

## Pantheon Report

Generated at 2018-10-10 06:06:16 (UTC).

Data path: Brazil on **p4p1** (*remote*) → AWS Brazil 1 on **ens5** (*local*).

Repeated the test of 18 congestion control schemes 5 times.

Each test lasted for 30 seconds running 3 flows with 10-second interval between two flows.

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

### System info:

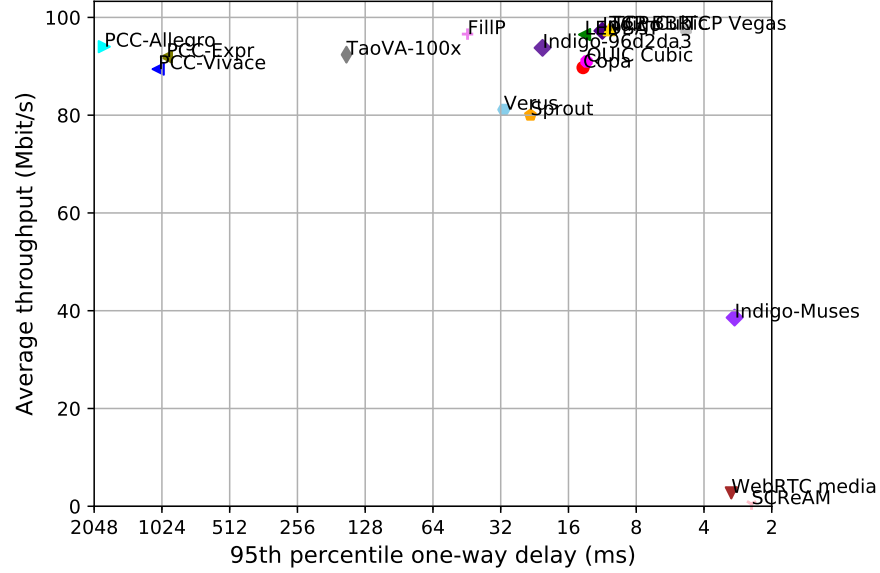
```
Linux 4.15.0-1023-aws
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912
```

### Git summary:

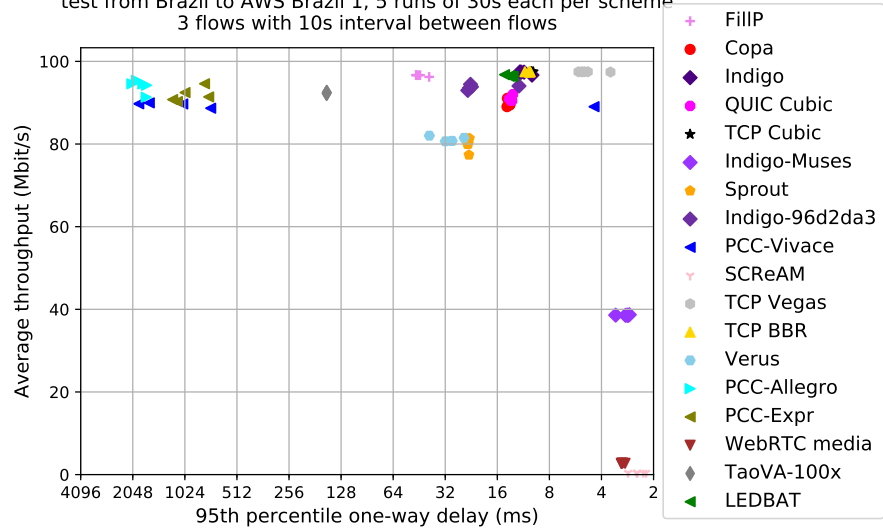
```
branch: muses @ 2e19c0464530faa92c63f8217c9971438a26a3be
third_party/fillp @ 5332fc9127c63565e13f4933b336c02d1aabdac6
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdf58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d
third_party/indigo-96d2da3 @ 8413272d46f8aa0bcb967ed7048b6a8f994abb95
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/muses @ 65ac1b19bbefed0c6349ae986009b4fa8643c40a
third_party/pantheon-tunnel @ f866d3f58d27afd942717625ee3a354cc2e802bd
third_party/pcc @ 1afc958fa0d66d18b623c091a55fec872b4981e1
M receiver/src/buffer.h
M receiver/src/core.cpp
M sender/src/buffer.h
M sender/src/core.cpp
third_party/pcc-experimental @ cd43e34e3f5f5613e8acd08fab92c4eb24f974ab
third_party/proto-quick @ 77961f1a82733a86b42f1bc8143ebc978f3cff42
third_party/scream-reproduce @ f099118d1421aa3131bf11ff1964974e1da3bdb2
M src/ScreamClient
M src/ScreamServer
third_party/sprout @ 366e35c6178b01e31d4a46ad18c74f9415f19a26
M src/examples/cellsim.cc
M src/examples/sproutbt2.cc
M src/network/sproutconn.cc
third_party/verus @ d4b447ea74c6c60a261149af2629562939f9a494
M src/verus.hpp
M tools/plot.py
```

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

test from Brazil to AWS Brazil 1, 5 runs of 30s each per scheme  
 3 flows with 10s interval between flows (mean of all runs by scheme)



test from Brazil to AWS Brazil 1, 5 runs of 30s each per scheme  
 3 flows with 10s interval between flows



scheme	# runs	mean avg tput (Mbit/s)			mean 95th-%ile delay (ms)			mean loss rate (%)		
		flow 1	flow 2	flow 3	flow 1	flow 2	flow 3	flow 1	flow 2	flow 3
TCP BBR	5	59.26	40.95	33.00	10.22	10.66	12.32	0.30	0.43	1.33
Copa	5	53.05	39.38	31.47	12.94	14.35	15.39	0.04	0.08	0.12
TCP Cubic	5	59.63	40.64	32.49	10.23	10.07	10.37	0.08	0.14	0.23
FillP	5	58.87	40.47	32.51	34.61	49.05	60.73	1.43	1.49	1.12
Indigo	5	59.63	40.60	32.31	9.70	11.99	9.80	0.03	1.87	0.58
Indigo-96d2da3	5	55.04	41.81	32.97	11.37	13.53	22.55	0.02	0.04	2.27
LEDBAT	5	58.87	40.33	32.42	13.31	13.67	13.67	0.13	0.23	0.39
Indigo-Muses	5	19.46	19.21	19.14	2.83	2.93	3.19	0.01	0.02	0.03
PCC-Allegro	5	67.17	26.02	29.01	1936.59	425.80	31.43	8.90	4.12	0.50
PCC-Expr	5	57.54	37.58	28.38	978.96	791.34	117.93	19.75	6.53	0.52
QUIC Cubic	5	53.98	40.17	31.10	13.04	13.13	13.96	0.15	0.30	0.46
SCReAM	5	0.22	0.22	0.22	2.46	2.45	2.44	0.00	0.04	0.07
Sprout	5	43.26	39.29	32.18	22.22	23.64	24.98	0.05	0.08	0.19
TaoVA-100x	5	55.54	39.44	31.81	154.77	154.93	155.60	0.52	1.08	2.71
TCP Vegas	5	54.06	48.26	33.93	3.83	4.81	5.11	0.01	0.02	0.06
Verus	5	47.06	36.14	30.11	23.01	27.86	165.35	0.11	0.07	0.19
PCC-Vivace	5	57.07	35.08	27.31	527.27	668.35	50.50	2.80	3.88	0.69
WebRTC media	5	1.49	0.85	0.40	2.96	3.02	3.20	0.00	0.08	0.07



Run 1: Statistics of TCP BBR

Start at: 2018-10-10 04:07:36

End at: 2018-10-10 04:08:06

Local clock offset: -7.397 ms

Remote clock offset: -0.71 ms

# Below is generated by plot.py at 2018-10-10 05:54:09

# Datalink statistics

-- Total of 3 flows:

Average throughput: 97.48 Mbit/s

95th percentile per-packet one-way delay: 10.450 ms

Loss rate: 0.35%

-- Flow 1:

Average throughput: 59.26 Mbit/s

95th percentile per-packet one-way delay: 10.064 ms

Loss rate: 0.24%

-- Flow 2:

Average throughput: 40.93 Mbit/s

95th percentile per-packet one-way delay: 10.252 ms

Loss rate: 0.16%

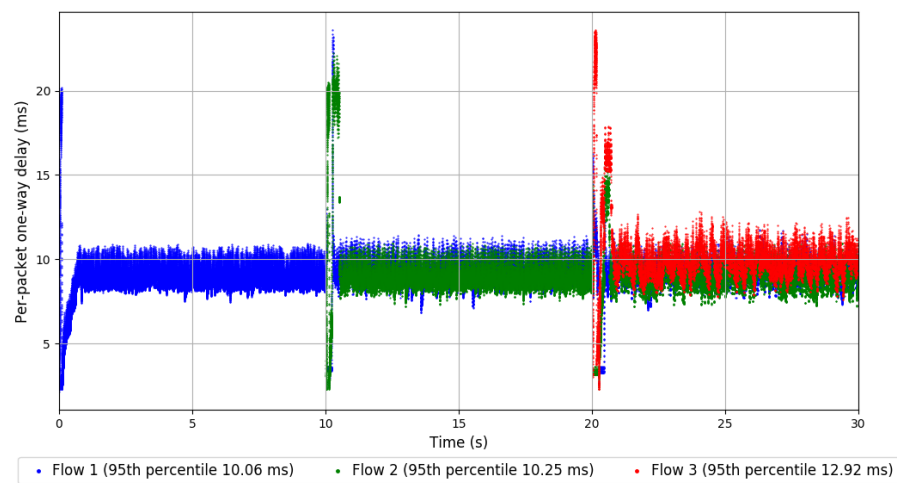
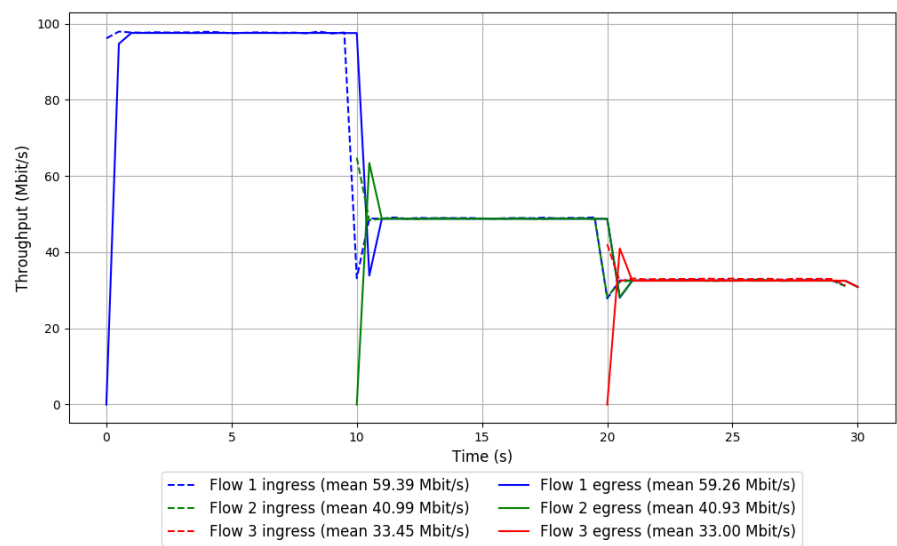
-- Flow 3:

Average throughput: 33.00 Mbit/s

95th percentile per-packet one-way delay: 12.917 ms

Loss rate: 1.38%

Run 1: Report of TCP BBR — Data Link

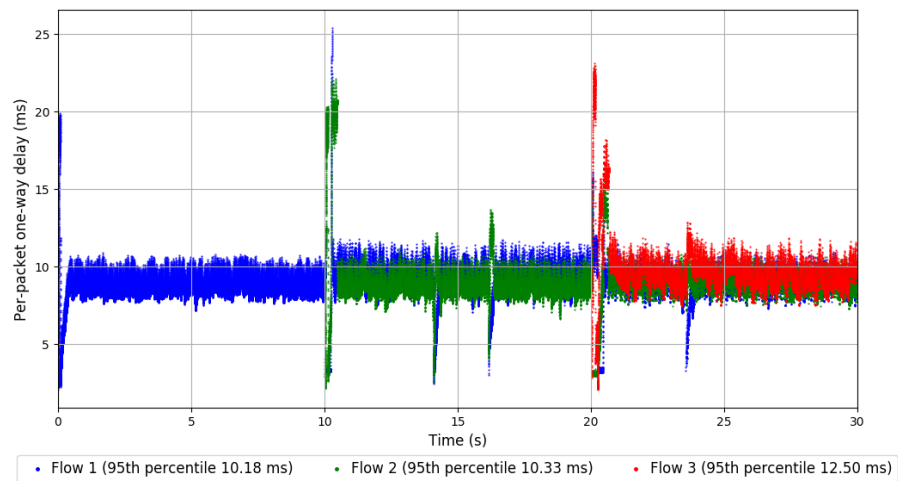
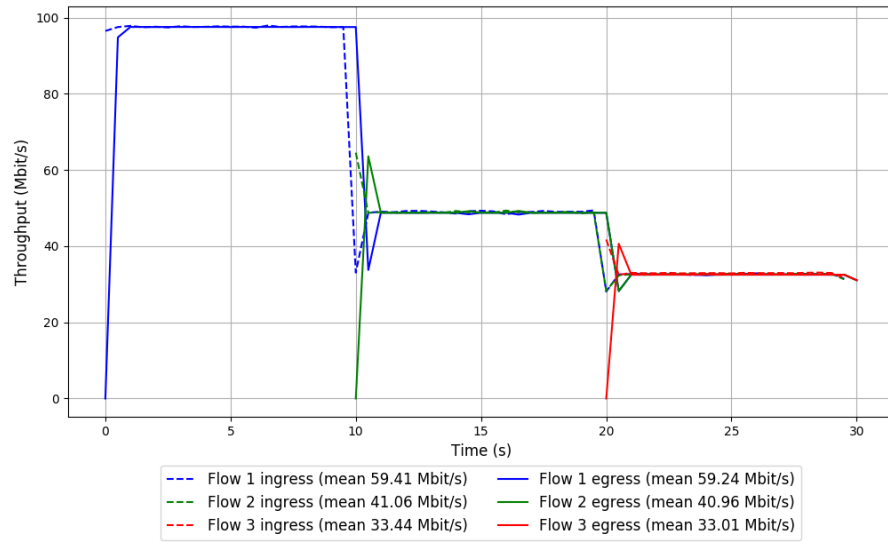


Run 2: Statistics of TCP BBR

Start at: 2018-10-10 04:28:24  
End at: 2018-10-10 04:28:54  
Local clock offset: -5.894 ms  
Remote clock offset: -0.511 ms

# Below is generated by plot.py at 2018-10-10 05:54:09  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 97.48 Mbit/s  
95th percentile per-packet one-way delay: 10.394 ms  
Loss rate: 0.41%  
-- Flow 1:  
Average throughput: 59.24 Mbit/s  
95th percentile per-packet one-way delay: 10.175 ms  
Loss rate: 0.30%  
-- Flow 2:  
Average throughput: 40.96 Mbit/s  
95th percentile per-packet one-way delay: 10.332 ms  
Loss rate: 0.28%  
-- Flow 3:  
Average throughput: 33.01 Mbit/s  
95th percentile per-packet one-way delay: 12.498 ms  
Loss rate: 1.34%

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

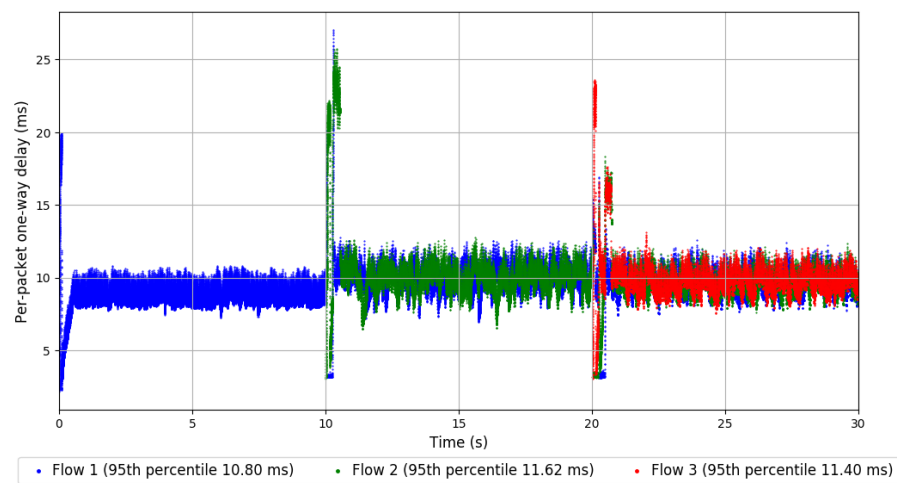
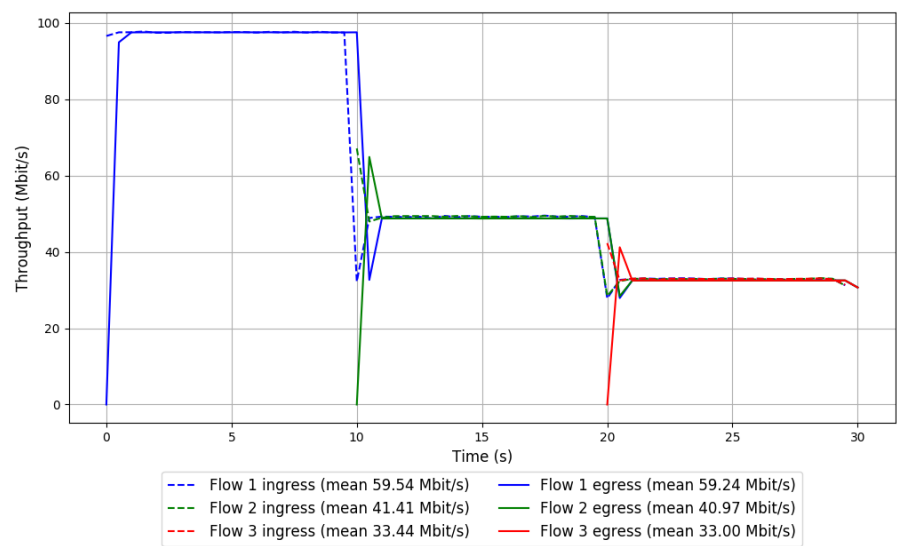


Run 3: Statistics of TCP BBR

Start at: 2018-10-10 04:49:13  
End at: 2018-10-10 04:49:43  
Local clock offset: -2.118 ms  
Remote clock offset: -0.229 ms

# Below is generated by plot.py at 2018-10-10 05:54:09  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 97.50 Mbit/s  
95th percentile per-packet one-way delay: 11.082 ms  
Loss rate: 0.77%  
-- Flow 1:  
Average throughput: 59.24 Mbit/s  
95th percentile per-packet one-way delay: 10.805 ms  
Loss rate: 0.51%  
-- Flow 2:  
Average throughput: 40.97 Mbit/s  
95th percentile per-packet one-way delay: 11.617 ms  
Loss rate: 1.09%  
-- Flow 3:  
Average throughput: 33.00 Mbit/s  
95th percentile per-packet one-way delay: 11.397 ms  
Loss rate: 1.38%

Run 3: Report of TCP BBR — Data Link



Run 4: Statistics of TCP BBR

Start at: 2018-10-10 05:10:01

End at: 2018-10-10 05:10:31

Local clock offset: -6.412 ms

Remote clock offset: 0.035 ms

# Below is generated by plot.py at 2018-10-10 05:54:10

# Datalink statistics

-- Total of 3 flows:

Average throughput: 97.49 Mbit/s

95th percentile per-packet one-way delay: 10.482 ms

Loss rate: 0.30%

-- Flow 1:

Average throughput: 59.28 Mbit/s

95th percentile per-packet one-way delay: 10.131 ms

Loss rate: 0.17%

-- Flow 2:

Average throughput: 40.94 Mbit/s

95th percentile per-packet one-way delay: 10.400 ms

Loss rate: 0.23%

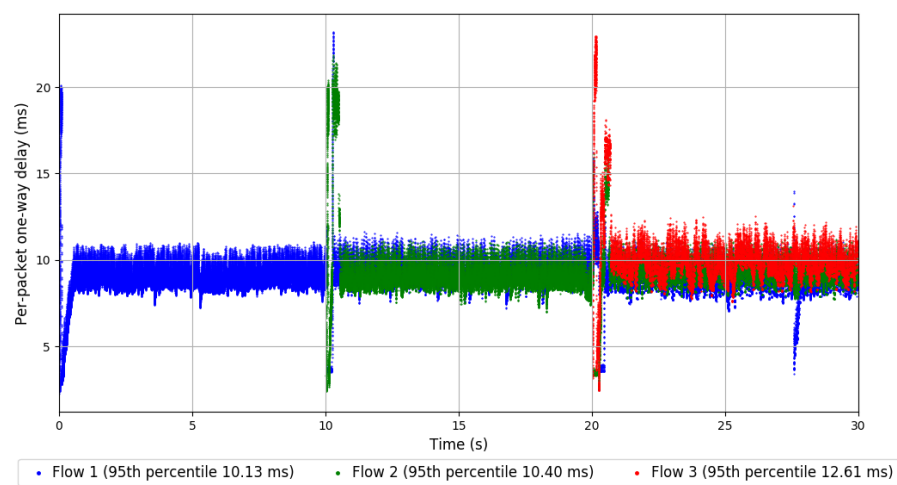
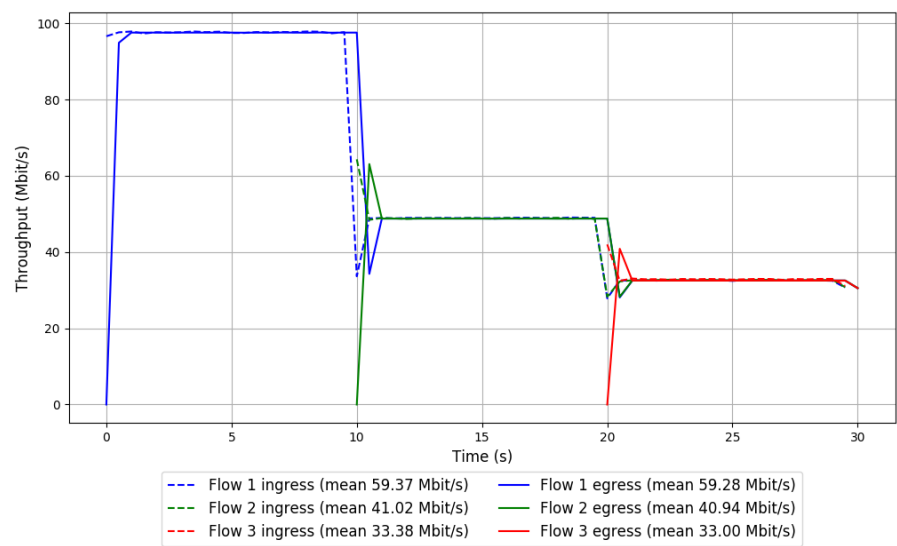
-- Flow 3:

Average throughput: 33.00 Mbit/s

95th percentile per-packet one-way delay: 12.610 ms

Loss rate: 1.20%

Run 4: Report of TCP BBR — Data Link





Run 5: Statistics of TCP BBR

Start at: 2018-10-10 05:30:48

End at: 2018-10-10 05:31:18

Local clock offset: -4.603 ms

Remote clock offset: 0.114 ms

# Below is generated by plot.py at 2018-10-10 05:54:10

# Datalink statistics

-- Total of 3 flows:

Average throughput: 97.49 Mbit/s

95th percentile per-packet one-way delay: 10.318 ms

Loss rate: 0.42%

-- Flow 1:

Average throughput: 59.26 Mbit/s

95th percentile per-packet one-way delay: 9.905 ms

Loss rate: 0.26%

-- Flow 2:

Average throughput: 40.93 Mbit/s

95th percentile per-packet one-way delay: 10.712 ms

Loss rate: 0.38%

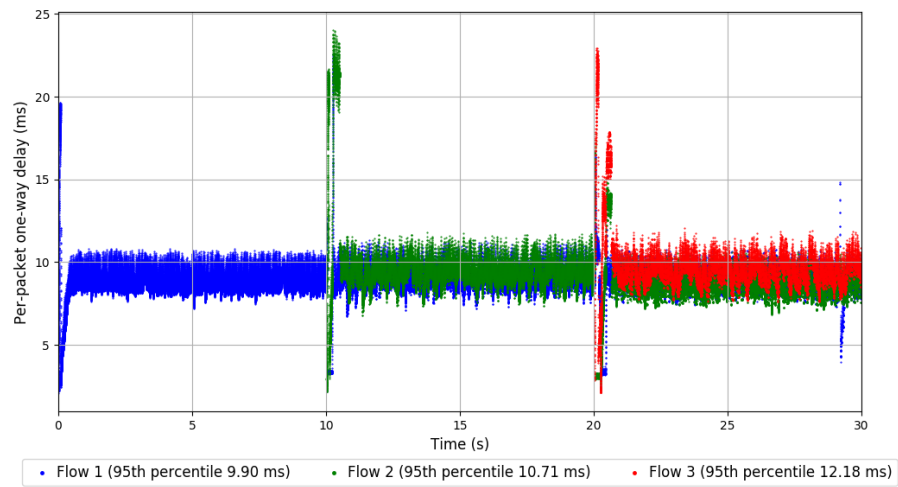
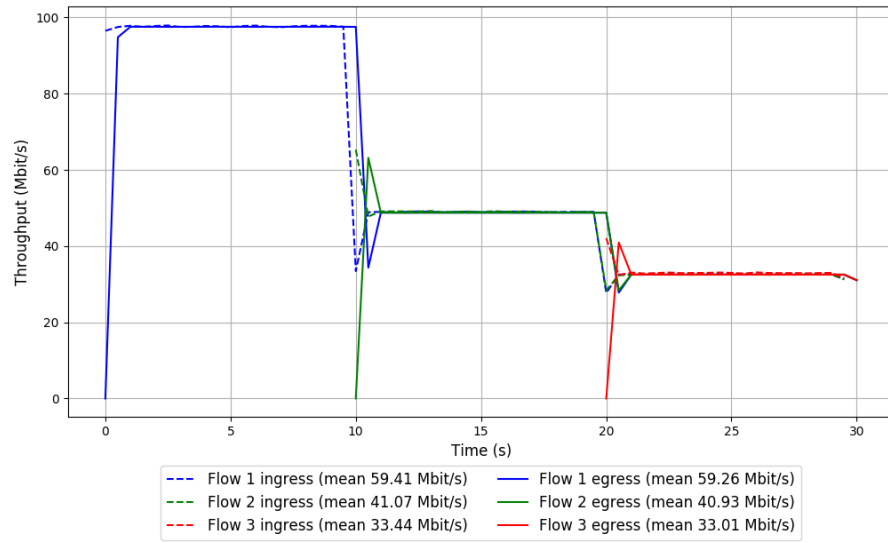
-- Flow 3:

Average throughput: 33.01 Mbit/s

95th percentile per-packet one-way delay: 12.179 ms

Loss rate: 1.36%

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

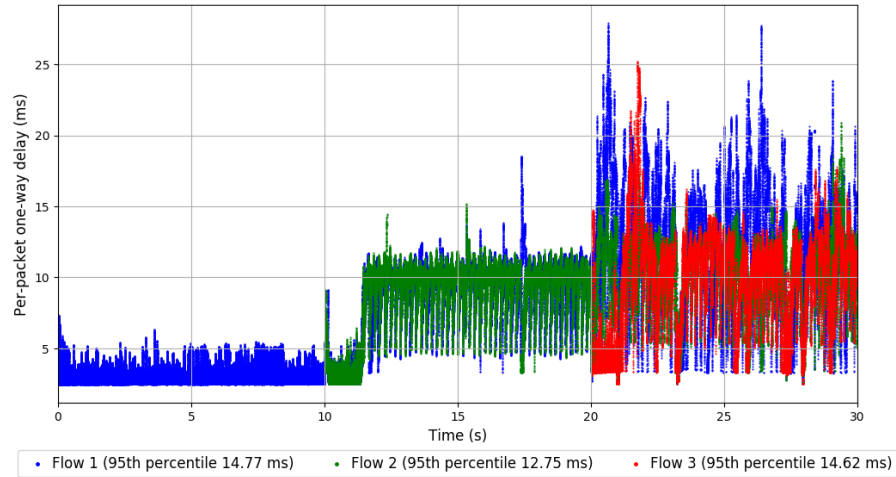
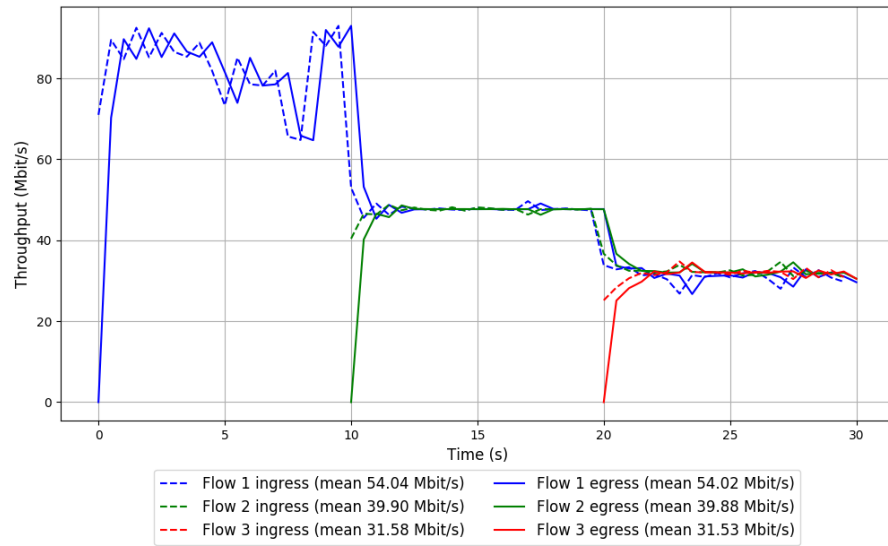


Run 1: Statistics of Copa

Start at: 2018-10-10 04:19:04  
End at: 2018-10-10 04:19:34  
Local clock offset: -7.611 ms  
Remote clock offset: -0.735 ms

# Below is generated by plot.py at 2018-10-10 05:55:08  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 91.06 Mbit/s  
95th percentile per-packet one-way delay: 13.990 ms  
Loss rate: 0.08%  
-- Flow 1:  
Average throughput: 54.02 Mbit/s  
95th percentile per-packet one-way delay: 14.769 ms  
Loss rate: 0.05%  
-- Flow 2:  
Average throughput: 39.88 Mbit/s  
95th percentile per-packet one-way delay: 12.751 ms  
Loss rate: 0.08%  
-- Flow 3:  
Average throughput: 31.53 Mbit/s  
95th percentile per-packet one-way delay: 14.618 ms  
Loss rate: 0.19%

## Run 1: Report of Copa — Data Link

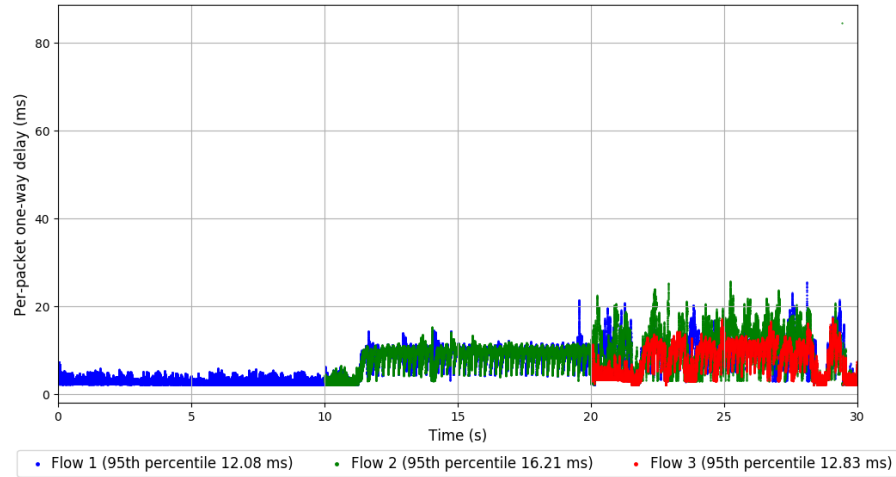
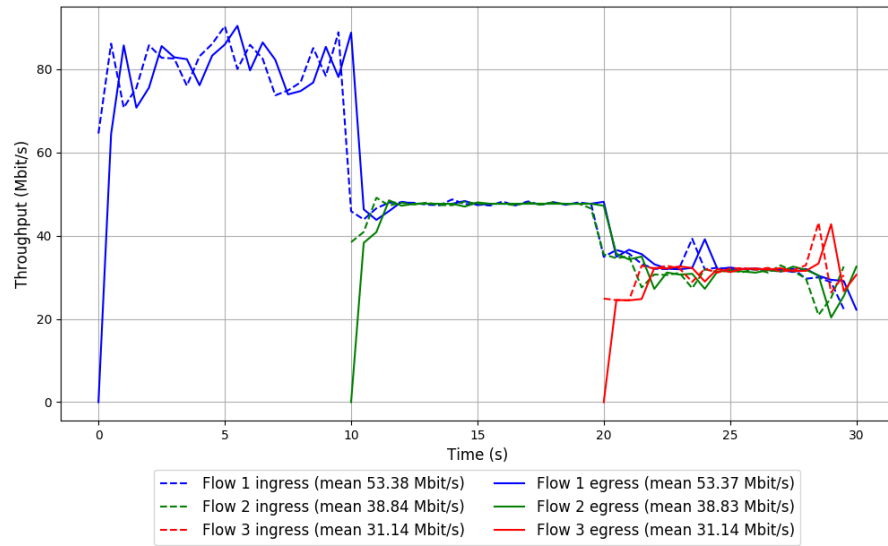


Run 2: Statistics of Copa

Start at: 2018-10-10 04:39:53  
End at: 2018-10-10 04:40:23  
Local clock offset: -3.029 ms  
Remote clock offset: -0.458 ms

# Below is generated by plot.py at 2018-10-10 05:55:08  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 89.57 Mbit/s  
95th percentile per-packet one-way delay: 13.518 ms  
Loss rate: 0.05%  
-- Flow 1:  
Average throughput: 53.37 Mbit/s  
95th percentile per-packet one-way delay: 12.084 ms  
Loss rate: 0.04%  
-- Flow 2:  
Average throughput: 38.83 Mbit/s  
95th percentile per-packet one-way delay: 16.213 ms  
Loss rate: 0.06%  
-- Flow 3:  
Average throughput: 31.14 Mbit/s  
95th percentile per-packet one-way delay: 12.831 ms  
Loss rate: 0.06%

## Run 2: Report of Copa — Data Link

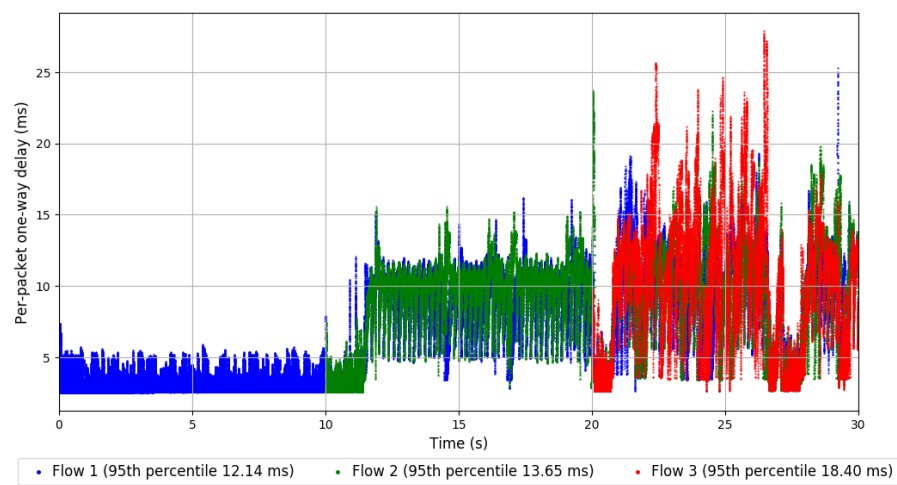
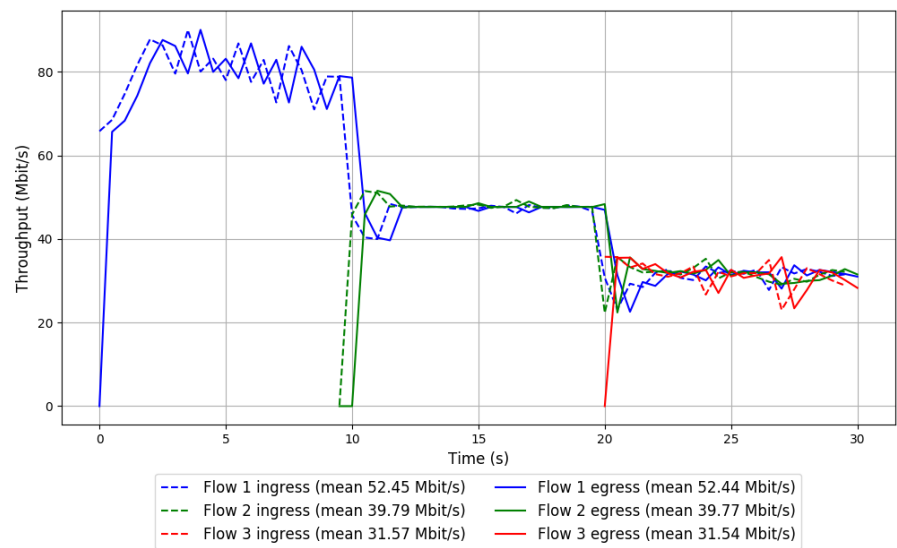


Run 3: Statistics of Copa

Start at: 2018-10-10 05:00:41  
End at: 2018-10-10 05:01:11  
Local clock offset: -4.41 ms  
Remote clock offset: -0.146 ms

# Below is generated by plot.py at 2018-10-10 05:55:08  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 89.44 Mbit/s  
95th percentile per-packet one-way delay: 13.589 ms  
Loss rate: 0.07%  
-- Flow 1:  
Average throughput: 52.44 Mbit/s  
95th percentile per-packet one-way delay: 12.140 ms  
Loss rate: 0.04%  
-- Flow 2:  
Average throughput: 39.77 Mbit/s  
95th percentile per-packet one-way delay: 13.653 ms  
Loss rate: 0.09%  
-- Flow 3:  
Average throughput: 31.54 Mbit/s  
95th percentile per-packet one-way delay: 18.402 ms  
Loss rate: 0.15%

Run 3: Report of Copa — Data Link





Run 4: Statistics of Copa

Start at: 2018-10-10 05:21:28

End at: 2018-10-10 05:21:58

Local clock offset: -7.435 ms

Remote clock offset: 0.007 ms

# Below is generated by plot.py at 2018-10-10 05:56:12

# Datalink statistics

-- Total of 3 flows:

Average throughput: 89.05 Mbit/s

95th percentile per-packet one-way delay: 14.063 ms

Loss rate: 0.05%

-- Flow 1:

Average throughput: 52.53 Mbit/s

95th percentile per-packet one-way delay: 13.319 ms

Loss rate: 0.03%

-- Flow 2:

Average throughput: 39.16 Mbit/s

95th percentile per-packet one-way delay: 12.913 ms

Loss rate: 0.06%

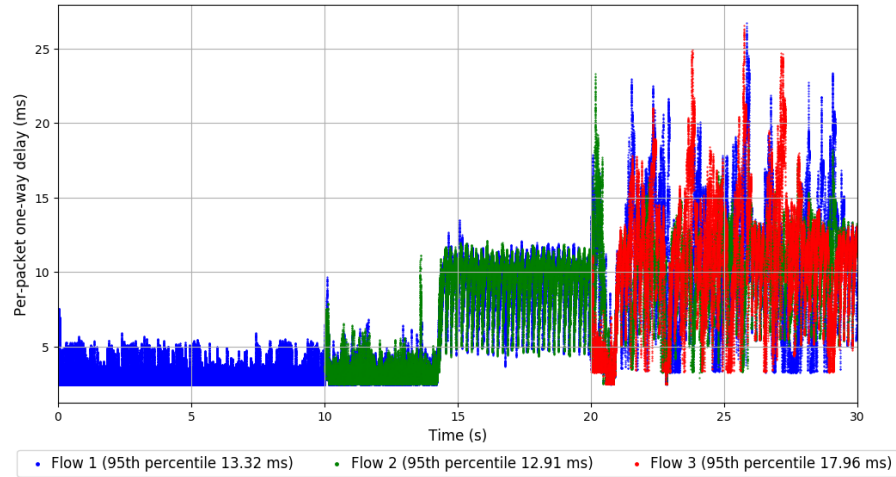
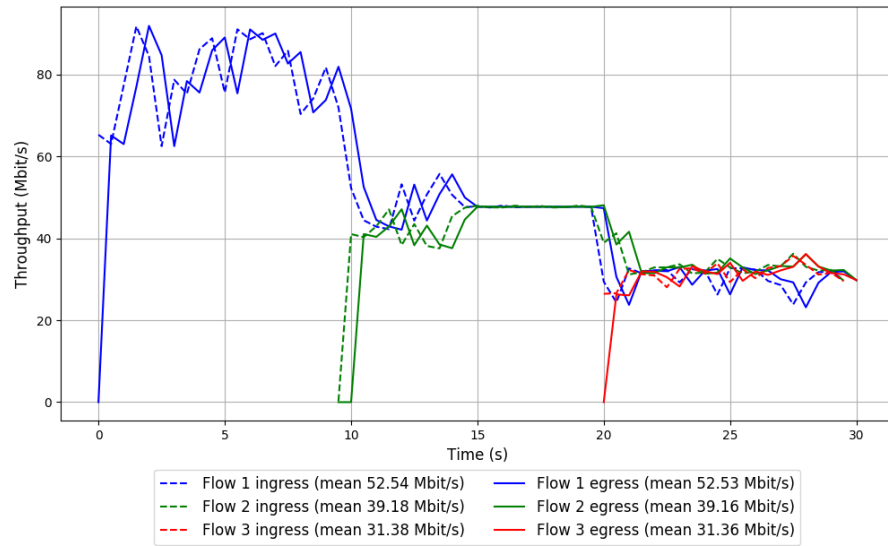
-- Flow 3:

Average throughput: 31.36 Mbit/s

95th percentile per-packet one-way delay: 17.962 ms

Loss rate: 0.10%

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



Run 5: Statistics of Copa

Start at: 2018-10-10 05:42:17

End at: 2018-10-10 05:42:47

Local clock offset: -1.926 ms

Remote clock offset: 0.137 ms

# Below is generated by plot.py at 2018-10-10 05:56:14

# Datalink statistics

-- Total of 3 flows:

Average throughput: 89.58 Mbit/s

95th percentile per-packet one-way delay: 13.742 ms

Loss rate: 0.07%

-- Flow 1:

Average throughput: 52.87 Mbit/s

95th percentile per-packet one-way delay: 12.411 ms

Loss rate: 0.04%

-- Flow 2:

Average throughput: 39.26 Mbit/s

95th percentile per-packet one-way delay: 16.241 ms

Loss rate: 0.11%

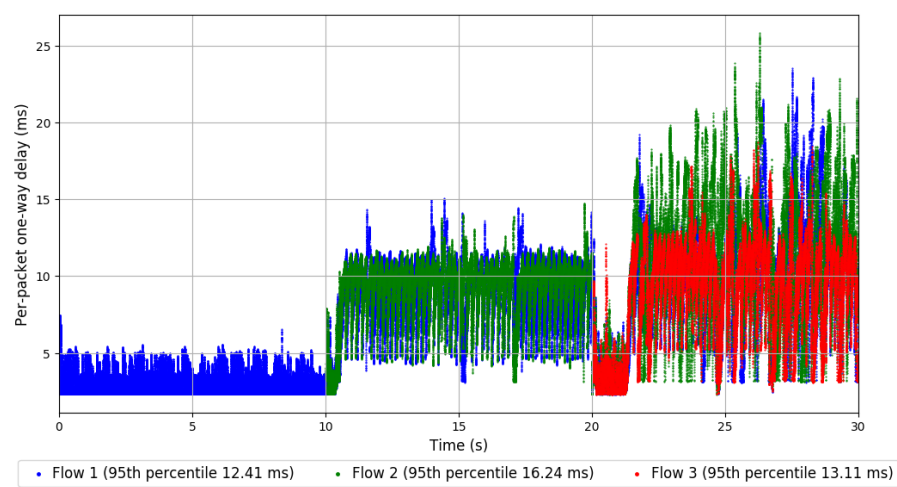
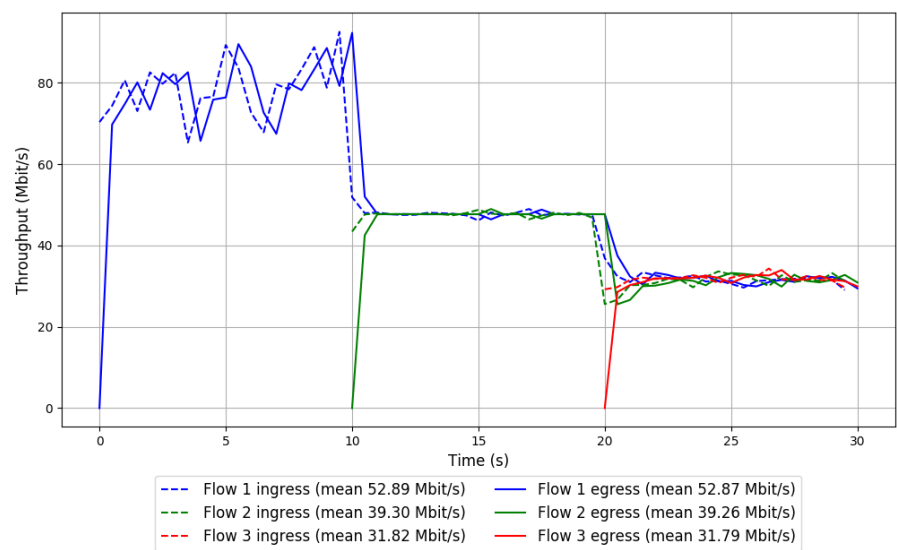
-- Flow 3:

Average throughput: 31.79 Mbit/s

95th percentile per-packet one-way delay: 13.114 ms

Loss rate: 0.12%

Run 5: Report of Copa — Data Link

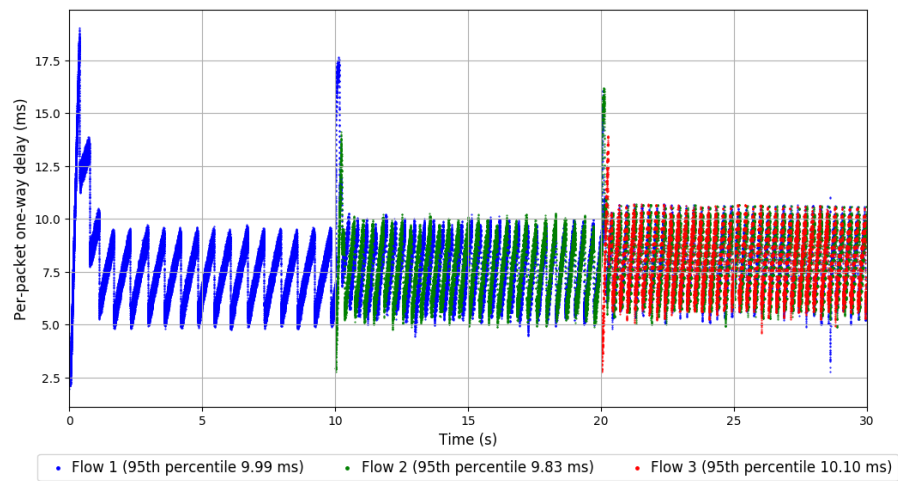
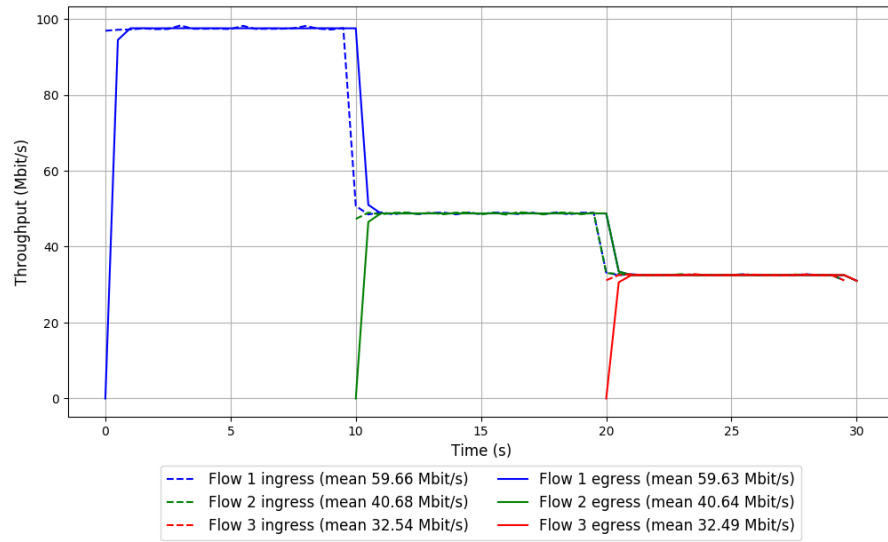


Run 1: Statistics of TCP Cubic

Start at: 2018-10-10 04:27:15  
End at: 2018-10-10 04:27:45  
Local clock offset: -6.545 ms  
Remote clock offset: -0.569 ms

# Below is generated by plot.py at 2018-10-10 05:56:14  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 97.48 Mbit/s  
95th percentile per-packet one-way delay: 9.924 ms  
Loss rate: 0.11%  
-- Flow 1:  
Average throughput: 59.63 Mbit/s  
95th percentile per-packet one-way delay: 9.988 ms  
Loss rate: 0.07%  
-- Flow 2:  
Average throughput: 40.64 Mbit/s  
95th percentile per-packet one-way delay: 9.833 ms  
Loss rate: 0.13%  
-- Flow 3:  
Average throughput: 32.49 Mbit/s  
95th percentile per-packet one-way delay: 10.095 ms  
Loss rate: 0.22%

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

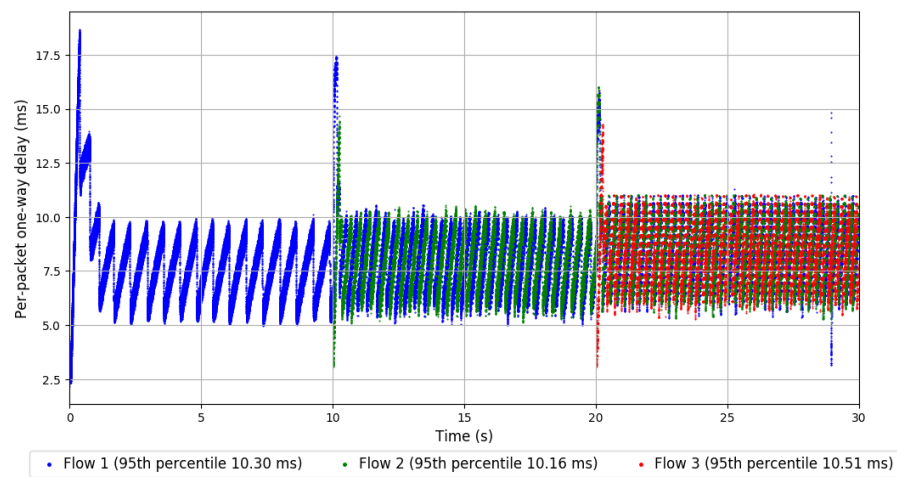
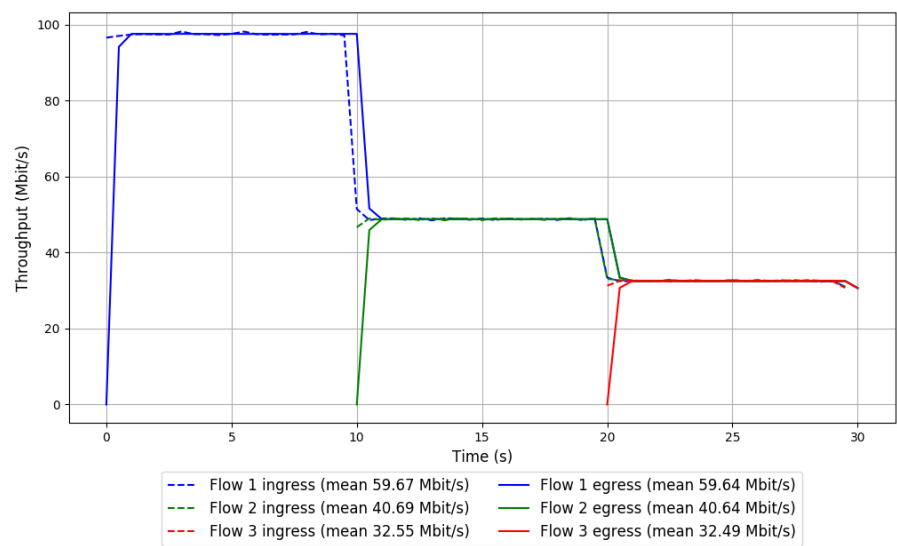


Run 2: Statistics of TCP Cubic

Start at: 2018-10-10 04:48:04  
End at: 2018-10-10 04:48:34  
Local clock offset: -2.186 ms  
Remote clock offset: -0.251 ms

# Below is generated by plot.py at 2018-10-10 05:56:14  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 97.48 Mbit/s  
95th percentile per-packet one-way delay: 10.272 ms  
Loss rate: 0.11%  
-- Flow 1:  
Average throughput: 59.64 Mbit/s  
95th percentile per-packet one-way delay: 10.297 ms  
Loss rate: 0.08%  
-- Flow 2:  
Average throughput: 40.64 Mbit/s  
95th percentile per-packet one-way delay: 10.156 ms  
Loss rate: 0.14%  
-- Flow 3:  
Average throughput: 32.49 Mbit/s  
95th percentile per-packet one-way delay: 10.511 ms  
Loss rate: 0.22%

Run 2: Report of TCP Cubic — Data Link





Run 3: Statistics of TCP Cubic

Start at: 2018-10-10 05:08:52

End at: 2018-10-10 05:09:22

Local clock offset: -6.298 ms

Remote clock offset: 0.015 ms

# Below is generated by plot.py at 2018-10-10 05:56:14

# Datalink statistics

-- Total of 3 flows:

Average throughput: 97.49 Mbit/s

95th percentile per-packet one-way delay: 10.370 ms

Loss rate: 0.11%

-- Flow 1:

Average throughput: 59.63 Mbit/s

95th percentile per-packet one-way delay: 10.381 ms

Loss rate: 0.08%

-- Flow 2:

Average throughput: 40.65 Mbit/s

95th percentile per-packet one-way delay: 10.293 ms

Loss rate: 0.14%

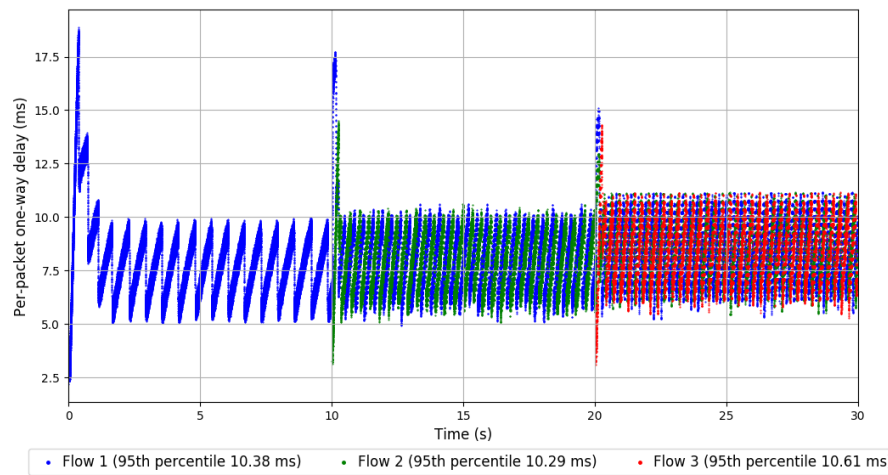
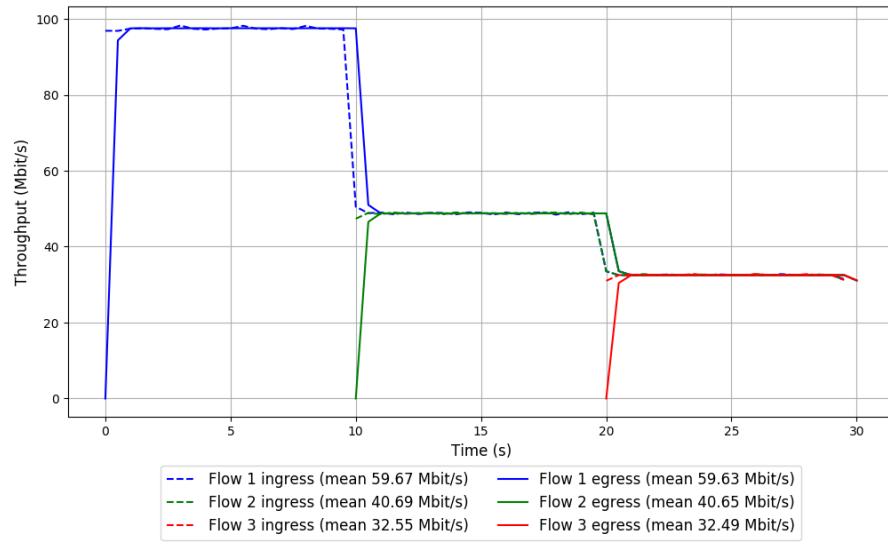
-- Flow 3:

Average throughput: 32.49 Mbit/s

95th percentile per-packet one-way delay: 10.609 ms

Loss rate: 0.23%

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



Run 4: Statistics of TCP Cubic

Start at: 2018-10-10 05:29:38

End at: 2018-10-10 05:30:09

Local clock offset: -5.061 ms

Remote clock offset: 0.096 ms

# Below is generated by plot.py at 2018-10-10 05:56:15

# Datalink statistics

-- Total of 3 flows:

Average throughput: 97.47 Mbit/s

95th percentile per-packet one-way delay: 10.113 ms

Loss rate: 0.11%

-- Flow 1:

Average throughput: 59.60 Mbit/s

95th percentile per-packet one-way delay: 10.276 ms

Loss rate: 0.07%

-- Flow 2:

Average throughput: 40.64 Mbit/s

95th percentile per-packet one-way delay: 9.959 ms

Loss rate: 0.14%

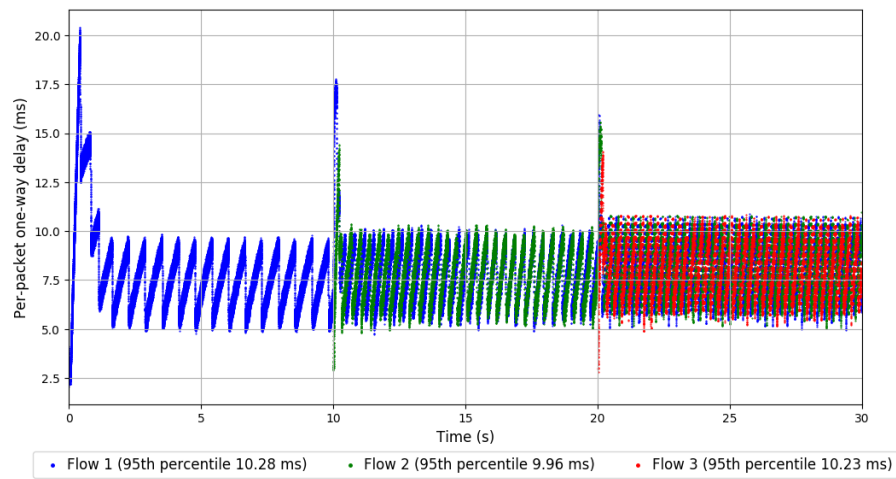
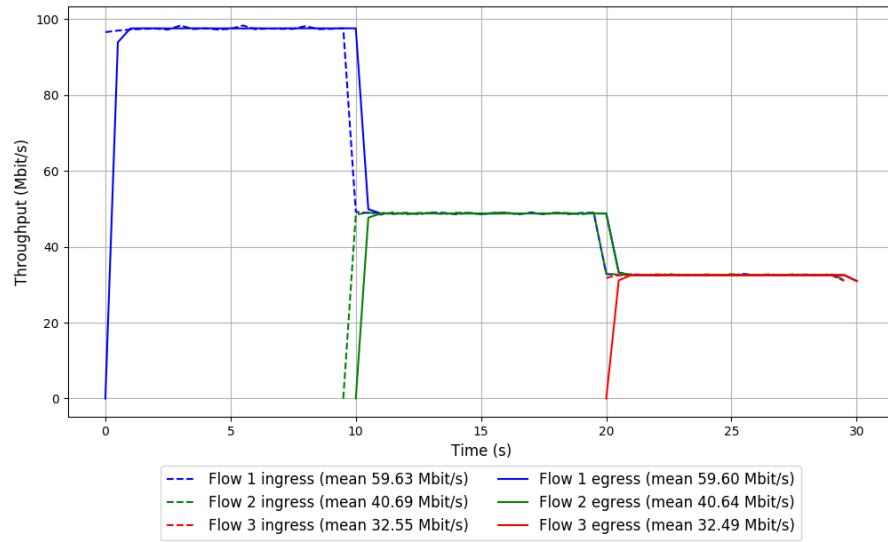
-- Flow 3:

Average throughput: 32.49 Mbit/s

95th percentile per-packet one-way delay: 10.227 ms

Loss rate: 0.24%

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



Run 5: Statistics of TCP Cubic

Start at: 2018-10-10 05:50:28

End at: 2018-10-10 05:50:58

Local clock offset: -1.148 ms

Remote clock offset: 0.289 ms

# Below is generated by plot.py at 2018-10-10 05:56:17

# Datalink statistics

-- Total of 3 flows:

Average throughput: 97.48 Mbit/s

95th percentile per-packet one-way delay: 10.174 ms

Loss rate: 0.11%

-- Flow 1:

Average throughput: 59.63 Mbit/s

95th percentile per-packet one-way delay: 10.187 ms

Loss rate: 0.08%

-- Flow 2:

Average throughput: 40.64 Mbit/s

95th percentile per-packet one-way delay: 10.100 ms

Loss rate: 0.14%

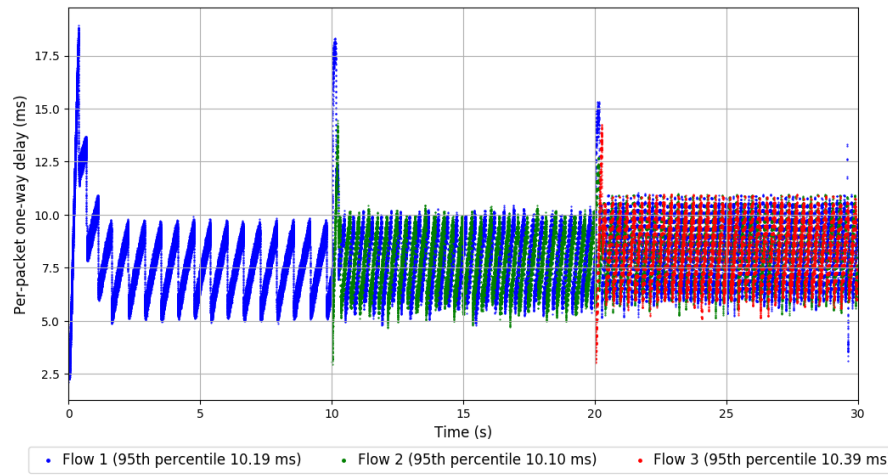
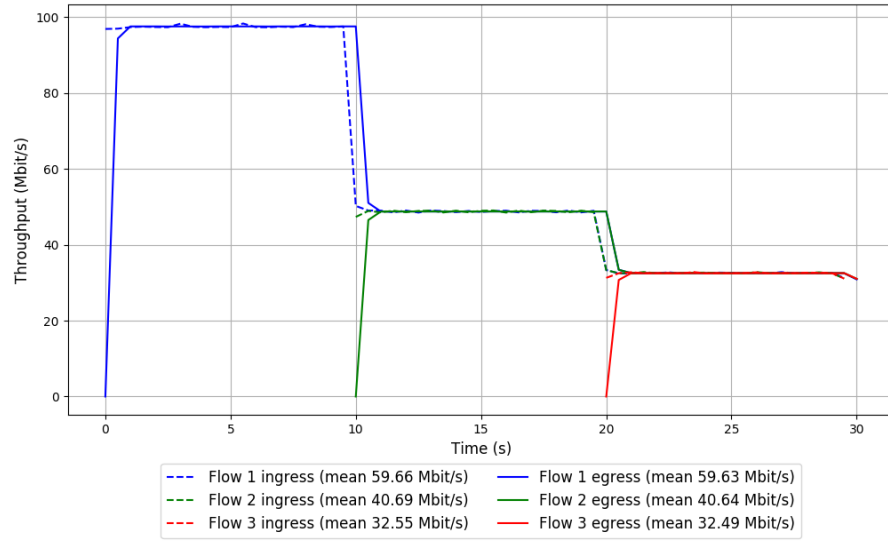
-- Flow 3:

Average throughput: 32.49 Mbit/s

95th percentile per-packet one-way delay: 10.389 ms

Loss rate: 0.22%

# Run 5: Report of TCP Cubic — Data Link

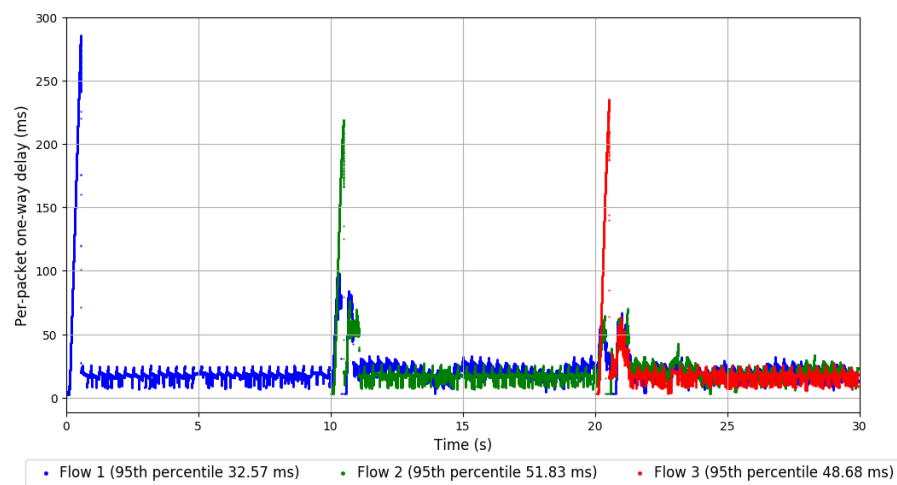
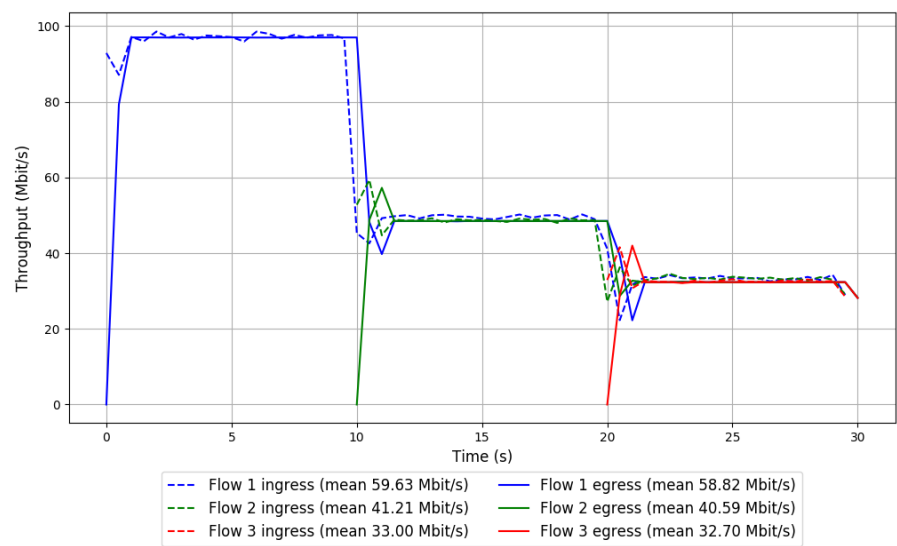


Run 1: Statistics of FillP

Start at: 2018-10-10 04:11:06  
End at: 2018-10-10 04:11:36  
Local clock offset: -7.383 ms  
Remote clock offset: -0.802 ms

# Below is generated by plot.py at 2018-10-10 05:56:35  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 96.67 Mbit/s  
95th percentile per-packet one-way delay: 47.025 ms  
Loss rate: 1.35%  
-- Flow 1:  
Average throughput: 58.82 Mbit/s  
95th percentile per-packet one-way delay: 32.574 ms  
Loss rate: 1.35%  
-- Flow 2:  
Average throughput: 40.59 Mbit/s  
95th percentile per-packet one-way delay: 51.830 ms  
Loss rate: 1.49%  
-- Flow 3:  
Average throughput: 32.70 Mbit/s  
95th percentile per-packet one-way delay: 48.684 ms  
Loss rate: 0.98%

Run 1: Report of FillP — Data Link



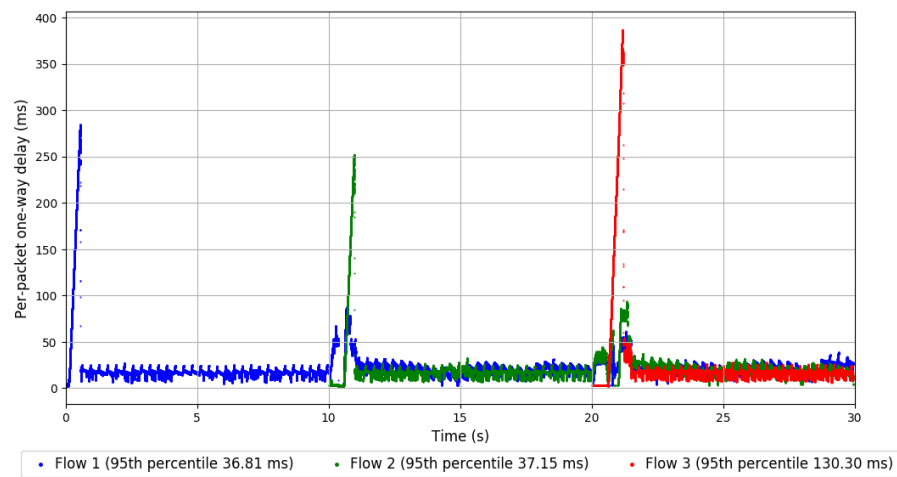
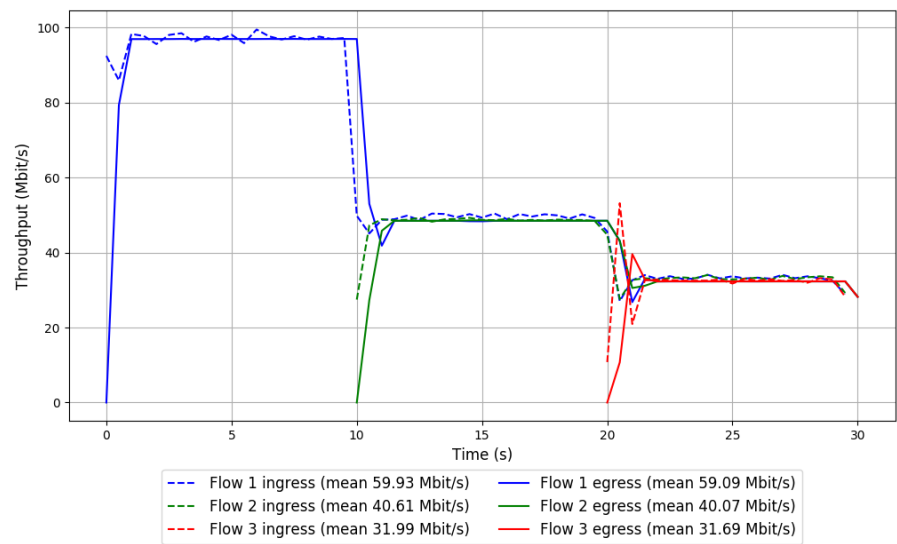


Run 2: Statistics of FillP

Start at: 2018-10-10 04:31:54  
End at: 2018-10-10 04:32:24  
Local clock offset: -4.713 ms  
Remote clock offset: -0.596 ms

# Below is generated by plot.py at 2018-10-10 05:56:47  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 96.25 Mbit/s  
95th percentile per-packet one-way delay: 39.650 ms  
Loss rate: 1.35%  
-- Flow 1:  
Average throughput: 59.09 Mbit/s  
95th percentile per-packet one-way delay: 36.812 ms  
Loss rate: 1.42%  
-- Flow 2:  
Average throughput: 40.07 Mbit/s  
95th percentile per-packet one-way delay: 37.154 ms  
Loss rate: 1.36%  
-- Flow 3:  
Average throughput: 31.69 Mbit/s  
95th percentile per-packet one-way delay: 130.298 ms  
Loss rate: 0.99%

Run 2: Report of FillP — Data Link

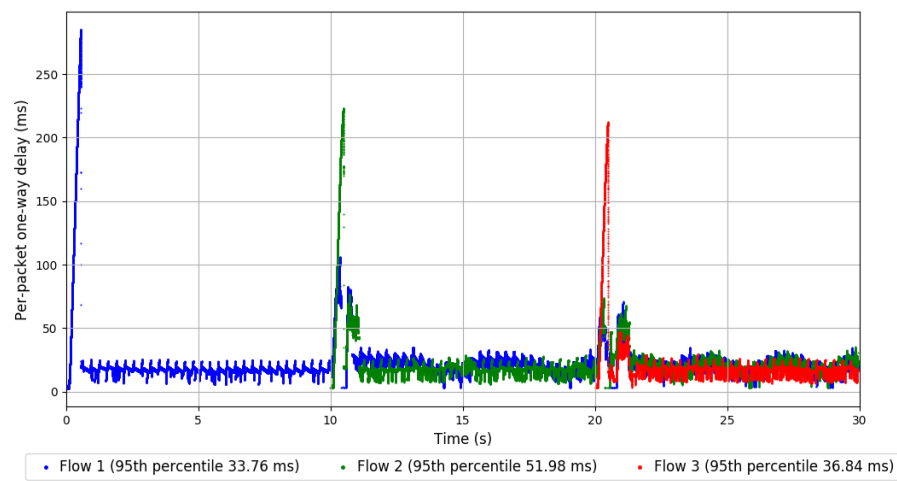
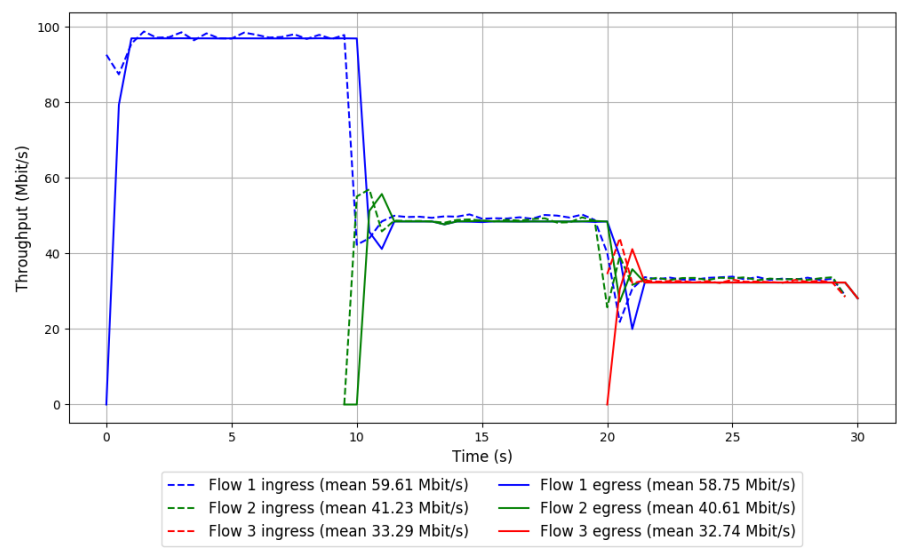


Run 3: Statistics of FillP

Start at: 2018-10-10 04:52:43  
End at: 2018-10-10 04:53:13  
Local clock offset: -1.932 ms  
Remote clock offset: -0.332 ms

# Below is generated by plot.py at 2018-10-10 05:56:47  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 96.64 Mbit/s  
95th percentile per-packet one-way delay: 46.027 ms  
Loss rate: 1.50%  
-- Flow 1:  
Average throughput: 58.75 Mbit/s  
95th percentile per-packet one-way delay: 33.759 ms  
Loss rate: 1.46%  
-- Flow 2:  
Average throughput: 40.61 Mbit/s  
95th percentile per-packet one-way delay: 51.979 ms  
Loss rate: 1.51%  
-- Flow 3:  
Average throughput: 32.74 Mbit/s  
95th percentile per-packet one-way delay: 36.845 ms  
Loss rate: 1.71%

Run 3: Report of FillP — Data Link

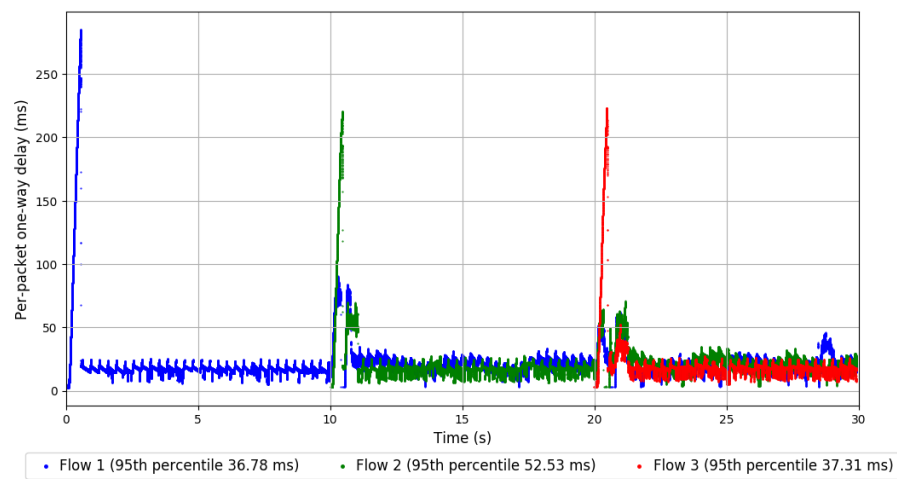
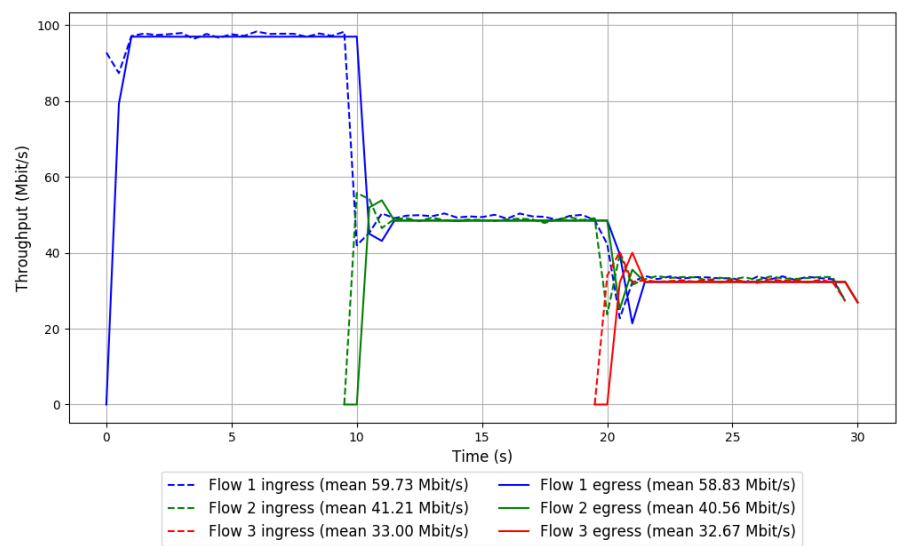


Run 4: Statistics of FillP

Start at: 2018-10-10 05:13:30  
End at: 2018-10-10 05:14:00  
Local clock offset: -6.867 ms  
Remote clock offset: -0.064 ms

# Below is generated by plot.py at 2018-10-10 05:56:49  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 96.68 Mbit/s  
95th percentile per-packet one-way delay: 44.747 ms  
Loss rate: 1.46%  
-- Flow 1:  
Average throughput: 58.83 Mbit/s  
95th percentile per-packet one-way delay: 36.778 ms  
Loss rate: 1.50%  
-- Flow 2:  
Average throughput: 40.56 Mbit/s  
95th percentile per-packet one-way delay: 52.530 ms  
Loss rate: 1.56%  
-- Flow 3:  
Average throughput: 32.67 Mbit/s  
95th percentile per-packet one-way delay: 37.314 ms  
Loss rate: 1.01%

Run 4: Report of FillP — Data Link



Run 5: Statistics of FillP

Start at: 2018-10-10 05:34:17

End at: 2018-10-10 05:34:47

Local clock offset: -3.539 ms

Remote clock offset: 0.135 ms

# Below is generated by plot.py at 2018-10-10 05:57:44

# Datalink statistics

-- Total of 3 flows:

Average throughput: 96.68 Mbit/s

95th percentile per-packet one-way delay: 47.203 ms

Loss rate: 1.38%

-- Flow 1:

Average throughput: 58.87 Mbit/s

95th percentile per-packet one-way delay: 33.138 ms

Loss rate: 1.41%

-- Flow 2:

Average throughput: 40.53 Mbit/s

95th percentile per-packet one-way delay: 51.757 ms

Loss rate: 1.52%

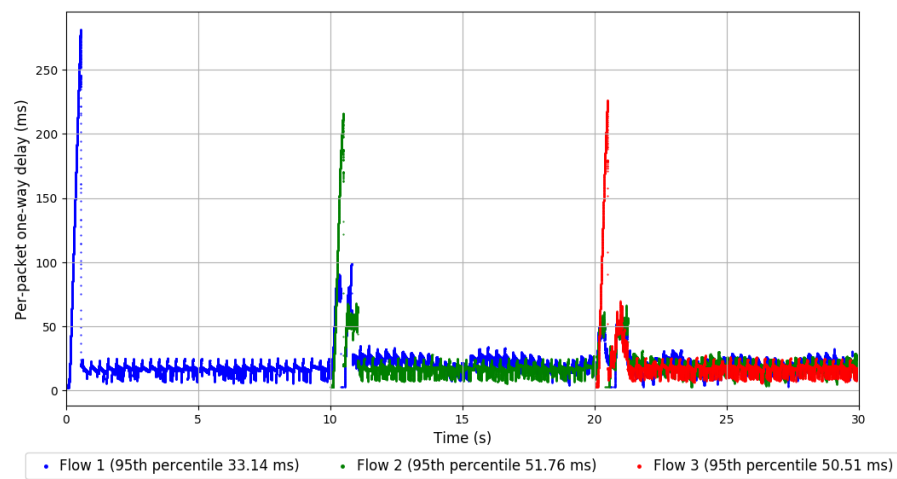
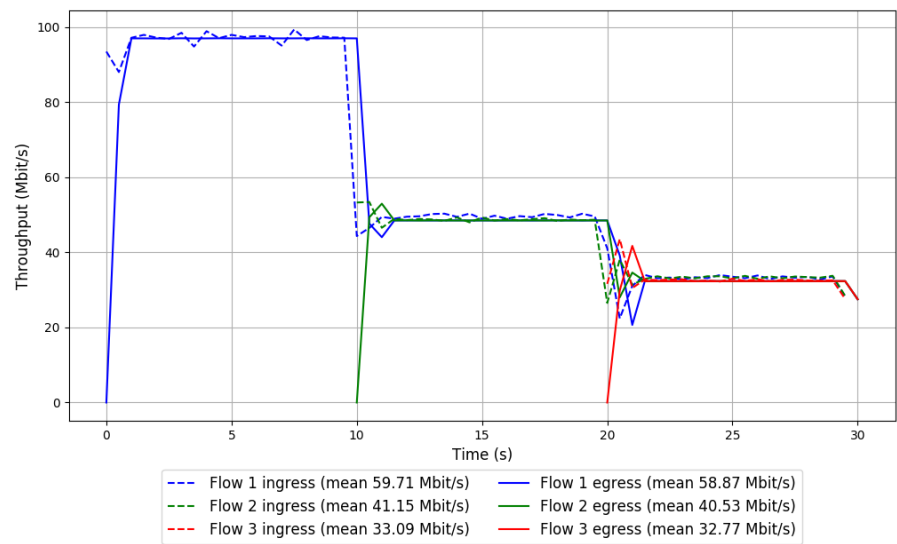
-- Flow 3:

Average throughput: 32.77 Mbit/s

95th percentile per-packet one-way delay: 50.511 ms

Loss rate: 0.90%

Run 5: Report of FillP — Data Link



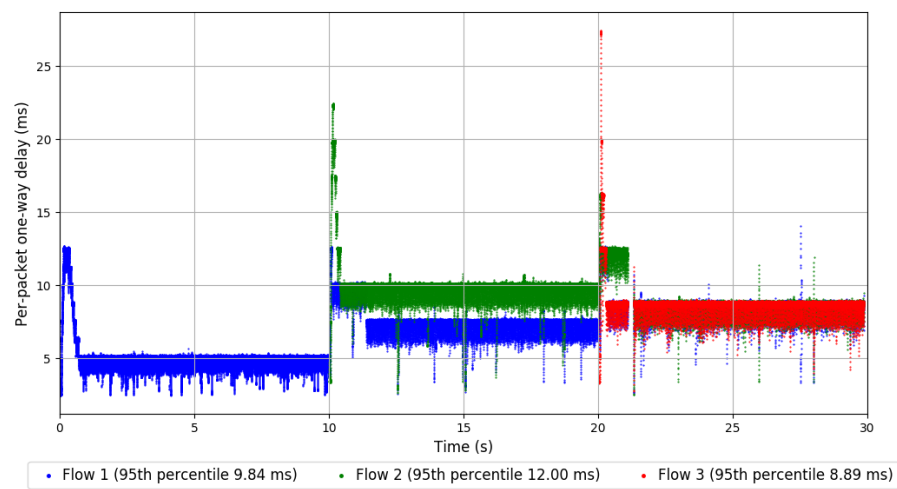
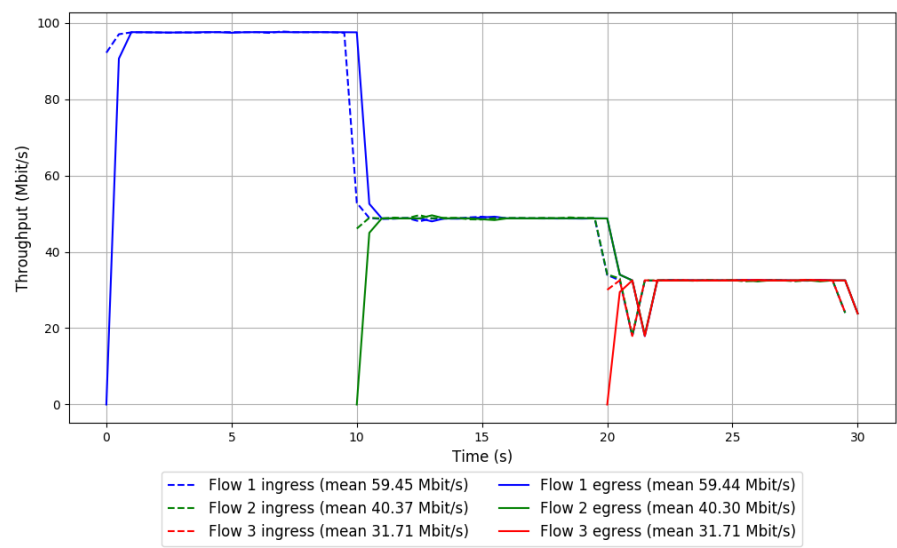


```
Run 1: Statistics of Indigo

Start at: 2018-10-10 04:23:47
End at: 2018-10-10 04:24:17
Local clock offset: -7.788 ms
Remote clock offset: -0.699 ms

# Below is generated by plot.py at 2018-10-10 05:57:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.68 Mbit/s
95th percentile per-packet one-way delay: 10.087 ms
Loss rate: 0.09%
-- Flow 1:
Average throughput: 59.44 Mbit/s
95th percentile per-packet one-way delay: 9.840 ms
Loss rate: 0.03%
-- Flow 2:
Average throughput: 40.30 Mbit/s
95th percentile per-packet one-way delay: 12.000 ms
Loss rate: 0.19%
-- Flow 3:
Average throughput: 31.71 Mbit/s
95th percentile per-packet one-way delay: 8.890 ms
Loss rate: 0.12%
```

Run 1: Report of Indigo — Data Link

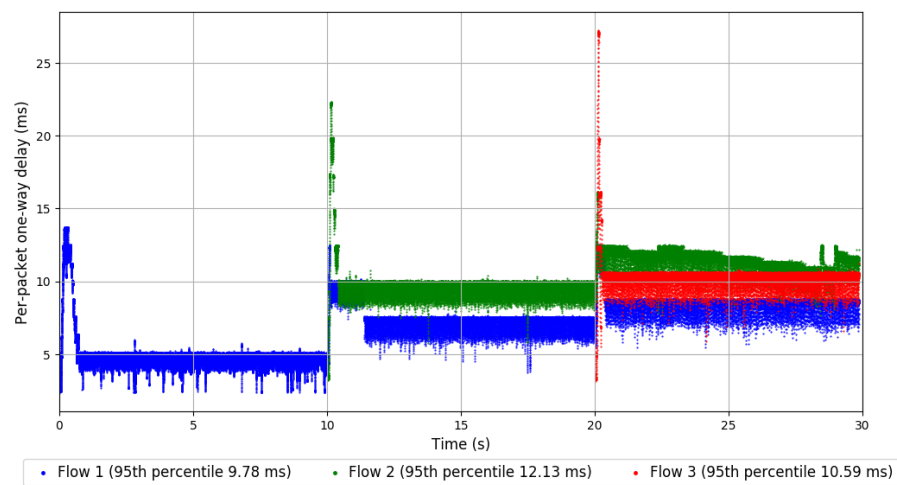
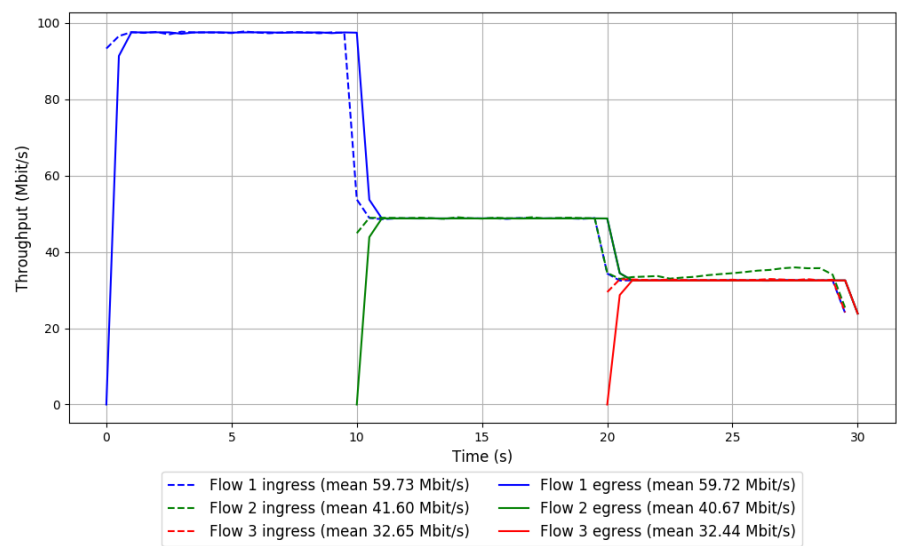


Run 2: Statistics of Indigo

Start at: 2018-10-10 04:44:36  
End at: 2018-10-10 04:45:06  
Local clock offset: -2.488 ms  
Remote clock offset: -0.405 ms

# Below is generated by plot.py at 2018-10-10 05:57:44  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 97.42 Mbit/s  
95th percentile per-packet one-way delay: 11.803 ms  
Loss rate: 0.73%  
-- Flow 1:  
Average throughput: 59.72 Mbit/s  
95th percentile per-packet one-way delay: 9.783 ms  
Loss rate: 0.03%  
-- Flow 2:  
Average throughput: 40.67 Mbit/s  
95th percentile per-packet one-way delay: 12.132 ms  
Loss rate: 2.27%  
-- Flow 3:  
Average throughput: 32.44 Mbit/s  
95th percentile per-packet one-way delay: 10.586 ms  
Loss rate: 0.69%

Run 2: Report of Indigo — Data Link

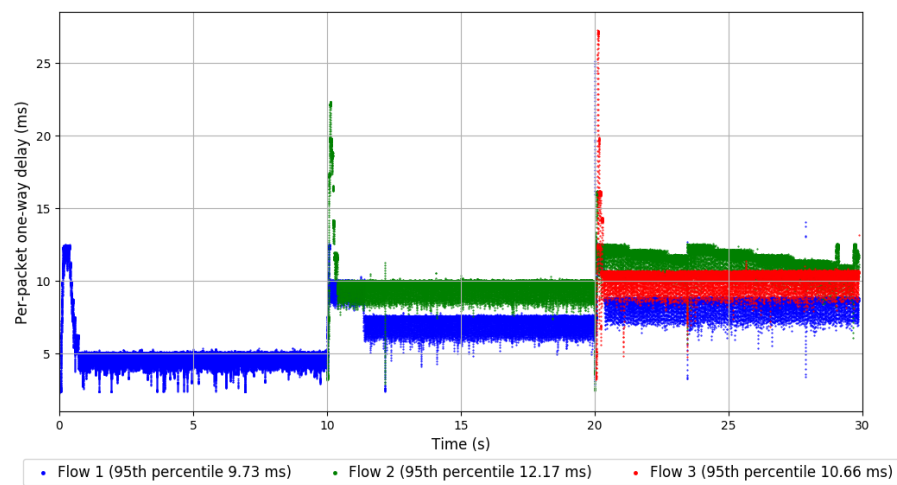
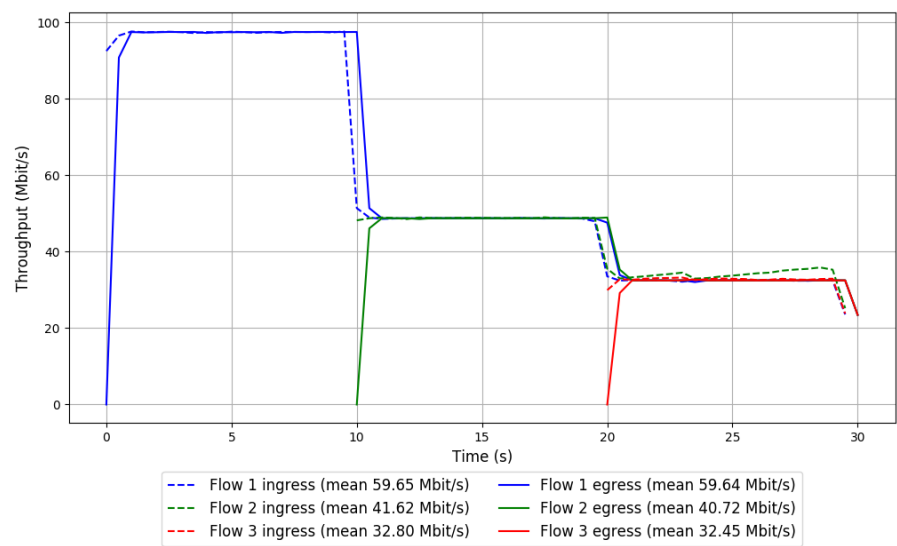


Run 3: Statistics of Indigo

Start at: 2018-10-10 05:05:24  
End at: 2018-10-10 05:05:54  
Local clock offset: -5.691 ms  
Remote clock offset: -0.027 ms

# Below is generated by plot.py at 2018-10-10 05:57:44  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 97.40 Mbit/s  
95th percentile per-packet one-way delay: 11.855 ms  
Loss rate: 0.75%  
-- Flow 1:  
Average throughput: 59.64 Mbit/s  
95th percentile per-packet one-way delay: 9.734 ms  
Loss rate: 0.03%  
-- Flow 2:  
Average throughput: 40.72 Mbit/s  
95th percentile per-packet one-way delay: 12.167 ms  
Loss rate: 2.18%  
-- Flow 3:  
Average throughput: 32.45 Mbit/s  
95th percentile per-packet one-way delay: 10.659 ms  
Loss rate: 1.10%

Run 3: Report of Indigo — Data Link



Run 4: Statistics of Indigo

Start at: 2018-10-10 05:26:11

End at: 2018-10-10 05:26:41

Local clock offset: -6.802 ms

Remote clock offset: 0.063 ms

# Below is generated by plot.py at 2018-10-10 05:57:47

# Datalink statistics

-- Total of 3 flows:

Average throughput: 97.39 Mbit/s

95th percentile per-packet one-way delay: 11.208 ms

Loss rate: 0.73%

-- Flow 1:

Average throughput: 59.67 Mbit/s

95th percentile per-packet one-way delay: 9.455 ms

Loss rate: 0.03%

-- Flow 2:

Average throughput: 40.66 Mbit/s

95th percentile per-packet one-way delay: 11.654 ms

Loss rate: 2.19%

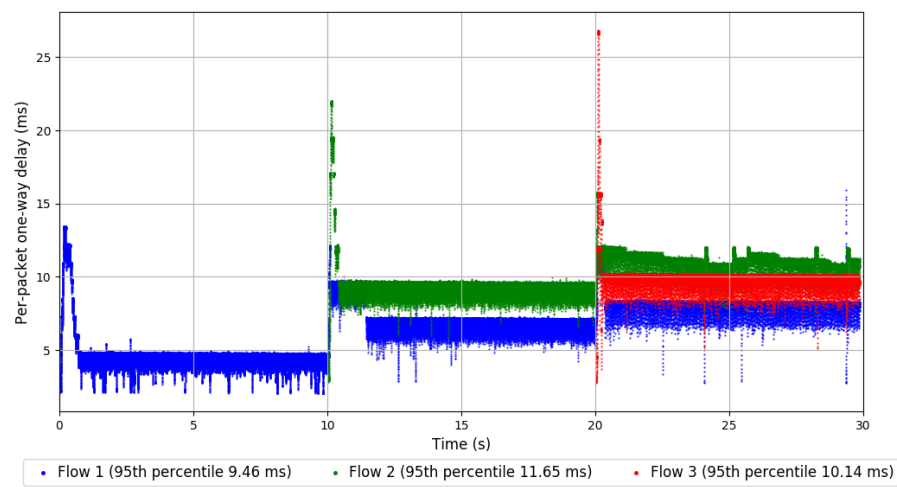
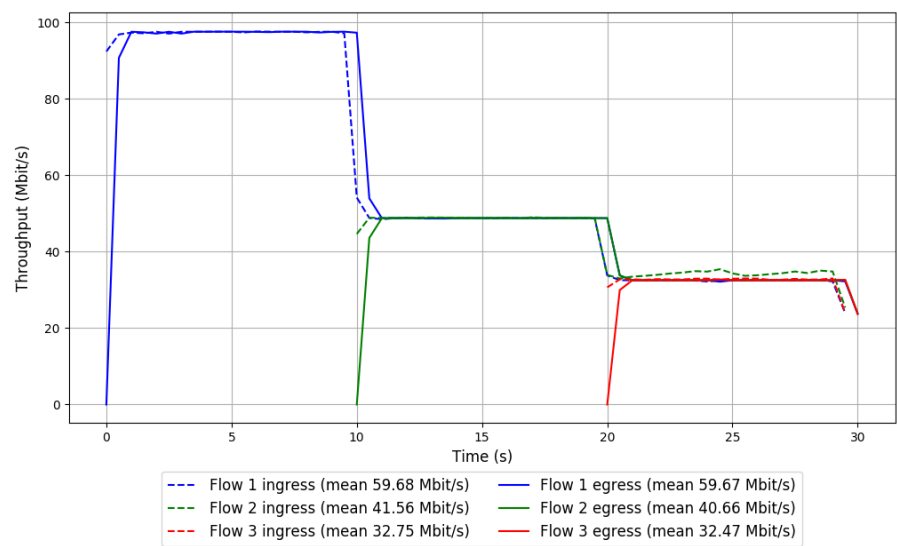
-- Flow 3:

Average throughput: 32.47 Mbit/s

95th percentile per-packet one-way delay: 10.143 ms

Loss rate: 0.90%

Run 4: Report of Indigo — Data Link





Run 5: Statistics of Indigo

Start at: 2018-10-10 05:47:00

End at: 2018-10-10 05:47:30

Local clock offset: -1.391 ms

Remote clock offset: 0.198 ms

# Below is generated by plot.py at 2018-10-10 05:57:59

# Datalink statistics

-- Total of 3 flows:

Average throughput: 97.39 Mbit/s

95th percentile per-packet one-way delay: 11.625 ms

Loss rate: 0.74%

-- Flow 1:

Average throughput: 59.69 Mbit/s

95th percentile per-packet one-way delay: 9.702 ms

Loss rate: 0.03%

-- Flow 2:

Average throughput: 40.66 Mbit/s

95th percentile per-packet one-way delay: 12.011 ms

Loss rate: 2.51%

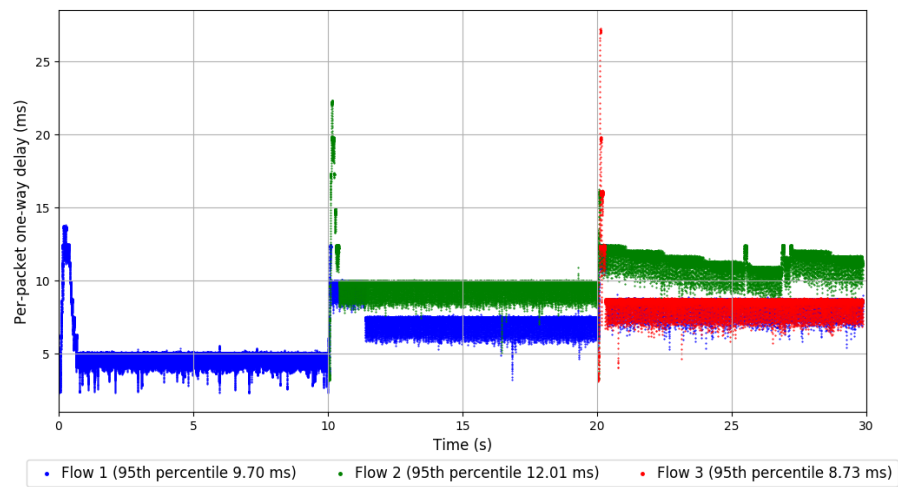
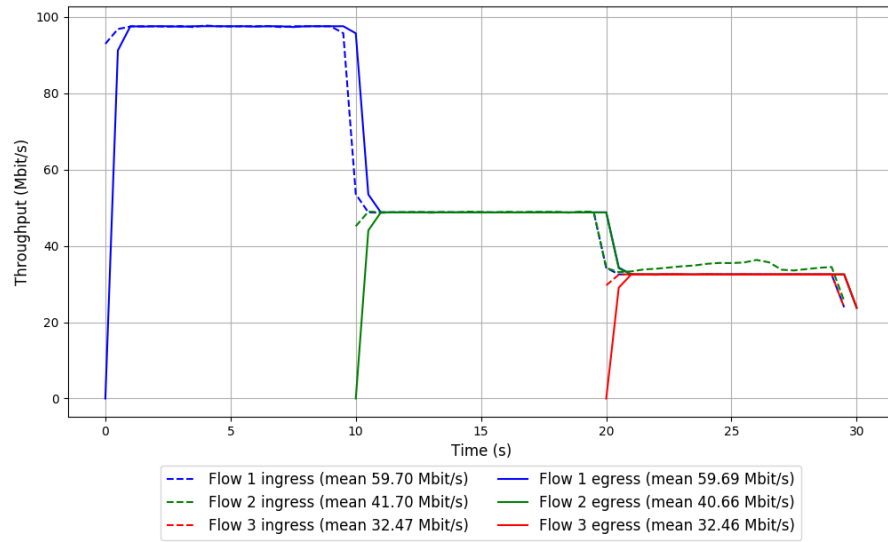
-- Flow 3:

Average throughput: 32.46 Mbit/s

95th percentile per-packet one-way delay: 8.729 ms

Loss rate: 0.10%

## Run 5: Report of Indigo — Data Link

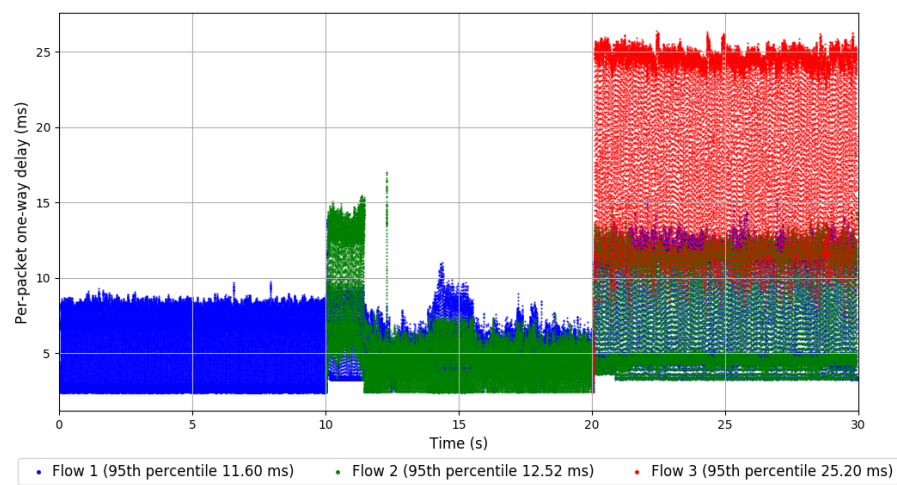
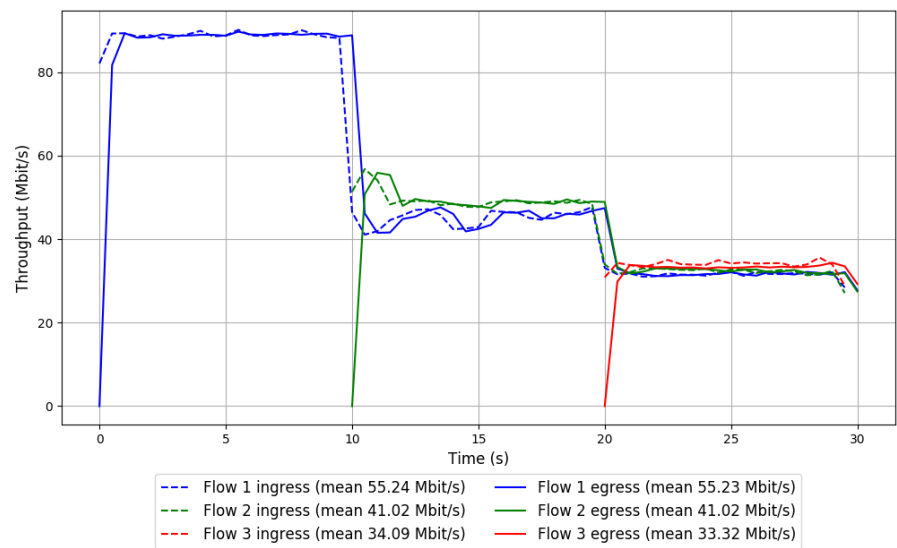


Run 1: Statistics of Indigo-96d2da3

Start at: 2018-10-10 04:08:46  
End at: 2018-10-10 04:09:16  
Local clock offset: -7.345 ms  
Remote clock offset: -0.763 ms

# Below is generated by plot.py at 2018-10-10 05:57:59  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 93.56 Mbit/s  
95th percentile per-packet one-way delay: 23.180 ms  
Loss rate: 0.29%  
-- Flow 1:  
Average throughput: 55.23 Mbit/s  
95th percentile per-packet one-way delay: 11.598 ms  
Loss rate: 0.03%  
-- Flow 2:  
Average throughput: 41.02 Mbit/s  
95th percentile per-packet one-way delay: 12.524 ms  
Loss rate: 0.03%  
-- Flow 3:  
Average throughput: 33.32 Mbit/s  
95th percentile per-packet one-way delay: 25.205 ms  
Loss rate: 2.19%

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

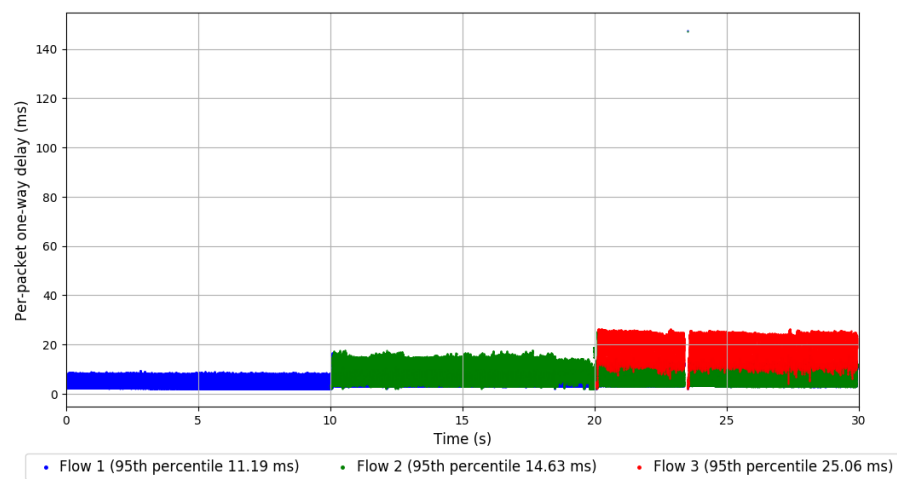
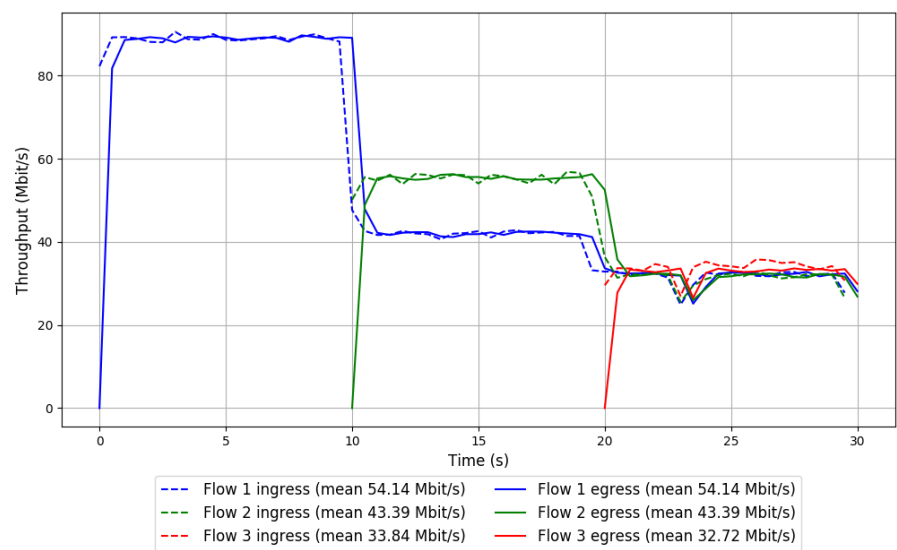


Run 2: Statistics of Indigo-96d2da3

Start at: 2018-10-10 04:29:34  
End at: 2018-10-10 04:30:04  
Local clock offset: -5.52 ms  
Remote clock offset: -0.565 ms

# Below is generated by plot.py at 2018-10-10 05:58:00  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 93.84 Mbit/s  
95th percentile per-packet one-way delay: 22.564 ms  
Loss rate: 0.41%  
-- Flow 1:  
Average throughput: 54.14 Mbit/s  
95th percentile per-packet one-way delay: 11.190 ms  
Loss rate: 0.01%  
-- Flow 2:  
Average throughput: 43.39 Mbit/s  
95th percentile per-packet one-way delay: 14.626 ms  
Loss rate: 0.02%  
-- Flow 3:  
Average throughput: 32.72 Mbit/s  
95th percentile per-packet one-way delay: 25.058 ms  
Loss rate: 3.37%

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



Run 3: Statistics of Indigo-96d2da3

Start at: 2018-10-10 04:50:23

End at: 2018-10-10 04:50:53

Local clock offset: -2.014 ms

Remote clock offset: -0.27 ms

# Below is generated by plot.py at 2018-10-10 05:58:35

# Datalink statistics

-- Total of 3 flows:

Average throughput: 94.45 Mbit/s

95th percentile per-packet one-way delay: 22.869 ms

Loss rate: 0.37%

-- Flow 1:

Average throughput: 54.37 Mbit/s

95th percentile per-packet one-way delay: 11.329 ms

Loss rate: 0.01%

-- Flow 2:

Average throughput: 43.64 Mbit/s

95th percentile per-packet one-way delay: 14.662 ms

Loss rate: 0.02%

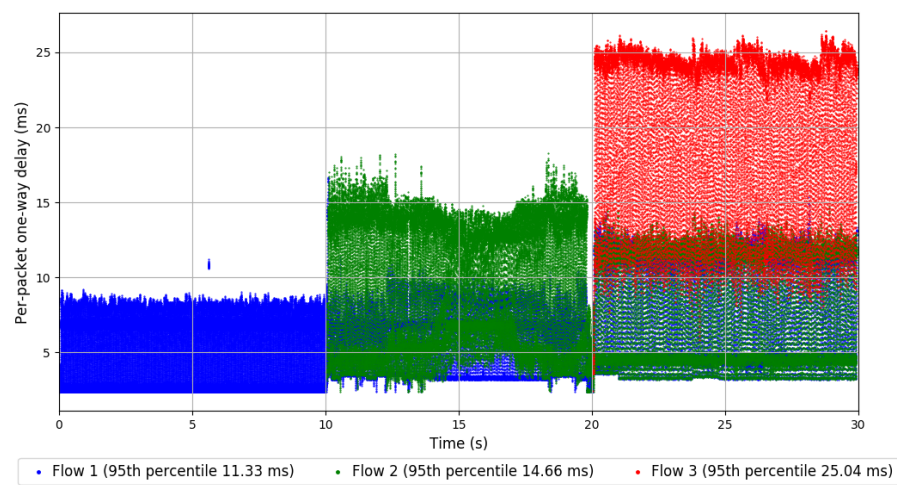
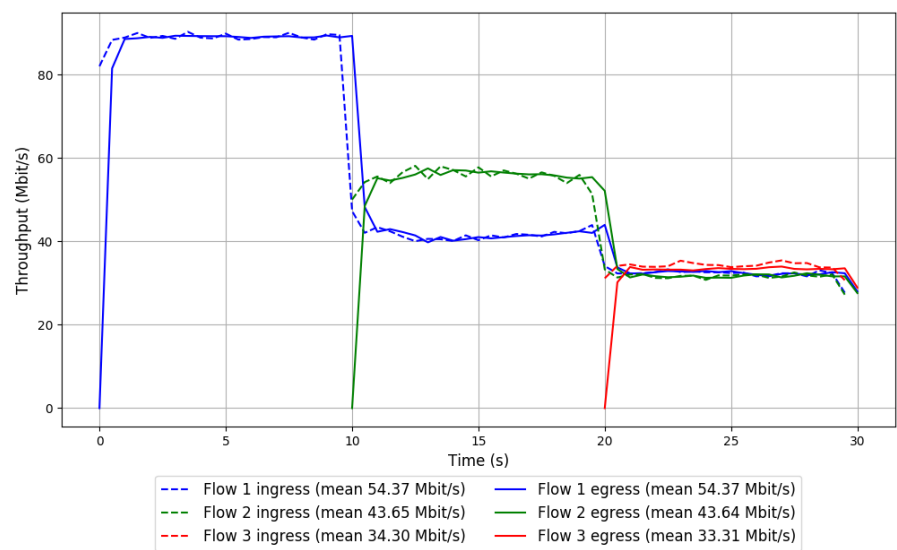
-- Flow 3:

Average throughput: 33.31 Mbit/s

95th percentile per-packet one-way delay: 25.044 ms

Loss rate: 2.92%

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



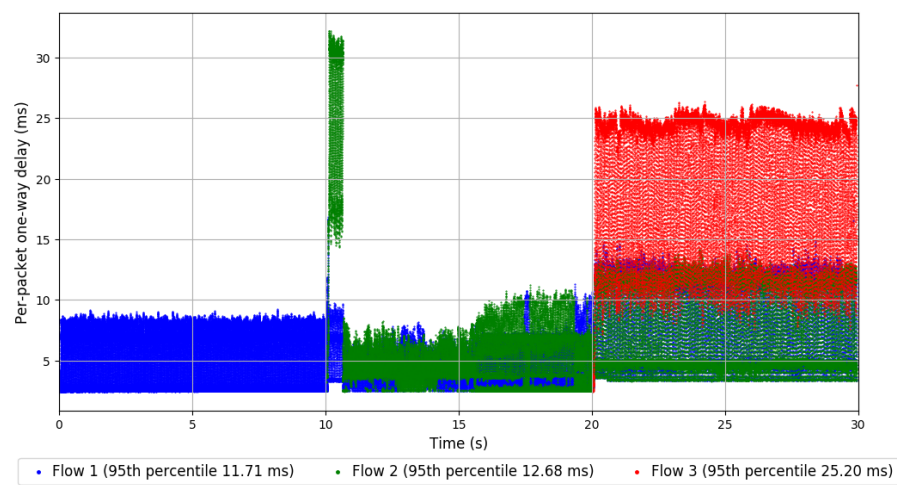
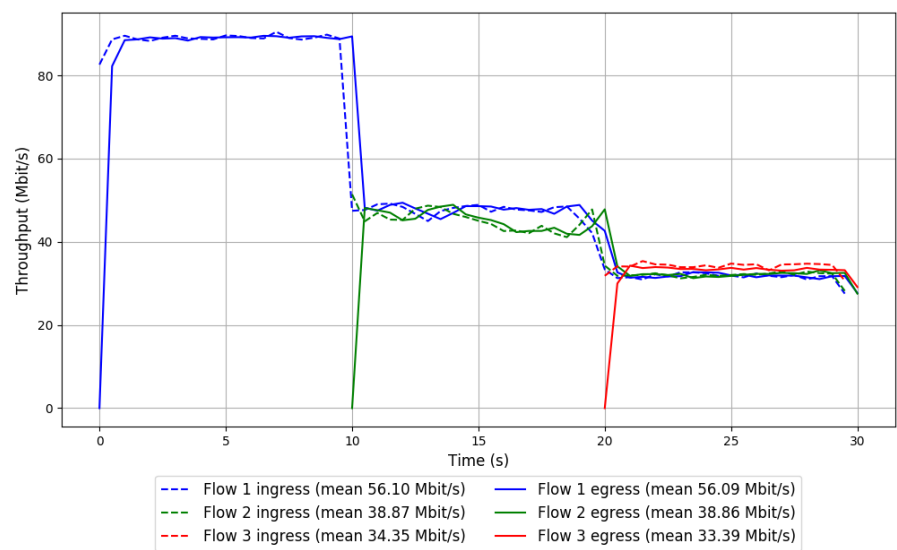


Run 4: Statistics of Indigo-96d2da3

Start at: 2018-10-10 05:11:10  
End at: 2018-10-10 05:11:41  
Local clock offset: -6.541 ms  
Remote clock offset: -0.007 ms

# Below is generated by plot.py at 2018-10-10 05:58:35  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 92.97 Mbit/s  
95th percentile per-packet one-way delay: 23.711 ms  
Loss rate: 0.37%  
-- Flow 1:  
Average throughput: 56.09 Mbit/s  
95th percentile per-packet one-way delay: 11.709 ms  
Loss rate: 0.02%  
-- Flow 2:  
Average throughput: 38.86 Mbit/s  
95th percentile per-packet one-way delay: 12.682 ms  
Loss rate: 0.07%  
-- Flow 3:  
Average throughput: 33.39 Mbit/s  
95th percentile per-packet one-way delay: 25.199 ms  
Loss rate: 2.78%

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



Run 5: Statistics of Indigo-96d2da3

Start at: 2018-10-10 05:31:57

End at: 2018-10-10 05:32:27

Local clock offset: -4.168 ms

Remote clock offset: 0.129 ms

# Below is generated by plot.py at 2018-10-10 05:58:40

# Datalink statistics

-- Total of 3 flows:

Average throughput: 94.05 Mbit/s

95th percentile per-packet one-way delay: 11.991 ms

Loss rate: 0.04%

-- Flow 1:

Average throughput: 55.38 Mbit/s

95th percentile per-packet one-way delay: 11.013 ms

Loss rate: 0.03%

-- Flow 2:

Average throughput: 42.12 Mbit/s

95th percentile per-packet one-way delay: 13.133 ms

Loss rate: 0.04%

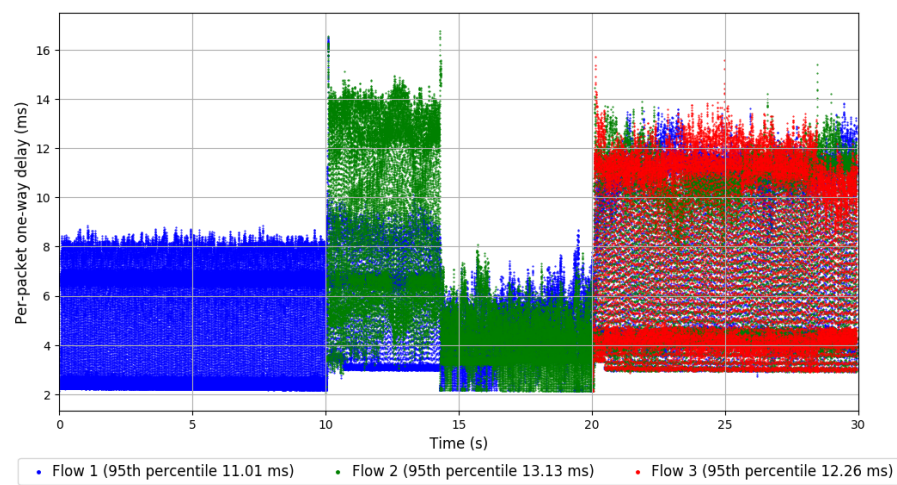
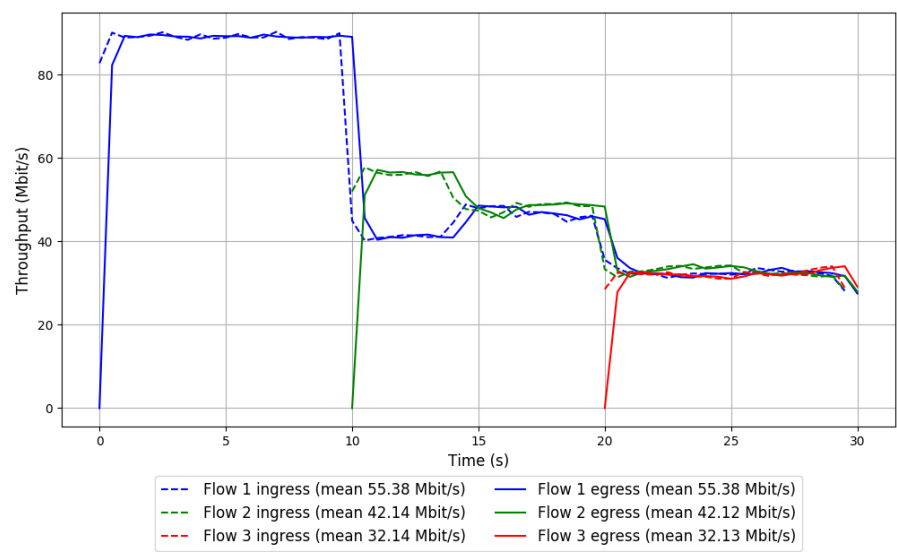
-- Flow 3:

Average throughput: 32.13 Mbit/s

95th percentile per-packet one-way delay: 12.257 ms

Loss rate: 0.07%

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

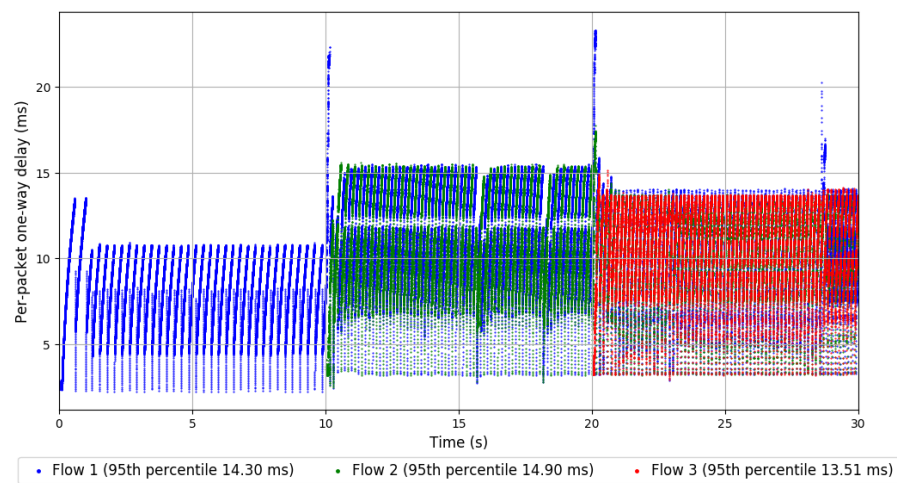
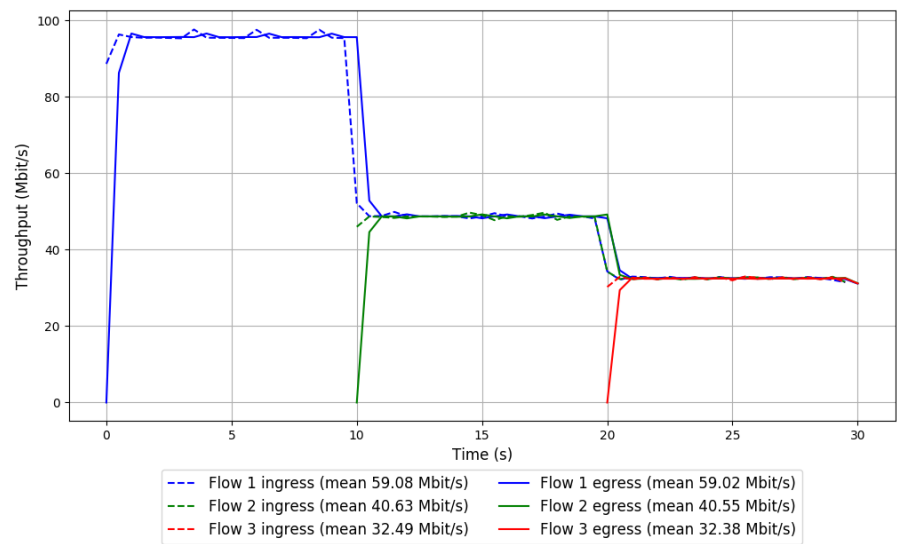


```
Run 1: Statistics of LEDBAT

Start at: 2018-10-10 04:16:41
End at: 2018-10-10 04:17:11
Local clock offset: -7.613 ms
Remote clock offset: -0.741 ms

# Below is generated by plot.py at 2018-10-10 05:58:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.78 Mbit/s
95th percentile per-packet one-way delay: 14.535 ms
Loss rate: 0.18%
-- Flow 1:
Average throughput: 59.02 Mbit/s
95th percentile per-packet one-way delay: 14.298 ms
Loss rate: 0.12%
-- Flow 2:
Average throughput: 40.55 Mbit/s
95th percentile per-packet one-way delay: 14.902 ms
Loss rate: 0.22%
-- Flow 3:
Average throughput: 32.38 Mbit/s
95th percentile per-packet one-way delay: 13.506 ms
Loss rate: 0.40%
```

Run 1: Report of LEDBAT — Data Link

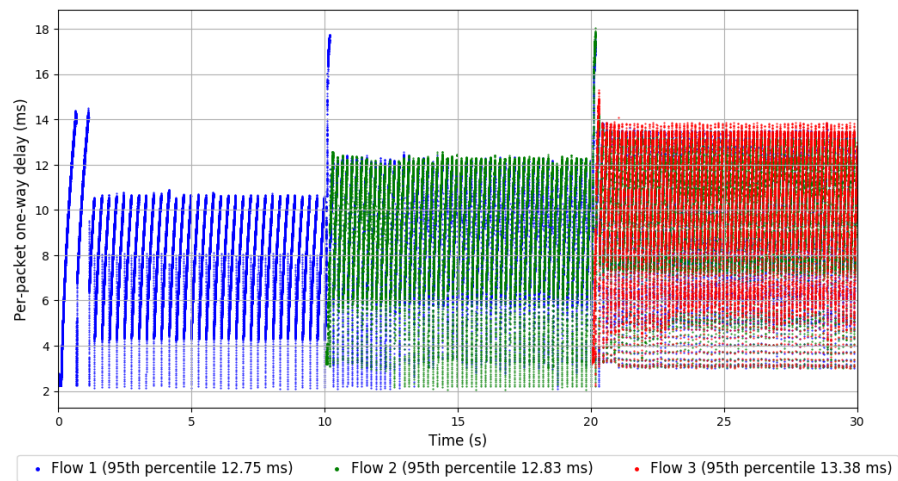
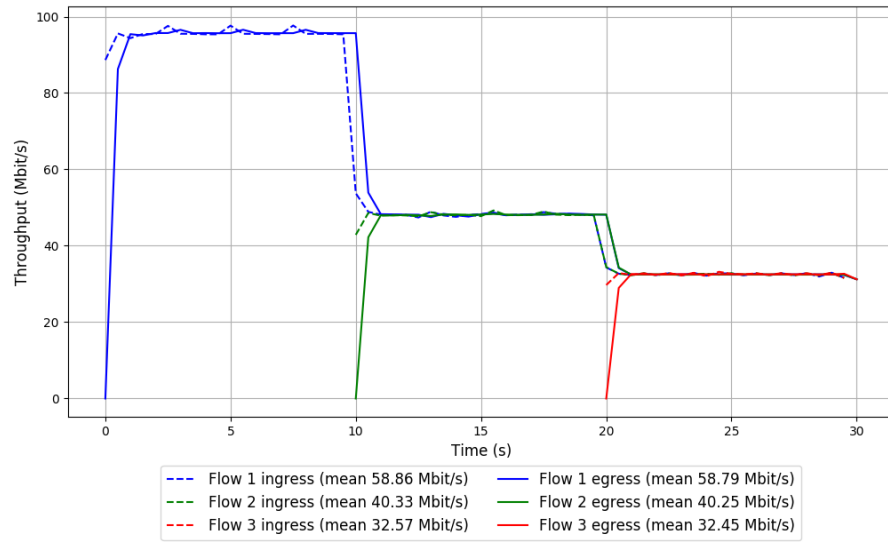


Run 2: Statistics of LEDBAT

Start at: 2018-10-10 04:37:29  
End at: 2018-10-10 04:37:59  
Local clock offset: -3.412 ms  
Remote clock offset: -0.438 ms

# Below is generated by plot.py at 2018-10-10 05:59:02  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 96.35 Mbit/s  
95th percentile per-packet one-way delay: 12.970 ms  
Loss rate: 0.20%  
-- Flow 1:  
Average throughput: 58.79 Mbit/s  
95th percentile per-packet one-way delay: 12.754 ms  
Loss rate: 0.14%  
-- Flow 2:  
Average throughput: 40.25 Mbit/s  
95th percentile per-packet one-way delay: 12.829 ms  
Loss rate: 0.24%  
-- Flow 3:  
Average throughput: 32.45 Mbit/s  
95th percentile per-packet one-way delay: 13.378 ms  
Loss rate: 0.40%

## Run 2: Report of LEDBAT — Data Link



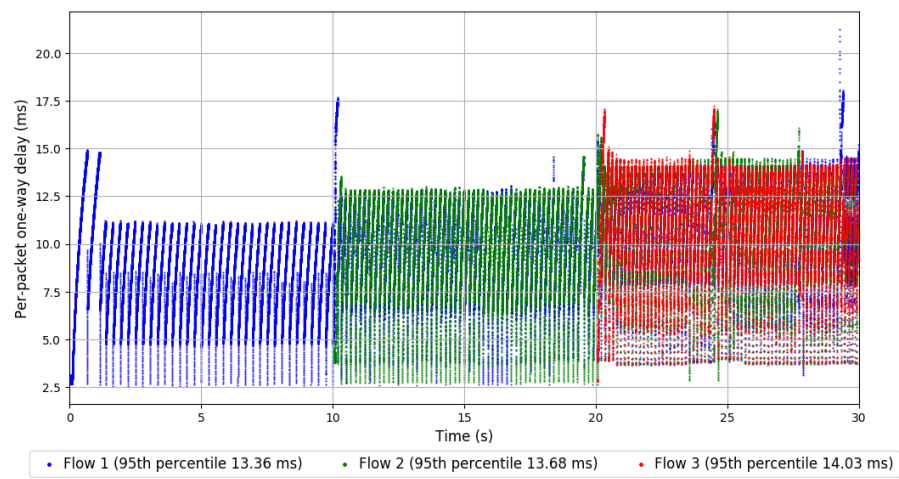
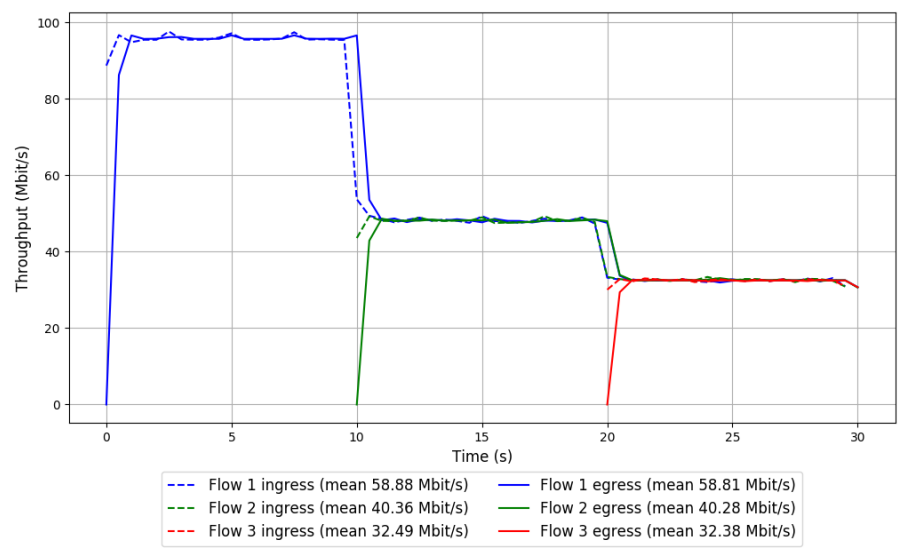


Run 3: Statistics of LEDBAT

Start at: 2018-10-10 04:58:18  
End at: 2018-10-10 04:58:48  
Local clock offset: -3.464 ms  
Remote clock offset: -0.212 ms

# Below is generated by plot.py at 2018-10-10 05:59:14  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 96.38 Mbit/s  
95th percentile per-packet one-way delay: 13.661 ms  
Loss rate: 0.19%  
-- Flow 1:  
Average throughput: 58.81 Mbit/s  
95th percentile per-packet one-way delay: 13.360 ms  
Loss rate: 0.14%  
-- Flow 2:  
Average throughput: 40.28 Mbit/s  
95th percentile per-packet one-way delay: 13.680 ms  
Loss rate: 0.23%  
-- Flow 3:  
Average throughput: 32.38 Mbit/s  
95th percentile per-packet one-way delay: 14.032 ms  
Loss rate: 0.38%

Run 3: Report of LEDBAT — Data Link

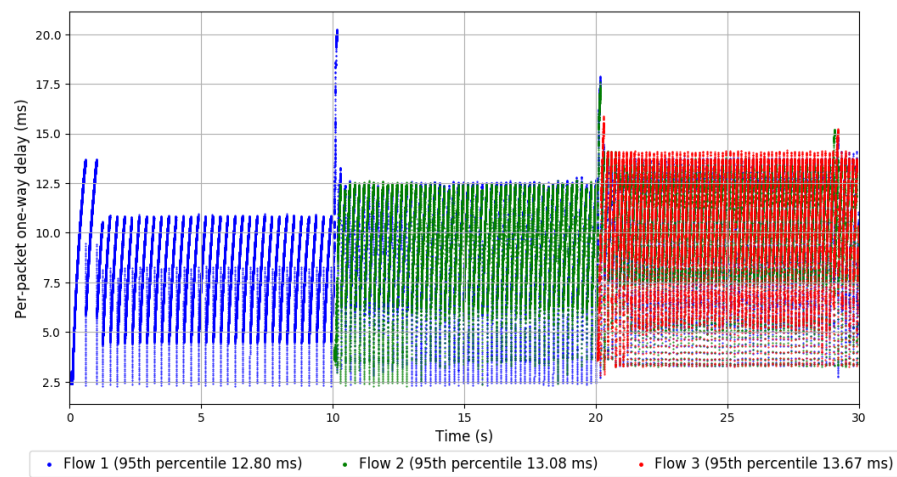
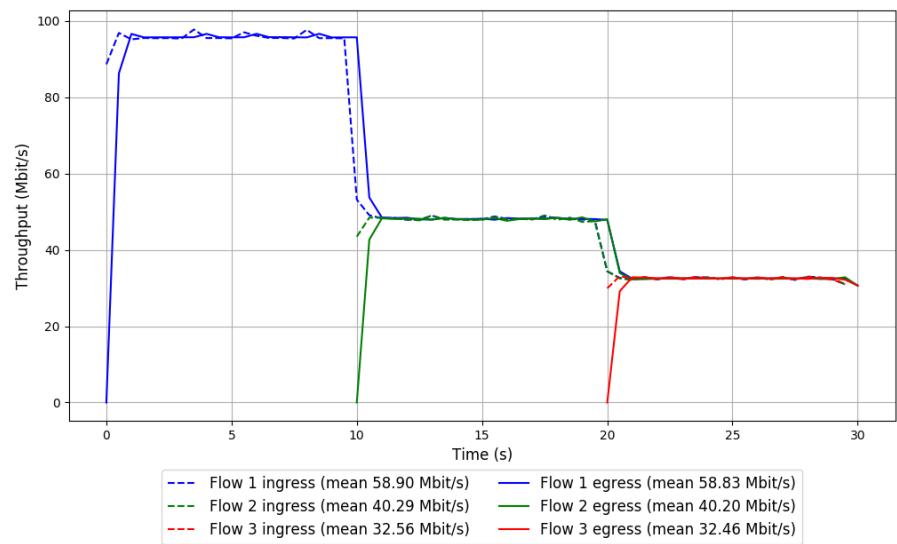


Run 4: Statistics of LEDBAT

Start at: 2018-10-10 05:19:05  
End at: 2018-10-10 05:19:35  
Local clock offset: -7.356 ms  
Remote clock offset: -0.017 ms

# Below is generated by plot.py at 2018-10-10 05:59:16  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 96.37 Mbit/s  
95th percentile per-packet one-way delay: 13.186 ms  
Loss rate: 0.19%  
-- Flow 1:  
Average throughput: 58.83 Mbit/s  
95th percentile per-packet one-way delay: 12.801 ms  
Loss rate: 0.13%  
-- Flow 2:  
Average throughput: 40.20 Mbit/s  
95th percentile per-packet one-way delay: 13.084 ms  
Loss rate: 0.23%  
-- Flow 3:  
Average throughput: 32.46 Mbit/s  
95th percentile per-packet one-way delay: 13.666 ms  
Loss rate: 0.37%

Run 4: Report of LEDBAT — Data Link



Run 5: Statistics of LEDBAT

Start at: 2018-10-10 05:39:53

End at: 2018-10-10 05:40:23

Local clock offset: -2.266 ms

Remote clock offset: 0.151 ms

# Below is generated by plot.py at 2018-10-10 05:59:17

# Datalink statistics

-- Total of 3 flows:

Average throughput: 96.54 Mbit/s

95th percentile per-packet one-way delay: 13.516 ms

Loss rate: 0.18%

-- Flow 1:

Average throughput: 58.90 Mbit/s

95th percentile per-packet one-way delay: 13.332 ms

Loss rate: 0.13%

-- Flow 2:

Average throughput: 40.36 Mbit/s

95th percentile per-packet one-way delay: 13.847 ms

Loss rate: 0.23%

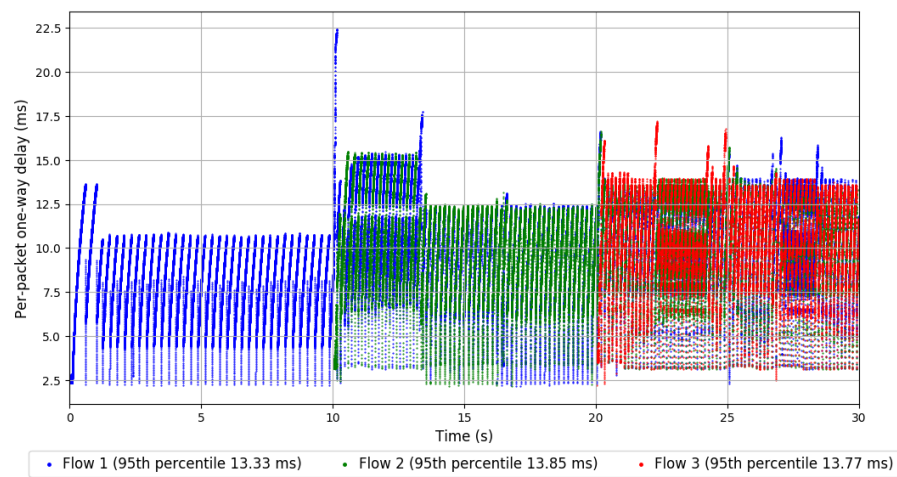
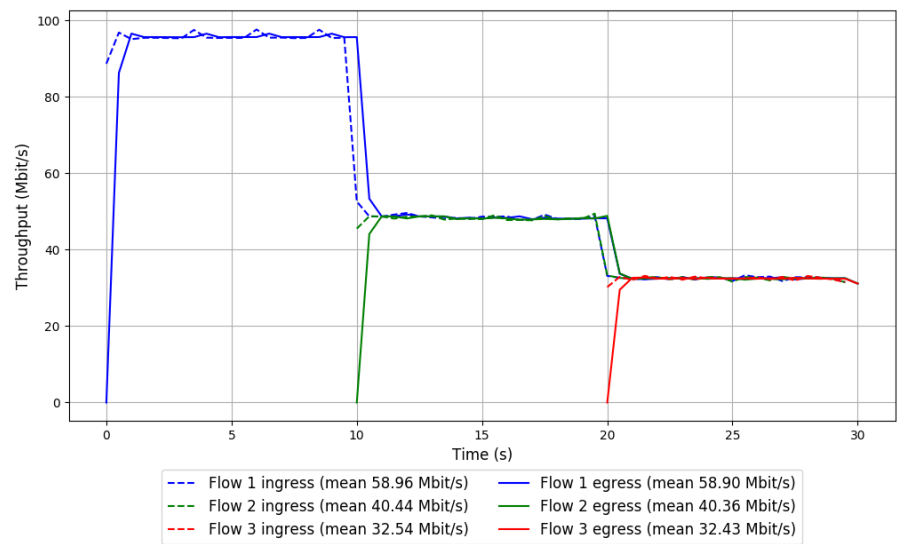
-- Flow 3:

Average throughput: 32.43 Mbit/s

95th percentile per-packet one-way delay: 13.767 ms

Loss rate: 0.38%

Run 5: Report of LEDBAT — Data Link

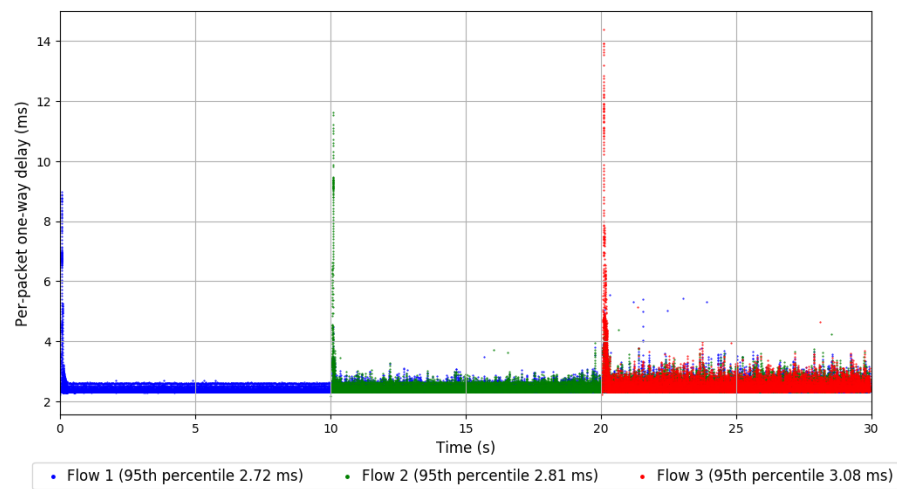
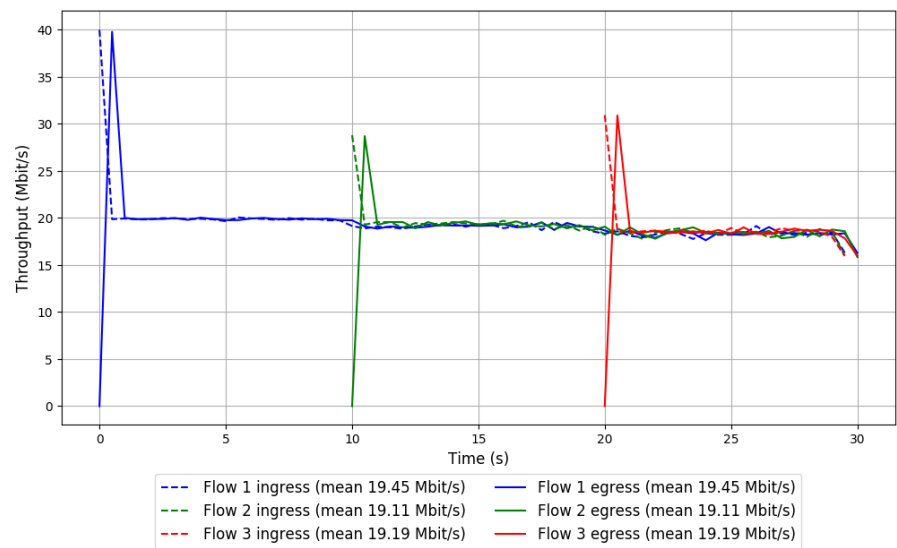


Run 1: Statistics of Indigo-Muses

Start at: 2018-10-10 04:14:25  
End at: 2018-10-10 04:14:55  
Local clock offset: -7.551 ms  
Remote clock offset: -0.694 ms

# Below is generated by plot.py at 2018-10-10 05:59:17  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 38.52 Mbit/s  
95th percentile per-packet one-way delay: 2.810 ms  
Loss rate: 0.02%  
-- Flow 1:  
Average throughput: 19.45 Mbit/s  
95th percentile per-packet one-way delay: 2.718 ms  
Loss rate: 0.01%  
-- Flow 2:  
Average throughput: 19.11 Mbit/s  
95th percentile per-packet one-way delay: 2.805 ms  
Loss rate: 0.03%  
-- Flow 3:  
Average throughput: 19.19 Mbit/s  
95th percentile per-packet one-way delay: 3.080 ms  
Loss rate: 0.03%

Run 1: Report of Indigo-Muses — Data Link



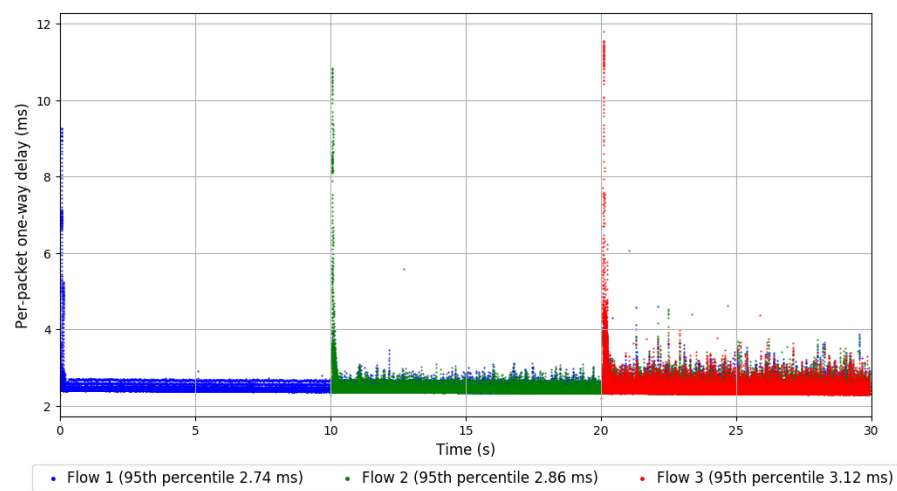
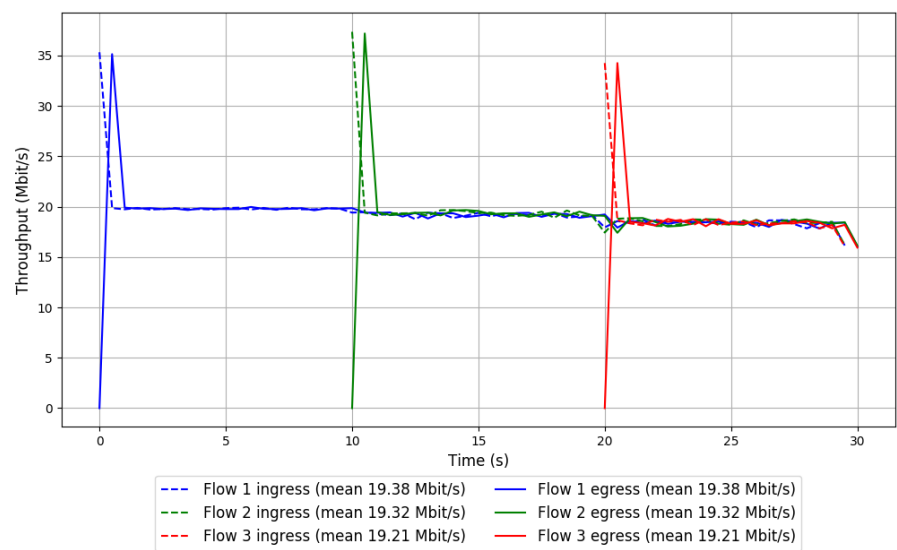


Run 2: Statistics of Indigo-Muses

Start at: 2018-10-10 04:35:13  
End at: 2018-10-10 04:35:43  
Local clock offset: -3.84 ms  
Remote clock offset: -0.608 ms

# Below is generated by plot.py at 2018-10-10 05:59:17  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 38.61 Mbit/s  
95th percentile per-packet one-way delay: 2.840 ms  
Loss rate: 0.03%  
-- Flow 1:  
Average throughput: 19.38 Mbit/s  
95th percentile per-packet one-way delay: 2.738 ms  
Loss rate: 0.02%  
-- Flow 2:  
Average throughput: 19.32 Mbit/s  
95th percentile per-packet one-way delay: 2.862 ms  
Loss rate: 0.02%  
-- Flow 3:  
Average throughput: 19.21 Mbit/s  
95th percentile per-packet one-way delay: 3.122 ms  
Loss rate: 0.04%

Run 2: Report of Indigo-Muses — Data Link

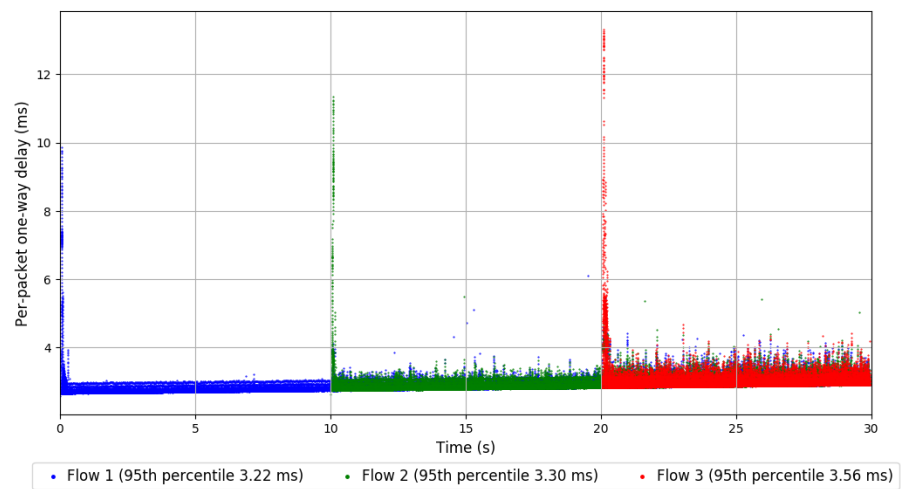
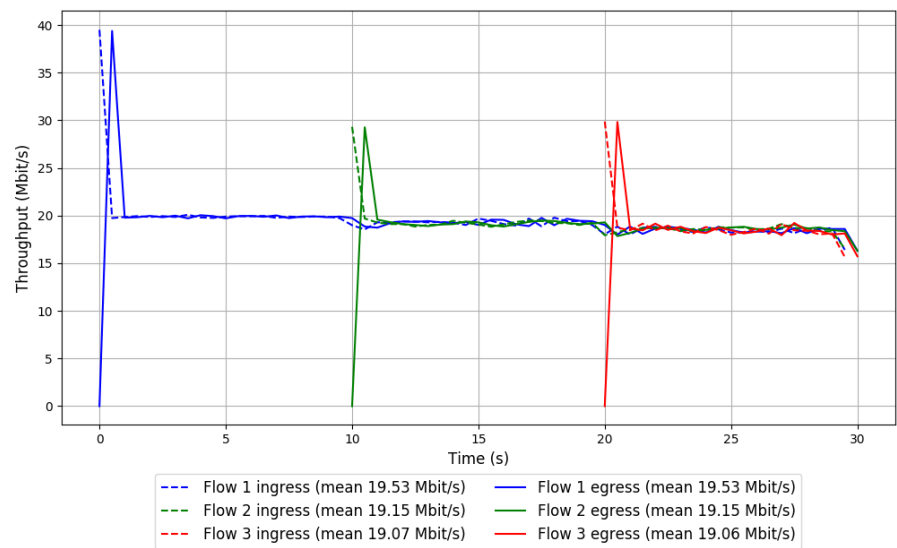


Run 3: Statistics of Indigo-Muses

Start at: 2018-10-10 04:56:02  
End at: 2018-10-10 04:56:32  
Local clock offset: -2.347 ms  
Remote clock offset: -0.141 ms

# Below is generated by plot.py at 2018-10-10 05:59:17  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 38.59 Mbit/s  
95th percentile per-packet one-way delay: 3.312 ms  
Loss rate: 0.02%  
-- Flow 1:  
Average throughput: 19.53 Mbit/s  
95th percentile per-packet one-way delay: 3.222 ms  
Loss rate: 0.02%  
-- Flow 2:  
Average throughput: 19.15 Mbit/s  
95th percentile per-packet one-way delay: 3.303 ms  
Loss rate: 0.03%  
-- Flow 3:  
Average throughput: 19.06 Mbit/s  
95th percentile per-packet one-way delay: 3.562 ms  
Loss rate: 0.02%

Run 3: Report of Indigo-Muses — Data Link



Run 4: Statistics of Indigo-Muses

Start at: 2018-10-10 05:16:49

End at: 2018-10-10 05:17:20

Local clock offset: -7.116 ms

Remote clock offset: 0.07 ms

# Below is generated by plot.py at 2018-10-10 05:59:28

# Datalink statistics

-- Total of 3 flows:

Average throughput: 38.55 Mbit/s

95th percentile per-packet one-way delay: 2.904 ms

Loss rate: 0.02%

-- Flow 1:

Average throughput: 19.50 Mbit/s

95th percentile per-packet one-way delay: 2.819 ms

Loss rate: 0.01%

-- Flow 2:

Average throughput: 19.11 Mbit/s

95th percentile per-packet one-way delay: 2.904 ms

Loss rate: 0.02%

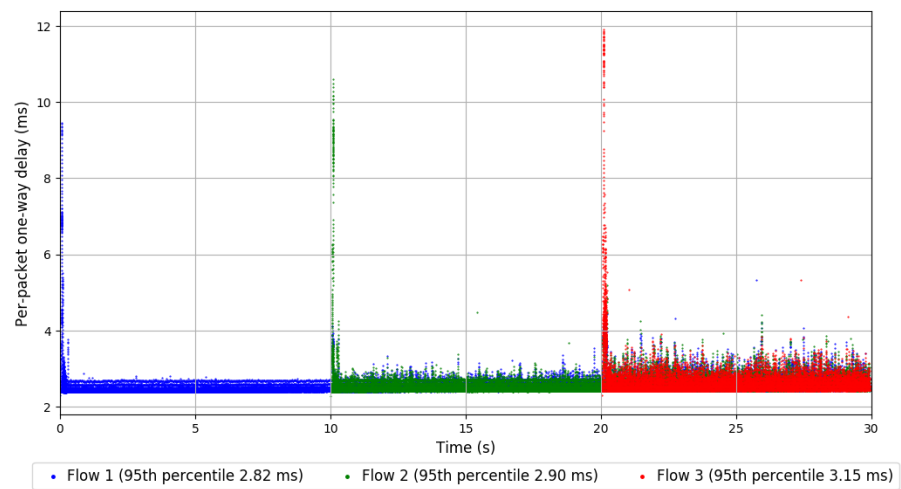
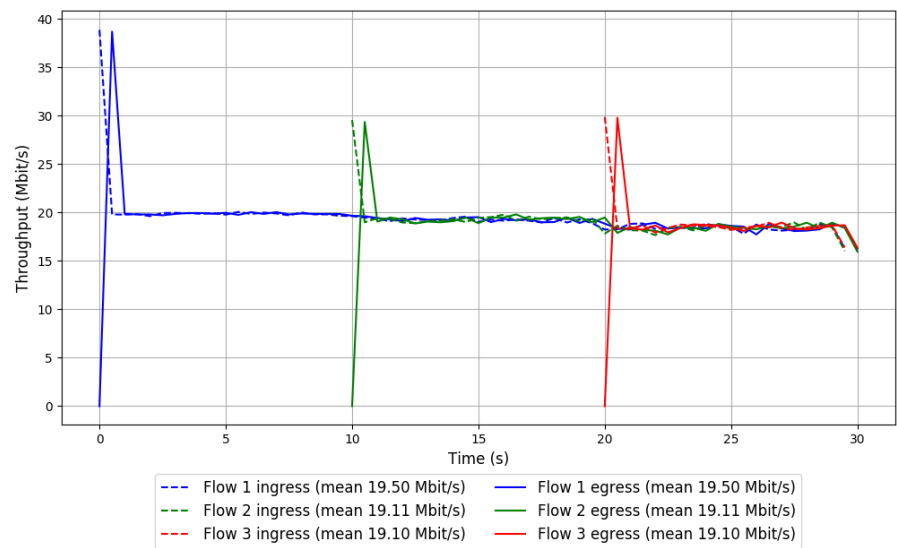
-- Flow 3:

Average throughput: 19.10 Mbit/s

95th percentile per-packet one-way delay: 3.149 ms

Loss rate: 0.04%

Run 4: Report of Indigo-Muses — Data Link



Run 5: Statistics of Indigo-Muses

Start at: 2018-10-10 05:37:36

End at: 2018-10-10 05:38:06

Local clock offset: -2.664 ms

Remote clock offset: 0.156 ms

# Below is generated by plot.py at 2018-10-10 05:59:32

# Datalink statistics

-- Total of 3 flows:

Average throughput: 38.70 Mbit/s

95th percentile per-packet one-way delay: 2.762 ms

Loss rate: 0.01%

-- Flow 1:

Average throughput: 19.46 Mbit/s

95th percentile per-packet one-way delay: 2.667 ms

Loss rate: 0.01%

-- Flow 2:

Average throughput: 19.38 Mbit/s

95th percentile per-packet one-way delay: 2.767 ms

Loss rate: 0.01%

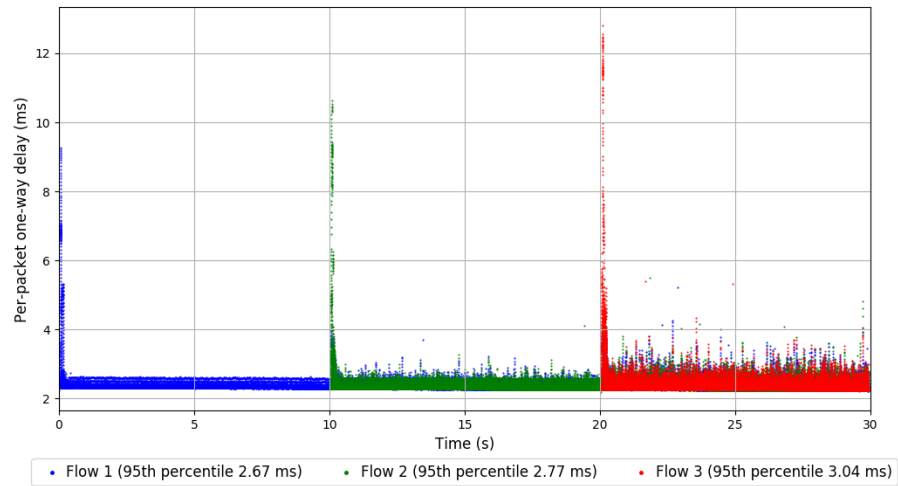
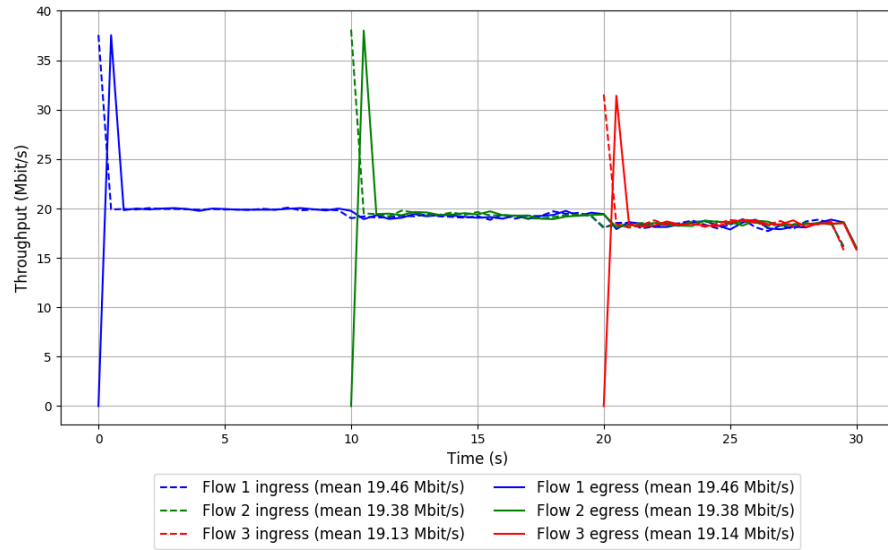
-- Flow 3:

Average throughput: 19.14 Mbit/s

95th percentile per-packet one-way delay: 3.035 ms

Loss rate: 0.03%

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



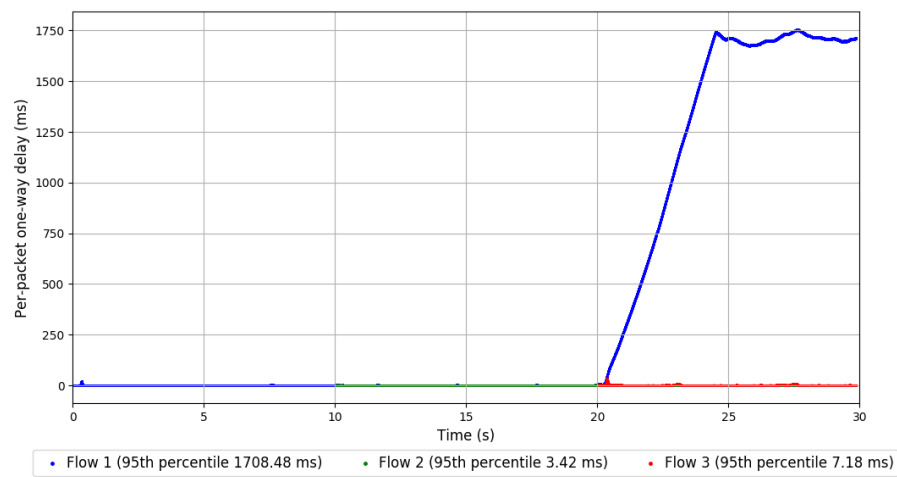
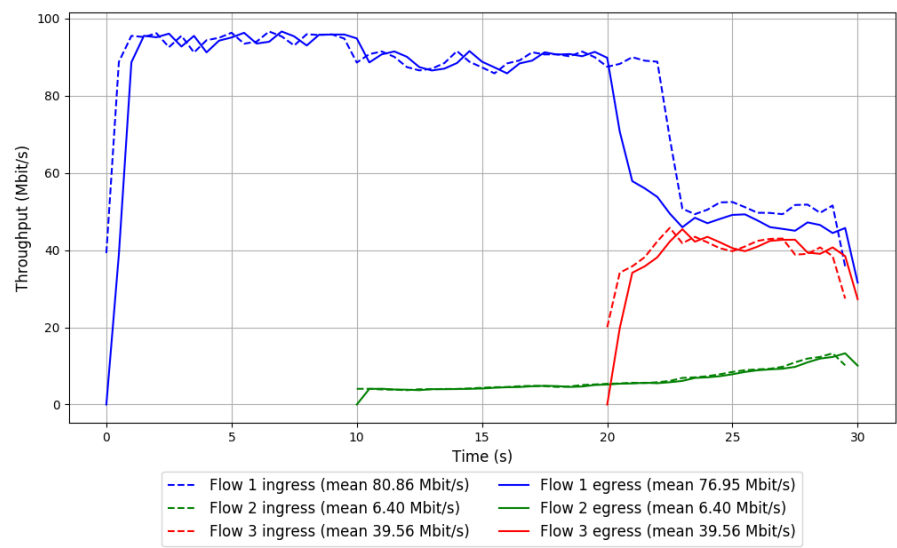


```
Run 1: Statistics of PCC-Allegro

Start at: 2018-10-10 04:15:32
End at: 2018-10-10 04:16:02
Local clock offset: -7.583 ms
Remote clock offset: -0.727 ms

# Below is generated by plot.py at 2018-10-10 06:00:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.22 Mbit/s
95th percentile per-packet one-way delay: 1705.578 ms
Loss rate: 4.00%
-- Flow 1:
Average throughput: 76.95 Mbit/s
95th percentile per-packet one-way delay: 1708.483 ms
Loss rate: 4.84%
-- Flow 2:
Average throughput: 6.40 Mbit/s
95th percentile per-packet one-way delay: 3.423 ms
Loss rate: 0.07%
-- Flow 3:
Average throughput: 39.56 Mbit/s
95th percentile per-packet one-way delay: 7.185 ms
Loss rate: 0.06%
```

Run 1: Report of PCC-Allegro — Data Link

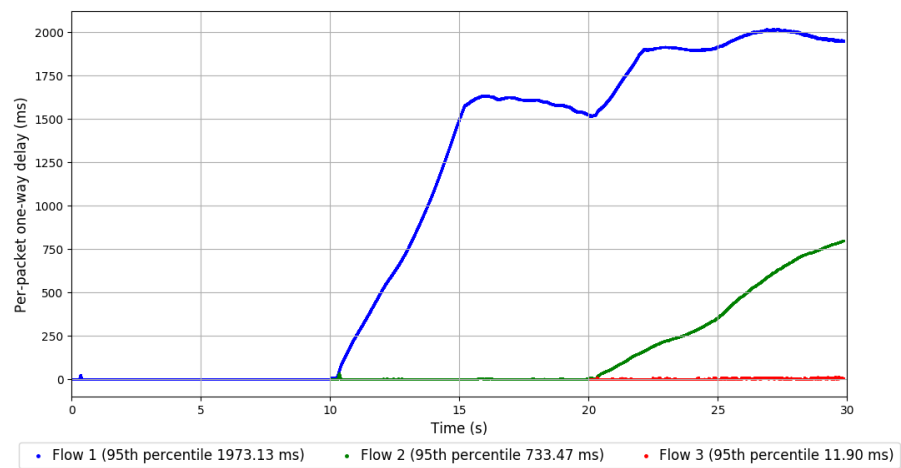
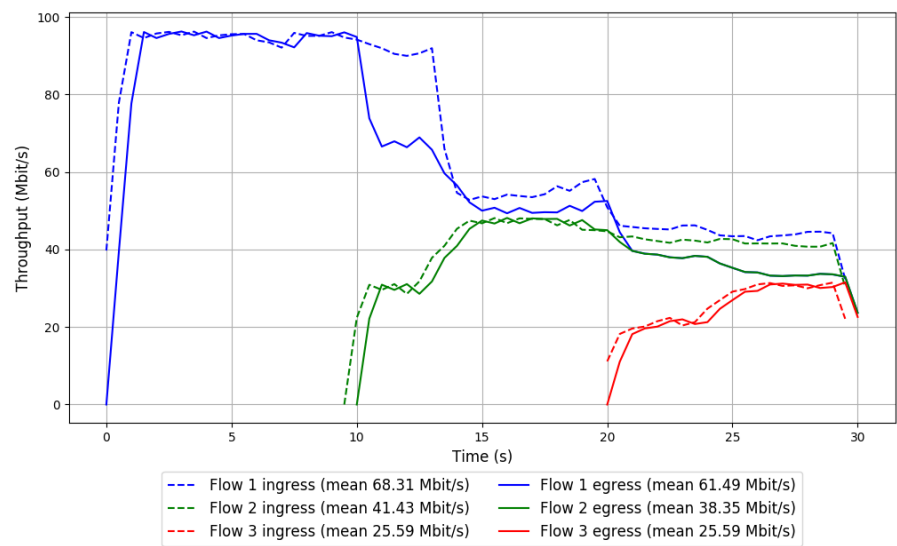


Run 2: Statistics of PCC-Allegro

Start at: 2018-10-10 04:36:20  
End at: 2018-10-10 04:36:50  
Local clock offset: -3.65 ms  
Remote clock offset: -0.508 ms

# Below is generated by plot.py at 2018-10-10 06:00:18  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 95.42 Mbit/s  
95th percentile per-packet one-way delay: 1946.837 ms  
Loss rate: 8.51%  
-- Flow 1:  
Average throughput: 61.49 Mbit/s  
95th percentile per-packet one-way delay: 1973.129 ms  
Loss rate: 9.98%  
-- Flow 2:  
Average throughput: 38.35 Mbit/s  
95th percentile per-packet one-way delay: 733.474 ms  
Loss rate: 7.44%  
-- Flow 3:  
Average throughput: 25.59 Mbit/s  
95th percentile per-packet one-way delay: 11.898 ms  
Loss rate: 0.04%

Run 2: Report of PCC-Allegro — Data Link

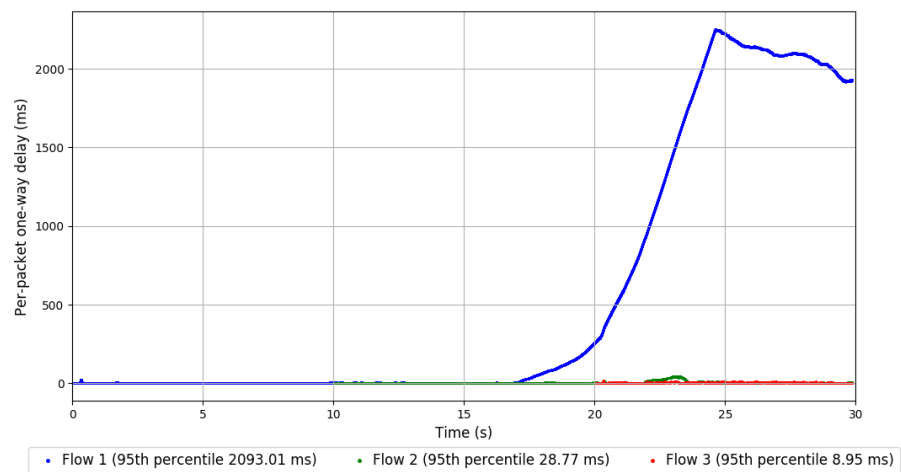
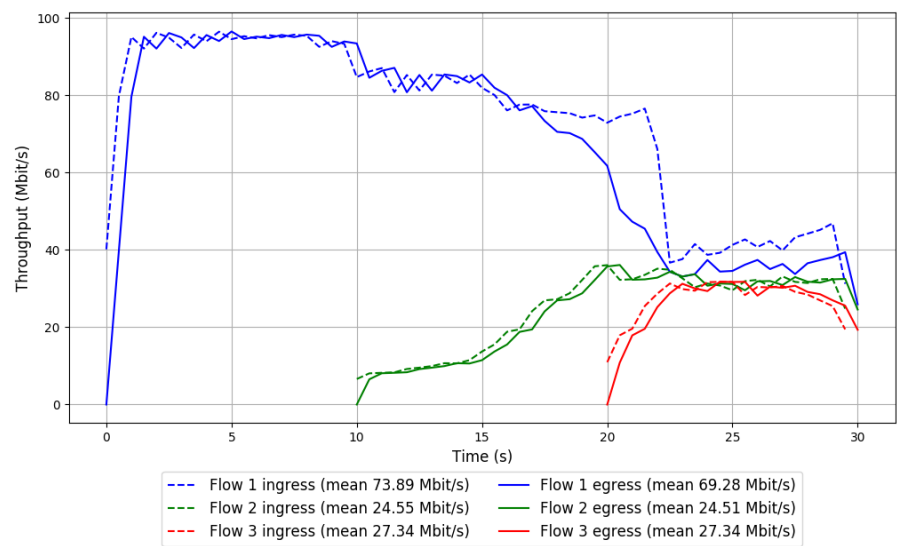


Run 3: Statistics of PCC-Allegro

Start at: 2018-10-10 04:57:09  
End at: 2018-10-10 04:57:39  
Local clock offset: -3.05 ms  
Remote clock offset: -0.142 ms

# Below is generated by plot.py at 2018-10-10 06:00:21  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 94.57 Mbit/s  
95th percentile per-packet one-way delay: 2072.864 ms  
Loss rate: 4.67%  
-- Flow 1:  
Average throughput: 69.28 Mbit/s  
95th percentile per-packet one-way delay: 2093.007 ms  
Loss rate: 6.23%  
-- Flow 2:  
Average throughput: 24.51 Mbit/s  
95th percentile per-packet one-way delay: 28.770 ms  
Loss rate: 0.20%  
-- Flow 3:  
Average throughput: 27.34 Mbit/s  
95th percentile per-packet one-way delay: 8.947 ms  
Loss rate: 0.05%

Run 3: Report of PCC-Allegro — Data Link



Run 4: Statistics of PCC-Allegro

Start at: 2018-10-10 05:17:56

End at: 2018-10-10 05:18:26

Local clock offset: -7.217 ms

Remote clock offset: 0.024 ms

# Below is generated by plot.py at 2018-10-10 06:00:21

# Datalink statistics

-- Total of 3 flows:

Average throughput: 91.33 Mbit/s

95th percentile per-packet one-way delay: 1713.749 ms

Loss rate: 4.29%

-- Flow 1:

Average throughput: 65.43 Mbit/s

95th percentile per-packet one-way delay: 2076.389 ms

Loss rate: 5.54%

-- Flow 2:

Average throughput: 25.91 Mbit/s

95th percentile per-packet one-way delay: 108.504 ms

Loss rate: 1.32%

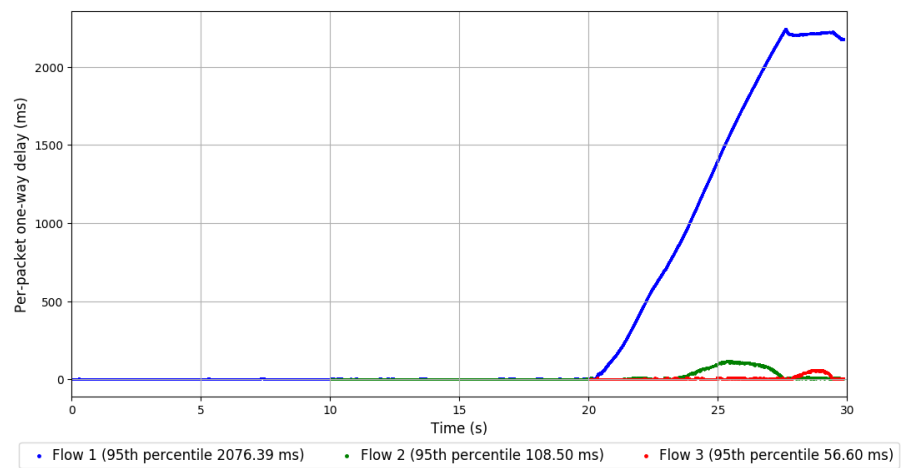
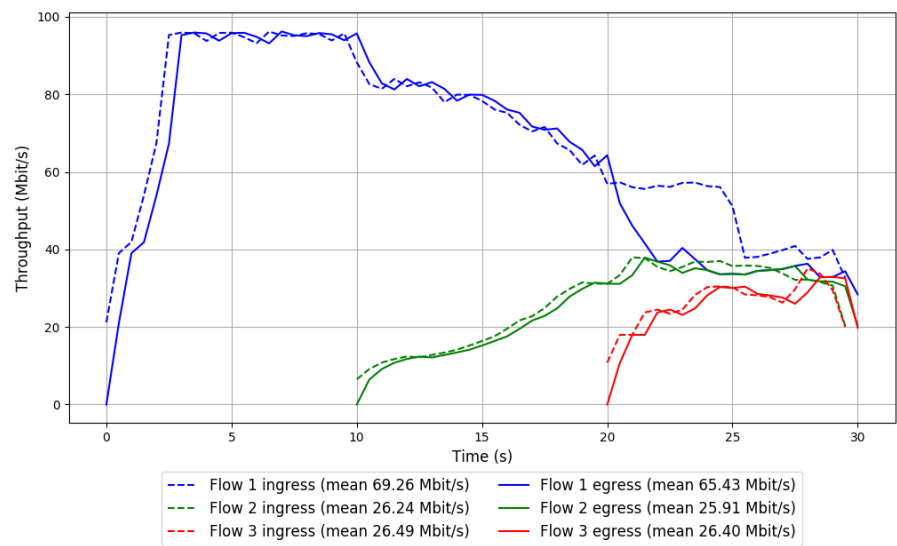
-- Flow 3:

Average throughput: 26.40 Mbit/s

95th percentile per-packet one-way delay: 56.605 ms

Loss rate: 0.33%

Run 4: Report of PCC-Allegro — Data Link





Run 5: Statistics of PCC-Allegro

Start at: 2018-10-10 05:38:43

End at: 2018-10-10 05:39:13

Local clock offset: -2.53 ms

Remote clock offset: 0.215 ms

# Below is generated by plot.py at 2018-10-10 06:00:24

# Datalink statistics

-- Total of 3 flows:

Average throughput: 94.53 Mbit/s

95th percentile per-packet one-way delay: 1792.556 ms

Loss rate: 15.14%

-- Flow 1:

Average throughput: 62.72 Mbit/s

95th percentile per-packet one-way delay: 1831.950 ms

Loss rate: 17.89%

-- Flow 2:

Average throughput: 34.95 Mbit/s

95th percentile per-packet one-way delay: 1254.841 ms

Loss rate: 11.55%

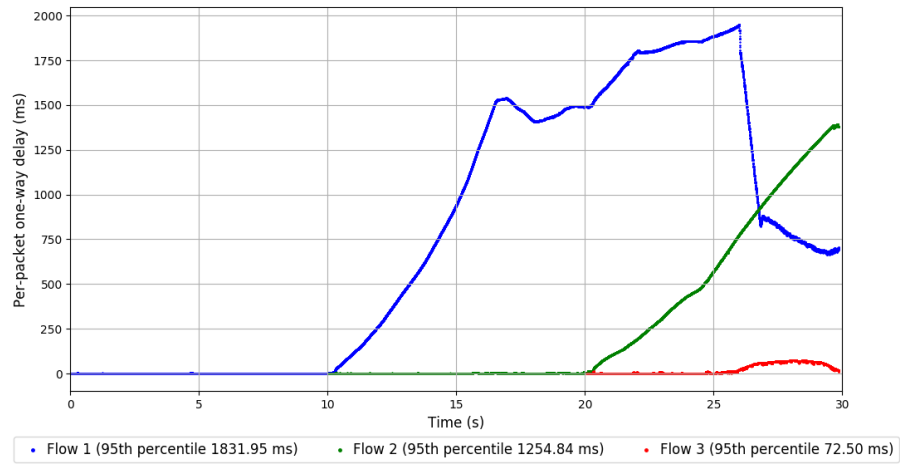
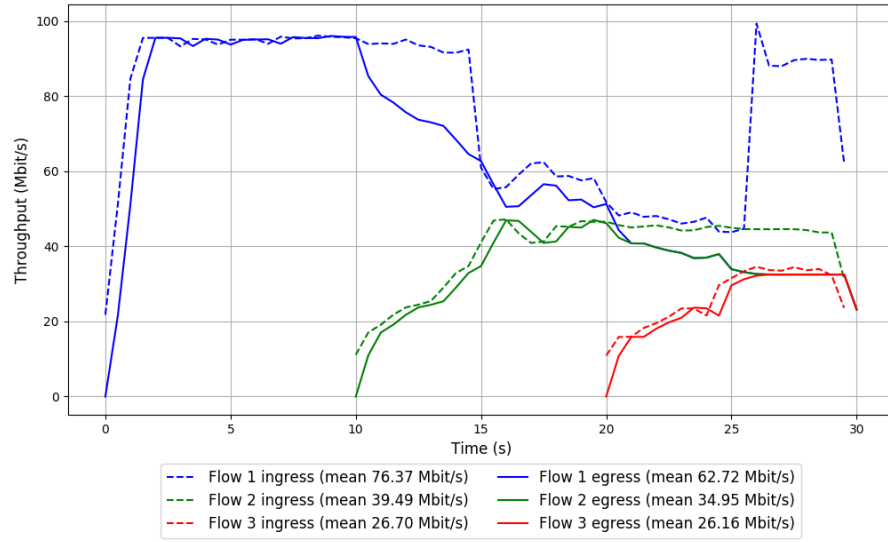
-- Flow 3:

Average throughput: 26.16 Mbit/s

95th percentile per-packet one-way delay: 72.495 ms

Loss rate: 2.04%

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

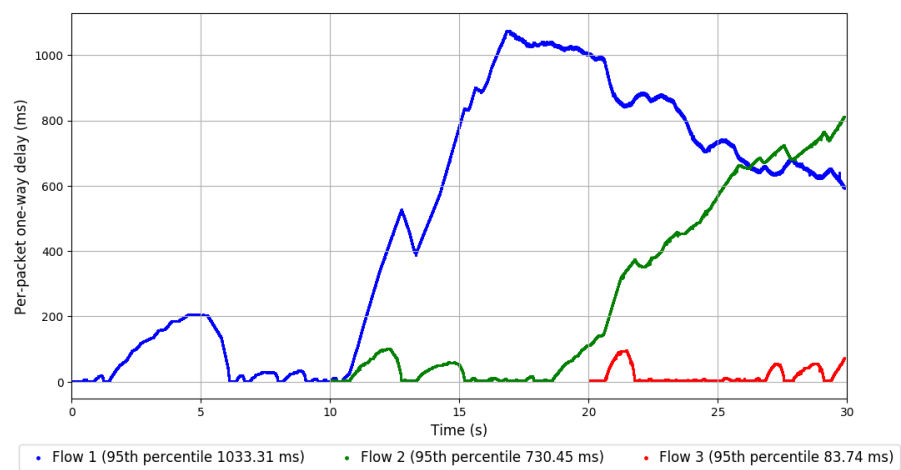
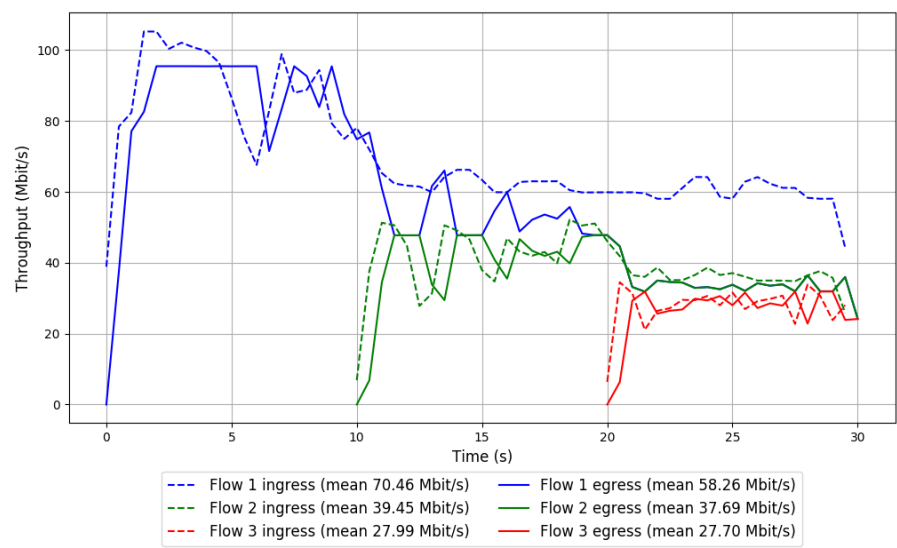


```
Run 1: Statistics of PCC-Expr

Start at: 2018-10-10 04:17:51
End at: 2018-10-10 04:18:21
Local clock offset: -7.654 ms
Remote clock offset: -0.662 ms

# Below is generated by plot.py at 2018-10-10 06:01:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.45 Mbit/s
95th percentile per-packet one-way delay: 1022.223 ms
Loss rate: 12.74%
-- Flow 1:
Average throughput: 58.26 Mbit/s
95th percentile per-packet one-way delay: 1033.306 ms
Loss rate: 17.33%
-- Flow 2:
Average throughput: 37.69 Mbit/s
95th percentile per-packet one-way delay: 730.453 ms
Loss rate: 4.50%
-- Flow 3:
Average throughput: 27.70 Mbit/s
95th percentile per-packet one-way delay: 83.744 ms
Loss rate: 1.09%
```

Run 1: Report of PCC-Expr — Data Link

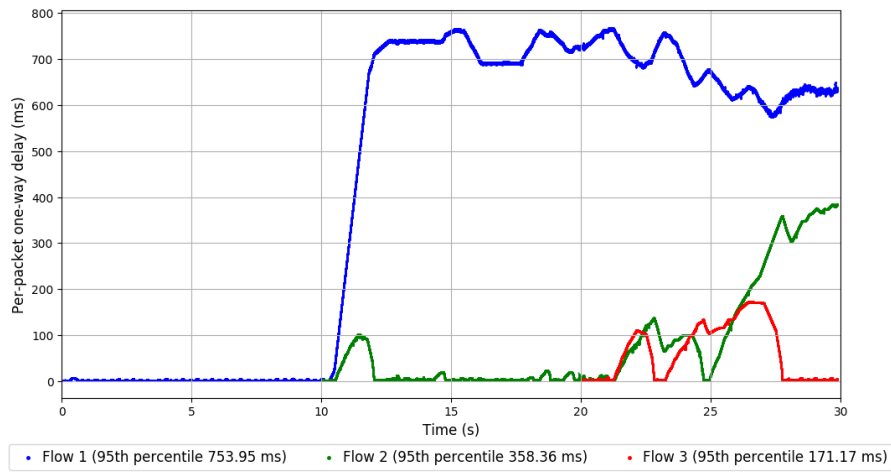
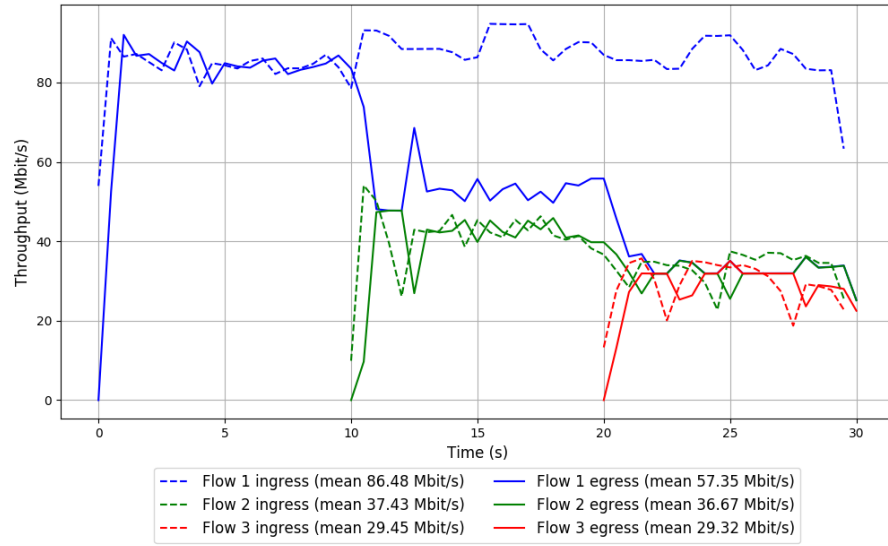


Run 2: Statistics of PCC-Expr

Start at: 2018-10-10 04:38:40  
End at: 2018-10-10 04:39:10  
Local clock offset: -3.286 ms  
Remote clock offset: -0.527 ms

# Below is generated by plot.py at 2018-10-10 06:01:39  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 91.40 Mbit/s  
95th percentile per-packet one-way delay: 746.044 ms  
Loss rate: 24.54%  
-- Flow 1:  
Average throughput: 57.35 Mbit/s  
95th percentile per-packet one-way delay: 753.948 ms  
Loss rate: 33.70%  
-- Flow 2:  
Average throughput: 36.67 Mbit/s  
95th percentile per-packet one-way delay: 358.357 ms  
Loss rate: 2.07%  
-- Flow 3:  
Average throughput: 29.32 Mbit/s  
95th percentile per-packet one-way delay: 171.167 ms  
Loss rate: 0.52%

## Run 2: Report of PCC-Expr — Data Link

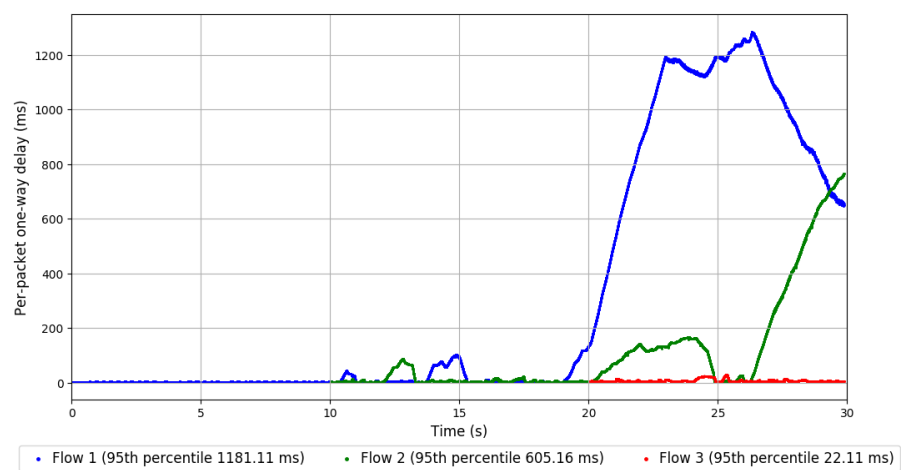
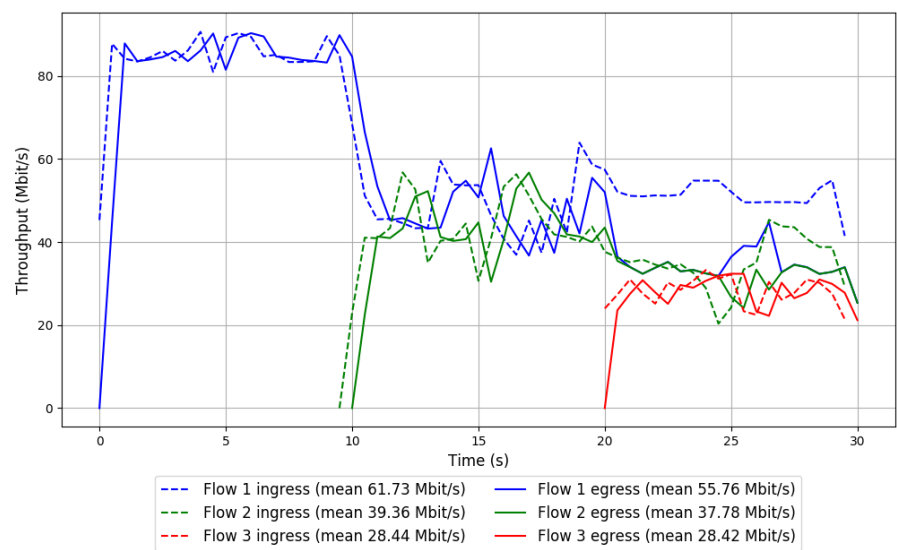


Run 3: Statistics of PCC-Expr

Start at: 2018-10-10 04:59:29  
End at: 2018-10-10 04:59:59  
Local clock offset: -3.99 ms  
Remote clock offset: -0.137 ms

# Below is generated by plot.py at 2018-10-10 06:01:39  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 90.28 Mbit/s  
95th percentile per-packet one-way delay: 1131.134 ms  
Loss rate: 7.25%  
-- Flow 1:  
Average throughput: 55.76 Mbit/s  
95th percentile per-packet one-way delay: 1181.111 ms  
Loss rate: 9.68%  
-- Flow 2:  
Average throughput: 37.78 Mbit/s  
95th percentile per-packet one-way delay: 605.158 ms  
Loss rate: 4.07%  
-- Flow 3:  
Average throughput: 28.42 Mbit/s  
95th percentile per-packet one-way delay: 22.114 ms  
Loss rate: 0.13%

Run 3: Report of PCC-Expr — Data Link





Run 4: Statistics of PCC-Expr

Start at: 2018-10-10 05:20:15

End at: 2018-10-10 05:20:45

Local clock offset: -7.437 ms

Remote clock offset: 0.086 ms

# Below is generated by plot.py at 2018-10-10 06:02:26

# Datalink statistics

-- Total of 3 flows:

Average throughput: 90.76 Mbit/s

95th percentile per-packet one-way delay: 1205.289 ms

Loss rate: 6.44%

-- Flow 1:

Average throughput: 55.77 Mbit/s

95th percentile per-packet one-way delay: 1158.292 ms

Loss rate: 3.68%

-- Flow 2:

Average throughput: 38.33 Mbit/s

95th percentile per-packet one-way delay: 1390.657 ms

Loss rate: 13.81%

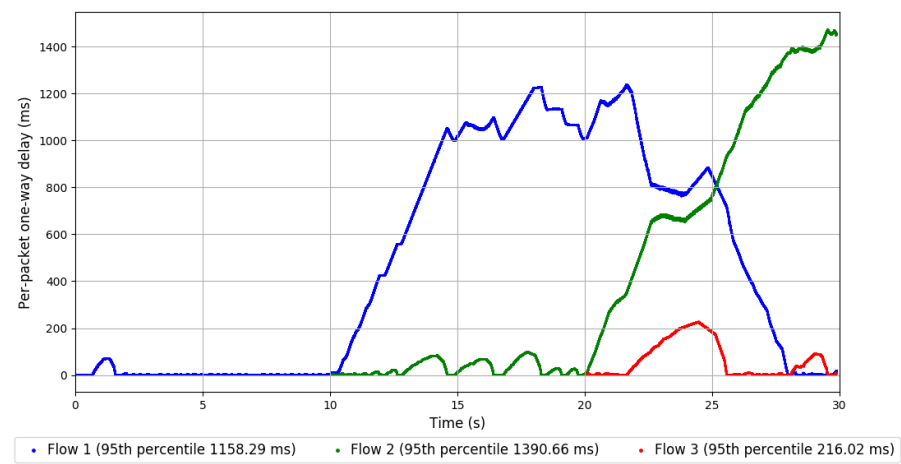
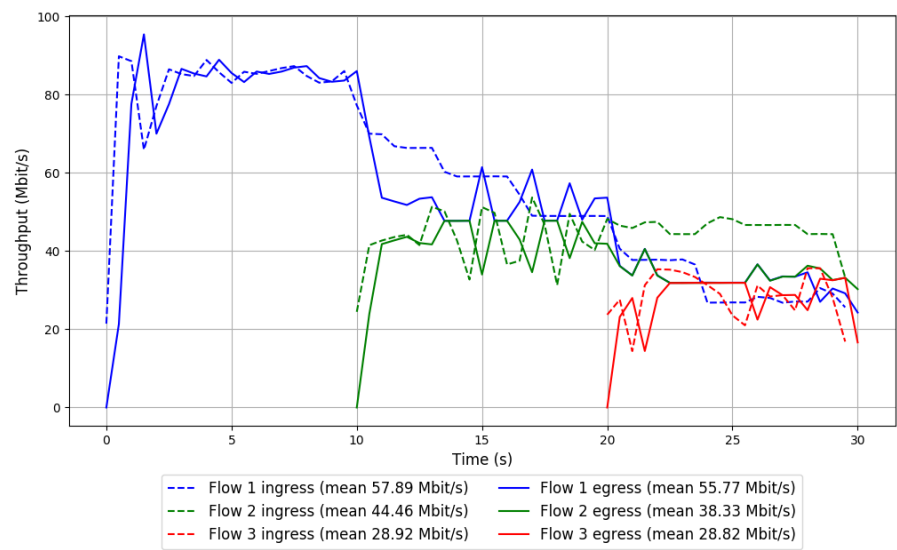
-- Flow 3:

Average throughput: 28.82 Mbit/s

95th percentile per-packet one-way delay: 216.024 ms

Loss rate: 0.37%

Run 4: Report of PCC-Expr — Data Link



Run 5: Statistics of PCC-Expr

Start at: 2018-10-10 05:41:03

End at: 2018-10-10 05:41:33

Local clock offset: -2.104 ms

Remote clock offset: 0.25 ms

# Below is generated by plot.py at 2018-10-10 06:02:43

# Datalink statistics

-- Total of 3 flows:

Average throughput: 94.59 Mbit/s

95th percentile per-packet one-way delay: 788.341 ms

Loss rate: 26.43%

-- Flow 1:

Average throughput: 60.58 Mbit/s

95th percentile per-packet one-way delay: 768.153 ms

Loss rate: 34.37%

-- Flow 2:

Average throughput: 37.44 Mbit/s

95th percentile per-packet one-way delay: 872.064 ms

Loss rate: 8.18%

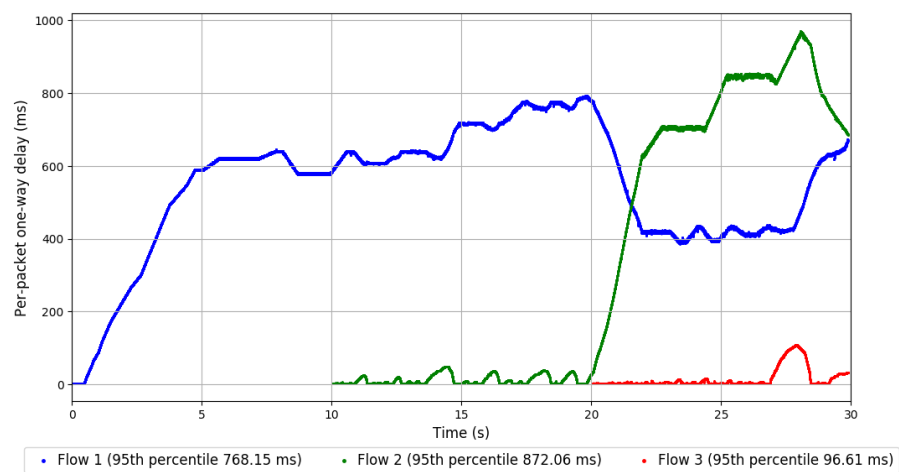
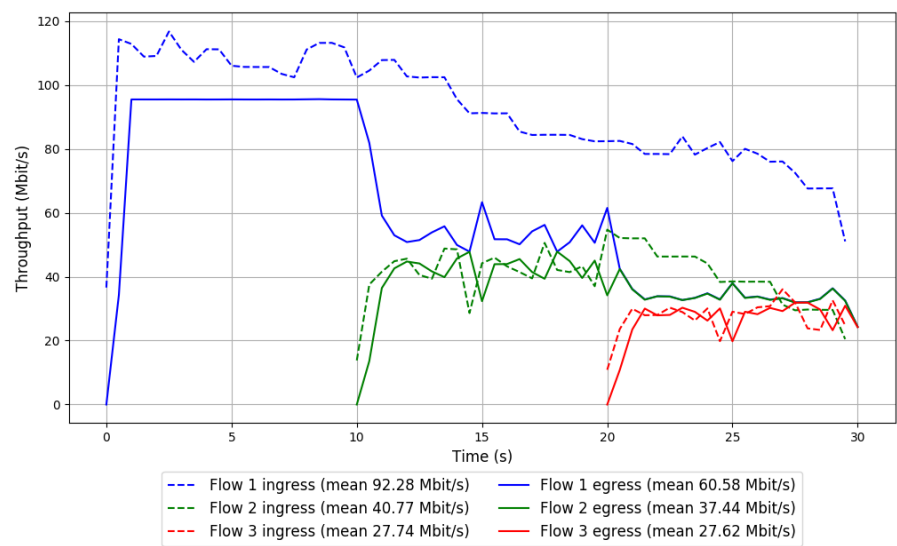
-- Flow 3:

Average throughput: 27.62 Mbit/s

95th percentile per-packet one-way delay: 96.612 ms

Loss rate: 0.48%

Run 5: Report of PCC-Expr — Data Link

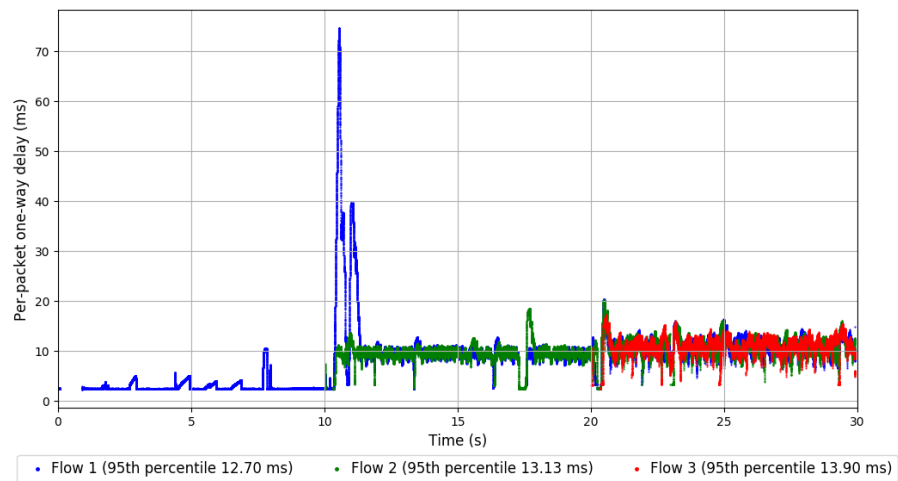
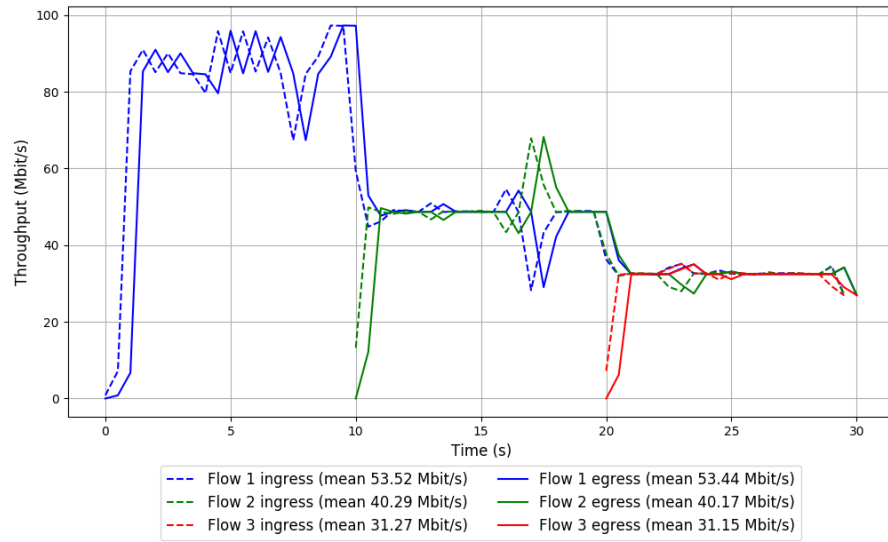


Run 1: Statistics of QUIC Cubic

Start at: 2018-10-10 04:21:29  
End at: 2018-10-10 04:21:59  
Local clock offset: -7.699 ms  
Remote clock offset: -0.604 ms

# Below is generated by plot.py at 2018-10-10 06:02:43  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 90.47 Mbit/s  
95th percentile per-packet one-way delay: 13.156 ms  
Loss rate: 0.23%  
-- Flow 1:  
Average throughput: 53.44 Mbit/s  
95th percentile per-packet one-way delay: 12.701 ms  
Loss rate: 0.16%  
-- Flow 2:  
Average throughput: 40.17 Mbit/s  
95th percentile per-packet one-way delay: 13.135 ms  
Loss rate: 0.30%  
-- Flow 3:  
Average throughput: 31.15 Mbit/s  
95th percentile per-packet one-way delay: 13.903 ms  
Loss rate: 0.44%

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



Run 2: Statistics of QUIC Cubic

Start at: 2018-10-10 04:42:18

End at: 2018-10-10 04:42:48

Local clock offset: -2.716 ms

Remote clock offset: -0.51 ms

# Below is generated by plot.py at 2018-10-10 06:02:43

# Datalink statistics

-- Total of 3 flows:

Average throughput: 90.97 Mbit/s

95th percentile per-packet one-way delay: 13.292 ms

Loss rate: 0.23%

-- Flow 1:

Average throughput: 53.88 Mbit/s

95th percentile per-packet one-way delay: 13.245 ms

Loss rate: 0.15%

-- Flow 2:

Average throughput: 40.29 Mbit/s

95th percentile per-packet one-way delay: 13.085 ms

Loss rate: 0.29%

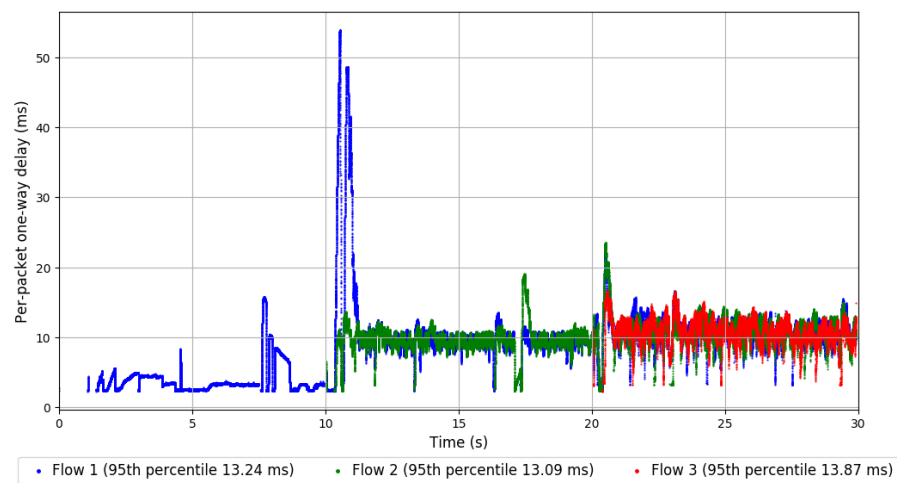
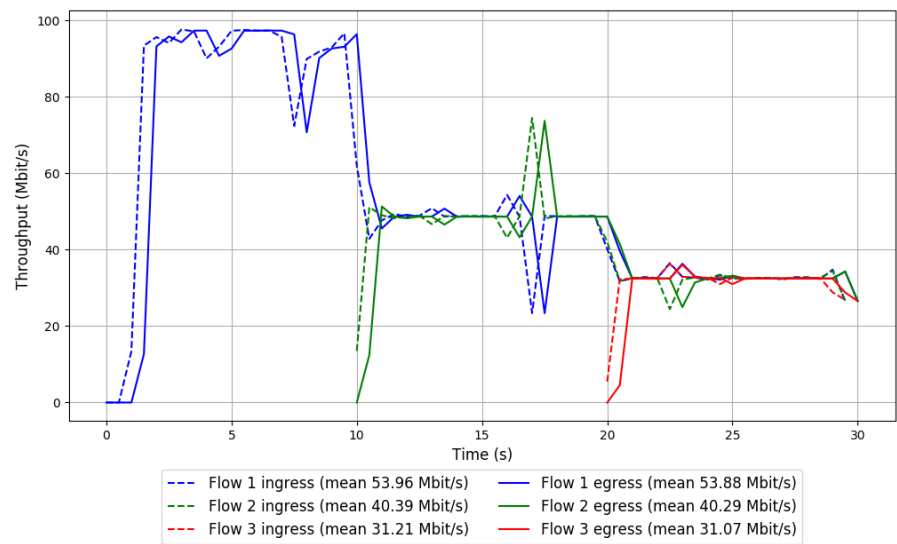
-- Flow 3:

Average throughput: 31.07 Mbit/s

95th percentile per-packet one-way delay: 13.865 ms

Loss rate: 0.47%

Run 2: Report of QUIC Cubic — Data Link



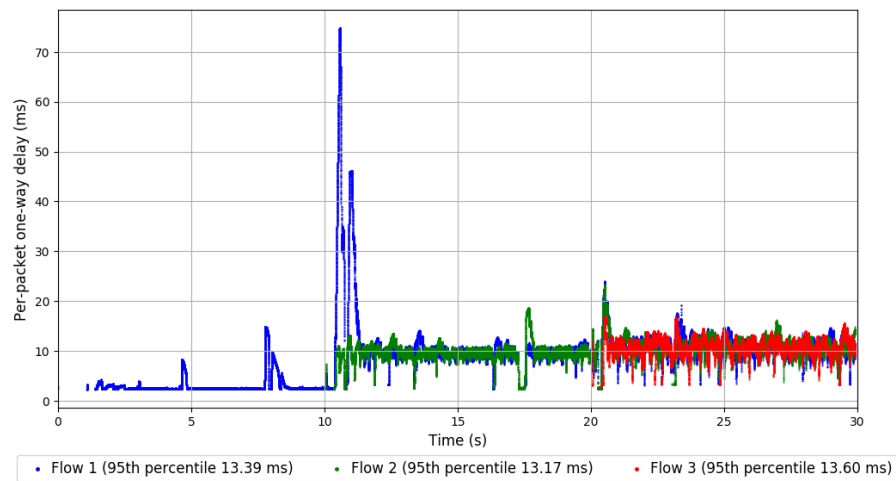
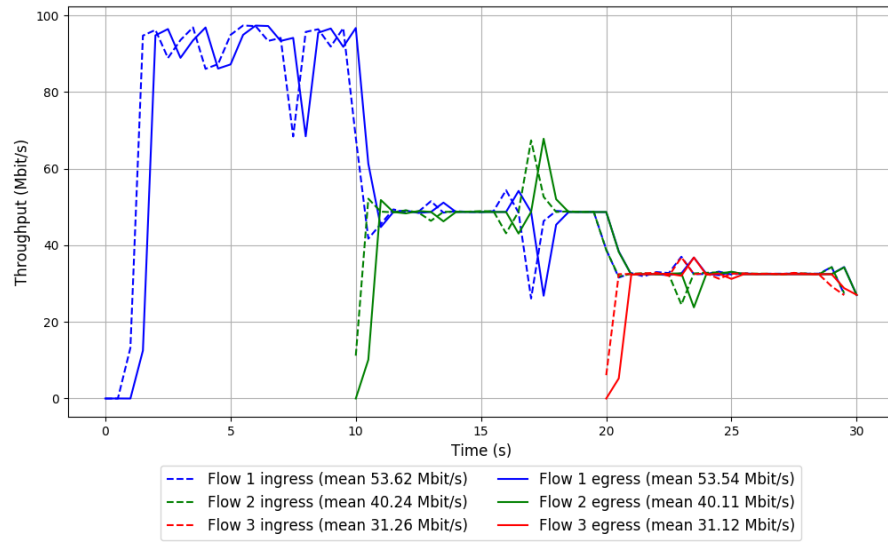


Run 3: Statistics of QUIC Cubic

Start at: 2018-10-10 05:03:06  
End at: 2018-10-10 05:03:36  
Local clock offset: -5.171 ms  
Remote clock offset: -0.101 ms

# Below is generated by plot.py at 2018-10-10 06:02:43  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 90.51 Mbit/s  
95th percentile per-packet one-way delay: 13.362 ms  
Loss rate: 0.24%  
-- Flow 1:  
Average throughput: 53.54 Mbit/s  
95th percentile per-packet one-way delay: 13.387 ms  
Loss rate: 0.15%  
-- Flow 2:  
Average throughput: 40.11 Mbit/s  
95th percentile per-packet one-way delay: 13.174 ms  
Loss rate: 0.33%  
-- Flow 3:  
Average throughput: 31.12 Mbit/s  
95th percentile per-packet one-way delay: 13.599 ms  
Loss rate: 0.49%

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



Run 4: Statistics of QUIC Cubic

Start at: 2018-10-10 05:23:53

End at: 2018-10-10 05:24:23

Local clock offset: -7.567 ms

Remote clock offset: 0.03 ms

# Below is generated by plot.py at 2018-10-10 06:02:43

# Datalink statistics

-- Total of 3 flows:

Average throughput: 90.95 Mbit/s

95th percentile per-packet one-way delay: 13.664 ms

Loss rate: 0.23%

-- Flow 1:

Average throughput: 54.05 Mbit/s

95th percentile per-packet one-way delay: 13.045 ms

Loss rate: 0.16%

-- Flow 2:

Average throughput: 40.04 Mbit/s

95th percentile per-packet one-way delay: 13.274 ms

Loss rate: 0.29%

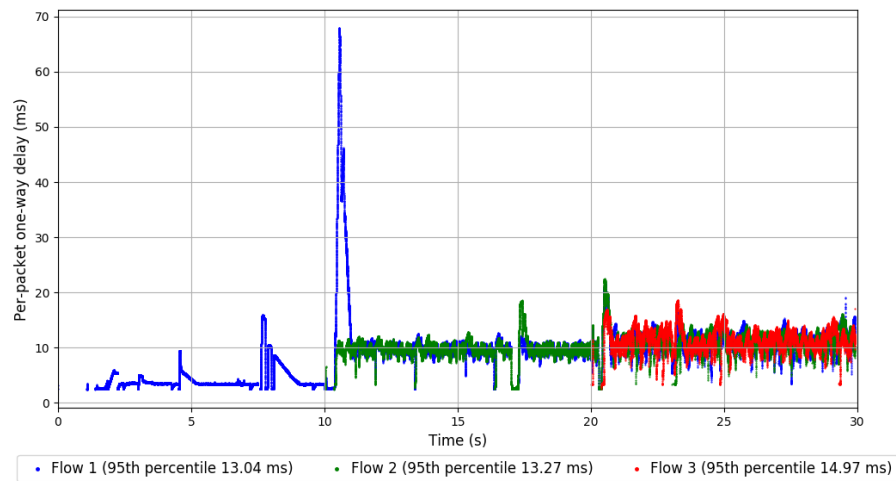
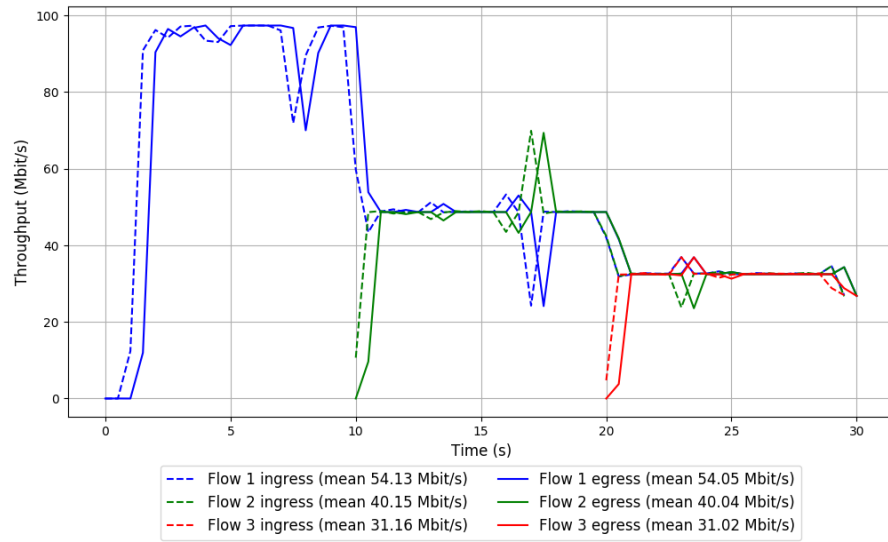
-- Flow 3:

Average throughput: 31.02 Mbit/s

95th percentile per-packet one-way delay: 14.967 ms

Loss rate: 0.44%

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



Run 5: Statistics of QUIC Cubic

Start at: 2018-10-10 05:44:41

End at: 2018-10-10 05:45:11

Local clock offset: -1.619 ms

Remote clock offset: 0.18 ms

# Below is generated by plot.py at 2018-10-10 06:02:48

# Datalink statistics

-- Total of 3 flows:

Average throughput: 92.04 Mbit/s

95th percentile per-packet one-way delay: 13.007 ms

Loss rate: 0.23%

-- Flow 1:

Average throughput: 54.97 Mbit/s

95th percentile per-packet one-way delay: 12.823 ms

Loss rate: 0.15%

-- Flow 2:

Average throughput: 40.24 Mbit/s

95th percentile per-packet one-way delay: 12.958 ms

Loss rate: 0.29%

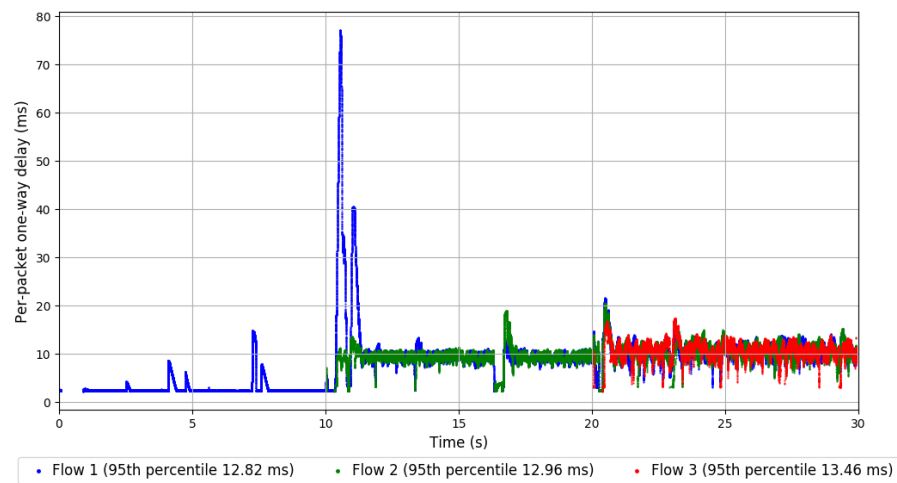
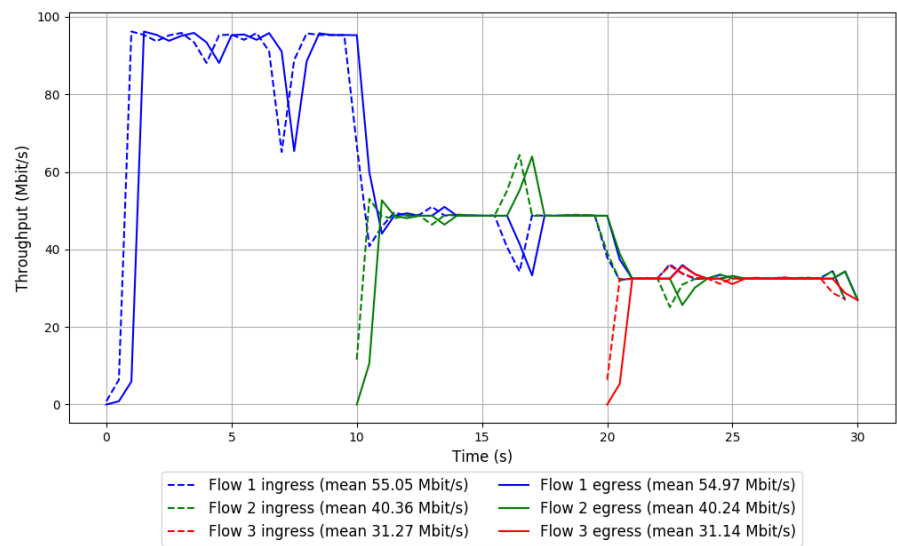
-- Flow 3:

Average throughput: 31.14 Mbit/s

95th percentile per-packet one-way delay: 13.465 ms

Loss rate: 0.47%

Run 5: Report of QUIC Cubic — Data Link

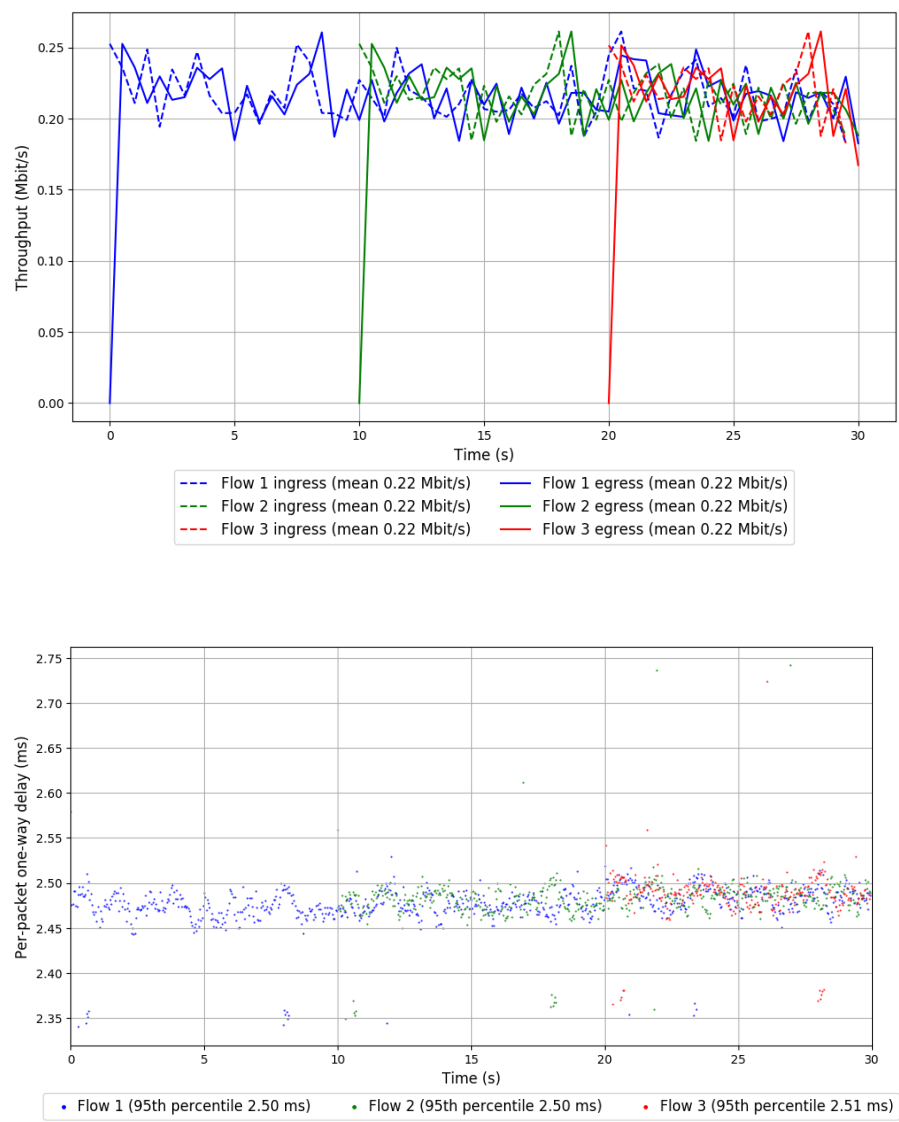


```
Run 1: Statistics of SReAM

Start at: 2018-10-10 04:13:20
End at: 2018-10-10 04:13:50
Local clock offset: -7.434 ms
Remote clock offset: -0.783 ms

# Below is generated by plot.py at 2018-10-10 06:02:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 2.504 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 2.502 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 2.503 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 2.511 ms
Loss rate: 0.35%
```

Run 1: Report of SReAM — Data Link



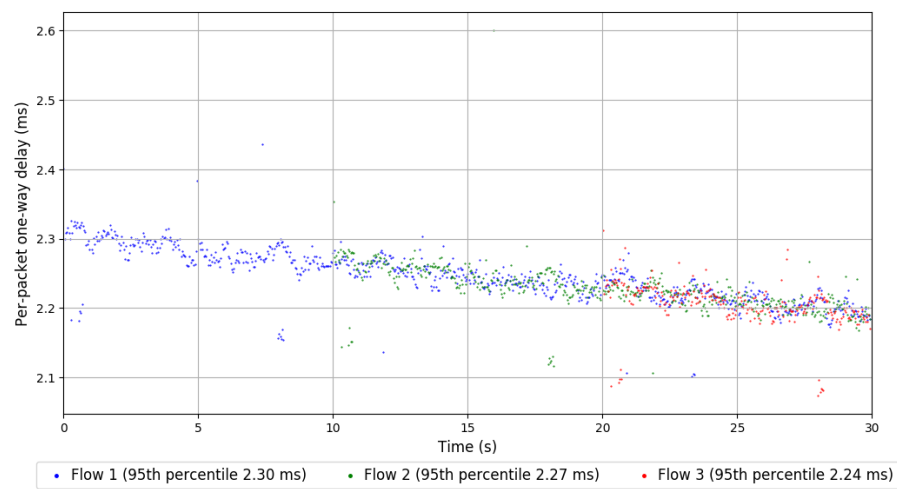
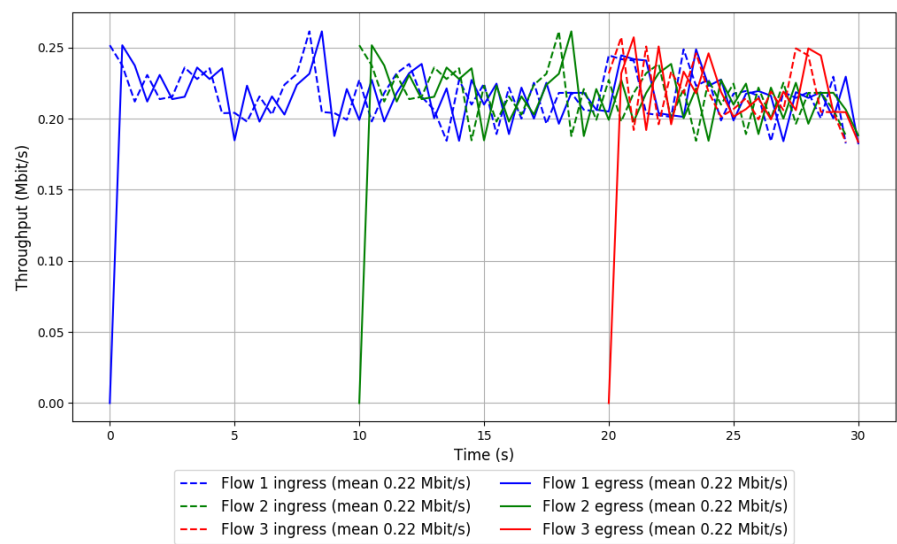


Run 2: Statistics of SReAM

Start at: 2018-10-10 04:34:08  
End at: 2018-10-10 04:34:38  
Local clock offset: -4.08 ms  
Remote clock offset: -0.523 ms

# Below is generated by plot.py at 2018-10-10 06:02:48  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 0.44 Mbit/s  
95th percentile per-packet one-way delay: 2.296 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 2.303 ms  
Loss rate: 0.00%  
-- Flow 2:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 2.273 ms  
Loss rate: 0.00%  
-- Flow 3:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 2.242 ms  
Loss rate: 0.00%

Run 2: Report of SReAM — Data Link

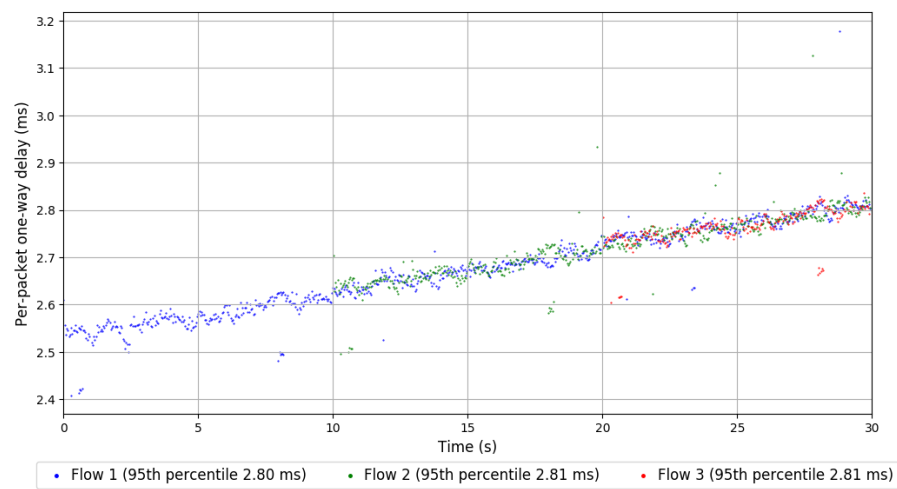
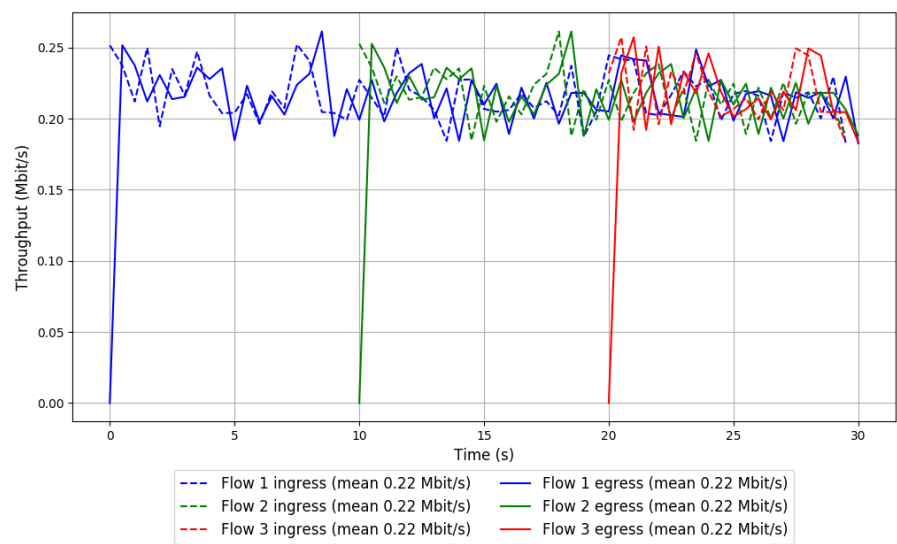


Run 3: Statistics of SReAM

Start at: 2018-10-10 04:54:57  
End at: 2018-10-10 04:55:27  
Local clock offset: -1.873 ms  
Remote clock offset: -0.155 ms

# Below is generated by plot.py at 2018-10-10 06:02:48  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 0.43 Mbit/s  
95th percentile per-packet one-way delay: 2.807 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 2.804 ms  
Loss rate: 0.00%  
-- Flow 2:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 2.808 ms  
Loss rate: 0.00%  
-- Flow 3:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 2.814 ms  
Loss rate: 0.00%

Run 3: Report of SReAM — Data Link



Run 4: Statistics of SReAM

Start at: 2018-10-10 05:15:44

End at: 2018-10-10 05:16:14

Local clock offset: -7.029 ms

Remote clock offset: 0.013 ms

# Below is generated by plot.py at 2018-10-10 06:02:48

# Datalink statistics

-- Total of 3 flows:

Average throughput: 0.43 Mbit/s

95th percentile per-packet one-way delay: 2.480 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 2.475 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 2.475 ms

Loss rate: 0.00%

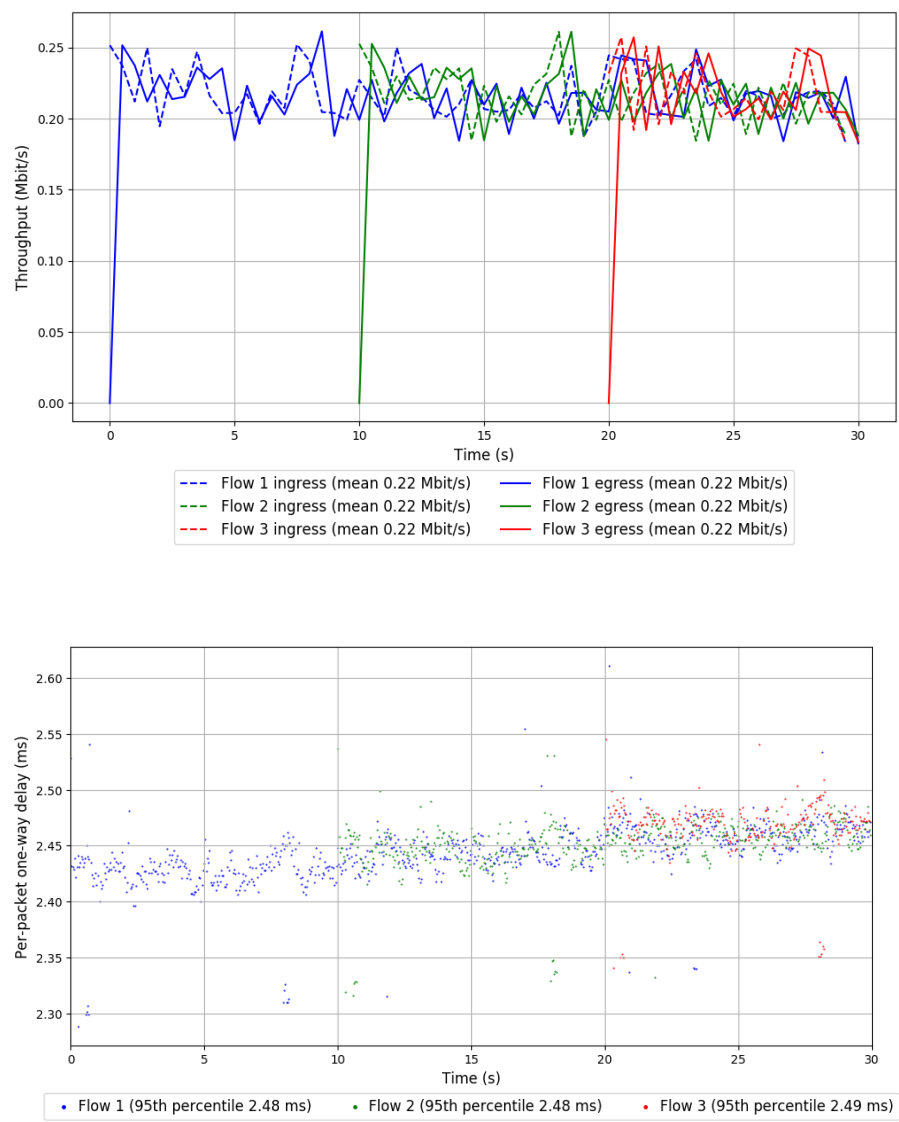
-- Flow 3:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 2.492 ms

Loss rate: 0.00%

Run 4: Report of SReAM — Data Link



Run 5: Statistics of SReAM

Start at: 2018-10-10 05:36:31

End at: 2018-10-10 05:37:01

Local clock offset: -2.925 ms

Remote clock offset: 0.204 ms

# Below is generated by plot.py at 2018-10-10 06:02:48

# Datalink statistics

-- Total of 3 flows:

Average throughput: 0.43 Mbit/s

95th percentile per-packet one-way delay: 2.209 ms

Loss rate: 0.06%

-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 2.214 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 2.188 ms

Loss rate: 0.19%

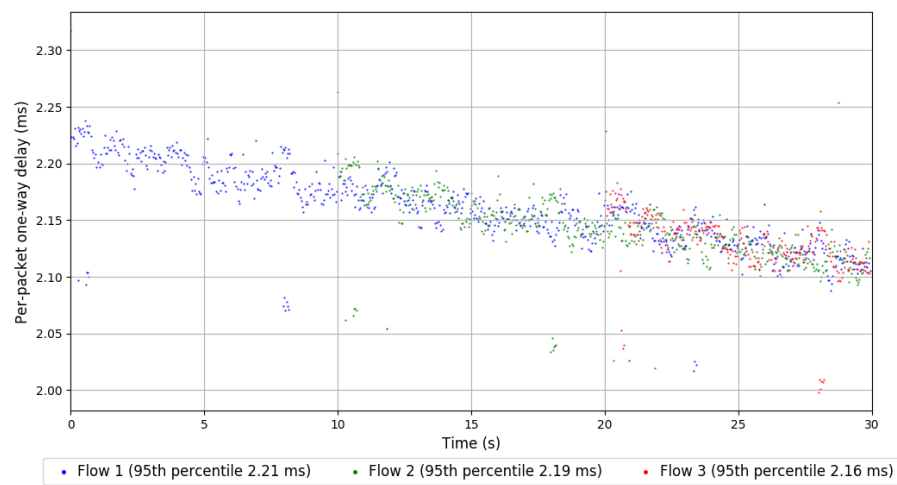
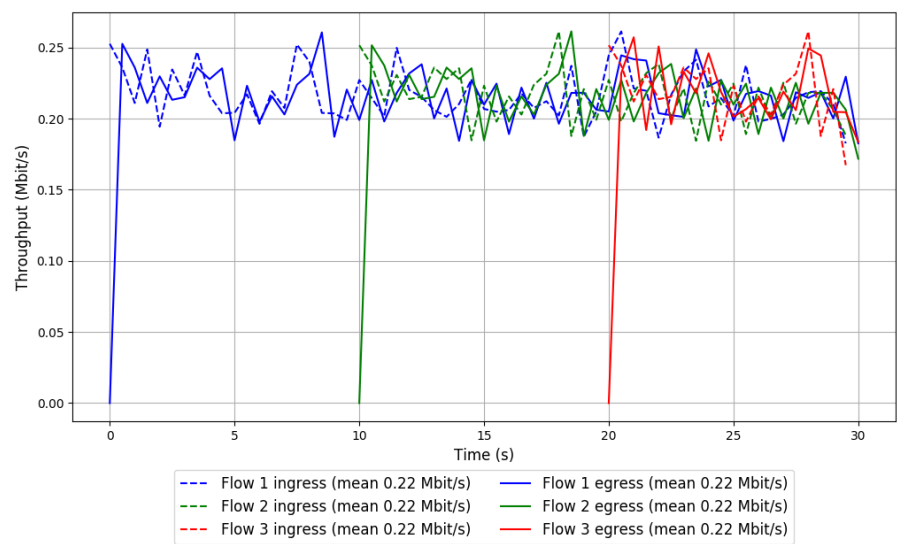
-- Flow 3:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 2.162 ms

Loss rate: 0.00%

Run 5: Report of SReAM — Data Link



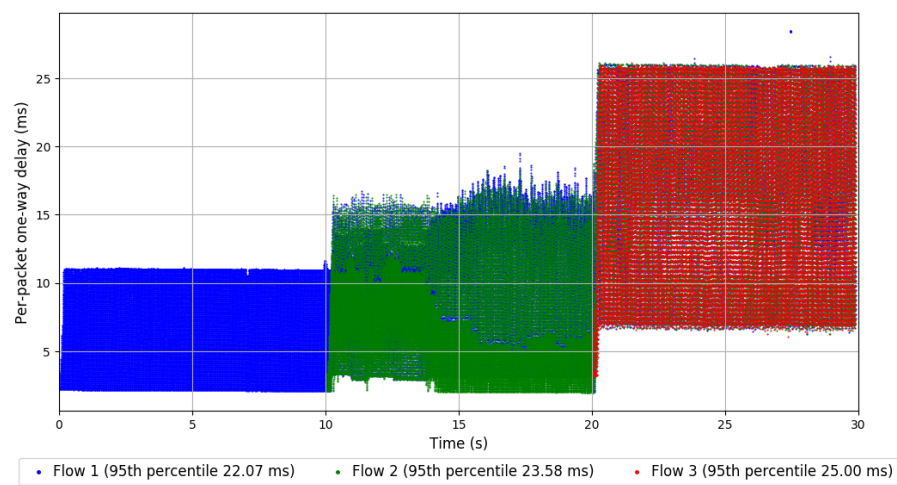
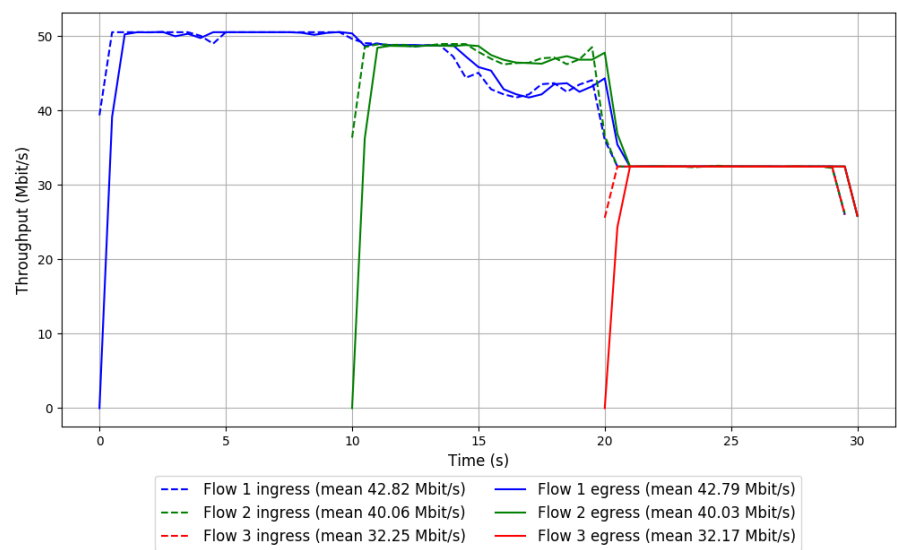


Run 1: Statistics of Sprout

Start at: 2018-10-10 04:24:58  
End at: 2018-10-10 04:25:28  
Local clock offset: -7.863 ms  
Remote clock offset: -0.722 ms

# Below is generated by plot.py at 2018-10-10 06:02:48  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 80.03 Mbit/s  
95th percentile per-packet one-way delay: 23.549 ms  
Loss rate: 0.08%  
-- Flow 1:  
Average throughput: 42.79 Mbit/s  
95th percentile per-packet one-way delay: 22.075 ms  
Loss rate: 0.03%  
-- Flow 2:  
Average throughput: 40.03 Mbit/s  
95th percentile per-packet one-way delay: 23.579 ms  
Loss rate: 0.11%  
-- Flow 3:  
Average throughput: 32.17 Mbit/s  
95th percentile per-packet one-way delay: 25.005 ms  
Loss rate: 0.22%

Run 1: Report of Sprout — Data Link

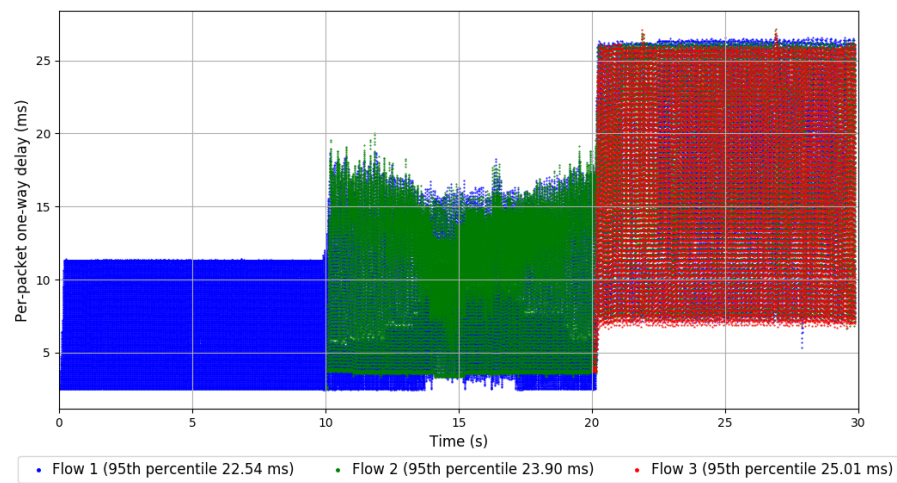
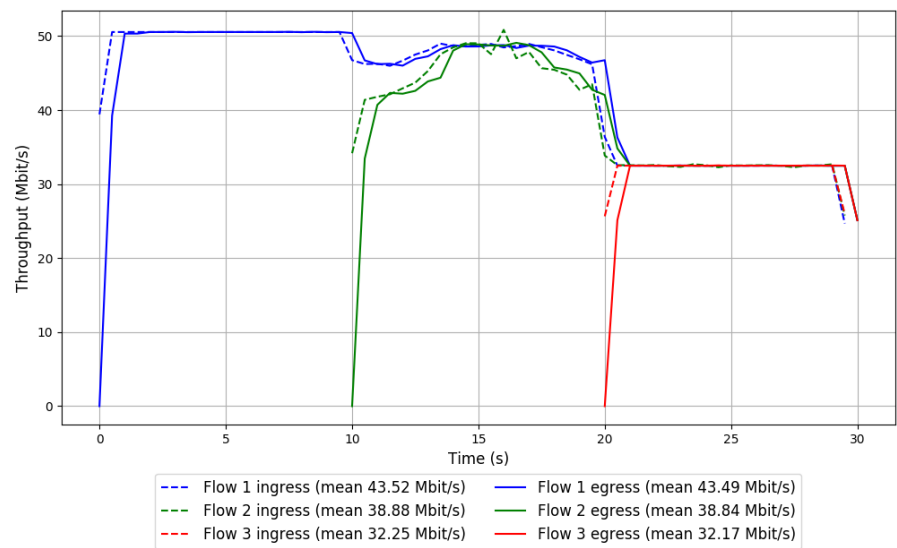


## Run 2: Statistics of Sprout

Start at: 2018-10-10 04:45:47  
End at: 2018-10-10 04:46:17  
Local clock offset: -2.375 ms  
Remote clock offset: -0.441 ms

# Below is generated by plot.py at 2018-10-10 06:02:48  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 79.95 Mbit/s  
95th percentile per-packet one-way delay: 23.827 ms  
Loss rate: 0.08%  
-- Flow 1:  
Average throughput: 43.49 Mbit/s  
95th percentile per-packet one-way delay: 22.539 ms  
Loss rate: 0.04%  
-- Flow 2:  
Average throughput: 38.84 Mbit/s  
95th percentile per-packet one-way delay: 23.902 ms  
Loss rate: 0.09%  
-- Flow 3:  
Average throughput: 32.17 Mbit/s  
95th percentile per-packet one-way delay: 25.011 ms  
Loss rate: 0.22%

Run 2: Report of Sprout — Data Link

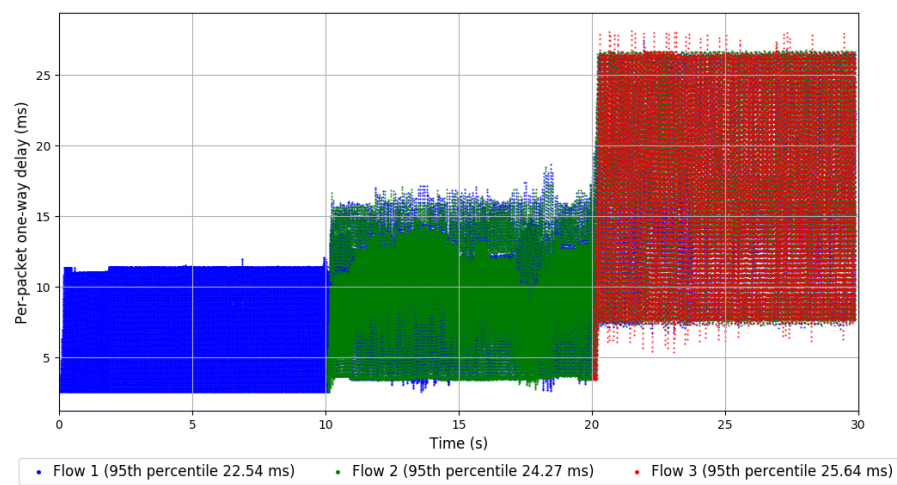
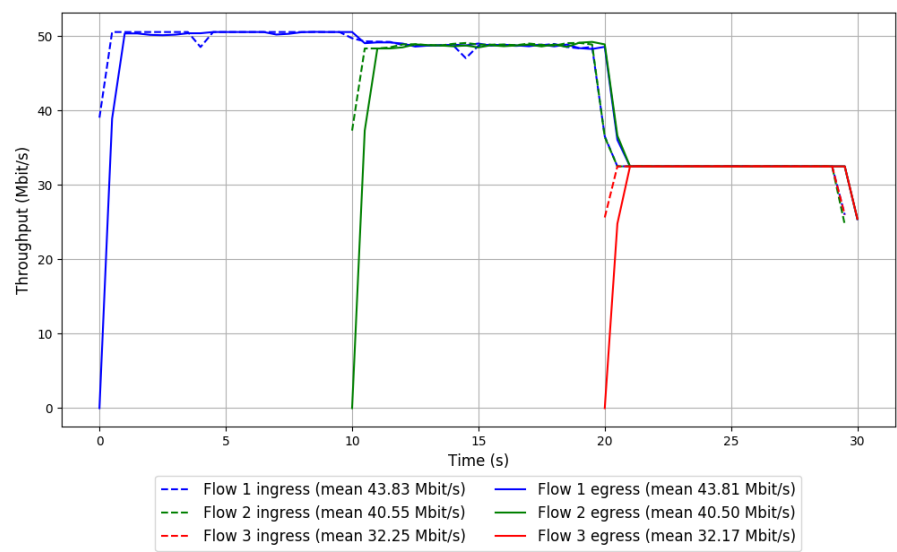


### Run 3: Statistics of Sprout

Start at: 2018-10-10 05:06:35  
End at: 2018-10-10 05:07:05  
Local clock offset: -5.826 ms  
Remote clock offset: -0.109 ms

```
# Below is generated by plot.py at 2018-10-10 06:02:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 81.36 Mbit/s
95th percentile per-packet one-way delay: 24.144 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 43.81 Mbit/s
95th percentile per-packet one-way delay: 22.535 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 40.50 Mbit/s
95th percentile per-packet one-way delay: 24.266 ms
Loss rate: 0.05%
-- Flow 3:
Average throughput: 32.17 Mbit/s
95th percentile per-packet one-way delay: 25.645 ms
Loss rate: 0.22%
```

Run 3: Report of Sprout — Data Link

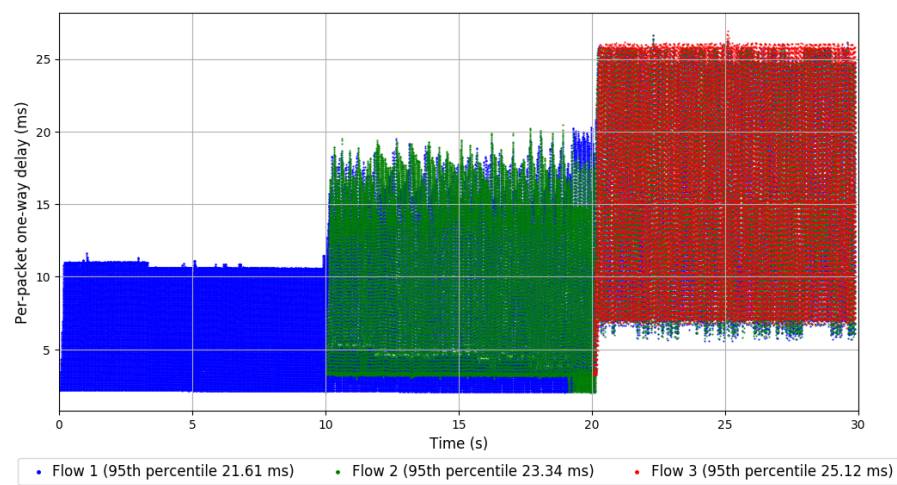
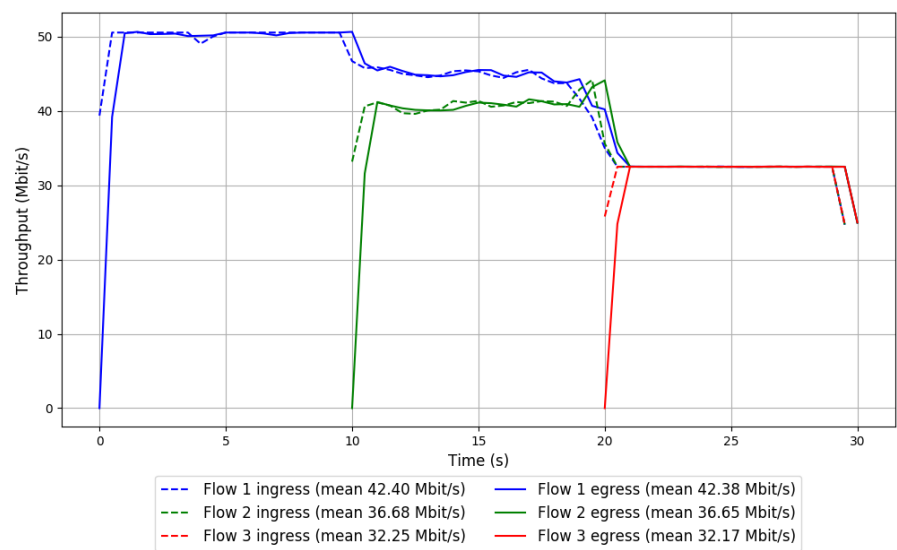


Run 4: Statistics of Sprout

Start at: 2018-10-10 05:27:22  
End at: 2018-10-10 05:27:52  
Local clock offset: -6.122 ms  
Remote clock offset: 0.069 ms

# Below is generated by plot.py at 2018-10-10 06:02:48  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 77.37 Mbit/s  
95th percentile per-packet one-way delay: 23.344 ms  
Loss rate: 0.07%  
-- Flow 1:  
Average throughput: 42.38 Mbit/s  
95th percentile per-packet one-way delay: 21.610 ms  
Loss rate: 0.05%  
-- Flow 2:  
Average throughput: 36.65 Mbit/s  
95th percentile per-packet one-way delay: 23.335 ms  
Loss rate: 0.09%  
-- Flow 3:  
Average throughput: 32.17 Mbit/s  
95th percentile per-packet one-way delay: 25.117 ms  
Loss rate: 0.11%

Run 4: Report of Sprout — Data Link



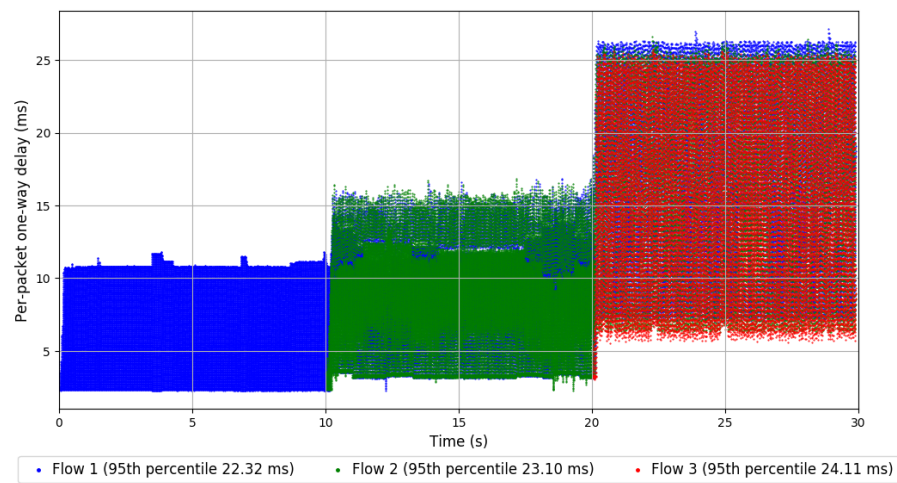
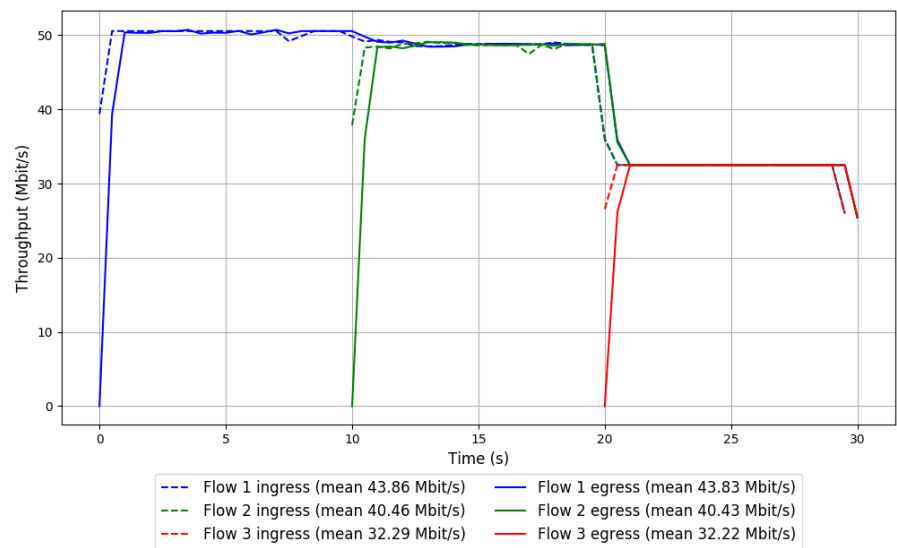


Run 5: Statistics of Sprout

Start at: 2018-10-10 05:48:10  
End at: 2018-10-10 05:48:40  
Local clock offset: -1.308 ms  
Remote clock offset: 0.284 ms

```
# Below is generated by plot.py at 2018-10-10 06:03:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 81.37 Mbit/s
95th percentile per-packet one-way delay: 23.181 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 43.83 Mbit/s
95th percentile per-packet one-way delay: 22.318 ms
Loss rate: 0.07%
-- Flow 2:
Average throughput: 40.43 Mbit/s
95th percentile per-packet one-way delay: 23.104 ms
Loss rate: 0.07%
-- Flow 3:
Average throughput: 32.22 Mbit/s
95th percentile per-packet one-way delay: 24.114 ms
Loss rate: 0.16%
```

Run 5: Report of Sprout — Data Link

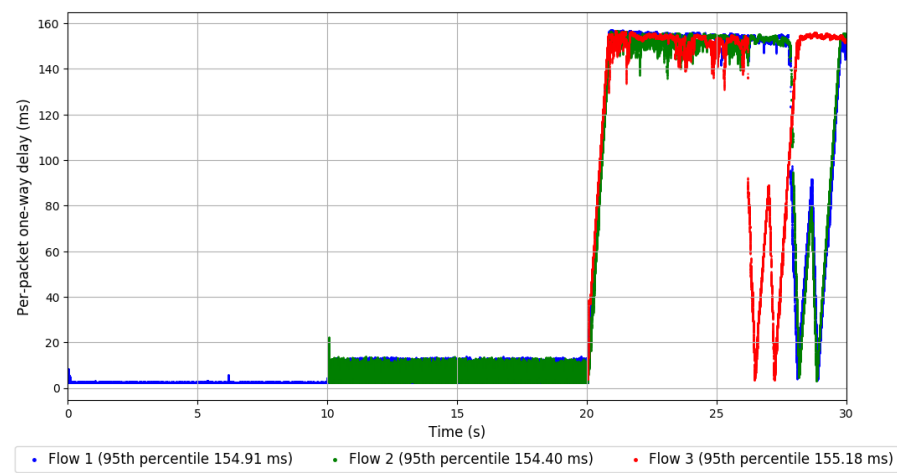
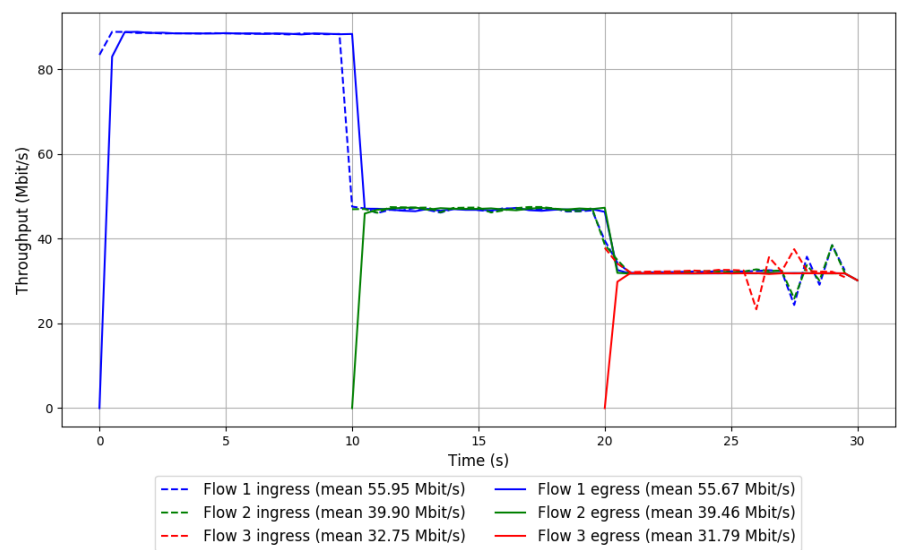


```
Run 1: Statistics of TaoVA-100x

Start at: 2018-10-10 04:20:17
End at: 2018-10-10 04:20:47
Local clock offset: -7.653 ms
Remote clock offset: -0.786 ms

# Below is generated by plot.py at 2018-10-10 06:04:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.51 Mbit/s
95th percentile per-packet one-way delay: 154.841 ms
Loss rate: 0.99%
-- Flow 1:
Average throughput: 55.67 Mbit/s
95th percentile per-packet one-way delay: 154.908 ms
Loss rate: 0.53%
-- Flow 2:
Average throughput: 39.46 Mbit/s
95th percentile per-packet one-way delay: 154.403 ms
Loss rate: 1.12%
-- Flow 3:
Average throughput: 31.79 Mbit/s
95th percentile per-packet one-way delay: 155.175 ms
Loss rate: 3.00%
```

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

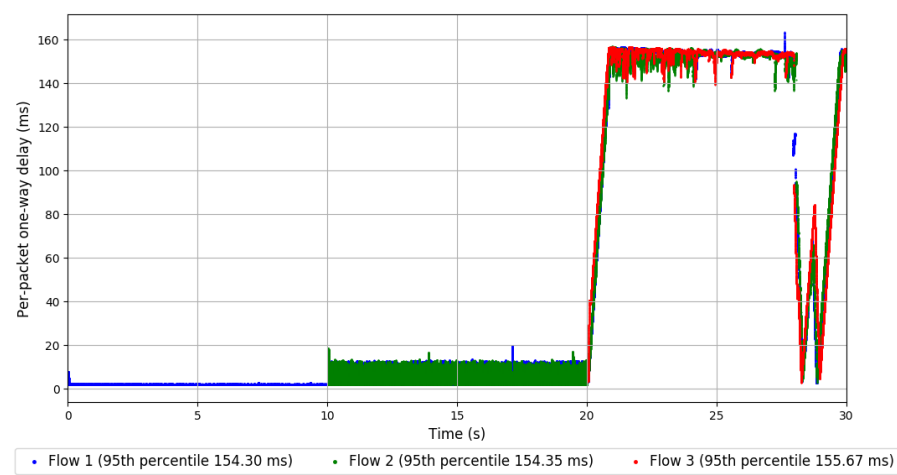
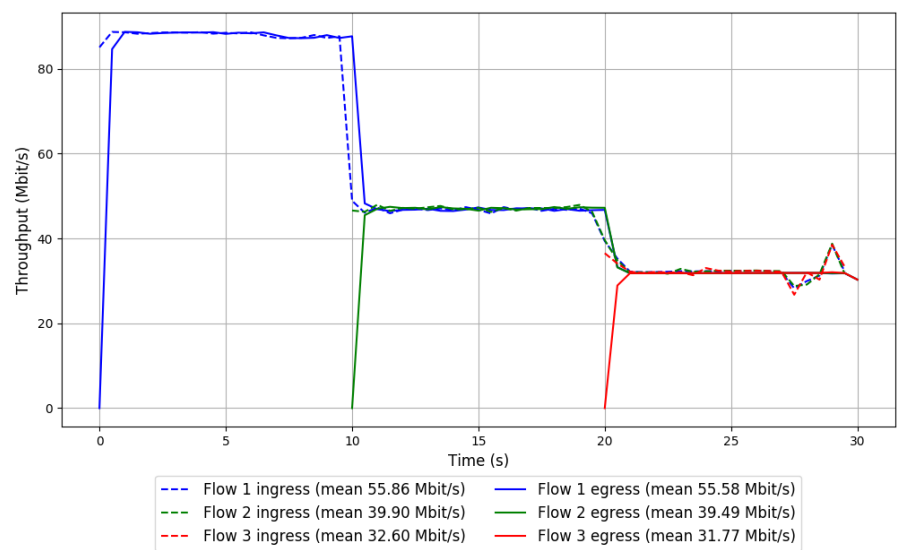


Run 2: Statistics of TaoVA-100x

Start at: 2018-10-10 04:41:05  
End at: 2018-10-10 04:41:35  
Local clock offset: -2.928 ms  
Remote clock offset: -0.383 ms

# Below is generated by plot.py at 2018-10-10 06:04:38  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 92.43 Mbit/s  
95th percentile per-packet one-way delay: 154.774 ms  
Loss rate: 0.92%  
-- Flow 1:  
Average throughput: 55.58 Mbit/s  
95th percentile per-packet one-way delay: 154.303 ms  
Loss rate: 0.52%  
-- Flow 2:  
Average throughput: 39.49 Mbit/s  
95th percentile per-packet one-way delay: 154.355 ms  
Loss rate: 1.07%  
-- Flow 3:  
Average throughput: 31.77 Mbit/s  
95th percentile per-packet one-way delay: 155.667 ms  
Loss rate: 2.66%

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

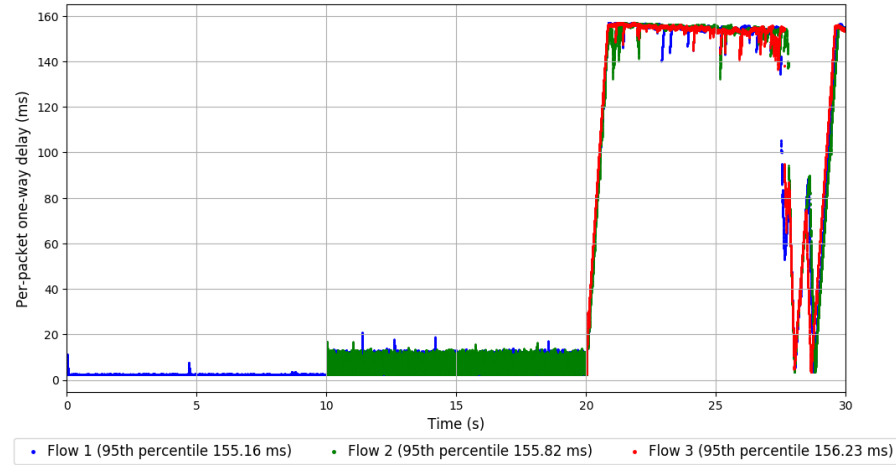
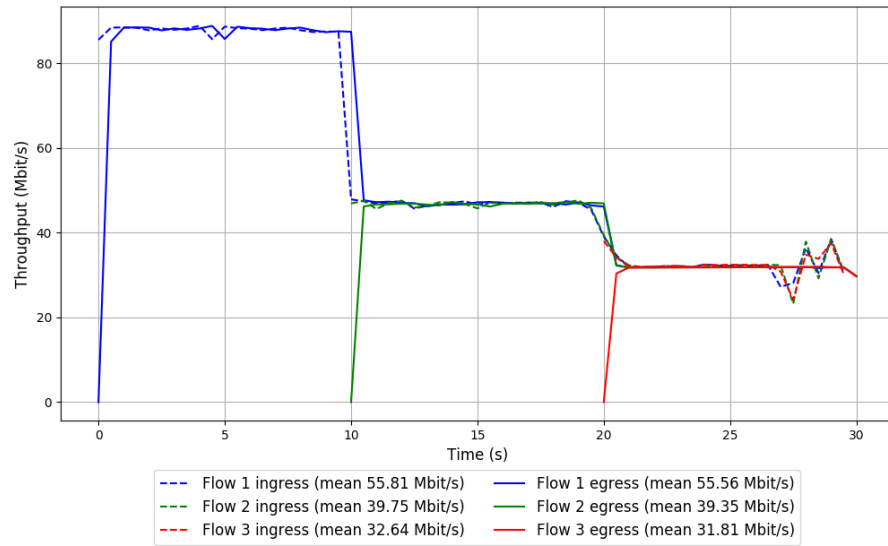


Run 3: Statistics of TaoVA-100x

Start at: 2018-10-10 05:01:53  
End at: 2018-10-10 05:02:23  
Local clock offset: -4.793 ms  
Remote clock offset: -0.123 ms

# Below is generated by plot.py at 2018-10-10 06:04:38  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 92.33 Mbit/s  
95th percentile per-packet one-way delay: 155.702 ms  
Loss rate: 0.89%  
-- Flow 1:  
Average throughput: 55.56 Mbit/s  
95th percentile per-packet one-way delay: 155.164 ms  
Loss rate: 0.48%  
-- Flow 2:  
Average throughput: 39.35 Mbit/s  
95th percentile per-packet one-way delay: 155.825 ms  
Loss rate: 1.04%  
-- Flow 3:  
Average throughput: 31.81 Mbit/s  
95th percentile per-packet one-way delay: 156.228 ms  
Loss rate: 2.62%

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





Run 4: Statistics of TaoVA-100x

Start at: 2018-10-10 05:22:40

End at: 2018-10-10 05:23:10

Local clock offset: -7.59 ms

Remote clock offset: 0.105 ms

# Below is generated by plot.py at 2018-10-10 06:04:41

# Datalink statistics

-- Total of 3 flows:

Average throughput: 92.39 Mbit/s

95th percentile per-packet one-way delay: 154.950 ms

Loss rate: 0.94%

-- Flow 1:

Average throughput: 55.53 Mbit/s

95th percentile per-packet one-way delay: 154.689 ms

Loss rate: 0.52%

-- Flow 2:

Average throughput: 39.48 Mbit/s

95th percentile per-packet one-way delay: 154.623 ms

Loss rate: 1.11%

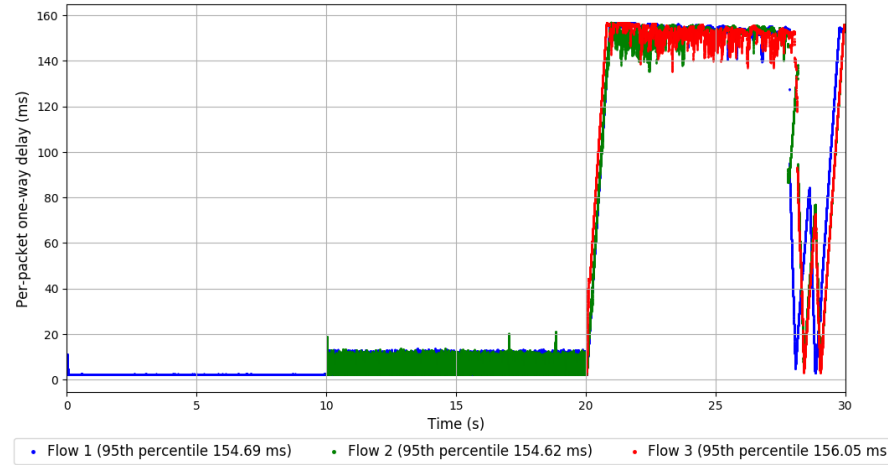
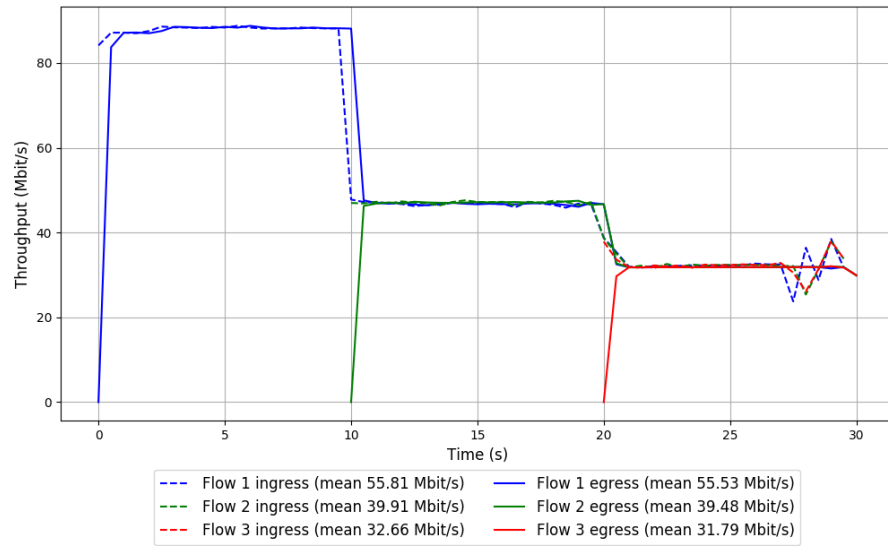
-- Flow 3:

Average throughput: 31.79 Mbit/s

95th percentile per-packet one-way delay: 156.047 ms

Loss rate: 2.70%

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



Run 5: Statistics of TaoVA-100x

Start at: 2018-10-10 05:43:29

End at: 2018-10-10 05:43:59

Local clock offset: -1.771 ms

Remote clock offset: 0.174 ms

# Below is generated by plot.py at 2018-10-10 06:04:41

# Datalink statistics

-- Total of 3 flows:

Average throughput: 92.23 Mbit/s

95th percentile per-packet one-way delay: 155.085 ms

Loss rate: 0.93%

-- Flow 1:

Average throughput: 55.38 Mbit/s

95th percentile per-packet one-way delay: 154.779 ms

Loss rate: 0.53%

-- Flow 2:

Average throughput: 39.44 Mbit/s

95th percentile per-packet one-way delay: 155.450 ms

Loss rate: 1.08%

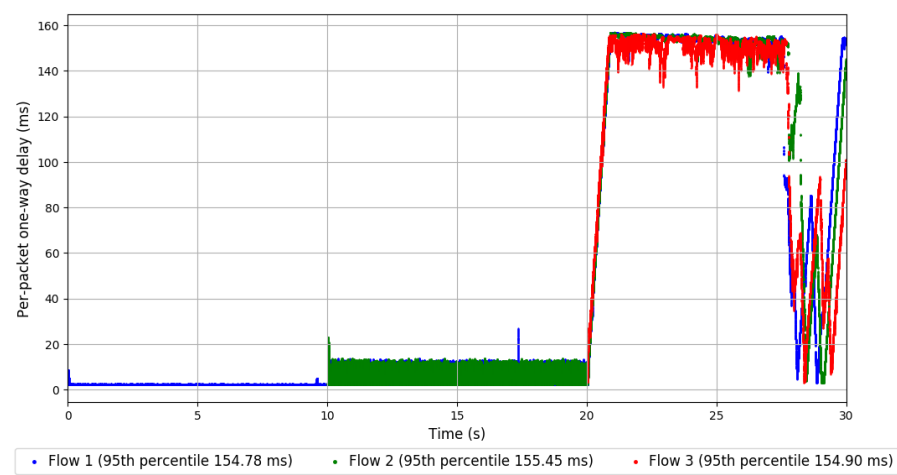
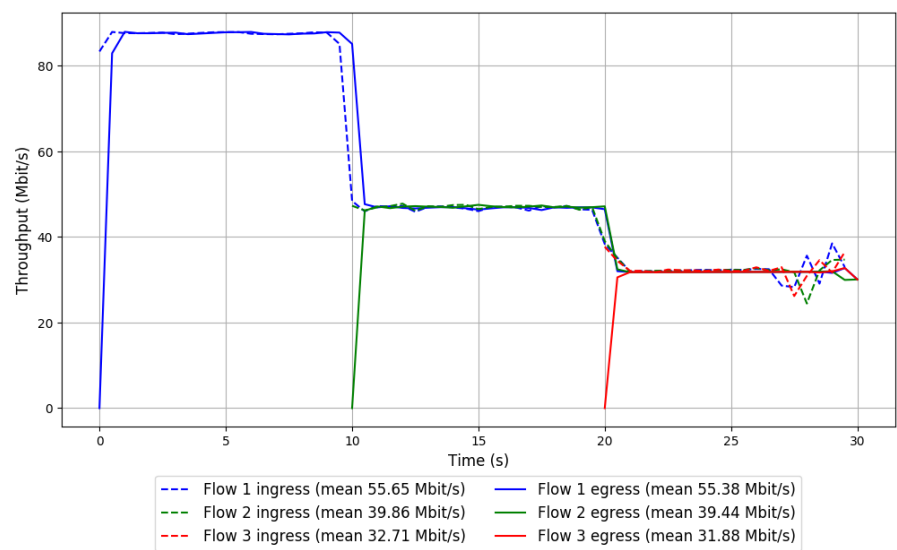
-- Flow 3:

Average throughput: 31.88 Mbit/s

95th percentile per-packet one-way delay: 154.901 ms

Loss rate: 2.59%

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

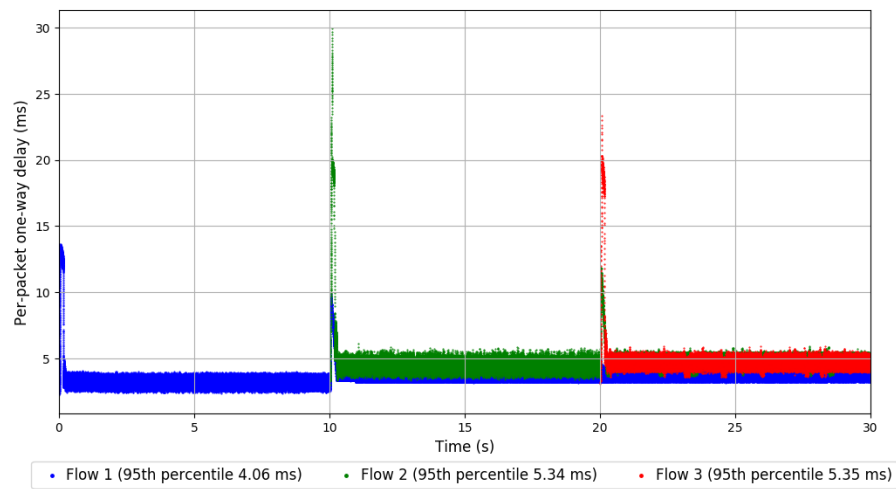
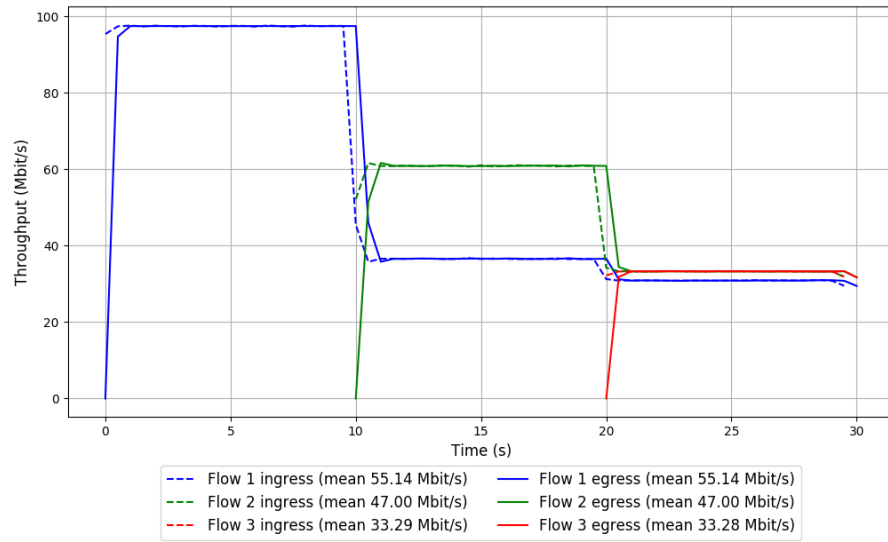


Run 1: Statistics of TCP Vegas

Start at: 2018-10-10 04:22:38  
End at: 2018-10-10 04:23:08  
Local clock offset: -7.802 ms  
Remote clock offset: -0.666 ms

# Below is generated by plot.py at 2018-10-10 06:04:41  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 97.48 Mbit/s  
95th percentile per-packet one-way delay: 5.212 ms  
Loss rate: 0.02%  
-- Flow 1:  
Average throughput: 55.14 Mbit/s  
95th percentile per-packet one-way delay: 4.064 ms  
Loss rate: 0.01%  
-- Flow 2:  
Average throughput: 47.00 Mbit/s  
95th percentile per-packet one-way delay: 5.340 ms  
Loss rate: 0.02%  
-- Flow 3:  
Average throughput: 33.28 Mbit/s  
95th percentile per-packet one-way delay: 5.350 ms  
Loss rate: 0.08%

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

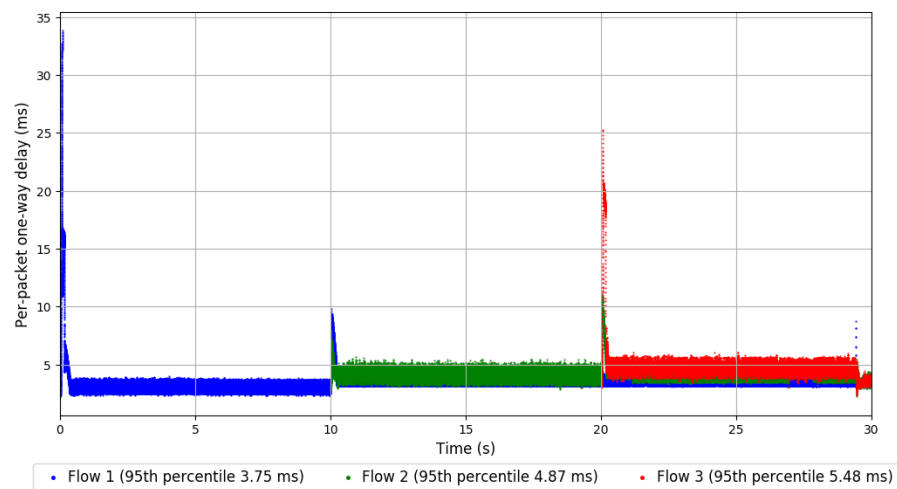
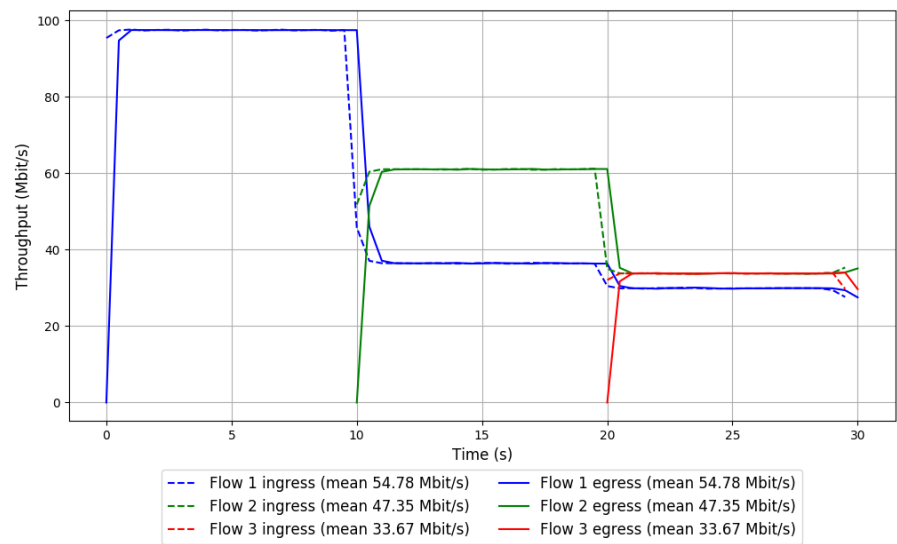


Run 2: Statistics of TCP Vegas

Start at: 2018-10-10 04:43:27  
End at: 2018-10-10 04:43:57  
Local clock offset: -2.677 ms  
Remote clock offset: -0.433 ms

# Below is generated by plot.py at 2018-10-10 06:04:41  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 97.49 Mbit/s  
95th percentile per-packet one-way delay: 5.030 ms  
Loss rate: 0.02%  
-- Flow 1:  
Average throughput: 54.78 Mbit/s  
95th percentile per-packet one-way delay: 3.748 ms  
Loss rate: 0.01%  
-- Flow 2:  
Average throughput: 47.35 Mbit/s  
95th percentile per-packet one-way delay: 4.869 ms  
Loss rate: 0.02%  
-- Flow 3:  
Average throughput: 33.67 Mbit/s  
95th percentile per-packet one-way delay: 5.476 ms  
Loss rate: 0.05%

Run 2: Report of TCP Vegas — Data Link



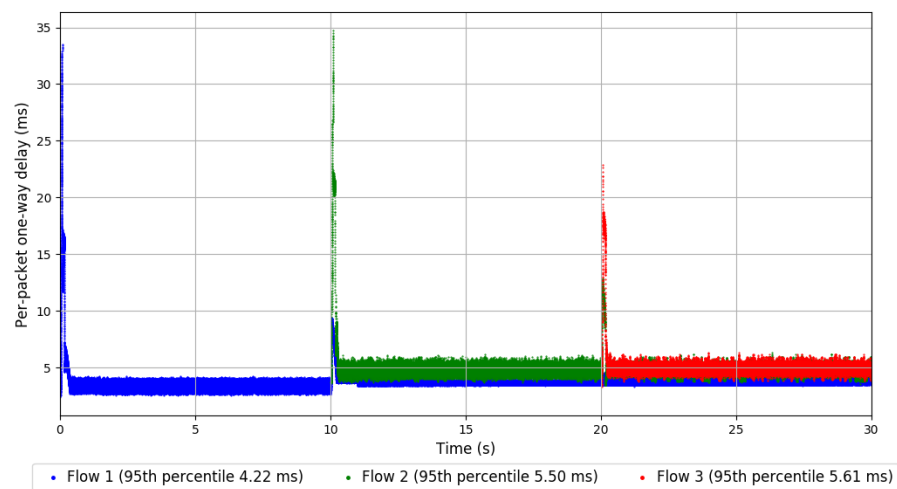
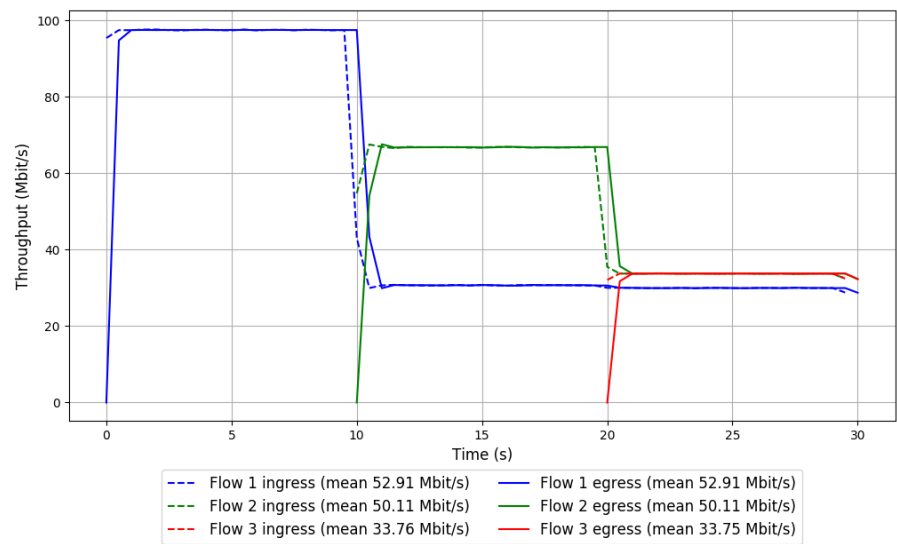


Run 3: Statistics of TCP Vegas

Start at: 2018-10-10 05:04:15  
End at: 2018-10-10 05:04:45  
Local clock offset: -5.397 ms  
Remote clock offset: -0.175 ms

# Below is generated by plot.py at 2018-10-10 06:04:41  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 97.49 Mbit/s  
95th percentile per-packet one-way delay: 5.434 ms  
Loss rate: 0.02%  
-- Flow 1:  
Average throughput: 52.91 Mbit/s  
95th percentile per-packet one-way delay: 4.223 ms  
Loss rate: 0.01%  
-- Flow 2:  
Average throughput: 50.11 Mbit/s  
95th percentile per-packet one-way delay: 5.504 ms  
Loss rate: 0.02%  
-- Flow 3:  
Average throughput: 33.75 Mbit/s  
95th percentile per-packet one-way delay: 5.612 ms  
Loss rate: 0.06%

Run 3: Report of TCP Vegas — Data Link



Run 4: Statistics of TCP Vegas

Start at: 2018-10-10 05:25:02

End at: 2018-10-10 05:25:32

Local clock offset: -7.567 ms

Remote clock offset: 0.133 ms

# Below is generated by plot.py at 2018-10-10 06:05:02

# Datalink statistics

-- Total of 3 flows:

Average throughput: 97.42 Mbit/s

95th percentile per-packet one-way delay: 3.548 ms

Loss rate: 0.02%

-- Flow 1:

Average throughput: 54.61 Mbit/s

95th percentile per-packet one-way delay: 3.233 ms

Loss rate: 0.01%

-- Flow 2:

Average throughput: 46.68 Mbit/s

95th percentile per-packet one-way delay: 3.509 ms

Loss rate: 0.02%

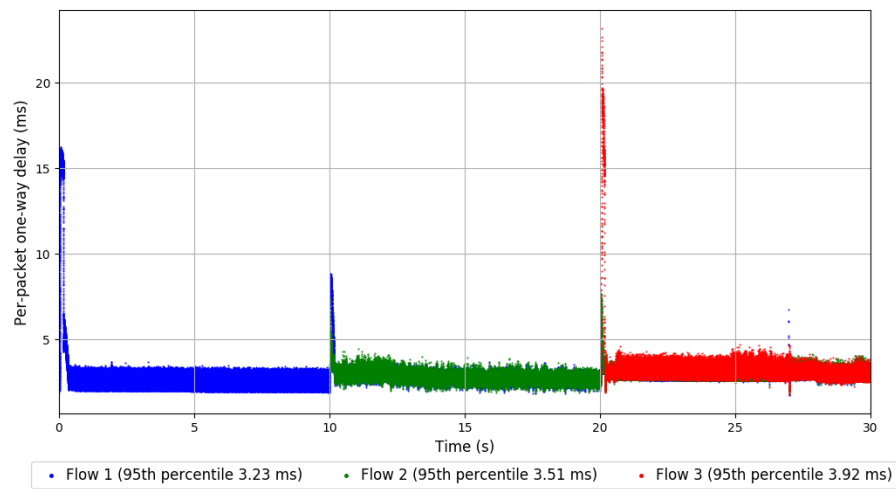
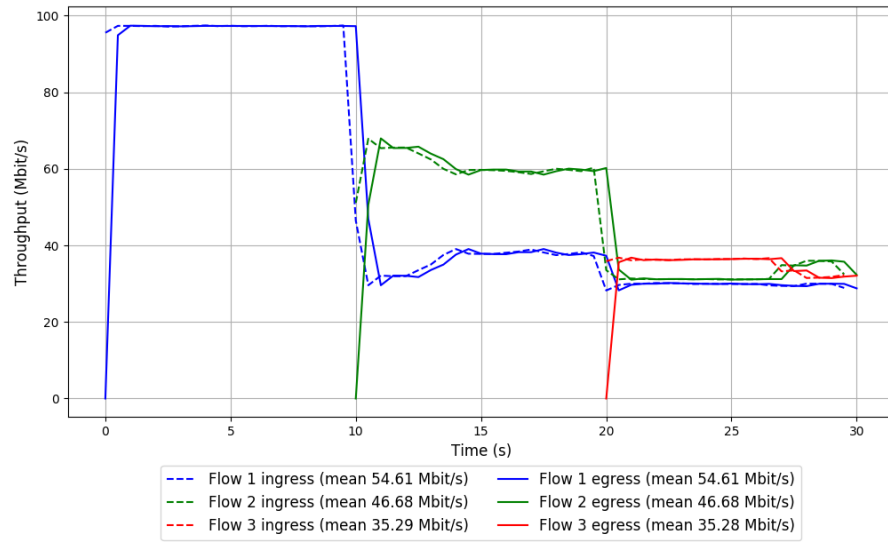
-- Flow 3:

Average throughput: 35.28 Mbit/s

95th percentile per-packet one-way delay: 3.924 ms

Loss rate: 0.06%

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



Run 5: Statistics of TCP Vegas

Start at: 2018-10-10 05:45:51

End at: 2018-10-10 05:46:21

Local clock offset: -1.506 ms

Remote clock offset: 0.165 ms

# Below is generated by plot.py at 2018-10-10 06:05:08

# Datalink statistics

-- Total of 3 flows:

Average throughput: 97.49 Mbit/s

95th percentile per-packet one-way delay: 4.799 ms

Loss rate: 0.02%

-- Flow 1:

Average throughput: 52.88 Mbit/s

95th percentile per-packet one-way delay: 3.857 ms

Loss rate: 0.01%

-- Flow 2:

Average throughput: 50.17 Mbit/s

95th percentile per-packet one-way delay: 4.852 ms

Loss rate: 0.02%

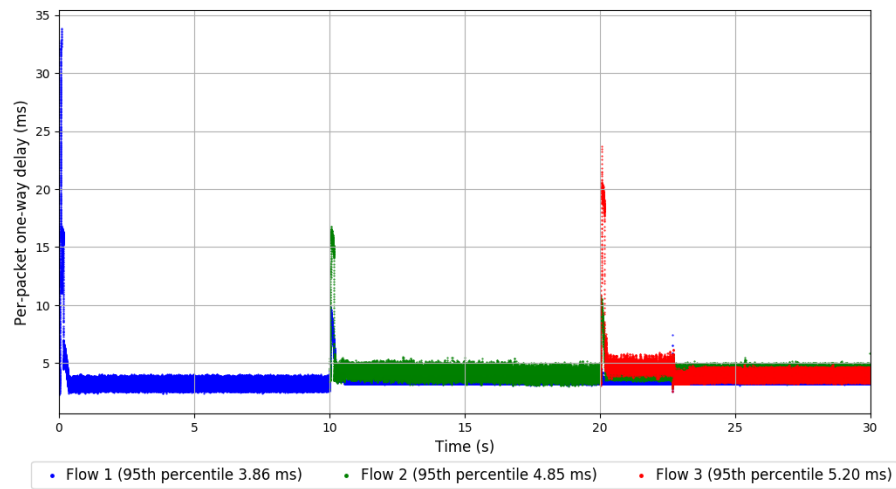
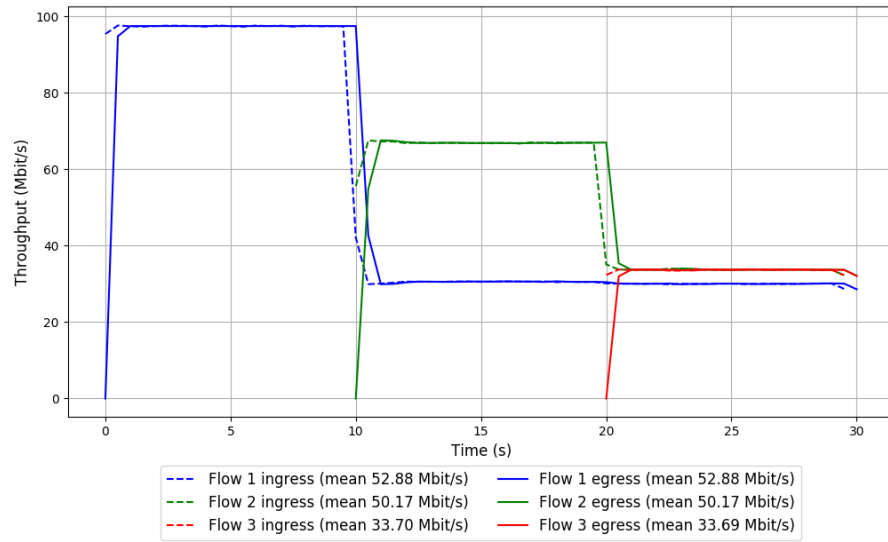
-- Flow 3:

Average throughput: 33.69 Mbit/s

95th percentile per-packet one-way delay: 5.202 ms

Loss rate: 0.07%

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

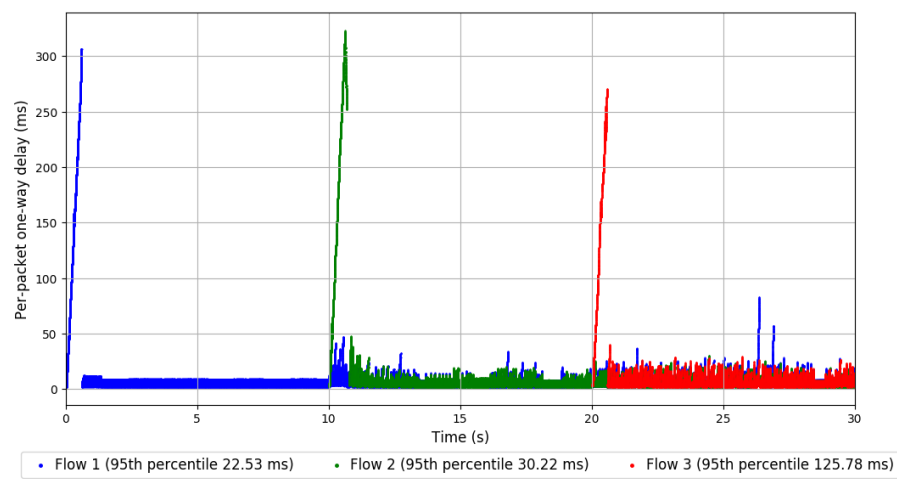
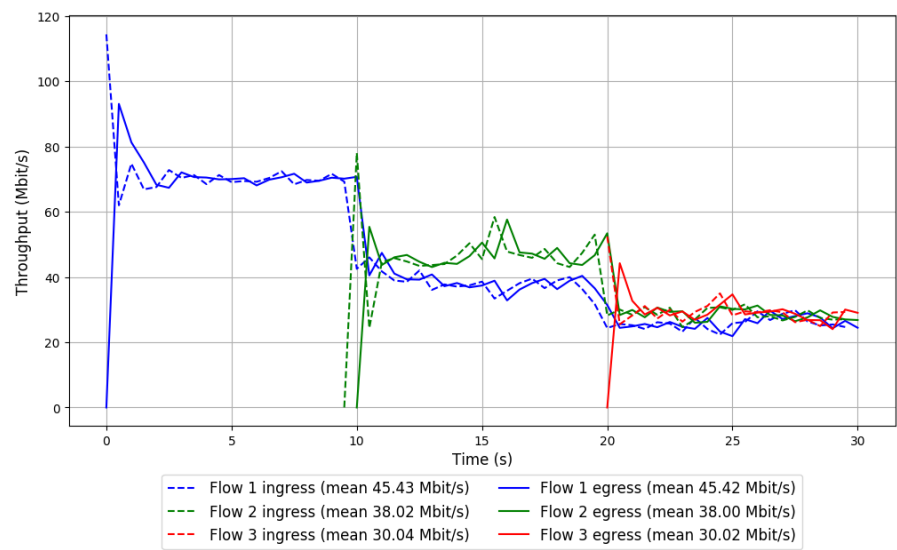


Run 1: Statistics of Verus

Start at: 2018-10-10 04:26:05  
End at: 2018-10-10 04:26:35  
Local clock offset: -7.081 ms  
Remote clock offset: -0.552 ms

# Below is generated by plot.py at 2018-10-10 06:05:36  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 80.72 Mbit/s  
95th percentile per-packet one-way delay: 29.411 ms  
Loss rate: 0.04%  
-- Flow 1:  
Average throughput: 45.42 Mbit/s  
95th percentile per-packet one-way delay: 22.529 ms  
Loss rate: 0.02%  
-- Flow 2:  
Average throughput: 38.00 Mbit/s  
95th percentile per-packet one-way delay: 30.219 ms  
Loss rate: 0.04%  
-- Flow 3:  
Average throughput: 30.02 Mbit/s  
95th percentile per-packet one-way delay: 125.783 ms  
Loss rate: 0.11%

Run 1: Report of Verus — Data Link



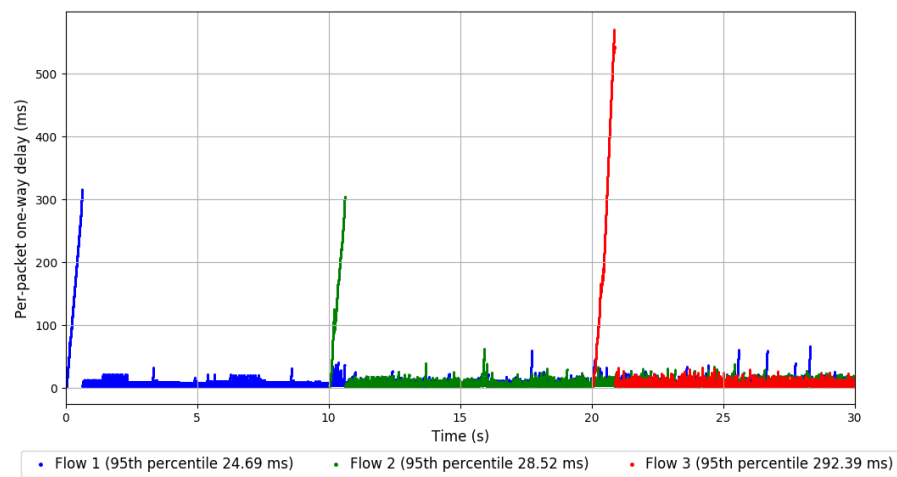
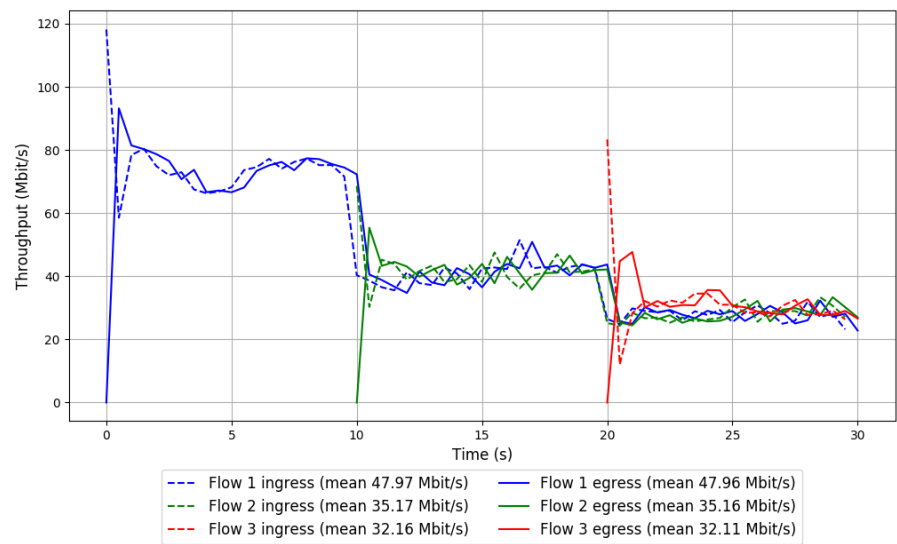


Run 2: Statistics of Verus

Start at: 2018-10-10 04:46:54  
End at: 2018-10-10 04:47:24  
Local clock offset: -2.266 ms  
Remote clock offset: -0.264 ms

# Below is generated by plot.py at 2018-10-10 06:05:38  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 82.02 Mbit/s  
95th percentile per-packet one-way delay: 39.530 ms  
Loss rate: 0.06%  
-- Flow 1:  
Average throughput: 47.96 Mbit/s  
95th percentile per-packet one-way delay: 24.693 ms  
Loss rate: 0.02%  
-- Flow 2:  
Average throughput: 35.16 Mbit/s  
95th percentile per-packet one-way delay: 28.520 ms  
Loss rate: 0.06%  
-- Flow 3:  
Average throughput: 32.11 Mbit/s  
95th percentile per-packet one-way delay: 292.394 ms  
Loss rate: 0.20%

Run 2: Report of Verus — Data Link

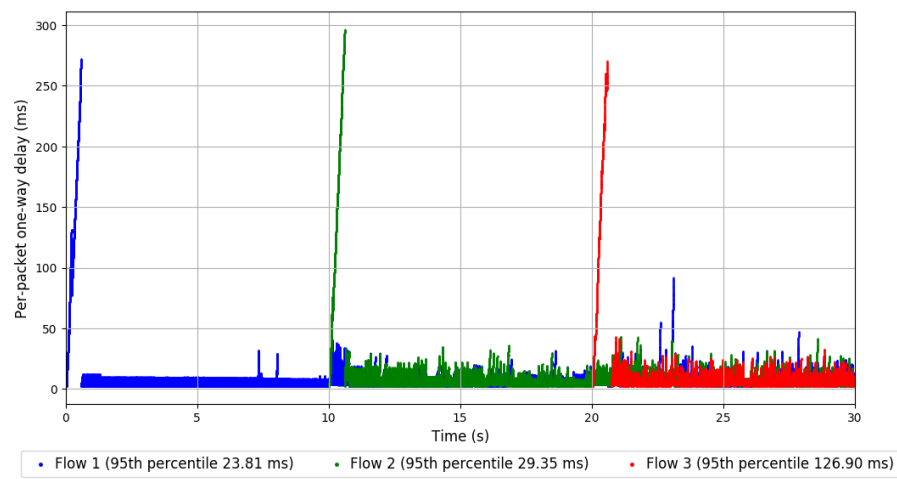
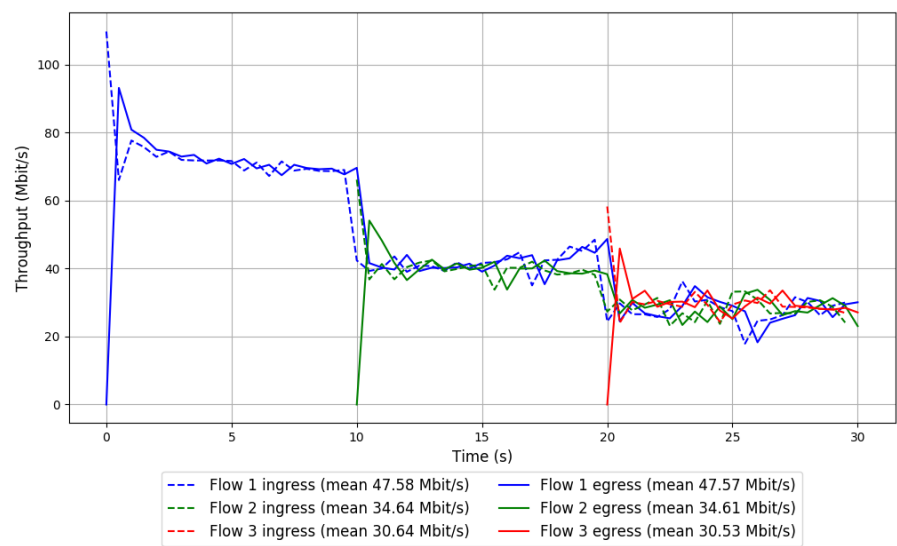


Run 3: Statistics of Verus

Start at: 2018-10-10 05:07:42  
End at: 2018-10-10 05:08:12  
Local clock offset: -6.041 ms  
Remote clock offset: -0.067 ms

# Below is generated by plot.py at 2018-10-10 06:05:38  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 80.77 Mbit/s  
95th percentile per-packet one-way delay: 29.184 ms  
Loss rate: 0.09%  
-- Flow 1:  
Average throughput: 47.57 Mbit/s  
95th percentile per-packet one-way delay: 23.806 ms  
Loss rate: 0.02%  
-- Flow 2:  
Average throughput: 34.61 Mbit/s  
95th percentile per-packet one-way delay: 29.348 ms  
Loss rate: 0.11%  
-- Flow 3:  
Average throughput: 30.53 Mbit/s  
95th percentile per-packet one-way delay: 126.898 ms  
Loss rate: 0.39%

Run 3: Report of Verus — Data Link



Run 4: Statistics of Verus

Start at: 2018-10-10 05:28:29

End at: 2018-10-10 05:28:59

Local clock offset: -5.589 ms

Remote clock offset: 0.104 ms

# Below is generated by plot.py at 2018-10-10 06:05:38

# Datalink statistics

-- Total of 3 flows:

Average throughput: 80.66 Mbit/s

95th percentile per-packet one-way delay: 31.991 ms

Loss rate: 0.05%

-- Flow 1:

Average throughput: 47.57 Mbit/s

95th percentile per-packet one-way delay: 23.679 ms

Loss rate: 0.04%

-- Flow 2:

Average throughput: 35.92 Mbit/s

95th percentile per-packet one-way delay: 28.235 ms

Loss rate: 0.03%

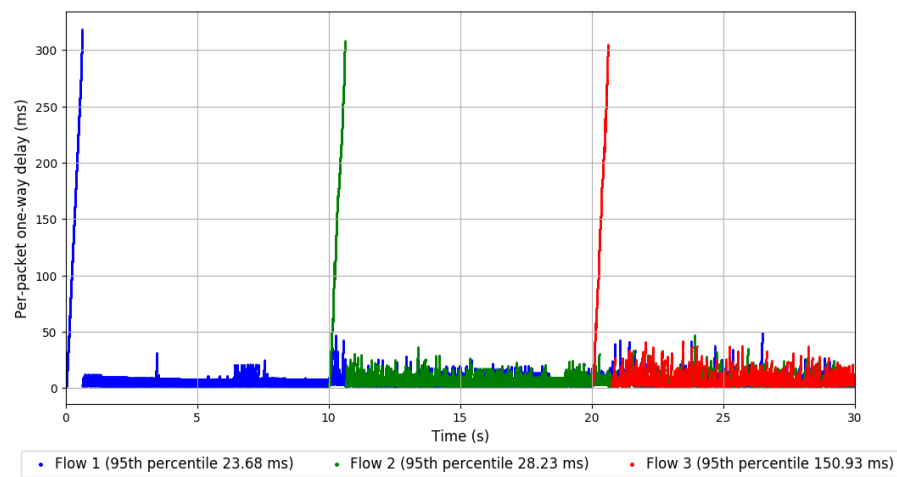
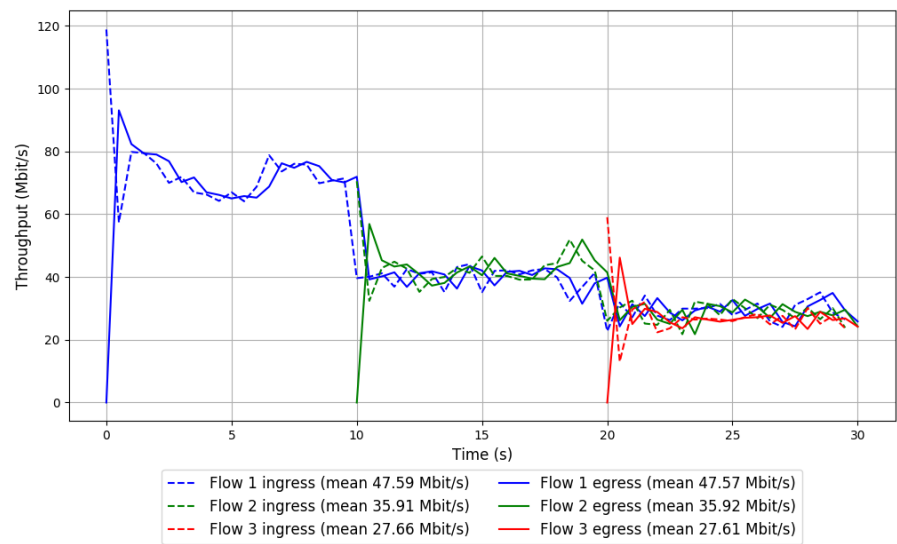
-- Flow 3:

Average throughput: 27.61 Mbit/s

95th percentile per-packet one-way delay: 150.928 ms

Loss rate: 0.16%

Run 4: Report of Verus — Data Link



Run 5: Statistics of Verus

Start at: 2018-10-10 05:49:18

End at: 2018-10-10 05:49:48

Local clock offset: -1.156 ms

Remote clock offset: 0.202 ms

# Below is generated by plot.py at 2018-10-10 06:05:42

# Datalink statistics

-- Total of 3 flows:

Average throughput: 81.50 Mbit/s

95th percentile per-packet one-way delay: 24.889 ms

Loss rate: 0.29%

-- Flow 1:

Average throughput: 46.80 Mbit/s

95th percentile per-packet one-way delay: 20.333 ms

Loss rate: 0.43%

-- Flow 2:

Average throughput: 36.99 Mbit/s

95th percentile per-packet one-way delay: 22.976 ms

Loss rate: 0.11%

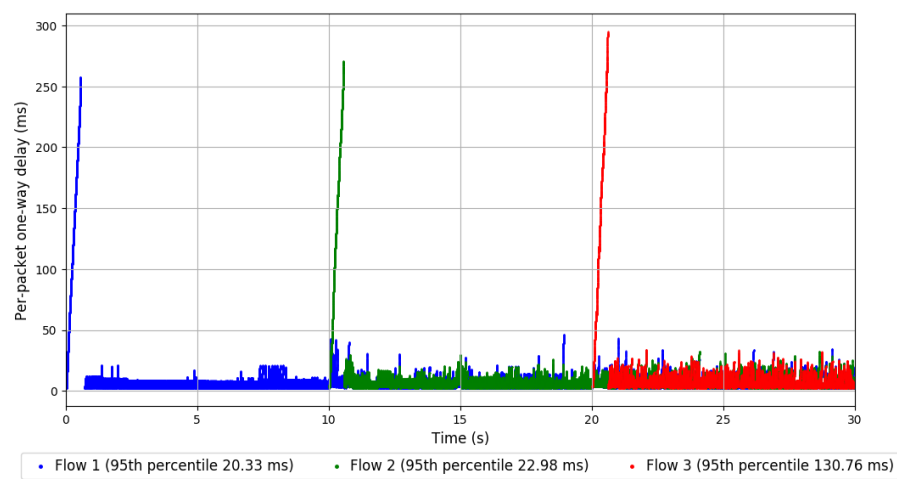
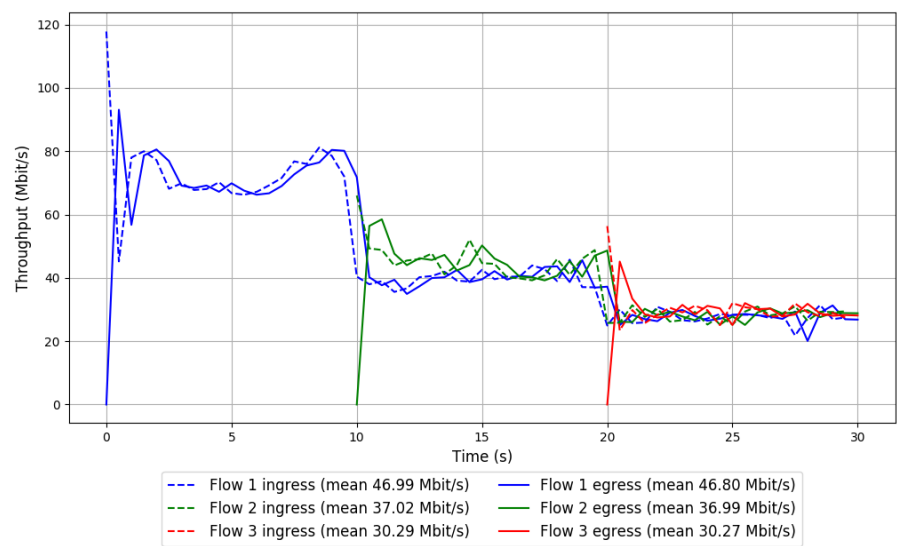
-- Flow 3:

Average throughput: 30.27 Mbit/s

95th percentile per-packet one-way delay: 130.762 ms

Loss rate: 0.11%

Run 5: Report of Verus — Data Link



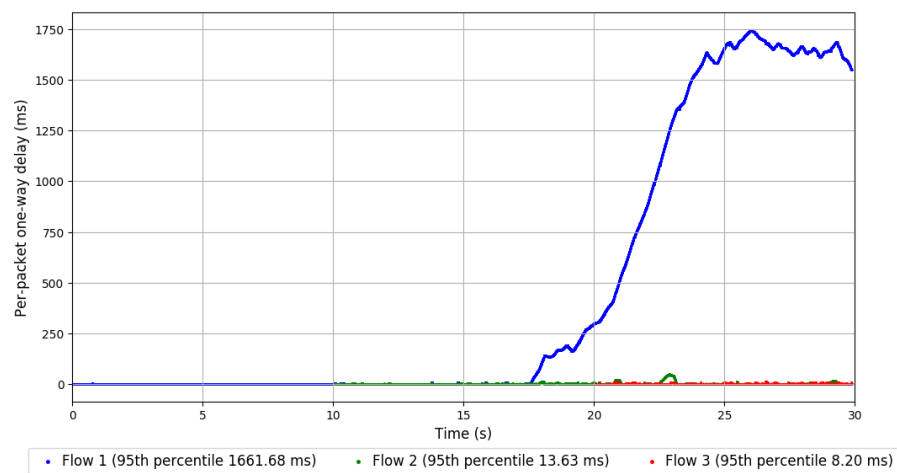
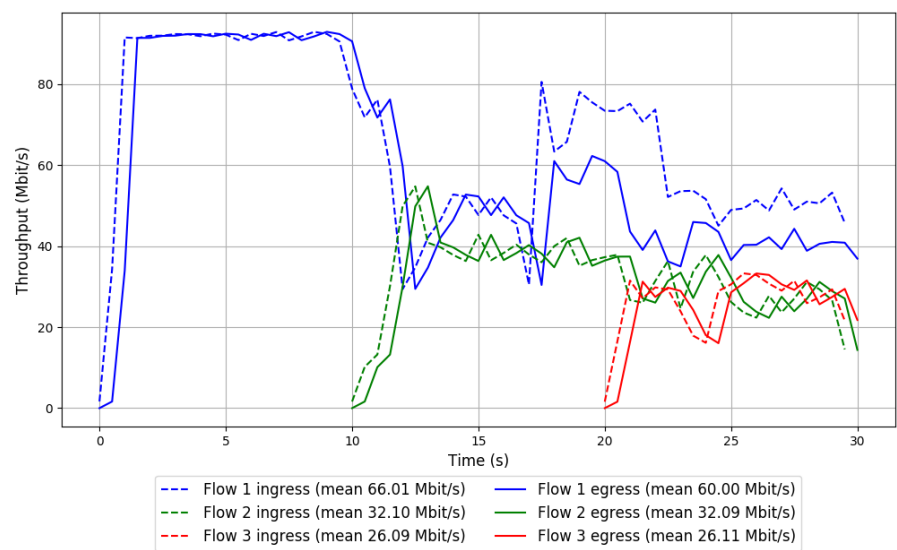


Run 1: Statistics of PCC-Vivace

Start at: 2018-10-10 04:09:55  
End at: 2018-10-10 04:10:25  
Local clock offset: -7.362 ms  
Remote clock offset: -0.787 ms

# Below is generated by plot.py at 2018-10-10 06:05:55  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 89.96 Mbit/s  
95th percentile per-packet one-way delay: 1644.934 ms  
Loss rate: 6.28%  
-- Flow 1:  
Average throughput: 60.00 Mbit/s  
95th percentile per-packet one-way delay: 1661.684 ms  
Loss rate: 9.12%  
-- Flow 2:  
Average throughput: 32.09 Mbit/s  
95th percentile per-packet one-way delay: 13.632 ms  
Loss rate: 0.05%  
-- Flow 3:  
Average throughput: 26.11 Mbit/s  
95th percentile per-packet one-way delay: 8.197 ms  
Loss rate: 0.01%

Run 1: Report of PCC-Vivace — Data Link

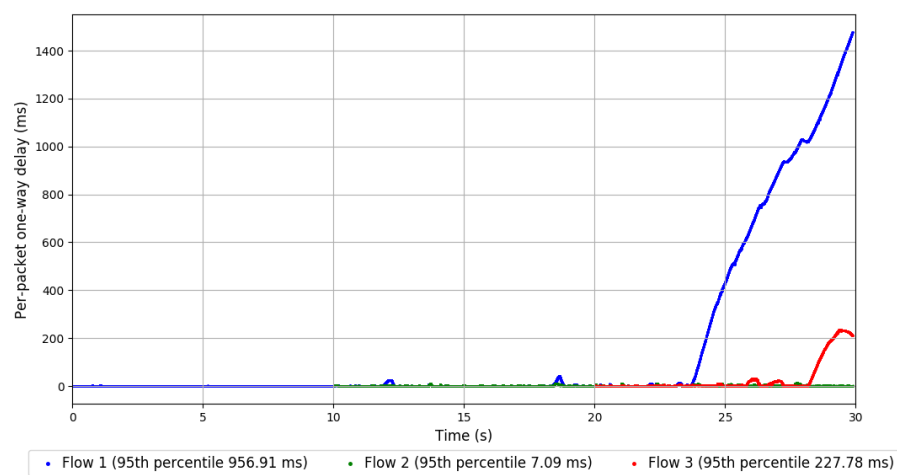
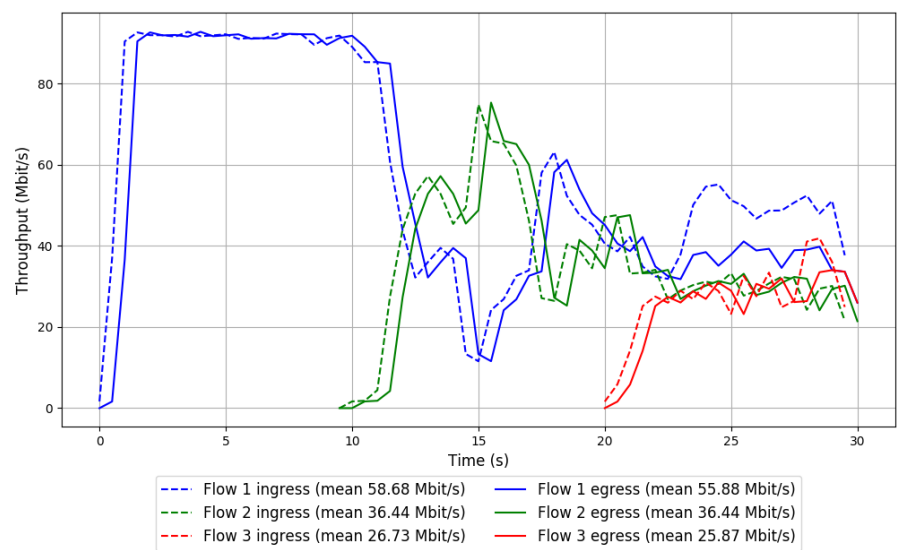


Run 2: Statistics of PCC-Vivace

Start at: 2018-10-10 04:30:43  
End at: 2018-10-10 04:31:13  
Local clock offset: -5.102 ms  
Remote clock offset: -0.557 ms

# Below is generated by plot.py at 2018-10-10 06:06:04  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 88.67 Mbit/s  
95th percentile per-packet one-way delay: 726.351 ms  
Loss rate: 3.40%  
-- Flow 1:  
Average throughput: 55.88 Mbit/s  
95th percentile per-packet one-way delay: 956.907 ms  
Loss rate: 4.81%  
-- Flow 2:  
Average throughput: 36.44 Mbit/s  
95th percentile per-packet one-way delay: 7.092 ms  
Loss rate: 0.03%  
-- Flow 3:  
Average throughput: 25.87 Mbit/s  
95th percentile per-packet one-way delay: 227.784 ms  
Loss rate: 3.27%

Run 2: Report of PCC-Vivace — Data Link

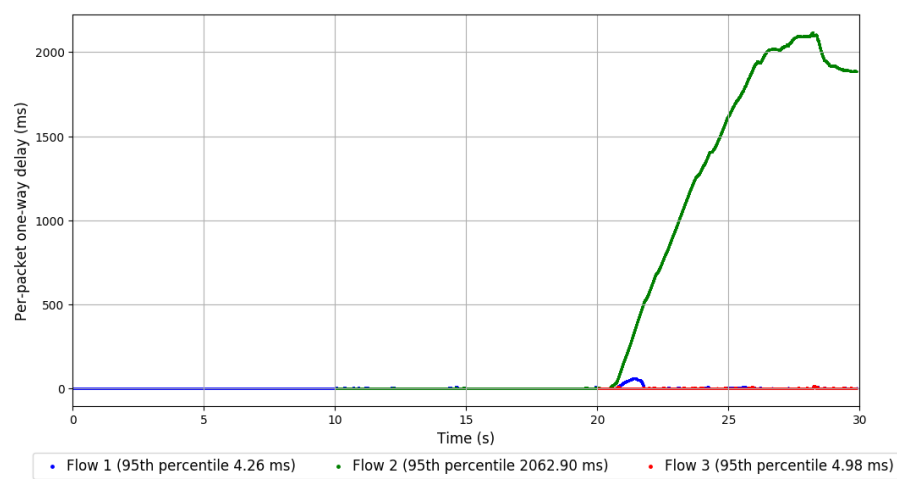
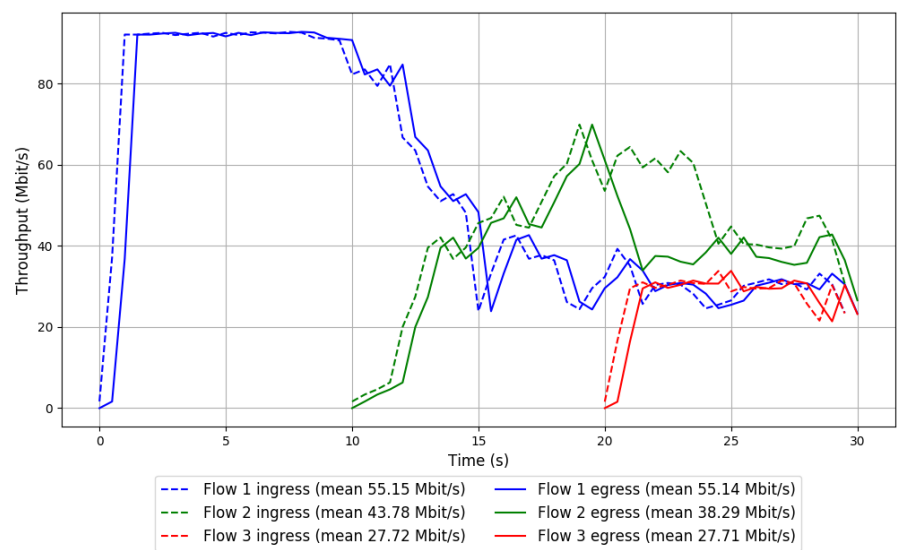


Run 3: Statistics of PCC-Vivace

Start at: 2018-10-10 04:51:32  
End at: 2018-10-10 04:52:02  
Local clock offset: -2.011 ms  
Remote clock offset: -0.241 ms

# Below is generated by plot.py at 2018-10-10 06:06:06  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 89.74 Mbit/s  
95th percentile per-packet one-way delay: 1892.212 ms  
Loss rate: 3.94%  
-- Flow 1:  
Average throughput: 55.14 Mbit/s  
95th percentile per-packet one-way delay: 4.263 ms  
Loss rate: 0.03%  
-- Flow 2:  
Average throughput: 38.29 Mbit/s  
95th percentile per-packet one-way delay: 2062.896 ms  
Loss rate: 12.55%  
-- Flow 3:  
Average throughput: 27.71 Mbit/s  
95th percentile per-packet one-way delay: 4.978 ms  
Loss rate: 0.07%

Run 3: Report of PCC-Vivace — Data Link

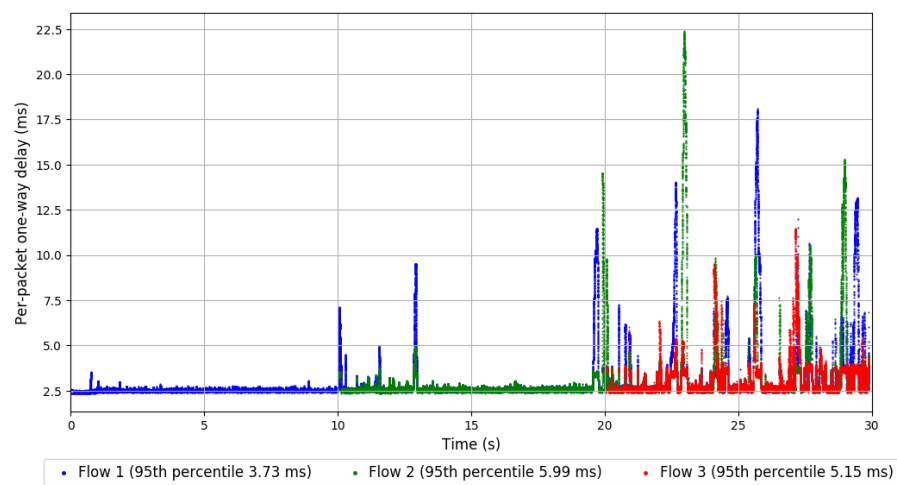
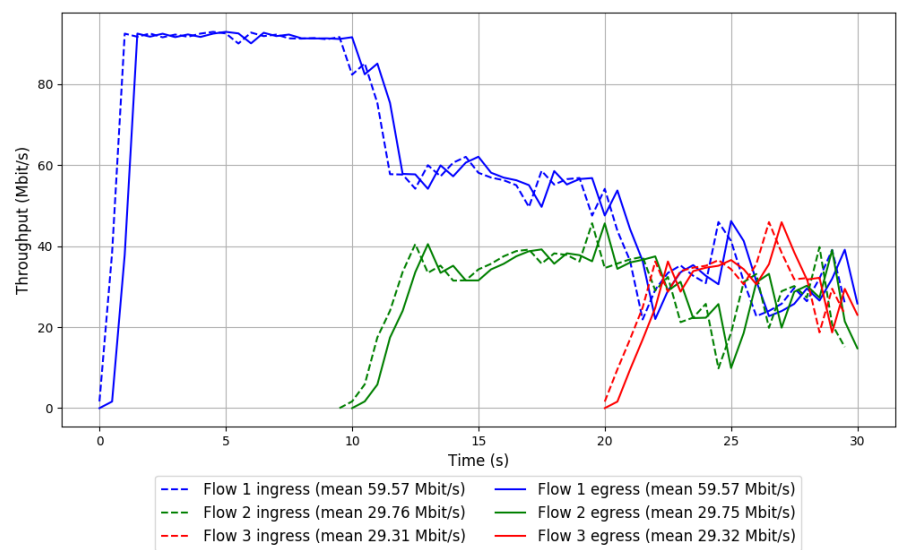


Run 4: Statistics of PCC-Vivace

Start at: 2018-10-10 05:12:20  
End at: 2018-10-10 05:12:50  
Local clock offset: -6.746 ms  
Remote clock offset: -0.108 ms

# Below is generated by plot.py at 2018-10-10 06:06:13  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 89.04 Mbit/s  
95th percentile per-packet one-way delay: 4.418 ms  
Loss rate: 0.03%  
-- Flow 1:  
Average throughput: 59.57 Mbit/s  
95th percentile per-packet one-way delay: 3.725 ms  
Loss rate: 0.01%  
-- Flow 2:  
Average throughput: 29.75 Mbit/s  
95th percentile per-packet one-way delay: 5.987 ms  
Loss rate: 0.06%  
-- Flow 3:  
Average throughput: 29.32 Mbit/s  
95th percentile per-packet one-way delay: 5.149 ms  
Loss rate: 0.06%

Run 4: Report of PCC-Vivace — Data Link





Run 5: Statistics of PCC-Vivace

Start at: 2018-10-10 05:33:06

End at: 2018-10-10 05:33:36

Local clock offset: -3.783 ms

Remote clock offset: 0.181 ms

# Below is generated by plot.py at 2018-10-10 06:06:14

# Datalink statistics

-- Total of 3 flows:

Average throughput: 89.70 Mbit/s

95th percentile per-packet one-way delay: 1053.313 ms

Loss rate: 2.06%

-- Flow 1:

Average throughput: 54.78 Mbit/s

95th percentile per-packet one-way delay: 9.767 ms

Loss rate: 0.03%

-- Flow 2:

Average throughput: 38.84 Mbit/s

95th percentile per-packet one-way delay: 1252.153 ms

Loss rate: 6.72%

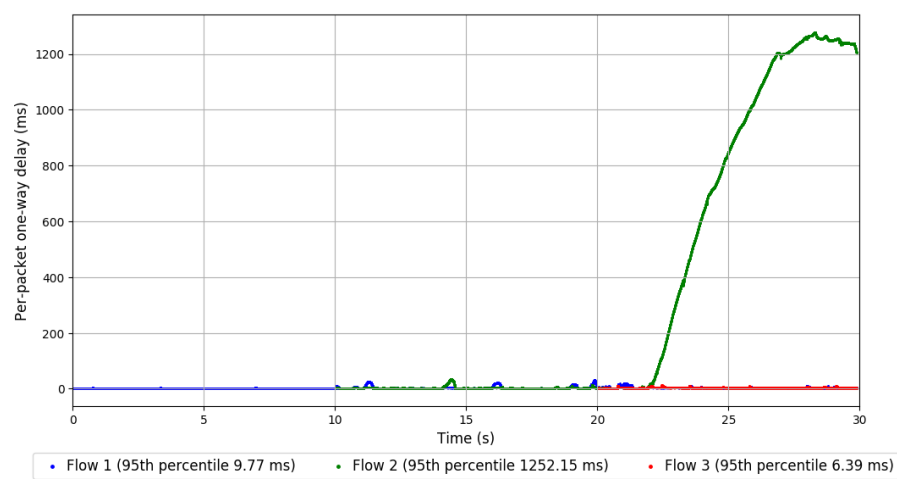
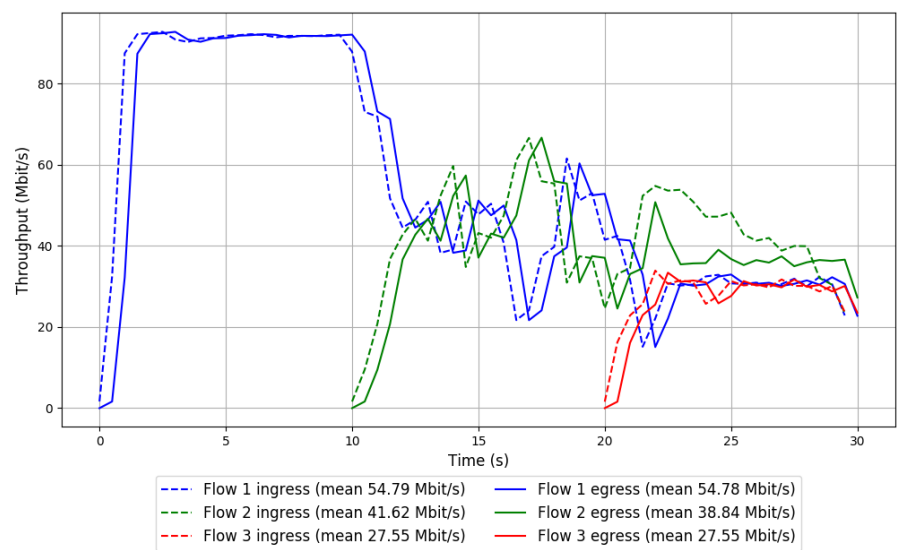
-- Flow 3:

Average throughput: 27.55 Mbit/s

95th percentile per-packet one-way delay: 6.388 ms

Loss rate: 0.06%

Run 5: Report of PCC-Vivace — Data Link

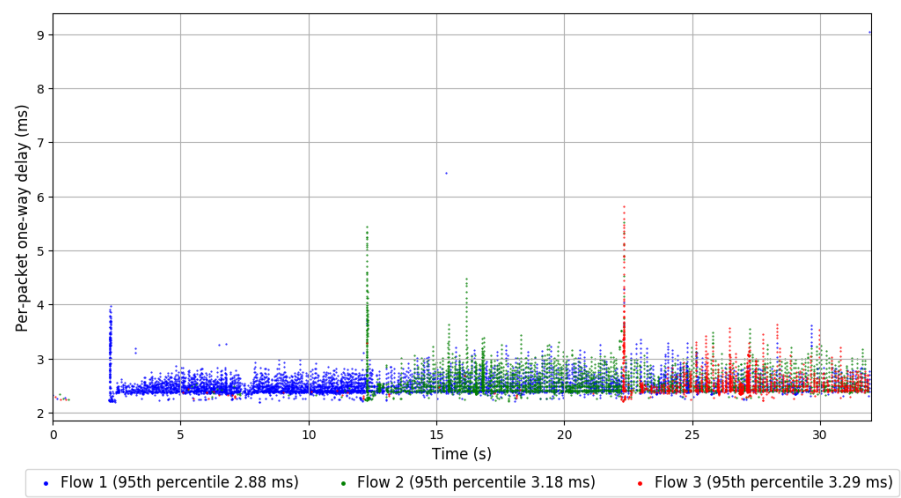
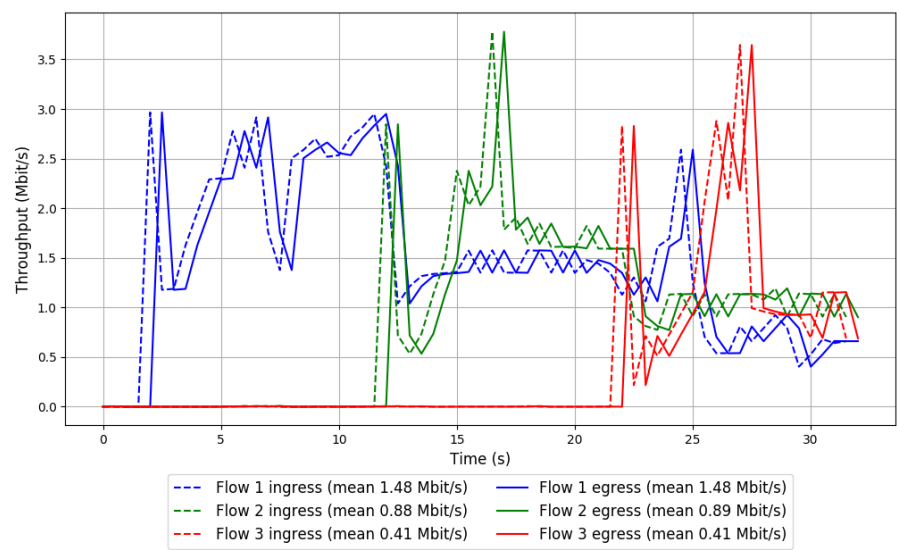


Run 1: Statistics of WebRTC media

Start at: 2018-10-10 04:12:15  
End at: 2018-10-10 04:12:45  
Local clock offset: -7.432 ms  
Remote clock offset: -0.696 ms

# Below is generated by plot.py at 2018-10-10 06:06:14  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 2.76 Mbit/s  
95th percentile per-packet one-way delay: 3.050 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 1.48 Mbit/s  
95th percentile per-packet one-way delay: 2.882 ms  
Loss rate: 0.00%  
-- Flow 2:  
Average throughput: 0.89 Mbit/s  
95th percentile per-packet one-way delay: 3.180 ms  
Loss rate: 0.00%  
-- Flow 3:  
Average throughput: 0.41 Mbit/s  
95th percentile per-packet one-way delay: 3.290 ms  
Loss rate: 0.00%

Run 1: Report of WebRTC media — Data Link

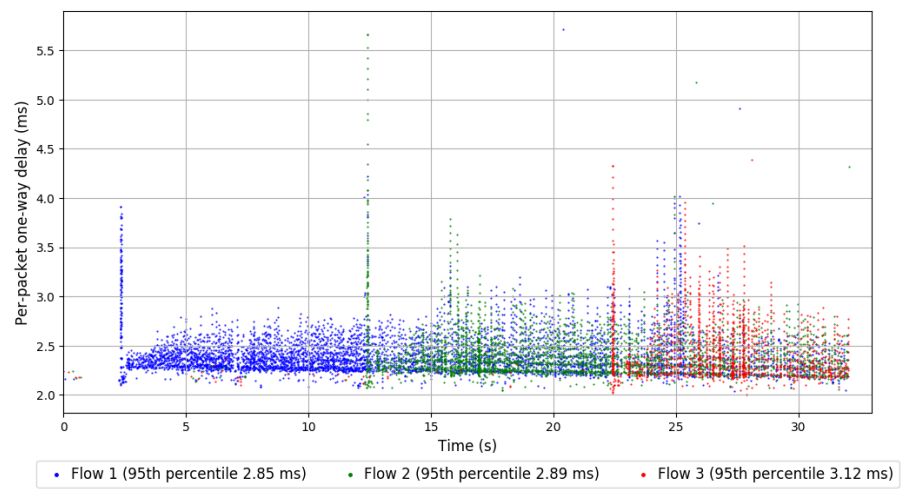
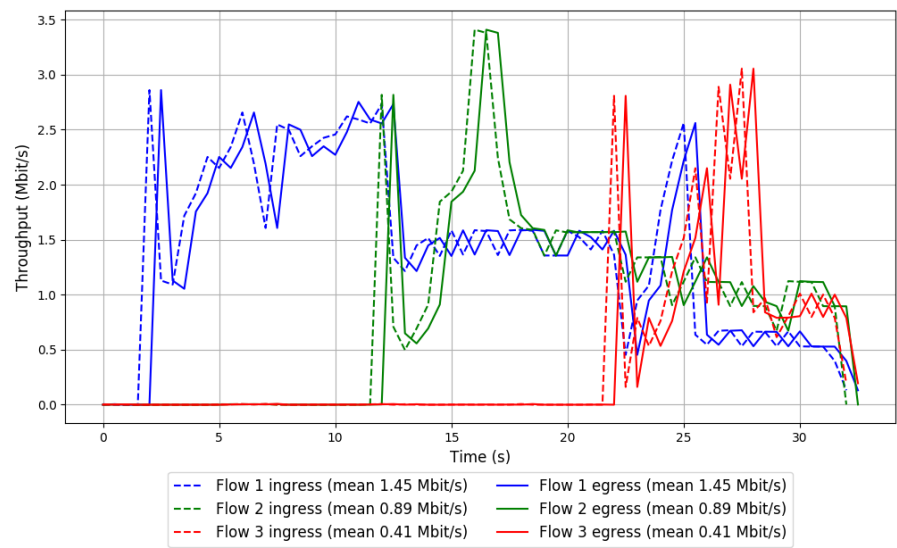


Run 2: Statistics of WebRTC media

Start at: 2018-10-10 04:33:03  
End at: 2018-10-10 04:33:33  
Local clock offset: -4.4 ms  
Remote clock offset: -0.554 ms

# Below is generated by plot.py at 2018-10-10 06:06:14  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 2.74 Mbit/s  
95th percentile per-packet one-way delay: 2.923 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 1.45 Mbit/s  
95th percentile per-packet one-way delay: 2.855 ms  
Loss rate: 0.00%  
-- Flow 2:  
Average throughput: 0.89 Mbit/s  
95th percentile per-packet one-way delay: 2.893 ms  
Loss rate: 0.00%  
-- Flow 3:  
Average throughput: 0.41 Mbit/s  
95th percentile per-packet one-way delay: 3.115 ms  
Loss rate: 0.00%

Run 2: Report of WebRTC media — Data Link

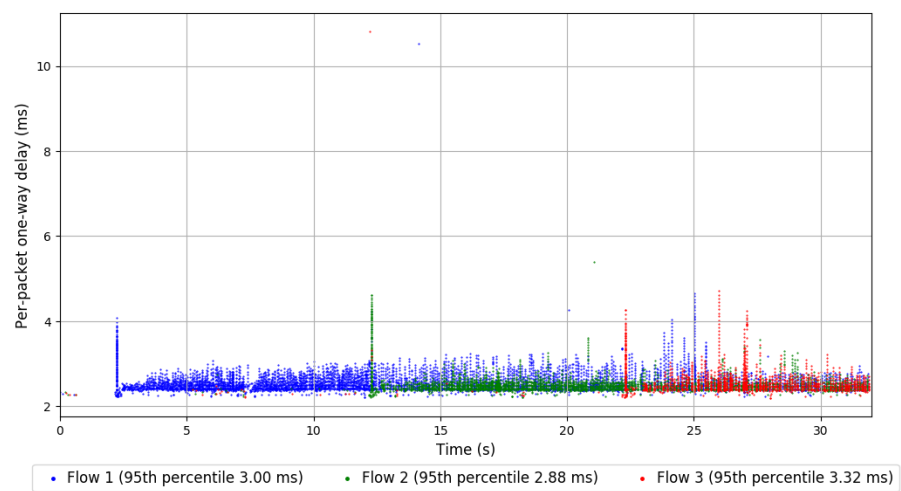
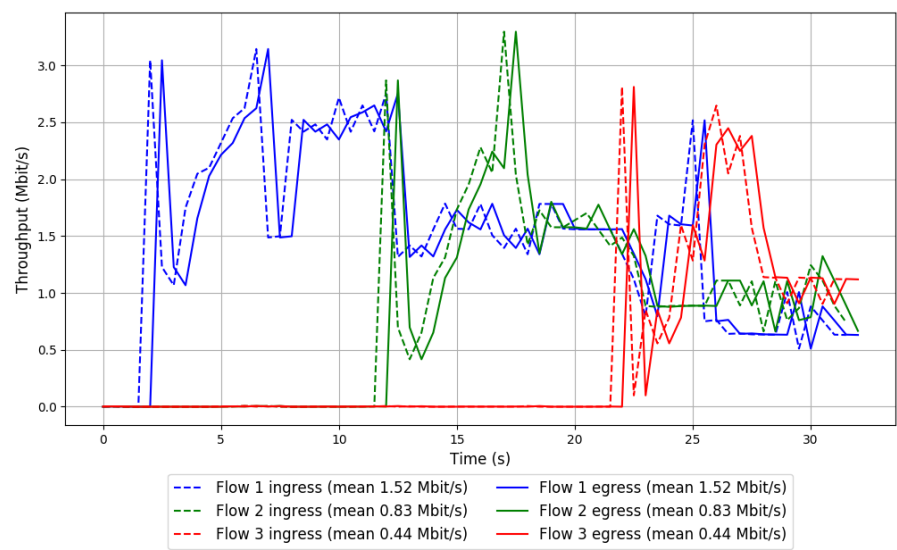


Run 3: Statistics of WebRTC media

Start at: 2018-10-10 04:53:52  
End at: 2018-10-10 04:54:22  
Local clock offset: -1.803 ms  
Remote clock offset: -0.205 ms

# Below is generated by plot.py at 2018-10-10 06:06:14  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 2.77 Mbit/s  
95th percentile per-packet one-way delay: 3.018 ms  
Loss rate: 0.04%  
-- Flow 1:  
Average throughput: 1.52 Mbit/s  
95th percentile per-packet one-way delay: 3.002 ms  
Loss rate: 0.00%  
-- Flow 2:  
Average throughput: 0.83 Mbit/s  
95th percentile per-packet one-way delay: 2.877 ms  
Loss rate: 0.14%  
-- Flow 3:  
Average throughput: 0.44 Mbit/s  
95th percentile per-packet one-way delay: 3.319 ms  
Loss rate: 0.00%

Run 3: Report of WebRTC media — Data Link





Run 4: Statistics of WebRTC media

Start at: 2018-10-10 05:14:39

End at: 2018-10-10 05:15:09

Local clock offset: -6.977 ms

Remote clock offset: 0.016 ms

# Below is generated by plot.py at 2018-10-10 06:06:14

# Datalink statistics

-- Total of 3 flows:

Average throughput: 2.68 Mbit/s

95th percentile per-packet one-way delay: 3.061 ms

Loss rate: 0.04%

-- Flow 1:

Average throughput: 1.50 Mbit/s

95th percentile per-packet one-way delay: 3.033 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 0.86 Mbit/s

95th percentile per-packet one-way delay: 3.103 ms

Loss rate: 0.00%

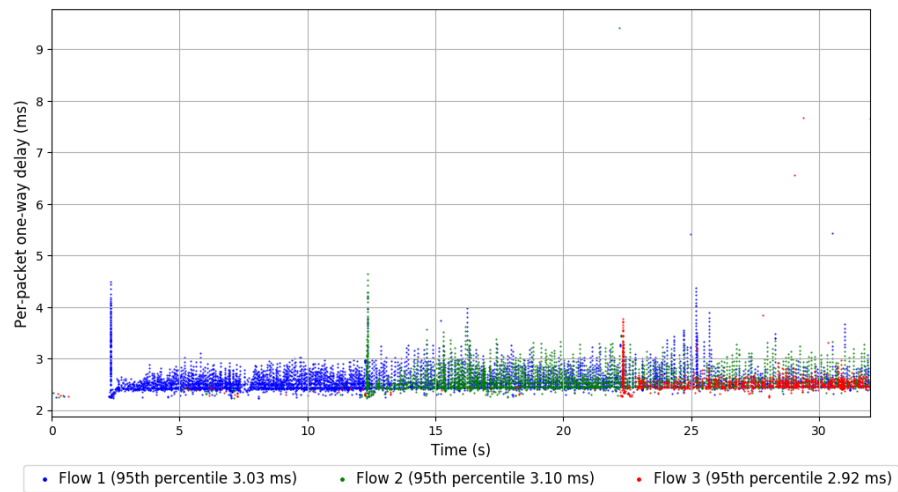
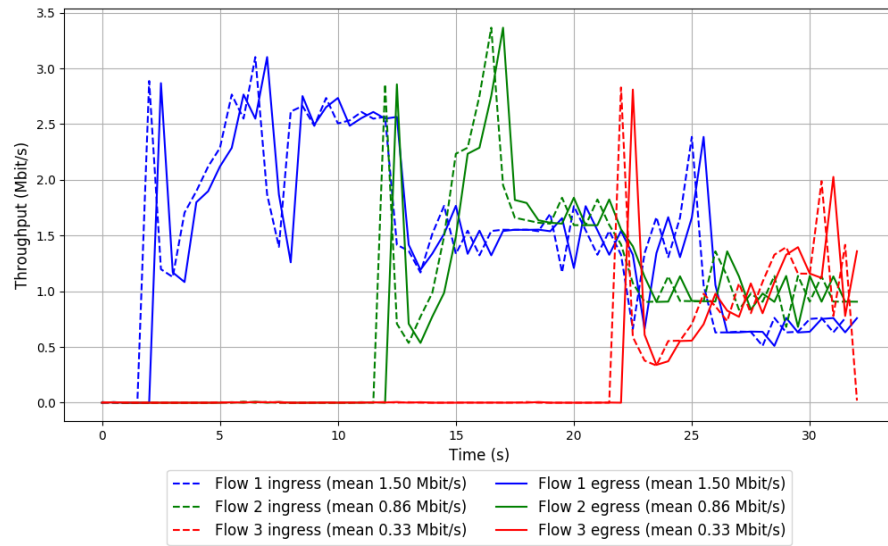
-- Flow 3:

Average throughput: 0.33 Mbit/s

95th percentile per-packet one-way delay: 2.917 ms

Loss rate: 0.37%

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



Run 5: Statistics of WebRTC media

Start at: 2018-10-10 05:35:26

End at: 2018-10-10 05:35:56

Local clock offset: -3.15 ms

Remote clock offset: 0.044 ms

# Below is generated by plot.py at 2018-10-10 06:06:14

# Datalink statistics

-- Total of 3 flows:

Average throughput: 2.72 Mbit/s

95th percentile per-packet one-way delay: 3.072 ms

Loss rate: 0.08%

-- Flow 1:

Average throughput: 1.52 Mbit/s

95th percentile per-packet one-way delay: 3.006 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 0.78 Mbit/s

95th percentile per-packet one-way delay: 3.029 ms

Loss rate: 0.28%

-- Flow 3:

Average throughput: 0.43 Mbit/s

95th percentile per-packet one-way delay: 3.378 ms

Loss rate: 0.00%

Run 5: Report of WebRTC media — Data Link

