

## Pantheon Report

Generated at 2018-12-11 17:48:50 (UTC).

Data path: Colombia on **p4p1** (*remote*) → AWS Brazil 2 on **ens5** (*local*).

Repeated the test of 19 congestion control schemes 5 times.

Each test lasted for 30 seconds running 1 flow.

NTP offsets were measured against **gps.ntp.br** and have been applied to correct the timestamps in logs.

### System info:

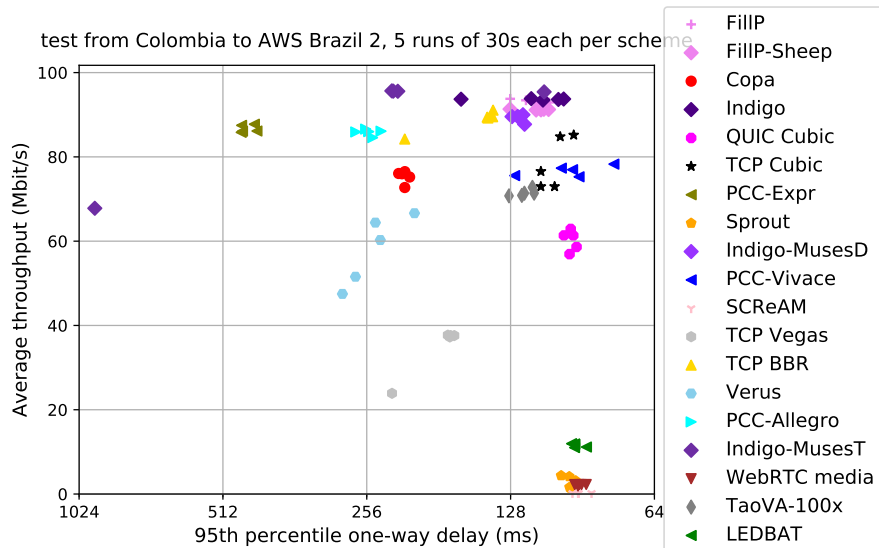
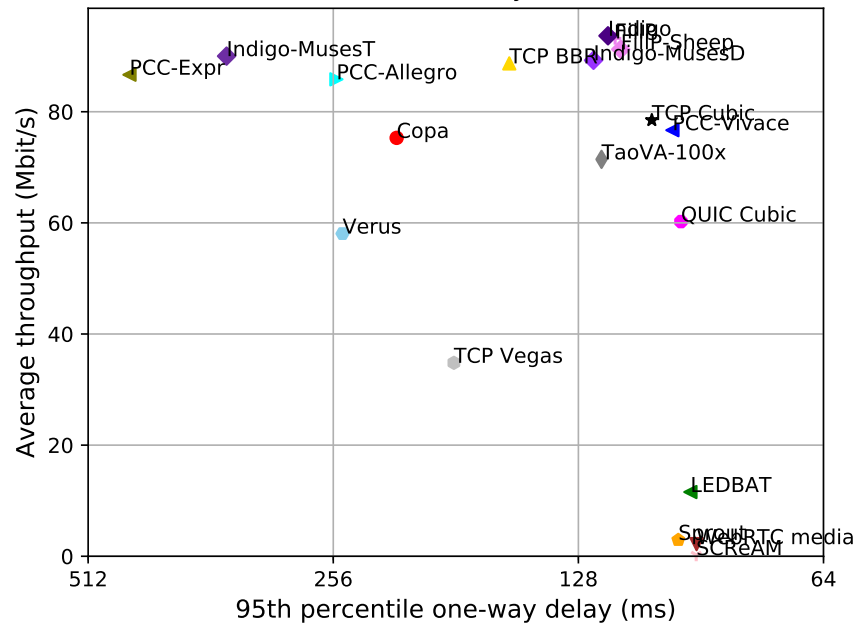
```
Linux 4.15.0-1029-aws
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912
```

### Git summary:

```
branch: muses @ c654af0b7d59d4ef4b914cfac404e1fc2e96dc68
third_party/fillp @ d6da1459332fcee56963885d7eba17e6a32d4519
third_party/fillp-sheep @ 0e5bb722943babcd2b090d2c64fcd45e12e923f9
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdfc58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecd90c077e64d
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/muses @ 65ac1b19bbefed0c6349ae986009b4fa8643c40a
third_party/muses-refactored @ 31f8f0ba8ef8b1da76c2bc0cd0a7850c33ff64fb
third_party/pantheon-tunnel @ f866d3f58d27afd942717625ee3a354cc2e802bd
third_party/pcc @ 1afc958fa0d66d18b623c091a55fec872b4981e1
M receiver/src/buffer.h
M receiver/src/core.cpp
M sender/src/buffer.h
M sender/src/core.cpp
third_party/pcc-experimental @ cd43e34e3f5f5613e8acd08fab92c4eb24f974ab
third_party/proto-quick @ 77961f1a82733a86b42f1bc8143ebc978f3cff42
third_party/scream-reproduce @ f099118d1421aa3131bf11ff1964974e1da3bdb2
M src/ScreamClient
M src/ScreamServer
third_party/sprout @ 366e35c6178b01e31d4a46ad18c74f9415f19a26
M src/examples/cellsim.cc
M src/examples/sproutbt2.cc
M src/network/sproutconn.cc
third_party/verus @ d4b447ea74c6c60a261149af2629562939f9a494
M src/verus.hpp
M tools/plot.py
```

third\_party/vivace @ 2baf86211435ae071a32f96b7d8c504587f5d7f4  
third\_party/webrtc @ 3f0cc2a9061a41b6f9dde4735770d143a1fa2851

test from Colombia to AWS Brazil 2, 5 runs of 30s each per scheme  
(mean of all runs by scheme)



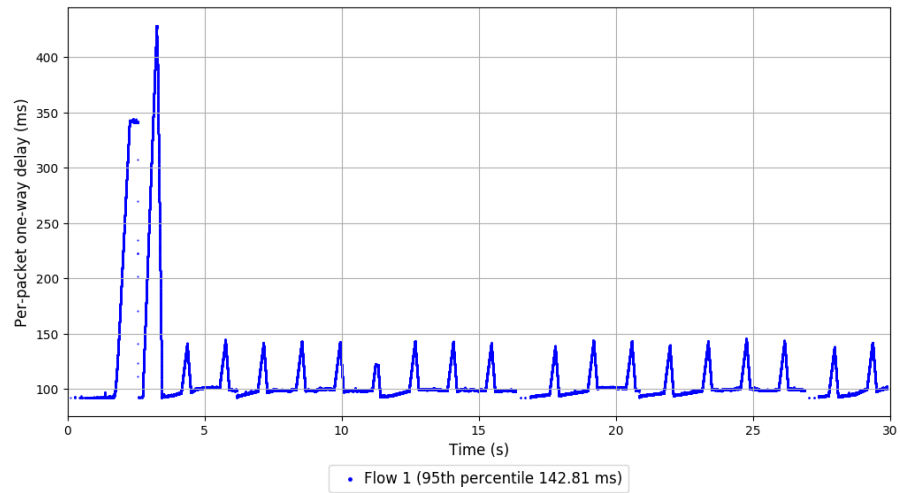
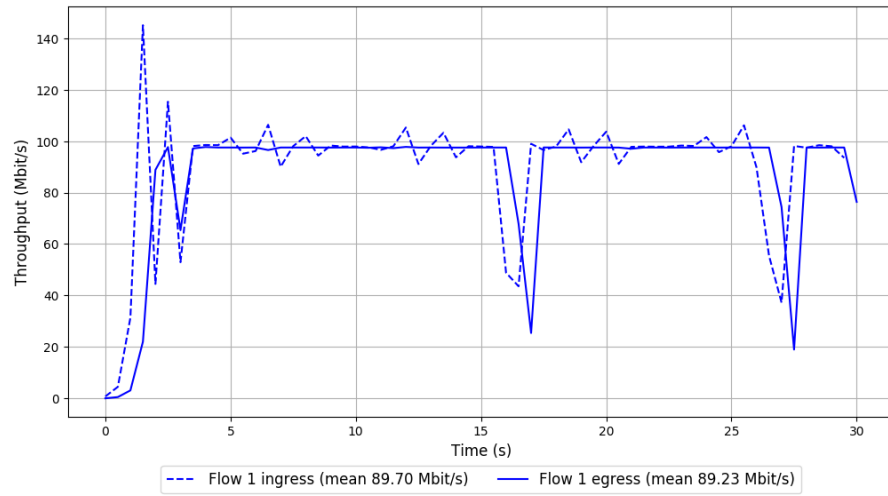
scheme	# runs	mean avg tput (Mbit/s) flow 1	mean 95th-%ile delay (ms) flow 1	mean loss rate (%) flow 1
TCP BBR	5	88.71	155.62	1.21
Copa	5	75.30	214.00	0.88
TCP Cubic	5	78.49	104.00	0.61
FillP	5	93.19	115.37	0.71
FillP-Sheep	5	91.23	113.55	0.65
Indigo	5	93.67	117.73	2.17
Indigo-MusesD	5	89.26	122.64	0.91
Indigo-MusesT	5	90.01	346.17	7.13
LEDBAT	5	11.56	93.25	1.17
PCC-Allegro	5	85.83	253.72	0.75
PCC-Expr	5	86.66	455.54	1.58
QUIC Cubic	5	60.23	95.78	0.89
SCReAM	5	0.22	91.73	0.54
Sprout	5	2.94	96.50	0.76
TaoVA-100x	5	71.43	119.89	0.74
TCP Vegas	5	34.81	182.02	0.68
Verus	5	58.07	249.39	0.80
PCC-Vivace	5	76.68	98.12	0.72
WebRTC media	5	2.18	91.64	0.37

Run 1: Statistics of TCP BBR

Start at: 2018-12-11 15:53:56  
End at: 2018-12-11 15:54:26  
Local clock offset: -5.739 ms  
Remote clock offset: 182.669 ms

# Below is generated by plot.py at 2018-12-11 17:39:10  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 89.23 Mbit/s  
95th percentile per-packet one-way delay: 142.806 ms  
Loss rate: 1.11%  
-- Flow 1:  
Average throughput: 89.23 Mbit/s  
95th percentile per-packet one-way delay: 142.806 ms  
Loss rate: 1.11%

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

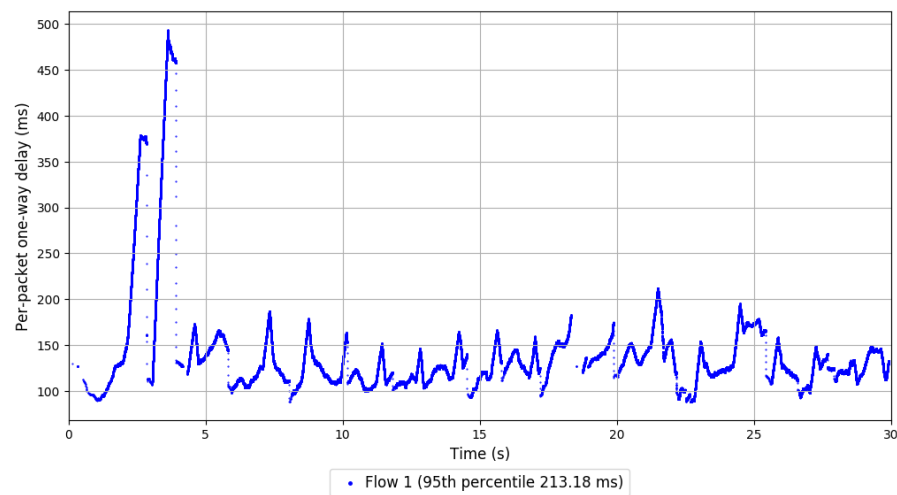
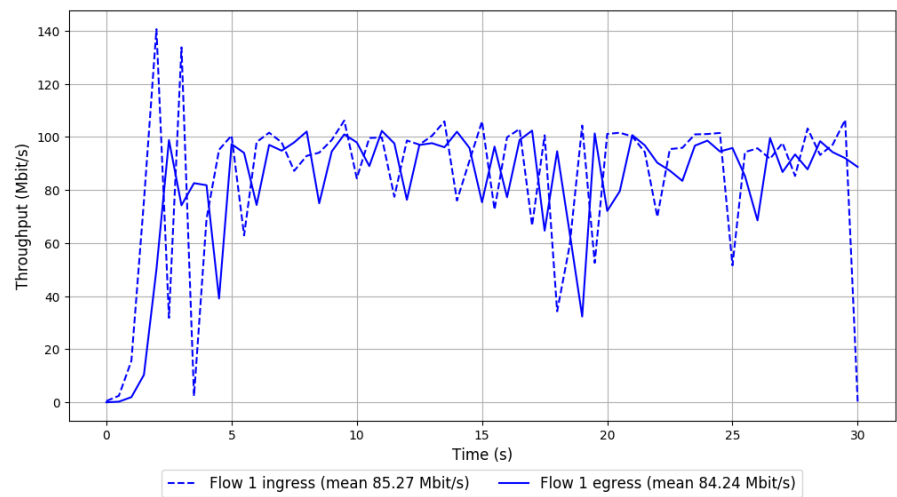


Run 2: Statistics of TCP BBR

Start at: 2018-12-11 16:16:29  
End at: 2018-12-11 16:16:59  
Local clock offset: -5.514 ms  
Remote clock offset: 200.586 ms

# Below is generated by plot.py at 2018-12-11 17:39:10  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 84.24 Mbit/s  
95th percentile per-packet one-way delay: 213.183 ms  
Loss rate: 1.93%  
-- Flow 1:  
Average throughput: 84.24 Mbit/s  
95th percentile per-packet one-way delay: 213.183 ms  
Loss rate: 1.93%

Run 2: Report of TCP BBR — Data Link



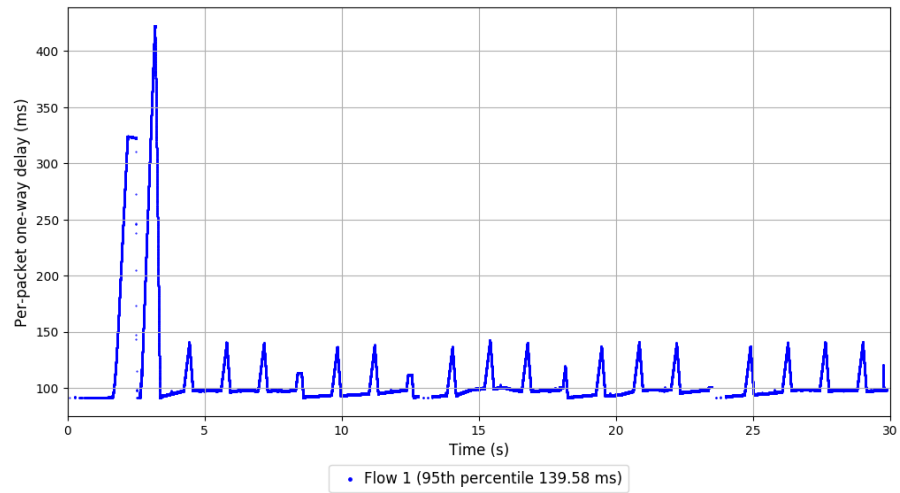
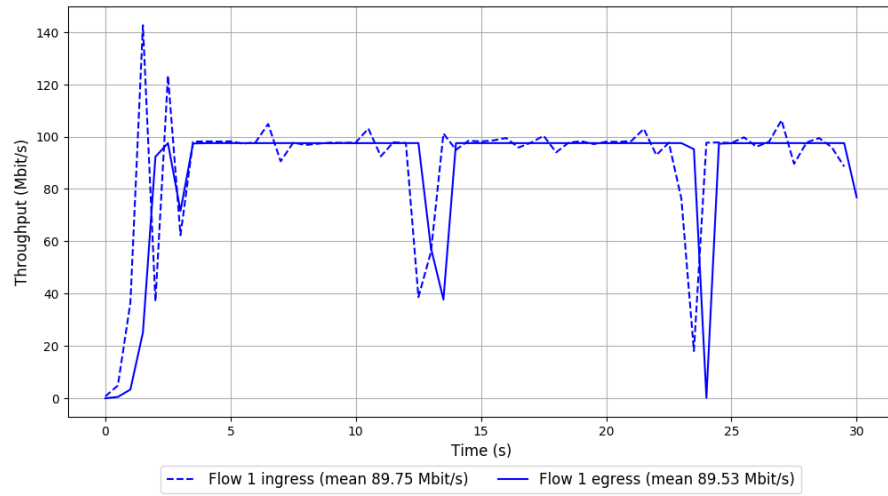


Run 3: Statistics of TCP BBR

Start at: 2018-12-11 16:39:08  
End at: 2018-12-11 16:39:38  
Local clock offset: -5.287 ms  
Remote clock offset: 209.464 ms

# Below is generated by plot.py at 2018-12-11 17:39:10  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 89.53 Mbit/s  
95th percentile per-packet one-way delay: 139.576 ms  
Loss rate: 0.81%  
-- Flow 1:  
Average throughput: 89.53 Mbit/s  
95th percentile per-packet one-way delay: 139.576 ms  
Loss rate: 0.81%

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

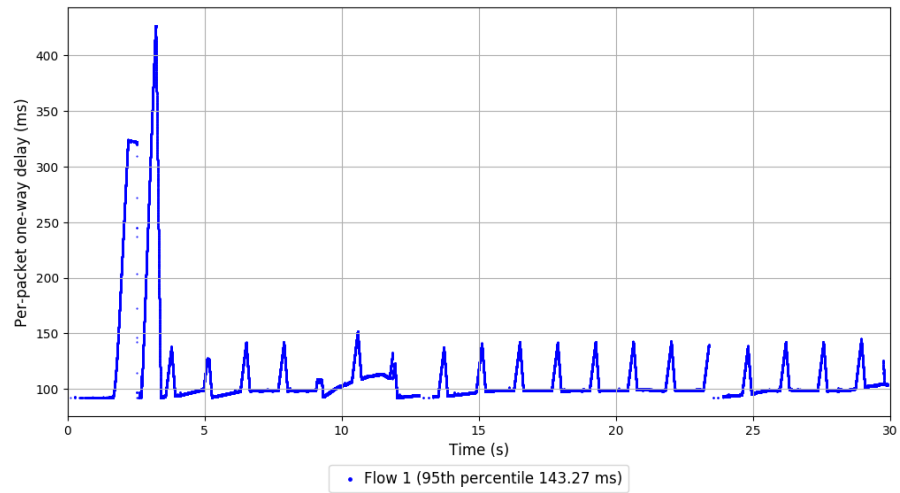
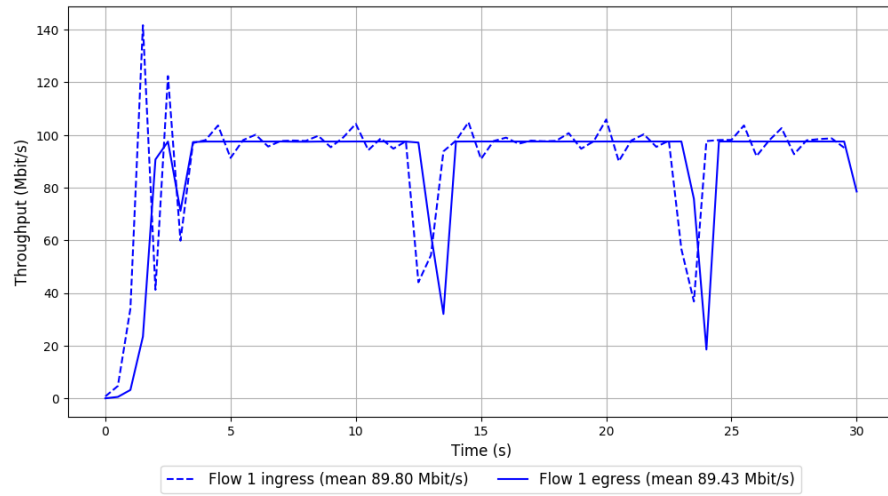


Run 4: Statistics of TCP BBR

Start at: 2018-12-11 17:01:40  
End at: 2018-12-11 17:02:10  
Local clock offset: -3.723 ms  
Remote clock offset: 224.546 ms

# Below is generated by plot.py at 2018-12-11 17:39:11  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 89.43 Mbit/s  
95th percentile per-packet one-way delay: 143.270 ms  
Loss rate: 0.99%  
-- Flow 1:  
Average throughput: 89.43 Mbit/s  
95th percentile per-packet one-way delay: 143.270 ms  
Loss rate: 0.99%

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

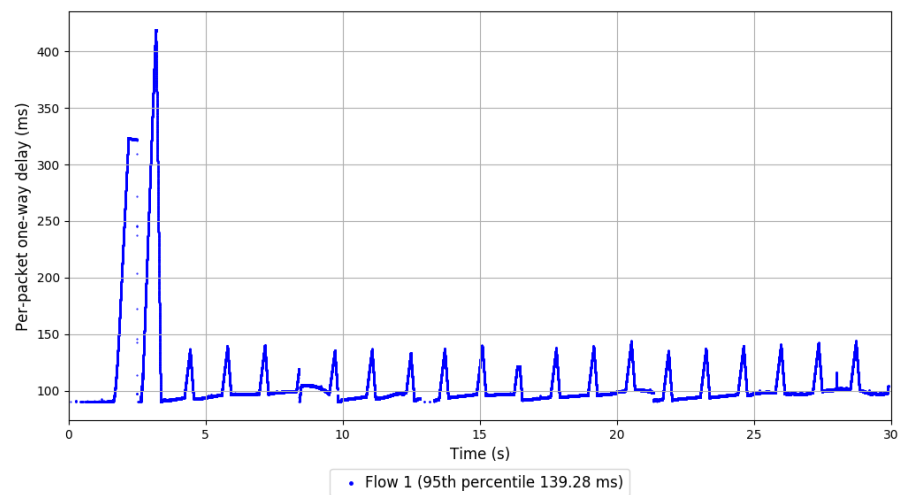
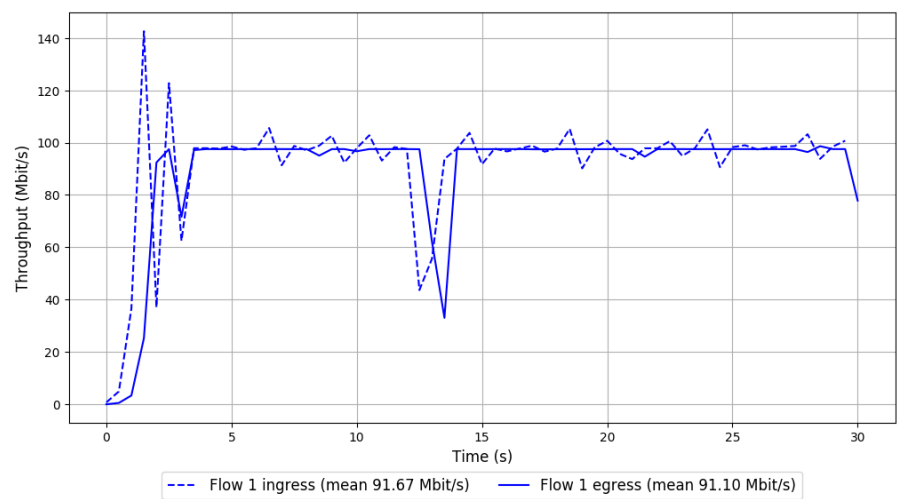


Run 5: Statistics of TCP BBR

Start at: 2018-12-11 17:24:13  
End at: 2018-12-11 17:24:43  
Local clock offset: -6.493 ms  
Remote clock offset: 238.742 ms

# Below is generated by plot.py at 2018-12-11 17:39:12  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 91.10 Mbit/s  
95th percentile per-packet one-way delay: 139.276 ms  
Loss rate: 1.19%  
-- Flow 1:  
Average throughput: 91.10 Mbit/s  
95th percentile per-packet one-way delay: 139.276 ms  
Loss rate: 1.19%

Run 5: Report of TCP BBR — Data Link

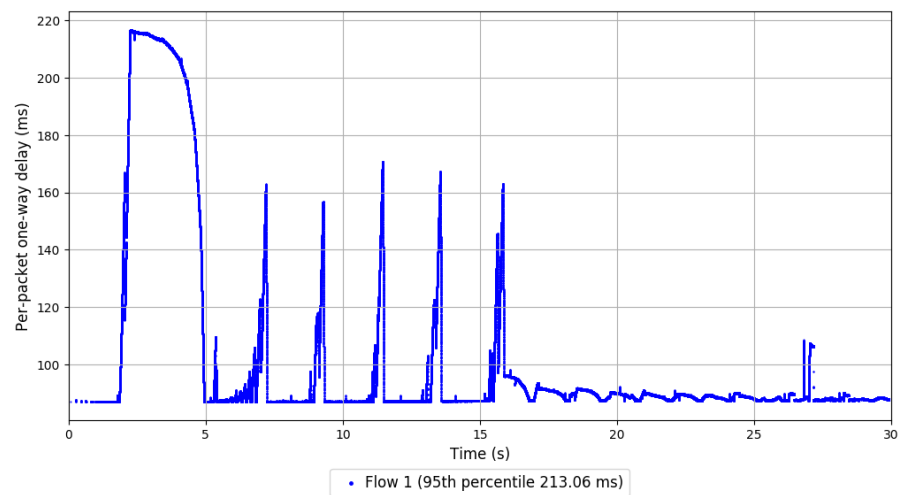
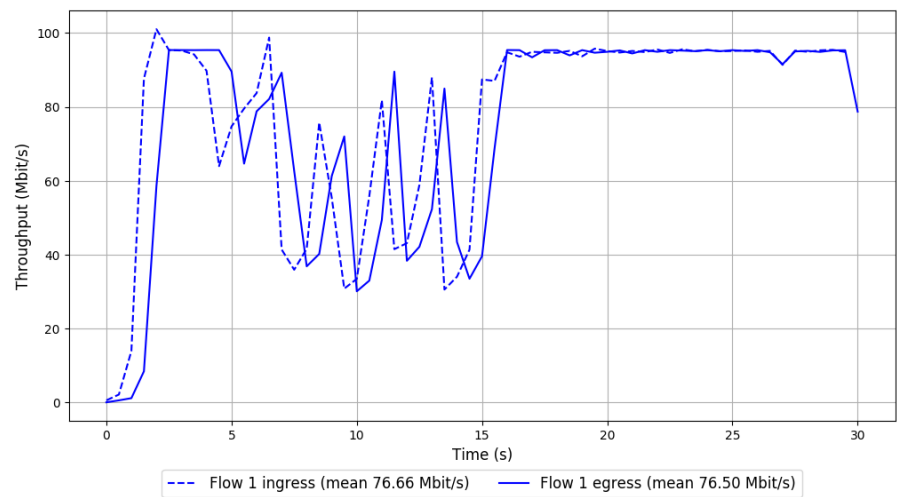


Run 1: Statistics of Copa

Start at: 2018-12-11 16:02:12  
End at: 2018-12-11 16:02:42  
Local clock offset: -5.77 ms  
Remote clock offset: 192.829 ms

# Below is generated by plot.py at 2018-12-11 17:39:53  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 76.50 Mbit/s  
95th percentile per-packet one-way delay: 213.060 ms  
Loss rate: 0.79%  
-- Flow 1:  
Average throughput: 76.50 Mbit/s  
95th percentile per-packet one-way delay: 213.060 ms  
Loss rate: 0.79%

Run 1: Report of Copa — Data Link



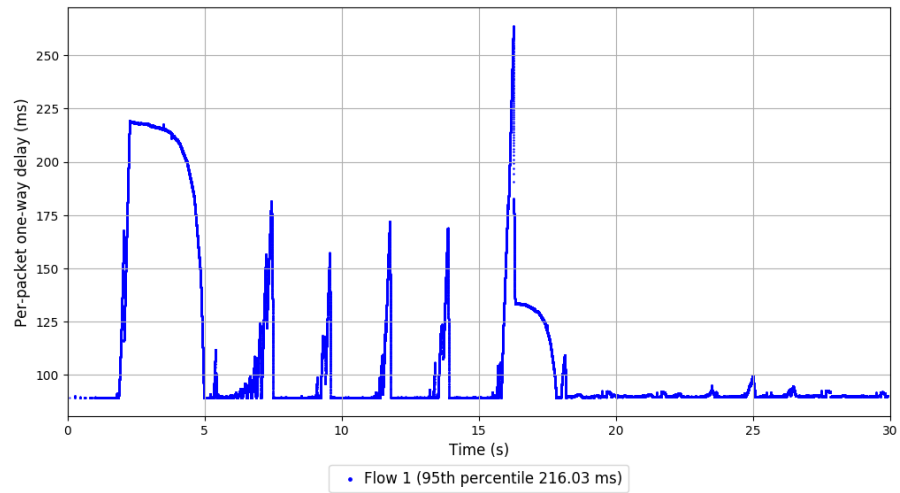
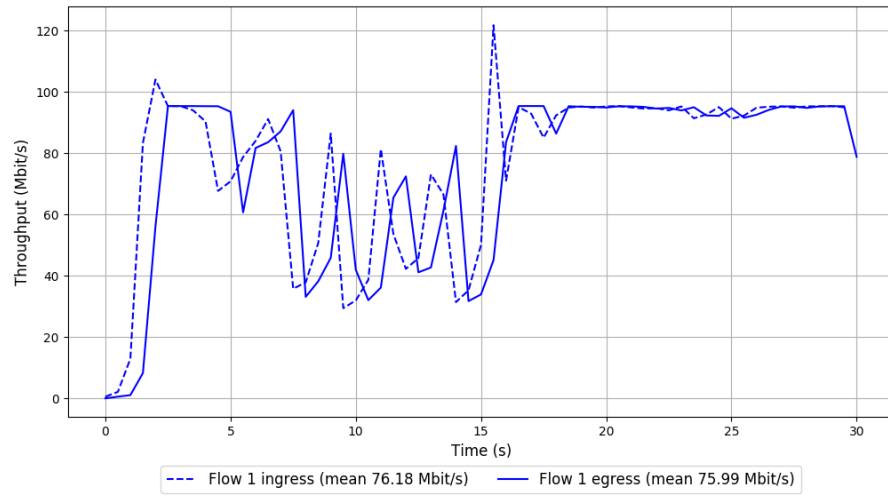


Run 2: Statistics of Copa

Start at: 2018-12-11 16:24:47  
End at: 2018-12-11 16:25:17  
Local clock offset: -5.344 ms  
Remote clock offset: 204.464 ms

# Below is generated by plot.py at 2018-12-11 17:39:53  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 75.99 Mbit/s  
95th percentile per-packet one-way delay: 216.033 ms  
Loss rate: 0.82%  
-- Flow 1:  
Average throughput: 75.99 Mbit/s  
95th percentile per-packet one-way delay: 216.033 ms  
Loss rate: 0.82%

## Run 2: Report of Copa — Data Link

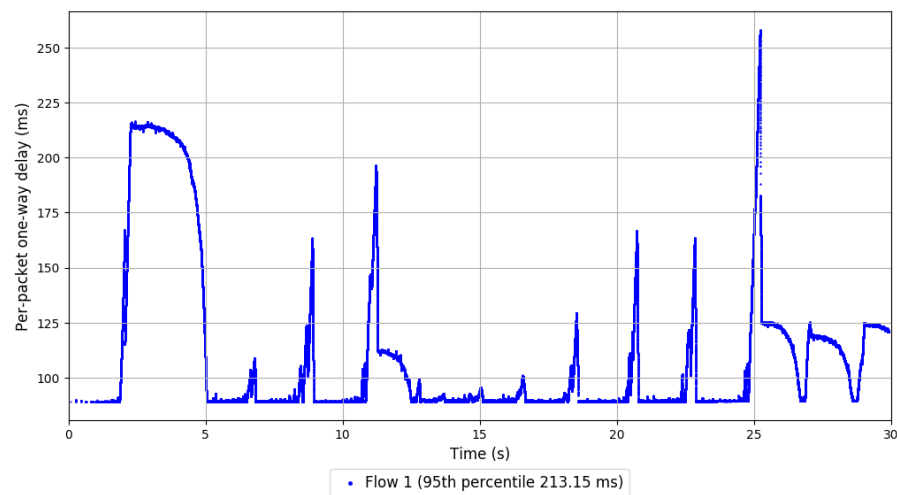
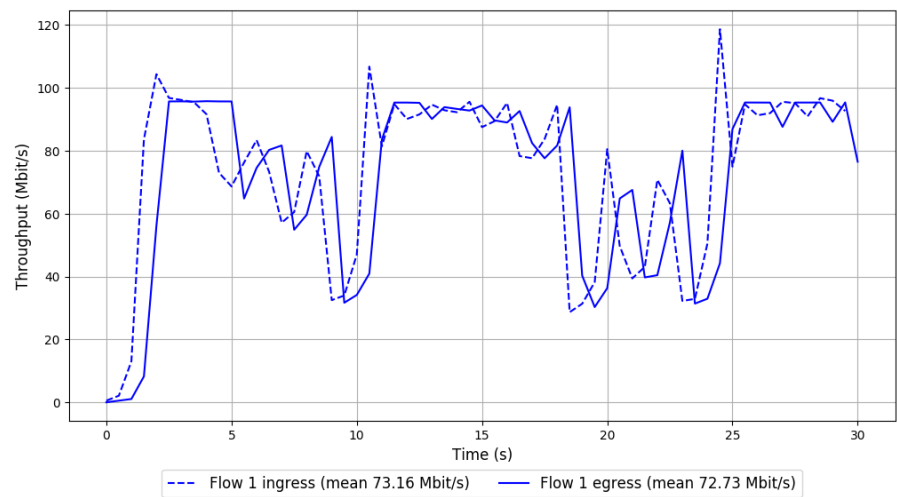


Run 3: Statistics of Copa

Start at: 2018-12-11 16:47:24  
End at: 2018-12-11 16:47:54  
Local clock offset: -4.329 ms  
Remote clock offset: 218.924 ms

# Below is generated by plot.py at 2018-12-11 17:39:53  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 72.73 Mbit/s  
95th percentile per-packet one-way delay: 213.149 ms  
Loss rate: 1.17%  
-- Flow 1:  
Average throughput: 72.73 Mbit/s  
95th percentile per-packet one-way delay: 213.149 ms  
Loss rate: 1.17%

Run 3: Report of Copa — Data Link

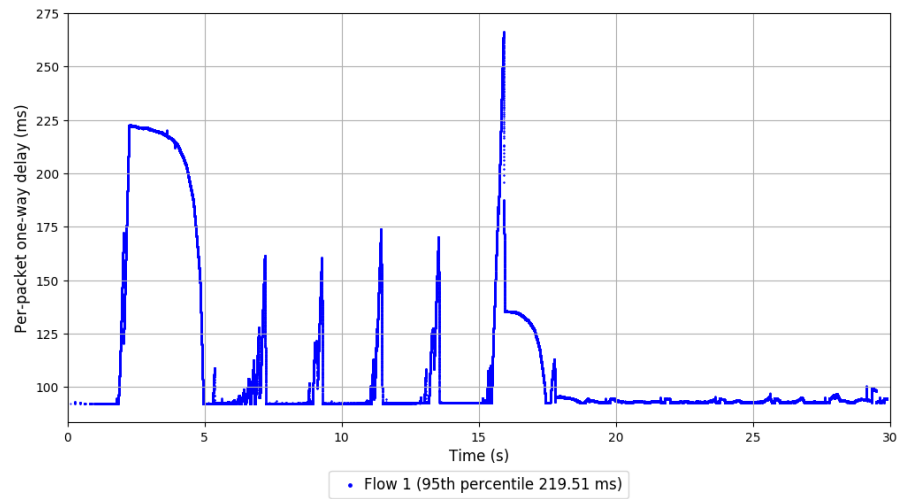
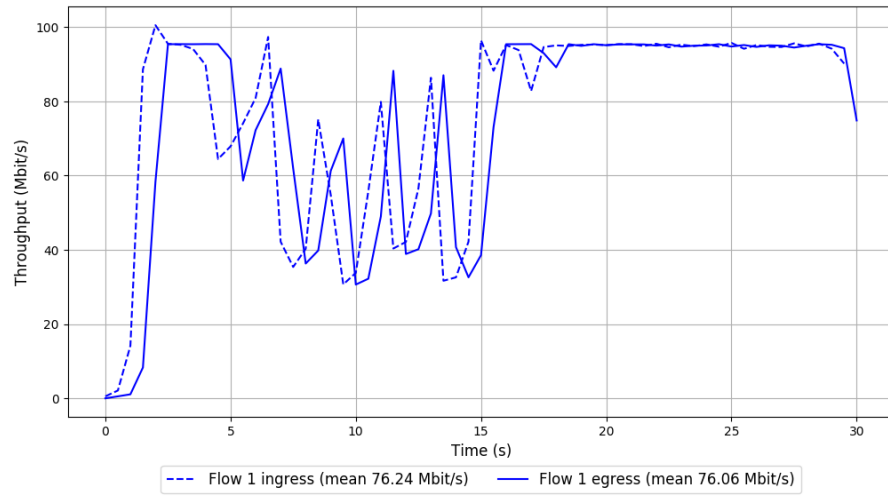


Run 4: Statistics of Copa

Start at: 2018-12-11 17:09:56  
End at: 2018-12-11 17:10:26  
Local clock offset: -4.051 ms  
Remote clock offset: 229.874 ms

# Below is generated by plot.py at 2018-12-11 17:40:45  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 76.06 Mbit/s  
95th percentile per-packet one-way delay: 219.511 ms  
Loss rate: 0.81%  
-- Flow 1:  
Average throughput: 76.06 Mbit/s  
95th percentile per-packet one-way delay: 219.511 ms  
Loss rate: 0.81%

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

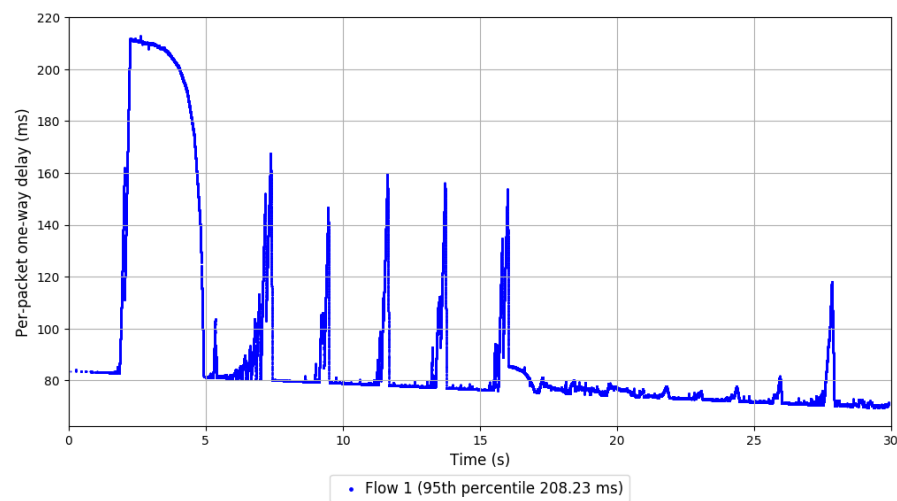
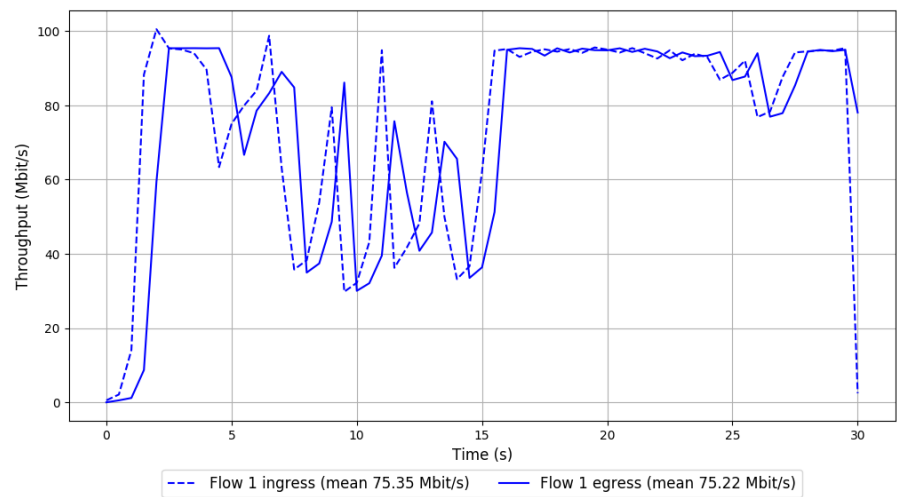


Run 5: Statistics of Copa

Start at: 2018-12-11 17:32:27  
End at: 2018-12-11 17:32:57  
Local clock offset: -7.062 ms  
Remote clock offset: -22.909 ms

# Below is generated by plot.py at 2018-12-11 17:40:46  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 75.22 Mbit/s  
95th percentile per-packet one-way delay: 208.232 ms  
Loss rate: 0.80%  
-- Flow 1:  
Average throughput: 75.22 Mbit/s  
95th percentile per-packet one-way delay: 208.232 ms  
Loss rate: 0.80%

Run 5: Report of Copa — Data Link



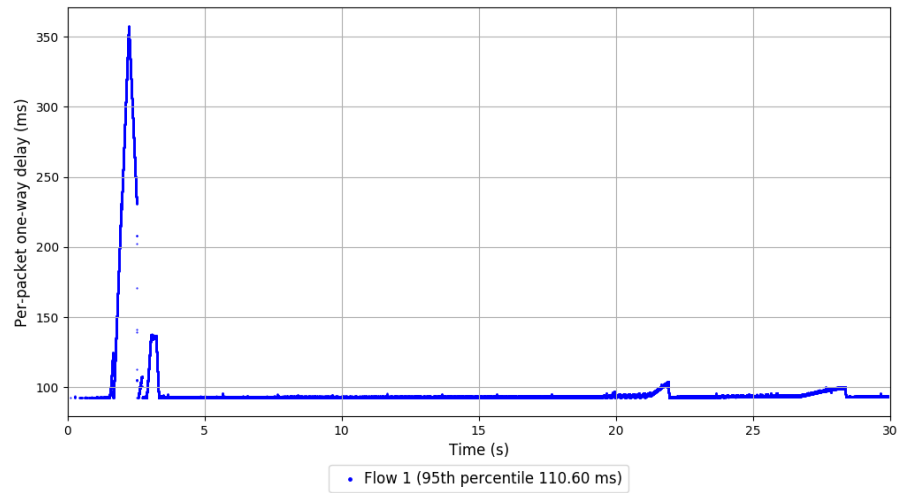
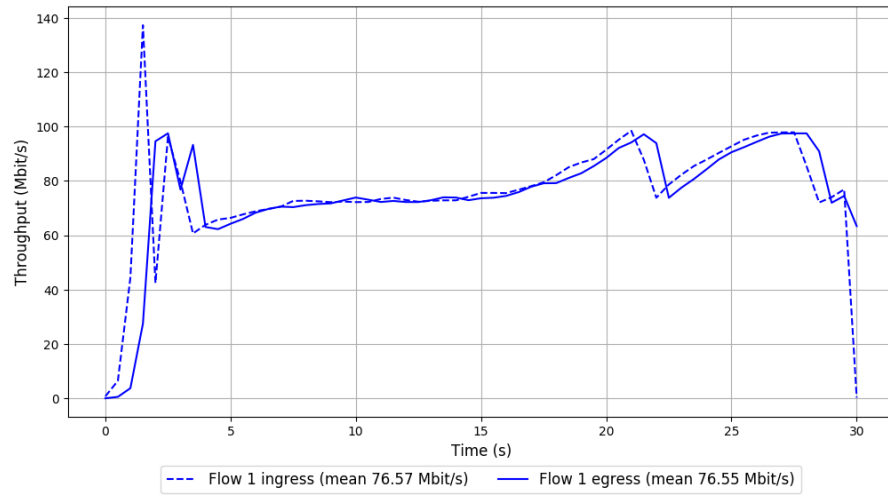


Run 1: Statistics of TCP Cubic

Start at: 2018-12-11 15:49:08  
End at: 2018-12-11 15:49:38  
Local clock offset: -5.826 ms  
Remote clock offset: 179.595 ms

# Below is generated by plot.py at 2018-12-11 17:40:46  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 76.55 Mbit/s  
95th percentile per-packet one-way delay: 110.603 ms  
Loss rate: 0.61%  
-- Flow 1:  
Average throughput: 76.55 Mbit/s  
95th percentile per-packet one-way delay: 110.603 ms  
Loss rate: 0.61%

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

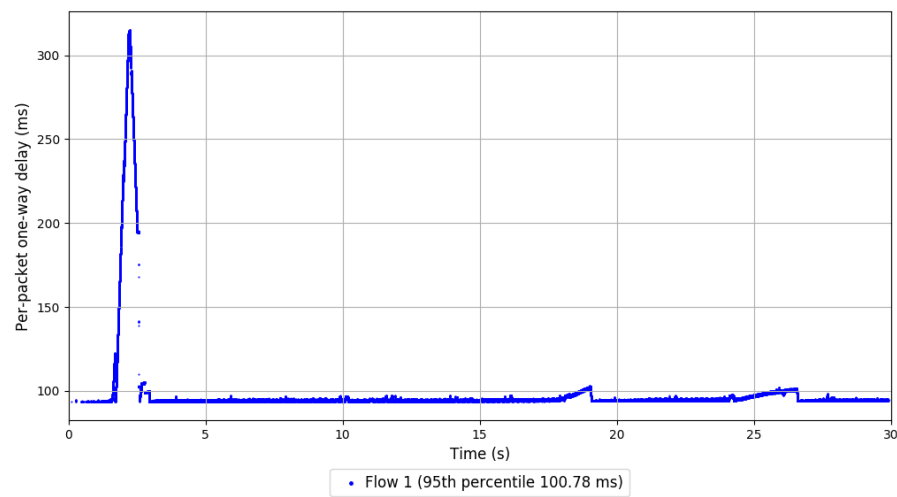
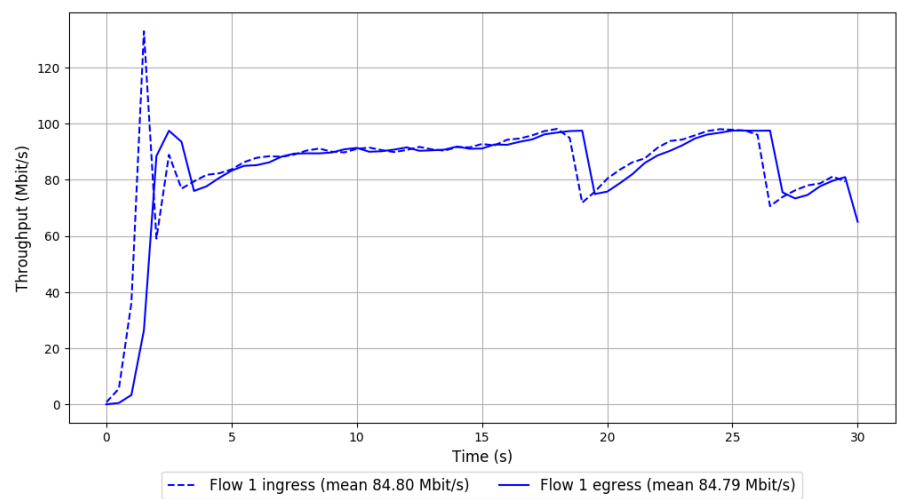


Run 2: Statistics of TCP Cubic

Start at: 2018-12-11 16:11:42  
End at: 2018-12-11 16:12:12  
Local clock offset: -5.56 ms  
Remote clock offset: 192.498 ms

# Below is generated by plot.py at 2018-12-11 17:40:46  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 84.79 Mbit/s  
95th percentile per-packet one-way delay: 100.776 ms  
Loss rate: 0.58%  
-- Flow 1:  
Average throughput: 84.79 Mbit/s  
95th percentile per-packet one-way delay: 100.776 ms  
Loss rate: 0.58%

Run 2: Report of TCP Cubic — Data Link

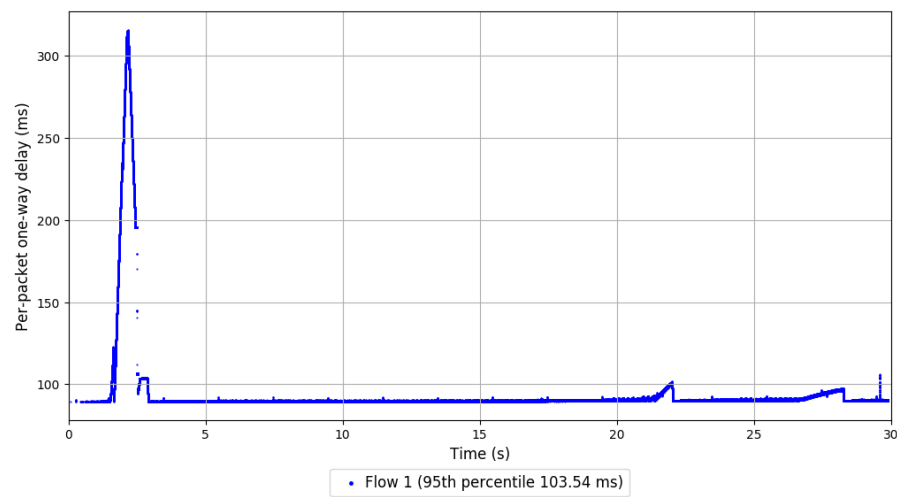
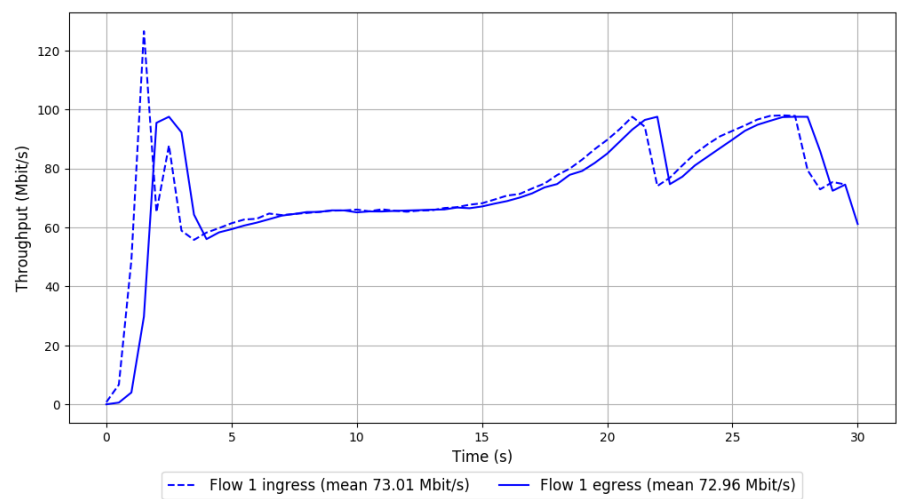


Run 3: Statistics of TCP Cubic

Start at: 2018-12-11 16:34:17  
End at: 2018-12-11 16:34:47  
Local clock offset: -5.342 ms  
Remote clock offset: 210.213 ms

# Below is generated by plot.py at 2018-12-11 17:40:46  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 72.96 Mbit/s  
95th percentile per-packet one-way delay: 103.538 ms  
Loss rate: 0.64%  
-- Flow 1:  
Average throughput: 72.96 Mbit/s  
95th percentile per-packet one-way delay: 103.538 ms  
Loss rate: 0.64%

Run 3: Report of TCP Cubic — Data Link

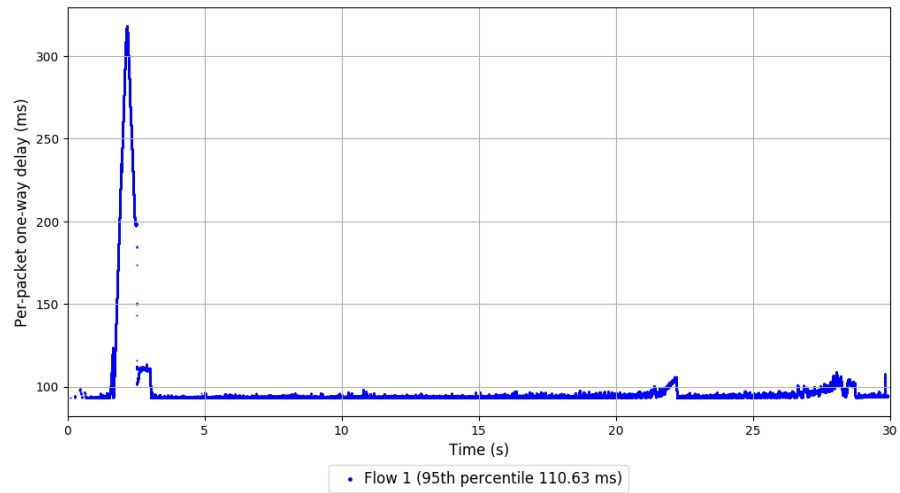
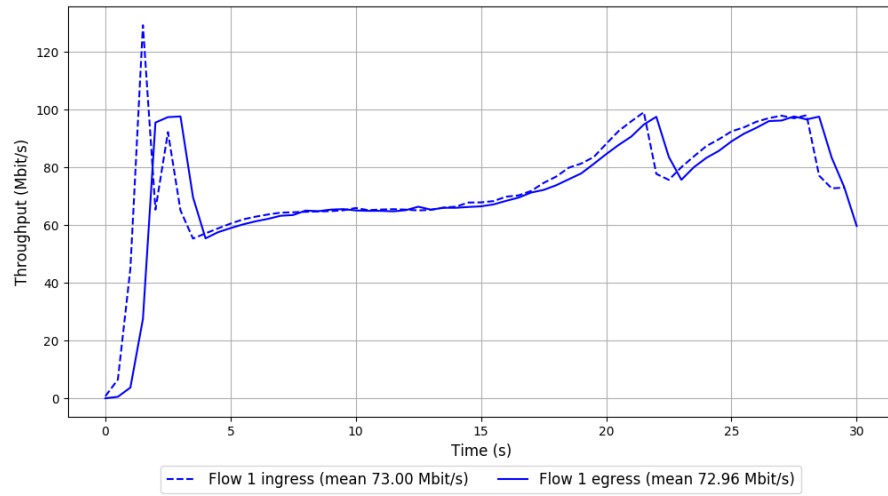


Run 4: Statistics of TCP Cubic

Start at: 2018-12-11 16:56:53  
End at: 2018-12-11 16:57:23  
Local clock offset: -3.892 ms  
Remote clock offset: 220.625 ms

# Below is generated by plot.py at 2018-12-11 17:40:46  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 72.96 Mbit/s  
95th percentile per-packet one-way delay: 110.633 ms  
Loss rate: 0.63%  
-- Flow 1:  
Average throughput: 72.96 Mbit/s  
95th percentile per-packet one-way delay: 110.633 ms  
Loss rate: 0.63%

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



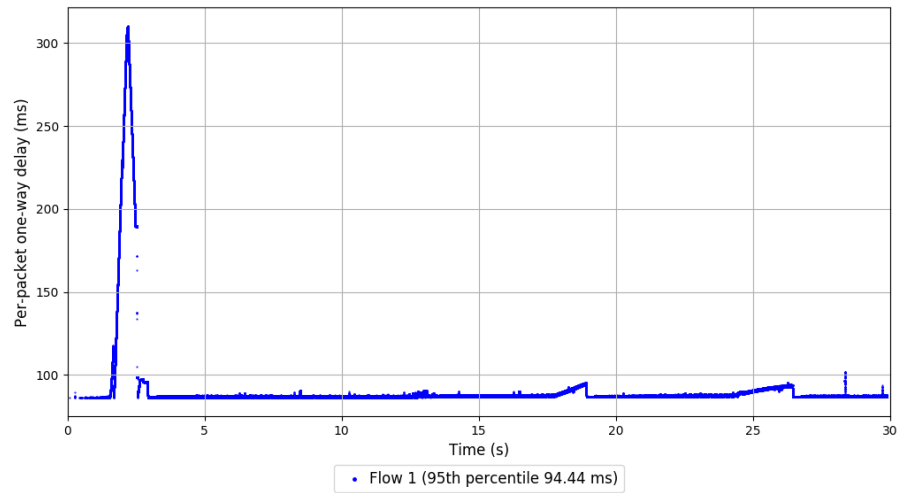
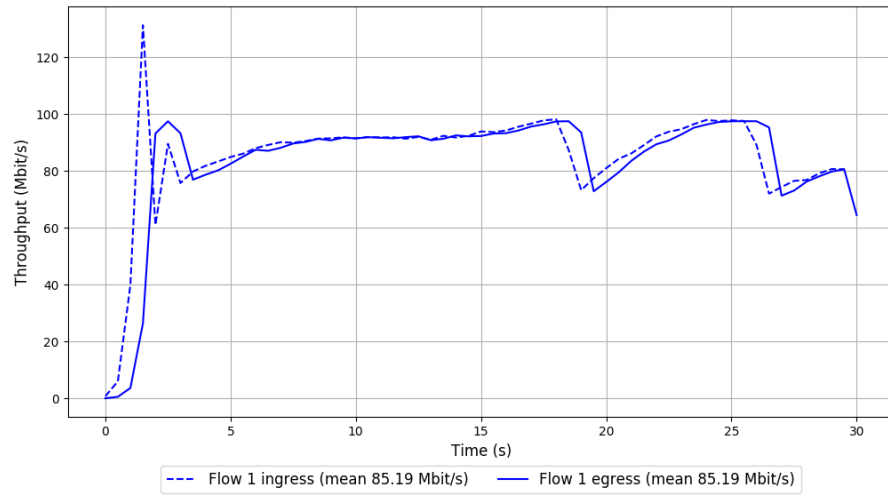


Run 5: Statistics of TCP Cubic

Start at: 2018-12-11 17:19:26  
End at: 2018-12-11 17:19:56  
Local clock offset: -6.041 ms  
Remote clock offset: 239.512 ms

# Below is generated by plot.py at 2018-12-11 17:40:49  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 85.19 Mbit/s  
95th percentile per-packet one-way delay: 94.438 ms  
Loss rate: 0.57%  
-- Flow 1:  
Average throughput: 85.19 Mbit/s  
95th percentile per-packet one-way delay: 94.438 ms  
Loss rate: 0.57%

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

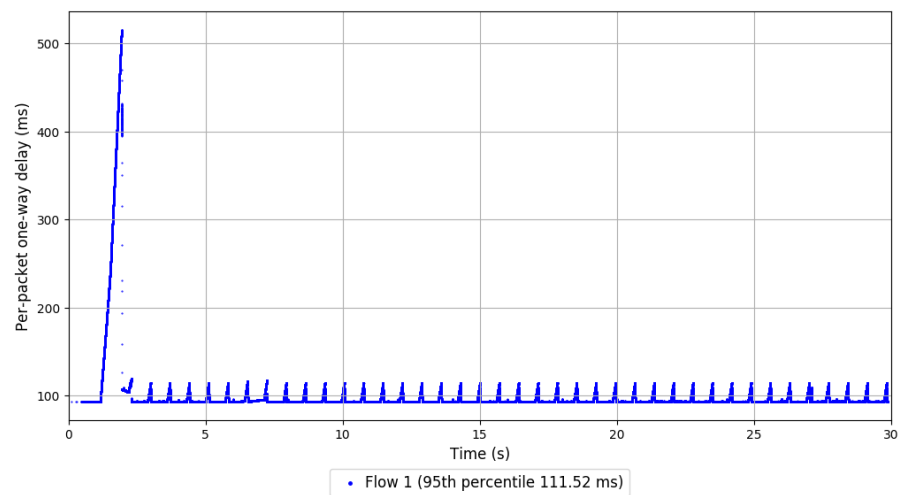
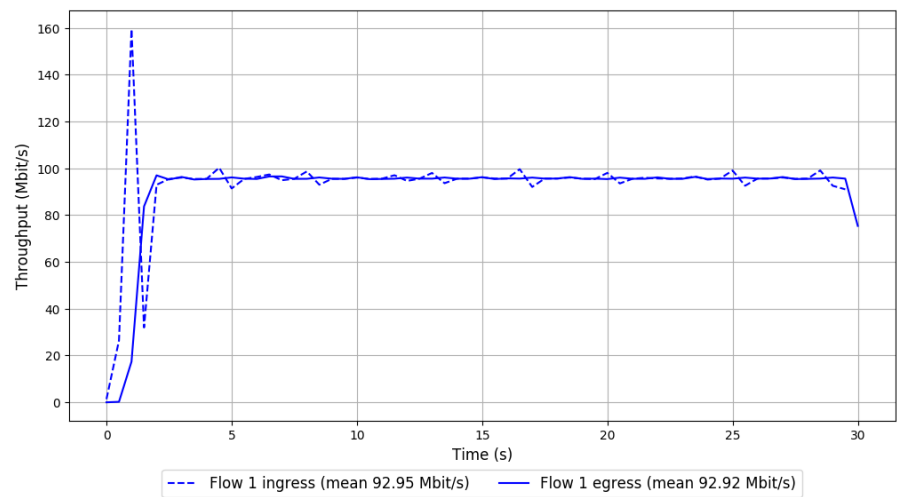


Run 1: Statistics of FillP

Start at: 2018-12-11 15:59:48  
End at: 2018-12-11 16:00:18  
Local clock offset: -5.76 ms  
Remote clock offset: 184.987 ms

# Below is generated by plot.py at 2018-12-11 17:41:13  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 92.92 Mbit/s  
95th percentile per-packet one-way delay: 111.520 ms  
Loss rate: 0.61%  
-- Flow 1:  
Average throughput: 92.92 Mbit/s  
95th percentile per-packet one-way delay: 111.520 ms  
Loss rate: 0.61%

Run 1: Report of FillP — Data Link

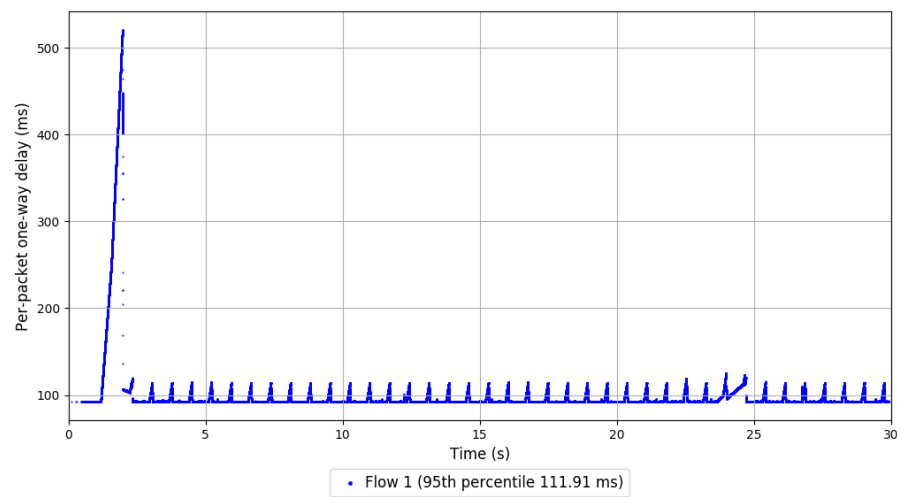
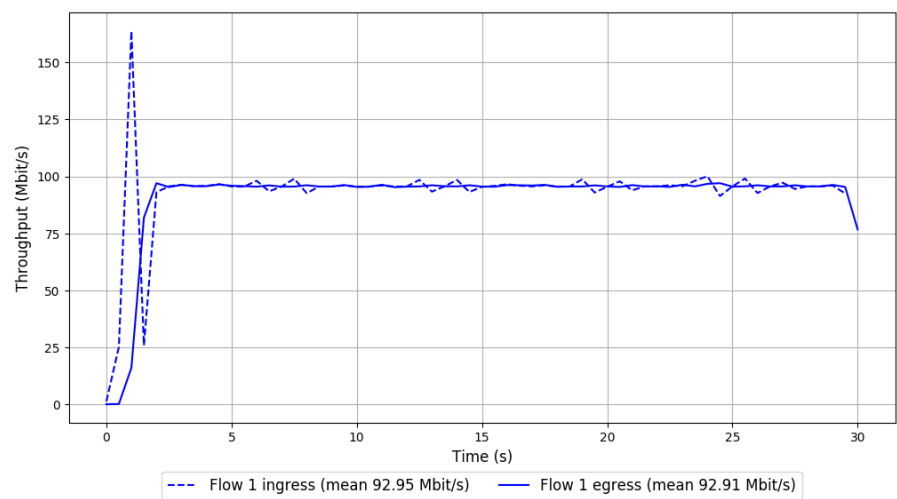


Run 2: Statistics of FillP

Start at: 2018-12-11 16:22:23  
End at: 2018-12-11 16:22:53  
Local clock offset: -5.376 ms  
Remote clock offset: 200.172 ms

# Below is generated by plot.py at 2018-12-11 17:41:19  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 92.91 Mbit/s  
95th percentile per-packet one-way delay: 111.914 ms  
Loss rate: 0.62%  
-- Flow 1:  
Average throughput: 92.91 Mbit/s  
95th percentile per-packet one-way delay: 111.914 ms  
Loss rate: 0.62%

Run 2: Report of FillP — Data Link

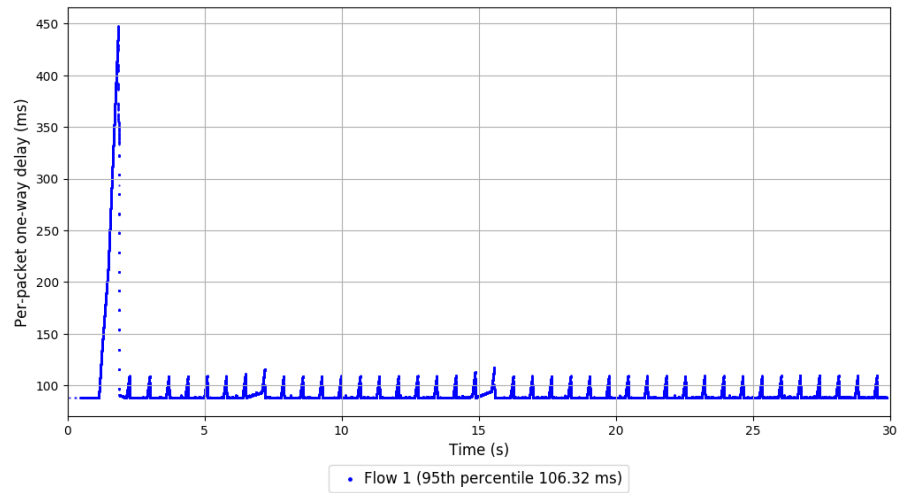
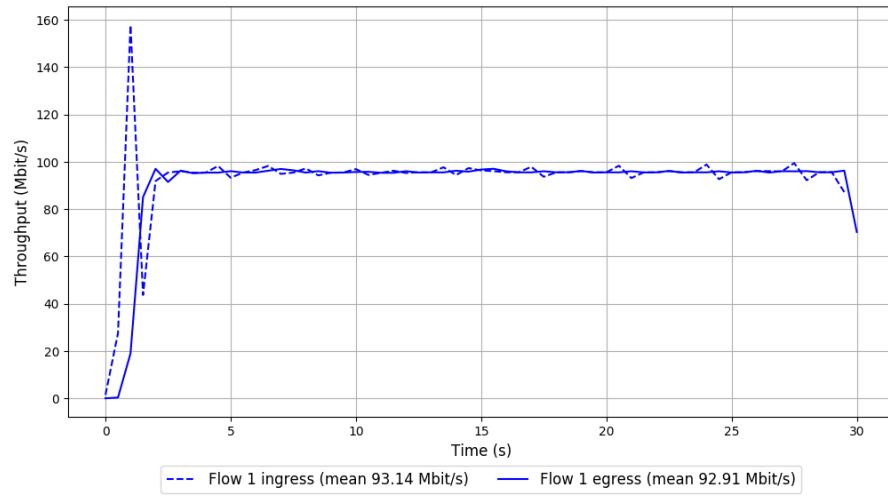


Run 3: Statistics of FillP

Start at: 2018-12-11 16:45:00  
End at: 2018-12-11 16:45:30  
Local clock offset: -4.555 ms  
Remote clock offset: 218.136 ms

# Below is generated by plot.py at 2018-12-11 17:41:20  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 92.91 Mbit/s  
95th percentile per-packet one-way delay: 106.323 ms  
Loss rate: 0.82%  
-- Flow 1:  
Average throughput: 92.91 Mbit/s  
95th percentile per-packet one-way delay: 106.323 ms  
Loss rate: 0.82%

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



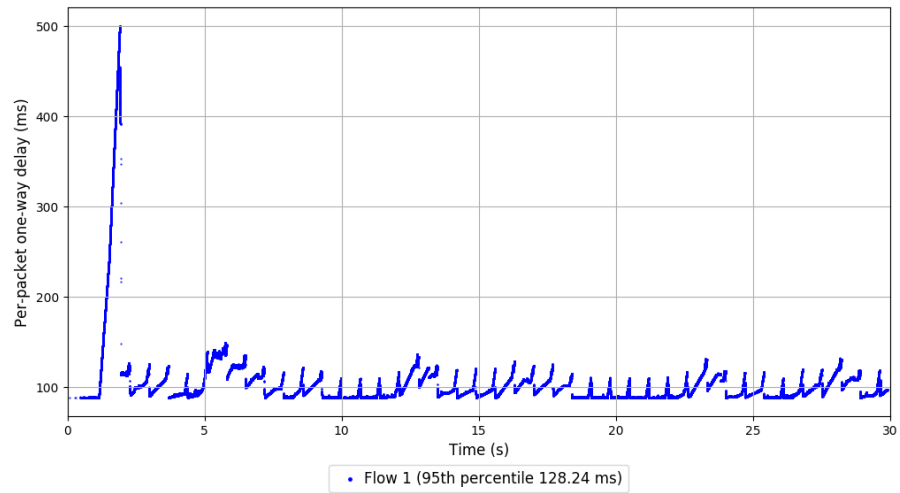
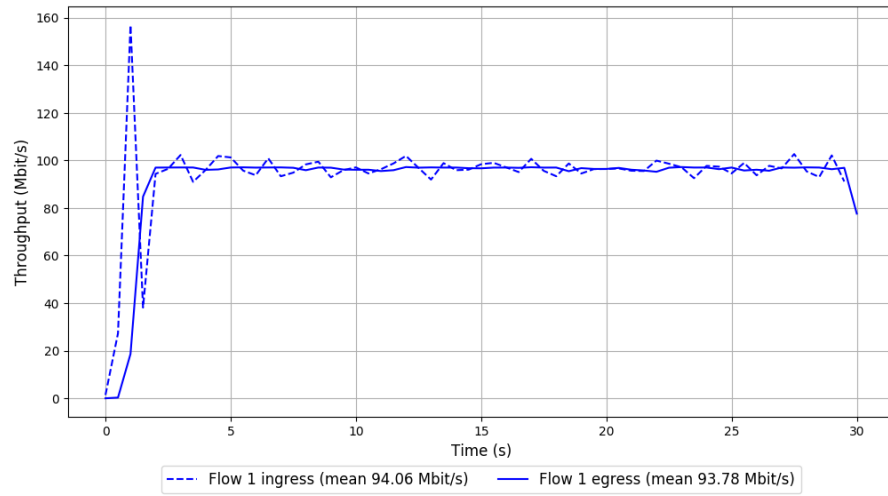


Run 4: Statistics of FillP

Start at: 2018-12-11 17:07:32  
End at: 2018-12-11 17:08:03  
Local clock offset: -3.524 ms  
Remote clock offset: 232.224 ms

# Below is generated by plot.py at 2018-12-11 17:41:26  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 93.78 Mbit/s  
95th percentile per-packet one-way delay: 128.238 ms  
Loss rate: 0.87%  
-- Flow 1:  
Average throughput: 93.78 Mbit/s  
95th percentile per-packet one-way delay: 128.238 ms  
Loss rate: 0.87%

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

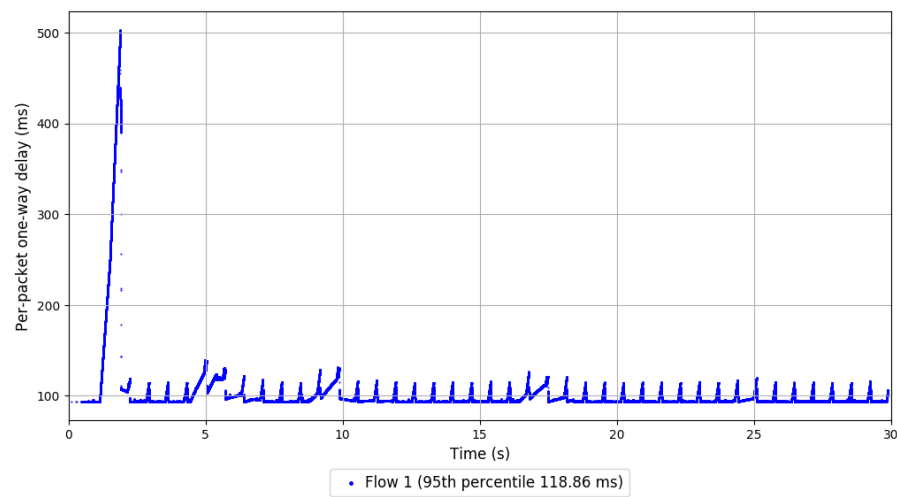
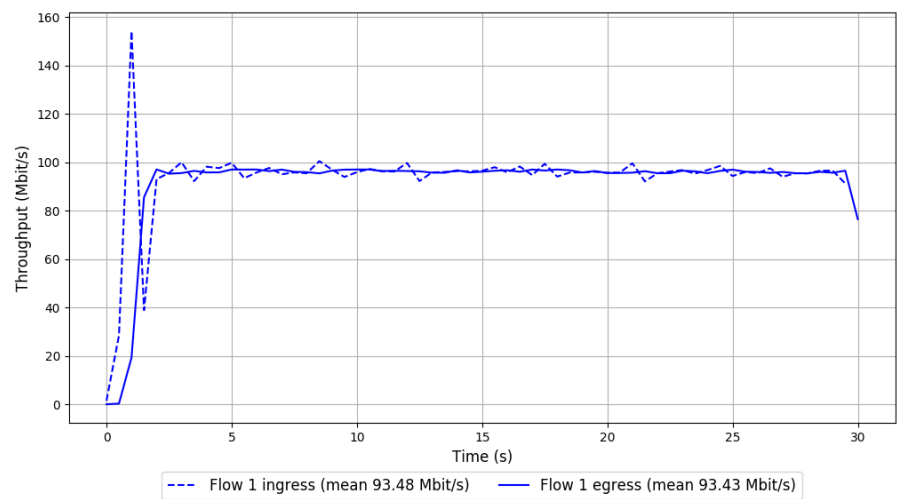


Run 5: Statistics of FillP

Start at: 2018-12-11 17:30:04  
End at: 2018-12-11 17:30:34  
Local clock offset: -6.857 ms  
Remote clock offset: 241.278 ms

# Below is generated by plot.py at 2018-12-11 17:41:54  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 93.43 Mbit/s  
95th percentile per-packet one-way delay: 118.864 ms  
Loss rate: 0.63%  
-- Flow 1:  
Average throughput: 93.43 Mbit/s  
95th percentile per-packet one-way delay: 118.864 ms  
Loss rate: 0.63%

Run 5: Report of FillP — Data Link

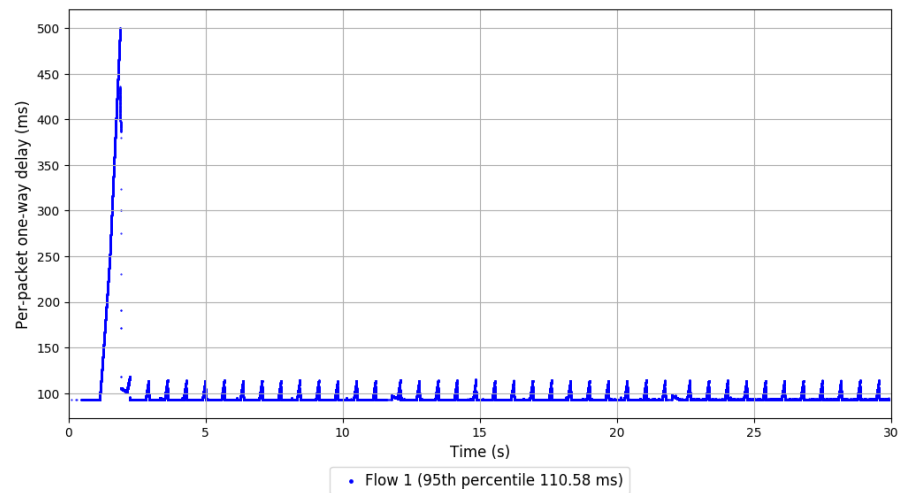
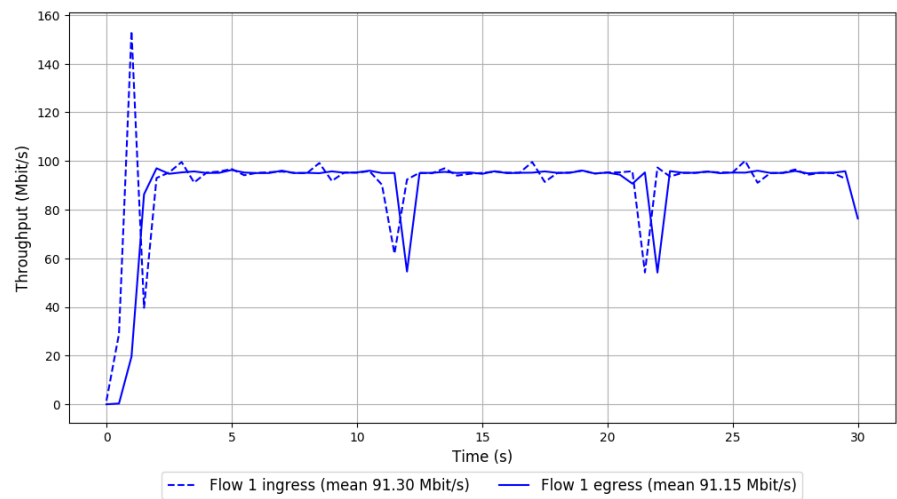


Run 1: Statistics of FillP-Sheep

Start at: 2018-12-11 15:50:20  
End at: 2018-12-11 15:50:50  
Local clock offset: -5.803 ms  
Remote clock offset: 179.293 ms

# Below is generated by plot.py at 2018-12-11 17:42:00  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 91.15 Mbit/s  
95th percentile per-packet one-way delay: 110.578 ms  
Loss rate: 0.73%  
-- Flow 1:  
Average throughput: 91.15 Mbit/s  
95th percentile per-packet one-way delay: 110.578 ms  
Loss rate: 0.73%

Run 1: Report of FillP-Sheep — Data Link

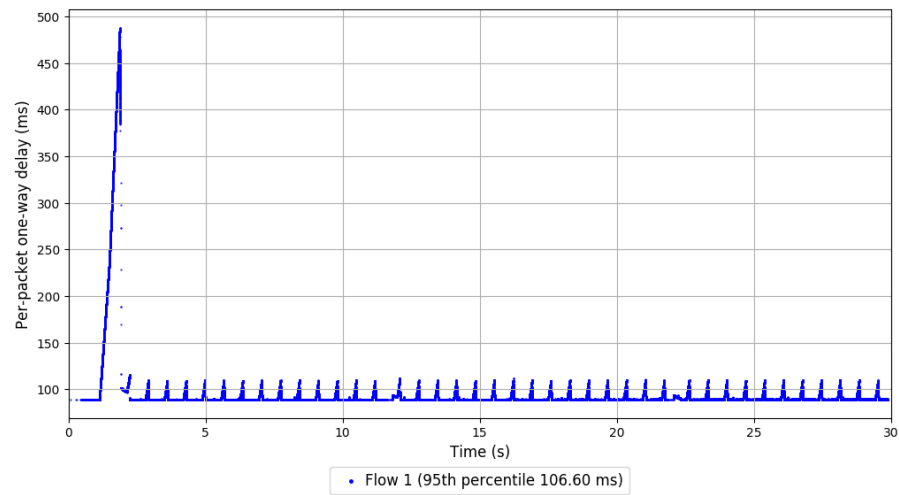
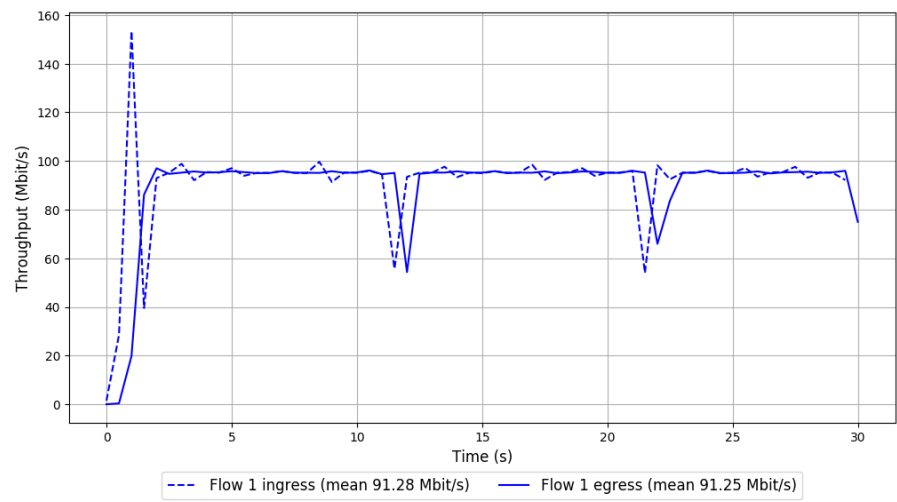


Run 2: Statistics of FillP-Sheep

Start at: 2018-12-11 16:12:54  
End at: 2018-12-11 16:13:24  
Local clock offset: -5.543 ms  
Remote clock offset: 197.381 ms

# Below is generated by plot.py at 2018-12-11 17:42:00  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 91.25 Mbit/s  
95th percentile per-packet one-way delay: 106.598 ms  
Loss rate: 0.62%  
-- Flow 1:  
Average throughput: 91.25 Mbit/s  
95th percentile per-packet one-way delay: 106.598 ms  
Loss rate: 0.62%

Run 2: Report of FillP-Sheep — Data Link



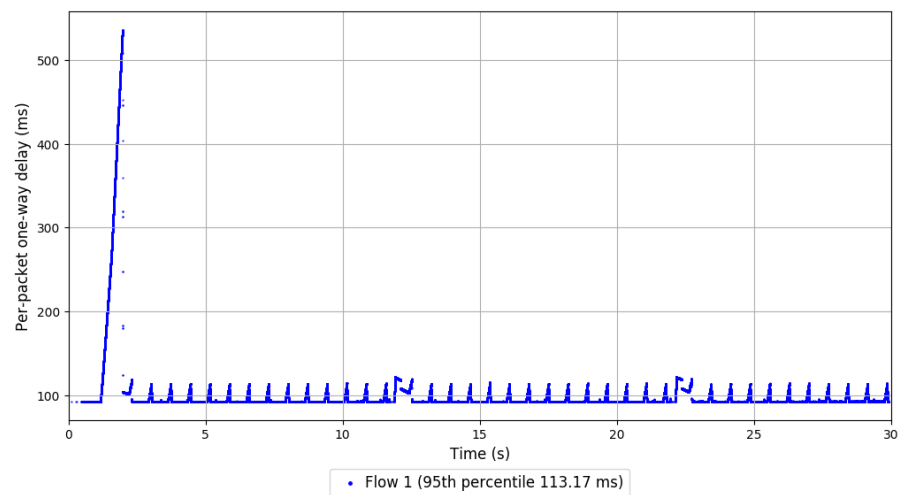
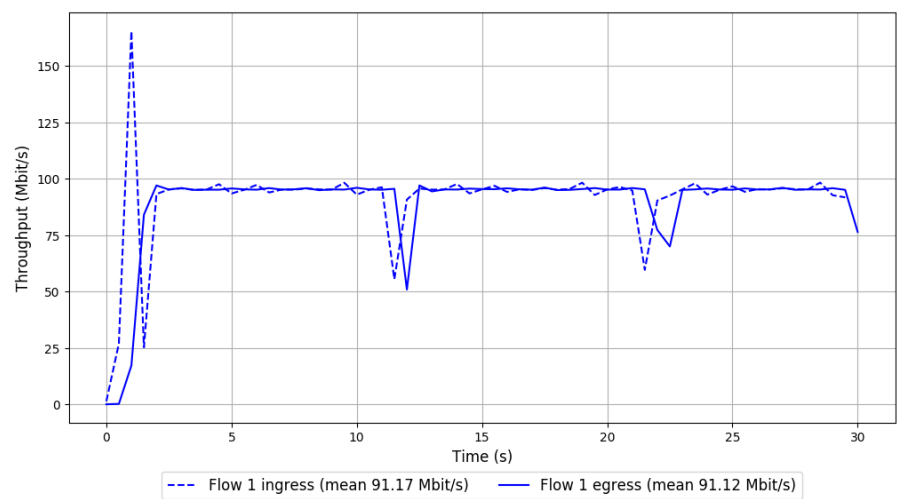


Run 3: Statistics of FillP-Sheep

Start at: 2018-12-11 16:35:33  
End at: 2018-12-11 16:36:03  
Local clock offset: -6.275 ms  
Remote clock offset: 207.307 ms

# Below is generated by plot.py at 2018-12-11 17:42:02  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 91.12 Mbit/s  
95th percentile per-packet one-way delay: 113.172 ms  
Loss rate: 0.63%  
-- Flow 1:  
Average throughput: 91.12 Mbit/s  
95th percentile per-packet one-way delay: 113.172 ms  
Loss rate: 0.63%

Run 3: Report of FillP-Sheep — Data Link

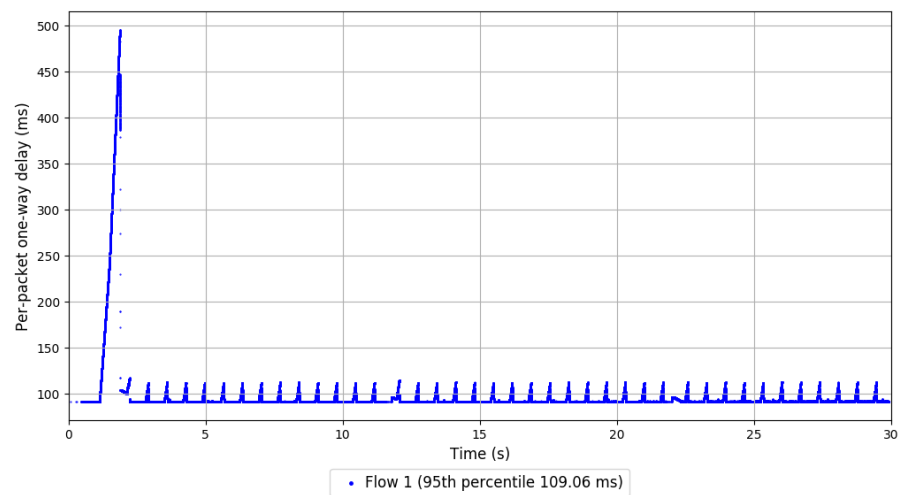
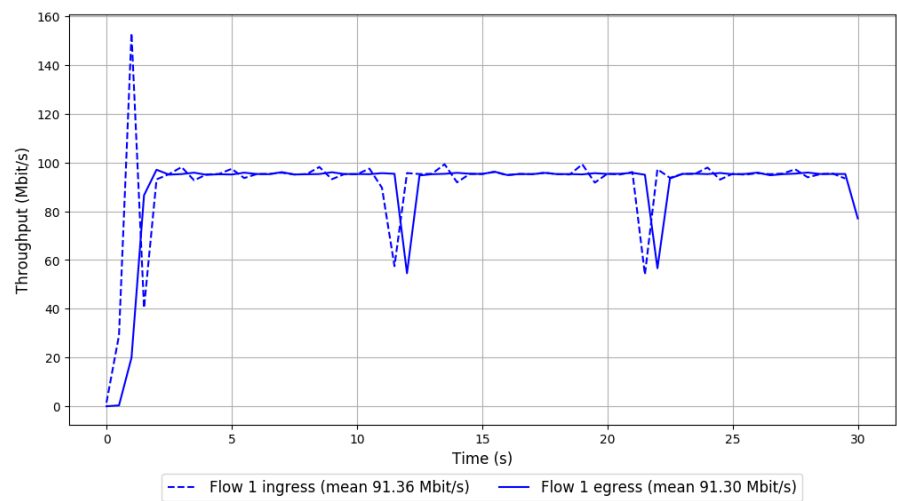


Run 4: Statistics of FillP-Sheep

Start at: 2018-12-11 16:58:04  
End at: 2018-12-11 16:58:34  
Local clock offset: -3.786 ms  
Remote clock offset: 221.182 ms

# Below is generated by plot.py at 2018-12-11 17:42:28  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 91.30 Mbit/s  
95th percentile per-packet one-way delay: 109.057 ms  
Loss rate: 0.64%  
-- Flow 1:  
Average throughput: 91.30 Mbit/s  
95th percentile per-packet one-way delay: 109.057 ms  
Loss rate: 0.64%

Run 4: Report of FillP-Sheep — Data Link



Run 5: Statistics of FillP-Sheep

Start at: 2018-12-11 17:20:37

End at: 2018-12-11 17:21:07

Local clock offset: -6.141 ms

Remote clock offset: 235.351 ms

# Below is generated by plot.py at 2018-12-11 17:42:34

# Datalink statistics

-- Total of 1 flow:

Average throughput: 91.34 Mbit/s

95th percentile per-packet one-way delay: 128.356 ms

Loss rate: 0.63%

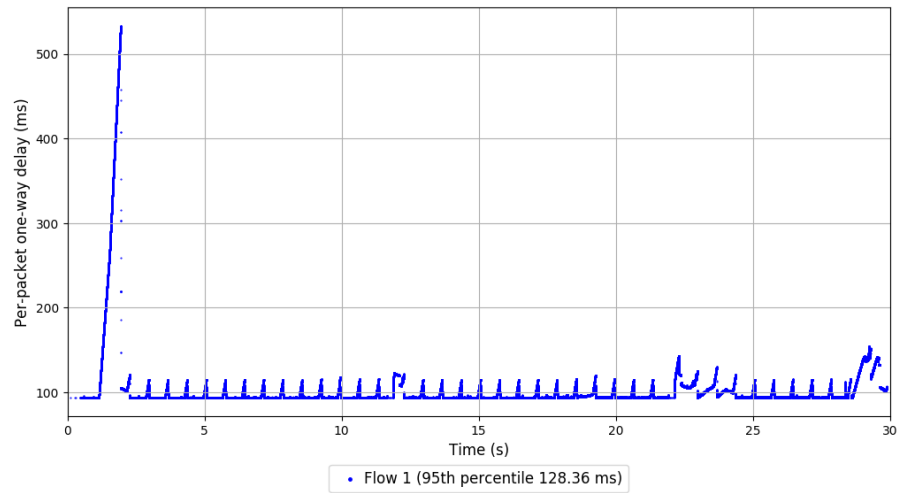
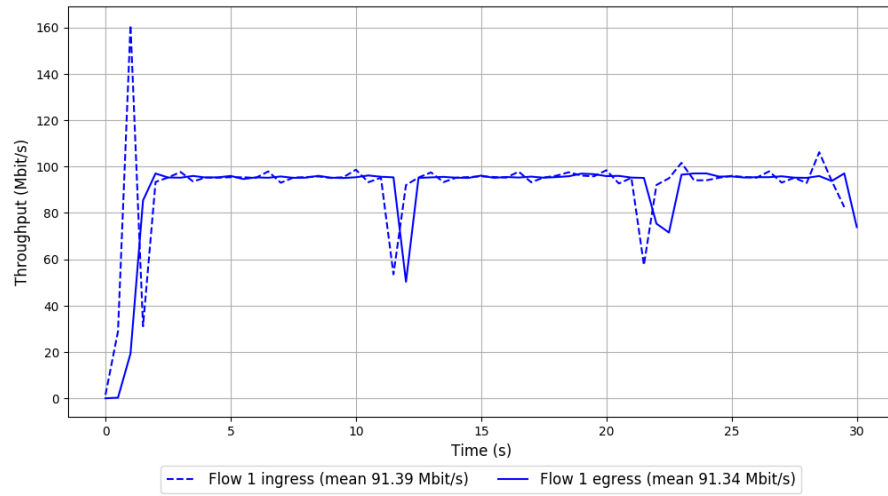
-- Flow 1:

Average throughput: 91.34 Mbit/s

95th percentile per-packet one-way delay: 128.356 ms

Loss rate: 0.63%

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

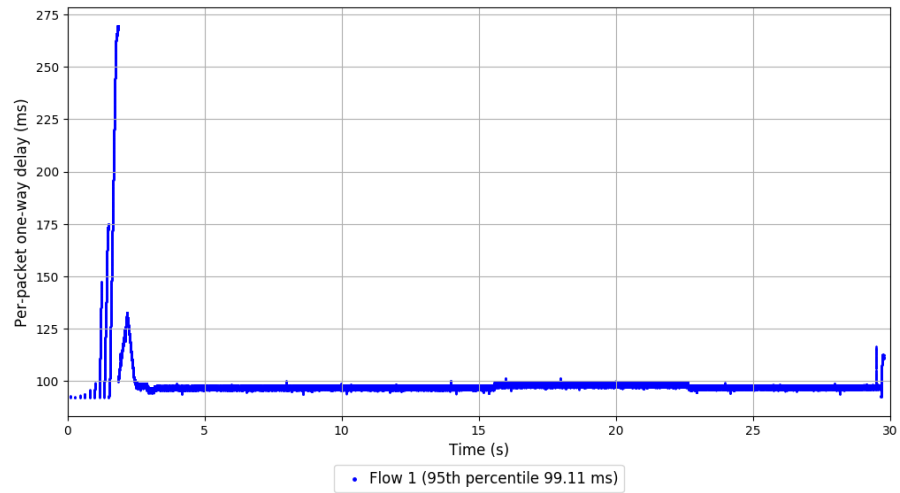
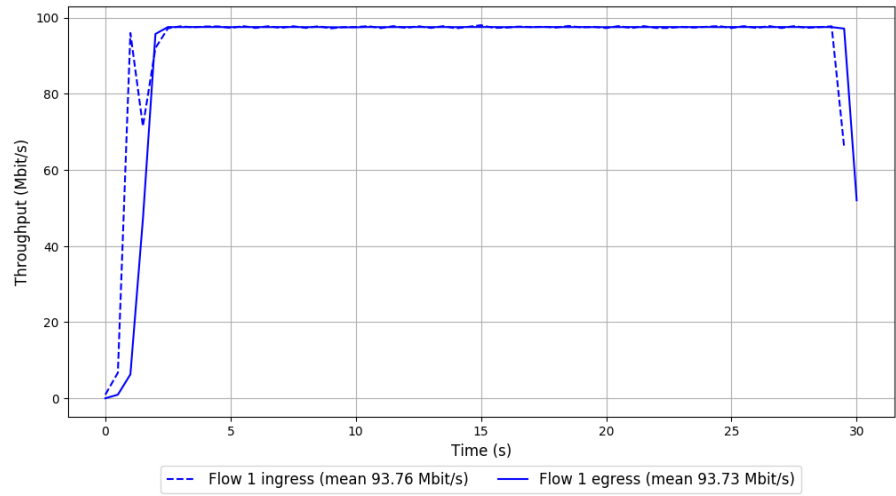


Run 1: Statistics of Indigo

Start at: 2018-12-11 16:03:26  
End at: 2018-12-11 16:03:56  
Local clock offset: -5.789 ms  
Remote clock offset: 188.567 ms

# Below is generated by plot.py at 2018-12-11 17:42:34  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 93.73 Mbit/s  
95th percentile per-packet one-way delay: 99.115 ms  
Loss rate: 0.61%  
-- Flow 1:  
Average throughput: 93.73 Mbit/s  
95th percentile per-packet one-way delay: 99.115 ms  
Loss rate: 0.61%

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



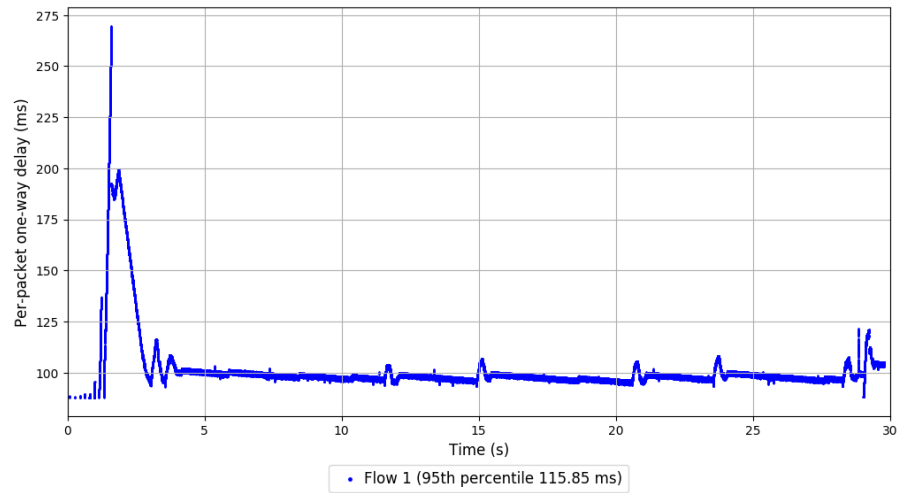
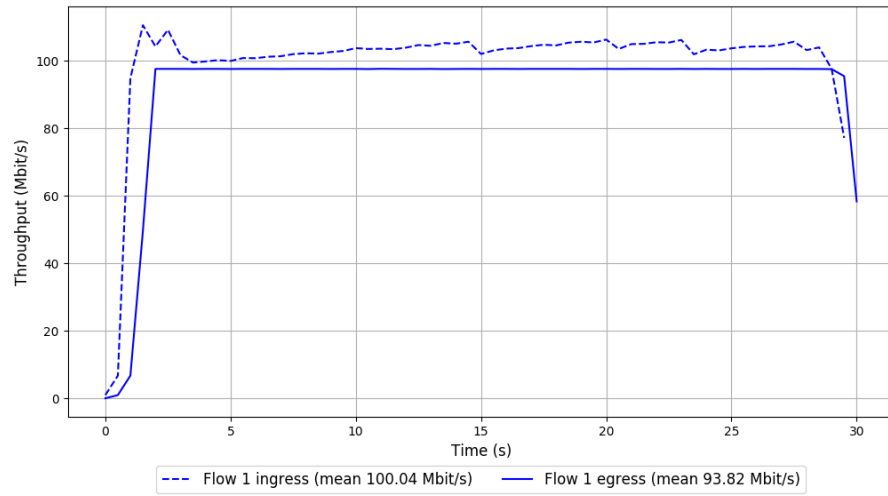


Run 2: Statistics of Indigo

Start at: 2018-12-11 16:26:01  
End at: 2018-12-11 16:26:31  
Local clock offset: -5.372 ms  
Remote clock offset: 206.604 ms

# Below is generated by plot.py at 2018-12-11 17:42:34  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 93.82 Mbit/s  
95th percentile per-packet one-way delay: 115.851 ms  
Loss rate: 6.77%  
-- Flow 1:  
Average throughput: 93.82 Mbit/s  
95th percentile per-packet one-way delay: 115.851 ms  
Loss rate: 6.77%

## Run 2: Report of Indigo — Data Link

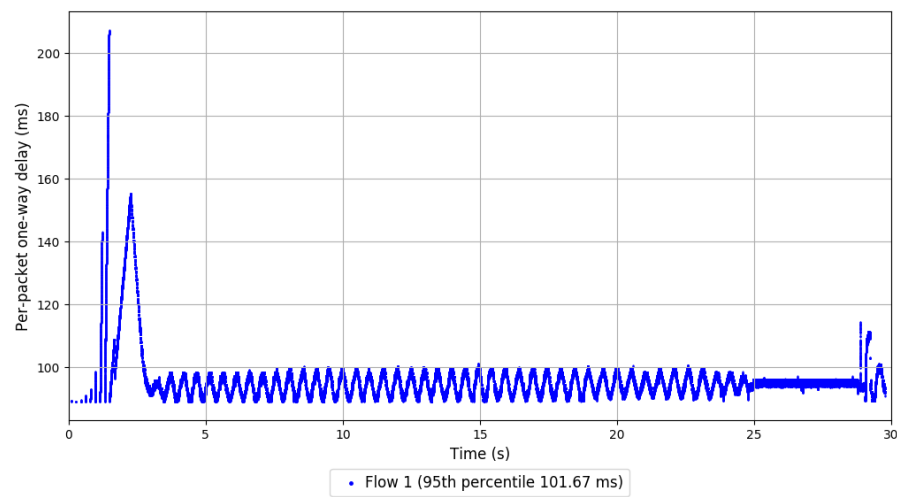
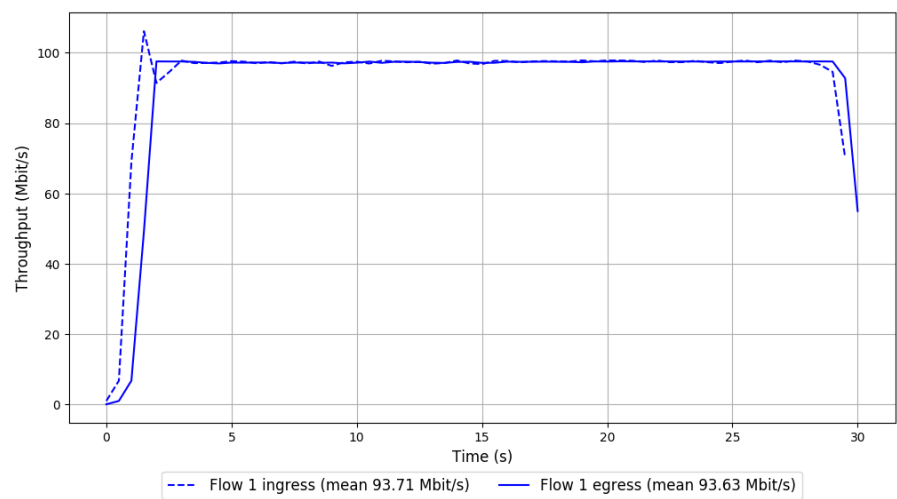


Run 3: Statistics of Indigo

Start at: 2018-12-11 16:48:37  
End at: 2018-12-11 16:49:07  
Local clock offset: -4.233 ms  
Remote clock offset: 219.684 ms

# Below is generated by plot.py at 2018-12-11 17:42:59  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 93.63 Mbit/s  
95th percentile per-packet one-way delay: 101.666 ms  
Loss rate: 0.66%  
-- Flow 1:  
Average throughput: 93.63 Mbit/s  
95th percentile per-packet one-way delay: 101.666 ms  
Loss rate: 0.66%

Run 3: Report of Indigo — Data Link

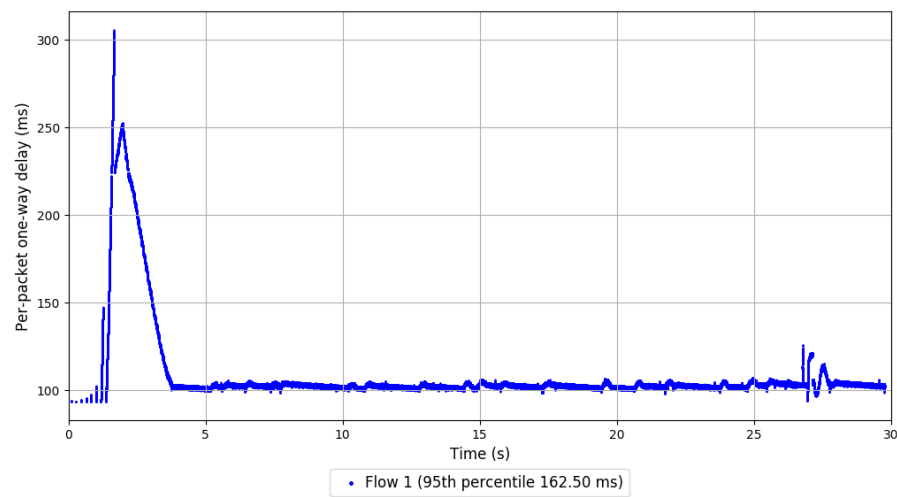
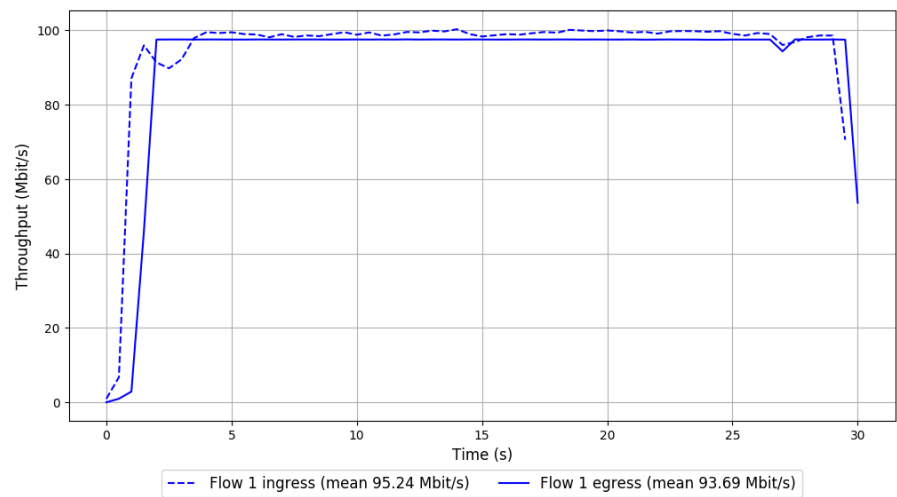


Run 4: Statistics of Indigo

Start at: 2018-12-11 17:11:10  
End at: 2018-12-11 17:11:40  
Local clock offset: -4.502 ms  
Remote clock offset: 229.344 ms

# Below is generated by plot.py at 2018-12-11 17:43:04  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 93.69 Mbit/s  
95th percentile per-packet one-way delay: 162.496 ms  
Loss rate: 2.20%  
-- Flow 1:  
Average throughput: 93.69 Mbit/s  
95th percentile per-packet one-way delay: 162.496 ms  
Loss rate: 2.20%

Run 4: Report of Indigo — Data Link

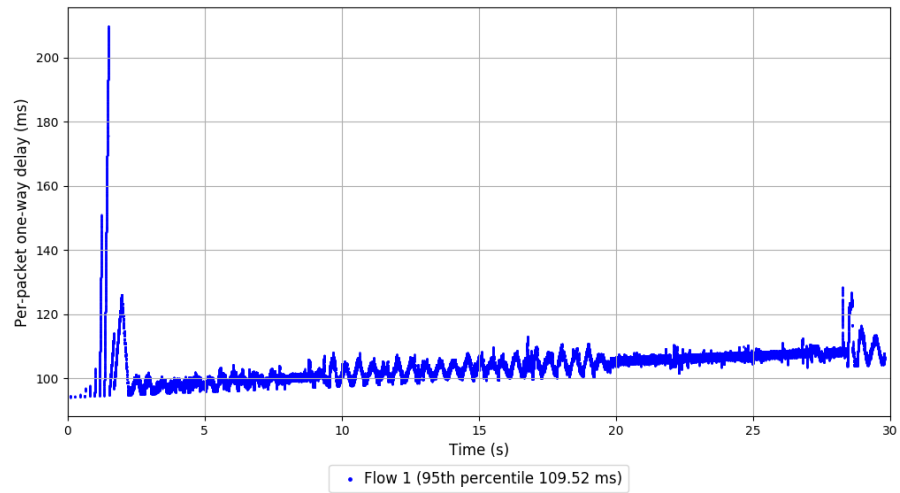
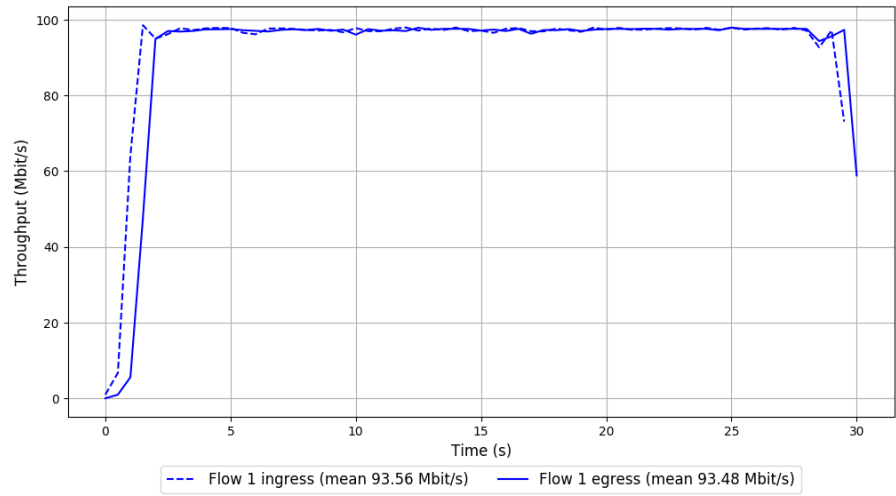


Run 5: Statistics of Indigo

Start at: 2018-12-11 17:33:41  
End at: 2018-12-11 17:34:11  
Local clock offset: -7.109 ms  
Remote clock offset: 16.085 ms

# Below is generated by plot.py at 2018-12-11 17:43:05  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 93.48 Mbit/s  
95th percentile per-packet one-way delay: 109.518 ms  
Loss rate: 0.63%  
-- Flow 1:  
Average throughput: 93.48 Mbit/s  
95th percentile per-packet one-way delay: 109.518 ms  
Loss rate: 0.63%

## Run 5: Report of Indigo — Data Link



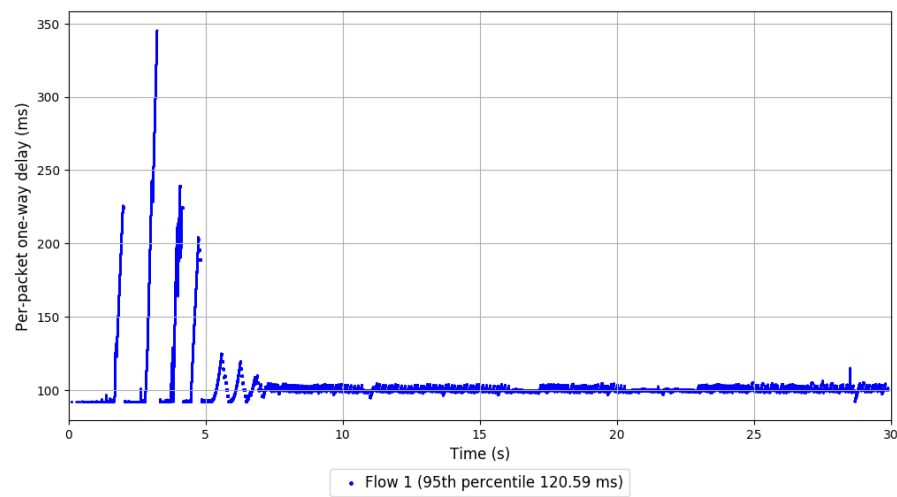
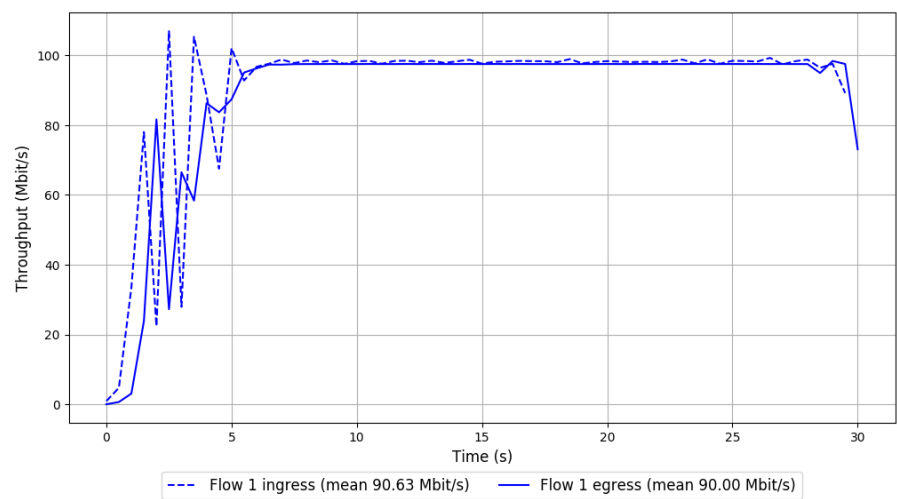


```
Run 1: Statistics of Indigo-MusesD

Start at: 2018-12-11 15:45:40
End at: 2018-12-11 15:46:11
Local clock offset: -5.956 ms
Remote clock offset: 177.701 ms

# Below is generated by plot.py at 2018-12-11 17:43:06
# Datalink statistics
-- Total of 1 flow:
Average throughput: 90.00 Mbit/s
95th percentile per-packet one-way delay: 120.586 ms
Loss rate: 1.26%
-- Flow 1:
Average throughput: 90.00 Mbit/s
95th percentile per-packet one-way delay: 120.586 ms
Loss rate: 1.26%
```

Run 1: Report of Indigo-MusesD — Data Link

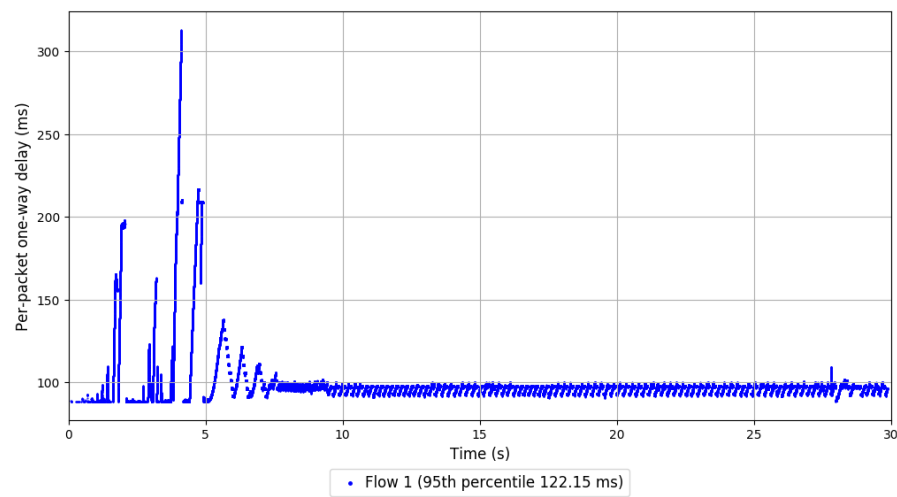
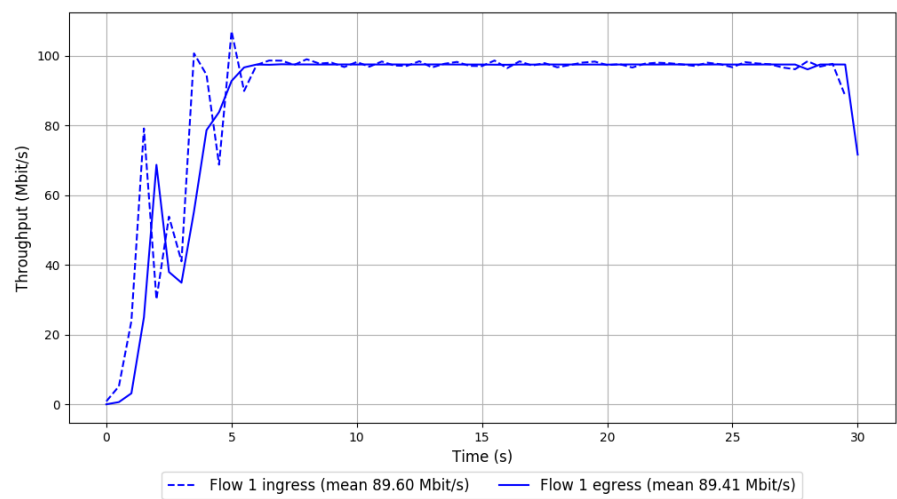


Run 2: Statistics of Indigo-MusesD

Start at: 2018-12-11 16:08:15  
End at: 2018-12-11 16:08:45  
Local clock offset: -5.711 ms  
Remote clock offset: 195.51 ms

# Below is generated by plot.py at 2018-12-11 17:43:28  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 89.41 Mbit/s  
95th percentile per-packet one-way delay: 122.149 ms  
Loss rate: 0.79%  
-- Flow 1:  
Average throughput: 89.41 Mbit/s  
95th percentile per-packet one-way delay: 122.149 ms  
Loss rate: 0.79%

Run 2: Report of Indigo-MusesD — Data Link

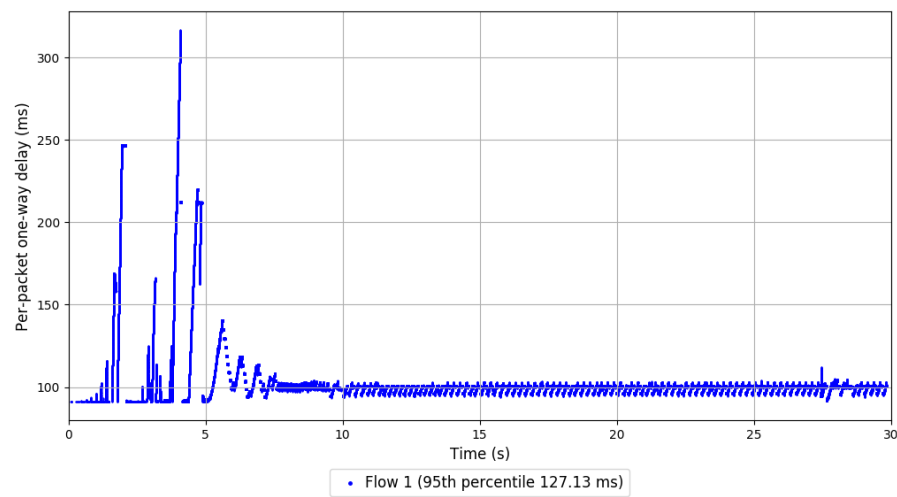
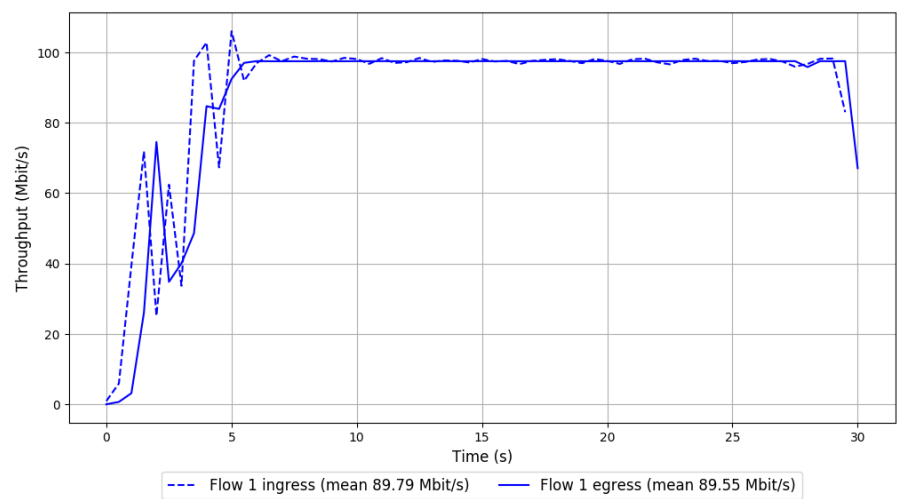


Run 3: Statistics of Indigo-MusesD

Start at: 2018-12-11 16:30:49  
End at: 2018-12-11 16:31:19  
Local clock offset: -6.292 ms  
Remote clock offset: 205.594 ms

# Below is generated by plot.py at 2018-12-11 17:43:30  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 89.55 Mbit/s  
95th percentile per-packet one-way delay: 127.128 ms  
Loss rate: 0.84%  
-- Flow 1:  
Average throughput: 89.55 Mbit/s  
95th percentile per-packet one-way delay: 127.128 ms  
Loss rate: 0.84%

Run 3: Report of Indigo-MusesD — Data Link

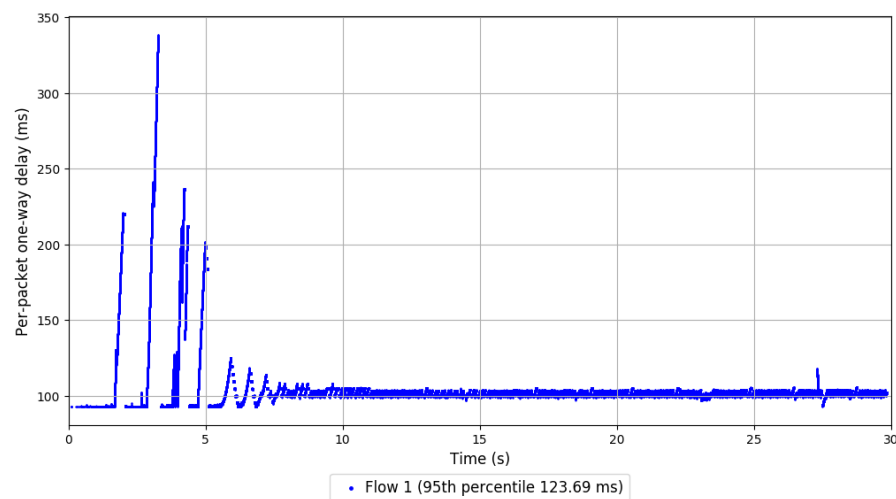
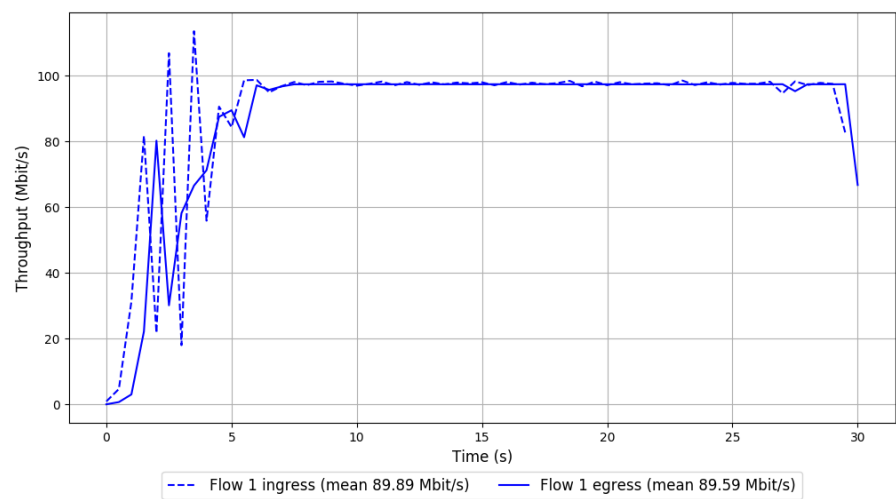


Run 4: Statistics of Indigo-MusesD

Start at: 2018-12-11 16:53:26  
End at: 2018-12-11 16:53:56  
Local clock offset: -4.045 ms  
Remote clock offset: 218.479 ms

# Below is generated by plot.py at 2018-12-11 17:43:35  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 89.59 Mbit/s  
95th percentile per-packet one-way delay: 123.692 ms  
Loss rate: 0.90%  
-- Flow 1:  
Average throughput: 89.59 Mbit/s  
95th percentile per-packet one-way delay: 123.692 ms  
Loss rate: 0.90%

Run 4: Report of Indigo-MusesD — Data Link



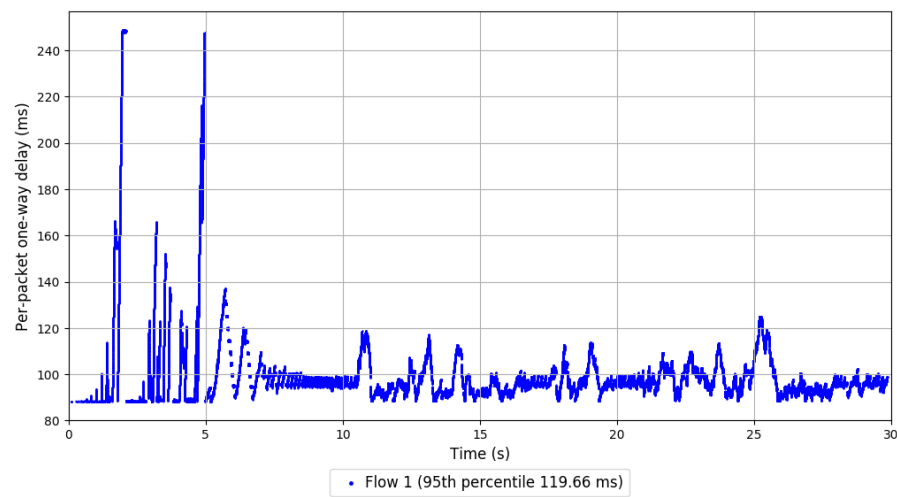
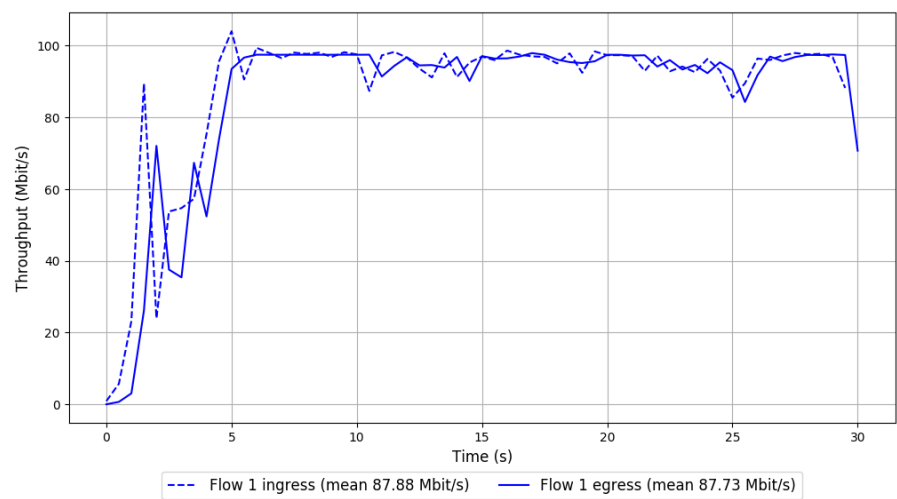


Run 5: Statistics of Indigo-MusesD

Start at: 2018-12-11 17:15:59  
End at: 2018-12-11 17:16:29  
Local clock offset: -5.489 ms  
Remote clock offset: 237.612 ms

# Below is generated by plot.py at 2018-12-11 17:43:36  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 87.73 Mbit/s  
95th percentile per-packet one-way delay: 119.663 ms  
Loss rate: 0.75%  
-- Flow 1:  
Average throughput: 87.73 Mbit/s  
95th percentile per-packet one-way delay: 119.663 ms  
Loss rate: 0.75%

Run 5: Report of Indigo-MusesD — Data Link

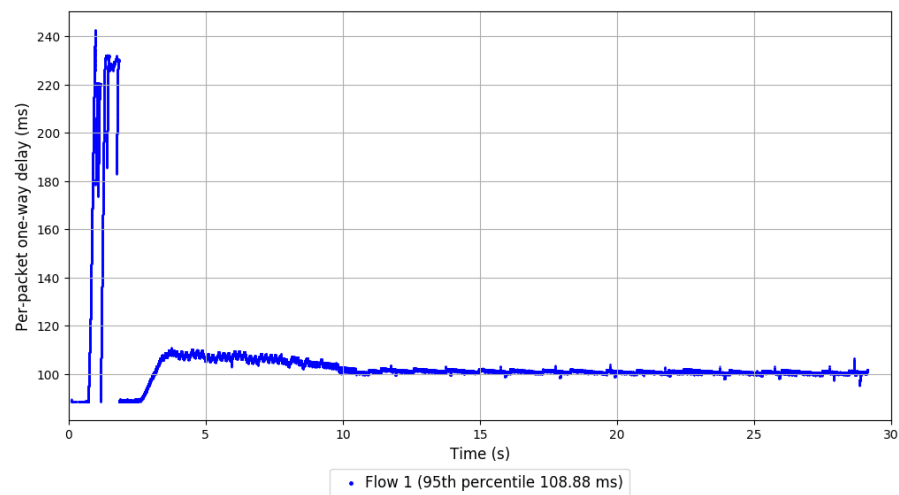
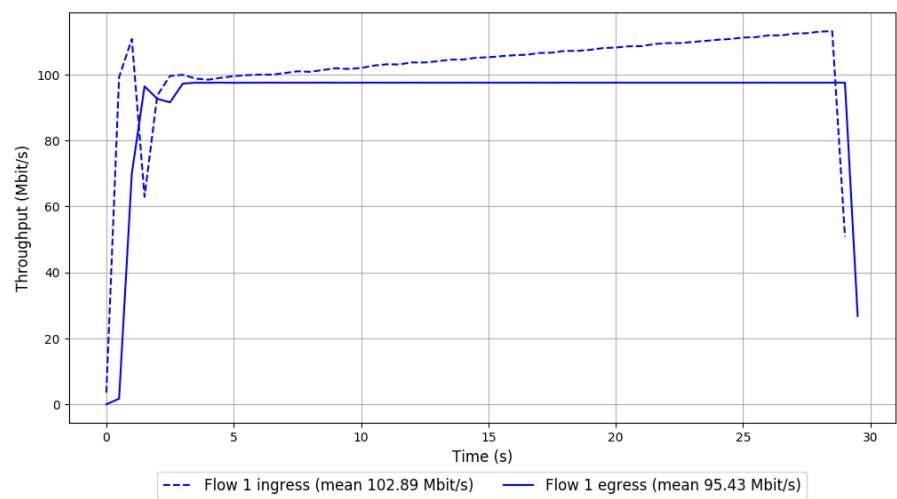


```
Run 1: Statistics of Indigo-MusesT

Start at: 2018-12-11 15:56:16
End at: 2018-12-11 15:56:46
Local clock offset: -5.715 ms
Remote clock offset: 187.652 ms

# Below is generated by plot.py at 2018-12-11 17:44:11
# Datalink statistics
-- Total of 1 flow:
Average throughput: 95.43 Mbit/s
95th percentile per-packet one-way delay: 108.884 ms
Loss rate: 7.81%
-- Flow 1:
Average throughput: 95.43 Mbit/s
95th percentile per-packet one-way delay: 108.884 ms
Loss rate: 7.81%
```

Run 1: Report of Indigo-MusesT — Data Link

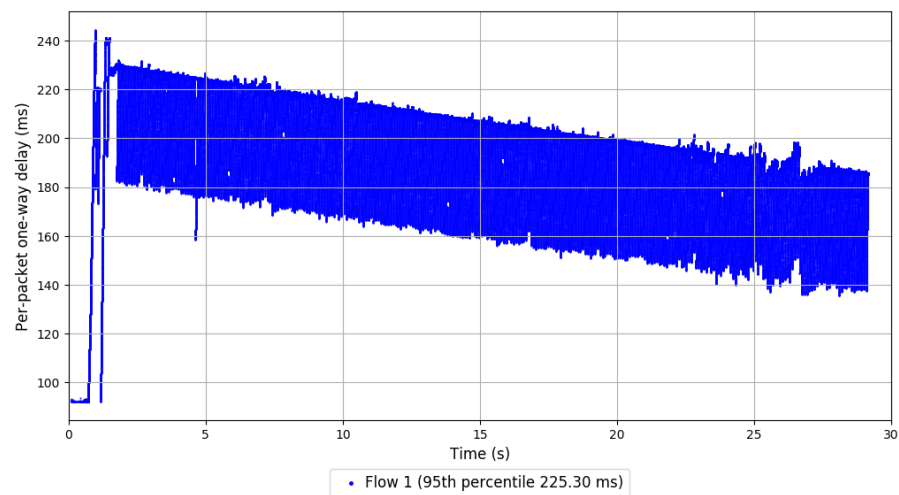
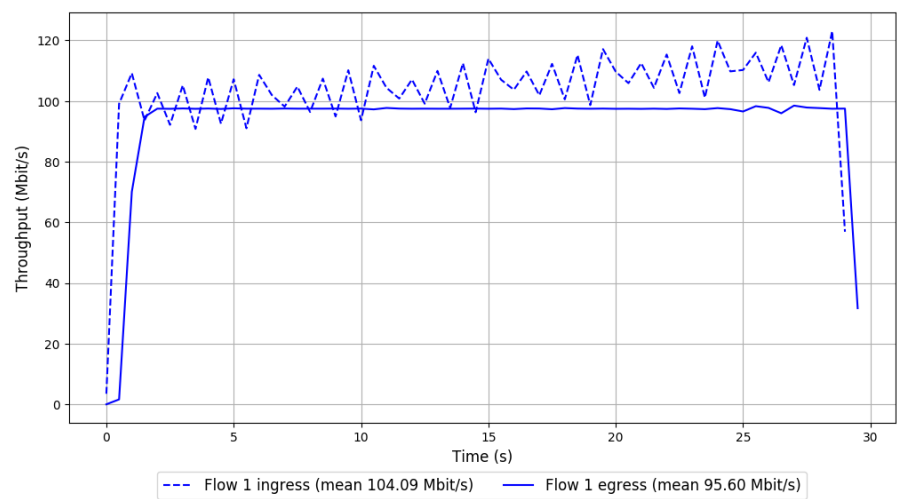


Run 2: Statistics of Indigo-MusesT

Start at: 2018-12-11 16:18:49  
End at: 2018-12-11 16:19:19  
Local clock offset: -5.475 ms  
Remote clock offset: 198.201 ms

# Below is generated by plot.py at 2018-12-11 17:44:15  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 95.60 Mbit/s  
95th percentile per-packet one-way delay: 225.301 ms  
Loss rate: 8.71%  
-- Flow 1:  
Average throughput: 95.60 Mbit/s  
95th percentile per-packet one-way delay: 225.301 ms  
Loss rate: 8.71%

Run 2: Report of Indigo-MusesT — Data Link

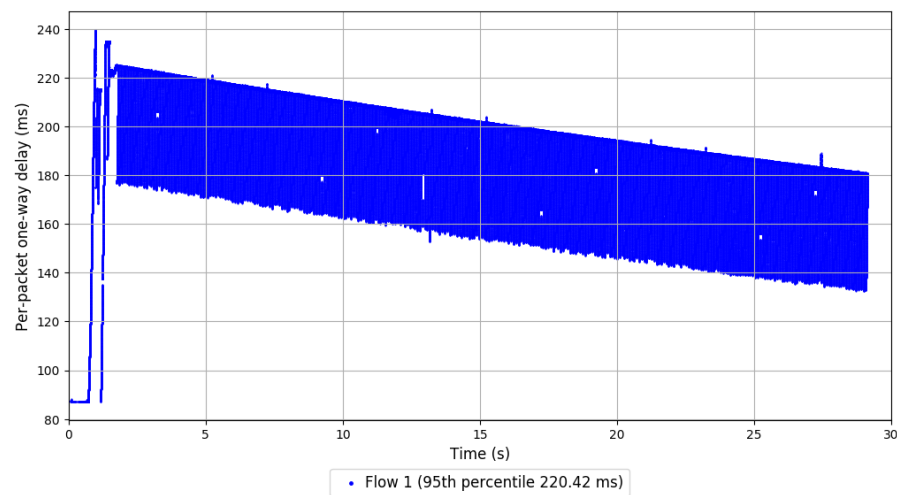
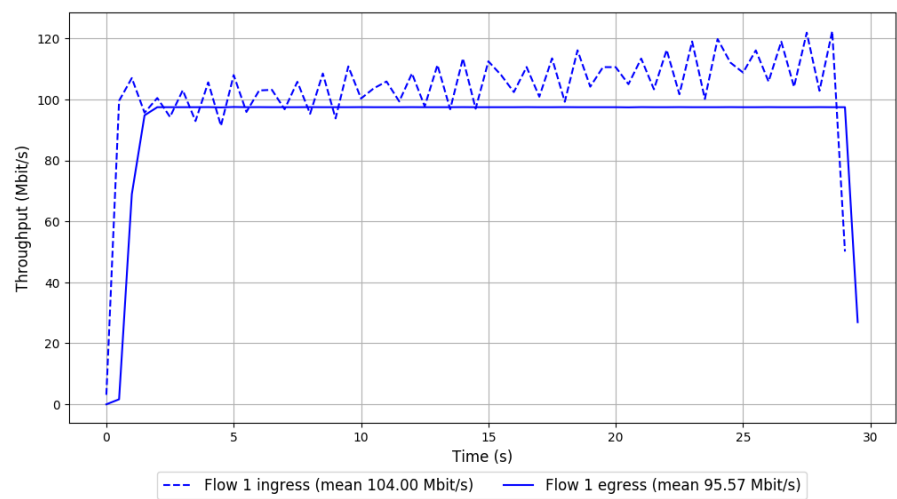


Run 3: Statistics of Indigo-MusesT

Start at: 2018-12-11 16:41:28  
End at: 2018-12-11 16:41:58  
Local clock offset: -4.948 ms  
Remote clock offset: 217.17 ms

# Below is generated by plot.py at 2018-12-11 17:44:15  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 95.57 Mbit/s  
95th percentile per-packet one-way delay: 220.424 ms  
Loss rate: 8.65%  
-- Flow 1:  
Average throughput: 95.57 Mbit/s  
95th percentile per-packet one-way delay: 220.424 ms  
Loss rate: 8.65%

Run 3: Report of Indigo-MusesT — Data Link





Run 4: Statistics of Indigo-MusesT

Start at: 2018-12-11 17:04:00

End at: 2018-12-11 17:04:30

Local clock offset: -3.607 ms

Remote clock offset: 225.107 ms

# Below is generated by plot.py at 2018-12-11 17:44:17

# Datalink statistics

-- Total of 1 flow:

Average throughput: 95.66 Mbit/s

95th percentile per-packet one-way delay: 226.861 ms

Loss rate: 8.79%

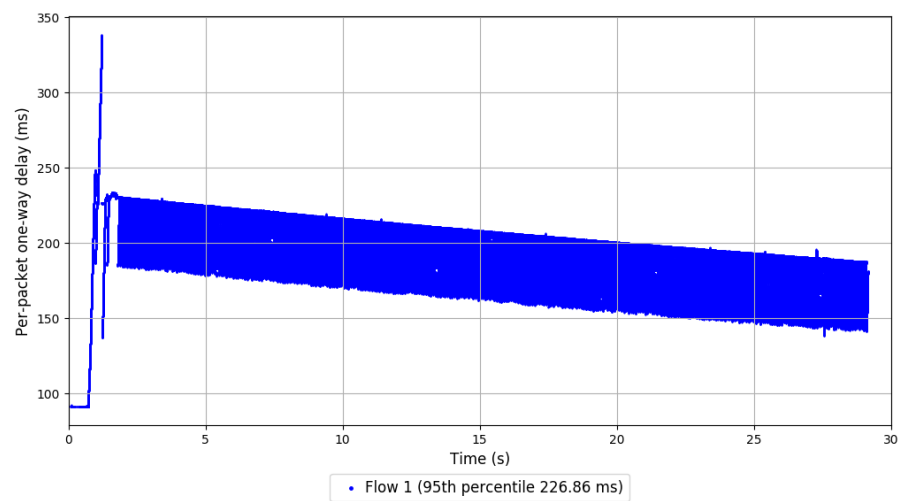
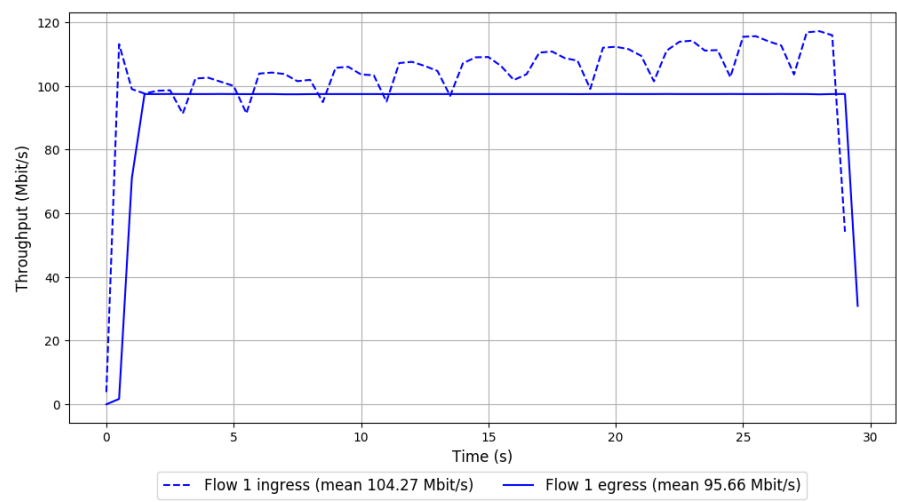
-- Flow 1:

Average throughput: 95.66 Mbit/s

95th percentile per-packet one-way delay: 226.861 ms

Loss rate: 8.79%

Run 4: Report of Indigo-MusesT — Data Link

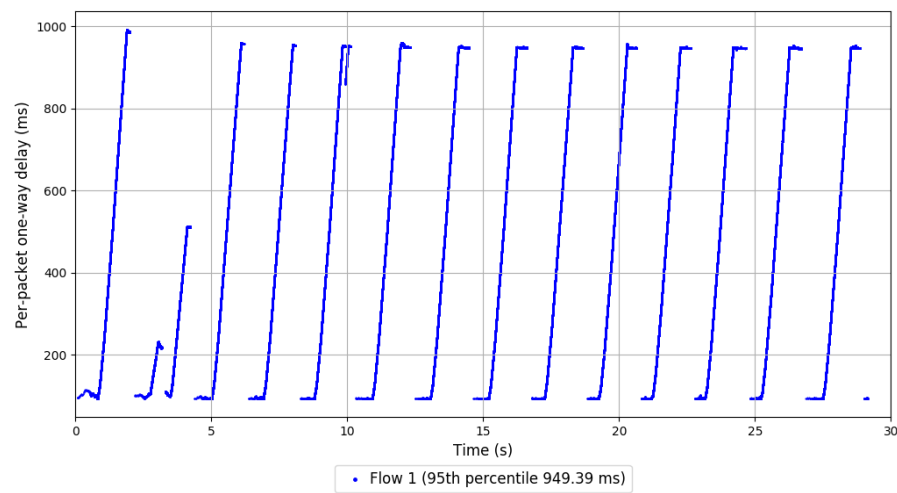
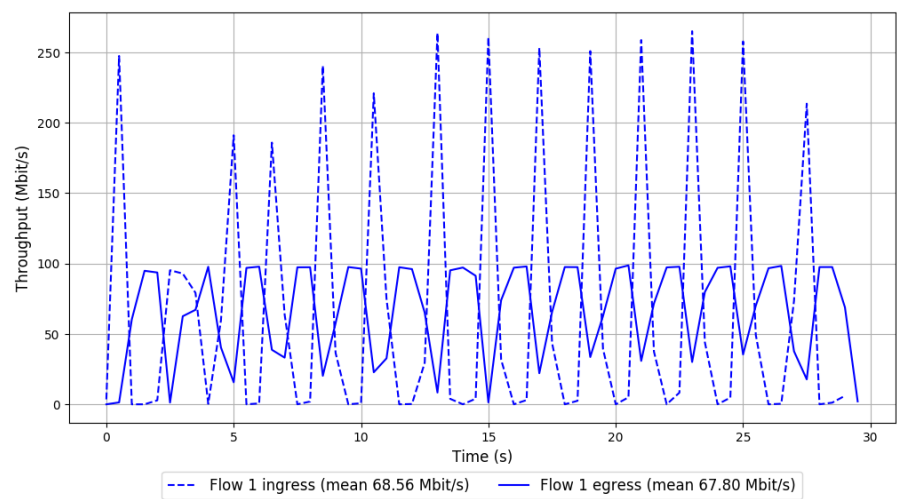


Run 5: Statistics of Indigo-MusesT

Start at: 2018-12-11 17:26:33  
End at: 2018-12-11 17:27:03  
Local clock offset: -6.676 ms  
Remote clock offset: 239.17 ms

# Below is generated by plot.py at 2018-12-11 17:44:17  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 67.80 Mbit/s  
95th percentile per-packet one-way delay: 949.392 ms  
Loss rate: 1.70%  
-- Flow 1:  
Average throughput: 67.80 Mbit/s  
95th percentile per-packet one-way delay: 949.392 ms  
Loss rate: 1.70%

Run 5: Report of Indigo-MusesT — Data Link

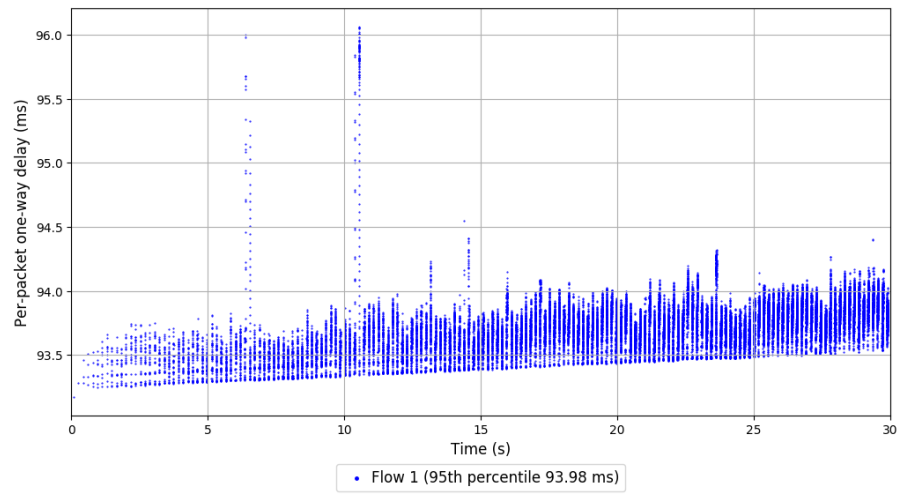
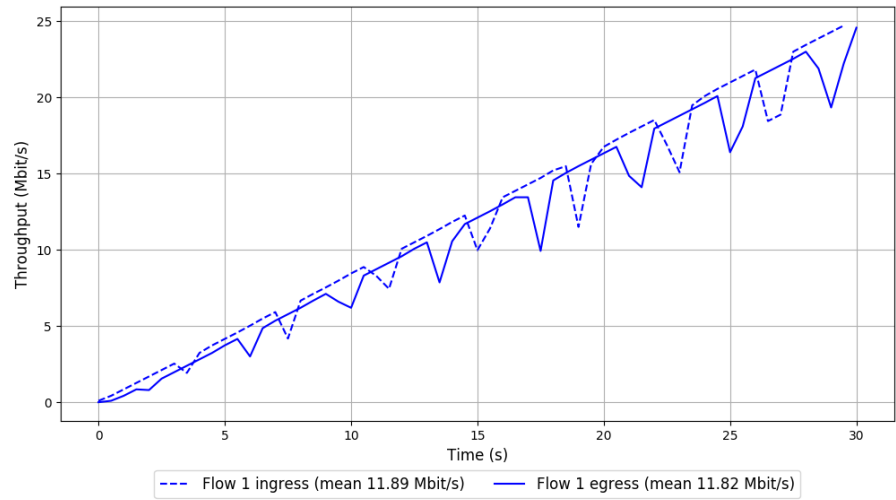


```
Run 1: Statistics of LEDBAT

Start at: 2018-12-11 15:57:28
End at: 2018-12-11 15:57:58
Local clock offset: -5.694 ms
Remote clock offset: 183.488 ms

# Below is generated by plot.py at 2018-12-11 17:44:17
# Datalink statistics
-- Total of 1 flow:
Average throughput: 11.82 Mbit/s
95th percentile per-packet one-way delay: 93.982 ms
Loss rate: 1.16%
-- Flow 1:
Average throughput: 11.82 Mbit/s
95th percentile per-packet one-way delay: 93.982 ms
Loss rate: 1.16%
```

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

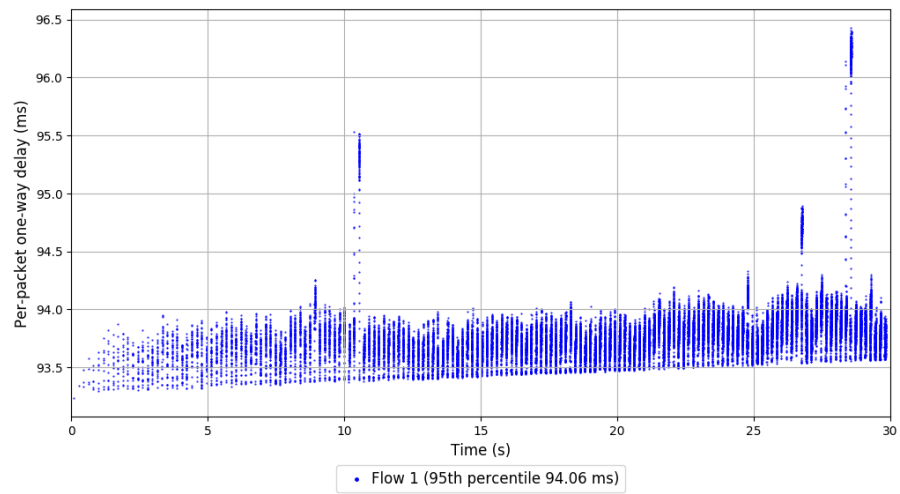
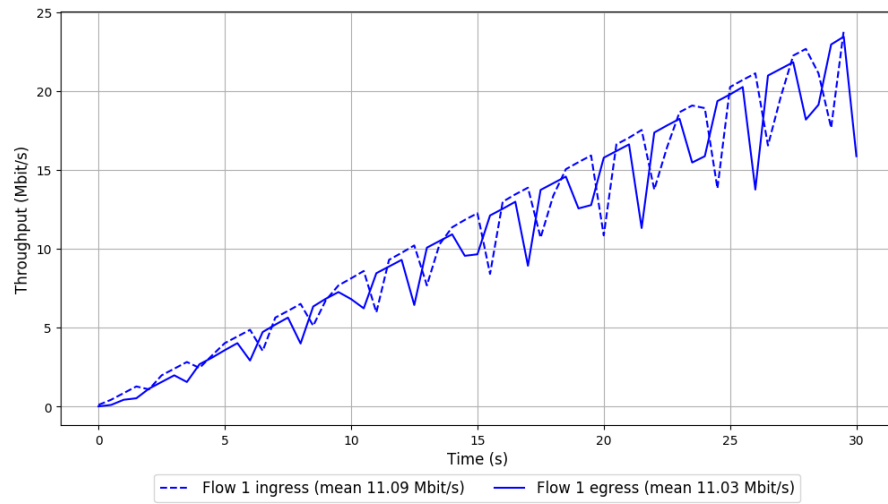


Run 2: Statistics of LEDBAT

Start at: 2018-12-11 16:20:02  
End at: 2018-12-11 16:20:32  
Local clock offset: -5.384 ms  
Remote clock offset: 197.519 ms

# Below is generated by plot.py at 2018-12-11 17:44:17  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 11.03 Mbit/s  
95th percentile per-packet one-way delay: 94.055 ms  
Loss rate: 1.20%  
-- Flow 1:  
Average throughput: 11.03 Mbit/s  
95th percentile per-packet one-way delay: 94.055 ms  
Loss rate: 1.20%

## Run 2: Report of LEDBAT — Data Link



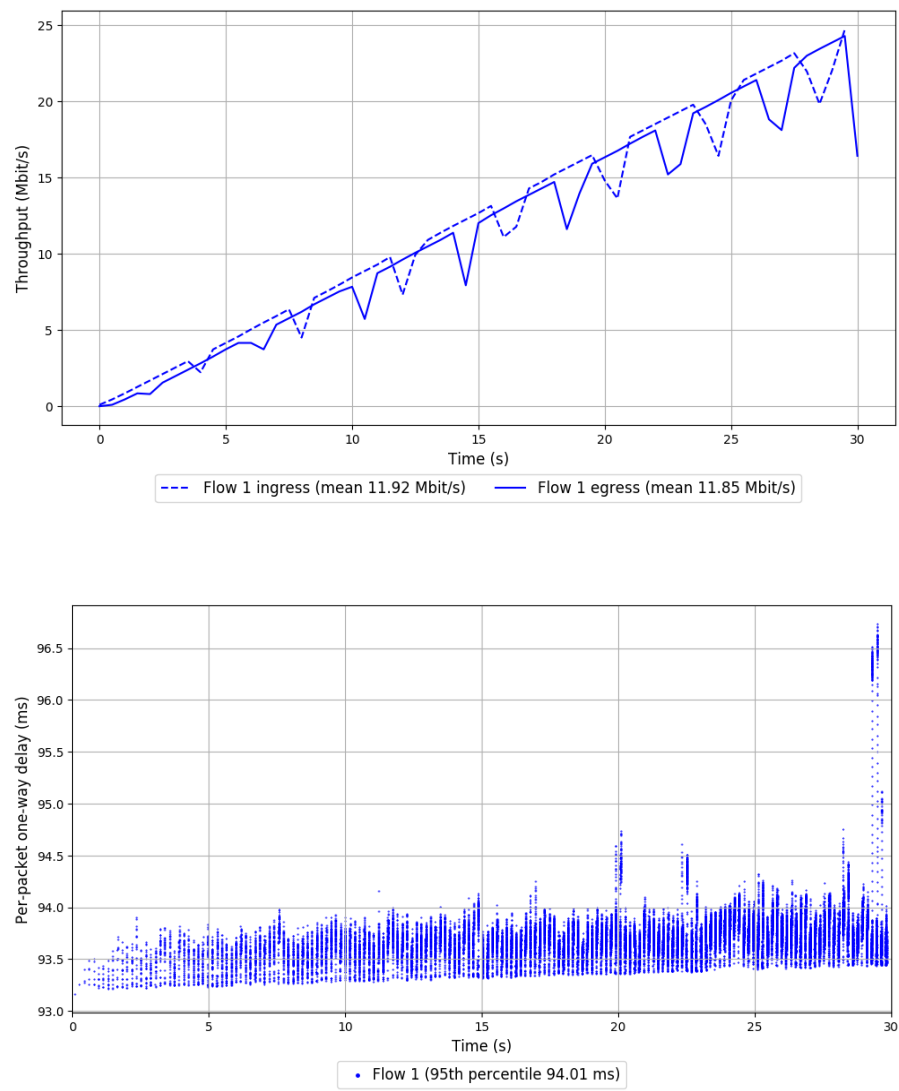


Run 3: Statistics of LEDBAT

Start at: 2018-12-11 16:42:40  
End at: 2018-12-11 16:43:10  
Local clock offset: -4.774 ms  
Remote clock offset: 211.864 ms

# Below is generated by plot.py at 2018-12-11 17:44:17  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 11.85 Mbit/s  
95th percentile per-packet one-way delay: 94.008 ms  
Loss rate: 1.16%  
-- Flow 1:  
Average throughput: 11.85 Mbit/s  
95th percentile per-packet one-way delay: 94.008 ms  
Loss rate: 1.16%

Run 3: Report of LEDBAT — Data Link

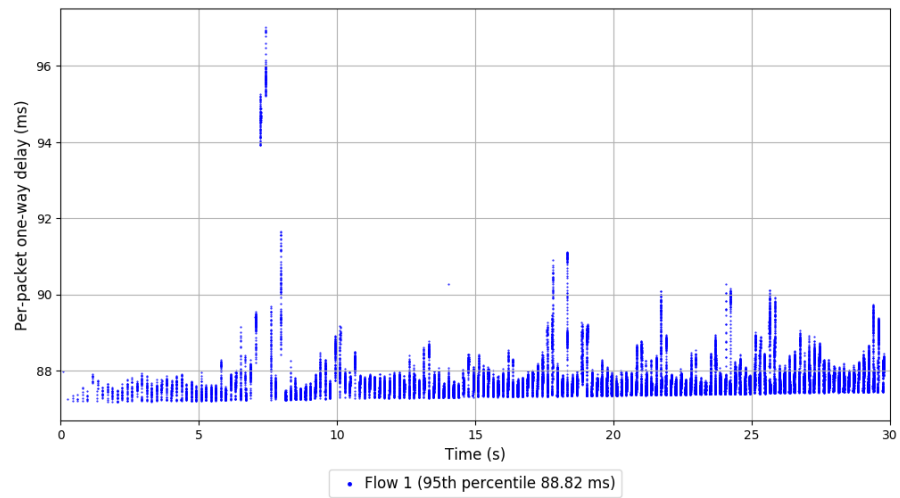
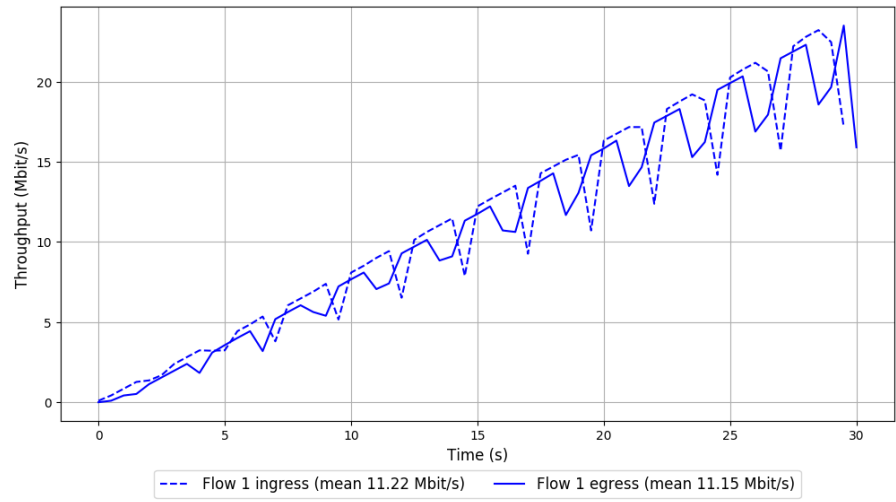


Run 4: Statistics of LEDBAT

Start at: 2018-12-11 17:05:12  
End at: 2018-12-11 17:05:42  
Local clock offset: -3.587 ms  
Remote clock offset: 231.916 ms

# Below is generated by plot.py at 2018-12-11 17:44:17  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 11.15 Mbit/s  
95th percentile per-packet one-way delay: 88.818 ms  
Loss rate: 1.20%  
-- Flow 1:  
Average throughput: 11.15 Mbit/s  
95th percentile per-packet one-way delay: 88.818 ms  
Loss rate: 1.20%

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

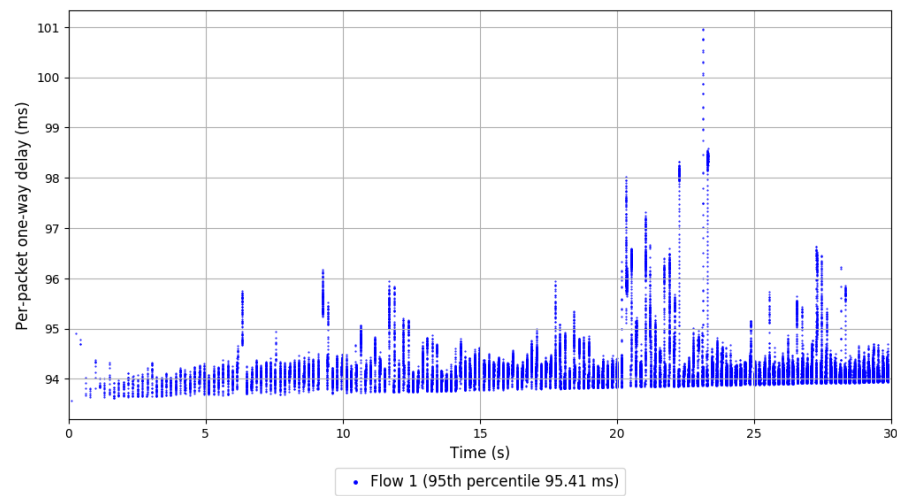
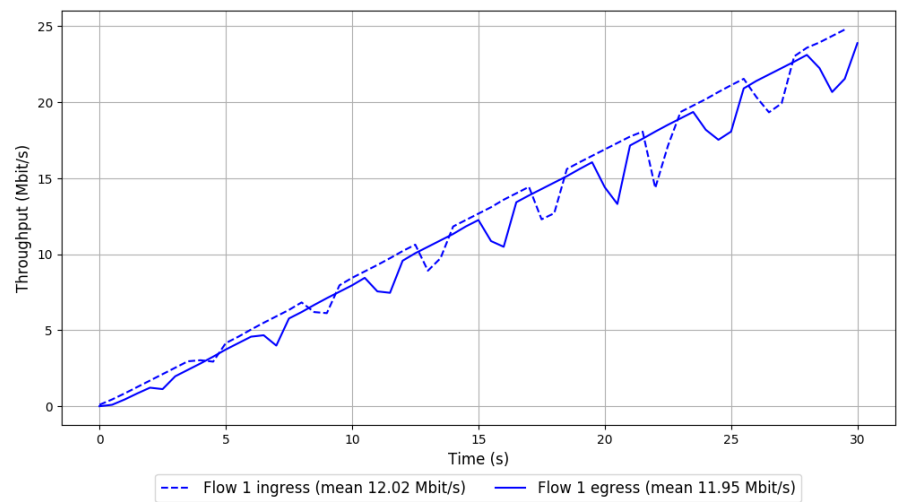


Run 5: Statistics of LEDBAT

Start at: 2018-12-11 17:27:44  
End at: 2018-12-11 17:28:14  
Local clock offset: -6.802 ms  
Remote clock offset: 239.613 ms

# Below is generated by plot.py at 2018-12-11 17:44:17  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 11.95 Mbit/s  
95th percentile per-packet one-way delay: 95.412 ms  
Loss rate: 1.15%  
-- Flow 1:  
Average throughput: 11.95 Mbit/s  
95th percentile per-packet one-way delay: 95.412 ms  
Loss rate: 1.15%

Run 5: Report of LEDBAT — Data Link



Run 1: Statistics of PCC-Allegro

Start at: 2018-12-11 15:51:31

End at: 2018-12-11 15:52:01

Local clock offset: -5.78 ms

Remote clock offset: 180.116 ms

# Below is generated by plot.py at 2018-12-11 17:44:46

# Datalink statistics

-- Total of 1 flow:

Average throughput: 85.99 Mbit/s

95th percentile per-packet one-way delay: 253.595 ms

Loss rate: 0.81%

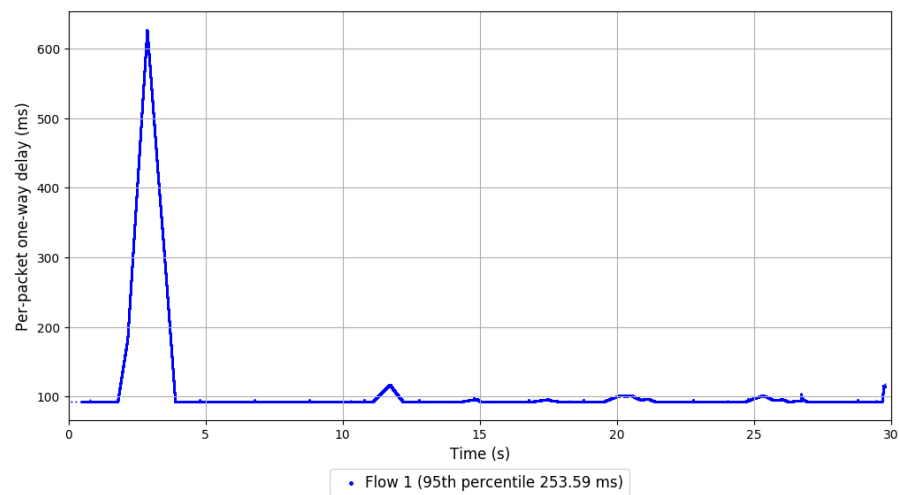
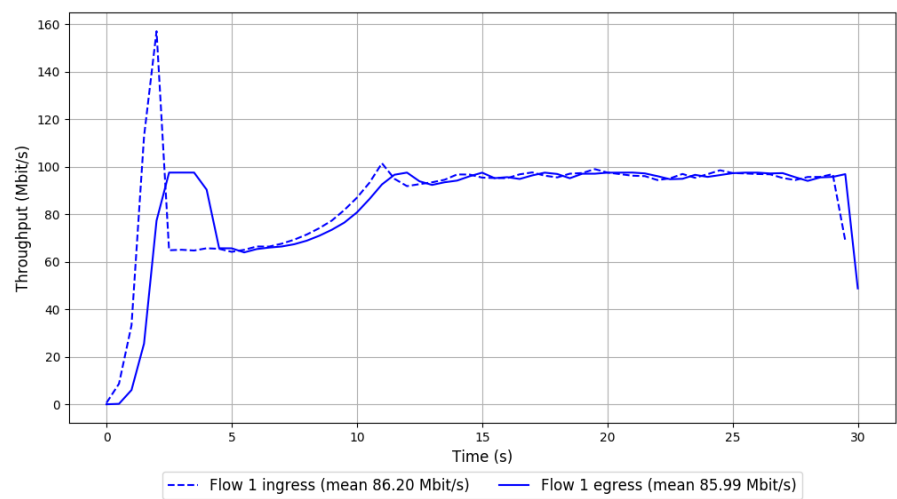
-- Flow 1:

Average throughput: 85.99 Mbit/s

95th percentile per-packet one-way delay: 253.595 ms

Loss rate: 0.81%

Run 1: Report of PCC-Allegro — Data Link





Run 2: Statistics of PCC-Allegro

Start at: 2018-12-11 16:14:05

End at: 2018-12-11 16:14:35

Local clock offset: -5.576 ms

Remote clock offset: 193.969 ms

# Below is generated by plot.py at 2018-12-11 17:44:47

# Datalink statistics

-- Total of 1 flow:

Average throughput: 85.91 Mbit/s

95th percentile per-packet one-way delay: 269.900 ms

Loss rate: 0.75%

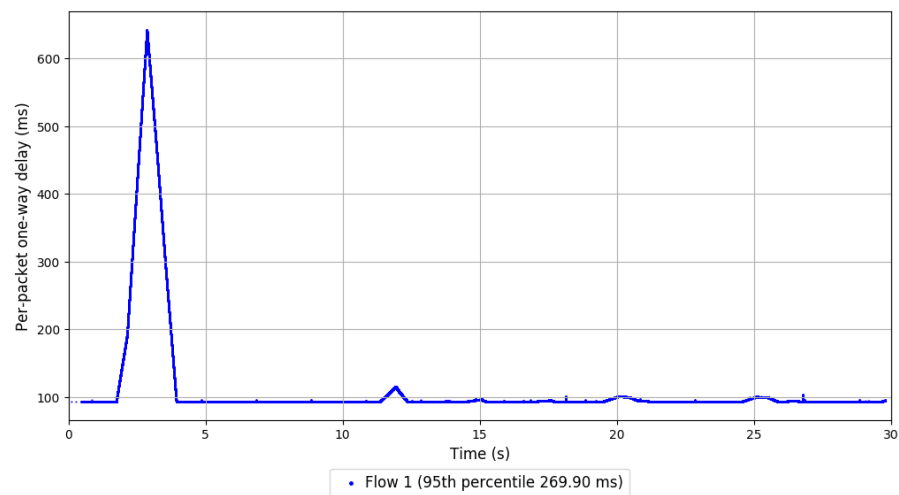
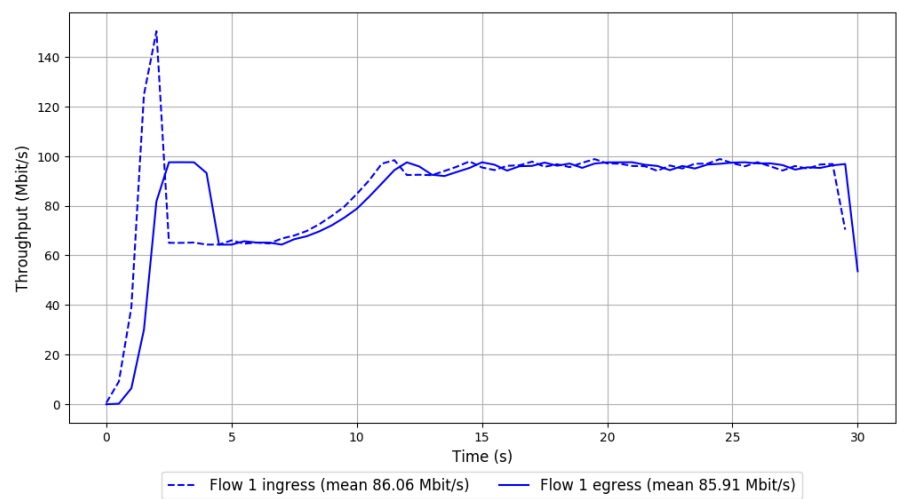
-- Flow 1:

Average throughput: 85.91 Mbit/s

95th percentile per-packet one-way delay: 269.900 ms

Loss rate: 0.75%

Run 2: Report of PCC-Allegro — Data Link



Run 3: Statistics of PCC-Allegro

Start at: 2018-12-11 16:36:44

End at: 2018-12-11 16:37:14

Local clock offset: -6.222 ms

Remote clock offset: 212.887 ms

# Below is generated by plot.py at 2018-12-11 17:44:54

# Datalink statistics

-- Total of 1 flow:

Average throughput: 86.59 Mbit/s

95th percentile per-packet one-way delay: 257.300 ms

Loss rate: 0.75%

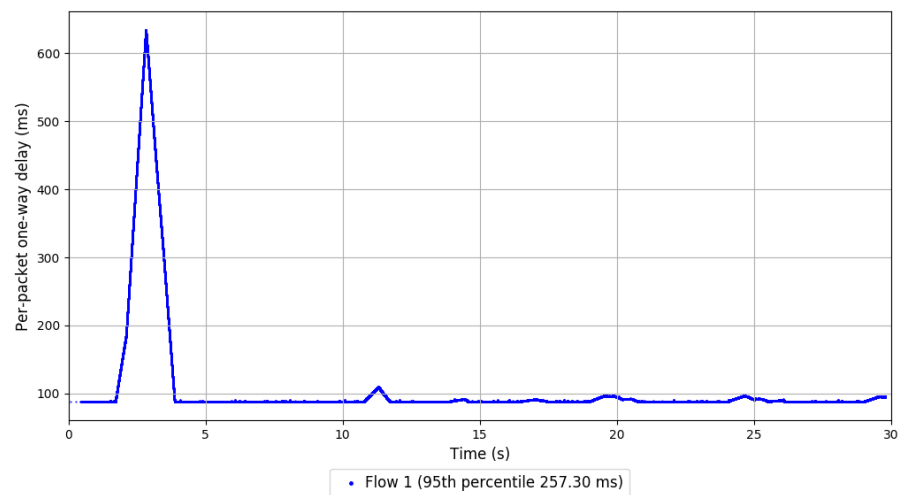
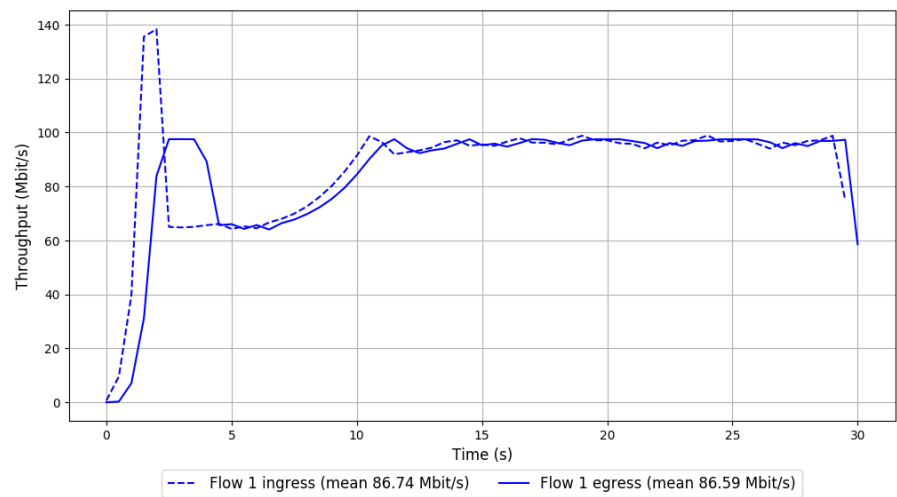
-- Flow 1:

Average throughput: 86.59 Mbit/s

95th percentile per-packet one-way delay: 257.300 ms

Loss rate: 0.75%

Run 3: Report of PCC-Allegro — Data Link

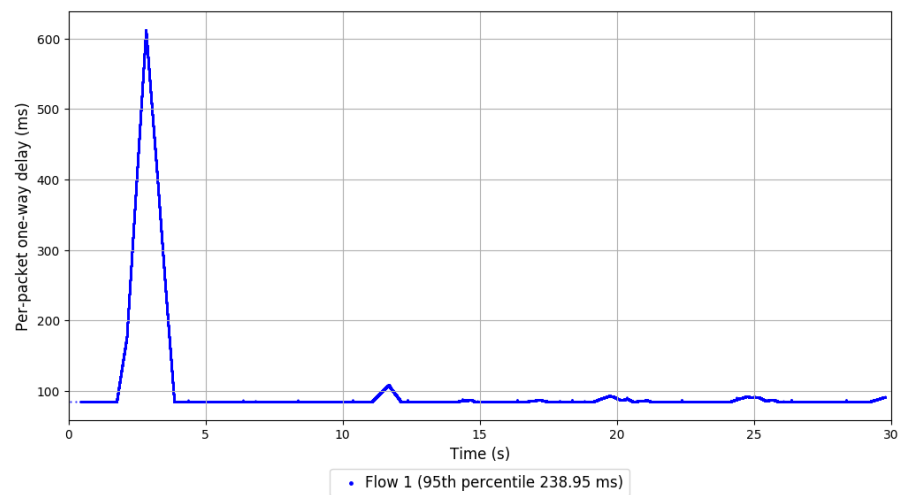
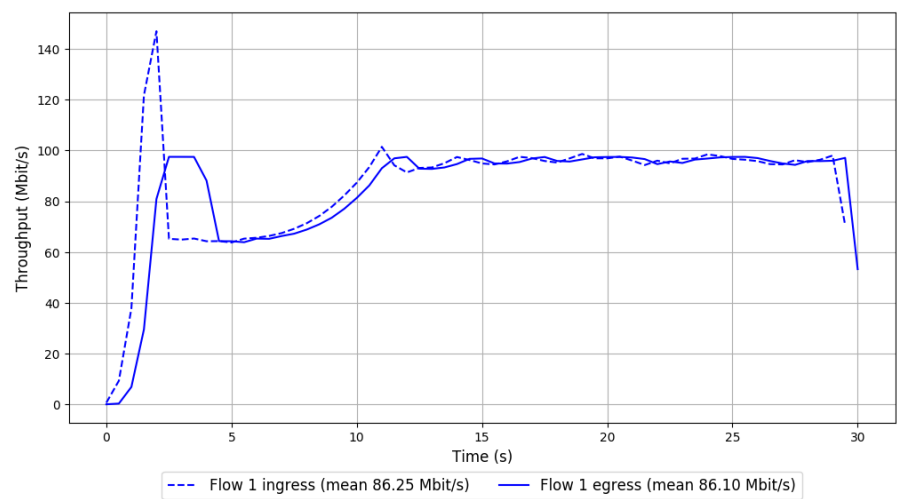


Run 4: Statistics of PCC-Allegro

Start at: 2018-12-11 16:59:16  
End at: 2018-12-11 16:59:46  
Local clock offset: -3.755 ms  
Remote clock offset: 228.547 ms

# Below is generated by plot.py at 2018-12-11 17:45:05  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 86.10 Mbit/s  
95th percentile per-packet one-way delay: 238.953 ms  
Loss rate: 0.74%  
-- Flow 1:  
Average throughput: 86.10 Mbit/s  
95th percentile per-packet one-way delay: 238.953 ms  
Loss rate: 0.74%

Run 4: Report of PCC-Allegro — Data Link



Run 5: Statistics of PCC-Allegro

Start at: 2018-12-11 17:21:49

End at: 2018-12-11 17:22:19

Local clock offset: -6.274 ms

Remote clock offset: 237.321 ms

# Below is generated by plot.py at 2018-12-11 17:45:09

# Datalink statistics

-- Total of 1 flow:

Average throughput: 84.57 Mbit/s

95th percentile per-packet one-way delay: 248.845 ms

Loss rate: 0.72%

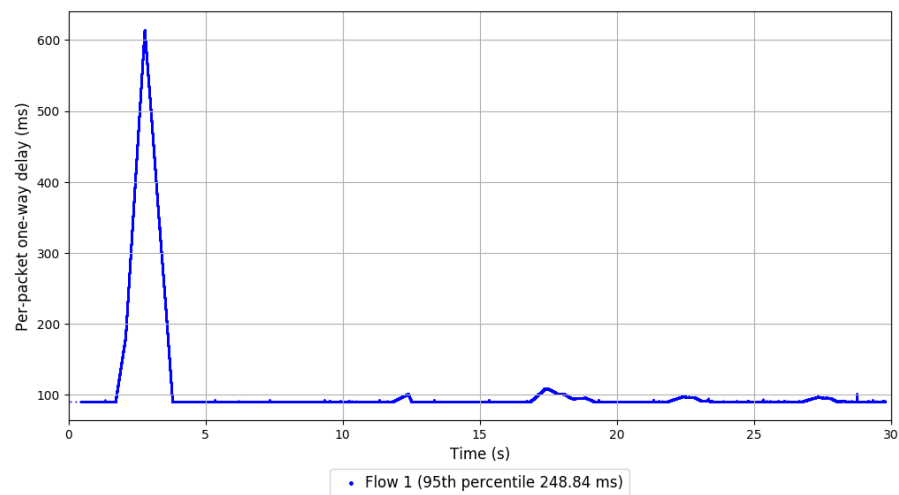
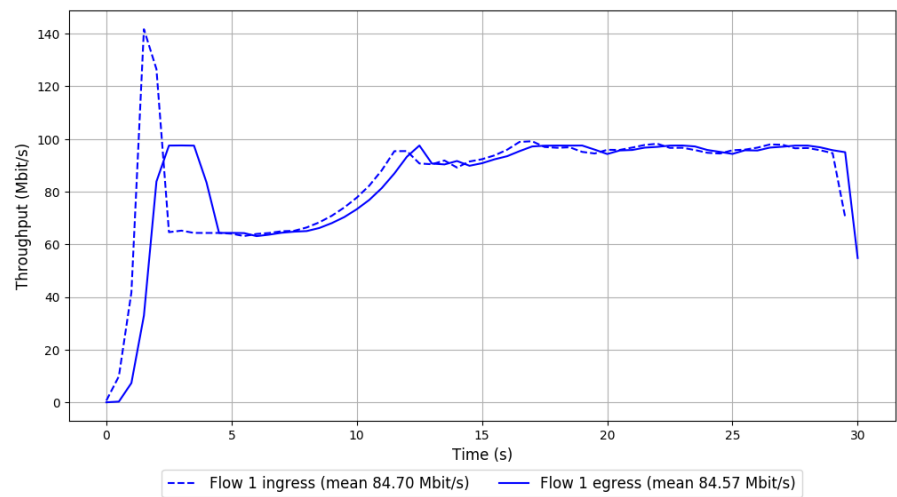
-- Flow 1:

Average throughput: 84.57 Mbit/s

95th percentile per-packet one-way delay: 248.845 ms

Loss rate: 0.72%

Run 5: Report of PCC-Allegro — Data Link



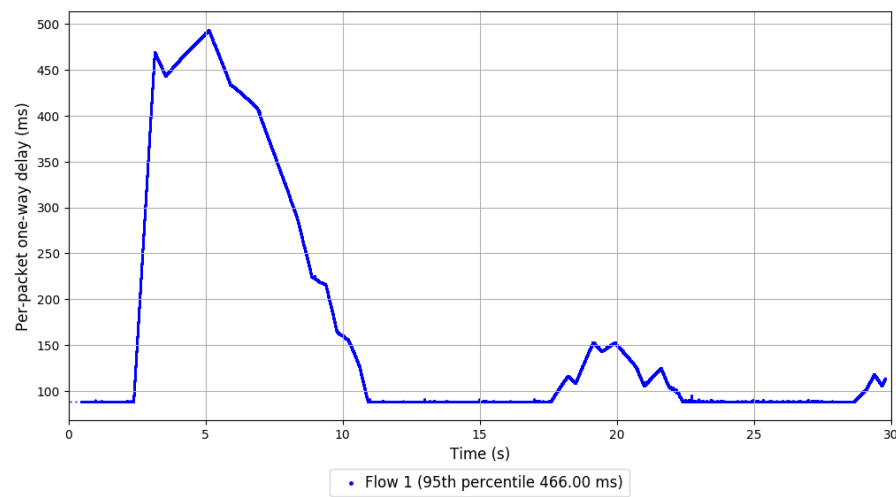
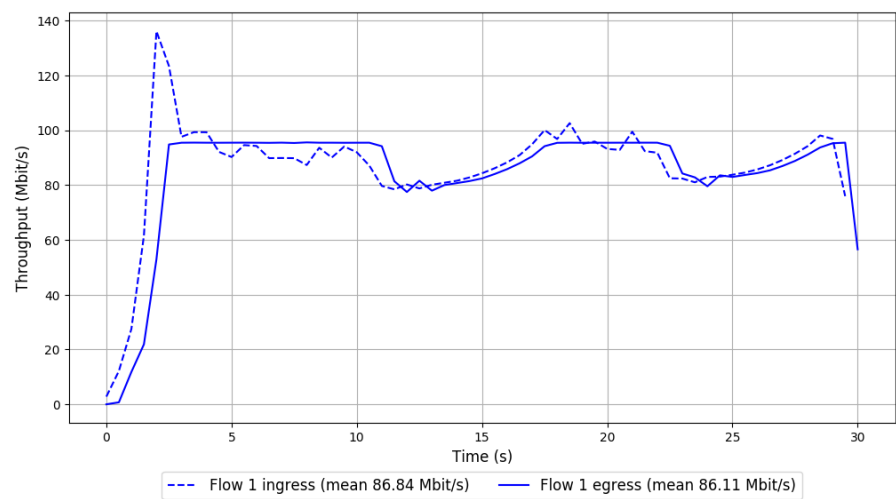


Run 1: Statistics of PCC-Expr

Start at: 2018-12-11 16:05:49  
End at: 2018-12-11 16:06:19  
Local clock offset: -5.716 ms  
Remote clock offset: 194.079 ms

# Below is generated by plot.py at 2018-12-11 17:46:01  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 86.11 Mbit/s  
95th percentile per-packet one-way delay: 465.997 ms  
Loss rate: 1.42%  
-- Flow 1:  
Average throughput: 86.11 Mbit/s  
95th percentile per-packet one-way delay: 465.997 ms  
Loss rate: 1.42%

Run 1: Report of PCC-Expr — Data Link

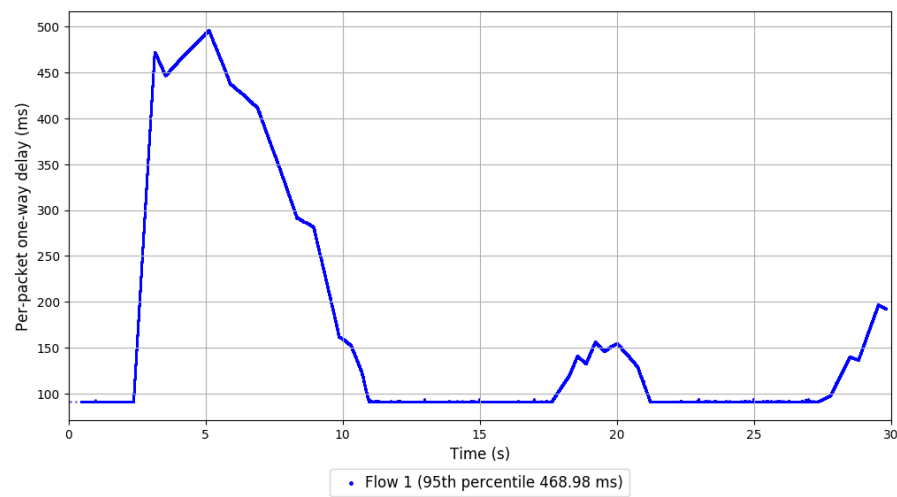
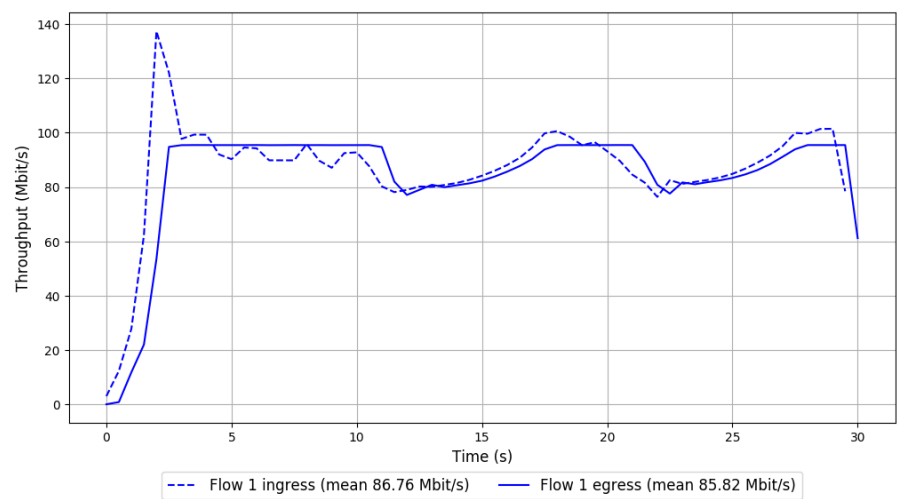


Run 2: Statistics of PCC-Expr

Start at: 2018-12-11 16:28:23  
End at: 2018-12-11 16:28:53  
Local clock offset: -6.298 ms  
Remote clock offset: 204.173 ms

# Below is generated by plot.py at 2018-12-11 17:46:02  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 85.82 Mbit/s  
95th percentile per-packet one-way delay: 468.979 ms  
Loss rate: 1.66%  
-- Flow 1:  
Average throughput: 85.82 Mbit/s  
95th percentile per-packet one-way delay: 468.979 ms  
Loss rate: 1.66%

Run 2: Report of PCC-Expr — Data Link

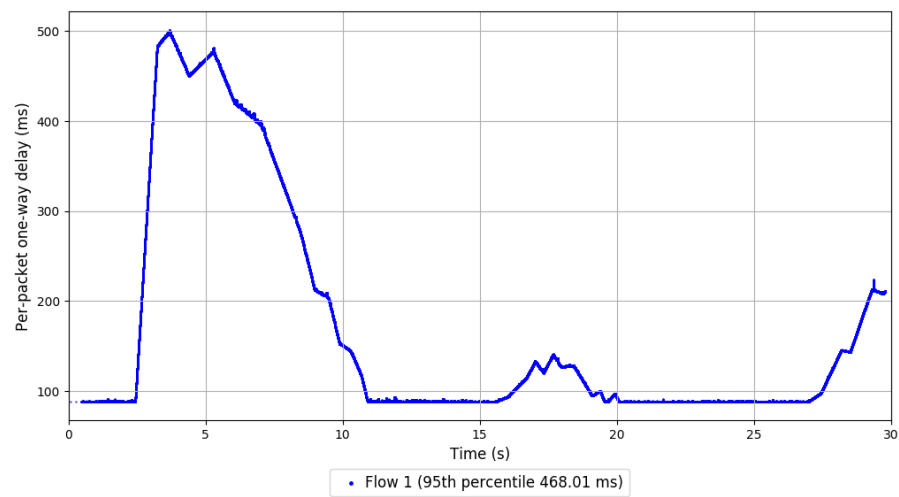
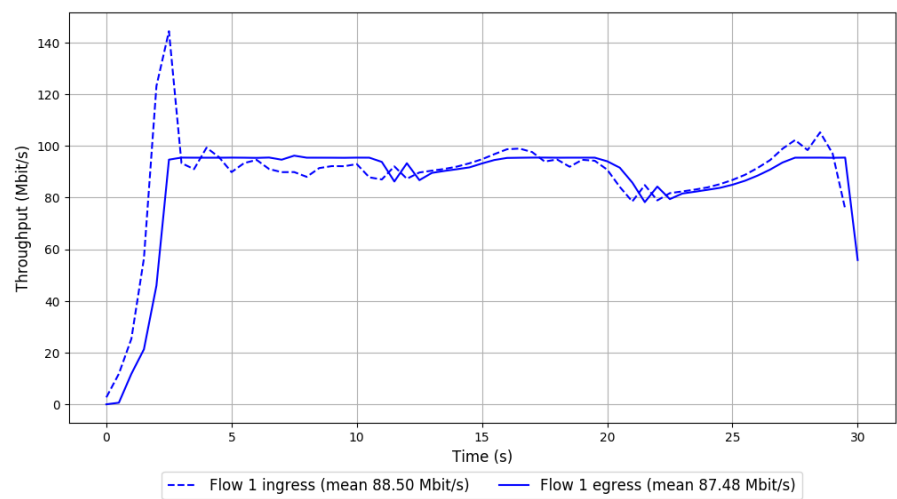


Run 3: Statistics of PCC-Expr

Start at: 2018-12-11 16:51:00  
End at: 2018-12-11 16:51:30  
Local clock offset: -4.095 ms  
Remote clock offset: 222.134 ms

# Below is generated by plot.py at 2018-12-11 17:46:09  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 87.48 Mbit/s  
95th percentile per-packet one-way delay: 468.008 ms  
Loss rate: 1.73%  
-- Flow 1:  
Average throughput: 87.48 Mbit/s  
95th percentile per-packet one-way delay: 468.008 ms  
Loss rate: 1.73%

Run 3: Report of PCC-Expr — Data Link

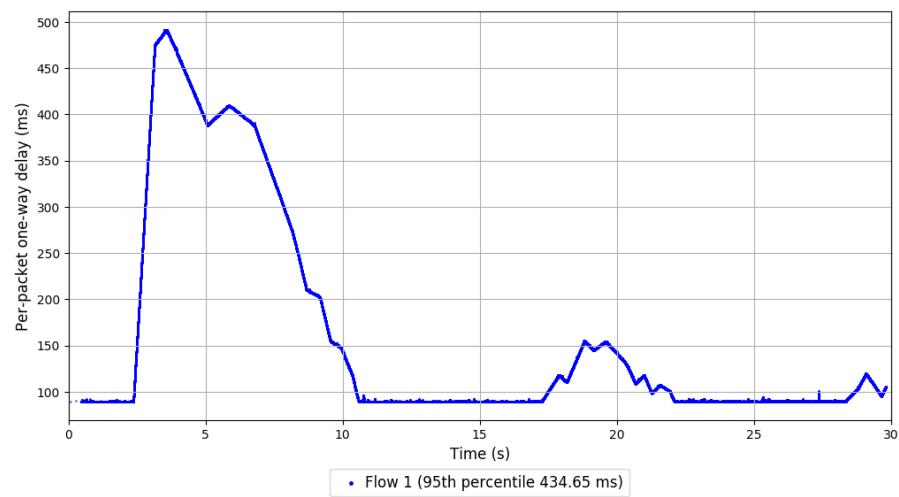
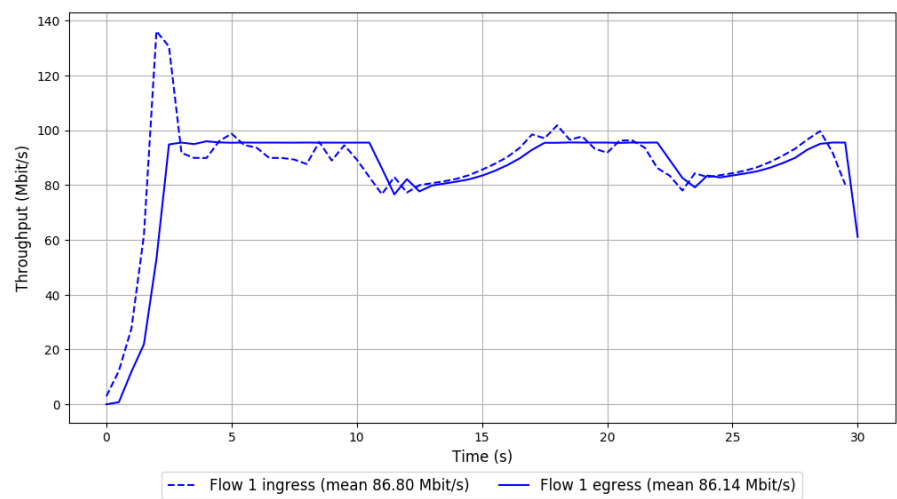


Run 4: Statistics of PCC-Expr

Start at: 2018-12-11 17:13:33  
End at: 2018-12-11 17:14:03  
Local clock offset: -5.013 ms  
Remote clock offset: 235.165 ms

# Below is generated by plot.py at 2018-12-11 17:46:42  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 86.14 Mbit/s  
95th percentile per-packet one-way delay: 434.653 ms  
Loss rate: 1.34%  
-- Flow 1:  
Average throughput: 86.14 Mbit/s  
95th percentile per-packet one-way delay: 434.653 ms  
Loss rate: 1.34%

Run 4: Report of PCC-Expr — Data Link



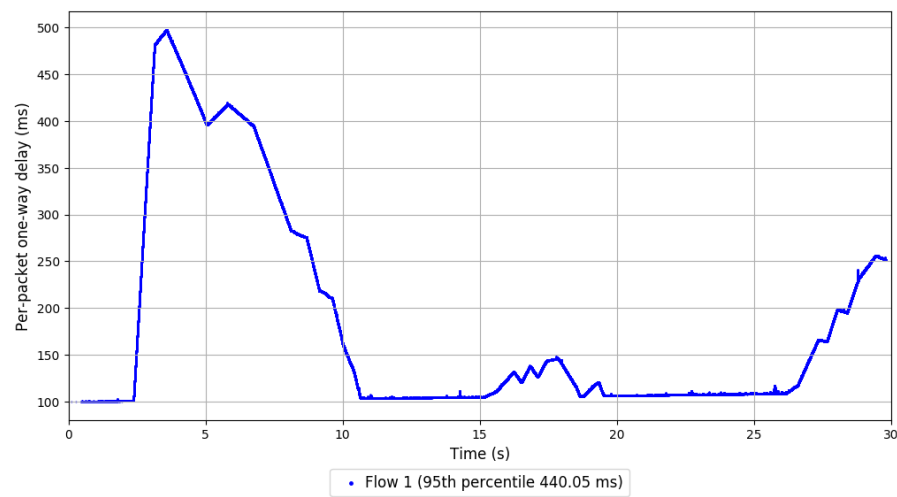
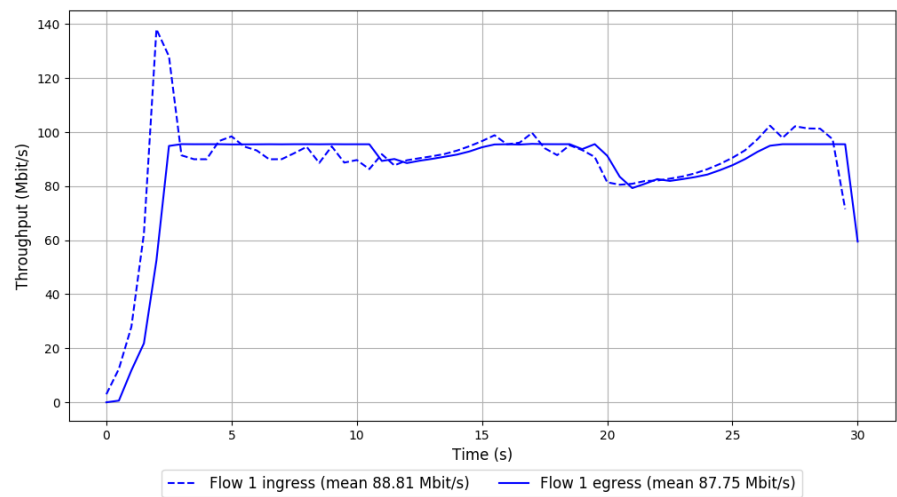


Run 5: Statistics of PCC-Expr

Start at: 2018-12-11 17:36:04  
End at: 2018-12-11 17:36:34  
Local clock offset: -7.23 ms  
Remote clock offset: 58.084 ms

# Below is generated by plot.py at 2018-12-11 17:46:44  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 87.75 Mbit/s  
95th percentile per-packet one-way delay: 440.046 ms  
Loss rate: 1.73%  
-- Flow 1:  
Average throughput: 87.75 Mbit/s  
95th percentile per-packet one-way delay: 440.046 ms  
Loss rate: 1.73%

Run 5: Report of PCC-Expr — Data Link

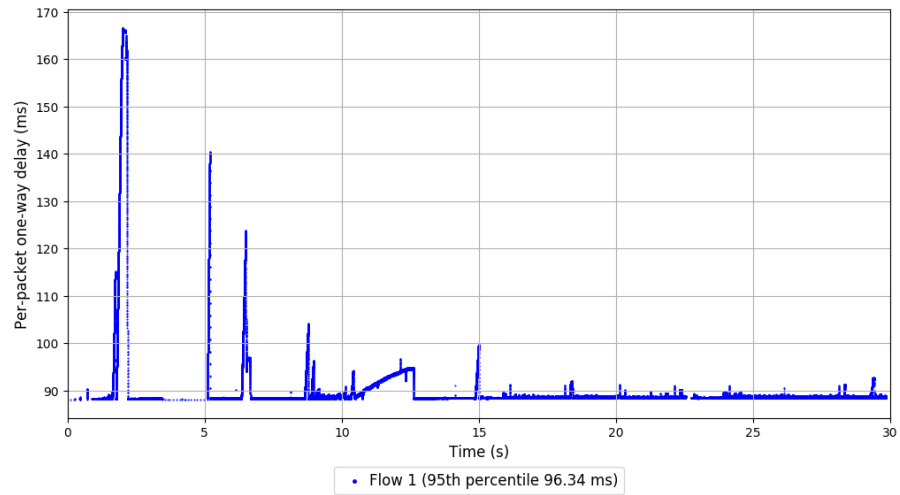
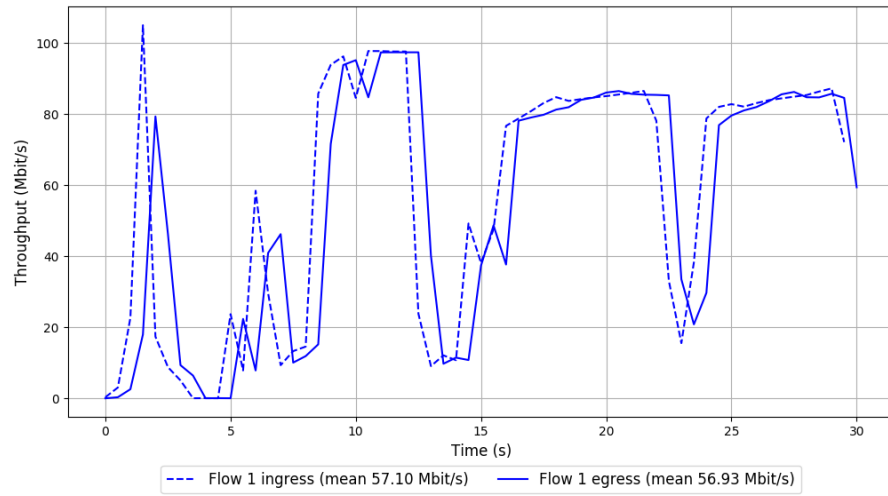


Run 1: Statistics of QUIC Cubic

Start at: 2018-12-11 15:44:30  
End at: 2018-12-11 15:45:00  
Local clock offset: -6.009 ms  
Remote clock offset: 180.769 ms

# Below is generated by plot.py at 2018-12-11 17:46:44  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 56.93 Mbit/s  
95th percentile per-packet one-way delay: 96.341 ms  
Loss rate: 0.88%  
-- Flow 1:  
Average throughput: 56.93 Mbit/s  
95th percentile per-packet one-way delay: 96.341 ms  
Loss rate: 0.88%

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

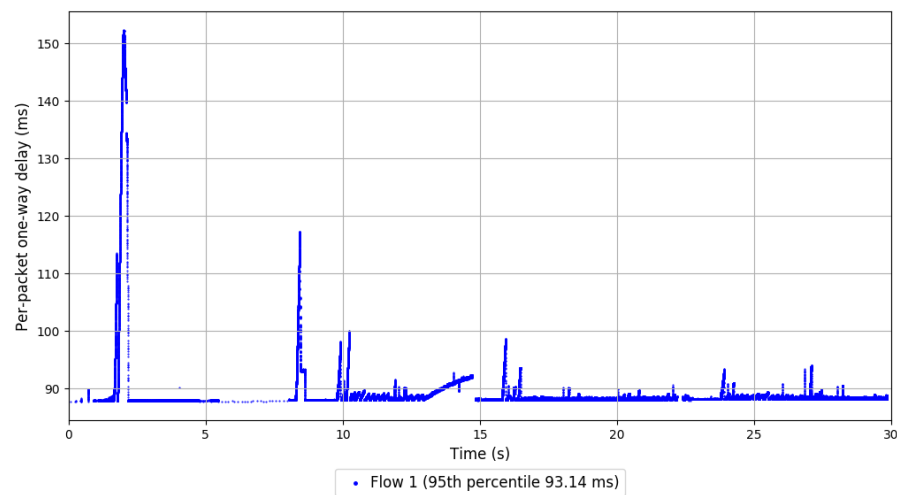
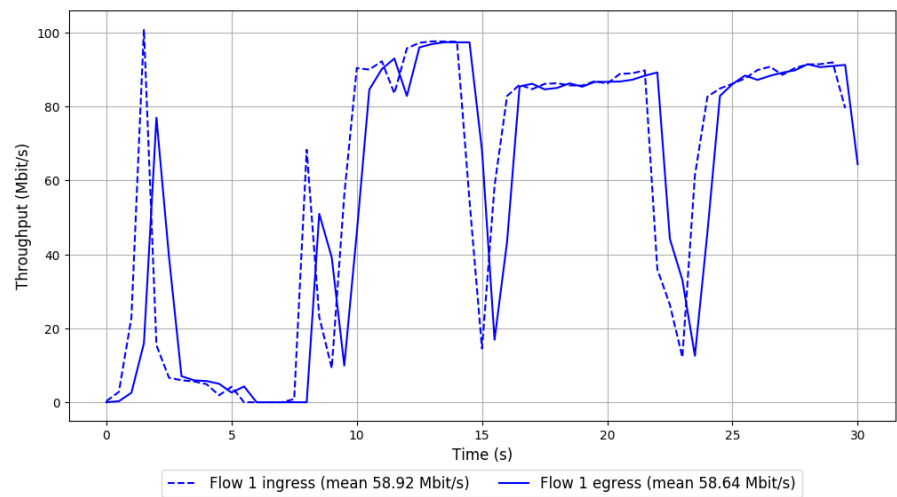


Run 2: Statistics of QUIC Cubic

Start at: 2018-12-11 16:07:04  
End at: 2018-12-11 16:07:34  
Local clock offset: -5.705 ms  
Remote clock offset: 195.111 ms

# Below is generated by plot.py at 2018-12-11 17:46:44  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 58.64 Mbit/s  
95th percentile per-packet one-way delay: 93.142 ms  
Loss rate: 1.07%  
-- Flow 1:  
Average throughput: 58.64 Mbit/s  
95th percentile per-packet one-way delay: 93.142 ms  
Loss rate: 1.07%

Run 2: Report of QUIC Cubic — Data Link

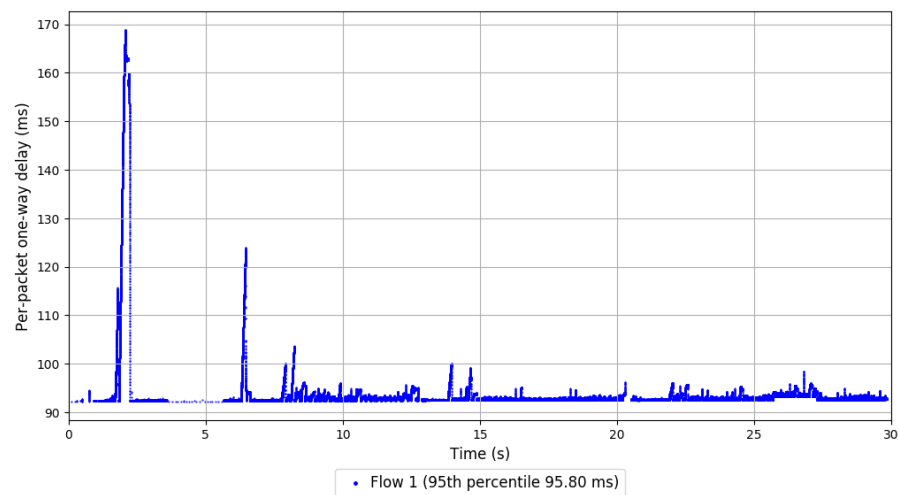
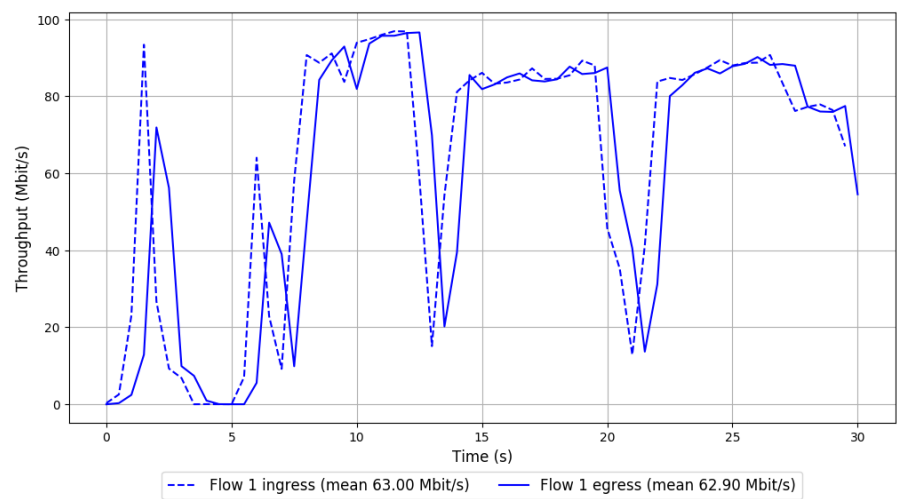


Run 3: Statistics of QUIC Cubic

Start at: 2018-12-11 16:29:38  
End at: 2018-12-11 16:30:08  
Local clock offset: -5.333 ms  
Remote clock offset: 204.786 ms

# Below is generated by plot.py at 2018-12-11 17:46:44  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 62.90 Mbit/s  
95th percentile per-packet one-way delay: 95.803 ms  
Loss rate: 0.73%  
-- Flow 1:  
Average throughput: 62.90 Mbit/s  
95th percentile per-packet one-way delay: 95.803 ms  
Loss rate: 0.73%

Run 3: Report of QUIC Cubic — Data Link



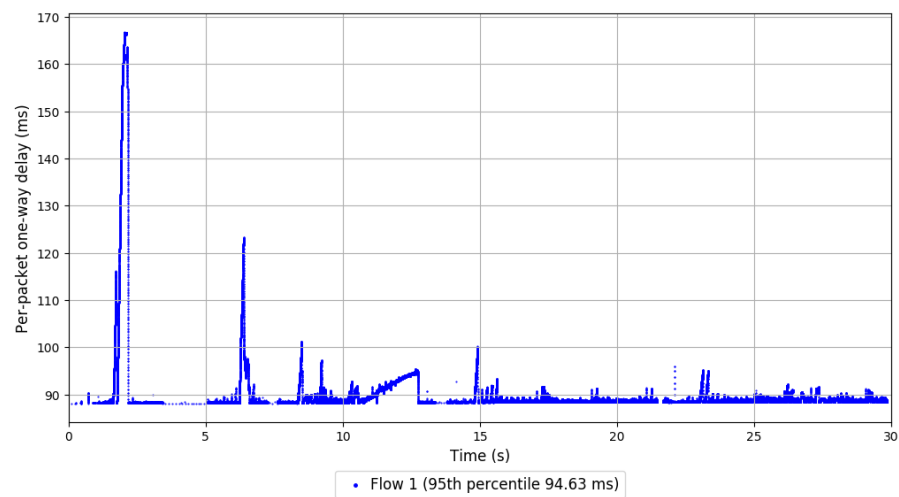
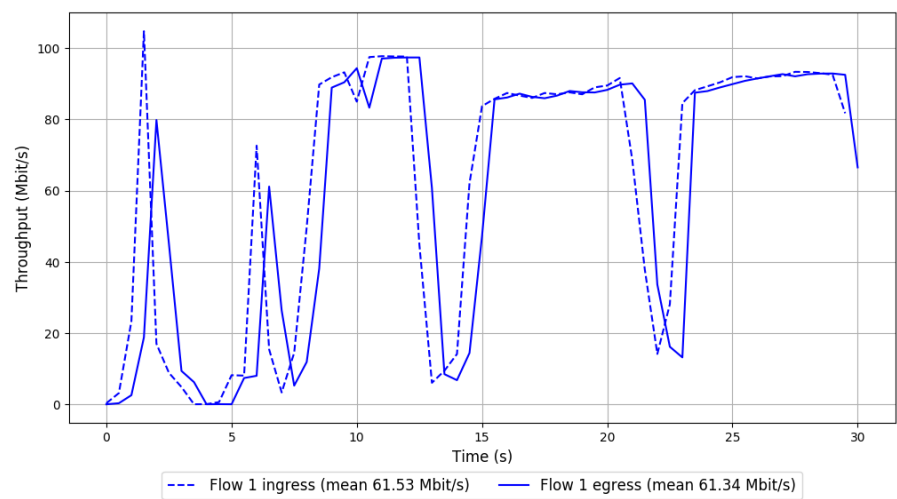


Run 4: Statistics of QUIC Cubic

Start at: 2018-12-11 16:52:15  
End at: 2018-12-11 16:52:45  
Local clock offset: -4.036 ms  
Remote clock offset: 222.839 ms

# Below is generated by plot.py at 2018-12-11 17:46:44  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 61.34 Mbit/s  
95th percentile per-packet one-way delay: 94.631 ms  
Loss rate: 0.88%  
-- Flow 1:  
Average throughput: 61.34 Mbit/s  
95th percentile per-packet one-way delay: 94.631 ms  
Loss rate: 0.88%

Run 4: Report of QUIC Cubic — Data Link

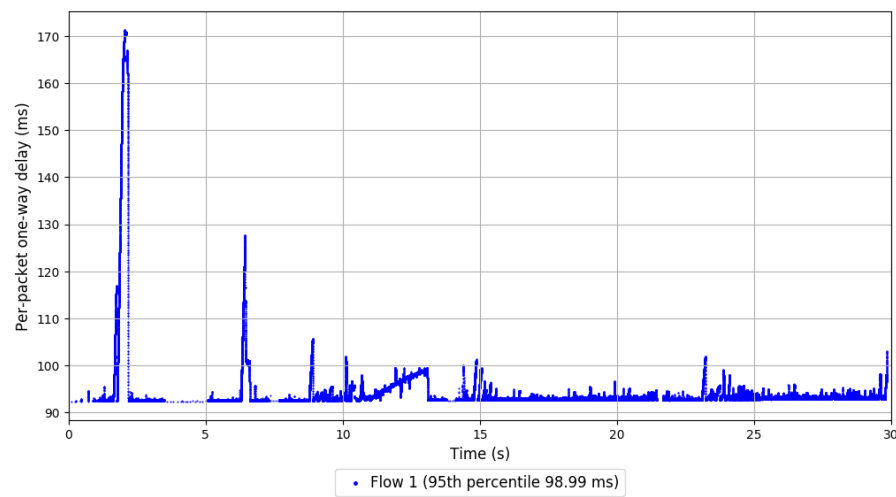
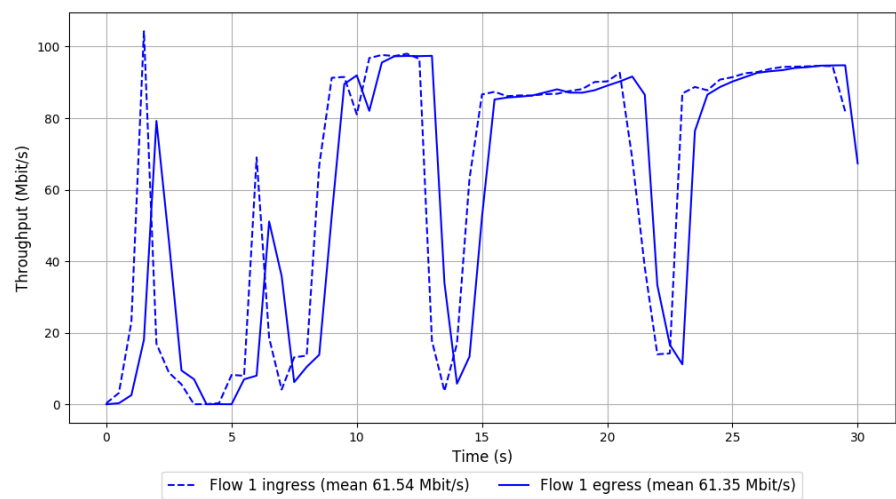


Run 5: Statistics of QUIC Cubic

Start at: 2018-12-11 17:14:48  
End at: 2018-12-11 17:15:18  
Local clock offset: -5.265 ms  
Remote clock offset: 232.783 ms

# Below is generated by plot.py at 2018-12-11 17:46:44  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 61.35 Mbit/s  
95th percentile per-packet one-way delay: 98.990 ms  
Loss rate: 0.87%  
-- Flow 1:  
Average throughput: 61.35 Mbit/s  
95th percentile per-packet one-way delay: 98.990 ms  
Loss rate: 0.87%

Run 5: Report of QUIC Cubic — Data Link

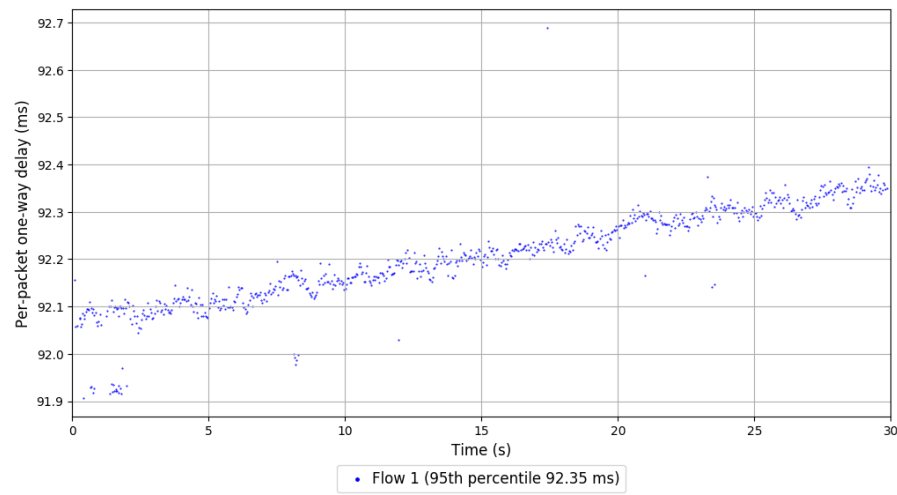
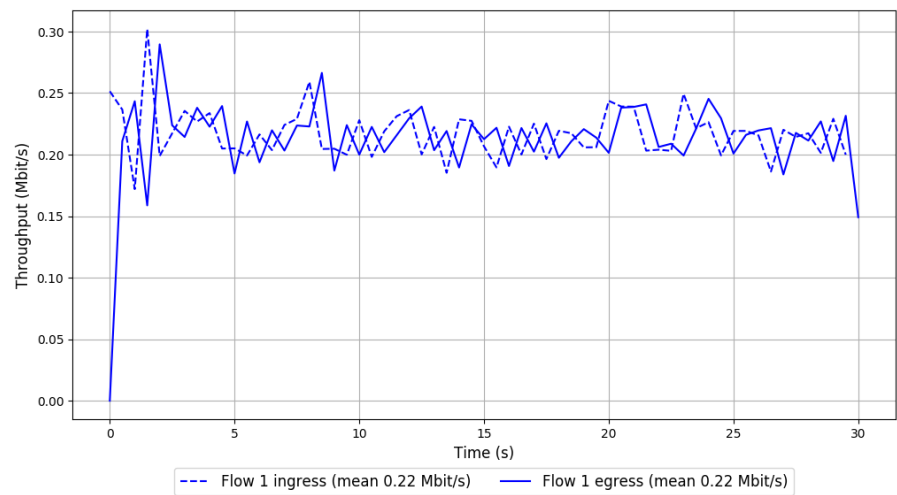


Run 1: Statistics of SCReAM

Start at: 2018-12-11 15:55:08  
End at: 2018-12-11 15:55:38  
Local clock offset: -5.743 ms  
Remote clock offset: 183.199 ms

# Below is generated by plot.py at 2018-12-11 17:46:44  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 92.347 ms  
Loss rate: 0.64%  
-- Flow 1:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 92.347 ms  
Loss rate: 0.64%

Run 1: Report of SReAM — Data Link

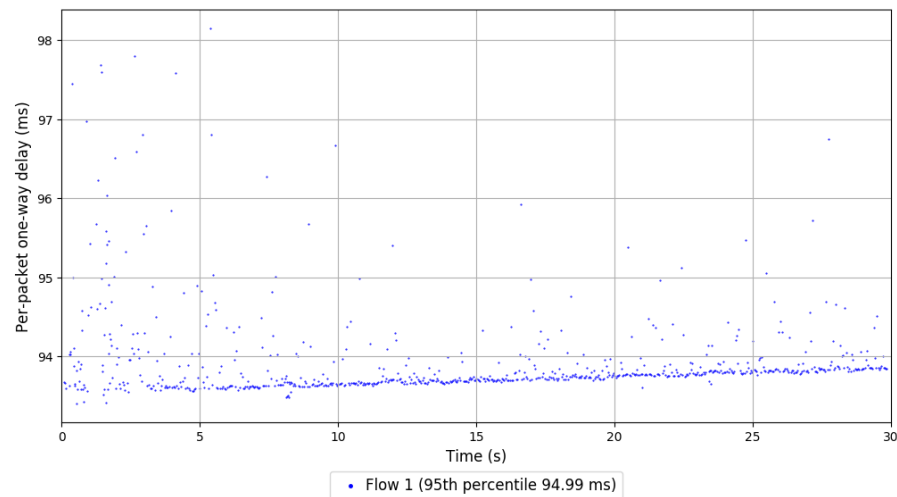
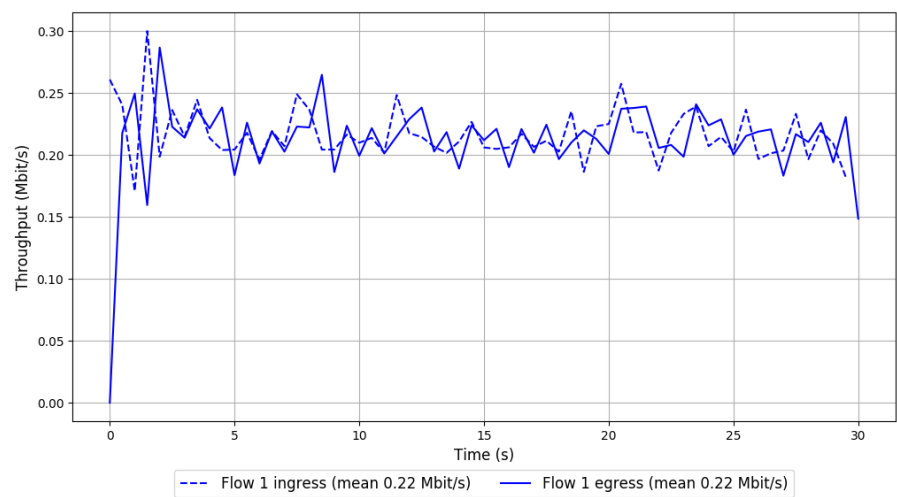


Run 2: Statistics of SCReAM

Start at: 2018-12-11 16:17:42  
End at: 2018-12-11 16:18:12  
Local clock offset: -5.432 ms  
Remote clock offset: 196.198 ms

# Below is generated by plot.py at 2018-12-11 17:46:44  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 94.990 ms  
Loss rate: 0.51%  
-- Flow 1:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 94.990 ms  
Loss rate: 0.51%

Run 2: Report of SReAM — Data Link



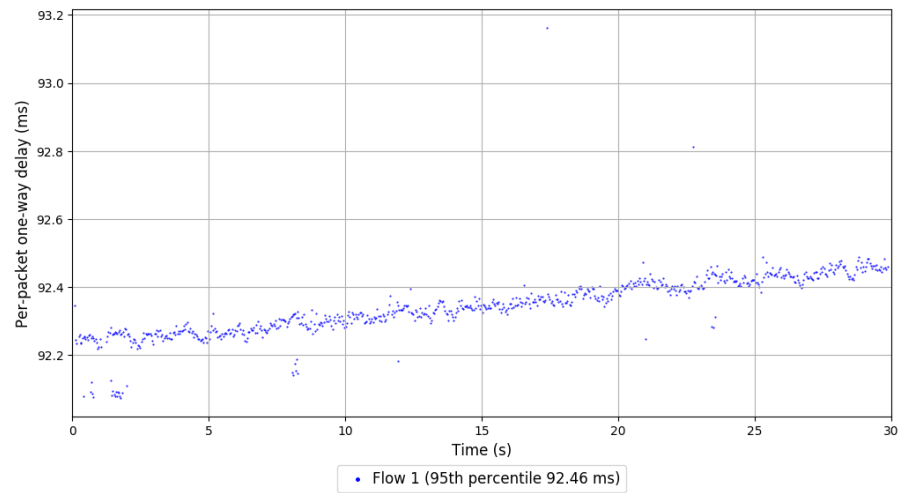
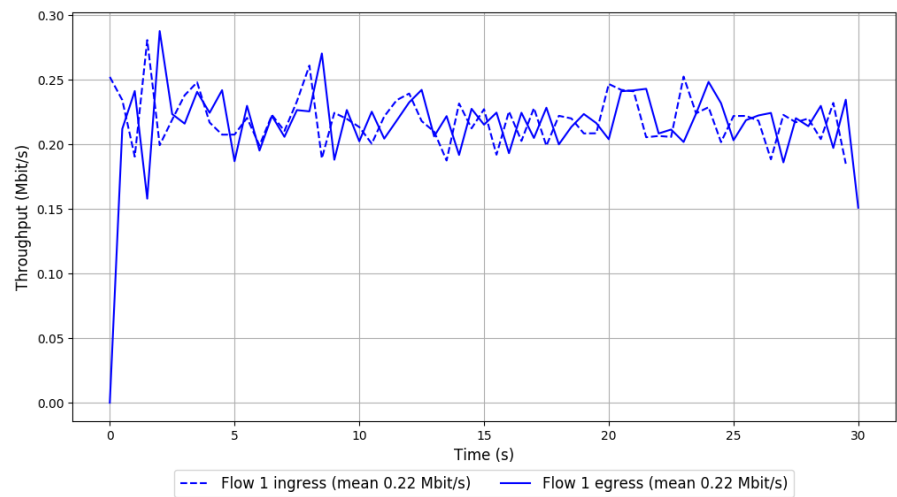


Run 3: Statistics of SCReAM

Start at: 2018-12-11 16:40:21  
End at: 2018-12-11 16:40:51  
Local clock offset: -5.094 ms  
Remote clock offset: 211.342 ms

# Below is generated by plot.py at 2018-12-11 17:46:44  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 92.456 ms  
Loss rate: 0.51%  
-- Flow 1:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 92.456 ms  
Loss rate: 0.51%

Run 3: Report of SReAM — Data Link

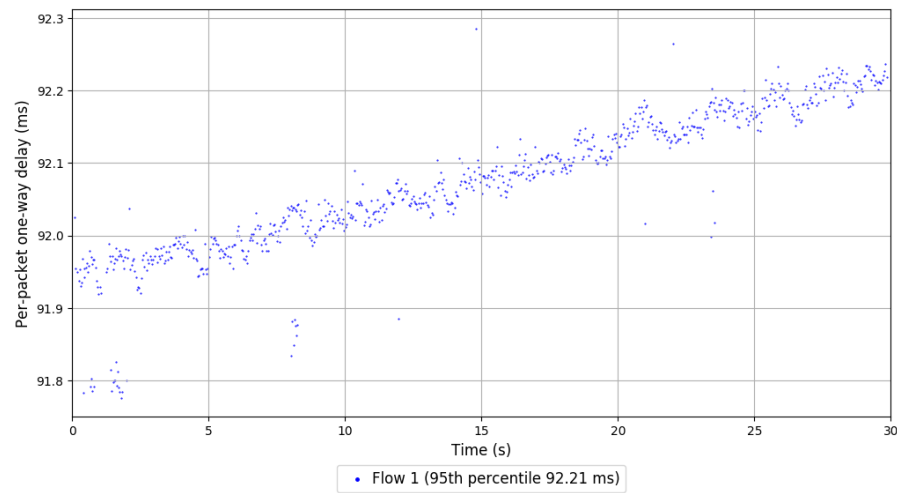
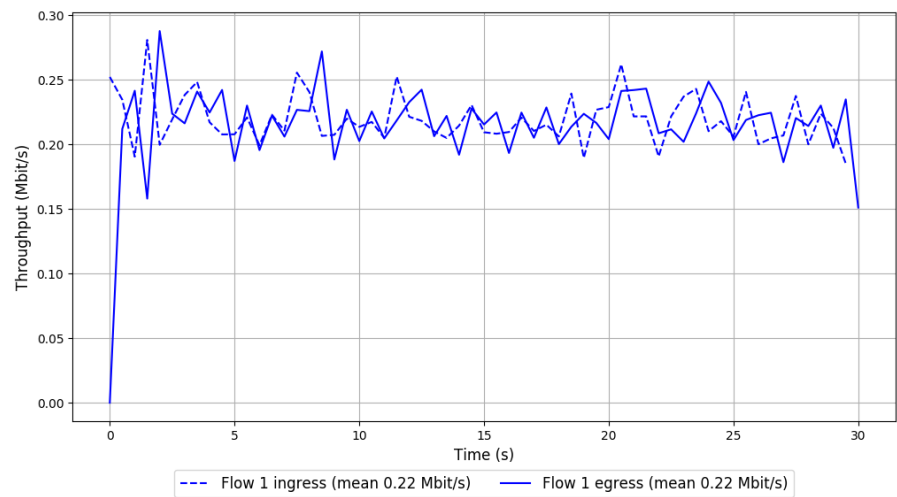


Run 4: Statistics of SCReAM

Start at: 2018-12-11 17:02:53  
End at: 2018-12-11 17:03:23  
Local clock offset: -3.631 ms  
Remote clock offset: 225.483 ms

# Below is generated by plot.py at 2018-12-11 17:46:44  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 92.211 ms  
Loss rate: 0.51%  
-- Flow 1:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 92.211 ms  
Loss rate: 0.51%

Run 4: Report of SReAM — Data Link

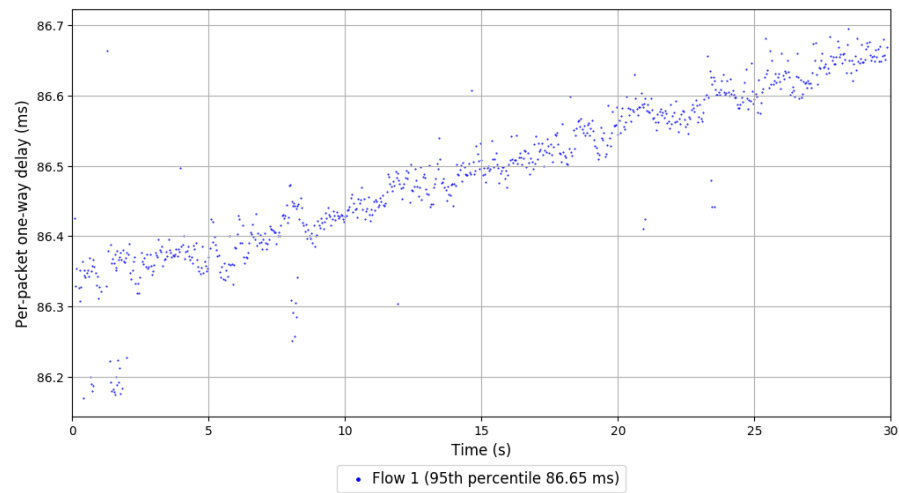
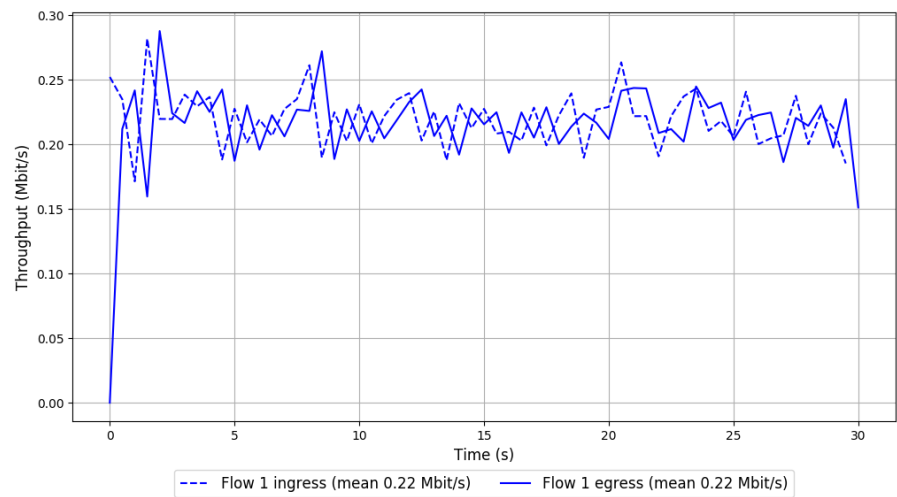


Run 5: Statistics of SCReAM

Start at: 2018-12-11 17:25:25  
End at: 2018-12-11 17:25:55  
Local clock offset: -6.6 ms  
Remote clock offset: 243.457 ms

# Below is generated by plot.py at 2018-12-11 17:46:44  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 86.653 ms  
Loss rate: 0.51%  
-- Flow 1:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 86.653 ms  
Loss rate: 0.51%

Run 5: Report of SReAM — Data Link

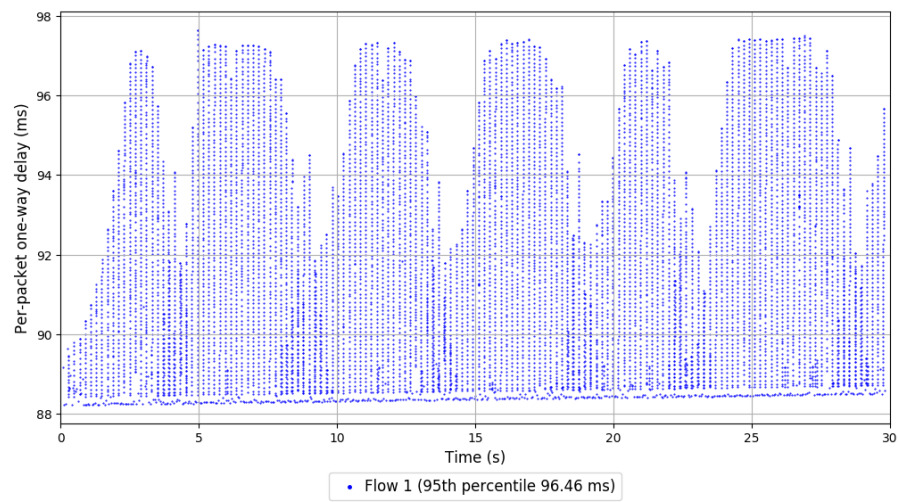
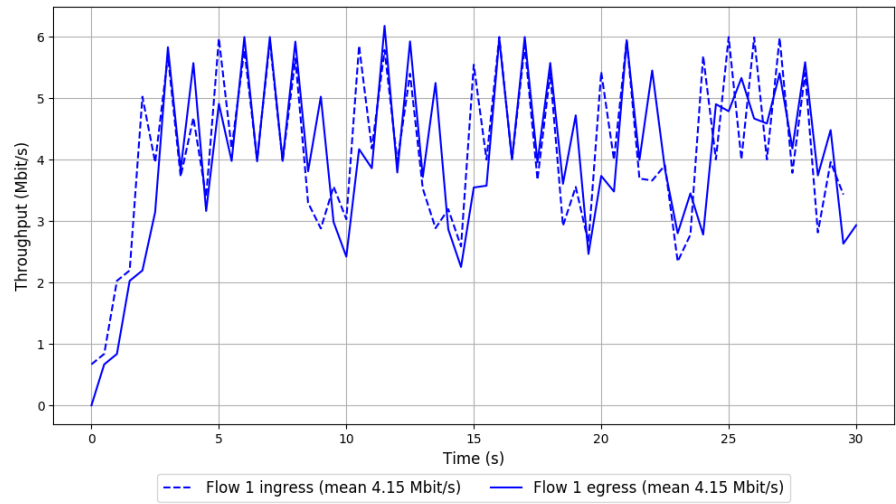


Run 1: Statistics of Sprout

Start at: 2018-12-11 15:46:52  
End at: 2018-12-11 15:47:22  
Local clock offset: -5.911 ms  
Remote clock offset: 182.145 ms

# Below is generated by plot.py at 2018-12-11 17:46:44  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 4.15 Mbit/s  
95th percentile per-packet one-way delay: 96.457 ms  
Loss rate: 0.74%  
-- Flow 1:  
Average throughput: 4.15 Mbit/s  
95th percentile per-packet one-way delay: 96.457 ms  
Loss rate: 0.74%

# Run 1: Report of Sprout — Data Link



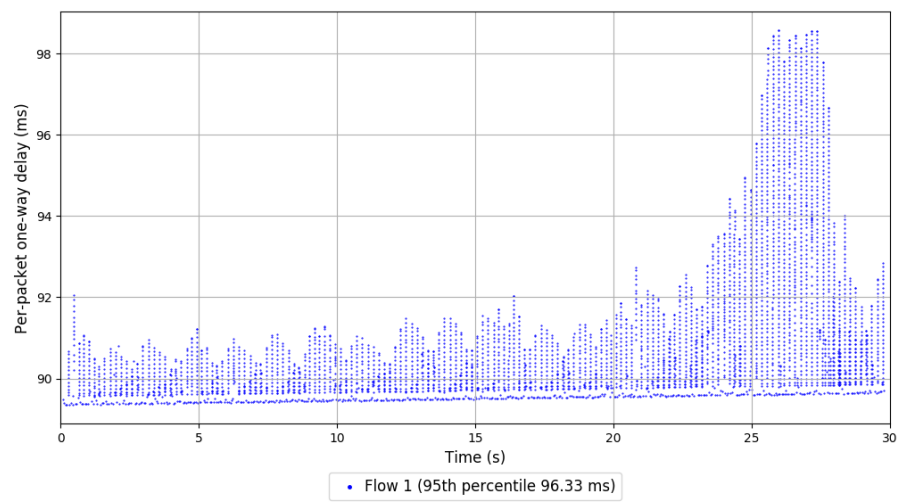
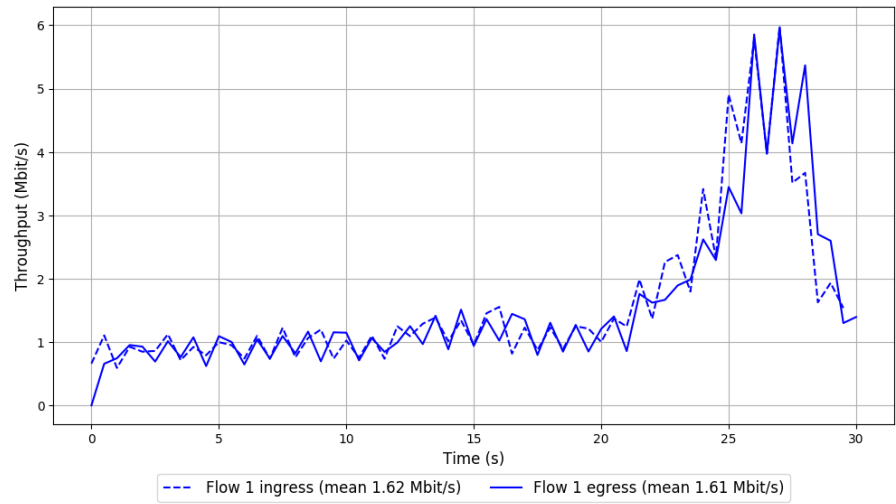


Run 2: Statistics of Sprout

Start at: 2018-12-11 16:09:27  
End at: 2018-12-11 16:09:57  
Local clock offset: -5.664 ms  
Remote clock offset: 195.025 ms

# Below is generated by plot.py at 2018-12-11 17:46:44  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 1.61 Mbit/s  
95th percentile per-packet one-way delay: 96.332 ms  
Loss rate: 0.80%  
-- Flow 1:  
Average throughput: 1.61 Mbit/s  
95th percentile per-packet one-way delay: 96.332 ms  
Loss rate: 0.80%

## Run 2: Report of Sprout — Data Link

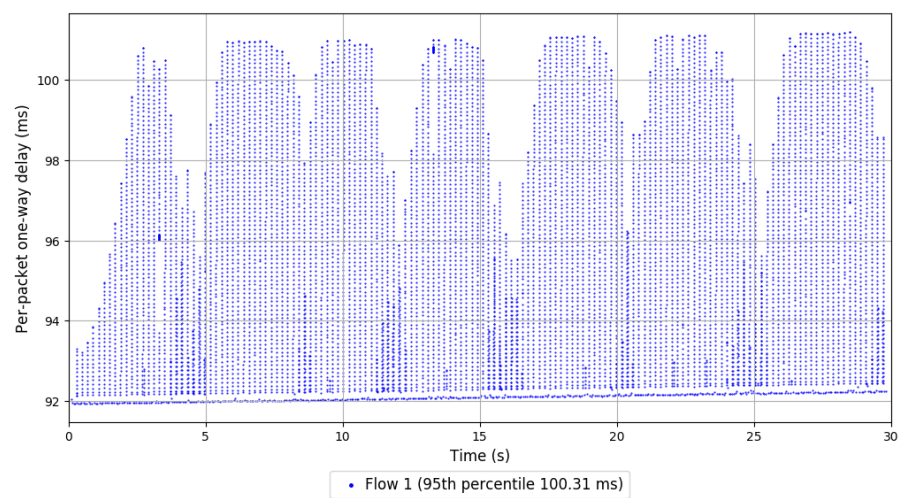
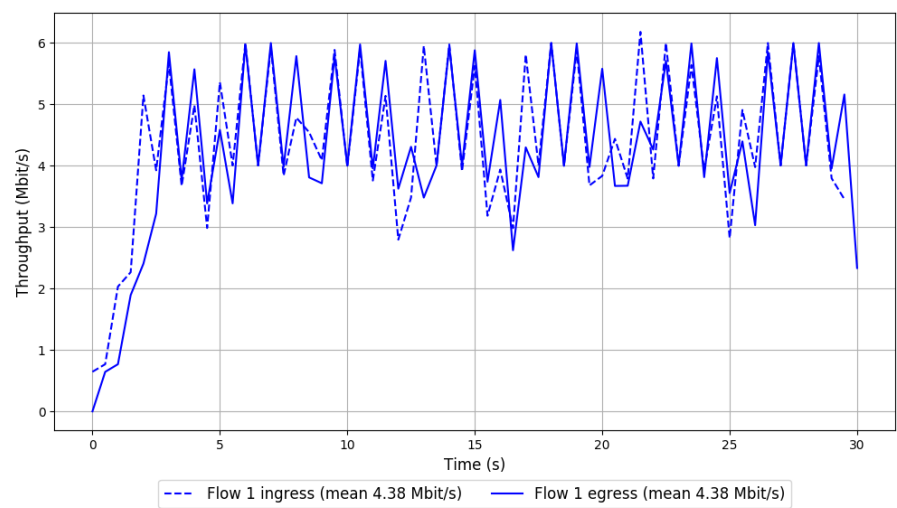


Run 3: Statistics of Sprout

Start at: 2018-12-11 16:32:01  
End at: 2018-12-11 16:32:31  
Local clock offset: -5.349 ms  
Remote clock offset: 206.37 ms

# Below is generated by plot.py at 2018-12-11 17:46:44  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 4.38 Mbit/s  
95th percentile per-packet one-way delay: 100.313 ms  
Loss rate: 0.61%  
-- Flow 1:  
Average throughput: 4.38 Mbit/s  
95th percentile per-packet one-way delay: 100.313 ms  
Loss rate: 0.61%

Run 3: Report of Sprout — Data Link



Run 4: Statistics of Sprout

Start at: 2018-12-11 16:54:37

End at: 2018-12-11 16:55:08

Local clock offset: -3.925 ms

Remote clock offset: 225.5 ms

# Below is generated by plot.py at 2018-12-11 17:46:44

# Datalink statistics

-- Total of 1 flow:

Average throughput: 3.16 Mbit/s

95th percentile per-packet one-way delay: 93.556 ms

Loss rate: 1.00%

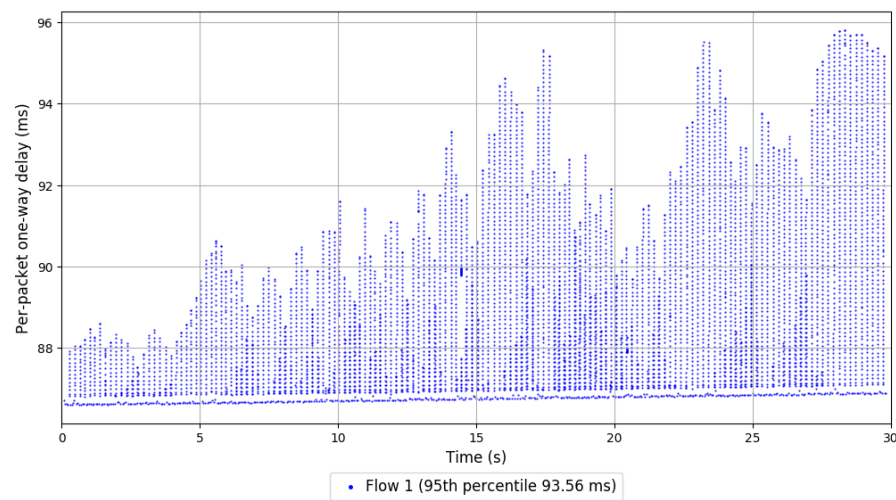
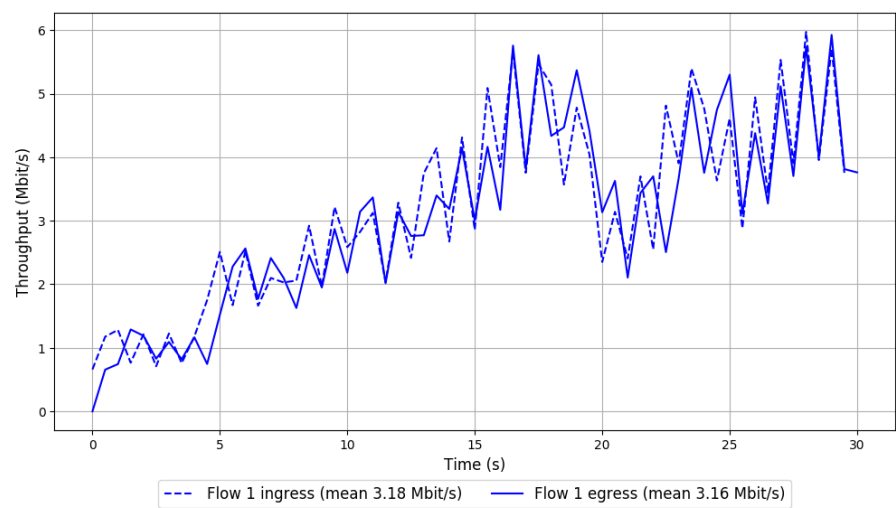
-- Flow 1:

Average throughput: 3.16 Mbit/s

95th percentile per-packet one-way delay: 93.556 ms

Loss rate: 1.00%

Run 4: Report of Sprout — Data Link

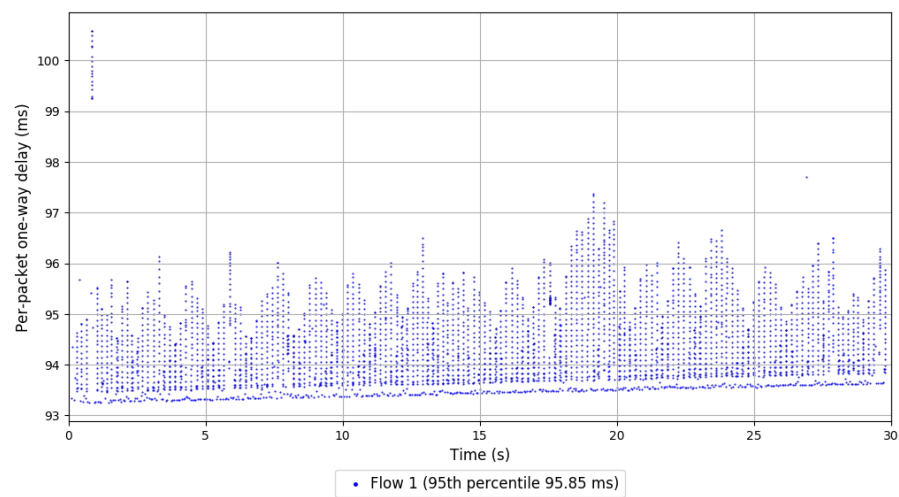
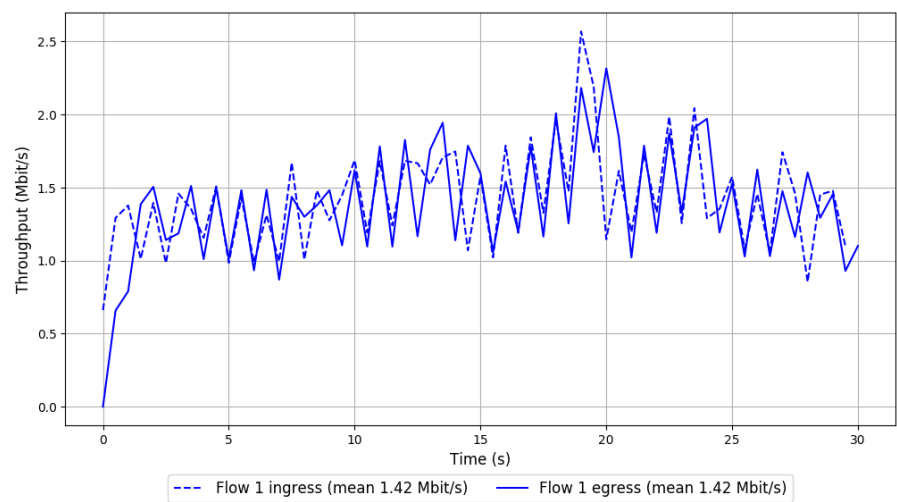


Run 5: Statistics of Sprout

Start at: 2018-12-11 17:17:10  
End at: 2018-12-11 17:17:40  
Local clock offset: -5.681 ms  
Remote clock offset: 233.251 ms

# Below is generated by plot.py at 2018-12-11 17:46:44  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 1.42 Mbit/s  
95th percentile per-packet one-way delay: 95.854 ms  
Loss rate: 0.65%  
-- Flow 1:  
Average throughput: 1.42 Mbit/s  
95th percentile per-packet one-way delay: 95.854 ms  
Loss rate: 0.65%

Run 5: Report of Sprout — Data Link



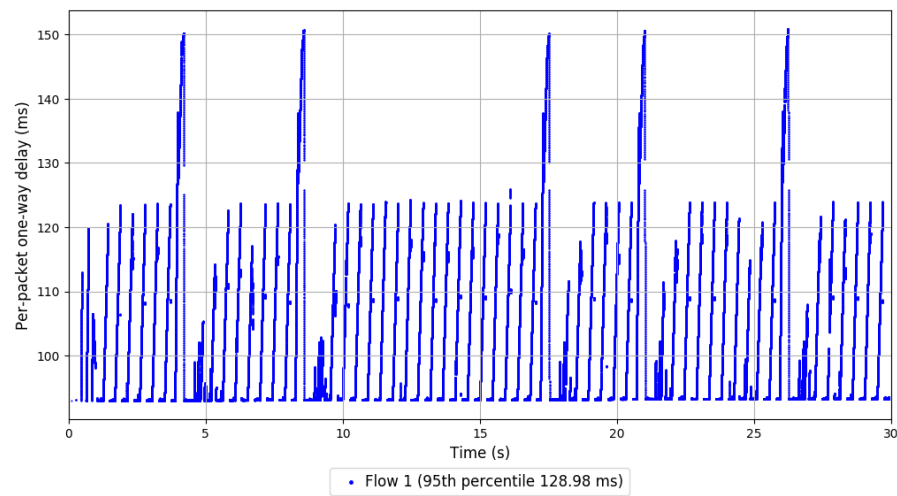
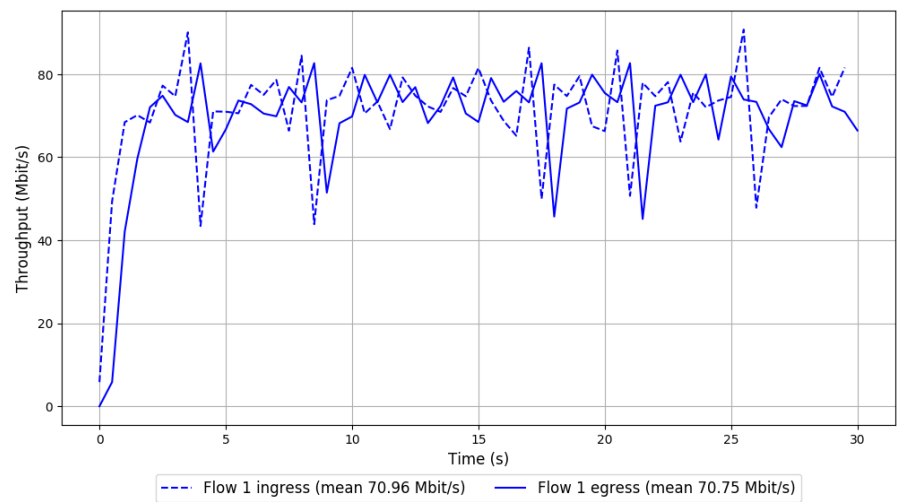


Run 1: Statistics of TaoVA-100x

Start at: 2018-12-11 15:52:42  
End at: 2018-12-11 15:53:12  
Local clock offset: -5.762 ms  
Remote clock offset: 180.831 ms

# Below is generated by plot.py at 2018-12-11 17:47:45  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 70.75 Mbit/s  
95th percentile per-packet one-way delay: 128.981 ms  
Loss rate: 0.87%  
-- Flow 1:  
Average throughput: 70.75 Mbit/s  
95th percentile per-packet one-way delay: 128.981 ms  
Loss rate: 0.87%

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

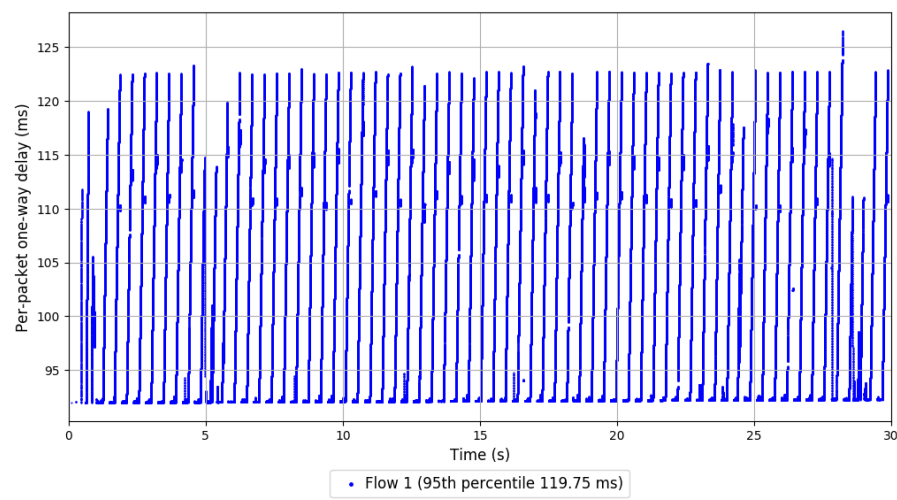
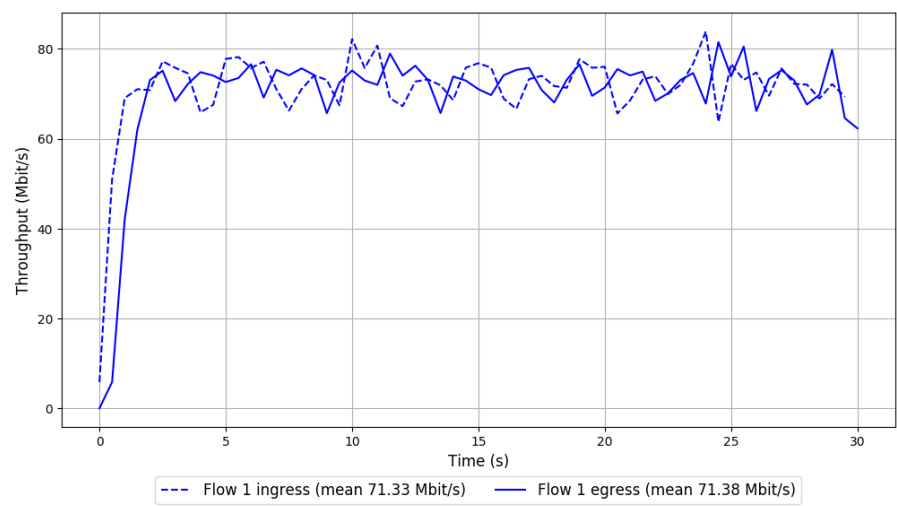


Run 2: Statistics of TaoVA-100x

Start at: 2018-12-11 16:15:16  
End at: 2018-12-11 16:15:46  
Local clock offset: -5.46 ms  
Remote clock offset: 195.985 ms

# Below is generated by plot.py at 2018-12-11 17:47:45  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 71.38 Mbit/s  
95th percentile per-packet one-way delay: 119.748 ms  
Loss rate: 0.56%  
-- Flow 1:  
Average throughput: 71.38 Mbit/s  
95th percentile per-packet one-way delay: 119.748 ms  
Loss rate: 0.56%

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

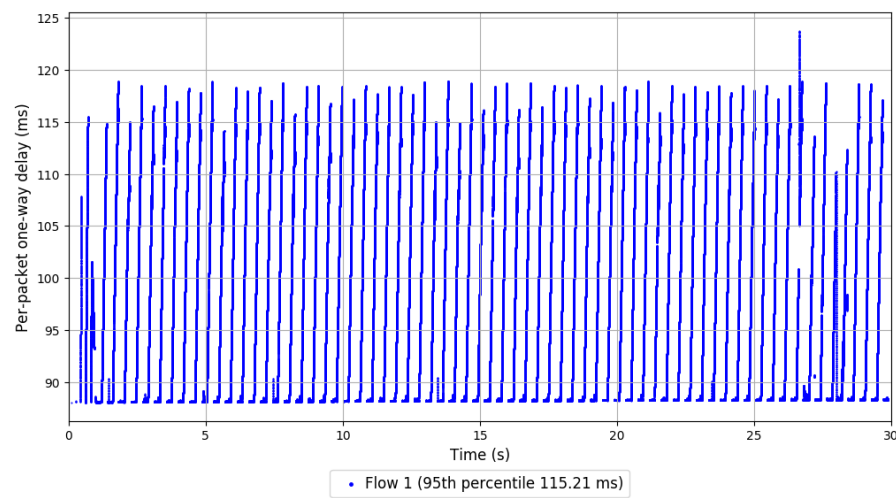
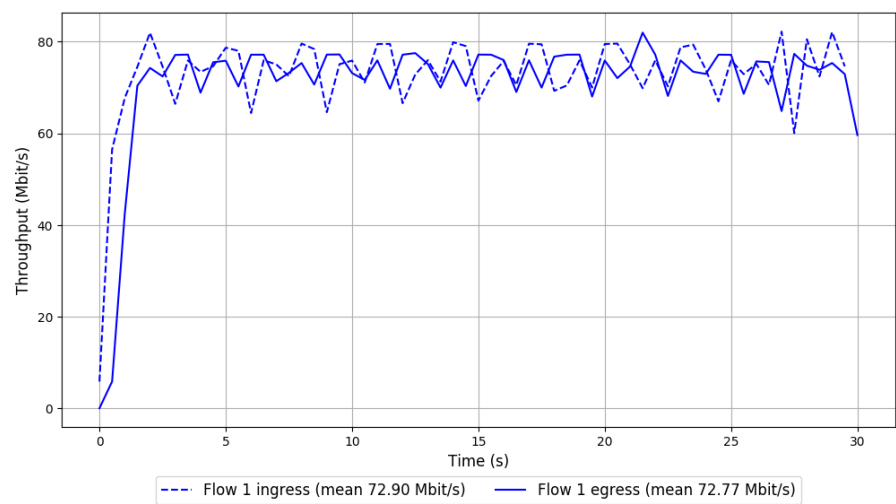


Run 3: Statistics of TaoVA-100x

Start at: 2018-12-11 16:37:55  
End at: 2018-12-11 16:38:25  
Local clock offset: -5.412 ms  
Remote clock offset: 213.819 ms

# Below is generated by plot.py at 2018-12-11 17:47:50  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 72.77 Mbit/s  
95th percentile per-packet one-way delay: 115.212 ms  
Loss rate: 0.83%  
-- Flow 1:  
Average throughput: 72.77 Mbit/s  
95th percentile per-packet one-way delay: 115.212 ms  
Loss rate: 0.83%

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

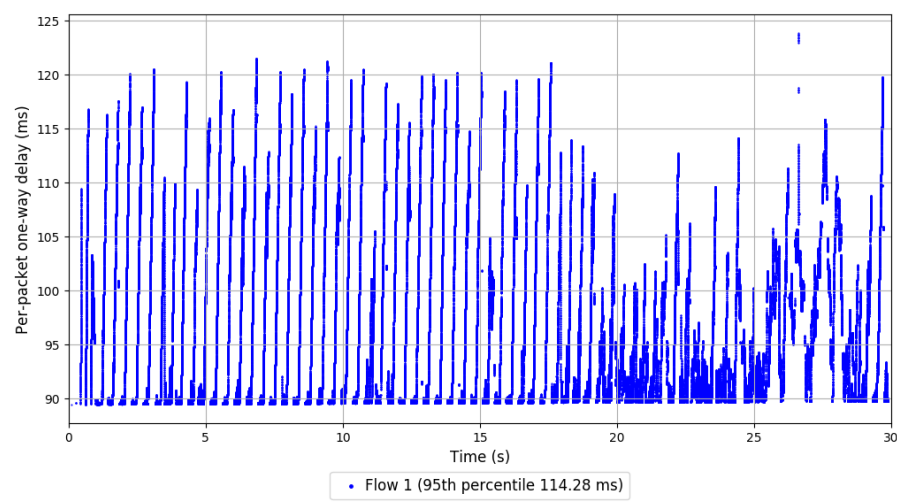
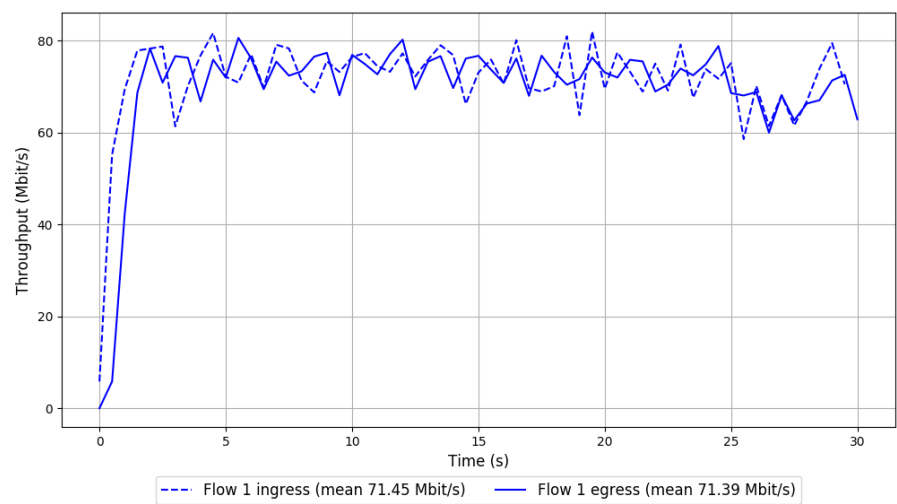


Run 4: Statistics of TaoVA-100x

Start at: 2018-12-11 17:00:26  
End at: 2018-12-11 17:00:56  
Local clock offset: -3.733 ms  
Remote clock offset: 226.692 ms

# Below is generated by plot.py at 2018-12-11 17:47:50  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 71.39 Mbit/s  
95th percentile per-packet one-way delay: 114.275 ms  
Loss rate: 0.67%  
-- Flow 1:  
Average throughput: 71.39 Mbit/s  
95th percentile per-packet one-way delay: 114.275 ms  
Loss rate: 0.67%

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



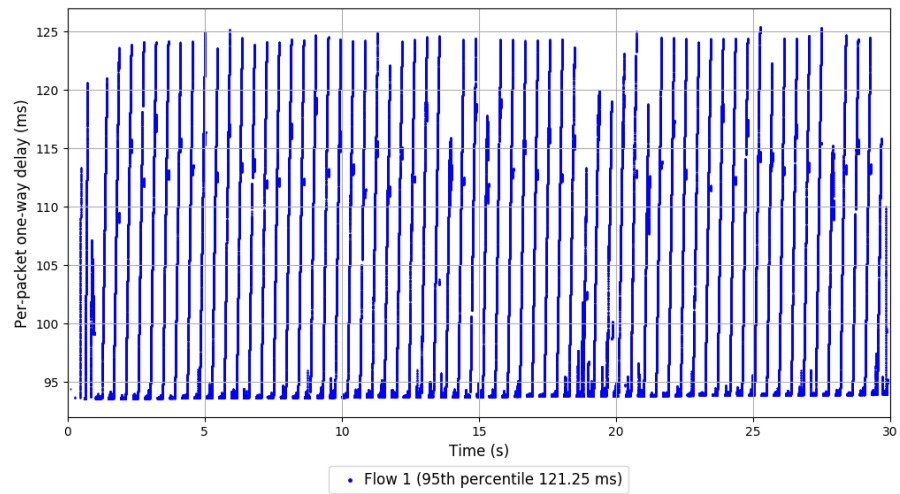
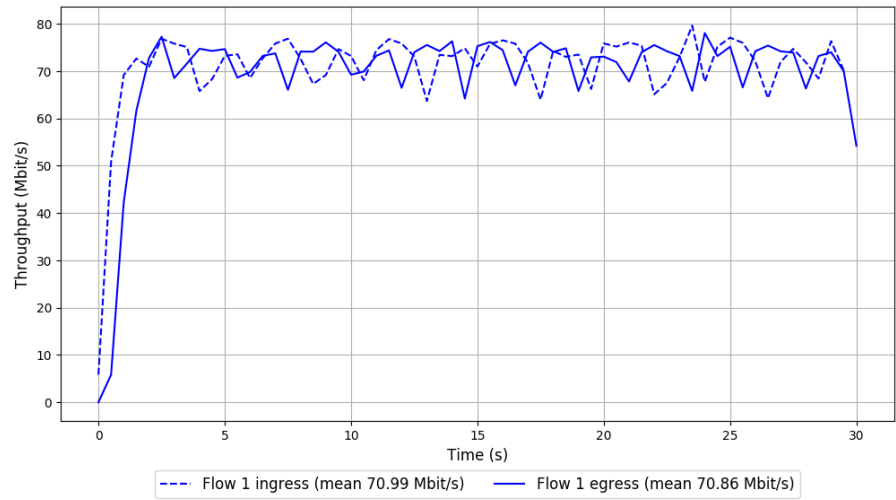


Run 5: Statistics of TaoVA-100x

Start at: 2018-12-11 17:22:59  
End at: 2018-12-11 17:23:29  
Local clock offset: -6.403 ms  
Remote clock offset: 236.712 ms

# Below is generated by plot.py at 2018-12-11 17:48:04  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 70.86 Mbit/s  
95th percentile per-packet one-way delay: 121.249 ms  
Loss rate: 0.75%  
-- Flow 1:  
Average throughput: 70.86 Mbit/s  
95th percentile per-packet one-way delay: 121.249 ms  
Loss rate: 0.75%

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

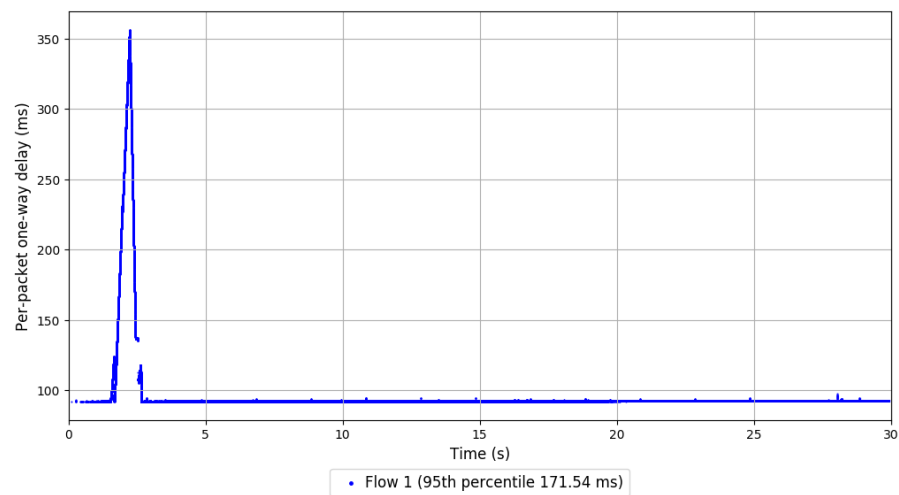
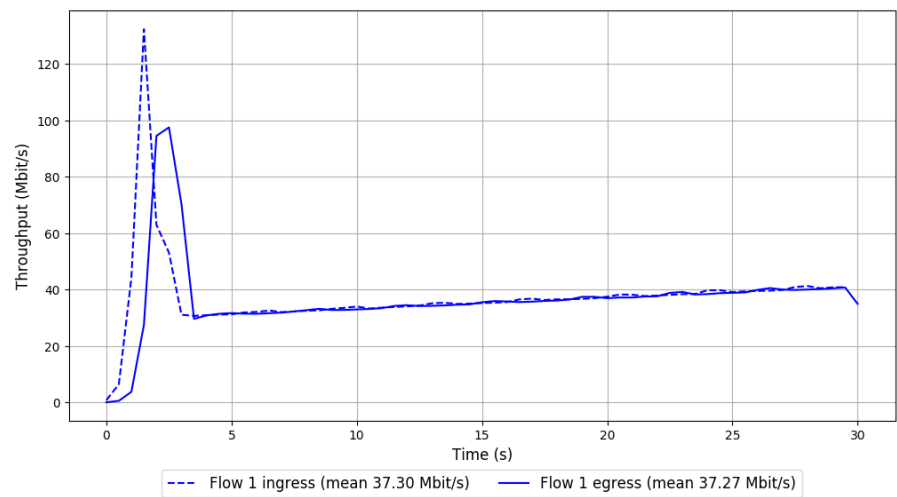


Run 1: Statistics of TCP Vegas

Start at: 2018-12-11 16:04:39  
End at: 2018-12-11 16:05:09  
Local clock offset: -5.7 ms  
Remote clock offset: 189.436 ms

# Below is generated by plot.py at 2018-12-11 17:48:04  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 37.27 Mbit/s  
95th percentile per-packet one-way delay: 171.541 ms  
Loss rate: 0.67%  
-- Flow 1:  
Average throughput: 37.27 Mbit/s  
95th percentile per-packet one-way delay: 171.541 ms  
Loss rate: 0.67%

Run 1: Report of TCP Vegas — Data Link

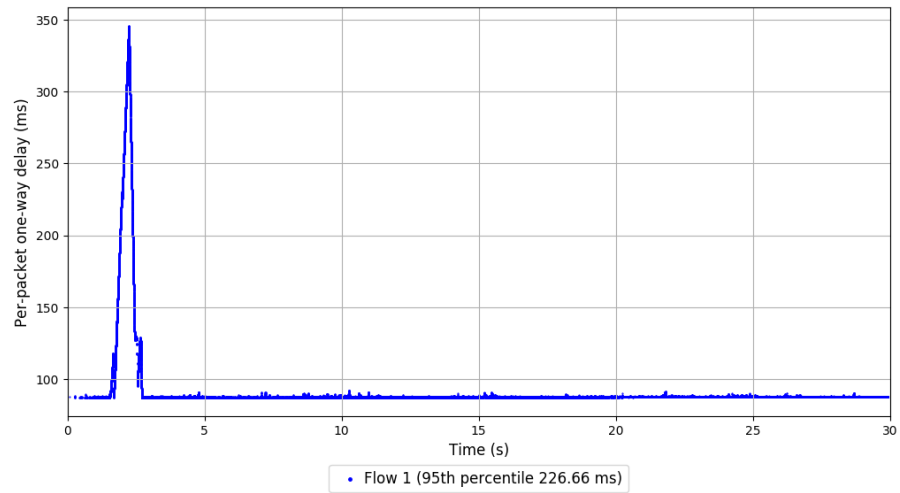
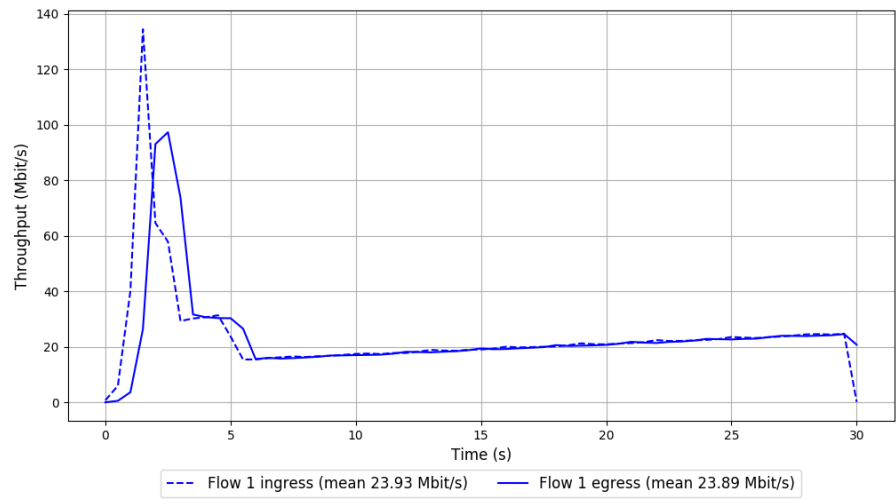


Run 2: Statistics of TCP Vegas

Start at: 2018-12-11 16:27:14  
End at: 2018-12-11 16:27:44  
Local clock offset: -6.241 ms  
Remote clock offset: 207.376 ms

# Below is generated by plot.py at 2018-12-11 17:48:04  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 23.89 Mbit/s  
95th percentile per-packet one-way delay: 226.658 ms  
Loss rate: 0.73%  
-- Flow 1:  
Average throughput: 23.89 Mbit/s  
95th percentile per-packet one-way delay: 226.658 ms  
Loss rate: 0.73%

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

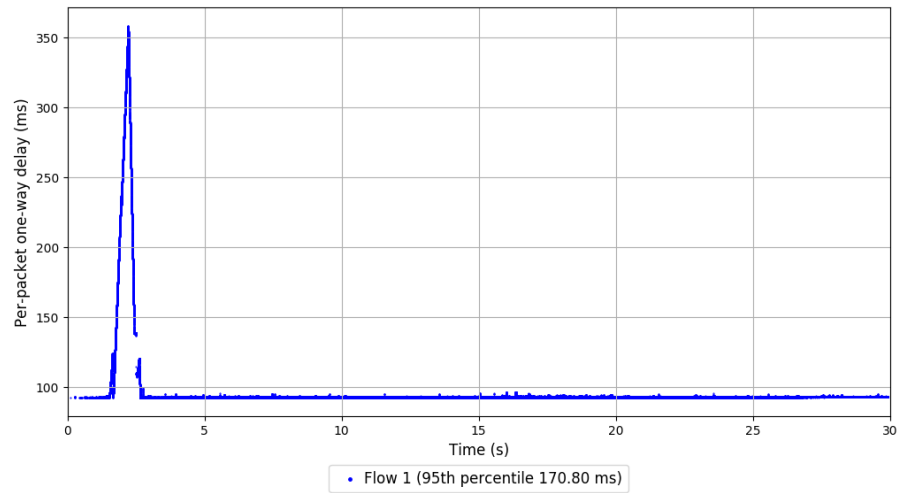
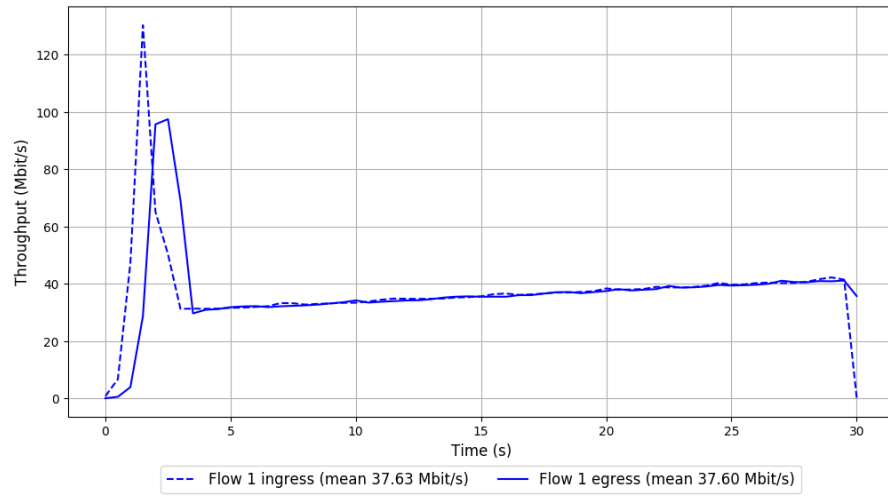


Run 3: Statistics of TCP Vegas

Start at: 2018-12-11 16:49:50  
End at: 2018-12-11 16:50:21  
Local clock offset: -4.171 ms  
Remote clock offset: 217.309 ms

# Below is generated by plot.py at 2018-12-11 17:48:04  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 37.60 Mbit/s  
95th percentile per-packet one-way delay: 170.803 ms  
Loss rate: 0.67%  
-- Flow 1:  
Average throughput: 37.60 Mbit/s  
95th percentile per-packet one-way delay: 170.803 ms  
Loss rate: 0.67%

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



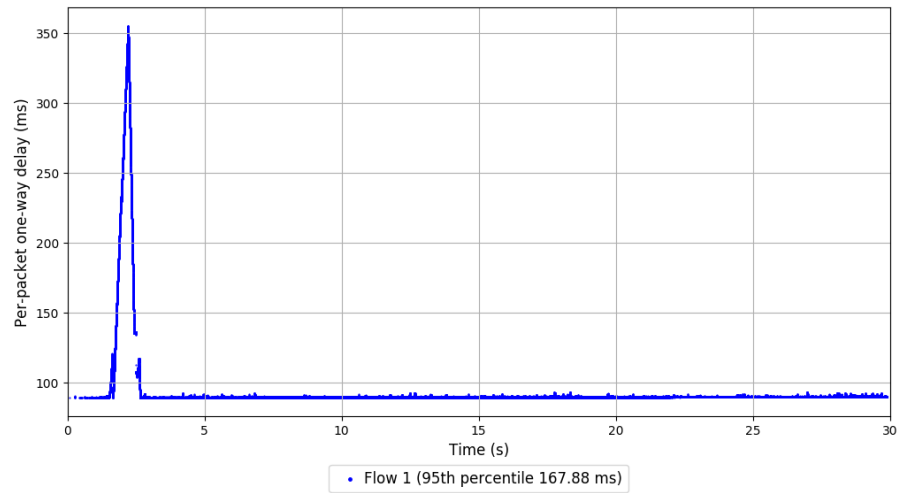
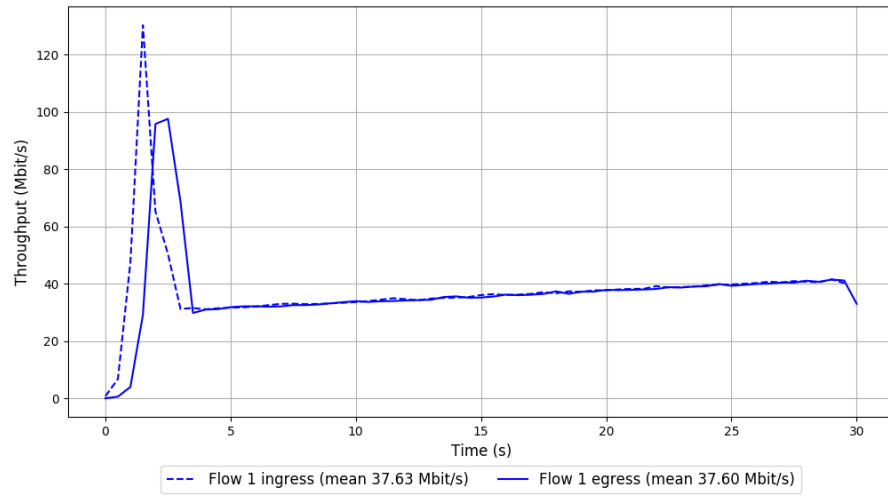


Run 4: Statistics of TCP Vegas

Start at: 2018-12-11 17:12:23  
End at: 2018-12-11 17:12:53  
Local clock offset: -4.822 ms  
Remote clock offset: 234.198 ms

# Below is generated by plot.py at 2018-12-11 17:48:04  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 37.60 Mbit/s  
95th percentile per-packet one-way delay: 167.883 ms  
Loss rate: 0.66%  
-- Flow 1:  
Average throughput: 37.60 Mbit/s  
95th percentile per-packet one-way delay: 167.883 ms  
Loss rate: 0.66%

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

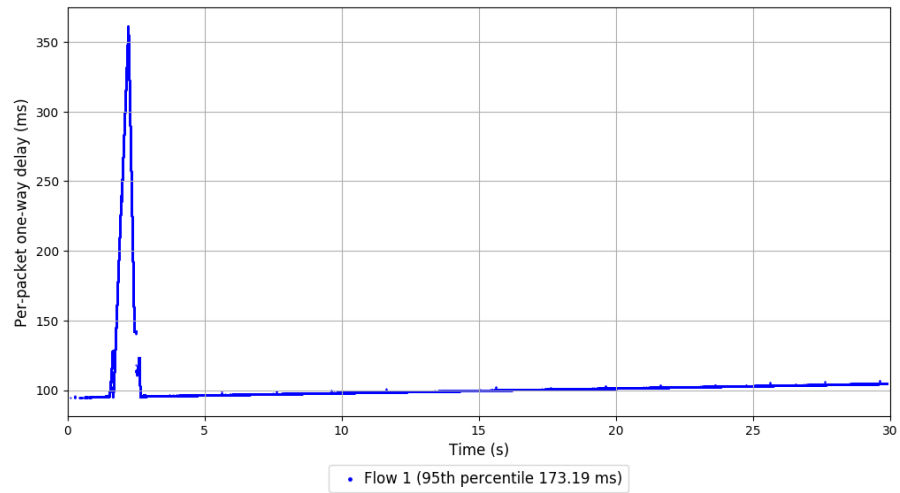
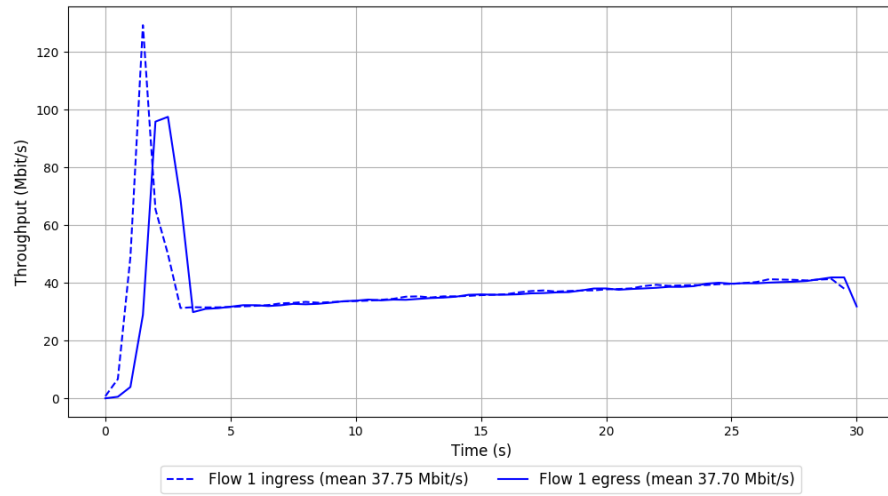


Run 5: Statistics of TCP Vegas

Start at: 2018-12-11 17:34:54  
End at: 2018-12-11 17:35:24  
Local clock offset: -7.092 ms  
Remote clock offset: 38.141 ms

# Below is generated by plot.py at 2018-12-11 17:48:04  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 37.70 Mbit/s  
95th percentile per-packet one-way delay: 173.193 ms  
Loss rate: 0.66%  
-- Flow 1:  
Average throughput: 37.70 Mbit/s  
95th percentile per-packet one-way delay: 173.193 ms  
Loss rate: 0.66%

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

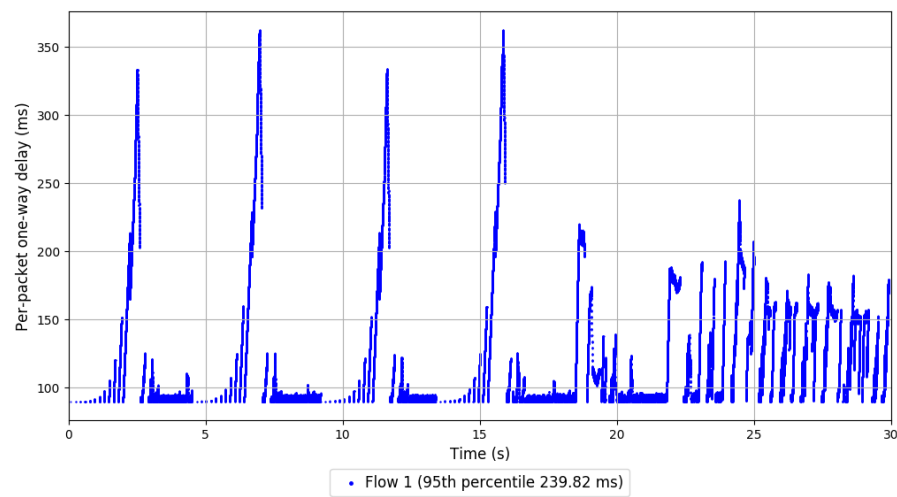
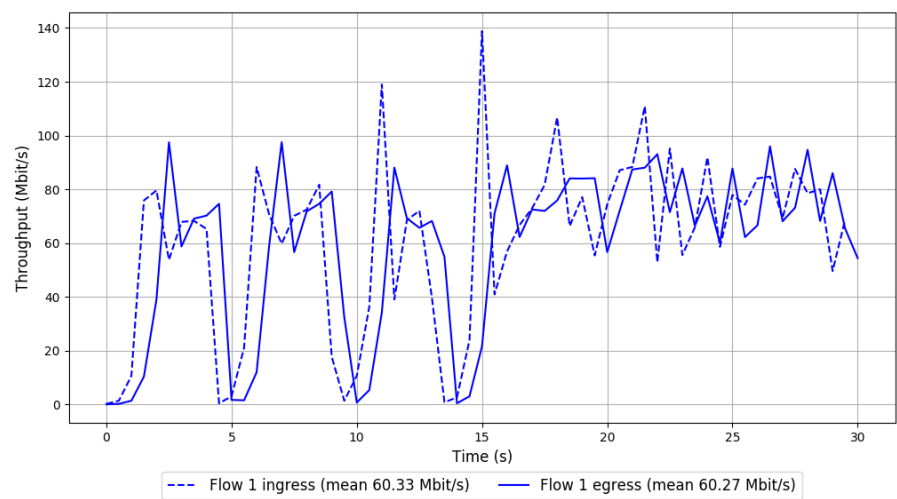


Run 1: Statistics of Verus

Start at: 2018-12-11 15:58:36  
End at: 2018-12-11 15:59:07  
Local clock offset: -5.773 ms  
Remote clock offset: 188.292 ms

# Below is generated by plot.py at 2018-12-11 17:48:04  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 60.27 Mbit/s  
95th percentile per-packet one-way delay: 239.822 ms  
Loss rate: 0.67%  
-- Flow 1:  
Average throughput: 60.27 Mbit/s  
95th percentile per-packet one-way delay: 239.822 ms  
Loss rate: 0.67%

Run 1: Report of Verus — Data Link

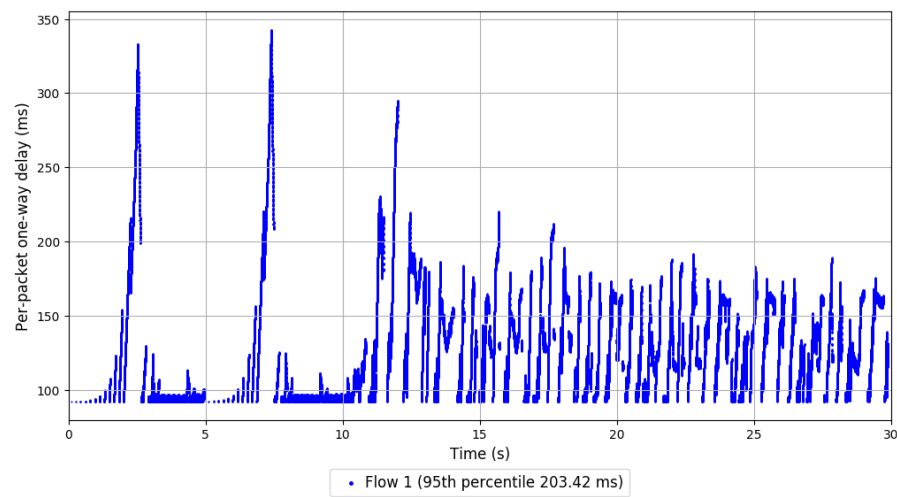
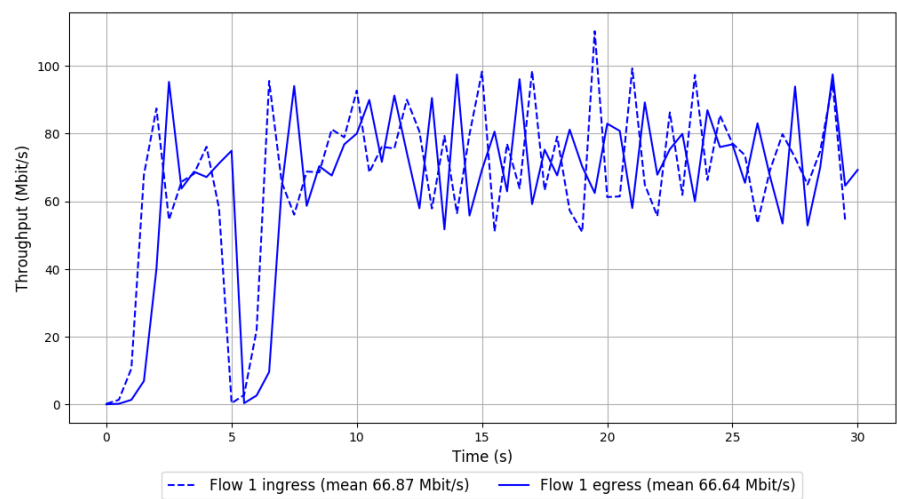


Run 2: Statistics of Verus

Start at: 2018-12-11 16:21:11  
End at: 2018-12-11 16:21:41  
Local clock offset: -5.396 ms  
Remote clock offset: 199.563 ms

# Below is generated by plot.py at 2018-12-11 17:48:14  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 66.64 Mbit/s  
95th percentile per-packet one-way delay: 203.418 ms  
Loss rate: 0.52%  
-- Flow 1:  
Average throughput: 66.64 Mbit/s  
95th percentile per-packet one-way delay: 203.418 ms  
Loss rate: 0.52%

Run 2: Report of Verus — Data Link



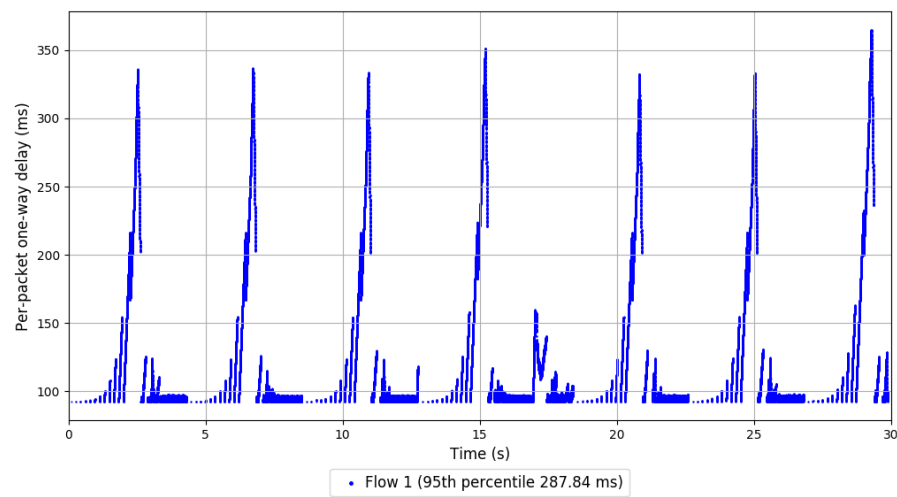
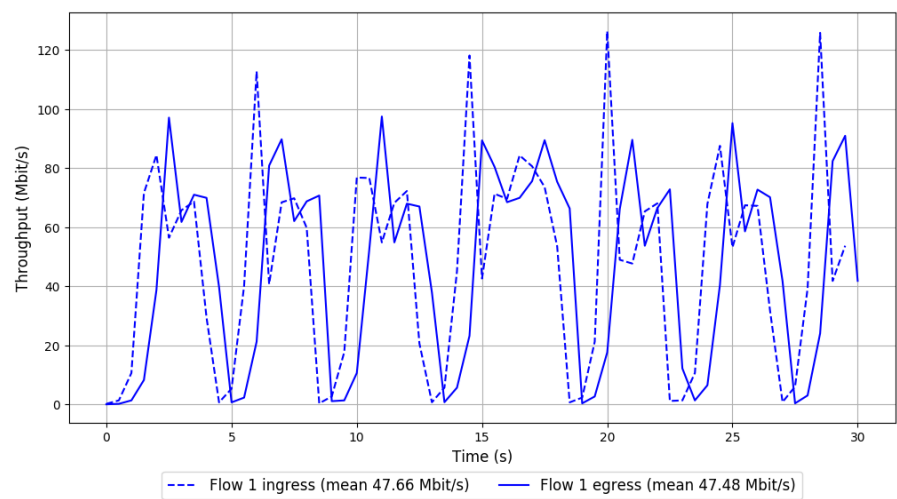


Run 3: Statistics of Verus

Start at: 2018-12-11 16:43:49  
End at: 2018-12-11 16:44:19  
Local clock offset: -4.718 ms  
Remote clock offset: 213.764 ms

# Below is generated by plot.py at 2018-12-11 17:48:14  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 47.48 Mbit/s  
95th percentile per-packet one-way delay: 287.839 ms  
Loss rate: 0.94%  
-- Flow 1:  
Average throughput: 47.48 Mbit/s  
95th percentile per-packet one-way delay: 287.839 ms  
Loss rate: 0.94%

Run 3: Report of Verus — Data Link

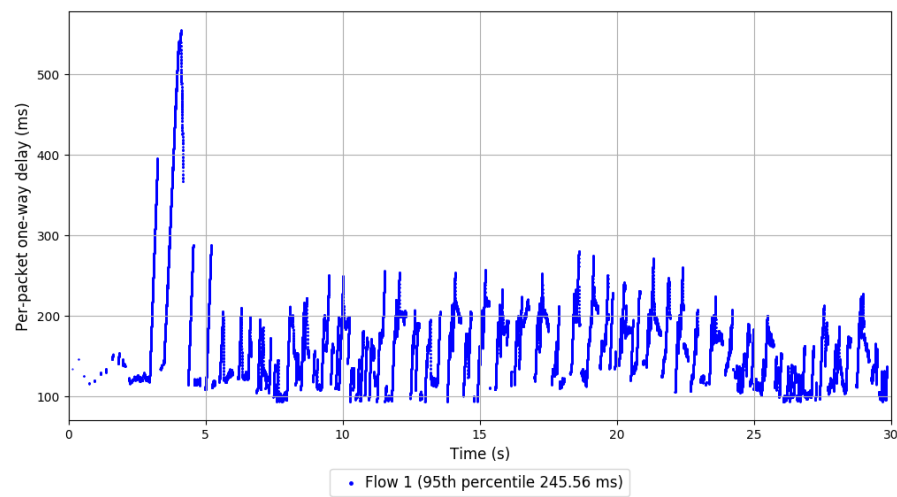
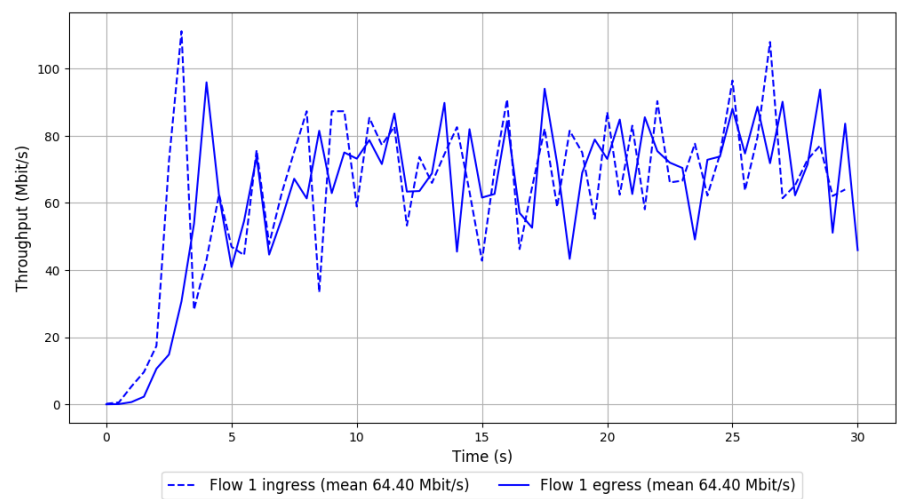


Run 4: Statistics of Verus

Start at: 2018-12-11 17:06:21  
End at: 2018-12-11 17:06:51  
Local clock offset: -3.56 ms  
Remote clock offset: 226.422 ms

# Below is generated by plot.py at 2018-12-11 17:48:32  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 64.40 Mbit/s  
95th percentile per-packet one-way delay: 245.561 ms  
Loss rate: 0.88%  
-- Flow 1:  
Average throughput: 64.40 Mbit/s  
95th percentile per-packet one-way delay: 245.561 ms  
Loss rate: 0.88%

Run 4: Report of Verus — Data Link

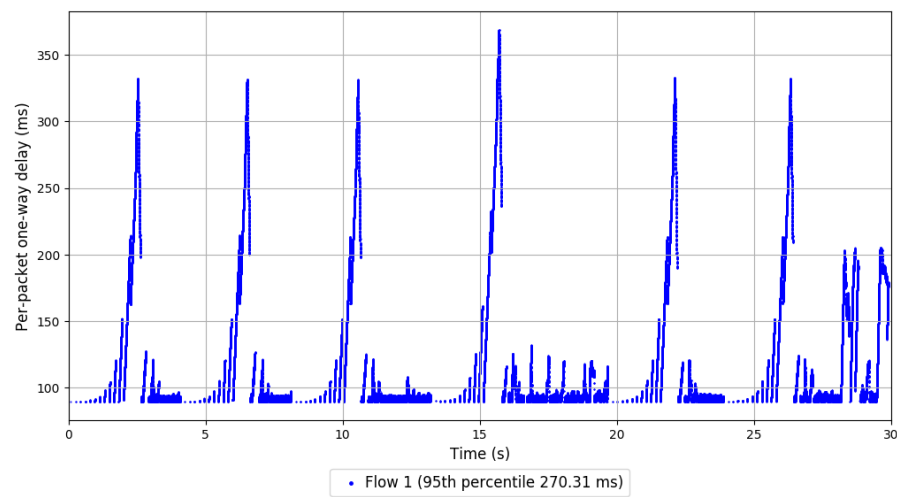
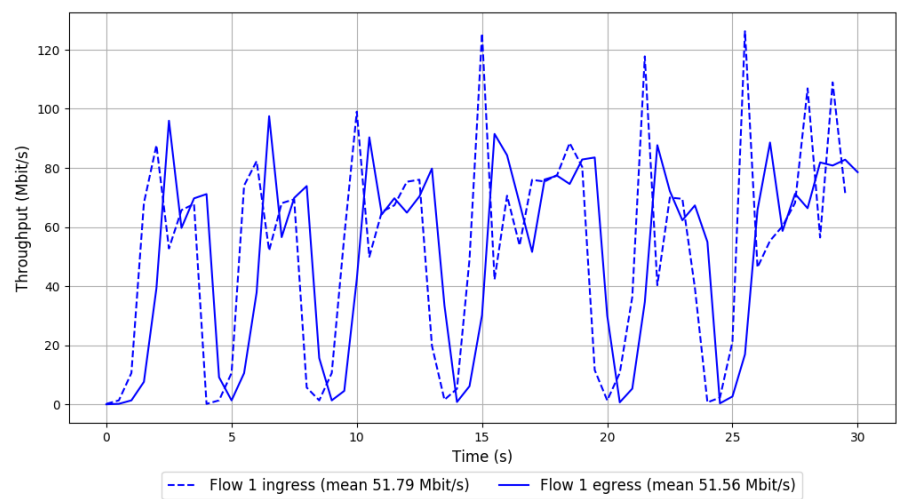


Run 5: Statistics of Verus

Start at: 2018-12-11 17:28:53  
End at: 2018-12-11 17:29:23  
Local clock offset: -6.874 ms  
Remote clock offset: 244.829 ms

# Below is generated by plot.py at 2018-12-11 17:48:32  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 51.56 Mbit/s  
95th percentile per-packet one-way delay: 270.310 ms  
Loss rate: 1.01%  
-- Flow 1:  
Average throughput: 51.56 Mbit/s  
95th percentile per-packet one-way delay: 270.310 ms  
Loss rate: 1.01%

Run 5: Report of Verus — Data Link

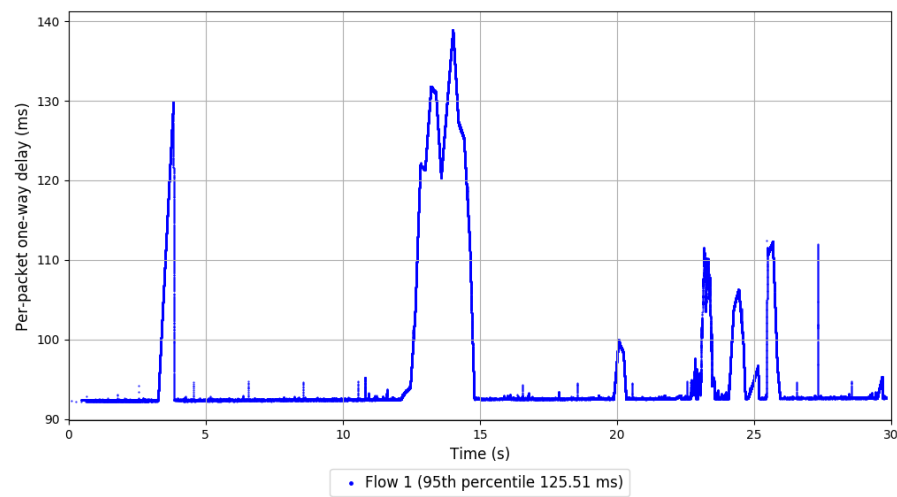
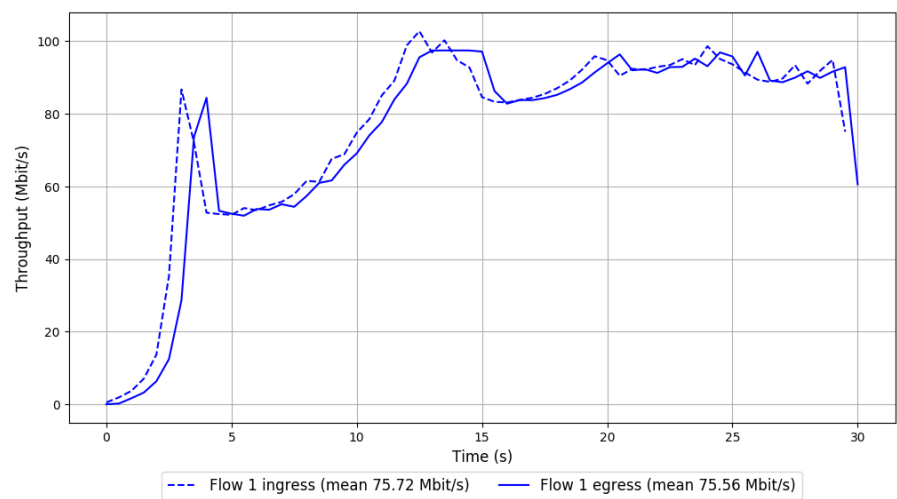


Run 1: Statistics of PCC-Vivace

Start at: 2018-12-11 16:00:59  
End at: 2018-12-11 16:01:29  
Local clock offset: -5.701 ms  
Remote clock offset: 186.92 ms

# Below is generated by plot.py at 2018-12-11 17:48:39  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 75.56 Mbit/s  
95th percentile per-packet one-way delay: 125.507 ms  
Loss rate: 0.80%  
-- Flow 1:  
Average throughput: 75.56 Mbit/s  
95th percentile per-packet one-way delay: 125.507 ms  
Loss rate: 0.80%

Run 1: Report of PCC-Vivace — Data Link





Run 2: Statistics of PCC-Vivace

Start at: 2018-12-11 16:23:34

End at: 2018-12-11 16:24:04

Local clock offset: -5.345 ms

Remote clock offset: 205.03 ms

# Below is generated by plot.py at 2018-12-11 17:48:40

# Datalink statistics

-- Total of 1 flow:

Average throughput: 75.28 Mbit/s

95th percentile per-packet one-way delay: 92.044 ms

Loss rate: 0.70%

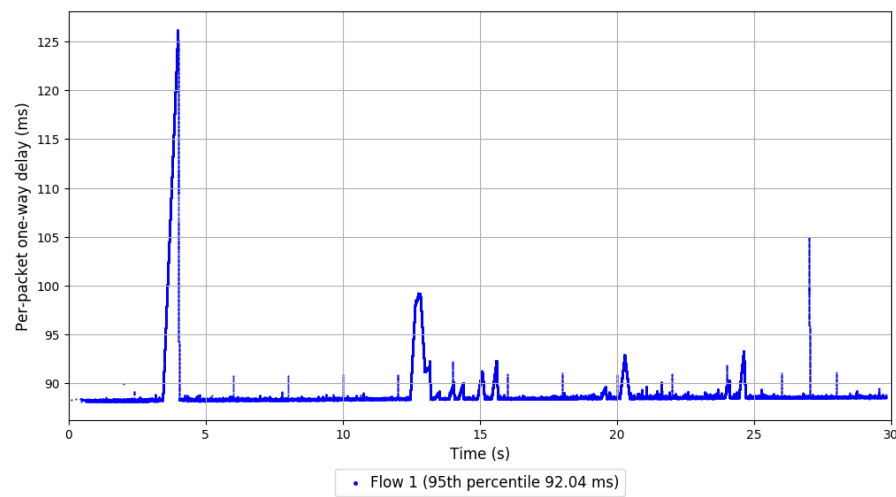
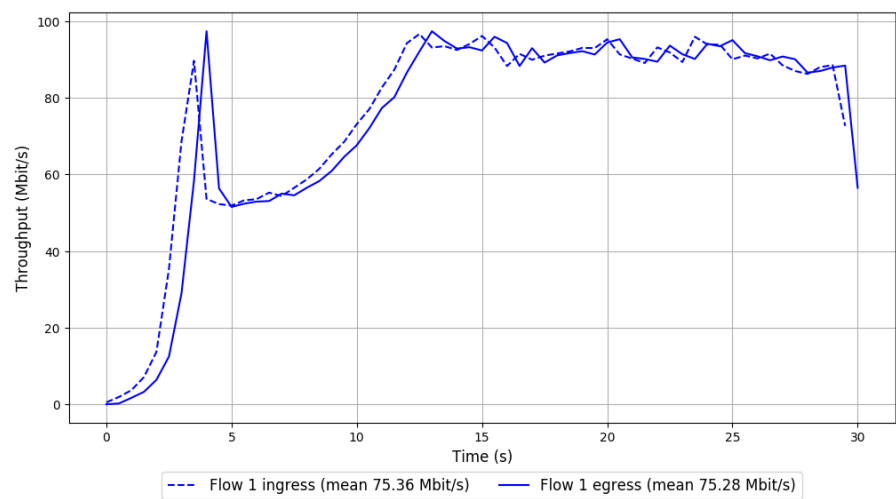
-- Flow 1:

Average throughput: 75.28 Mbit/s

95th percentile per-packet one-way delay: 92.044 ms

Loss rate: 0.70%

Run 2: Report of PCC-Vivace — Data Link

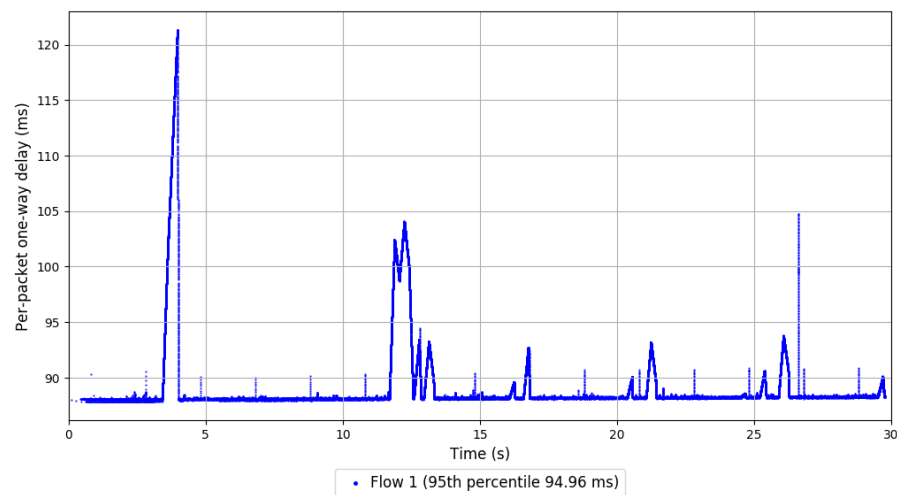
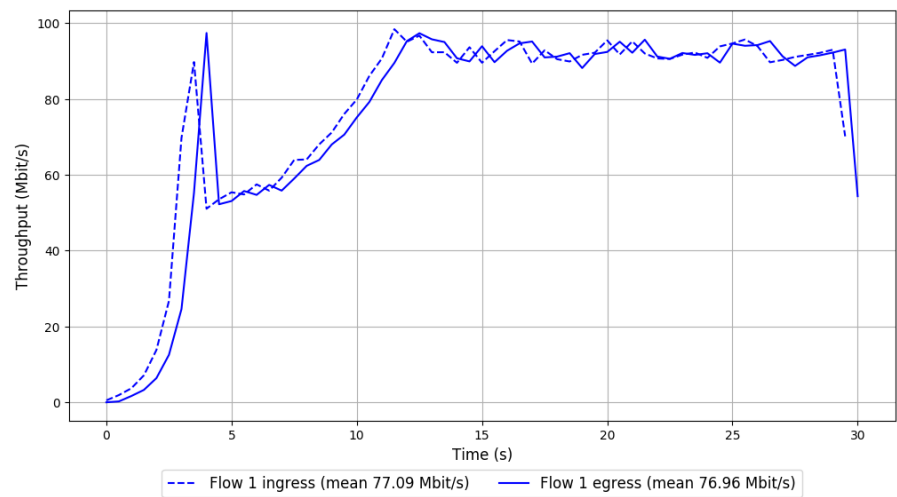


Run 3: Statistics of PCC-Vivace

Start at: 2018-12-11 16:46:11  
End at: 2018-12-11 16:46:41  
Local clock offset: -4.432 ms  
Remote clock offset: 218.986 ms

# Below is generated by plot.py at 2018-12-11 17:48:47  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 76.96 Mbit/s  
95th percentile per-packet one-way delay: 94.964 ms  
Loss rate: 0.74%  
-- Flow 1:  
Average throughput: 76.96 Mbit/s  
95th percentile per-packet one-way delay: 94.964 ms  
Loss rate: 0.74%

Run 3: Report of PCC-Vivace — Data Link

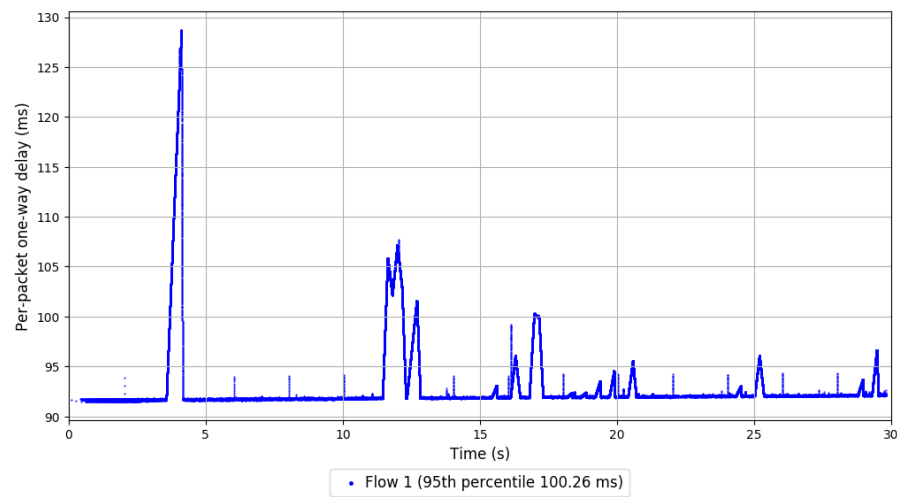
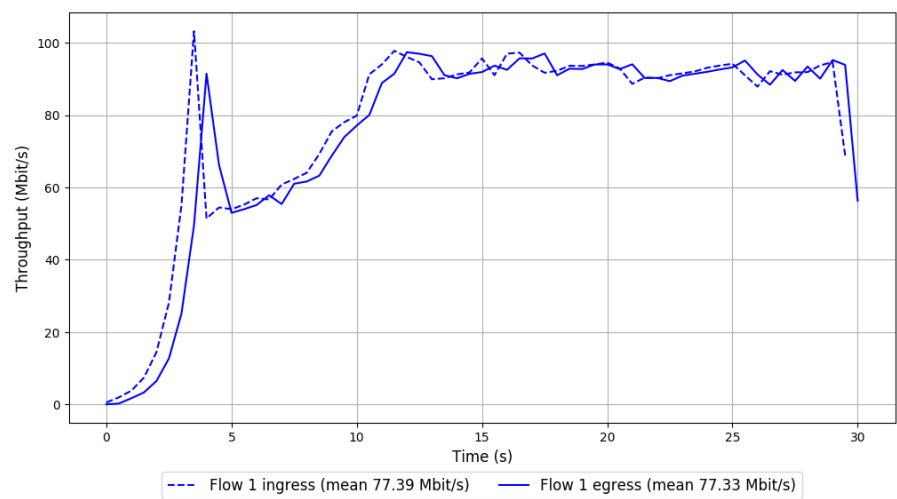


Run 4: Statistics of PCC-Vivace

Start at: 2018-12-11 17:08:44  
End at: 2018-12-11 17:09:14  
Local clock offset: -3.57 ms  
Remote clock offset: 228.025 ms

# Below is generated by plot.py at 2018-12-11 17:48:48  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 77.33 Mbit/s  
95th percentile per-packet one-way delay: 100.258 ms  
Loss rate: 0.66%  
-- Flow 1:  
Average throughput: 77.33 Mbit/s  
95th percentile per-packet one-way delay: 100.258 ms  
Loss rate: 0.66%

Run 4: Report of PCC-Vivace — Data Link

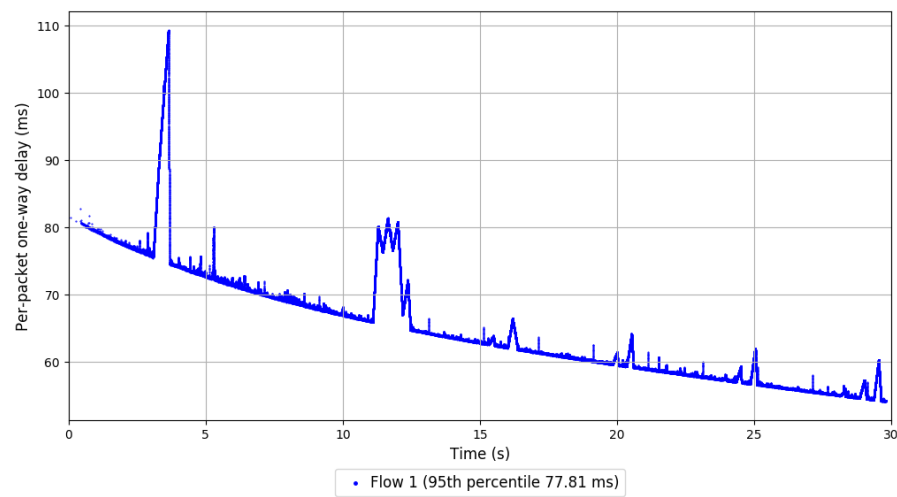
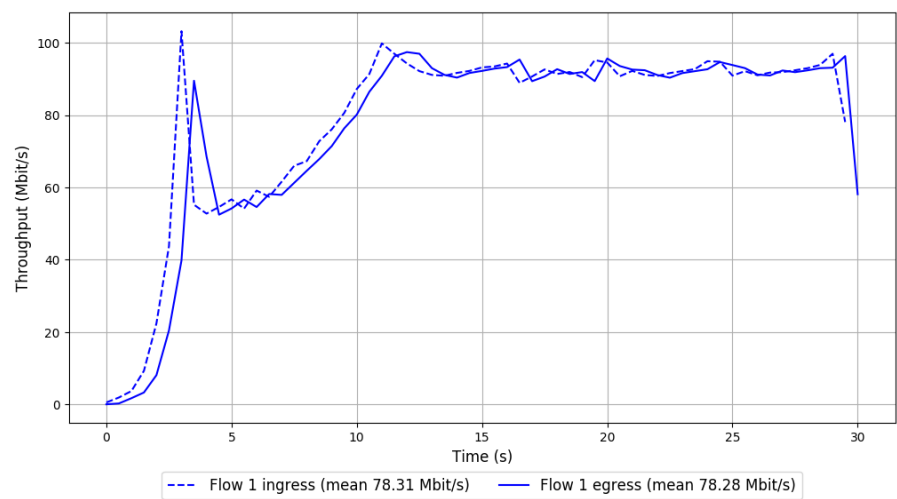


Run 5: Statistics of PCC-Vivace

Start at: 2018-12-11 17:31:15  
End at: 2018-12-11 17:31:45  
Local clock offset: -6.943 ms  
Remote clock offset: 27.633 ms

# Below is generated by plot.py at 2018-12-11 17:48:48  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 78.28 Mbit/s  
95th percentile per-packet one-way delay: 77.815 ms  
Loss rate: 0.71%  
-- Flow 1:  
Average throughput: 78.28 Mbit/s  
95th percentile per-packet one-way delay: 77.815 ms  
Loss rate: 0.71%

Run 5: Report of PCC-Vivace — Data Link



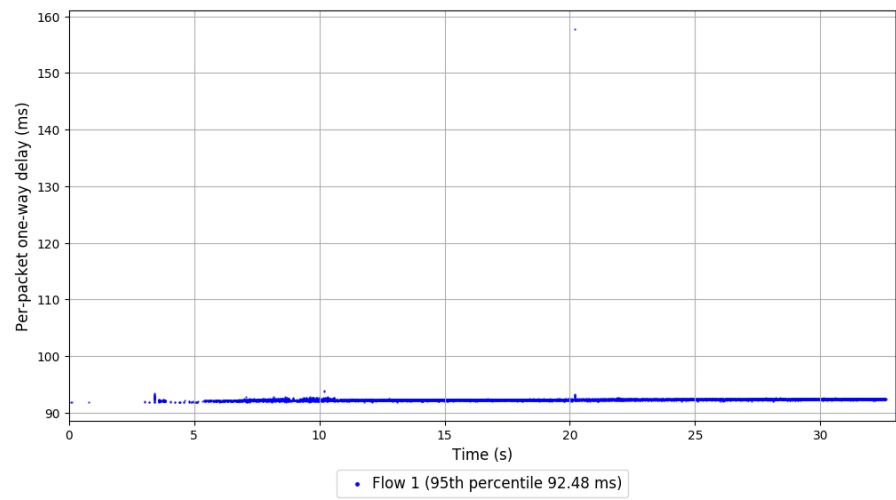
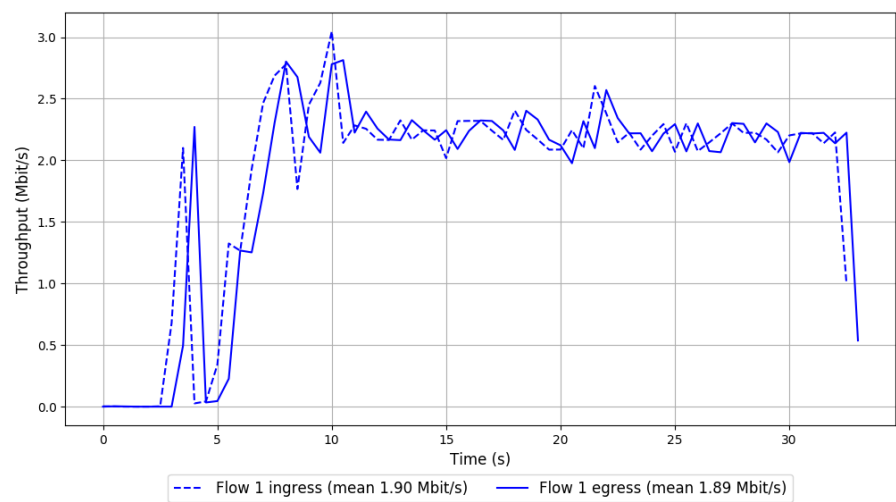


```
Run 1: Statistics of WebRTC media

Start at: 2018-12-11 15:48:01
End at: 2018-12-11 15:48:31
Local clock offset: -5.931 ms
Remote clock offset: 178.979 ms

# Below is generated by plot.py at 2018-12-11 17:48:48
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.89 Mbit/s
95th percentile per-packet one-way delay: 92.483 ms
Loss rate: 0.68%
-- Flow 1:
Average throughput: 1.89 Mbit/s
95th percentile per-packet one-way delay: 92.483 ms
Loss rate: 0.68%
```

Run 1: Report of WebRTC media — Data Link

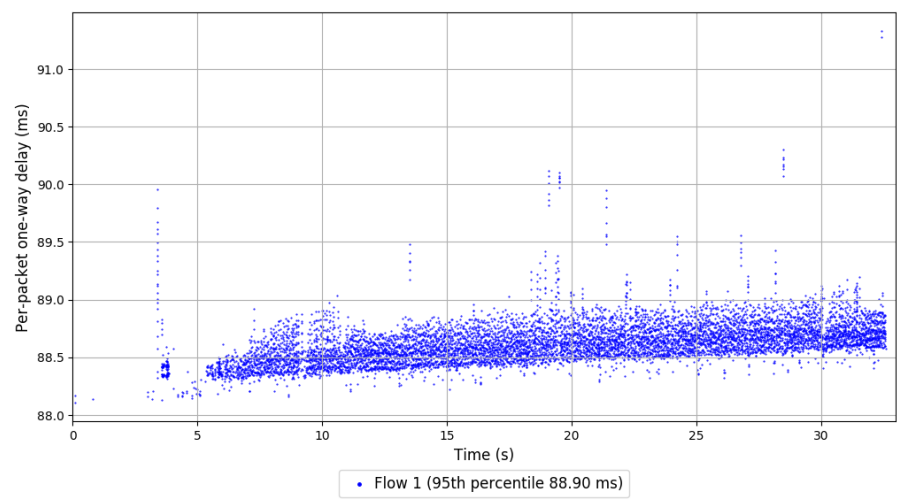
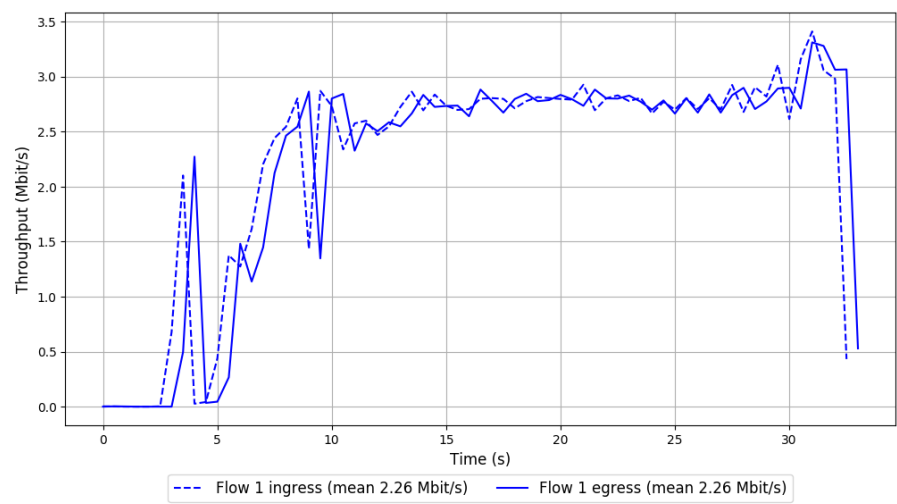


Run 2: Statistics of WebRTC media

Start at: 2018-12-11 16:10:34  
End at: 2018-12-11 16:11:04  
Local clock offset: -5.622 ms  
Remote clock offset: 197.003 ms

# Below is generated by plot.py at 2018-12-11 17:48:48  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 2.26 Mbit/s  
95th percentile per-packet one-way delay: 88.903 ms  
Loss rate: 0.29%  
-- Flow 1:  
Average throughput: 2.26 Mbit/s  
95th percentile per-packet one-way delay: 88.903 ms  
Loss rate: 0.29%

Run 2: Report of WebRTC media — Data Link

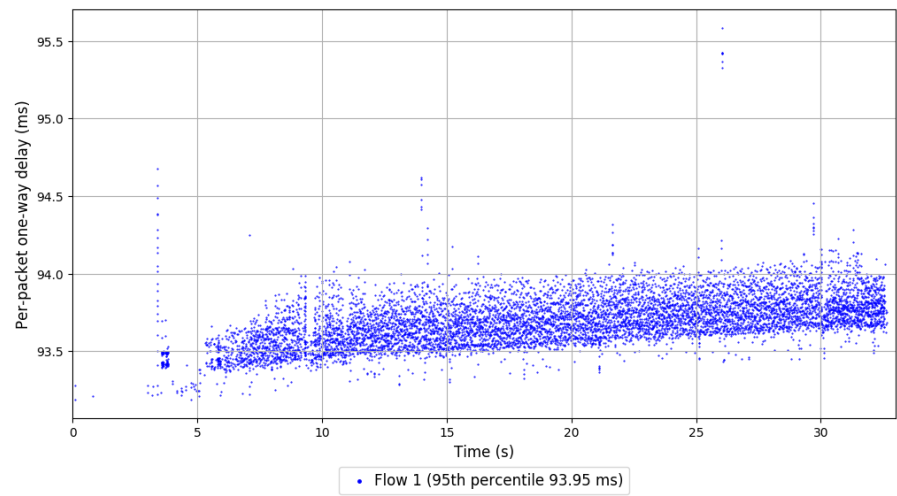
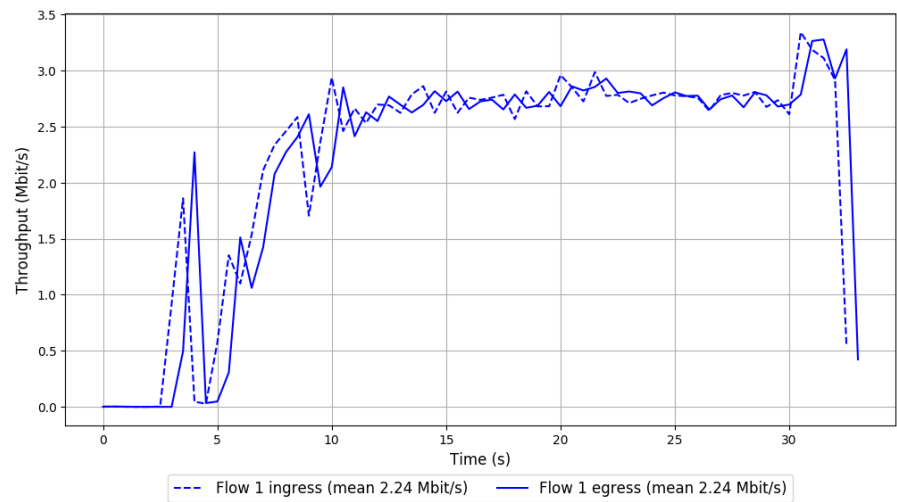


Run 3: Statistics of WebRTC media

Start at: 2018-12-11 16:33:09  
End at: 2018-12-11 16:33:39  
Local clock offset: -5.342 ms  
Remote clock offset: 205.88 ms

# Below is generated by plot.py at 2018-12-11 17:48:48  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 2.24 Mbit/s  
95th percentile per-packet one-way delay: 93.954 ms  
Loss rate: 0.31%  
-- Flow 1:  
Average throughput: 2.24 Mbit/s  
95th percentile per-packet one-way delay: 93.954 ms  
Loss rate: 0.31%

Run 3: Report of WebRTC media — Data Link

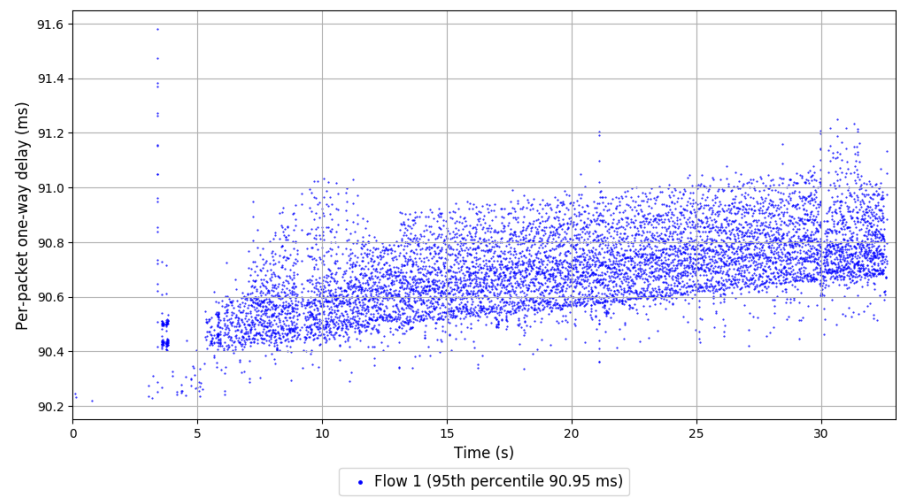
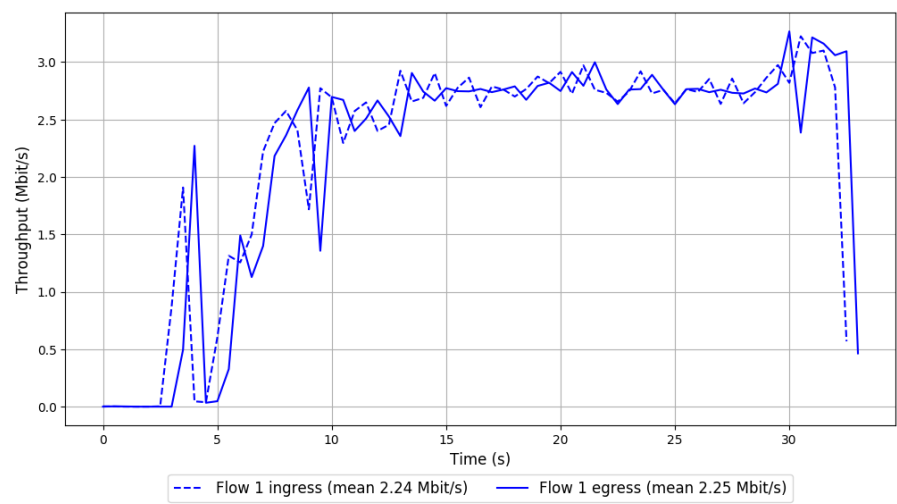


Run 4: Statistics of WebRTC media

Start at: 2018-12-11 16:55:45  
End at: 2018-12-11 16:56:15  
Local clock offset: -3.872 ms  
Remote clock offset: 221.031 ms

# Below is generated by plot.py at 2018-12-11 17:48:48  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 2.25 Mbit/s  
95th percentile per-packet one-way delay: 90.948 ms  
Loss rate: 0.28%  
-- Flow 1:  
Average throughput: 2.25 Mbit/s  
95th percentile per-packet one-way delay: 90.948 ms  
Loss rate: 0.28%

Run 4: Report of WebRTC media — Data Link





Run 5: Statistics of WebRTC media

Start at: 2018-12-11 17:18:18  
End at: 2018-12-11 17:18:48  
Local clock offset: -5.867 ms  
Remote clock offset: 234.073 ms

# Below is generated by plot.py at 2018-12-11 17:48:48  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 2.25 Mbit/s  
95th percentile per-packet one-way delay: 91.903 ms  
Loss rate: 0.29%  
-- Flow 1:  
Average throughput: 2.25 Mbit/s  
95th percentile per-packet one-way delay: 91.903 ms  
Loss rate: 0.29%

Run 5: Report of WebRTC media — Data Link

