

Pantheon Report

Generated at 2018-10-26 08:07:34 (UTC).

Data path: GCE London on *ens4 (remote)* → GCE Tokyo on *ens4 (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 `time.google.com` and have been applied to correct the timestamps in logs.

System info:

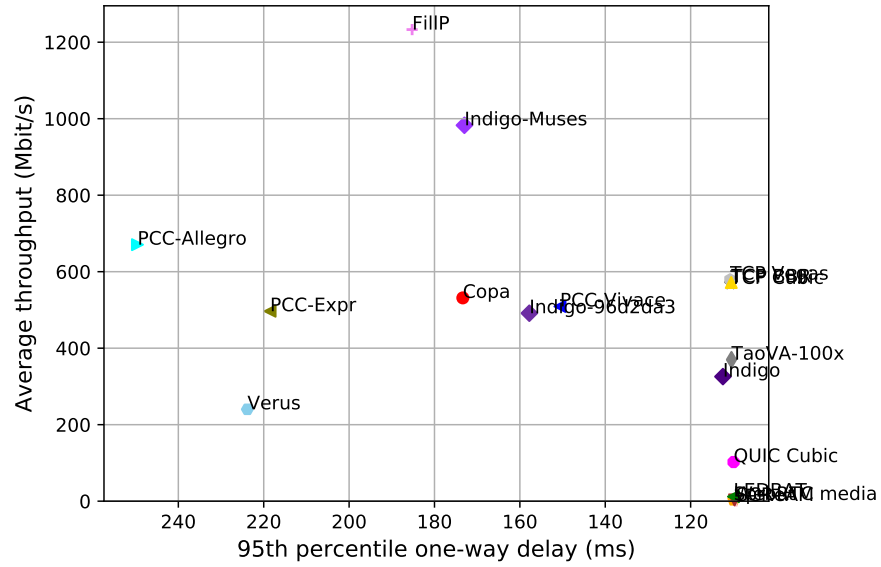
```
Linux 4.15.0-1021-gcp
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912
```

Git summary:

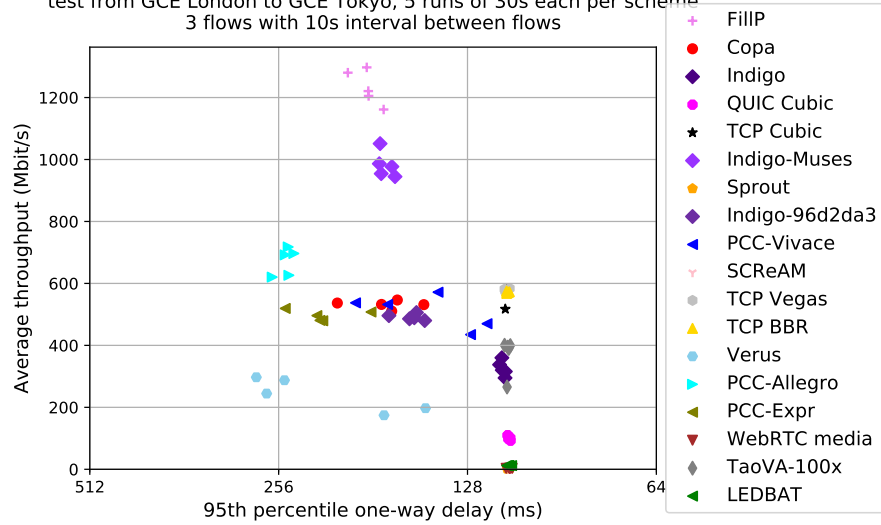
```
branch: muses @ 2e19c0464530faa92c63f8217c9971438a26a3be
third_party/fillp @ 5332fc9127c63565e13f4933b336c02d1aabdac6
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdf58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecd90c077e64d
third_party/indigo-96d2da3 @ 8413272d46f8aa0bcb967ed7048b6a8f994abb95
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/muses @ 65ac1b19bbefed0c6349ae986009b4fa8643c40a
third_party/pantheon-tunnel @ f866d3f58d27afd942717625ee3a354cc2e802bd
third_party/pcc @ 1afc958fa0d66d18b623c091a55fec872b4981e1
M receiver/src/buffer.h
M receiver/src/core.cpp
M sender/src/buffer.h
M sender/src/core.cpp
third_party/pcc-experimental @ cd43e34e3f5f5613e8acd08fab92c4eb24f974ab
third_party/proto-quick @ 77961f1a82733a86b42f1bc8143ebc978f3cff42
third_party/scream-reproduce @ f099118d1421aa3131bf11ff1964974e1da3bdb2
M src/ScreamClient
M src/ScreamServer
third_party/sprout @ 366e35c6178b01e31d4a46ad18c74f9415f19a26
M src/examples/cellsim.cc
M src/examples/sproutbt2.cc
M src/network/sproutconn.cc
third_party/verus @ d4b447ea74c6c60a261149af2629562939f9a494
M src/verus.hpp
M tools/plot.py
```

third_party/vivace @ 2baf86211435ae071a32f96b7d8c504587f5d7f4
third_party/webrtc @ 3f0cc2a9061a41b6f9dde4735770d143a1fa2851

test from GCE London to GCE Tokyo, 5 runs of 30s each per scheme
 3 flows with 10s interval between flows (mean of all runs by scheme)



test from GCE London to GCE Tokyo, 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	298.14	287.24	253.72	110.16	110.50	110.67	0.80	1.23	2.80
Copa	5	285.28	260.63	223.70	165.24	171.40	174.08	0.74	1.24	2.79
TCP Cubic	5	300.30	284.36	241.58	110.21	110.93	110.30	0.75	1.20	2.64
FillP	5	670.53	611.05	481.77	188.23	182.21	167.26	3.86	2.78	3.83
Indigo	5	178.21	152.01	143.82	112.97	111.58	114.06	0.74	1.22	2.74
Indigo-96d2da3	5	258.73	243.36	220.98	152.94	162.14	164.24	0.69	1.36	3.04
LEDBAT	5	7.68	5.14	2.49	110.10	109.62	109.33	1.48	2.21	4.46
Indigo-Muses	5	556.52	465.69	364.71	170.37	168.61	192.72	0.85	1.50	3.45
PCC-Allegro	5	371.67	343.37	224.92	245.05	269.74	260.31	5.01	7.65	8.23
PCC-Expr	5	295.52	219.06	172.16	223.06	186.67	193.51	4.59	7.46	4.53
QUIC Cubic	5	55.53	52.96	33.87	109.92	109.64	109.44	1.05	1.41	2.85
SCReAM	5	0.22	0.22	0.22	109.36	108.89	109.06	0.67	1.21	2.22
Sprout	5	1.55	1.33	0.78	109.77	109.81	109.66	1.03	0.59	2.02
TaoVA-100x	5	204.44	158.30	184.70	109.94	110.85	110.15	0.78	1.17	2.64
TCP Vegas	5	303.24	289.73	255.81	110.64	110.43	111.57	0.78	1.22	2.77
Verus	5	155.86	92.83	71.47	207.41	183.63	200.36	2.14	3.85	7.10
PCC-Vivace	5	305.47	243.69	129.88	155.80	153.29	172.82	0.94	1.80	6.05
WebRTC media	5	1.76	1.07	0.36	109.66	109.28	109.64	0.92	1.43	4.34

Run 1: Statistics of TCP BBR

Start at: 2018-10-26 03:41:58

End at: 2018-10-26 03:42:28

Local clock offset: 0.258 ms

Remote clock offset: 0.416 ms

Below is generated by plot.py at 2018-10-26 06:14:36

Datalink statistics

-- Total of 3 flows:

Average throughput: 573.20 Mbit/s

95th percentile per-packet one-way delay: 109.776 ms

Loss rate: 1.22%

-- Flow 1:

Average throughput: 299.07 Mbit/s

95th percentile per-packet one-way delay: 109.532 ms

Loss rate: 0.79%

-- Flow 2:

Average throughput: 288.12 Mbit/s

95th percentile per-packet one-way delay: 109.901 ms

Loss rate: 1.18%

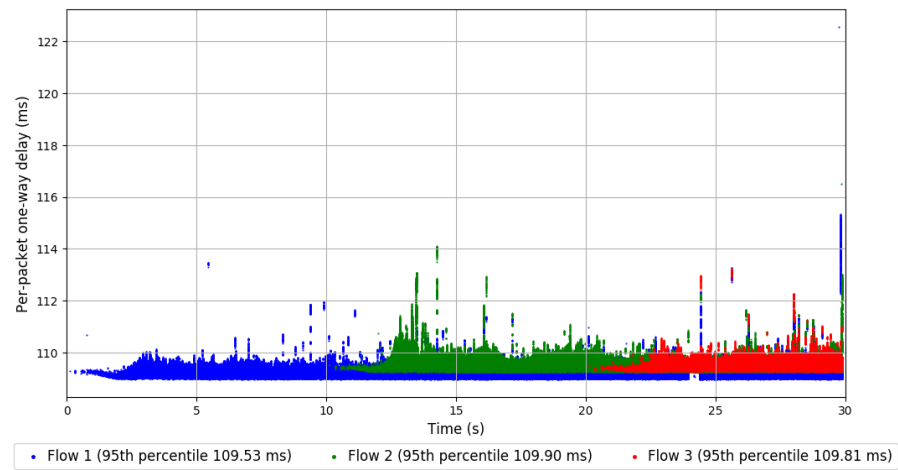
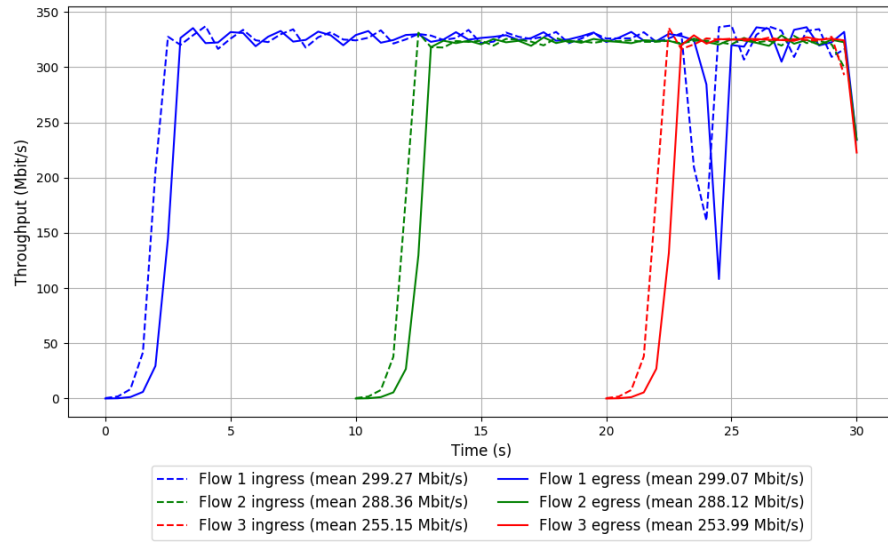
-- Flow 3:

Average throughput: 253.99 Mbit/s

95th percentile per-packet one-way delay: 109.811 ms

Loss rate: 2.81%

Run 1: Report of TCP BBR — Data Link

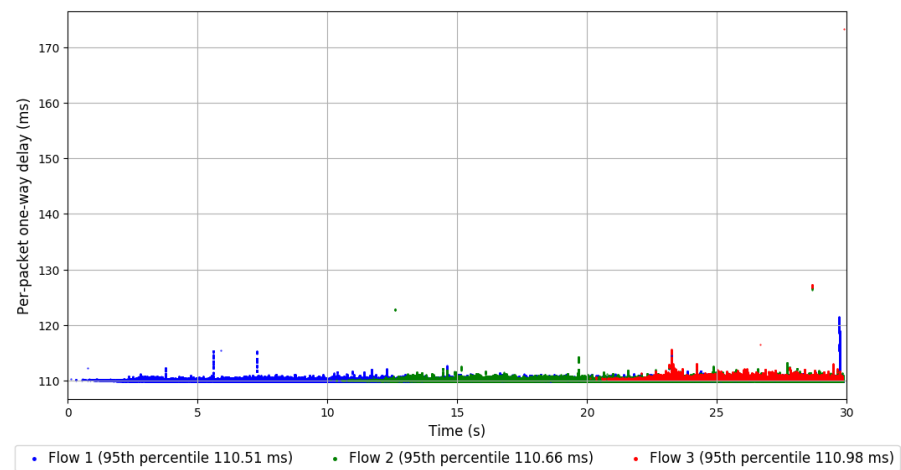
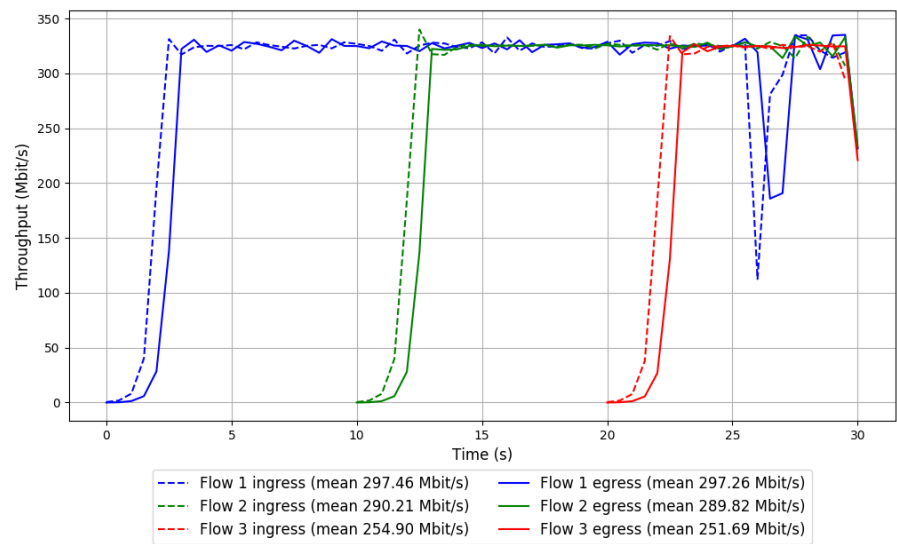


Run 2: Statistics of TCP BBR

Start at: 2018-10-26 04:13:50
End at: 2018-10-26 04:14:20
Local clock offset: 0.767 ms
Remote clock offset: -0.045 ms

Below is generated by plot.py at 2018-10-26 06:14:36
Datalink statistics
-- Total of 3 flows:
Average throughput: 571.71 Mbit/s
95th percentile per-packet one-way delay: 110.689 ms
Loss rate: 1.24%
-- Flow 1:
Average throughput: 297.26 Mbit/s
95th percentile per-packet one-way delay: 110.510 ms
Loss rate: 0.80%
-- Flow 2:
Average throughput: 289.82 Mbit/s
95th percentile per-packet one-way delay: 110.659 ms
Loss rate: 1.23%
-- Flow 3:
Average throughput: 251.69 Mbit/s
95th percentile per-packet one-way delay: 110.981 ms
Loss rate: 2.81%

Run 2: Report of TCP BBR — Data Link

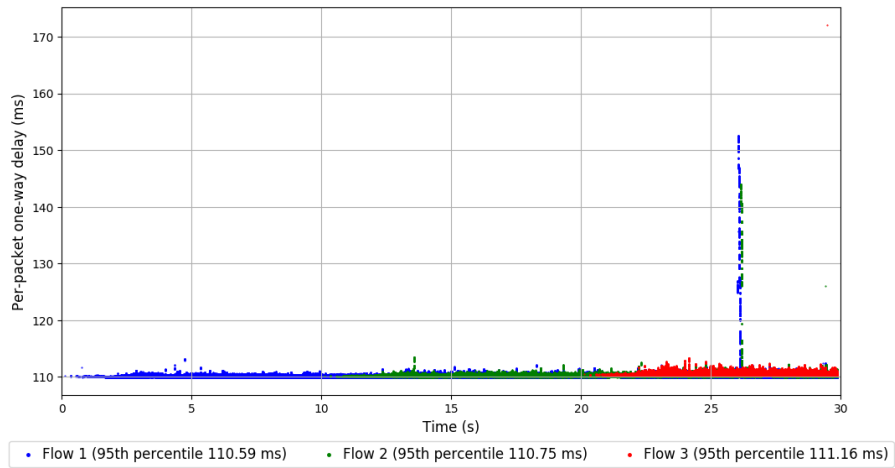
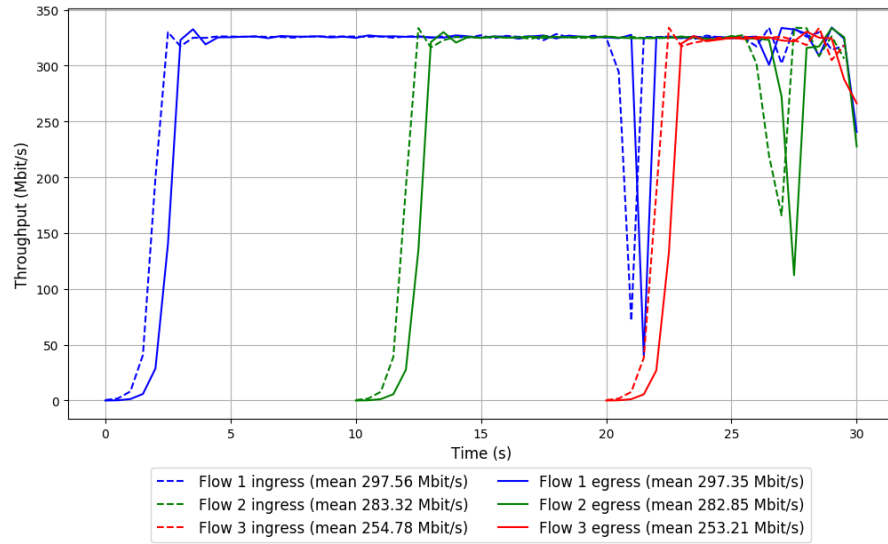


Run 3: Statistics of TCP BBR

Start at: 2018-10-26 04:45:45
End at: 2018-10-26 04:46:15
Local clock offset: 0.298 ms
Remote clock offset: -0.482 ms

Below is generated by plot.py at 2018-10-26 06:14:36
Datalink statistics
-- Total of 3 flows:
Average throughput: 567.95 Mbit/s
95th percentile per-packet one-way delay: 110.823 ms
Loss rate: 1.25%
-- Flow 1:
Average throughput: 297.35 Mbit/s
95th percentile per-packet one-way delay: 110.595 ms
Loss rate: 0.80%
-- Flow 2:
Average throughput: 282.85 Mbit/s
95th percentile per-packet one-way delay: 110.747 ms
Loss rate: 1.26%
-- Flow 3:
Average throughput: 253.21 Mbit/s
95th percentile per-packet one-way delay: 111.156 ms
Loss rate: 2.80%

Run 3: Report of TCP BBR — Data Link

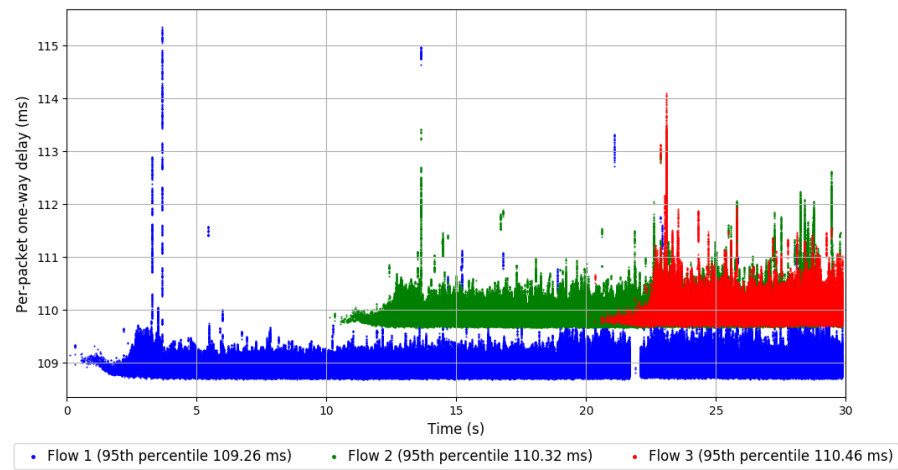
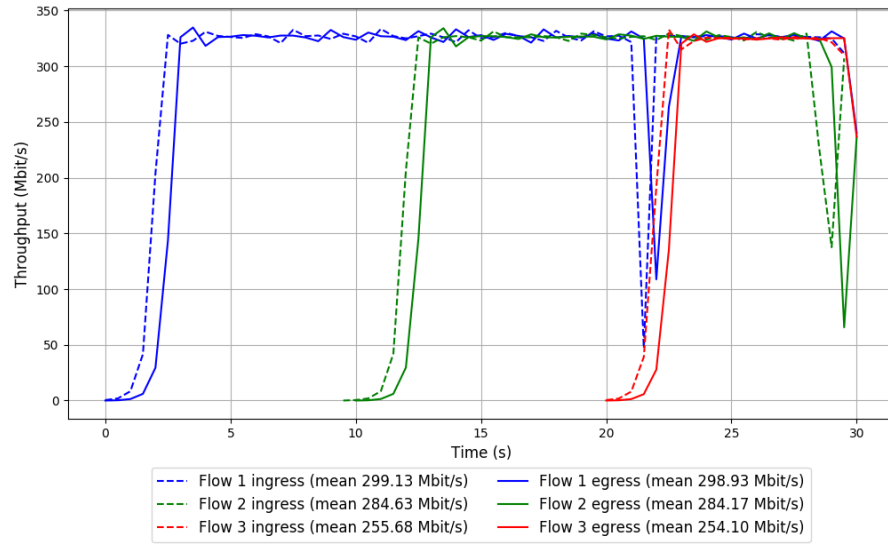


Run 4: Statistics of TCP BBR

Start at: 2018-10-26 05:17:26
End at: 2018-10-26 05:17:56
Local clock offset: -0.077 ms
Remote clock offset: -0.483 ms

Below is generated by plot.py at 2018-10-26 06:14:36
Datalink statistics
-- Total of 3 flows:
Average throughput: 570.83 Mbit/s
95th percentile per-packet one-way delay: 110.237 ms
Loss rate: 1.24%
-- Flow 1:
Average throughput: 298.93 Mbit/s
95th percentile per-packet one-way delay: 109.260 ms
Loss rate: 0.79%
-- Flow 2:
Average throughput: 284.17 Mbit/s
95th percentile per-packet one-way delay: 110.322 ms
Loss rate: 1.25%
-- Flow 3:
Average throughput: 254.10 Mbit/s
95th percentile per-packet one-way delay: 110.459 ms
Loss rate: 2.79%

Run 4: Report of TCP BBR — Data Link

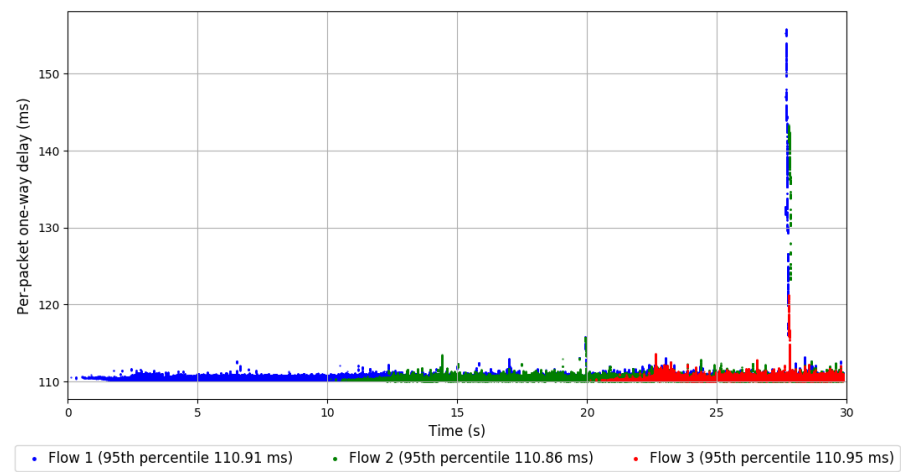
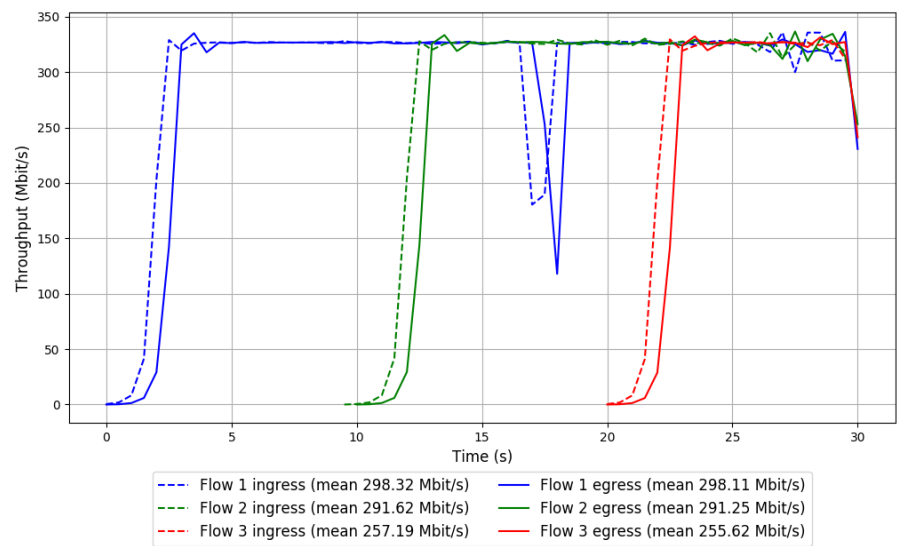


Run 5: Statistics of TCP BBR

Start at: 2018-10-26 05:49:50
End at: 2018-10-26 05:50:20
Local clock offset: 0.486 ms
Remote clock offset: -0.515 ms

Below is generated by plot.py at 2018-10-26 06:14:40
Datalink statistics
-- Total of 3 flows:
Average throughput: 575.29 Mbit/s
95th percentile per-packet one-way delay: 110.899 ms
Loss rate: 1.23%
-- Flow 1:
Average throughput: 298.11 Mbit/s
95th percentile per-packet one-way delay: 110.906 ms
Loss rate: 0.80%
-- Flow 2:
Average throughput: 291.25 Mbit/s
95th percentile per-packet one-way delay: 110.860 ms
Loss rate: 1.22%
-- Flow 3:
Average throughput: 255.62 Mbit/s
95th percentile per-packet one-way delay: 110.951 ms
Loss rate: 2.78%

Run 5: Report of TCP BBR — Data Link



Run 1: Statistics of Copa

Start at: 2018-10-26 03:21:07

End at: 2018-10-26 03:21:37

Local clock offset: 0.867 ms

Remote clock offset: -0.19 ms

Below is generated by plot.py at 2018-10-26 06:22:57

Datalink statistics

-- Total of 3 flows:

Average throughput: 532.14 Mbit/s

95th percentile per-packet one-way delay: 175.507 ms

Loss rate: 1.08%

-- Flow 1:

Average throughput: 271.76 Mbit/s

95th percentile per-packet one-way delay: 167.671 ms

Loss rate: 0.82%

-- Flow 2:

Average throughput: 283.61 Mbit/s

95th percentile per-packet one-way delay: 170.096 ms

Loss rate: 0.97%

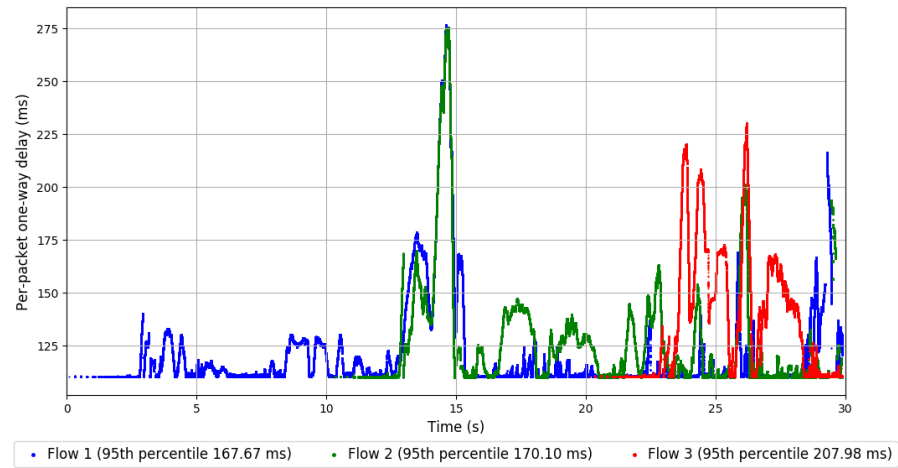
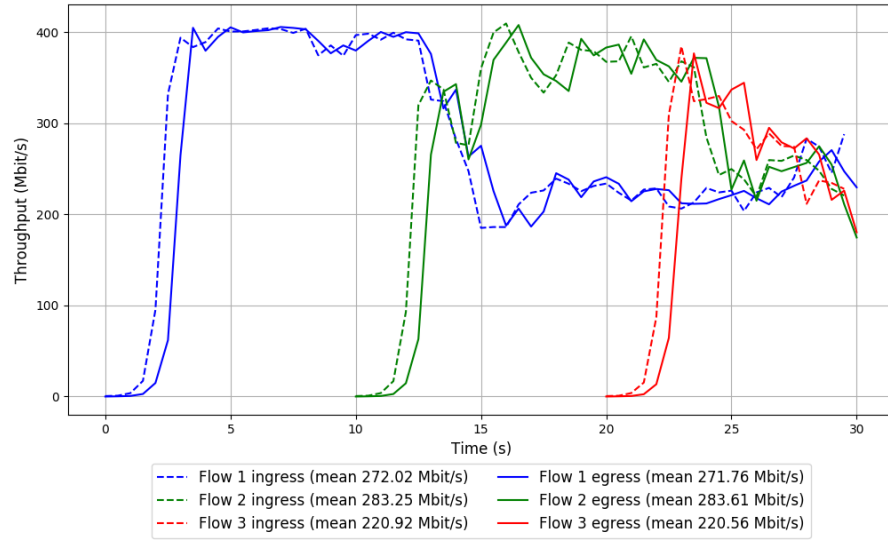
-- Flow 3:

Average throughput: 220.56 Mbit/s

95th percentile per-packet one-way delay: 207.980 ms

Loss rate: 2.35%

Run 1: Report of Copa — Data Link



Run 2: Statistics of Copa

Start at: 2018-10-26 03:52:37

End at: 2018-10-26 03:53:07

Local clock offset: -0.163 ms

Remote clock offset: 0.009 ms

Below is generated by plot.py at 2018-10-26 06:22:57

Datalink statistics

-- Total of 3 flows:

Average throughput: 510.68 Mbit/s

95th percentile per-packet one-way delay: 169.064 ms

Loss rate: 1.19%

-- Flow 1:

Average throughput: 259.26 Mbit/s

95th percentile per-packet one-way delay: 181.759 ms

Loss rate: 0.75%

-- Flow 2:

Average throughput: 272.07 Mbit/s

95th percentile per-packet one-way delay: 160.986 ms

Loss rate: 1.25%

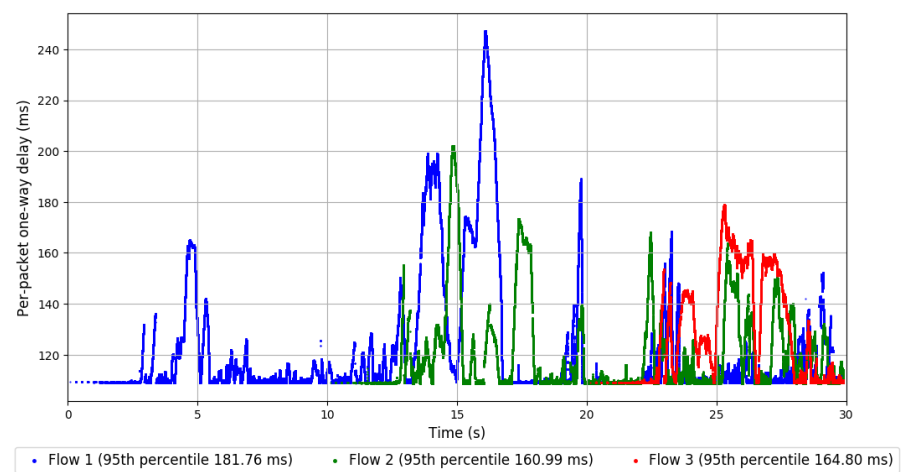
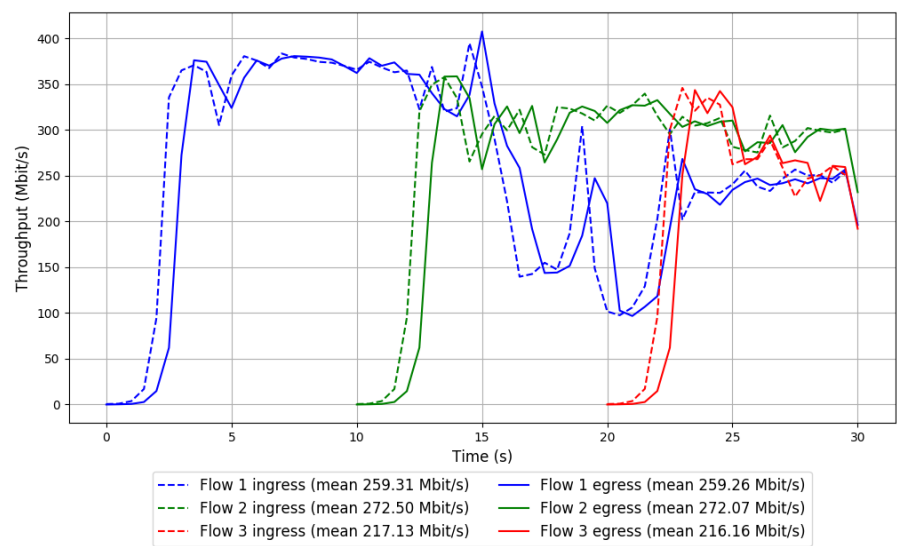
-- Flow 3:

Average throughput: 216.16 Mbit/s

95th percentile per-packet one-way delay: 164.800 ms

Loss rate: 2.62%

Run 2: Report of Copa — Data Link



Run 3: Statistics of Copa

Start at: 2018-10-26 04:24:35

End at: 2018-10-26 04:25:05

Local clock offset: -0.061 ms

Remote clock offset: 0.266 ms

Below is generated by plot.py at 2018-10-26 06:22:57

Datalink statistics

-- Total of 3 flows:

Average throughput: 531.48 Mbit/s

95th percentile per-packet one-way delay: 150.257 ms

Loss rate: 1.25%

-- Flow 1:

Average throughput: 303.13 Mbit/s

95th percentile per-packet one-way delay: 131.965 ms

Loss rate: 0.75%

-- Flow 2:

Average throughput: 234.61 Mbit/s

95th percentile per-packet one-way delay: 155.281 ms

Loss rate: 1.32%

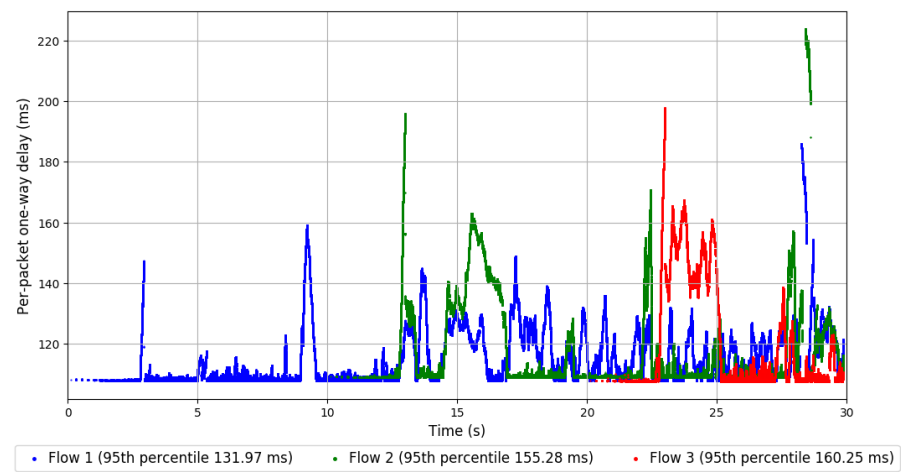
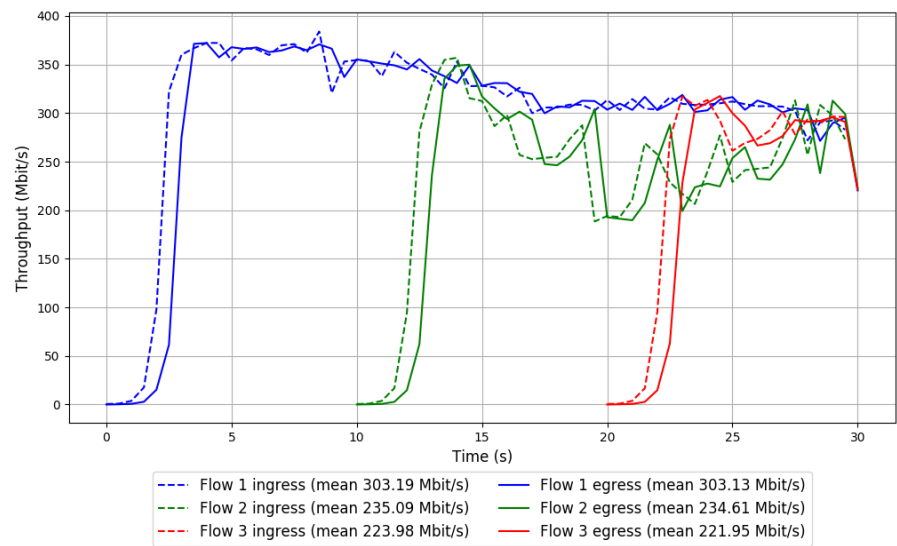
-- Flow 3:

Average throughput: 221.95 Mbit/s

95th percentile per-packet one-way delay: 160.252 ms

Loss rate: 3.11%

Run 3: Report of Copa — Data Link



Run 4: Statistics of Copa

Start at: 2018-10-26 04:56:22

End at: 2018-10-26 04:56:52

Local clock offset: -0.287 ms

Remote clock offset: 0.328 ms

Below is generated by plot.py at 2018-10-26 06:33:33

Datalink statistics

-- Total of 3 flows:

Average throughput: 536.66 Mbit/s

95th percentile per-packet one-way delay: 206.387 ms

Loss rate: 1.19%

-- Flow 1:

Average throughput: 291.56 Mbit/s

95th percentile per-packet one-way delay: 180.712 ms

Loss rate: 0.65%

-- Flow 2:

Average throughput: 254.14 Mbit/s

95th percentile per-packet one-way delay: 236.871 ms

Loss rate: 1.29%

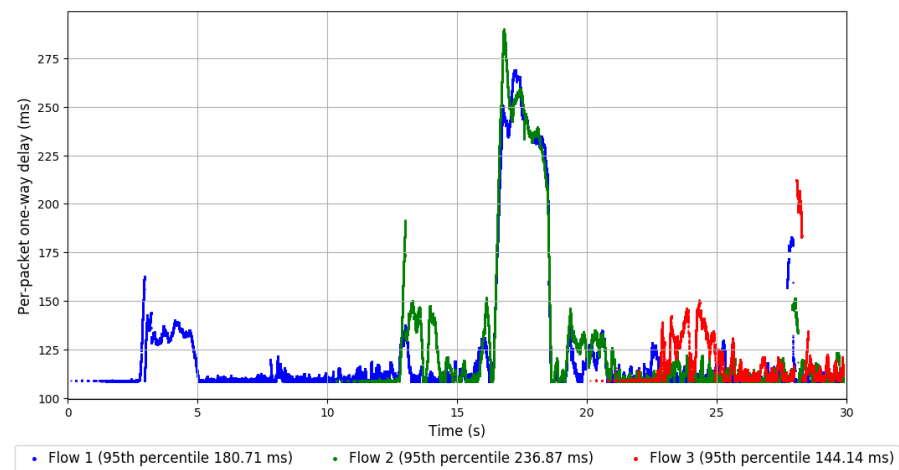
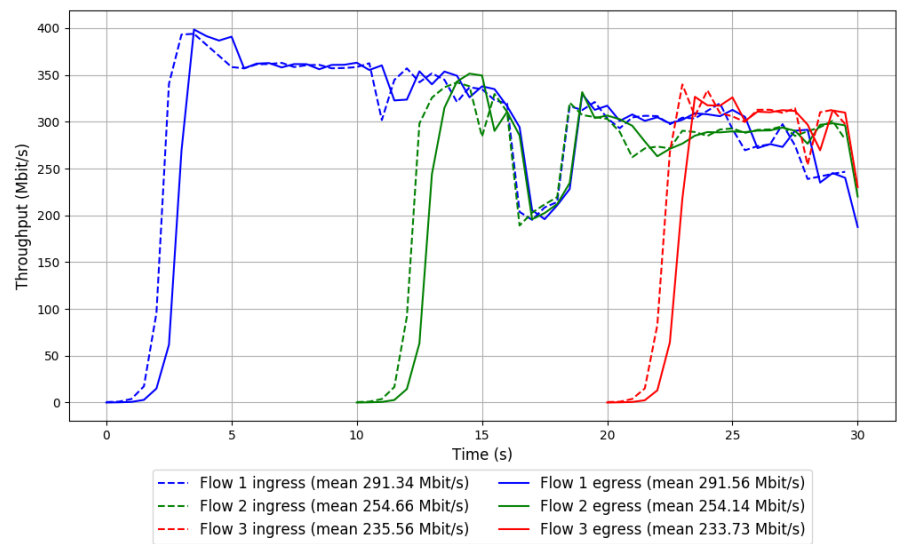
-- Flow 3:

Average throughput: 233.73 Mbit/s

95th percentile per-packet one-way delay: 144.136 ms

Loss rate: 2.96%

Run 4: Report of Copa — Data Link

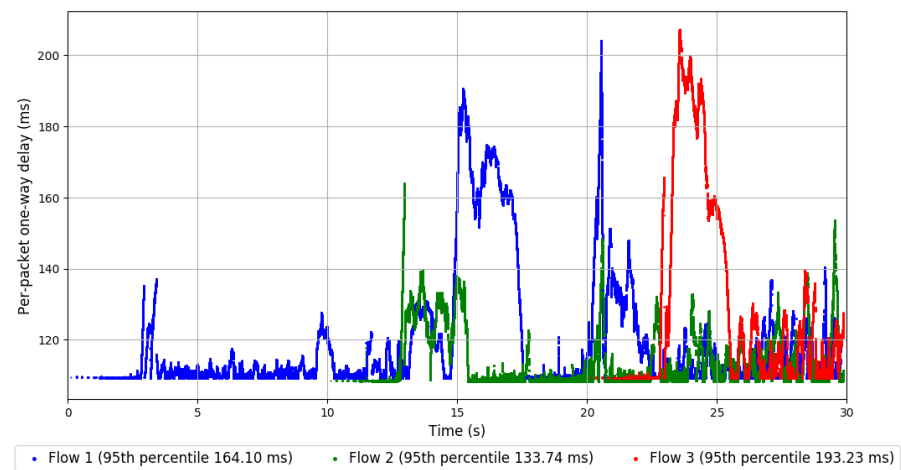
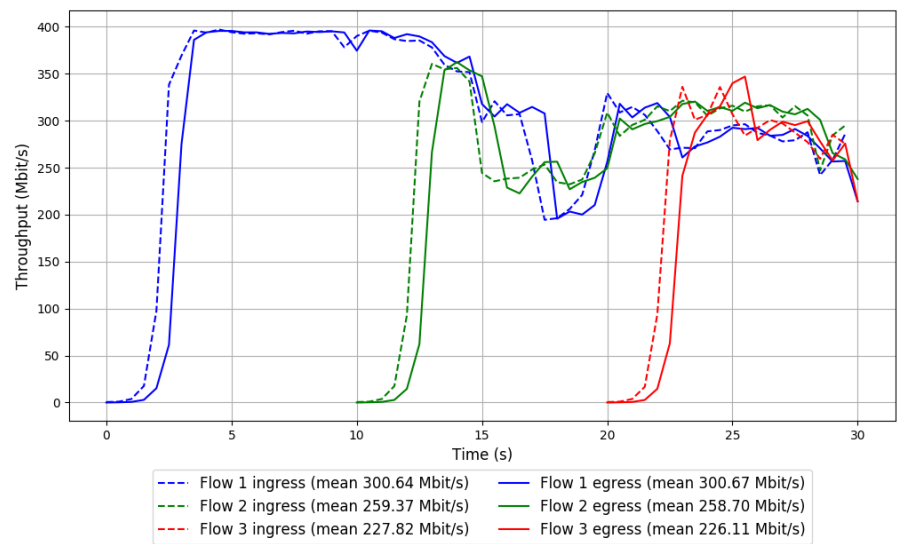


Run 5: Statistics of Copa

Start at: 2018-10-26 05:28:10
End at: 2018-10-26 05:28:40
Local clock offset: -0.017 ms
Remote clock offset: -0.089 ms

Below is generated by plot.py at 2018-10-26 06:33:50
Datalink statistics
-- Total of 3 flows:
Average throughput: 546.43 Mbit/s
95th percentile per-packet one-way delay: 165.606 ms
Loss rate: 1.22%
-- Flow 1:
Average throughput: 300.67 Mbit/s
95th percentile per-packet one-way delay: 164.105 ms
Loss rate: 0.72%
-- Flow 2:
Average throughput: 258.70 Mbit/s
95th percentile per-packet one-way delay: 133.741 ms
Loss rate: 1.35%
-- Flow 3:
Average throughput: 226.11 Mbit/s
95th percentile per-packet one-way delay: 193.227 ms
Loss rate: 2.92%

Run 5: Report of Copa — Data Link



Run 1: Statistics of TCP Cubic

Start at: 2018-10-26 03:40:09

End at: 2018-10-26 03:40:39

Local clock offset: 0.435 ms

Remote clock offset: 0.03 ms

Below is generated by plot.py at 2018-10-26 06:33:50

Datalink statistics

-- Total of 3 flows:

Average throughput: 580.42 Mbit/s

95th percentile per-packet one-way delay: 110.647 ms

Loss rate: 1.22%

-- Flow 1:

Average throughput: 304.10 Mbit/s

95th percentile per-packet one-way delay: 109.722 ms

Loss rate: 0.78%

-- Flow 2:

Average throughput: 288.44 Mbit/s

95th percentile per-packet one-way delay: 111.054 ms

Loss rate: 1.23%

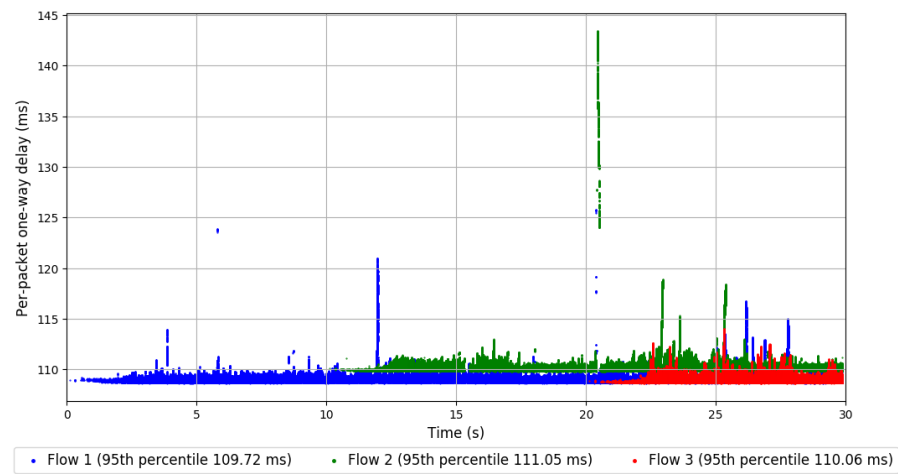
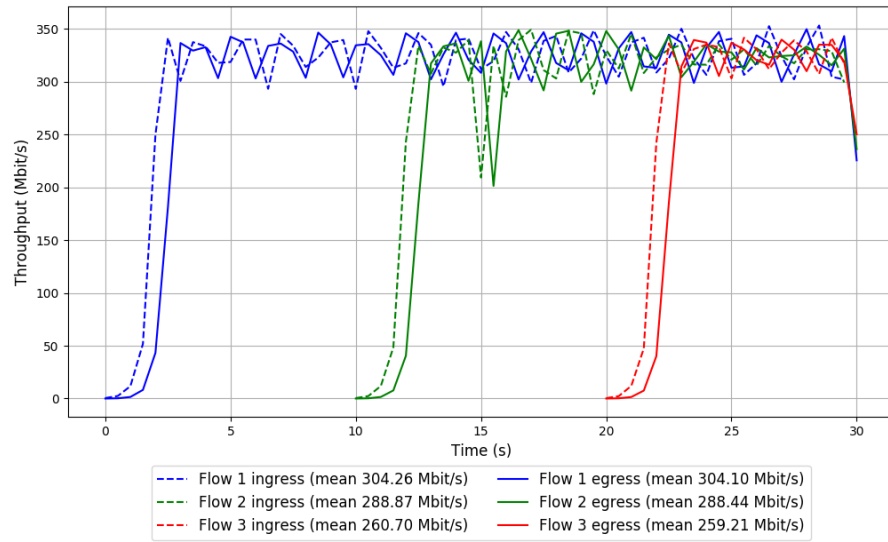
-- Flow 3:

Average throughput: 259.21 Mbit/s

95th percentile per-packet one-way delay: 110.063 ms

Loss rate: 2.74%

Run 1: Report of TCP Cubic — Data Link

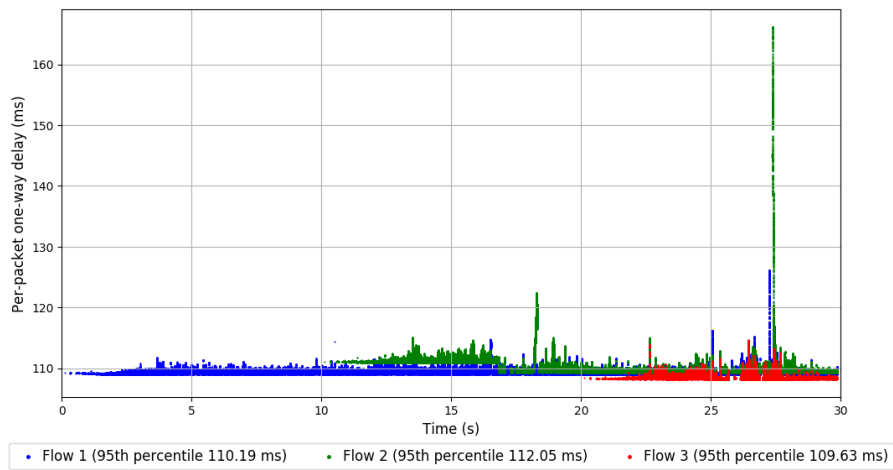
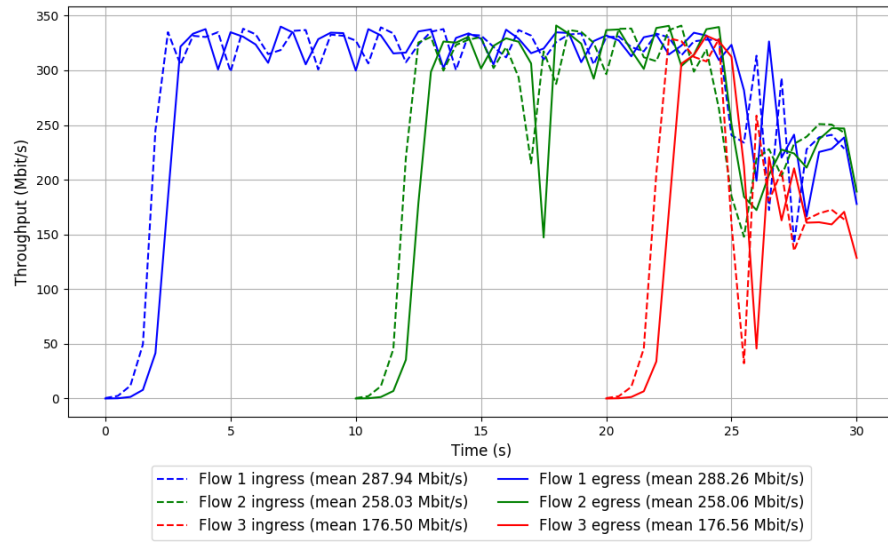


Run 2: Statistics of TCP Cubic

Start at: 2018-10-26 04:12:04
End at: 2018-10-26 04:12:34
Local clock offset: -0.092 ms
Remote clock offset: -0.019 ms

Below is generated by plot.py at 2018-10-26 06:33:50
Datalink statistics
-- Total of 3 flows:
Average throughput: 517.23 Mbit/s
95th percentile per-packet one-way delay: 111.411 ms
Loss rate: 0.96%
-- Flow 1:
Average throughput: 288.26 Mbit/s
95th percentile per-packet one-way delay: 110.191 ms
Loss rate: 0.62%
-- Flow 2:
Average throughput: 258.06 Mbit/s
95th percentile per-packet one-way delay: 112.047 ms
Loss rate: 1.09%
-- Flow 3:
Average throughput: 176.56 Mbit/s
95th percentile per-packet one-way delay: 109.630 ms
Loss rate: 2.21%

Run 2: Report of TCP Cubic — Data Link

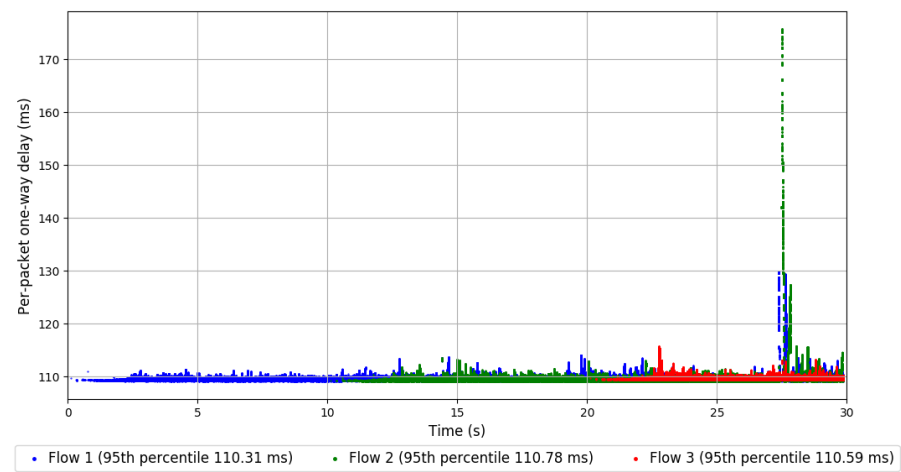
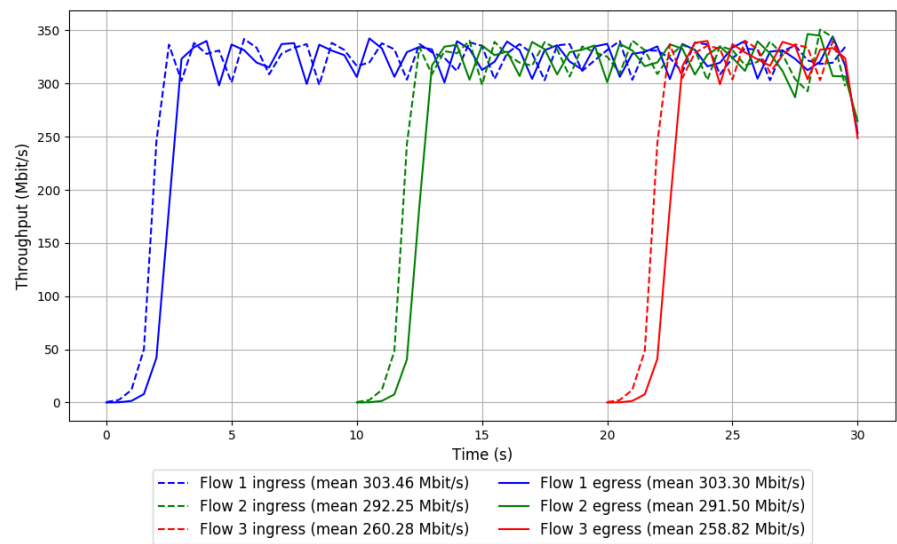


Run 3: Statistics of TCP Cubic

Start at: 2018-10-26 04:43:55
End at: 2018-10-26 04:44:25
Local clock offset: -0.127 ms
Remote clock offset: -0.079 ms

Below is generated by plot.py at 2018-10-26 06:33:50
Datalink statistics
-- Total of 3 flows:
Average throughput: 581.62 Mbit/s
95th percentile per-packet one-way delay: 110.503 ms
Loss rate: 1.22%
-- Flow 1:
Average throughput: 303.30 Mbit/s
95th percentile per-packet one-way delay: 110.312 ms
Loss rate: 0.78%
-- Flow 2:
Average throughput: 291.50 Mbit/s
95th percentile per-packet one-way delay: 110.785 ms
Loss rate: 1.22%
-- Flow 3:
Average throughput: 258.82 Mbit/s
95th percentile per-packet one-way delay: 110.588 ms
Loss rate: 2.73%

Run 3: Report of TCP Cubic — Data Link

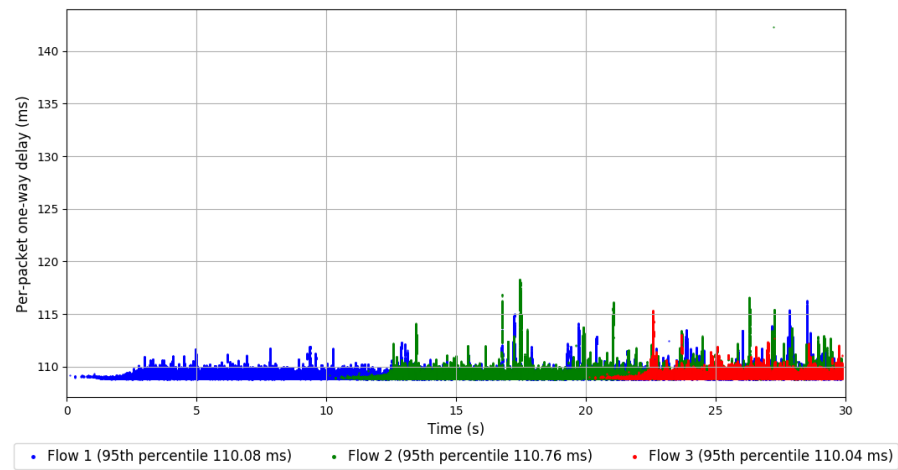
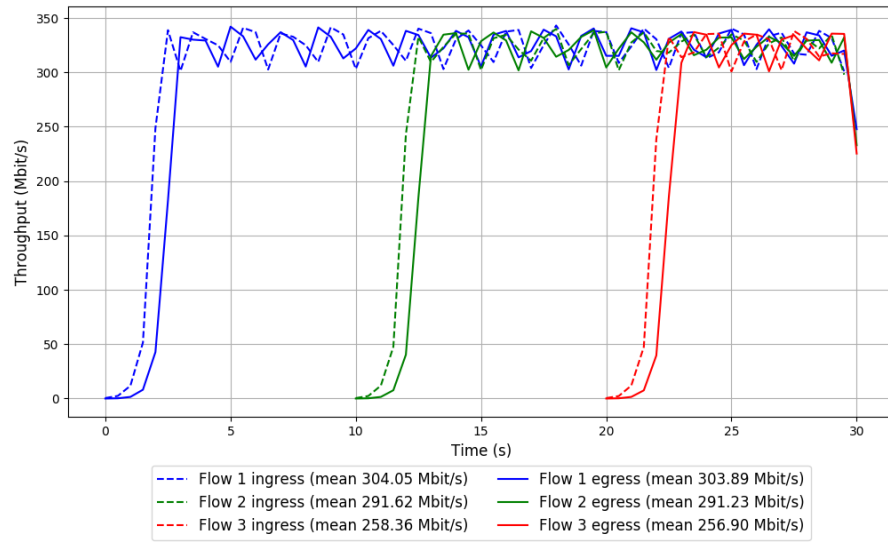


Run 4: Statistics of TCP Cubic

Start at: 2018-10-26 05:15:37
End at: 2018-10-26 05:16:07
Local clock offset: -0.723 ms
Remote clock offset: -0.049 ms

Below is generated by plot.py at 2018-10-26 06:33:50
Datalink statistics
-- Total of 3 flows:
Average throughput: 581.34 Mbit/s
95th percentile per-packet one-way delay: 110.244 ms
Loss rate: 1.22%
-- Flow 1:
Average throughput: 303.89 Mbit/s
95th percentile per-packet one-way delay: 110.078 ms
Loss rate: 0.78%
-- Flow 2:
Average throughput: 291.23 Mbit/s
95th percentile per-packet one-way delay: 110.763 ms
Loss rate: 1.23%
-- Flow 3:
Average throughput: 256.90 Mbit/s
95th percentile per-packet one-way delay: 110.044 ms
Loss rate: 2.75%

Run 4: Report of TCP Cubic — Data Link

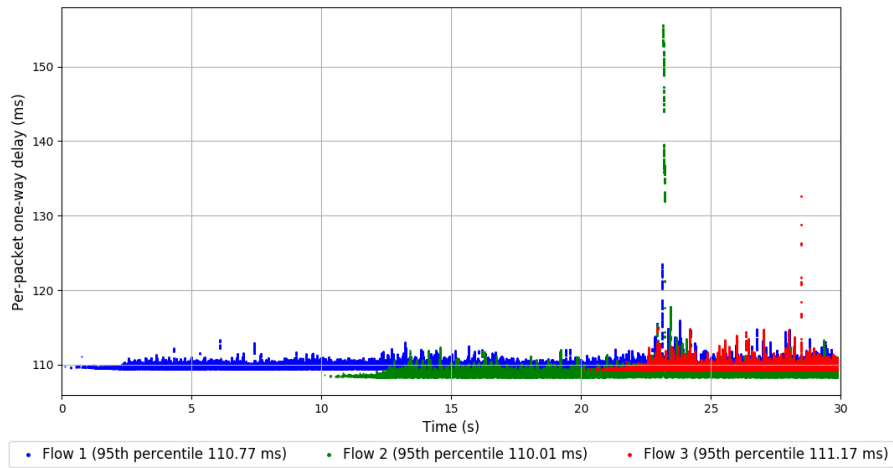
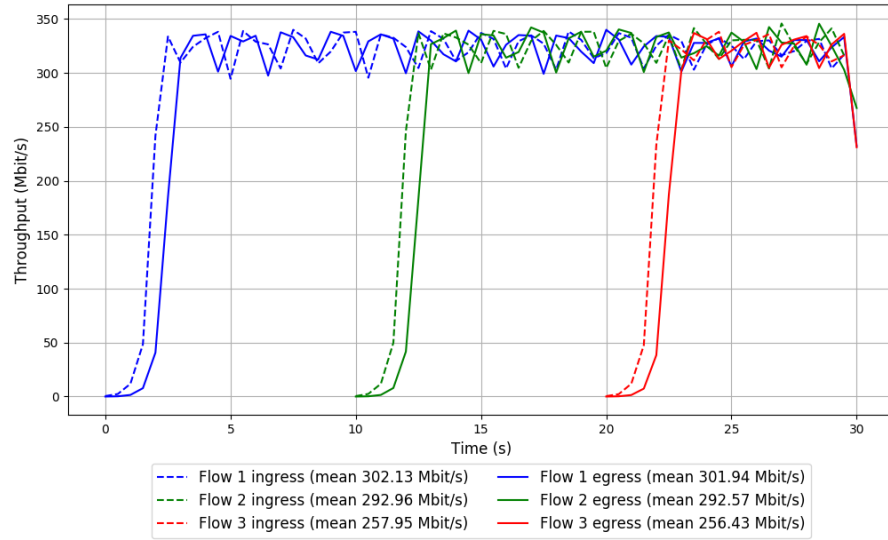


Run 5: Statistics of TCP Cubic

Start at: 2018-10-26 05:47:56
End at: 2018-10-26 05:48:26
Local clock offset: -0.084 ms
Remote clock offset: -0.177 ms

Below is generated by plot.py at 2018-10-26 06:33:50
Datalink statistics
-- Total of 3 flows:
Average throughput: 580.15 Mbit/s
95th percentile per-packet one-way delay: 110.693 ms
Loss rate: 1.22%
-- Flow 1:
Average throughput: 301.94 Mbit/s
95th percentile per-packet one-way delay: 110.766 ms
Loss rate: 0.79%
-- Flow 2:
Average throughput: 292.57 Mbit/s
95th percentile per-packet one-way delay: 110.014 ms
Loss rate: 1.22%
-- Flow 3:
Average throughput: 256.43 Mbit/s
95th percentile per-packet one-way delay: 111.171 ms
Loss rate: 2.78%

Run 5: Report of TCP Cubic — Data Link



Run 1: Statistics of FillP

Start at: 2018-10-26 03:17:43

End at: 2018-10-26 03:18:13

Local clock offset: 0.446 ms

Remote clock offset: -0.14 ms

Below is generated by plot.py at 2018-10-26 06:48:55

Datalink statistics

-- Total of 3 flows:

Average throughput: 1161.39 Mbit/s

95th percentile per-packet one-way delay: 174.130 ms

Loss rate: 2.45%

-- Flow 1:

Average throughput: 623.48 Mbit/s

95th percentile per-packet one-way delay: 190.183 ms

Loss rate: 2.96%

-- Flow 2:

Average throughput: 584.01 Mbit/s

95th percentile per-packet one-way delay: 155.158 ms

Loss rate: 1.38%

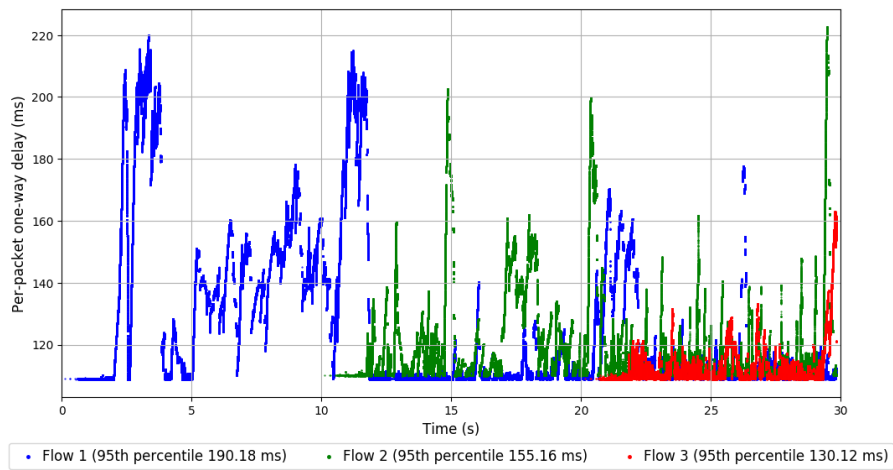
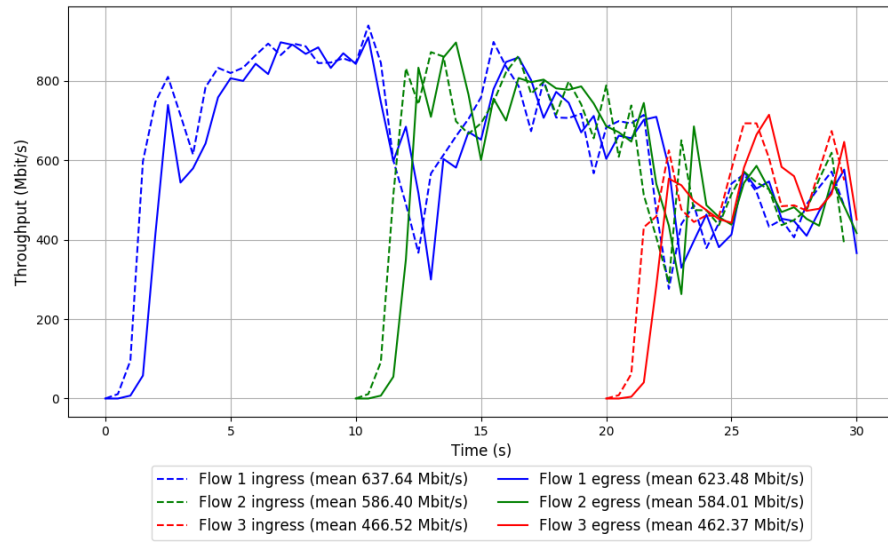
-- Flow 3:

Average throughput: 462.37 Mbit/s

95th percentile per-packet one-way delay: 130.118 ms

Loss rate: 3.07%

Run 1: Report of FillP — Data Link



Run 2: Statistics of FillP

Start at: 2018-10-26 03:49:09

End at: 2018-10-26 03:49:39

Local clock offset: -0.243 ms

Remote clock offset: 0.046 ms

Below is generated by plot.py at 2018-10-26 06:52:23

Datalink statistics

-- Total of 3 flows:

Average throughput: 1220.81 Mbit/s

95th percentile per-packet one-way delay: 184.210 ms

Loss rate: 3.64%

-- Flow 1:

Average throughput: 673.58 Mbit/s

95th percentile per-packet one-way delay: 183.613 ms

Loss rate: 3.70%

-- Flow 2:

Average throughput: 575.02 Mbit/s

95th percentile per-packet one-way delay: 188.581 ms

Loss rate: 3.28%

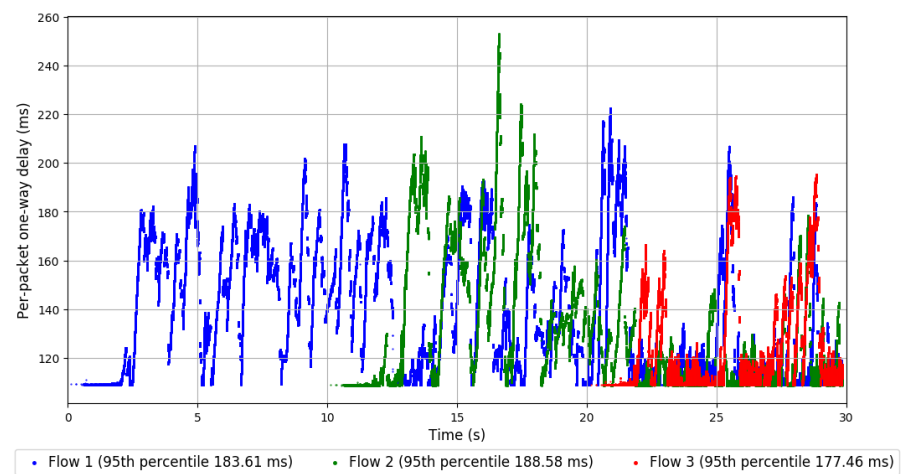
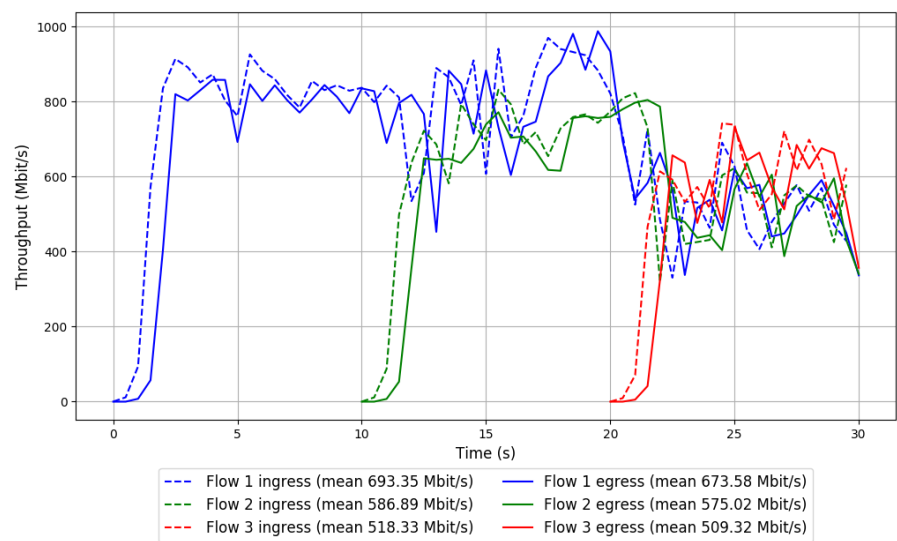
-- Flow 3:

Average throughput: 509.32 Mbit/s

95th percentile per-packet one-way delay: 177.456 ms

Loss rate: 4.26%

Run 2: Report of FillP — Data Link

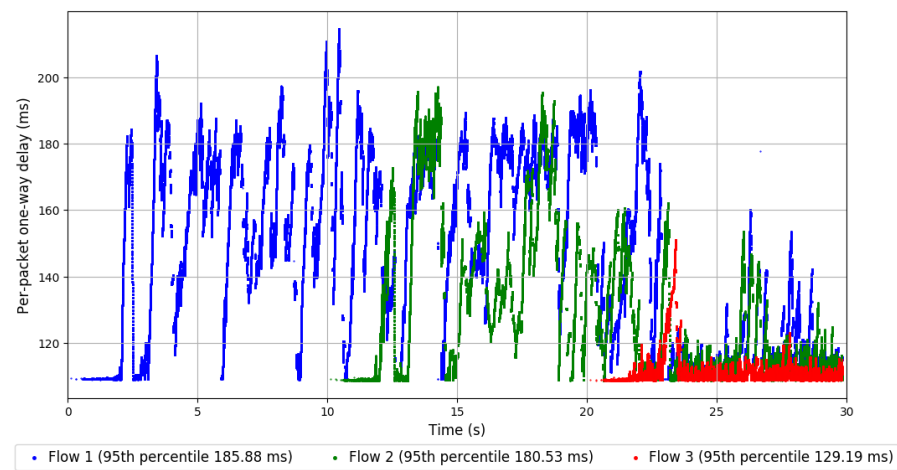
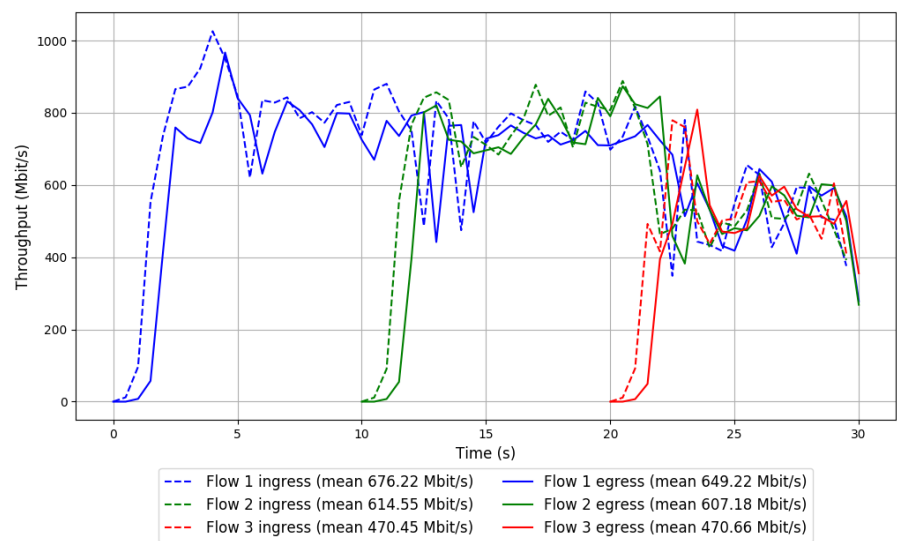


Run 3: Statistics of FillP

Start at: 2018-10-26 04:21:08
End at: 2018-10-26 04:21:38
Local clock offset: -0.235 ms
Remote clock offset: -0.132 ms

Below is generated by plot.py at 2018-10-26 06:53:37
Datalink statistics
-- Total of 3 flows:
Average throughput: 1205.24 Mbit/s
95th percentile per-packet one-way delay: 184.006 ms
Loss rate: 3.58%
-- Flow 1:
Average throughput: 649.22 Mbit/s
95th percentile per-packet one-way delay: 185.876 ms
Loss rate: 4.71%
-- Flow 2:
Average throughput: 607.18 Mbit/s
95th percentile per-packet one-way delay: 180.526 ms
Loss rate: 2.28%
-- Flow 3:
Average throughput: 470.66 Mbit/s
95th percentile per-packet one-way delay: 129.194 ms
Loss rate: 2.07%

Run 3: Report of FillP — Data Link

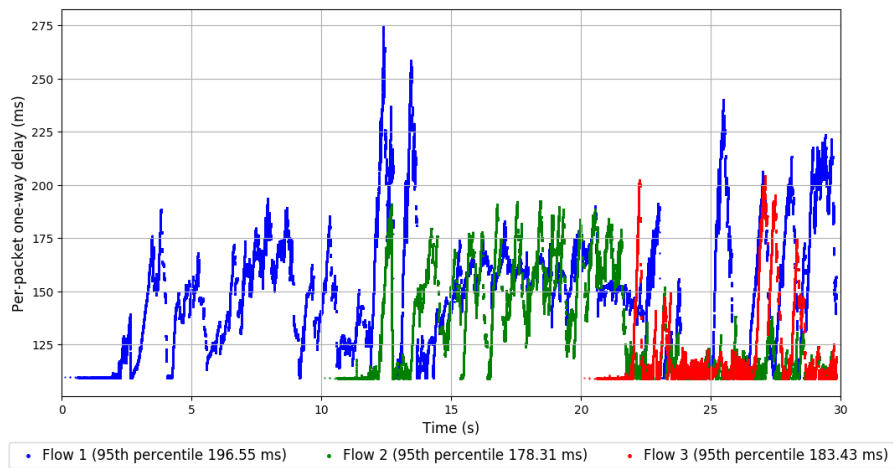
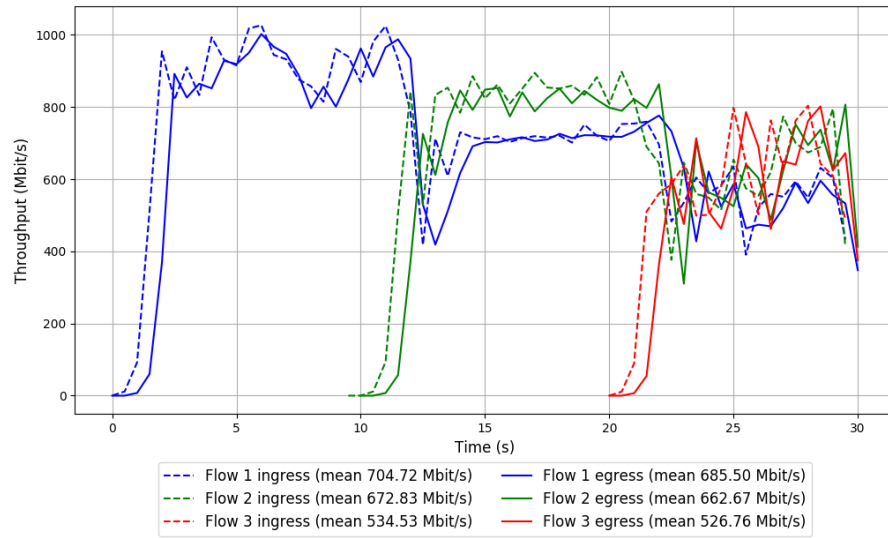


Run 4: Statistics of FillP

Start at: 2018-10-26 04:52:51
End at: 2018-10-26 04:53:21
Local clock offset: -0.284 ms
Remote clock offset: -0.042 ms

Below is generated by plot.py at 2018-10-26 06:56:27
Datalink statistics
-- Total of 3 flows:
Average throughput: 1297.31 Mbit/s
95th percentile per-packet one-way delay: 185.277 ms
Loss rate: 3.17%
-- Flow 1:
Average throughput: 685.50 Mbit/s
95th percentile per-packet one-way delay: 196.548 ms
Loss rate: 3.44%
-- Flow 2:
Average throughput: 662.67 Mbit/s
95th percentile per-packet one-way delay: 178.313 ms
Loss rate: 2.54%
-- Flow 3:
Average throughput: 526.76 Mbit/s
95th percentile per-packet one-way delay: 183.430 ms
Loss rate: 3.64%

Run 4: Report of FillP — Data Link

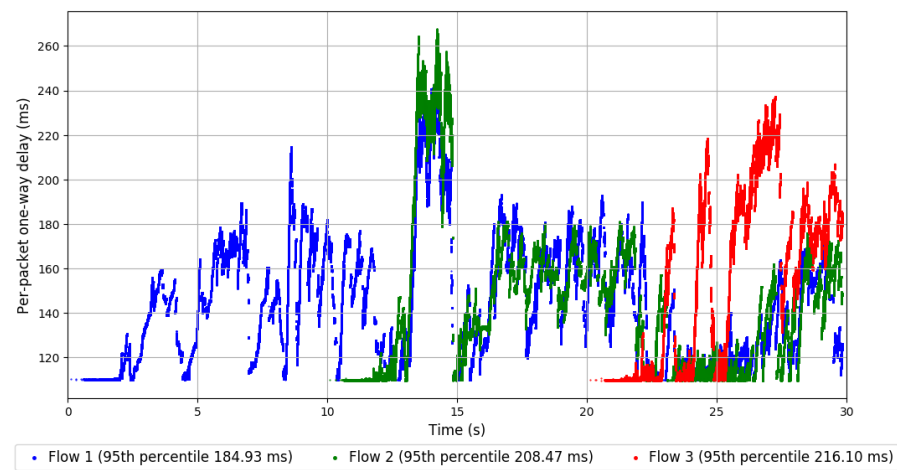
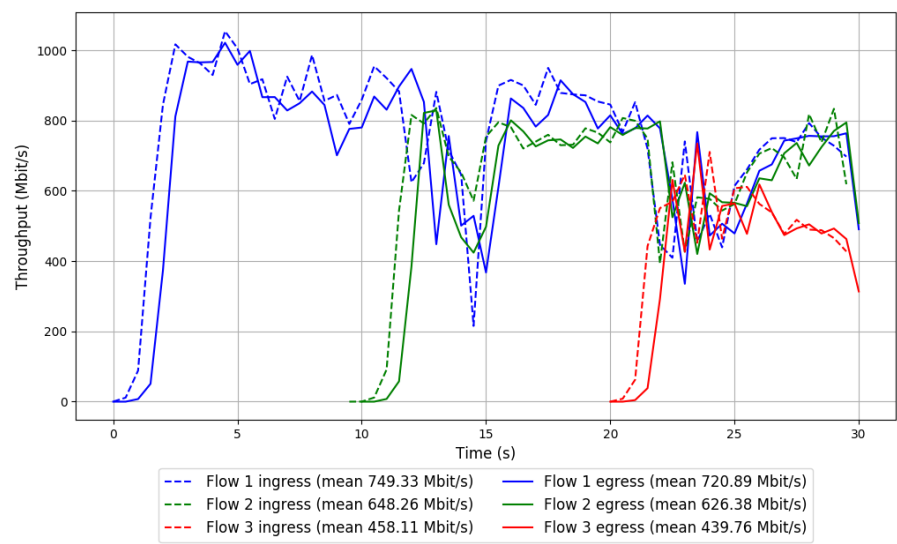


Run 5: Statistics of FillP

Start at: 2018-10-26 05:24:40
End at: 2018-10-26 05:25:10
Local clock offset: 0.5 ms
Remote clock offset: -0.106 ms

Below is generated by plot.py at 2018-10-26 07:03:07
Datalink statistics
-- Total of 3 flows:
Average throughput: 1280.23 Mbit/s
95th percentile per-packet one-way delay: 198.581 ms
Loss rate: 4.66%
-- Flow 1:
Average throughput: 720.89 Mbit/s
95th percentile per-packet one-way delay: 184.929 ms
Loss rate: 4.50%
-- Flow 2:
Average throughput: 626.38 Mbit/s
95th percentile per-packet one-way delay: 208.471 ms
Loss rate: 4.43%
-- Flow 3:
Average throughput: 439.76 Mbit/s
95th percentile per-packet one-way delay: 216.103 ms
Loss rate: 6.10%

Run 5: Report of FillP — Data Link

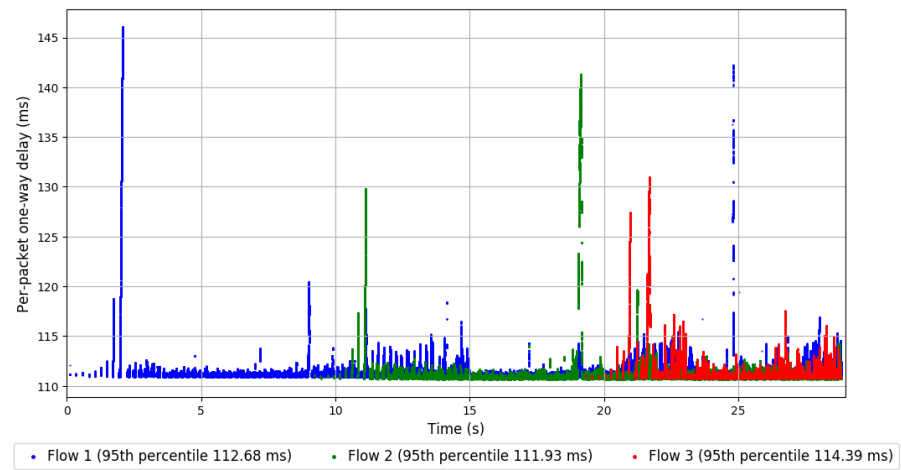
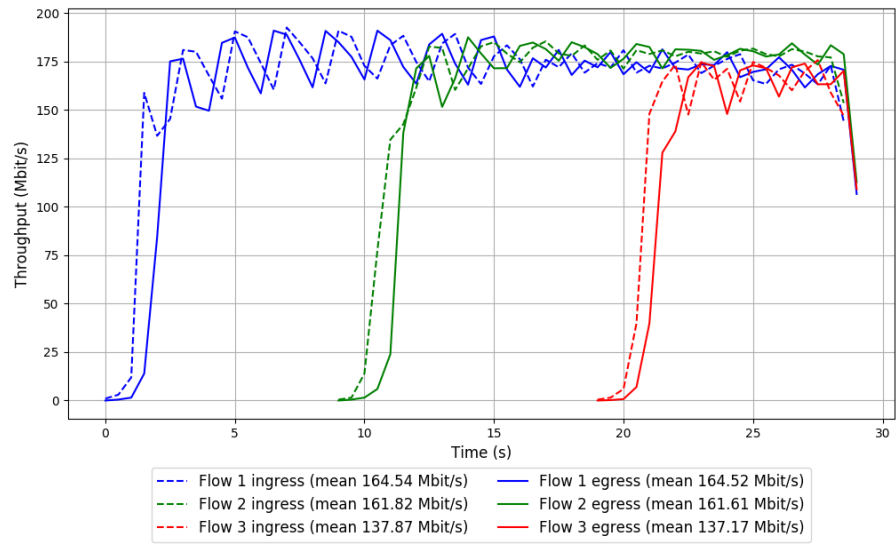


Run 1: Statistics of Indigo

Start at: 2018-10-26 03:37:04
End at: 2018-10-26 03:37:34
Local clock offset: 1.303 ms
Remote clock offset: -0.242 ms

Below is generated by plot.py at 2018-10-26 07:03:07
Datalink statistics
-- Total of 3 flows:
Average throughput: 320.08 Mbit/s
95th percentile per-packet one-way delay: 112.663 ms
Loss rate: 1.21%
-- Flow 1:
Average throughput: 164.52 Mbit/s
95th percentile per-packet one-way delay: 112.678 ms
Loss rate: 0.77%
-- Flow 2:
Average throughput: 161.61 Mbit/s
95th percentile per-packet one-way delay: 111.931 ms
Loss rate: 1.24%
-- Flow 3:
Average throughput: 137.17 Mbit/s
95th percentile per-packet one-way delay: 114.387 ms
Loss rate: 2.75%

Run 1: Report of Indigo — Data Link

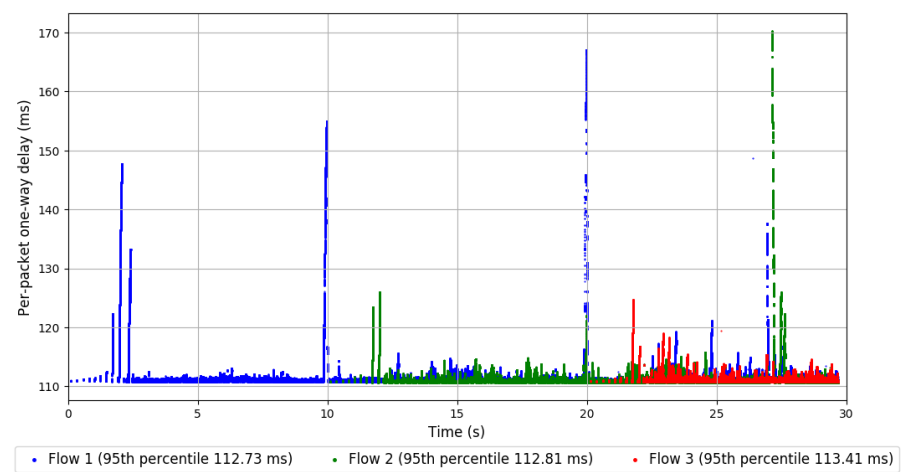
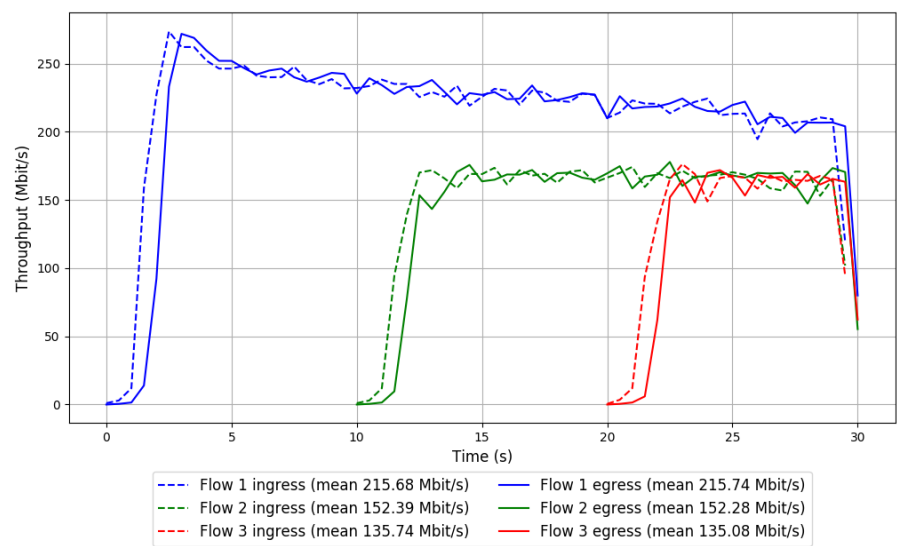


Run 2: Statistics of Indigo

Start at: 2018-10-26 04:08:53
End at: 2018-10-26 04:09:23
Local clock offset: 1.207 ms
Remote clock offset: -0.348 ms

Below is generated by plot.py at 2018-10-26 07:03:07
Datalink statistics
-- Total of 3 flows:
Average throughput: 360.04 Mbit/s
95th percentile per-packet one-way delay: 112.826 ms
Loss rate: 1.09%
-- Flow 1:
Average throughput: 215.74 Mbit/s
95th percentile per-packet one-way delay: 112.729 ms
Loss rate: 0.71%
-- Flow 2:
Average throughput: 152.28 Mbit/s
95th percentile per-packet one-way delay: 112.807 ms
Loss rate: 1.18%
-- Flow 3:
Average throughput: 135.08 Mbit/s
95th percentile per-packet one-way delay: 113.414 ms
Loss rate: 2.71%

Run 2: Report of Indigo — Data Link

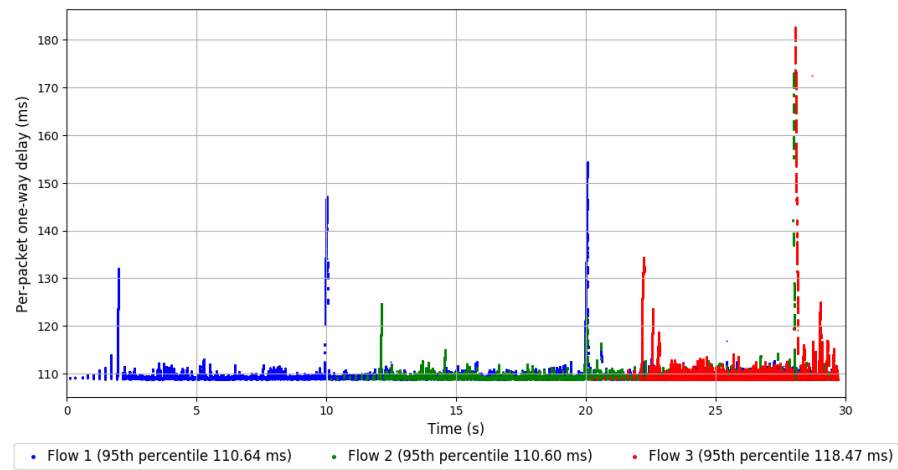
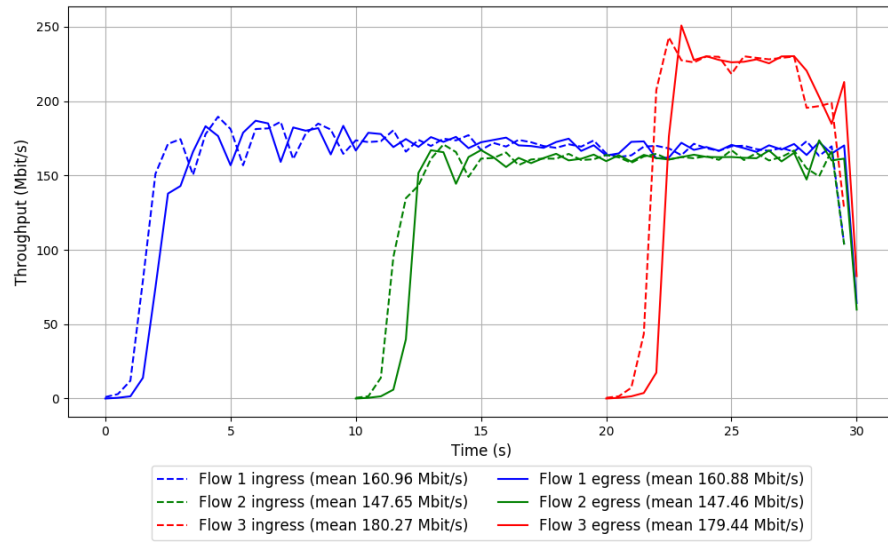


Run 3: Statistics of Indigo

Start at: 2018-10-26 04:40:49
End at: 2018-10-26 04:41:19
Local clock offset: -0.751 ms
Remote clock offset: -0.447 ms

Below is generated by plot.py at 2018-10-26 07:03:07
Datalink statistics
-- Total of 3 flows:
Average throughput: 315.68 Mbit/s
95th percentile per-packet one-way delay: 111.397 ms
Loss rate: 1.27%
-- Flow 1:
Average throughput: 160.88 Mbit/s
95th percentile per-packet one-way delay: 110.637 ms
Loss rate: 0.77%
-- Flow 2:
Average throughput: 147.46 Mbit/s
95th percentile per-packet one-way delay: 110.597 ms
Loss rate: 1.23%
-- Flow 3:
Average throughput: 179.44 Mbit/s
95th percentile per-packet one-way delay: 118.470 ms
Loss rate: 2.69%

Run 3: Report of Indigo — Data Link



Run 4: Statistics of Indigo

Start at: 2018-10-26 05:12:28

End at: 2018-10-26 05:12:58

Local clock offset: -0.381 ms

Remote clock offset: 0.368 ms

Below is generated by plot.py at 2018-10-26 07:03:07

Datalink statistics

-- Total of 3 flows:

Average throughput: 337.67 Mbit/s

95th percentile per-packet one-way delay: 113.785 ms

Loss rate: 1.10%

-- Flow 1:

Average throughput: 193.93 Mbit/s

95th percentile per-packet one-way delay: 117.046 ms

Loss rate: 0.67%

-- Flow 2:

Average throughput: 152.93 Mbit/s

95th percentile per-packet one-way delay: 112.197 ms

Loss rate: 1.20%

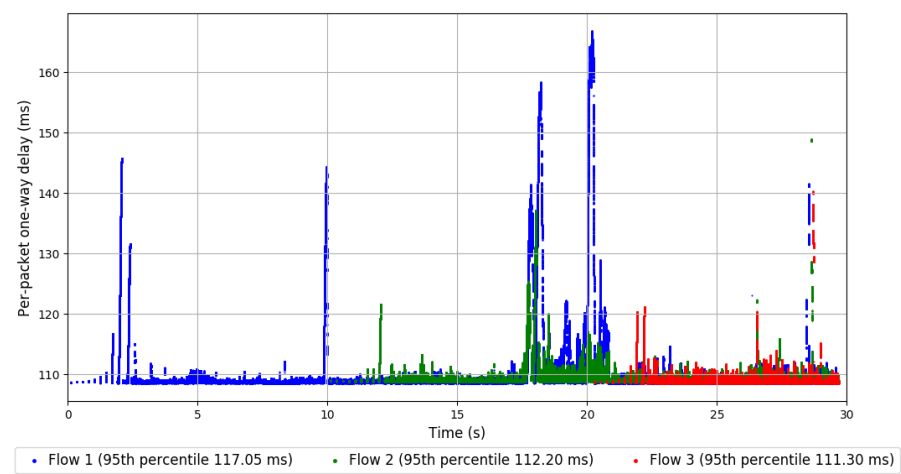
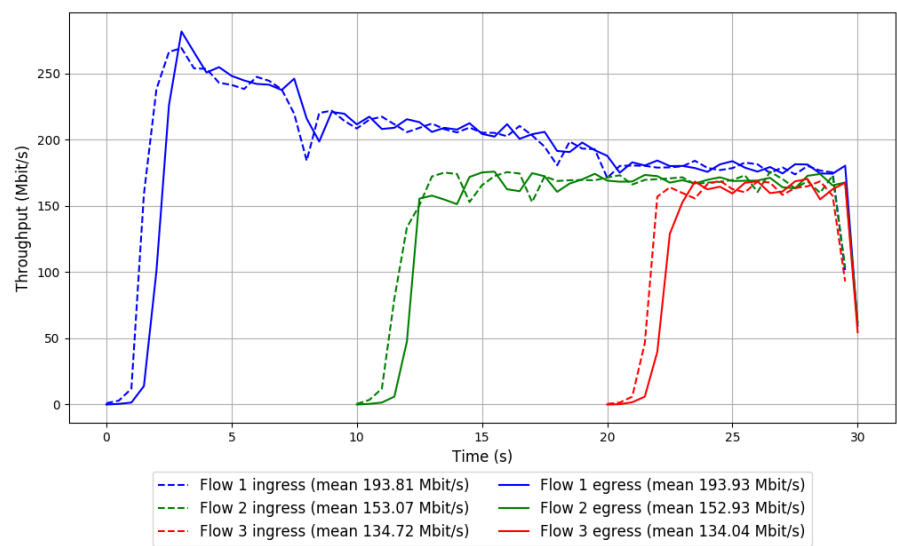
-- Flow 3:

Average throughput: 134.04 Mbit/s

95th percentile per-packet one-way delay: 111.301 ms

Loss rate: 2.78%

Run 4: Report of Indigo — Data Link

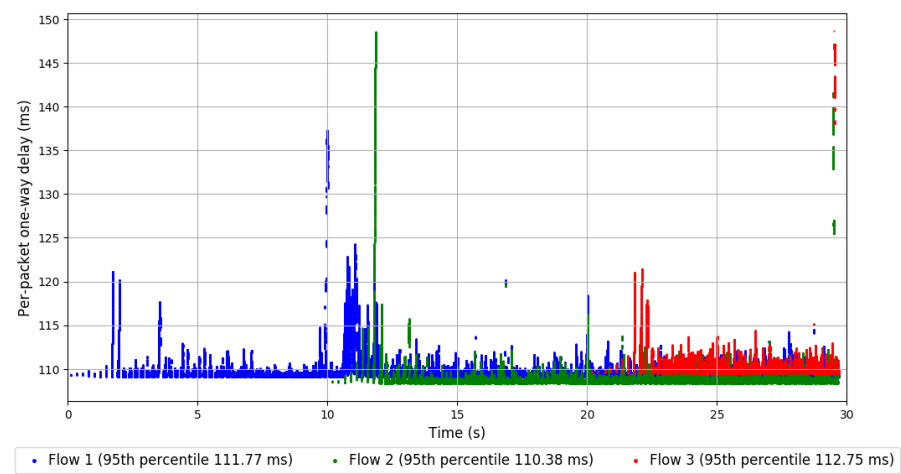
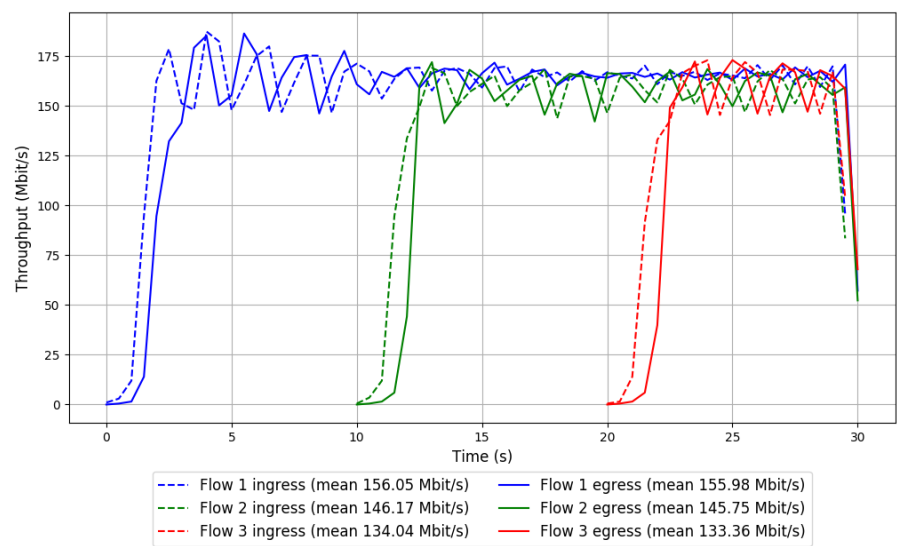


Run 5: Statistics of Indigo

Start at: 2018-10-26 05:44:49
End at: 2018-10-26 05:45:19
Local clock offset: 0.089 ms
Remote clock offset: -0.135 ms

Below is generated by plot.py at 2018-10-26 07:03:07
Datalink statistics
-- Total of 3 flows:
Average throughput: 294.91 Mbit/s
95th percentile per-packet one-way delay: 111.527 ms
Loss rate: 1.22%
-- Flow 1:
Average throughput: 155.98 Mbit/s
95th percentile per-packet one-way delay: 111.773 ms
Loss rate: 0.78%
-- Flow 2:
Average throughput: 145.75 Mbit/s
95th percentile per-packet one-way delay: 110.376 ms
Loss rate: 1.23%
-- Flow 3:
Average throughput: 133.36 Mbit/s
95th percentile per-packet one-way delay: 112.752 ms
Loss rate: 2.75%

Run 5: Report of Indigo — Data Link



Run 1: Statistics of Indigo-96d2da3

Start at: 2018-10-26 03:35:19

End at: 2018-10-26 03:35:49

Local clock offset: 1.418 ms

Remote clock offset: 0.113 ms

Below is generated by plot.py at 2018-10-26 07:03:07

Datalink statistics

-- Total of 3 flows:

Average throughput: 506.00 Mbit/s

95th percentile per-packet one-way delay: 154.381 ms

Loss rate: 1.25%

-- Flow 1:

Average throughput: 262.34 Mbit/s

95th percentile per-packet one-way delay: 149.791 ms

Loss rate: 0.51%

-- Flow 2:

Average throughput: 256.76 Mbit/s

95th percentile per-packet one-way delay: 149.332 ms

Loss rate: 1.09%

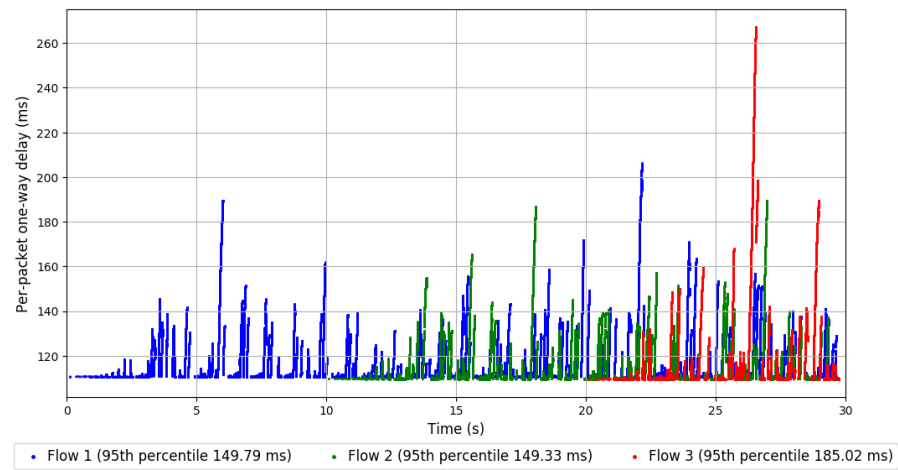
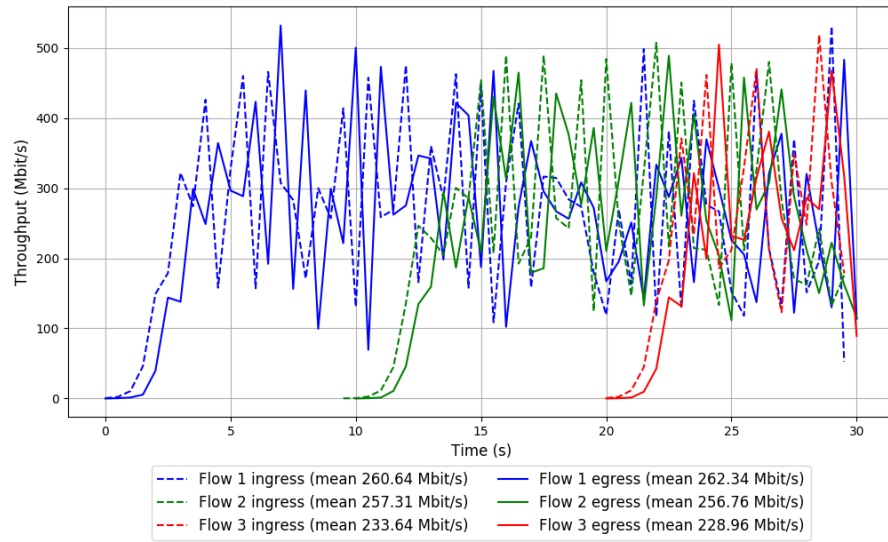
-- Flow 3:

Average throughput: 228.96 Mbit/s

95th percentile per-packet one-way delay: 185.021 ms

Loss rate: 4.10%

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

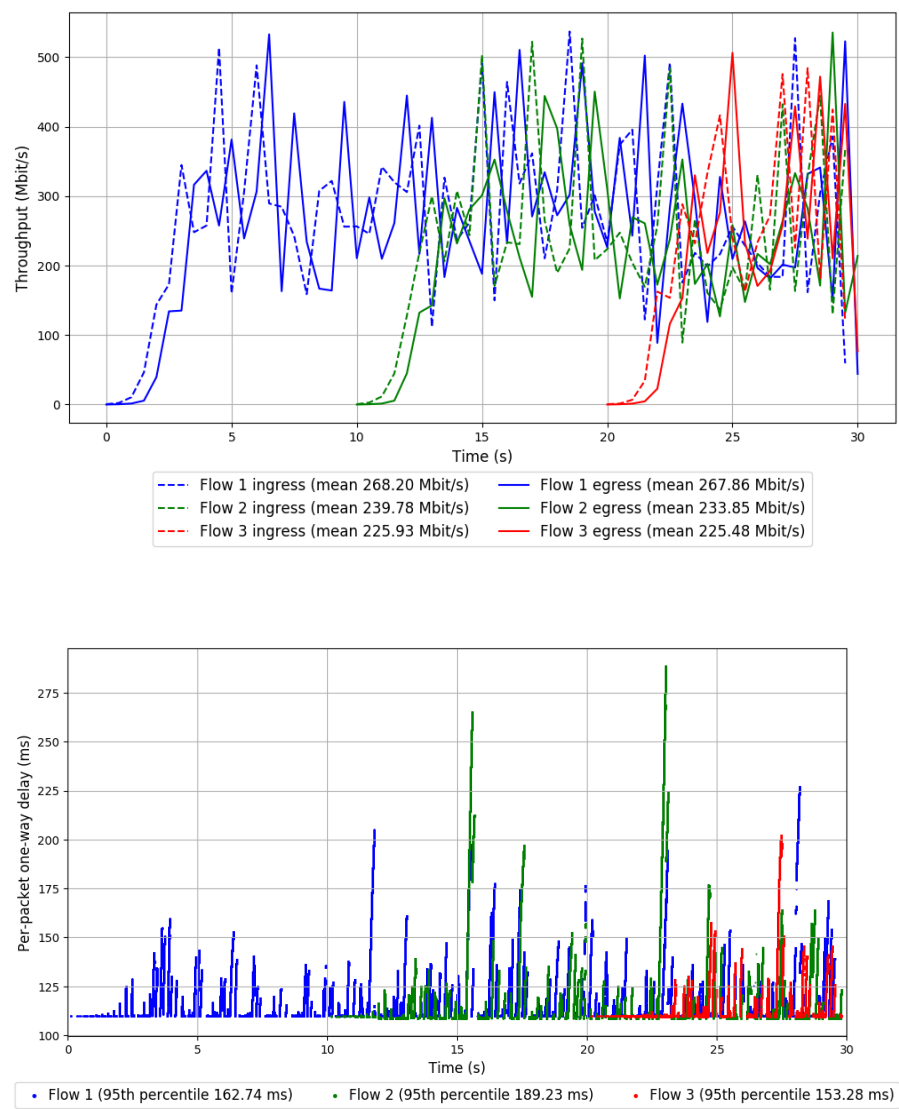


Run 2: Statistics of Indigo-96d2da3

Start at: 2018-10-26 04:07:09
End at: 2018-10-26 04:07:39
Local clock offset: -0.001 ms
Remote clock offset: -0.339 ms

Below is generated by plot.py at 2018-10-26 07:03:07
Datalink statistics
-- Total of 3 flows:
Average throughput: 495.97 Mbit/s
95th percentile per-packet one-way delay: 170.803 ms
Loss rate: 1.70%
-- Flow 1:
Average throughput: 267.86 Mbit/s
95th percentile per-packet one-way delay: 162.735 ms
Loss rate: 0.63%
-- Flow 2:
Average throughput: 233.85 Mbit/s
95th percentile per-packet one-way delay: 189.228 ms
Loss rate: 3.18%
-- Flow 3:
Average throughput: 225.48 Mbit/s
95th percentile per-packet one-way delay: 153.275 ms
Loss rate: 2.42%

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

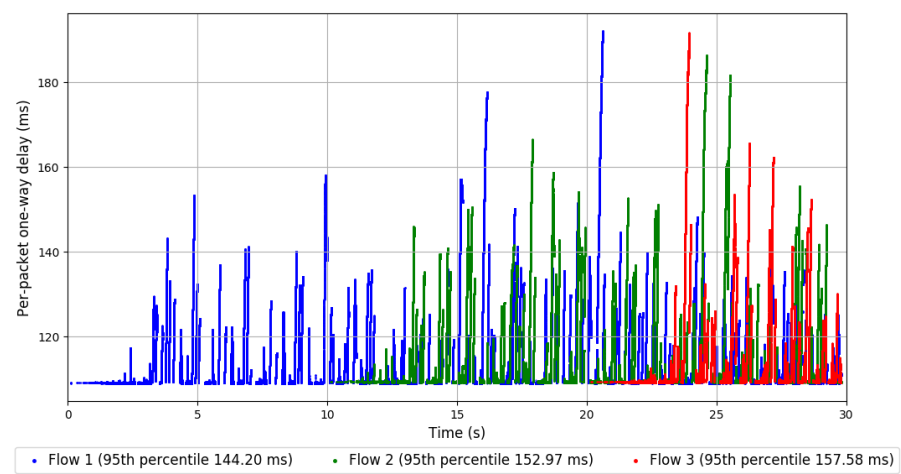
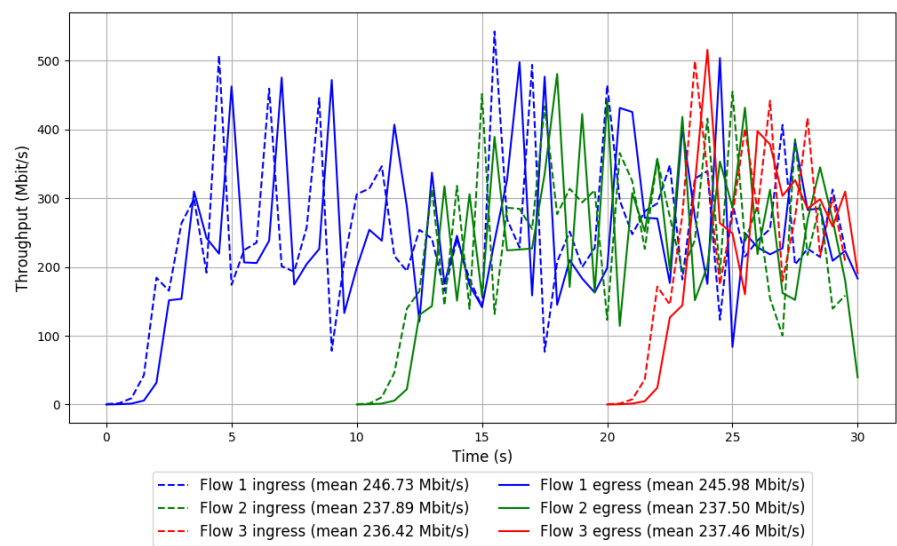


Run 3: Statistics of Indigo-96d2da3

Start at: 2018-10-26 04:39:05
End at: 2018-10-26 04:39:35
Local clock offset: -0.275 ms
Remote clock offset: -0.107 ms

Below is generated by plot.py at 2018-10-26 07:03:07
Datalink statistics
-- Total of 3 flows:
Average throughput: 480.09 Mbit/s
95th percentile per-packet one-way delay: 149.770 ms
Loss rate: 1.19%
-- Flow 1:
Average throughput: 245.98 Mbit/s
95th percentile per-packet one-way delay: 144.200 ms
Loss rate: 0.95%
-- Flow 2:
Average throughput: 237.50 Mbit/s
95th percentile per-packet one-way delay: 152.972 ms
Loss rate: 1.26%
-- Flow 3:
Average throughput: 237.46 Mbit/s
95th percentile per-packet one-way delay: 157.579 ms
Loss rate: 1.81%

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

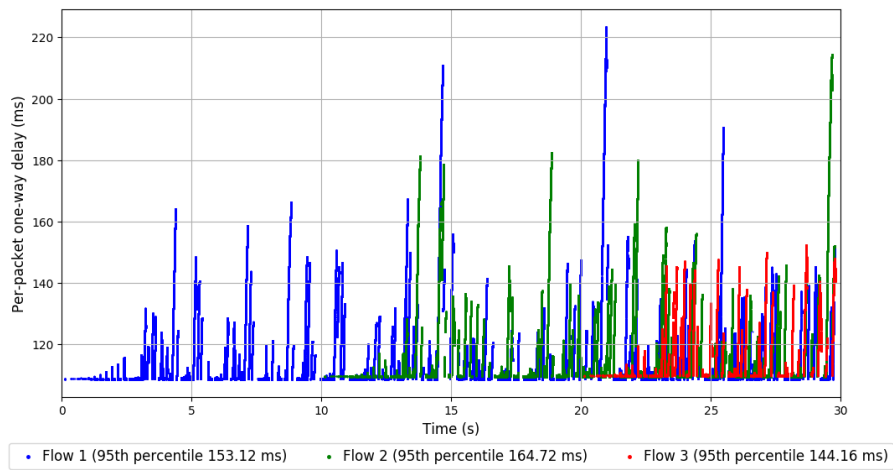
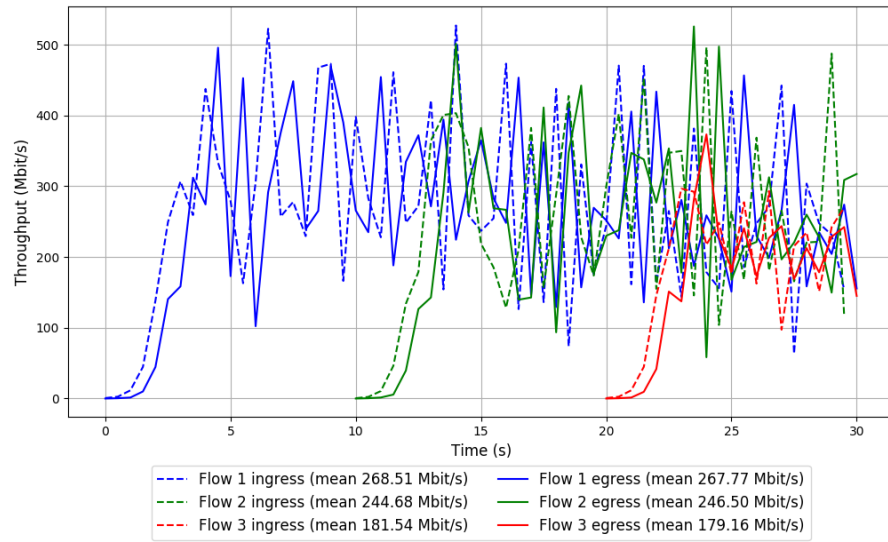


Run 4: Statistics of Indigo-96d2da3

Start at: 2018-10-26 05:10:44
End at: 2018-10-26 05:11:14
Local clock offset: -0.197 ms
Remote clock offset: -0.357 ms

Below is generated by plot.py at 2018-10-26 07:03:25
Datalink statistics
-- Total of 3 flows:
Average throughput: 489.16 Mbit/s
95th percentile per-packet one-way delay: 155.605 ms
Loss rate: 0.99%
-- Flow 1:
Average throughput: 267.77 Mbit/s
95th percentile per-packet one-way delay: 153.125 ms
Loss rate: 0.71%
-- Flow 2:
Average throughput: 246.50 Mbit/s
95th percentile per-packet one-way delay: 164.717 ms
Loss rate: 0.54%
-- Flow 3:
Average throughput: 179.16 Mbit/s
95th percentile per-packet one-way delay: 144.155 ms
Loss rate: 3.48%

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



Run 5: Statistics of Indigo-96d2da3

Start at: 2018-10-26 05:43:05

End at: 2018-10-26 05:43:35

Local clock offset: 0.712 ms

Remote clock offset: 0.219 ms

Below is generated by plot.py at 2018-10-26 07:05:04

Datalink statistics

-- Total of 3 flows:

Average throughput: 485.74 Mbit/s

95th percentile per-packet one-way delay: 158.381 ms

Loss rate: 1.11%

-- Flow 1:

Average throughput: 249.68 Mbit/s

95th percentile per-packet one-way delay: 154.827 ms

Loss rate: 0.63%

-- Flow 2:

Average throughput: 242.17 Mbit/s

95th percentile per-packet one-way delay: 154.468 ms

Loss rate: 0.74%

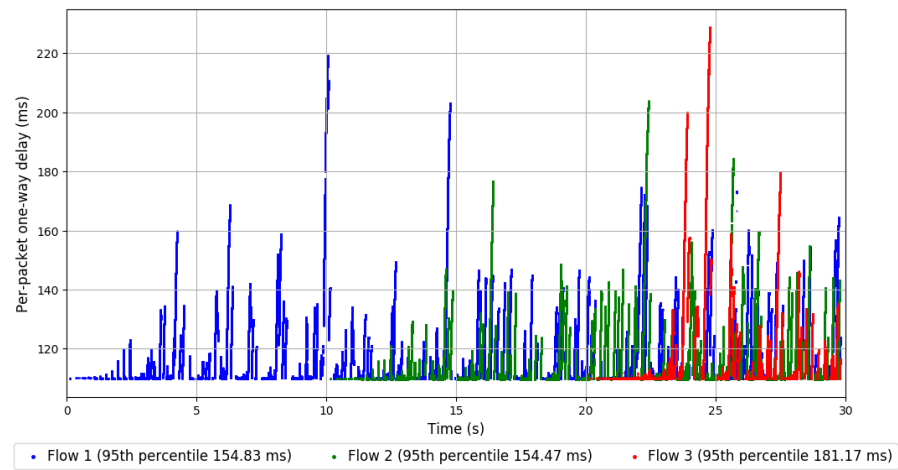
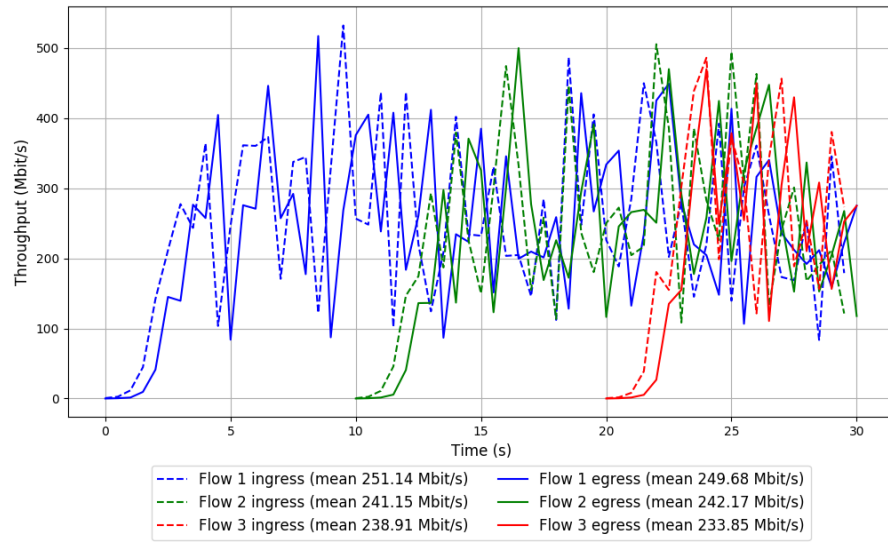
-- Flow 3:

Average throughput: 233.85 Mbit/s

95th percentile per-packet one-way delay: 181.168 ms

Loss rate: 3.41%

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

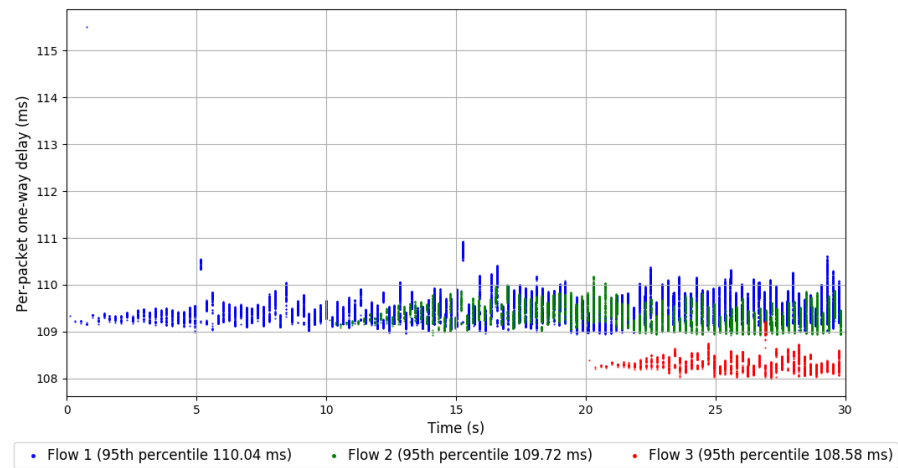
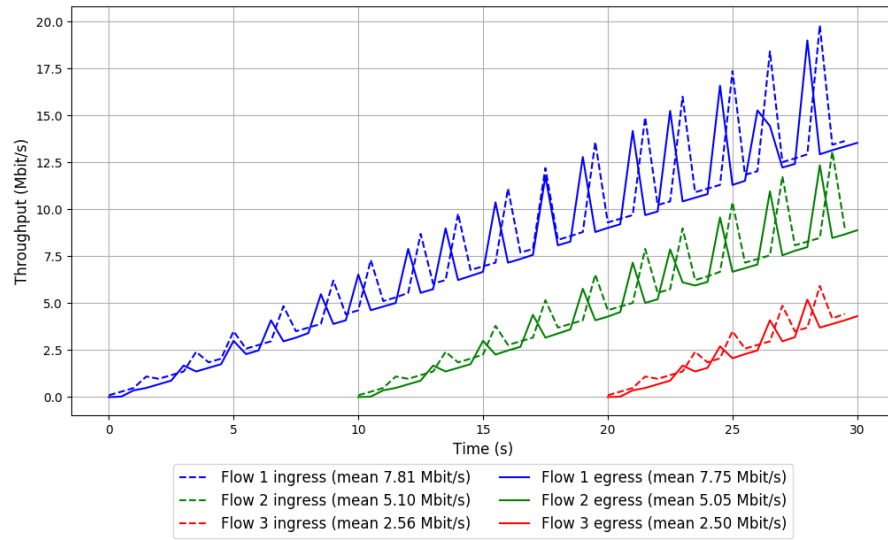


```
Run 1: Statistics of LEDBAT

Start at: 2018-10-26 03:38:52
End at: 2018-10-26 03:39:22
Local clock offset: -0.08 ms
Remote clock offset: 0.124 ms

# Below is generated by plot.py at 2018-10-26 07:05:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 11.89 Mbit/s
95th percentile per-packet one-way delay: 109.970 ms
Loss rate: 1.89%
-- Flow 1:
Average throughput: 7.75 Mbit/s
95th percentile per-packet one-way delay: 110.043 ms
Loss rate: 1.47%
-- Flow 2:
Average throughput: 5.05 Mbit/s
95th percentile per-packet one-way delay: 109.715 ms
Loss rate: 2.23%
-- Flow 3:
Average throughput: 2.50 Mbit/s
95th percentile per-packet one-way delay: 108.583 ms
Loss rate: 4.46%
```

Run 1: Report of LEDBAT — Data Link



Run 2: Statistics of LEDBAT

Start at: 2018-10-26 04:10:47

End at: 2018-10-26 04:11:17

Local clock offset: -0.005 ms

Remote clock offset: 0.408 ms

Below is generated by plot.py at 2018-10-26 07:05:04

Datalink statistics

-- Total of 3 flows:

Average throughput: 11.97 Mbit/s

95th percentile per-packet one-way delay: 110.228 ms

Loss rate: 1.89%

-- Flow 1:

Average throughput: 7.74 Mbit/s

95th percentile per-packet one-way delay: 110.355 ms

Loss rate: 1.47%

-- Flow 2:

Average throughput: 5.17 Mbit/s

95th percentile per-packet one-way delay: 109.772 ms

Loss rate: 2.20%

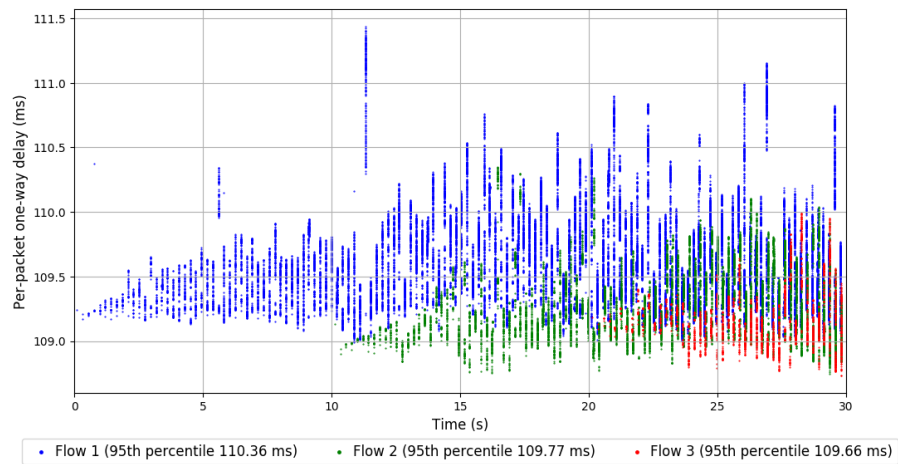
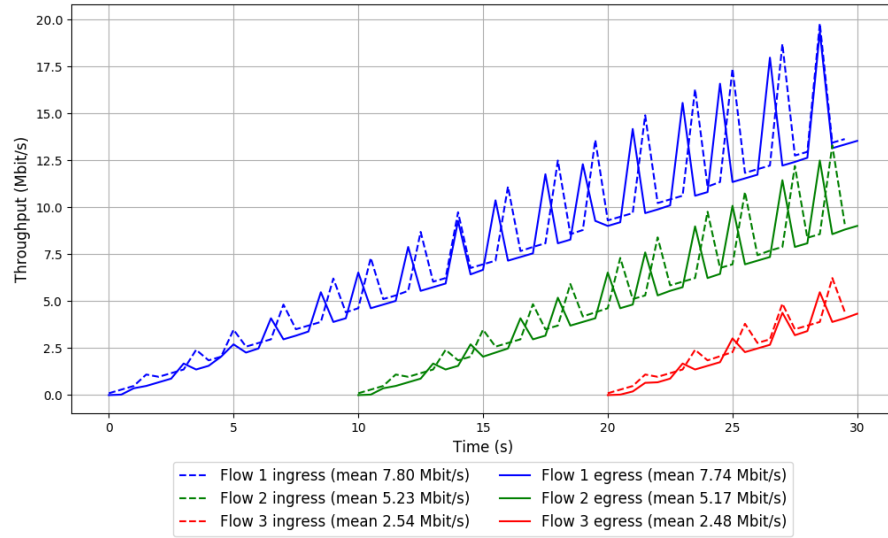
-- Flow 3:

Average throughput: 2.48 Mbit/s

95th percentile per-packet one-way delay: 109.661 ms

Loss rate: 4.46%

Run 2: Report of LEDBAT — Data Link

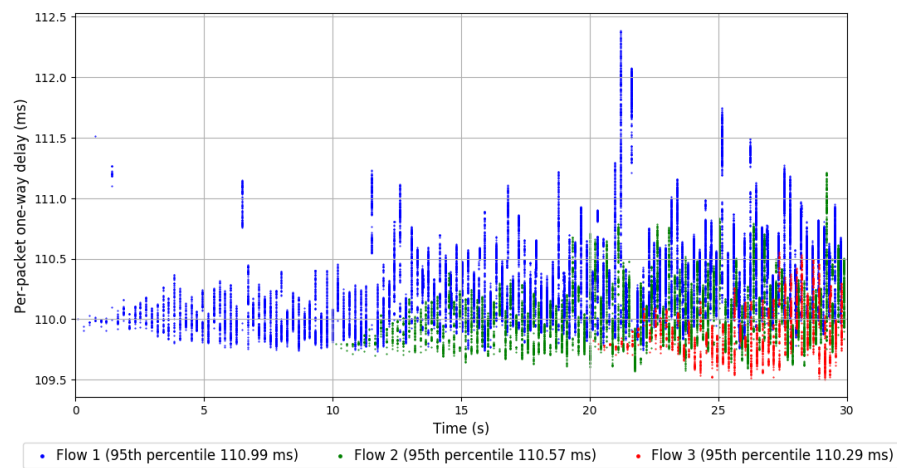
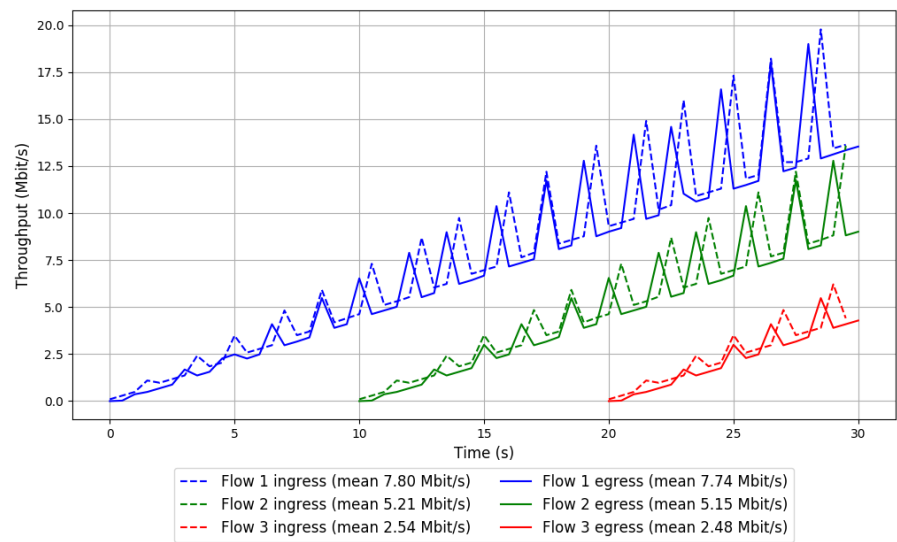


Run 3: Statistics of LEDBAT

Start at: 2018-10-26 04:42:38
End at: 2018-10-26 04:43:08
Local clock offset: -0.03 ms
Remote clock offset: -0.458 ms

Below is generated by plot.py at 2018-10-26 07:05:04
Datalink statistics
-- Total of 3 flows:
Average throughput: 11.93 Mbit/s
95th percentile per-packet one-way delay: 110.876 ms
Loss rate: 1.89%
-- Flow 1:
Average throughput: 7.74 Mbit/s
95th percentile per-packet one-way delay: 110.991 ms
Loss rate: 1.47%
-- Flow 2:
Average throughput: 5.15 Mbit/s
95th percentile per-packet one-way delay: 110.569 ms
Loss rate: 2.20%
-- Flow 3:
Average throughput: 2.48 Mbit/s
95th percentile per-packet one-way delay: 110.290 ms
Loss rate: 4.46%

Run 3: Report of LEDBAT — Data Link



Run 4: Statistics of LEDBAT

Start at: 2018-10-26 05:14:20

End at: 2018-10-26 05:14:50

Local clock offset: -0.806 ms

Remote clock offset: -0.02 ms

Below is generated by plot.py at 2018-10-26 07:05:04

Datalink statistics

-- Total of 3 flows:

Average throughput: 11.64 Mbit/s

95th percentile per-packet one-way delay: 109.941 ms

Loss rate: 1.92%

-- Flow 1:

Average throughput: 7.42 Mbit/s

95th percentile per-packet one-way delay: 110.084 ms

Loss rate: 1.50%

-- Flow 2:

Average throughput: 5.18 Mbit/s

95th percentile per-packet one-way delay: 109.555 ms

Loss rate: 2.20%

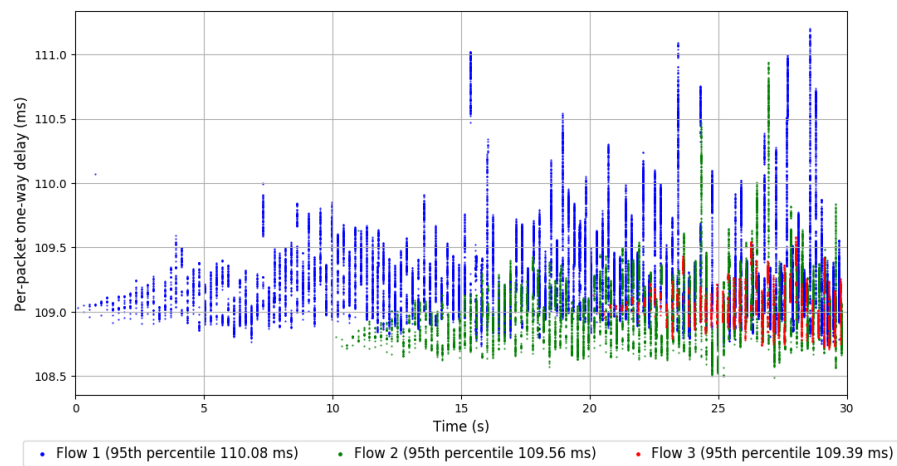
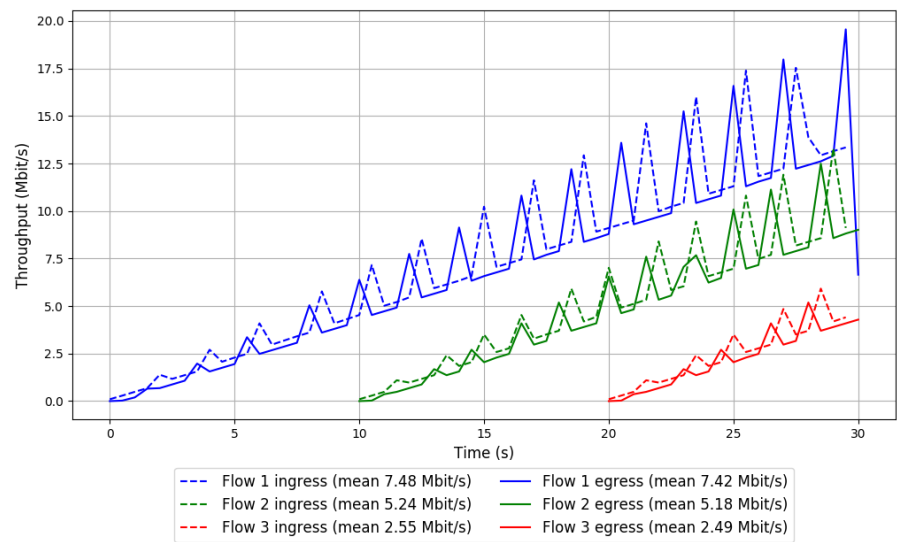
-- Flow 3:

Average throughput: 2.49 Mbit/s

95th percentile per-packet one-way delay: 109.393 ms

Loss rate: 4.46%

Run 4: Report of LEDBAT — Data Link

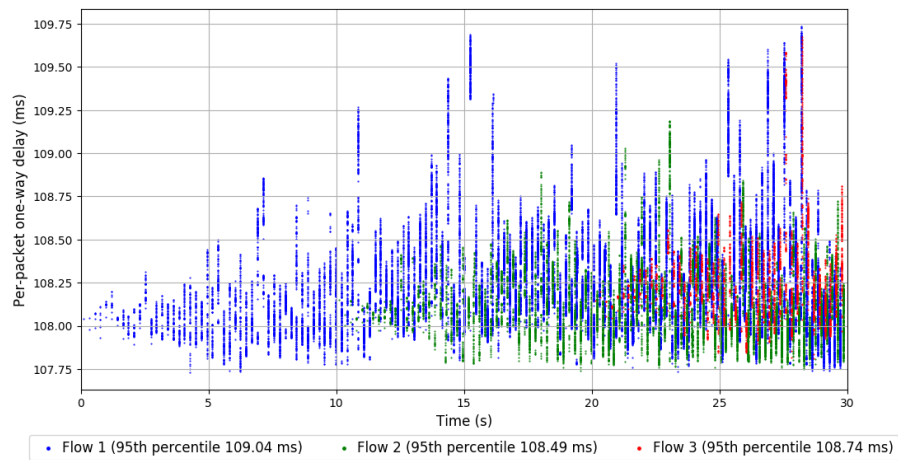
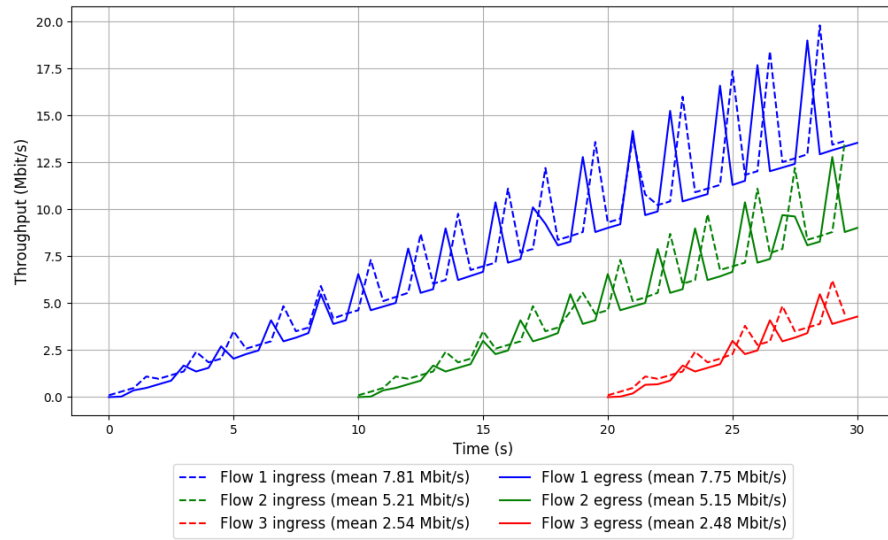


Run 5: Statistics of LEDBAT

Start at: 2018-10-26 05:46:38
End at: 2018-10-26 05:47:08
Local clock offset: -1.359 ms
Remote clock offset: -0.108 ms

Below is generated by plot.py at 2018-10-26 07:05:04
Datalink statistics
-- Total of 3 flows:
Average throughput: 11.94 Mbit/s
95th percentile per-packet one-way delay: 108.864 ms
Loss rate: 1.89%
-- Flow 1:
Average throughput: 7.75 Mbit/s
95th percentile per-packet one-way delay: 109.042 ms
Loss rate: 1.47%
-- Flow 2:
Average throughput: 5.15 Mbit/s
95th percentile per-packet one-way delay: 108.489 ms
Loss rate: 2.20%
-- Flow 3:
Average throughput: 2.48 Mbit/s
95th percentile per-packet one-way delay: 108.744 ms
Loss rate: 4.46%

Run 5: Report of LEDBAT — Data Link



Run 1: Statistics of Indigo-Muses

Start at: 2018-10-26 03:24:55

End at: 2018-10-26 03:25:25

Local clock offset: 1.361 ms

Remote clock offset: 0.216 ms

Below is generated by plot.py at 2018-10-26 07:16:28

Datalink statistics

-- Total of 3 flows:

Average throughput: 1051.25 Mbit/s

95th percentile per-packet one-way delay: 176.410 ms

Loss rate: 1.21%

-- Flow 1:

Average throughput: 569.35 Mbit/s

95th percentile per-packet one-way delay: 176.266 ms

Loss rate: 0.68%

-- Flow 2:

Average throughput: 526.98 Mbit/s

95th percentile per-packet one-way delay: 165.901 ms

Loss rate: 1.45%

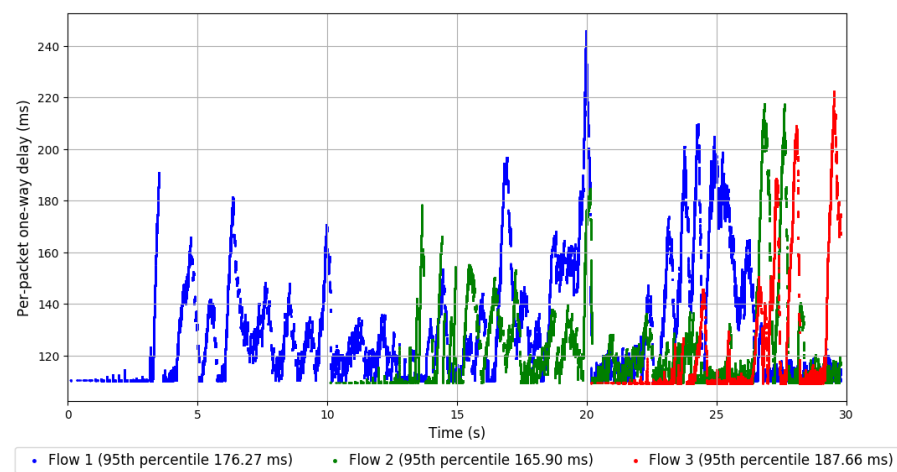
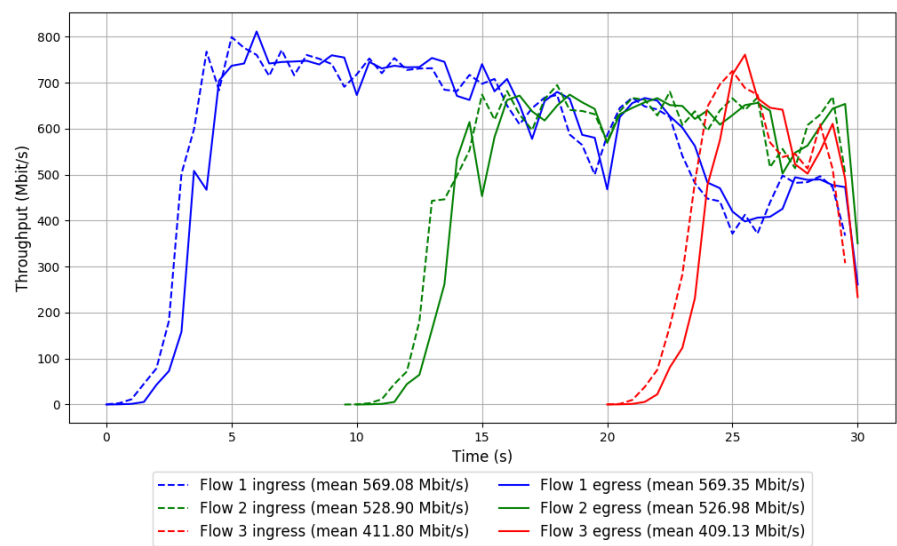
-- Flow 3:

Average throughput: 409.13 Mbit/s

95th percentile per-packet one-way delay: 187.662 ms

Loss rate: 2.85%

Run 1: Report of Indigo-Muses — Data Link

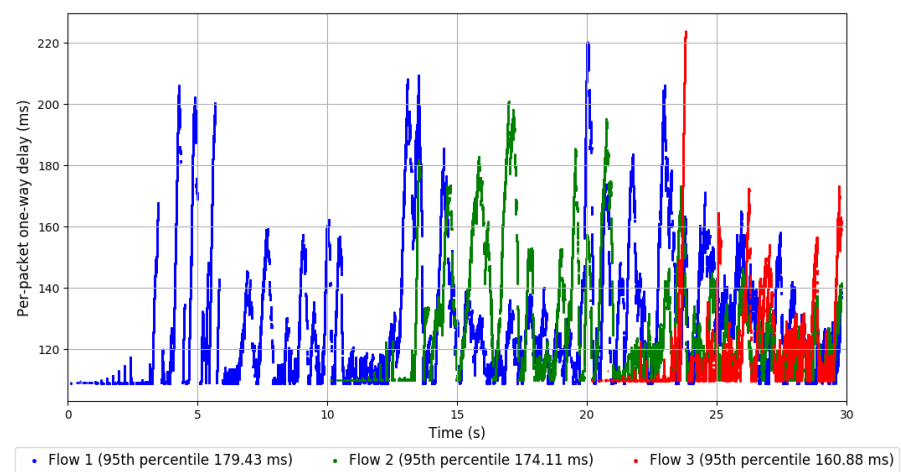
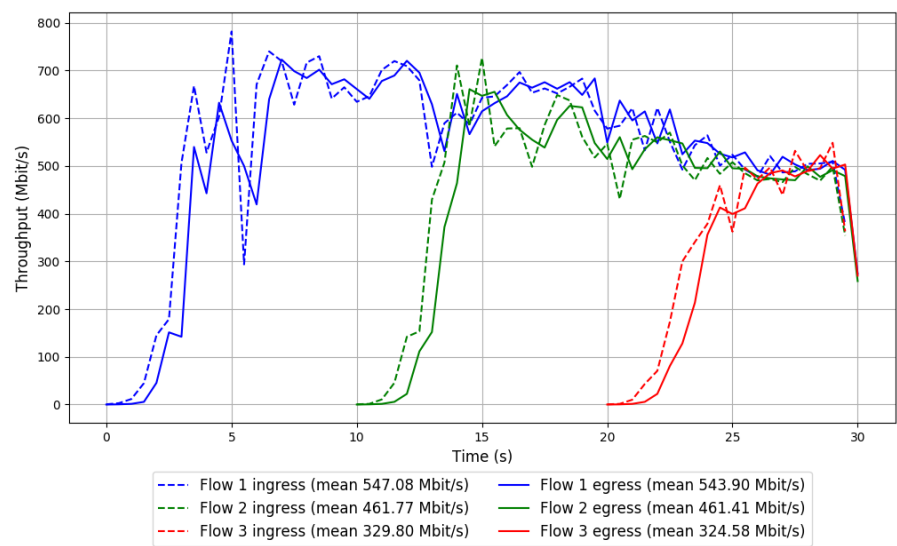


Run 2: Statistics of Indigo-Muses

Start at: 2018-10-26 03:56:35
End at: 2018-10-26 03:57:05
Local clock offset: 0.171 ms
Remote clock offset: -0.331 ms

Below is generated by plot.py at 2018-10-26 07:16:28
Datalink statistics
-- Total of 3 flows:
Average throughput: 954.28 Mbit/s
95th percentile per-packet one-way delay: 175.695 ms
Loss rate: 1.54%
-- Flow 1:
Average throughput: 543.90 Mbit/s
95th percentile per-packet one-way delay: 179.427 ms
Loss rate: 1.31%
-- Flow 2:
Average throughput: 461.41 Mbit/s
95th percentile per-packet one-way delay: 174.108 ms
Loss rate: 1.16%
-- Flow 3:
Average throughput: 324.58 Mbit/s
95th percentile per-packet one-way delay: 160.875 ms
Loss rate: 3.78%

Run 2: Report of Indigo-Muses — Data Link

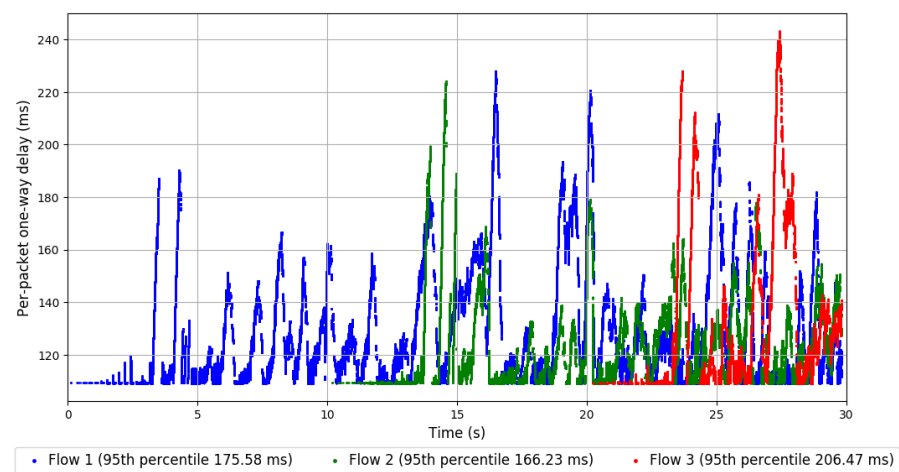
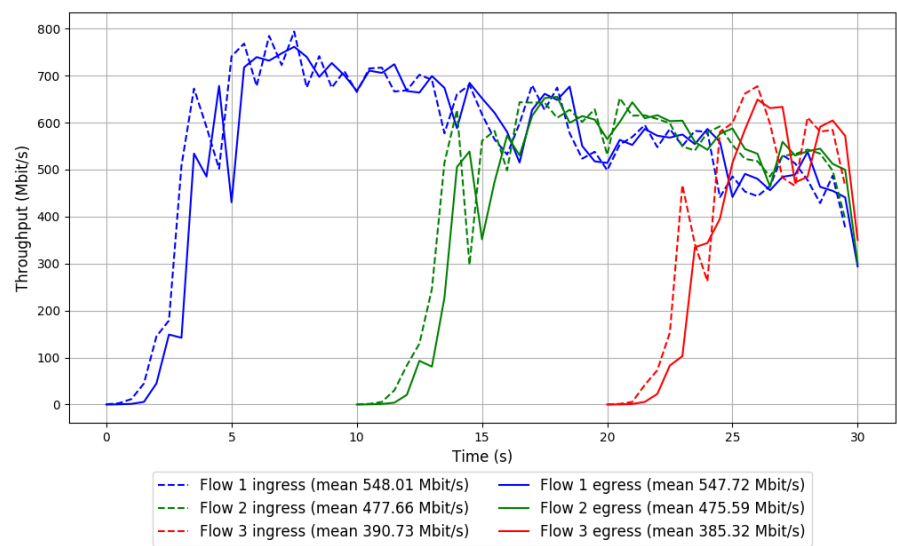


Run 3: Statistics of Indigo-Muses

Start at: 2018-10-26 04:28:30
End at: 2018-10-26 04:29:00
Local clock offset: -0.012 ms
Remote clock offset: -0.096 ms

Below is generated by plot.py at 2018-10-26 07:16:28
Datalink statistics
-- Total of 3 flows:
Average throughput: 986.36 Mbit/s
95th percentile per-packet one-way delay: 176.934 ms
Loss rate: 1.38%
-- Flow 1:
Average throughput: 547.72 Mbit/s
95th percentile per-packet one-way delay: 175.580 ms
Loss rate: 0.78%
-- Flow 2:
Average throughput: 475.59 Mbit/s
95th percentile per-packet one-way delay: 166.233 ms
Loss rate: 1.53%
-- Flow 3:
Average throughput: 385.32 Mbit/s
95th percentile per-packet one-way delay: 206.472 ms
Loss rate: 3.58%

Run 3: Report of Indigo-Muses — Data Link

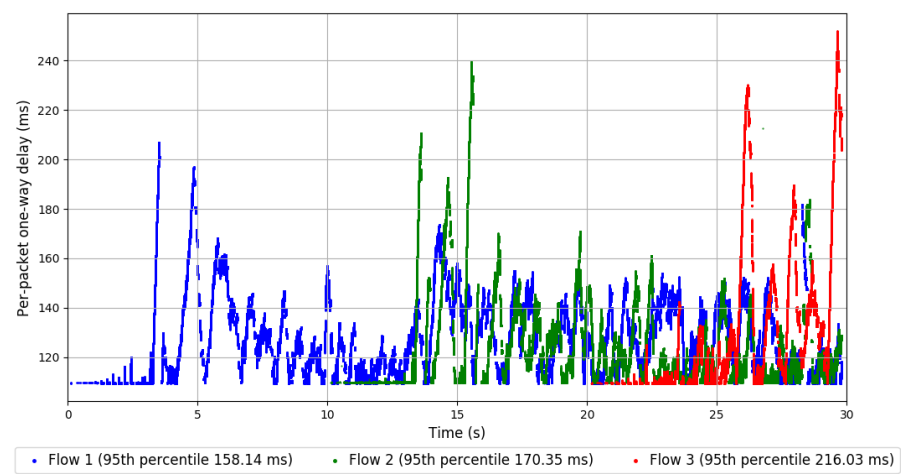
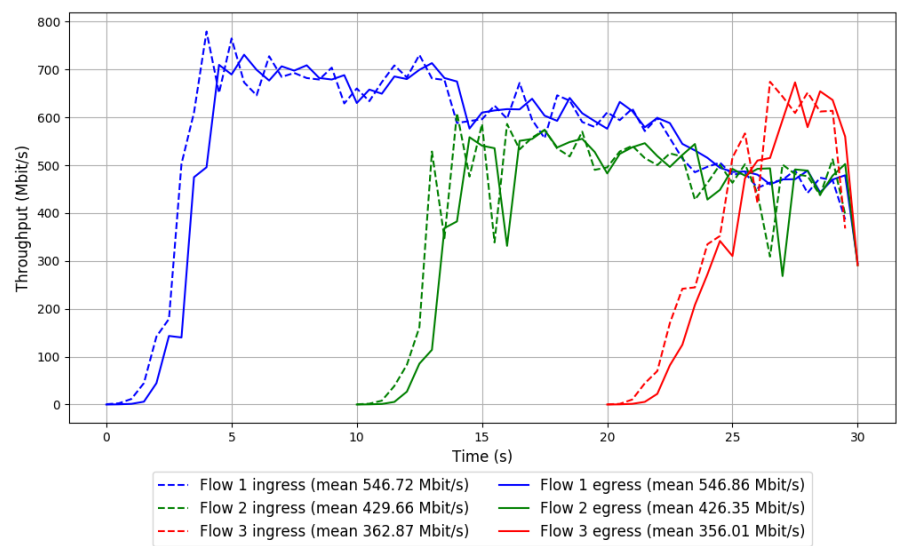


Run 4: Statistics of Indigo-Muses

Start at: 2018-10-26 05:00:10
End at: 2018-10-26 05:00:40
Local clock offset: 0.108 ms
Remote clock offset: -0.044 ms

Below is generated by plot.py at 2018-10-26 07:16:32
Datalink statistics
-- Total of 3 flows:
Average throughput: 944.72 Mbit/s
95th percentile per-packet one-way delay: 167.015 ms
Loss rate: 1.47%
-- Flow 1:
Average throughput: 546.86 Mbit/s
95th percentile per-packet one-way delay: 158.142 ms
Loss rate: 0.70%
-- Flow 2:
Average throughput: 426.35 Mbit/s
95th percentile per-packet one-way delay: 170.349 ms
Loss rate: 1.87%
-- Flow 3:
Average throughput: 356.01 Mbit/s
95th percentile per-packet one-way delay: 216.034 ms
Loss rate: 4.07%

Run 4: Report of Indigo-Muses — Data Link

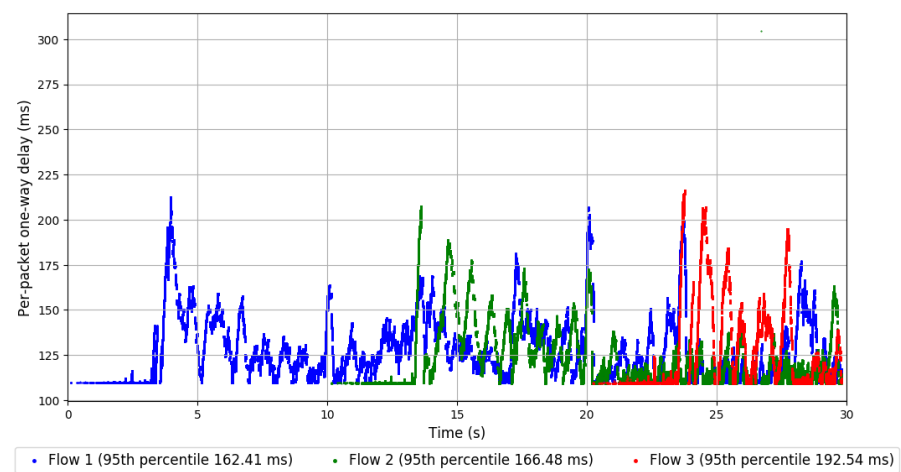
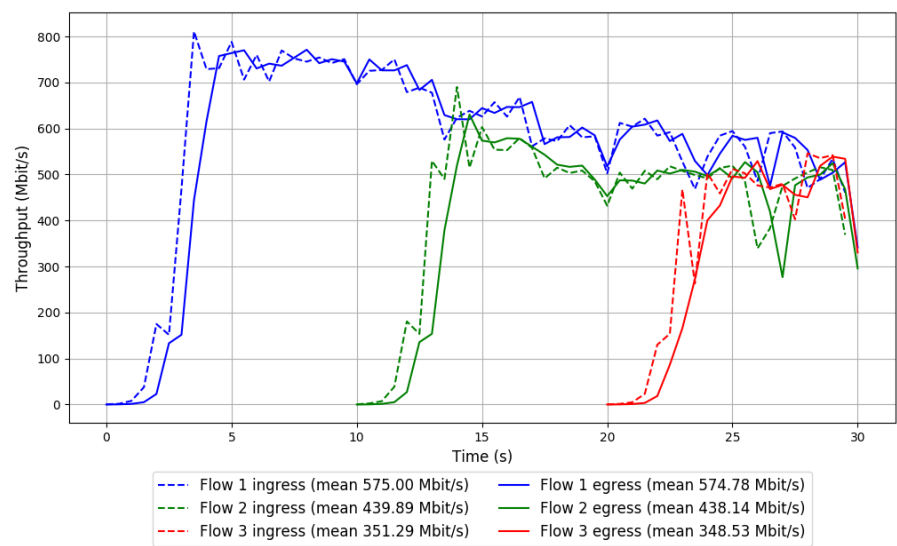


Run 5: Statistics of Indigo-Muses

Start at: 2018-10-26 05:32:13
End at: 2018-10-26 05:32:43
Local clock offset: 0.197 ms
Remote clock offset: -0.109 ms

Below is generated by plot.py at 2018-10-26 07:20:24
Datalink statistics
-- Total of 3 flows:
Average throughput: 977.14 Mbit/s
95th percentile per-packet one-way delay: 168.916 ms
Loss rate: 1.25%
-- Flow 1:
Average throughput: 574.78 Mbit/s
95th percentile per-packet one-way delay: 162.411 ms
Loss rate: 0.77%
-- Flow 2:
Average throughput: 438.14 Mbit/s
95th percentile per-packet one-way delay: 166.478 ms
Loss rate: 1.49%
-- Flow 3:
Average throughput: 348.53 Mbit/s
95th percentile per-packet one-way delay: 192.541 ms
Loss rate: 2.98%

Run 5: Report of Indigo-Muses — Data Link

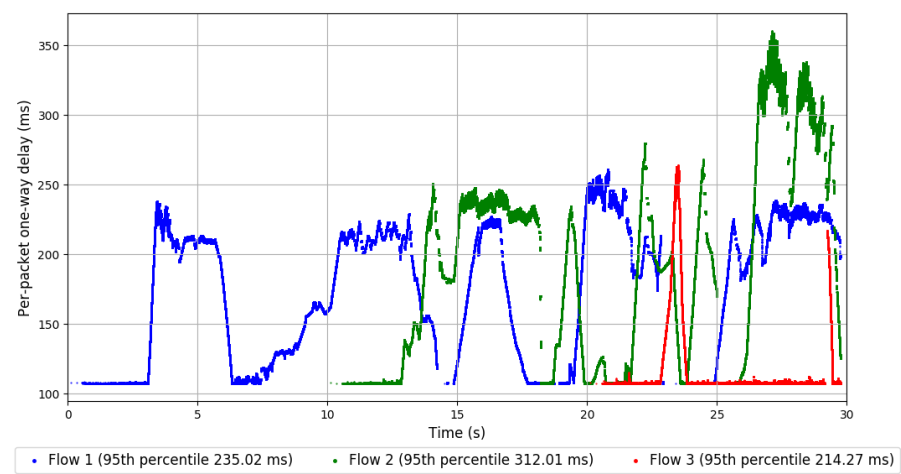
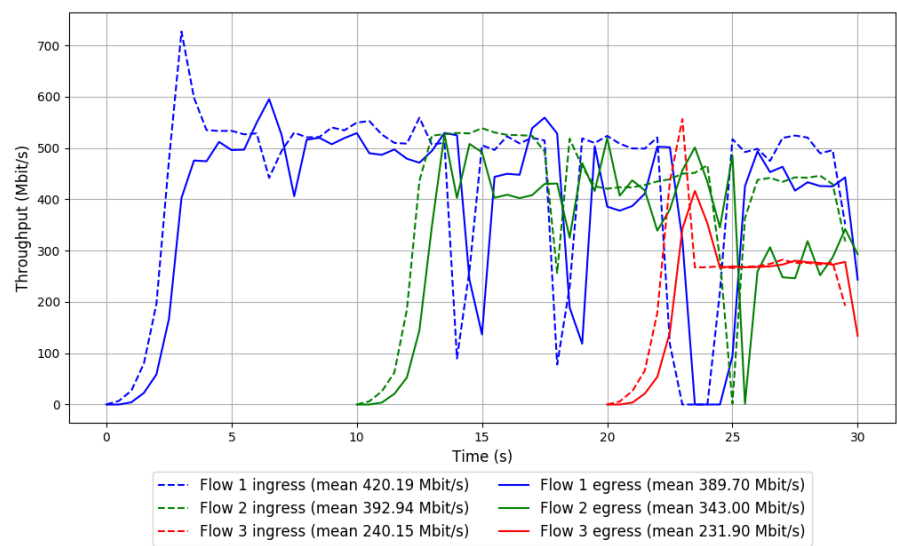



```
Run 1: Statistics of PCC-Allegro

Start at: 2018-10-26 03:15:34
End at: 2018-10-26 03:16:04
Local clock offset: -0.409 ms
Remote clock offset: 0.133 ms

# Below is generated by plot.py at 2018-10-26 07:27:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 692.09 Mbit/s
95th percentile per-packet one-way delay: 249.977 ms
Loss rate: 9.66%
-- Flow 1:
Average throughput: 389.70 Mbit/s
95th percentile per-packet one-way delay: 235.023 ms
Loss rate: 7.93%
-- Flow 2:
Average throughput: 343.00 Mbit/s
95th percentile per-packet one-way delay: 312.014 ms
Loss rate: 13.67%
-- Flow 3:
Average throughput: 231.90 Mbit/s
95th percentile per-packet one-way delay: 214.266 ms
Loss rate: 5.58%
```

Run 1: Report of PCC-Allegro — Data Link



Run 2: Statistics of PCC-Allegro

Start at: 2018-10-26 03:46:59

End at: 2018-10-26 03:47:29

Local clock offset: 0.36 ms

Remote clock offset: 0.395 ms

Below is generated by plot.py at 2018-10-26 07:28:35

Datalink statistics

-- Total of 3 flows:

Average throughput: 717.72 Mbit/s

95th percentile per-packet one-way delay: 247.161 ms

Loss rate: 6.63%

-- Flow 1:

Average throughput: 384.98 Mbit/s

95th percentile per-packet one-way delay: 239.449 ms

Loss rate: 3.31%

-- Flow 2:

Average throughput: 398.13 Mbit/s

95th percentile per-packet one-way delay: 254.261 ms

Loss rate: 12.00%

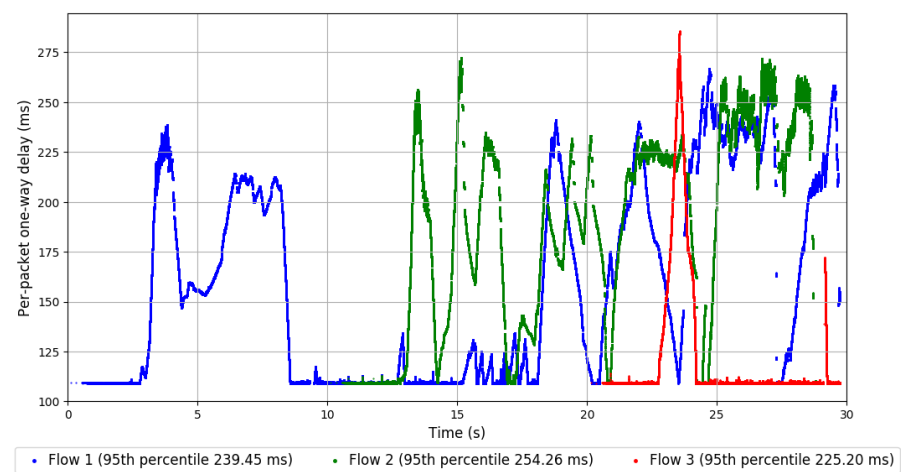
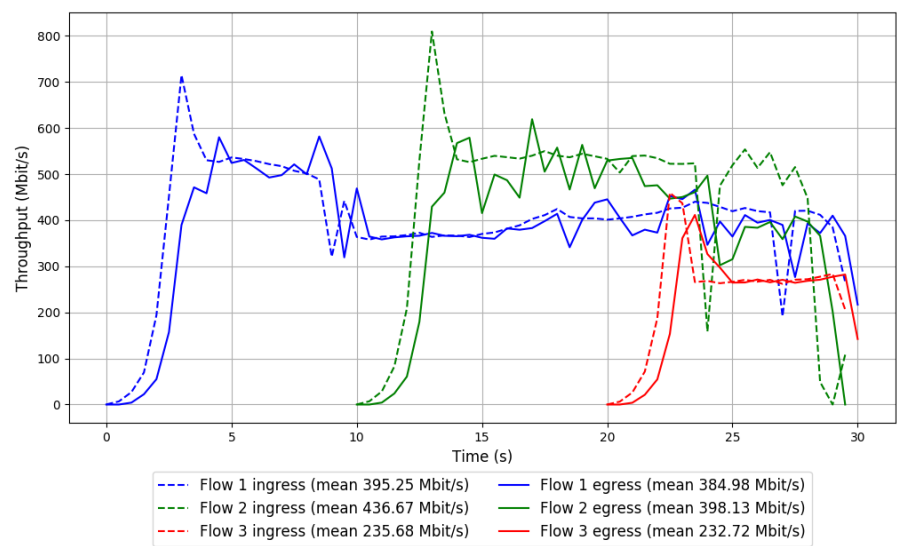
-- Flow 3:

Average throughput: 232.72 Mbit/s

95th percentile per-packet one-way delay: 225.196 ms

Loss rate: 3.44%

Run 2: Report of PCC-Allegro — Data Link

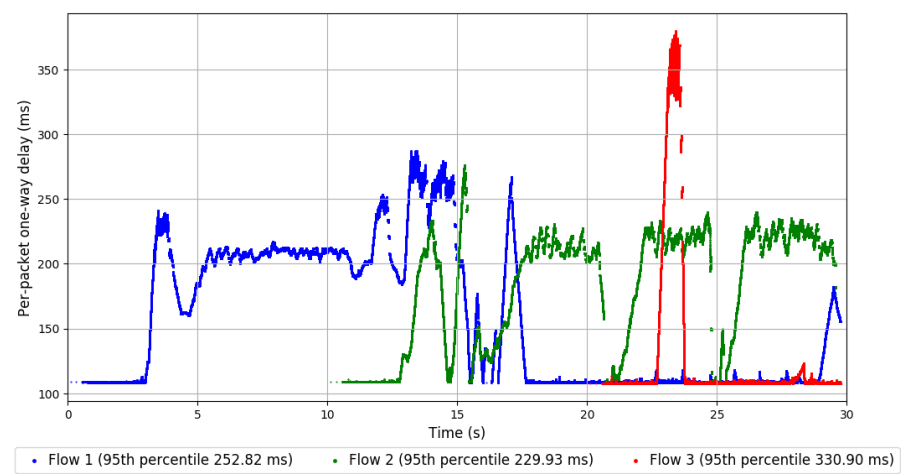
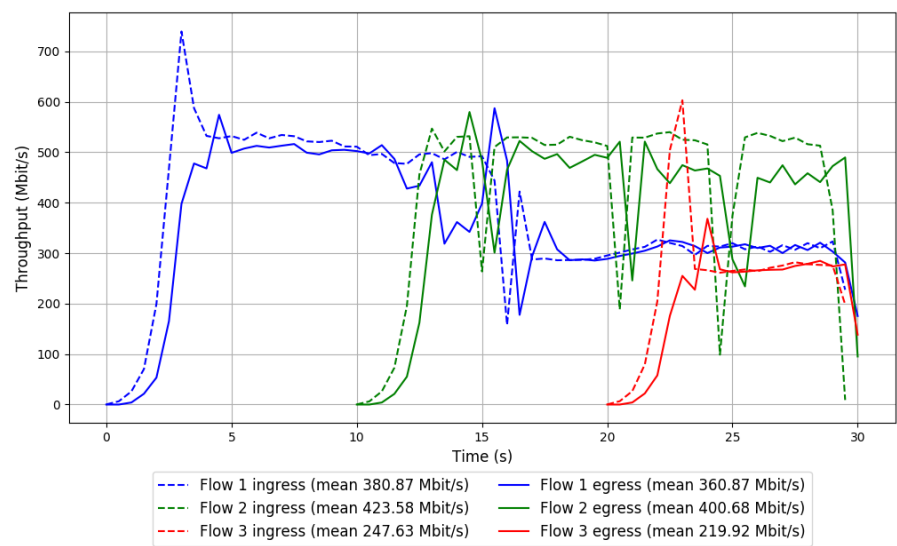


Run 3: Statistics of PCC-Allegro

Start at: 2018-10-26 04:18:59
End at: 2018-10-26 04:19:29
Local clock offset: -0.715 ms
Remote clock offset: -0.061 ms

```
# Below is generated by plot.py at 2018-10-26 07:30:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 696.65 Mbit/s
95th percentile per-packet one-way delay: 242.060 ms
Loss rate: 6.99%
-- Flow 1:
Average throughput: 360.87 Mbit/s
95th percentile per-packet one-way delay: 252.818 ms
Loss rate: 5.94%
-- Flow 2:
Average throughput: 400.68 Mbit/s
95th percentile per-packet one-way delay: 229.928 ms
Loss rate: 6.61%
-- Flow 3:
Average throughput: 219.92 Mbit/s
95th percentile per-packet one-way delay: 330.904 ms
Loss rate: 13.18%
```

Run 3: Report of PCC-Allegro — Data Link

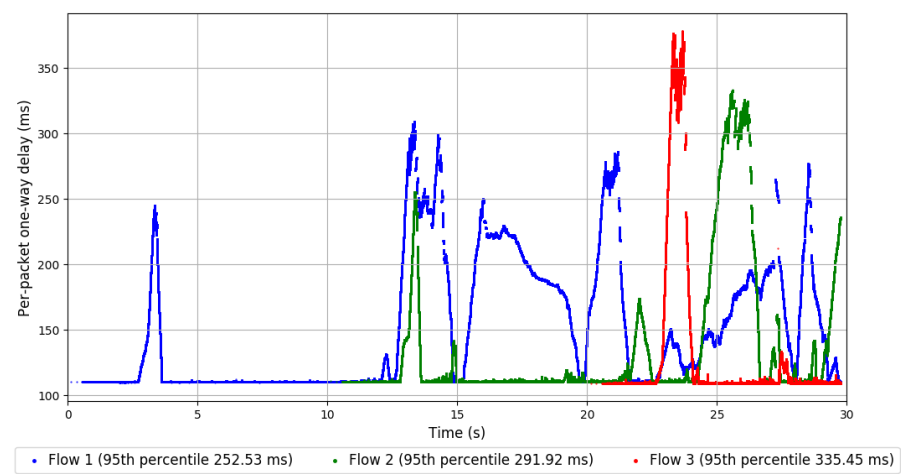
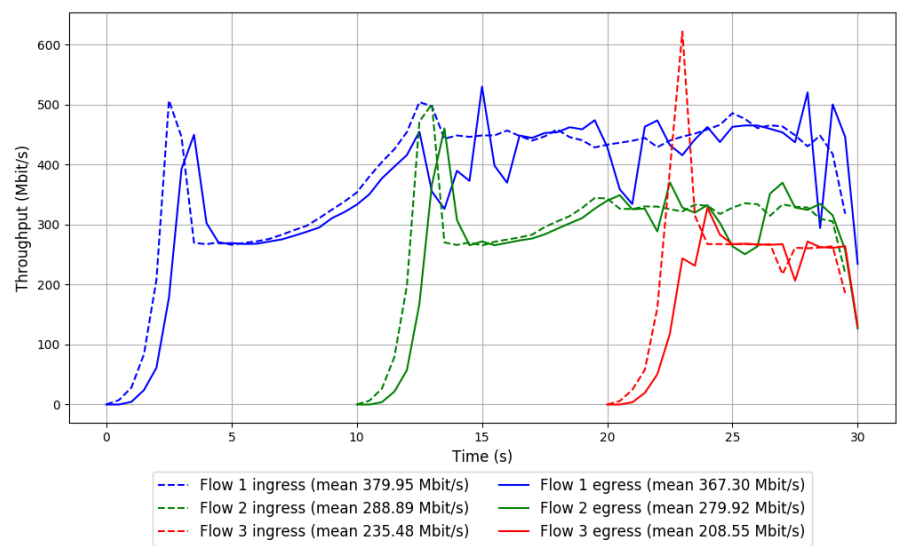


Run 4: Statistics of PCC-Allegro

Start at: 2018-10-26 04:50:49
End at: 2018-10-26 04:51:19
Local clock offset: 0.595 ms
Remote clock offset: -0.057 ms

Below is generated by plot.py at 2018-10-26 07:38:25
Datalink statistics
-- Total of 3 flows:
Average throughput: 620.31 Mbit/s
95th percentile per-packet one-way delay: 262.119 ms
Loss rate: 5.19%
-- Flow 1:
Average throughput: 367.30 Mbit/s
95th percentile per-packet one-way delay: 252.529 ms
Loss rate: 4.04%
-- Flow 2:
Average throughput: 279.92 Mbit/s
95th percentile per-packet one-way delay: 291.919 ms
Loss rate: 4.17%
-- Flow 3:
Average throughput: 208.55 Mbit/s
95th percentile per-packet one-way delay: 335.455 ms
Loss rate: 13.39%

Run 4: Report of PCC-Allegro — Data Link

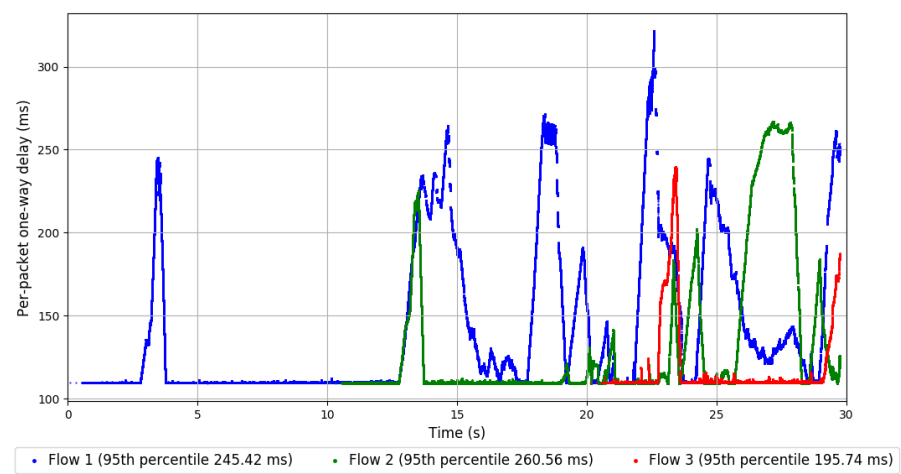
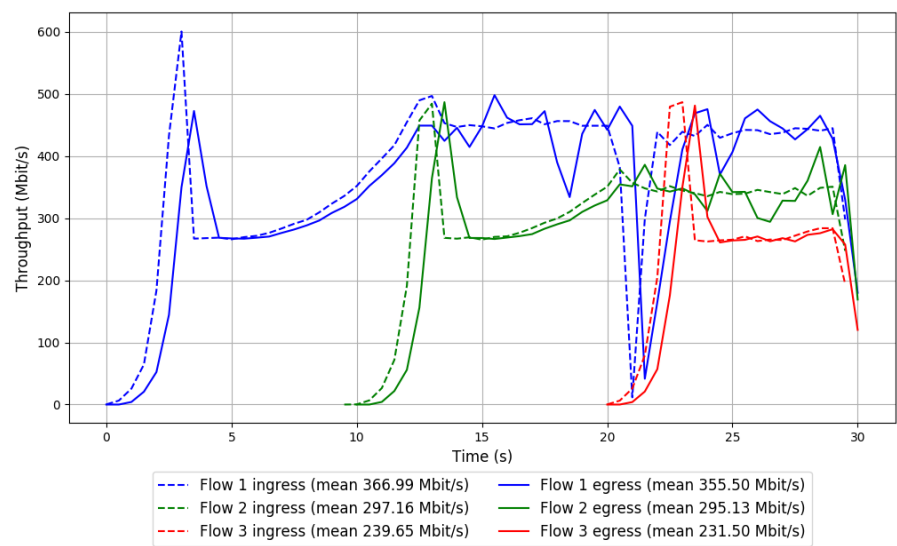


Run 5: Statistics of PCC-Allegro

Start at: 2018-10-26 05:22:36
End at: 2018-10-26 05:23:06
Local clock offset: -0.186 ms
Remote clock offset: -0.446 ms

Below is generated by plot.py at 2018-10-26 07:39:20
Datalink statistics
-- Total of 3 flows:
Average throughput: 626.19 Mbit/s
95th percentile per-packet one-way delay: 246.535 ms
Loss rate: 3.41%
-- Flow 1:
Average throughput: 355.50 Mbit/s
95th percentile per-packet one-way delay: 245.424 ms
Loss rate: 3.84%
-- Flow 2:
Average throughput: 295.13 Mbit/s
95th percentile per-packet one-way delay: 260.561 ms
Loss rate: 1.78%
-- Flow 3:
Average throughput: 231.50 Mbit/s
95th percentile per-packet one-way delay: 195.735 ms
Loss rate: 5.54%

Run 5: Report of PCC-Allegro — Data Link

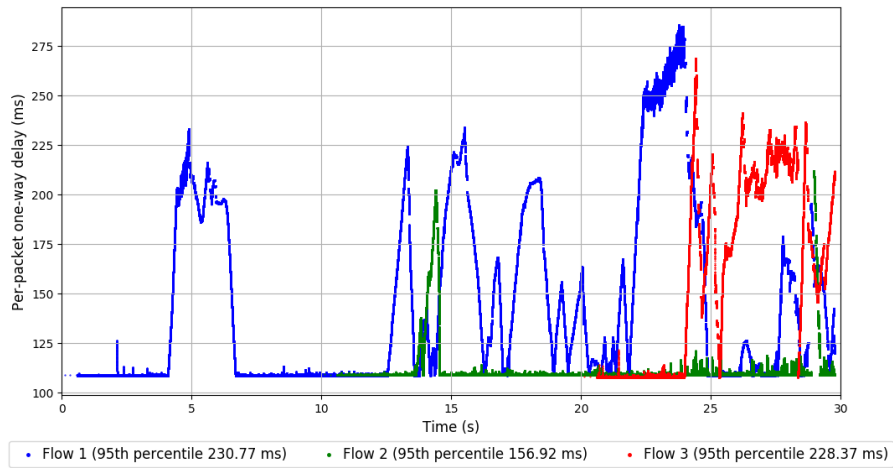
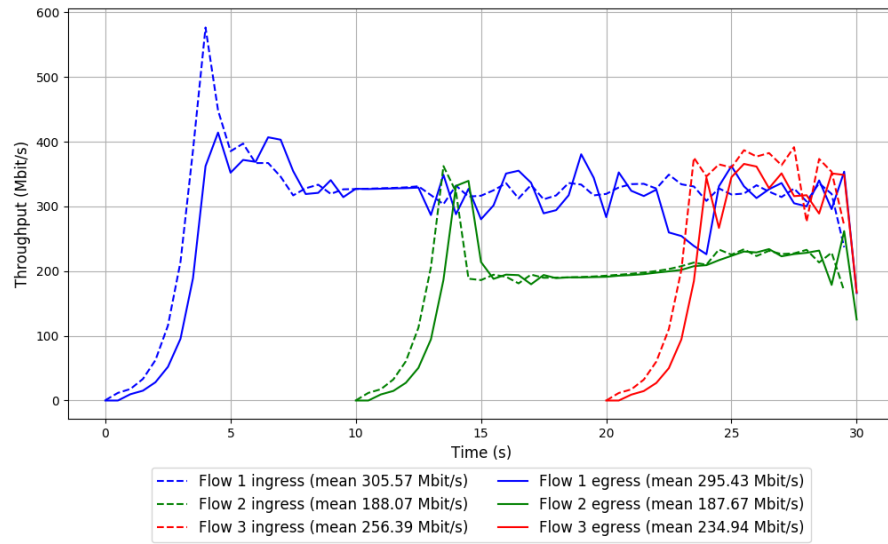


```
Run 1: Statistics of PCC-Expr

Start at: 2018-10-26 03:31:29
End at: 2018-10-26 03:31:59
Local clock offset: 0.178 ms
Remote clock offset: 0.638 ms

# Below is generated by plot.py at 2018-10-26 07:39:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 496.16 Mbit/s
95th percentile per-packet one-way delay: 222.515 ms
Loss rate: 4.41%
-- Flow 1:
Average throughput: 295.43 Mbit/s
95th percentile per-packet one-way delay: 230.768 ms
Loss rate: 4.03%
-- Flow 2:
Average throughput: 187.67 Mbit/s
95th percentile per-packet one-way delay: 156.918 ms
Loss rate: 1.31%
-- Flow 3:
Average throughput: 234.94 Mbit/s
95th percentile per-packet one-way delay: 228.369 ms
Loss rate: 10.37%
```

Run 1: Report of PCC-Expr — Data Link



Run 2: Statistics of PCC-Expr

Start at: 2018-10-26 04:03:04

End at: 2018-10-26 04:03:34

Local clock offset: -1.225 ms

Remote clock offset: 0.117 ms

Below is generated by plot.py at 2018-10-26 07:39:20

Datalink statistics

-- Total of 3 flows:

Average throughput: 507.74 Mbit/s

95th percentile per-packet one-way delay: 182.420 ms

Loss rate: 1.83%

-- Flow 1:

Average throughput: 316.53 Mbit/s

95th percentile per-packet one-way delay: 188.068 ms

Loss rate: 1.83%

-- Flow 2:

Average throughput: 212.06 Mbit/s

95th percentile per-packet one-way delay: 127.257 ms

Loss rate: 1.43%

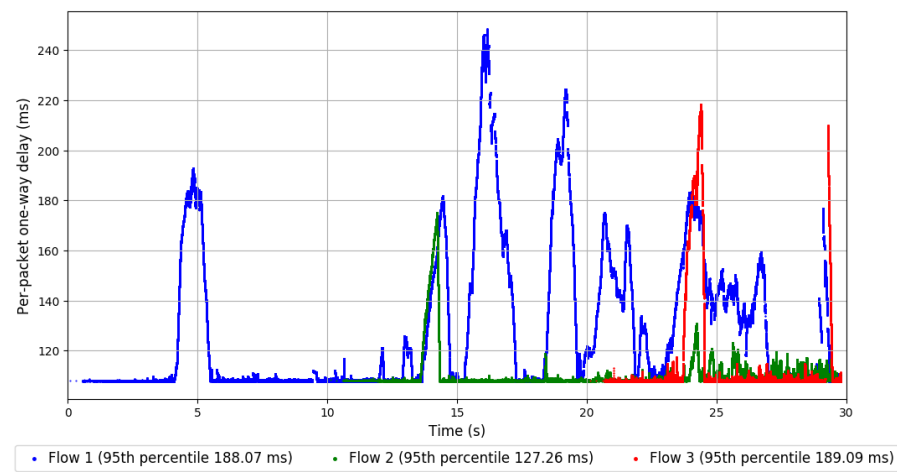
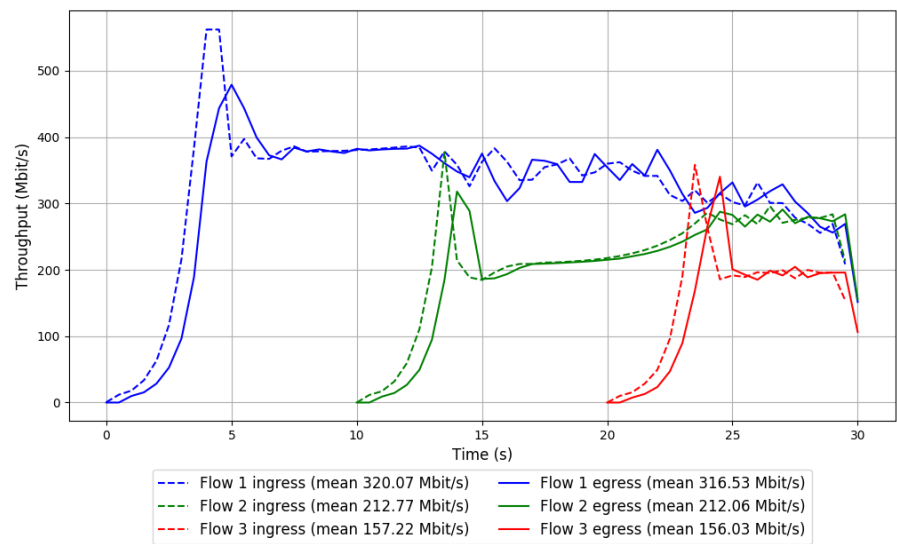
-- Flow 3:

Average throughput: 156.03 Mbit/s

95th percentile per-packet one-way delay: 189.091 ms

Loss rate: 2.95%

Run 2: Report of PCC-Expr — Data Link

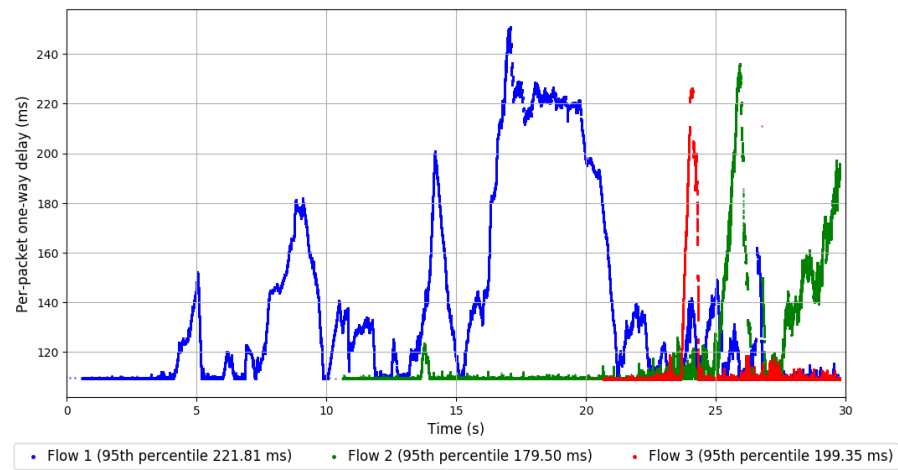
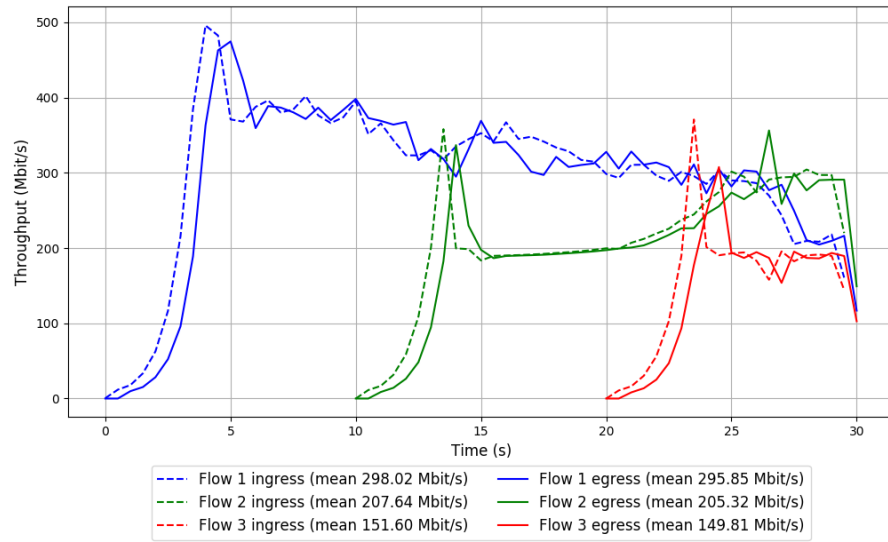


Run 3: Statistics of PCC-Expr

Start at: 2018-10-26 04:35:02
End at: 2018-10-26 04:35:32
Local clock offset: -0.341 ms
Remote clock offset: -0.158 ms

Below is generated by plot.py at 2018-10-26 07:39:20
Datalink statistics
-- Total of 3 flows:
Average throughput: 480.58 Mbit/s
95th percentile per-packet one-way delay: 220.025 ms
Loss rate: 1.86%
-- Flow 1:
Average throughput: 295.85 Mbit/s
95th percentile per-packet one-way delay: 221.808 ms
Loss rate: 1.45%
-- Flow 2:
Average throughput: 205.32 Mbit/s
95th percentile per-packet one-way delay: 179.498 ms
Loss rate: 2.20%
-- Flow 3:
Average throughput: 149.81 Mbit/s
95th percentile per-packet one-way delay: 199.349 ms
Loss rate: 3.37%

Run 3: Report of PCC-Expr — Data Link

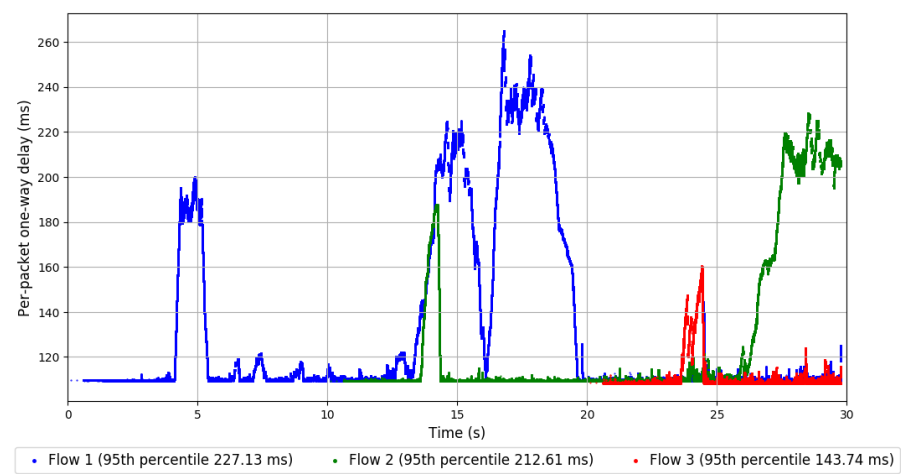
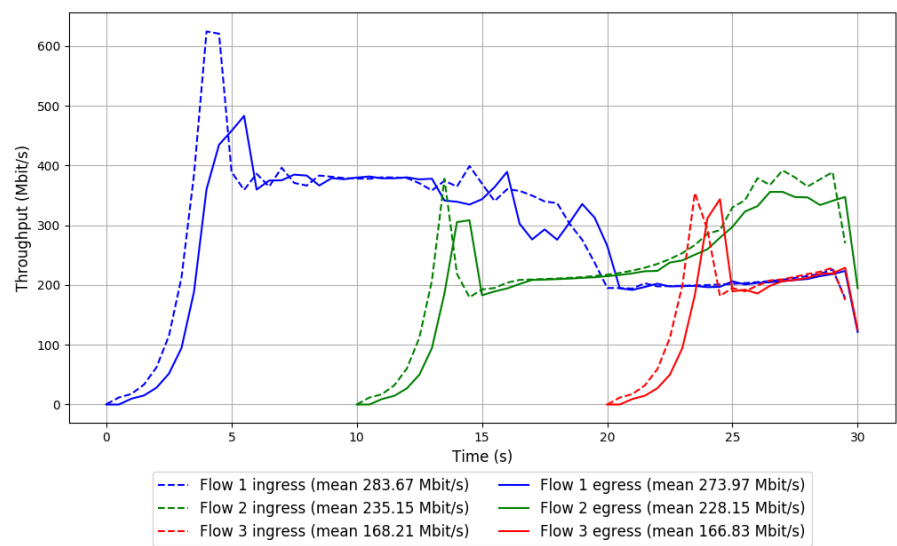


Run 4: Statistics of PCC-Expr

Start at: 2018-10-26 05:06:40
End at: 2018-10-26 05:07:10
Local clock offset: -0.097 ms
Remote clock offset: -0.034 ms

Below is generated by plot.py at 2018-10-26 07:45:15
Datalink statistics
-- Total of 3 flows:
Average throughput: 479.44 Mbit/s
95th percentile per-packet one-way delay: 217.735 ms
Loss rate: 3.98%
-- Flow 1:
Average throughput: 273.97 Mbit/s
95th percentile per-packet one-way delay: 227.126 ms
Loss rate: 4.13%
-- Flow 2:
Average throughput: 228.15 Mbit/s
95th percentile per-packet one-way delay: 212.614 ms
Loss rate: 4.05%
-- Flow 3:
Average throughput: 166.83 Mbit/s
95th percentile per-packet one-way delay: 143.742 ms
Loss rate: 3.00%

Run 4: Report of PCC-Expr — Data Link



Run 5: Statistics of PCC-Expr

Start at: 2018-10-26 05:38:45

End at: 2018-10-26 05:39:15

Local clock offset: 0.848 ms

Remote clock offset: -0.17 ms

Below is generated by plot.py at 2018-10-26 07:49:25

Datalink statistics

-- Total of 3 flows:

Average throughput: 519.24 Mbit/s

95th percentile per-packet one-way delay: 249.914 ms

Loss rate: 17.28%

-- Flow 1:

Average throughput: 295.82 Mbit/s

95th percentile per-packet one-way delay: 247.546 ms

Loss rate: 11.50%

-- Flow 2:

Average throughput: 262.11 Mbit/s

95th percentile per-packet one-way delay: 257.075 ms

Loss rate: 28.29%

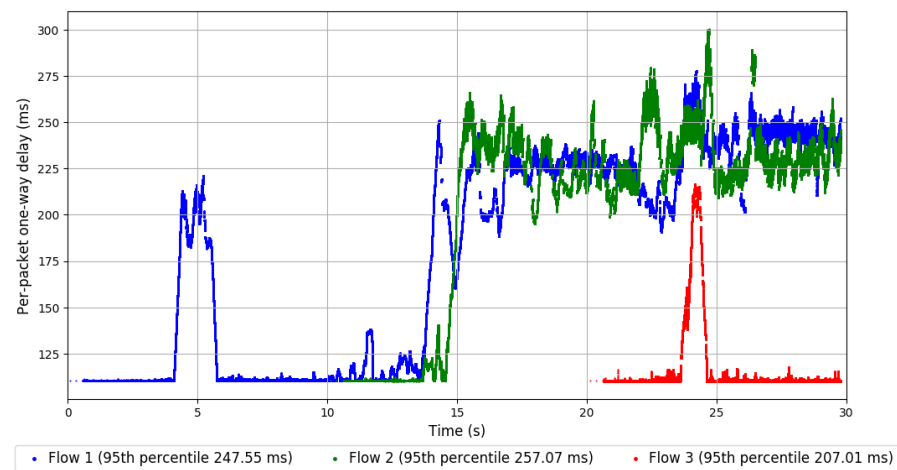
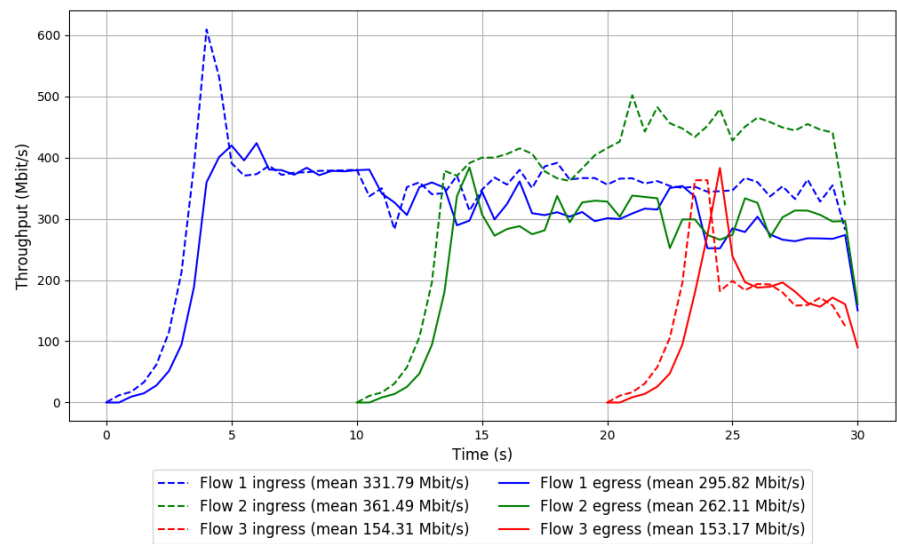
-- Flow 3:

Average throughput: 153.17 Mbit/s

95th percentile per-packet one-way delay: 207.012 ms

Loss rate: 2.95%

Run 5: Report of PCC-Expr — Data Link

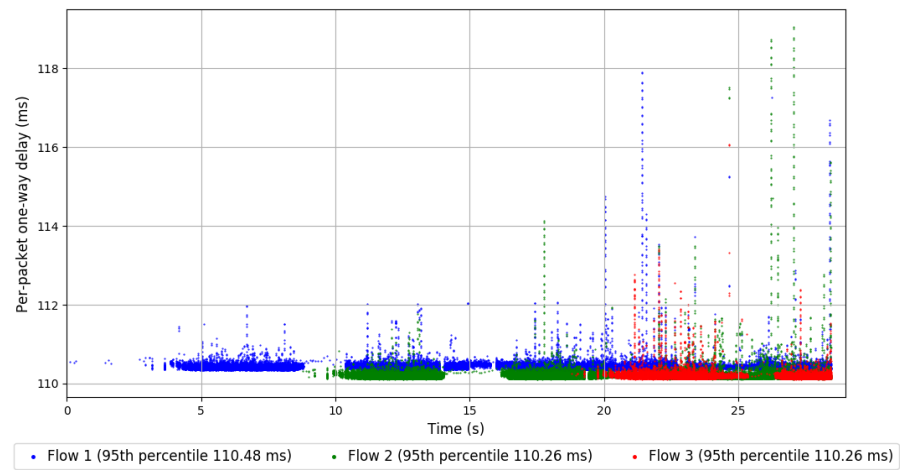
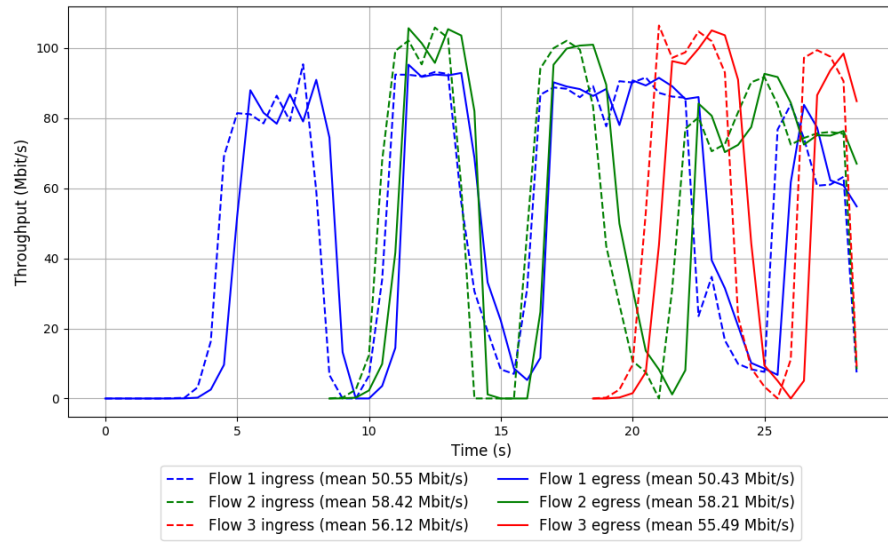


Run 1: Statistics of QUIC Cubic

Start at: 2018-10-26 03:12:11
End at: 2018-10-26 03:12:41
Local clock offset: 0.809 ms
Remote clock offset: -0.188 ms

Below is generated by plot.py at 2018-10-26 07:49:25
Datalink statistics
-- Total of 3 flows:
Average throughput: 109.75 Mbit/s
95th percentile per-packet one-way delay: 110.458 ms
Loss rate: 1.57%
-- Flow 1:
Average throughput: 50.43 Mbit/s
95th percentile per-packet one-way delay: 110.484 ms
Loss rate: 1.00%
-- Flow 2:
Average throughput: 58.21 Mbit/s
95th percentile per-packet one-way delay: 110.263 ms
Loss rate: 1.44%
-- Flow 3:
Average throughput: 55.49 Mbit/s
95th percentile per-packet one-way delay: 110.257 ms
Loss rate: 3.29%

Run 1: Report of QUIC Cubic — Data Link



Run 2: Statistics of QUIC Cubic

Start at: 2018-10-26 03:43:47

End at: 2018-10-26 03:44:17

Local clock offset: -0.085 ms

Remote clock offset: 0.064 ms

Below is generated by plot.py at 2018-10-26 07:49:25

Datalink statistics

-- Total of 3 flows:

Average throughput: 101.92 Mbit/s

95th percentile per-packet one-way delay: 109.384 ms

Loss rate: 1.43%

-- Flow 1:

Average throughput: 56.94 Mbit/s

95th percentile per-packet one-way delay: 109.165 ms

Loss rate: 0.99%

-- Flow 2:

Average throughput: 57.21 Mbit/s

95th percentile per-packet one-way delay: 109.440 ms

Loss rate: 1.77%

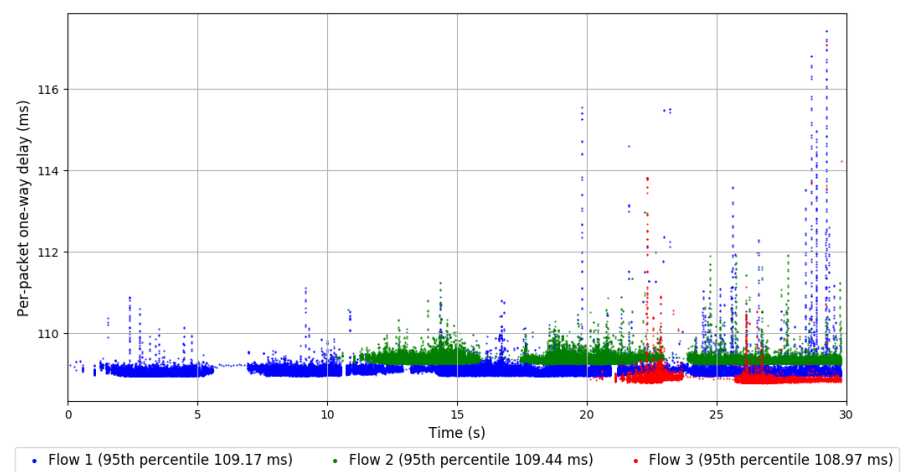
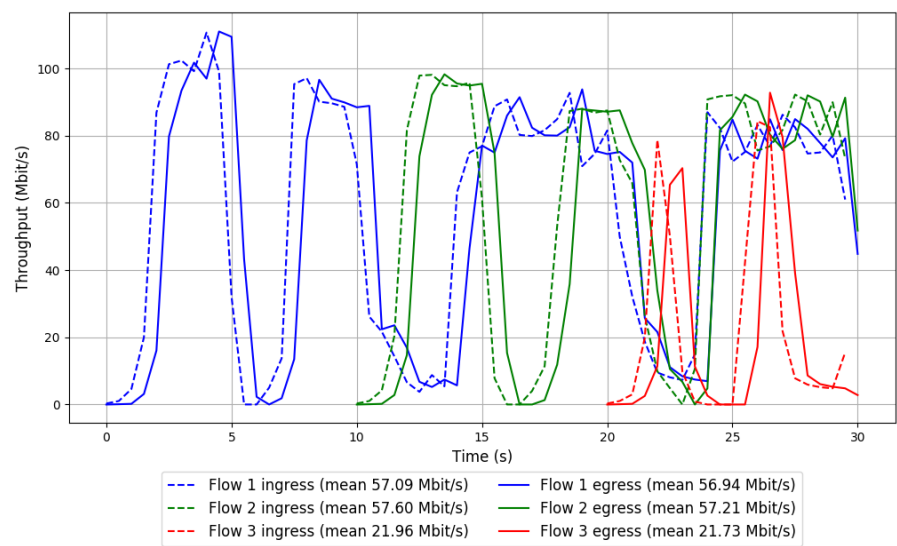
-- Flow 3:

Average throughput: 21.73 Mbit/s

95th percentile per-packet one-way delay: 108.975 ms

Loss rate: 3.17%

Run 2: Report of QUIC Cubic — Data Link

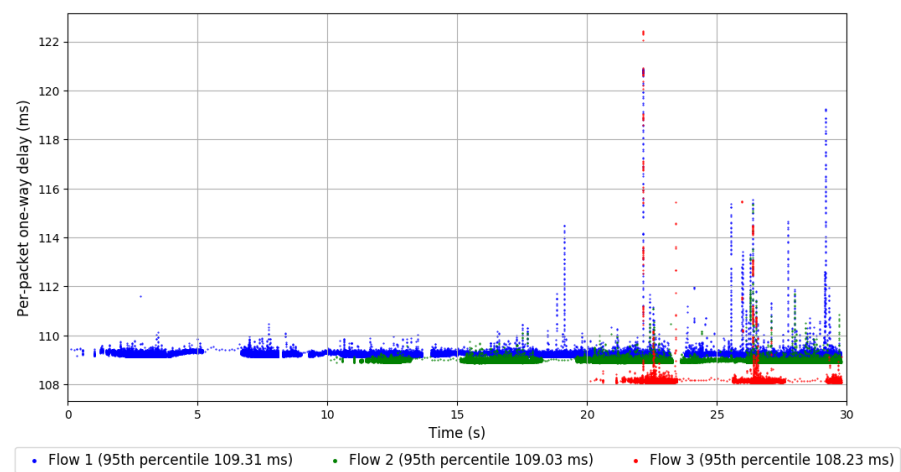
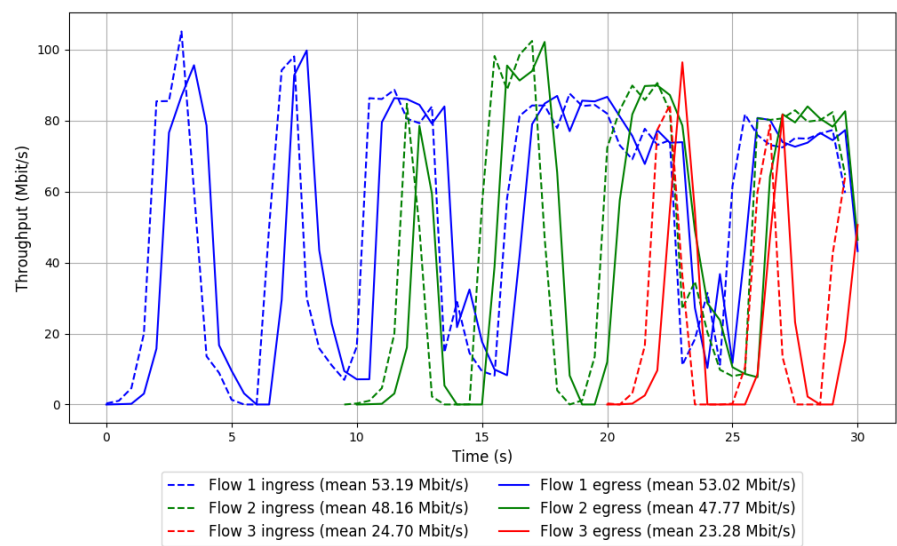


Run 3: Statistics of QUIC Cubic

Start at: 2018-10-26 04:15:39
End at: 2018-10-26 04:16:09
Local clock offset: -0.25 ms
Remote clock offset: -0.049 ms

Below is generated by plot.py at 2018-10-26 07:49:25
Datalink statistics
-- Total of 3 flows:
Average throughput: 92.26 Mbit/s
95th percentile per-packet one-way delay: 109.288 ms
Loss rate: 1.93%
-- Flow 1:
Average throughput: 53.02 Mbit/s
95th percentile per-packet one-way delay: 109.314 ms
Loss rate: 1.06%
-- Flow 2:
Average throughput: 47.77 Mbit/s
95th percentile per-packet one-way delay: 109.035 ms
Loss rate: 1.89%
-- Flow 3:
Average throughput: 23.28 Mbit/s
95th percentile per-packet one-way delay: 108.232 ms
Loss rate: 7.81%

Run 3: Report of QUIC Cubic — Data Link

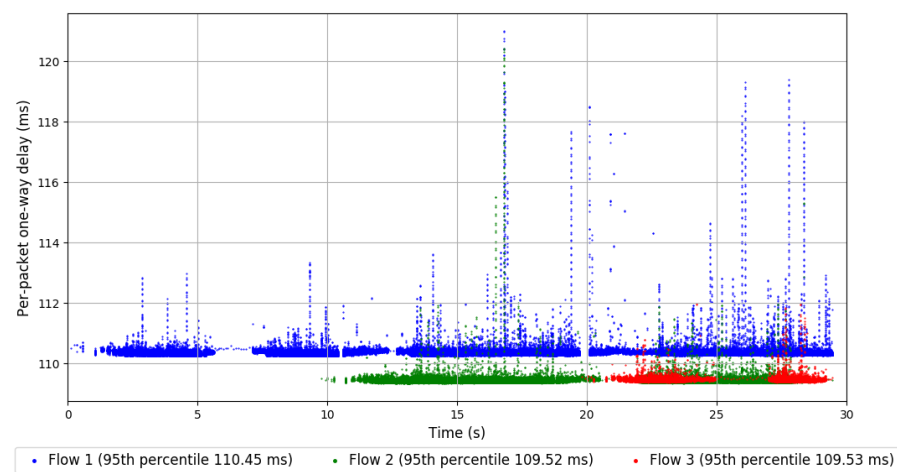
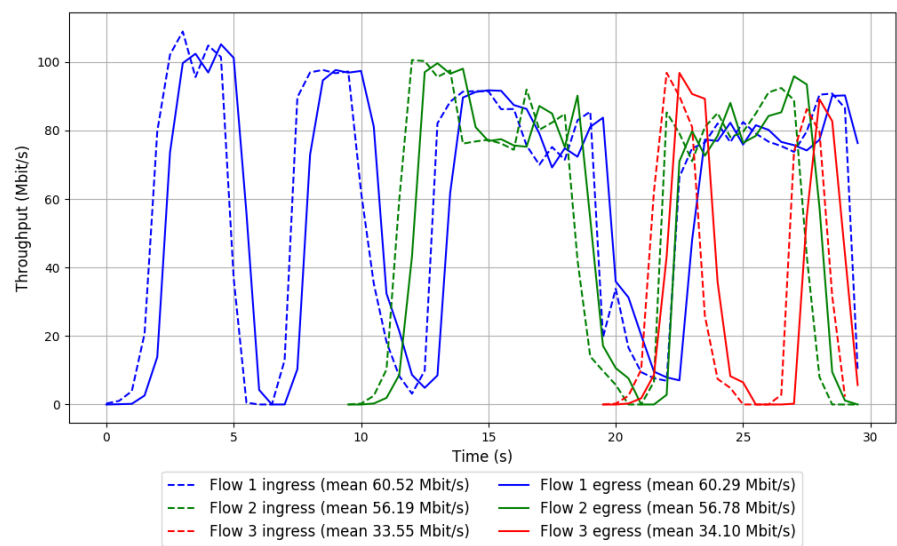


Run 4: Statistics of QUIC Cubic

Start at: 2018-10-26 04:47:34
End at: 2018-10-26 04:48:04
Local clock offset: 0.652 ms
Remote clock offset: -0.429 ms

Below is generated by plot.py at 2018-10-26 07:49:25
Datalink statistics
-- Total of 3 flows:
Average throughput: 109.56 Mbit/s
95th percentile per-packet one-way delay: 110.409 ms
Loss rate: 0.62%
-- Flow 1:
Average throughput: 60.29 Mbit/s
95th percentile per-packet one-way delay: 110.446 ms
Loss rate: 1.12%
-- Flow 2:
Average throughput: 56.78 Mbit/s
95th percentile per-packet one-way delay: 109.515 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 34.10 Mbit/s
95th percentile per-packet one-way delay: 109.531 ms
Loss rate: 0.00%

Run 4: Report of QUIC Cubic — Data Link

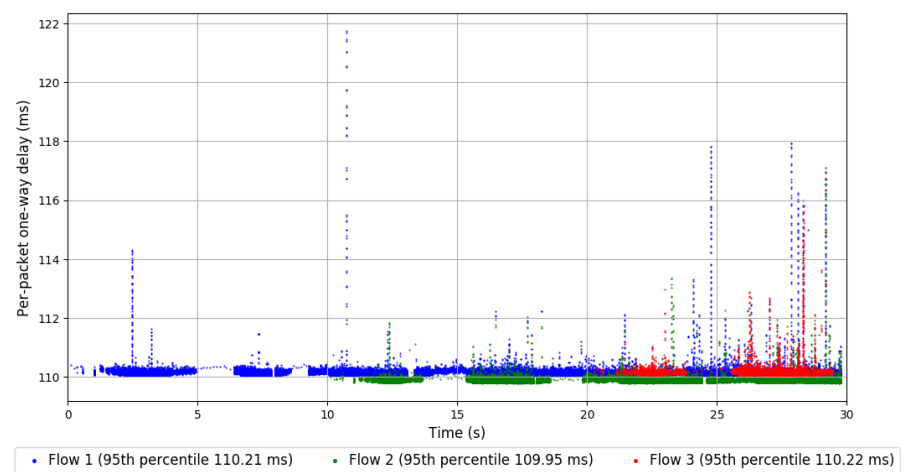
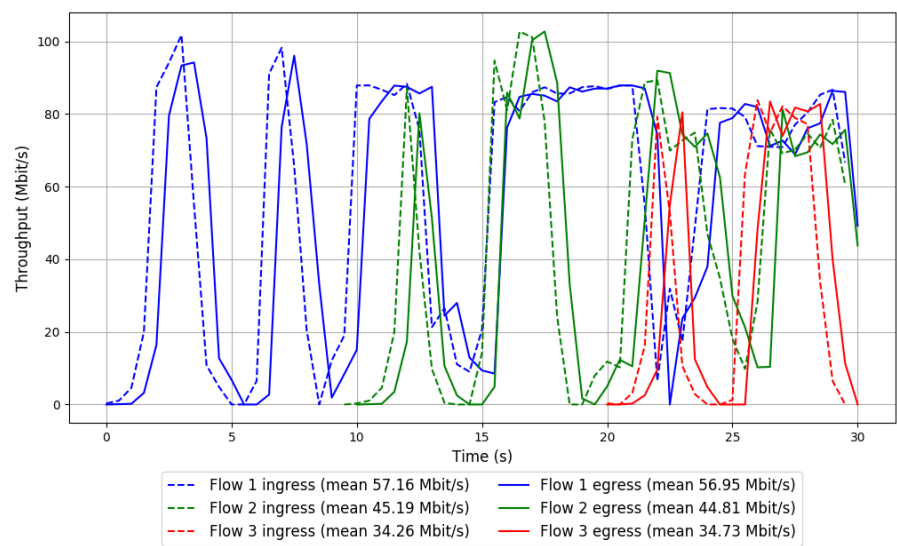


Run 5: Statistics of QUIC Cubic

Start at: 2018-10-26 05:19:16
End at: 2018-10-26 05:19:46
Local clock offset: 0.178 ms
Remote clock offset: -0.446 ms

Below is generated by plot.py at 2018-10-26 07:49:25
Datalink statistics
-- Total of 3 flows:
Average throughput: 97.90 Mbit/s
95th percentile per-packet one-way delay: 110.194 ms
Loss rate: 1.22%
-- Flow 1:
Average throughput: 56.95 Mbit/s
95th percentile per-packet one-way delay: 110.210 ms
Loss rate: 1.09%
-- Flow 2:
Average throughput: 44.81 Mbit/s
95th percentile per-packet one-way delay: 109.949 ms
Loss rate: 1.93%
-- Flow 3:
Average throughput: 34.73 Mbit/s
95th percentile per-packet one-way delay: 110.216 ms
Loss rate: 0.00%

Run 5: Report of QUIC Cubic — Data Link

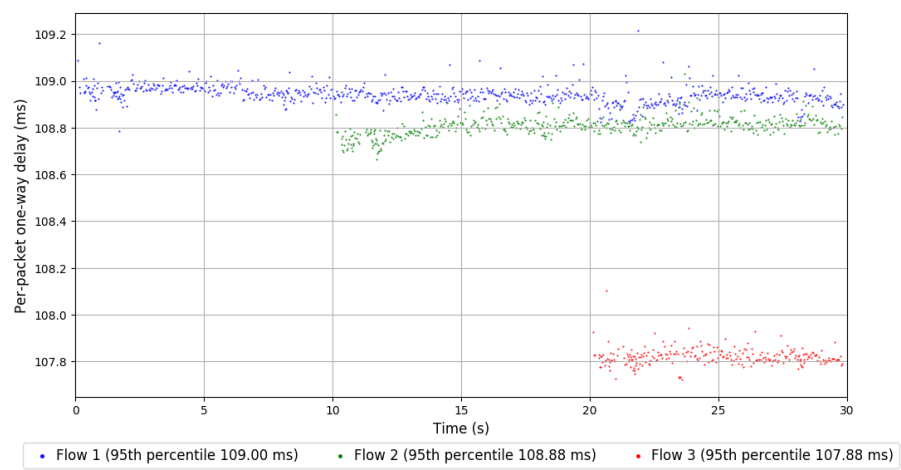
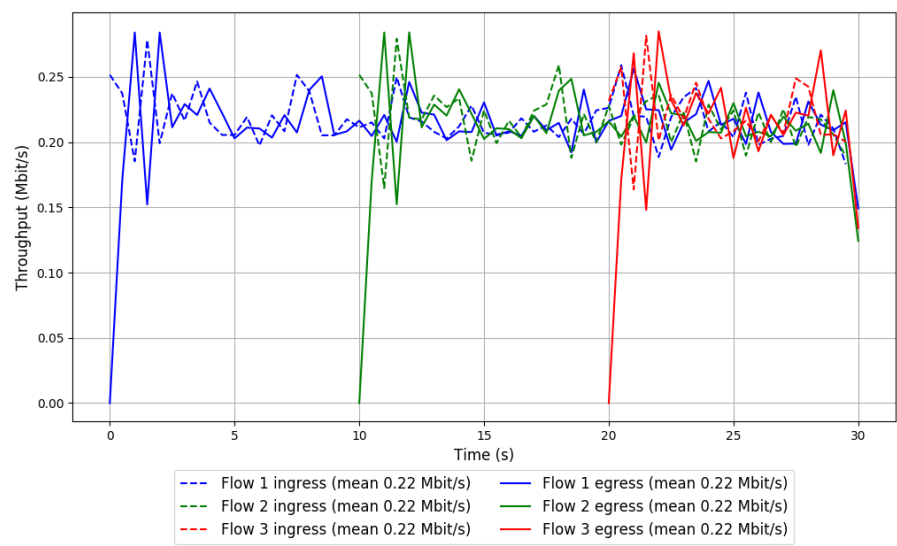


```
Run 1: Statistics of SReAM

Start at: 2018-10-26 03:19:52
End at: 2018-10-26 03:20:22
Local clock offset: -0.483 ms
Remote clock offset: 0.156 ms

# Below is generated by plot.py at 2018-10-26 07:49:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 108.981 ms
Loss rate: 1.11%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 109.001 ms
Loss rate: 0.64%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 108.875 ms
Loss rate: 1.25%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 107.875 ms
Loss rate: 2.22%
```

Run 1: Report of SReAM — Data Link

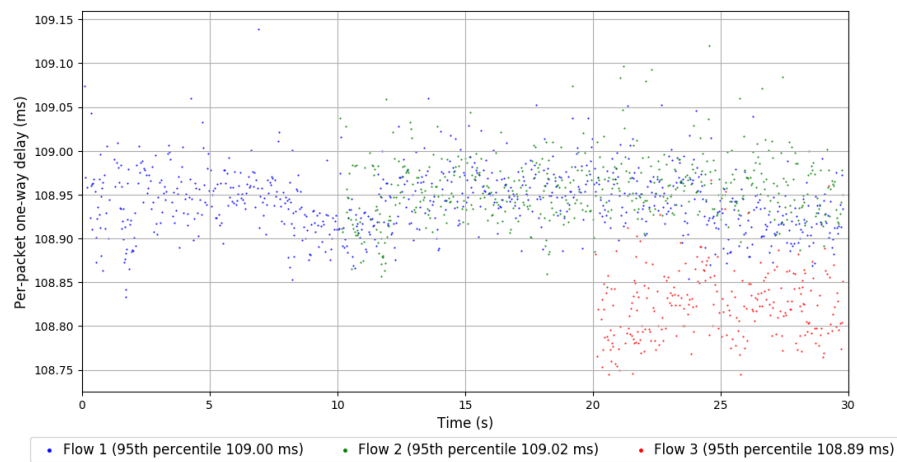
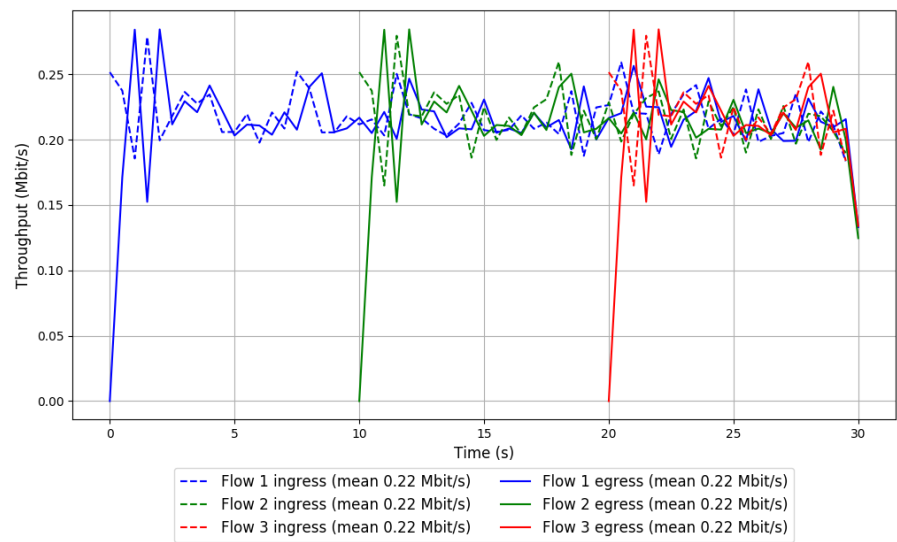


Run 2: Statistics of SReAM

Start at: 2018-10-26 03:51:22
End at: 2018-10-26 03:51:52
Local clock offset: -0.398 ms
Remote clock offset: 0.05 ms

Below is generated by plot.py at 2018-10-26 07:49:25
Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 109.003 ms
Loss rate: 1.17%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 109.003 ms
Loss rate: 0.77%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 109.015 ms
Loss rate: 1.25%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 108.887 ms
Loss rate: 2.22%

Run 2: Report of SReAM — Data Link

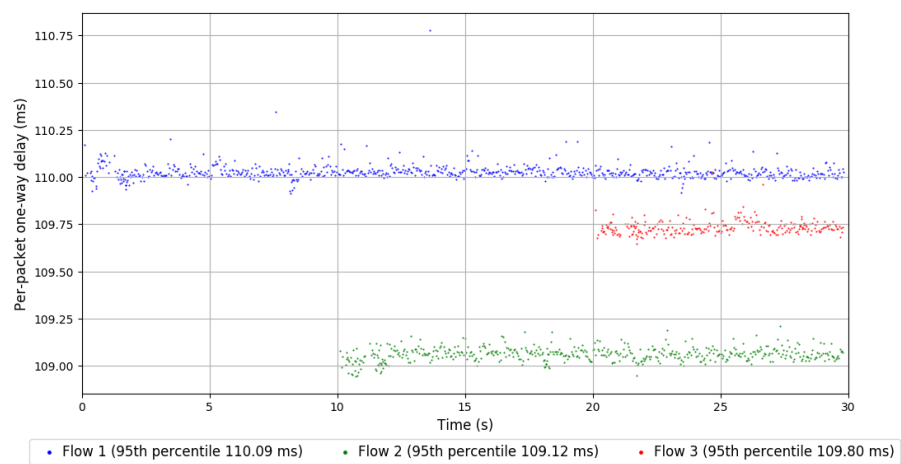
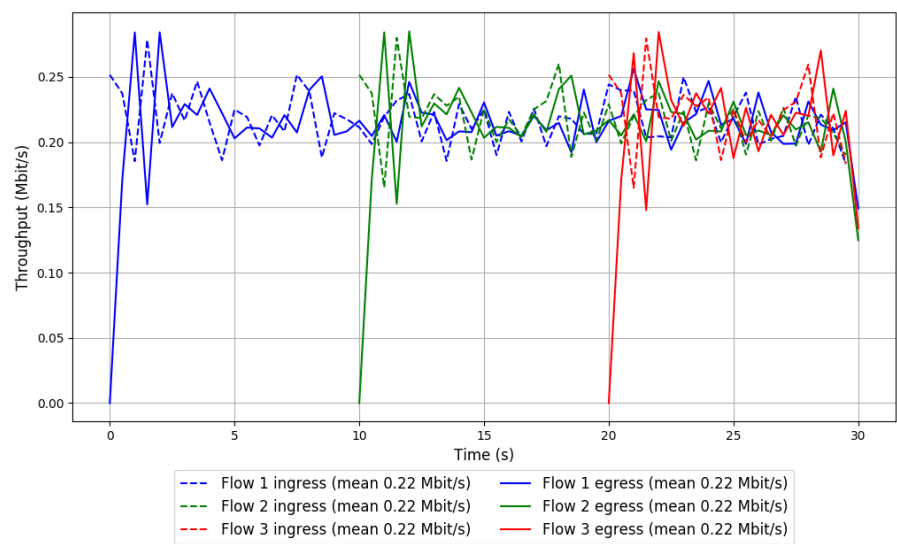


Run 3: Statistics of SReAM

Start at: 2018-10-26 04:23:20
End at: 2018-10-26 04:23:50
Local clock offset: 0.65 ms
Remote clock offset: -0.086 ms

Below is generated by plot.py at 2018-10-26 07:49:25
Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 110.062 ms
Loss rate: 1.11%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 110.089 ms
Loss rate: 0.64%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 109.124 ms
Loss rate: 1.25%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 109.798 ms
Loss rate: 2.22%

Run 3: Report of SReAM — Data Link

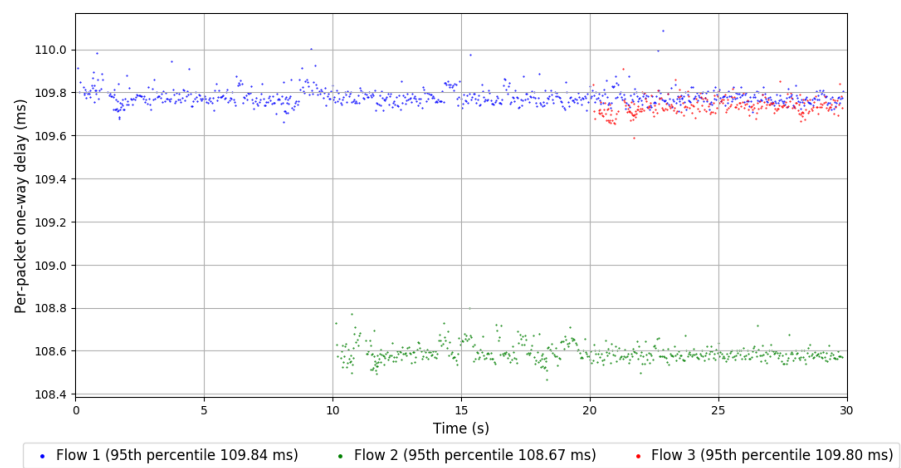
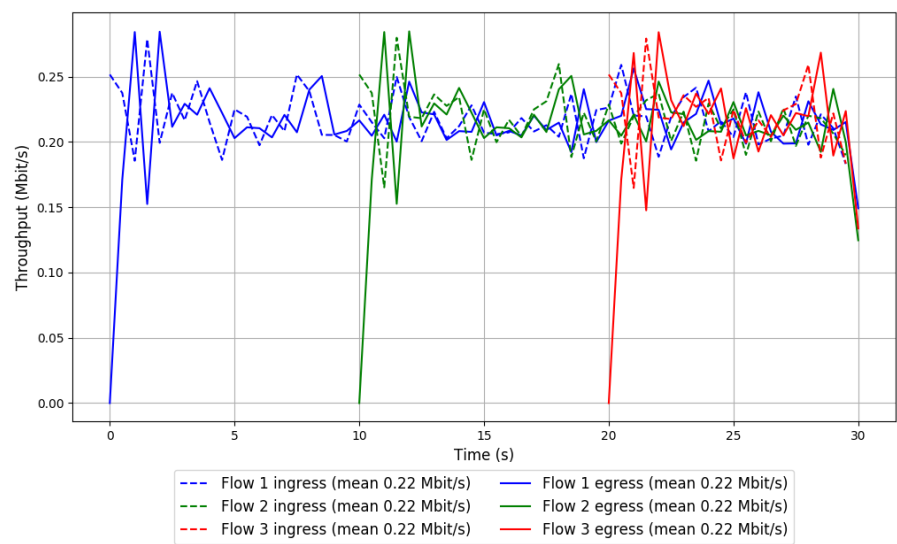


Run 4: Statistics of SReAM

Start at: 2018-10-26 04:55:07
End at: 2018-10-26 04:55:37
Local clock offset: 0.034 ms
Remote clock offset: -0.003 ms

Below is generated by plot.py at 2018-10-26 07:49:25
Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 109.826 ms
Loss rate: 1.11%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 109.845 ms
Loss rate: 0.64%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 108.666 ms
Loss rate: 1.25%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 109.798 ms
Loss rate: 2.22%

Run 4: Report of SCReAM — Data Link



Run 5: Statistics of SReAM

Start at: 2018-10-26 05:26:55

End at: 2018-10-26 05:27:25

Local clock offset: -0.378 ms

Remote clock offset: 0.203 ms

Below is generated by plot.py at 2018-10-26 07:49:25

Datalink statistics

-- Total of 3 flows:

Average throughput: 0.44 Mbit/s

95th percentile per-packet one-way delay: 108.893 ms

Loss rate: 1.04%

-- Flow 1:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 108.877 ms

Loss rate: 0.64%

-- Flow 2:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 108.757 ms

Loss rate: 1.04%

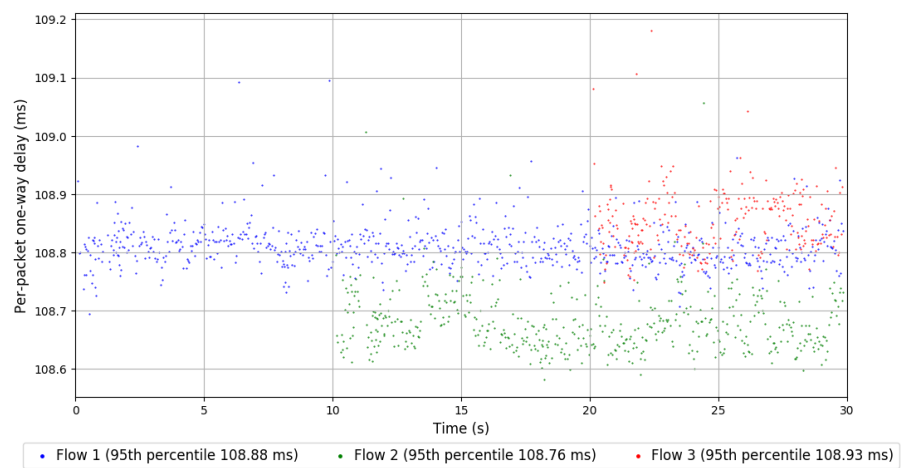
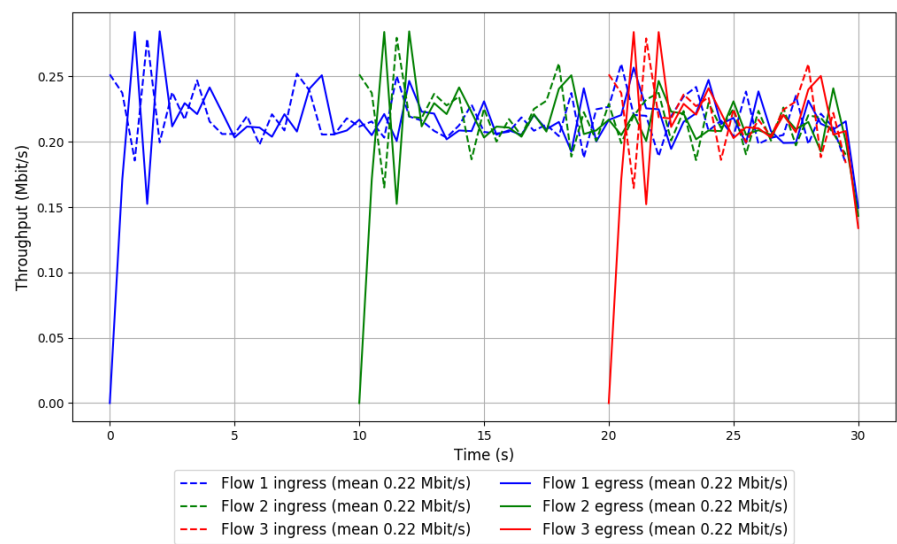
-- Flow 3:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 108.928 ms

Loss rate: 2.22%

Run 5: Report of SReAM — Data Link



Run 1: Statistics of Sprout

Start at: 2018-10-26 03:27:09

End at: 2018-10-26 03:27:39

Local clock offset: 1.02 ms

Remote clock offset: 0.188 ms

Below is generated by plot.py at 2018-10-26 07:49:25

Datalink statistics

-- Total of 3 flows:

Average throughput: 1.50 Mbit/s

95th percentile per-packet one-way delay: 110.667 ms

Loss rate: 0.37%

-- Flow 1:

Average throughput: 0.68 Mbit/s

95th percentile per-packet one-way delay: 110.410 ms

Loss rate: 0.70%

-- Flow 2:

Average throughput: 0.96 Mbit/s

95th percentile per-packet one-way delay: 110.744 ms

Loss rate: 0.11%

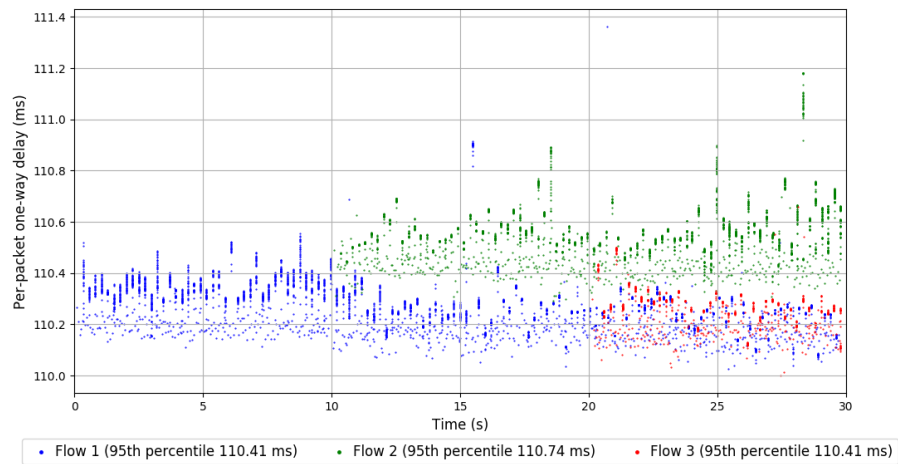
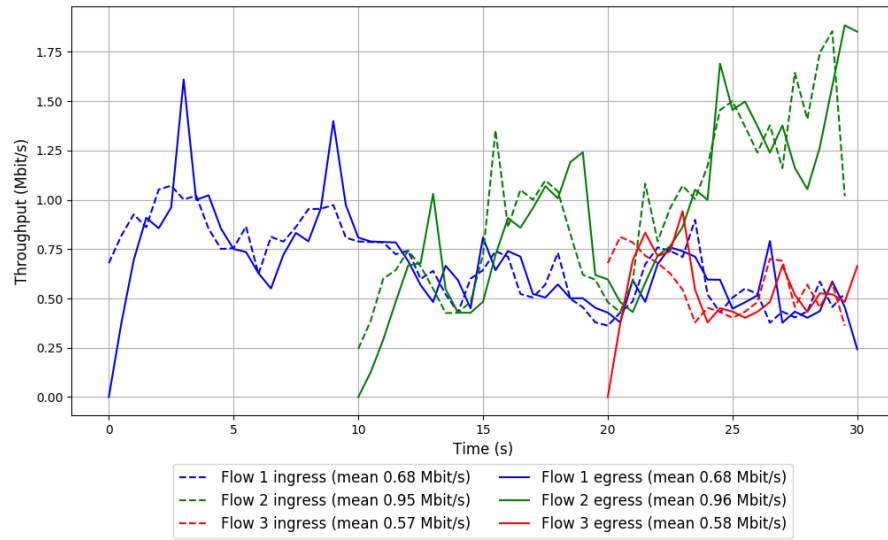
-- Flow 3:

Average throughput: 0.58 Mbit/s

95th percentile per-packet one-way delay: 110.411 ms

Loss rate: 0.06%

Run 1: Report of Sprout — Data Link

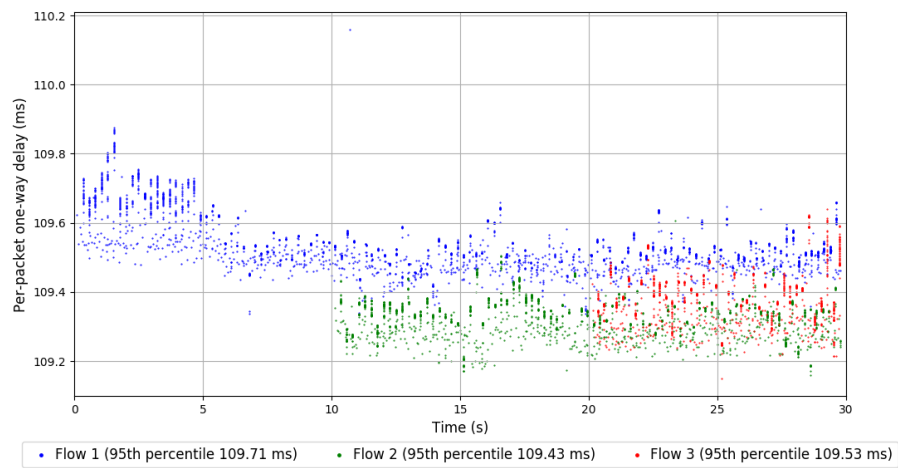
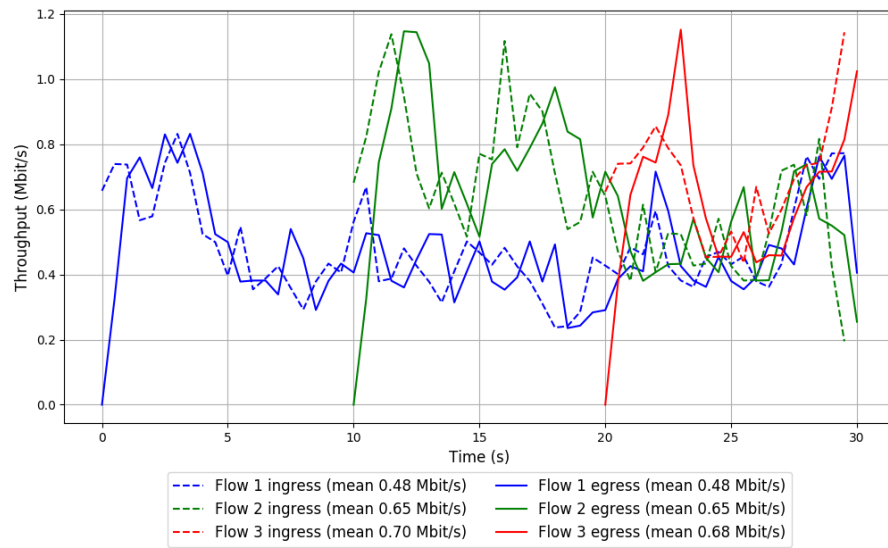


Run 2: Statistics of Sprout

Start at: 2018-10-26 03:58:44
End at: 2018-10-26 03:59:14
Local clock offset: 0.402 ms
Remote clock offset: 0.453 ms

Below is generated by plot.py at 2018-10-26 07:49:25
Datalink statistics
-- Total of 3 flows:
Average throughput: 1.13 Mbit/s
95th percentile per-packet one-way delay: 109.664 ms
Loss rate: 1.60%
-- Flow 1:
Average throughput: 0.48 Mbit/s
95th percentile per-packet one-way delay: 109.713 ms
Loss rate: 1.30%
-- Flow 2:
Average throughput: 0.65 Mbit/s
95th percentile per-packet one-way delay: 109.428 ms
Loss rate: 0.48%
-- Flow 3:
Average throughput: 0.68 Mbit/s
95th percentile per-packet one-way delay: 109.535 ms
Loss rate: 4.33%

Run 2: Report of Sprout — Data Link

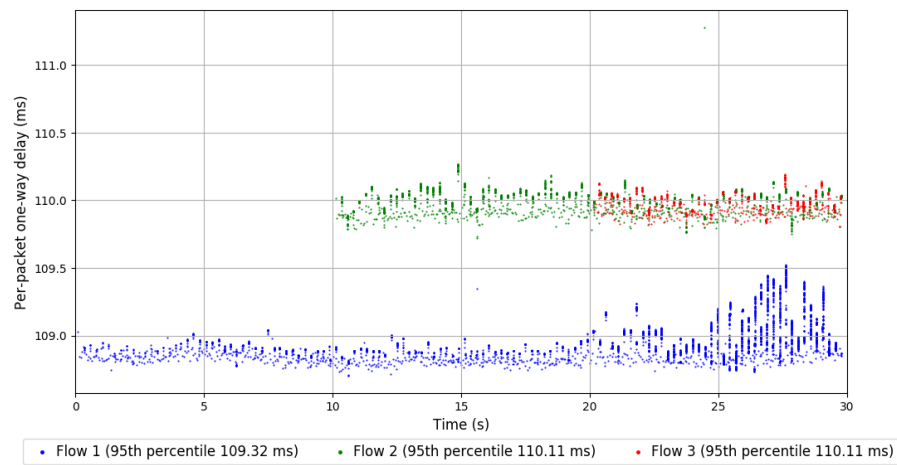
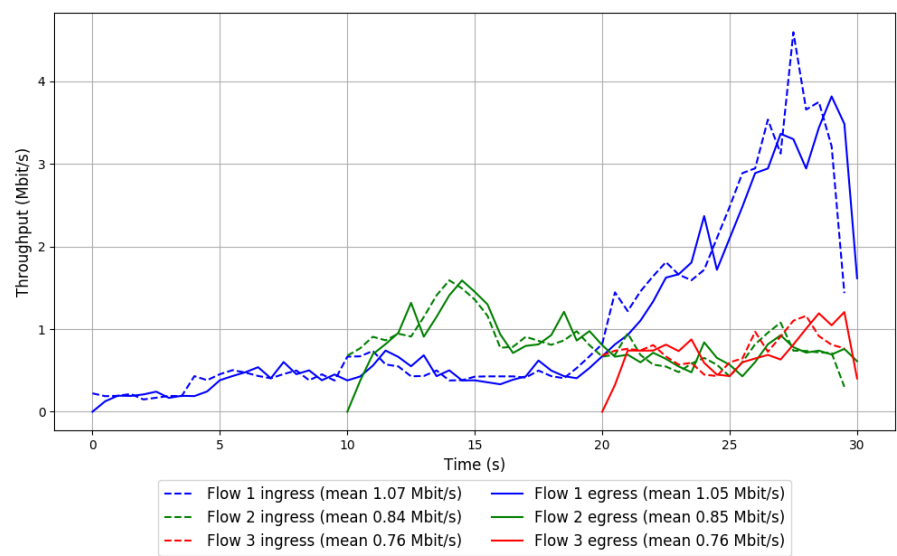


Run 3: Statistics of Sprout

Start at: 2018-10-26 04:30:42
End at: 2018-10-26 04:31:12
Local clock offset: -0.103 ms
Remote clock offset: -0.459 ms

```
# Below is generated by plot.py at 2018-10-26 07:49:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.87 Mbit/s
95th percentile per-packet one-way delay: 110.083 ms
Loss rate: 1.56%
-- Flow 1:
Average throughput: 1.05 Mbit/s
95th percentile per-packet one-way delay: 109.319 ms
Loss rate: 2.12%
-- Flow 2:
Average throughput: 0.85 Mbit/s
95th percentile per-packet one-way delay: 110.115 ms
Loss rate: 0.05%
-- Flow 3:
Average throughput: 0.76 Mbit/s
95th percentile per-packet one-way delay: 110.113 ms
Loss rate: 2.51%
```

Run 3: Report of Sprout — Data Link

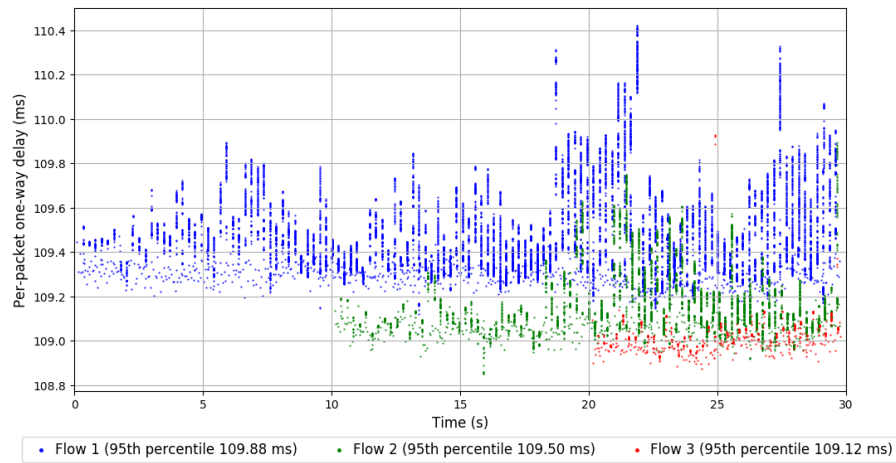
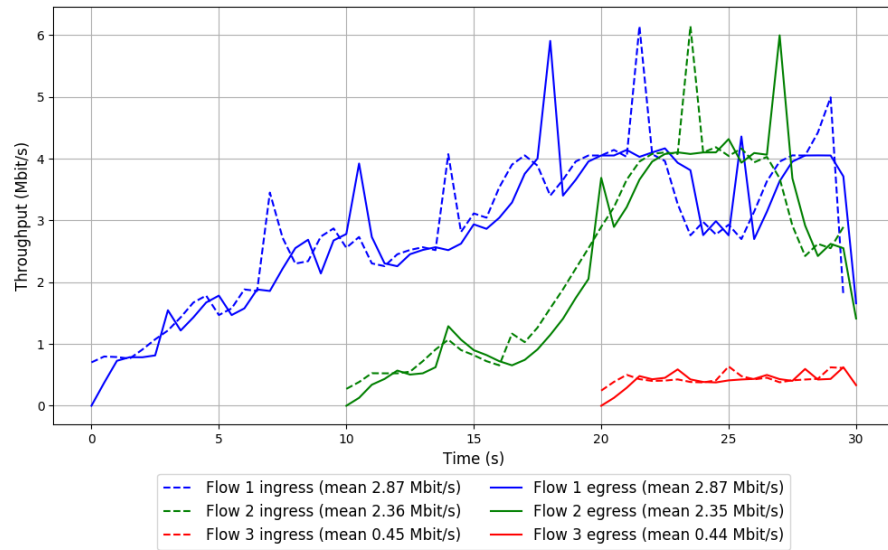


Run 4: Statistics of Sprout

Start at: 2018-10-26 05:02:19
End at: 2018-10-26 05:02:49
Local clock offset: -0.458 ms
Remote clock offset: -0.022 ms

```
# Below is generated by plot.py at 2018-10-26 07:49:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 4.57 Mbit/s
95th percentile per-packet one-way delay: 109.809 ms
Loss rate: 1.29%
-- Flow 1:
Average throughput: 2.87 Mbit/s
95th percentile per-packet one-way delay: 109.881 ms
Loss rate: 1.04%
-- Flow 2:
Average throughput: 2.35 Mbit/s
95th percentile per-packet one-way delay: 109.500 ms
Loss rate: 1.58%
-- Flow 3:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 109.124 ms
Loss rate: 3.18%
```

Run 4: Report of Sprout — Data Link

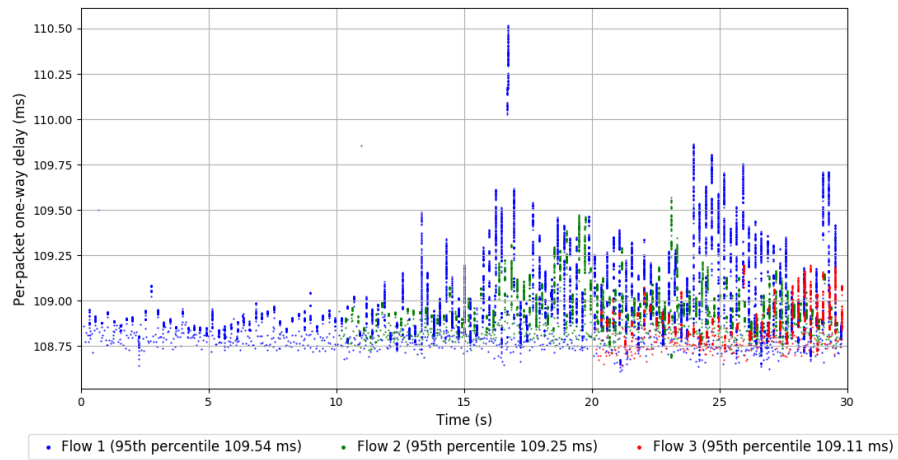
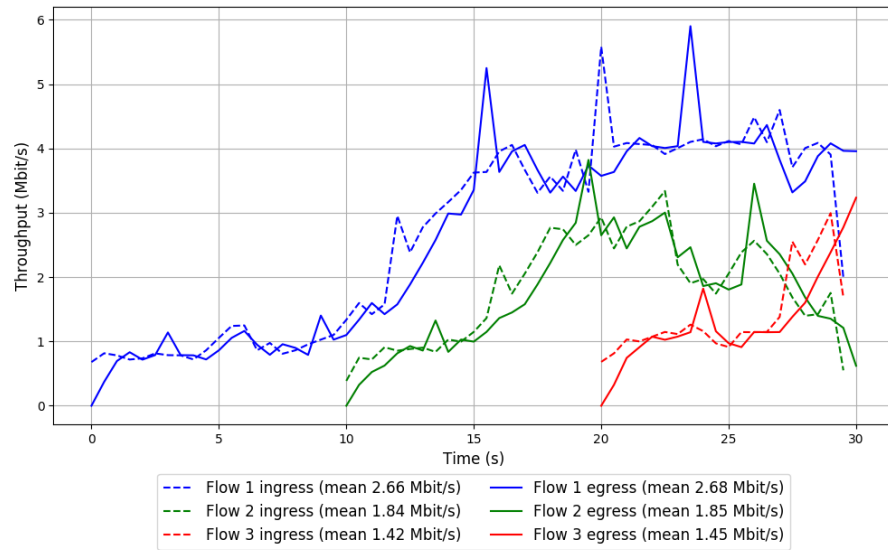


Run 5: Statistics of Sprout

Start at: 2018-10-26 05:34:24
End at: 2018-10-26 05:34:54
Local clock offset: -0.333 ms
Remote clock offset: 0.217 ms

```
# Below is generated by plot.py at 2018-10-26 07:49:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 4.38 Mbit/s
95th percentile per-packet one-way delay: 109.442 ms
Loss rate: 0.21%
-- Flow 1:
Average throughput: 2.68 Mbit/s
95th percentile per-packet one-way delay: 109.540 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.85 Mbit/s
95th percentile per-packet one-way delay: 109.252 ms
Loss rate: 0.74%
-- Flow 3:
Average throughput: 1.45 Mbit/s
95th percentile per-packet one-way delay: 109.113 ms
Loss rate: 0.02%
```

Run 5: Report of Sprout — Data Link

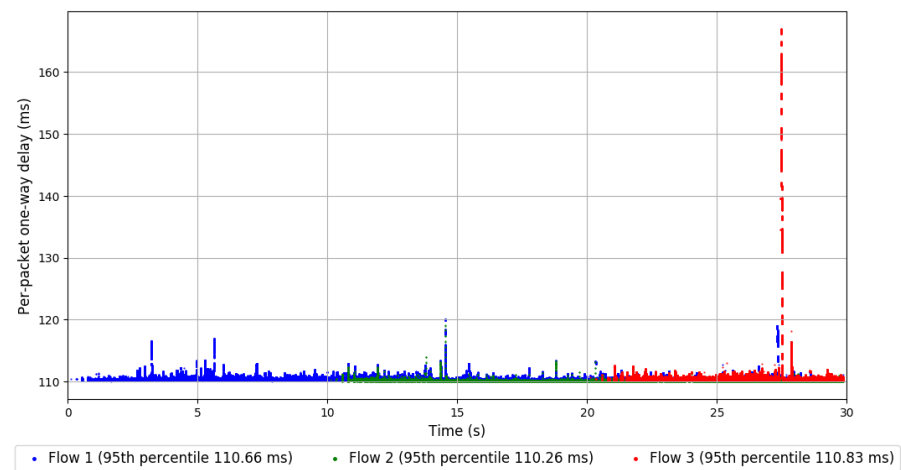
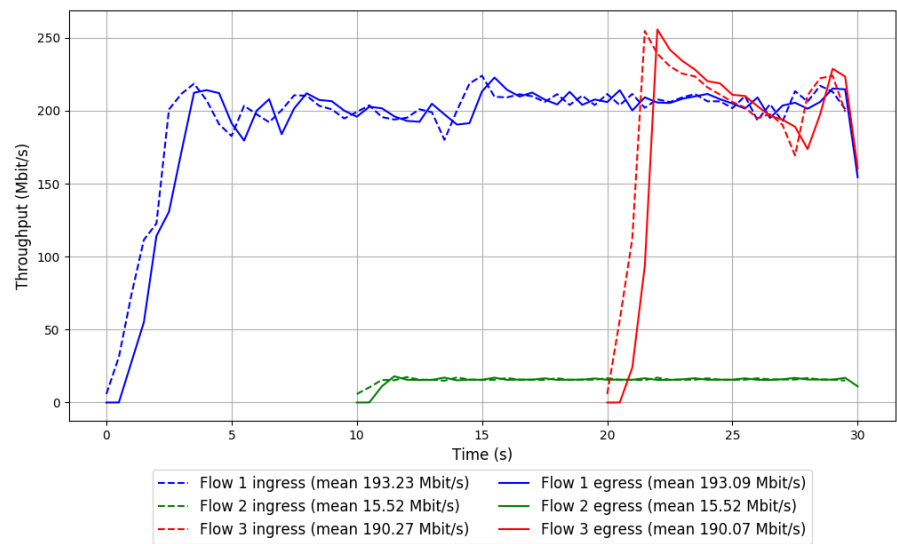


```
Run 1: Statistics of TaoVA-100x

Start at: 2018-10-26 03:33:35
End at: 2018-10-26 03:34:05
Local clock offset: 1.119 ms
Remote clock offset: 0.141 ms

# Below is generated by plot.py at 2018-10-26 07:49:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 265.62 Mbit/s
95th percentile per-packet one-way delay: 110.697 ms
Loss rate: 1.17%
-- Flow 1:
Average throughput: 193.09 Mbit/s
95th percentile per-packet one-way delay: 110.660 ms
Loss rate: 0.80%
-- Flow 2:
Average throughput: 15.52 Mbit/s
95th percentile per-packet one-way delay: 110.260 ms
Loss rate: 1.12%
-- Flow 3:
Average throughput: 190.07 Mbit/s
95th percentile per-packet one-way delay: 110.828 ms
Loss rate: 2.31%
```

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

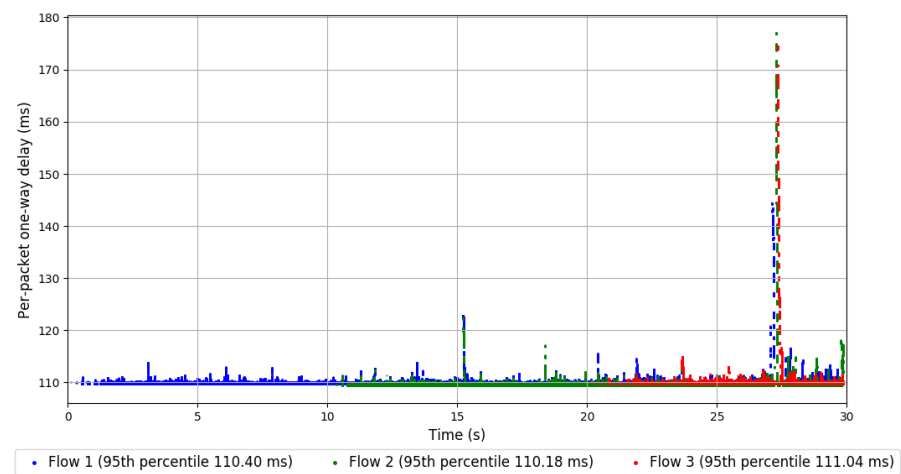
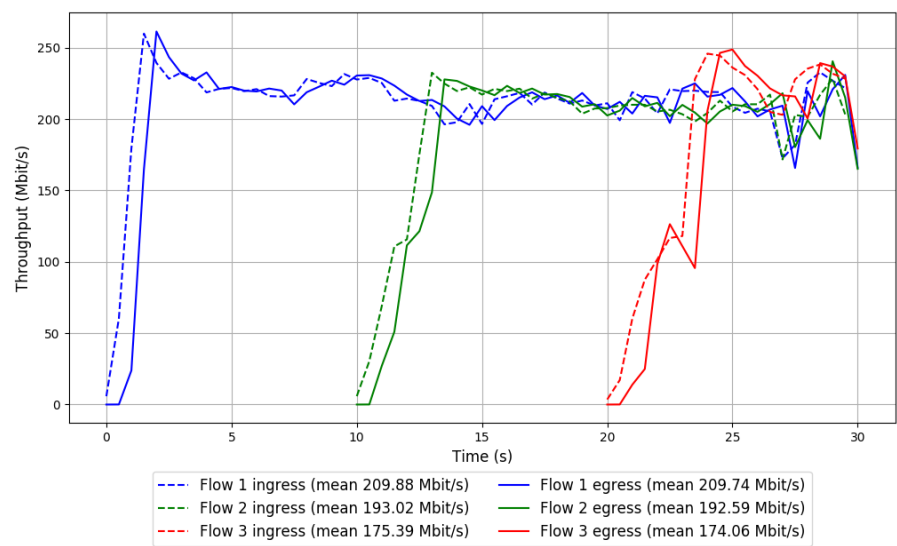


Run 2: Statistics of TaoVA-100x

Start at: 2018-10-26 04:05:11
End at: 2018-10-26 04:05:41
Local clock offset: -0.088 ms
Remote clock offset: -0.289 ms

Below is generated by plot.py at 2018-10-26 07:51:57
Datalink statistics
-- Total of 3 flows:
Average throughput: 394.32 Mbit/s
95th percentile per-packet one-way delay: 110.406 ms
Loss rate: 1.21%
-- Flow 1:
Average throughput: 209.74 Mbit/s
95th percentile per-packet one-way delay: 110.396 ms
Loss rate: 0.80%
-- Flow 2:
Average throughput: 192.59 Mbit/s
95th percentile per-packet one-way delay: 110.181 ms
Loss rate: 1.10%
-- Flow 3:
Average throughput: 174.06 Mbit/s
95th percentile per-packet one-way delay: 111.042 ms
Loss rate: 2.94%

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

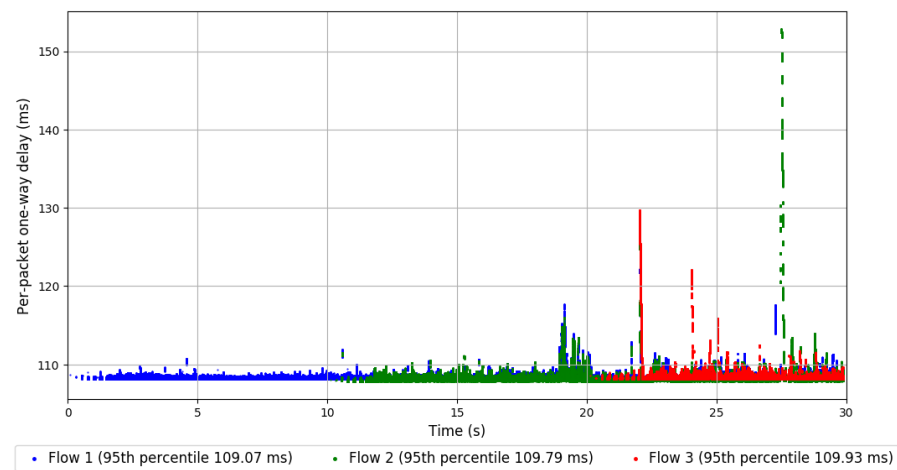
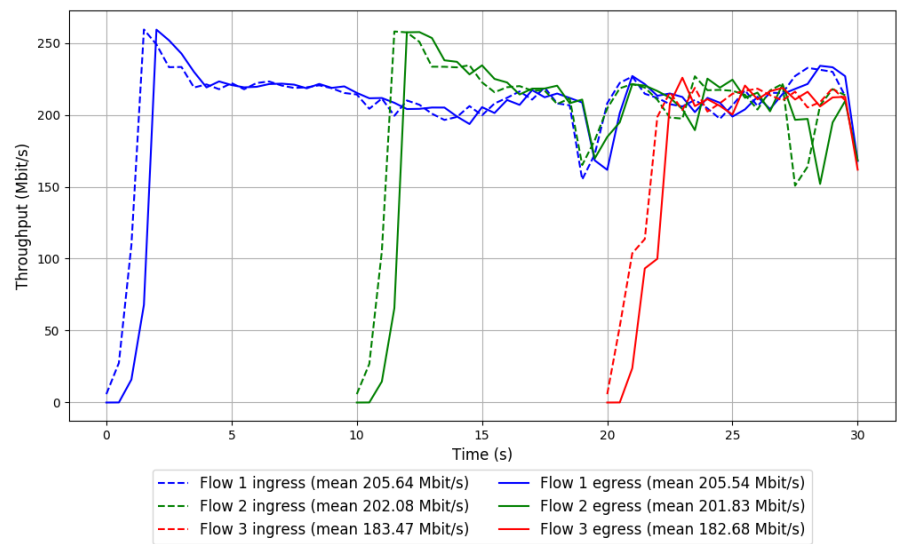


Run 3: Statistics of TaoVA-100x

Start at: 2018-10-26 04:37:07
End at: 2018-10-26 04:37:37
Local clock offset: -1.285 ms
Remote clock offset: -0.093 ms

Below is generated by plot.py at 2018-10-26 07:52:04
Datalink statistics
-- Total of 3 flows:
Average throughput: 399.28 Mbit/s
95th percentile per-packet one-way delay: 109.373 ms
Loss rate: 1.21%
-- Flow 1:
Average throughput: 205.54 Mbit/s
95th percentile per-packet one-way delay: 109.071 ms
Loss rate: 0.78%
-- Flow 2:
Average throughput: 201.83 Mbit/s
95th percentile per-packet one-way delay: 109.787 ms
Loss rate: 1.22%
-- Flow 3:
Average throughput: 182.68 Mbit/s
95th percentile per-packet one-way delay: 109.932 ms
Loss rate: 2.61%

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

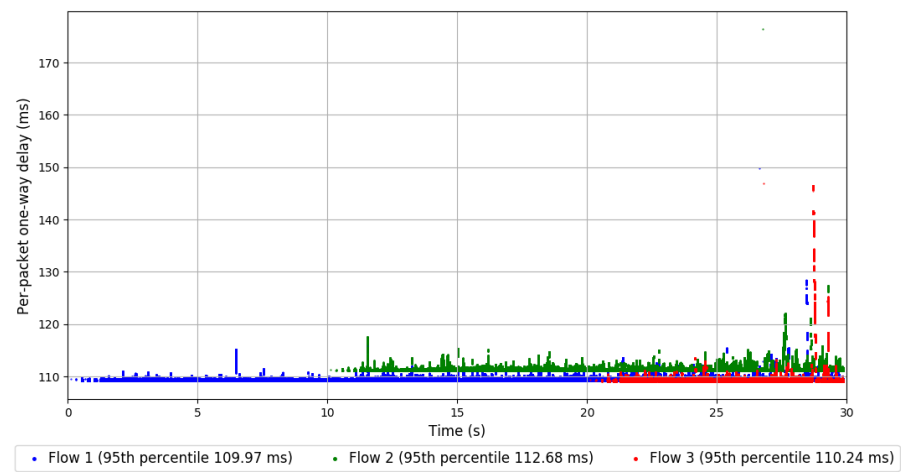
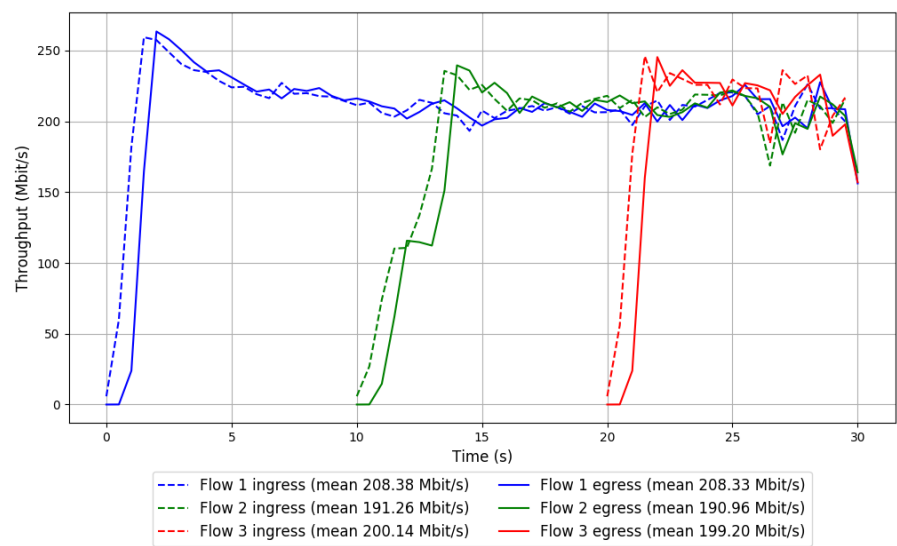


Run 4: Statistics of TaoVA-100x

Start at: 2018-10-26 05:08:46
End at: 2018-10-26 05:09:16
Local clock offset: -0.284 ms
Remote clock offset: -0.045 ms

Below is generated by plot.py at 2018-10-26 07:53:04
Datalink statistics
-- Total of 3 flows:
Average throughput: 400.30 Mbit/s
95th percentile per-packet one-way delay: 111.714 ms
Loss rate: 1.23%
-- Flow 1:
Average throughput: 208.33 Mbit/s
95th percentile per-packet one-way delay: 109.971 ms
Loss rate: 0.75%
-- Flow 2:
Average throughput: 190.96 Mbit/s
95th percentile per-packet one-way delay: 112.684 ms
Loss rate: 1.26%
-- Flow 3:
Average throughput: 199.20 Mbit/s
95th percentile per-packet one-way delay: 110.237 ms
Loss rate: 2.65%

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

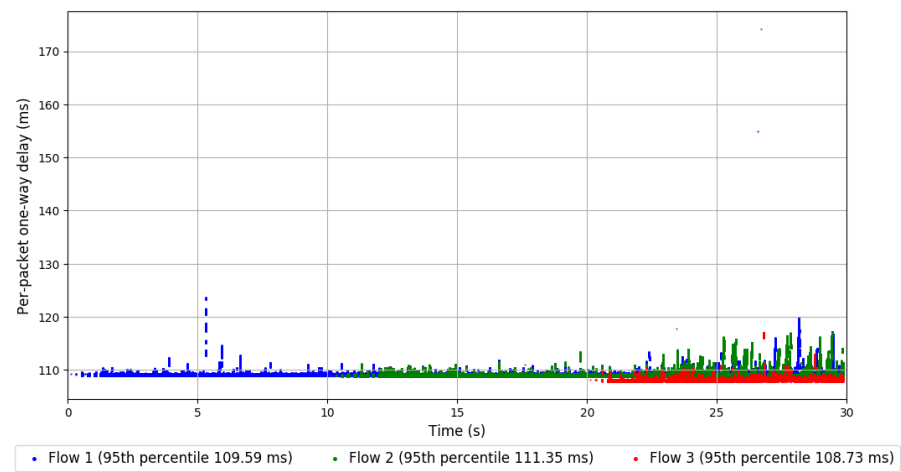
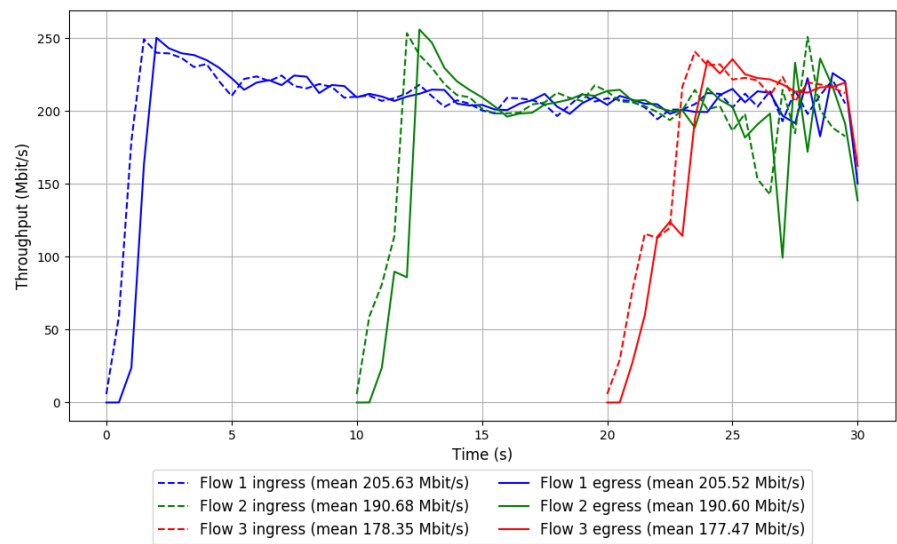


Run 5: Statistics of TaoVA-100x

Start at: 2018-10-26 05:41:07
End at: 2018-10-26 05:41:37
Local clock offset: -0.793 ms
Remote clock offset: -0.531 ms

Below is generated by plot.py at 2018-10-26 07:53:04
Datalink statistics
-- Total of 3 flows:
Average throughput: 390.11 Mbit/s
95th percentile per-packet one-way delay: 109.992 ms
Loss rate: 1.19%
-- Flow 1:
Average throughput: 205.52 Mbit/s
95th percentile per-packet one-way delay: 109.590 ms
Loss rate: 0.78%
-- Flow 2:
Average throughput: 190.60 Mbit/s
95th percentile per-packet one-way delay: 111.354 ms
Loss rate: 1.14%
-- Flow 3:
Average throughput: 177.47 Mbit/s
95th percentile per-packet one-way delay: 108.730 ms
Loss rate: 2.68%

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



Run 1: Statistics of TCP Vegas

Start at: 2018-10-26 03:29:41

End at: 2018-10-26 03:30:11

Local clock offset: 1.518 ms

Remote clock offset: 0.262 ms

Below is generated by plot.py at 2018-10-26 07:53:04

Datalink statistics

-- Total of 3 flows:

Average throughput: 574.59 Mbit/s

95th percentile per-packet one-way delay: 111.453 ms

Loss rate: 1.23%

-- Flow 1:

Average throughput: 302.55 Mbit/s

95th percentile per-packet one-way delay: 111.493 ms

Loss rate: 0.78%

-- Flow 2:

Average throughput: 286.31 Mbit/s

95th percentile per-packet one-way delay: 110.858 ms

Loss rate: 1.25%

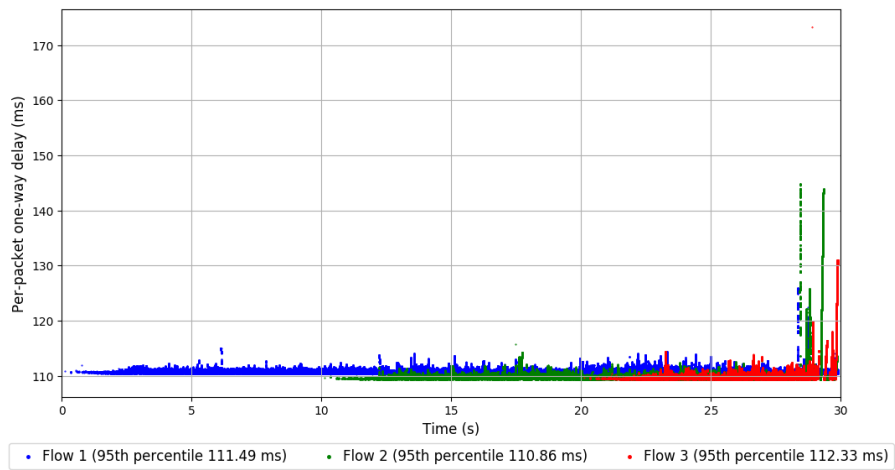
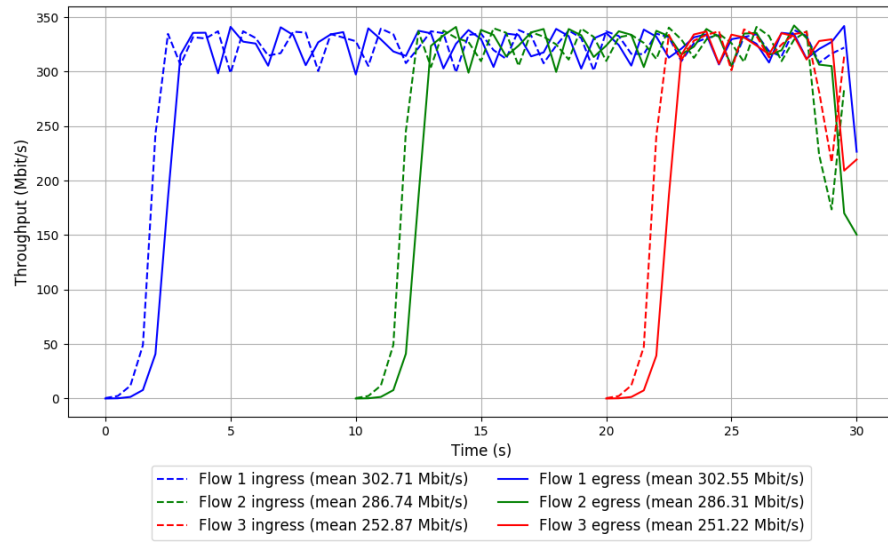
-- Flow 3:

Average throughput: 251.22 Mbit/s

95th percentile per-packet one-way delay: 112.328 ms

Loss rate: 2.82%

Run 1: Report of TCP Vegas — Data Link

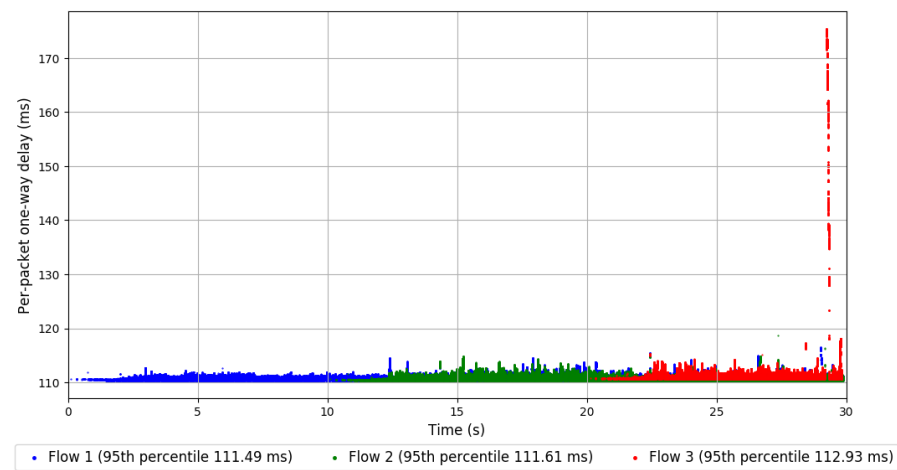
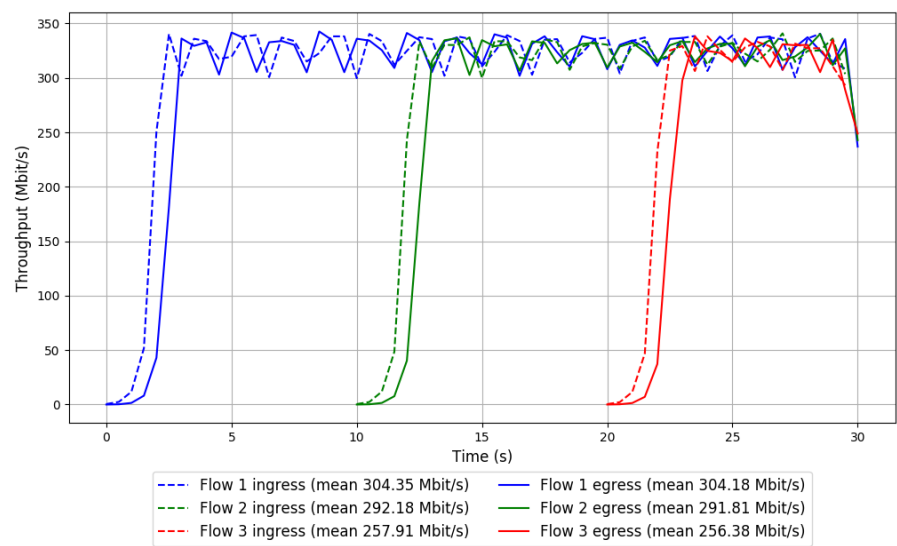


Run 2: Statistics of TCP Vegas

Start at: 2018-10-26 04:01:15
End at: 2018-10-26 04:01:45
Local clock offset: 0.914 ms
Remote clock offset: -0.274 ms

Below is generated by plot.py at 2018-10-26 07:57:18
Datalink statistics
-- Total of 3 flows:
Average throughput: 581.47 Mbit/s
95th percentile per-packet one-way delay: 111.741 ms
Loss rate: 1.22%
-- Flow 1:
Average throughput: 304.18 Mbit/s
95th percentile per-packet one-way delay: 111.488 ms
Loss rate: 0.78%
-- Flow 2:
Average throughput: 291.81 Mbit/s
95th percentile per-packet one-way delay: 111.608 ms
Loss rate: 1.22%
-- Flow 3:
Average throughput: 256.38 Mbit/s
95th percentile per-packet one-way delay: 112.927 ms
Loss rate: 2.79%

Run 2: Report of TCP Vegas — Data Link



Run 3: Statistics of TCP Vegas

Start at: 2018-10-26 04:33:13

End at: 2018-10-26 04:33:43

Local clock offset: -0.159 ms

Remote clock offset: 0.225 ms

Below is generated by plot.py at 2018-10-26 07:58:04

Datalink statistics

-- Total of 3 flows:

Average throughput: 583.90 Mbit/s

95th percentile per-packet one-way delay: 109.615 ms

Loss rate: 1.21%

-- Flow 1:

Average throughput: 304.30 Mbit/s

95th percentile per-packet one-way delay: 109.386 ms

Loss rate: 0.78%

-- Flow 2:

Average throughput: 294.10 Mbit/s

95th percentile per-packet one-way delay: 109.201 ms

Loss rate: 1.21%

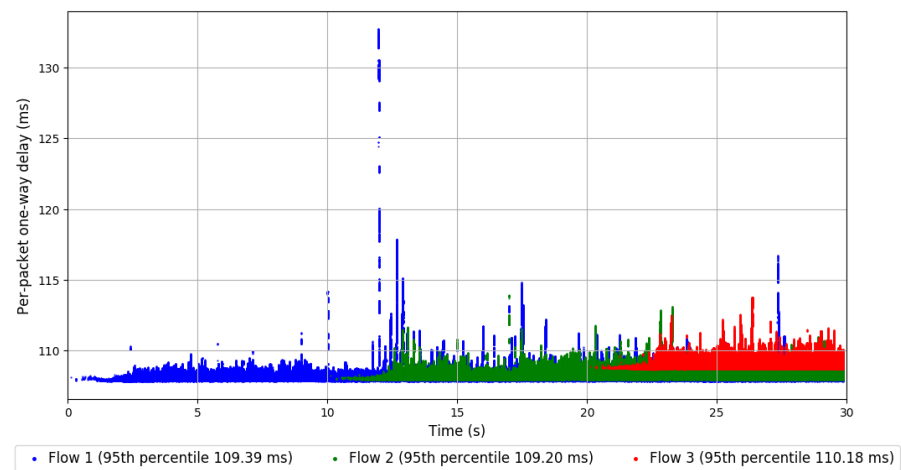
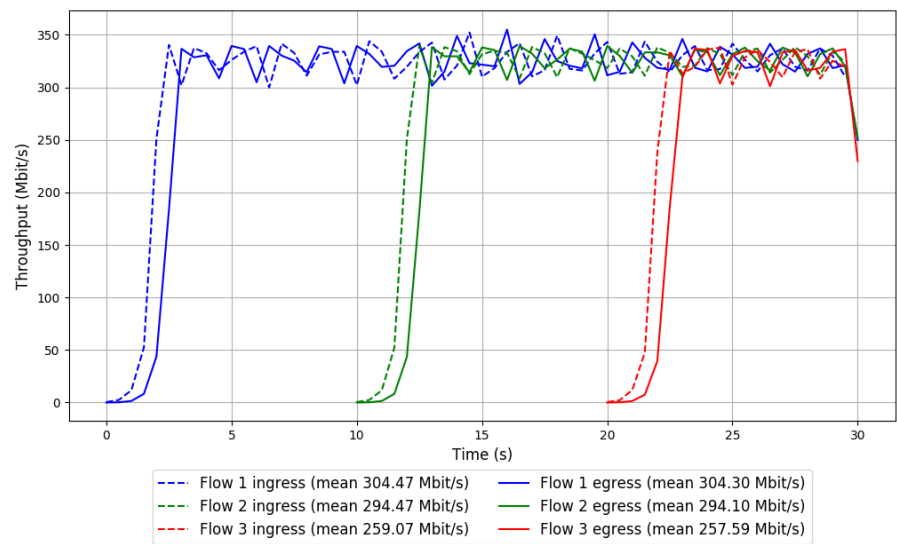
-- Flow 3:

Average throughput: 257.59 Mbit/s

95th percentile per-packet one-way delay: 110.178 ms

Loss rate: 2.75%

Run 3: Report of TCP Vegas — Data Link

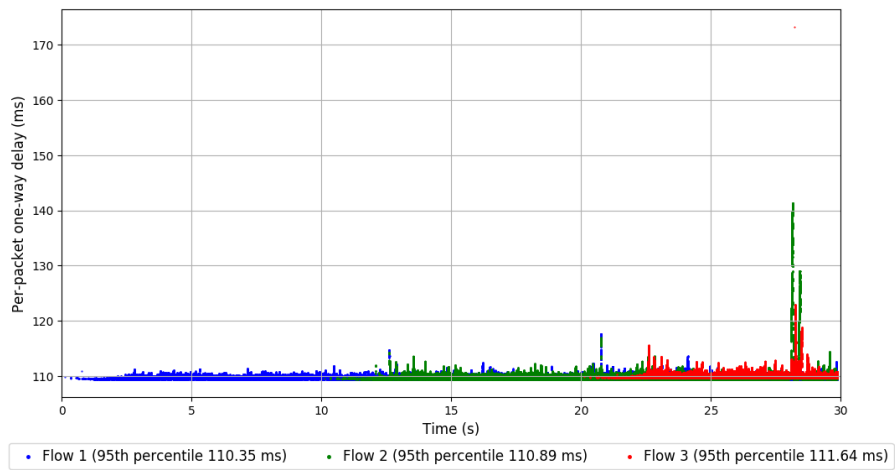
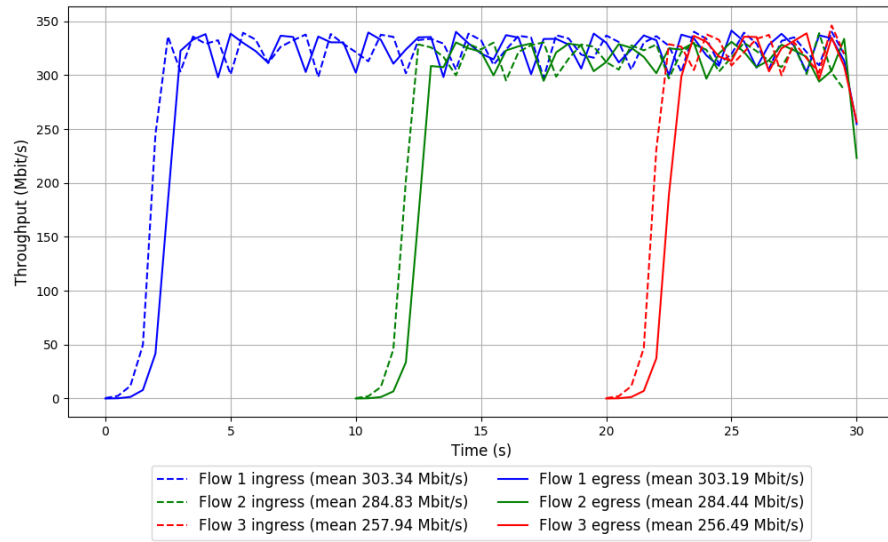


Run 4: Statistics of TCP Vegas

Start at: 2018-10-26 05:04:51
End at: 2018-10-26 05:05:21
Local clock offset: -0.257 ms
Remote clock offset: -0.392 ms

Below is generated by plot.py at 2018-10-26 08:00:33
Datalink statistics
-- Total of 3 flows:
Average throughput: 575.94 Mbit/s
95th percentile per-packet one-way delay: 110.674 ms
Loss rate: 1.21%
-- Flow 1:
Average throughput: 303.19 Mbit/s
95th percentile per-packet one-way delay: 110.349 ms
Loss rate: 0.78%
-- Flow 2:
Average throughput: 284.44 Mbit/s
95th percentile per-packet one-way delay: 110.892 ms
Loss rate: 1.22%
-- Flow 3:
Average throughput: 256.49 Mbit/s
95th percentile per-packet one-way delay: 111.638 ms
Loss rate: 2.74%

Run 4: Report of TCP Vegas — Data Link

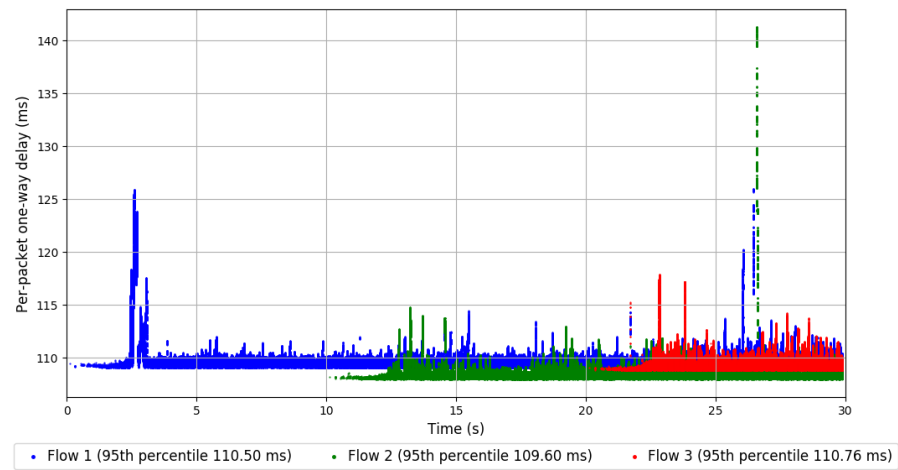
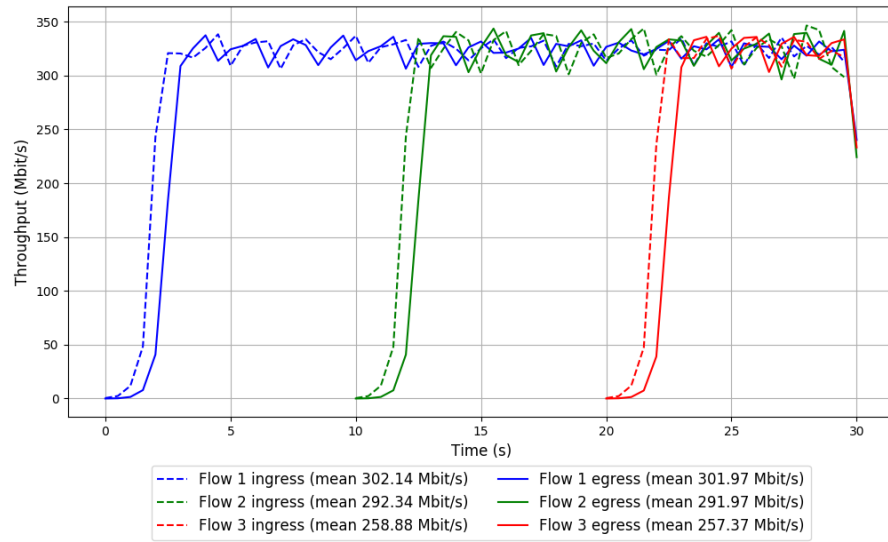


Run 5: Statistics of TCP Vegas

Start at: 2018-10-26 05:36:56
End at: 2018-10-26 05:37:26
Local clock offset: -0.462 ms
Remote clock offset: -0.183 ms

Below is generated by plot.py at 2018-10-26 08:01:58
Datalink statistics
-- Total of 3 flows:
Average throughput: 580.02 Mbit/s
95th percentile per-packet one-way delay: 110.370 ms
Loss rate: 1.22%
-- Flow 1:
Average throughput: 301.97 Mbit/s
95th percentile per-packet one-way delay: 110.500 ms
Loss rate: 0.79%
-- Flow 2:
Average throughput: 291.97 Mbit/s
95th percentile per-packet one-way delay: 109.604 ms
Loss rate: 1.22%
-- Flow 3:
Average throughput: 257.37 Mbit/s
95th percentile per-packet one-way delay: 110.762 ms
Loss rate: 2.75%

Run 5: Report of TCP Vegas — Data Link

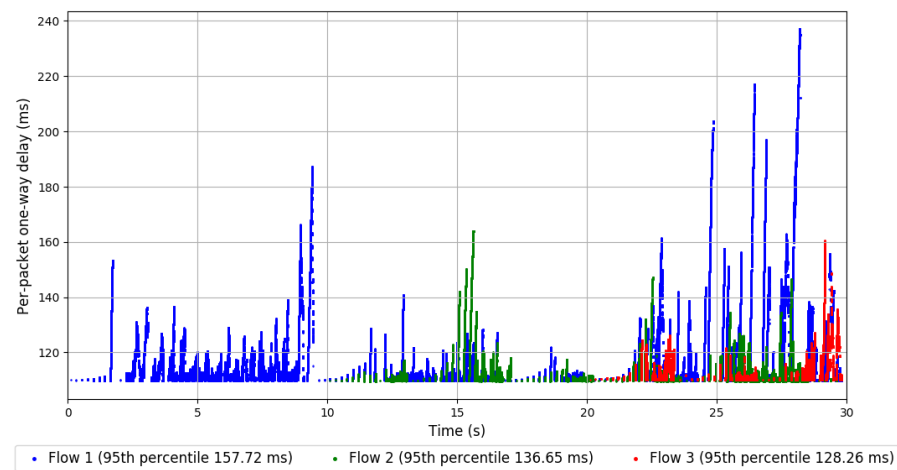
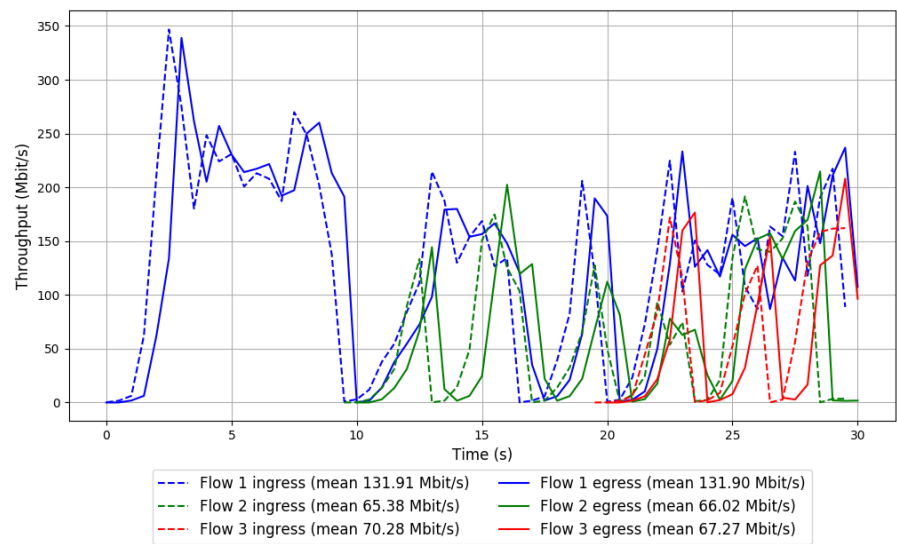


Run 1: Statistics of Verus

Start at: 2018-10-26 03:23:18
End at: 2018-10-26 03:23:48
Local clock offset: 0.48 ms
Remote clock offset: -0.182 ms

Below is generated by plot.py at 2018-10-26 08:01:58
Datalink statistics
-- Total of 3 flows:
Average throughput: 197.26 Mbit/s
95th percentile per-packet one-way delay: 149.318 ms
Loss rate: 0.85%
-- Flow 1:
Average throughput: 131.90 Mbit/s
95th percentile per-packet one-way delay: 157.718 ms
Loss rate: 0.16%
-- Flow 2:
Average throughput: 66.02 Mbit/s
95th percentile per-packet one-way delay: 136.651 ms
Loss rate: 0.14%
-- Flow 3:
Average throughput: 67.27 Mbit/s
95th percentile per-packet one-way delay: 128.257 ms
Loss rate: 6.07%

Run 1: Report of Verus — Data Link

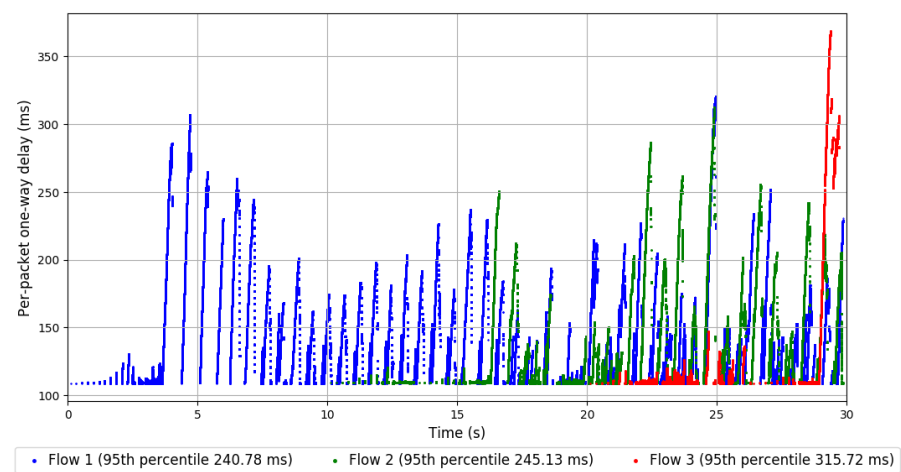
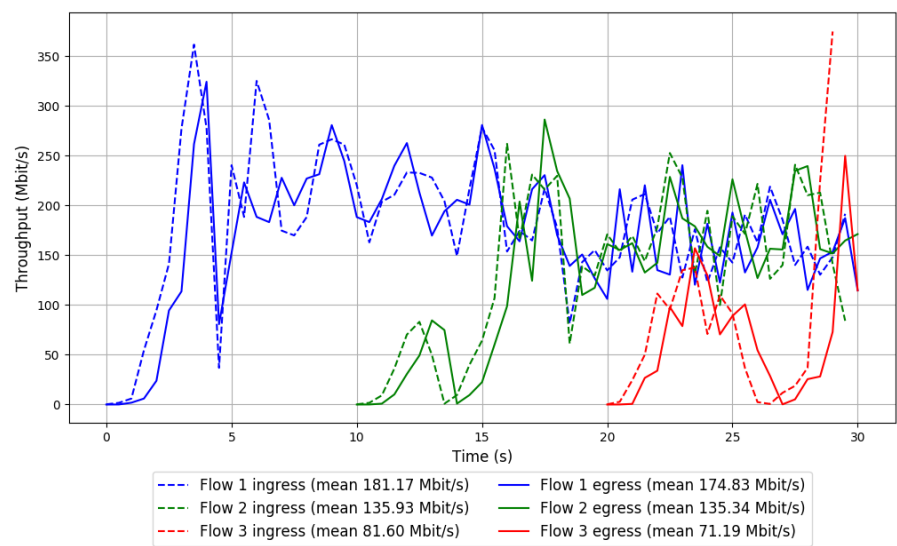


Run 2: Statistics of Verus

Start at: 2018-10-26 03:54:46
End at: 2018-10-26 03:55:16
Local clock offset: -0.651 ms
Remote clock offset: -0.292 ms

Below is generated by plot.py at 2018-10-26 08:02:35
Datalink statistics
-- Total of 3 flows:
Average throughput: 287.49 Mbit/s
95th percentile per-packet one-way delay: 250.596 ms
Loss rate: 3.30%
-- Flow 1:
Average throughput: 174.83 Mbit/s
95th percentile per-packet one-way delay: 240.776 ms
Loss rate: 3.58%
-- Flow 2:
Average throughput: 135.34 Mbit/s
95th percentile per-packet one-way delay: 245.135 ms
Loss rate: 0.50%
-- Flow 3:
Average throughput: 71.19 Mbit/s
95th percentile per-packet one-way delay: 315.719 ms
Loss rate: 11.14%

Run 2: Report of Verus — Data Link

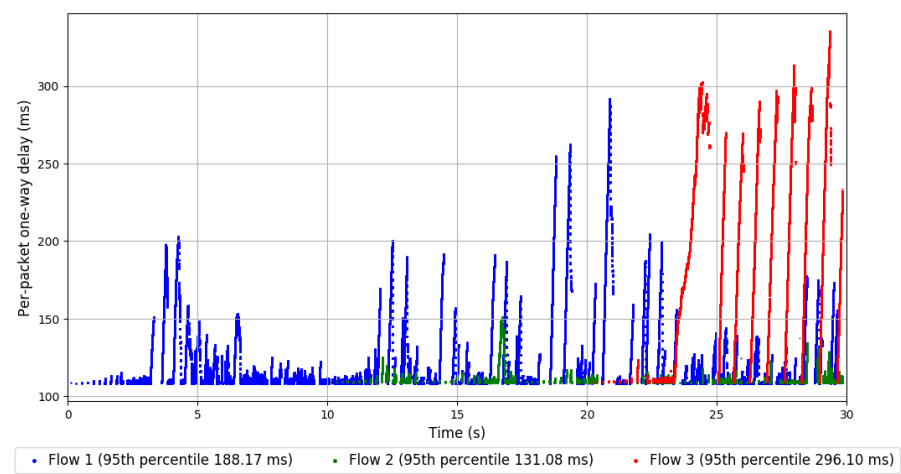
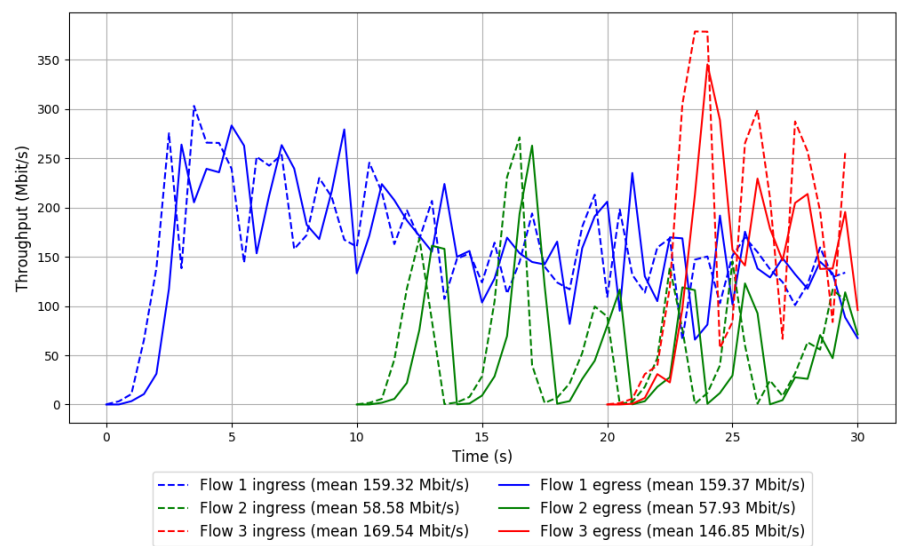


Run 3: Statistics of Verus

Start at: 2018-10-26 04:26:47
End at: 2018-10-26 04:27:17
Local clock offset: -0.127 ms
Remote clock offset: -0.116 ms

Below is generated by plot.py at 2018-10-26 08:02:35
Datalink statistics
-- Total of 3 flows:
Average throughput: 244.46 Mbit/s
95th percentile per-packet one-way delay: 267.518 ms
Loss rate: 4.33%
-- Flow 1:
Average throughput: 159.37 Mbit/s
95th percentile per-packet one-way delay: 188.171 ms
Loss rate: 1.40%
-- Flow 2:
Average throughput: 57.93 Mbit/s
95th percentile per-packet one-way delay: 131.083 ms
Loss rate: 1.97%
-- Flow 3:
Average throughput: 146.85 Mbit/s
95th percentile per-packet one-way delay: 296.095 ms
Loss rate: 14.38%

Run 3: Report of Verus — Data Link

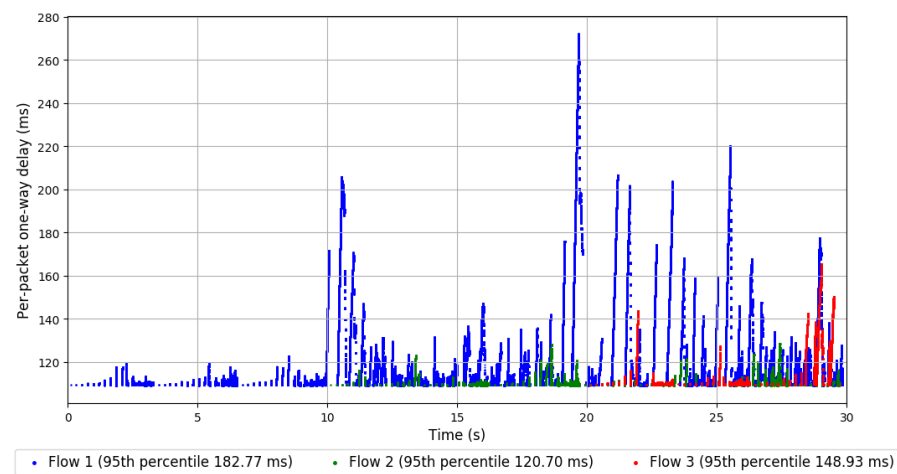
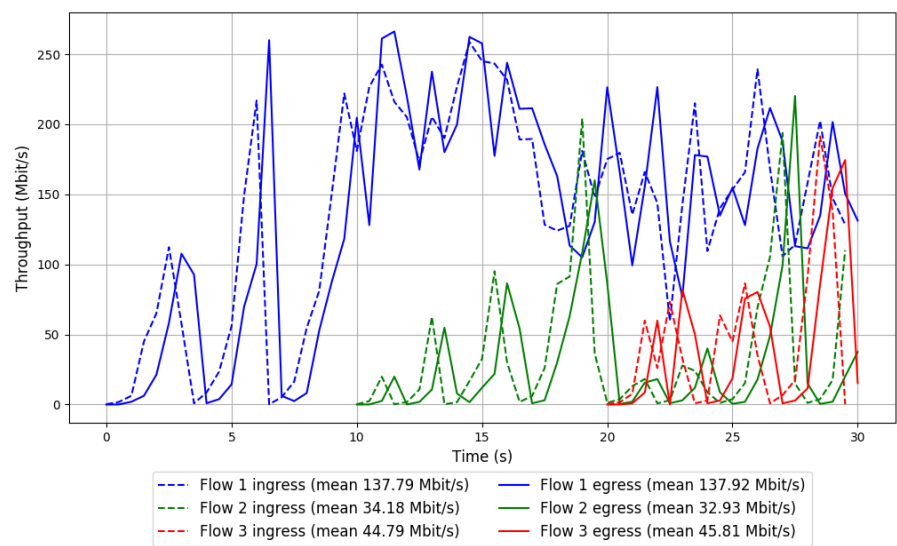


Run 4: Statistics of Verus

Start at: 2018-10-26 04:58:34
End at: 2018-10-26 04:59:04
Local clock offset: -0.144 ms
Remote clock offset: -0.055 ms

Below is generated by plot.py at 2018-10-26 08:02:35
Datalink statistics
-- Total of 3 flows:
Average throughput: 174.43 Mbit/s
95th percentile per-packet one-way delay: 173.877 ms
Loss rate: 1.19%
-- Flow 1:
Average throughput: 137.92 Mbit/s
95th percentile per-packet one-way delay: 182.773 ms
Loss rate: 0.64%
-- Flow 2:
Average throughput: 32.93 Mbit/s
95th percentile per-packet one-way delay: 120.696 ms
Loss rate: 5.32%
-- Flow 3:
Average throughput: 45.81 Mbit/s
95th percentile per-packet one-way delay: 148.930 ms
Loss rate: 0.02%

Run 4: Report of Verus — Data Link

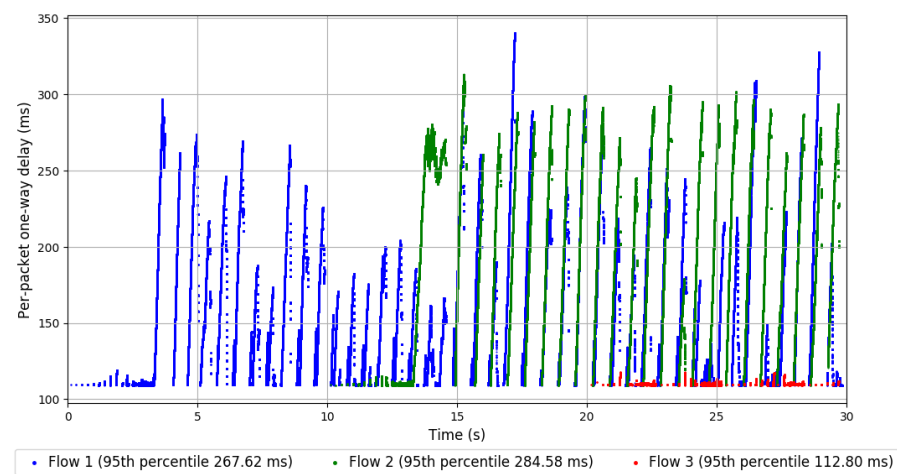
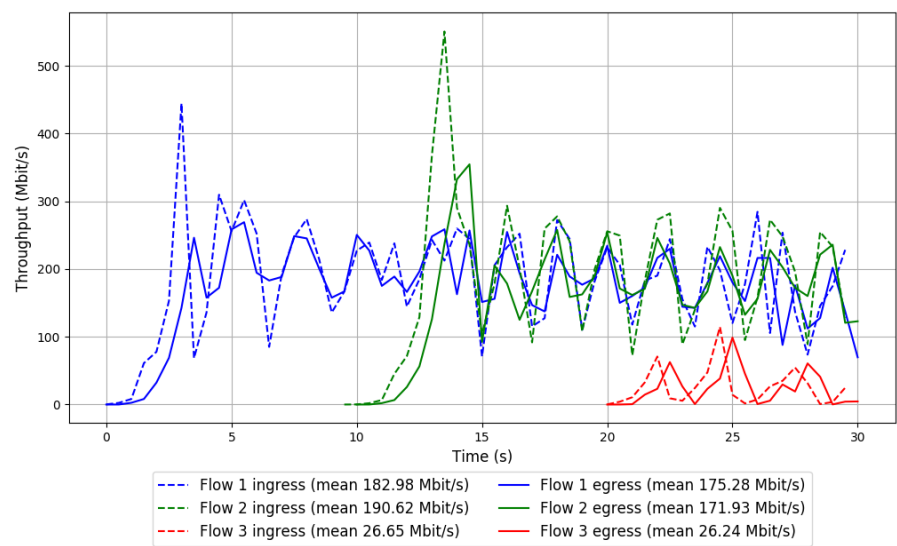


Run 5: Statistics of Verus

Start at: 2018-10-26 05:30:24
End at: 2018-10-26 05:30:54
Local clock offset: -0.271 ms
Remote clock offset: -0.154 ms

Below is generated by plot.py at 2018-10-26 08:06:37
Datalink statistics
-- Total of 3 flows:
Average throughput: 297.07 Mbit/s
95th percentile per-packet one-way delay: 277.858 ms
Loss rate: 7.44%
-- Flow 1:
Average throughput: 175.28 Mbit/s
95th percentile per-packet one-way delay: 267.625 ms
Loss rate: 4.90%
-- Flow 2:
Average throughput: 171.93 Mbit/s
95th percentile per-packet one-way delay: 284.584 ms
Loss rate: 11.34%
-- Flow 3:
Average throughput: 26.24 Mbit/s
95th percentile per-packet one-way delay: 112.795 ms
Loss rate: 3.87%

Run 5: Report of Verus — Data Link



Run 1: Statistics of PCC-Vivace

Start at: 2018-10-26 03:13:34

End at: 2018-10-26 03:14:04

Local clock offset: 1.375 ms

Remote clock offset: 0.53 ms

Below is generated by plot.py at 2018-10-26 08:07:07

Datalink statistics

-- Total of 3 flows:

Average throughput: 571.63 Mbit/s

95th percentile per-packet one-way delay: 142.637 ms

Loss rate: 1.55%

-- Flow 1:

Average throughput: 316.02 Mbit/s

95th percentile per-packet one-way delay: 133.015 ms

Loss rate: 0.66%

-- Flow 2:

Average throughput: 274.16 Mbit/s

95th percentile per-packet one-way delay: 118.272 ms

Loss rate: 1.31%

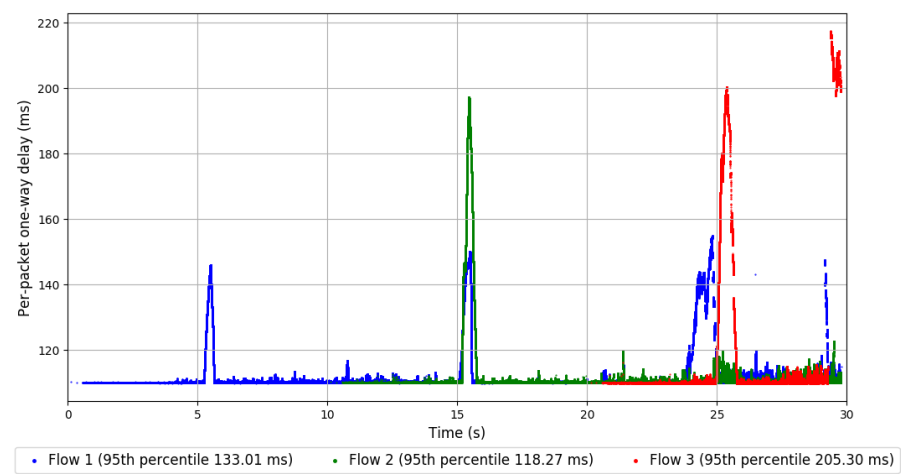
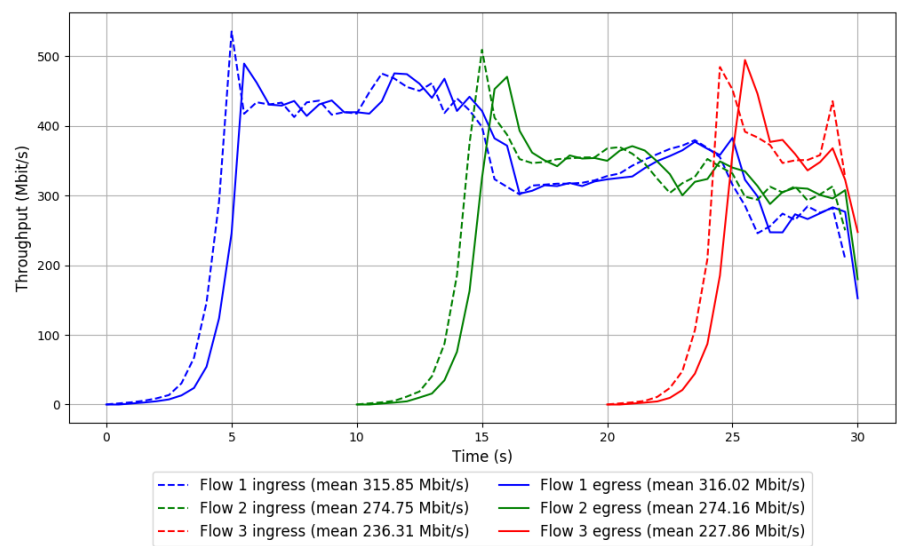
-- Flow 3:

Average throughput: 227.86 Mbit/s

95th percentile per-packet one-way delay: 205.298 ms

Loss rate: 5.71%

Run 1: Report of PCC-Vivace — Data Link



Run 2: Statistics of PCC-Vivace

Start at: 2018-10-26 03:45:09

End at: 2018-10-26 03:45:39

Local clock offset: 0.091 ms

Remote clock offset: 0.021 ms

Below is generated by plot.py at 2018-10-26 08:07:07

Datalink statistics

-- Total of 3 flows:

Average throughput: 434.77 Mbit/s

95th percentile per-packet one-way delay: 126.596 ms

Loss rate: 1.07%

-- Flow 1:

Average throughput: 296.65 Mbit/s

95th percentile per-packet one-way delay: 138.885 ms

Loss rate: 0.78%

-- Flow 2:

Average throughput: 173.37 Mbit/s

95th percentile per-packet one-way delay: 110.162 ms

Loss rate: 1.37%

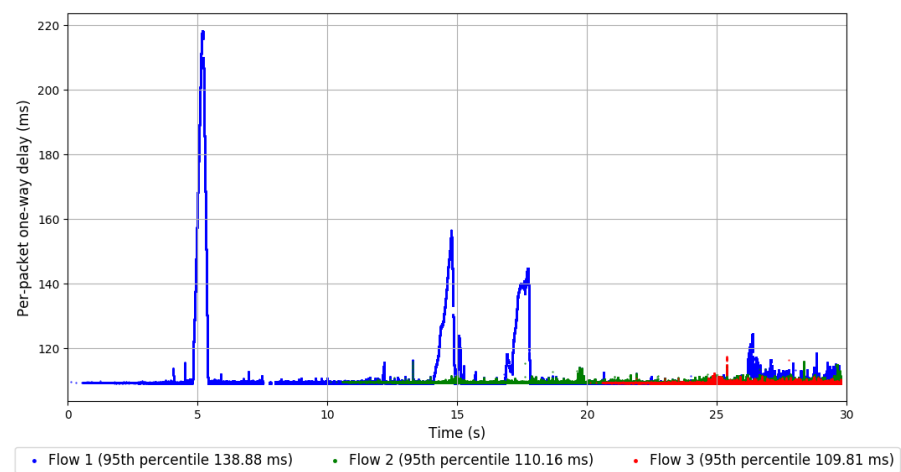
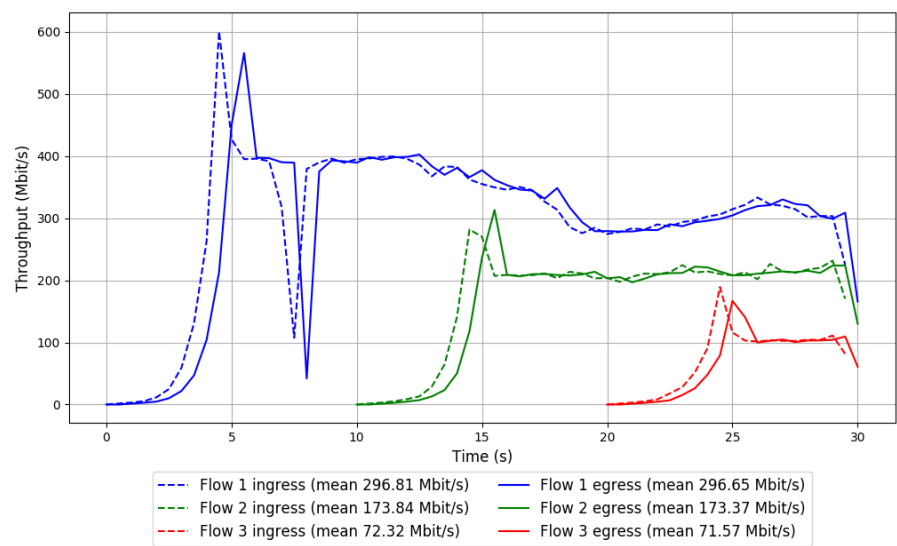
-- Flow 3:

Average throughput: 71.57 Mbit/s

95th percentile per-packet one-way delay: 109.811 ms

Loss rate: 3.22%

Run 2: Report of PCC-Vivace — Data Link



Run 3: Statistics of PCC-Vivace

Start at: 2018-10-26 04:17:01

End at: 2018-10-26 04:17:31

Local clock offset: 0.211 ms

Remote clock offset: 0.289 ms

Below is generated by plot.py at 2018-10-26 08:07:14

Datalink statistics

-- Total of 3 flows:

Average throughput: 531.96 Mbit/s

95th percentile per-packet one-way delay: 171.596 ms

Loss rate: 1.70%

-- Flow 1:

Average throughput: 302.34 Mbit/s

95th percentile per-packet one-way delay: 169.897 ms

Loss rate: 0.71%

-- Flow 2:

Average throughput: 305.28 Mbit/s

95th percentile per-packet one-way delay: 127.272 ms

Loss rate: 1.19%

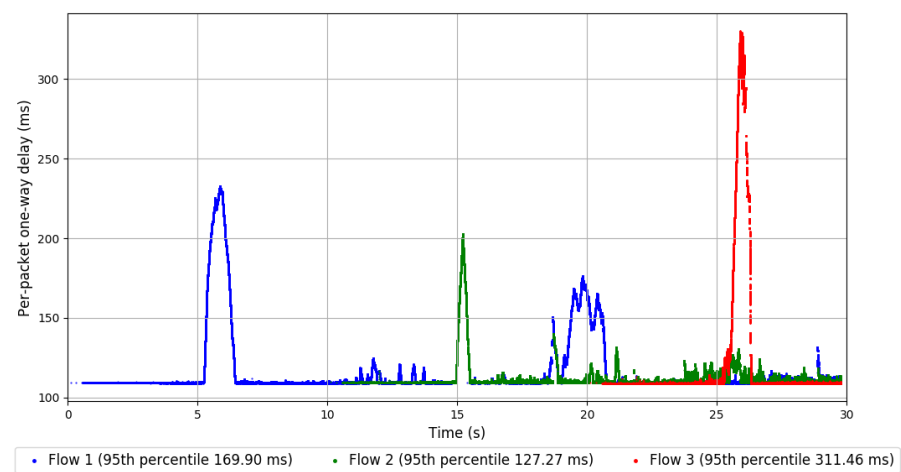
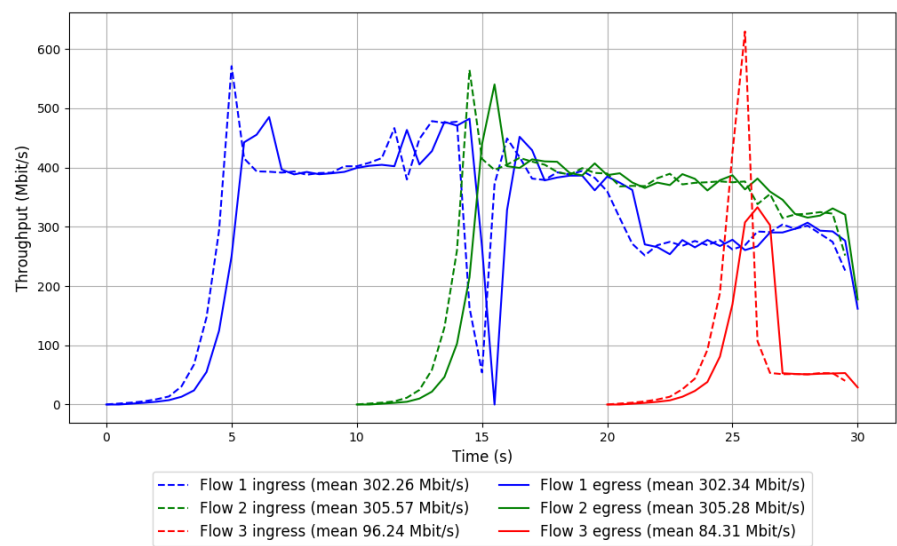
-- Flow 3:

Average throughput: 84.31 Mbit/s

95th percentile per-packet one-way delay: 311.465 ms

Loss rate: 14.33%

Run 3: Report of PCC-Vivace — Data Link

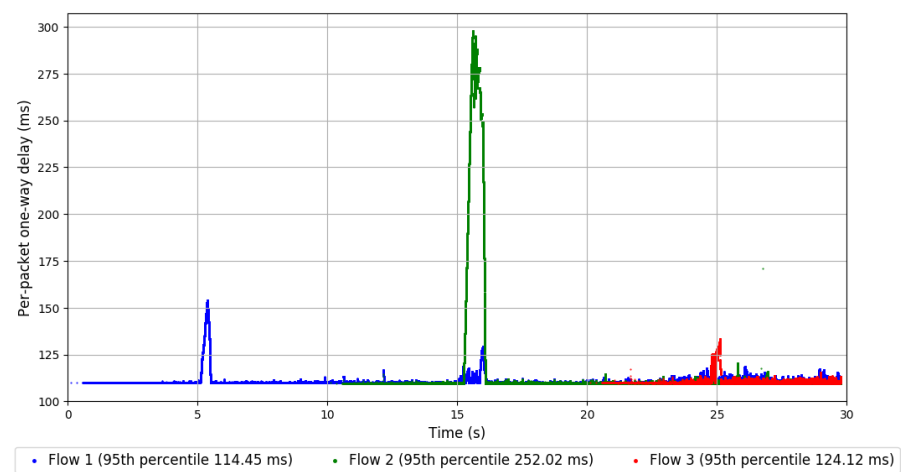
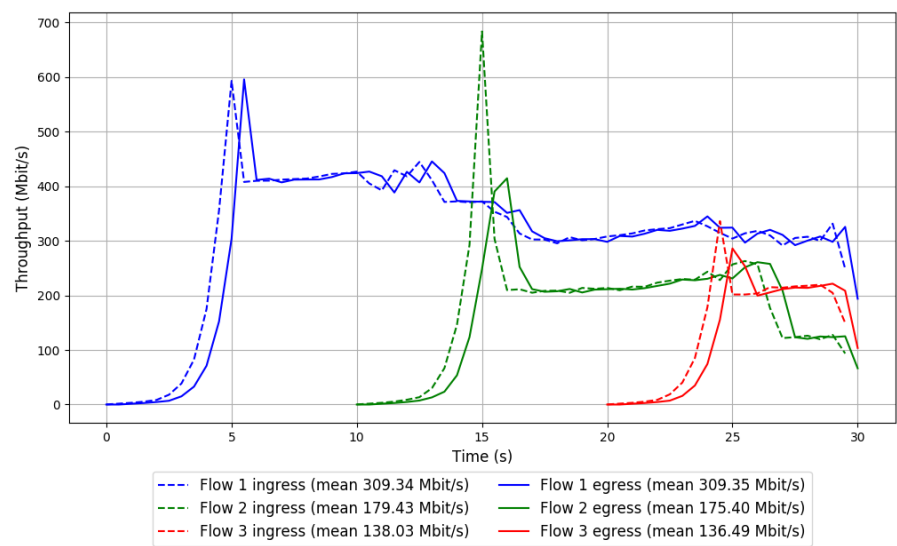


Run 4: Statistics of PCC-Vivace

Start at: 2018-10-26 04:48:57
End at: 2018-10-26 04:49:27
Local clock offset: -0.045 ms
Remote clock offset: -0.402 ms

Below is generated by plot.py at 2018-10-26 08:07:14
Datalink statistics
-- Total of 3 flows:
Average throughput: 469.95 Mbit/s
95th percentile per-packet one-way delay: 119.154 ms
Loss rate: 1.63%
-- Flow 1:
Average throughput: 309.35 Mbit/s
95th percentile per-packet one-way delay: 114.452 ms
Loss rate: 0.72%
-- Flow 2:
Average throughput: 175.40 Mbit/s
95th percentile per-packet one-way delay: 252.016 ms
Loss rate: 3.32%
-- Flow 3:
Average throughput: 136.49 Mbit/s
95th percentile per-packet one-way delay: 124.123 ms
Loss rate: 3.31%

Run 4: Report of PCC-Vivace — Data Link

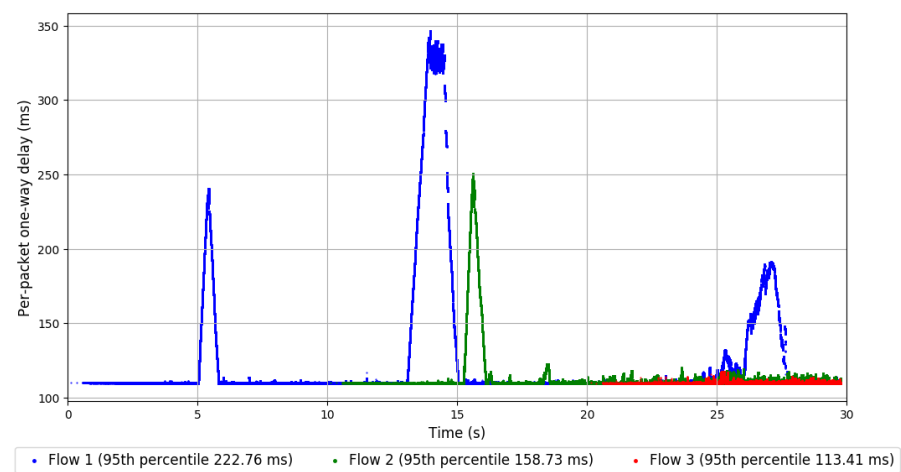
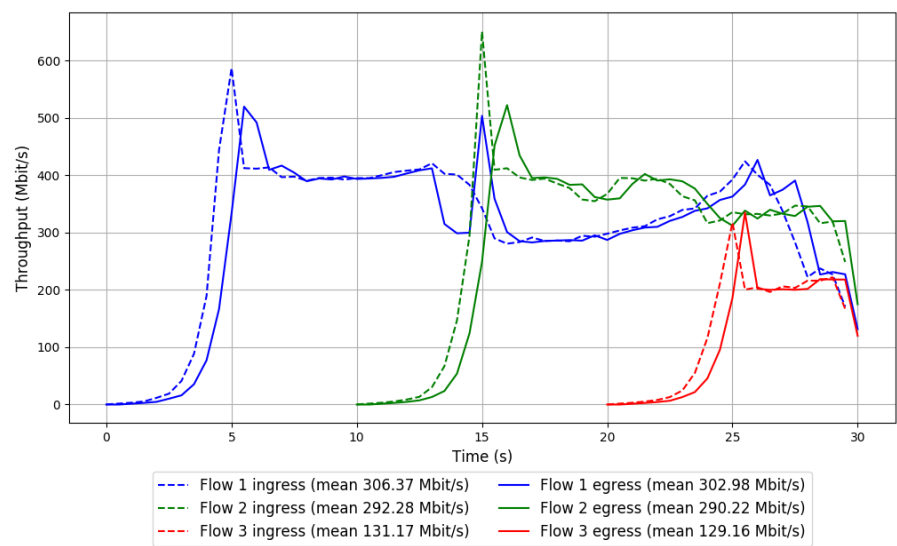


Run 5: Statistics of PCC-Vivace

Start at: 2018-10-26 05:20:39
End at: 2018-10-26 05:21:09
Local clock offset: 0.549 ms
Remote clock offset: -0.083 ms

Below is generated by plot.py at 2018-10-26 08:07:31
Datalink statistics
-- Total of 3 flows:
Average throughput: 537.24 Mbit/s
95th percentile per-packet one-way delay: 193.093 ms
Loss rate: 1.97%
-- Flow 1:
Average throughput: 302.98 Mbit/s
95th percentile per-packet one-way delay: 222.764 ms
Loss rate: 1.83%
-- Flow 2:
Average throughput: 290.22 Mbit/s
95th percentile per-packet one-way delay: 158.732 ms
Loss rate: 1.81%
-- Flow 3:
Average throughput: 129.16 Mbit/s
95th percentile per-packet one-way delay: 113.413 ms
Loss rate: 3.70%

Run 5: Report of PCC-Vivace — Data Link

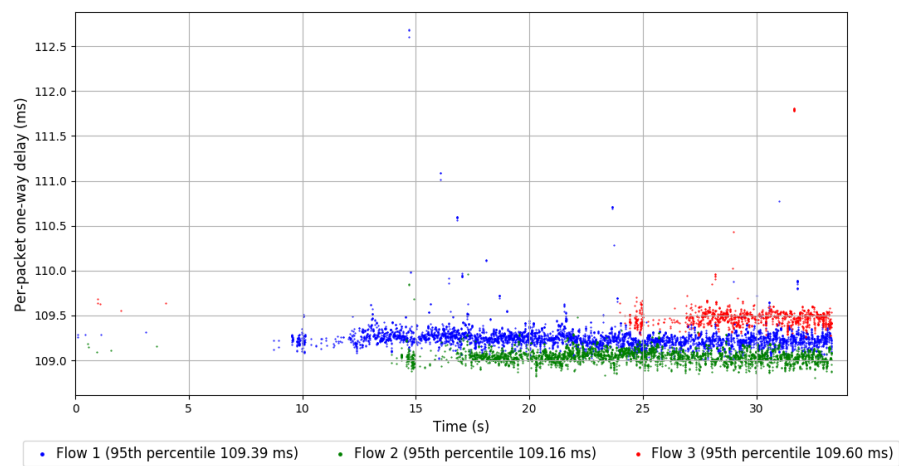
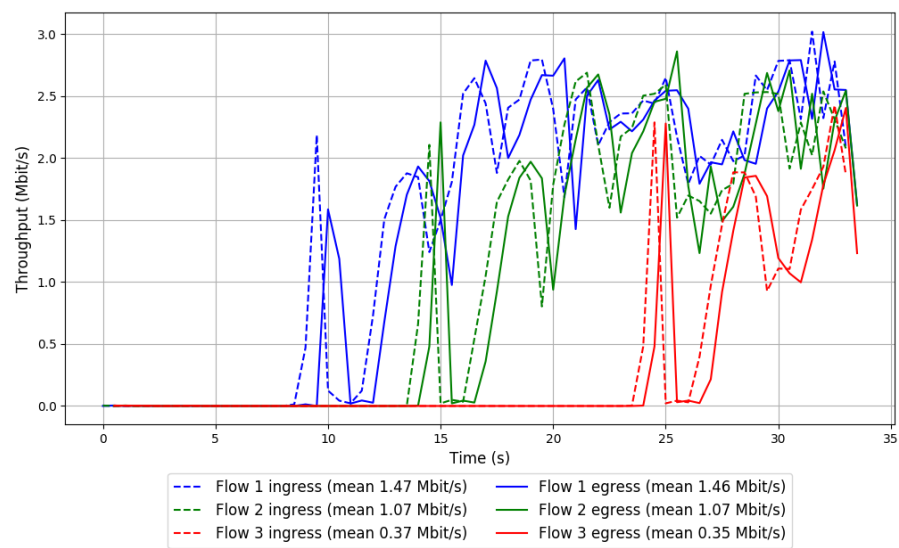


Run 1: Statistics of WebRTC media

Start at: 2018-10-26 03:28:24
End at: 2018-10-26 03:28:54
Local clock offset: -0.287 ms
Remote clock offset: -0.146 ms

Below is generated by plot.py at 2018-10-26 08:07:31
Datalink statistics
-- Total of 3 flows:
Average throughput: 2.86 Mbit/s
95th percentile per-packet one-way delay: 109.504 ms
Loss rate: 1.58%
-- Flow 1:
Average throughput: 1.46 Mbit/s
95th percentile per-packet one-way delay: 109.387 ms
Loss rate: 1.18%
-- Flow 2:
Average throughput: 1.07 Mbit/s
95th percentile per-packet one-way delay: 109.155 ms
Loss rate: 1.30%
-- Flow 3:
Average throughput: 0.35 Mbit/s
95th percentile per-packet one-way delay: 109.601 ms
Loss rate: 4.05%

Run 1: Report of WebRTC media — Data Link

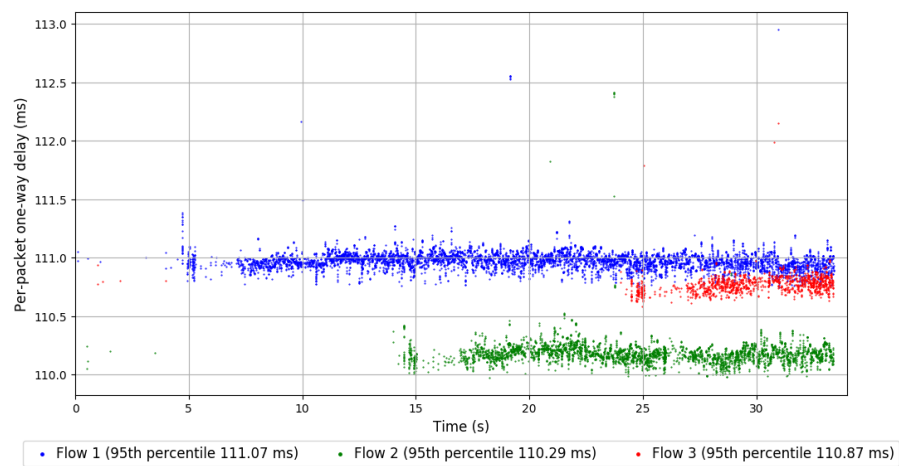
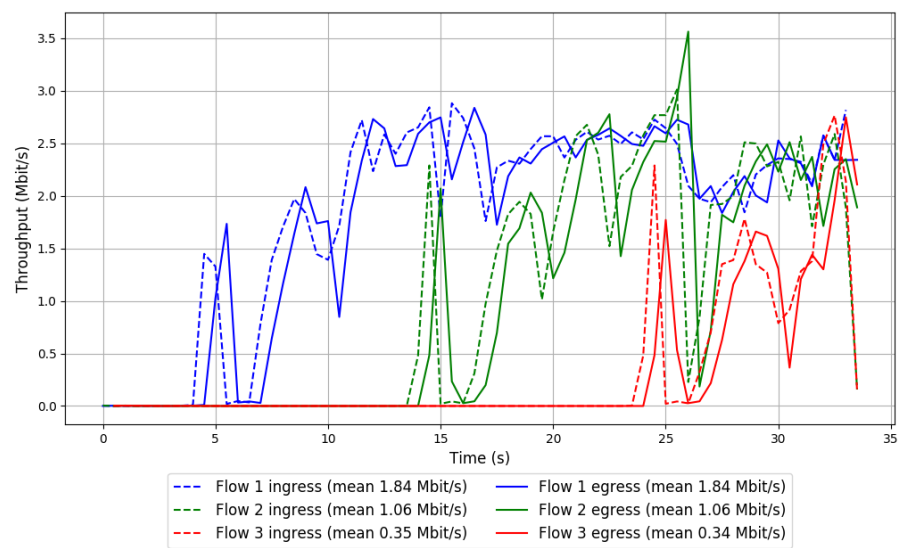


Run 2: Statistics of WebRTC media

Start at: 2018-10-26 03:59:59
End at: 2018-10-26 04:00:29
Local clock offset: 1.29 ms
Remote clock offset: -0.288 ms

Below is generated by plot.py at 2018-10-26 08:07:31
Datalink statistics
-- Total of 3 flows:
Average throughput: 3.21 Mbit/s
95th percentile per-packet one-way delay: 111.053 ms
Loss rate: 1.28%
-- Flow 1:
Average throughput: 1.84 Mbit/s
95th percentile per-packet one-way delay: 111.074 ms
Loss rate: 0.76%
-- Flow 2:
Average throughput: 1.06 Mbit/s
95th percentile per-packet one-way delay: 110.293 ms
Loss rate: 1.23%
-- Flow 3:
Average throughput: 0.34 Mbit/s
95th percentile per-packet one-way delay: 110.873 ms
Loss rate: 4.26%

Run 2: Report of WebRTC media — Data Link

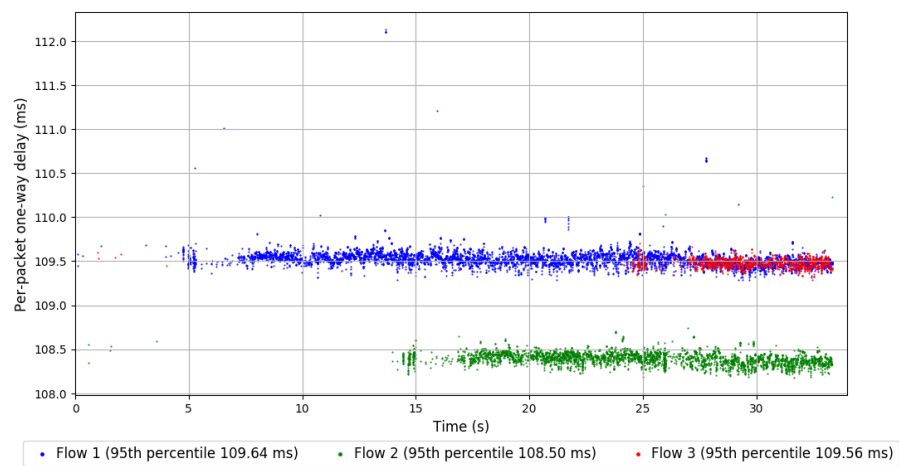
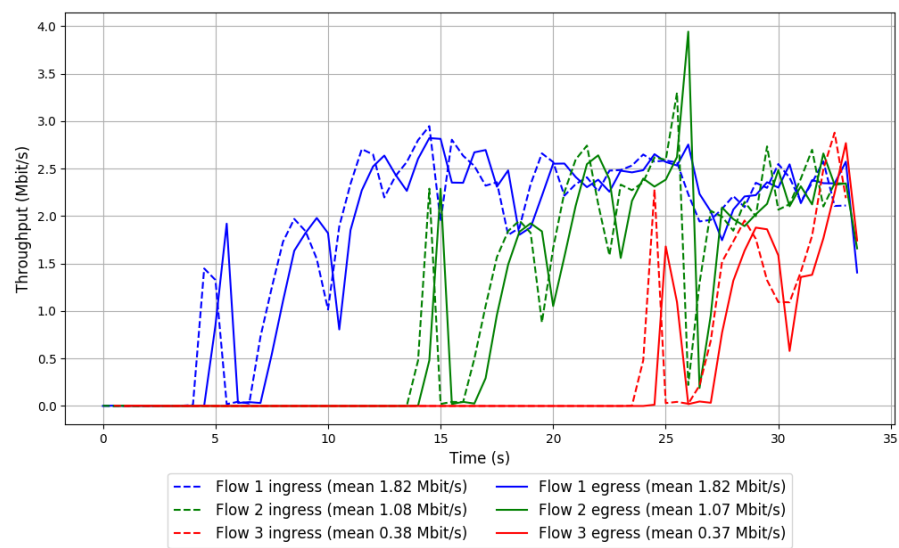


Run 3: Statistics of WebRTC media

Start at: 2018-10-26 04:31:57
End at: 2018-10-26 04:32:27
Local clock offset: -0.096 ms
Remote clock offset: -0.076 ms

Below is generated by plot.py at 2018-10-26 08:07:31
Datalink statistics
-- Total of 3 flows:
Average throughput: 3.23 Mbit/s
95th percentile per-packet one-way delay: 109.613 ms
Loss rate: 1.52%
-- Flow 1:
Average throughput: 1.82 Mbit/s
95th percentile per-packet one-way delay: 109.638 ms
Loss rate: 0.77%
-- Flow 2:
Average throughput: 1.07 Mbit/s
95th percentile per-packet one-way delay: 108.496 ms
Loss rate: 1.62%
-- Flow 3:
Average throughput: 0.37 Mbit/s
95th percentile per-packet one-way delay: 109.558 ms
Loss rate: 4.92%

Run 3: Report of WebRTC media — Data Link

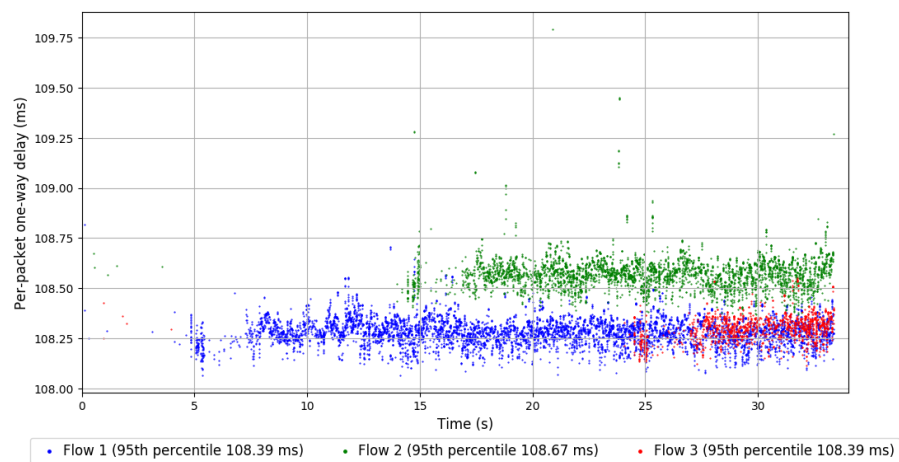
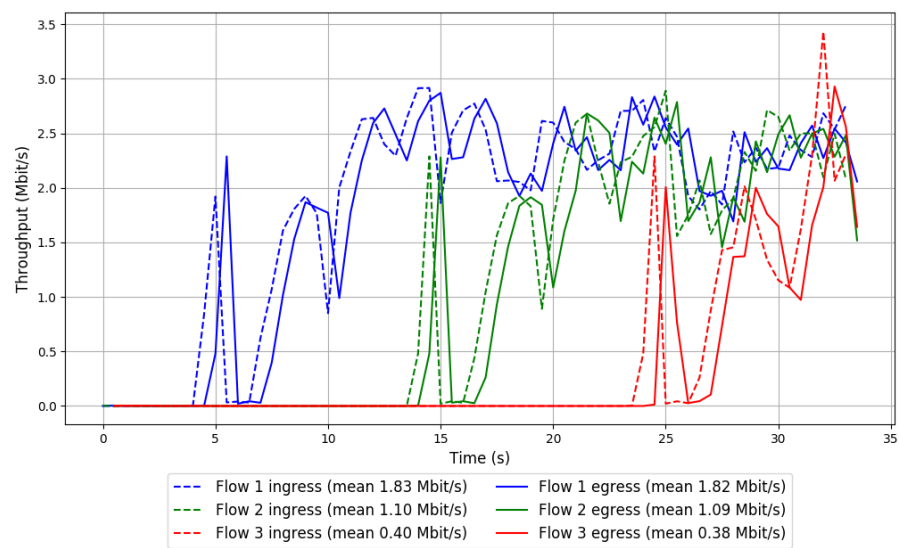


Run 4: Statistics of WebRTC media

Start at: 2018-10-26 05:03:35
End at: 2018-10-26 05:04:05
Local clock offset: -1.575 ms
Remote clock offset: -0.409 ms

Below is generated by plot.py at 2018-10-26 08:07:31
Datalink statistics
-- Total of 3 flows:
Average throughput: 3.27 Mbit/s
95th percentile per-packet one-way delay: 108.632 ms
Loss rate: 1.63%
-- Flow 1:
Average throughput: 1.82 Mbit/s
95th percentile per-packet one-way delay: 108.388 ms
Loss rate: 1.13%
-- Flow 2:
Average throughput: 1.09 Mbit/s
95th percentile per-packet one-way delay: 108.675 ms
Loss rate: 1.37%
-- Flow 3:
Average throughput: 0.38 Mbit/s
95th percentile per-packet one-way delay: 108.392 ms
Loss rate: 4.69%

Run 4: Report of WebRTC media — Data Link



Run 5: Statistics of WebRTC media

Start at: 2018-10-26 05:35:40
End at: 2018-10-26 05:36:10
Local clock offset: -0.194 ms
Remote clock offset: -0.527 ms

Below is generated by plot.py at 2018-10-26 08:07:31
Datalink statistics
-- Total of 3 flows:
Average throughput: 3.27 Mbit/s
95th percentile per-packet one-way delay: 109.799 ms
Loss rate: 1.36%
-- Flow 1:
Average throughput: 1.86 Mbit/s
95th percentile per-packet one-way delay: 109.802 ms
Loss rate: 0.75%
-- Flow 2:
Average throughput: 1.06 Mbit/s
95th percentile per-packet one-way delay: 109.801 ms
Loss rate: 1.61%
-- Flow 3:
Average throughput: 0.37 Mbit/s
95th percentile per-packet one-way delay: 109.756 ms
Loss rate: 3.77%

Run 5: Report of WebRTC media — Data Link

