

Pantheon Report

Generated at 2019-02-05 06:55:04 (UTC).

Data path: AWS Brazil 2 on `ens5 (local)` → Colombia cellular on `ppp0 (remote)`.

Repeated the test of 21 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 `gps.ntp.br` and have been applied to correct the timestamps in logs.

System info:

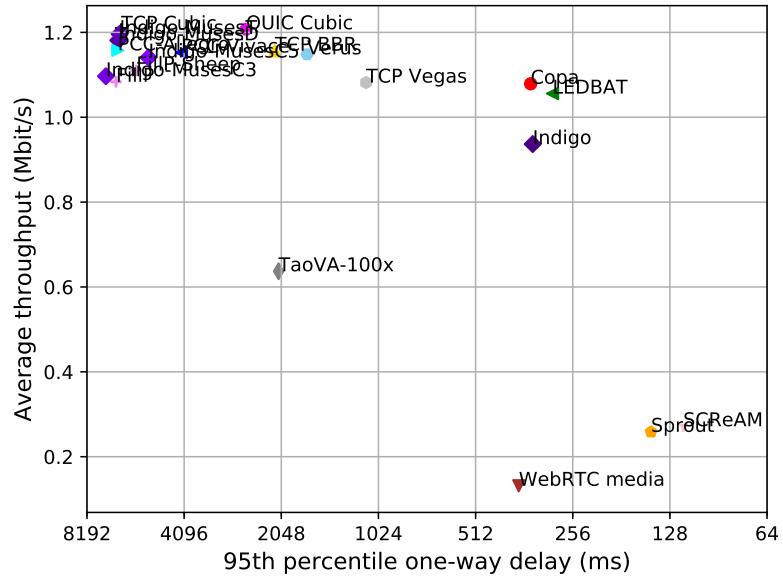
```
Linux 4.15.0-1031-aws
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912
```

Git summary:

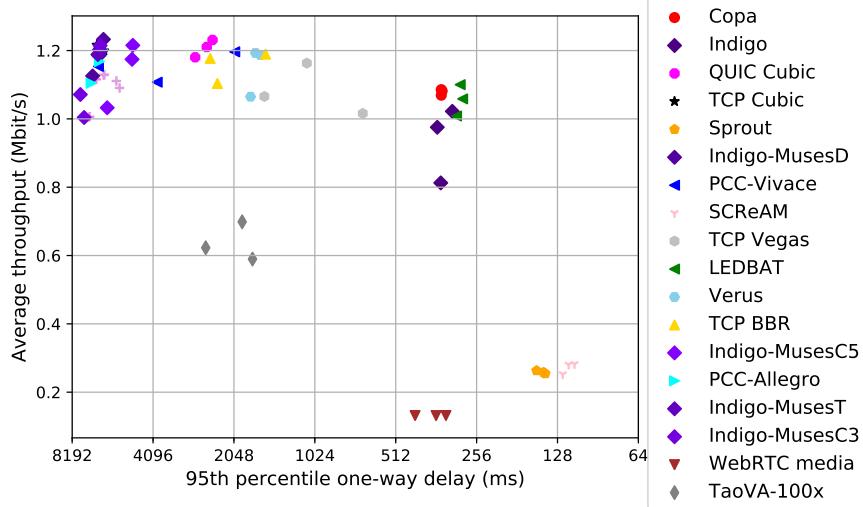
```
branch: muses @ 7a686f7c2ed0a333082c0bab1fa5c921ab47e6ee
third_party/fillp @ d6da1459332fce56963885d7eba17e6a32d4519
third_party/fillp-sheep @ 0e5bb722943babcd2b090d2c64fc45e12e923f9
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdf58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d
third_party/libutp @ b3465b942e2826f2b179eab4a906ce6bb7cf3cf
third_party/muses @ 5ce721187ad823da20955337730c746486ca4966
third_party/pantheon-tunnel @ f866d3f58d27af942717625ee3a354cc2e802bd
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-quic @ 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 AWS Brazil 2 to Colombia cellular, 3 runs of 30s each per scheme
 3 flows with 10s interval between flows (mean of all runs by scheme)



test from AWS Brazil 2 to Colombia cellular, 3 runs of 30s each per scheme
 3 flows with 10s interval between flows



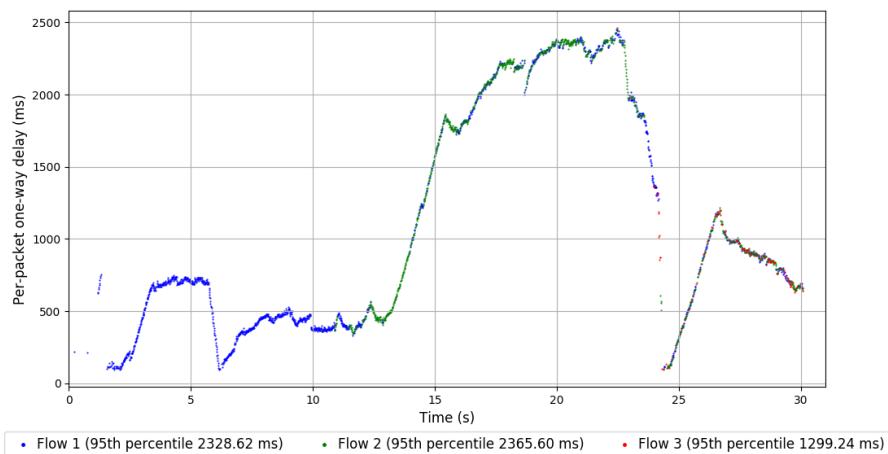
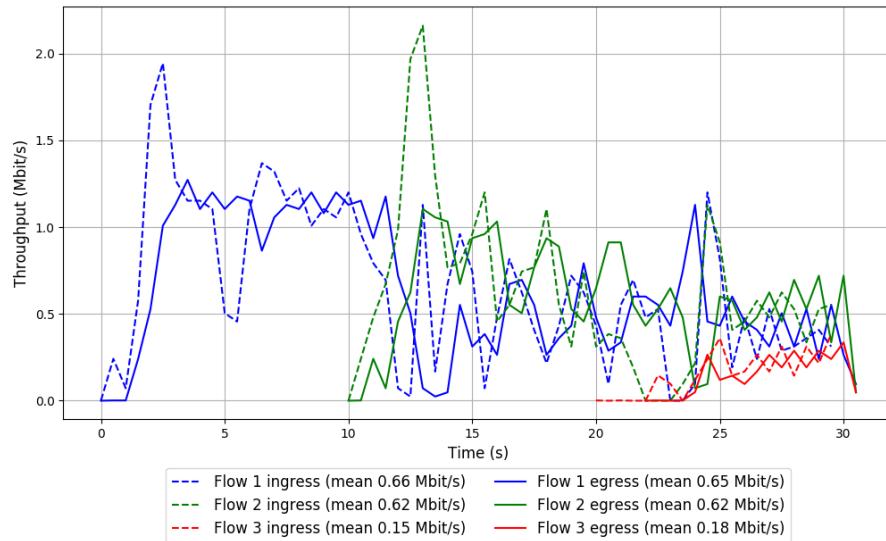
scheme	# runs	mean avg tput (Mbit/s)			mean 95th-%ile delay (ms)			mean loss rate (%)		
		flow 1	flow 2	flow 3	flow 1	flow 2	flow 3	flow 1	flow 2	flow 3
TCP BBR	3	0.72	0.58	0.22	2098.78	2130.66	1812.25	2.41	5.24	16.98
Copa	3	0.63	0.47	0.41	325.38	347.11	320.66	0.18	0.13	0.49
TCP Cubic	3	1.18	0.05	0.00	6421.66	6385.11	6507.26	21.87	38.79	85.96
FillP	3	0.73	0.58	0.01	6406.32	6729.43	5509.86	29.72	60.02	83.56
FillP-Sheep	3	0.61	0.60	0.37	5199.07	5389.74	5602.22	16.73	21.70	85.00
Indigo	3	0.57	0.35	0.40	313.66	330.27	401.58	0.06	0.00	0.53
Indigo-MusesC3	3	0.74	0.65	0.00	6896.84	7189.87	7030.24	85.56	96.97	98.08
Indigo-MusesC5	3	0.78	0.57	0.00	5207.17	5367.68	5463.81	20.92	35.67	99.91
Indigo-MusesD	3	0.72	0.81	0.00	6494.61	6592.78	6559.68	65.53	97.64	99.91
Indigo-MusesT	3	0.74	0.77	0.00	6408.18	6557.59	6397.29	84.98	95.90	99.88
LEDBAT	3	0.77	0.32	0.24	291.90	299.35	375.15	0.13	0.83	0.22
PCC-Allegro	3	1.16	0.00	0.00	6575.22	6570.88	6511.04	86.26	1.53	50.96
PCC-Expr	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
QUIC Cubic	3	0.94	0.37	0.09	2589.22	2659.43	2781.09	6.55	16.99	42.63
SCReAM	3	0.08	0.19	0.19	108.79	118.69	125.48	0.00	0.06	0.20
Sprout	3	0.12	0.14	0.14	170.08	138.95	141.28	0.13	0.01	0.02
TaoVA-100x	3	0.01	0.68	0.62	237.01	1757.96	2079.06	85.53	2.59	4.62
TCP Vegas	3	0.67	0.44	0.38	1013.08	1176.71	1071.32	1.00	2.28	6.88
Verus	3	1.13	0.01	0.01	1702.97	1717.00	1874.12	2.65	7.95	12.12
PCC-Vivace	3	1.01	0.22	0.00	4167.72	4158.03	4110.75	21.03	27.17	25.29
WebRTC media	3	0.04	0.04	0.04	301.33	351.44	384.15	0.02	0.00	0.00

Run 1: Statistics of TCP BBR

```
Start at: 2019-02-05 05:38:38
End at: 2019-02-05 05:39:08
Local clock offset: -7.259 ms
Remote clock offset: 2.478 ms

# Below is generated by plot.py at 2019-02-05 06:54:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.10 Mbit/s
95th percentile per-packet one-way delay: 2358.634 ms
Loss rate: 2.03%
-- Flow 1:
Average throughput: 0.65 Mbit/s
95th percentile per-packet one-way delay: 2328.617 ms
Loss rate: 1.10%
-- Flow 2:
Average throughput: 0.62 Mbit/s
95th percentile per-packet one-way delay: 2365.599 ms
Loss rate: 2.22%
-- Flow 3:
Average throughput: 0.18 Mbit/s
95th percentile per-packet one-way delay: 1299.244 ms
Loss rate: 12.48%
```

Run 1: Report of TCP BBR — Data Link

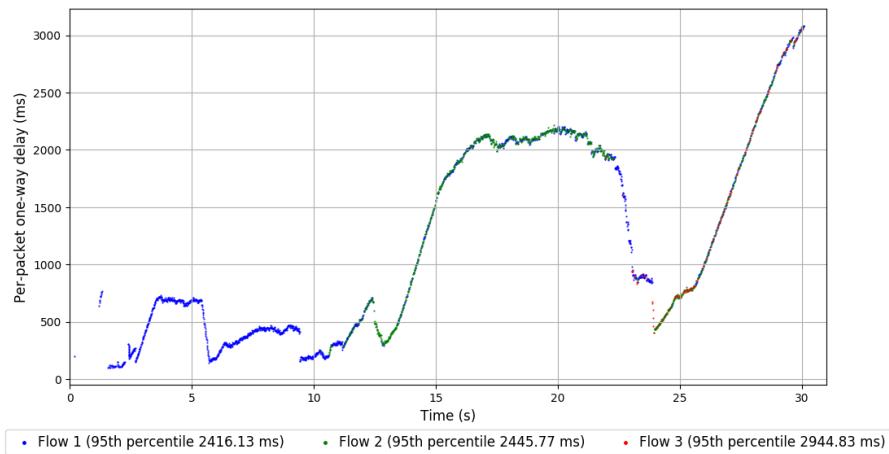
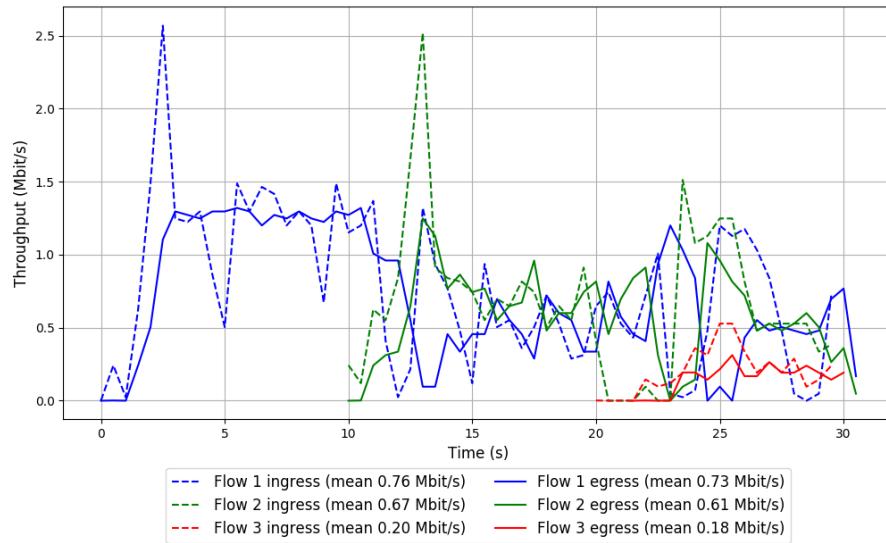


Run 2: Statistics of TCP BBR

```
Start at: 2019-02-05 06:04:27
End at: 2019-02-05 06:04:58
Local clock offset: -7.023 ms
Remote clock offset: 6.966 ms

# Below is generated by plot.py at 2019-02-05 06:54:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.18 Mbit/s
95th percentile per-packet one-way delay: 2509.812 ms
Loss rate: 8.09%
-- Flow 1:
Average throughput: 0.73 Mbit/s
95th percentile per-packet one-way delay: 2416.129 ms
Loss rate: 4.68%
-- Flow 2:
Average throughput: 0.61 Mbit/s
95th percentile per-packet one-way delay: 2445.772 ms
Loss rate: 10.57%
-- Flow 3:
Average throughput: 0.18 Mbit/s
95th percentile per-packet one-way delay: 2944.831 ms
Loss rate: 30.31%
```

Run 2: Report of TCP BBR — Data Link

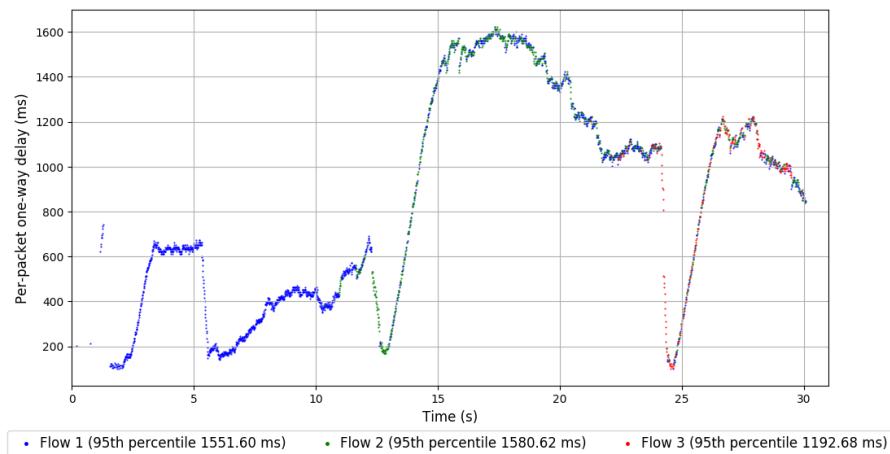
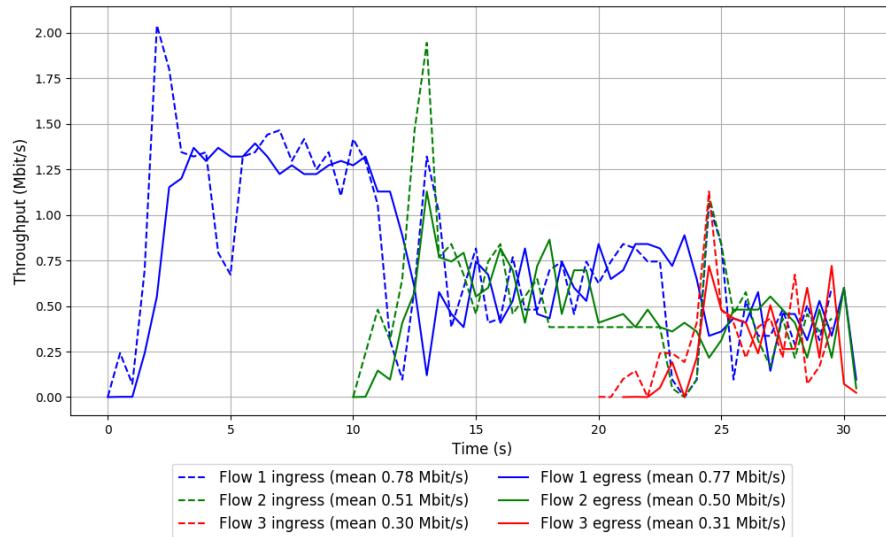


Run 3: Statistics of TCP BBR

```
Start at: 2019-02-05 06:30:18
End at: 2019-02-05 06:30:48
Local clock offset: -6.839 ms
Remote clock offset: 9.553 ms

# Below is generated by plot.py at 2019-02-05 06:54:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.19 Mbit/s
95th percentile per-packet one-way delay: 1561.418 ms
Loss rate: 2.41%
-- Flow 1:
Average throughput: 0.77 Mbit/s
95th percentile per-packet one-way delay: 1551.603 ms
Loss rate: 1.45%
-- Flow 2:
Average throughput: 0.50 Mbit/s
95th percentile per-packet one-way delay: 1580.616 ms
Loss rate: 2.94%
-- Flow 3:
Average throughput: 0.31 Mbit/s
95th percentile per-packet one-way delay: 1192.678 ms
Loss rate: 8.16%
```

Run 3: Report of TCP BBR — Data Link

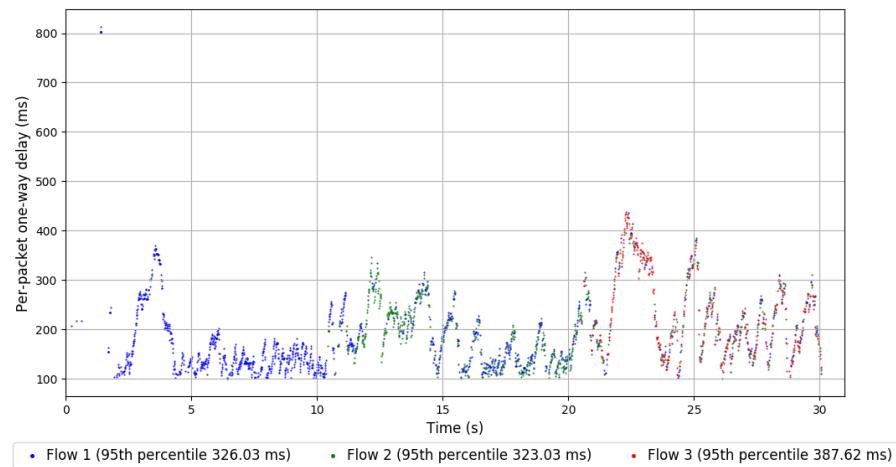
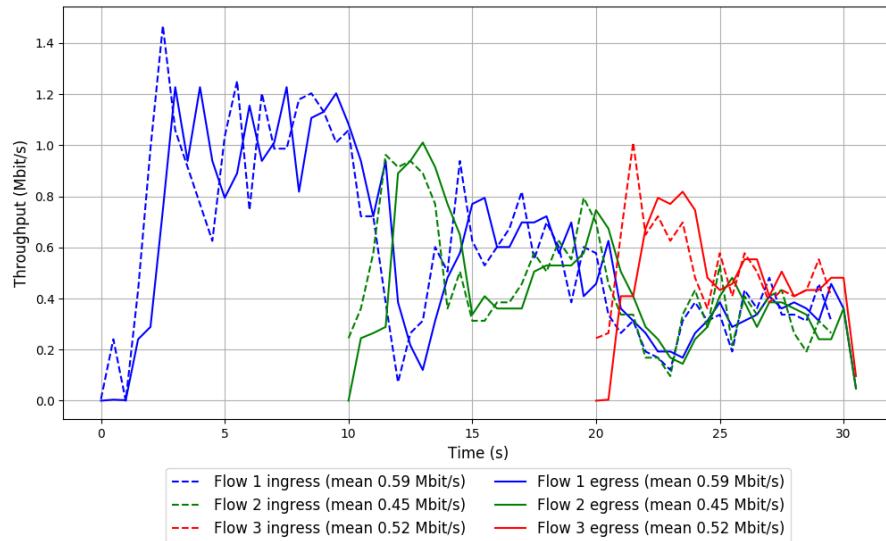


Run 1: Statistics of Copa

```
Start at: 2019-02-05 05:55:53
End at: 2019-02-05 05:56:23
Local clock offset: -7.074 ms
Remote clock offset: 3.796 ms

# Below is generated by plot.py at 2019-02-05 06:54:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.07 Mbit/s
95th percentile per-packet one-way delay: 346.571 ms
Loss rate: 0.19%
-- Flow 1:
Average throughput: 0.59 Mbit/s
95th percentile per-packet one-way delay: 326.031 ms
Loss rate: 0.14%
-- Flow 2:
Average throughput: 0.45 Mbit/s
95th percentile per-packet one-way delay: 323.031 ms
Loss rate: 0.13%
-- Flow 3:
Average throughput: 0.52 Mbit/s
95th percentile per-packet one-way delay: 387.622 ms
Loss rate: 0.46%
```

Run 1: Report of Copa — Data Link

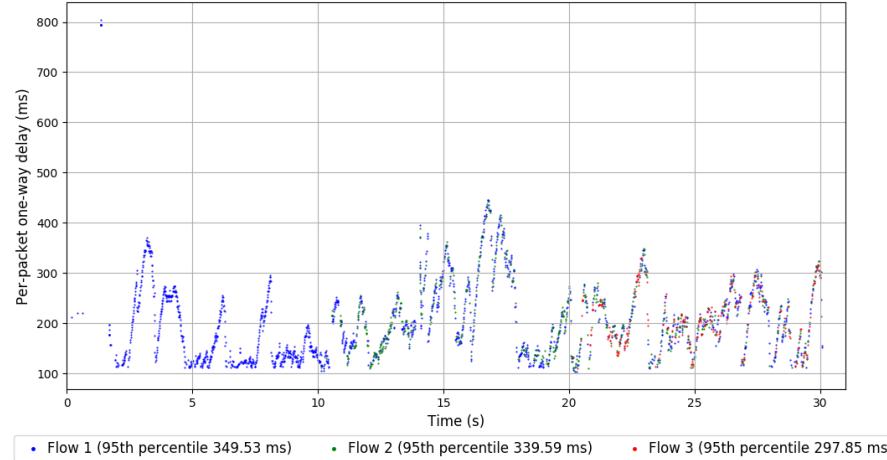
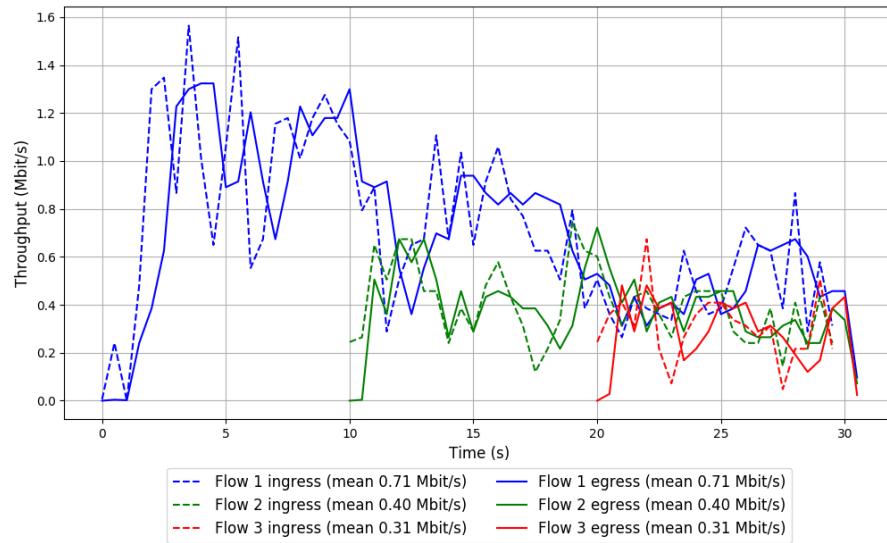


Run 2: Statistics of Copa

```
Start at: 2019-02-05 06:21:37
End at: 2019-02-05 06:22:07
Local clock offset: -7.683 ms
Remote clock offset: 9.357 ms

# Below is generated by plot.py at 2019-02-05 06:54:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.08 Mbit/s
95th percentile per-packet one-way delay: 343.855 ms
Loss rate: 0.15%
-- Flow 1:
Average throughput: 0.71 Mbit/s
95th percentile per-packet one-way delay: 349.528 ms
Loss rate: 0.11%
-- Flow 2:
Average throughput: 0.40 Mbit/s
95th percentile per-packet one-way delay: 339.589 ms
Loss rate: 0.15%
-- Flow 3:
Average throughput: 0.31 Mbit/s
95th percentile per-packet one-way delay: 297.846 ms
Loss rate: 0.39%
```

Run 2: Report of Copa — Data Link

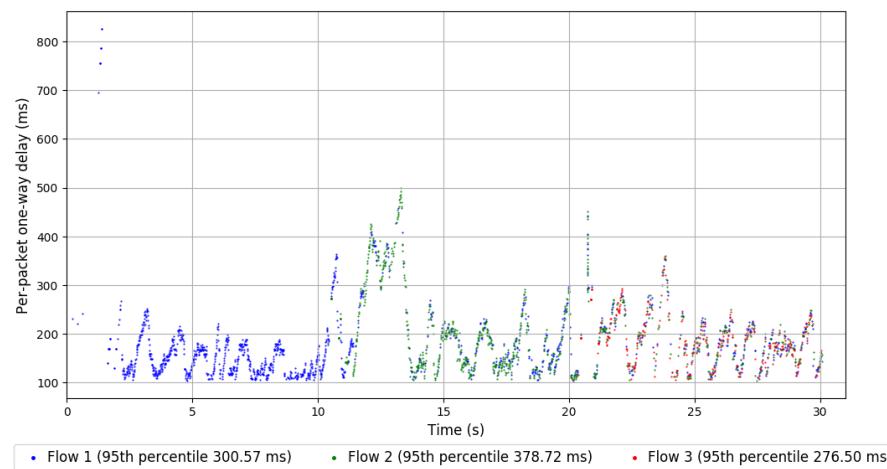
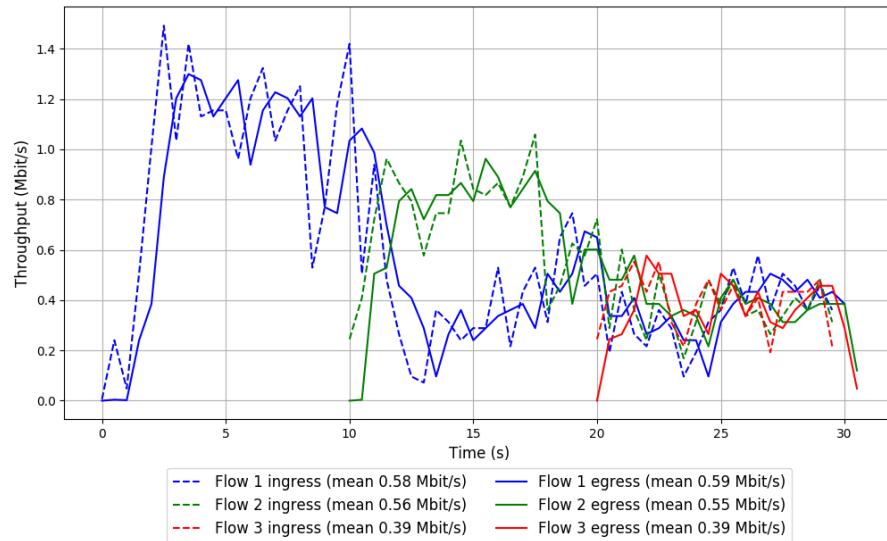


Run 3: Statistics of Copa

```
Start at: 2019-02-05 06:47:27
End at: 2019-02-05 06:47:57
Local clock offset: -7.616 ms
Remote clock offset: 10.289 ms

# Below is generated by plot.py at 2019-02-05 06:54:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.09 Mbit/s
95th percentile per-packet one-way delay: 346.610 ms
Loss rate: 0.26%
-- Flow 1:
Average throughput: 0.59 Mbit/s
95th percentile per-packet one-way delay: 300.567 ms
Loss rate: 0.28%
-- Flow 2:
Average throughput: 0.55 Mbit/s
95th percentile per-packet one-way delay: 378.722 ms
Loss rate: 0.11%
-- Flow 3:
Average throughput: 0.39 Mbit/s
95th percentile per-packet one-way delay: 276.501 ms
Loss rate: 0.62%
```

Run 3: Report of Copa — Data Link

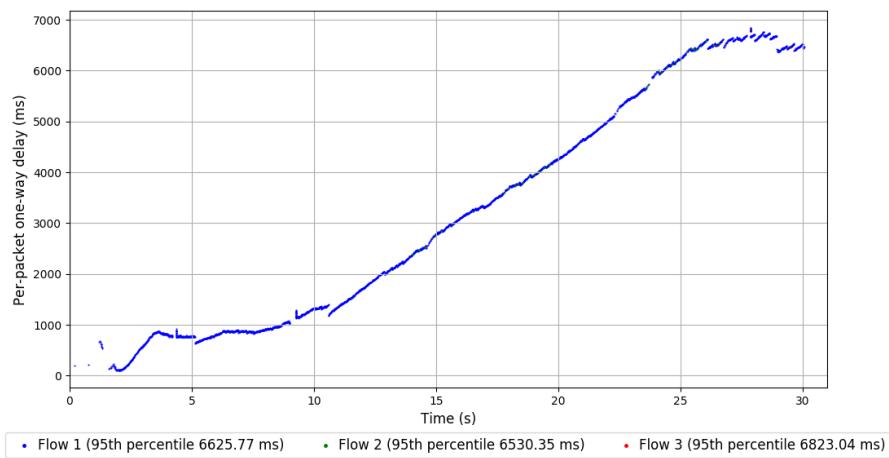
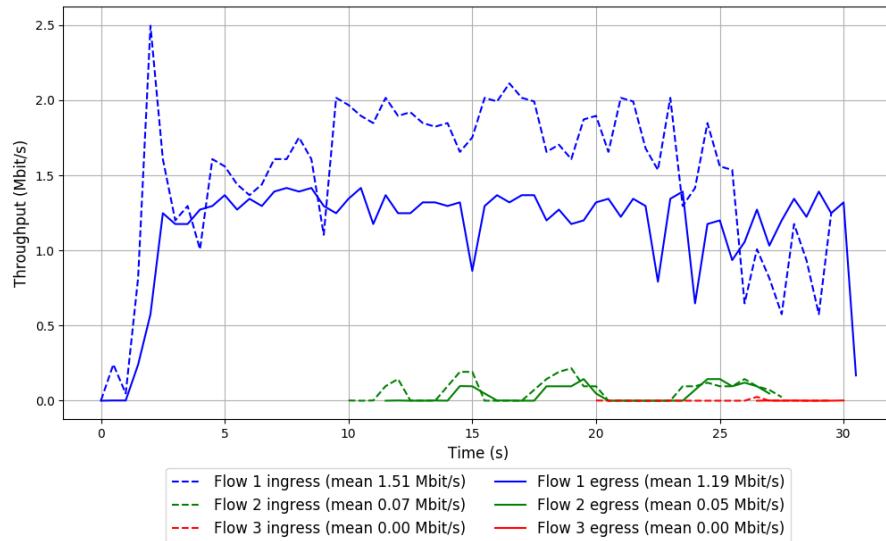


```
Run 1: Statistics of TCP Cubic

Start at: 2019-02-05 05:54:39
End at: 2019-02-05 05:55:09
Local clock offset: -7.111 ms
Remote clock offset: 2.764 ms

# Below is generated by plot.py at 2019-02-05 06:54:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.22 Mbit/s
95th percentile per-packet one-way delay: 6625.305 ms
Loss rate: 21.99%
-- Flow 1:
Average throughput: 1.19 Mbit/s
95th percentile per-packet one-way delay: 6625.765 ms
Loss rate: 21.51%
-- Flow 2:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 6530.351 ms
Loss rate: 39.27%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 6823.044 ms
Loss rate: 85.96%
```

Run 1: Report of TCP Cubic — Data Link

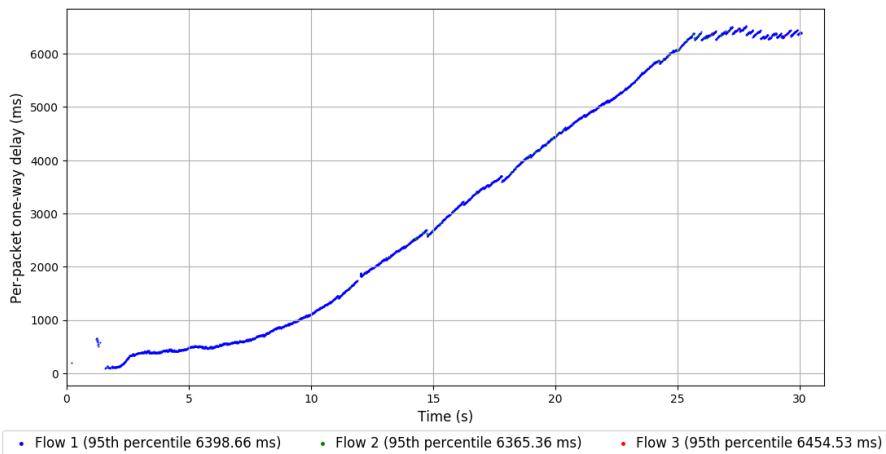
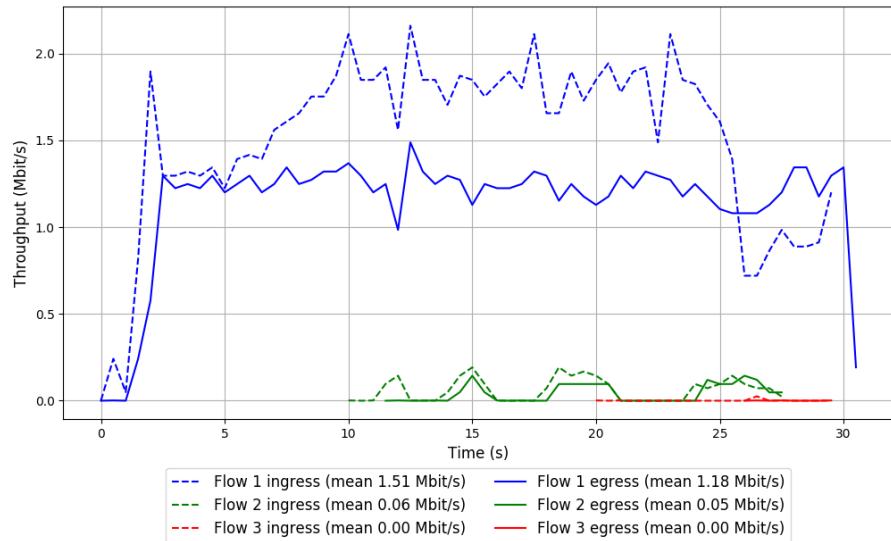


Run 2: Statistics of TCP Cubic

```
Start at: 2019-02-05 06:20:24
End at: 2019-02-05 06:20:54
Local clock offset: -7.063 ms
Remote clock offset: 3.325 ms

# Below is generated by plot.py at 2019-02-05 06:54:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.20 Mbit/s
95th percentile per-packet one-way delay: 6398.662 ms
Loss rate: 22.60%
-- Flow 1:
Average throughput: 1.18 Mbit/s
95th percentile per-packet one-way delay: 6398.662 ms
Loss rate: 22.22%
-- Flow 2:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 6365.356 ms
Loss rate: 36.83%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 6454.535 ms
Loss rate: 85.96%
```

Run 2: Report of TCP Cubic — Data Link

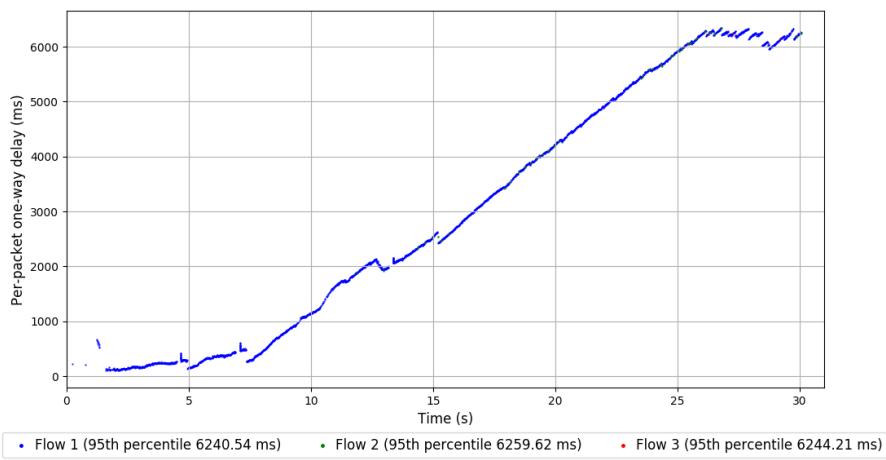
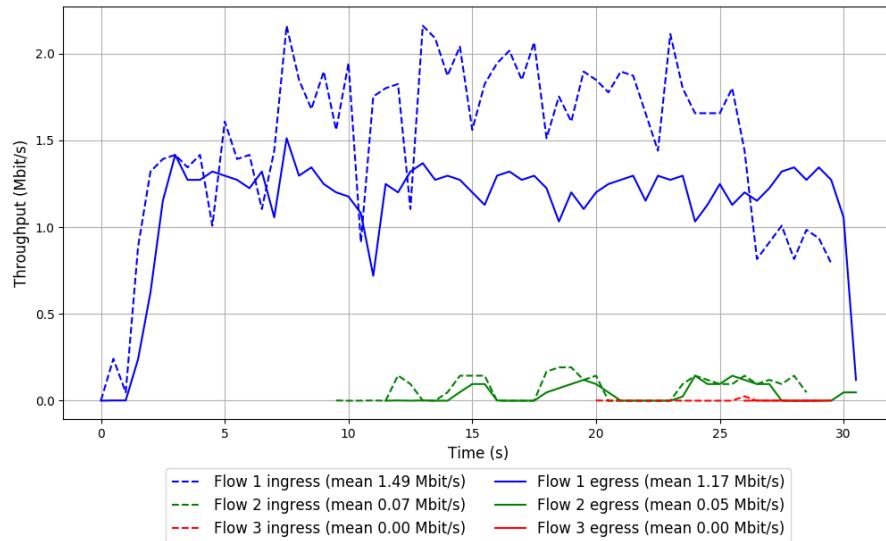


Run 3: Statistics of TCP Cubic

```
Start at: 2019-02-05 06:46:14
End at: 2019-02-05 06:46:44
Local clock offset: -7.775 ms
Remote clock offset: 9.363 ms

# Below is generated by plot.py at 2019-02-05 06:54:24
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.20 Mbit/s
95th percentile per-packet one-way delay: 6242.116 ms
Loss rate: 22.46%
-- Flow 1:
Average throughput: 1.17 Mbit/s
95th percentile per-packet one-way delay: 6240.541 ms
Loss rate: 21.89%
-- Flow 2:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 6259.622 ms
Loss rate: 40.26%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 6244.207 ms
Loss rate: 85.96%
```

Run 3: Report of TCP Cubic — Data Link

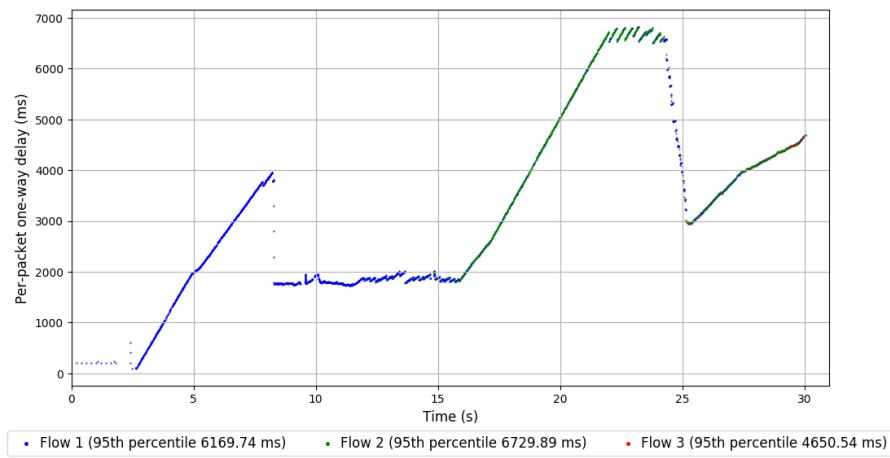
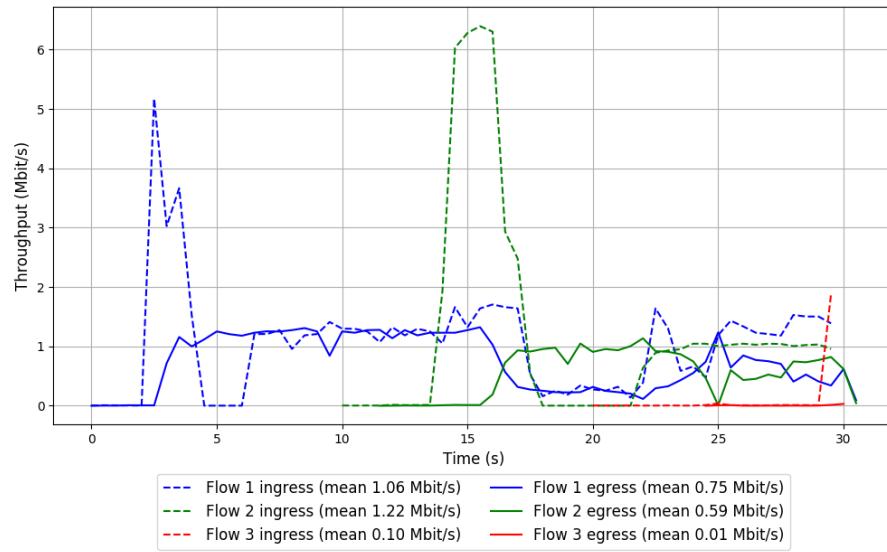


```
Run 1: Statistics of FillP

Start at: 2019-02-05 05:46:05
End at: 2019-02-05 05:46:35
Local clock offset: -7.856 ms
Remote clock offset: 2.567 ms

# Below is generated by plot.py at 2019-02-05 06:54:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.12 Mbit/s
95th percentile per-packet one-way delay: 6664.388 ms
Loss rate: 41.74%
-- Flow 1:
Average throughput: 0.75 Mbit/s
95th percentile per-packet one-way delay: 6169.743 ms
Loss rate: 29.31%
-- Flow 2:
Average throughput: 0.59 Mbit/s
95th percentile per-packet one-way delay: 6729.892 ms
Loss rate: 55.68%
-- Flow 3:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 4650.537 ms
Loss rate: 96.11%
```

Run 1: Report of FillP — Data Link

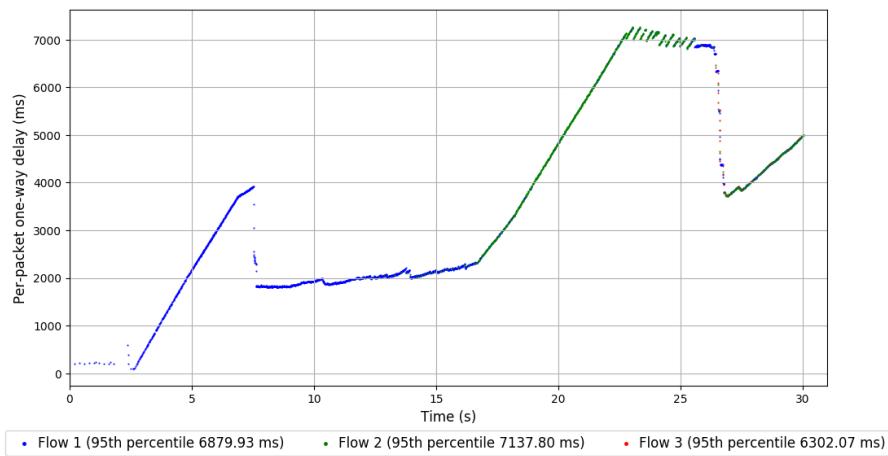
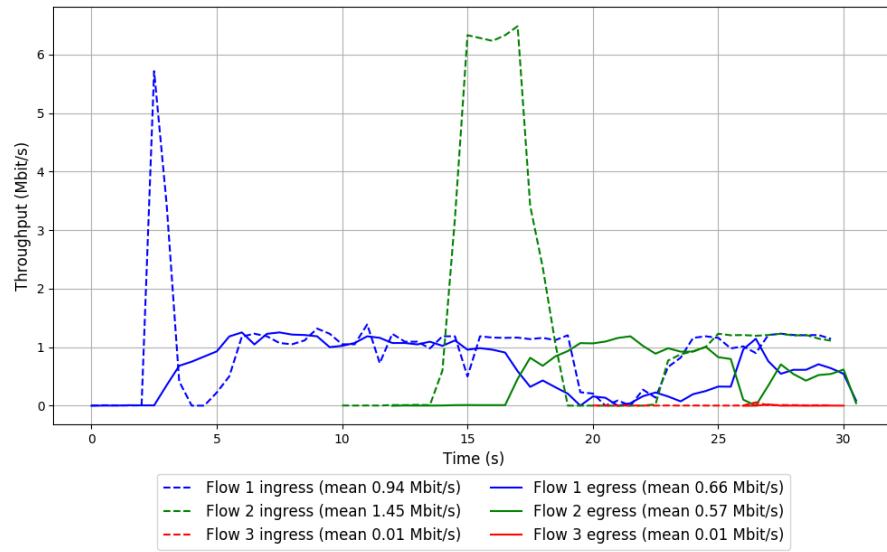


Run 2: Statistics of FillP

```
Start at: 2019-02-05 06:11:49
End at: 2019-02-05 06:12:19
Local clock offset: -7.163 ms
Remote clock offset: 9.26 ms

# Below is generated by plot.py at 2019-02-05 06:54:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.01 Mbit/s
95th percentile per-packet one-way delay: 7055.838 ms
Loss rate: 47.61%
-- Flow 1:
Average throughput: 0.66 Mbit/s
95th percentile per-packet one-way delay: 6879.929 ms
Loss rate: 30.31%
-- Flow 2:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 7137.796 ms
Loss rate: 64.41%
-- Flow 3:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 6302.066 ms
Loss rate: 76.60%
```

Run 2: Report of FillP — Data Link

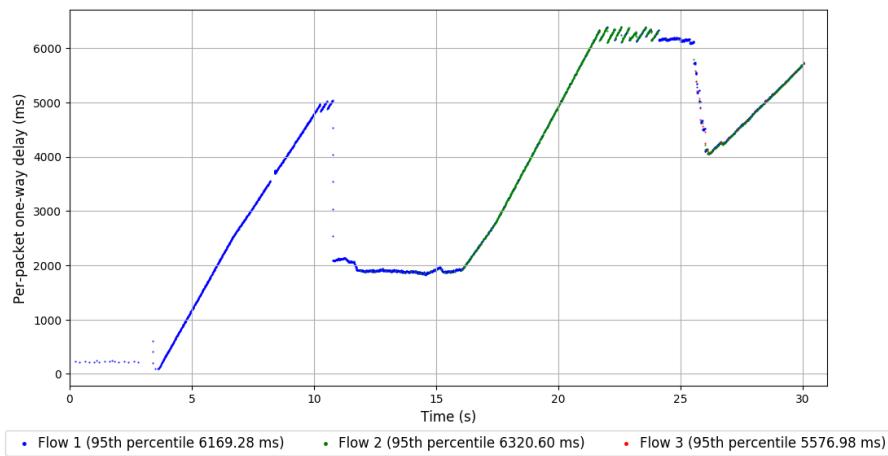
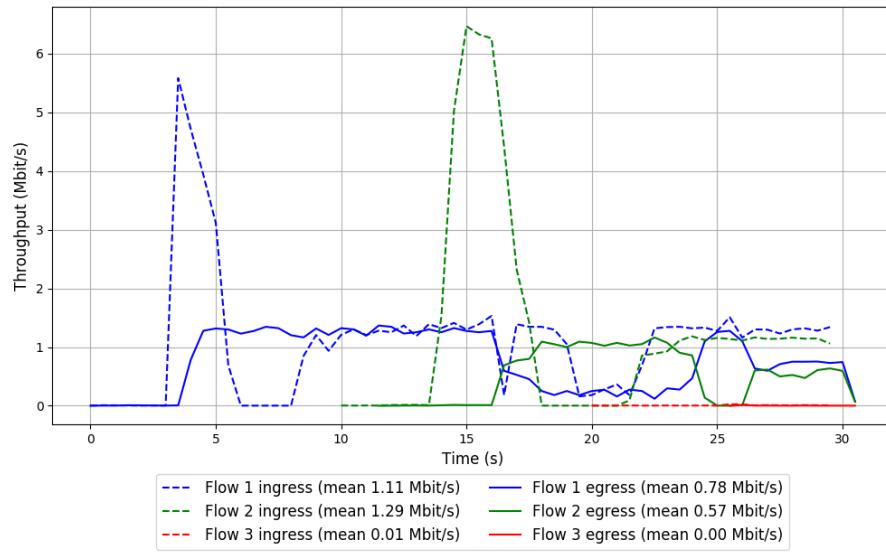


Run 3: Statistics of FillP

```
Start at: 2019-02-05 06:37:40
End at: 2019-02-05 06:38:10
Local clock offset: -7.717 ms
Remote clock offset: 8.912 ms

# Below is generated by plot.py at 2019-02-05 06:54:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.13 Mbit/s
95th percentile per-packet one-way delay: 6253.425 ms
Loss rate: 42.87%
-- Flow 1:
Average throughput: 0.78 Mbit/s
95th percentile per-packet one-way delay: 6169.281 ms
Loss rate: 29.55%
-- Flow 2:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 6320.596 ms
Loss rate: 59.97%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 5576.984 ms
Loss rate: 77.97%
```

Run 3: Report of FillP — Data Link

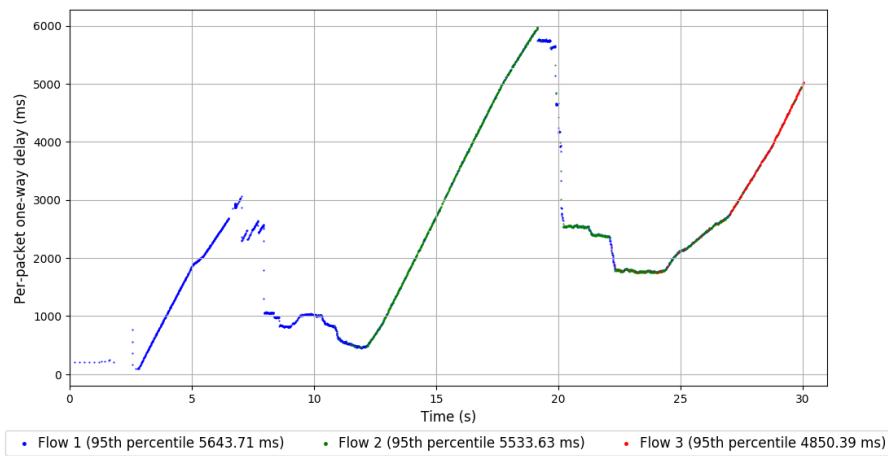
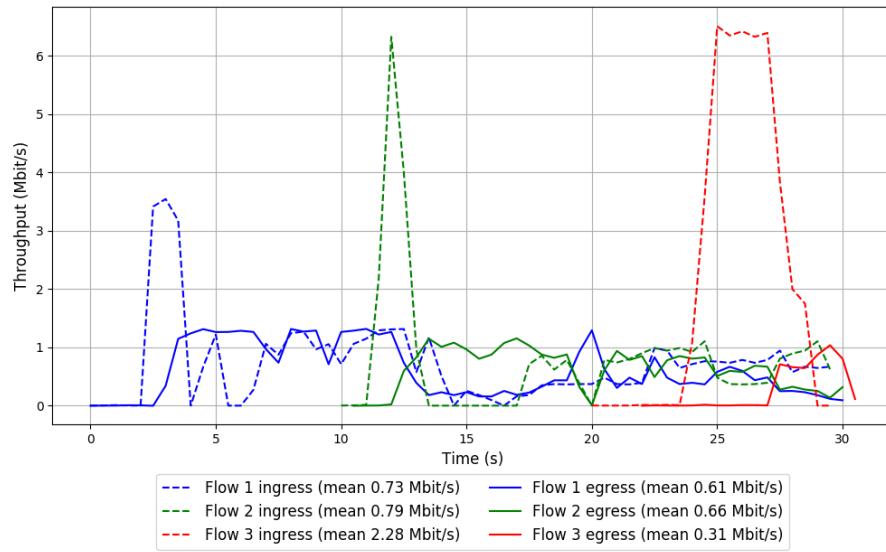


```
Run 1: Statistics of FillP-Sheep
```

```
Start at: 2019-02-05 05:48:32
End at: 2019-02-05 05:49:02
Local clock offset: -7.551 ms
Remote clock offset: 3.552 ms

# Below is generated by plot.py at 2019-02-05 06:54:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.11 Mbit/s
95th percentile per-packet one-way delay: 5607.845 ms
Loss rate: 44.44%
-- Flow 1:
Average throughput: 0.61 Mbit/s
95th percentile per-packet one-way delay: 5643.712 ms
Loss rate: 16.76%
-- Flow 2:
Average throughput: 0.66 Mbit/s
95th percentile per-packet one-way delay: 5533.633 ms
Loss rate: 20.18%
-- Flow 3:
Average throughput: 0.31 Mbit/s
95th percentile per-packet one-way delay: 4850.392 ms
Loss rate: 88.89%
```

Run 1: Report of FillP-Sheep — Data Link

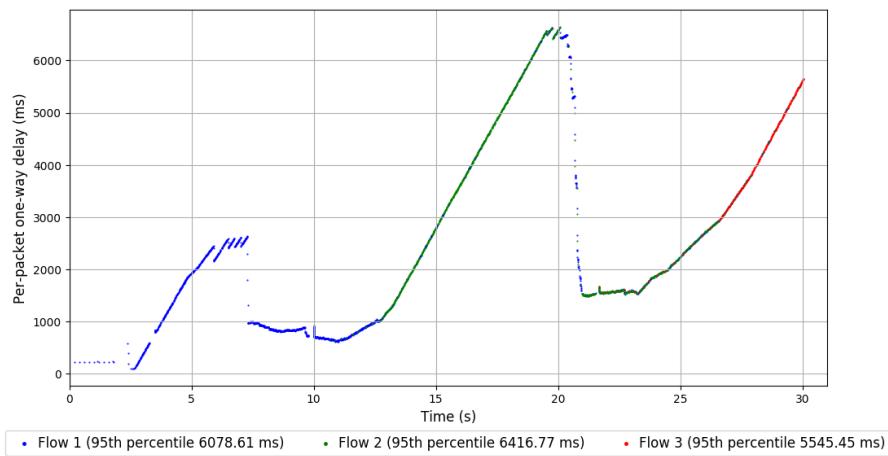
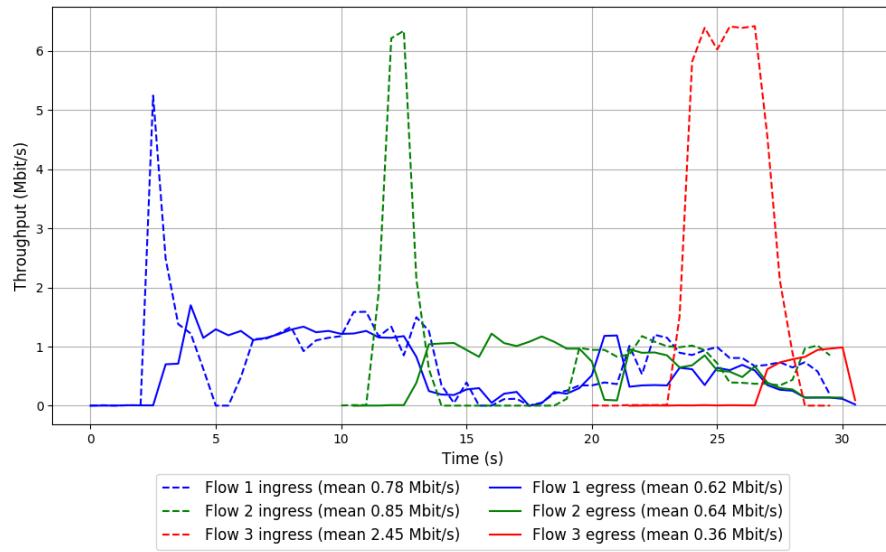


Run 2: Statistics of FillP-Sheep

```
Start at: 2019-02-05 06:14:16
End at: 2019-02-05 06:14:46
Local clock offset: -7.201 ms
Remote clock offset: 7.976 ms

# Below is generated by plot.py at 2019-02-05 06:54:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.13 Mbit/s
95th percentile per-packet one-way delay: 6213.252 ms
Loss rate: 46.95%
-- Flow 1:
Average throughput: 0.62 Mbit/s
95th percentile per-packet one-way delay: 6078.608 ms
Loss rate: 20.37%
-- Flow 2:
Average throughput: 0.64 Mbit/s
95th percentile per-packet one-way delay: 6416.773 ms
Loss rate: 28.17%
-- Flow 3:
Average throughput: 0.36 Mbit/s
95th percentile per-packet one-way delay: 5545.448 ms
Loss rate: 87.10%
```

Run 2: Report of FillP-Sheep — Data Link

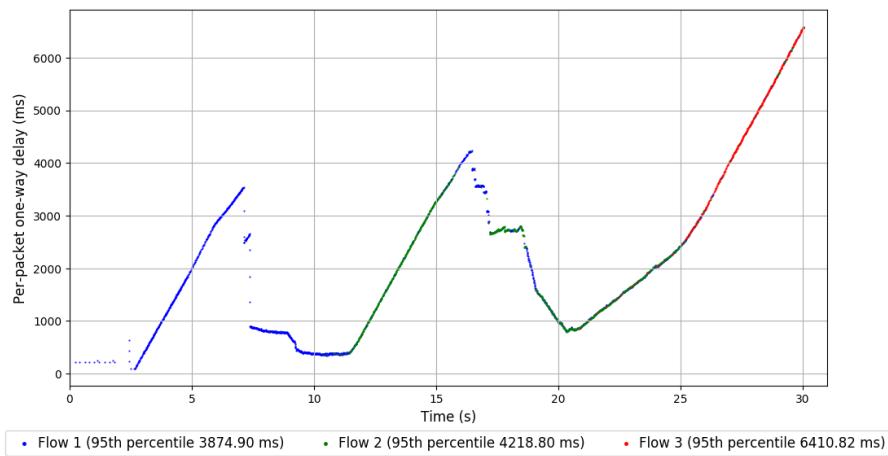
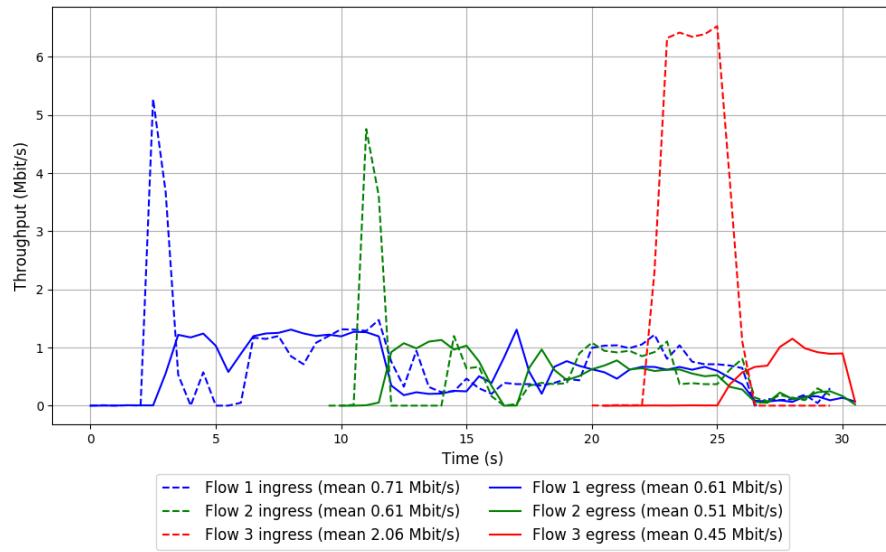


```
Run 3: Statistics of FillP-Sheep
```

```
Start at: 2019-02-05 06:40:07
End at: 2019-02-05 06:40:37
Local clock offset: -7.746 ms
Remote clock offset: 7.815 ms

# Below is generated by plot.py at 2019-02-05 06:54:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.09 Mbit/s
95th percentile per-packet one-way delay: 5457.068 ms
Loss rate: 38.46%
-- Flow 1:
Average throughput: 0.61 Mbit/s
95th percentile per-packet one-way delay: 3874.896 ms
Loss rate: 13.06%
-- Flow 2:
Average throughput: 0.51 Mbit/s
95th percentile per-packet one-way delay: 4218.800 ms
Loss rate: 16.74%
-- Flow 3:
Average throughput: 0.45 Mbit/s
95th percentile per-packet one-way delay: 6410.820 ms
Loss rate: 79.00%
```

Run 3: Report of FillP-Sheep — Data Link

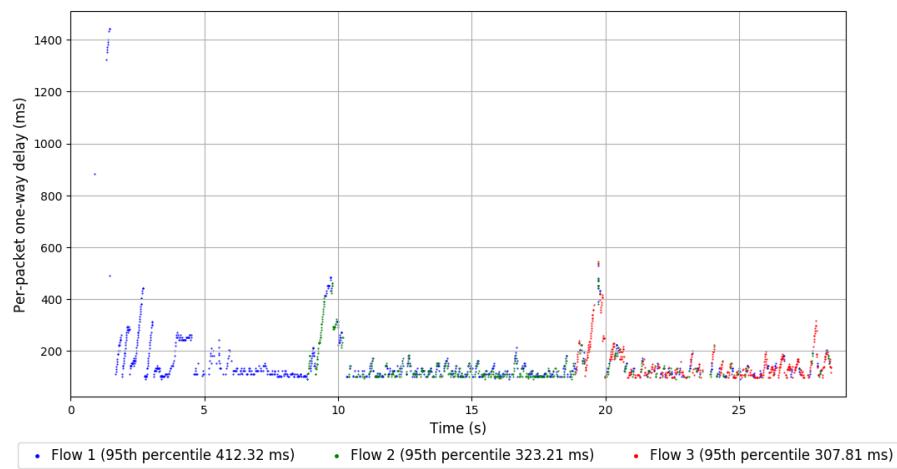
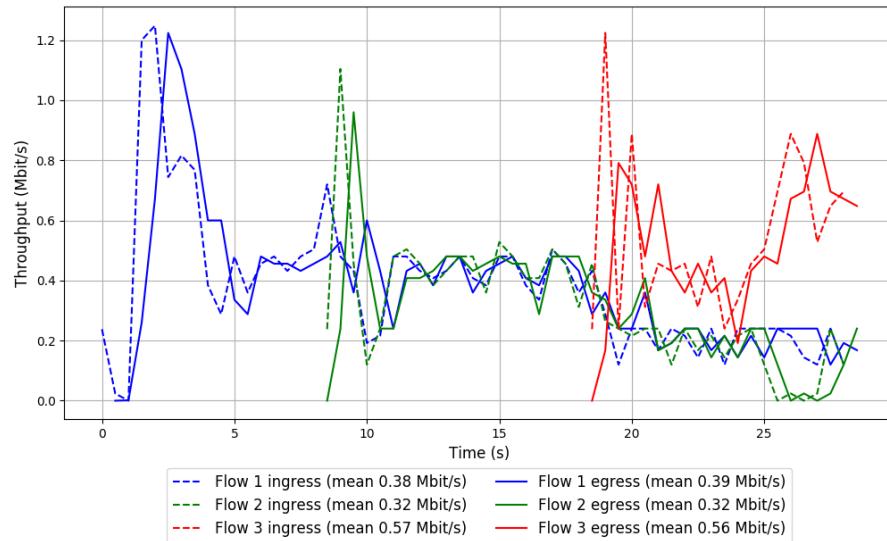


Run 1: Statistics of Indigo

```
Start at: 2019-02-05 05:59:33
End at: 2019-02-05 06:00:03
Local clock offset: -7.065 ms
Remote clock offset: 3.678 ms

# Below is generated by plot.py at 2019-02-05 06:54:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.81 Mbit/s
95th percentile per-packet one-way delay: 348.053 ms
Loss rate: 0.21%
-- Flow 1:
Average throughput: 0.39 Mbit/s
95th percentile per-packet one-way delay: 412.317 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.32 Mbit/s
95th percentile per-packet one-way delay: 323.208 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.56 Mbit/s
95th percentile per-packet one-way delay: 307.810 ms
Loss rate: 0.89%
```

Run 1: Report of Indigo — Data Link

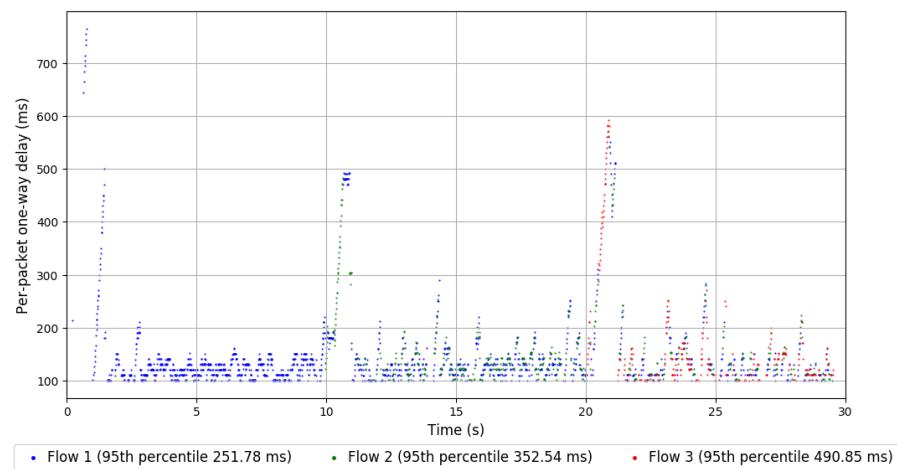
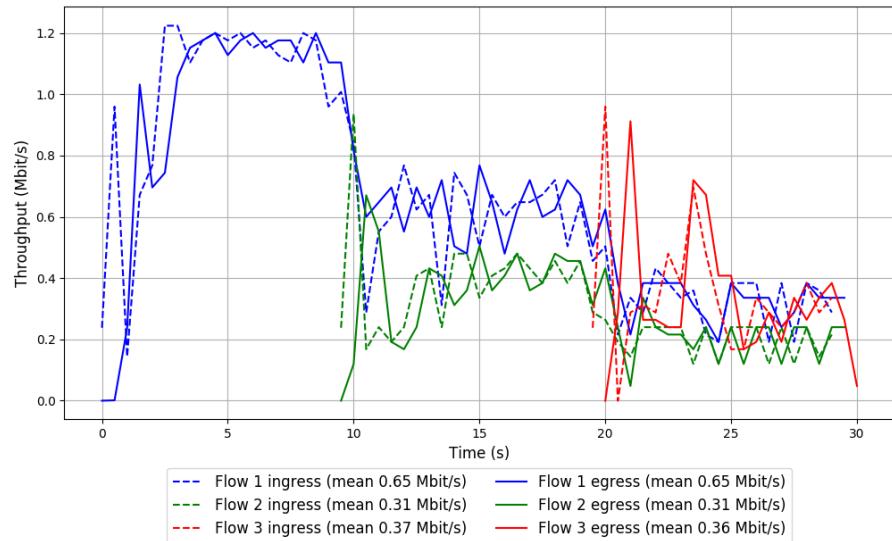


Run 2: Statistics of Indigo

```
Start at: 2019-02-05 06:25:23
End at: 2019-02-05 06:25:53
Local clock offset: -7.608 ms
Remote clock offset: 6.915 ms

# Below is generated by plot.py at 2019-02-05 06:54:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.98 Mbit/s
95th percentile per-packet one-way delay: 358.555 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 0.65 Mbit/s
95th percentile per-packet one-way delay: 251.776 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 0.31 Mbit/s
95th percentile per-packet one-way delay: 352.537 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.36 Mbit/s
95th percentile per-packet one-way delay: 490.854 ms
Loss rate: 0.69%
```

Run 2: Report of Indigo — Data Link

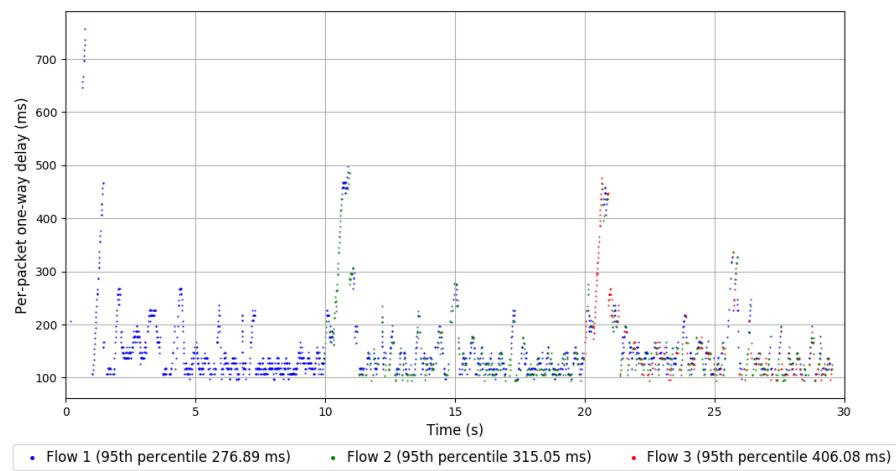
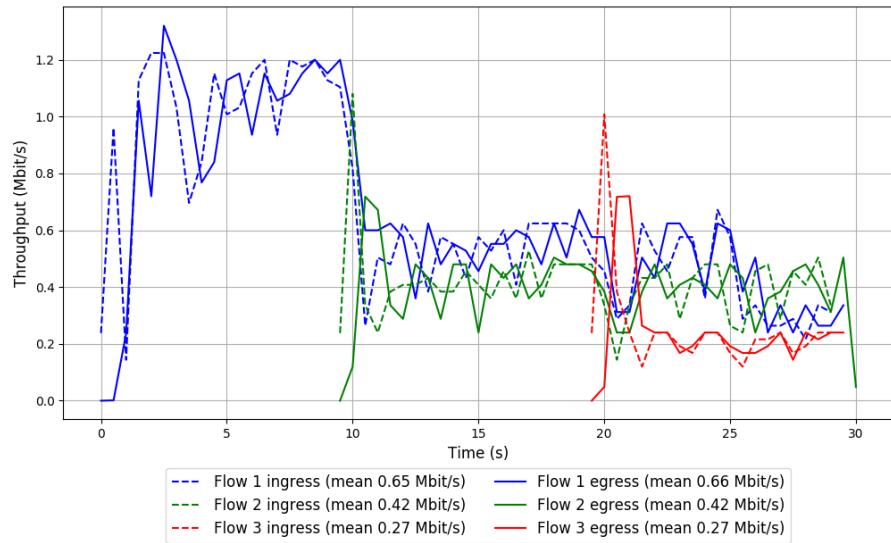


Run 3: Statistics of Indigo

```
Start at: 2019-02-05 06:51:08
End at: 2019-02-05 06:51:38
Local clock offset: -7.373 ms
Remote clock offset: 5.604 ms

# Below is generated by plot.py at 2019-02-05 06:54:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.02 Mbit/s
95th percentile per-packet one-way delay: 315.233 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 0.66 Mbit/s
95th percentile per-packet one-way delay: 276.892 ms
Loss rate: 0.12%
-- Flow 2:
Average throughput: 0.42 Mbit/s
95th percentile per-packet one-way delay: 315.053 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.27 Mbit/s
95th percentile per-packet one-way delay: 406.076 ms
Loss rate: 0.00%
```

Run 3: Report of Indigo — Data Link

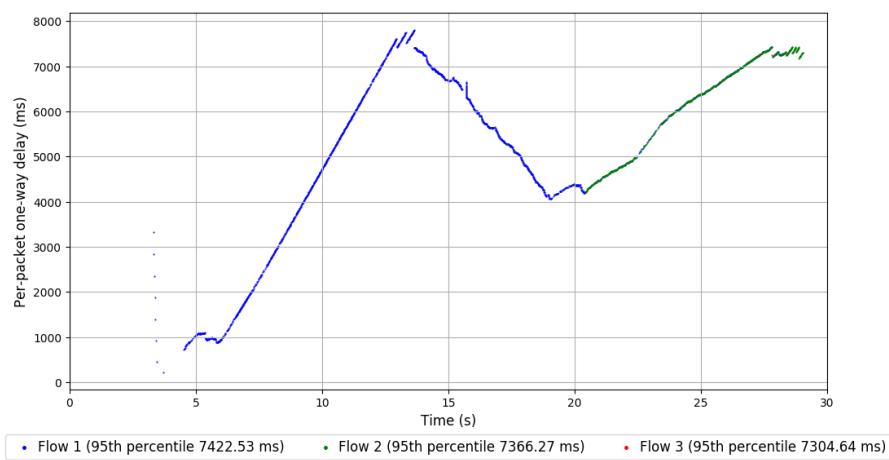
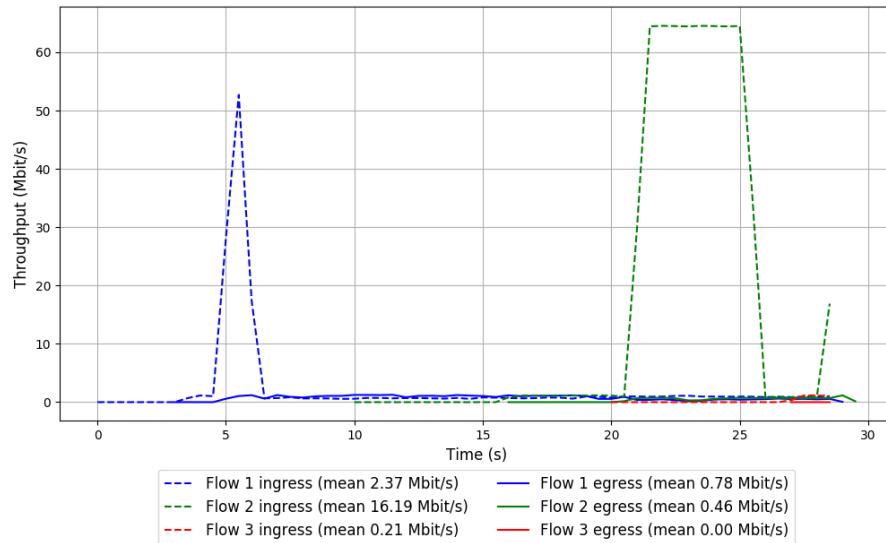


```
Run 1: Statistics of Indigo-MusesC3
```

```
Start at: 2019-02-05 05:44:51
End at: 2019-02-05 05:45:21
Local clock offset: -7.753 ms
Remote clock offset: 8.369 ms

# Below is generated by plot.py at 2019-02-05 06:54:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.00 Mbit/s
95th percentile per-packet one-way delay: 7393.158 ms
Loss rate: 93.14%
-- Flow 1:
Average throughput: 0.78 Mbit/s
95th percentile per-packet one-way delay: 7422.535 ms
Loss rate: 71.03%
-- Flow 2:
Average throughput: 0.46 Mbit/s
95th percentile per-packet one-way delay: 7366.267 ms
Loss rate: 98.06%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 7304.642 ms
Loss rate: 99.91%
```

Run 1: Report of Indigo-MusesC3 — Data Link

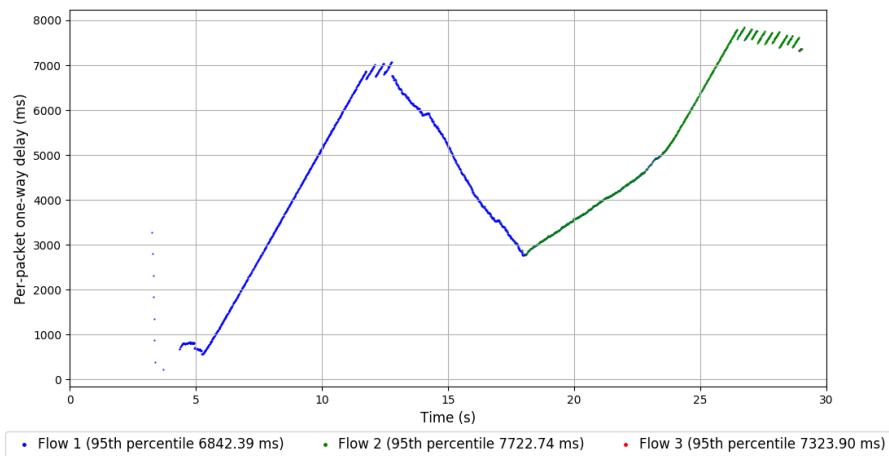
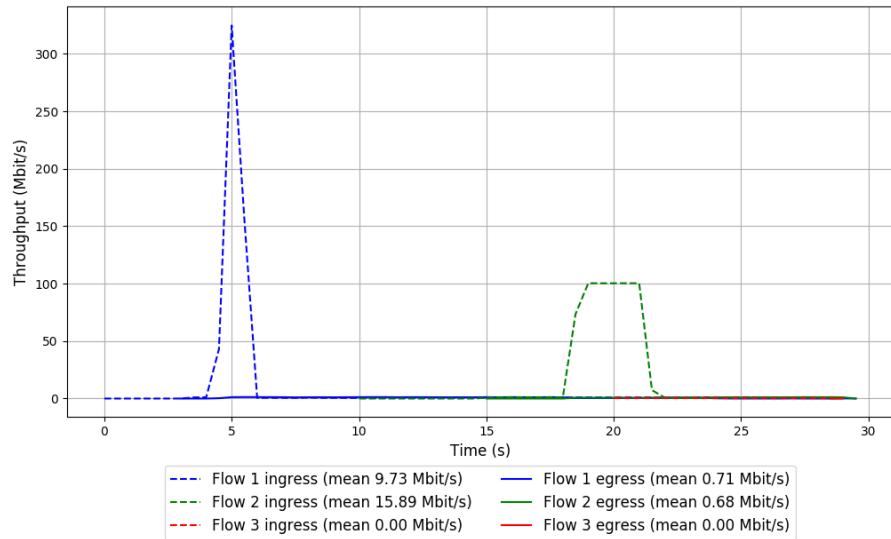


Run 2: Statistics of Indigo-MusesC3

```
Start at: 2019-02-05 06:10:35
End at: 2019-02-05 06:11:05
Local clock offset: -7.115 ms
Remote clock offset: 2.915 ms

# Below is generated by plot.py at 2019-02-05 06:54:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.07 Mbit/s
95th percentile per-packet one-way delay: 7637.075 ms
Loss rate: 95.26%
-- Flow 1:
Average throughput: 0.71 Mbit/s
95th percentile per-packet one-way delay: 6842.388 ms
Loss rate: 93.54%
-- Flow 2:
Average throughput: 0.68 Mbit/s
95th percentile per-packet one-way delay: 7722.739 ms
Loss rate: 96.87%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 7323.903 ms
Loss rate: 94.44%
```

Run 2: Report of Indigo-MusesC3 — Data Link

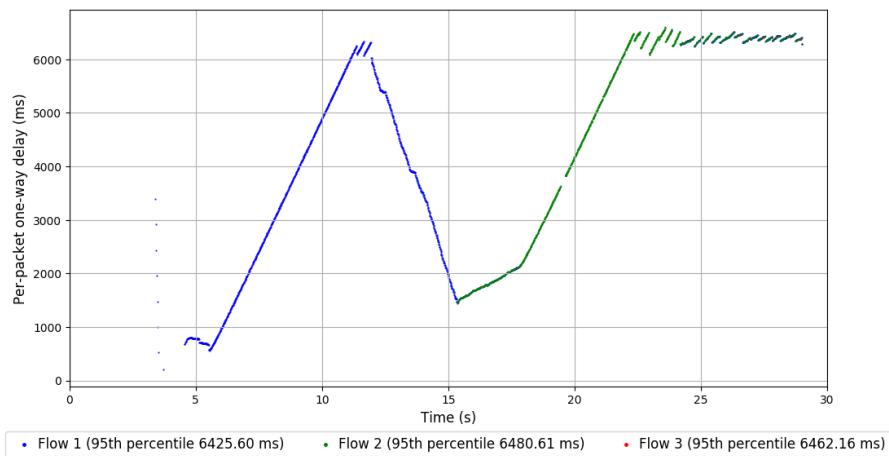
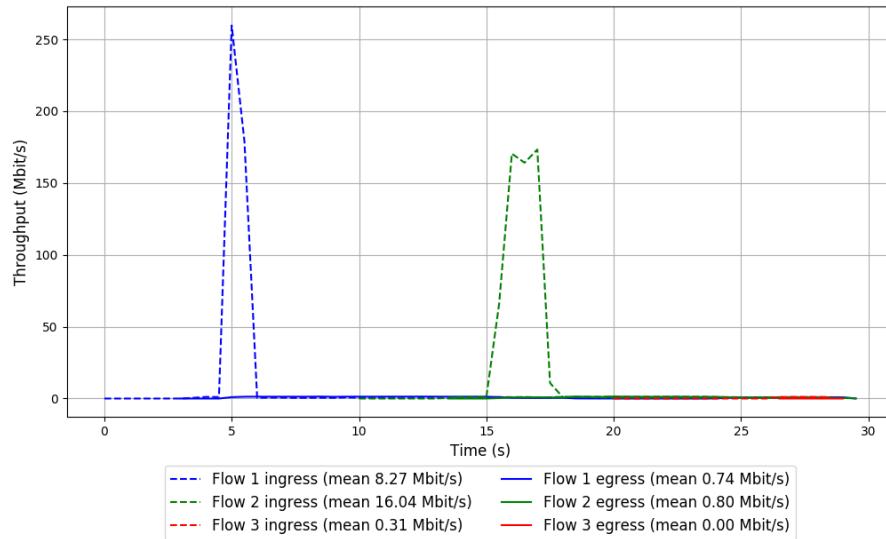


Run 3: Statistics of Indigo-MusesC3

```
Start at: 2019-02-05 06:36:26
End at: 2019-02-05 06:36:56
Local clock offset: -6.912 ms
Remote clock offset: 5.049 ms

# Below is generated by plot.py at 2019-02-05 06:54:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.21 Mbit/s
95th percentile per-packet one-way delay: 6445.100 ms
Loss rate: 94.29%
-- Flow 1:
Average throughput: 0.74 Mbit/s
95th percentile per-packet one-way delay: 6425.604 ms
Loss rate: 92.10%
-- Flow 2:
Average throughput: 0.80 Mbit/s
95th percentile per-packet one-way delay: 6480.610 ms
Loss rate: 95.98%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 6462.162 ms
Loss rate: 99.88%
```

Run 3: Report of Indigo-MusesC3 — Data Link

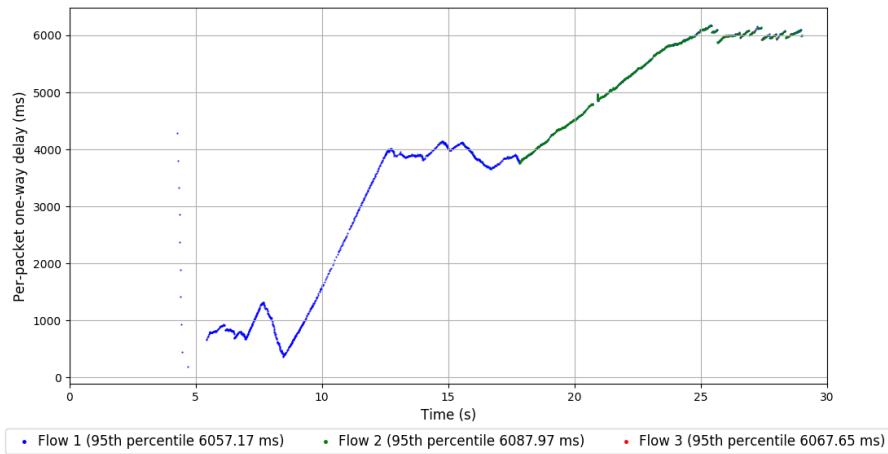
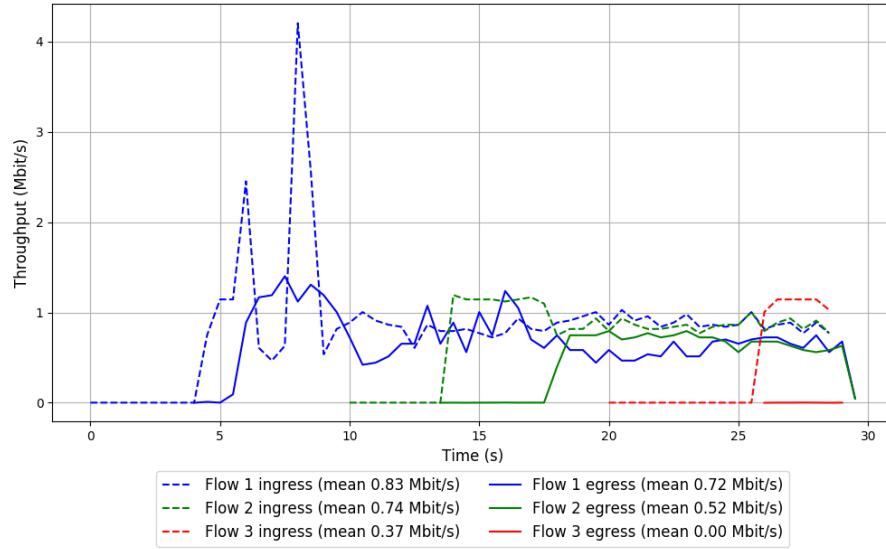


```
Run 1: Statistics of Indigo-MusesC5
```

```
Start at: 2019-02-05 05:53:26
End at: 2019-02-05 05:53:56
Local clock offset: -7.175 ms
Remote clock offset: 2.676 ms

# Below is generated by plot.py at 2019-02-05 06:54:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.03 Mbit/s
95th percentile per-packet one-way delay: 6067.559 ms
Loss rate: 38.21%
-- Flow 1:
Average throughput: 0.72 Mbit/s
95th percentile per-packet one-way delay: 6057.170 ms
Loss rate: 26.47%
-- Flow 2:
Average throughput: 0.52 Mbit/s
95th percentile per-packet one-way delay: 6087.974 ms
Loss rate: 43.82%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 6067.646 ms
Loss rate: 99.90%
```

Run 1: Report of Indigo-MusesC5 — Data Link

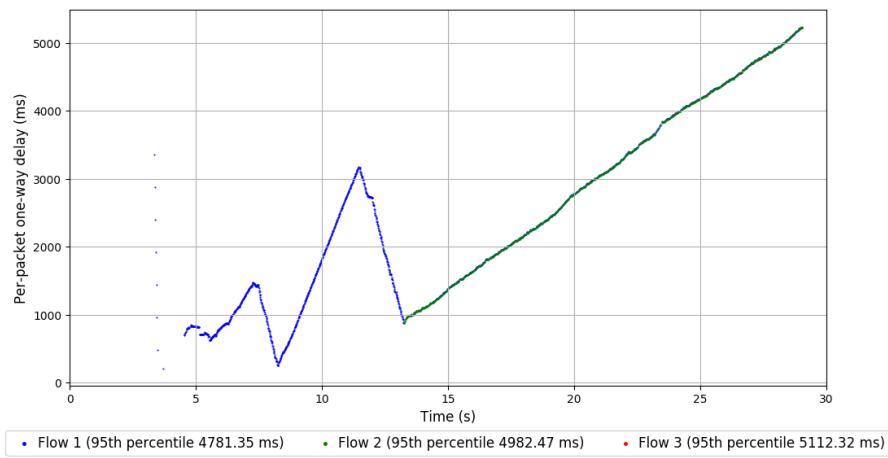
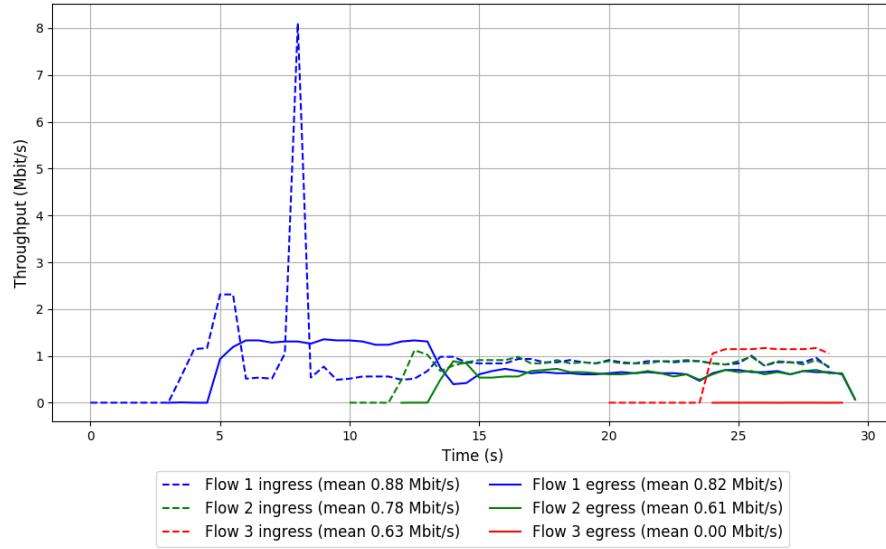


Run 2: Statistics of Indigo-MusesC5

```
Start at: 2019-02-05 06:19:10
End at: 2019-02-05 06:19:40
Local clock offset: -7.027 ms
Remote clock offset: 9.391 ms

# Below is generated by plot.py at 2019-02-05 06:54:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.22 Mbit/s
95th percentile per-packet one-way delay: 4871.379 ms
Loss rate: 32.01%
-- Flow 1:
Average throughput: 0.82 Mbit/s
95th percentile per-packet one-way delay: 4781.355 ms
Loss rate: 17.97%
-- Flow 2:
Average throughput: 0.61 Mbit/s
95th percentile per-packet one-way delay: 4982.472 ms
Loss rate: 30.28%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 5112.316 ms
Loss rate: 99.92%
```

Run 2: Report of Indigo-MusesC5 — Data Link

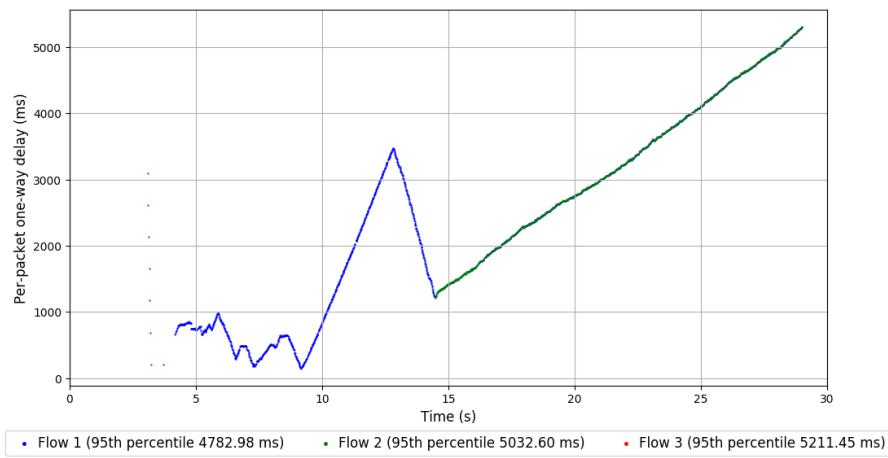
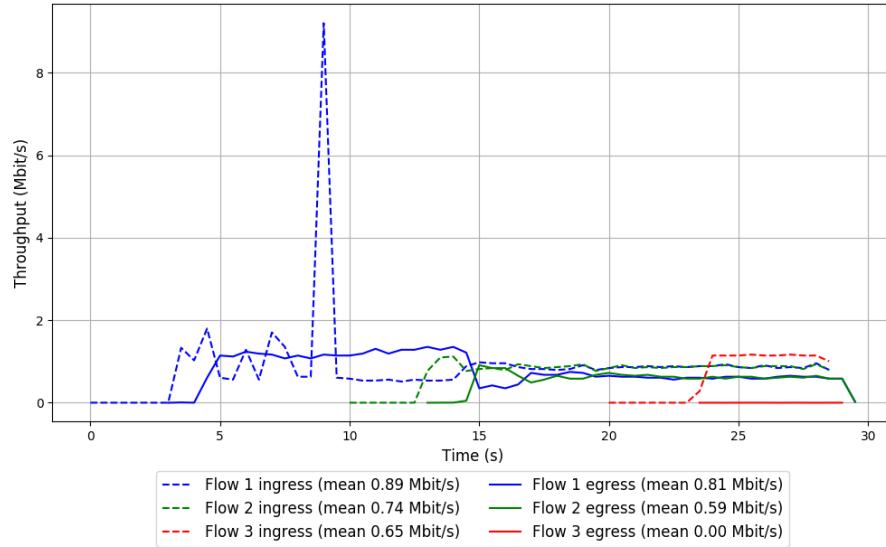


Run 3: Statistics of Indigo-MusesC5

```
Start at: 2019-02-05 06:45:00
End at: 2019-02-05 06:45:30
Local clock offset: -7.772 ms
Remote clock offset: 8.121 ms

# Below is generated by plot.py at 2019-02-05 06:54:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.17 Mbit/s
95th percentile per-packet one-way delay: 4903.456 ms
Loss rate: 33.21%
-- Flow 1:
Average throughput: 0.81 Mbit/s
95th percentile per-packet one-way delay: 4782.978 ms
Loss rate: 18.31%
-- Flow 2:
Average throughput: 0.59 Mbit/s
95th percentile per-packet one-way delay: 5032.602 ms
Loss rate: 32.91%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 5211.453 ms
Loss rate: 99.92%
```

Run 3: Report of Indigo-MusesC5 — Data Link

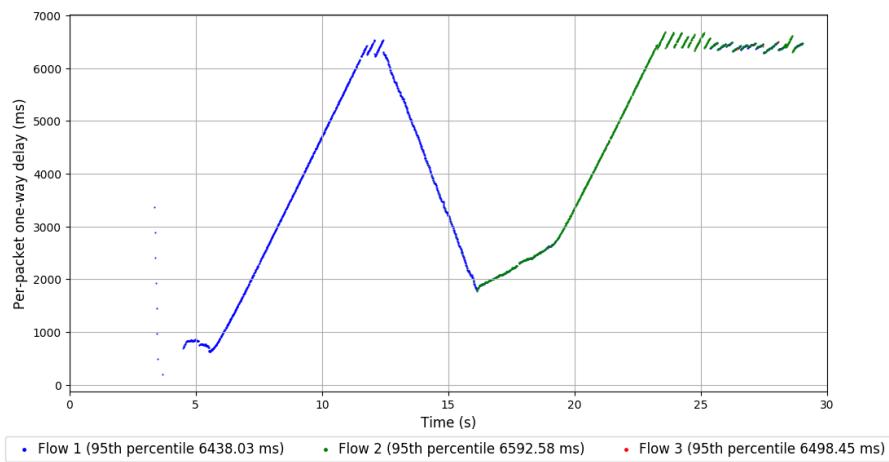
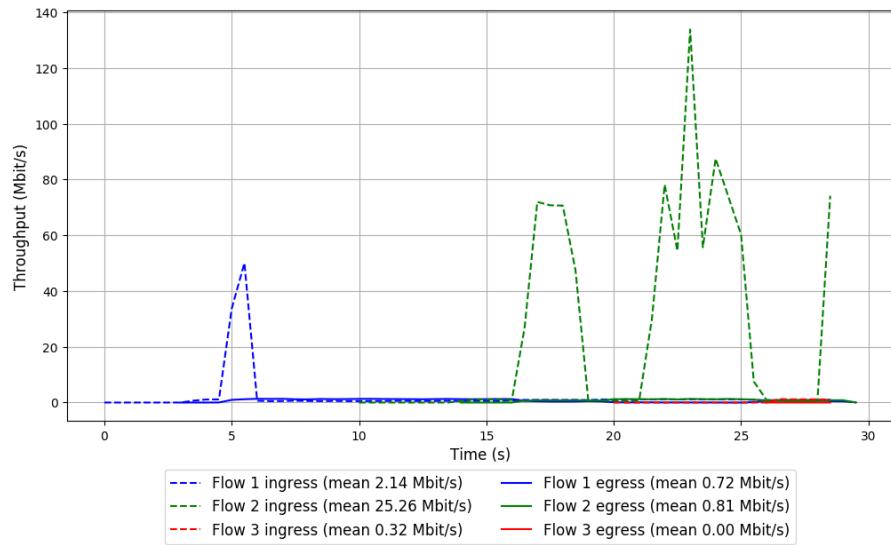


```
Run 1: Statistics of Indigo-MusesD
```

```
Start at: 2019-02-05 06:02:00
End at: 2019-02-05 06:02:30
Local clock offset: -7.015 ms
Remote clock offset: 2.678 ms

# Below is generated by plot.py at 2019-02-05 06:54:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.19 Mbit/s
95th percentile per-packet one-way delay: 6513.816 ms
Loss rate: 94.40%
-- Flow 1:
Average throughput: 0.72 Mbit/s
95th percentile per-packet one-way delay: 6438.026 ms
Loss rate: 70.31%
-- Flow 2:
Average throughput: 0.81 Mbit/s
95th percentile per-packet one-way delay: 6592.577 ms
Loss rate: 97.49%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 6498.449 ms
Loss rate: 99.92%
```

Run 1: Report of Indigo-MusesD — Data Link

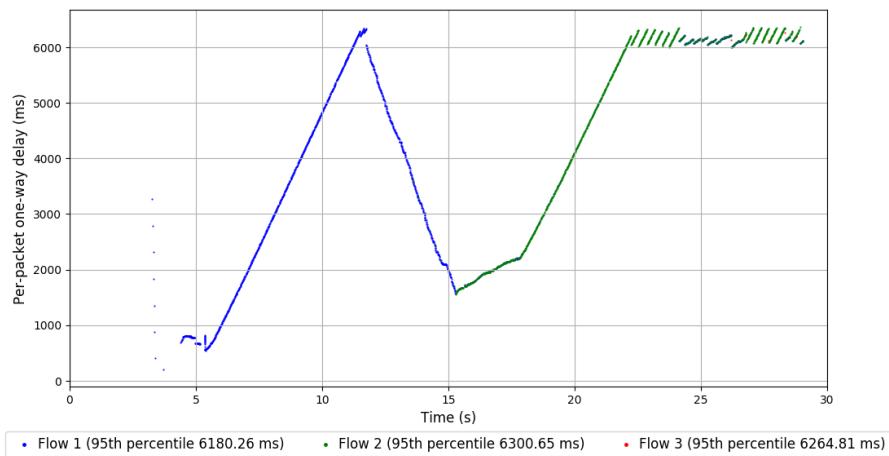
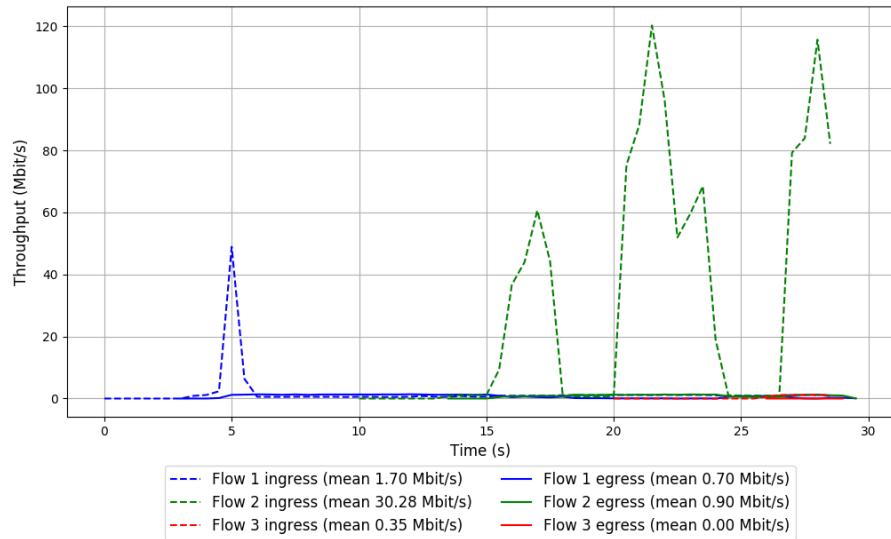


Run 2: Statistics of Indigo-MusesD

```
Start at: 2019-02-05 06:27:51
End at: 2019-02-05 06:28:21
Local clock offset: -6.86 ms
Remote clock offset: 3.039 ms

# Below is generated by plot.py at 2019-02-05 06:54:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.23 Mbit/s
95th percentile per-packet one-way delay: 6265.067 ms
Loss rate: 94.92%
-- Flow 1:
Average throughput: 0.70 Mbit/s
95th percentile per-packet one-way delay: 6180.264 ms
Loss rate: 63.47%
-- Flow 2:
Average throughput: 0.90 Mbit/s
95th percentile per-packet one-way delay: 6300.648 ms
Loss rate: 97.59%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 6264.805 ms
Loss rate: 99.91%
```

Run 2: Report of Indigo-MusesD — Data Link

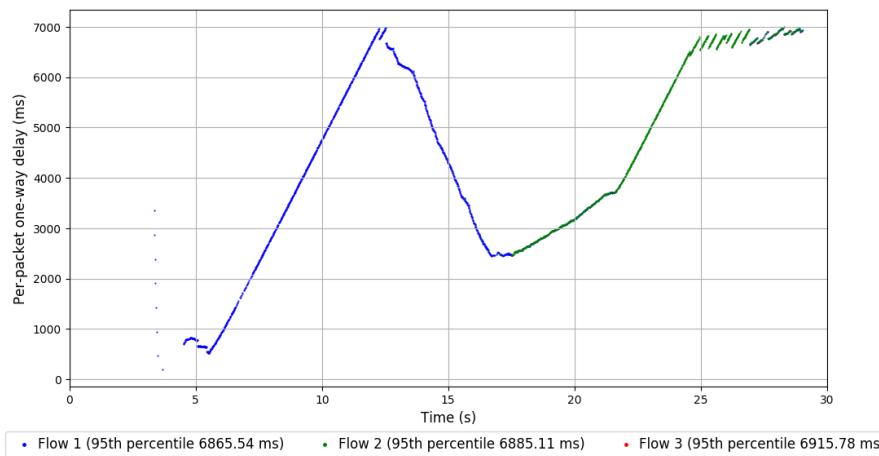
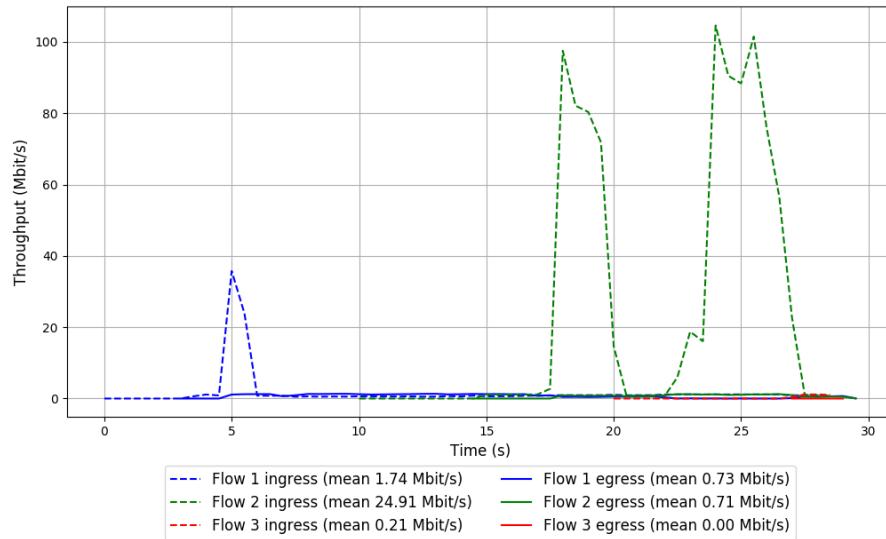


Run 3: Statistics of Indigo-MusesD

```
Start at: 2019-02-05 06:53:35
End at: 2019-02-05 06:54:05
Local clock offset: -6.501 ms
Remote clock offset: 9.465 ms

# Below is generated by plot.py at 2019-02-05 06:54:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.13 Mbit/s
95th percentile per-packet one-way delay: 6875.093 ms
Loss rate: 94.47%
-- Flow 1:
Average throughput: 0.73 Mbit/s
95th percentile per-packet one-way delay: 6865.540 ms
Loss rate: 62.80%
-- Flow 2:
Average throughput: 0.71 Mbit/s
95th percentile per-packet one-way delay: 6885.114 ms
Loss rate: 97.83%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 6915.785 ms
Loss rate: 99.91%
```

Run 3: Report of Indigo-MusesD — Data Link

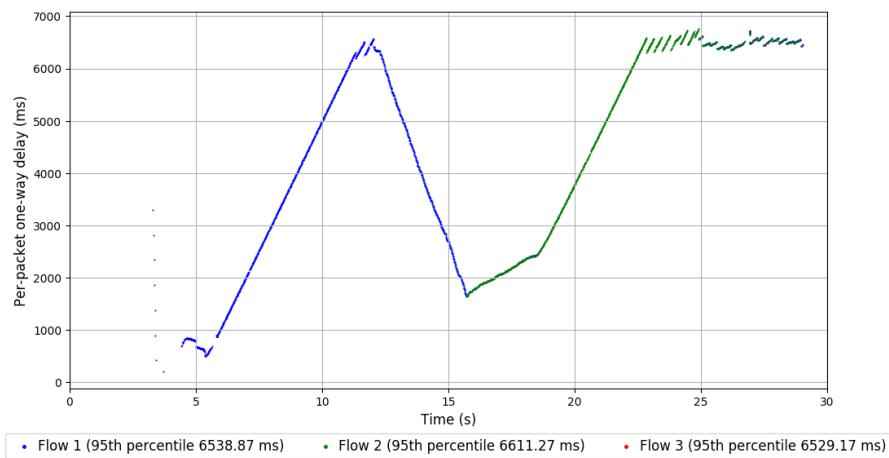
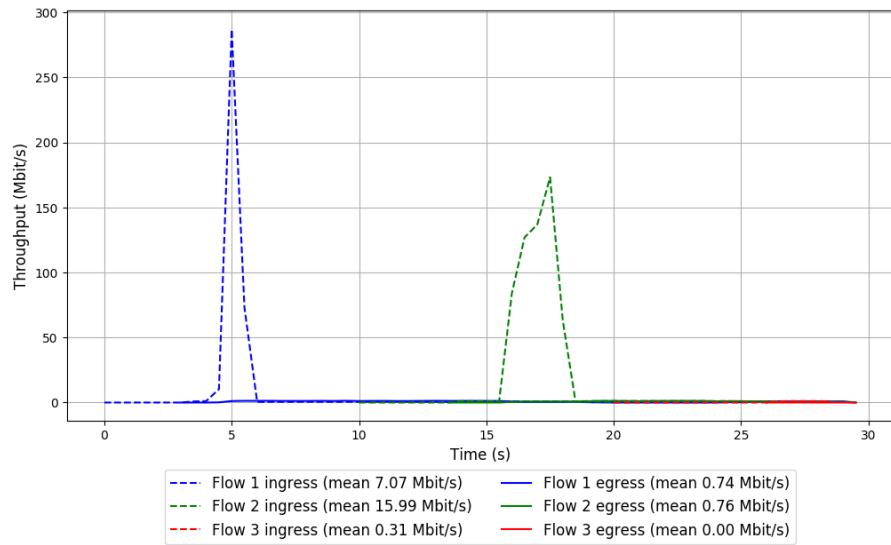


Run 1: Statistics of Indigo-MusesT

```
Start at: 2019-02-05 05:42:19
End at: 2019-02-05 05:42:49
Local clock offset: -7.568 ms
Remote clock offset: 3.583 ms

# Below is generated by plot.py at 2019-02-05 06:54:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.19 Mbit/s
95th percentile per-packet one-way delay: 6571.445 ms
Loss rate: 94.00%
-- Flow 1:
Average throughput: 0.74 Mbit/s
95th percentile per-packet one-way delay: 6538.867 ms
Loss rate: 90.69%
-- Flow 2:
Average throughput: 0.76 Mbit/s
95th percentile per-packet one-way delay: 6611.266 ms
Loss rate: 96.19%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 6529.170 ms
Loss rate: 99.88%
```

Run 1: Report of Indigo-MusesT — Data Link

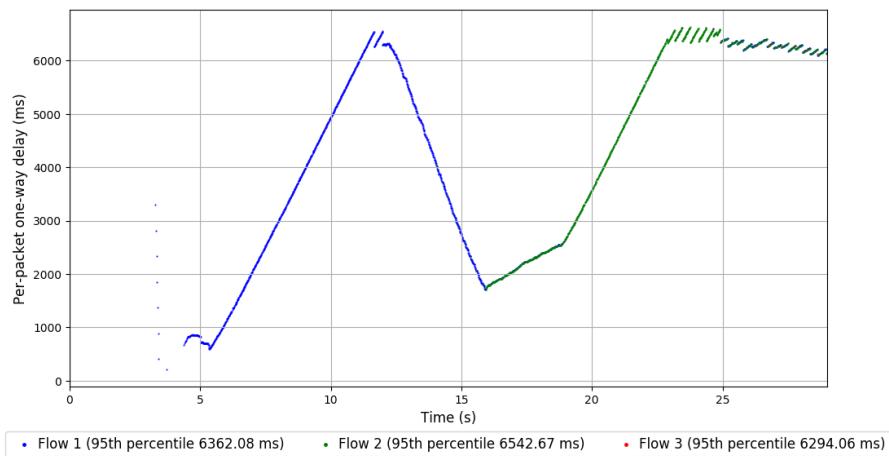
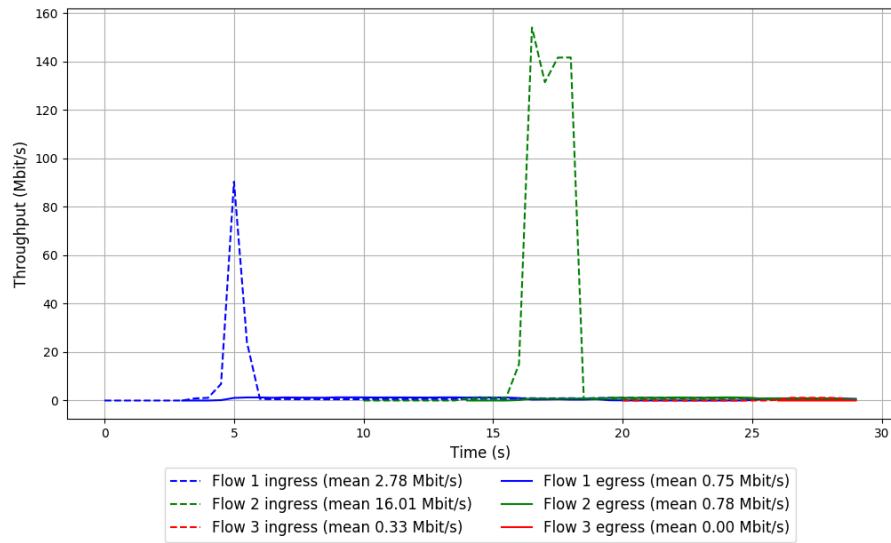


Run 2: Statistics of Indigo-MusesT

```
Start at: 2019-02-05 06:08:08
End at: 2019-02-05 06:08:38
Local clock offset: -7.068 ms
Remote clock offset: 6.798 ms

# Below is generated by plot.py at 2019-02-05 06:54:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.20 Mbit/s
95th percentile per-packet one-way delay: 6482.632 ms
Loss rate: 91.99%
-- Flow 1:
Average throughput: 0.75 Mbit/s
95th percentile per-packet one-way delay: 6362.081 ms
Loss rate: 76.09%
-- Flow 2:
Average throughput: 0.78 Mbit/s
95th percentile per-packet one-way delay: 6542.668 ms
Loss rate: 96.13%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 6294.060 ms
Loss rate: 99.89%
```

Run 2: Report of Indigo-MusesT — Data Link

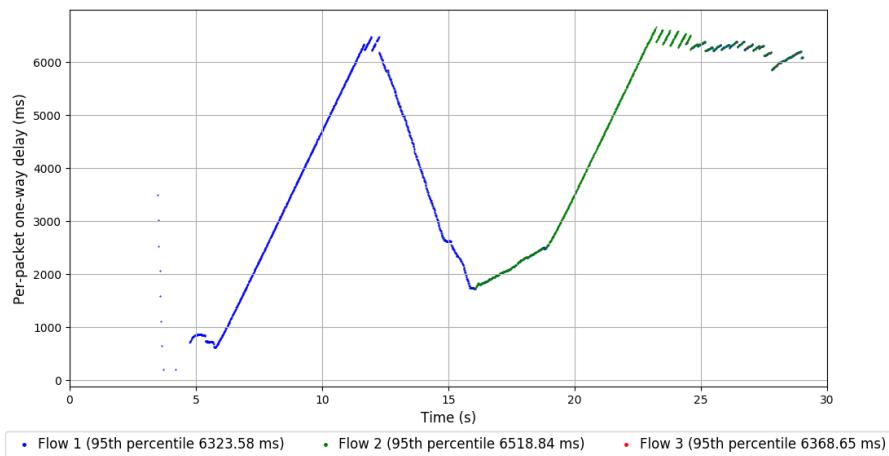
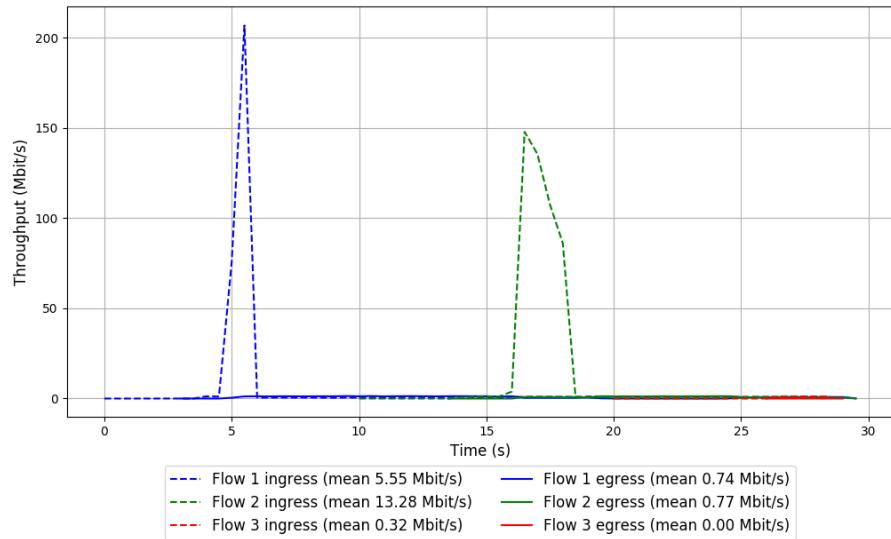


Run 3: Statistics of Indigo-MusesT

```
Start at: 2019-02-05 06:33:59
End at: 2019-02-05 06:34:29
Local clock offset: -7.685 ms
Remote clock offset: 9.802 ms

# Below is generated by plot.py at 2019-02-05 06:54:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.20 Mbit/s
95th percentile per-packet one-way delay: 6422.644 ms
Loss rate: 92.61%
-- Flow 1:
Average throughput: 0.74 Mbit/s
95th percentile per-packet one-way delay: 6323.580 ms
Loss rate: 88.17%
-- Flow 2:
Average throughput: 0.77 Mbit/s
95th percentile per-packet one-way delay: 6518.843 ms
Loss rate: 95.38%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 6368.655 ms
Loss rate: 99.88%
```

Run 3: Report of Indigo-MusesT — Data Link

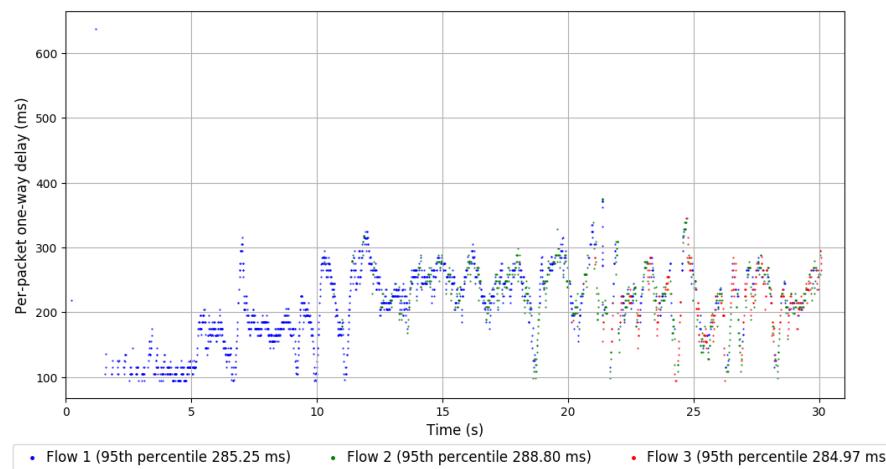
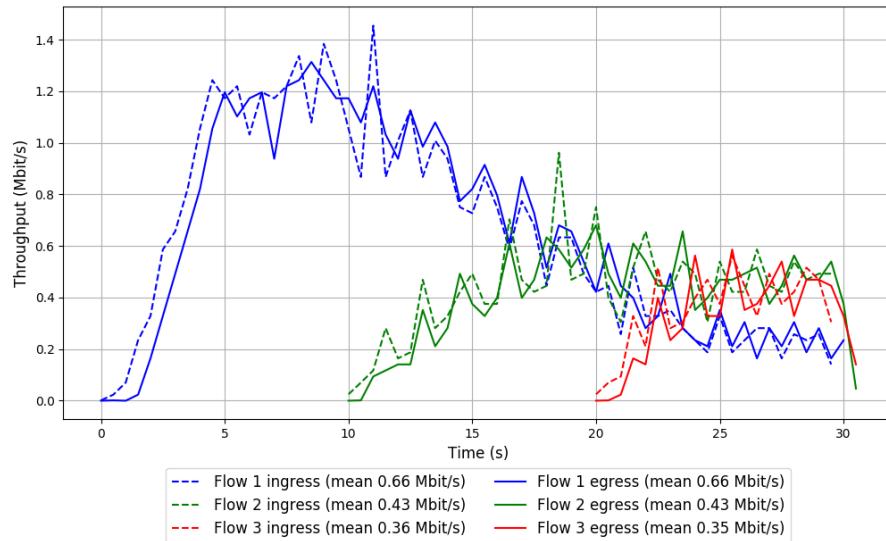


Run 1: Statistics of LEDBAT

```
Start at: 2019-02-05 05:41:05
End at: 2019-02-05 05:41:35
Local clock offset: -7.48 ms
Remote clock offset: 2.475 ms

# Below is generated by plot.py at 2019-02-05 06:54:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.06 Mbit/s
95th percentile per-packet one-way delay: 288.584 ms
Loss rate: 0.59%
-- Flow 1:
Average throughput: 0.66 Mbit/s
95th percentile per-packet one-way delay: 285.246 ms
Loss rate: 0.18%
-- Flow 2:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 288.799 ms
Loss rate: 1.50%
-- Flow 3:
Average throughput: 0.35 Mbit/s
95th percentile per-packet one-way delay: 284.966 ms
Loss rate: 0.67%
```

Run 1: Report of LEDBAT — Data Link

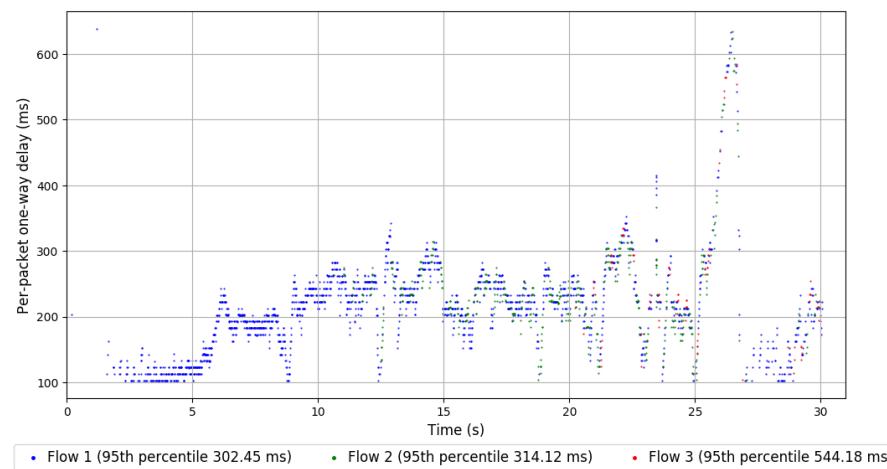
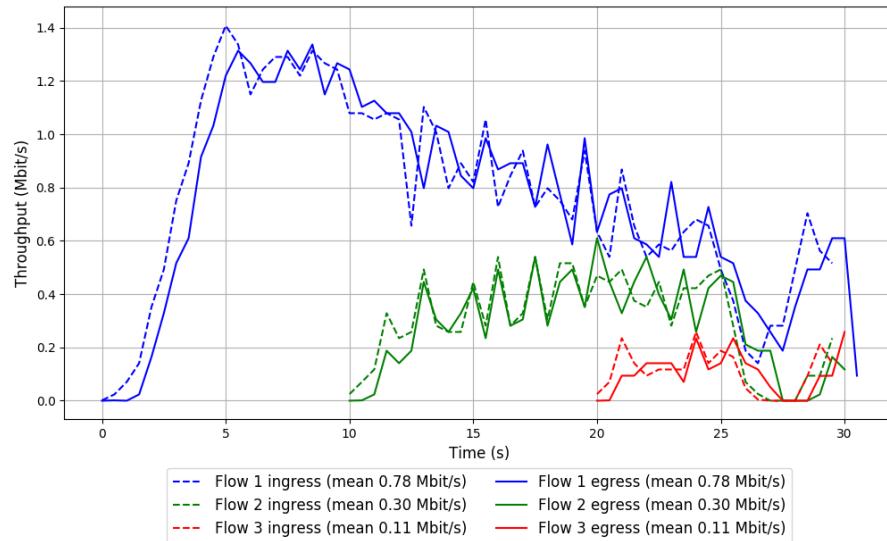


Run 2: Statistics of LEDBAT

```
Start at: 2019-02-05 06:06:55
End at: 2019-02-05 06:07:25
Local clock offset: -7.072 ms
Remote clock offset: 8.103 ms

# Below is generated by plot.py at 2019-02-05 06:54:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.01 Mbit/s
95th percentile per-packet one-way delay: 304.042 ms
Loss rate: 0.31%
-- Flow 1:
Average throughput: 0.78 Mbit/s
95th percentile per-packet one-way delay: 302.450 ms
Loss rate: 0.15%
-- Flow 2:
Average throughput: 0.30 Mbit/s
95th percentile per-packet one-way delay: 314.122 ms
Loss rate: 0.99%
-- Flow 3:
Average throughput: 0.11 Mbit/s
95th percentile per-packet one-way delay: 544.184 ms
Loss rate: 0.00%
```

Run 2: Report of LEDBAT — Data Link

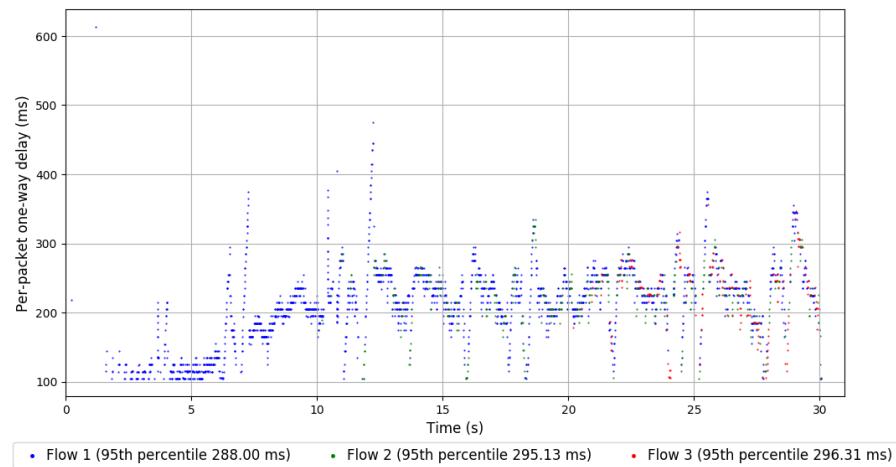
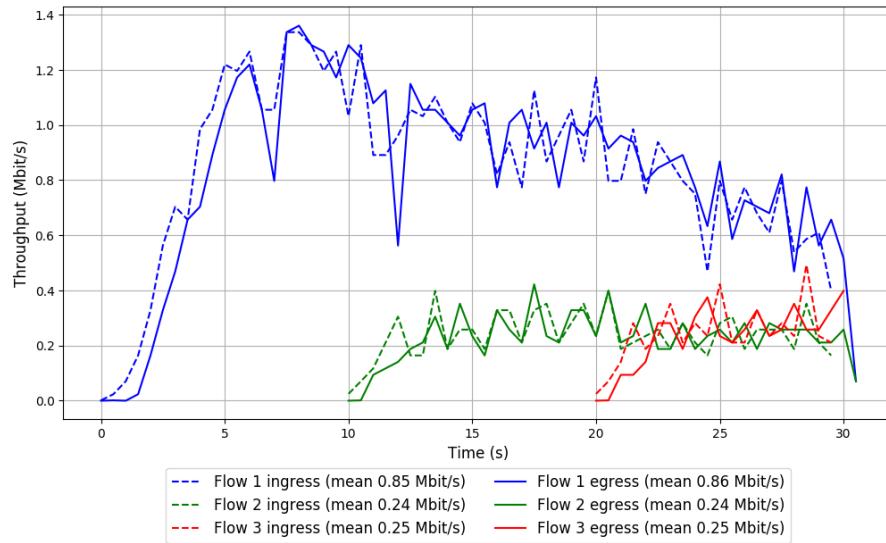


Run 3: Statistics of LEDBAT

```
Start at: 2019-02-05 06:32:45
End at: 2019-02-05 06:33:15
Local clock offset: -7.603 ms
Remote clock offset: 4.739 ms

# Below is generated by plot.py at 2019-02-05 06:54:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.10 Mbit/s
95th percentile per-packet one-way delay: 294.689 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 0.86 Mbit/s
95th percentile per-packet one-way delay: 288.003 ms
Loss rate: 0.05%
-- Flow 2:
Average throughput: 0.24 Mbit/s
95th percentile per-packet one-way delay: 295.129 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.25 Mbit/s
95th percentile per-packet one-way delay: 296.308 ms
Loss rate: 0.00%
```

Run 3: Report of LEDBAT — Data Link

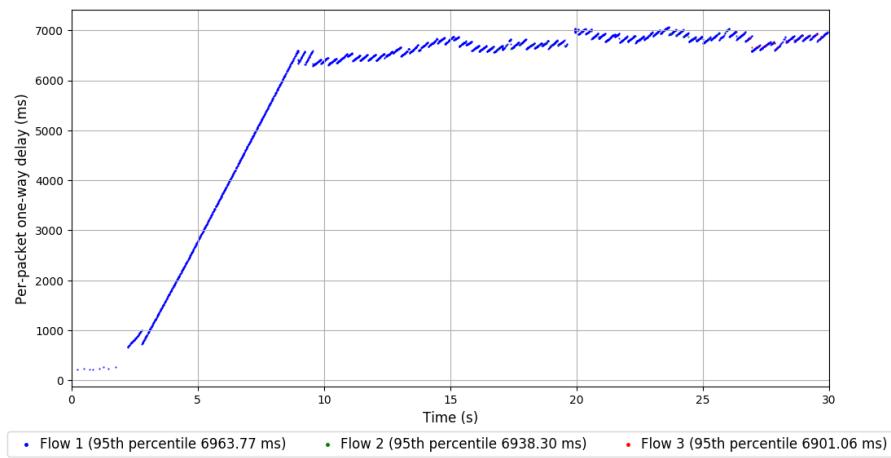
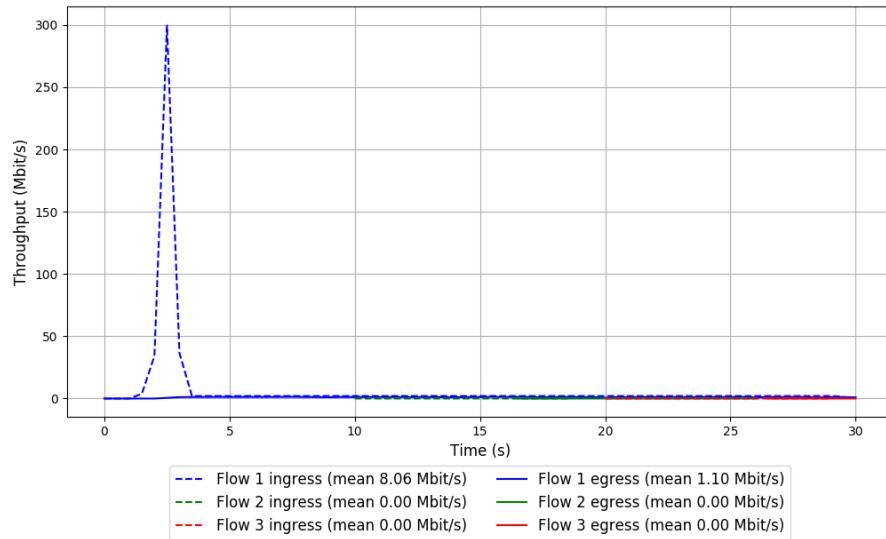


```
Run 1: Statistics of PCC-Allegro
```

```
Start at: 2019-02-05 05:39:51
End at: 2019-02-05 05:40:21
Local clock offset: -7.419 ms
Remote clock offset: 7.508 ms

# Below is generated by plot.py at 2019-02-05 06:54:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.10 Mbit/s
95th percentile per-packet one-way delay: 6963.194 ms
Loss rate: 86.36%
-- Flow 1:
Average throughput: 1.10 Mbit/s
95th percentile per-packet one-way delay: 6963.767 ms
Loss rate: 86.37%
-- Flow 2:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 6938.296 ms
Loss rate: 4.60%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 6901.060 ms
Loss rate: 44.83%
```

Run 1: Report of PCC-Allegro — Data Link

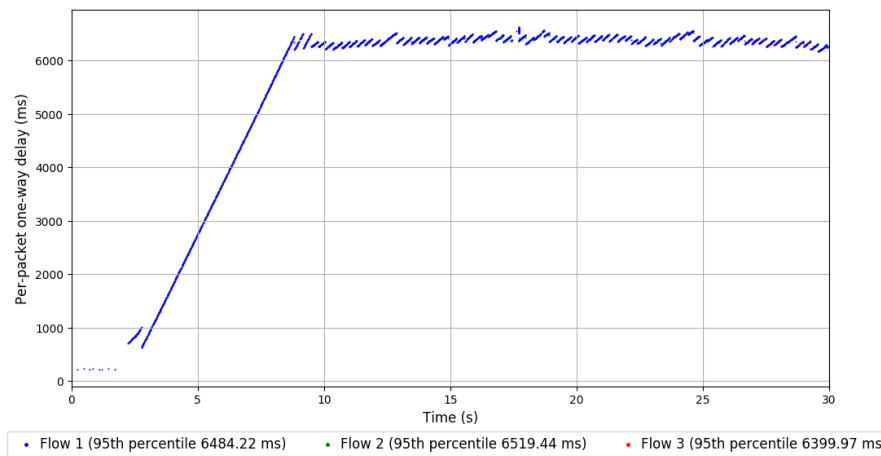
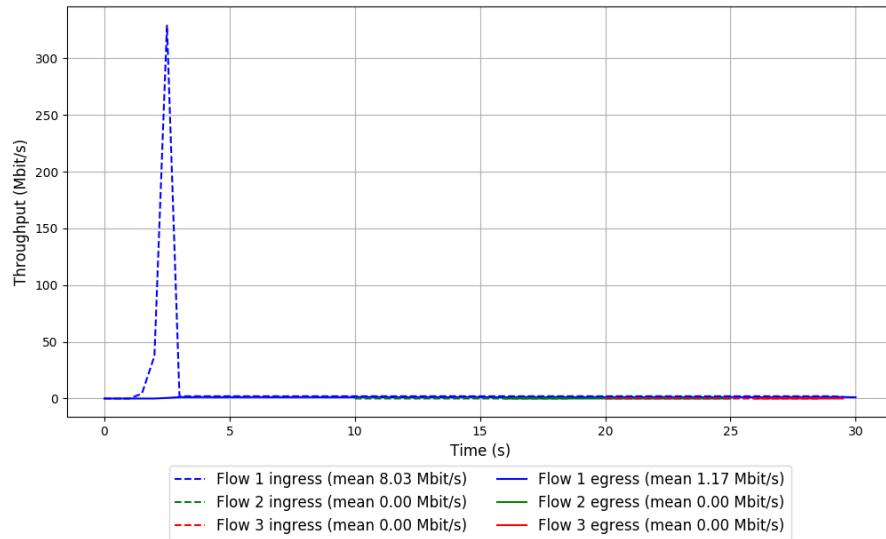


Run 2: Statistics of PCC-Allegro

```
Start at: 2019-02-05 06:05:41
End at: 2019-02-05 06:06:11
Local clock offset: -7.036 ms
Remote clock offset: 9.127 ms

# Below is generated by plot.py at 2019-02-05 06:54:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.17 Mbit/s
95th percentile per-packet one-way delay: 6484.778 ms
Loss rate: 85.54%
-- Flow 1:
Average throughput: 1.17 Mbit/s
95th percentile per-packet one-way delay: 6484.218 ms
Loss rate: 85.55%
-- Flow 2:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 6519.437 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 6399.969 ms
Loss rate: 44.83%
```

Run 2: Report of PCC-Allegro — Data Link

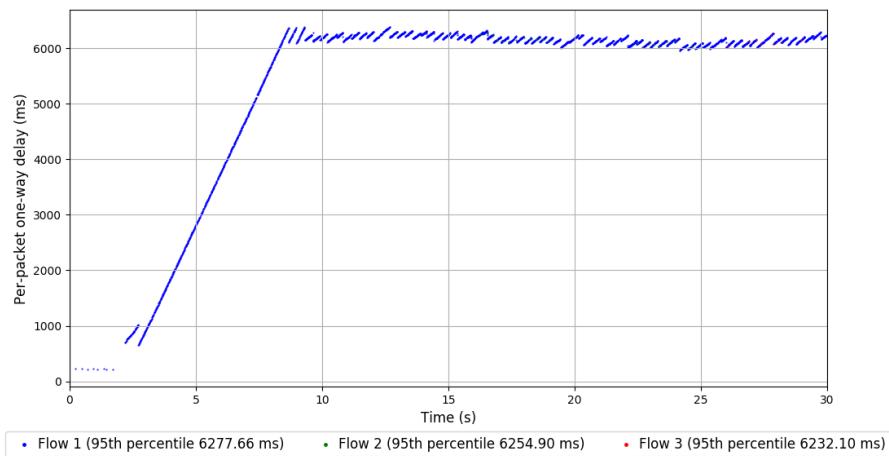
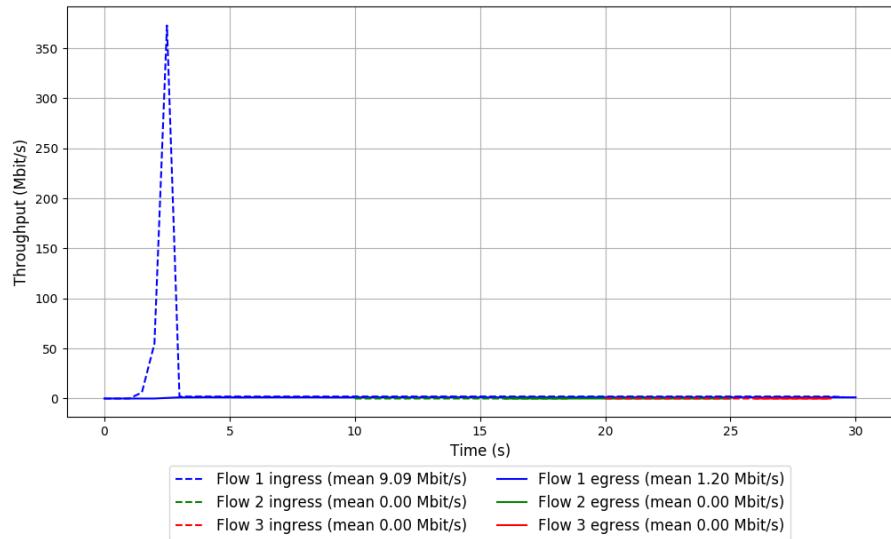


Run 3: Statistics of PCC-Allegro

```
Start at: 2019-02-05 06:31:31
End at: 2019-02-05 06:32:01
Local clock offset: -7.597 ms
Remote clock offset: 7.288 ms

# Below is generated by plot.py at 2019-02-05 06:54:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.20 Mbit/s
95th percentile per-packet one-way delay: 6277.599 ms
Loss rate: 86.86%
-- Flow 1:
Average throughput: 1.20 Mbit/s
95th percentile per-packet one-way delay: 6277.661 ms
Loss rate: 86.87%
-- Flow 2:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 6254.900 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 6232.096 ms
Loss rate: 63.22%
```

Run 3: Report of PCC-Allegro — Data Link



Run 1: Statistics of PCC-Expr

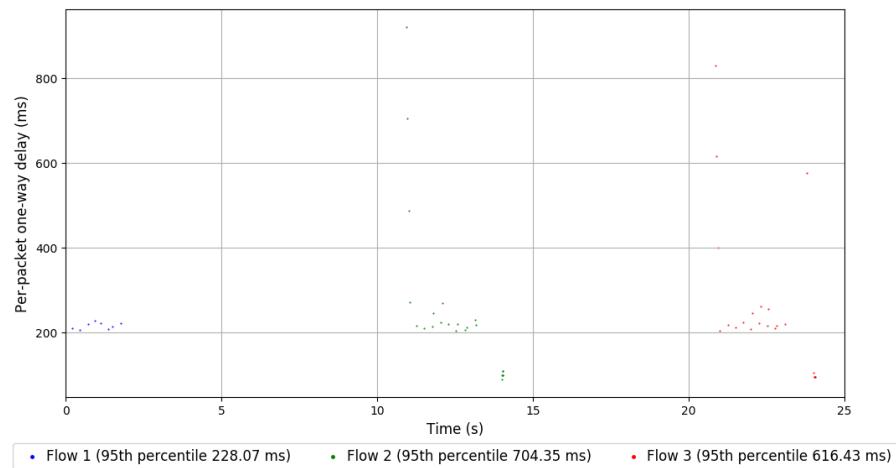
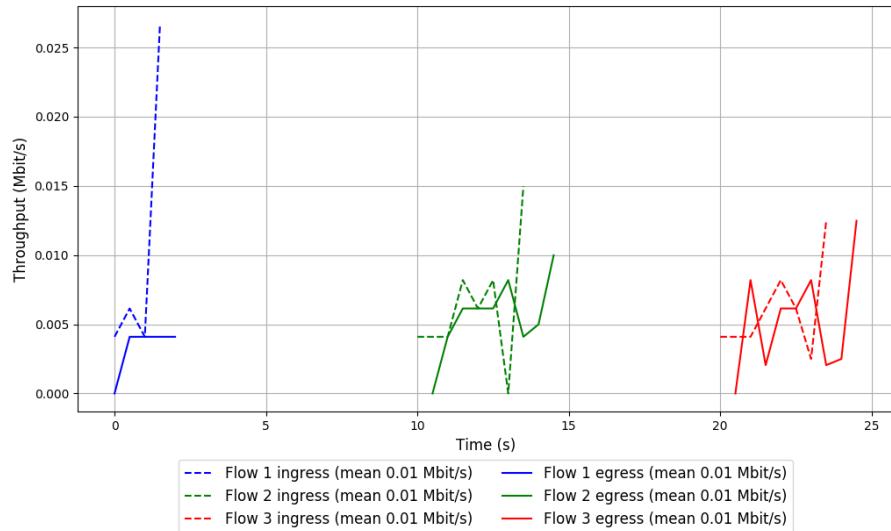
Start at: 2019-02-05 05:50:59

End at: 2019-02-05 05:51:29

Local clock offset: -7.323 ms

Remote clock offset: 3.859 ms

Run 1: Report of PCC-Expr — Data Link



Run 2: Statistics of PCC-Expr

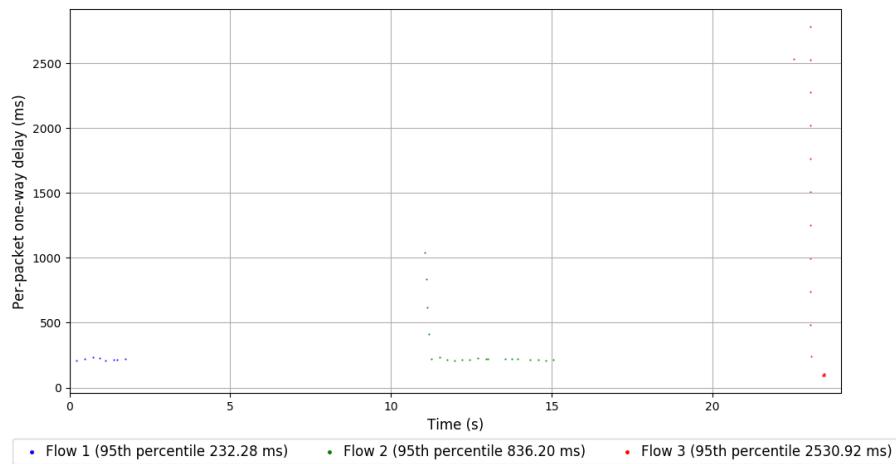
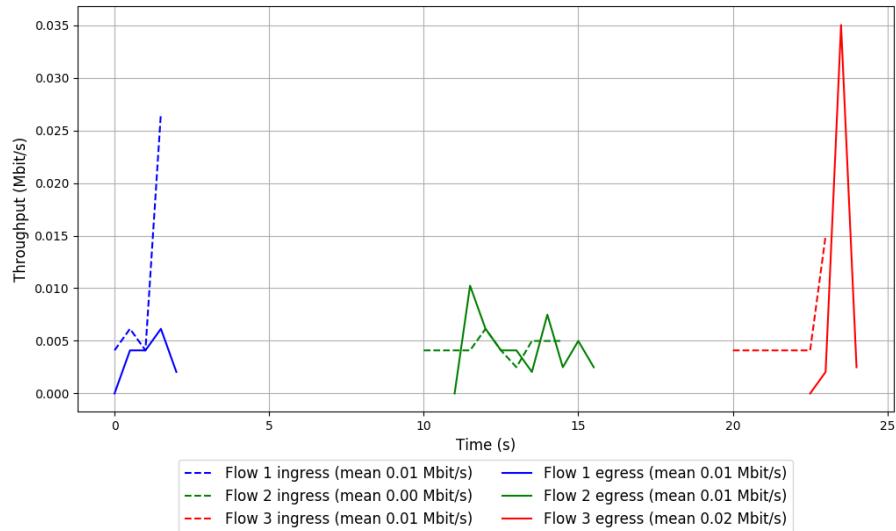
Start at: 2019-02-05 06:16:43

End at: 2019-02-05 06:17:13

Local clock offset: -6.501 ms

Remote clock offset: 6.918 ms

Run 2: Report of PCC-Expr — Data Link



Run 3: Statistics of PCC-Expr

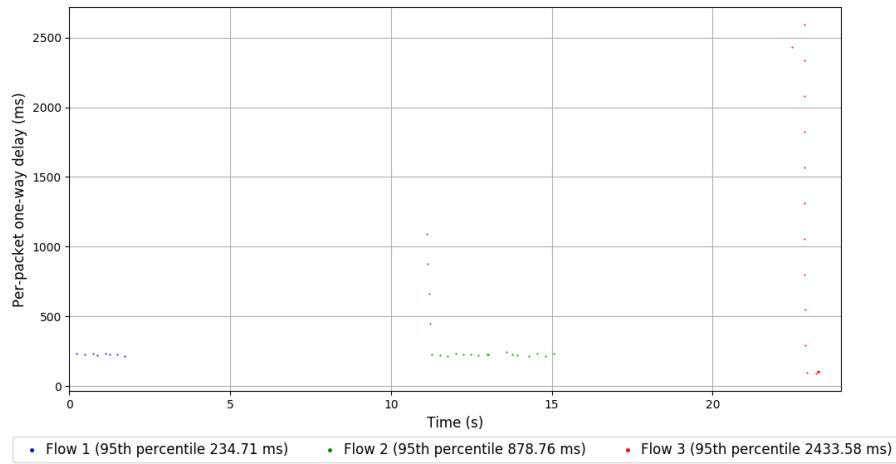
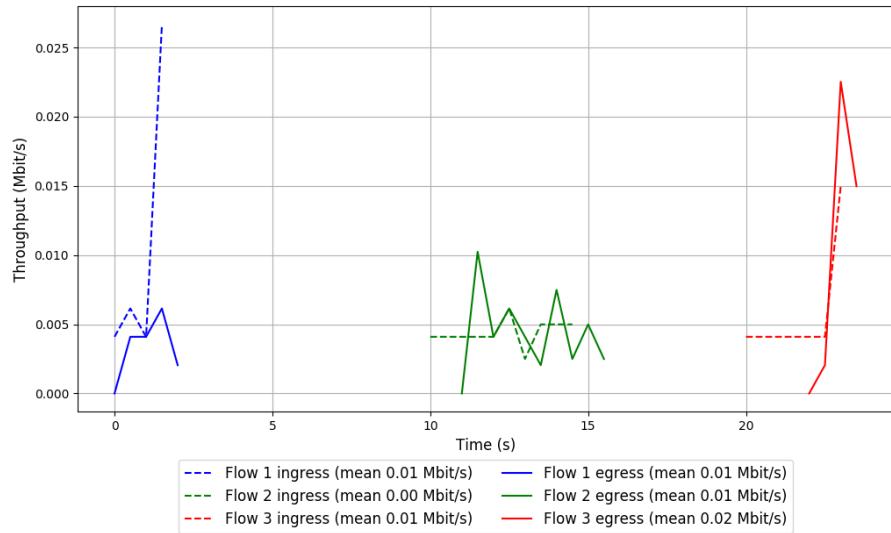
Start at: 2019-02-05 06:42:34

End at: 2019-02-05 06:43:04

Local clock offset: -7.72 ms

Remote clock offset: 9.117 ms

Run 3: Report of PCC-Expr — Data Link

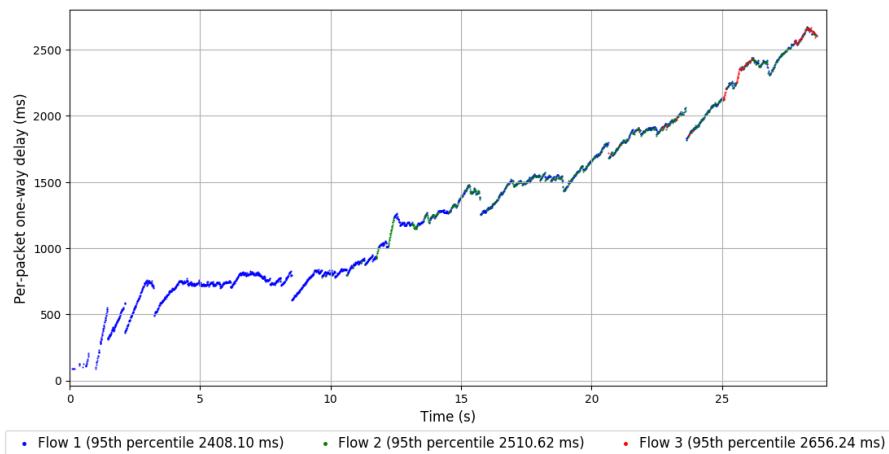
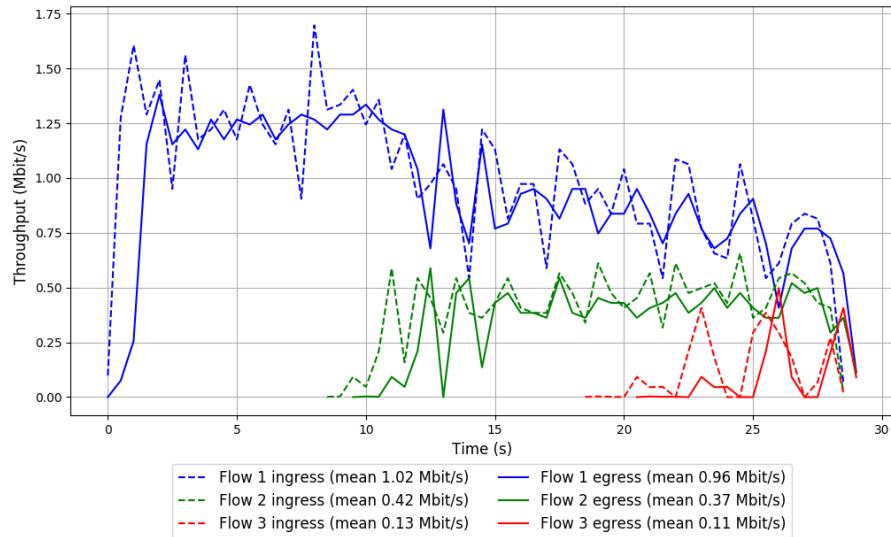


```
Run 1: Statistics of QUIC Cubic

Start at: 2019-02-05 05:58:20
End at: 2019-02-05 05:58:50
Local clock offset: -7.024 ms
Remote clock offset: 7.761 ms

# Below is generated by plot.py at 2019-02-05 06:54:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.23 Mbit/s
95th percentile per-packet one-way delay: 2460.028 ms
Loss rate: 9.08%
-- Flow 1:
Average throughput: 0.96 Mbit/s
95th percentile per-packet one-way delay: 2408.097 ms
Loss rate: 6.37%
-- Flow 2:
Average throughput: 0.37 Mbit/s
95th percentile per-packet one-way delay: 2510.617 ms
Loss rate: 15.10%
-- Flow 3:
Average throughput: 0.11 Mbit/s
95th percentile per-packet one-way delay: 2656.245 ms
Loss rate: 32.54%
```

Run 1: Report of QUIC Cubic — Data Link

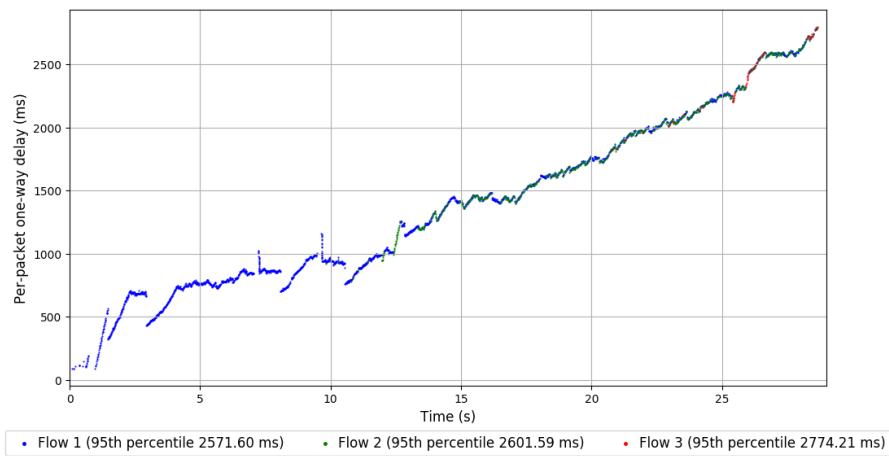
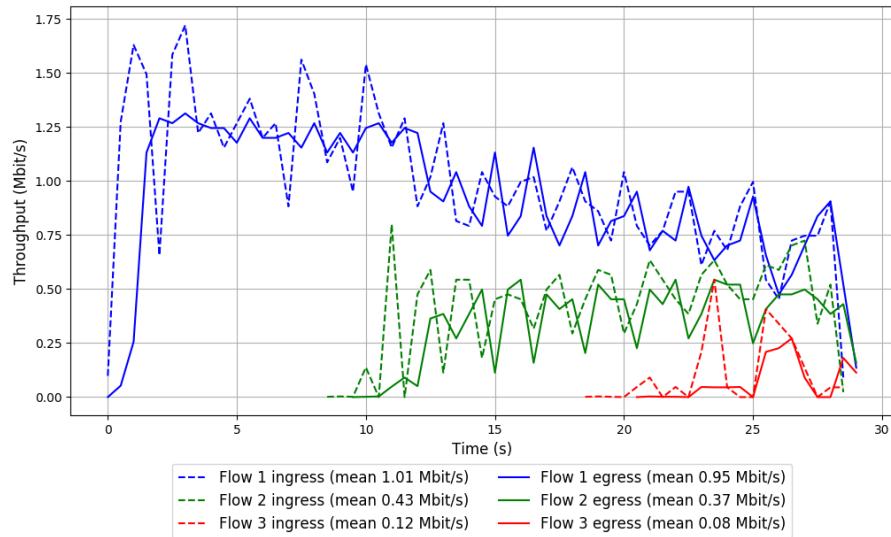


Run 2: Statistics of QUIC Cubic

```
Start at: 2019-02-05 06:24:09
End at: 2019-02-05 06:24:39
Local clock offset: -7.634 ms
Remote clock offset: 3.239 ms

# Below is generated by plot.py at 2019-02-05 06:54:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.21 Mbit/s
95th percentile per-packet one-way delay: 2585.512 ms
Loss rate: 10.17%
-- Flow 1:
Average throughput: 0.95 Mbit/s
95th percentile per-packet one-way delay: 2571.596 ms
Loss rate: 6.57%
-- Flow 2:
Average throughput: 0.37 Mbit/s
95th percentile per-packet one-way delay: 2601.587 ms
Loss rate: 18.19%
-- Flow 3:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 2774.210 ms
Loss rate: 42.58%
```

Run 2: Report of QUIC Cubic — Data Link

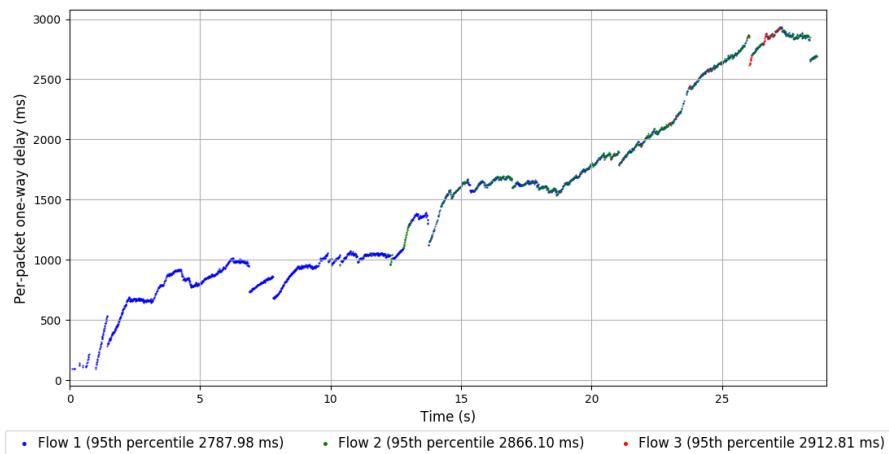
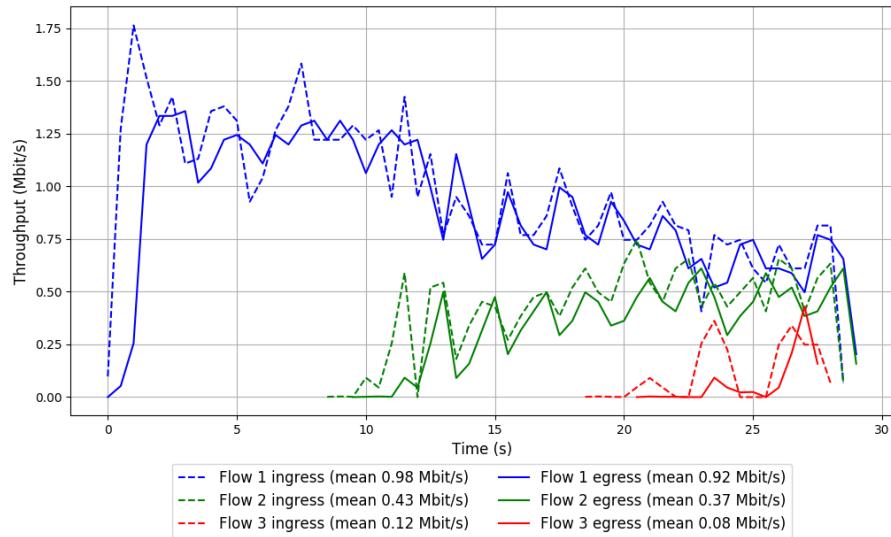


Run 3: Statistics of QUIC Cubic

```
Start at: 2019-02-05 06:49:54
End at: 2019-02-05 06:50:24
Local clock offset: -7.404 ms
Remote clock offset: 9.39 ms

# Below is generated by plot.py at 2019-02-05 06:54:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.18 Mbit/s
95th percentile per-packet one-way delay: 2854.342 ms
Loss rate: 10.52%
-- Flow 1:
Average throughput: 0.92 Mbit/s
95th percentile per-packet one-way delay: 2787.981 ms
Loss rate: 6.70%
-- Flow 2:
Average throughput: 0.37 Mbit/s
95th percentile per-packet one-way delay: 2866.100 ms
Loss rate: 17.69%
-- Flow 3:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 2912.807 ms
Loss rate: 52.77%
```

Run 3: Report of QUIC Cubic — Data Link

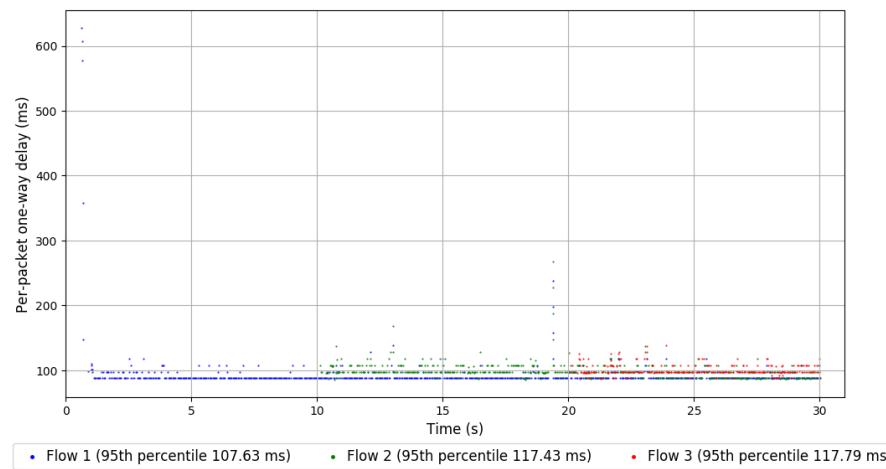
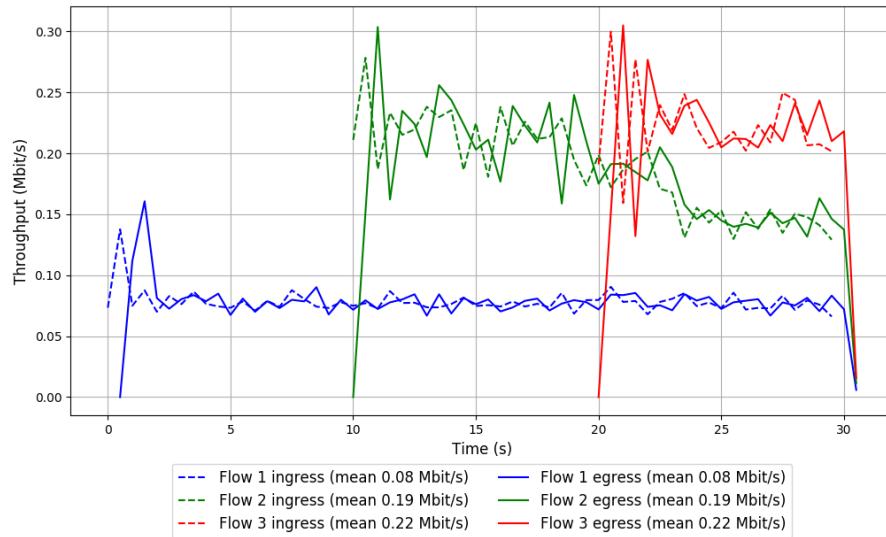


```
Run 1: Statistics of SCReAM

Start at: 2019-02-05 05:57:06
End at: 2019-02-05 05:57:36
Local clock offset: -7.041 ms
Remote clock offset: 2.762 ms

# Below is generated by plot.py at 2019-02-05 06:54:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.28 Mbit/s
95th percentile per-packet one-way delay: 110.636 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 107.633 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.19 Mbit/s
95th percentile per-packet one-way delay: 117.432 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 117.788 ms
Loss rate: 0.00%
```

Run 1: Report of SCReAM — Data Link

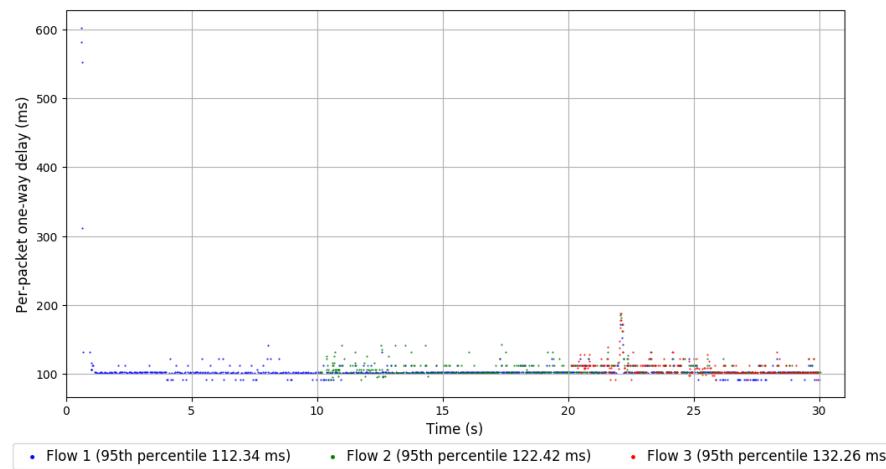
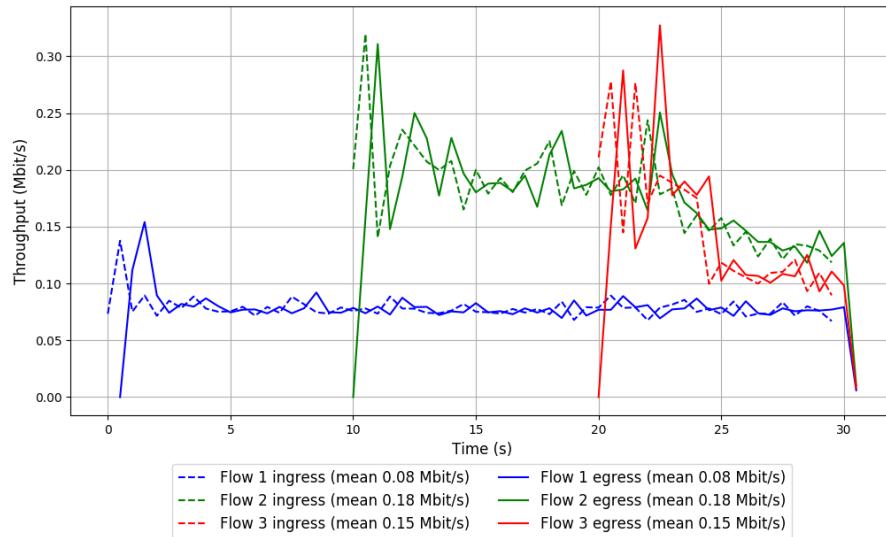


Run 2: Statistics of SCReAM

```
Start at: 2019-02-05 06:22:51
End at: 2019-02-05 06:23:21
Local clock offset: -7.658 ms
Remote clock offset: 8.443 ms

# Below is generated by plot.py at 2019-02-05 06:54:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.25 Mbit/s
95th percentile per-packet one-way delay: 122.313 ms
Loss rate: 0.05%
-- Flow 1:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 112.345 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.18 Mbit/s
95th percentile per-packet one-way delay: 122.422 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 132.259 ms
Loss rate: 0.25%
```

Run 2: Report of SCReAM — Data Link

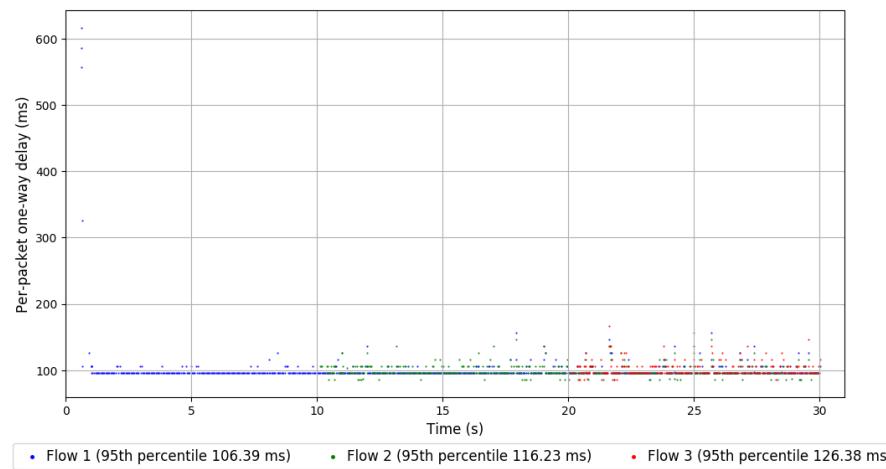
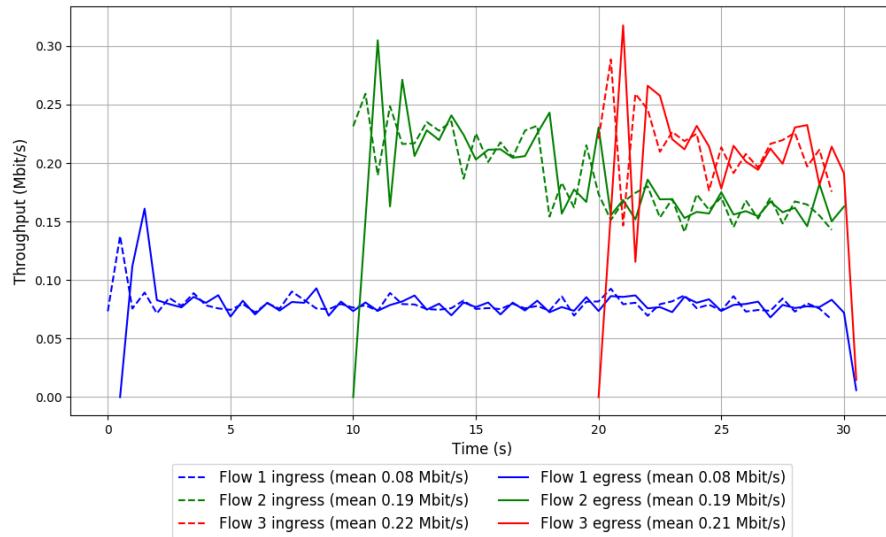


Run 3: Statistics of SCReAM

```
Start at: 2019-02-05 06:48:41
End at: 2019-02-05 06:49:11
Local clock offset: -6.775 ms
Remote clock offset: 4.28 ms

# Below is generated by plot.py at 2019-02-05 06:54:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.28 Mbit/s
95th percentile per-packet one-way delay: 116.325 ms
Loss rate: 0.17%
-- Flow 1:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 106.388 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.19 Mbit/s
95th percentile per-packet one-way delay: 116.228 ms
Loss rate: 0.17%
-- Flow 3:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 126.383 ms
Loss rate: 0.35%
```

Run 3: Report of SCReAM — Data Link

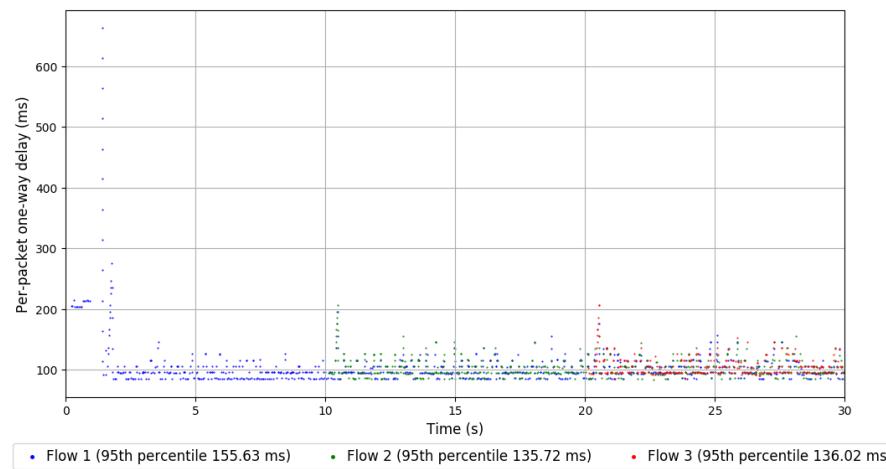
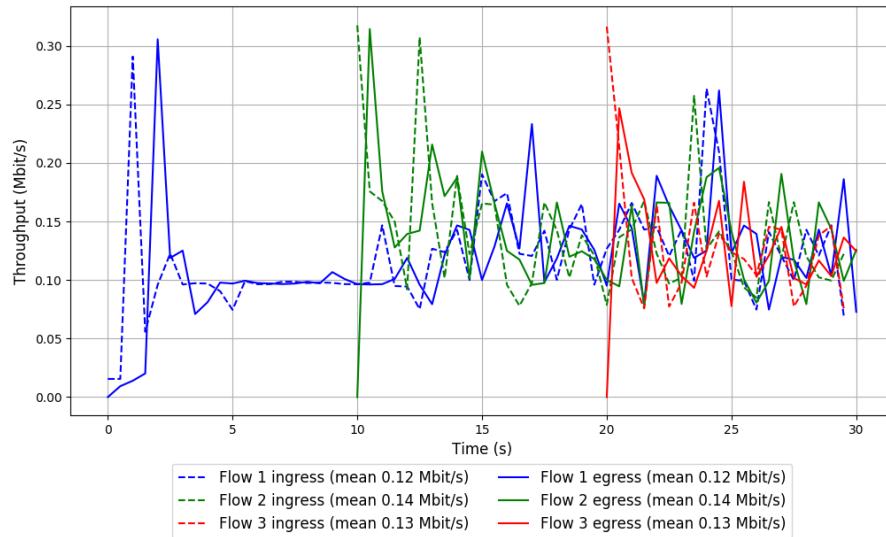


Run 1: Statistics of Sprout

```
Start at: 2019-02-05 06:00:47
End at: 2019-02-05 06:01:17
Local clock offset: -7.003 ms
Remote clock offset: 3.955 ms

# Below is generated by plot.py at 2019-02-05 06:54:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.26 Mbit/s
95th percentile per-packet one-way delay: 144.169 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.12 Mbit/s
95th percentile per-packet one-way delay: 155.631 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 135.722 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.13 Mbit/s
95th percentile per-packet one-way delay: 136.023 ms
Loss rate: 0.00%
```

Run 1: Report of Sprout — Data Link

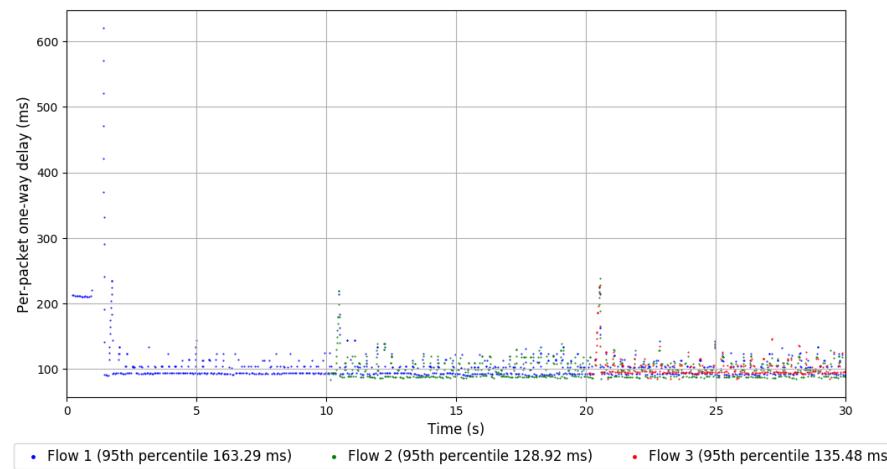
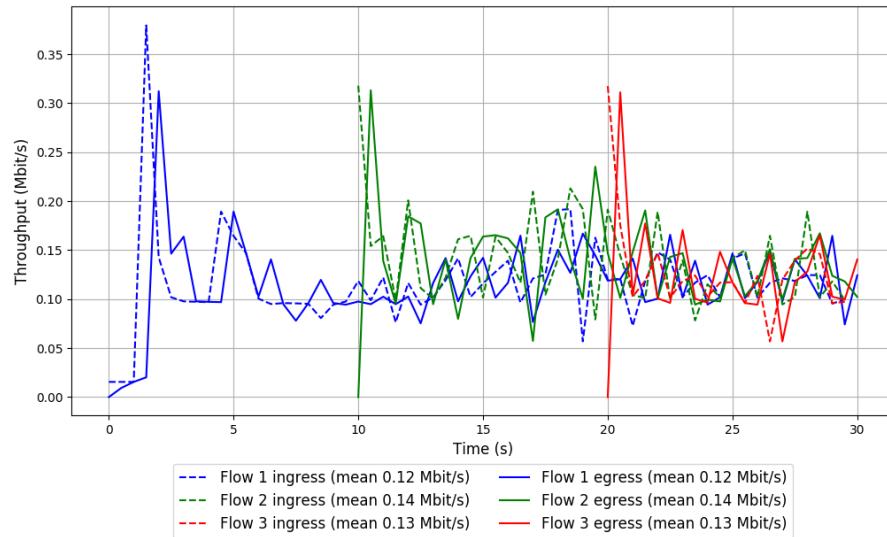


Run 2: Statistics of Sprout

```
Start at: 2019-02-05 06:26:37
End at: 2019-02-05 06:27:07
Local clock offset: -6.881 ms
Remote clock offset: 4.375 ms

# Below is generated by plot.py at 2019-02-05 06:54:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.25 Mbit/s
95th percentile per-packet one-way delay: 142.110 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.12 Mbit/s
95th percentile per-packet one-way delay: 163.295 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 128.919 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.13 Mbit/s
95th percentile per-packet one-way delay: 135.480 ms
Loss rate: 0.00%
```

Run 2: Report of Sprout — Data Link

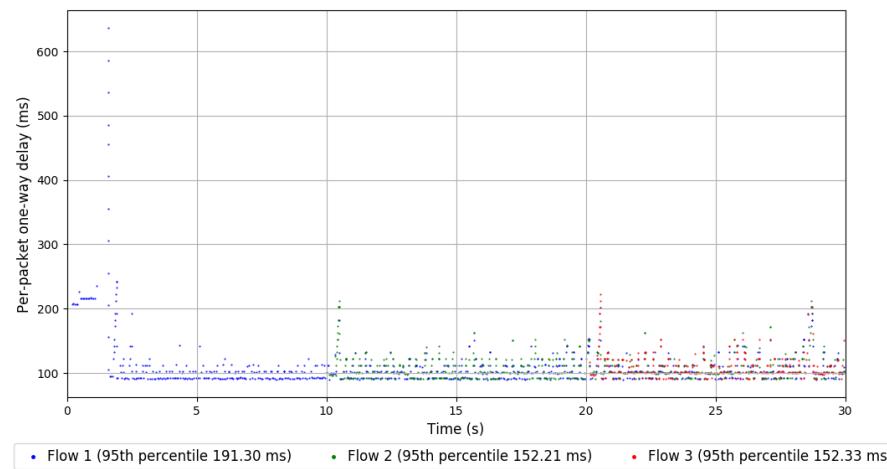
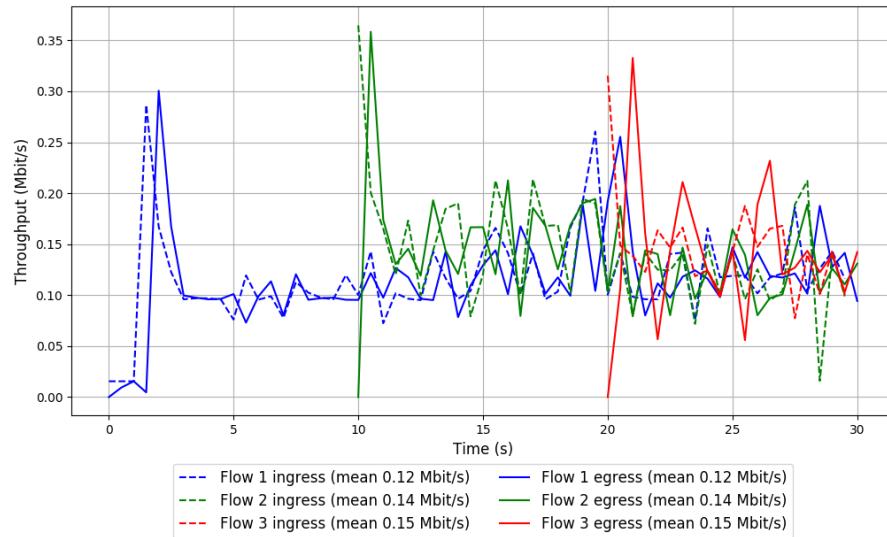


Run 3: Statistics of Sprout

```
Start at: 2019-02-05 06:52:21
End at: 2019-02-05 06:52:51
Local clock offset: -6.555 ms
Remote clock offset: 9.654 ms

# Below is generated by plot.py at 2019-02-05 06:54:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.26 Mbit/s
95th percentile per-packet one-way delay: 153.127 ms
Loss rate: 0.19%
-- Flow 1:
Average throughput: 0.12 Mbit/s
95th percentile per-packet one-way delay: 191.304 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 152.214 ms
Loss rate: 0.03%
-- Flow 3:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 152.328 ms
Loss rate: 0.05%
```

Run 3: Report of Sprout — Data Link

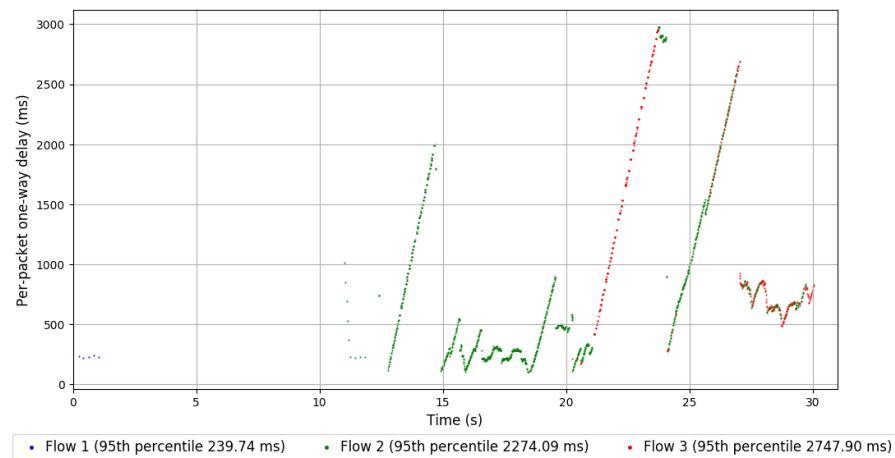
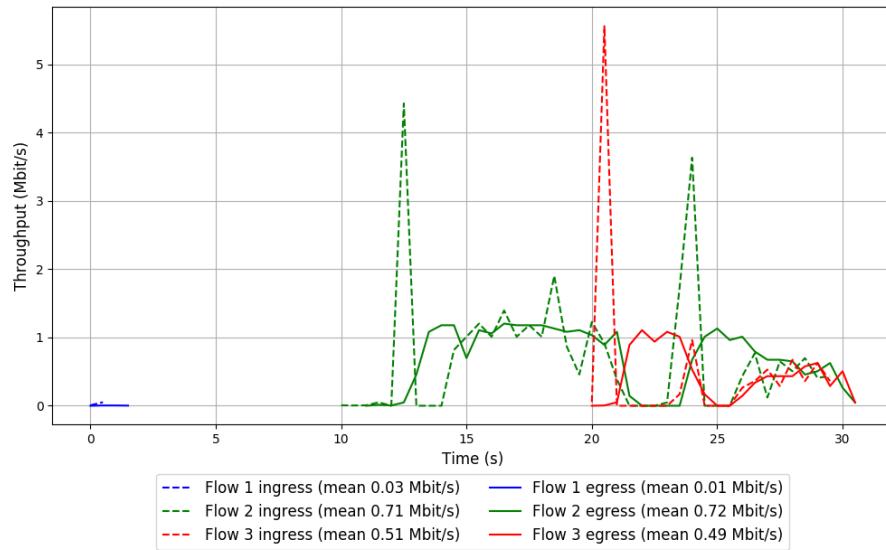


Run 1: Statistics of TaoVA-100x

```
Start at: 2019-02-05 05:37:25
End at: 2019-02-05 05:37:55
Local clock offset: -7.12 ms
Remote clock offset: 7.43 ms

# Below is generated by plot.py at 2019-02-05 06:54:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.62 Mbit/s
95th percentile per-packet one-way delay: 2608.592 ms
Loss rate: 3.74%
-- Flow 1:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 239.744 ms
Loss rate: 82.46%
-- Flow 2:
Average throughput: 0.72 Mbit/s
95th percentile per-packet one-way delay: 2274.092 ms
Loss rate: 2.80%
-- Flow 3:
Average throughput: 0.49 Mbit/s
95th percentile per-packet one-way delay: 2747.899 ms
Loss rate: 5.89%
```

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

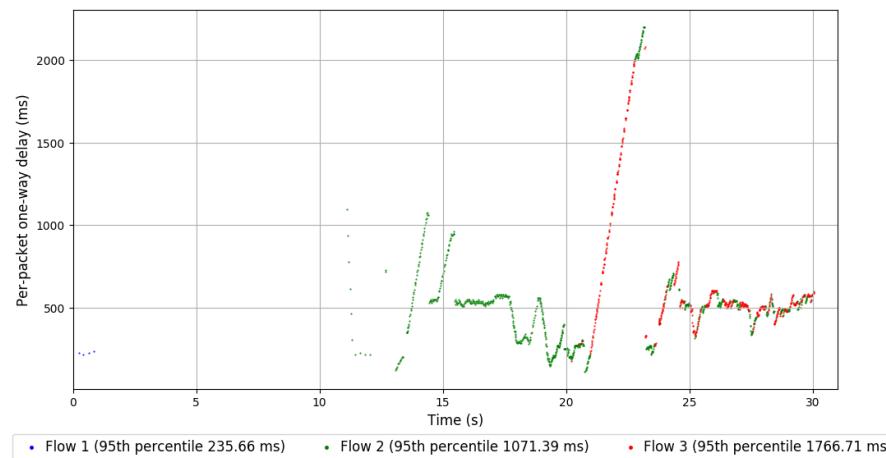
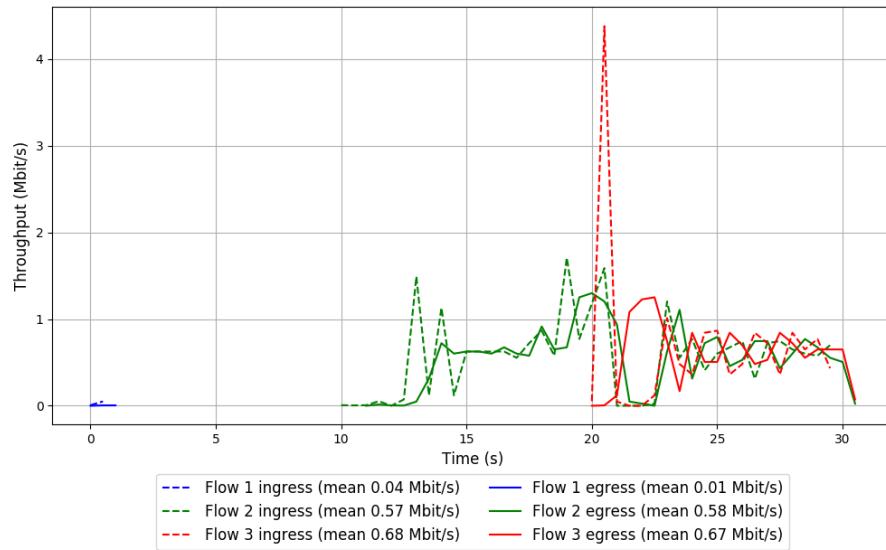


Run 2: Statistics of TaoVA-100x

```
Start at: 2019-02-05 06:03:14
End at: 2019-02-05 06:03:44
Local clock offset: -7.01 ms
Remote clock offset: 3.861 ms

# Below is generated by plot.py at 2019-02-05 06:54:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.59 Mbit/s
95th percentile per-packet one-way delay: 1746.904 ms
Loss rate: 3.50%
-- Flow 1:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 235.660 ms
Loss rate: 85.45%
-- Flow 2:
Average throughput: 0.58 Mbit/s
95th percentile per-packet one-way delay: 1071.391 ms
Loss rate: 3.28%
-- Flow 3:
Average throughput: 0.67 Mbit/s
95th percentile per-packet one-way delay: 1766.706 ms
Loss rate: 3.53%
```

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

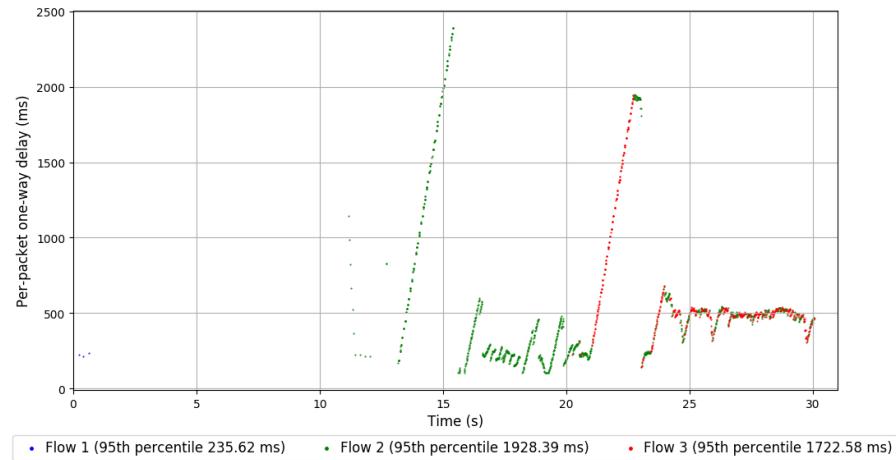
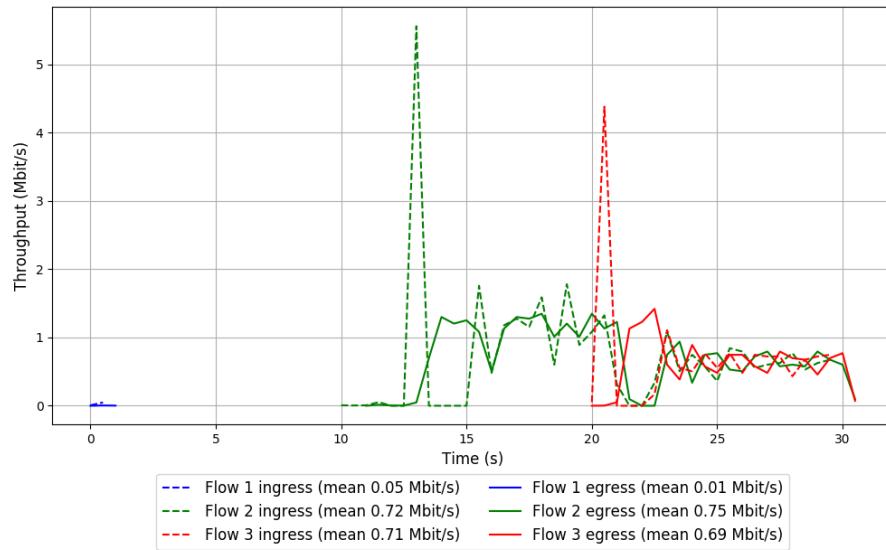


Run 3: Statistics of TaoVA-100x

```
Start at: 2019-02-05 06:29:04
End at: 2019-02-05 06:29:34
Local clock offset: -7.655 ms
Remote clock offset: 4.544 ms

# Below is generated by plot.py at 2019-02-05 06:54:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.70 Mbit/s
95th percentile per-packet one-way delay: 1908.362 ms
Loss rate: 2.70%
-- Flow 1:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 235.618 ms
Loss rate: 88.68%
-- Flow 2:
Average throughput: 0.75 Mbit/s
95th percentile per-packet one-way delay: 1928.395 ms
Loss rate: 1.68%
-- Flow 3:
Average throughput: 0.69 Mbit/s
95th percentile per-packet one-way delay: 1722.580 ms
Loss rate: 4.44%
```

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

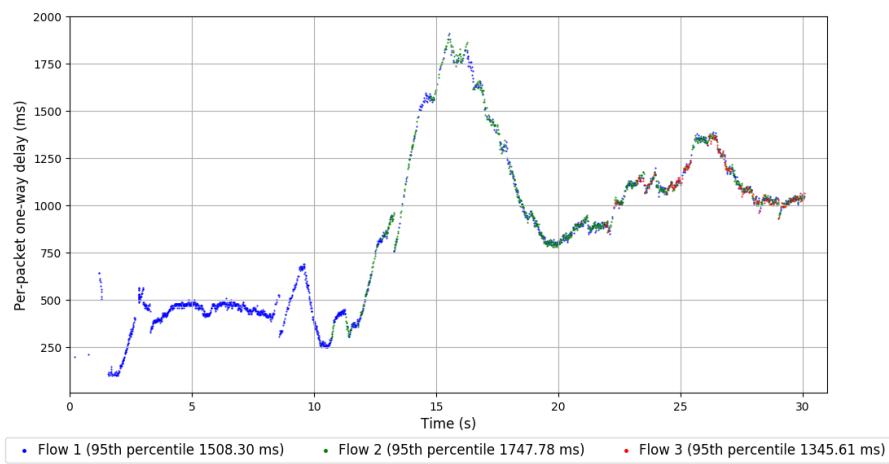
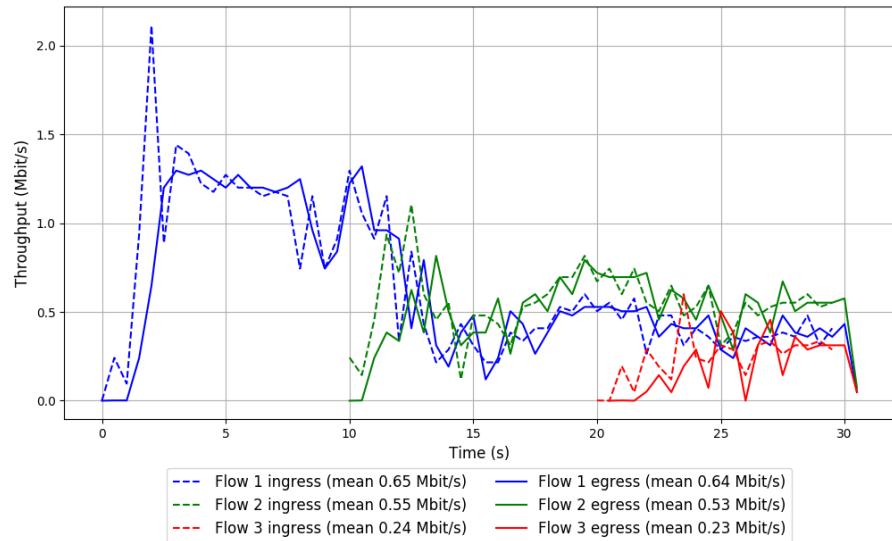


Run 1: Statistics of TCP Vegas

```
Start at: 2019-02-05 05:47:19
End at: 2019-02-05 05:47:49
Local clock offset: -7.753 ms
Remote clock offset: 2.322 ms

# Below is generated by plot.py at 2019-02-05 06:54:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.07 Mbit/s
95th percentile per-packet one-way delay: 1578.026 ms
Loss rate: 3.56%
-- Flow 1:
Average throughput: 0.64 Mbit/s
95th percentile per-packet one-way delay: 1508.297 ms
Loss rate: 1.84%
-- Flow 2:
Average throughput: 0.53 Mbit/s
95th percentile per-packet one-way delay: 1747.776 ms
Loss rate: 4.78%
-- Flow 3:
Average throughput: 0.23 Mbit/s
95th percentile per-packet one-way delay: 1345.614 ms
Loss rate: 11.99%
```

Run 1: Report of TCP Vegas — Data Link

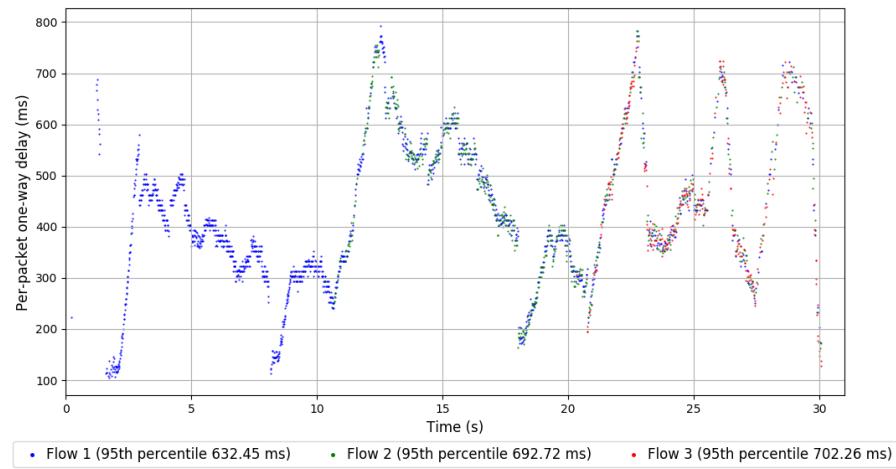
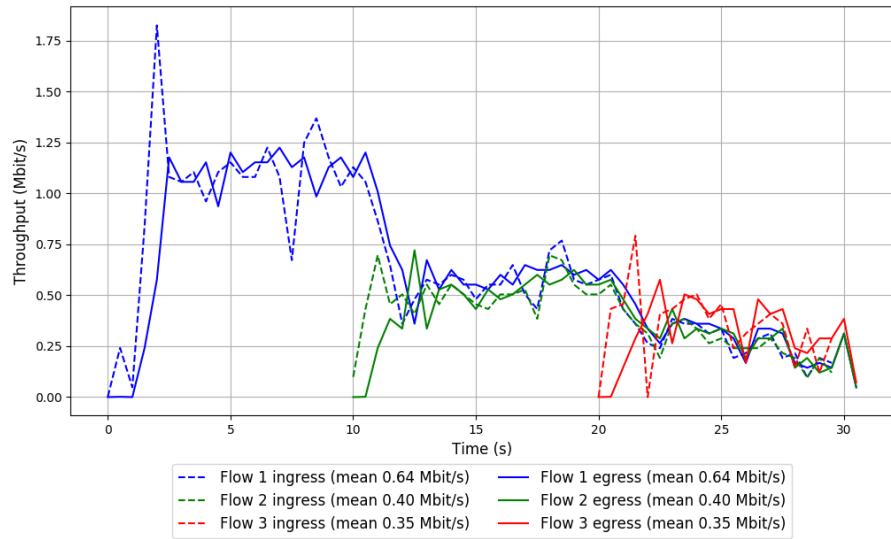


Run 2: Statistics of TCP Vegas

```
Start at: 2019-02-05 06:13:03
End at: 2019-02-05 06:13:33
Local clock offset: -7.187 ms
Remote clock offset: 8.198 ms

# Below is generated by plot.py at 2019-02-05 06:54:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.02 Mbit/s
95th percentile per-packet one-way delay: 679.034 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 0.64 Mbit/s
95th percentile per-packet one-way delay: 632.446 ms
Loss rate: 0.13%
-- Flow 2:
Average throughput: 0.40 Mbit/s
95th percentile per-packet one-way delay: 692.720 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.35 Mbit/s
95th percentile per-packet one-way delay: 702.257 ms
Loss rate: 0.00%
```

Run 2: Report of TCP Vegas — Data Link

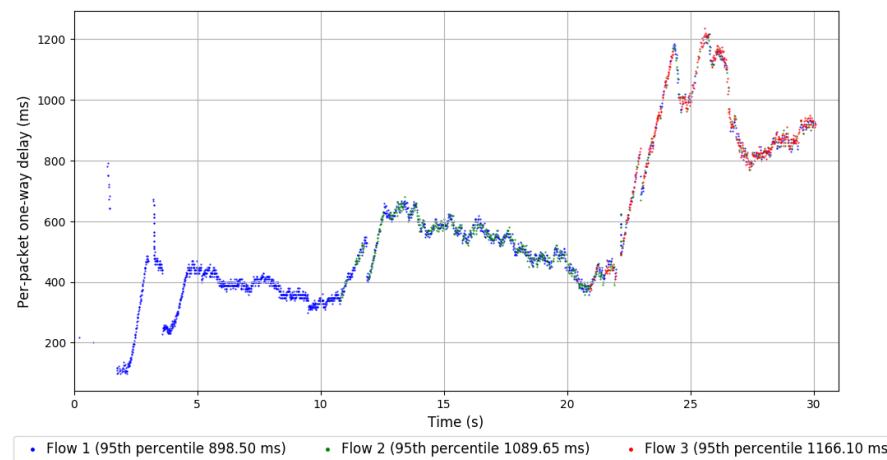
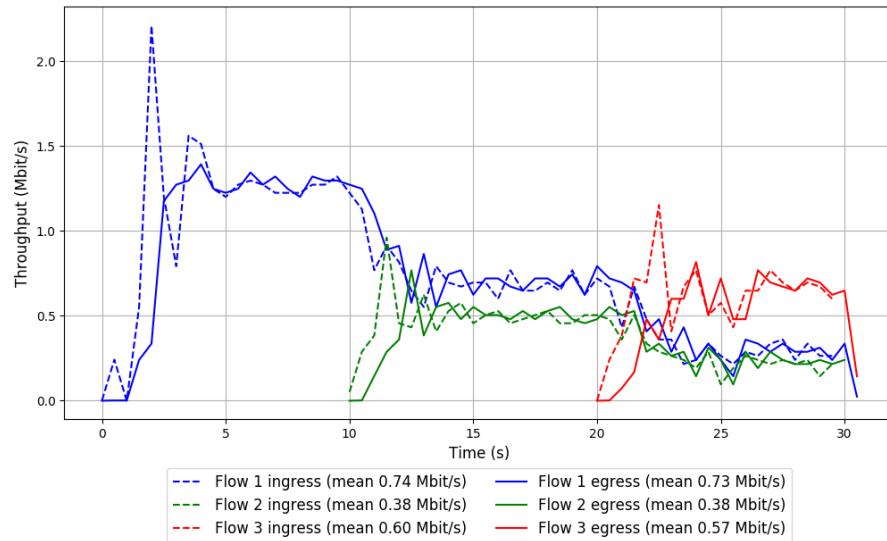


Run 3: Statistics of TCP Vegas

```
Start at: 2019-02-05 06:38:53
End at: 2019-02-05 06:39:23
Local clock offset: -6.918 ms
Remote clock offset: 4.046 ms

# Below is generated by plot.py at 2019-02-05 06:54:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.16 Mbit/s
95th percentile per-packet one-way delay: 1096.449 ms
Loss rate: 2.53%
-- Flow 1:
Average throughput: 0.73 Mbit/s
95th percentile per-packet one-way delay: 898.495 ms
Loss rate: 1.03%
-- Flow 2:
Average throughput: 0.38 Mbit/s
95th percentile per-packet one-way delay: 1089.648 ms
Loss rate: 2.07%
-- Flow 3:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 1166.103 ms
Loss rate: 8.65%
```

Run 3: Report of TCP Vegas — Data Link

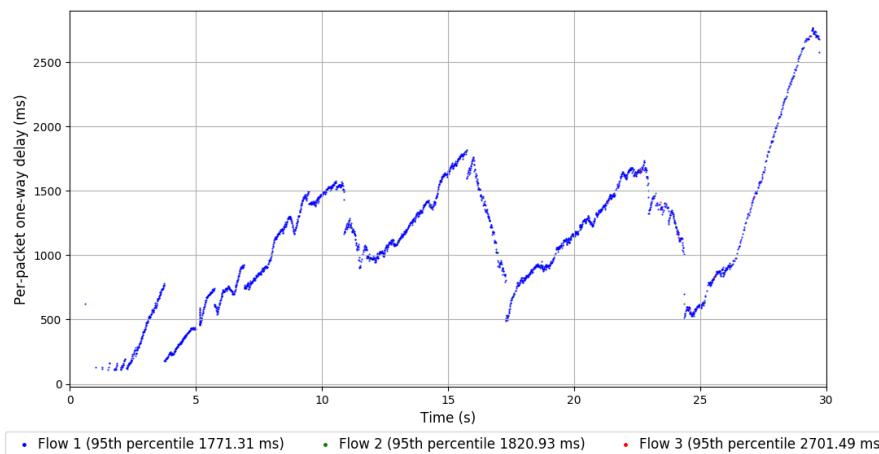
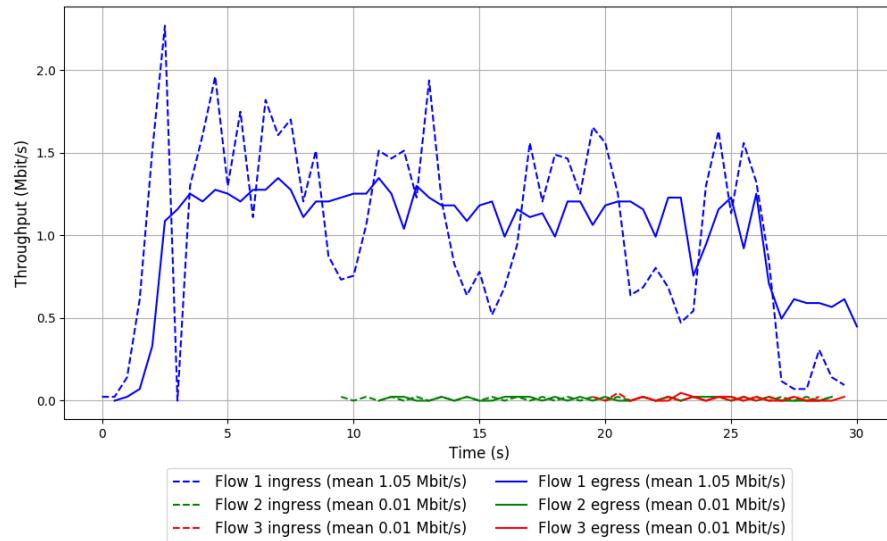


Run 1: Statistics of Verus

```
Start at: 2019-02-05 05:49:46
End at: 2019-02-05 05:50:16
Local clock offset: -7.424 ms
Remote clock offset: 8.612 ms

# Below is generated by plot.py at 2019-02-05 06:54:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.06 Mbit/s
95th percentile per-packet one-way delay: 1775.801 ms
Loss rate: 1.39%
-- Flow 1:
Average throughput: 1.05 Mbit/s
95th percentile per-packet one-way delay: 1771.308 ms
Loss rate: 1.22%
-- Flow 2:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 1820.935 ms
Loss rate: 14.29%
-- Flow 3:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 2701.487 ms
Loss rate: 18.18%
```

Run 1: Report of Verus — Data Link

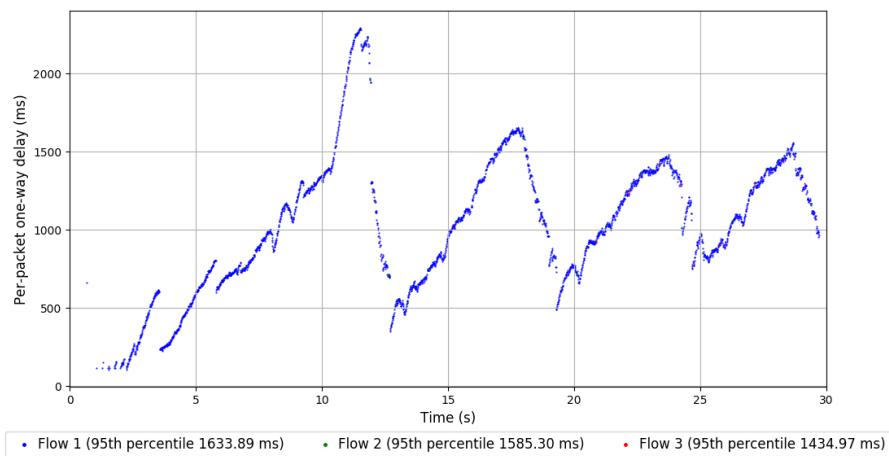
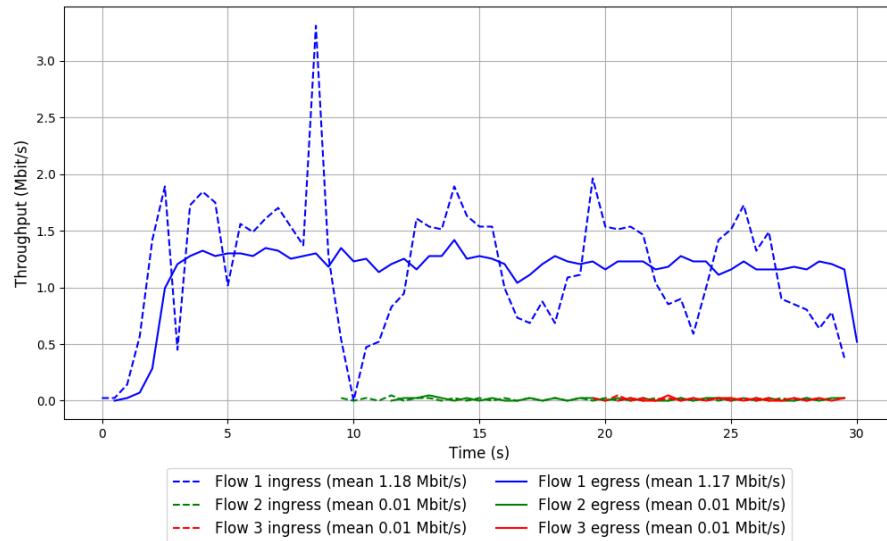


Run 2: Statistics of Verus

```
Start at: 2019-02-05 06:15:30
End at: 2019-02-05 06:16:00
Local clock offset: -7.304 ms
Remote clock offset: 6.821 ms

# Below is generated by plot.py at 2019-02-05 06:55:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.19 Mbit/s
95th percentile per-packet one-way delay: 1632.437 ms
Loss rate: 2.11%
-- Flow 1:
Average throughput: 1.17 Mbit/s
95th percentile per-packet one-way delay: 1633.888 ms
Loss rate: 2.07%
-- Flow 2:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 1585.297 ms
Loss rate: 4.55%
-- Flow 3:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 1434.974 ms
Loss rate: 9.09%
```

Run 2: Report of Verus — Data Link

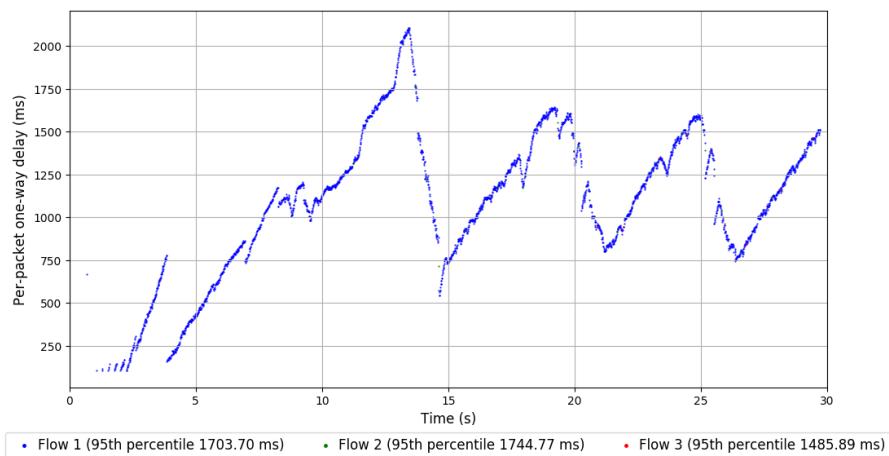
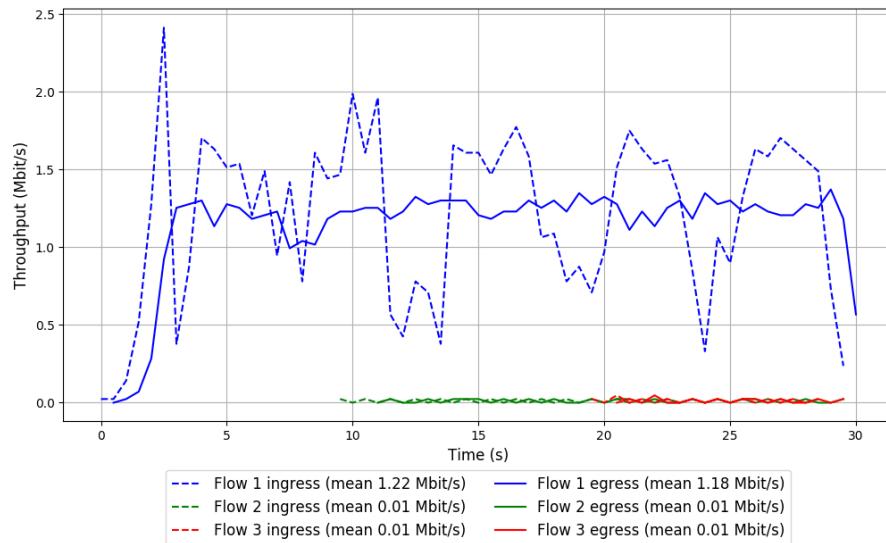


Run 3: Statistics of Verus

```
Start at: 2019-02-05 06:41:20
End at: 2019-02-05 06:41:50
Local clock offset: -7.686 ms
Remote clock offset: 3.832 ms

# Below is generated by plot.py at 2019-02-05 06:55:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.19 Mbit/s
95th percentile per-packet one-way delay: 1703.728 ms
Loss rate: 4.68%
-- Flow 1:
Average throughput: 1.18 Mbit/s
95th percentile per-packet one-way delay: 1703.704 ms
Loss rate: 4.66%
-- Flow 2:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 1744.770 ms
Loss rate: 5.00%
-- Flow 3:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 1485.891 ms
Loss rate: 9.09%
```

Run 3: Report of Verus — Data Link

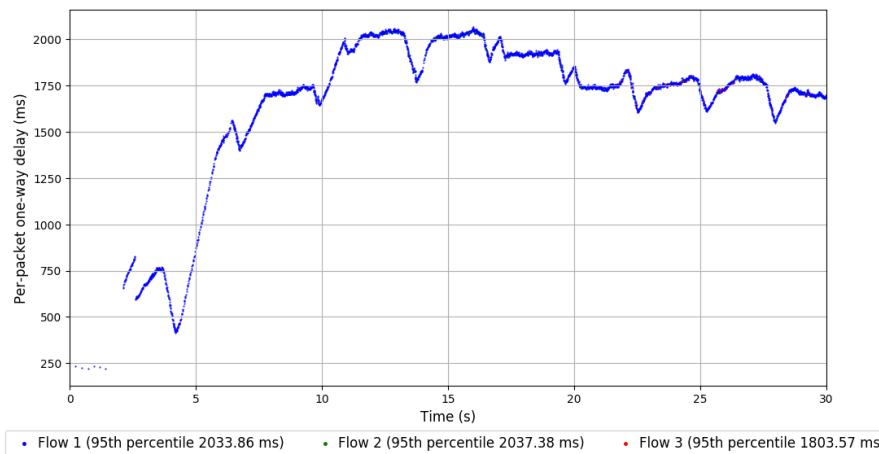
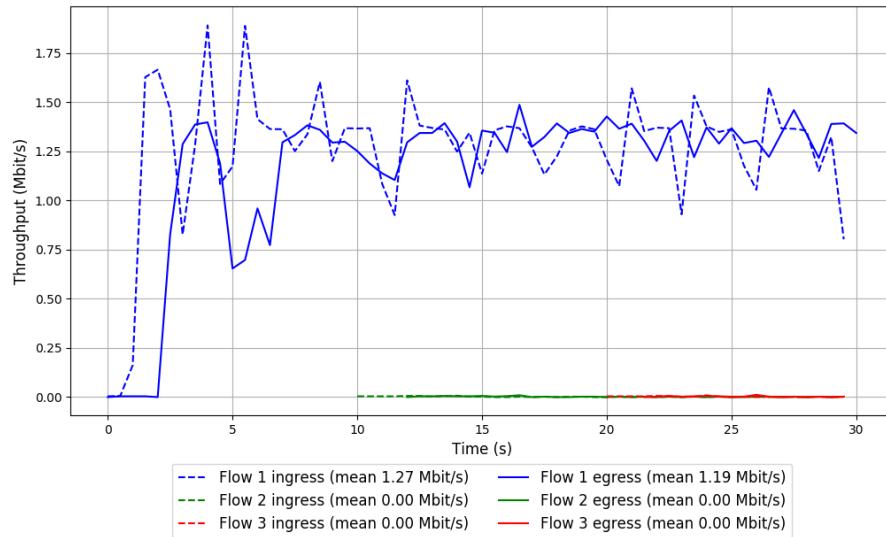


```
Run 1: Statistics of PCC-Vivace
```

```
Start at: 2019-02-05 05:43:37
End at: 2019-02-05 05:44:07
Local clock offset: -7.655 ms
Remote clock offset: 6.233 ms

# Below is generated by plot.py at 2019-02-05 06:55:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.20 Mbit/s
95th percentile per-packet one-way delay: 2033.899 ms
Loss rate: 6.09%
-- Flow 1:
Average throughput: 1.19 Mbit/s
95th percentile per-packet one-way delay: 2033.857 ms
Loss rate: 6.09%
-- Flow 2:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 2037.377 ms
Loss rate: 5.50%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 1803.568 ms
Loss rate: 7.33%
```

Run 1: Report of PCC-Vivace — Data Link

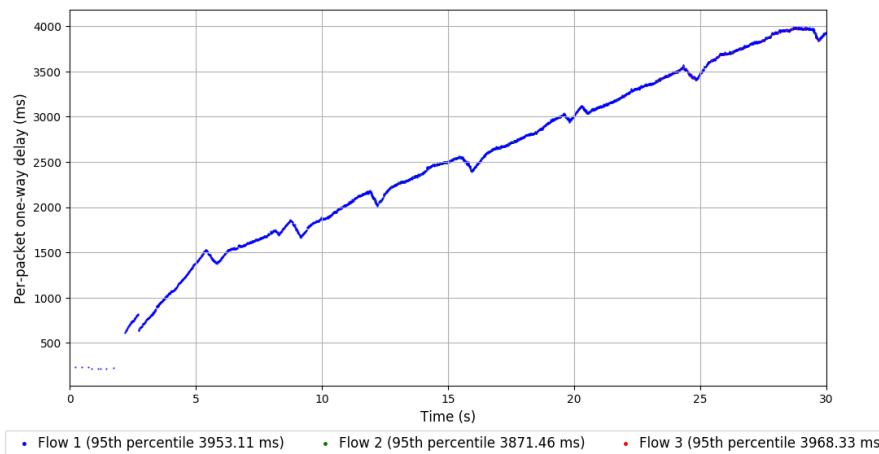
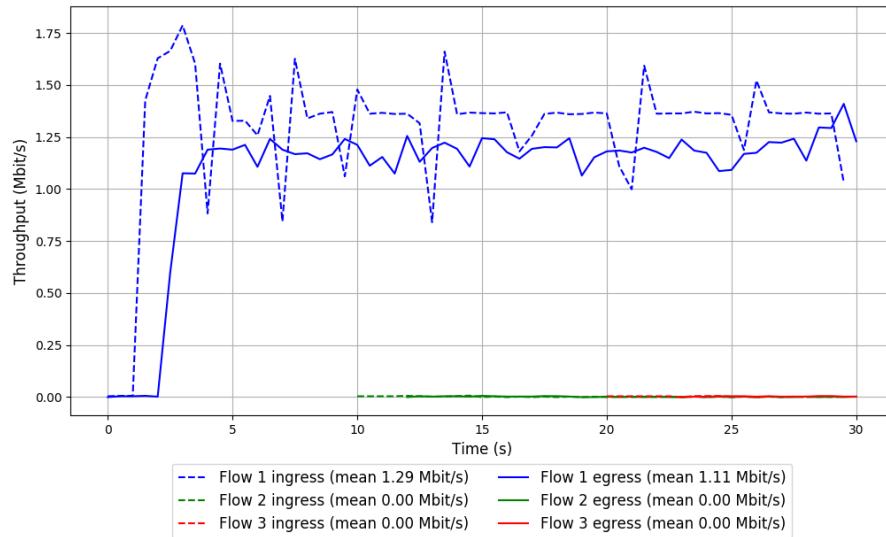


Run 2: Statistics of PCC-Vivace

```
Start at: 2019-02-05 06:09:22
End at: 2019-02-05 06:09:52
Local clock offset: -7.106 ms
Remote clock offset: 6.822 ms

# Below is generated by plot.py at 2019-02-05 06:55:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.11 Mbit/s
95th percentile per-packet one-way delay: 3953.154 ms
Loss rate: 14.54%
-- Flow 1:
Average throughput: 1.11 Mbit/s
95th percentile per-packet one-way delay: 3953.106 ms
Loss rate: 14.55%
-- Flow 2:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 3871.464 ms
Loss rate: 10.77%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 3968.330 ms
Loss rate: 5.31%
```

Run 2: Report of PCC-Vivace — Data Link

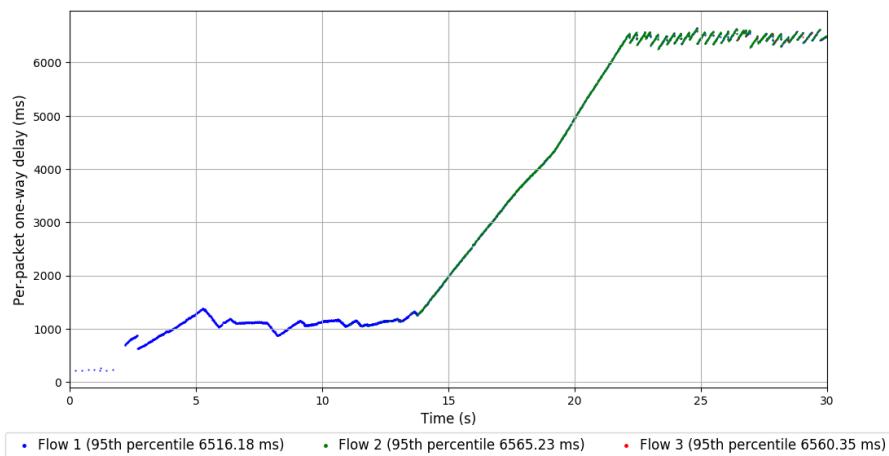
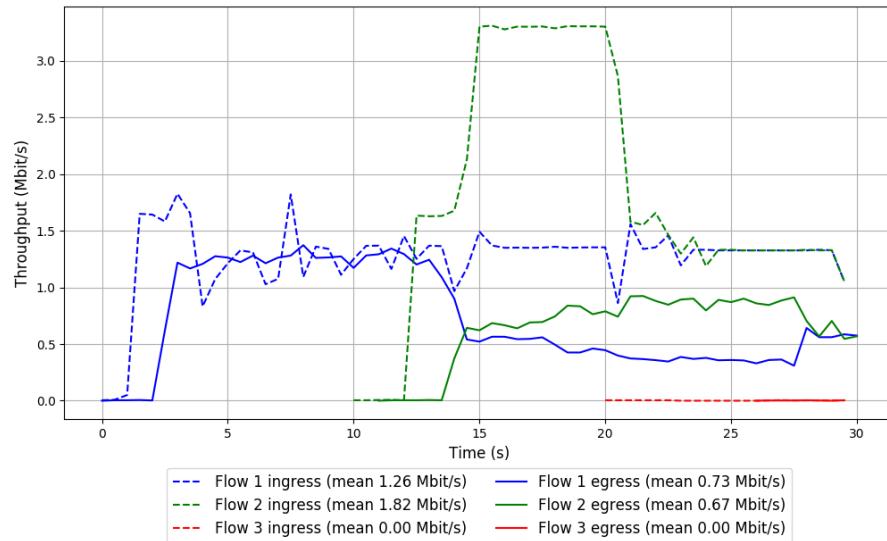


Run 3: Statistics of PCC-Vivace

```
Start at: 2019-02-05 06:35:12
End at: 2019-02-05 06:35:42
Local clock offset: -7.613 ms
Remote clock offset: 8.578 ms

# Below is generated by plot.py at 2019-02-05 06:55:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.15 Mbit/s
95th percentile per-packet one-way delay: 6542.497 ms
Loss rate: 53.62%
-- Flow 1:
Average throughput: 0.73 Mbit/s
95th percentile per-packet one-way delay: 6516.183 ms
Loss rate: 42.46%
-- Flow 2:
Average throughput: 0.67 Mbit/s
95th percentile per-packet one-way delay: 6565.234 ms
Loss rate: 65.25%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 6560.352 ms
Loss rate: 63.22%
```

Run 3: Report of PCC-Vivace — Data Link

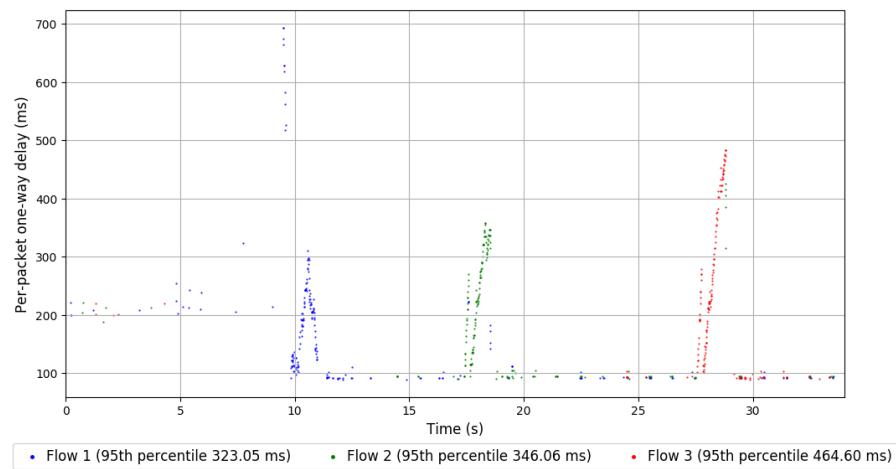
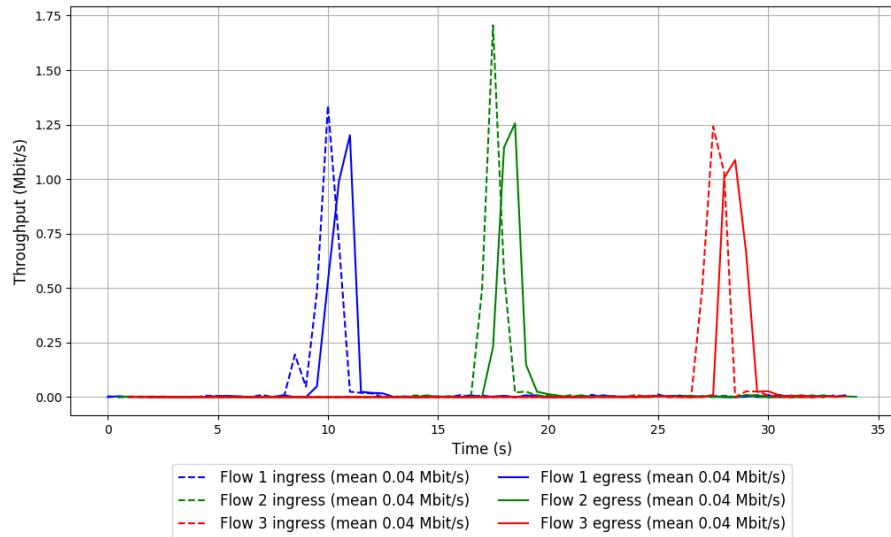


```
Run 1: Statistics of WebRTC media

Start at: 2019-02-05 05:52:12
End at: 2019-02-05 05:52:42
Local clock offset: -7.232 ms
Remote clock offset: 6.607 ms

# Below is generated by plot.py at 2019-02-05 06:55:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.13 Mbit/s
95th percentile per-packet one-way delay: 433.643 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.04 Mbit/s
95th percentile per-packet one-way delay: 323.045 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.04 Mbit/s
95th percentile per-packet one-way delay: 346.061 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.04 Mbit/s
95th percentile per-packet one-way delay: 464.603 ms
Loss rate: 0.00%
```

Run 1: Report of WebRTC media — Data Link

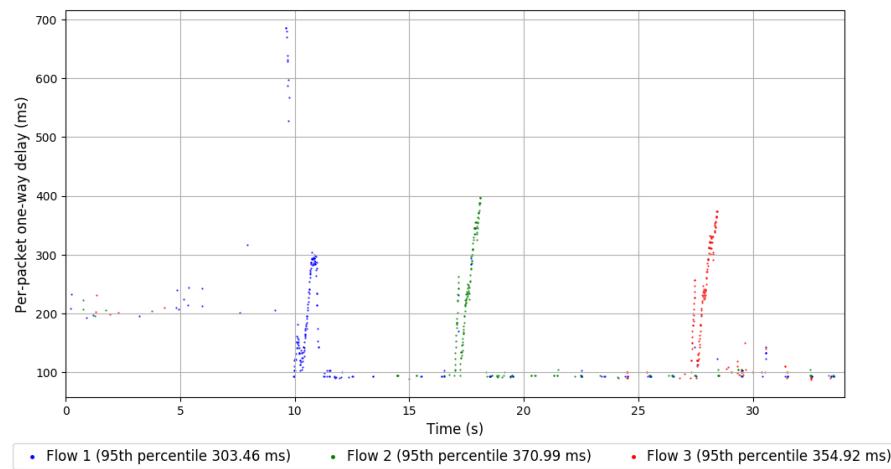
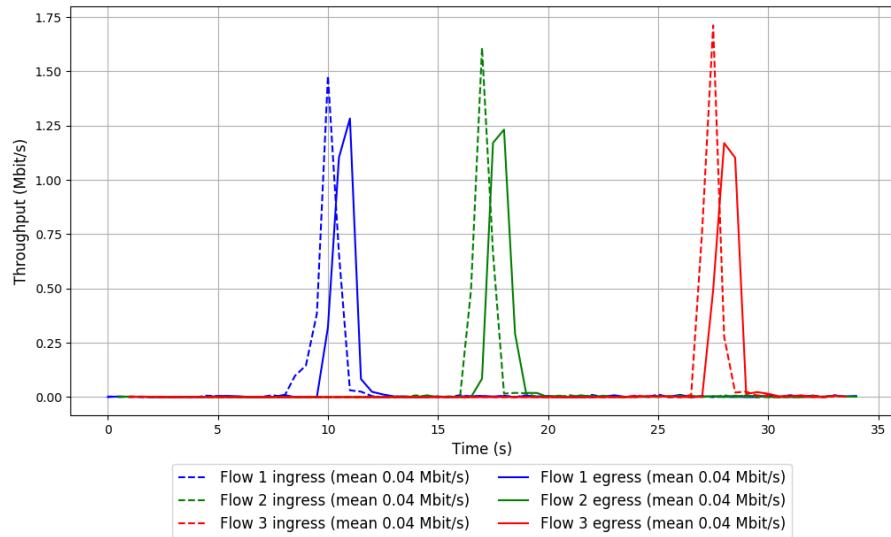


Run 2: Statistics of WebRTC media

```
Start at: 2019-02-05 06:17:57
End at: 2019-02-05 06:18:27
Local clock offset: -7.098 ms
Remote clock offset: 7.979 ms

# Below is generated by plot.py at 2019-02-05 06:55:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.13 Mbit/s
95th percentile per-packet one-way delay: 362.278 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 0.04 Mbit/s
95th percentile per-packet one-way delay: 303.461 ms
Loss rate: 0.05%
-- Flow 2:
Average throughput: 0.04 Mbit/s
95th percentile per-packet one-way delay: 370.994 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.04 Mbit/s
95th percentile per-packet one-way delay: 354.916 ms
Loss rate: 0.00%
```

Run 2: Report of WebRTC media — Data Link



Run 3: Statistics of WebRTC media

```
Start at: 2019-02-05 06:43:47
End at: 2019-02-05 06:44:17
Local clock offset: -7.014 ms
Remote clock offset: 9.072 ms

# Below is generated by plot.py at 2019-02-05 06:55:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.13 Mbit/s
95th percentile per-packet one-way delay: 332.924 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.04 Mbit/s
95th percentile per-packet one-way delay: 277.470 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.04 Mbit/s
95th percentile per-packet one-way delay: 337.256 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.04 Mbit/s
95th percentile per-packet one-way delay: 332.924 ms
Loss rate: 0.00%
```

Run 3: Report of WebRTC media — Data Link

