

Pantheon Report

Generated at 2018-10-26 12:58:56 (UTC).

Data path: Stanford on `eno1` (*remote*) → AWS California 1 on `ens5` (*local*).

Repeated the test of 18 congestion control schemes 5 times.

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

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

System info:

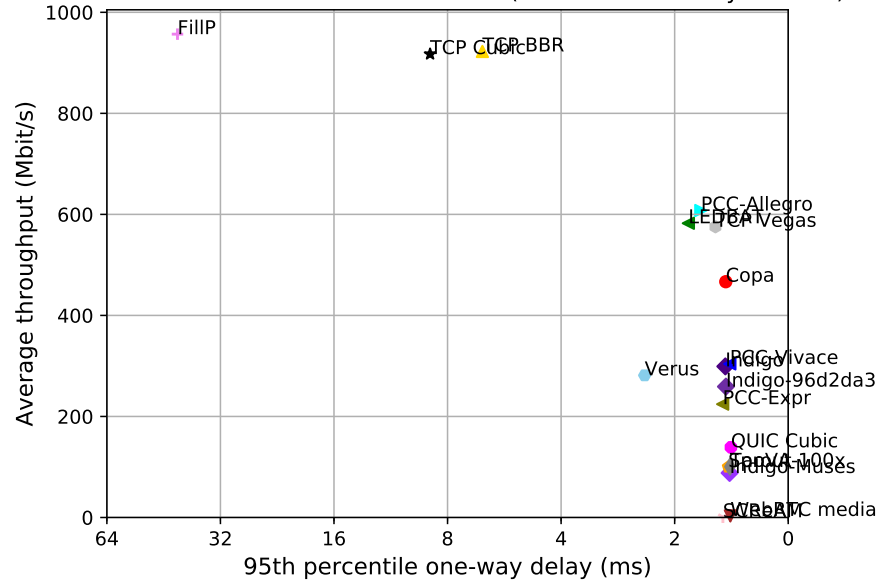
```
Linux 4.15.0-1023-aws
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912
```

Git summary:

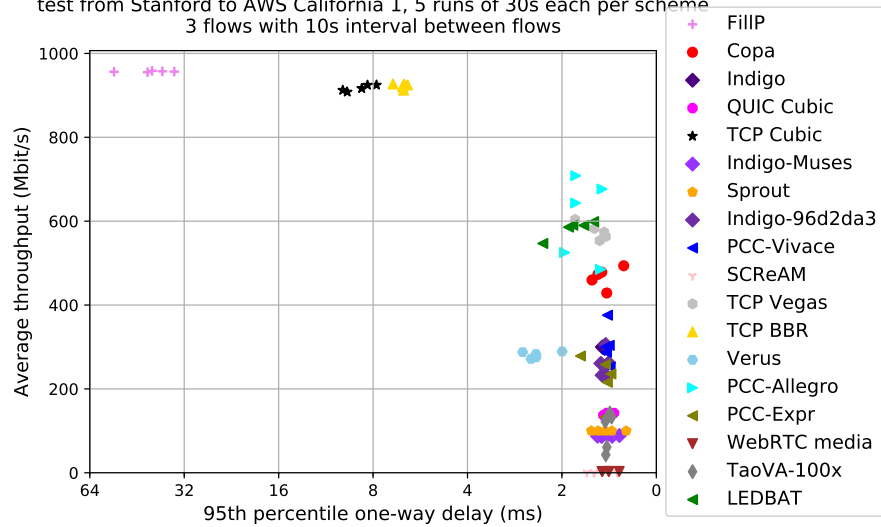
```
branch: muses @ 2e19c0464530faa92c63f8217c9971438a26a3be
third_party/fillp @ 5332fc9127c63565e13f4933b336c02d1aabdac6
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdf58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecd90c077e64d
third_party/indigo-96d2da3 @ 8413272d46f8aa0bcb967ed7048b6a8f994abb95
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 Stanford to AWS California 1, 5 runs of 30s each per scheme
3 flows with 10s interval between flows (mean of all runs by scheme)



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



scheme	# runs	mean avg tput (Mbit/s)			mean 95th-%ile delay (ms)			mean loss rate (%)		
		flow 1	flow 2	flow 3	flow 1	flow 2	flow 3	flow 1	flow 2	flow 3
TCP BBR	5	543.35	405.23	328.71	6.59	5.94	6.19	0.01	0.02	0.06
Copa	5	284.05	217.11	114.68	1.10	1.09	1.09	0.00	0.00	0.01
TCP Cubic	5	542.40	402.24	321.65	9.22	7.61	7.78	0.02	0.03	0.08
FillP	5	581.54	402.50	324.55	37.98	52.30	47.27	0.80	1.13	1.48
Indigo	5	160.11	147.43	124.26	1.05	1.13	1.24	0.01	0.01	0.03
Indigo-96d2da3	5	119.33	135.48	149.64	1.07	1.11	1.13	0.00	0.01	0.02
LEDBAT	5	351.29	256.50	181.68	1.66	1.96	1.62	0.01	0.01	0.02
Indigo-Muses	5	42.92	43.52	49.03	1.04	1.01	0.99	0.01	0.01	0.02
PCC-Allegro	5	486.19	128.56	109.67	1.49	1.64	1.54	0.00	0.02	0.02
PCC-Expr	5	164.69	73.24	33.11	1.15	1.15	1.19	0.00	0.00	0.02
QUIC Cubic	5	73.33	70.15	57.04	1.01	1.00	0.99	0.00	0.01	0.02
SCReAM	5	0.22	0.22	0.22	1.15	1.13	1.10	0.00	0.00	0.07
Sprout	5	50.24	50.14	49.87	1.06	1.04	1.03	0.00	0.01	0.01
TaoVA-100x	5	61.04	33.19	51.99	1.03	1.01	1.02	0.01	0.01	0.02
TCP Vegas	5	285.08	293.97	284.56	1.20	1.53	1.24	0.01	0.01	0.01
Verus	5	183.95	106.69	79.49	2.51	1.85	1.53	0.00	0.01	0.01
PCC-Vivace	5	209.46	105.84	73.43	1.01	1.08	1.14	0.00	0.01	0.01
WebRTC media	5	1.61	1.07	0.46	1.02	1.01	1.00	0.00	0.00	0.00

Run 1: Statistics of TCP BBR

Start at: 2018-10-26 09:52:12

End at: 2018-10-26 09:52:42

Local clock offset: 0.532 ms

Remote clock offset: 2.908 ms

Below is generated by plot.py at 2018-10-26 12:13:43

Datalink statistics

-- Total of 3 flows:

Average throughput: 927.15 Mbit/s

95th percentile per-packet one-way delay: 6.910 ms

Loss rate: 0.02%

-- Flow 1:

Average throughput: 548.04 Mbit/s

95th percentile per-packet one-way delay: 7.074 ms

Loss rate: 0.01%

-- Flow 2:

Average throughput: 404.98 Mbit/s

95th percentile per-packet one-way delay: 6.089 ms

Loss rate: 0.03%

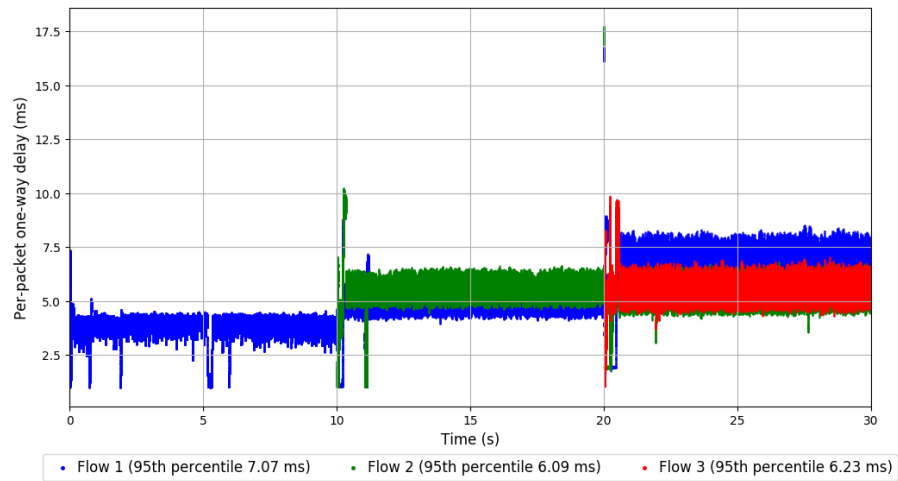
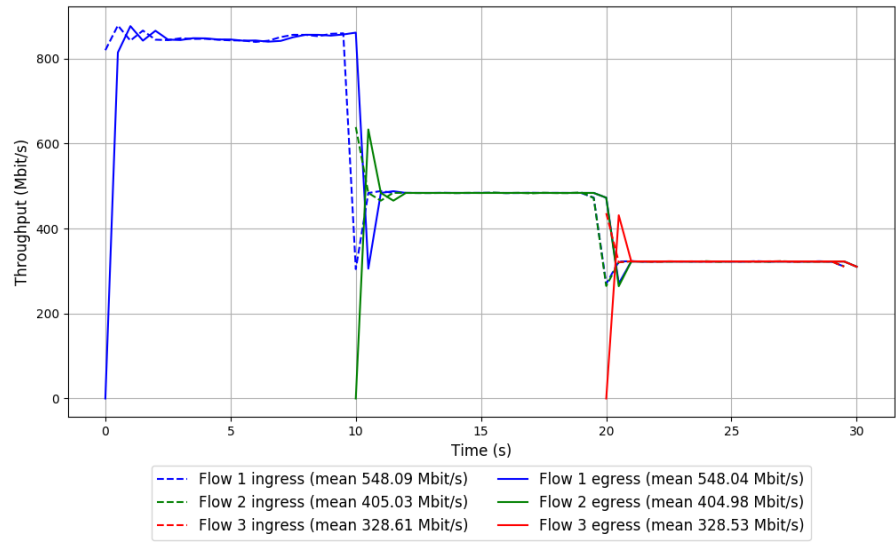
-- Flow 3:

Average throughput: 328.53 Mbit/s

95th percentile per-packet one-way delay: 6.228 ms

Loss rate: 0.06%

Run 1: Report of TCP BBR — Data Link



Run 2: Statistics of TCP BBR

Start at: 2018-10-26 10:19:59

End at: 2018-10-26 10:20:29

Local clock offset: 0.296 ms

Remote clock offset: 0.75 ms

Below is generated by plot.py at 2018-10-26 12:13:43

Datalink statistics

-- Total of 3 flows:

Average throughput: 912.45 Mbit/s

95th percentile per-packet one-way delay: 6.394 ms

Loss rate: 0.02%

-- Flow 1:

Average throughput: 533.23 Mbit/s

95th percentile per-packet one-way delay: 6.500 ms

Loss rate: 0.01%

-- Flow 2:

Average throughput: 405.44 Mbit/s

95th percentile per-packet one-way delay: 5.984 ms

Loss rate: 0.02%

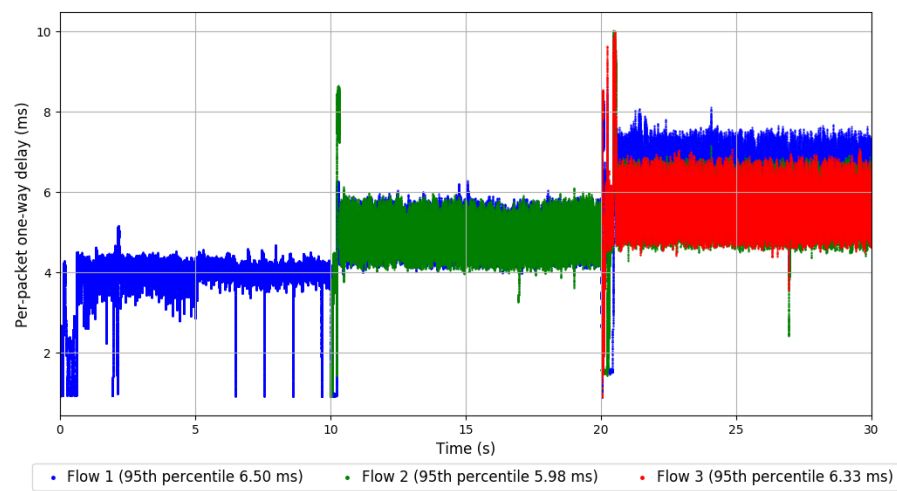
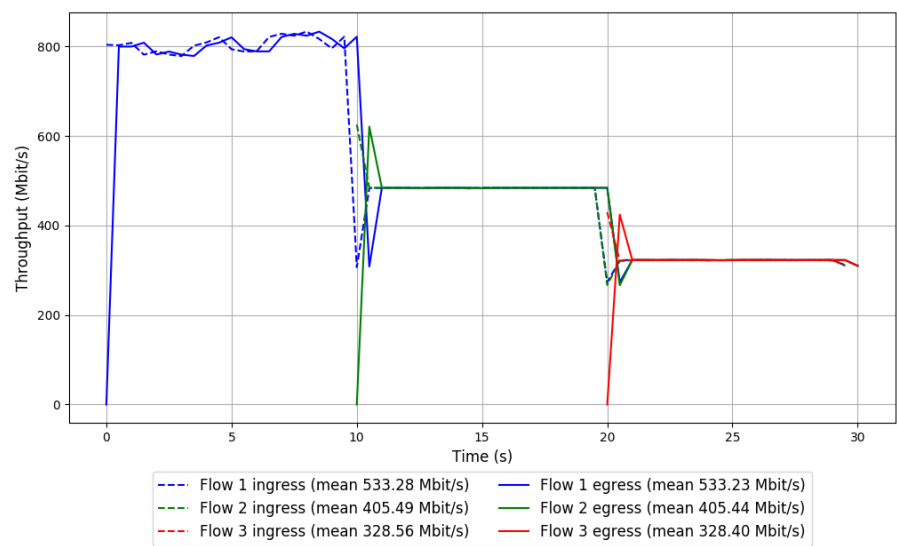
-- Flow 3:

Average throughput: 328.40 Mbit/s

95th percentile per-packet one-way delay: 6.327 ms

Loss rate: 0.07%

Run 2: Report of TCP BBR — Data Link

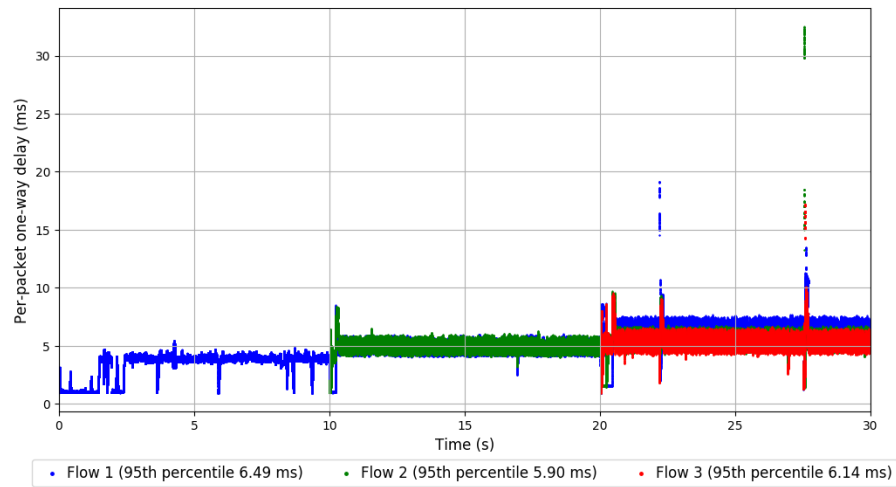
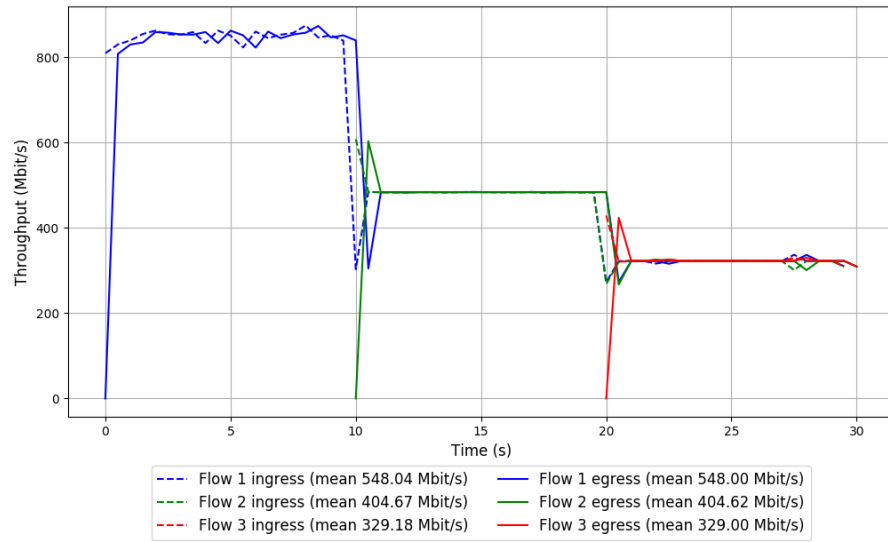


Run 3: Statistics of TCP BBR

Start at: 2018-10-26 10:47:56
End at: 2018-10-26 10:48:26
Local clock offset: -2.796 ms
Remote clock offset: -2.209 ms

Below is generated by plot.py at 2018-10-26 12:13:43
Datalink statistics
-- Total of 3 flows:
Average throughput: 926.87 Mbit/s
95th percentile per-packet one-way delay: 6.379 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 548.00 Mbit/s
95th percentile per-packet one-way delay: 6.491 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 404.62 Mbit/s
95th percentile per-packet one-way delay: 5.896 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 329.00 Mbit/s
95th percentile per-packet one-way delay: 6.138 ms
Loss rate: 0.06%

Run 3: Report of TCP BBR — Data Link

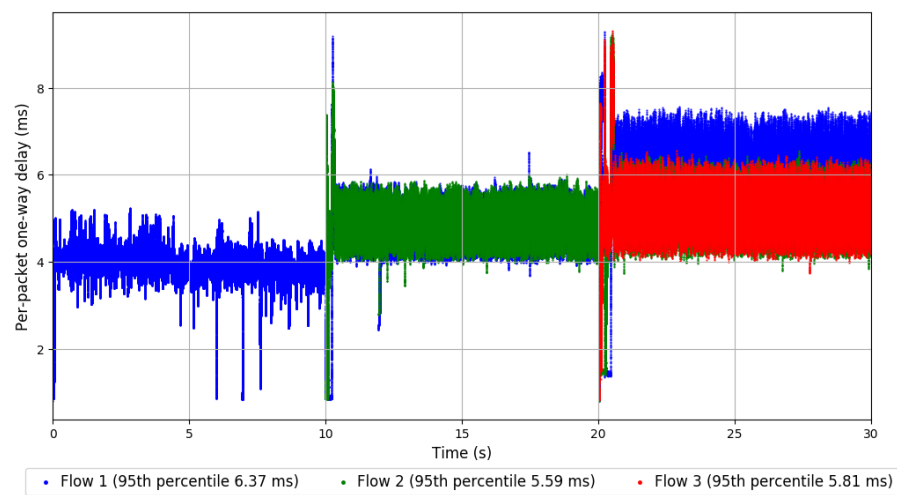
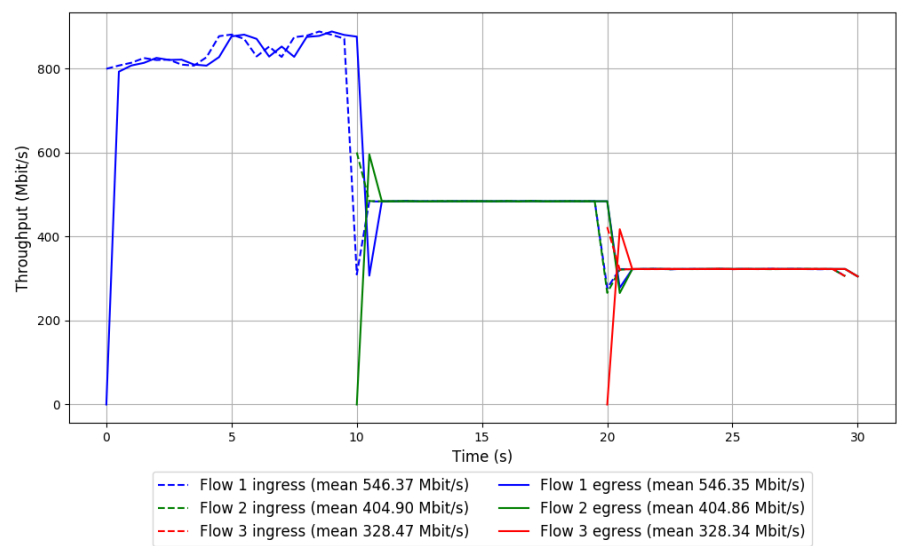


Run 4: Statistics of TCP BBR

Start at: 2018-10-26 11:15:51
End at: 2018-10-26 11:16:21
Local clock offset: -0.264 ms
Remote clock offset: -5.507 ms

Below is generated by plot.py at 2018-10-26 12:13:43
Datalink statistics
-- Total of 3 flows:
Average throughput: 925.02 Mbit/s
95th percentile per-packet one-way delay: 6.213 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 546.35 Mbit/s
95th percentile per-packet one-way delay: 6.365 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 404.86 Mbit/s
95th percentile per-packet one-way delay: 5.588 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 328.34 Mbit/s
95th percentile per-packet one-way delay: 5.813 ms
Loss rate: 0.06%

Run 4: Report of TCP BBR — Data Link

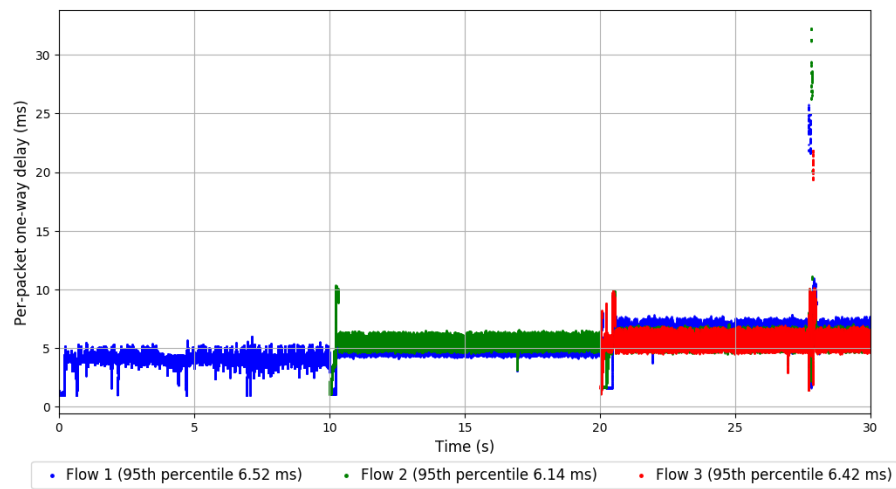
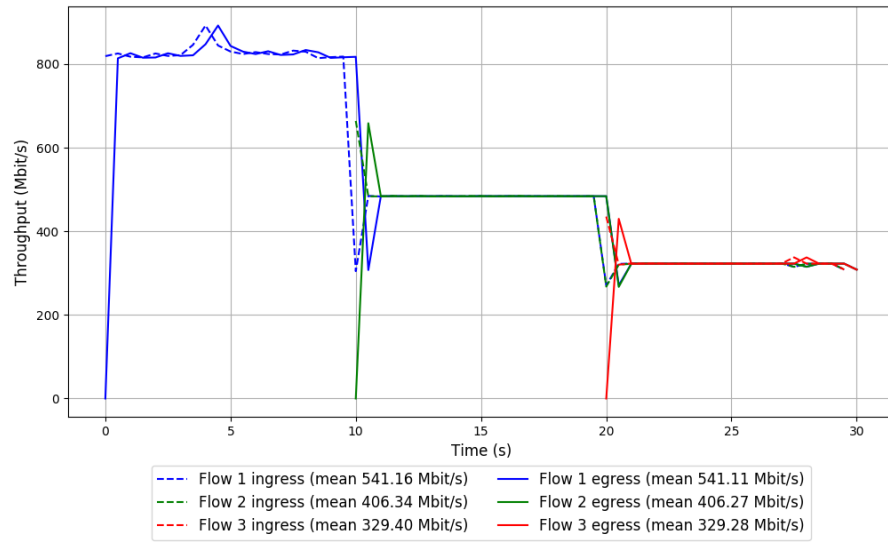


Run 5: Statistics of TCP BBR

Start at: 2018-10-26 11:43:42
End at: 2018-10-26 11:44:12
Local clock offset: -2.191 ms
Remote clock offset: -4.127 ms

Below is generated by plot.py at 2018-10-26 12:13:43
Datalink statistics
-- Total of 3 flows:
Average throughput: 921.23 Mbit/s
95th percentile per-packet one-way delay: 6.439 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 541.11 Mbit/s
95th percentile per-packet one-way delay: 6.517 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 406.27 Mbit/s
95th percentile per-packet one-way delay: 6.143 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 329.28 Mbit/s
95th percentile per-packet one-way delay: 6.422 ms
Loss rate: 0.06%

Run 5: Report of TCP BBR — Data Link



Run 1: Statistics of Copa

Start at: 2018-10-26 09:39:52

End at: 2018-10-26 09:40:22

Local clock offset: 0.825 ms

Remote clock offset: 0.511 ms

Below is generated by plot.py at 2018-10-26 12:13:43

Datalink statistics

-- Total of 3 flows:

Average throughput: 473.11 Mbit/s

95th percentile per-packet one-way delay: 1.238 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 291.87 Mbit/s

95th percentile per-packet one-way delay: 1.235 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 209.33 Mbit/s

95th percentile per-packet one-way delay: 1.235 ms

Loss rate: 0.01%

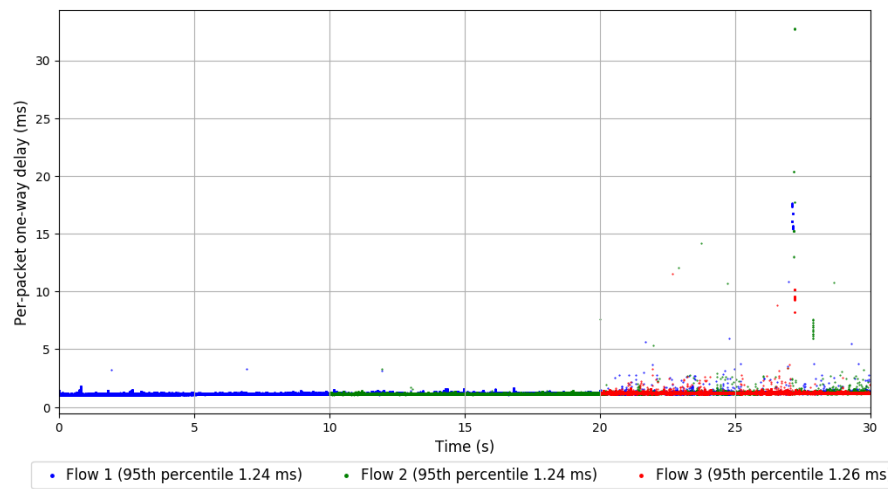
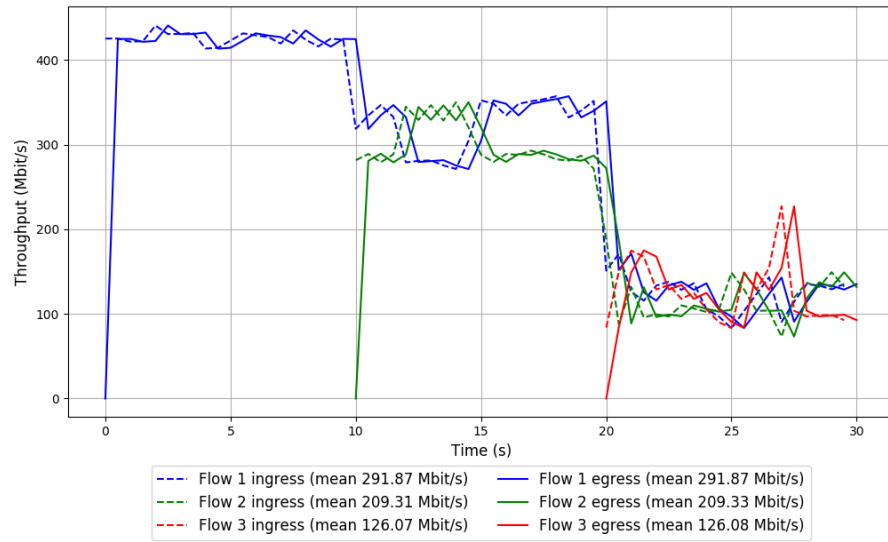
-- Flow 3:

Average throughput: 126.08 Mbit/s

95th percentile per-packet one-way delay: 1.257 ms

Loss rate: 0.00%

Run 1: Report of Copa — Data Link



Run 2: Statistics of Copa

Start at: 2018-10-26 10:07:42

End at: 2018-10-26 10:08:12

Local clock offset: 0.376 ms

Remote clock offset: 4.138 ms

Below is generated by plot.py at 2018-10-26 12:13:43

Datalink statistics

-- Total of 3 flows:

Average throughput: 428.73 Mbit/s

95th percentile per-packet one-way delay: 1.051 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 258.38 Mbit/s

95th percentile per-packet one-way delay: 1.046 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 209.91 Mbit/s

95th percentile per-packet one-way delay: 1.051 ms

Loss rate: 0.00%

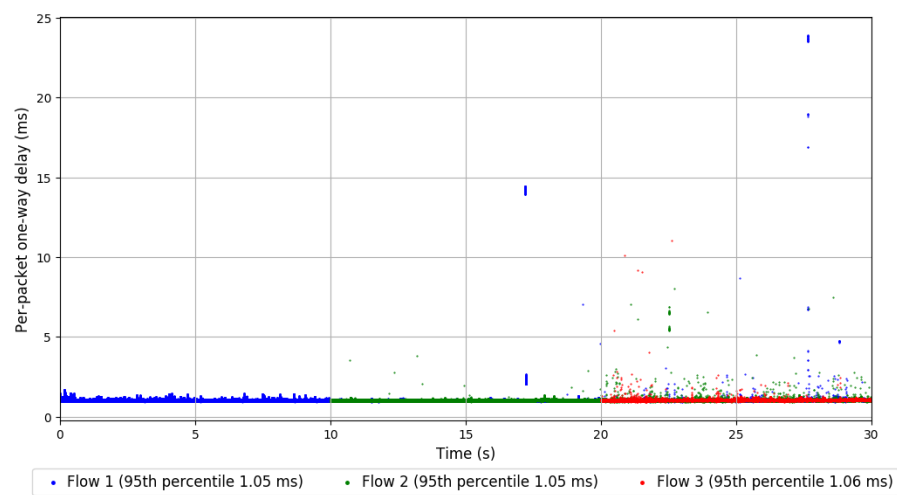
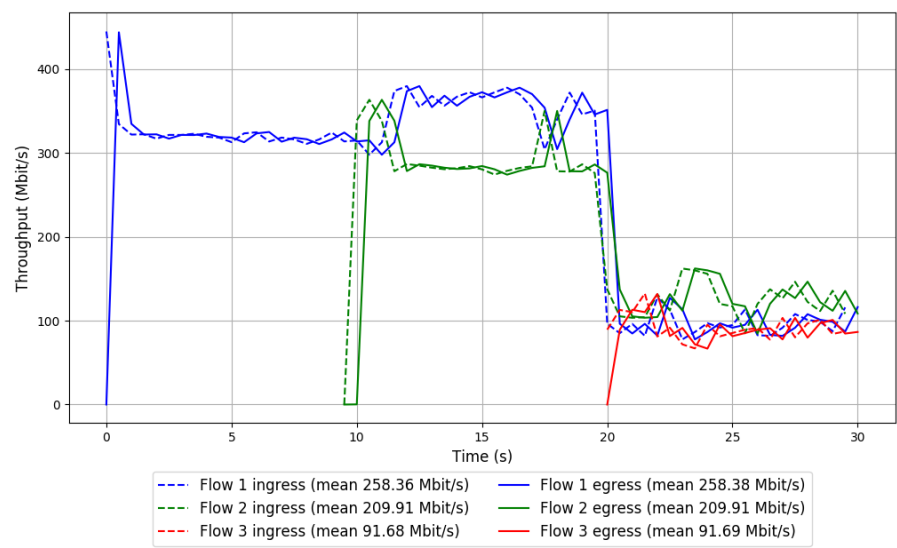
-- Flow 3:

Average throughput: 91.69 Mbit/s

95th percentile per-packet one-way delay: 1.065 ms

Loss rate: 0.03%

Run 2: Report of Copa — Data Link

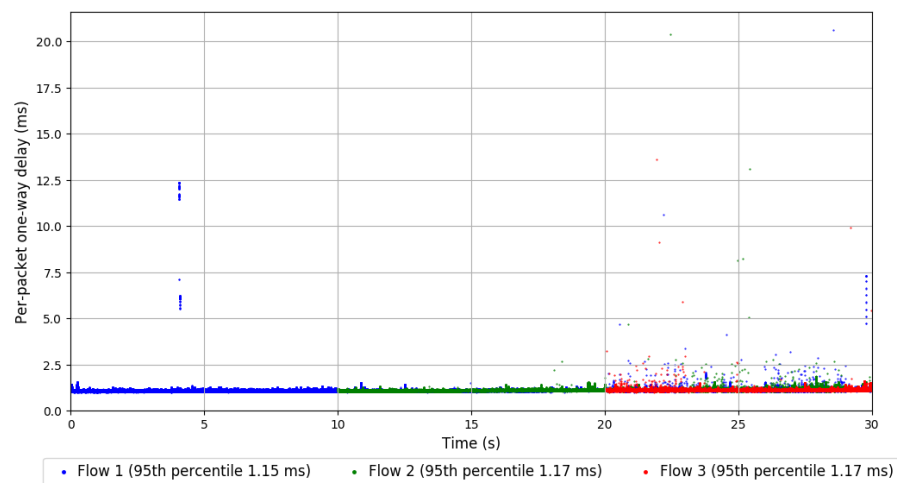
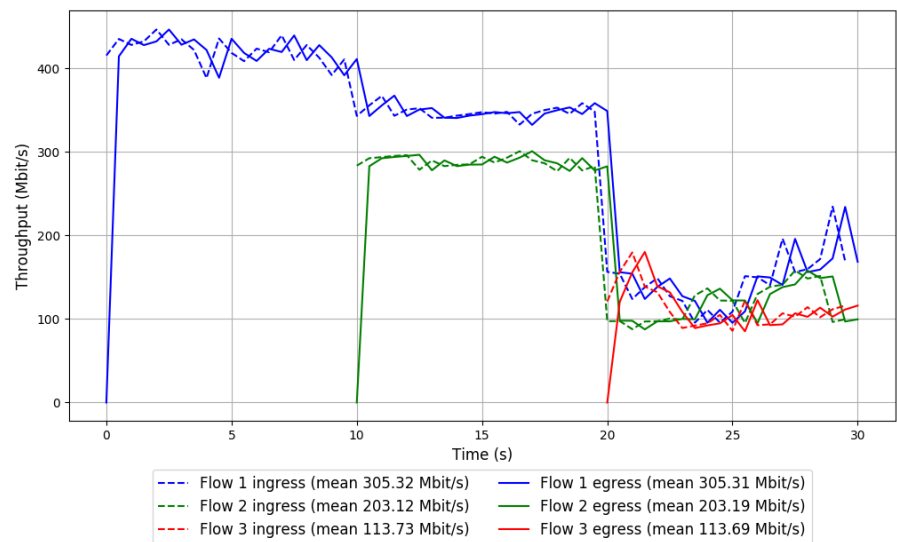


Run 3: Statistics of Copa

Start at: 2018-10-26 10:35:37
End at: 2018-10-26 10:36:07
Local clock offset: -0.931 ms
Remote clock offset: -0.509 ms

Below is generated by plot.py at 2018-10-26 12:13:43
Datalink statistics
-- Total of 3 flows:
Average throughput: 478.35 Mbit/s
95th percentile per-packet one-way delay: 1.156 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 305.31 Mbit/s
95th percentile per-packet one-way delay: 1.146 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 203.19 Mbit/s
95th percentile per-packet one-way delay: 1.166 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 113.69 Mbit/s
95th percentile per-packet one-way delay: 1.170 ms
Loss rate: 0.01%

Run 3: Report of Copa — Data Link

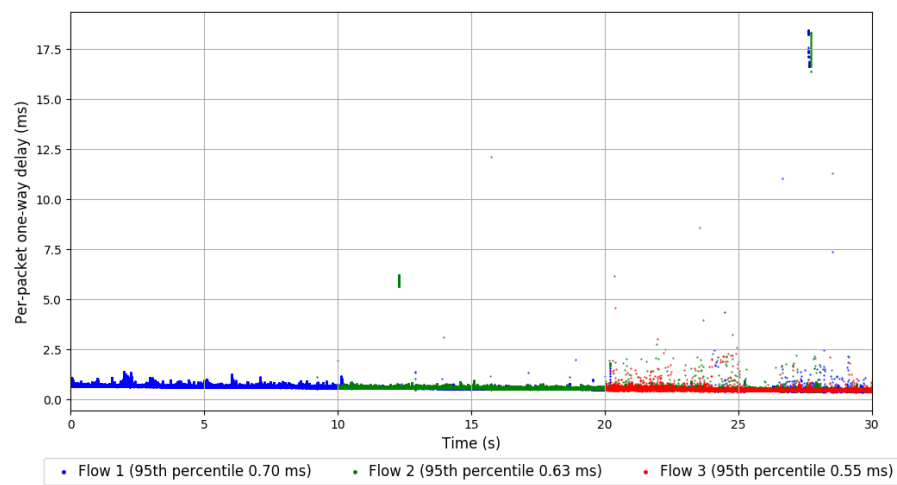
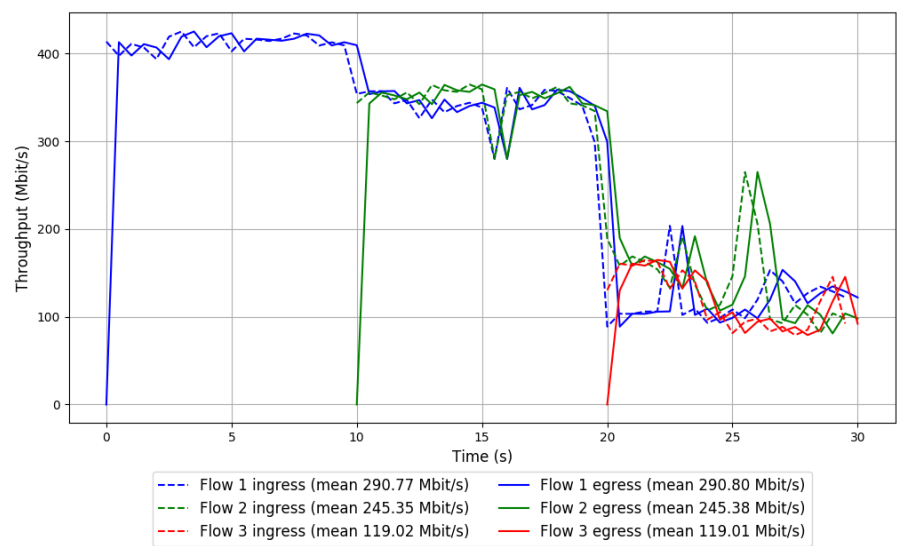


Run 4: Statistics of Copa

Start at: 2018-10-26 11:03:31
End at: 2018-10-26 11:04:01
Local clock offset: -2.908 ms
Remote clock offset: -4.423 ms

Below is generated by plot.py at 2018-10-26 12:22:59
Datalink statistics
-- Total of 3 flows:
Average throughput: 493.69 Mbit/s
95th percentile per-packet one-way delay: 0.691 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 290.80 Mbit/s
95th percentile per-packet one-way delay: 0.701 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 245.38 Mbit/s
95th percentile per-packet one-way delay: 0.633 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 119.01 Mbit/s
95th percentile per-packet one-way delay: 0.553 ms
Loss rate: 0.01%

Run 4: Report of Copa — Data Link

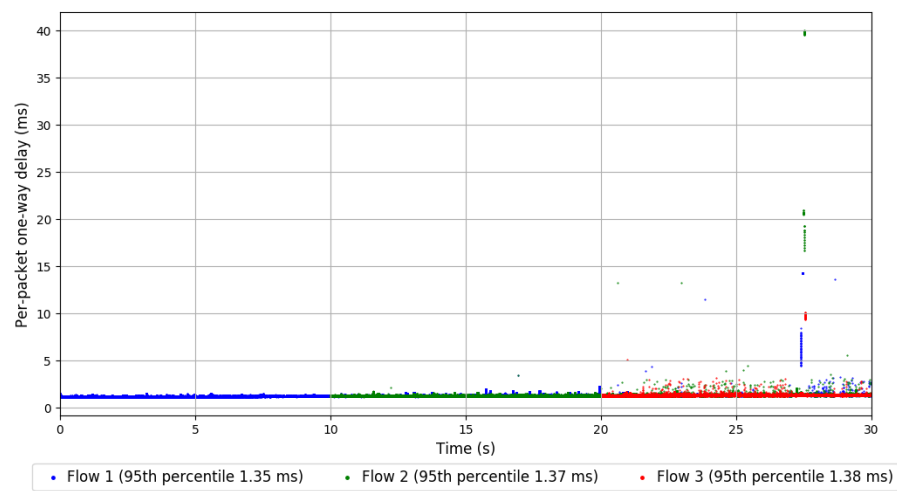
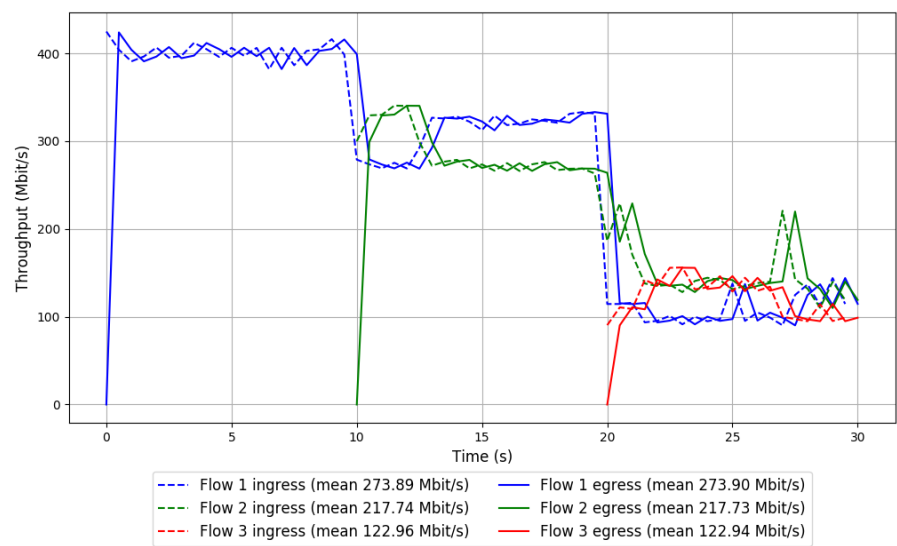


Run 5: Statistics of Copa

Start at: 2018-10-26 11:31:25
End at: 2018-10-26 11:31:55
Local clock offset: 0.638 ms
Remote clock offset: -4.088 ms

Below is generated by plot.py at 2018-10-26 12:22:59
Datalink statistics
-- Total of 3 flows:
Average throughput: 459.73 Mbit/s
95th percentile per-packet one-way delay: 1.362 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 273.90 Mbit/s
95th percentile per-packet one-way delay: 1.349 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 217.73 Mbit/s
95th percentile per-packet one-way delay: 1.367 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 122.94 Mbit/s
95th percentile per-packet one-way delay: 1.381 ms
Loss rate: 0.01%

Run 5: Report of Copa — Data Link



Run 1: Statistics of TCP Cubic

Start at: 2018-10-26 10:03:01

End at: 2018-10-26 10:03:31

Local clock offset: 0.493 ms

Remote clock offset: 3.953 ms

Below is generated by plot.py at 2018-10-26 12:23:15

Datalink statistics

-- Total of 3 flows:

Average throughput: 924.50 Mbit/s

95th percentile per-packet one-way delay: 8.335 ms

Loss rate: 0.03%

-- Flow 1:

Average throughput: 549.40 Mbit/s

95th percentile per-packet one-way delay: 8.552 ms

Loss rate: 0.01%

-- Flow 2:

Average throughput: 402.59 Mbit/s

95th percentile per-packet one-way delay: 7.533 ms

Loss rate: 0.03%

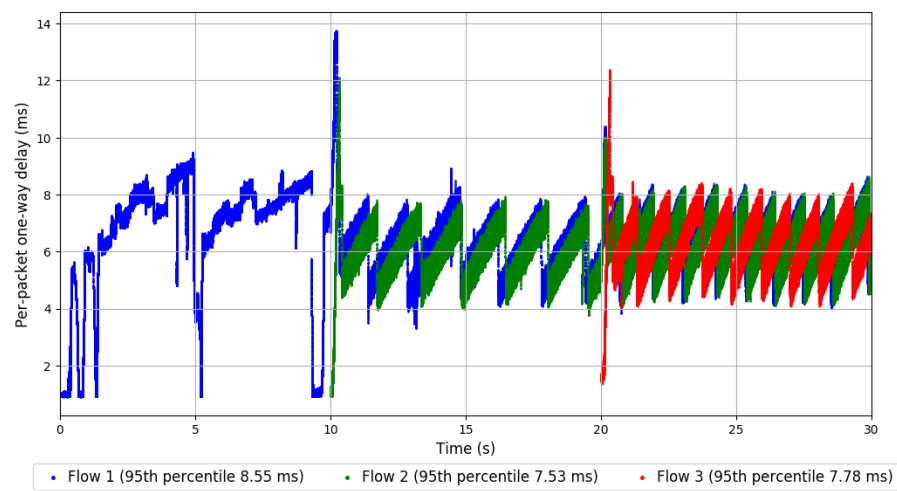
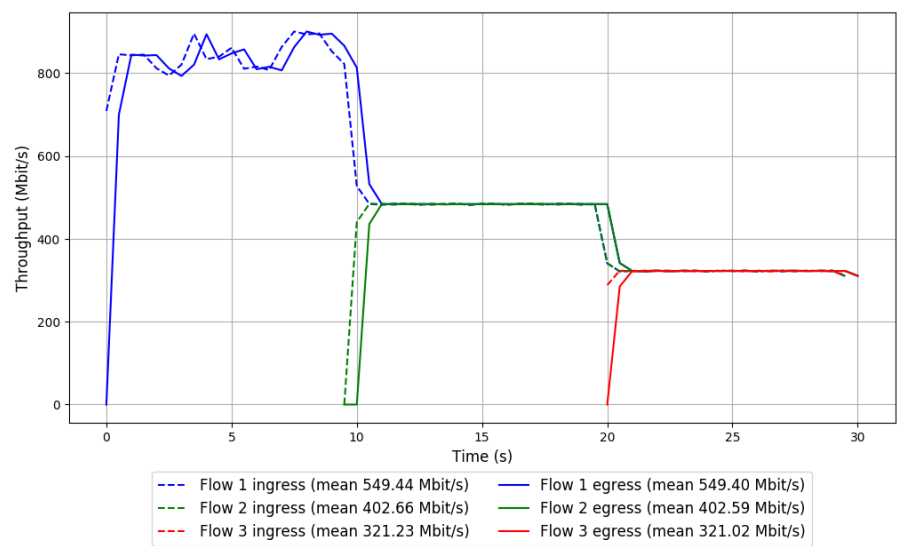
-- Flow 3:

Average throughput: 321.02 Mbit/s

95th percentile per-packet one-way delay: 7.779 ms

Loss rate: 0.08%

Run 1: Report of TCP Cubic — Data Link

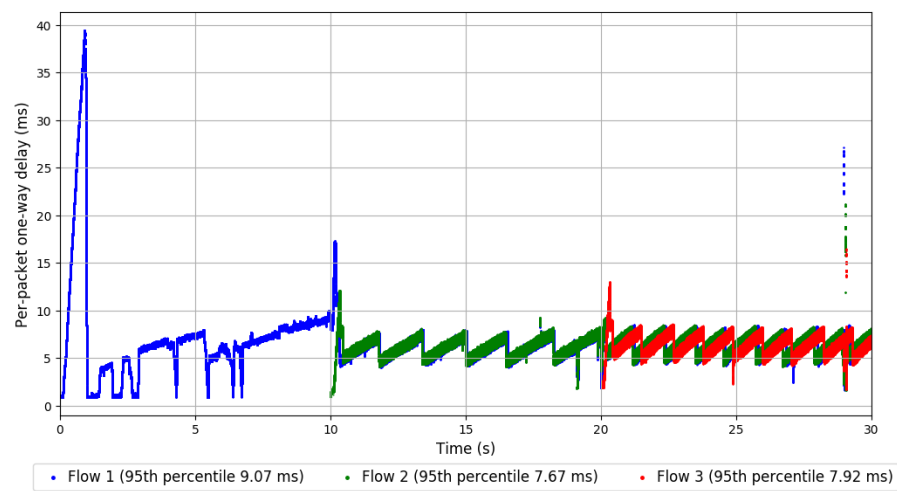
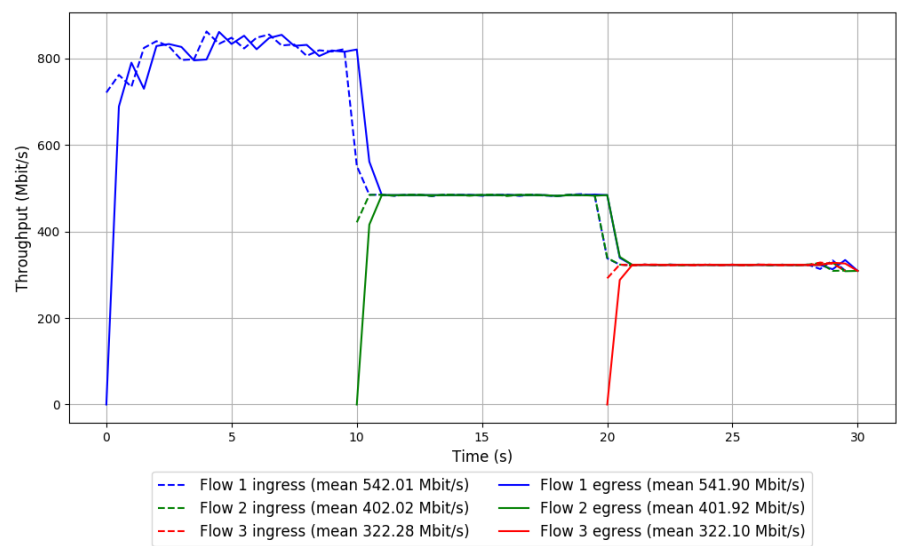


Run 2: Statistics of TCP Cubic

Start at: 2018-10-26 10:30:55
End at: 2018-10-26 10:31:25
Local clock offset: 0.301 ms
Remote clock offset: -0.314 ms

Below is generated by plot.py at 2018-10-26 12:23:21
Datalink statistics
-- Total of 3 flows:
Average throughput: 916.65 Mbit/s
95th percentile per-packet one-way delay: 8.696 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 541.90 Mbit/s
95th percentile per-packet one-way delay: 9.067 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 401.92 Mbit/s
95th percentile per-packet one-way delay: 7.670 ms
Loss rate: 0.03%
-- Flow 3:
Average throughput: 322.10 Mbit/s
95th percentile per-packet one-way delay: 7.922 ms
Loss rate: 0.08%

Run 2: Report of TCP Cubic — Data Link

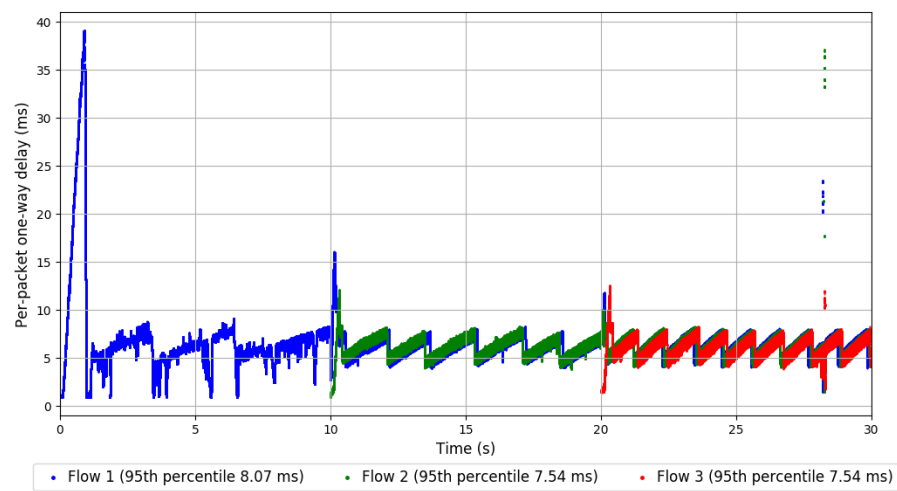
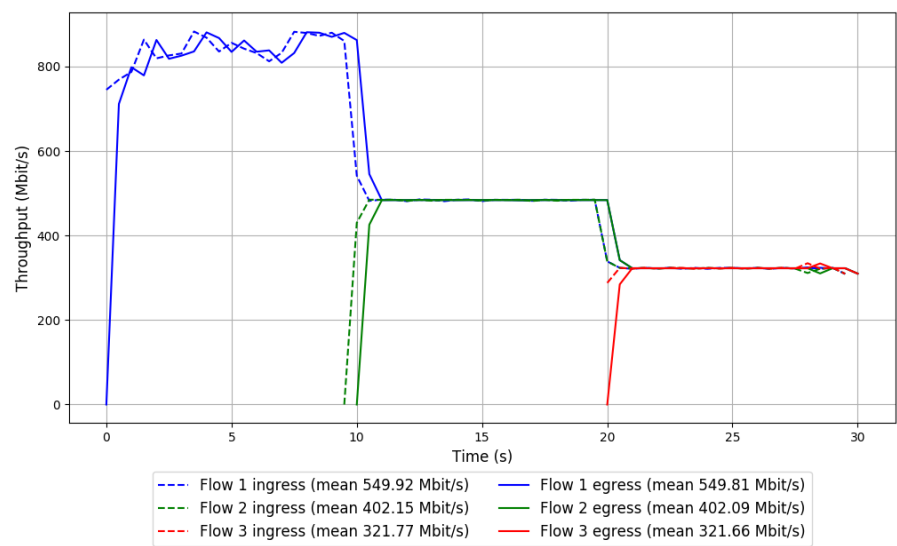


Run 3: Statistics of TCP Cubic

Start at: 2018-10-26 10:58:49
End at: 2018-10-26 10:59:19
Local clock offset: -3.536 ms
Remote clock offset: -3.864 ms

Below is generated by plot.py at 2018-10-26 12:23:52
Datalink statistics
-- Total of 3 flows:
Average throughput: 924.74 Mbit/s
95th percentile per-packet one-way delay: 7.802 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 549.81 Mbit/s
95th percentile per-packet one-way delay: 8.067 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 402.09 Mbit/s
95th percentile per-packet one-way delay: 7.544 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 321.66 Mbit/s
95th percentile per-packet one-way delay: 7.535 ms
Loss rate: 0.06%

Run 3: Report of TCP Cubic — Data Link

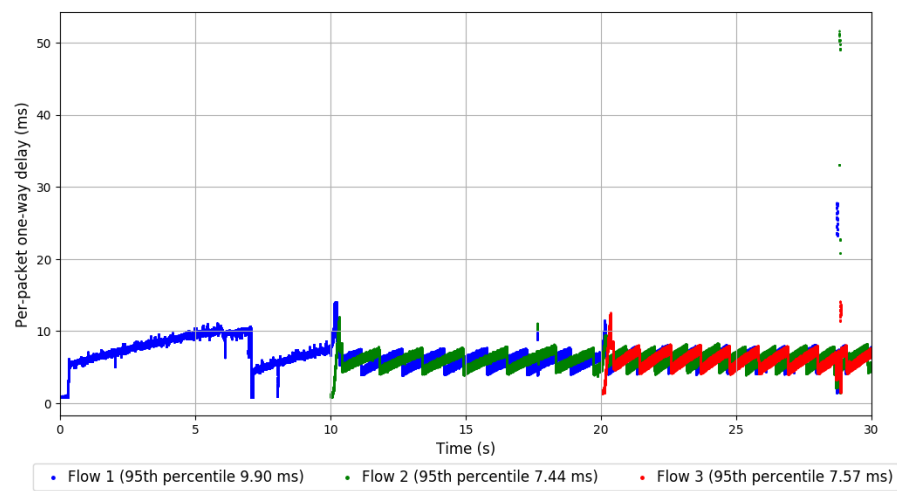
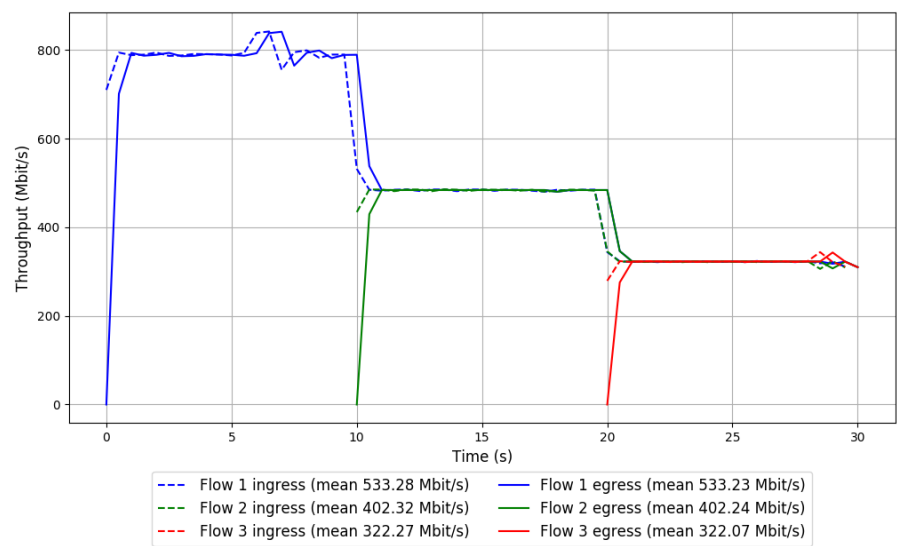


Run 4: Statistics of TCP Cubic

Start at: 2018-10-26 11:26:45
End at: 2018-10-26 11:27:15
Local clock offset: 0.456 ms
Remote clock offset: -4.175 ms

Below is generated by plot.py at 2018-10-26 12:23:52
Datalink statistics
-- Total of 3 flows:
Average throughput: 908.20 Mbit/s
95th percentile per-packet one-way delay: 9.672 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 533.23 Mbit/s
95th percentile per-packet one-way delay: 9.905 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 402.24 Mbit/s
95th percentile per-packet one-way delay: 7.443 ms
Loss rate: 0.03%
-- Flow 3:
Average throughput: 322.07 Mbit/s
95th percentile per-packet one-way delay: 7.570 ms
Loss rate: 0.09%

Run 4: Report of TCP Cubic — Data Link

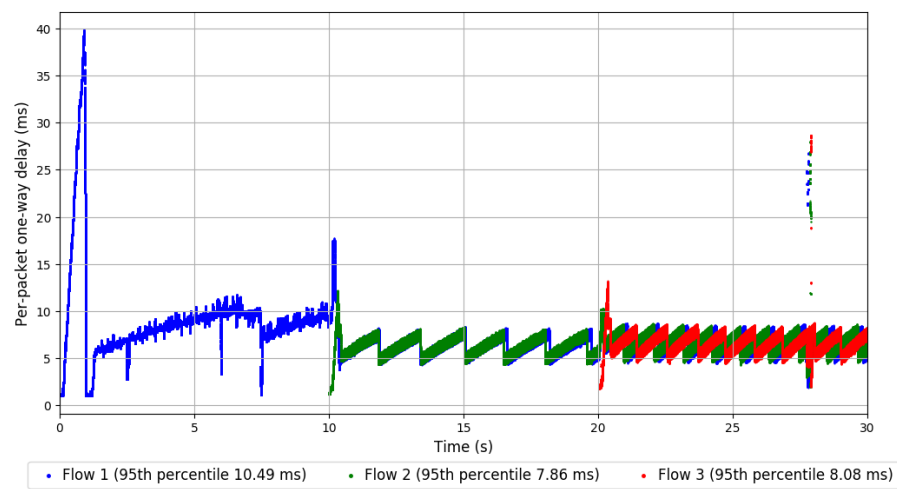
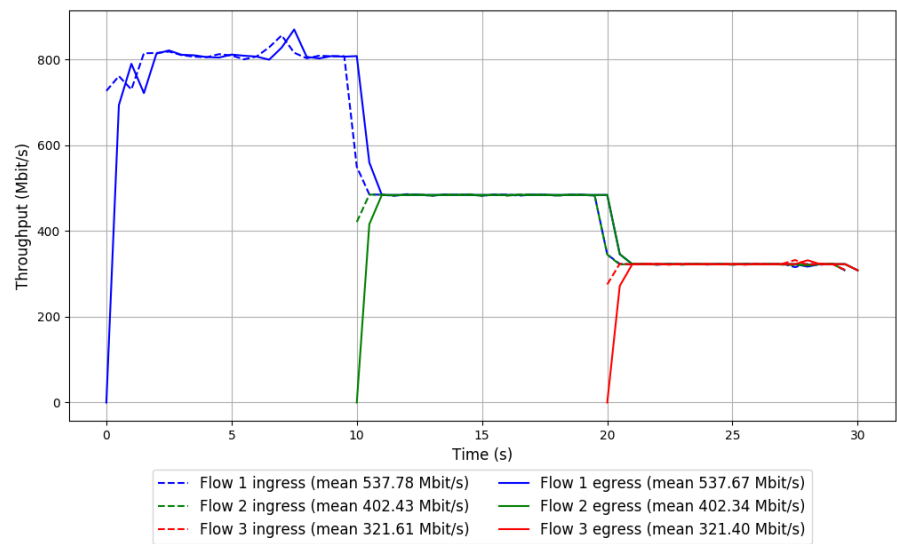


Run 5: Statistics of TCP Cubic

Start at: 2018-10-26 11:54:32
End at: 2018-10-26 11:55:02
Local clock offset: -3.097 ms
Remote clock offset: -2.002 ms

Below is generated by plot.py at 2018-10-26 12:23:52
Datalink statistics
-- Total of 3 flows:
Average throughput: 912.42 Mbit/s
95th percentile per-packet one-way delay: 9.994 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 537.67 Mbit/s
95th percentile per-packet one-way delay: 10.491 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 402.34 Mbit/s
95th percentile per-packet one-way delay: 7.858 ms
Loss rate: 0.03%
-- Flow 3:
Average throughput: 321.40 Mbit/s
95th percentile per-packet one-way delay: 8.082 ms
Loss rate: 0.09%

Run 5: Report of TCP Cubic — Data Link

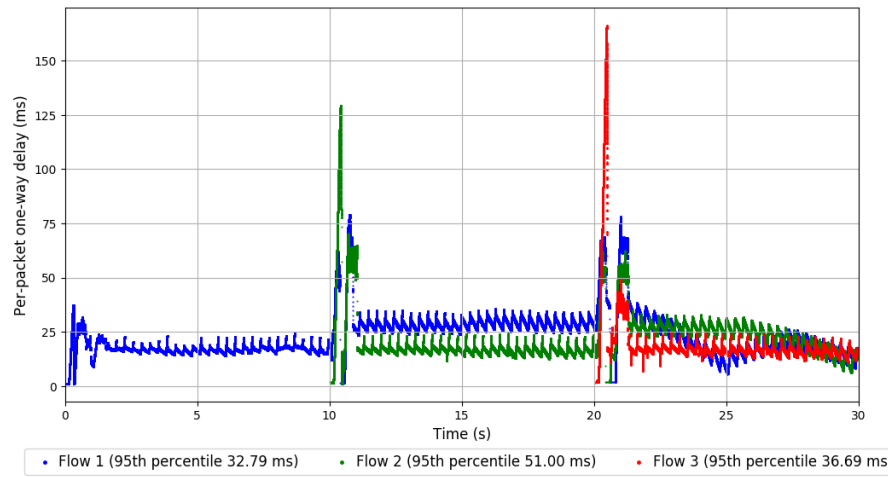
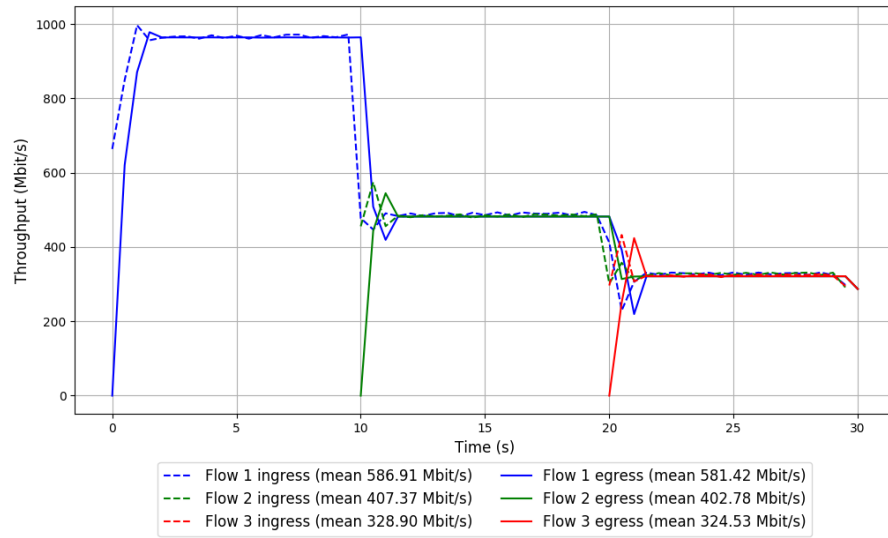


```
Run 1: Statistics of FillP

Start at: 2018-10-26 09:44:21
End at: 2018-10-26 09:44:51
Local clock offset: 0.653 ms
Remote clock offset: 1.663 ms

# Below is generated by plot.py at 2018-10-26 12:27:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 956.61 Mbit/s
95th percentile per-packet one-way delay: 34.424 ms
Loss rate: 1.04%
-- Flow 1:
Average throughput: 581.42 Mbit/s
95th percentile per-packet one-way delay: 32.793 ms
Loss rate: 0.94%
-- Flow 2:
Average throughput: 402.78 Mbit/s
95th percentile per-packet one-way delay: 50.997 ms
Loss rate: 1.13%
-- Flow 3:
Average throughput: 324.53 Mbit/s
95th percentile per-packet one-way delay: 36.692 ms
Loss rate: 1.34%
```

Run 1: Report of FillP — Data Link



Run 2: Statistics of FillP

Start at: 2018-10-26 10:12:09

End at: 2018-10-26 10:12:39

Local clock offset: 0.327 ms

Remote clock offset: 2.805 ms

Below is generated by plot.py at 2018-10-26 12:36:14

Datalink statistics

-- Total of 3 flows:

Average throughput: 958.43 Mbit/s

95th percentile per-packet one-way delay: 40.510 ms

Loss rate: 0.96%

-- Flow 1:

Average throughput: 582.40 Mbit/s

95th percentile per-packet one-way delay: 39.684 ms

Loss rate: 0.80%

-- Flow 2:

Average throughput: 403.21 Mbit/s

95th percentile per-packet one-way delay: 51.115 ms

Loss rate: 1.14%

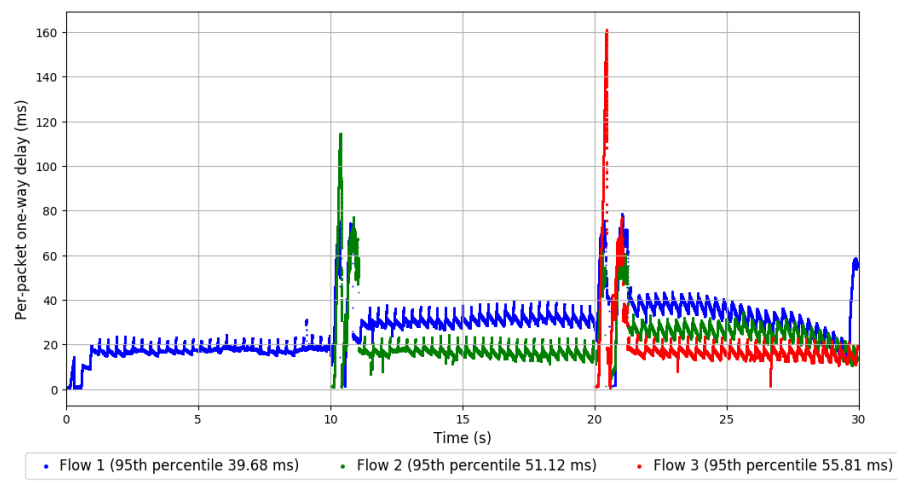
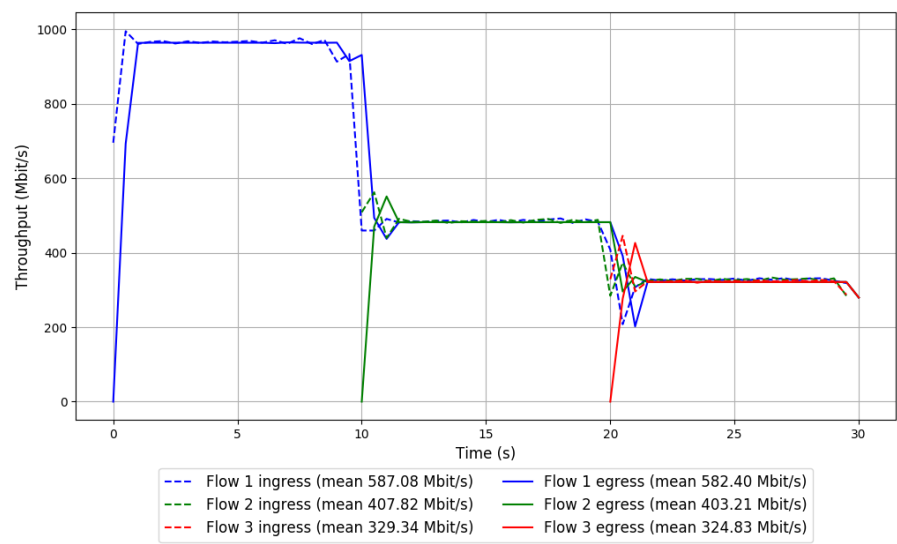
-- Flow 3:

Average throughput: 324.83 Mbit/s

95th percentile per-packet one-way delay: 55.810 ms

Loss rate: 1.39%

Run 2: Report of FillP — Data Link

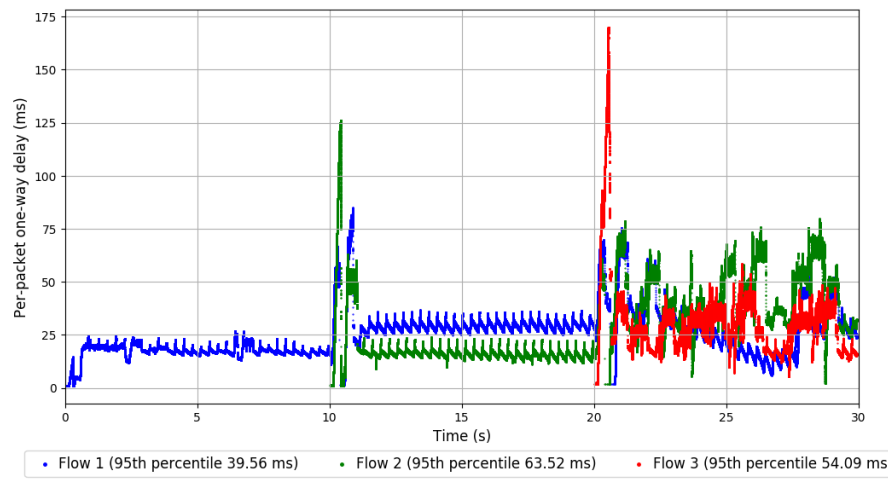
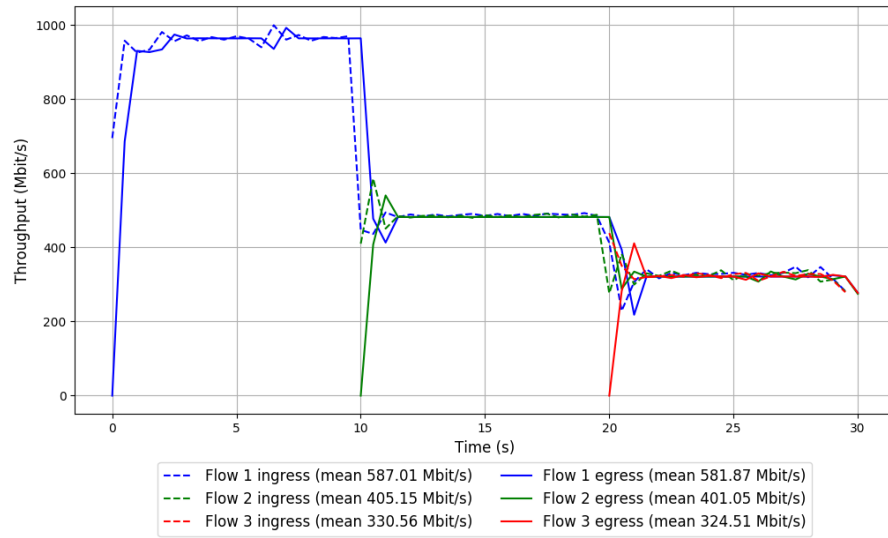


Run 3: Statistics of FillP

Start at: 2018-10-26 10:40:07
End at: 2018-10-26 10:40:37
Local clock offset: -1.851 ms
Remote clock offset: -0.779 ms

Below is generated by plot.py at 2018-10-26 12:36:17
Datalink statistics
-- Total of 3 flows:
Average throughput: 956.28 Mbit/s
95th percentile per-packet one-way delay: 53.559 ms
Loss rate: 1.03%
-- Flow 1:
Average throughput: 581.87 Mbit/s
95th percentile per-packet one-way delay: 39.560 ms
Loss rate: 0.88%
-- Flow 2:
Average throughput: 401.05 Mbit/s
95th percentile per-packet one-way delay: 63.515 ms
Loss rate: 1.02%
-- Flow 3:
Average throughput: 324.51 Mbit/s
95th percentile per-packet one-way delay: 54.087 ms
Loss rate: 1.85%

Run 3: Report of FillP — Data Link

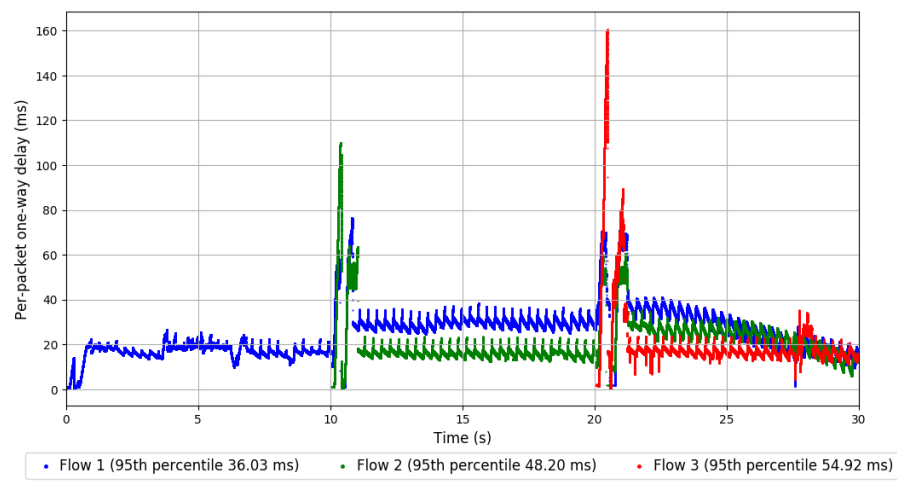
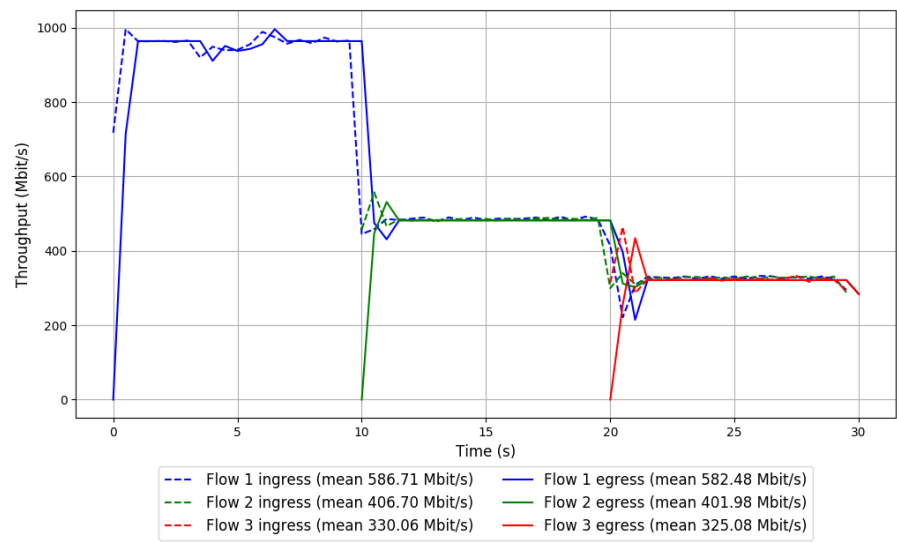


Run 4: Statistics of FillP

Start at: 2018-10-26 11:08:01
End at: 2018-10-26 11:08:31
Local clock offset: -1.514 ms
Remote clock offset: -4.877 ms

Below is generated by plot.py at 2018-10-26 12:36:21
Datalink statistics
-- Total of 3 flows:
Average throughput: 957.37 Mbit/s
95th percentile per-packet one-way delay: 37.574 ms
Loss rate: 0.94%
-- Flow 1:
Average throughput: 582.48 Mbit/s
95th percentile per-packet one-way delay: 36.028 ms
Loss rate: 0.73%
-- Flow 2:
Average throughput: 401.98 Mbit/s
95th percentile per-packet one-way delay: 48.205 ms
Loss rate: 1.16%
-- Flow 3:
Average throughput: 325.08 Mbit/s
95th percentile per-packet one-way delay: 54.919 ms
Loss rate: 1.54%

Run 4: Report of FillP — Data Link

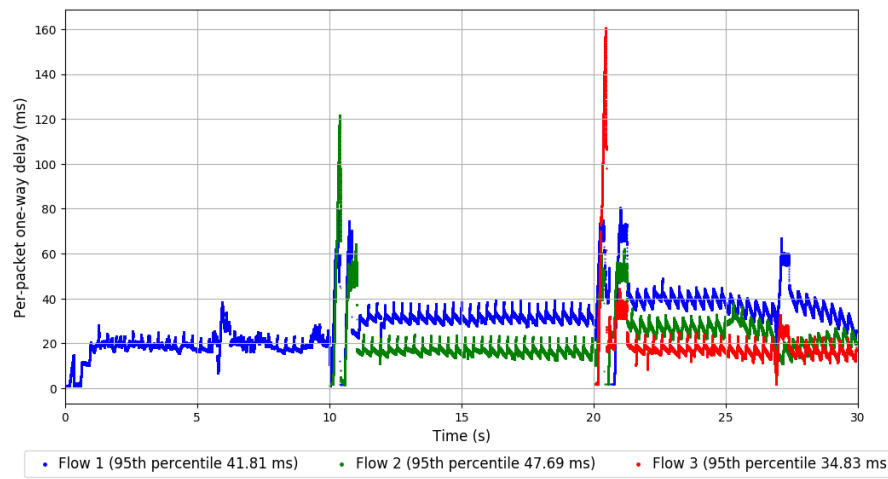
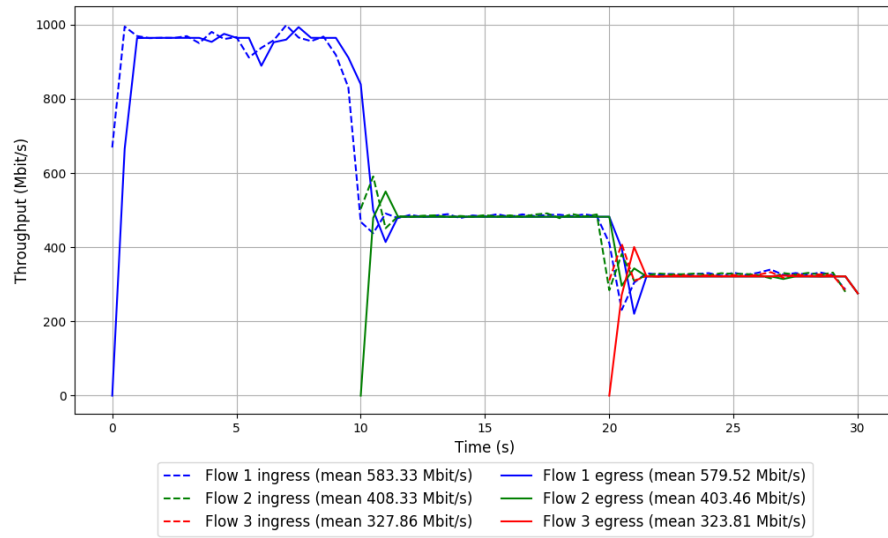


Run 5: Statistics of FillP

Start at: 2018-10-26 11:35:54
End at: 2018-10-26 11:36:24
Local clock offset: -0.778 ms
Remote clock offset: -4.079 ms

Below is generated by plot.py at 2018-10-26 12:36:21
Datalink statistics
-- Total of 3 flows:
Average throughput: 955.19 Mbit/s
95th percentile per-packet one-way delay: 41.887 ms
Loss rate: 0.88%
-- Flow 1:
Average throughput: 579.52 Mbit/s
95th percentile per-packet one-way delay: 41.814 ms
Loss rate: 0.66%
-- Flow 2:
Average throughput: 403.46 Mbit/s
95th percentile per-packet one-way delay: 47.691 ms
Loss rate: 1.20%
-- Flow 3:
Average throughput: 323.81 Mbit/s
95th percentile per-packet one-way delay: 34.829 ms
Loss rate: 1.27%

Run 5: Report of FillP — Data Link

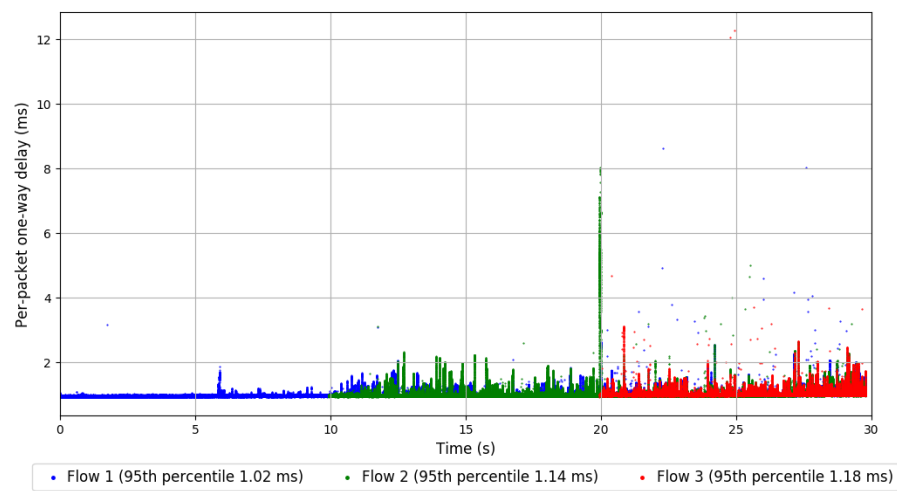
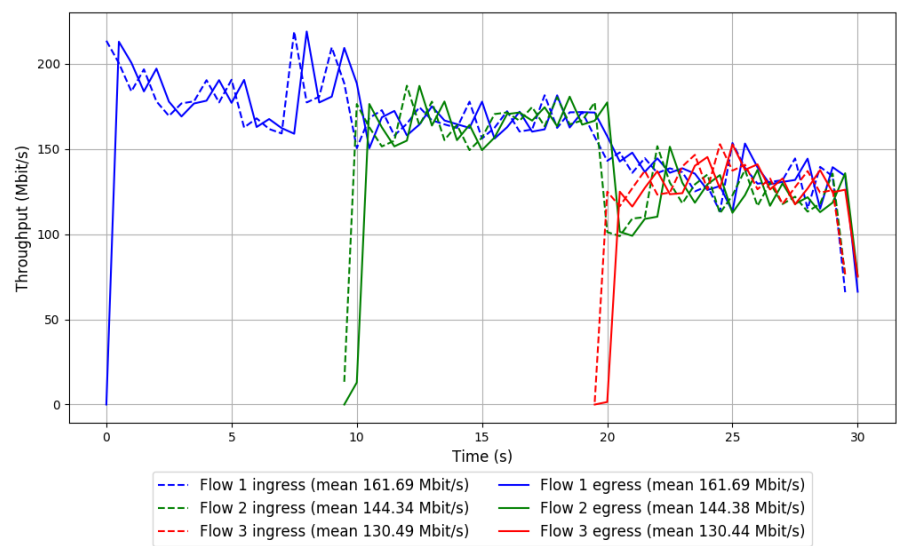



```
Run 1: Statistics of Indigo

Start at: 2018-10-26 09:56:54
End at: 2018-10-26 09:57:24
Local clock offset: 0.521 ms
Remote clock offset: 3.463 ms

# Below is generated by plot.py at 2018-10-26 12:36:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 300.99 Mbit/s
95th percentile per-packet one-way delay: 1.086 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 161.69 Mbit/s
95th percentile per-packet one-way delay: 1.020 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 144.38 Mbit/s
95th percentile per-packet one-way delay: 1.141 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 130.44 Mbit/s
95th percentile per-packet one-way delay: 1.181 ms
Loss rate: 0.06%
```

Run 1: Report of Indigo — Data Link



Run 2: Statistics of Indigo

Start at: 2018-10-26 10:24:44

End at: 2018-10-26 10:25:14

Local clock offset: 0.303 ms

Remote clock offset: 0.123 ms

Below is generated by plot.py at 2018-10-26 12:36:21

Datalink statistics

-- Total of 3 flows:

Average throughput: 296.38 Mbit/s

95th percentile per-packet one-way delay: 1.094 ms

Loss rate: 0.01%

-- Flow 1:

Average throughput: 157.16 Mbit/s

95th percentile per-packet one-way delay: 1.029 ms

Loss rate: 0.01%

-- Flow 2:

Average throughput: 150.11 Mbit/s

95th percentile per-packet one-way delay: 1.107 ms

Loss rate: 0.01%

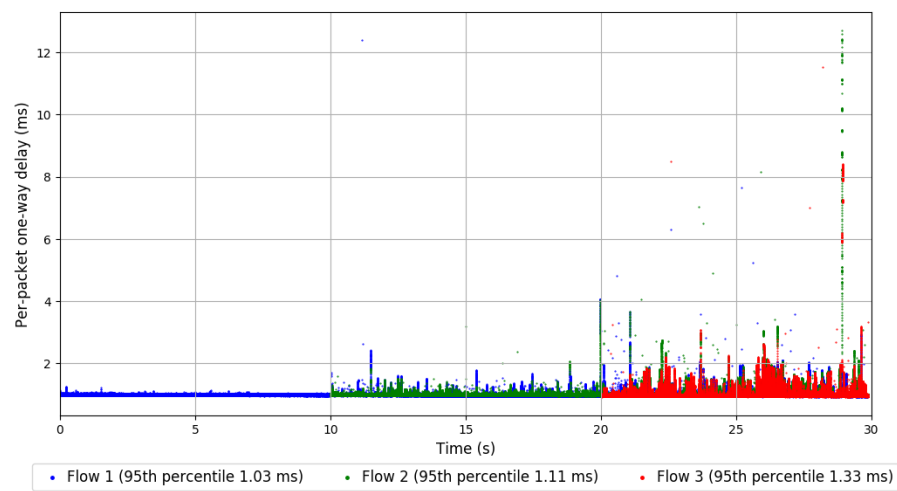
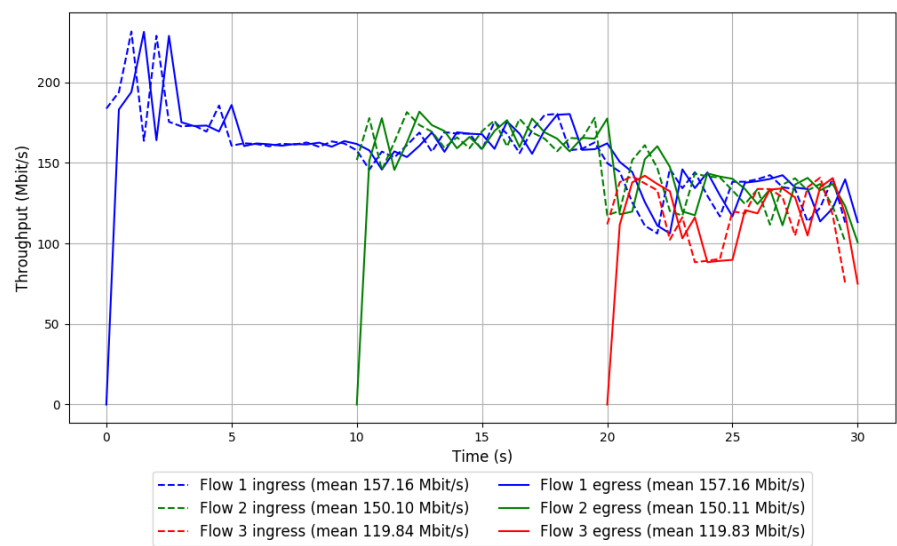
-- Flow 3:

Average throughput: 119.83 Mbit/s

95th percentile per-packet one-way delay: 1.329 ms

Loss rate: 0.02%

Run 2: Report of Indigo — Data Link

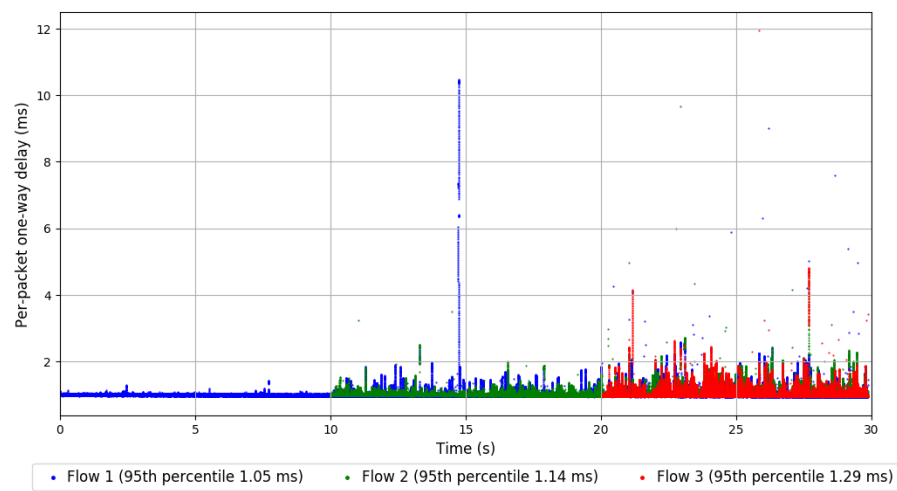
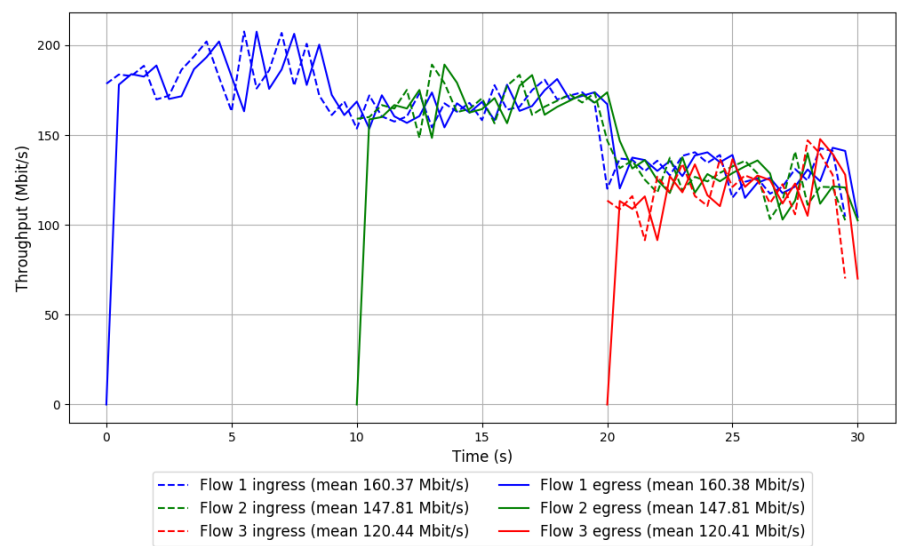


Run 3: Statistics of Indigo

Start at: 2018-10-26 10:52:41
End at: 2018-10-26 10:53:11
Local clock offset: -3.183 ms
Remote clock offset: -3.124 ms

Below is generated by plot.py at 2018-10-26 12:36:21
Datalink statistics
-- Total of 3 flows:
Average throughput: 298.34 Mbit/s
95th percentile per-packet one-way delay: 1.125 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 160.38 Mbit/s
95th percentile per-packet one-way delay: 1.054 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 147.81 Mbit/s
95th percentile per-packet one-way delay: 1.142 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 120.41 Mbit/s
95th percentile per-packet one-way delay: 1.287 ms
Loss rate: 0.01%

Run 3: Report of Indigo — Data Link

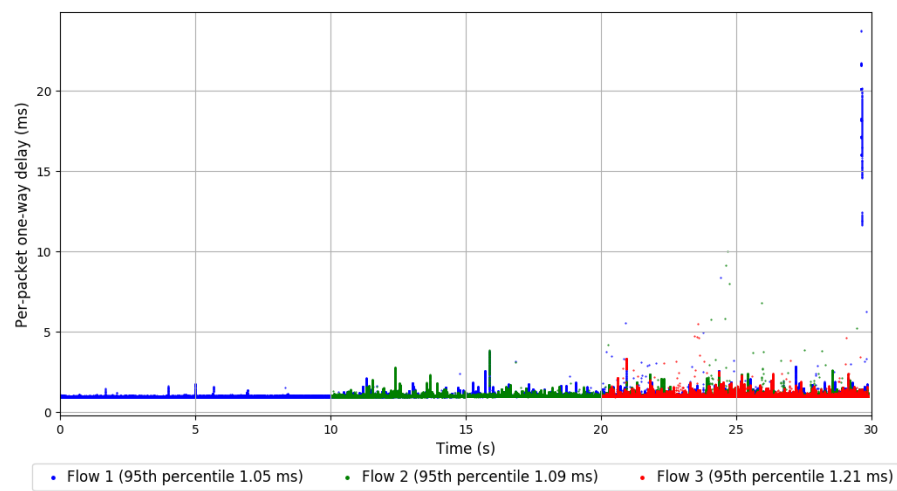
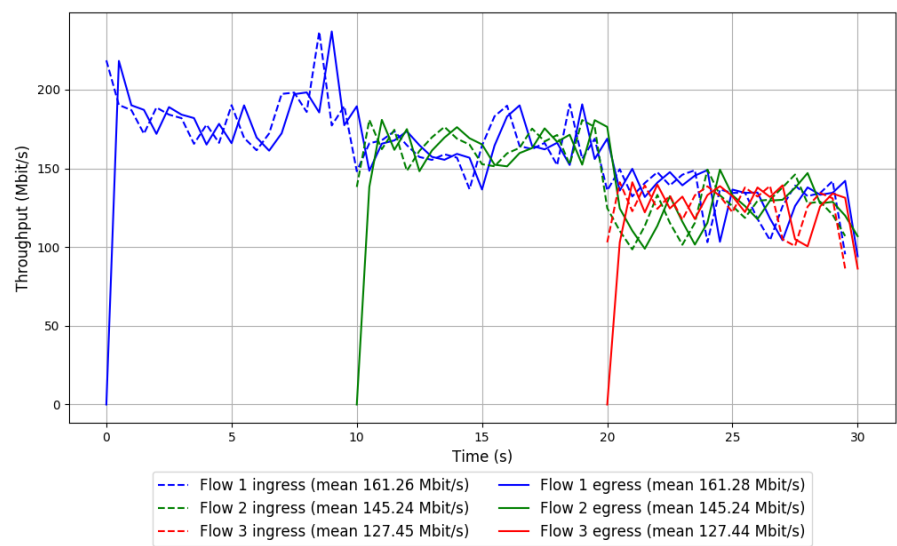


Run 4: Statistics of Indigo

Start at: 2018-10-26 11:20:27
End at: 2018-10-26 11:20:57
Local clock offset: 0.126 ms
Remote clock offset: -4.933 ms

Below is generated by plot.py at 2018-10-26 12:36:21
Datalink statistics
-- Total of 3 flows:
Average throughput: 299.58 Mbit/s
95th percentile per-packet one-way delay: 1.090 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 161.28 Mbit/s
95th percentile per-packet one-way delay: 1.055 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 145.24 Mbit/s
95th percentile per-packet one-way delay: 1.095 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 127.44 Mbit/s
95th percentile per-packet one-way delay: 1.208 ms
Loss rate: 0.00%

Run 4: Report of Indigo — Data Link



Run 5: Statistics of Indigo

Start at: 2018-10-26 11:48:21

End at: 2018-10-26 11:48:51

Local clock offset: -2.695 ms

Remote clock offset: -4.32 ms

Below is generated by plot.py at 2018-10-26 12:36:21

Datalink statistics

-- Total of 3 flows:

Average throughput: 300.05 Mbit/s

95th percentile per-packet one-way delay: 1.143 ms

Loss rate: 0.01%

-- Flow 1:

Average throughput: 160.06 Mbit/s

95th percentile per-packet one-way delay: 1.108 ms

Loss rate: 0.01%

-- Flow 2:

Average throughput: 149.62 Mbit/s

95th percentile per-packet one-way delay: 1.164 ms

Loss rate: 0.01%

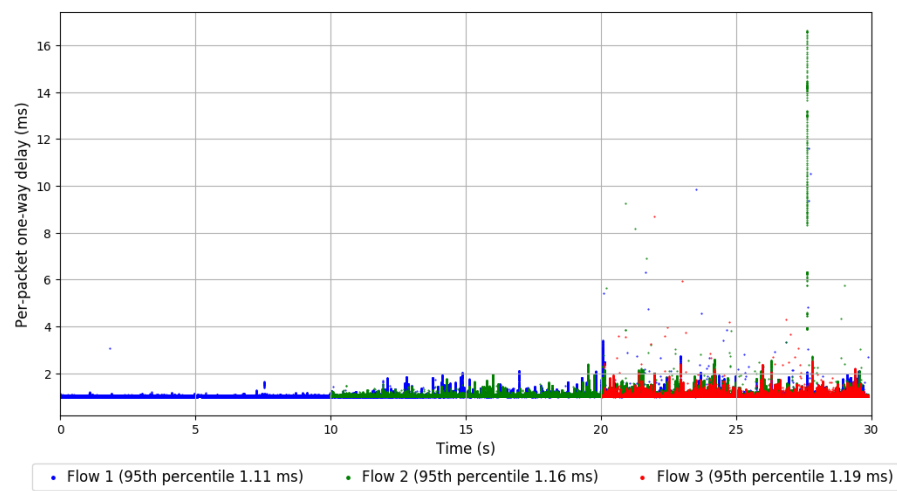
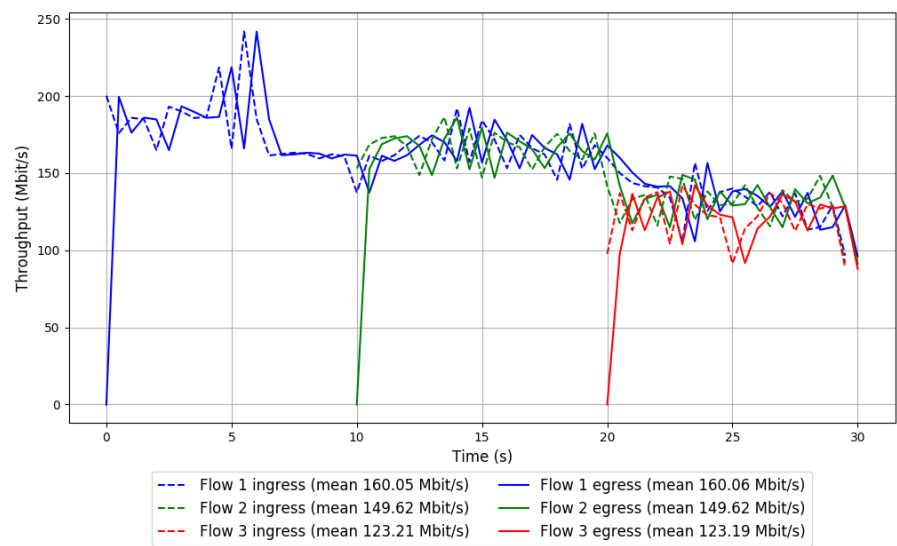
-- Flow 3:

Average throughput: 123.19 Mbit/s

95th percentile per-packet one-way delay: 1.194 ms

Loss rate: 0.04%

Run 5: Report of Indigo — Data Link



Run 1: Statistics of Indigo-96d2da3

Start at: 2018-10-26 09:54:01

End at: 2018-10-26 09:54:31

Local clock offset: 0.522 ms

Remote clock offset: 3.158 ms

Below is generated by plot.py at 2018-10-26 12:36:21

Datalink statistics

-- Total of 3 flows:

Average throughput: 233.90 Mbit/s

95th percentile per-packet one-way delay: 1.078 ms

Loss rate: 0.01%

-- Flow 1:

Average throughput: 108.34 Mbit/s

95th percentile per-packet one-way delay: 1.055 ms

Loss rate: 0.01%

-- Flow 2:

Average throughput: 129.57 Mbit/s

95th percentile per-packet one-way delay: 1.086 ms

Loss rate: 0.01%

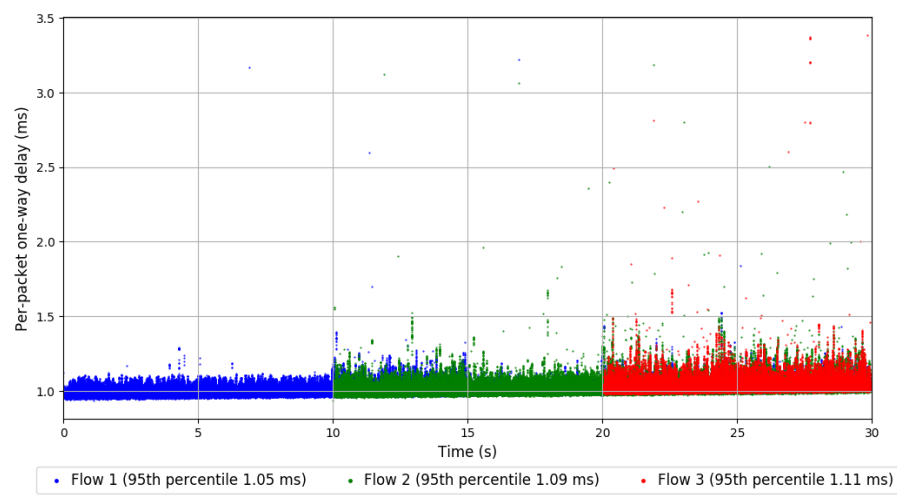
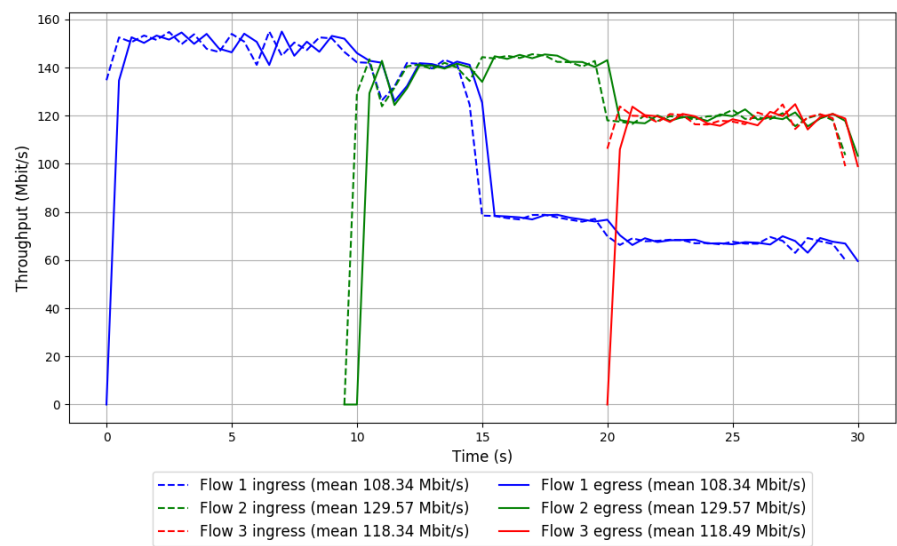
-- Flow 3:

Average throughput: 118.49 Mbit/s

95th percentile per-packet one-way delay: 1.111 ms

Loss rate: 0.01%

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



Run 2: Statistics of Indigo-96d2da3

Start at: 2018-10-26 10:21:48

End at: 2018-10-26 10:22:18

Local clock offset: 0.287 ms

Remote clock offset: 0.503 ms

Below is generated by plot.py at 2018-10-26 12:36:21

Datalink statistics

-- Total of 3 flows:

Average throughput: 262.15 Mbit/s

95th percentile per-packet one-way delay: 1.011 ms

Loss rate: 0.01%

-- Flow 1:

Average throughput: 115.81 Mbit/s

95th percentile per-packet one-way delay: 0.993 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 123.09 Mbit/s

95th percentile per-packet one-way delay: 1.014 ms

Loss rate: 0.02%

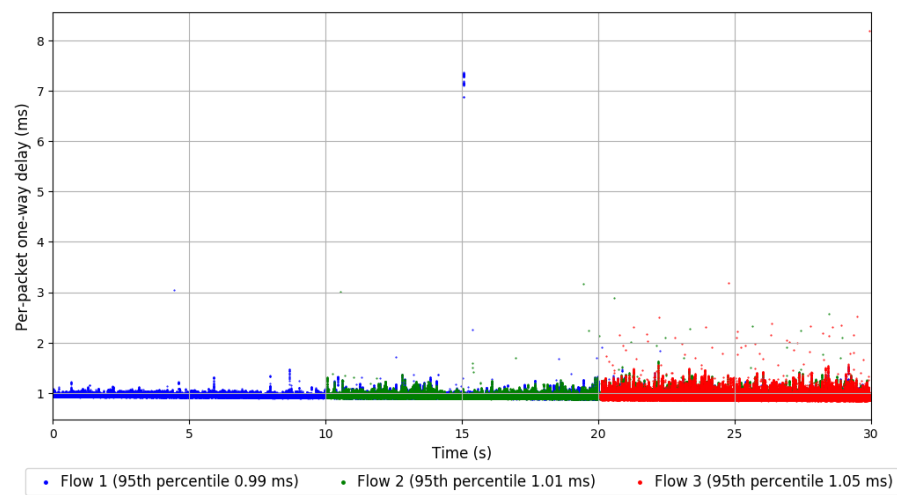
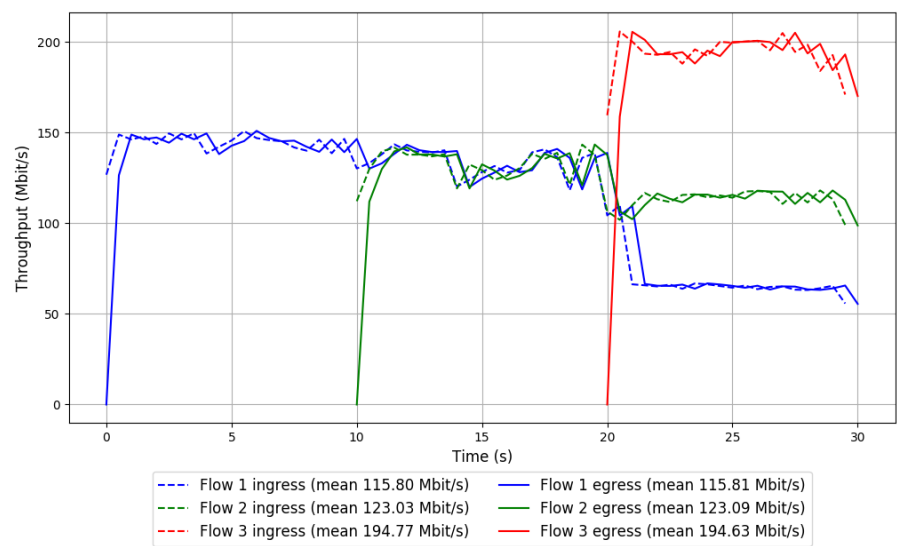
-- Flow 3:

Average throughput: 194.63 Mbit/s

95th percentile per-packet one-way delay: 1.054 ms

Loss rate: 0.02%

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

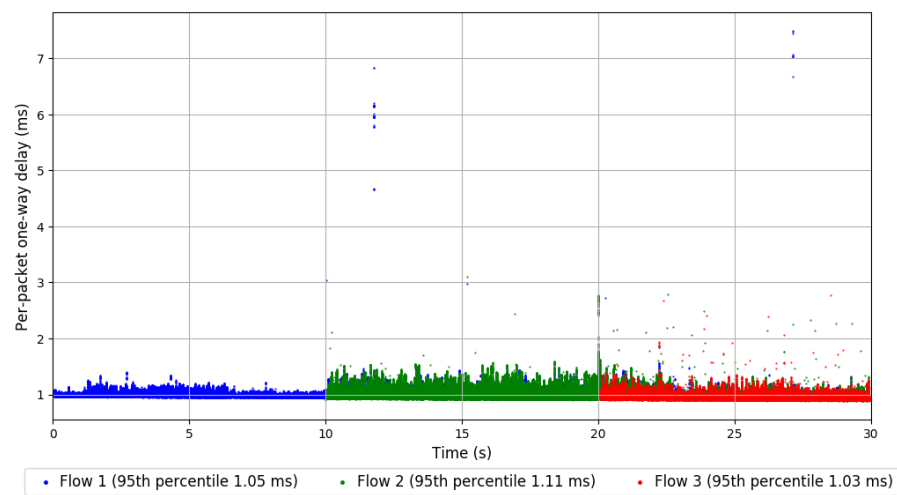
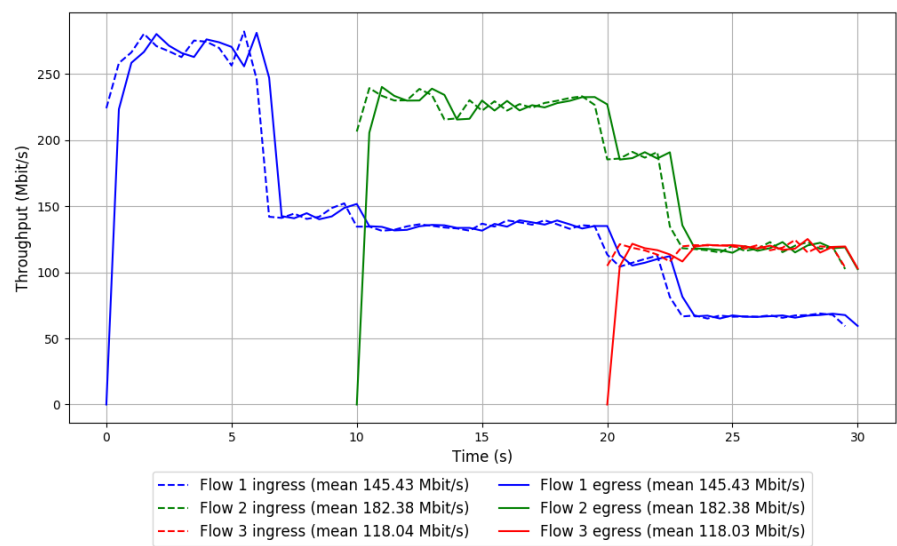


Run 3: Statistics of Indigo-96d2da3

Start at: 2018-10-26 10:49:45
End at: 2018-10-26 10:50:15
Local clock offset: -2.95 ms
Remote clock offset: -2.571 ms

Below is generated by plot.py at 2018-10-26 12:36:21
Datalink statistics
-- Total of 3 flows:
Average throughput: 305.88 Mbit/s
95th percentile per-packet one-way delay: 1.073 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 145.43 Mbit/s
95th percentile per-packet one-way delay: 1.051 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 182.38 Mbit/s
95th percentile per-packet one-way delay: 1.115 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 118.03 Mbit/s
95th percentile per-packet one-way delay: 1.031 ms
Loss rate: 0.04%

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

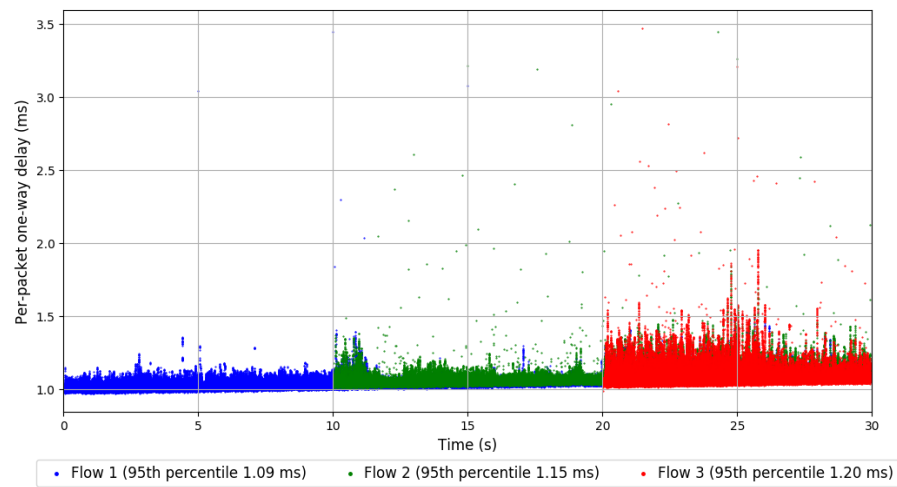
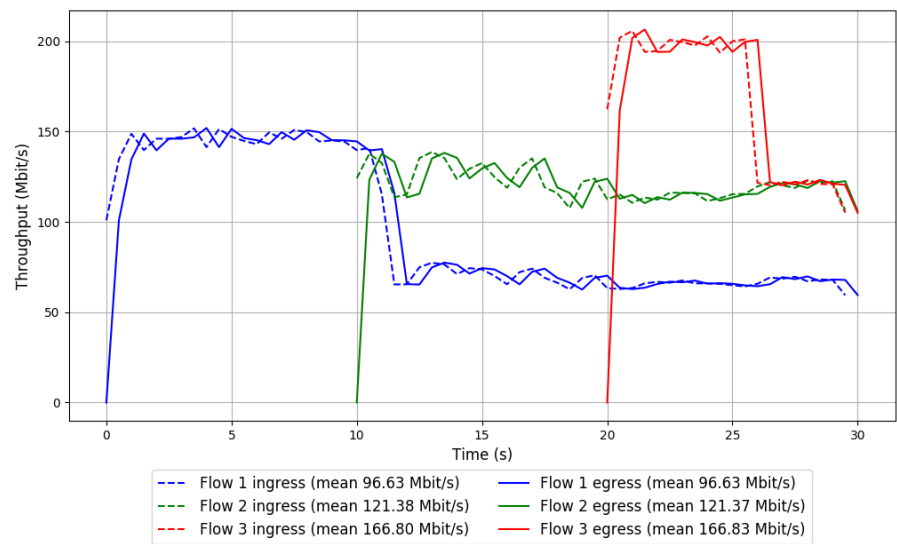


Run 4: Statistics of Indigo-96d2da3

Start at: 2018-10-26 11:17:39
End at: 2018-10-26 11:18:09
Local clock offset: -0.099 ms
Remote clock offset: -5.574 ms

Below is generated by plot.py at 2018-10-26 12:36:21
Datalink statistics
-- Total of 3 flows:
Average throughput: 232.67 Mbit/s
95th percentile per-packet one-way delay: 1.148 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 96.63 Mbit/s
95th percentile per-packet one-way delay: 1.093 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 121.37 Mbit/s
95th percentile per-packet one-way delay: 1.152 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 166.83 Mbit/s
95th percentile per-packet one-way delay: 1.204 ms
Loss rate: 0.01%

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

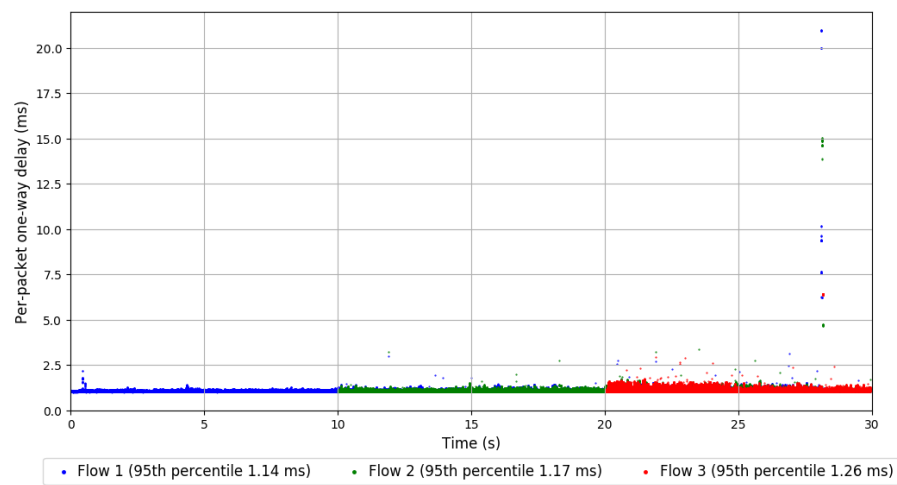
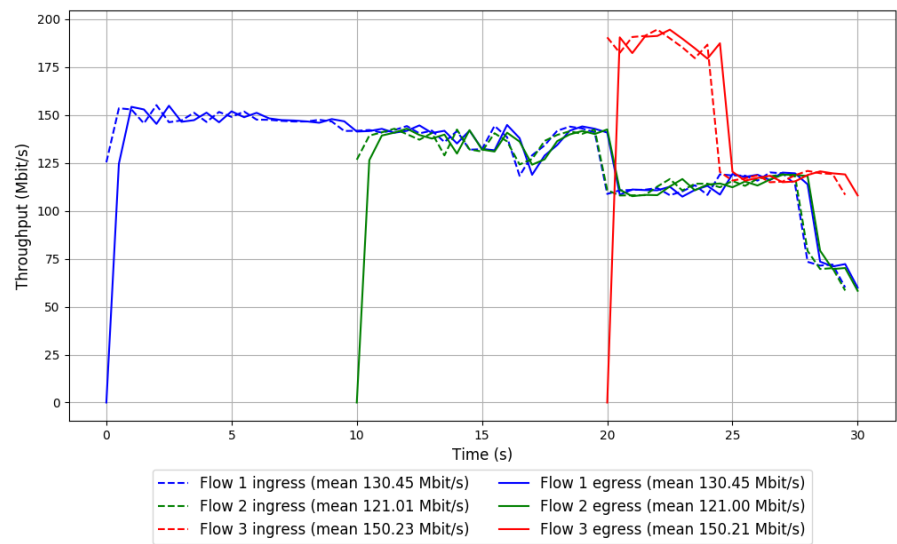


Run 5: Statistics of Indigo-96d2da3

Start at: 2018-10-26 11:45:31
End at: 2018-10-26 11:46:01
Local clock offset: -2.411 ms
Remote clock offset: -4.222 ms

Below is generated by plot.py at 2018-10-26 12:36:21
Datalink statistics
-- Total of 3 flows:
Average throughput: 260.74 Mbit/s
95th percentile per-packet one-way delay: 1.175 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 130.45 Mbit/s
95th percentile per-packet one-way delay: 1.140 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 121.00 Mbit/s
95th percentile per-packet one-way delay: 1.167 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 150.21 Mbit/s
95th percentile per-packet one-way delay: 1.265 ms
Loss rate: 0.03%

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

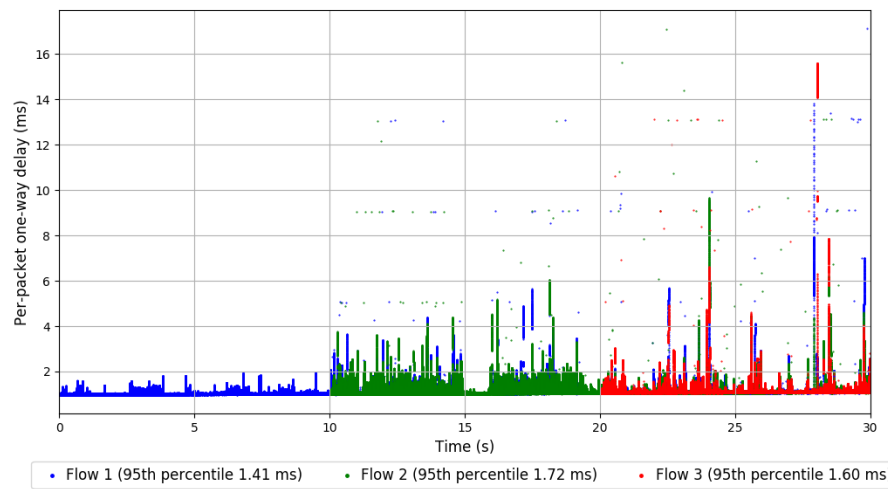
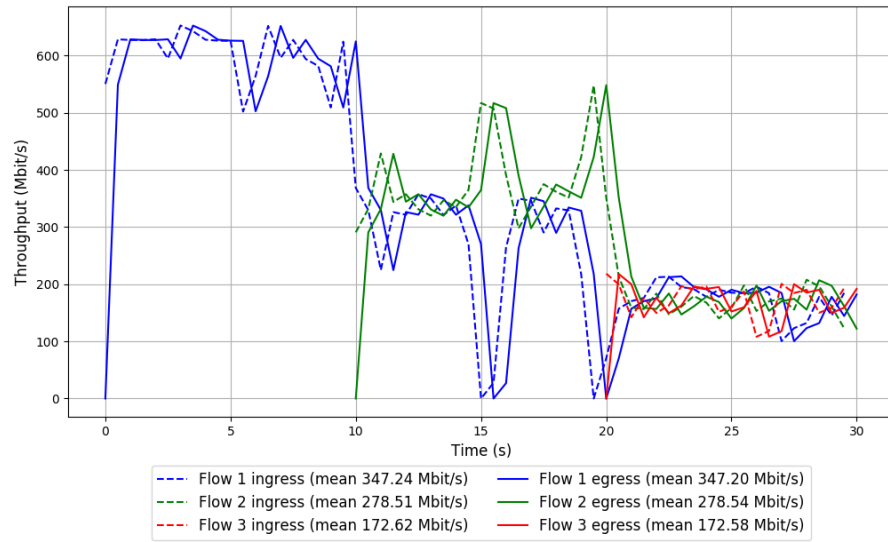


```
Run 1: Statistics of LEDBAT

Start at: 2018-10-26 09:46:07
End at: 2018-10-26 09:46:37
Local clock offset: 0.597 ms
Remote clock offset: 2.082 ms

# Below is generated by plot.py at 2018-10-26 12:37:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 589.94 Mbit/s
95th percentile per-packet one-way delay: 1.536 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 347.20 Mbit/s
95th percentile per-packet one-way delay: 1.410 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 278.54 Mbit/s
95th percentile per-packet one-way delay: 1.716 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 172.58 Mbit/s
95th percentile per-packet one-way delay: 1.605 ms
Loss rate: 0.04%
```

Run 1: Report of LEDBAT — Data Link



Run 2: Statistics of LEDBAT

Start at: 2018-10-26 10:13:55

End at: 2018-10-26 10:14:25

Local clock offset: 0.312 ms

Remote clock offset: 2.153 ms

Below is generated by plot.py at 2018-10-26 12:39:49

Datalink statistics

-- Total of 3 flows:

Average throughput: 585.78 Mbit/s

95th percentile per-packet one-way delay: 1.861 ms

Loss rate: 0.01%

-- Flow 1:

Average throughput: 357.42 Mbit/s

95th percentile per-packet one-way delay: 1.566 ms

Loss rate: 0.01%

-- Flow 2:

Average throughput: 254.48 Mbit/s

95th percentile per-packet one-way delay: 2.444 ms

Loss rate: 0.00%

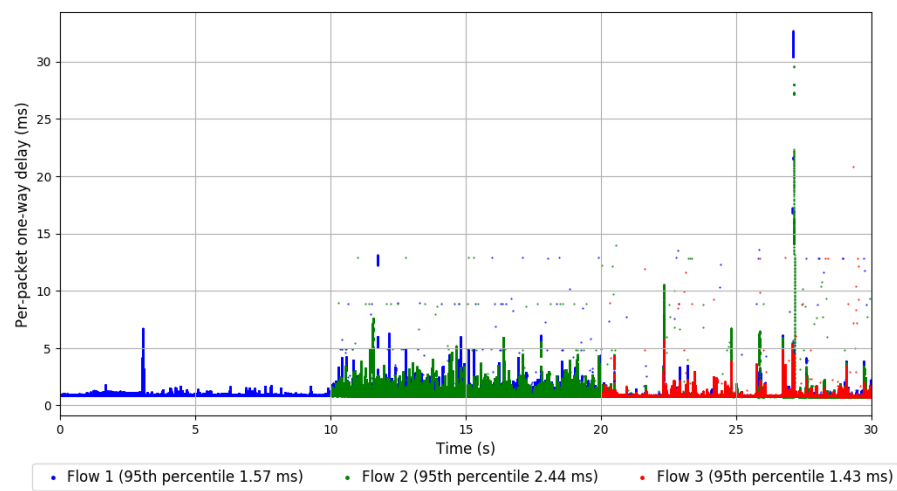
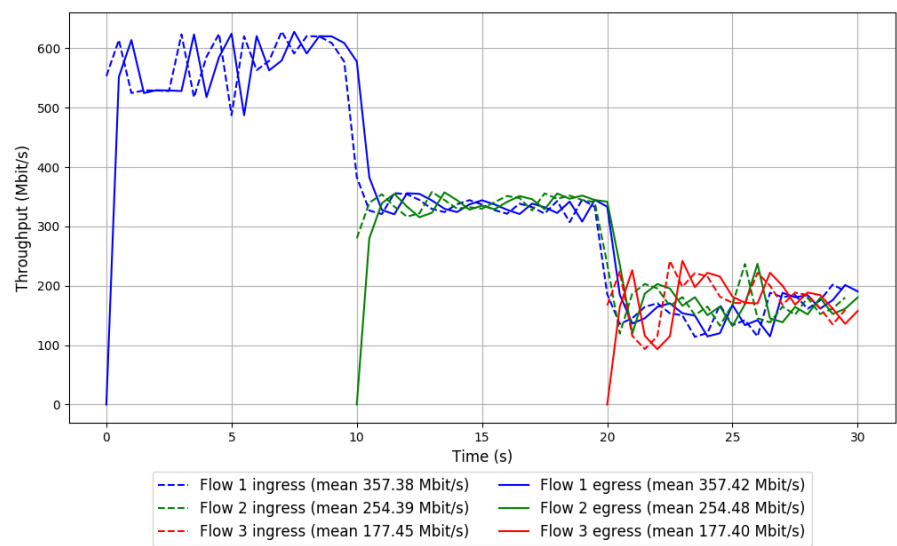
-- Flow 3:

Average throughput: 177.40 Mbit/s

95th percentile per-packet one-way delay: 1.429 ms

Loss rate: 0.05%

Run 2: Report of LEDBAT — Data Link

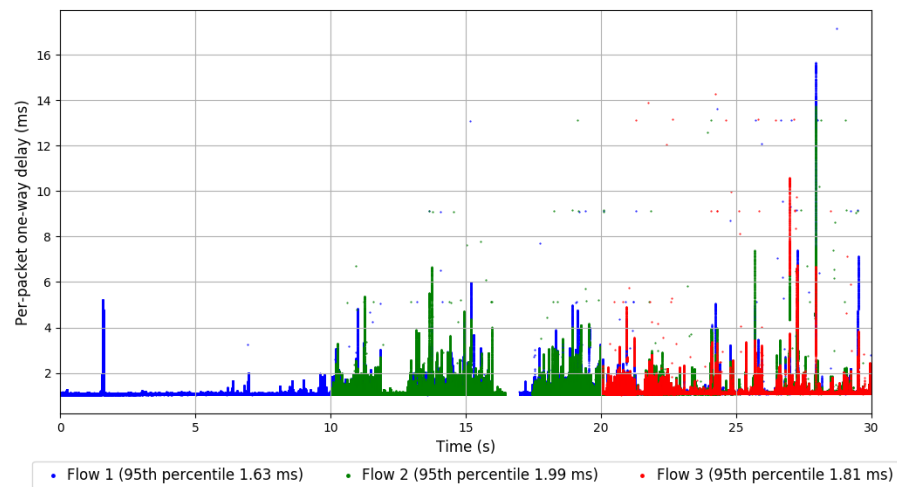
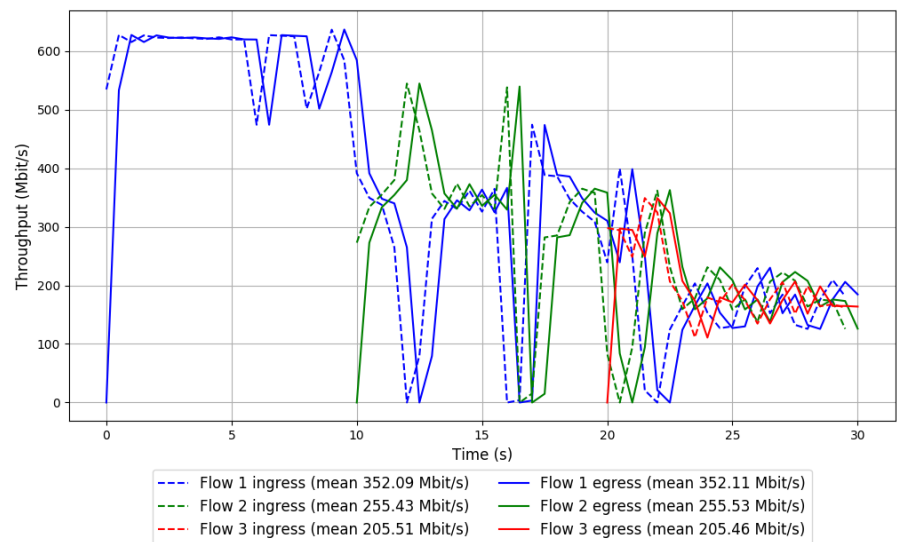


Run 3: Statistics of LEDBAT

Start at: 2018-10-26 10:41:53
End at: 2018-10-26 10:42:23
Local clock offset: -2.133 ms
Remote clock offset: -0.864 ms

Below is generated by plot.py at 2018-10-26 12:40:09
Datalink statistics
-- Total of 3 flows:
Average throughput: 590.43 Mbit/s
95th percentile per-packet one-way delay: 1.769 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 352.11 Mbit/s
95th percentile per-packet one-way delay: 1.631 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 255.53 Mbit/s
95th percentile per-packet one-way delay: 1.985 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 205.46 Mbit/s
95th percentile per-packet one-way delay: 1.811 ms
Loss rate: 0.03%

Run 3: Report of LEDBAT — Data Link

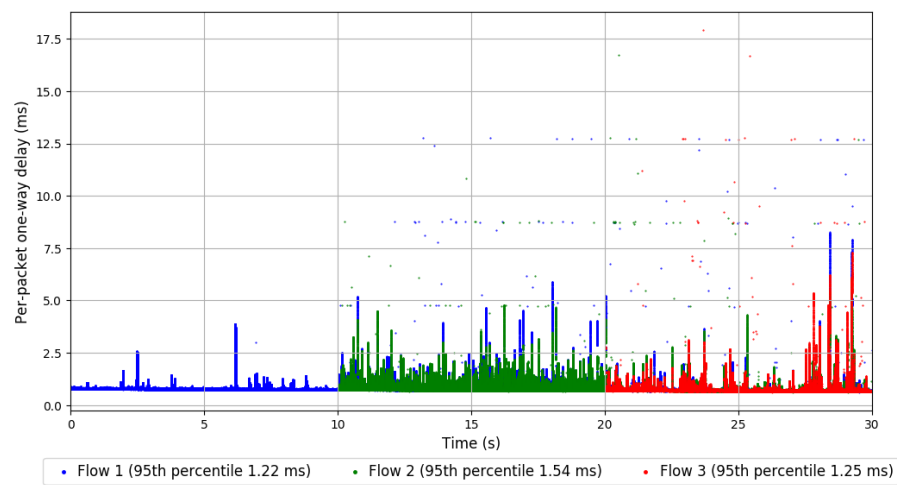
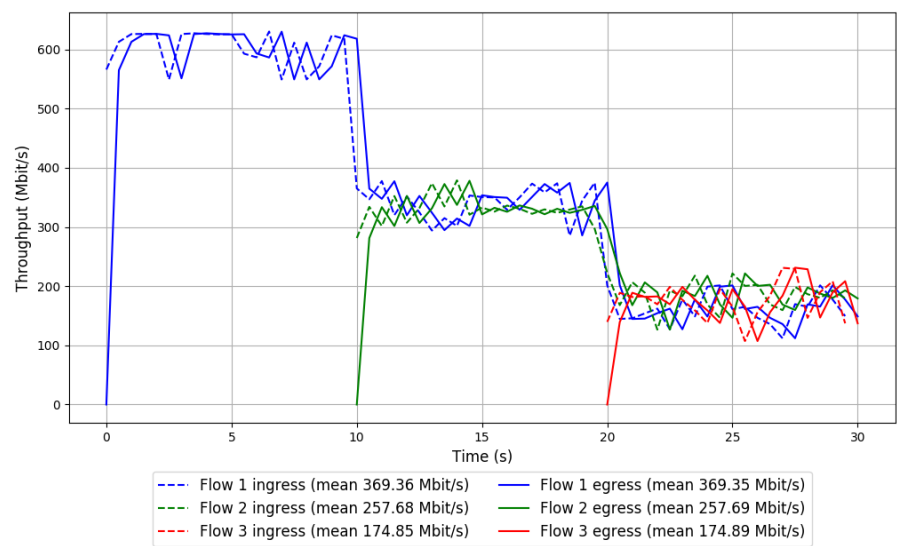


Run 4: Statistics of LEDBAT

Start at: 2018-10-26 11:09:47
End at: 2018-10-26 11:10:17
Local clock offset: -1.12 ms
Remote clock offset: -4.964 ms

Below is generated by plot.py at 2018-10-26 12:40:15
Datalink statistics
-- Total of 3 flows:
Average throughput: 599.00 Mbit/s
95th percentile per-packet one-way delay: 1.328 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 369.35 Mbit/s
95th percentile per-packet one-way delay: 1.217 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 257.69 Mbit/s
95th percentile per-packet one-way delay: 1.540 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 174.89 Mbit/s
95th percentile per-packet one-way delay: 1.250 ms
Loss rate: 0.00%

Run 4: Report of LEDBAT — Data Link

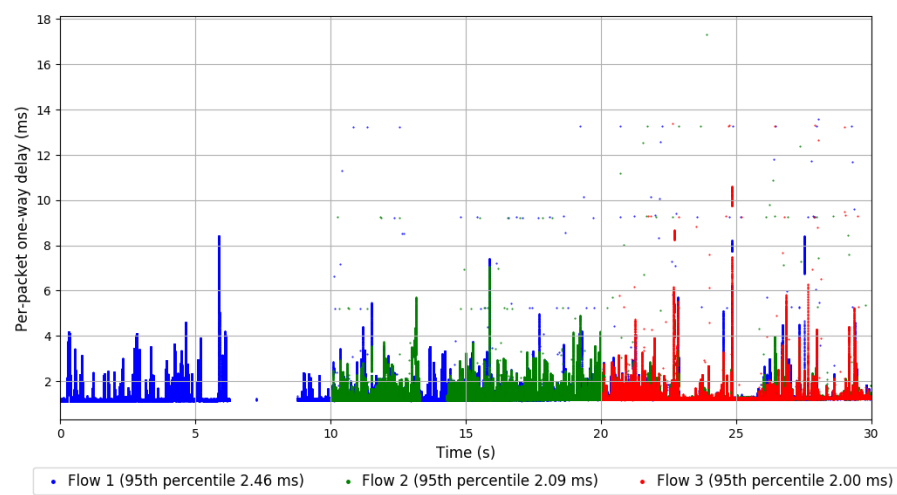
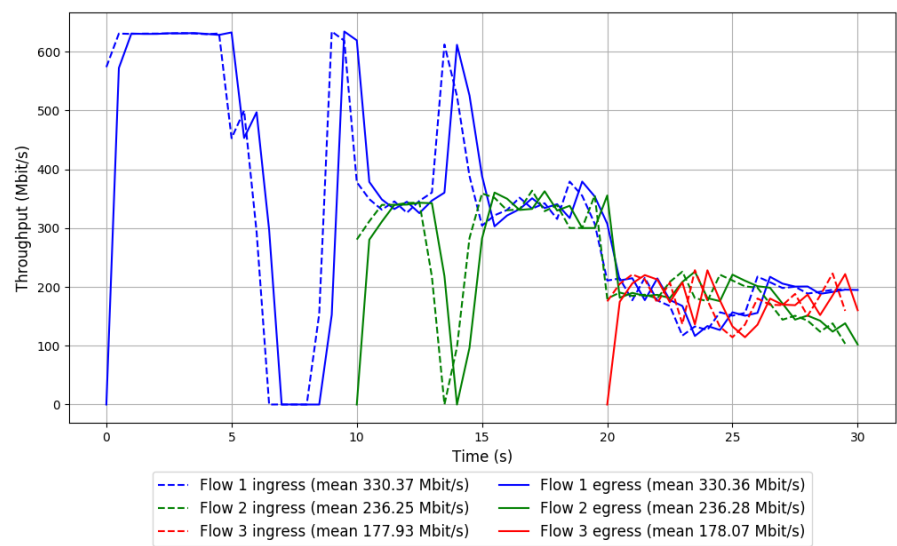


Run 5: Statistics of LEDBAT

Start at: 2018-10-26 11:37:39
End at: 2018-10-26 11:38:09
Local clock offset: -1.181 ms
Remote clock offset: -4.103 ms

Below is generated by plot.py at 2018-10-26 12:42:27
Datalink statistics
-- Total of 3 flows:
Average throughput: 546.87 Mbit/s
95th percentile per-packet one-way delay: 2.301 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 330.36 Mbit/s
95th percentile per-packet one-way delay: 2.463 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 236.28 Mbit/s
95th percentile per-packet one-way delay: 2.092 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 178.07 Mbit/s
95th percentile per-packet one-way delay: 2.004 ms
Loss rate: 0.00%

Run 5: Report of LEDBAT — Data Link



Run 1: Statistics of Indigo-Muses

Start at: 2018-10-26 09:42:59

End at: 2018-10-26 09:43:29

Local clock offset: 0.683 ms

Remote clock offset: 1.525 ms

Below is generated by plot.py at 2018-10-26 12:42:27

Datalink statistics

-- Total of 3 flows:

Average throughput: 90.81 Mbit/s

95th percentile per-packet one-way delay: 1.037 ms

Loss rate: 0.01%

-- Flow 1:

Average throughput: 44.43 Mbit/s

95th percentile per-packet one-way delay: 1.029 ms

Loss rate: 0.01%

-- Flow 2:

Average throughput: 45.01 Mbit/s

95th percentile per-packet one-way delay: 1.041 ms

Loss rate: 0.01%

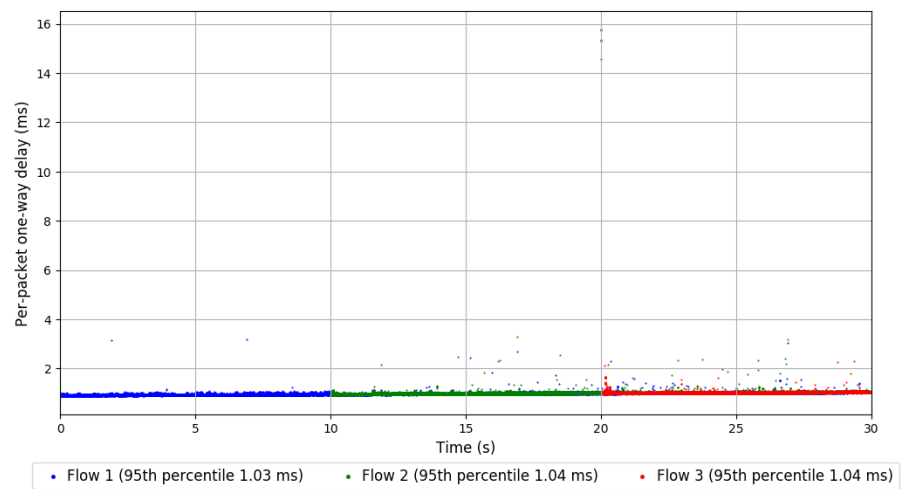
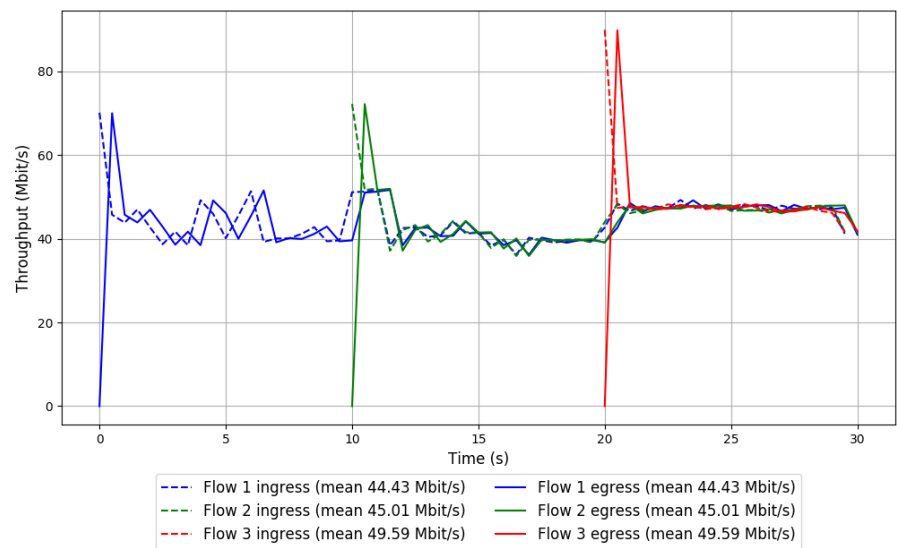
-- Flow 3:

Average throughput: 49.59 Mbit/s

95th percentile per-packet one-way delay: 1.042 ms

Loss rate: 0.00%

Run 1: Report of Indigo-Muses — Data Link



Run 2: Statistics of Indigo-Muses

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

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

Local clock offset: 0.334 ms

Remote clock offset: 3.299 ms

Below is generated by plot.py at 2018-10-26 12:42:27

Datalink statistics

-- Total of 3 flows:

Average throughput: 86.93 Mbit/s

95th percentile per-packet one-way delay: 0.938 ms

Loss rate: 0.01%

-- Flow 1:

Average throughput: 41.93 Mbit/s

95th percentile per-packet one-way delay: 0.951 ms

Loss rate: 0.01%

-- Flow 2:

Average throughput: 42.17 Mbit/s

95th percentile per-packet one-way delay: 0.889 ms

Loss rate: 0.01%

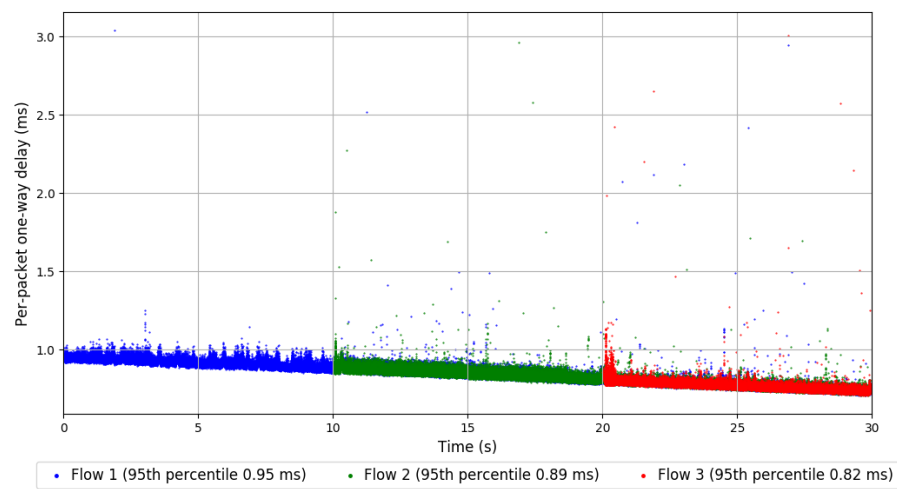
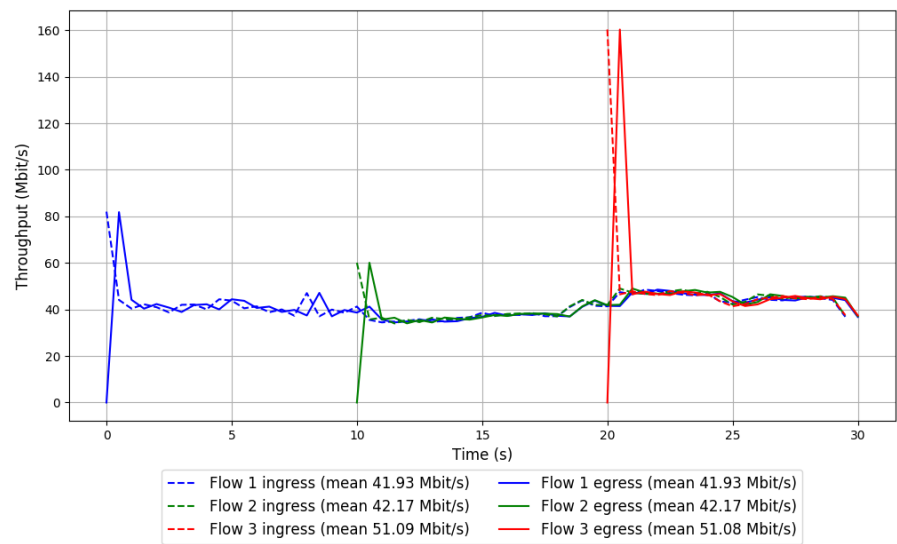
-- Flow 3:

Average throughput: 51.08 Mbit/s

95th percentile per-packet one-way delay: 0.819 ms

Loss rate: 0.02%

Run 2: Report of Indigo-Muses — Data Link

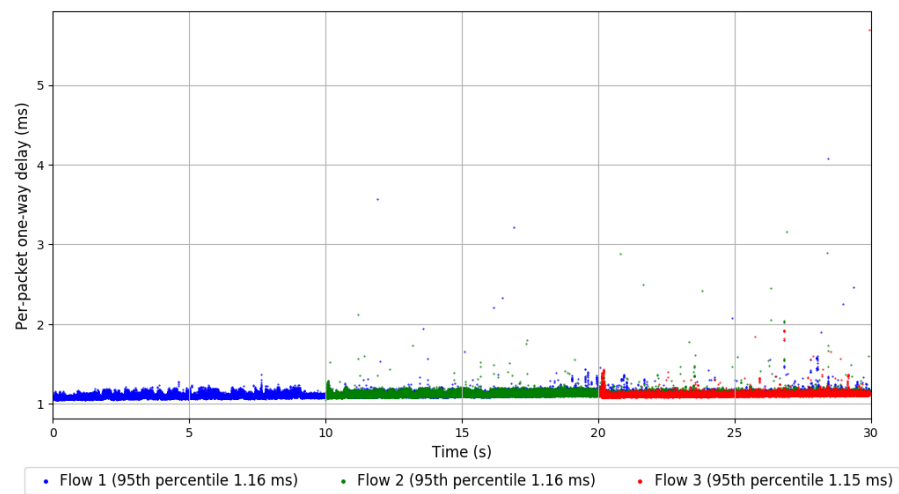
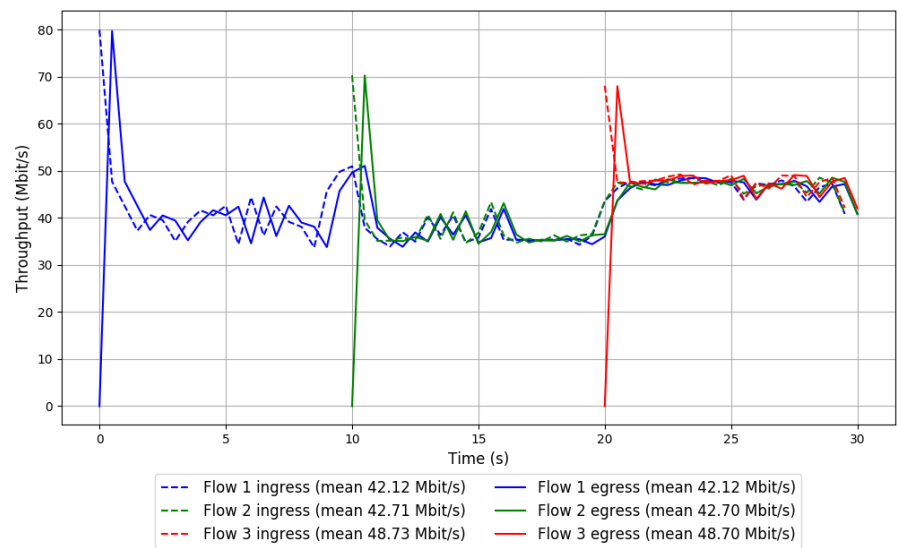


Run 3: Statistics of Indigo-Muses

Start at: 2018-10-26 10:38:45
End at: 2018-10-26 10:39:15
Local clock offset: -1.621 ms
Remote clock offset: -0.703 ms

Below is generated by plot.py at 2018-10-26 12:42:27
Datalink statistics
-- Total of 3 flows:
Average throughput: 86.67 Mbit/s
95th percentile per-packet one-way delay: 1.158 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 42.12 Mbit/s
95th percentile per-packet one-way delay: 1.159 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 42.70 Mbit/s
95th percentile per-packet one-way delay: 1.161 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 48.70 Mbit/s
95th percentile per-packet one-way delay: 1.147 ms
Loss rate: 0.02%

Run 3: Report of Indigo-Muses — Data Link

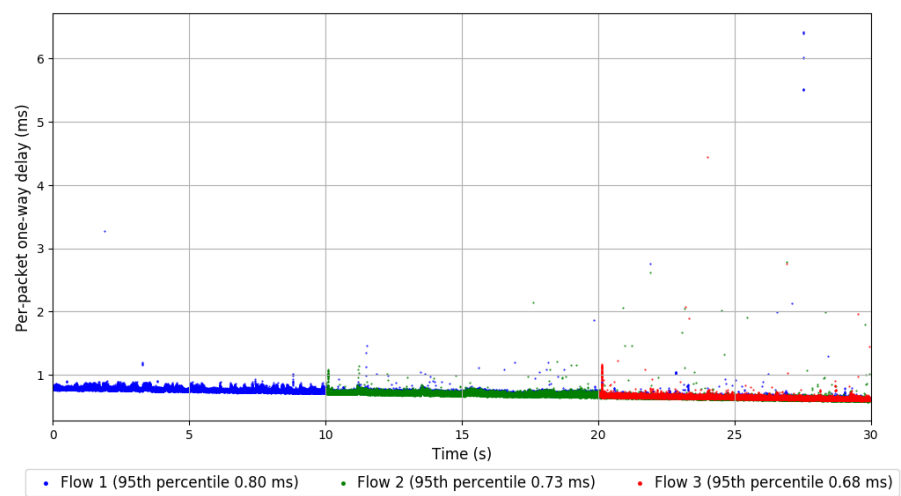
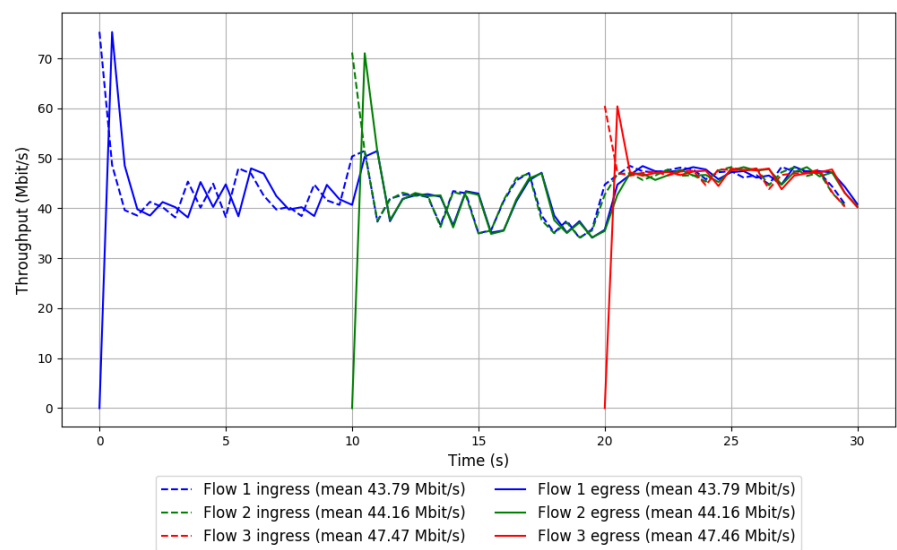


Run 4: Statistics of Indigo-Muses

Start at: 2018-10-26 11:06:39
End at: 2018-10-26 11:07:09
Local clock offset: -1.877 ms
Remote clock offset: -4.743 ms

Below is generated by plot.py at 2018-10-26 12:42:27
Datalink statistics
-- Total of 3 flows:
Average throughput: 88.90 Mbit/s
95th percentile per-packet one-way delay: 0.782 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 43.79 Mbit/s
95th percentile per-packet one-way delay: 0.796 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 44.16 Mbit/s
95th percentile per-packet one-way delay: 0.732 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 47.46 Mbit/s
95th percentile per-packet one-way delay: 0.682 ms
Loss rate: 0.02%

Run 4: Report of Indigo-Muses — Data Link

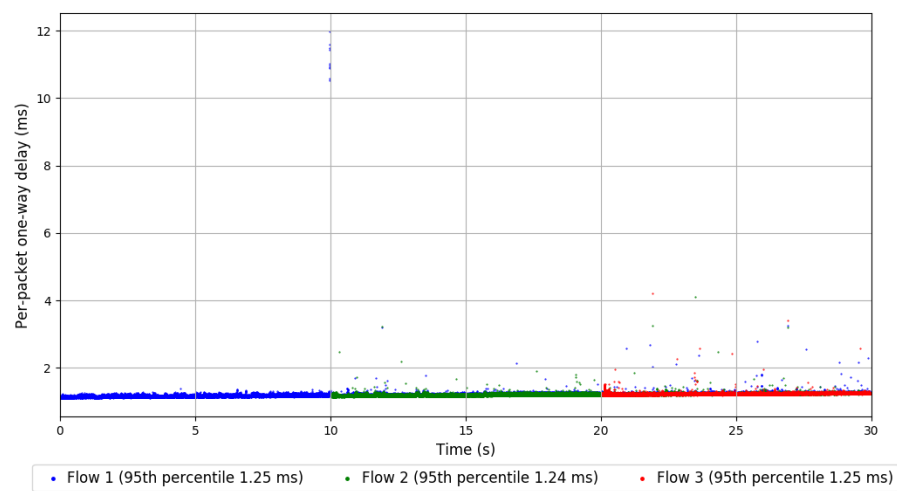
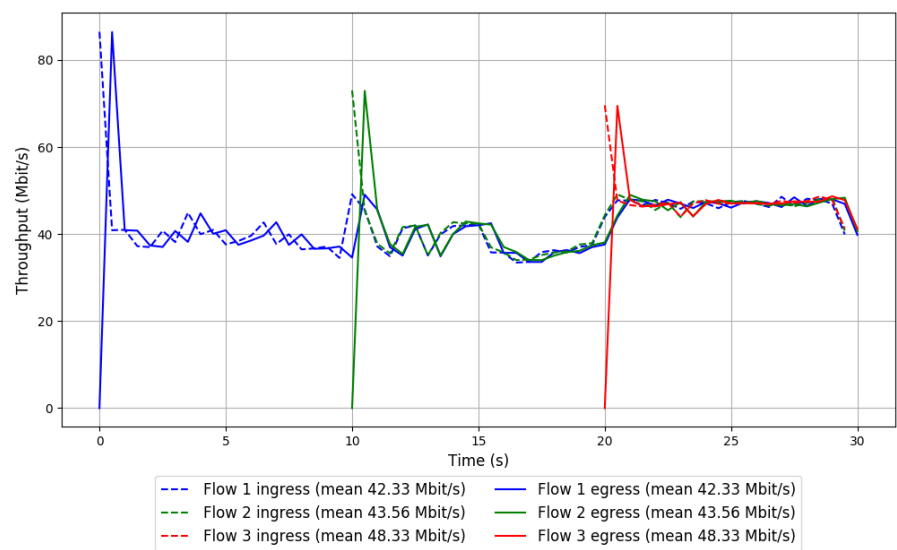


Run 5: Statistics of Indigo-Muses

Start at: 2018-10-26 11:34:32
End at: 2018-10-26 11:35:02
Local clock offset: -0.356 ms
Remote clock offset: -3.954 ms

Below is generated by plot.py at 2018-10-26 12:42:27
Datalink statistics
-- Total of 3 flows:
Average throughput: 87.32 Mbit/s
95th percentile per-packet one-way delay: 1.246 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 42.33 Mbit/s
95th percentile per-packet one-way delay: 1.249 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 43.56 Mbit/s
95th percentile per-packet one-way delay: 1.240 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 48.33 Mbit/s
95th percentile per-packet one-way delay: 1.246 ms
Loss rate: 0.02%

Run 5: Report of Indigo-Muses — Data Link

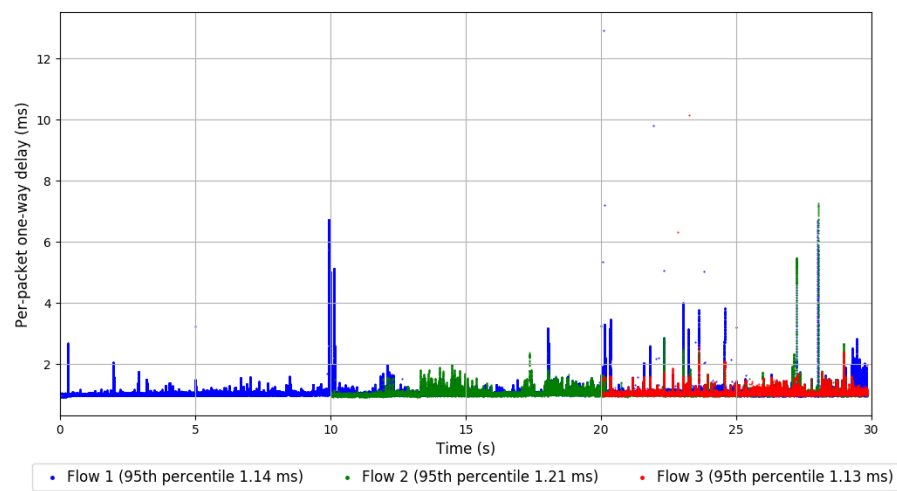
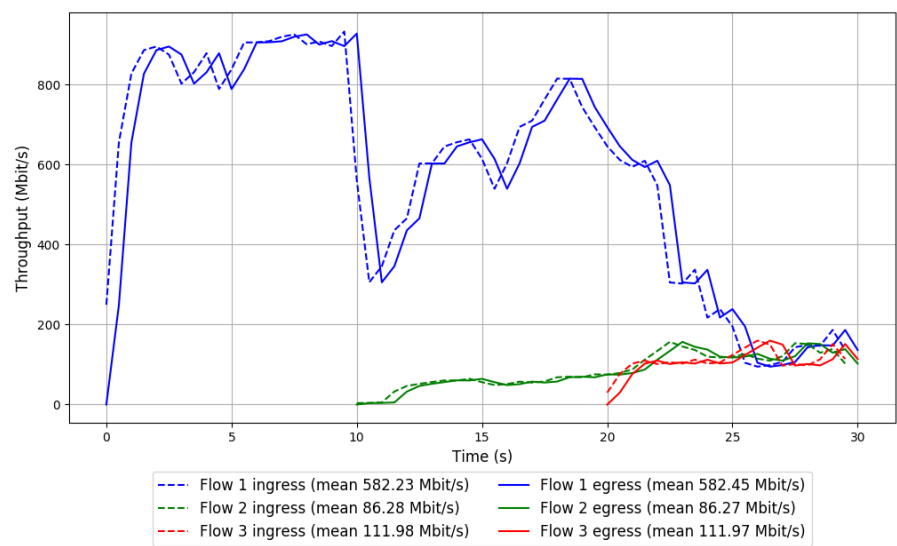



```
Run 1: Statistics of PCC-Allegro

Start at: 2018-10-26 09:59:58
End at: 2018-10-26 10:00:28
Local clock offset: 0.531 ms
Remote clock offset: 3.649 ms

# Below is generated by plot.py at 2018-10-26 12:45:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 676.54 Mbit/s
95th percentile per-packet one-way delay: 1.150 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 582.45 Mbit/s
95th percentile per-packet one-way delay: 1.141 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 86.27 Mbit/s
95th percentile per-packet one-way delay: 1.214 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 111.97 Mbit/s
95th percentile per-packet one-way delay: 1.129 ms
Loss rate: 0.03%
```

Run 1: Report of PCC-Allegro — Data Link

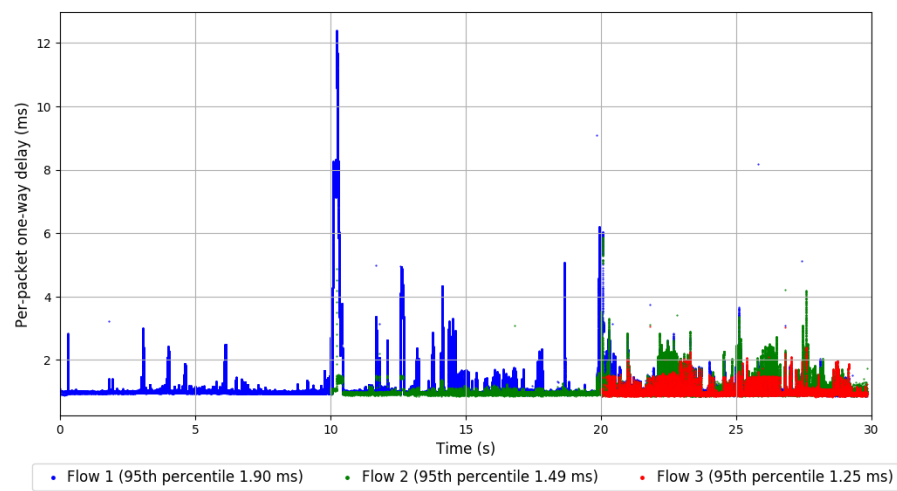
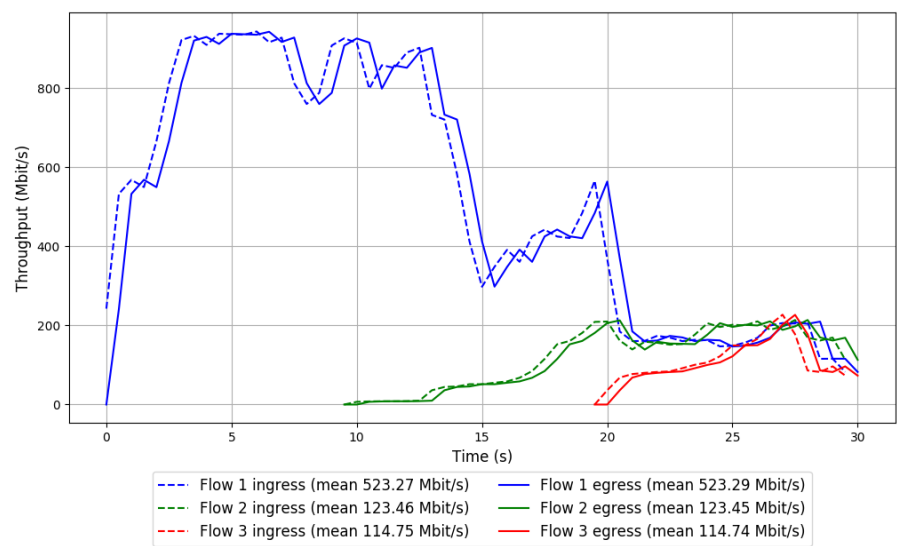


Run 2: Statistics of PCC-Allegro

Start at: 2018-10-26 10:27:47
End at: 2018-10-26 10:28:17
Local clock offset: 0.295 ms
Remote clock offset: -0.131 ms

Below is generated by plot.py at 2018-10-26 12:45:18
Datalink statistics
-- Total of 3 flows:
Average throughput: 643.26 Mbit/s
95th percentile per-packet one-way delay: 1.709 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 523.29 Mbit/s
95th percentile per-packet one-way delay: 1.904 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 123.45 Mbit/s
95th percentile per-packet one-way delay: 1.492 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 114.74 Mbit/s
95th percentile per-packet one-way delay: 1.253 ms
Loss rate: 0.02%

Run 2: Report of PCC-Allegro — Data Link

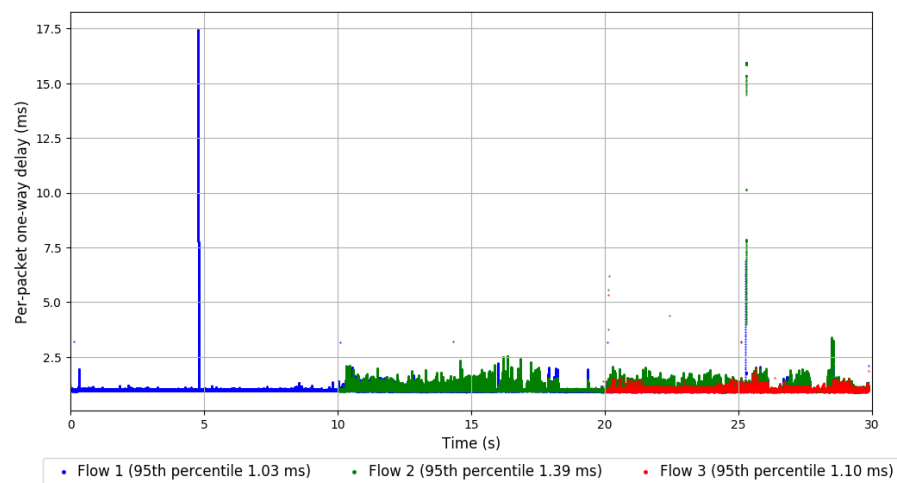
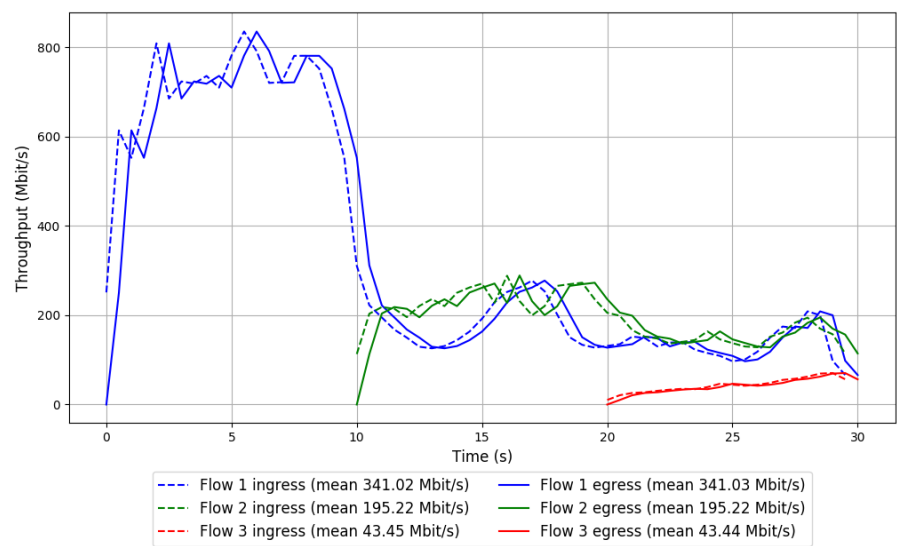


Run 3: Statistics of PCC-Allegro

Start at: 2018-10-26 10:55:46
End at: 2018-10-26 10:56:16
Local clock offset: -3.381 ms
Remote clock offset: -3.573 ms

Below is generated by plot.py at 2018-10-26 12:45:18
Datalink statistics
-- Total of 3 flows:
Average throughput: 485.03 Mbit/s
95th percentile per-packet one-way delay: 1.184 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 341.03 Mbit/s
95th percentile per-packet one-way delay: 1.034 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 195.22 Mbit/s
95th percentile per-packet one-way delay: 1.386 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 43.44 Mbit/s
95th percentile per-packet one-way delay: 1.104 ms
Loss rate: 0.04%

Run 3: Report of PCC-Allegro — Data Link

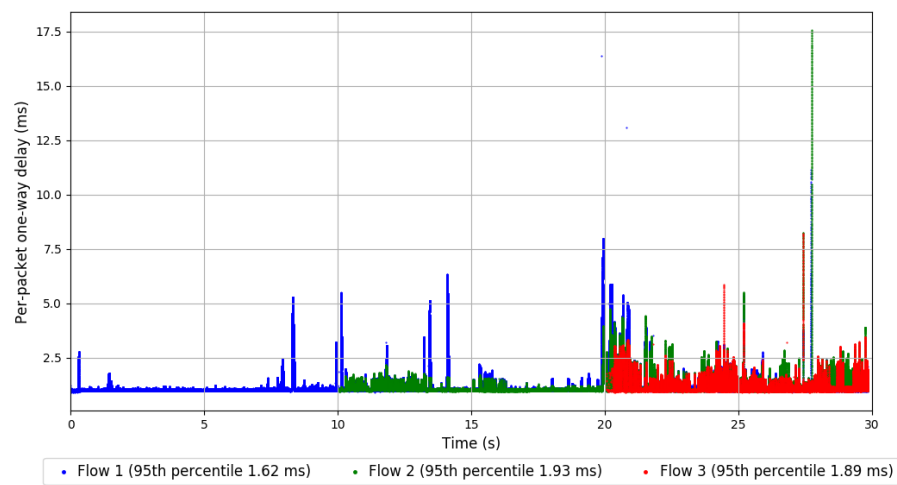
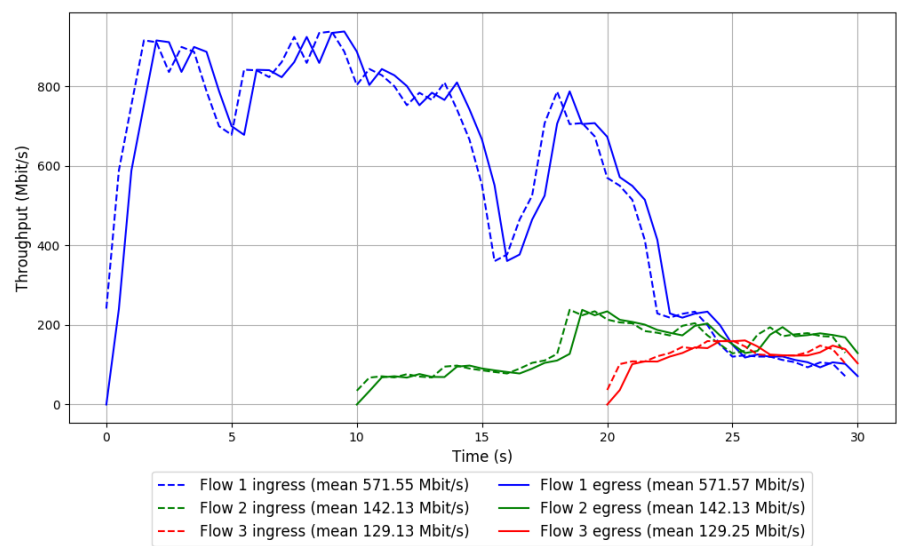


Run 4: Statistics of PCC-Allegro

Start at: 2018-10-26 11:23:35
End at: 2018-10-26 11:24:05
Local clock offset: 0.327 ms
Remote clock offset: -4.535 ms

Below is generated by plot.py at 2018-10-26 12:46:44
Datalink statistics
-- Total of 3 flows:
Average throughput: 708.39 Mbit/s
95th percentile per-packet one-way delay: 1.706 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 571.57 Mbit/s
95th percentile per-packet one-way delay: 1.618 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 142.13 Mbit/s
95th percentile per-packet one-way delay: 1.929 ms
Loss rate: 0.04%
-- Flow 3:
Average throughput: 129.25 Mbit/s
95th percentile per-packet one-way delay: 1.886 ms
Loss rate: 0.00%

Run 4: Report of PCC-Allegro — Data Link

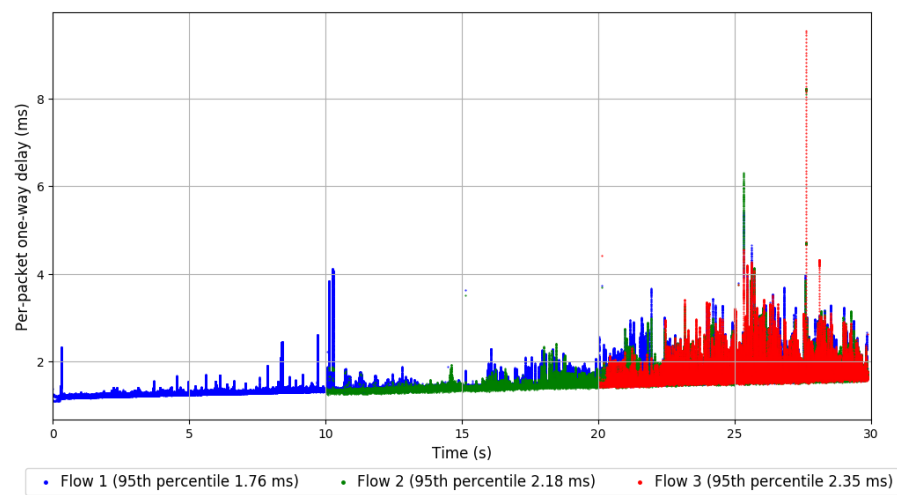
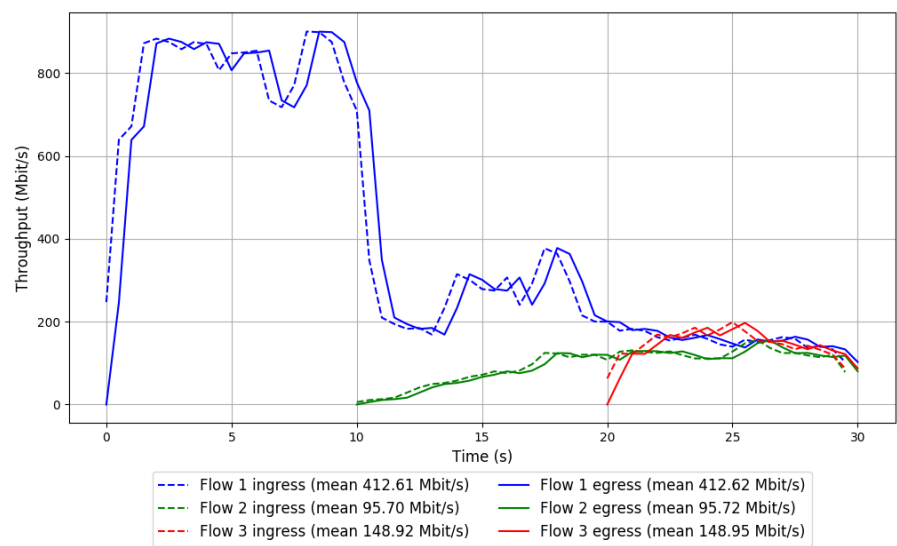


Run 5: Statistics of PCC-Allegro

Start at: 2018-10-26 11:51:25
End at: 2018-10-26 11:51:55
Local clock offset: -2.898 ms
Remote clock offset: -4.387 ms

Below is generated by plot.py at 2018-10-26 12:46:44
Datalink statistics
-- Total of 3 flows:
Average throughput: 525.27 Mbit/s
95th percentile per-packet one-way delay: 1.945 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 412.62 Mbit/s
95th percentile per-packet one-way delay: 1.759 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 95.72 Mbit/s
95th percentile per-packet one-way delay: 2.183 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 148.95 Mbit/s
95th percentile per-packet one-way delay: 2.348 ms
Loss rate: 0.01%

Run 5: Report of PCC-Allegro — Data Link

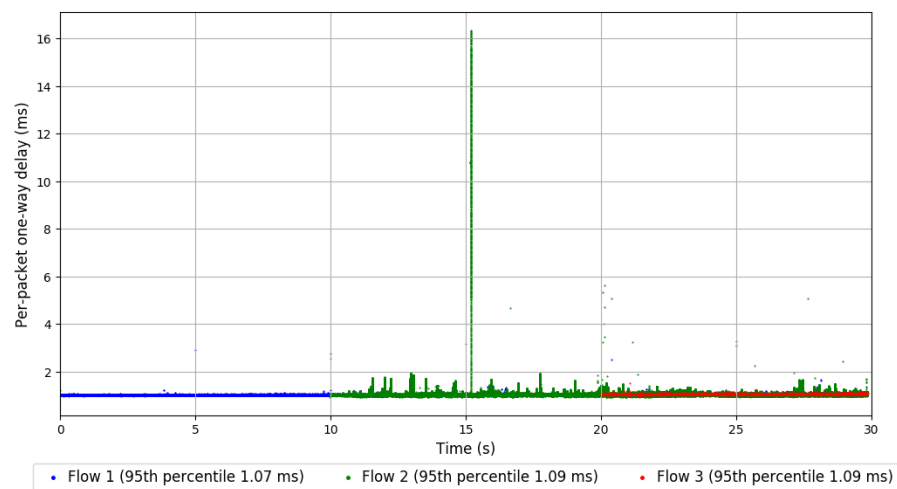
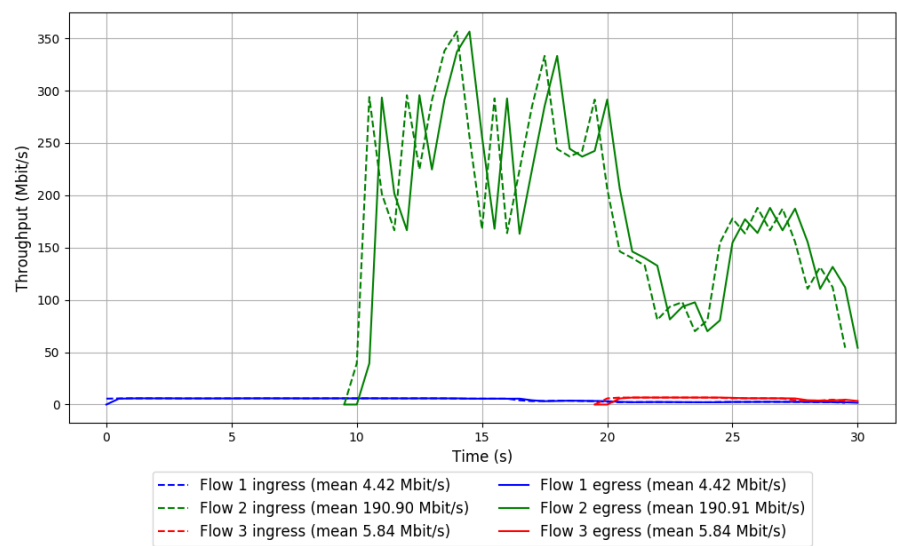


```
Run 1: Statistics of PCC-Expr

Start at: 2018-10-26 10:01:34
End at: 2018-10-26 10:02:04
Local clock offset: 0.536 ms
Remote clock offset: 3.764 ms

# Below is generated by plot.py at 2018-10-26 12:46:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 133.51 Mbit/s
95th percentile per-packet one-way delay: 1.085 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 4.42 Mbit/s
95th percentile per-packet one-way delay: 1.067 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 190.91 Mbit/s
95th percentile per-packet one-way delay: 1.086 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 5.84 Mbit/s
95th percentile per-packet one-way delay: 1.092 ms
Loss rate: 0.02%
```

Run 1: Report of PCC-Expr — Data Link

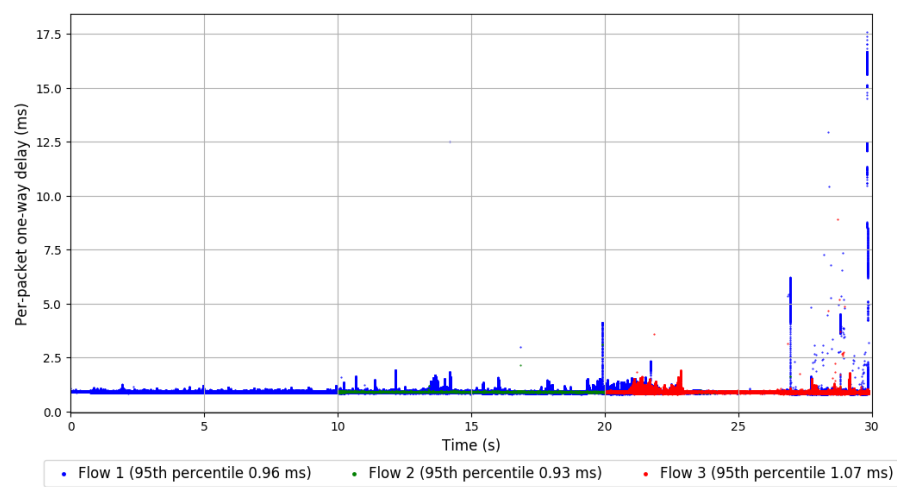
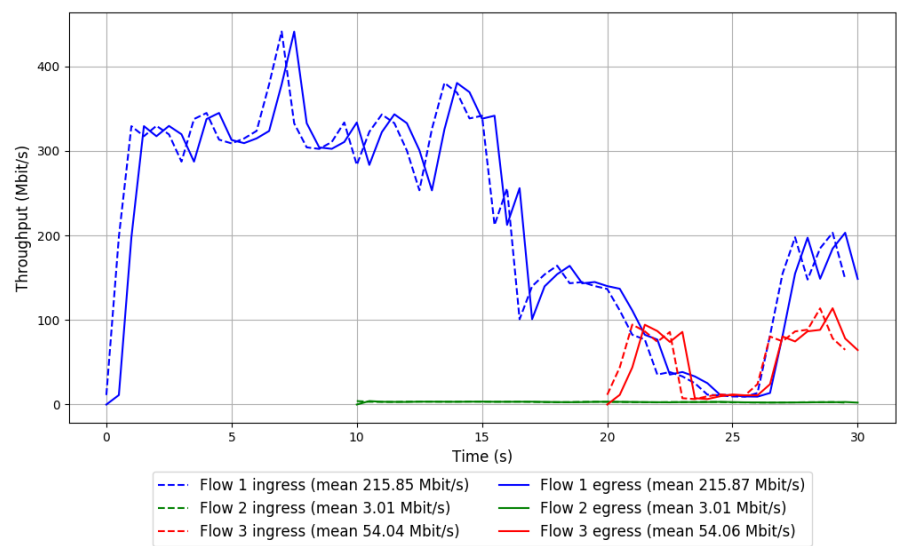


Run 2: Statistics of PCC-Expr

Start at: 2018-10-26 10:29:21
End at: 2018-10-26 10:29:51
Local clock offset: 0.308 ms
Remote clock offset: -0.181 ms

Below is generated by plot.py at 2018-10-26 12:46:44
Datalink statistics
-- Total of 3 flows:
Average throughput: 235.69 Mbit/s
95th percentile per-packet one-way delay: 0.962 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 215.87 Mbit/s
95th percentile per-packet one-way delay: 0.957 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 3.01 Mbit/s
95th percentile per-packet one-way delay: 0.930 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 54.06 Mbit/s
95th percentile per-packet one-way delay: 1.070 ms
Loss rate: 0.05%

Run 2: Report of PCC-Expr — Data Link

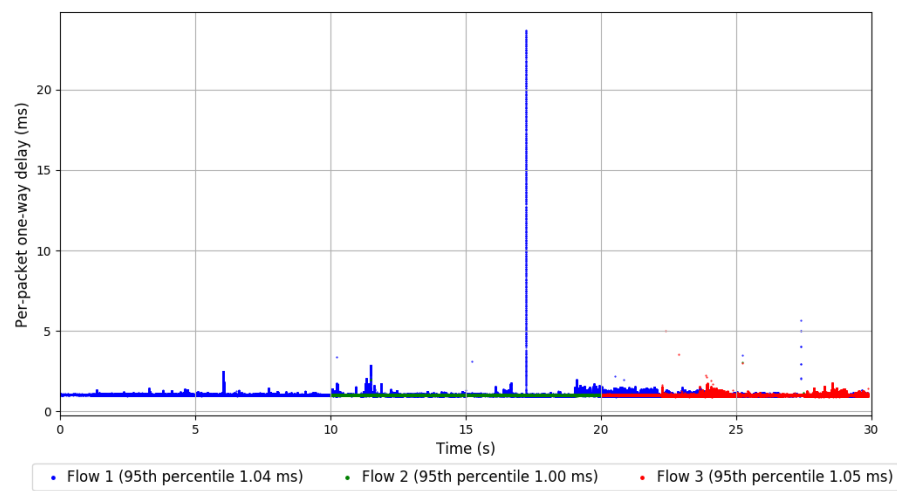
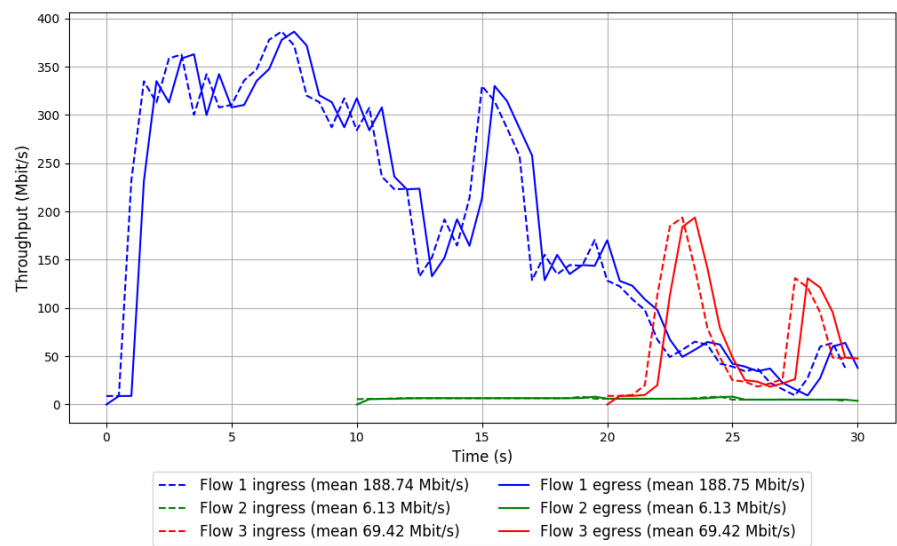


Run 3: Statistics of PCC-Expr

Start at: 2018-10-26 10:57:17
End at: 2018-10-26 10:57:47
Local clock offset: -3.453 ms
Remote clock offset: -3.743 ms

Below is generated by plot.py at 2018-10-26 12:47:39
Datalink statistics
-- Total of 3 flows:
Average throughput: 215.71 Mbit/s
95th percentile per-packet one-way delay: 1.038 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 188.75 Mbit/s
95th percentile per-packet one-way delay: 1.039 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 6.13 Mbit/s
95th percentile per-packet one-way delay: 0.999 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 69.42 Mbit/s
95th percentile per-packet one-way delay: 1.051 ms
Loss rate: 0.01%

Run 3: Report of PCC-Expr — Data Link

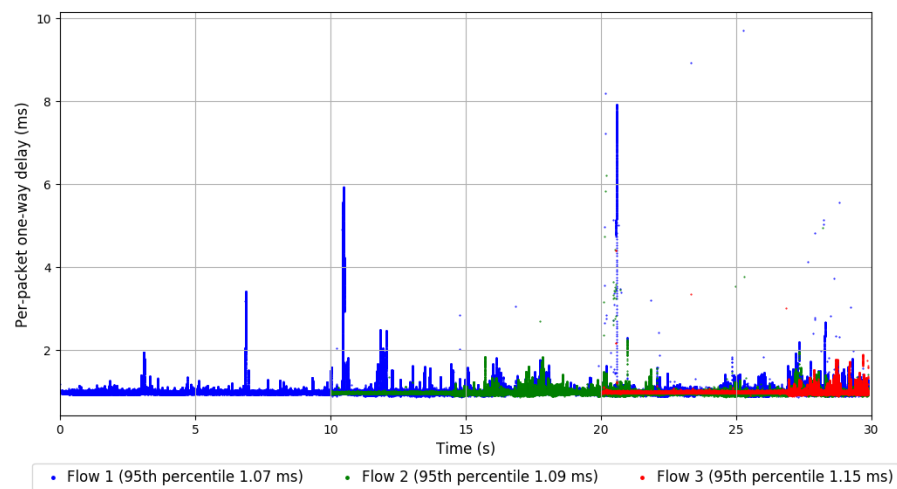
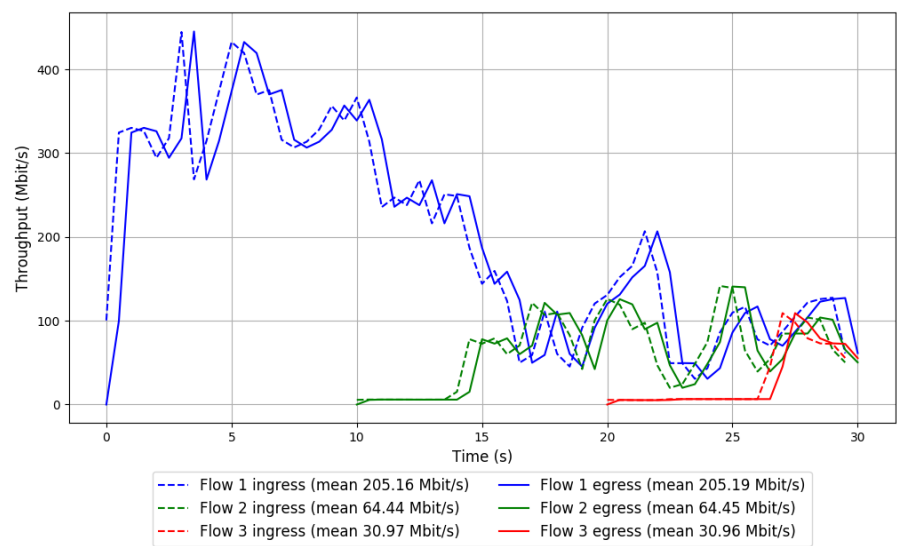


Run 4: Statistics of PCC-Expr

Start at: 2018-10-26 11:25:11
End at: 2018-10-26 11:25:41
Local clock offset: 0.387 ms
Remote clock offset: -4.382 ms

Below is generated by plot.py at 2018-10-26 12:49:04
Datalink statistics
-- Total of 3 flows:
Average throughput: 258.26 Mbit/s
95th percentile per-packet one-way delay: 1.079 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 205.19 Mbit/s
95th percentile per-packet one-way delay: 1.071 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 64.45 Mbit/s
95th percentile per-packet one-way delay: 1.088 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 30.96 Mbit/s
95th percentile per-packet one-way delay: 1.154 ms
Loss rate: 0.04%

Run 4: Report of PCC-Expr — Data Link

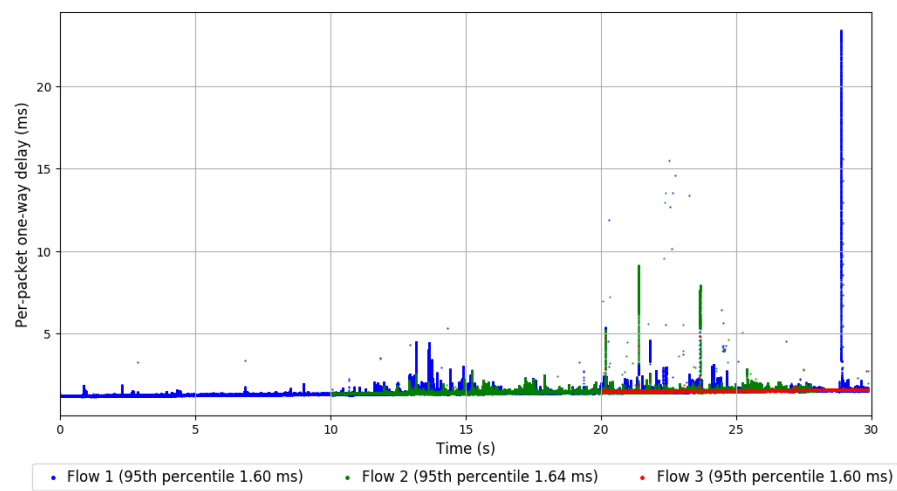
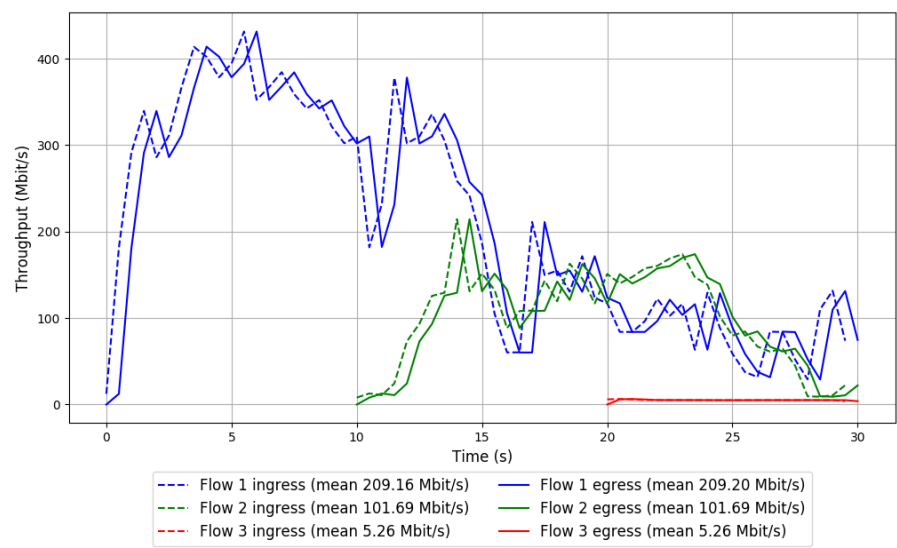


Run 5: Statistics of PCC-Expr

Start at: 2018-10-26 11:52:56
End at: 2018-10-26 11:53:27
Local clock offset: -3.008 ms
Remote clock offset: -3.199 ms

Below is generated by plot.py at 2018-10-26 12:50:16
Datalink statistics
-- Total of 3 flows:
Average throughput: 278.53 Mbit/s
95th percentile per-packet one-way delay: 1.608 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 209.20 Mbit/s
95th percentile per-packet one-way delay: 1.597 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 101.69 Mbit/s
95th percentile per-packet one-way delay: 1.641 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 5.26 Mbit/s
95th percentile per-packet one-way delay: 1.598 ms
Loss rate: 0.00%

Run 5: Report of PCC-Expr — Data Link



Run 1: Statistics of QUIC Cubic

Start at: 2018-10-26 09:50:48

End at: 2018-10-26 09:51:18

Local clock offset: 0.544 ms

Remote clock offset: 2.818 ms

Below is generated by plot.py at 2018-10-26 12:50:16

Datalink statistics

-- Total of 3 flows:

Average throughput: 142.67 Mbit/s

95th percentile per-packet one-way delay: 1.049 ms

Loss rate: 0.01%

-- Flow 1:

Average throughput: 75.16 Mbit/s

95th percentile per-packet one-way delay: 1.035 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 70.34 Mbit/s

95th percentile per-packet one-way delay: 1.061 ms

Loss rate: 0.01%

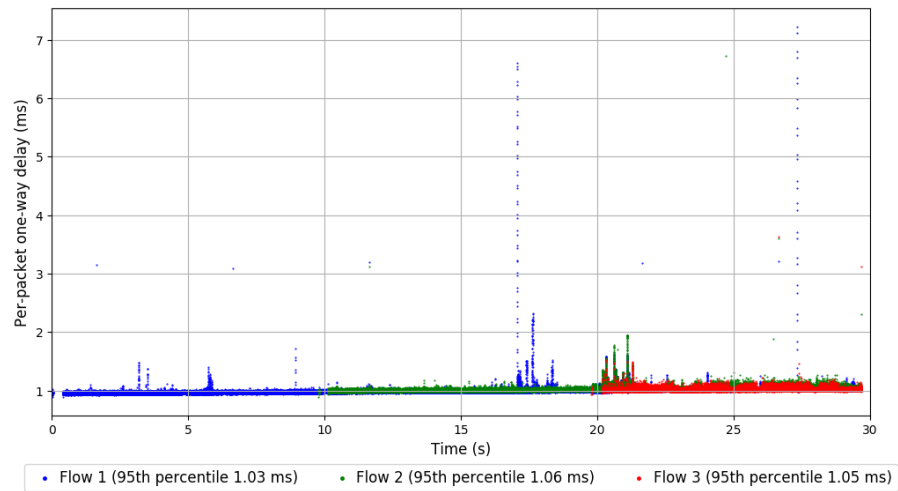
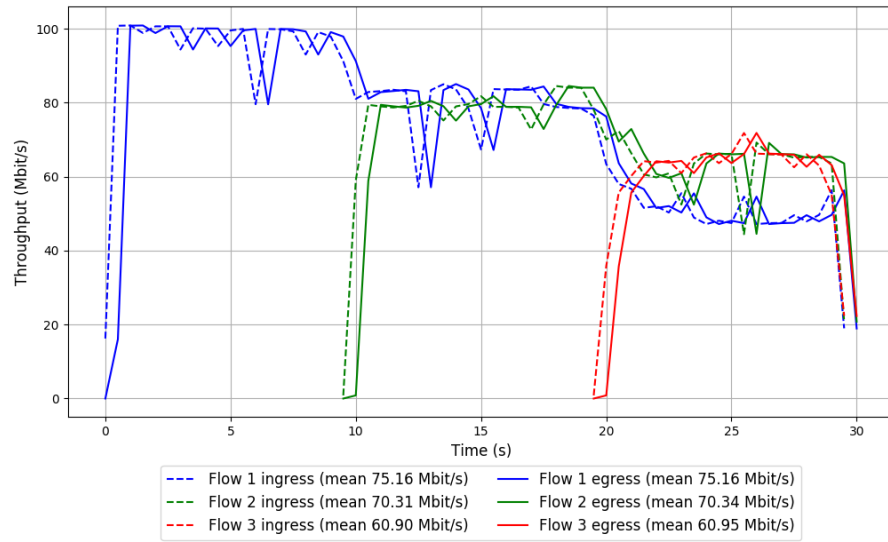
-- Flow 3:

Average throughput: 60.95 Mbit/s

95th percentile per-packet one-way delay: 1.049 ms

Loss rate: 0.02%

Run 1: Report of QUIC Cubic — Data Link



Run 2: Statistics of QUIC Cubic

Start at: 2018-10-26 10:18:35

End at: 2018-10-26 10:19:05

Local clock offset: 0.292 ms

Remote clock offset: 0.98 ms

Below is generated by plot.py at 2018-10-26 12:50:16

Datalink statistics

-- Total of 3 flows:

Average throughput: 137.40 Mbit/s

95th percentile per-packet one-way delay: 0.970 ms

Loss rate: 0.01%

-- Flow 1:

Average throughput: 71.59 Mbit/s

95th percentile per-packet one-way delay: 0.973 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 70.55 Mbit/s

95th percentile per-packet one-way delay: 0.969 ms

Loss rate: 0.01%

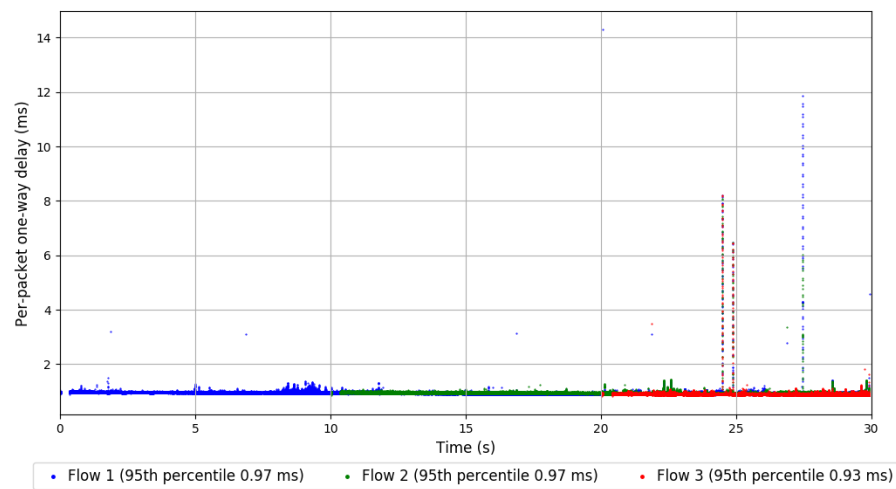
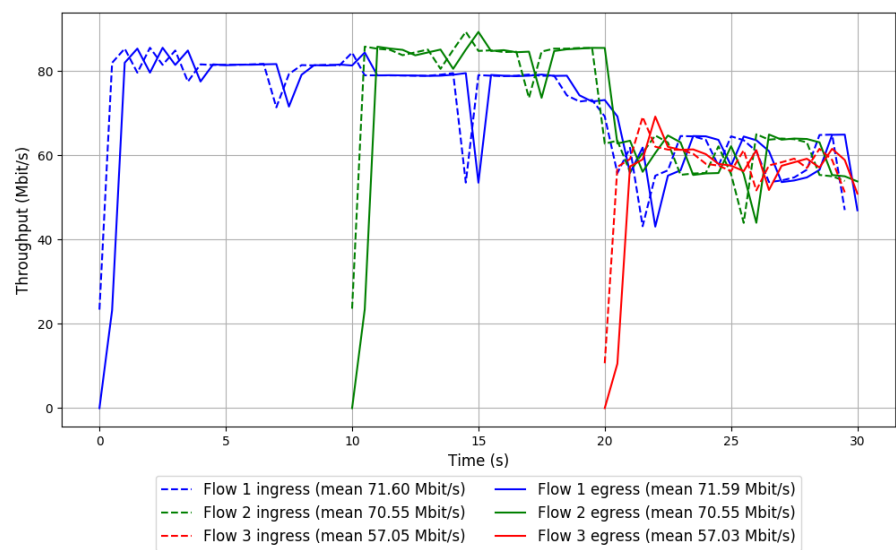
-- Flow 3:

Average throughput: 57.03 Mbit/s

95th percentile per-packet one-way delay: 0.927 ms

Loss rate: 0.03%

Run 2: Report of QUIC Cubic — Data Link

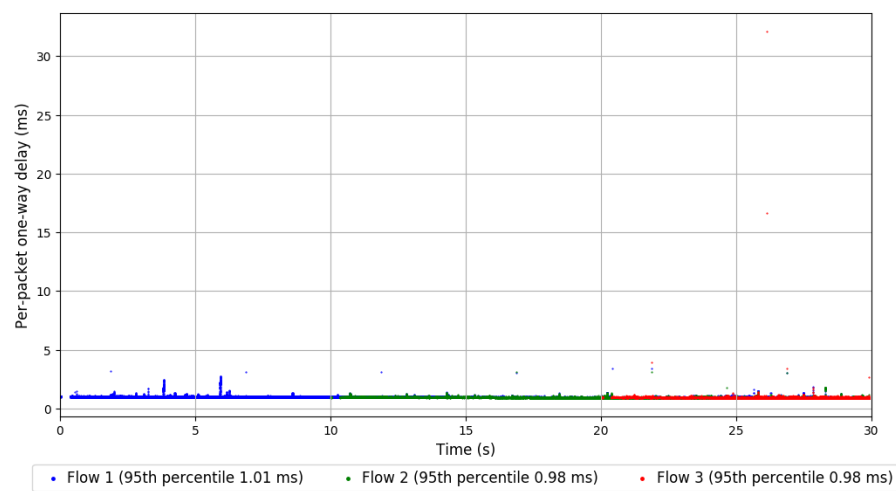
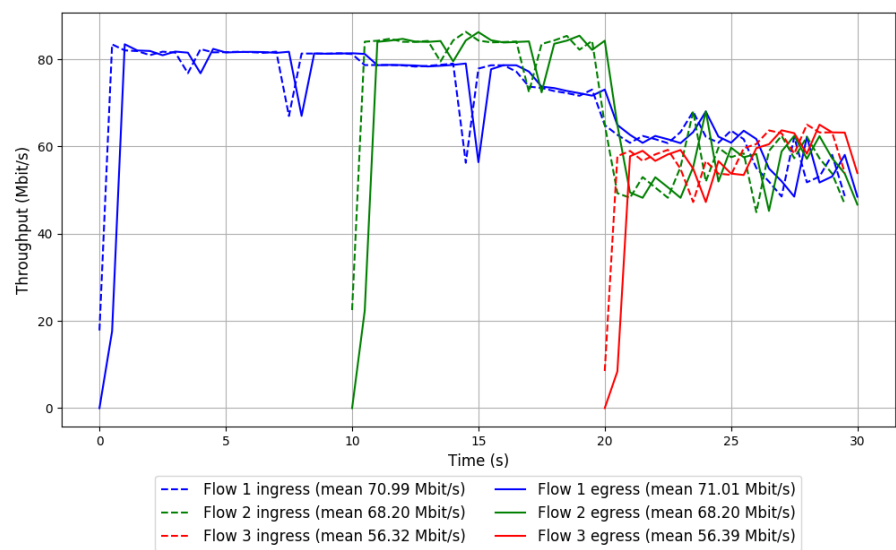


Run 3: Statistics of QUIC Cubic

Start at: 2018-10-26 10:46:32
End at: 2018-10-26 10:47:02
Local clock offset: -2.665 ms
Remote clock offset: -1.869 ms

Below is generated by plot.py at 2018-10-26 12:50:16
Datalink statistics
-- Total of 3 flows:
Average throughput: 135.04 Mbit/s
95th percentile per-packet one-way delay: 1.008 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 71.01 Mbit/s
95th percentile per-packet one-way delay: 1.015 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 68.20 Mbit/s
95th percentile per-packet one-way delay: 0.982 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 56.39 Mbit/s
95th percentile per-packet one-way delay: 0.979 ms
Loss rate: 0.02%

Run 3: Report of QUIC Cubic — Data Link

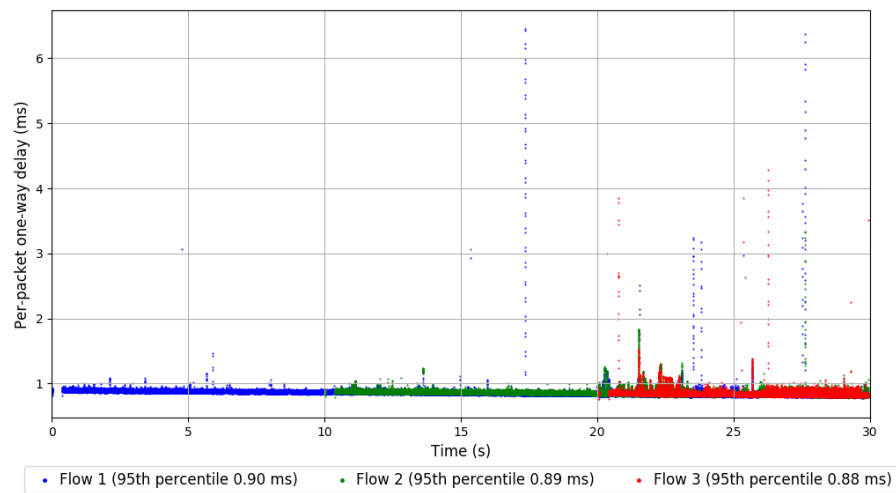
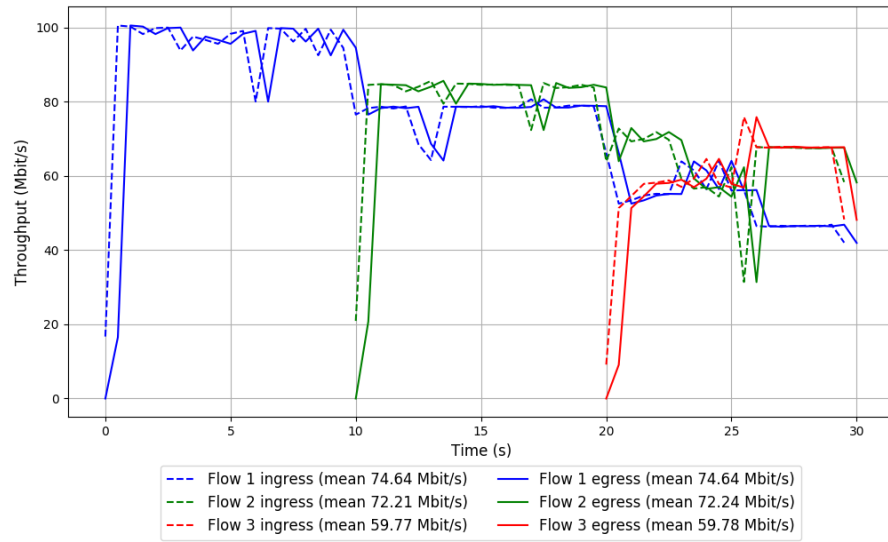


Run 4: Statistics of QUIC Cubic

Start at: 2018-10-26 11:14:27
End at: 2018-10-26 11:14:57
Local clock offset: -0.42 ms
Remote clock offset: -5.419 ms

Below is generated by plot.py at 2018-10-26 12:50:16
Datalink statistics
-- Total of 3 flows:
Average throughput: 142.47 Mbit/s
95th percentile per-packet one-way delay: 0.897 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 74.64 Mbit/s
95th percentile per-packet one-way delay: 0.900 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 72.24 Mbit/s
95th percentile per-packet one-way delay: 0.892 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 59.78 Mbit/s
95th percentile per-packet one-way delay: 0.878 ms
Loss rate: 0.02%

Run 4: Report of QUIC Cubic — Data Link

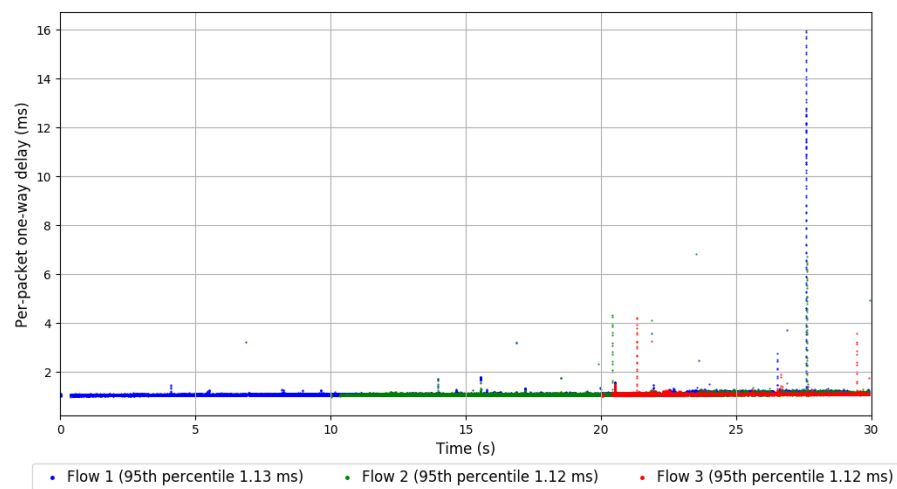
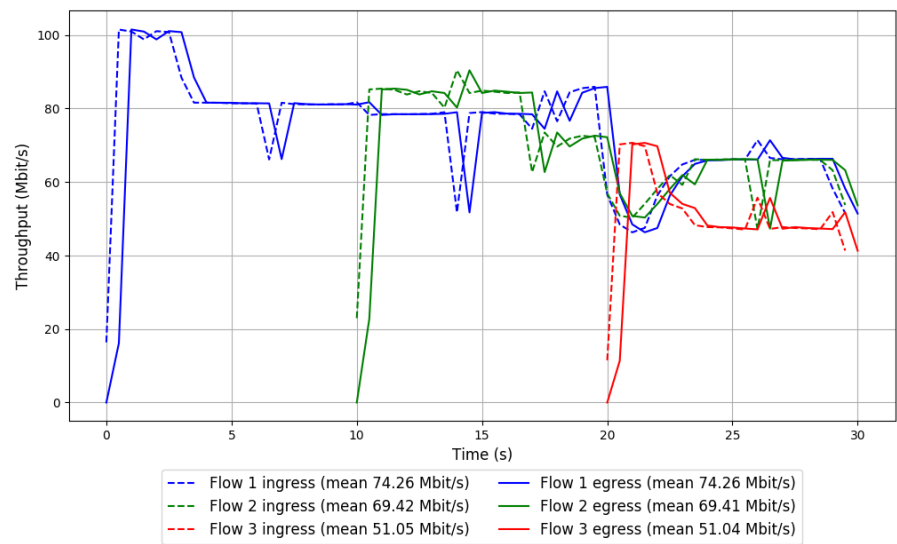


Run 5: Statistics of QUIC Cubic

Start at: 2018-10-26 11:42:19
End at: 2018-10-26 11:42:49
Local clock offset: -2.03 ms
Remote clock offset: -4.145 ms

Below is generated by plot.py at 2018-10-26 12:50:16
Datalink statistics
-- Total of 3 flows:
Average throughput: 137.31 Mbit/s
95th percentile per-packet one-way delay: 1.123 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 74.26 Mbit/s
95th percentile per-packet one-way delay: 1.126 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 69.41 Mbit/s
95th percentile per-packet one-way delay: 1.118 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 51.04 Mbit/s
95th percentile per-packet one-way delay: 1.125 ms
Loss rate: 0.02%

Run 5: Report of QUIC Cubic — Data Link

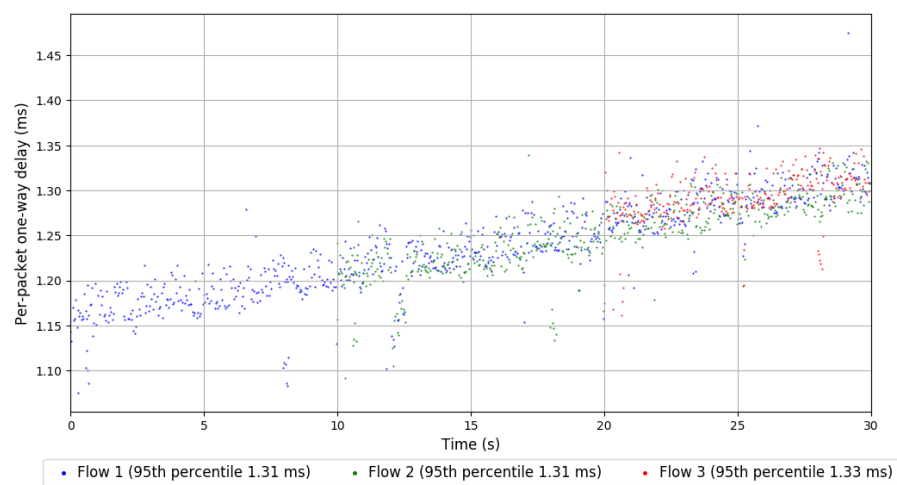
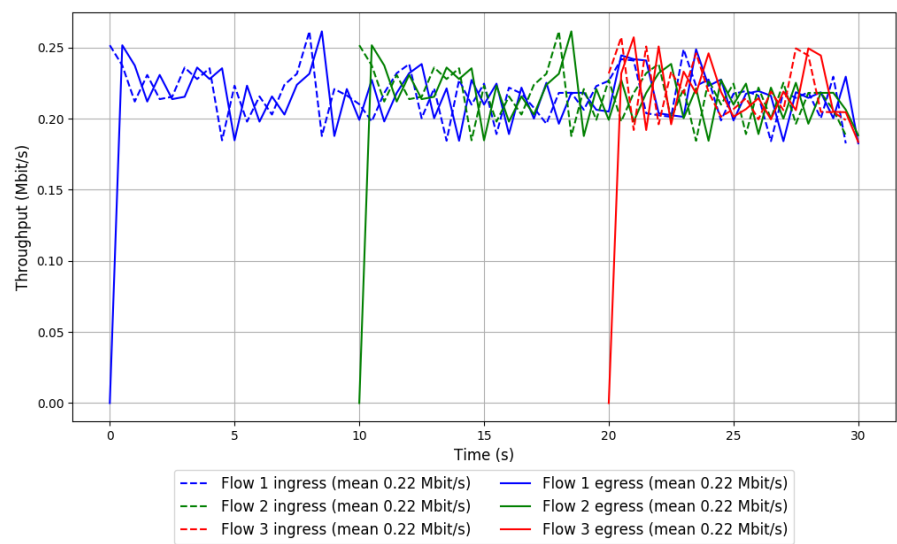


```
Run 1: Statistics of SReAM

Start at: 2018-10-26 09:41:40
End at: 2018-10-26 09:42:10
Local clock offset: 0.741 ms
Remote clock offset: 1.058 ms

# Below is generated by plot.py at 2018-10-26 12:50:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 1.319 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.314 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.307 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.332 ms
Loss rate: 0.35%
```

Run 1: Report of SReAM — Data Link

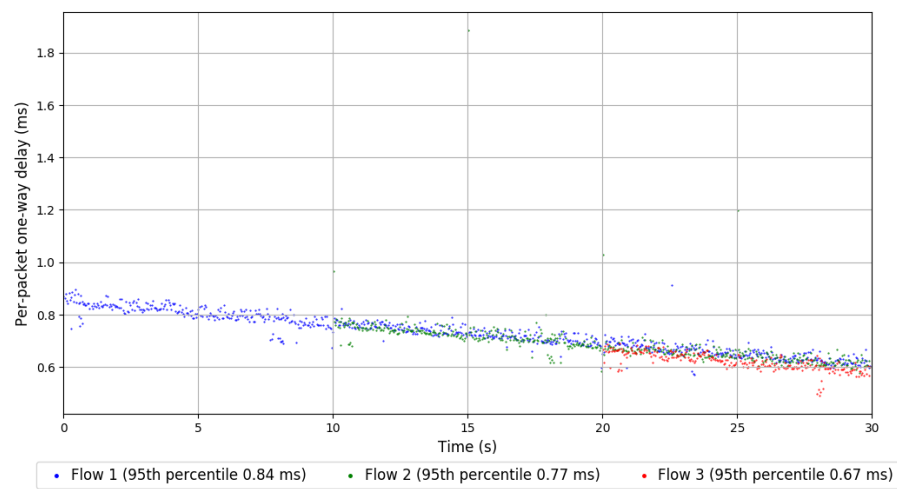
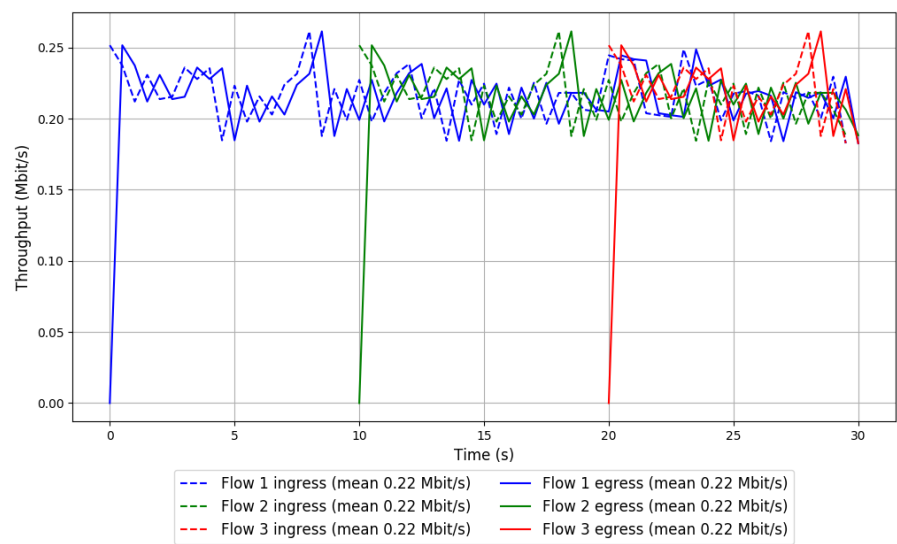



```
Run 2: Statistics of SReAM

Start at: 2018-10-26 10:09:28
End at: 2018-10-26 10:09:58
Local clock offset: 0.35 ms
Remote clock offset: 4.12 ms

# Below is generated by plot.py at 2018-10-26 12:50:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 0.829 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 0.842 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 0.765 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 0.669 ms
Loss rate: 0.00%
```

Run 2: Report of SReAM — Data Link

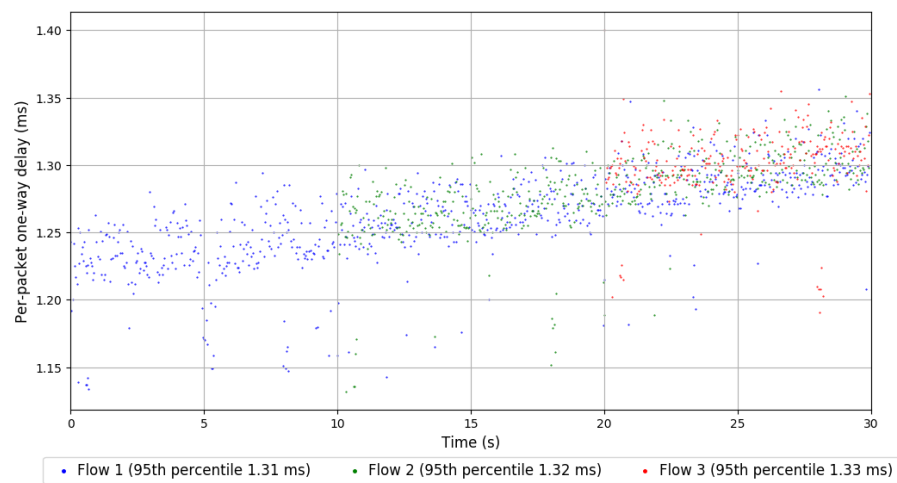
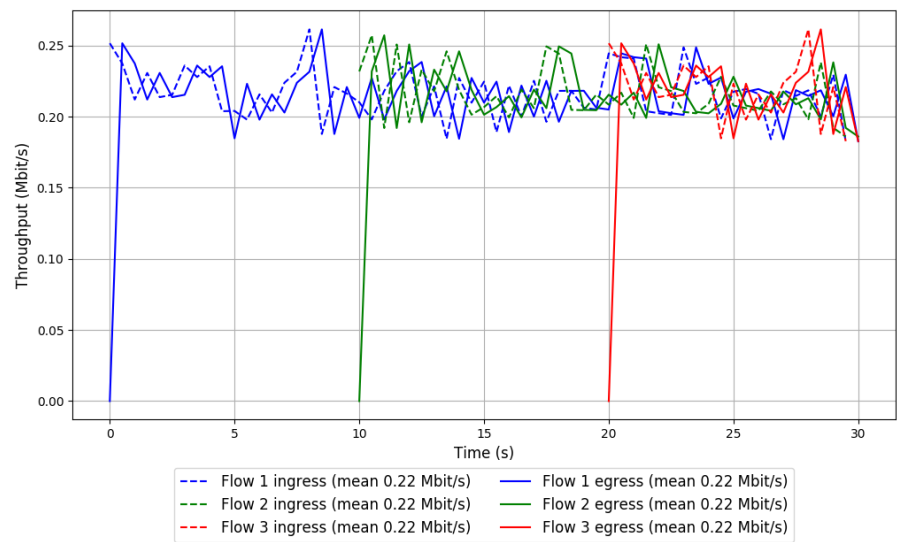


Run 3: Statistics of SReAM

Start at: 2018-10-26 10:37:26
End at: 2018-10-26 10:37:56
Local clock offset: -1.334 ms
Remote clock offset: -0.664 ms

Below is generated by plot.py at 2018-10-26 12:50:16
Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 1.322 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.307 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.321 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.333 ms
Loss rate: 0.00%

Run 3: Report of SReAM — Data Link

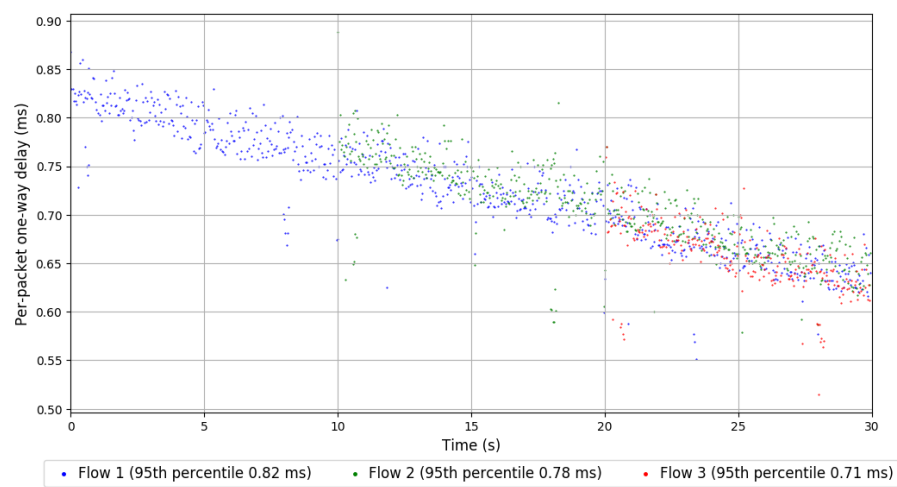
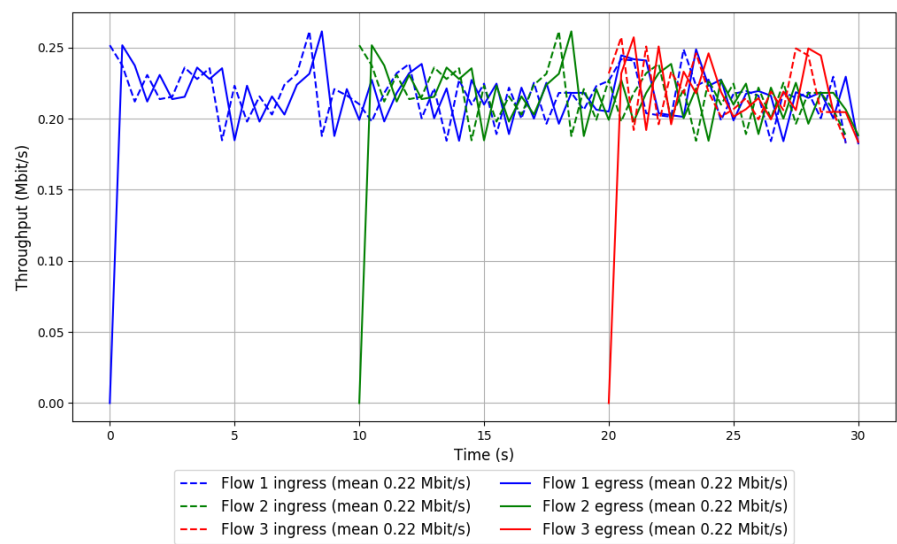


Run 4: Statistics of SReAM

Start at: 2018-10-26 11:05:20
End at: 2018-10-26 11:05:50
Local clock offset: -2.265 ms
Remote clock offset: -4.575 ms

Below is generated by plot.py at 2018-10-26 12:50:16
Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 0.808 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 0.821 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 0.775 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 0.707 ms
Loss rate: 0.00%

Run 4: Report of SReAM — Data Link

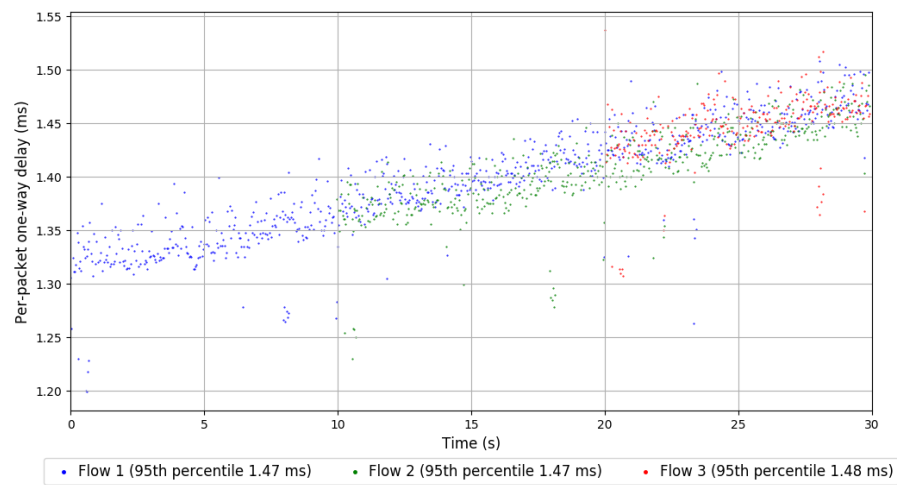
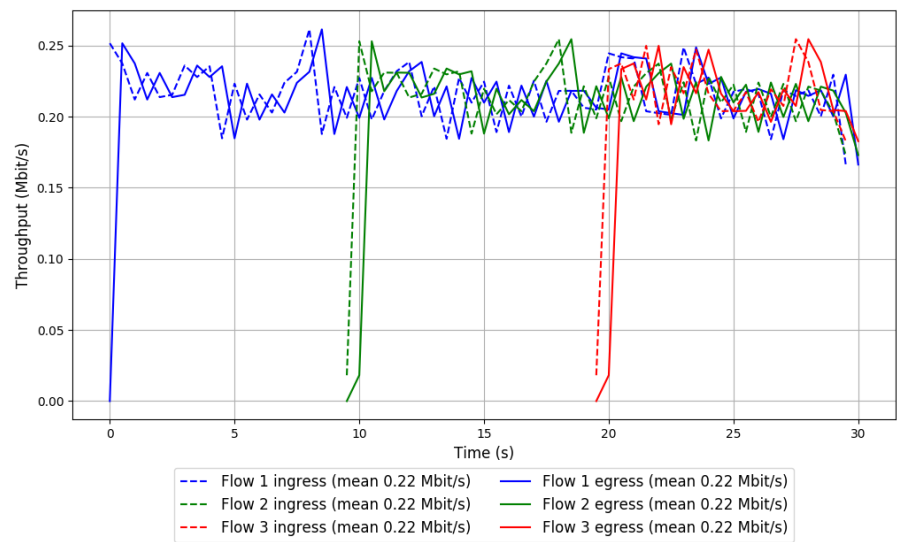


Run 5: Statistics of SReAM

Start at: 2018-10-26 11:33:13
End at: 2018-10-26 11:33:43
Local clock offset: 0.053 ms
Remote clock offset: -4.036 ms

Below is generated by plot.py at 2018-10-26 12:50:16
Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 1.473 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.471 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.467 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.484 ms
Loss rate: 0.00%

Run 5: Report of SReAM — Data Link

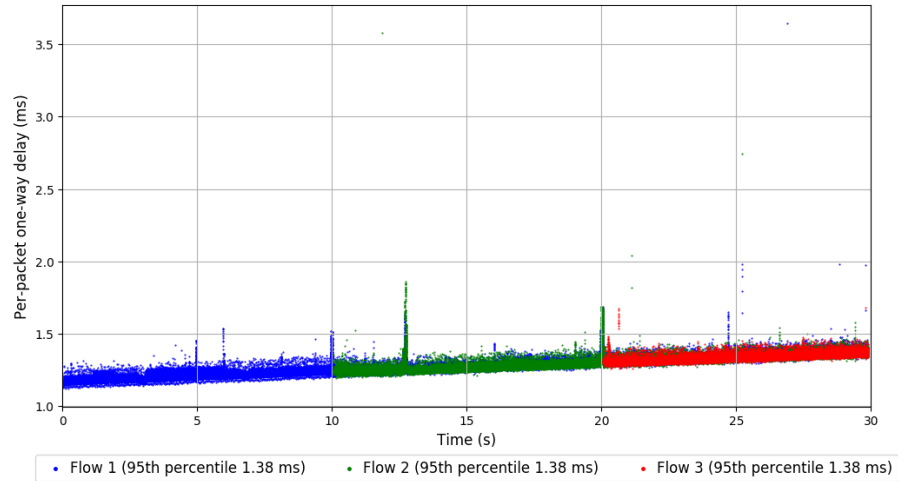
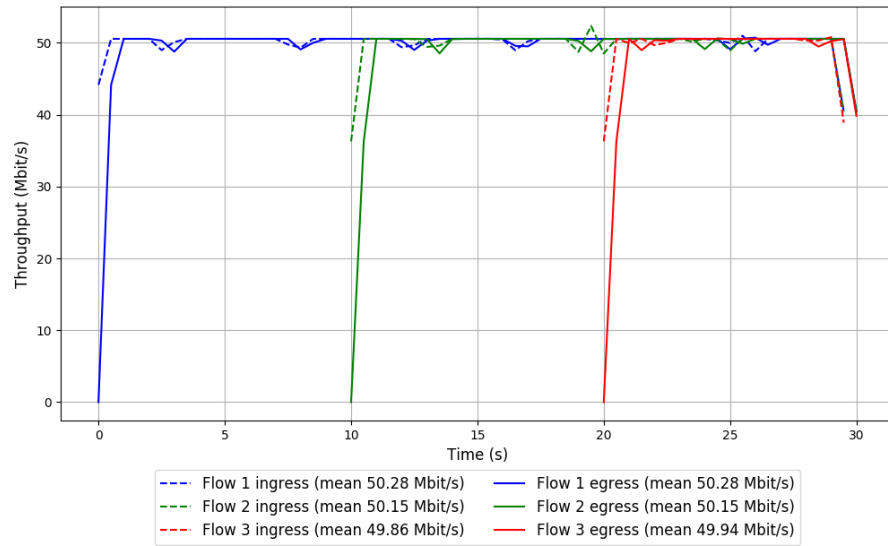


Run 1: Statistics of Sprout

Start at: 2018-10-26 09:38:31
End at: 2018-10-26 09:39:01
Local clock offset: 0.904 ms
Remote clock offset: -0.051 ms

Below is generated by plot.py at 2018-10-26 12:50:16
Datalink statistics
-- Total of 3 flows:
Average throughput: 100.02 Mbit/s
95th percentile per-packet one-way delay: 1.378 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 50.28 Mbit/s
95th percentile per-packet one-way delay: 1.377 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 50.15 Mbit/s
95th percentile per-packet one-way delay: 1.375 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 49.94 Mbit/s
95th percentile per-packet one-way delay: 1.383 ms
Loss rate: 0.02%

Run 1: Report of Sprout — Data Link

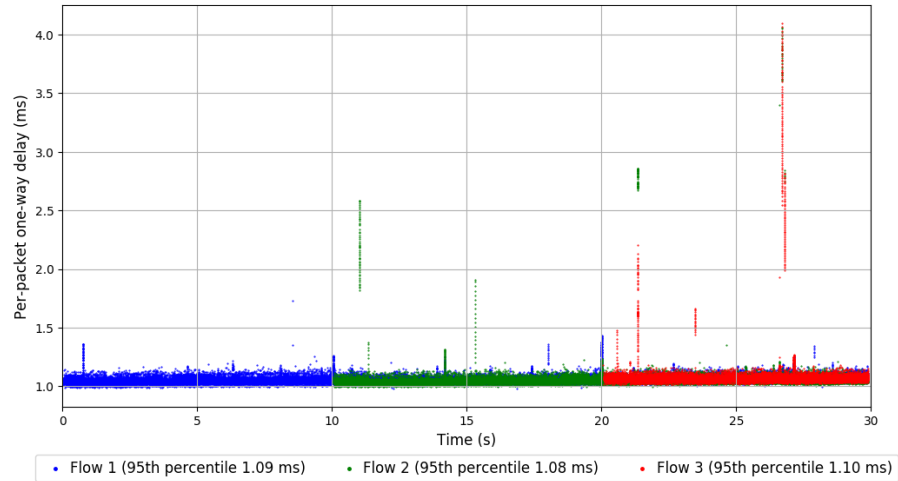
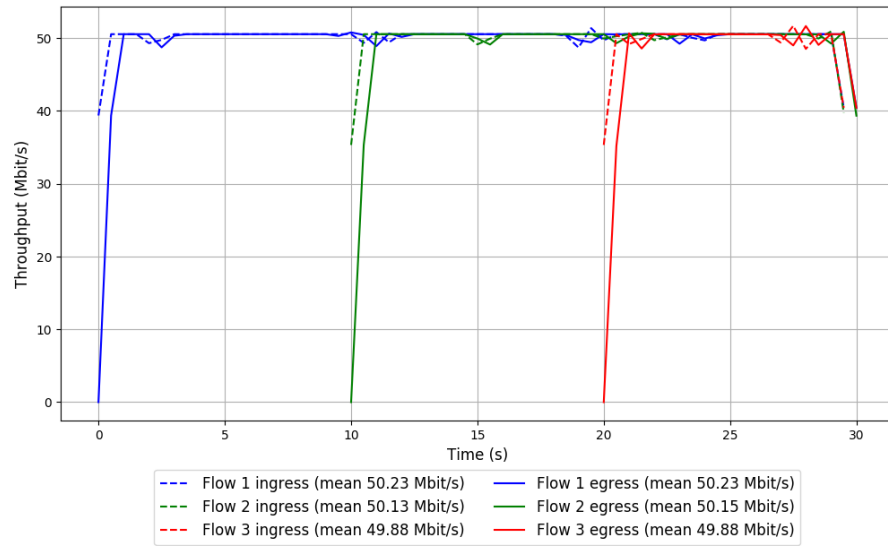


Run 2: Statistics of Sprout

Start at: 2018-10-26 10:06:21
End at: 2018-10-26 10:06:51
Local clock offset: 0.398 ms
Remote clock offset: 4.042 ms

Below is generated by plot.py at 2018-10-26 12:50:16
Datalink statistics
-- Total of 3 flows:
Average throughput: 99.94 Mbit/s
95th percentile per-packet one-way delay: 1.088 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 50.23 Mbit/s
95th percentile per-packet one-way delay: 1.089 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 50.15 Mbit/s
95th percentile per-packet one-way delay: 1.082 ms
Loss rate: 0.06%
-- Flow 3:
Average throughput: 49.88 Mbit/s
95th percentile per-packet one-way delay: 1.096 ms
Loss rate: 0.00%

Run 2: Report of Sprout — Data Link

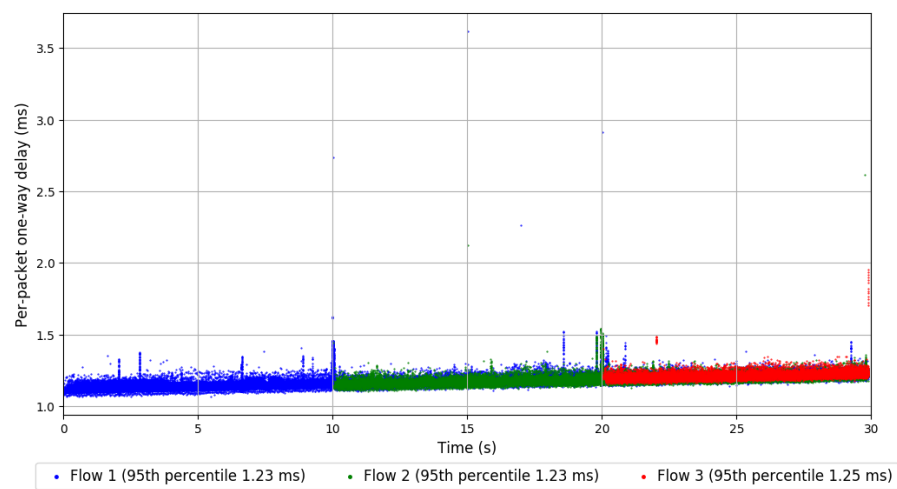
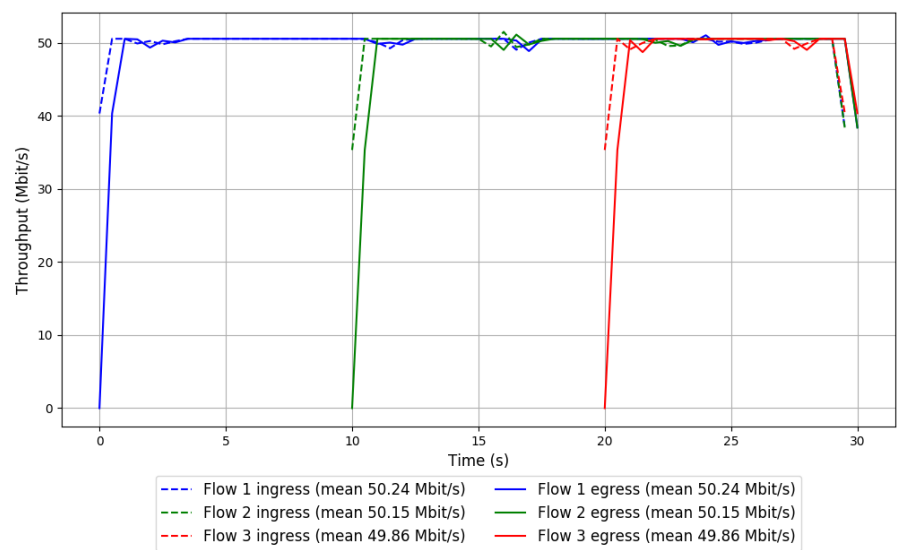


Run 3: Statistics of Sprout

Start at: 2018-10-26 10:34:16
End at: 2018-10-26 10:34:46
Local clock offset: -0.588 ms
Remote clock offset: -0.488 ms

```
# Below is generated by plot.py at 2018-10-26 12:50:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 99.94 Mbit/s
95th percentile per-packet one-way delay: 1.234 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 50.24 Mbit/s
95th percentile per-packet one-way delay: 1.228 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 50.15 Mbit/s
95th percentile per-packet one-way delay: 1.229 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 49.86 Mbit/s
95th percentile per-packet one-way delay: 1.247 ms
Loss rate: 0.01%
```

Run 3: Report of Sprout — Data Link

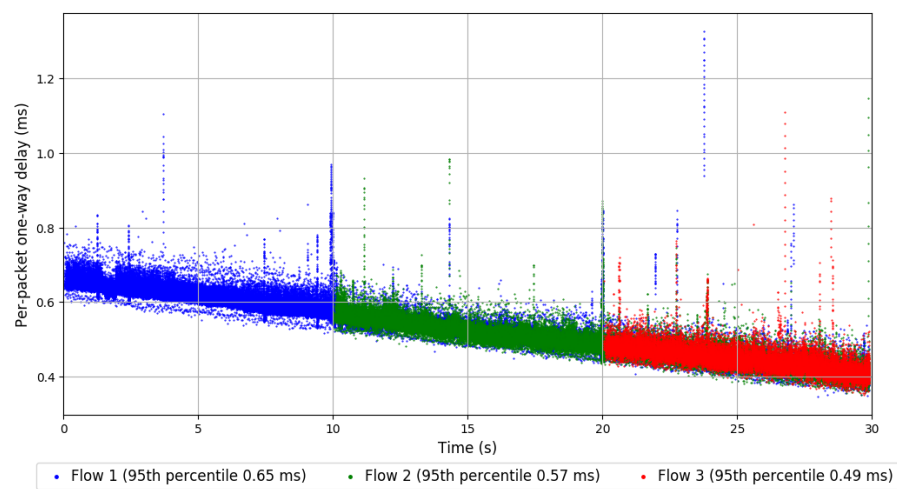
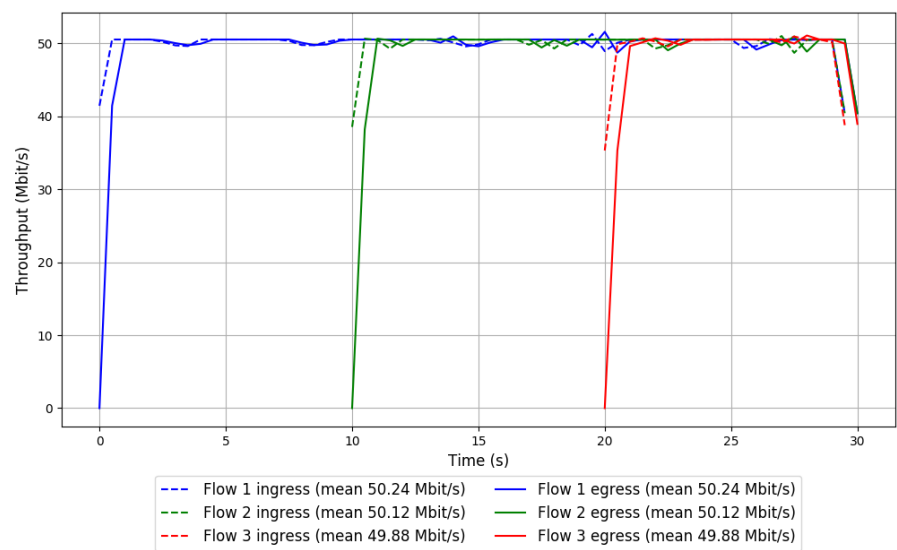


Run 4: Statistics of Sprout

Start at: 2018-10-26 11:02:09
End at: 2018-10-26 11:02:39
Local clock offset: -3.477 ms
Remote clock offset: -4.258 ms

```
# Below is generated by plot.py at 2018-10-26 12:50:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 99.99 Mbit/s
95th percentile per-packet one-way delay: 0.638 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 50.24 Mbit/s
95th percentile per-packet one-way delay: 0.654 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 50.12 Mbit/s
95th percentile per-packet one-way delay: 0.566 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 49.88 Mbit/s
95th percentile per-packet one-way delay: 0.494 ms
Loss rate: 0.00%
```

Run 4: Report of Sprout — Data Link

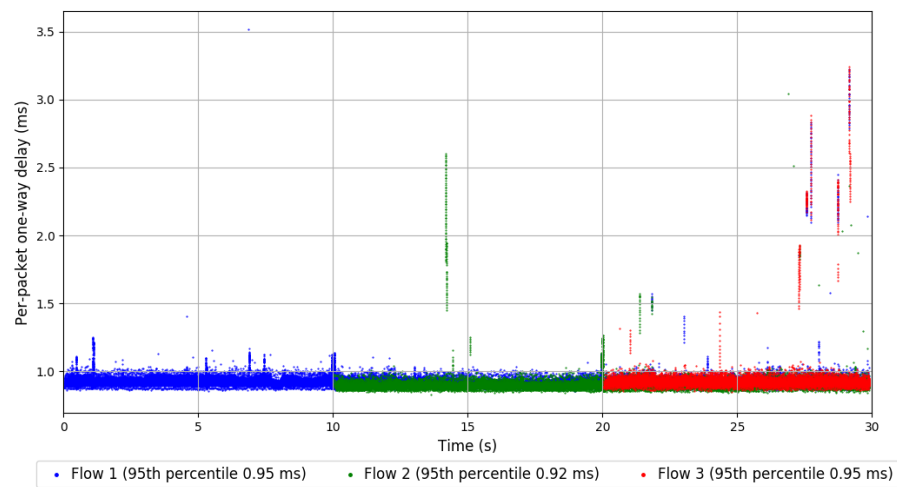
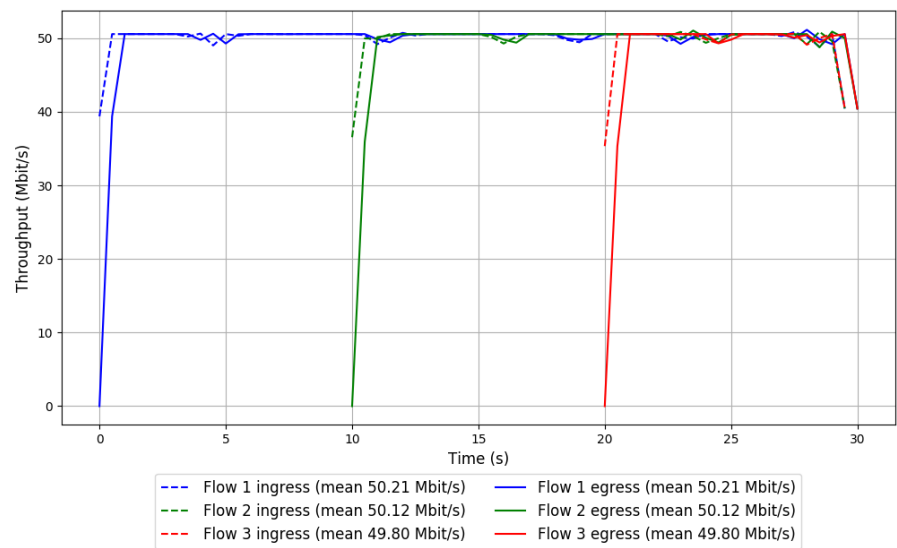


Run 5: Statistics of Sprout

Start at: 2018-10-26 11:30:04
End at: 2018-10-26 11:30:34
Local clock offset: 0.59 ms
Remote clock offset: -4.022 ms

```
# Below is generated by plot.py at 2018-10-26 12:50:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 99.92 Mbit/s
95th percentile per-packet one-way delay: 0.944 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 50.21 Mbit/s
95th percentile per-packet one-way delay: 0.949 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 50.12 Mbit/s
95th percentile per-packet one-way delay: 0.924 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 49.80 Mbit/s
95th percentile per-packet one-way delay: 0.949 ms
Loss rate: 0.00%
```

Run 5: Report of Sprout — Data Link

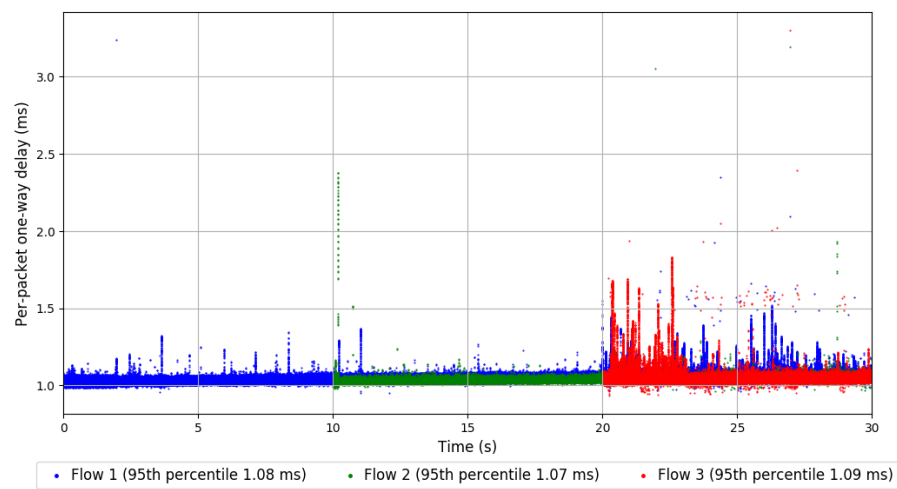
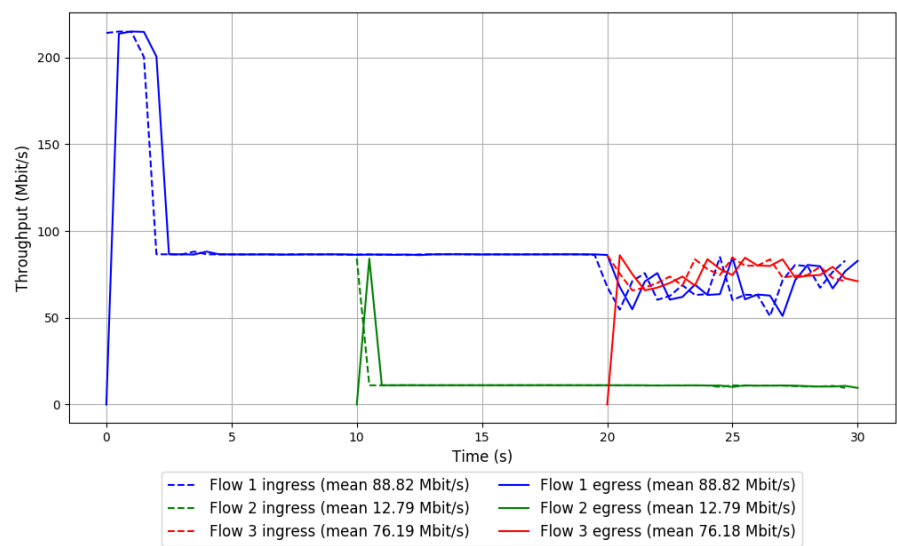


```
Run 1: Statistics of TaoVA-100x

Start at: 2018-10-26 09:55:28
End at: 2018-10-26 09:55:58
Local clock offset: 0.522 ms
Remote clock offset: 3.258 ms

# Below is generated by plot.py at 2018-10-26 12:50:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 122.62 Mbit/s
95th percentile per-packet one-way delay: 1.081 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 88.82 Mbit/s
95th percentile per-packet one-way delay: 1.081 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 12.79 Mbit/s
95th percentile per-packet one-way delay: 1.069 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 76.18 Mbit/s
95th percentile per-packet one-way delay: 1.091 ms
Loss rate: 0.03%
```

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



Run 2: Statistics of TaoVA-100x

Start at: 2018-10-26 10:23:16

End at: 2018-10-26 10:23:46

Local clock offset: 0.288 ms

Remote clock offset: 0.297 ms

Below is generated by plot.py at 2018-10-26 12:51:22

Datalink statistics

-- Total of 3 flows:

Average throughput: 142.24 Mbit/s

95th percentile per-packet one-way delay: 0.984 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 80.89 Mbit/s

95th percentile per-packet one-way delay: 0.988 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 86.42 Mbit/s

95th percentile per-packet one-way delay: 0.959 ms

Loss rate: 0.01%

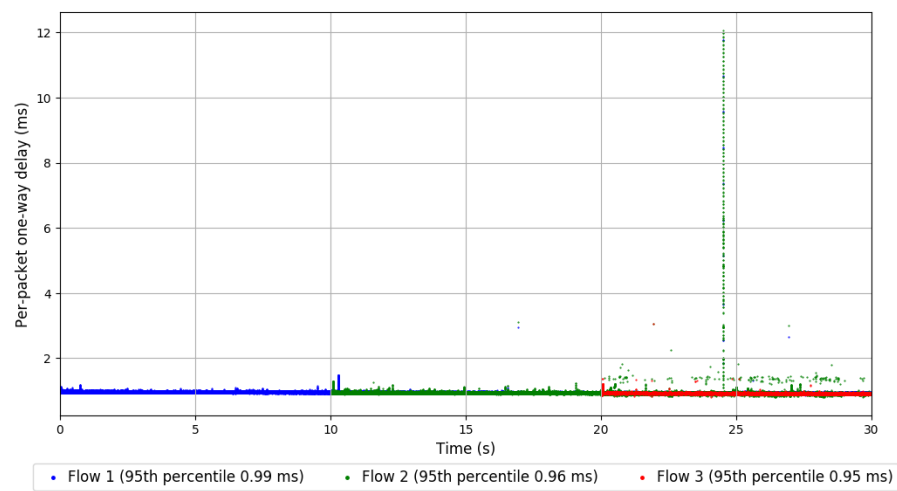
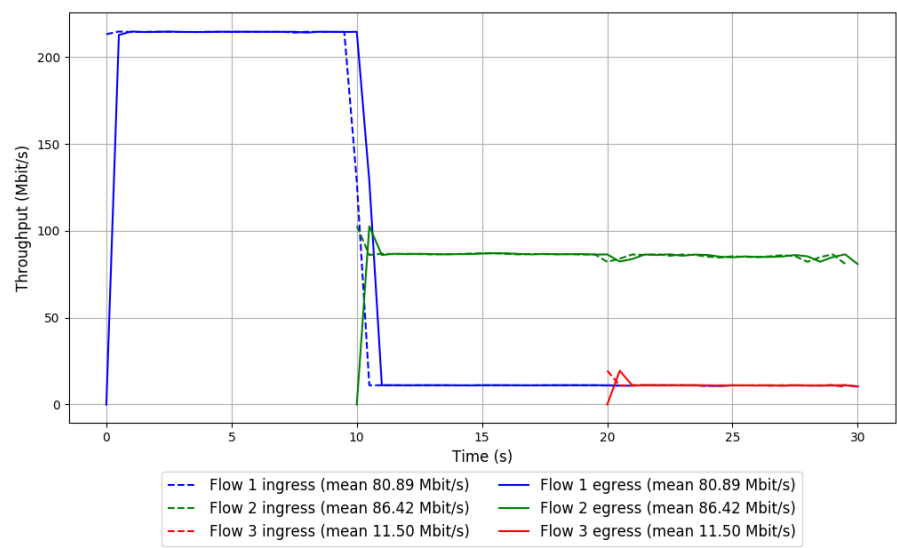
-- Flow 3:

Average throughput: 11.50 Mbit/s

95th percentile per-packet one-way delay: 0.946 ms

Loss rate: 0.02%

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

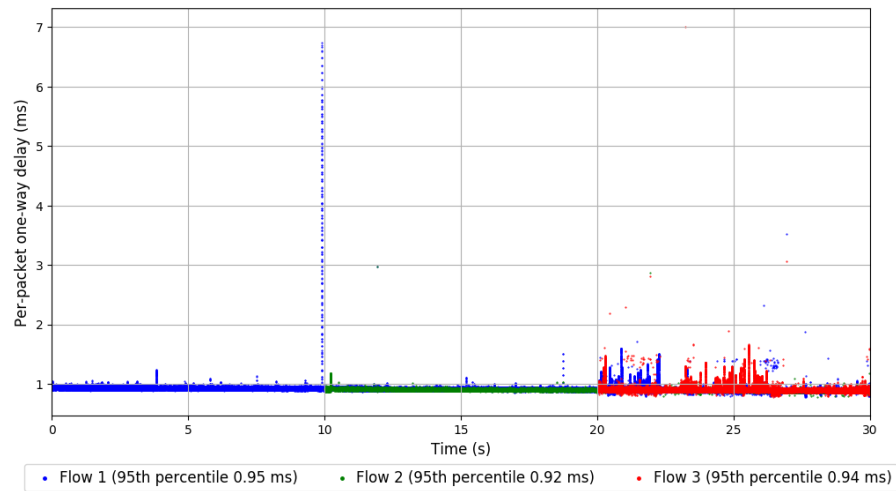
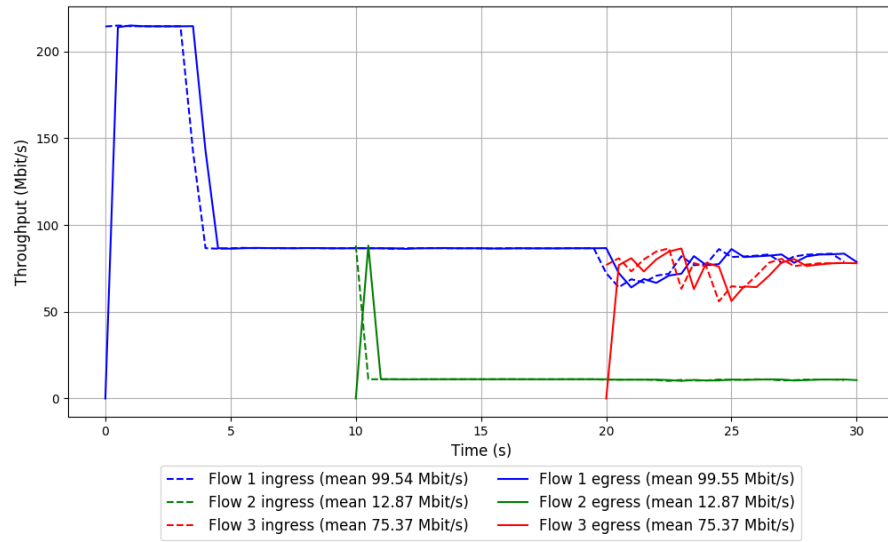


Run 3: Statistics of TaoVA-100x

Start at: 2018-10-26 10:51:14
End at: 2018-10-26 10:51:44
Local clock offset: -3.079 ms
Remote clock offset: -2.809 ms

Below is generated by plot.py at 2018-10-26 12:51:22
Datalink statistics
-- Total of 3 flows:
Average throughput: 133.16 Mbit/s
95th percentile per-packet one-way delay: 0.948 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 99.55 Mbit/s
95th percentile per-packet one-way delay: 0.949 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 12.87 Mbit/s
95th percentile per-packet one-way delay: 0.924 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 75.37 Mbit/s
95th percentile per-packet one-way delay: 0.939 ms
Loss rate: 0.02%

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

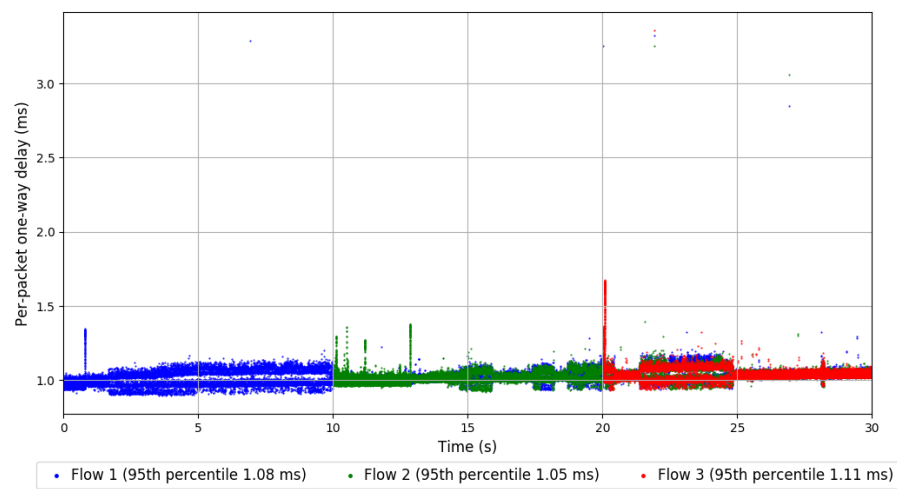
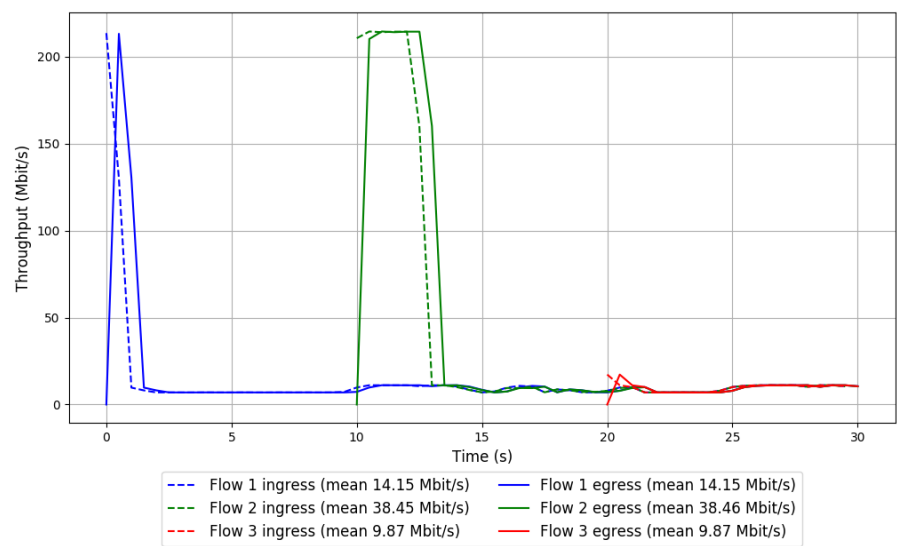


Run 4: Statistics of TaoVA-100x

Start at: 2018-10-26 11:19:06
End at: 2018-10-26 11:19:36
Local clock offset: 0.038 ms
Remote clock offset: -5.205 ms

Below is generated by plot.py at 2018-10-26 12:51:22
Datalink statistics
-- Total of 3 flows:
Average throughput: 43.04 Mbit/s
95th percentile per-packet one-way delay: 1.071 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 14.15 Mbit/s
95th percentile per-packet one-way delay: 1.083 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 38.46 Mbit/s
95th percentile per-packet one-way delay: 1.048 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 9.87 Mbit/s
95th percentile per-packet one-way delay: 1.107 ms
Loss rate: 0.01%

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



Run 5: Statistics of TaoVA-100x

Start at: 2018-10-26 11:46:58

End at: 2018-10-26 11:47:28

Local clock offset: -2.541 ms

Remote clock offset: -4.21 ms

Below is generated by plot.py at 2018-10-26 12:51:22

Datalink statistics

-- Total of 3 flows:

Average throughput: 60.97 Mbit/s

95th percentile per-packet one-way delay: 1.049 ms

Loss rate: 0.01%

-- Flow 1:

Average throughput: 21.81 Mbit/s

95th percentile per-packet one-way delay: 1.067 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 15.39 Mbit/s

95th percentile per-packet one-way delay: 1.074 ms

Loss rate: 0.01%

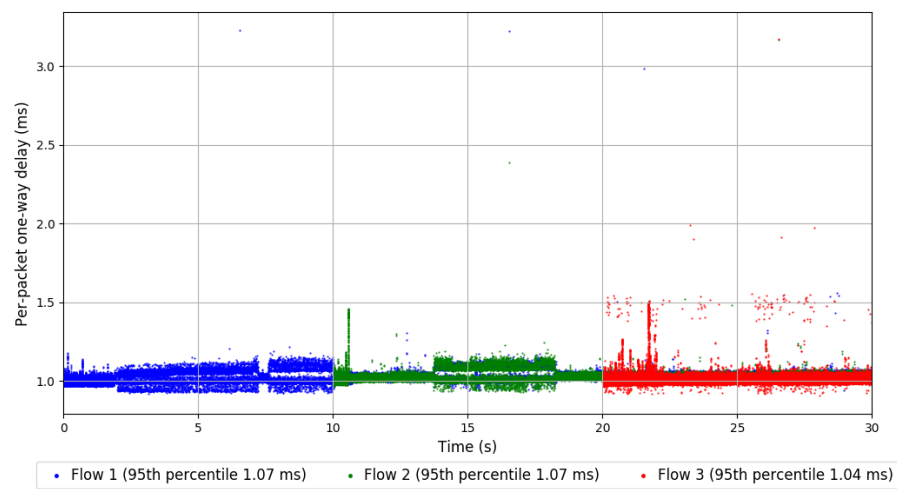
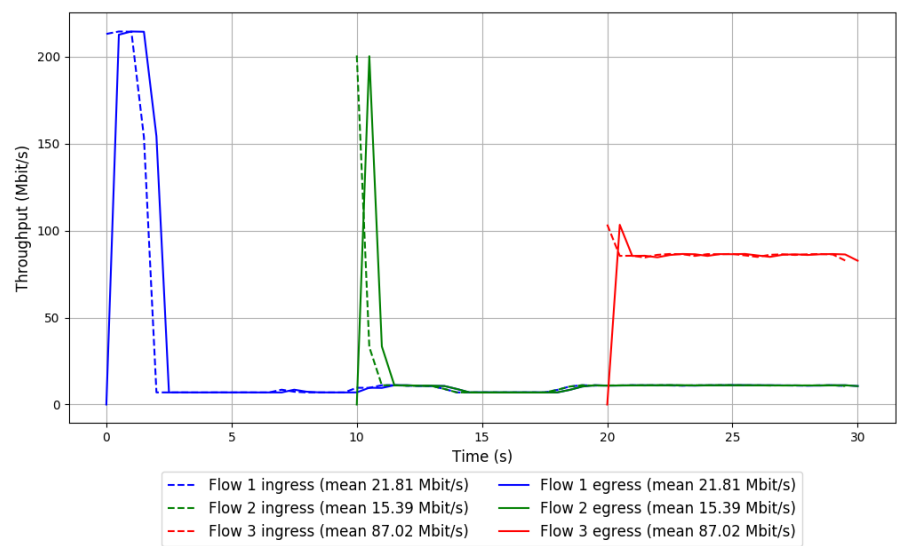
-- Flow 3:

Average throughput: 87.02 Mbit/s

95th percentile per-packet one-way delay: 1.036 ms

Loss rate: 0.02%

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



Run 1: Statistics of TCP Vegas

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

End at: 2018-10-26 09:49:40

Local clock offset: 0.542 ms

Remote clock offset: 2.55 ms

Below is generated by plot.py at 2018-10-26 12:55:28

Datalink statistics

-- Total of 3 flows:

Average throughput: 582.34 Mbit/s

95th percentile per-packet one-way delay: 1.310 ms

Loss rate: 0.01%

-- Flow 1:

Average throughput: 269.95 Mbit/s

95th percentile per-packet one-way delay: 1.283 ms

Loss rate: 0.01%

-- Flow 2:

Average throughput: 319.25 Mbit/s

95th percentile per-packet one-way delay: 1.333 ms

Loss rate: 0.01%

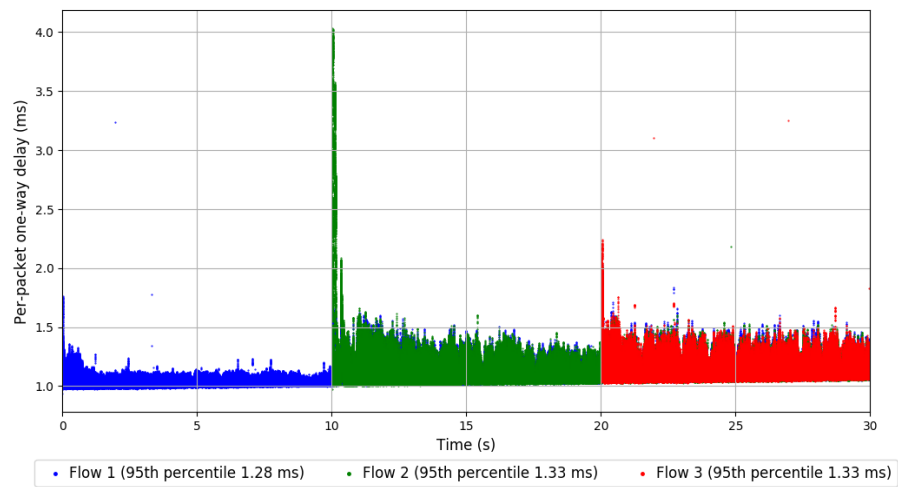
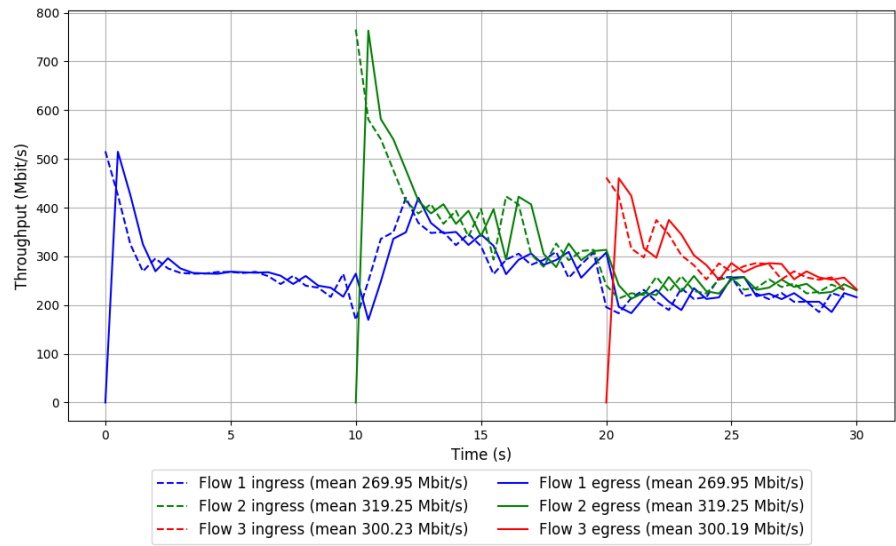
-- Flow 3:

Average throughput: 300.19 Mbit/s

95th percentile per-packet one-way delay: 1.326 ms

Loss rate: 0.01%

Run 1: Report of TCP Vegas — Data Link



Run 2: Statistics of TCP Vegas

Start at: 2018-10-26 10:16:58

End at: 2018-10-26 10:17:28

Local clock offset: 0.299 ms

Remote clock offset: 1.349 ms

Below is generated by plot.py at 2018-10-26 12:55:44

Datalink statistics

-- Total of 3 flows:

Average throughput: 574.13 Mbit/s

95th percentile per-packet one-way delay: 1.105 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 298.70 Mbit/s

95th percentile per-packet one-way delay: 1.090 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 273.35 Mbit/s

95th percentile per-packet one-way delay: 1.118 ms

Loss rate: 0.00%

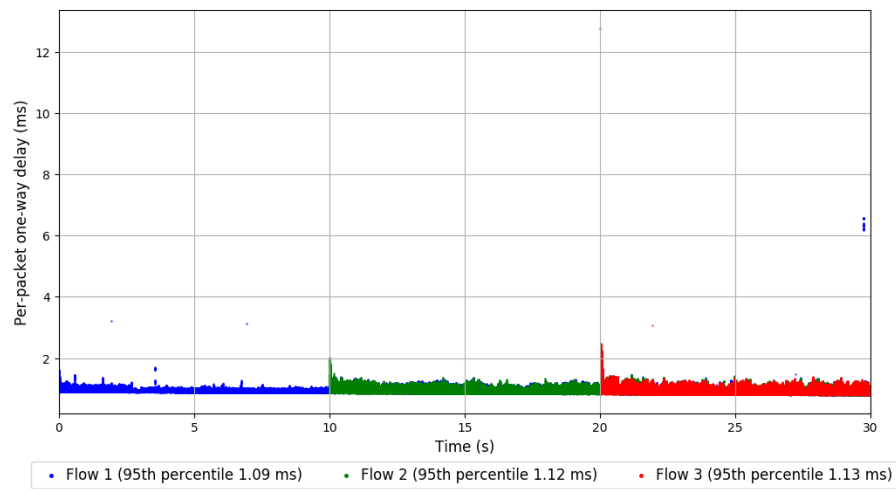
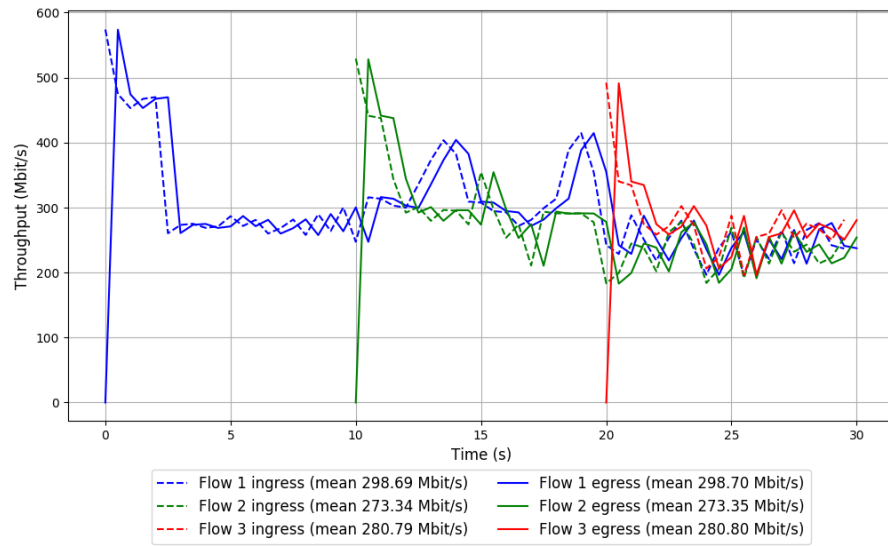
-- Flow 3:

Average throughput: 280.80 Mbit/s

95th percentile per-packet one-way delay: 1.132 ms

Loss rate: 0.01%

Run 2: Report of TCP Vegas — Data Link

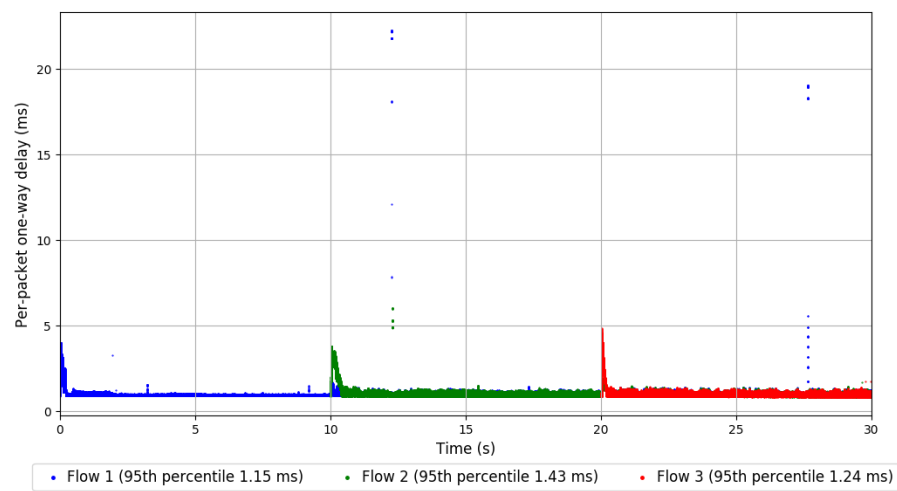
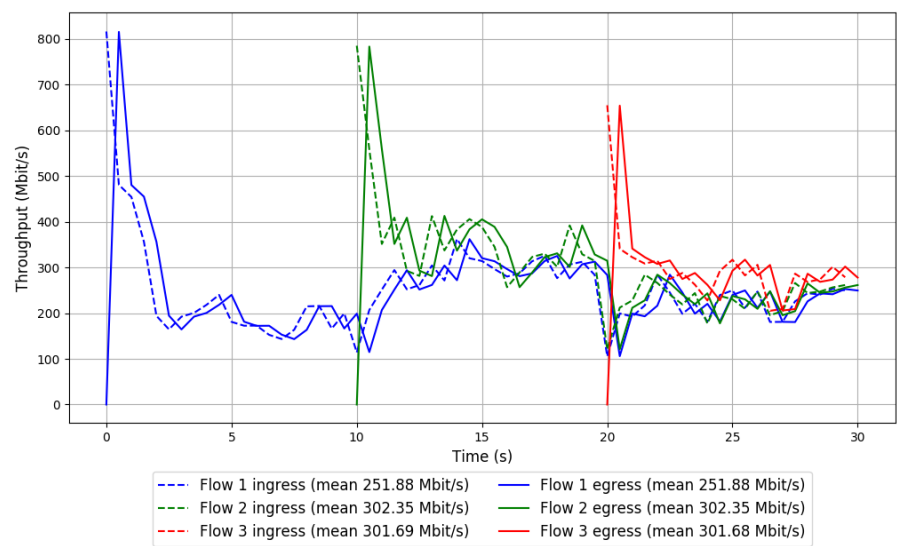


Run 3: Statistics of TCP Vegas

Start at: 2018-10-26 10:44:55
End at: 2018-10-26 10:45:25
Local clock offset: -2.502 ms
Remote clock offset: -1.386 ms

Below is generated by plot.py at 2018-10-26 12:55:50
Datalink statistics
-- Total of 3 flows:
Average throughput: 553.59 Mbit/s
95th percentile per-packet one-way delay: 1.201 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 251.88 Mbit/s
95th percentile per-packet one-way delay: 1.148 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 302.35 Mbit/s
95th percentile per-packet one-way delay: 1.430 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 301.68 Mbit/s
95th percentile per-packet one-way delay: 1.241 ms
Loss rate: 0.02%

Run 3: Report of TCP Vegas — Data Link

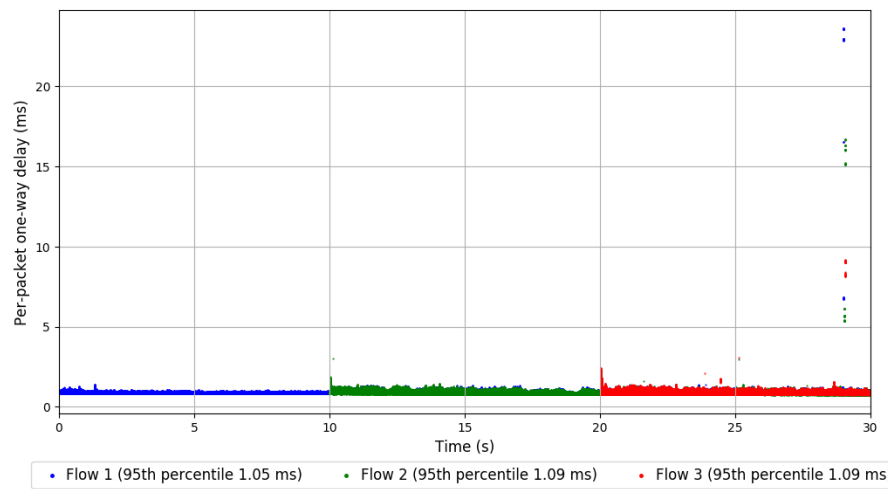
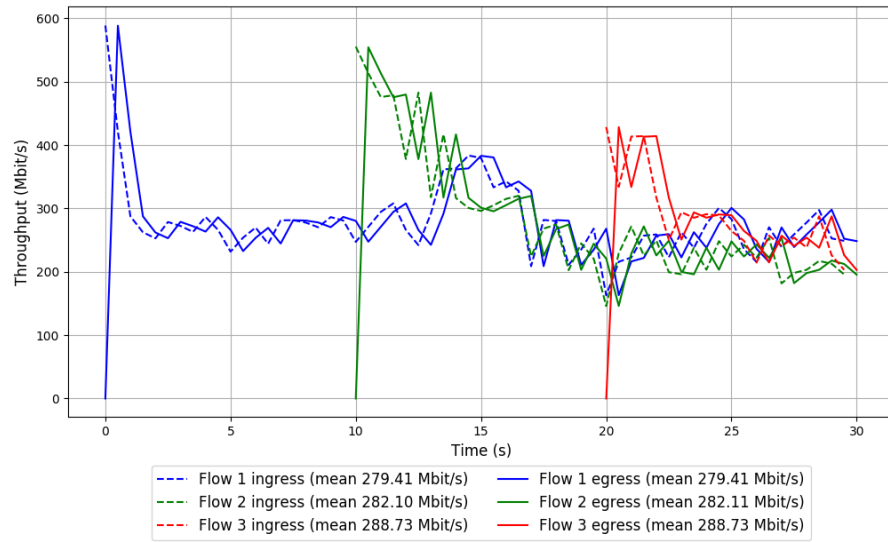


Run 4: Statistics of TCP Vegas

Start at: 2018-10-26 11:12:50
End at: 2018-10-26 11:13:20
Local clock offset: -0.636 ms
Remote clock offset: -5.285 ms

Below is generated by plot.py at 2018-10-26 12:56:36
Datalink statistics
-- Total of 3 flows:
Average throughput: 563.22 Mbit/s
95th percentile per-packet one-way delay: 1.070 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 279.41 Mbit/s
95th percentile per-packet one-way delay: 1.050 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 282.11 Mbit/s
95th percentile per-packet one-way delay: 1.087 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 288.73 Mbit/s
95th percentile per-packet one-way delay: 1.086 ms
Loss rate: 0.01%

Run 4: Report of TCP Vegas — Data Link

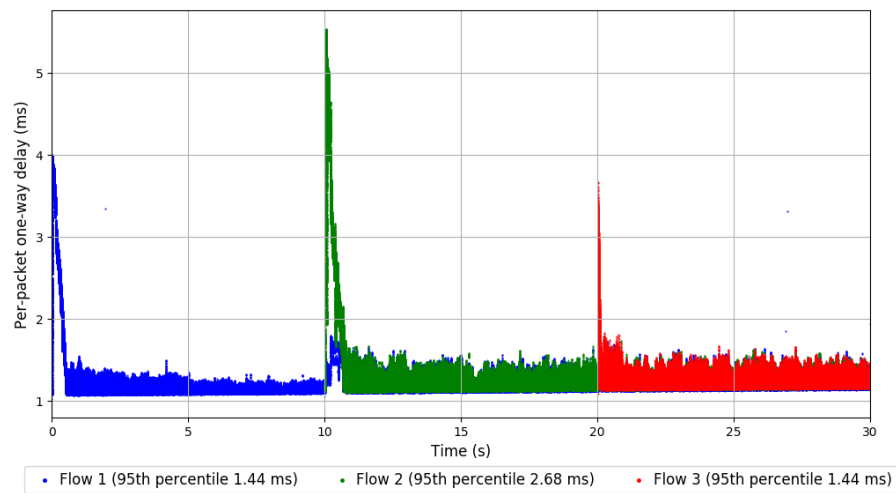
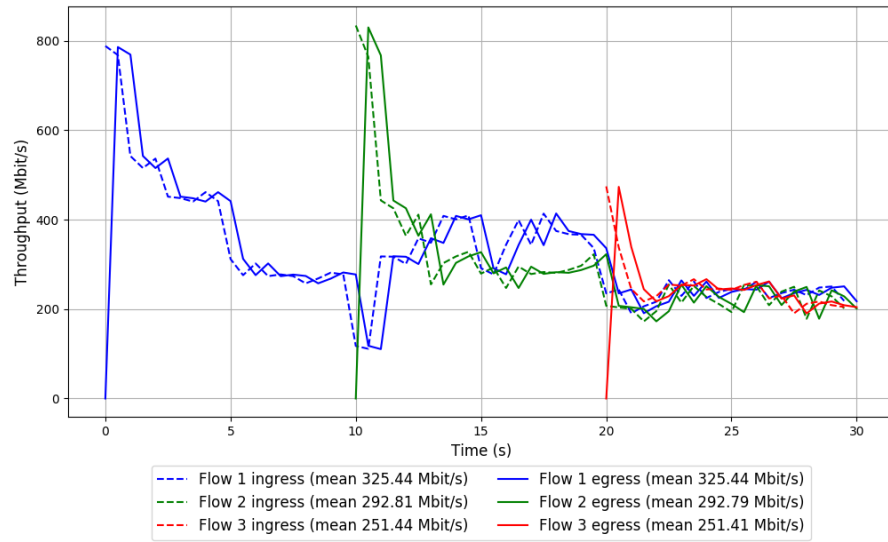


Run 5: Statistics of TCP Vegas

Start at: 2018-10-26 11:40:41
End at: 2018-10-26 11:41:11
Local clock offset: -1.762 ms
Remote clock offset: -4.131 ms

Below is generated by plot.py at 2018-10-26 12:57:09
Datalink statistics
-- Total of 3 flows:
Average throughput: 604.11 Mbit/s
95th percentile per-packet one-way delay: 1.721 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 325.44 Mbit/s
95th percentile per-packet one-way delay: 1.436 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 292.79 Mbit/s
95th percentile per-packet one-way delay: 2.676 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 251.41 Mbit/s
95th percentile per-packet one-way delay: 1.436 ms
Loss rate: 0.02%

Run 5: Report of TCP Vegas — Data Link

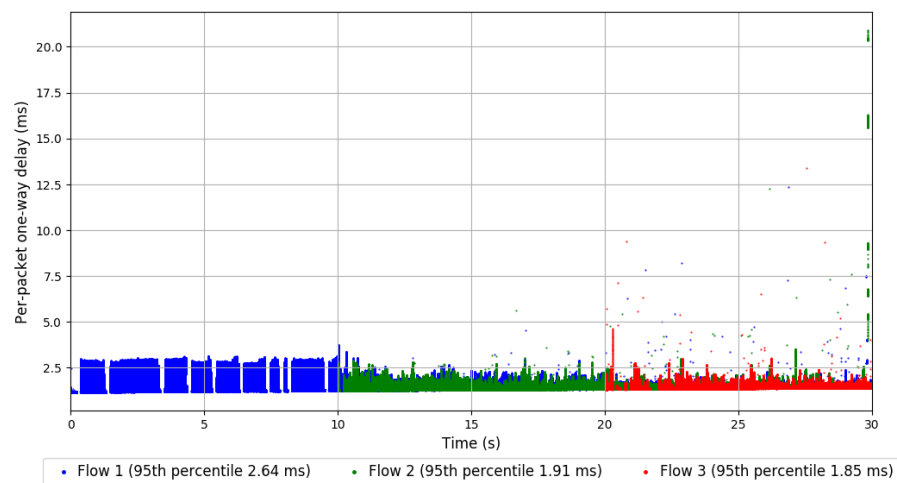
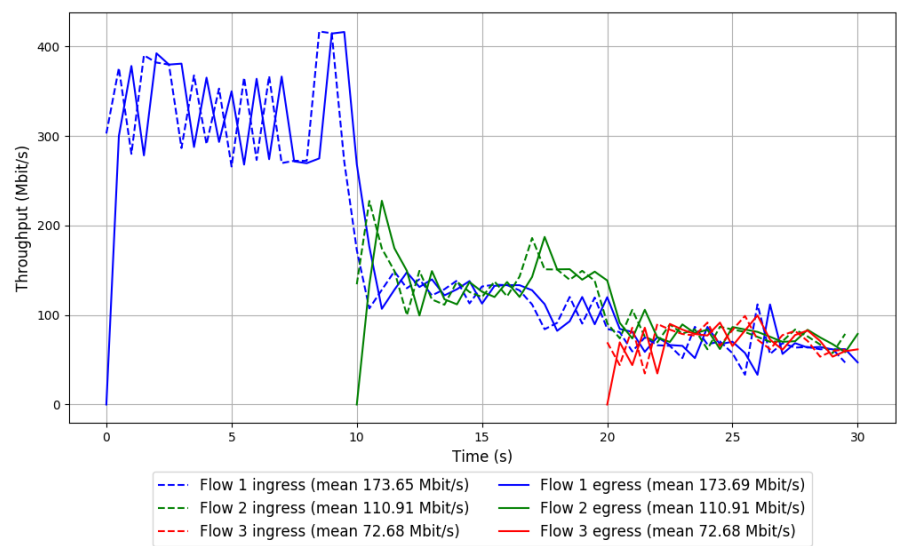


Run 1: Statistics of Verus

Start at: 2018-10-26 09:37:00
End at: 2018-10-26 09:37:30
Local clock offset: 1.009 ms
Remote clock offset: -0.655 ms

Below is generated by plot.py at 2018-10-26 12:57:09
Datalink statistics
-- Total of 3 flows:
Average throughput: 271.64 Mbit/s
95th percentile per-packet one-way delay: 2.508 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 173.69 Mbit/s
95th percentile per-packet one-way delay: 2.636 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 110.91 Mbit/s
95th percentile per-packet one-way delay: 1.905 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 72.68 Mbit/s
95th percentile per-packet one-way delay: 1.846 ms
Loss rate: 0.00%

Run 1: Report of Verus — Data Link



Run 2: Statistics of Verus

Start at: 2018-10-26 10:04:50

End at: 2018-10-26 10:05:20

Local clock offset: 0.435 ms

Remote clock offset: 3.976 ms

Below is generated by plot.py at 2018-10-26 12:57:09

Datalink statistics

-- Total of 3 flows:

Average throughput: 289.26 Mbit/s

95th percentile per-packet one-way delay: 1.996 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 193.42 Mbit/s

95th percentile per-packet one-way delay: 2.082 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 103.36 Mbit/s

95th percentile per-packet one-way delay: 1.843 ms

Loss rate: 0.00%

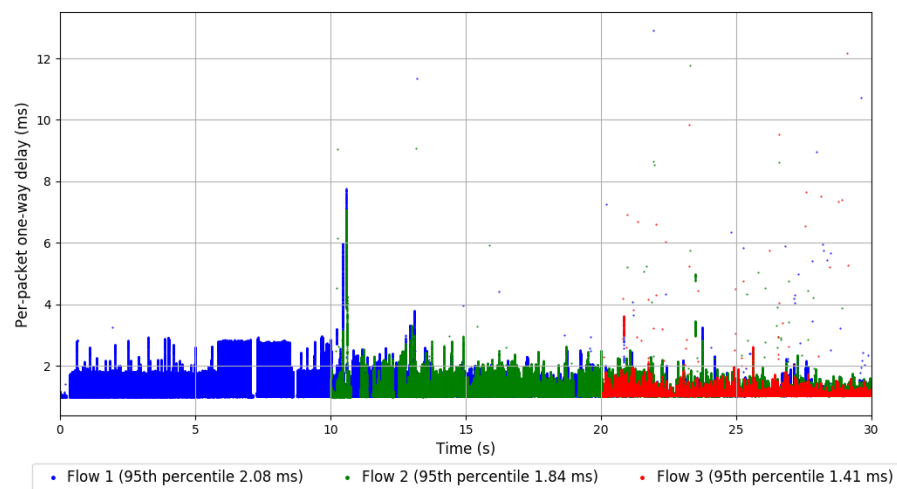
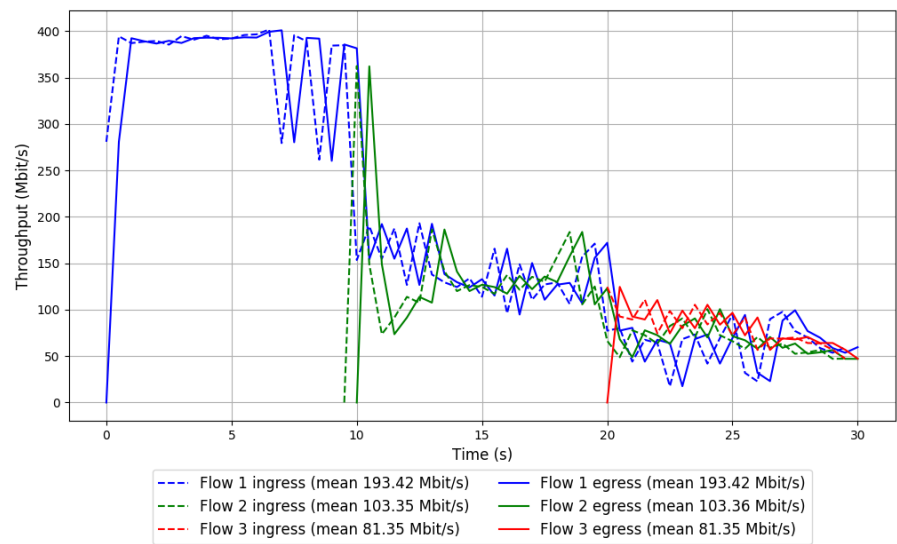
-- Flow 3:

Average throughput: 81.35 Mbit/s

95th percentile per-packet one-way delay: 1.408 ms

Loss rate: 0.00%

Run 2: Report of Verus — Data Link

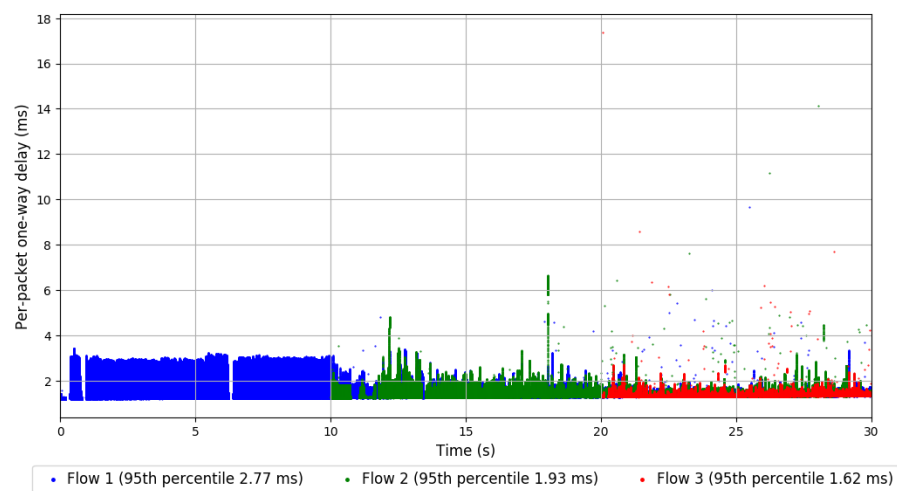
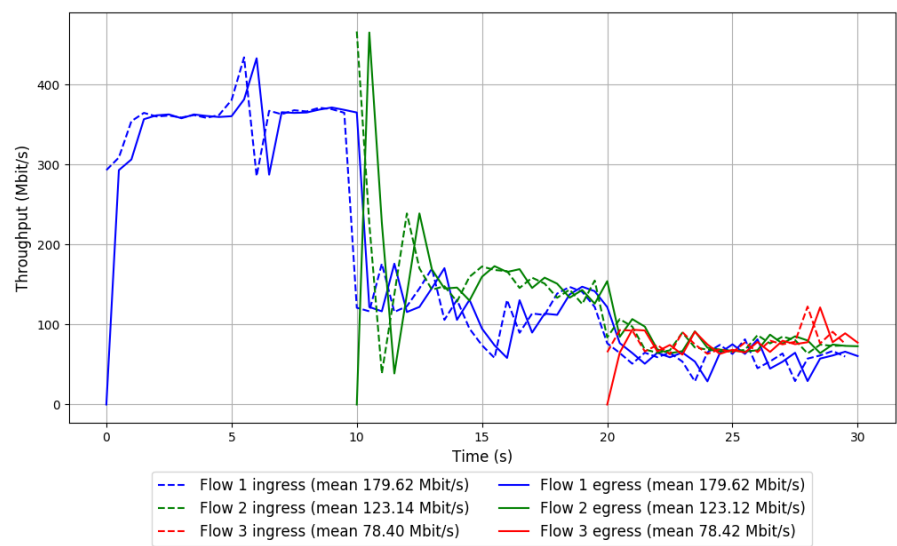


Run 3: Statistics of Verus

Start at: 2018-10-26 10:32:44
End at: 2018-10-26 10:33:14
Local clock offset: -0.051 ms
Remote clock offset: -0.439 ms

Below is generated by plot.py at 2018-10-26 12:57:09
Datalink statistics
-- Total of 3 flows:
Average throughput: 287.64 Mbit/s
95th percentile per-packet one-way delay: 2.668 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 179.62 Mbit/s
95th percentile per-packet one-way delay: 2.766 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 123.12 Mbit/s
95th percentile per-packet one-way delay: 1.933 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 78.42 Mbit/s
95th percentile per-packet one-way delay: 1.617 ms
Loss rate: 0.03%

Run 3: Report of Verus — Data Link

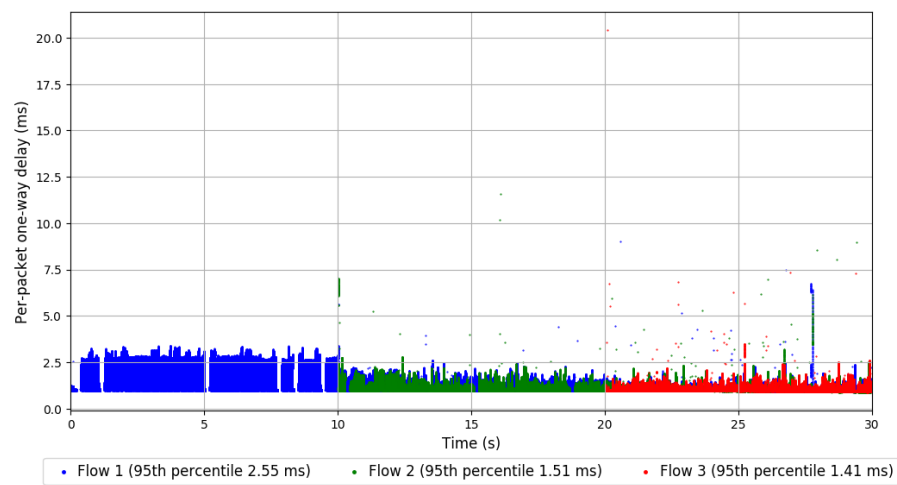
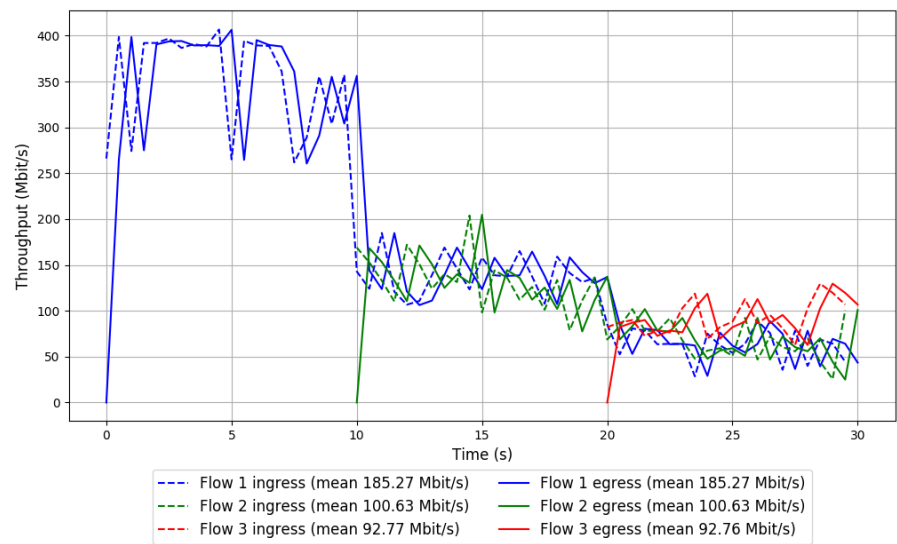


Run 4: Statistics of Verus

Start at: 2018-10-26 11:00:38
End at: 2018-10-26 11:01:08
Local clock offset: -3.634 ms
Remote clock offset: -4.138 ms

Below is generated by plot.py at 2018-10-26 12:57:33
Datalink statistics
-- Total of 3 flows:
Average throughput: 283.08 Mbit/s
95th percentile per-packet one-way delay: 2.420 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 185.27 Mbit/s
95th percentile per-packet one-way delay: 2.548 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 100.63 Mbit/s
95th percentile per-packet one-way delay: 1.507 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 92.76 Mbit/s
95th percentile per-packet one-way delay: 1.411 ms
Loss rate: 0.00%

Run 4: Report of Verus — Data Link

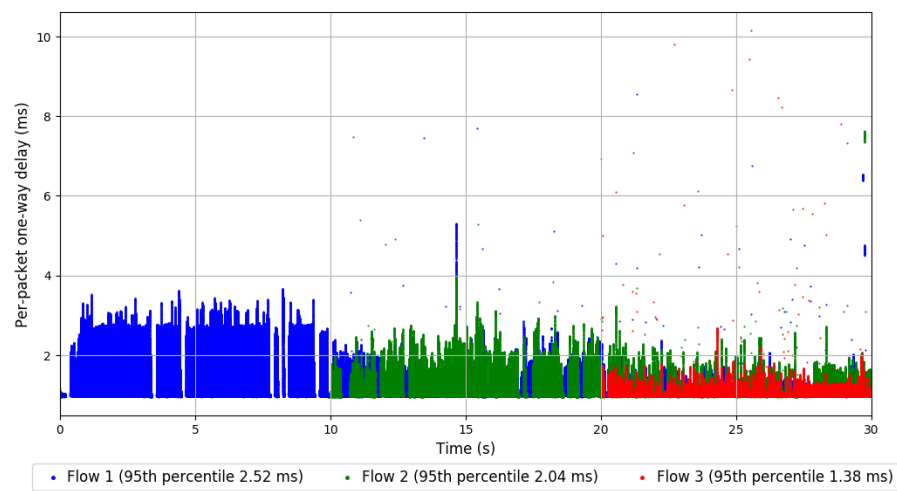
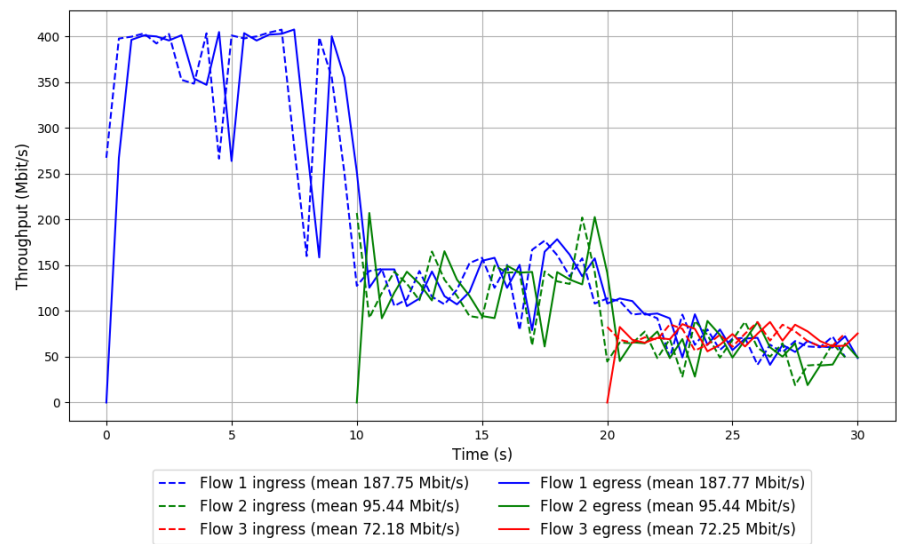


Run 5: Statistics of Verus

Start at: 2018-10-26 11:28:33
End at: 2018-10-26 11:29:03
Local clock offset: 0.528 ms
Remote clock offset: -4.181 ms

Below is generated by plot.py at 2018-10-26 12:57:50
Datalink statistics
-- Total of 3 flows:
Average throughput: 275.31 Mbit/s
95th percentile per-packet one-way delay: 2.419 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 187.77 Mbit/s
95th percentile per-packet one-way delay: 2.523 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 95.44 Mbit/s
95th percentile per-packet one-way delay: 2.045 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 72.25 Mbit/s
95th percentile per-packet one-way delay: 1.375 ms
Loss rate: 0.01%

Run 5: Report of Verus — Data Link



Run 1: Statistics of PCC-Vivace

Start at: 2018-10-26 09:58:26

End at: 2018-10-26 09:58:56

Local clock offset: 0.501 ms

Remote clock offset: 3.519 ms

Below is generated by plot.py at 2018-10-26 12:58:03

Datalink statistics

-- Total of 3 flows:

Average throughput: 287.48 Mbit/s

95th percentile per-packet one-way delay: 1.057 ms

Loss rate: 0.01%

-- Flow 1:

Average throughput: 201.40 Mbit/s

95th percentile per-packet one-way delay: 1.042 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 91.30 Mbit/s

95th percentile per-packet one-way delay: 1.134 ms

Loss rate: 0.01%

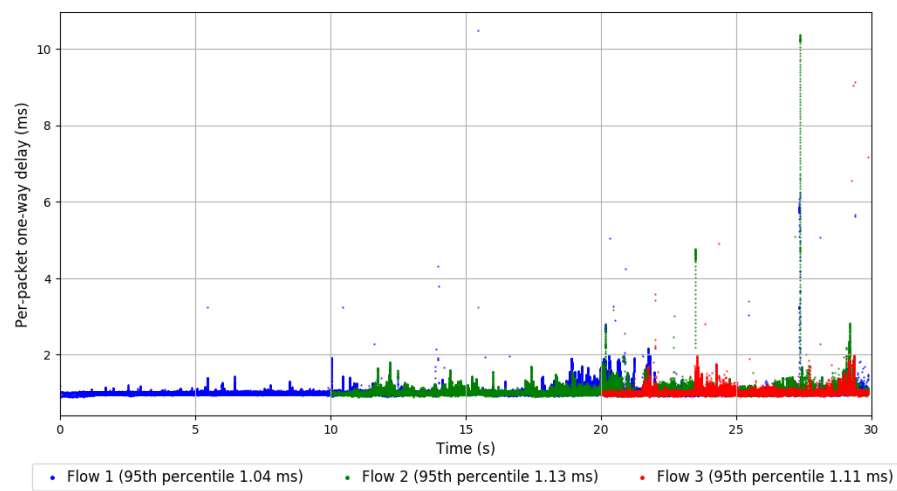
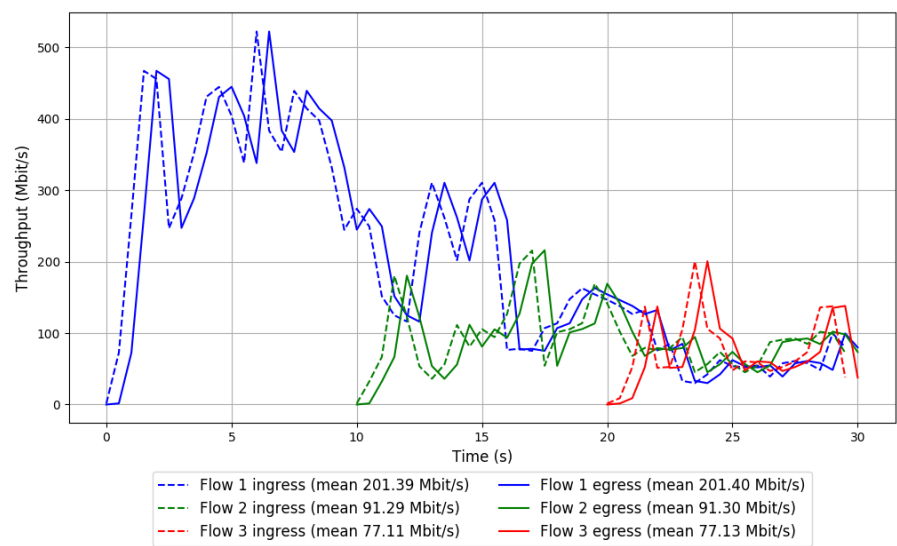
-- Flow 3:

Average throughput: 77.13 Mbit/s

95th percentile per-packet one-way delay: 1.111 ms

Loss rate: 0.01%

Run 1: Report of PCC-Vivace — Data Link



Run 2: Statistics of PCC-Vivace

Start at: 2018-10-26 10:26:16

End at: 2018-10-26 10:26:46

Local clock offset: 0.293 ms

Remote clock offset: 0.009 ms

Below is generated by plot.py at 2018-10-26 12:58:17

Datalink statistics

-- Total of 3 flows:

Average throughput: 252.60 Mbit/s

95th percentile per-packet one-way delay: 0.979 ms

Loss rate: 0.01%

-- Flow 1:

Average throughput: 170.83 Mbit/s

95th percentile per-packet one-way delay: 0.962 ms

Loss rate: 0.01%

-- Flow 2:

Average throughput: 99.86 Mbit/s

95th percentile per-packet one-way delay: 1.036 ms

Loss rate: 0.01%

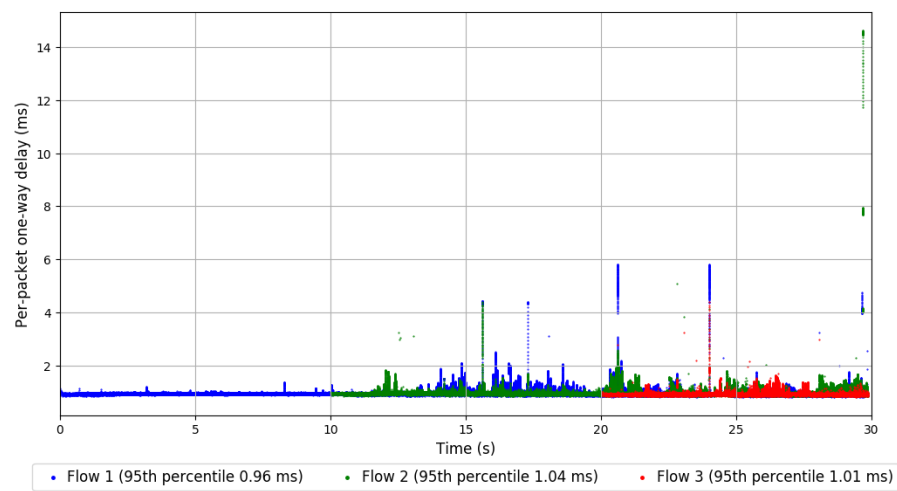
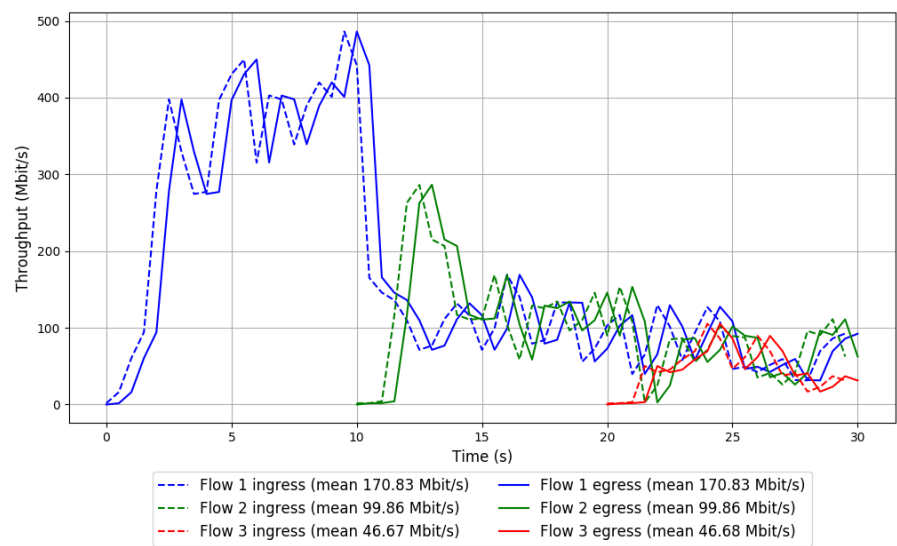
-- Flow 3:

Average throughput: 46.68 Mbit/s

95th percentile per-packet one-way delay: 1.015 ms

Loss rate: 0.01%

Run 2: Report of PCC-Vivace — Data Link

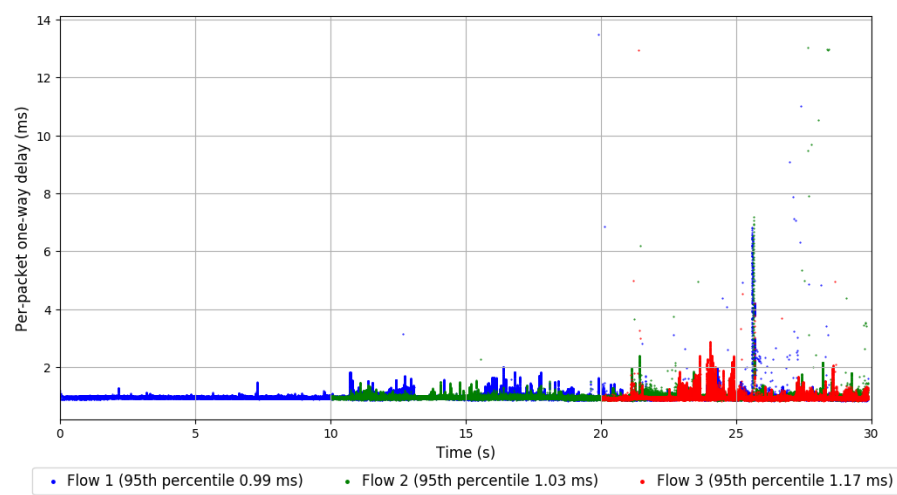
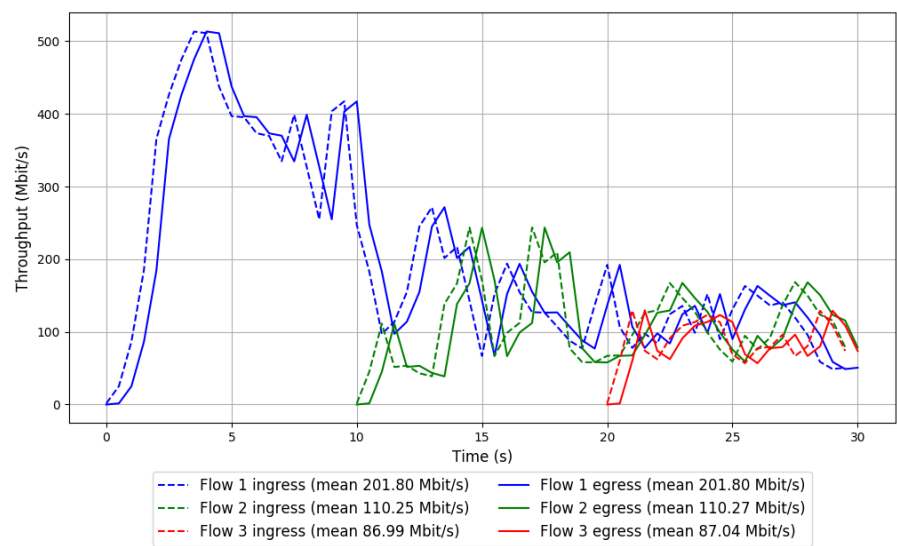


Run 3: Statistics of PCC-Vivace

Start at: 2018-10-26 10:54:13
End at: 2018-10-26 10:54:43
Local clock offset: -3.27 ms
Remote clock offset: -3.315 ms

Below is generated by plot.py at 2018-10-26 12:58:43
Datalink statistics
-- Total of 3 flows:
Average throughput: 303.85 Mbit/s
95th percentile per-packet one-way delay: 0.998 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 201.80 Mbit/s
95th percentile per-packet one-way delay: 0.986 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 110.27 Mbit/s
95th percentile per-packet one-way delay: 1.027 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 87.04 Mbit/s
95th percentile per-packet one-way delay: 1.170 ms
Loss rate: 0.02%

Run 3: Report of PCC-Vivace — Data Link



Run 4: Statistics of PCC-Vivace

Start at: 2018-10-26 11:21:59

End at: 2018-10-26 11:22:29

Local clock offset: 0.233 ms

Remote clock offset: -4.7 ms

Below is generated by plot.py at 2018-10-26 12:58:54

Datalink statistics

-- Total of 3 flows:

Average throughput: 375.81 Mbit/s

95th percentile per-packet one-way delay: 1.036 ms

Loss rate: 0.01%

-- Flow 1:

Average throughput: 269.48 Mbit/s

95th percentile per-packet one-way delay: 1.014 ms

Loss rate: 0.01%

-- Flow 2:

Average throughput: 115.24 Mbit/s

95th percentile per-packet one-way delay: 1.117 ms

Loss rate: 0.00%

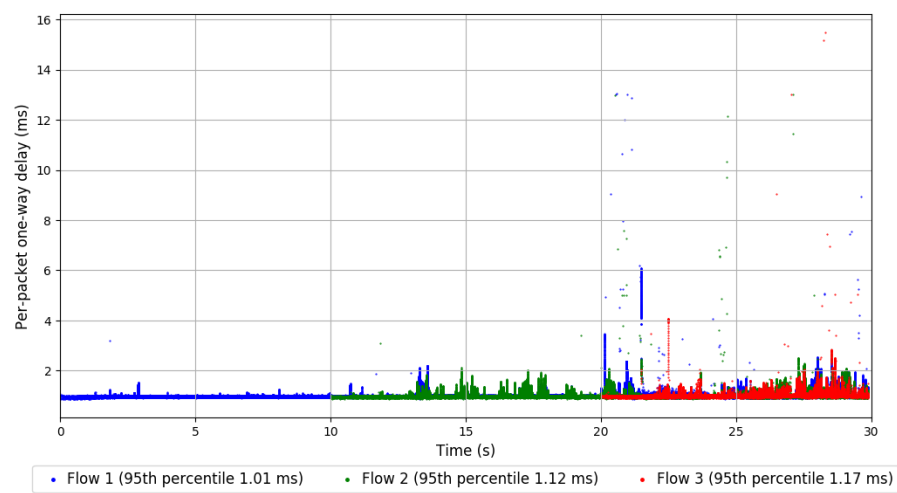
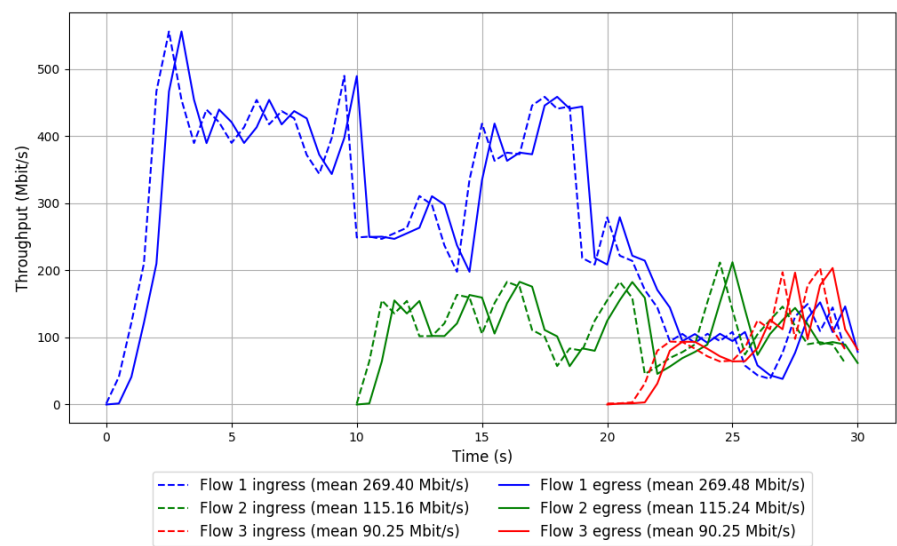
-- Flow 3:

Average throughput: 90.25 Mbit/s

95th percentile per-packet one-way delay: 1.165 ms

Loss rate: 0.02%

Run 4: Report of PCC-Vivace — Data Link

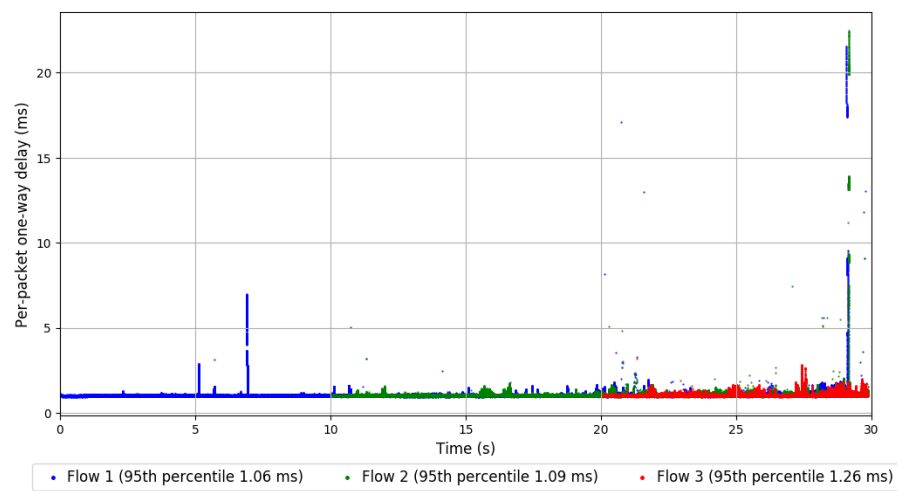
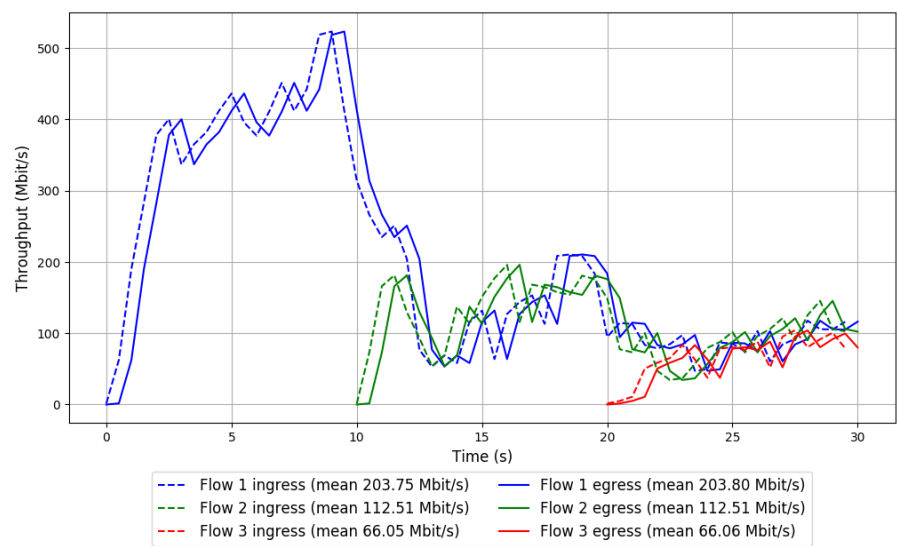


Run 5: Statistics of PCC-Vivace

Start at: 2018-10-26 11:49:52
End at: 2018-10-26 11:50:22
Local clock offset: -2.811 ms
Remote clock offset: -4.357 ms

Below is generated by plot.py at 2018-10-26 12:58:54
Datalink statistics
-- Total of 3 flows:
Average throughput: 300.38 Mbit/s
95th percentile per-packet one-way delay: 1.071 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 203.80 Mbit/s
95th percentile per-packet one-way delay: 1.058 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 112.51 Mbit/s
95th percentile per-packet one-way delay: 1.086 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 66.06 Mbit/s
95th percentile per-packet one-way delay: 1.258 ms
Loss rate: 0.01%

Run 5: Report of PCC-Vivace — Data Link



Run 1: Statistics of WebRTC media

Start at: 2018-10-26 09:47:51

End at: 2018-10-26 09:48:21

Local clock offset: 0.569 ms

Remote clock offset: 2.347 ms

Below is generated by plot.py at 2018-10-26 12:58:54

Datalink statistics

-- Total of 3 flows:

Average throughput: 3.06 Mbit/s

95th percentile per-packet one-way delay: 1.148 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 1.53 Mbit/s

95th percentile per-packet one-way delay: 1.130 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 1.11 Mbit/s

95th percentile per-packet one-way delay: 1.162 ms

Loss rate: 0.00%

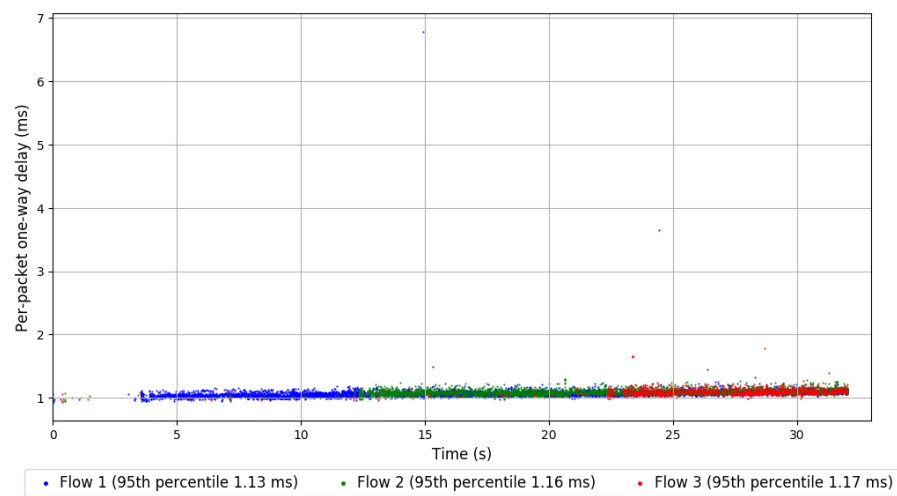
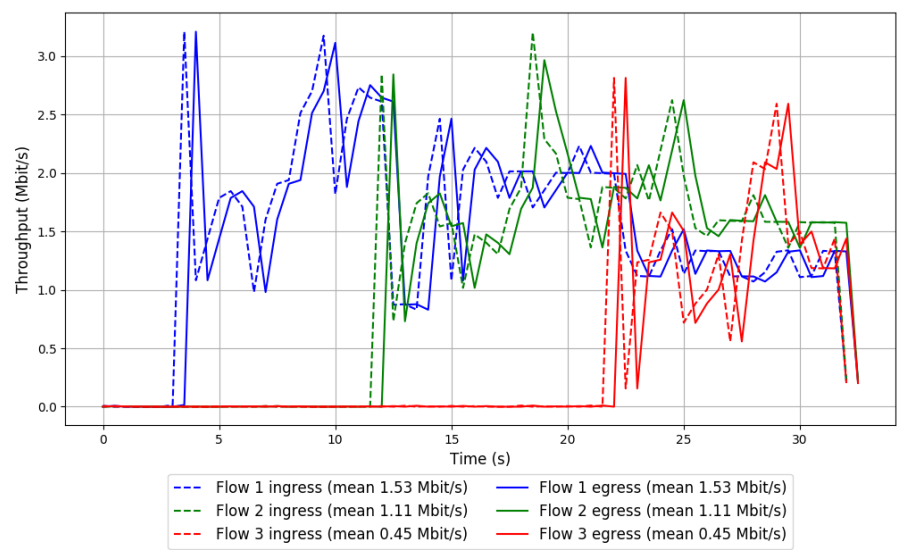
-- Flow 3:

Average throughput: 0.45 Mbit/s

95th percentile per-packet one-way delay: 1.167 ms

Loss rate: 0.00%

Run 1: Report of WebRTC media — Data Link



Run 2: Statistics of WebRTC media

Start at: 2018-10-26 10:15:39

End at: 2018-10-26 10:16:09

Local clock offset: 0.302 ms

Remote clock offset: 1.601 ms

Below is generated by plot.py at 2018-10-26 12:58:54

Datalink statistics

-- Total of 3 flows:

Average throughput: 3.22 Mbit/s

95th percentile per-packet one-way delay: 1.007 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 1.82 Mbit/s

95th percentile per-packet one-way delay: 1.019 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 1.00 Mbit/s

95th percentile per-packet one-way delay: 0.987 ms

Loss rate: 0.00%

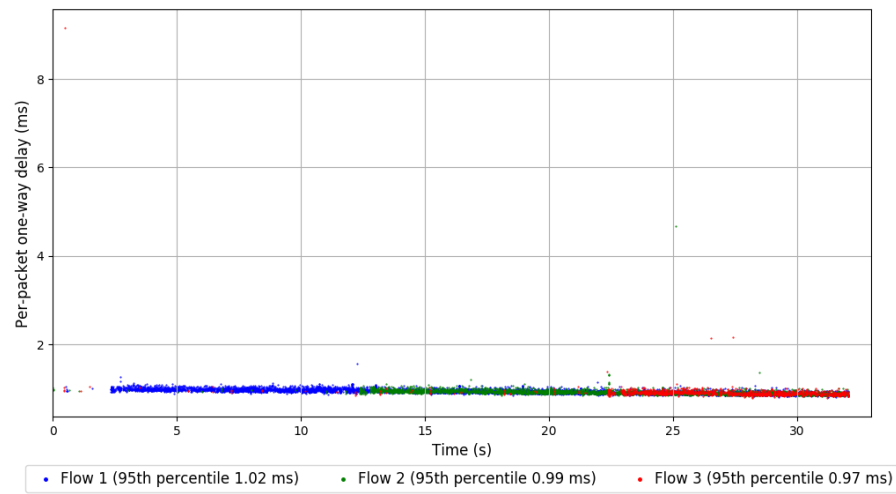
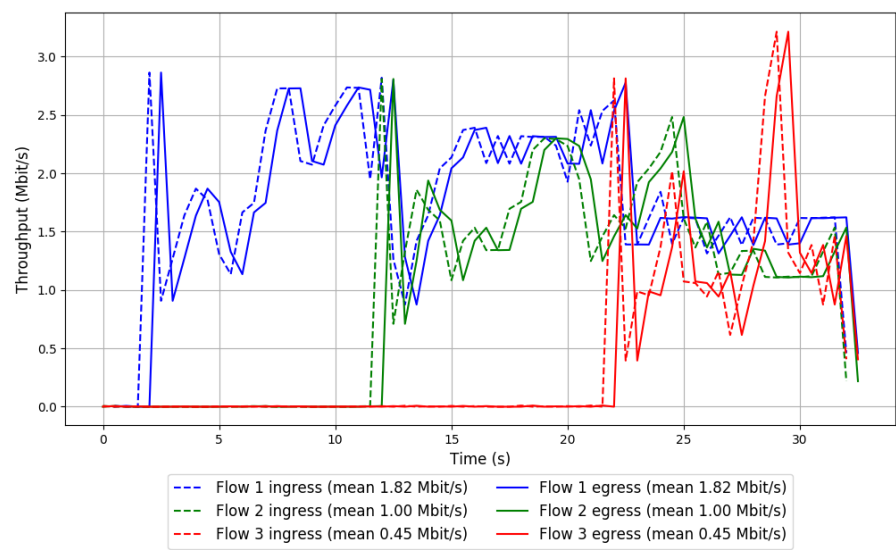
-- Flow 3:

Average throughput: 0.45 Mbit/s

95th percentile per-packet one-way delay: 0.970 ms

Loss rate: 0.00%

Run 2: Report of WebRTC media — Data Link

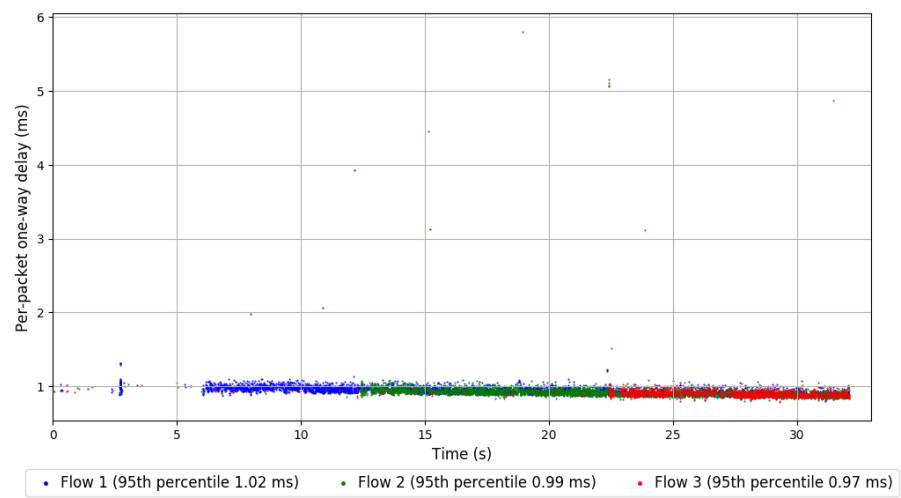
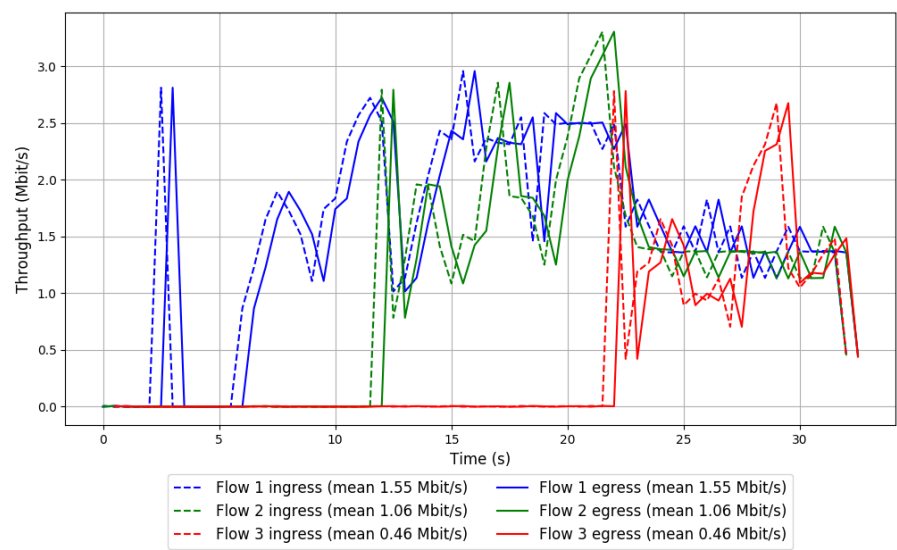


Run 3: Statistics of WebRTC media

Start at: 2018-10-26 10:43:36
End at: 2018-10-26 10:44:06
Local clock offset: -2.348 ms
Remote clock offset: -1.008 ms

Below is generated by plot.py at 2018-10-26 12:58:54
Datalink statistics
-- Total of 3 flows:
Average throughput: 3.04 Mbit/s
95th percentile per-packet one-way delay: 1.007 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.55 Mbit/s
95th percentile per-packet one-way delay: 1.018 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.06 Mbit/s
95th percentile per-packet one-way delay: 0.995 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.46 Mbit/s
95th percentile per-packet one-way delay: 0.966 ms
Loss rate: 0.00%

Run 3: Report of WebRTC media — Data Link

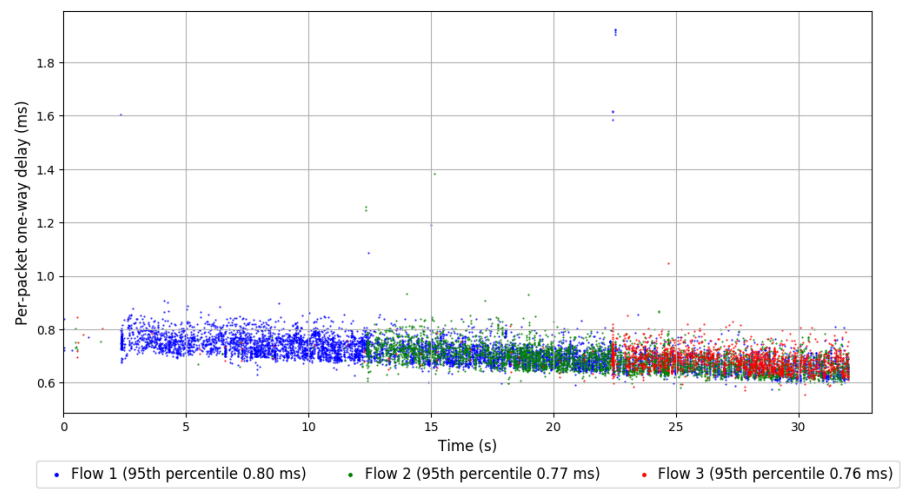
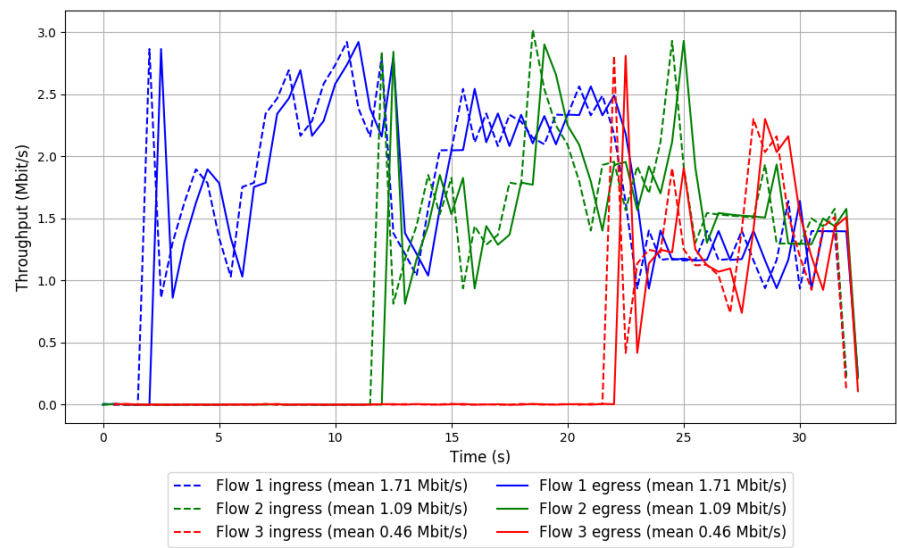


Run 4: Statistics of WebRTC media

Start at: 2018-10-26 11:11:31
End at: 2018-10-26 11:12:01
Local clock offset: -0.841 ms
Remote clock offset: -5.077 ms

Below is generated by plot.py at 2018-10-26 12:58:54
Datalink statistics
-- Total of 3 flows:
Average throughput: 3.23 Mbit/s
95th percentile per-packet one-way delay: 0.787 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.71 Mbit/s
95th percentile per-packet one-way delay: 0.796 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.09 Mbit/s
95th percentile per-packet one-way delay: 0.771 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.46 Mbit/s
95th percentile per-packet one-way delay: 0.758 ms
Loss rate: 0.00%

Run 4: Report of WebRTC media — Data Link



Run 5: Statistics of WebRTC media

Start at: 2018-10-26 11:39:21
End at: 2018-10-26 11:39:51
Local clock offset: -1.577 ms
Remote clock offset: -4.059 ms

Below is generated by plot.py at 2018-10-26 12:58:54
Datalink statistics
-- Total of 3 flows:
Average throughput: 2.99 Mbit/s
95th percentile per-packet one-way delay: 1.146 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.45 Mbit/s
95th percentile per-packet one-way delay: 1.139 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.10 Mbit/s
95th percentile per-packet one-way delay: 1.146 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.46 Mbit/s
95th percentile per-packet one-way delay: 1.156 ms
Loss rate: 0.00%

Run 5: Report of WebRTC media — Data Link

