

Pantheon Report

Generated at 2018-09-07 23:54:51 (UTC).

Data path: India cellular on `ppp0` (*remote*) → AWS India 1 on `ens5` (*local*).

Repeated the test of 18 congestion control schemes 3 times.

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

NTP offsets were measured against `nets.org.sg` and have been applied to correct the timestamps in logs.

System info:

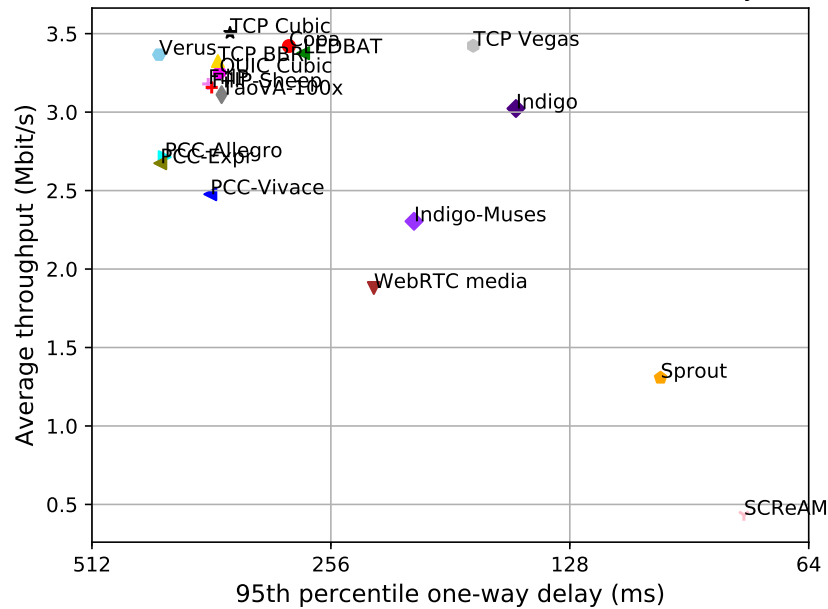
```
Linux 4.15.0-1020-aws
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912
net.ipv4.tcp_mem = 536870912 536870912 536870912
```

Git summary:

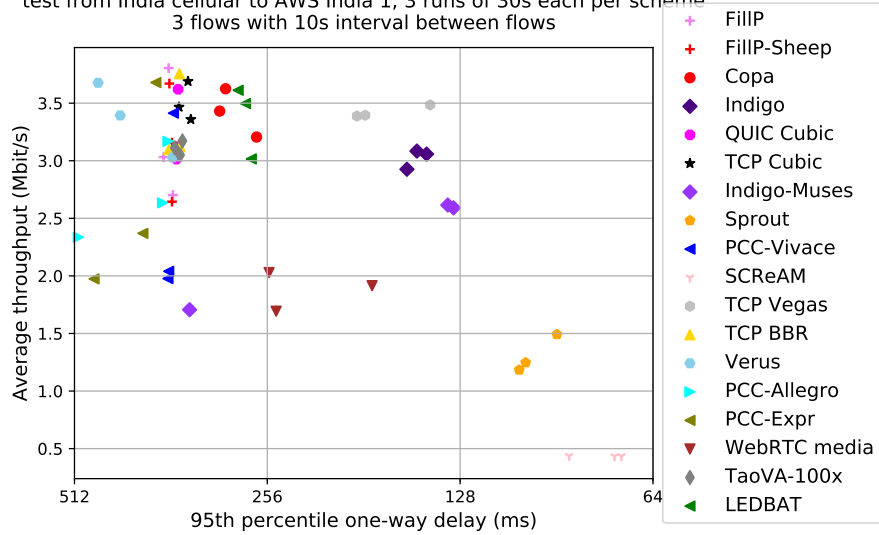
```
branch: muses @ e0a9b05ad97d268013b7cc9a9c95637b593a1b4c
third_party/fillp @ d47f4fa1b454a5e3c0537115c5a28436dbd4b834
third_party/fillp-sheep @ daed0c84f98531712514b2231f43ec6901114ffe
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdf5e58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/muses @ 7631aea3923a3598767c87765ae5103aca0678d3
third_party/pantheon-tunnel @ cbfce6db5ff5740dafa1771f813cd646339e1952
third_party/pcc @ 1afc958fa0d66d18b623c091a55fec872b4981e1
M receiver/src/buffer.h
M receiver/src/core.cpp
M sender/src/buffer.h
M sender/src/core.cpp
third_party/pcc-experimental @ cd43e34e3f5f5613e8acd08fab92c4eb24f974ab
third_party/proto-quick @ 77961f1a82733a86b42f1bc8143ebc978f3cff42
third_party/scream-reproduce @ f099118d1421aa3131bf11ff1964974e1da3bdb2
M src/ScreamClient
M src/ScreamServer
third_party/sprout @ 366e35c6178b01e31d4a46ad18c74f9415f19a26
M src/examples/cellsim.cc
M src/examples/sproutbt2.cc
M src/network/sproutconn.cc
third_party/verus @ d4b447ea74c6c60a261149af2629562939f9a494
M src/verus.hpp
```

```
M tools/plot.py
third_party/vivace @ 2baf86211435ae071a32f96b7d8c504587f5d7f4
third_party/webrtc @ 3f0cc2a9061a41b6f9dde4735770d143a1fa2851
```

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



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



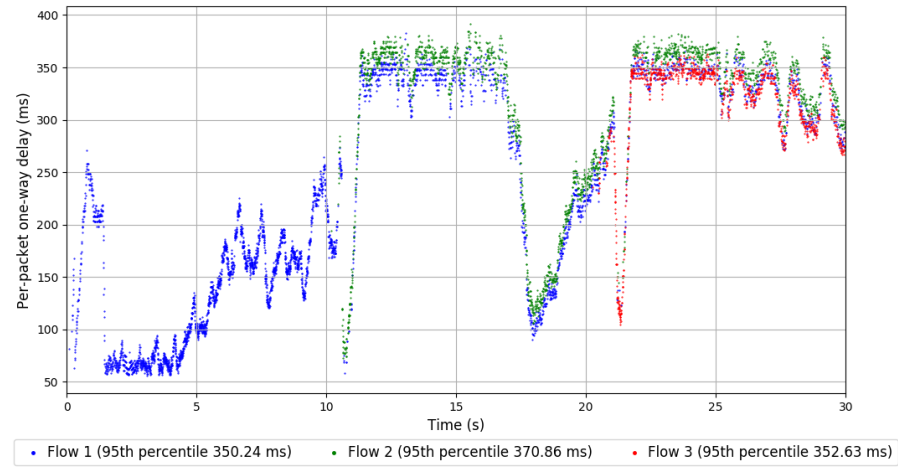
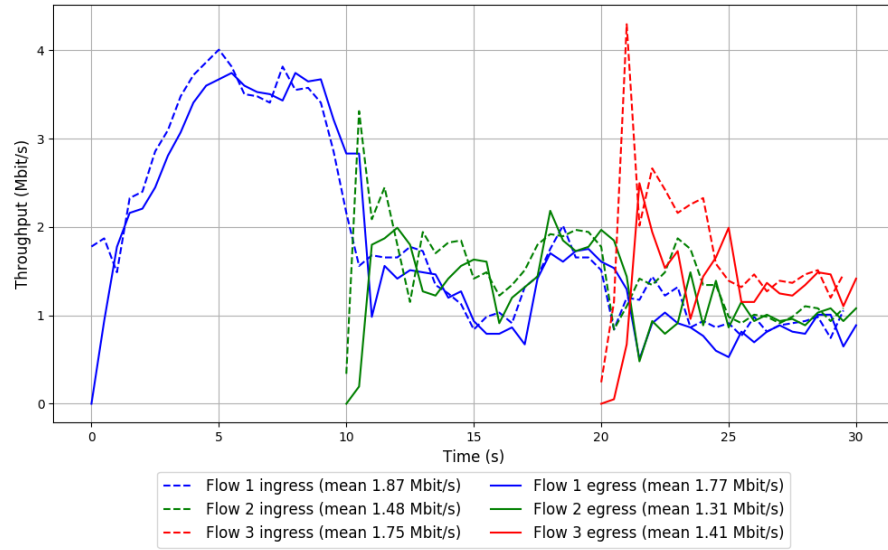
scheme	# runs	mean avg tput (Mbit/s)			mean 95th-%ile delay (ms)			mean loss rate (%)		
		flow 1	flow 2	flow 3	flow 1	flow 2	flow 3	flow 1	flow 2	flow 3
TCP BBR	3	2.00	1.36	1.32	348.18	358.55	349.49	3.32	8.15	14.30
Copa	3	2.09	1.41	1.19	280.99	291.68	308.47	0.39	0.82	2.04
TCP Cubic	3	2.48	1.06	1.01	340.15	347.82	354.22	1.87	3.30	4.61
FillP	3	2.08	1.10	1.17	366.07	356.91	363.17	44.66	25.74	28.55
FillP-Sheep	3	1.88	1.36	1.18	355.55	359.51	364.14	17.91	28.69	49.43
Indigo	3	1.48	1.46	1.75	145.51	150.67	155.51	0.28	0.37	1.02
LEDBAT	3	1.90	1.89	0.79	240.08	288.21	301.86	0.16	1.40	3.73
Indigo-Muses	3	1.16	1.09	1.28	173.83	189.31	237.81	1.56	1.50	4.53
PCC-Allegro	3	1.53	1.25	1.12	359.39	471.78	661.35	32.06	47.54	73.13
PCC-Expr	3	1.57	1.31	0.76	368.88	467.05	416.85	58.62	68.22	77.47
QUIC Cubic	3	2.22	1.07	1.02	350.49	353.44	357.40	4.62	7.36	9.12
SCReAM	3	0.22	0.22	0.22	71.86	76.79	75.76	0.26	0.39	0.64
Sprout	3	0.65	0.64	0.71	98.15	99.11	95.90	0.23	0.49	1.14
TaoVA-100x	3	1.94	1.25	1.06	339.35	352.49	369.84	5.41	13.27	26.26
TCP Vegas	3	1.80	1.53	1.83	161.22	174.94	178.48	0.28	0.28	0.93
Verus	3	2.83	0.42	0.86	357.22	409.41	512.97	33.00	65.26	65.87
PCC-Vivace	3	1.39	1.05	1.22	355.12	363.17	360.72	15.54	25.83	39.10
WebRTC media	3	0.99	0.69	0.21	219.60	212.52	249.55	0.54	0.80	1.79

Run 1: Statistics of TCP BBR

Start at: 2018-09-07 23:11:54
End at: 2018-09-07 23:12:24
Local clock offset: 0.545 ms
Remote clock offset: -2.001 ms

Below is generated by plot.py at 2018-09-07 23:54:02
Datalink statistics
-- Total of 3 flows:
Average throughput: 3.10 Mbit/s
95th percentile per-packet one-way delay: 364.505 ms
Loss rate: 10.30%
-- Flow 1:
Average throughput: 1.77 Mbit/s
95th percentile per-packet one-way delay: 350.235 ms
Loss rate: 5.60%
-- Flow 2:
Average throughput: 1.31 Mbit/s
95th percentile per-packet one-way delay: 370.855 ms
Loss rate: 12.56%
-- Flow 3:
Average throughput: 1.41 Mbit/s
95th percentile per-packet one-way delay: 352.632 ms
Loss rate: 21.55%

Run 1: Report of TCP BBR — Data Link

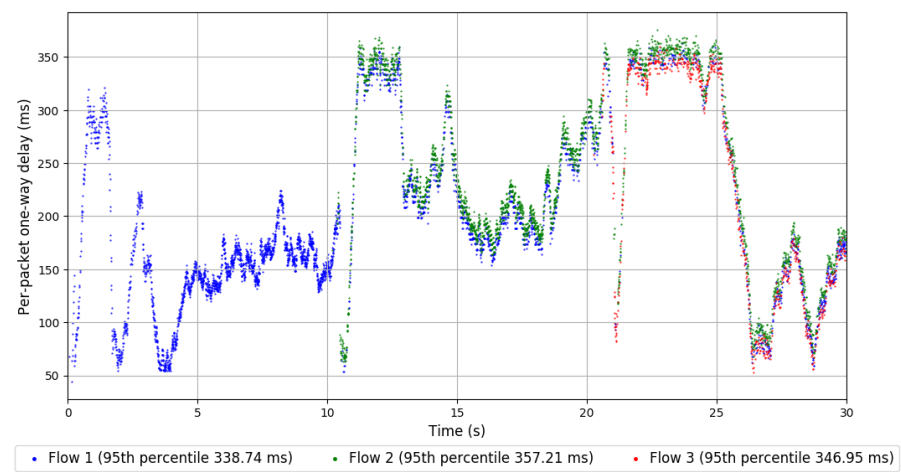
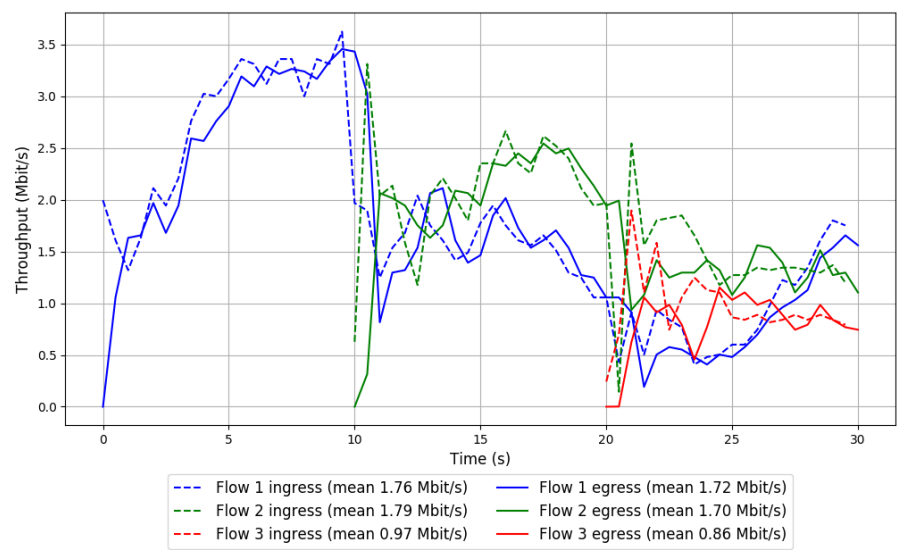


Run 2: Statistics of TCP BBR

Start at: 2018-09-07 23:32:02
End at: 2018-09-07 23:32:32
Local clock offset: -1.195 ms
Remote clock offset: -1.723 ms

Below is generated by plot.py at 2018-09-07 23:54:02
Datalink statistics
-- Total of 3 flows:
Average throughput: 3.12 Mbit/s
95th percentile per-packet one-way delay: 350.282 ms
Loss rate: 4.81%
-- Flow 1:
Average throughput: 1.72 Mbit/s
95th percentile per-packet one-way delay: 338.744 ms
Loss rate: 2.42%
-- Flow 2:
Average throughput: 1.70 Mbit/s
95th percentile per-packet one-way delay: 357.213 ms
Loss rate: 5.94%
-- Flow 3:
Average throughput: 0.86 Mbit/s
95th percentile per-packet one-way delay: 346.950 ms
Loss rate: 13.68%

Run 2: Report of TCP BBR — Data Link

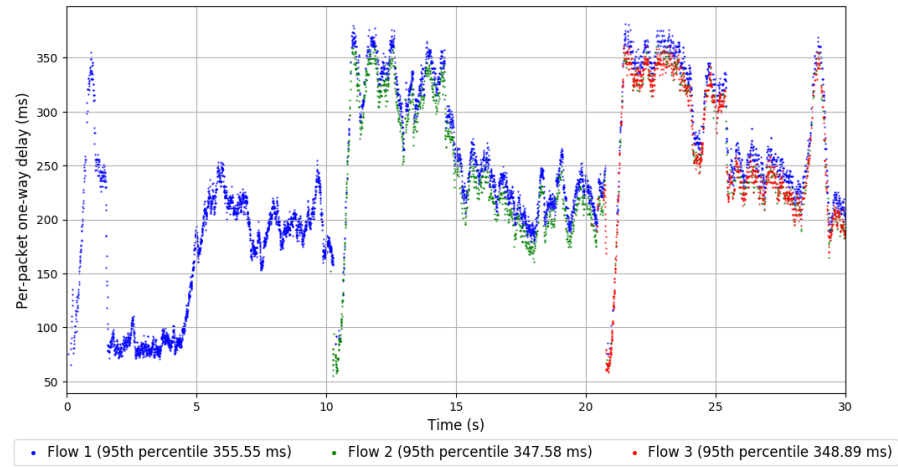
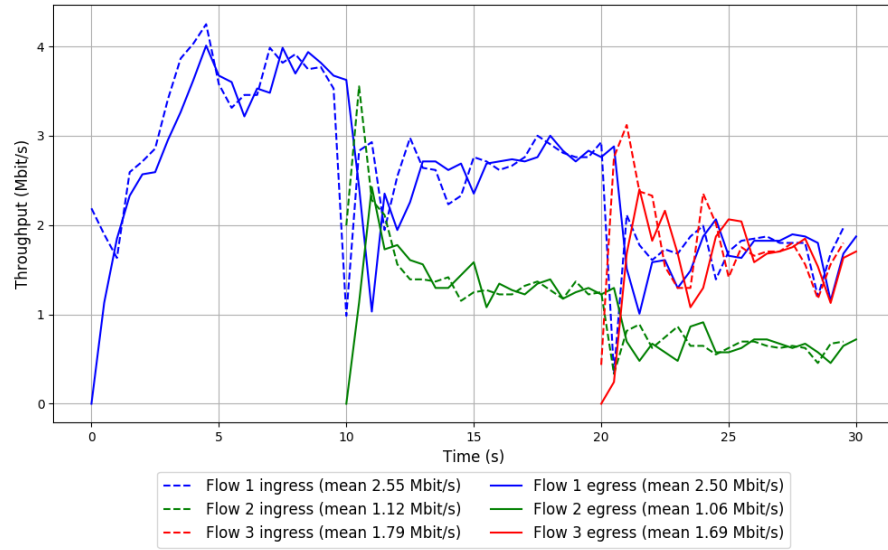


Run 3: Statistics of TCP BBR

Start at: 2018-09-07 23:52:11
End at: 2018-09-07 23:52:42
Local clock offset: 2.044 ms
Remote clock offset: -1.218 ms

Below is generated by plot.py at 2018-09-07 23:54:03
Datalink statistics
-- Total of 3 flows:
Average throughput: 3.76 Mbit/s
95th percentile per-packet one-way delay: 351.126 ms
Loss rate: 3.59%
-- Flow 1:
Average throughput: 2.50 Mbit/s
95th percentile per-packet one-way delay: 355.551 ms
Loss rate: 1.93%
-- Flow 2:
Average throughput: 1.06 Mbit/s
95th percentile per-packet one-way delay: 347.576 ms
Loss rate: 5.96%
-- Flow 3:
Average throughput: 1.69 Mbit/s
95th percentile per-packet one-way delay: 348.889 ms
Loss rate: 7.68%

Run 3: Report of TCP BBR — Data Link

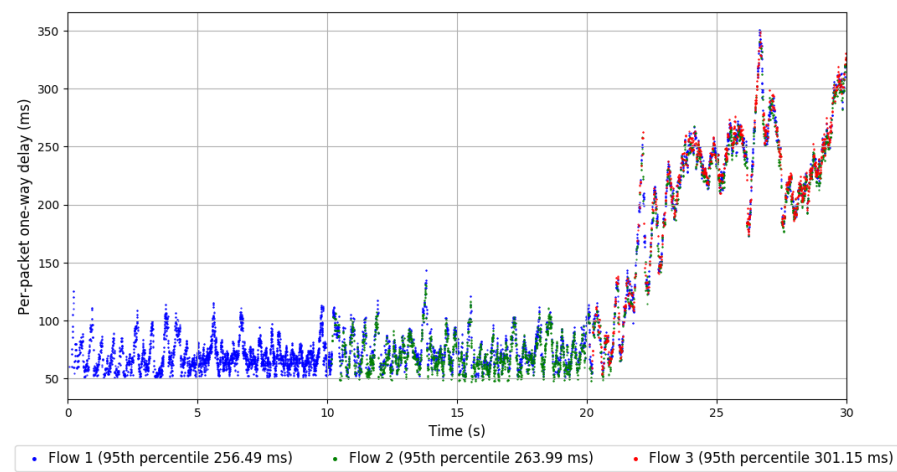
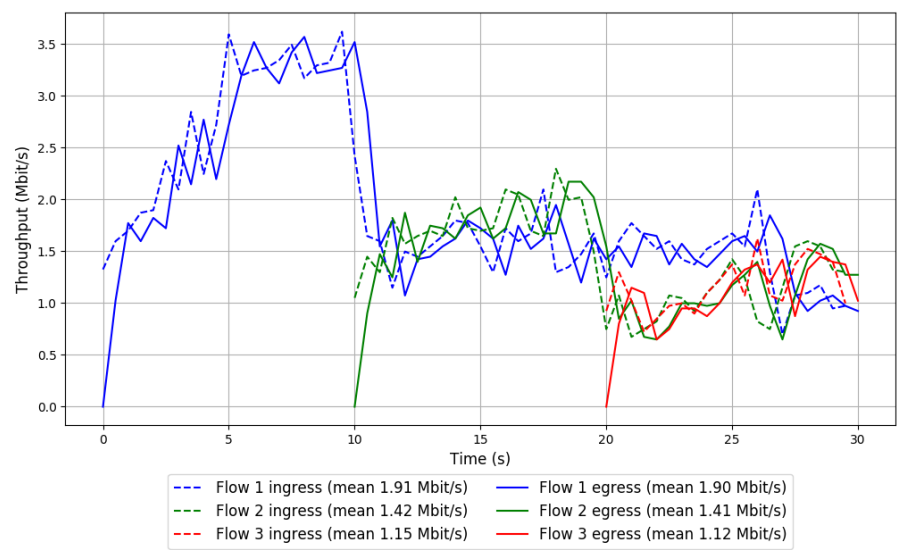


Run 1: Statistics of Copa

Start at: 2018-09-07 23:08:33
End at: 2018-09-07 23:09:03
Local clock offset: -4.19 ms
Remote clock offset: -2.282 ms

Below is generated by plot.py at 2018-09-07 23:54:06
Datalink statistics
-- Total of 3 flows:
Average throughput: 3.21 Mbit/s
95th percentile per-packet one-way delay: 266.101 ms
Loss rate: 1.19%
-- Flow 1:
Average throughput: 1.90 Mbit/s
95th percentile per-packet one-way delay: 256.490 ms
Loss rate: 0.61%
-- Flow 2:
Average throughput: 1.41 Mbit/s
95th percentile per-packet one-way delay: 263.987 ms
Loss rate: 1.45%
-- Flow 3:
Average throughput: 1.12 Mbit/s
95th percentile per-packet one-way delay: 301.152 ms
Loss rate: 3.39%

Run 1: Report of Copa — Data Link

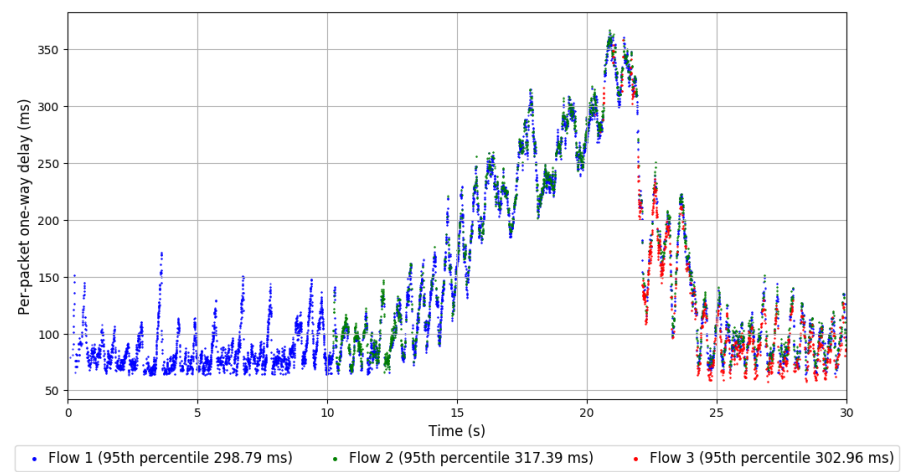
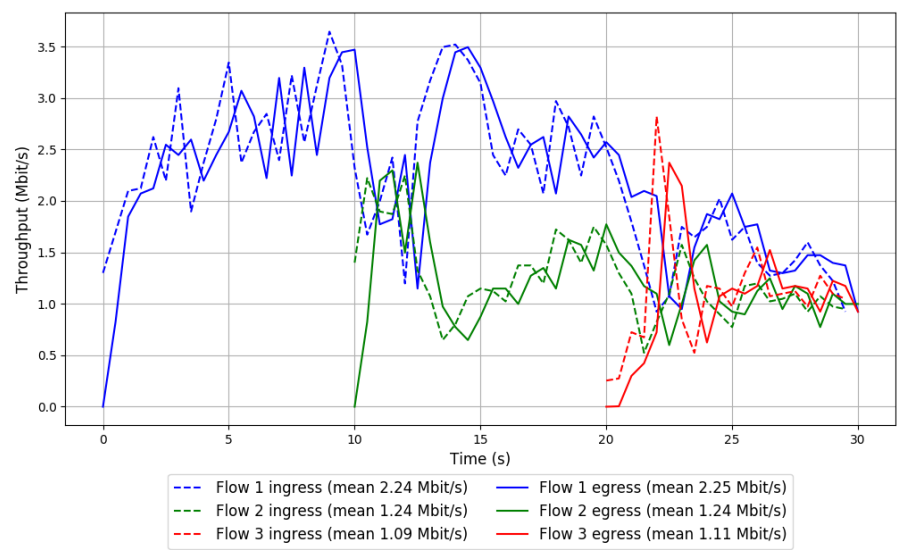


Run 2: Statistics of Copa

Start at: 2018-09-07 23:28:40
End at: 2018-09-07 23:29:10
Local clock offset: 1.004 ms
Remote clock offset: -2.975 ms

Below is generated by plot.py at 2018-09-07 23:54:07
Datalink statistics
-- Total of 3 flows:
Average throughput: 3.43 Mbit/s
95th percentile per-packet one-way delay: 303.800 ms
Loss rate: 0.42%
-- Flow 1:
Average throughput: 2.25 Mbit/s
95th percentile per-packet one-way delay: 298.786 ms
Loss rate: 0.23%
-- Flow 2:
Average throughput: 1.24 Mbit/s
95th percentile per-packet one-way delay: 317.393 ms
Loss rate: 0.46%
-- Flow 3:
Average throughput: 1.11 Mbit/s
95th percentile per-packet one-way delay: 302.956 ms
Loss rate: 1.50%

Run 2: Report of Copa — Data Link

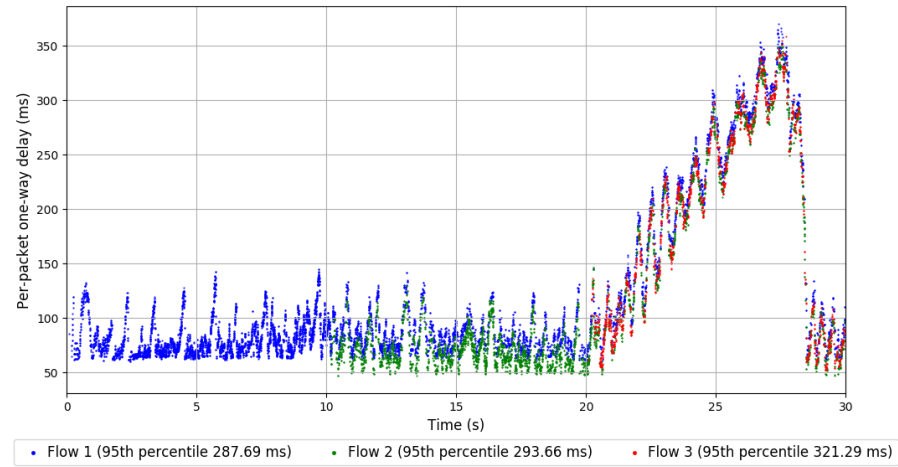
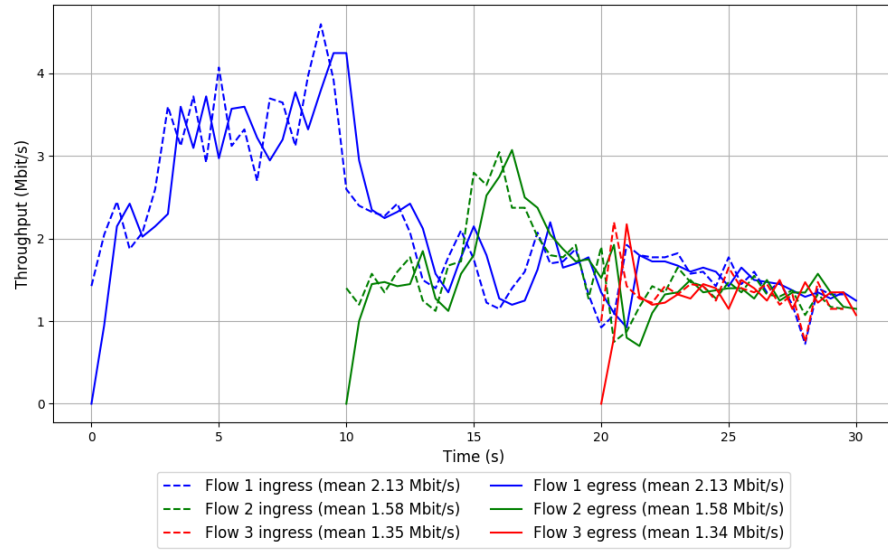


Run 3: Statistics of Copa

Start at: 2018-09-07 23:48:49
End at: 2018-09-07 23:49:19
Local clock offset: -2.731 ms
Remote clock offset: -2.334 ms

Below is generated by plot.py at 2018-09-07 23:54:08
Datalink statistics
-- Total of 3 flows:
Average throughput: 3.63 Mbit/s
95th percentile per-packet one-way delay: 297.431 ms
Loss rate: 0.51%
-- Flow 1:
Average throughput: 2.13 Mbit/s
95th percentile per-packet one-way delay: 287.694 ms
Loss rate: 0.34%
-- Flow 2:
Average throughput: 1.58 Mbit/s
95th percentile per-packet one-way delay: 293.657 ms
Loss rate: 0.56%
-- Flow 3:
Average throughput: 1.34 Mbit/s
95th percentile per-packet one-way delay: 321.293 ms
Loss rate: 1.22%

Run 3: Report of Copa — Data Link

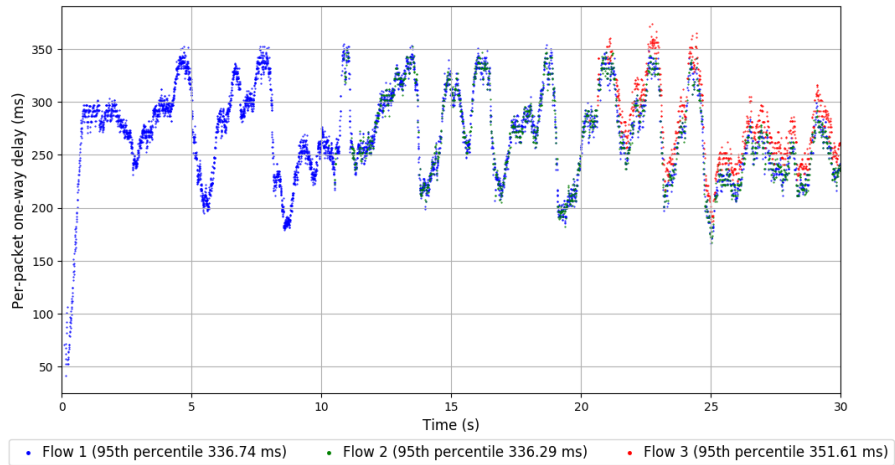
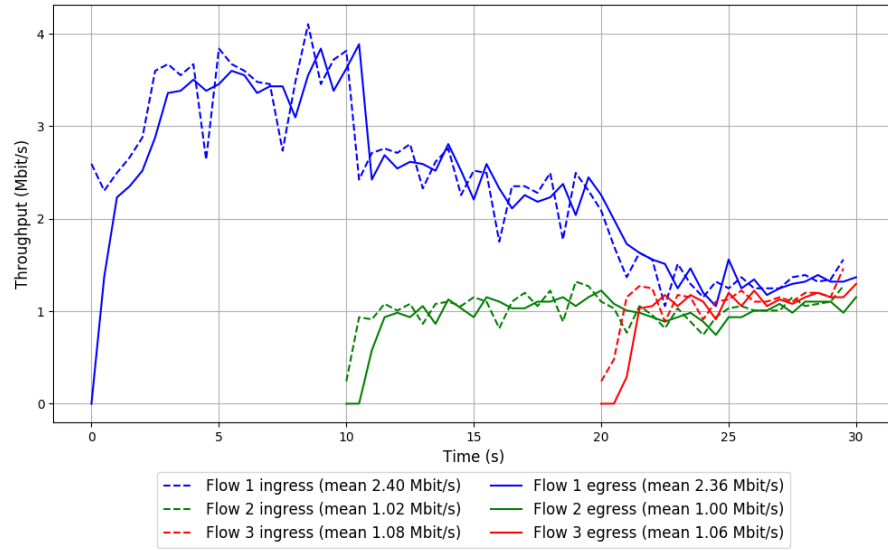


Run 1: Statistics of TCP Cubic

Start at: 2018-09-07 23:04:05
End at: 2018-09-07 23:04:35
Local clock offset: -4.737 ms
Remote clock offset: -2.132 ms

Below is generated by plot.py at 2018-09-07 23:54:08
Datalink statistics
-- Total of 3 flows:
Average throughput: 3.36 Mbit/s
95th percentile per-packet one-way delay: 337.016 ms
Loss rate: 2.38%
-- Flow 1:
Average throughput: 2.36 Mbit/s
95th percentile per-packet one-way delay: 336.744 ms
Loss rate: 1.90%
-- Flow 2:
Average throughput: 1.00 Mbit/s
95th percentile per-packet one-way delay: 336.285 ms
Loss rate: 2.95%
-- Flow 3:
Average throughput: 1.06 Mbit/s
95th percentile per-packet one-way delay: 351.610 ms
Loss rate: 4.47%

Run 1: Report of TCP Cubic — Data Link

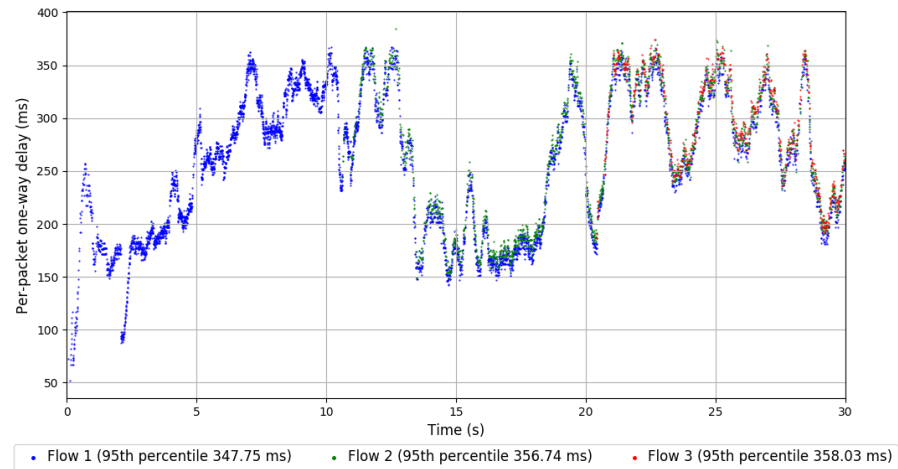
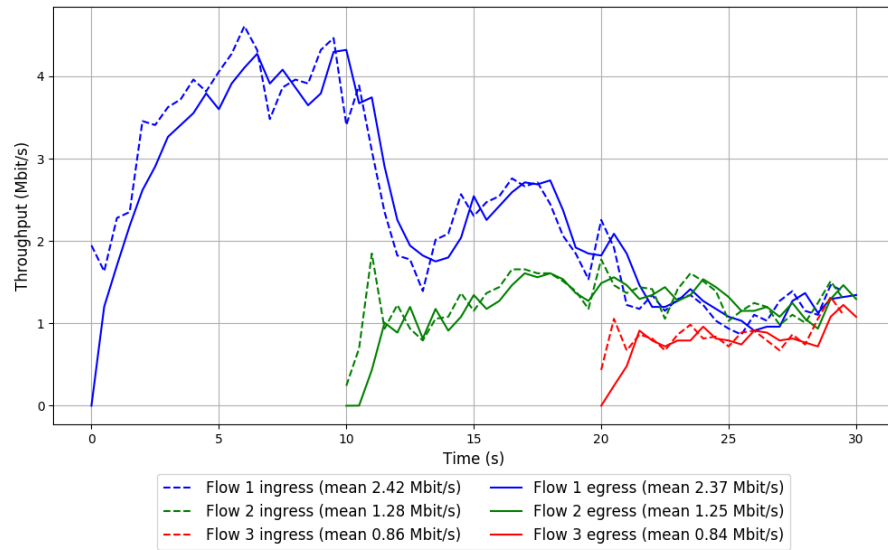


Run 2: Statistics of TCP Cubic

Start at: 2018-09-07 23:24:12
End at: 2018-09-07 23:24:42
Local clock offset: 2.286 ms
Remote clock offset: -3.303 ms

Below is generated by plot.py at 2018-09-07 23:54:08
Datalink statistics
-- Total of 3 flows:
Average throughput: 3.47 Mbit/s
95th percentile per-packet one-way delay: 351.624 ms
Loss rate: 2.65%
-- Flow 1:
Average throughput: 2.37 Mbit/s
95th percentile per-packet one-way delay: 347.747 ms
Loss rate: 2.07%
-- Flow 2:
Average throughput: 1.25 Mbit/s
95th percentile per-packet one-way delay: 356.740 ms
Loss rate: 3.67%
-- Flow 3:
Average throughput: 0.84 Mbit/s
95th percentile per-packet one-way delay: 358.026 ms
Loss rate: 4.49%

Run 2: Report of TCP Cubic — Data Link

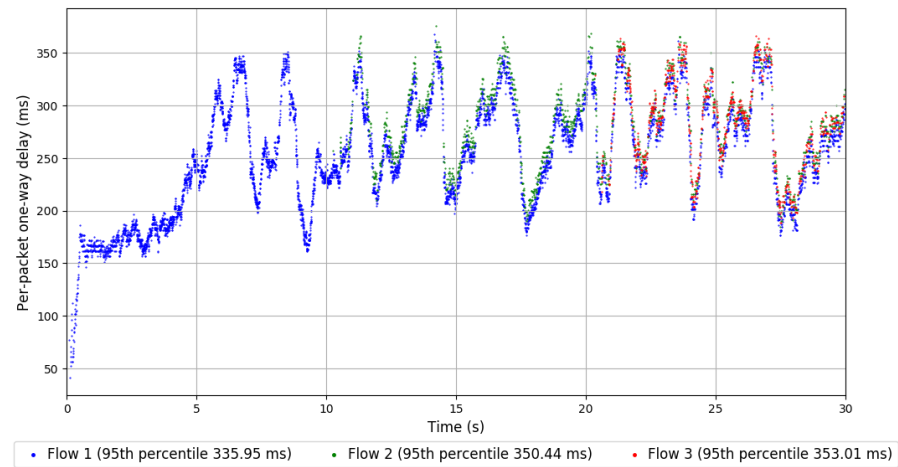
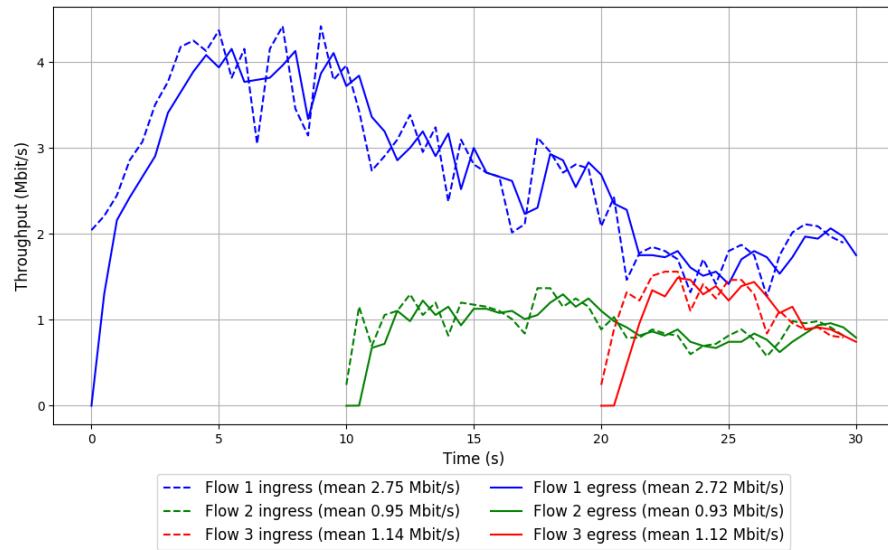


Run 3: Statistics of TCP Cubic

Start at: 2018-09-07 23:44:21
End at: 2018-09-07 23:44:51
Local clock offset: -1.489 ms
Remote clock offset: -3.074 ms

Below is generated by plot.py at 2018-09-07 23:54:09
Datalink statistics
-- Total of 3 flows:
Average throughput: 3.69 Mbit/s
95th percentile per-packet one-way delay: 340.441 ms
Loss rate: 2.24%
-- Flow 1:
Average throughput: 2.72 Mbit/s
95th percentile per-packet one-way delay: 335.954 ms
Loss rate: 1.64%
-- Flow 2:
Average throughput: 0.93 Mbit/s
95th percentile per-packet one-way delay: 350.438 ms
Loss rate: 3.29%
-- Flow 3:
Average throughput: 1.12 Mbit/s
95th percentile per-packet one-way delay: 353.012 ms
Loss rate: 4.88%

Run 3: Report of TCP Cubic — Data Link

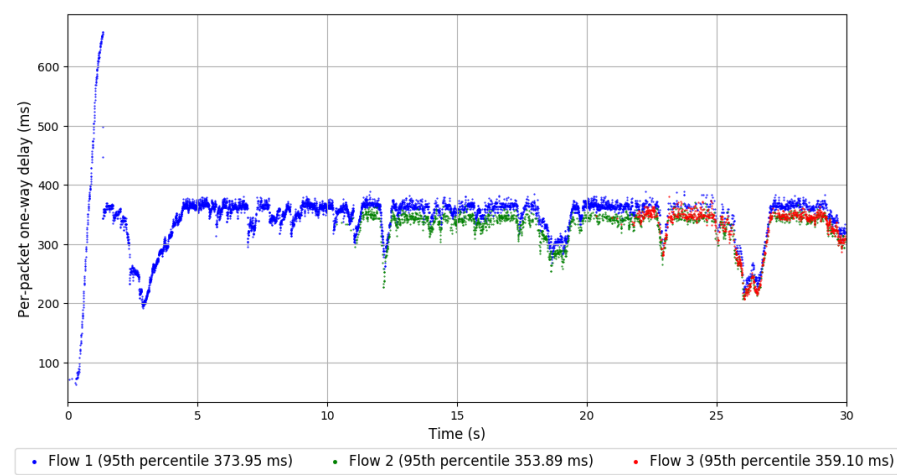
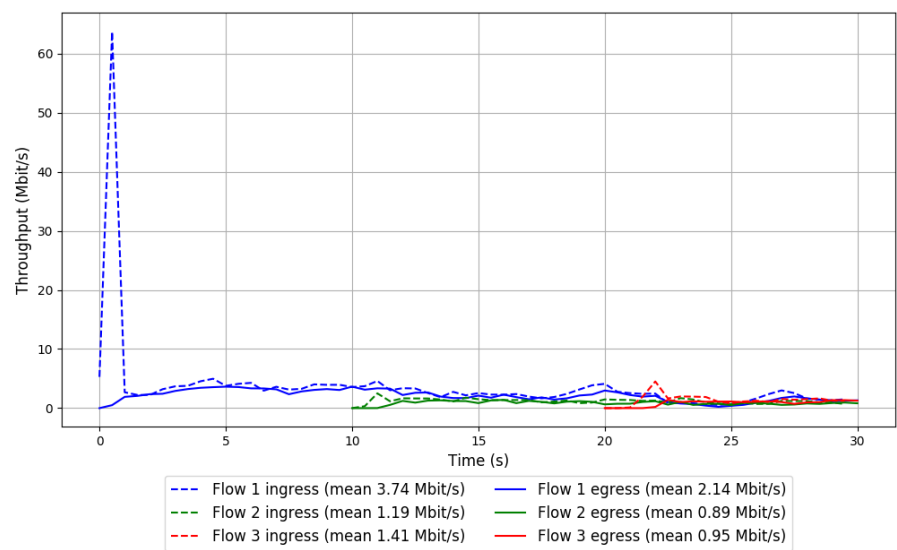


Run 1: Statistics of FillP

Start at: 2018-09-07 23:13:01
End at: 2018-09-07 23:13:31
Local clock offset: -0.757 ms
Remote clock offset: -2.793 ms

Below is generated by plot.py at 2018-09-07 23:54:11
Datalink statistics
-- Total of 3 flows:
Average throughput: 3.03 Mbit/s
95th percentile per-packet one-way delay: 371.773 ms
Loss rate: 39.51%
-- Flow 1:
Average throughput: 2.14 Mbit/s
95th percentile per-packet one-way delay: 373.948 ms
Loss rate: 42.85%
-- Flow 2:
Average throughput: 0.89 Mbit/s
95th percentile per-packet one-way delay: 353.888 ms
Loss rate: 26.14%
-- Flow 3:
Average throughput: 0.95 Mbit/s
95th percentile per-packet one-way delay: 359.103 ms
Loss rate: 35.40%

Run 1: Report of FillP — Data Link

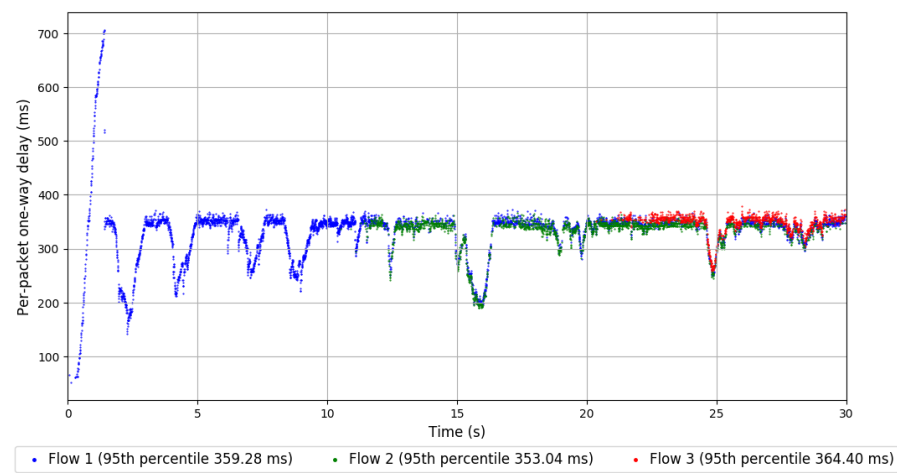
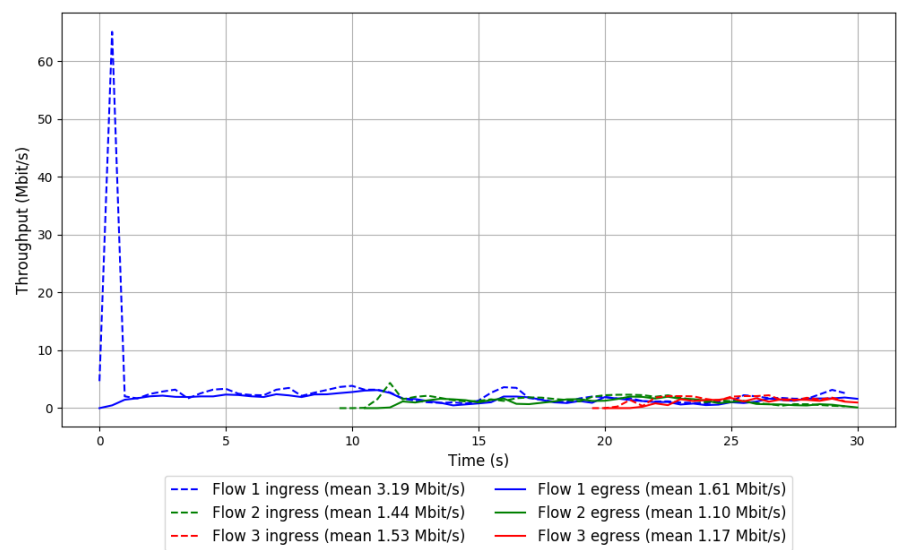


Run 2: Statistics of FillP

Start at: 2018-09-07 23:33:09
End at: 2018-09-07 23:33:39
Local clock offset: 0.568 ms
Remote clock offset: -3.028 ms

Below is generated by plot.py at 2018-09-07 23:54:11
Datalink statistics
-- Total of 3 flows:
Average throughput: 2.70 Mbit/s
95th percentile per-packet one-way delay: 359.449 ms
Loss rate: 42.06%
-- Flow 1:
Average throughput: 1.61 Mbit/s
95th percentile per-packet one-way delay: 359.283 ms
Loss rate: 49.57%
-- Flow 2:
Average throughput: 1.10 Mbit/s
95th percentile per-packet one-way delay: 353.036 ms
Loss rate: 25.45%
-- Flow 3:
Average throughput: 1.17 Mbit/s
95th percentile per-packet one-way delay: 364.399 ms
Loss rate: 26.30%

Run 2: Report of FillP — Data Link

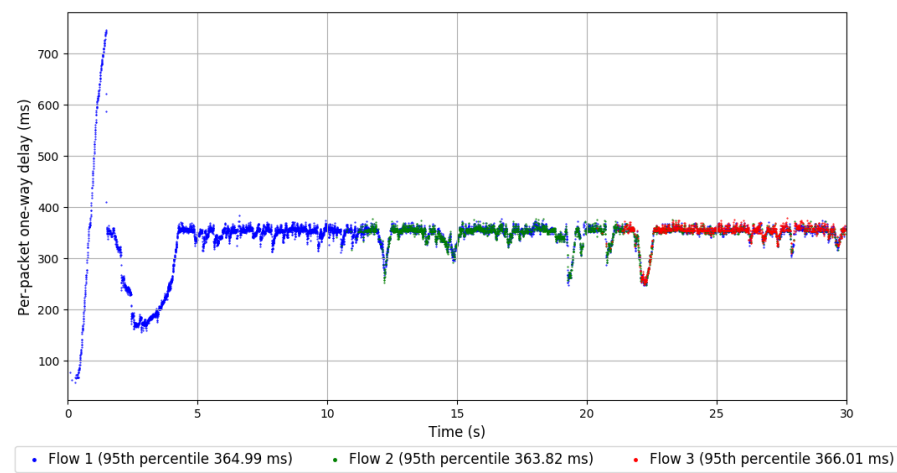
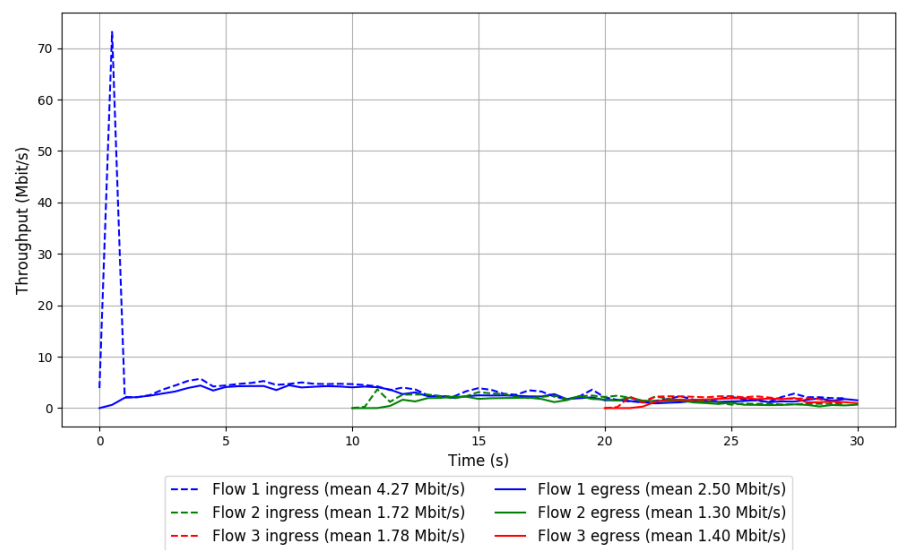


Run 3: Statistics of FillP

Start at: 2018-09-07 23:53:18
End at: 2018-09-07 23:53:48
Local clock offset: 1.098 ms
Remote clock offset: -2.755 ms

Below is generated by plot.py at 2018-09-07 23:54:13
Datalink statistics
-- Total of 3 flows:
Average throughput: 3.80 Mbit/s
95th percentile per-packet one-way delay: 365.001 ms
Loss rate: 36.78%
-- Flow 1:
Average throughput: 2.50 Mbit/s
95th percentile per-packet one-way delay: 364.989 ms
Loss rate: 41.56%
-- Flow 2:
Average throughput: 1.30 Mbit/s
95th percentile per-packet one-way delay: 363.819 ms
Loss rate: 25.62%
-- Flow 3:
Average throughput: 1.40 Mbit/s
95th percentile per-packet one-way delay: 366.014 ms
Loss rate: 23.94%

Run 3: Report of FillP — Data Link

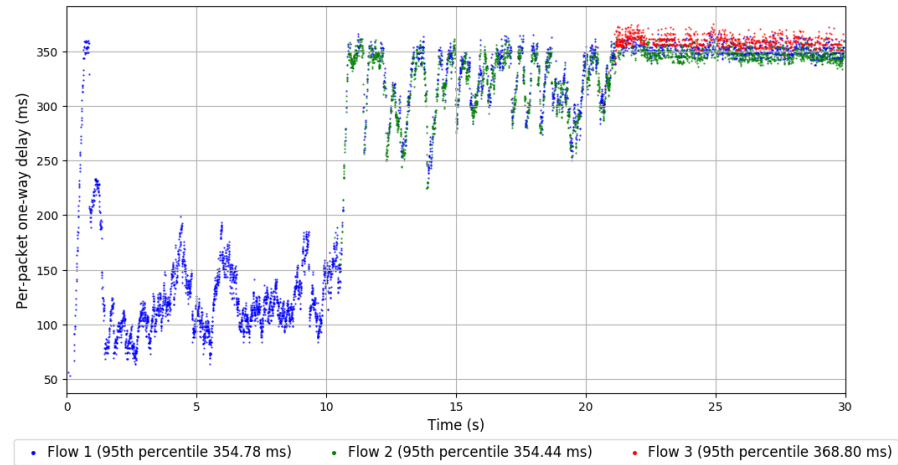
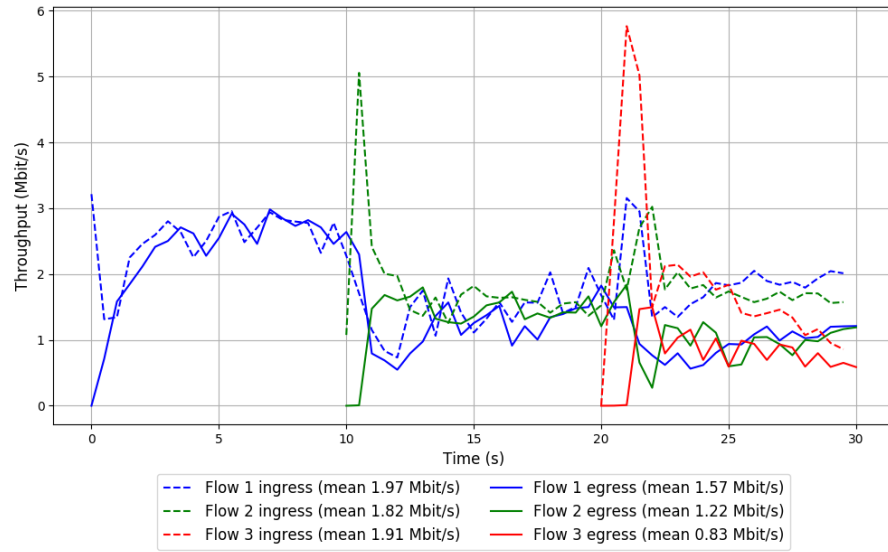


Run 1: Statistics of FillP-Sheep

Start at: 2018-09-07 22:56:11
End at: 2018-09-07 22:56:41
Local clock offset: -0.417 ms
Remote clock offset: -3.436 ms

Below is generated by plot.py at 2018-09-07 23:54:13
Datalink statistics
-- Total of 3 flows:
Average throughput: 2.64 Mbit/s
95th percentile per-packet one-way delay: 360.633 ms
Loss rate: 30.92%
-- Flow 1:
Average throughput: 1.57 Mbit/s
95th percentile per-packet one-way delay: 354.779 ms
Loss rate: 20.73%
-- Flow 2:
Average throughput: 1.22 Mbit/s
95th percentile per-packet one-way delay: 354.440 ms
Loss rate: 33.31%
-- Flow 3:
Average throughput: 0.83 Mbit/s
95th percentile per-packet one-way delay: 368.799 ms
Loss rate: 58.03%

Run 1: Report of FillP-Sheep — Data Link

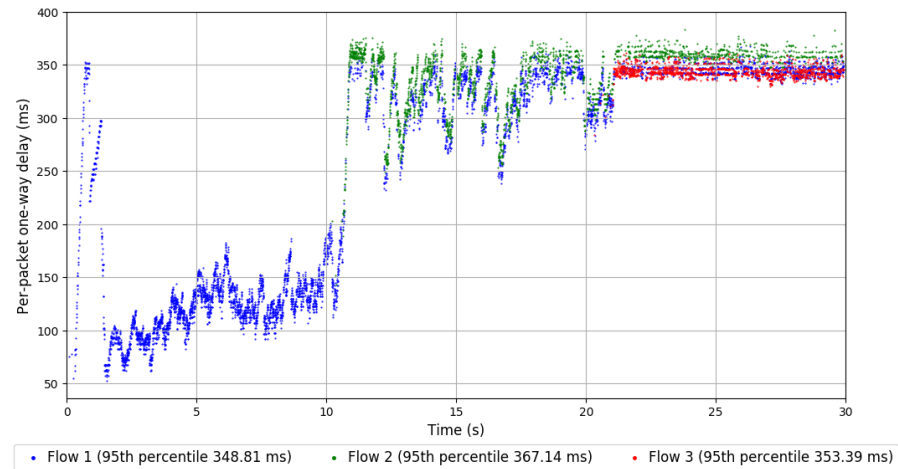
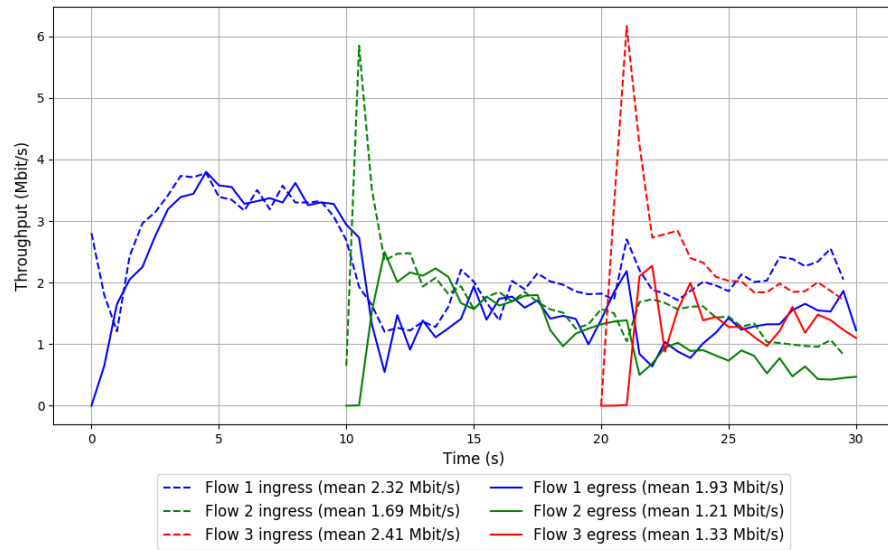


Run 2: Statistics of FillP-Sheep

Start at: 2018-09-07 23:16:23
End at: 2018-09-07 23:16:53
Local clock offset: -4.16 ms
Remote clock offset: -1.835 ms

Below is generated by plot.py at 2018-09-07 23:54:15
Datalink statistics
-- Total of 3 flows:
Average throughput: 3.16 Mbit/s
95th percentile per-packet one-way delay: 360.568 ms
Loss rate: 25.93%
-- Flow 1:
Average throughput: 1.93 Mbit/s
95th percentile per-packet one-way delay: 348.811 ms
Loss rate: 17.10%
-- Flow 2:
Average throughput: 1.21 Mbit/s
95th percentile per-packet one-way delay: 367.141 ms
Loss rate: 29.42%
-- Flow 3:
Average throughput: 1.33 Mbit/s
95th percentile per-packet one-way delay: 353.391 ms
Loss rate: 46.69%

Run 2: Report of FillP-Sheep — Data Link

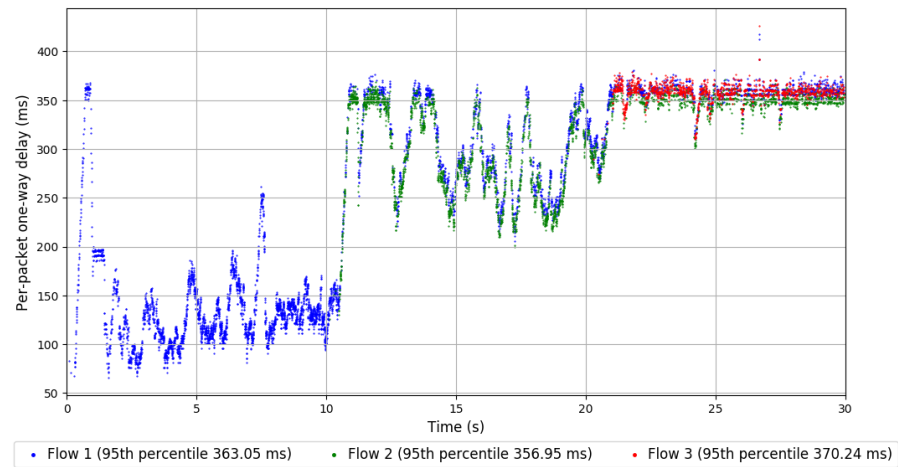
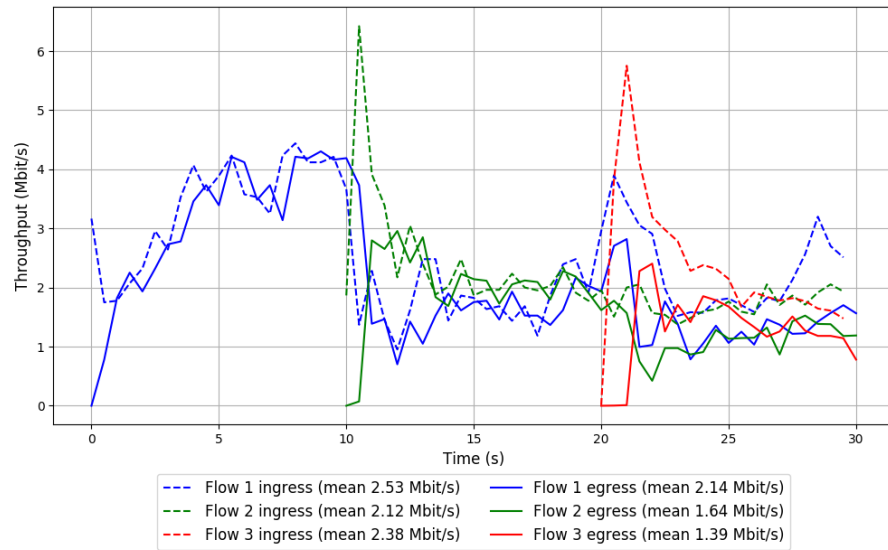


Run 3: Statistics of FillP-Sheep

Start at: 2018-09-07 23:36:30
End at: 2018-09-07 23:37:00
Local clock offset: 1.324 ms
Remote clock offset: -3.328 ms

Below is generated by plot.py at 2018-09-07 23:54:17
Datalink statistics
-- Total of 3 flows:
Average throughput: 3.67 Mbit/s
95th percentile per-packet one-way delay: 363.983 ms
Loss rate: 22.73%
-- Flow 1:
Average throughput: 2.14 Mbit/s
95th percentile per-packet one-way delay: 363.045 ms
Loss rate: 15.90%
-- Flow 2:
Average throughput: 1.64 Mbit/s
95th percentile per-packet one-way delay: 356.953 ms
Loss rate: 23.33%
-- Flow 3:
Average throughput: 1.39 Mbit/s
95th percentile per-packet one-way delay: 370.235 ms
Loss rate: 43.58%

Run 3: Report of FillP-Sheep — Data Link

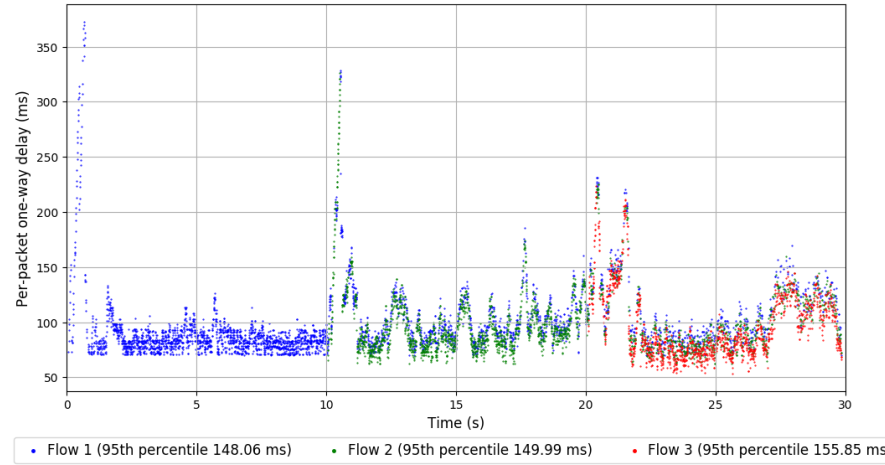
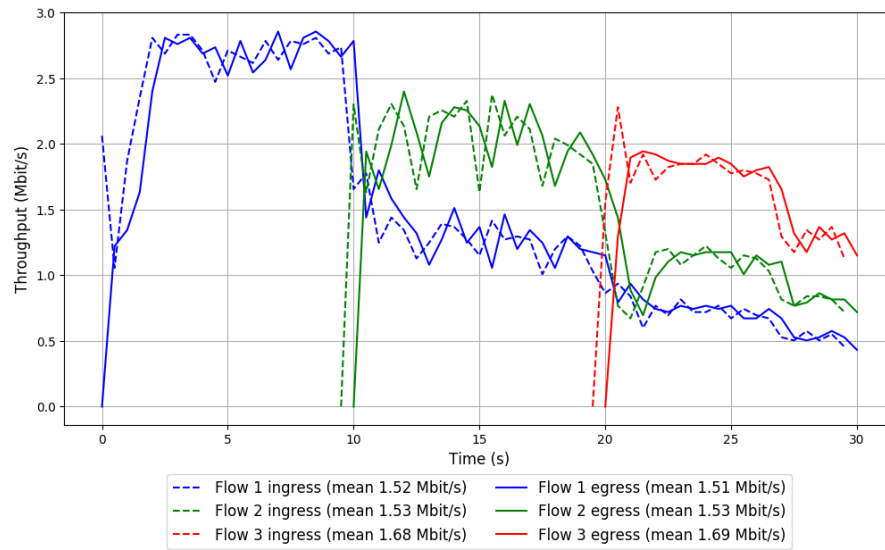


```
Run 1: Statistics of Indigo

Start at: 2018-09-07 23:05:12
End at: 2018-09-07 23:05:42
Local clock offset: -3.375 ms
Remote clock offset: -2.921 ms

# Below is generated by plot.py at 2018-09-07 23:54:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.08 Mbit/s
95th percentile per-packet one-way delay: 149.528 ms
Loss rate: 0.49%
-- Flow 1:
Average throughput: 1.51 Mbit/s
95th percentile per-packet one-way delay: 148.061 ms
Loss rate: 0.48%
-- Flow 2:
Average throughput: 1.53 Mbit/s
95th percentile per-packet one-way delay: 149.987 ms
Loss rate: 0.32%
-- Flow 3:
Average throughput: 1.69 Mbit/s
95th percentile per-packet one-way delay: 155.848 ms
Loss rate: 0.87%
```

Run 1: Report of Indigo — Data Link

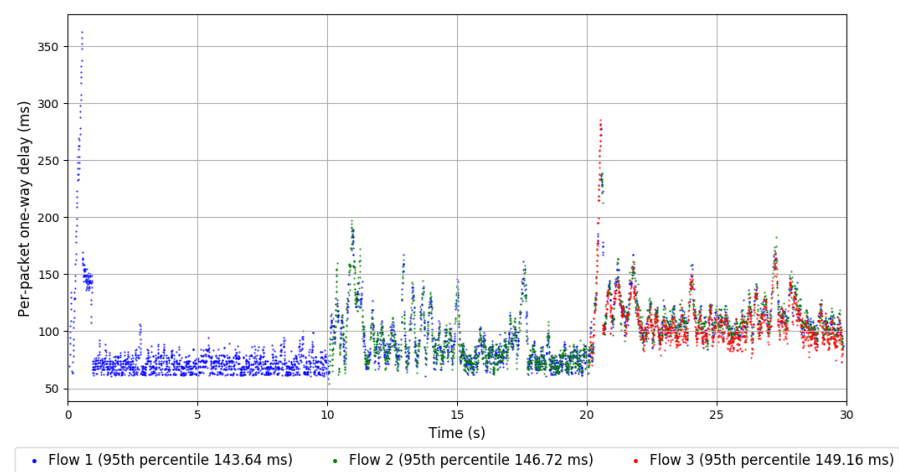
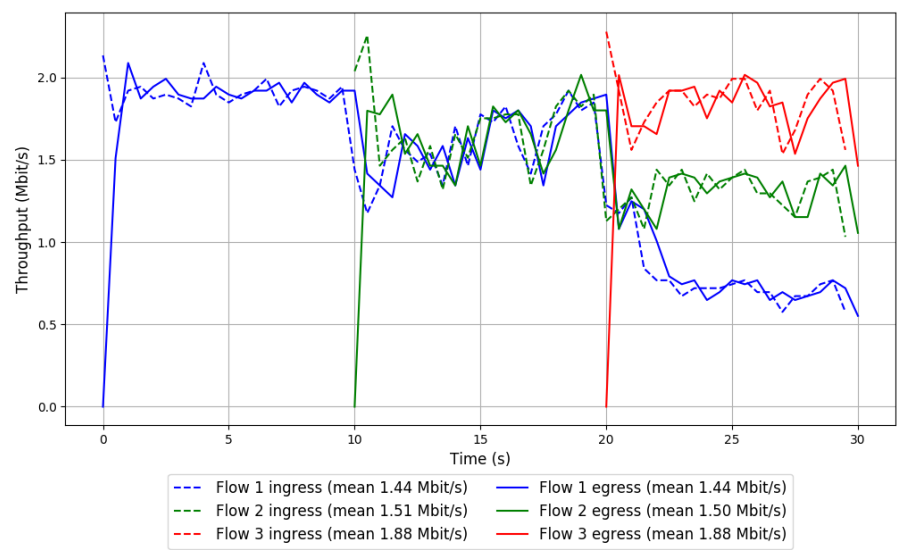


Run 2: Statistics of Indigo

Start at: 2018-09-07 23:25:20
End at: 2018-09-07 23:25:50
Local clock offset: -2.266 ms
Remote clock offset: -3.367 ms

```
# Below is generated by plot.py at 2018-09-07 23:54:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.06 Mbit/s
95th percentile per-packet one-way delay: 144.431 ms
Loss rate: 0.46%
-- Flow 1:
Average throughput: 1.44 Mbit/s
95th percentile per-packet one-way delay: 143.639 ms
Loss rate: 0.17%
-- Flow 2:
Average throughput: 1.50 Mbit/s
95th percentile per-packet one-way delay: 146.715 ms
Loss rate: 0.44%
-- Flow 3:
Average throughput: 1.88 Mbit/s
95th percentile per-packet one-way delay: 149.162 ms
Loss rate: 1.17%
```

Run 2: Report of Indigo — Data Link

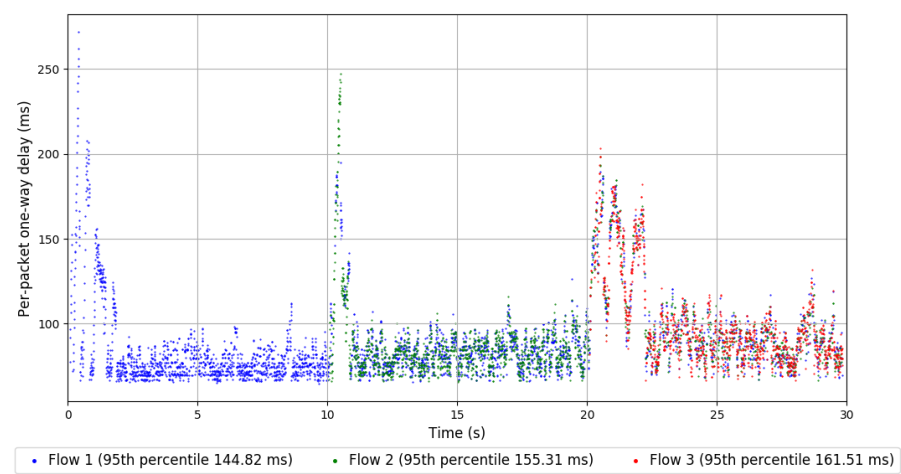
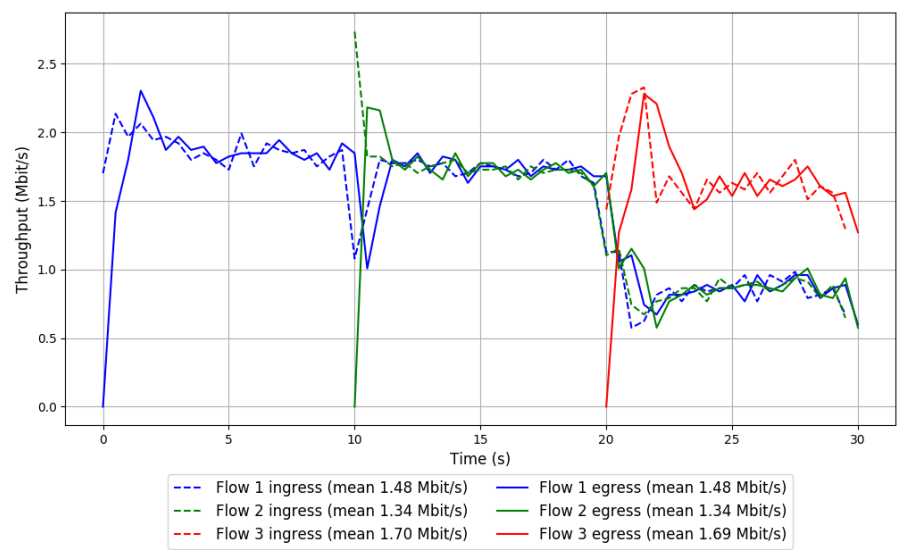


Run 3: Statistics of Indigo

Start at: 2018-09-07 23:45:28
End at: 2018-09-07 23:45:58
Local clock offset: 1.305 ms
Remote clock offset: -2.502 ms

```
# Below is generated by plot.py at 2018-09-07 23:54:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.93 Mbit/s
95th percentile per-packet one-way delay: 154.991 ms
Loss rate: 0.40%
-- Flow 1:
Average throughput: 1.48 Mbit/s
95th percentile per-packet one-way delay: 144.825 ms
Loss rate: 0.19%
-- Flow 2:
Average throughput: 1.34 Mbit/s
95th percentile per-packet one-way delay: 155.308 ms
Loss rate: 0.36%
-- Flow 3:
Average throughput: 1.69 Mbit/s
95th percentile per-packet one-way delay: 161.513 ms
Loss rate: 1.01%
```

Run 3: Report of Indigo — Data Link

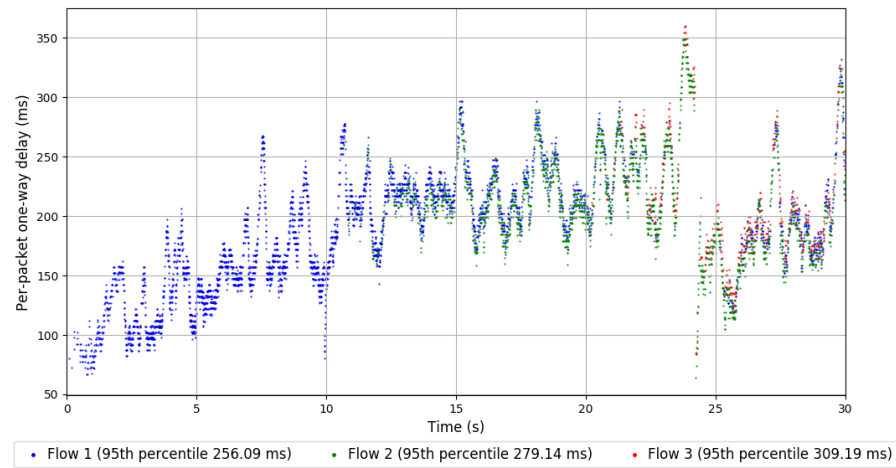
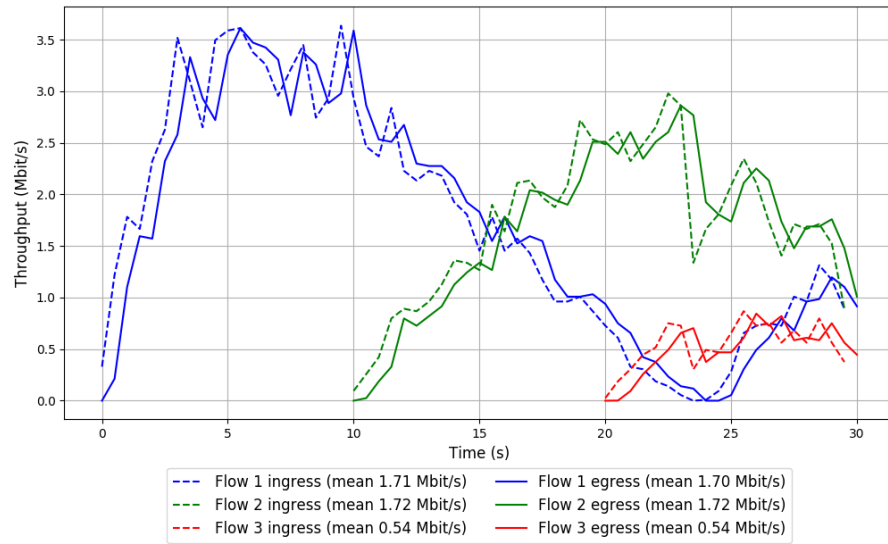


```
Run 1: Statistics of LEDBAT

Start at: 2018-09-07 23:07:26
End at: 2018-09-07 23:07:56
Local clock offset: -0.843 ms
Remote clock offset: -2.634 ms

# Below is generated by plot.py at 2018-09-07 23:54:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.02 Mbit/s
95th percentile per-packet one-way delay: 271.205 ms
Loss rate: 0.79%
-- Flow 1:
Average throughput: 1.70 Mbit/s
95th percentile per-packet one-way delay: 256.088 ms
Loss rate: 0.49%
-- Flow 2:
Average throughput: 1.72 Mbit/s
95th percentile per-packet one-way delay: 279.140 ms
Loss rate: 0.89%
-- Flow 3:
Average throughput: 0.54 Mbit/s
95th percentile per-packet one-way delay: 309.188 ms
Loss rate: 3.05%
```

Run 1: Report of LEDBAT — Data Link

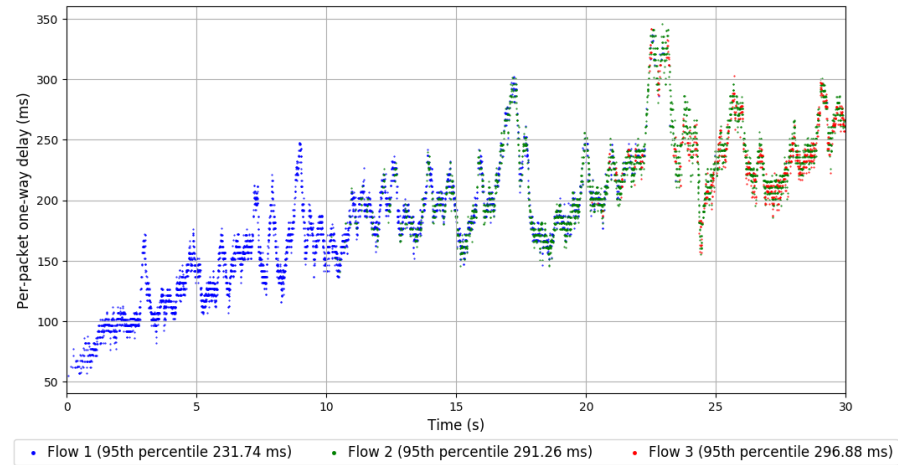
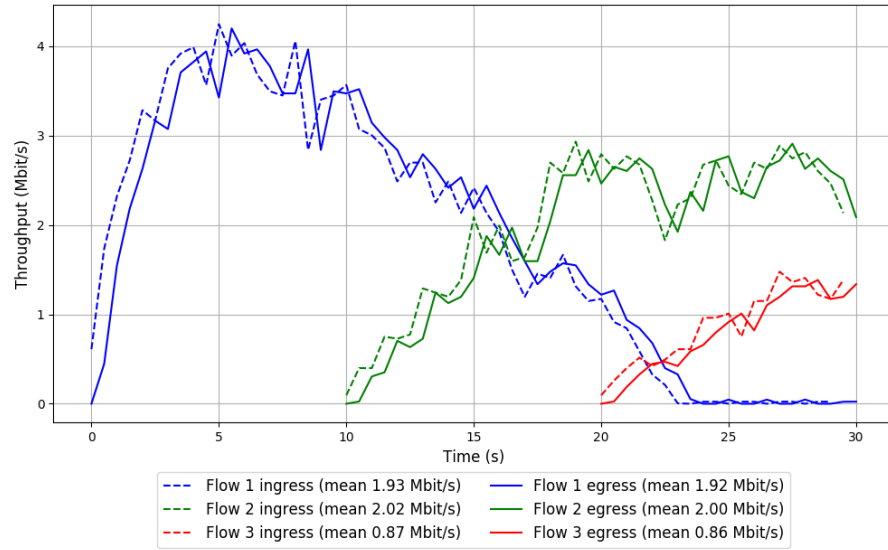


Run 2: Statistics of LEDBAT

Start at: 2018-09-07 23:27:33
End at: 2018-09-07 23:28:03
Local clock offset: 0.382 ms
Remote clock offset: -1.711 ms

Below is generated by plot.py at 2018-09-07 23:54:19
Datalink statistics
-- Total of 3 flows:
Average throughput: 3.50 Mbit/s
95th percentile per-packet one-way delay: 276.931 ms
Loss rate: 1.00%
-- Flow 1:
Average throughput: 1.92 Mbit/s
95th percentile per-packet one-way delay: 231.742 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 2.00 Mbit/s
95th percentile per-packet one-way delay: 291.258 ms
Loss rate: 1.72%
-- Flow 3:
Average throughput: 0.86 Mbit/s
95th percentile per-packet one-way delay: 296.884 ms
Loss rate: 4.18%

Run 2: Report of LEDBAT — Data Link

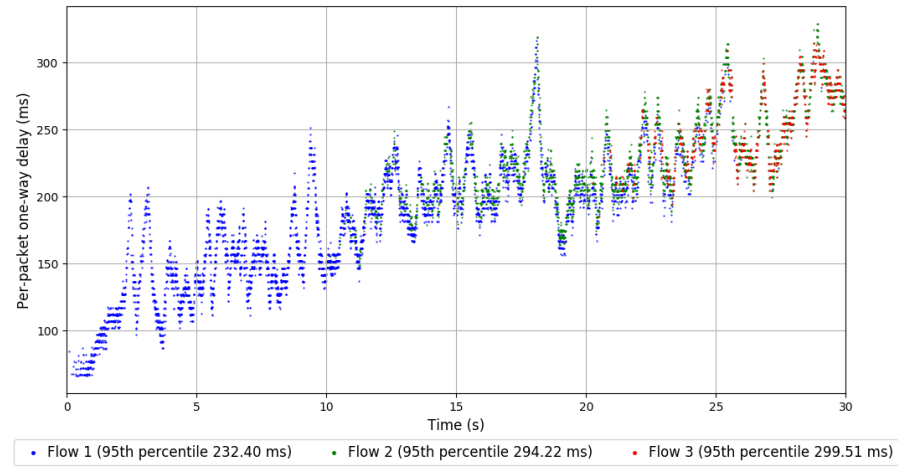
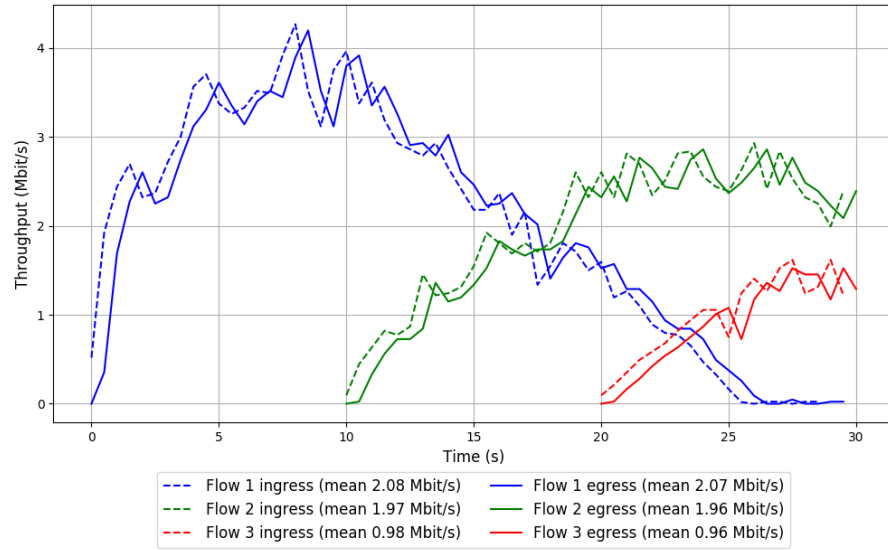


Run 3: Statistics of LEDBAT

Start at: 2018-09-07 23:47:42
End at: 2018-09-07 23:48:12
Local clock offset: 3.112 ms
Remote clock offset: -2.646 ms

Below is generated by plot.py at 2018-09-07 23:54:21
Datalink statistics
-- Total of 3 flows:
Average throughput: 3.61 Mbit/s
95th percentile per-packet one-way delay: 284.319 ms
Loss rate: 0.93%
-- Flow 1:
Average throughput: 2.07 Mbit/s
95th percentile per-packet one-way delay: 232.397 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.96 Mbit/s
95th percentile per-packet one-way delay: 294.219 ms
Loss rate: 1.58%
-- Flow 3:
Average throughput: 0.96 Mbit/s
95th percentile per-packet one-way delay: 299.513 ms
Loss rate: 3.97%

Run 3: Report of LEDBAT — Data Link

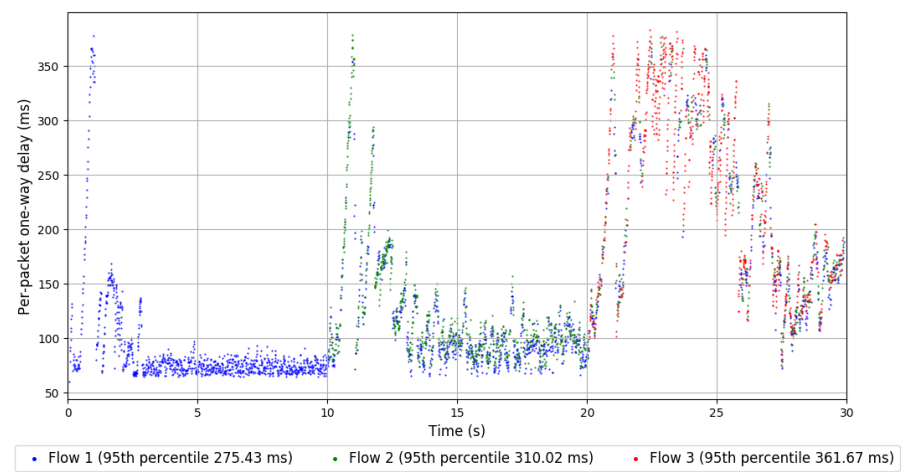
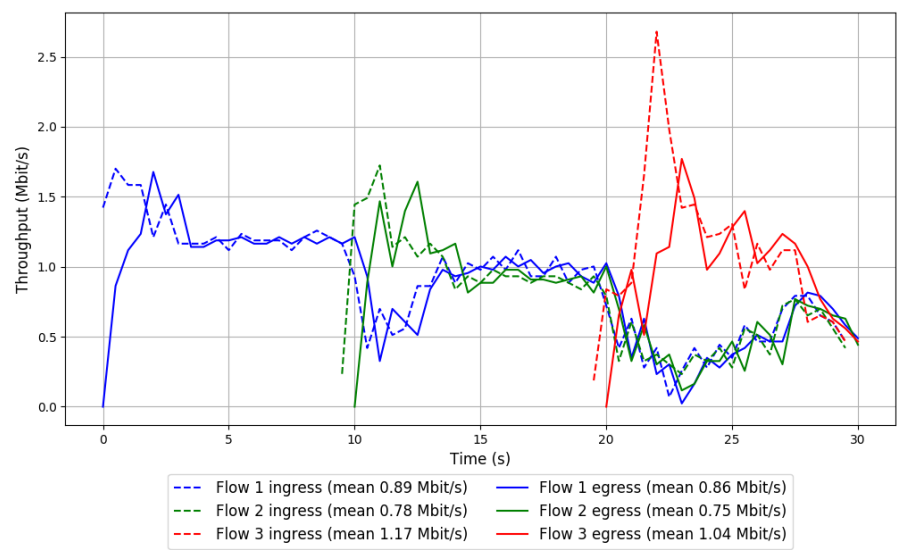


Run 1: Statistics of Indigo-Muses

Start at: 2018-09-07 23:01:52
End at: 2018-09-07 23:02:22
Local clock offset: -1.05 ms
Remote clock offset: -2.627 ms

Below is generated by plot.py at 2018-09-07 23:54:21
Datalink statistics
-- Total of 3 flows:
Average throughput: 1.71 Mbit/s
95th percentile per-packet one-way delay: 338.516 ms
Loss rate: 5.23%
-- Flow 1:
Average throughput: 0.86 Mbit/s
95th percentile per-packet one-way delay: 275.429 ms
Loss rate: 3.07%
-- Flow 2:
Average throughput: 0.75 Mbit/s
95th percentile per-packet one-way delay: 310.017 ms
Loss rate: 3.75%
-- Flow 3:
Average throughput: 1.04 Mbit/s
95th percentile per-packet one-way delay: 361.673 ms
Loss rate: 12.16%

Run 1: Report of Indigo-Muses — Data Link

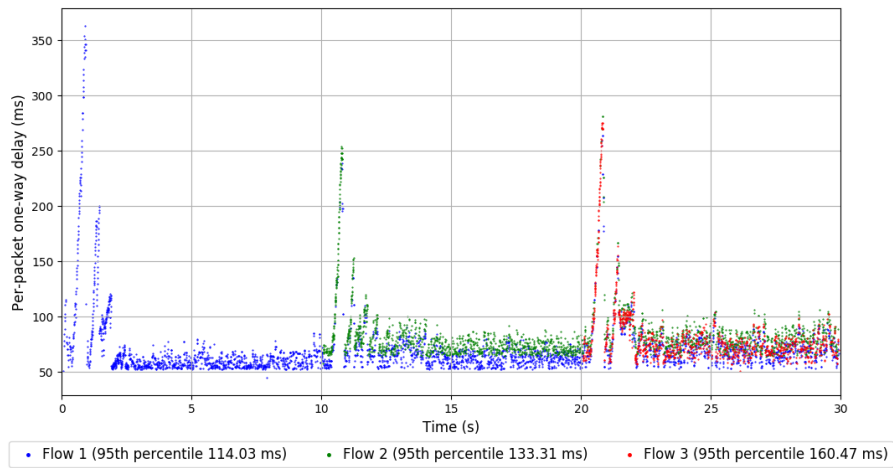
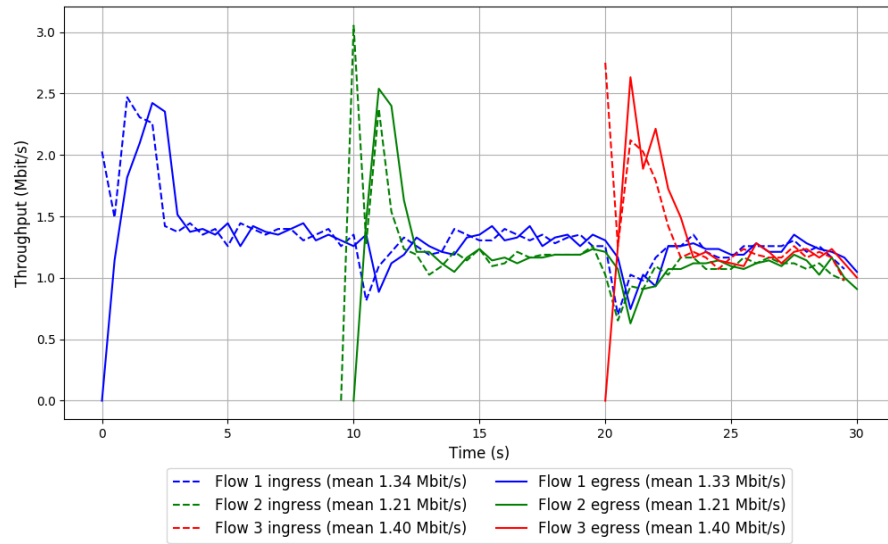


Run 2: Statistics of Indigo-Muses

Start at: 2018-09-07 23:21:59
End at: 2018-09-07 23:22:29
Local clock offset: 0.28 ms
Remote clock offset: -3.132 ms

Below is generated by plot.py at 2018-09-07 23:54:21
Datalink statistics
-- Total of 3 flows:
Average throughput: 2.59 Mbit/s
95th percentile per-packet one-way delay: 131.106 ms
Loss rate: 0.70%
-- Flow 1:
Average throughput: 1.33 Mbit/s
95th percentile per-packet one-way delay: 114.030 ms
Loss rate: 0.87%
-- Flow 2:
Average throughput: 1.21 Mbit/s
95th percentile per-packet one-way delay: 133.310 ms
Loss rate: 0.48%
-- Flow 3:
Average throughput: 1.40 Mbit/s
95th percentile per-packet one-way delay: 160.475 ms
Loss rate: 0.59%

Run 2: Report of Indigo-Muses — Data Link

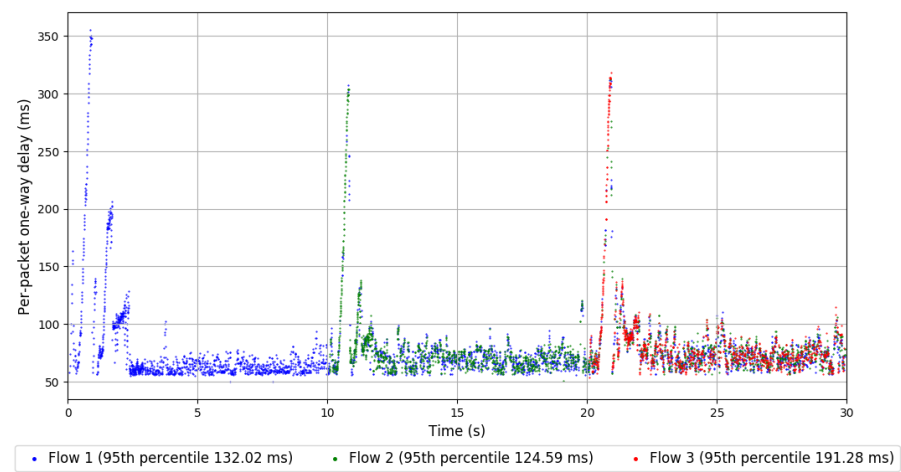
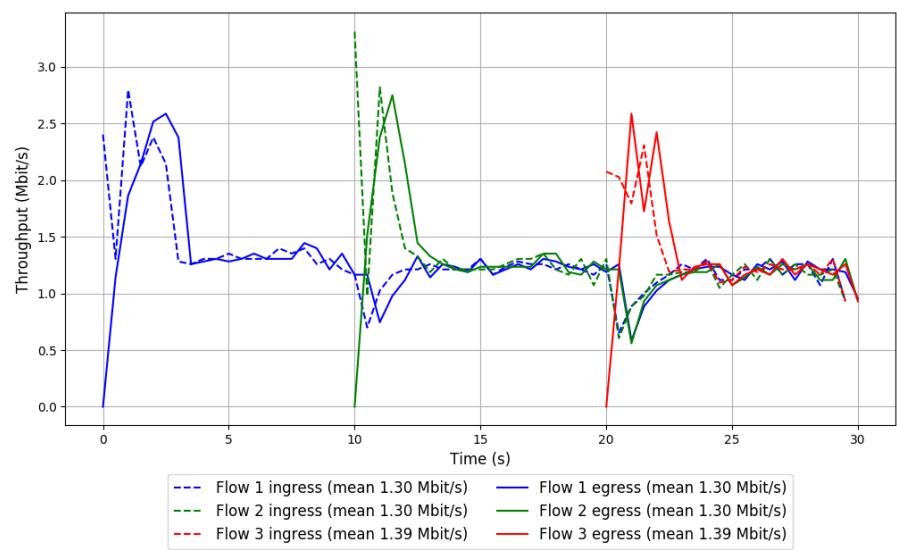


Run 3: Statistics of Indigo-Muses

Start at: 2018-09-07 23:42:07
End at: 2018-09-07 23:42:37
Local clock offset: 1.509 ms
Remote clock offset: -2.746 ms

Below is generated by plot.py at 2018-09-07 23:54:22
Datalink statistics
-- Total of 3 flows:
Average throughput: 2.62 Mbit/s
95th percentile per-packet one-way delay: 133.825 ms
Loss rate: 0.61%
-- Flow 1:
Average throughput: 1.30 Mbit/s
95th percentile per-packet one-way delay: 132.024 ms
Loss rate: 0.75%
-- Flow 2:
Average throughput: 1.30 Mbit/s
95th percentile per-packet one-way delay: 124.591 ms
Loss rate: 0.27%
-- Flow 3:
Average throughput: 1.39 Mbit/s
95th percentile per-packet one-way delay: 191.284 ms
Loss rate: 0.84%

Run 3: Report of Indigo-Muses — Data Link

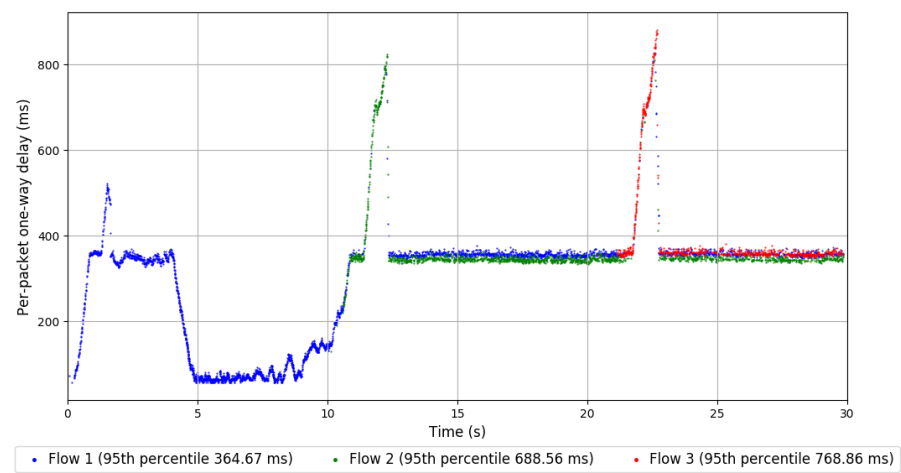
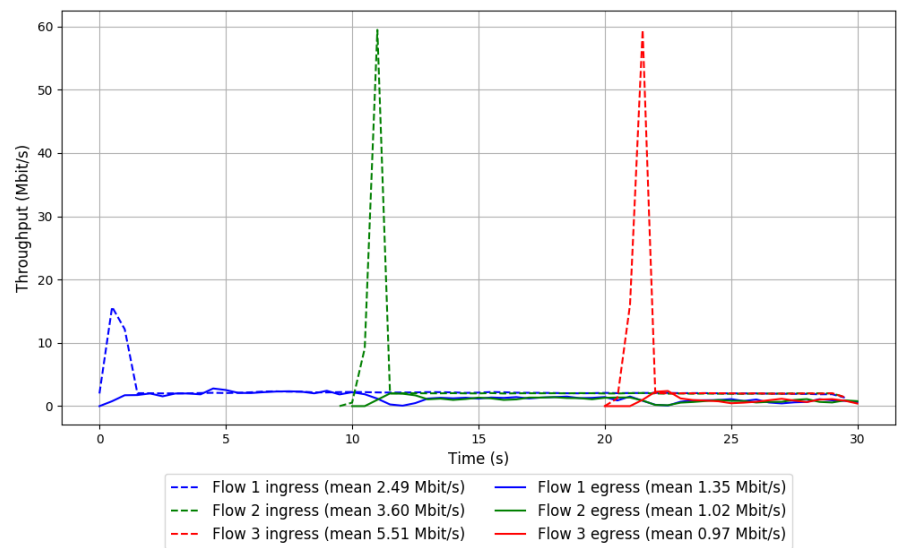


Run 1: Statistics of PCC-Allegro

Start at: 2018-09-07 22:57:23
End at: 2018-09-07 22:57:53
Local clock offset: -4.199 ms
Remote clock offset: -3.196 ms

Below is generated by plot.py at 2018-09-07 23:54:24
Datalink statistics
-- Total of 3 flows:
Average throughput: 2.34 Mbit/s
95th percentile per-packet one-way delay: 504.940 ms
Loss rate: 65.26%
-- Flow 1:
Average throughput: 1.35 Mbit/s
95th percentile per-packet one-way delay: 364.674 ms
Loss rate: 45.96%
-- Flow 2:
Average throughput: 1.02 Mbit/s
95th percentile per-packet one-way delay: 688.557 ms
Loss rate: 71.79%
-- Flow 3:
Average throughput: 0.97 Mbit/s
95th percentile per-packet one-way delay: 768.861 ms
Loss rate: 83.16%

Run 1: Report of PCC-Allegro — Data Link

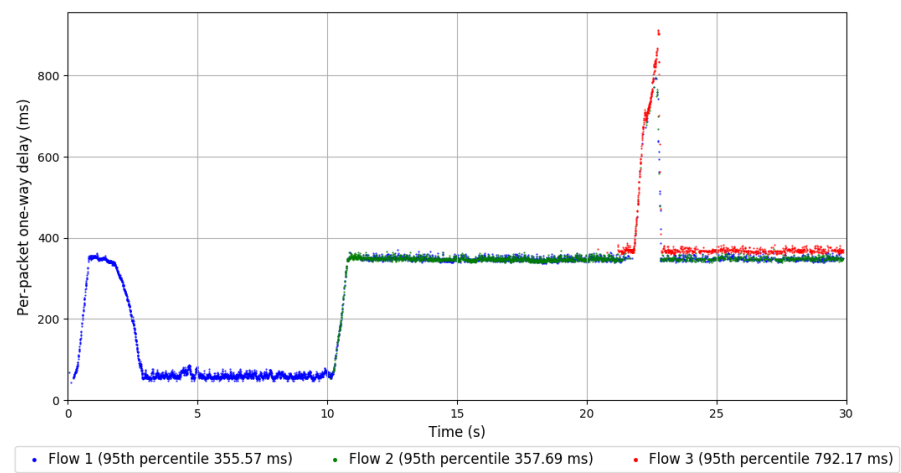
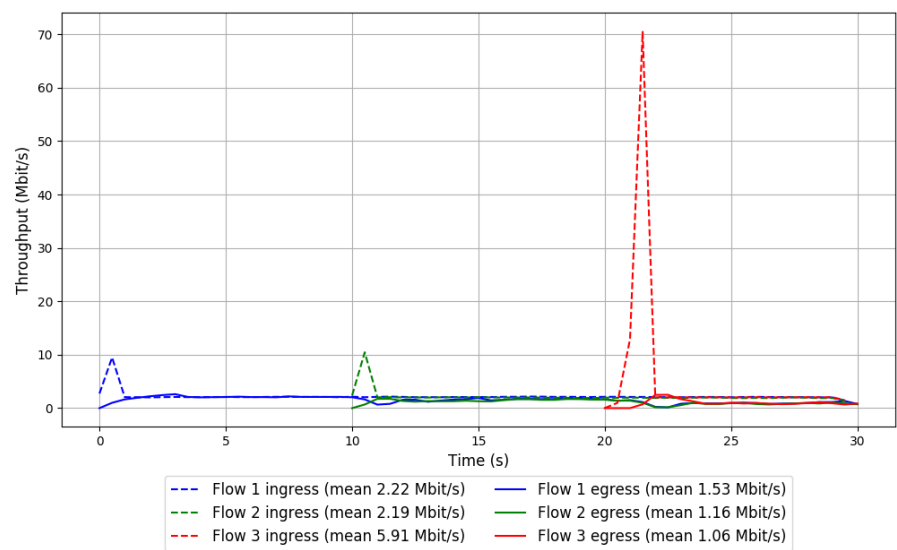


Run 2: Statistics of PCC-Allegro

Start at: 2018-09-07 23:17:30
End at: 2018-09-07 23:18:00
Local clock offset: 1.301 ms
Remote clock offset: -2.381 ms

Below is generated by plot.py at 2018-09-07 23:54:24
Datalink statistics
-- Total of 3 flows:
Average throughput: 2.63 Mbit/s
95th percentile per-packet one-way delay: 373.055 ms
Loss rate: 53.26%
-- Flow 1:
Average throughput: 1.53 Mbit/s
95th percentile per-packet one-way delay: 355.575 ms
Loss rate: 31.37%
-- Flow 2:
Average throughput: 1.16 Mbit/s
95th percentile per-packet one-way delay: 357.691 ms
Loss rate: 47.14%
-- Flow 3:
Average throughput: 1.06 Mbit/s
95th percentile per-packet one-way delay: 792.166 ms
Loss rate: 82.76%

Run 2: Report of PCC-Allegro — Data Link

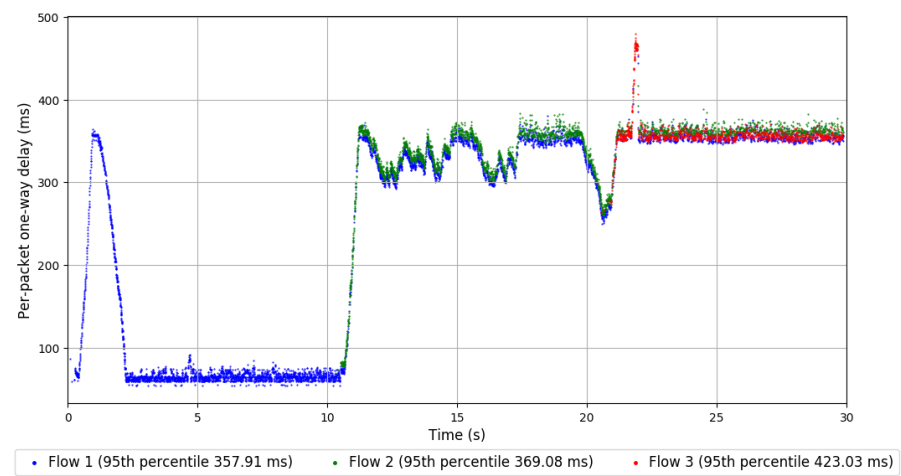
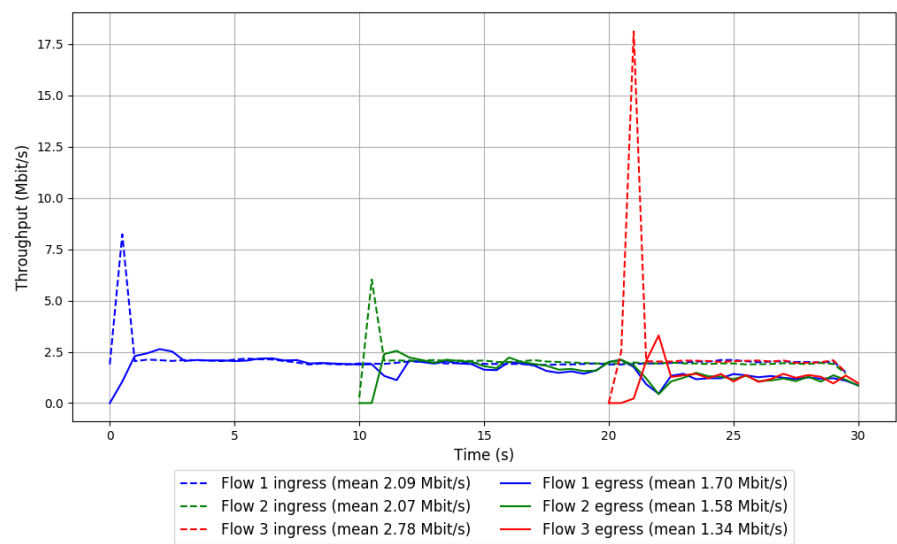


Run 3: Statistics of PCC-Allegro

Start at: 2018-09-07 23:37:37
End at: 2018-09-07 23:38:07
Local clock offset: -2.054 ms
Remote clock offset: -2.381 ms

Below is generated by plot.py at 2018-09-07 23:54:25
Datalink statistics
-- Total of 3 flows:
Average throughput: 3.17 Mbit/s
95th percentile per-packet one-way delay: 365.812 ms
Loss rate: 27.62%
-- Flow 1:
Average throughput: 1.70 Mbit/s
95th percentile per-packet one-way delay: 357.911 ms
Loss rate: 18.84%
-- Flow 2:
Average throughput: 1.58 Mbit/s
95th percentile per-packet one-way delay: 369.080 ms
Loss rate: 23.70%
-- Flow 3:
Average throughput: 1.34 Mbit/s
95th percentile per-packet one-way delay: 423.029 ms
Loss rate: 53.46%

Run 3: Report of PCC-Allegro — Data Link

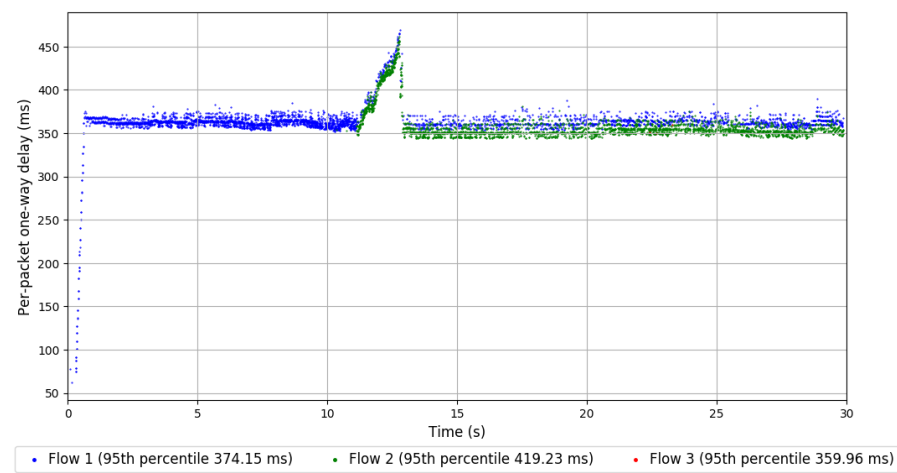
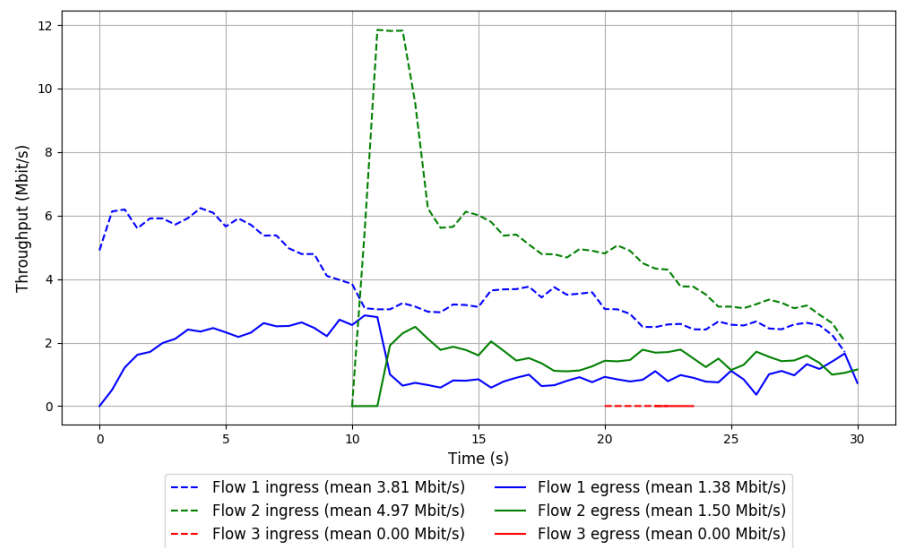


```
Run 1: Statistics of PCC-Expr

Start at: 2018-09-07 22:59:38
End at: 2018-09-07 23:00:08
Local clock offset: -0.62 ms
Remote clock offset: -3.748 ms

# Below is generated by plot.py at 2018-09-07 23:54:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.37 Mbit/s
95th percentile per-packet one-way delay: 400.429 ms
Loss rate: 66.81%
-- Flow 1:
Average throughput: 1.38 Mbit/s
95th percentile per-packet one-way delay: 374.155 ms
Loss rate: 63.76%
-- Flow 2:
Average throughput: 1.50 Mbit/s
95th percentile per-packet one-way delay: 419.228 ms
Loss rate: 70.33%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 359.957 ms
Loss rate: 76.92%
```

Run 1: Report of PCC-Expr — Data Link

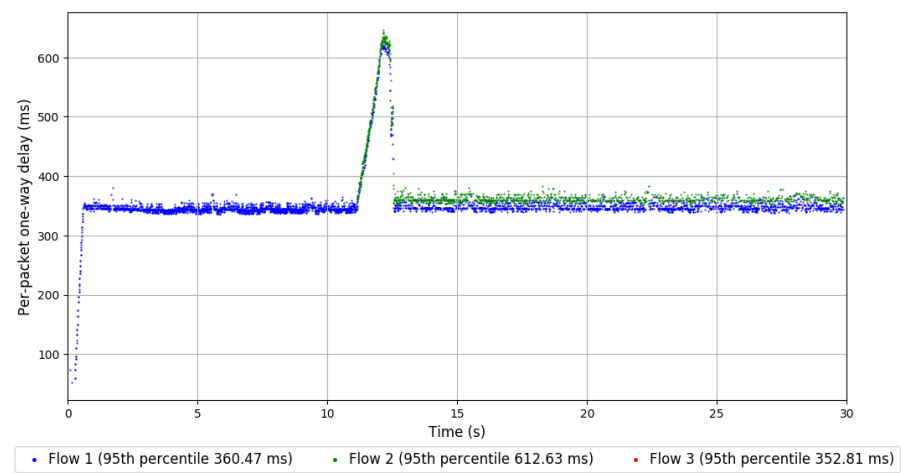
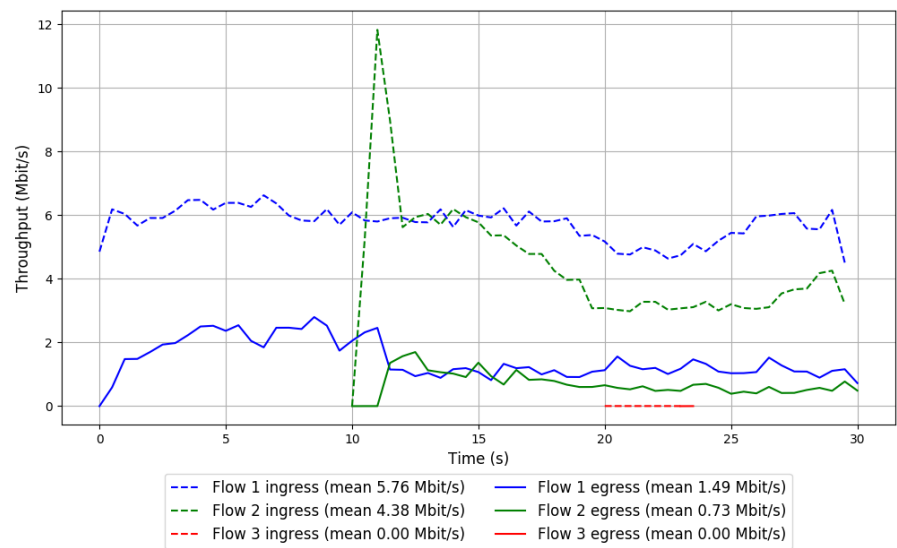


```
Run 2: Statistics of PCC-Expr

Start at: 2018-09-07 23:19:44
End at: 2018-09-07 23:20:14
Local clock offset: -3.604 ms
Remote clock offset: -2.575 ms

# Below is generated by plot.py at 2018-09-07 23:54:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.97 Mbit/s
95th percentile per-packet one-way delay: 477.226 ms
Loss rate: 77.32%
-- Flow 1:
Average throughput: 1.49 Mbit/s
95th percentile per-packet one-way delay: 360.470 ms
Loss rate: 74.14%
-- Flow 2:
Average throughput: 0.73 Mbit/s
95th percentile per-packet one-way delay: 612.630 ms
Loss rate: 83.60%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 352.813 ms
Loss rate: 92.43%
```

Run 2: Report of PCC-Expr — Data Link

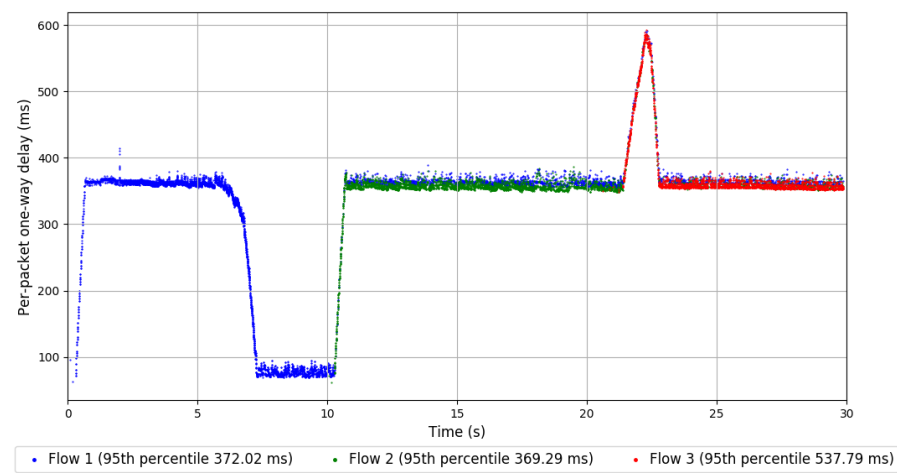
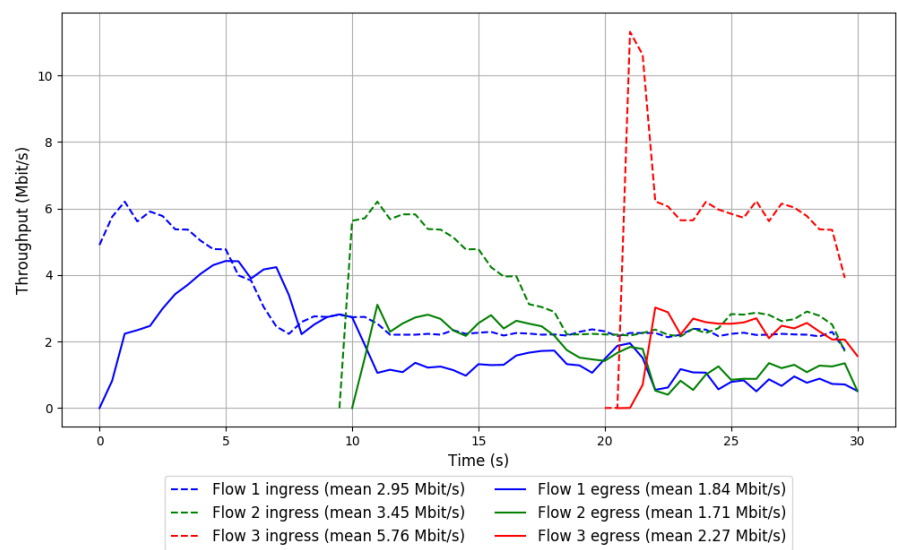


Run 3: Statistics of PCC-Expr

Start at: 2018-09-07 23:39:52
End at: 2018-09-07 23:40:22
Local clock offset: -0.747 ms
Remote clock offset: -2.292 ms

Below is generated by plot.py at 2018-09-07 23:54:36
Datalink statistics
-- Total of 3 flows:
Average throughput: 3.68 Mbit/s
95th percentile per-packet one-way delay: 382.165 ms
Loss rate: 48.74%
-- Flow 1:
Average throughput: 1.84 Mbit/s
95th percentile per-packet one-way delay: 372.022 ms
Loss rate: 37.96%
-- Flow 2:
Average throughput: 1.71 Mbit/s
95th percentile per-packet one-way delay: 369.286 ms
Loss rate: 50.72%
-- Flow 3:
Average throughput: 2.27 Mbit/s
95th percentile per-packet one-way delay: 537.794 ms
Loss rate: 63.07%

Run 3: Report of PCC-Expr — Data Link

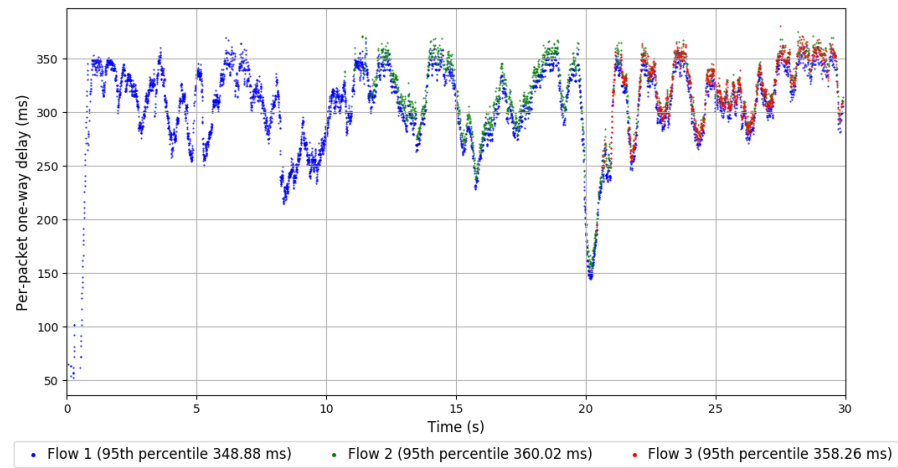
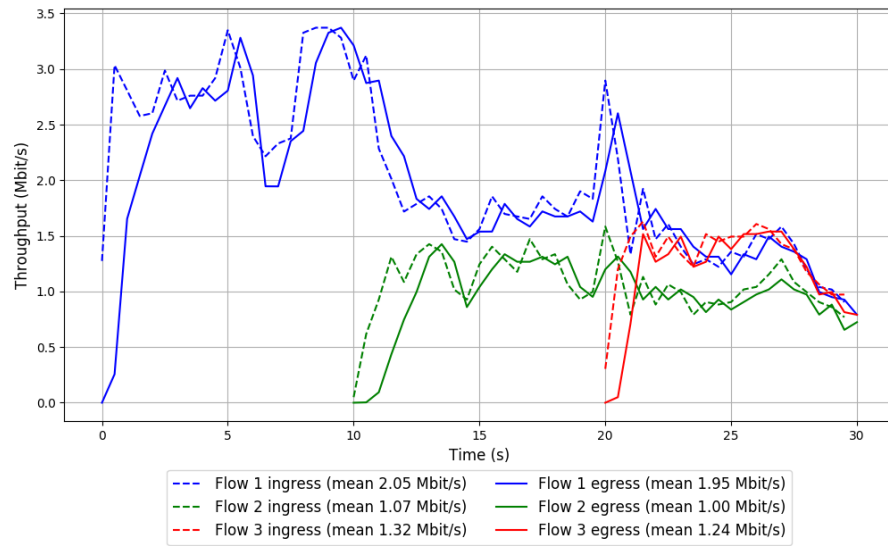


Run 1: Statistics of QUIC Cubic

Start at: 2018-09-07 22:55:04
End at: 2018-09-07 22:55:34
Local clock offset: -2.387 ms
Remote clock offset: -2.746 ms

Below is generated by plot.py at 2018-09-07 23:54:36
Datalink statistics
-- Total of 3 flows:
Average throughput: 3.01 Mbit/s
95th percentile per-packet one-way delay: 354.845 ms
Loss rate: 6.02%
-- Flow 1:
Average throughput: 1.95 Mbit/s
95th percentile per-packet one-way delay: 348.884 ms
Loss rate: 5.02%
-- Flow 2:
Average throughput: 1.00 Mbit/s
95th percentile per-packet one-way delay: 360.018 ms
Loss rate: 7.70%
-- Flow 3:
Average throughput: 1.24 Mbit/s
95th percentile per-packet one-way delay: 358.264 ms
Loss rate: 7.97%

Run 1: Report of QUIC Cubic — Data Link

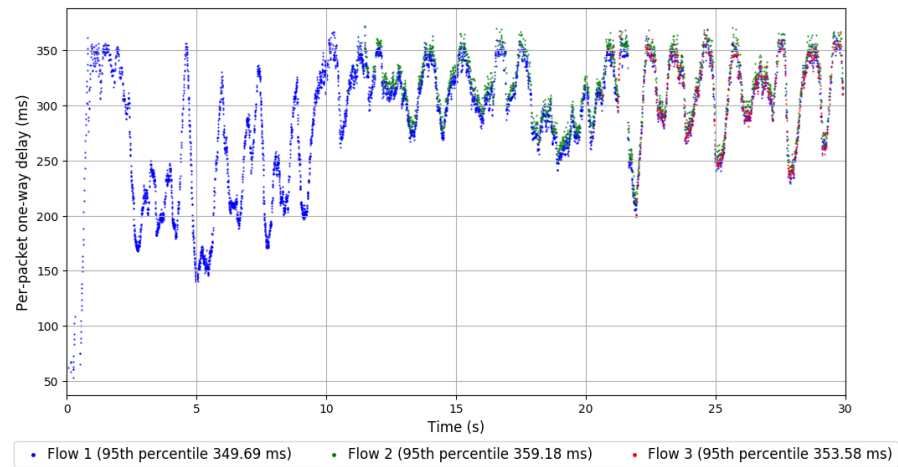
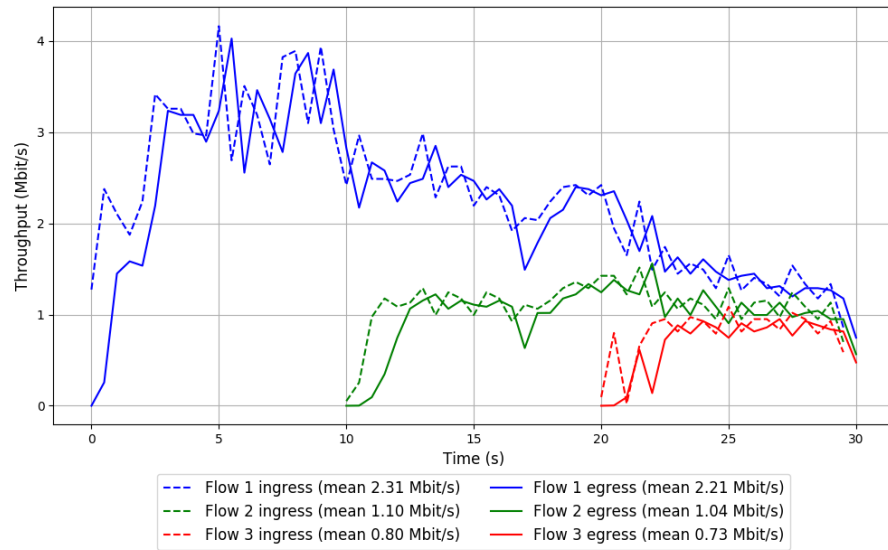


Run 2: Statistics of QUIC Cubic

Start at: 2018-09-07 23:15:16
End at: 2018-09-07 23:15:46
Local clock offset: 0.349 ms
Remote clock offset: -2.099 ms

Below is generated by plot.py at 2018-09-07 23:54:36
Datalink statistics
-- Total of 3 flows:
Average throughput: 3.12 Mbit/s
95th percentile per-packet one-way delay: 353.430 ms
Loss rate: 5.91%
-- Flow 1:
Average throughput: 2.21 Mbit/s
95th percentile per-packet one-way delay: 349.688 ms
Loss rate: 4.74%
-- Flow 2:
Average throughput: 1.04 Mbit/s
95th percentile per-packet one-way delay: 359.182 ms
Loss rate: 7.54%
-- Flow 3:
Average throughput: 0.73 Mbit/s
95th percentile per-packet one-way delay: 353.578 ms
Loss rate: 11.58%

Run 2: Report of QUIC Cubic — Data Link

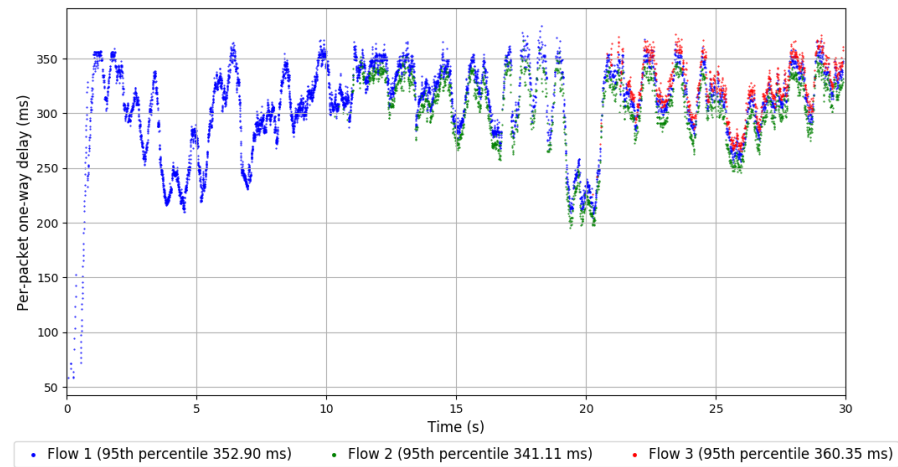
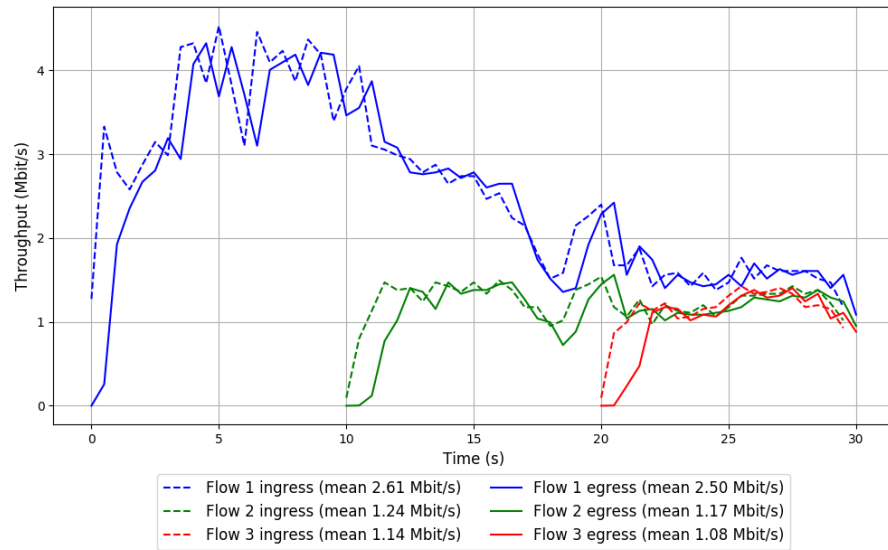


Run 3: Statistics of QUIC Cubic

Start at: 2018-09-07 23:35:23
End at: 2018-09-07 23:35:53
Local clock offset: -2.854 ms
Remote clock offset: -1.672 ms

Below is generated by plot.py at 2018-09-07 23:54:36
Datalink statistics
-- Total of 3 flows:
Average throughput: 3.62 Mbit/s
95th percentile per-packet one-way delay: 352.795 ms
Loss rate: 5.07%
-- Flow 1:
Average throughput: 2.50 Mbit/s
95th percentile per-packet one-way delay: 352.901 ms
Loss rate: 4.11%
-- Flow 2:
Average throughput: 1.17 Mbit/s
95th percentile per-packet one-way delay: 341.112 ms
Loss rate: 6.85%
-- Flow 3:
Average throughput: 1.08 Mbit/s
95th percentile per-packet one-way delay: 360.350 ms
Loss rate: 7.81%

Run 3: Report of QUIC Cubic — Data Link

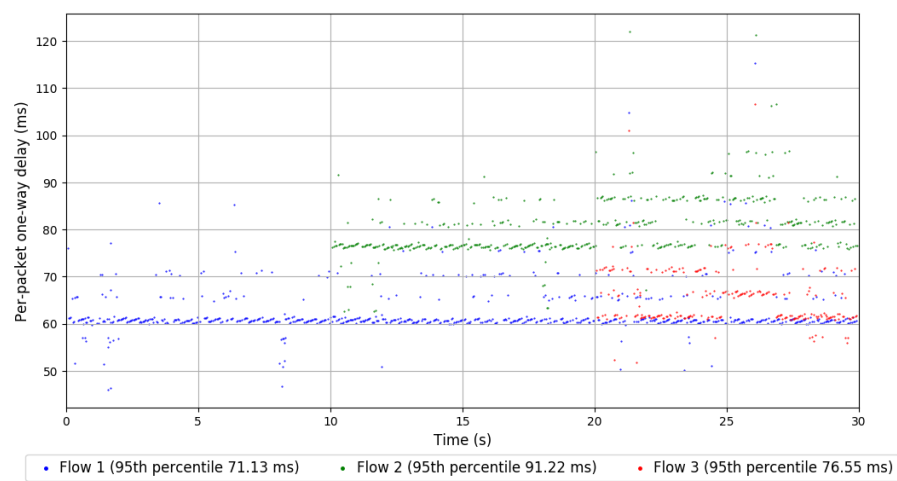
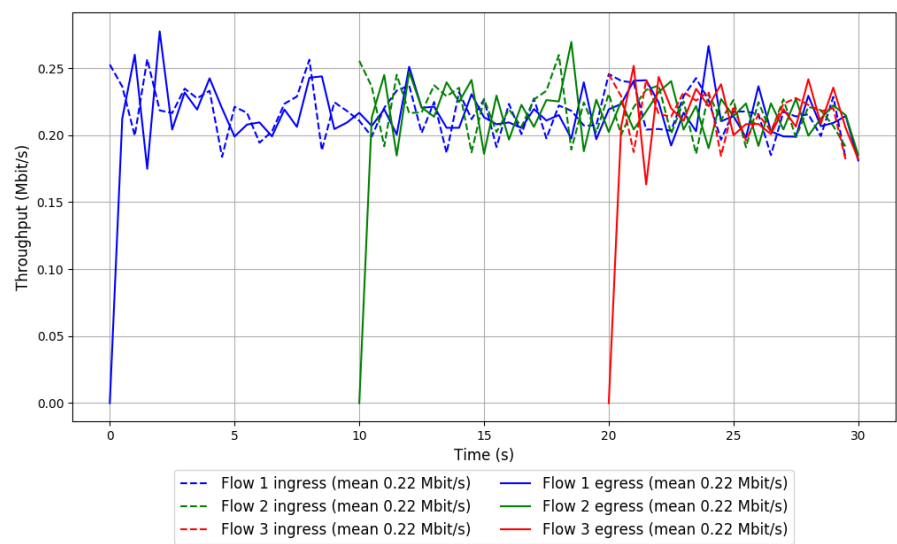


```
Run 1: Statistics of SReAM

Start at: 2018-09-07 23:00:45
End at: 2018-09-07 23:01:15
Local clock offset: -0.382 ms
Remote clock offset: -3.349 ms

# Below is generated by plot.py at 2018-09-07 23:54:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 86.533 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 71.131 ms
Loss rate: 0.25%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 91.217 ms
Loss rate: 0.40%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 76.545 ms
Loss rate: 0.71%
```

Run 1: Report of SReAM — Data Link

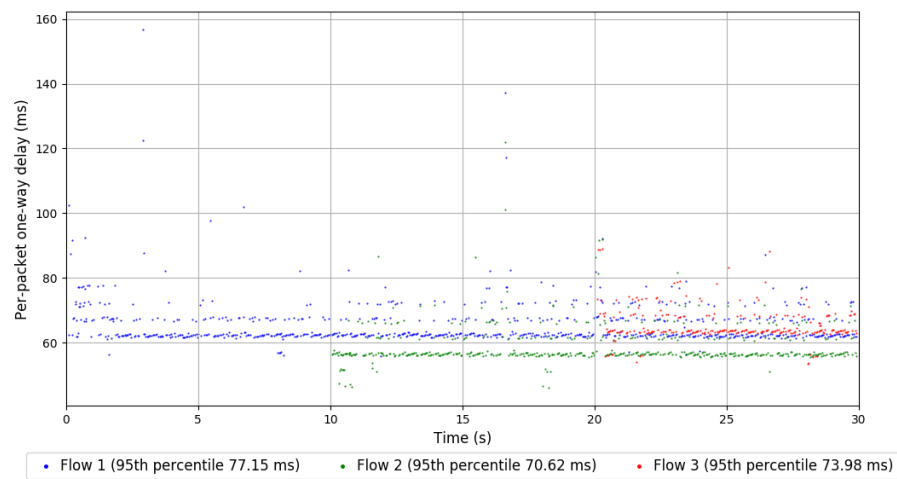
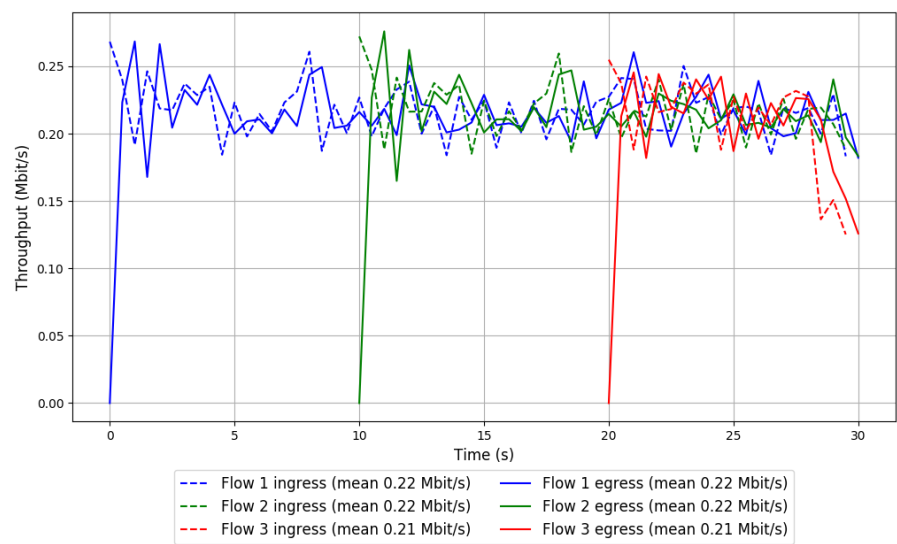


Run 2: Statistics of SReAM

Start at: 2018-09-07 23:20:52
End at: 2018-09-07 23:21:22
Local clock offset: -2.942 ms
Remote clock offset: -2.603 ms

Below is generated by plot.py at 2018-09-07 23:54:36
Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 73.491 ms
Loss rate: 0.34%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 77.146 ms
Loss rate: 0.26%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 70.622 ms
Loss rate: 0.39%
-- Flow 3:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 73.983 ms
Loss rate: 0.50%

Run 2: Report of SReAM — Data Link

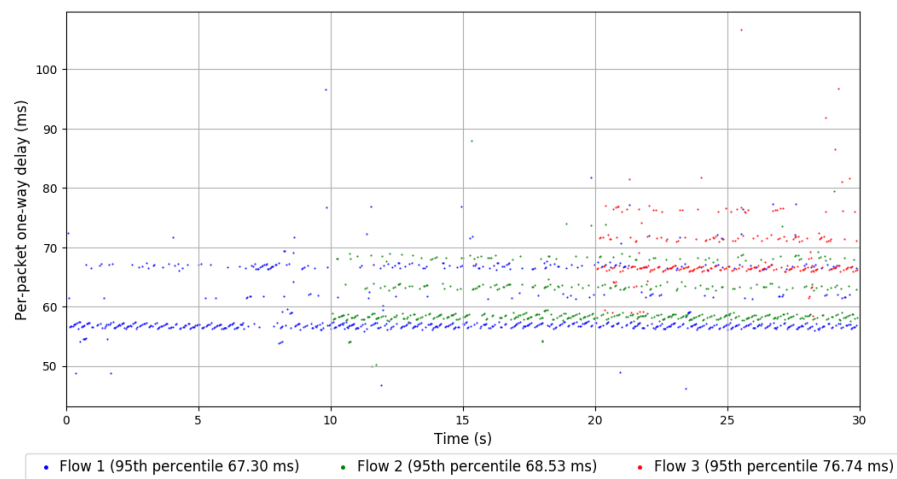
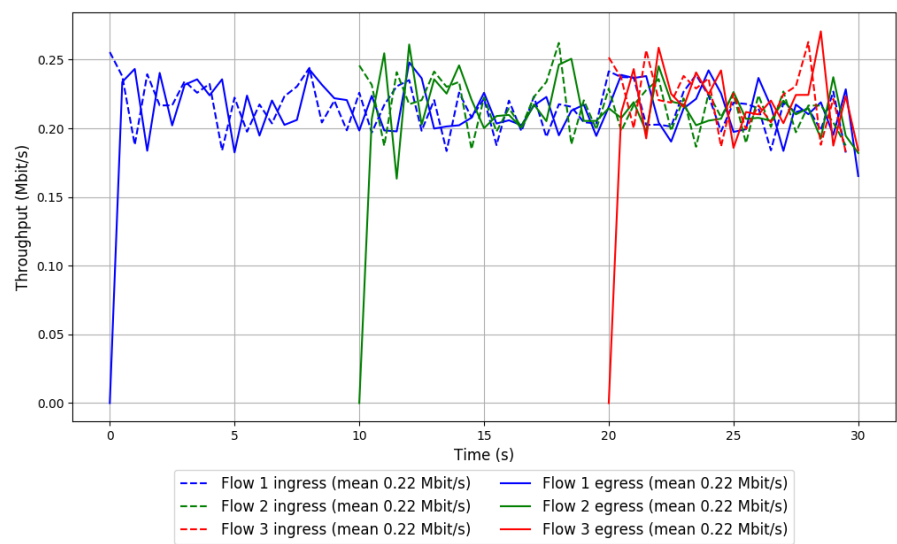


Run 3: Statistics of SReAM

Start at: 2018-09-07 23:41:00
End at: 2018-09-07 23:41:30
Local clock offset: 1.95 ms
Remote clock offset: -2.609 ms

Below is generated by plot.py at 2018-09-07 23:54:36
Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 71.708 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 67.296 ms
Loss rate: 0.26%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 68.533 ms
Loss rate: 0.39%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 76.739 ms
Loss rate: 0.70%

Run 3: Report of SReAM — Data Link

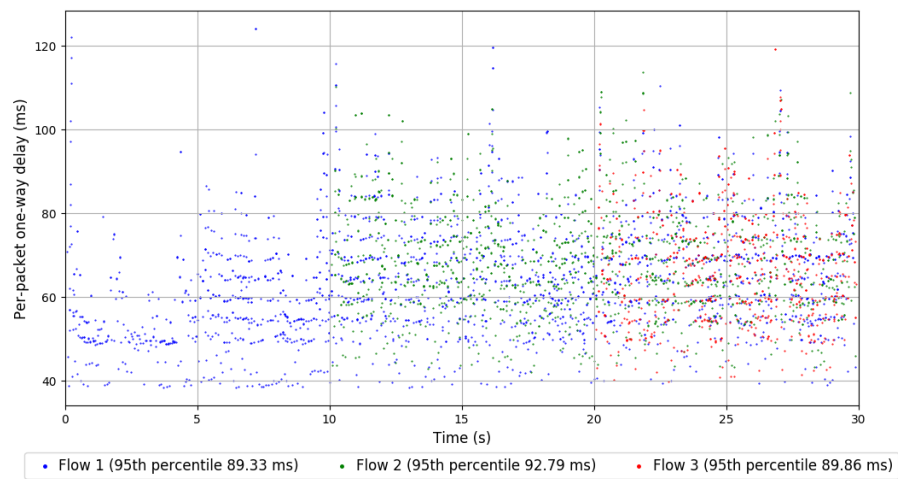
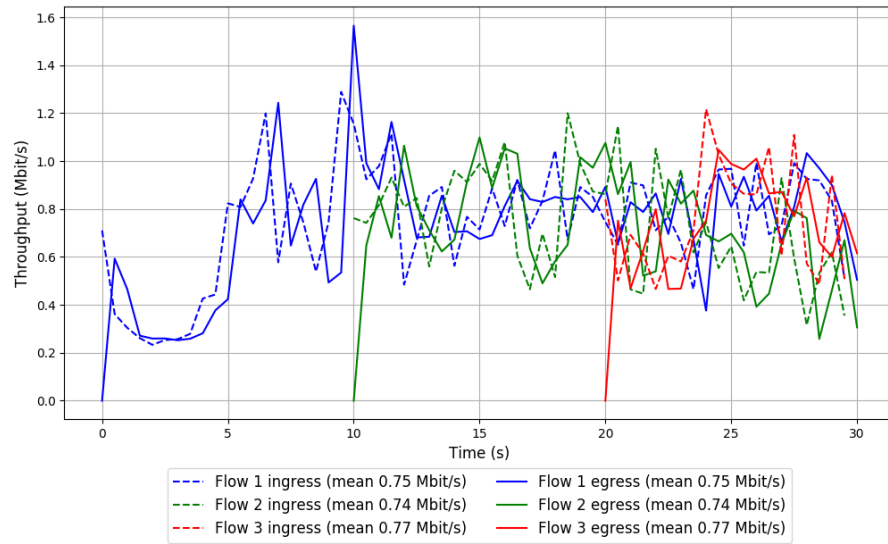


Run 1: Statistics of Sprout

Start at: 2018-09-07 23:09:40
End at: 2018-09-07 23:10:10
Local clock offset: -4.32 ms
Remote clock offset: -3.236 ms

Below is generated by plot.py at 2018-09-07 23:54:36
Datalink statistics
-- Total of 3 flows:
Average throughput: 1.49 Mbit/s
95th percentile per-packet one-way delay: 90.414 ms
Loss rate: 0.40%
-- Flow 1:
Average throughput: 0.75 Mbit/s
95th percentile per-packet one-way delay: 89.329 ms
Loss rate: 0.36%
-- Flow 2:
Average throughput: 0.74 Mbit/s
95th percentile per-packet one-way delay: 92.786 ms
Loss rate: 0.48%
-- Flow 3:
Average throughput: 0.77 Mbit/s
95th percentile per-packet one-way delay: 89.856 ms
Loss rate: 0.35%

Run 1: Report of Sprout — Data Link

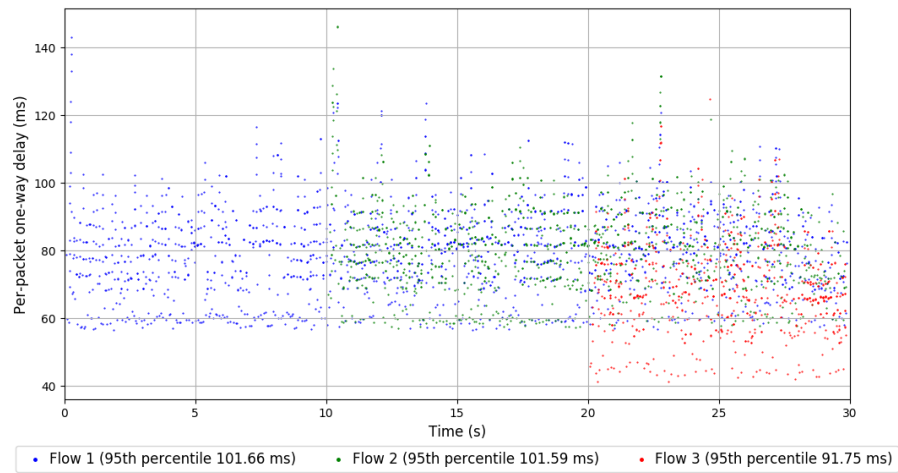
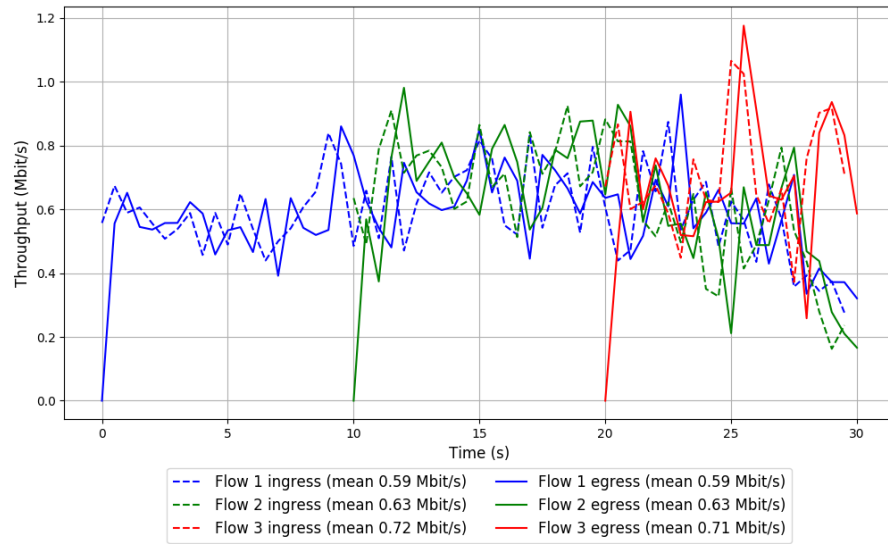


Run 2: Statistics of Sprout

Start at: 2018-09-07 23:29:47
End at: 2018-09-07 23:30:17
Local clock offset: -2.683 ms
Remote clock offset: -1.909 ms

```
# Below is generated by plot.py at 2018-09-07 23:54:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.25 Mbit/s
95th percentile per-packet one-way delay: 101.156 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 0.59 Mbit/s
95th percentile per-packet one-way delay: 101.662 ms
Loss rate: 0.07%
-- Flow 2:
Average throughput: 0.63 Mbit/s
95th percentile per-packet one-way delay: 101.589 ms
Loss rate: 0.36%
-- Flow 3:
Average throughput: 0.71 Mbit/s
95th percentile per-packet one-way delay: 91.753 ms
Loss rate: 1.50%
```

Run 2: Report of Sprout — Data Link

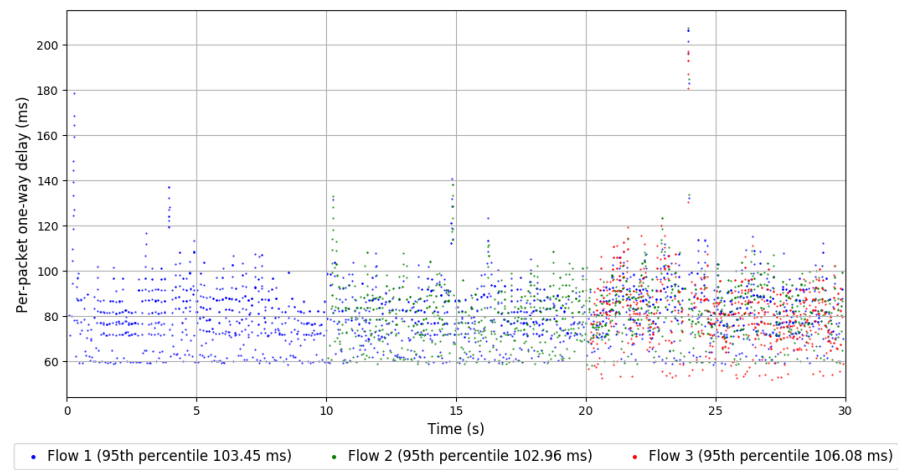
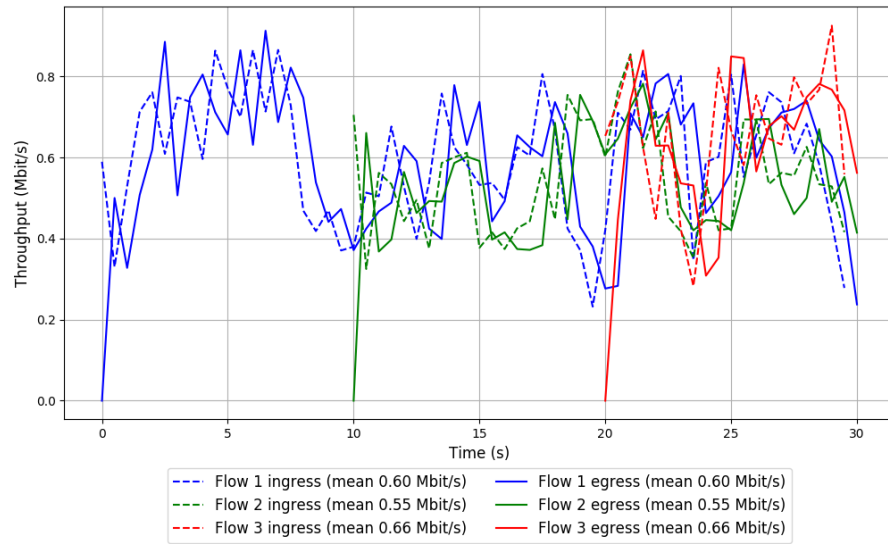


Run 3: Statistics of Sprout

Start at: 2018-09-07 23:49:57
End at: 2018-09-07 23:50:27
Local clock offset: -1.608 ms
Remote clock offset: -2.607 ms

```
# Below is generated by plot.py at 2018-09-07 23:54:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.18 Mbit/s
95th percentile per-packet one-way delay: 103.536 ms
Loss rate: 0.61%
-- Flow 1:
Average throughput: 0.60 Mbit/s
95th percentile per-packet one-way delay: 103.455 ms
Loss rate: 0.25%
-- Flow 2:
Average throughput: 0.55 Mbit/s
95th percentile per-packet one-way delay: 102.961 ms
Loss rate: 0.63%
-- Flow 3:
Average throughput: 0.66 Mbit/s
95th percentile per-packet one-way delay: 106.084 ms
Loss rate: 1.57%
```

Run 3: Report of Sprout — Data Link

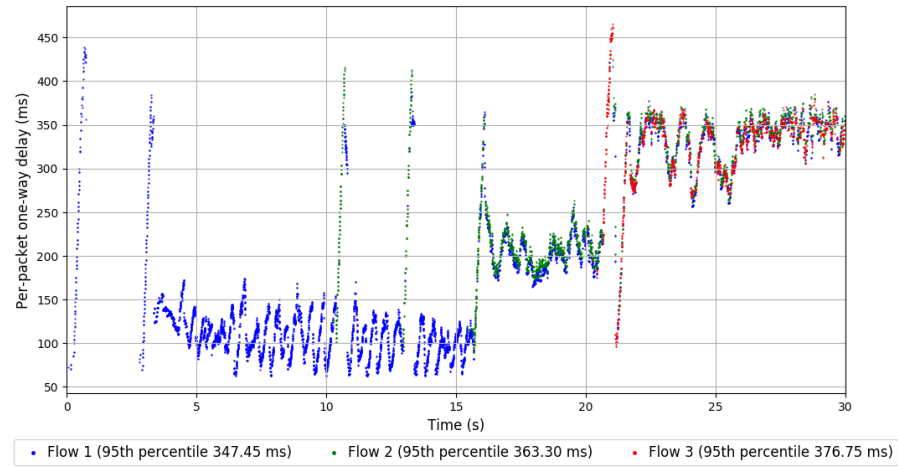
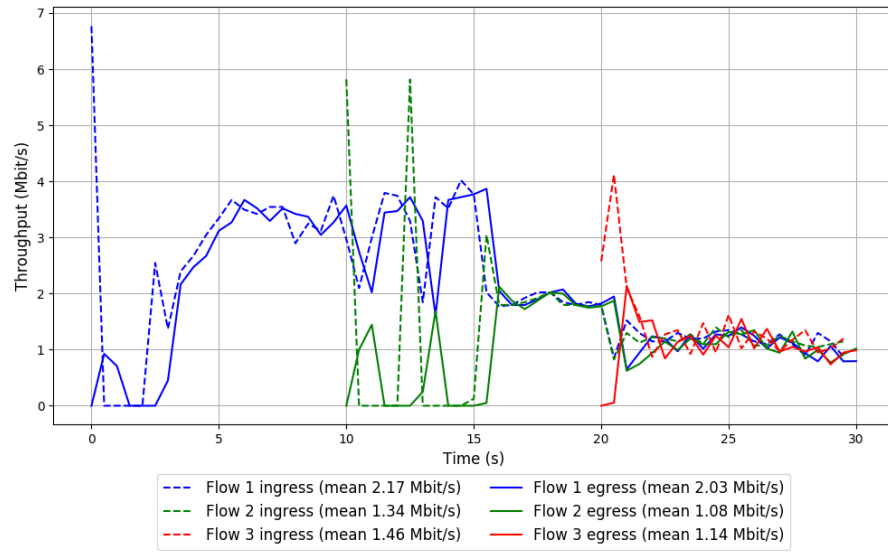


```
Run 1: Statistics of TaoVA-100x

Start at: 2018-09-07 22:53:57
End at: 2018-09-07 22:54:27
Local clock offset: -4.126 ms
Remote clock offset: -2.74 ms

# Below is generated by plot.py at 2018-09-07 23:54:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.11 Mbit/s
95th percentile per-packet one-way delay: 356.986 ms
Loss rate: 12.36%
-- Flow 1:
Average throughput: 2.03 Mbit/s
95th percentile per-packet one-way delay: 347.447 ms
Loss rate: 6.85%
-- Flow 2:
Average throughput: 1.08 Mbit/s
95th percentile per-packet one-way delay: 363.297 ms
Loss rate: 19.77%
-- Flow 3:
Average throughput: 1.14 Mbit/s
95th percentile per-packet one-way delay: 376.752 ms
Loss rate: 23.33%
```

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

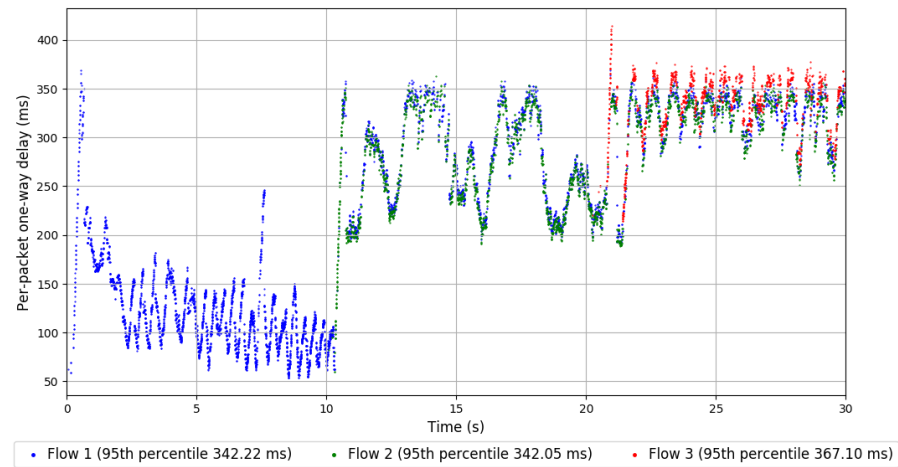
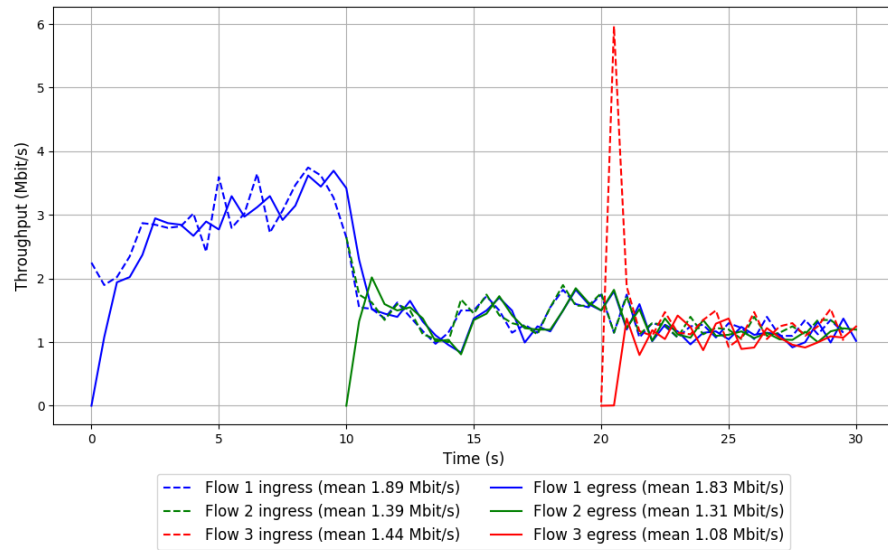


Run 2: Statistics of TaoVA-100x

Start at: 2018-09-07 23:14:08
End at: 2018-09-07 23:14:38
Local clock offset: -4.155 ms
Remote clock offset: -2.932 ms

Below is generated by plot.py at 2018-09-07 23:54:42
Datalink statistics
-- Total of 3 flows:
Average throughput: 3.05 Mbit/s
95th percentile per-packet one-way delay: 350.211 ms
Loss rate: 7.47%
-- Flow 1:
Average throughput: 1.83 Mbit/s
95th percentile per-packet one-way delay: 342.224 ms
Loss rate: 3.22%
-- Flow 2:
Average throughput: 1.31 Mbit/s
95th percentile per-packet one-way delay: 342.053 ms
Loss rate: 6.05%
-- Flow 3:
Average throughput: 1.08 Mbit/s
95th percentile per-packet one-way delay: 367.101 ms
Loss rate: 26.93%

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

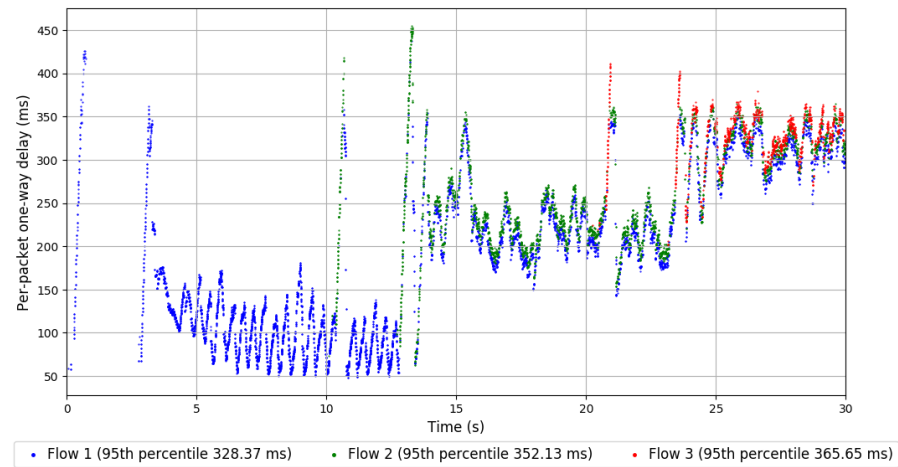
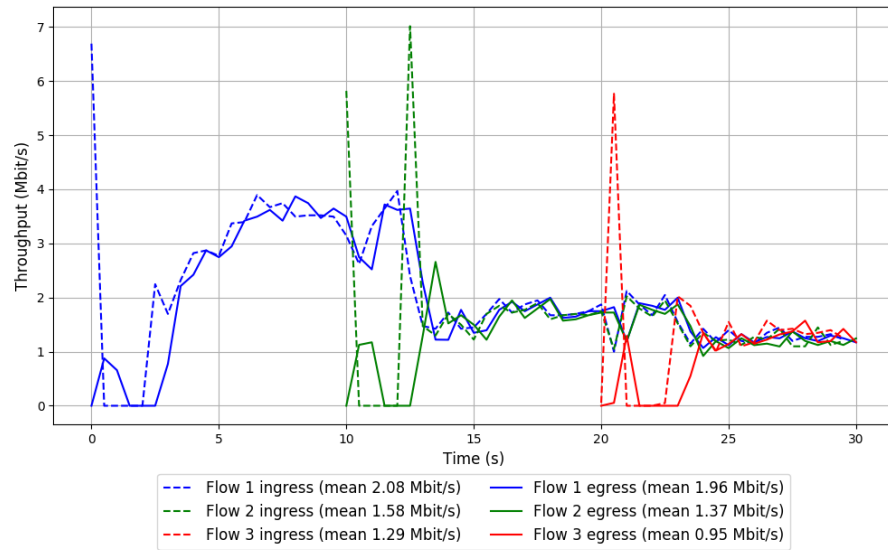


Run 3: Statistics of TaoVA-100x

Start at: 2018-09-07 23:34:16
End at: 2018-09-07 23:34:46
Local clock offset: -2.994 ms
Remote clock offset: -2.917 ms

Below is generated by plot.py at 2018-09-07 23:54:44
Datalink statistics
-- Total of 3 flows:
Average throughput: 3.17 Mbit/s
95th percentile per-packet one-way delay: 347.293 ms
Loss rate: 11.16%
-- Flow 1:
Average throughput: 1.96 Mbit/s
95th percentile per-packet one-way delay: 328.369 ms
Loss rate: 6.16%
-- Flow 2:
Average throughput: 1.37 Mbit/s
95th percentile per-packet one-way delay: 352.126 ms
Loss rate: 13.99%
-- Flow 3:
Average throughput: 0.95 Mbit/s
95th percentile per-packet one-way delay: 365.655 ms
Loss rate: 28.51%

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

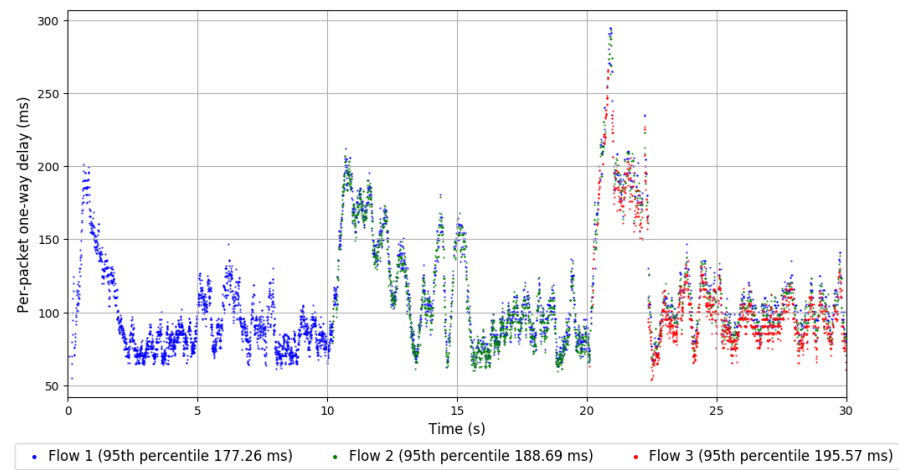
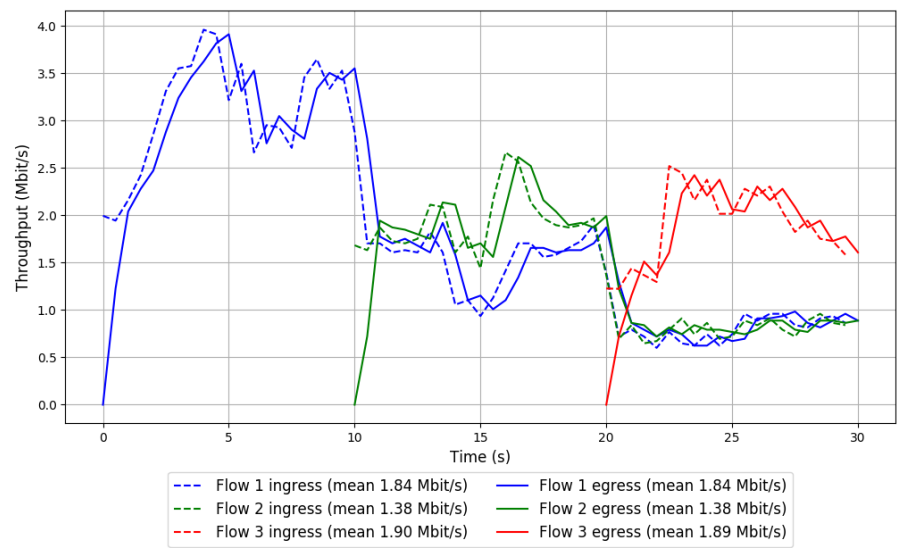


Run 1: Statistics of TCP Vegas

Start at: 2018-09-07 23:06:19
End at: 2018-09-07 23:06:49
Local clock offset: -4.925 ms
Remote clock offset: -2.736 ms

Below is generated by plot.py at 2018-09-07 23:54:44
Datalink statistics
-- Total of 3 flows:
Average throughput: 3.39 Mbit/s
95th percentile per-packet one-way delay: 185.485 ms
Loss rate: 0.30%
-- Flow 1:
Average throughput: 1.84 Mbit/s
95th percentile per-packet one-way delay: 177.264 ms
Loss rate: 0.13%
-- Flow 2:
Average throughput: 1.38 Mbit/s
95th percentile per-packet one-way delay: 188.694 ms
Loss rate: 0.30%
-- Flow 3:
Average throughput: 1.89 Mbit/s
95th percentile per-packet one-way delay: 195.571 ms
Loss rate: 0.76%

Run 1: Report of TCP Vegas — Data Link

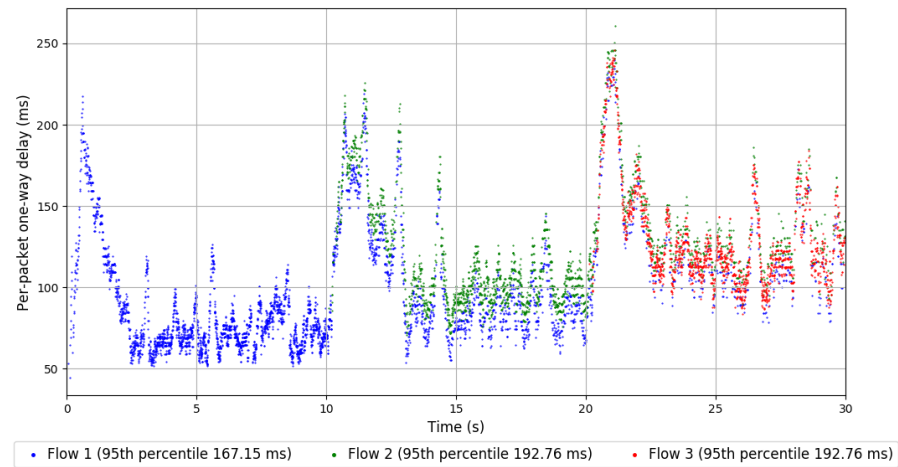
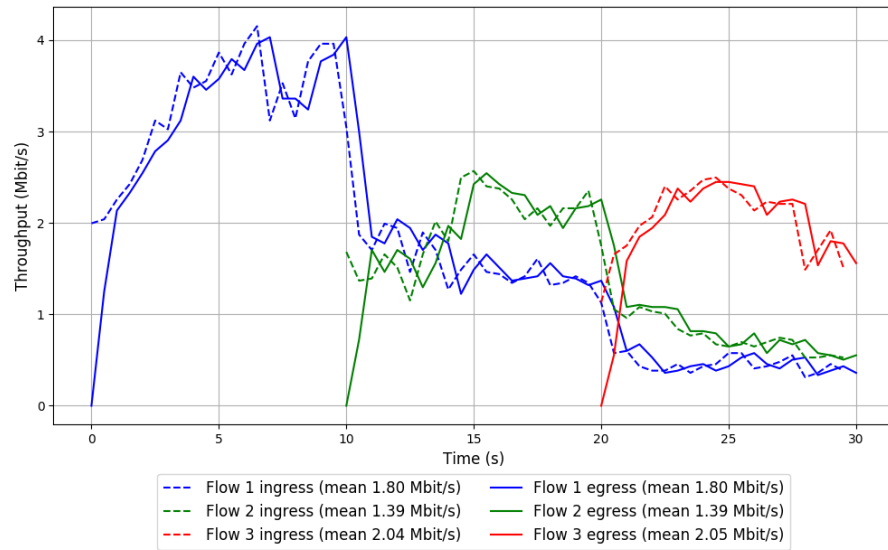


Run 2: Statistics of TCP Vegas

Start at: 2018-09-07 23:26:27
End at: 2018-09-07 23:26:57
Local clock offset: -2.614 ms
Remote clock offset: -2.197 ms

Below is generated by plot.py at 2018-09-07 23:54:44
Datalink statistics
-- Total of 3 flows:
Average throughput: 3.39 Mbit/s
95th percentile per-packet one-way delay: 180.101 ms
Loss rate: 0.36%
-- Flow 1:
Average throughput: 1.80 Mbit/s
95th percentile per-packet one-way delay: 167.151 ms
Loss rate: 0.11%
-- Flow 2:
Average throughput: 1.39 Mbit/s
95th percentile per-packet one-way delay: 192.764 ms
Loss rate: 0.30%
-- Flow 3:
Average throughput: 2.05 Mbit/s
95th percentile per-packet one-way delay: 192.758 ms
Loss rate: 1.12%

Run 2: Report of TCP Vegas — Data Link

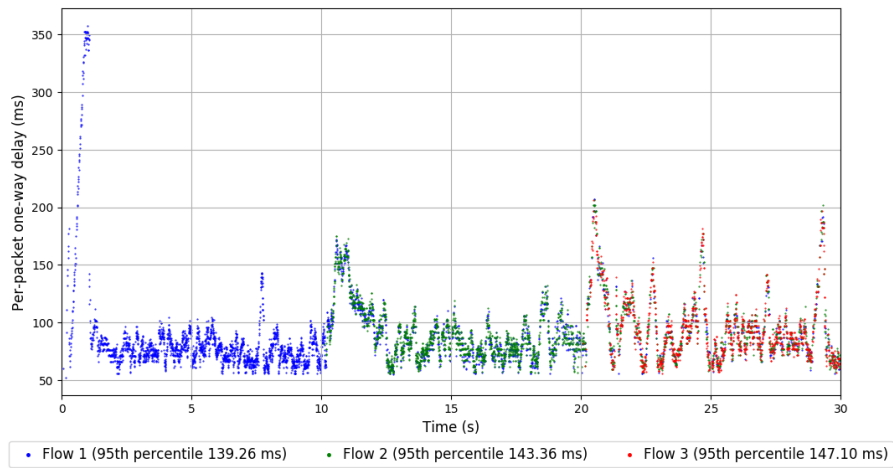
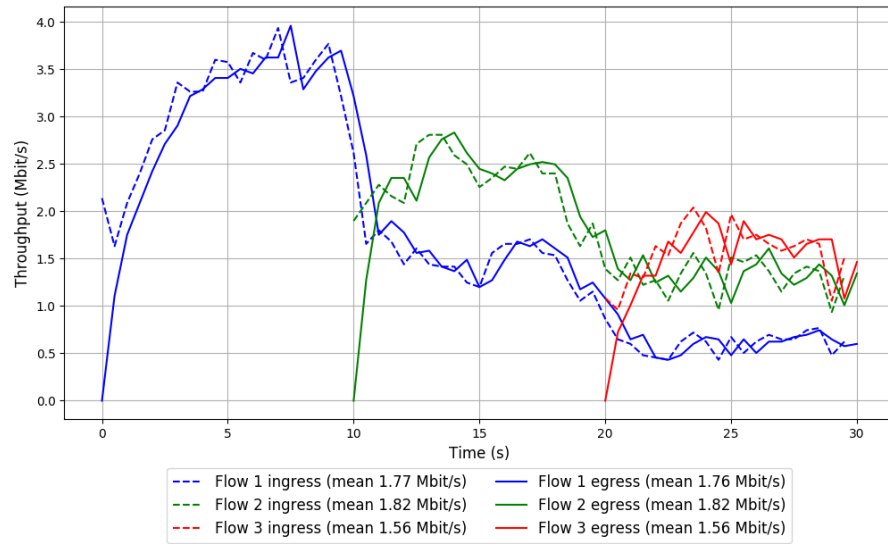


Run 3: Statistics of TCP Vegas

Start at: 2018-09-07 23:46:35
End at: 2018-09-07 23:47:05
Local clock offset: 1.698 ms
Remote clock offset: -2.219 ms

Below is generated by plot.py at 2018-09-07 23:54:44
Datalink statistics
-- Total of 3 flows:
Average throughput: 3.48 Mbit/s
95th percentile per-packet one-way delay: 142.553 ms
Loss rate: 0.53%
-- Flow 1:
Average throughput: 1.76 Mbit/s
95th percentile per-packet one-way delay: 139.256 ms
Loss rate: 0.61%
-- Flow 2:
Average throughput: 1.82 Mbit/s
95th percentile per-packet one-way delay: 143.357 ms
Loss rate: 0.23%
-- Flow 3:
Average throughput: 1.56 Mbit/s
95th percentile per-packet one-way delay: 147.098 ms
Loss rate: 0.92%

Run 3: Report of TCP Vegas — Data Link

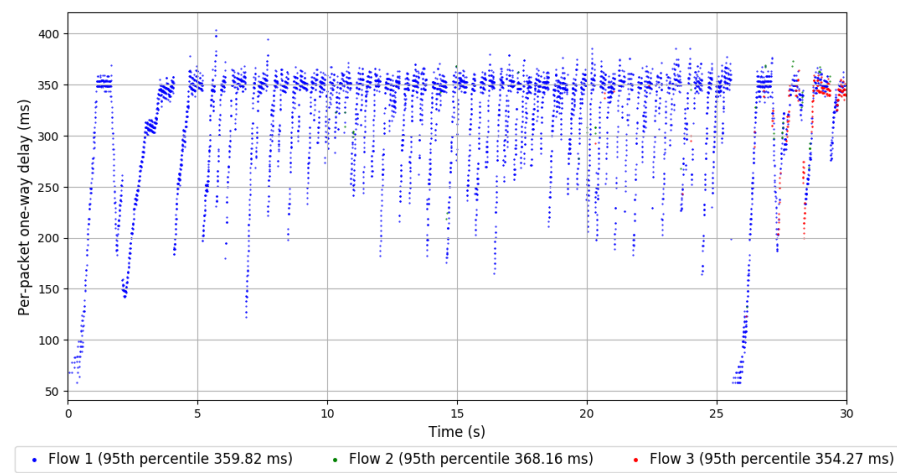
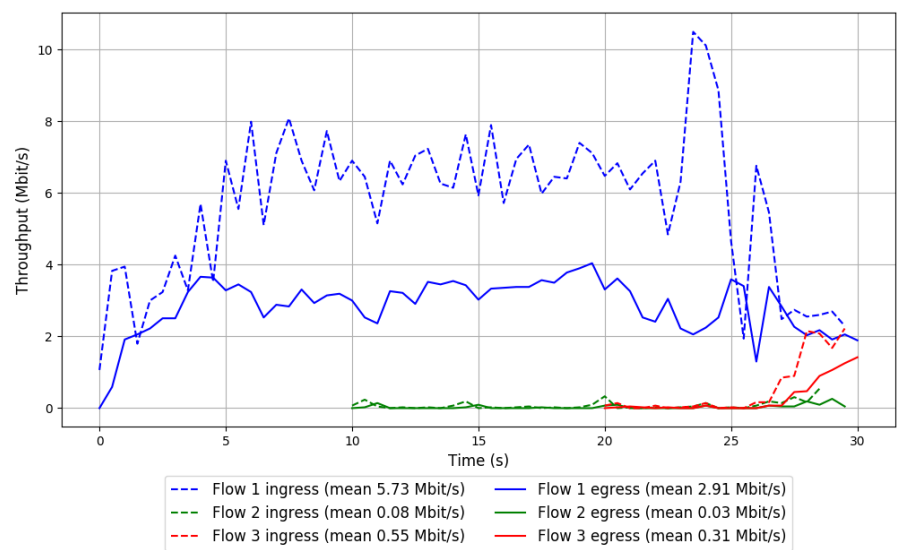


Run 1: Statistics of Verus

Start at: 2018-09-07 23:10:47
End at: 2018-09-07 23:11:17
Local clock offset: -1.005 ms
Remote clock offset: -2.587 ms

Below is generated by plot.py at 2018-09-07 23:54:44
Datalink statistics
-- Total of 3 flows:
Average throughput: 3.03 Mbit/s
95th percentile per-packet one-way delay: 359.770 ms
Loss rate: 49.18%
-- Flow 1:
Average throughput: 2.91 Mbit/s
95th percentile per-packet one-way delay: 359.821 ms
Loss rate: 49.25%
-- Flow 2:
Average throughput: 0.03 Mbit/s
95th percentile per-packet one-way delay: 368.156 ms
Loss rate: 55.65%
-- Flow 3:
Average throughput: 0.31 Mbit/s
95th percentile per-packet one-way delay: 354.271 ms
Loss rate: 45.15%

Run 1: Report of Verus — Data Link

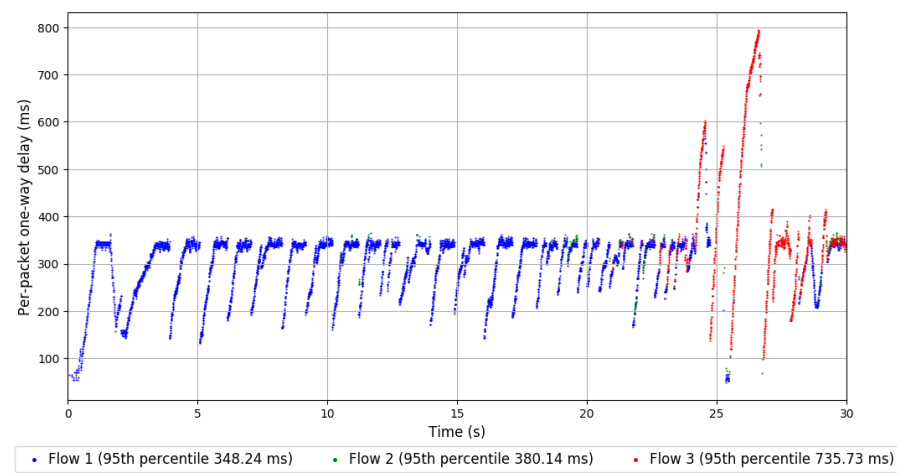
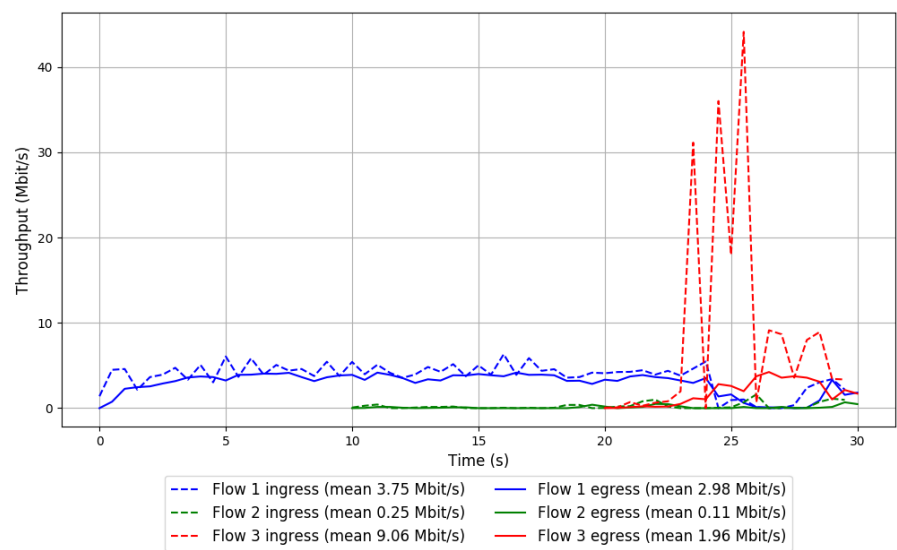


Run 2: Statistics of Verus

Start at: 2018-09-07 23:30:54
End at: 2018-09-07 23:31:24
Local clock offset: -2.951 ms
Remote clock offset: -2.783 ms

Below is generated by plot.py at 2018-09-07 23:54:46
Datalink statistics
-- Total of 3 flows:
Average throughput: 3.68 Mbit/s
95th percentile per-packet one-way delay: 470.268 ms
Loss rate: 46.96%
-- Flow 1:
Average throughput: 2.98 Mbit/s
95th percentile per-packet one-way delay: 348.240 ms
Loss rate: 20.93%
-- Flow 2:
Average throughput: 0.11 Mbit/s
95th percentile per-packet one-way delay: 380.140 ms
Loss rate: 56.50%
-- Flow 3:
Average throughput: 1.96 Mbit/s
95th percentile per-packet one-way delay: 735.732 ms
Loss rate: 79.05%

Run 2: Report of Verus — Data Link

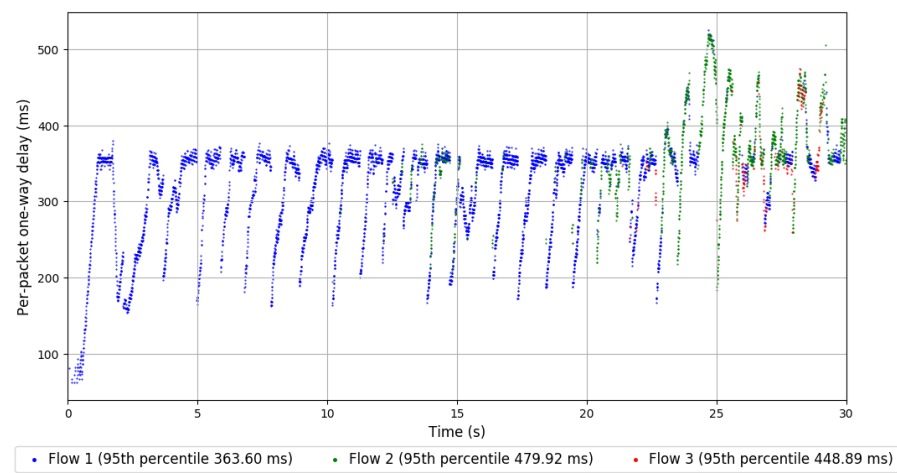
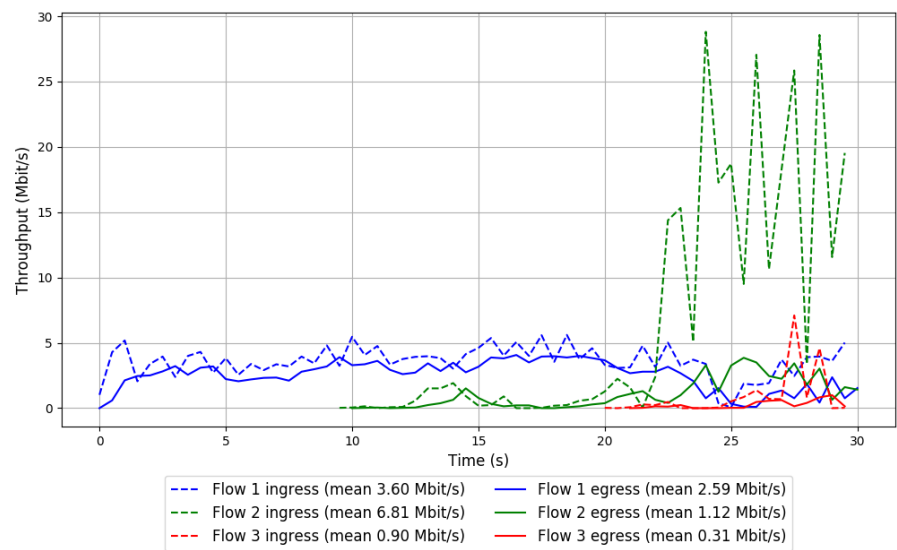


Run 3: Statistics of Verus

Start at: 2018-09-07 23:51:04
End at: 2018-09-07 23:51:34
Local clock offset: -2.15 ms
Remote clock offset: -2.397 ms

Below is generated by plot.py at 2018-09-07 23:54:49
Datalink statistics
-- Total of 3 flows:
Average throughput: 3.39 Mbit/s
95th percentile per-packet one-way delay: 434.370 ms
Loss rate: 59.84%
-- Flow 1:
Average throughput: 2.59 Mbit/s
95th percentile per-packet one-way delay: 363.598 ms
Loss rate: 28.81%
-- Flow 2:
Average throughput: 1.12 Mbit/s
95th percentile per-packet one-way delay: 479.920 ms
Loss rate: 83.63%
-- Flow 3:
Average throughput: 0.31 Mbit/s
95th percentile per-packet one-way delay: 448.894 ms
Loss rate: 73.40%

Run 3: Report of Verus — Data Link

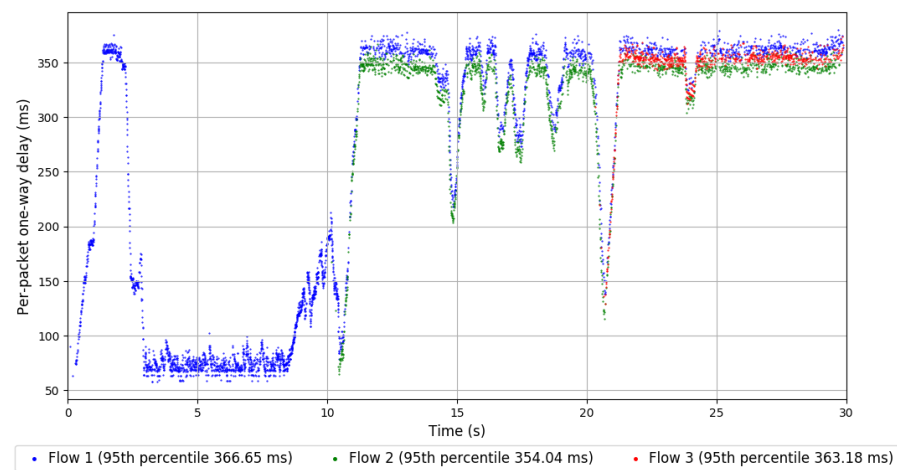
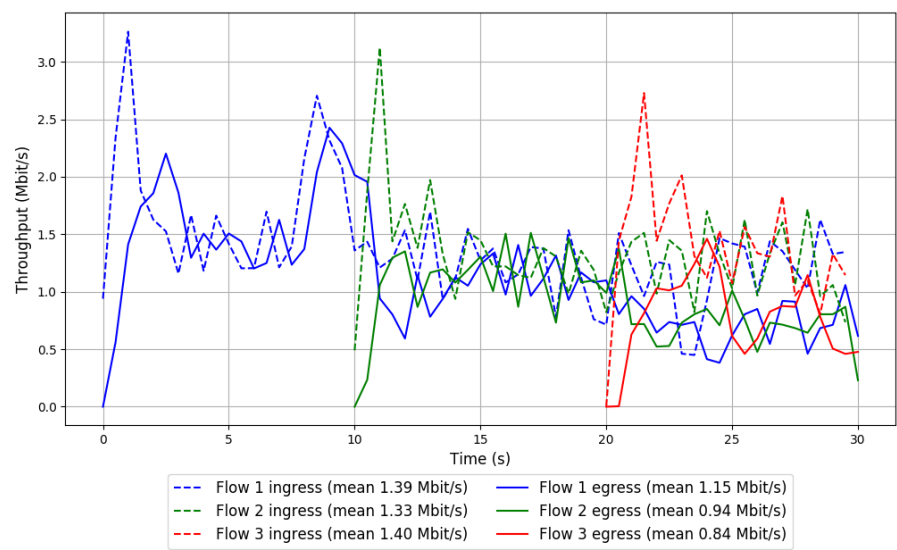


Run 1: Statistics of PCC-Vivace

Start at: 2018-09-07 22:58:31
End at: 2018-09-07 22:59:01
Local clock offset: -4.753 ms
Remote clock offset: -1.875 ms

Below is generated by plot.py at 2018-09-07 23:54:49
Datalink statistics
-- Total of 3 flows:
Average throughput: 2.04 Mbit/s
95th percentile per-packet one-way delay: 364.936 ms
Loss rate: 25.73%
-- Flow 1:
Average throughput: 1.15 Mbit/s
95th percentile per-packet one-way delay: 366.651 ms
Loss rate: 17.39%
-- Flow 2:
Average throughput: 0.94 Mbit/s
95th percentile per-packet one-way delay: 354.043 ms
Loss rate: 30.36%
-- Flow 3:
Average throughput: 0.84 Mbit/s
95th percentile per-packet one-way delay: 363.184 ms
Loss rate: 41.89%

Run 1: Report of PCC-Vivace — Data Link

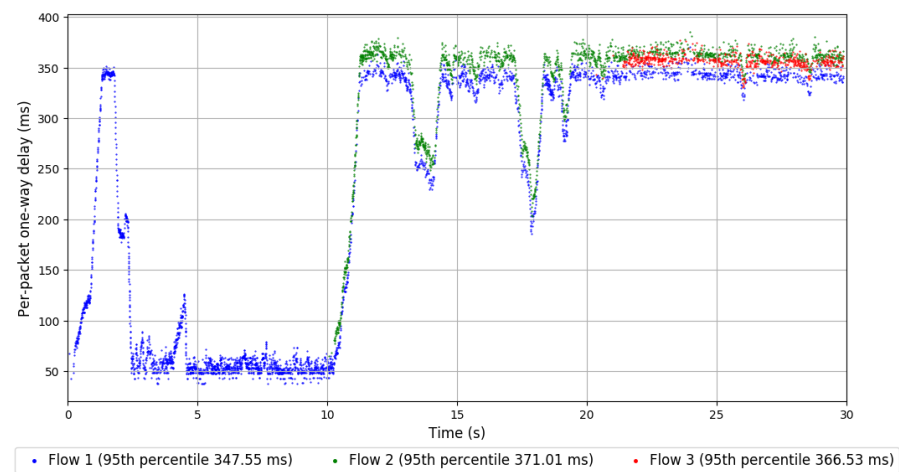
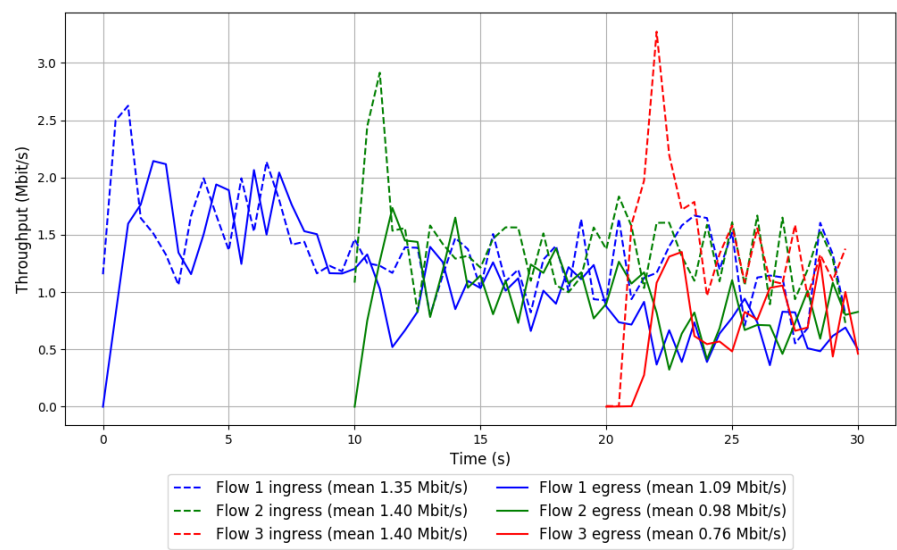


Run 2: Statistics of PCC-Vivace

Start at: 2018-09-07 23:18:37
End at: 2018-09-07 23:19:07
Local clock offset: -4.103 ms
Remote clock offset: -2.741 ms

Below is generated by plot.py at 2018-09-07 23:54:49
Datalink statistics
-- Total of 3 flows:
Average throughput: 1.98 Mbit/s
95th percentile per-packet one-way delay: 365.946 ms
Loss rate: 28.29%
-- Flow 1:
Average throughput: 1.09 Mbit/s
95th percentile per-packet one-way delay: 347.547 ms
Loss rate: 20.05%
-- Flow 2:
Average throughput: 0.98 Mbit/s
95th percentile per-packet one-way delay: 371.009 ms
Loss rate: 30.68%
-- Flow 3:
Average throughput: 0.76 Mbit/s
95th percentile per-packet one-way delay: 366.529 ms
Loss rate: 47.62%

Run 2: Report of PCC-Vivace — Data Link

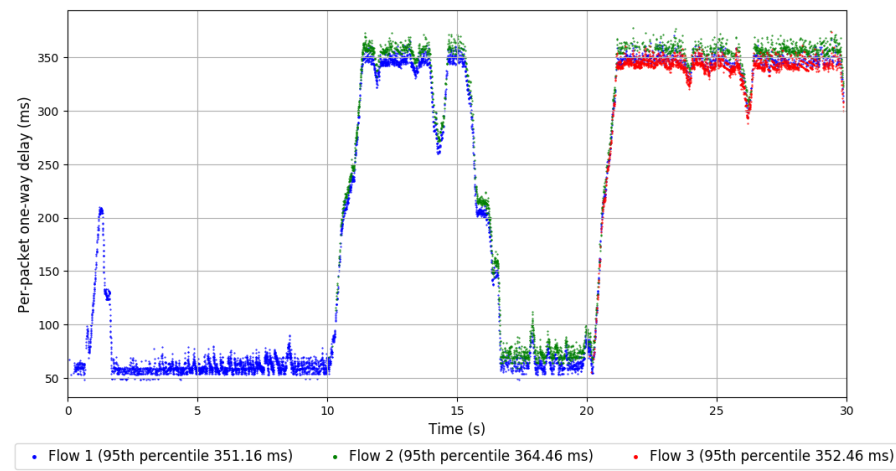
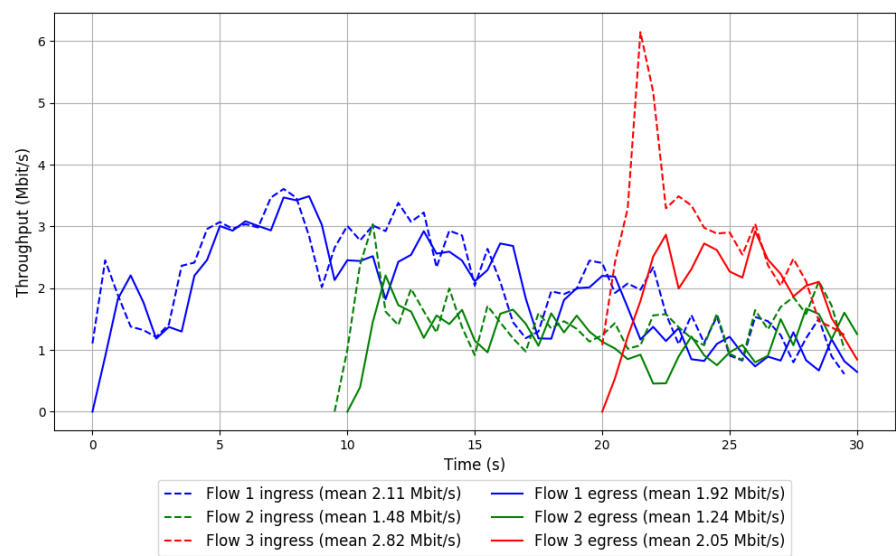


Run 3: Statistics of PCC-Vivace

Start at: 2018-09-07 23:38:44
End at: 2018-09-07 23:39:14
Local clock offset: 1.44 ms
Remote clock offset: -1.788 ms

Below is generated by plot.py at 2018-09-07 23:54:49
Datalink statistics
-- Total of 3 flows:
Average throughput: 3.41 Mbit/s
95th percentile per-packet one-way delay: 358.779 ms
Loss rate: 15.27%
-- Flow 1:
Average throughput: 1.92 Mbit/s
95th percentile per-packet one-way delay: 351.156 ms
Loss rate: 9.18%
-- Flow 2:
Average throughput: 1.24 Mbit/s
95th percentile per-packet one-way delay: 364.458 ms
Loss rate: 16.45%
-- Flow 3:
Average throughput: 2.05 Mbit/s
95th percentile per-packet one-way delay: 352.456 ms
Loss rate: 27.78%

Run 3: Report of PCC-Vivace — Data Link

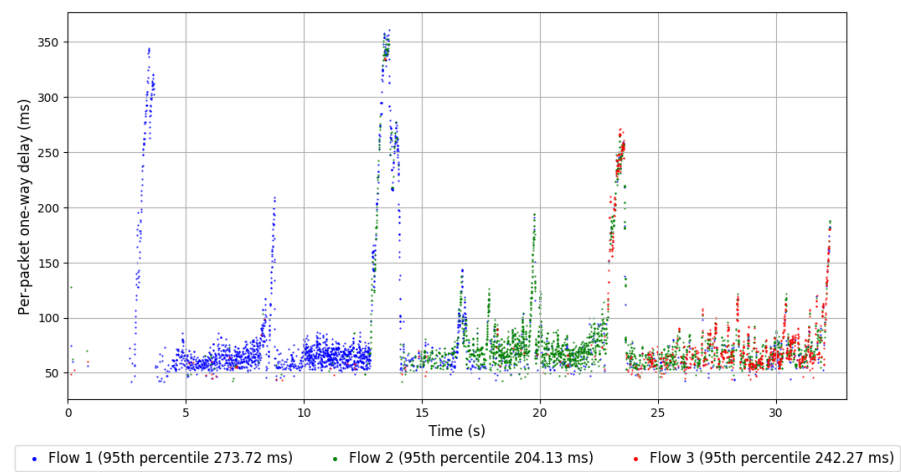
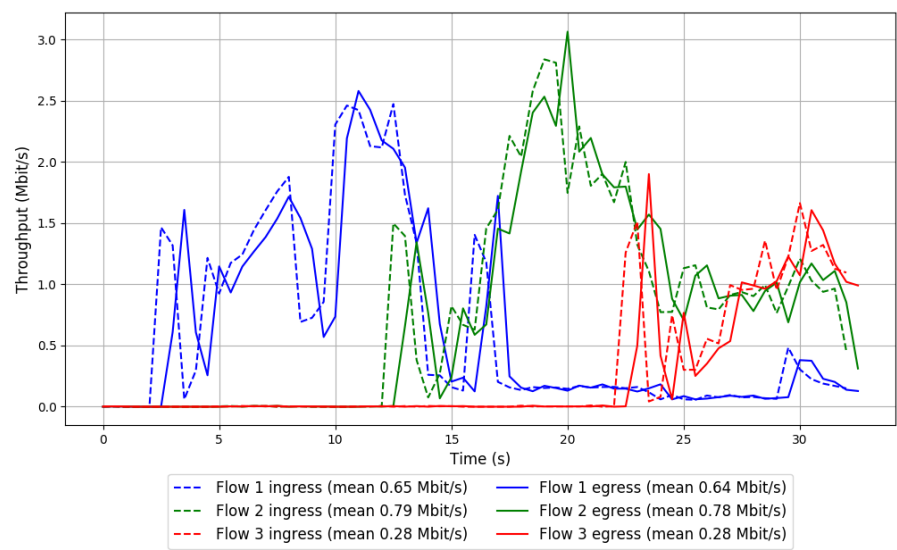


Run 1: Statistics of WebRTC media

Start at: 2018-09-07 23:02:58
End at: 2018-09-07 23:03:28
Local clock offset: -4.007 ms
Remote clock offset: -3.229 ms

Below is generated by plot.py at 2018-09-07 23:54:49
Datalink statistics
-- Total of 3 flows:
Average throughput: 1.69 Mbit/s
95th percentile per-packet one-way delay: 247.976 ms
Loss rate: 1.57%
-- Flow 1:
Average throughput: 0.64 Mbit/s
95th percentile per-packet one-way delay: 273.724 ms
Loss rate: 1.23%
-- Flow 2:
Average throughput: 0.78 Mbit/s
95th percentile per-packet one-way delay: 204.131 ms
Loss rate: 1.50%
-- Flow 3:
Average throughput: 0.28 Mbit/s
95th percentile per-packet one-way delay: 242.267 ms
Loss rate: 2.52%

Run 1: Report of WebRTC media — Data Link

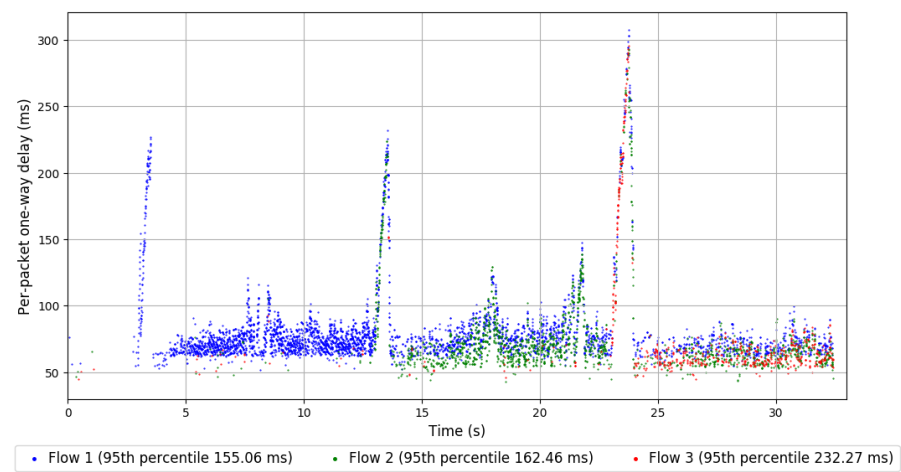
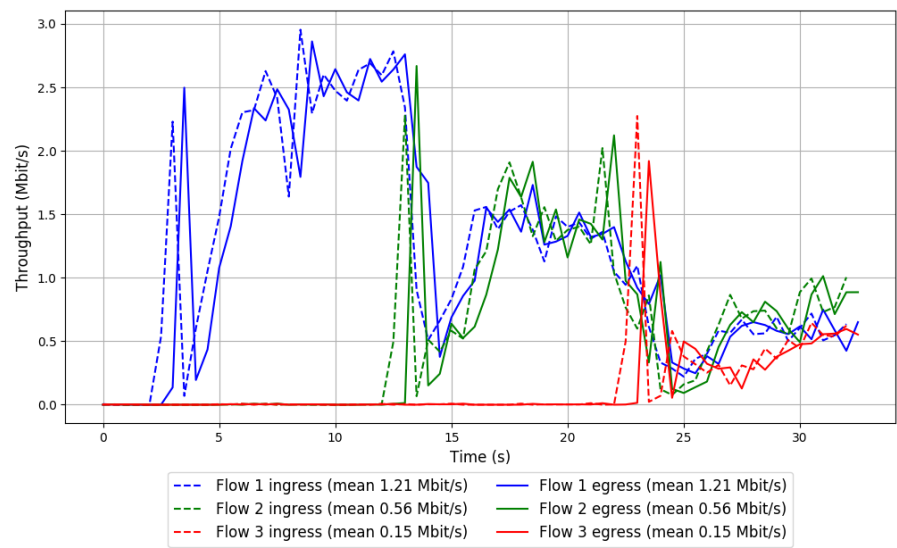


Run 2: Statistics of WebRTC media

Start at: 2018-09-07 23:23:06
End at: 2018-09-07 23:23:36
Local clock offset: -1.594 ms
Remote clock offset: -2.713 ms

Below is generated by plot.py at 2018-09-07 23:54:49
Datalink statistics
-- Total of 3 flows:
Average throughput: 1.92 Mbit/s
95th percentile per-packet one-way delay: 175.651 ms
Loss rate: 0.30%
-- Flow 1:
Average throughput: 1.21 Mbit/s
95th percentile per-packet one-way delay: 155.065 ms
Loss rate: 0.14%
-- Flow 2:
Average throughput: 0.56 Mbit/s
95th percentile per-packet one-way delay: 162.461 ms
Loss rate: 0.49%
-- Flow 3:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 232.269 ms
Loss rate: 0.93%

Run 2: Report of WebRTC media — Data Link



Run 3: Statistics of WebRTC media

Start at: 2018-09-07 23:43:14
End at: 2018-09-07 23:43:44
Local clock offset: -0.42 ms
Remote clock offset: -8.056 ms

Below is generated by plot.py at 2018-09-07 23:54:49
Datalink statistics
-- Total of 3 flows:
Average throughput: 2.03 Mbit/s
95th percentile per-packet one-way delay: 254.374 ms
Loss rate: 0.47%
-- Flow 1:
Average throughput: 1.11 Mbit/s
95th percentile per-packet one-way delay: 229.998 ms
Loss rate: 0.25%
-- Flow 2:
Average throughput: 0.72 Mbit/s
95th percentile per-packet one-way delay: 270.962 ms
Loss rate: 0.40%
-- Flow 3:
Average throughput: 0.20 Mbit/s
95th percentile per-packet one-way delay: 274.128 ms
Loss rate: 1.91%

Run 3: Report of WebRTC media — Data Link

