

## Pantheon Report

Generated at 2018-11-02 21:44:53 (UTC).

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

Repeated the test of 18 congestion control schemes 5 times.

Each test lasted for 30 seconds running 1 flow.

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

### System info:

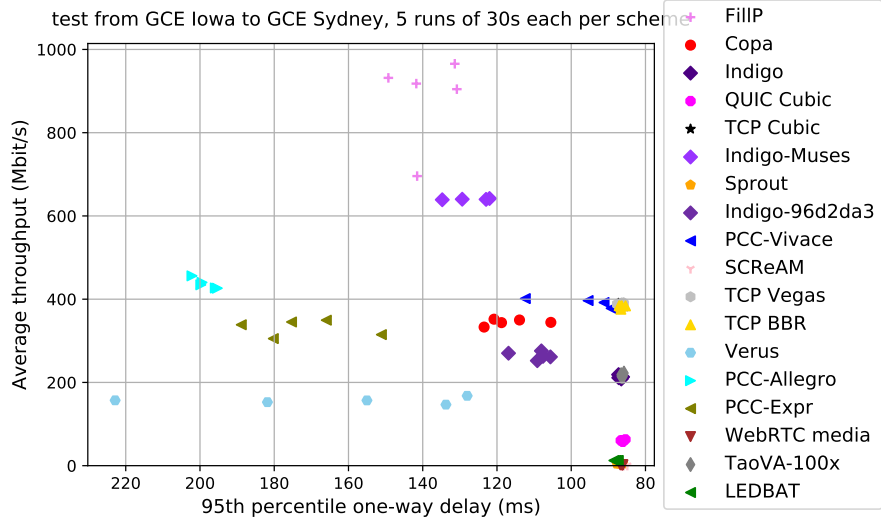
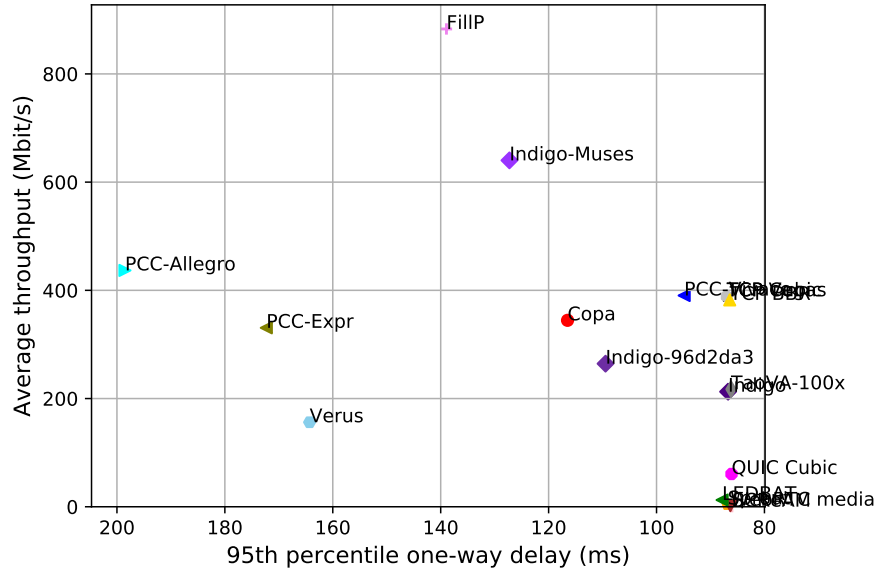
```
Linux 4.15.0-1021-gcp
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912
```

### Git summary:

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

third\_party/webrtc @ 3f0cc2a9061a41b6f9dde4735770d143a1fa2851

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



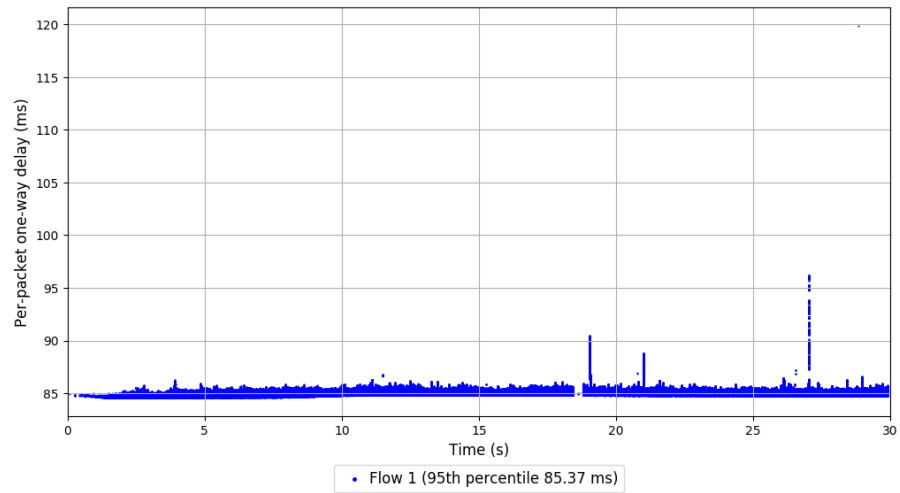
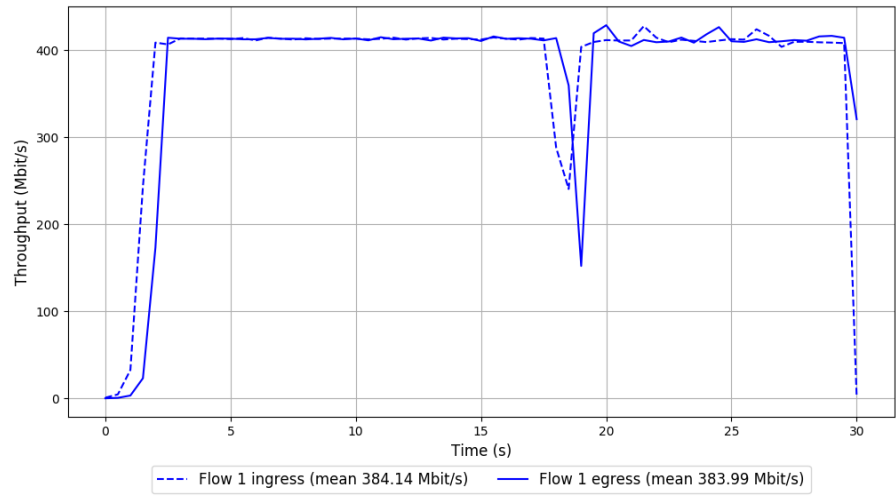
scheme	# runs	mean avg tput (Mbit/s) flow 1	mean 95th-%ile delay (ms) flow 1	mean loss rate (%) flow 1
TCP BBR	5	382.36	86.44	0.60
Copa	5	344.57	116.49	0.62
TCP Cubic	5	389.06	86.94	0.61
FillP	5	883.09	138.93	1.85
Indigo	5	212.67	86.74	0.63
Indigo-96d2da3	5	264.47	109.45	0.94
LEDBAT	5	12.48	87.85	1.15
Indigo-Muses	4	640.20	127.26	0.82
PCC-Allegro	5	436.81	198.51	3.85
PCC-Expr	5	330.70	172.32	1.86
QUIC Cubic	4	60.57	86.10	0.94
SCReAM	5	0.22	86.03	0.56
Sprout	5	4.35	86.82	0.76
TaoVA-100x	5	217.18	86.20	0.61
TCP Vegas	5	389.04	87.01	0.61
Verus	5	156.20	164.30	1.82
PCC-Vivace	5	390.45	94.89	0.71
WebRTC media	5	1.97	86.32	0.68

Run 1: Statistics of TCP BBR

Start at: 2018-11-02 18:20:30  
End at: 2018-11-02 18:21:00  
Local clock offset: 15.333 ms  
Remote clock offset: 18.241 ms

# Below is generated by plot.py at 2018-11-02 20:29:44  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 383.99 Mbit/s  
95th percentile per-packet one-way delay: 85.372 ms  
Loss rate: 0.62%  
-- Flow 1:  
Average throughput: 383.99 Mbit/s  
95th percentile per-packet one-way delay: 85.372 ms  
Loss rate: 0.62%

# Run 1: Report of TCP BBR — Data Link

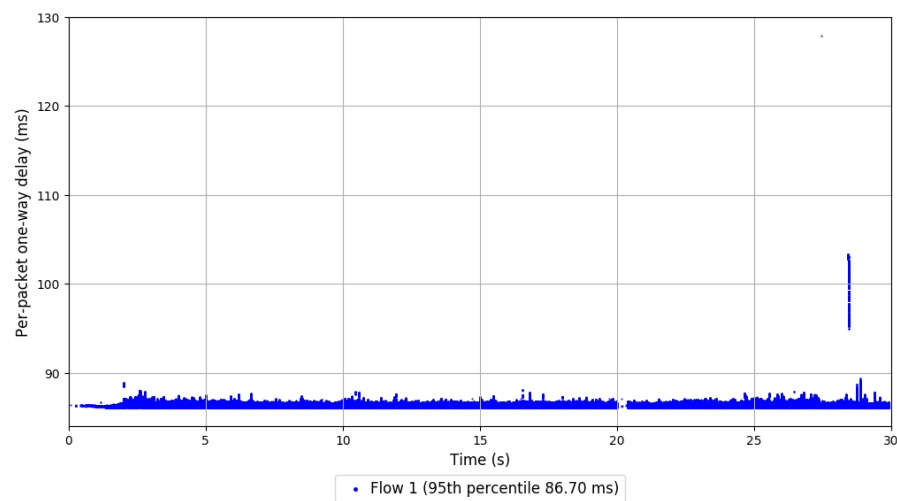
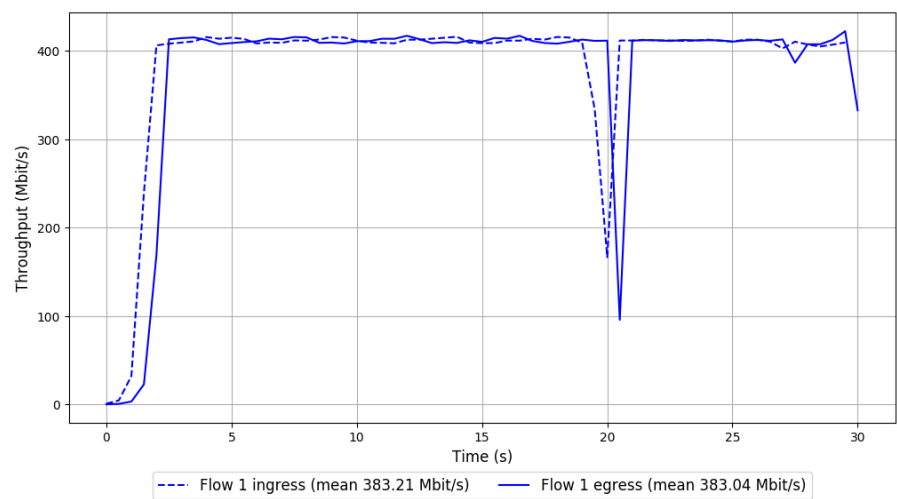


Run 2: Statistics of TCP BBR

Start at: 2018-11-02 18:46:24  
End at: 2018-11-02 18:46:54  
Local clock offset: 18.494 ms  
Remote clock offset: 20.557 ms

# Below is generated by plot.py at 2018-11-02 20:29:44  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 383.04 Mbit/s  
95th percentile per-packet one-way delay: 86.700 ms  
Loss rate: 0.62%  
-- Flow 1:  
Average throughput: 383.04 Mbit/s  
95th percentile per-packet one-way delay: 86.700 ms  
Loss rate: 0.62%

Run 2: Report of TCP BBR — Data Link



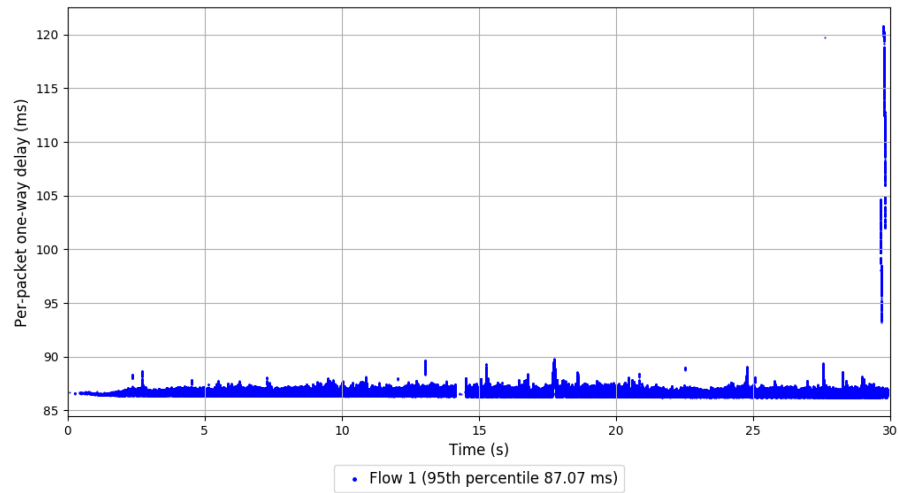
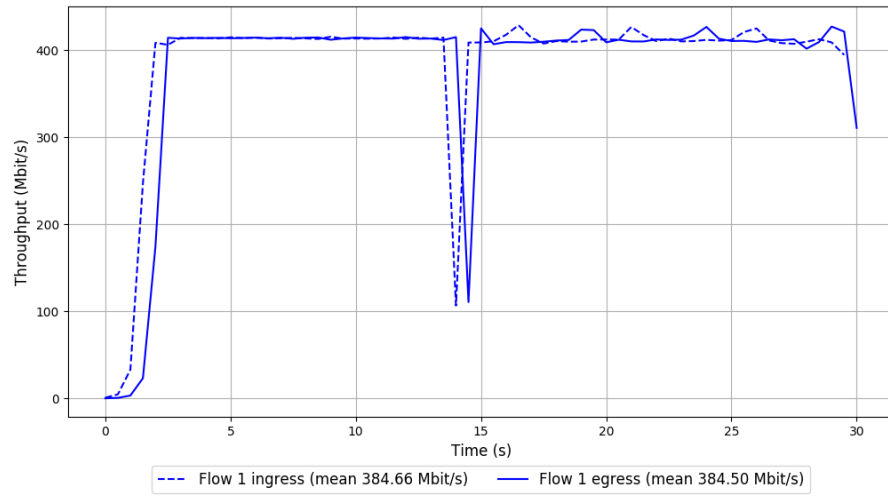


Run 3: Statistics of TCP BBR

Start at: 2018-11-02 19:12:39  
End at: 2018-11-02 19:13:09  
Local clock offset: 35.838 ms  
Remote clock offset: 39.343 ms

# Below is generated by plot.py at 2018-11-02 20:29:44  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 384.50 Mbit/s  
95th percentile per-packet one-way delay: 87.071 ms  
Loss rate: 0.62%  
-- Flow 1:  
Average throughput: 384.50 Mbit/s  
95th percentile per-packet one-way delay: 87.071 ms  
Loss rate: 0.62%

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

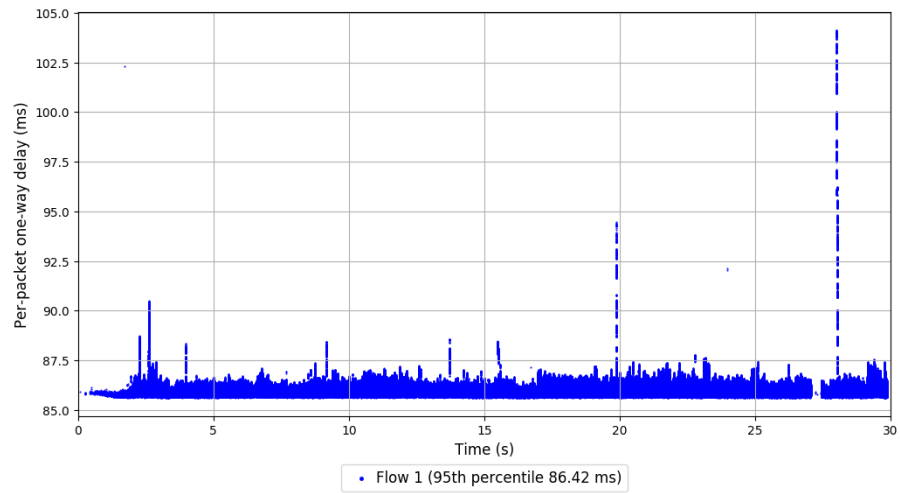
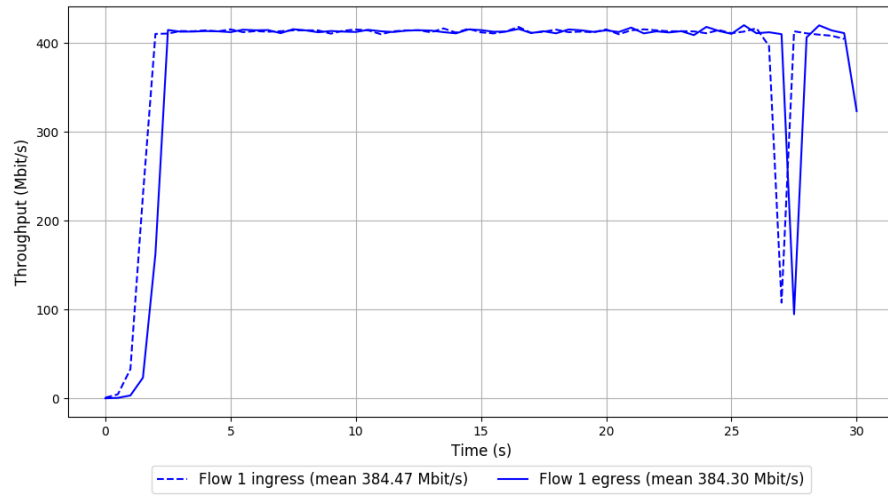


Run 4: Statistics of TCP BBR

Start at: 2018-11-02 19:38:36  
End at: 2018-11-02 19:39:06  
Local clock offset: 15.805 ms  
Remote clock offset: 17.737 ms

# Below is generated by plot.py at 2018-11-02 20:29:44  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 384.30 Mbit/s  
95th percentile per-packet one-way delay: 86.415 ms  
Loss rate: 0.62%  
-- Flow 1:  
Average throughput: 384.30 Mbit/s  
95th percentile per-packet one-way delay: 86.415 ms  
Loss rate: 0.62%

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



Run 5: Statistics of TCP BBR

Start at: 2018-11-02 20:04:54

End at: 2018-11-02 20:05:24

Local clock offset: 6.988 ms

Remote clock offset: 7.712 ms

# Below is generated by plot.py at 2018-11-02 20:29:44

# Datalink statistics

-- Total of 1 flow:

Average throughput: 375.96 Mbit/s

95th percentile per-packet one-way delay: 86.628 ms

Loss rate: 0.53%

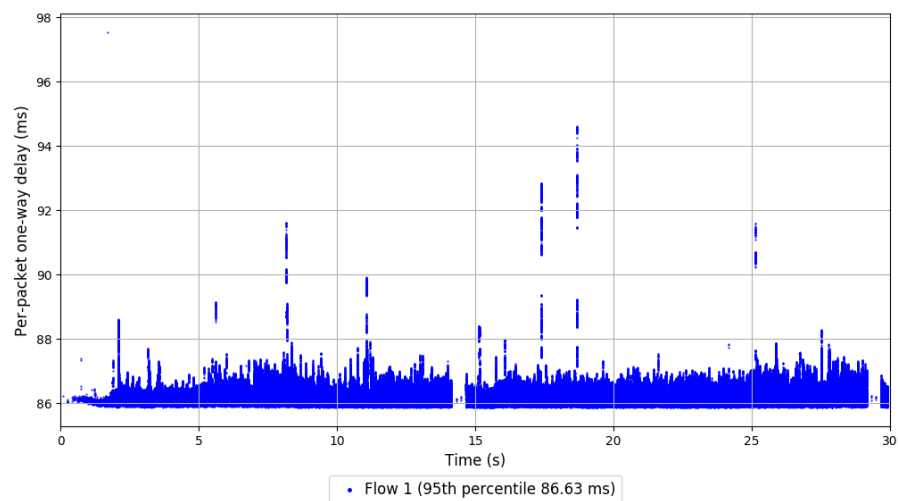
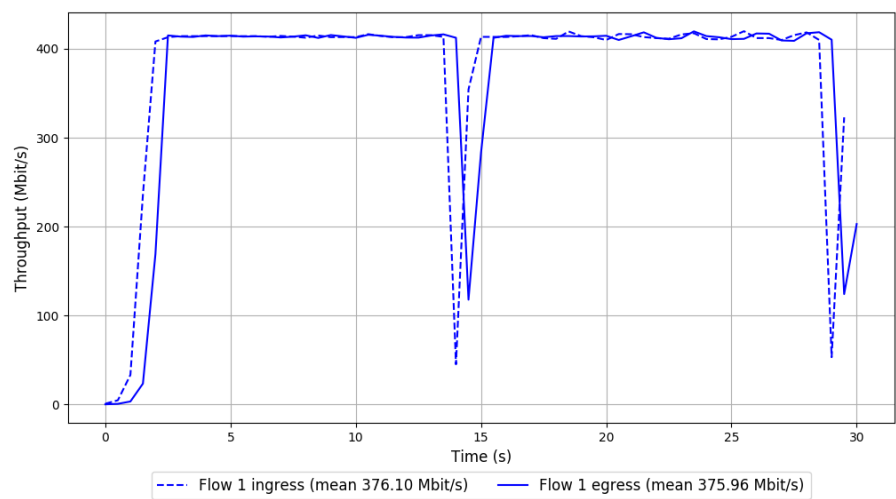
-- Flow 1:

Average throughput: 375.96 Mbit/s

95th percentile per-packet one-way delay: 86.628 ms

Loss rate: 0.53%

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

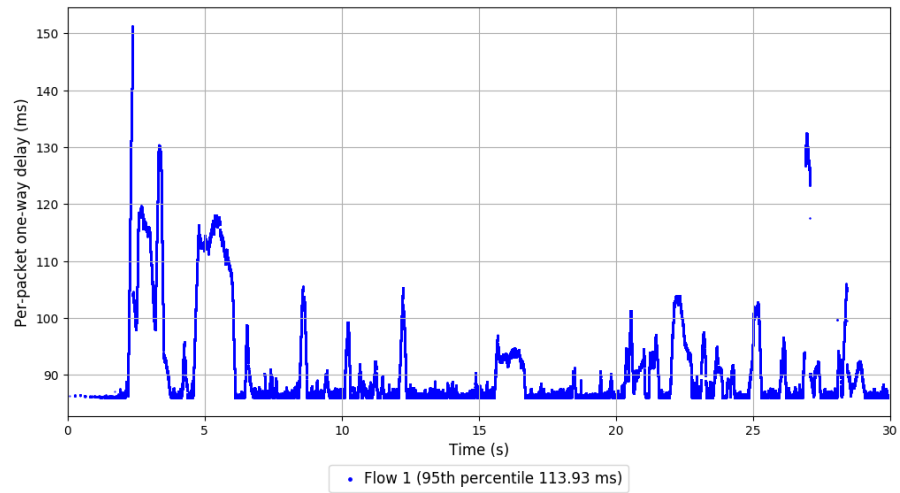
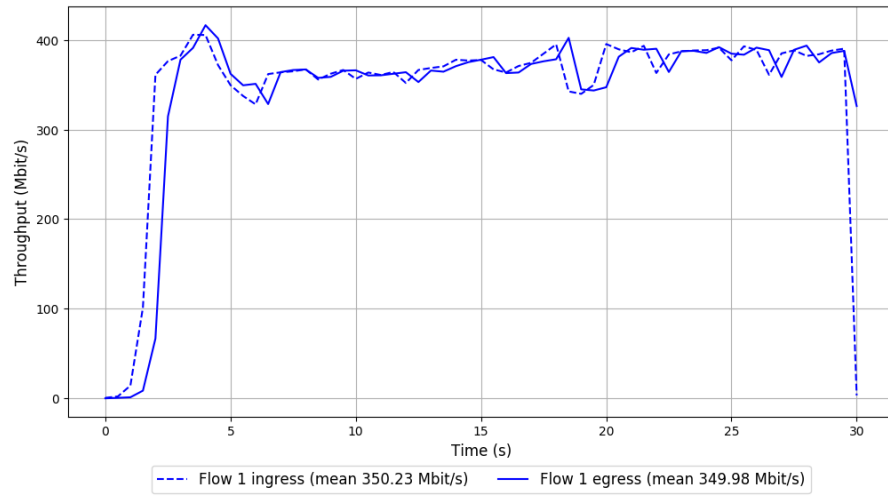


Run 1: Statistics of Copa

Start at: 2018-11-02 18:26:32  
End at: 2018-11-02 18:27:02  
Local clock offset: 12.954 ms  
Remote clock offset: 14.099 ms

# Below is generated by plot.py at 2018-11-02 20:34:45  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 349.98 Mbit/s  
95th percentile per-packet one-way delay: 113.933 ms  
Loss rate: 0.64%  
-- Flow 1:  
Average throughput: 349.98 Mbit/s  
95th percentile per-packet one-way delay: 113.933 ms  
Loss rate: 0.64%

## Run 1: Report of Copa — Data Link



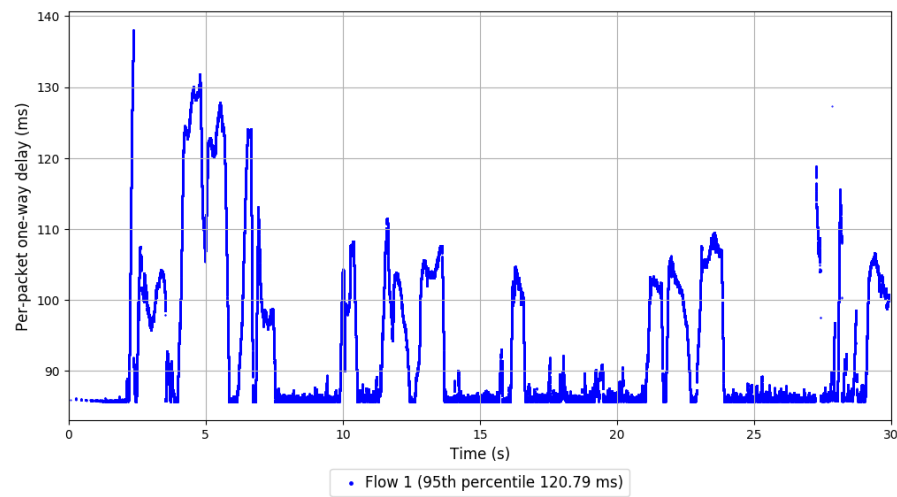
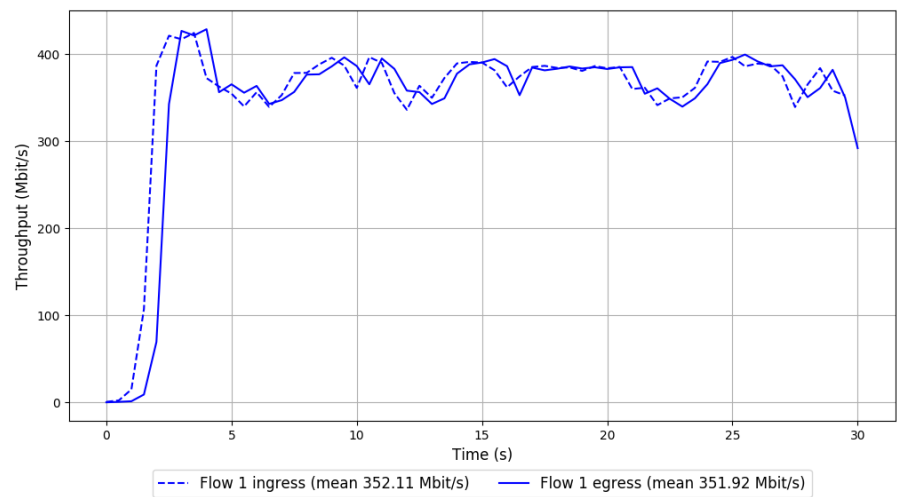


Run 2: Statistics of Copa

Start at: 2018-11-02 18:52:33  
End at: 2018-11-02 18:53:03  
Local clock offset: 20.342 ms  
Remote clock offset: 22.745 ms

# Below is generated by plot.py at 2018-11-02 20:34:55  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 351.92 Mbit/s  
95th percentile per-packet one-way delay: 120.794 ms  
Loss rate: 0.63%  
-- Flow 1:  
Average throughput: 351.92 Mbit/s  
95th percentile per-packet one-way delay: 120.794 ms  
Loss rate: 0.63%

Run 2: Report of Copa — Data Link

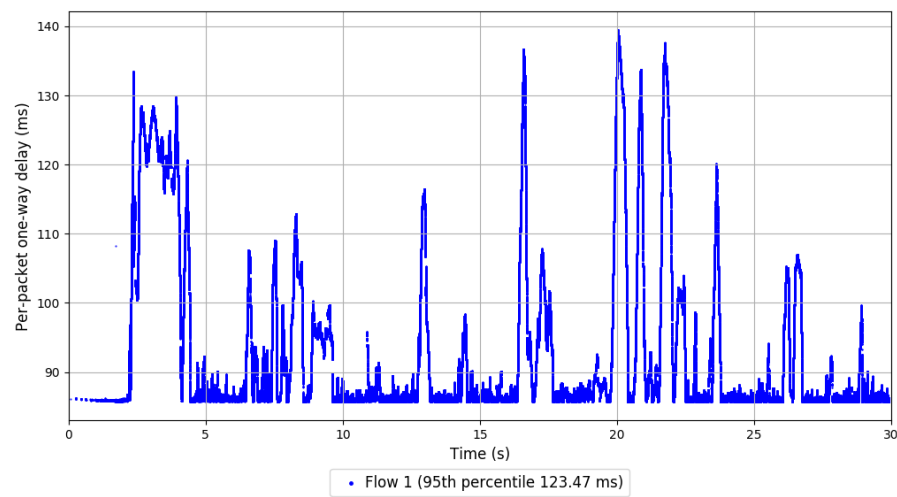
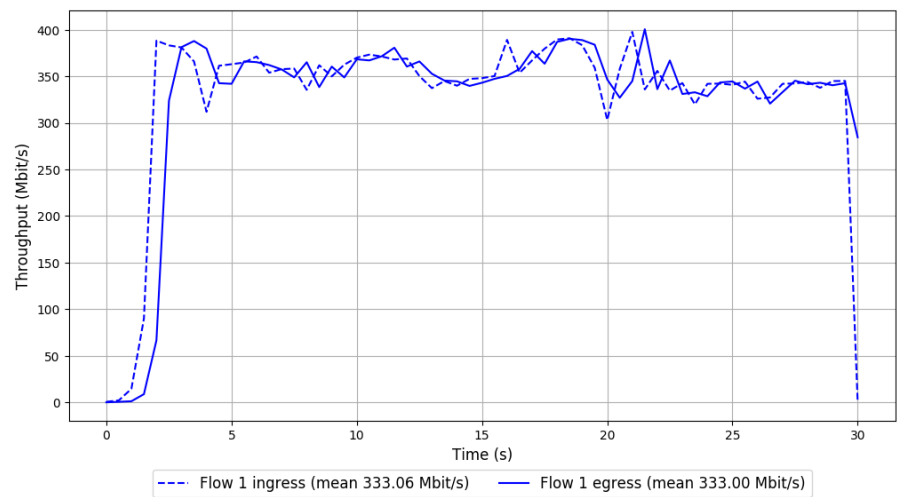


Run 3: Statistics of Copa

Start at: 2018-11-02 19:18:45  
End at: 2018-11-02 19:19:15  
Local clock offset: 20.552 ms  
Remote clock offset: 22.861 ms

# Below is generated by plot.py at 2018-11-02 20:34:55  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 333.00 Mbit/s  
95th percentile per-packet one-way delay: 123.470 ms  
Loss rate: 0.59%  
-- Flow 1:  
Average throughput: 333.00 Mbit/s  
95th percentile per-packet one-way delay: 123.470 ms  
Loss rate: 0.59%

Run 3: Report of Copa — Data Link

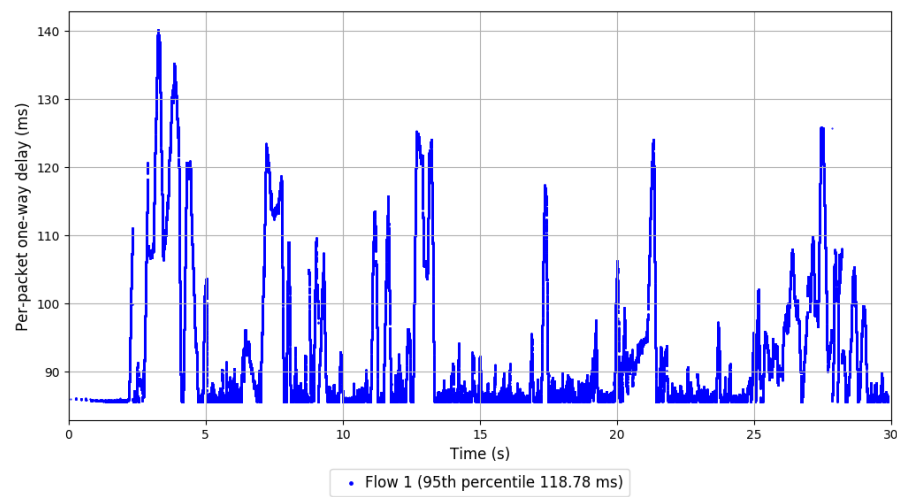
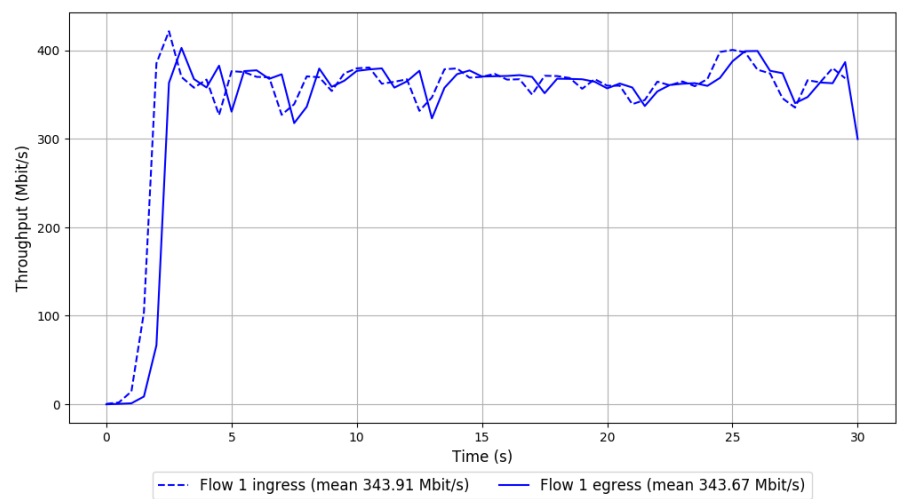


Run 4: Statistics of Copa

Start at: 2018-11-02 19:44:47  
End at: 2018-11-02 19:45:17  
Local clock offset: 18.25 ms  
Remote clock offset: 20.483 ms

# Below is generated by plot.py at 2018-11-02 20:42:02  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 343.67 Mbit/s  
95th percentile per-packet one-way delay: 118.779 ms  
Loss rate: 0.64%  
-- Flow 1:  
Average throughput: 343.67 Mbit/s  
95th percentile per-packet one-way delay: 118.779 ms  
Loss rate: 0.64%

Run 4: Report of Copa — Data Link



Run 5: Statistics of Copa

Start at: 2018-11-02 20:11:06

End at: 2018-11-02 20:11:36

Local clock offset: 7.703 ms

Remote clock offset: 8.292 ms

# Below is generated by plot.py at 2018-11-02 20:42:10

# Datalink statistics

-- Total of 1 flow:

Average throughput: 344.27 Mbit/s

95th percentile per-packet one-way delay: 105.490 ms

Loss rate: 0.60%

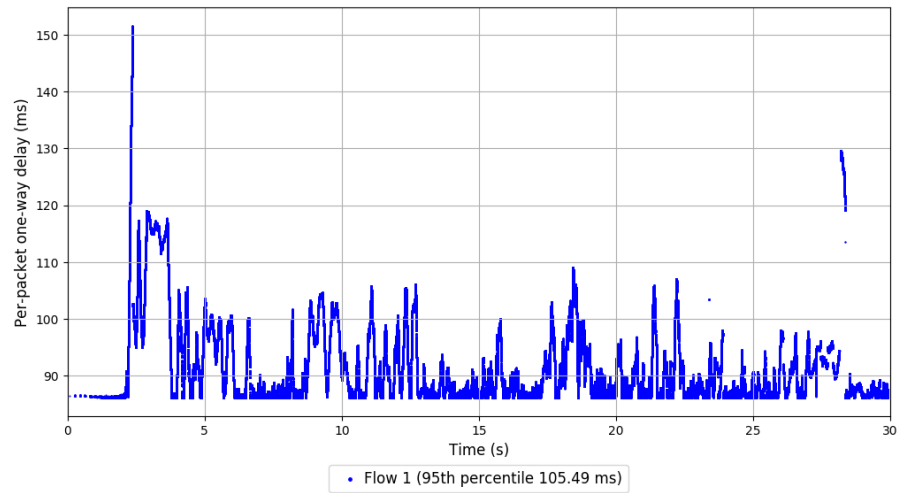
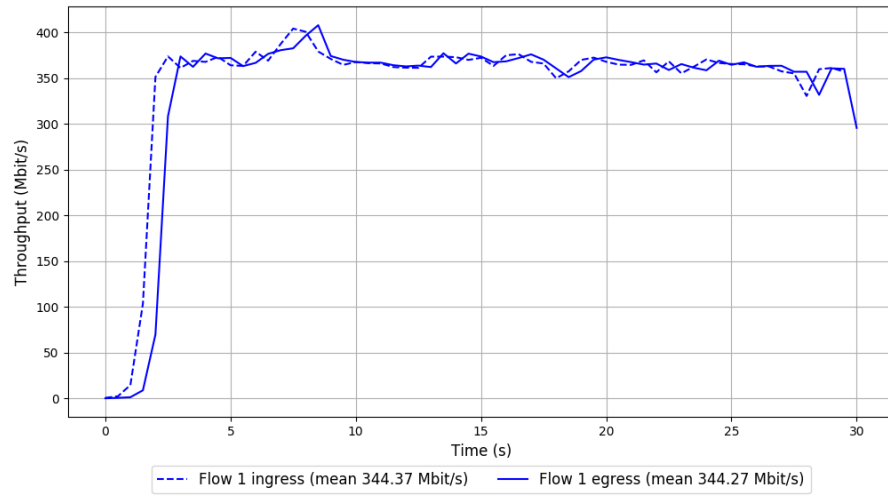
-- Flow 1:

Average throughput: 344.27 Mbit/s

95th percentile per-packet one-way delay: 105.490 ms

Loss rate: 0.60%

## Run 5: Report of Copa — Data Link





Run 1: Statistics of TCP Cubic

Start at: 2018-11-02 18:07:01

End at: 2018-11-02 18:07:31

Local clock offset: 4.025 ms

Remote clock offset: 4.998 ms

# Below is generated by plot.py at 2018-11-02 20:42:10

# Datalink statistics

-- Total of 1 flow:

Average throughput: 389.34 Mbit/s

95th percentile per-packet one-way delay: 86.101 ms

Loss rate: 0.61%

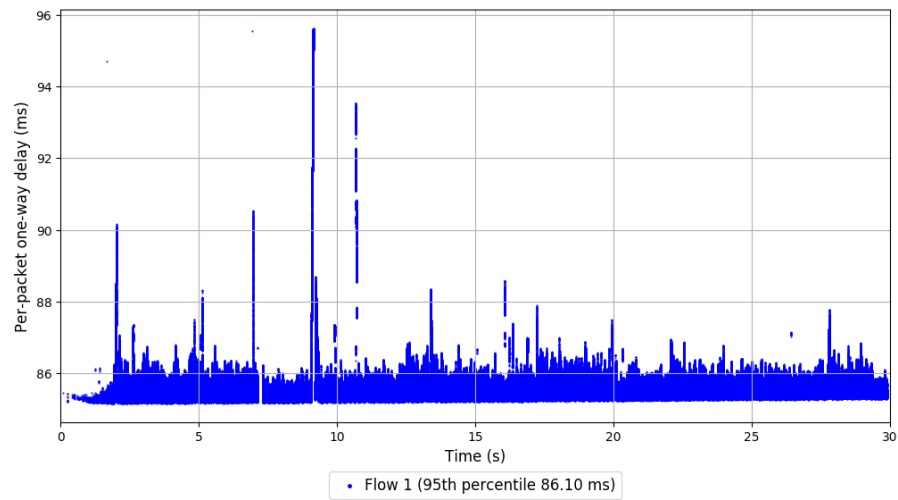
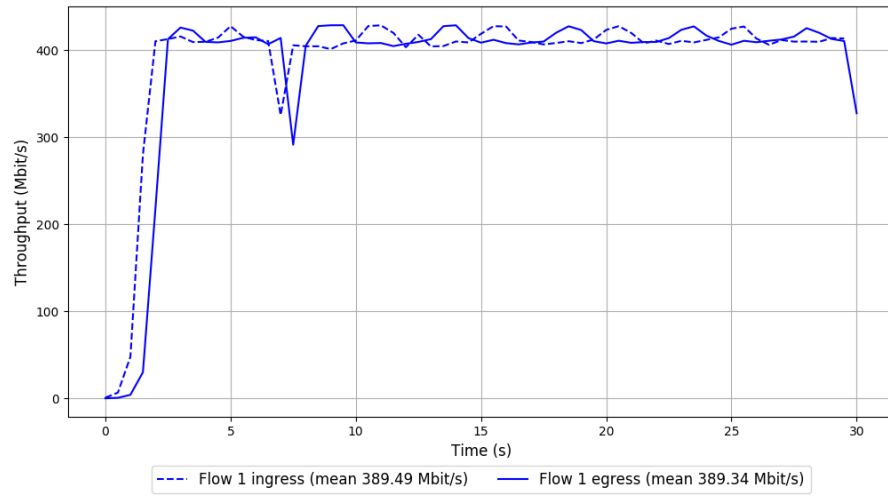
-- Flow 1:

Average throughput: 389.34 Mbit/s

95th percentile per-packet one-way delay: 86.101 ms

Loss rate: 0.61%

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

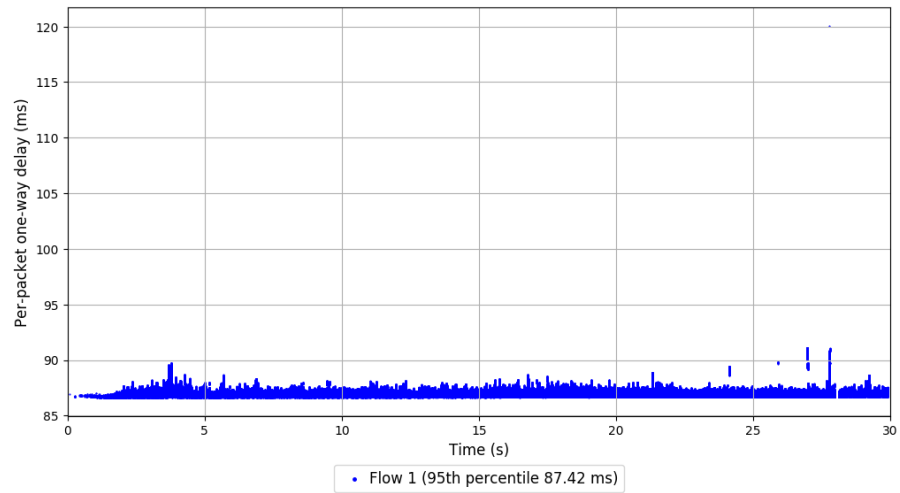
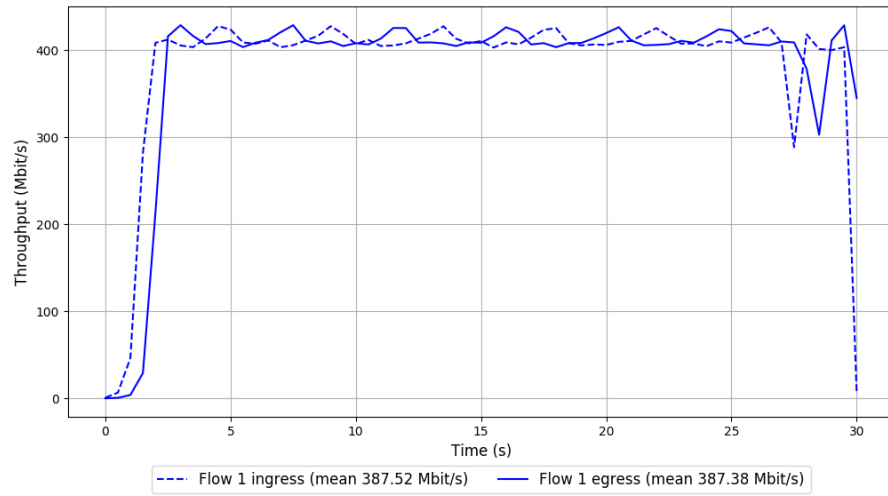


Run 2: Statistics of TCP Cubic

Start at: 2018-11-02 18:32:12  
End at: 2018-11-02 18:32:42  
Local clock offset: 18.109 ms  
Remote clock offset: 19.547 ms

# Below is generated by plot.py at 2018-11-02 20:42:10  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 387.38 Mbit/s  
95th percentile per-packet one-way delay: 87.416 ms  
Loss rate: 0.61%  
-- Flow 1:  
Average throughput: 387.38 Mbit/s  
95th percentile per-packet one-way delay: 87.416 ms  
Loss rate: 0.61%

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

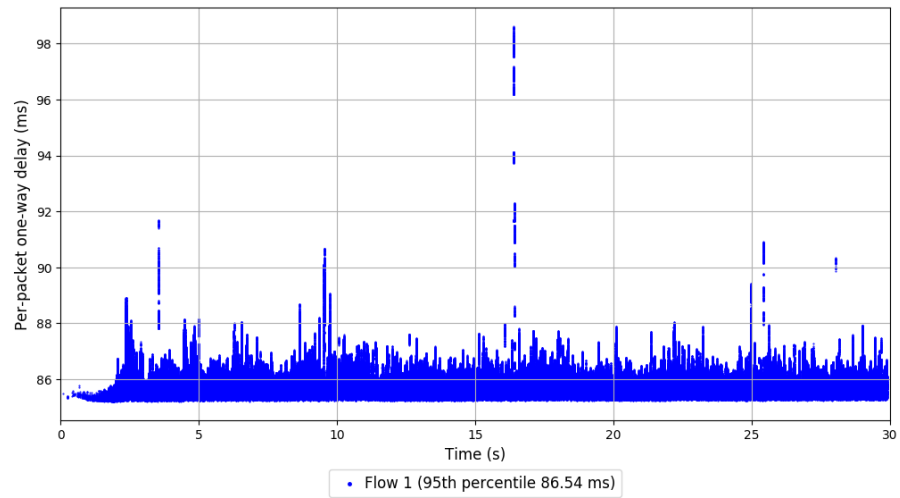
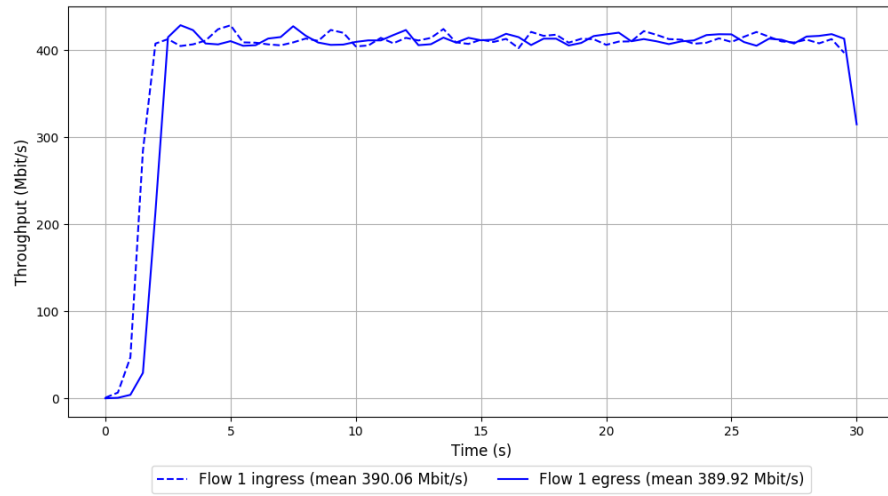


Run 3: Statistics of TCP Cubic

Start at: 2018-11-02 18:58:19  
End at: 2018-11-02 18:58:49  
Local clock offset: 23.94 ms  
Remote clock offset: 27.158 ms

# Below is generated by plot.py at 2018-11-02 20:42:10  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 389.92 Mbit/s  
95th percentile per-packet one-way delay: 86.544 ms  
Loss rate: 0.61%  
-- Flow 1:  
Average throughput: 389.92 Mbit/s  
95th percentile per-packet one-way delay: 86.544 ms  
Loss rate: 0.61%

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

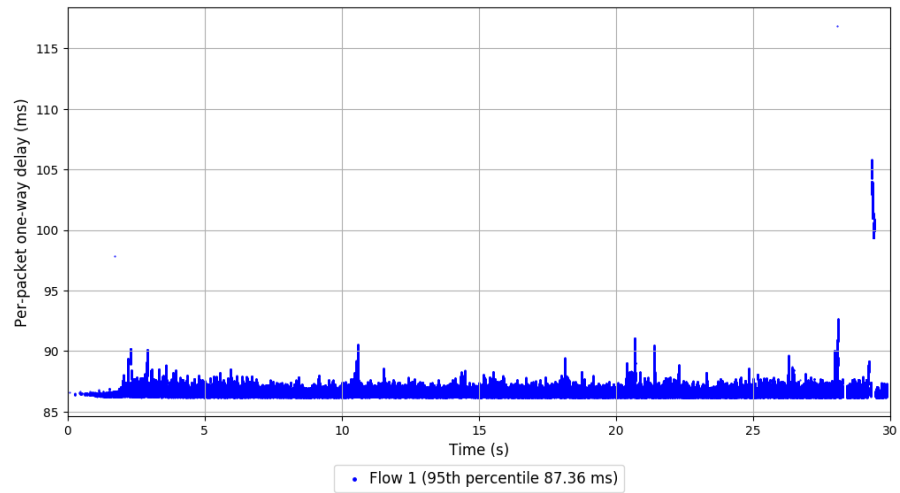
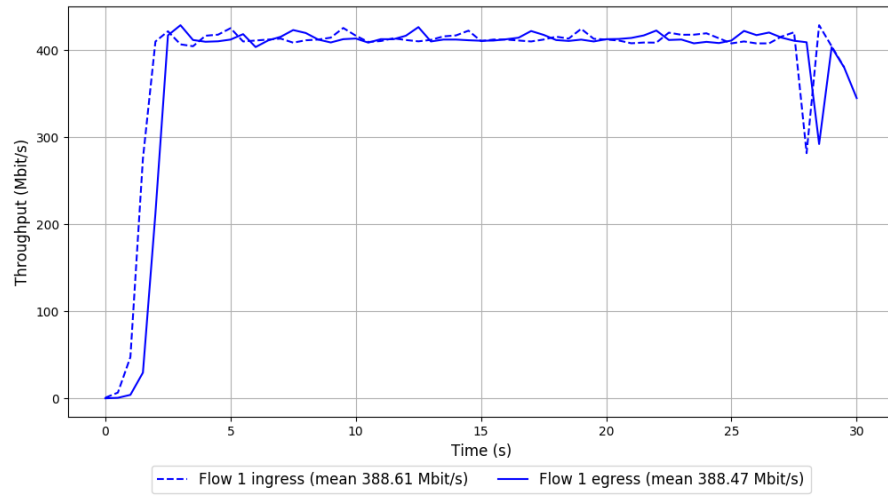


Run 4: Statistics of TCP Cubic

Start at: 2018-11-02 19:24:28  
End at: 2018-11-02 19:24:58  
Local clock offset: 15.867 ms  
Remote clock offset: 17.174 ms

# Below is generated by plot.py at 2018-11-02 20:42:10  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 388.47 Mbit/s  
95th percentile per-packet one-way delay: 87.365 ms  
Loss rate: 0.61%  
-- Flow 1:  
Average throughput: 388.47 Mbit/s  
95th percentile per-packet one-way delay: 87.365 ms  
Loss rate: 0.61%

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





Run 5: Statistics of TCP Cubic

Start at: 2018-11-02 19:50:33

End at: 2018-11-02 19:51:03

Local clock offset: 12.639 ms

Remote clock offset: 13.82 ms

# Below is generated by plot.py at 2018-11-02 20:42:28

# Datalink statistics

-- Total of 1 flow:

Average throughput: 390.21 Mbit/s

95th percentile per-packet one-way delay: 87.273 ms

Loss rate: 0.61%

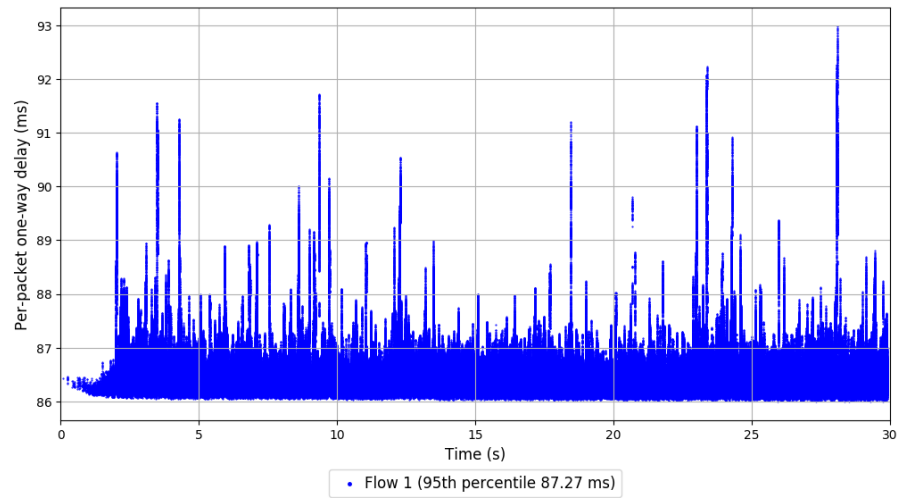
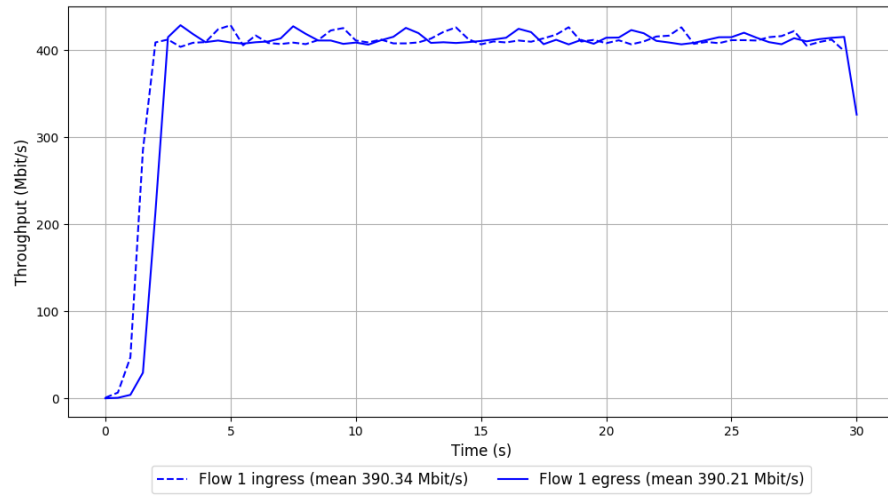
-- Flow 1:

Average throughput: 390.21 Mbit/s

95th percentile per-packet one-way delay: 87.273 ms

Loss rate: 0.61%

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



Run 1: Statistics of FillP

Start at: 2018-11-02 18:08:28

End at: 2018-11-02 18:08:58

Local clock offset: 6.879 ms

Remote clock offset: 6.601 ms

# Below is generated by plot.py at 2018-11-02 20:57:38

# Datalink statistics

-- Total of 1 flow:

Average throughput: 931.69 Mbit/s

95th percentile per-packet one-way delay: 149.254 ms

Loss rate: 3.42%

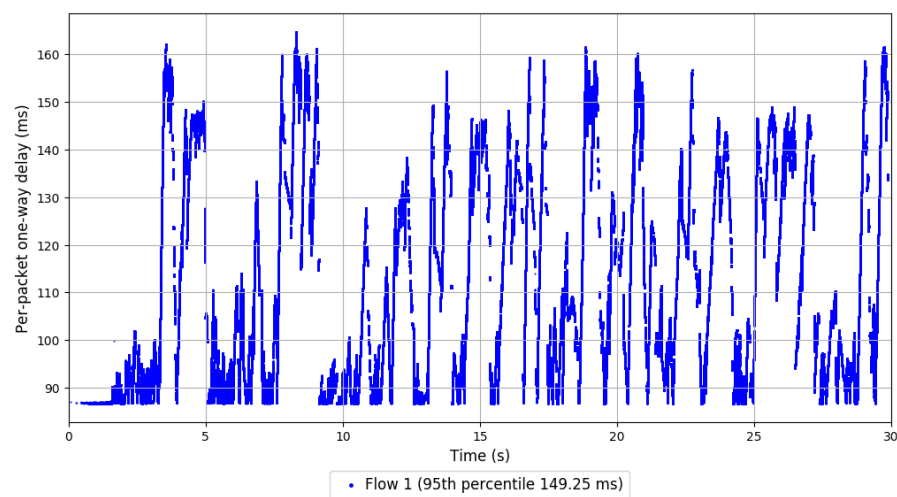
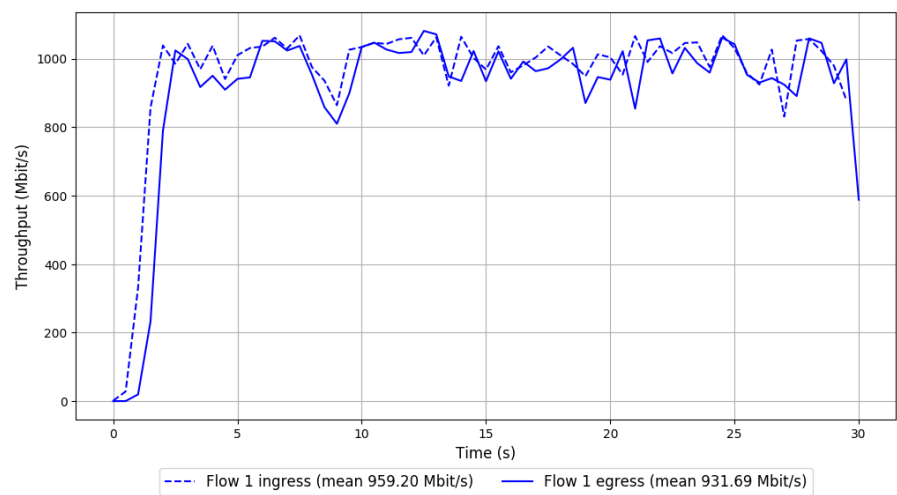
-- Flow 1:

Average throughput: 931.69 Mbit/s

95th percentile per-packet one-way delay: 149.254 ms

Loss rate: 3.42%

Run 1: Report of FillP — Data Link

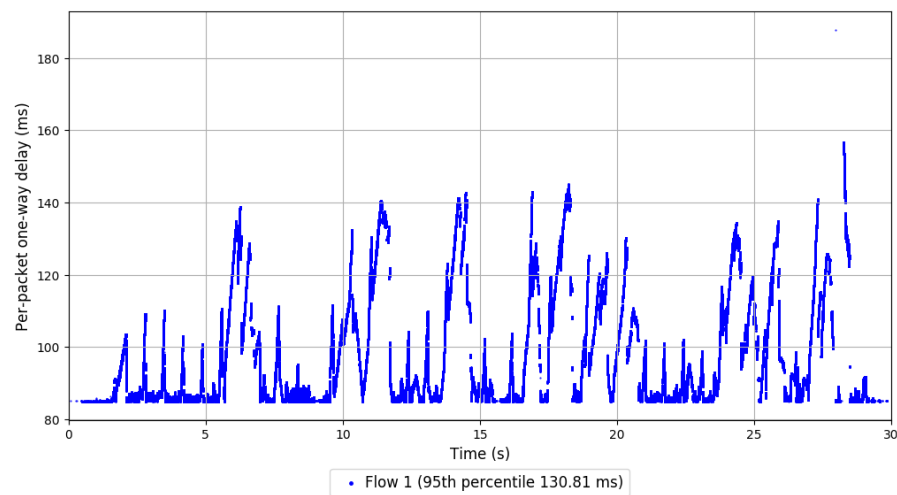
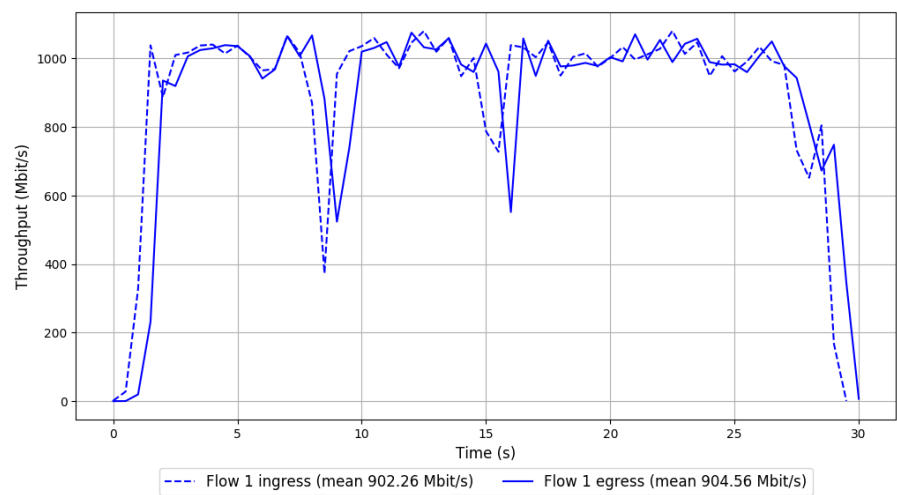


Run 2: Statistics of FillP

Start at: 2018-11-02 18:33:40  
End at: 2018-11-02 18:34:10  
Local clock offset: 18.606 ms  
Remote clock offset: 21.616 ms

# Below is generated by plot.py at 2018-11-02 20:59:40  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 904.56 Mbit/s  
95th percentile per-packet one-way delay: 130.807 ms  
Loss rate: 0.20%  
-- Flow 1:  
Average throughput: 904.56 Mbit/s  
95th percentile per-packet one-way delay: 130.807 ms  
Loss rate: 0.20%

Run 2: Report of FillP — Data Link

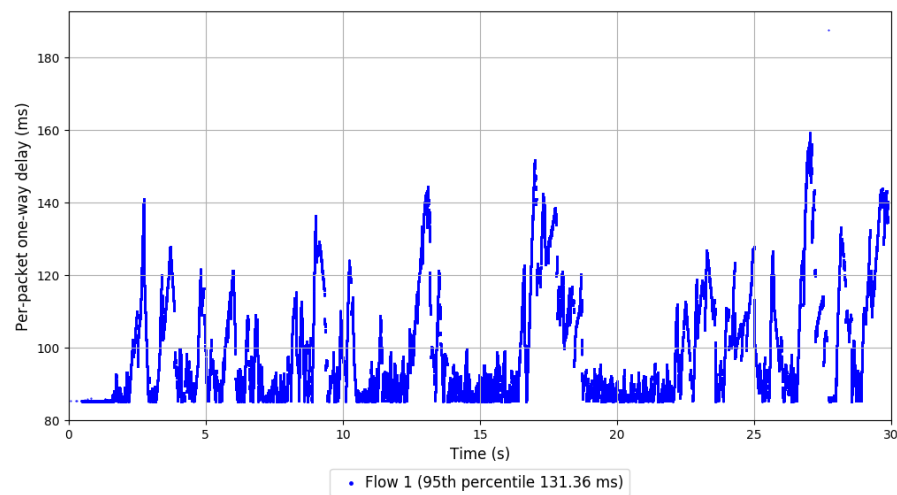
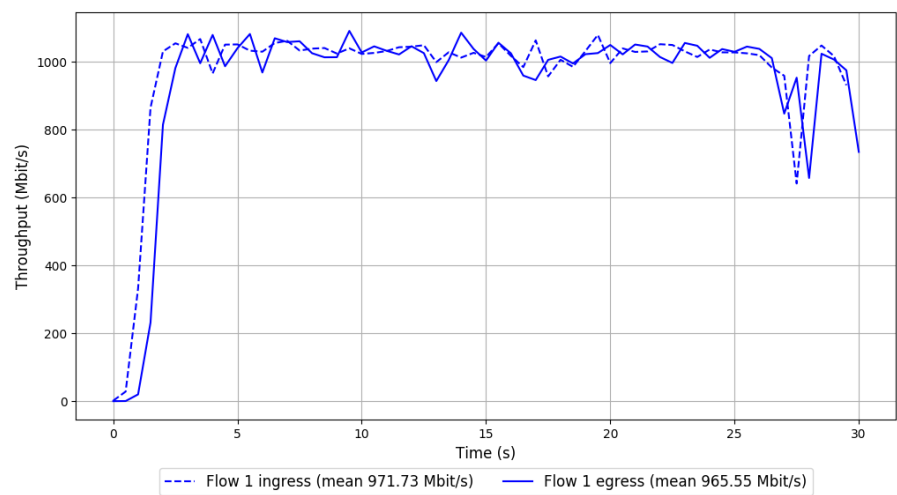


Run 3: Statistics of FillP

Start at: 2018-11-02 18:59:48  
End at: 2018-11-02 19:00:19  
Local clock offset: 25.116 ms  
Remote clock offset: 28.655 ms

# Below is generated by plot.py at 2018-11-02 21:01:05  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 965.55 Mbit/s  
95th percentile per-packet one-way delay: 131.364 ms  
Loss rate: 1.21%  
-- Flow 1:  
Average throughput: 965.55 Mbit/s  
95th percentile per-packet one-way delay: 131.364 ms  
Loss rate: 1.21%

Run 3: Report of FillP — Data Link



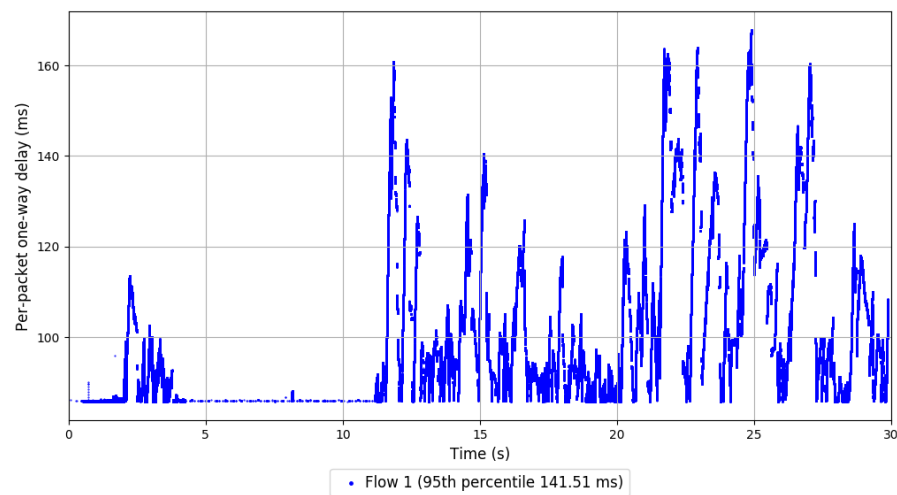
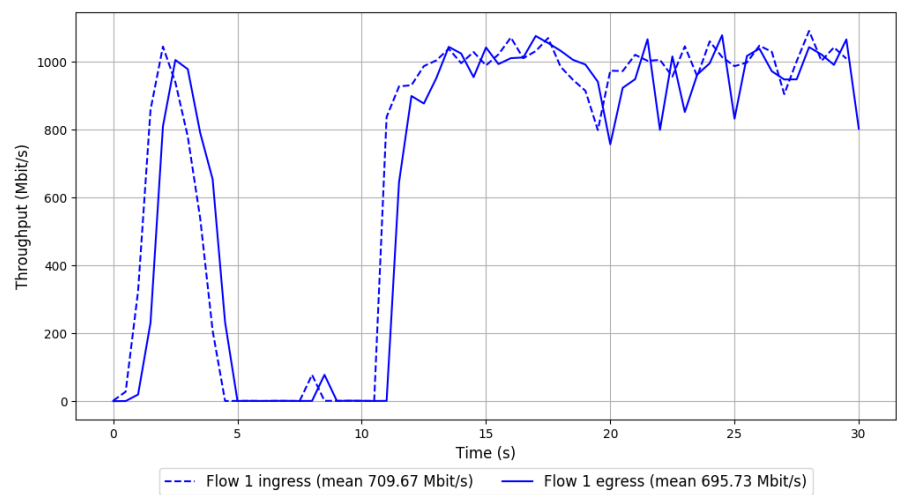


Run 4: Statistics of FillP

Start at: 2018-11-02 19:25:57  
End at: 2018-11-02 19:26:27  
Local clock offset: 14.417 ms  
Remote clock offset: 16.498 ms

# Below is generated by plot.py at 2018-11-02 21:01:05  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 695.73 Mbit/s  
95th percentile per-packet one-way delay: 141.508 ms  
Loss rate: 2.53%  
-- Flow 1:  
Average throughput: 695.73 Mbit/s  
95th percentile per-packet one-way delay: 141.508 ms  
Loss rate: 2.53%

Run 4: Report of FillP — Data Link

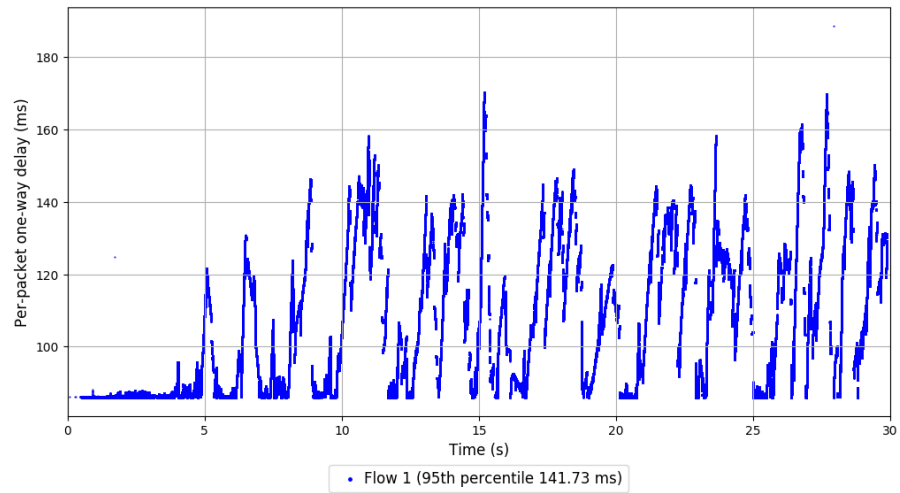
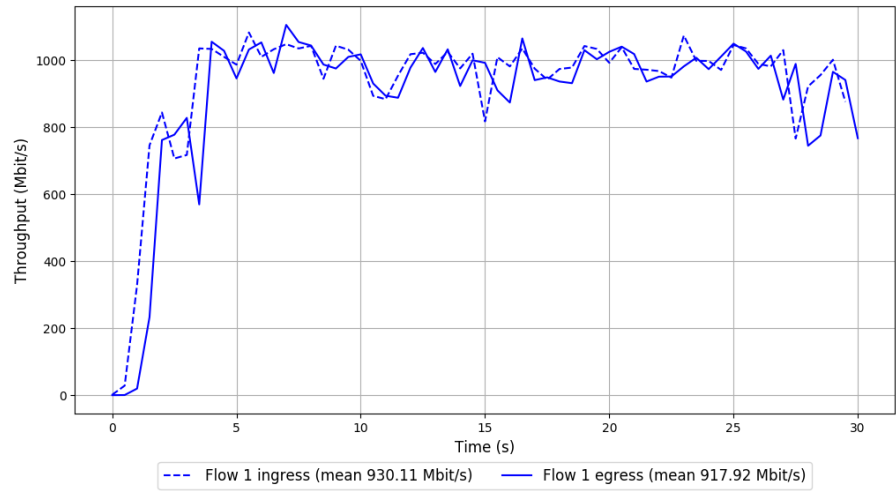


Run 5: Statistics of FillP

Start at: 2018-11-02 19:52:02  
End at: 2018-11-02 19:52:32  
Local clock offset: 10.864 ms  
Remote clock offset: 12.422 ms

# Below is generated by plot.py at 2018-11-02 21:04:01  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 917.92 Mbit/s  
95th percentile per-packet one-way delay: 141.733 ms  
Loss rate: 1.88%  
-- Flow 1:  
Average throughput: 917.92 Mbit/s  
95th percentile per-packet one-way delay: 141.733 ms  
Loss rate: 1.88%

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

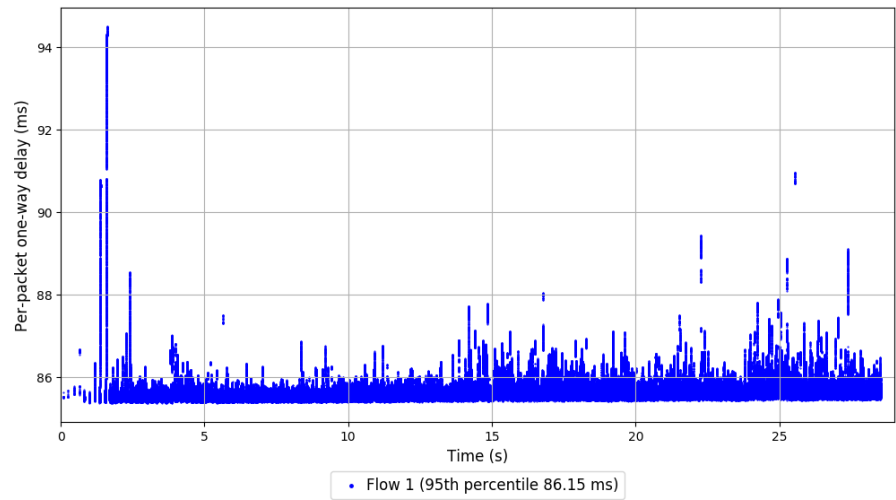
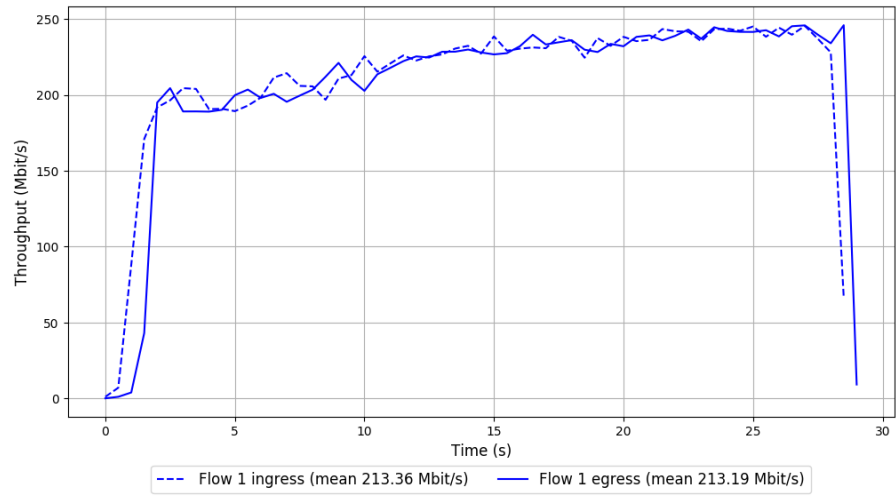


Run 1: Statistics of Indigo

Start at: 2018-11-02 18:17:34  
End at: 2018-11-02 18:18:04  
Local clock offset: 11.007 ms  
Remote clock offset: 12.605 ms

# Below is generated by plot.py at 2018-11-02 21:04:01  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 213.19 Mbit/s  
95th percentile per-packet one-way delay: 86.152 ms  
Loss rate: 0.69%  
-- Flow 1:  
Average throughput: 213.19 Mbit/s  
95th percentile per-packet one-way delay: 86.152 ms  
Loss rate: 0.69%

## Run 1: Report of Indigo — Data Link

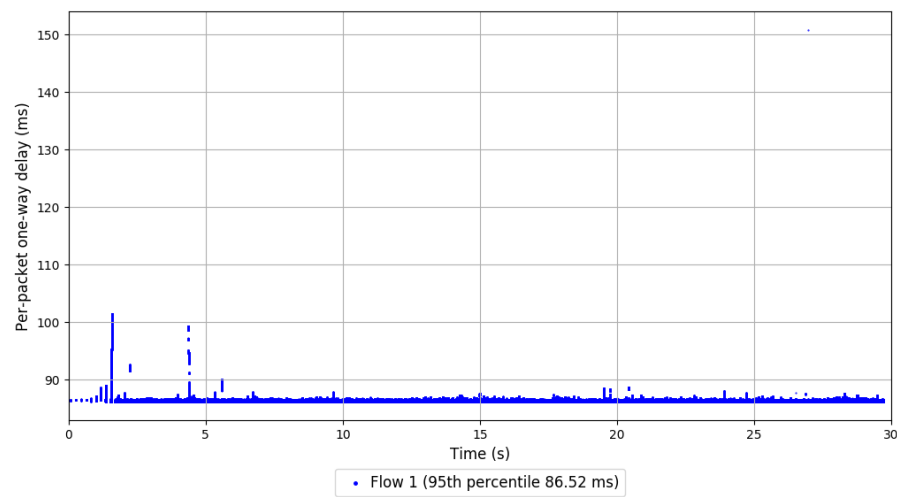
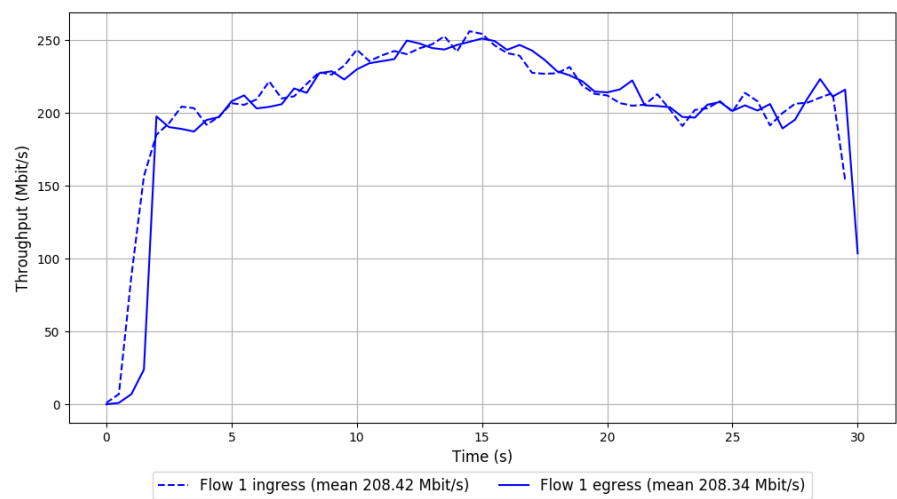


Run 2: Statistics of Indigo

Start at: 2018-11-02 18:43:27  
End at: 2018-11-02 18:43:57  
Local clock offset: 19.165 ms  
Remote clock offset: 21.325 ms

# Below is generated by plot.py at 2018-11-02 21:04:01  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 208.34 Mbit/s  
95th percentile per-packet one-way delay: 86.517 ms  
Loss rate: 0.62%  
-- Flow 1:  
Average throughput: 208.34 Mbit/s  
95th percentile per-packet one-way delay: 86.517 ms  
Loss rate: 0.62%

Run 2: Report of Indigo — Data Link



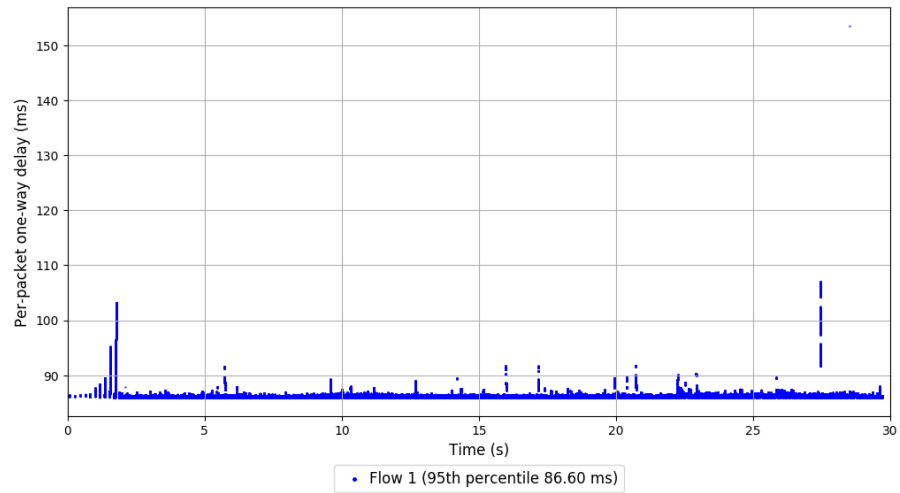
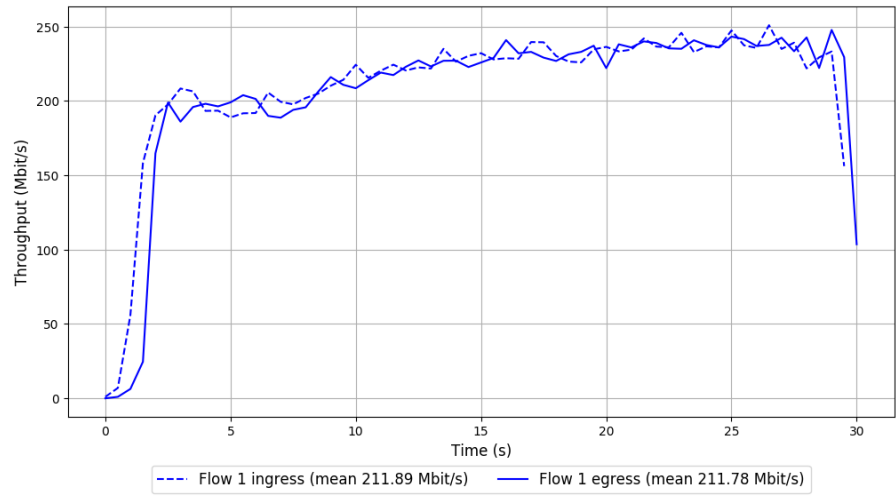


Run 3: Statistics of Indigo

Start at: 2018-11-02 19:09:40  
End at: 2018-11-02 19:10:10  
Local clock offset: 34.973 ms  
Remote clock offset: 39.001 ms

# Below is generated by plot.py at 2018-11-02 21:04:01  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 211.78 Mbit/s  
95th percentile per-packet one-way delay: 86.601 ms  
Loss rate: 0.66%  
-- Flow 1:  
Average throughput: 211.78 Mbit/s  
95th percentile per-packet one-way delay: 86.601 ms  
Loss rate: 0.66%

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

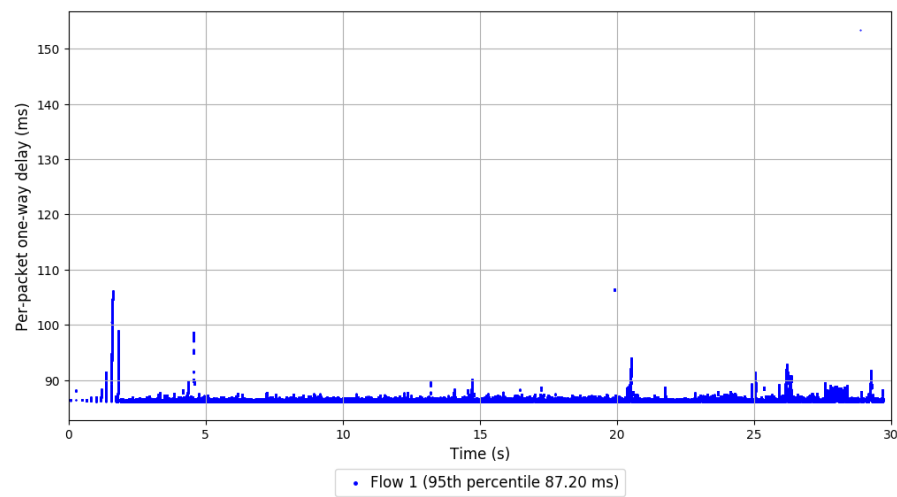
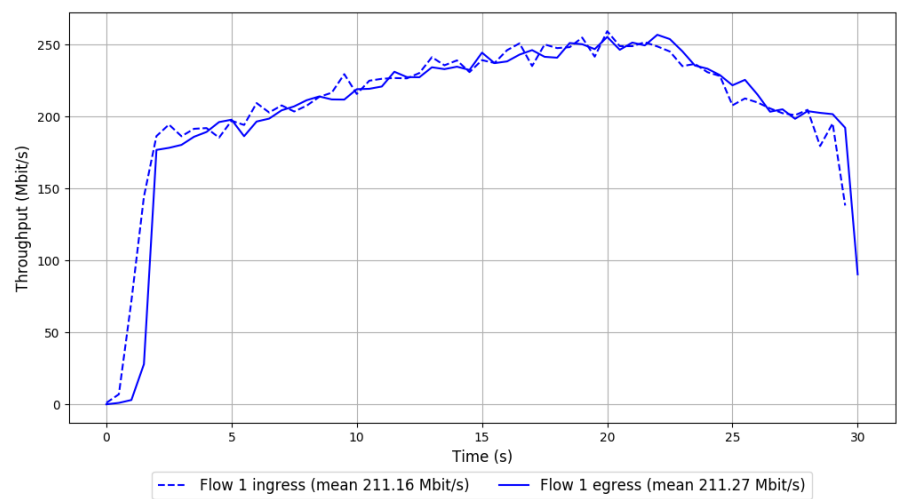


Run 4: Statistics of Indigo

Start at: 2018-11-02 19:35:37  
End at: 2018-11-02 19:36:07  
Local clock offset: 14.975 ms  
Remote clock offset: 16.675 ms

# Below is generated by plot.py at 2018-11-02 21:04:01  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 211.27 Mbit/s  
95th percentile per-packet one-way delay: 87.200 ms  
Loss rate: 0.53%  
-- Flow 1:  
Average throughput: 211.27 Mbit/s  
95th percentile per-packet one-way delay: 87.200 ms  
Loss rate: 0.53%

Run 4: Report of Indigo — Data Link



Run 5: Statistics of Indigo

Start at: 2018-11-02 20:01:52

End at: 2018-11-02 20:02:22

Local clock offset: 7.375 ms

Remote clock offset: 7.867 ms

# Below is generated by plot.py at 2018-11-02 21:04:01

# Datalink statistics

-- Total of 1 flow:

Average throughput: 218.78 Mbit/s

95th percentile per-packet one-way delay: 87.249 ms

Loss rate: 0.67%

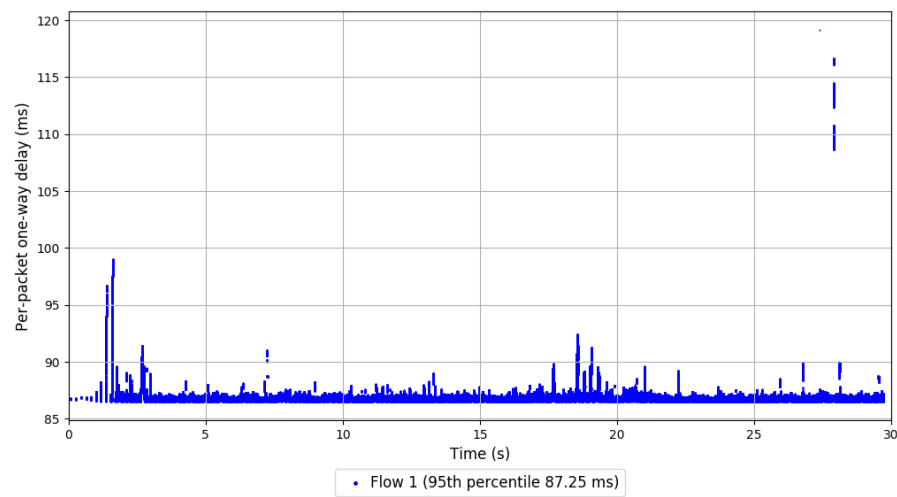
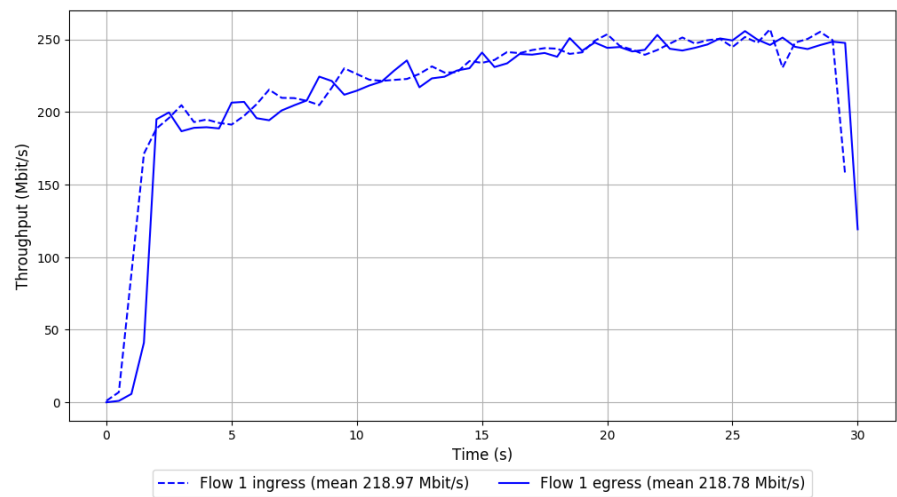
-- Flow 1:

Average throughput: 218.78 Mbit/s

95th percentile per-packet one-way delay: 87.249 ms

Loss rate: 0.67%

Run 5: Report of Indigo — Data Link



Run 1: Statistics of Indigo-96d2da3

Start at: 2018-11-02 18:16:13

End at: 2018-11-02 18:16:43

Local clock offset: 8.871 ms

Remote clock offset: 10.38 ms

# Below is generated by plot.py at 2018-11-02 21:04:01

# Datalink statistics

-- Total of 1 flow:

Average throughput: 252.24 Mbit/s

95th percentile per-packet one-way delay: 109.137 ms

Loss rate: 0.65%

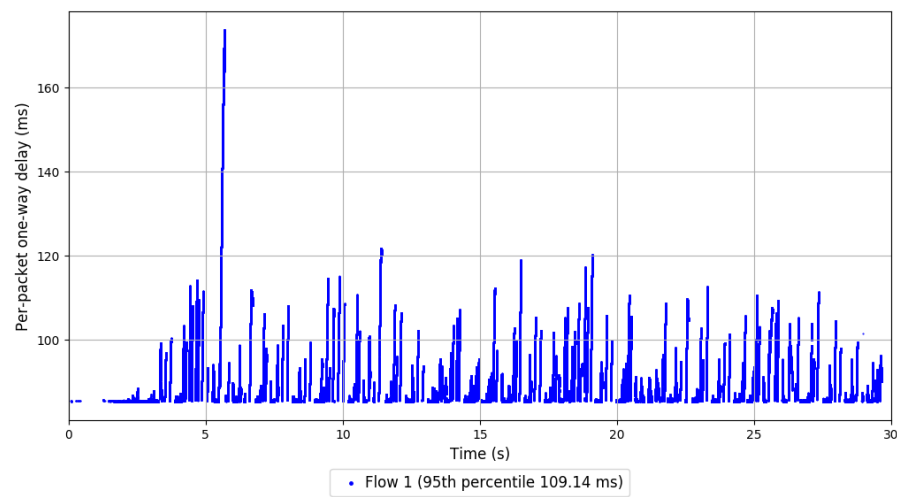
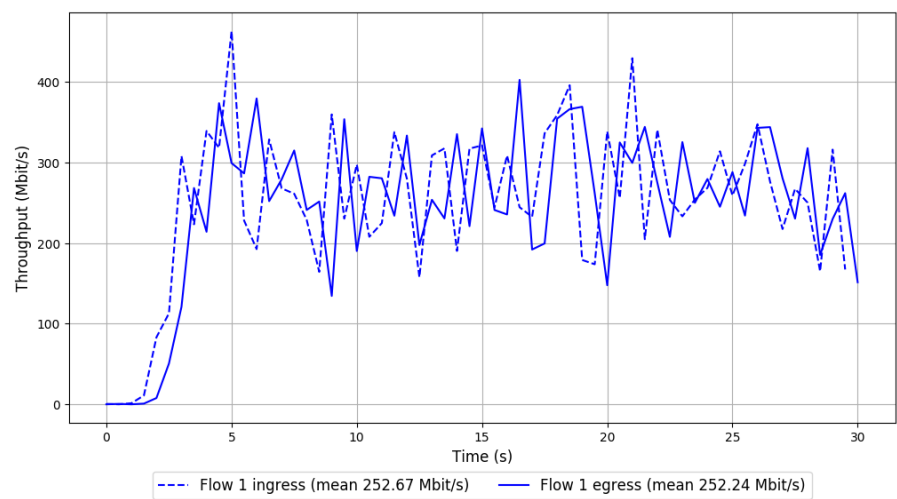
-- Flow 1:

Average throughput: 252.24 Mbit/s

95th percentile per-packet one-way delay: 109.137 ms

Loss rate: 0.65%

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



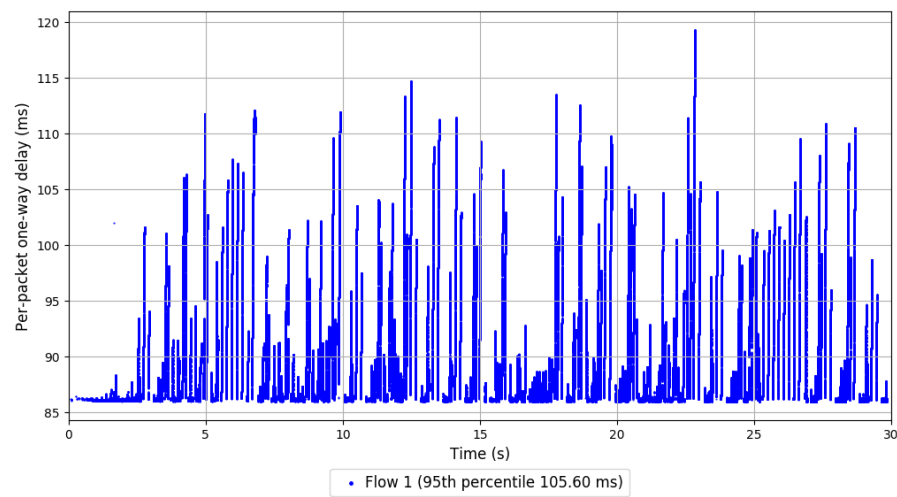
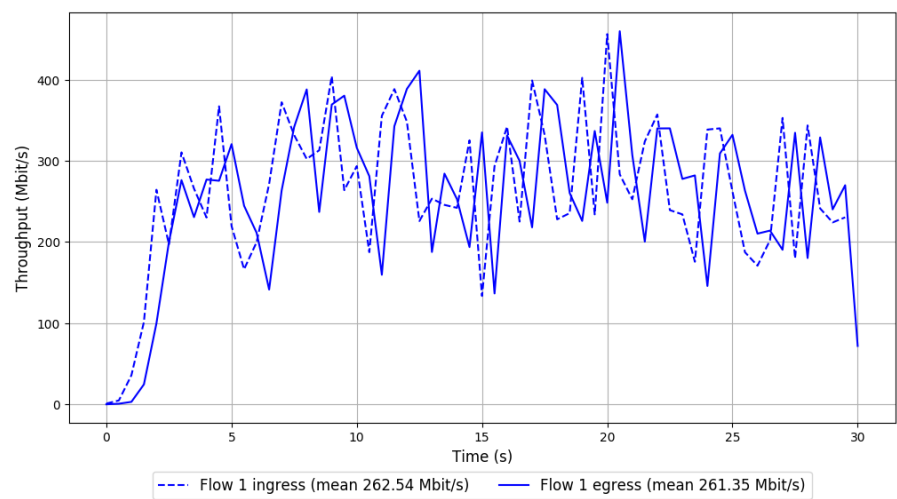


Run 2: Statistics of Indigo-96d2da3

Start at: 2018-11-02 18:42:04  
End at: 2018-11-02 18:42:34  
Local clock offset: 20.158 ms  
Remote clock offset: 22.179 ms

# Below is generated by plot.py at 2018-11-02 21:04:01  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 261.35 Mbit/s  
95th percentile per-packet one-way delay: 105.601 ms  
Loss rate: 1.01%  
-- Flow 1:  
Average throughput: 261.35 Mbit/s  
95th percentile per-packet one-way delay: 105.601 ms  
Loss rate: 1.01%

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



Run 3: Statistics of Indigo-96d2da3

Start at: 2018-11-02 19:08:17

End at: 2018-11-02 19:08:47

Local clock offset: 33.466 ms

Remote clock offset: 37.62 ms

# Below is generated by plot.py at 2018-11-02 21:04:01

# Datalink statistics

-- Total of 1 flow:

Average throughput: 275.81 Mbit/s

95th percentile per-packet one-way delay: 108.039 ms

Loss rate: 0.90%

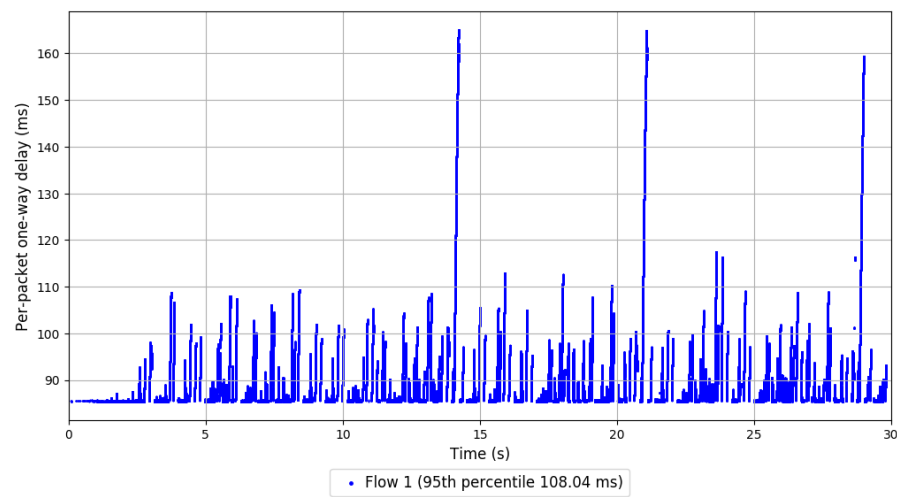
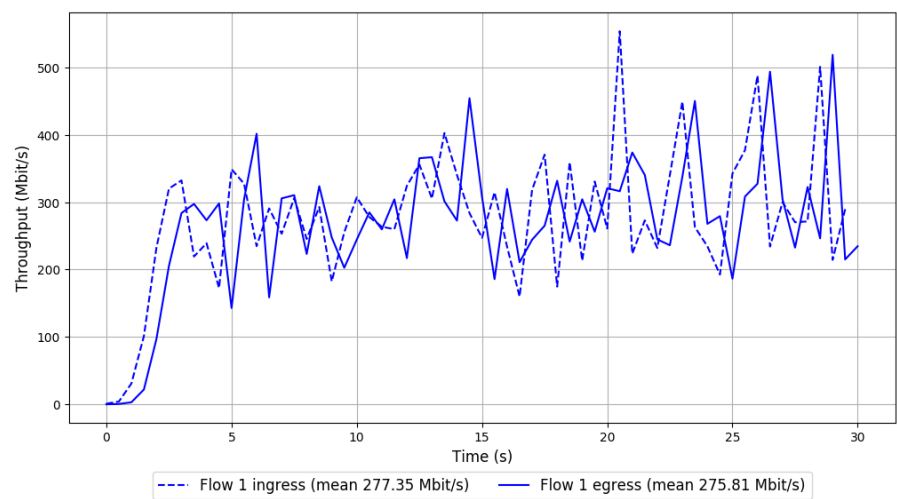
-- Flow 1:

Average throughput: 275.81 Mbit/s

95th percentile per-packet one-way delay: 108.039 ms

Loss rate: 0.90%

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

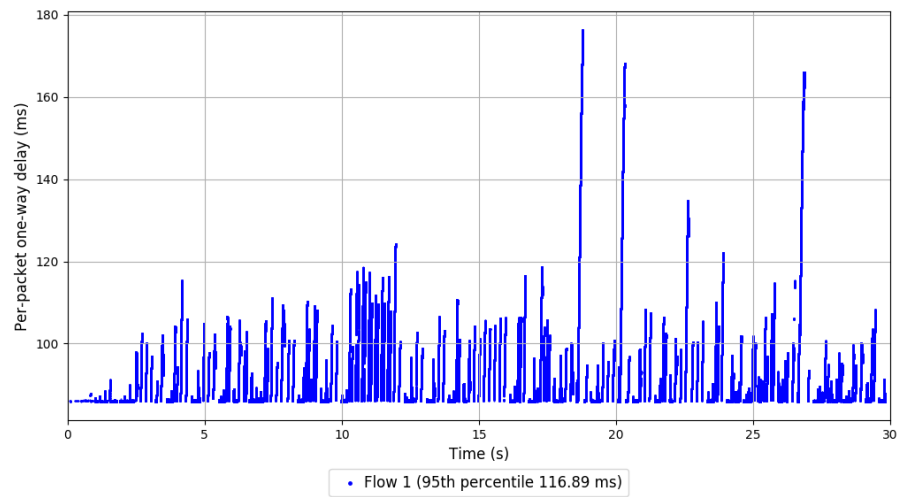
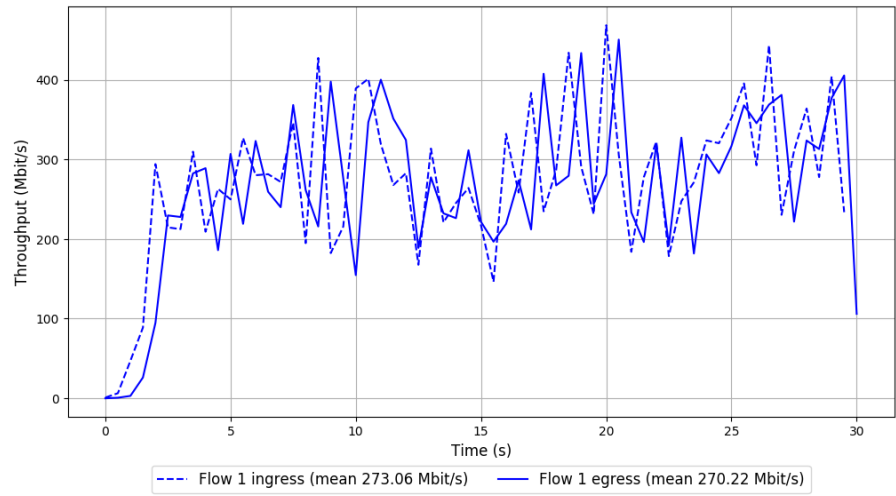


Run 4: Statistics of Indigo-96d2da3

Start at: 2018-11-02 19:34:14  
End at: 2018-11-02 19:34:44  
Local clock offset: 14.819 ms  
Remote clock offset: 16.337 ms

# Below is generated by plot.py at 2018-11-02 21:04:01  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 270.22 Mbit/s  
95th percentile per-packet one-way delay: 116.894 ms  
Loss rate: 1.47%  
-- Flow 1:  
Average throughput: 270.22 Mbit/s  
95th percentile per-packet one-way delay: 116.894 ms  
Loss rate: 1.47%

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



Run 5: Statistics of Indigo-96d2da3

Start at: 2018-11-02 20:00:30

End at: 2018-11-02 20:01:00

Local clock offset: 7.13 ms

Remote clock offset: 8.07 ms

# Below is generated by plot.py at 2018-11-02 21:04:01

# Datalink statistics

-- Total of 1 flow:

Average throughput: 262.71 Mbit/s

95th percentile per-packet one-way delay: 107.595 ms

Loss rate: 0.68%

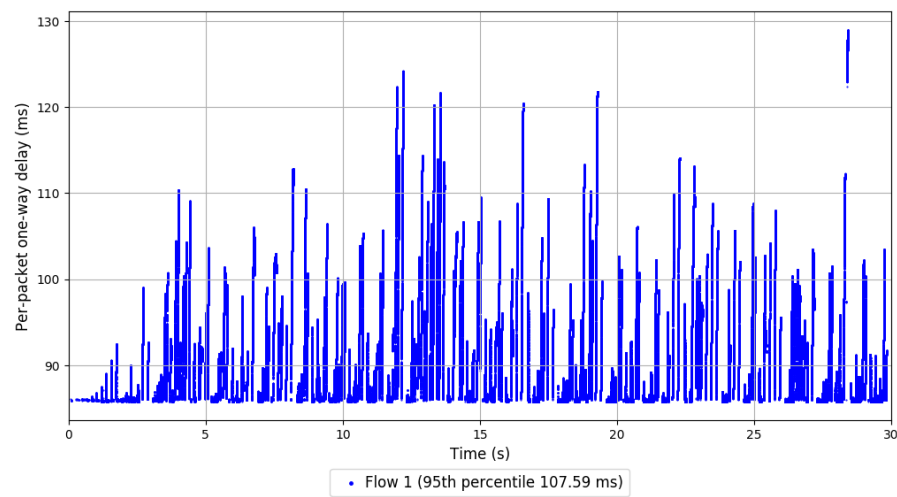
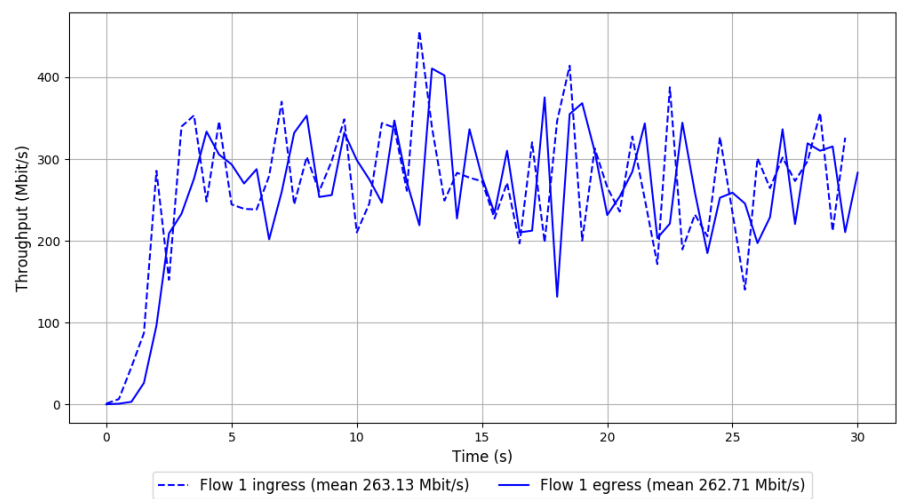
-- Flow 1:

Average throughput: 262.71 Mbit/s

95th percentile per-packet one-way delay: 107.595 ms

Loss rate: 0.68%

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



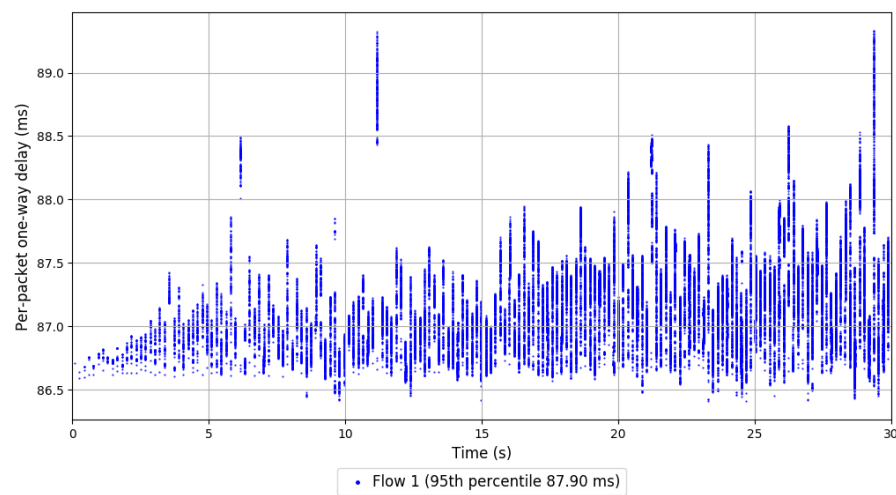
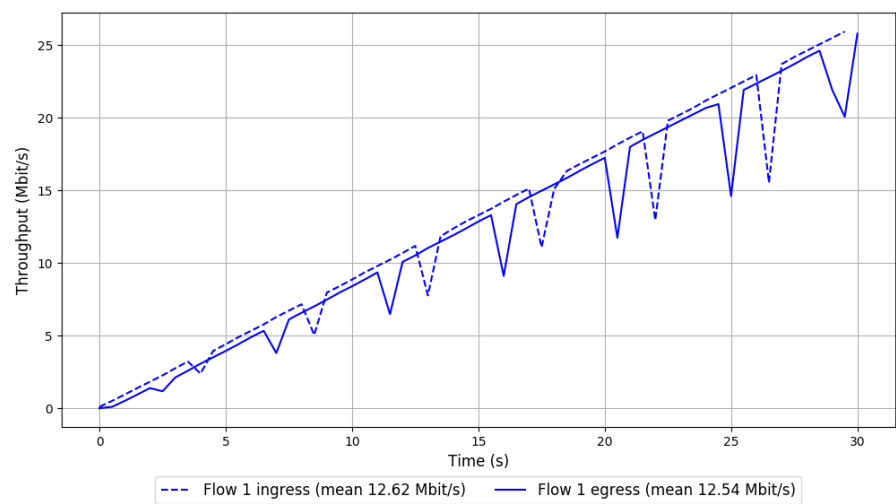


```
Run 1: Statistics of LEDBAT

Start at: 2018-11-02 18:29:22
End at: 2018-11-02 18:29:52
Local clock offset: 15.022 ms
Remote clock offset: 16.373 ms

# Below is generated by plot.py at 2018-11-02 21:04:01
# Datalink statistics
-- Total of 1 flow:
Average throughput: 12.54 Mbit/s
95th percentile per-packet one-way delay: 87.897 ms
Loss rate: 1.15%
-- Flow 1:
Average throughput: 12.54 Mbit/s
95th percentile per-packet one-way delay: 87.897 ms
Loss rate: 1.15%
```

Run 1: Report of LEDBAT — Data Link

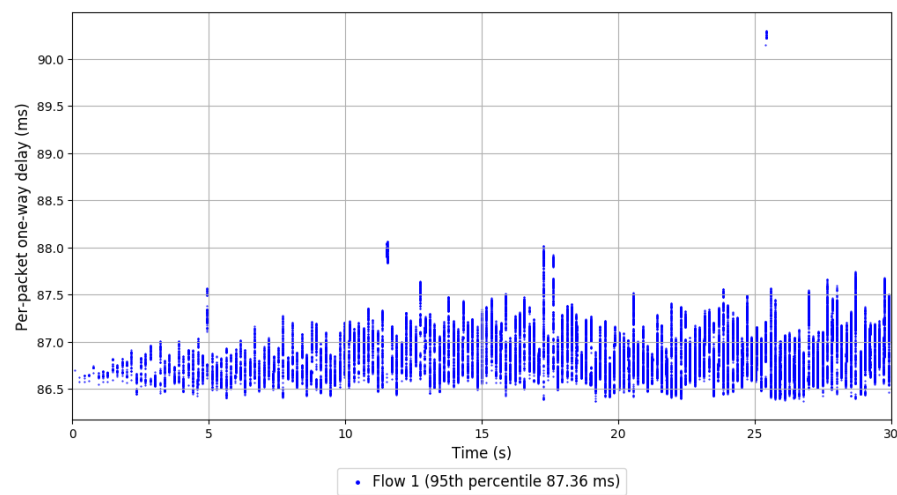
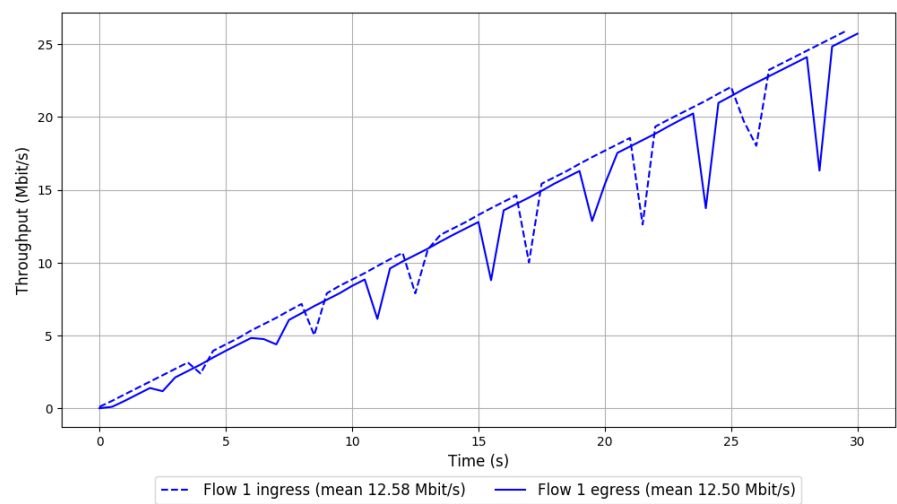


Run 2: Statistics of LEDBAT

Start at: 2018-11-02 18:55:28  
End at: 2018-11-02 18:55:58  
Local clock offset: 22.583 ms  
Remote clock offset: 24.785 ms

# Below is generated by plot.py at 2018-11-02 21:04:01  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 12.50 Mbit/s  
95th percentile per-packet one-way delay: 87.358 ms  
Loss rate: 1.15%  
-- Flow 1:  
Average throughput: 12.50 Mbit/s  
95th percentile per-packet one-way delay: 87.358 ms  
Loss rate: 1.15%

Run 2: Report of LEDBAT — Data Link

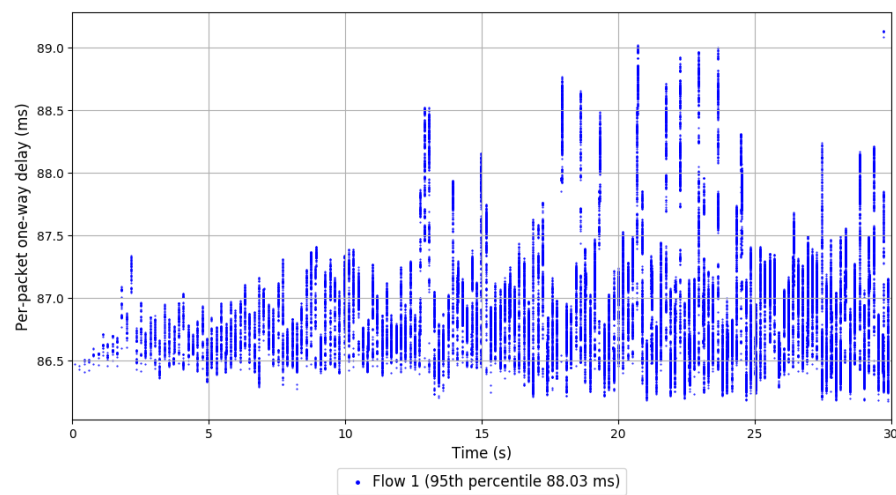
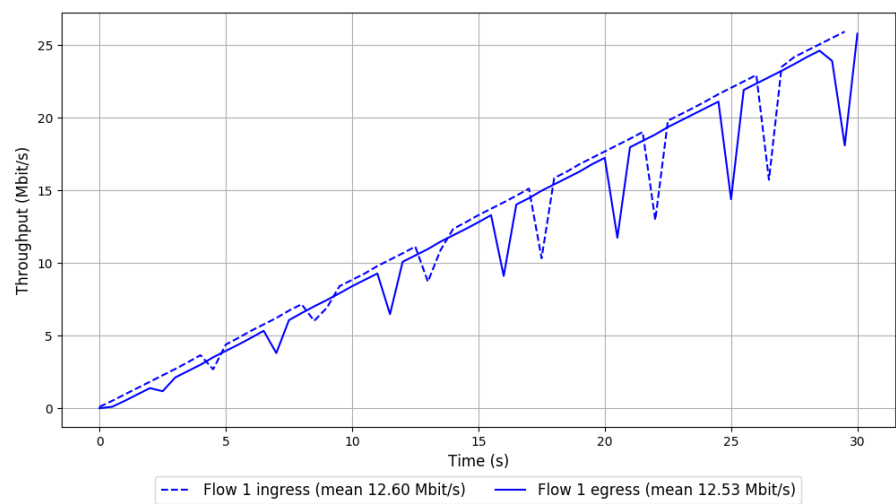


Run 3: Statistics of LEDBAT

Start at: 2018-11-02 19:21:39  
End at: 2018-11-02 19:22:09  
Local clock offset: 17.528 ms  
Remote clock offset: 19.392 ms

# Below is generated by plot.py at 2018-11-02 21:04:01  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 12.53 Mbit/s  
95th percentile per-packet one-way delay: 88.027 ms  
Loss rate: 1.15%  
-- Flow 1:  
Average throughput: 12.53 Mbit/s  
95th percentile per-packet one-way delay: 88.027 ms  
Loss rate: 1.15%

Run 3: Report of LEDBAT — Data Link

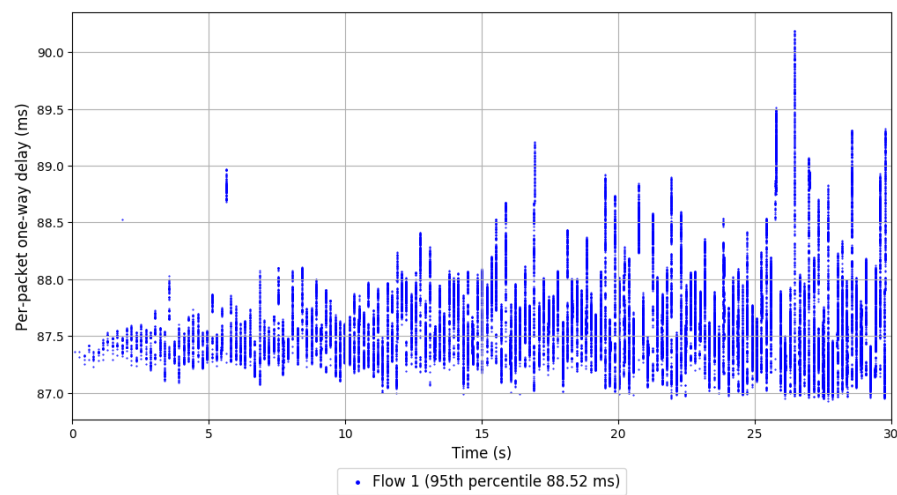
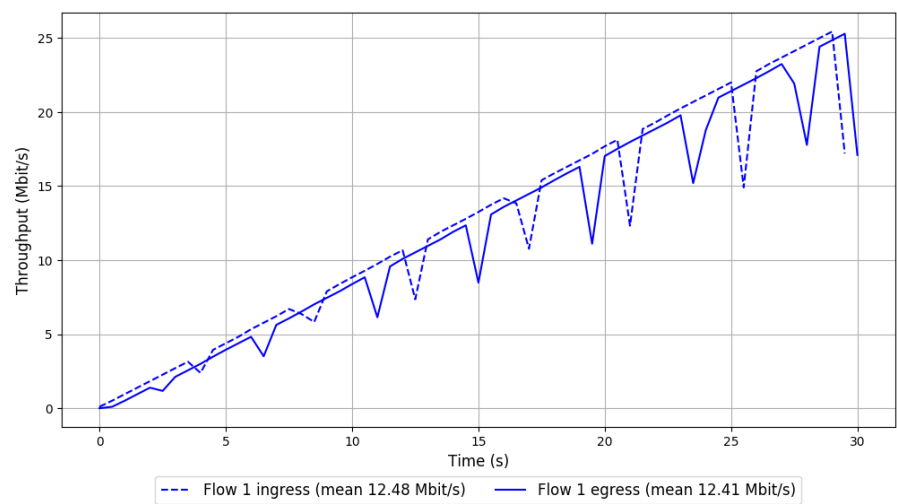


Run 4: Statistics of LEDBAT

Start at: 2018-11-02 19:47:41  
End at: 2018-11-02 19:48:11  
Local clock offset: 16.978 ms  
Remote clock offset: 18.016 ms

# Below is generated by plot.py at 2018-11-02 21:04:01  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 12.41 Mbit/s  
95th percentile per-packet one-way delay: 88.523 ms  
Loss rate: 1.16%  
-- Flow 1:  
Average throughput: 12.41 Mbit/s  
95th percentile per-packet one-way delay: 88.523 ms  
Loss rate: 1.16%

Run 4: Report of LEDBAT — Data Link





Run 5: Statistics of LEDBAT

Start at: 2018-11-02 20:14:01

End at: 2018-11-02 20:14:31

Local clock offset: 7.715 ms

Remote clock offset: 8.811 ms

# Below is generated by plot.py at 2018-11-02 21:04:01

# Datalink statistics

-- Total of 1 flow:

Average throughput: 12.43 Mbit/s

95th percentile per-packet one-way delay: 87.452 ms

Loss rate: 1.16%

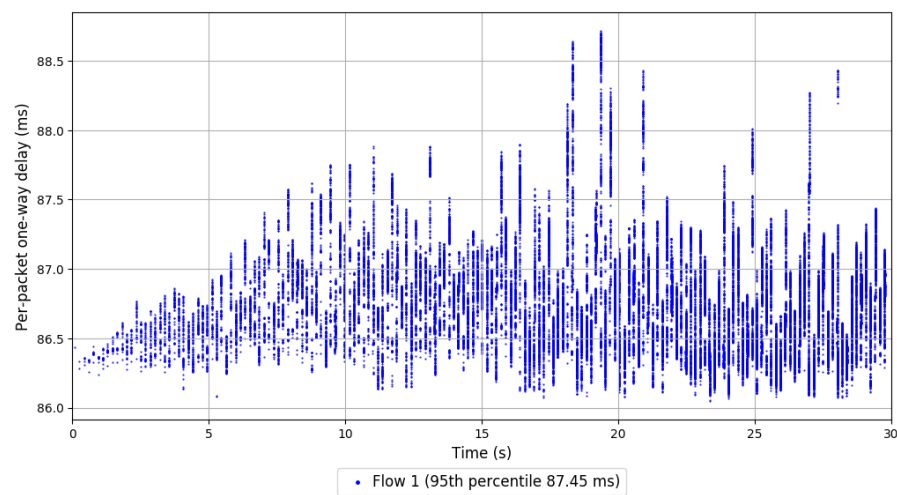
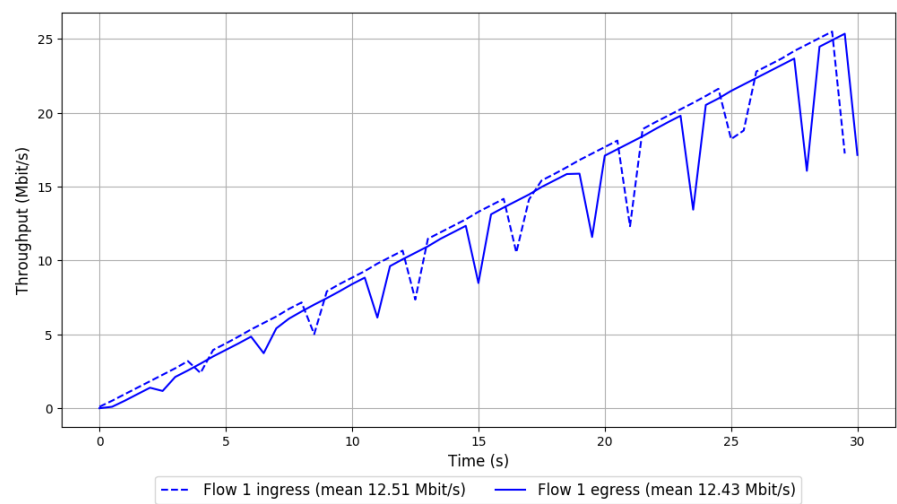
-- Flow 1:

Average throughput: 12.43 Mbit/s

95th percentile per-packet one-way delay: 87.452 ms

Loss rate: 1.16%

Run 5: Report of LEDBAT — Data Link



Run 1: Statistics of Indigo-Muses

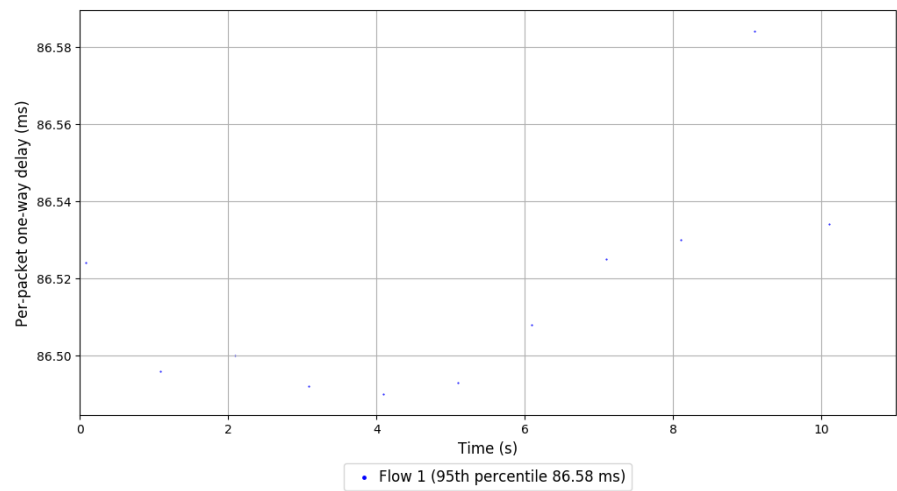
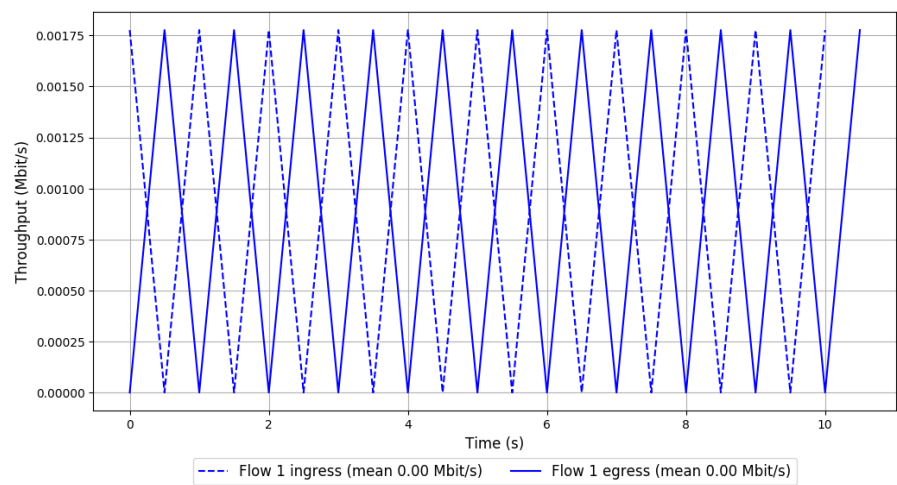
Start at: 2018-11-02 18:11:22

End at: 2018-11-02 18:11:52

Local clock offset: 9.552 ms

Remote clock offset: 10.256 ms

Run 1: Report of Indigo-Muses — Data Link



Run 2: Statistics of Indigo-Muses

Start at: 2018-11-02 18:36:35

End at: 2018-11-02 18:37:05

Local clock offset: 23.098 ms

Remote clock offset: 25.8 ms

# Below is generated by plot.py at 2018-11-02 21:11:11

# Datalink statistics

-- Total of 1 flow:

Average throughput: 639.79 Mbit/s

95th percentile per-packet one-way delay: 122.940 ms

Loss rate: 0.80%

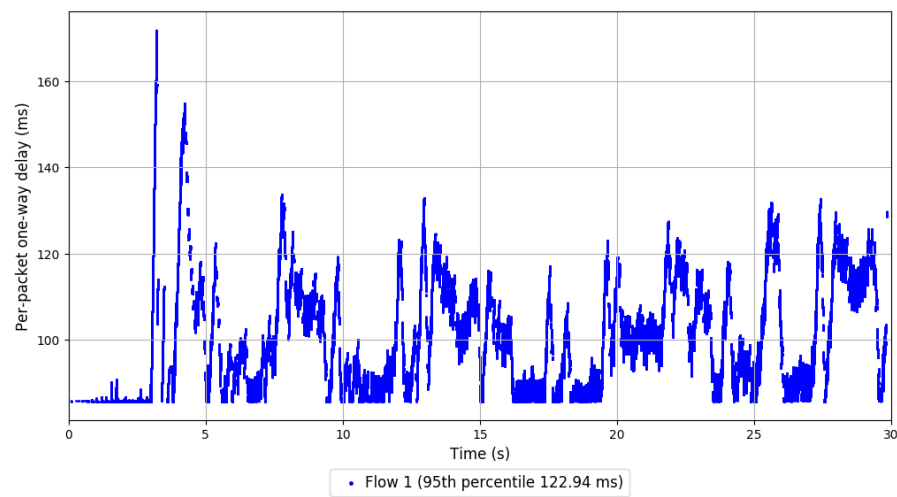
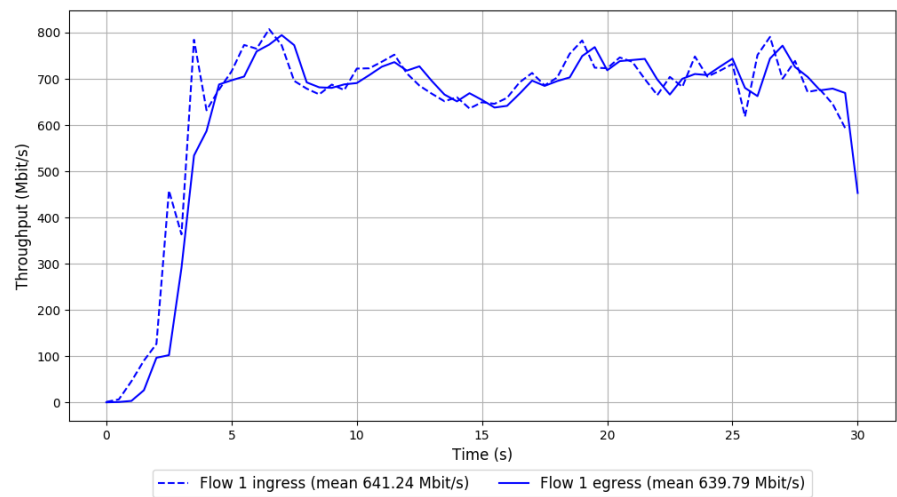
-- Flow 1:

Average throughput: 639.79 Mbit/s

95th percentile per-packet one-way delay: 122.940 ms

Loss rate: 0.80%

Run 2: Report of Indigo-Muses — Data Link

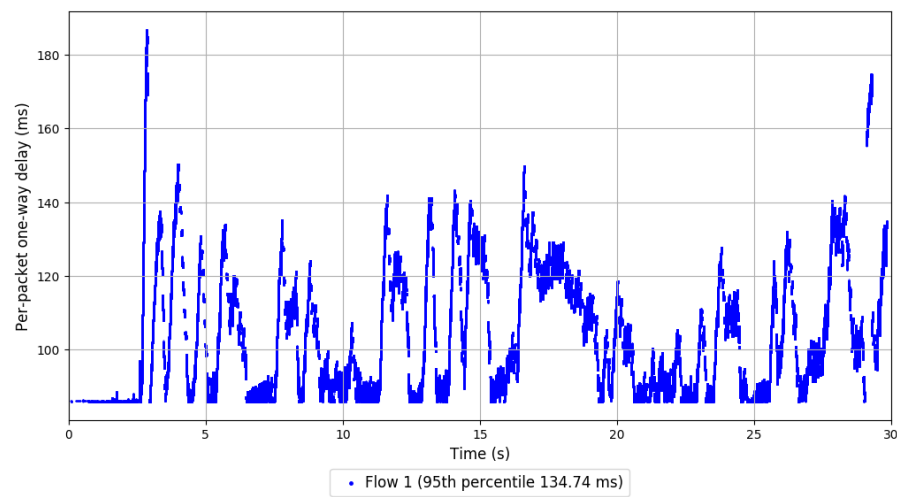
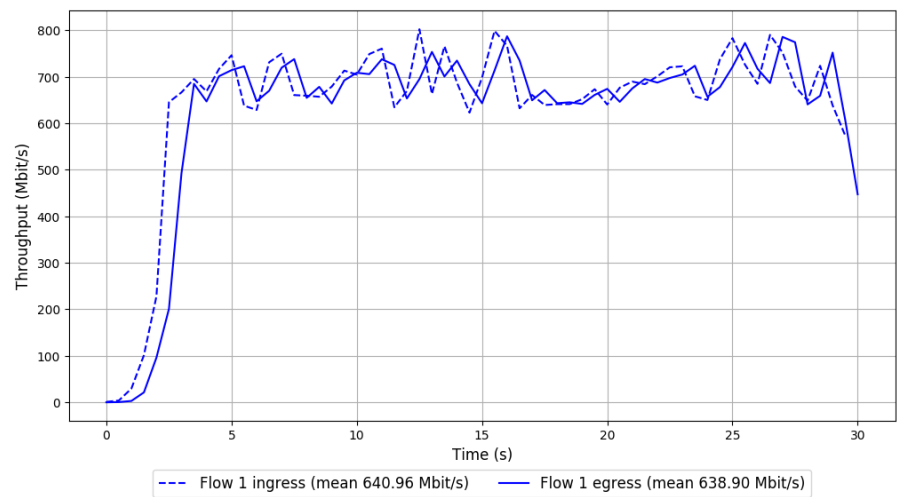


Run 3: Statistics of Indigo-Muses

Start at: 2018-11-02 19:02:46  
End at: 2018-11-02 19:03:16  
Local clock offset: 28.695 ms  
Remote clock offset: 31.721 ms

# Below is generated by plot.py at 2018-11-02 21:11:14  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 638.90 Mbit/s  
95th percentile per-packet one-way delay: 134.741 ms  
Loss rate: 0.89%  
-- Flow 1:  
Average throughput: 638.90 Mbit/s  
95th percentile per-packet one-way delay: 134.741 ms  
Loss rate: 0.89%

Run 3: Report of Indigo-Muses — Data Link



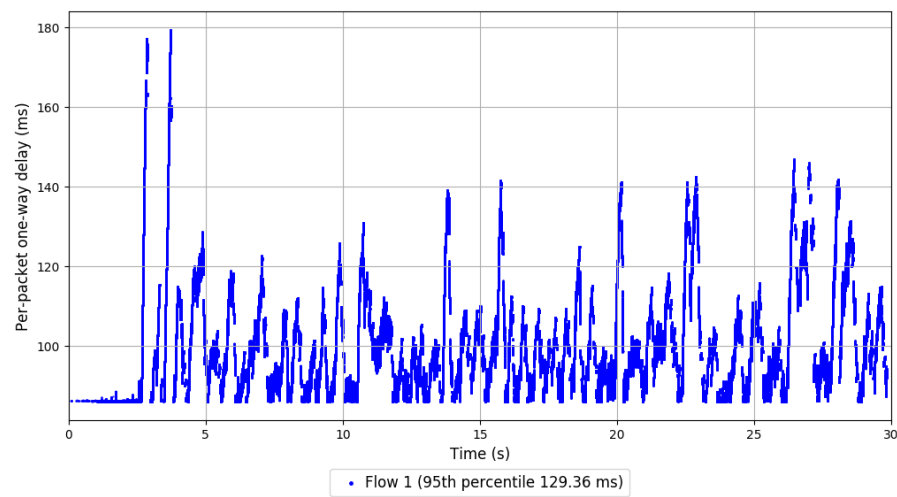
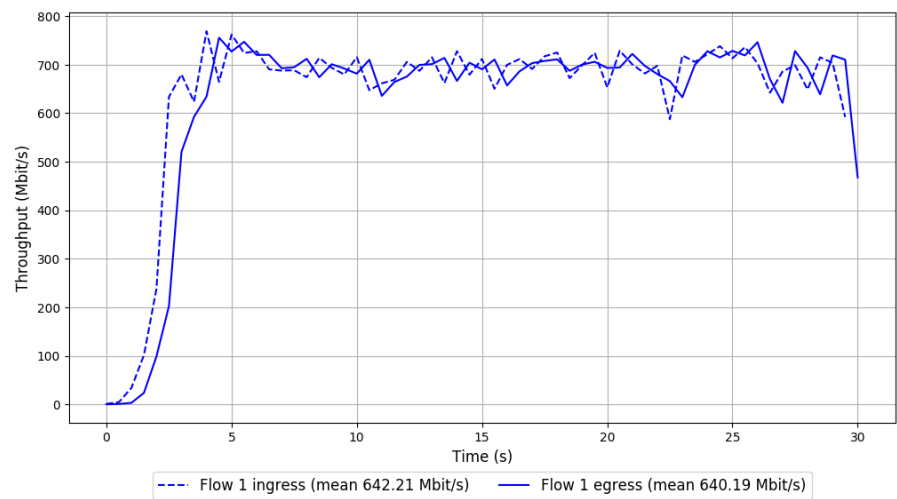


Run 4: Statistics of Indigo-Muses

Start at: 2018-11-02 19:28:44  
End at: 2018-11-02 19:29:14  
Local clock offset: 14.506 ms  
Remote clock offset: 15.829 ms

# Below is generated by plot.py at 2018-11-02 21:11:42  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 640.19 Mbit/s  
95th percentile per-packet one-way delay: 129.360 ms  
Loss rate: 0.89%  
-- Flow 1:  
Average throughput: 640.19 Mbit/s  
95th percentile per-packet one-way delay: 129.360 ms  
Loss rate: 0.89%

Run 4: Report of Indigo-Muses — Data Link

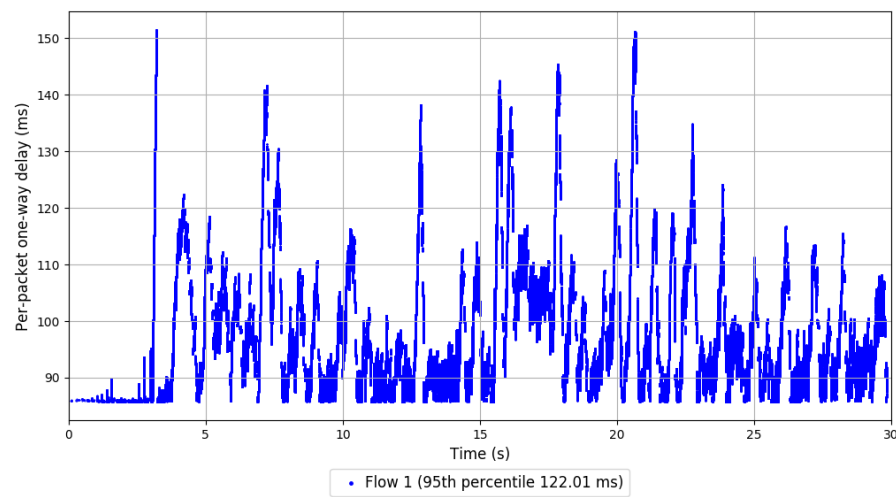
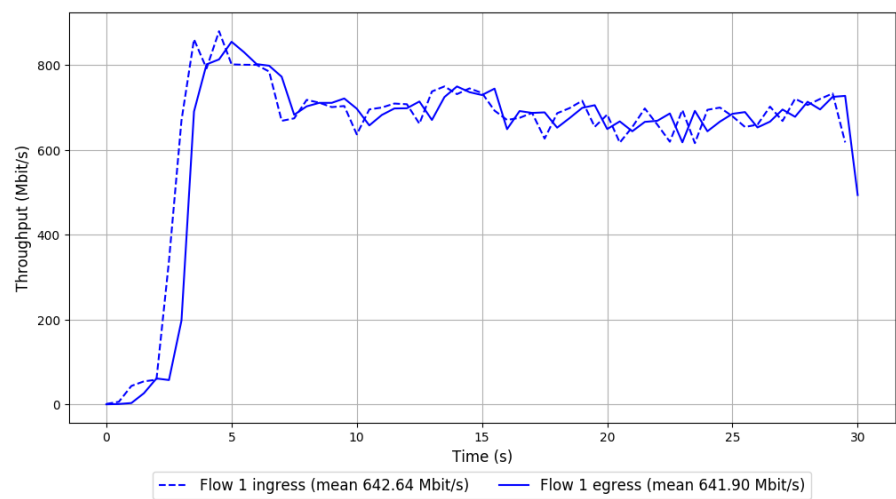


Run 5: Statistics of Indigo-Muses

Start at: 2018-11-02 19:54:58  
End at: 2018-11-02 19:55:28  
Local clock offset: 8.875 ms  
Remote clock offset: 10.032 ms

# Below is generated by plot.py at 2018-11-02 21:12:43  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 641.90 Mbit/s  
95th percentile per-packet one-way delay: 122.009 ms  
Loss rate: 0.69%  
-- Flow 1:  
Average throughput: 641.90 Mbit/s  
95th percentile per-packet one-way delay: 122.009 ms  
Loss rate: 0.69%

Run 5: Report of Indigo-Muses — Data Link

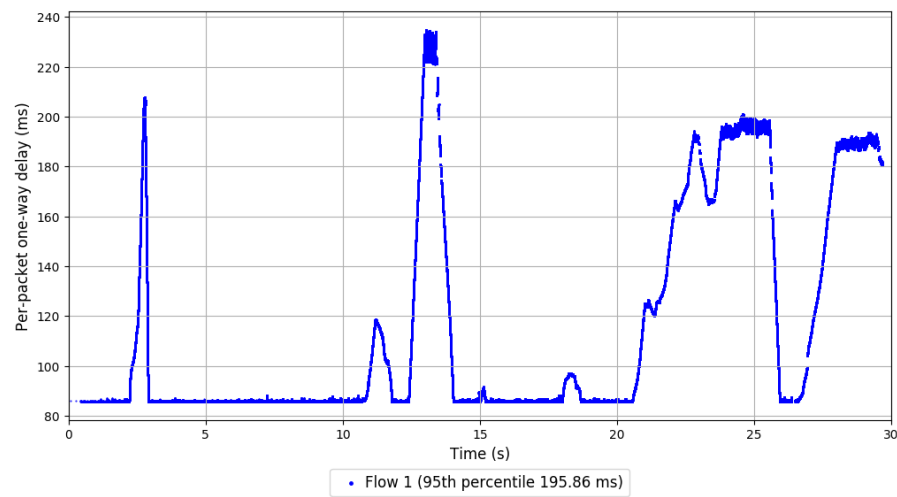
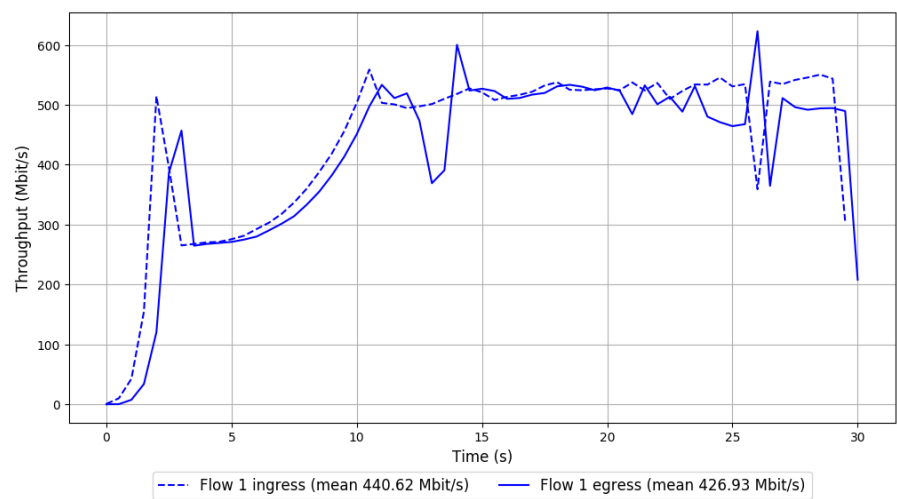


Run 1: Statistics of PCC-Allegro

Start at: 2018-11-02 18:23:31  
End at: 2018-11-02 18:24:01  
Local clock offset: 12.315 ms  
Remote clock offset: 14.212 ms

# Below is generated by plot.py at 2018-11-02 21:17:25  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 426.93 Mbit/s  
95th percentile per-packet one-way delay: 195.864 ms  
Loss rate: 3.67%  
-- Flow 1:  
Average throughput: 426.93 Mbit/s  
95th percentile per-packet one-way delay: 195.864 ms  
Loss rate: 3.67%

Run 1: Report of PCC-Allegro — Data Link

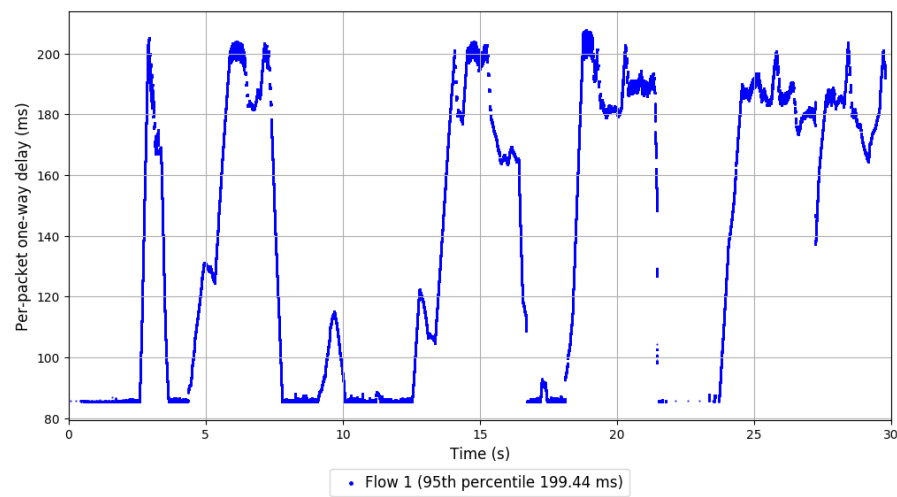
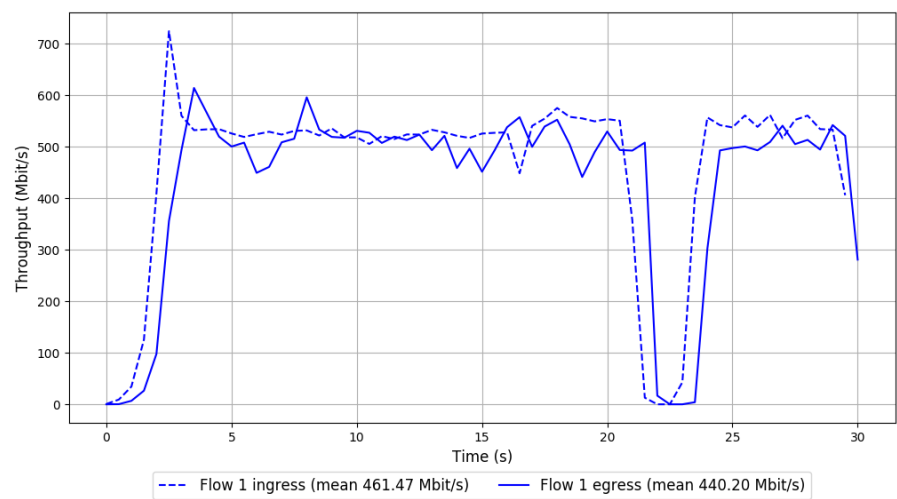


Run 2: Statistics of PCC-Allegro

Start at: 2018-11-02 18:49:29  
End at: 2018-11-02 18:49:59  
Local clock offset: 18.768 ms  
Remote clock offset: 21.228 ms

# Below is generated by plot.py at 2018-11-02 21:19:02  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 440.20 Mbit/s  
95th percentile per-packet one-way delay: 199.441 ms  
Loss rate: 5.16%  
-- Flow 1:  
Average throughput: 440.20 Mbit/s  
95th percentile per-packet one-way delay: 199.441 ms  
Loss rate: 5.16%

Run 2: Report of PCC-Allegro — Data Link





Run 3: Statistics of PCC-Allegro

Start at: 2018-11-02 19:15:43

End at: 2018-11-02 19:16:13

Local clock offset: 27.258 ms

Remote clock offset: 29.385 ms

# Below is generated by plot.py at 2018-11-02 21:19:02

# Datalink statistics

-- Total of 1 flow:

Average throughput: 434.53 Mbit/s

95th percentile per-packet one-way delay: 199.772 ms

Loss rate: 3.17%

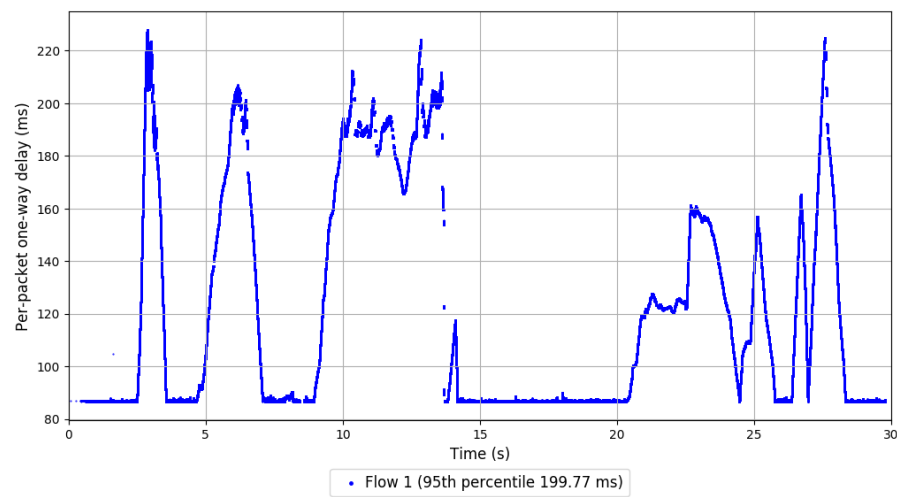
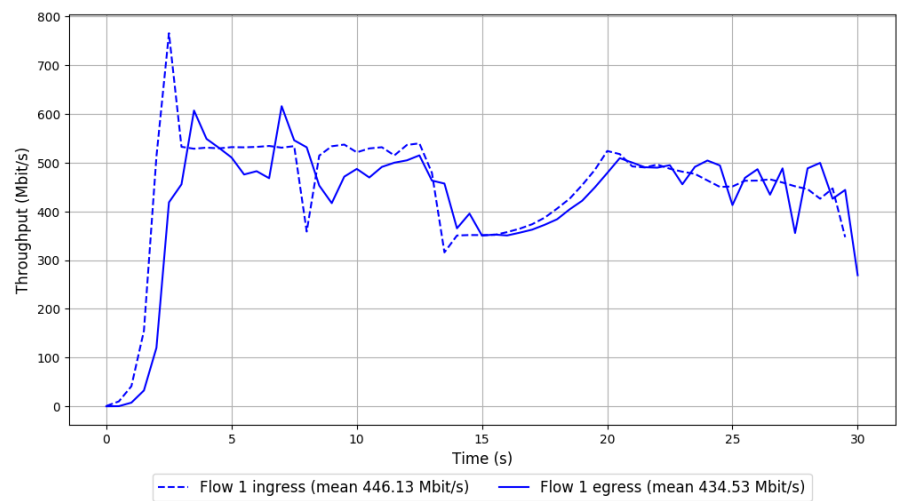
-- Flow 1:

Average throughput: 434.53 Mbit/s

95th percentile per-packet one-way delay: 199.772 ms

Loss rate: 3.17%

Run 3: Report of PCC-Allegro — Data Link

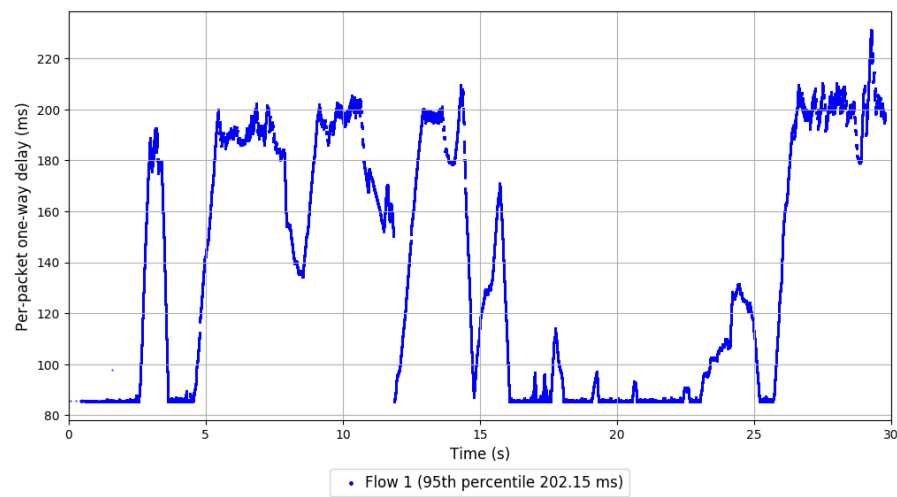
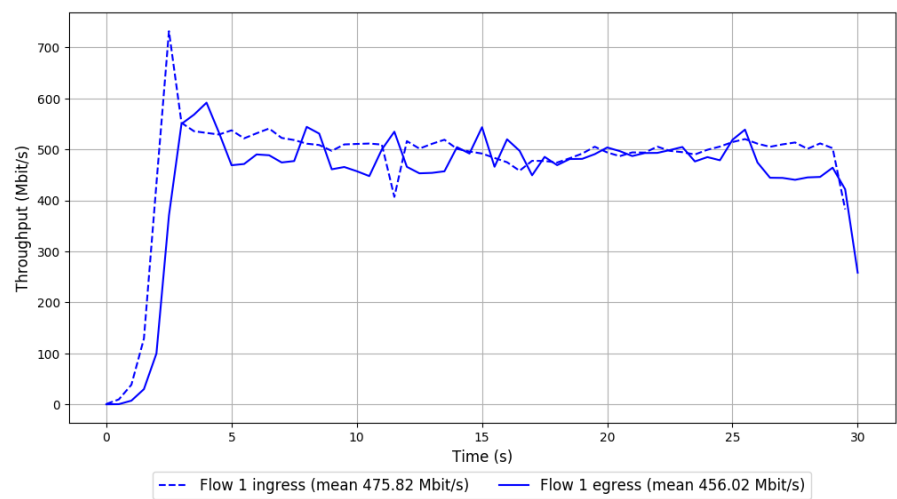


Run 4: Statistics of PCC-Allegro

Start at: 2018-11-02 19:41:42  
End at: 2018-11-02 19:42:12  
Local clock offset: 16.523 ms  
Remote clock offset: 18.932 ms

# Below is generated by plot.py at 2018-11-02 21:20:57  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 456.02 Mbit/s  
95th percentile per-packet one-way delay: 202.154 ms  
Loss rate: 4.72%  
-- Flow 1:  
Average throughput: 456.02 Mbit/s  
95th percentile per-packet one-way delay: 202.154 ms  
Loss rate: 4.72%

Run 4: Report of PCC-Allegro — Data Link



Run 5: Statistics of PCC-Allegro

Start at: 2018-11-02 20:08:02

End at: 2018-11-02 20:08:32

Local clock offset: 7.341 ms

Remote clock offset: 7.904 ms

# Below is generated by plot.py at 2018-11-02 21:28:15

# Datalink statistics

-- Total of 1 flow:

Average throughput: 426.35 Mbit/s

95th percentile per-packet one-way delay: 195.329 ms

Loss rate: 2.53%

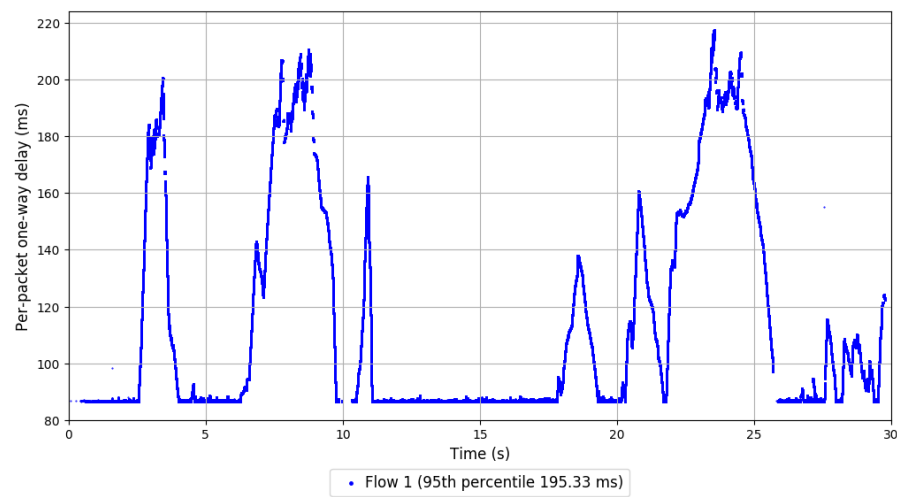
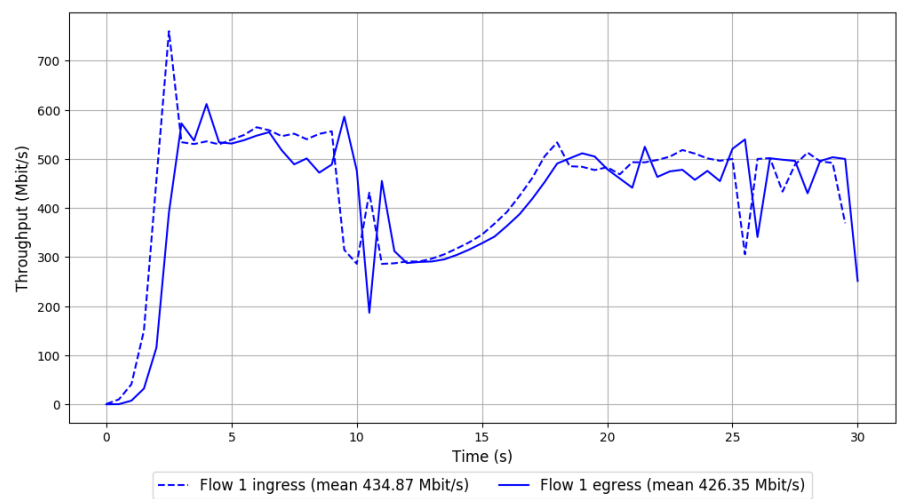
-- Flow 1:

Average throughput: 426.35 Mbit/s

95th percentile per-packet one-way delay: 195.329 ms

Loss rate: 2.53%

Run 5: Report of PCC-Allegro — Data Link

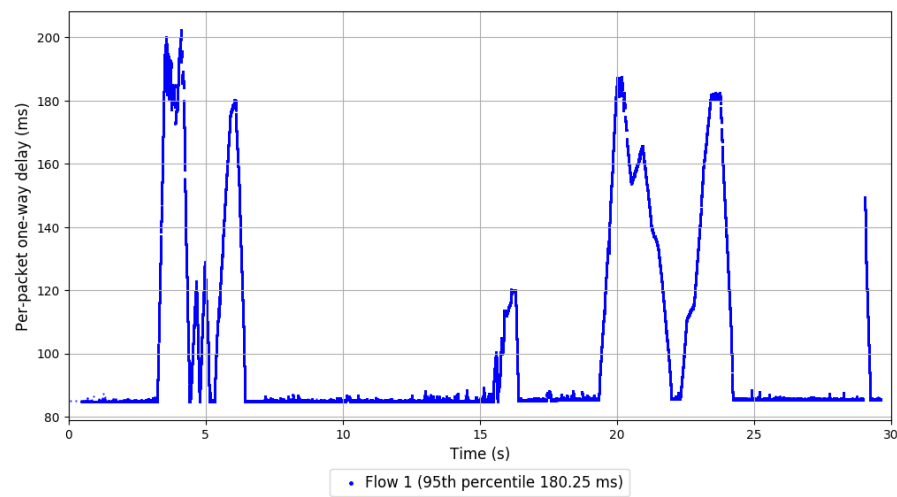
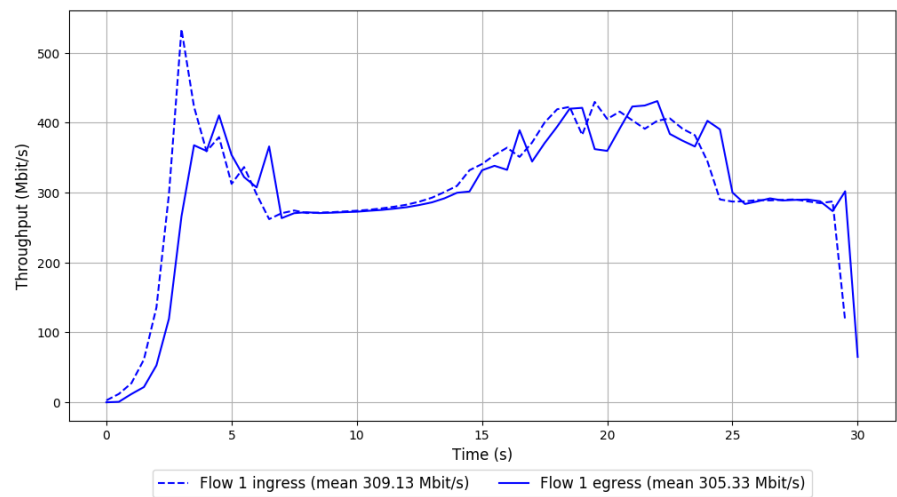


```
Run 1: Statistics of PCC-Expr

Start at: 2018-11-02 18:05:24
End at: 2018-11-02 18:05:54
Local clock offset: 2.572 ms
Remote clock offset: 3.644 ms

# Below is generated by plot.py at 2018-11-02 21:28:15
# Datalink statistics
-- Total of 1 flow:
Average throughput: 305.33 Mbit/s
95th percentile per-packet one-way delay: 180.255 ms
Loss rate: 1.80%
-- Flow 1:
Average throughput: 305.33 Mbit/s
95th percentile per-packet one-way delay: 180.255 ms
Loss rate: 1.80%
```

Run 1: Report of PCC-Expr — Data Link



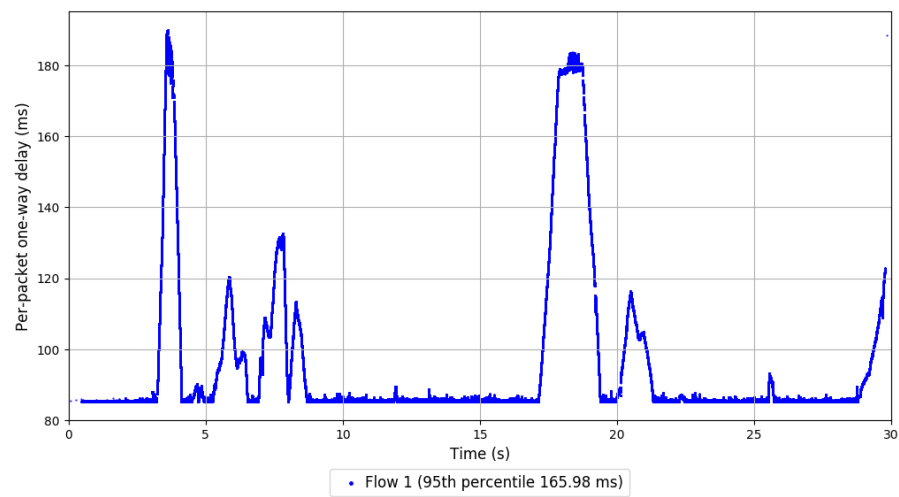
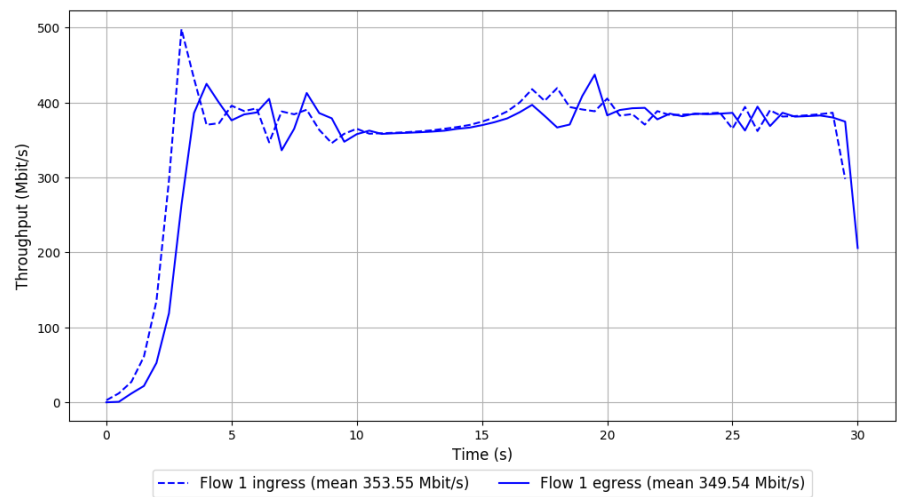


Run 2: Statistics of PCC-Expr

Start at: 2018-11-02 18:30:32  
End at: 2018-11-02 18:31:02  
Local clock offset: 15.319 ms  
Remote clock offset: 17.586 ms

# Below is generated by plot.py at 2018-11-02 21:28:15  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 349.54 Mbit/s  
95th percentile per-packet one-way delay: 165.976 ms  
Loss rate: 1.52%  
-- Flow 1:  
Average throughput: 349.54 Mbit/s  
95th percentile per-packet one-way delay: 165.976 ms  
Loss rate: 1.52%

Run 2: Report of PCC-Expr — Data Link

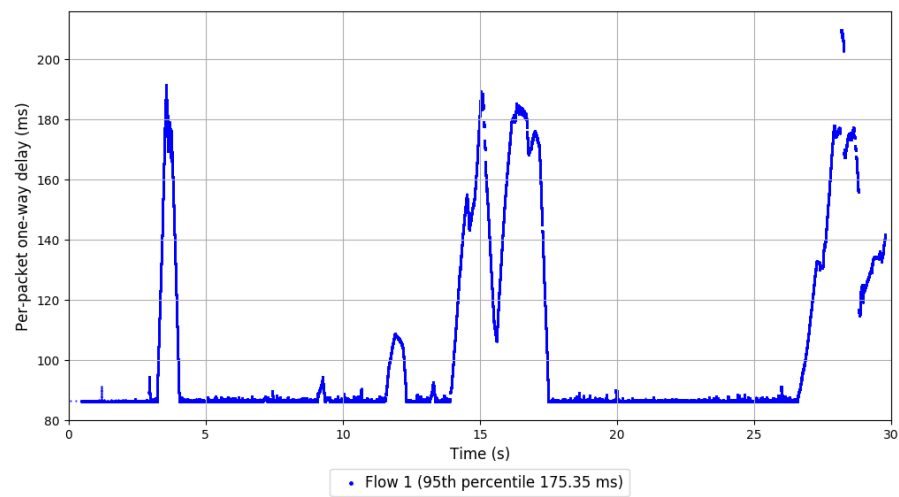
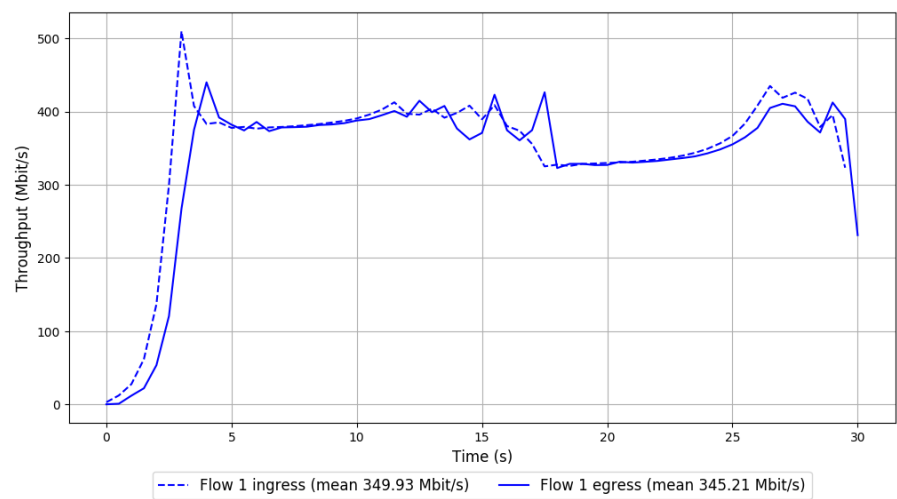


Run 3: Statistics of PCC-Expr

Start at: 2018-11-02 18:56:39  
End at: 2018-11-02 18:57:09  
Local clock offset: 23.436 ms  
Remote clock offset: 25.705 ms

# Below is generated by plot.py at 2018-11-02 21:28:15  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 345.21 Mbit/s  
95th percentile per-packet one-way delay: 175.352 ms  
Loss rate: 1.92%  
-- Flow 1:  
Average throughput: 345.21 Mbit/s  
95th percentile per-packet one-way delay: 175.352 ms  
Loss rate: 1.92%

Run 3: Report of PCC-Expr — Data Link

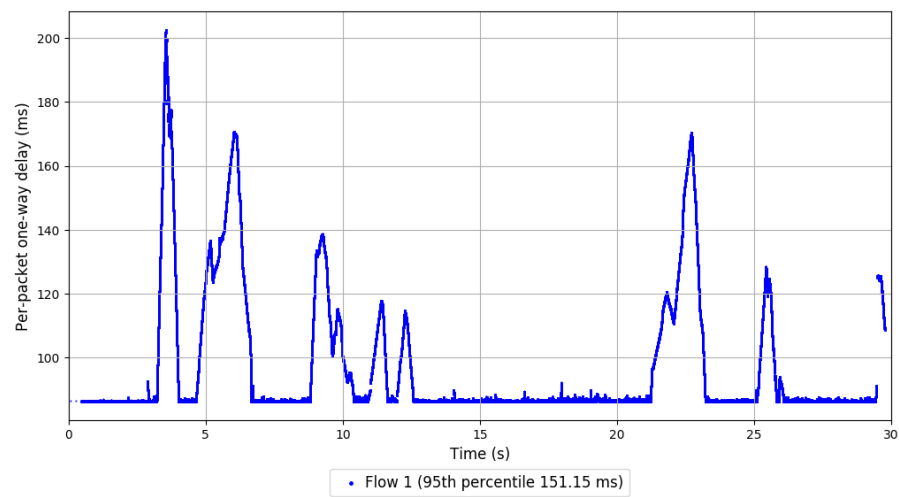
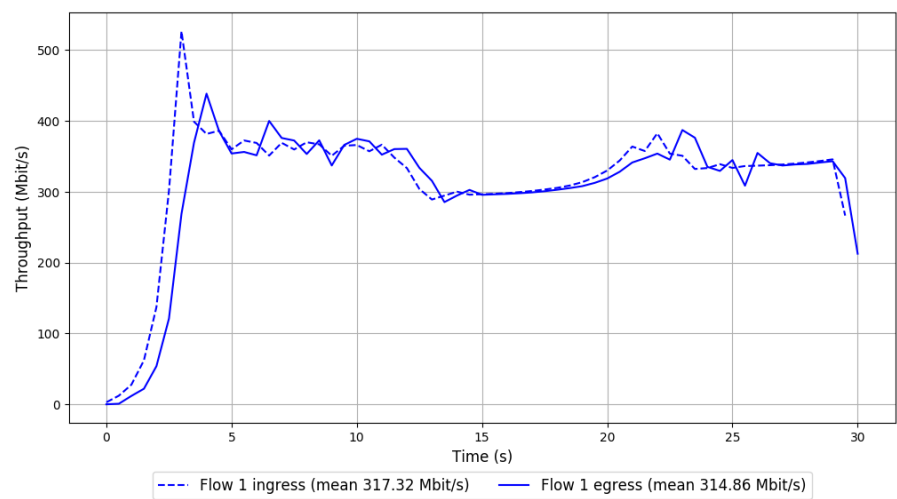


Run 4: Statistics of PCC-Expr

Start at: 2018-11-02 19:22:49  
End at: 2018-11-02 19:23:19  
Local clock offset: 17.007 ms  
Remote clock offset: 18.297 ms

# Below is generated by plot.py at 2018-11-02 21:28:31  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 314.86 Mbit/s  
95th percentile per-packet one-way delay: 151.145 ms  
Loss rate: 1.35%  
-- Flow 1:  
Average throughput: 314.86 Mbit/s  
95th percentile per-packet one-way delay: 151.145 ms  
Loss rate: 1.35%

Run 4: Report of PCC-Expr — Data Link

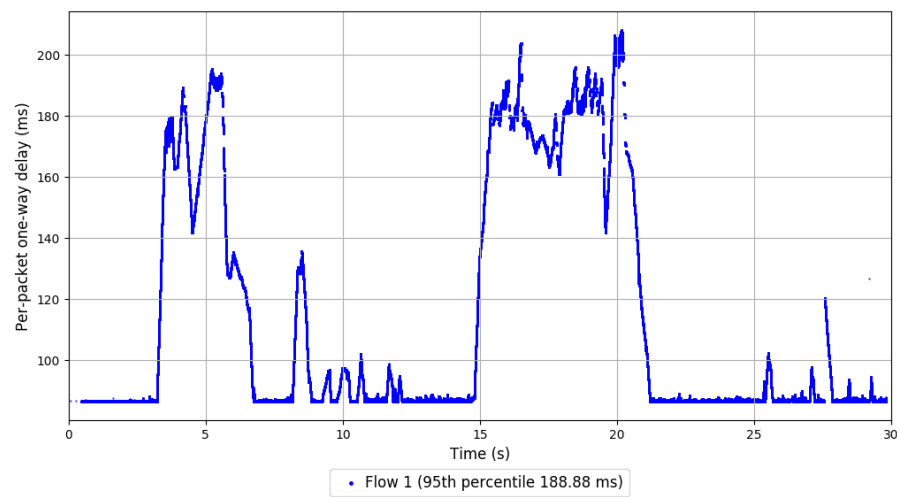
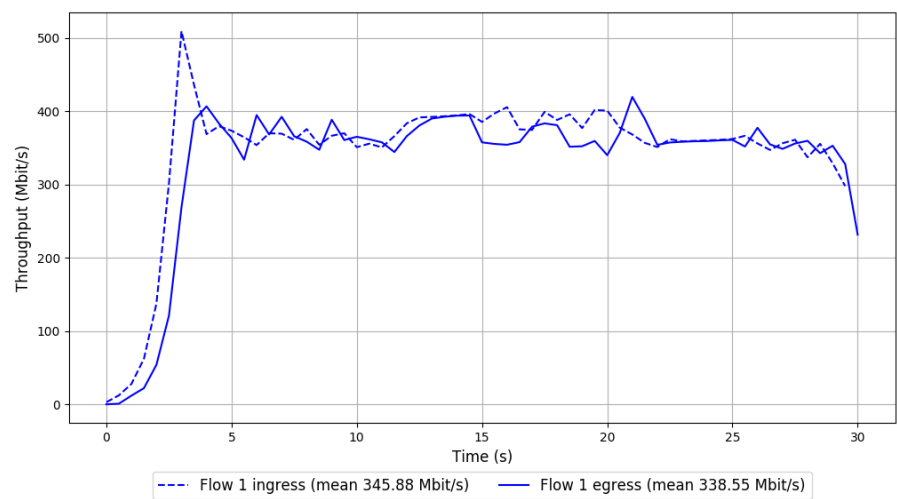


Run 5: Statistics of PCC-Expr

Start at: 2018-11-02 19:48:52  
End at: 2018-11-02 19:49:22  
Local clock offset: 14.941 ms  
Remote clock offset: 16.047 ms

# Below is generated by plot.py at 2018-11-02 21:31:54  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 338.55 Mbit/s  
95th percentile per-packet one-way delay: 188.885 ms  
Loss rate: 2.69%  
-- Flow 1:  
Average throughput: 338.55 Mbit/s  
95th percentile per-packet one-way delay: 188.885 ms  
Loss rate: 2.69%

Run 5: Report of PCC-Expr — Data Link





Run 1: Statistics of QUIC Cubic

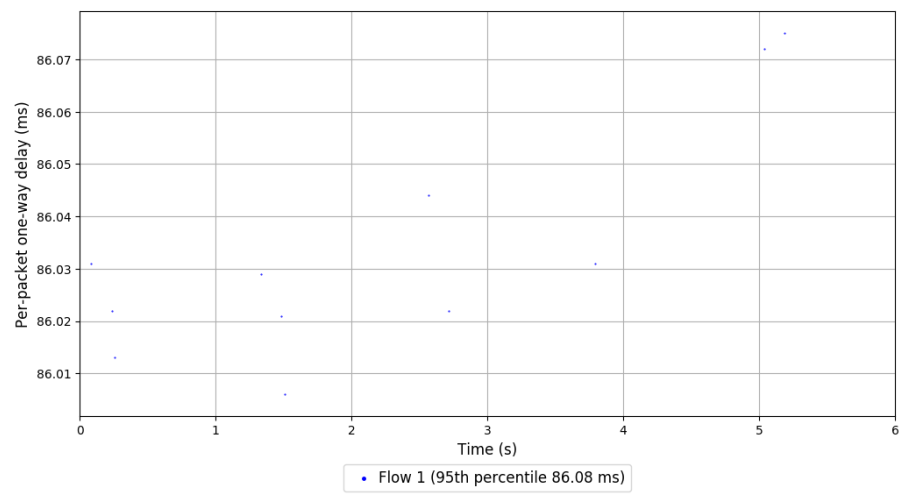
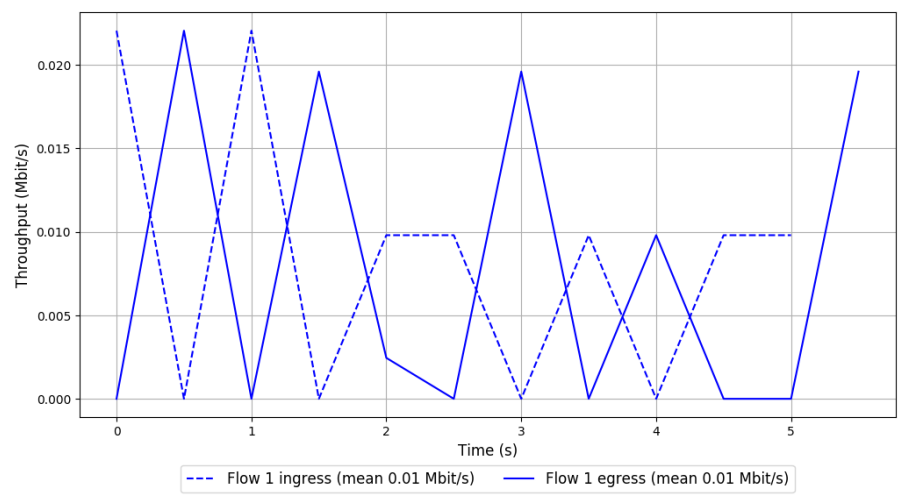
Start at: 2018-11-02 18:28:14

End at: 2018-11-02 18:28:44

Local clock offset: 13.716 ms

Remote clock offset: 15.142 ms

Run 1: Report of QUIC Cubic — Data Link



Run 2: Statistics of QUIC Cubic

Start at: 2018-11-02 18:54:15

End at: 2018-11-02 18:54:45

Local clock offset: 20.993 ms

Remote clock offset: 23.903 ms

# Below is generated by plot.py at 2018-11-02 21:31:54

# Datalink statistics

-- Total of 1 flow:

Average throughput: 63.12 Mbit/s

95th percentile per-packet one-way delay: 85.393 ms

Loss rate: 0.95%

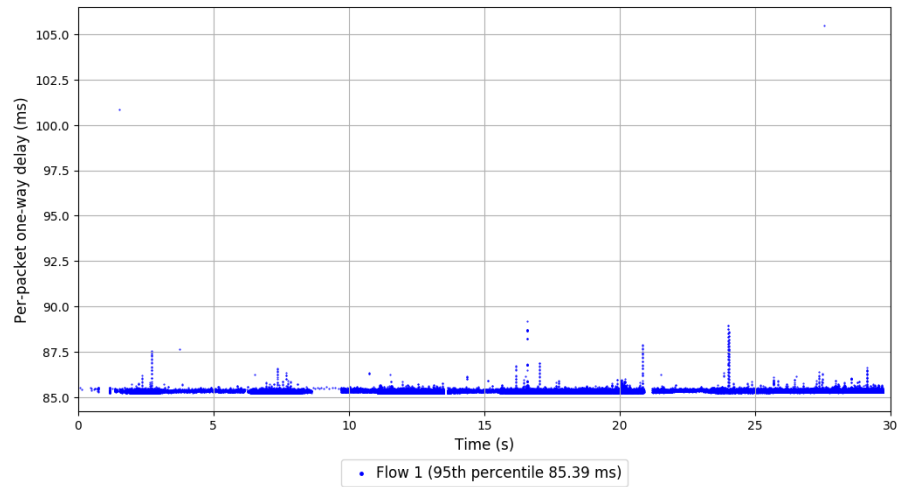
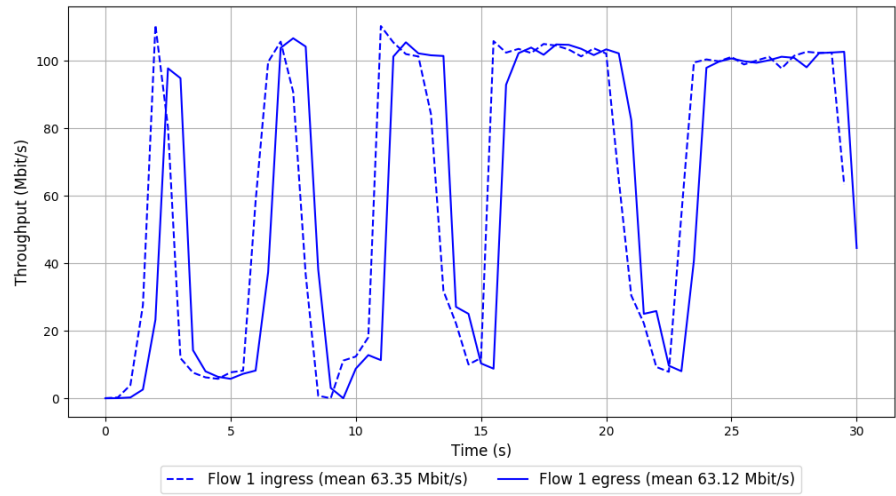
-- Flow 1:

Average throughput: 63.12 Mbit/s

95th percentile per-packet one-way delay: 85.393 ms

Loss rate: 0.95%

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



Run 3: Statistics of QUIC Cubic

Start at: 2018-11-02 19:20:26

End at: 2018-11-02 19:20:56

Local clock offset: 18.75 ms

Remote clock offset: 20.528 ms

# Below is generated by plot.py at 2018-11-02 21:31:54

# Datalink statistics

-- Total of 1 flow:

Average throughput: 61.24 Mbit/s

95th percentile per-packet one-way delay: 86.247 ms

Loss rate: 0.89%

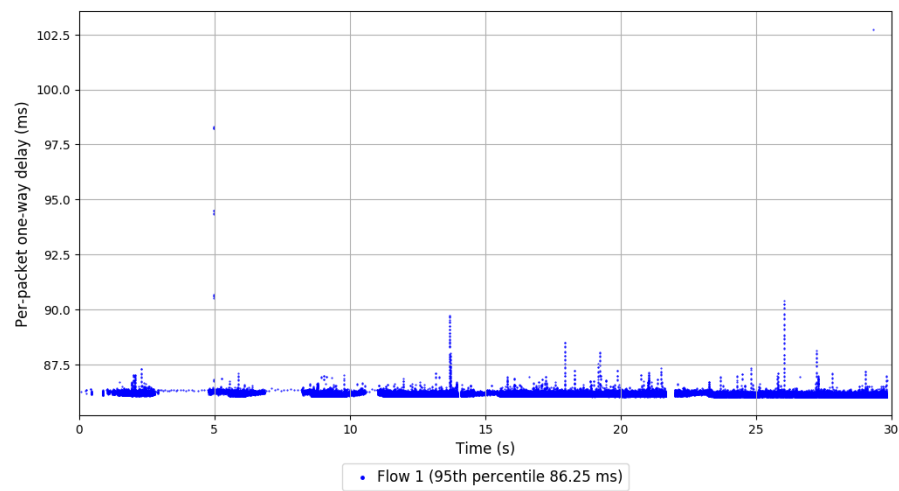
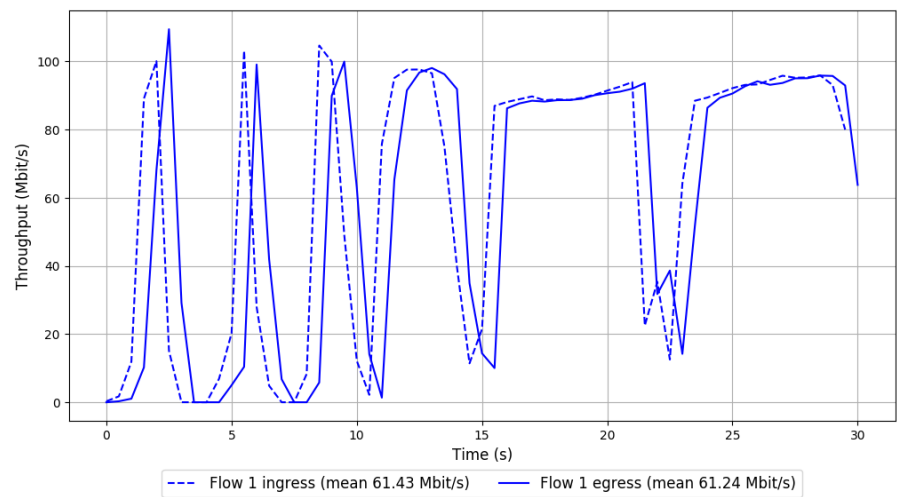
-- Flow 1:

Average throughput: 61.24 Mbit/s

95th percentile per-packet one-way delay: 86.247 ms

Loss rate: 0.89%

Run 3: Report of QUIC Cubic — Data Link

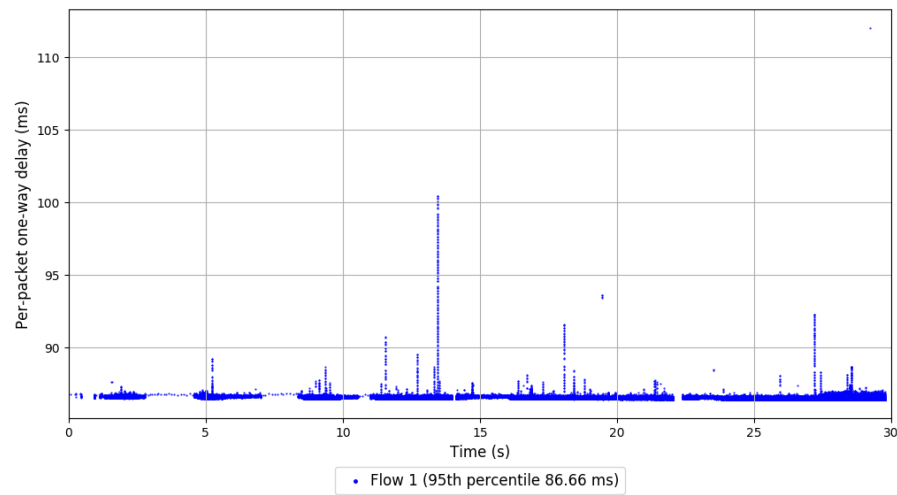
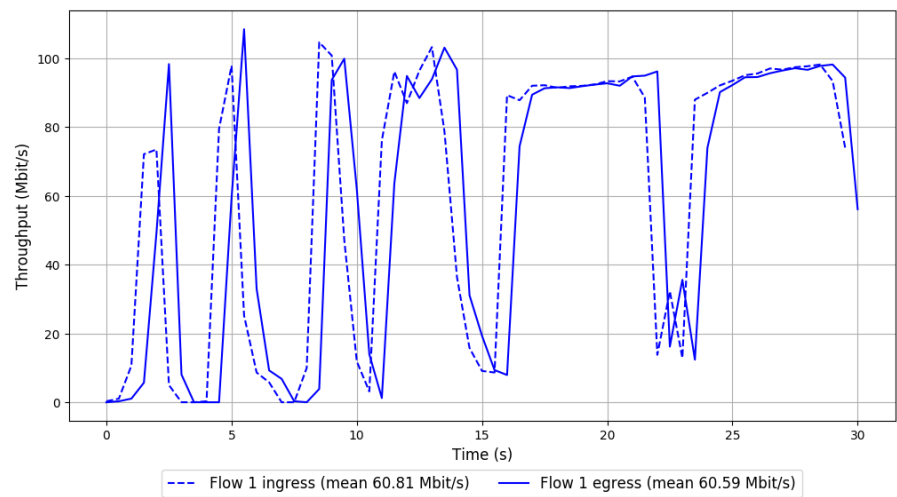


Run 4: Statistics of QUIC Cubic

Start at: 2018-11-02 19:46:28  
End at: 2018-11-02 19:46:58  
Local clock offset: 18.975 ms  
Remote clock offset: 20.341 ms

# Below is generated by plot.py at 2018-11-02 21:31:54  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 60.59 Mbit/s  
95th percentile per-packet one-way delay: 86.656 ms  
Loss rate: 0.93%  
-- Flow 1:  
Average throughput: 60.59 Mbit/s  
95th percentile per-packet one-way delay: 86.656 ms  
Loss rate: 0.93%

Run 4: Report of QUIC Cubic — Data Link





Run 5: Statistics of QUIC Cubic

Start at: 2018-11-02 20:12:49

End at: 2018-11-02 20:13:19

Local clock offset: 7.369 ms

Remote clock offset: 8.584 ms

# Below is generated by plot.py at 2018-11-02 21:31:54

# Datalink statistics

-- Total of 1 flow:

Average throughput: 57.35 Mbit/s

95th percentile per-packet one-way delay: 86.109 ms

Loss rate: 0.99%

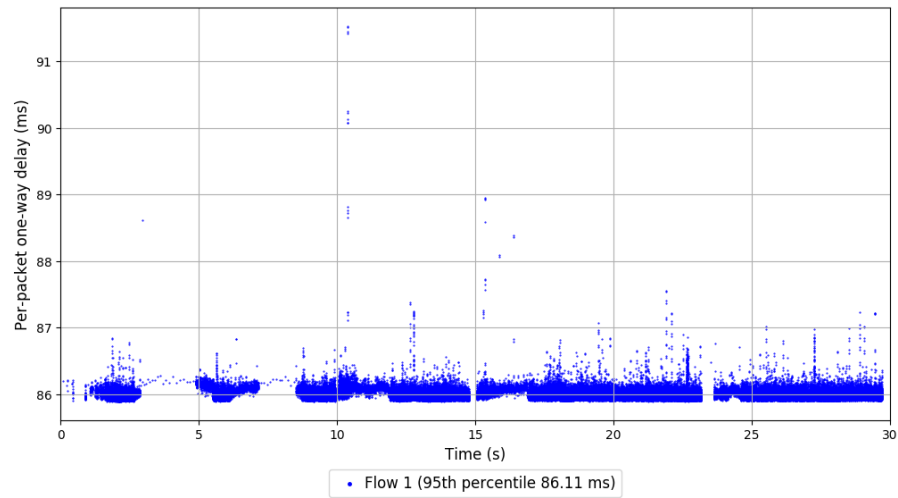
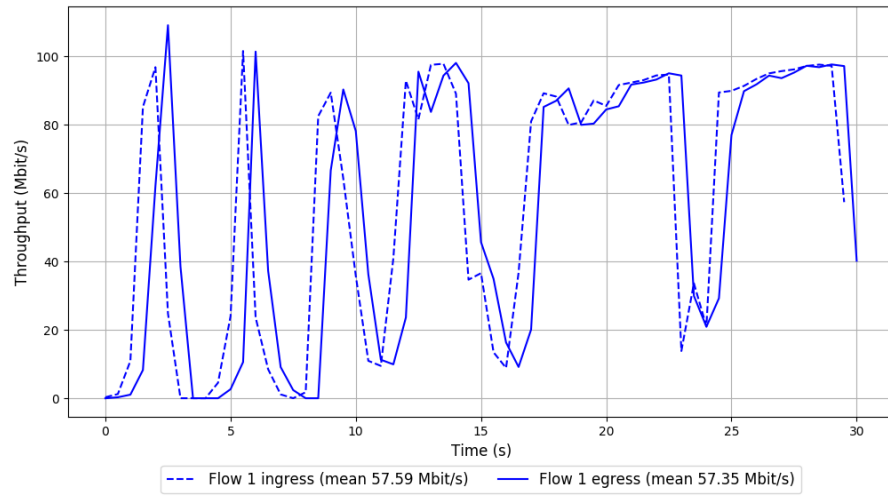
-- Flow 1:

Average throughput: 57.35 Mbit/s

95th percentile per-packet one-way delay: 86.109 ms

Loss rate: 0.99%

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

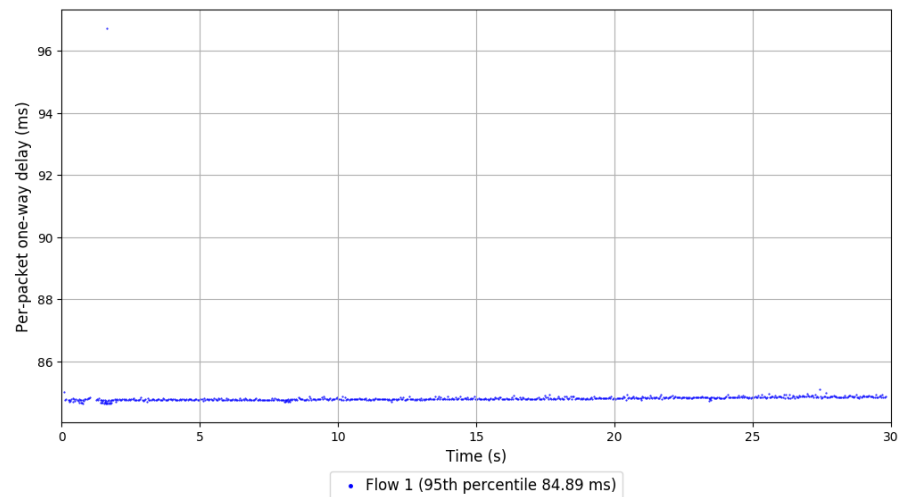
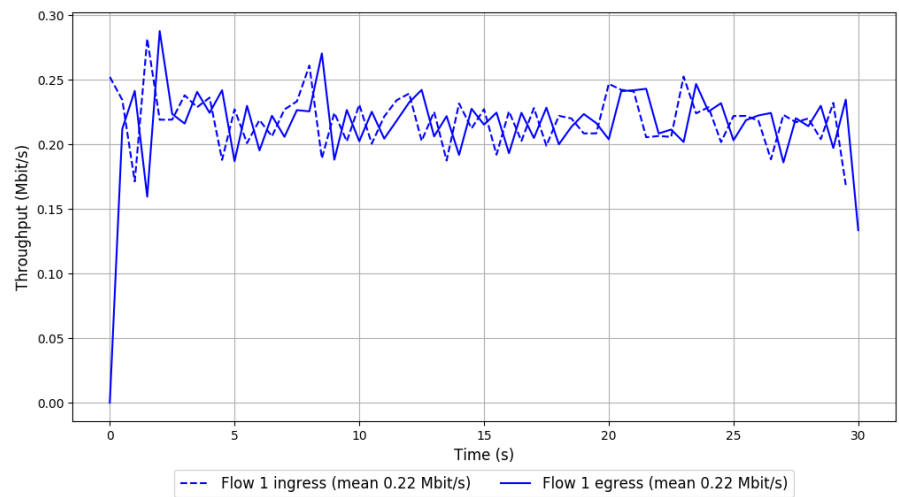


```
Run 1: Statistics of SCReAM

Start at: 2018-11-02 18:10:14
End at: 2018-11-02 18:10:44
Local clock offset: 5.38 ms
Remote clock offset: 7.277 ms

# Below is generated by plot.py at 2018-11-02 21:31:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 84.889 ms
Loss rate: 0.52%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 84.889 ms
Loss rate: 0.52%
```

Run 1: Report of SReAM — Data Link



Run 2: Statistics of SCReAM

Start at: 2018-11-02 18:35:26

End at: 2018-11-02 18:35:56

Local clock offset: 21.716 ms

Remote clock offset: 24.1 ms

# Below is generated by plot.py at 2018-11-02 21:31:54

# Datalink statistics

-- Total of 1 flow:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 86.558 ms

Loss rate: 0.64%

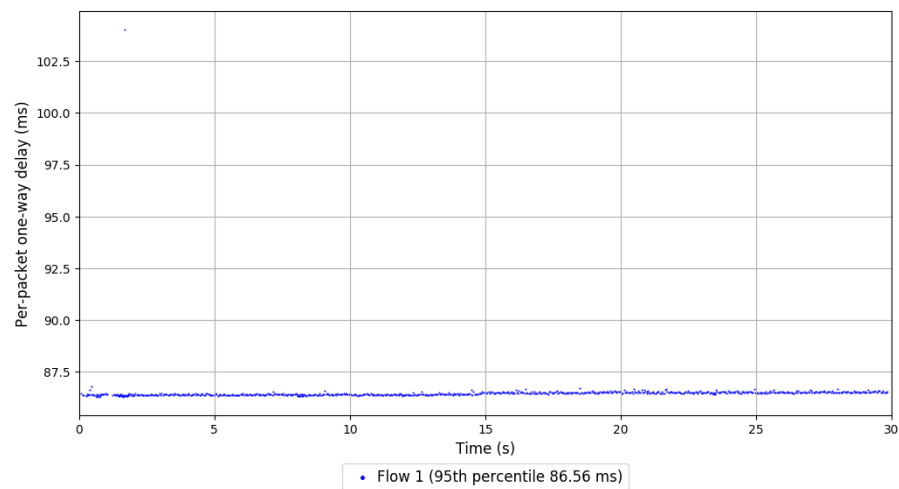
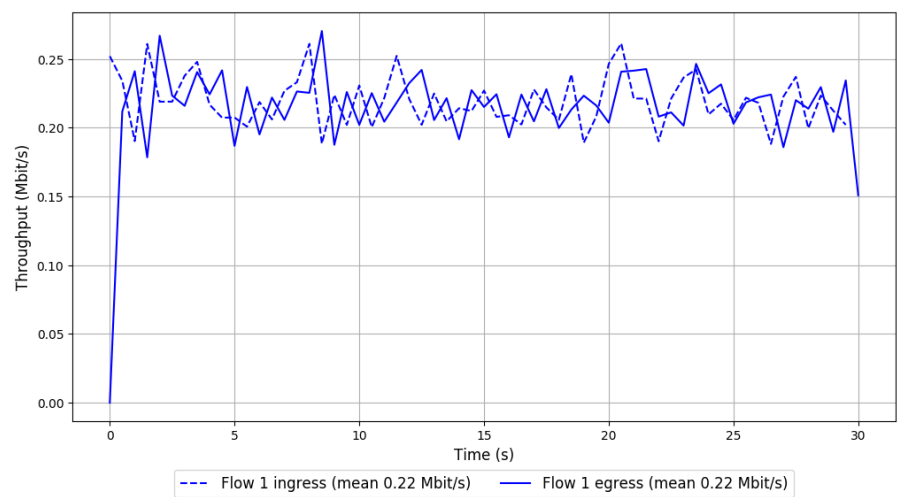
-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 86.558 ms

Loss rate: 0.64%

Run 2: Report of SReAM — Data Link

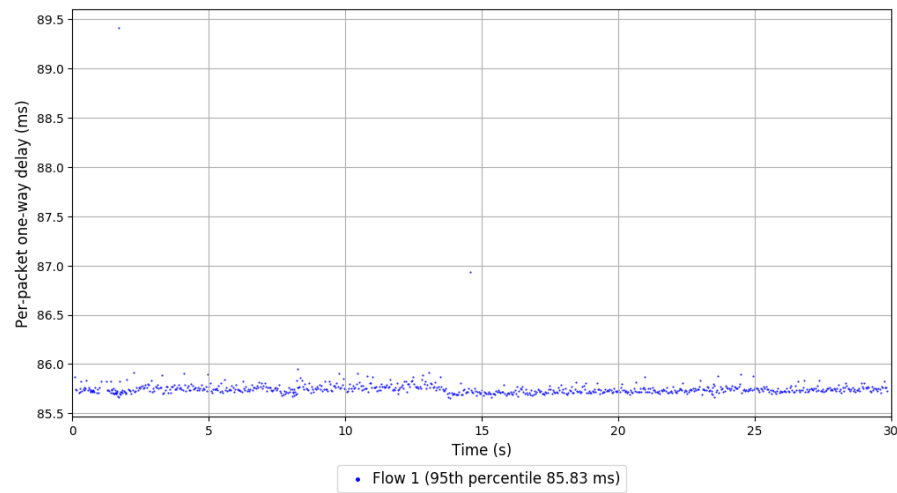
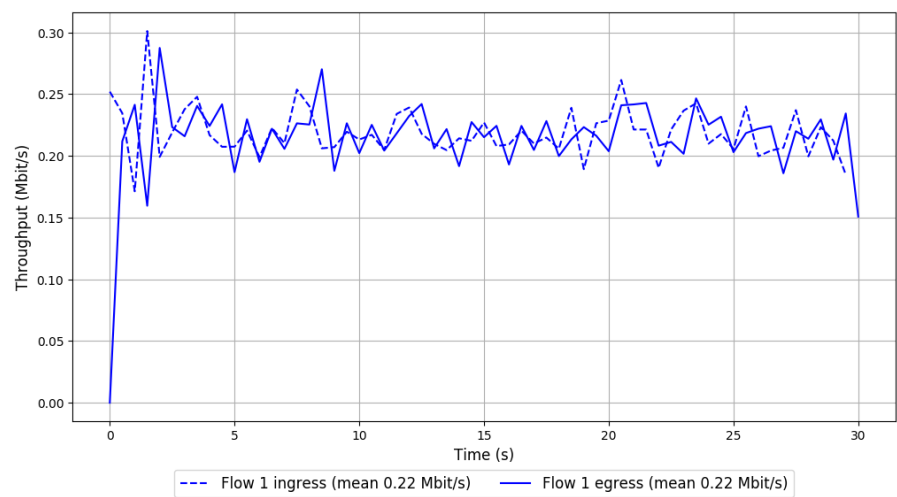


Run 3: Statistics of SCReAM

Start at: 2018-11-02 19:01:37  
End at: 2018-11-02 19:02:07  
Local clock offset: 27.037 ms  
Remote clock offset: 30.406 ms

# Below is generated by plot.py at 2018-11-02 21:31:54  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 85.828 ms  
Loss rate: 0.51%  
-- Flow 1:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 85.828 ms  
Loss rate: 0.51%

Run 3: Report of SReAM — Data Link



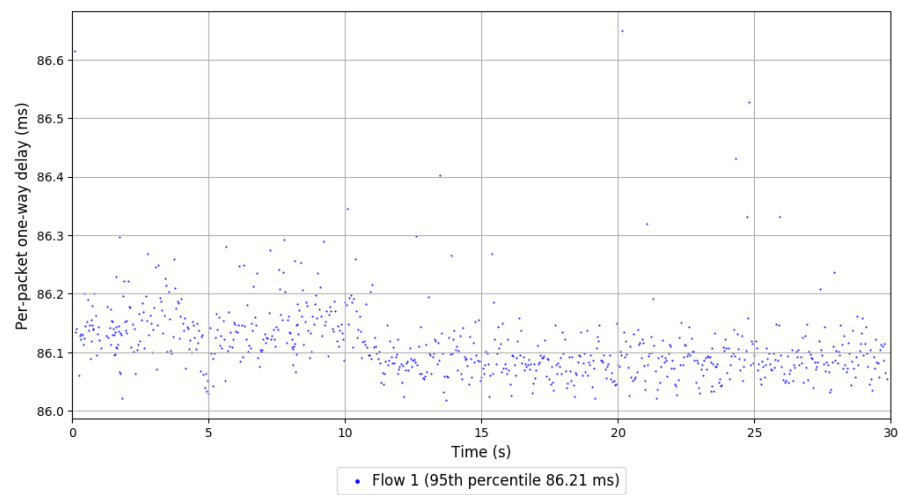
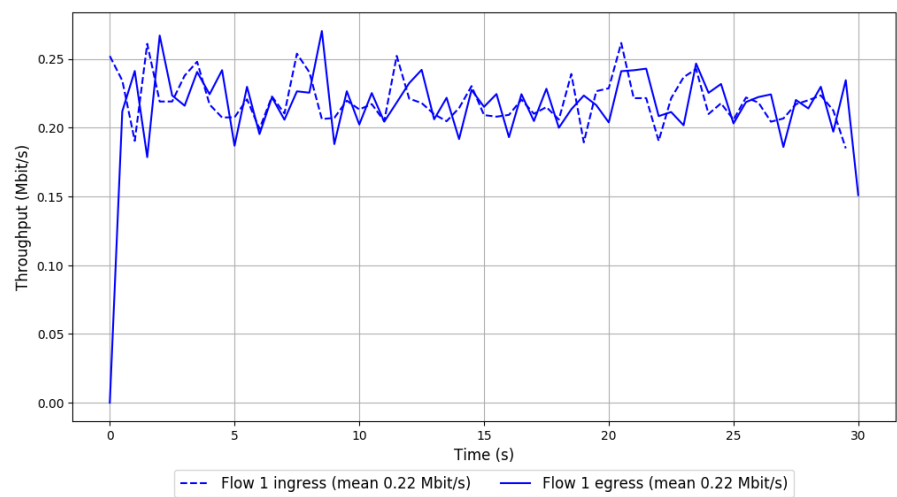


Run 4: Statistics of SCReAM

Start at: 2018-11-02 19:27:35  
End at: 2018-11-02 19:28:05  
Local clock offset: 14.438 ms  
Remote clock offset: 16.003 ms

# Below is generated by plot.py at 2018-11-02 21:31:54  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 86.211 ms  
Loss rate: 0.51%  
-- Flow 1:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 86.211 ms  
Loss rate: 0.51%

Run 4: Report of SReAM — Data Link

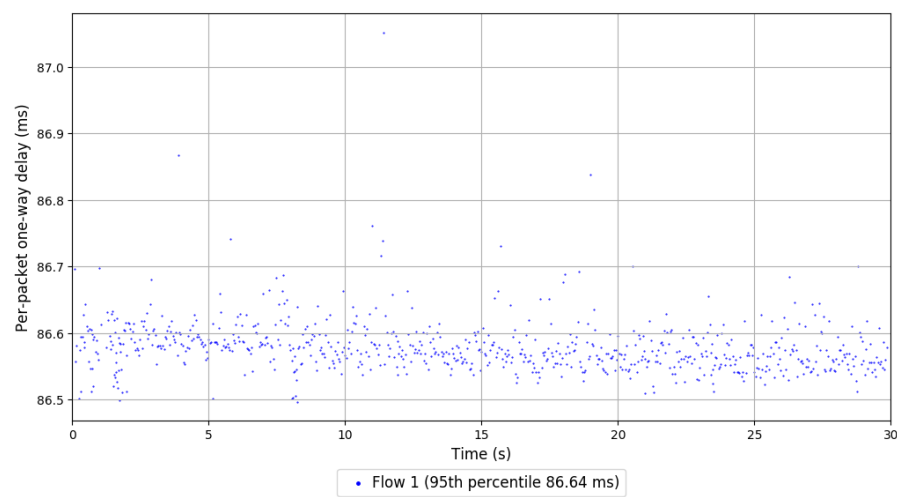
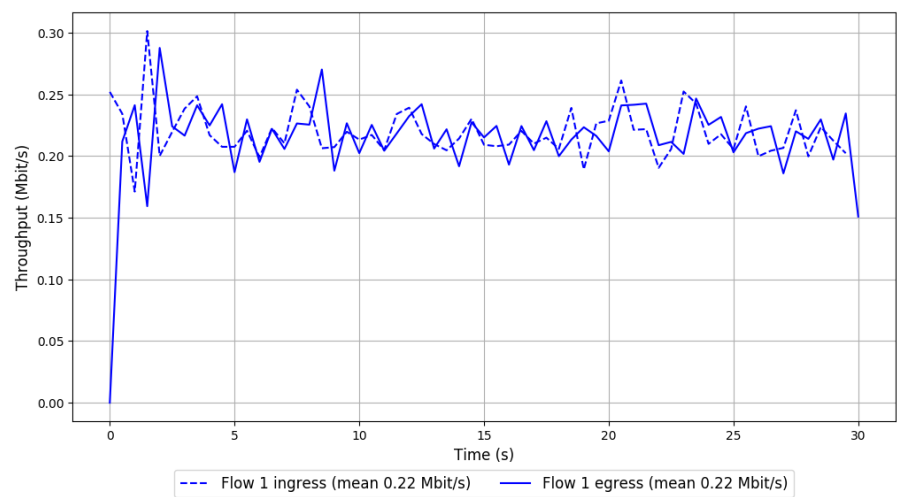


Run 5: Statistics of SCReAM

Start at: 2018-11-02 19:53:49  
End at: 2018-11-02 19:54:19  
Local clock offset: 9.806 ms  
Remote clock offset: 10.745 ms

# Below is generated by plot.py at 2018-11-02 21:31:54  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 86.644 ms  
Loss rate: 0.64%  
-- Flow 1:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 86.644 ms  
Loss rate: 0.64%

Run 5: Report of SReAM — Data Link



Run 1: Statistics of Sprout

Start at: 2018-11-02 18:15:05

End at: 2018-11-02 18:15:35

Local clock offset: 8.887 ms

Remote clock offset: 9.318 ms

# Below is generated by plot.py at 2018-11-02 21:31:54

# Datalink statistics

-- Total of 1 flow:

Average throughput: 4.62 Mbit/s

95th percentile per-packet one-way delay: 87.182 ms

Loss rate: 0.73%

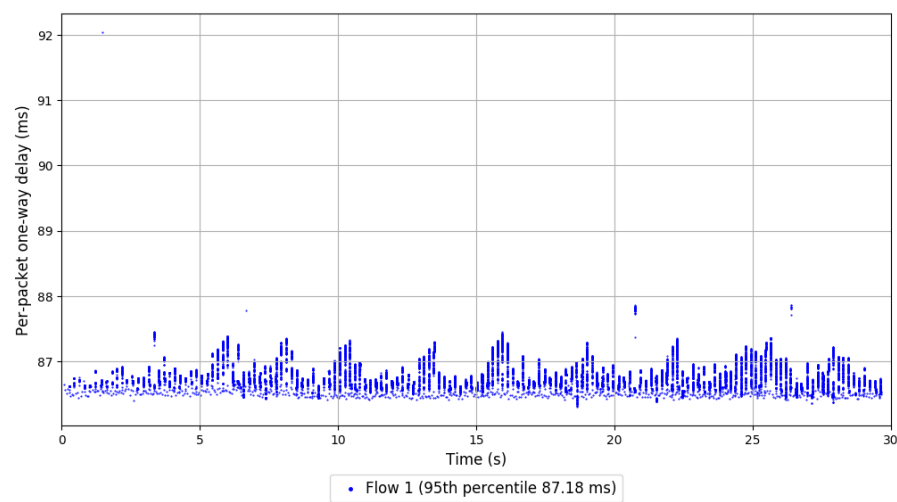
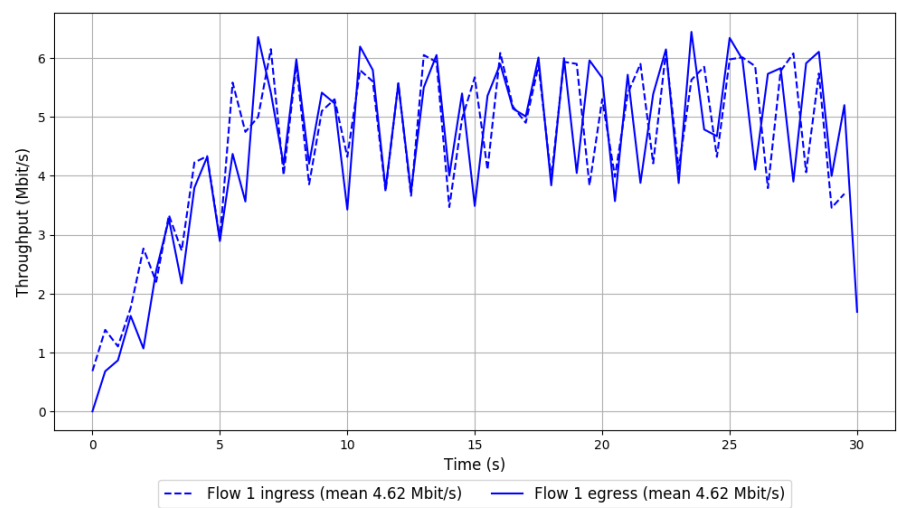
-- Flow 1:

Average throughput: 4.62 Mbit/s

95th percentile per-packet one-way delay: 87.182 ms

Loss rate: 0.73%

Run 1: Report of Sprout — Data Link

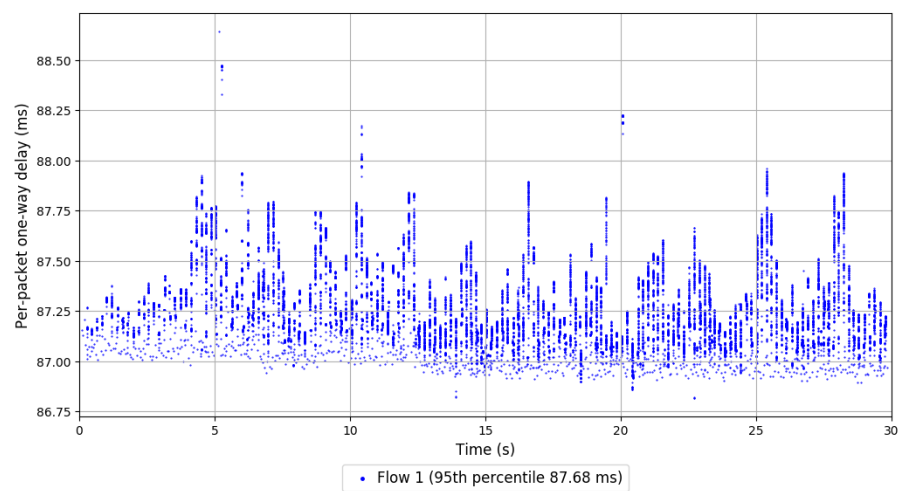
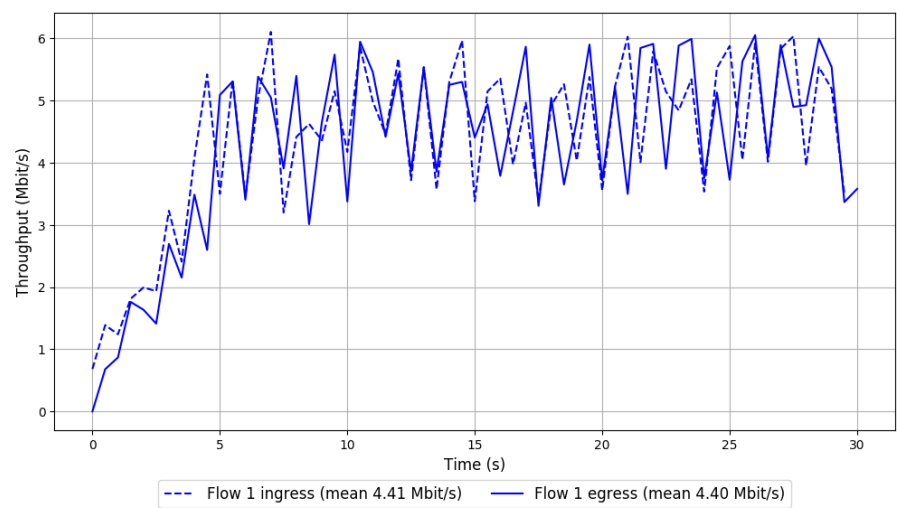


Run 2: Statistics of Sprout

Start at: 2018-11-02 18:40:55  
End at: 2018-11-02 18:41:25  
Local clock offset: 21.59 ms  
Remote clock offset: 23.296 ms

# Below is generated by plot.py at 2018-11-02 21:31:54  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 4.40 Mbit/s  
95th percentile per-packet one-way delay: 87.683 ms  
Loss rate: 0.66%  
-- Flow 1:  
Average throughput: 4.40 Mbit/s  
95th percentile per-packet one-way delay: 87.683 ms  
Loss rate: 0.66%

Run 2: Report of Sprout — Data Link



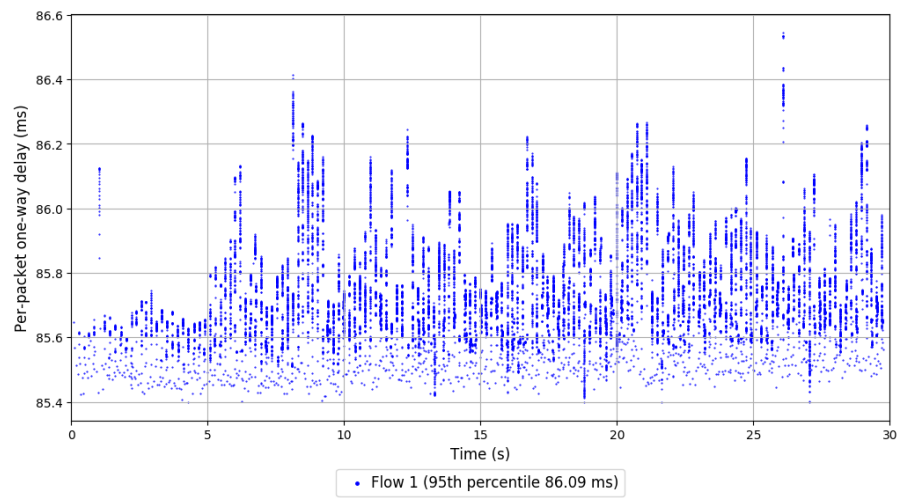
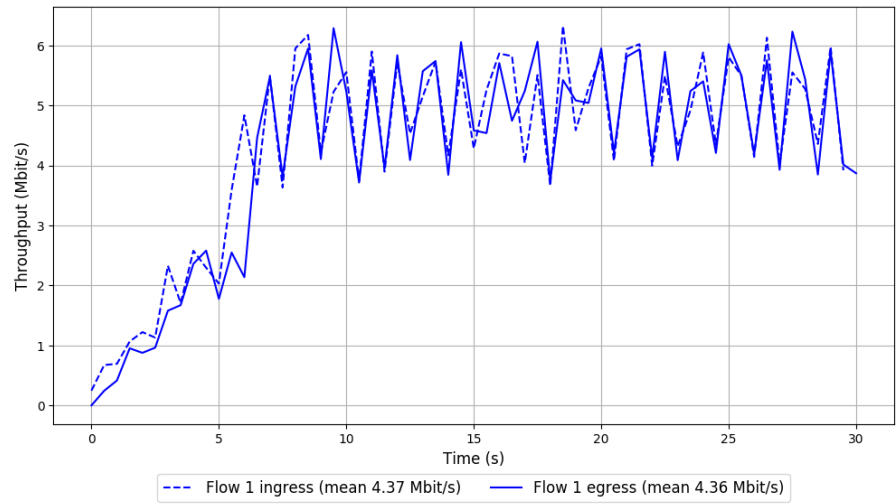


Run 3: Statistics of Sprout

Start at: 2018-11-02 19:07:07  
End at: 2018-11-02 19:07:37  
Local clock offset: 32.142 ms  
Remote clock offset: 36.191 ms

# Below is generated by plot.py at 2018-11-02 21:31:54  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 4.36 Mbit/s  
95th percentile per-packet one-way delay: 86.090 ms  
Loss rate: 0.77%  
-- Flow 1:  
Average throughput: 4.36 Mbit/s  
95th percentile per-packet one-way delay: 86.090 ms  
Loss rate: 0.77%

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

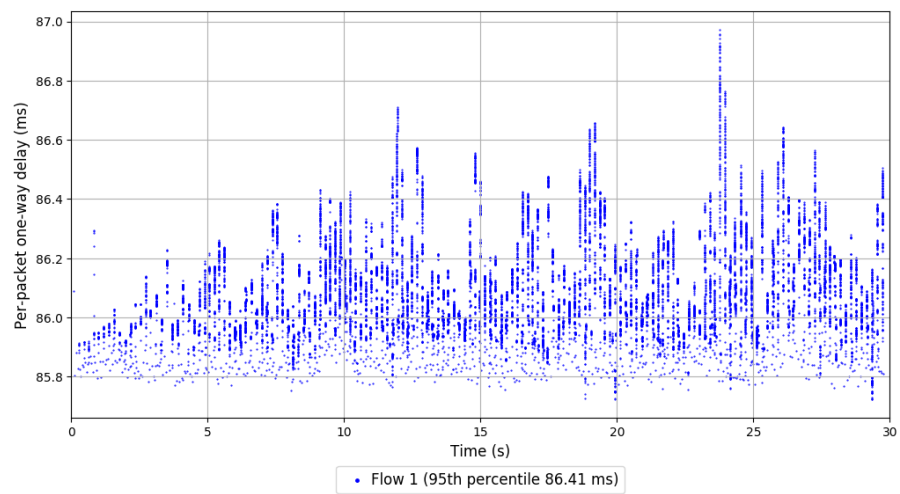
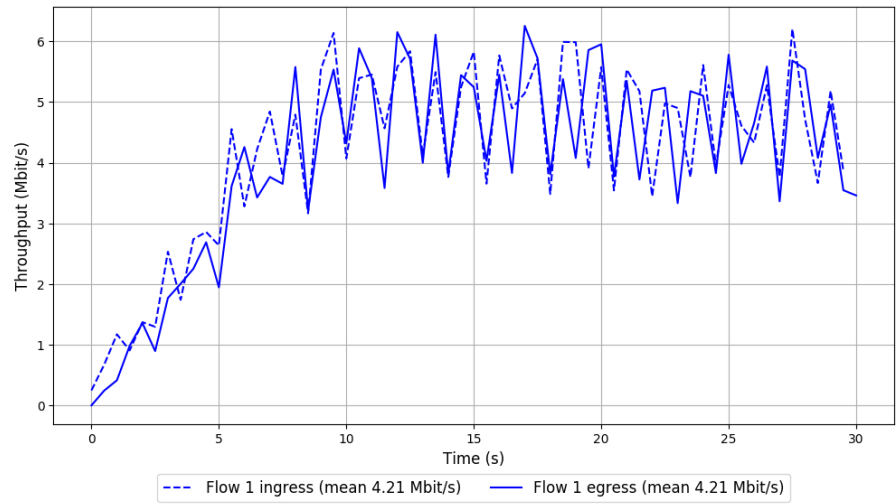


Run 4: Statistics of Sprout

Start at: 2018-11-02 19:33:04  
End at: 2018-11-02 19:33:34  
Local clock offset: 14.415 ms  
Remote clock offset: 16.103 ms

# Below is generated by plot.py at 2018-11-02 21:31:54  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 4.21 Mbit/s  
95th percentile per-packet one-way delay: 86.414 ms  
Loss rate: 0.81%  
-- Flow 1:  
Average throughput: 4.21 Mbit/s  
95th percentile per-packet one-way delay: 86.414 ms  
Loss rate: 0.81%

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



Run 5: Statistics of Sprout

Start at: 2018-11-02 19:59:20

End at: 2018-11-02 19:59:50

Local clock offset: 7.313 ms

Remote clock offset: 8.321 ms

# Below is generated by plot.py at 2018-11-02 21:31:54

# Datalink statistics

-- Total of 1 flow:

Average throughput: 4.18 Mbit/s

95th percentile per-packet one-way delay: 86.726 ms

Loss rate: 0.83%

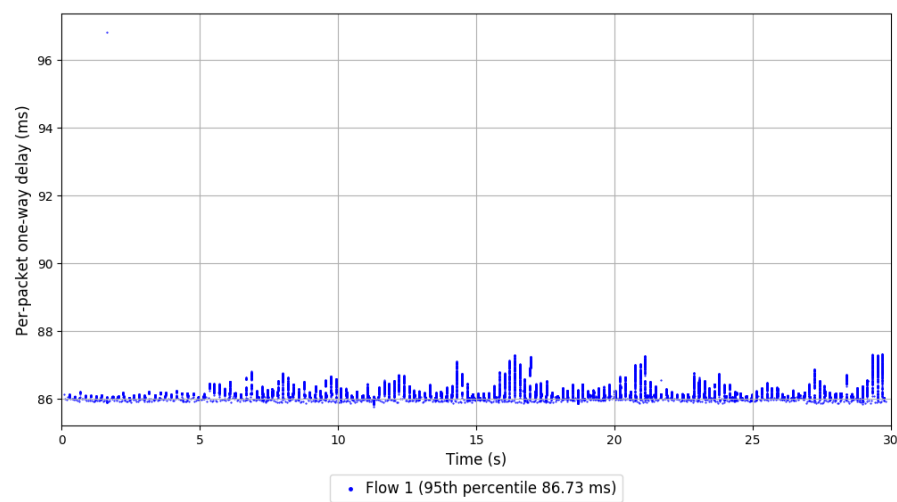
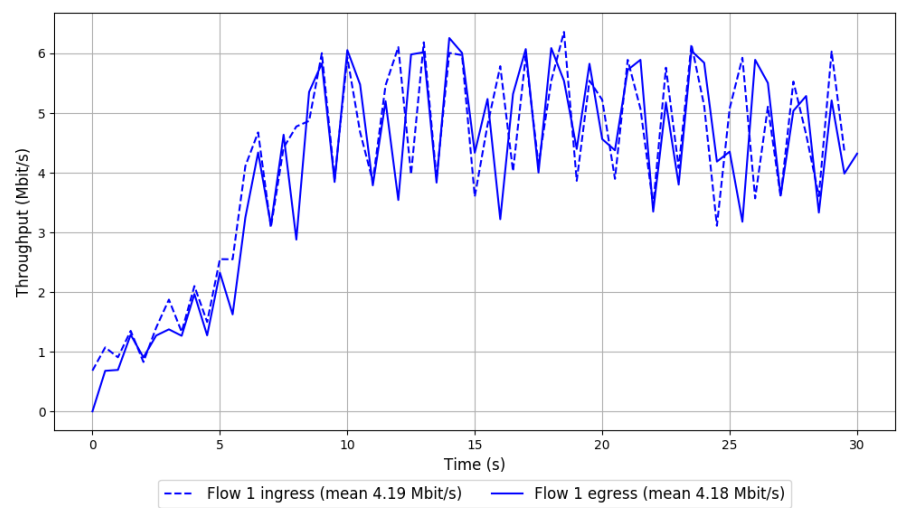
-- Flow 1:

Average throughput: 4.18 Mbit/s

95th percentile per-packet one-way delay: 86.726 ms

Loss rate: 0.83%

Run 5: Report of Sprout — Data Link



Run 1: Statistics of TaoVA-100x

Start at: 2018-11-02 18:13:37

End at: 2018-11-02 18:14:07

Local clock offset: 8.276 ms

Remote clock offset: 9.481 ms

# Below is generated by plot.py at 2018-11-02 21:31:54

# Datalink statistics

-- Total of 1 flow:

Average throughput: 213.98 Mbit/s

95th percentile per-packet one-way delay: 86.091 ms

Loss rate: 0.62%

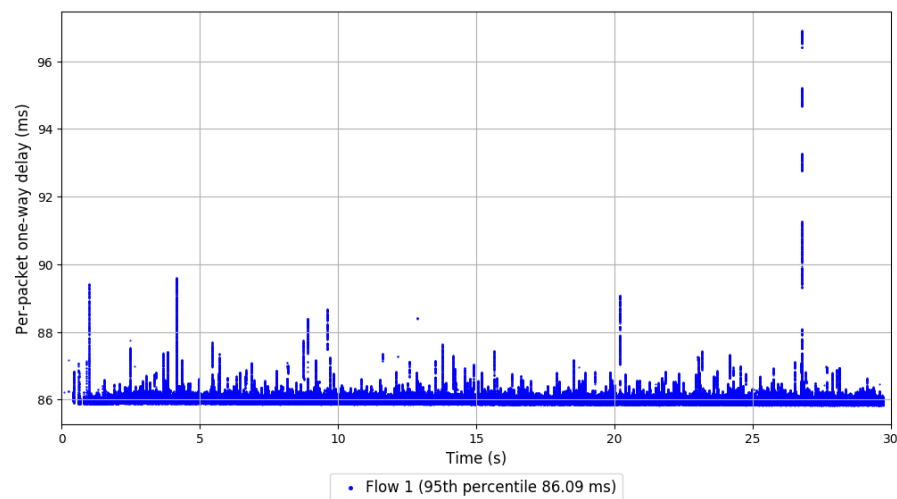
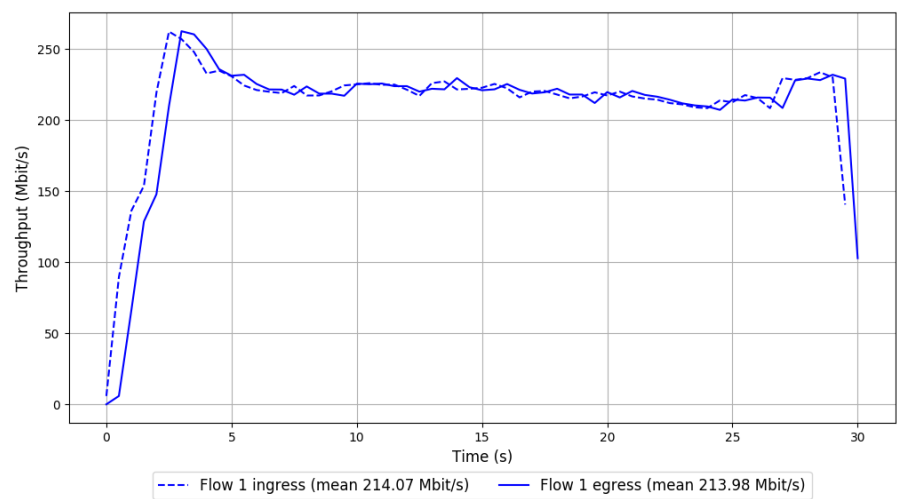
-- Flow 1:

Average throughput: 213.98 Mbit/s

95th percentile per-packet one-way delay: 86.091 ms

Loss rate: 0.62%

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



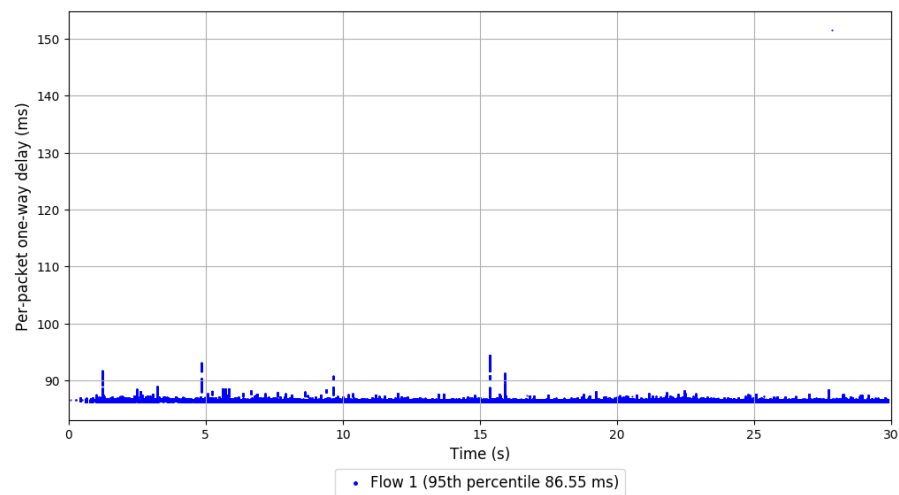
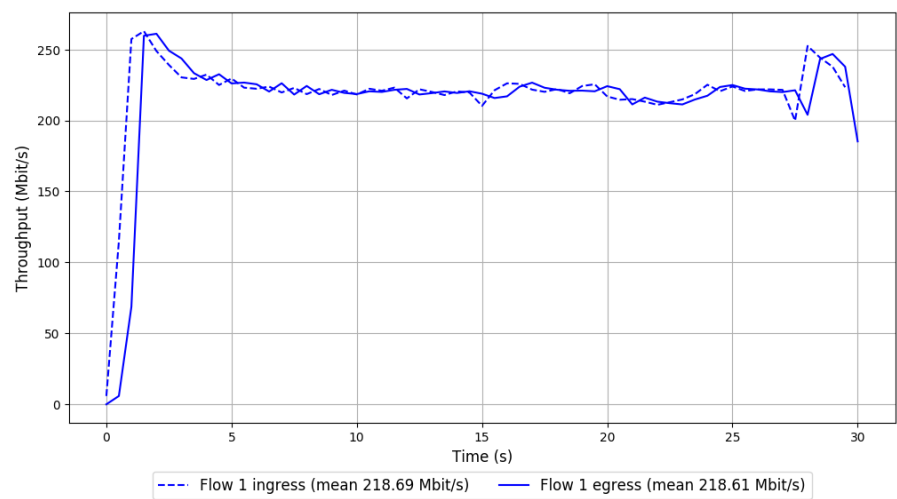


Run 2: Statistics of TaoVA-100x

Start at: 2018-11-02 18:39:25  
End at: 2018-11-02 18:39:55  
Local clock offset: 23.049 ms  
Remote clock offset: 25.141 ms

# Below is generated by plot.py at 2018-11-02 21:31:54  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 218.61 Mbit/s  
95th percentile per-packet one-way delay: 86.553 ms  
Loss rate: 0.61%  
-- Flow 1:  
Average throughput: 218.61 Mbit/s  
95th percentile per-packet one-way delay: 86.553 ms  
Loss rate: 0.61%

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

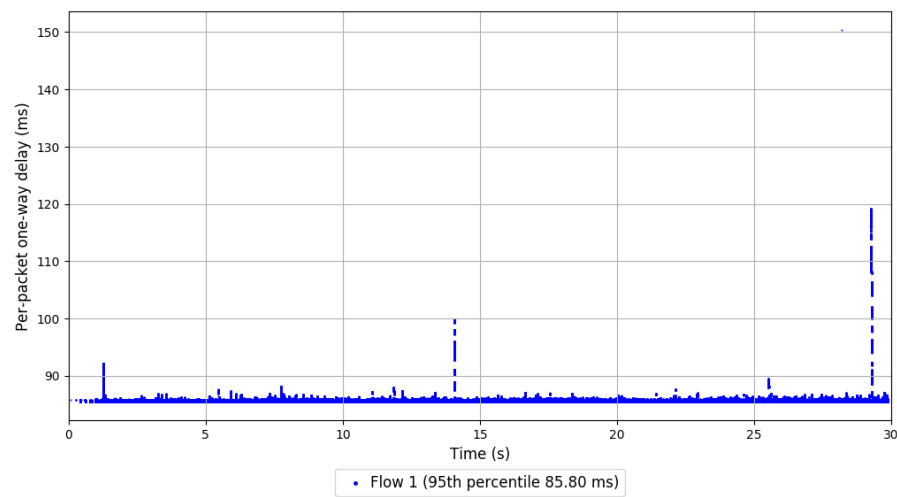
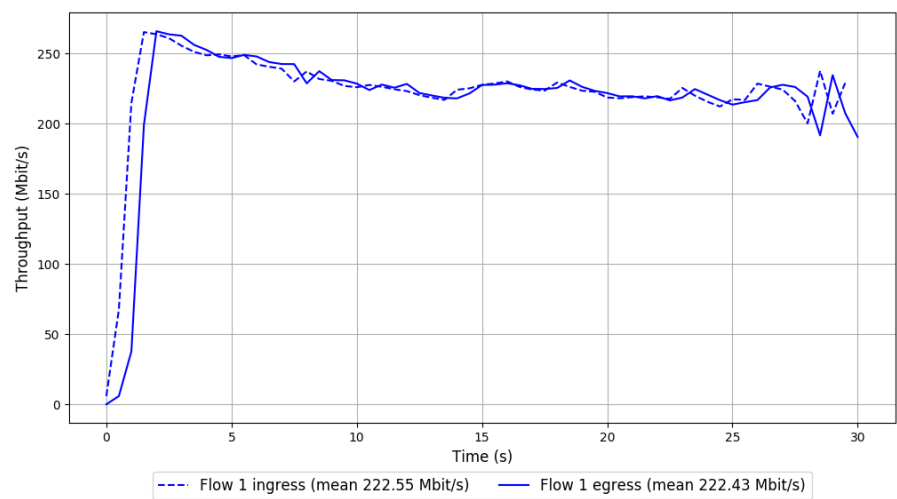


Run 3: Statistics of TaoVA-100x

Start at: 2018-11-02 19:05:37  
End at: 2018-11-02 19:06:07  
Local clock offset: 30.884 ms  
Remote clock offset: 34.611 ms

# Below is generated by plot.py at 2018-11-02 21:32:12  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 222.43 Mbit/s  
95th percentile per-packet one-way delay: 85.796 ms  
Loss rate: 0.63%  
-- Flow 1:  
Average throughput: 222.43 Mbit/s  
95th percentile per-packet one-way delay: 85.796 ms  
Loss rate: 0.63%

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



Run 4: Statistics of TaoVA-100x

Start at: 2018-11-02 19:31:35

End at: 2018-11-02 19:32:05

Local clock offset: 14.63 ms

Remote clock offset: 15.866 ms

# Below is generated by plot.py at 2018-11-02 21:33:16

# Datalink statistics

-- Total of 1 flow:

Average throughput: 214.28 Mbit/s

95th percentile per-packet one-way delay: 86.501 ms

Loss rate: 0.56%

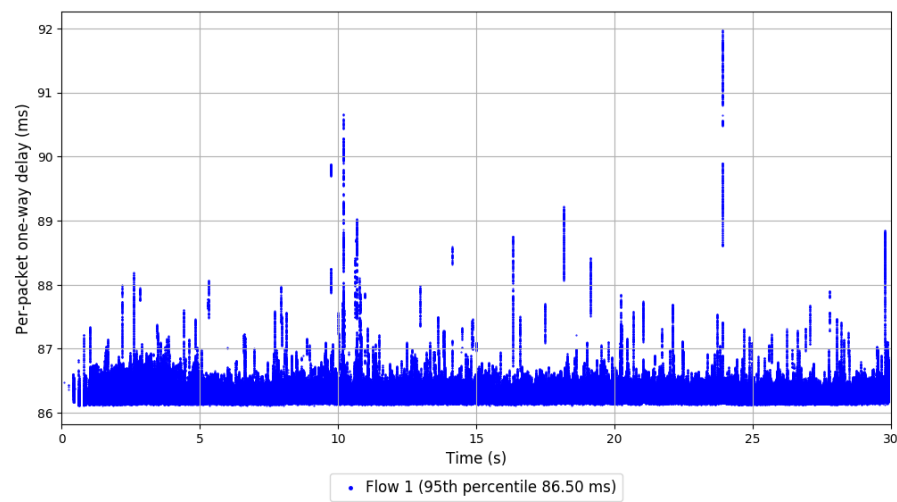
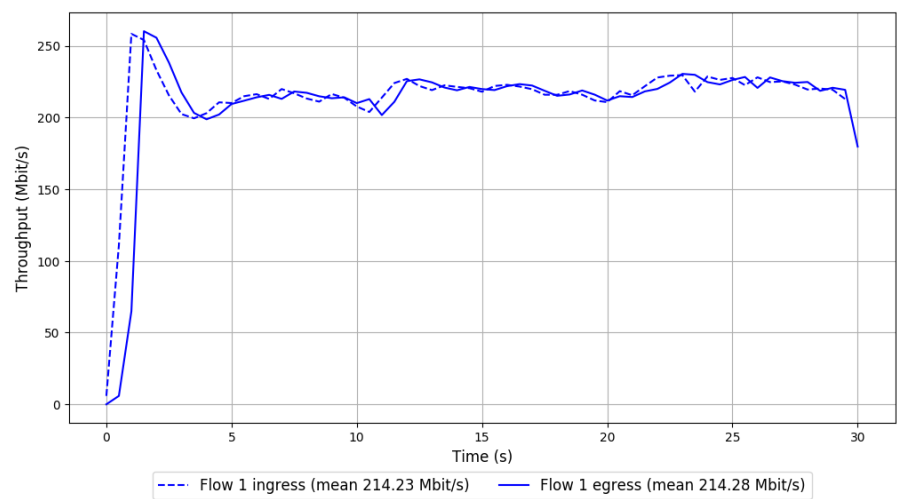
-- Flow 1:

Average throughput: 214.28 Mbit/s

95th percentile per-packet one-way delay: 86.501 ms

Loss rate: 0.56%

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



Run 5: Statistics of TaoVA-100x

Start at: 2018-11-02 19:57:49

End at: 2018-11-02 19:58:19

Local clock offset: 7.782 ms

Remote clock offset: 8.801 ms

# Below is generated by plot.py at 2018-11-02 21:34:02

# Datalink statistics

-- Total of 1 flow:

Average throughput: 216.60 Mbit/s

95th percentile per-packet one-way delay: 86.042 ms

Loss rate: 0.65%

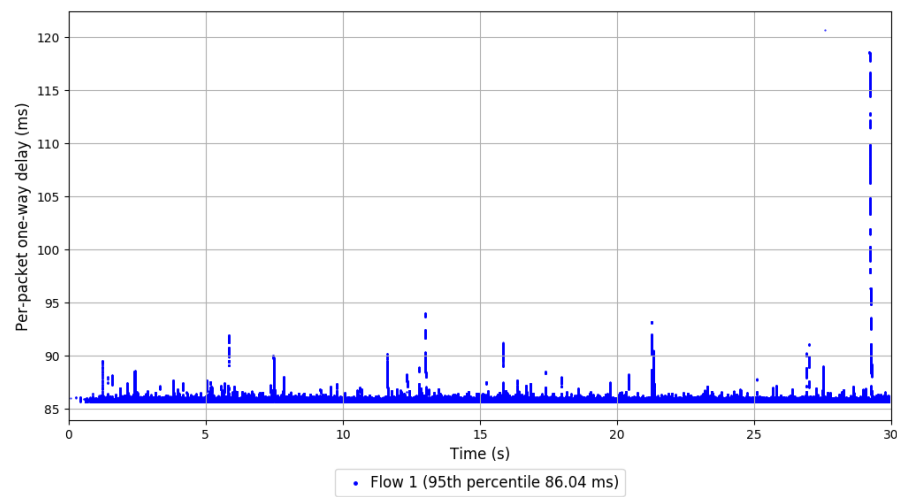
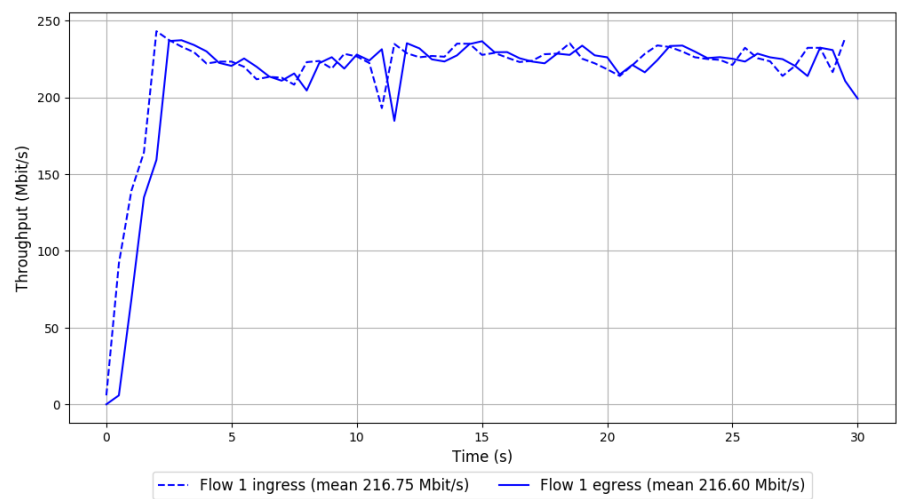
-- Flow 1:

Average throughput: 216.60 Mbit/s

95th percentile per-packet one-way delay: 86.042 ms

Loss rate: 0.65%

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





Run 1: Statistics of TCP Vegas

Start at: 2018-11-02 18:19:02

End at: 2018-11-02 18:19:32

Local clock offset: 13.247 ms

Remote clock offset: 15.11 ms

# Below is generated by plot.py at 2018-11-02 21:35:38

# Datalink statistics

-- Total of 1 flow:

Average throughput: 390.75 Mbit/s

95th percentile per-packet one-way delay: 86.445 ms

Loss rate: 0.61%

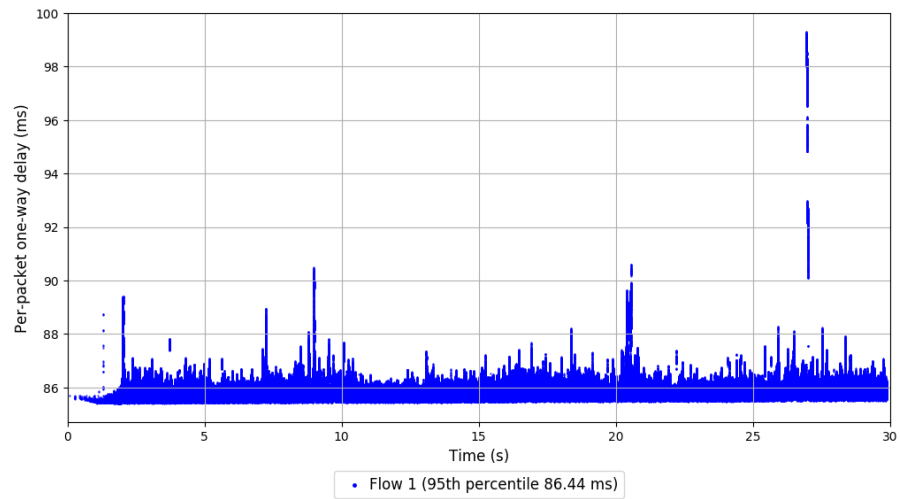
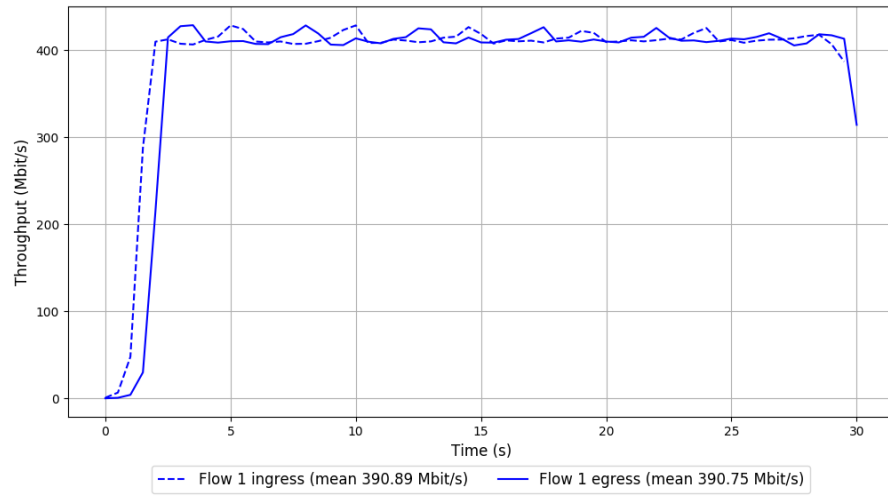
-- Flow 1:

Average throughput: 390.75 Mbit/s

95th percentile per-packet one-way delay: 86.445 ms

Loss rate: 0.61%

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



Run 2: Statistics of TCP Vegas

Start at: 2018-11-02 18:44:56

End at: 2018-11-02 18:45:26

Local clock offset: 19.067 ms

Remote clock offset: 20.78 ms

# Below is generated by plot.py at 2018-11-02 21:36:08

# Datalink statistics

-- Total of 1 flow:

Average throughput: 387.02 Mbit/s

95th percentile per-packet one-way delay: 87.551 ms

Loss rate: 0.62%

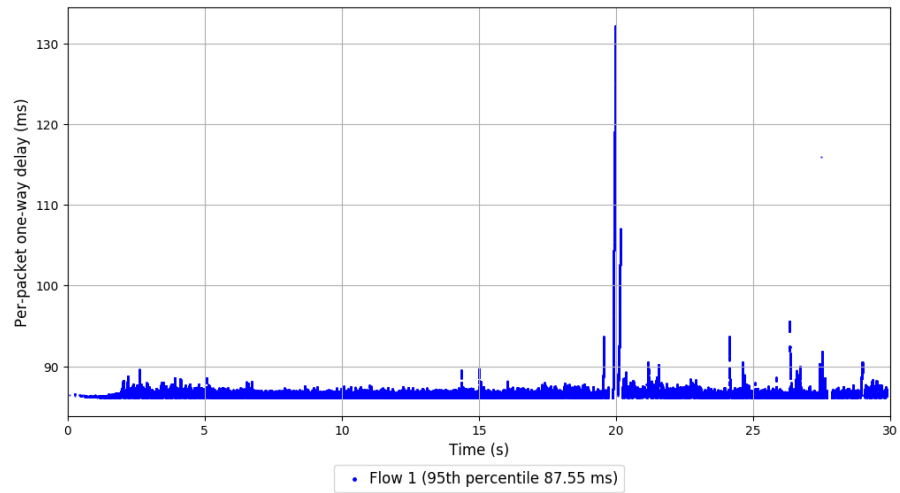
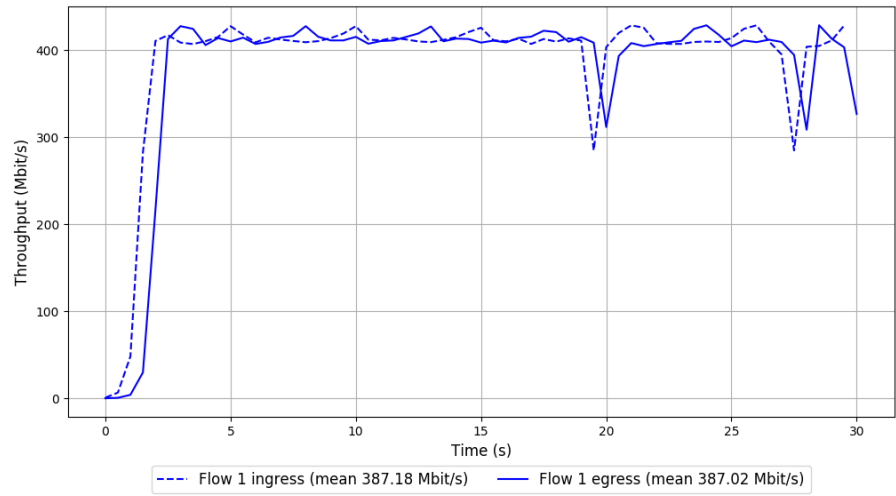
-- Flow 1:

Average throughput: 387.02 Mbit/s

95th percentile per-packet one-way delay: 87.551 ms

Loss rate: 0.62%

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

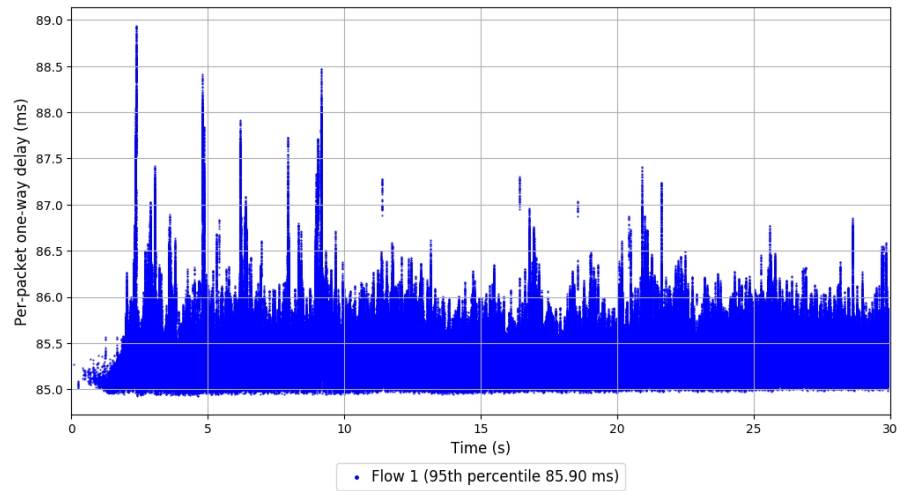
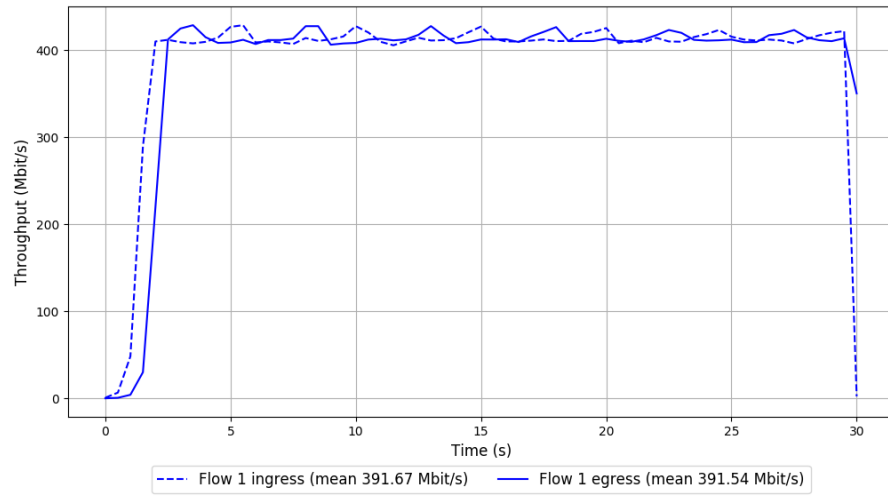


Run 3: Statistics of TCP Vegas

Start at: 2018-11-02 19:11:09  
End at: 2018-11-02 19:11:40  
Local clock offset: 36.002 ms  
Remote clock offset: 40.865 ms

# Below is generated by plot.py at 2018-11-02 21:39:14  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 391.54 Mbit/s  
95th percentile per-packet one-way delay: 85.903 ms  
Loss rate: 0.61%  
-- Flow 1:  
Average throughput: 391.54 Mbit/s  
95th percentile per-packet one-way delay: 85.903 ms  
Loss rate: 0.61%

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



Run 4: Statistics of TCP Vegas

Start at: 2018-11-02 19:37:06

End at: 2018-11-02 19:37:36

Local clock offset: 15.327 ms

Remote clock offset: 17.14 ms

# Below is generated by plot.py at 2018-11-02 21:39:29

# Datalink statistics

-- Total of 1 flow:

Average throughput: 387.74 Mbit/s

95th percentile per-packet one-way delay: 87.454 ms

Loss rate: 0.61%

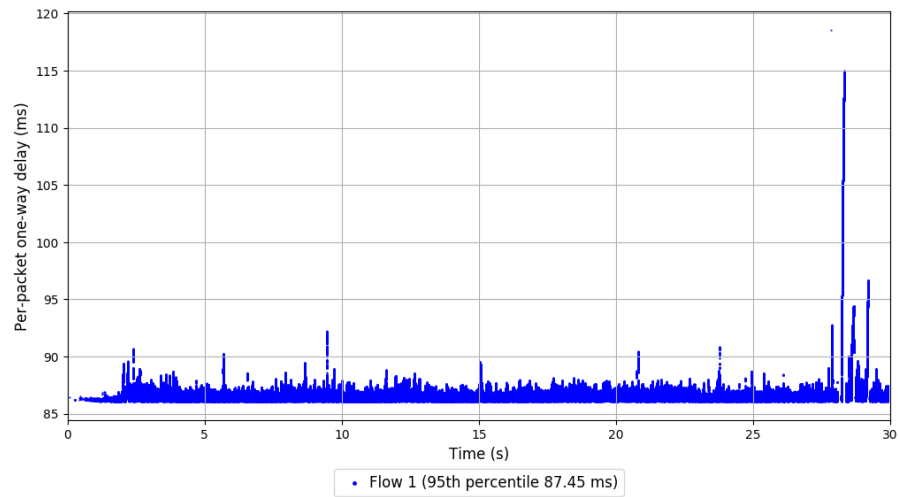
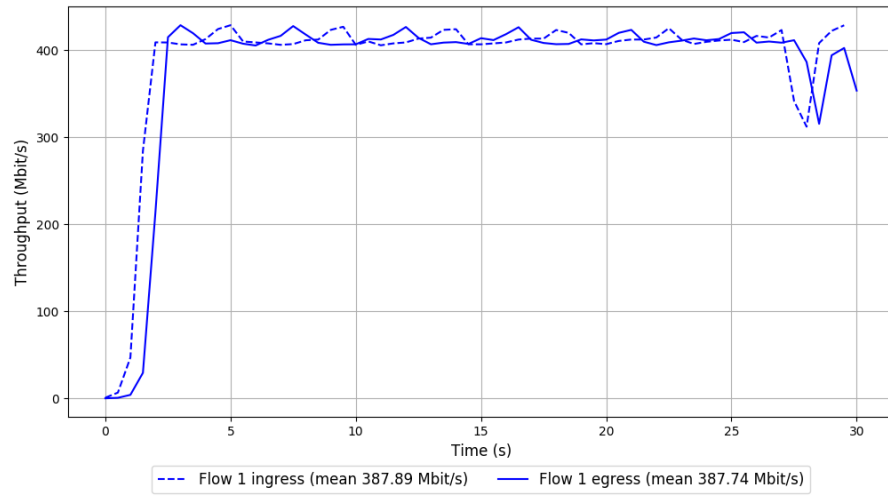
-- Flow 1:

Average throughput: 387.74 Mbit/s

95th percentile per-packet one-way delay: 87.454 ms

Loss rate: 0.61%

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





Run 5: Statistics of TCP Vegas

Start at: 2018-11-02 20:03:24

End at: 2018-11-02 20:03:54

Local clock offset: 6.79 ms

Remote clock offset: 7.765 ms

# Below is generated by plot.py at 2018-11-02 21:39:31

# Datalink statistics

-- Total of 1 flow:

Average throughput: 388.17 Mbit/s

95th percentile per-packet one-way delay: 87.686 ms

Loss rate: 0.61%

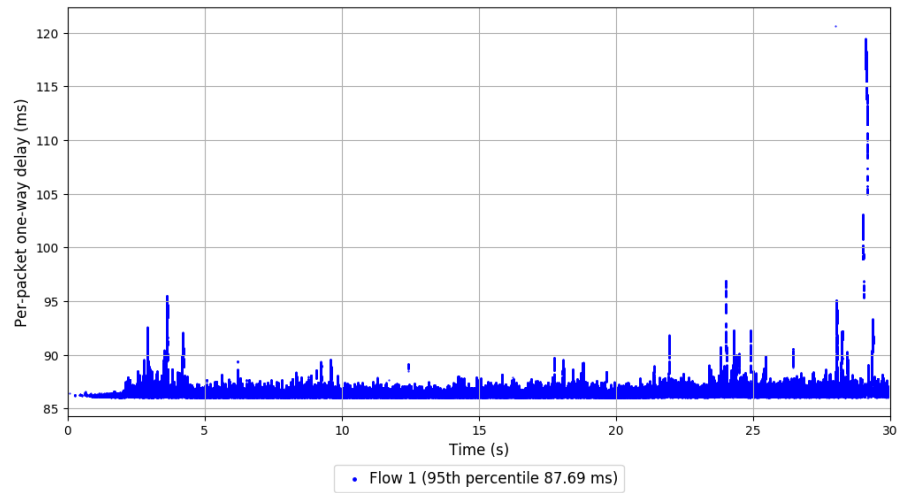
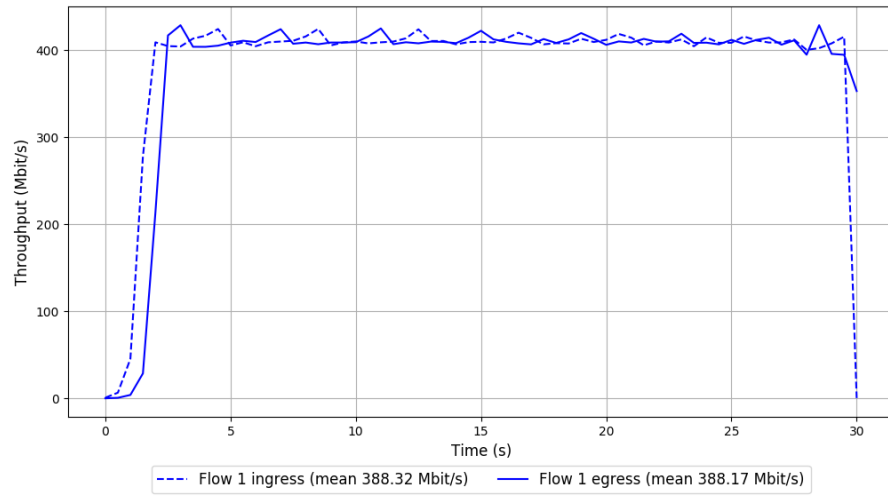
-- Flow 1:

Average throughput: 388.17 Mbit/s

95th percentile per-packet one-way delay: 87.686 ms

Loss rate: 0.61%

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

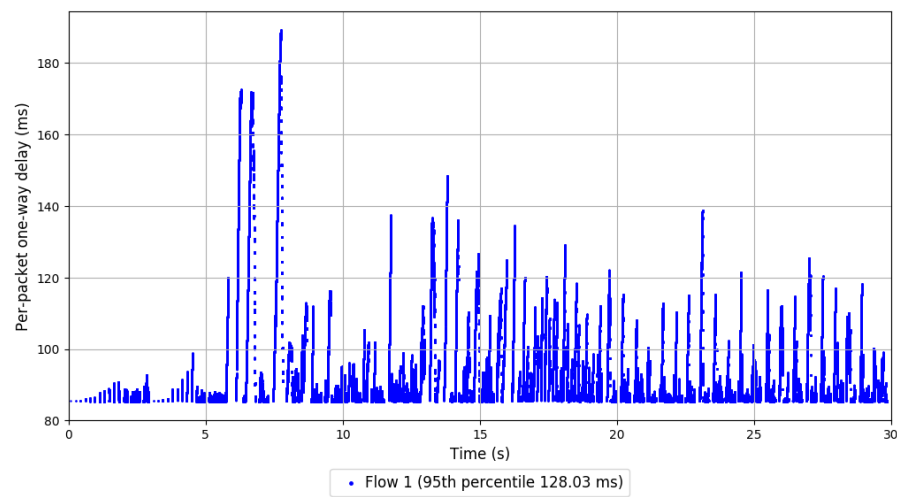
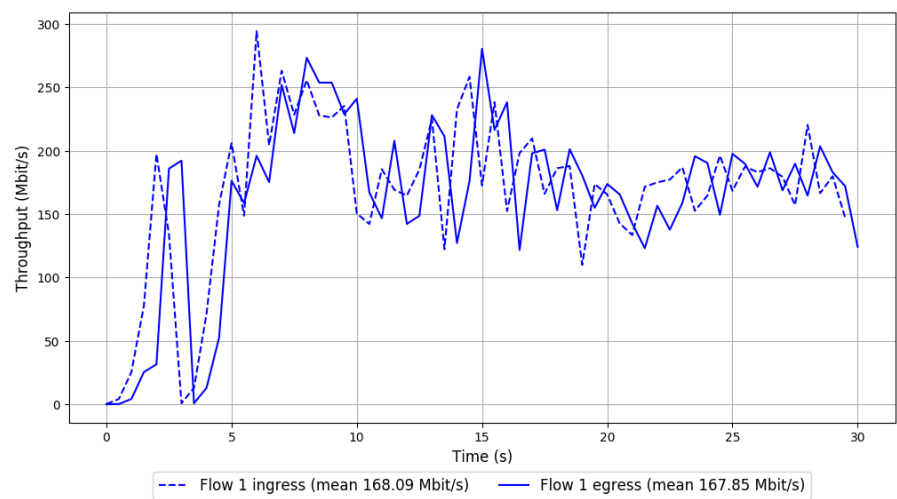


Run 1: Statistics of Verus

Start at: 2018-11-02 18:25:07  
End at: 2018-11-02 18:25:37  
Local clock offset: 11.937 ms  
Remote clock offset: 13.778 ms

# Below is generated by plot.py at 2018-11-02 21:39:31  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 167.85 Mbit/s  
95th percentile per-packet one-way delay: 128.028 ms  
Loss rate: 0.58%  
-- Flow 1:  
Average throughput: 167.85 Mbit/s  
95th percentile per-packet one-way delay: 128.028 ms  
Loss rate: 0.58%

Run 1: Report of Verus — Data Link

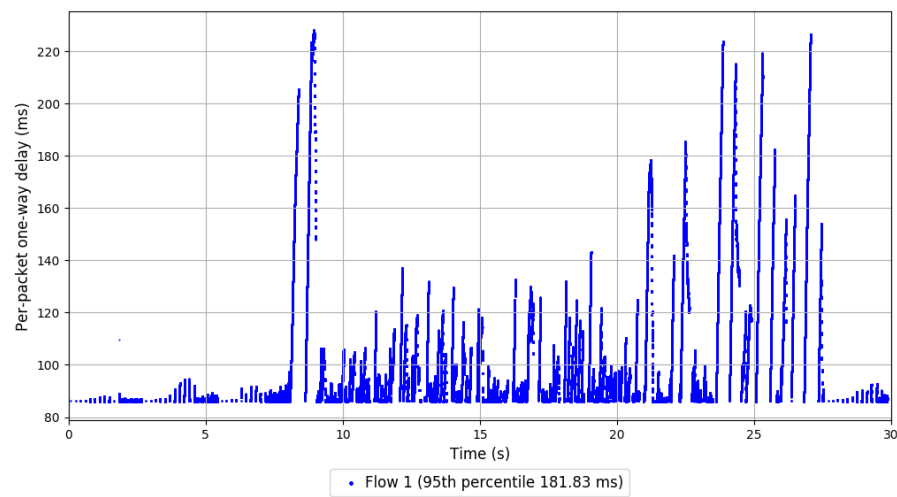
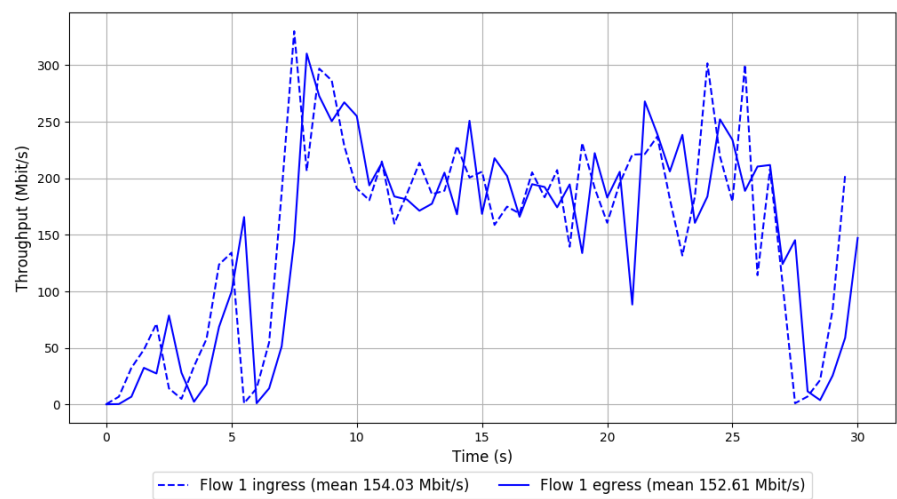


Run 2: Statistics of Verus

Start at: 2018-11-02 18:51:08  
End at: 2018-11-02 18:51:38  
Local clock offset: 19.761 ms  
Remote clock offset: 21.849 ms

# Below is generated by plot.py at 2018-11-02 21:39:31  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 152.61 Mbit/s  
95th percentile per-packet one-way delay: 181.833 ms  
Loss rate: 1.49%  
-- Flow 1:  
Average throughput: 152.61 Mbit/s  
95th percentile per-packet one-way delay: 181.833 ms  
Loss rate: 1.49%

Run 2: Report of Verus — Data Link



Run 3: Statistics of Verus

Start at: 2018-11-02 19:17:21

End at: 2018-11-02 19:17:52

Local clock offset: 22.967 ms

Remote clock offset: 25.76 ms

# Below is generated by plot.py at 2018-11-02 21:39:41

# Datalink statistics

-- Total of 1 flow:

Average throughput: 146.70 Mbit/s

95th percentile per-packet one-way delay: 133.748 ms

Loss rate: 0.61%

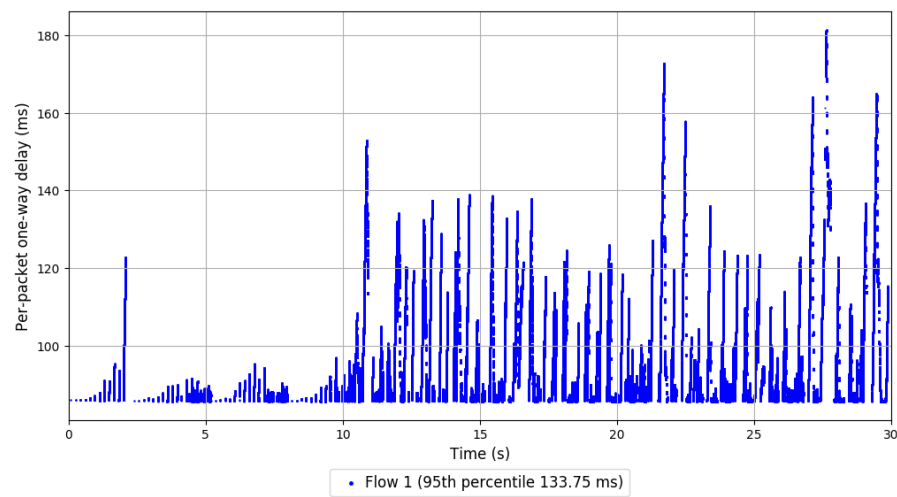
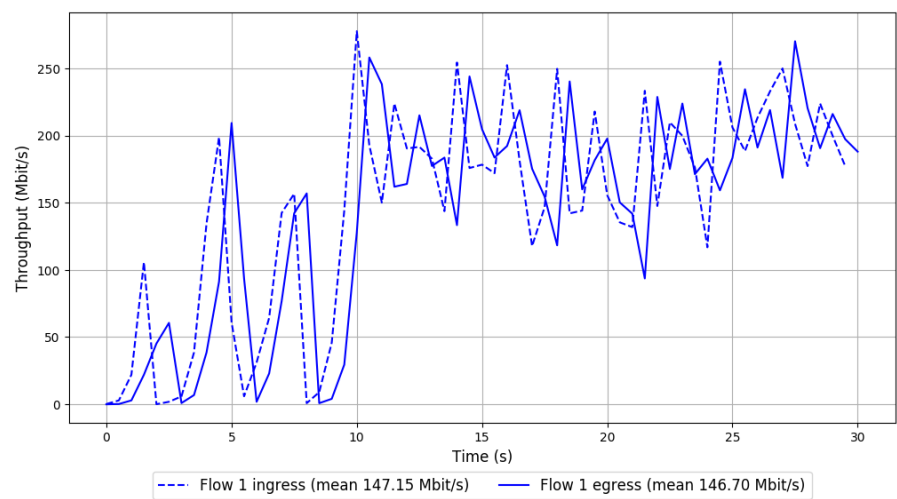
-- Flow 1:

Average throughput: 146.70 Mbit/s

95th percentile per-packet one-way delay: 133.748 ms

Loss rate: 0.61%

Run 3: Report of Verus — Data Link



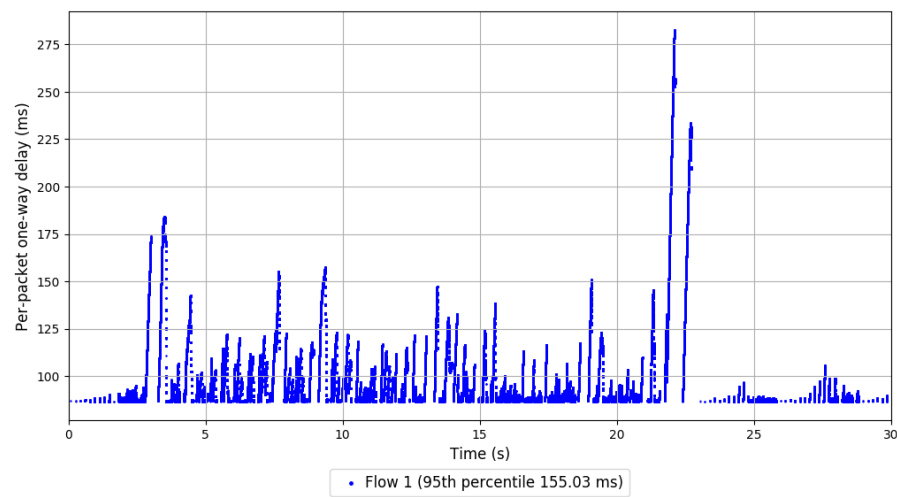
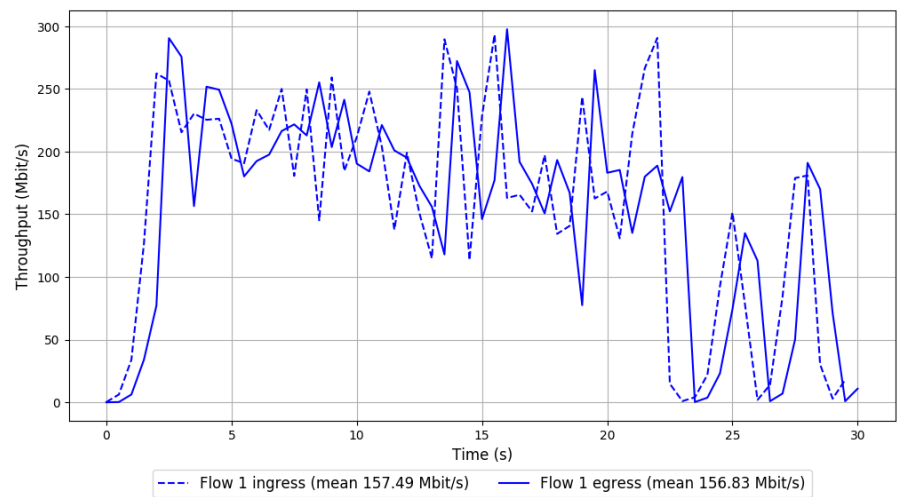


Run 4: Statistics of Verus

Start at: 2018-11-02 19:43:22  
End at: 2018-11-02 19:43:52  
Local clock offset: 18.071 ms  
Remote clock offset: 19.739 ms

# Below is generated by plot.py at 2018-11-02 21:41:37  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 156.83 Mbit/s  
95th percentile per-packet one-way delay: 155.029 ms  
Loss rate: 1.00%  
-- Flow 1:  
Average throughput: 156.83 Mbit/s  
95th percentile per-packet one-way delay: 155.029 ms  
Loss rate: 1.00%

Run 4: Report of Verus — Data Link



Run 5: Statistics of Verus

Start at: 2018-11-02 20:09:41

End at: 2018-11-02 20:10:11

Local clock offset: 6.73 ms

Remote clock offset: 8.127 ms

# Below is generated by plot.py at 2018-11-02 21:41:49

# Datalink statistics

-- Total of 1 flow:

Average throughput: 157.02 Mbit/s

95th percentile per-packet one-way delay: 222.851 ms

Loss rate: 5.43%

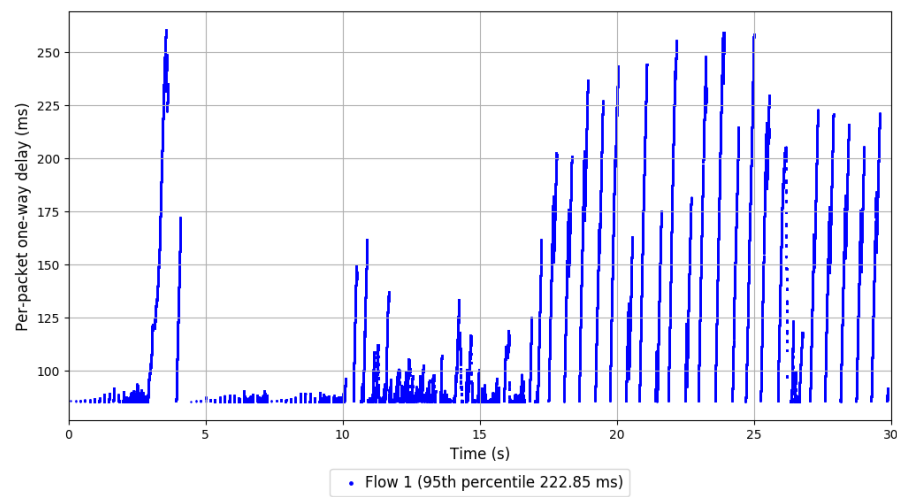
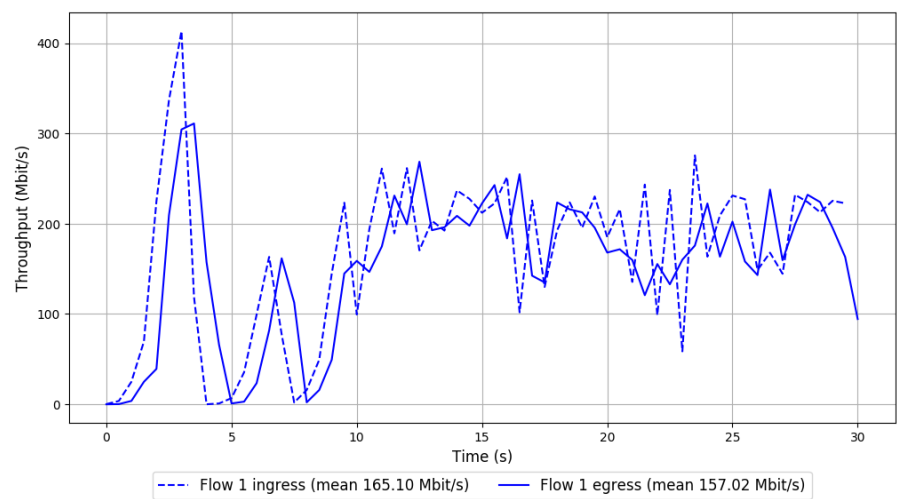
-- Flow 1:

Average throughput: 157.02 Mbit/s

95th percentile per-packet one-way delay: 222.851 ms

Loss rate: 5.43%

Run 5: Report of Verus — Data Link



Run 1: Statistics of PCC-Vivace

Start at: 2018-11-02 18:21:57

End at: 2018-11-02 18:22:27

Local clock offset: 14.033 ms

Remote clock offset: 16.18 ms

# Below is generated by plot.py at 2018-11-02 21:44:30

# Datalink statistics

-- Total of 1 flow:

Average throughput: 384.04 Mbit/s

95th percentile per-packet one-way delay: 86.145 ms

Loss rate: 0.68%

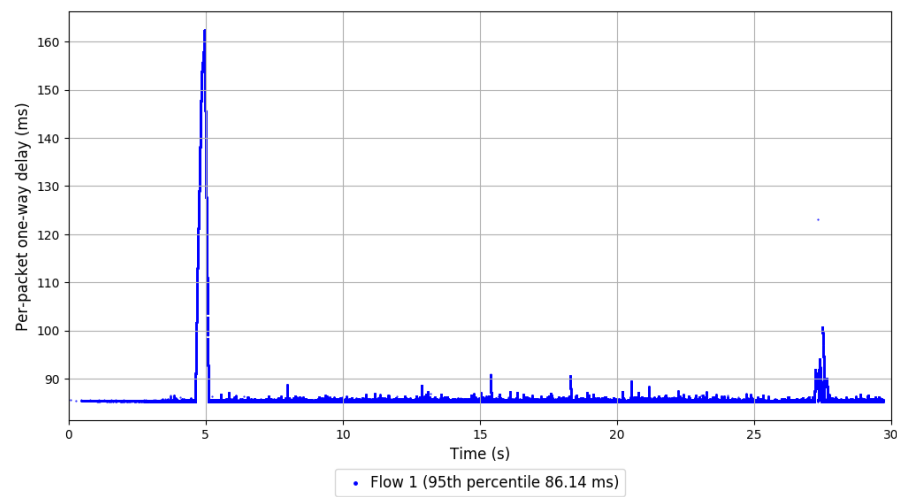
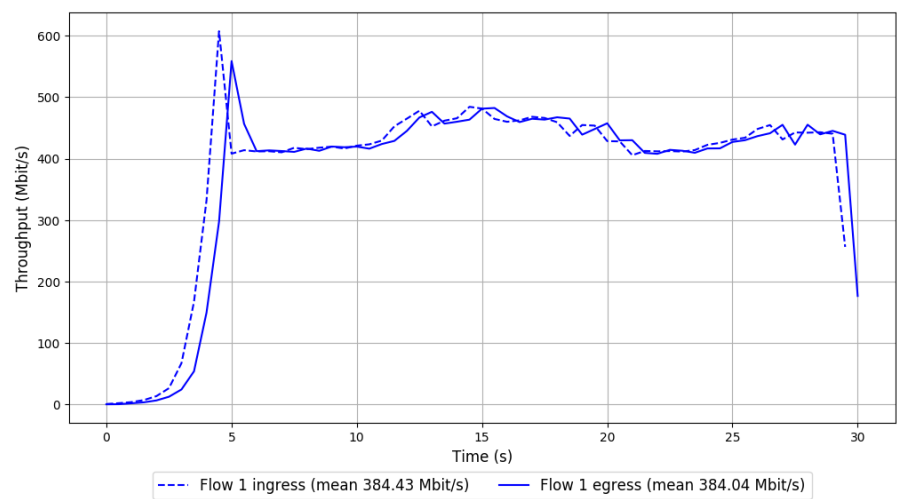
-- Flow 1:

Average throughput: 384.04 Mbit/s

95th percentile per-packet one-way delay: 86.145 ms

Loss rate: 0.68%

Run 1: Report of PCC-Vivace — Data Link

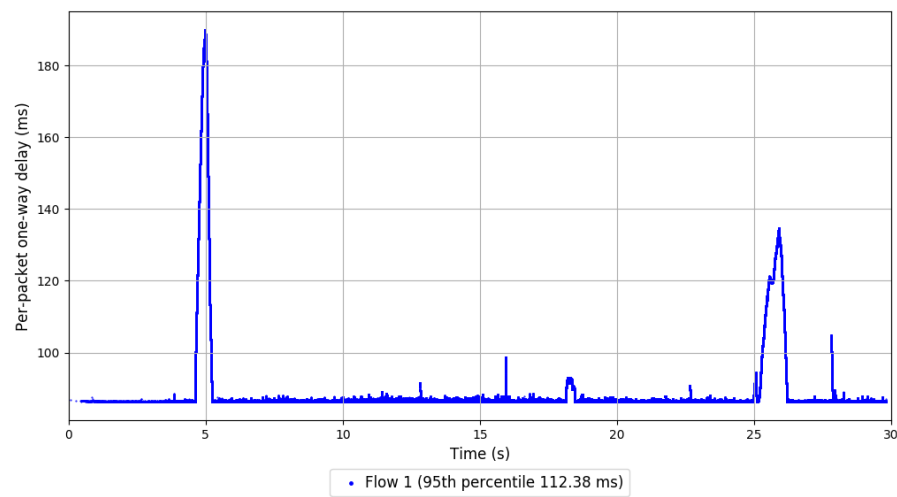
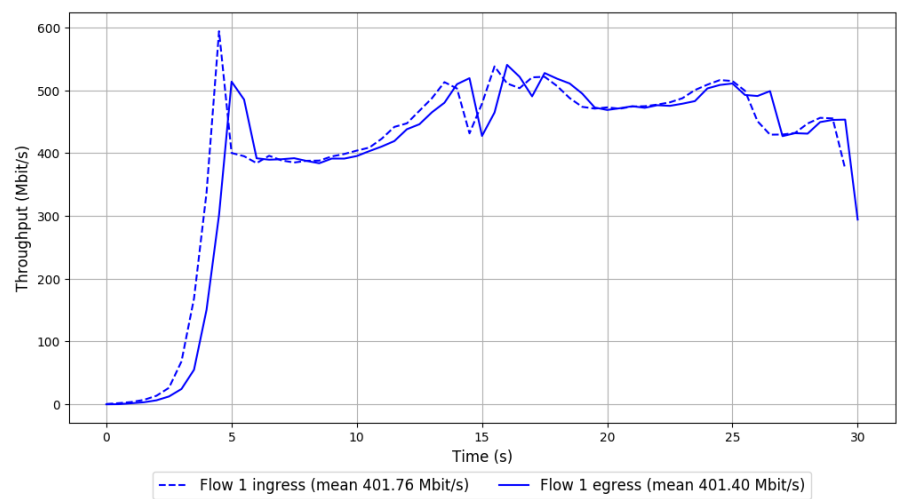


Run 2: Statistics of PCC-Vivace

Start at: 2018-11-02 18:47:53  
End at: 2018-11-02 18:48:23  
Local clock offset: 18.864 ms  
Remote clock offset: 20.729 ms

# Below is generated by plot.py at 2018-11-02 21:44:47  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 401.40 Mbit/s  
95th percentile per-packet one-way delay: 112.384 ms  
Loss rate: 0.66%  
-- Flow 1:  
Average throughput: 401.40 Mbit/s  
95th percentile per-packet one-way delay: 112.384 ms  
Loss rate: 0.66%

Run 2: Report of PCC-Vivace — Data Link



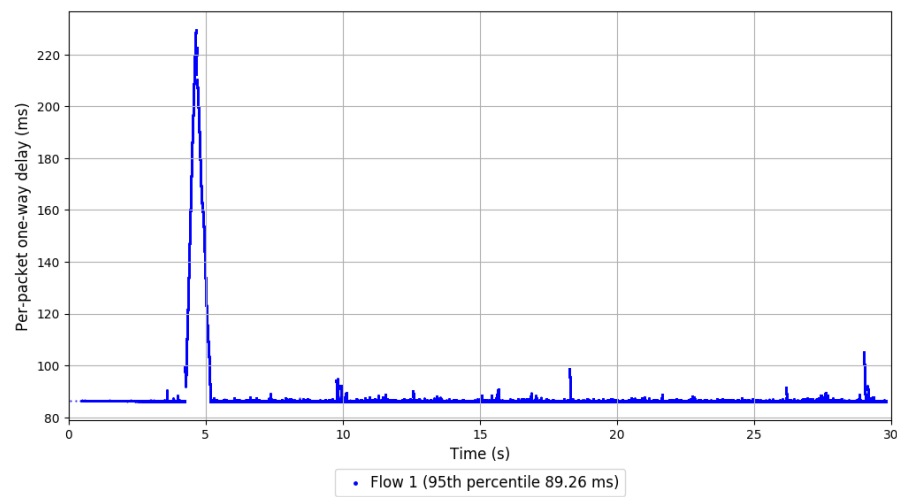
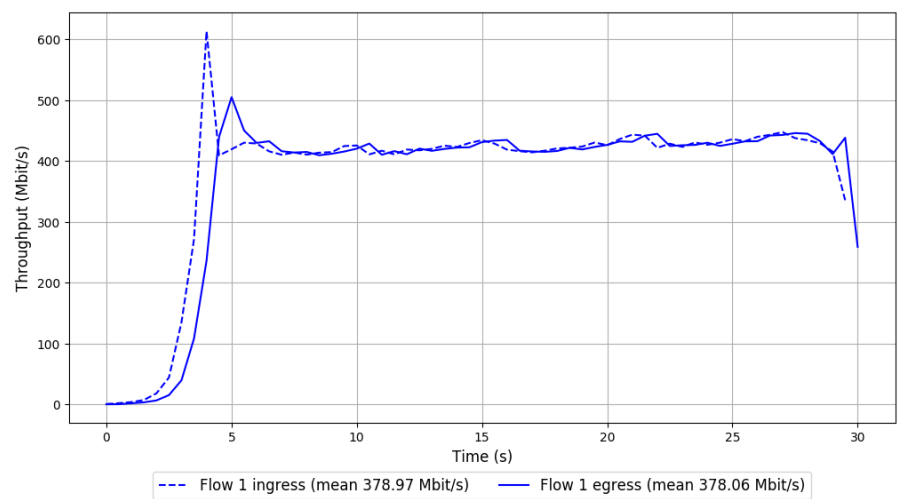


Run 3: Statistics of PCC-Vivace

Start at: 2018-11-02 19:14:08  
End at: 2018-11-02 19:14:38  
Local clock offset: 31.134 ms  
Remote clock offset: 34.256 ms

# Below is generated by plot.py at 2018-11-02 21:44:47  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 378.06 Mbit/s  
95th percentile per-packet one-way delay: 89.261 ms  
Loss rate: 0.82%  
-- Flow 1:  
Average throughput: 378.06 Mbit/s  
95th percentile per-packet one-way delay: 89.261 ms  
Loss rate: 0.82%

Run 3: Report of PCC-Vivace — Data Link



Run 4: Statistics of PCC-Vivace

Start at: 2018-11-02 19:40:05

End at: 2018-11-02 19:40:35

Local clock offset: 16.789 ms

Remote clock offset: 18.31 ms

# Below is generated by plot.py at 2018-11-02 21:44:51

# Datalink statistics

-- Total of 1 flow:

Average throughput: 396.73 Mbit/s

95th percentile per-packet one-way delay: 95.462 ms

Loss rate: 0.72%

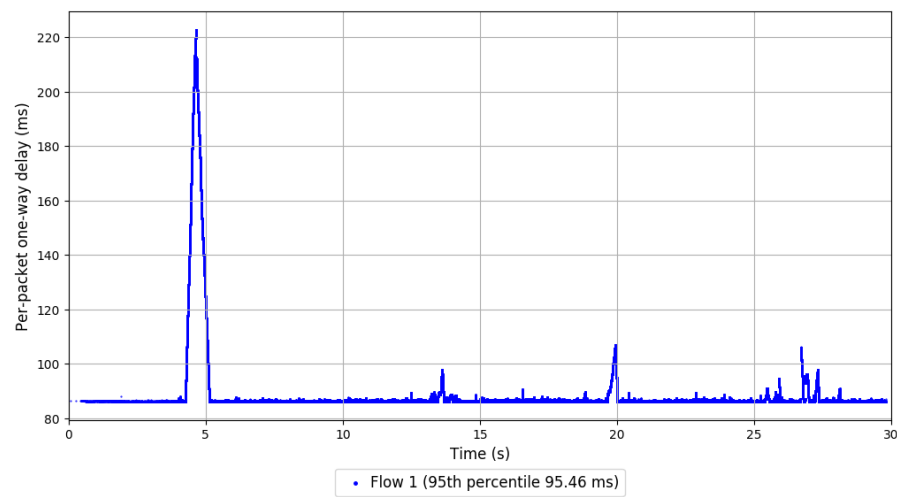
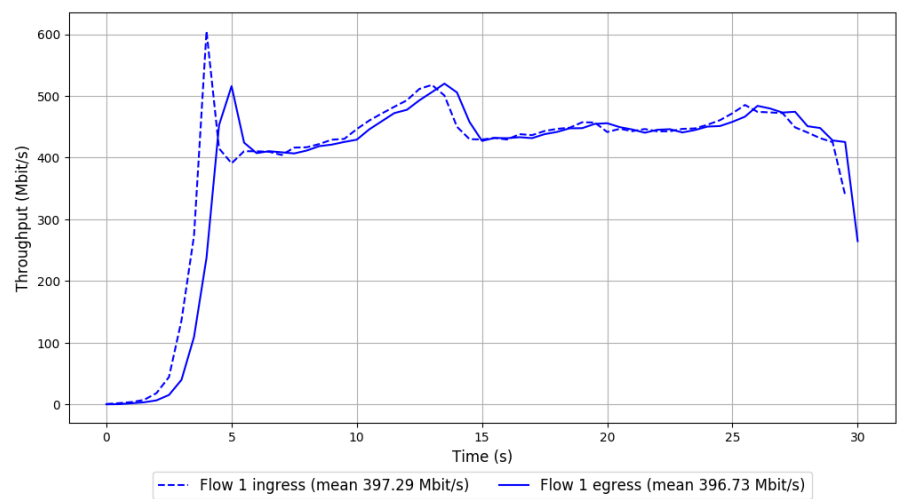
-- Flow 1:

Average throughput: 396.73 Mbit/s

95th percentile per-packet one-way delay: 95.462 ms

Loss rate: 0.72%

Run 4: Report of PCC-Vivace — Data Link



Run 5: Statistics of PCC-Vivace

Start at: 2018-11-02 20:06:24

End at: 2018-11-02 20:06:54

Local clock offset: 7.084 ms

Remote clock offset: 7.793 ms

# Below is generated by plot.py at 2018-11-02 21:44:51

# Datalink statistics

-- Total of 1 flow:

Average throughput: 392.00 Mbit/s

95th percentile per-packet one-way delay: 91.175 ms

Loss rate: 0.68%

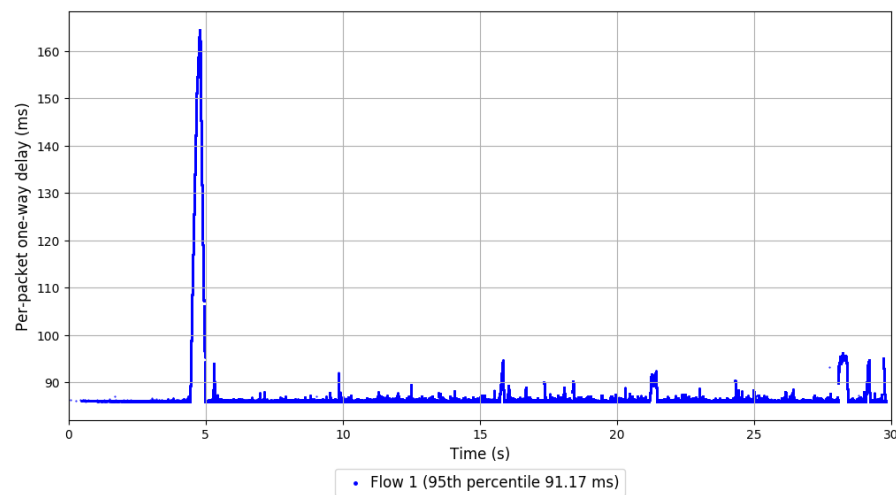
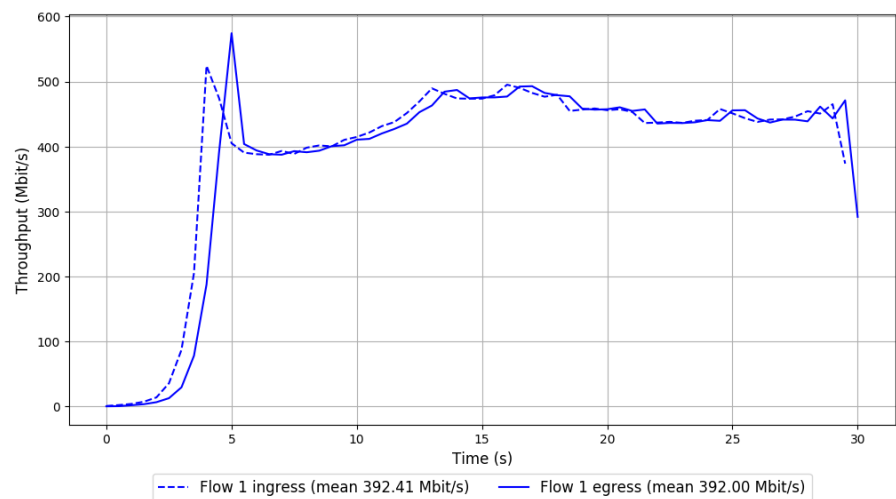
-- Flow 1:

Average throughput: 392.00 Mbit/s

95th percentile per-packet one-way delay: 91.175 ms

Loss rate: 0.68%

Run 5: Report of PCC-Vivace — Data Link

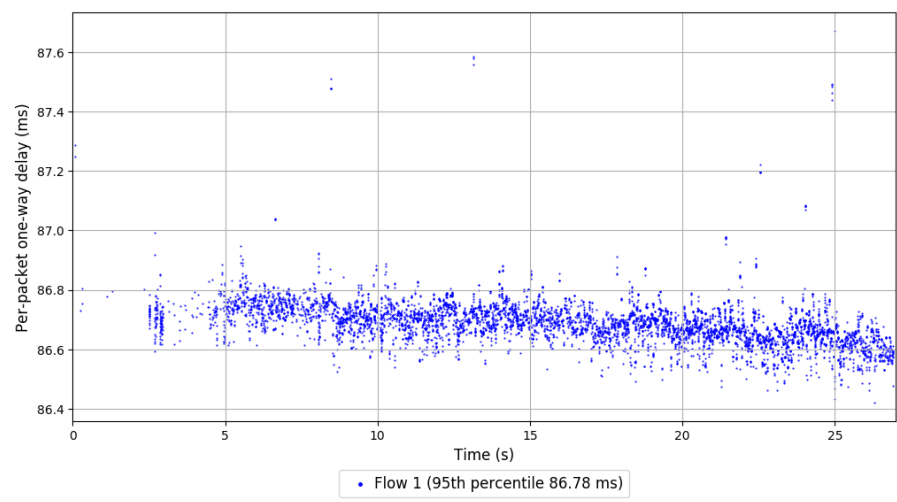
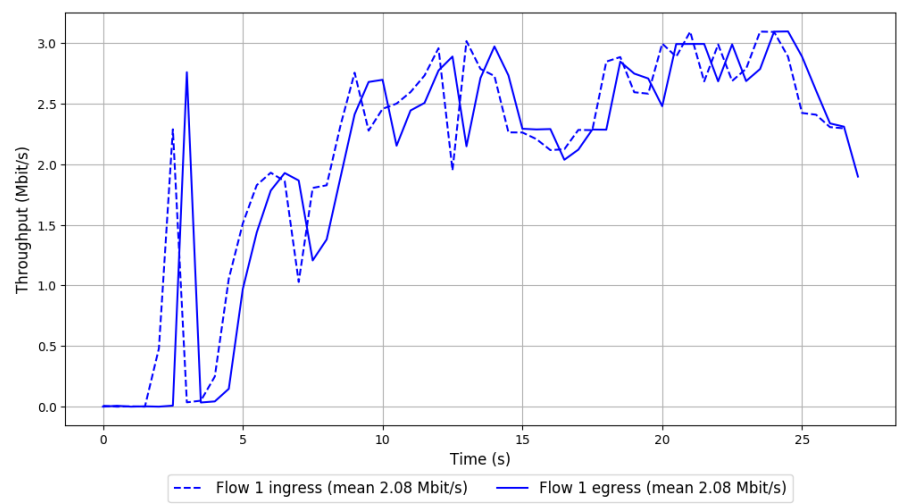


Run 1: Statistics of WebRTC media

Start at: 2018-11-02 18:12:29  
End at: 2018-11-02 18:12:59  
Local clock offset: 10.725 ms  
Remote clock offset: 11.583 ms

# Below is generated by plot.py at 2018-11-02 21:44:51  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 2.08 Mbit/s  
95th percentile per-packet one-way delay: 86.784 ms  
Loss rate: 0.71%  
-- Flow 1:  
Average throughput: 2.08 Mbit/s  
95th percentile per-packet one-way delay: 86.784 ms  
Loss rate: 0.71%

Run 1: Report of WebRTC media — Data Link



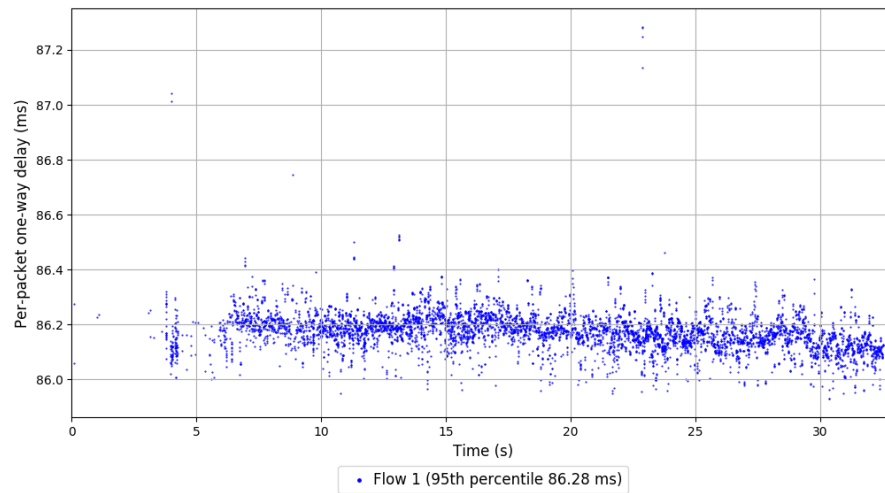
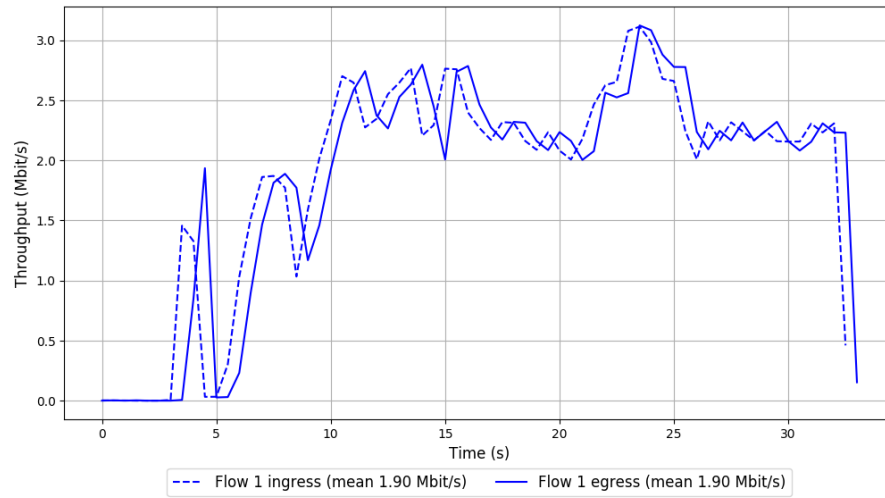


Run 2: Statistics of WebRTC media

Start at: 2018-11-02 18:38:16  
End at: 2018-11-02 18:38:46  
Local clock offset: 24.258 ms  
Remote clock offset: 27.273 ms

# Below is generated by plot.py at 2018-11-02 21:44:51  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 1.90 Mbit/s  
95th percentile per-packet one-way delay: 86.277 ms  
Loss rate: 0.62%  
-- Flow 1:  
Average throughput: 1.90 Mbit/s  
95th percentile per-packet one-way delay: 86.277 ms  
Loss rate: 0.62%

## Run 2: Report of WebRTC media — Data Link

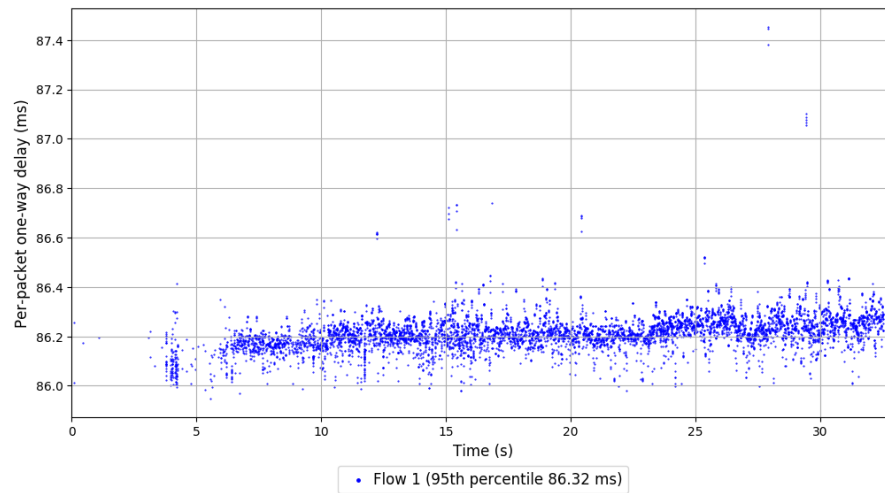
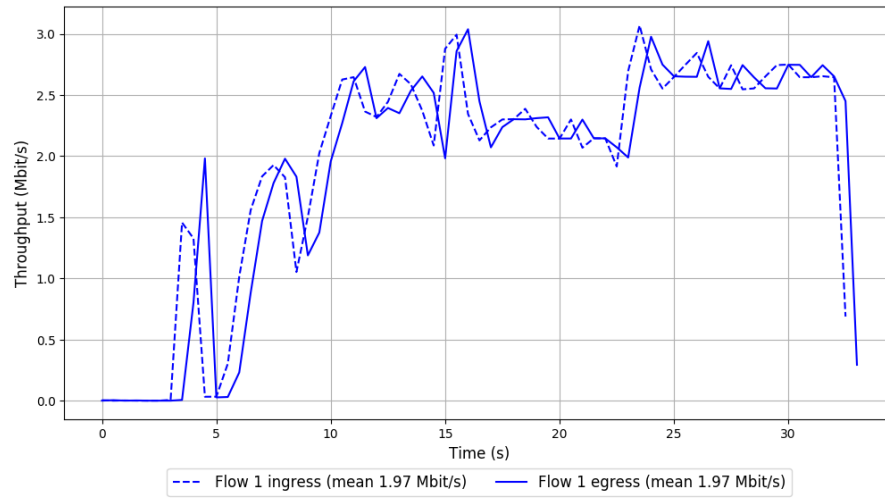


Run 3: Statistics of WebRTC media

Start at: 2018-11-02 19:04:27  
End at: 2018-11-02 19:04:57  
Local clock offset: 29.986 ms  
Remote clock offset: 33.469 ms

# Below is generated by plot.py at 2018-11-02 21:44:51  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 1.97 Mbit/s  
95th percentile per-packet one-way delay: 86.316 ms  
Loss rate: 0.76%  
-- Flow 1:  
Average throughput: 1.97 Mbit/s  
95th percentile per-packet one-way delay: 86.316 ms  
Loss rate: 0.76%

### Run 3: Report of WebRTC media — Data Link

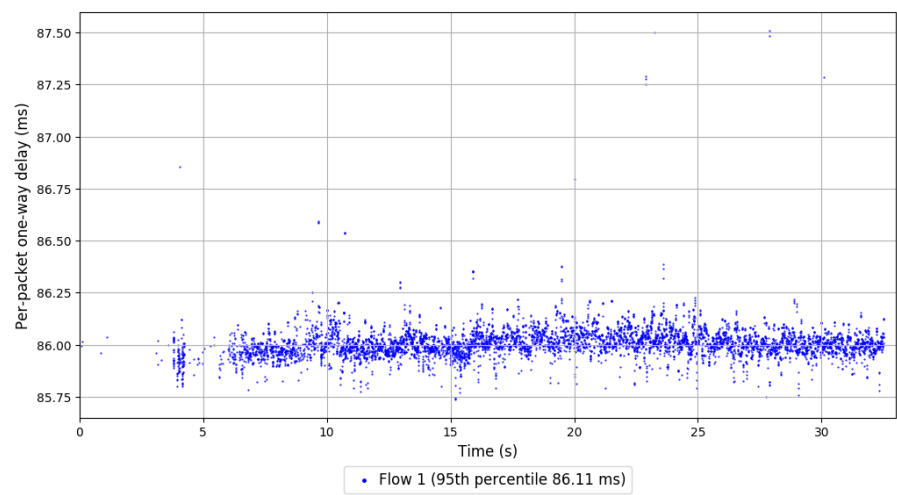
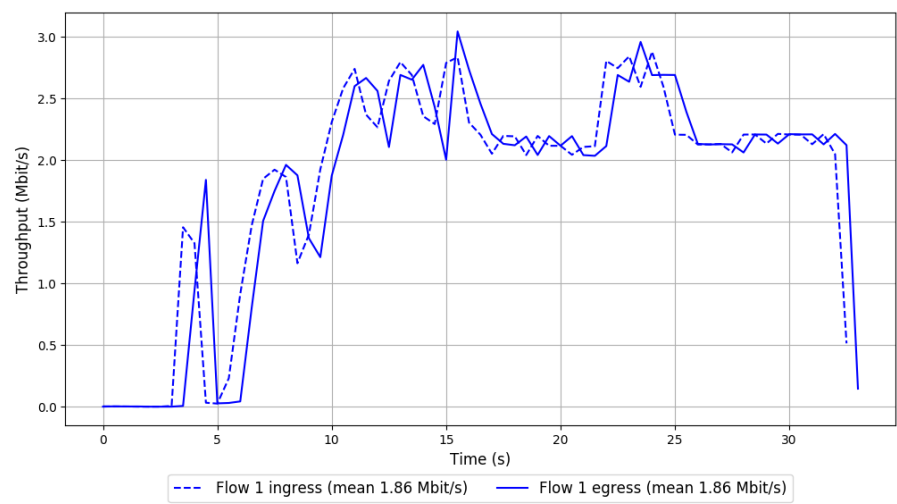


Run 4: Statistics of WebRTC media

Start at: 2018-11-02 19:30:25  
End at: 2018-11-02 19:30:55  
Local clock offset: 14.138 ms  
Remote clock offset: 15.787 ms

# Below is generated by plot.py at 2018-11-02 21:44:51  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 1.86 Mbit/s  
95th percentile per-packet one-way delay: 86.112 ms  
Loss rate: 0.55%  
-- Flow 1:  
Average throughput: 1.86 Mbit/s  
95th percentile per-packet one-way delay: 86.112 ms  
Loss rate: 0.55%

Run 4: Report of WebRTC media — Data Link



Run 5: Statistics of WebRTC media

Start at: 2018-11-02 19:56:40

End at: 2018-11-02 19:57:10

Local clock offset: 8.006 ms

Remote clock offset: 9.169 ms

# Below is generated by plot.py at 2018-11-02 21:44:51

# Datalink statistics

-- Total of 1 flow:

Average throughput: 2.06 Mbit/s

95th percentile per-packet one-way delay: 86.120 ms

Loss rate: 0.74%

-- Flow 1:

Average throughput: 2.06 Mbit/s

95th percentile per-packet one-way delay: 86.120 ms

Loss rate: 0.74%

Run 5: Report of WebRTC media — Data Link

