

## Pantheon Report

Generated at 2018-09-07 21:27:09 (UTC).

Data path: GCE London 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:

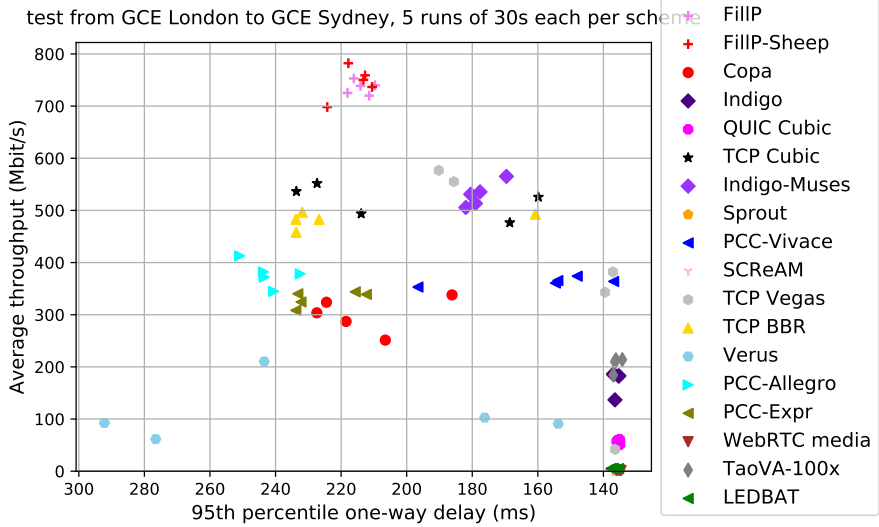
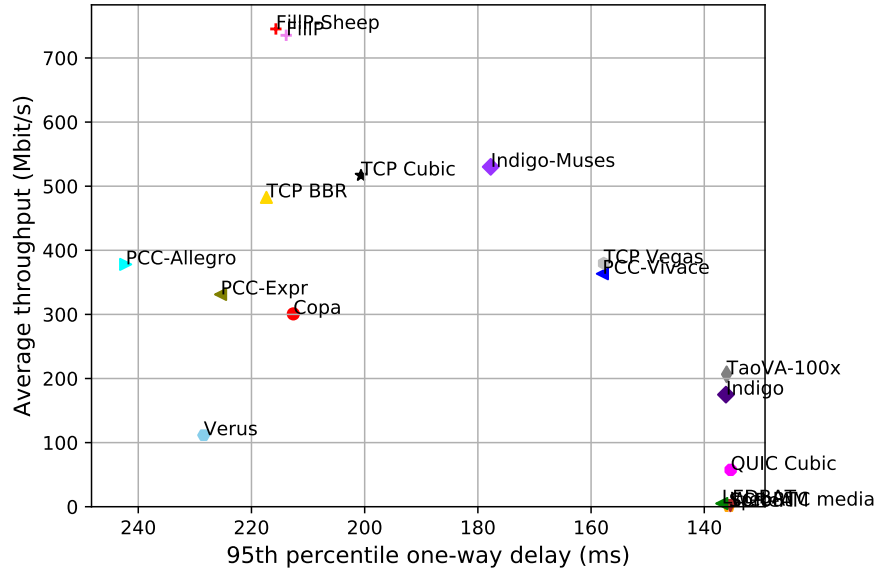
```
Linux 4.15.0-1018-gcp
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912
net.ipv4.tcp_mem = 190986 254651 381972
```

### Git summary:

```
branch: muses @ e0a9b05ad97d268013b7cc9a9c95637b593a1b4c
third_party/fillp @ d47f4fa1b454a5e3c0537115c5a28436dbd4b834
third_party/fillp-sheep @ daed0c84f98531712514b2231f43ec6901114ffe
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdf58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecd90c077e64d
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/muses @ 7631aea3923a3598767c87765ae5103aca0678d3
third_party/pantheon-tunnel @ cbfce6db5ff5740dafa1771f813cd646339e1952
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 London 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	482.57	217.36	1.96
Copa	5	300.81	212.61	1.00
TCP Cubic	5	516.80	200.65	1.24
FillP	5	735.38	213.87	6.89
FillP-Sheep	5	745.28	215.69	8.12
Indigo	5	174.82	136.18	0.95
LEDBAT	5	5.03	136.91	1.82
Indigo-Muses	5	530.17	177.74	1.17
PCC-Allegro	5	378.04	242.22	4.29
PCC-Expr	5	331.15	225.46	4.02
QUIC Cubic	5	57.50	135.34	1.32
SCReAM	5	0.22	135.49	0.89
Sprout	5	0.44	135.65	0.82
TaoVA-100x	5	206.54	136.05	0.98
TCP Vegas	5	379.73	157.76	0.89
Verus	5	111.60	228.44	4.77
PCC-Vivace	5	363.39	158.00	1.31
WebRTC media	5	1.74	135.39	1.14

Run 1: Statistics of TCP BBR

Start at: 2018-09-07 18:12:45

End at: 2018-09-07 18:13:15

Local clock offset: -3.61 ms

Remote clock offset: -0.491 ms

# Below is generated by plot.py at 2018-09-07 20:27:36

# Datalink statistics

-- Total of 1 flow:

Average throughput: 458.04 Mbit/s

95th percentile per-packet one-way delay: 233.696 ms

Loss rate: 1.76%

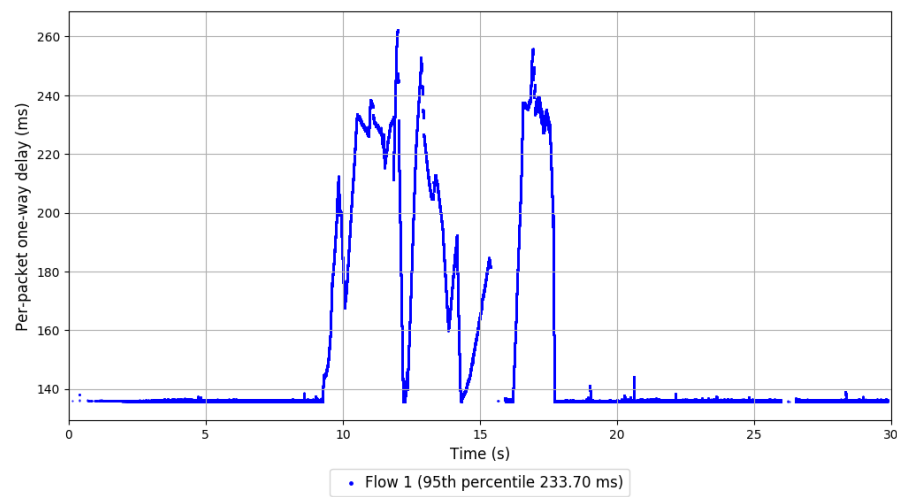
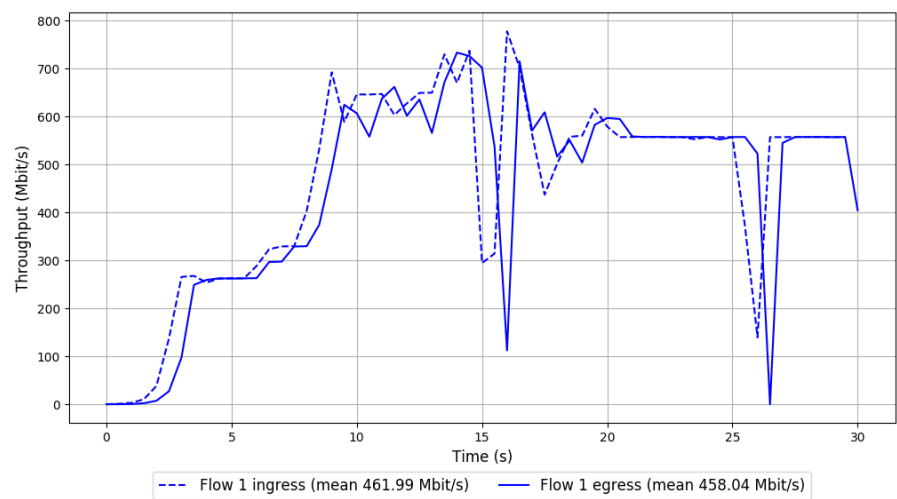
-- Flow 1:

Average throughput: 458.04 Mbit/s

95th percentile per-packet one-way delay: 233.696 ms

Loss rate: 1.76%

Run 1: Report of TCP BBR — Data Link



Run 2: Statistics of TCP BBR

Start at: 2018-09-07 18:39:20

End at: 2018-09-07 18:39:50

Local clock offset: -1.487 ms

Remote clock offset: 0.3 ms

# Below is generated by plot.py at 2018-09-07 20:28:15

# Datalink statistics

-- Total of 1 flow:

Average throughput: 482.93 Mbit/s

95th percentile per-packet one-way delay: 233.768 ms

Loss rate: 2.53%

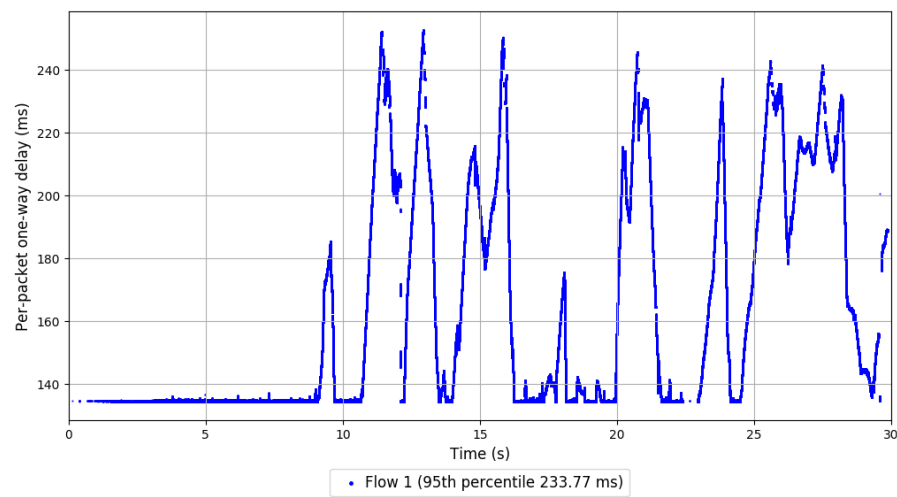
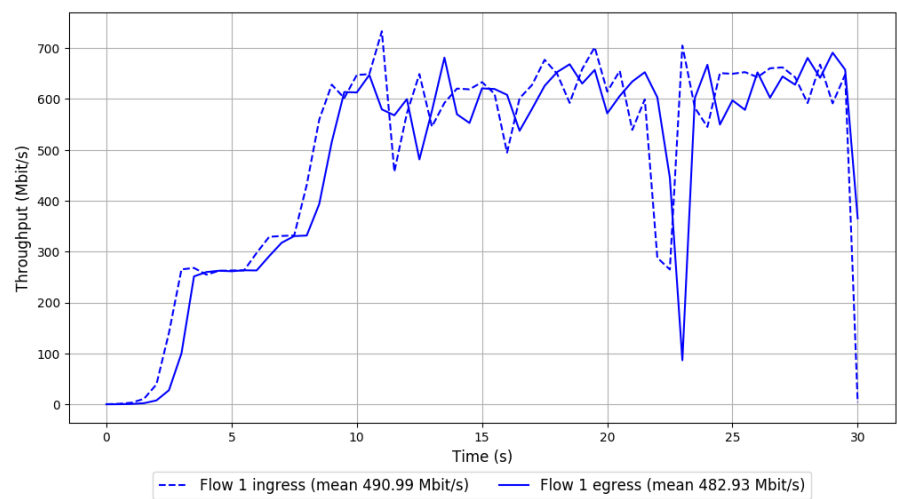
-- Flow 1:

Average throughput: 482.93 Mbit/s

95th percentile per-packet one-way delay: 233.768 ms

Loss rate: 2.53%

Run 2: Report of TCP BBR — Data Link



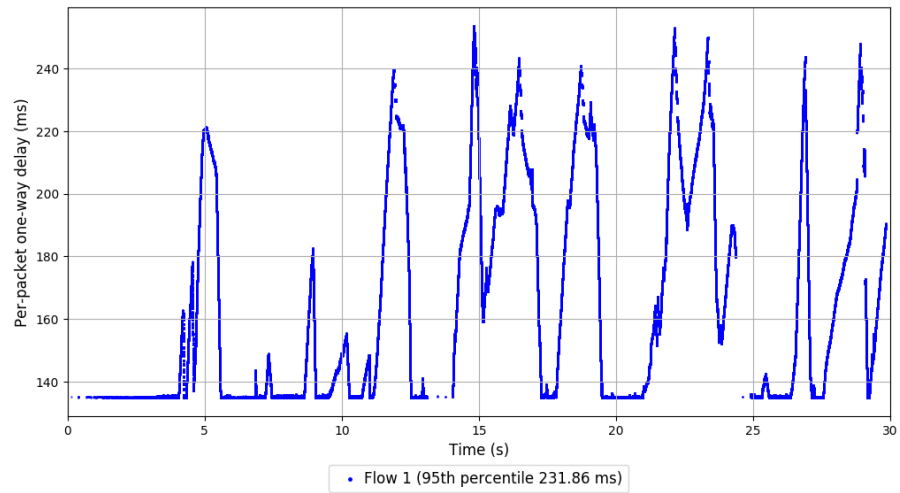
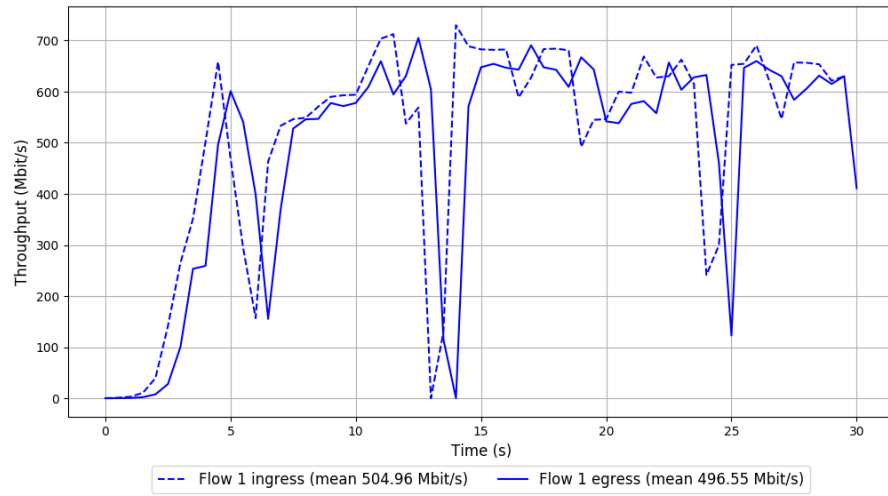


Run 3: Statistics of TCP BBR

Start at: 2018-09-07 19:06:20  
End at: 2018-09-07 19:06:50  
Local clock offset: -0.422 ms  
Remote clock offset: -0.059 ms

# Below is generated by plot.py at 2018-09-07 20:28:25  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 496.55 Mbit/s  
95th percentile per-packet one-way delay: 231.863 ms  
Loss rate: 2.56%  
-- Flow 1:  
Average throughput: 496.55 Mbit/s  
95th percentile per-packet one-way delay: 231.863 ms  
Loss rate: 2.56%

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

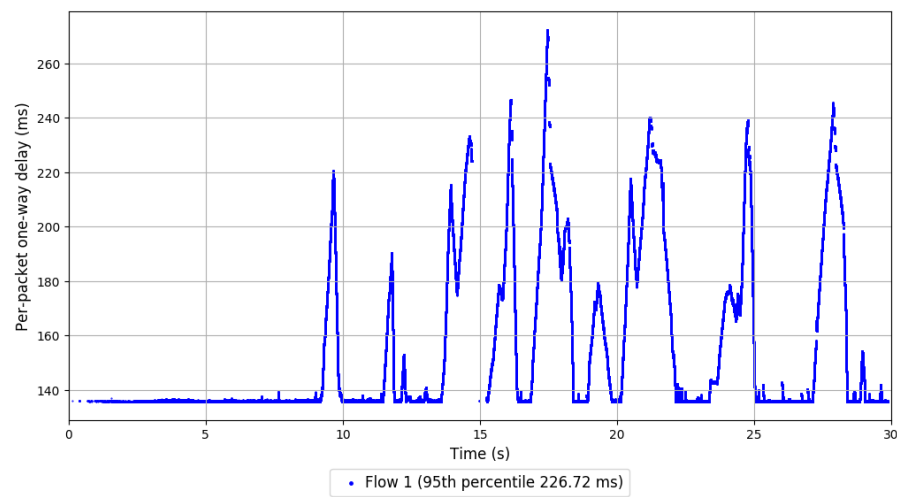
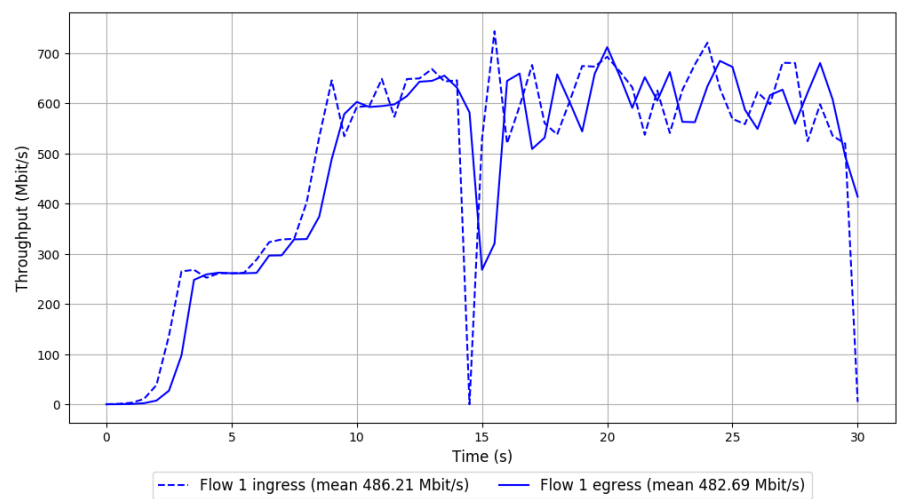


Run 4: Statistics of TCP BBR

Start at: 2018-09-07 19:32:58  
End at: 2018-09-07 19:33:28  
Local clock offset: -0.237 ms  
Remote clock offset: -0.081 ms

# Below is generated by plot.py at 2018-09-07 20:28:25  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 482.69 Mbit/s  
95th percentile per-packet one-way delay: 226.721 ms  
Loss rate: 1.63%  
-- Flow 1:  
Average throughput: 482.69 Mbit/s  
95th percentile per-packet one-way delay: 226.721 ms  
Loss rate: 1.63%

Run 4: Report of TCP BBR — Data Link



Run 5: Statistics of TCP BBR

Start at: 2018-09-07 20:00:02

End at: 2018-09-07 20:00:32

Local clock offset: -0.031 ms

Remote clock offset: -0.08 ms

# Below is generated by plot.py at 2018-09-07 20:28:25

# Datalink statistics

-- Total of 1 flow:

Average throughput: 492.65 Mbit/s

95th percentile per-packet one-way delay: 160.747 ms

Loss rate: 1.32%

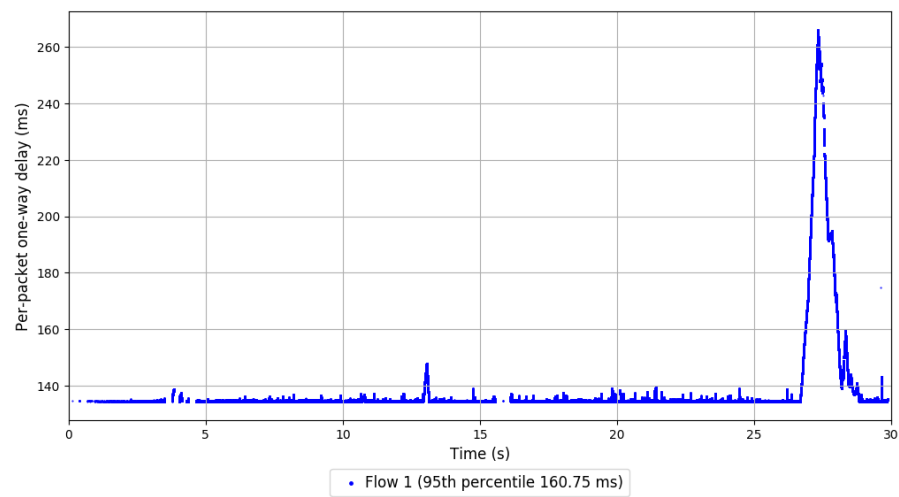
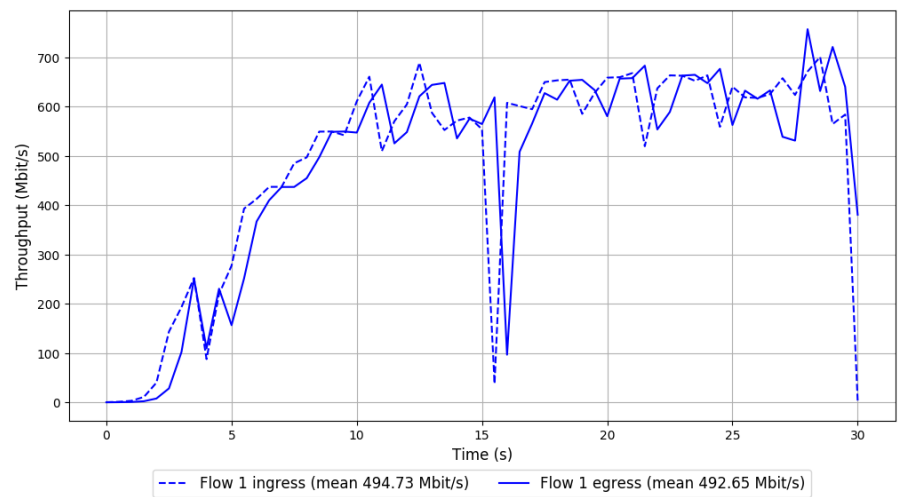
-- Flow 1:

Average throughput: 492.65 Mbit/s

95th percentile per-packet one-way delay: 160.747 ms

Loss rate: 1.32%

Run 5: Report of TCP BBR — Data Link

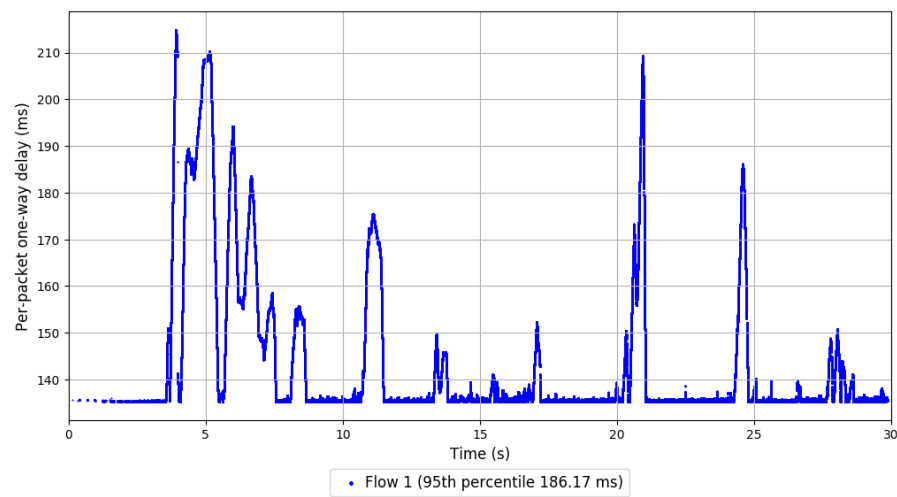
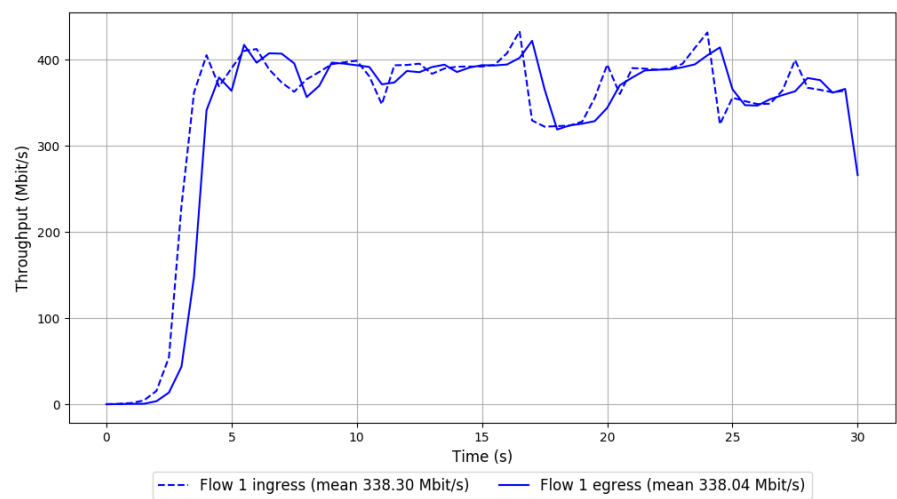


Run 1: Statistics of Copa

Start at: 2018-09-07 17:59:50  
End at: 2018-09-07 18:00:20  
Local clock offset: -6.029 ms  
Remote clock offset: -0.147 ms

# Below is generated by plot.py at 2018-09-07 20:30:06  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 338.04 Mbit/s  
95th percentile per-packet one-way delay: 186.168 ms  
Loss rate: 0.98%  
-- Flow 1:  
Average throughput: 338.04 Mbit/s  
95th percentile per-packet one-way delay: 186.168 ms  
Loss rate: 0.98%

Run 1: Report of Copa — Data Link



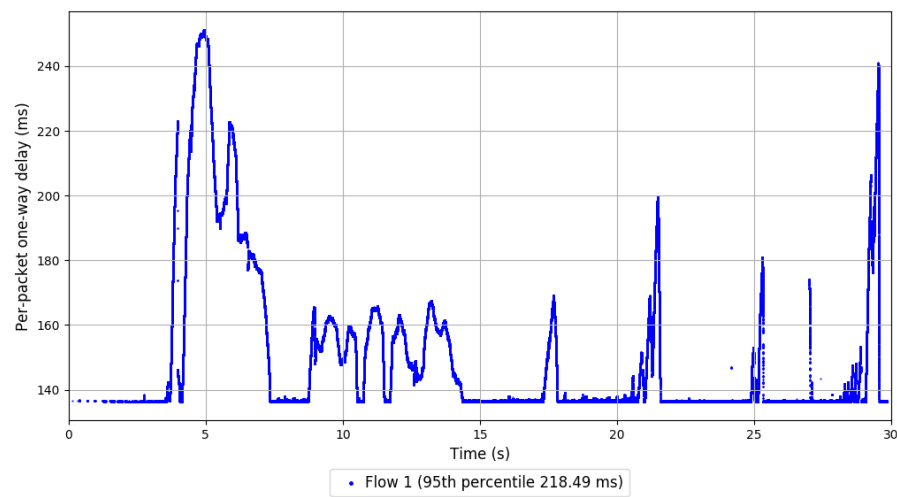
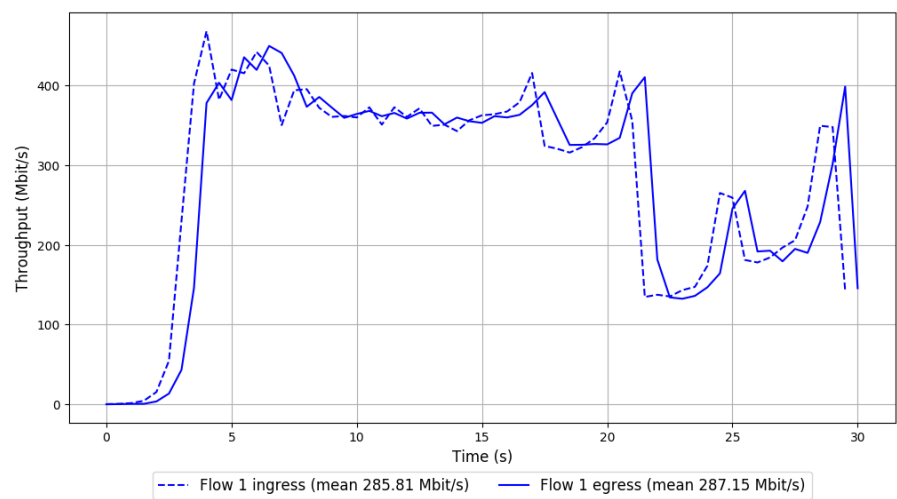


Run 2: Statistics of Copa

Start at: 2018-09-07 18:26:27  
End at: 2018-09-07 18:26:57  
Local clock offset: -1.708 ms  
Remote clock offset: -0.413 ms

# Below is generated by plot.py at 2018-09-07 20:30:06  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 287.15 Mbit/s  
95th percentile per-packet one-way delay: 218.485 ms  
Loss rate: 0.44%  
-- Flow 1:  
Average throughput: 287.15 Mbit/s  
95th percentile per-packet one-way delay: 218.485 ms  
Loss rate: 0.44%

Run 2: Report of Copa — Data Link



Run 3: Statistics of Copa

Start at: 2018-09-07 18:53:09

End at: 2018-09-07 18:53:39

Local clock offset: -0.783 ms

Remote clock offset: -0.43 ms

# Below is generated by plot.py at 2018-09-07 20:30:06

# Datalink statistics

-- Total of 1 flow:

Average throughput: 323.93 Mbit/s

95th percentile per-packet one-way delay: 224.457 ms

Loss rate: 1.12%

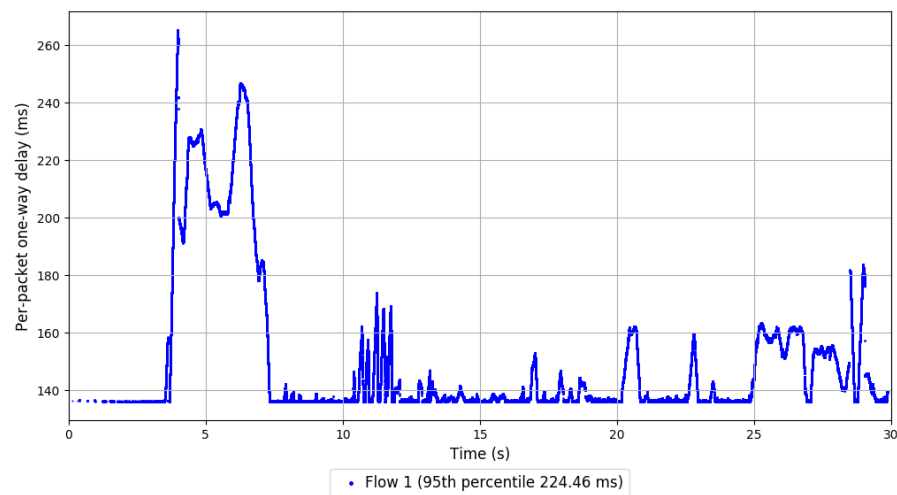
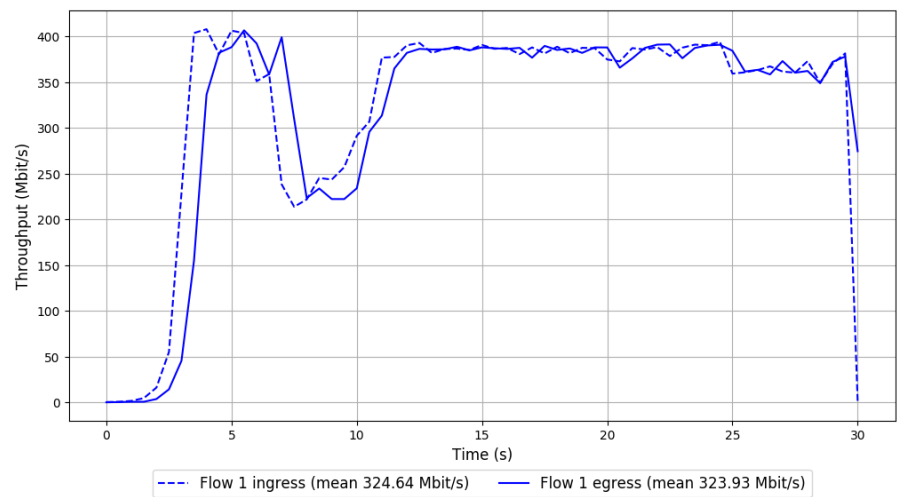
-- Flow 1:

Average throughput: 323.93 Mbit/s

95th percentile per-packet one-way delay: 224.457 ms

Loss rate: 1.12%

Run 3: Report of Copa — Data Link

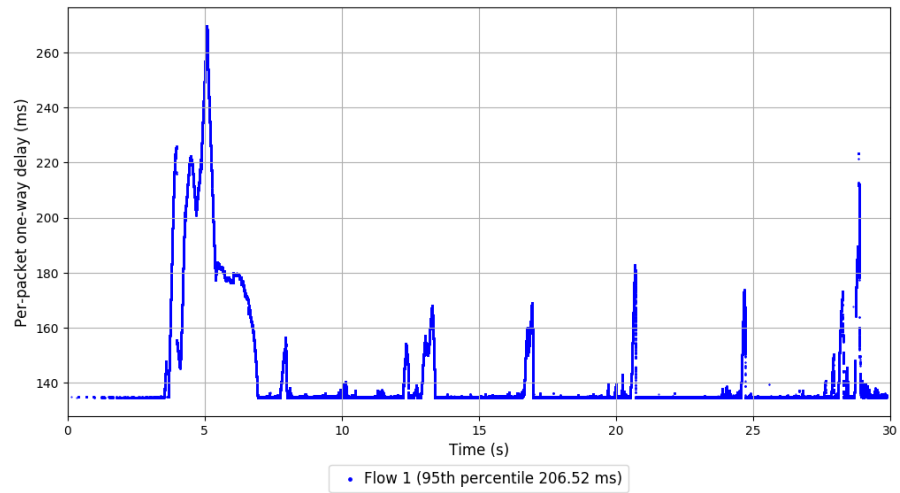
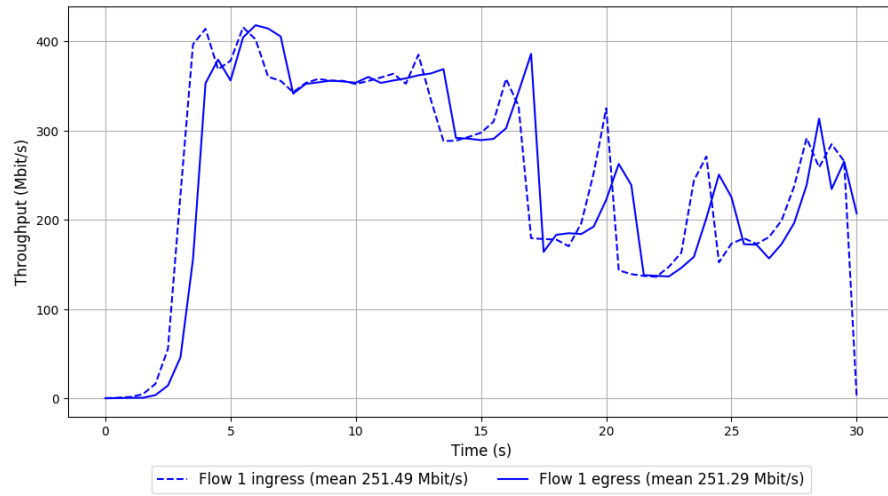


Run 4: Statistics of Copa

Start at: 2018-09-07 19:20:29  
End at: 2018-09-07 19:20:59  
Local clock offset: -0.444 ms  
Remote clock offset: -0.033 ms

# Below is generated by plot.py at 2018-09-07 20:34:59  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 251.29 Mbit/s  
95th percentile per-packet one-way delay: 206.522 ms  
Loss rate: 0.98%  
-- Flow 1:  
Average throughput: 251.29 Mbit/s  
95th percentile per-packet one-way delay: 206.522 ms  
Loss rate: 0.98%

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

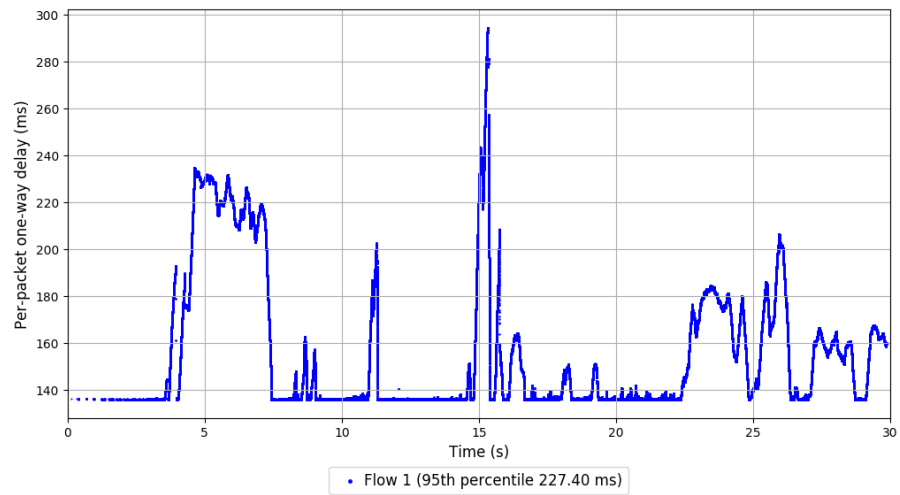
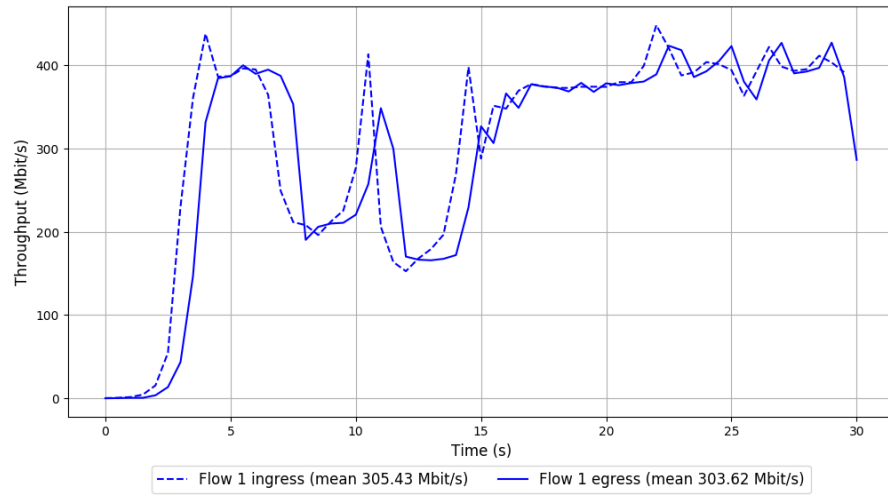


Run 5: Statistics of Copa

Start at: 2018-09-07 19:46:52  
End at: 2018-09-07 19:47:22  
Local clock offset: -0.401 ms  
Remote clock offset: -0.106 ms

# Below is generated by plot.py at 2018-09-07 20:36:25  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 303.62 Mbit/s  
95th percentile per-packet one-way delay: 227.403 ms  
Loss rate: 1.49%  
-- Flow 1:  
Average throughput: 303.62 Mbit/s  
95th percentile per-packet one-way delay: 227.403 ms  
Loss rate: 1.49%

## Run 5: Report of Copa — Data Link



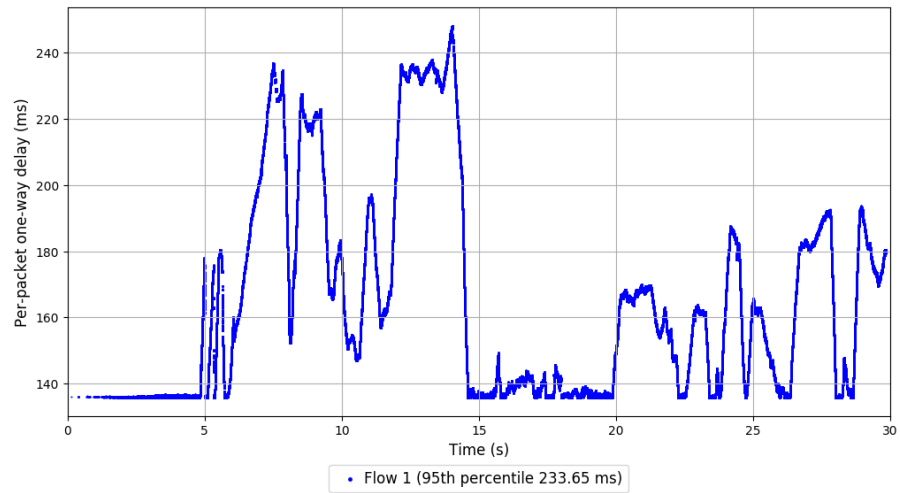
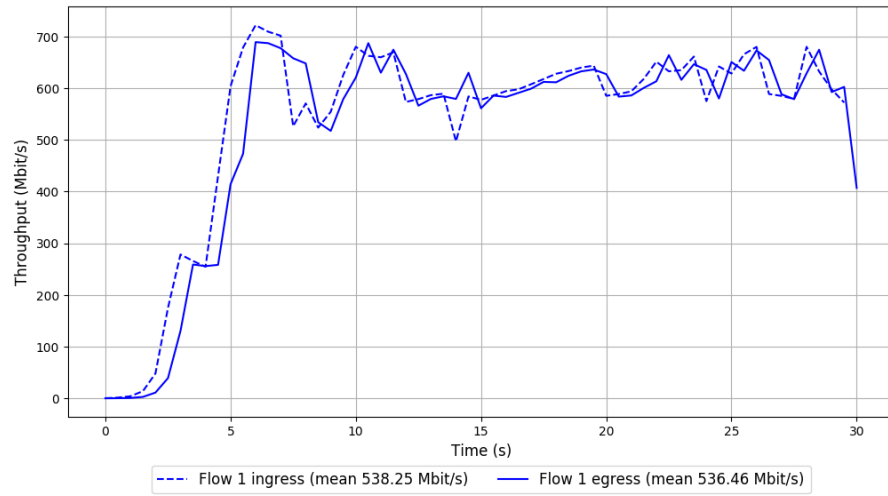


Run 1: Statistics of TCP Cubic

Start at: 2018-09-07 18:17:22  
End at: 2018-09-07 18:17:52  
Local clock offset: -2.36 ms  
Remote clock offset: -0.462 ms

# Below is generated by plot.py at 2018-09-07 20:36:25  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 536.46 Mbit/s  
95th percentile per-packet one-way delay: 233.645 ms  
Loss rate: 1.24%  
-- Flow 1:  
Average throughput: 536.46 Mbit/s  
95th percentile per-packet one-way delay: 233.645 ms  
Loss rate: 1.24%

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

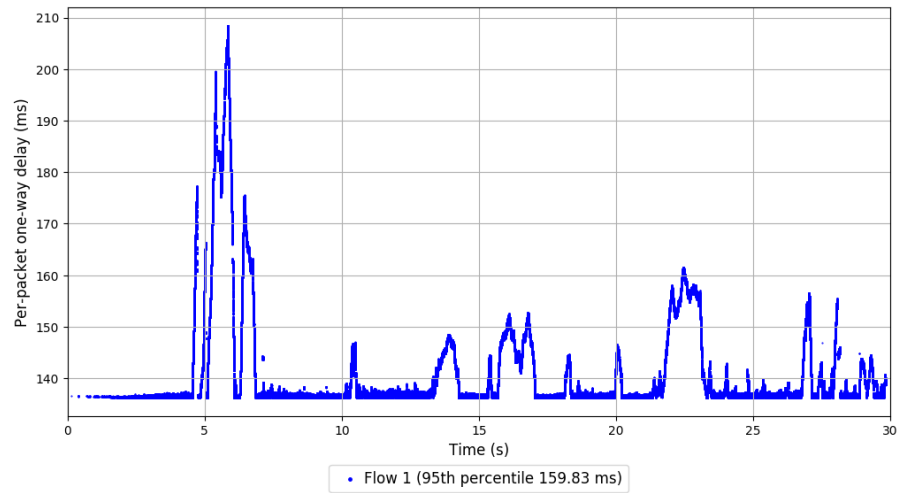
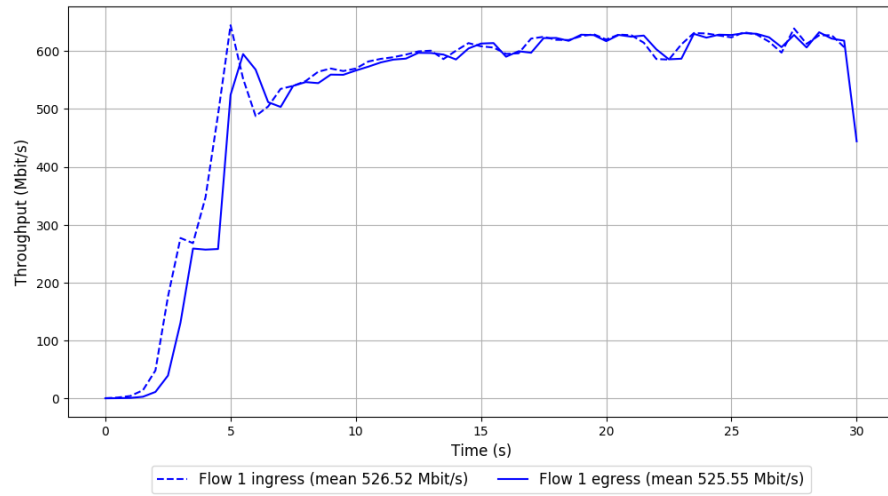


Run 2: Statistics of TCP Cubic

Start at: 2018-09-07 18:44:05  
End at: 2018-09-07 18:44:35  
Local clock offset: -1.241 ms  
Remote clock offset: -0.392 ms

# Below is generated by plot.py at 2018-09-07 20:36:25  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 525.55 Mbit/s  
95th percentile per-packet one-way delay: 159.831 ms  
Loss rate: 1.09%  
-- Flow 1:  
Average throughput: 525.55 Mbit/s  
95th percentile per-packet one-way delay: 159.831 ms  
Loss rate: 1.09%

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



Run 3: Statistics of TCP Cubic

Start at: 2018-09-07 19:11:06

End at: 2018-09-07 19:11:36

Local clock offset: -0.727 ms

Remote clock offset: 0.299 ms

# Below is generated by plot.py at 2018-09-07 20:36:25

# Datalink statistics

-- Total of 1 flow:

Average throughput: 551.75 Mbit/s

95th percentile per-packet one-way delay: 227.329 ms

Loss rate: 1.04%

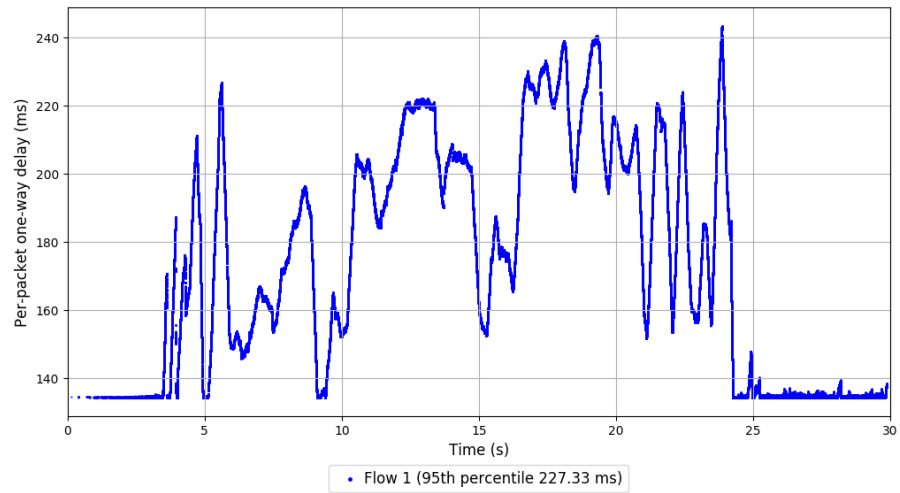
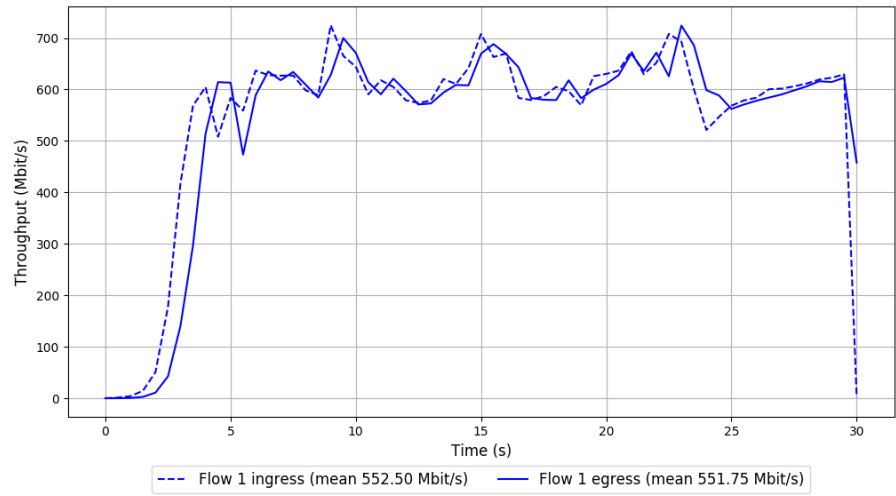
-- Flow 1:

Average throughput: 551.75 Mbit/s

95th percentile per-packet one-way delay: 227.329 ms

Loss rate: 1.04%

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



Run 4: Statistics of TCP Cubic

Start at: 2018-09-07 19:37:47

End at: 2018-09-07 19:38:17

Local clock offset: -0.268 ms

Remote clock offset: -0.12 ms

# Below is generated by plot.py at 2018-09-07 20:36:25

# Datalink statistics

-- Total of 1 flow:

Average throughput: 476.58 Mbit/s

95th percentile per-packet one-way delay: 168.553 ms

Loss rate: 1.20%

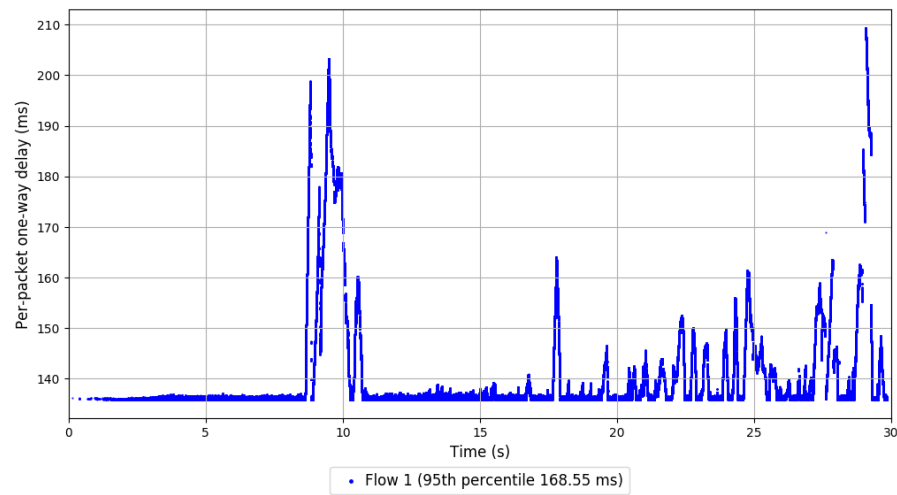
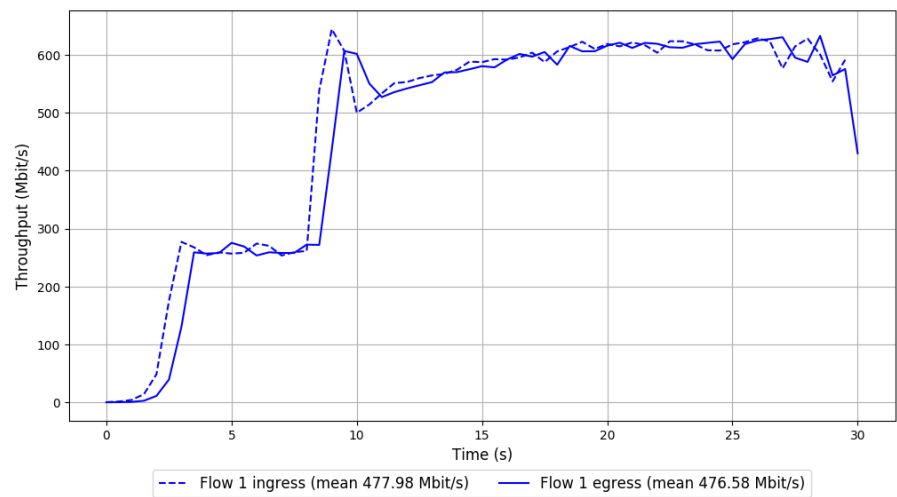
-- Flow 1:

Average throughput: 476.58 Mbit/s

95th percentile per-packet one-way delay: 168.553 ms

Loss rate: 1.20%

Run 4: Report of TCP Cubic — Data Link



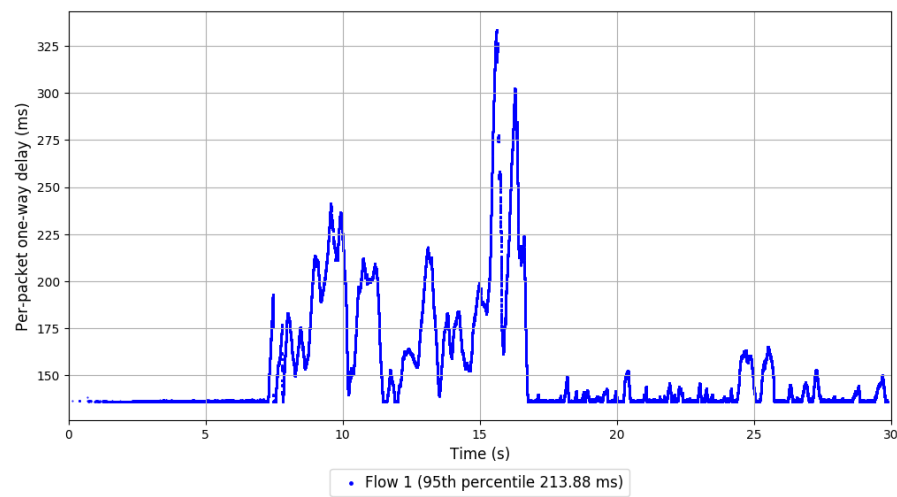
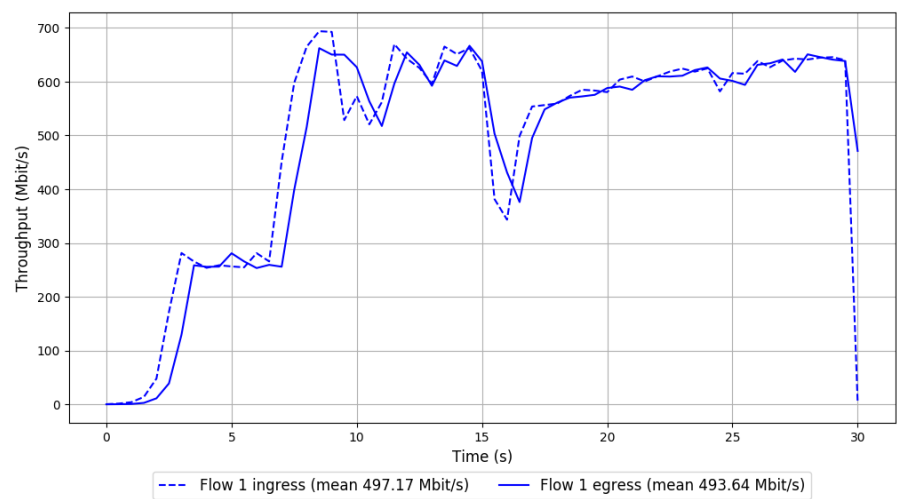


Run 5: Statistics of TCP Cubic

Start at: 2018-09-07 20:04:50  
End at: 2018-09-07 20:05:20  
Local clock offset: -0.064 ms  
Remote clock offset: -0.013 ms

# Below is generated by plot.py at 2018-09-07 20:37:23  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 493.64 Mbit/s  
95th percentile per-packet one-way delay: 213.875 ms  
Loss rate: 1.61%  
-- Flow 1:  
Average throughput: 493.64 Mbit/s  
95th percentile per-packet one-way delay: 213.875 ms  
Loss rate: 1.61%

Run 5: Report of TCP Cubic — Data Link

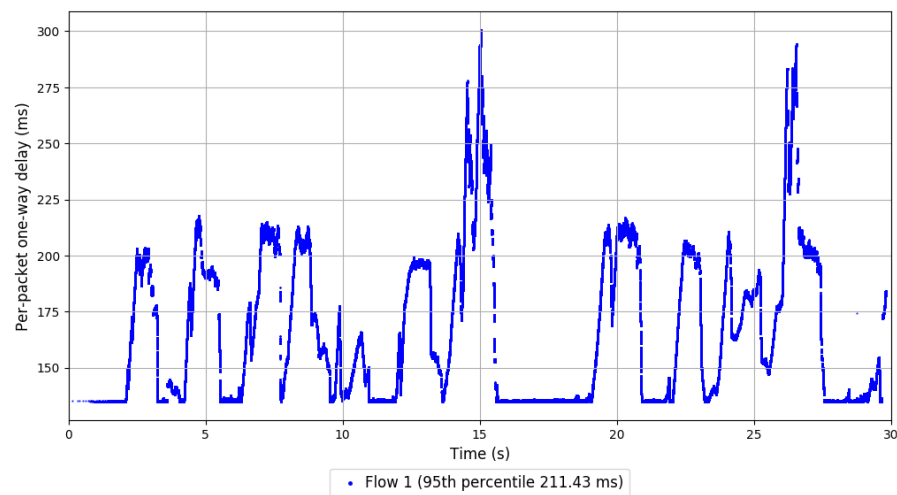
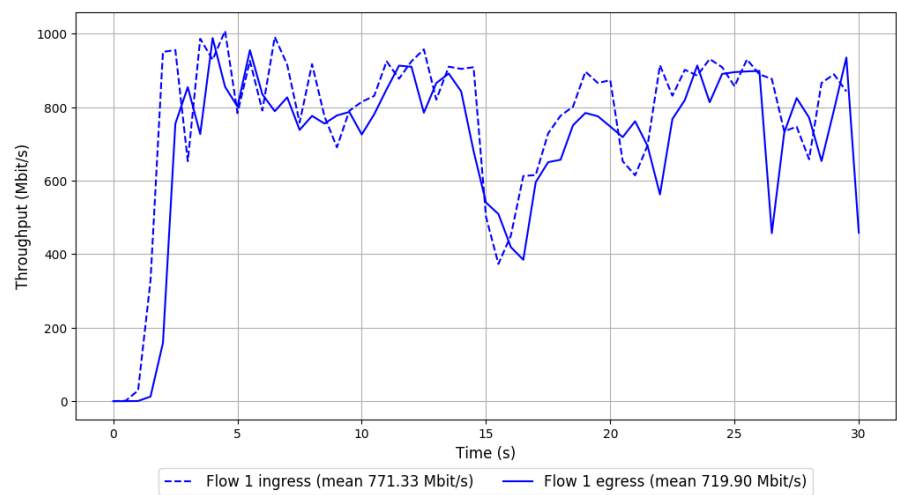


Run 1: Statistics of FillP

Start at: 2018-09-07 18:03:10  
End at: 2018-09-07 18:03:40  
Local clock offset: -6.578 ms  
Remote clock offset: -0.166 ms

# Below is generated by plot.py at 2018-09-07 20:42:38  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 719.90 Mbit/s  
95th percentile per-packet one-way delay: 211.434 ms  
Loss rate: 7.51%  
-- Flow 1:  
Average throughput: 719.90 Mbit/s  
95th percentile per-packet one-way delay: 211.434 ms  
Loss rate: 7.51%

Run 1: Report of FillP — Data Link

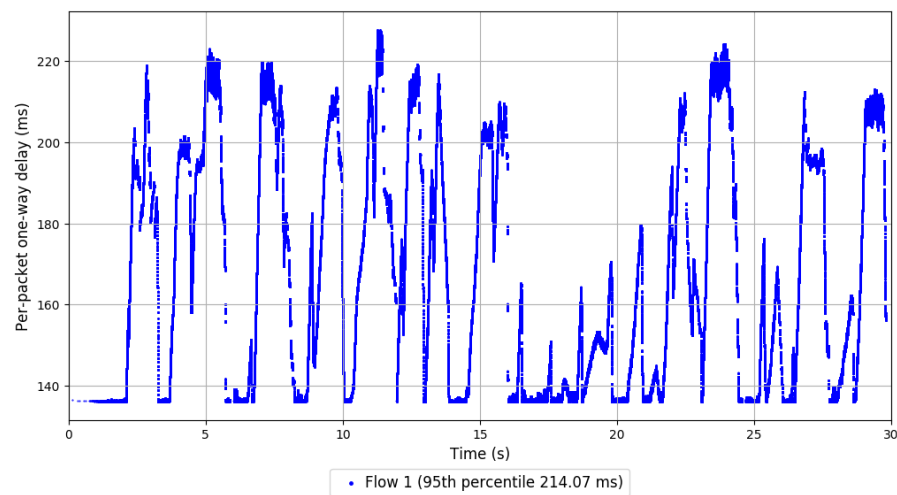
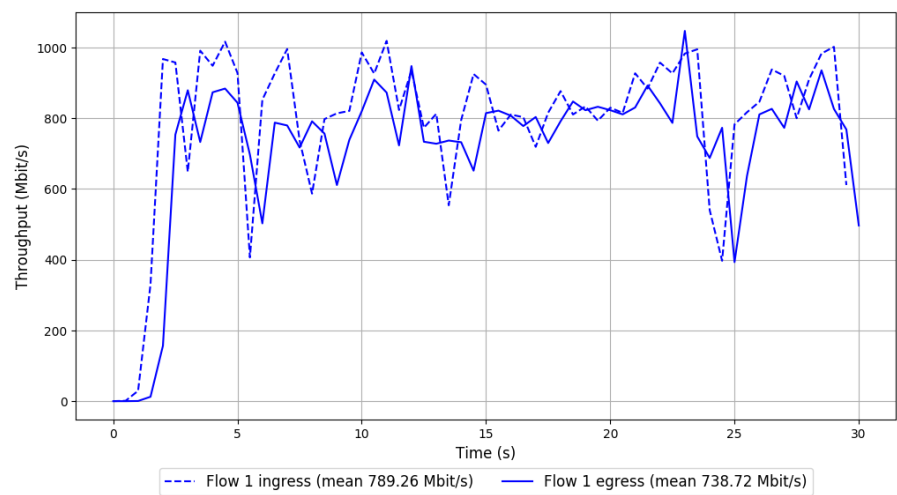


Run 2: Statistics of FillP

Start at: 2018-09-07 18:29:43  
End at: 2018-09-07 18:30:13  
Local clock offset: -1.424 ms  
Remote clock offset: -0.064 ms

# Below is generated by plot.py at 2018-09-07 20:48:52  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 738.72 Mbit/s  
95th percentile per-packet one-way delay: 214.070 ms  
Loss rate: 7.26%  
-- Flow 1:  
Average throughput: 738.72 Mbit/s  
95th percentile per-packet one-way delay: 214.070 ms  
Loss rate: 7.26%

Run 2: Report of FillP — Data Link



Run 3: Statistics of FillP

Start at: 2018-09-07 18:56:29

End at: 2018-09-07 18:56:59

Local clock offset: -0.462 ms

Remote clock offset: 0.296 ms

# Below is generated by plot.py at 2018-09-07 20:49:20

# Datalink statistics

-- Total of 1 flow:

Average throughput: 740.08 Mbit/s

95th percentile per-packet one-way delay: 209.674 ms

Loss rate: 5.70%

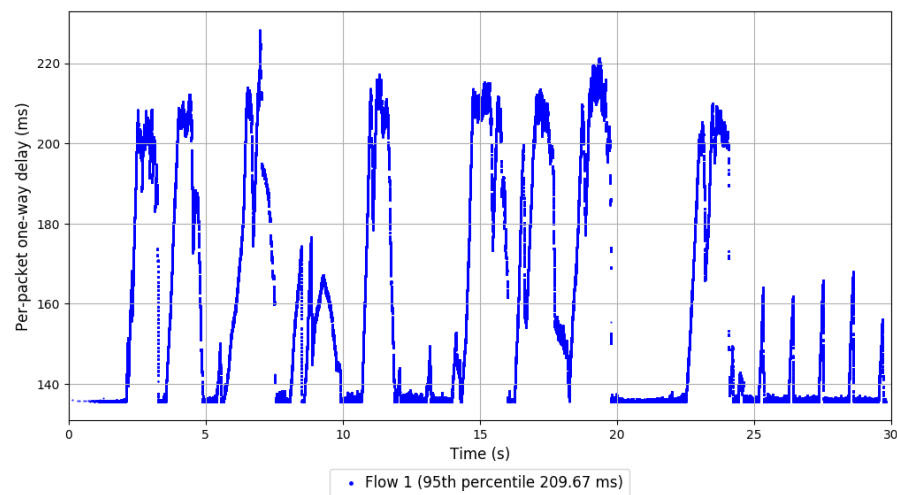
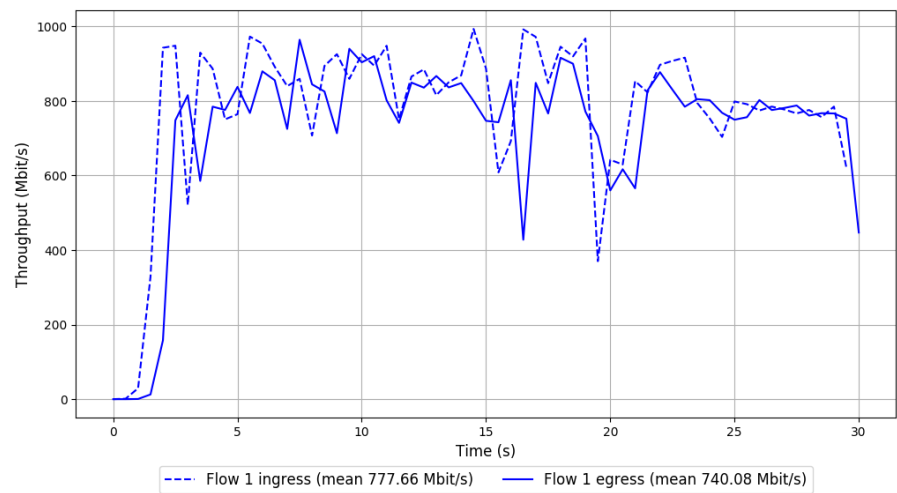
-- Flow 1:

Average throughput: 740.08 Mbit/s

95th percentile per-packet one-way delay: 209.674 ms

Loss rate: 5.70%

Run 3: Report of FillP — Data Link



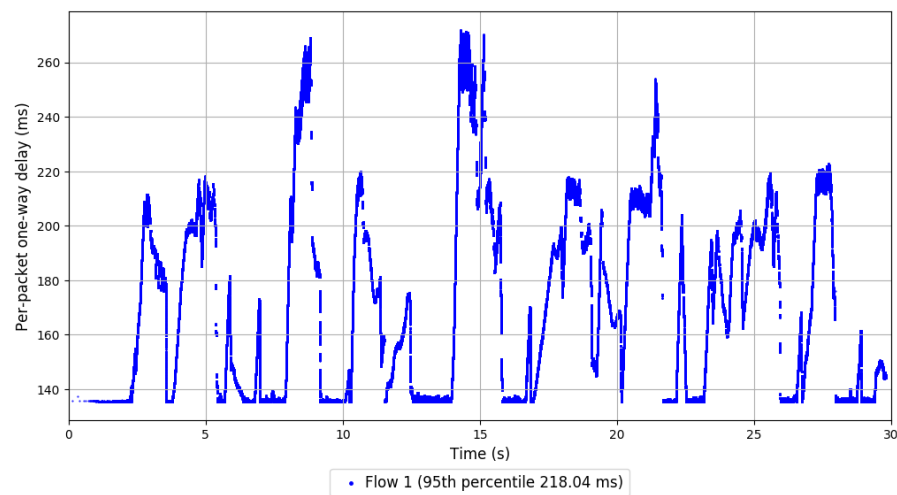
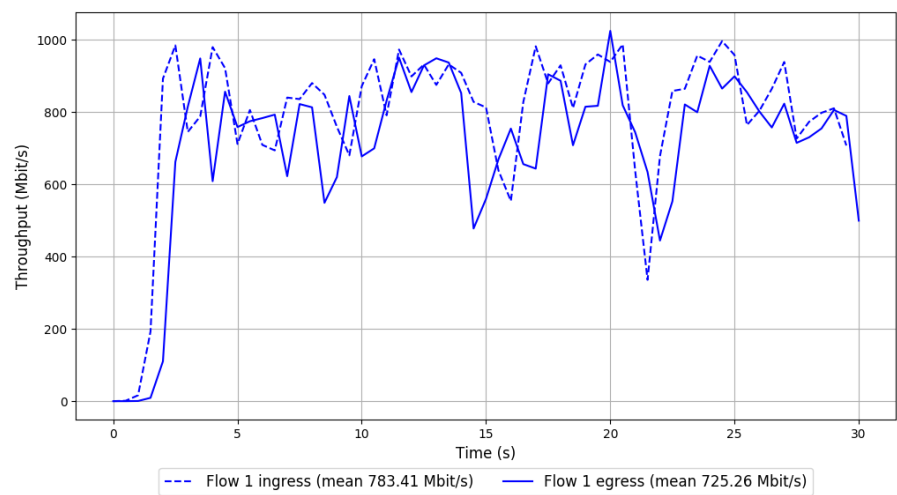


Run 4: Statistics of FillP

Start at: 2018-09-07 19:23:41  
End at: 2018-09-07 19:24:11  
Local clock offset: -0.252 ms  
Remote clock offset: -0.078 ms

# Below is generated by plot.py at 2018-09-07 20:49:20  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 725.26 Mbit/s  
95th percentile per-packet one-way delay: 218.040 ms  
Loss rate: 8.26%  
-- Flow 1:  
Average throughput: 725.26 Mbit/s  
95th percentile per-packet one-way delay: 218.040 ms  
Loss rate: 8.26%

Run 4: Report of FillP — Data Link



Run 5: Statistics of FillP

Start at: 2018-09-07 19:50:11

End at: 2018-09-07 19:50:41

Local clock offset: 0.038 ms

Remote clock offset: -0.12 ms

# Below is generated by plot.py at 2018-09-07 20:49:36

# Datalink statistics

-- Total of 1 flow:

Average throughput: 752.92 Mbit/s

95th percentile per-packet one-way delay: 216.113 ms

Loss rate: 5.74%

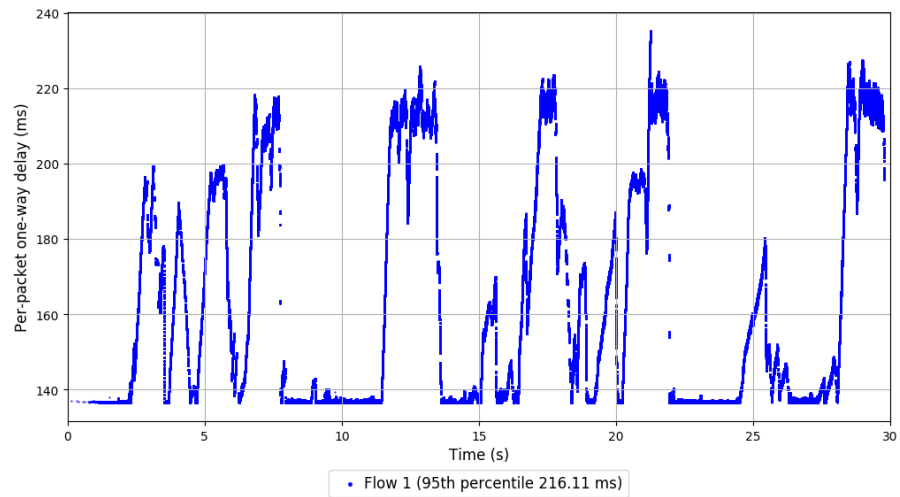
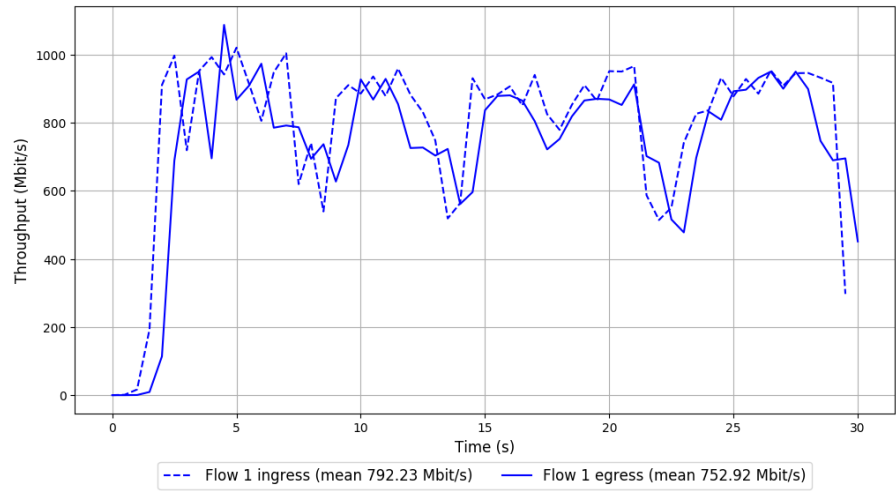
-- Flow 1:

Average throughput: 752.92 Mbit/s

95th percentile per-packet one-way delay: 216.113 ms

Loss rate: 5.74%

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



Run 1: Statistics of FillP-Sheep

Start at: 2018-09-07 17:58:04

End at: 2018-09-07 17:58:34

Local clock offset: -5.965 ms

Remote clock offset: 0.196 ms

# Below is generated by plot.py at 2018-09-07 20:50:10

# Datalink statistics

-- Total of 1 flow:

Average throughput: 759.06 Mbit/s

95th percentile per-packet one-way delay: 212.685 ms

Loss rate: 8.01%

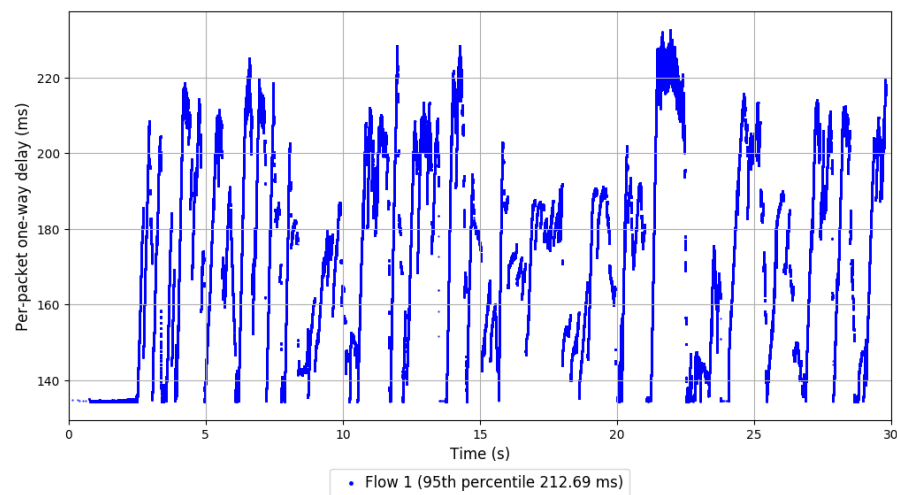
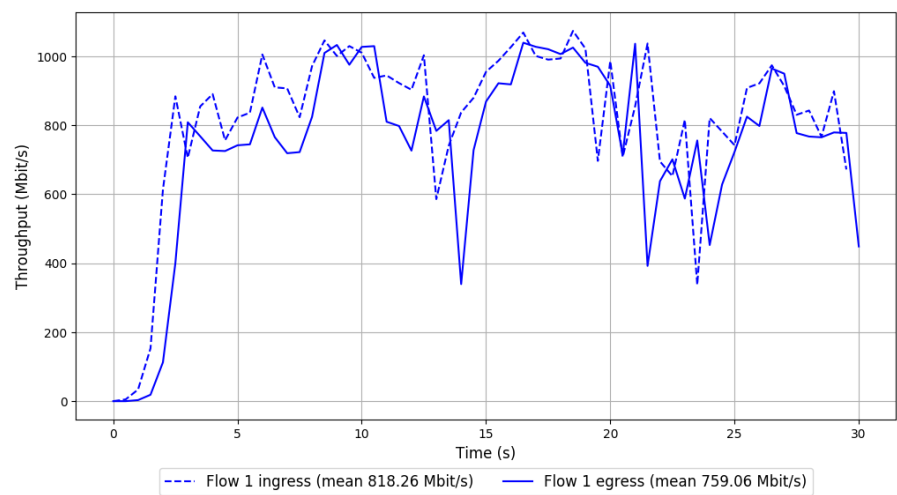
-- Flow 1:

Average throughput: 759.06 Mbit/s

95th percentile per-packet one-way delay: 212.685 ms

Loss rate: 8.01%

Run 1: Report of FillP-Sheep — Data Link

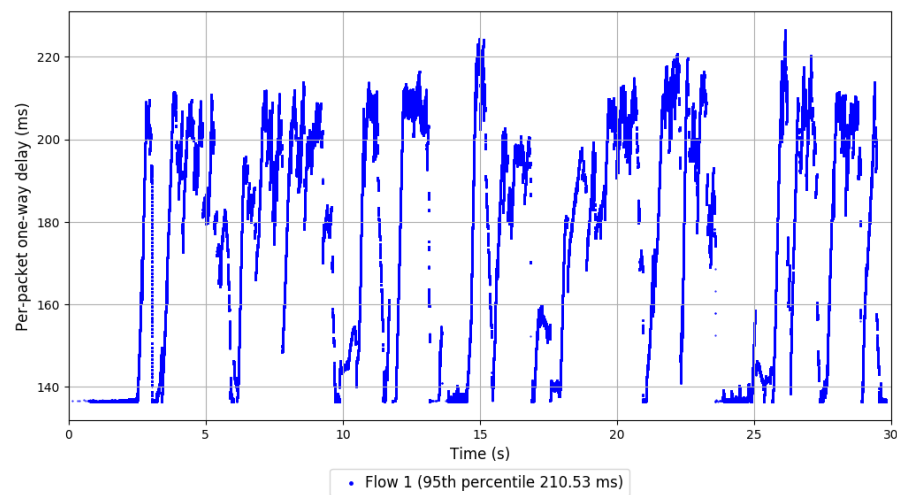
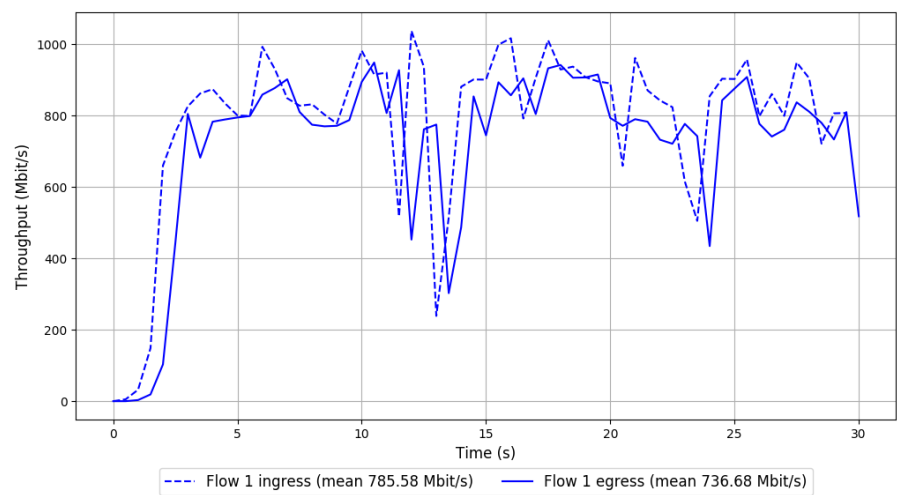


Run 2: Statistics of FillP-Sheep

Start at: 2018-09-07 18:24:43  
End at: 2018-09-07 18:25:13  
Local clock offset: -1.607 ms  
Remote clock offset: -0.063 ms

# Below is generated by plot.py at 2018-09-07 20:50:10  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 736.68 Mbit/s  
95th percentile per-packet one-way delay: 210.531 ms  
Loss rate: 7.08%  
-- Flow 1:  
Average throughput: 736.68 Mbit/s  
95th percentile per-packet one-way delay: 210.531 ms  
Loss rate: 7.08%

Run 2: Report of FillP-Sheep — Data Link





Run 3: Statistics of FillP-Sheep

Start at: 2018-09-07 18:51:26

End at: 2018-09-07 18:51:56

Local clock offset: -0.885 ms

Remote clock offset: 0.278 ms

# Below is generated by plot.py at 2018-09-07 20:50:37

# Datalink statistics

-- Total of 1 flow:

Average throughput: 698.15 Mbit/s

95th percentile per-packet one-way delay: 224.224 ms

Loss rate: 9.09%

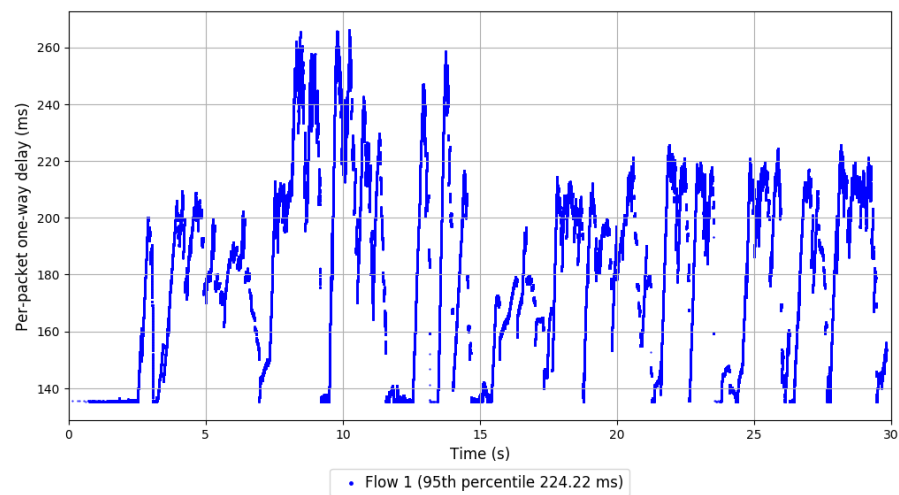
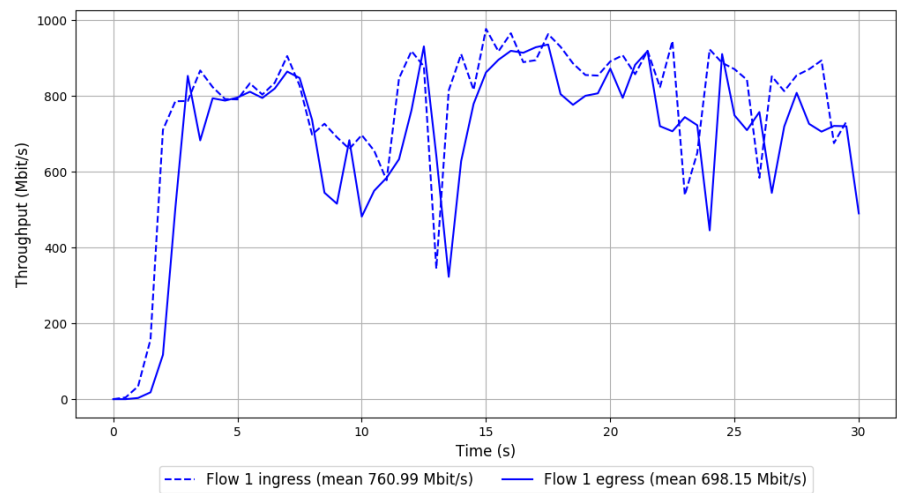
-- Flow 1:

Average throughput: 698.15 Mbit/s

95th percentile per-packet one-way delay: 224.224 ms

Loss rate: 9.09%

Run 3: Report of FillP-Sheep — Data Link

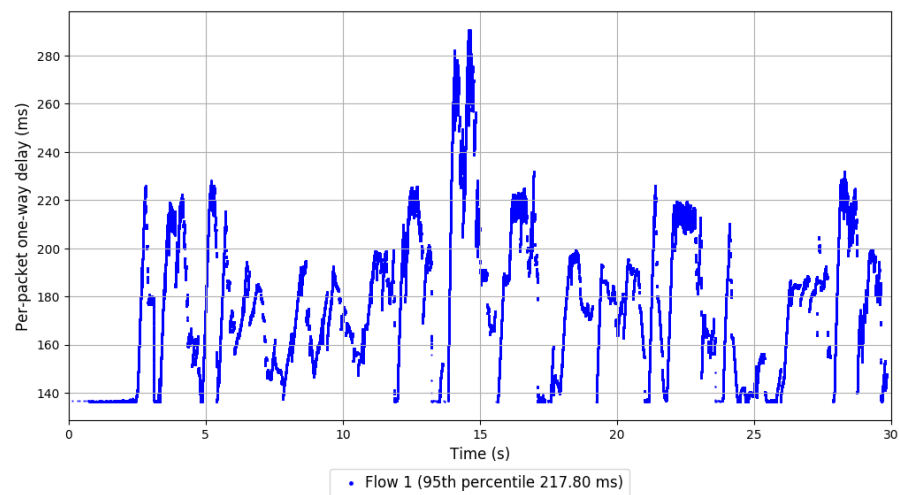
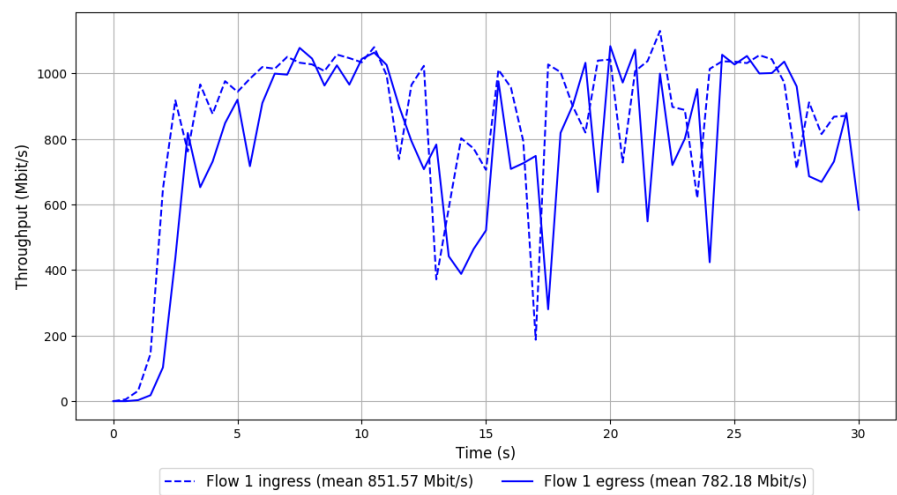


Run 4: Statistics of FillP-Sheep

Start at: 2018-09-07 19:18:41  
End at: 2018-09-07 19:19:11  
Local clock offset: -0.326 ms  
Remote clock offset: -0.471 ms

# Below is generated by plot.py at 2018-09-07 20:59:26  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 782.18 Mbit/s  
95th percentile per-packet one-way delay: 217.798 ms  
Loss rate: 8.98%  
-- Flow 1:  
Average throughput: 782.18 Mbit/s  
95th percentile per-packet one-way delay: 217.798 ms  
Loss rate: 8.98%

Run 4: Report of FillP-Sheep — Data Link

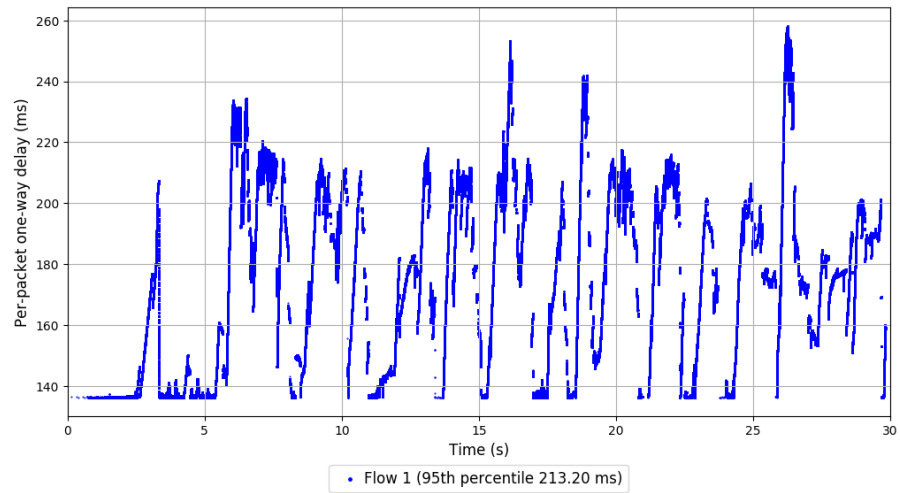
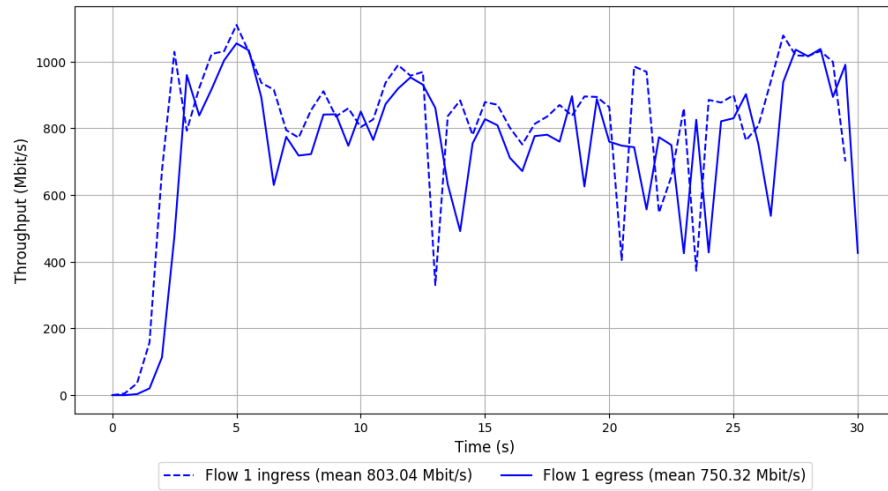


Run 5: Statistics of FillP-Sheep

Start at: 2018-09-07 19:45:07  
End at: 2018-09-07 19:45:37  
Local clock offset: -0.365 ms  
Remote clock offset: -0.115 ms

# Below is generated by plot.py at 2018-09-07 21:02:06  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 750.32 Mbit/s  
95th percentile per-packet one-way delay: 213.199 ms  
Loss rate: 7.42%  
-- Flow 1:  
Average throughput: 750.32 Mbit/s  
95th percentile per-packet one-way delay: 213.199 ms  
Loss rate: 7.42%

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

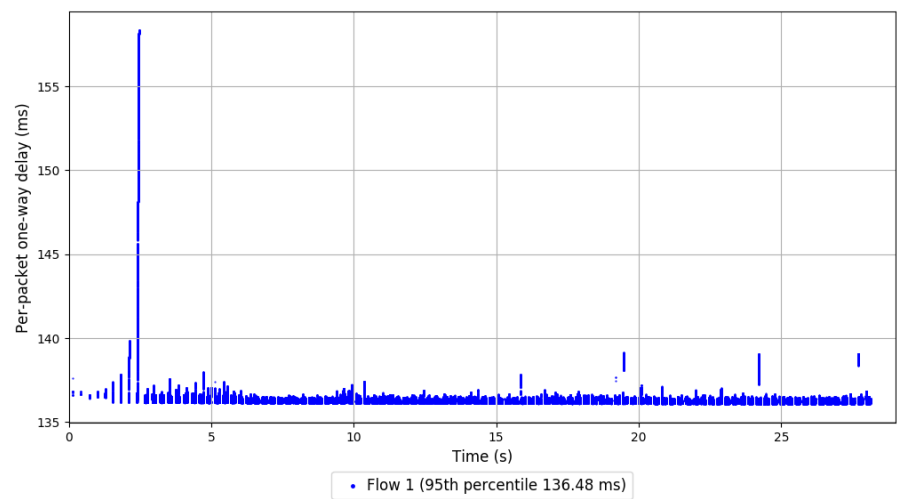
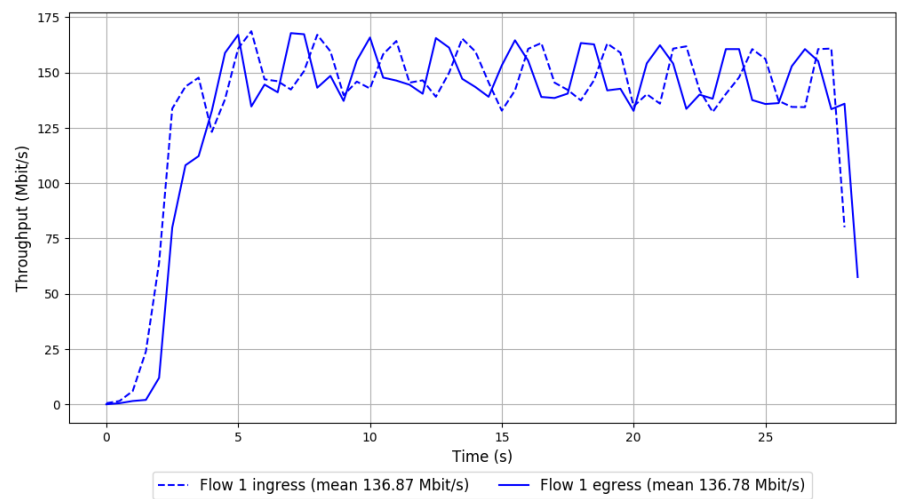


Run 1: Statistics of Indigo

Start at: 2018-09-07 18:15:59  
End at: 2018-09-07 18:16:29  
Local clock offset: -2.642 ms  
Remote clock offset: -0.103 ms

# Below is generated by plot.py at 2018-09-07 21:02:06  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 136.78 Mbit/s  
95th percentile per-packet one-way delay: 136.479 ms  
Loss rate: 1.03%  
-- Flow 1:  
Average throughput: 136.78 Mbit/s  
95th percentile per-packet one-way delay: 136.479 ms  
Loss rate: 1.03%

Run 1: Report of Indigo — Data Link



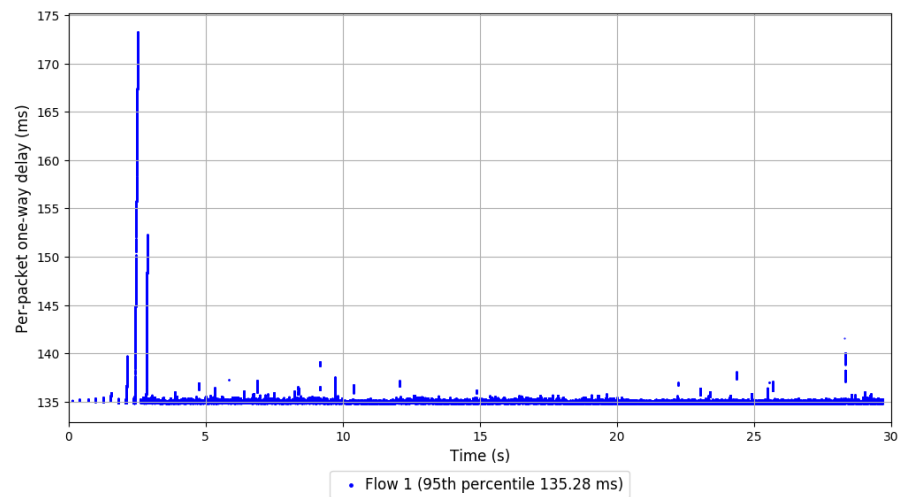
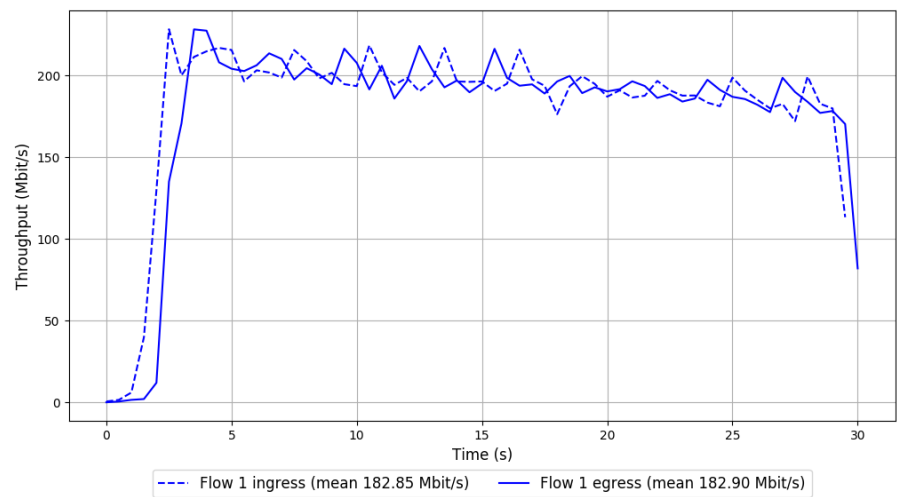


Run 2: Statistics of Indigo

Start at: 2018-09-07 18:42:35  
End at: 2018-09-07 18:43:05  
Local clock offset: -1.124 ms  
Remote clock offset: -0.043 ms

# Below is generated by plot.py at 2018-09-07 21:02:06  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 182.90 Mbit/s  
95th percentile per-packet one-way delay: 135.284 ms  
Loss rate: 0.89%  
-- Flow 1:  
Average throughput: 182.90 Mbit/s  
95th percentile per-packet one-way delay: 135.284 ms  
Loss rate: 0.89%

Run 2: Report of Indigo — Data Link

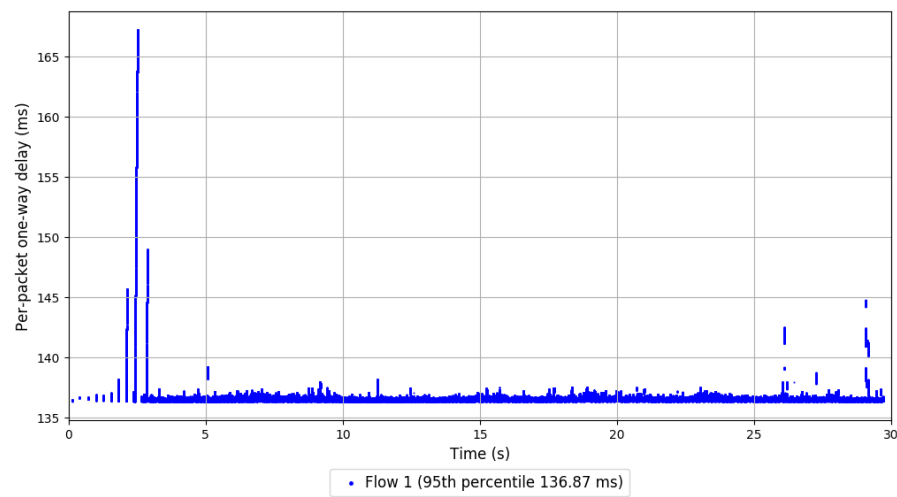
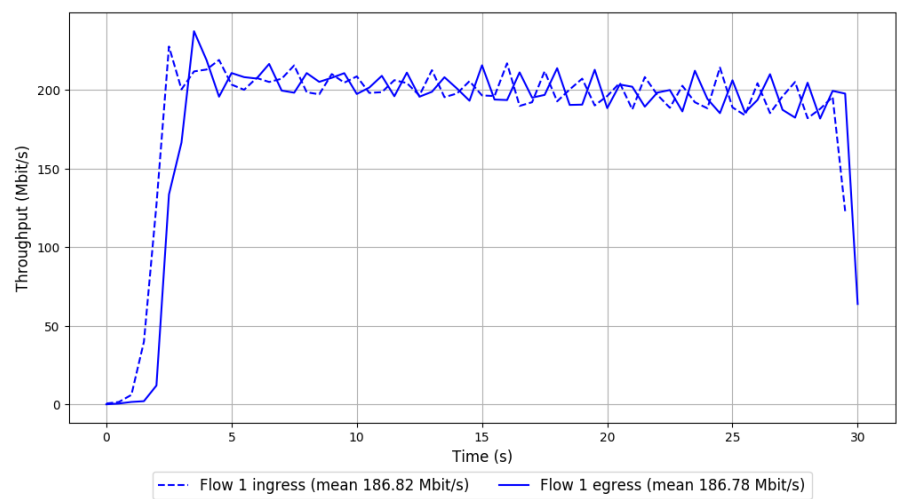


Run 3: Statistics of Indigo

Start at: 2018-09-07 19:09:37  
End at: 2018-09-07 19:10:07  
Local clock offset: -0.641 ms  
Remote clock offset: -0.056 ms

# Below is generated by plot.py at 2018-09-07 21:02:06  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 186.78 Mbit/s  
95th percentile per-packet one-way delay: 136.870 ms  
Loss rate: 0.93%  
-- Flow 1:  
Average throughput: 186.78 Mbit/s  
95th percentile per-packet one-way delay: 136.870 ms  
Loss rate: 0.93%

Run 3: Report of Indigo — Data Link



Run 4: Statistics of Indigo

Start at: 2018-09-07 19:36:18

End at: 2018-09-07 19:36:48

Local clock offset: -0.346 ms

Remote clock offset: 0.267 ms

# Below is generated by plot.py at 2018-09-07 21:02:06

# Datalink statistics

-- Total of 1 flow:

Average throughput: 182.37 Mbit/s

95th percentile per-packet one-way delay: 135.341 ms

Loss rate: 0.94%

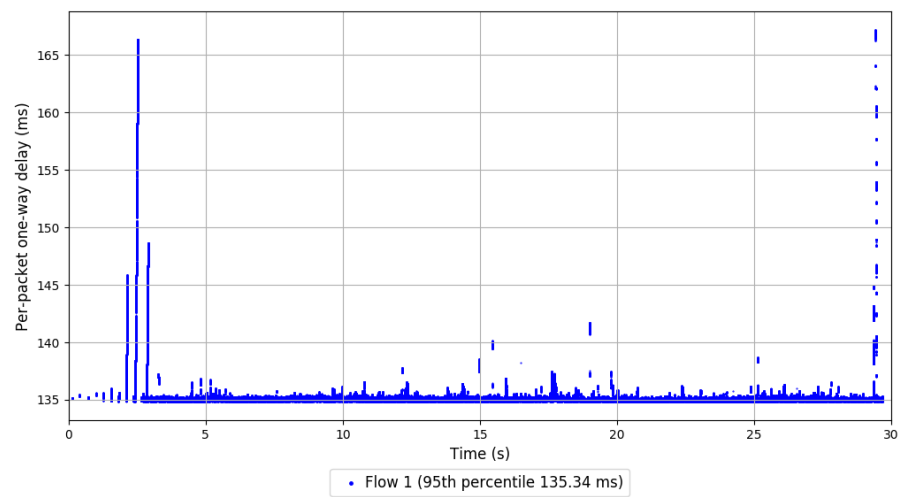
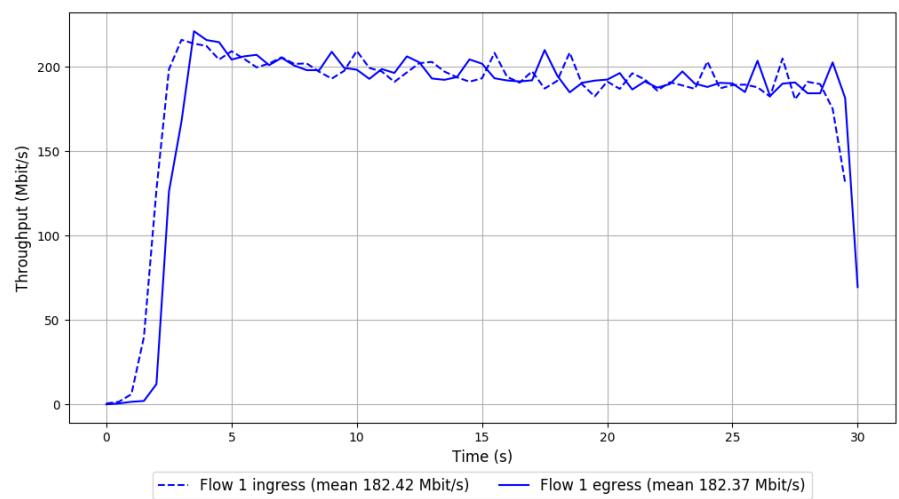
-- Flow 1:

Average throughput: 182.37 Mbit/s

95th percentile per-packet one-way delay: 135.341 ms

Loss rate: 0.94%

Run 4: Report of Indigo — Data Link



Run 5: Statistics of Indigo

Start at: 2018-09-07 20:03:21

End at: 2018-09-07 20:03:51

Local clock offset: 0.137 ms

Remote clock offset: -0.06 ms

# Below is generated by plot.py at 2018-09-07 21:02:06

# Datalink statistics

-- Total of 1 flow:

Average throughput: 185.29 Mbit/s

95th percentile per-packet one-way delay: 136.906 ms

Loss rate: 0.94%

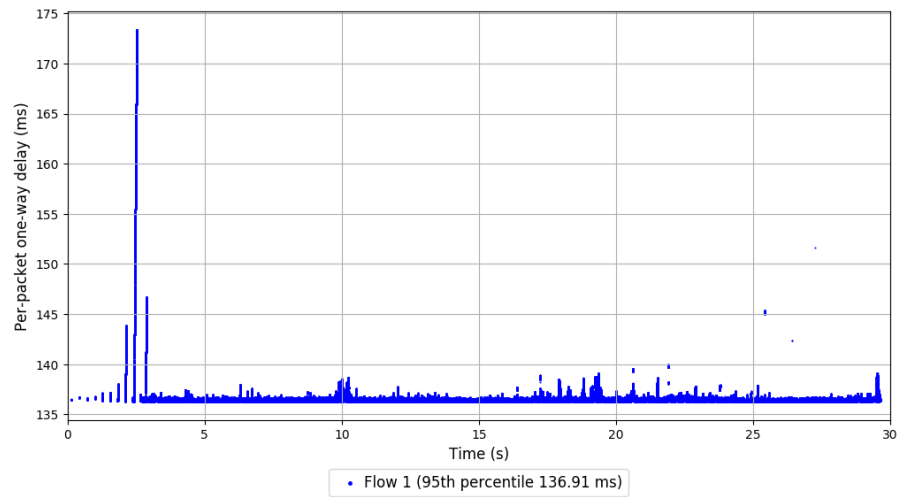
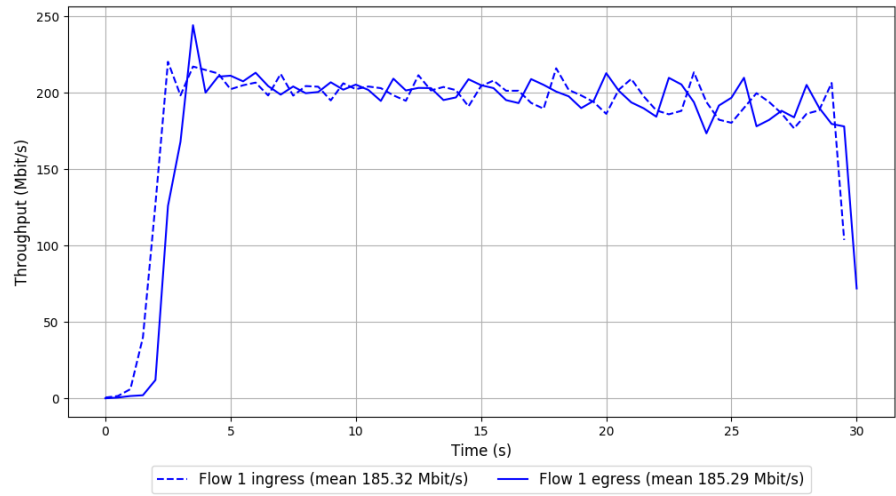
-- Flow 1:

Average throughput: 185.29 Mbit/s

95th percentile per-packet one-way delay: 136.906 ms

Loss rate: 0.94%

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



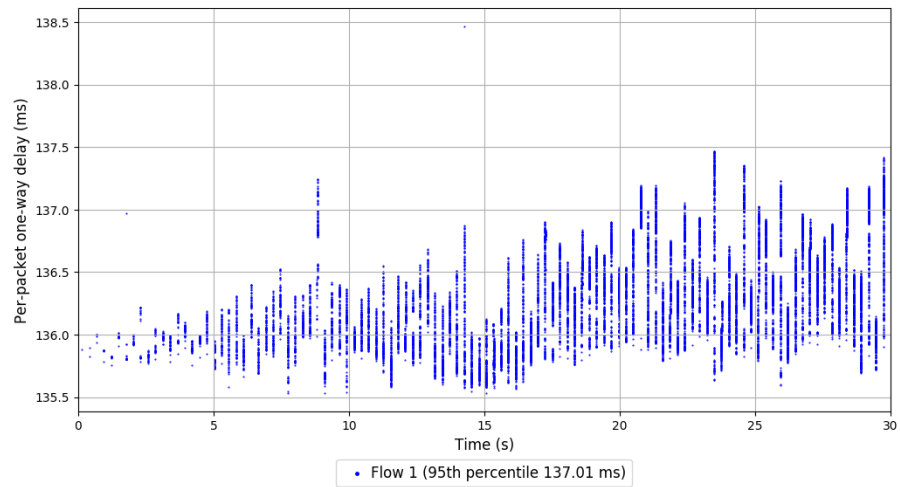
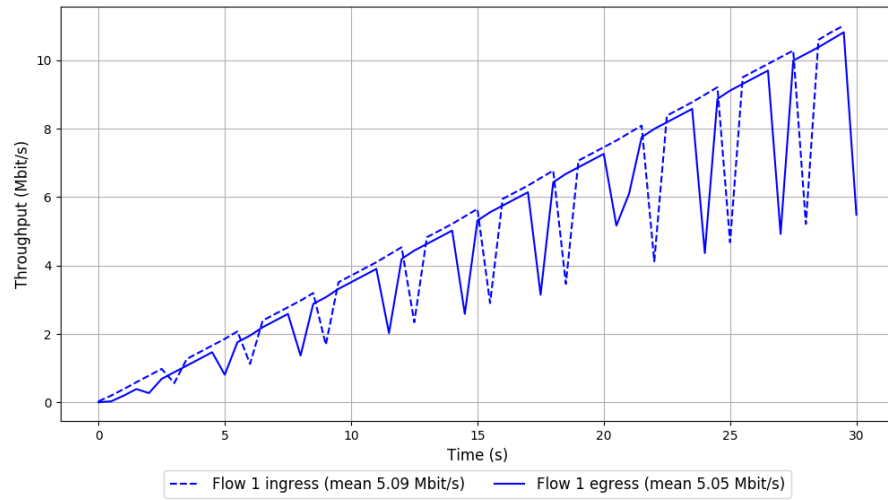


```
Run 1: Statistics of LEDBAT

Start at: 2018-09-07 18:04:52
End at: 2018-09-07 18:05:23
Local clock offset: -6.836 ms
Remote clock offset: -0.137 ms

# Below is generated by plot.py at 2018-09-07 21:02:06
# Datalink statistics
-- Total of 1 flow:
Average throughput: 5.05 Mbit/s
95th percentile per-packet one-way delay: 137.012 ms
Loss rate: 1.82%
-- Flow 1:
Average throughput: 5.05 Mbit/s
95th percentile per-packet one-way delay: 137.012 ms
Loss rate: 1.82%
```

# Run 1: Report of LEDBAT — Data Link

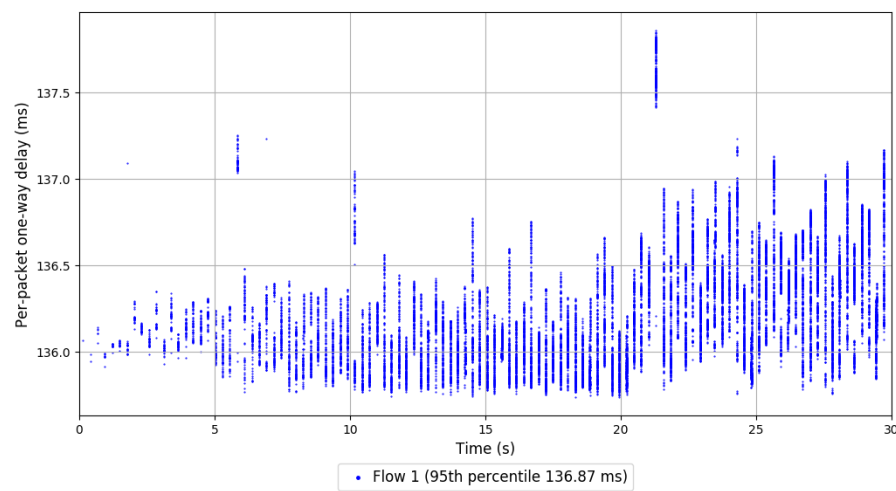
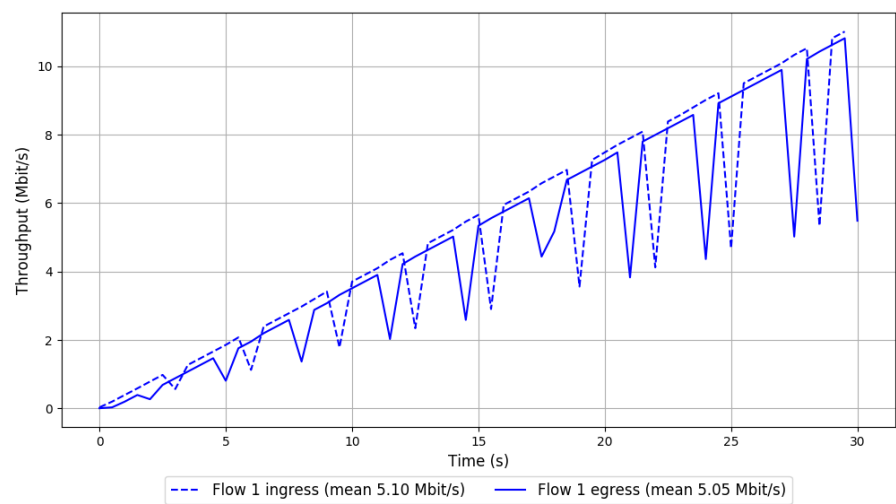


Run 2: Statistics of LEDBAT

Start at: 2018-09-07 18:31:27  
End at: 2018-09-07 18:31:57  
Local clock offset: -1.423 ms  
Remote clock offset: -0.096 ms

# Below is generated by plot.py at 2018-09-07 21:02:06  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 5.05 Mbit/s  
95th percentile per-packet one-way delay: 136.874 ms  
Loss rate: 1.82%  
-- Flow 1:  
Average throughput: 5.05 Mbit/s  
95th percentile per-packet one-way delay: 136.874 ms  
Loss rate: 1.82%

Run 2: Report of LEDBAT — Data Link

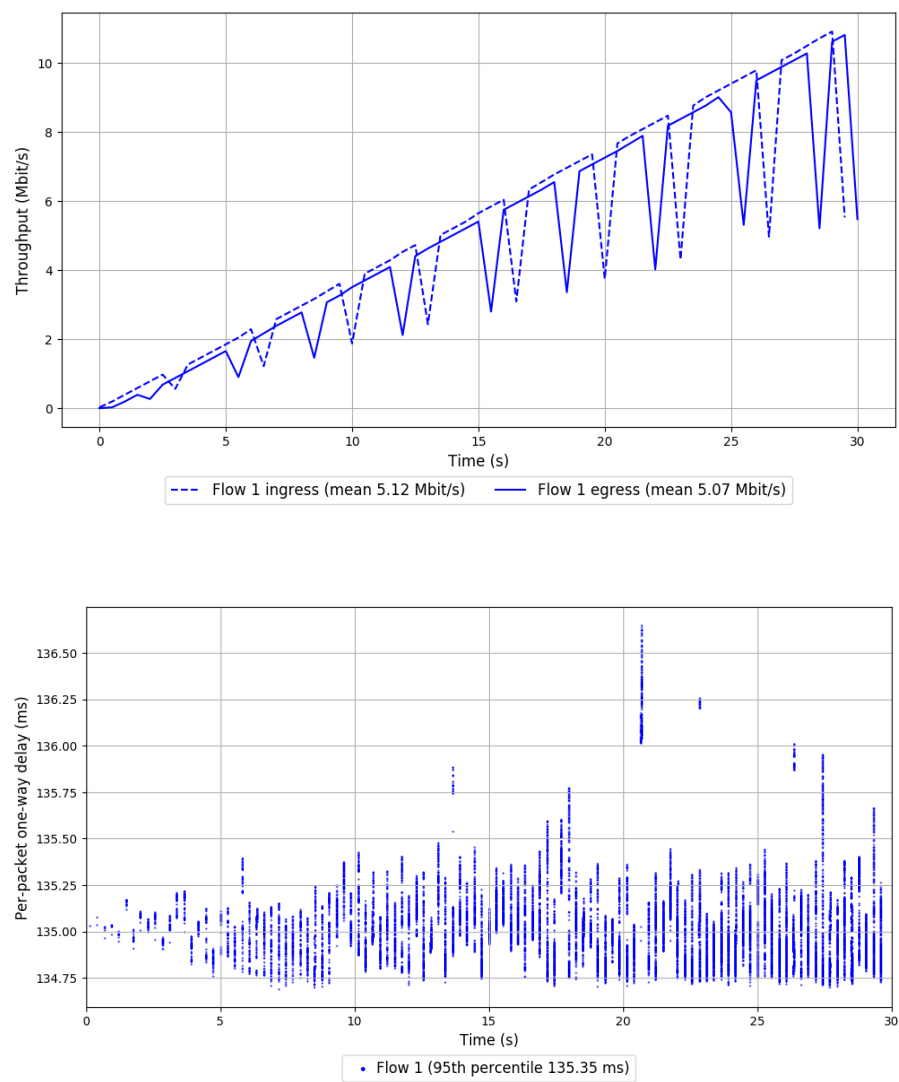


Run 3: Statistics of LEDBAT

Start at: 2018-09-07 18:58:13  
End at: 2018-09-07 18:58:43  
Local clock offset: -0.64 ms  
Remote clock offset: -0.056 ms

# Below is generated by plot.py at 2018-09-07 21:02:06  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 5.07 Mbit/s  
95th percentile per-packet one-way delay: 135.355 ms  
Loss rate: 1.82%  
-- Flow 1:  
Average throughput: 5.07 Mbit/s  
95th percentile per-packet one-way delay: 135.355 ms  
Loss rate: 1.82%

Run 3: Report of LEDBAT — Data Link



Run 4: Statistics of LEDBAT

Start at: 2018-09-07 19:25:25

End at: 2018-09-07 19:25:55

Local clock offset: -0.368 ms

Remote clock offset: -0.44 ms

# Below is generated by plot.py at 2018-09-07 21:02:06

# Datalink statistics

-- Total of 1 flow:

Average throughput: 4.95 Mbit/s

95th percentile per-packet one-way delay: 137.697 ms

Loss rate: 1.84%

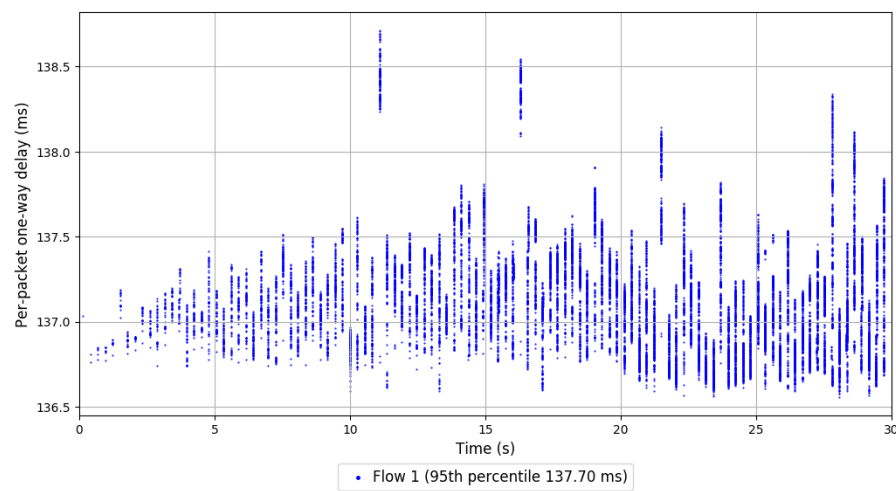
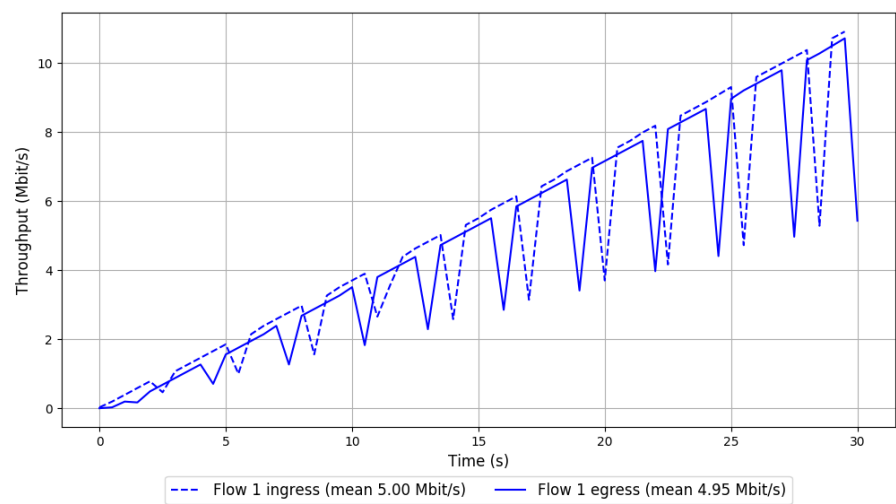
-- Flow 1:

Average throughput: 4.95 Mbit/s

95th percentile per-packet one-way delay: 137.697 ms

Loss rate: 1.84%

Run 4: Report of LEDBAT — Data Link



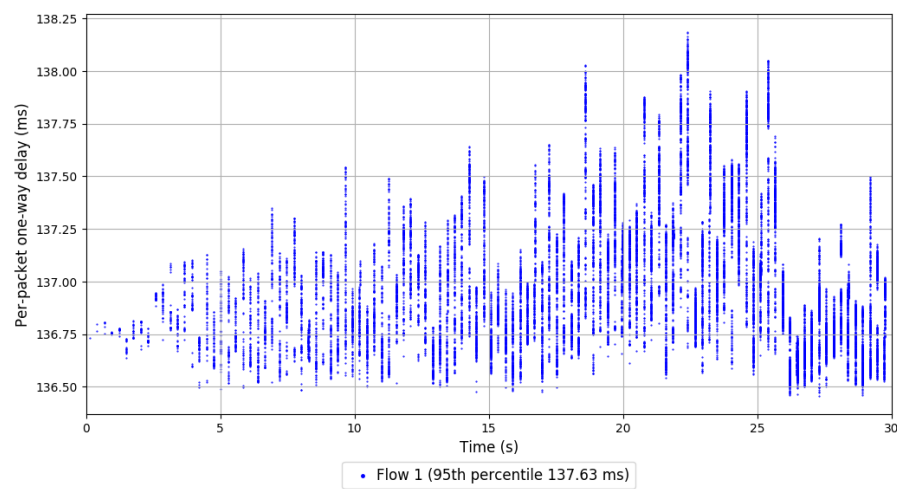
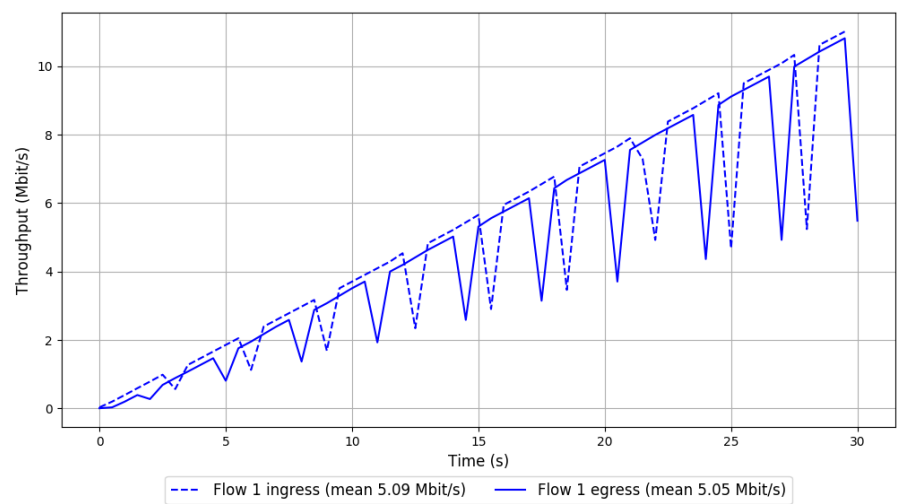


Run 5: Statistics of LEDBAT

Start at: 2018-09-07 19:51:56  
End at: 2018-09-07 19:52:26  
Local clock offset: -0.187 ms  
Remote clock offset: -0.458 ms

# Below is generated by plot.py at 2018-09-07 21:02:06  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 5.05 Mbit/s  
95th percentile per-packet one-way delay: 137.628 ms  
Loss rate: 1.82%  
-- Flow 1:  
Average throughput: 5.05 Mbit/s  
95th percentile per-packet one-way delay: 137.628 ms  
Loss rate: 1.82%

Run 5: Report of LEDBAT — Data Link

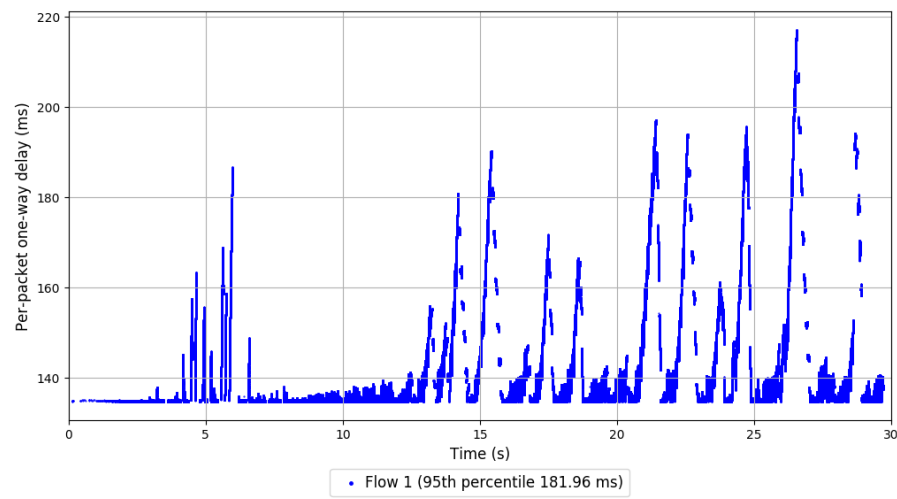
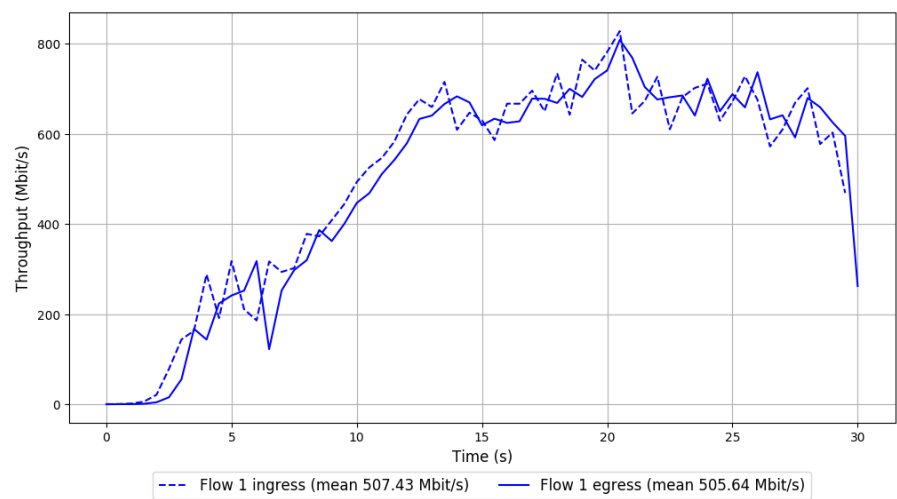


```
Run 1: Statistics of Indigo-Muses

Start at: 2018-09-07 18:21:35
End at: 2018-09-07 18:22:05
Local clock offset: -1.844 ms
Remote clock offset: -0.068 ms

# Below is generated by plot.py at 2018-09-07 21:02:06
# Datalink statistics
-- Total of 1 flow:
Average throughput: 505.64 Mbit/s
95th percentile per-packet one-way delay: 181.964 ms
Loss rate: 1.26%
-- Flow 1:
Average throughput: 505.64 Mbit/s
95th percentile per-packet one-way delay: 181.964 ms
Loss rate: 1.26%
```

Run 1: Report of Indigo-Muses — Data Link

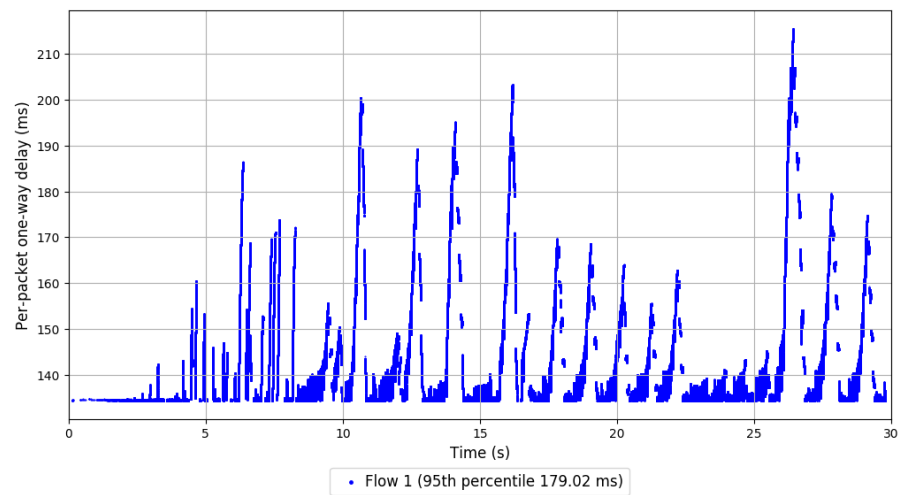
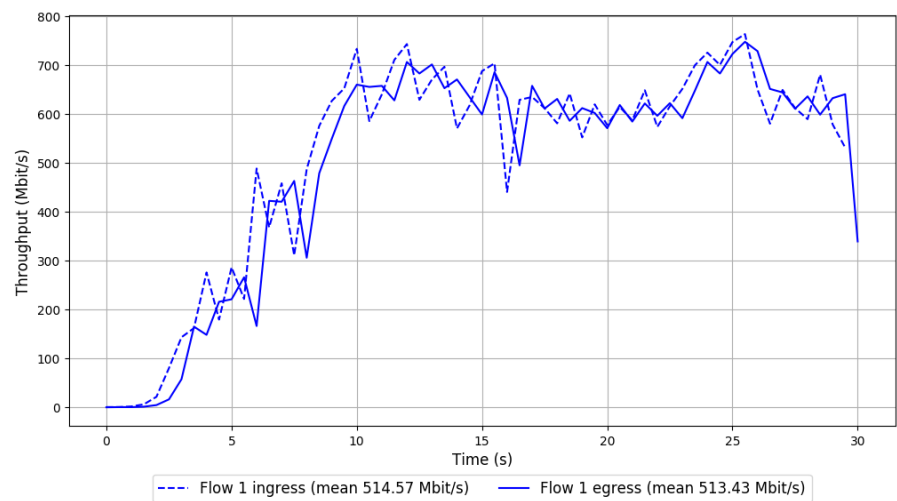


Run 2: Statistics of Indigo-Muses

Start at: 2018-09-07 18:48:17  
End at: 2018-09-07 18:48:47  
Local clock offset: -0.887 ms  
Remote clock offset: -0.072 ms

# Below is generated by plot.py at 2018-09-07 21:02:06  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 513.43 Mbit/s  
95th percentile per-packet one-way delay: 179.021 ms  
Loss rate: 1.13%  
-- Flow 1:  
Average throughput: 513.43 Mbit/s  
95th percentile per-packet one-way delay: 179.021 ms  
Loss rate: 1.13%

Run 2: Report of Indigo-Muses — Data Link

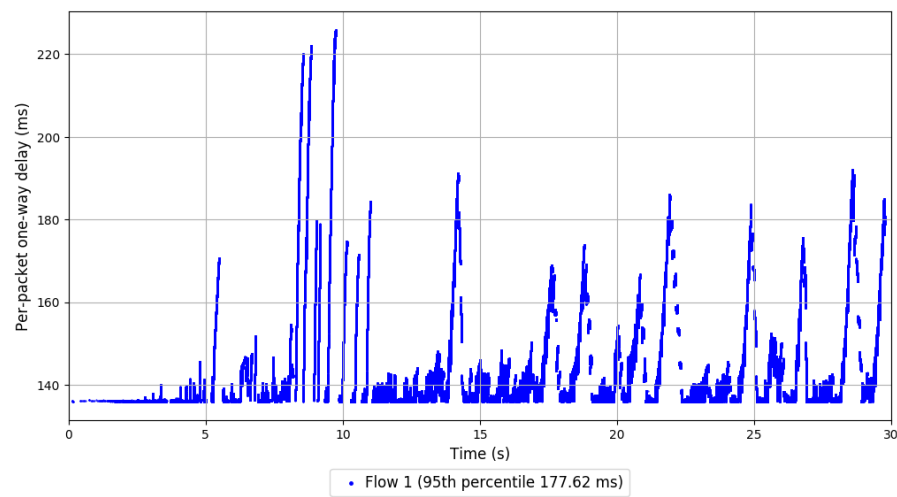
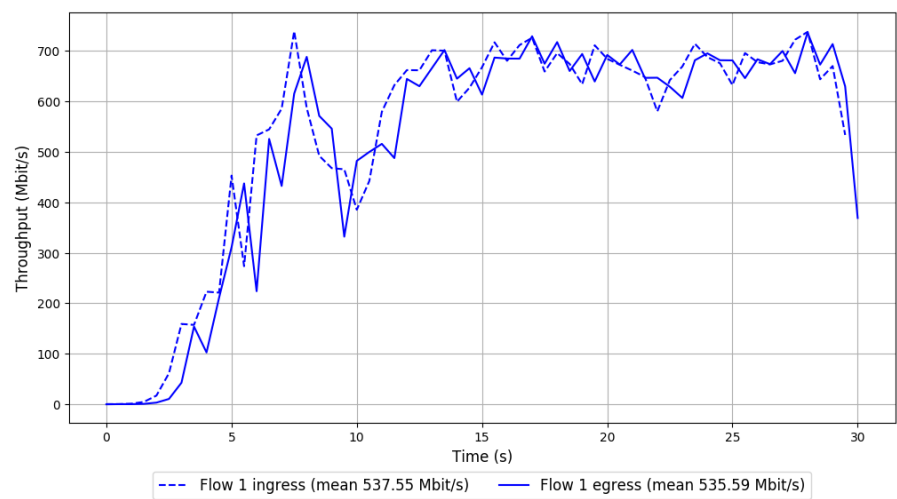


Run 3: Statistics of Indigo-Muses

Start at: 2018-09-07 19:15:31  
End at: 2018-09-07 19:16:01  
Local clock offset: -0.858 ms  
Remote clock offset: -0.449 ms

# Below is generated by plot.py at 2018-09-07 21:02:10  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 535.59 Mbit/s  
95th percentile per-packet one-way delay: 177.624 ms  
Loss rate: 1.27%  
-- Flow 1:  
Average throughput: 535.59 Mbit/s  
95th percentile per-packet one-way delay: 177.624 ms  
Loss rate: 1.27%

Run 3: Report of Indigo-Muses — Data Link



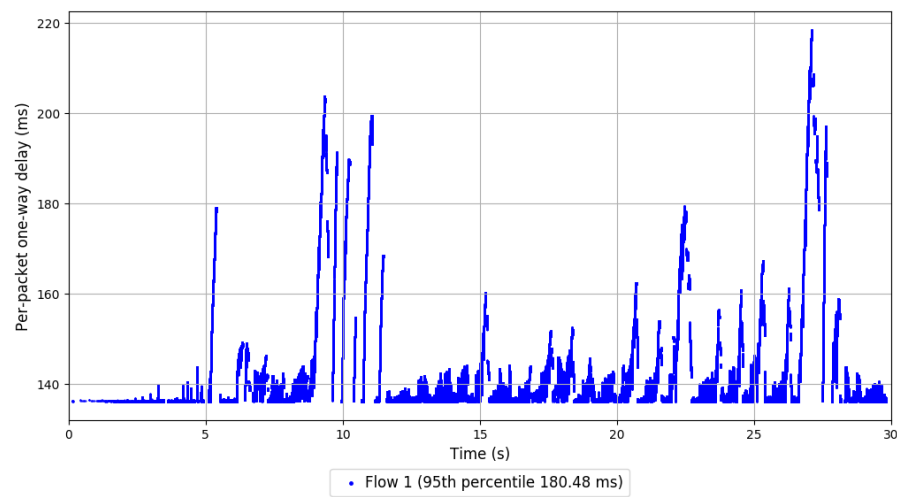
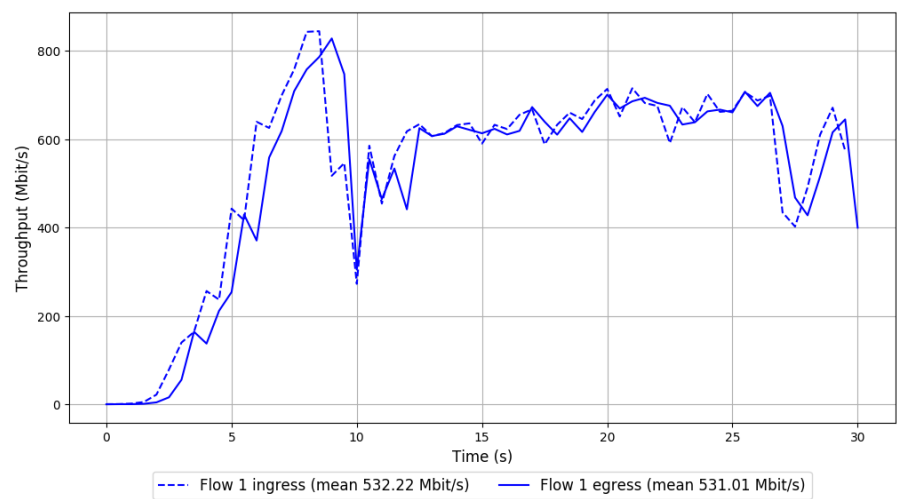


Run 4: Statistics of Indigo-Muses

Start at: 2018-09-07 19:41:57  
End at: 2018-09-07 19:42:27  
Local clock offset: -0.225 ms  
Remote clock offset: -0.444 ms

# Below is generated by plot.py at 2018-09-07 21:02:28  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 531.01 Mbit/s  
95th percentile per-packet one-way delay: 180.481 ms  
Loss rate: 1.14%  
-- Flow 1:  
Average throughput: 531.01 Mbit/s  
95th percentile per-packet one-way delay: 180.481 ms  
Loss rate: 1.14%

Run 4: Report of Indigo-Muses — Data Link



Run 5: Statistics of Indigo-Muses

Start at: 2018-09-07 20:08:58

End at: 2018-09-07 20:09:28

Local clock offset: 0.018 ms

Remote clock offset: 0.023 ms

# Below is generated by plot.py at 2018-09-07 21:03:26

# Datalink statistics

-- Total of 1 flow:

Average throughput: 565.20 Mbit/s

95th percentile per-packet one-way delay: 169.588 ms

Loss rate: 1.06%

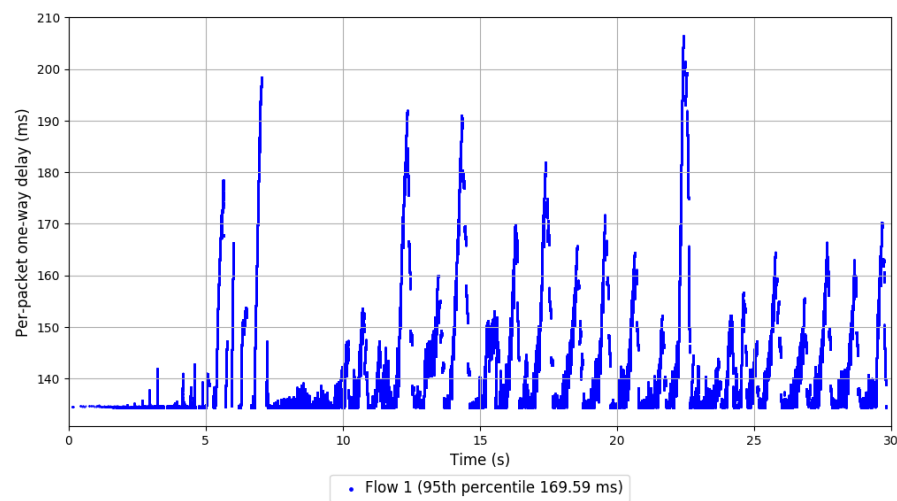
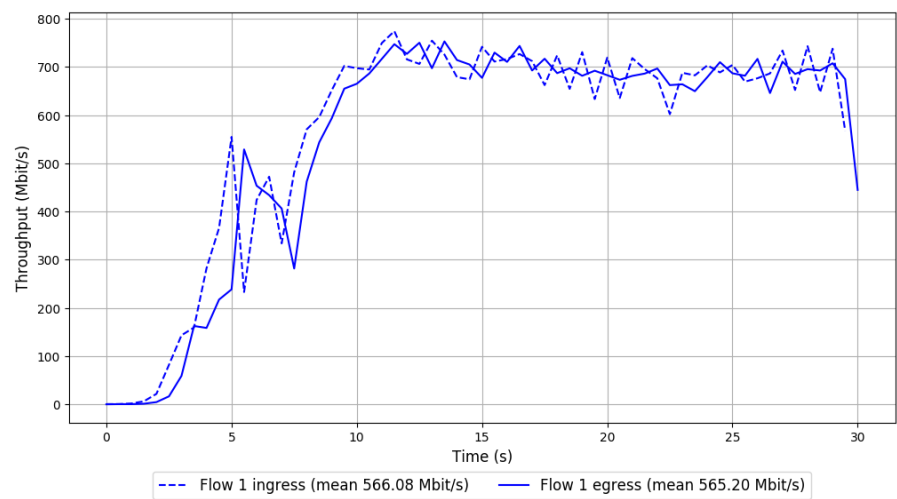
-- Flow 1:

Average throughput: 565.20 Mbit/s

95th percentile per-packet one-way delay: 169.588 ms

Loss rate: 1.06%

Run 5: Report of Indigo-Muses — Data Link



Run 1: Statistics of PCC-Allegro

Start at: 2018-09-07 18:14:22

End at: 2018-09-07 18:14:52

Local clock offset: -2.938 ms

Remote clock offset: -0.083 ms

# Below is generated by plot.py at 2018-09-07 21:05:38

# Datalink statistics

-- Total of 1 flow:

Average throughput: 378.31 Mbit/s

95th percentile per-packet one-way delay: 232.459 ms

Loss rate: 2.50%

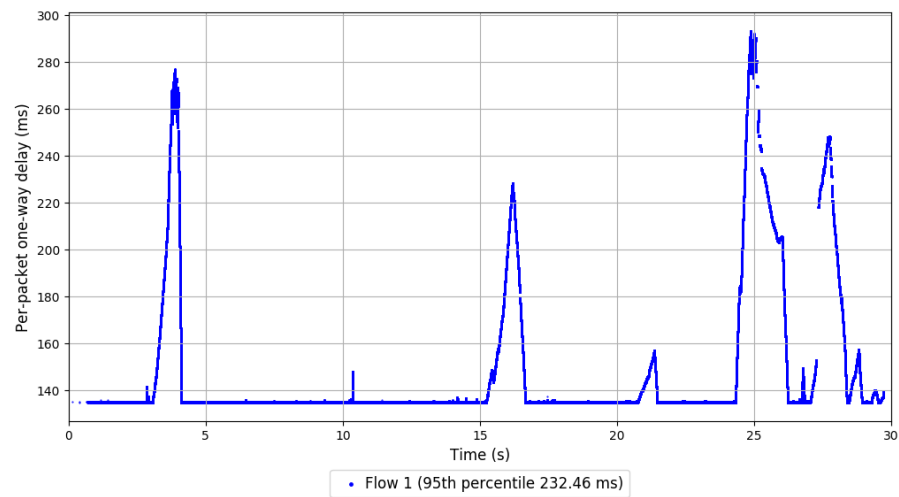
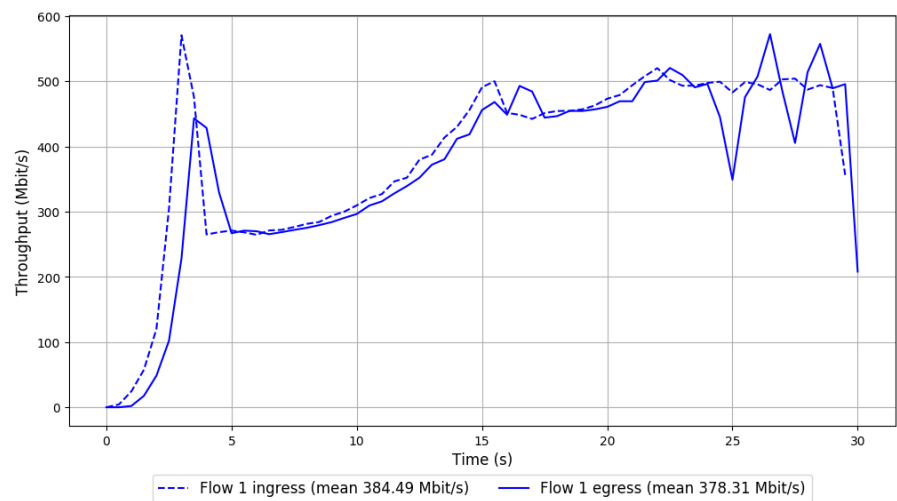
-- Flow 1:

Average throughput: 378.31 Mbit/s

95th percentile per-packet one-way delay: 232.459 ms

Loss rate: 2.50%

Run 1: Report of PCC-Allegro — Data Link

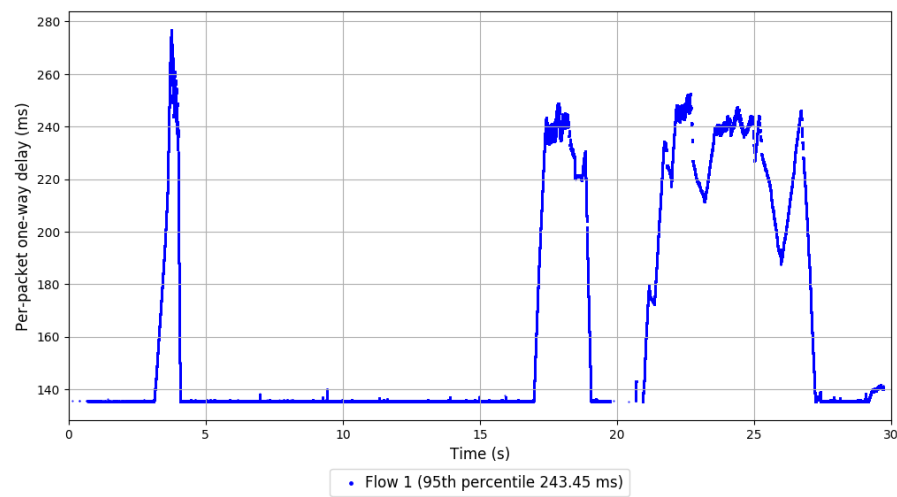
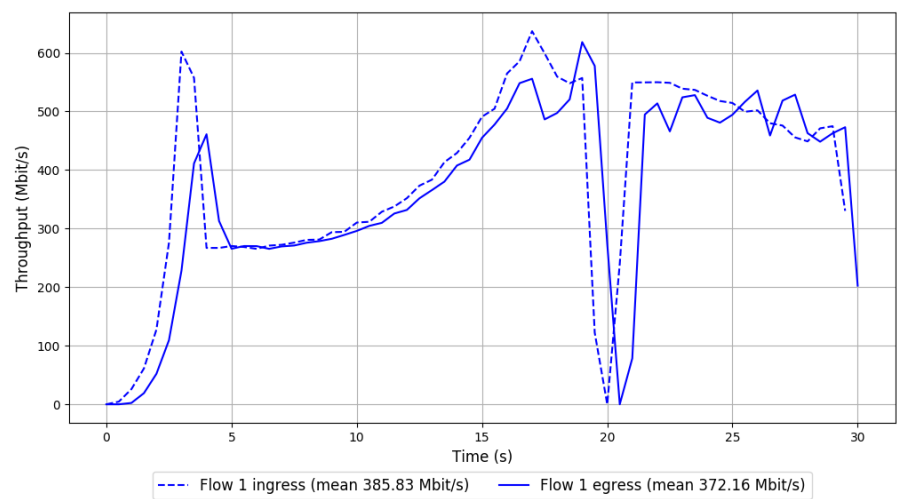


Run 2: Statistics of PCC-Allegro

Start at: 2018-09-07 18:40:59  
End at: 2018-09-07 18:41:29  
Local clock offset: -1.667 ms  
Remote clock offset: -0.432 ms

# Below is generated by plot.py at 2018-09-07 21:10:20  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 372.16 Mbit/s  
95th percentile per-packet one-way delay: 243.452 ms  
Loss rate: 4.42%  
-- Flow 1:  
Average throughput: 372.16 Mbit/s  
95th percentile per-packet one-way delay: 243.452 ms  
Loss rate: 4.42%

Run 2: Report of PCC-Allegro — Data Link





Run 3: Statistics of PCC-Allegro

Start at: 2018-09-07 19:07:59

End at: 2018-09-07 19:08:29

Local clock offset: -0.613 ms

Remote clock offset: 0.324 ms

# Below is generated by plot.py at 2018-09-07 21:11:04

# Datalink statistics

-- Total of 1 flow:

Average throughput: 382.07 Mbit/s

95th percentile per-packet one-way delay: 243.681 ms

Loss rate: 3.21%

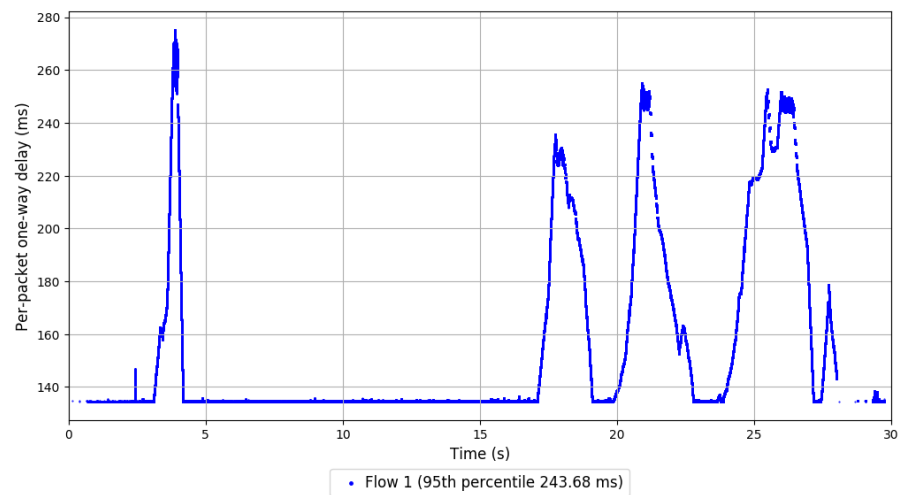
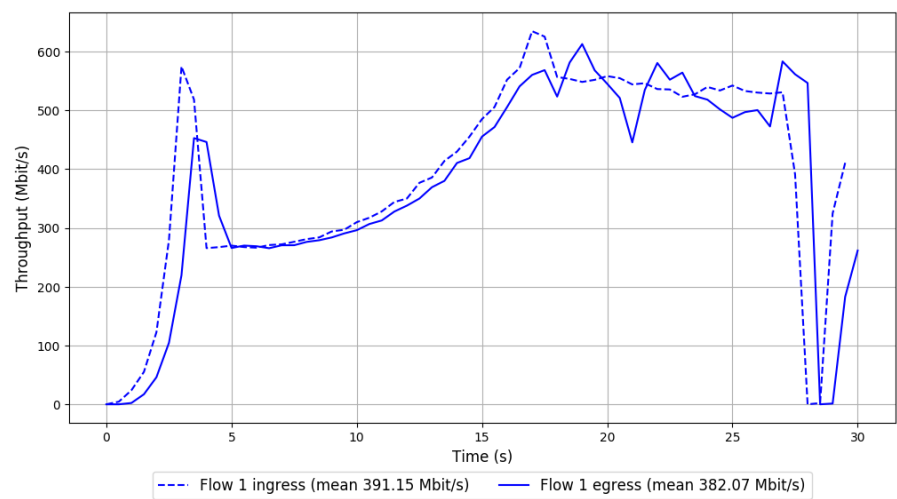
-- Flow 1:

Average throughput: 382.07 Mbit/s

95th percentile per-packet one-way delay: 243.681 ms

Loss rate: 3.21%

Run 3: Report of PCC-Allegro — Data Link



Run 4: Statistics of PCC-Allegro

Start at: 2018-09-07 19:34:37

End at: 2018-09-07 19:35:07

Local clock offset: -0.239 ms

Remote clock offset: 0.271 ms

# Below is generated by plot.py at 2018-09-07 21:12:25

# Datalink statistics

-- Total of 1 flow:

Average throughput: 412.87 Mbit/s

95th percentile per-packet one-way delay: 250.960 ms

Loss rate: 8.31%

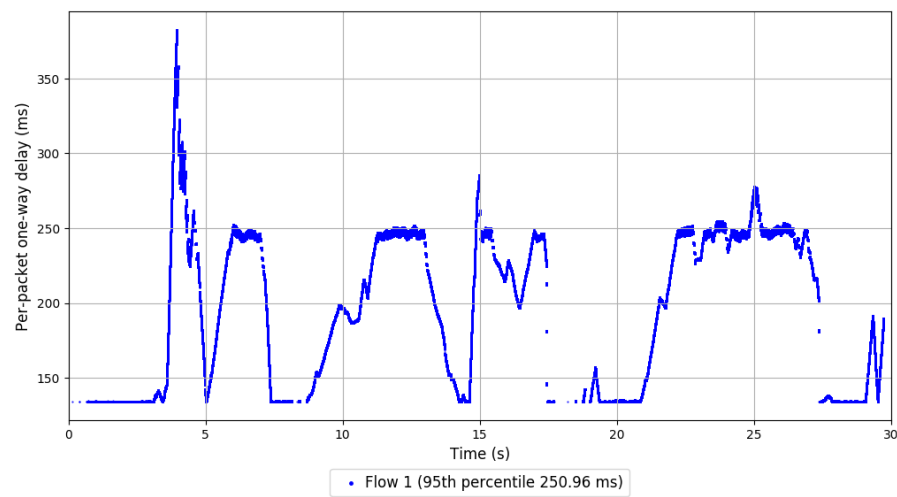
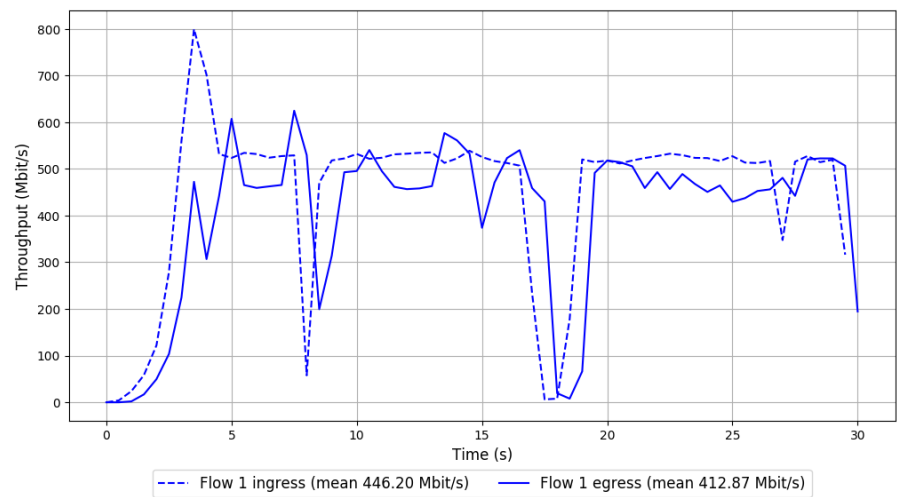
-- Flow 1:

Average throughput: 412.87 Mbit/s

95th percentile per-packet one-way delay: 250.960 ms

Loss rate: 8.31%

Run 4: Report of PCC-Allegro — Data Link



Run 5: Statistics of PCC-Allegro

Start at: 2018-09-07 20:01:46

End at: 2018-09-07 20:02:16

Local clock offset: 0.033 ms

Remote clock offset: -0.405 ms

# Below is generated by plot.py at 2018-09-07 21:12:25

# Datalink statistics

-- Total of 1 flow:

Average throughput: 344.81 Mbit/s

95th percentile per-packet one-way delay: 240.566 ms

Loss rate: 3.03%

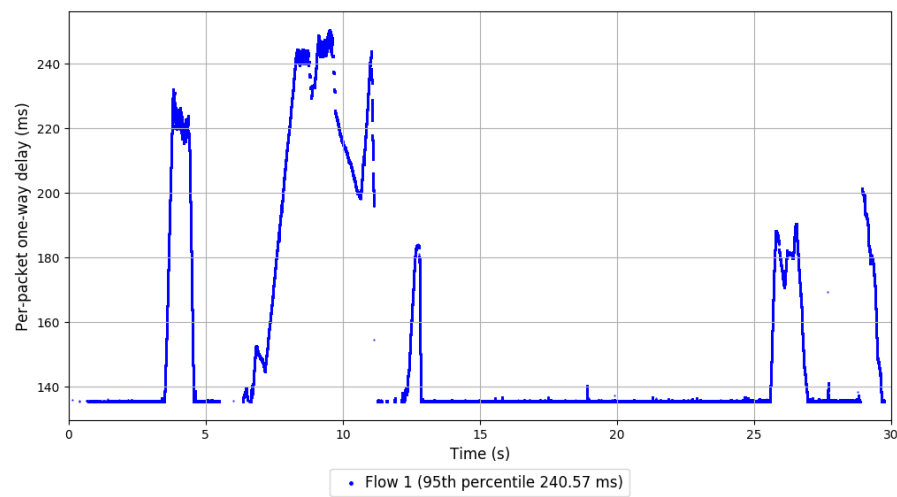
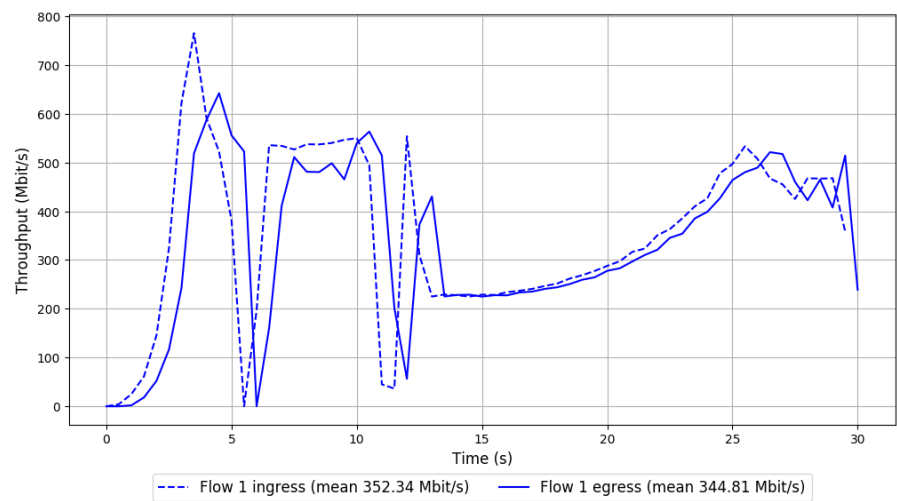
-- Flow 1:

Average throughput: 344.81 Mbit/s

95th percentile per-packet one-way delay: 240.566 ms

Loss rate: 3.03%

Run 5: Report of PCC-Allegro — Data Link

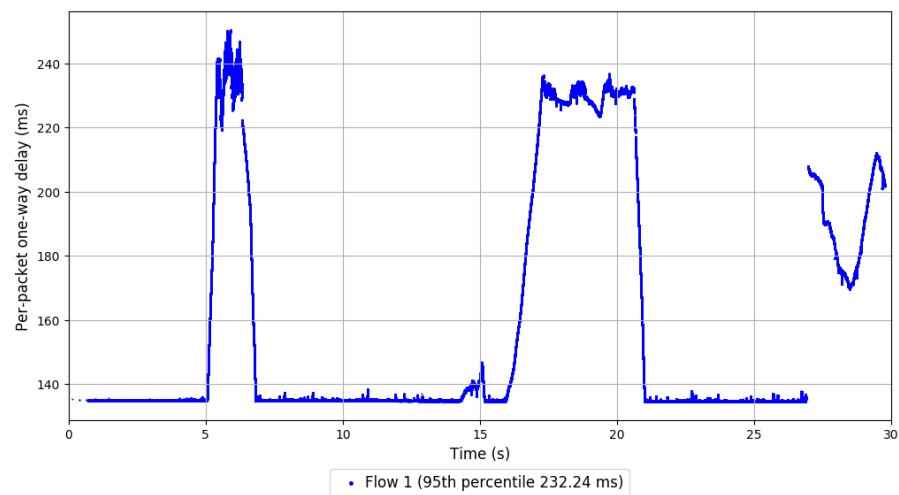
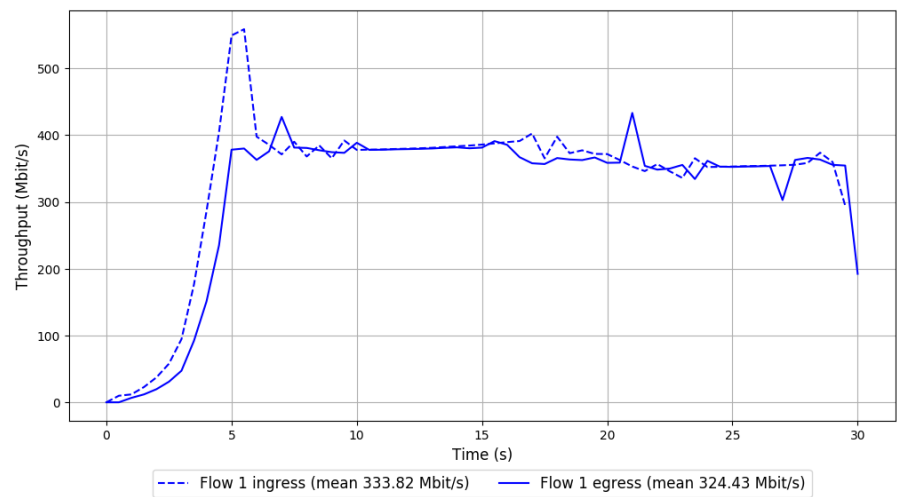


Run 1: Statistics of PCC-Expr

Start at: 2018-09-07 18:06:03  
End at: 2018-09-07 18:06:33  
Local clock offset: -6.939 ms  
Remote clock offset: -0.178 ms

# Below is generated by plot.py at 2018-09-07 21:12:25  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 324.43 Mbit/s  
95th percentile per-packet one-way delay: 232.242 ms  
Loss rate: 3.70%  
-- Flow 1:  
Average throughput: 324.43 Mbit/s  
95th percentile per-packet one-way delay: 232.242 ms  
Loss rate: 3.70%

Run 1: Report of PCC-Expr — Data Link



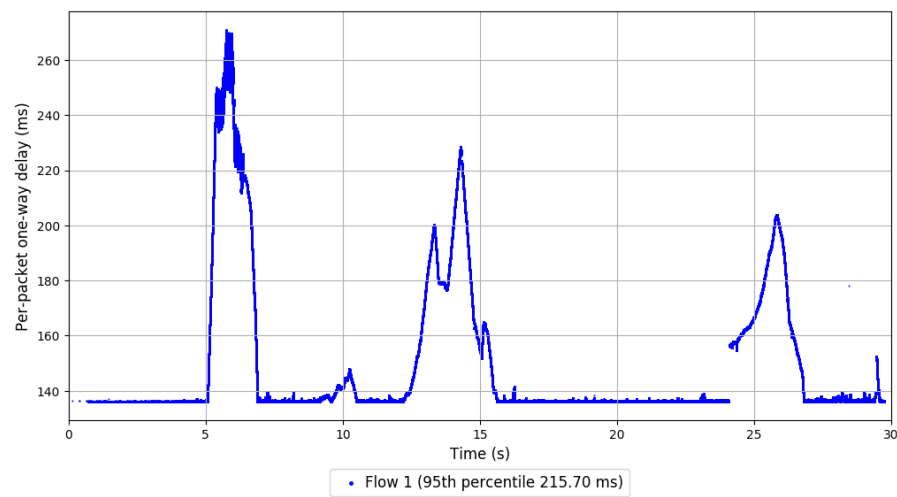
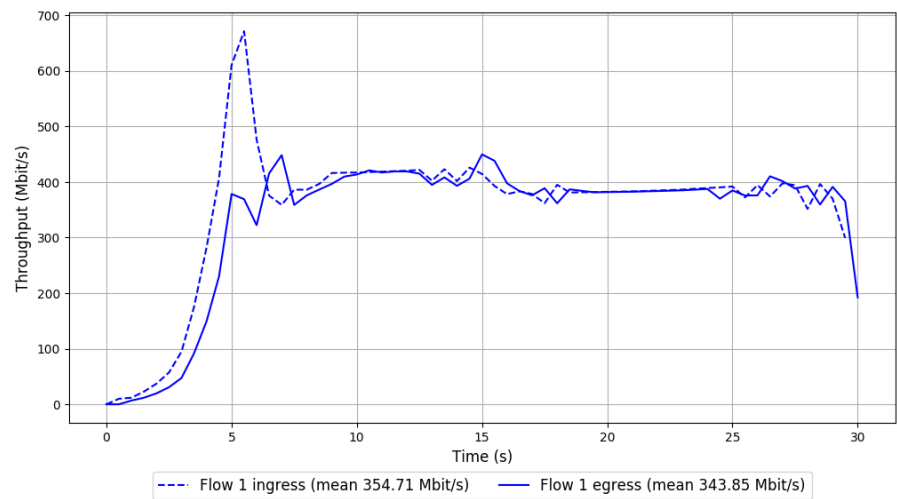


Run 2: Statistics of PCC-Expr

Start at: 2018-09-07 18:32:38  
End at: 2018-09-07 18:33:08  
Local clock offset: -1.461 ms  
Remote clock offset: -0.051 ms

# Below is generated by plot.py at 2018-09-07 21:12:25  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 343.85 Mbit/s  
95th percentile per-packet one-way delay: 215.700 ms  
Loss rate: 3.95%  
-- Flow 1:  
Average throughput: 343.85 Mbit/s  
95th percentile per-packet one-way delay: 215.700 ms  
Loss rate: 3.95%

Run 2: Report of PCC-Expr — Data Link

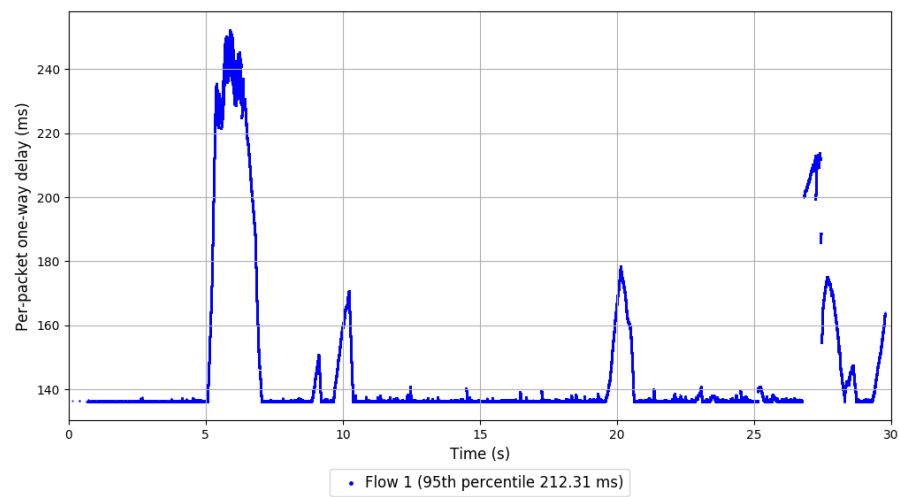
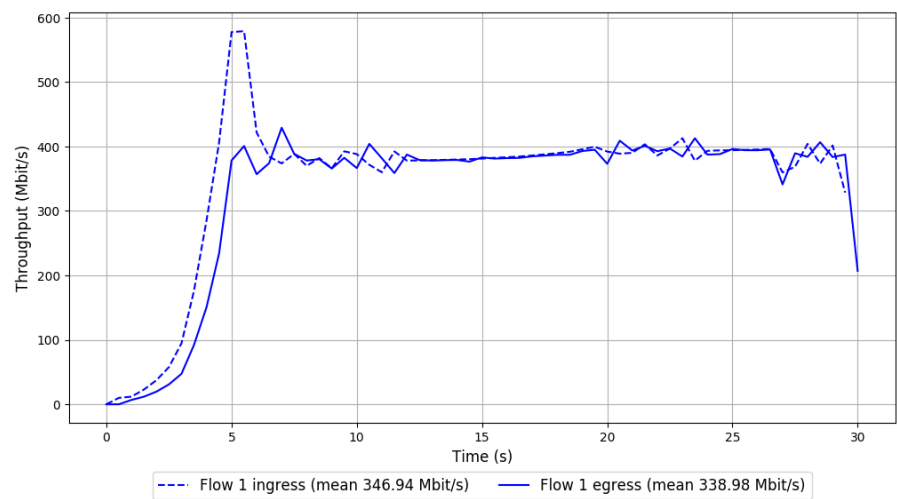


Run 3: Statistics of PCC-Expr

Start at: 2018-09-07 18:59:24  
End at: 2018-09-07 18:59:54  
Local clock offset: -0.453 ms  
Remote clock offset: -0.065 ms

# Below is generated by plot.py at 2018-09-07 21:12:56  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 338.98 Mbit/s  
95th percentile per-packet one-way delay: 212.309 ms  
Loss rate: 3.18%  
-- Flow 1:  
Average throughput: 338.98 Mbit/s  
95th percentile per-packet one-way delay: 212.309 ms  
Loss rate: 3.18%

Run 3: Report of PCC-Expr — Data Link

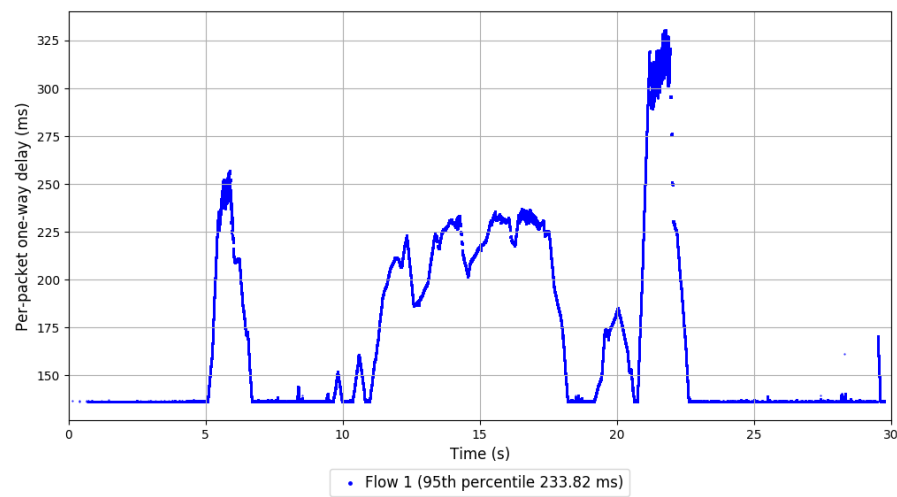
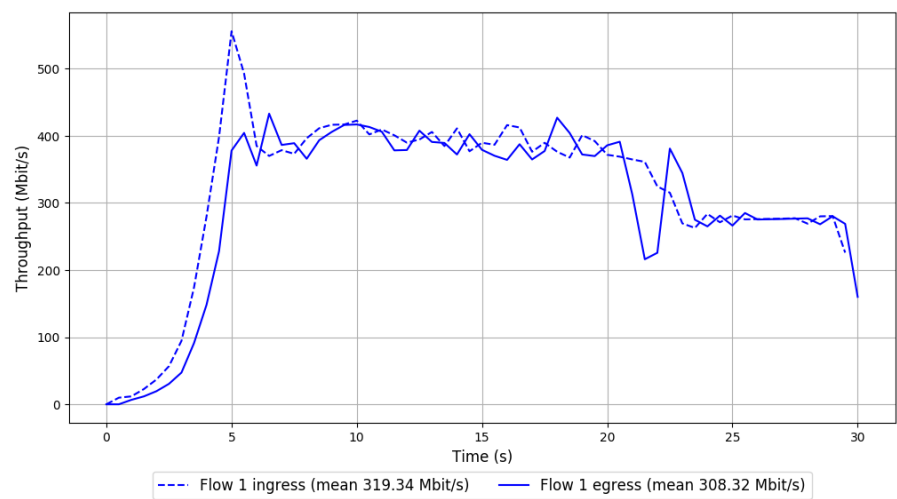


Run 4: Statistics of PCC-Expr

Start at: 2018-09-07 19:26:35  
End at: 2018-09-07 19:27:05  
Local clock offset: -0.42 ms  
Remote clock offset: -0.133 ms

# Below is generated by plot.py at 2018-09-07 21:15:15  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 308.32 Mbit/s  
95th percentile per-packet one-way delay: 233.823 ms  
Loss rate: 4.33%  
-- Flow 1:  
Average throughput: 308.32 Mbit/s  
95th percentile per-packet one-way delay: 233.823 ms  
Loss rate: 4.33%

Run 4: Report of PCC-Expr — Data Link

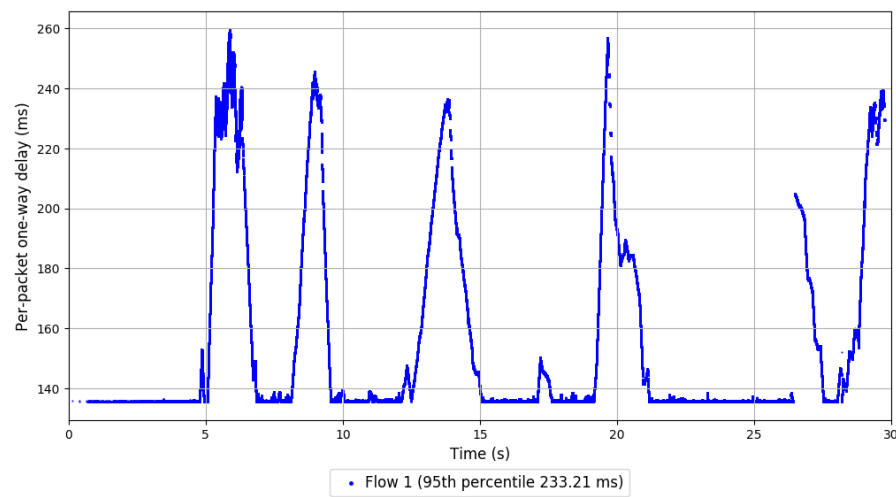
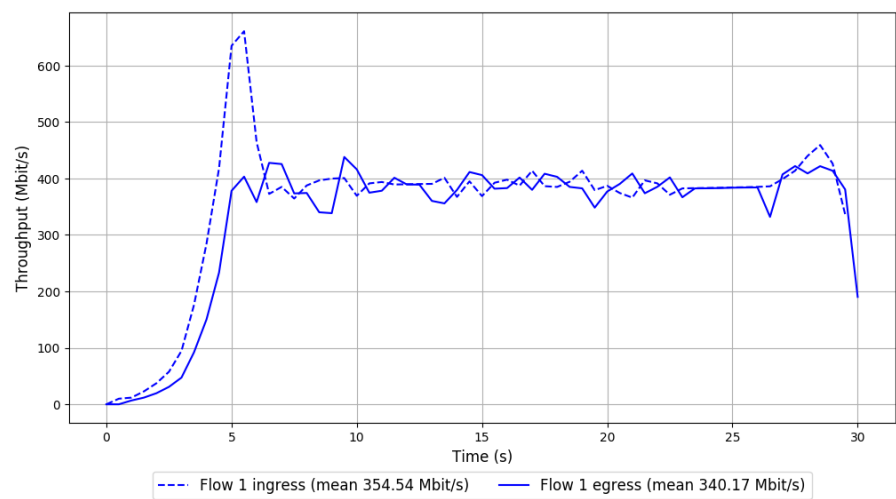


Run 5: Statistics of PCC-Expr

Start at: 2018-09-07 19:53:07  
End at: 2018-09-07 19:53:37  
Local clock offset: -0.12 ms  
Remote clock offset: -0.451 ms

# Below is generated by plot.py at 2018-09-07 21:19:55  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 340.17 Mbit/s  
95th percentile per-packet one-way delay: 233.208 ms  
Loss rate: 4.92%  
-- Flow 1:  
Average throughput: 340.17 Mbit/s  
95th percentile per-packet one-way delay: 233.208 ms  
Loss rate: 4.92%

Run 5: Report of PCC-Expr — Data Link





Run 1: Statistics of QUIC Cubic

Start at: 2018-09-07 18:19:02

End at: 2018-09-07 18:19:32

Local clock offset: -2.077 ms

Remote clock offset: 0.242 ms

# Below is generated by plot.py at 2018-09-07 21:19:55

# Datalink statistics

-- Total of 1 flow:

Average throughput: 59.56 Mbit/s

95th percentile per-packet one-way delay: 135.810 ms

Loss rate: 1.28%

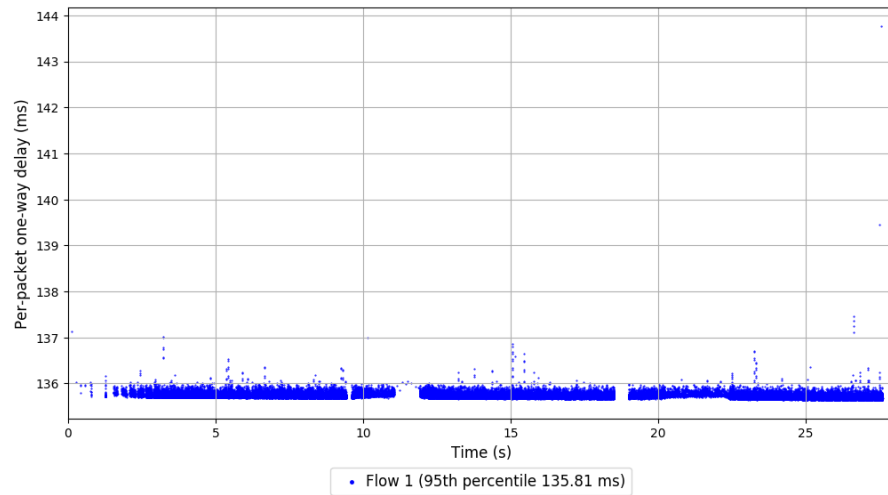
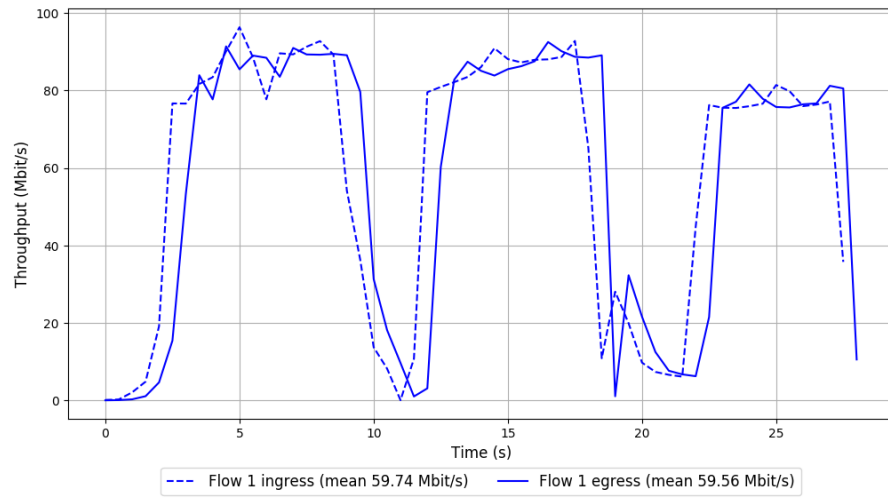
-- Flow 1:

Average throughput: 59.56 Mbit/s

95th percentile per-packet one-way delay: 135.810 ms

Loss rate: 1.28%

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



Run 2: Statistics of QUIC Cubic

Start at: 2018-09-07 18:45:43

End at: 2018-09-07 18:46:13

Local clock offset: -0.871 ms

Remote clock offset: 0.322 ms

# Below is generated by plot.py at 2018-09-07 21:19:55

# Datalink statistics

-- Total of 1 flow:

Average throughput: 58.71 Mbit/s

95th percentile per-packet one-way delay: 134.949 ms

Loss rate: 1.20%

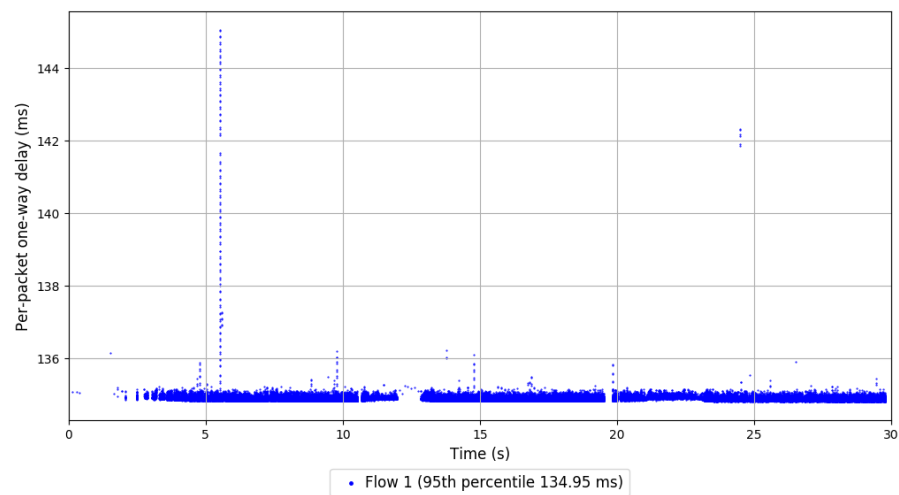
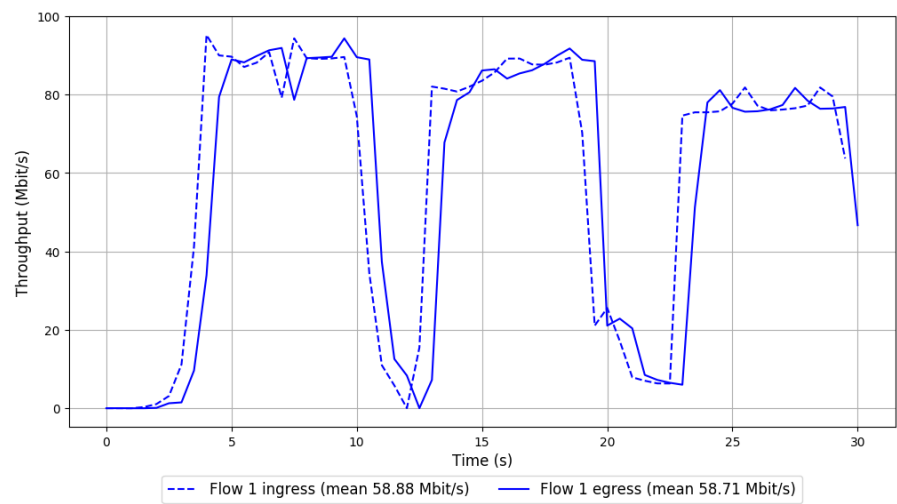
-- Flow 1:

Average throughput: 58.71 Mbit/s

95th percentile per-packet one-way delay: 134.949 ms

Loss rate: 1.20%

Run 2: Report of QUIC Cubic — Data Link



Run 3: Statistics of QUIC Cubic

Start at: 2018-09-07 19:12:47

End at: 2018-09-07 19:13:17

Local clock offset: -0.76 ms

Remote clock offset: -0.434 ms

# Below is generated by plot.py at 2018-09-07 21:19:55

# Datalink statistics

-- Total of 1 flow:

Average throughput: 50.82 Mbit/s

95th percentile per-packet one-way delay: 134.938 ms

Loss rate: 1.38%

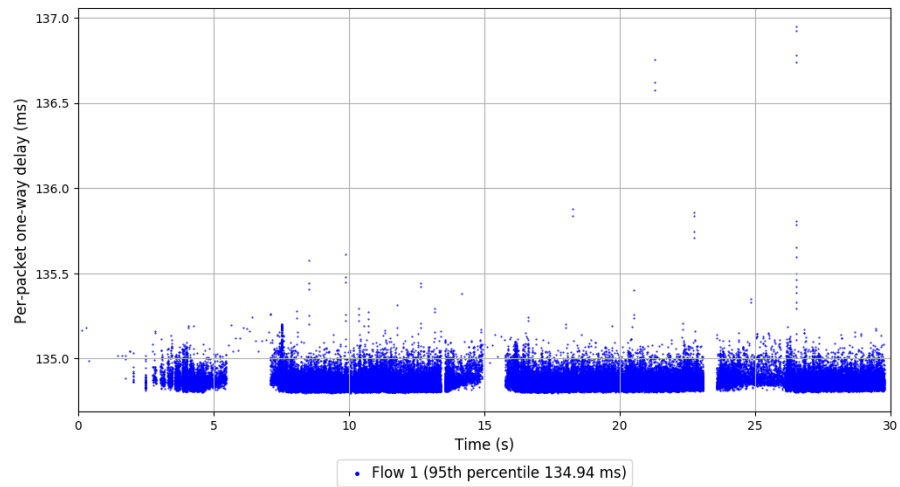
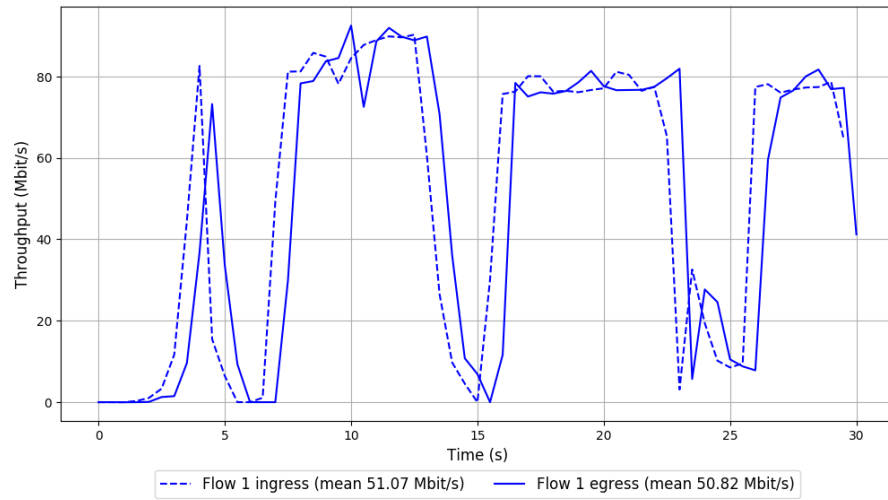
-- Flow 1:

Average throughput: 50.82 Mbit/s

95th percentile per-packet one-way delay: 134.938 ms

Loss rate: 1.38%

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



Run 4: Statistics of QUIC Cubic

Start at: 2018-09-07 19:39:23

End at: 2018-09-07 19:39:53

Local clock offset: -0.124 ms

Remote clock offset: -0.066 ms

# Below is generated by plot.py at 2018-09-07 21:19:55

# Datalink statistics

-- Total of 1 flow:

Average throughput: 57.04 Mbit/s

95th percentile per-packet one-way delay: 135.944 ms

Loss rate: 1.42%

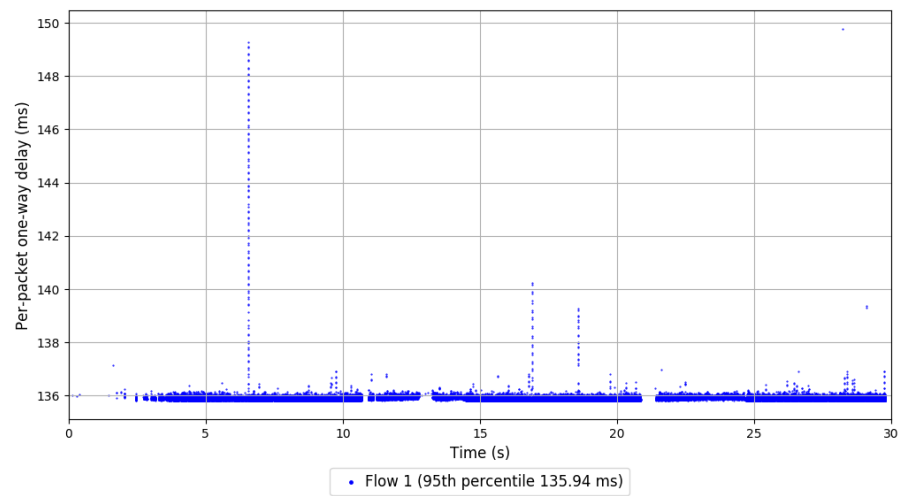
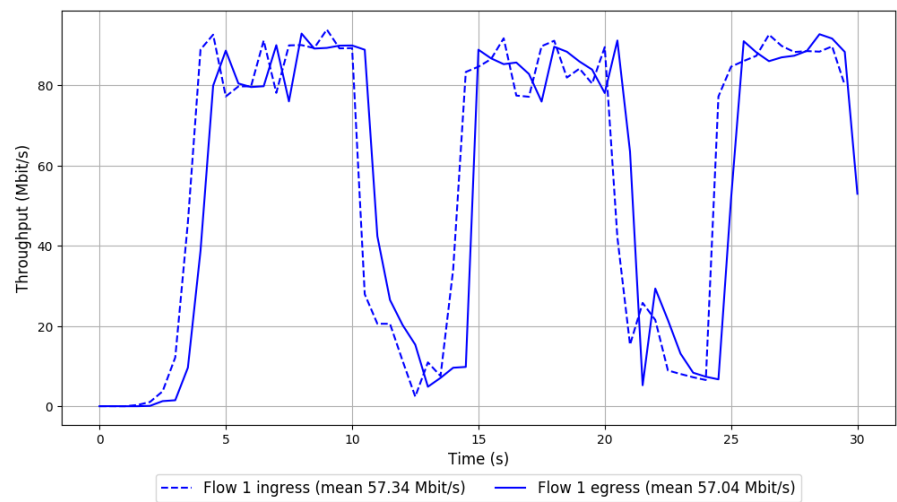
-- Flow 1:

Average throughput: 57.04 Mbit/s

95th percentile per-packet one-way delay: 135.944 ms

Loss rate: 1.42%

Run 4: Report of QUIC Cubic — Data Link





Run 5: Statistics of QUIC Cubic

Start at: 2018-09-07 20:06:28

End at: 2018-09-07 20:06:58

Local clock offset: 0.034 ms

Remote clock offset: -0.035 ms

# Below is generated by plot.py at 2018-09-07 21:19:55

# Datalink statistics

-- Total of 1 flow:

Average throughput: 61.36 Mbit/s

95th percentile per-packet one-way delay: 135.055 ms

Loss rate: 1.32%

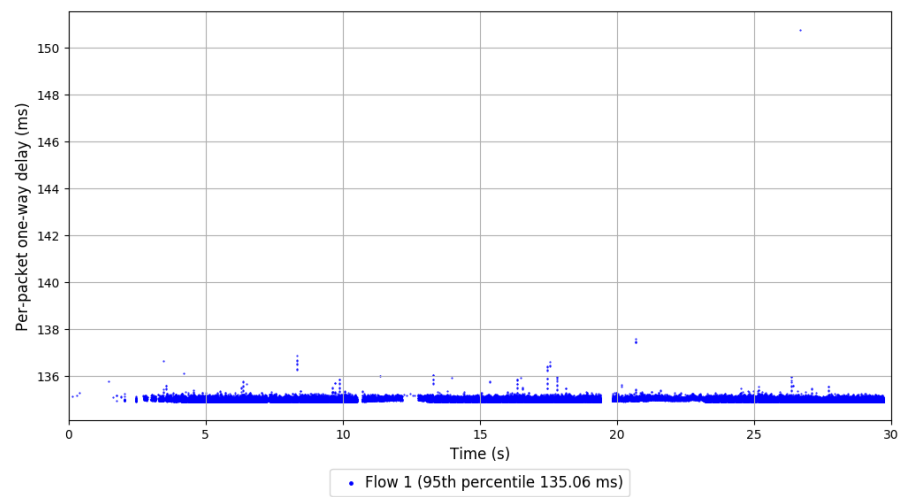
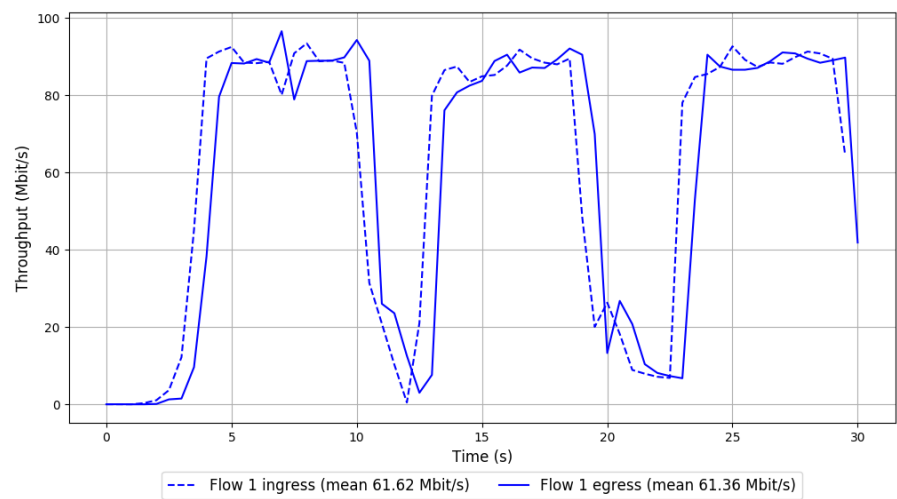
-- Flow 1:

Average throughput: 61.36 Mbit/s

95th percentile per-packet one-way delay: 135.055 ms

Loss rate: 1.32%

Run 5: Report of QUIC Cubic — Data Link

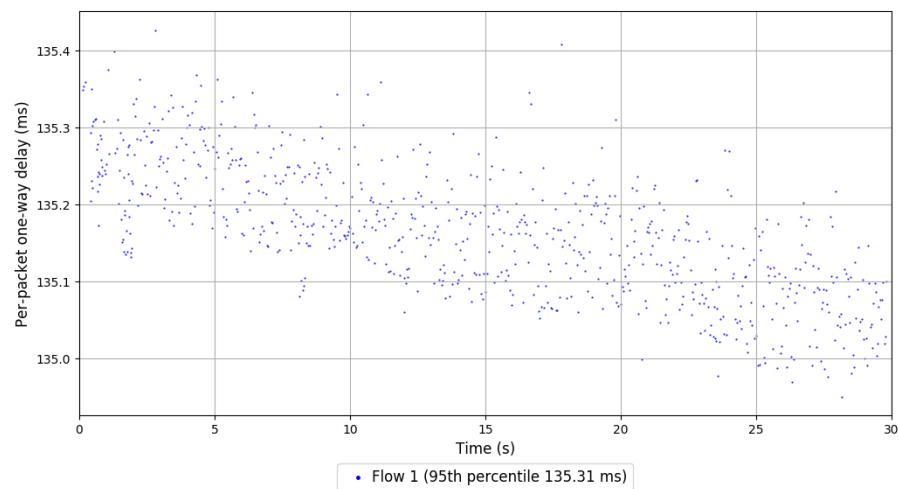
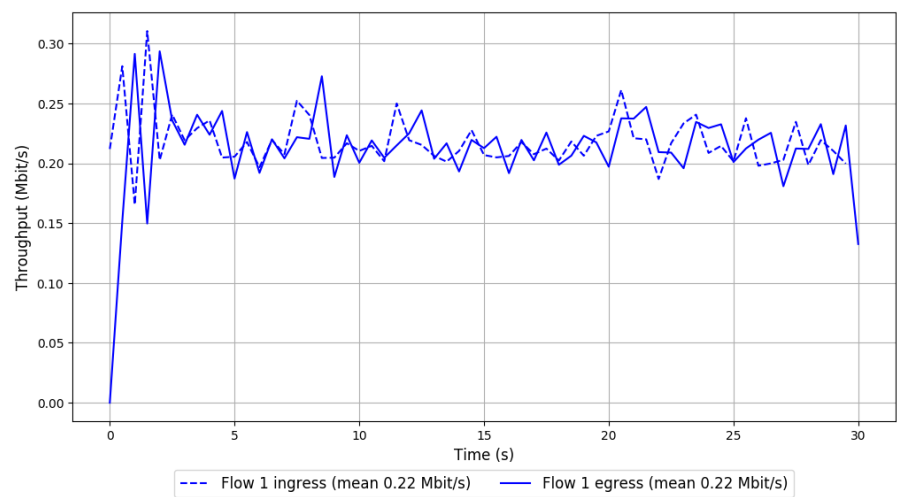


```
Run 1: Statistics of SCReAM

Start at: 2018-09-07 18:07:45
End at: 2018-09-07 18:08:15
Local clock offset: -6.31 ms
Remote clock offset: -0.14 ms

# Below is generated by plot.py at 2018-09-07 21:19:55
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 135.308 ms
Loss rate: 0.89%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 135.308 ms
Loss rate: 0.89%
```

Run 1: Report of SReAM — Data Link

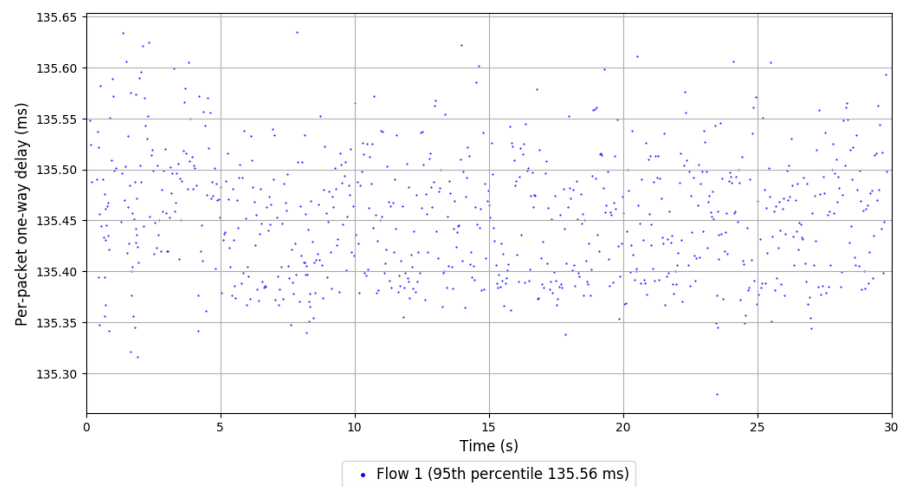
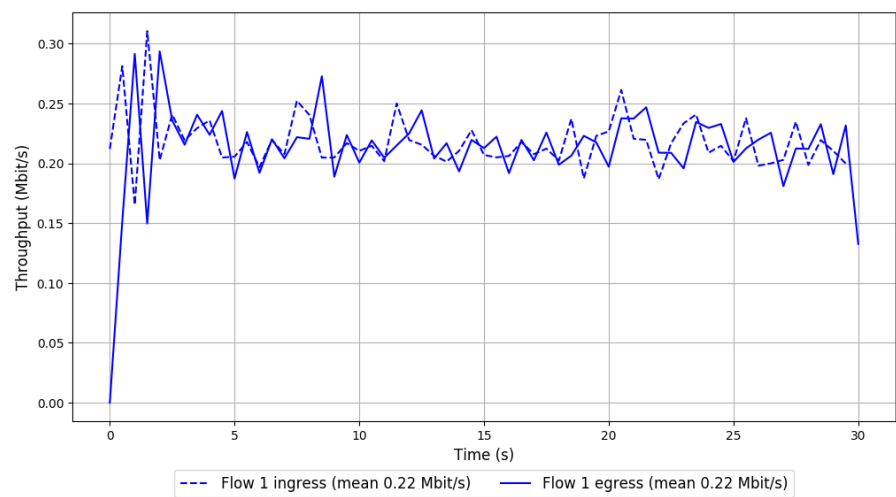


Run 2: Statistics of SCReAM

Start at: 2018-09-07 18:34:22  
End at: 2018-09-07 18:34:52  
Local clock offset: -1.562 ms  
Remote clock offset: -0.072 ms

# Below is generated by plot.py at 2018-09-07 21:19:55  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 135.561 ms  
Loss rate: 0.89%  
-- Flow 1:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 135.561 ms  
Loss rate: 0.89%

Run 2: Report of SReAM — Data Link

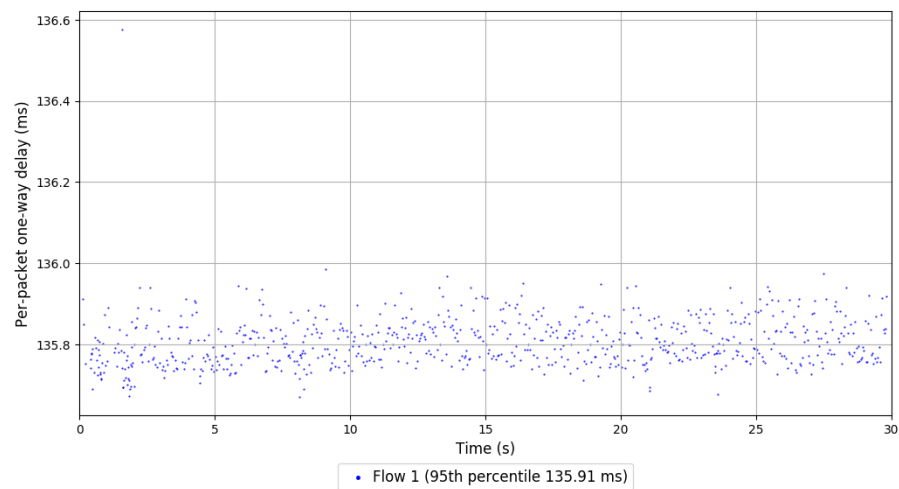
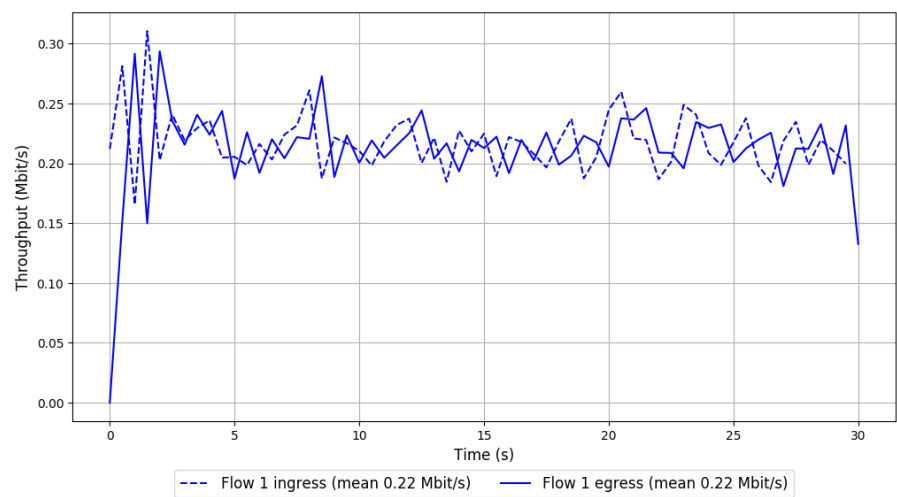


Run 3: Statistics of SCReAM

Start at: 2018-09-07 19:01:08  
End at: 2018-09-07 19:01:38  
Local clock offset: -0.746 ms  
Remote clock offset: -0.067 ms

# Below is generated by plot.py at 2018-09-07 21:19:55  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 135.907 ms  
Loss rate: 0.89%  
-- Flow 1:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 135.907 ms  
Loss rate: 0.89%

Run 3: Report of SReAM — Data Link



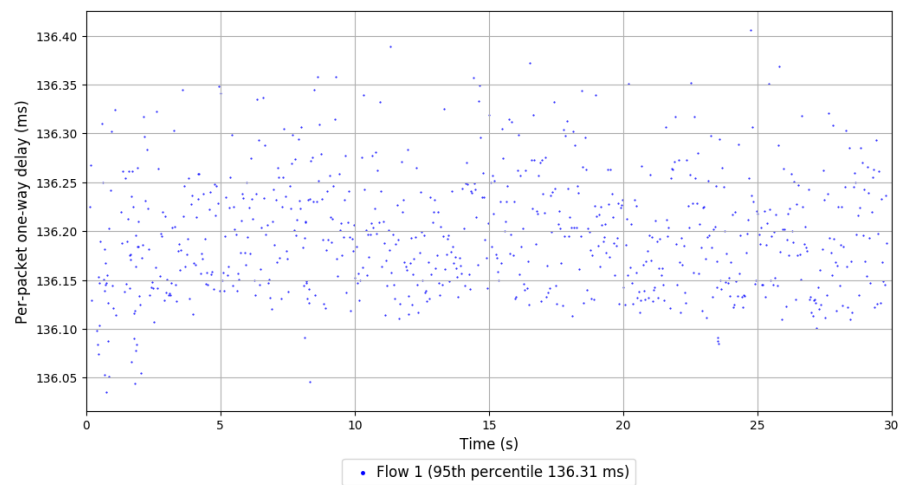
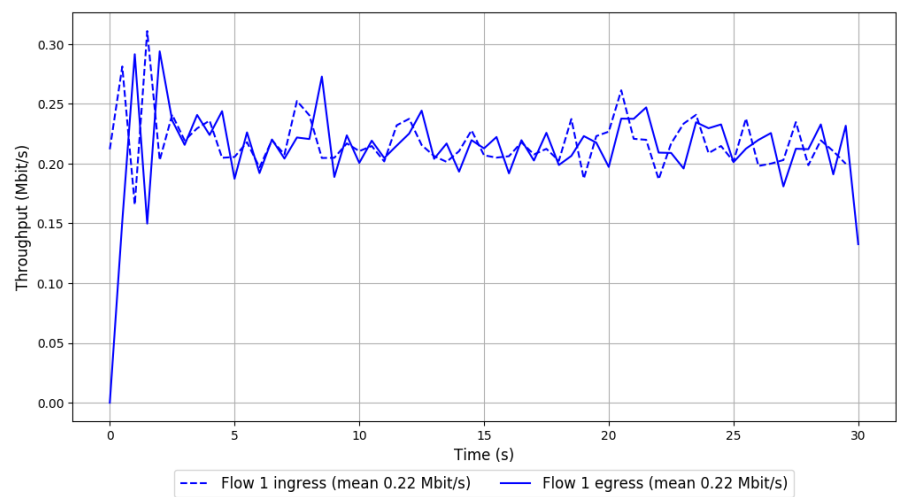


Run 4: Statistics of SCReAM

Start at: 2018-09-07 19:28:16  
End at: 2018-09-07 19:28:46  
Local clock offset: -0.356 ms  
Remote clock offset: -0.473 ms

# Below is generated by plot.py at 2018-09-07 21:19:56  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 136.309 ms  
Loss rate: 0.89%  
-- Flow 1:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 136.309 ms  
Loss rate: 0.89%

Run 4: Report of SReAM — Data Link



Run 5: Statistics of SCReAM

Start at: 2018-09-07 19:54:51

End at: 2018-09-07 19:55:21

Local clock offset: -0.049 ms

Remote clock offset: 0.351 ms

# Below is generated by plot.py at 2018-09-07 21:19:56

# Datalink statistics

-- Total of 1 flow:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 134.371 ms

Loss rate: 0.89%

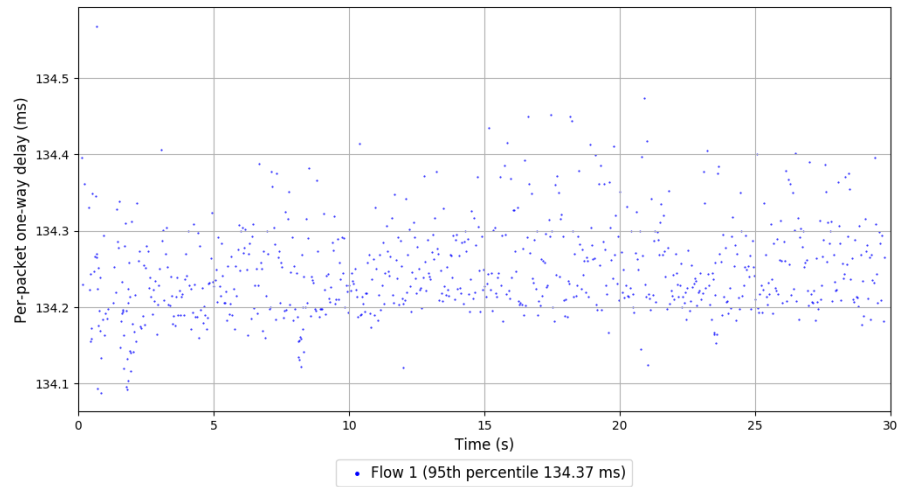
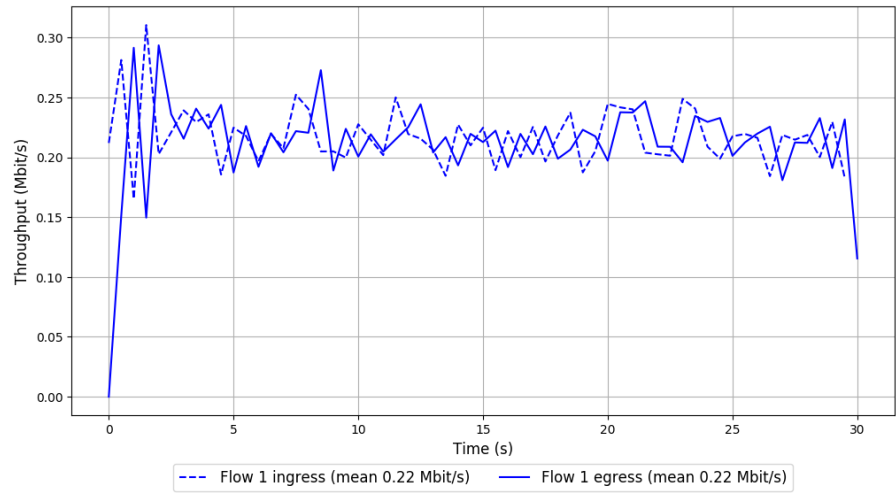
-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 134.371 ms

Loss rate: 0.89%

## Run 5: Report of SReAM — Data Link



Run 1: Statistics of Sprout

Start at: 2018-09-07 18:11:36

End at: 2018-09-07 18:12:06

Local clock offset: -4.017 ms

Remote clock offset: 0.223 ms

# Below is generated by plot.py at 2018-09-07 21:19:56

# Datalink statistics

-- Total of 1 flow:

Average throughput: 0.41 Mbit/s

95th percentile per-packet one-way delay: 135.153 ms

Loss rate: 0.88%

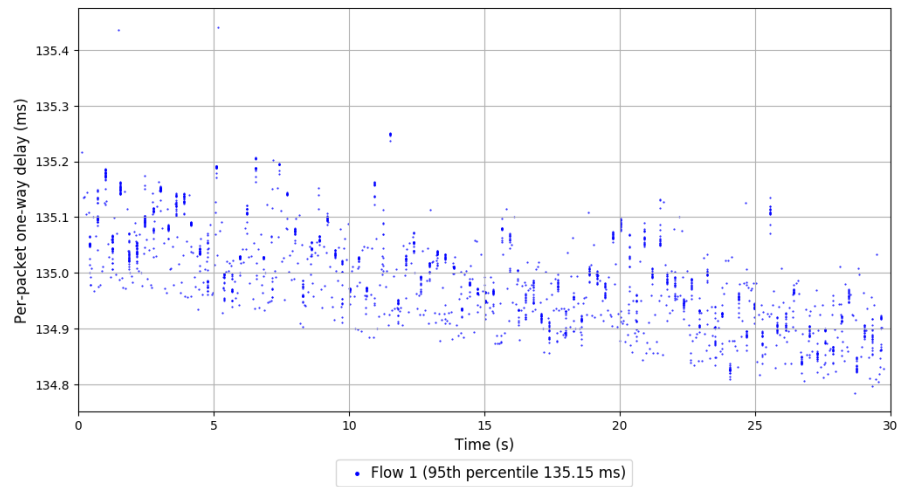
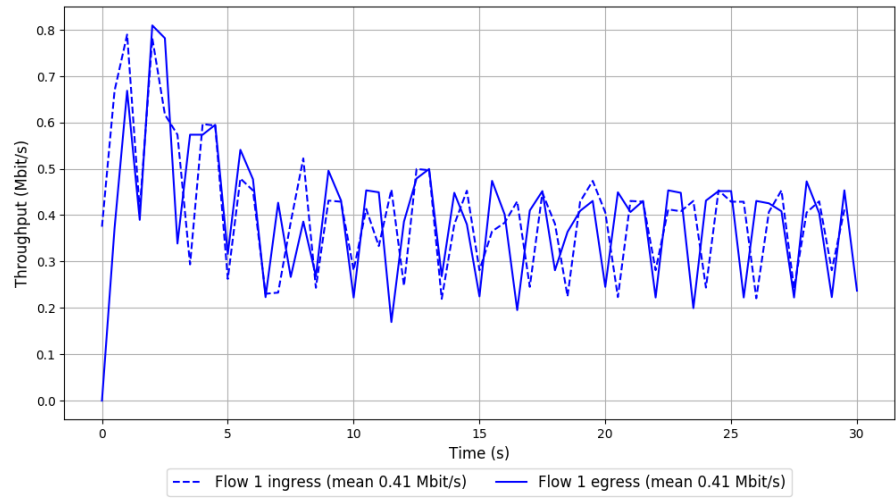
-- Flow 1:

Average throughput: 0.41 Mbit/s

95th percentile per-packet one-way delay: 135.153 ms

Loss rate: 0.88%

## Run 1: Report of Sprout — Data Link

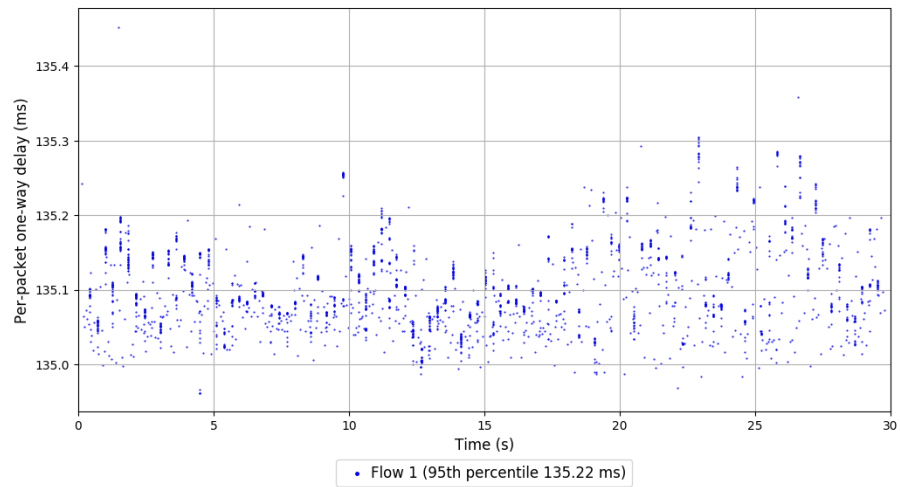
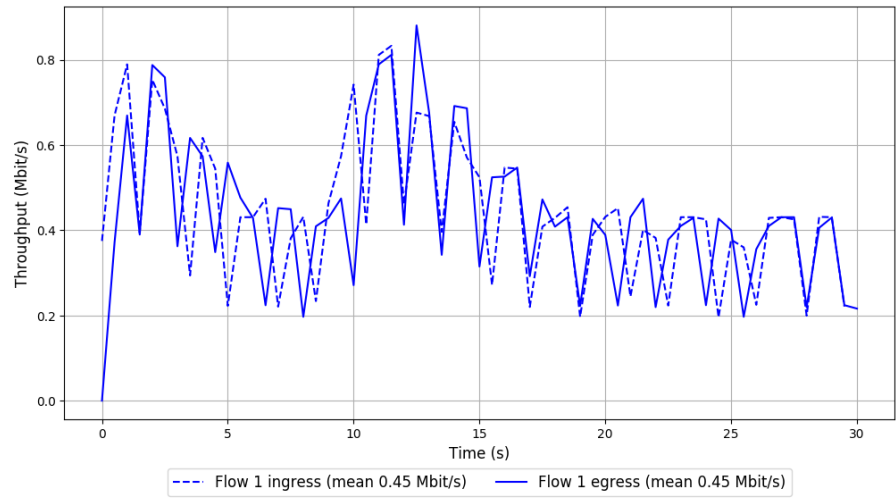


Run 2: Statistics of Sprout

Start at: 2018-09-07 18:38:10  
End at: 2018-09-07 18:38:40  
Local clock offset: -1.438 ms  
Remote clock offset: -0.09 ms

# Below is generated by plot.py at 2018-09-07 21:19:56  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.45 Mbit/s  
95th percentile per-packet one-way delay: 135.217 ms  
Loss rate: 0.80%  
-- Flow 1:  
Average throughput: 0.45 Mbit/s  
95th percentile per-packet one-way delay: 135.217 ms  
Loss rate: 0.80%

## Run 2: Report of Sprout — Data Link



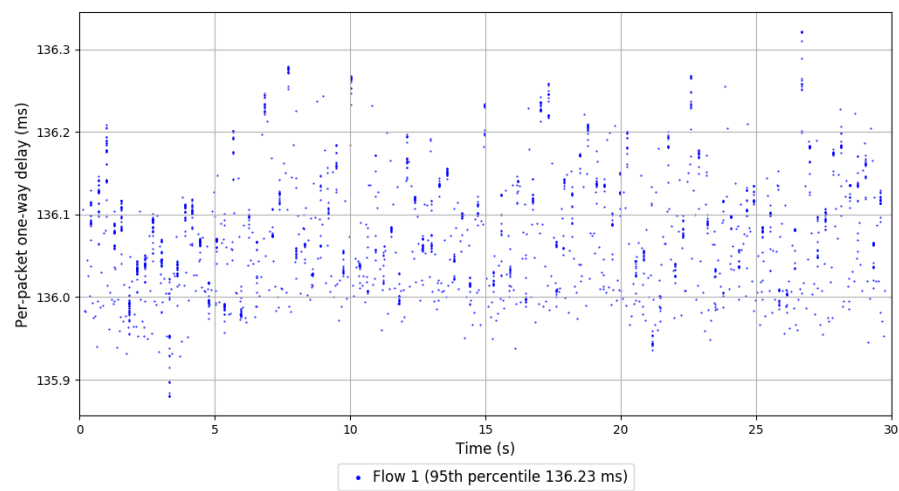
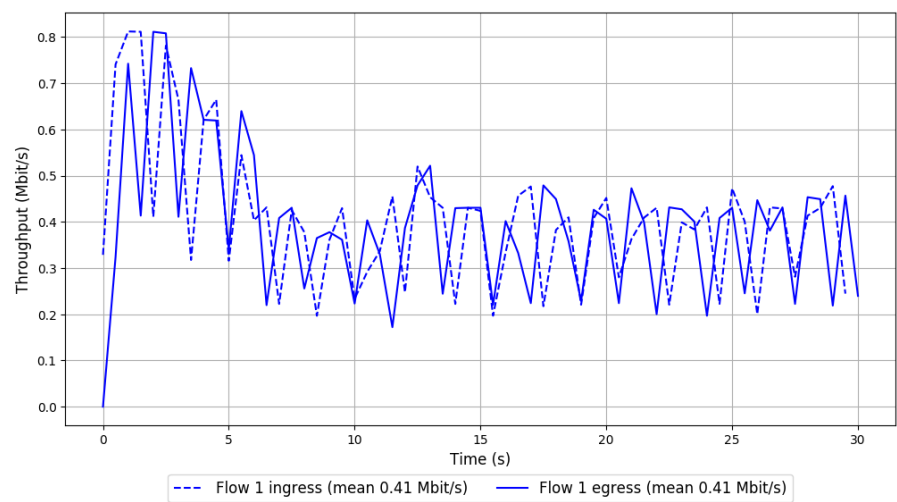


Run 3: Statistics of Sprout

Start at: 2018-09-07 19:05:10  
End at: 2018-09-07 19:05:40  
Local clock offset: -0.607 ms  
Remote clock offset: -0.083 ms

# Below is generated by plot.py at 2018-09-07 21:19:56  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.41 Mbit/s  
95th percentile per-packet one-way delay: 136.226 ms  
Loss rate: 0.98%  
-- Flow 1:  
Average throughput: 0.41 Mbit/s  
95th percentile per-packet one-way delay: 136.226 ms  
Loss rate: 0.98%

Run 3: Report of Sprout — Data Link

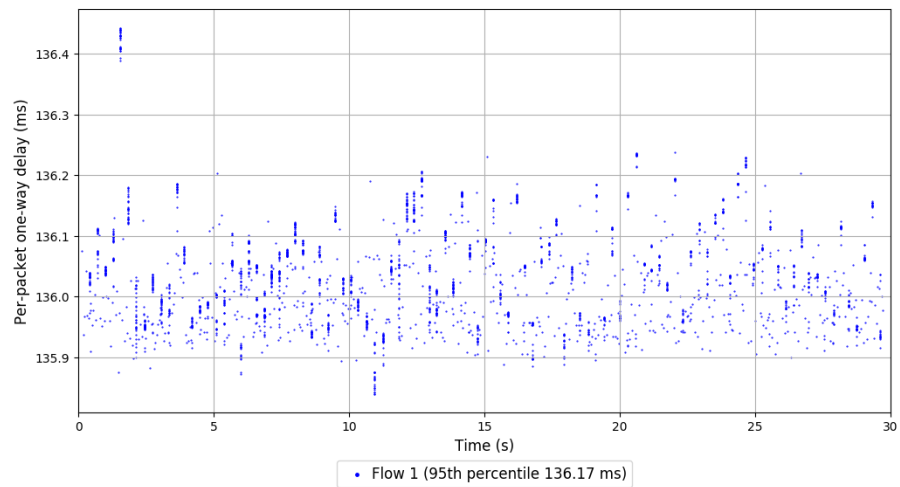
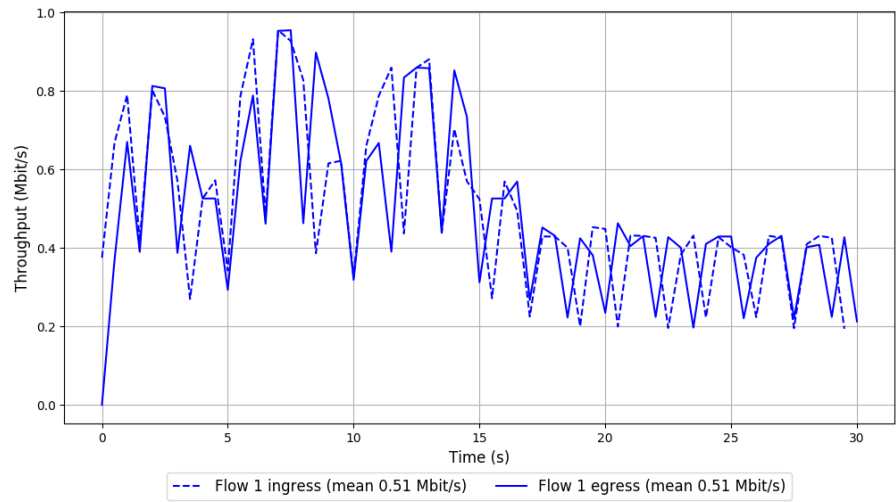


Run 4: Statistics of Sprout

Start at: 2018-09-07 19:31:48  
End at: 2018-09-07 19:32:18  
Local clock offset: -0.229 ms  
Remote clock offset: -0.137 ms

# Below is generated by plot.py at 2018-09-07 21:19:56  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.51 Mbit/s  
95th percentile per-packet one-way delay: 136.174 ms  
Loss rate: 0.63%  
-- Flow 1:  
Average throughput: 0.51 Mbit/s  
95th percentile per-packet one-way delay: 136.174 ms  
Loss rate: 0.63%

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

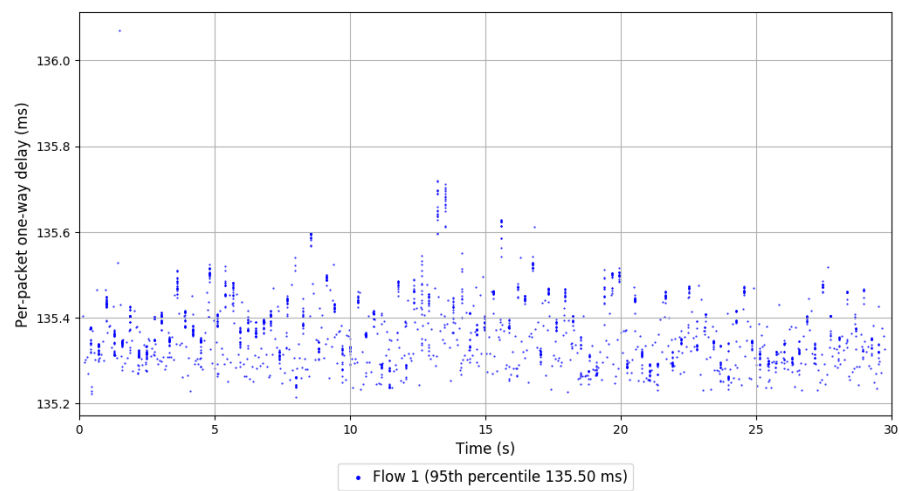
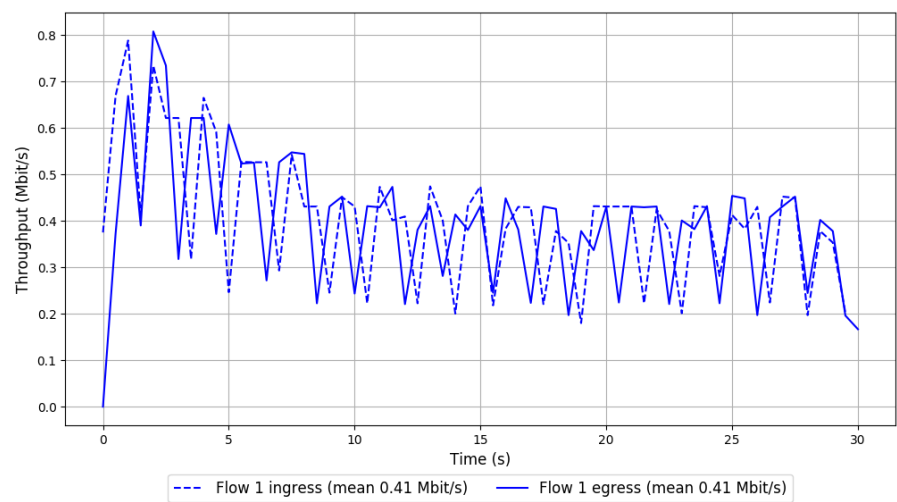


Run 5: Statistics of Sprout

Start at: 2018-09-07 19:58:52  
End at: 2018-09-07 19:59:22  
Local clock offset: -0.091 ms  
Remote clock offset: -0.042 ms

# Below is generated by plot.py at 2018-09-07 21:19:56  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 0.41 Mbit/s  
95th percentile per-packet one-way delay: 135.504 ms  
Loss rate: 0.81%  
-- Flow 1:  
Average throughput: 0.41 Mbit/s  
95th percentile per-packet one-way delay: 135.504 ms  
Loss rate: 0.81%

Run 5: Report of Sprout — Data Link



Run 1: Statistics of TaoVA-100x

Start at: 2018-09-07 18:23:12

End at: 2018-09-07 18:23:42

Local clock offset: -1.662 ms

Remote clock offset: -0.386 ms

# Below is generated by plot.py at 2018-09-07 21:19:56

# Datalink statistics

-- Total of 1 flow:

Average throughput: 213.59 Mbit/s

95th percentile per-packet one-way delay: 136.190 ms

Loss rate: 1.01%

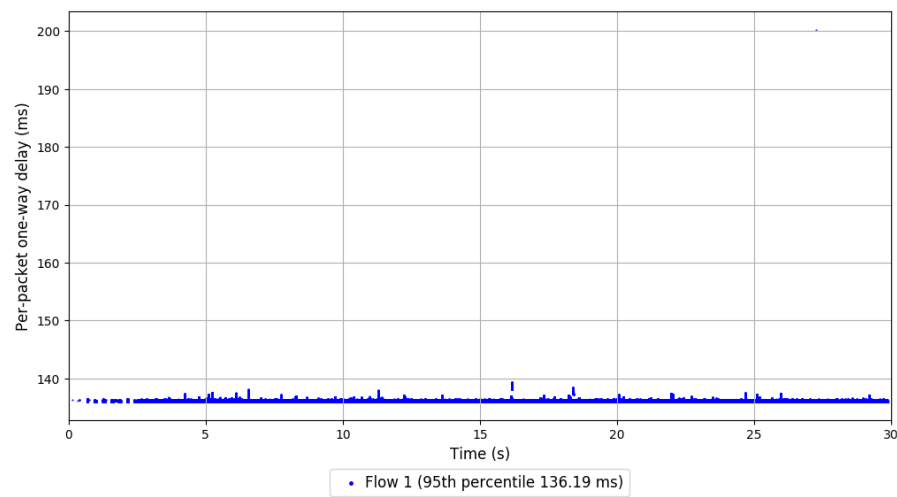
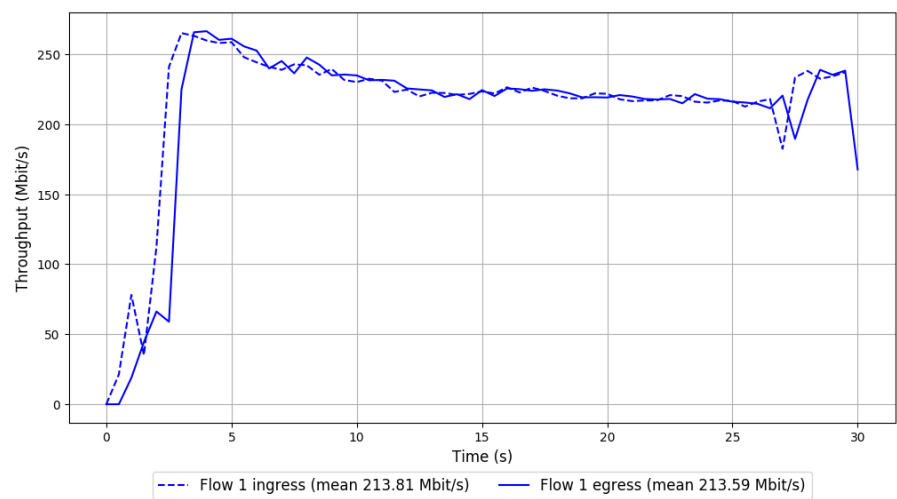
-- Flow 1:

Average throughput: 213.59 Mbit/s

95th percentile per-packet one-way delay: 136.190 ms

Loss rate: 1.01%

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



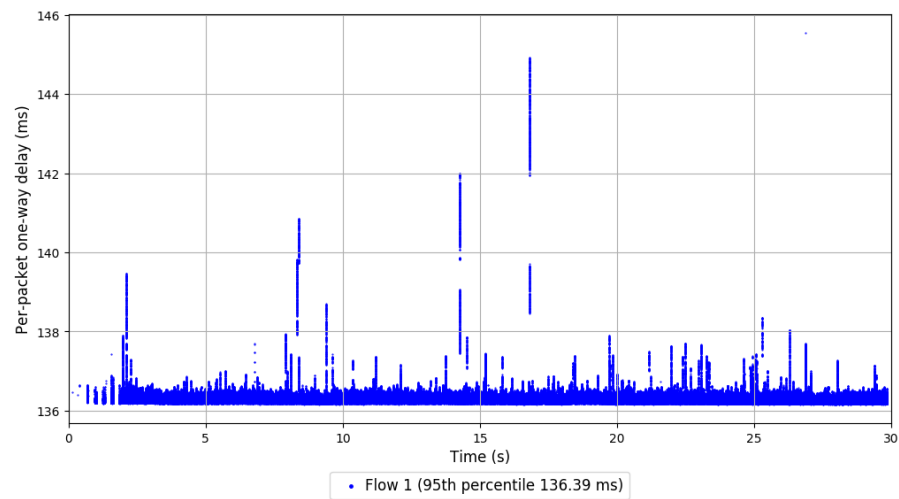
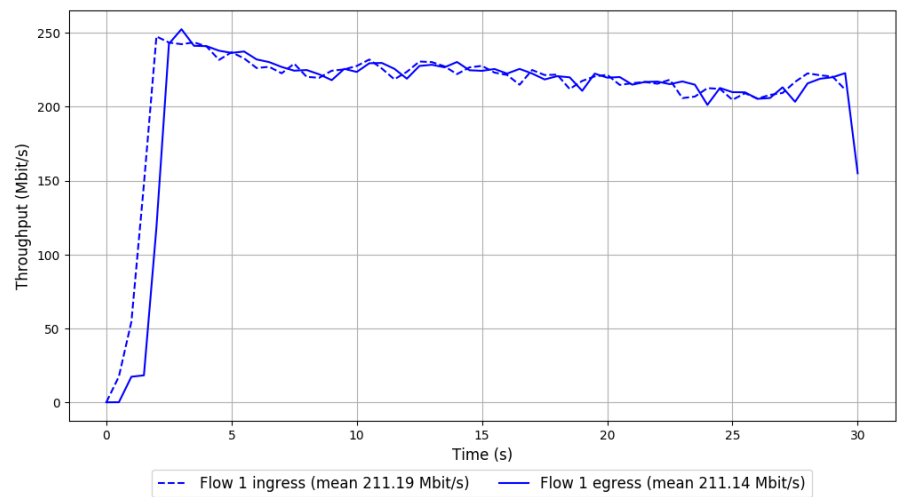


Run 2: Statistics of TaoVA-100x

Start at: 2018-09-07 18:49:55  
End at: 2018-09-07 18:50:25  
Local clock offset: -0.76 ms  
Remote clock offset: -0.033 ms

# Below is generated by plot.py at 2018-09-07 21:19:56  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 211.14 Mbit/s  
95th percentile per-packet one-way delay: 136.391 ms  
Loss rate: 0.93%  
-- Flow 1:  
Average throughput: 211.14 Mbit/s  
95th percentile per-packet one-way delay: 136.391 ms  
Loss rate: 0.93%

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



Run 3: Statistics of TaoVA-100x

Start at: 2018-09-07 19:17:10

End at: 2018-09-07 19:17:40

Local clock offset: -0.583 ms

Remote clock offset: 0.319 ms

# Below is generated by plot.py at 2018-09-07 21:19:56

# Datalink statistics

-- Total of 1 flow:

Average throughput: 213.99 Mbit/s

95th percentile per-packet one-way delay: 134.232 ms

Loss rate: 0.94%

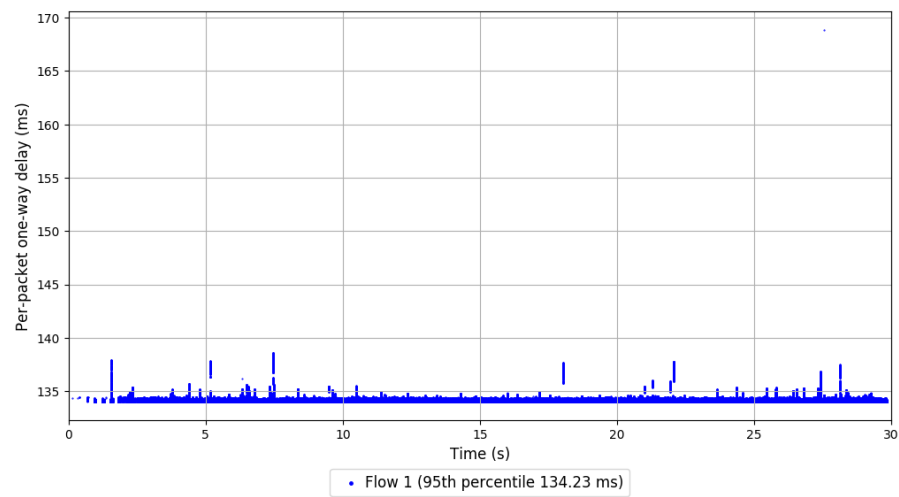
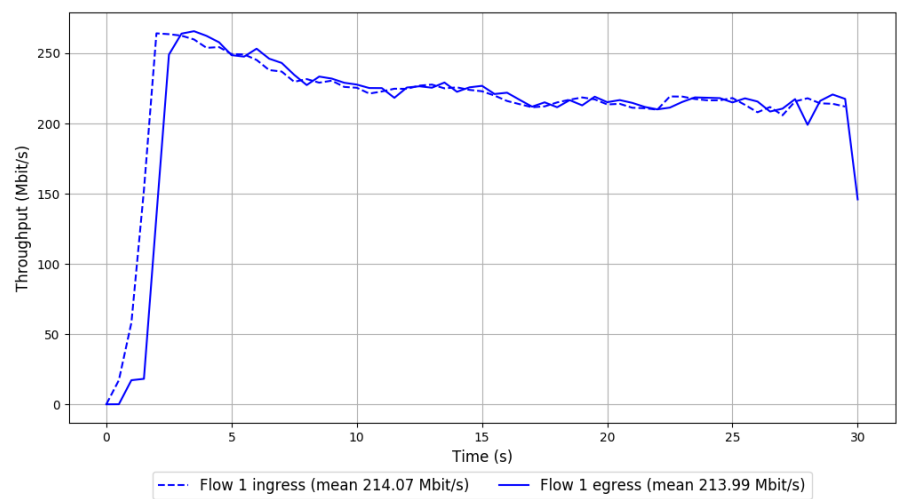
-- Flow 1:

Average throughput: 213.99 Mbit/s

95th percentile per-packet one-way delay: 134.232 ms

Loss rate: 0.94%

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

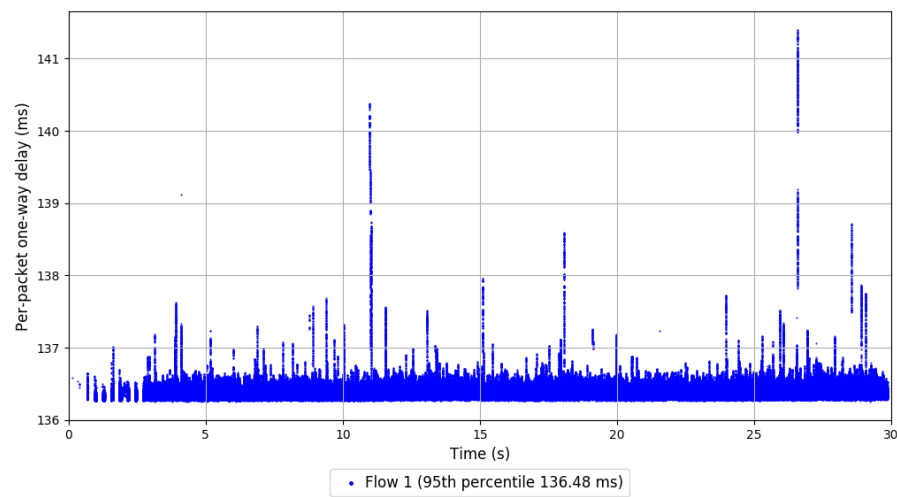
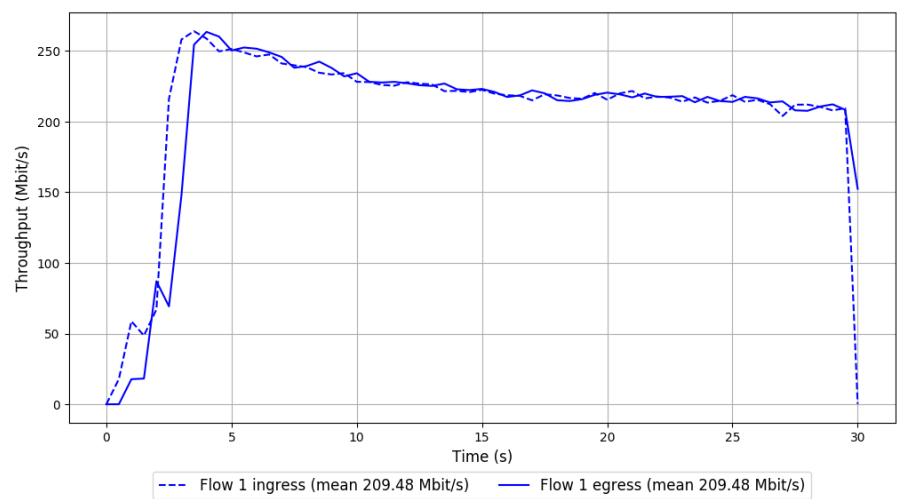


Run 4: Statistics of TaoVA-100x

Start at: 2018-09-07 19:43:36  
End at: 2018-09-07 19:44:06  
Local clock offset: -0.166 ms  
Remote clock offset: -0.487 ms

# Below is generated by plot.py at 2018-09-07 21:19:56  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 209.48 Mbit/s  
95th percentile per-packet one-way delay: 136.481 ms  
Loss rate: 0.90%  
-- Flow 1:  
Average throughput: 209.48 Mbit/s  
95th percentile per-packet one-way delay: 136.481 ms  
Loss rate: 0.90%

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



Run 5: Statistics of TaoVA-100x

Start at: 2018-09-07 20:10:38

End at: 2018-09-07 20:11:08

Local clock offset: 0.222 ms

Remote clock offset: -0.398 ms

# Below is generated by plot.py at 2018-09-07 21:19:56

# Datalink statistics

-- Total of 1 flow:

Average throughput: 184.51 Mbit/s

95th percentile per-packet one-way delay: 136.979 ms

Loss rate: 1.10%

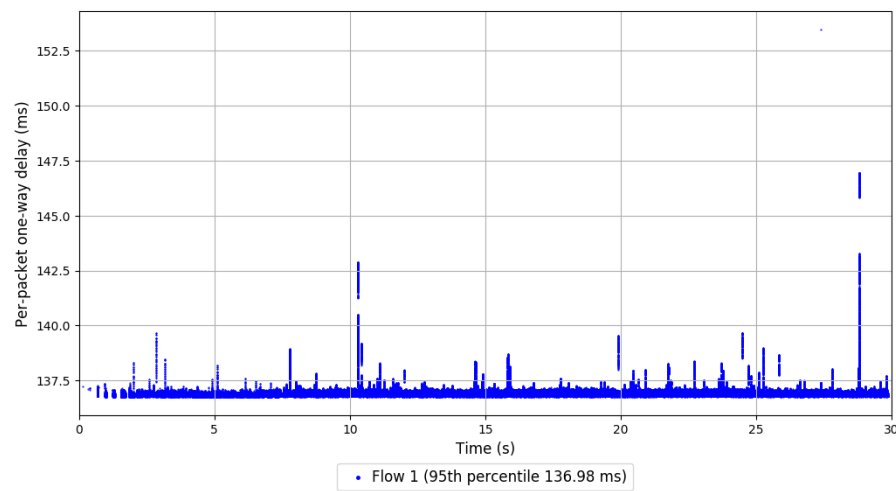
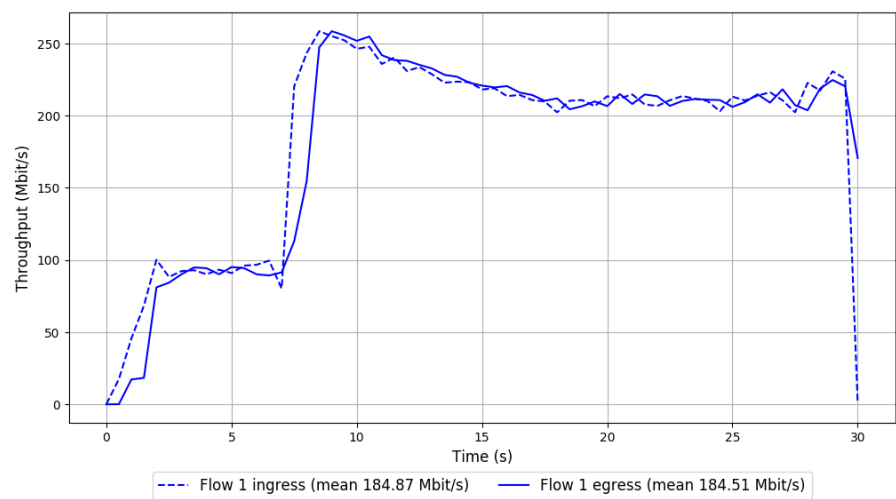
-- Flow 1:

Average throughput: 184.51 Mbit/s

95th percentile per-packet one-way delay: 136.979 ms

Loss rate: 1.10%

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



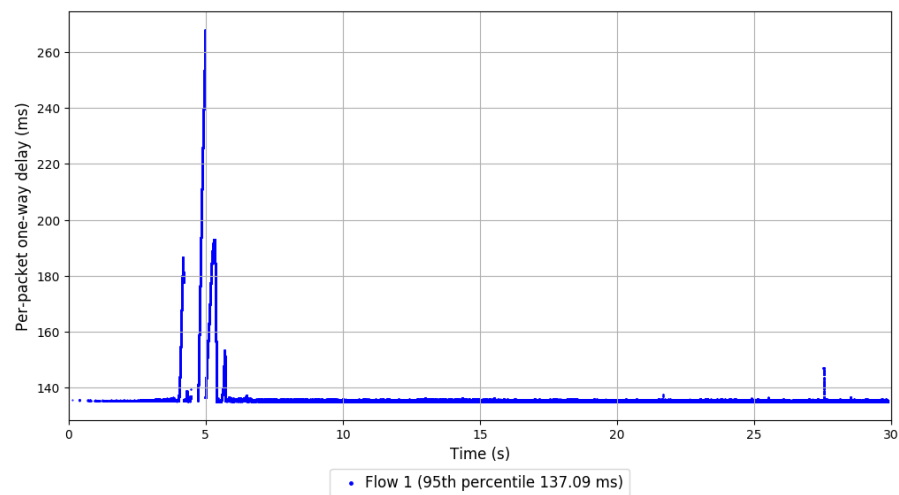
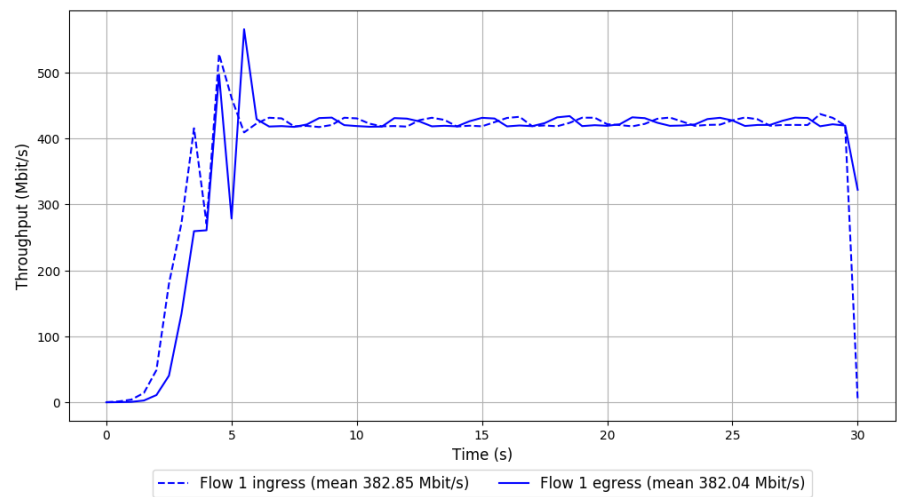


Run 1: Statistics of TCP Vegas

Start at: 2018-09-07 18:10:04  
End at: 2018-09-07 18:10:34  
Local clock offset: -4.872 ms  
Remote clock offset: -0.084 ms

# Below is generated by plot.py at 2018-09-07 21:19:56  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 382.04 Mbit/s  
95th percentile per-packet one-way delay: 137.090 ms  
Loss rate: 1.12%  
-- Flow 1:  
Average throughput: 382.04 Mbit/s  
95th percentile per-packet one-way delay: 137.090 ms  
Loss rate: 1.12%

Run 1: Report of TCP Vegas — Data Link

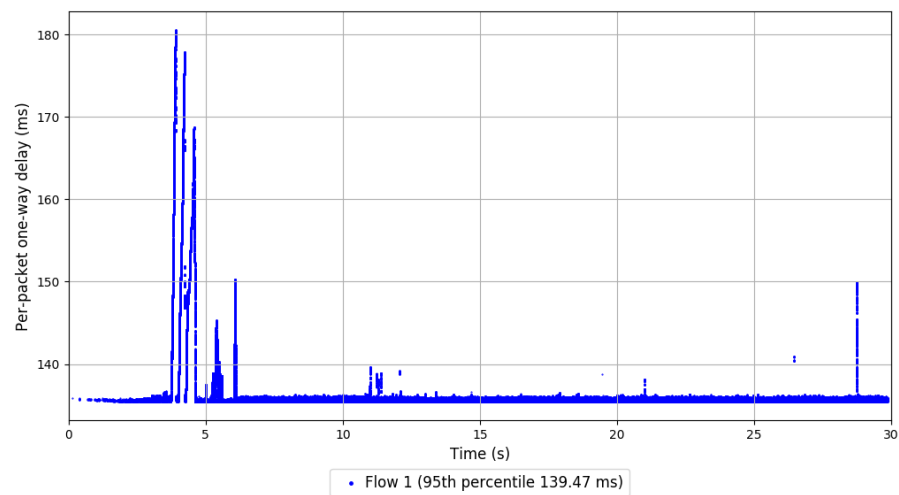
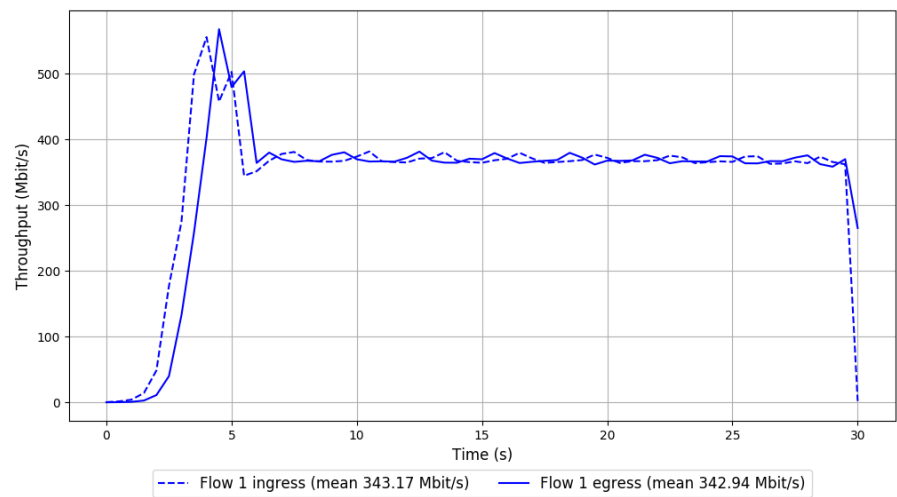


Run 2: Statistics of TCP Vegas

Start at: 2018-09-07 18:36:41  
End at: 2018-09-07 18:37:11  
Local clock offset: -1.538 ms  
Remote clock offset: -0.029 ms

# Below is generated by plot.py at 2018-09-07 21:21:23  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 342.94 Mbit/s  
95th percentile per-packet one-way delay: 139.475 ms  
Loss rate: 0.97%  
-- Flow 1:  
Average throughput: 342.94 Mbit/s  
95th percentile per-packet one-way delay: 139.475 ms  
Loss rate: 0.97%

Run 2: Report of TCP Vegas — Data Link

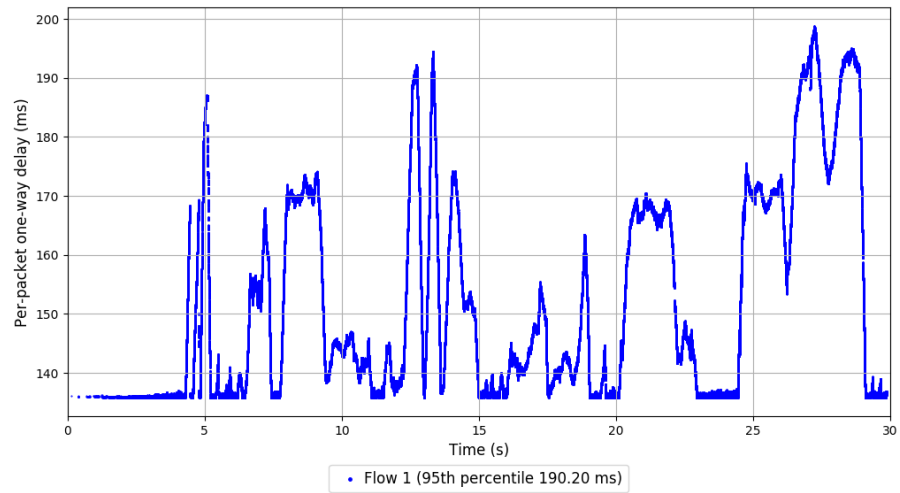
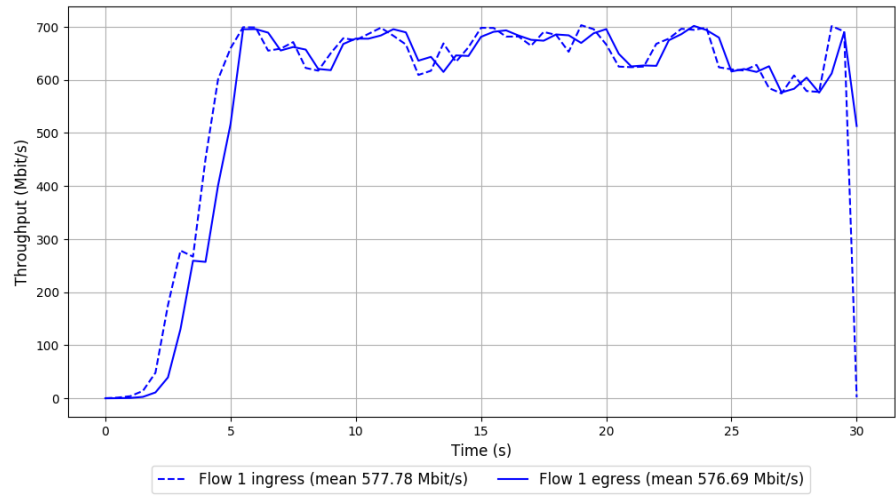


Run 3: Statistics of TCP Vegas

Start at: 2018-09-07 19:03:27  
End at: 2018-09-07 19:03:57  
Local clock offset: -0.656 ms  
Remote clock offset: -0.083 ms

# Below is generated by plot.py at 2018-09-07 21:26:57  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 576.69 Mbit/s  
95th percentile per-packet one-way delay: 190.202 ms  
Loss rate: 1.09%  
-- Flow 1:  
Average throughput: 576.69 Mbit/s  
95th percentile per-packet one-way delay: 190.202 ms  
Loss rate: 1.09%

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

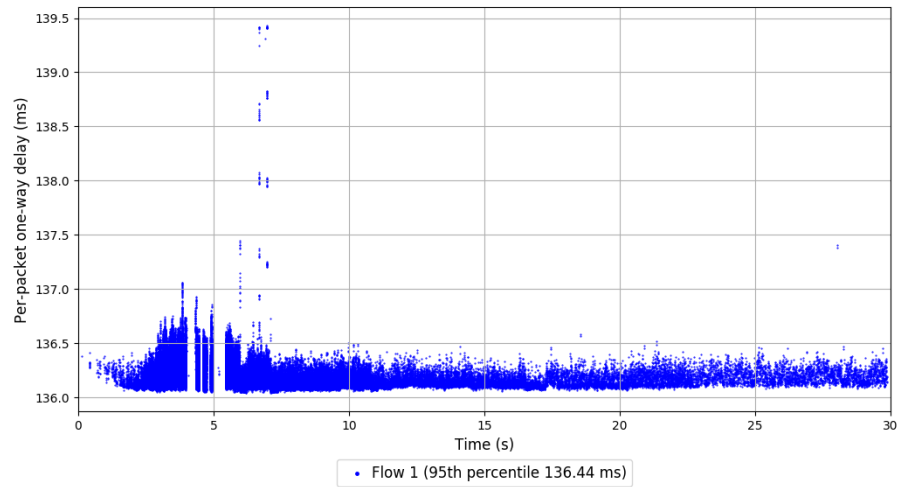
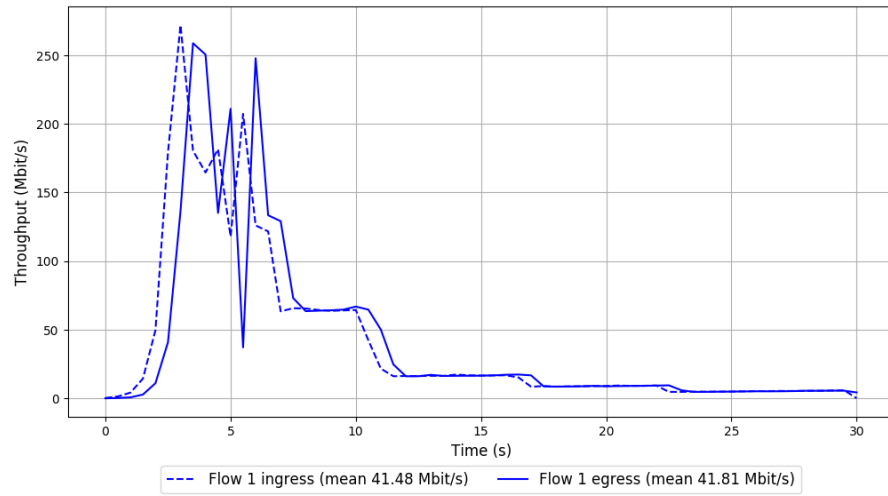


Run 4: Statistics of TCP Vegas

Start at: 2018-09-07 19:30:35  
End at: 2018-09-07 19:31:06  
Local clock offset: -0.318 ms  
Remote clock offset: -0.418 ms

# Below is generated by plot.py at 2018-09-07 21:26:57  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 41.81 Mbit/s  
95th percentile per-packet one-way delay: 136.437 ms  
Loss rate: 0.13%  
-- Flow 1:  
Average throughput: 41.81 Mbit/s  
95th percentile per-packet one-way delay: 136.437 ms  
Loss rate: 0.13%

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



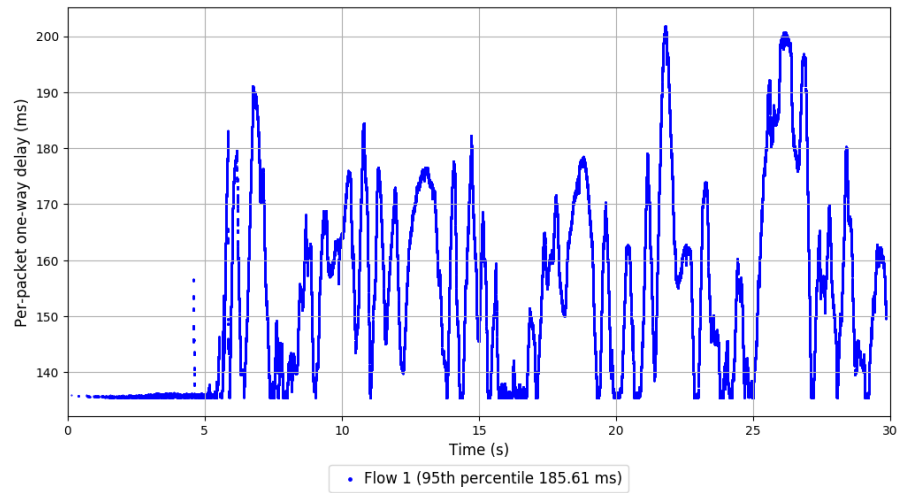
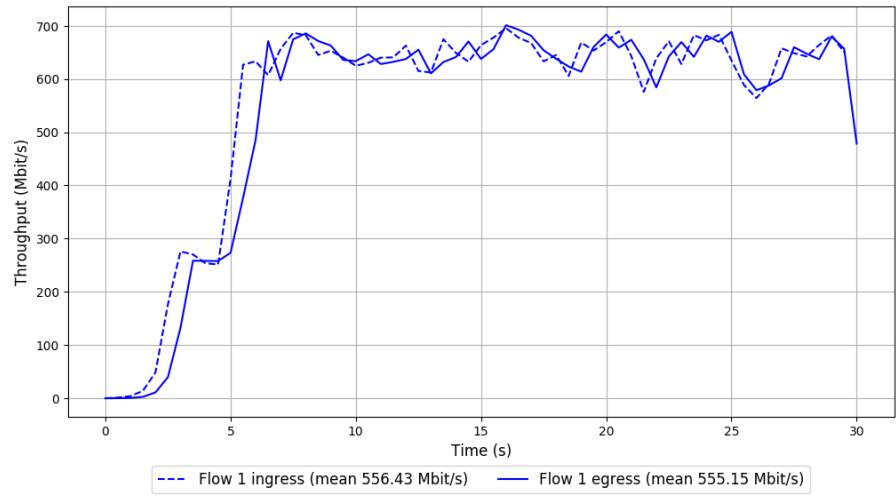


Run 5: Statistics of TCP Vegas

Start at: 2018-09-07 19:57:11  
End at: 2018-09-07 19:57:41  
Local clock offset: -0.162 ms  
Remote clock offset: -0.054 ms

# Below is generated by plot.py at 2018-09-07 21:26:57  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 555.15 Mbit/s  
95th percentile per-packet one-way delay: 185.611 ms  
Loss rate: 1.13%  
-- Flow 1:  
Average throughput: 555.15 Mbit/s  
95th percentile per-packet one-way delay: 185.611 ms  
Loss rate: 1.13%

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

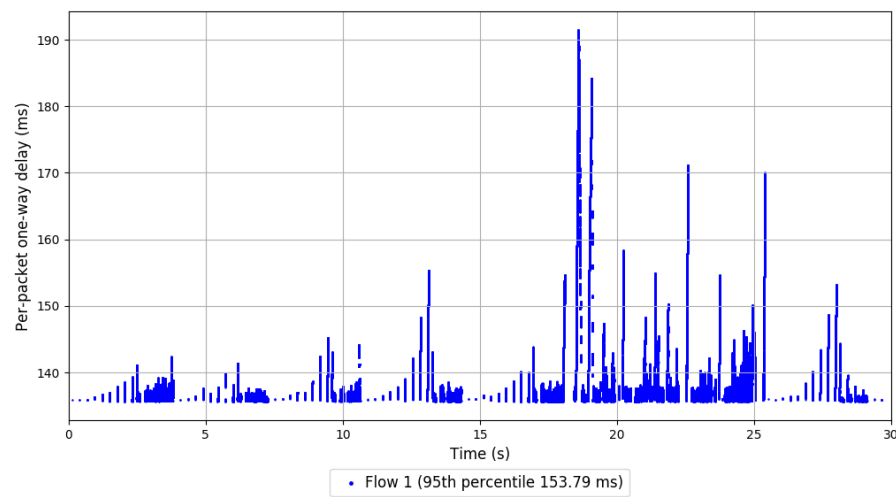
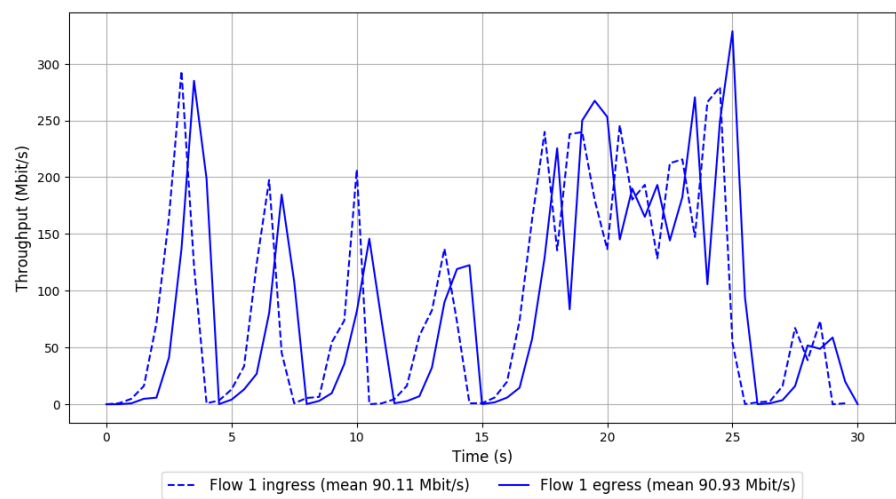


Run 1: Statistics of Verus

Start at: 2018-09-07 18:20:15  
End at: 2018-09-07 18:20:45  
Local clock offset: -1.983 ms  
Remote clock offset: -0.077 ms

# Below is generated by plot.py at 2018-09-07 21:26:57  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 90.93 Mbit/s  
95th percentile per-packet one-way delay: 153.787 ms  
Loss rate: 0.01%  
-- Flow 1:  
Average throughput: 90.93 Mbit/s  
95th percentile per-packet one-way delay: 153.787 ms  
Loss rate: 0.01%

Run 1: Report of Verus — Data Link



Run 2: Statistics of Verus

Start at: 2018-09-07 18:46:57

End at: 2018-09-07 18:47:27

Local clock offset: -0.977 ms

Remote clock offset: -0.43 ms

# Below is generated by plot.py at 2018-09-07 21:26:57

# Datalink statistics

-- Total of 1 flow:

Average throughput: 102.65 Mbit/s

95th percentile per-packet one-way delay: 176.214 ms

Loss rate: 1.13%

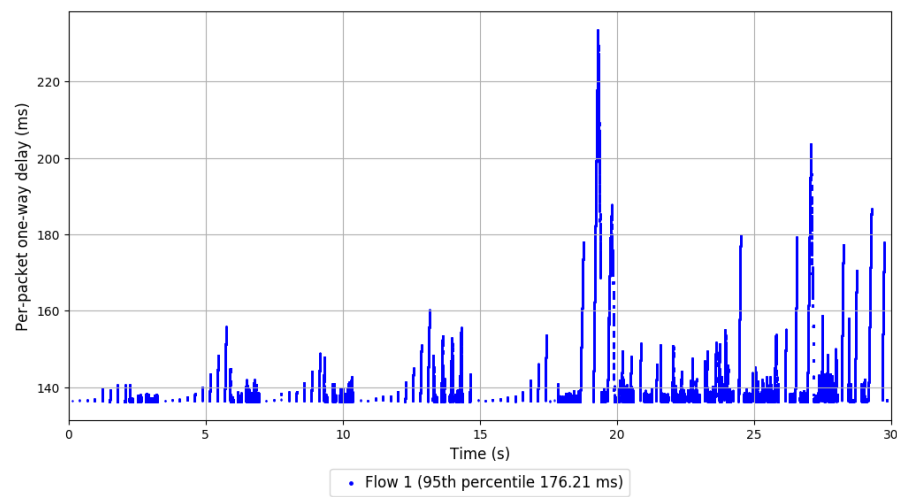
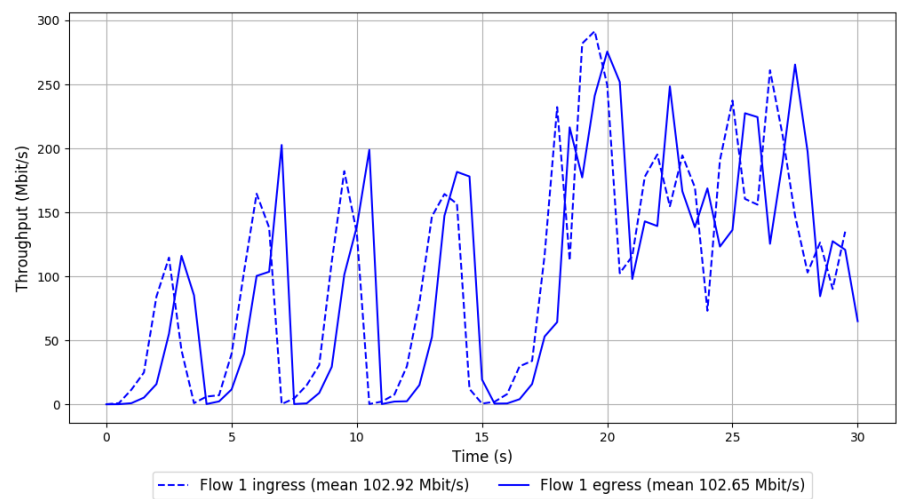
-- Flow 1:

Average throughput: 102.65 Mbit/s

95th percentile per-packet one-way delay: 176.214 ms

Loss rate: 1.13%

Run 2: Report of Verus — Data Link

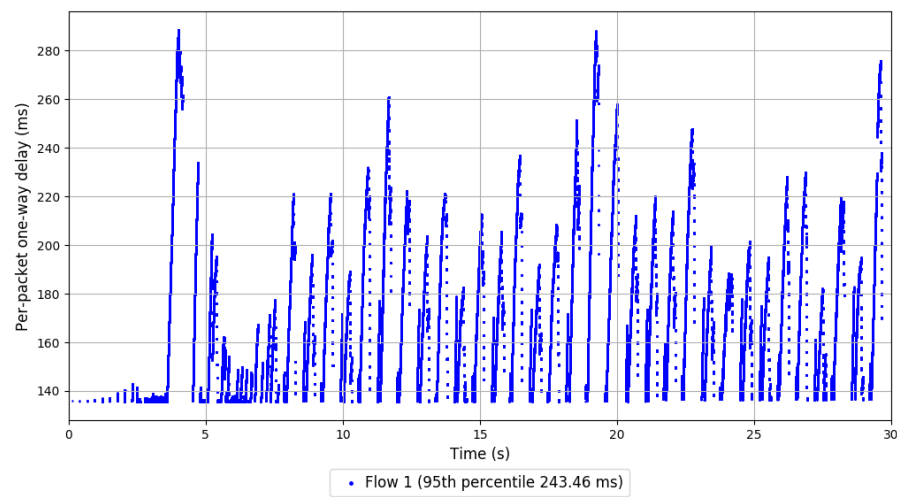
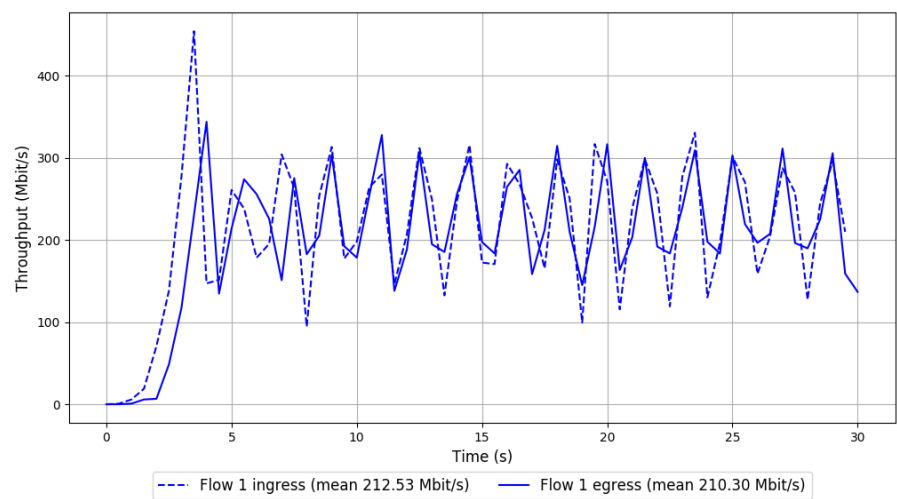


Run 3: Statistics of Verus

Start at: 2018-09-07 19:14:00  
End at: 2018-09-07 19:14:30  
Local clock offset: -0.822 ms  
Remote clock offset: -0.407 ms

# Below is generated by plot.py at 2018-09-07 21:26:57  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 210.30 Mbit/s  
95th percentile per-packet one-way delay: 243.464 ms  
Loss rate: 2.54%  
-- Flow 1:  
Average throughput: 210.30 Mbit/s  
95th percentile per-packet one-way delay: 243.464 ms  
Loss rate: 2.54%

Run 3: Report of Verus — Data Link





Run 4: Statistics of Verus

Start at: 2018-09-07 19:40:37

End at: 2018-09-07 19:41:07

Local clock offset: -0.368 ms

Remote clock offset: 0.247 ms

# Below is generated by plot.py at 2018-09-07 21:26:57

# Datalink statistics

-- Total of 1 flow:

Average throughput: 92.54 Mbit/s

95th percentile per-packet one-way delay: 292.183 ms

Loss rate: 15.67%

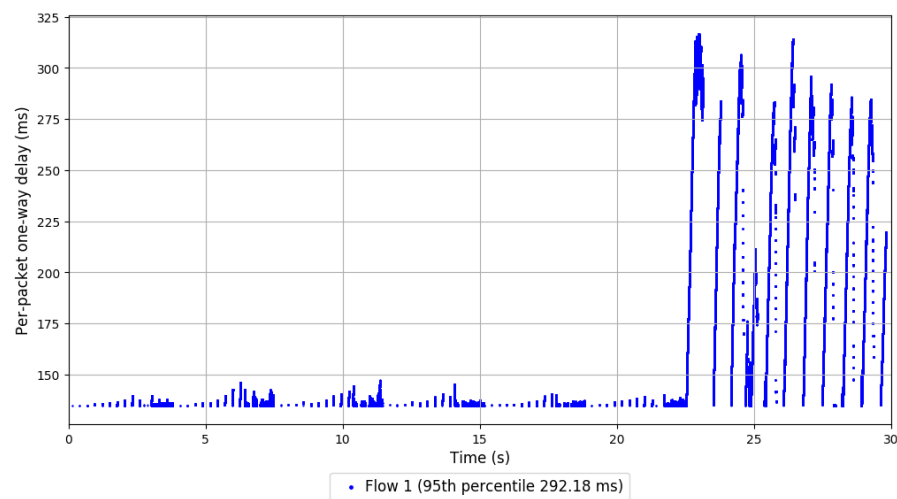
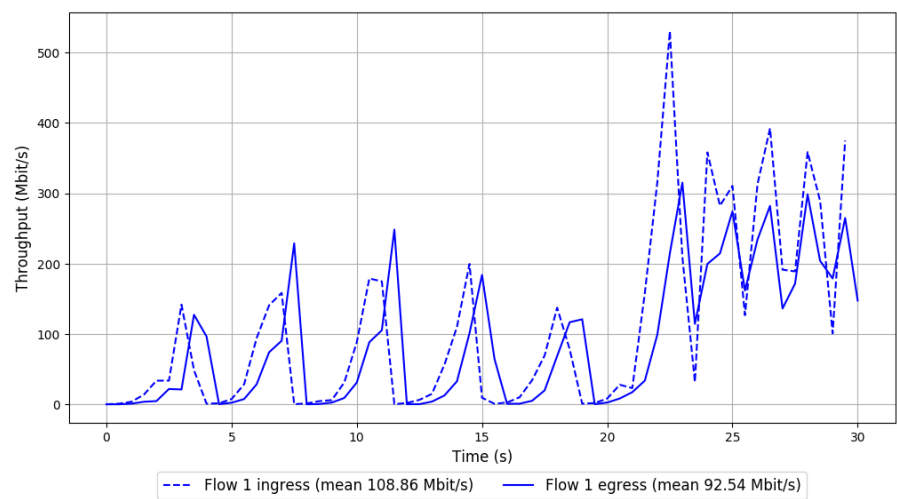
-- Flow 1:

Average throughput: 92.54 Mbit/s

95th percentile per-packet one-way delay: 292.183 ms

Loss rate: 15.67%

Run 4: Report of Verus — Data Link

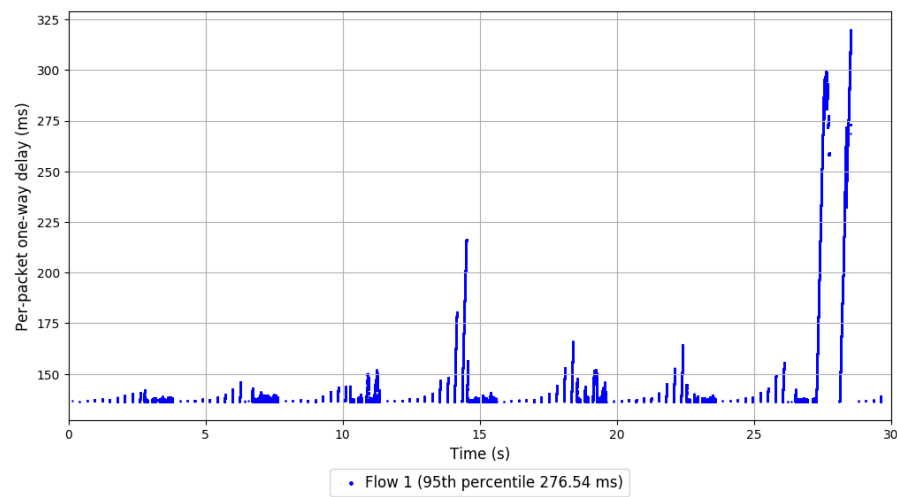
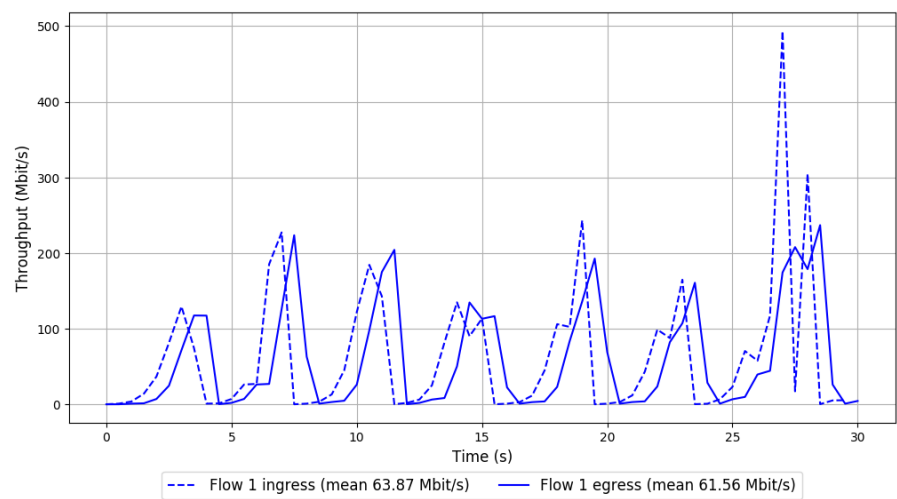


Run 5: Statistics of Verus

Start at: 2018-09-07 20:07:41  
End at: 2018-09-07 20:08:11  
Local clock offset: 0.074 ms  
Remote clock offset: -0.005 ms

# Below is generated by plot.py at 2018-09-07 21:26:57  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 61.56 Mbit/s  
95th percentile per-packet one-way delay: 276.540 ms  
Loss rate: 4.52%  
-- Flow 1:  
Average throughput: 61.56 Mbit/s  
95th percentile per-packet one-way delay: 276.540 ms  
Loss rate: 4.52%

Run 5: Report of Verus — Data Link



Run 1: Statistics of PCC-Vivace

Start at: 2018-09-07 18:01:34

End at: 2018-09-07 18:02:04

Local clock offset: -6.262 ms

Remote clock offset: -0.13 ms

# Below is generated by plot.py at 2018-09-07 21:26:57

# Datalink statistics

-- Total of 1 flow:

Average throughput: 353.01 Mbit/s

95th percentile per-packet one-way delay: 196.578 ms

Loss rate: 1.33%

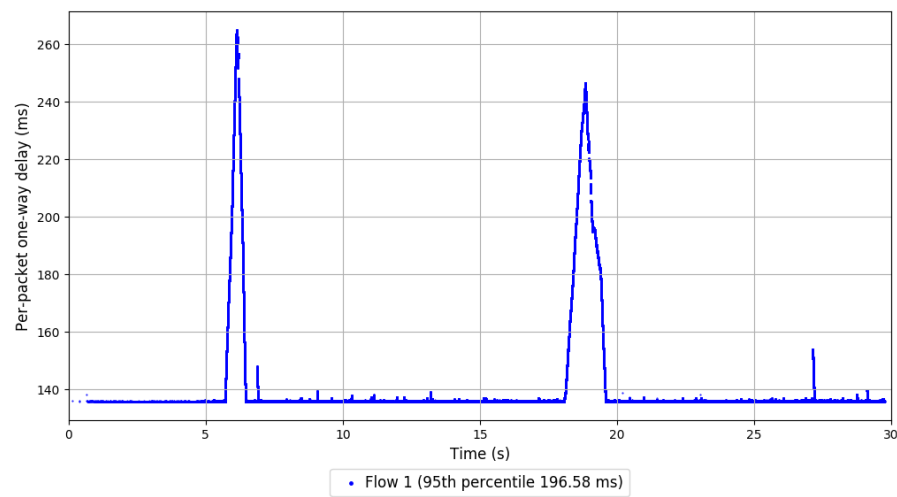
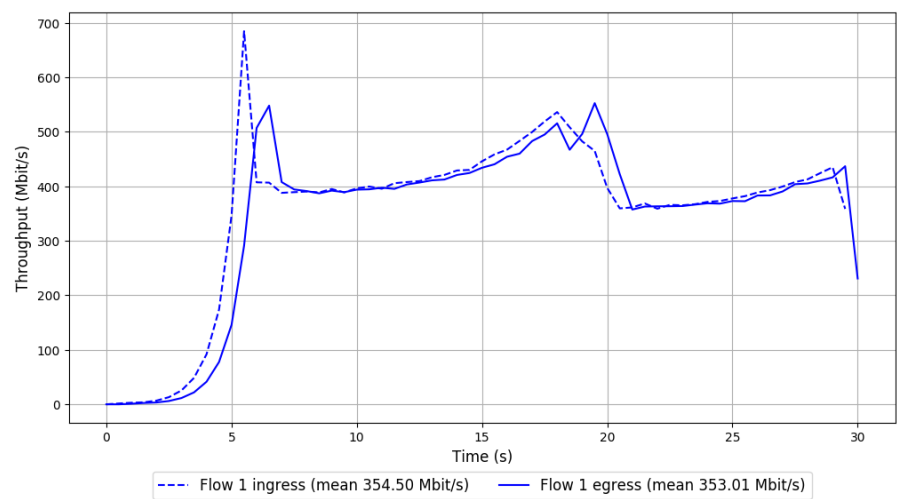
-- Flow 1:

Average throughput: 353.01 Mbit/s

95th percentile per-packet one-way delay: 196.578 ms

Loss rate: 1.33%

Run 1: Report of PCC-Vivace — Data Link

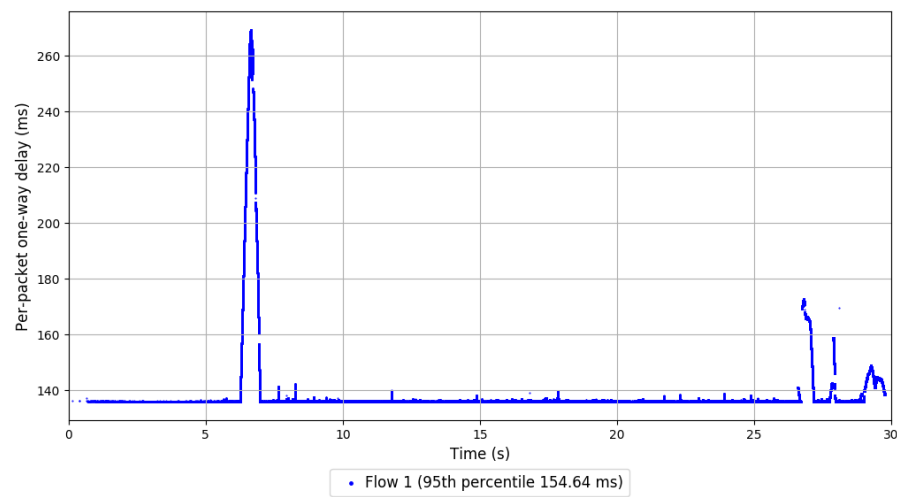
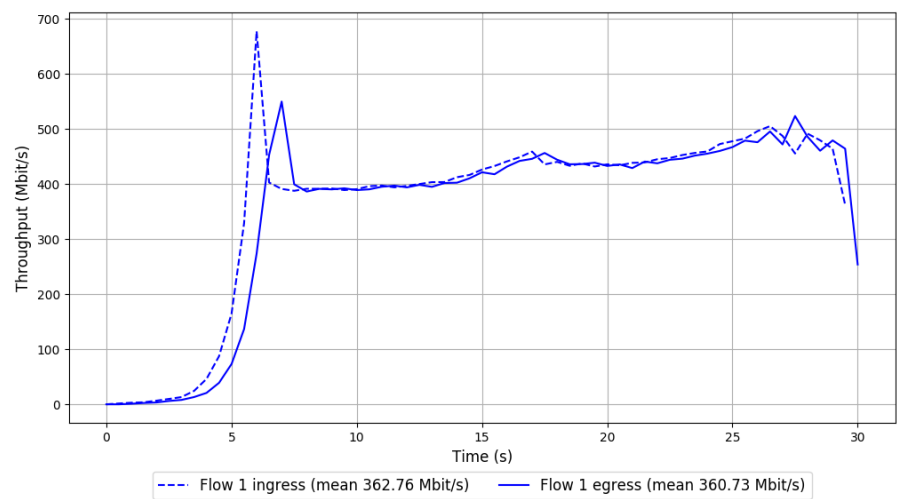


Run 2: Statistics of PCC-Vivace

Start at: 2018-09-07 18:28:06  
End at: 2018-09-07 18:28:36  
Local clock offset: -1.498 ms  
Remote clock offset: -0.062 ms

# Below is generated by plot.py at 2018-09-07 21:27:01  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 360.73 Mbit/s  
95th percentile per-packet one-way delay: 154.641 ms  
Loss rate: 1.47%  
-- Flow 1:  
Average throughput: 360.73 Mbit/s  
95th percentile per-packet one-way delay: 154.641 ms  
Loss rate: 1.47%

Run 2: Report of PCC-Vivace — Data Link



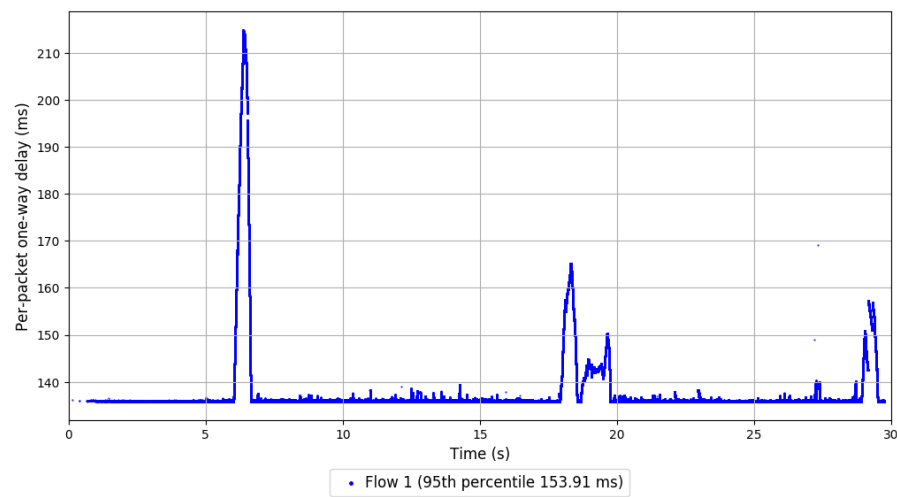
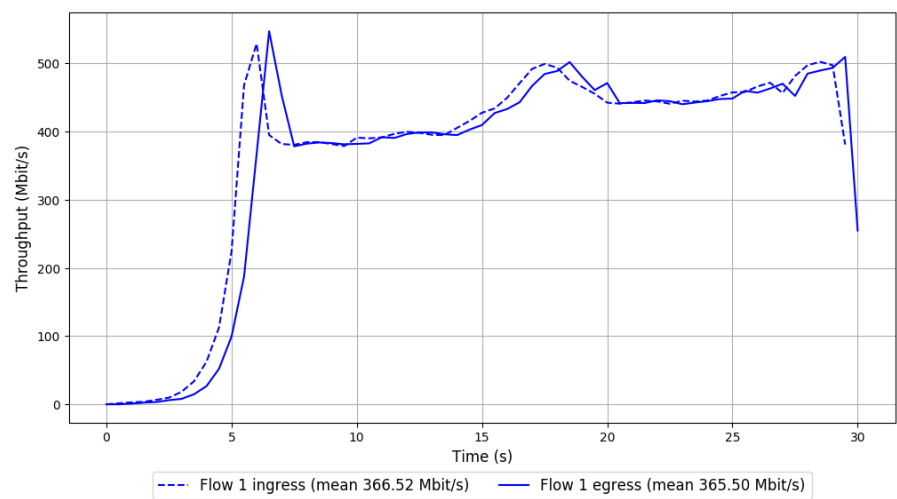


Run 3: Statistics of PCC-Vivace

Start at: 2018-09-07 18:54:52  
End at: 2018-09-07 18:55:22  
Local clock offset: -0.533 ms  
Remote clock offset: -0.028 ms

# Below is generated by plot.py at 2018-09-07 21:27:04  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 365.50 Mbit/s  
95th percentile per-packet one-way delay: 153.906 ms  
Loss rate: 1.19%  
-- Flow 1:  
Average throughput: 365.50 Mbit/s  
95th percentile per-packet one-way delay: 153.906 ms  
Loss rate: 1.19%

Run 3: Report of PCC-Vivace — Data Link



Run 4: Statistics of PCC-Vivace

Start at: 2018-09-07 19:22:04

End at: 2018-09-07 19:22:34

Local clock offset: -0.264 ms

Remote clock offset: -0.074 ms

# Below is generated by plot.py at 2018-09-07 21:27:06

# Datalink statistics

-- Total of 1 flow:

Average throughput: 363.81 Mbit/s

95th percentile per-packet one-way delay: 136.883 ms

Loss rate: 1.30%

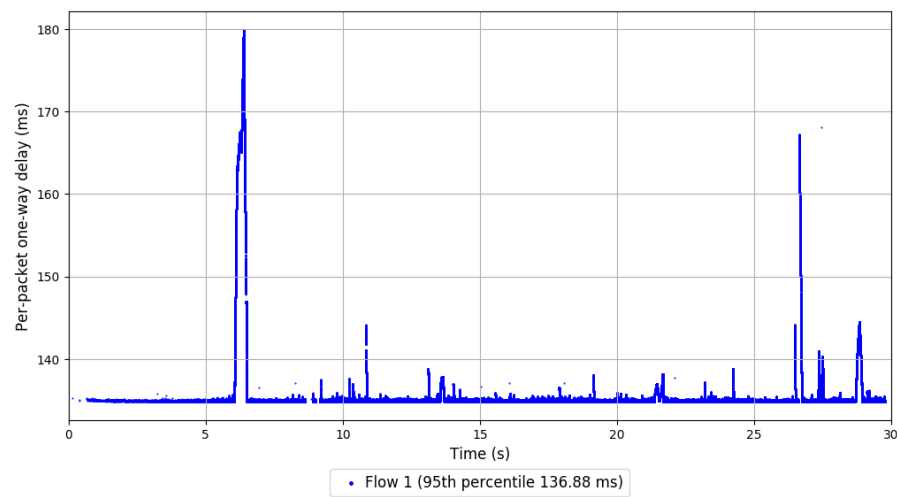
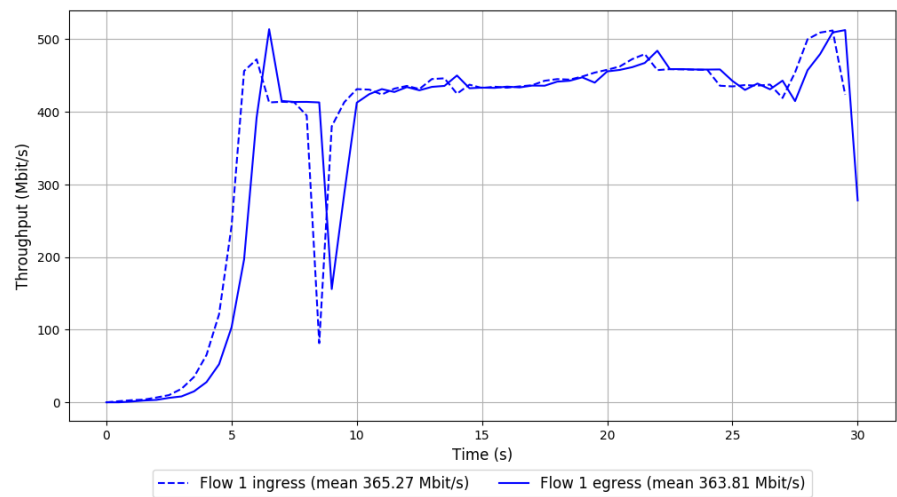
-- Flow 1:

Average throughput: 363.81 Mbit/s

95th percentile per-packet one-way delay: 136.883 ms

Loss rate: 1.30%

Run 4: Report of PCC-Vivace — Data Link



Run 5: Statistics of PCC-Vivace

Start at: 2018-09-07 19:48:33

End at: 2018-09-07 19:49:03

Local clock offset: -0.281 ms

Remote clock offset: 0.208 ms

# Below is generated by plot.py at 2018-09-07 21:27:07

# Datalink statistics

-- Total of 1 flow:

Average throughput: 373.92 Mbit/s

95th percentile per-packet one-way delay: 147.999 ms

Loss rate: 1.25%

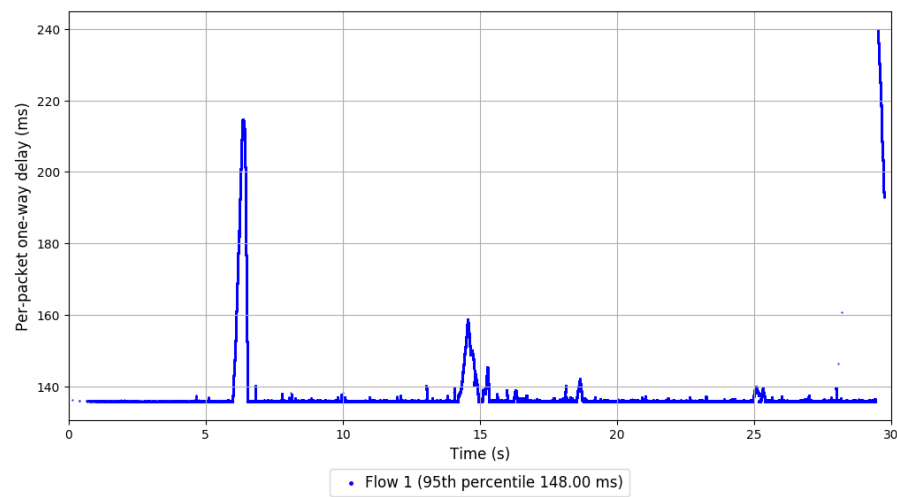
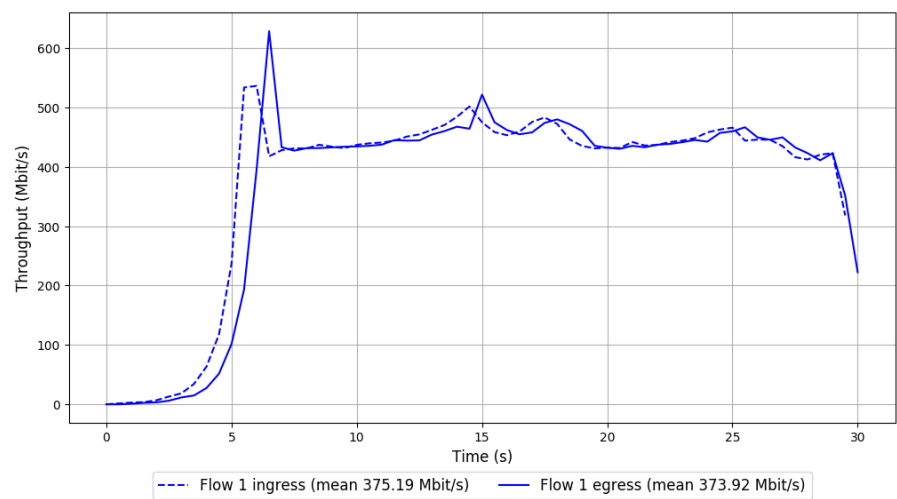
-- Flow 1:

Average throughput: 373.92 Mbit/s

95th percentile per-packet one-way delay: 147.999 ms

Loss rate: 1.25%

Run 5: Report of PCC-Vivace — Data Link

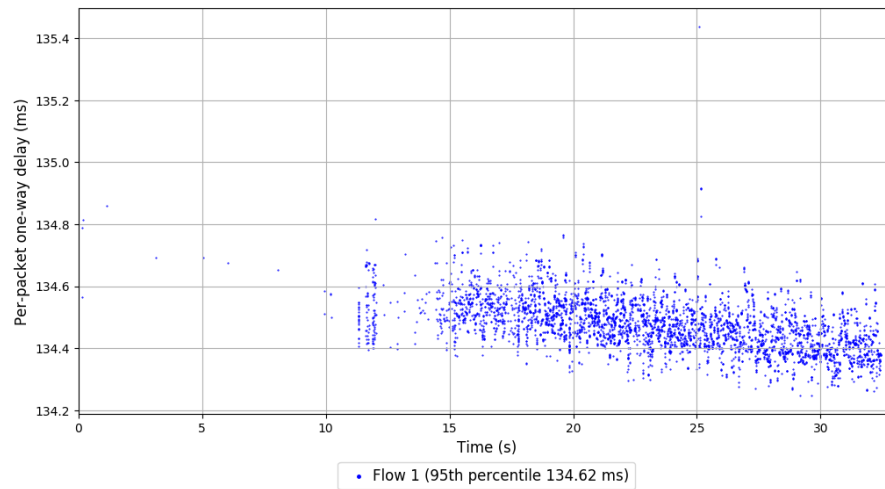
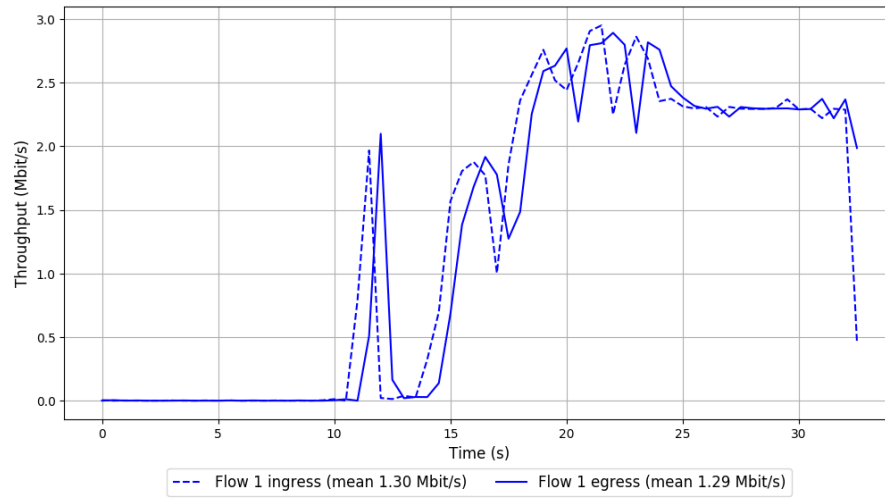


Run 1: Statistics of WebRTC media

Start at: 2018-09-07 18:08:55  
End at: 2018-09-07 18:09:25  
Local clock offset: -5.429 ms  
Remote clock offset: -0.114 ms

# Below is generated by plot.py at 2018-09-07 21:27:07  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 1.29 Mbit/s  
95th percentile per-packet one-way delay: 134.621 ms  
Loss rate: 1.53%  
-- Flow 1:  
Average throughput: 1.29 Mbit/s  
95th percentile per-packet one-way delay: 134.621 ms  
Loss rate: 1.53%

## Run 1: Report of WebRTC media — Data Link



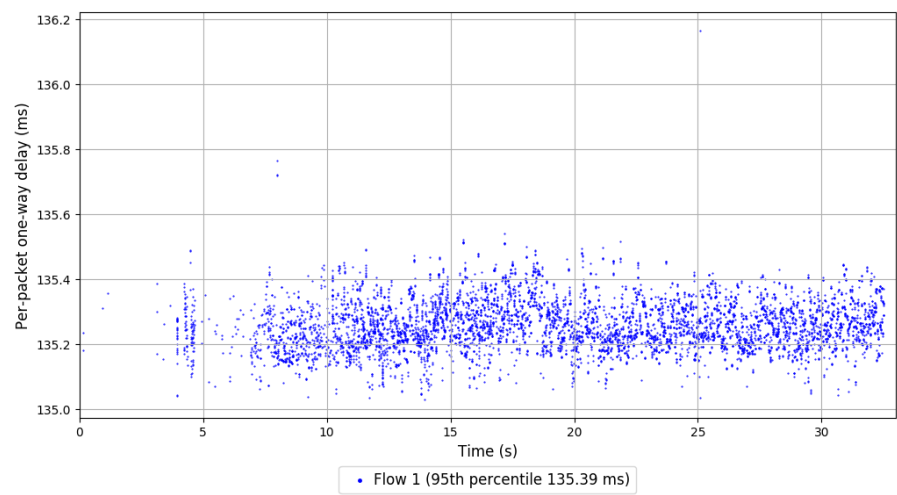
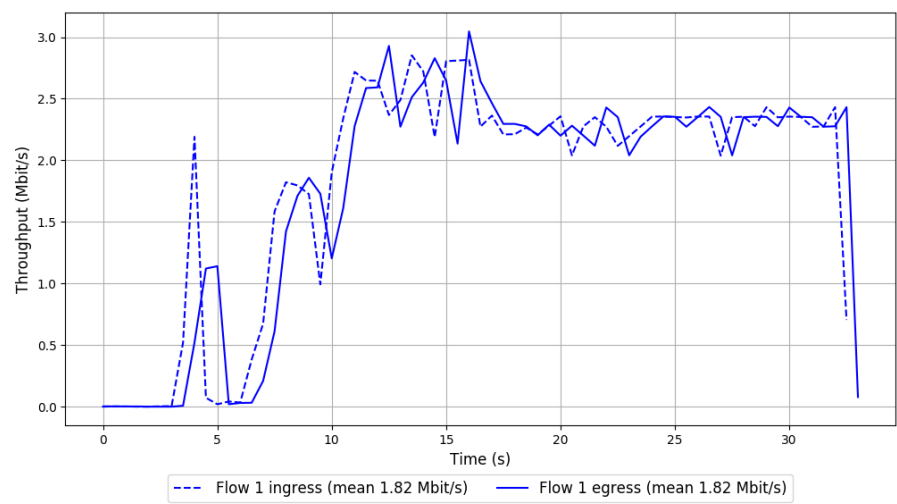


Run 2: Statistics of WebRTC media

Start at: 2018-09-07 18:35:31  
End at: 2018-09-07 18:36:01  
Local clock offset: -1.547 ms  
Remote clock offset: -0.401 ms

# Below is generated by plot.py at 2018-09-07 21:27:07  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 1.82 Mbit/s  
95th percentile per-packet one-way delay: 135.393 ms  
Loss rate: 1.05%  
-- Flow 1:  
Average throughput: 1.82 Mbit/s  
95th percentile per-packet one-way delay: 135.393 ms  
Loss rate: 1.05%

Run 2: Report of WebRTC media — Data Link



Run 3: Statistics of WebRTC media

Start at: 2018-09-07 19:02:17

End at: 2018-09-07 19:02:47

Local clock offset: -0.373 ms

Remote clock offset: 0.273 ms

# Below is generated by plot.py at 2018-09-07 21:27:07

# Datalink statistics

-- Total of 1 flow:

Average throughput: 1.96 Mbit/s

95th percentile per-packet one-way delay: 135.040 ms

Loss rate: 1.04%

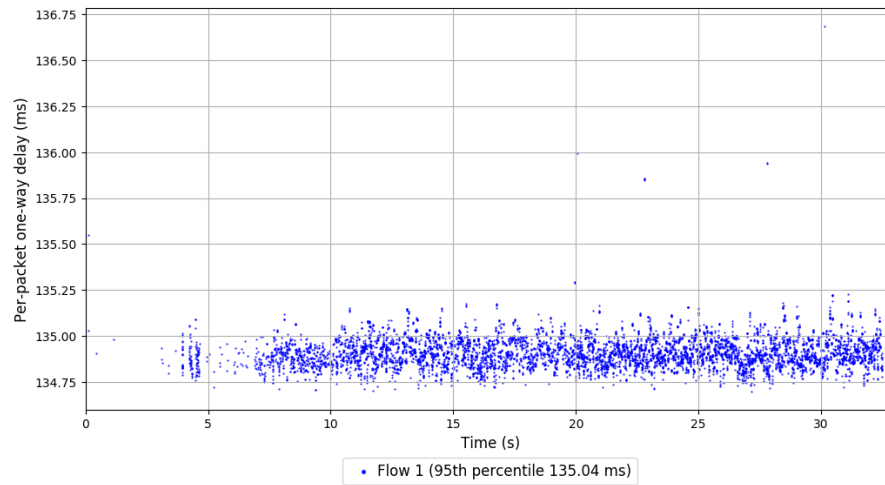
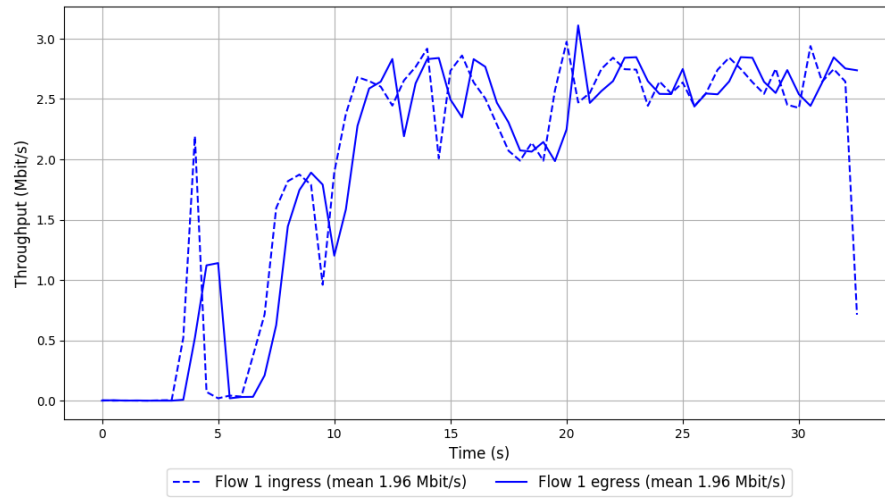
-- Flow 1:

Average throughput: 1.96 Mbit/s

95th percentile per-packet one-way delay: 135.040 ms

Loss rate: 1.04%

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

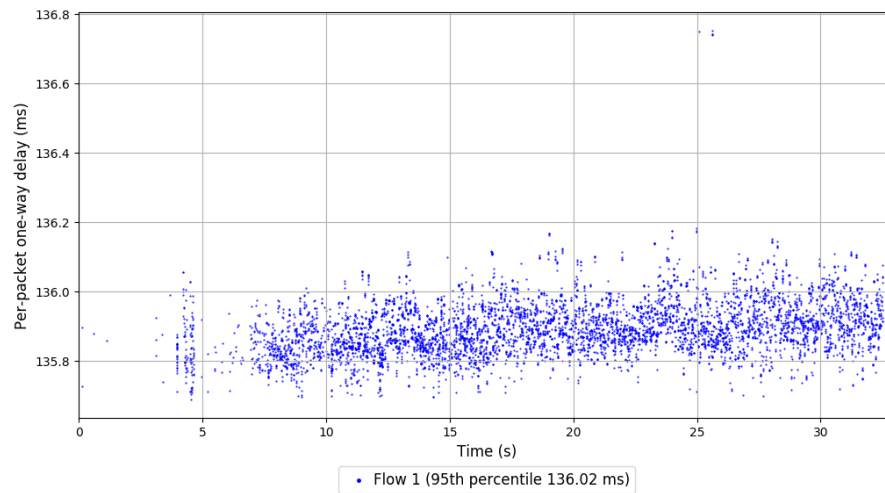
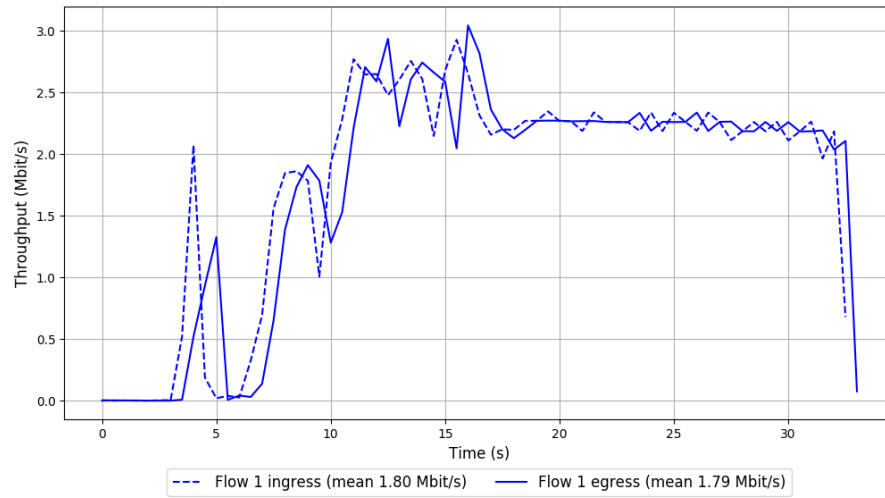


Run 4: Statistics of WebRTC media

Start at: 2018-09-07 19:29:26  
End at: 2018-09-07 19:29:56  
Local clock offset: -0.283 ms  
Remote clock offset: -0.096 ms

# Below is generated by plot.py at 2018-09-07 21:27:07  
# Datalink statistics  
-- Total of 1 flow:  
Average throughput: 1.79 Mbit/s  
95th percentile per-packet one-way delay: 136.022 ms  
Loss rate: 1.03%  
-- Flow 1:  
Average throughput: 1.79 Mbit/s  
95th percentile per-packet one-way delay: 136.022 ms  
Loss rate: 1.03%

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



Run 5: Statistics of WebRTC media

Start at: 2018-09-07 19:56:01

End at: 2018-09-07 19:56:31

Local clock offset: -0.31 ms

Remote clock offset: 0.305 ms

# Below is generated by plot.py at 2018-09-07 21:27:07

# Datalink statistics

-- Total of 1 flow:

Average throughput: 1.85 Mbit/s

95th percentile per-packet one-way delay: 135.897 ms

Loss rate: 1.06%

-- Flow 1:

Average throughput: 1.85 Mbit/s

95th percentile per-packet one-way delay: 135.897 ms

Loss rate: 1.06%

Run 5: Report of WebRTC media — Data Link

