

## Pantheon Report

Generated at 2018-11-03 06:30:57 (UTC).

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

Repeated the test of 18 congestion control schemes 5 times.

Each test lasted for 30 seconds running 1 flow.

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

### System info:

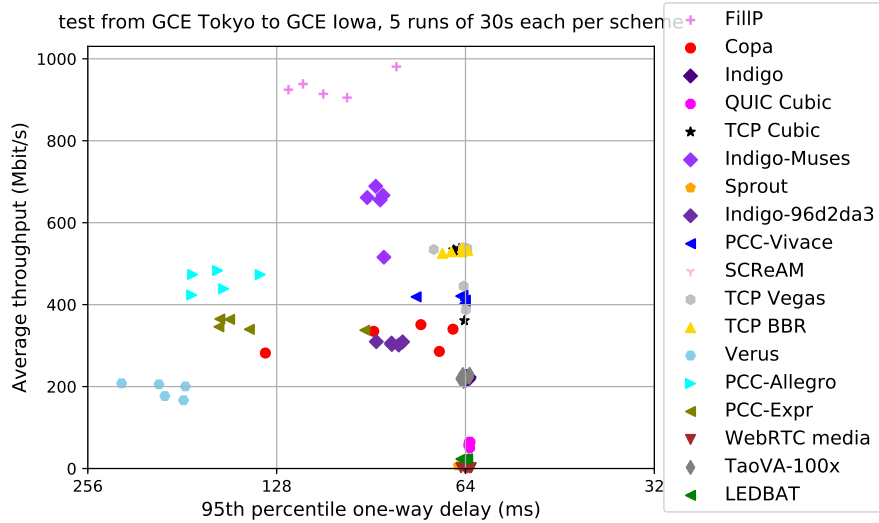
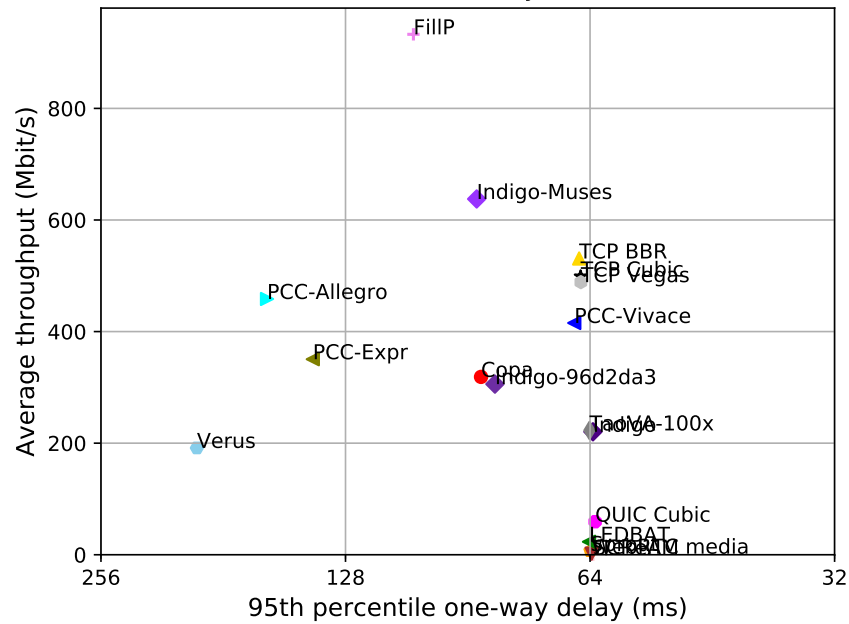
```
Linux 4.15.0-1021-gcp
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912
```

### Git summary:

```
branch: muses @ 794ca3866981572cb73700a276691acf79c60f2b
third_party/fillp @ d6da1459332fcee56963885d7eba17e6a32d4519
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdf58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d
third_party/indigo-96d2da3 @ 8413272d46f8aa0bcb967ed7048b6a8f994abb95
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/muses @ 65ac1b19bbefed0c6349ae986009b4fa8643c40a
third_party/pantheon-tunnel @ f866d3f58d27afd942717625ee3a354cc2e802bd
third_party/pcc @ 1afc958fa0d66d18b623c091a55fec872b4981e1
M receiver/src/buffer.h
M receiver/src/core.cpp
M sender/src/buffer.h
M sender/src/core.cpp
third_party/pcc-experimental @ cd43e34e3f5f5613e8acd08fab92c4eb24f974ab
third_party/proto-quick @ 77961f1a82733a86b42f1bc8143ebc978f3cff42
third_party/scream-reproduce @ f099118d1421aa3131bf11ff1964974e1da3bdb2
M src/ScreamClient
M src/ScreamServer
third_party/sprout @ 366e35c6178b01e31d4a46ad18c74f9415f19a26
M src/examples/cellsim.cc
M src/examples/sproutbt2.cc
M src/network/sproutconn.cc
third_party/verus @ d4b447ea74c6c60a261149af2629562939f9a494
M src/verus.hpp
M tools/plot.py
third_party/vivace @ 2baf86211435ae071a32f96b7d8c504587f5d7f4
```

third\_party/webrtc @ 3f0cc2a9061a41b6f9dde4735770d143a1fa2851

test from GCE Tokyo to GCE Iowa, 5 runs of 30s each per scheme  
(mean of all runs by scheme)



scheme	# runs	mean avg tput (Mbit/s) flow 1	mean 95th-%ile delay (ms) flow 1	mean loss rate (%) flow 1
TCP BBR	5	530.99	66.01	0.45
Copa	5	318.77	87.17	0.45
TCP Cubic	5	498.84	65.74	0.42
FillP	5	932.76	105.59	0.95
Indigo	5	220.36	63.48	0.43
Indigo-96d2da3	5	305.84	83.81	0.58
LEDBAT	5	23.26	64.19	0.84
Indigo-Muses	5	637.69	88.26	0.53
PCC-Allegro	5	458.44	159.89	1.79
PCC-Expr	5	350.45	140.44	1.48
QUIC Cubic	4	59.25	63.08	0.58
SCReAM	5	0.22	63.48	0.46
Sprout	5	6.75	63.95	0.49
TaoVA-100x	5	222.82	64.10	0.43
TCP Vegas	5	488.58	65.69	0.37
Verus	5	191.47	195.06	4.37
PCC-Vivace	5	415.42	66.93	0.49
WebRTC media	5	1.92	63.72	0.50

Run 1: Statistics of TCP BBR

Start at: 2018-11-03 02:54:47

End at: 2018-11-03 02:55:17

Local clock offset: -0.095 ms

Remote clock offset: 0.539 ms

# Below is generated by plot.py at 2018-11-03 05:15:47

# Datalink statistics

-- Total of 1 flow:

Average throughput: 532.57 Mbit/s

95th percentile per-packet one-way delay: 63.477 ms

Loss rate: 0.45%

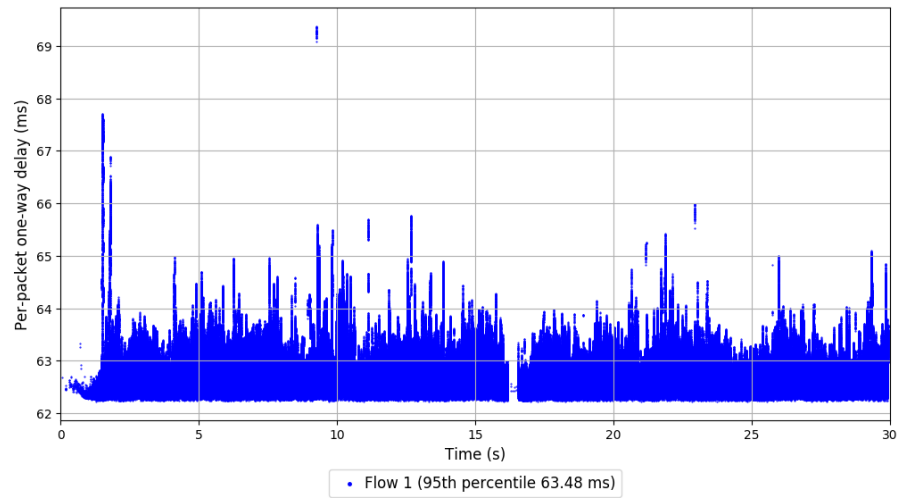
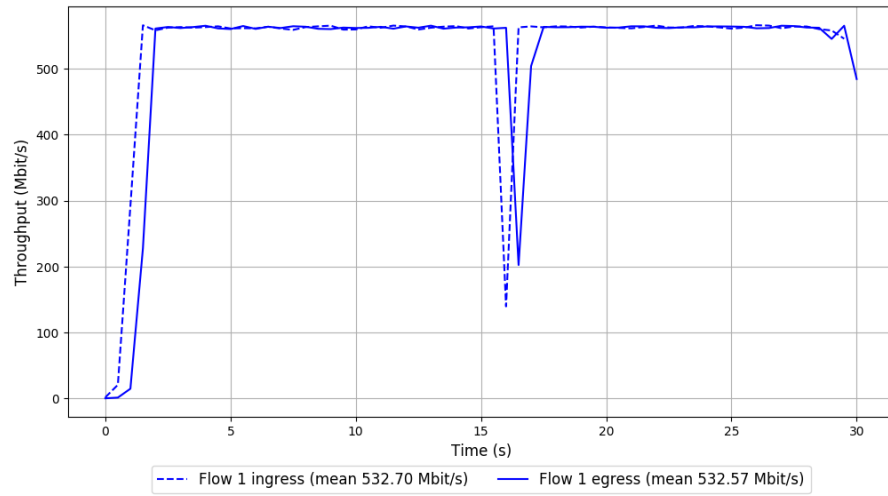
-- Flow 1:

Average throughput: 532.57 Mbit/s

95th percentile per-packet one-way delay: 63.477 ms

Loss rate: 0.45%

# Run 1: Report of TCP BBR — Data Link



Run 2: Statistics of TCP BBR

Start at: 2018-11-03 03:21:03

End at: 2018-11-03 03:21:33

Local clock offset: -0.102 ms

Remote clock offset: -0.122 ms

# Below is generated by plot.py at 2018-11-03 05:15:47

# Datalink statistics

-- Total of 1 flow:

Average throughput: 528.94 Mbit/s

95th percentile per-packet one-way delay: 64.768 ms

Loss rate: 0.45%

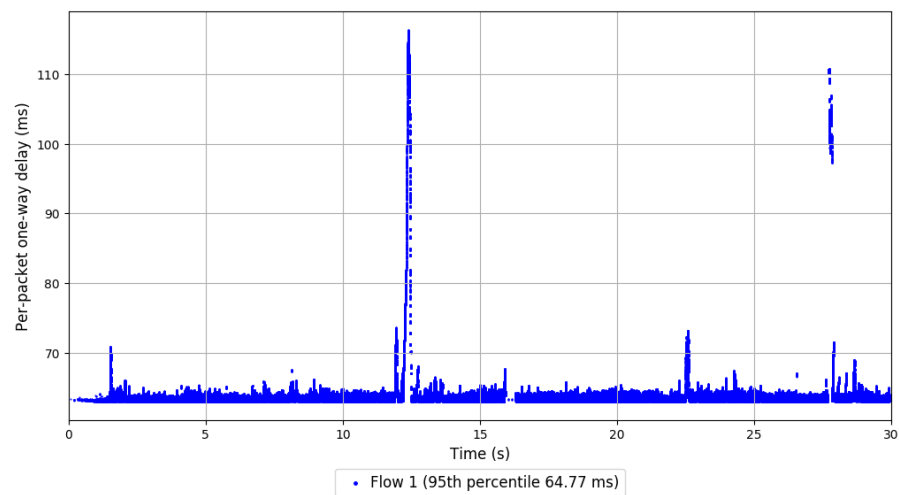
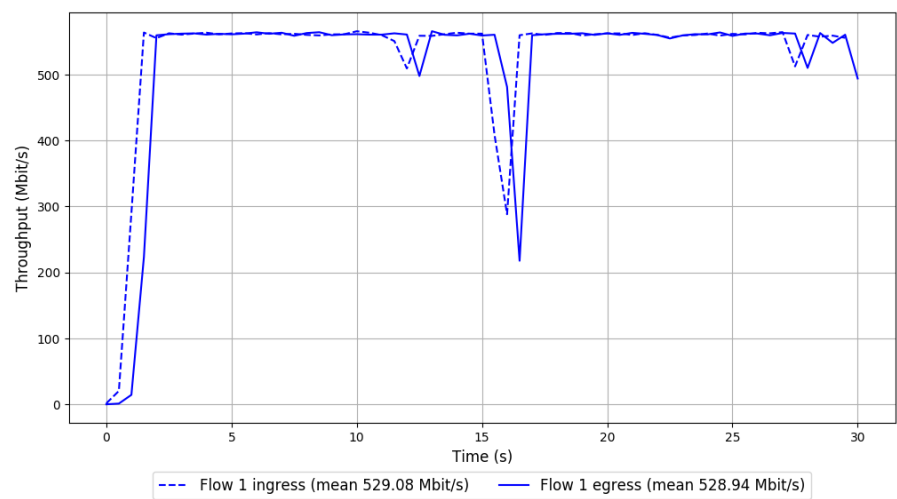
-- Flow 1:

Average throughput: 528.94 Mbit/s

95th percentile per-packet one-way delay: 64.768 ms

Loss rate: 0.45%

Run 2: Report of TCP BBR — Data Link



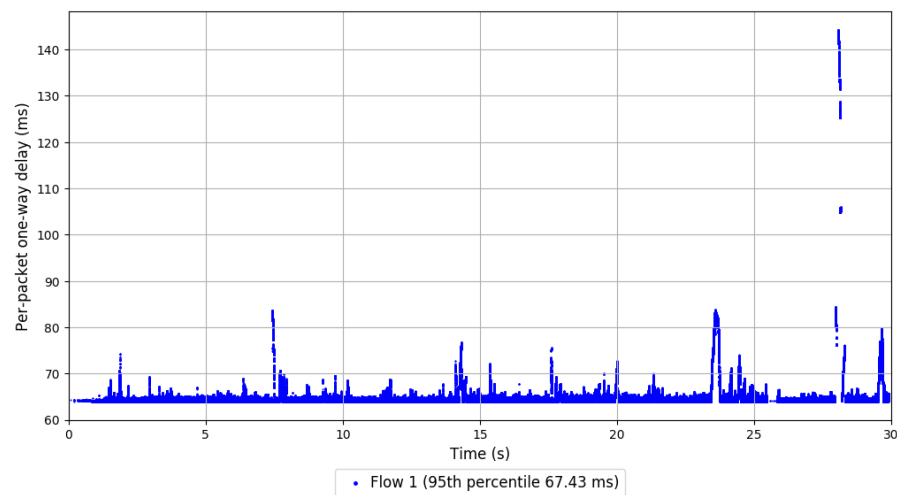
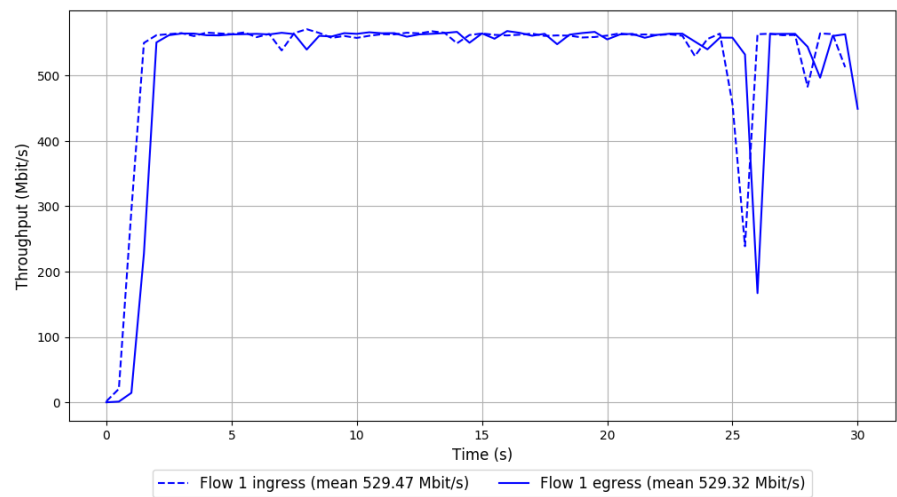


Run 3: Statistics of TCP BBR

Start at: 2018-11-03 03:47:10  
End at: 2018-11-03 03:47:40  
Local clock offset: -0.059 ms  
Remote clock offset: -1.288 ms

# Below is generated by plot.py at 2018-11-03 05:15:47  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 529.32 Mbit/s  
95th percentile per-packet one-way delay: 67.429 ms  
Loss rate: 0.45%  
-- Flow 1:  
Average throughput: 529.32 Mbit/s  
95th percentile per-packet one-way delay: 67.429 ms  
Loss rate: 0.45%

Run 3: Report of TCP BBR — Data Link

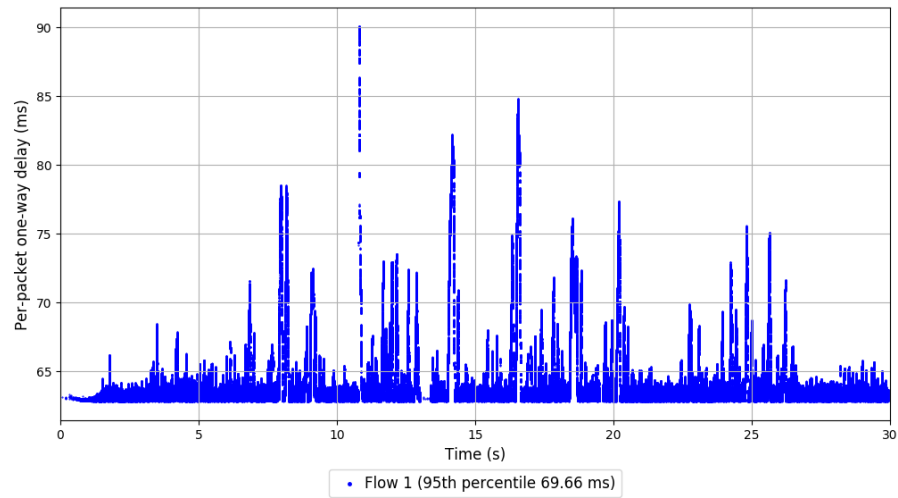
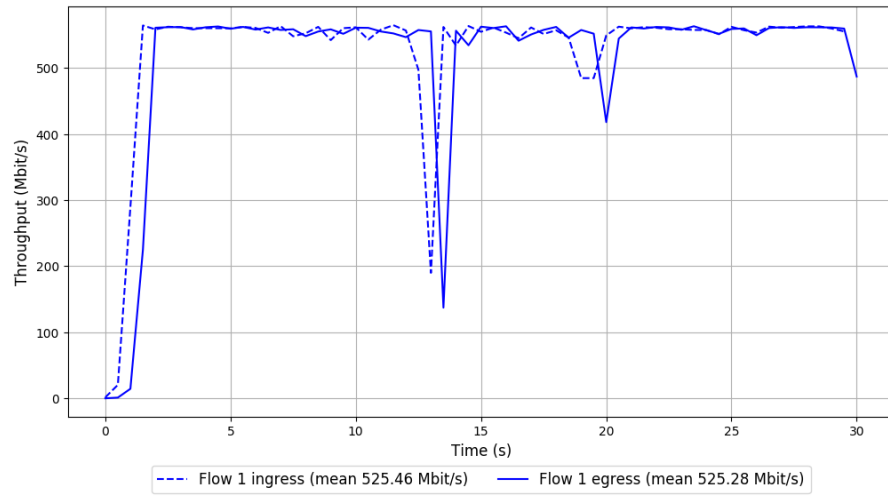


Run 4: Statistics of TCP BBR

Start at: 2018-11-03 04:13:42  
End at: 2018-11-03 04:14:12  
Local clock offset: -0.042 ms  
Remote clock offset: -0.228 ms

# Below is generated by plot.py at 2018-11-03 05:15:47  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 525.28 Mbit/s  
95th percentile per-packet one-way delay: 69.655 ms  
Loss rate: 0.45%  
-- Flow 1:  
Average throughput: 525.28 Mbit/s  
95th percentile per-packet one-way delay: 69.655 ms  
Loss rate: 0.45%

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

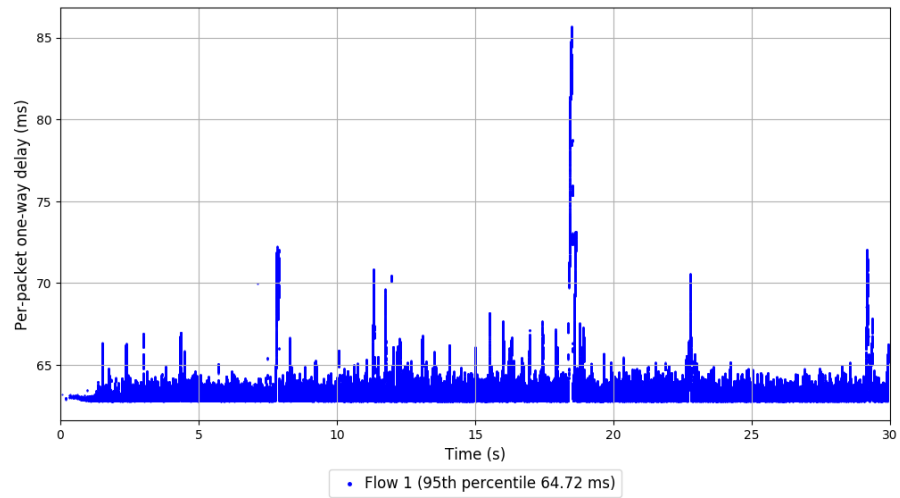
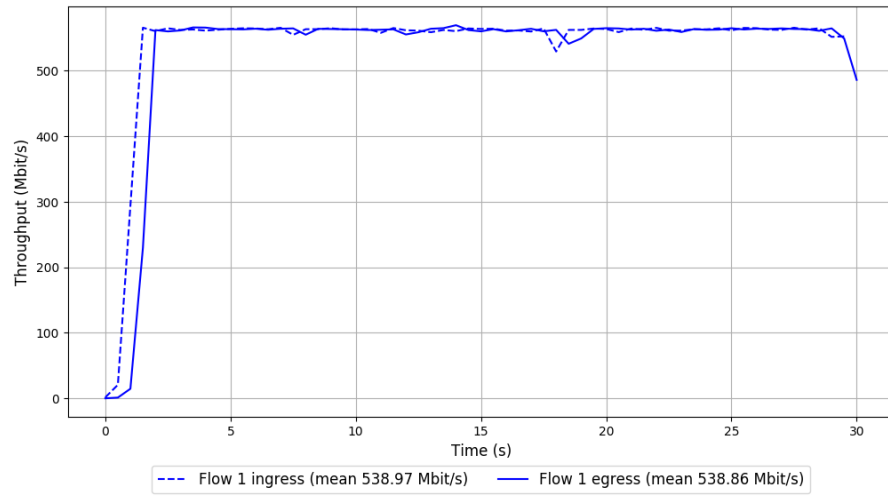


Run 5: Statistics of TCP BBR

Start at: 2018-11-03 04:39:51  
End at: 2018-11-03 04:40:21  
Local clock offset: -0.121 ms  
Remote clock offset: -0.211 ms

# Below is generated by plot.py at 2018-11-03 05:15:55  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 538.86 Mbit/s  
95th percentile per-packet one-way delay: 64.723 ms  
Loss rate: 0.44%  
-- Flow 1:  
Average throughput: 538.86 Mbit/s  
95th percentile per-packet one-way delay: 64.723 ms  
Loss rate: 0.44%

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

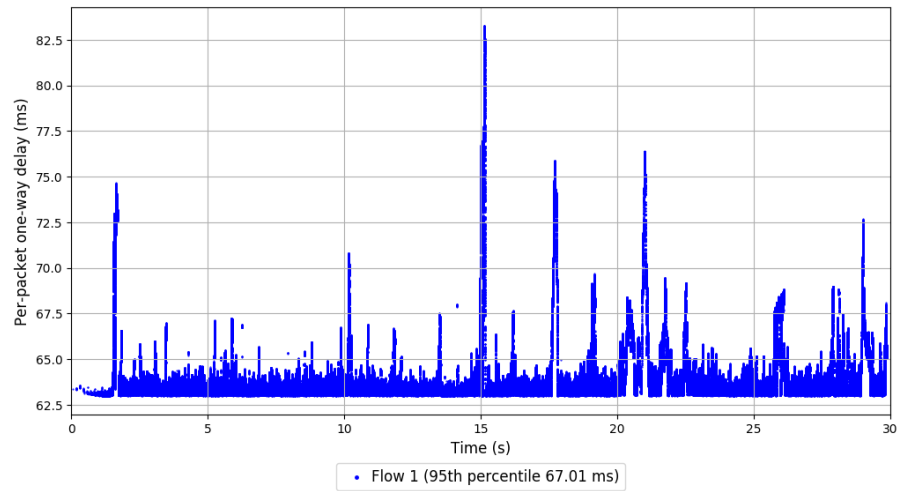
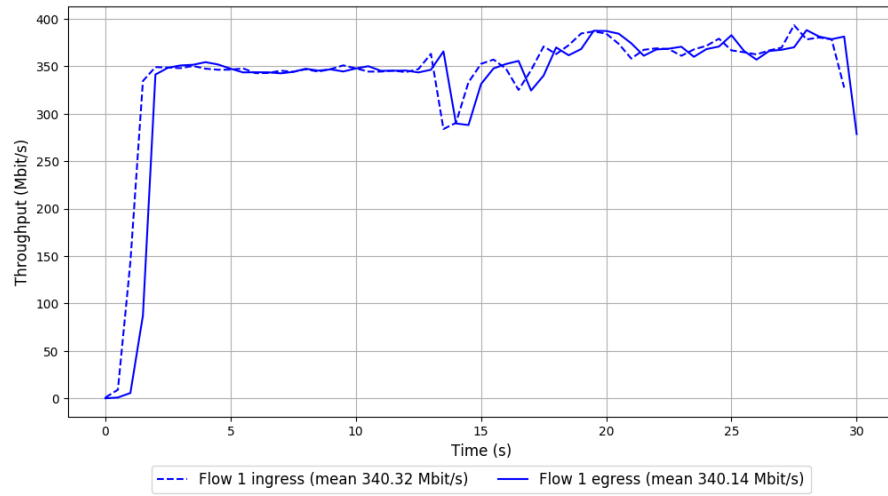


Run 1: Statistics of Copa

Start at: 2018-11-03 02:50:25  
End at: 2018-11-03 02:50:55  
Local clock offset: -0.093 ms  
Remote clock offset: -0.204 ms

# Below is generated by plot.py at 2018-11-03 05:17:08  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 340.14 Mbit/s  
95th percentile per-packet one-way delay: 67.007 ms  
Loss rate: 0.47%  
-- Flow 1:  
Average throughput: 340.14 Mbit/s  
95th percentile per-packet one-way delay: 67.007 ms  
Loss rate: 0.47%

## Run 1: Report of Copa — Data Link





Run 2: Statistics of Copa

Start at: 2018-11-03 03:16:45

End at: 2018-11-03 03:17:15

Local clock offset: -0.087 ms

Remote clock offset: 0.229 ms

# Below is generated by plot.py at 2018-11-03 05:17:08

# Datalink statistics

-- Total of 1 flow:

Average throughput: 285.82 Mbit/s

95th percentile per-packet one-way delay: 70.442 ms

Loss rate: 0.56%

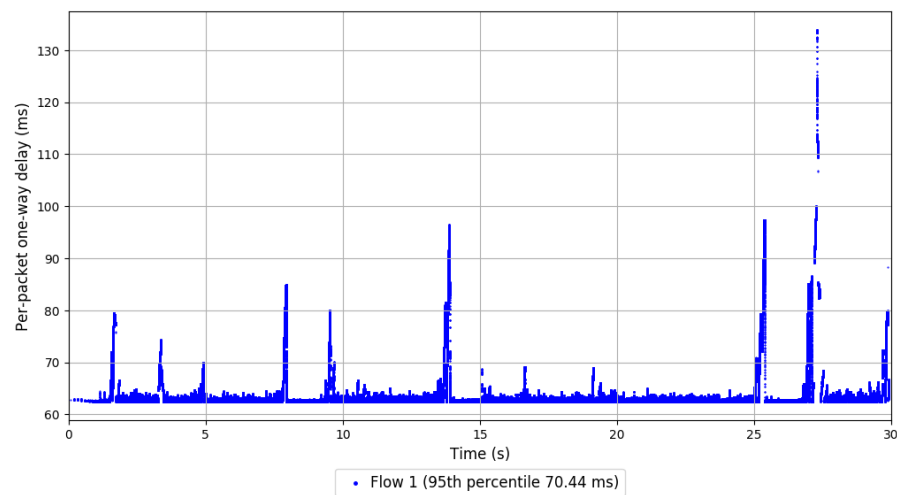
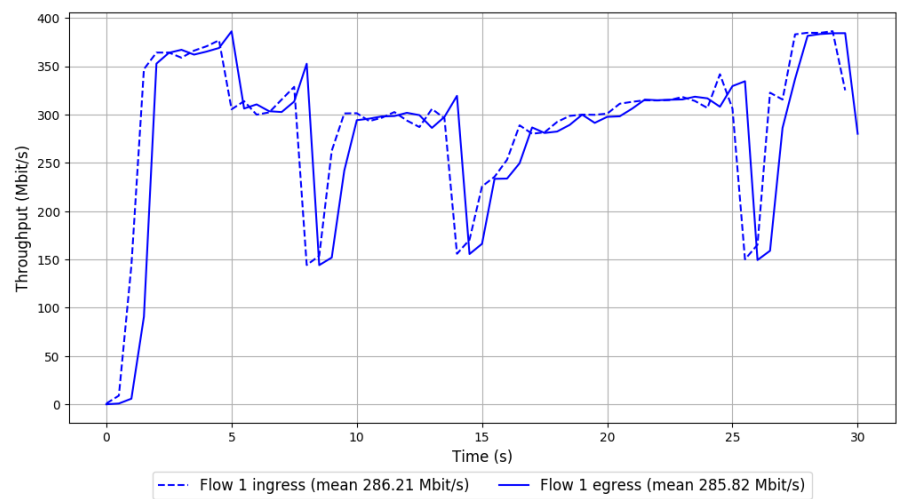
-- Flow 1:

Average throughput: 285.82 Mbit/s

95th percentile per-packet one-way delay: 70.442 ms

Loss rate: 0.56%

Run 2: Report of Copa — Data Link

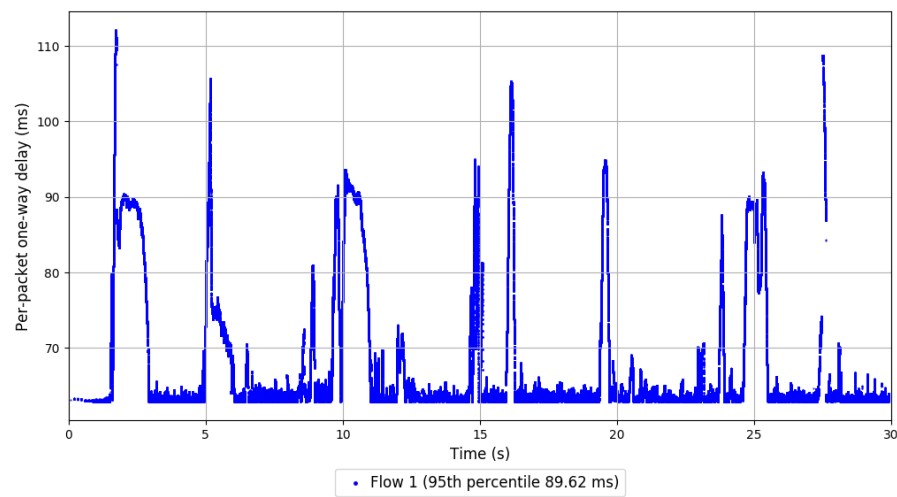
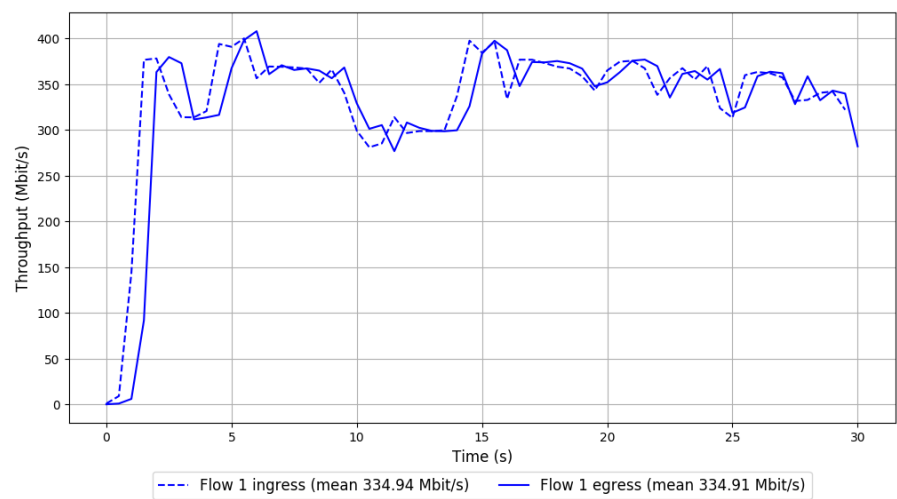


Run 3: Statistics of Copa

Start at: 2018-11-03 03:42:58  
End at: 2018-11-03 03:43:28  
Local clock offset: -0.068 ms  
Remote clock offset: -0.258 ms

# Below is generated by plot.py at 2018-11-03 05:17:08  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 334.91 Mbit/s  
95th percentile per-packet one-way delay: 89.624 ms  
Loss rate: 0.43%  
-- Flow 1:  
Average throughput: 334.91 Mbit/s  
95th percentile per-packet one-way delay: 89.624 ms  
Loss rate: 0.43%

Run 3: Report of Copa — Data Link

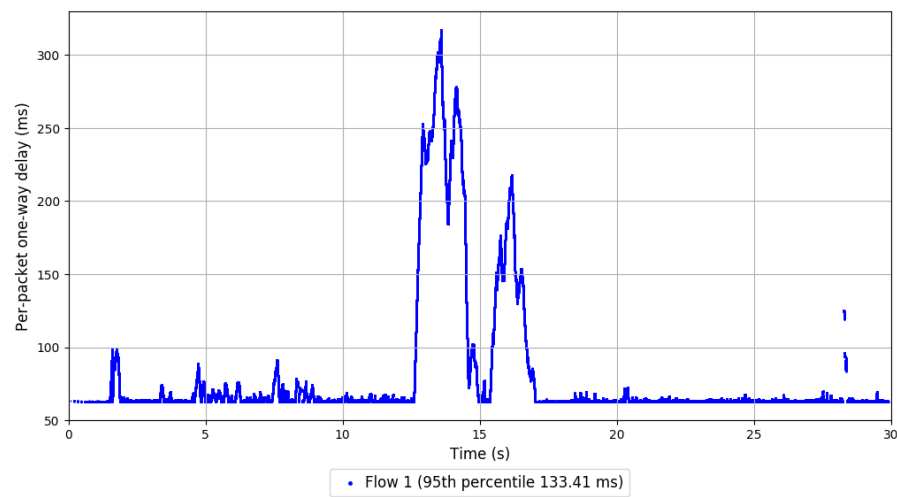
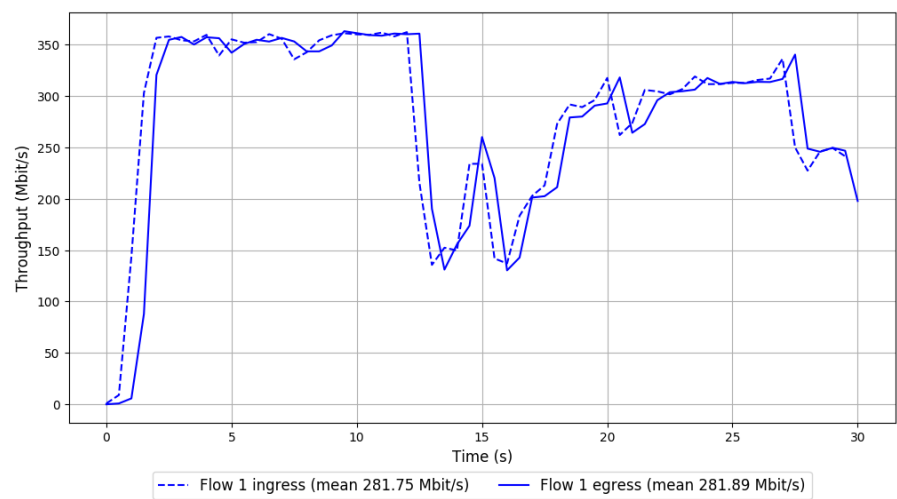


Run 4: Statistics of Copa

Start at: 2018-11-03 04:09:06  
End at: 2018-11-03 04:09:36  
Local clock offset: -0.108 ms  
Remote clock offset: -0.242 ms

# Below is generated by plot.py at 2018-11-03 05:24:50  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 281.89 Mbit/s  
95th percentile per-packet one-way delay: 133.407 ms  
Loss rate: 0.37%  
-- Flow 1:  
Average throughput: 281.89 Mbit/s  
95th percentile per-packet one-way delay: 133.407 ms  
Loss rate: 0.37%

Run 4: Report of Copa — Data Link



Run 5: Statistics of Copa

Start at: 2018-11-03 04:35:28

End at: 2018-11-03 04:35:58

Local clock offset: -0.132 ms

Remote clock offset: 1.097 ms

# Below is generated by plot.py at 2018-11-03 05:26:34

# Datalink statistics

-- Total of 1 flow:

Average throughput: 351.11 Mbit/s

95th percentile per-packet one-way delay: 75.383 ms

Loss rate: 0.41%

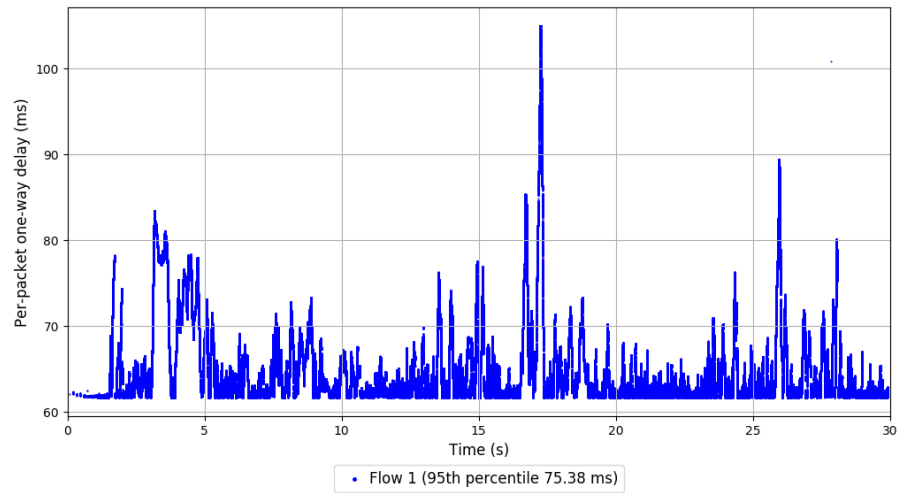
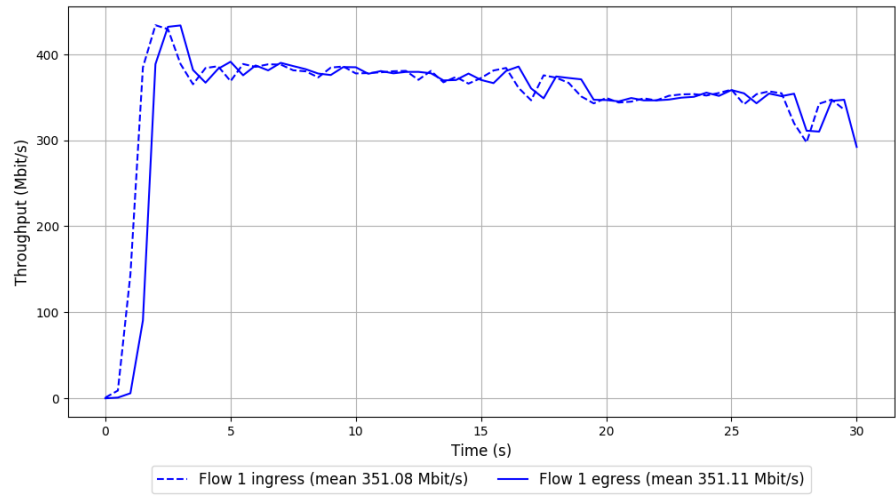
-- Flow 1:

Average throughput: 351.11 Mbit/s

95th percentile per-packet one-way delay: 75.383 ms

Loss rate: 0.41%

## Run 5: Report of Copa — Data Link



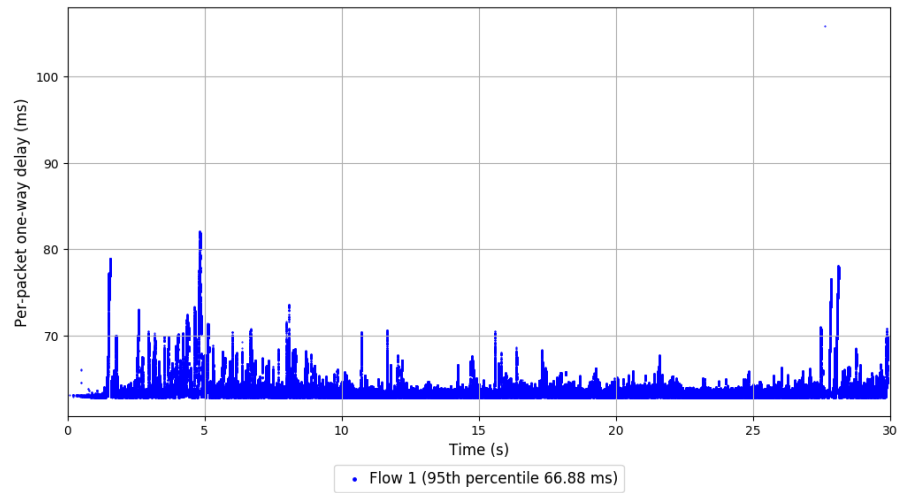
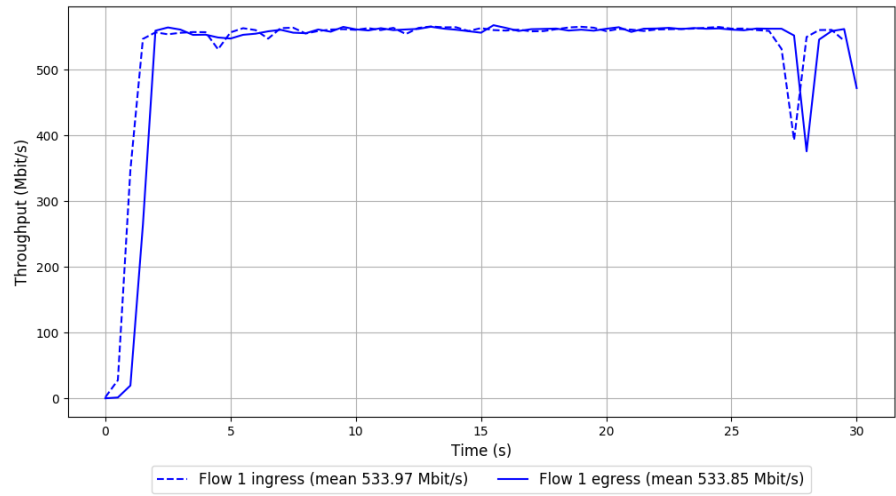


Run 1: Statistics of TCP Cubic

Start at: 2018-11-03 02:52:04  
End at: 2018-11-03 02:52:34  
Local clock offset: -0.088 ms  
Remote clock offset: -0.007 ms

# Below is generated by plot.py at 2018-11-03 05:26:34  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 533.85 Mbit/s  
95th percentile per-packet one-way delay: 66.881 ms  
Loss rate: 0.44%  
-- Flow 1:  
Average throughput: 533.85 Mbit/s  
95th percentile per-packet one-way delay: 66.881 ms  
Loss rate: 0.44%

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

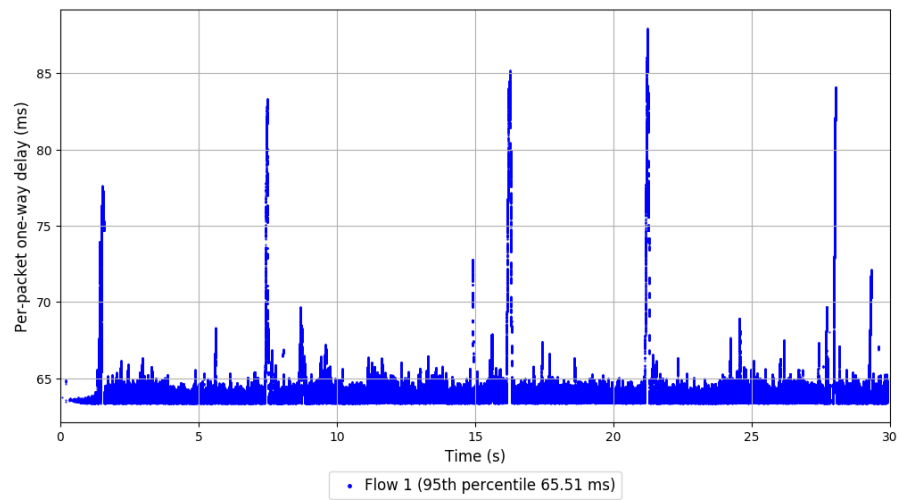
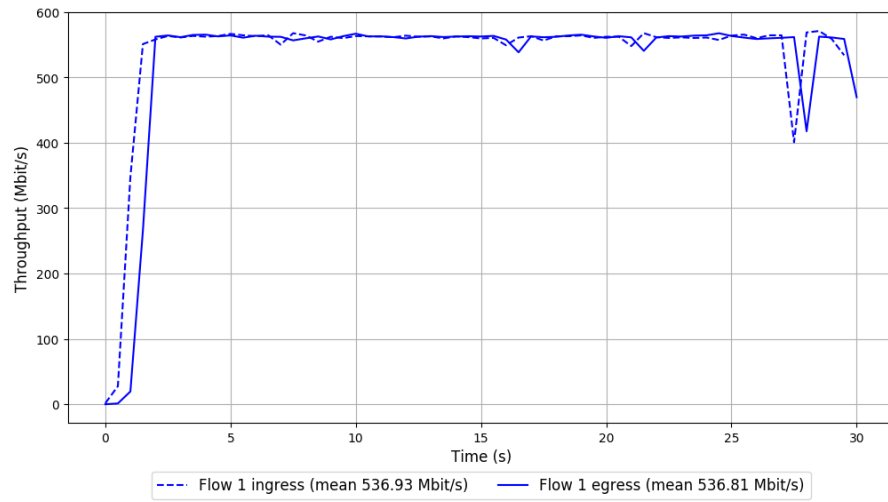


Run 2: Statistics of TCP Cubic

Start at: 2018-11-03 03:18:20  
End at: 2018-11-03 03:18:50  
Local clock offset: -0.086 ms  
Remote clock offset: -0.819 ms

# Below is generated by plot.py at 2018-11-03 05:26:34  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 536.81 Mbit/s  
95th percentile per-packet one-way delay: 65.513 ms  
Loss rate: 0.44%  
-- Flow 1:  
Average throughput: 536.81 Mbit/s  
95th percentile per-packet one-way delay: 65.513 ms  
Loss rate: 0.44%

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

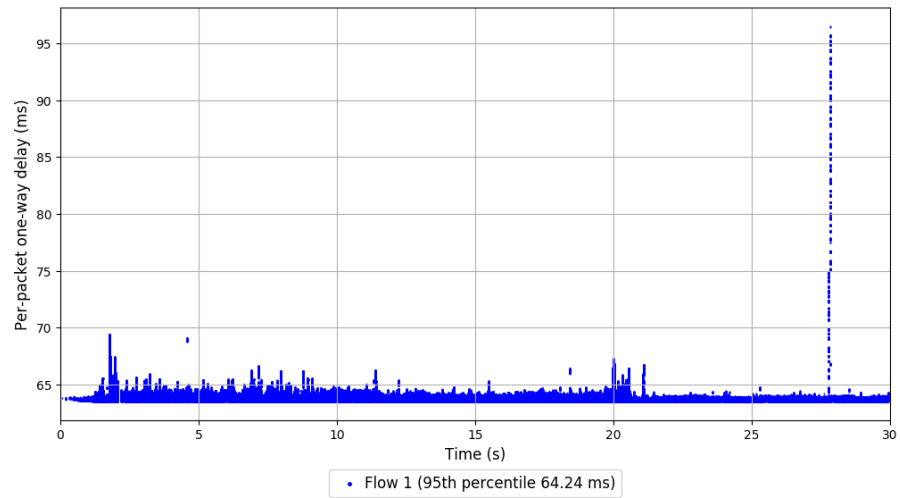
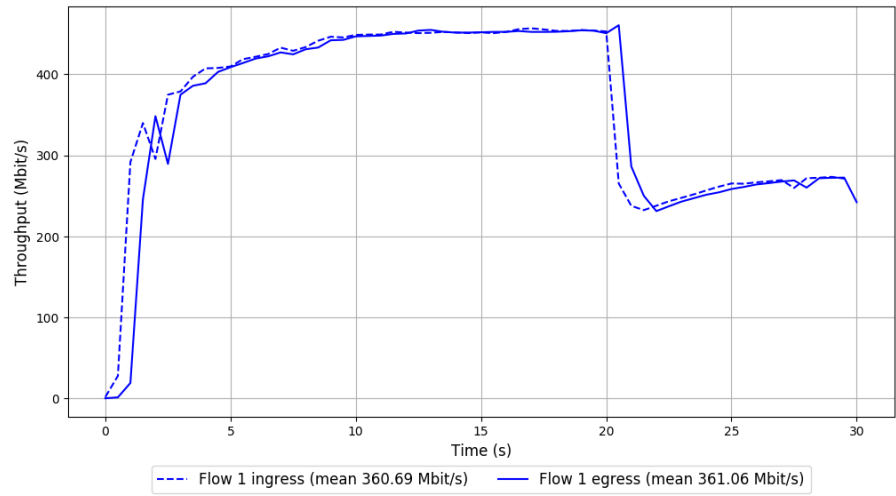


Run 3: Statistics of TCP Cubic

Start at: 2018-11-03 03:44:36  
End at: 2018-11-03 03:45:06  
Local clock offset: -0.096 ms  
Remote clock offset: -0.666 ms

# Below is generated by plot.py at 2018-11-03 05:26:34  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 361.06 Mbit/s  
95th percentile per-packet one-way delay: 64.244 ms  
Loss rate: 0.32%  
-- Flow 1:  
Average throughput: 361.06 Mbit/s  
95th percentile per-packet one-way delay: 64.244 ms  
Loss rate: 0.32%

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

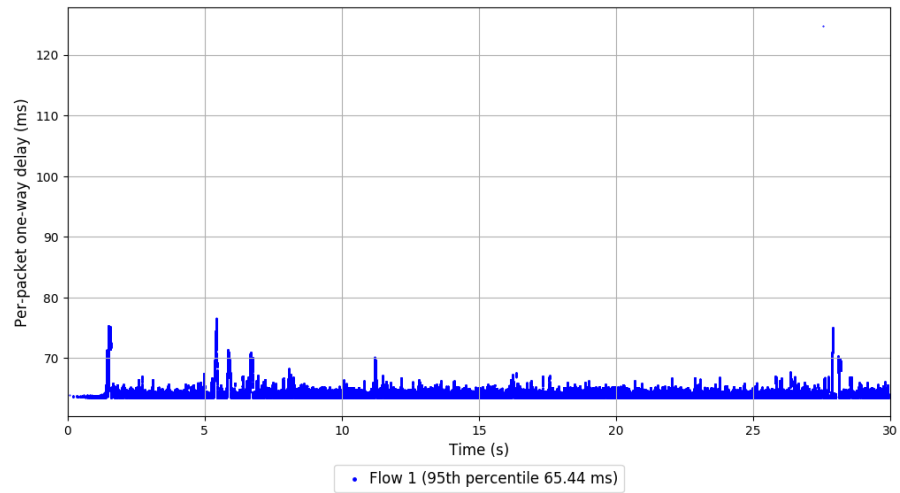
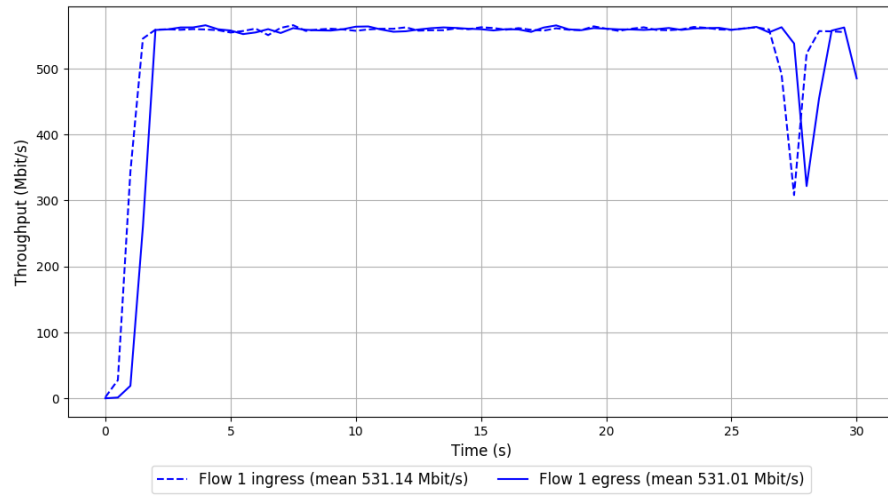


Run 4: Statistics of TCP Cubic

Start at: 2018-11-03 04:10:40  
End at: 2018-11-03 04:11:10  
Local clock offset: -0.069 ms  
Remote clock offset: -0.657 ms

# Below is generated by plot.py at 2018-11-03 05:26:34  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 531.01 Mbit/s  
95th percentile per-packet one-way delay: 65.444 ms  
Loss rate: 0.45%  
-- Flow 1:  
Average throughput: 531.01 Mbit/s  
95th percentile per-packet one-way delay: 65.444 ms  
Loss rate: 0.45%

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





Run 5: Statistics of TCP Cubic

Start at: 2018-11-03 04:37:09

End at: 2018-11-03 04:37:39

Local clock offset: -0.086 ms

Remote clock offset: 0.602 ms

# Below is generated by plot.py at 2018-11-03 05:26:34

# Datalink statistics

-- Total of 1 flow:

Average throughput: 531.46 Mbit/s

95th percentile per-packet one-way delay: 66.610 ms

Loss rate: 0.45%

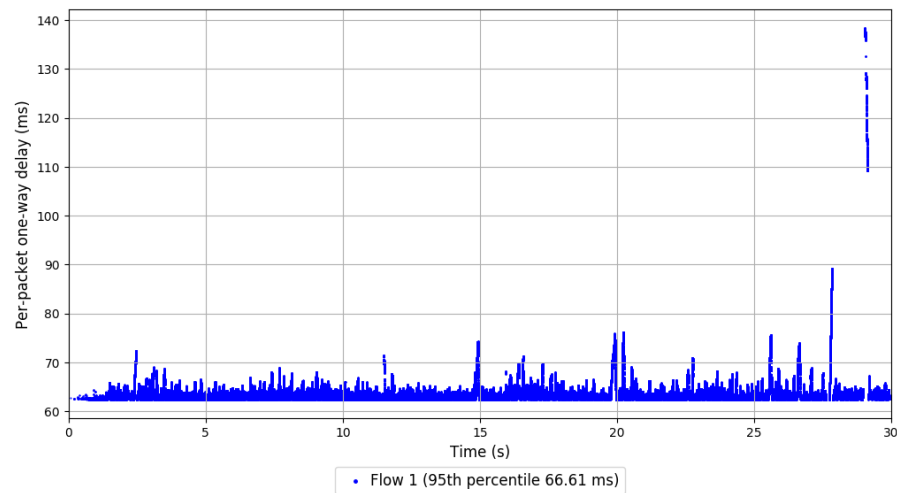
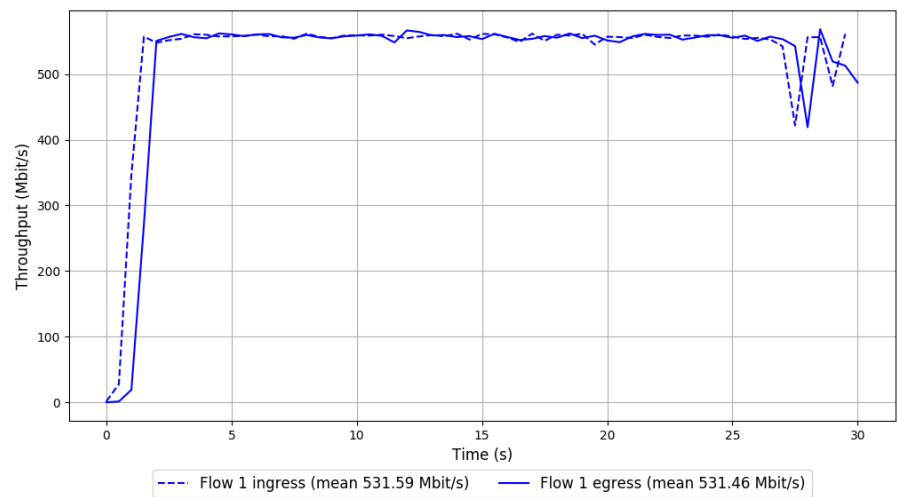
-- Flow 1:

Average throughput: 531.46 Mbit/s

95th percentile per-packet one-way delay: 66.610 ms

Loss rate: 0.45%

Run 5: Report of TCP Cubic — Data Link



Run 1: Statistics of FillP

Start at: 2018-11-03 03:05:11

End at: 2018-11-03 03:05:41

Local clock offset: -0.131 ms

Remote clock offset: 0.059 ms

# Below is generated by plot.py at 2018-11-03 05:37:14

# Datalink statistics

-- Total of 1 flow:

Average throughput: 980.92 Mbit/s

95th percentile per-packet one-way delay: 82.472 ms

Loss rate: 0.62%

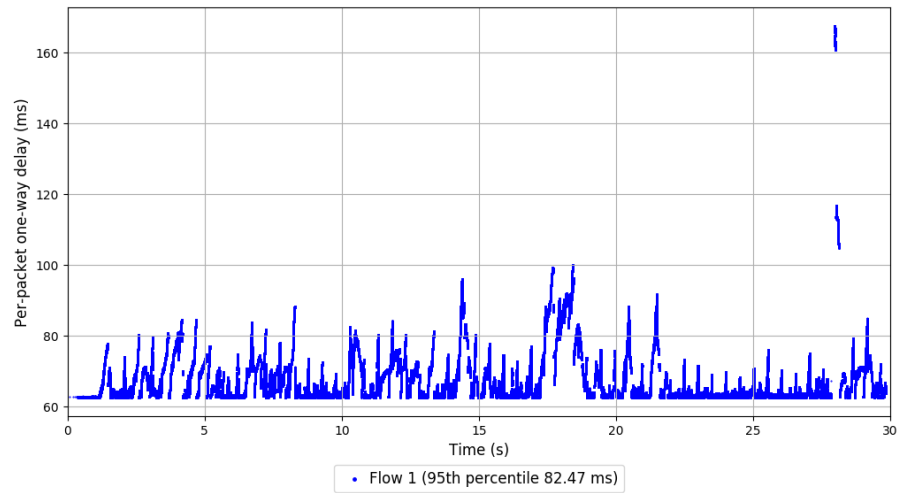
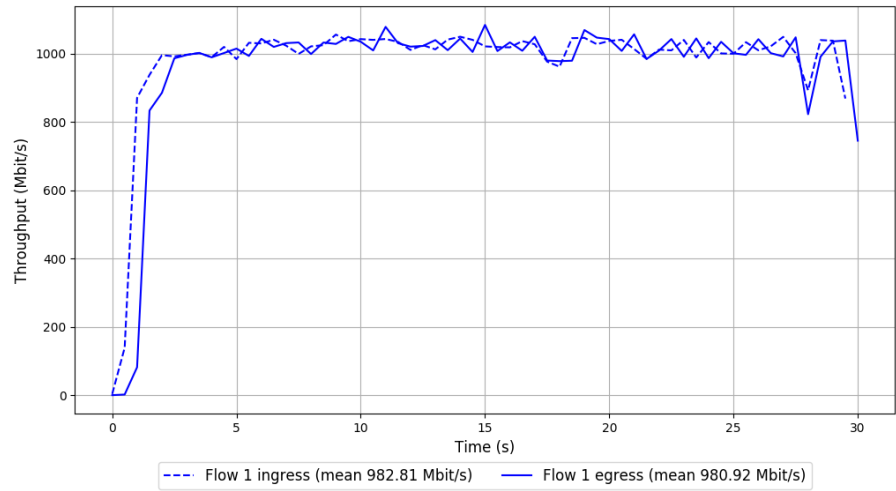
-- Flow 1:

Average throughput: 980.92 Mbit/s

95th percentile per-packet one-way delay: 82.472 ms

Loss rate: 0.62%

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



Run 2: Statistics of FillP

Start at: 2018-11-03 03:31:15

End at: 2018-11-03 03:31:45

Local clock offset: -0.081 ms

Remote clock offset: 0.009 ms

# Below is generated by plot.py at 2018-11-03 05:42:48

# Datalink statistics

-- Total of 1 flow:

Average throughput: 938.65 Mbit/s

95th percentile per-packet one-way delay: 116.179 ms

Loss rate: 0.98%

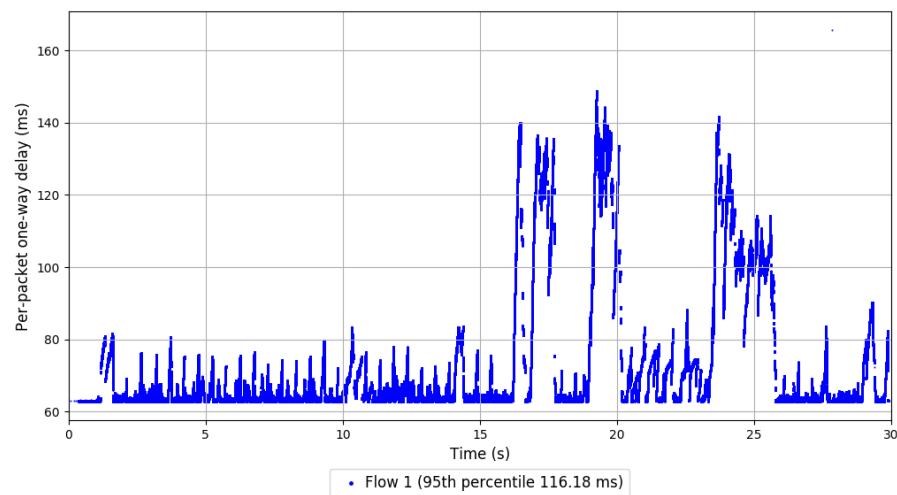
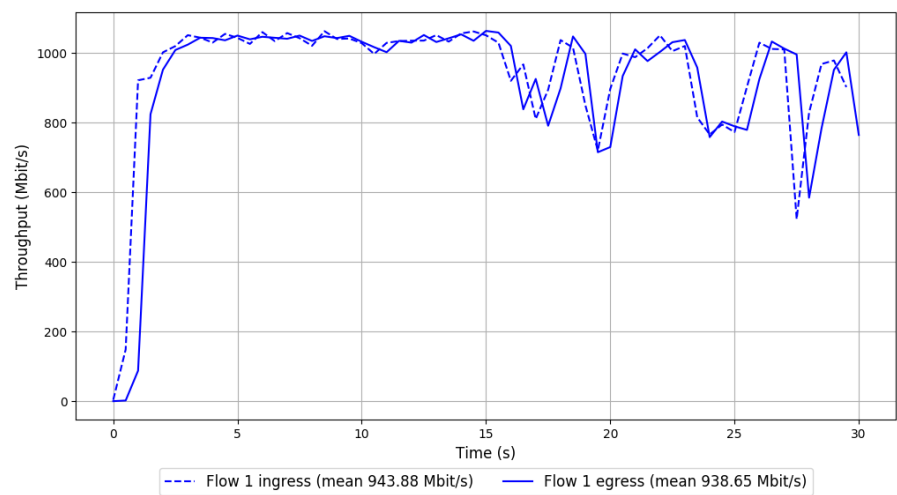
-- Flow 1:

Average throughput: 938.65 Mbit/s

95th percentile per-packet one-way delay: 116.179 ms

Loss rate: 0.98%

Run 2: Report of FillP — Data Link

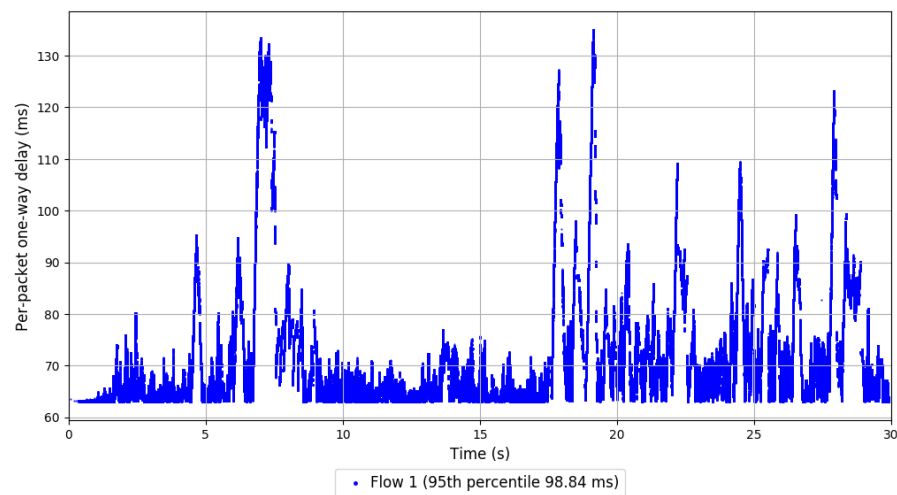
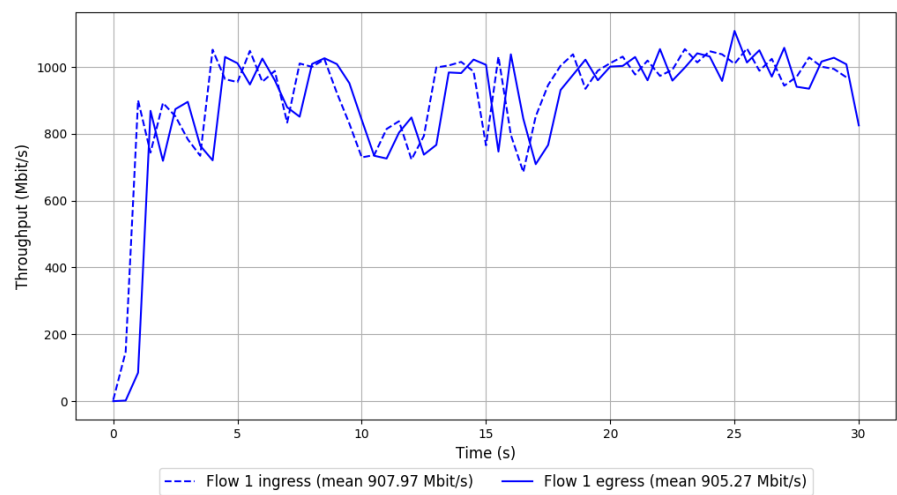


Run 3: Statistics of FillP

Start at: 2018-11-03 03:57:26  
End at: 2018-11-03 03:57:56  
Local clock offset: -0.054 ms  
Remote clock offset: -0.145 ms

# Below is generated by plot.py at 2018-11-03 05:45:09  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 905.27 Mbit/s  
95th percentile per-packet one-way delay: 98.844 ms  
Loss rate: 0.73%  
-- Flow 1:  
Average throughput: 905.27 Mbit/s  
95th percentile per-packet one-way delay: 98.844 ms  
Loss rate: 0.73%

Run 3: Report of FillP — Data Link



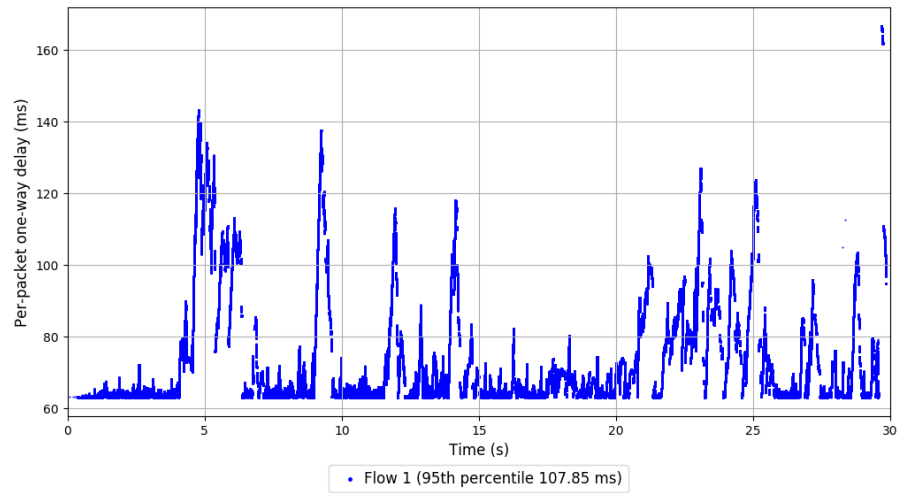
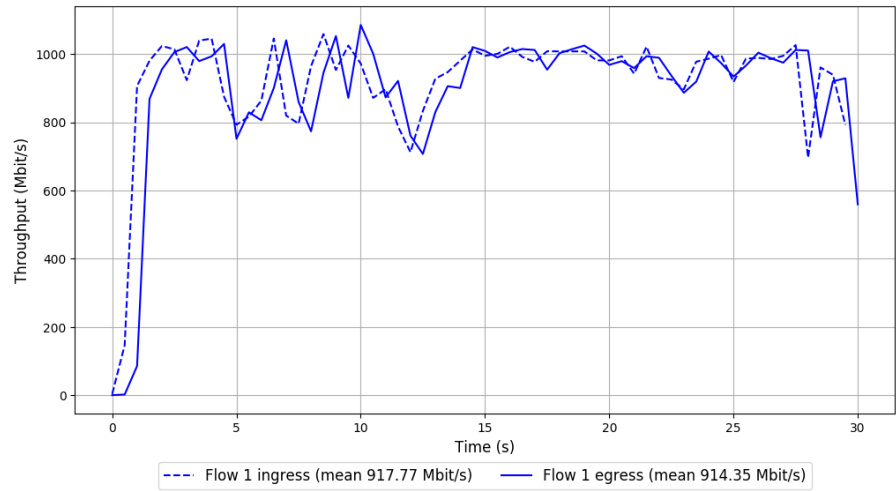


Run 4: Statistics of FillP

Start at: 2018-11-03 04:23:55  
End at: 2018-11-03 04:24:25  
Local clock offset: -0.074 ms  
Remote clock offset: -0.373 ms

# Below is generated by plot.py at 2018-11-03 05:45:16  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 914.35 Mbit/s  
95th percentile per-packet one-way delay: 107.852 ms  
Loss rate: 0.92%  
-- Flow 1:  
Average throughput: 914.35 Mbit/s  
95th percentile per-packet one-way delay: 107.852 ms  
Loss rate: 0.92%

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

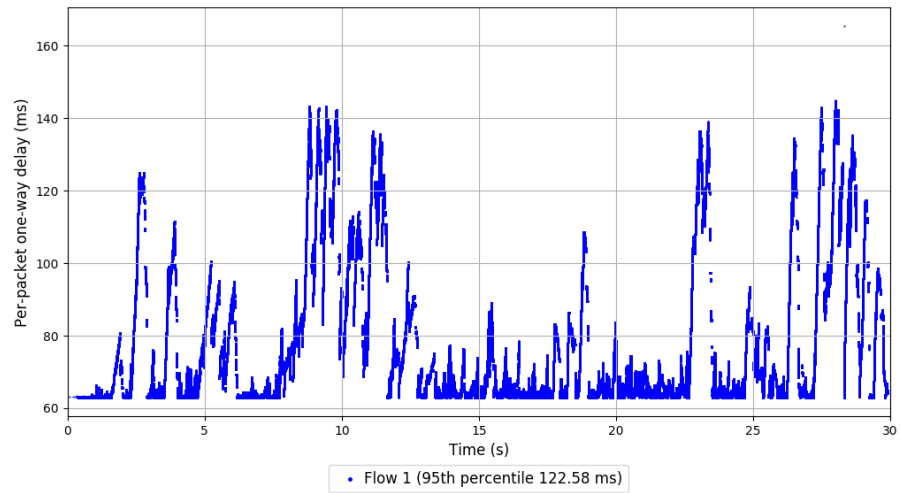
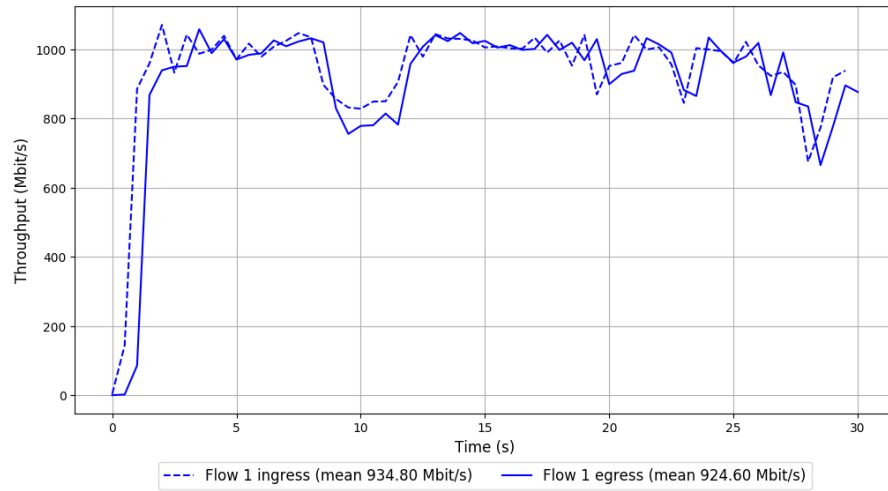


Run 5: Statistics of FillP

Start at: 2018-11-03 04:50:01  
End at: 2018-11-03 04:50:31  
Local clock offset: -0.126 ms  
Remote clock offset: -0.218 ms

# Below is generated by plot.py at 2018-11-03 05:45:36  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 924.60 Mbit/s  
95th percentile per-packet one-way delay: 122.579 ms  
Loss rate: 1.51%  
-- Flow 1:  
Average throughput: 924.60 Mbit/s  
95th percentile per-packet one-way delay: 122.579 ms  
Loss rate: 1.51%

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

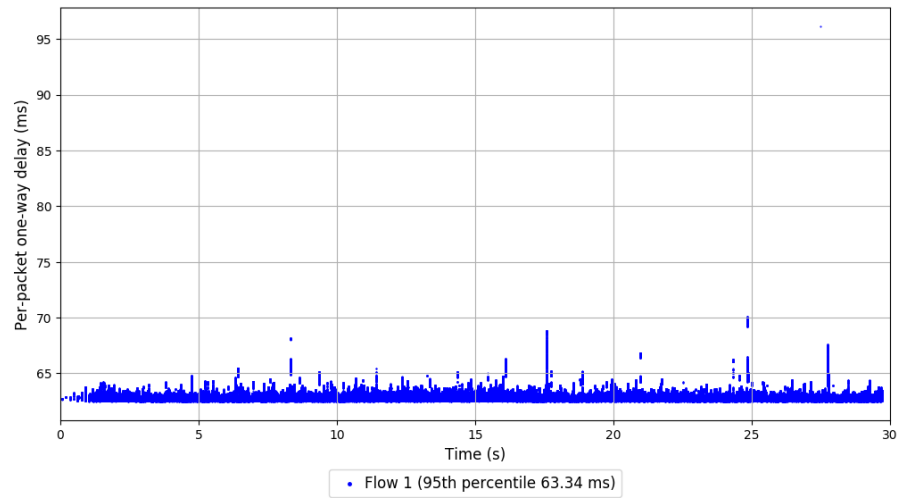
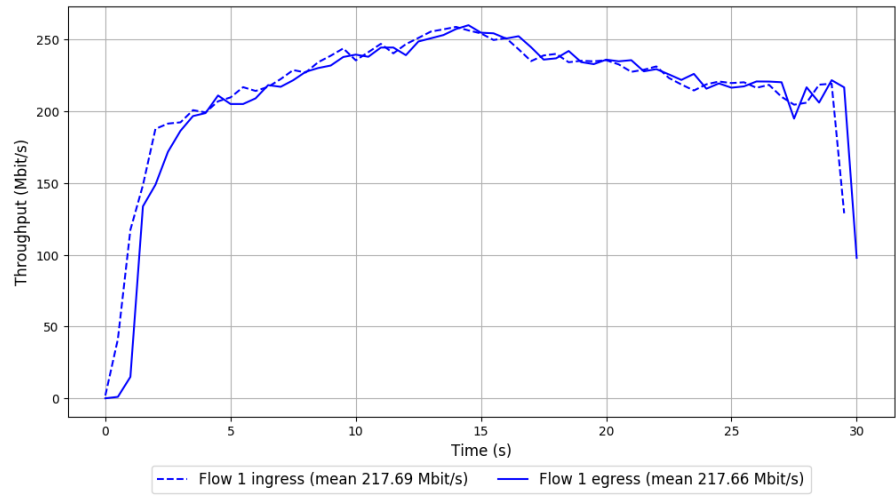


```
Run 1: Statistics of Indigo

Start at: 2018-11-03 02:57:54
End at: 2018-11-03 02:58:24
Local clock offset: -0.087 ms
Remote clock offset: 0.491 ms

# Below is generated by plot.py at 2018-11-03 05:45:36
# Datalink statistics
-- Total of 1 flow:
Average throughput: 217.66 Mbit/s
95th percentile per-packet one-way delay: 63.338 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 217.66 Mbit/s
95th percentile per-packet one-way delay: 63.338 ms
Loss rate: 0.44%
```

## Run 1: Report of Indigo — Data Link

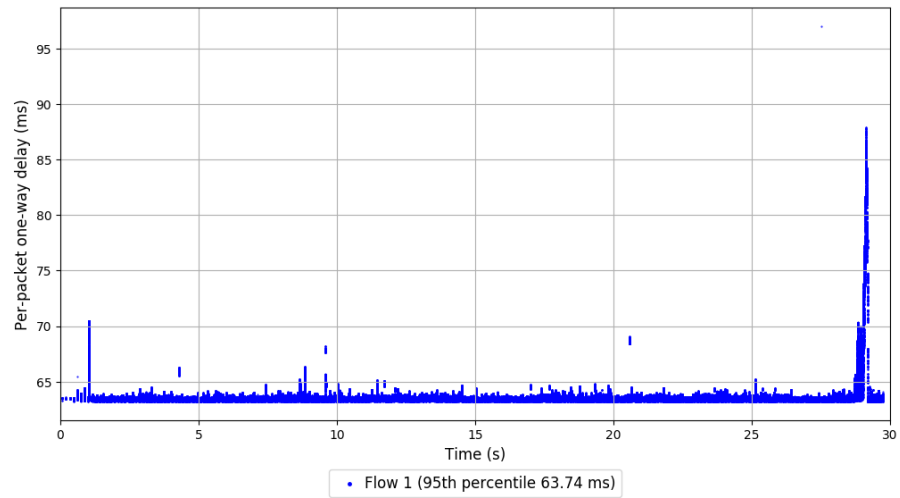
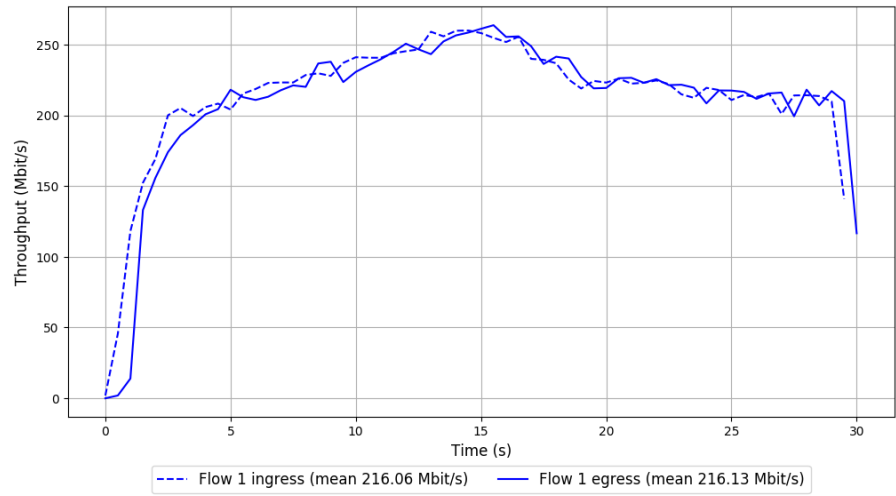


Run 2: Statistics of Indigo

Start at: 2018-11-03 03:24:18  
End at: 2018-11-03 03:24:48  
Local clock offset: -0.112 ms  
Remote clock offset: -0.347 ms

# Below is generated by plot.py at 2018-11-03 05:45:36  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 216.13 Mbit/s  
95th percentile per-packet one-way delay: 63.737 ms  
Loss rate: 0.39%  
-- Flow 1:  
Average throughput: 216.13 Mbit/s  
95th percentile per-packet one-way delay: 63.737 ms  
Loss rate: 0.39%

## Run 2: Report of Indigo — Data Link



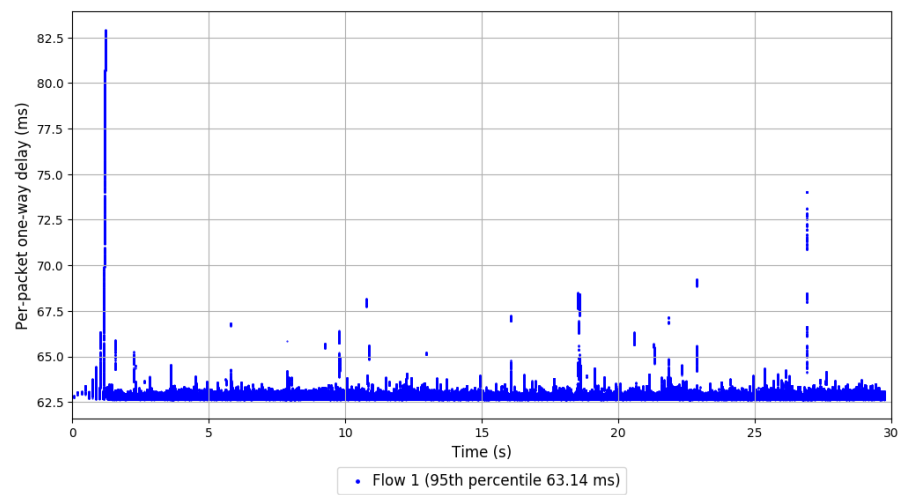
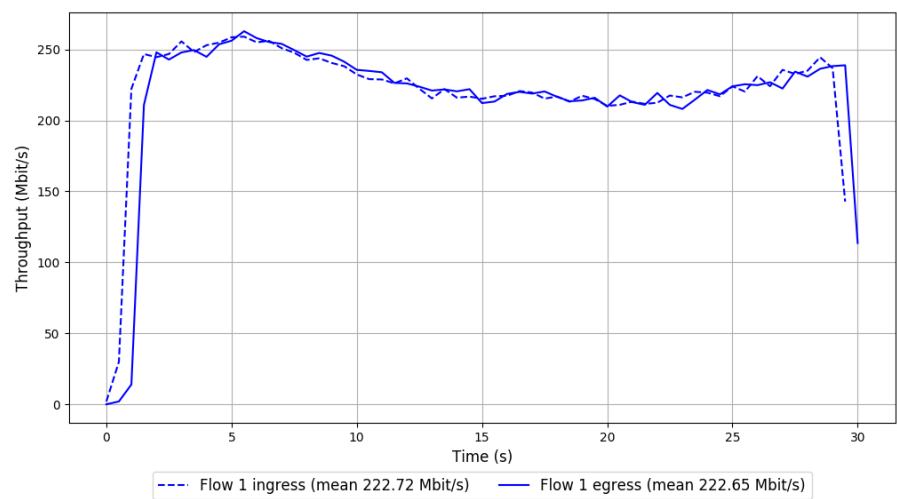


Run 3: Statistics of Indigo

Start at: 2018-11-03 03:50:26  
End at: 2018-11-03 03:50:56  
Local clock offset: -0.056 ms  
Remote clock offset: -0.183 ms

# Below is generated by plot.py at 2018-11-03 05:45:36  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 222.65 Mbit/s  
95th percentile per-packet one-way delay: 63.139 ms  
Loss rate: 0.45%  
-- Flow 1:  
Average throughput: 222.65 Mbit/s  
95th percentile per-packet one-way delay: 63.139 ms  
Loss rate: 0.45%

Run 3: Report of Indigo — Data Link



Run 4: Statistics of Indigo

Start at: 2018-11-03 04:16:55

End at: 2018-11-03 04:17:25

Local clock offset: -0.077 ms

Remote clock offset: -0.51 ms

# Below is generated by plot.py at 2018-11-03 05:45:36

# Datalink statistics

-- Total of 1 flow:

Average throughput: 220.47 Mbit/s

95th percentile per-packet one-way delay: 63.469 ms

Loss rate: 0.42%

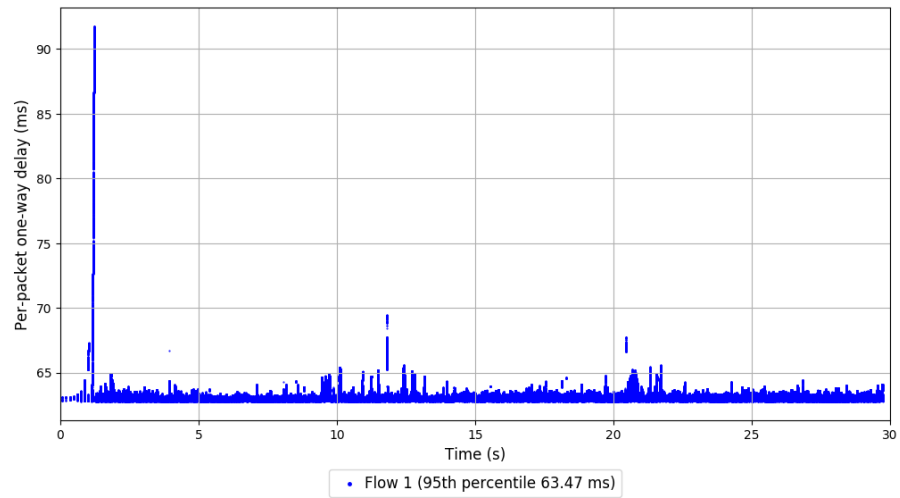
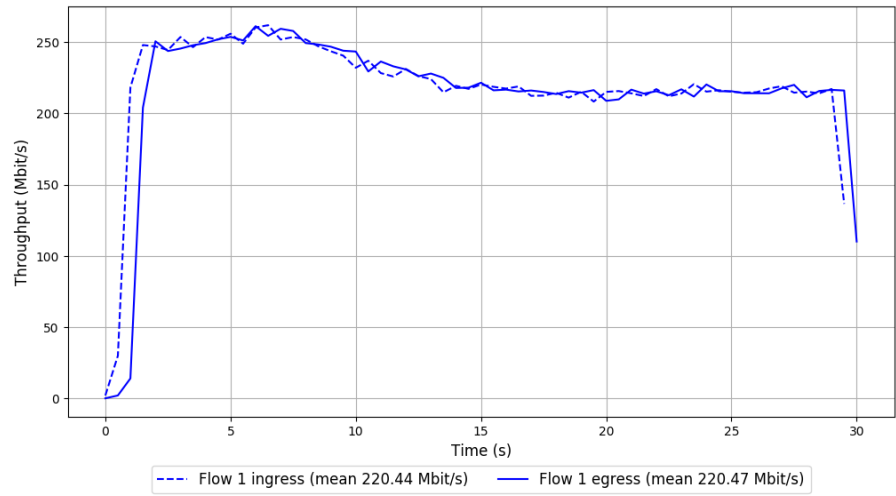
-- Flow 1:

Average throughput: 220.47 Mbit/s

95th percentile per-packet one-way delay: 63.469 ms

Loss rate: 0.42%

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



Run 5: Statistics of Indigo

Start at: 2018-11-03 04:43:06

End at: 2018-11-03 04:43:36

Local clock offset: -0.13 ms

Remote clock offset: -0.188 ms

# Below is generated by plot.py at 2018-11-03 05:45:36

# Datalink statistics

-- Total of 1 flow:

Average throughput: 224.88 Mbit/s

95th percentile per-packet one-way delay: 63.708 ms

Loss rate: 0.46%

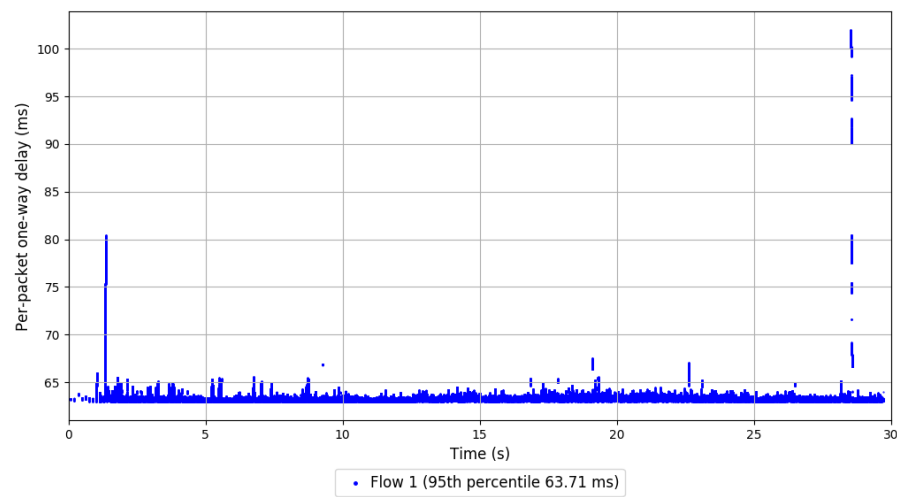
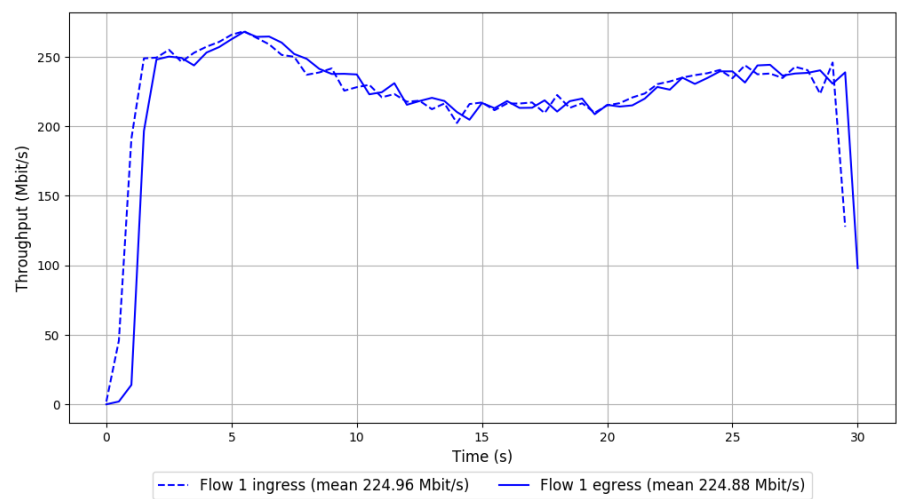
-- Flow 1:

Average throughput: 224.88 Mbit/s

95th percentile per-packet one-way delay: 63.708 ms

Loss rate: 0.46%

Run 5: Report of Indigo — Data Link

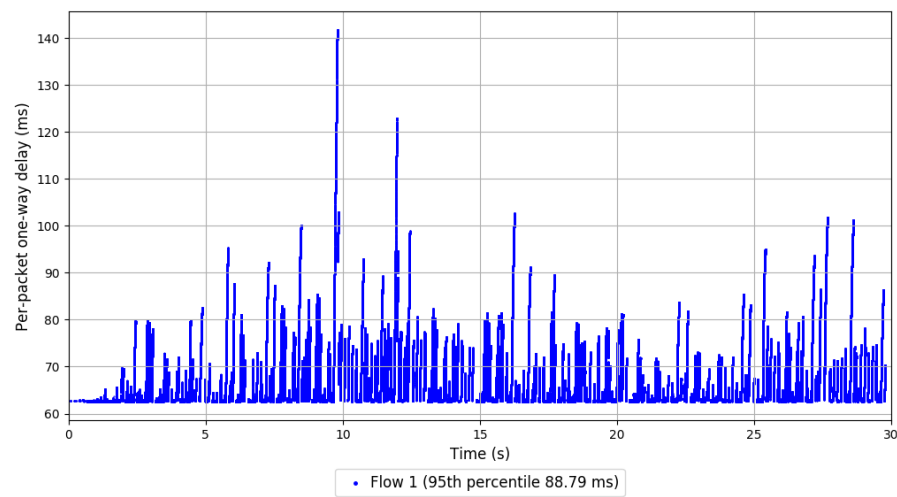
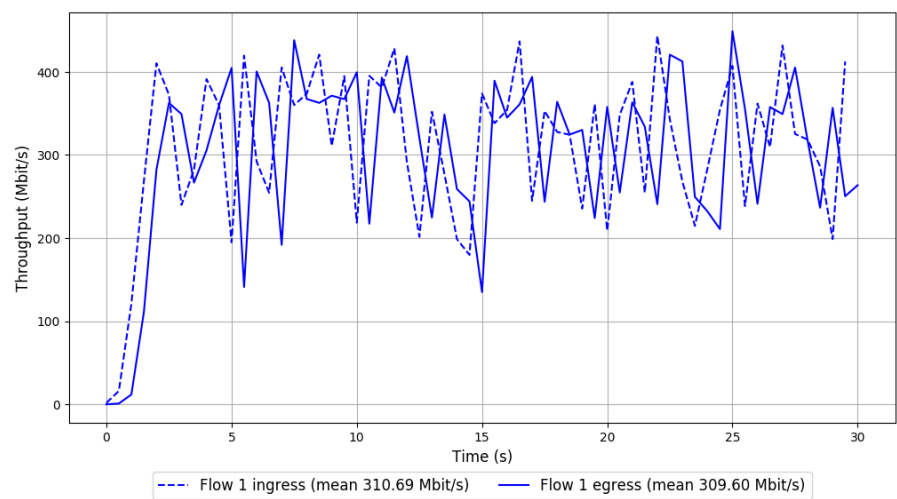


```
Run 1: Statistics of Indigo-96d2da3

Start at: 2018-11-03 03:02:39
End at: 2018-11-03 03:03:09
Local clock offset: -0.088 ms
Remote clock offset: 0.061 ms

# Below is generated by plot.py at 2018-11-03 05:45:36
# Datalink statistics
-- Total of 1 flow:
Average throughput: 309.60 Mbit/s
95th percentile per-packet one-way delay: 88.790 ms
Loss rate: 0.84%
-- Flow 1:
Average throughput: 309.60 Mbit/s
95th percentile per-packet one-way delay: 88.790 ms
Loss rate: 0.84%
```

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





Run 2: Statistics of Indigo-96d2da3

Start at: 2018-11-03 03:28:39

End at: 2018-11-03 03:29:09

Local clock offset: -0.087 ms

Remote clock offset: 0.432 ms

# Below is generated by plot.py at 2018-11-03 05:45:36

# Datalink statistics

-- Total of 1 flow:

Average throughput: 309.19 Mbit/s

95th percentile per-packet one-way delay: 80.624 ms

Loss rate: 0.59%

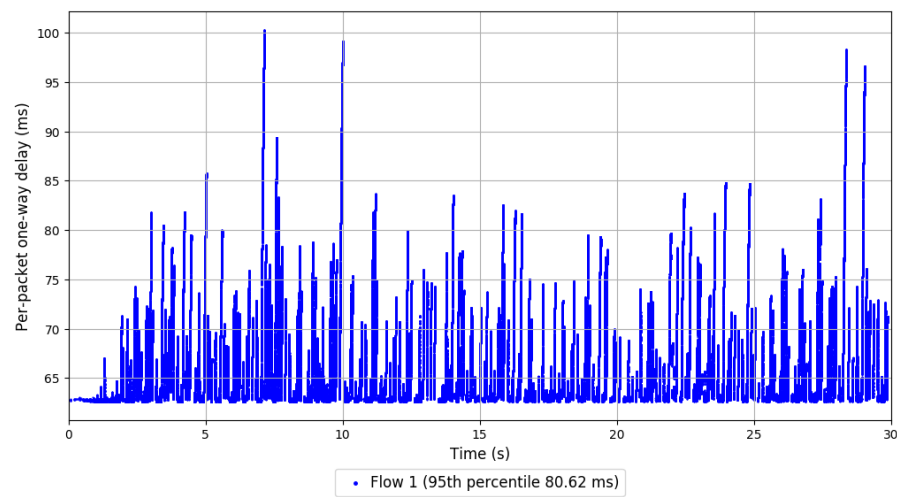
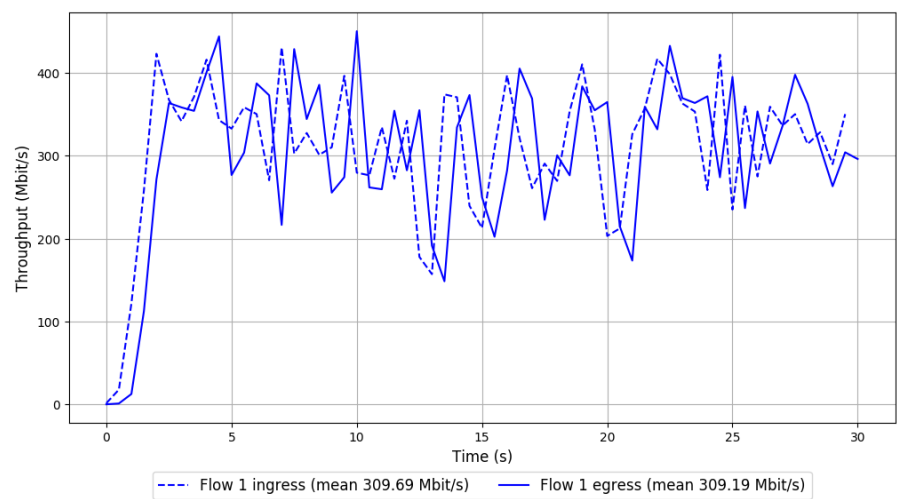
-- Flow 1:

Average throughput: 309.19 Mbit/s

95th percentile per-packet one-way delay: 80.624 ms

Loss rate: 0.59%

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

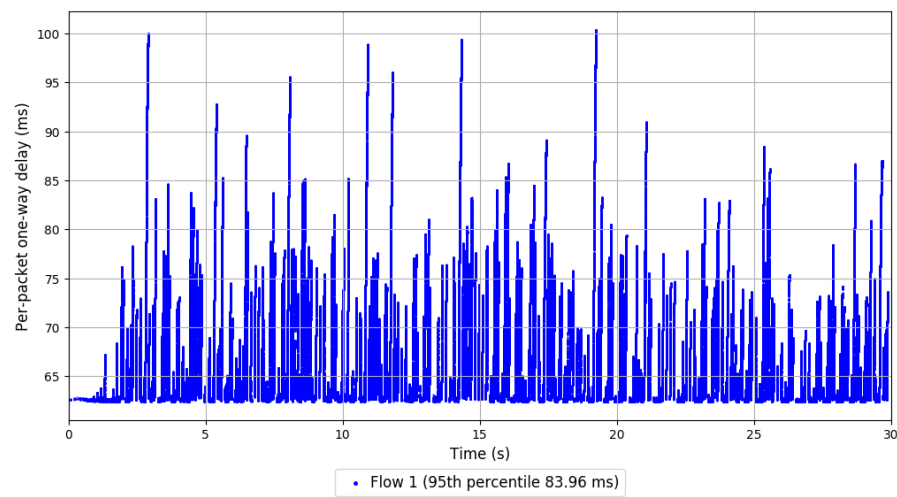
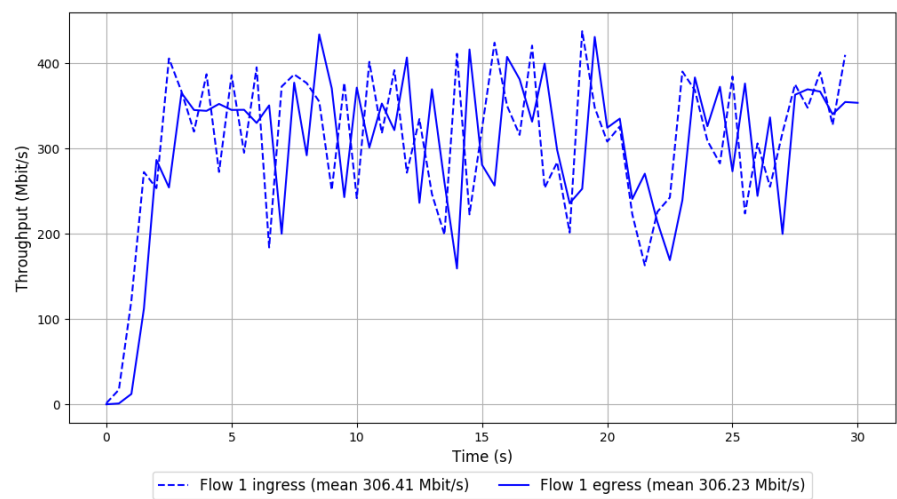


Run 3: Statistics of Indigo-96d2da3

Start at: 2018-11-03 03:54:51  
End at: 2018-11-03 03:55:21  
Local clock offset: -0.068 ms  
Remote clock offset: -0.058 ms

# Below is generated by plot.py at 2018-11-03 05:45:47  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 306.23 Mbit/s  
95th percentile per-packet one-way delay: 83.958 ms  
Loss rate: 0.48%  
-- Flow 1:  
Average throughput: 306.23 Mbit/s  
95th percentile per-packet one-way delay: 83.958 ms  
Loss rate: 0.48%

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

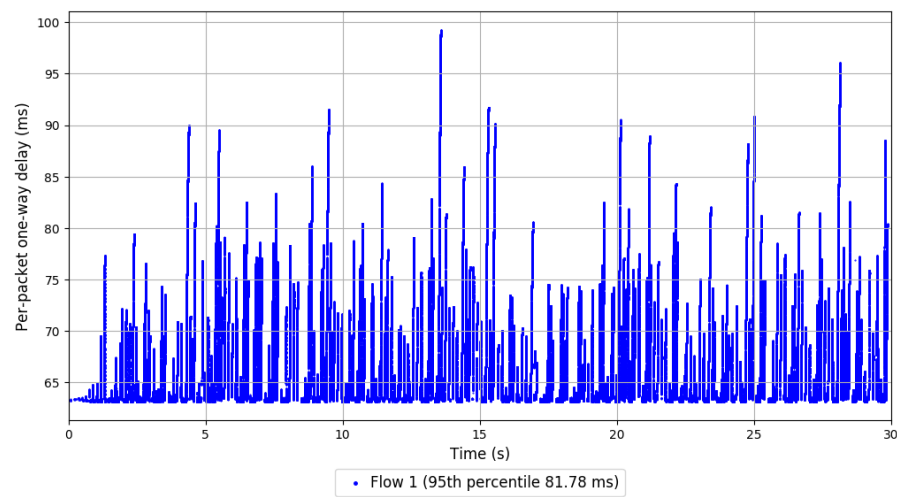
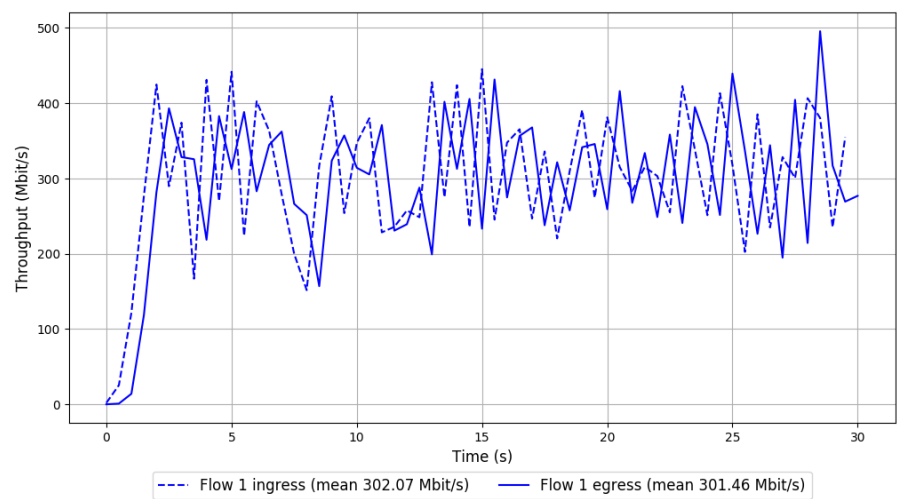


Run 4: Statistics of Indigo-96d2da3

Start at: 2018-11-03 04:21:20  
End at: 2018-11-03 04:21:50  
Local clock offset: -0.08 ms  
Remote clock offset: -0.487 ms

# Below is generated by plot.py at 2018-11-03 05:46:21  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 301.46 Mbit/s  
95th percentile per-packet one-way delay: 81.779 ms  
Loss rate: 0.61%  
-- Flow 1:  
Average throughput: 301.46 Mbit/s  
95th percentile per-packet one-way delay: 81.779 ms  
Loss rate: 0.61%

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

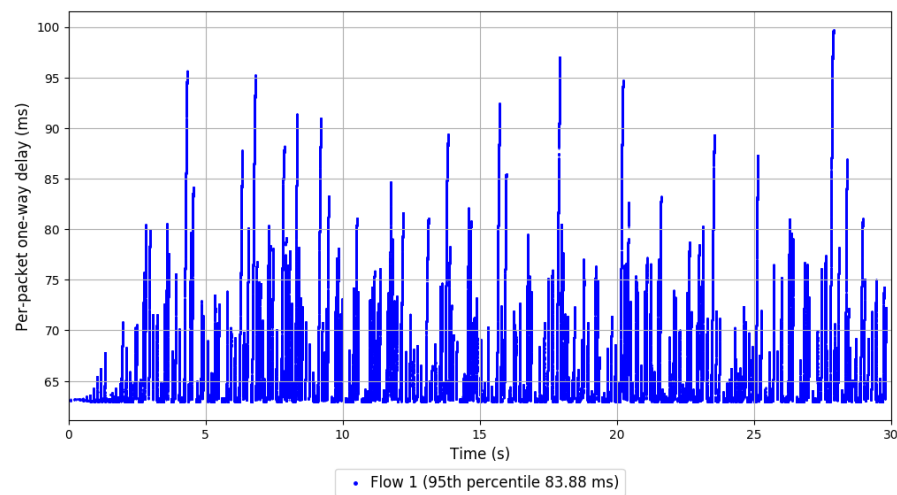
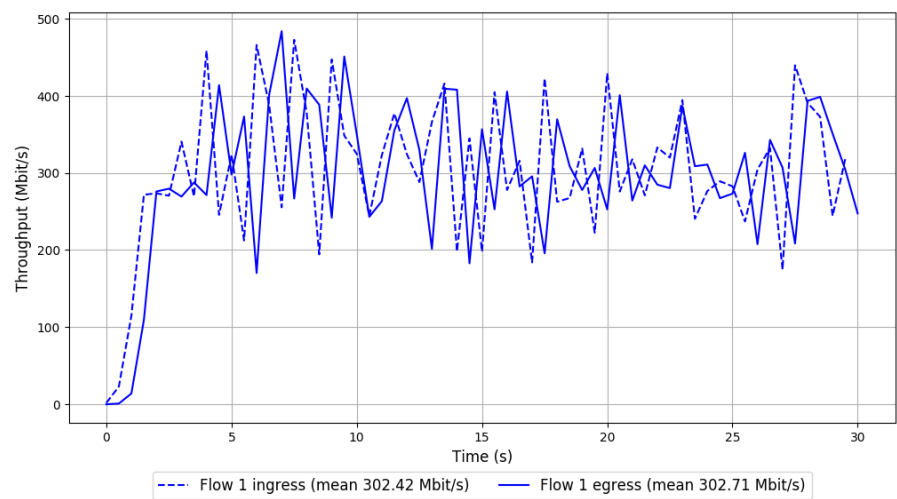


Run 5: Statistics of Indigo-96d2da3

Start at: 2018-11-03 04:47:27  
End at: 2018-11-03 04:47:57  
Local clock offset: -0.123 ms  
Remote clock offset: -0.017 ms

# Below is generated by plot.py at 2018-11-03 05:47:10  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 302.71 Mbit/s  
95th percentile per-packet one-way delay: 83.876 ms  
Loss rate: 0.39%  
-- Flow 1:  
Average throughput: 302.71 Mbit/s  
95th percentile per-packet one-way delay: 83.876 ms  
Loss rate: 0.39%

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



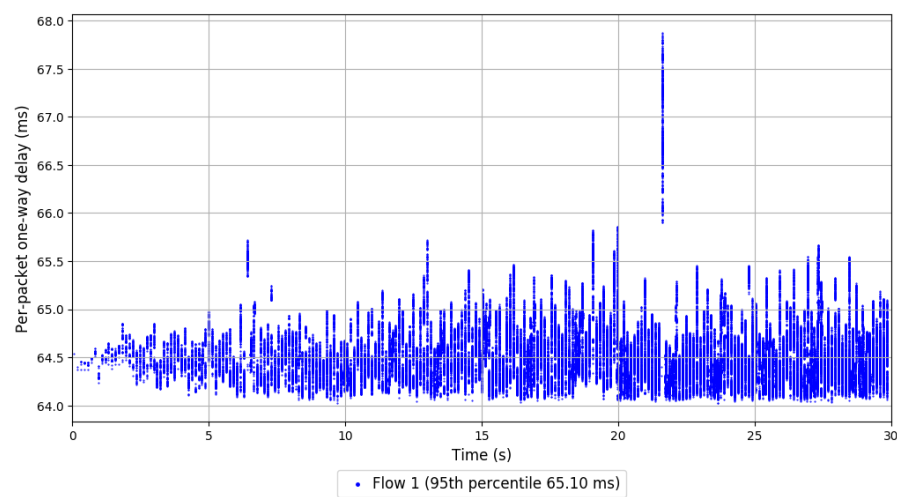
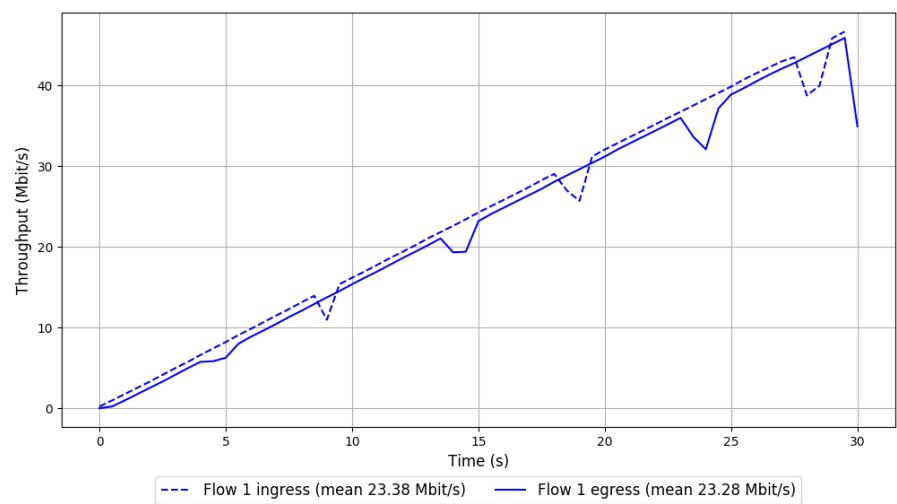


Run 1: Statistics of LEDBAT

Start at: 2018-11-03 03:10:12  
End at: 2018-11-03 03:10:42  
Local clock offset: -0.108 ms  
Remote clock offset: -1.513 ms

# Below is generated by plot.py at 2018-11-03 05:47:10  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 23.28 Mbit/s  
95th percentile per-packet one-way delay: 65.103 ms  
Loss rate: 0.84%  
-- Flow 1:  
Average throughput: 23.28 Mbit/s  
95th percentile per-packet one-way delay: 65.103 ms  
Loss rate: 0.84%

Run 1: Report of LEDBAT — Data Link



Run 2: Statistics of LEDBAT

Start at: 2018-11-03 03:36:20

End at: 2018-11-03 03:36:50

Local clock offset: -0.083 ms

Remote clock offset: -0.18 ms

# Below is generated by plot.py at 2018-11-03 05:47:10

# Datalink statistics

-- Total of 1 flow:

Average throughput: 23.22 Mbit/s

95th percentile per-packet one-way delay: 64.370 ms

Loss rate: 0.84%

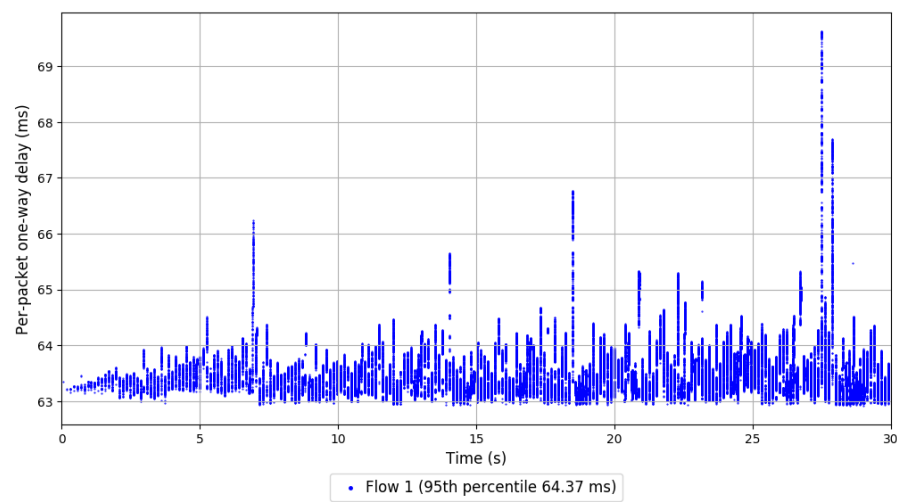
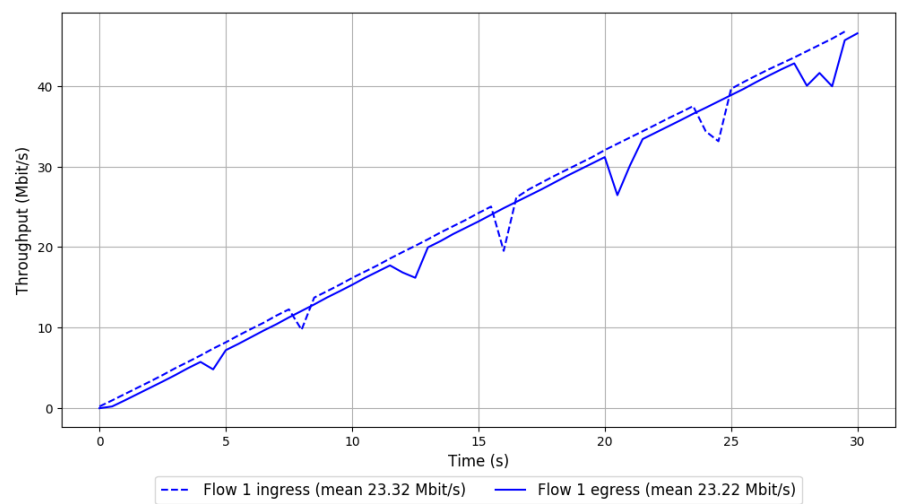
-- Flow 1:

Average throughput: 23.22 Mbit/s

95th percentile per-packet one-way delay: 64.370 ms

Loss rate: 0.84%

Run 2: Report of LEDBAT — Data Link

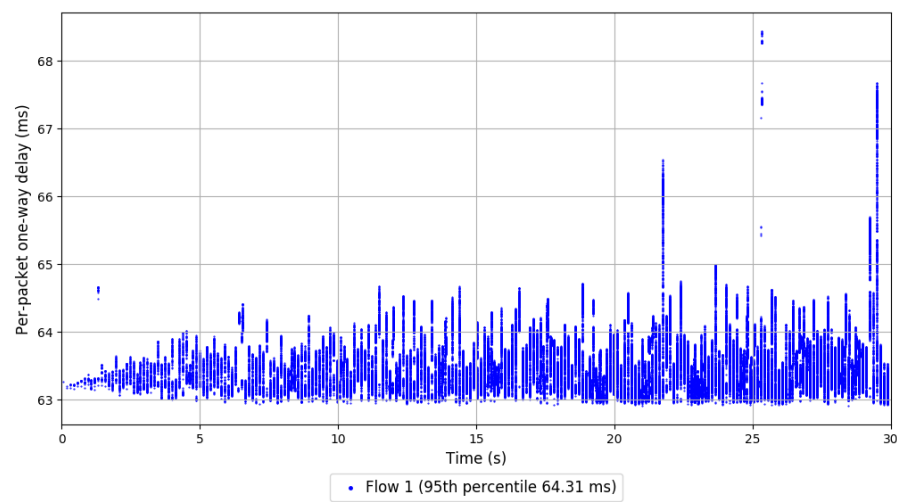
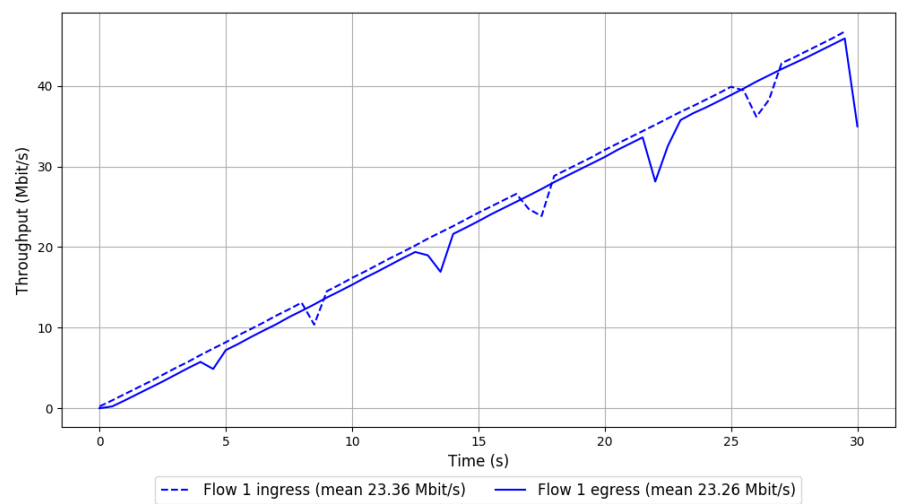


Run 3: Statistics of LEDBAT

Start at: 2018-11-03 04:02:28  
End at: 2018-11-03 04:02:58  
Local clock offset: -0.085 ms  
Remote clock offset: -0.351 ms

# Below is generated by plot.py at 2018-11-03 05:47:10  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 23.26 Mbit/s  
95th percentile per-packet one-way delay: 64.310 ms  
Loss rate: 0.84%  
-- Flow 1:  
Average throughput: 23.26 Mbit/s  
95th percentile per-packet one-way delay: 64.310 ms  
Loss rate: 0.84%

Run 3: Report of LEDBAT — Data Link



Run 4: Statistics of LEDBAT

Start at: 2018-11-03 04:28:56

End at: 2018-11-03 04:29:26

Local clock offset: -0.134 ms

Remote clock offset: 0.505 ms

# Below is generated by plot.py at 2018-11-03 05:47:10

# Datalink statistics

-- Total of 1 flow:

Average throughput: 23.28 Mbit/s

95th percentile per-packet one-way delay: 63.665 ms

Loss rate: 0.84%

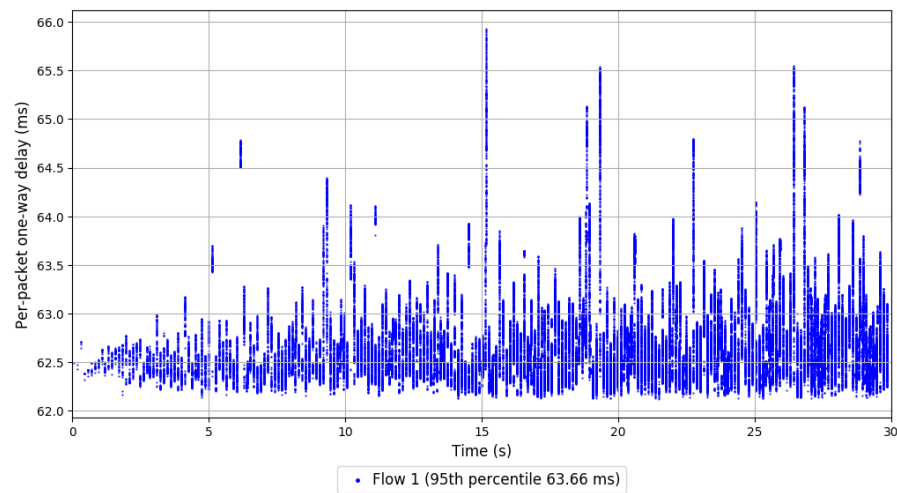
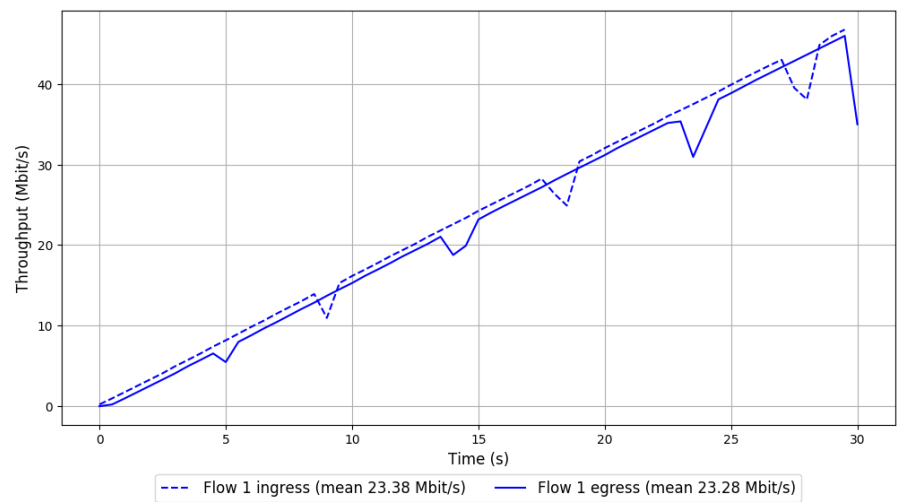
-- Flow 1:

Average throughput: 23.28 Mbit/s

95th percentile per-packet one-way delay: 63.665 ms

Loss rate: 0.84%

Run 4: Report of LEDBAT — Data Link





Run 5: Statistics of LEDBAT

Start at: 2018-11-03 04:55:02

End at: 2018-11-03 04:55:32

Local clock offset: -0.149 ms

Remote clock offset: 0.276 ms

# Below is generated by plot.py at 2018-11-03 05:47:10

# Datalink statistics

-- Total of 1 flow:

Average throughput: 23.28 Mbit/s

95th percentile per-packet one-way delay: 63.495 ms

Loss rate: 0.84%

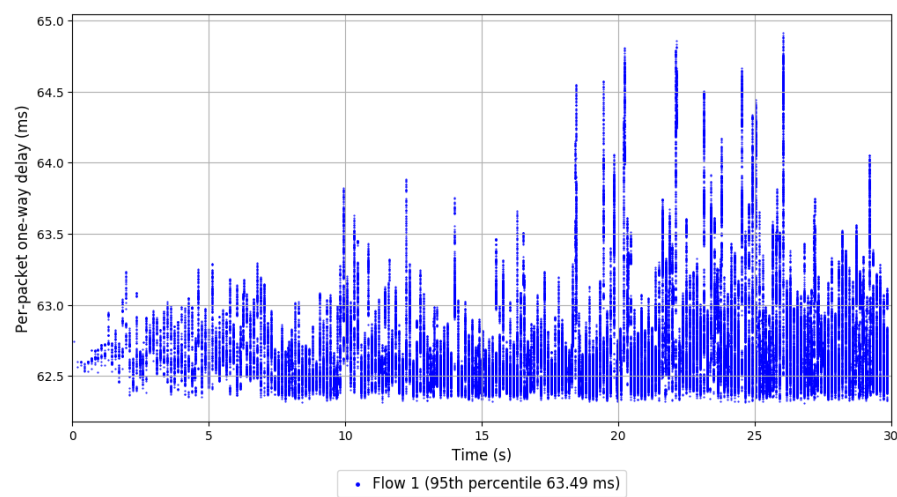
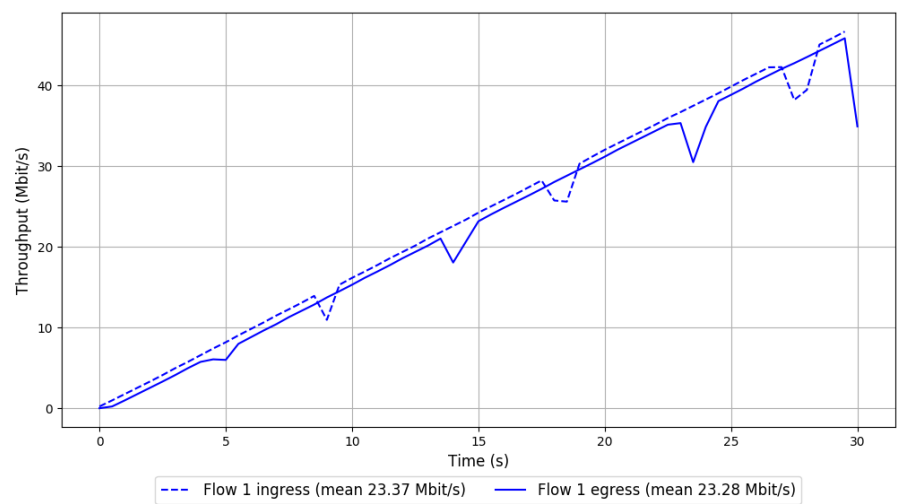
-- Flow 1:

Average throughput: 23.28 Mbit/s

95th percentile per-packet one-way delay: 63.495 ms

Loss rate: 0.84%

Run 5: Report of LEDBAT — Data Link

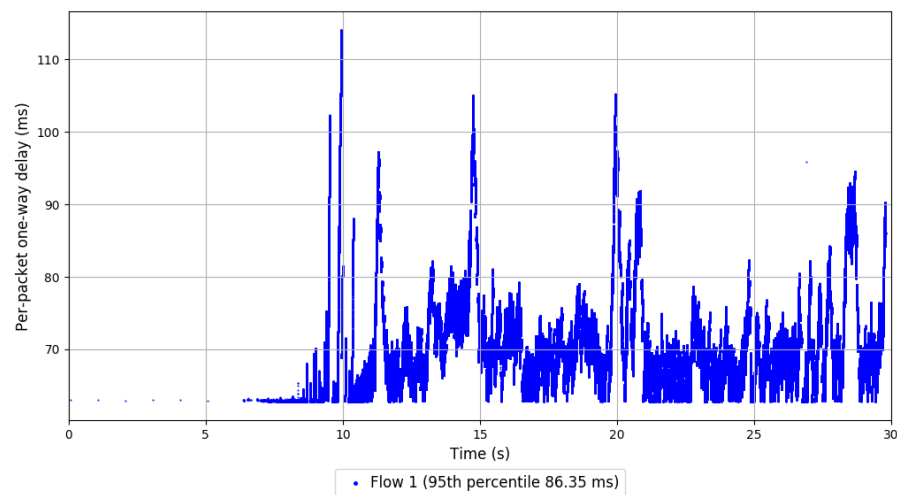
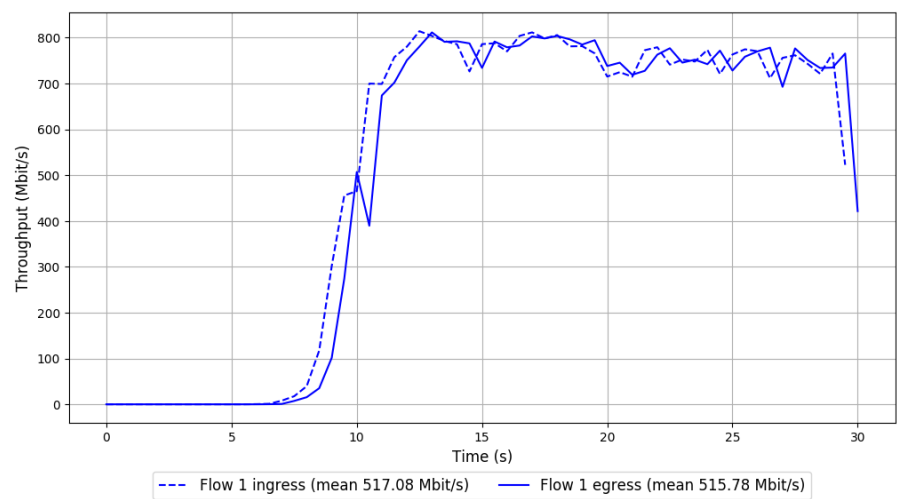


```
Run 1: Statistics of Indigo-Muses

Start at: 2018-11-03 02:56:21
End at: 2018-11-03 02:56:51
Local clock offset: -0.08 ms
Remote clock offset: -0.185 ms

# Below is generated by plot.py at 2018-11-03 05:53:35
# Datalink statistics
-- Total of 1 flow:
Average throughput: 515.78 Mbit/s
95th percentile per-packet one-way delay: 86.353 ms
Loss rate: 0.67%
-- Flow 1:
Average throughput: 515.78 Mbit/s
95th percentile per-packet one-way delay: 86.353 ms
Loss rate: 0.67%
```

Run 1: Report of Indigo-Muses — Data Link

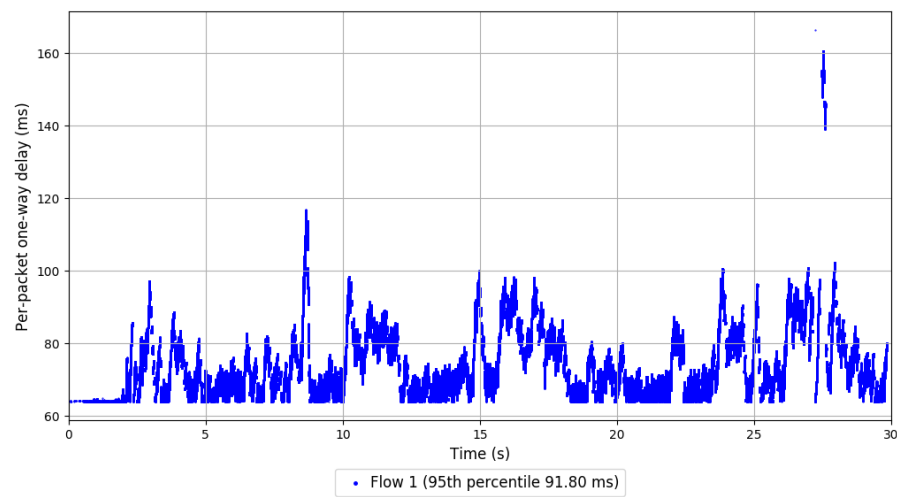
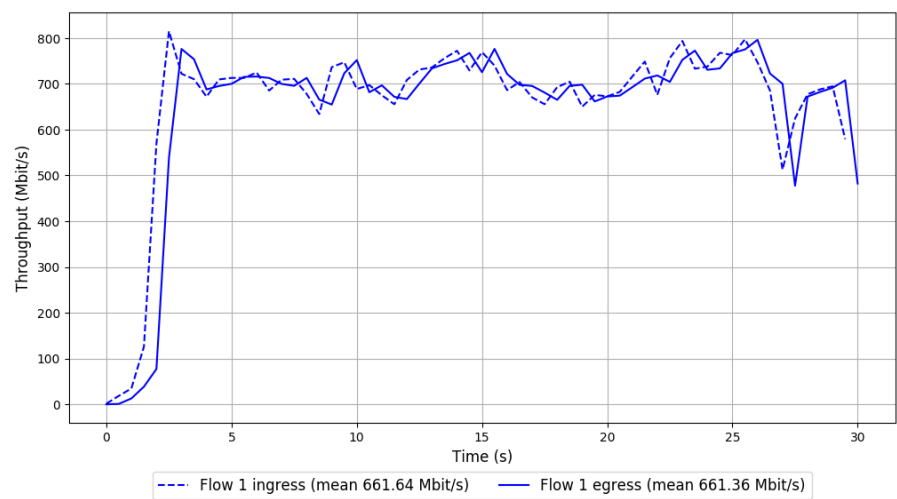


Run 2: Statistics of Indigo-Muses

Start at: 2018-11-03 03:22:37  
End at: 2018-11-03 03:23:07  
Local clock offset: -0.096 ms  
Remote clock offset: -1.144 ms

# Below is generated by plot.py at 2018-11-03 05:56:35  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 661.36 Mbit/s  
95th percentile per-packet one-way delay: 91.798 ms  
Loss rate: 0.47%  
-- Flow 1:  
Average throughput: 661.36 Mbit/s  
95th percentile per-packet one-way delay: 91.798 ms  
Loss rate: 0.47%

Run 2: Report of Indigo-Muses — Data Link

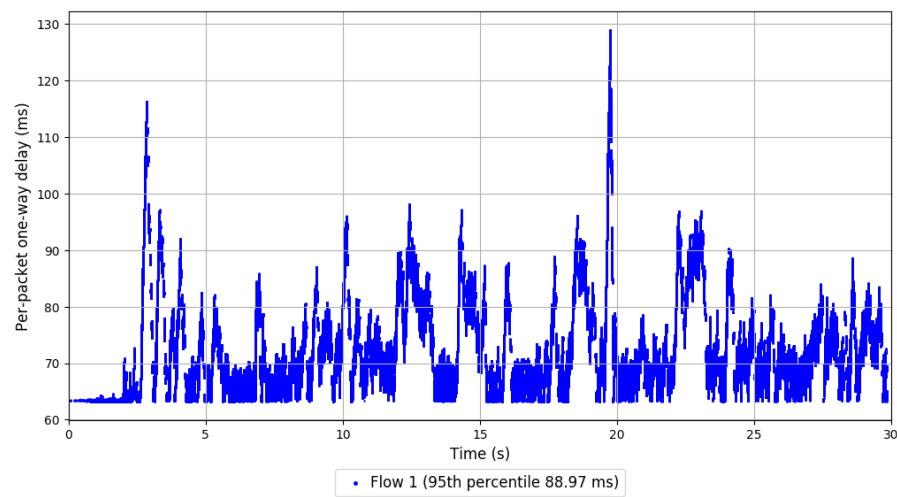
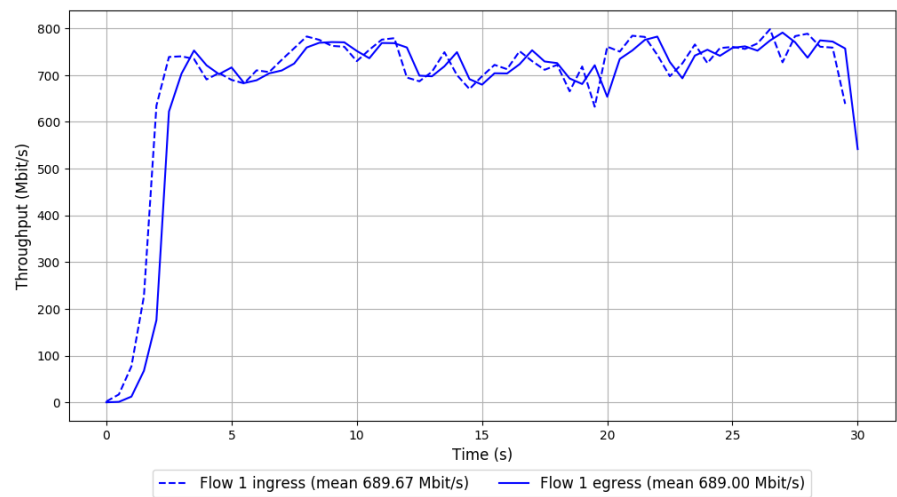


Run 3: Statistics of Indigo-Muses

Start at: 2018-11-03 03:48:44  
End at: 2018-11-03 03:49:14  
Local clock offset: -0.056 ms  
Remote clock offset: -0.363 ms

# Below is generated by plot.py at 2018-11-03 05:57:53  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 689.00 Mbit/s  
95th percentile per-packet one-way delay: 88.966 ms  
Loss rate: 0.52%  
-- Flow 1:  
Average throughput: 689.00 Mbit/s  
95th percentile per-packet one-way delay: 88.966 ms  
Loss rate: 0.52%

Run 3: Report of Indigo-Muses — Data Link



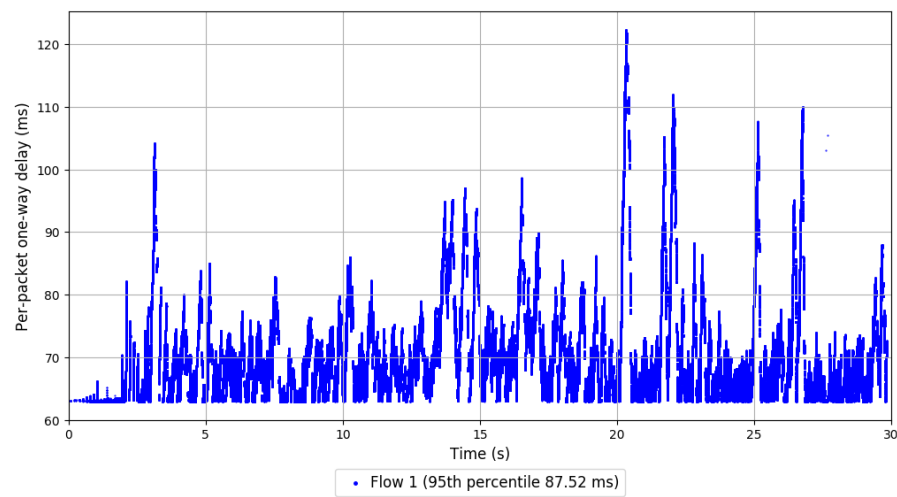
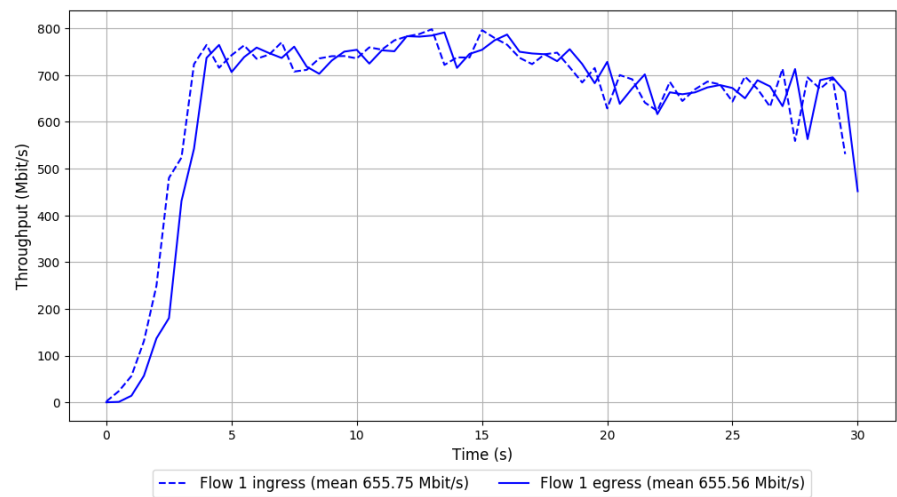


Run 4: Statistics of Indigo-Muses

Start at: 2018-11-03 04:15:16  
End at: 2018-11-03 04:15:46  
Local clock offset: -0.08 ms  
Remote clock offset: -0.491 ms

# Below is generated by plot.py at 2018-11-03 05:57:53  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 655.56 Mbit/s  
95th percentile per-packet one-way delay: 87.521 ms  
Loss rate: 0.45%  
-- Flow 1:  
Average throughput: 655.56 Mbit/s  
95th percentile per-packet one-way delay: 87.521 ms  
Loss rate: 0.45%

Run 4: Report of Indigo-Muses — Data Link



Run 5: Statistics of Indigo-Muses

Start at: 2018-11-03 04:41:26

End at: 2018-11-03 04:41:56

Local clock offset: -0.099 ms

Remote clock offset: 1.136 ms

# Below is generated by plot.py at 2018-11-03 05:57:53

# Datalink statistics

-- Total of 1 flow:

Average throughput: 666.75 Mbit/s

95th percentile per-packet one-way delay: 86.638 ms

Loss rate: 0.53%

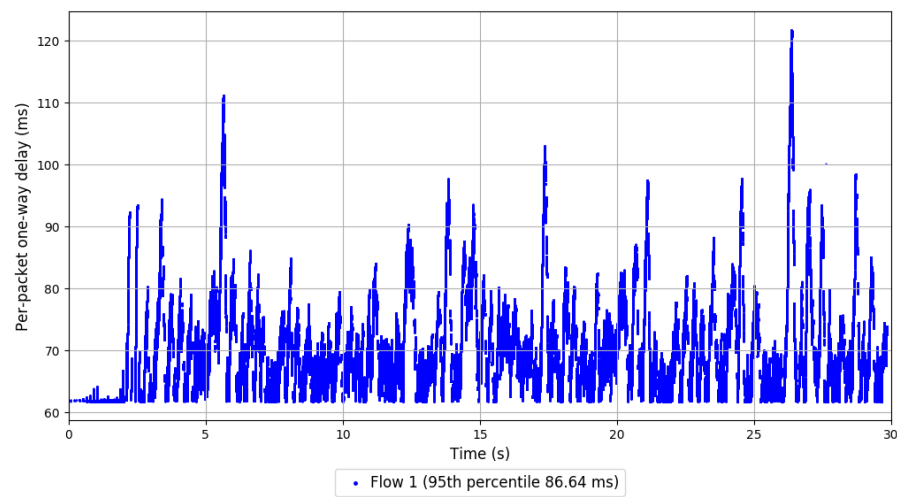
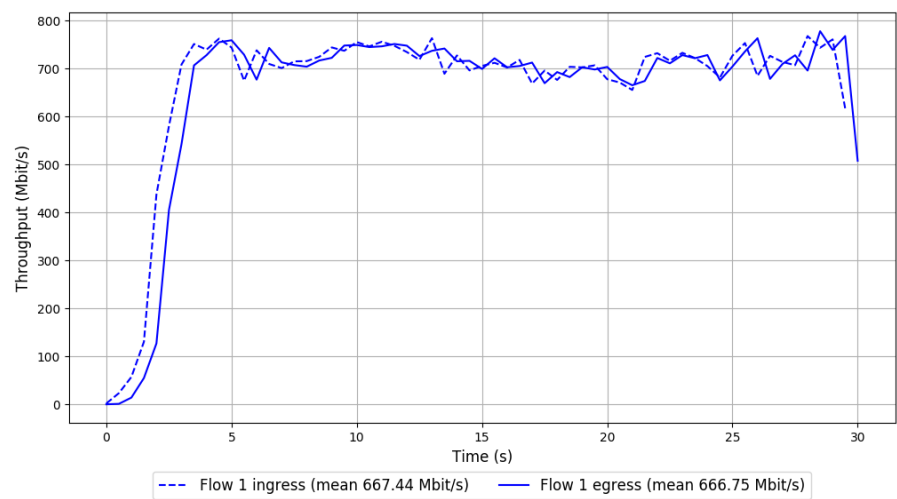
-- Flow 1:

Average throughput: 666.75 Mbit/s

95th percentile per-packet one-way delay: 86.638 ms

Loss rate: 0.53%

Run 5: Report of Indigo-Muses — Data Link



Run 1: Statistics of PCC-Allegro

Start at: 2018-11-03 03:08:37

End at: 2018-11-03 03:09:07

Local clock offset: -0.079 ms

Remote clock offset: -1.202 ms

# Below is generated by plot.py at 2018-11-03 06:00:15

# Datalink statistics

-- Total of 1 flow:

Average throughput: 423.41 Mbit/s

95th percentile per-packet one-way delay: 174.822 ms

Loss rate: 2.81%

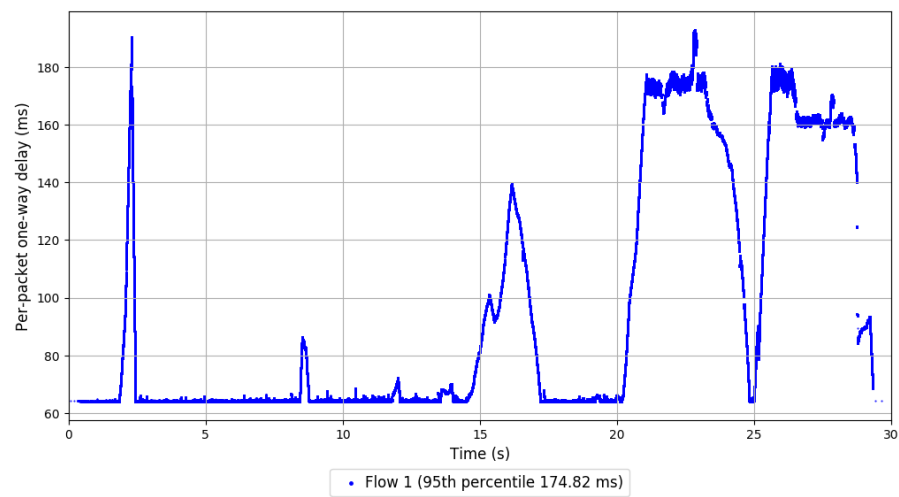
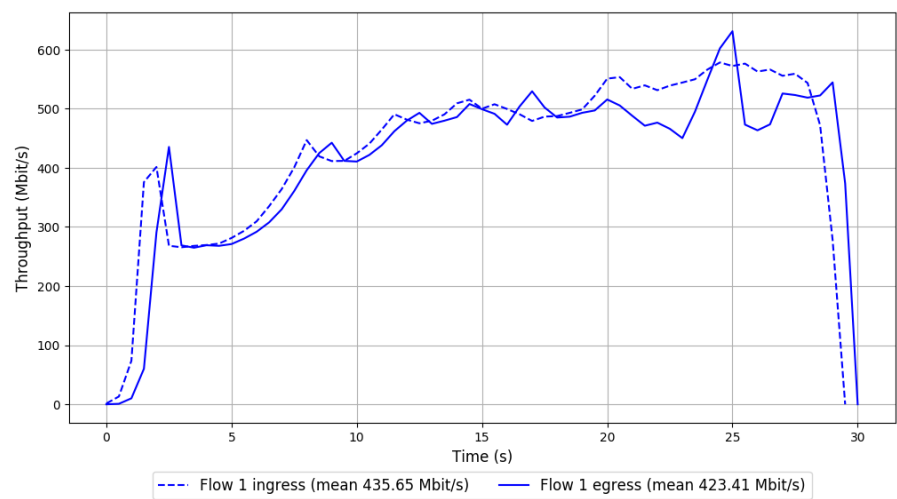
-- Flow 1:

Average throughput: 423.41 Mbit/s

95th percentile per-packet one-way delay: 174.822 ms

Loss rate: 2.81%

Run 1: Report of PCC-Allegro — Data Link

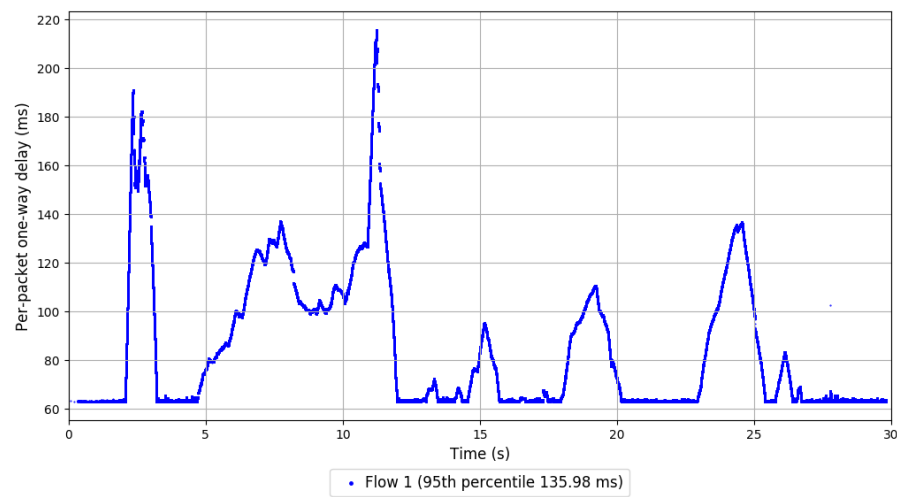
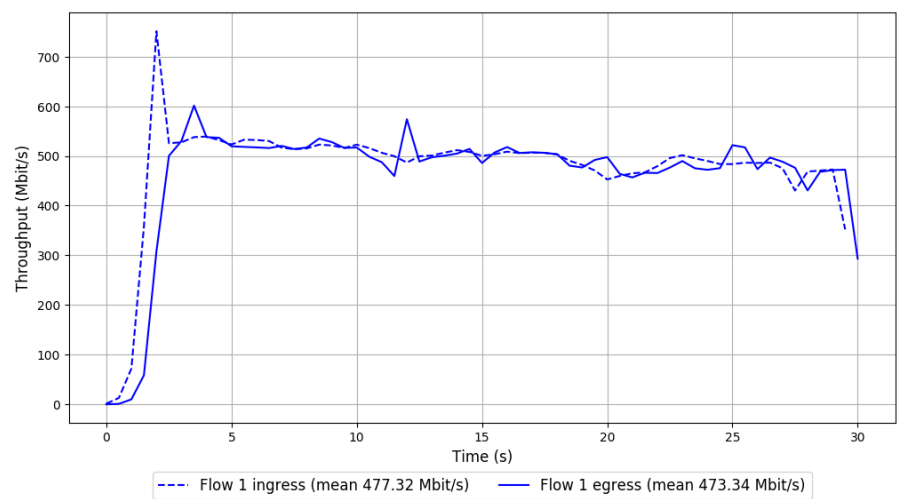


Run 2: Statistics of PCC-Allegro

Start at: 2018-11-03 03:34:41  
End at: 2018-11-03 03:35:11  
Local clock offset: -0.087 ms  
Remote clock offset: -0.356 ms

# Below is generated by plot.py at 2018-11-03 06:01:34  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 473.34 Mbit/s  
95th percentile per-packet one-way delay: 135.978 ms  
Loss rate: 1.26%  
-- Flow 1:  
Average throughput: 473.34 Mbit/s  
95th percentile per-packet one-way delay: 135.978 ms  
Loss rate: 1.26%

Run 2: Report of PCC-Allegro — Data Link



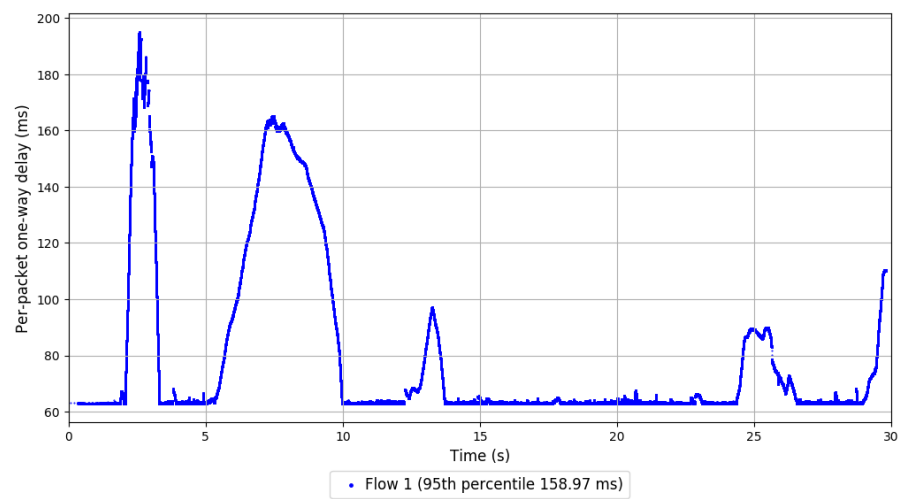
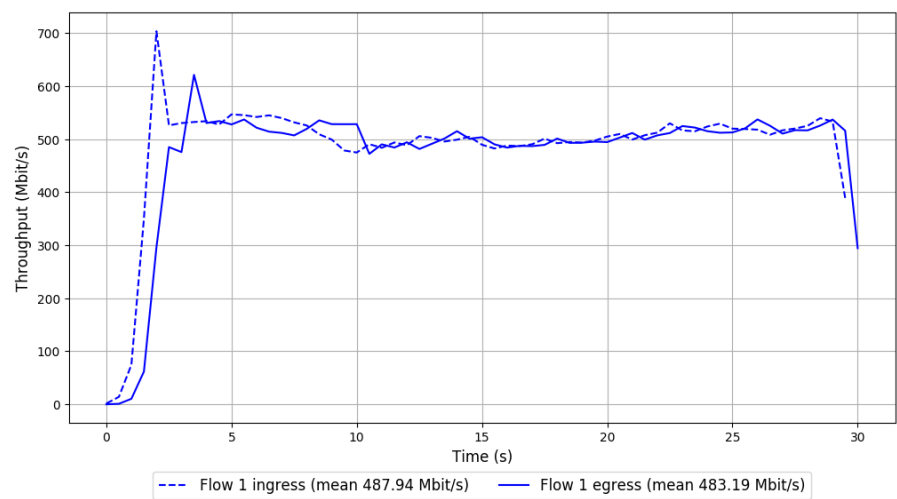


Run 3: Statistics of PCC-Allegro

Start at: 2018-11-03 04:00:50  
End at: 2018-11-03 04:01:20  
Local clock offset: -0.065 ms  
Remote clock offset: -0.475 ms

# Below is generated by plot.py at 2018-11-03 06:02:38  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 483.19 Mbit/s  
95th percentile per-packet one-way delay: 158.966 ms  
Loss rate: 1.39%  
-- Flow 1:  
Average throughput: 483.19 Mbit/s  
95th percentile per-packet one-way delay: 158.966 ms  
Loss rate: 1.39%

Run 3: Report of PCC-Allegro — Data Link



Run 4: Statistics of PCC-Allegro

Start at: 2018-11-03 04:27:19

End at: 2018-11-03 04:27:49

Local clock offset: -0.088 ms

Remote clock offset: -0.011 ms

# Below is generated by plot.py at 2018-11-03 06:10:05

# Datalink statistics

-- Total of 1 flow:

Average throughput: 438.71 Mbit/s

95th percentile per-packet one-way delay: 155.452 ms

Loss rate: 0.88%

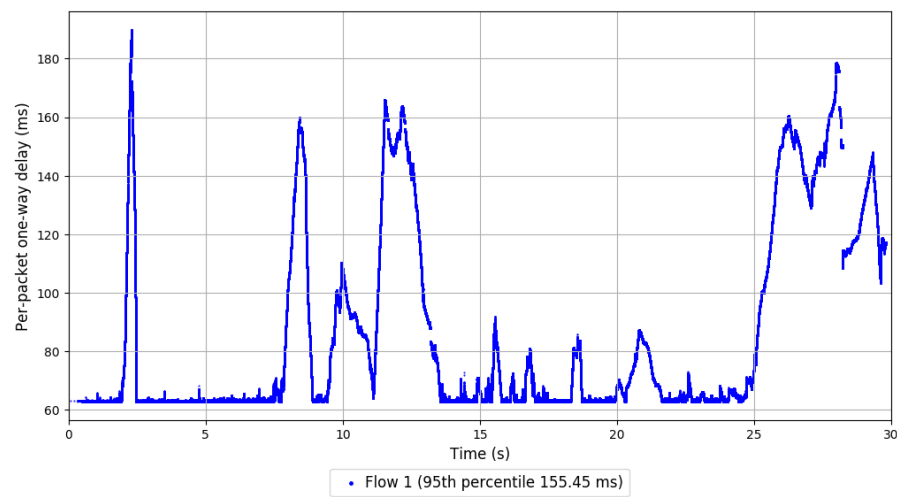
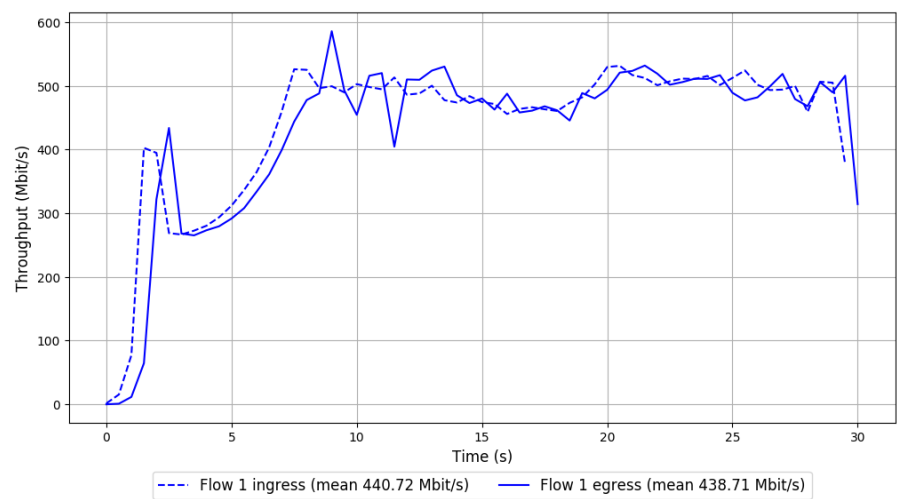
-- Flow 1:

Average throughput: 438.71 Mbit/s

95th percentile per-packet one-way delay: 155.452 ms

Loss rate: 0.88%

Run 4: Report of PCC-Allegro — Data Link



Run 5: Statistics of PCC-Allegro

Start at: 2018-11-03 04:53:24

End at: 2018-11-03 04:53:54

Local clock offset: -0.15 ms

Remote clock offset: -0.218 ms

# Below is generated by plot.py at 2018-11-03 06:13:22

# Datalink statistics

-- Total of 1 flow:

Average throughput: 473.54 Mbit/s

95th percentile per-packet one-way delay: 174.217 ms

Loss rate: 2.60%

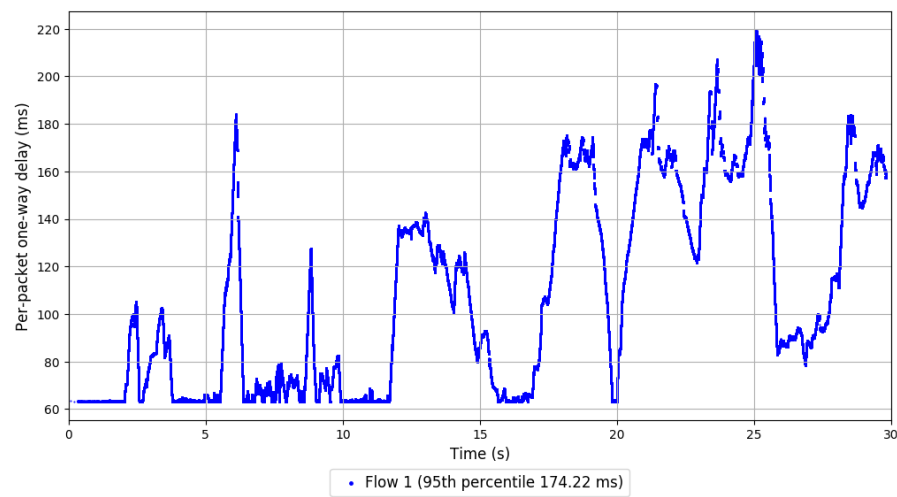
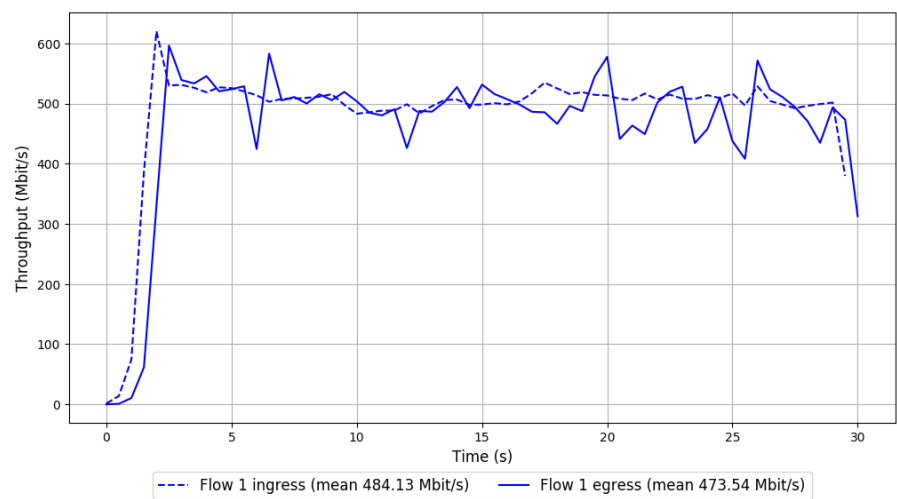
-- Flow 1:

Average throughput: 473.54 Mbit/s

95th percentile per-packet one-way delay: 174.217 ms

Loss rate: 2.60%

Run 5: Report of PCC-Allegro — Data Link



Run 1: Statistics of PCC-Expr

Start at: 2018-11-03 03:06:58

End at: 2018-11-03 03:07:28

Local clock offset: -0.107 ms

Remote clock offset: -0.192 ms

# Below is generated by plot.py at 2018-11-03 06:13:22

# Datalink statistics

-- Total of 1 flow:

Average throughput: 345.93 Mbit/s

95th percentile per-packet one-way delay: 158.234 ms

Loss rate: 1.18%

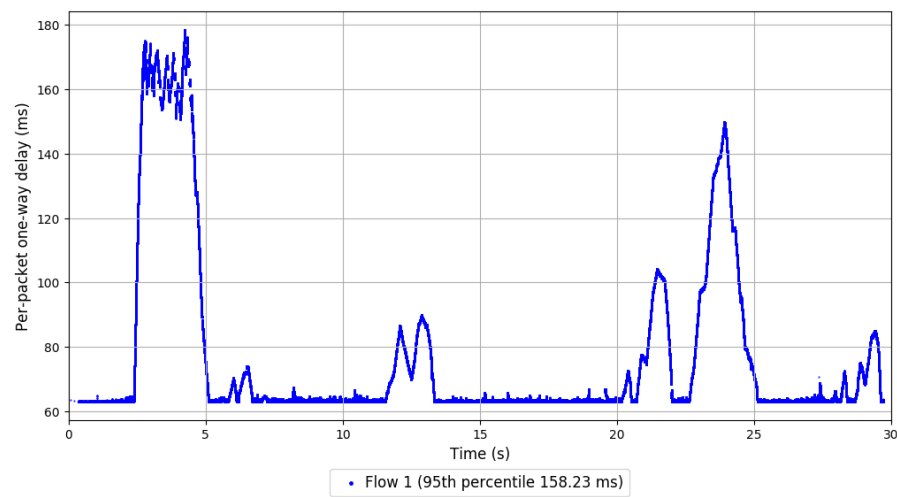
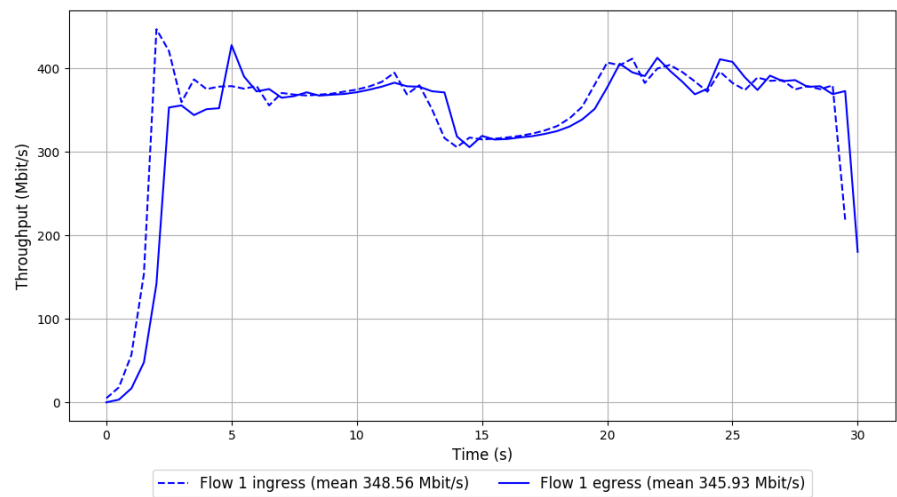
-- Flow 1:

Average throughput: 345.93 Mbit/s

95th percentile per-packet one-way delay: 158.234 ms

Loss rate: 1.18%

Run 1: Report of PCC-Expr — Data Link



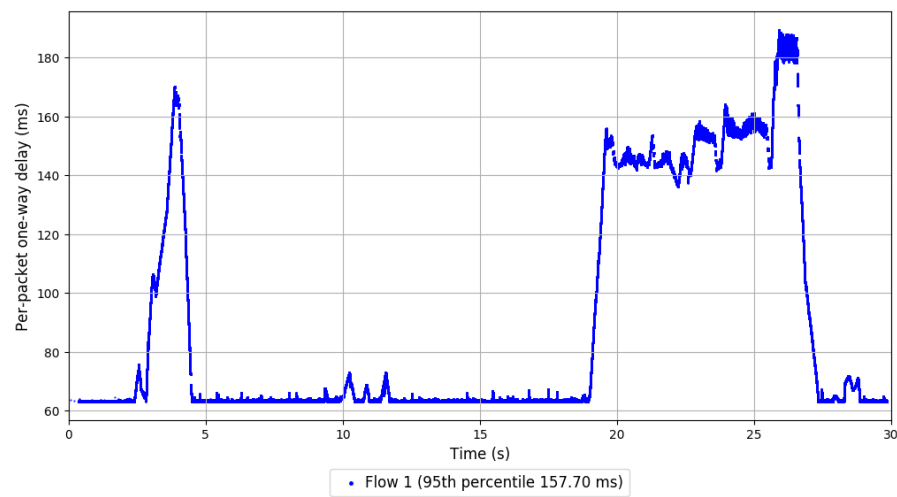
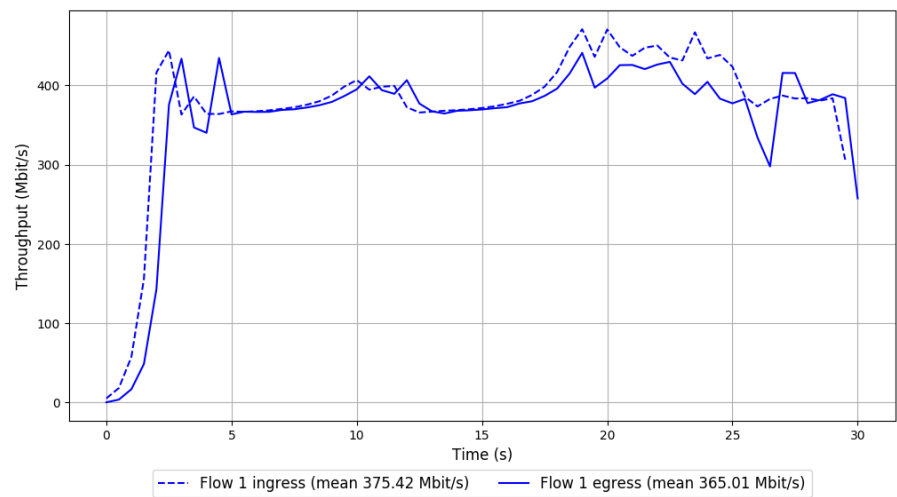


Run 2: Statistics of PCC-Expr

Start at: 2018-11-03 03:33:01  
End at: 2018-11-03 03:33:31  
Local clock offset: -0.081 ms  
Remote clock offset: -0.221 ms

# Below is generated by plot.py at 2018-11-03 06:13:22  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 365.01 Mbit/s  
95th percentile per-packet one-way delay: 157.696 ms  
Loss rate: 3.19%  
-- Flow 1:  
Average throughput: 365.01 Mbit/s  
95th percentile per-packet one-way delay: 157.696 ms  
Loss rate: 3.19%

Run 2: Report of PCC-Expr — Data Link

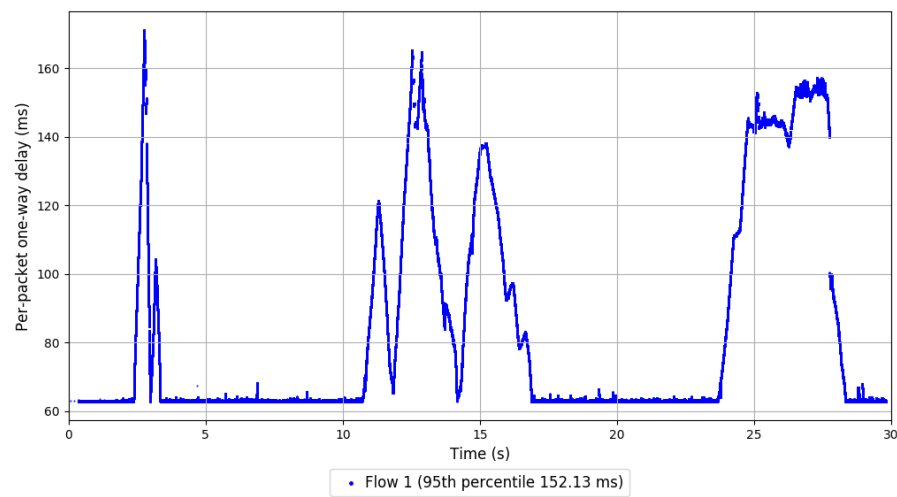
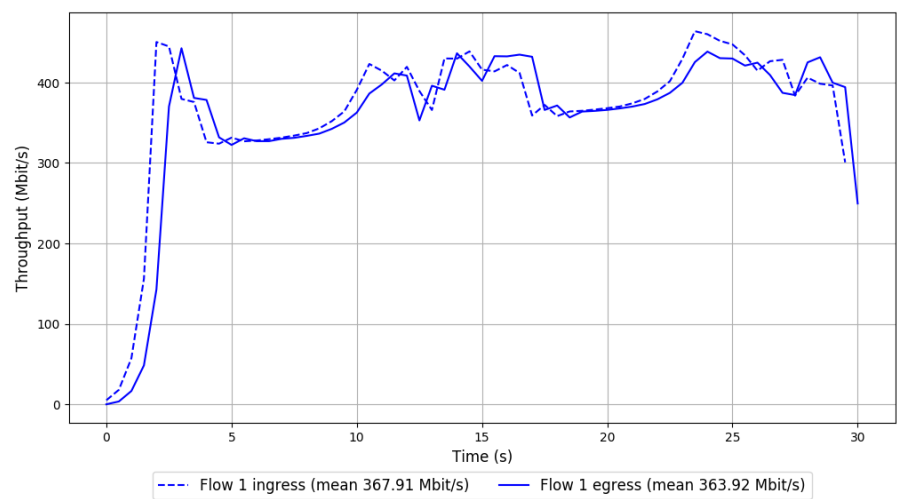


Run 3: Statistics of PCC-Expr

Start at: 2018-11-03 03:59:10  
End at: 2018-11-03 03:59:40  
Local clock offset: -0.076 ms  
Remote clock offset: -0.365 ms

# Below is generated by plot.py at 2018-11-03 06:13:22  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 363.92 Mbit/s  
95th percentile per-packet one-way delay: 152.129 ms  
Loss rate: 1.50%  
-- Flow 1:  
Average throughput: 363.92 Mbit/s  
95th percentile per-packet one-way delay: 152.129 ms  
Loss rate: 1.50%

Run 3: Report of PCC-Expr — Data Link

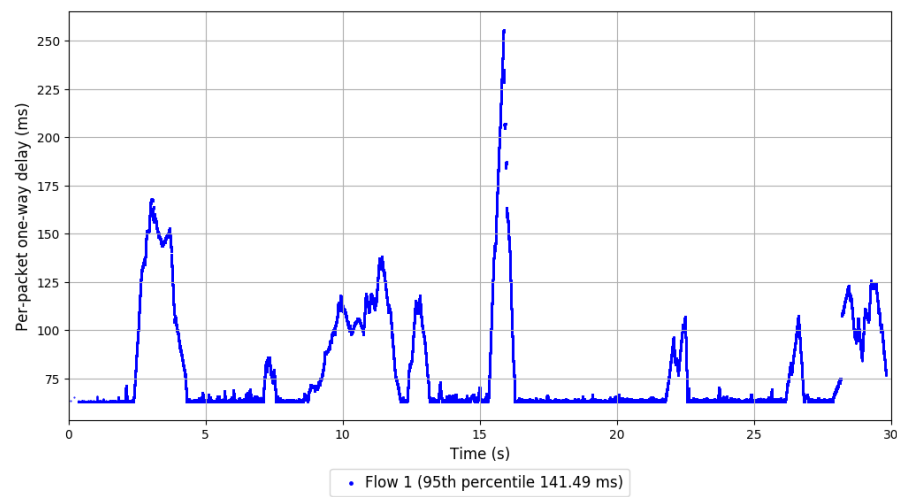
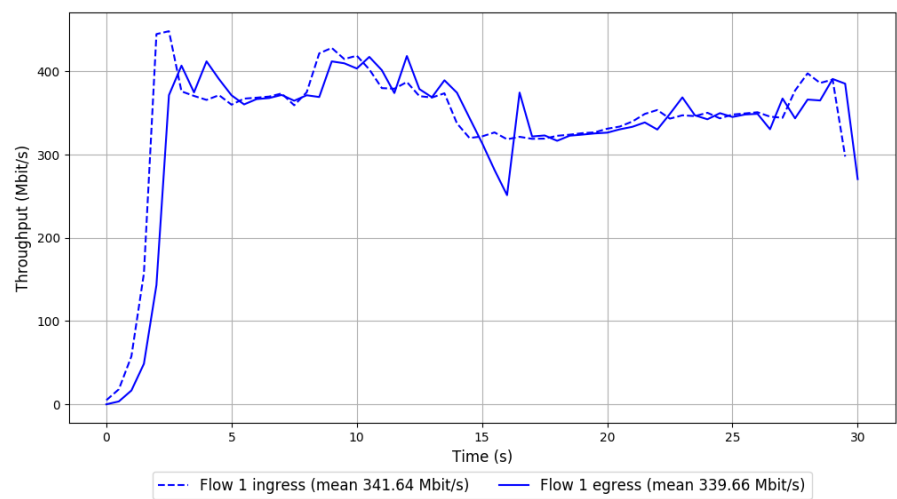


Run 4: Statistics of PCC-Expr

Start at: 2018-11-03 04:25:41  
End at: 2018-11-03 04:26:11  
Local clock offset: -0.06 ms  
Remote clock offset: -0.323 ms

# Below is generated by plot.py at 2018-11-03 06:13:22  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 339.66 Mbit/s  
95th percentile per-packet one-way delay: 141.486 ms  
Loss rate: 1.00%  
-- Flow 1:  
Average throughput: 339.66 Mbit/s  
95th percentile per-packet one-way delay: 141.486 ms  
Loss rate: 1.00%

Run 4: Report of PCC-Expr — Data Link

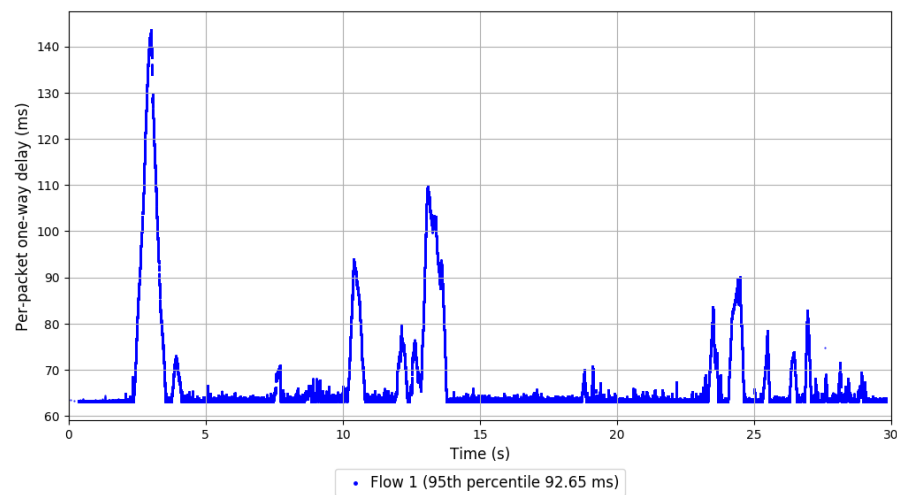
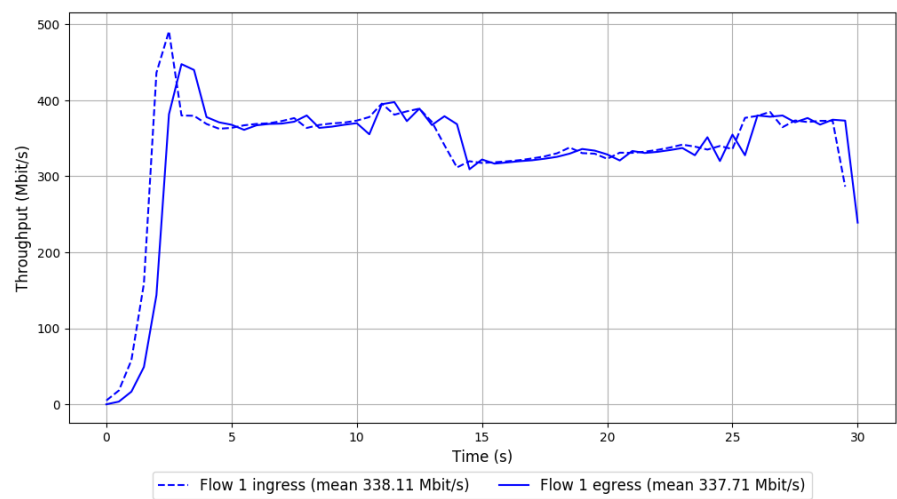


Run 5: Statistics of PCC-Expr

Start at: 2018-11-03 04:51:46  
End at: 2018-11-03 04:52:16  
Local clock offset: -0.14 ms  
Remote clock offset: -0.516 ms

# Below is generated by plot.py at 2018-11-03 06:13:29  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 337.71 Mbit/s  
95th percentile per-packet one-way delay: 92.648 ms  
Loss rate: 0.54%  
-- Flow 1:  
Average throughput: 337.71 Mbit/s  
95th percentile per-packet one-way delay: 92.648 ms  
Loss rate: 0.54%

Run 5: Report of PCC-Expr — Data Link





Run 1: Statistics of QUIC Cubic

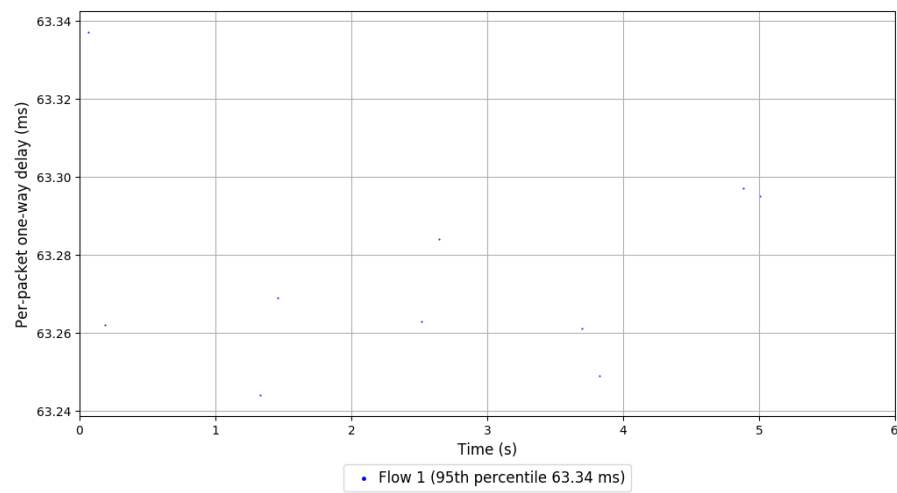
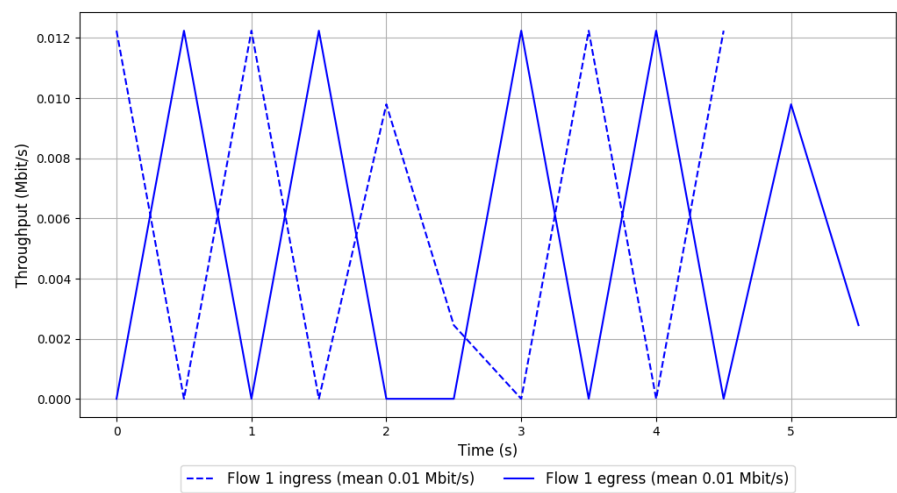
Start at: 2018-11-03 03:04:03

End at: 2018-11-03 03:04:33

Local clock offset: -0.095 ms

Remote clock offset: -0.125 ms

Run 1: Report of QUIC Cubic — Data Link



Run 2: Statistics of QUIC Cubic

Start at: 2018-11-03 03:30:03

End at: 2018-11-03 03:30:33

Local clock offset: -0.095 ms

Remote clock offset: -0.24 ms

# Below is generated by plot.py at 2018-11-03 06:13:29

# Datalink statistics

-- Total of 1 flow:

Average throughput: 64.83 Mbit/s

95th percentile per-packet one-way delay: 62.910 ms

Loss rate: 0.67%

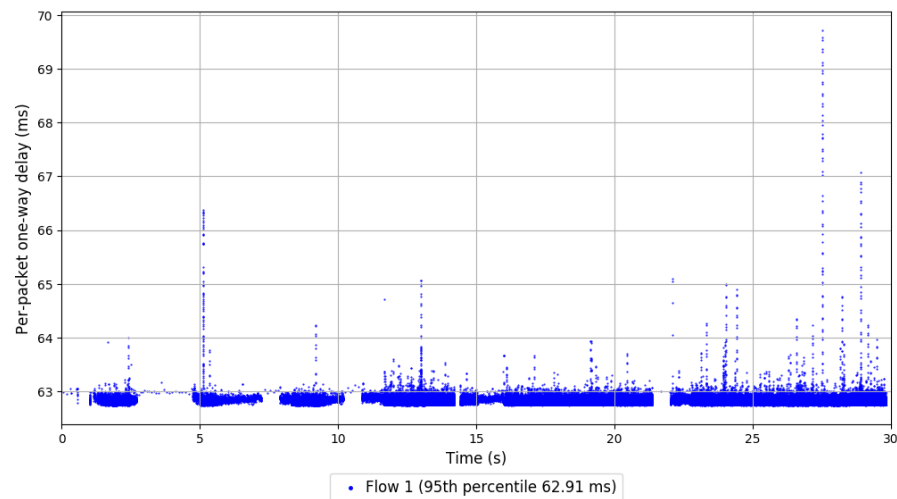
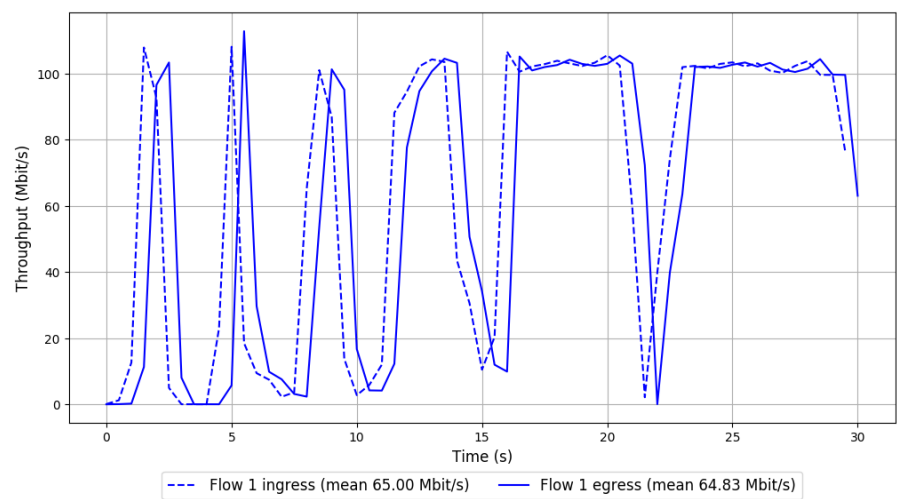
-- Flow 1:

Average throughput: 64.83 Mbit/s

95th percentile per-packet one-way delay: 62.910 ms

Loss rate: 0.67%

Run 2: Report of QUIC Cubic — Data Link



Run 3: Statistics of QUIC Cubic

Start at: 2018-11-03 03:56:14

End at: 2018-11-03 03:56:44

Local clock offset: -0.037 ms

Remote clock offset: -0.428 ms

# Below is generated by plot.py at 2018-11-03 06:13:29

# Datalink statistics

-- Total of 1 flow:

Average throughput: 64.54 Mbit/s

95th percentile per-packet one-way delay: 63.136 ms

Loss rate: 0.62%

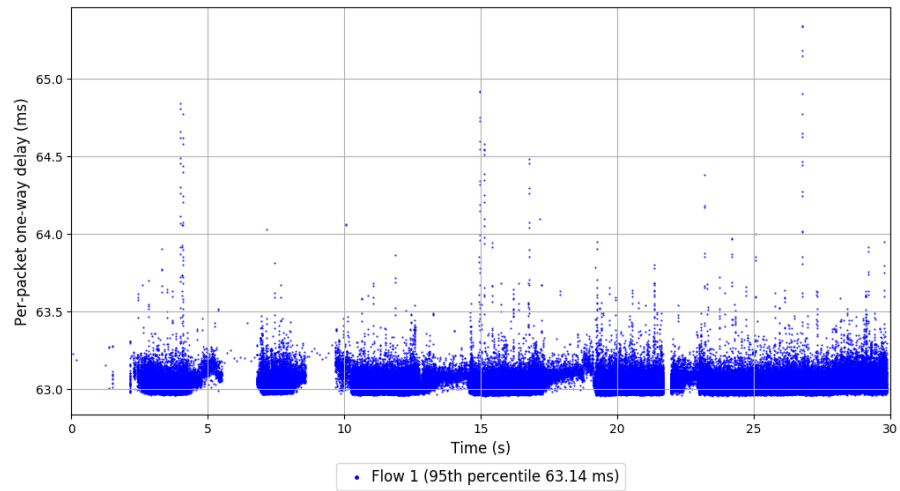
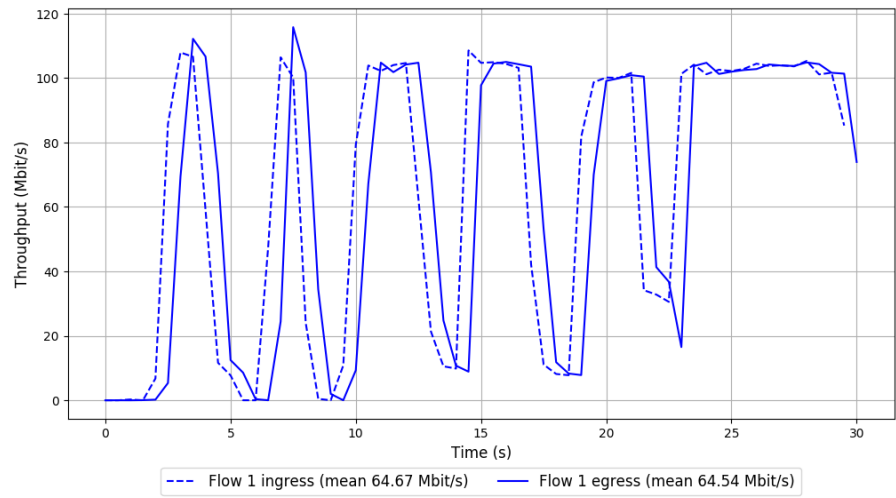
-- Flow 1:

Average throughput: 64.54 Mbit/s

95th percentile per-packet one-way delay: 63.136 ms

Loss rate: 0.62%

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



Run 4: Statistics of QUIC Cubic

Start at: 2018-11-03 04:22:43

End at: 2018-11-03 04:23:13

Local clock offset: -0.06 ms

Remote clock offset: -0.164 ms

# Below is generated by plot.py at 2018-11-03 06:13:29

# Datalink statistics

-- Total of 1 flow:

Average throughput: 57.47 Mbit/s

95th percentile per-packet one-way delay: 63.289 ms

Loss rate: 0.60%

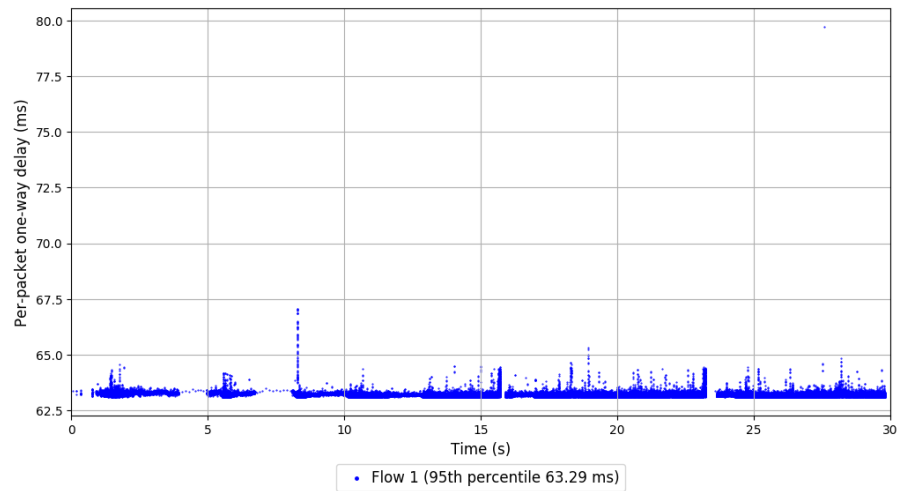
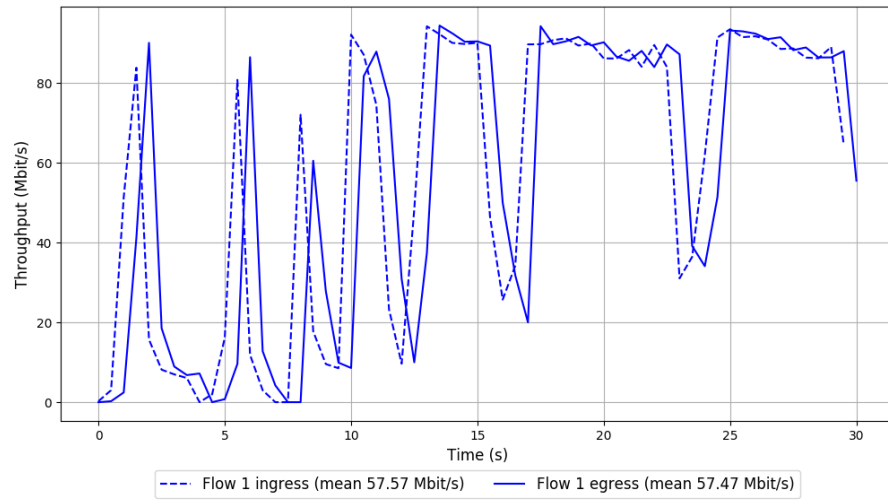
-- Flow 1:

Average throughput: 57.47 Mbit/s

95th percentile per-packet one-way delay: 63.289 ms

Loss rate: 0.60%

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





Run 5: Statistics of QUIC Cubic

Start at: 2018-11-03 04:48:50

End at: 2018-11-03 04:49:20

Local clock offset: -0.14 ms

Remote clock offset: 0.03 ms

# Below is generated by plot.py at 2018-11-03 06:13:29

# Datalink statistics

-- Total of 1 flow:

Average throughput: 50.16 Mbit/s

95th percentile per-packet one-way delay: 62.991 ms

Loss rate: 0.44%

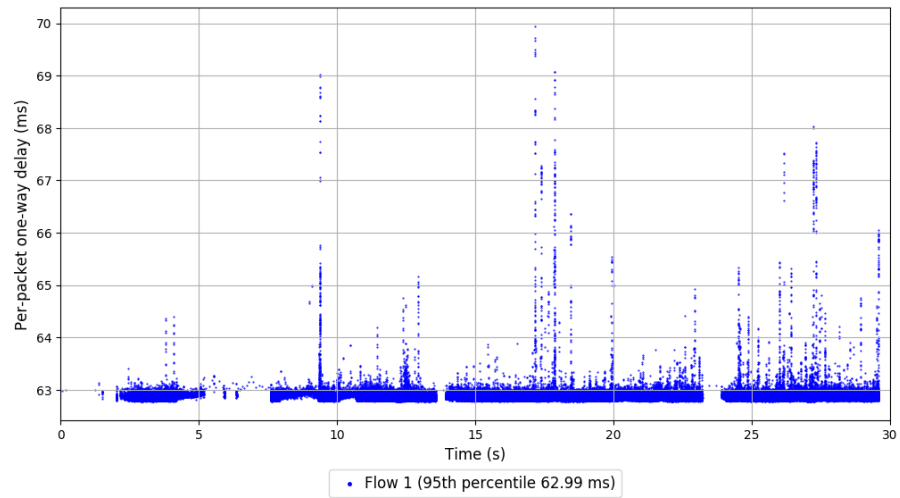
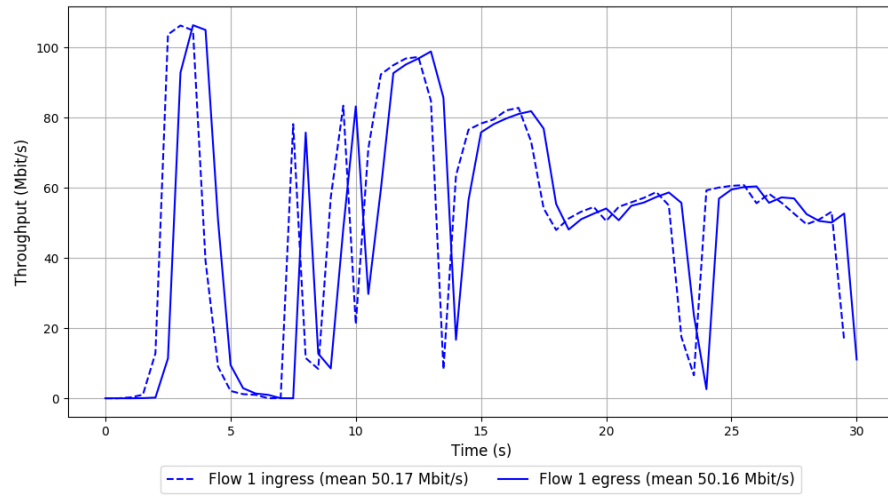
-- Flow 1:

Average throughput: 50.16 Mbit/s

95th percentile per-packet one-way delay: 62.991 ms

Loss rate: 0.44%

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

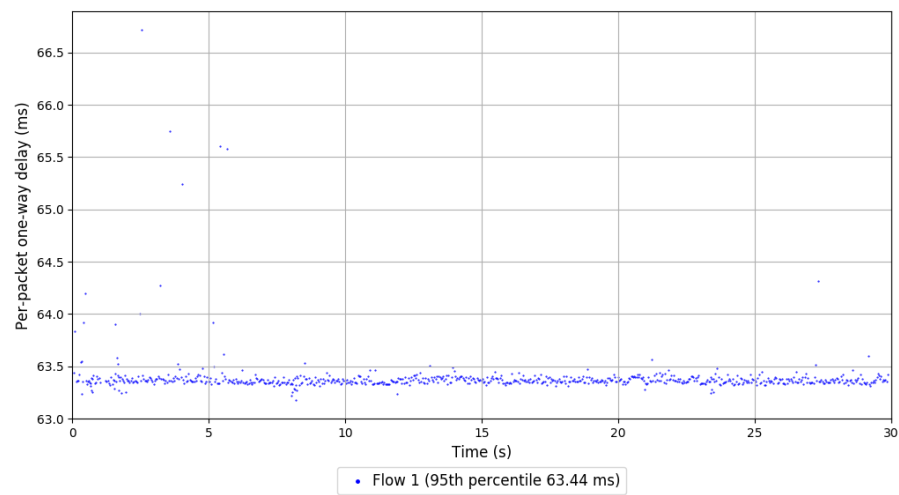
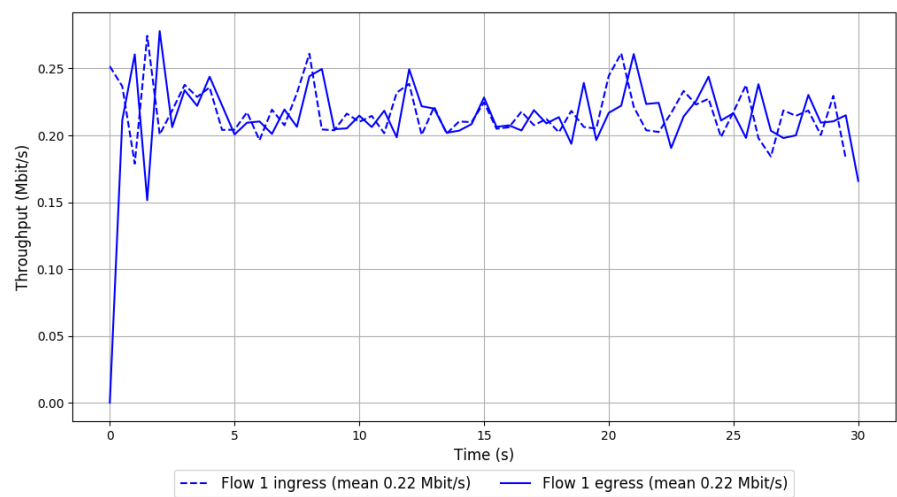


Run 1: Statistics of SCReAM

Start at: 2018-11-03 02:46:32  
End at: 2018-11-03 02:47:02  
Local clock offset: -0.127 ms  
Remote clock offset: -0.311 ms

# Below is generated by plot.py at 2018-11-03 06:13:29  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 63.444 ms  
Loss rate: 0.38%  
-- Flow 1:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 63.444 ms  
Loss rate: 0.38%

Run 1: Report of SReAM — Data Link

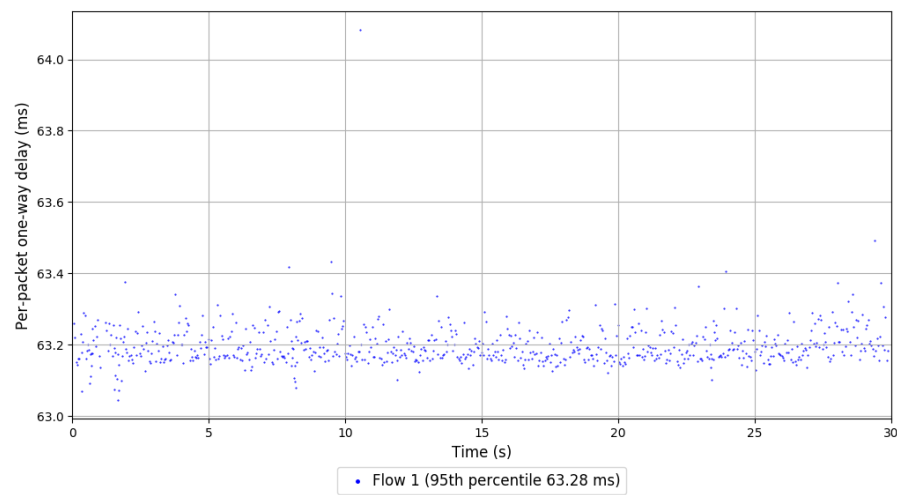
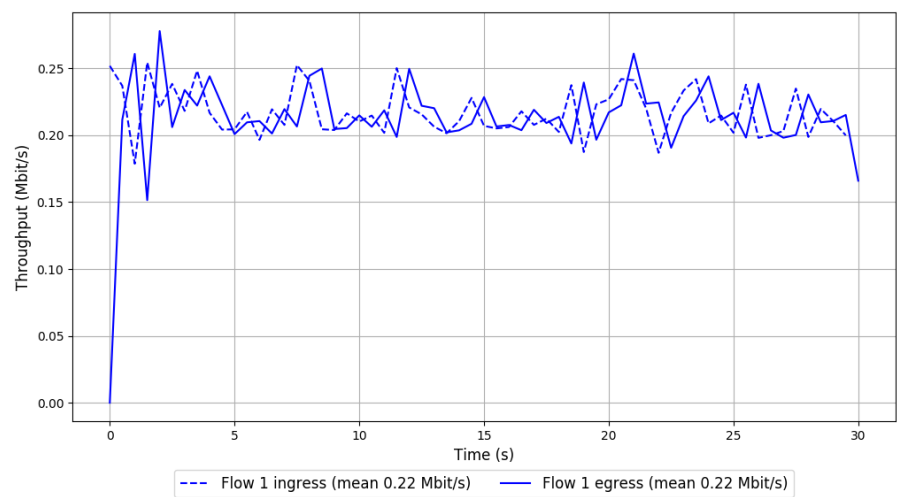


Run 2: Statistics of SCReAM

Start at: 2018-11-03 03:12:53  
End at: 2018-11-03 03:13:23  
Local clock offset: -0.107 ms  
Remote clock offset: -0.001 ms

# Below is generated by plot.py at 2018-11-03 06:13:29  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 63.285 ms  
Loss rate: 0.51%  
-- Flow 1:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 63.285 ms  
Loss rate: 0.51%

Run 2: Report of SReAM — Data Link

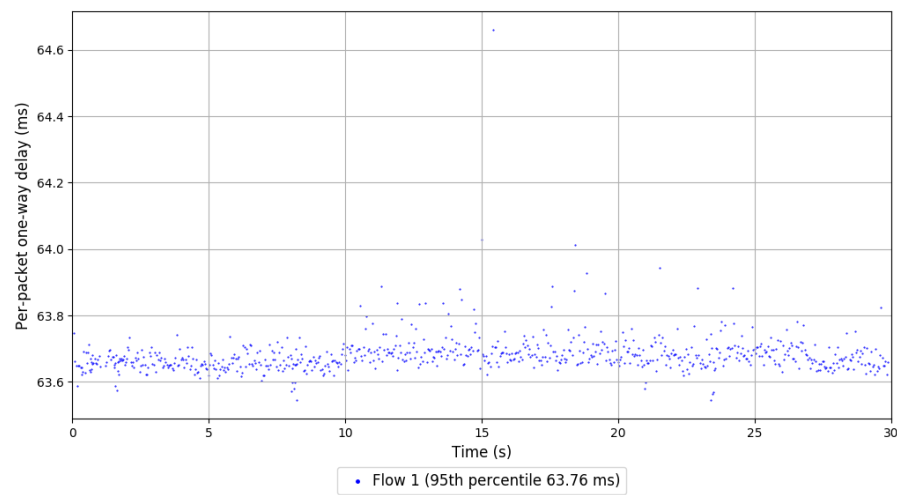
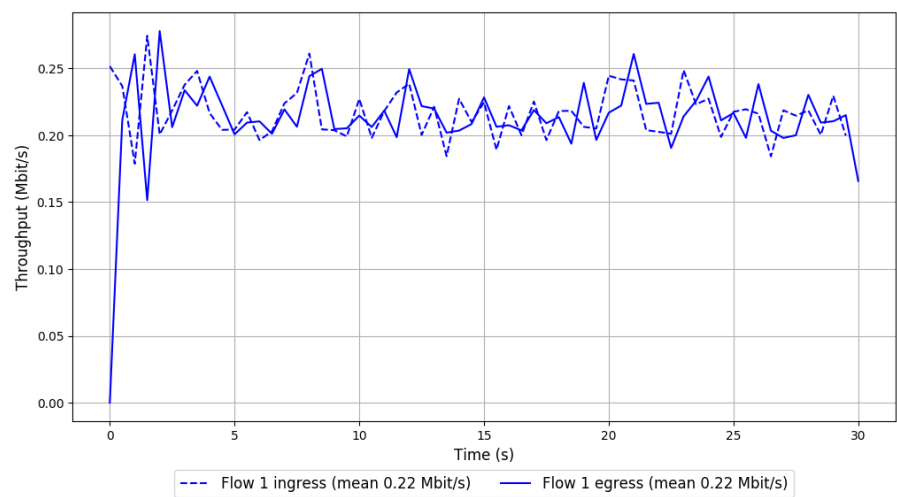


Run 3: Statistics of SCReAM

Start at: 2018-11-03 03:39:05  
End at: 2018-11-03 03:39:35  
Local clock offset: -0.09 ms  
Remote clock offset: -0.391 ms

# Below is generated by plot.py at 2018-11-03 06:13:29  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 63.760 ms  
Loss rate: 0.51%  
-- Flow 1:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 63.760 ms  
Loss rate: 0.51%

Run 3: Report of SReAM — Data Link



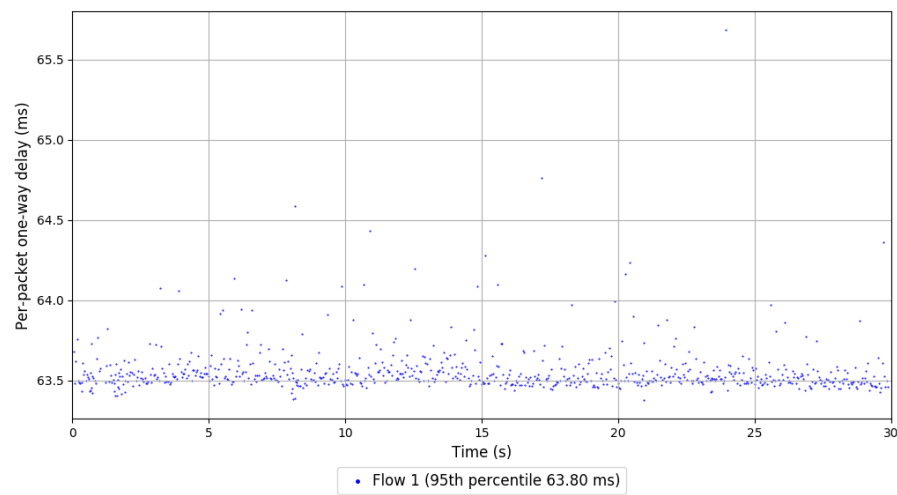
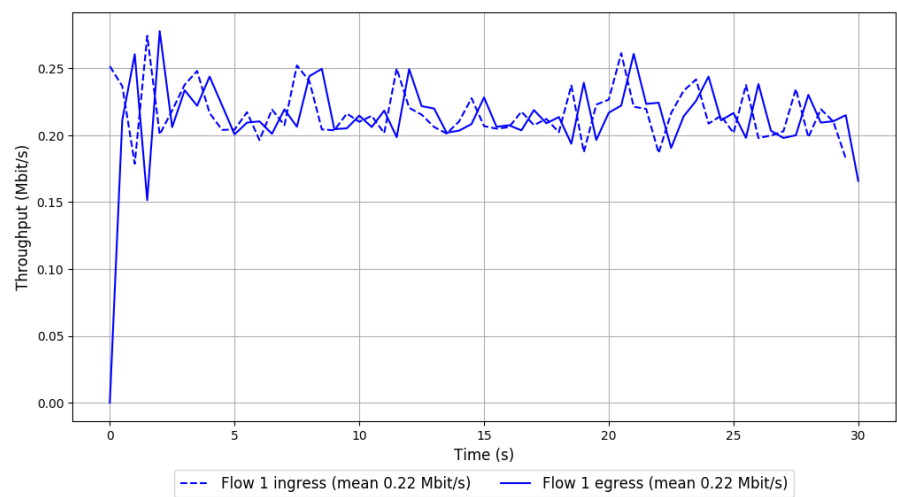


Run 4: Statistics of SCReAM

Start at: 2018-11-03 04:05:13  
End at: 2018-11-03 04:05:43  
Local clock offset: -0.088 ms  
Remote clock offset: -0.545 ms

# Below is generated by plot.py at 2018-11-03 06:13:29  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 63.796 ms  
Loss rate: 0.38%  
-- Flow 1:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 63.796 ms  
Loss rate: 0.38%

Run 4: Report of SReAM — Data Link



Run 5: Statistics of SCReAM

Start at: 2018-11-03 04:31:35

End at: 2018-11-03 04:32:05

Local clock offset: -0.093 ms

Remote clock offset: 0.022 ms

# Below is generated by plot.py at 2018-11-03 06:13:29

# Datalink statistics

-- Total of 1 flow:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 63.091 ms

Loss rate: 0.51%

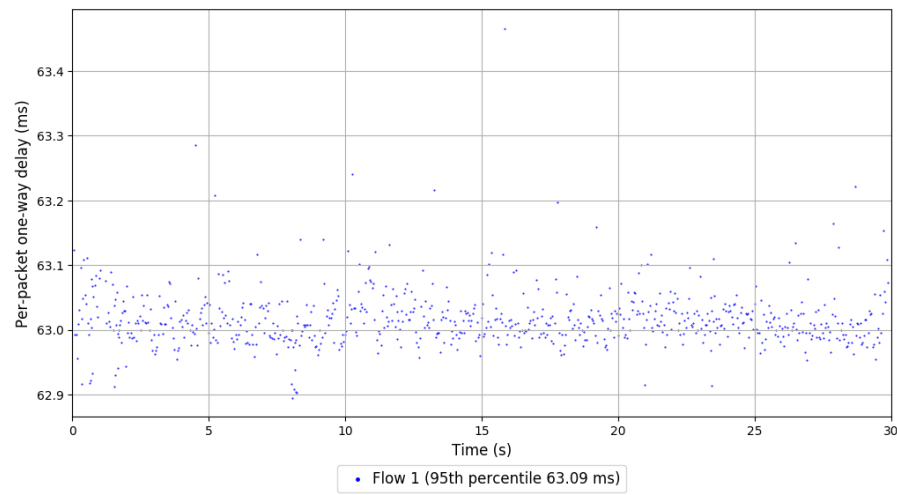
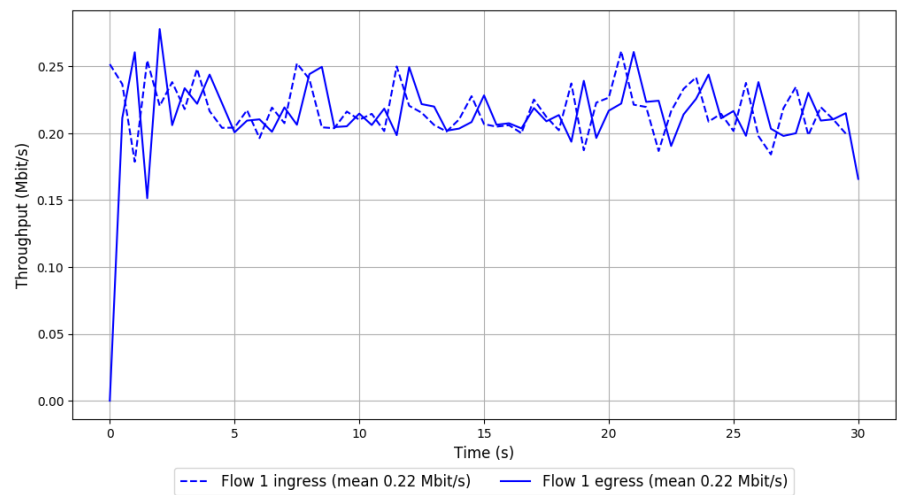
-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 63.091 ms

Loss rate: 0.51%

Run 5: Report of SReAM — Data Link



Run 1: Statistics of Sprout

Start at: 2018-11-03 02:47:40

End at: 2018-11-03 02:48:10

Local clock offset: -0.081 ms

Remote clock offset: 0.423 ms

# Below is generated by plot.py at 2018-11-03 06:13:29

# Datalink statistics

-- Total of 1 flow:

Average throughput: 6.63 Mbit/s

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

Loss rate: 0.51%

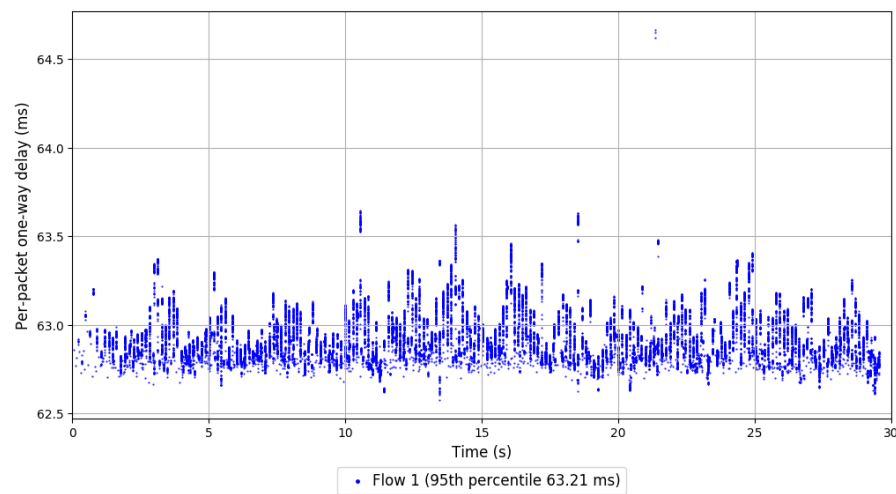
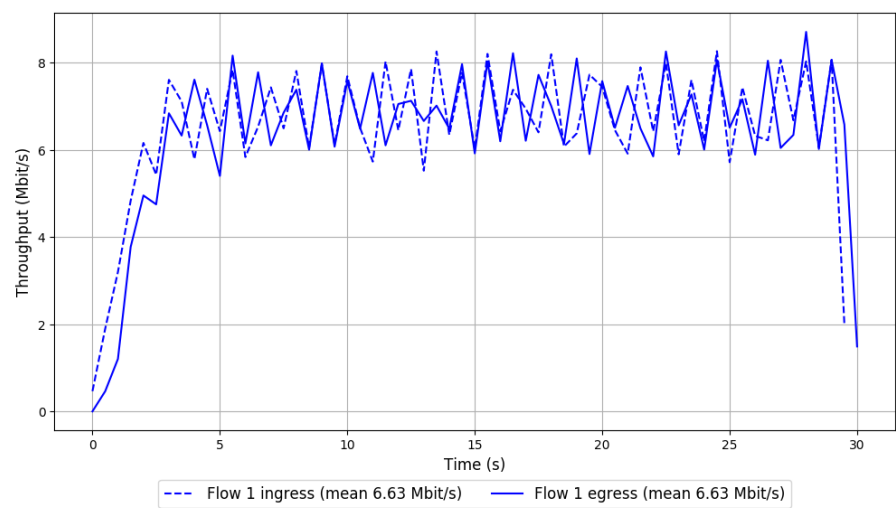
-- Flow 1:

Average throughput: 6.63 Mbit/s

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

Loss rate: 0.51%

Run 1: Report of Sprout — Data Link

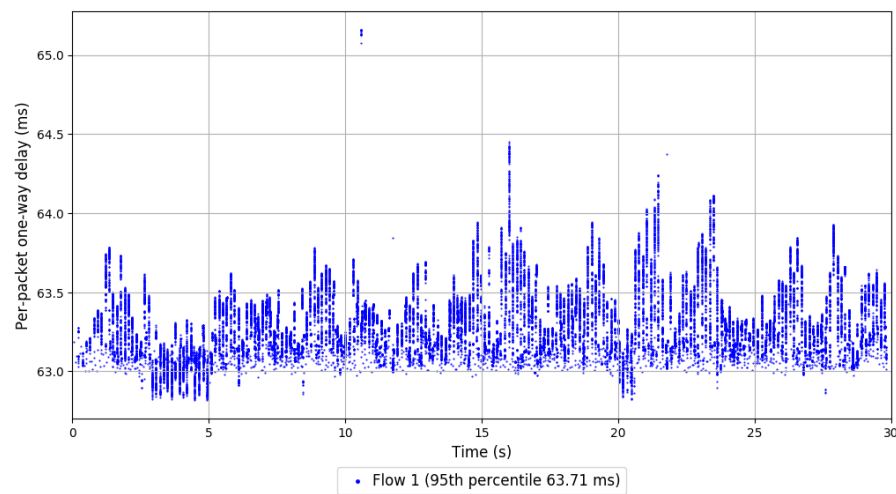
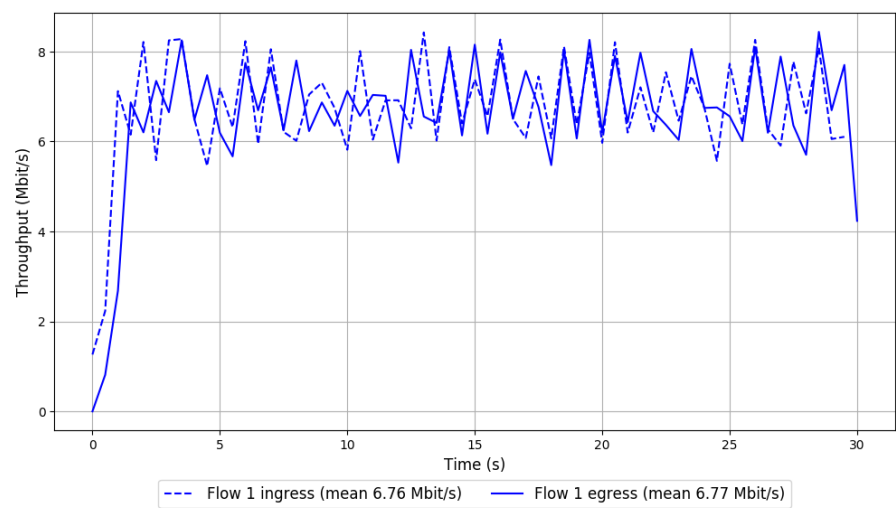


Run 2: Statistics of Sprout

Start at: 2018-11-03 03:14:01  
End at: 2018-11-03 03:14:31  
Local clock offset: -0.118 ms  
Remote clock offset: -0.014 ms

# Below is generated by plot.py at 2018-11-03 06:13:29  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 6.77 Mbit/s  
95th percentile per-packet one-way delay: 63.713 ms  
Loss rate: 0.46%  
-- Flow 1:  
Average throughput: 6.77 Mbit/s  
95th percentile per-packet one-way delay: 63.713 ms  
Loss rate: 0.46%

Run 2: Report of Sprout — Data Link





Run 3: Statistics of Sprout

Start at: 2018-11-03 03:40:13

End at: 2018-11-03 03:40:43

Local clock offset: -0.093 ms

Remote clock offset: 0.051 ms

# Below is generated by plot.py at 2018-11-03 06:13:29

# Datalink statistics

-- Total of 1 flow:

Average throughput: 6.77 Mbit/s

95th percentile per-packet one-way delay: 63.297 ms

Loss rate: 0.48%

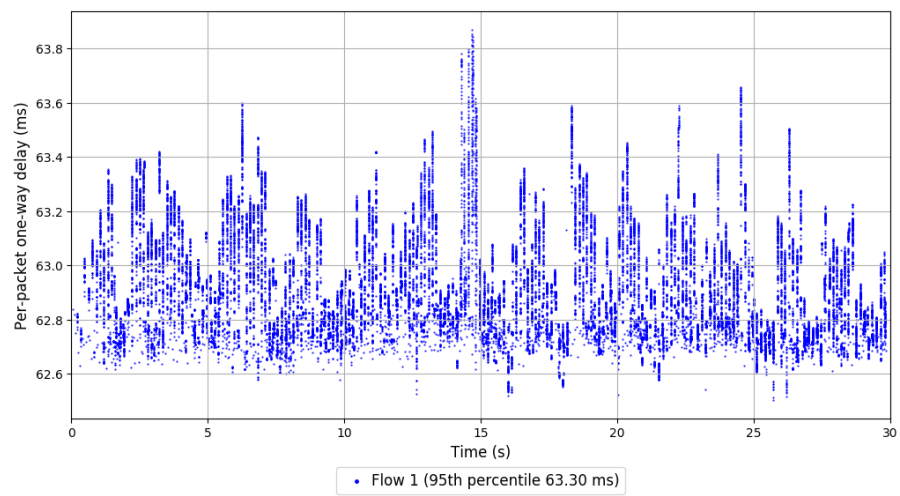
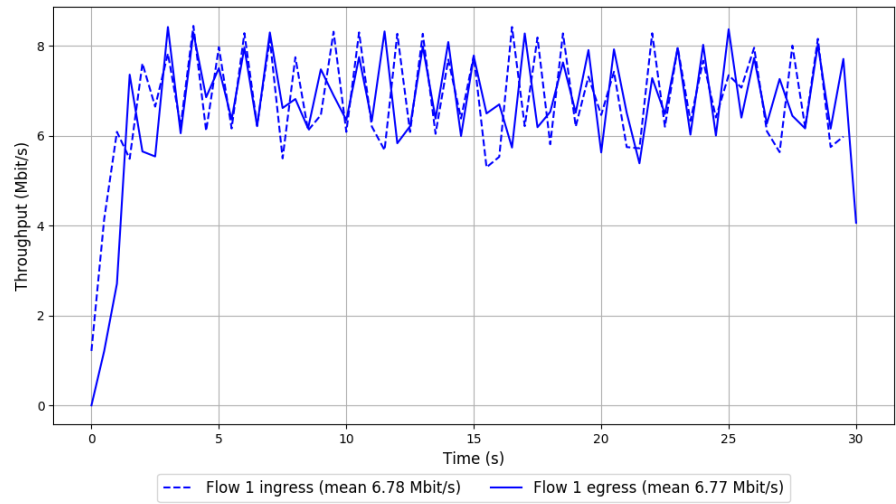
-- Flow 1:

Average throughput: 6.77 Mbit/s

95th percentile per-packet one-way delay: 63.297 ms

Loss rate: 0.48%

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

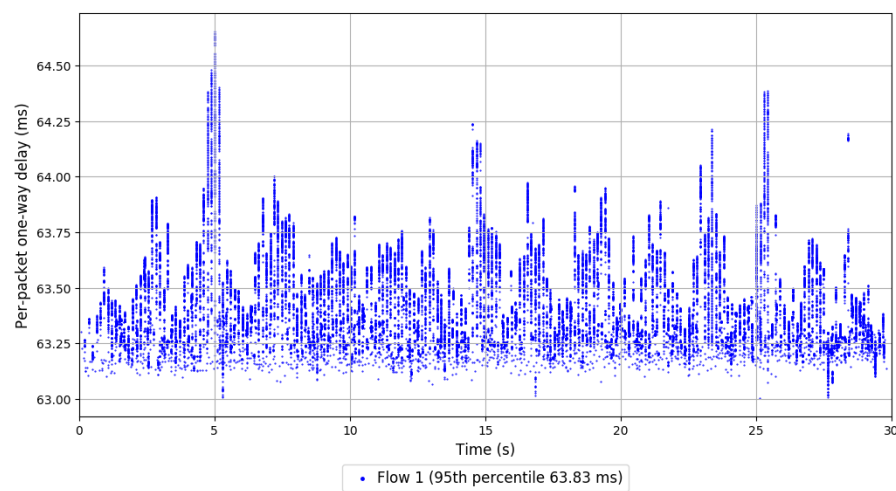
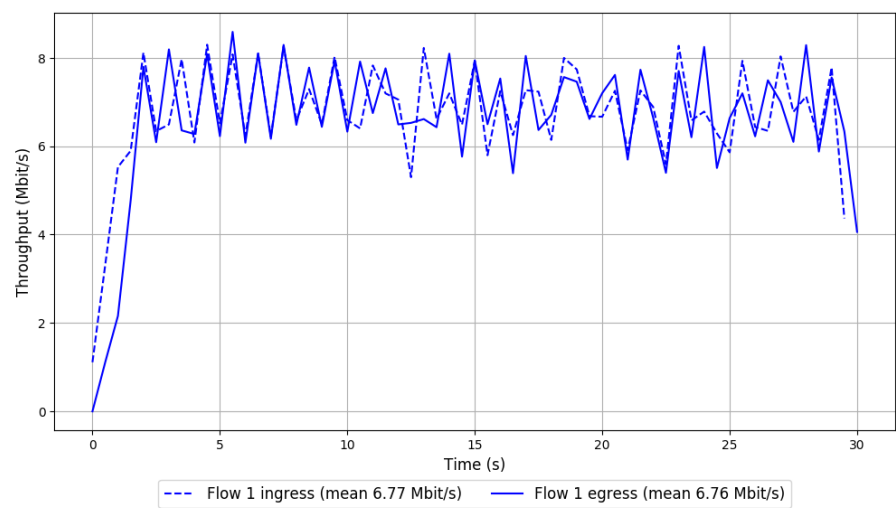


Run 4: Statistics of Sprout

Start at: 2018-11-03 04:06:21  
End at: 2018-11-03 04:06:51  
Local clock offset: -0.087 ms  
Remote clock offset: -0.142 ms

# Below is generated by plot.py at 2018-11-03 06:13:29  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 6.76 Mbit/s  
95th percentile per-packet one-way delay: 63.826 ms  
Loss rate: 0.50%  
-- Flow 1:  
Average throughput: 6.76 Mbit/s  
95th percentile per-packet one-way delay: 63.826 ms  
Loss rate: 0.50%

Run 4: Report of Sprout — Data Link

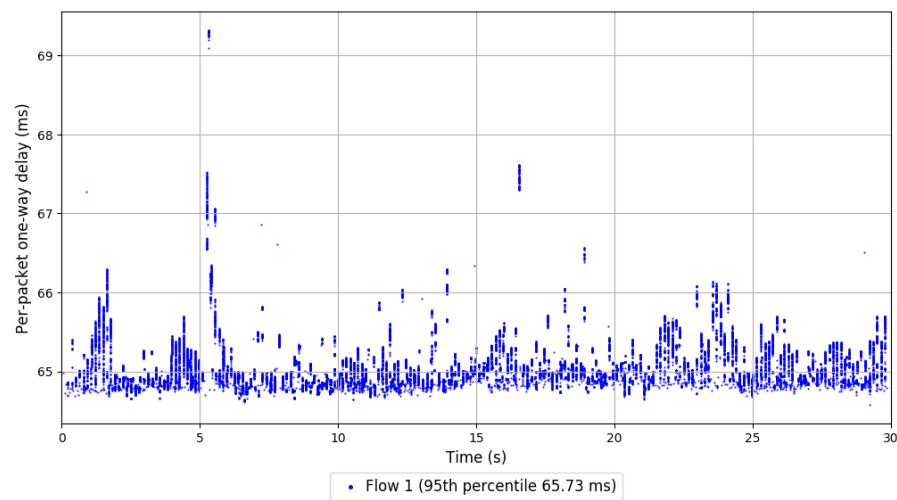
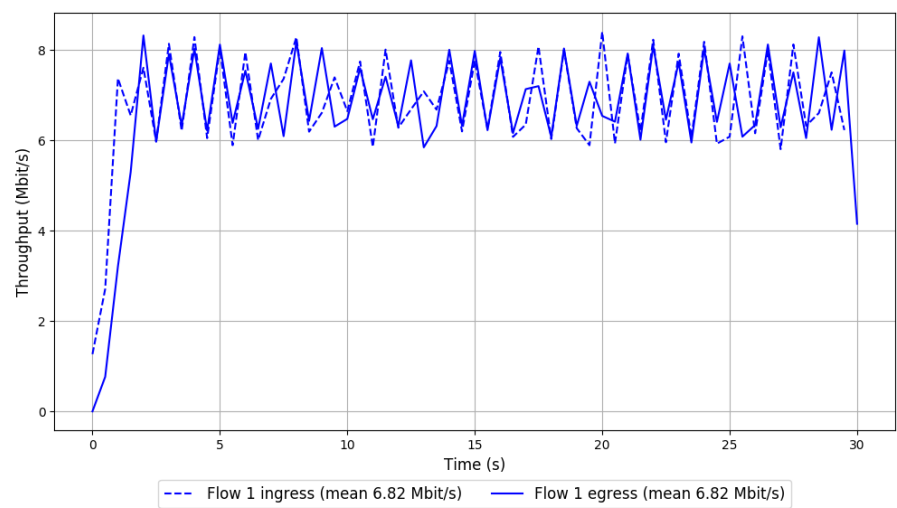


Run 5: Statistics of Sprout

Start at: 2018-11-03 04:32:43  
End at: 2018-11-03 04:33:13  
Local clock offset: -0.118 ms  
Remote clock offset: -1.409 ms

# Below is generated by plot.py at 2018-11-03 06:13:29  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 6.82 Mbit/s  
95th percentile per-packet one-way delay: 65.729 ms  
Loss rate: 0.51%  
-- Flow 1:  
Average throughput: 6.82 Mbit/s  
95th percentile per-packet one-way delay: 65.729 ms  
Loss rate: 0.51%

Run 5: Report of Sprout — Data Link

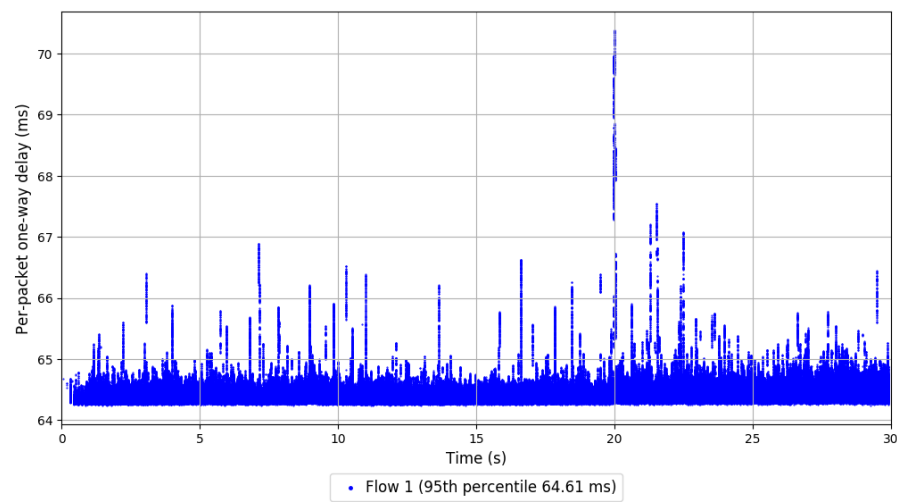
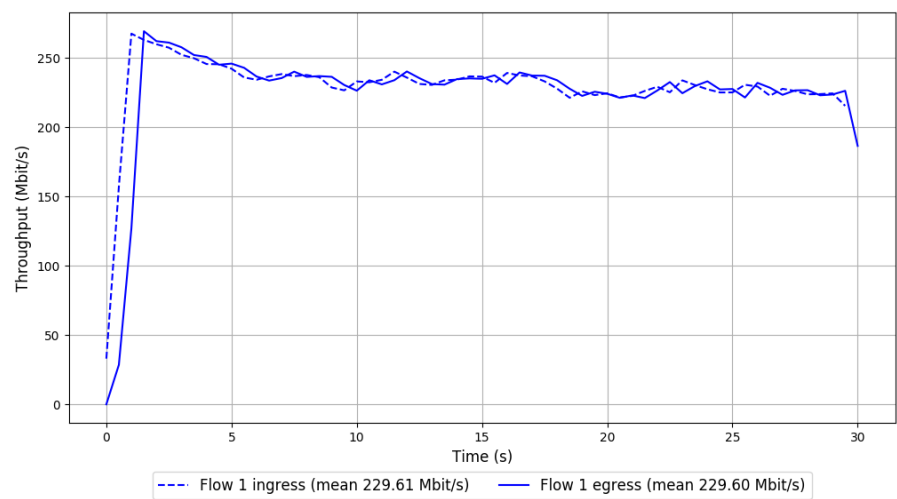


Run 1: Statistics of TaoVA-100x

Start at: 2018-11-03 02:59:23  
End at: 2018-11-03 02:59:53  
Local clock offset: -0.083 ms  
Remote clock offset: -1.422 ms

# Below is generated by plot.py at 2018-11-03 06:17:21  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 229.60 Mbit/s  
95th percentile per-packet one-way delay: 64.615 ms  
Loss rate: 0.42%  
-- Flow 1:  
Average throughput: 229.60 Mbit/s  
95th percentile per-packet one-way delay: 64.615 ms  
Loss rate: 0.42%

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



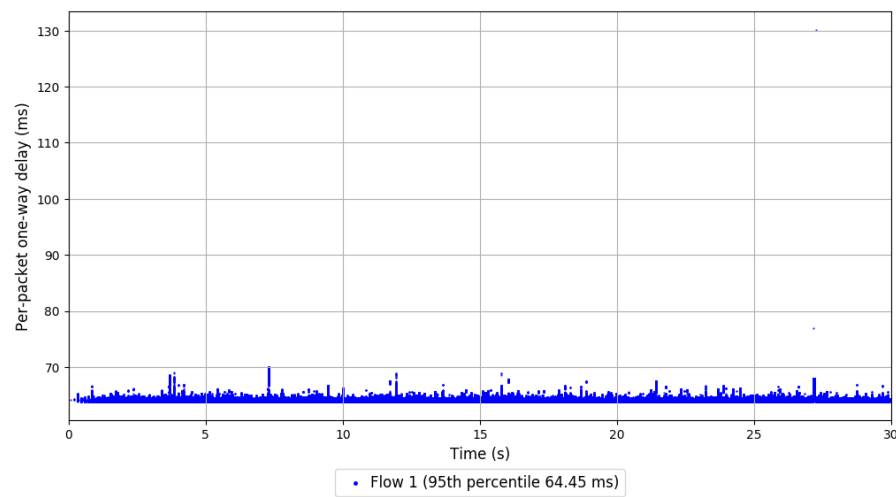
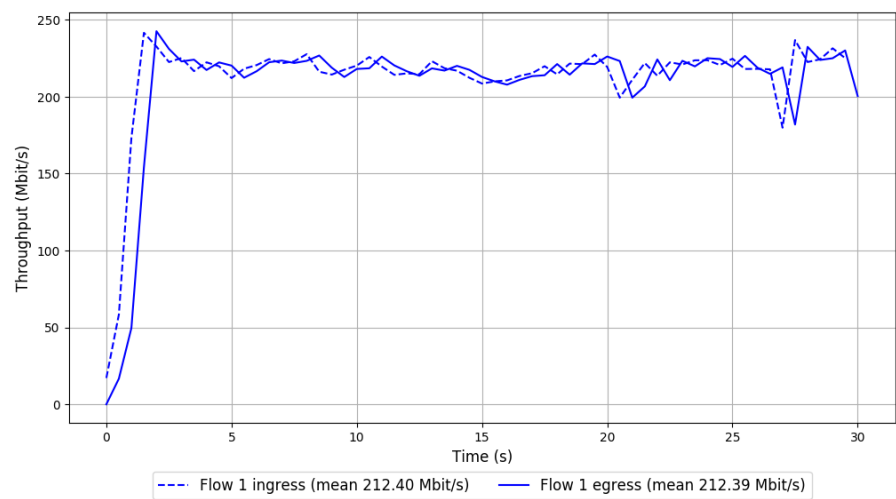


Run 2: Statistics of TaoVA-100x

Start at: 2018-11-03 03:25:46  
End at: 2018-11-03 03:26:16  
Local clock offset: -0.099 ms  
Remote clock offset: -0.753 ms

# Below is generated by plot.py at 2018-11-03 06:17:21  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 212.39 Mbit/s  
95th percentile per-packet one-way delay: 64.455 ms  
Loss rate: 0.43%  
-- Flow 1:  
Average throughput: 212.39 Mbit/s  
95th percentile per-packet one-way delay: 64.455 ms  
Loss rate: 0.43%

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



Run 3: Statistics of TaoVA-100x

Start at: 2018-11-03 03:51:54

End at: 2018-11-03 03:52:24

Local clock offset: -0.066 ms

Remote clock offset: -0.284 ms

# Below is generated by plot.py at 2018-11-03 06:17:21

# Datalink statistics

-- Total of 1 flow:

Average throughput: 222.55 Mbit/s

95th percentile per-packet one-way delay: 63.129 ms

Loss rate: 0.45%

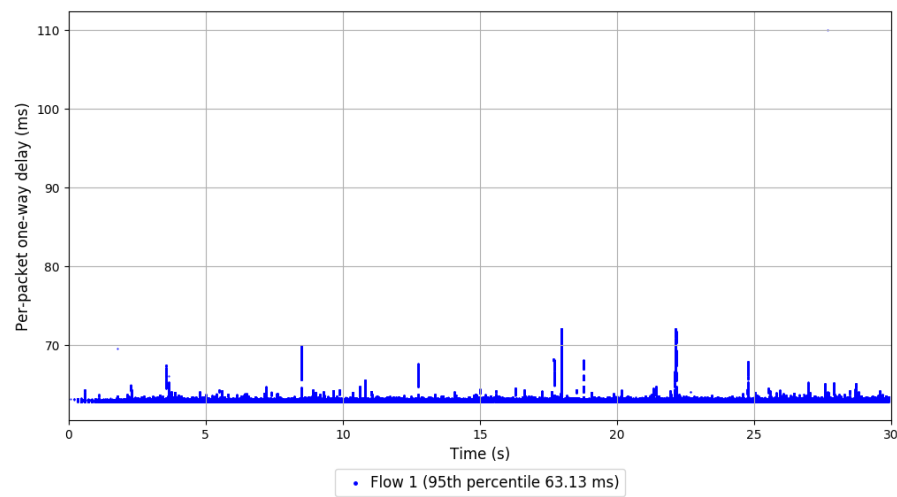
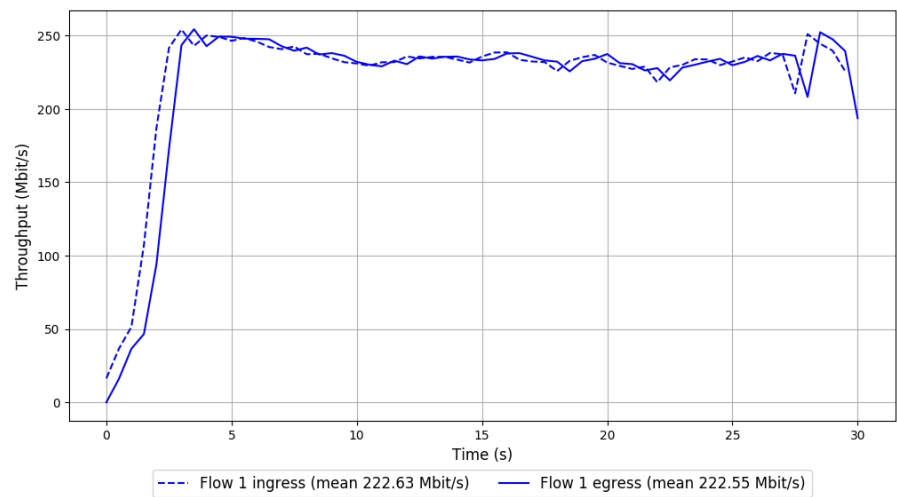
-- Flow 1:

Average throughput: 222.55 Mbit/s

95th percentile per-packet one-way delay: 63.129 ms

Loss rate: 0.45%

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

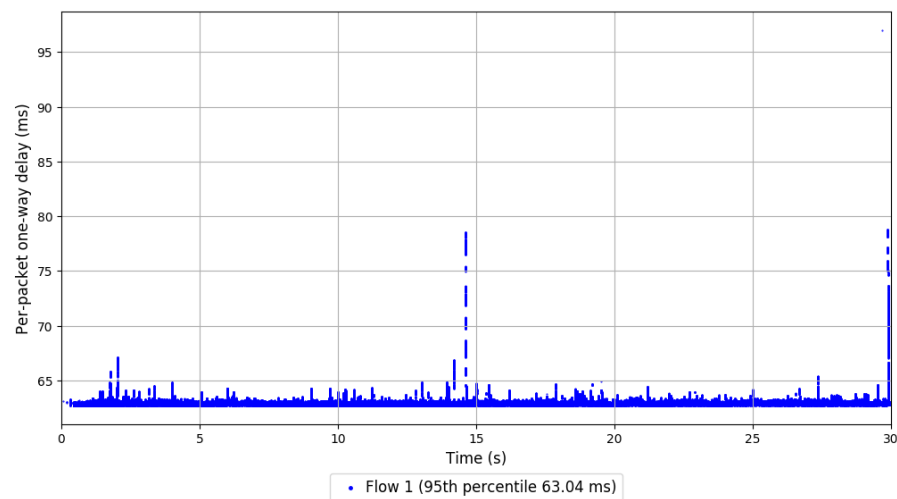
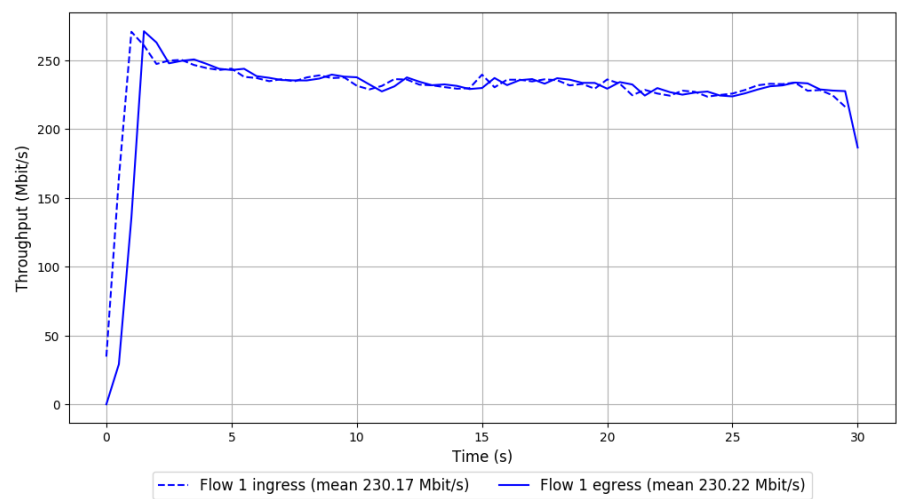


Run 4: Statistics of TaoVA-100x

Start at: 2018-11-03 04:18:24  
End at: 2018-11-03 04:18:54  
Local clock offset: -0.079 ms  
Remote clock offset: -0.422 ms

# Below is generated by plot.py at 2018-11-03 06:17:56  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 230.22 Mbit/s  
95th percentile per-packet one-way delay: 63.043 ms  
Loss rate: 0.40%  
-- Flow 1:  
Average throughput: 230.22 Mbit/s  
95th percentile per-packet one-way delay: 63.043 ms  
Loss rate: 0.40%

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

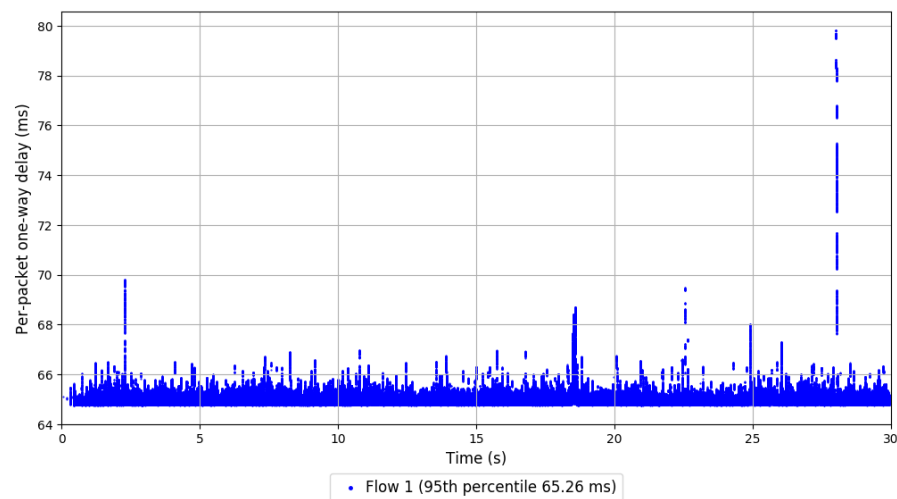
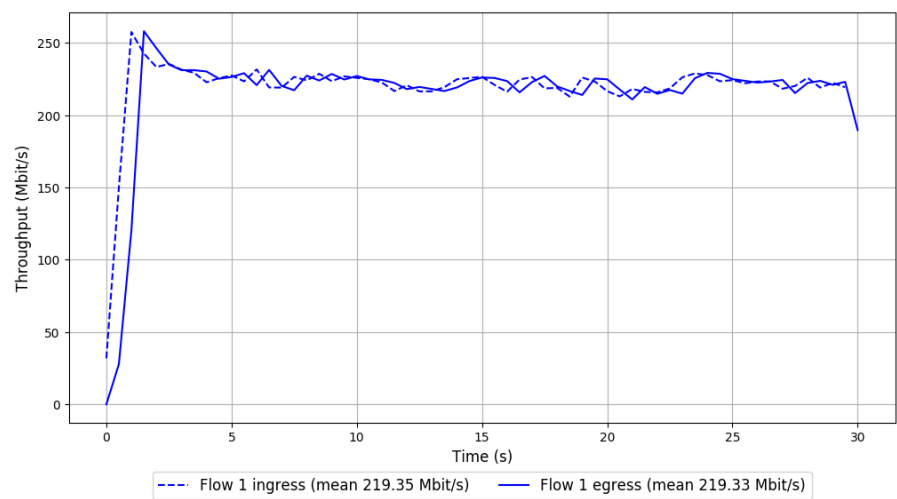


Run 5: Statistics of TaoVA-100x

Start at: 2018-11-03 04:44:35  
End at: 2018-11-03 04:45:05  
Local clock offset: -0.117 ms  
Remote clock offset: -1.593 ms

# Below is generated by plot.py at 2018-11-03 06:17:56  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 219.33 Mbit/s  
95th percentile per-packet one-way delay: 65.256 ms  
Loss rate: 0.44%  
-- Flow 1:  
Average throughput: 219.33 Mbit/s  
95th percentile per-packet one-way delay: 65.256 ms  
Loss rate: 0.44%

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





Run 1: Statistics of TCP Vegas

Start at: 2018-11-03 02:44:56

End at: 2018-11-03 02:45:26

Local clock offset: -0.107 ms

Remote clock offset: 0.622 ms

# Below is generated by plot.py at 2018-11-03 06:21:38

# Datalink statistics

-- Total of 1 flow:

Average throughput: 537.24 Mbit/s

95th percentile per-packet one-way delay: 63.582 ms

Loss rate: 0.44%

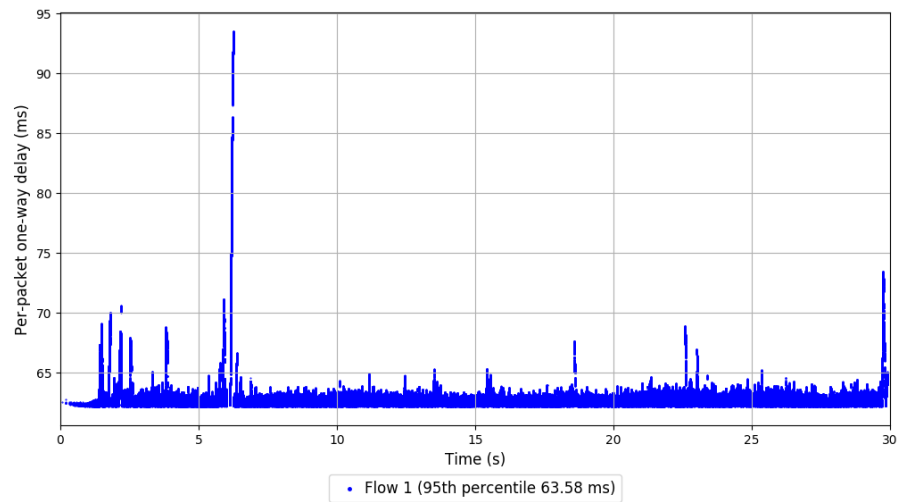
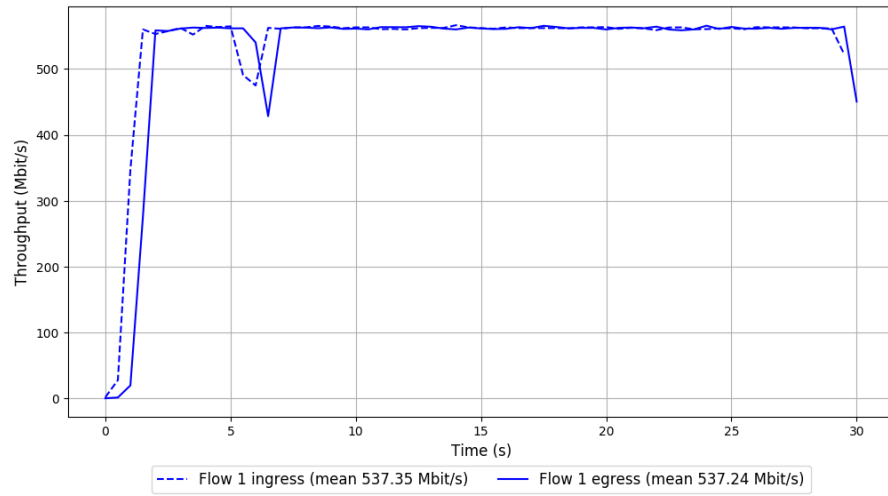
-- Flow 1:

Average throughput: 537.24 Mbit/s

95th percentile per-packet one-way delay: 63.582 ms

Loss rate: 0.44%

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

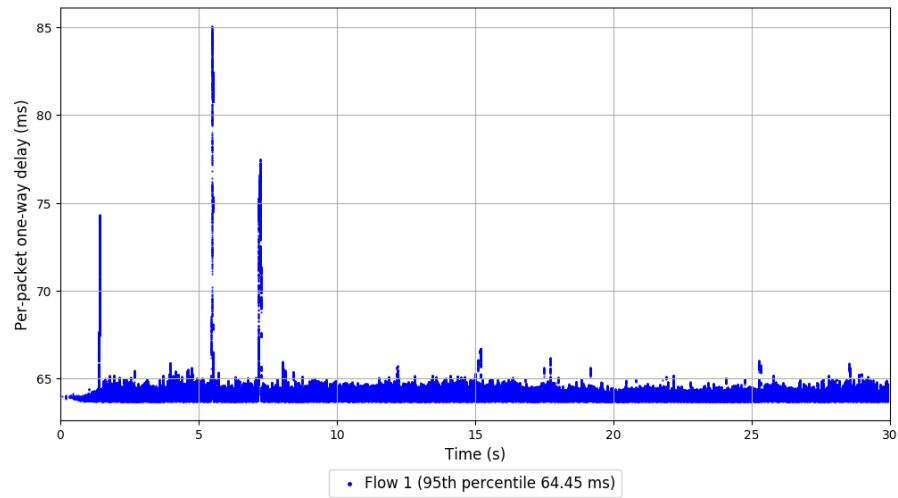
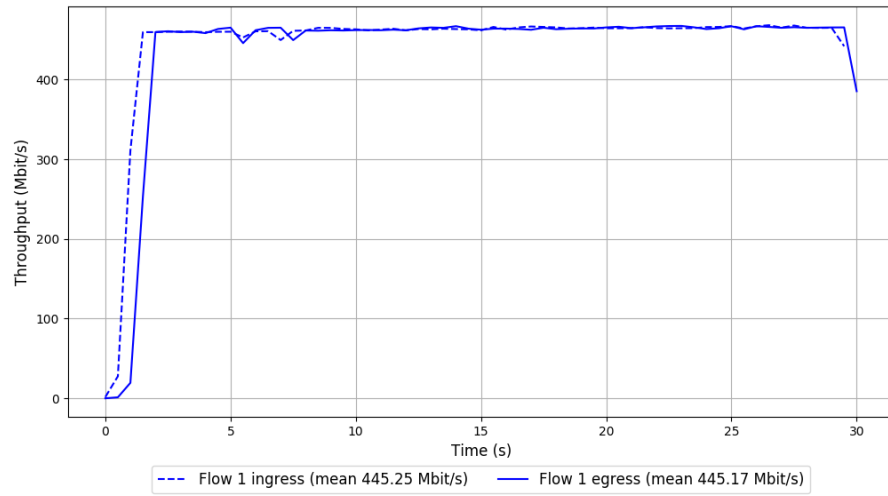


Run 2: Statistics of TCP Vegas

Start at: 2018-11-03 03:11:23  
End at: 2018-11-03 03:11:53  
Local clock offset: 0.005 ms  
Remote clock offset: -0.742 ms

# Below is generated by plot.py at 2018-11-03 06:21:48  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 445.17 Mbit/s  
95th percentile per-packet one-way delay: 64.448 ms  
Loss rate: 0.44%  
-- Flow 1:  
Average throughput: 445.17 Mbit/s  
95th percentile per-packet one-way delay: 64.448 ms  
Loss rate: 0.44%

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

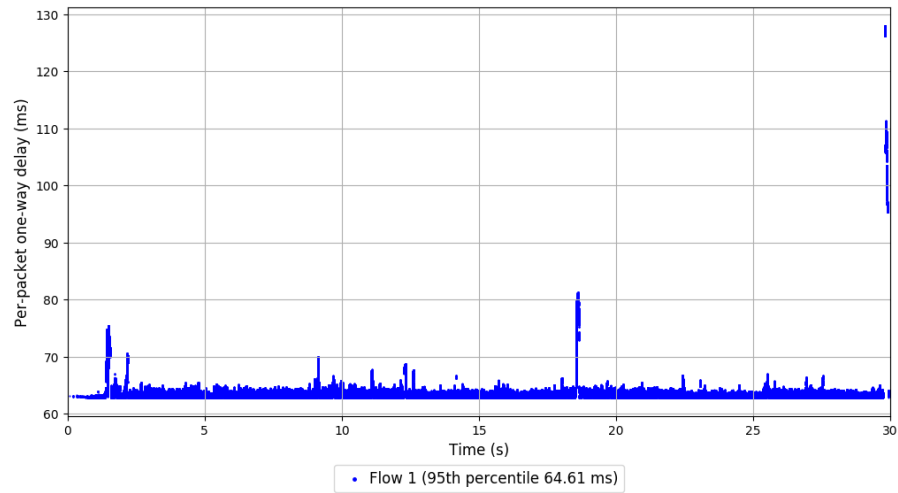
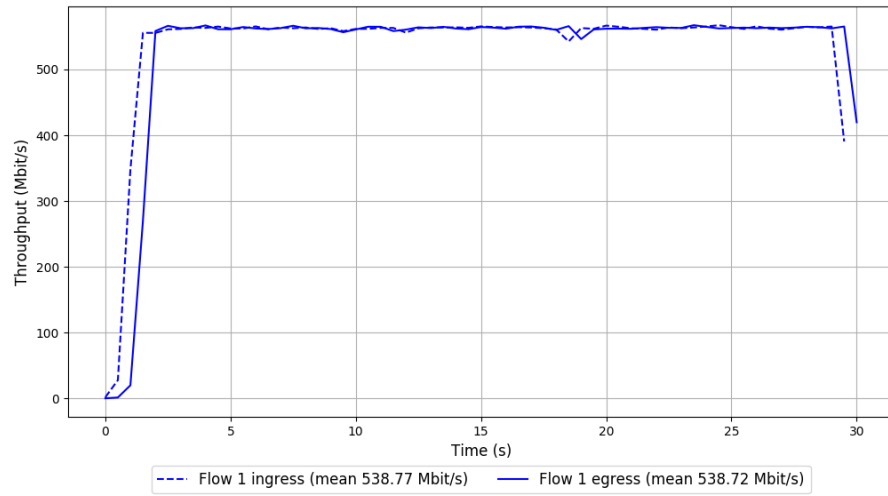


Run 3: Statistics of TCP Vegas

Start at: 2018-11-03 03:37:31  
End at: 2018-11-03 03:38:01  
Local clock offset: -0.071 ms  
Remote clock offset: -0.309 ms

# Below is generated by plot.py at 2018-11-03 06:24:33  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 538.72 Mbit/s  
95th percentile per-packet one-way delay: 64.605 ms  
Loss rate: 0.13%  
-- Flow 1:  
Average throughput: 538.72 Mbit/s  
95th percentile per-packet one-way delay: 64.605 ms  
Loss rate: 0.13%

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

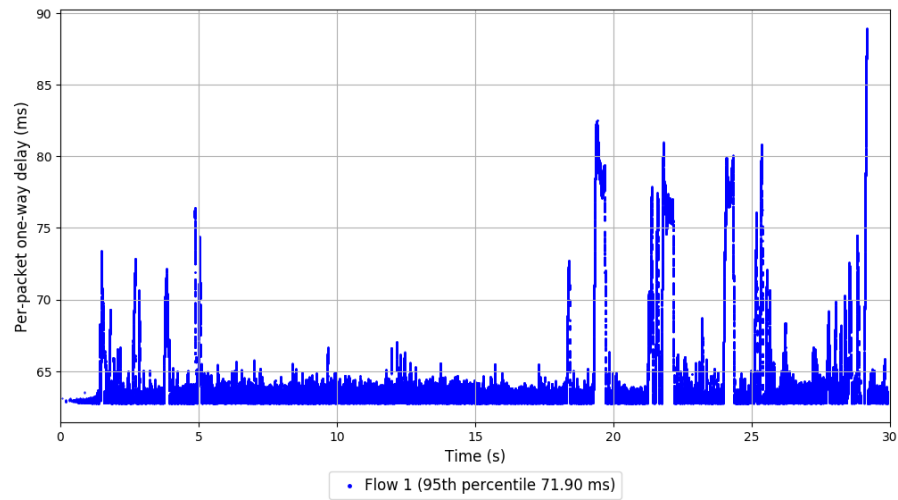
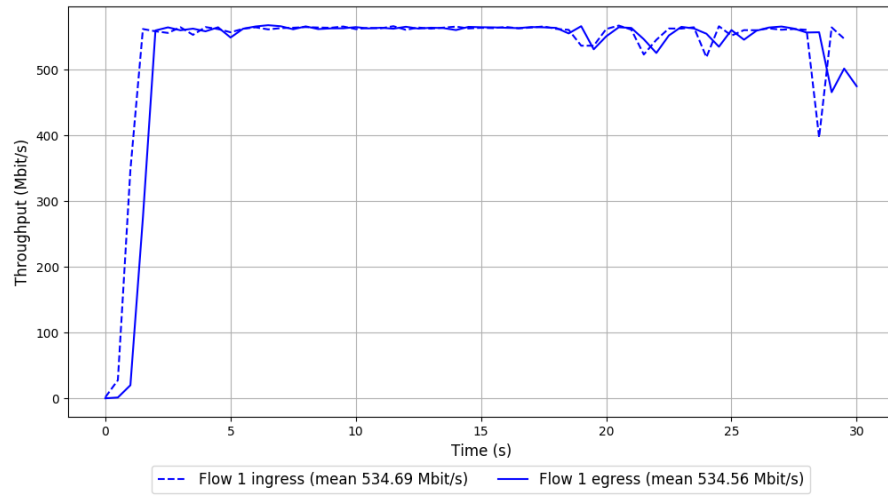


Run 4: Statistics of TCP Vegas

Start at: 2018-11-03 04:03:39  
End at: 2018-11-03 04:04:09  
Local clock offset: -0.09 ms  
Remote clock offset: -0.411 ms

# Below is generated by plot.py at 2018-11-03 06:26:41  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 534.56 Mbit/s  
95th percentile per-packet one-way delay: 71.903 ms  
Loss rate: 0.44%  
-- Flow 1:  
Average throughput: 534.56 Mbit/s  
95th percentile per-packet one-way delay: 71.903 ms  
Loss rate: 0.44%

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



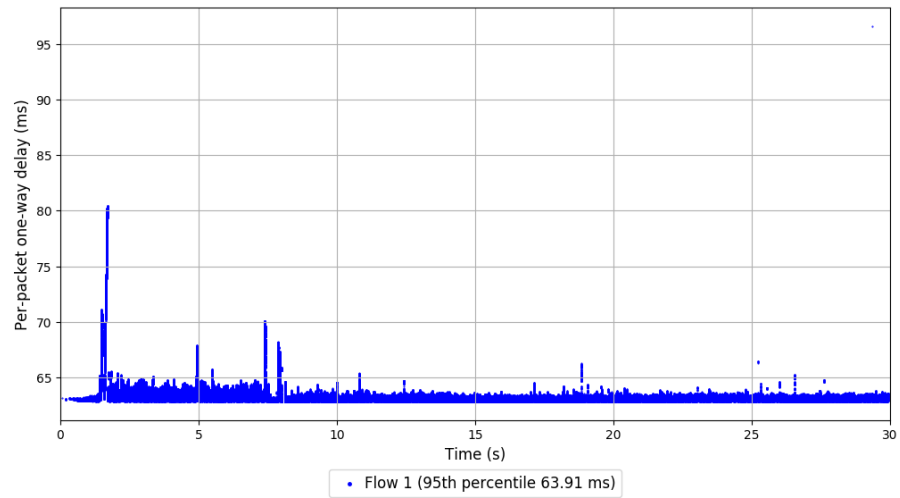
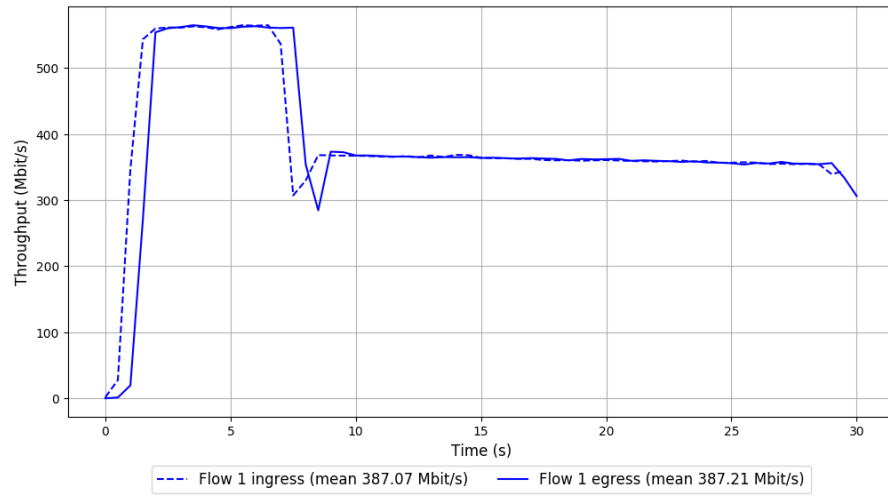


Run 5: Statistics of TCP Vegas

Start at: 2018-11-03 04:30:07  
End at: 2018-11-03 04:30:37  
Local clock offset: -0.076 ms  
Remote clock offset: -0.293 ms

# Below is generated by plot.py at 2018-11-03 06:26:41  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 387.21 Mbit/s  
95th percentile per-packet one-way delay: 63.907 ms  
Loss rate: 0.38%  
-- Flow 1:  
Average throughput: 387.21 Mbit/s  
95th percentile per-packet one-way delay: 63.907 ms  
Loss rate: 0.38%

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

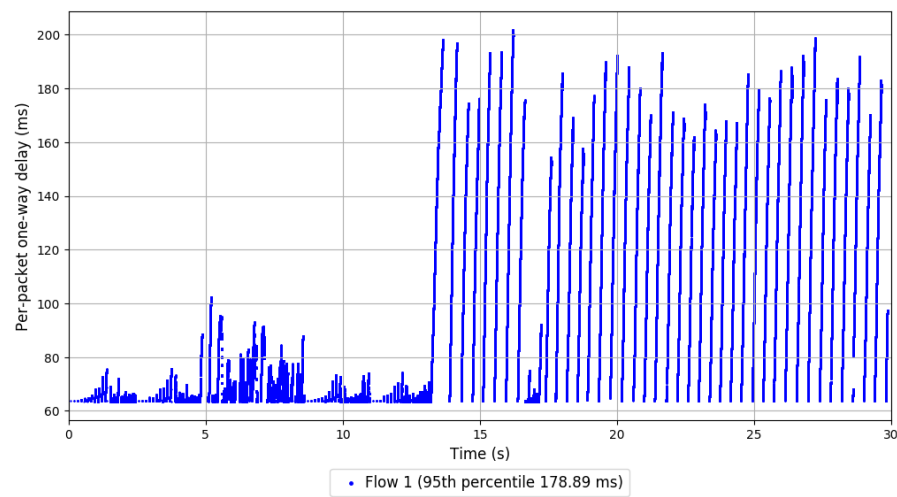
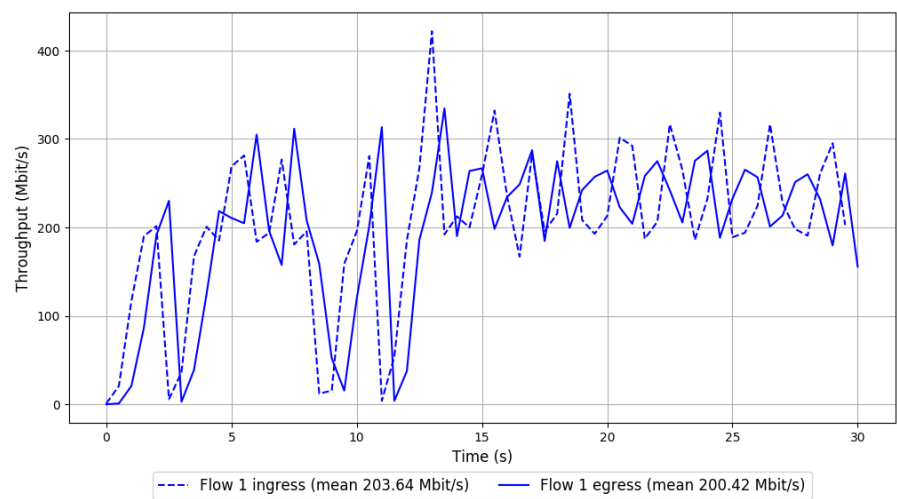


Run 1: Statistics of Verus

Start at: 2018-11-03 03:00:52  
End at: 2018-11-03 03:01:22  
Local clock offset: -0.063 ms  
Remote clock offset: -0.576 ms

# Below is generated by plot.py at 2018-11-03 06:26:41  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 200.42 Mbit/s  
95th percentile per-packet one-way delay: 178.894 ms  
Loss rate: 1.87%  
-- Flow 1:  
Average throughput: 200.42 Mbit/s  
95th percentile per-packet one-way delay: 178.894 ms  
Loss rate: 1.87%

Run 1: Report of Verus — Data Link

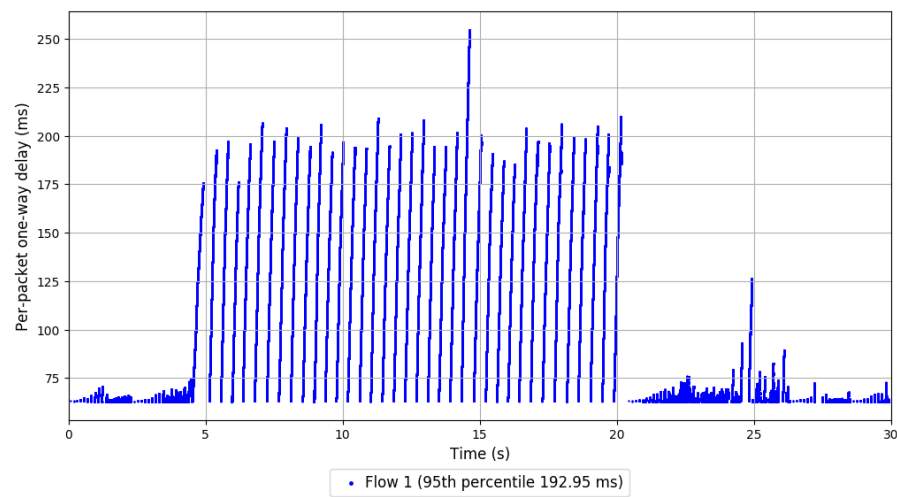
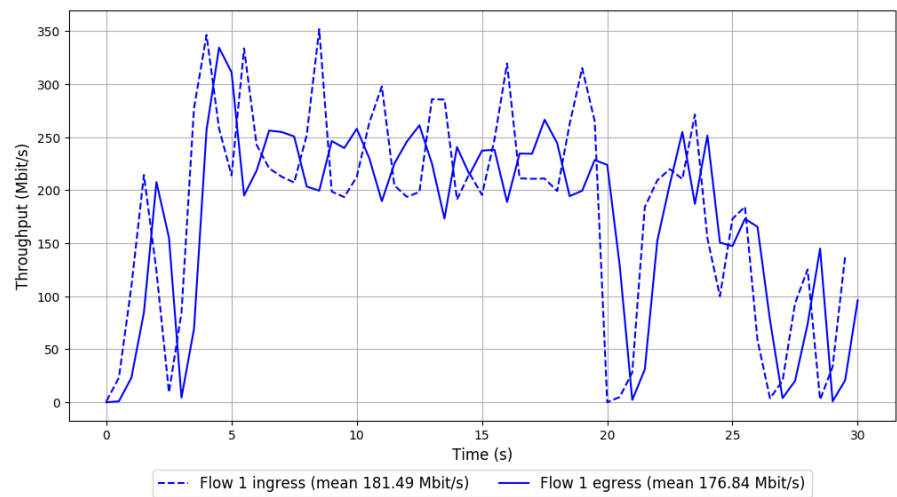


Run 2: Statistics of Verus

Start at: 2018-11-03 03:27:14  
End at: 2018-11-03 03:27:44  
Local clock offset: -0.112 ms  
Remote clock offset: -0.327 ms

# Below is generated by plot.py at 2018-11-03 06:26:41  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 176.84 Mbit/s  
95th percentile per-packet one-way delay: 192.954 ms  
Loss rate: 2.97%  
-- Flow 1:  
Average throughput: 176.84 Mbit/s  
95th percentile per-packet one-way delay: 192.954 ms  
Loss rate: 2.97%

Run 2: Report of Verus — Data Link

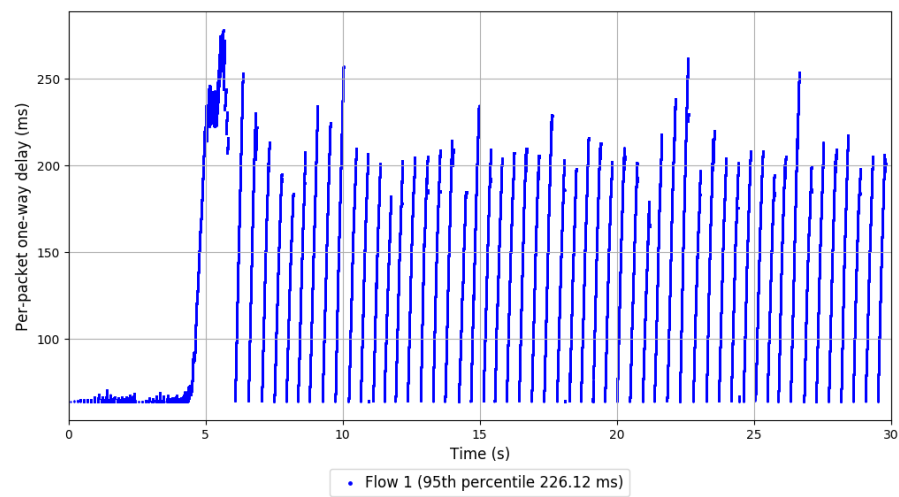
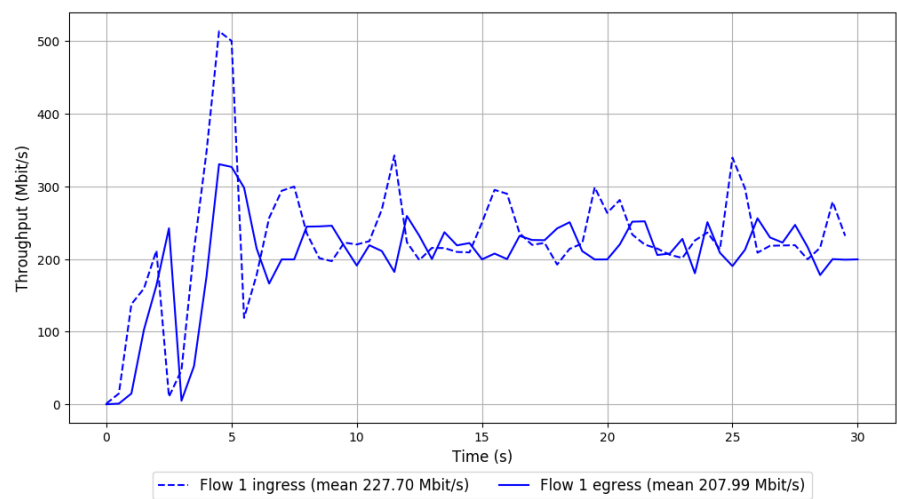


Run 3: Statistics of Verus

Start at: 2018-11-03 03:53:23  
End at: 2018-11-03 03:53:53  
Local clock offset: -0.091 ms  
Remote clock offset: -0.885 ms

# Below is generated by plot.py at 2018-11-03 06:26:41  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 207.99 Mbit/s  
95th percentile per-packet one-way delay: 226.120 ms  
Loss rate: 9.38%  
-- Flow 1:  
Average throughput: 207.99 Mbit/s  
95th percentile per-packet one-way delay: 226.120 ms  
Loss rate: 9.38%

Run 3: Report of Verus — Data Link



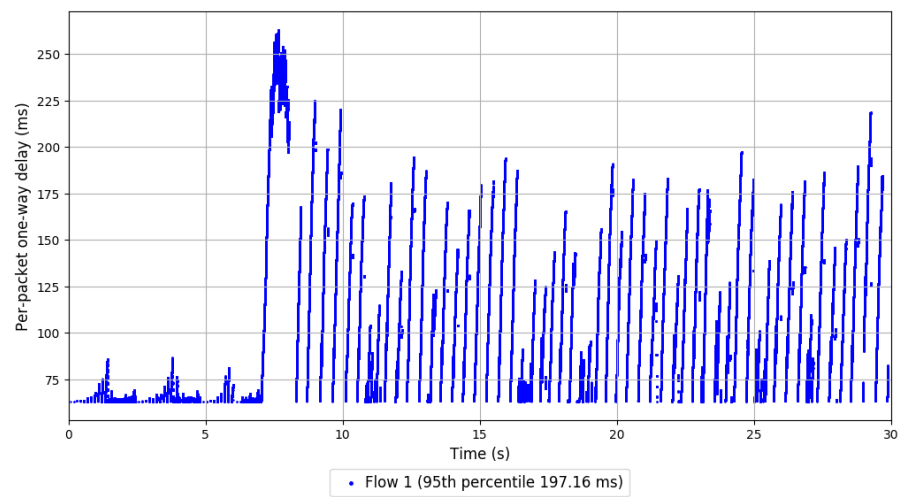
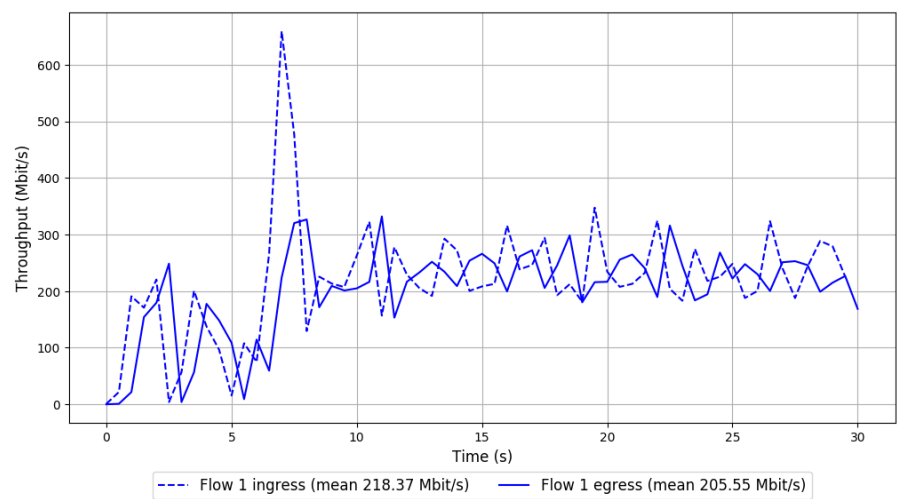


Run 4: Statistics of Verus

Start at: 2018-11-03 04:19:52  
End at: 2018-11-03 04:20:22  
Local clock offset: -0.041 ms  
Remote clock offset: -0.409 ms

# Below is generated by plot.py at 2018-11-03 06:28:26  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 205.55 Mbit/s  
95th percentile per-packet one-way delay: 197.159 ms  
Loss rate: 6.21%  
-- Flow 1:  
Average throughput: 205.55 Mbit/s  
95th percentile per-packet one-way delay: 197.159 ms  
Loss rate: 6.21%

Run 4: Report of Verus — Data Link

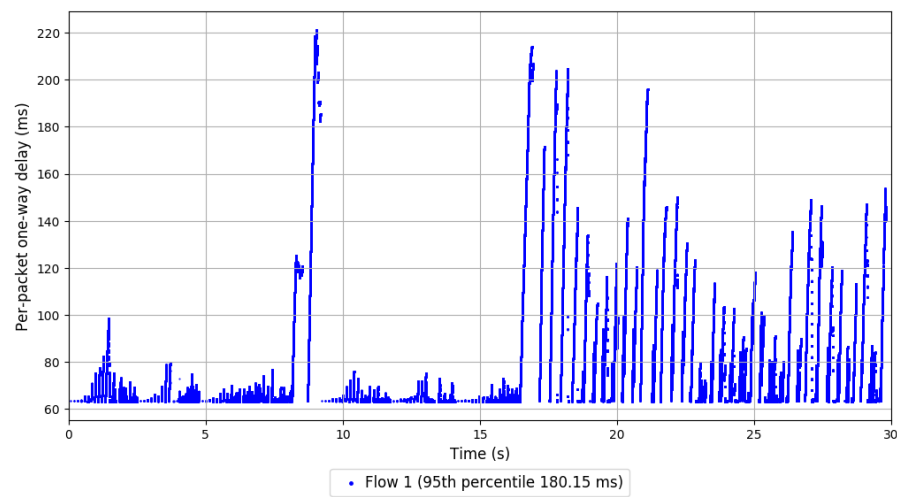
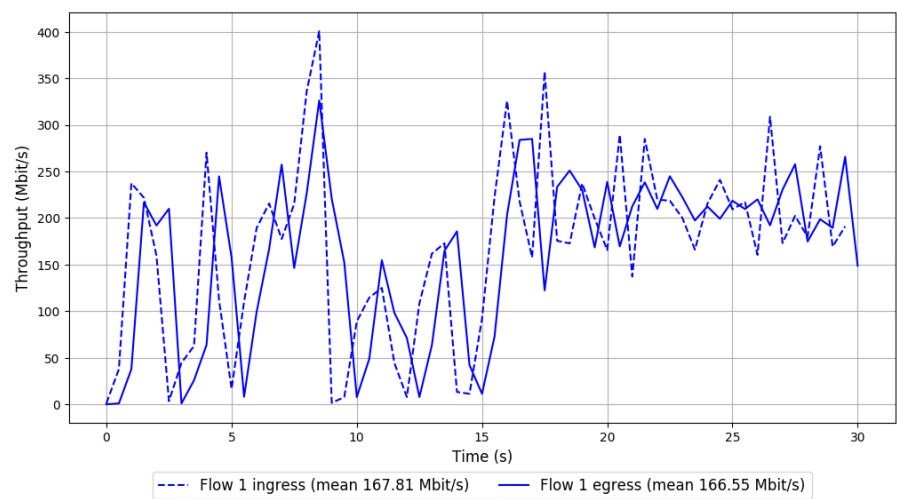


Run 5: Statistics of Verus

Start at: 2018-11-03 04:46:03  
End at: 2018-11-03 04:46:33  
Local clock offset: -0.132 ms  
Remote clock offset: -0.148 ms

# Below is generated by plot.py at 2018-11-03 06:28:26  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 166.55 Mbit/s  
95th percentile per-packet one-way delay: 180.150 ms  
Loss rate: 1.41%  
-- Flow 1:  
Average throughput: 166.55 Mbit/s  
95th percentile per-packet one-way delay: 180.150 ms  
Loss rate: 1.41%

Run 5: Report of Verus — Data Link



Run 1: Statistics of PCC-Vivace

Start at: 2018-11-03 02:48:49

End at: 2018-11-03 02:49:19

Local clock offset: -0.049 ms

Remote clock offset: -0.66 ms

# Below is generated by plot.py at 2018-11-03 06:30:26

# Datalink statistics

-- Total of 1 flow:

Average throughput: 403.25 Mbit/s

95th percentile per-packet one-way delay: 64.136 ms

Loss rate: 0.49%

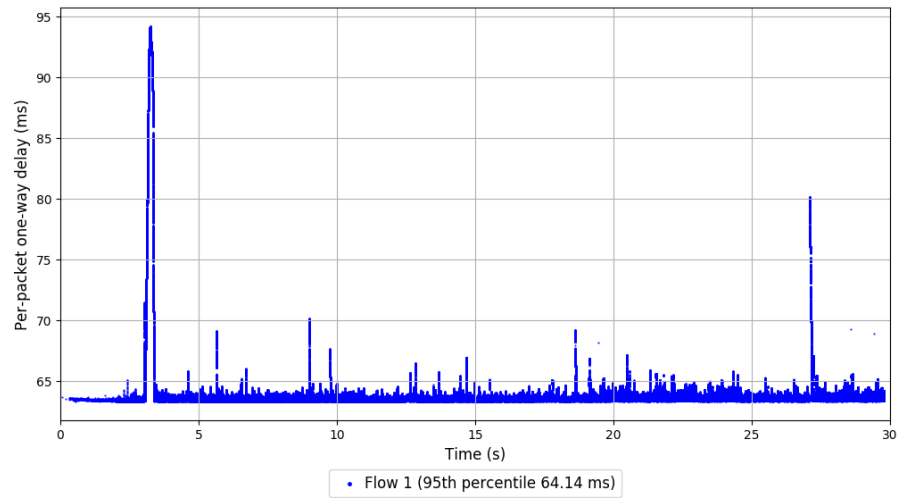
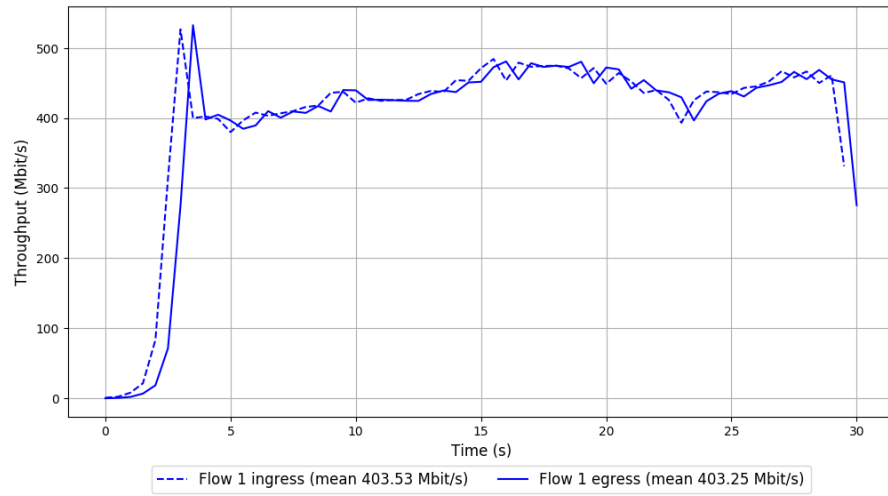
-- Flow 1:

Average throughput: 403.25 Mbit/s

95th percentile per-packet one-way delay: 64.136 ms

Loss rate: 0.49%

# Run 1: Report of PCC-Vivace — Data Link

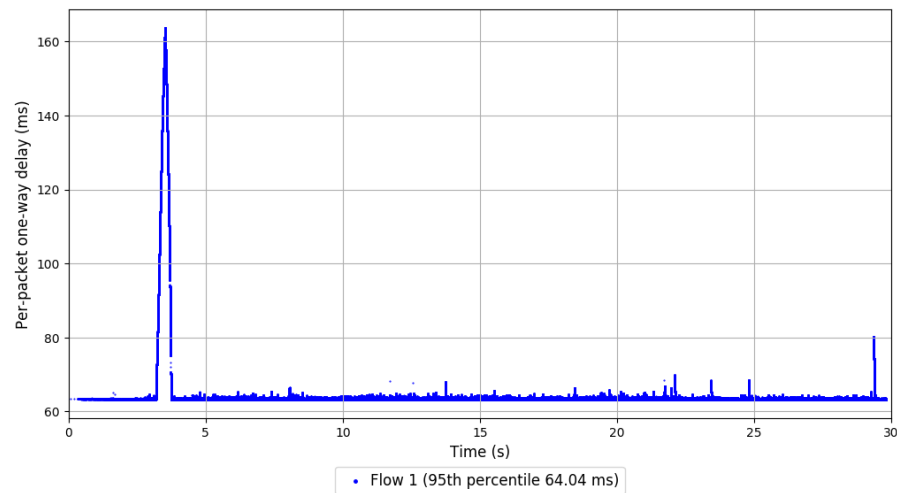
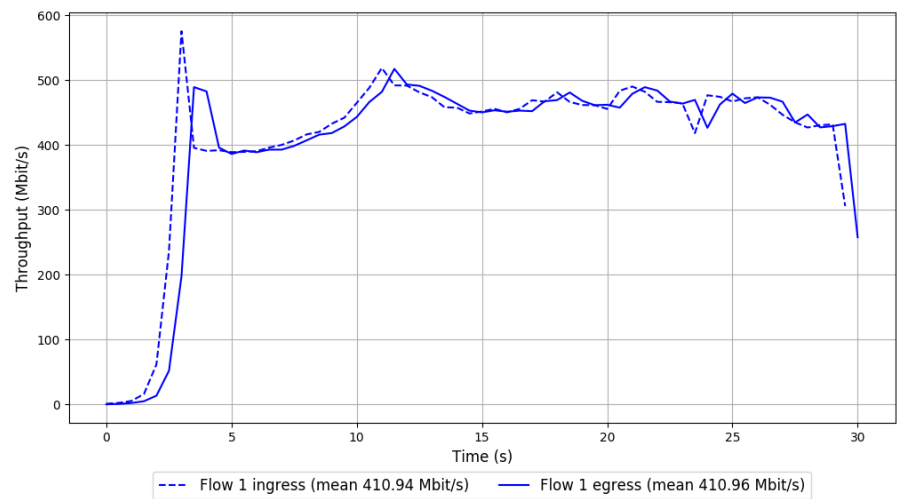


Run 2: Statistics of PCC-Vivace

Start at: 2018-11-03 03:15:10  
End at: 2018-11-03 03:15:40  
Local clock offset: -0.079 ms  
Remote clock offset: -0.382 ms

# Below is generated by plot.py at 2018-11-03 06:30:30  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 410.96 Mbit/s  
95th percentile per-packet one-way delay: 64.043 ms  
Loss rate: 0.42%  
-- Flow 1:  
Average throughput: 410.96 Mbit/s  
95th percentile per-packet one-way delay: 64.043 ms  
Loss rate: 0.42%

Run 2: Report of PCC-Vivace — Data Link



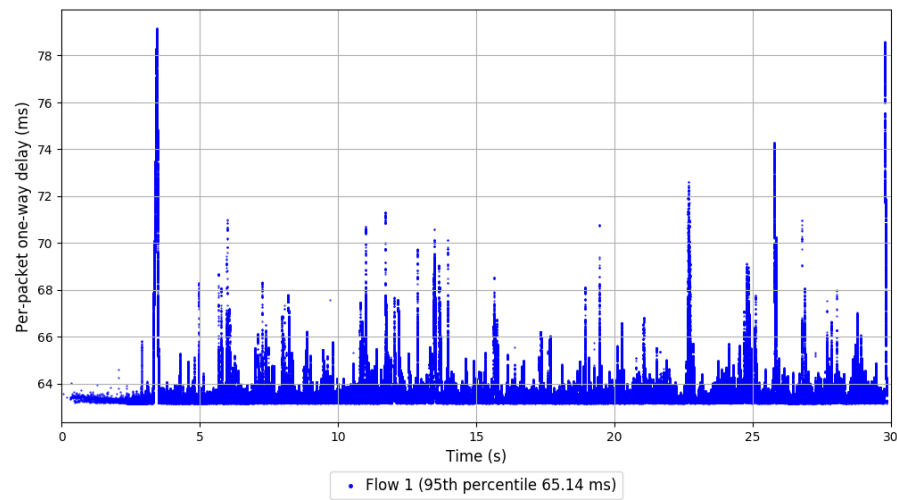
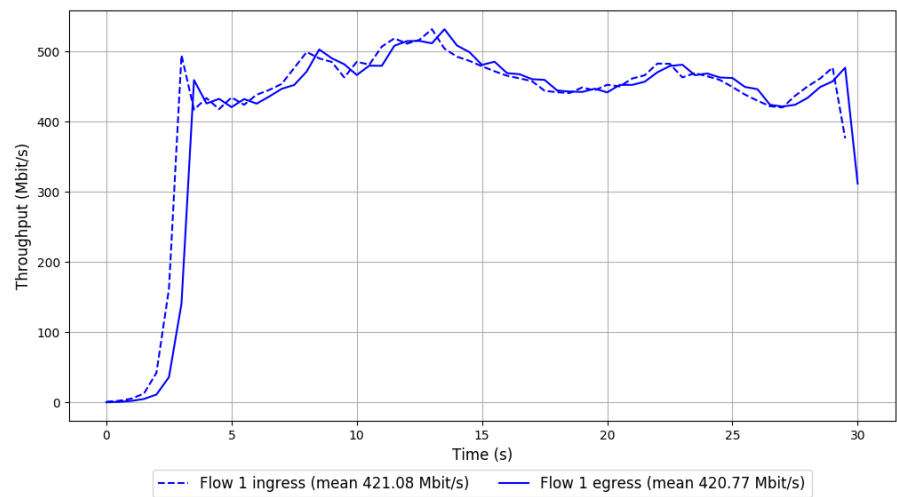


Run 3: Statistics of PCC-Vivace

Start at: 2018-11-03 03:41:22  
End at: 2018-11-03 03:41:52  
Local clock offset: -0.082 ms  
Remote clock offset: -0.285 ms

# Below is generated by plot.py at 2018-11-03 06:30:49  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 420.77 Mbit/s  
95th percentile per-packet one-way delay: 65.144 ms  
Loss rate: 0.50%  
-- Flow 1:  
Average throughput: 420.77 Mbit/s  
95th percentile per-packet one-way delay: 65.144 ms  
Loss rate: 0.50%

Run 3: Report of PCC-Vivace — Data Link

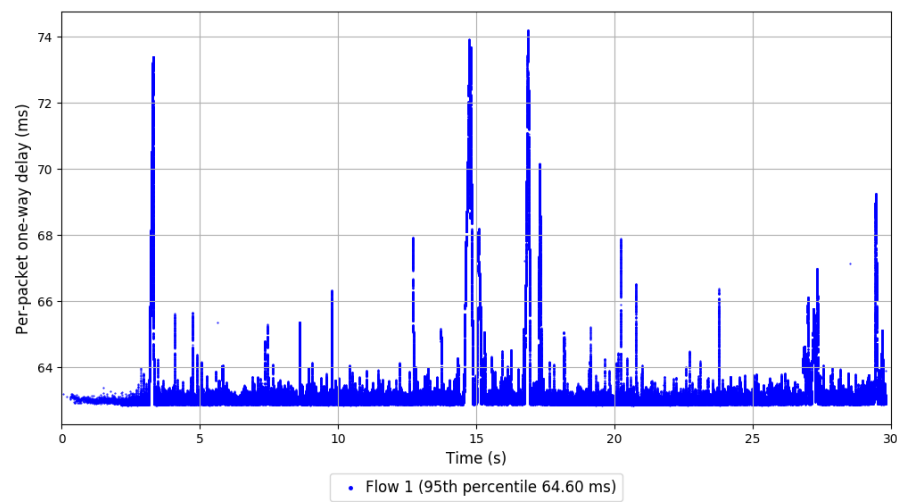
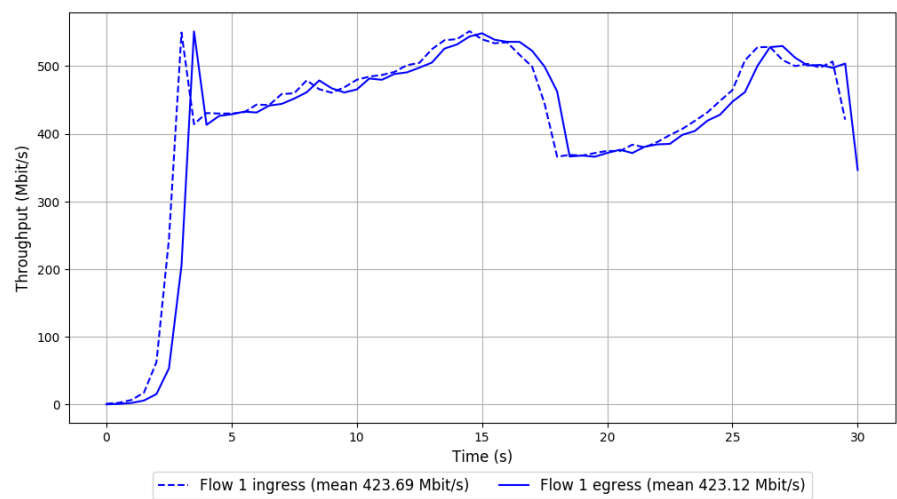


Run 4: Statistics of PCC-Vivace

Start at: 2018-11-03 04:07:30  
End at: 2018-11-03 04:08:00  
Local clock offset: -0.121 ms  
Remote clock offset: -0.448 ms

# Below is generated by plot.py at 2018-11-03 06:30:51  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 423.12 Mbit/s  
95th percentile per-packet one-way delay: 64.604 ms  
Loss rate: 0.55%  
-- Flow 1:  
Average throughput: 423.12 Mbit/s  
95th percentile per-packet one-way delay: 64.604 ms  
Loss rate: 0.55%

Run 4: Report of PCC-Vivace — Data Link

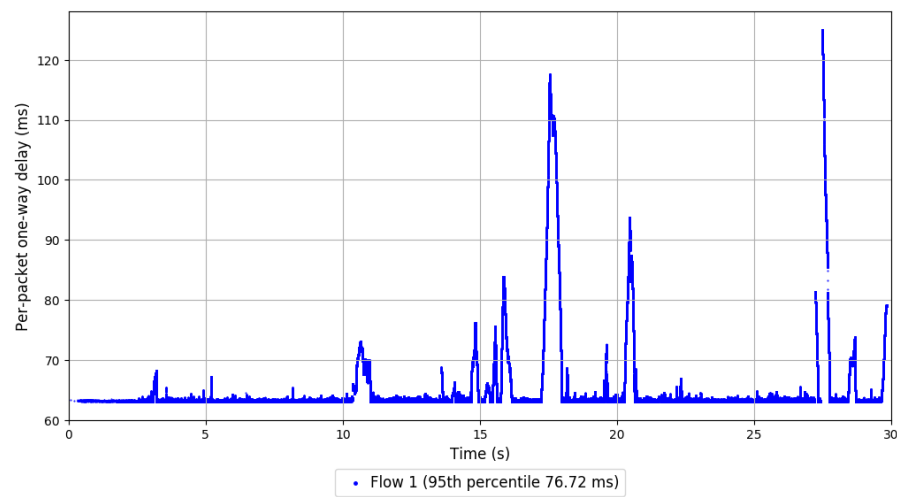
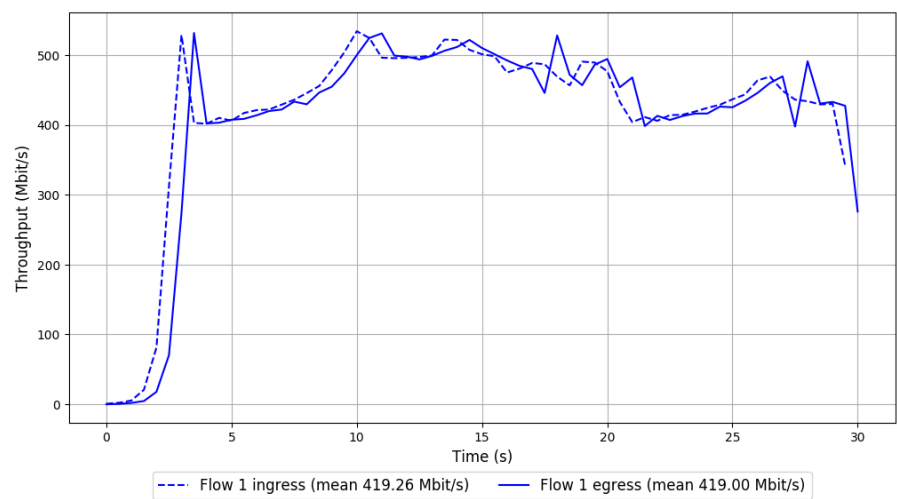


Run 5: Statistics of PCC-Vivace

Start at: 2018-11-03 04:33:52  
End at: 2018-11-03 04:34:22  
Local clock offset: -0.106 ms  
Remote clock offset: -0.258 ms

# Below is generated by plot.py at 2018-11-03 06:30:54  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 419.00 Mbit/s  
95th percentile per-packet one-way delay: 76.717 ms  
Loss rate: 0.49%  
-- Flow 1:  
Average throughput: 419.00 Mbit/s  
95th percentile per-packet one-way delay: 76.717 ms  
Loss rate: 0.49%

Run 5: Report of PCC-Vivace — Data Link

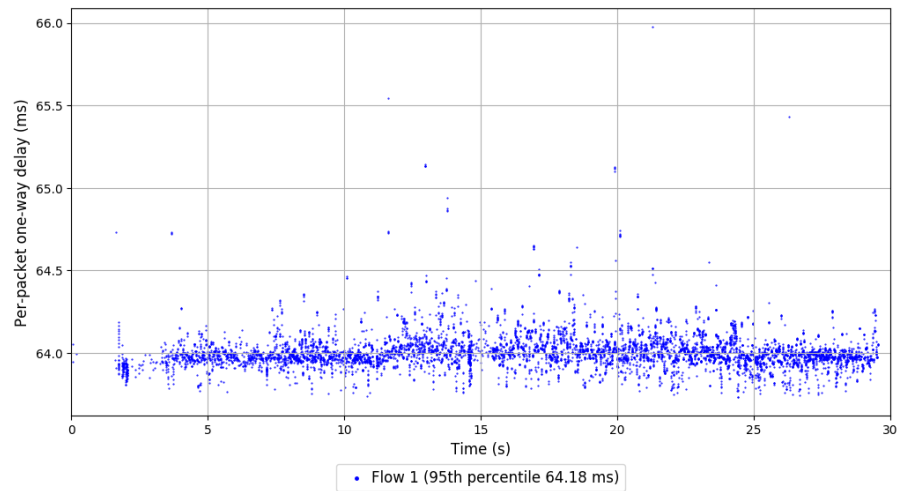
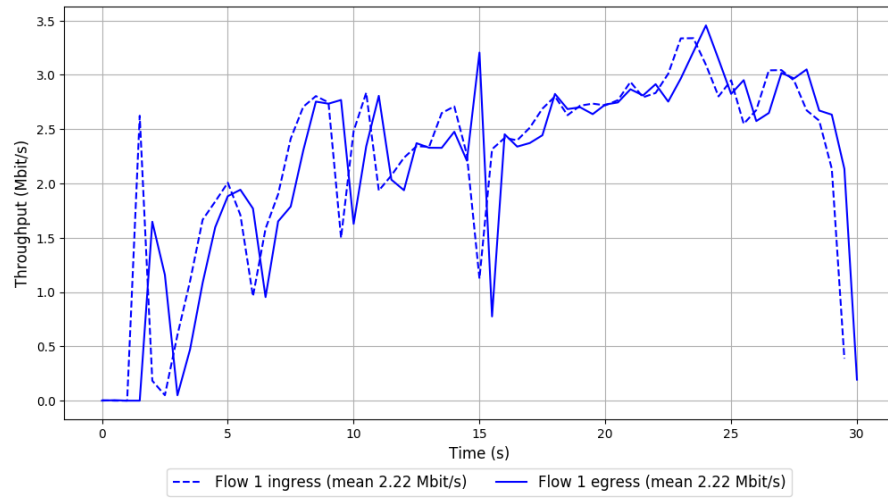


Run 1: Statistics of WebRTC media

Start at: 2018-11-03 02:53:38  
End at: 2018-11-03 02:54:08  
Local clock offset: -0.059 ms  
Remote clock offset: -0.744 ms

# Below is generated by plot.py at 2018-11-03 06:30:54  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 2.22 Mbit/s  
95th percentile per-packet one-way delay: 64.184 ms  
Loss rate: 0.37%  
-- Flow 1:  
Average throughput: 2.22 Mbit/s  
95th percentile per-packet one-way delay: 64.184 ms  
Loss rate: 0.37%

# Run 1: Report of WebRTC media — Data Link





Run 2: Statistics of WebRTC media

Start at: 2018-11-03 03:19:54

End at: 2018-11-03 03:20:25

Local clock offset: -0.048 ms

Remote clock offset: 0.328 ms

# Below is generated by plot.py at 2018-11-03 06:30:54

# Datalink statistics

-- Total of 1 flow:

Average throughput: 2.13 Mbit/s

95th percentile per-packet one-way delay: 62.658 ms

Loss rate: 0.49%

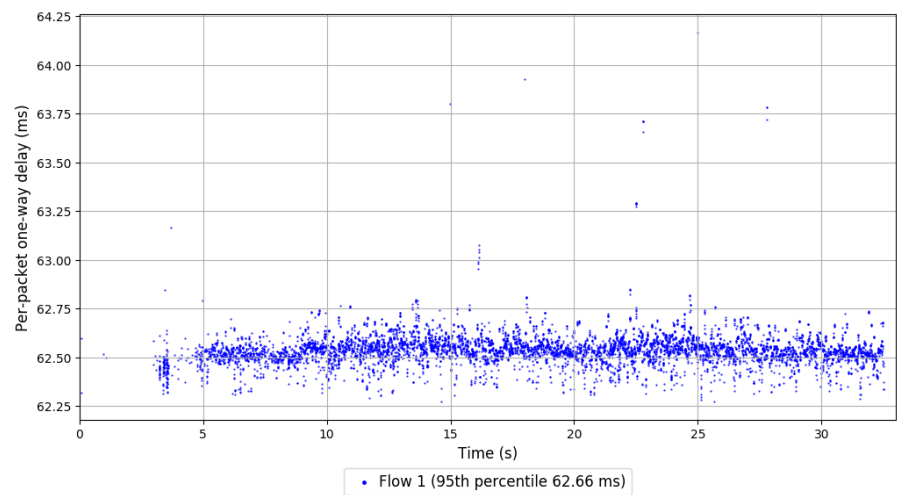
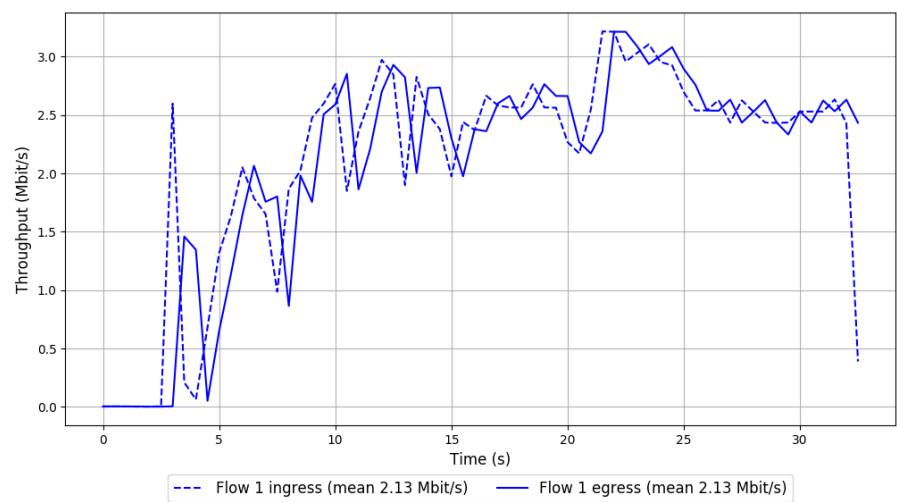
-- Flow 1:

Average throughput: 2.13 Mbit/s

95th percentile per-packet one-way delay: 62.658 ms

Loss rate: 0.49%

Run 2: Report of WebRTC media — Data Link

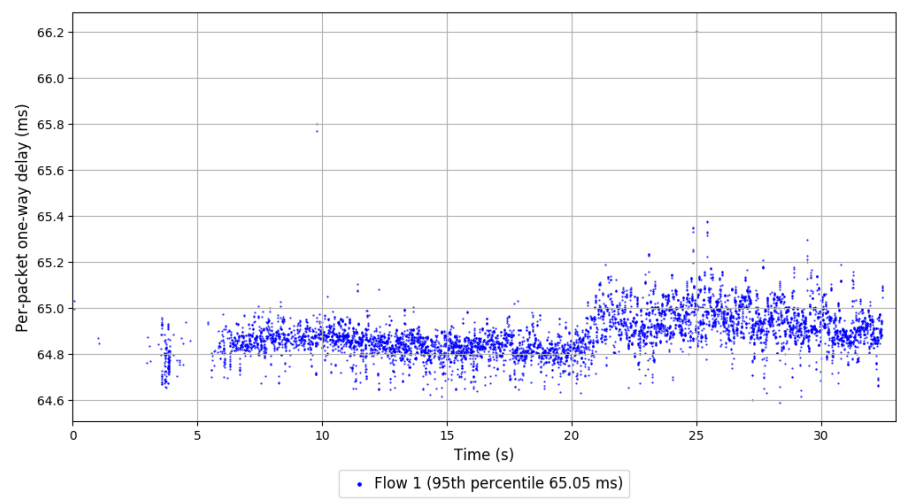
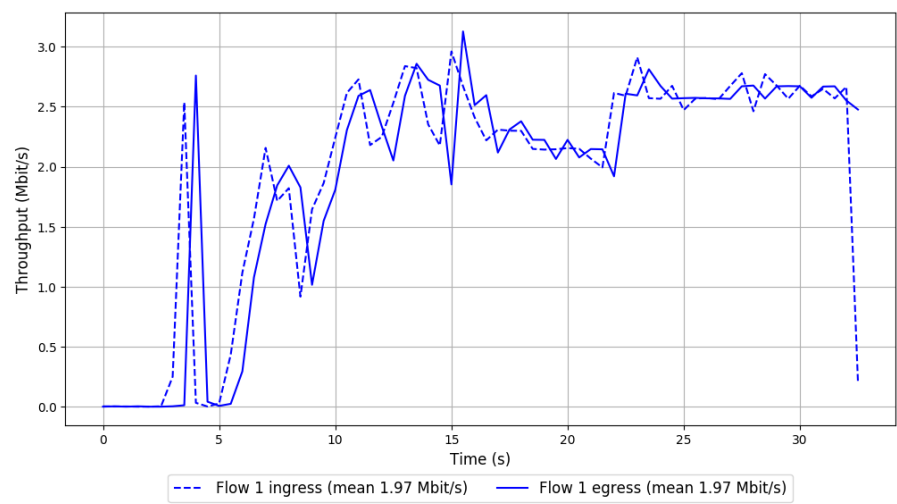


Run 3: Statistics of WebRTC media

Start at: 2018-11-03 03:46:02  
End at: 2018-11-03 03:46:32  
Local clock offset: -0.064 ms  
Remote clock offset: -1.614 ms

# Below is generated by plot.py at 2018-11-03 06:30:54  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 1.97 Mbit/s  
95th percentile per-packet one-way delay: 65.051 ms  
Loss rate: 0.56%  
-- Flow 1:  
Average throughput: 1.97 Mbit/s  
95th percentile per-packet one-way delay: 65.051 ms  
Loss rate: 0.56%

Run 3: Report of WebRTC media — Data Link

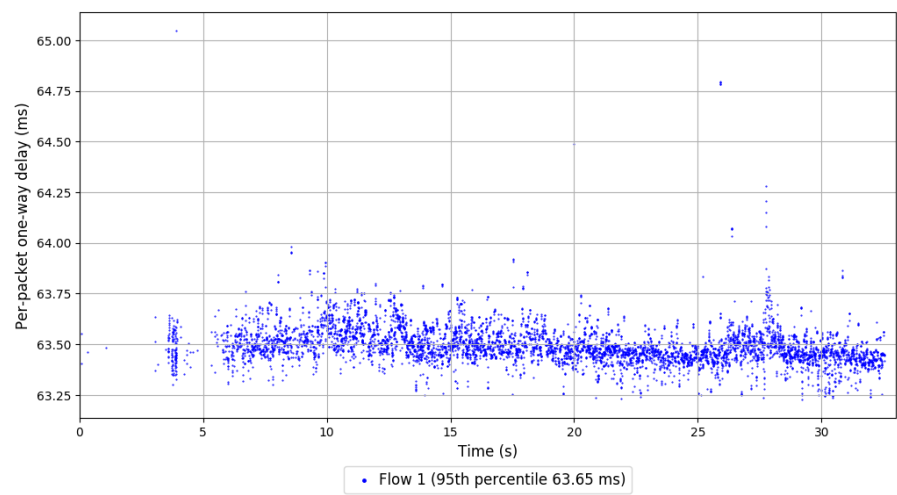
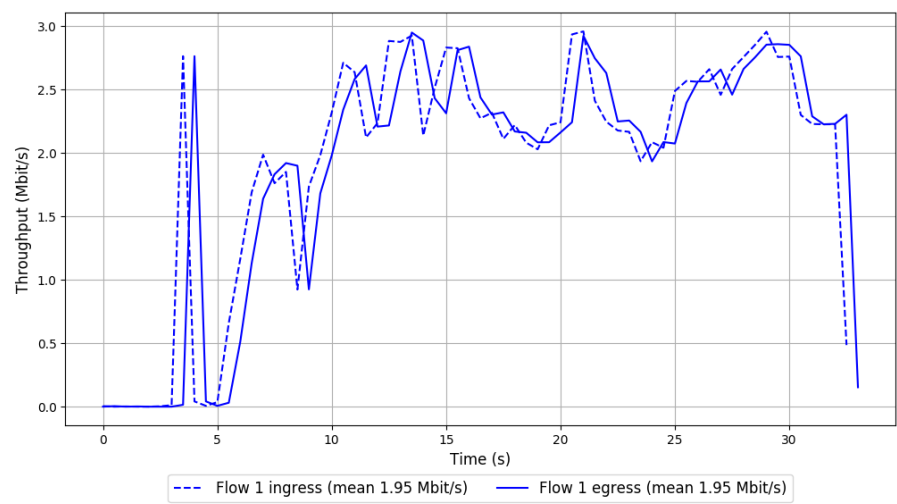


Run 4: Statistics of WebRTC media

Start at: 2018-11-03 04:12:14  
End at: 2018-11-03 04:12:44  
Local clock offset: -0.088 ms  
Remote clock offset: -0.635 ms

# Below is generated by plot.py at 2018-11-03 06:30:54  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 1.95 Mbit/s  
95th percentile per-packet one-way delay: 63.653 ms  
Loss rate: 0.44%  
-- Flow 1:  
Average throughput: 1.95 Mbit/s  
95th percentile per-packet one-way delay: 63.653 ms  
Loss rate: 0.44%

Run 4: Report of WebRTC media — Data Link



Run 5: Statistics of WebRTC media

Start at: 2018-11-03 04:38:43

End at: 2018-11-03 04:39:13

Local clock offset: -0.174 ms

Remote clock offset: 0.03 ms

# Below is generated by plot.py at 2018-11-03 06:30:54

# Datalink statistics

-- Total of 1 flow:

Average throughput: 1.31 Mbit/s

95th percentile per-packet one-way delay: 63.064 ms

Loss rate: 0.63%

-- Flow 1:

Average throughput: 1.31 Mbit/s

95th percentile per-packet one-way delay: 63.064 ms

Loss rate: 0.63%

Run 5: Report of WebRTC media — Data Link

