

## Pantheon Report

Generated at 2019-01-03 09:20:56 (UTC).

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

Repeated the test of 19 congestion control schemes 5 times.

Each test lasted for 30 seconds running 1 flow.

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

### System info:

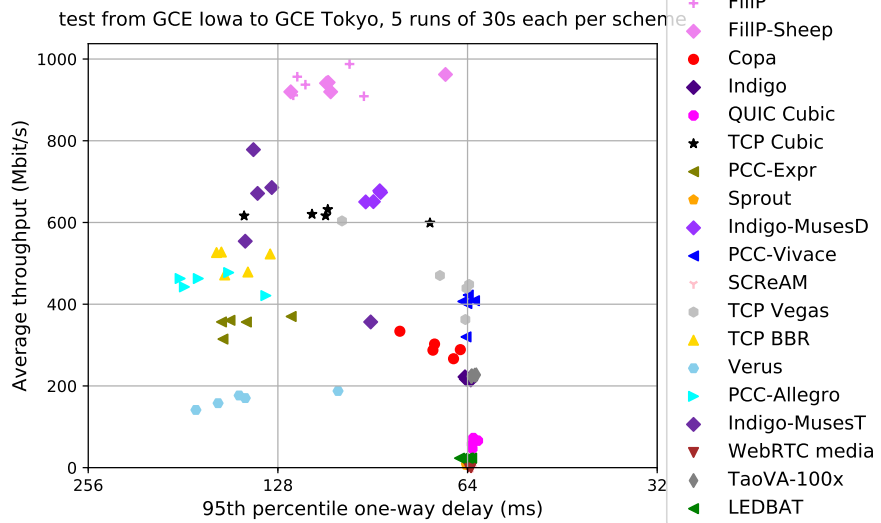
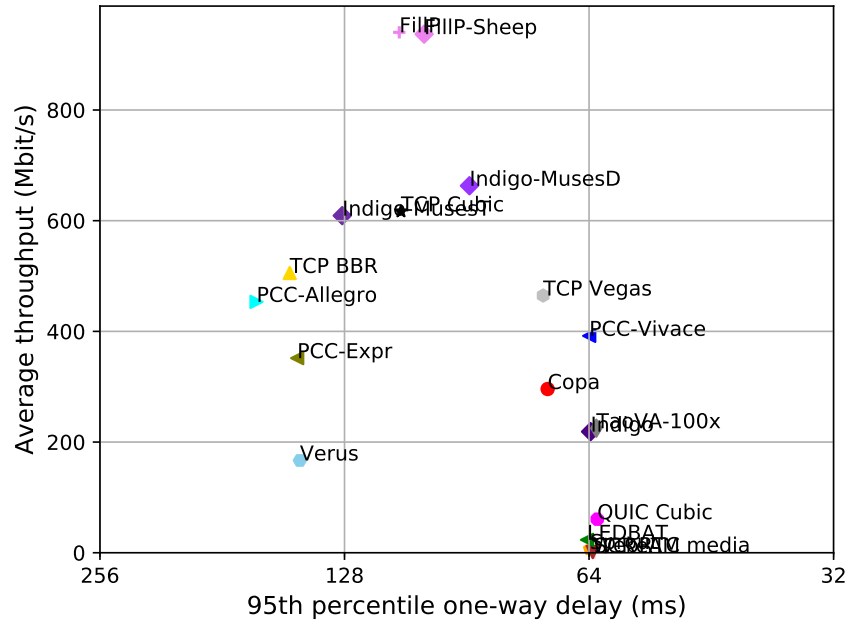
```
Linux 4.15.0-1025-gcp
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912
```

### Git summary:

```
branch: muses @ c654af0b7d59d4ef4b914cfac404e1fc2e96dc68
third_party/fillp @ d6da1459332fcee56963885d7eba17e6a32d4519
third_party/fillp-sheep @ 0e5bb722943babcd2b090d2c64fcd45e12e923f9
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdfc58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecd90c077e64d
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/muses @ 65ac1b19bbefed0c6349ae986009b4fa8643c40a
third_party/muses-refactored @ 31f8f0ba8ef8b1da76c2bc0cd0a7850c33ff64fb
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 GCE Iowa to GCE Tokyo, 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	505.56	149.50	0.77
Copa	5	295.86	71.97	0.01
TCP Cubic	5	616.78	109.07	0.11
FillP	5	940.35	109.59	0.60
FillP-Sheep	5	937.11	102.14	0.56
Indigo	5	218.85	63.73	0.00
Indigo-MusesD	4	663.14	89.83	0.04
Indigo-MusesT	5	609.13	128.82	0.20
LEDBAT	5	23.36	64.36	0.00
PCC-Allegro	5	453.30	164.25	2.26
PCC-Expr	5	351.63	146.37	1.86
QUIC Cubic	4	60.64	62.53	0.00
SCReAM	5	0.22	63.10	0.00
Sprout	5	6.80	63.85	0.00
TaoVA-100x	5	225.03	62.70	0.02
TCP Vegas	5	464.78	72.89	0.00
Verus	5	166.73	145.27	0.59
PCC-Vivace	5	391.90	63.98	0.00
WebRTC media	4	1.12	63.34	0.00



Run 1: Statistics of TCP BBR

Start at: 2019-01-03 04:47:24

End at: 2019-01-03 04:47:54

Local clock offset: -0.081 ms

Remote clock offset: -0.227 ms

# Below is generated by plot.py at 2019-01-03 07:20:28

# Datalink statistics

-- Total of 1 flow:

Average throughput: 523.01 Mbit/s

95th percentile per-packet one-way delay: 131.643 ms

Loss rate: 0.62%

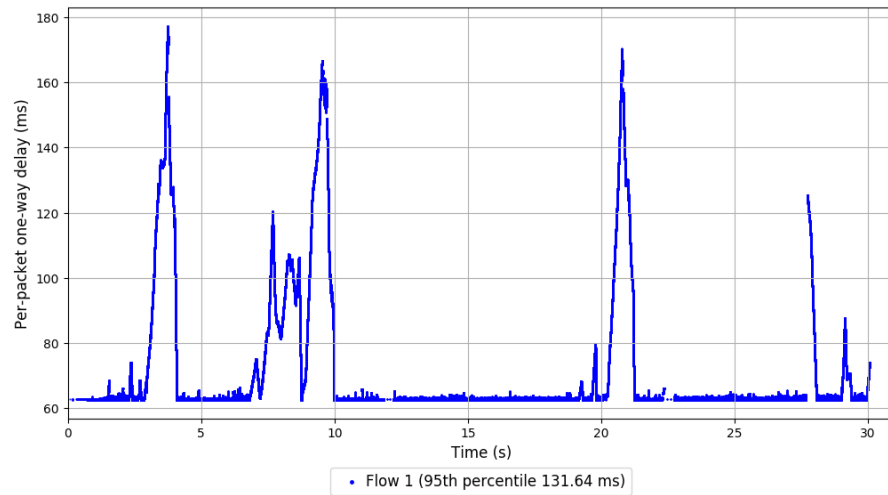
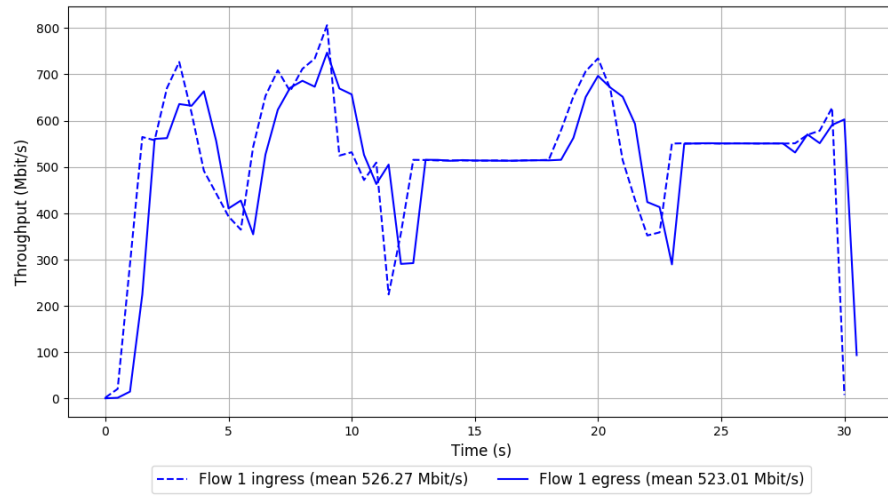
-- Flow 1:

Average throughput: 523.01 Mbit/s

95th percentile per-packet one-way delay: 131.643 ms

Loss rate: 0.62%

# Run 1: Report of TCP BBR — Data Link



Run 2: Statistics of TCP BBR

Start at: 2019-01-03 05:15:42

End at: 2019-01-03 05:16:12

Local clock offset: -0.024 ms

Remote clock offset: 0.011 ms

# Below is generated by plot.py at 2019-01-03 07:20:28

# Datalink statistics

-- Total of 1 flow:

Average throughput: 478.85 Mbit/s

95th percentile per-packet one-way delay: 142.832 ms

Loss rate: 0.81%

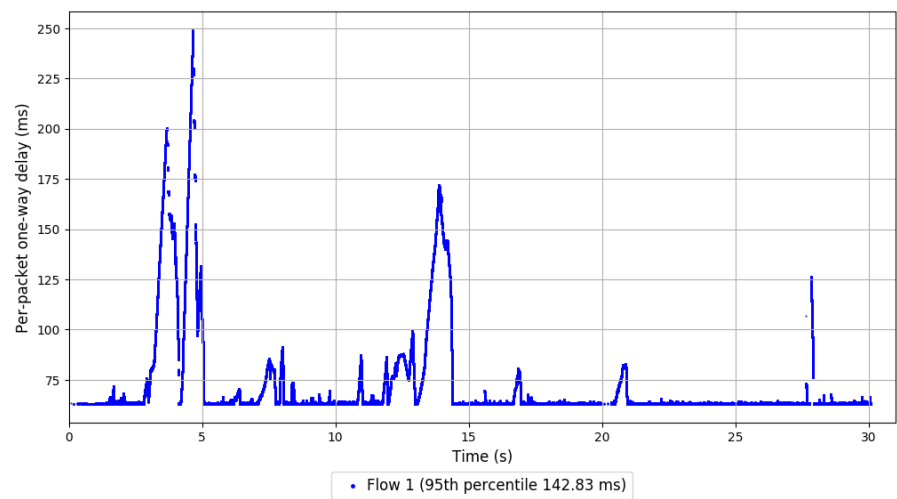
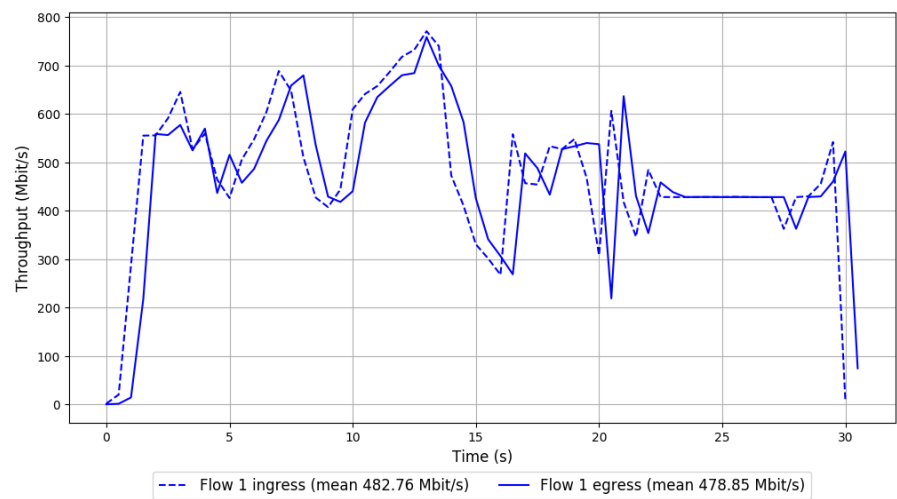
-- Flow 1:

Average throughput: 478.85 Mbit/s

95th percentile per-packet one-way delay: 142.832 ms

Loss rate: 0.81%

Run 2: Report of TCP BBR — Data Link

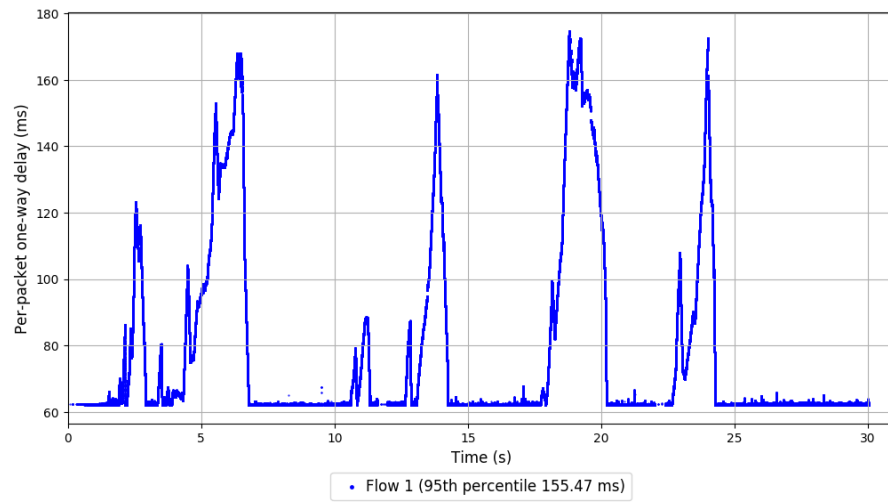
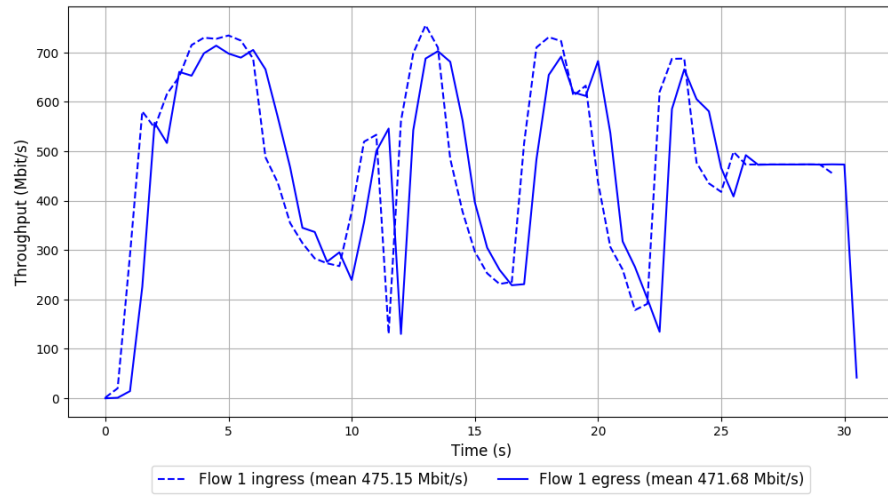


Run 3: Statistics of TCP BBR

Start at: 2019-01-03 05:43:49  
End at: 2019-01-03 05:44:19  
Local clock offset: -0.05 ms  
Remote clock offset: -0.687 ms

# Below is generated by plot.py at 2019-01-03 07:20:28  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 471.68 Mbit/s  
95th percentile per-packet one-way delay: 155.465 ms  
Loss rate: 0.73%  
-- Flow 1:  
Average throughput: 471.68 Mbit/s  
95th percentile per-packet one-way delay: 155.465 ms  
Loss rate: 0.73%

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



Run 4: Statistics of TCP BBR

Start at: 2019-01-03 06:12:06

End at: 2019-01-03 06:12:36

Local clock offset: -0.004 ms

Remote clock offset: 1.476 ms

# Below is generated by plot.py at 2019-01-03 07:20:37

# Datalink statistics

-- Total of 1 flow:

Average throughput: 527.72 Mbit/s

95th percentile per-packet one-way delay: 157.362 ms

Loss rate: 0.93%

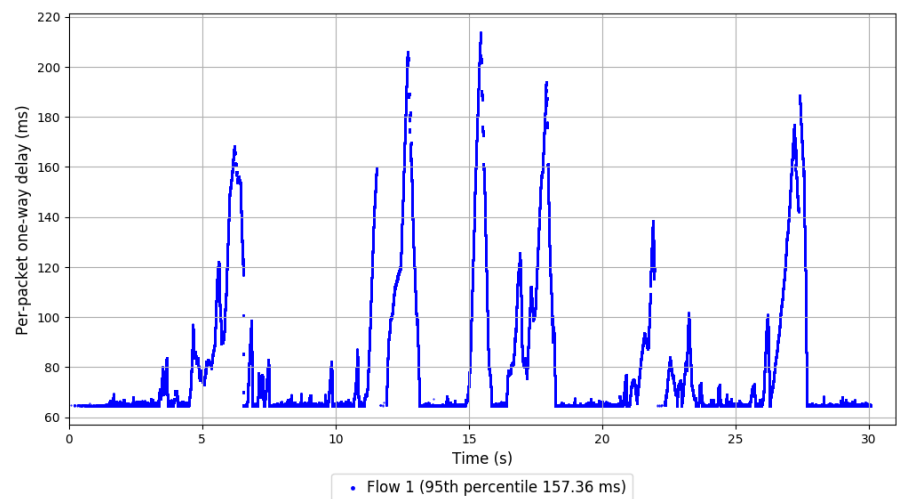
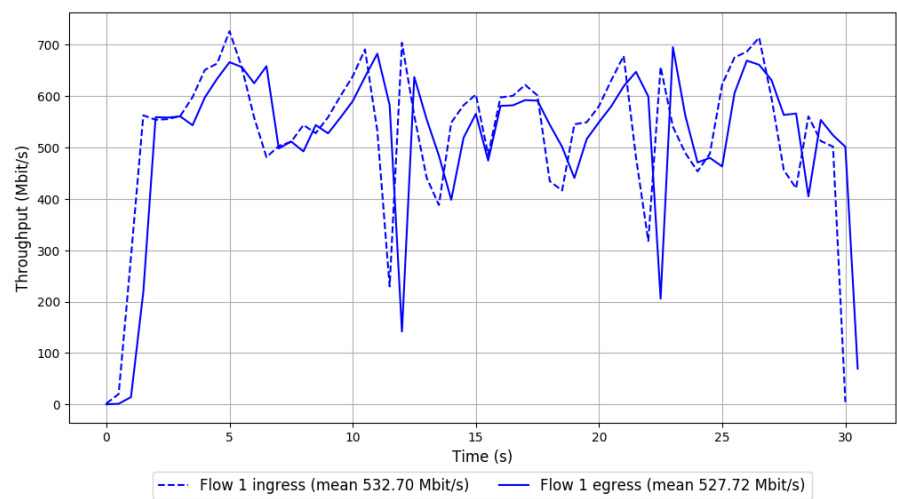
-- Flow 1:

Average throughput: 527.72 Mbit/s

95th percentile per-packet one-way delay: 157.362 ms

Loss rate: 0.93%

Run 4: Report of TCP BBR — Data Link



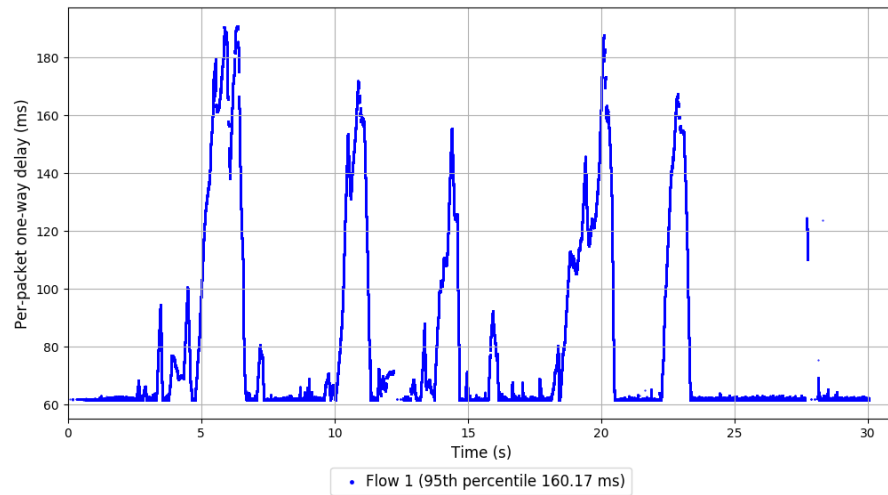
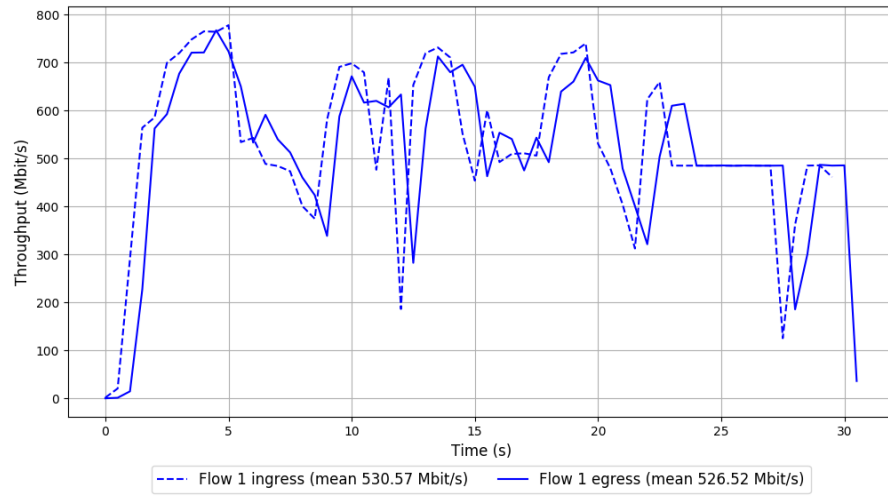


Run 5: Statistics of TCP BBR

Start at: 2019-01-03 06:40:28  
End at: 2019-01-03 06:40:58  
Local clock offset: -0.001 ms  
Remote clock offset: -1.224 ms

# Below is generated by plot.py at 2019-01-03 07:20:37  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 526.52 Mbit/s  
95th percentile per-packet one-way delay: 160.174 ms  
Loss rate: 0.76%  
-- Flow 1:  
Average throughput: 526.52 Mbit/s  
95th percentile per-packet one-way delay: 160.174 ms  
Loss rate: 0.76%

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



Run 1: Statistics of Copa

Start at: 2019-01-03 04:44:14

End at: 2019-01-03 04:44:44

Local clock offset: -0.048 ms

Remote clock offset: 0.538 ms

# Below is generated by plot.py at 2019-01-03 07:20:42

# Datalink statistics

-- Total of 1 flow:

Average throughput: 287.51 Mbit/s

95th percentile per-packet one-way delay: 72.632 ms

Loss rate: 0.00%

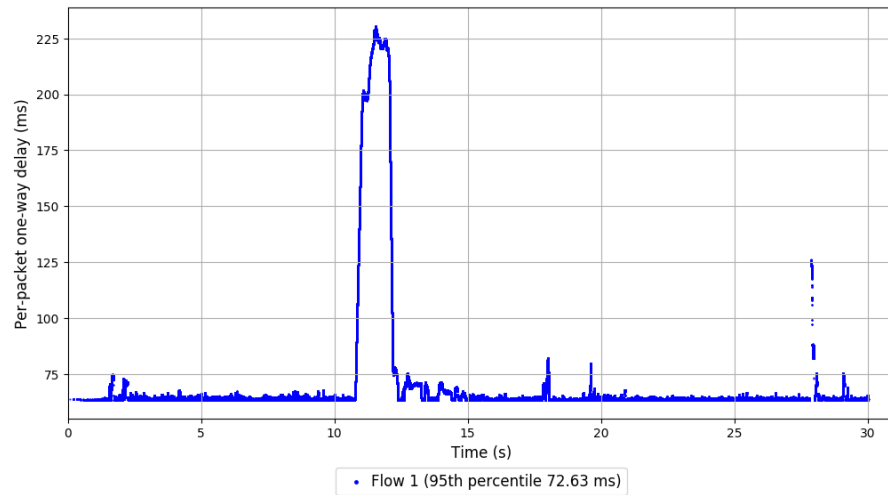
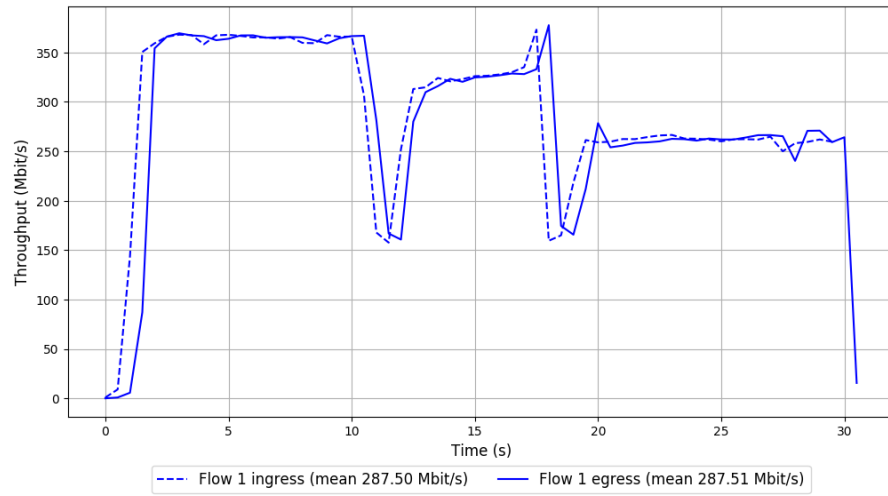
-- Flow 1:

Average throughput: 287.51 Mbit/s

95th percentile per-packet one-way delay: 72.632 ms

Loss rate: 0.00%

## Run 1: Report of Copa — Data Link

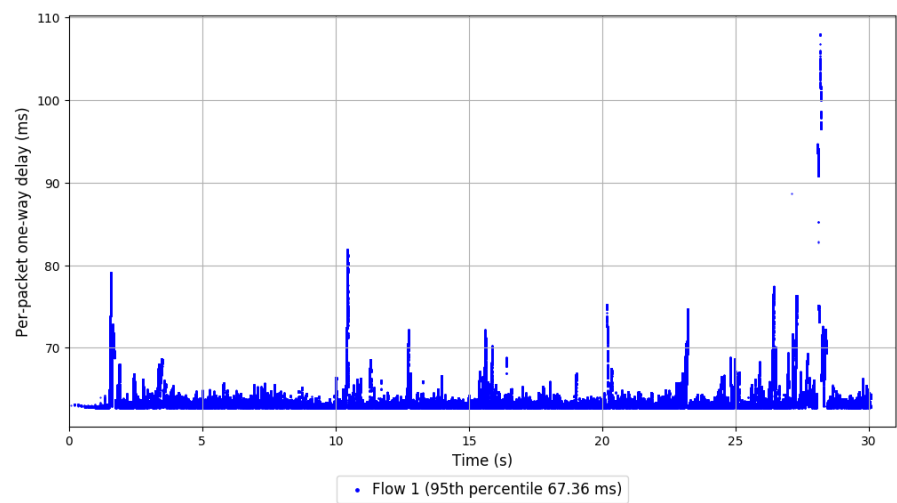
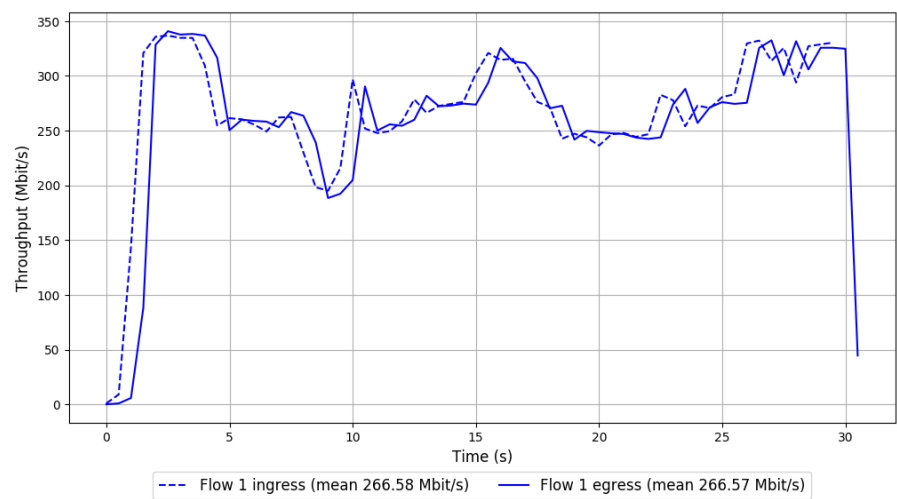


Run 2: Statistics of Copa

Start at: 2019-01-03 05:12:31  
End at: 2019-01-03 05:13:01  
Local clock offset: -0.047 ms  
Remote clock offset: -0.163 ms

# Below is generated by plot.py at 2019-01-03 07:20:42  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 266.57 Mbit/s  
95th percentile per-packet one-way delay: 67.362 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 266.57 Mbit/s  
95th percentile per-packet one-way delay: 67.362 ms  
Loss rate: 0.00%

Run 2: Report of Copa — Data Link



Run 3: Statistics of Copa

Start at: 2019-01-03 05:40:36

End at: 2019-01-03 05:41:06

Local clock offset: -0.019 ms

Remote clock offset: 0.063 ms

# Below is generated by plot.py at 2019-01-03 07:20:46

# Datalink statistics

-- Total of 1 flow:

Average throughput: 288.82 Mbit/s

95th percentile per-packet one-way delay: 65.710 ms

Loss rate: 0.00%

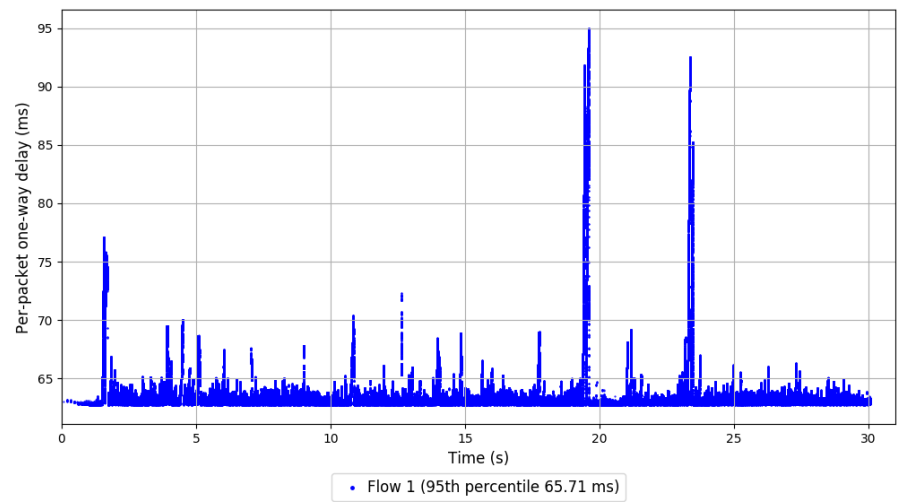
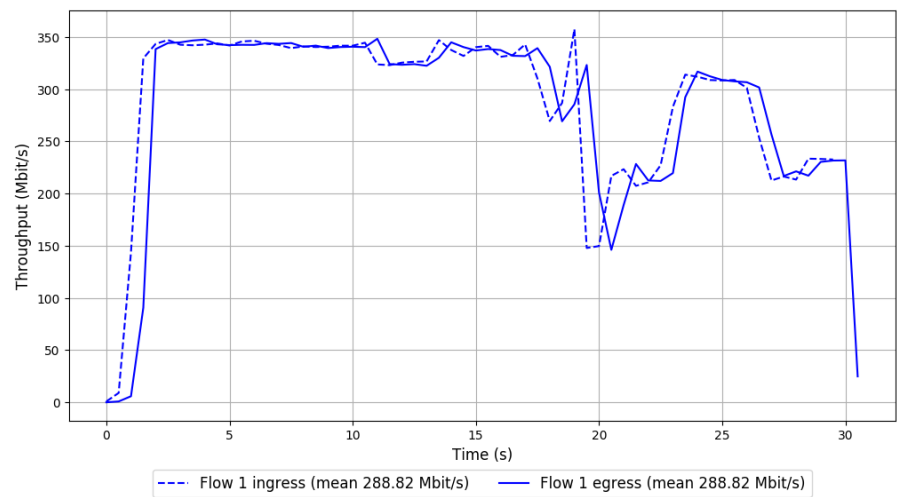
-- Flow 1:

Average throughput: 288.82 Mbit/s

95th percentile per-packet one-way delay: 65.710 ms

Loss rate: 0.00%

Run 3: Report of Copa — Data Link



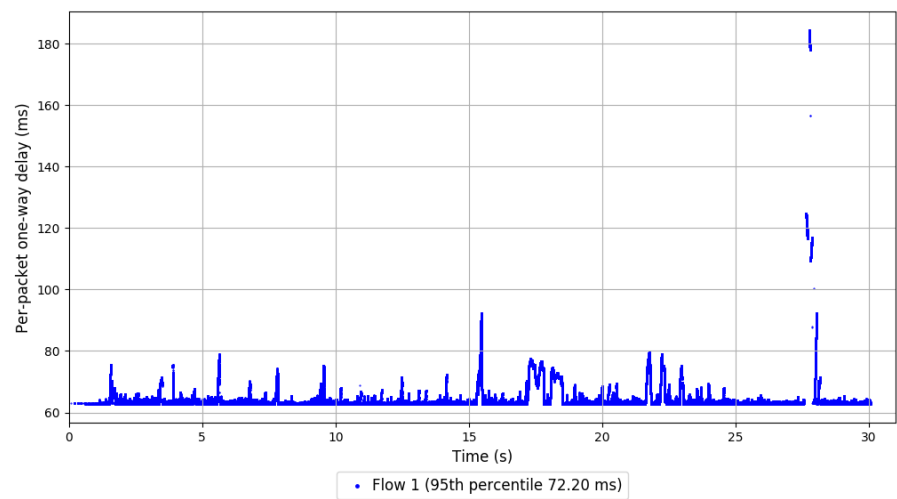
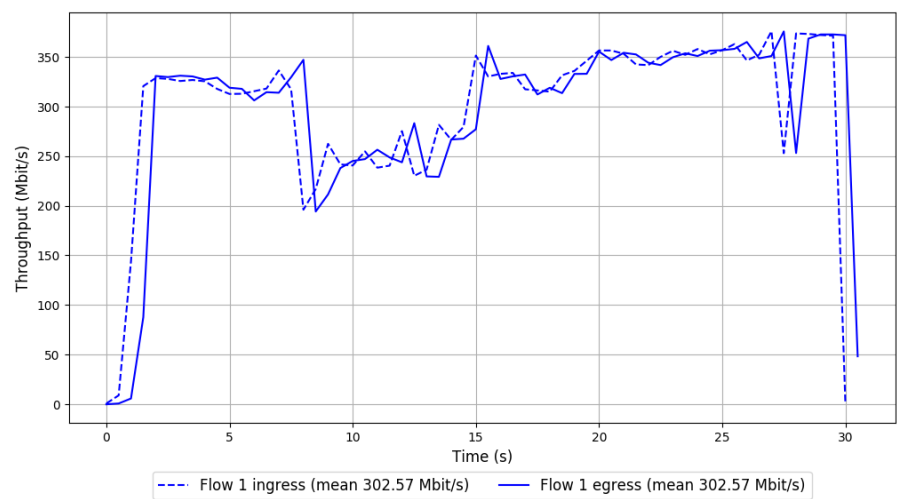


Run 4: Statistics of Copa

Start at: 2019-01-03 06:08:52  
End at: 2019-01-03 06:09:22  
Local clock offset: -0.045 ms  
Remote clock offset: -0.059 ms

# Below is generated by plot.py at 2019-01-03 07:32:52  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 302.57 Mbit/s  
95th percentile per-packet one-way delay: 72.201 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 302.57 Mbit/s  
95th percentile per-packet one-way delay: 72.201 ms  
Loss rate: 0.00%

Run 4: Report of Copa — Data Link



Run 5: Statistics of Copa

Start at: 2019-01-03 06:37:10

End at: 2019-01-03 06:37:40

Local clock offset: -0.027 ms

Remote clock offset: 0.1 ms

# Below is generated by plot.py at 2019-01-03 07:33:50

# Datalink statistics

-- Total of 1 flow:

Average throughput: 333.83 Mbit/s

95th percentile per-packet one-way delay: 81.962 ms

Loss rate: 0.03%

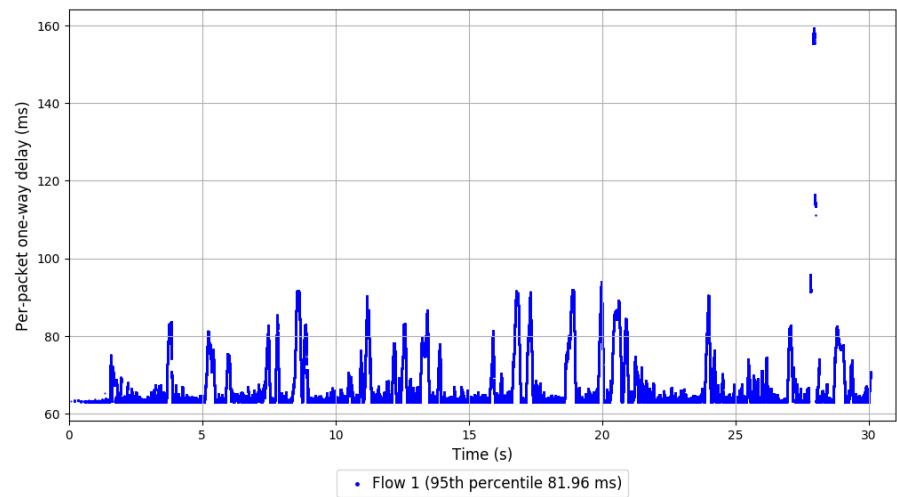
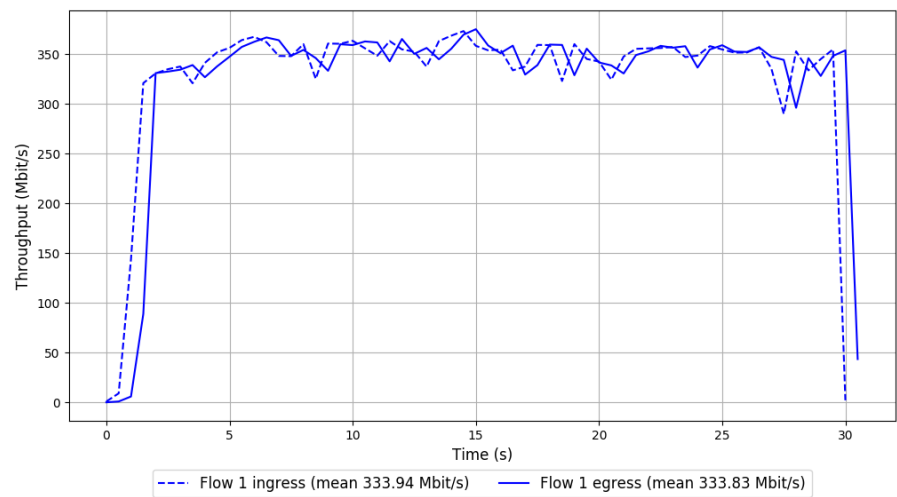
-- Flow 1:

Average throughput: 333.83 Mbit/s

95th percentile per-packet one-way delay: 81.962 ms

Loss rate: 0.03%

Run 5: Report of Copa — Data Link



Run 1: Statistics of TCP Cubic

Start at: 2019-01-03 04:56:47

End at: 2019-01-03 04:57:17

Local clock offset: -0.073 ms

Remote clock offset: 0.133 ms

# Below is generated by plot.py at 2019-01-03 07:33:53

# Datalink statistics

-- Total of 1 flow:

Average throughput: 616.28 Mbit/s

95th percentile per-packet one-way delay: 144.802 ms

Loss rate: 0.23%

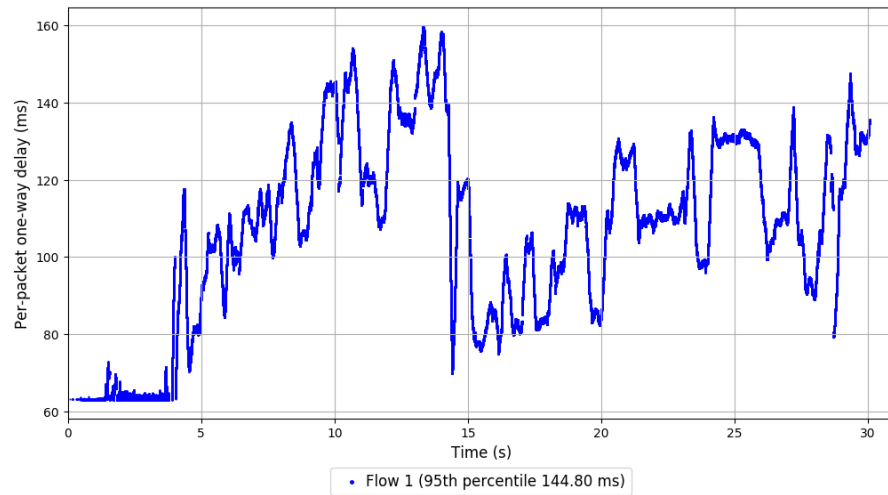
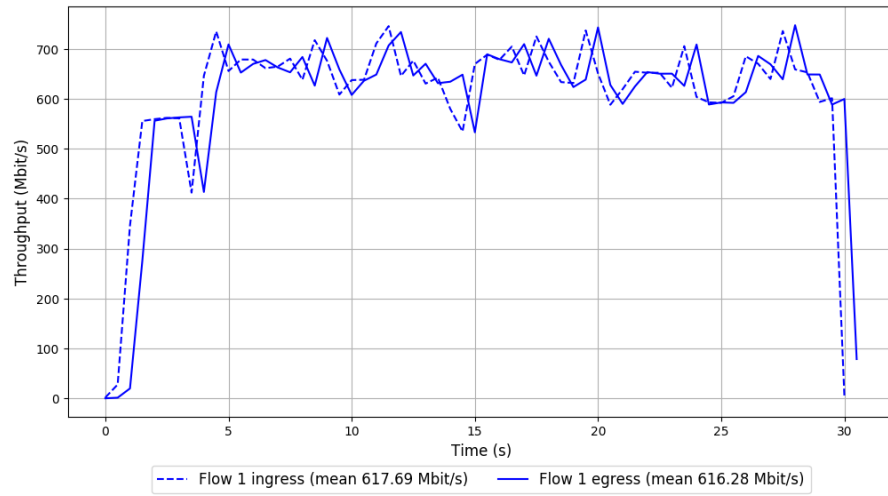
-- Flow 1:

Average throughput: 616.28 Mbit/s

95th percentile per-packet one-way delay: 144.802 ms

Loss rate: 0.23%

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

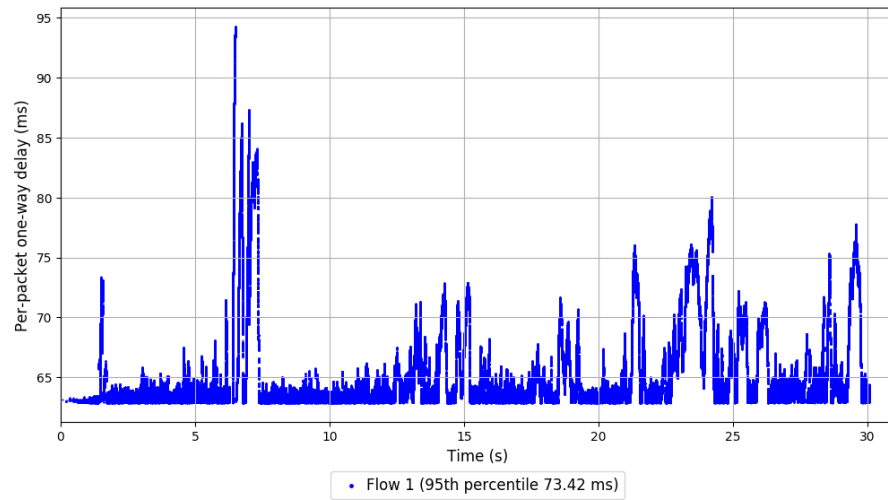
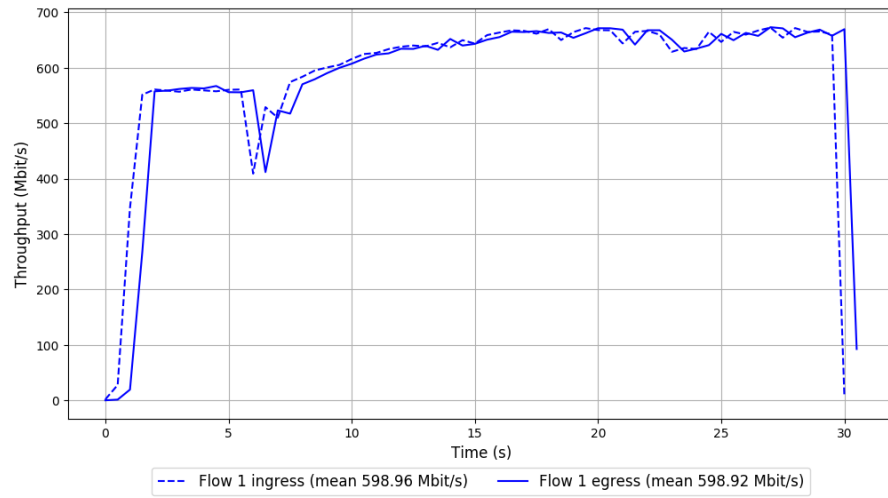


Run 2: Statistics of TCP Cubic

Start at: 2019-01-03 05:25:04  
End at: 2019-01-03 05:25:34  
Local clock offset: -0.037 ms  
Remote clock offset: -0.308 ms

# Below is generated by plot.py at 2019-01-03 07:34:11  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 598.92 Mbit/s  
95th percentile per-packet one-way delay: 73.420 ms  
Loss rate: 0.01%  
-- Flow 1:  
Average throughput: 598.92 Mbit/s  
95th percentile per-packet one-way delay: 73.420 ms  
Loss rate: 0.01%

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





Run 3: Statistics of TCP Cubic

Start at: 2019-01-03 05:53:12

End at: 2019-01-03 05:53:42

Local clock offset: -0.075 ms

Remote clock offset: 0.637 ms

# Below is generated by plot.py at 2019-01-03 07:34:34

# Datalink statistics

-- Total of 1 flow:

Average throughput: 616.53 Mbit/s

95th percentile per-packet one-way delay: 107.492 ms

Loss rate: 0.13%

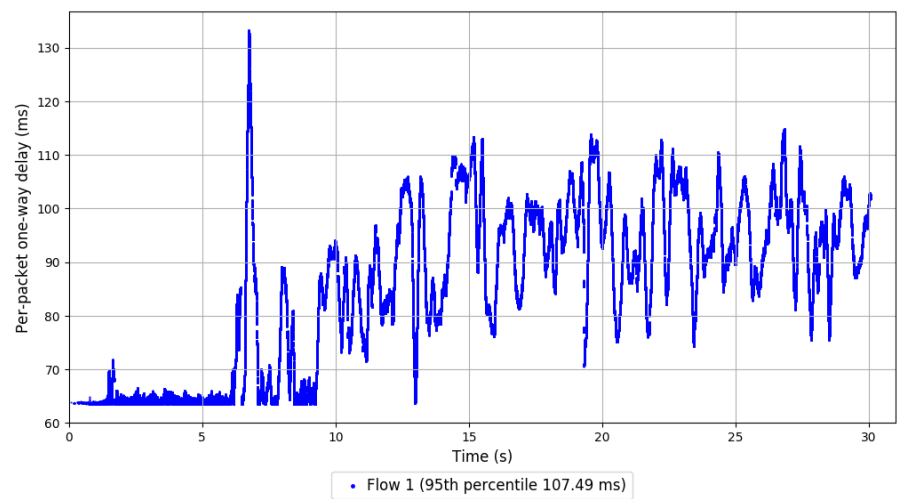
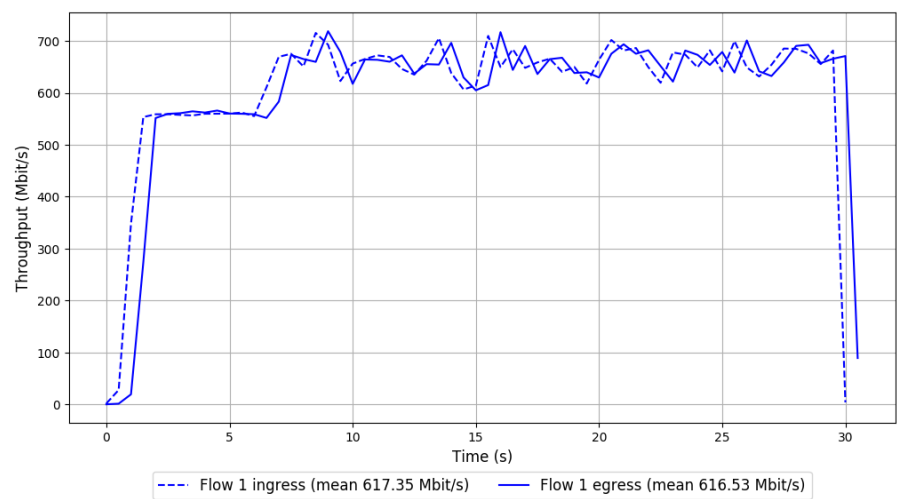
-- Flow 1:

Average throughput: 616.53 Mbit/s

95th percentile per-packet one-way delay: 107.492 ms

Loss rate: 0.13%

Run 3: Report of TCP Cubic — Data Link



Run 4: Statistics of TCP Cubic

Start at: 2019-01-03 06:21:32

End at: 2019-01-03 06:22:02

Local clock offset: 0.007 ms

Remote clock offset: 1.309 ms

# Below is generated by plot.py at 2019-01-03 07:34:43

# Datalink statistics

-- Total of 1 flow:

Average throughput: 620.25 Mbit/s

95th percentile per-packet one-way delay: 112.983 ms

Loss rate: 0.14%

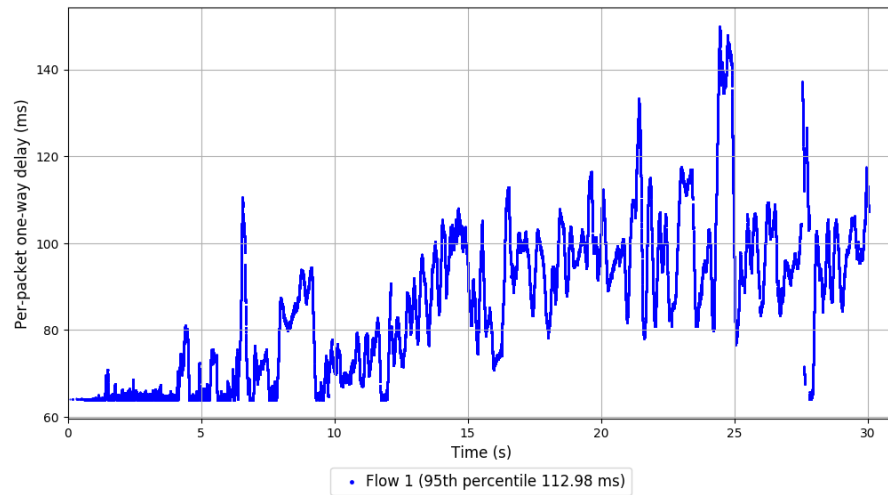
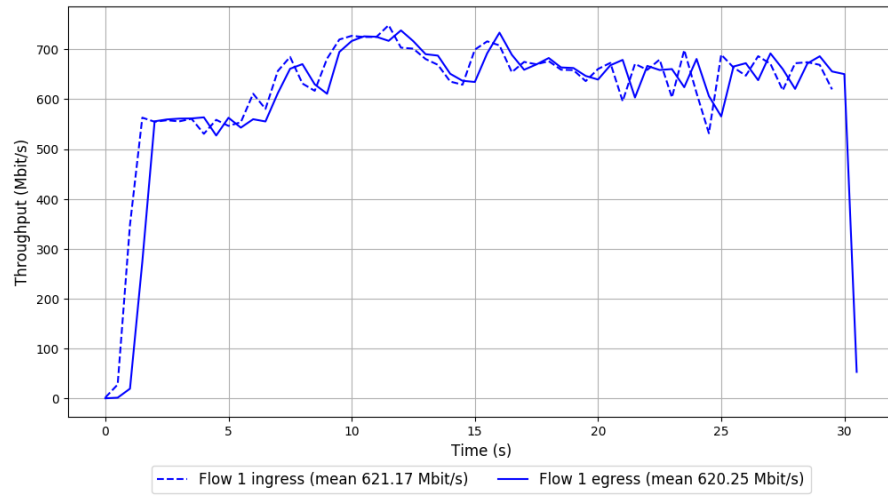
-- Flow 1:

Average throughput: 620.25 Mbit/s

95th percentile per-packet one-way delay: 112.983 ms

Loss rate: 0.14%

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

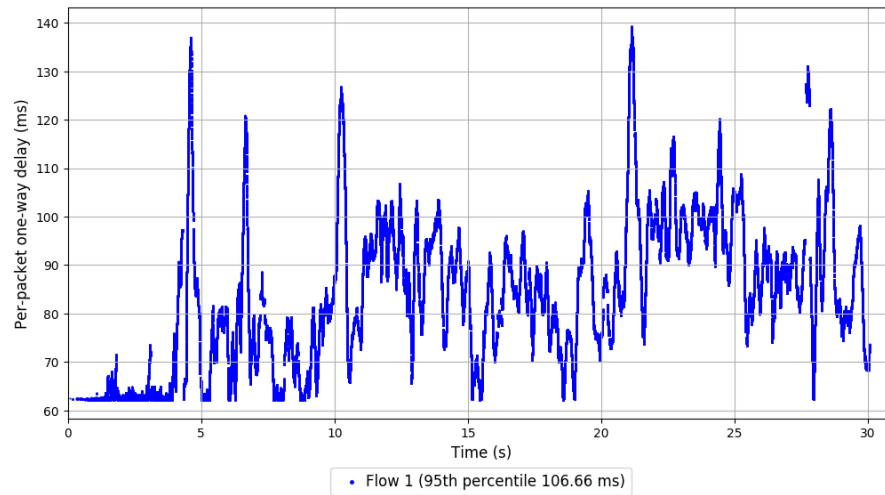
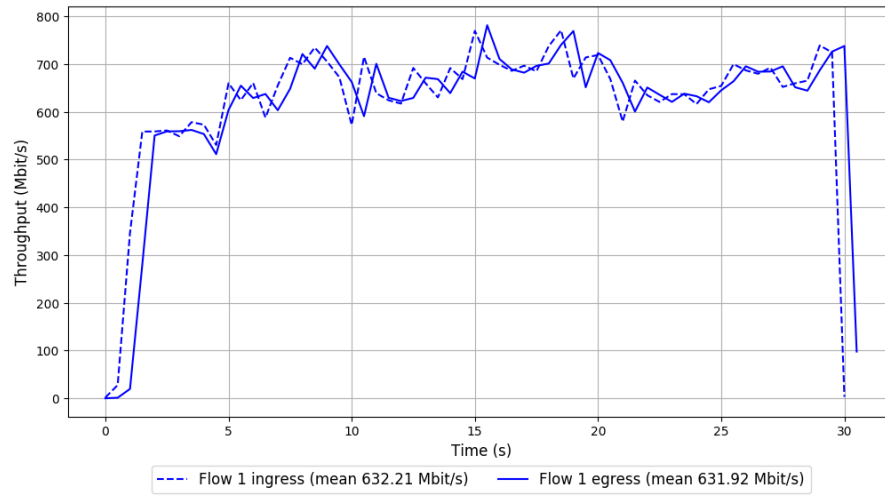


Run 5: Statistics of TCP Cubic

Start at: 2019-01-03 06:49:46  
End at: 2019-01-03 06:50:16  
Local clock offset: 0.032 ms  
Remote clock offset: -0.671 ms

# Below is generated by plot.py at 2019-01-03 07:34:57  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 631.92 Mbit/s  
95th percentile per-packet one-way delay: 106.664 ms  
Loss rate: 0.05%  
-- Flow 1:  
Average throughput: 631.92 Mbit/s  
95th percentile per-packet one-way delay: 106.664 ms  
Loss rate: 0.05%

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



Run 1: Statistics of FillP

Start at: 2019-01-03 05:00:44

End at: 2019-01-03 05:01:14

Local clock offset: -0.082 ms

Remote clock offset: 0.105 ms

# Below is generated by plot.py at 2019-01-03 07:43:46

# Datalink statistics

-- Total of 1 flow:

Average throughput: 911.17 Mbit/s

95th percentile per-packet one-way delay: 120.999 ms

Loss rate: 0.82%

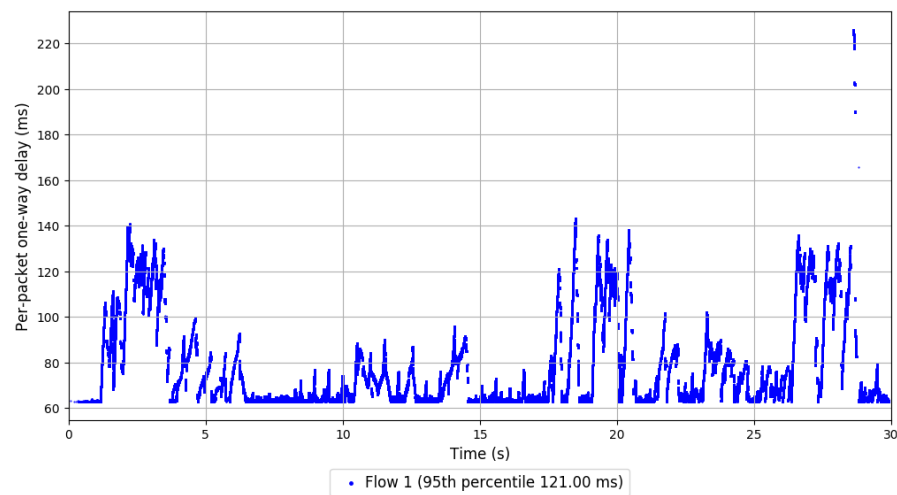
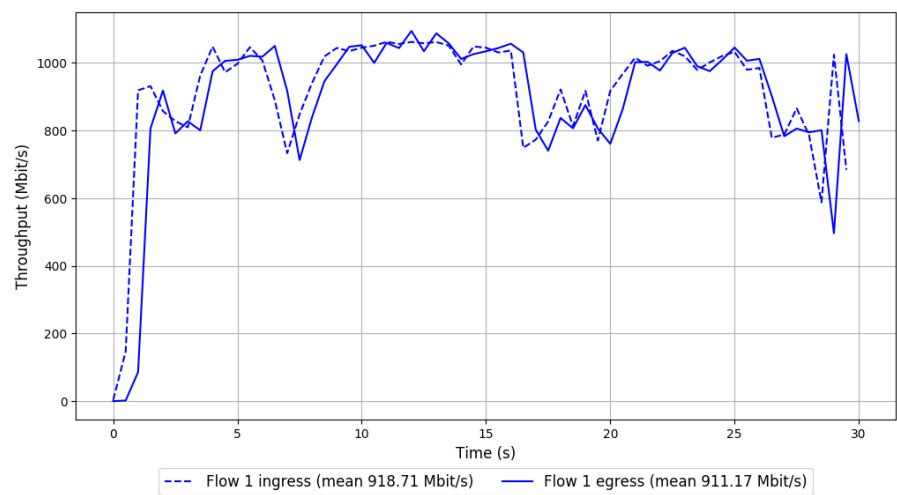
-- Flow 1:

Average throughput: 911.17 Mbit/s

95th percentile per-packet one-way delay: 120.999 ms

Loss rate: 0.82%

Run 1: Report of FillP — Data Link





Run 2: Statistics of FillP

Start at: 2019-01-03 05:28:57

End at: 2019-01-03 05:29:27

Local clock offset: -0.077 ms

Remote clock offset: 0.295 ms

# Below is generated by plot.py at 2019-01-03 08:00:26

# Datalink statistics

-- Total of 1 flow:

Average throughput: 987.73 Mbit/s

95th percentile per-packet one-way delay: 98.507 ms

Loss rate: 0.06%

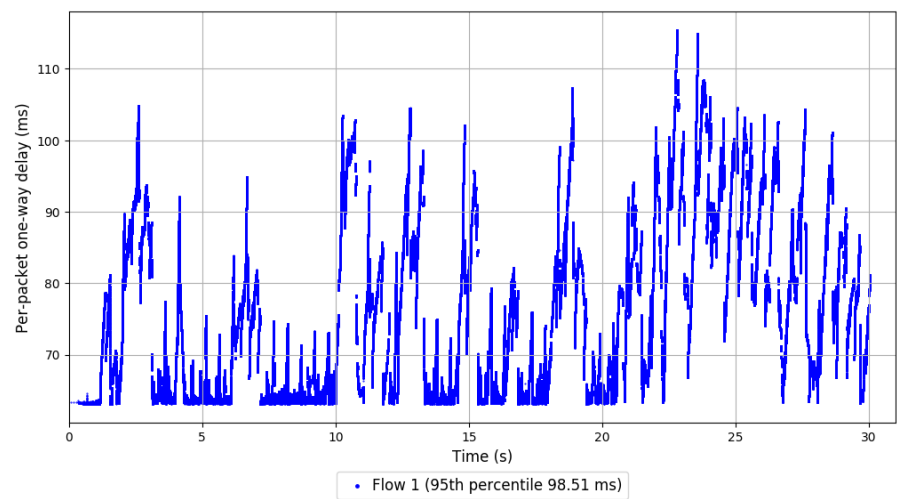
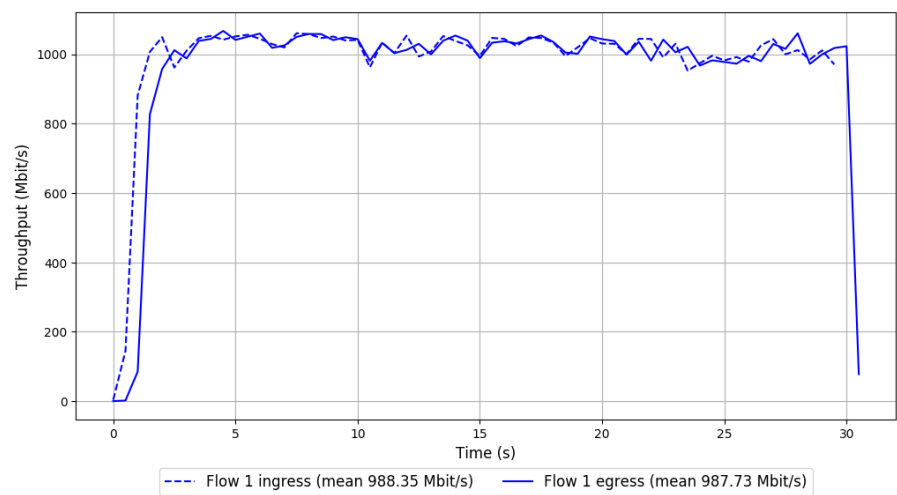
-- Flow 1:

Average throughput: 987.73 Mbit/s

95th percentile per-packet one-way delay: 98.507 ms

Loss rate: 0.06%

Run 2: Report of FillP — Data Link



Run 3: Statistics of FillP

Start at: 2019-01-03 05:57:07

End at: 2019-01-03 05:57:37

Local clock offset: -0.07 ms

Remote clock offset: 1.297 ms

# Below is generated by plot.py at 2019-01-03 08:00:33

# Datalink statistics

-- Total of 1 flow:

Average throughput: 937.26 Mbit/s

95th percentile per-packet one-way delay: 115.752 ms

Loss rate: 1.01%

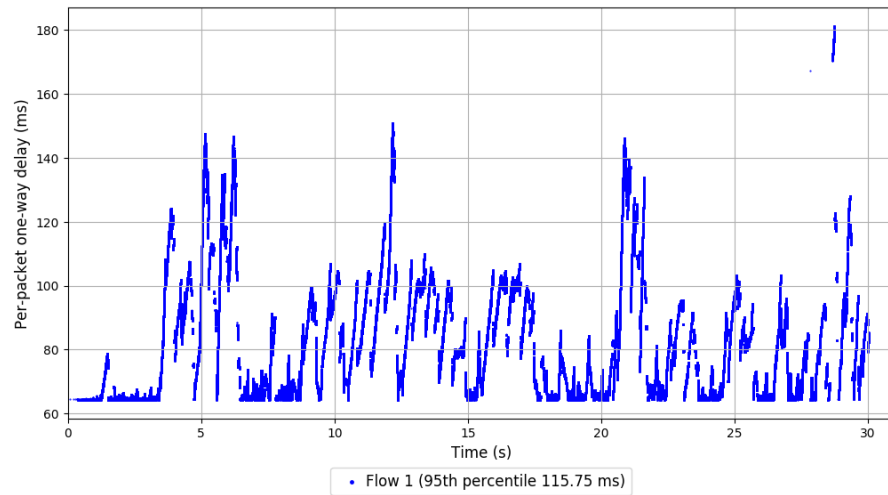
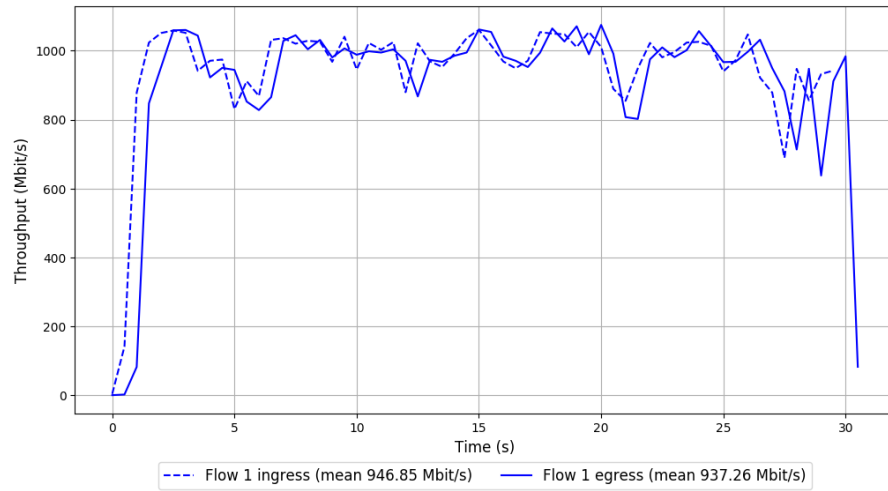
-- Flow 1:

Average throughput: 937.26 Mbit/s

95th percentile per-packet one-way delay: 115.752 ms

Loss rate: 1.01%

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



Run 4: Statistics of FillP

Start at: 2019-01-03 06:25:29

End at: 2019-01-03 06:25:59

Local clock offset: -0.012 ms

Remote clock offset: 0.836 ms

# Below is generated by plot.py at 2019-01-03 08:00:33

# Datalink statistics

-- Total of 1 flow:

Average throughput: 908.93 Mbit/s

95th percentile per-packet one-way delay: 93.466 ms

Loss rate: 0.07%

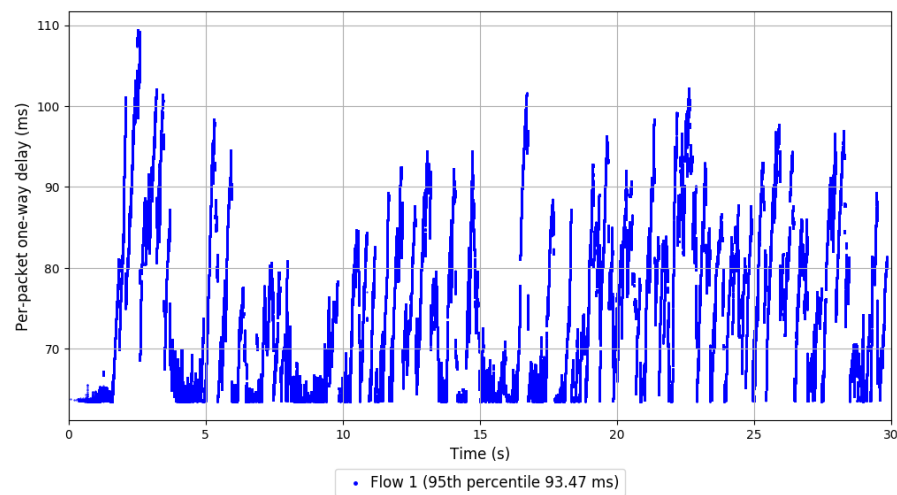
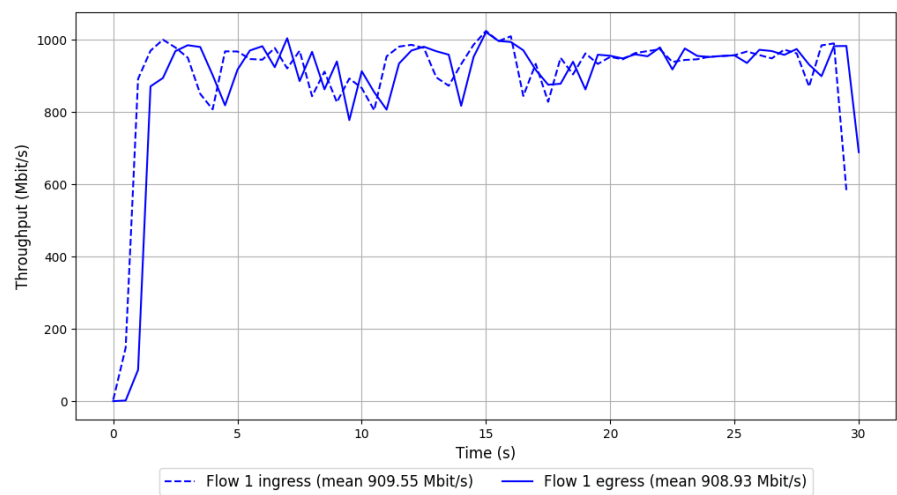
-- Flow 1:

Average throughput: 908.93 Mbit/s

95th percentile per-packet one-way delay: 93.466 ms

Loss rate: 0.07%

Run 4: Report of FillP — Data Link



Run 5: Statistics of FillP

Start at: 2019-01-03 06:53:44

End at: 2019-01-03 06:54:14

Local clock offset: 0.01 ms

Remote clock offset: -0.05 ms

# Below is generated by plot.py at 2019-01-03 08:01:33

# Datalink statistics

-- Total of 1 flow:

Average throughput: 956.68 Mbit/s

95th percentile per-packet one-way delay: 119.243 ms

Loss rate: 1.02%

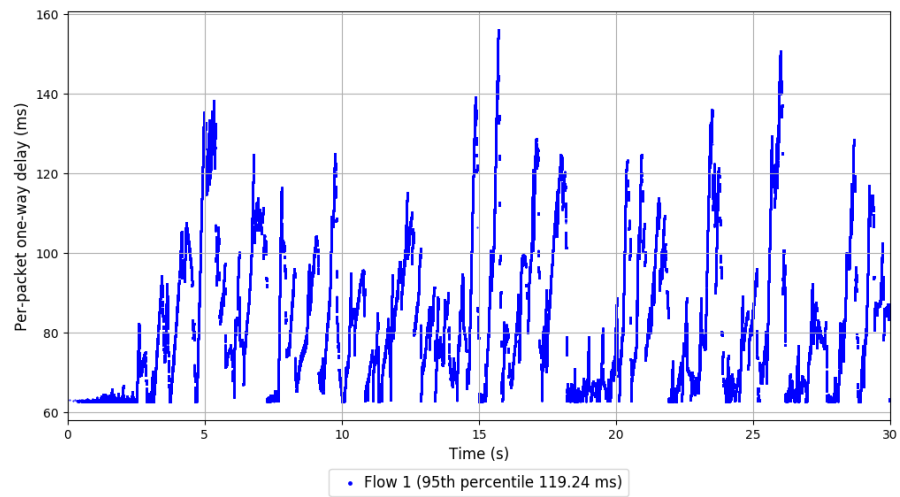
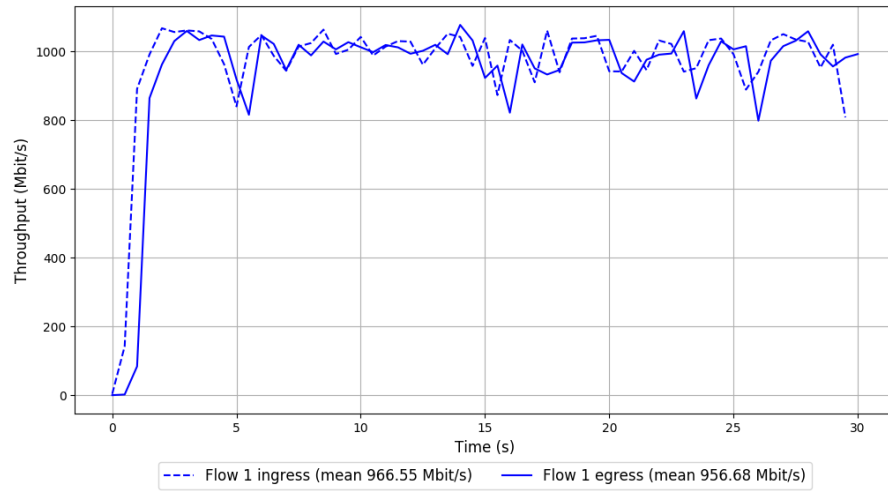
-- Flow 1:

Average throughput: 956.68 Mbit/s

95th percentile per-packet one-way delay: 119.243 ms

Loss rate: 1.02%

### Run 5: Report of FillP — Data Link





Run 1: Statistics of FillP-Sheep

Start at: 2019-01-03 04:52:06

End at: 2019-01-03 04:52:36

Local clock offset: -0.032 ms

Remote clock offset: 0.4 ms

# Below is generated by plot.py at 2019-01-03 08:01:44

# Datalink statistics

-- Total of 1 flow:

Average throughput: 962.24 Mbit/s

95th percentile per-packet one-way delay: 69.371 ms

Loss rate: 0.35%

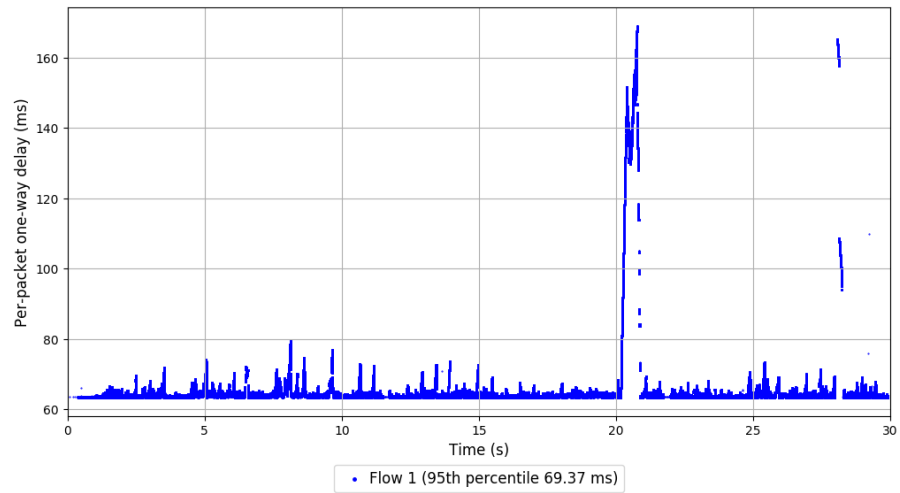
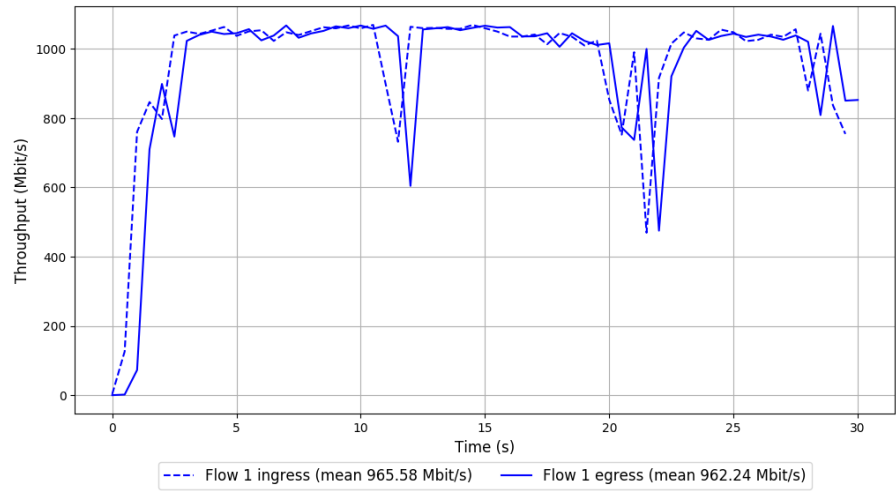
-- Flow 1:

Average throughput: 962.24 Mbit/s

95th percentile per-packet one-way delay: 69.371 ms

Loss rate: 0.35%

# Run 1: Report of FillP-Sheep — Data Link



Run 2: Statistics of FillP-Sheep

Start at: 2019-01-03 05:20:27

End at: 2019-01-03 05:20:57

Local clock offset: -0.035 ms

Remote clock offset: 0.754 ms

# Below is generated by plot.py at 2019-01-03 08:01:44

# Datalink statistics

-- Total of 1 flow:

Average throughput: 919.79 Mbit/s

95th percentile per-packet one-way delay: 122.117 ms

Loss rate: 0.59%

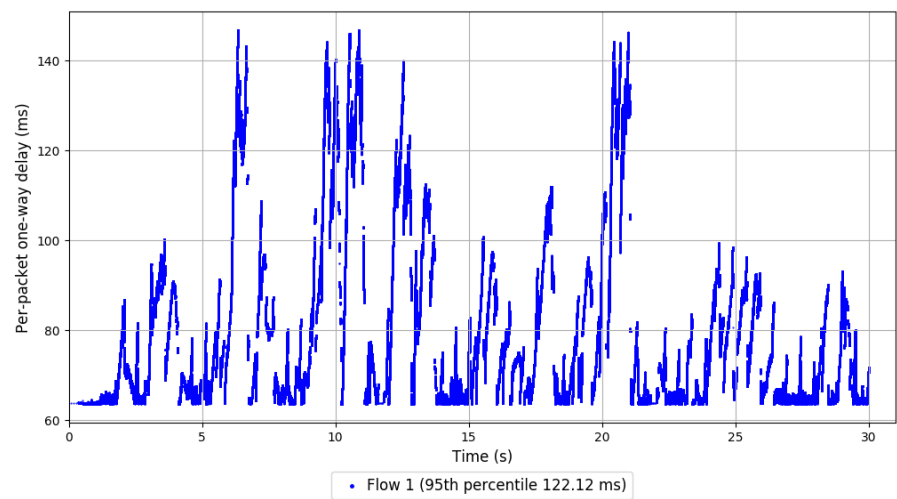
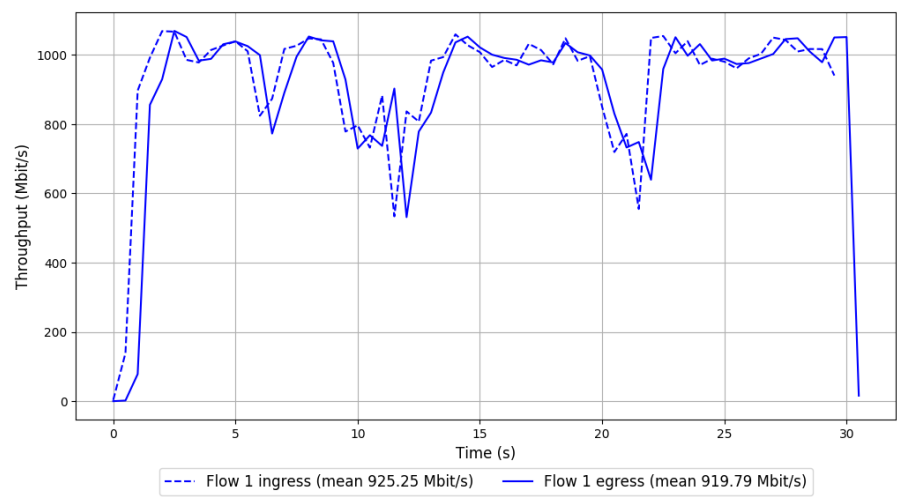
-- Flow 1:

Average throughput: 919.79 Mbit/s

95th percentile per-packet one-way delay: 122.117 ms

Loss rate: 0.59%

Run 2: Report of FillP-Sheep — Data Link

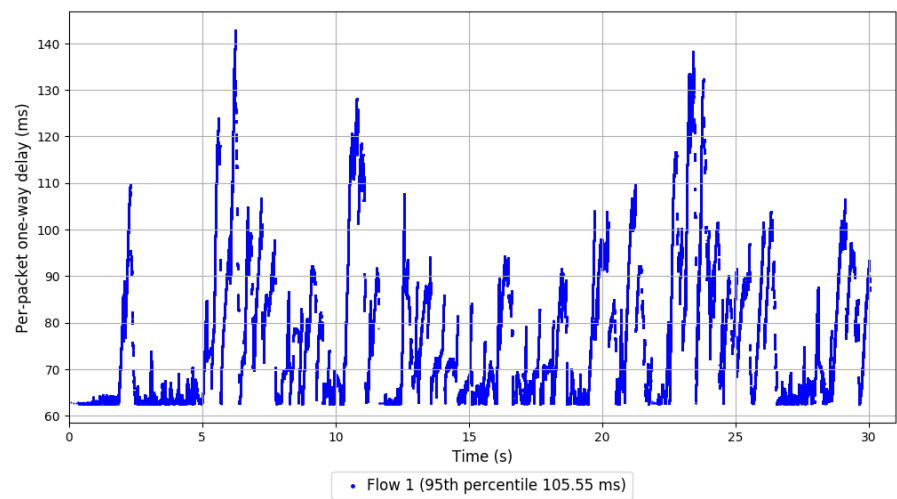
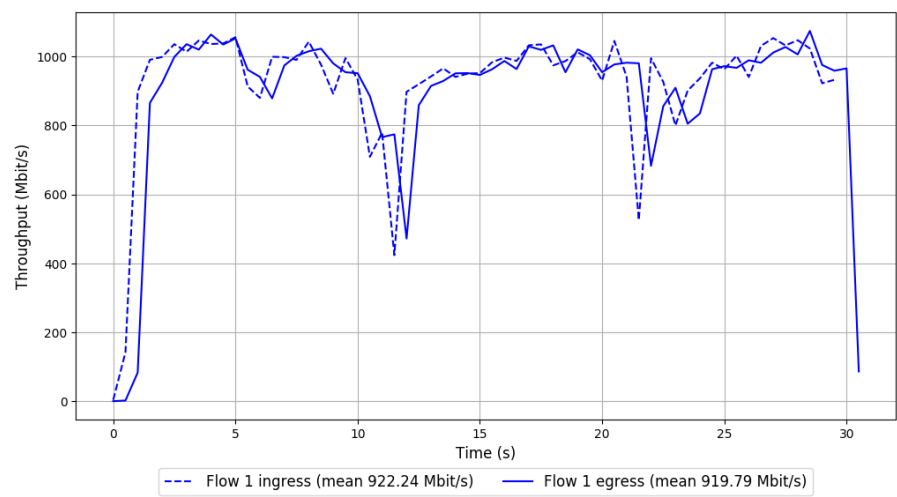


Run 3: Statistics of FillP-Sheep

Start at: 2019-01-03 05:48:36  
End at: 2019-01-03 05:49:06  
Local clock offset: -0.062 ms  
Remote clock offset: -0.413 ms

# Below is generated by plot.py at 2019-01-03 08:01:44  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 919.79 Mbit/s  
95th percentile per-packet one-way delay: 105.545 ms  
Loss rate: 0.26%  
-- Flow 1:  
Average throughput: 919.79 Mbit/s  
95th percentile per-packet one-way delay: 105.545 ms  
Loss rate: 0.26%

Run 3: Report of FillP-Sheep — Data Link



Run 4: Statistics of FillP-Sheep

Start at: 2019-01-03 06:16:55

End at: 2019-01-03 06:17:25

Local clock offset: 0.013 ms

Remote clock offset: 0.471 ms

# Below is generated by plot.py at 2019-01-03 08:13:21

# Datalink statistics

-- Total of 1 flow:

Average throughput: 942.79 Mbit/s

95th percentile per-packet one-way delay: 106.518 ms

Loss rate: 0.99%

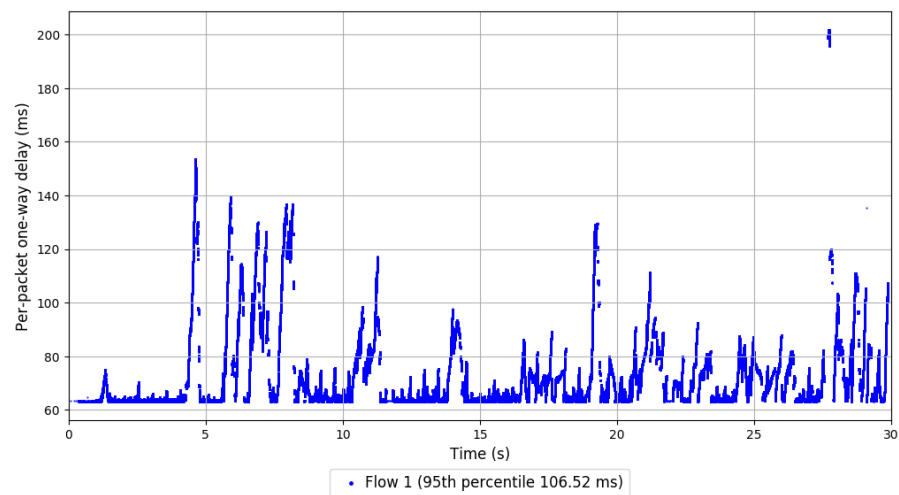
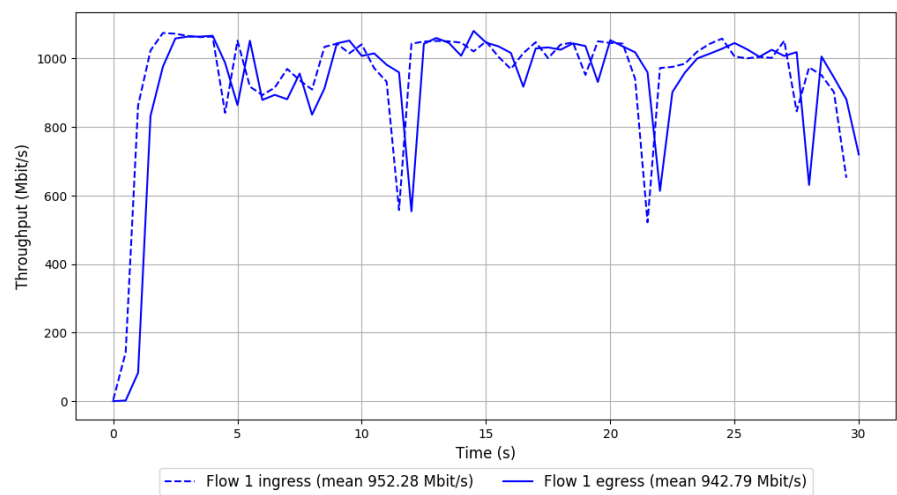
-- Flow 1:

Average throughput: 942.79 Mbit/s

95th percentile per-packet one-way delay: 106.518 ms

Loss rate: 0.99%

Run 4: Report of FillP-Sheep — Data Link





Run 5: Statistics of FillP-Sheep

Start at: 2019-01-03 06:45:08

End at: 2019-01-03 06:45:38

Local clock offset: -0.01 ms

Remote clock offset: -0.904 ms

# Below is generated by plot.py at 2019-01-03 08:27:22

# Datalink statistics

-- Total of 1 flow:

Average throughput: 940.92 Mbit/s

95th percentile per-packet one-way delay: 107.156 ms

Loss rate: 0.60%

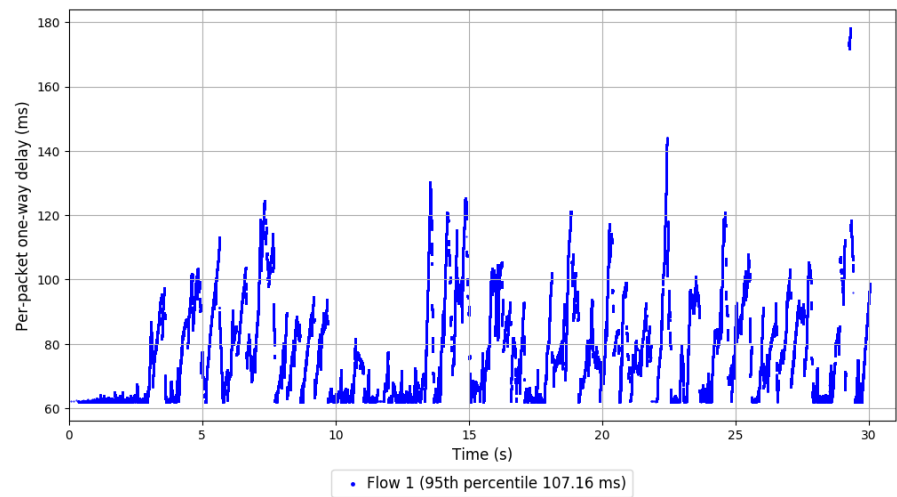
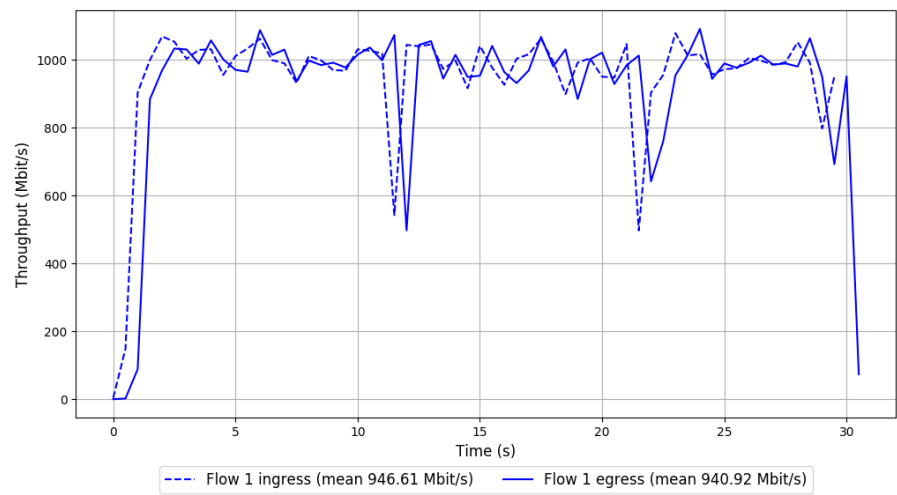
-- Flow 1:

Average throughput: 940.92 Mbit/s

95th percentile per-packet one-way delay: 107.156 ms

Loss rate: 0.60%

Run 5: Report of FillP-Sheep — Data Link

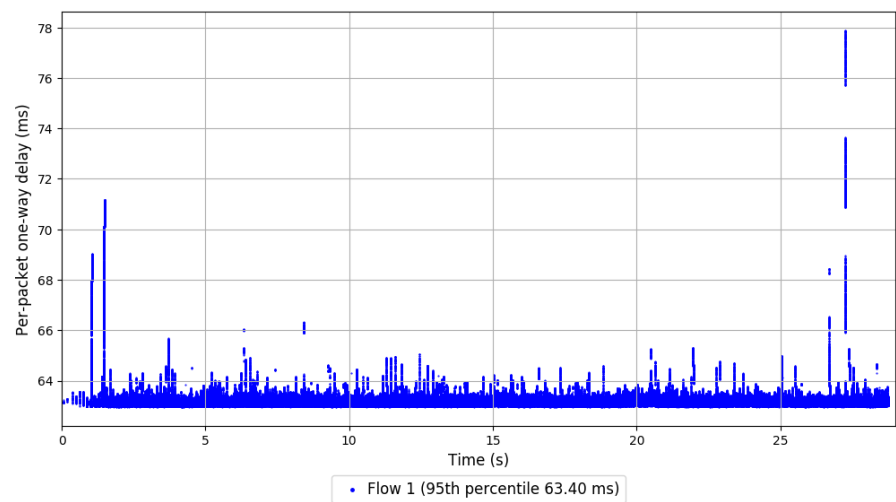
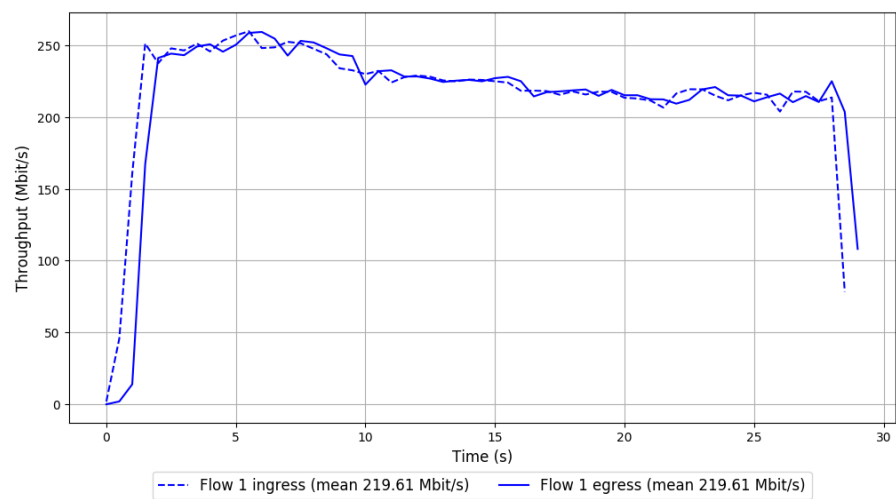


```
Run 1: Statistics of Indigo

Start at: 2019-01-03 04:53:54
End at: 2019-01-03 04:54:24
Local clock offset: -0.05 ms
Remote clock offset: 0.195 ms

# Below is generated by plot.py at 2019-01-03 08:27:22
# Datalink statistics
-- Total of 1 flow:
Average throughput: 219.61 Mbit/s
95th percentile per-packet one-way delay: 63.397 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 219.61 Mbit/s
95th percentile per-packet one-way delay: 63.397 ms
Loss rate: 0.00%
```

Run 1: Report of Indigo — Data Link



Run 2: Statistics of Indigo

Start at: 2019-01-03 05:22:11

End at: 2019-01-03 05:22:41

Local clock offset: -0.069 ms

Remote clock offset: 0.631 ms

# Below is generated by plot.py at 2019-01-03 08:27:22

# Datalink statistics

-- Total of 1 flow:

Average throughput: 216.97 Mbit/s

95th percentile per-packet one-way delay: 64.288 ms

Loss rate: 0.00%

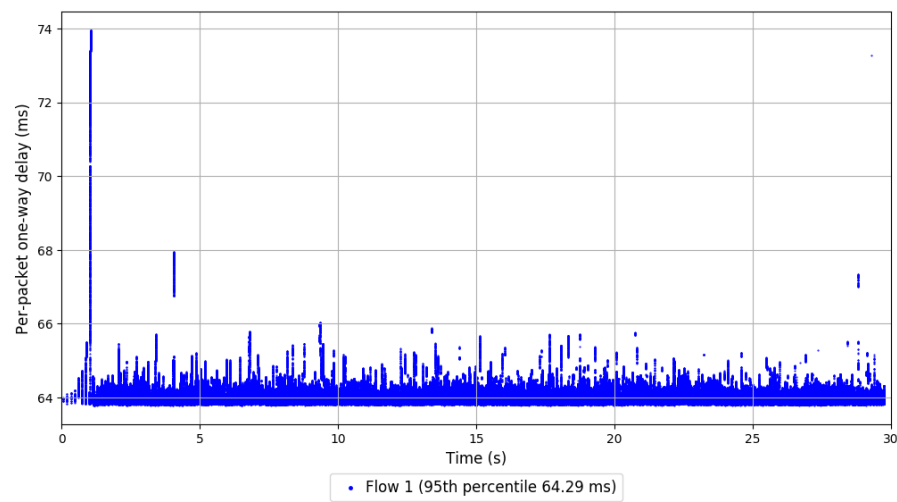
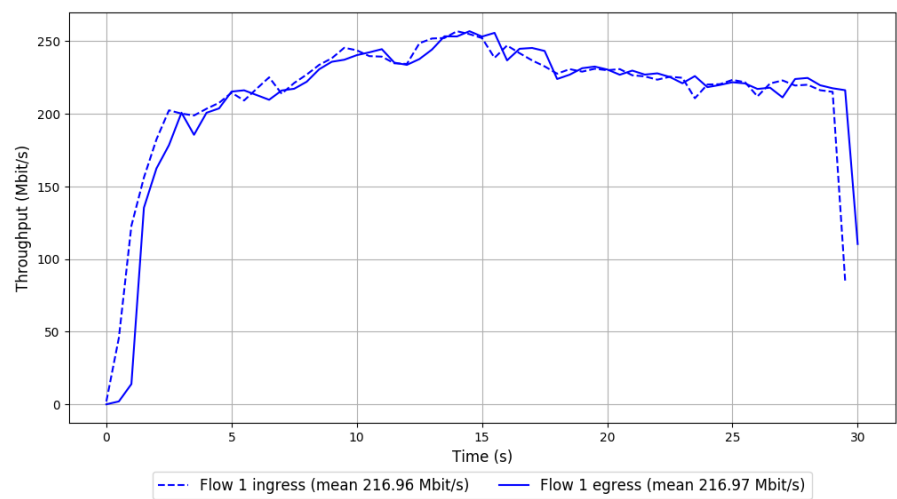
-- Flow 1:

Average throughput: 216.97 Mbit/s

95th percentile per-packet one-way delay: 64.288 ms

Loss rate: 0.00%

Run 2: Report of Indigo — Data Link



Run 3: Statistics of Indigo

Start at: 2019-01-03 05:50:21

End at: 2019-01-03 05:50:51

Local clock offset: -0.04 ms

Remote clock offset: 0.148 ms

# Below is generated by plot.py at 2019-01-03 08:27:22

# Datalink statistics

-- Total of 1 flow:

Average throughput: 214.86 Mbit/s

95th percentile per-packet one-way delay: 63.256 ms

Loss rate: 0.00%

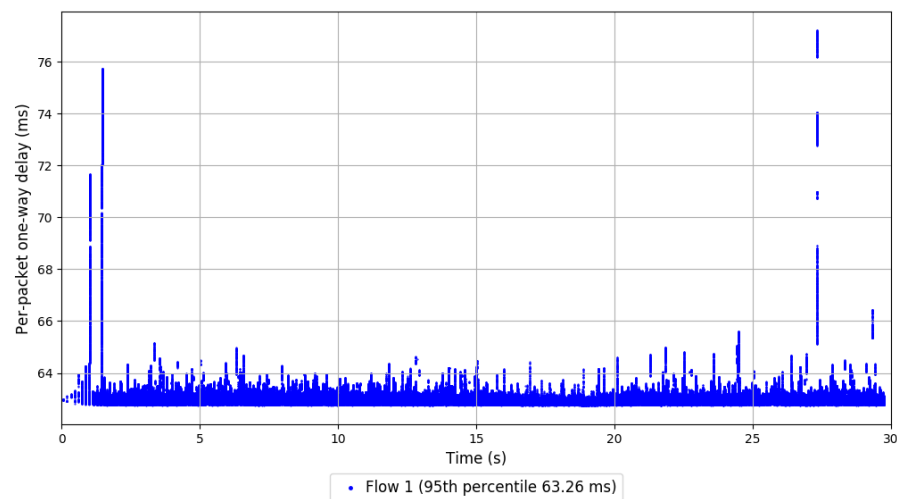
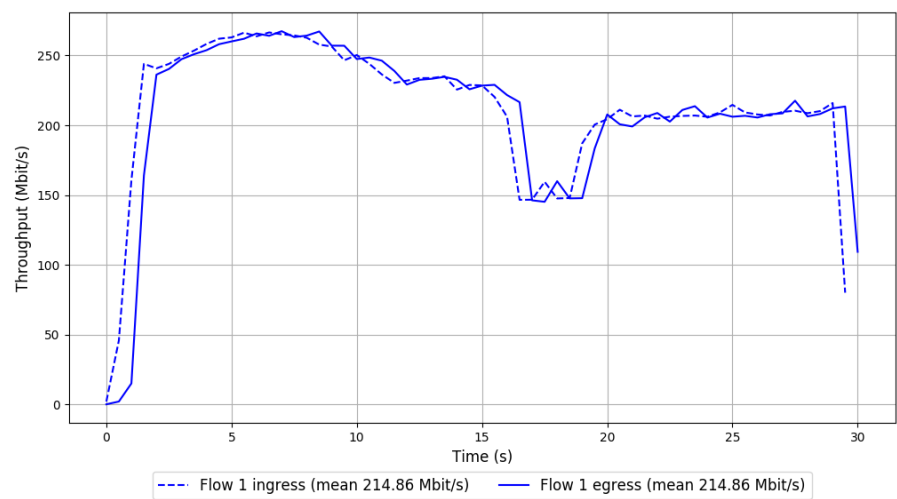
-- Flow 1:

Average throughput: 214.86 Mbit/s

95th percentile per-packet one-way delay: 63.256 ms

Loss rate: 0.00%

Run 3: Report of Indigo — Data Link



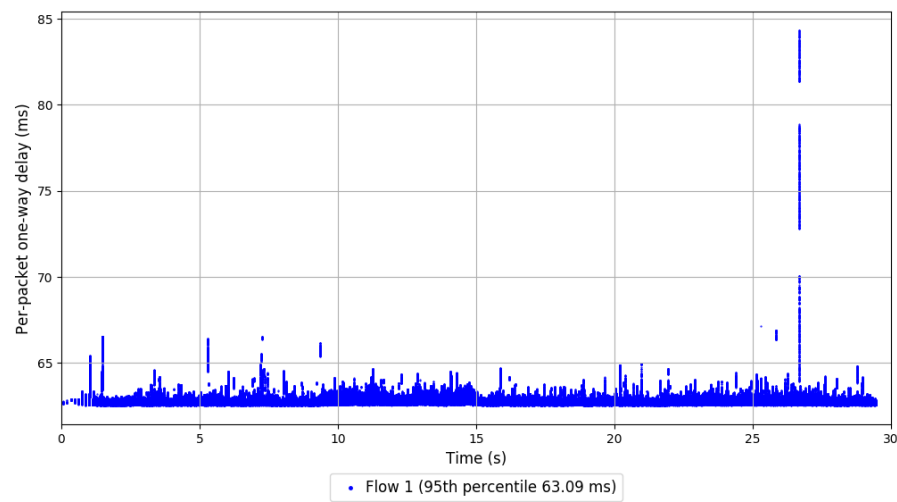
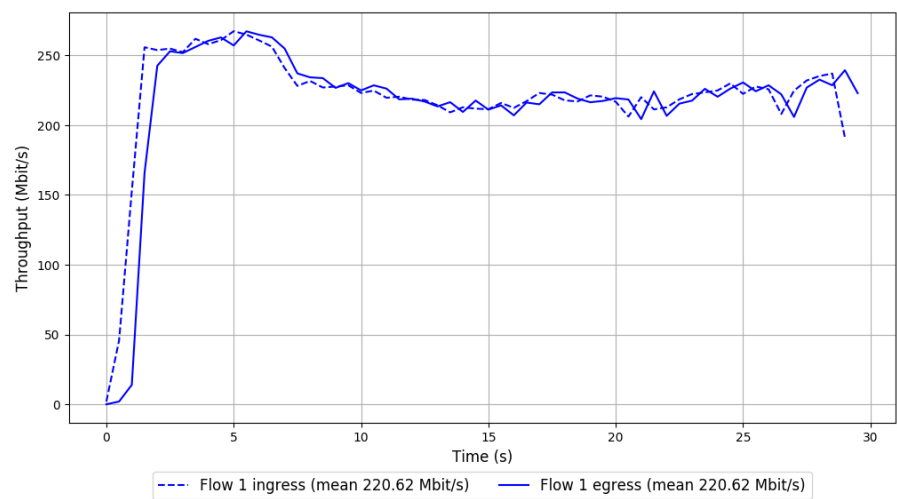


Run 4: Statistics of Indigo

Start at: 2019-01-03 06:18:42  
End at: 2019-01-03 06:19:12  
Local clock offset: -0.028 ms  
Remote clock offset: -0.092 ms

# Below is generated by plot.py at 2019-01-03 08:27:22  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 220.62 Mbit/s  
95th percentile per-packet one-way delay: 63.091 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 220.62 Mbit/s  
95th percentile per-packet one-way delay: 63.091 ms  
Loss rate: 0.00%

Run 4: Report of Indigo — Data Link



Run 5: Statistics of Indigo

Start at: 2019-01-03 06:46:54

End at: 2019-01-03 06:47:24

Local clock offset: 0.004 ms

Remote clock offset: 1.155 ms

# Below is generated by plot.py at 2019-01-03 08:27:22

# Datalink statistics

-- Total of 1 flow:

Average throughput: 222.21 Mbit/s

95th percentile per-packet one-way delay: 64.596 ms

Loss rate: 0.00%

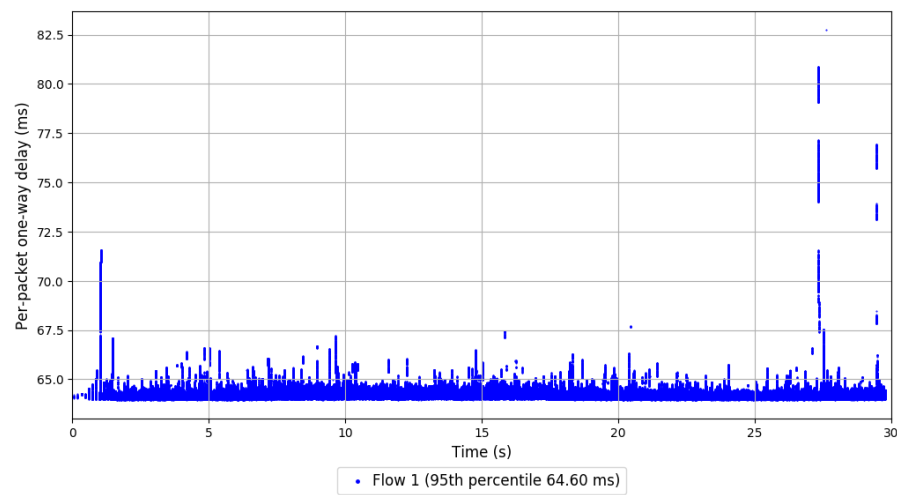
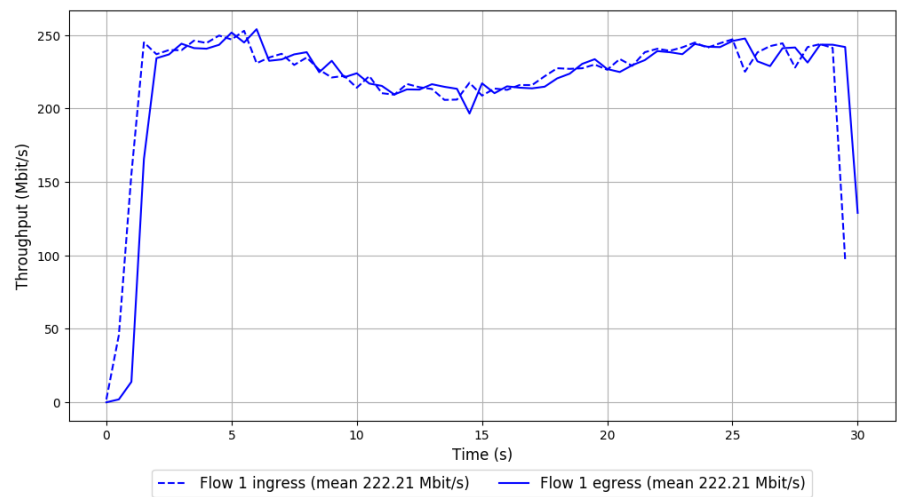
-- Flow 1:

Average throughput: 222.21 Mbit/s

95th percentile per-packet one-way delay: 64.596 ms

Loss rate: 0.00%

Run 5: Report of Indigo — Data Link



Run 1: Statistics of Indigo-MusesD

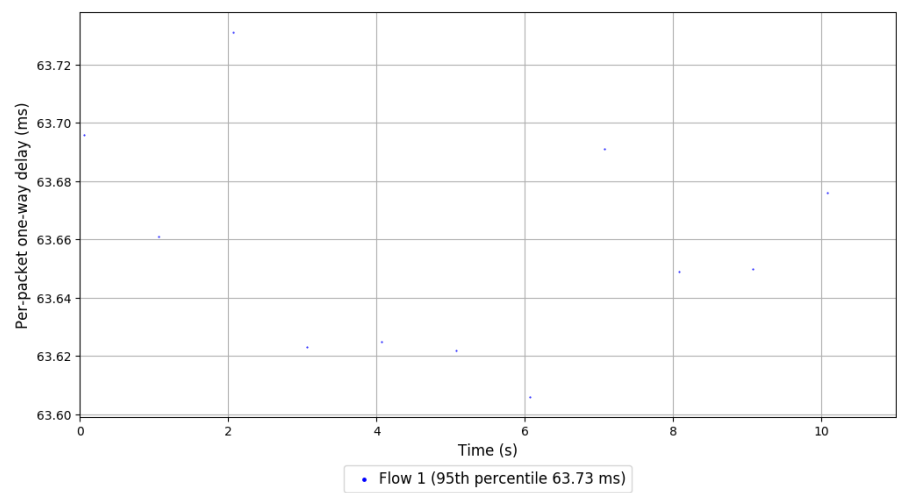
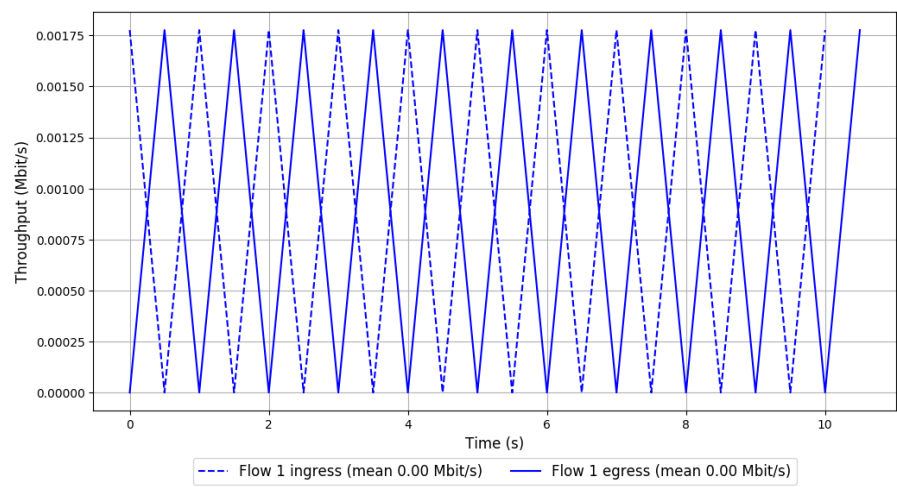
Start at: 2019-01-03 04:37:53

End at: 2019-01-03 04:38:23

Local clock offset: -0.054 ms

Remote clock offset: 0.608 ms

Run 1: Report of Indigo-MusesD — Data Link



Run 2: Statistics of Indigo-MusesD

Start at: 2019-01-03 05:05:35

End at: 2019-01-03 05:06:05

Local clock offset: -0.06 ms

Remote clock offset: -0.099 ms

# Below is generated by plot.py at 2019-01-03 08:27:22

# Datalink statistics

-- Total of 1 flow:

Average throughput: 677.58 Mbit/s

95th percentile per-packet one-way delay: 88.207 ms

Loss rate: 0.02%

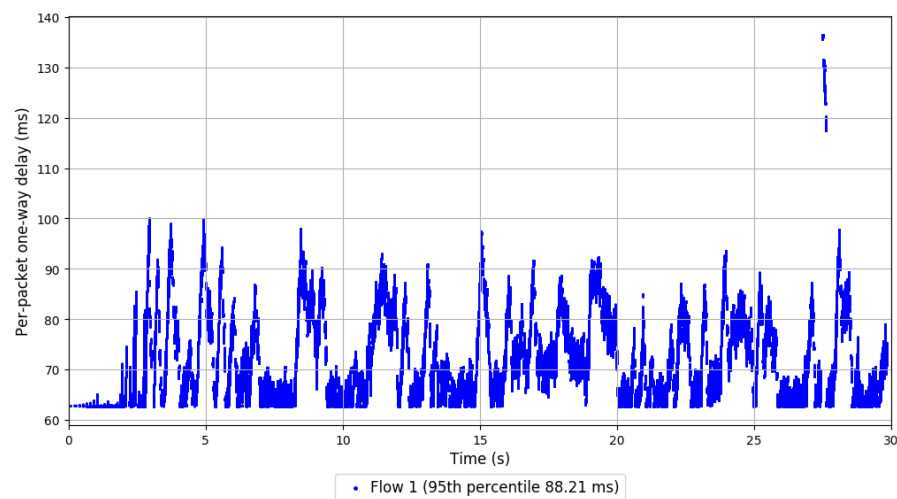
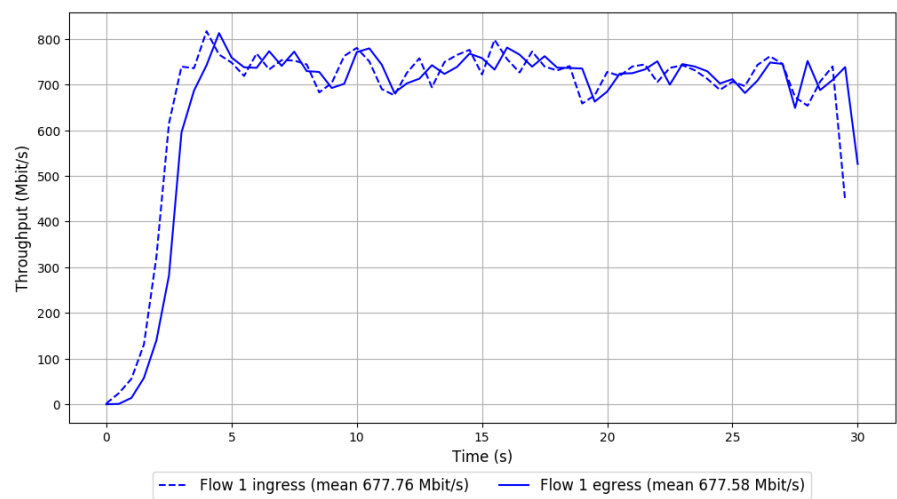
-- Flow 1:

Average throughput: 677.58 Mbit/s

95th percentile per-packet one-way delay: 88.207 ms

Loss rate: 0.02%

Run 2: Report of Indigo-MusesD — Data Link





Run 3: Statistics of Indigo-MusesD

Start at: 2019-01-03 05:33:43

End at: 2019-01-03 05:34:13

Local clock offset: -0.115 ms

Remote clock offset: 0.428 ms

# Below is generated by plot.py at 2019-01-03 08:27:22

# Datalink statistics

-- Total of 1 flow:

Average throughput: 650.38 Mbit/s

95th percentile per-packet one-way delay: 92.868 ms

Loss rate: 0.04%

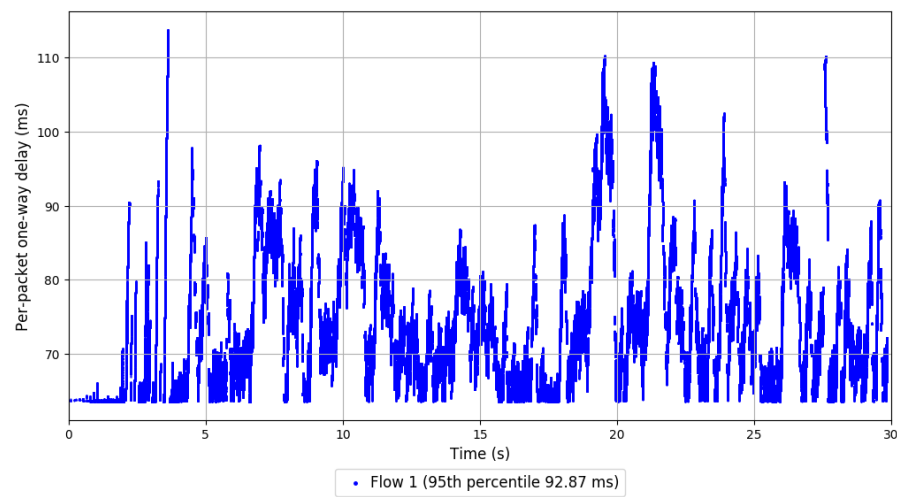
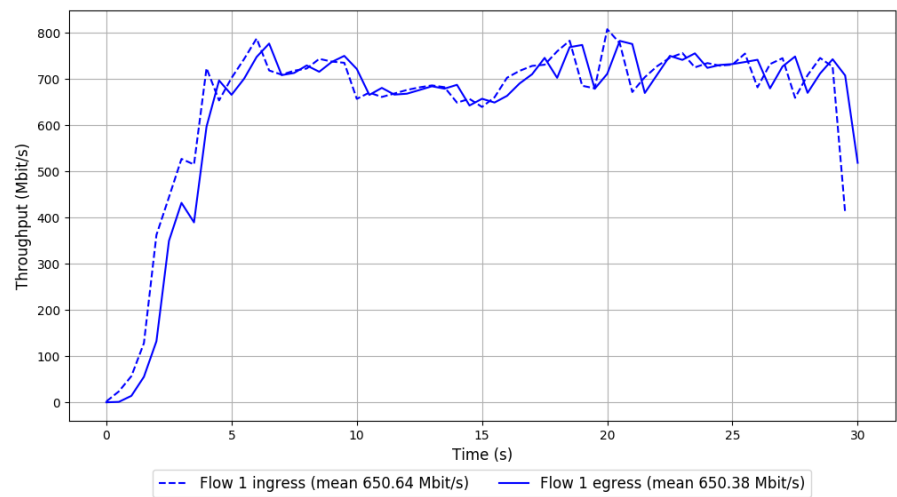
-- Flow 1:

Average throughput: 650.38 Mbit/s

95th percentile per-packet one-way delay: 92.868 ms

Loss rate: 0.04%

Run 3: Report of Indigo-MusesD — Data Link

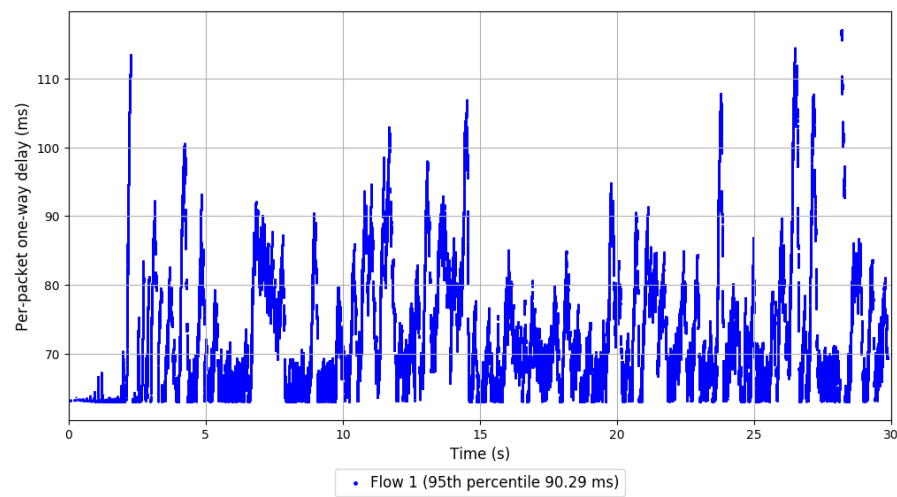
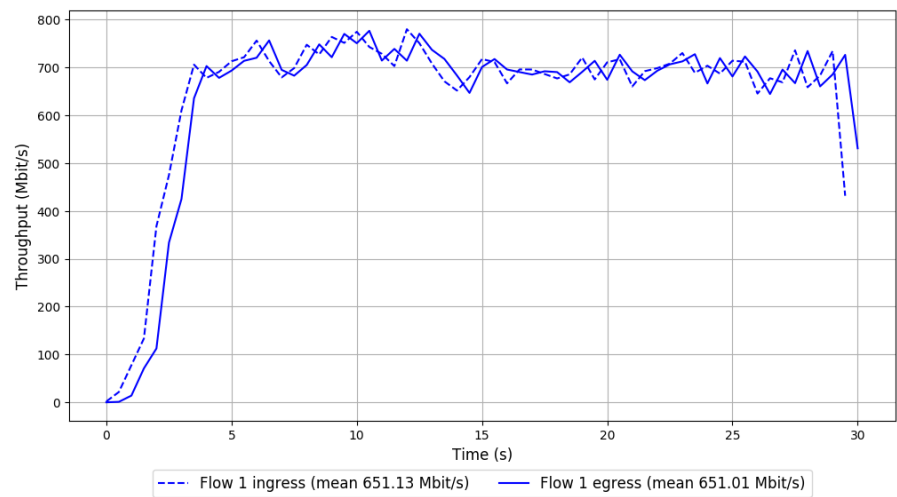


Run 4: Statistics of Indigo-MusesD

Start at: 2019-01-03 06:02:00  
End at: 2019-01-03 06:02:30  
Local clock offset: -0.045 ms  
Remote clock offset: -0.118 ms

# Below is generated by plot.py at 2019-01-03 08:27:22  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 651.01 Mbit/s  
95th percentile per-packet one-way delay: 90.287 ms  
Loss rate: 0.02%  
-- Flow 1:  
Average throughput: 651.01 Mbit/s  
95th percentile per-packet one-way delay: 90.287 ms  
Loss rate: 0.02%

Run 4: Report of Indigo-MusesD — Data Link



Run 5: Statistics of Indigo-MusesD

Start at: 2019-01-03 06:30:20

End at: 2019-01-03 06:30:50

Local clock offset: -0.03 ms

Remote clock offset: -1.27 ms

# Below is generated by plot.py at 2019-01-03 08:27:40

# Datalink statistics

-- Total of 1 flow:

Average throughput: 673.58 Mbit/s

95th percentile per-packet one-way delay: 87.942 ms

Loss rate: 0.06%

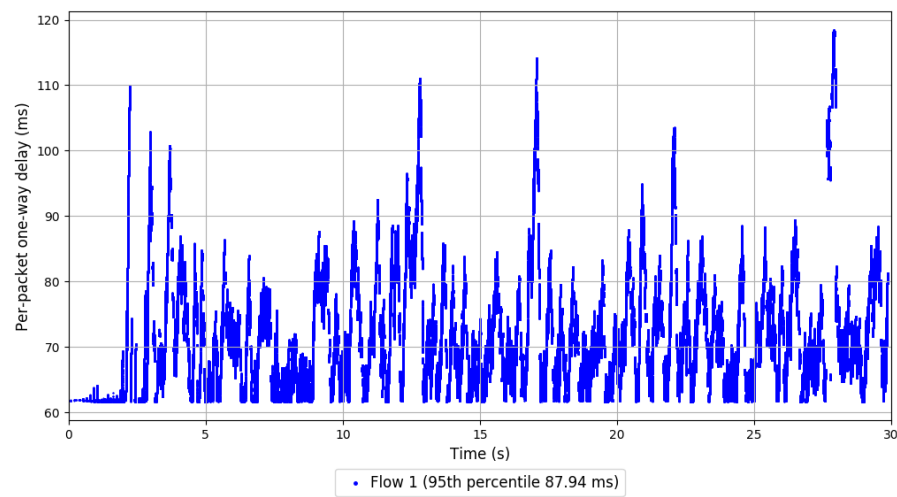
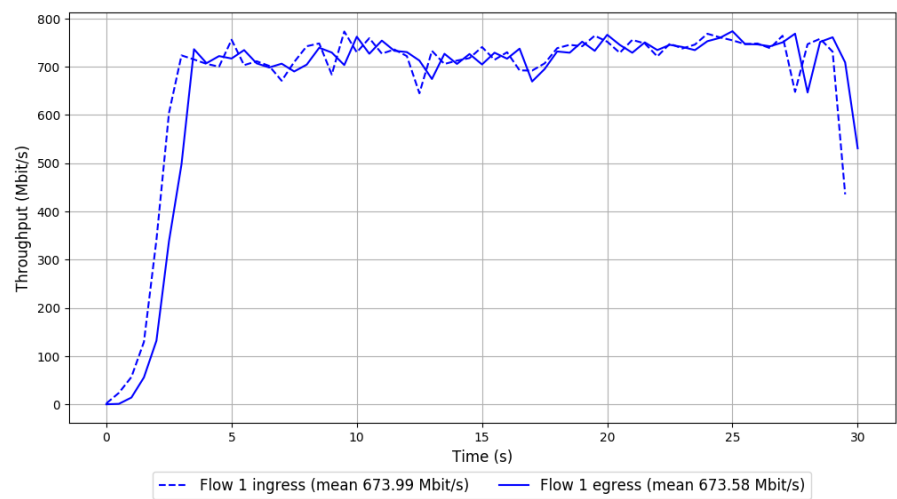
-- Flow 1:

Average throughput: 673.58 Mbit/s

95th percentile per-packet one-way delay: 87.942 ms

Loss rate: 0.06%

Run 5: Report of Indigo-MusesD — Data Link



Run 1: Statistics of Indigo-MusesT

Start at: 2019-01-03 04:50:31

End at: 2019-01-03 04:51:01

Local clock offset: -0.062 ms

Remote clock offset: 0.444 ms

# Below is generated by plot.py at 2019-01-03 08:27:40

# Datalink statistics

-- Total of 1 flow:

Average throughput: 554.13 Mbit/s

95th percentile per-packet one-way delay: 144.218 ms

Loss rate: 0.26%

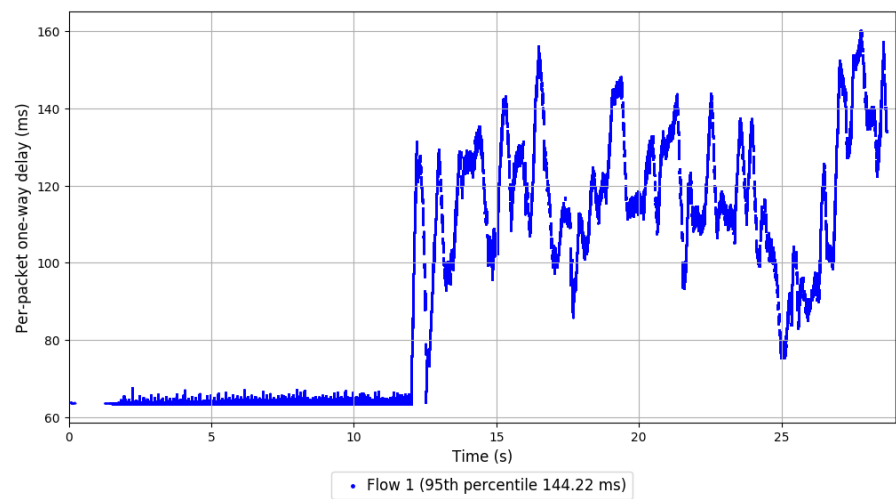
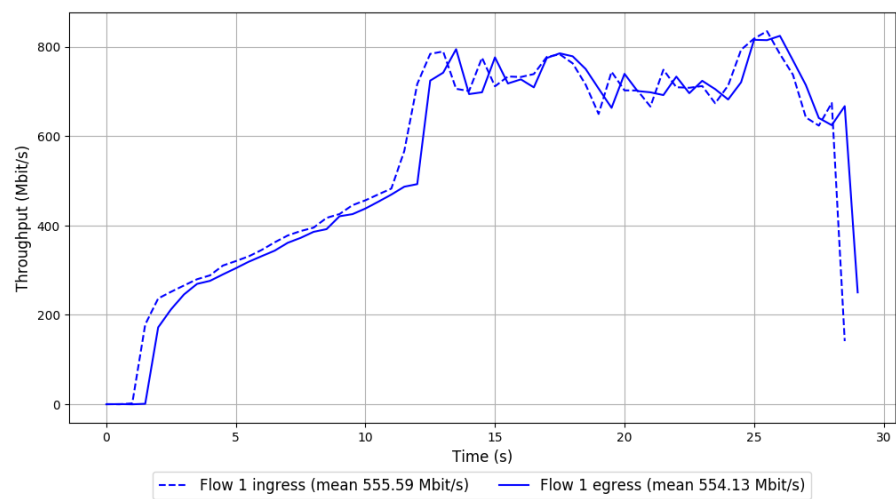
-- Flow 1:

Average throughput: 554.13 Mbit/s

95th percentile per-packet one-way delay: 144.218 ms

Loss rate: 0.26%

Run 1: Report of Indigo-MusesT — Data Link





Run 2: Statistics of Indigo-MusesT

Start at: 2019-01-03 05:18:47

End at: 2019-01-03 05:19:17

Local clock offset: -0.03 ms

Remote clock offset: -0.148 ms

# Below is generated by plot.py at 2019-01-03 08:28:12

# Datalink statistics

-- Total of 1 flow:

Average throughput: 671.14 Mbit/s

95th percentile per-packet one-way delay: 137.862 ms

Loss rate: 0.29%

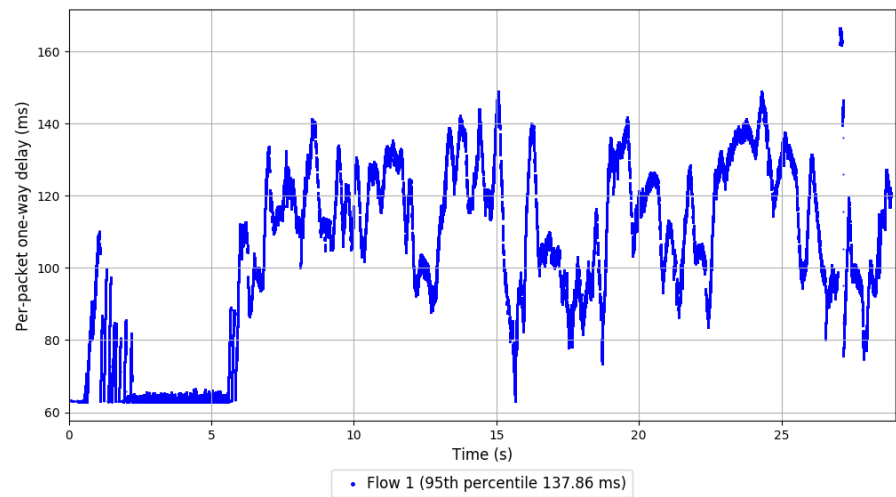
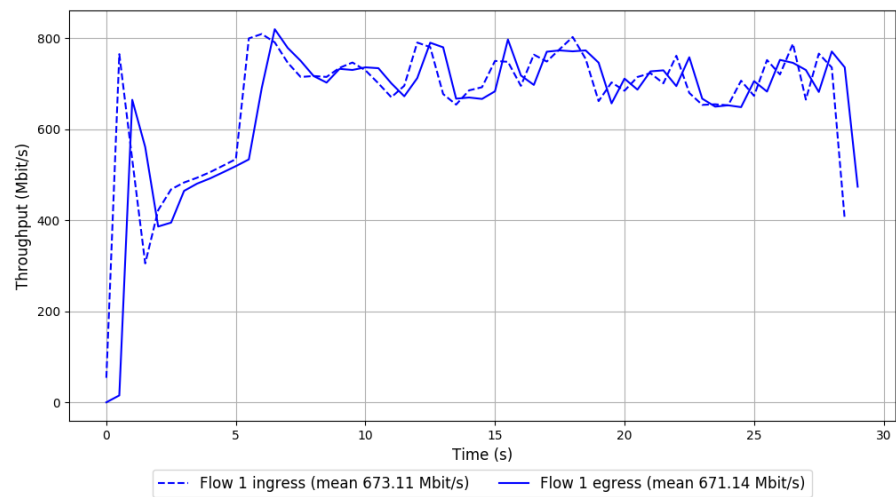
-- Flow 1:

Average throughput: 671.14 Mbit/s

95th percentile per-packet one-way delay: 137.862 ms

Loss rate: 0.29%

Run 2: Report of Indigo-MusesT — Data Link

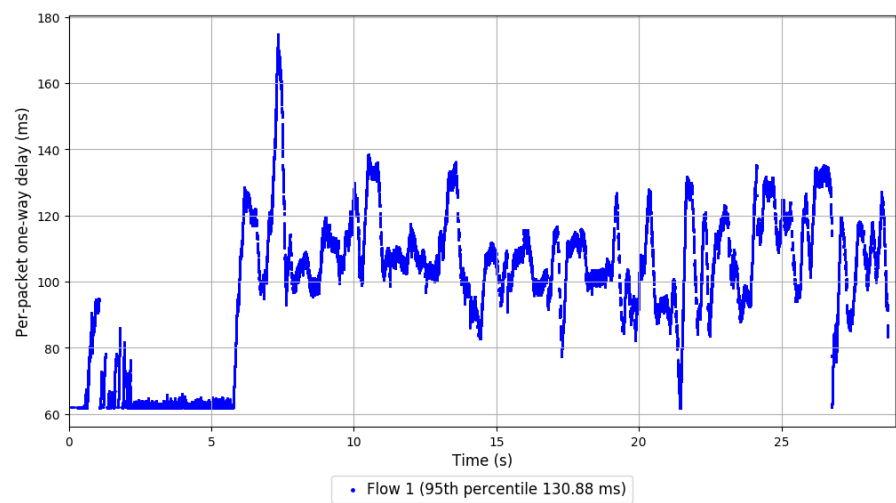
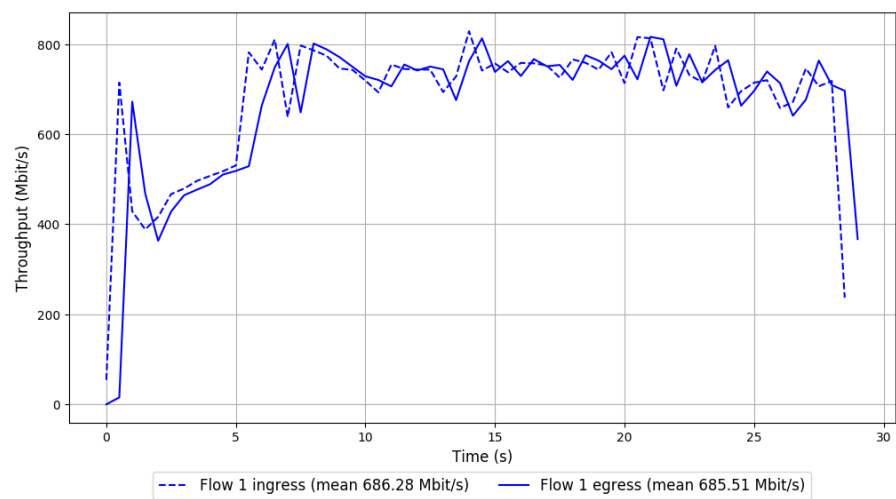


Run 3: Statistics of Indigo-MusesT

Start at: 2019-01-03 05:46:55  
End at: 2019-01-03 05:47:25  
Local clock offset: -0.052 ms  
Remote clock offset: -1.256 ms

# Below is generated by plot.py at 2019-01-03 08:30:21  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 685.51 Mbit/s  
95th percentile per-packet one-way delay: 130.884 ms  
Loss rate: 0.11%  
-- Flow 1:  
Average throughput: 685.51 Mbit/s  
95th percentile per-packet one-way delay: 130.884 ms  
Loss rate: 0.11%

Run 3: Report of Indigo-MusesT — Data Link



Run 4: Statistics of Indigo-MusesT

Start at: 2019-01-03 06:15:09

End at: 2019-01-03 06:15:39

Local clock offset: -0.009 ms

Remote clock offset: 0.242 ms

# Below is generated by plot.py at 2019-01-03 08:36:14

# Datalink statistics

-- Total of 1 flow:

Average throughput: 778.27 Mbit/s

95th percentile per-packet one-way delay: 139.968 ms

Loss rate: 0.20%

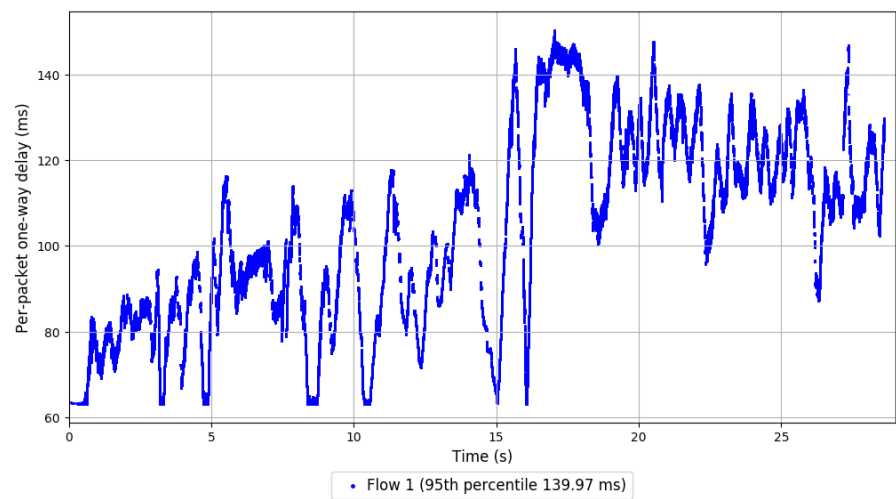
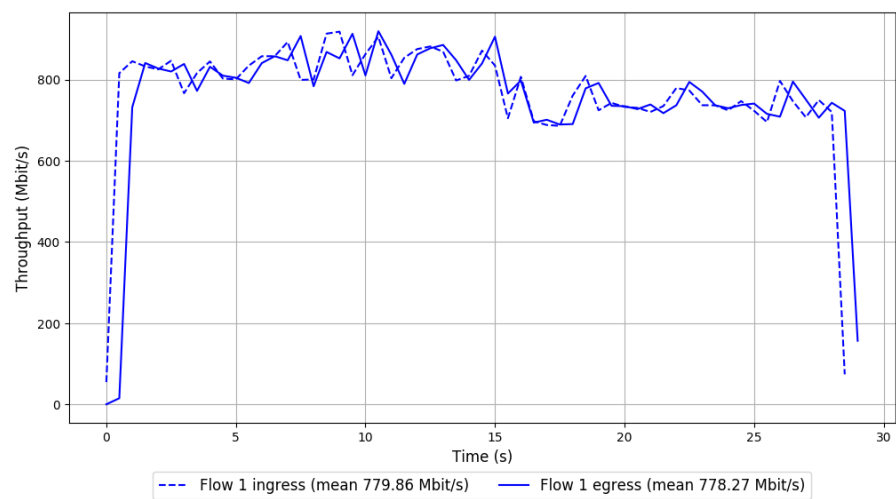
-- Flow 1:

Average throughput: 778.27 Mbit/s

95th percentile per-packet one-way delay: 139.968 ms

Loss rate: 0.20%

Run 4: Report of Indigo-MusesT — Data Link



Run 5: Statistics of Indigo-MusesT

Start at: 2019-01-03 06:43:43

End at: 2019-01-03 06:44:13

Local clock offset: -0.025 ms

Remote clock offset: 0.135 ms

# Below is generated by plot.py at 2019-01-03 08:36:14

# Datalink statistics

-- Total of 1 flow:

Average throughput: 356.59 Mbit/s

95th percentile per-packet one-way delay: 91.184 ms

Loss rate: 0.12%

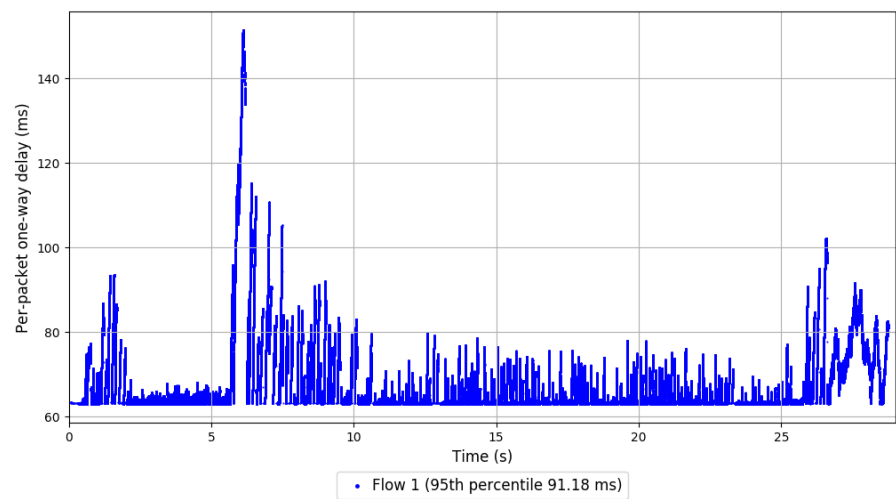
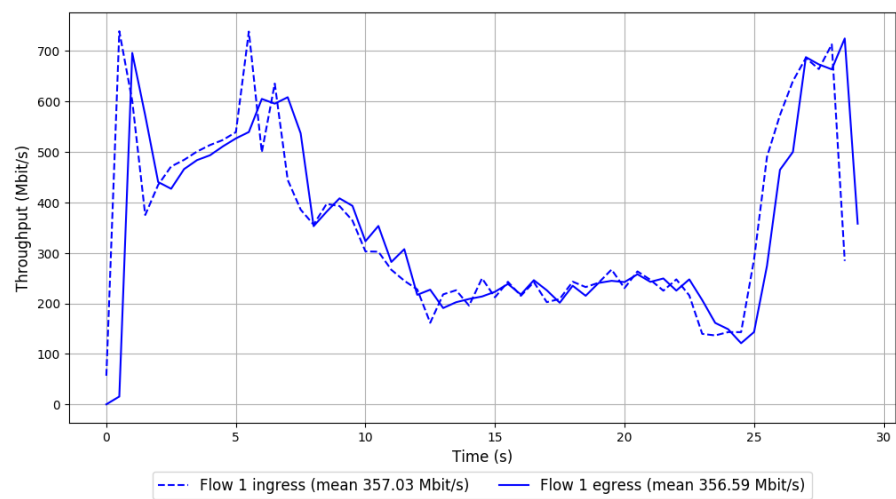
-- Flow 1:

Average throughput: 356.59 Mbit/s

95th percentile per-packet one-way delay: 91.184 ms

Loss rate: 0.12%

Run 5: Report of Indigo-MusesT — Data Link



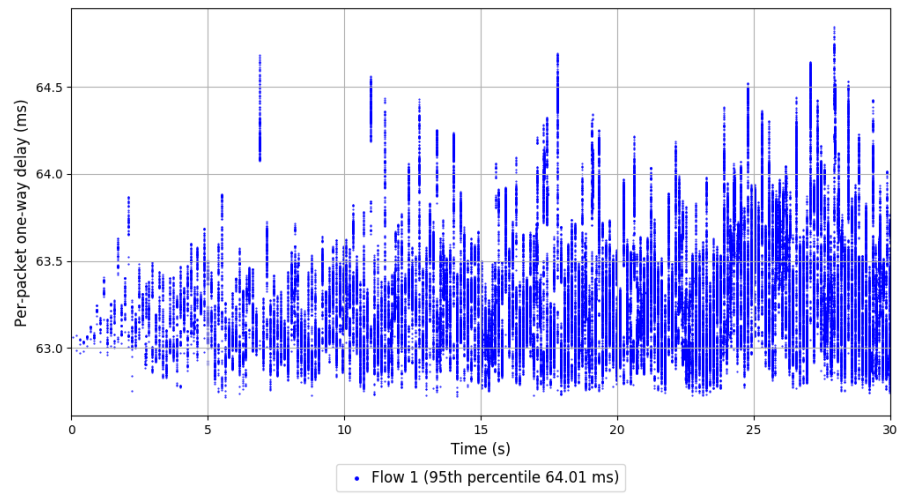
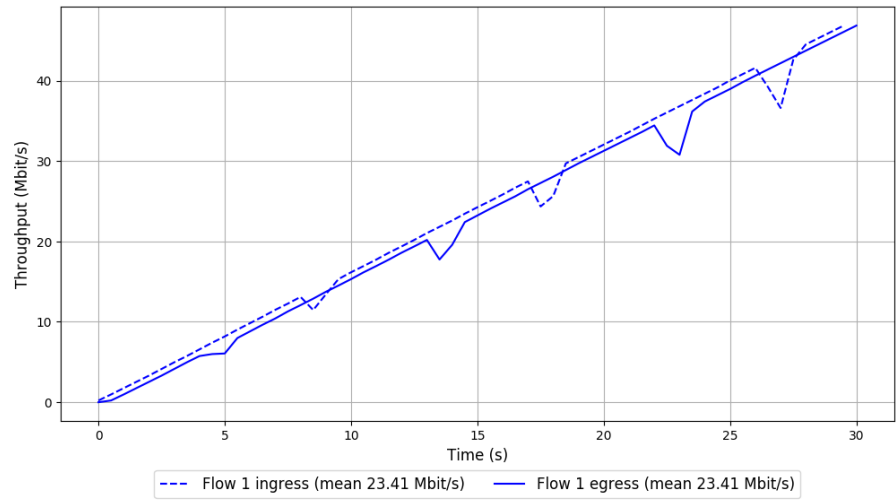


Run 1: Statistics of LEDBAT

Start at: 2019-01-03 04:43:04  
End at: 2019-01-03 04:43:34  
Local clock offset: -0.077 ms  
Remote clock offset: -0.046 ms

# Below is generated by plot.py at 2019-01-03 08:36:14  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 23.41 Mbit/s  
95th percentile per-packet one-way delay: 64.012 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 23.41 Mbit/s  
95th percentile per-packet one-way delay: 64.012 ms  
Loss rate: 0.00%

# Run 1: Report of LEDBAT — Data Link

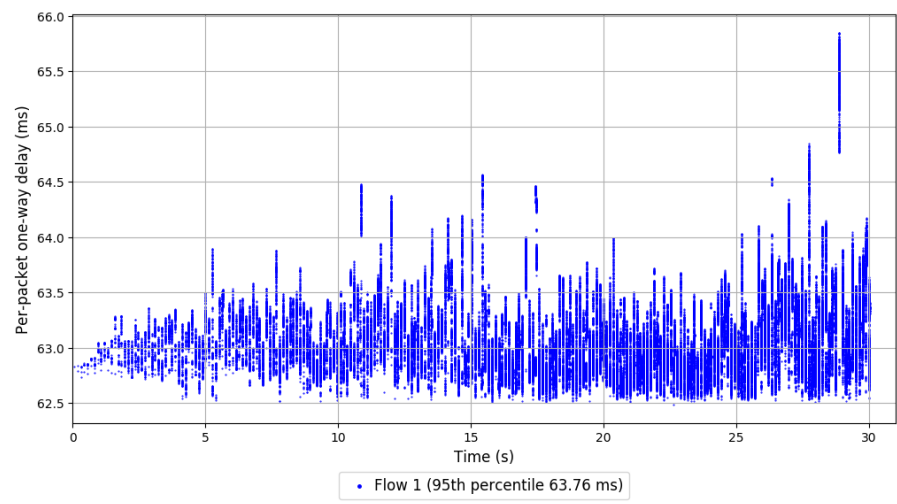
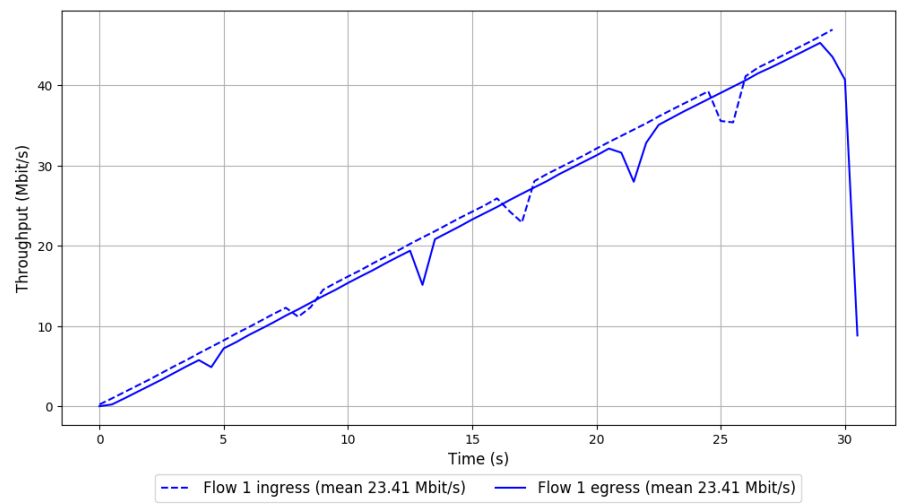


Run 2: Statistics of LEDBAT

Start at: 2019-01-03 05:11:20  
End at: 2019-01-03 05:11:50  
Local clock offset: -0.03 ms  
Remote clock offset: -0.228 ms

# Below is generated by plot.py at 2019-01-03 08:36:14  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 23.41 Mbit/s  
95th percentile per-packet one-way delay: 63.757 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 23.41 Mbit/s  
95th percentile per-packet one-way delay: 63.757 ms  
Loss rate: 0.00%

Run 2: Report of LEDBAT — Data Link



Run 3: Statistics of LEDBAT

Start at: 2019-01-03 05:39:26

End at: 2019-01-03 05:39:56

Local clock offset: -0.058 ms

Remote clock offset: 0.648 ms

# Below is generated by plot.py at 2019-01-03 08:36:14

# Datalink statistics

-- Total of 1 flow:

Average throughput: 23.30 Mbit/s

95th percentile per-packet one-way delay: 65.093 ms

Loss rate: 0.00%

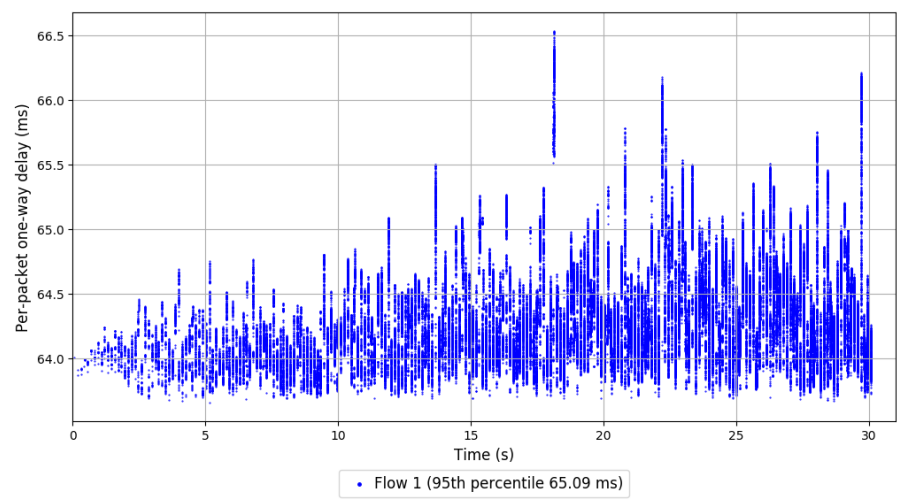
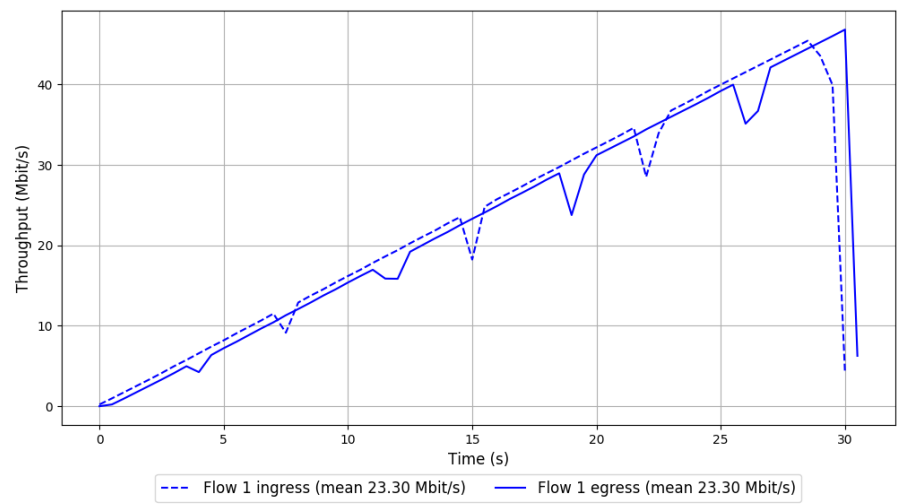
-- Flow 1:

Average throughput: 23.30 Mbit/s

95th percentile per-packet one-way delay: 65.093 ms

Loss rate: 0.00%

Run 3: Report of LEDBAT — Data Link



Run 4: Statistics of LEDBAT

Start at: 2019-01-03 06:07:41

End at: 2019-01-03 06:08:11

Local clock offset: 0.006 ms

Remote clock offset: 1.337 ms

# Below is generated by plot.py at 2019-01-03 08:36:14

# Datalink statistics

-- Total of 1 flow:

Average throughput: 23.23 Mbit/s

95th percentile per-packet one-way delay: 65.915 ms

Loss rate: 0.00%

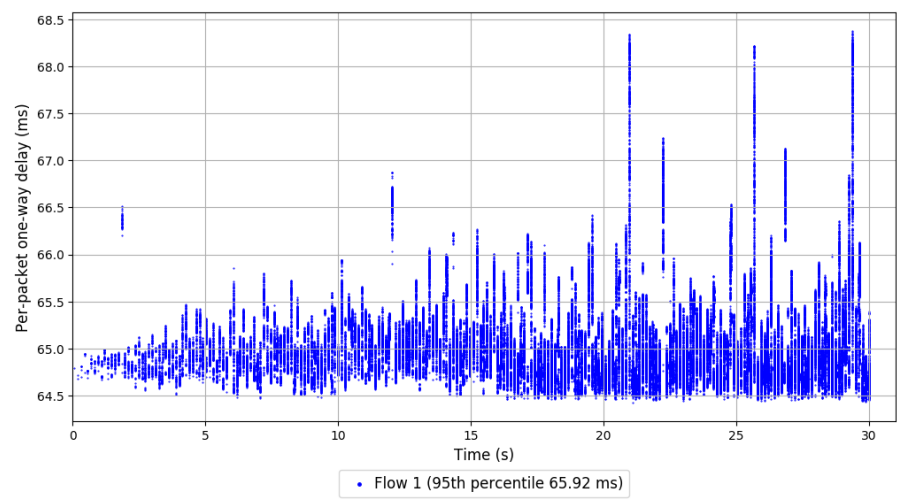
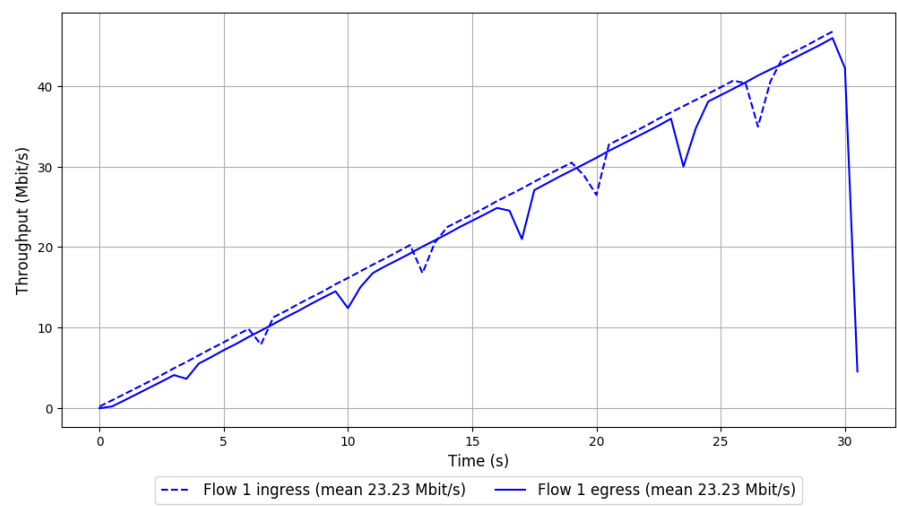
-- Flow 1:

Average throughput: 23.23 Mbit/s

95th percentile per-packet one-way delay: 65.915 ms

Loss rate: 0.00%

Run 4: Report of LEDBAT — Data Link



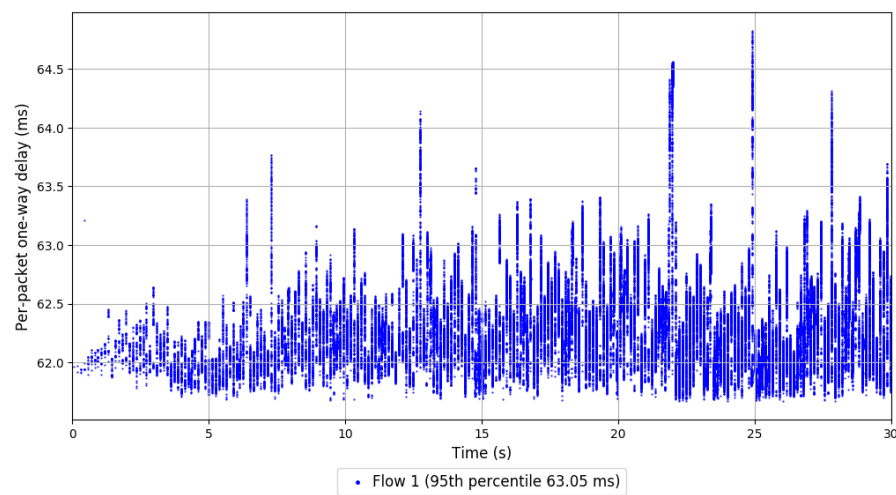
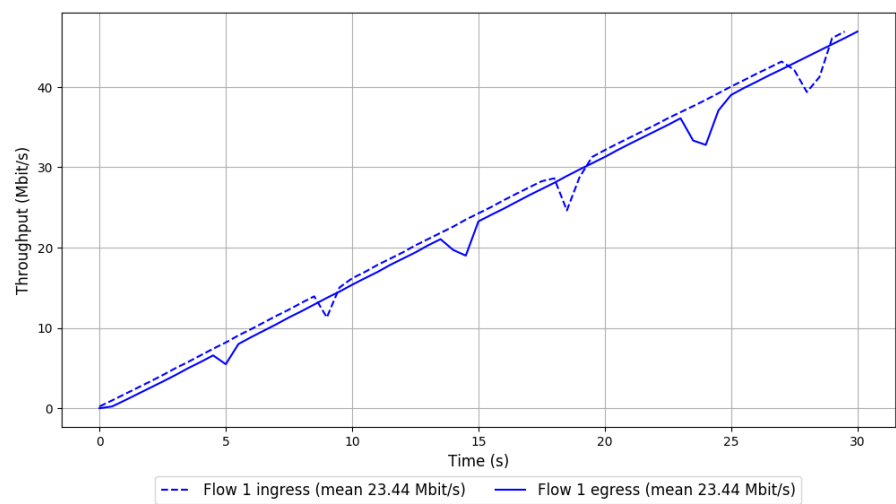


Run 5: Statistics of LEDBAT

Start at: 2019-01-03 06:36:00  
End at: 2019-01-03 06:36:30  
Local clock offset: -0.02 ms  
Remote clock offset: -1.106 ms

# Below is generated by plot.py at 2019-01-03 08:36:14  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 23.44 Mbit/s  
95th percentile per-packet one-way delay: 63.047 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 23.44 Mbit/s  
95th percentile per-packet one-way delay: 63.047 ms  
Loss rate: 0.00%

Run 5: Report of LEDBAT — Data Link



Run 1: Statistics of PCC-Allegro

Start at: 2019-01-03 04:45:49

End at: 2019-01-03 04:46:19

Local clock offset: -0.037 ms

Remote clock offset: 0.678 ms

# Below is generated by plot.py at 2019-01-03 08:48:14

# Datalink statistics

-- Total of 1 flow:

Average throughput: 421.06 Mbit/s

95th percentile per-packet one-way delay: 133.742 ms

Loss rate: 0.00%

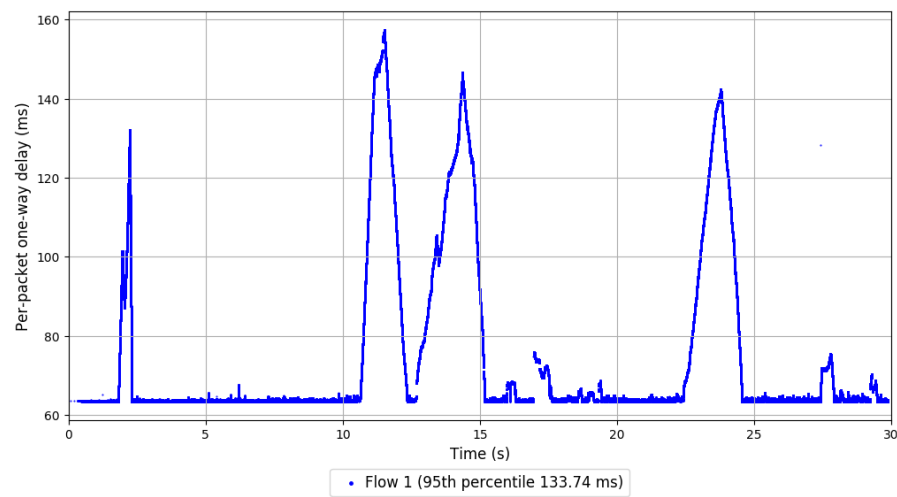
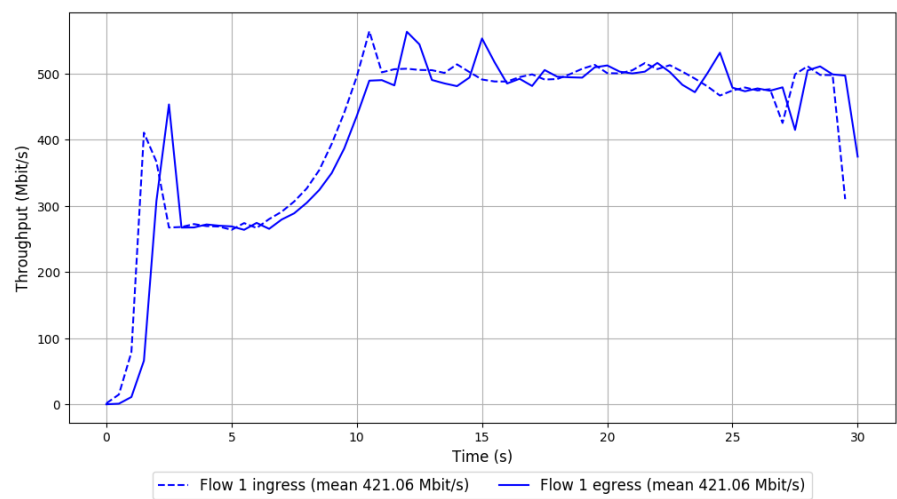
-- Flow 1:

Average throughput: 421.06 Mbit/s

95th percentile per-packet one-way delay: 133.742 ms

Loss rate: 0.00%

Run 1: Report of PCC-Allegro — Data Link



Run 2: Statistics of PCC-Allegro

Start at: 2019-01-03 05:14:03

End at: 2019-01-03 05:14:33

Local clock offset: -0.019 ms

Remote clock offset: 0.395 ms

# Below is generated by plot.py at 2019-01-03 08:51:25

# Datalink statistics

-- Total of 1 flow:

Average throughput: 477.40 Mbit/s

95th percentile per-packet one-way delay: 153.202 ms

Loss rate: 1.01%

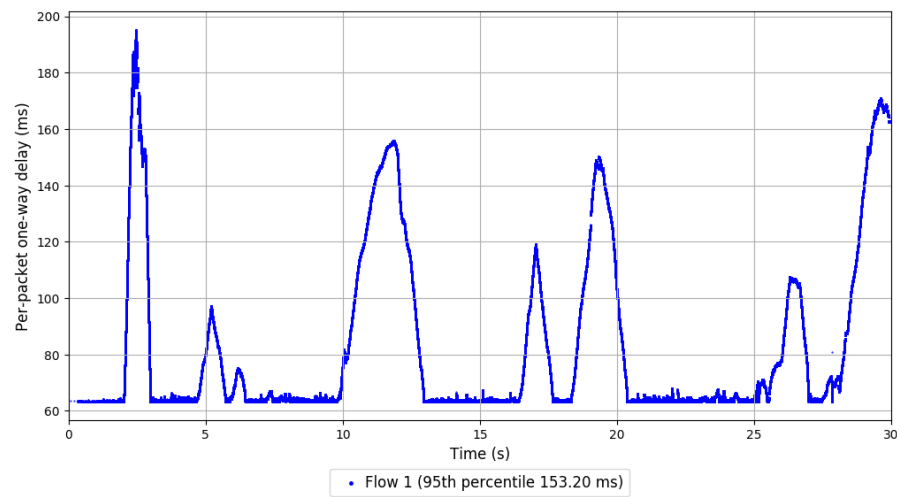
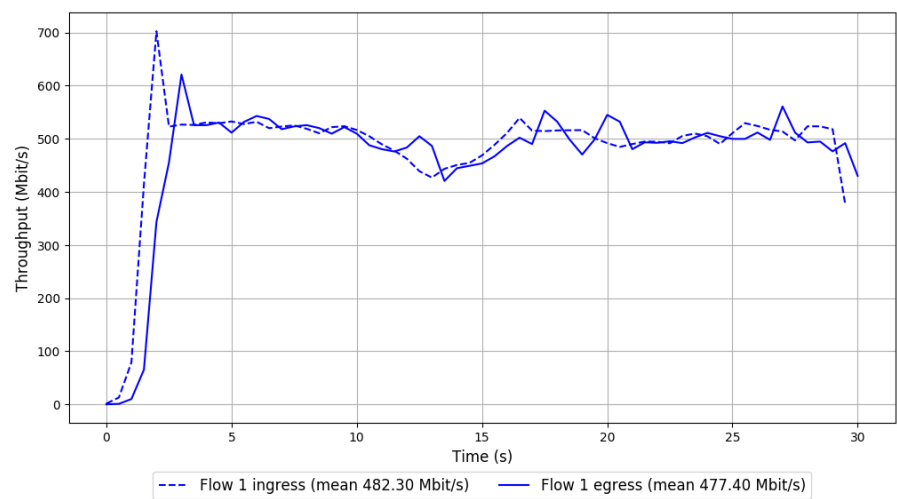
-- Flow 1:

Average throughput: 477.40 Mbit/s

95th percentile per-packet one-way delay: 153.202 ms

Loss rate: 1.01%

Run 2: Report of PCC-Allegro — Data Link



Run 3: Statistics of PCC-Allegro

Start at: 2019-01-03 05:42:11

End at: 2019-01-03 05:42:41

Local clock offset: -0.089 ms

Remote clock offset: 0.37 ms

# Below is generated by plot.py at 2019-01-03 08:51:25

# Datalink statistics

-- Total of 1 flow:

Average throughput: 462.82 Mbit/s

95th percentile per-packet one-way delay: 171.207 ms

Loss rate: 1.83%

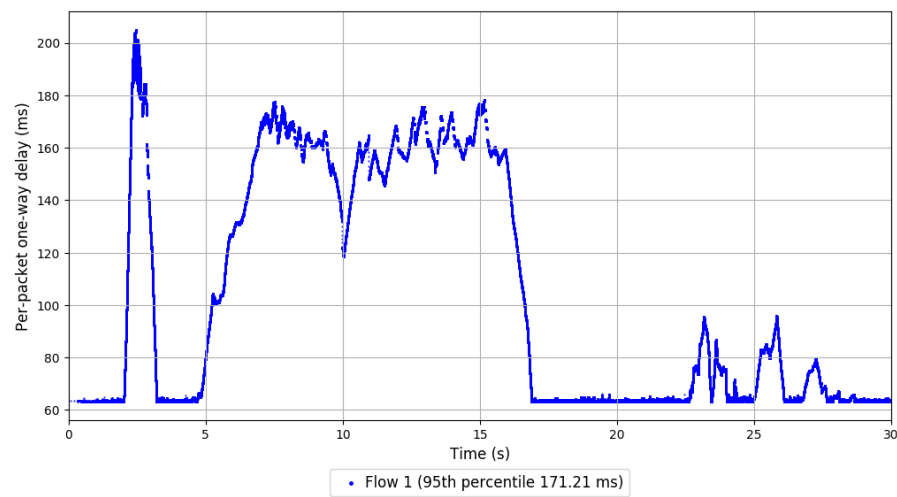
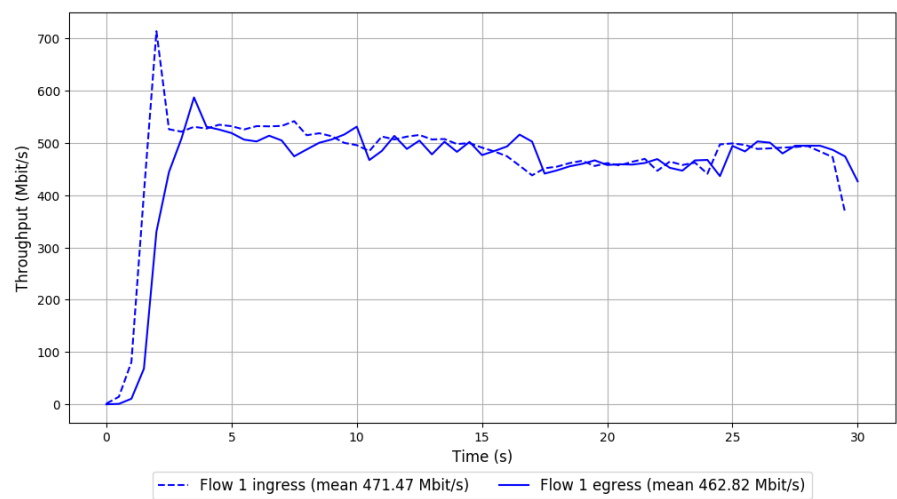
-- Flow 1:

Average throughput: 462.82 Mbit/s

95th percentile per-packet one-way delay: 171.207 ms

Loss rate: 1.83%

Run 3: Report of PCC-Allegro — Data Link





Run 4: Statistics of PCC-Allegro

Start at: 2019-01-03 06:10:28

End at: 2019-01-03 06:10:58

Local clock offset: -0.011 ms

Remote clock offset: 0.241 ms

# Below is generated by plot.py at 2019-01-03 08:51:25

# Datalink statistics

-- Total of 1 flow:

Average throughput: 462.87 Mbit/s

95th percentile per-packet one-way delay: 182.956 ms

Loss rate: 2.40%

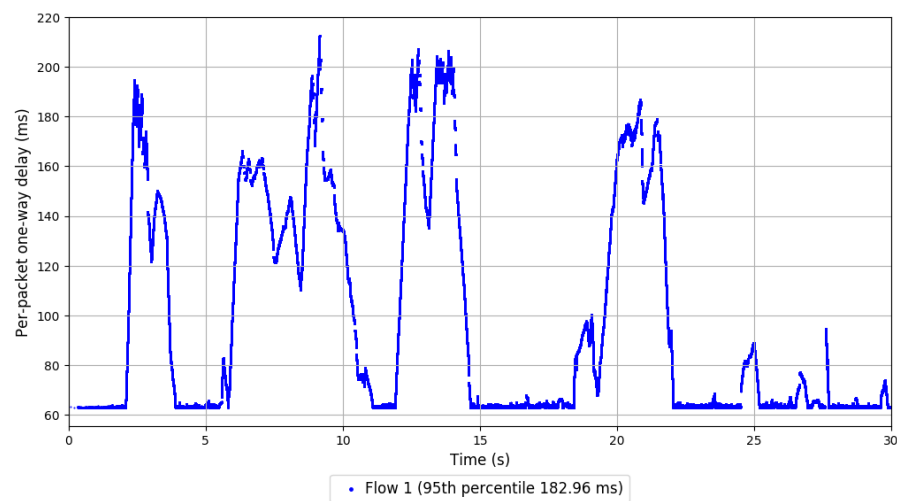
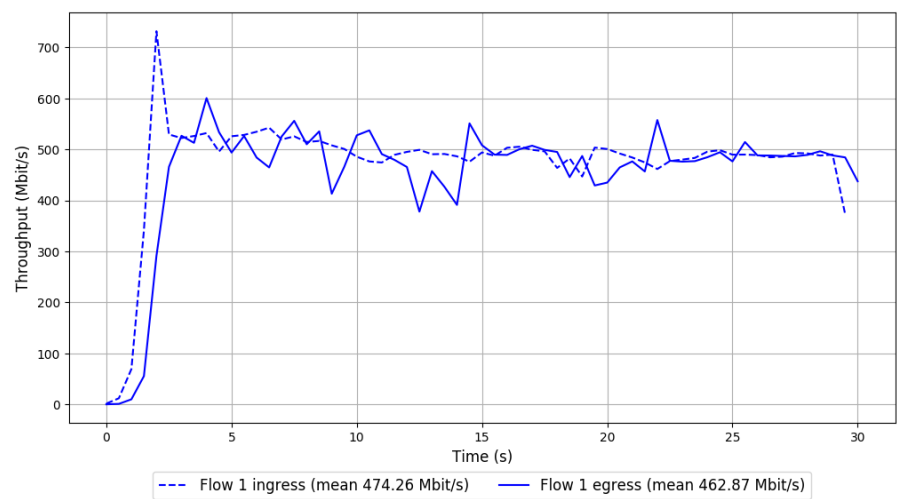
-- Flow 1:

Average throughput: 462.87 Mbit/s

95th percentile per-packet one-way delay: 182.956 ms

Loss rate: 2.40%

Run 4: Report of PCC-Allegro — Data Link



Run 5: Statistics of PCC-Allegro

Start at: 2019-01-03 06:38:50

End at: 2019-01-03 06:39:20

Local clock offset: 0.008 ms

Remote clock offset: -0.086 ms

# Below is generated by plot.py at 2019-01-03 08:51:25

# Datalink statistics

-- Total of 1 flow:

Average throughput: 442.34 Mbit/s

95th percentile per-packet one-way delay: 180.129 ms

Loss rate: 6.07%

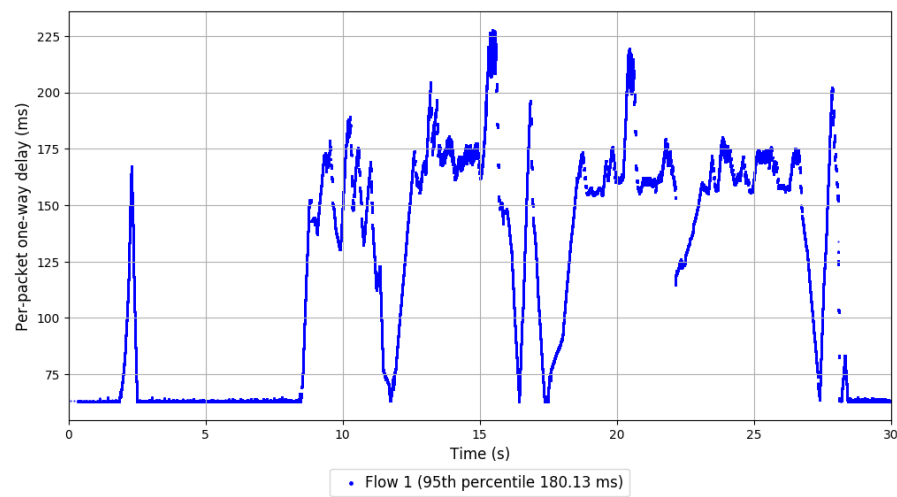
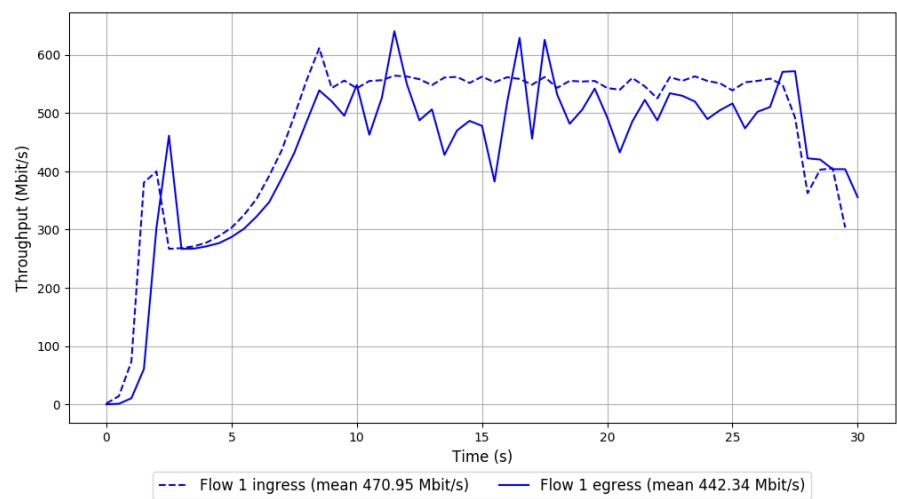
-- Flow 1:

Average throughput: 442.34 Mbit/s

95th percentile per-packet one-way delay: 180.129 ms

Loss rate: 6.07%

Run 5: Report of PCC-Allegro — Data Link

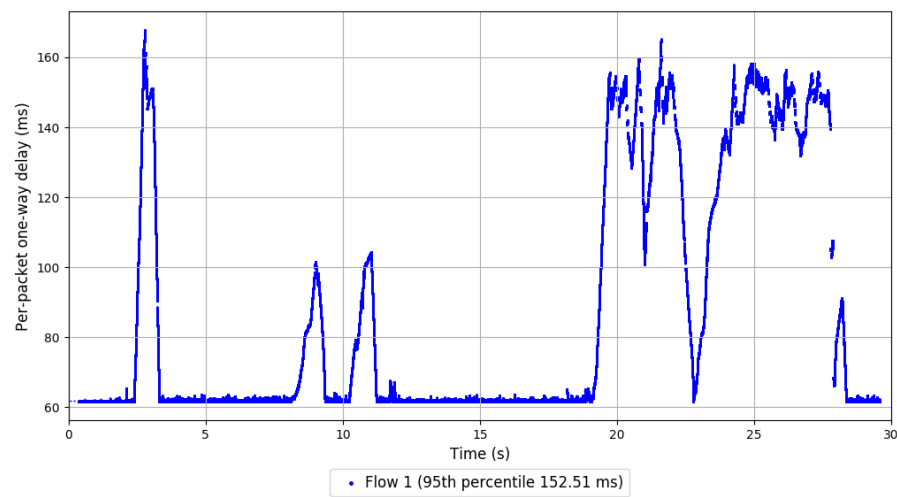
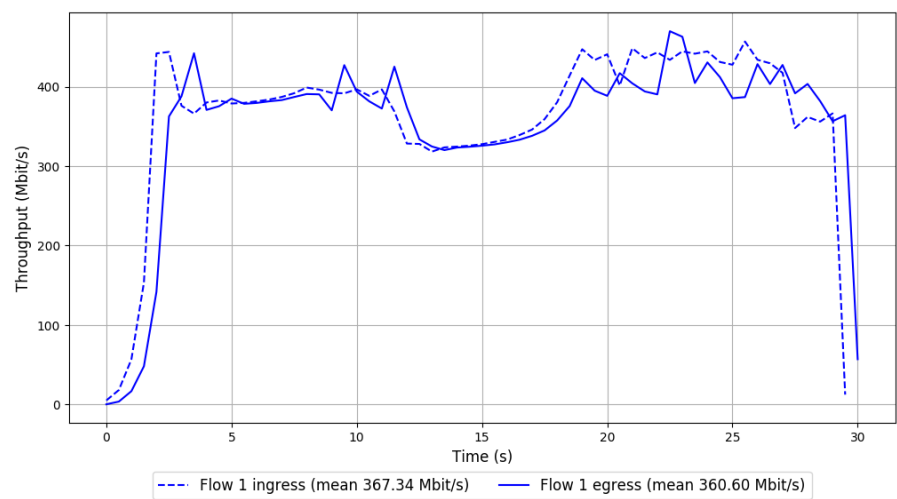


```
Run 1: Statistics of PCC-Expr

Start at: 2019-01-03 04:39:01
End at: 2019-01-03 04:39:31
Local clock offset: -0.088 ms
Remote clock offset: -1.431 ms

# Below is generated by plot.py at 2019-01-03 08:51:25
# Datalink statistics
-- Total of 1 flow:
Average throughput: 360.60 Mbit/s
95th percentile per-packet one-way delay: 152.508 ms
Loss rate: 1.83%
-- Flow 1:
Average throughput: 360.60 Mbit/s
95th percentile per-packet one-way delay: 152.508 ms
Loss rate: 1.83%
```

Run 1: Report of PCC-Expr — Data Link

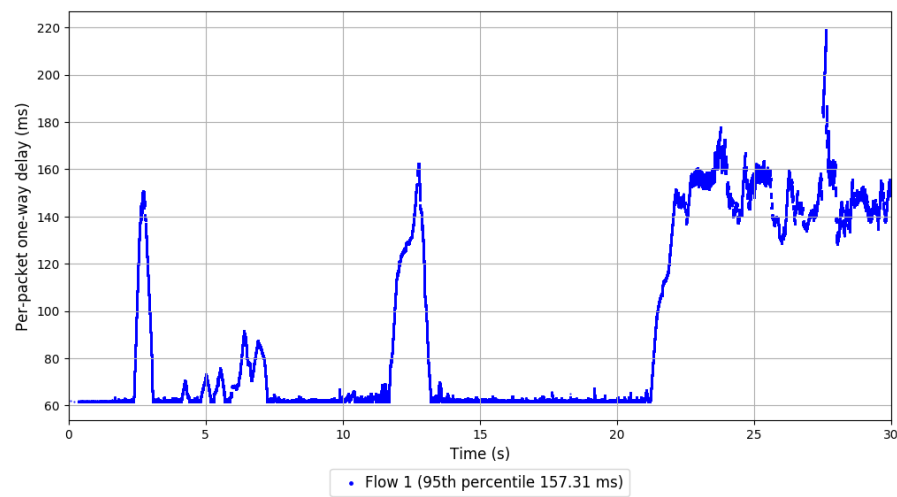
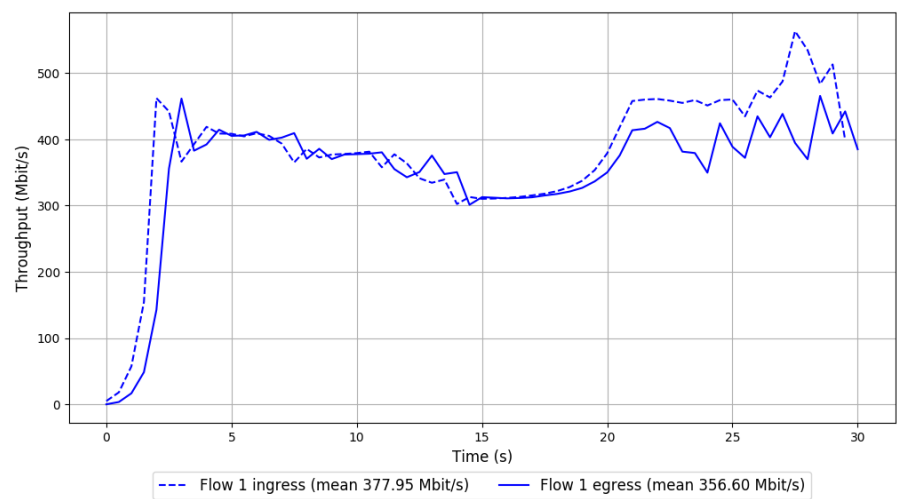


Run 2: Statistics of PCC-Expr

Start at: 2019-01-03 05:07:18  
End at: 2019-01-03 05:07:48  
Local clock offset: -0.054 ms  
Remote clock offset: -1.265 ms

# Below is generated by plot.py at 2019-01-03 08:51:25  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 356.60 Mbit/s  
95th percentile per-packet one-way delay: 157.306 ms  
Loss rate: 5.65%  
-- Flow 1:  
Average throughput: 356.60 Mbit/s  
95th percentile per-packet one-way delay: 157.306 ms  
Loss rate: 5.65%

Run 2: Report of PCC-Expr — Data Link





Run 3: Statistics of PCC-Expr

Start at: 2019-01-03 05:35:24

End at: 2019-01-03 05:35:54

Local clock offset: -0.058 ms

Remote clock offset: 0.166 ms

# Below is generated by plot.py at 2019-01-03 08:54:37

# Datalink statistics

-- Total of 1 flow:

Average throughput: 369.95 Mbit/s

95th percentile per-packet one-way delay: 121.945 ms

Loss rate: 0.26%

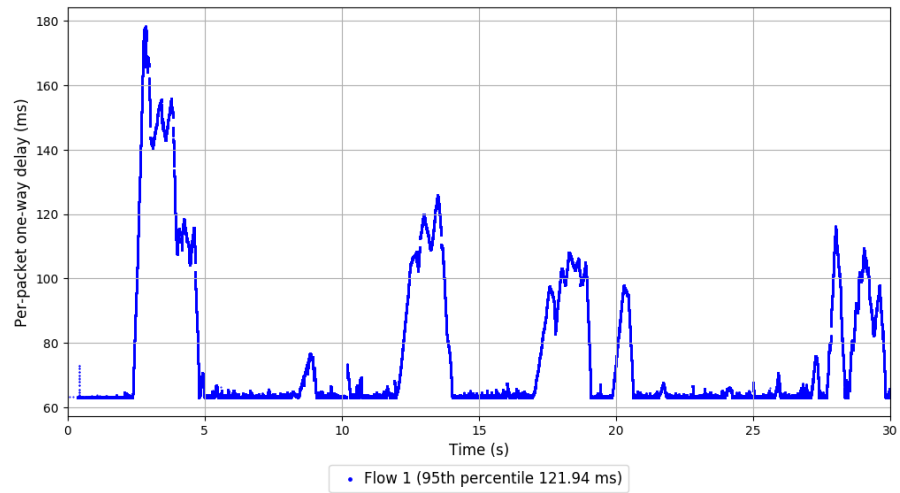
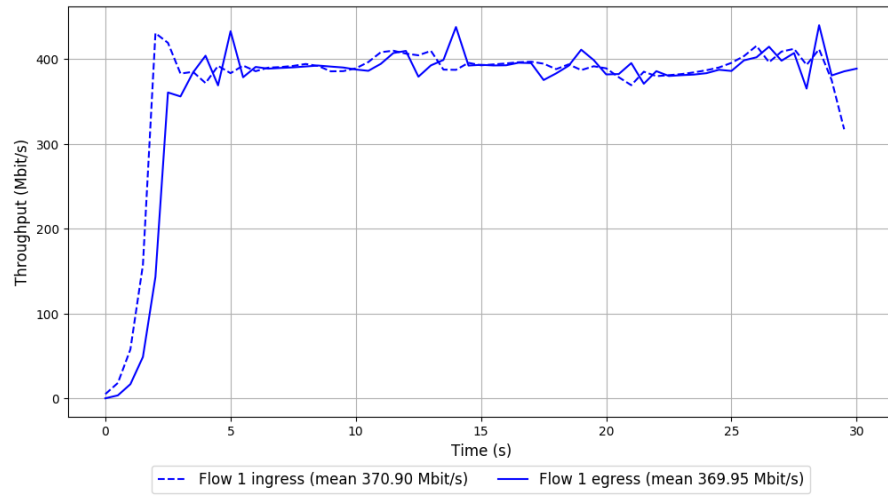
-- Flow 1:

Average throughput: 369.95 Mbit/s

95th percentile per-packet one-way delay: 121.945 ms

Loss rate: 0.26%

### Run 3: Report of PCC-Expr — Data Link

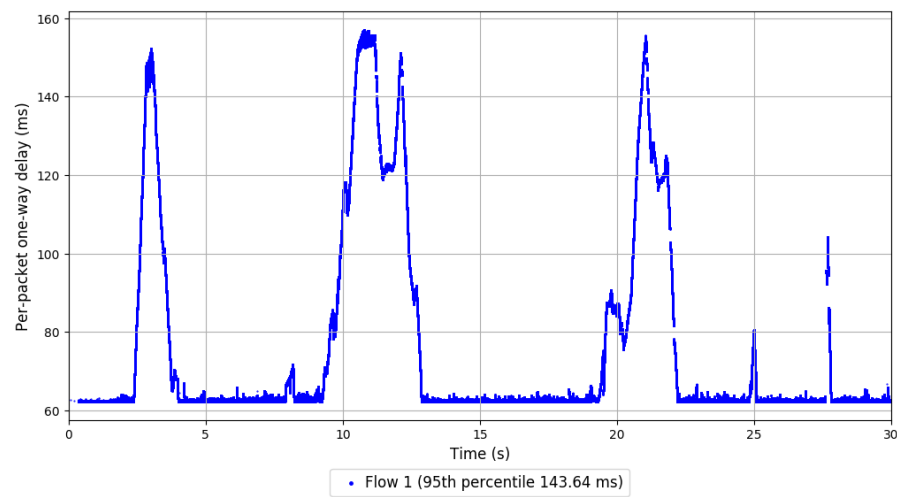
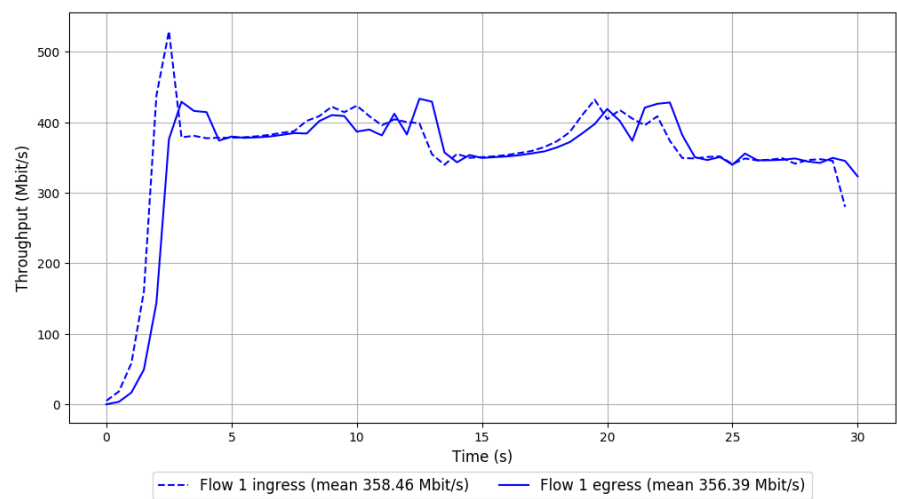


Run 4: Statistics of PCC-Expr

Start at: 2019-01-03 06:03:40  
End at: 2019-01-03 06:04:10  
Local clock offset: -0.003 ms  
Remote clock offset: -0.296 ms

# Below is generated by plot.py at 2019-01-03 09:03:27  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 356.39 Mbit/s  
95th percentile per-packet one-way delay: 143.643 ms  
Loss rate: 0.58%  
-- Flow 1:  
Average throughput: 356.39 Mbit/s  
95th percentile per-packet one-way delay: 143.643 ms  
Loss rate: 0.58%

Run 4: Report of PCC-Expr — Data Link



Run 5: Statistics of PCC-Expr

Start at: 2019-01-03 06:32:02

End at: 2019-01-03 06:32:32

Local clock offset: -0.049 ms

Remote clock offset: 0.096 ms

# Below is generated by plot.py at 2019-01-03 09:03:27

# Datalink statistics

-- Total of 1 flow:

Average throughput: 314.63 Mbit/s

95th percentile per-packet one-way delay: 156.467 ms

Loss rate: 0.96%

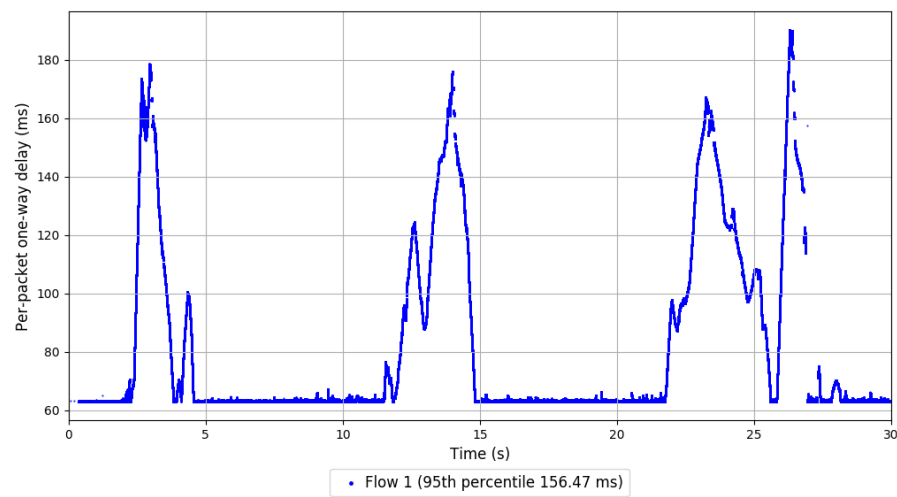
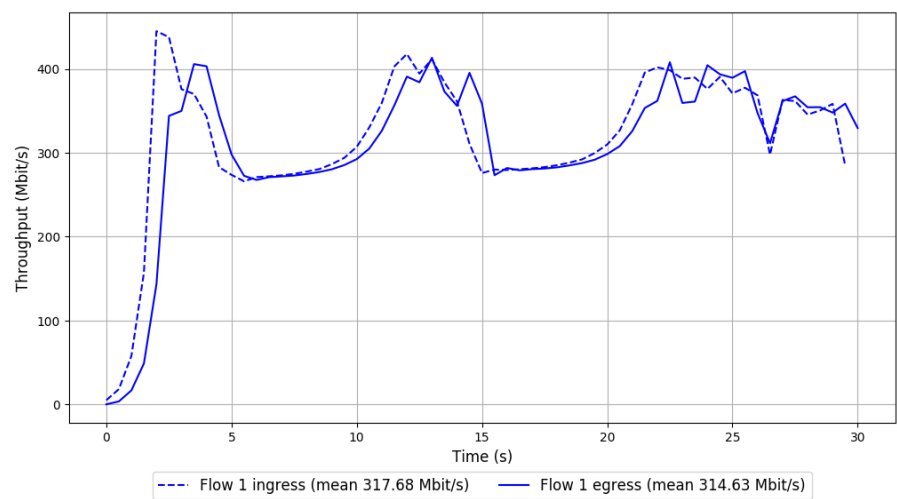
-- Flow 1:

Average throughput: 314.63 Mbit/s

95th percentile per-packet one-way delay: 156.467 ms

Loss rate: 0.96%

Run 5: Report of PCC-Expr — Data Link



Run 1: Statistics of QUIC Cubic

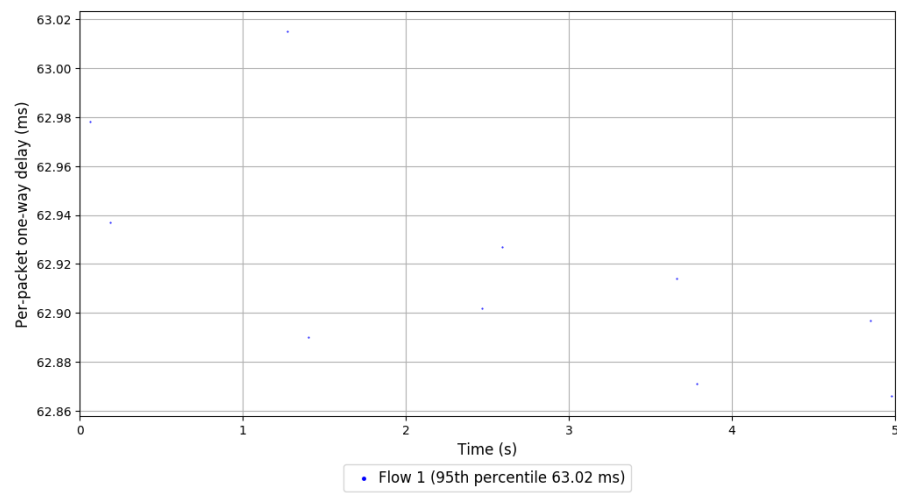
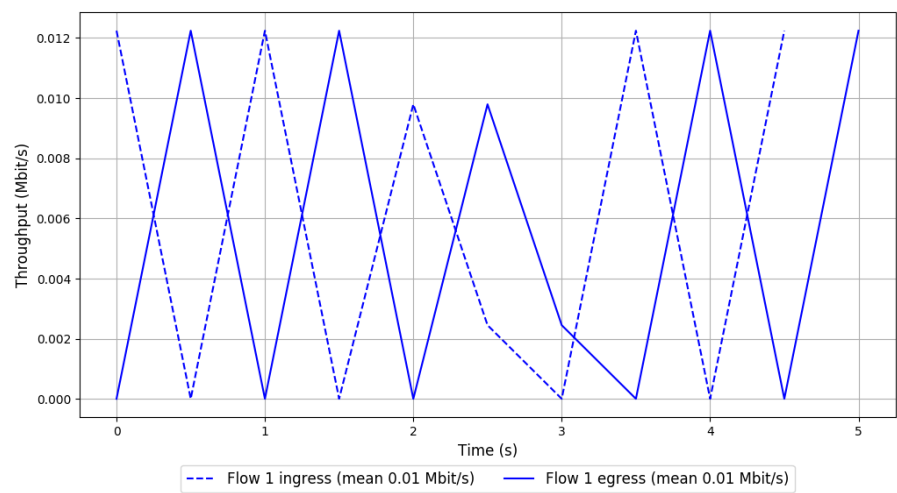
Start at: 2019-01-03 04:40:47

End at: 2019-01-03 04:41:17

Local clock offset: -0.101 ms

Remote clock offset: -0.045 ms

Run 1: Report of QUIC Cubic — Data Link



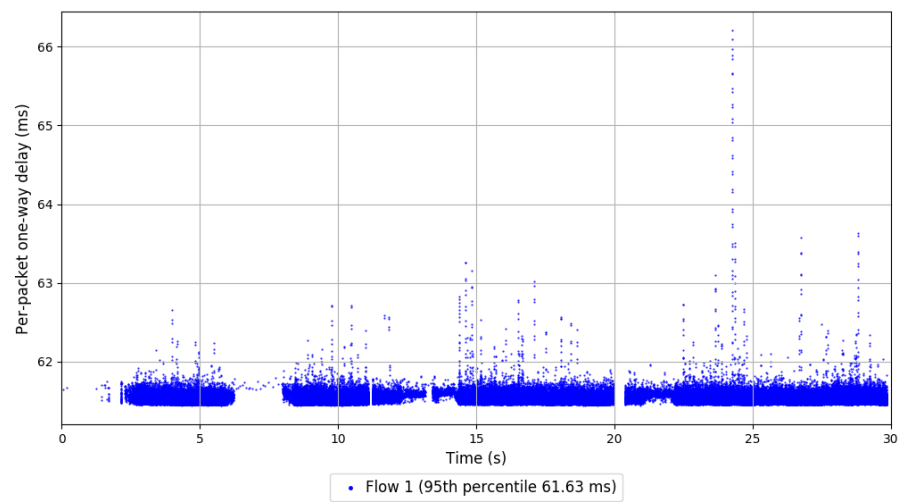
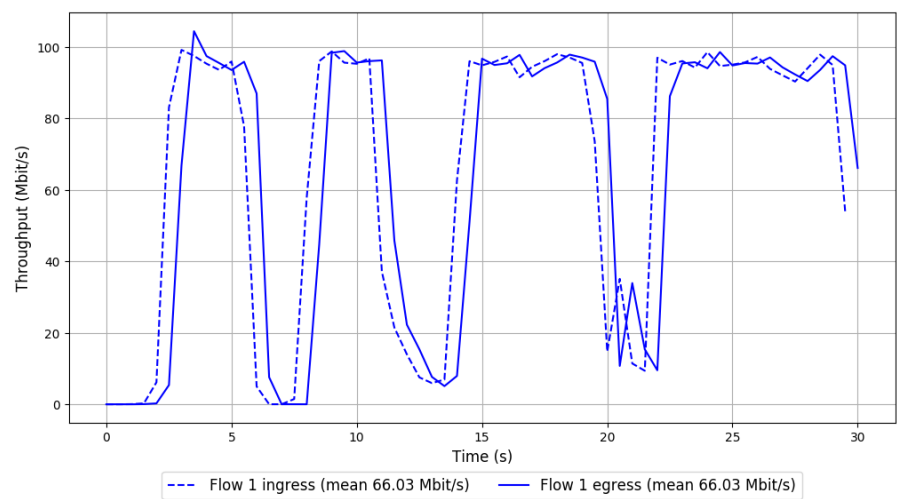


Run 2: Statistics of QUIC Cubic

Start at: 2019-01-03 05:08:59  
End at: 2019-01-03 05:09:29  
Local clock offset: -0.018 ms  
Remote clock offset: -1.242 ms

# Below is generated by plot.py at 2019-01-03 09:03:27  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 66.03 Mbit/s  
95th percentile per-packet one-way delay: 61.627 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 66.03 Mbit/s  
95th percentile per-packet one-way delay: 61.627 ms  
Loss rate: 0.00%

Run 2: Report of QUIC Cubic — Data Link

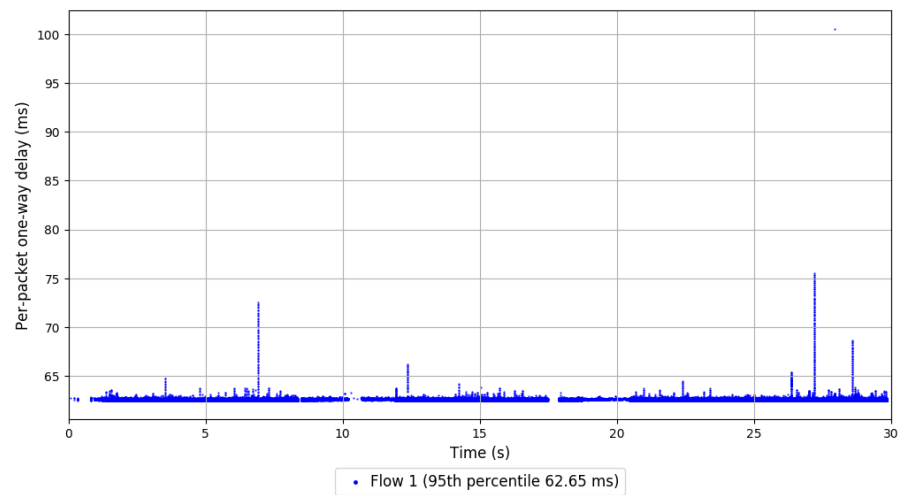
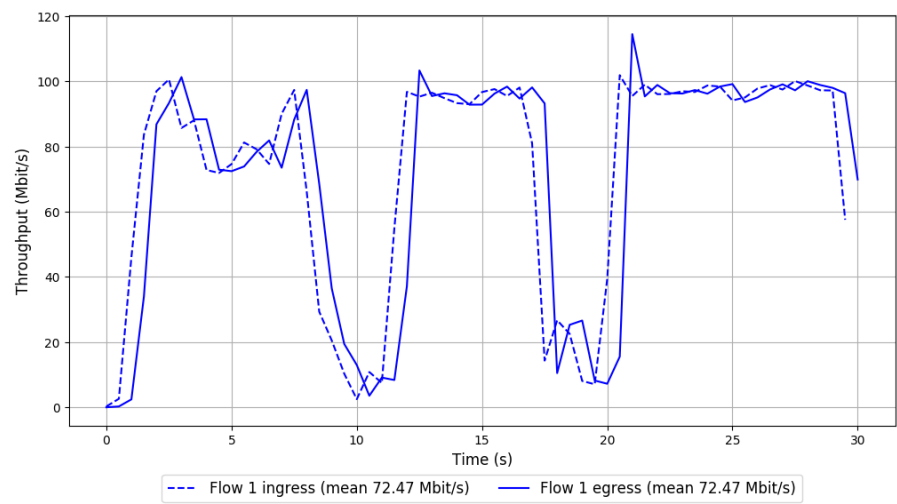


Run 3: Statistics of QUIC Cubic

Start at: 2019-01-03 05:37:05  
End at: 2019-01-03 05:37:35  
Local clock offset: -0.057 ms  
Remote clock offset: -0.183 ms

# Below is generated by plot.py at 2019-01-03 09:03:27  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 72.47 Mbit/s  
95th percentile per-packet one-way delay: 62.650 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 72.47 Mbit/s  
95th percentile per-packet one-way delay: 62.650 ms  
Loss rate: 0.00%

Run 3: Report of QUIC Cubic — Data Link

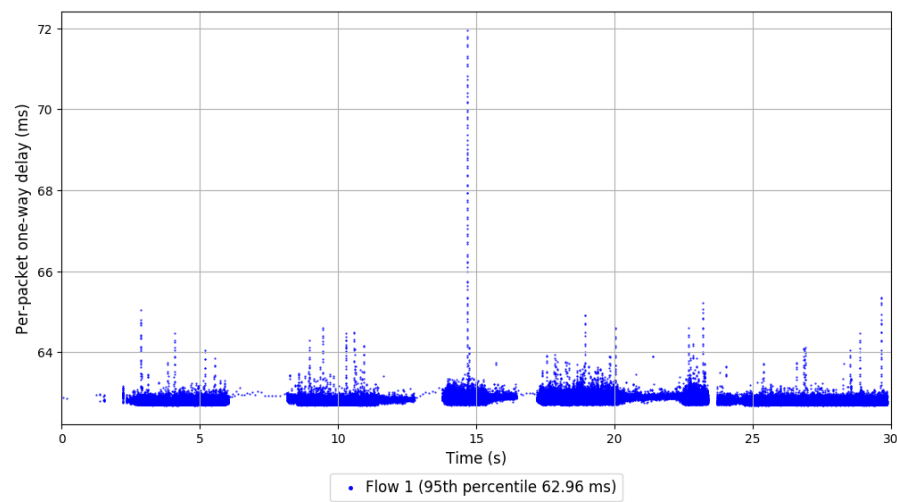
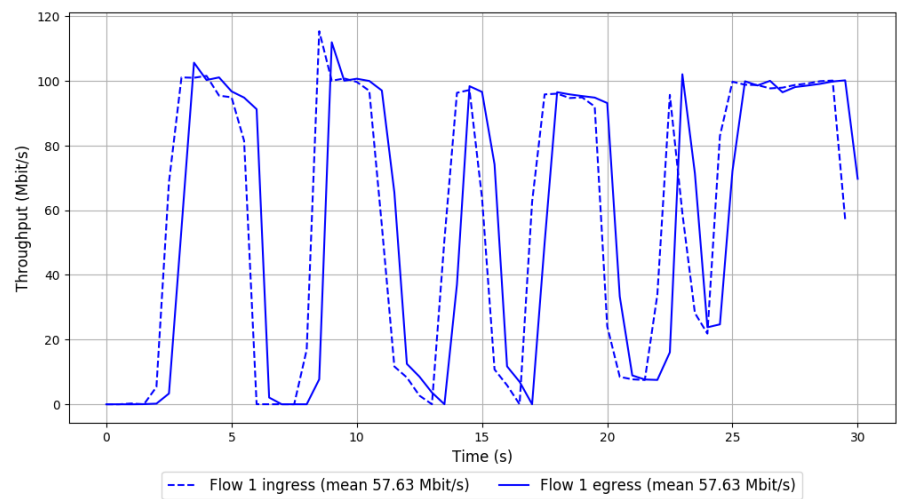


Run 4: Statistics of QUIC Cubic

Start at: 2019-01-03 06:05:21  
End at: 2019-01-03 06:05:51  
Local clock offset: -0.041 ms  
Remote clock offset: -0.175 ms

# Below is generated by plot.py at 2019-01-03 09:03:27  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 57.63 Mbit/s  
95th percentile per-packet one-way delay: 62.958 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 57.63 Mbit/s  
95th percentile per-packet one-way delay: 62.958 ms  
Loss rate: 0.00%

Run 4: Report of QUIC Cubic — Data Link

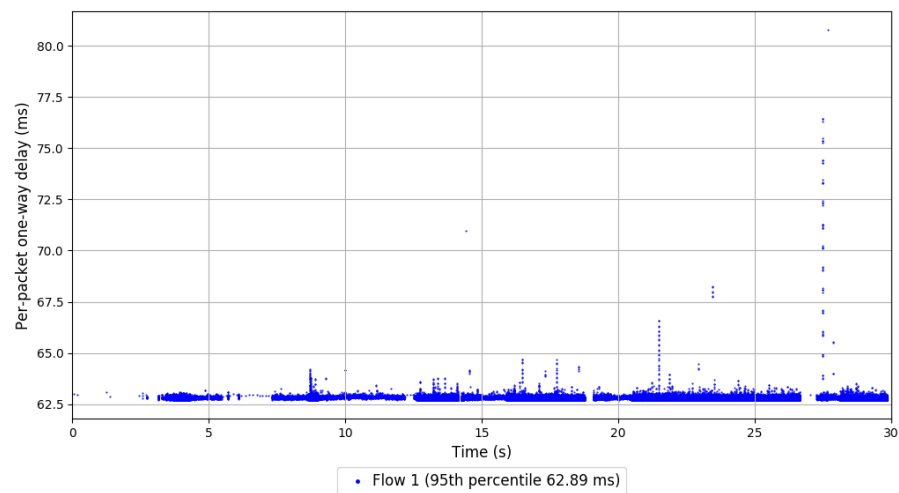
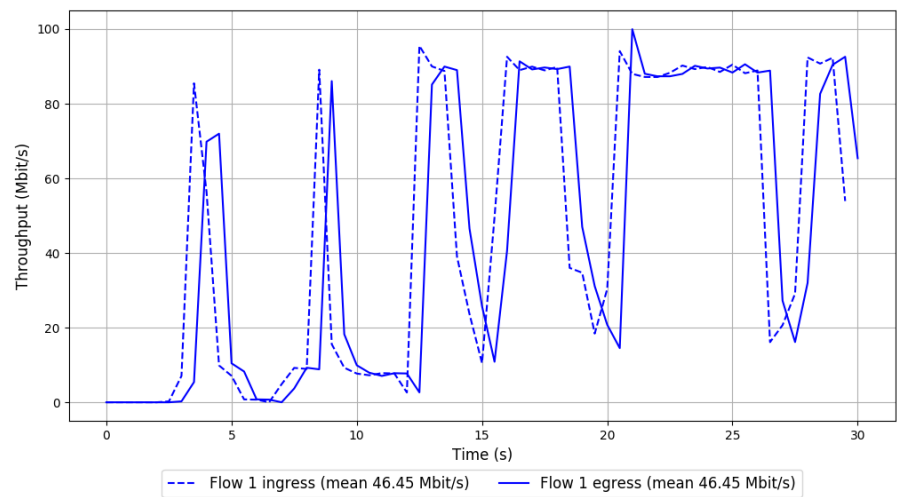


Run 5: Statistics of QUIC Cubic

Start at: 2019-01-03 06:33:40  
End at: 2019-01-03 06:34:10  
Local clock offset: -0.039 ms  
Remote clock offset: -0.089 ms

# Below is generated by plot.py at 2019-01-03 09:03:27  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 46.45 Mbit/s  
95th percentile per-packet one-way delay: 62.893 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 46.45 Mbit/s  
95th percentile per-packet one-way delay: 62.893 ms  
Loss rate: 0.00%

Run 5: Report of QUIC Cubic — Data Link



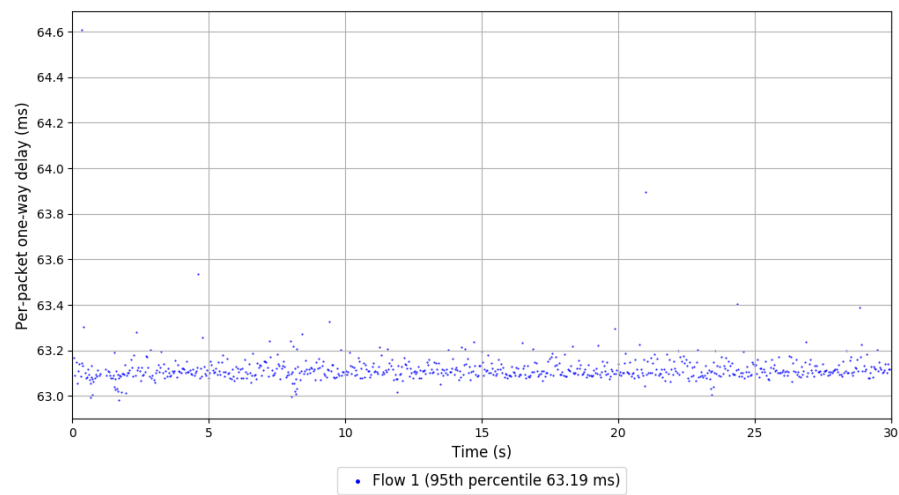
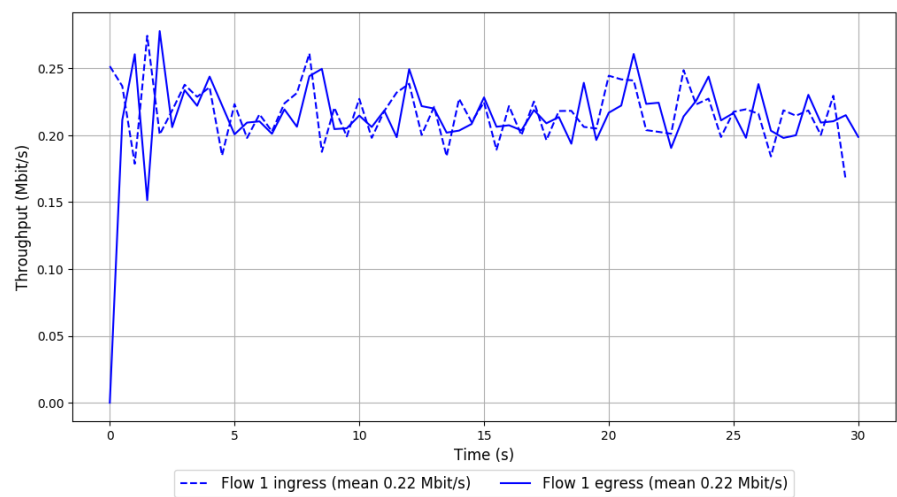


```
Run 1: Statistics of SCReAM

Start at: 2019-01-03 04:58:28
End at: 2019-01-03 04:58:58
Local clock offset: -0.063 ms
Remote clock offset: 0.062 ms

# Below is generated by plot.py at 2019-01-03 09:03:27
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.191 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.191 ms
Loss rate: 0.00%
```

Run 1: Report of SReAM — Data Link

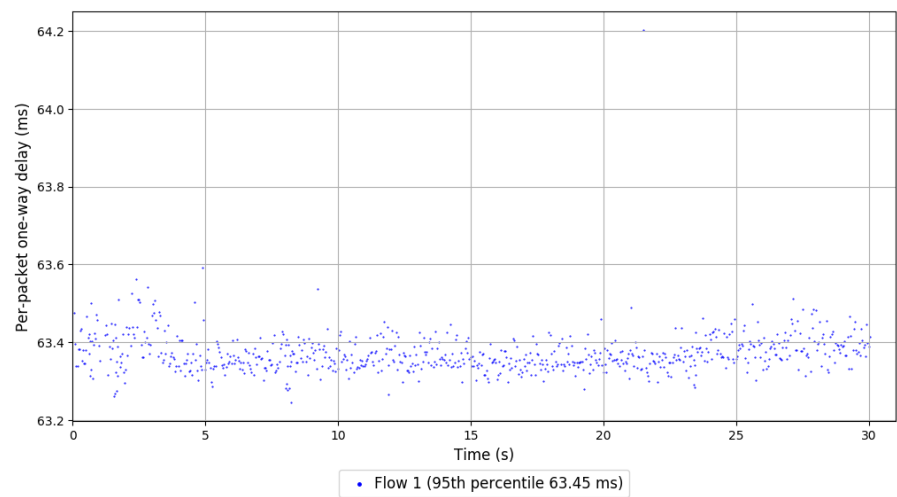
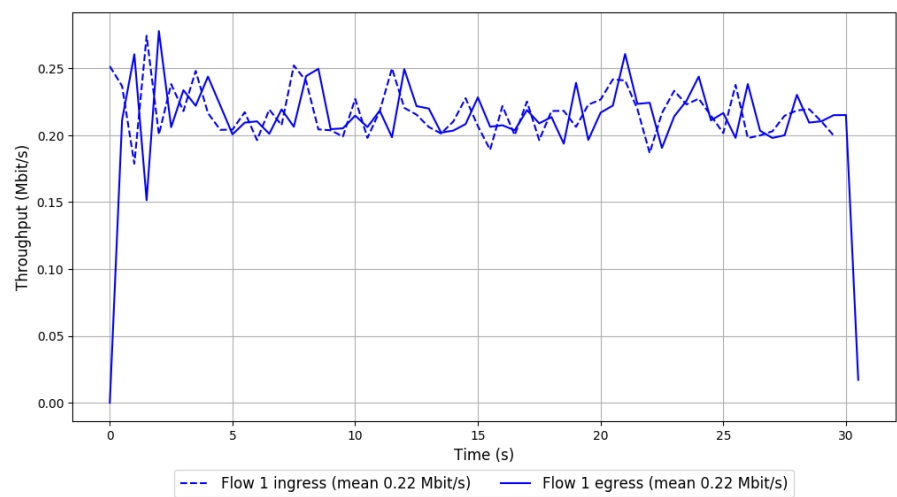


Run 2: Statistics of SCReAM

Start at: 2019-01-03 05:26:41  
End at: 2019-01-03 05:27:11  
Local clock offset: -0.019 ms  
Remote clock offset: -0.035 ms

# Below is generated by plot.py at 2019-01-03 09:03:27  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 63.453 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 63.453 ms  
Loss rate: 0.00%

Run 2: Report of SReAM — Data Link

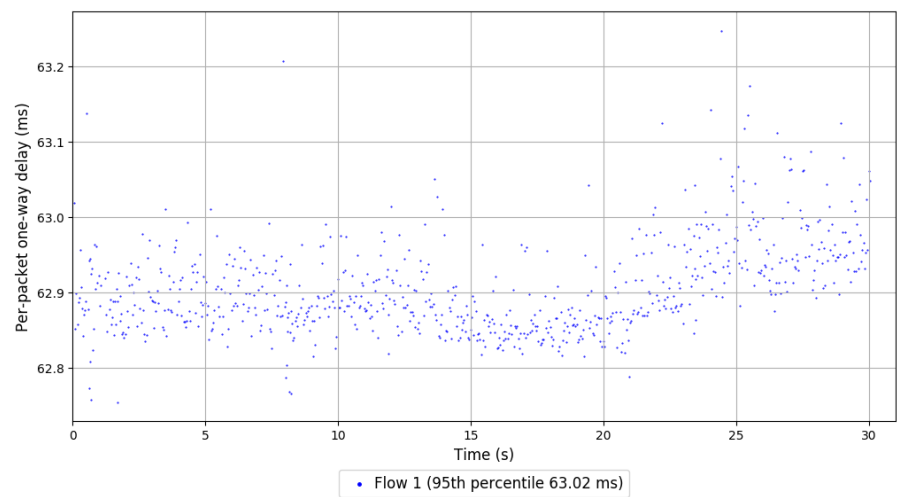
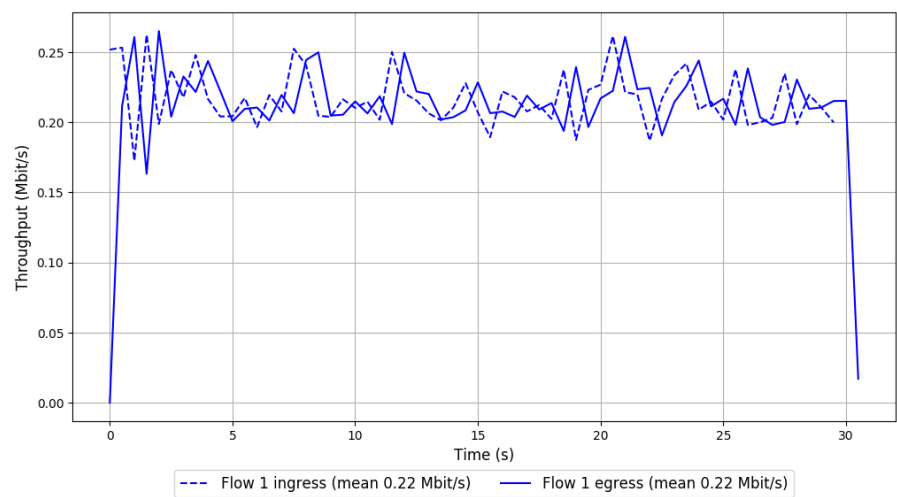


Run 3: Statistics of SCReAM

Start at: 2019-01-03 05:54:51  
End at: 2019-01-03 05:55:21  
Local clock offset: -0.099 ms  
Remote clock offset: -0.295 ms

# Below is generated by plot.py at 2019-01-03 09:03:27  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 63.019 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 63.019 ms  
Loss rate: 0.00%

Run 3: Report of SReAM — Data Link

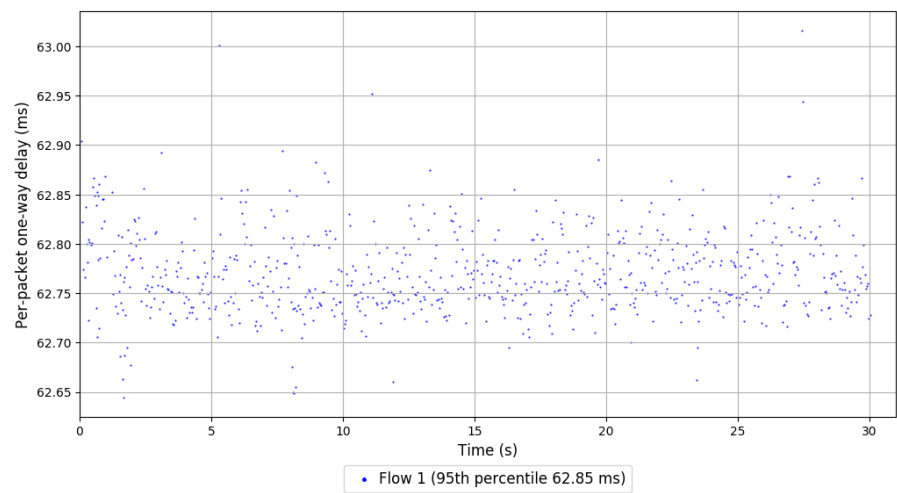
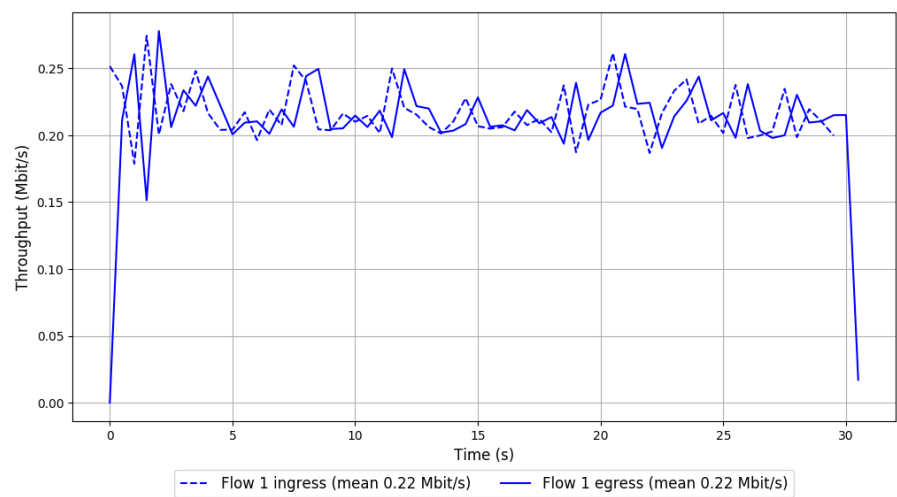


Run 4: Statistics of SCReAM

Start at: 2019-01-03 06:23:12  
End at: 2019-01-03 06:23:42  
Local clock offset: -0.023 ms  
Remote clock offset: -0.085 ms

# Below is generated by plot.py at 2019-01-03 09:03:27  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 62.846 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 62.846 ms  
Loss rate: 0.00%

Run 4: Report of SReAM — Data Link



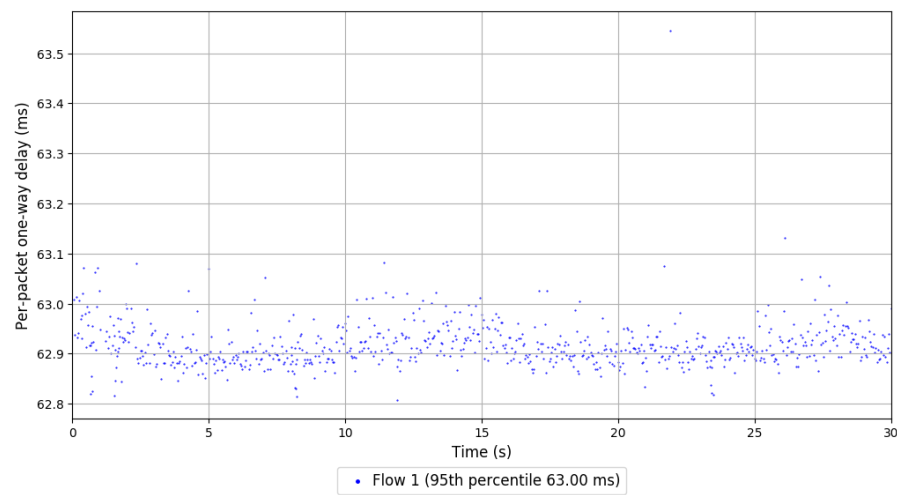
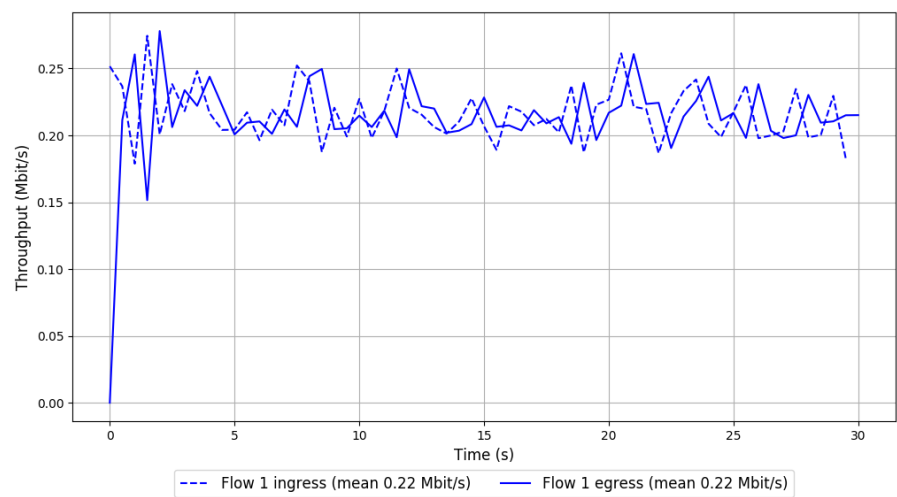


Run 5: Statistics of SCReAM

Start at: 2019-01-03 06:51:27  
End at: 2019-01-03 06:51:57  
Local clock offset: -0.007 ms  
Remote clock offset: -0.276 ms

# Below is generated by plot.py at 2019-01-03 09:03:27  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 62.996 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 62.996 ms  
Loss rate: 0.00%

Run 5: Report of SReAM — Data Link



Run 1: Statistics of Sprout

Start at: 2019-01-03 04:41:55

End at: 2019-01-03 04:42:25

Local clock offset: -0.065 ms

Remote clock offset: -0.02 ms

# Below is generated by plot.py at 2019-01-03 09:03:27

# Datalink statistics

-- Total of 1 flow:

Average throughput: 6.79 Mbit/s

95th percentile per-packet one-way delay: 63.784 ms

Loss rate: 0.00%

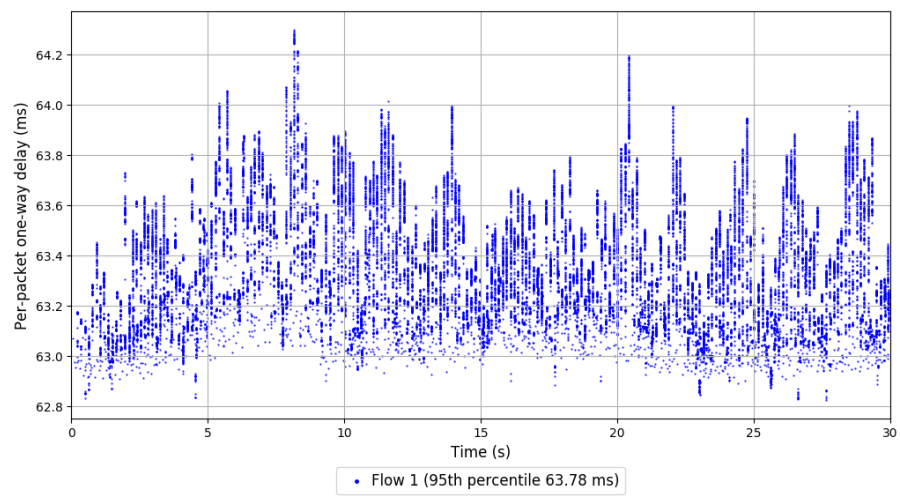
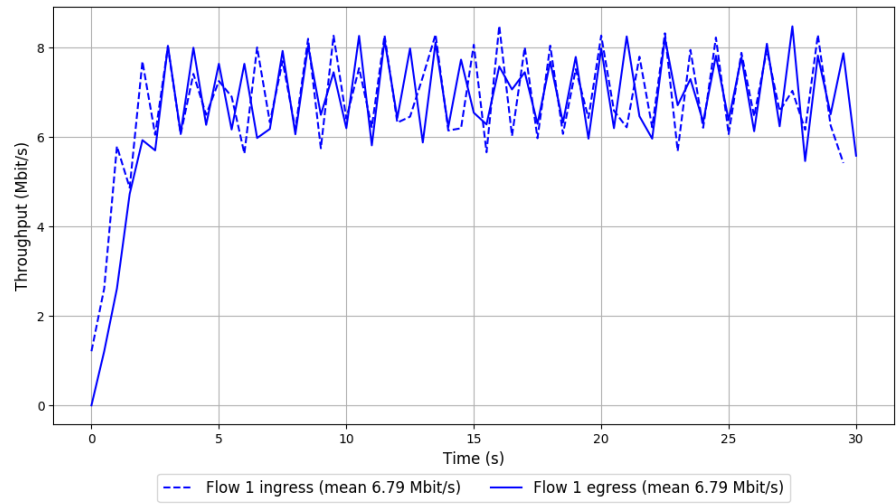
-- Flow 1:

Average throughput: 6.79 Mbit/s

95th percentile per-packet one-way delay: 63.784 ms

Loss rate: 0.00%

# Run 1: Report of Sprout — Data Link

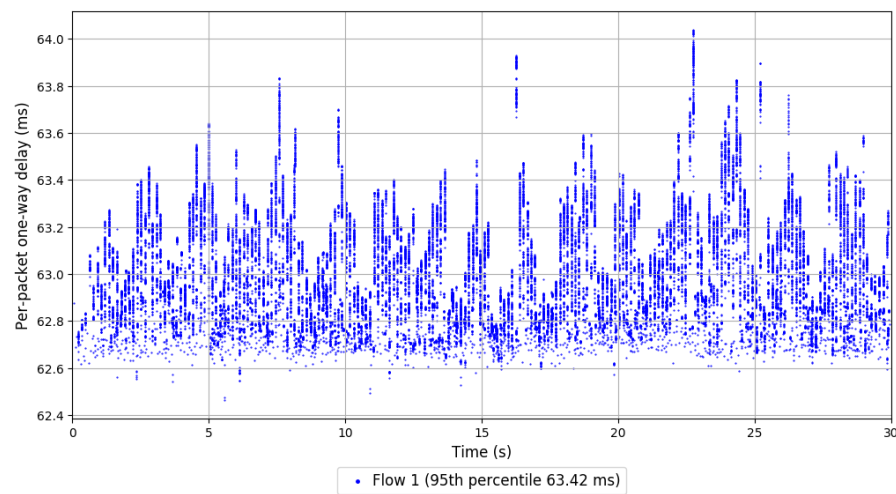
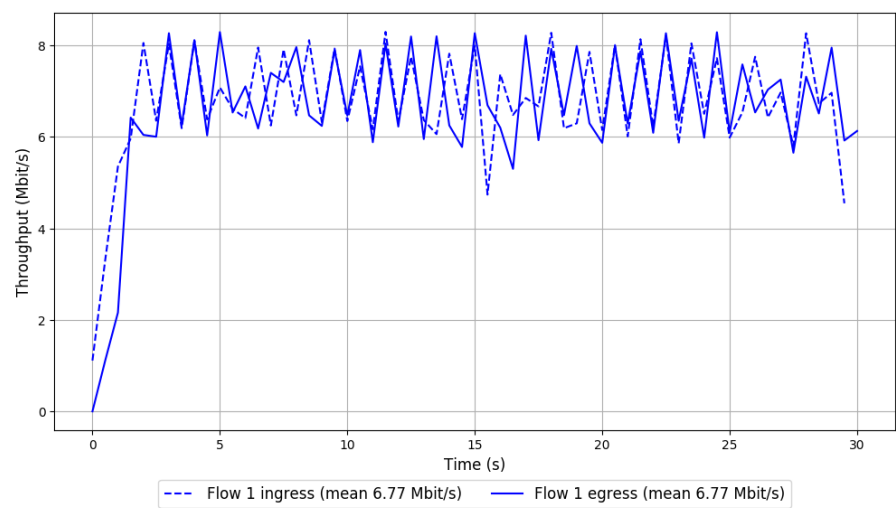


Run 2: Statistics of Sprout

Start at: 2019-01-03 05:10:11  
End at: 2019-01-03 05:10:41  
Local clock offset: -0.051 ms  
Remote clock offset: -0.167 ms

# Below is generated by plot.py at 2019-01-03 09:03:27  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 6.77 Mbit/s  
95th percentile per-packet one-way delay: 63.417 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 6.77 Mbit/s  
95th percentile per-packet one-way delay: 63.417 ms  
Loss rate: 0.00%

Run 2: Report of Sprout — Data Link

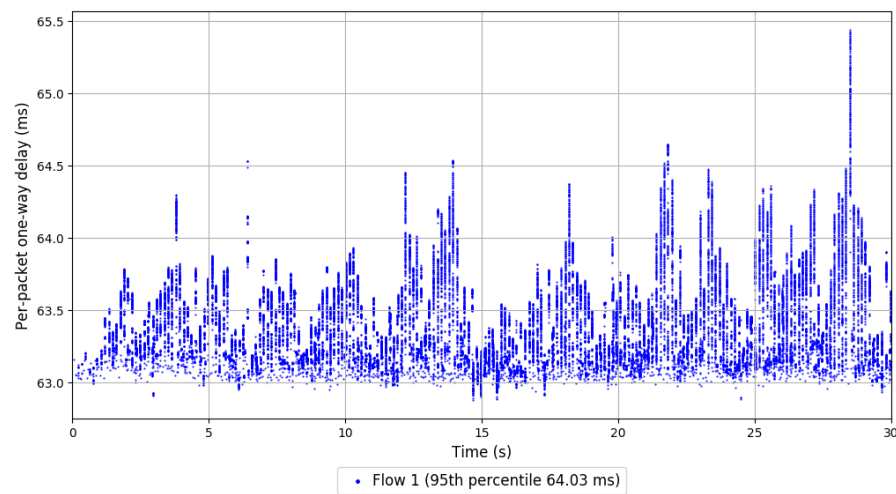
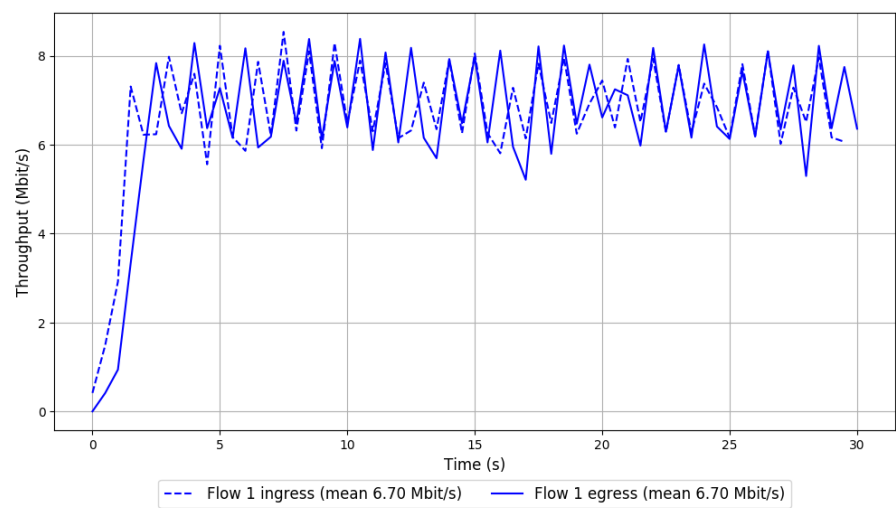


Run 3: Statistics of Sprout

Start at: 2019-01-03 05:38:17  
End at: 2019-01-03 05:38:47  
Local clock offset: -0.045 ms  
Remote clock offset: -0.18 ms

# Below is generated by plot.py at 2019-01-03 09:03:27  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 6.70 Mbit/s  
95th percentile per-packet one-way delay: 64.028 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 6.70 Mbit/s  
95th percentile per-packet one-way delay: 64.028 ms  
Loss rate: 0.00%

Run 3: Report of Sprout — Data Link



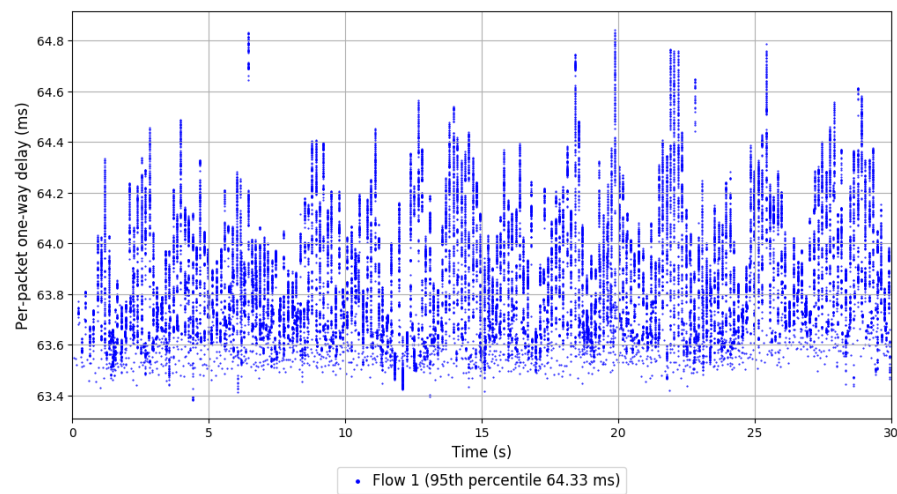
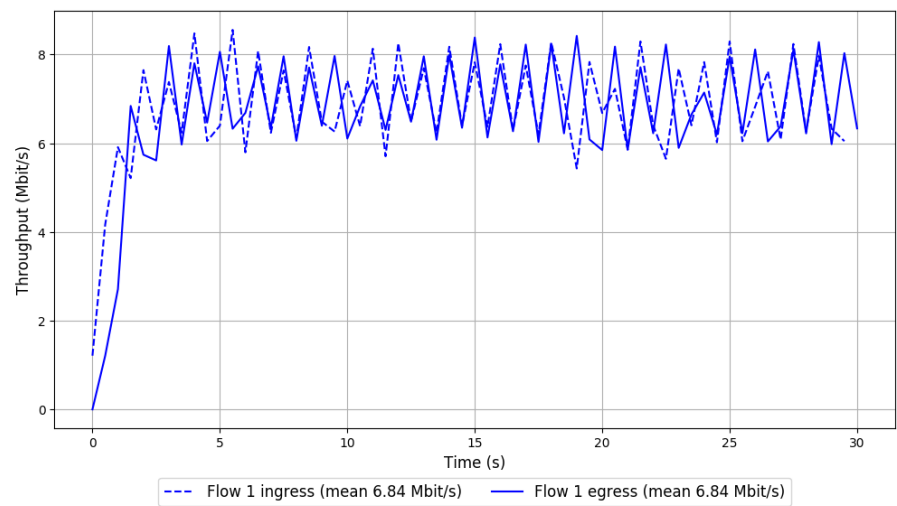


Run 4: Statistics of Sprout

Start at: 2019-01-03 06:06:32  
End at: 2019-01-03 06:07:02  
Local clock offset: -0.022 ms  
Remote clock offset: 0.179 ms

# Below is generated by plot.py at 2019-01-03 09:03:27  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 6.84 Mbit/s  
95th percentile per-packet one-way delay: 64.330 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 6.84 Mbit/s  
95th percentile per-packet one-way delay: 64.330 ms  
Loss rate: 0.00%

Run 4: Report of Sprout — Data Link

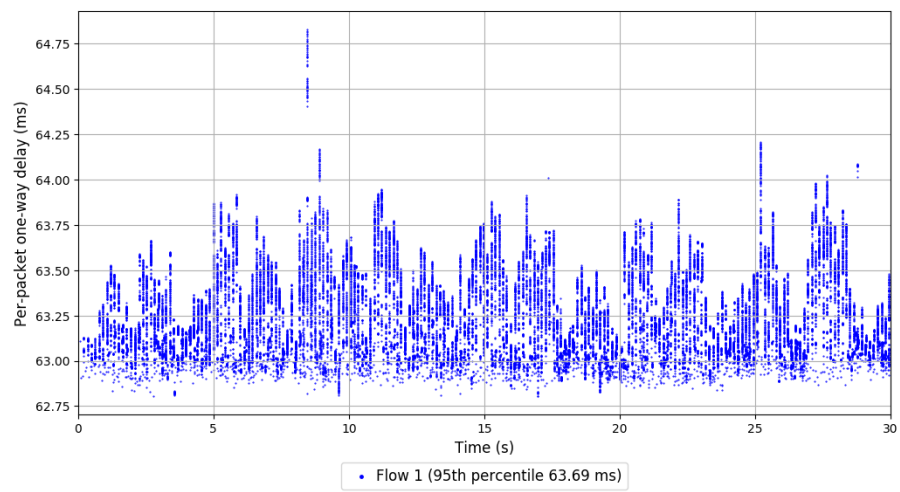
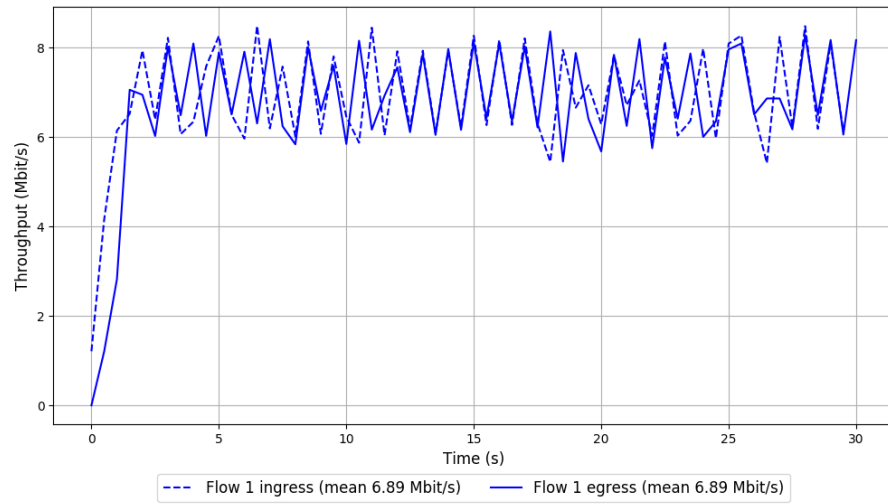


Run 5: Statistics of Sprout

Start at: 2019-01-03 06:34:51  
End at: 2019-01-03 06:35:21  
Local clock offset: -0.031 ms  
Remote clock offset: -0.118 ms

# Below is generated by plot.py at 2019-01-03 09:03:28  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 6.89 Mbit/s  
95th percentile per-packet one-way delay: 63.693 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 6.89 Mbit/s  
95th percentile per-packet one-way delay: 63.693 ms  
Loss rate: 0.00%

## Run 5: Report of Sprout — Data Link

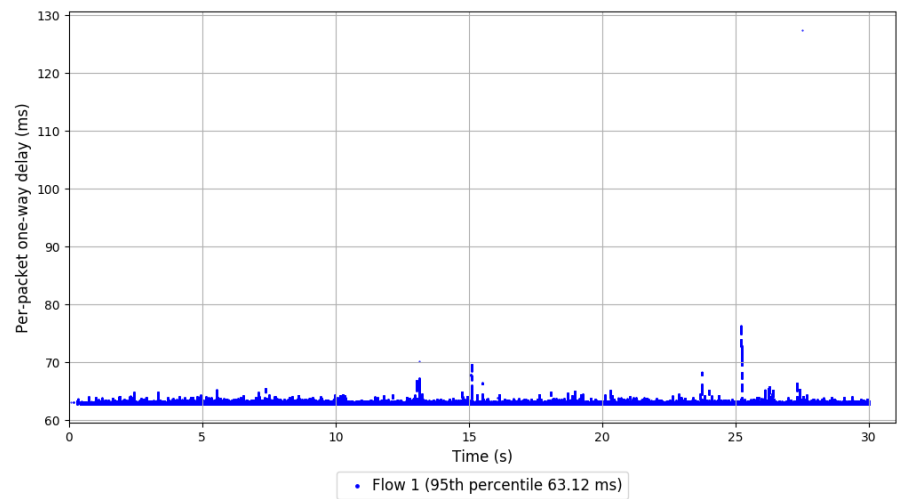
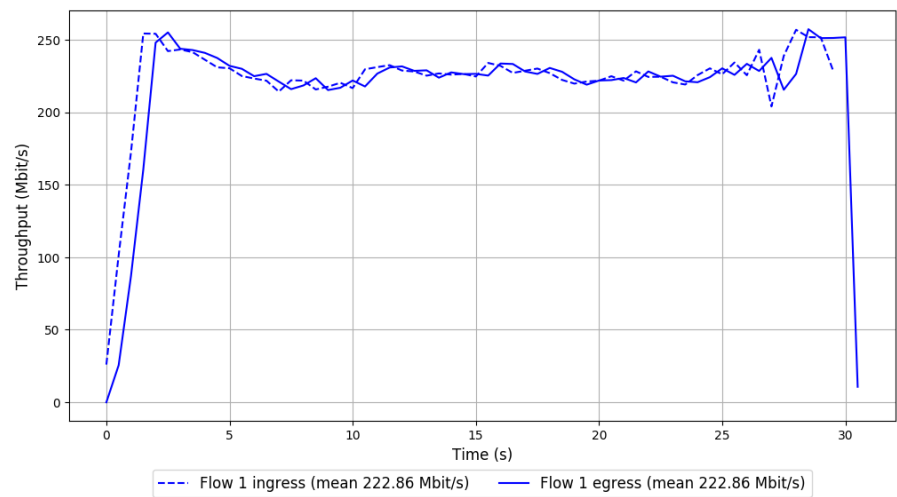


```
Run 1: Statistics of TaoVA-100x

Start at: 2019-01-03 05:02:30
End at: 2019-01-03 05:03:00
Local clock offset: -0.026 ms
Remote clock offset: 0.015 ms

# Below is generated by plot.py at 2019-01-03 09:03:28
# Datalink statistics
-- Total of 1 flow:
Average throughput: 222.86 Mbit/s
95th percentile per-packet one-way delay: 63.123 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 222.86 Mbit/s
95th percentile per-packet one-way delay: 63.123 ms
Loss rate: 0.00%
```

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



Run 2: Statistics of TaoVA-100x

Start at: 2019-01-03 05:30:44

End at: 2019-01-03 05:31:14

Local clock offset: -0.036 ms

Remote clock offset: -1.29 ms

# Below is generated by plot.py at 2019-01-03 09:03:28

# Datalink statistics

-- Total of 1 flow:

Average throughput: 227.05 Mbit/s

95th percentile per-packet one-way delay: 61.991 ms

Loss rate: 0.00%

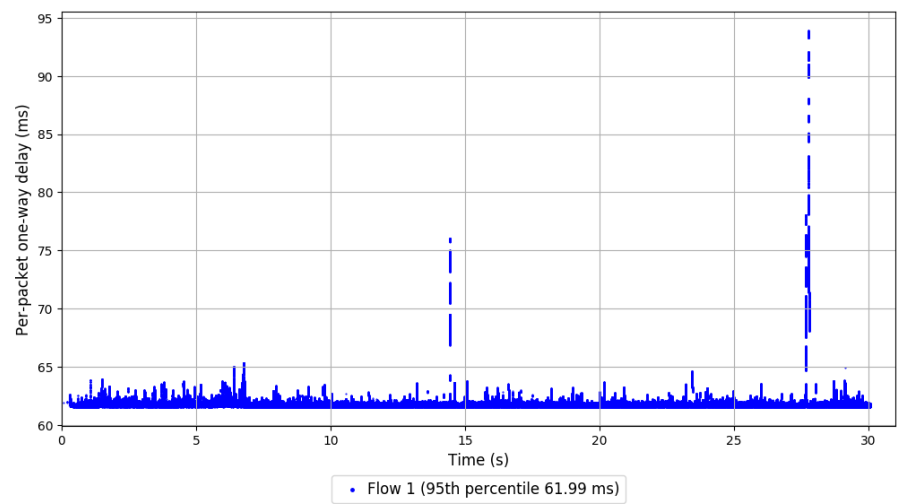
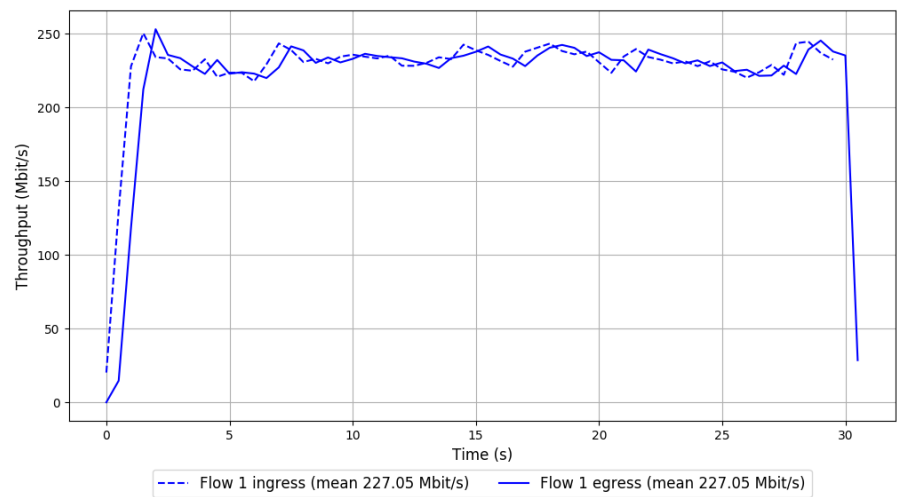
-- Flow 1:

Average throughput: 227.05 Mbit/s

95th percentile per-packet one-way delay: 61.991 ms

Loss rate: 0.00%

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





Run 3: Statistics of TaoVA-100x

Start at: 2019-01-03 05:58:54

End at: 2019-01-03 05:59:24

Local clock offset: -0.029 ms

Remote clock offset: -0.025 ms

# Below is generated by plot.py at 2019-01-03 09:03:28

# Datalink statistics

-- Total of 1 flow:

Average throughput: 224.59 Mbit/s

95th percentile per-packet one-way delay: 63.083 ms

Loss rate: 0.00%

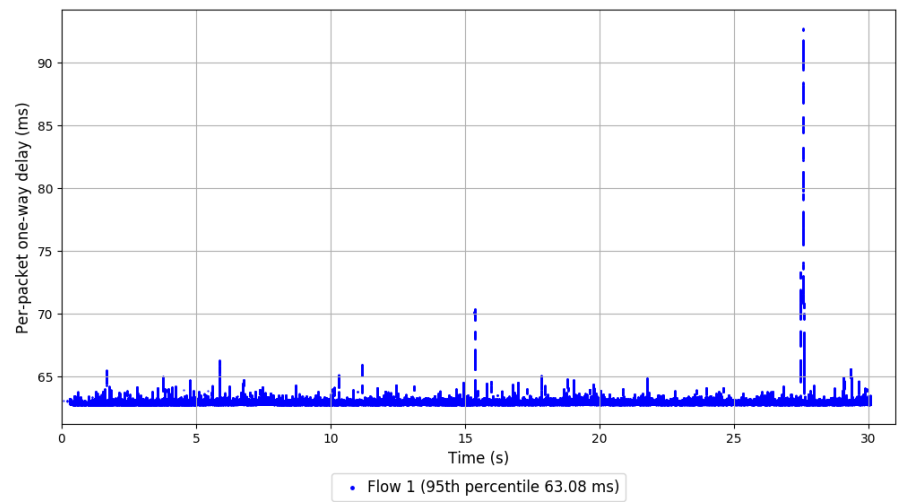
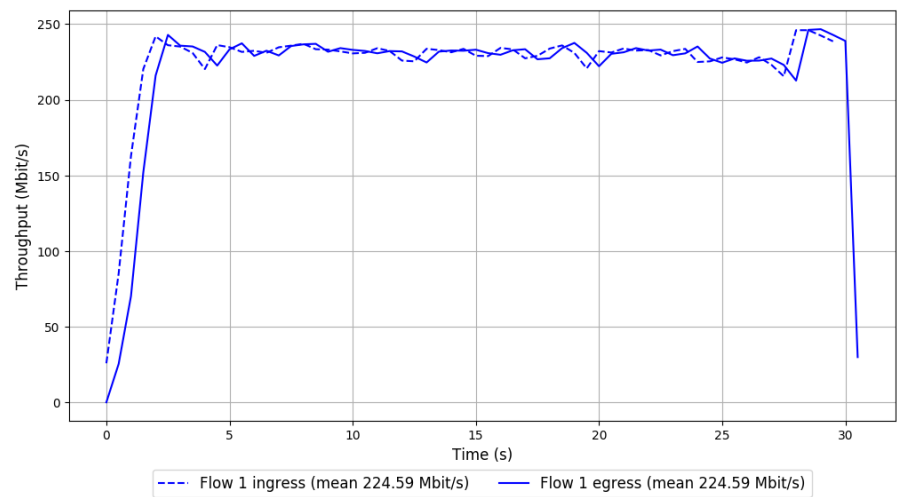
-- Flow 1:

Average throughput: 224.59 Mbit/s

95th percentile per-packet one-way delay: 63.083 ms

Loss rate: 0.00%

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



Run 4: Statistics of TaoVA-100x

Start at: 2019-01-03 06:27:14

End at: 2019-01-03 06:27:44

Local clock offset: 0.017 ms

Remote clock offset: -0.012 ms

# Below is generated by plot.py at 2019-01-03 09:03:28

# Datalink statistics

-- Total of 1 flow:

Average throughput: 224.30 Mbit/s

95th percentile per-packet one-way delay: 62.941 ms

Loss rate: 0.00%

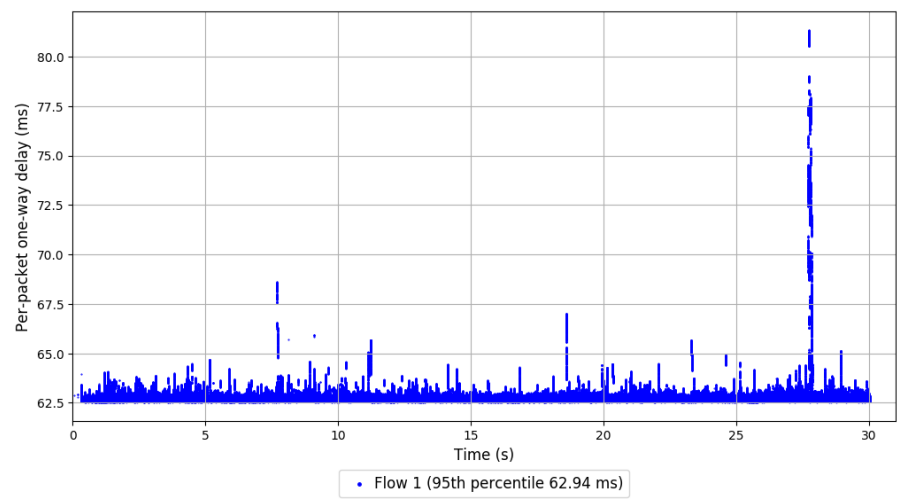
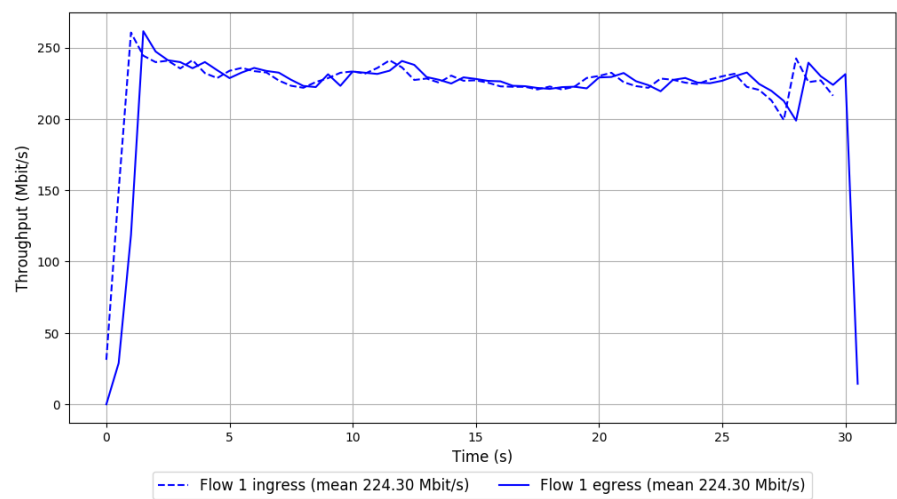
-- Flow 1:

Average throughput: 224.30 Mbit/s

95th percentile per-packet one-way delay: 62.941 ms

Loss rate: 0.00%

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

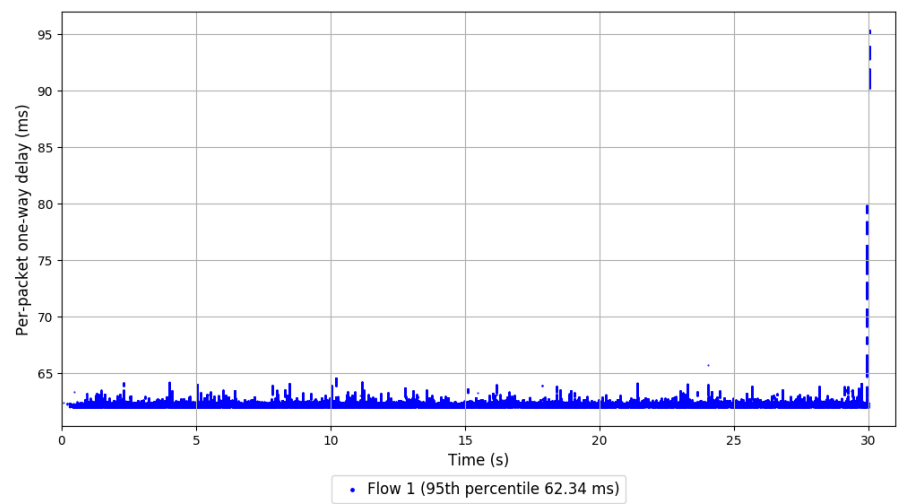
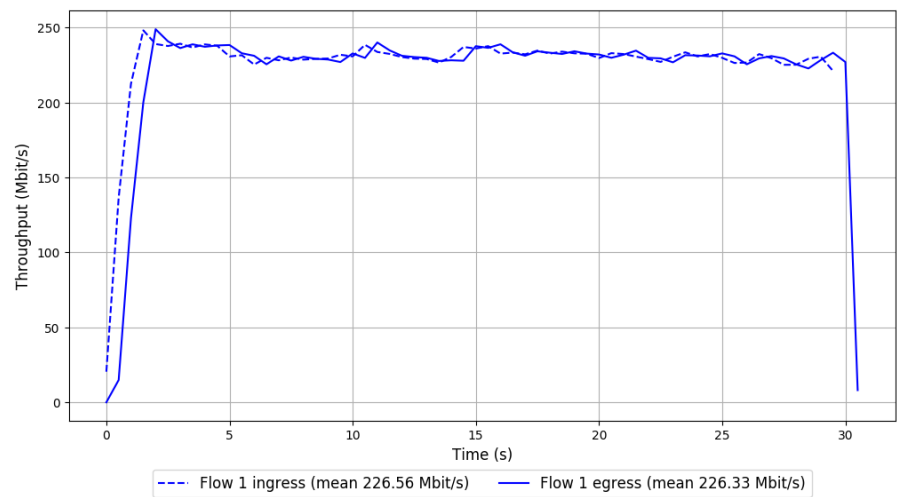


Run 5: Statistics of TaoVA-100x

Start at: 2019-01-03 06:55:33  
End at: 2019-01-03 06:56:03  
Local clock offset: -0.014 ms  
Remote clock offset: -0.693 ms

# Below is generated by plot.py at 2019-01-03 09:03:28  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 226.33 Mbit/s  
95th percentile per-packet one-way delay: 62.344 ms  
Loss rate: 0.10%  
-- Flow 1:  
Average throughput: 226.33 Mbit/s  
95th percentile per-packet one-way delay: 62.344 ms  
Loss rate: 0.10%

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



Run 1: Statistics of TCP Vegas

Start at: 2019-01-03 04:49:00

End at: 2019-01-03 04:49:30

Local clock offset: -0.047 ms

Remote clock offset: 0.122 ms

# Below is generated by plot.py at 2019-01-03 09:06:02

# Datalink statistics

-- Total of 1 flow:

Average throughput: 439.08 Mbit/s

95th percentile per-packet one-way delay: 64.249 ms

Loss rate: 0.00%

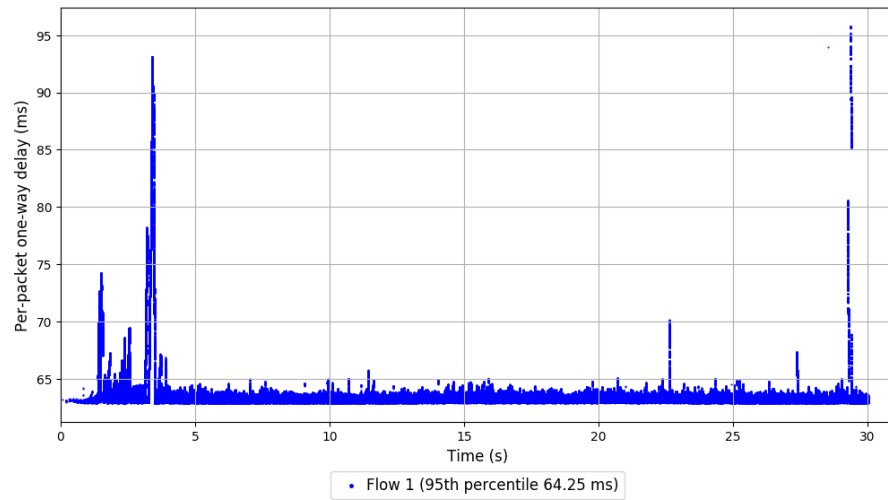
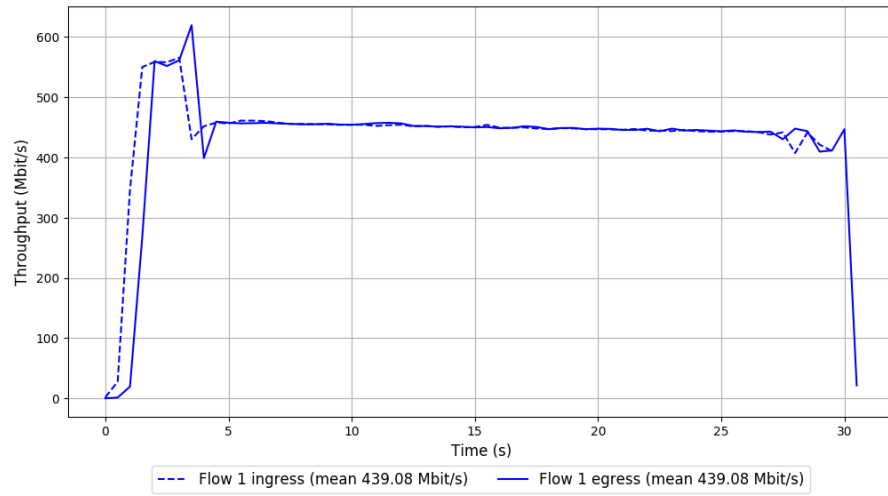
-- Flow 1:

Average throughput: 439.08 Mbit/s

95th percentile per-packet one-way delay: 64.249 ms

Loss rate: 0.00%

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



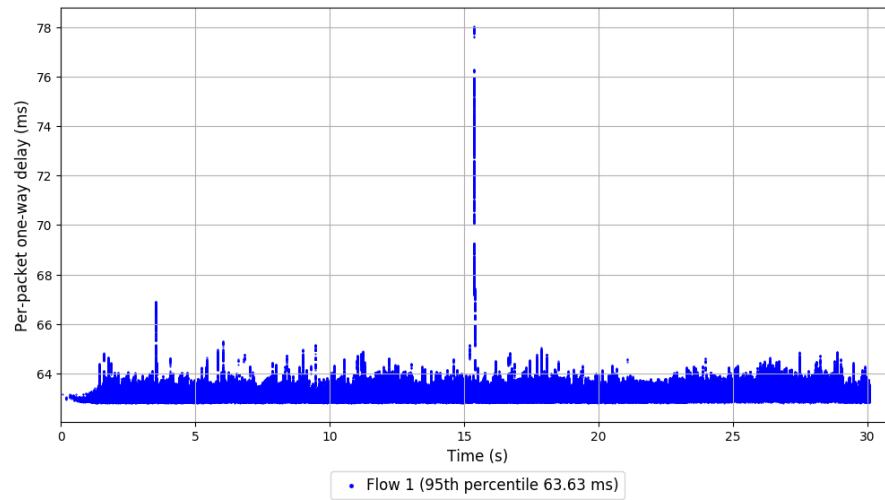
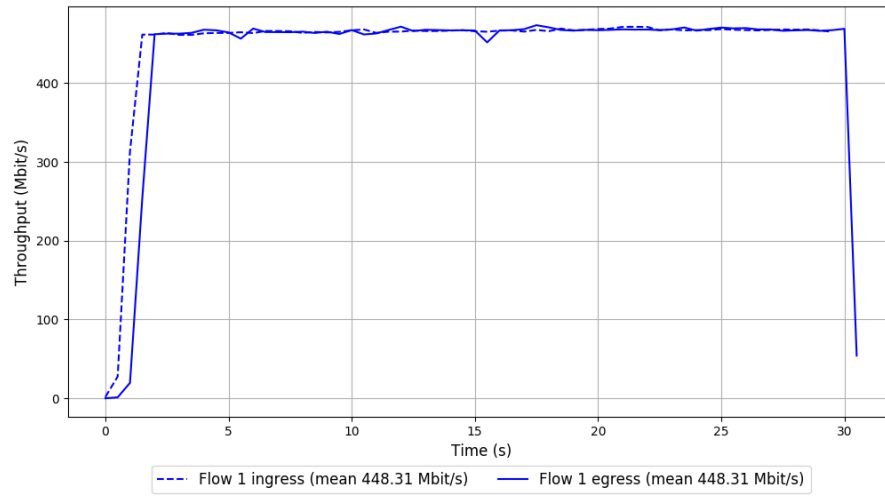


Run 2: Statistics of TCP Vegas

Start at: 2019-01-03 05:17:17  
End at: 2019-01-03 05:17:47  
Local clock offset: -0.029 ms  
Remote clock offset: -0.174 ms

# Below is generated by plot.py at 2019-01-03 09:13:26  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 448.31 Mbit/s  
95th percentile per-packet one-way delay: 63.634 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 448.31 Mbit/s  
95th percentile per-packet one-way delay: 63.634 ms  
Loss rate: 0.00%

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

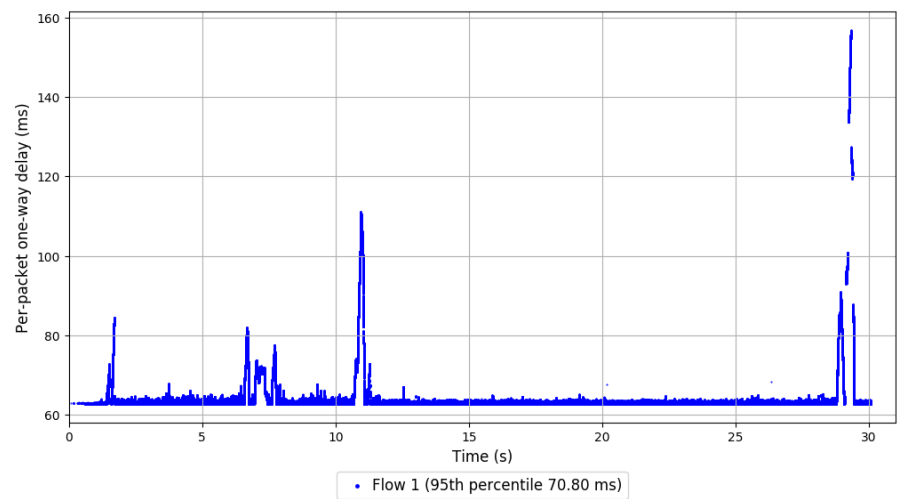
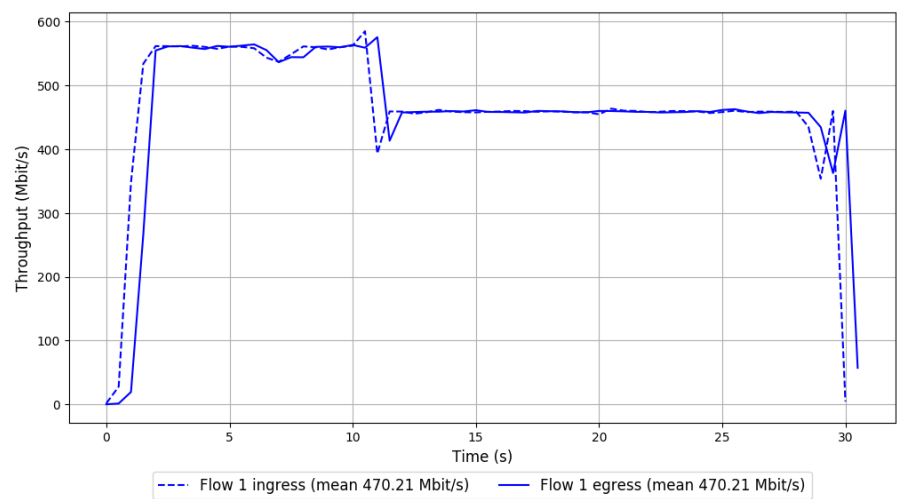


Run 3: Statistics of TCP Vegas

Start at: 2019-01-03 05:45:23  
End at: 2019-01-03 05:45:53  
Local clock offset: -0.055 ms  
Remote clock offset: -0.167 ms

# Below is generated by plot.py at 2019-01-03 09:14:40  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 470.21 Mbit/s  
95th percentile per-packet one-way delay: 70.796 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 470.21 Mbit/s  
95th percentile per-packet one-way delay: 70.796 ms  
Loss rate: 0.00%

Run 3: Report of TCP Vegas — Data Link

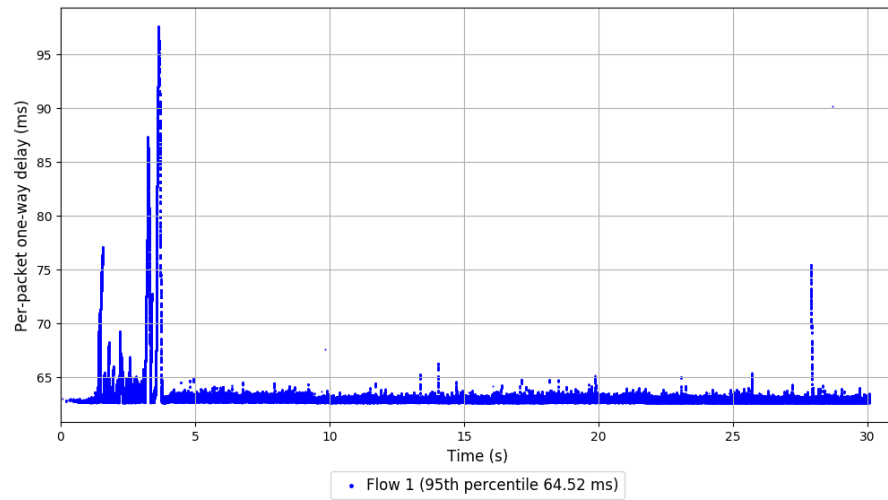
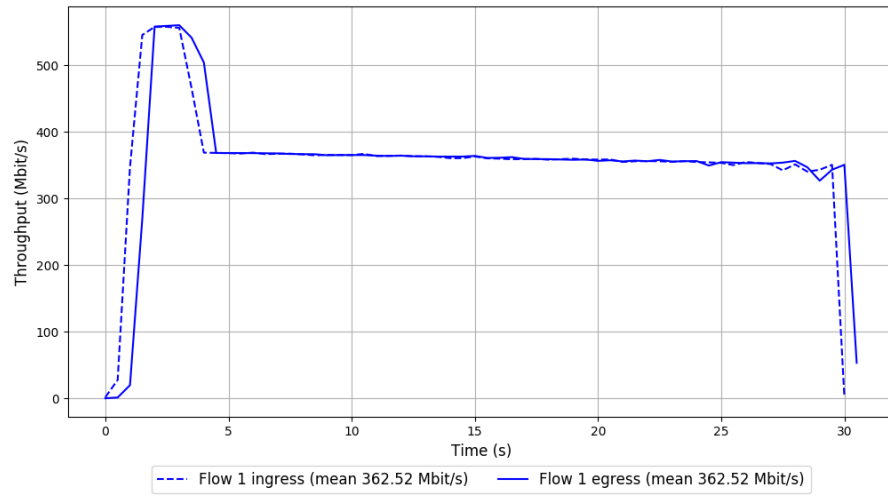


Run 4: Statistics of TCP Vegas

Start at: 2019-01-03 06:13:43  
End at: 2019-01-03 06:14:13  
Local clock offset: -0.024 ms  
Remote clock offset: 0.009 ms

# Below is generated by plot.py at 2019-01-03 09:14:40  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 362.52 Mbit/s  
95th percentile per-packet one-way delay: 64.515 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 362.52 Mbit/s  
95th percentile per-packet one-way delay: 64.515 ms  
Loss rate: 0.00%

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

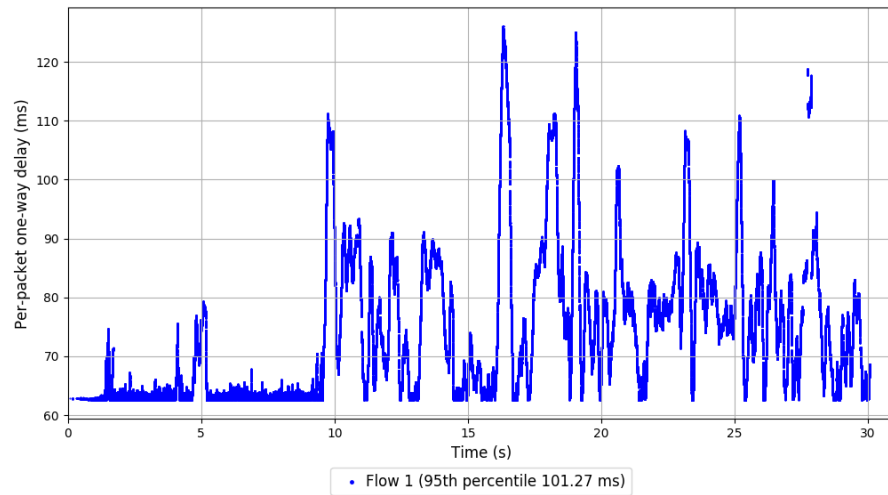
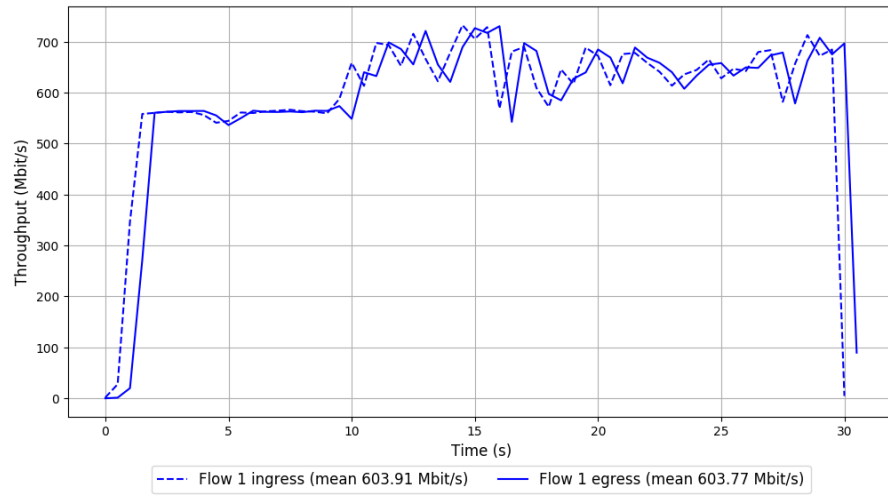


Run 5: Statistics of TCP Vegas

Start at: 2019-01-03 06:42:05  
End at: 2019-01-03 06:42:35  
Local clock offset: -0.018 ms  
Remote clock offset: -0.178 ms

# Below is generated by plot.py at 2019-01-03 09:17:45  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 603.77 Mbit/s  
95th percentile per-packet one-way delay: 101.269 ms  
Loss rate: 0.02%  
-- Flow 1:  
Average throughput: 603.77 Mbit/s  
95th percentile per-packet one-way delay: 101.269 ms  
Loss rate: 0.02%

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



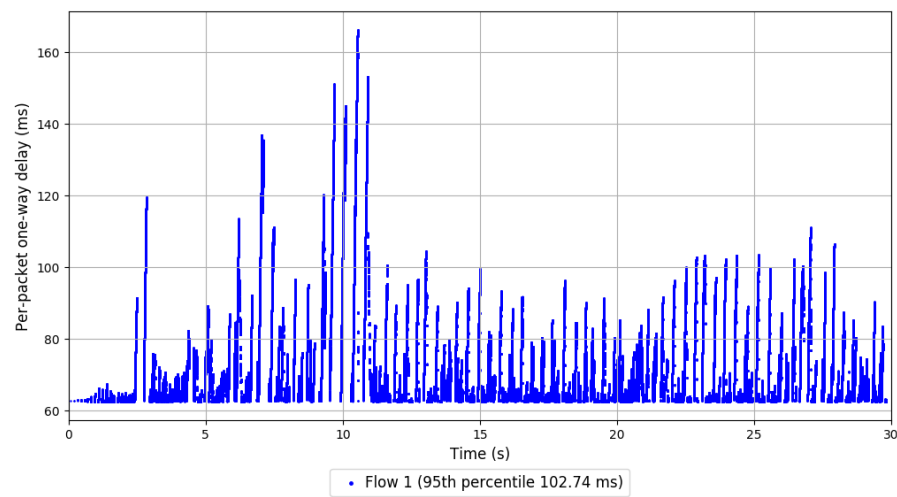
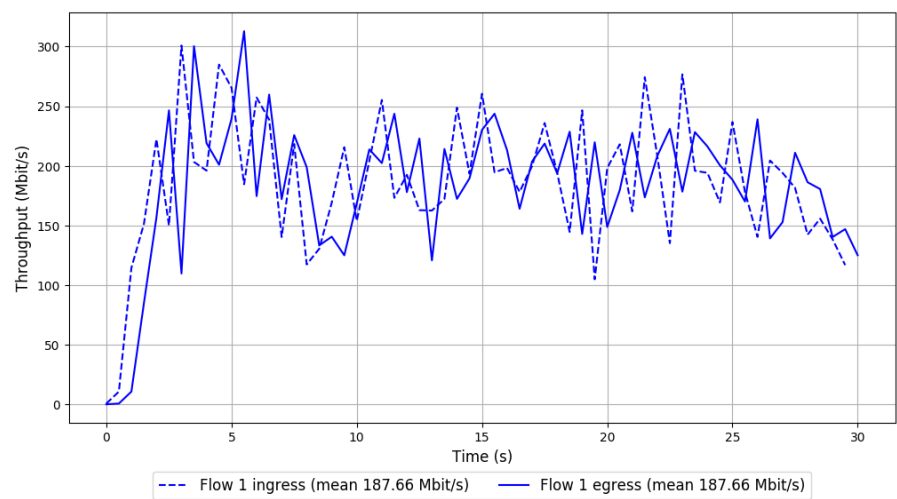


Run 1: Statistics of Verus

Start at: 2019-01-03 04:55:22  
End at: 2019-01-03 04:55:52  
Local clock offset: -0.019 ms  
Remote clock offset: -0.187 ms

# Below is generated by plot.py at 2019-01-03 09:17:45  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 187.66 Mbit/s  
95th percentile per-packet one-way delay: 102.736 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 187.66 Mbit/s  
95th percentile per-packet one-way delay: 102.736 ms  
Loss rate: 0.00%

Run 1: Report of Verus — Data Link

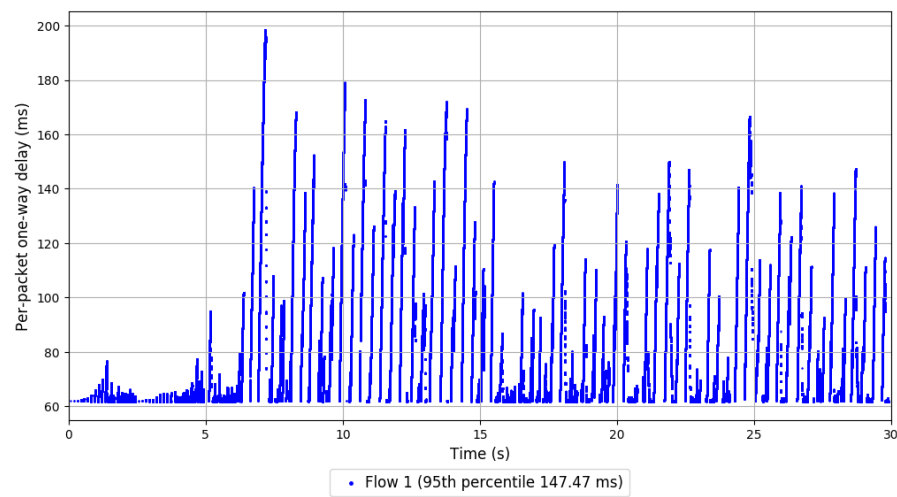
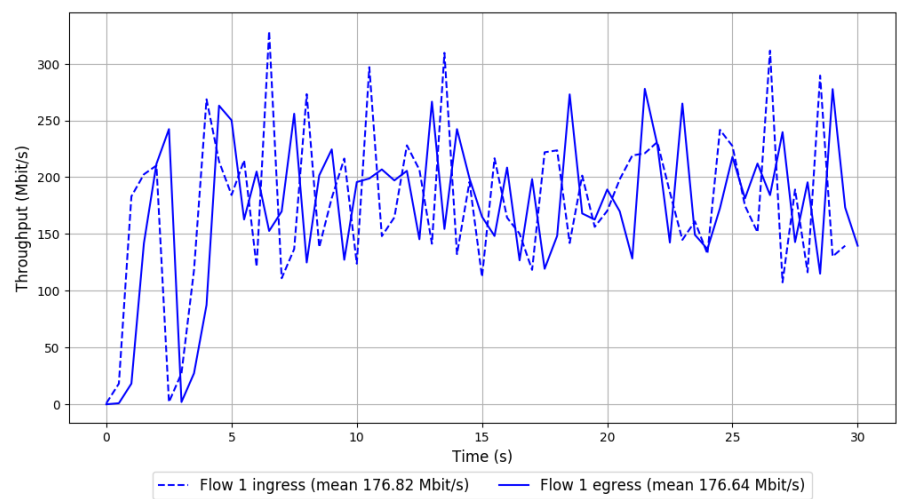


Run 2: Statistics of Verus

Start at: 2019-01-03 05:23:40  
End at: 2019-01-03 05:24:10  
Local clock offset: -0.025 ms  
Remote clock offset: -1.375 ms

# Below is generated by plot.py at 2019-01-03 09:17:45  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 176.64 Mbit/s  
95th percentile per-packet one-way delay: 147.474 ms  
Loss rate: 0.10%  
-- Flow 1:  
Average throughput: 176.64 Mbit/s  
95th percentile per-packet one-way delay: 147.474 ms  
Loss rate: 0.10%

Run 2: Report of Verus — Data Link

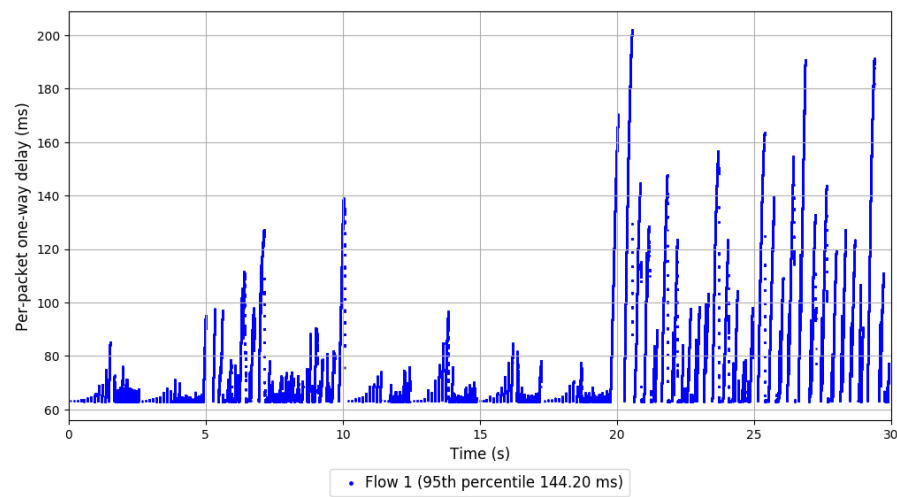
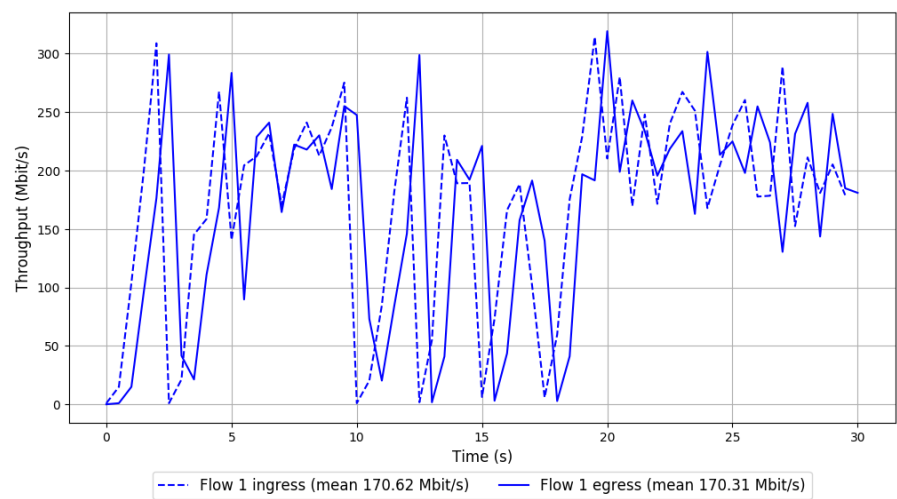


Run 3: Statistics of Verus

Start at: 2019-01-03 05:51:48  
End at: 2019-01-03 05:52:18  
Local clock offset: -0.066 ms  
Remote clock offset: -0.021 ms

# Below is generated by plot.py at 2019-01-03 09:17:45  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 170.31 Mbit/s  
95th percentile per-packet one-way delay: 144.197 ms  
Loss rate: 0.18%  
-- Flow 1:  
Average throughput: 170.31 Mbit/s  
95th percentile per-packet one-way delay: 144.197 ms  
Loss rate: 0.18%

Run 3: Report of Verus — Data Link

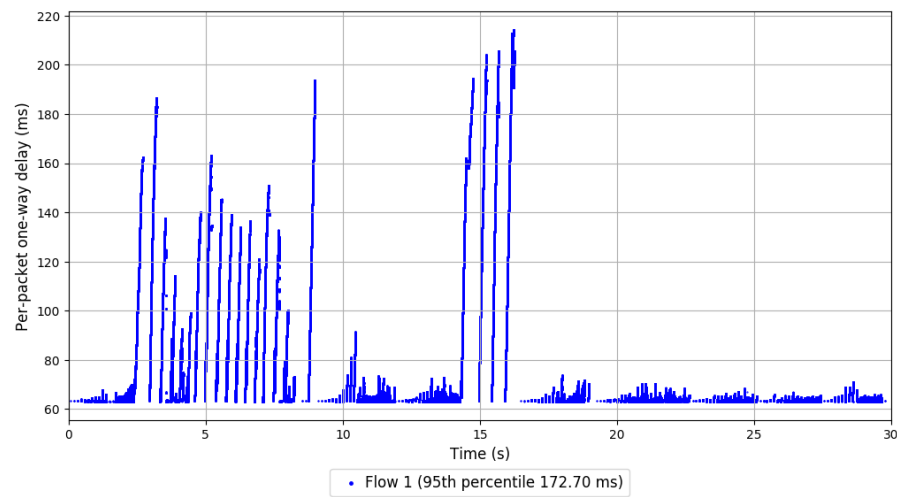
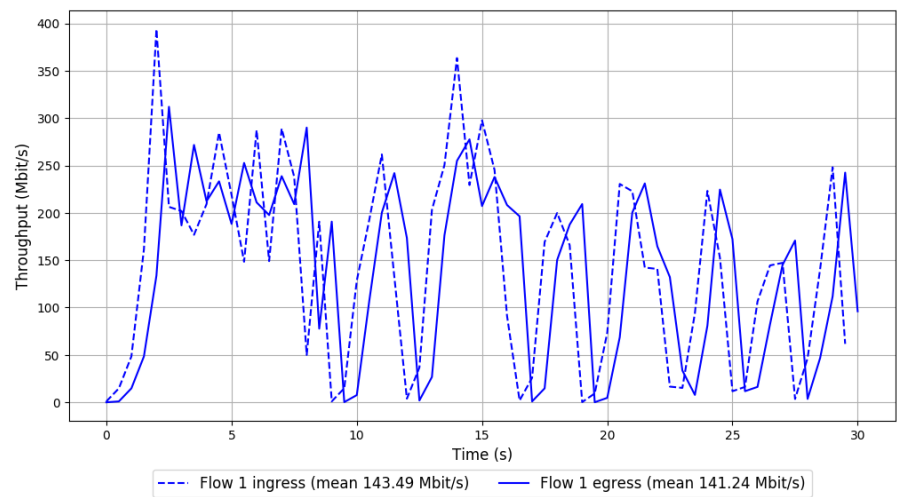


Run 4: Statistics of Verus

Start at: 2019-01-03 06:20:10  
End at: 2019-01-03 06:20:40  
Local clock offset: -0.018 ms  
Remote clock offset: -0.094 ms

# Below is generated by plot.py at 2019-01-03 09:17:45  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 141.24 Mbit/s  
95th percentile per-packet one-way delay: 172.703 ms  
Loss rate: 1.57%  
-- Flow 1:  
Average throughput: 141.24 Mbit/s  
95th percentile per-packet one-way delay: 172.703 ms  
Loss rate: 1.57%

Run 4: Report of Verus — Data Link





Run 5: Statistics of Verus

Start at: 2019-01-03 06:48:22

End at: 2019-01-03 06:48:52

Local clock offset: 0.012 ms

Remote clock offset: 1.24 ms

# Below is generated by plot.py at 2019-01-03 09:18:05

# Datalink statistics

-- Total of 1 flow:

Average throughput: 157.80 Mbit/s

95th percentile per-packet one-way delay: 159.261 ms

Loss rate: 1.08%

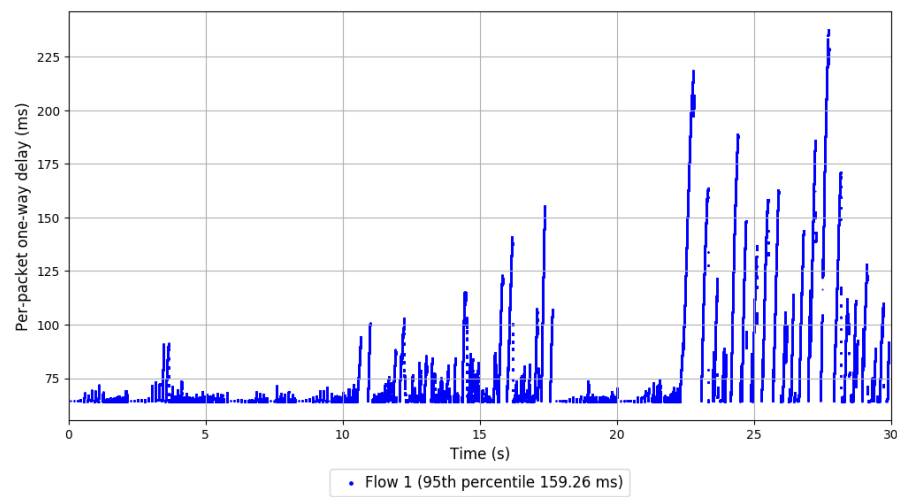
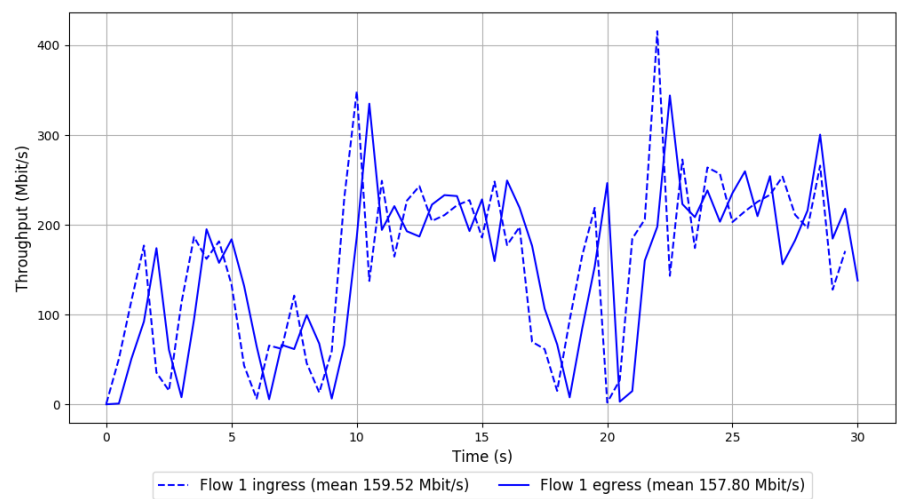
-- Flow 1:

Average throughput: 157.80 Mbit/s

95th percentile per-packet one-way delay: 159.261 ms

Loss rate: 1.08%

Run 5: Report of Verus — Data Link



Run 1: Statistics of PCC-Vivace

Start at: 2019-01-03 04:36:07

End at: 2019-01-03 04:36:37

Local clock offset: -0.1 ms

Remote clock offset: 0.135 ms

# Below is generated by plot.py at 2019-01-03 09:20:39

# Datalink statistics

-- Total of 1 flow:

Average throughput: 401.63 Mbit/s

95th percentile per-packet one-way delay: 64.161 ms

Loss rate: 0.00%

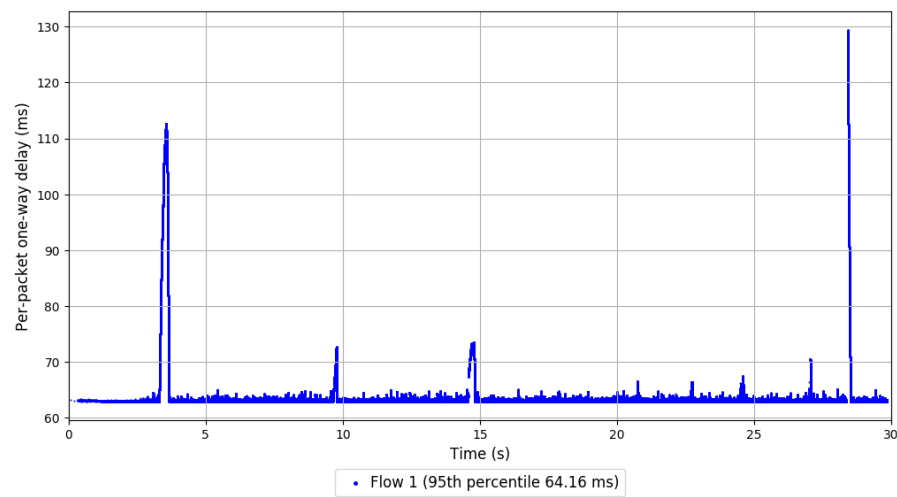
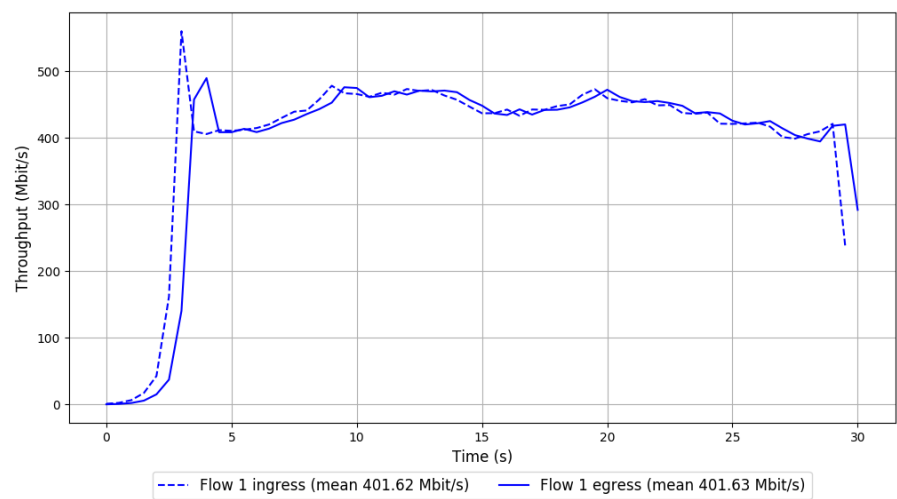
-- Flow 1:

Average throughput: 401.63 Mbit/s

95th percentile per-packet one-way delay: 64.161 ms

Loss rate: 0.00%

Run 1: Report of PCC-Vivace — Data Link



Run 2: Statistics of PCC-Vivace

Start at: 2019-01-03 05:03:59

End at: 2019-01-03 05:04:29

Local clock offset: -0.082 ms

Remote clock offset: 1.35 ms

# Below is generated by plot.py at 2019-01-03 09:20:44

# Datalink statistics

-- Total of 1 flow:

Average throughput: 406.78 Mbit/s

95th percentile per-packet one-way delay: 65.120 ms

Loss rate: 0.00%

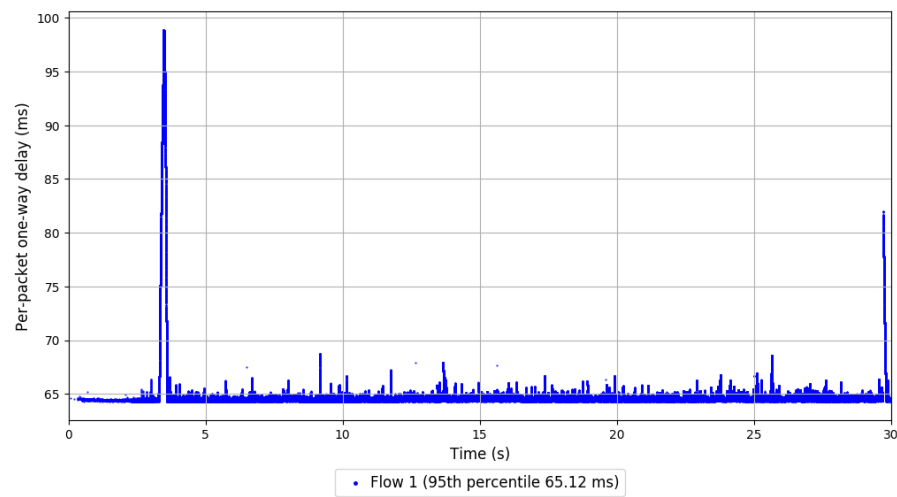
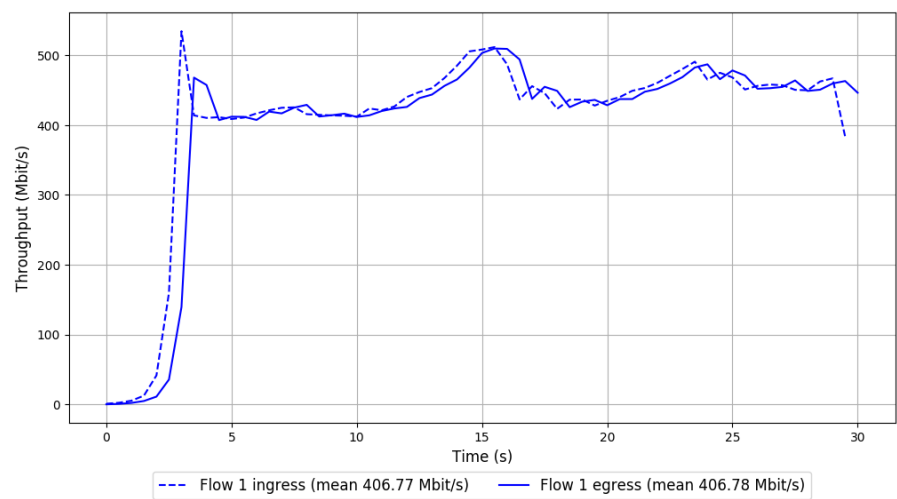
-- Flow 1:

Average throughput: 406.78 Mbit/s

95th percentile per-packet one-way delay: 65.120 ms

Loss rate: 0.00%

Run 2: Report of PCC-Vivace — Data Link



Run 3: Statistics of PCC-Vivace

Start at: 2019-01-03 05:32:14

End at: 2019-01-03 05:32:44

Local clock offset: -0.059 ms

Remote clock offset: 0.161 ms

# Below is generated by plot.py at 2019-01-03 09:20:44

# Datalink statistics

-- Total of 1 flow:

Average throughput: 320.05 Mbit/s

95th percentile per-packet one-way delay: 64.361 ms

Loss rate: 0.00%

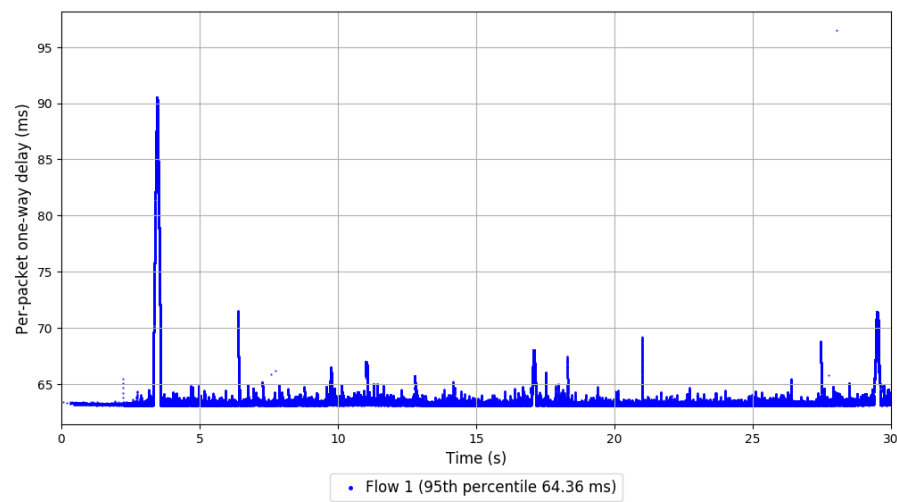
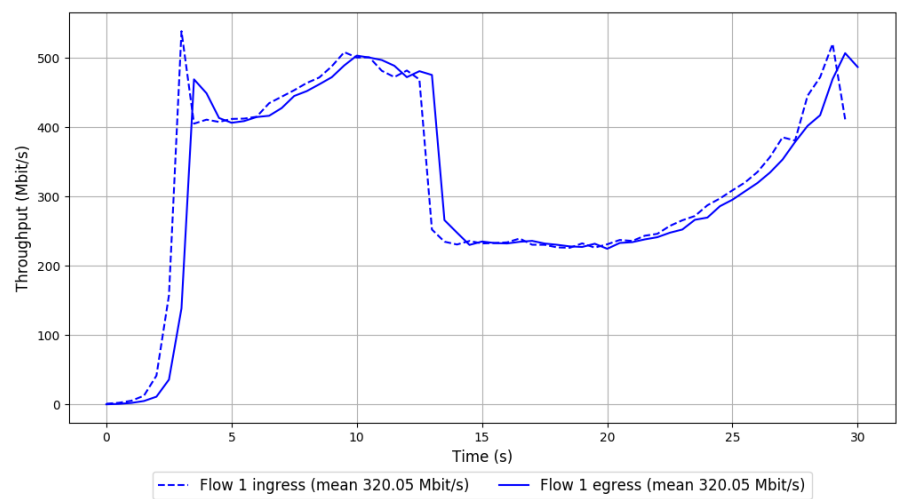
-- Flow 1:

Average throughput: 320.05 Mbit/s

95th percentile per-packet one-way delay: 64.361 ms

Loss rate: 0.00%

Run 3: Report of PCC-Vivace — Data Link



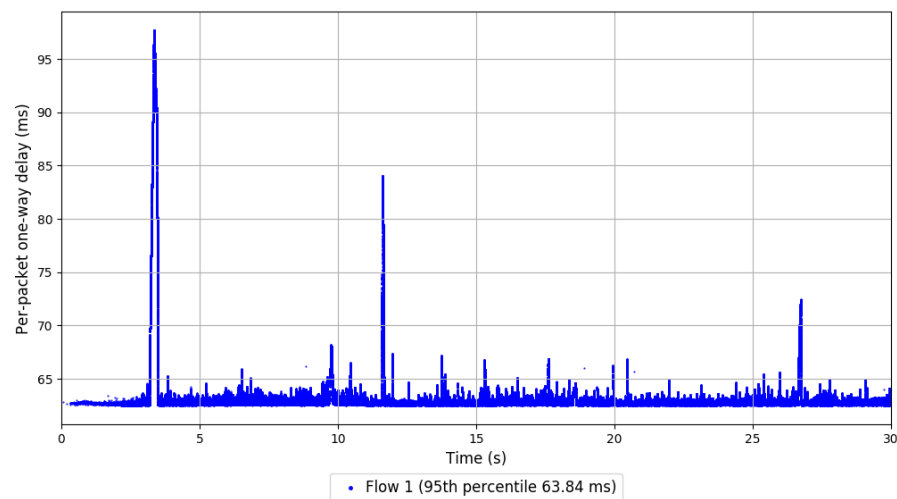
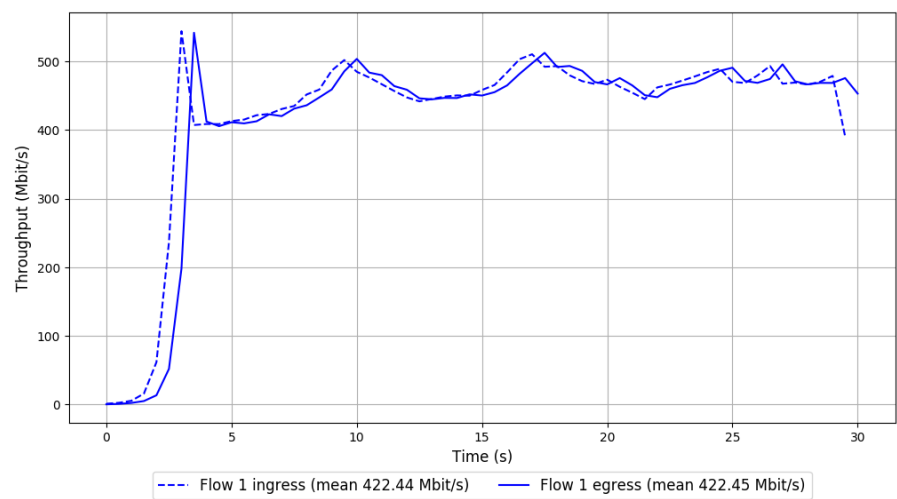


Run 4: Statistics of PCC-Vivace

Start at: 2019-01-03 06:00:22  
End at: 2019-01-03 06:00:52  
Local clock offset: -0.069 ms  
Remote clock offset: -0.166 ms

# Below is generated by plot.py at 2019-01-03 09:20:52  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 422.45 Mbit/s  
95th percentile per-packet one-way delay: 63.840 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 422.45 Mbit/s  
95th percentile per-packet one-way delay: 63.840 ms  
Loss rate: 0.00%

Run 4: Report of PCC-Vivace — Data Link



Run 5: Statistics of PCC-Vivace

Start at: 2019-01-03 06:28:44

End at: 2019-01-03 06:29:14

Local clock offset: -0.036 ms

Remote clock offset: -1.24 ms

# Below is generated by plot.py at 2019-01-03 09:20:52

# Datalink statistics

-- Total of 1 flow:

Average throughput: 408.57 Mbit/s

95th percentile per-packet one-way delay: 62.397 ms

Loss rate: 0.00%

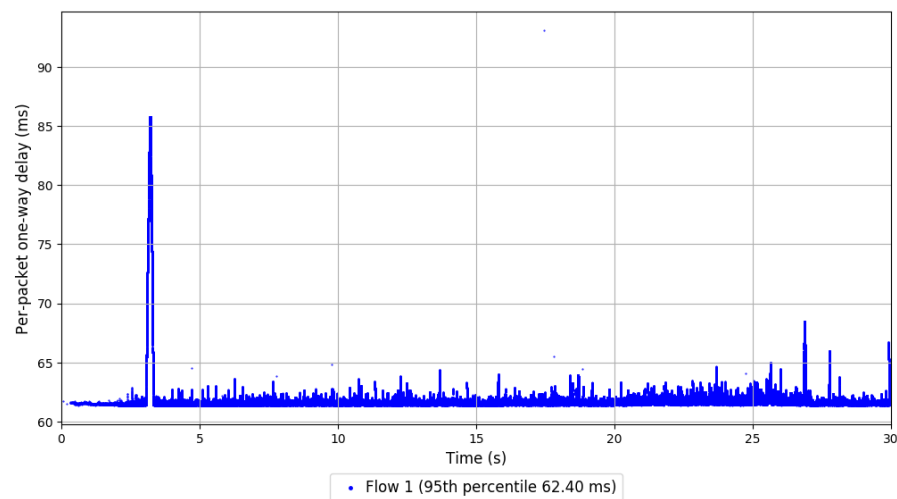
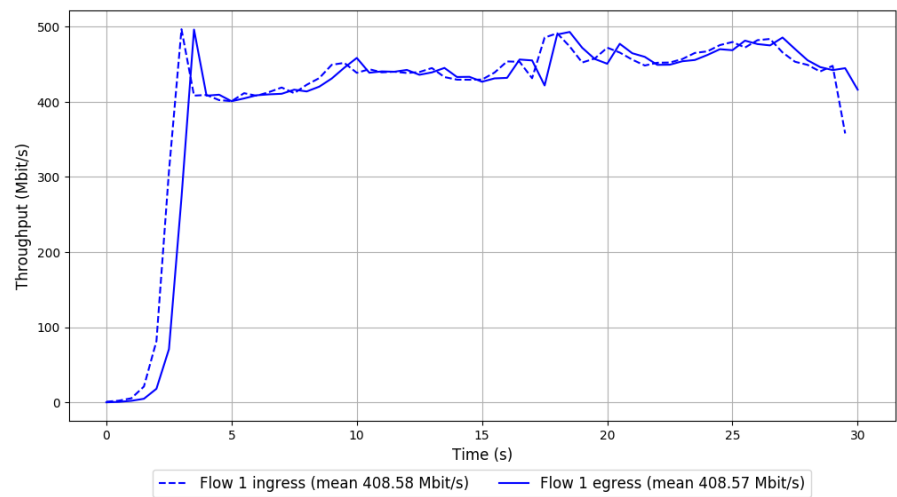
-- Flow 1:

Average throughput: 408.57 Mbit/s

95th percentile per-packet one-way delay: 62.397 ms

Loss rate: 0.00%

Run 5: Report of PCC-Vivace — Data Link



Run 1: Statistics of WebRTC media

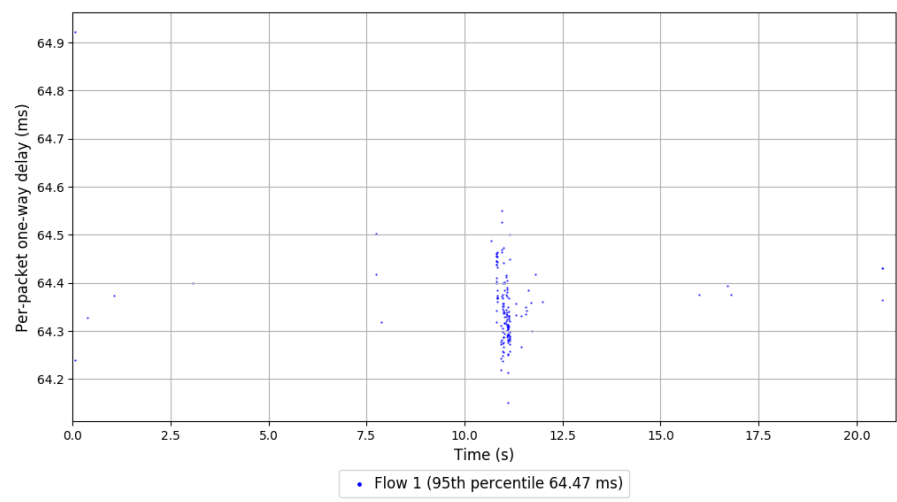
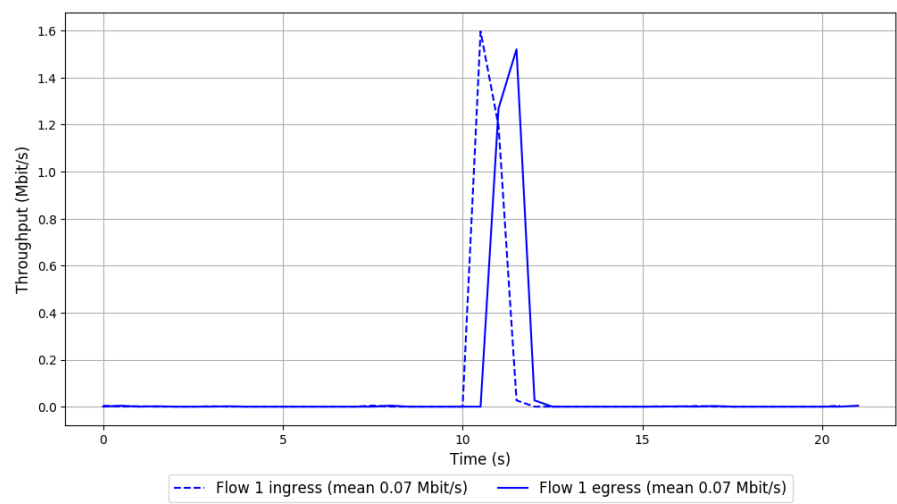
Start at: 2019-01-03 04:59:36

End at: 2019-01-03 05:00:06

Local clock offset: -0.057 ms

Remote clock offset: 1.214 ms

Run 1: Report of WebRTC media — Data Link



Run 2: Statistics of WebRTC media

Start at: 2019-01-03 05:27:49

End at: 2019-01-03 05:28:19

Local clock offset: -0.056 ms

Remote clock offset: 0.117 ms

# Below is generated by plot.py at 2019-01-03 09:20:52

# Datalink statistics

-- Total of 1 flow:

Average throughput: 0.05 Mbit/s

95th percentile per-packet one-way delay: 63.210 ms

Loss rate: 0.00%

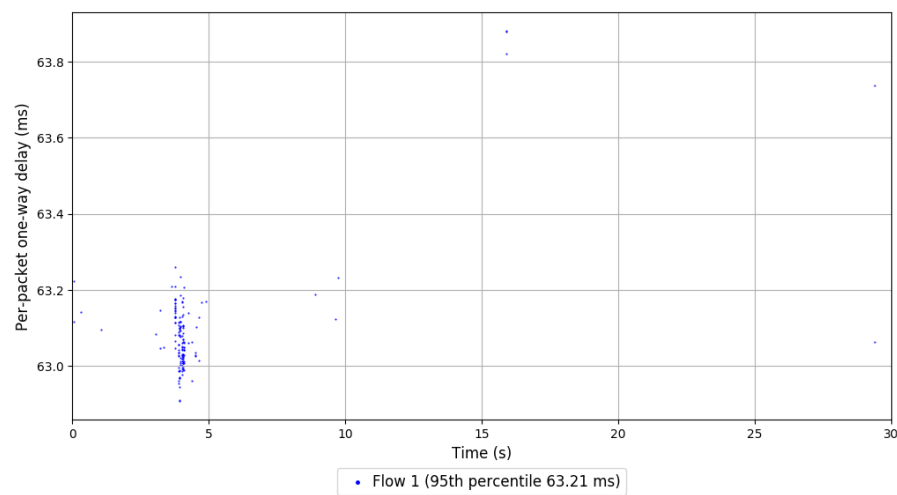
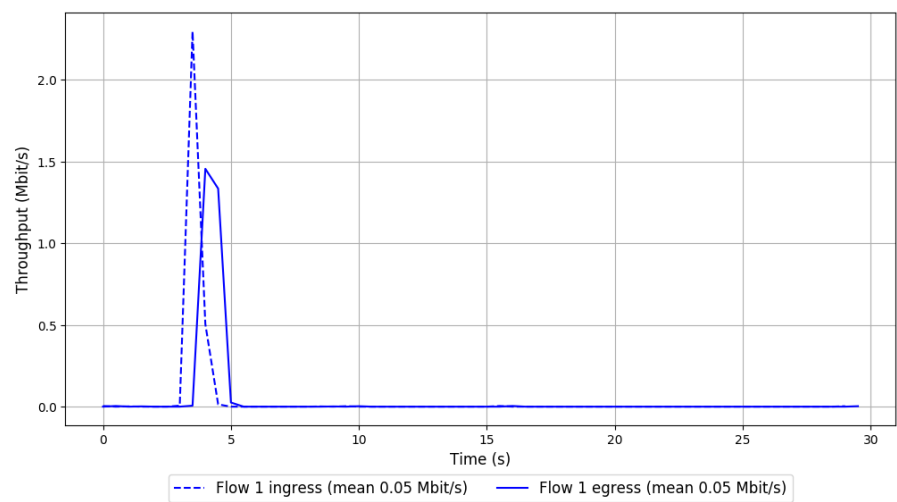
-- Flow 1:

Average throughput: 0.05 Mbit/s

95th percentile per-packet one-way delay: 63.210 ms

Loss rate: 0.00%

Run 2: Report of WebRTC media — Data Link



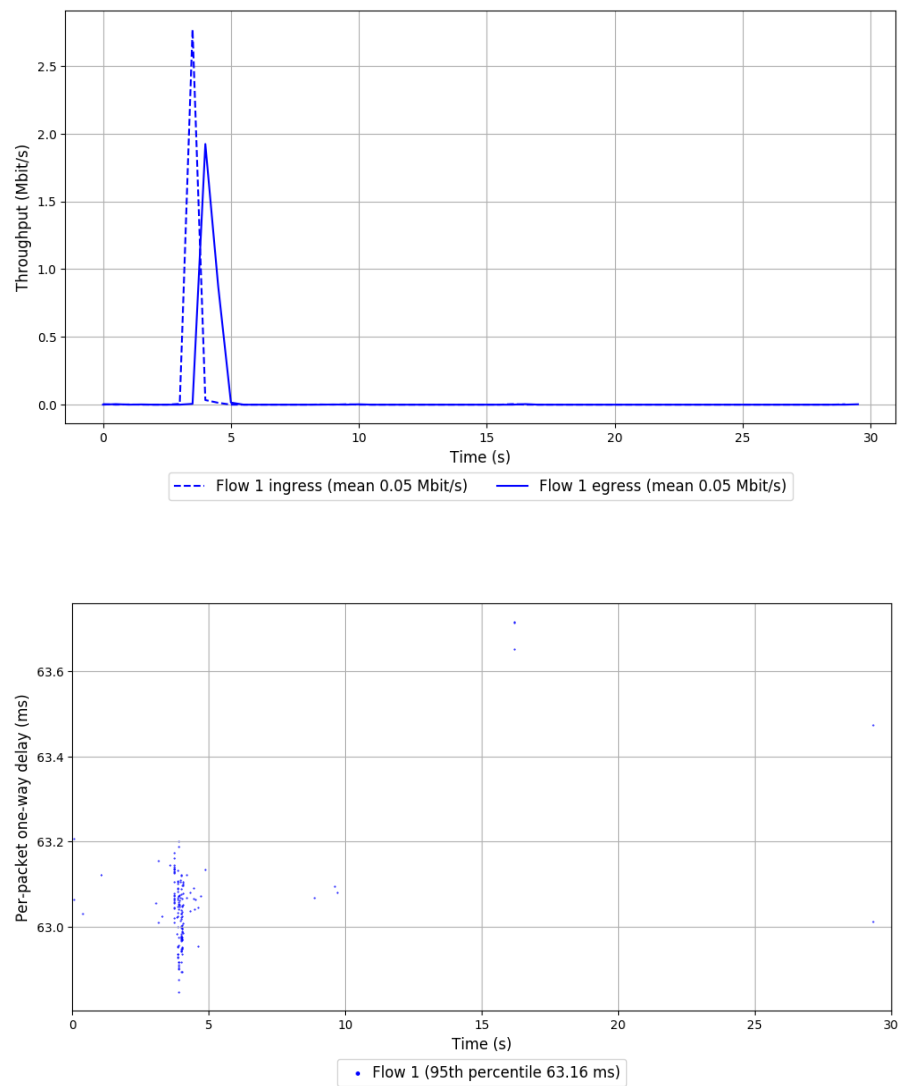


Run 3: Statistics of WebRTC media

Start at: 2019-01-03 05:55:59  
End at: 2019-01-03 05:56:29  
Local clock offset: -0.067 ms  
Remote clock offset: -0.054 ms

# Below is generated by plot.py at 2019-01-03 09:20:52  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.05 Mbit/s  
95th percentile per-packet one-way delay: 63.162 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 0.05 Mbit/s  
95th percentile per-packet one-way delay: 63.162 ms  
Loss rate: 0.00%

Run 3: Report of WebRTC media — Data Link

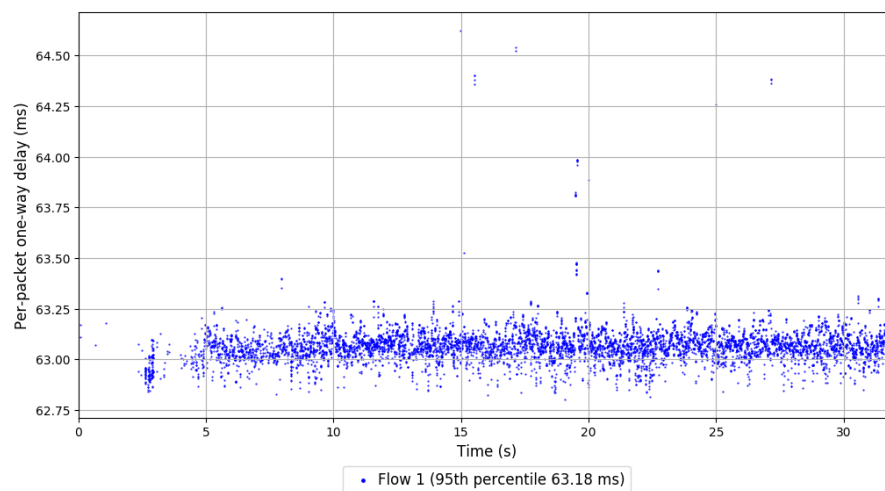
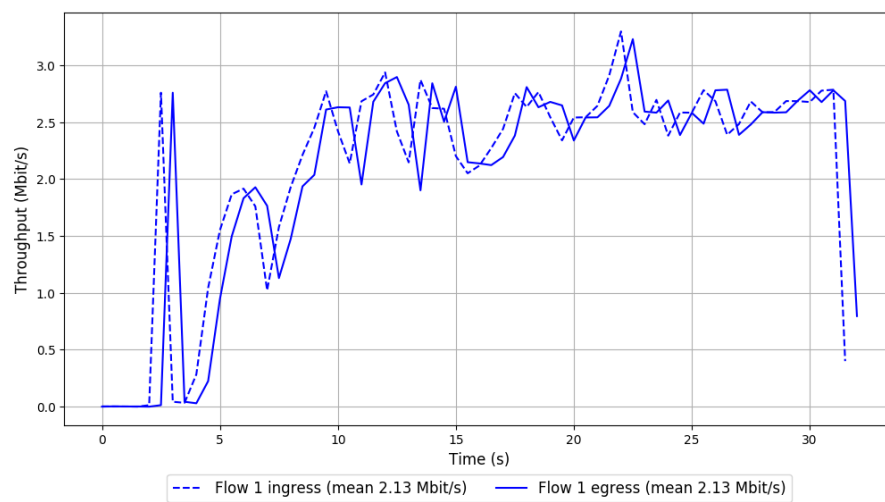


Run 4: Statistics of WebRTC media

Start at: 2019-01-03 06:24:21  
End at: 2019-01-03 06:24:51  
Local clock offset: -0.034 ms  
Remote clock offset: -0.213 ms

# Below is generated by plot.py at 2019-01-03 09:20:52  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 2.13 Mbit/s  
95th percentile per-packet one-way delay: 63.178 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 2.13 Mbit/s  
95th percentile per-packet one-way delay: 63.178 ms  
Loss rate: 0.00%

#### Run 4: Report of WebRTC media — Data Link



Run 5: Statistics of WebRTC media

Start at: 2019-01-03 06:52:36

End at: 2019-01-03 06:53:06

Local clock offset: 0.044 ms

Remote clock offset: 0.771 ms

# Below is generated by plot.py at 2019-01-03 09:20:52

# Datalink statistics

-- Total of 1 flow:

Average throughput: 2.26 Mbit/s

95th percentile per-packet one-way delay: 63.807 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 2.26 Mbit/s

95th percentile per-packet one-way delay: 63.807 ms

Loss rate: 0.00%

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

