

## Pantheon Report

Generated at 2019-01-03 07:10:01 (UTC).

Data path: China on `eno1` (*remote*) → AWS Korea on `ens5` (*local*).

Repeated the test of 19 congestion control schemes 5 times.

Each test lasted for 30 seconds running 1 flow.

NTP offsets were measured against `ntp.nict.jp` and have been applied to correct the timestamps in logs.

### System info:

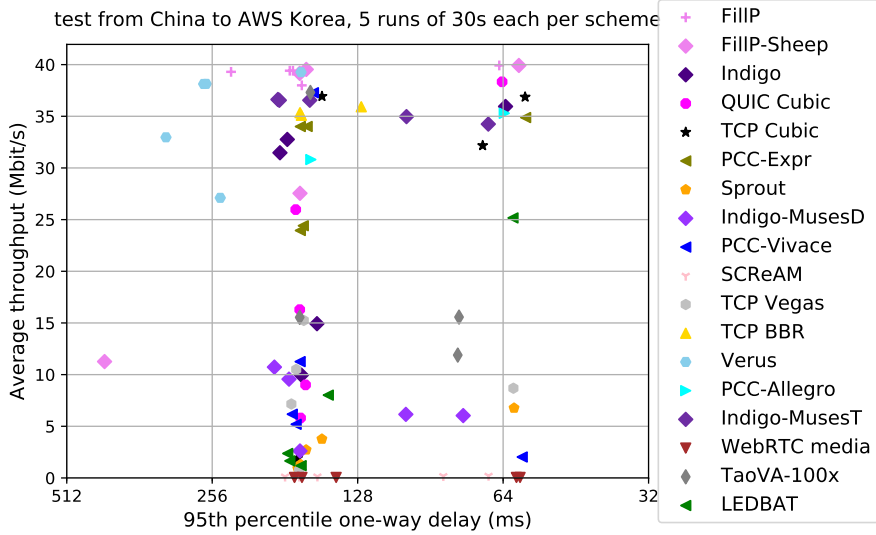
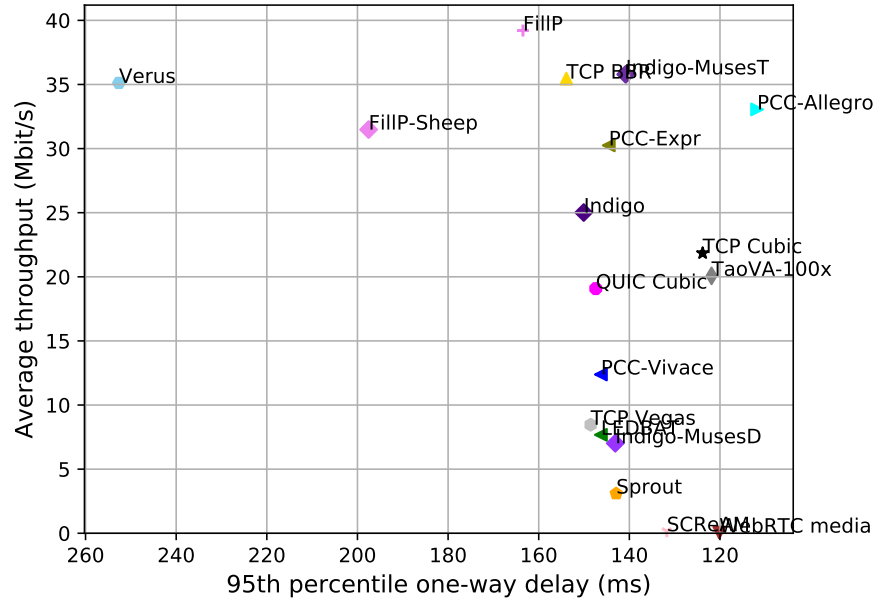
```
Linux 4.15.0-1029-aws
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912
```

### Git summary:

```
branch: muses @ 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 China to AWS Korea, 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	3	35.46	153.90	13.02
Copa	0	N/A	N/A	N/A
TCP Cubic	5	21.85	123.83	2.02
FillP	5	39.21	163.48	18.60
FillP-Sheep	5	31.48	197.54	21.81
Indigo	5	25.01	150.07	26.78
Indigo-MusesD	5	7.02	143.10	0.76
Indigo-MusesT	5	35.79	140.81	8.28
LEDBAT	5	7.68	146.29	1.31
PCC-Allegro	2	33.05	111.81	2.09
PCC-Expr	5	30.25	144.55	9.15
QUIC Cubic	5	19.08	147.41	1.13
SCReAM	5	0.16	131.74	0.48
Sprout	5	3.10	142.90	1.16
TaoVA-100x	4	20.07	121.86	10.03
TCP Vegas	5	8.46	148.54	2.12
Verus	5	35.12	252.64	31.13
PCC-Vivace	5	12.39	146.28	3.36
WebRTC media	5	0.05	120.16	0.02



Run 1: Statistics of TCP BBR

Start at: 2019-01-03 05:03:34

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

Local clock offset: -1.176 ms

Remote clock offset: 23.389 ms

# Below is generated by plot.py at 2019-01-03 07:06:58

# Datalink statistics

-- Total of 1 flow:

Average throughput: 35.10 Mbit/s

95th percentile per-packet one-way delay: 167.414 ms

Loss rate: 10.63%

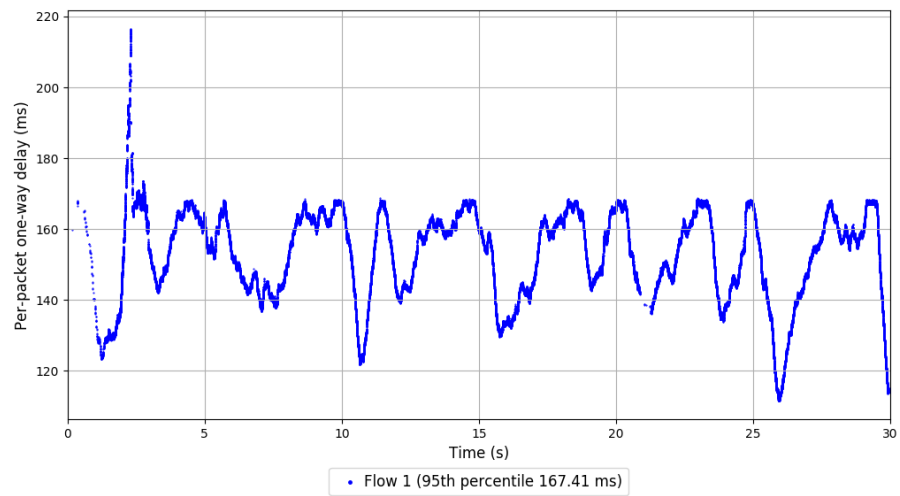
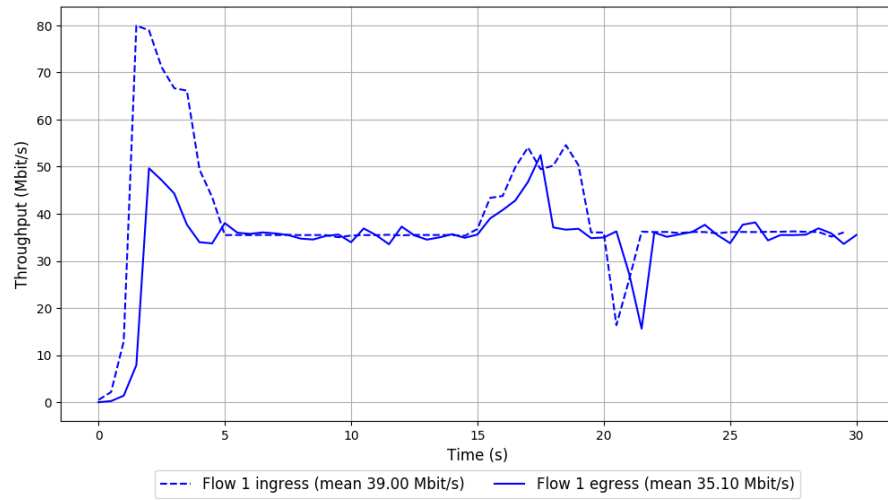
-- Flow 1:

Average throughput: 35.10 Mbit/s

95th percentile per-packet one-way delay: 167.414 ms

Loss rate: 10.63%

# Run 1: Report of TCP BBR — Data Link



Run 2: Statistics of TCP BBR

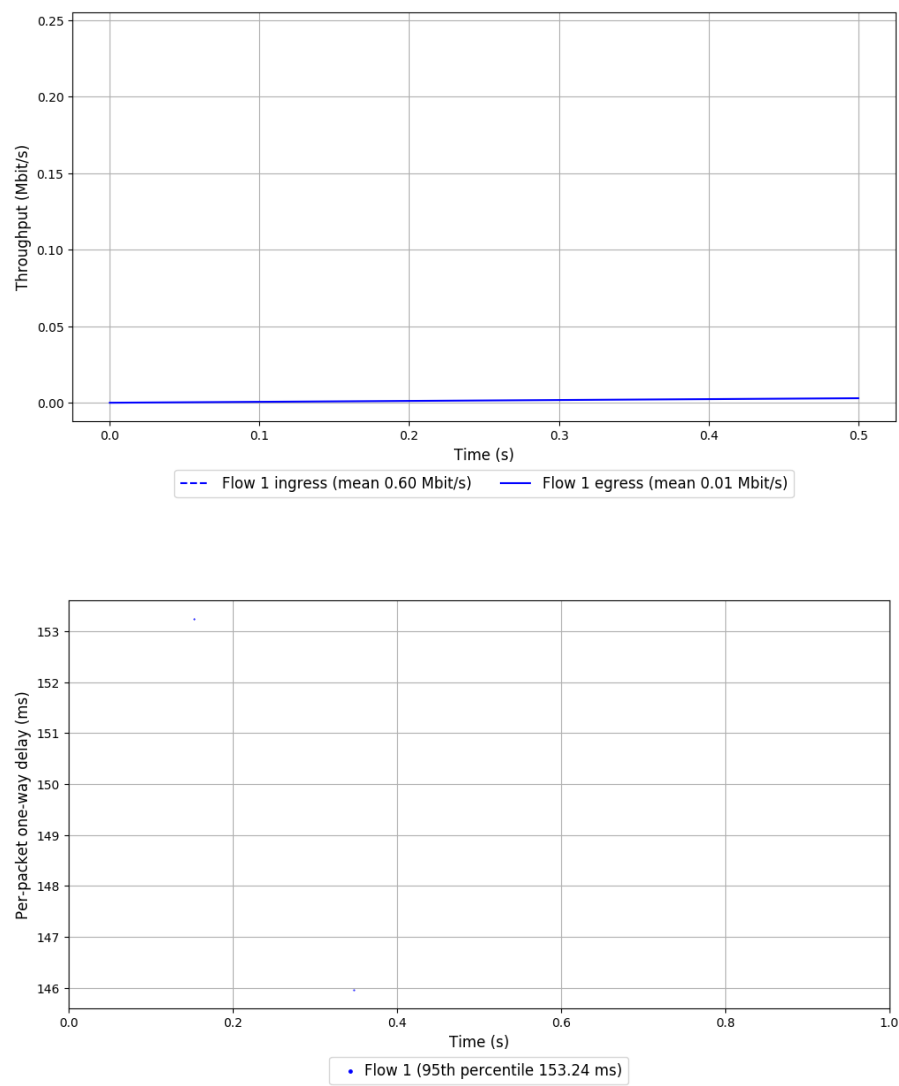
Start at: 2019-01-03 05:26:52

End at: 2019-01-03 05:27:22

Local clock offset: 0.626 ms

Remote clock offset: 26.431 ms

Run 2: Report of TCP BBR — Data Link

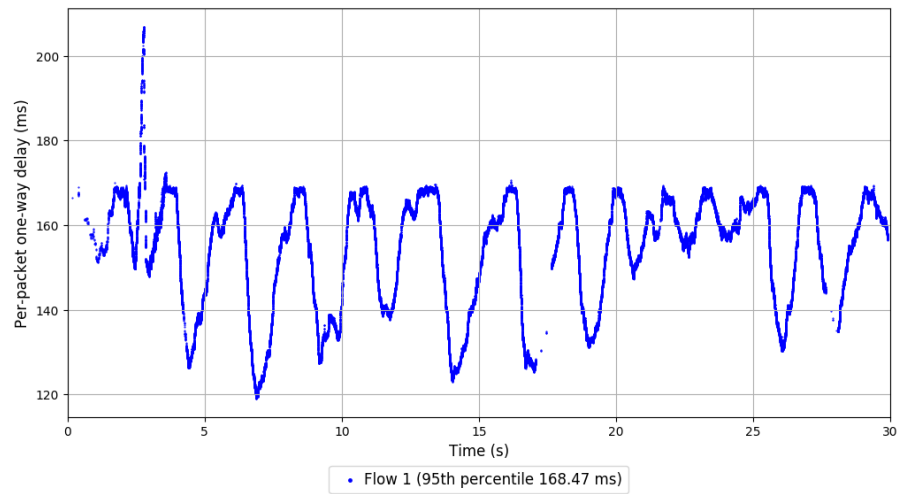
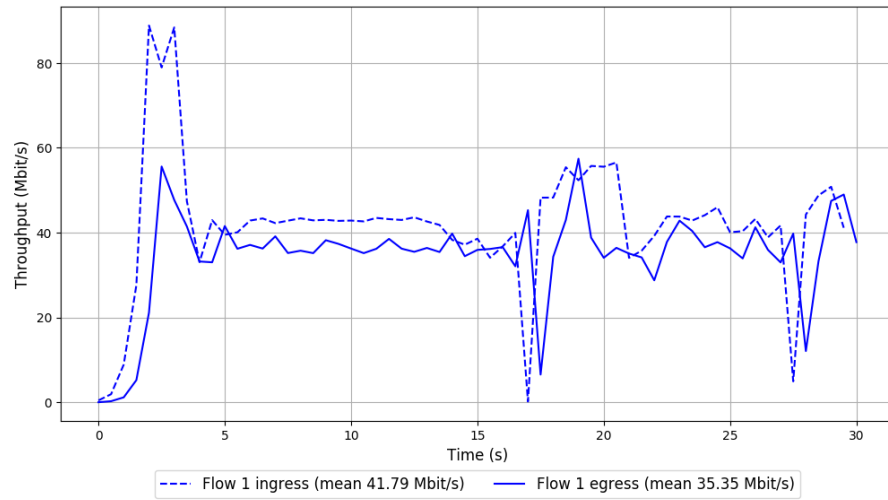


Run 3: Statistics of TCP BBR

Start at: 2019-01-03 05:51:09  
End at: 2019-01-03 05:51:39  
Local clock offset: 1.074 ms  
Remote clock offset: 44.359 ms

# Below is generated by plot.py at 2019-01-03 07:06:59  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 35.35 Mbit/s  
95th percentile per-packet one-way delay: 168.472 ms  
Loss rate: 16.02%  
-- Flow 1:  
Average throughput: 35.35 Mbit/s  
95th percentile per-packet one-way delay: 168.472 ms  
Loss rate: 16.02%

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

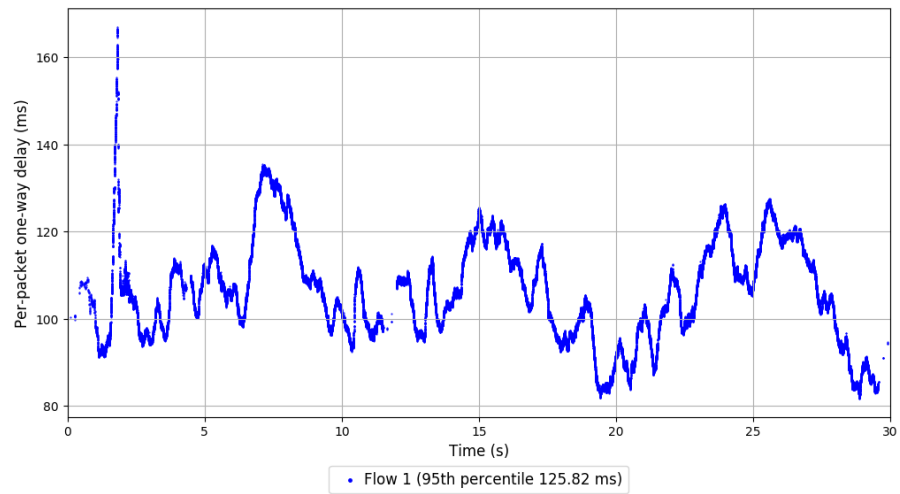
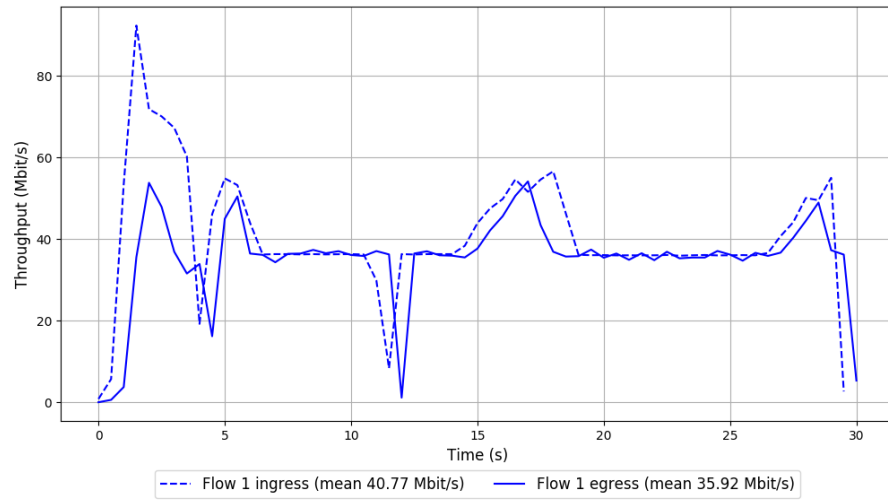


Run 4: Statistics of TCP BBR

Start at: 2019-01-03 06:36:16  
End at: 2019-01-03 06:36:46  
Local clock offset: 2.411 ms  
Remote clock offset: 57.291 ms

# Below is generated by plot.py at 2019-01-03 07:06:59  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 35.92 Mbit/s  
95th percentile per-packet one-way delay: 125.823 ms  
Loss rate: 12.42%  
-- Flow 1:  
Average throughput: 35.92 Mbit/s  
95th percentile per-packet one-way delay: 125.823 ms  
Loss rate: 12.42%

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





Run 5: Statistics of TCP BBR

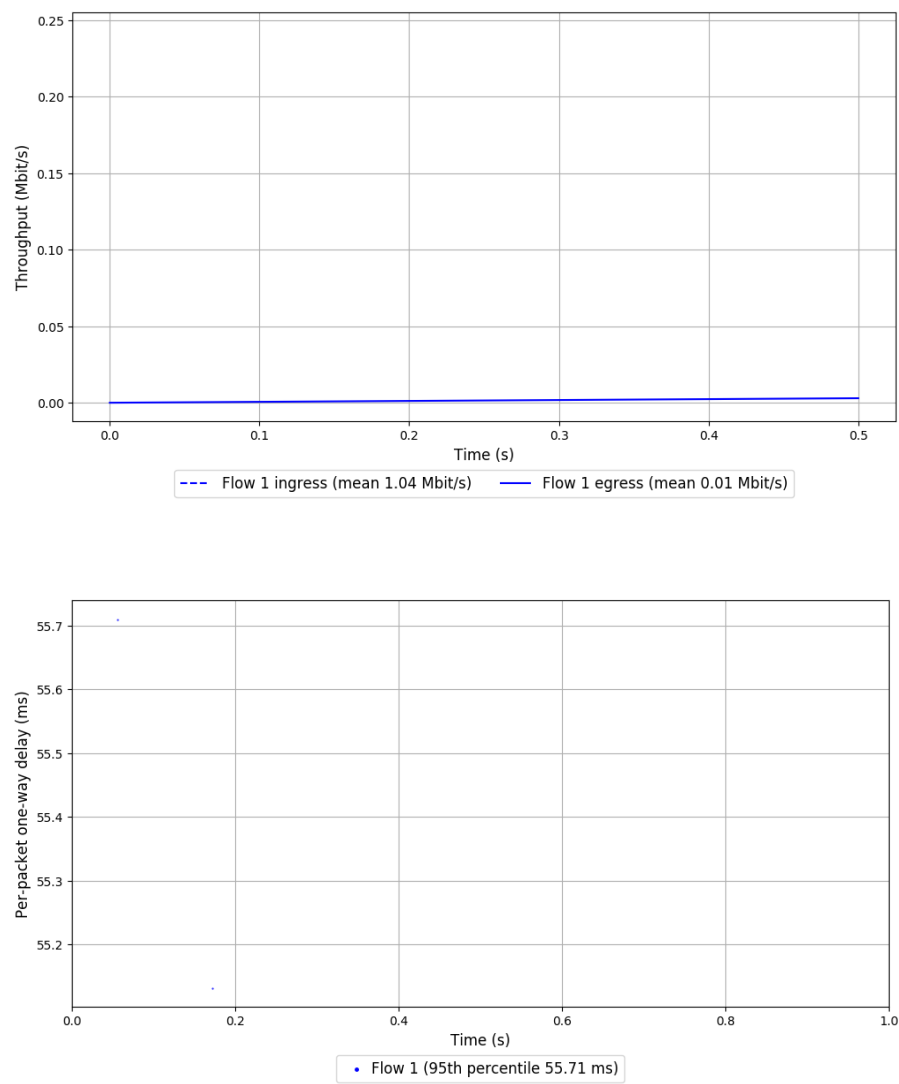
Start at: 2019-01-03 06:58:30

End at: 2019-01-03 06:59:00

Local clock offset: 2.835 ms

Remote clock offset: 20.871 ms

Run 5: Report of TCP BBR — Data Link



Run 1: Statistics of Copa

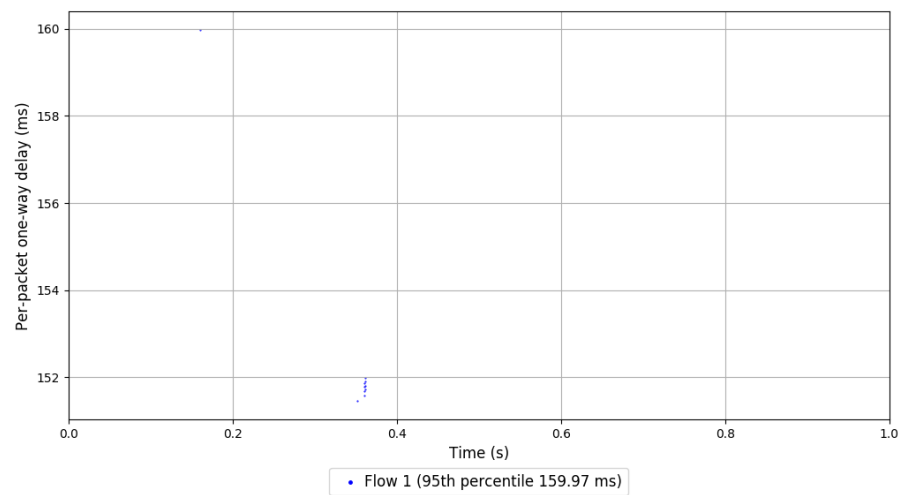
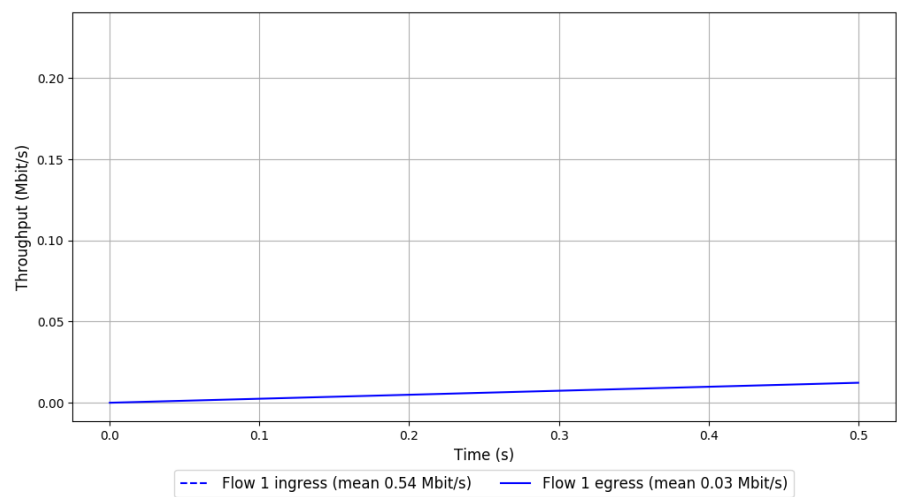
Start at: 2019-01-03 04:50:41

End at: 2019-01-03 04:51:11

Local clock offset: -3.636 ms

Remote clock offset: 19.456 ms

Run 1: Report of Copa — Data Link



Run 2: Statistics of Copa

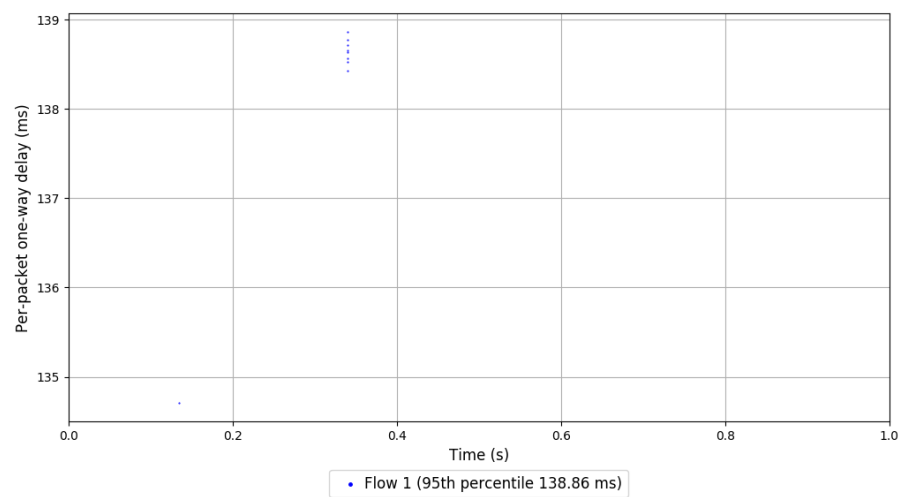
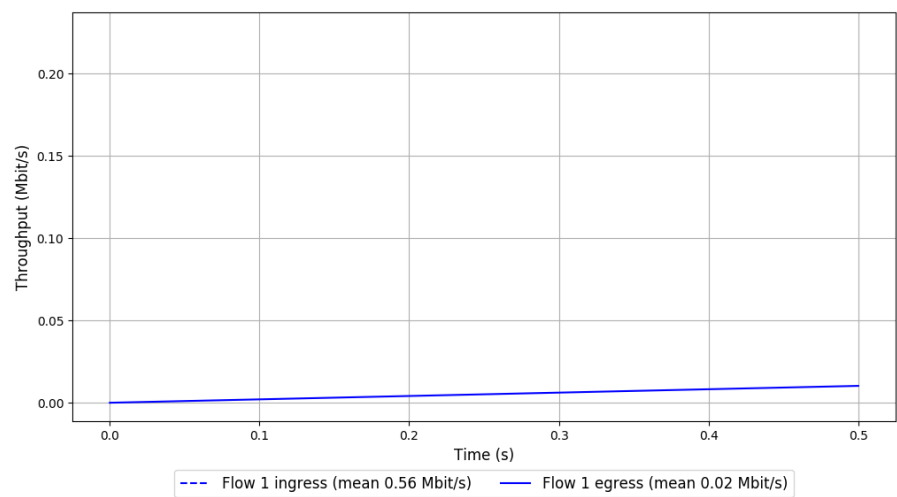
Start at: 2019-01-03 05:16:03

End at: 2019-01-03 05:16:33

Local clock offset: 0.568 ms

Remote clock offset: 25.713 ms

Run 2: Report of Copa — Data Link



Run 3: Statistics of Copa

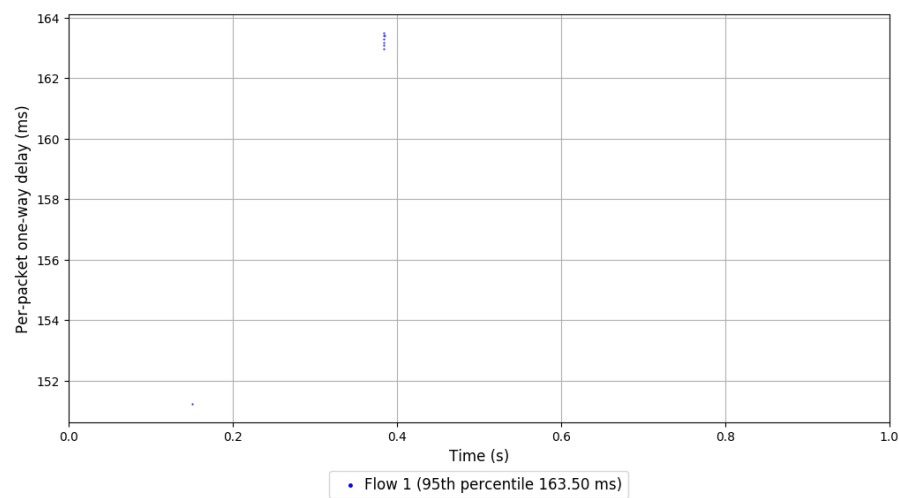
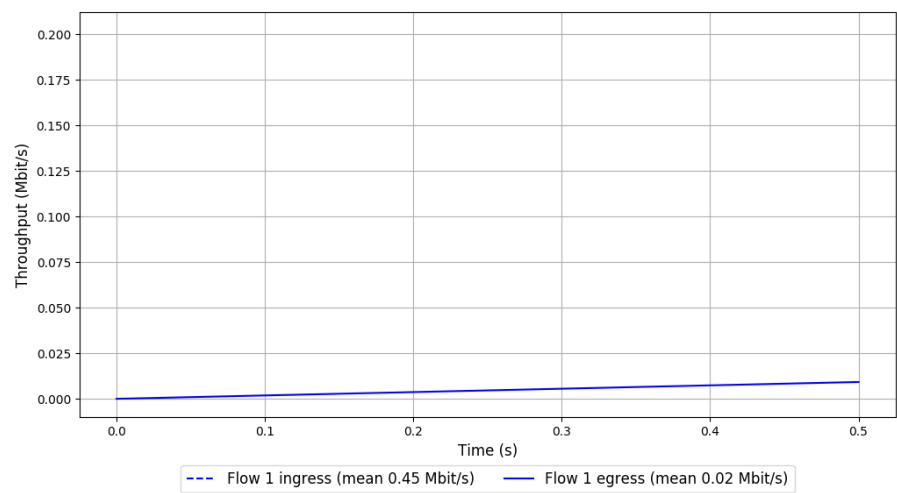
Start at: 2019-01-03 05:39:17

End at: 2019-01-03 05:39:47

Local clock offset: 0.683 ms

Remote clock offset: 37.571 ms

Run 3: Report of Copa — Data Link





Run 4: Statistics of Copa

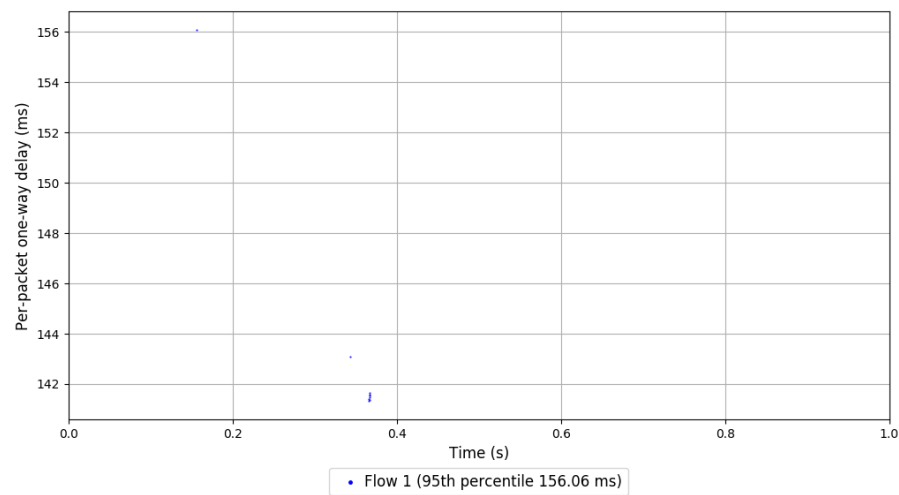
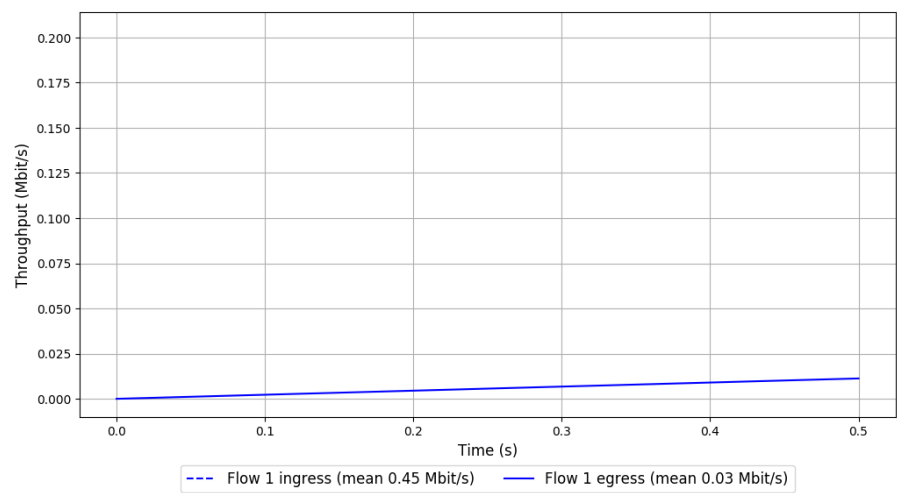
Start at: 2019-01-03 06:25:02

End at: 2019-01-03 06:25:32

Local clock offset: 0.586 ms

Remote clock offset: 55.3 ms

Run 4: Report of Copa — Data Link



Run 5: Statistics of Copa

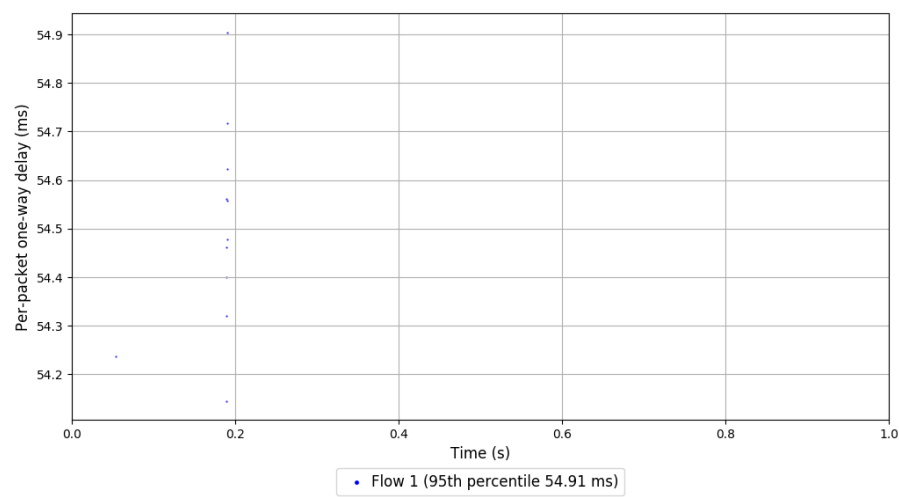
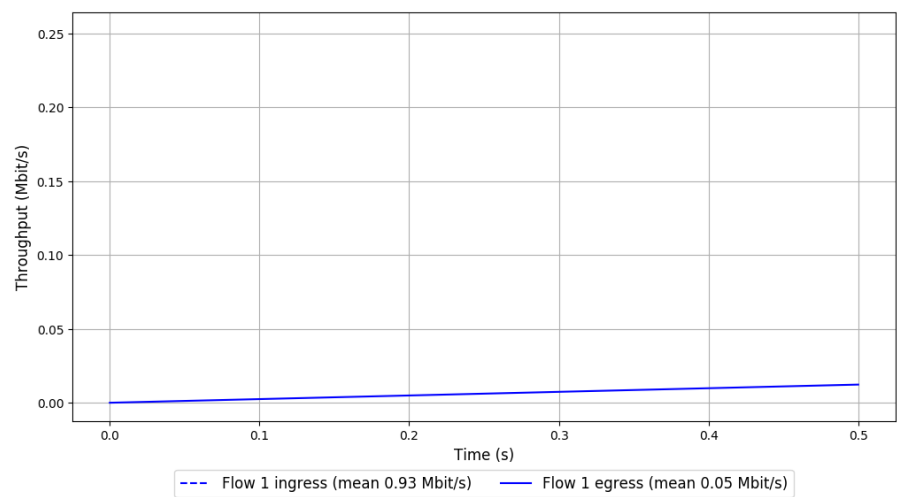
Start at: 2019-01-03 06:48:00

End at: 2019-01-03 06:48:30

Local clock offset: 3.289 ms

Remote clock offset: 36.13 ms

Run 5: Report of Copa — Data Link

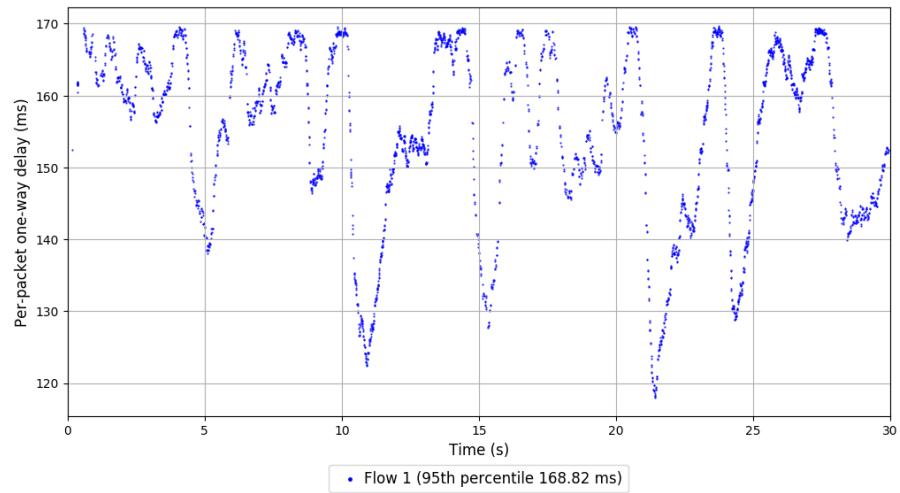
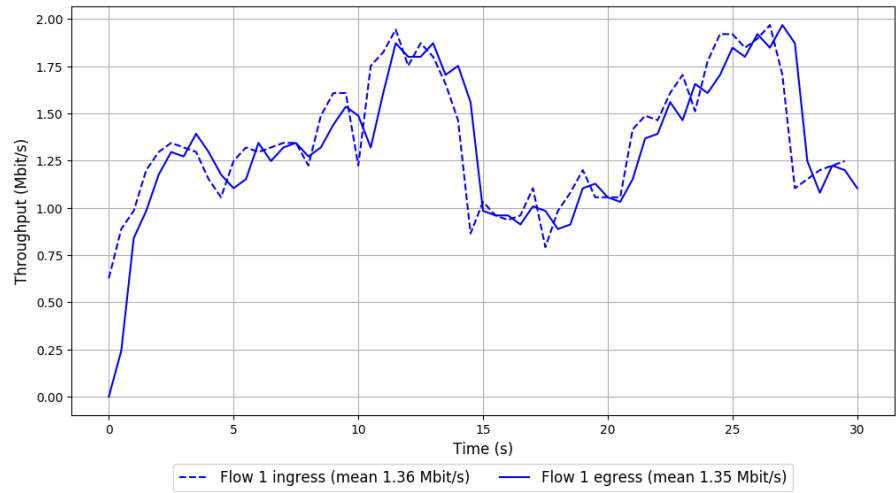


Run 1: Statistics of TCP Cubic

Start at: 2019-01-03 05:07:41  
End at: 2019-01-03 05:08:11  
Local clock offset: -0.364 ms  
Remote clock offset: 24.139 ms

# Below is generated by plot.py at 2019-01-03 07:06:59  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 1.35 Mbit/s  
95th percentile per-packet one-way delay: 168.819 ms  
Loss rate: 1.24%  
-- Flow 1:  
Average throughput: 1.35 Mbit/s  
95th percentile per-packet one-way delay: 168.819 ms  
Loss rate: 1.24%

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

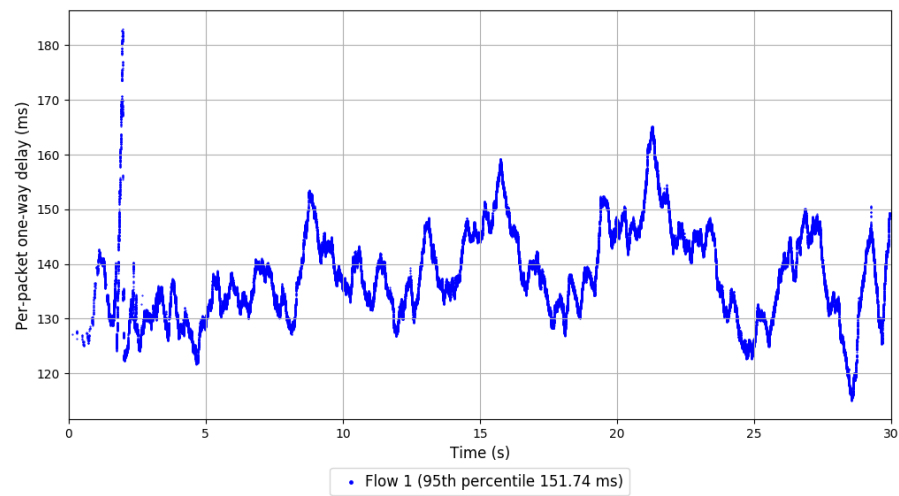
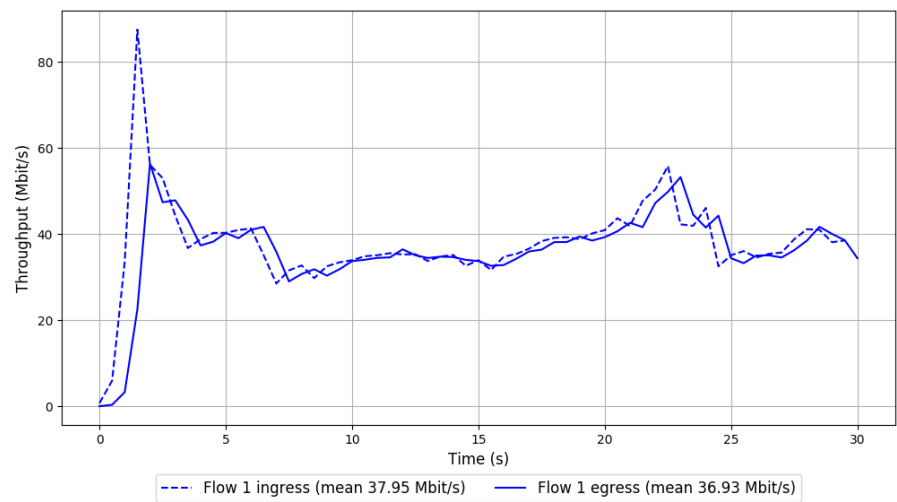


Run 2: Statistics of TCP Cubic

Start at: 2019-01-03 05:30:46  
End at: 2019-01-03 05:31:16  
Local clock offset: 0.904 ms  
Remote clock offset: 27.079 ms

# Below is generated by plot.py at 2019-01-03 07:07:00  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 36.93 Mbit/s  
95th percentile per-packet one-way delay: 151.736 ms  
Loss rate: 3.26%  
-- Flow 1:  
Average throughput: 36.93 Mbit/s  
95th percentile per-packet one-way delay: 151.736 ms  
Loss rate: 3.26%

Run 2: Report of TCP Cubic — Data Link



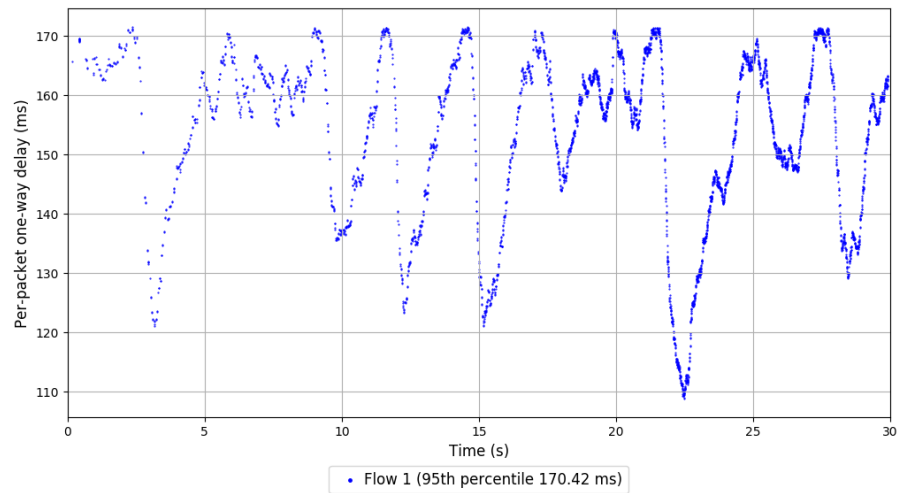
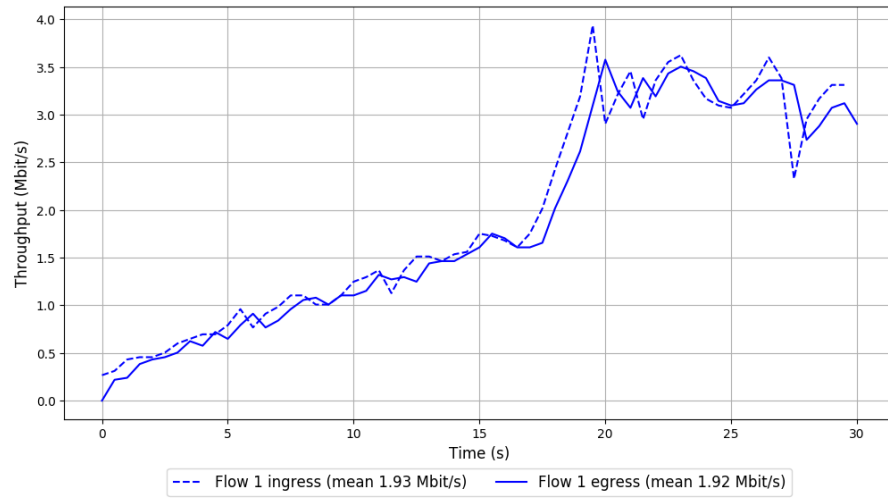


Run 3: Statistics of TCP Cubic

Start at: 2019-01-03 06:03:11  
End at: 2019-01-03 06:03:41  
Local clock offset: 0.579 ms  
Remote clock offset: 46.239 ms

# Below is generated by plot.py at 2019-01-03 07:07:00  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 1.92 Mbit/s  
95th percentile per-packet one-way delay: 170.417 ms  
Loss rate: 1.63%  
-- Flow 1:  
Average throughput: 1.92 Mbit/s  
95th percentile per-packet one-way delay: 170.417 ms  
Loss rate: 1.63%

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

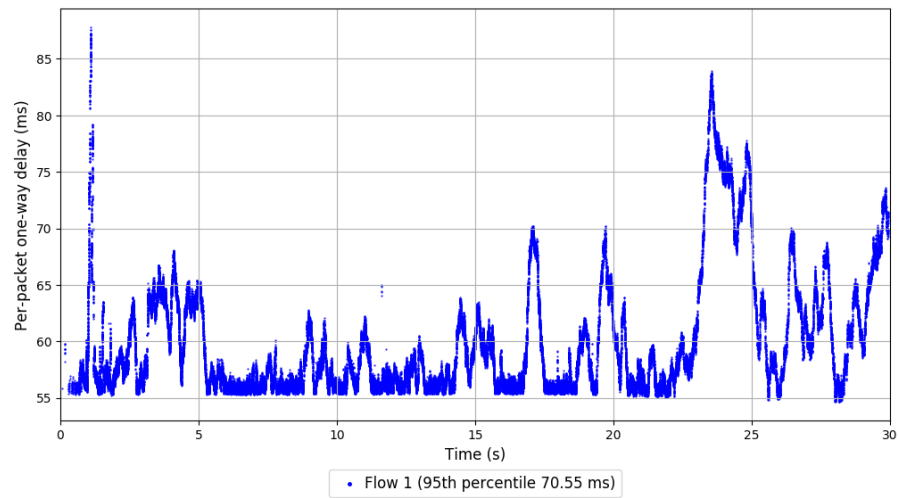
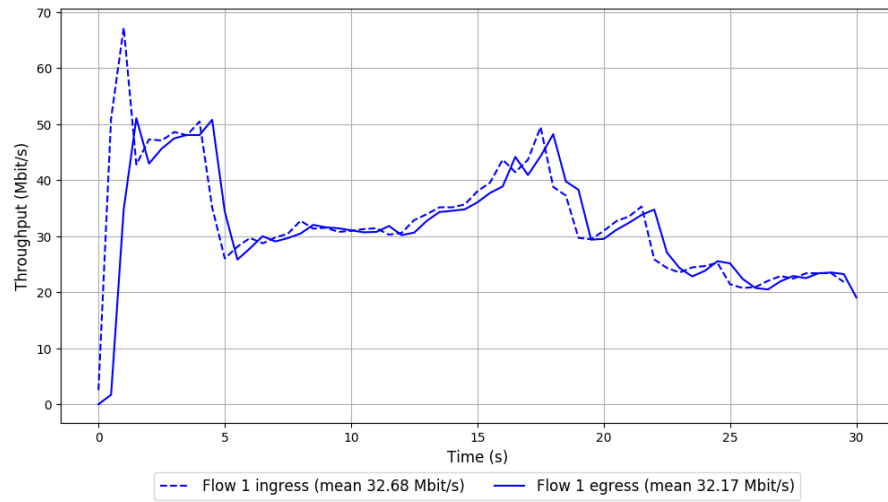


Run 4: Statistics of TCP Cubic

Start at: 2019-01-03 06:39:49  
End at: 2019-01-03 06:40:19  
Local clock offset: 2.889 ms  
Remote clock offset: 60.546 ms

# Below is generated by plot.py at 2019-01-03 07:07:00  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 32.17 Mbit/s  
95th percentile per-packet one-way delay: 70.551 ms  
Loss rate: 1.94%  
-- Flow 1:  
Average throughput: 32.17 Mbit/s  
95th percentile per-packet one-way delay: 70.551 ms  
Loss rate: 1.94%

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

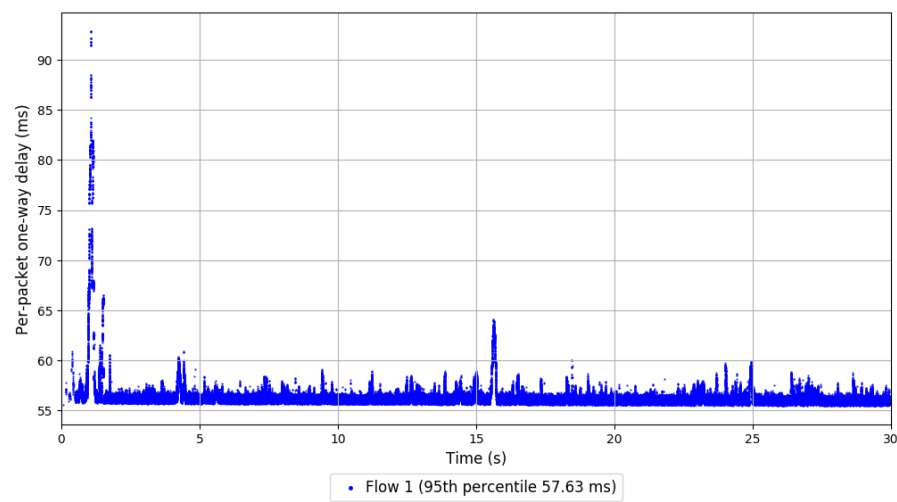
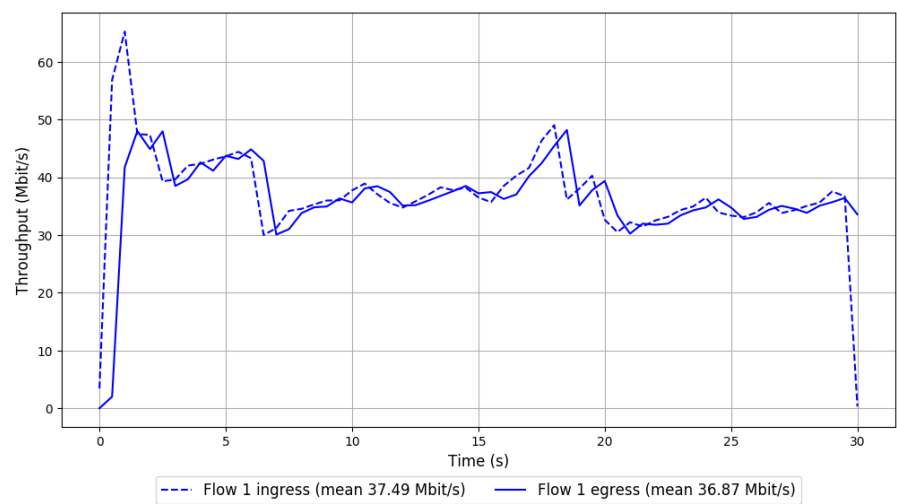


Run 5: Statistics of TCP Cubic

Start at: 2019-01-03 07:02:00  
End at: 2019-01-03 07:02:30  
Local clock offset: 2.476 ms  
Remote clock offset: 18.505 ms

# Below is generated by plot.py at 2019-01-03 07:07:00  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 36.87 Mbit/s  
95th percentile per-packet one-way delay: 57.629 ms  
Loss rate: 2.04%  
-- Flow 1:  
Average throughput: 36.87 Mbit/s  
95th percentile per-packet one-way delay: 57.629 ms  
Loss rate: 2.04%

Run 5: Report of TCP Cubic — Data Link

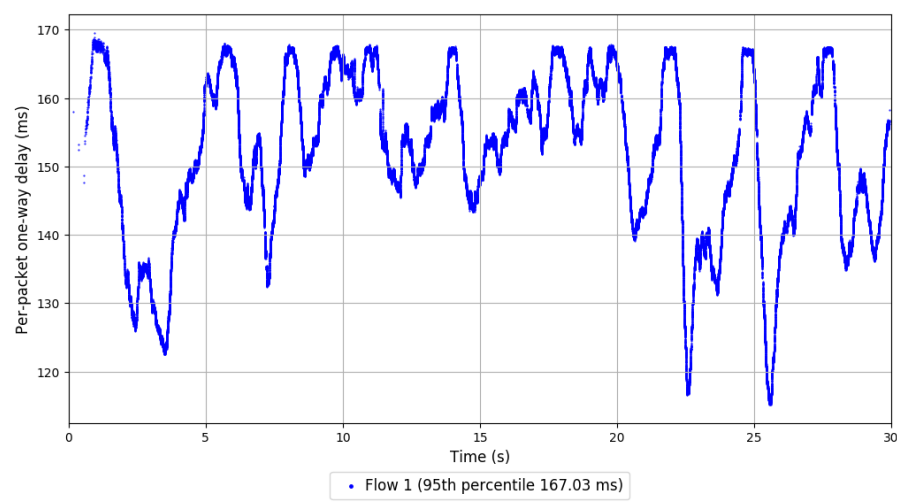
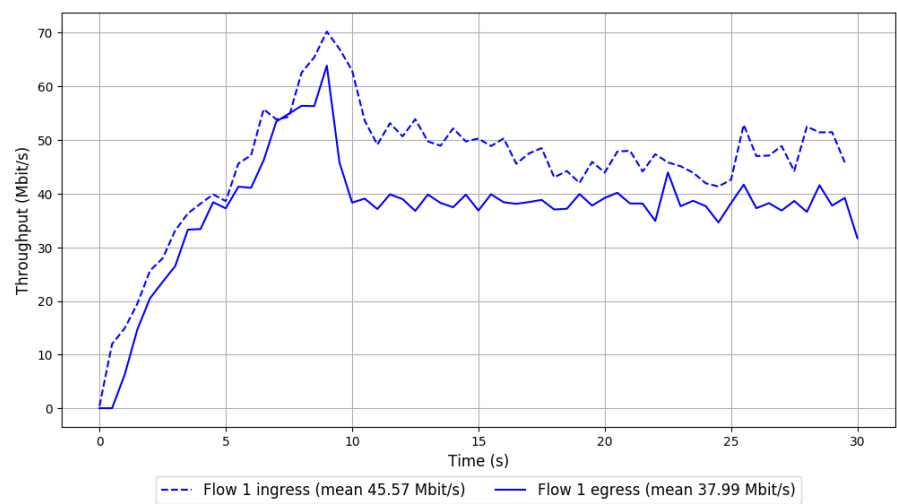


Run 1: Statistics of FillP

Start at: 2019-01-03 04:48:02  
End at: 2019-01-03 04:48:32  
Local clock offset: -3.511 ms  
Remote clock offset: 19.912 ms

# Below is generated by plot.py at 2019-01-03 07:07:10  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 37.99 Mbit/s  
95th percentile per-packet one-way delay: 167.033 ms  
Loss rate: 17.19%  
-- Flow 1:  
Average throughput: 37.99 Mbit/s  
95th percentile per-packet one-way delay: 167.033 ms  
Loss rate: 17.19%

Run 1: Report of FillP — Data Link



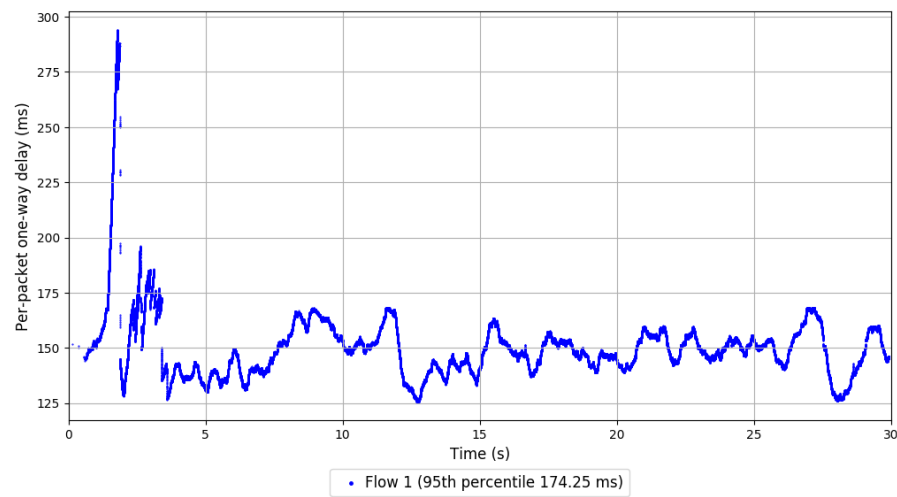
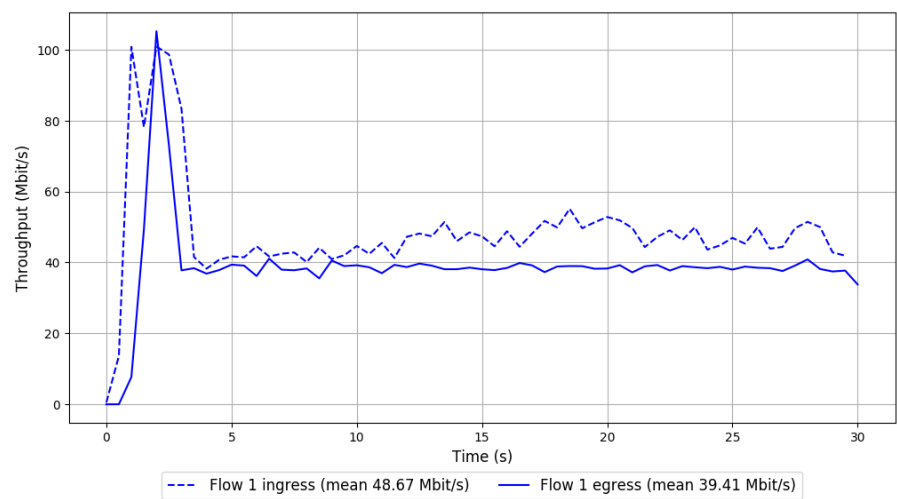


Run 2: Statistics of FillP

Start at: 2019-01-03 05:13:38  
End at: 2019-01-03 05:14:08  
Local clock offset: 0.266 ms  
Remote clock offset: 25.484 ms

# Below is generated by plot.py at 2019-01-03 07:07:12  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 39.41 Mbit/s  
95th percentile per-packet one-way delay: 174.250 ms  
Loss rate: 19.57%  
-- Flow 1:  
Average throughput: 39.41 Mbit/s  
95th percentile per-packet one-way delay: 174.250 ms  
Loss rate: 19.57%

Run 2: Report of FillP — Data Link

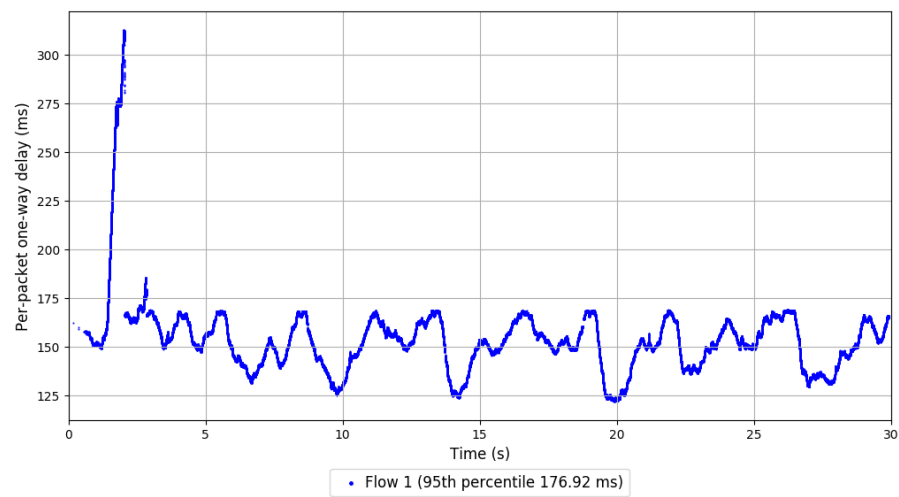
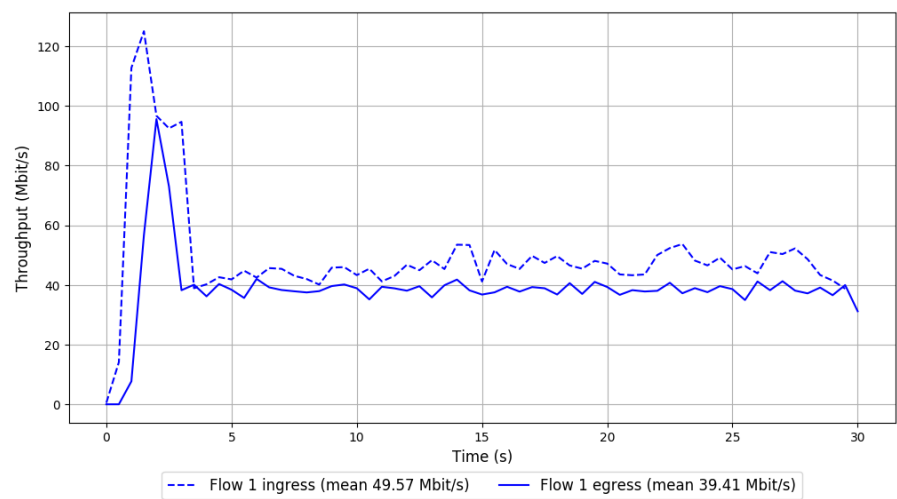


Run 3: Statistics of FillP

Start at: 2019-01-03 05:36:50  
End at: 2019-01-03 05:37:20  
Local clock offset: 0.78 ms  
Remote clock offset: 34.218 ms

# Below is generated by plot.py at 2019-01-03 07:07:32  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 39.41 Mbit/s  
95th percentile per-packet one-way delay: 176.919 ms  
Loss rate: 21.05%  
-- Flow 1:  
Average throughput: 39.41 Mbit/s  
95th percentile per-packet one-way delay: 176.919 ms  
Loss rate: 21.05%

Run 3: Report of FillP — Data Link

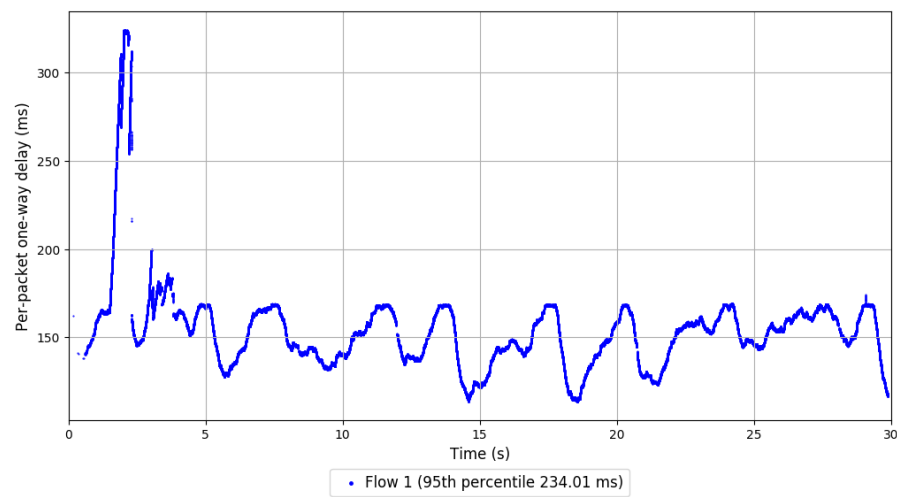
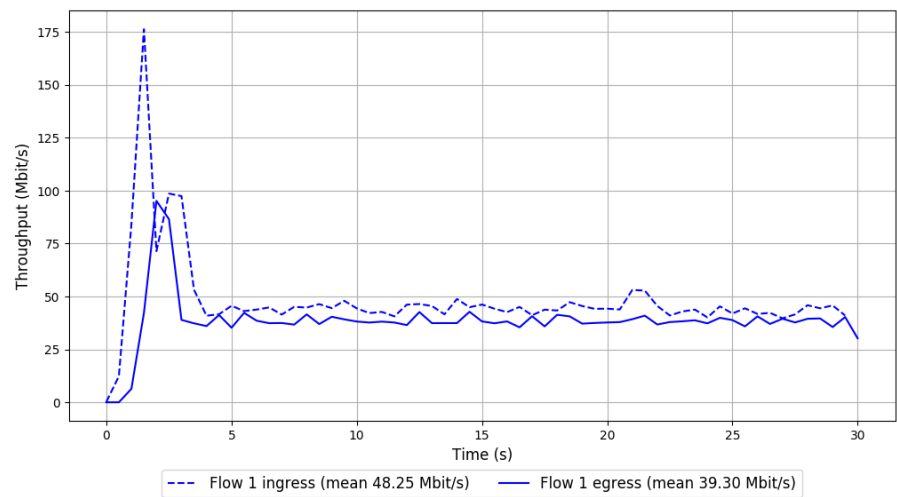


Run 4: Statistics of FillP

Start at: 2019-01-03 06:22:18  
End at: 2019-01-03 06:22:48  
Local clock offset: 0.417 ms  
Remote clock offset: 55.815 ms

# Below is generated by plot.py at 2019-01-03 07:07:33  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 39.30 Mbit/s  
95th percentile per-packet one-way delay: 234.010 ms  
Loss rate: 19.17%  
-- Flow 1:  
Average throughput: 39.30 Mbit/s  
95th percentile per-packet one-way delay: 234.010 ms  
Loss rate: 19.17%

Run 4: Report of FillP — Data Link



Run 5: Statistics of FillP

Start at: 2019-01-03 06:45:39

End at: 2019-01-03 06:46:09

Local clock offset: 3.027 ms

Remote clock offset: 38.15 ms

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

# Datalink statistics

-- Total of 1 flow:

Average throughput: 39.92 Mbit/s

95th percentile per-packet one-way delay: 65.183 ms

Loss rate: 16.00%

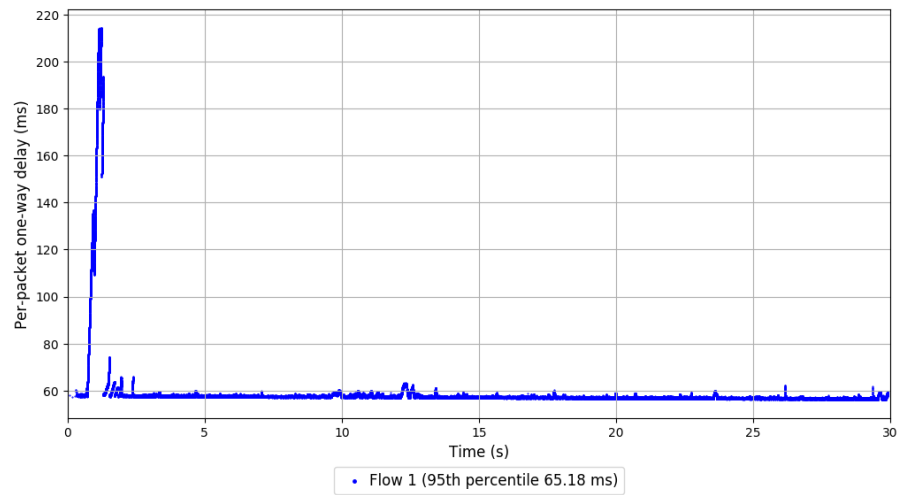
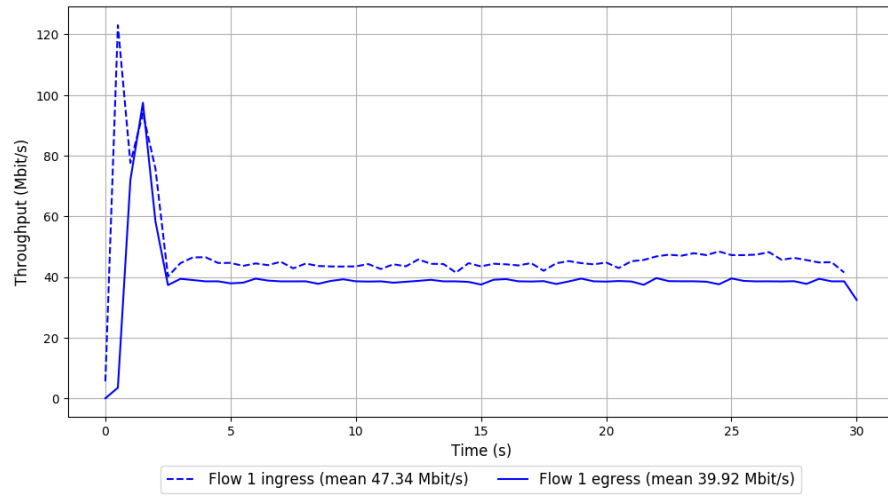
-- Flow 1:

Average throughput: 39.92 Mbit/s

95th percentile per-packet one-way delay: 65.183 ms

Loss rate: 16.00%

## Run 5: Report of FillP — Data Link





Run 1: Statistics of FillP-Sheep

Start at: 2019-01-03 05:01:02

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

Local clock offset: -1.356 ms

Remote clock offset: 20.208 ms

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

# Datalink statistics

-- Total of 1 flow:

Average throughput: 39.15 Mbit/s

95th percentile per-packet one-way delay: 168.718 ms

Loss rate: 11.05%

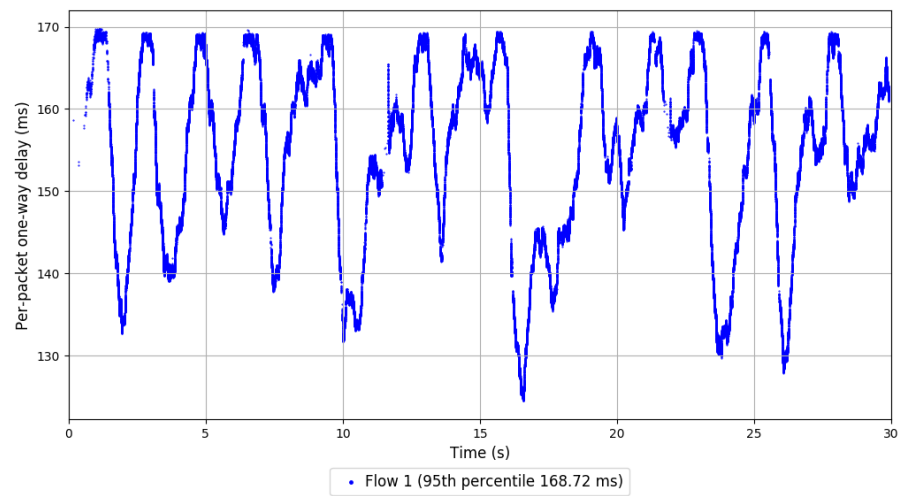
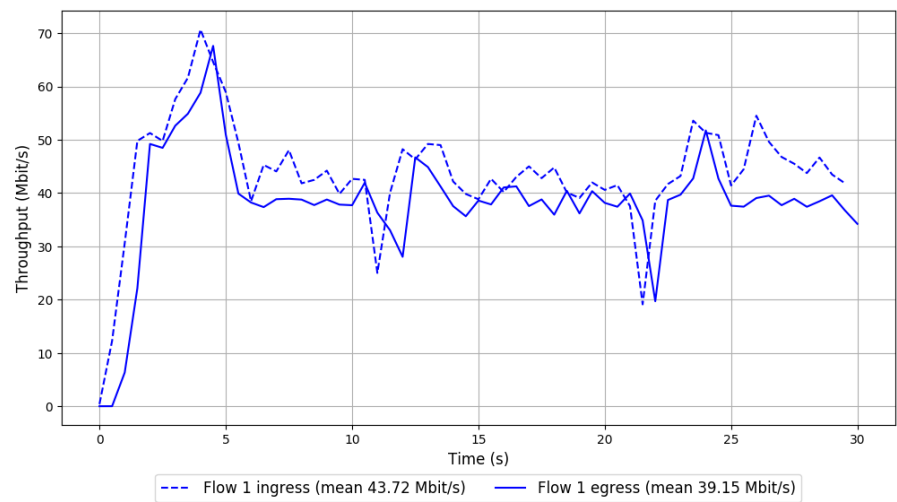
-- Flow 1:

Average throughput: 39.15 Mbit/s

95th percentile per-packet one-way delay: 168.718 ms

Loss rate: 11.05%

Run 1: Report of FillP-Sheep — Data Link

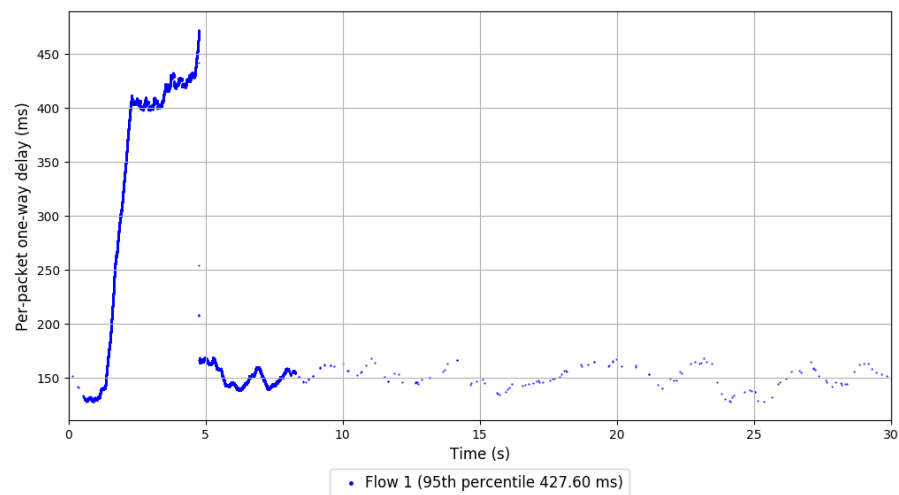
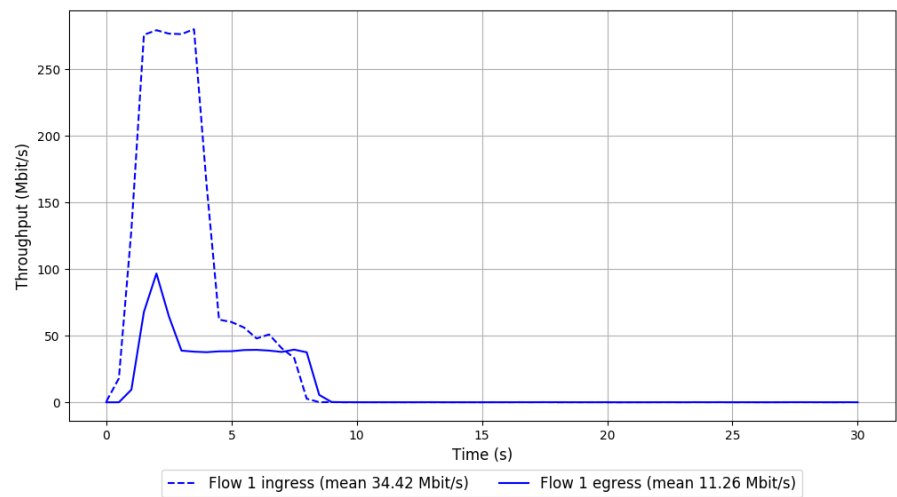


Run 2: Statistics of FillP-Sheep

Start at: 2019-01-03 05:24:27  
End at: 2019-01-03 05:24:57  
Local clock offset: 0.925 ms  
Remote clock offset: 25.976 ms

# Below is generated by plot.py at 2019-01-03 07:07:34  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 11.26 Mbit/s  
95th percentile per-packet one-way delay: 427.600 ms  
Loss rate: 67.44%  
-- Flow 1:  
Average throughput: 11.26 Mbit/s  
95th percentile per-packet one-way delay: 427.600 ms  
Loss rate: 67.44%

Run 2: Report of FillP-Sheep — Data Link

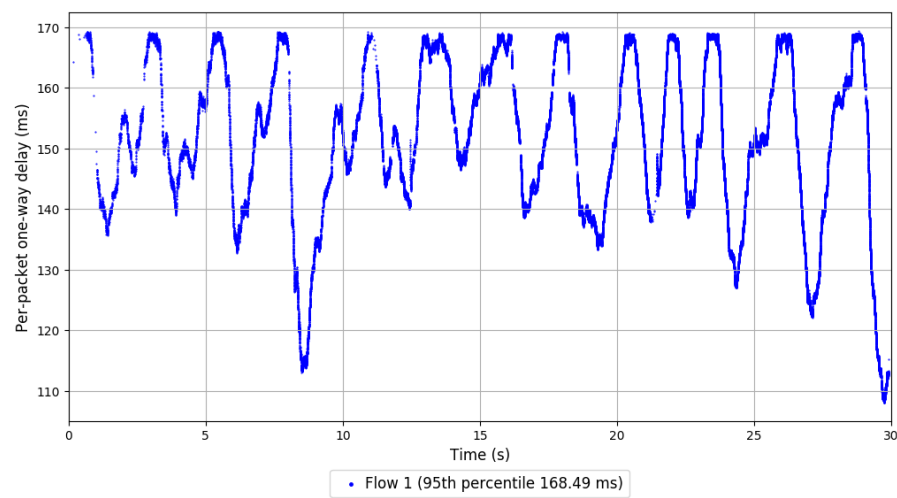
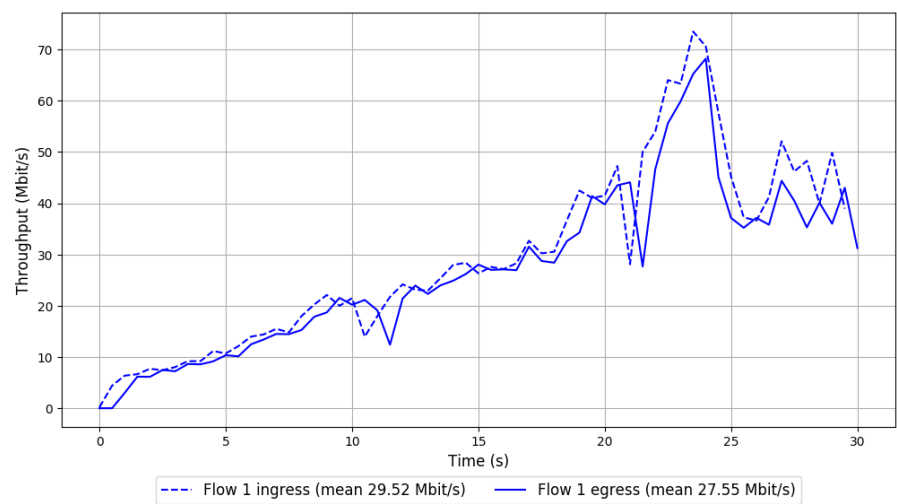


Run 3: Statistics of FillP-Sheep

Start at: 2019-01-03 05:48:32  
End at: 2019-01-03 05:49:02  
Local clock offset: 1.061 ms  
Remote clock offset: 42.944 ms

# Below is generated by plot.py at 2019-01-03 07:07:34  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 27.55 Mbit/s  
95th percentile per-packet one-way delay: 168.492 ms  
Loss rate: 7.33%  
-- Flow 1:  
Average throughput: 27.55 Mbit/s  
95th percentile per-packet one-way delay: 168.492 ms  
Loss rate: 7.33%

Run 3: Report of FillP-Sheep — Data Link

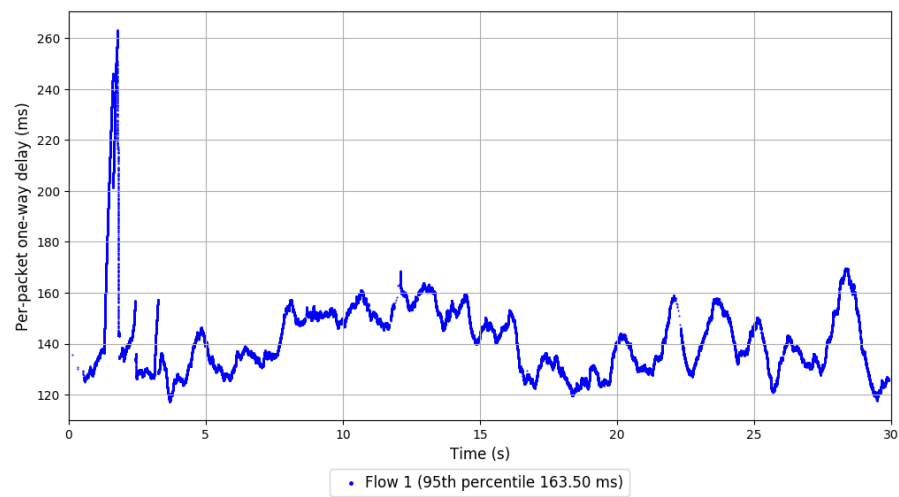
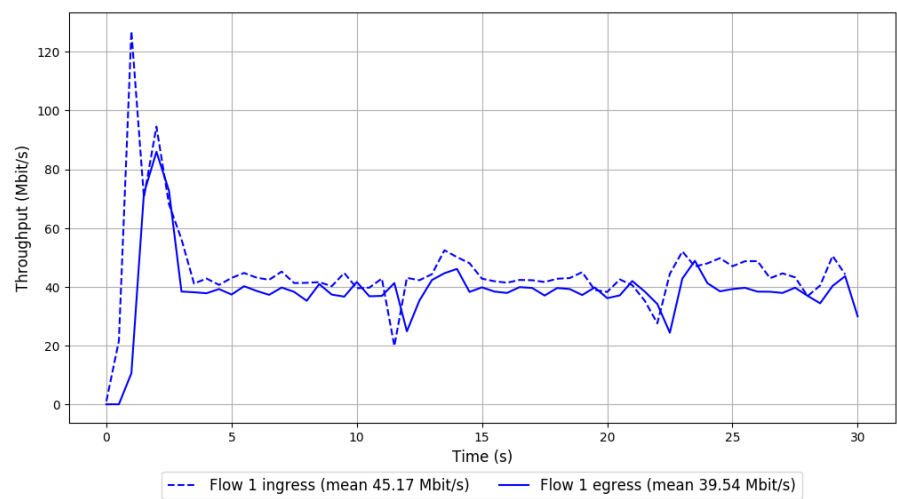


Run 4: Statistics of FillP-Sheep

Start at: 2019-01-03 06:33:53  
End at: 2019-01-03 06:34:23  
Local clock offset: 2.041 ms  
Remote clock offset: 58.448 ms

# Below is generated by plot.py at 2019-01-03 07:07:49  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 39.54 Mbit/s  
95th percentile per-packet one-way delay: 163.505 ms  
Loss rate: 13.03%  
-- Flow 1:  
Average throughput: 39.54 Mbit/s  
95th percentile per-packet one-way delay: 163.505 ms  
Loss rate: 13.03%

Run 4: Report of FillP-Sheep — Data Link





Run 5: Statistics of FillP-Sheep

Start at: 2019-01-03 06:56:09

End at: 2019-01-03 06:56:39

Local clock offset: 3.262 ms

Remote clock offset: 23.53 ms

# Below is generated by plot.py at 2019-01-03 07:07:51

# Datalink statistics

-- Total of 1 flow:

Average throughput: 39.92 Mbit/s

95th percentile per-packet one-way delay: 59.370 ms

Loss rate: 10.22%

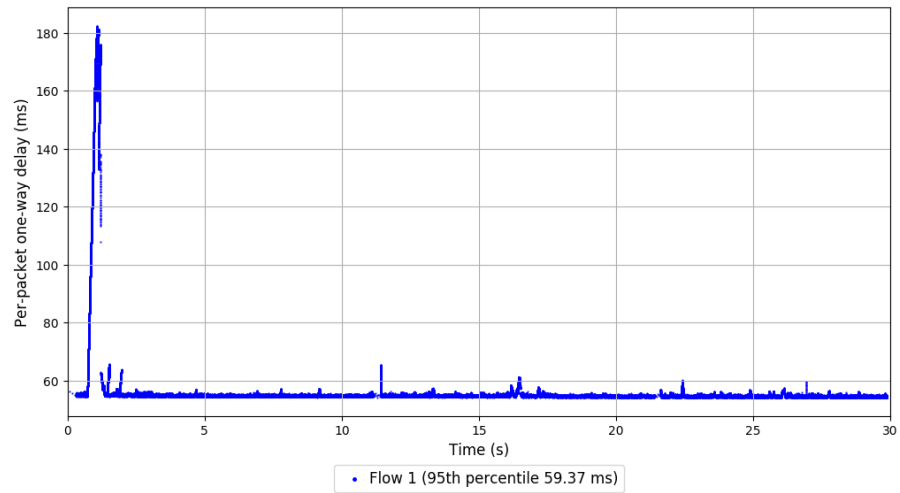
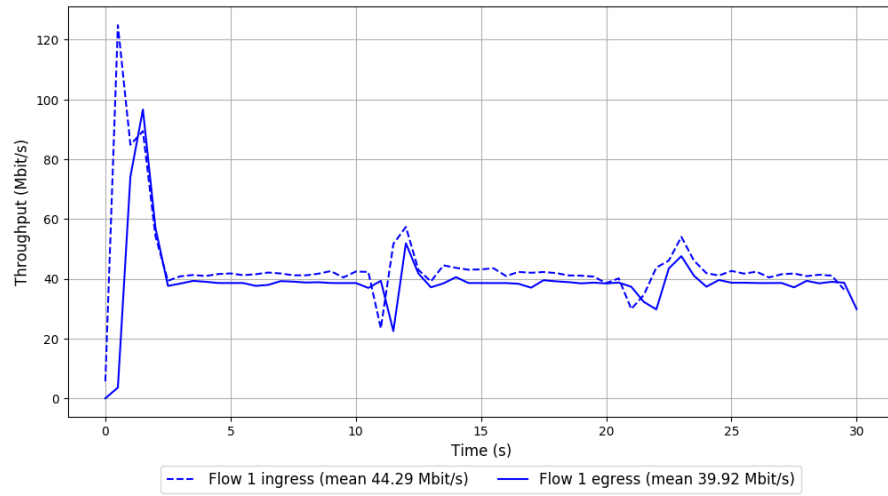
-- Flow 1:

Average throughput: 39.92 Mbit/s

95th percentile per-packet one-way delay: 59.370 ms

Loss rate: 10.22%

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

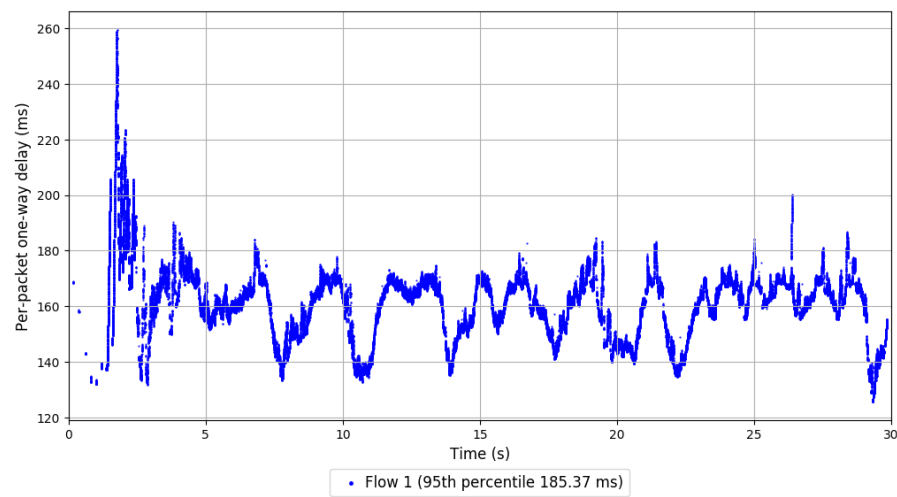
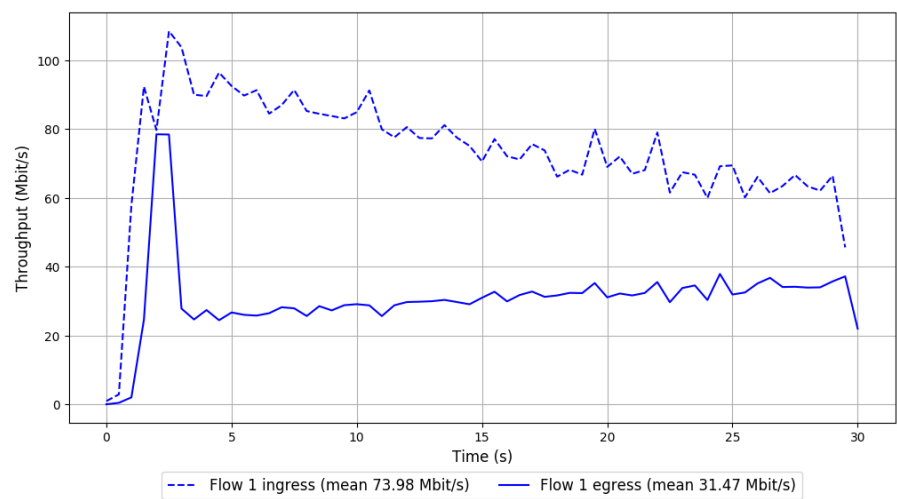


```
Run 1: Statistics of Indigo

Start at: 2019-01-03 04:53:02
End at: 2019-01-03 04:53:32
Local clock offset: -3.517 ms
Remote clock offset: 17.631 ms

# Below is generated by plot.py at 2019-01-03 07:07:51
# Datalink statistics
-- Total of 1 flow:
Average throughput: 31.47 Mbit/s
95th percentile per-packet one-way delay: 185.374 ms
Loss rate: 57.78%
-- Flow 1:
Average throughput: 31.47 Mbit/s
95th percentile per-packet one-way delay: 185.374 ms
Loss rate: 57.78%
```

Run 1: Report of Indigo — Data Link

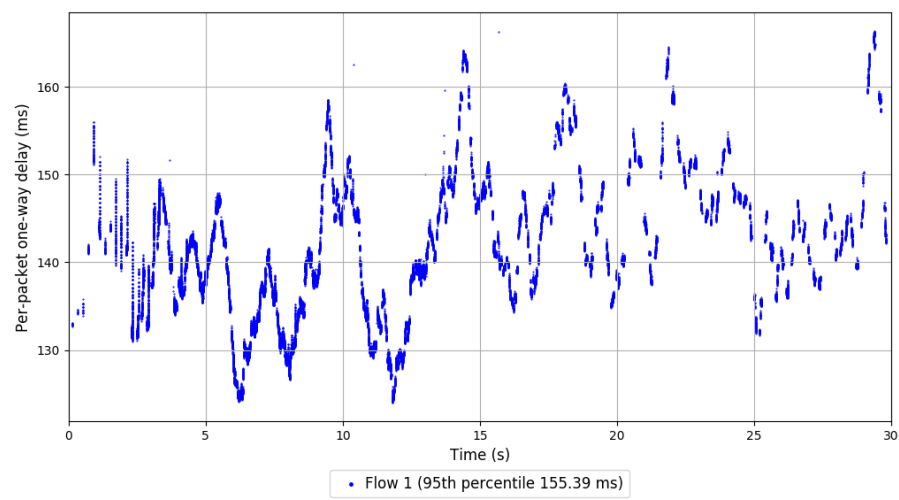
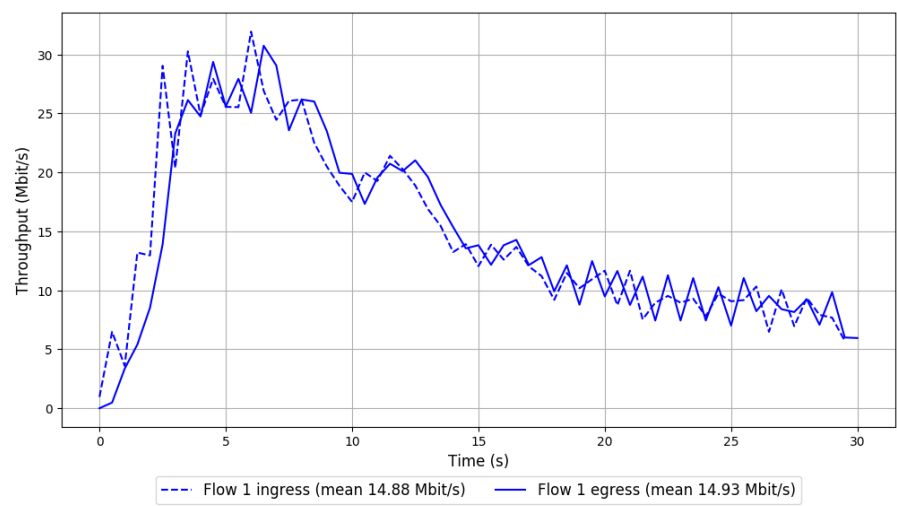


Run 2: Statistics of Indigo

Start at: 2019-01-03 05:18:25  
End at: 2019-01-03 05:18:55  
Local clock offset: 0.372 ms  
Remote clock offset: 26.178 ms

# Below is generated by plot.py at 2019-01-03 07:07:51  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 14.93 Mbit/s  
95th percentile per-packet one-way delay: 155.393 ms  
Loss rate: 0.32%  
-- Flow 1:  
Average throughput: 14.93 Mbit/s  
95th percentile per-packet one-way delay: 155.393 ms  
Loss rate: 0.32%

Run 2: Report of Indigo — Data Link

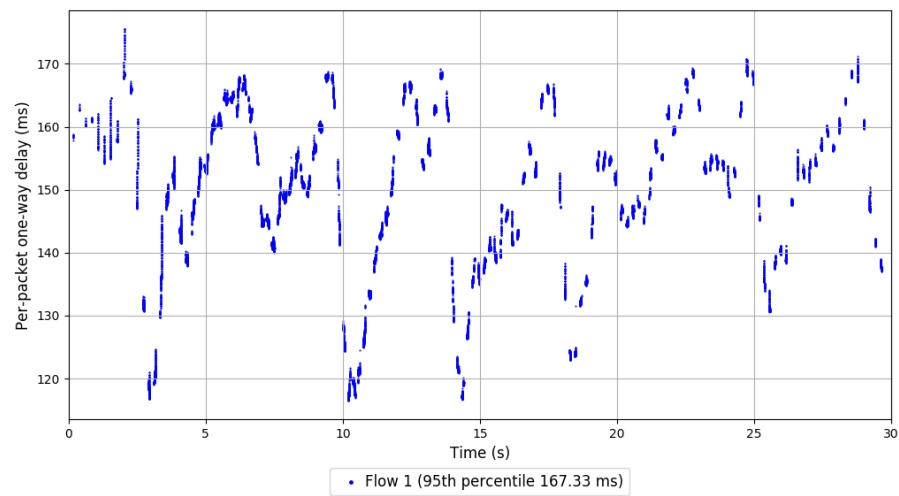
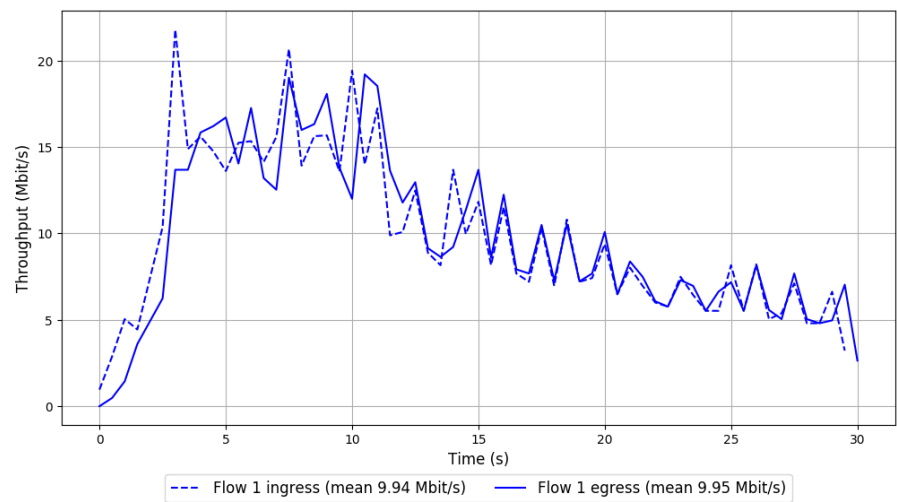


Run 3: Statistics of Indigo

Start at: 2019-01-03 05:41:39  
End at: 2019-01-03 05:42:09  
Local clock offset: 0.985 ms  
Remote clock offset: 39.249 ms

# Below is generated by plot.py at 2019-01-03 07:07:51  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 9.95 Mbit/s  
95th percentile per-packet one-way delay: 167.327 ms  
Loss rate: 0.63%  
-- Flow 1:  
Average throughput: 9.95 Mbit/s  
95th percentile per-packet one-way delay: 167.327 ms  
Loss rate: 0.63%

Run 3: Report of Indigo — Data Link





Run 4: Statistics of Indigo

Start at: 2019-01-03 06:27:26

End at: 2019-01-03 06:27:56

Local clock offset: 1.076 ms

Remote clock offset: 46.894 ms

# Below is generated by plot.py at 2019-01-03 07:08:06

# Datalink statistics

-- Total of 1 flow:

Average throughput: 32.76 Mbit/s

95th percentile per-packet one-way delay: 178.999 ms

Loss rate: 48.75%

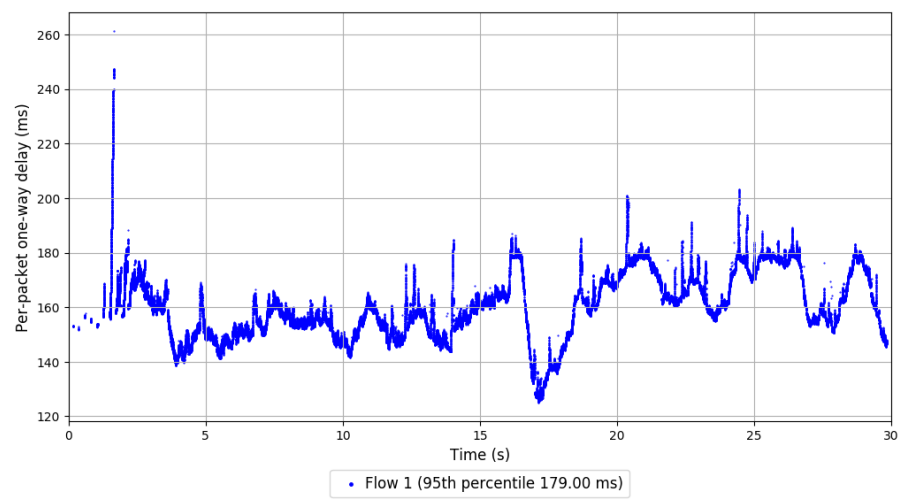
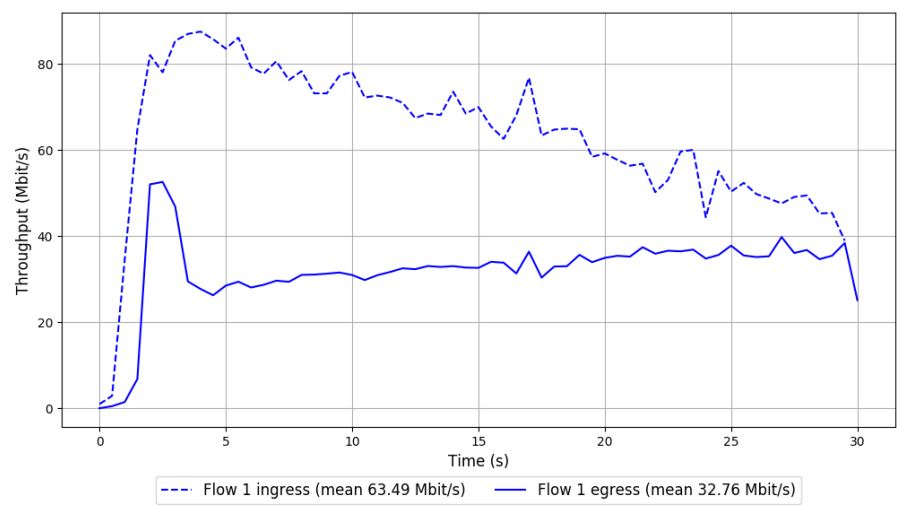
-- Flow 1:

Average throughput: 32.76 Mbit/s

95th percentile per-packet one-way delay: 178.999 ms

Loss rate: 48.75%

Run 4: Report of Indigo — Data Link

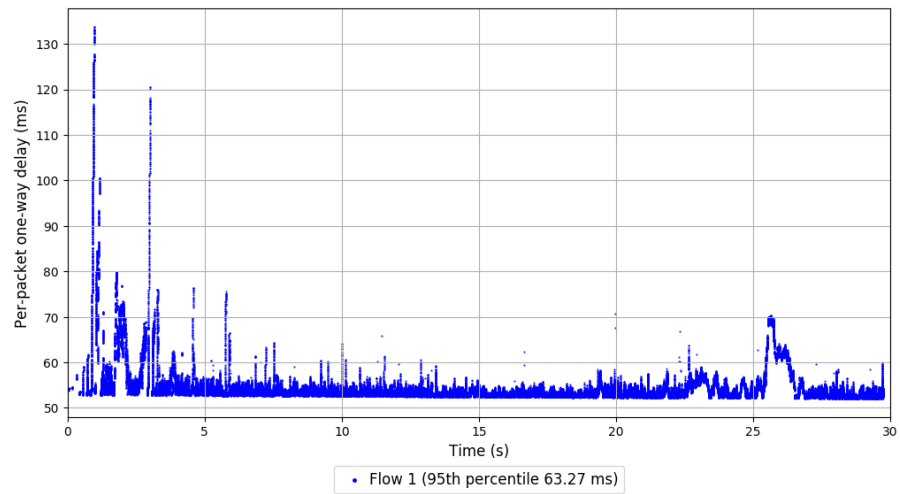
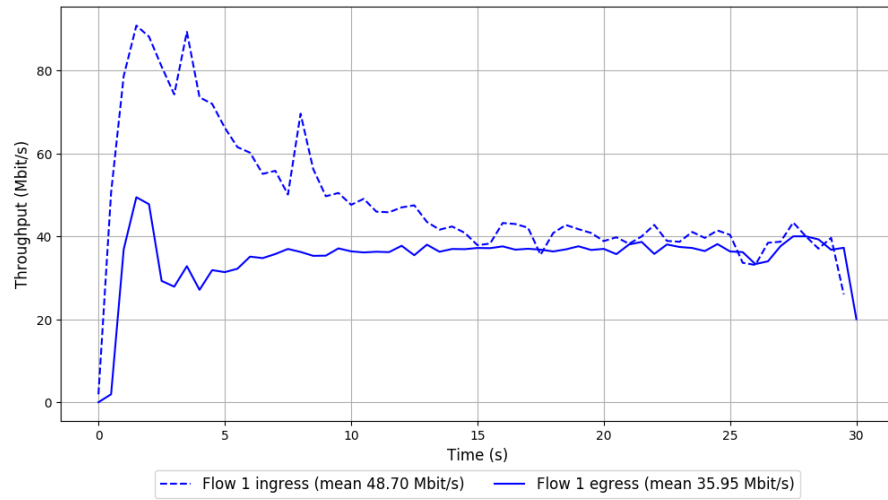


Run 5: Statistics of Indigo

Start at: 2019-01-03 06:50:18  
End at: 2019-01-03 06:50:48  
Local clock offset: 3.508 ms  
Remote clock offset: 33.229 ms

# Below is generated by plot.py at 2019-01-03 07:08:06  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 35.95 Mbit/s  
95th percentile per-packet one-way delay: 63.265 ms  
Loss rate: 26.44%  
-- Flow 1:  
Average throughput: 35.95 Mbit/s  
95th percentile per-packet one-way delay: 63.265 ms  
Loss rate: 26.44%

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



Run 1: Statistics of Indigo-MusesD

Start at: 2019-01-03 05:11:12

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

Local clock offset: 0.178 ms

Remote clock offset: 25.038 ms

# Below is generated by plot.py at 2019-01-03 07:08:06

# Datalink statistics

-- Total of 1 flow:

Average throughput: 2.61 Mbit/s

95th percentile per-packet one-way delay: 168.497 ms

Loss rate: 0.30%

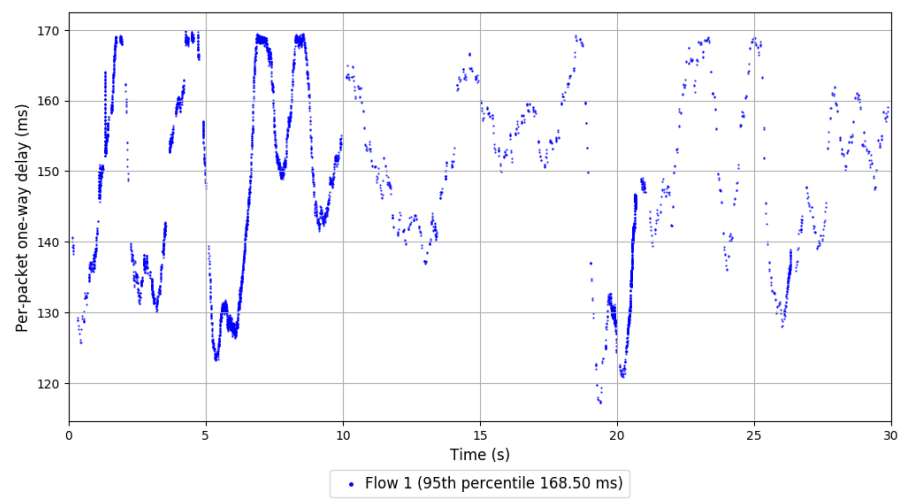
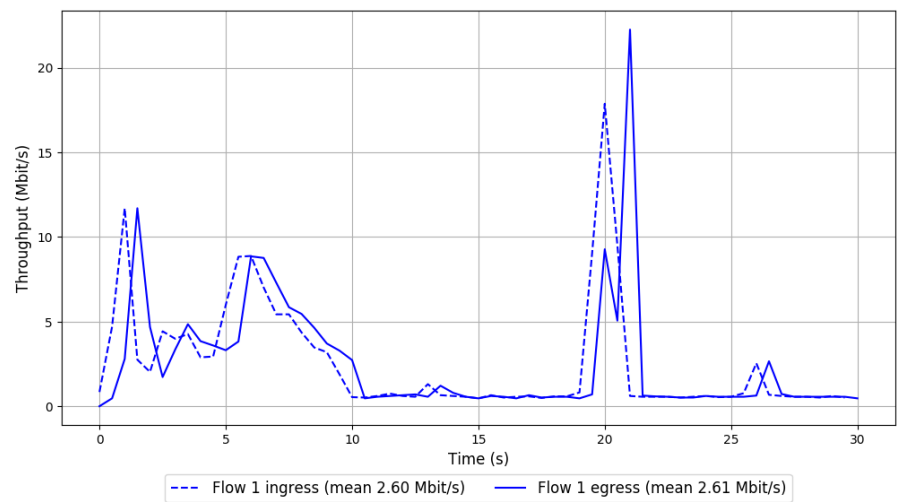
-- Flow 1:

Average throughput: 2.61 Mbit/s

95th percentile per-packet one-way delay: 168.497 ms

Loss rate: 0.30%

Run 1: Report of Indigo-MusesD — Data Link



Run 2: Statistics of Indigo-MusesD

Start at: 2019-01-03 05:34:20

End at: 2019-01-03 05:34:50

Local clock offset: 0.696 ms

Remote clock offset: 30.611 ms

# Below is generated by plot.py at 2019-01-03 07:08:06

# Datalink statistics

-- Total of 1 flow:

Average throughput: 10.73 Mbit/s

95th percentile per-packet one-way delay: 190.329 ms

Loss rate: 2.42%

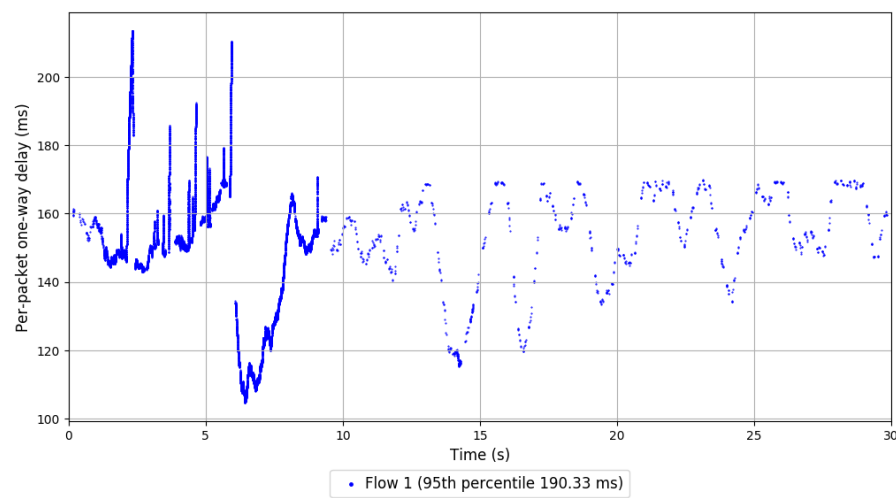
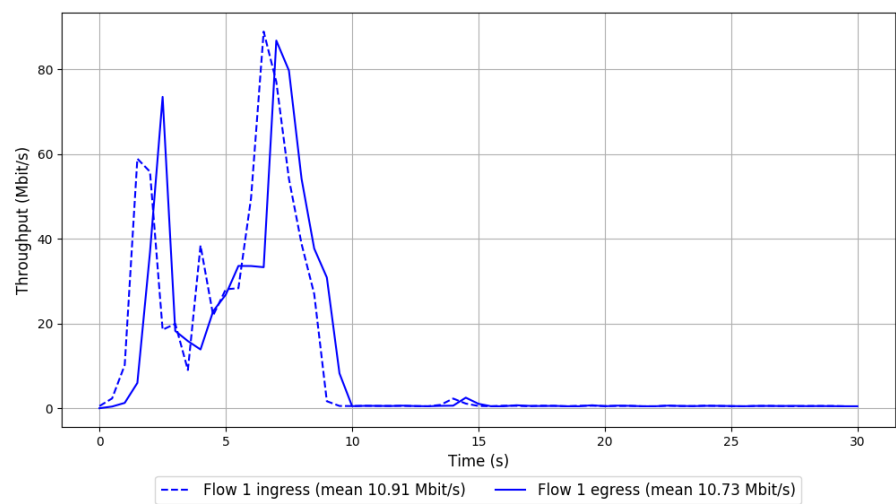
-- Flow 1:

Average throughput: 10.73 Mbit/s

95th percentile per-packet one-way delay: 190.329 ms

Loss rate: 2.42%

Run 2: Report of Indigo-MusesD — Data Link





Run 3: Statistics of Indigo-MusesD

Start at: 2019-01-03 06:09:18

End at: 2019-01-03 06:09:48

Local clock offset: 0.563 ms

Remote clock offset: 42.036 ms

# Below is generated by plot.py at 2019-01-03 07:08:06

# Datalink statistics

-- Total of 1 flow:

Average throughput: 9.56 Mbit/s

95th percentile per-packet one-way delay: 177.557 ms

Loss rate: 0.24%

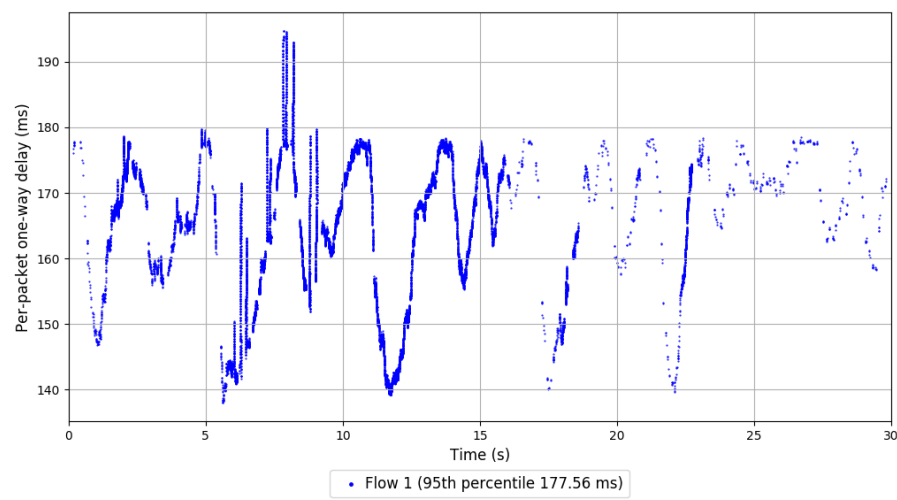
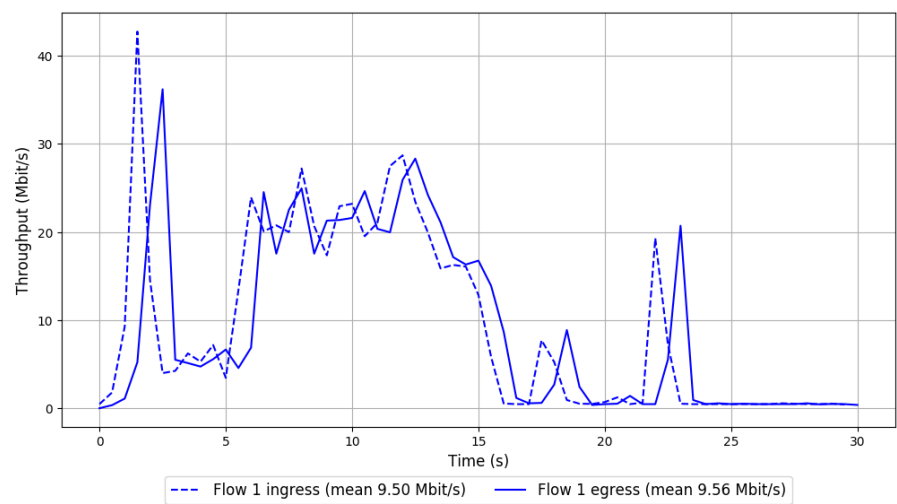
-- Flow 1:

Average throughput: 9.56 Mbit/s

95th percentile per-packet one-way delay: 177.557 ms

Loss rate: 0.24%

Run 3: Report of Indigo-MusesD — Data Link



Run 4: Statistics of Indigo-MusesD

Start at: 2019-01-03 06:43:18

End at: 2019-01-03 06:43:48

Local clock offset: 2.948 ms

Remote clock offset: 46.956 ms

# Below is generated by plot.py at 2019-01-03 07:08:06

# Datalink statistics

-- Total of 1 flow:

Average throughput: 6.15 Mbit/s

95th percentile per-packet one-way delay: 101.734 ms

Loss rate: 0.76%

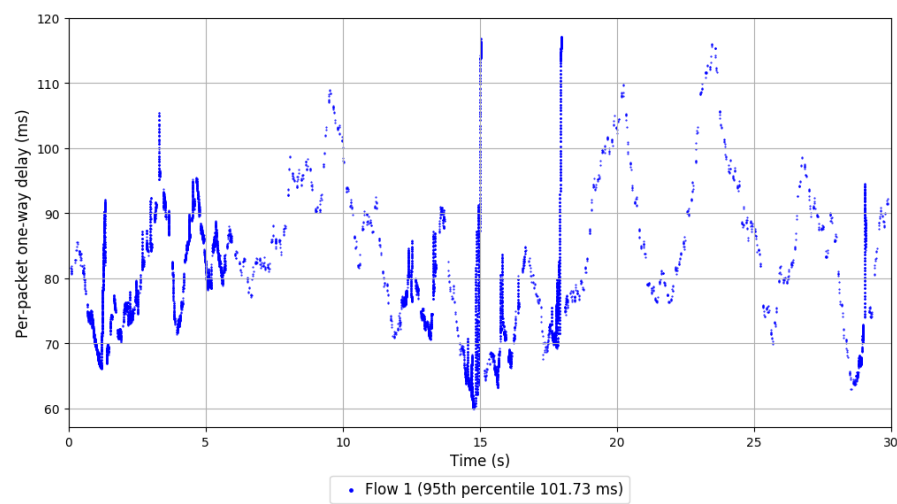
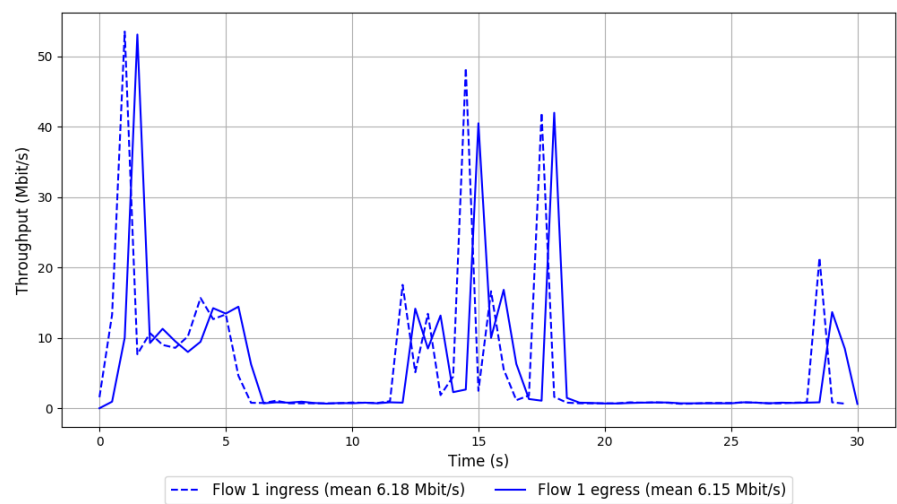
-- Flow 1:

Average throughput: 6.15 Mbit/s

95th percentile per-packet one-way delay: 101.734 ms

Loss rate: 0.76%

Run 4: Report of Indigo-MusesD — Data Link



Run 5: Statistics of Indigo-MusesD

Start at: 2019-01-03 07:05:26

End at: 2019-01-03 07:05:56

Local clock offset: 2.272 ms

Remote clock offset: 18.73 ms

# Below is generated by plot.py at 2019-01-03 07:08:06

# Datalink statistics

-- Total of 1 flow:

Average throughput: 6.03 Mbit/s

95th percentile per-packet one-way delay: 77.404 ms

Loss rate: 0.06%

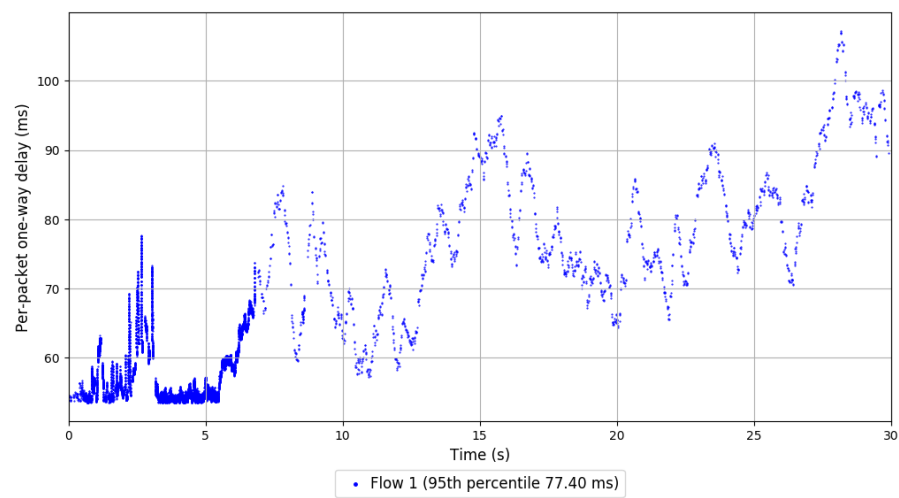
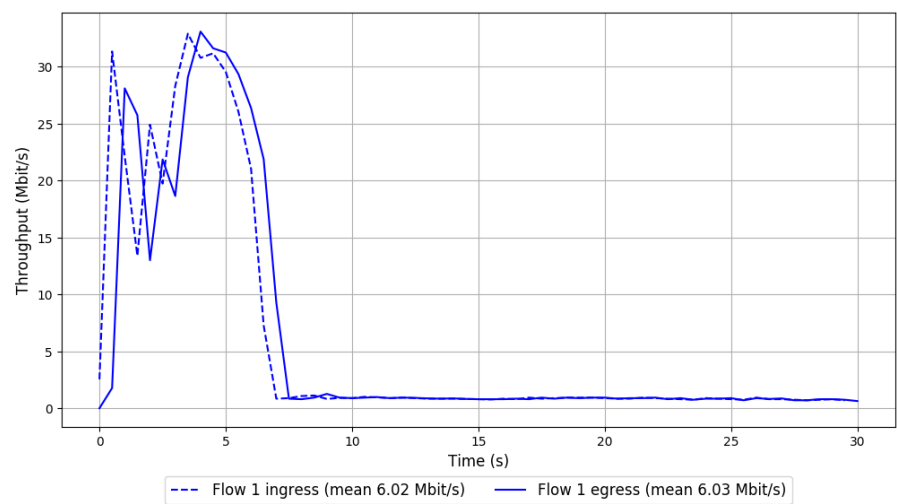
-- Flow 1:

Average throughput: 6.03 Mbit/s

95th percentile per-packet one-way delay: 77.404 ms

Loss rate: 0.06%

Run 5: Report of Indigo-MusesD — Data Link

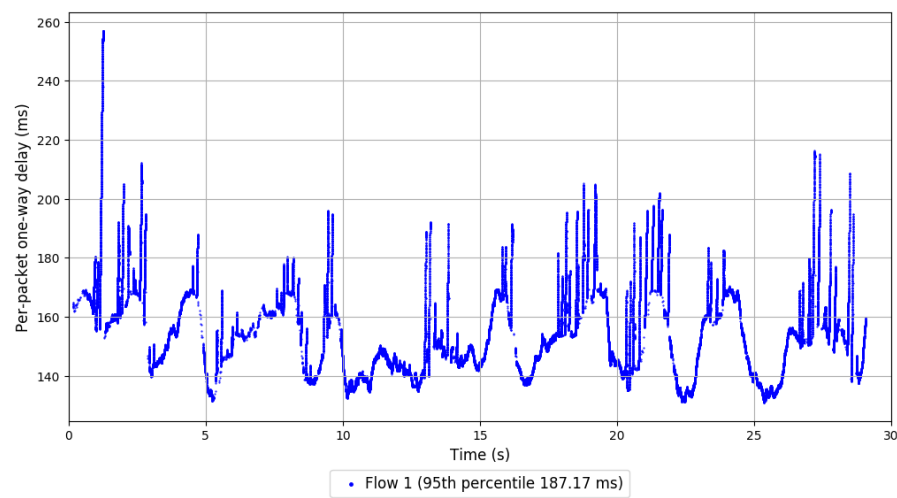
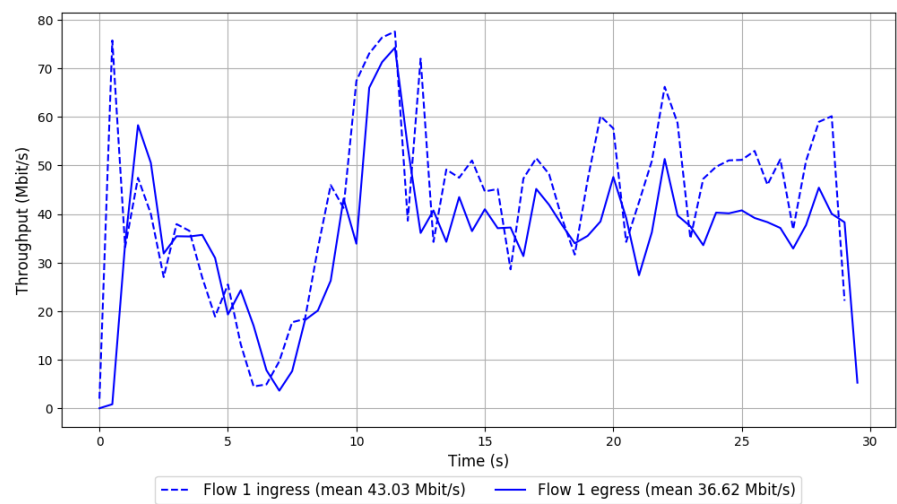


```
Run 1: Statistics of Indigo-MusesT

Start at: 2019-01-03 05:04:50
End at: 2019-01-03 05:05:20
Local clock offset: -0.857 ms
Remote clock offset: 23.178 ms

# Below is generated by plot.py at 2019-01-03 07:08:18
# Datalink statistics
-- Total of 1 flow:
Average throughput: 36.62 Mbit/s
95th percentile per-packet one-way delay: 187.174 ms
Loss rate: 15.74%
-- Flow 1:
Average throughput: 36.62 Mbit/s
95th percentile per-packet one-way delay: 187.174 ms
Loss rate: 15.74%
```

Run 1: Report of Indigo-MusesT — Data Link



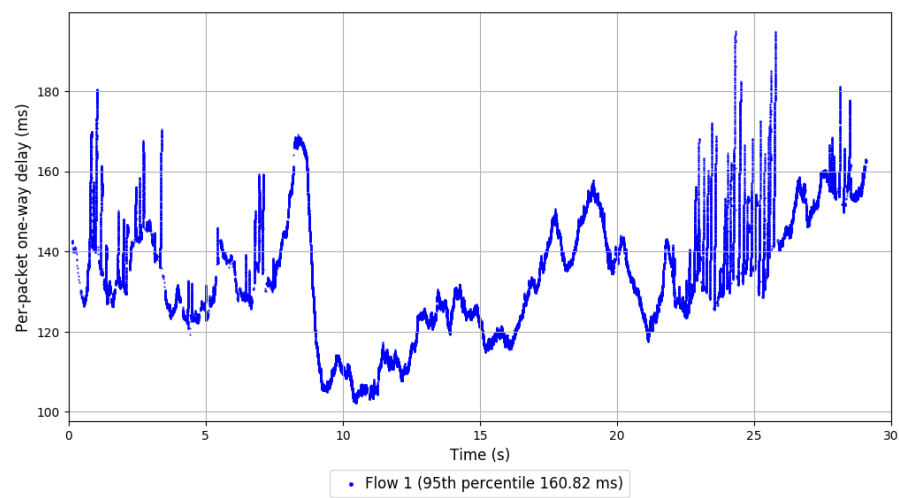
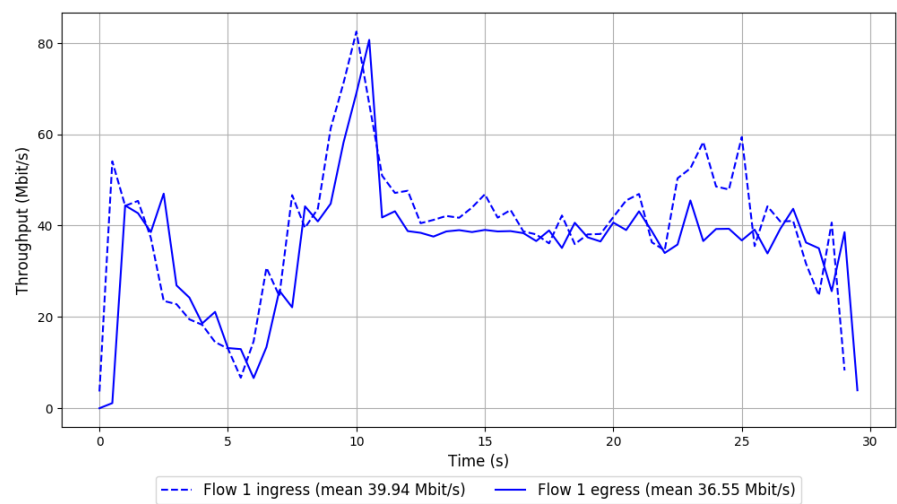


Run 2: Statistics of Indigo-MusesT

Start at: 2019-01-03 05:28:01  
End at: 2019-01-03 05:28:31  
Local clock offset: 0.849 ms  
Remote clock offset: 26.425 ms

# Below is generated by plot.py at 2019-01-03 07:08:18  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 36.55 Mbit/s  
95th percentile per-packet one-way delay: 160.825 ms  
Loss rate: 9.08%  
-- Flow 1:  
Average throughput: 36.55 Mbit/s  
95th percentile per-packet one-way delay: 160.825 ms  
Loss rate: 9.08%

Run 2: Report of Indigo-MusesT — Data Link



Run 3: Statistics of Indigo-MusesT

Start at: 2019-01-03 05:52:42

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

Local clock offset: 1.024 ms

Remote clock offset: 44.988 ms

# Below is generated by plot.py at 2019-01-03 07:08:19

# Datalink statistics

-- Total of 1 flow:

Average throughput: 36.55 Mbit/s

95th percentile per-packet one-way delay: 185.923 ms

Loss rate: 4.21%

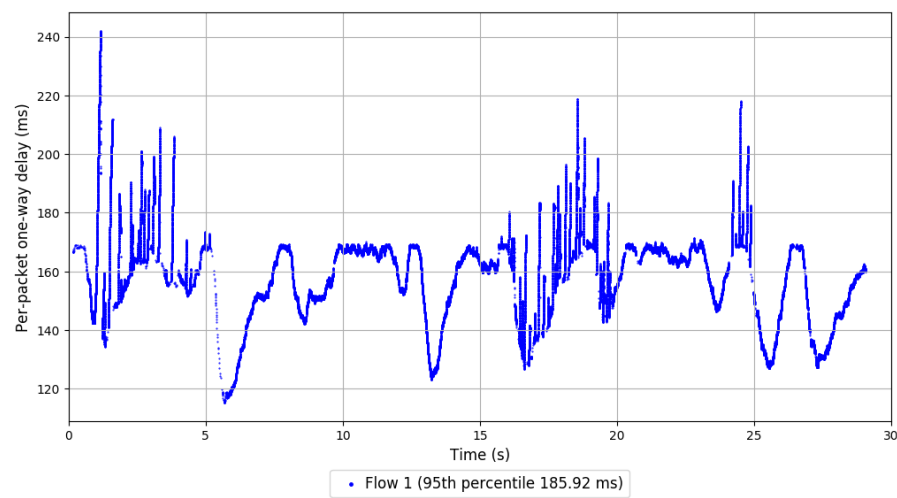
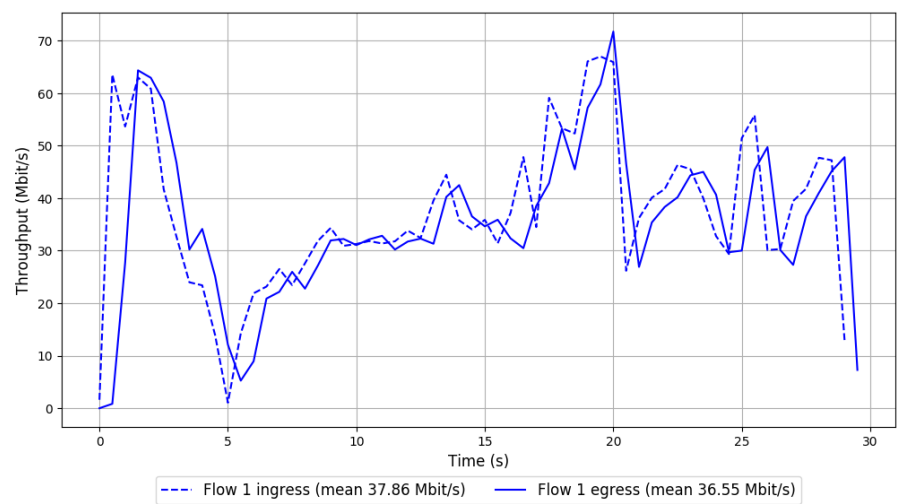
-- Flow 1:

Average throughput: 36.55 Mbit/s

95th percentile per-packet one-way delay: 185.923 ms

Loss rate: 4.21%

Run 3: Report of Indigo-MusesT — Data Link



Run 4: Statistics of Indigo-MusesT

Start at: 2019-01-03 06:37:28

End at: 2019-01-03 06:37:58

Local clock offset: 2.549 ms

Remote clock offset: 56.664 ms

# Below is generated by plot.py at 2019-01-03 07:08:19

# Datalink statistics

-- Total of 1 flow:

Average throughput: 34.97 Mbit/s

95th percentile per-packet one-way delay: 101.433 ms

Loss rate: 8.24%

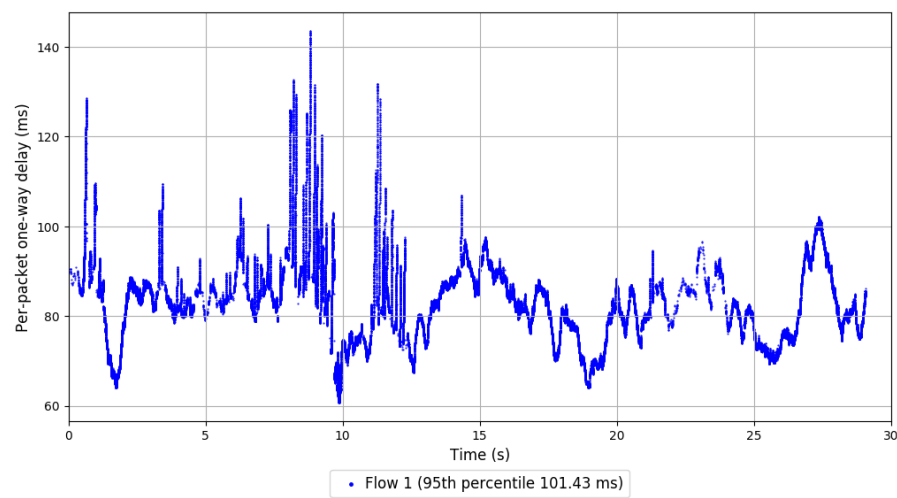
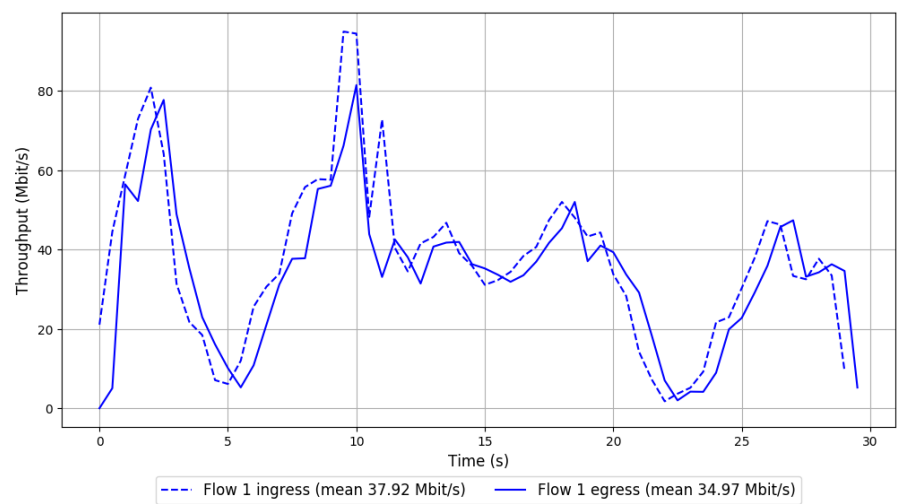
-- Flow 1:

Average throughput: 34.97 Mbit/s

95th percentile per-packet one-way delay: 101.433 ms

Loss rate: 8.24%

Run 4: Report of Indigo-MusesT — Data Link



Run 5: Statistics of Indigo-MusesT

Start at: 2019-01-03 06:59:38

End at: 2019-01-03 07:00:08

Local clock offset: 2.846 ms

Remote clock offset: 19.842 ms

# Below is generated by plot.py at 2019-01-03 07:08:20

# Datalink statistics

-- Total of 1 flow:

Average throughput: 34.24 Mbit/s

95th percentile per-packet one-way delay: 68.682 ms

Loss rate: 4.15%

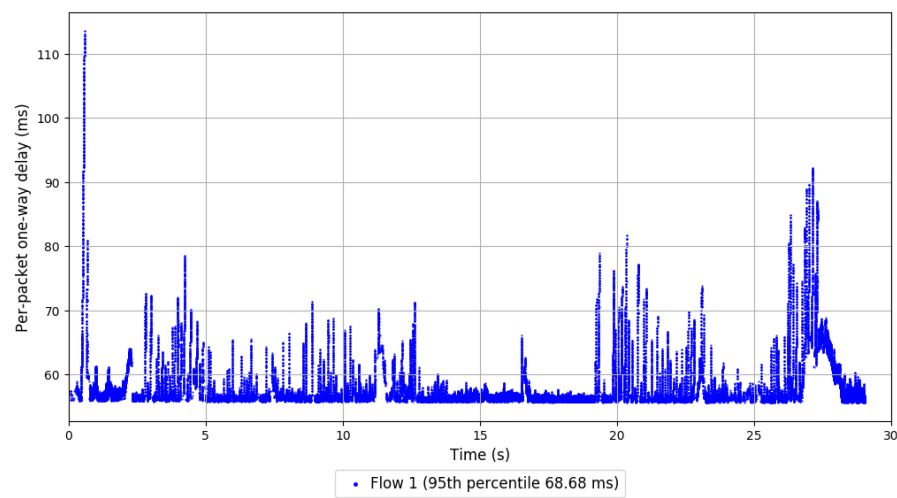
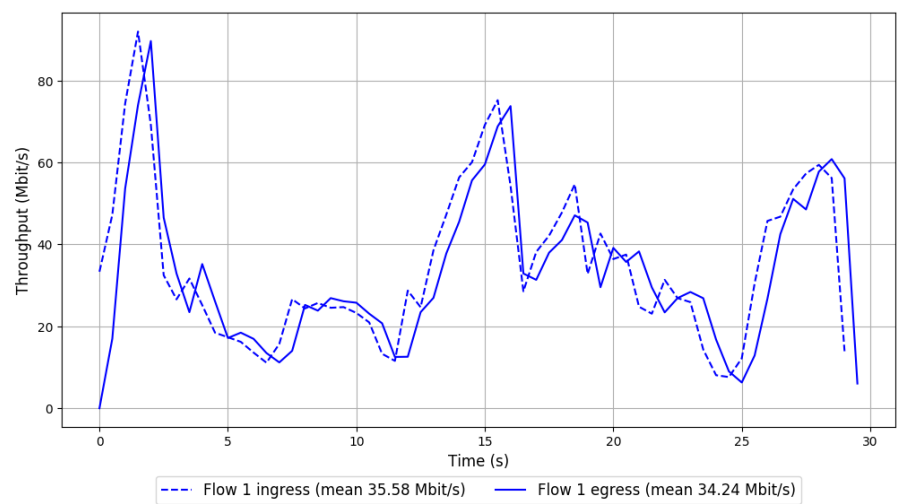
-- Flow 1:

Average throughput: 34.24 Mbit/s

95th percentile per-packet one-way delay: 68.682 ms

Loss rate: 4.15%

Run 5: Report of Indigo-MusesT — Data Link



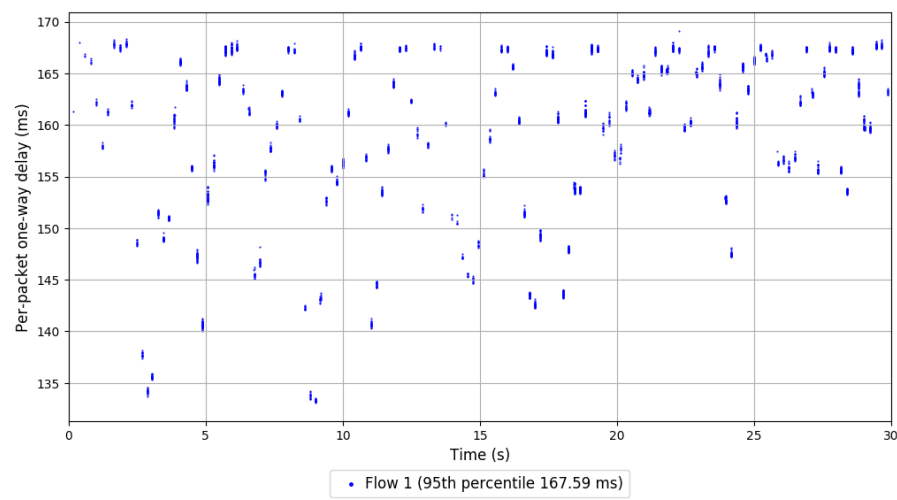
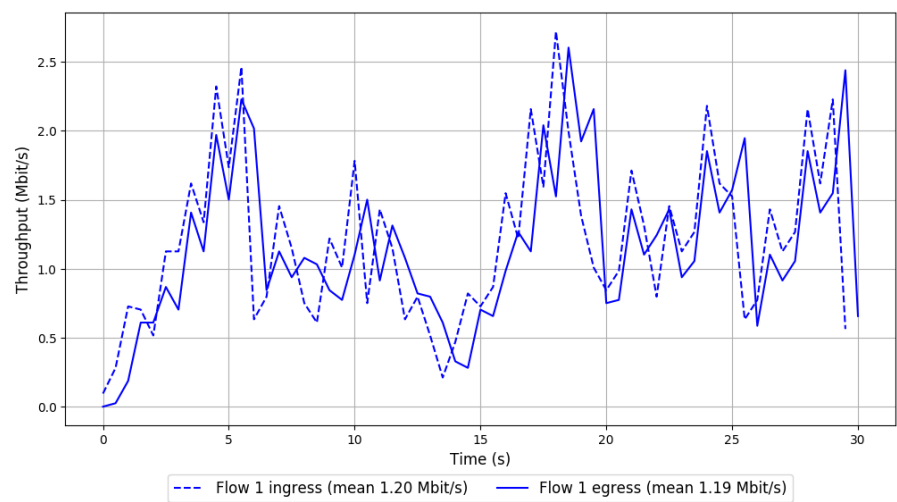


```
Run 1: Statistics of LEDBAT

Start at: 2019-01-03 04:55:23
End at: 2019-01-03 04:55:53
Local clock offset: -3.186 ms
Remote clock offset: 17.836 ms

# Below is generated by plot.py at 2019-01-03 07:08:20
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.19 Mbit/s
95th percentile per-packet one-way delay: 167.589 ms
Loss rate: 1.92%
-- Flow 1:
Average throughput: 1.19 Mbit/s
95th percentile per-packet one-way delay: 167.589 ms
Loss rate: 1.92%
```

Run 1: Report of LEDBAT — Data Link

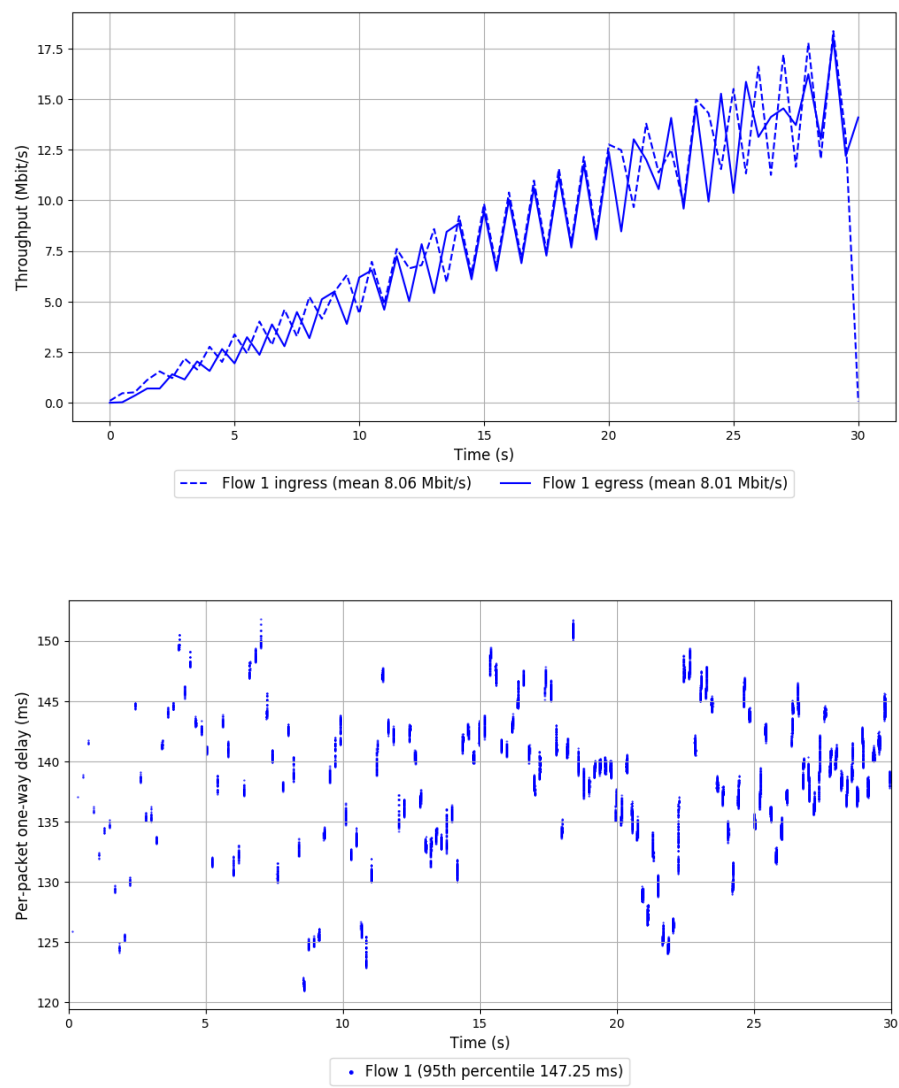


Run 2: Statistics of LEDBAT

Start at: 2019-01-03 05:19:37  
End at: 2019-01-03 05:20:07  
Local clock offset: 0.781 ms  
Remote clock offset: 27.558 ms

# Below is generated by plot.py at 2019-01-03 07:08:20  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 8.01 Mbit/s  
95th percentile per-packet one-way delay: 147.249 ms  
Loss rate: 1.09%  
-- Flow 1:  
Average throughput: 8.01 Mbit/s  
95th percentile per-packet one-way delay: 147.249 ms  
Loss rate: 1.09%

Run 2: Report of LEDBAT — Data Link

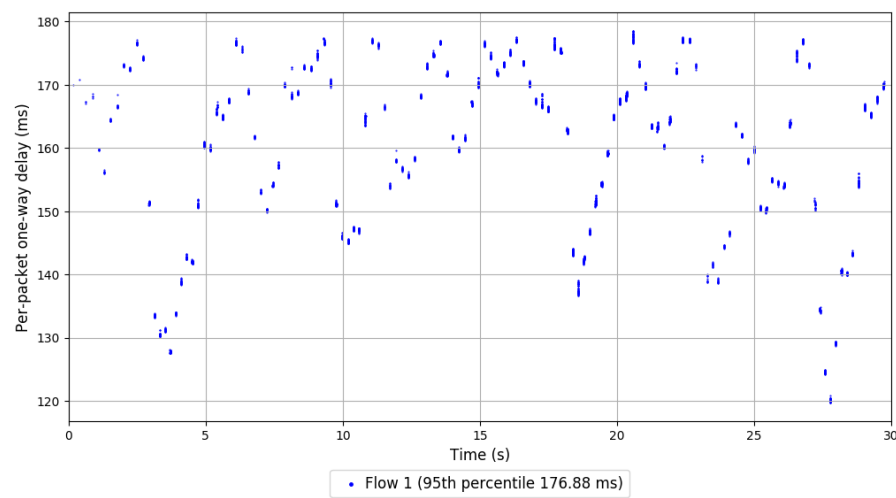
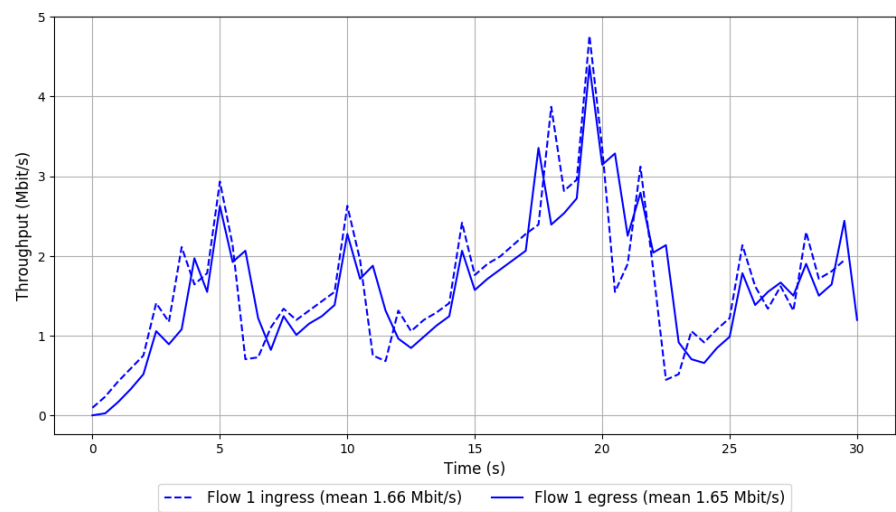


Run 3: Statistics of LEDBAT

Start at: 2019-01-03 05:42:52  
End at: 2019-01-03 05:43:22  
Local clock offset: 0.88 ms  
Remote clock offset: 31.145 ms

# Below is generated by plot.py at 2019-01-03 07:08:20  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 1.65 Mbit/s  
95th percentile per-packet one-way delay: 176.881 ms  
Loss rate: 1.47%  
-- Flow 1:  
Average throughput: 1.65 Mbit/s  
95th percentile per-packet one-way delay: 176.881 ms  
Loss rate: 1.47%

Run 3: Report of LEDBAT — Data Link

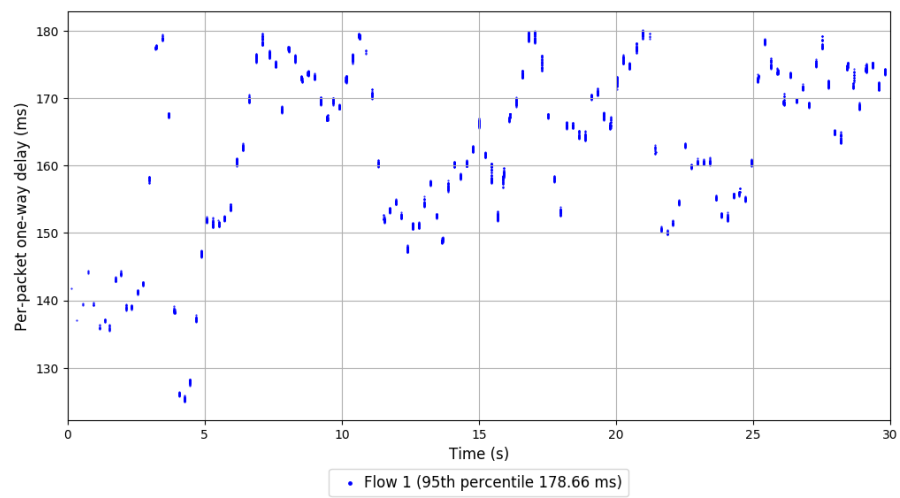
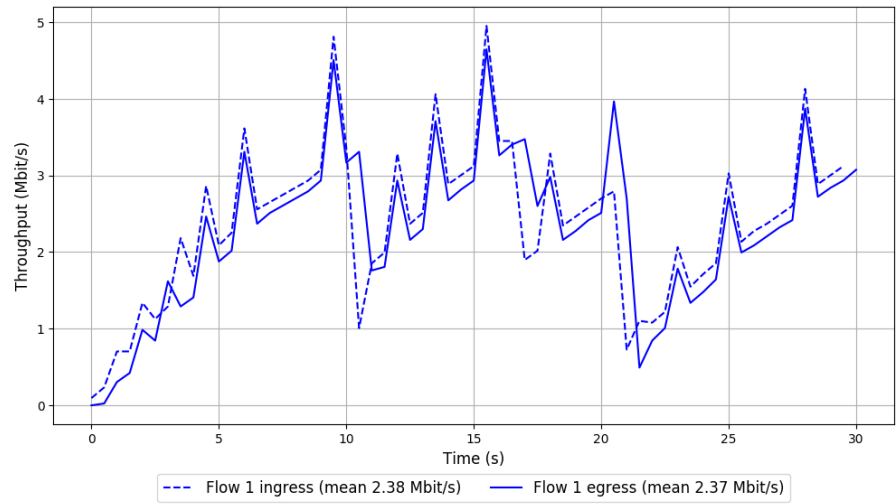


Run 4: Statistics of LEDBAT

Start at: 2019-01-03 06:28:43  
End at: 2019-01-03 06:29:13  
Local clock offset: 1.577 ms  
Remote clock offset: 47.475 ms

# Below is generated by plot.py at 2019-01-03 07:08:20  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 2.37 Mbit/s  
95th percentile per-packet one-way delay: 178.658 ms  
Loss rate: 1.27%  
-- Flow 1:  
Average throughput: 2.37 Mbit/s  
95th percentile per-packet one-way delay: 178.658 ms  
Loss rate: 1.27%

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





Run 5: Statistics of LEDBAT

Start at: 2019-01-03 06:51:29

End at: 2019-01-03 06:51:59

Local clock offset: 3.369 ms

Remote clock offset: 24.86 ms

# Below is generated by plot.py at 2019-01-03 07:08:24

# Datalink statistics

-- Total of 1 flow:

Average throughput: 25.16 Mbit/s

95th percentile per-packet one-way delay: 61.069 ms

Loss rate: 0.79%

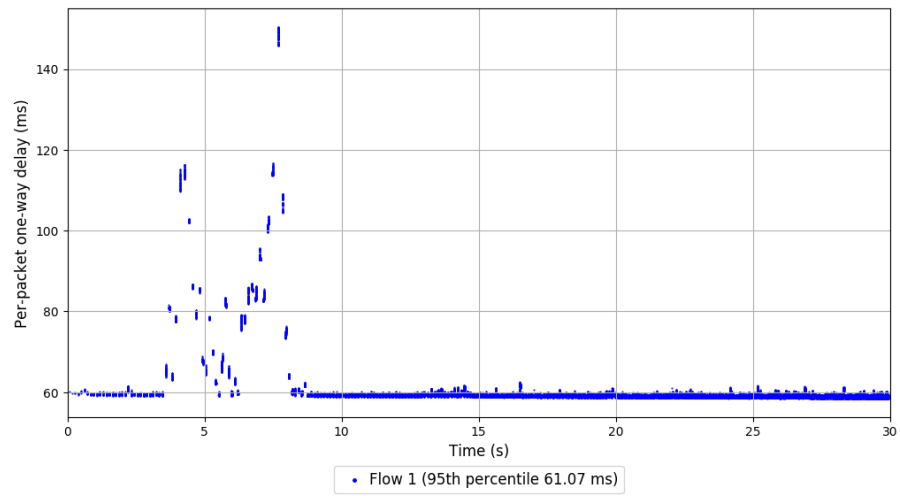
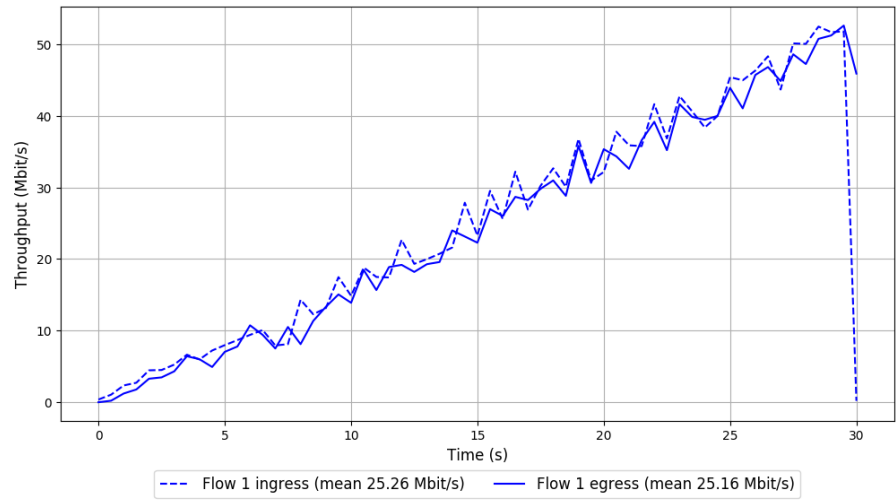
-- Flow 1:

Average throughput: 25.16 Mbit/s

95th percentile per-packet one-way delay: 61.069 ms

Loss rate: 0.79%

## Run 5: Report of LEDBAT — Data Link



Run 1: Statistics of PCC-Allegro

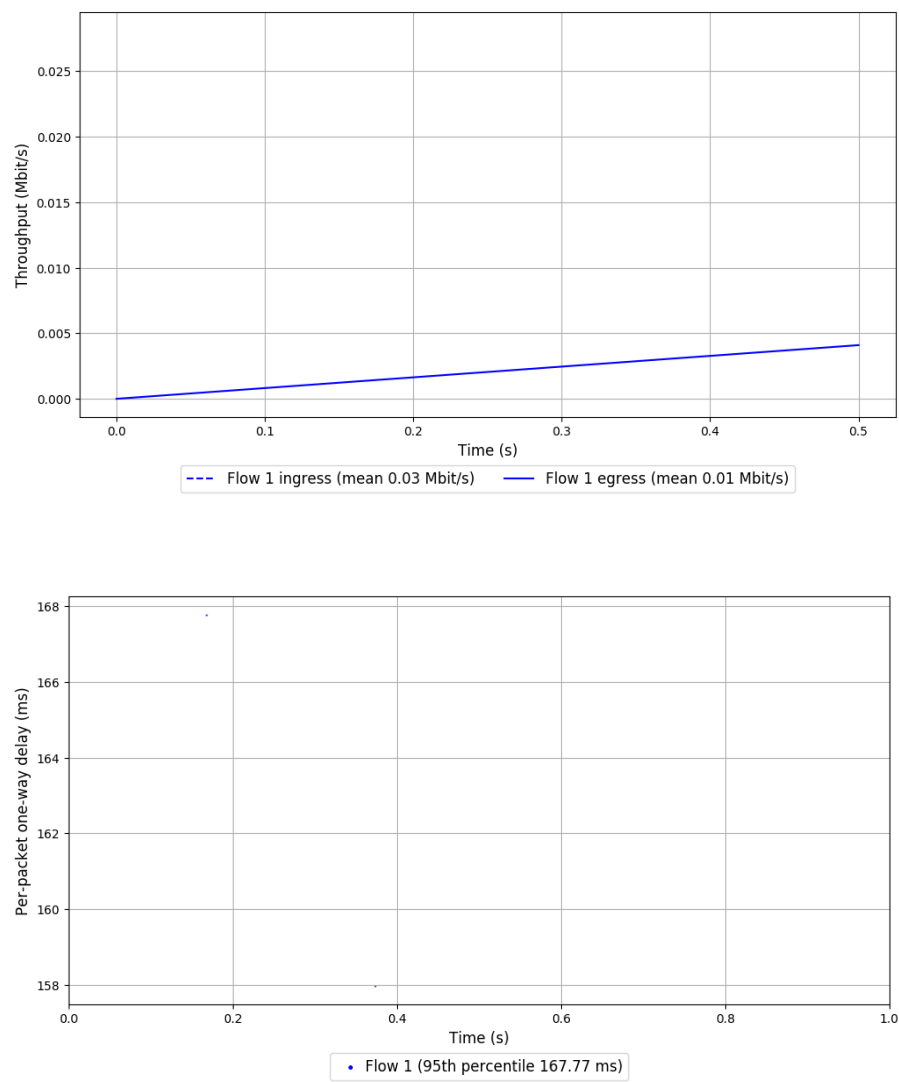
Start at: 2019-01-03 05:02:24

End at: 2019-01-03 05:02:54

Local clock offset: -1.052 ms

Remote clock offset: 21.314 ms

Run 1: Report of PCC-Allegro — Data Link



Run 2: Statistics of PCC-Allegro

Start at: 2019-01-03 05:25:40

End at: 2019-01-03 05:26:10

Local clock offset: 0.993 ms

Remote clock offset: 30.146 ms

# Below is generated by plot.py at 2019-01-03 07:08:31

# Datalink statistics

-- Total of 1 flow:

Average throughput: 30.81 Mbit/s

95th percentile per-packet one-way delay: 159.979 ms

Loss rate: 2.88%

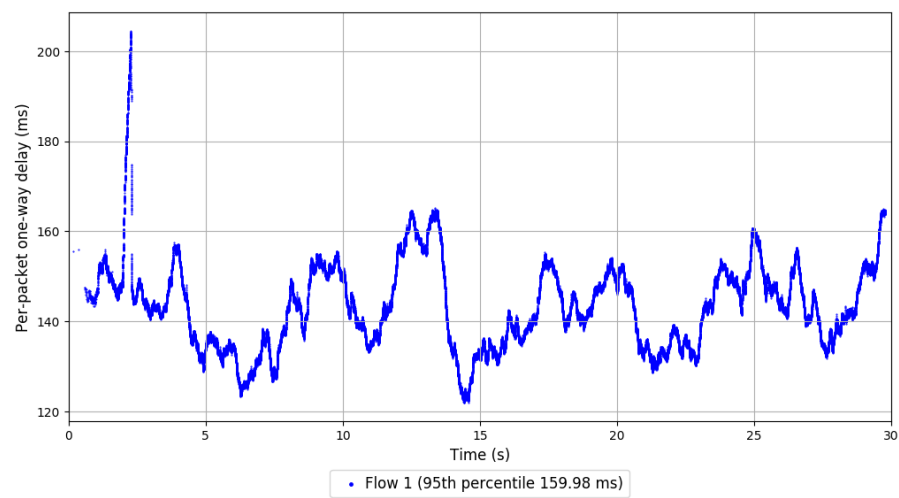
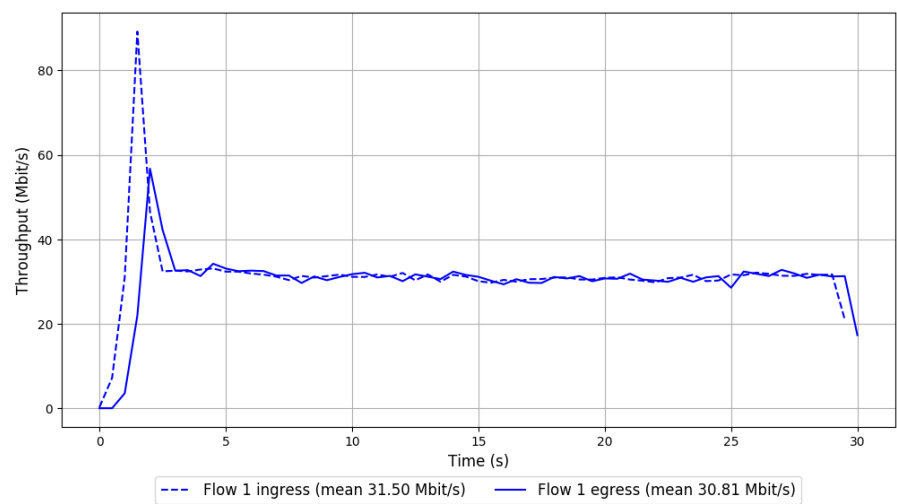
-- Flow 1:

Average throughput: 30.81 Mbit/s

95th percentile per-packet one-way delay: 159.979 ms

Loss rate: 2.88%

Run 2: Report of PCC-Allegro — Data Link



Run 3: Statistics of PCC-Allegro

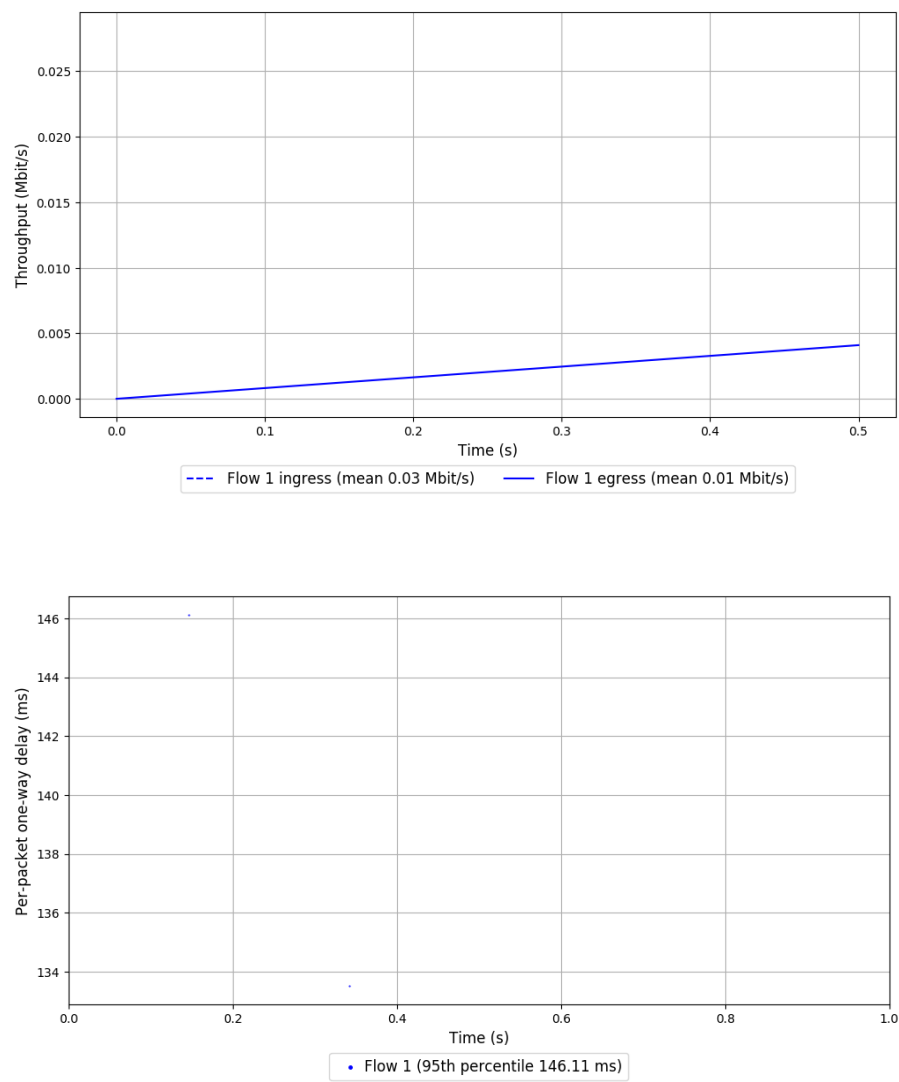
Start at: 2019-01-03 05:49:59

End at: 2019-01-03 05:50:29

Local clock offset: 1.196 ms

Remote clock offset: 43.425 ms

Run 3: Report of PCC-Allegro — Data Link





Run 4: Statistics of PCC-Allegro

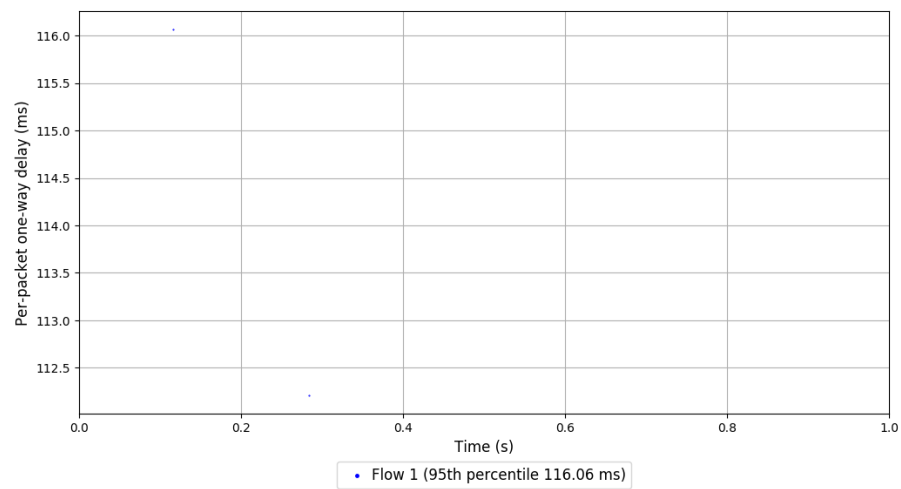
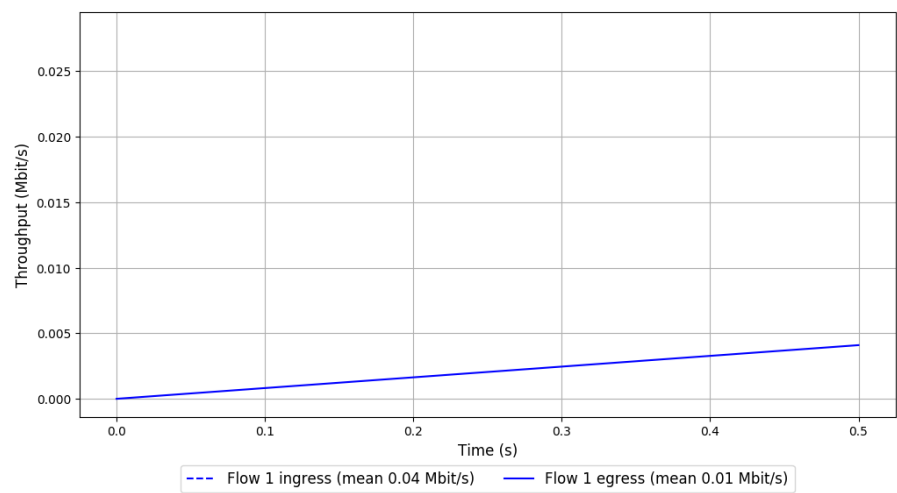
Start at: 2019-01-03 06:35:07

End at: 2019-01-03 06:35:37

Local clock offset: 2.318 ms

Remote clock offset: 57.952 ms

Run 4: Report of PCC-Allegro — Data Link



Run 5: Statistics of PCC-Allegro

Start at: 2019-01-03 06:57:20

End at: 2019-01-03 06:57:50

Local clock offset: 3.165 ms

Remote clock offset: 20.804 ms

# Below is generated by plot.py at 2019-01-03 07:08:36

# Datalink statistics

-- Total of 1 flow:

Average throughput: 35.29 Mbit/s

95th percentile per-packet one-way delay: 63.640 ms

Loss rate: 1.31%

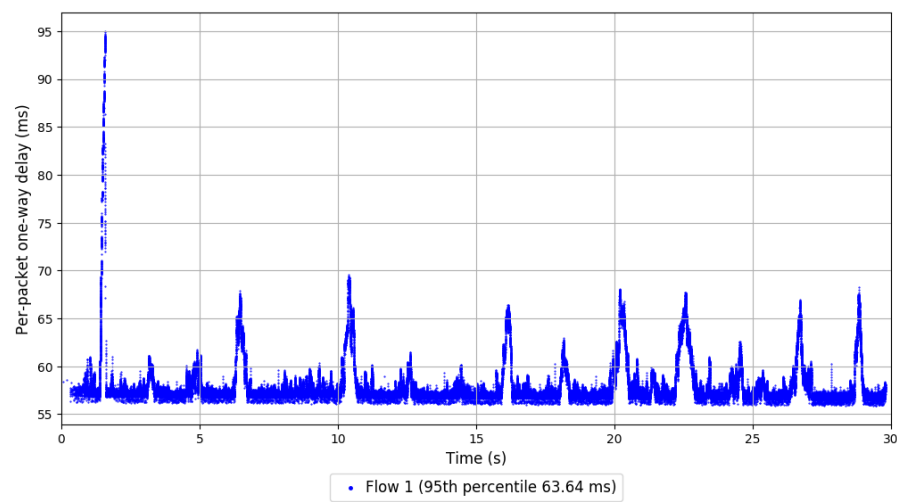
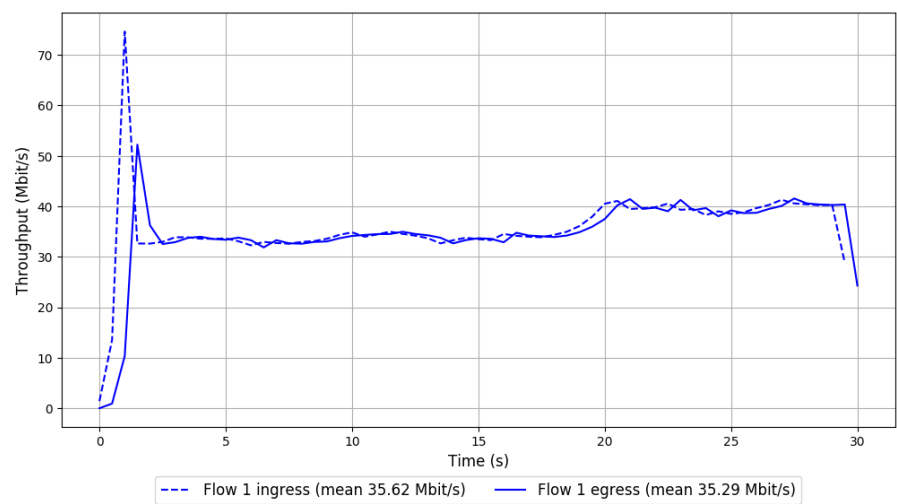
-- Flow 1:

Average throughput: 35.29 Mbit/s

95th percentile per-packet one-way delay: 63.640 ms

Loss rate: 1.31%

Run 5: Report of PCC-Allegro — Data Link

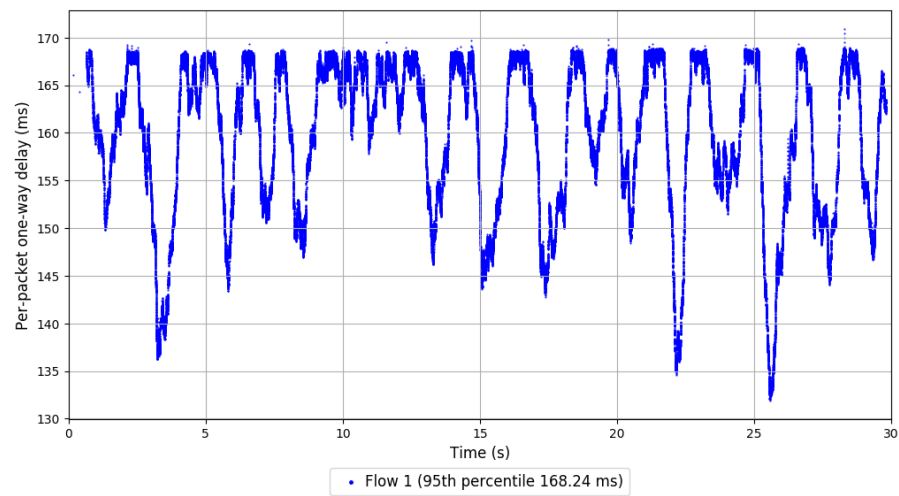
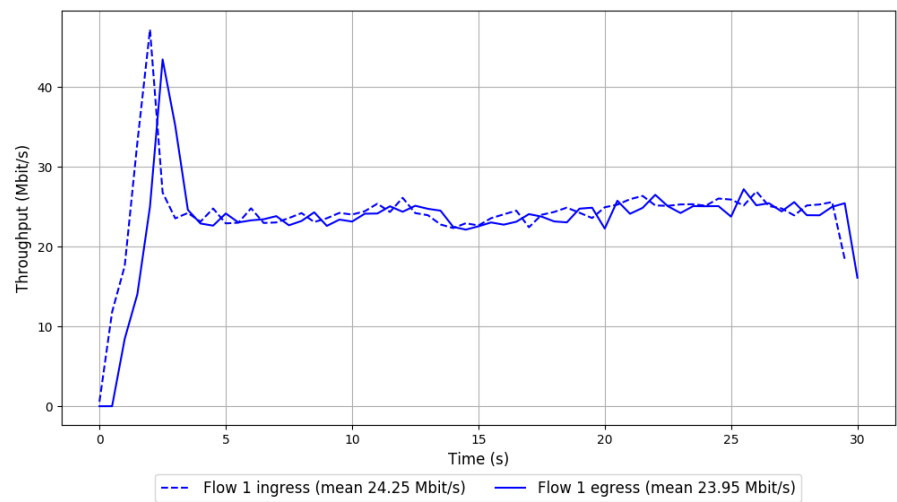


```
Run 1: Statistics of PCC-Expr

Start at: 2019-01-03 04:59:30
End at: 2019-01-03 05:00:00
Local clock offset: -2.068 ms
Remote clock offset: 19.239 ms

# Below is generated by plot.py at 2019-01-03 07:08:51
# Datalink statistics
-- Total of 1 flow:
Average throughput: 23.95 Mbit/s
95th percentile per-packet one-way delay: 168.239 ms
Loss rate: 1.96%
-- Flow 1:
Average throughput: 23.95 Mbit/s
95th percentile per-packet one-way delay: 168.239 ms
Loss rate: 1.96%
```

Run 1: Report of PCC-Expr — Data Link

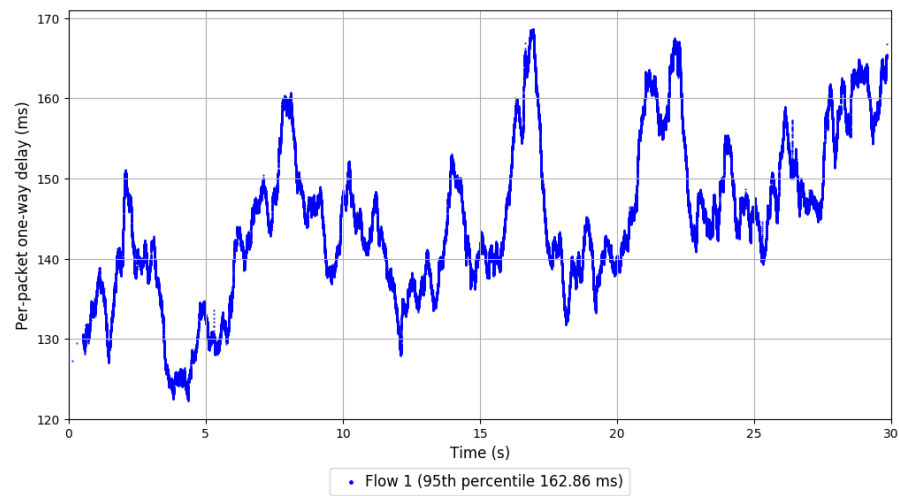
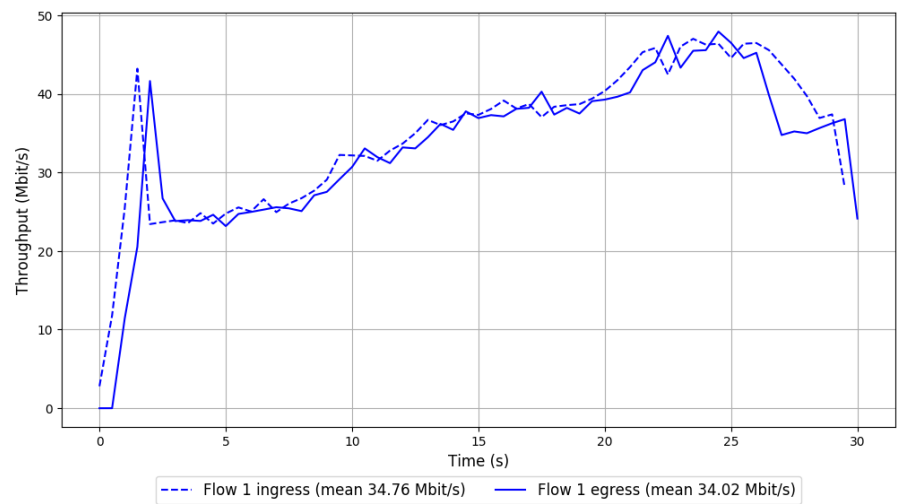


Run 2: Statistics of PCC-Expr

Start at: 2019-01-03 05:23:13  
End at: 2019-01-03 05:23:43  
Local clock offset: 0.823 ms  
Remote clock offset: 26.058 ms

# Below is generated by plot.py at 2019-01-03 07:09:11  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 34.02 Mbit/s  
95th percentile per-packet one-way delay: 162.861 ms  
Loss rate: 2.71%  
-- Flow 1:  
Average throughput: 34.02 Mbit/s  
95th percentile per-packet one-way delay: 162.861 ms  
Loss rate: 2.71%

Run 2: Report of PCC-Expr — Data Link



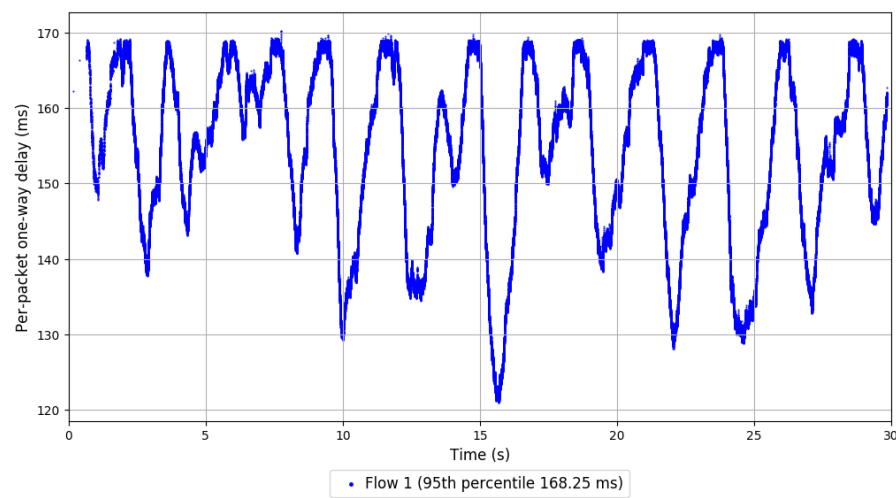
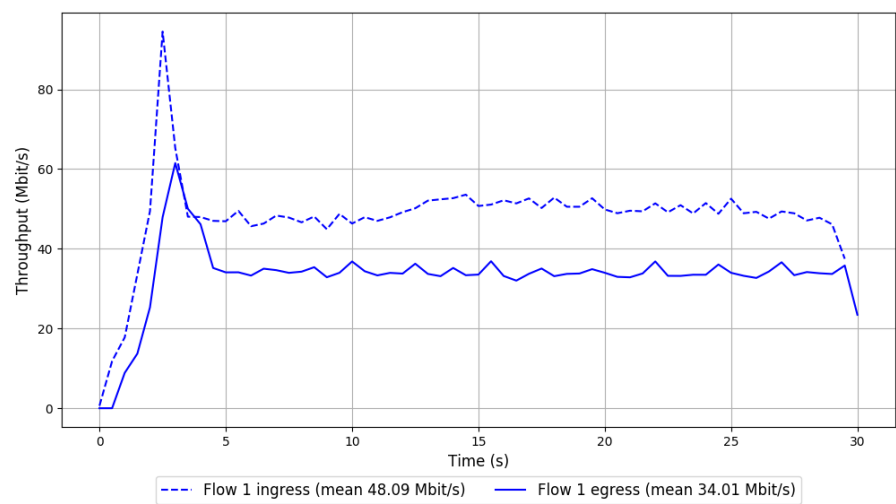


Run 3: Statistics of PCC-Expr

Start at: 2019-01-03 05:46:30  
End at: 2019-01-03 05:47:00  
Local clock offset: 0.881 ms  
Remote clock offset: 41.886 ms

# Below is generated by plot.py at 2019-01-03 07:09:22  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 34.01 Mbit/s  
95th percentile per-packet one-way delay: 168.250 ms  
Loss rate: 29.81%  
-- Flow 1:  
Average throughput: 34.01 Mbit/s  
95th percentile per-packet one-way delay: 168.250 ms  
Loss rate: 29.81%

Run 3: Report of PCC-Expr — Data Link

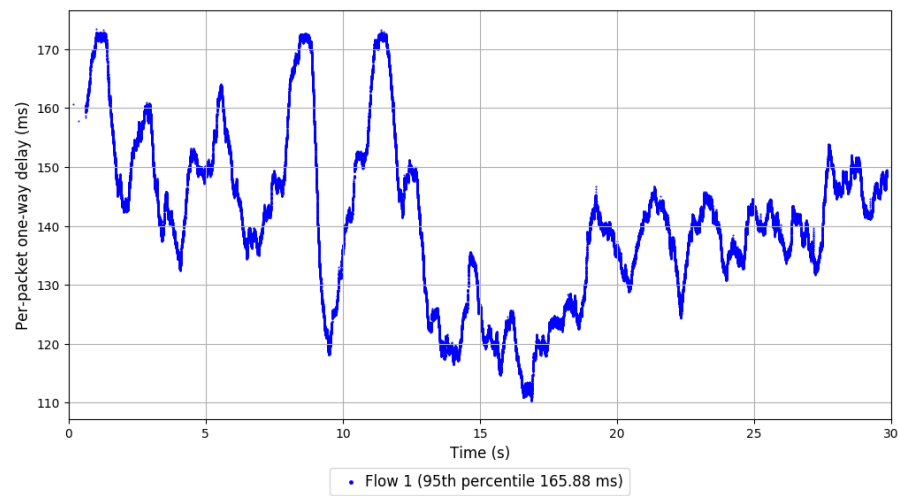
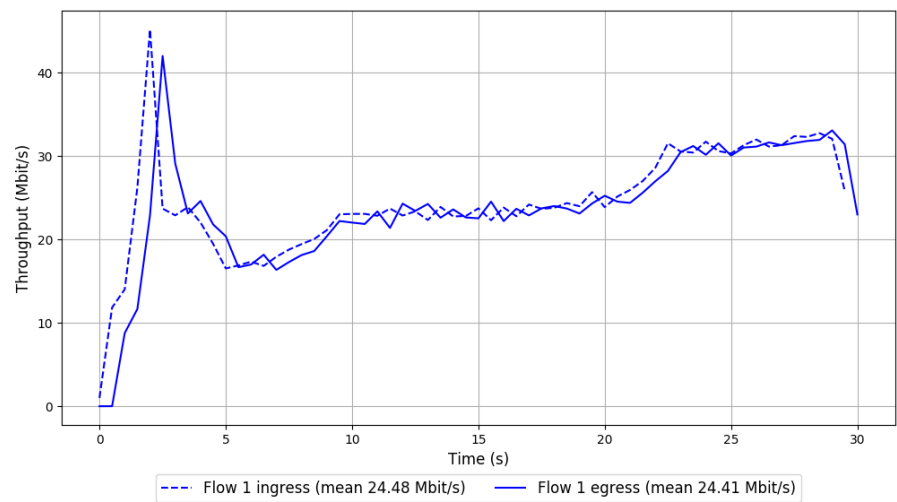


Run 4: Statistics of PCC-Expr

Start at: 2019-01-03 06:32:29  
End at: 2019-01-03 06:32:59  
Local clock offset: 1.951 ms  
Remote clock offset: 55.131 ms

# Below is generated by plot.py at 2019-01-03 07:09:22  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 24.41 Mbit/s  
95th percentile per-packet one-way delay: 165.885 ms  
Loss rate: 0.98%  
-- Flow 1:  
Average throughput: 24.41 Mbit/s  
95th percentile per-packet one-way delay: 165.885 ms  
Loss rate: 0.98%

Run 4: Report of PCC-Expr — Data Link

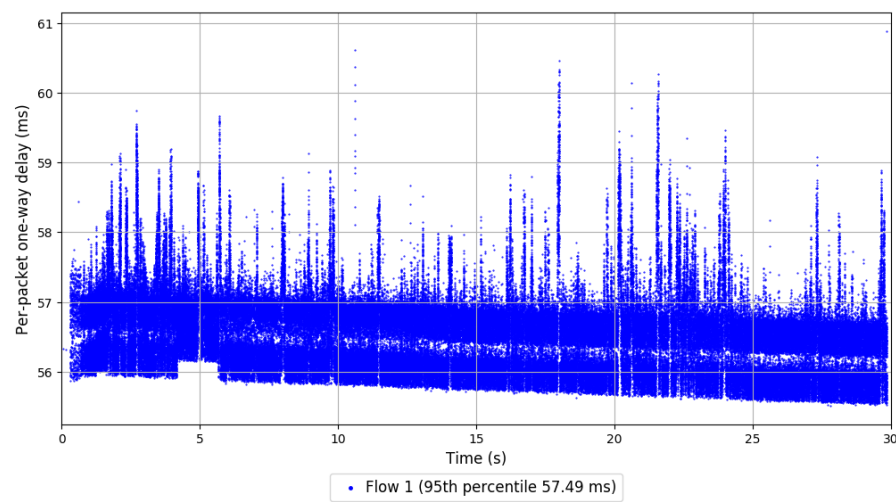
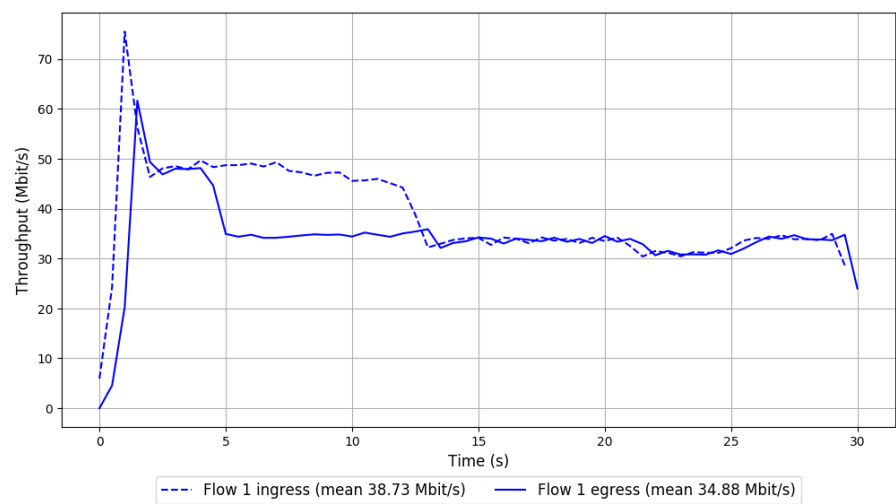


Run 5: Statistics of PCC-Expr

Start at: 2019-01-03 06:54:57  
End at: 2019-01-03 06:55:27  
Local clock offset: 3.523 ms  
Remote clock offset: 23.256 ms

# Below is generated by plot.py at 2019-01-03 07:09:22  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 34.88 Mbit/s  
95th percentile per-packet one-way delay: 57.494 ms  
Loss rate: 10.30%  
-- Flow 1:  
Average throughput: 34.88 Mbit/s  
95th percentile per-packet one-way delay: 57.494 ms  
Loss rate: 10.30%

Run 5: Report of PCC-Expr — Data Link

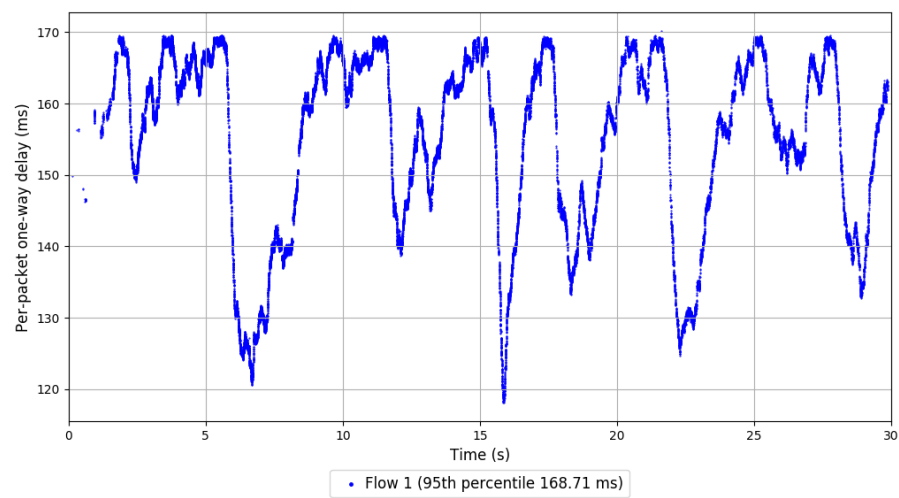
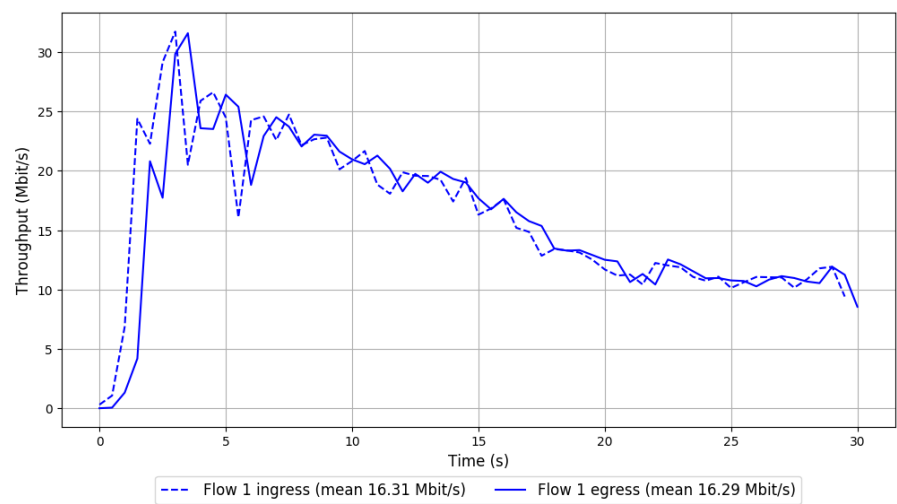


Run 1: Statistics of QUIC Cubic

Start at: 2019-01-03 04:49:25  
End at: 2019-01-03 04:49:55  
Local clock offset: -3.489 ms  
Remote clock offset: 18.726 ms

# Below is generated by plot.py at 2019-01-03 07:09:22  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 16.29 Mbit/s  
95th percentile per-packet one-way delay: 168.706 ms  
Loss rate: 0.75%  
-- Flow 1:  
Average throughput: 16.29 Mbit/s  
95th percentile per-packet one-way delay: 168.706 ms  
Loss rate: 0.75%

Run 1: Report of QUIC Cubic — Data Link



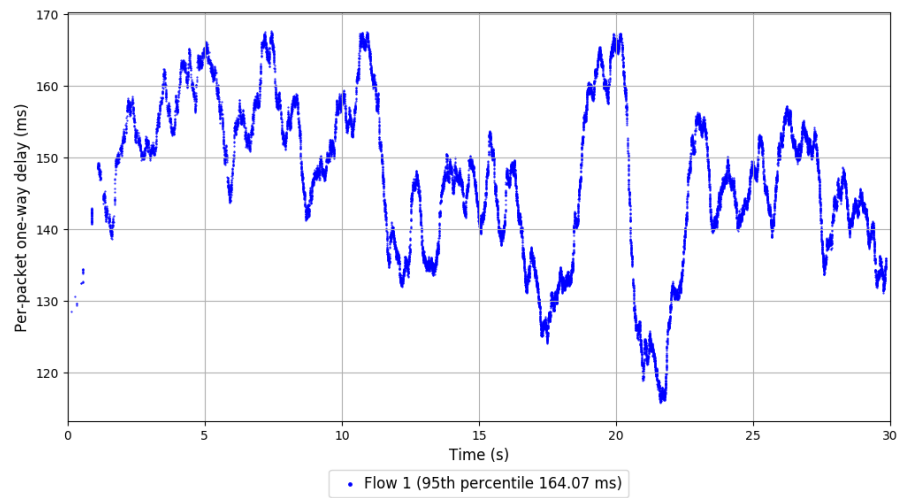
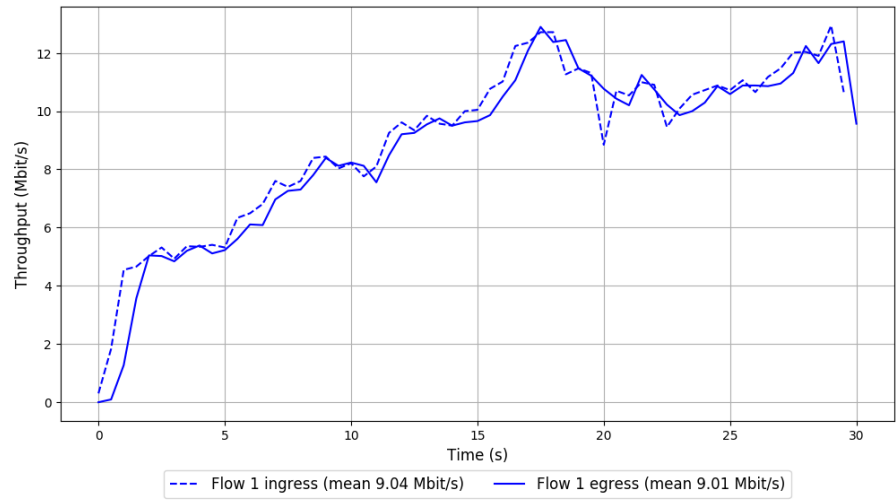


Run 2: Statistics of QUIC Cubic

Start at: 2019-01-03 05:14:51  
End at: 2019-01-03 05:15:21  
Local clock offset: 0.26 ms  
Remote clock offset: 26.926 ms

# Below is generated by plot.py at 2019-01-03 07:09:22  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 9.01 Mbit/s  
95th percentile per-packet one-way delay: 164.071 ms  
Loss rate: 0.93%  
-- Flow 1:  
Average throughput: 9.01 Mbit/s  
95th percentile per-packet one-way delay: 164.071 ms  
Loss rate: 0.93%

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



Run 3: Statistics of QUIC Cubic

Start at: 2019-01-03 05:38:06

End at: 2019-01-03 05:38:36

Local clock offset: 0.788 ms

Remote clock offset: 35.289 ms

# Below is generated by plot.py at 2019-01-03 07:09:22

# Datalink statistics

-- Total of 1 flow:

Average throughput: 5.80 Mbit/s

95th percentile per-packet one-way delay: 168.013 ms

Loss rate: 1.00%

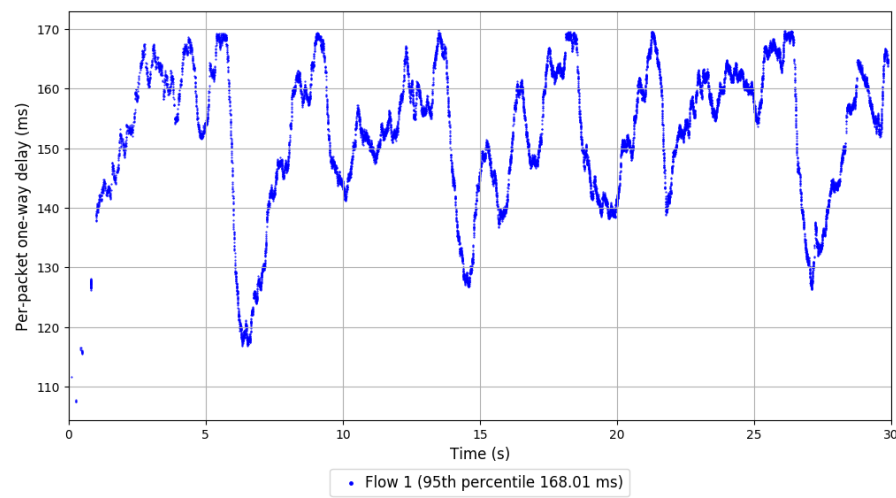
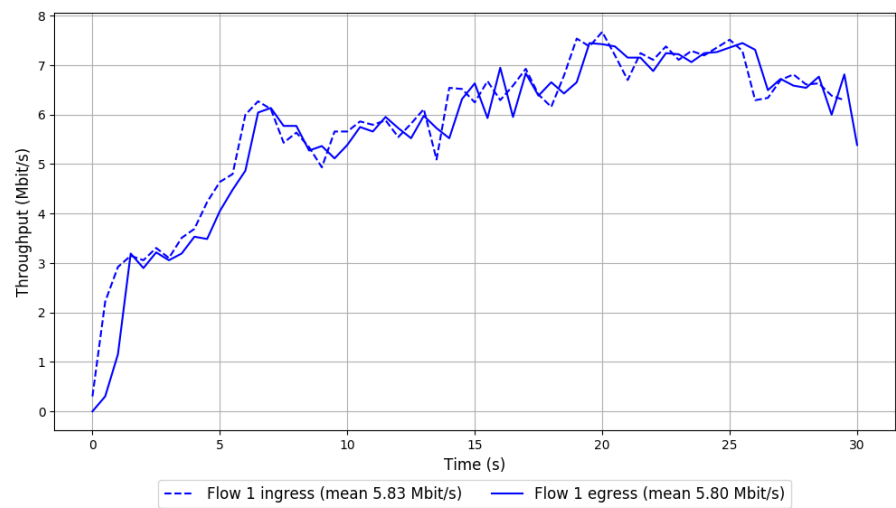
-- Flow 1:

Average throughput: 5.80 Mbit/s

95th percentile per-packet one-way delay: 168.013 ms

Loss rate: 1.00%

Run 3: Report of QUIC Cubic — Data Link



Run 4: Statistics of QUIC Cubic

Start at: 2019-01-03 06:23:45

End at: 2019-01-03 06:24:15

Local clock offset: 0.507 ms

Remote clock offset: 50.016 ms

# Below is generated by plot.py at 2019-01-03 07:09:22

# Datalink statistics

-- Total of 1 flow:

Average throughput: 25.97 Mbit/s

95th percentile per-packet one-way delay: 171.937 ms

Loss rate: 0.73%

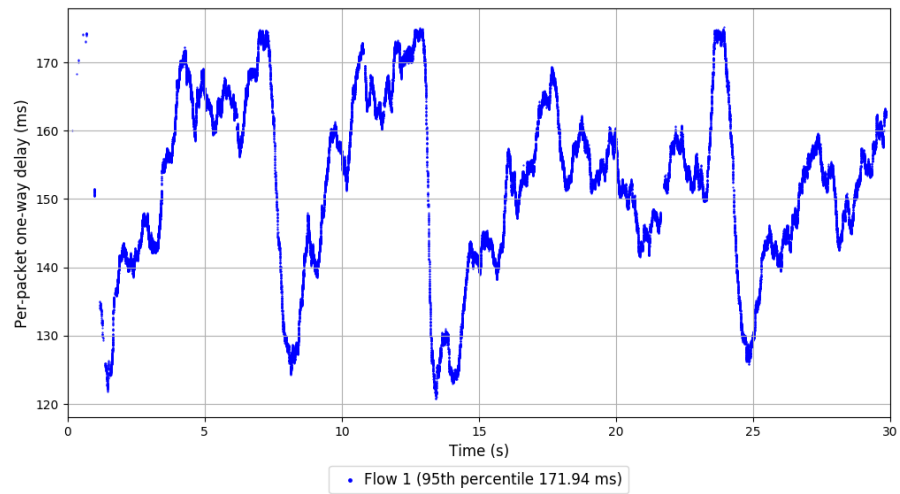
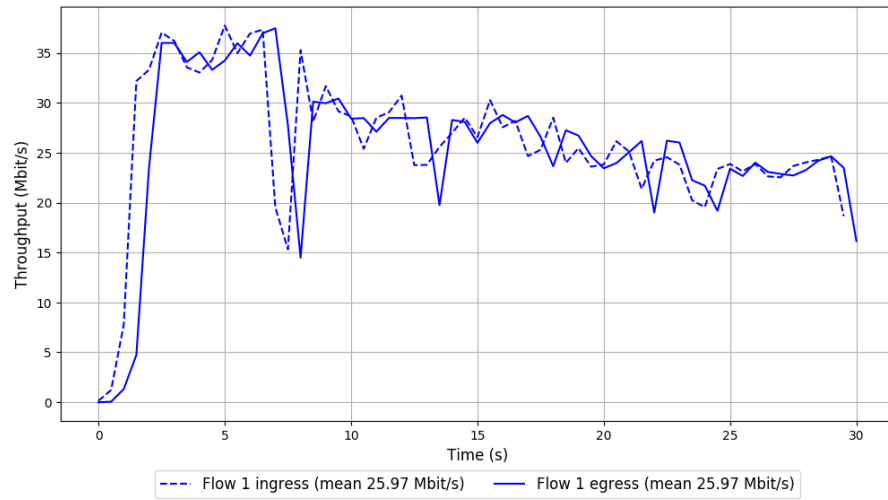
-- Flow 1:

Average throughput: 25.97 Mbit/s

95th percentile per-packet one-way delay: 171.937 ms

Loss rate: 0.73%

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



Run 5: Statistics of QUIC Cubic

Start at: 2019-01-03 06:46:50

End at: 2019-01-03 06:47:20

Local clock offset: 3.289 ms

Remote clock offset: 39.571 ms

# Below is generated by plot.py at 2019-01-03 07:09:22

# Datalink statistics

-- Total of 1 flow:

Average throughput: 38.34 Mbit/s

95th percentile per-packet one-way delay: 64.309 ms

Loss rate: 2.24%

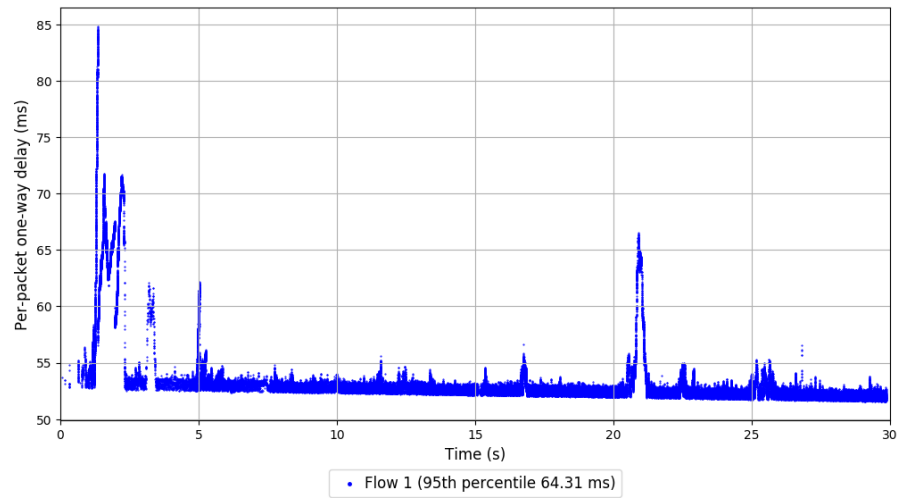
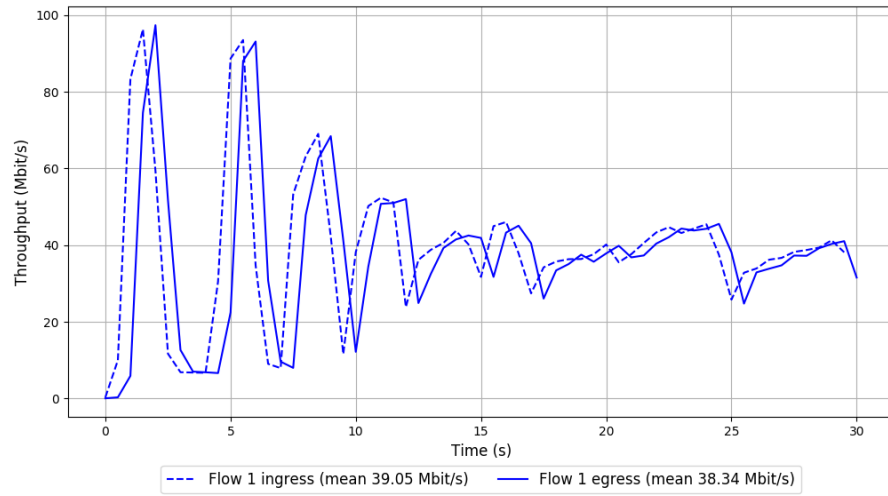
-- Flow 1:

Average throughput: 38.34 Mbit/s

95th percentile per-packet one-way delay: 64.309 ms

Loss rate: 2.24%

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



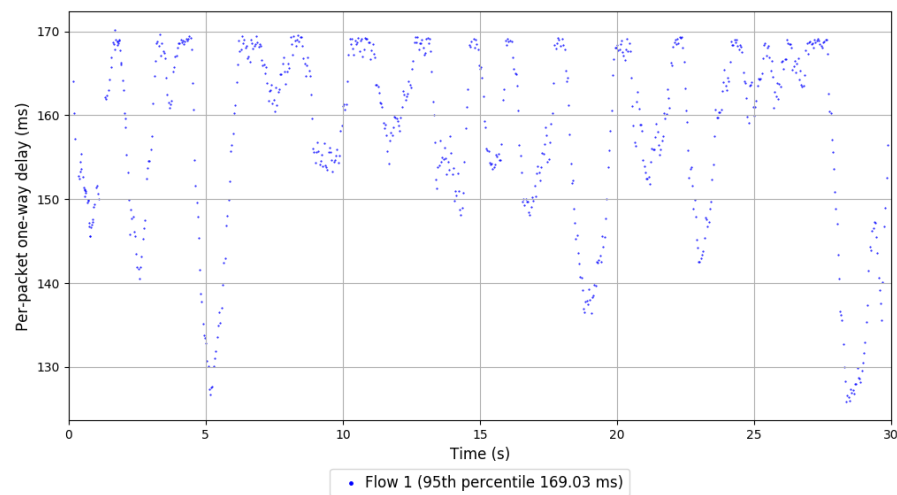
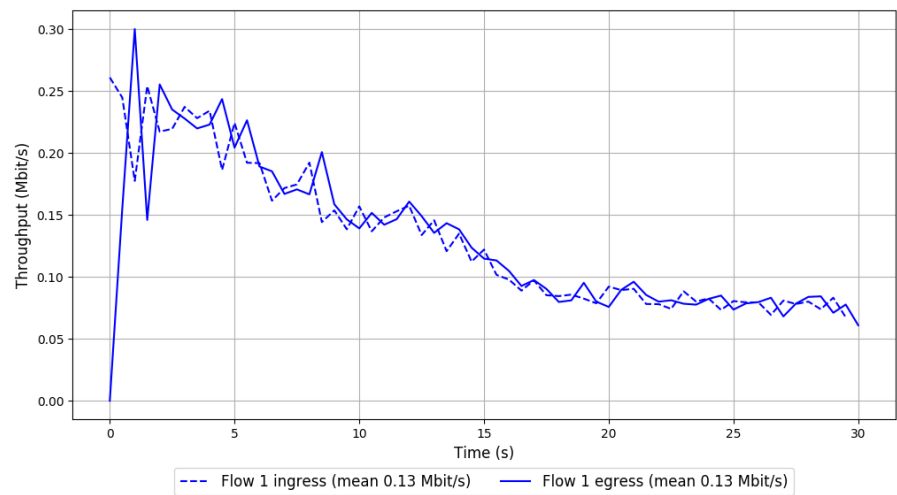


Run 1: Statistics of SCReAM

Start at: 2019-01-03 05:08:52  
End at: 2019-01-03 05:09:22  
Local clock offset: -0.19 ms  
Remote clock offset: 24.564 ms

# Below is generated by plot.py at 2019-01-03 07:09:22  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.13 Mbit/s  
95th percentile per-packet one-way delay: 169.034 ms  
Loss rate: 0.72%  
-- Flow 1:  
Average throughput: 0.13 Mbit/s  
95th percentile per-packet one-way delay: 169.034 ms  
Loss rate: 0.72%

Run 1: Report of SReAM — Data Link

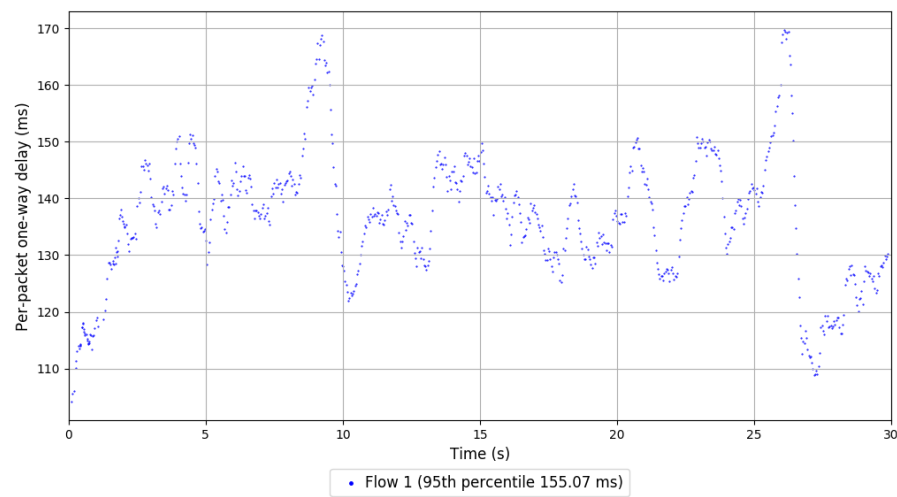
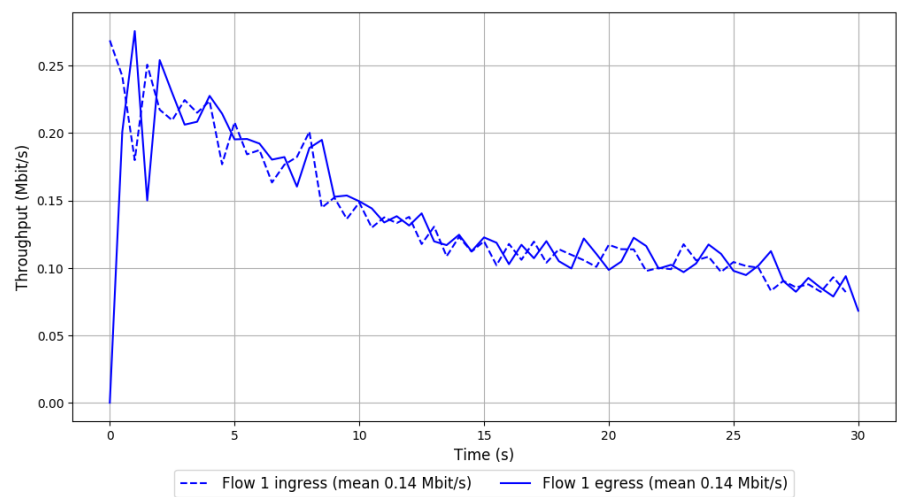


Run 2: Statistics of SCReAM

Start at: 2019-01-03 05:32:01  
End at: 2019-01-03 05:32:31  
Local clock offset: 0.633 ms  
Remote clock offset: 27.108 ms

# Below is generated by plot.py at 2019-01-03 07:09:22  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.14 Mbit/s  
95th percentile per-packet one-way delay: 155.069 ms  
Loss rate: 0.41%  
-- Flow 1:  
Average throughput: 0.14 Mbit/s  
95th percentile per-packet one-way delay: 155.069 ms  
Loss rate: 0.41%

Run 2: Report of SReAM — Data Link

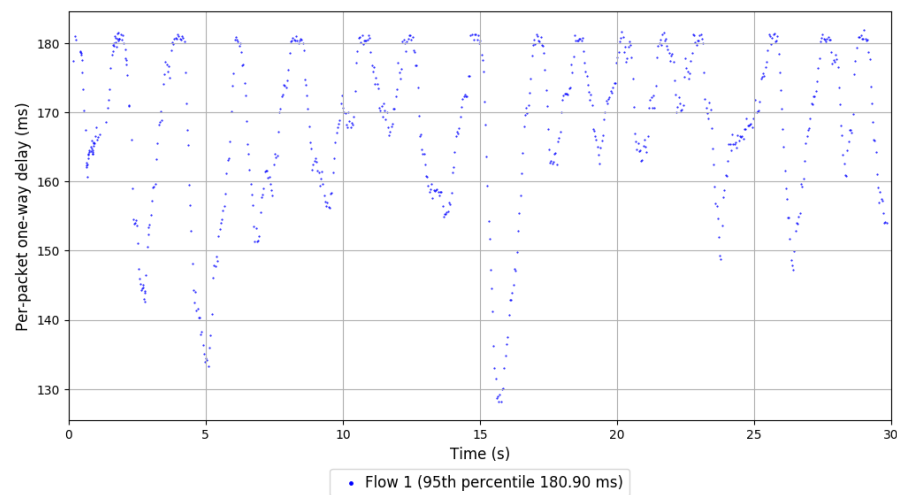
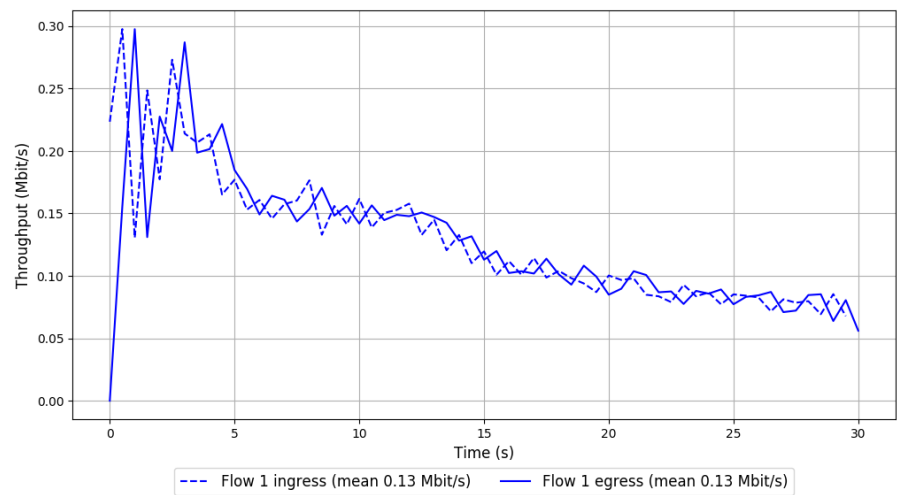


Run 3: Statistics of SCReAM

Start at: 2019-01-03 06:06:25  
End at: 2019-01-03 06:06:55  
Local clock offset: 0.621 ms  
Remote clock offset: 37.544 ms

# Below is generated by plot.py at 2019-01-03 07:09:22  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.13 Mbit/s  
95th percentile per-packet one-way delay: 180.902 ms  
Loss rate: 0.71%  
-- Flow 1:  
Average throughput: 0.13 Mbit/s  
95th percentile per-packet one-way delay: 180.902 ms  
Loss rate: 0.71%

Run 3: Report of SReAM — Data Link

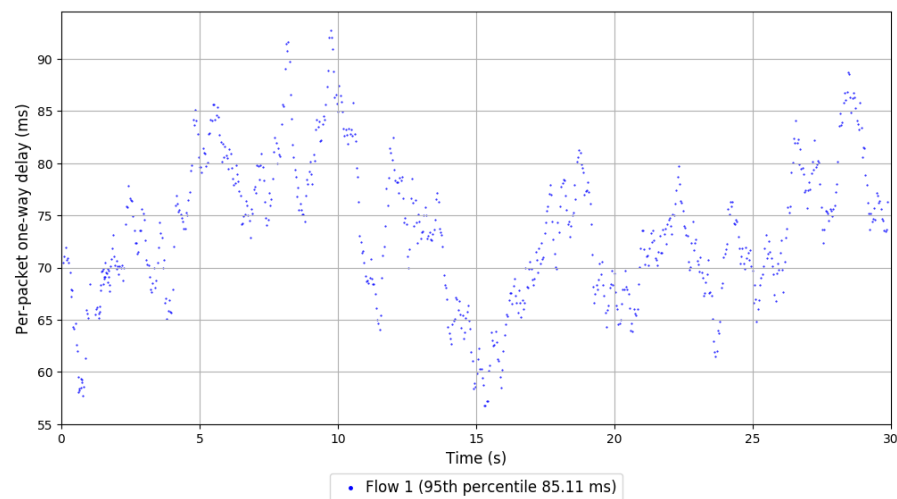
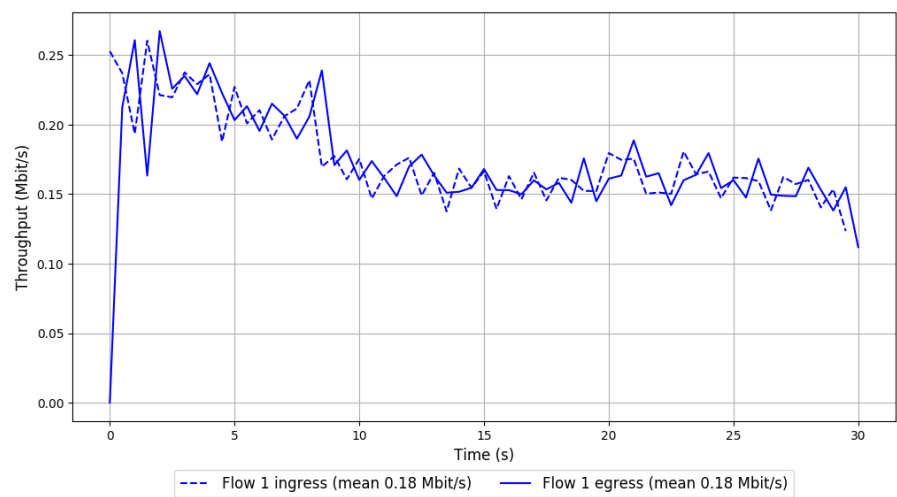


Run 4: Statistics of SCReAM

Start at: 2019-01-03 06:41:01  
End at: 2019-01-03 06:41:31  
Local clock offset: 2.9 ms  
Remote clock offset: 53.635 ms

# Below is generated by plot.py at 2019-01-03 07:09:22  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.18 Mbit/s  
95th percentile per-packet one-way delay: 85.106 ms  
Loss rate: 0.32%  
-- Flow 1:  
Average throughput: 0.18 Mbit/s  
95th percentile per-packet one-way delay: 85.106 ms  
Loss rate: 0.32%

Run 4: Report of SReAM — Data Link



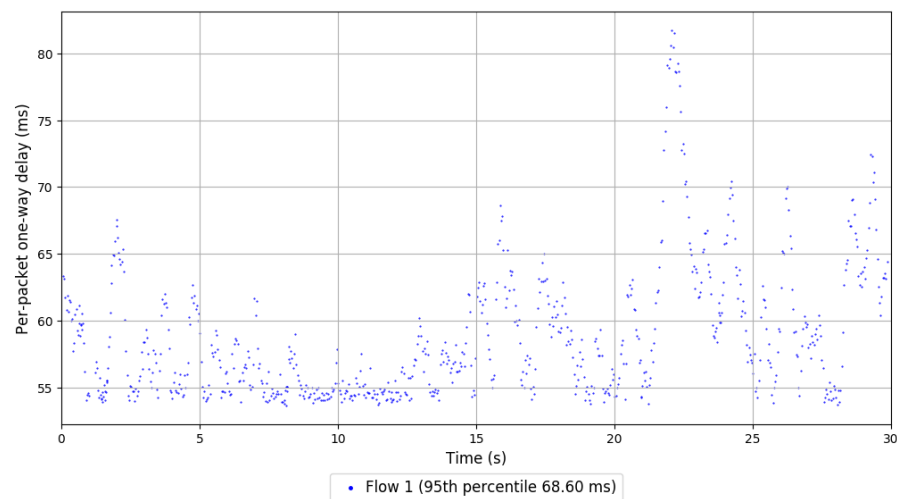
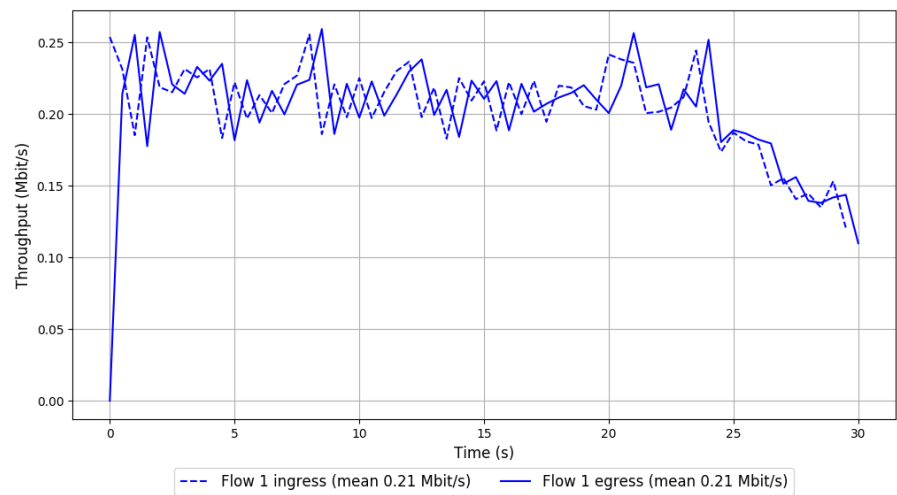


Run 5: Statistics of SCReAM

Start at: 2019-01-03 07:03:10  
End at: 2019-01-03 07:03:40  
Local clock offset: 2.48 ms  
Remote clock offset: 19.747 ms

# Below is generated by plot.py at 2019-01-03 07:09:22  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.21 Mbit/s  
95th percentile per-packet one-way delay: 68.600 ms  
Loss rate: 0.26%  
-- Flow 1:  
Average throughput: 0.21 Mbit/s  
95th percentile per-packet one-way delay: 68.600 ms  
Loss rate: 0.26%

Run 5: Report of SReAM — Data Link

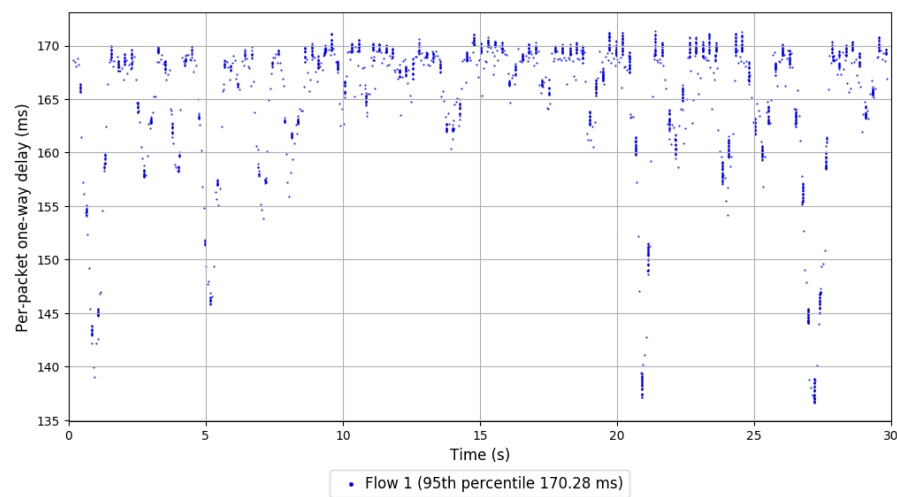
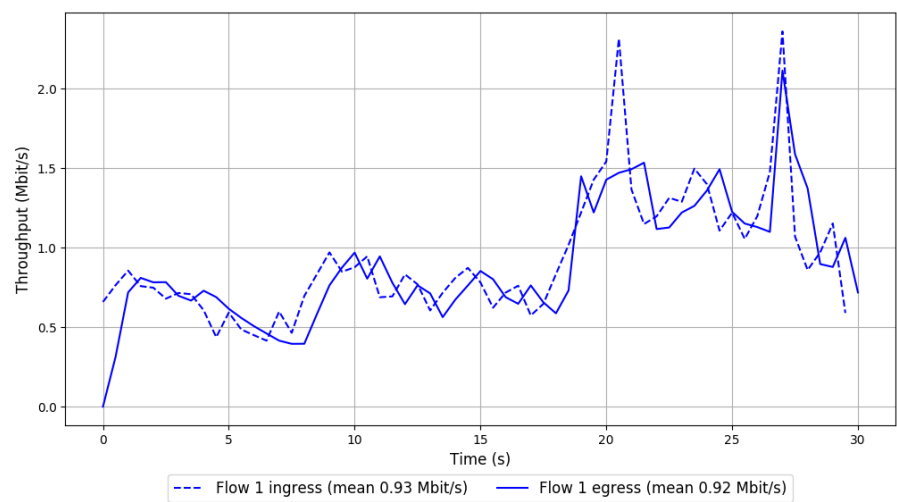


Run 1: Statistics of Sprout

Start at: 2019-01-03 04:58:17  
End at: 2019-01-03 04:58:47  
Local clock offset: -1.998 ms  
Remote clock offset: 17.747 ms

# Below is generated by plot.py at 2019-01-03 07:09:22  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.92 Mbit/s  
95th percentile per-packet one-way delay: 170.282 ms  
Loss rate: 2.34%  
-- Flow 1:  
Average throughput: 0.92 Mbit/s  
95th percentile per-packet one-way delay: 170.282 ms  
Loss rate: 2.34%

Run 1: Report of Sprout — Data Link

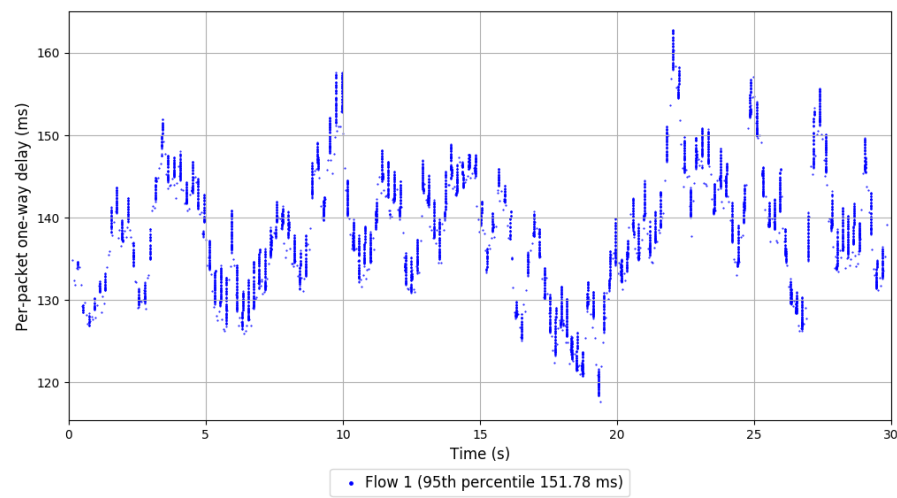
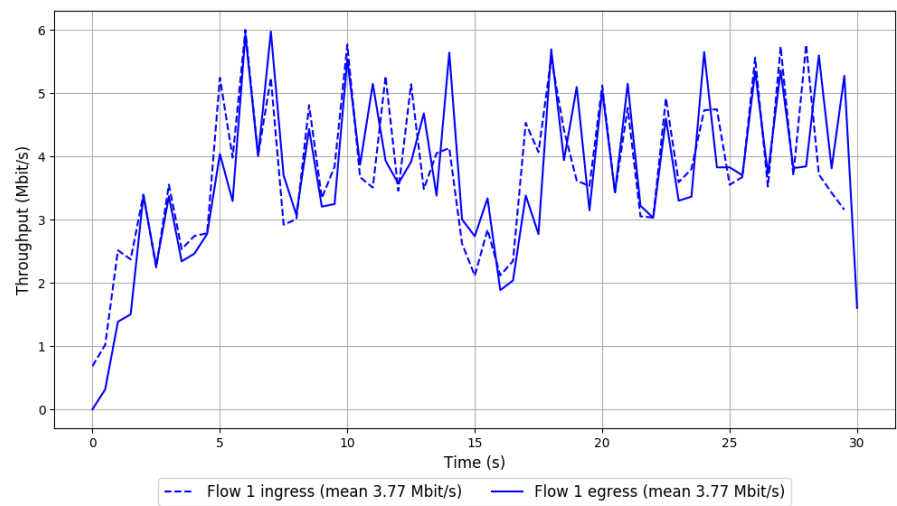


Run 2: Statistics of Sprout

Start at: 2019-01-03 05:22:02  
End at: 2019-01-03 05:22:32  
Local clock offset: 0.919 ms  
Remote clock offset: 27.394 ms

# Below is generated by plot.py at 2019-01-03 07:09:22  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 3.77 Mbit/s  
95th percentile per-packet one-way delay: 151.784 ms  
Loss rate: 0.69%  
-- Flow 1:  
Average throughput: 3.77 Mbit/s  
95th percentile per-packet one-way delay: 151.784 ms  
Loss rate: 0.69%

Run 2: Report of Sprout — Data Link

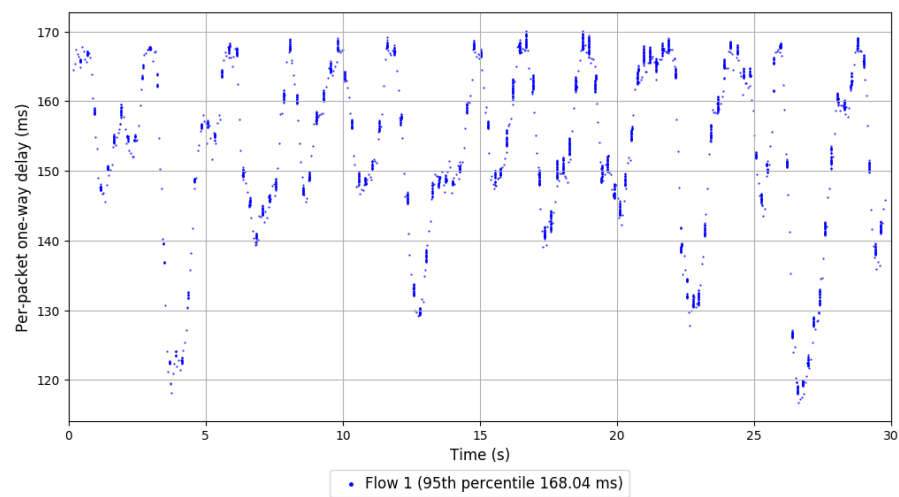
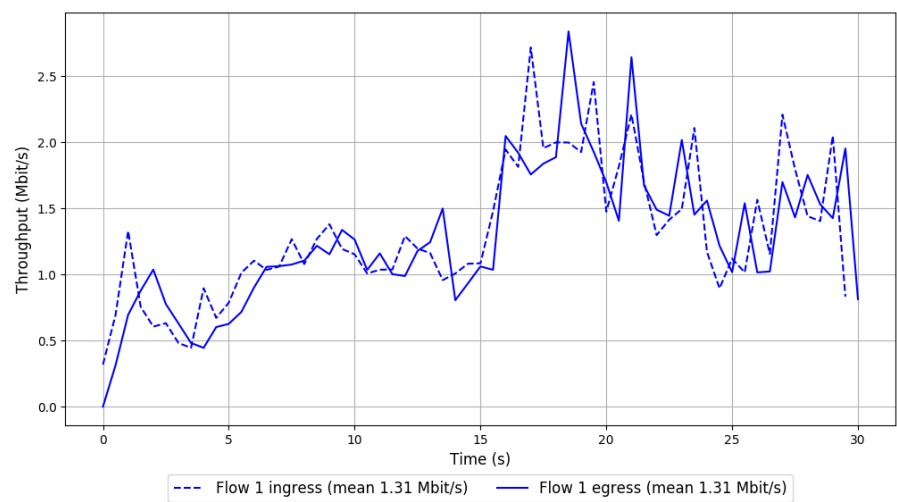


Run 3: Statistics of Sprout

Start at: 2019-01-03 05:45:19  
End at: 2019-01-03 05:45:49  
Local clock offset: 0.842 ms  
Remote clock offset: 42.607 ms

# Below is generated by plot.py at 2019-01-03 07:09:22  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 1.31 Mbit/s  
95th percentile per-packet one-way delay: 168.040 ms  
Loss rate: 1.29%  
-- Flow 1:  
Average throughput: 1.31 Mbit/s  
95th percentile per-packet one-way delay: 168.040 ms  
Loss rate: 1.29%

Run 3: Report of Sprout — Data Link



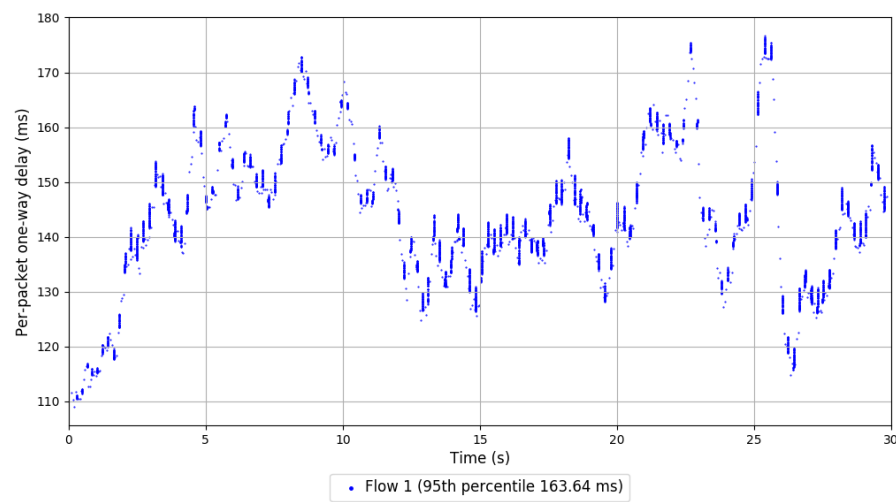
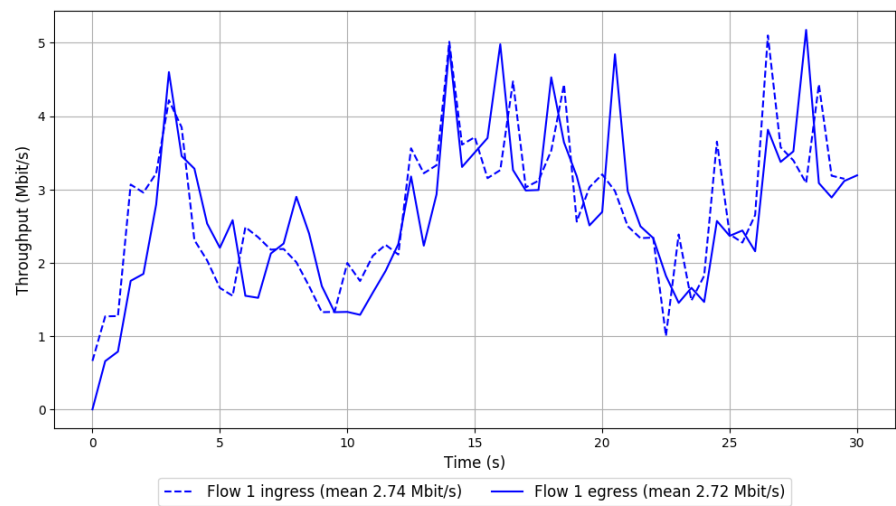


Run 4: Statistics of Sprout

Start at: 2019-01-03 06:31:17  
End at: 2019-01-03 06:31:47  
Local clock offset: 1.991 ms  
Remote clock offset: 53.964 ms

# Below is generated by plot.py at 2019-01-03 07:09:22  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 2.72 Mbit/s  
95th percentile per-packet one-way delay: 163.636 ms  
Loss rate: 1.12%  
-- Flow 1:  
Average throughput: 2.72 Mbit/s  
95th percentile per-packet one-way delay: 163.636 ms  
Loss rate: 1.12%

Run 4: Report of Sprout — Data Link

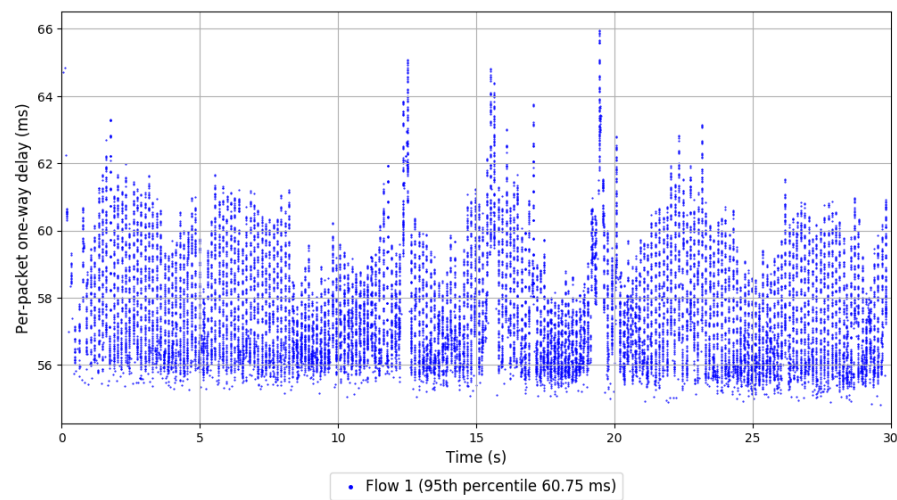
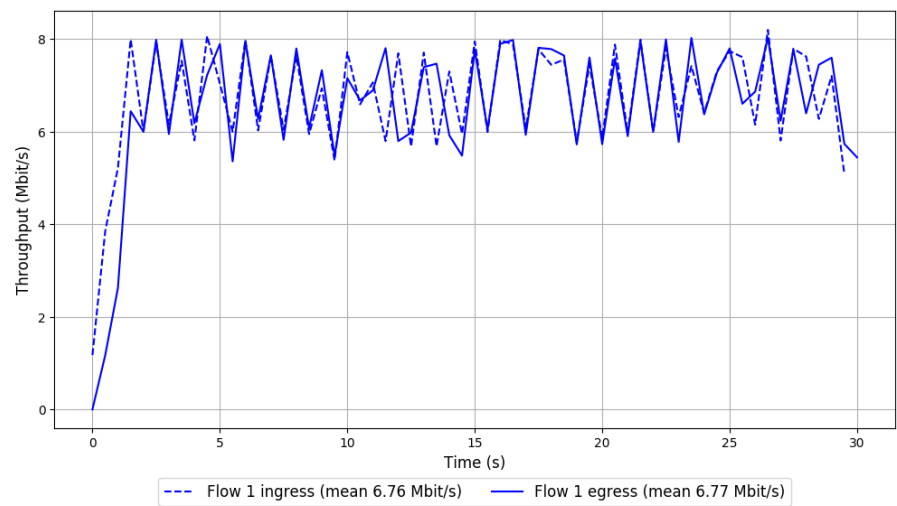


Run 5: Statistics of Sprout

Start at: 2019-01-03 06:53:48  
End at: 2019-01-03 06:54:18  
Local clock offset: 3.619 ms  
Remote clock offset: 25.775 ms

# Below is generated by plot.py at 2019-01-03 07:09:22  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 6.77 Mbit/s  
95th percentile per-packet one-way delay: 60.752 ms  
Loss rate: 0.34%  
-- Flow 1:  
Average throughput: 6.77 Mbit/s  
95th percentile per-packet one-way delay: 60.752 ms  
Loss rate: 0.34%

Run 5: Report of Sprout — Data Link

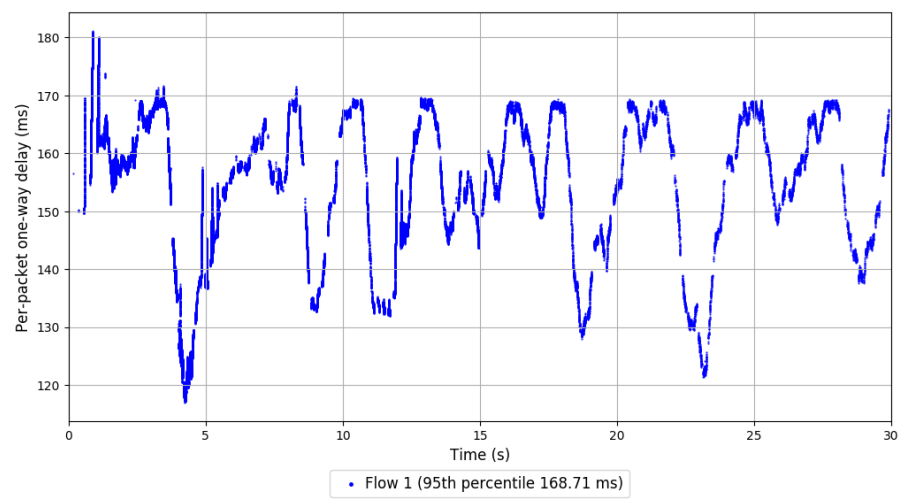
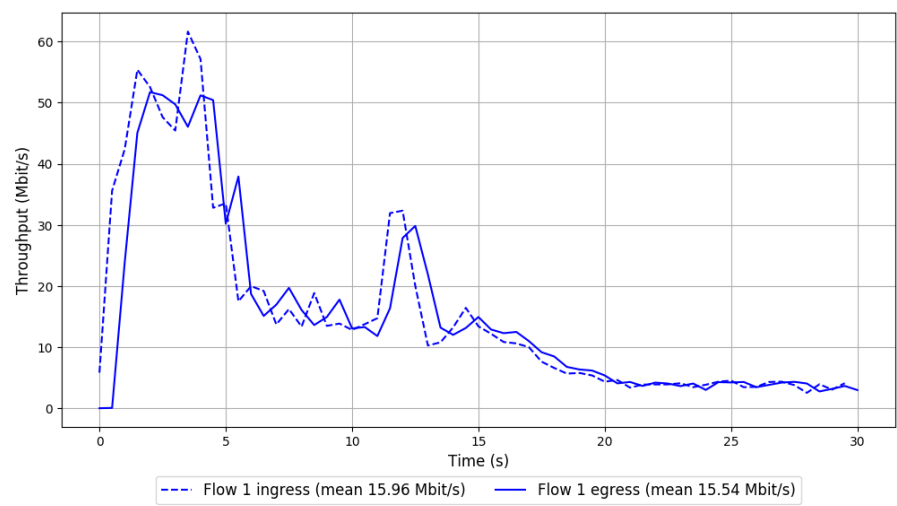


```
Run 1: Statistics of TaoVA-100x

Start at: 2019-01-03 05:06:25
End at: 2019-01-03 05:06:55
Local clock offset: -0.619 ms
Remote clock offset: 23.91 ms

# Below is generated by plot.py at 2019-01-03 07:09:22
# Datalink statistics
-- Total of 1 flow:
Average throughput: 15.54 Mbit/s
95th percentile per-packet one-way delay: 168.713 ms
Loss rate: 3.45%
-- Flow 1:
Average throughput: 15.54 Mbit/s
95th percentile per-packet one-way delay: 168.713 ms
Loss rate: 3.45%
```

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



Run 2: Statistics of TaoVA-100x

Start at: 2019-01-03 05:29:25

End at: 2019-01-03 05:29:55

Local clock offset: 0.643 ms

Remote clock offset: 25.892 ms

# Below is generated by plot.py at 2019-01-03 07:09:58

# Datalink statistics

-- Total of 1 flow:

Average throughput: 37.30 Mbit/s

95th percentile per-packet one-way delay: 160.338 ms

Loss rate: 14.06%

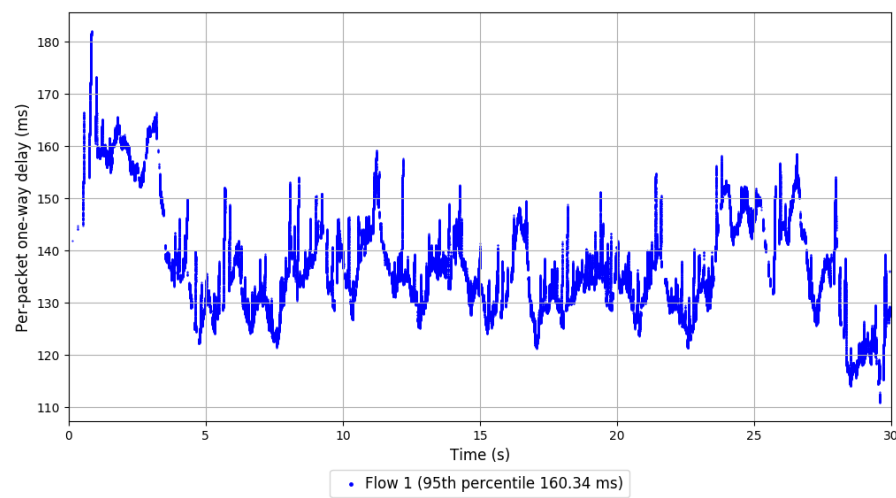
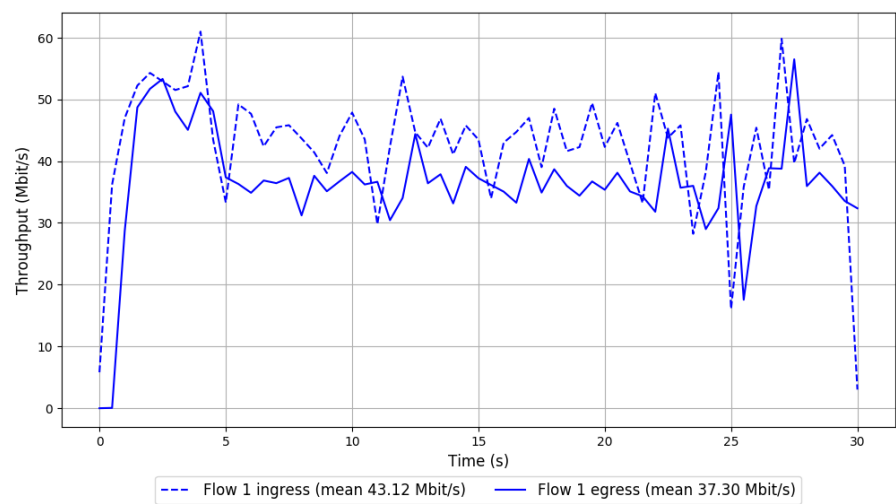
-- Flow 1:

Average throughput: 37.30 Mbit/s

95th percentile per-packet one-way delay: 160.338 ms

Loss rate: 14.06%

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





Run 3: Statistics of TaoVA-100x

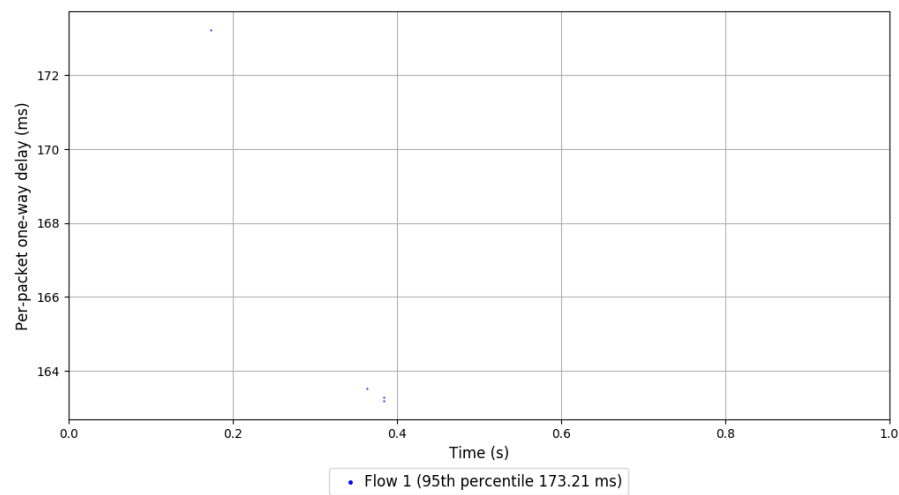
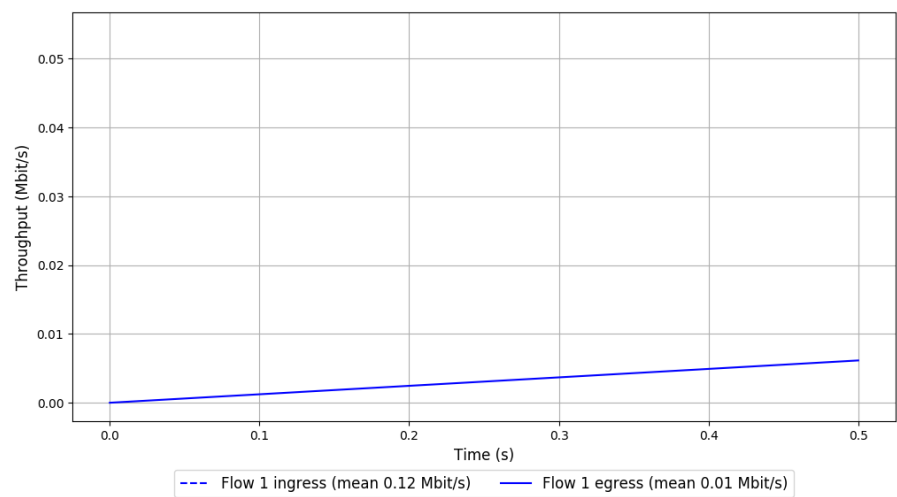
Start at: 2019-01-03 06:01:58

End at: 2019-01-03 06:02:28

Local clock offset: 0.608 ms

Remote clock offset: 37.504 ms

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



Run 4: Statistics of TaoVA-100x

Start at: 2019-01-03 06:38:39

End at: 2019-01-03 06:39:09

Local clock offset: 2.652 ms

Remote clock offset: 57.569 ms

# Below is generated by plot.py at 2019-01-03 07:09:58

# Datalink statistics

-- Total of 1 flow:

Average throughput: 11.89 Mbit/s

95th percentile per-packet one-way delay: 79.443 ms

Loss rate: 9.40%

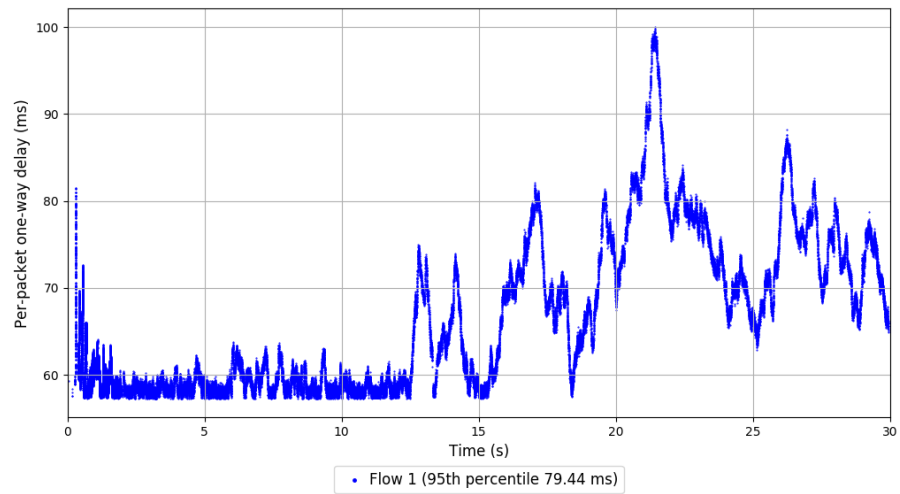
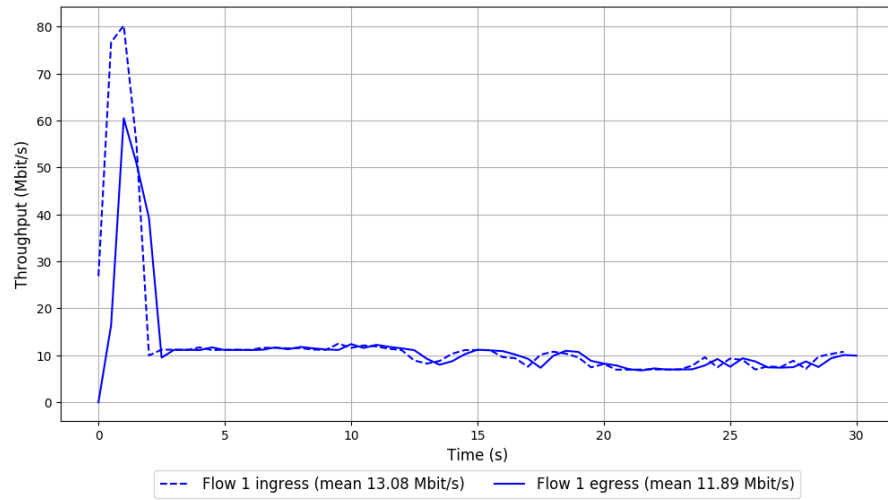
-- Flow 1:

Average throughput: 11.89 Mbit/s

95th percentile per-packet one-way delay: 79.443 ms

Loss rate: 9.40%

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



Run 5: Statistics of TaoVA-100x

Start at: 2019-01-03 07:00:49

End at: 2019-01-03 07:01:19

Local clock offset: 2.804 ms

Remote clock offset: 16.191 ms

# Below is generated by plot.py at 2019-01-03 07:09:58

# Datalink statistics

-- Total of 1 flow:

Average throughput: 15.56 Mbit/s

95th percentile per-packet one-way delay: 78.963 ms

Loss rate: 13.20%

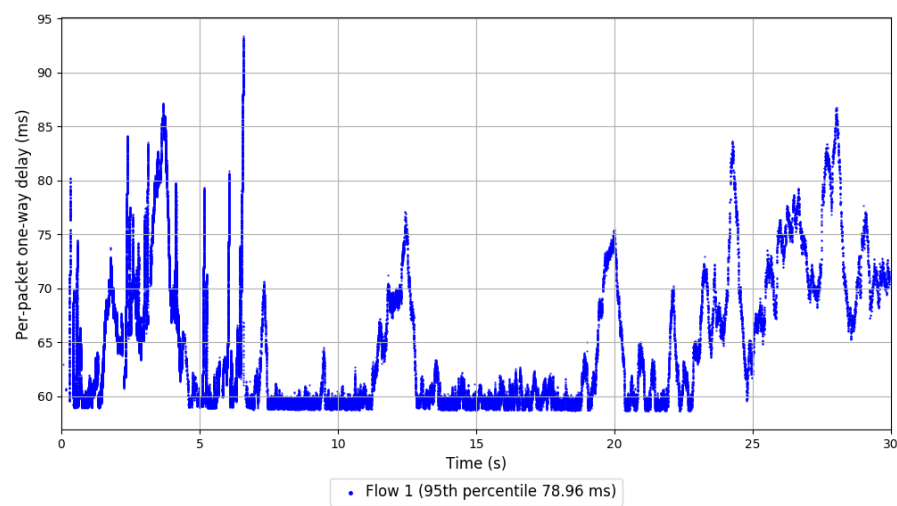
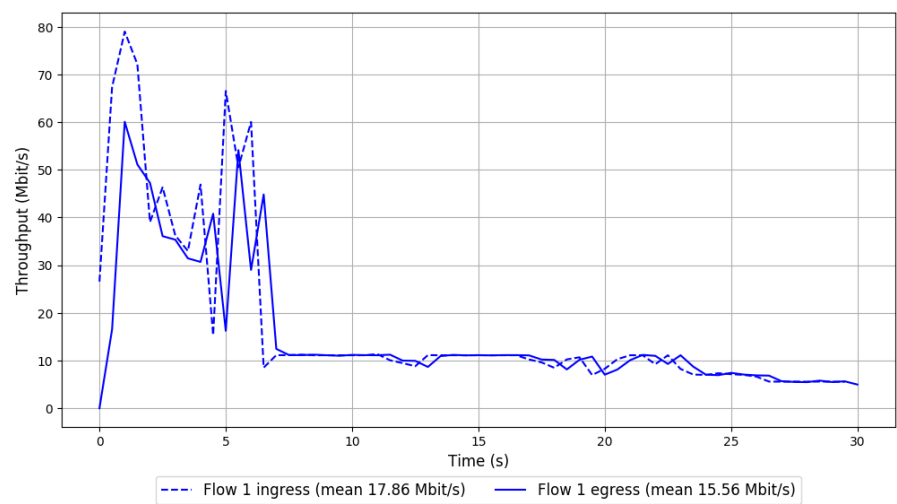
-- Flow 1:

Average throughput: 15.56 Mbit/s

95th percentile per-packet one-way delay: 78.963 ms

Loss rate: 13.20%

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

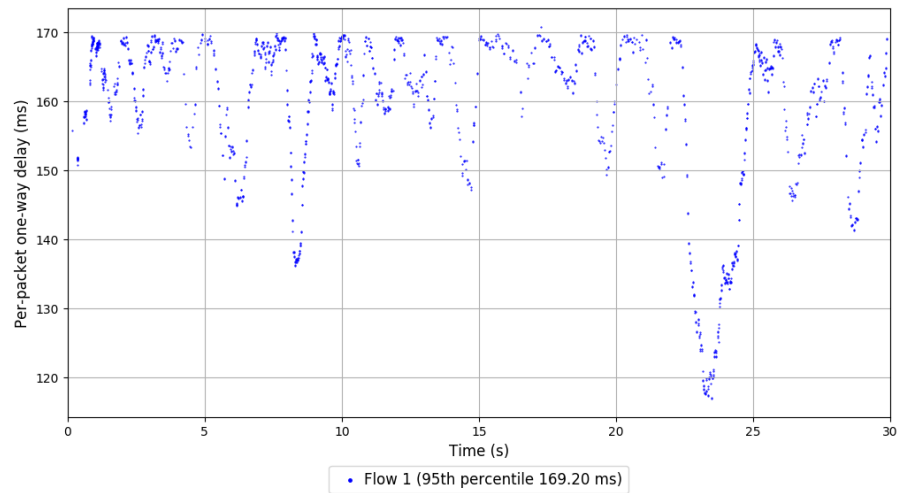
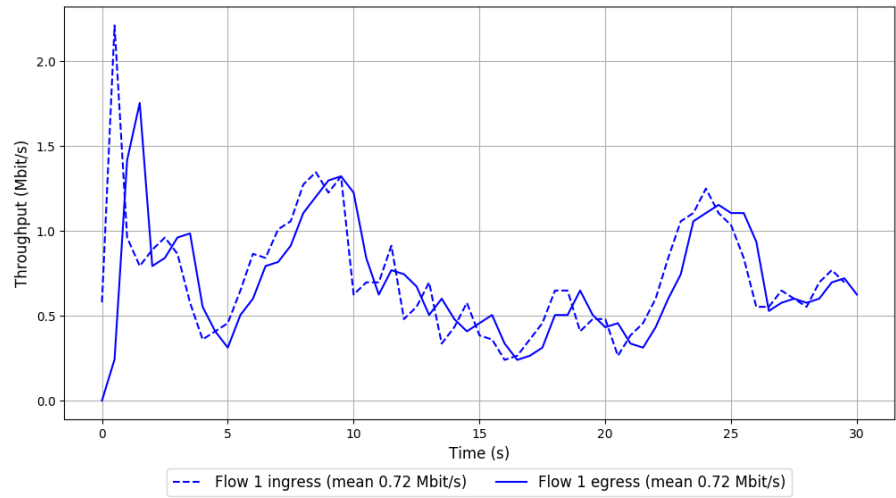


Run 1: Statistics of TCP Vegas

Start at: 2019-01-03 04:51:51  
End at: 2019-01-03 04:52:21  
Local clock offset: -3.524 ms  
Remote clock offset: 17.868 ms

# Below is generated by plot.py at 2019-01-03 07:09:58  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.72 Mbit/s  
95th percentile per-packet one-way delay: 169.200 ms  
Loss rate: 1.66%  
-- Flow 1:  
Average throughput: 0.72 Mbit/s  
95th percentile per-packet one-way delay: 169.200 ms  
Loss rate: 1.66%

# Run 1: Report of TCP Vegas — Data Link



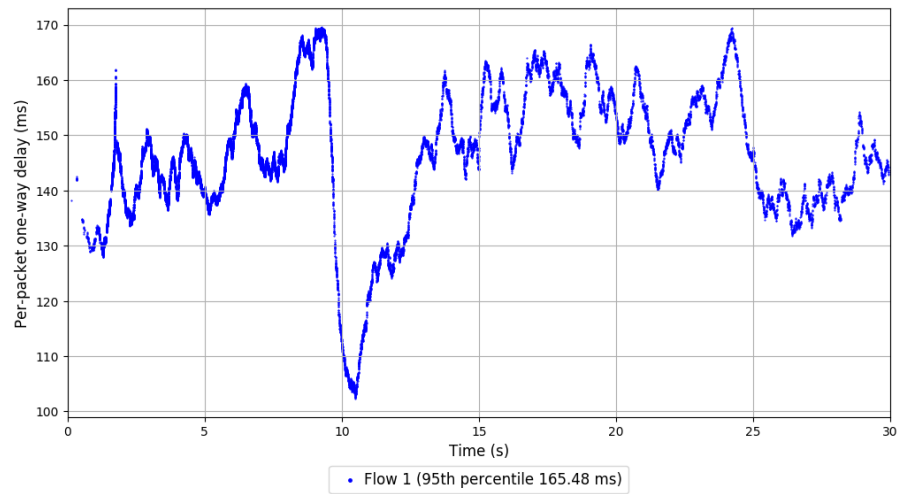
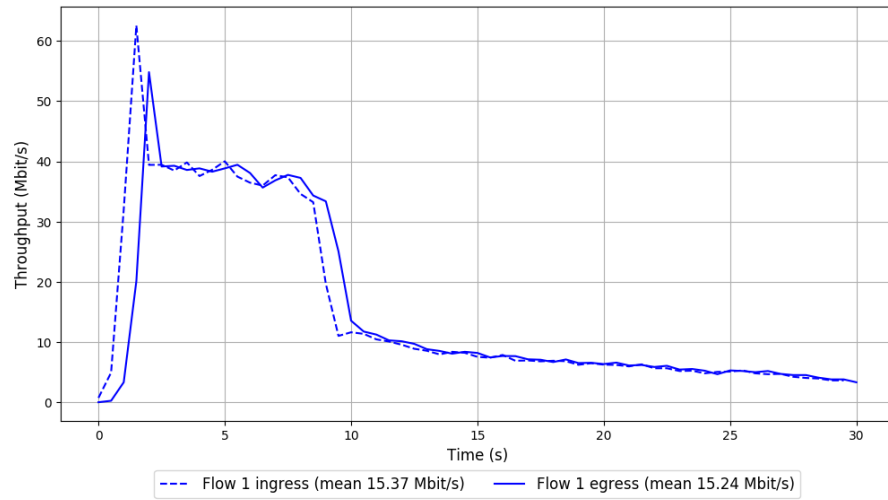


Run 2: Statistics of TCP Vegas

Start at: 2019-01-03 05:17:12  
End at: 2019-01-03 05:17:42  
Local clock offset: 0.641 ms  
Remote clock offset: 25.822 ms

# Below is generated by plot.py at 2019-01-03 07:09:58  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 15.24 Mbit/s  
95th percentile per-packet one-way delay: 165.481 ms  
Loss rate: 1.42%  
-- Flow 1:  
Average throughput: 15.24 Mbit/s  
95th percentile per-packet one-way delay: 165.481 ms  
Loss rate: 1.42%

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

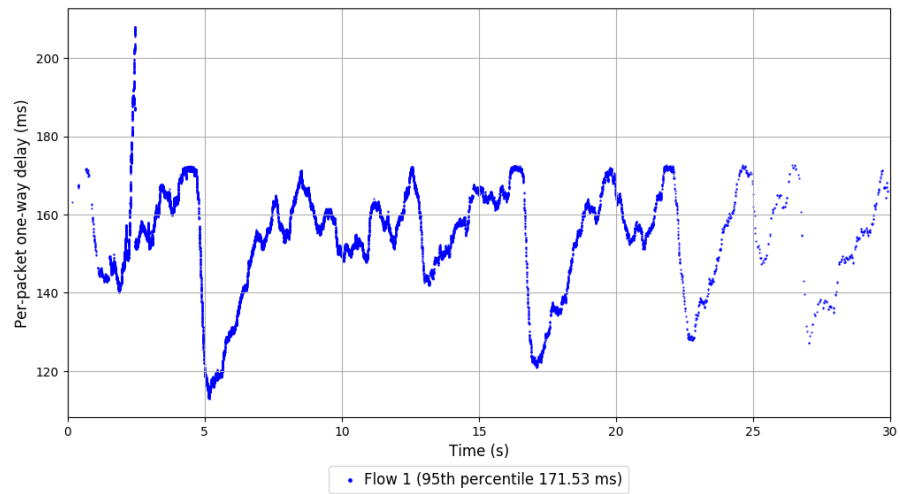
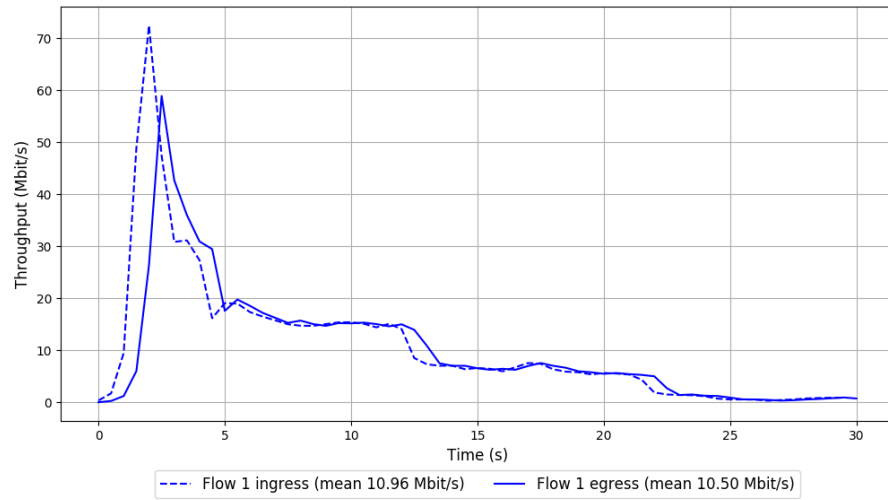


Run 3: Statistics of TCP Vegas

Start at: 2019-01-03 05:40:27  
End at: 2019-01-03 05:40:57  
Local clock offset: 0.871 ms  
Remote clock offset: 34.729 ms

# Below is generated by plot.py at 2019-01-03 07:09:58  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 10.50 Mbit/s  
95th percentile per-packet one-way delay: 171.534 ms  
Loss rate: 4.88%  
-- Flow 1:  
Average throughput: 10.50 Mbit/s  
95th percentile per-packet one-way delay: 171.534 ms  
Loss rate: 4.88%

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

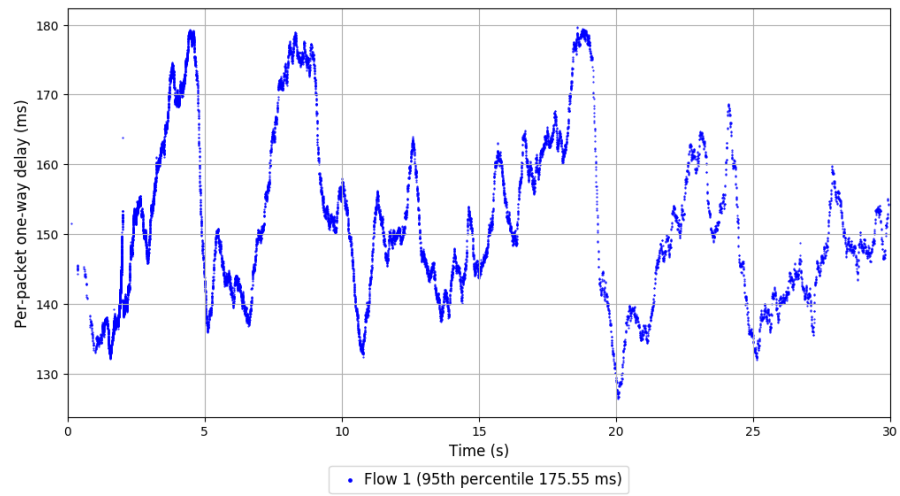
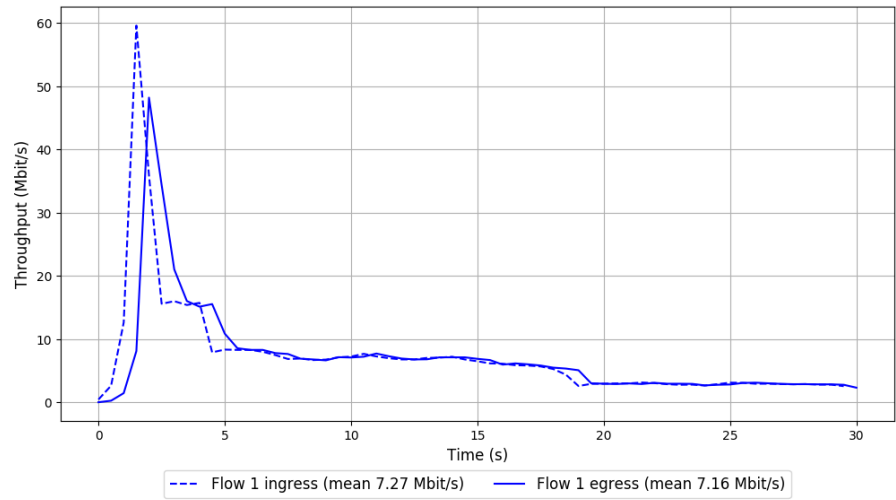


Run 4: Statistics of TCP Vegas

Start at: 2019-01-03 06:26:12  
End at: 2019-01-03 06:26:43  
Local clock offset: 0.794 ms  
Remote clock offset: 46.467 ms

# Below is generated by plot.py at 2019-01-03 07:09:58  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 7.16 Mbit/s  
95th percentile per-packet one-way delay: 175.551 ms  
Loss rate: 2.16%  
-- Flow 1:  
Average throughput: 7.16 Mbit/s  
95th percentile per-packet one-way delay: 175.551 ms  
Loss rate: 2.16%

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

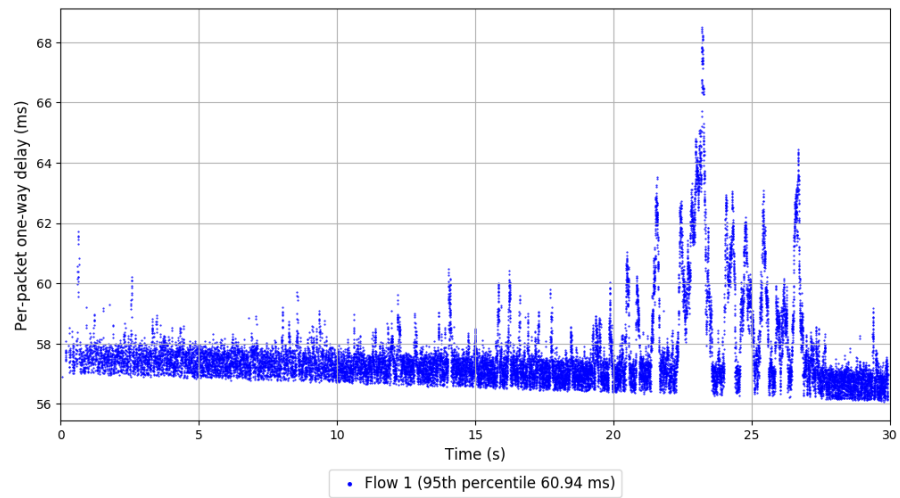
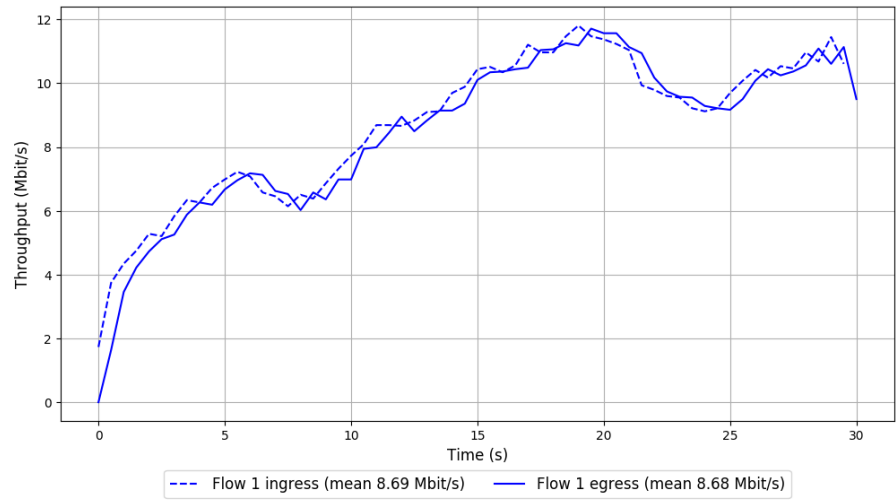


Run 5: Statistics of TCP Vegas

Start at: 2019-01-03 06:49:08  
End at: 2019-01-03 06:49:38  
Local clock offset: 3.444 ms  
Remote clock offset: 31.096 ms

# Below is generated by plot.py at 2019-01-03 07:09:58  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 8.68 Mbit/s  
95th percentile per-packet one-way delay: 60.938 ms  
Loss rate: 0.50%  
-- Flow 1:  
Average throughput: 8.68 Mbit/s  
95th percentile per-packet one-way delay: 60.938 ms  
Loss rate: 0.50%

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



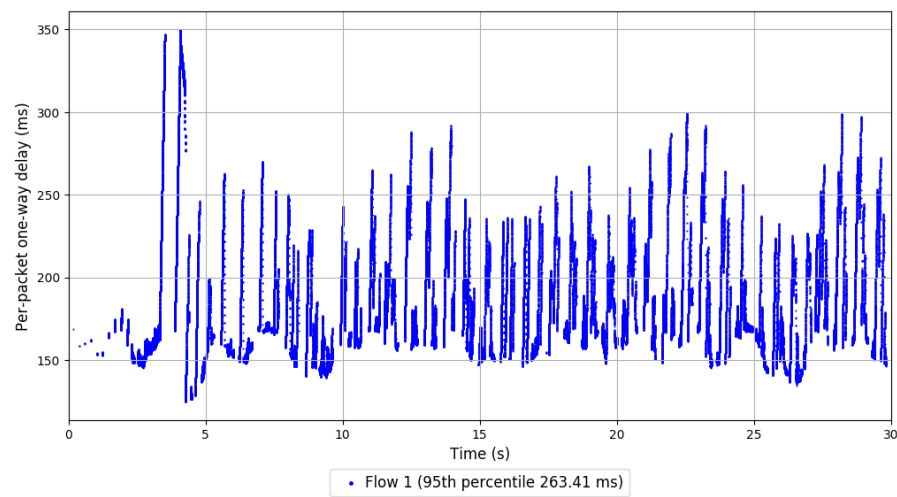
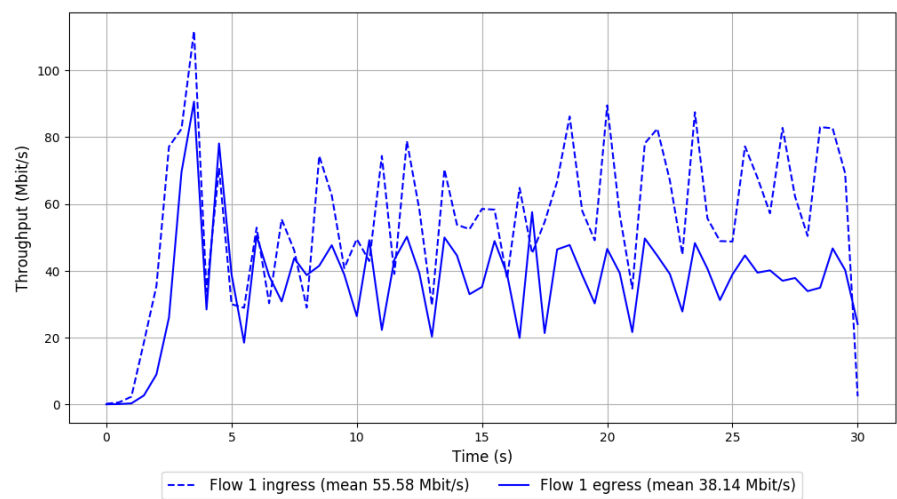


Run 1: Statistics of Verus

Start at: 2019-01-03 04:46:33  
End at: 2019-01-03 04:47:03  
Local clock offset: -3.629 ms  
Remote clock offset: 19.869 ms

# Below is generated by plot.py at 2019-01-03 07:09:58  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 38.14 Mbit/s  
95th percentile per-packet one-way delay: 263.412 ms  
Loss rate: 32.31%  
-- Flow 1:  
Average throughput: 38.14 Mbit/s  
95th percentile per-packet one-way delay: 263.412 ms  
Loss rate: 32.31%

Run 1: Report of Verus — Data Link

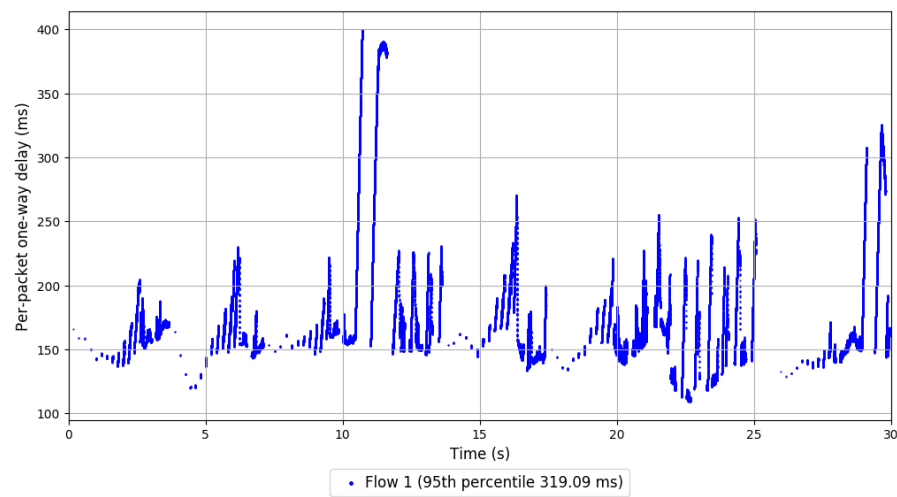
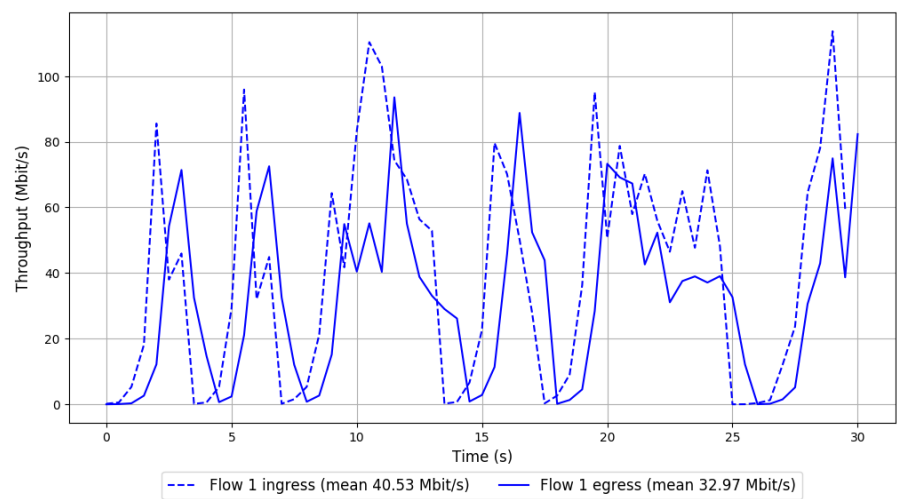


Run 2: Statistics of Verus

Start at: 2019-01-03 05:12:23  
End at: 2019-01-03 05:12:54  
Local clock offset: 0.325 ms  
Remote clock offset: 25.348 ms

# Below is generated by plot.py at 2019-01-03 07:09:58  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 32.97 Mbit/s  
95th percentile per-packet one-way delay: 319.088 ms  
Loss rate: 19.27%  
-- Flow 1:  
Average throughput: 32.97 Mbit/s  
95th percentile per-packet one-way delay: 319.088 ms  
Loss rate: 19.27%

Run 2: Report of Verus — Data Link

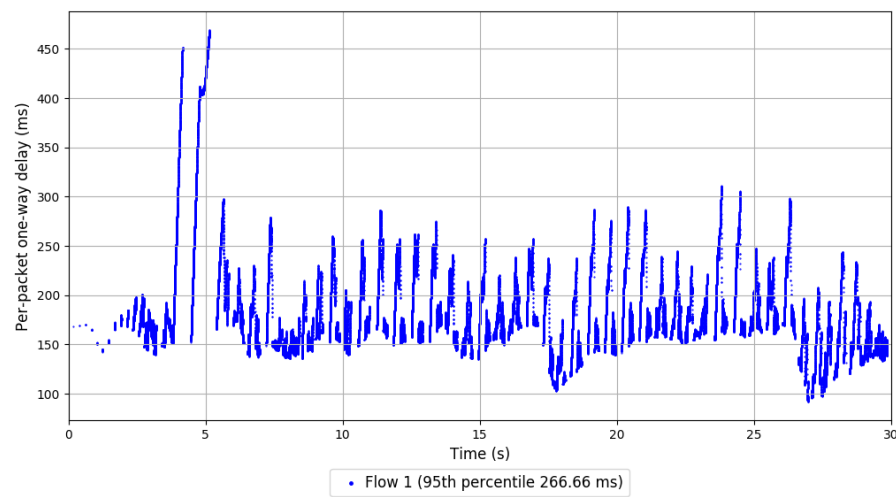
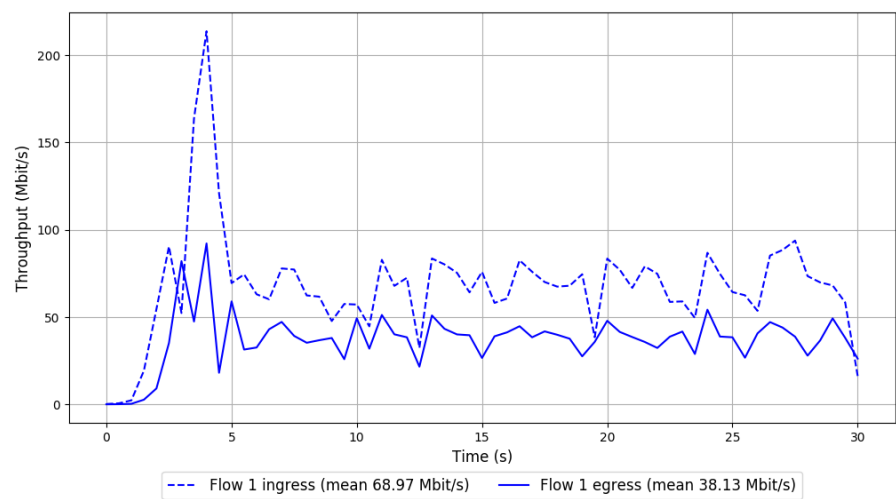


Run 3: Statistics of Verus

Start at: 2019-01-03 05:35:33  
End at: 2019-01-03 05:36:03  
Local clock offset: 0.771 ms  
Remote clock offset: 32.453 ms

# Below is generated by plot.py at 2019-01-03 07:09:59  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 38.13 Mbit/s  
95th percentile per-packet one-way delay: 266.664 ms  
Loss rate: 45.35%  
-- Flow 1:  
Average throughput: 38.13 Mbit/s  
95th percentile per-packet one-way delay: 266.664 ms  
Loss rate: 45.35%

Run 3: Report of Verus — Data Link

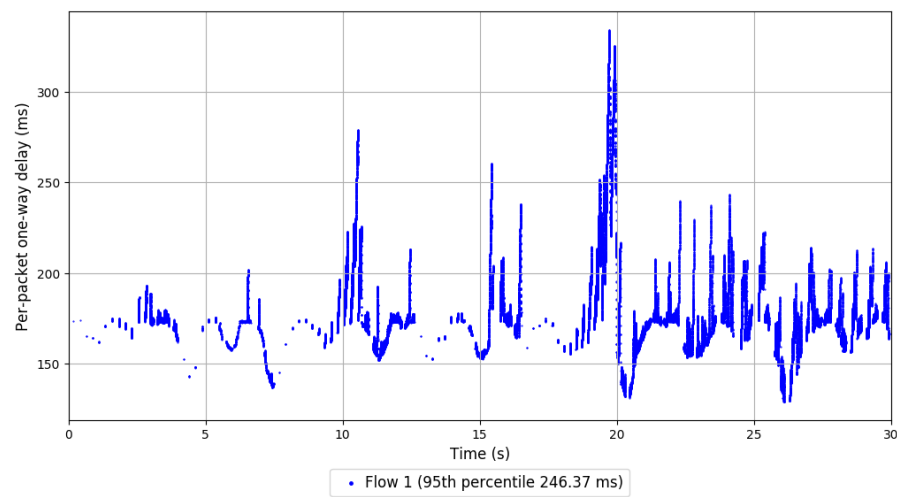
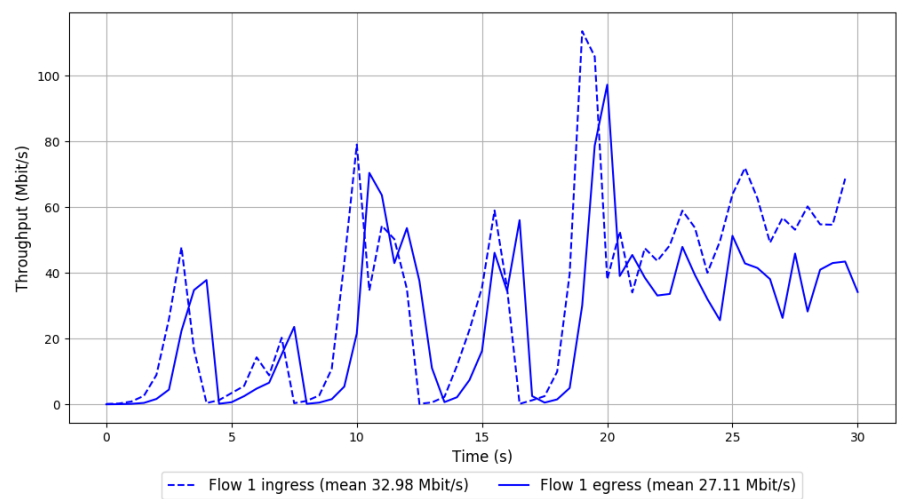


Run 4: Statistics of Verus

Start at: 2019-01-03 06:20:39  
End at: 2019-01-03 06:21:09  
Local clock offset: 0.356 ms  
Remote clock offset: 50.913 ms

# Below is generated by plot.py at 2019-01-03 07:09:59  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 27.11 Mbit/s  
95th percentile per-packet one-way delay: 246.371 ms  
Loss rate: 18.19%  
-- Flow 1:  
Average throughput: 27.11 Mbit/s  
95th percentile per-packet one-way delay: 246.371 ms  
Loss rate: 18.19%

Run 4: Report of Verus — Data Link



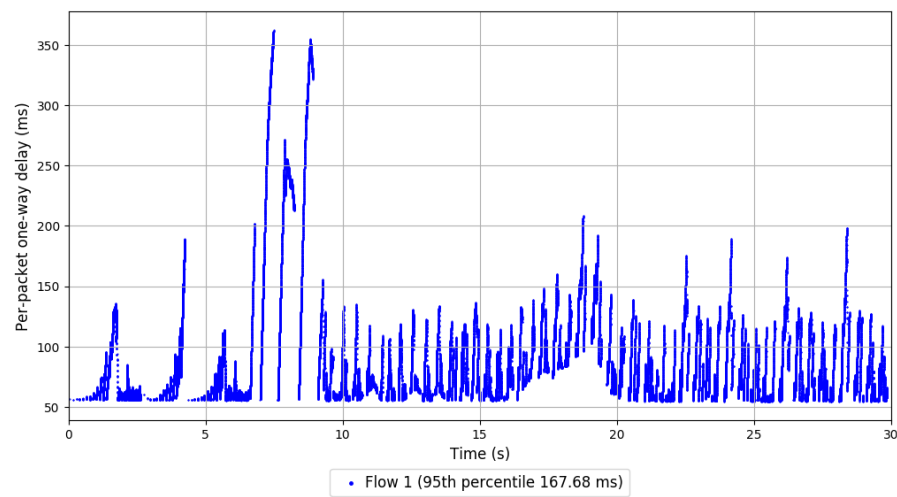
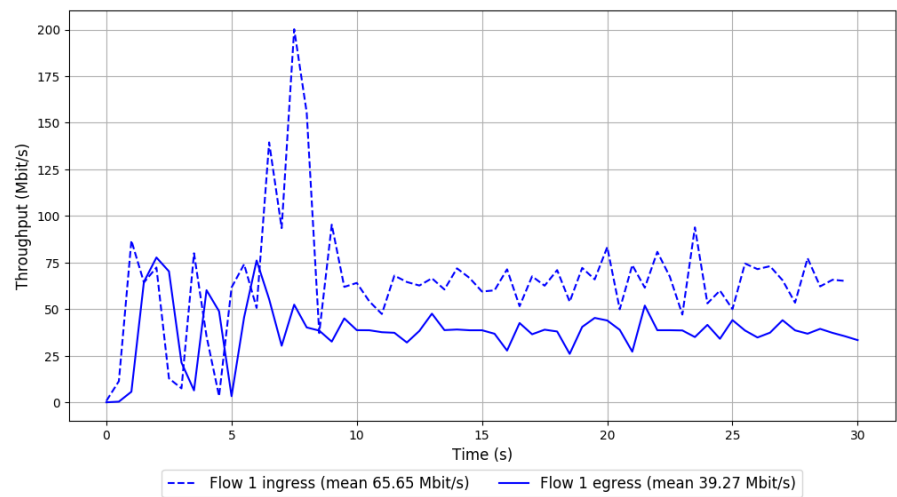


Run 5: Statistics of Verus

Start at: 2019-01-03 06:44:27  
End at: 2019-01-03 06:44:57  
Local clock offset: 3.207 ms  
Remote clock offset: 43.376 ms

# Below is generated by plot.py at 2019-01-03 07:09:59  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 39.27 Mbit/s  
95th percentile per-packet one-way delay: 167.681 ms  
Loss rate: 40.52%  
-- Flow 1:  
Average throughput: 39.27 Mbit/s  
95th percentile per-packet one-way delay: 167.681 ms  
Loss rate: 40.52%

Run 5: Report of Verus — Data Link

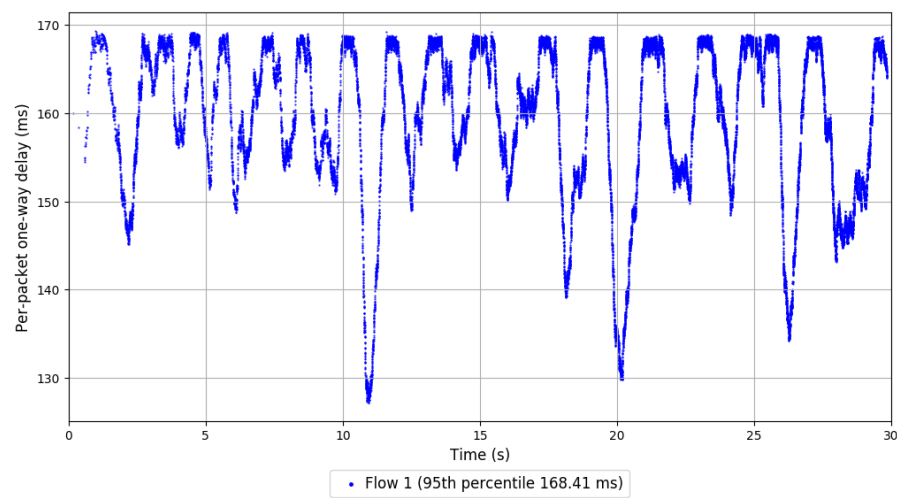
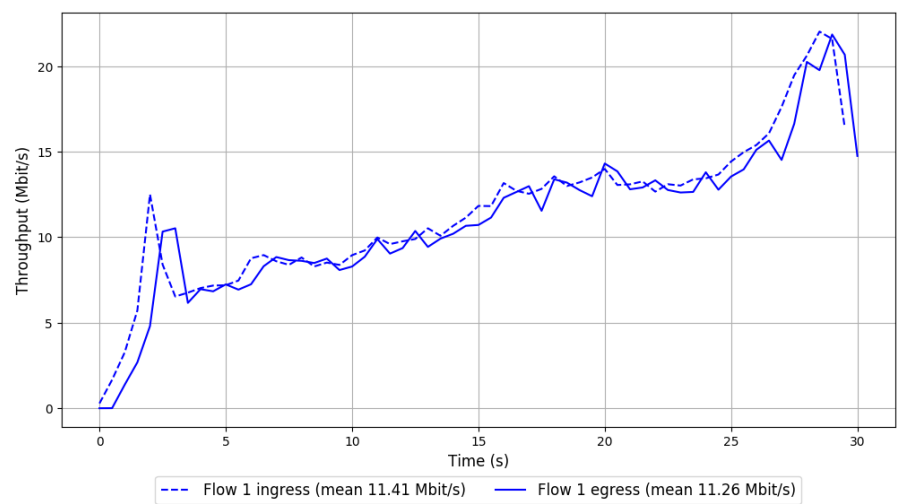


Run 1: Statistics of PCC-Vivace

Start at: 2019-01-03 04:56:40  
End at: 2019-01-03 04:57:10  
Local clock offset: -2.569 ms  
Remote clock offset: 16.358 ms

# Below is generated by plot.py at 2019-01-03 07:09:59  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 11.26 Mbit/s  
95th percentile per-packet one-way delay: 168.408 ms  
Loss rate: 1.97%  
-- Flow 1:  
Average throughput: 11.26 Mbit/s  
95th percentile per-packet one-way delay: 168.408 ms  
Loss rate: 1.97%

Run 1: Report of PCC-Vivace — Data Link

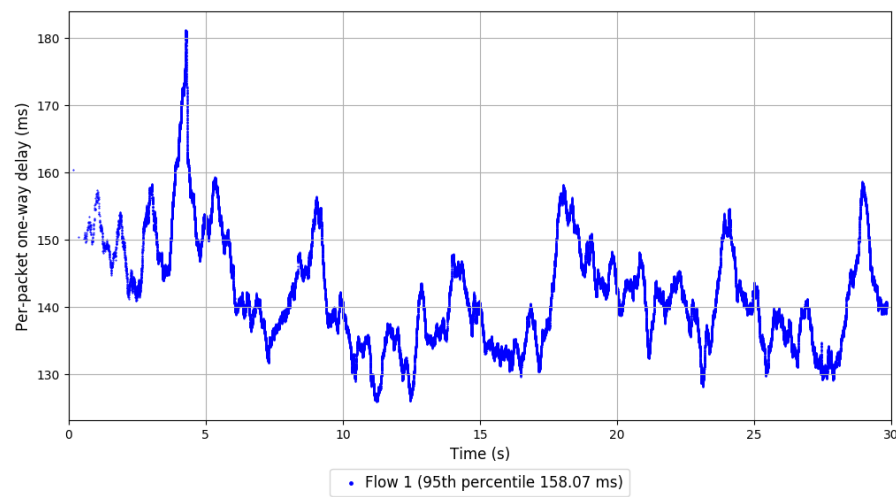
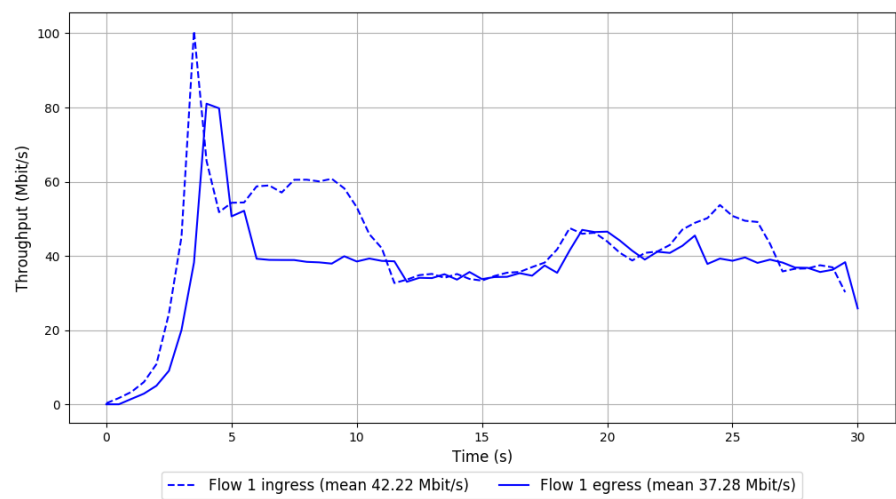


Run 2: Statistics of PCC-Vivace

Start at: 2019-01-03 05:20:48  
End at: 2019-01-03 05:21:18  
Local clock offset: 0.716 ms  
Remote clock offset: 26.262 ms

# Below is generated by plot.py at 2019-01-03 07:10:00  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 37.28 Mbit/s  
95th percentile per-packet one-way delay: 158.071 ms  
Loss rate: 12.32%  
-- Flow 1:  
Average throughput: 37.28 Mbit/s  
95th percentile per-packet one-way delay: 158.071 ms  
Loss rate: 12.32%

Run 2: Report of PCC-Vivace — Data Link

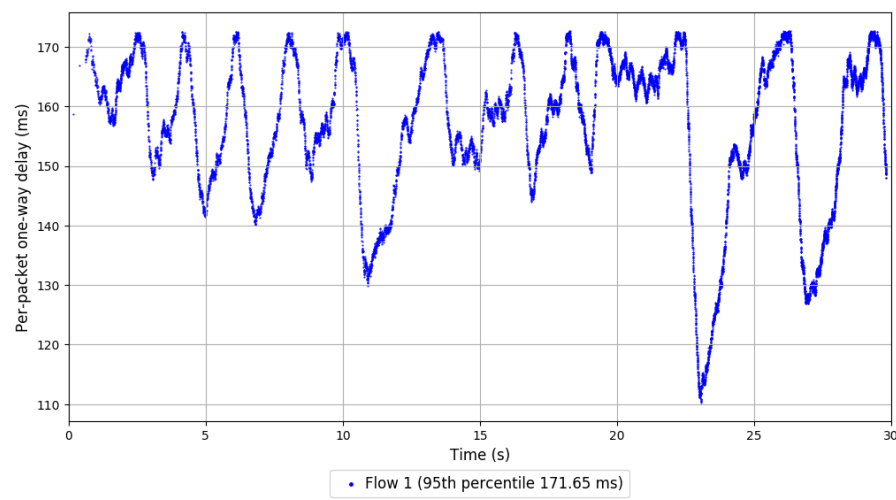
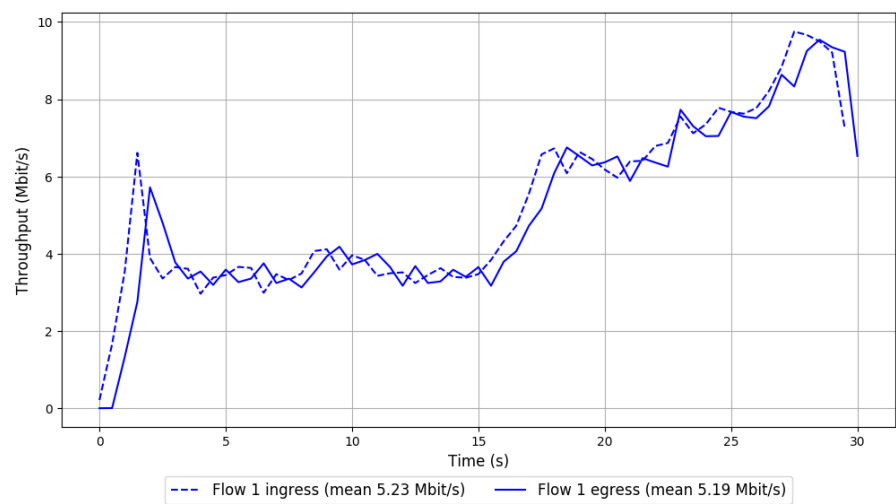


Run 3: Statistics of PCC-Vivace

Start at: 2019-01-03 05:44:05  
End at: 2019-01-03 05:44:35  
Local clock offset: 1.026 ms  
Remote clock offset: 37.117 ms

# Below is generated by plot.py at 2019-01-03 07:10:00  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 5.19 Mbit/s  
95th percentile per-packet one-way delay: 171.652 ms  
Loss rate: 1.37%  
-- Flow 1:  
Average throughput: 5.19 Mbit/s  
95th percentile per-packet one-way delay: 171.652 ms  
Loss rate: 1.37%

Run 3: Report of PCC-Vivace — Data Link





Run 4: Statistics of PCC-Vivace

Start at: 2019-01-03 06:29:59

End at: 2019-01-03 06:30:29

Local clock offset: 1.694 ms

Remote clock offset: 50.632 ms

# Below is generated by plot.py at 2019-01-03 07:10:00

# Datalink statistics

-- Total of 1 flow:

Average throughput: 6.17 Mbit/s

95th percentile per-packet one-way delay: 174.842 ms

Loss rate: 0.87%

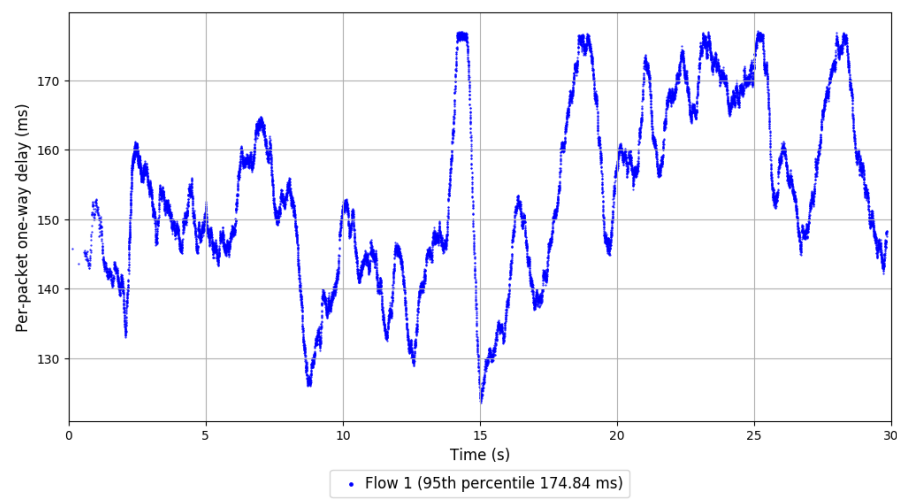
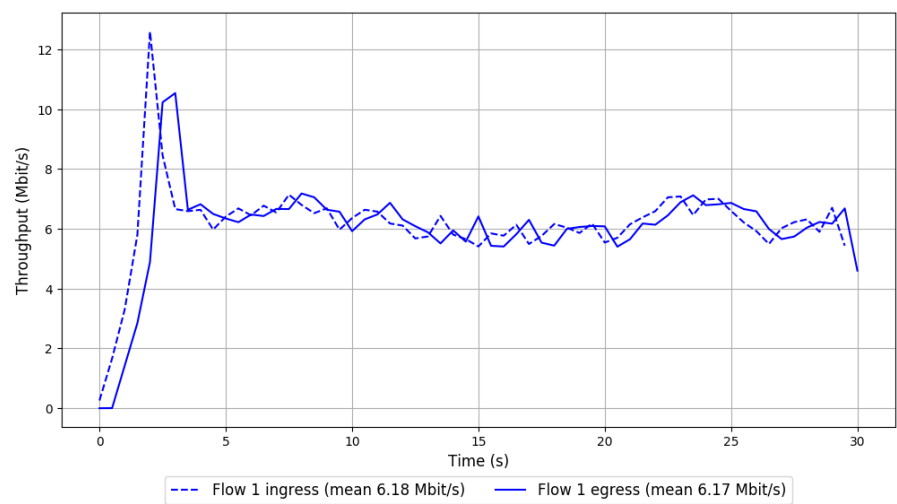
-- Flow 1:

Average throughput: 6.17 Mbit/s

95th percentile per-packet one-way delay: 174.842 ms

Loss rate: 0.87%

Run 4: Report of PCC-Vivace — Data Link

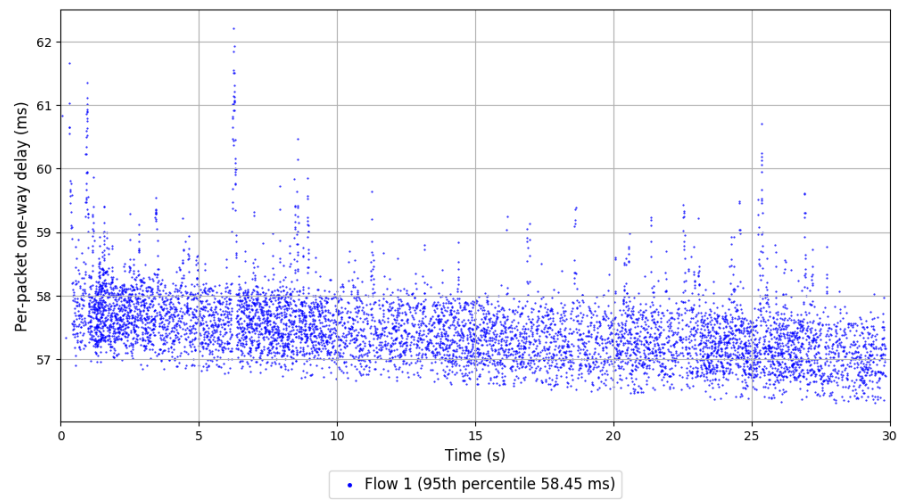
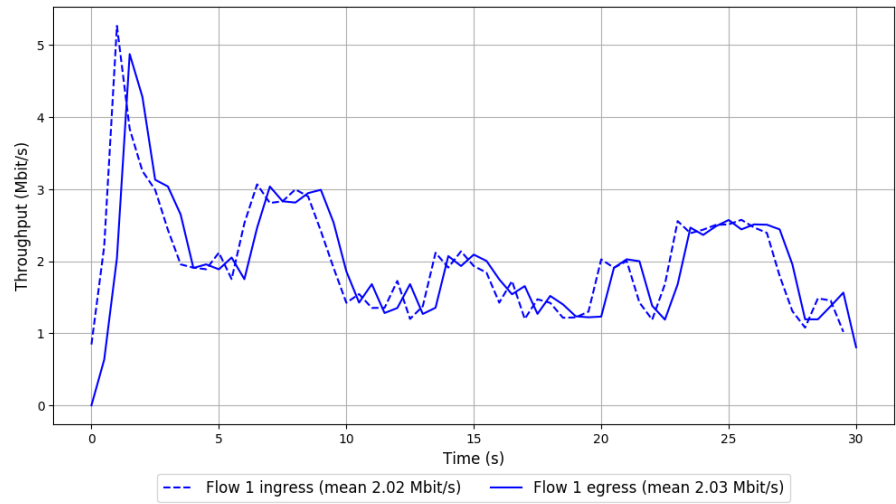


Run 5: Statistics of PCC-Vivace

Start at: 2019-01-03 06:52:39  
End at: 2019-01-03 06:53:09  
Local clock offset: 3.677 ms  
Remote clock offset: 25.586 ms

# Below is generated by plot.py at 2019-01-03 07:10:00  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 2.03 Mbit/s  
95th percentile per-packet one-way delay: 58.445 ms  
Loss rate: 0.26%  
-- Flow 1:  
Average throughput: 2.03 Mbit/s  
95th percentile per-packet one-way delay: 58.445 ms  
Loss rate: 0.26%

# Run 5: Report of PCC-Vivace — Data Link

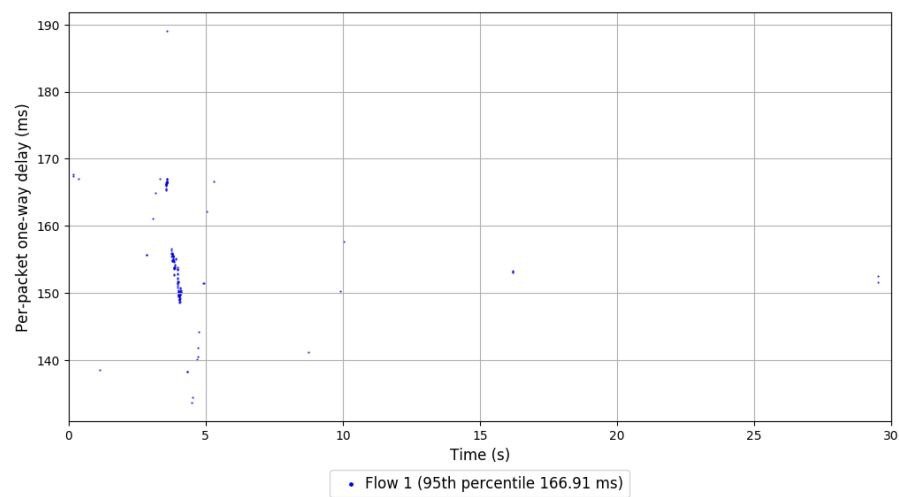
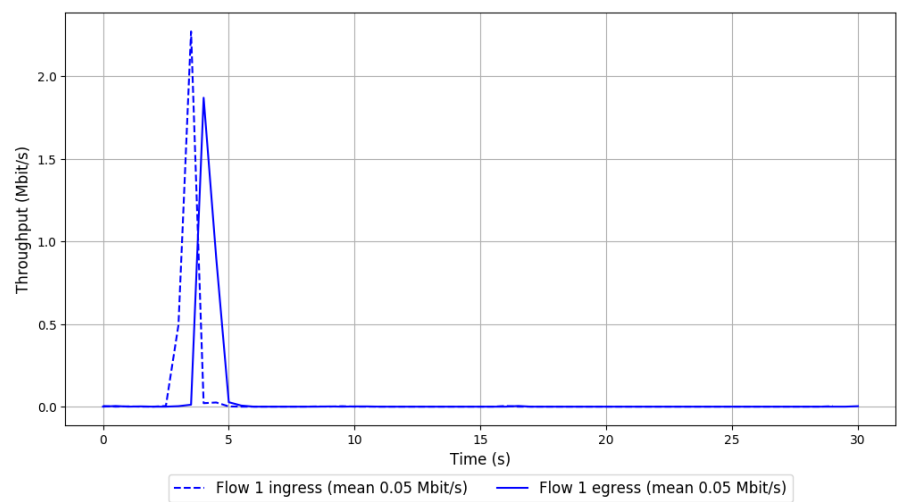


```
Run 1: Statistics of WebRTC media

Start at: 2019-01-03 05:10:02
End at: 2019-01-03 05:10:32
Local clock offset: -0.066 ms
Remote clock offset: 26.056 ms

# Below is generated by plot.py at 2019-01-03 07:10:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 166.914 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 166.914 ms
Loss rate: 0.00%
```

Run 1: Report of WebRTC media — Data Link

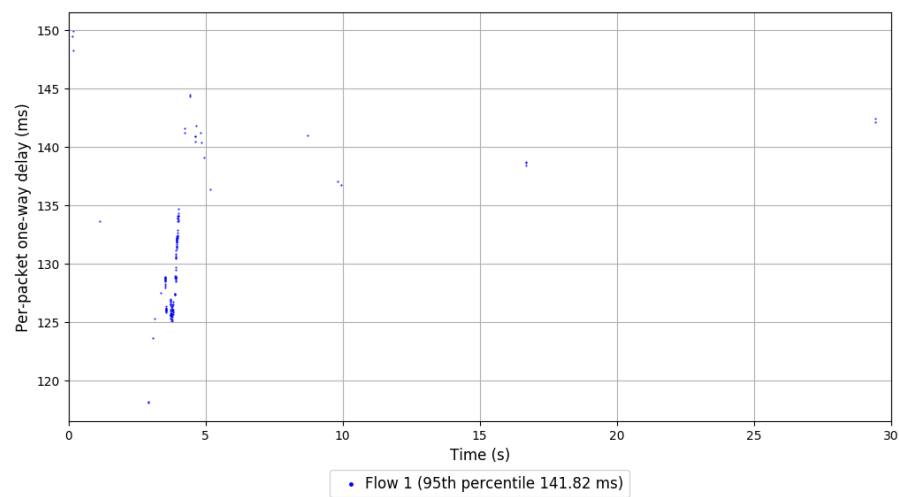
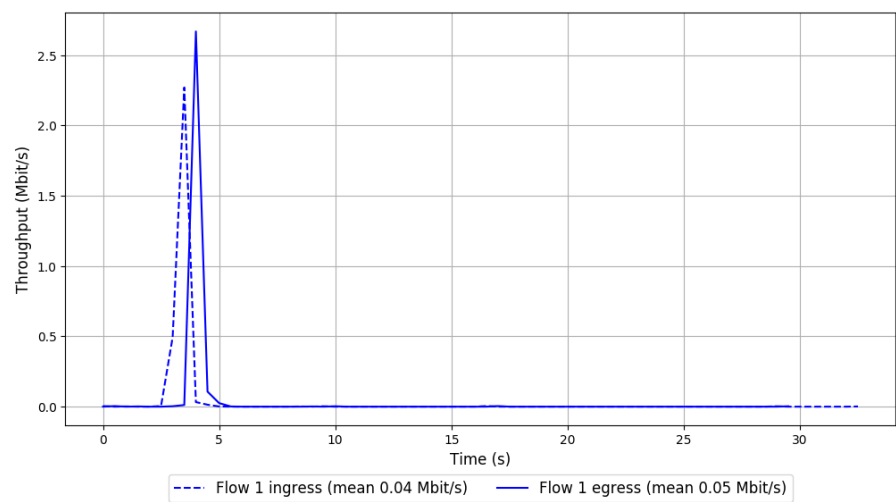


Run 2: Statistics of WebRTC media

Start at: 2019-01-03 05:33:10  
End at: 2019-01-03 05:33:40  
Local clock offset: 0.679 ms  
Remote clock offset: 28.803 ms

# Below is generated by plot.py at 2019-01-03 07:10:00  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.05 Mbit/s  
95th percentile per-packet one-way delay: 141.824 ms  
Loss rate: 0.05%  
-- Flow 1:  
Average throughput: 0.05 Mbit/s  
95th percentile per-packet one-way delay: 141.824 ms  
Loss rate: 0.05%

Run 2: Report of WebRTC media — Data Link



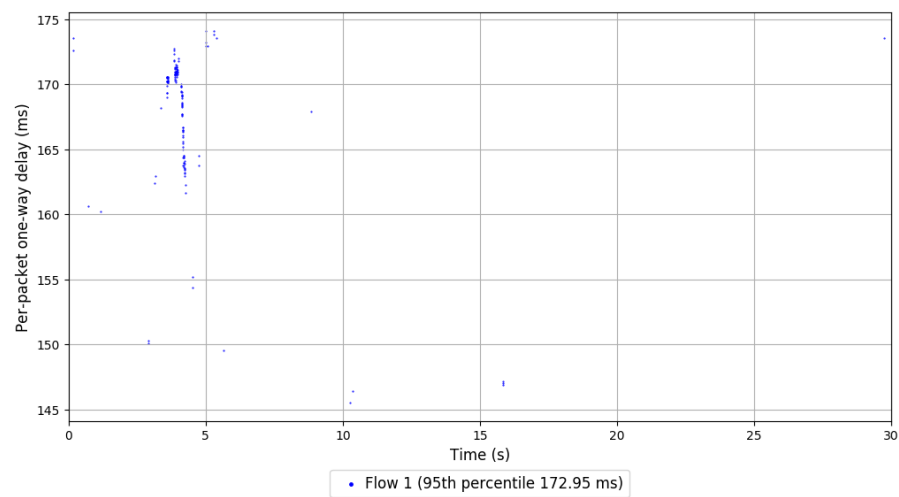
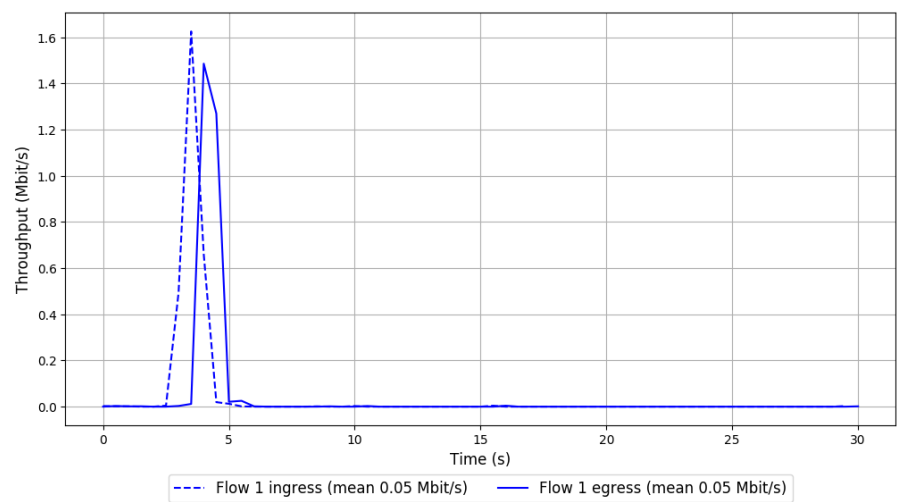


Run 3: Statistics of WebRTC media

Start at: 2019-01-03 06:08:01  
End at: 2019-01-03 06:08:31  
Local clock offset: 0.451 ms  
Remote clock offset: 44.702 ms

# Below is generated by plot.py at 2019-01-03 07:10:00  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.05 Mbit/s  
95th percentile per-packet one-way delay: 172.947 ms  
Loss rate: 0.05%  
-- Flow 1:  
Average throughput: 0.05 Mbit/s  
95th percentile per-packet one-way delay: 172.947 ms  
Loss rate: 0.05%

Run 3: Report of WebRTC media — Data Link

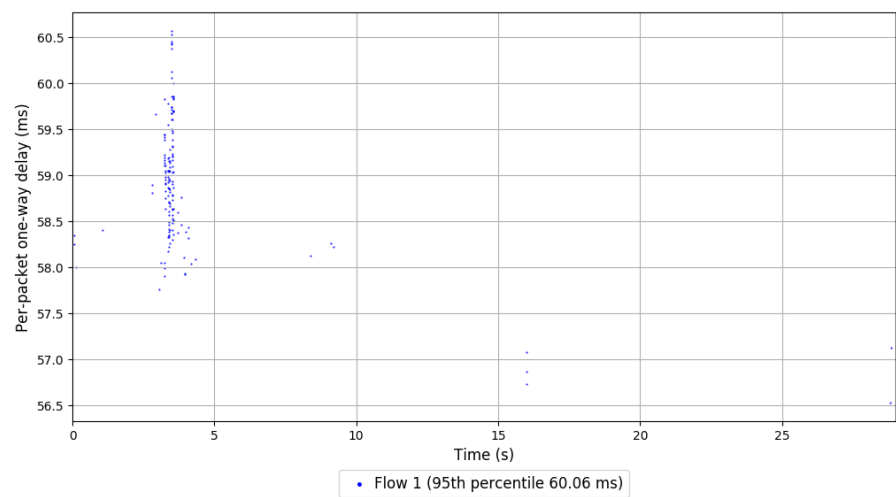
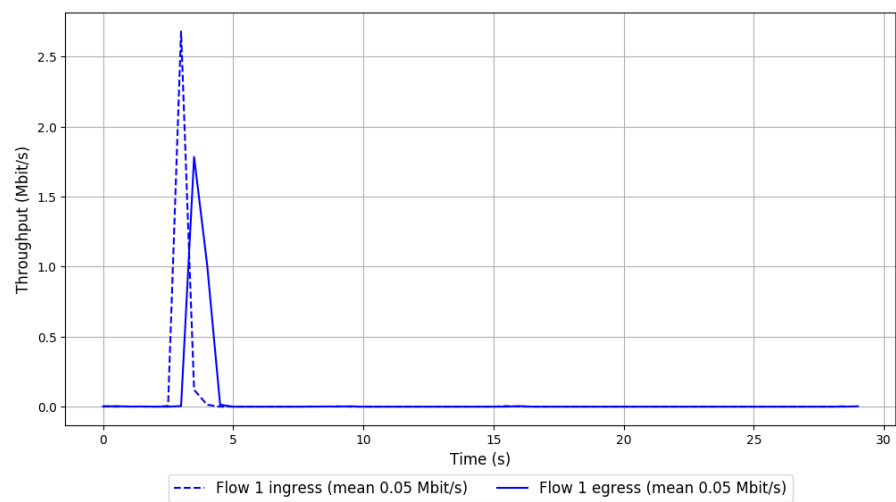


Run 4: Statistics of WebRTC media

Start at: 2019-01-03 06:42:10  
End at: 2019-01-03 06:42:40  
Local clock offset: 3.051 ms  
Remote clock offset: 48.848 ms

# Below is generated by plot.py at 2019-01-03 07:10:00  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.05 Mbit/s  
95th percentile per-packet one-way delay: 60.058 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 0.05 Mbit/s  
95th percentile per-packet one-way delay: 60.058 ms  
Loss rate: 0.00%

Run 4: Report of WebRTC media — Data Link



Run 5: Statistics of WebRTC media

Start at: 2019-01-03 07:04:18  
End at: 2019-01-03 07:04:48  
Local clock offset: 2.377 ms  
Remote clock offset: 19.229 ms

# Below is generated by plot.py at 2019-01-03 07:10:00  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.05 Mbit/s  
95th percentile per-packet one-way delay: 59.039 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 0.05 Mbit/s  
95th percentile per-packet one-way delay: 59.039 ms  
Loss rate: 0.00%

Run 5: Report of WebRTC media — Data Link

