

Pantheon Report

Generated at 2019-01-21 10:26:08 (UTC).

Data path: AWS India 1 on `ens5 (local)` → India 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 `nets.org.sg` and have been applied to correct the timestamps in logs.

System info:

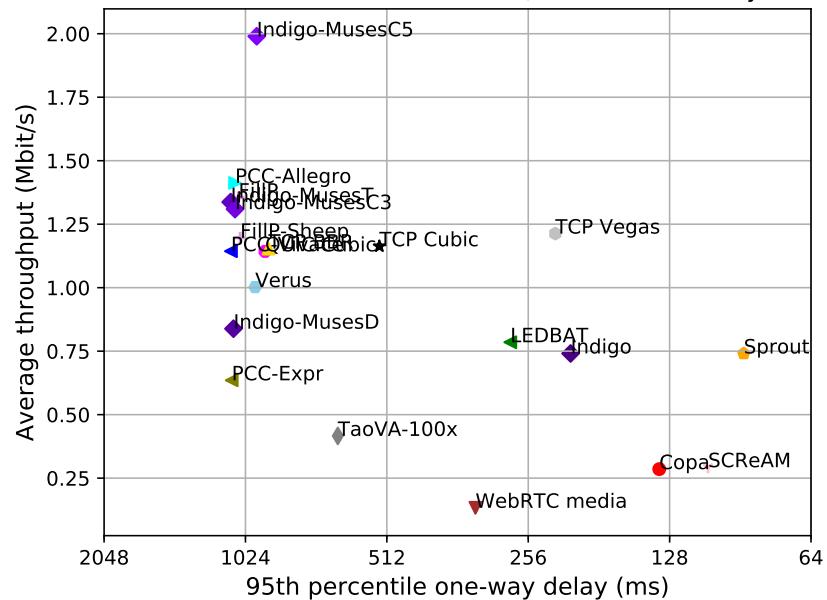
```
Linux 4.15.0-1031-aws
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912
```

Git summary:

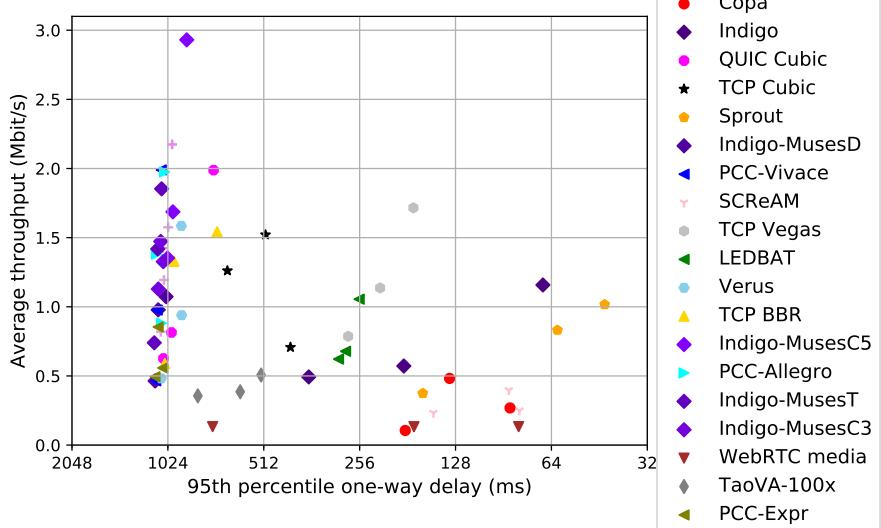
```
branch: muses @ 89d24e57783e7fbfec537a619071de937b639e38
third_party/fillp @ d6da1459332fce56963885d7eba17e6a32d4519
third_party/fillp-sheep @ 0e5bb722943babcd2b090d2c64fcd45e12e923f9
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdf58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/muses @ 1ddcff131048c6962f123bcd22b4d166a422adde
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 India 1 to India cellular, 3 runs of 30s each per scheme
3 flows with 10s interval between flows (mean of all runs by scheme)



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



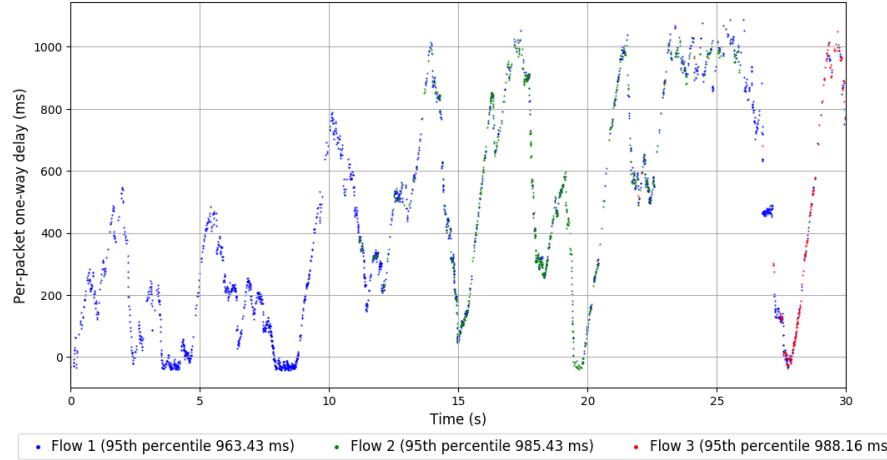
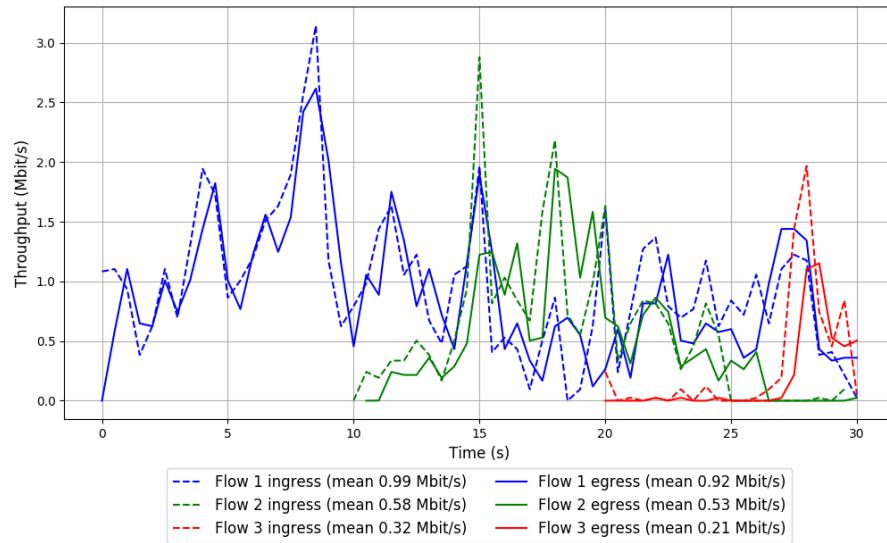
scheme	# runs	mean avg tput (Mbit/s)			mean 95th-%ile delay (ms)			mean loss rate (%)		
		flow 1	flow 2	flow 3	flow 1	flow 2	flow 3	flow 1	flow 2	flow 3
TCP BBR	3	0.66	0.50	0.52	895.66	926.83	924.95	6.63	10.48	23.56
Copa	3	0.16	0.04	0.30	52.65	64.35	146.70	71.06	85.13	57.20
TCP Cubic	3	0.68	0.42	0.65	469.64	638.64	515.35	1.60	3.88	4.45
FillP	3	0.81	0.63	0.43	1034.77	1068.07	1066.63	28.88	45.08	63.44
FillP-Sheep	3	0.62	0.60	0.61	964.49	1047.77	1090.50	11.73	28.47	55.71
Indigo	3	0.40	0.32	0.38	113.25	283.43	381.75	0.32	0.50	1.43
Indigo-MusesC3	3	0.84	0.58	0.35	1062.93	1087.65	1111.11	24.22	41.33	70.60
Indigo-MusesC5	3	1.15	0.94	0.87	973.75	989.92	949.53	20.58	22.66	33.07
Indigo-MusesD	3	0.55	0.37	0.24	1073.94	1099.90	2166.16	44.51	63.18	77.19
Indigo-MusesT	3	0.80	0.61	0.56	1075.39	1111.16	1117.37	38.74	74.22	89.26
LEDBAT	3	0.48	0.28	0.38	268.91	304.95	294.67	0.81	1.87	2.64
PCC-Allegro	3	0.93	0.57	0.41	1061.82	1100.62	1106.97	63.25	96.06	96.20
PCC-Expr	3	0.30	0.52	0.00	738.88	1068.97	1060.71	89.60	88.49	79.60
QUIC Cubic	3	0.67	0.48	0.50	948.97	891.36	924.92	6.92	9.31	14.01
SCReAM	3	0.16	0.13	0.14	92.64	112.79	132.69	0.06	0.21	0.09
Sprout	3	0.41	0.34	0.32	75.47	94.82	100.45	0.12	0.12	0.59
TaoVA-100x	3	0.00	0.37	0.52	-24.46	484.00	541.00	95.92	53.33	65.38
TCP Vegas	3	0.58	0.49	0.91	191.65	230.99	250.54	0.43	0.64	0.64
Verus	3	0.64	0.32	0.48	902.94	957.18	1011.73	12.33	8.48	11.67
PCC-Vivace	3	0.65	0.55	0.48	1109.10	1094.74	1063.20	54.82	59.86	66.28
WebRTC media	3	0.05	0.04	0.05	225.51	353.60	280.89	0.56	1.55	0.91

Run 1: Statistics of TCP BBR

```
Start at: 2019-01-21 09:31:19
End at: 2019-01-21 09:31:49
Local clock offset: -2.687 ms
Remote clock offset: -64.212 ms

# Below is generated by plot.py at 2019-01-21 10:25:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.33 Mbit/s
95th percentile per-packet one-way delay: 979.186 ms
Loss rate: 10.48%
-- Flow 1:
Average throughput: 0.92 Mbit/s
95th percentile per-packet one-way delay: 963.430 ms
Loss rate: 7.45%
-- Flow 2:
Average throughput: 0.53 Mbit/s
95th percentile per-packet one-way delay: 985.431 ms
Loss rate: 11.38%
-- Flow 3:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 988.156 ms
Loss rate: 35.74%
```

Run 1: Report of TCP BBR — Data Link

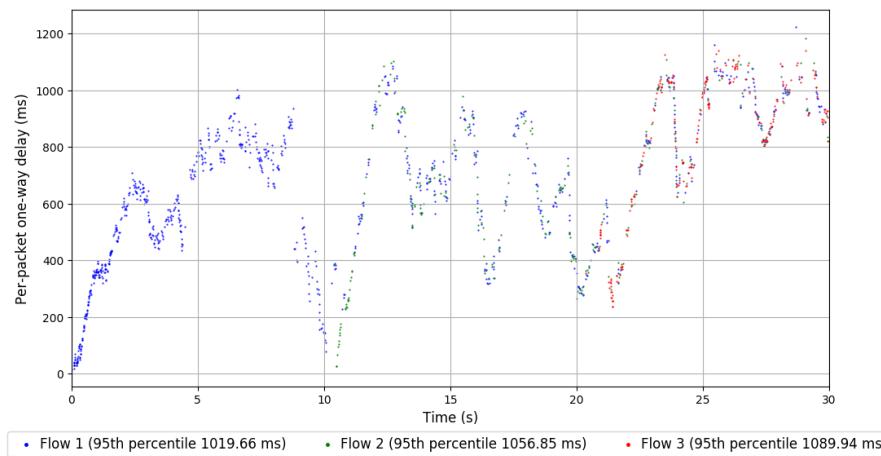
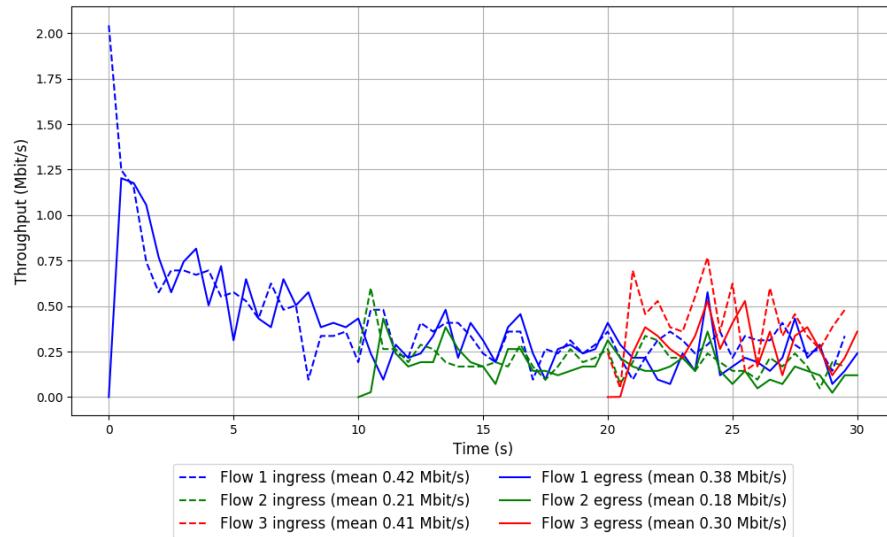


Run 2: Statistics of TCP BBR

```
Start at: 2019-01-21 09:55:43
End at: 2019-01-21 09:56:13
Local clock offset: 0.824 ms
Remote clock offset: -4.369 ms

# Below is generated by plot.py at 2019-01-21 10:25:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.59 Mbit/s
95th percentile per-packet one-way delay: 1047.661 ms
Loss rate: 15.05%
-- Flow 1:
Average throughput: 0.38 Mbit/s
95th percentile per-packet one-way delay: 1019.658 ms
Loss rate: 9.76%
-- Flow 2:
Average throughput: 0.18 Mbit/s
95th percentile per-packet one-way delay: 1056.849 ms
Loss rate: 17.28%
-- Flow 3:
Average throughput: 0.30 Mbit/s
95th percentile per-packet one-way delay: 1089.936 ms
Loss rate: 28.94%
```

Run 2: Report of TCP BBR — Data Link

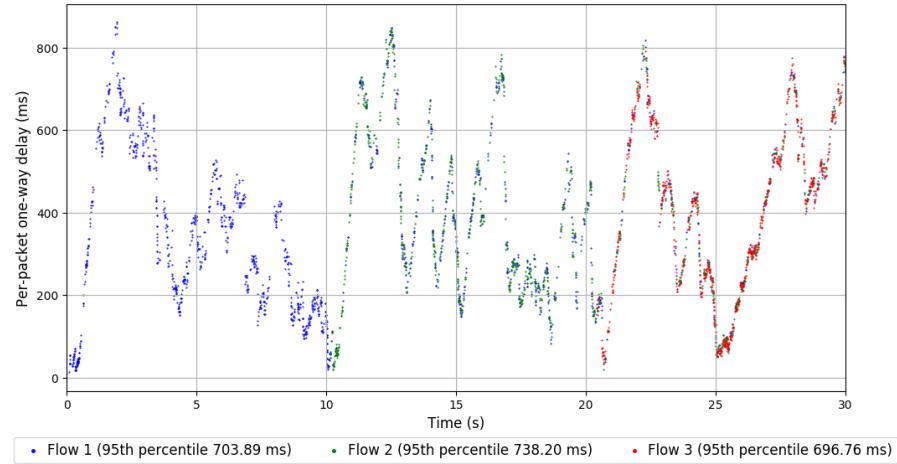
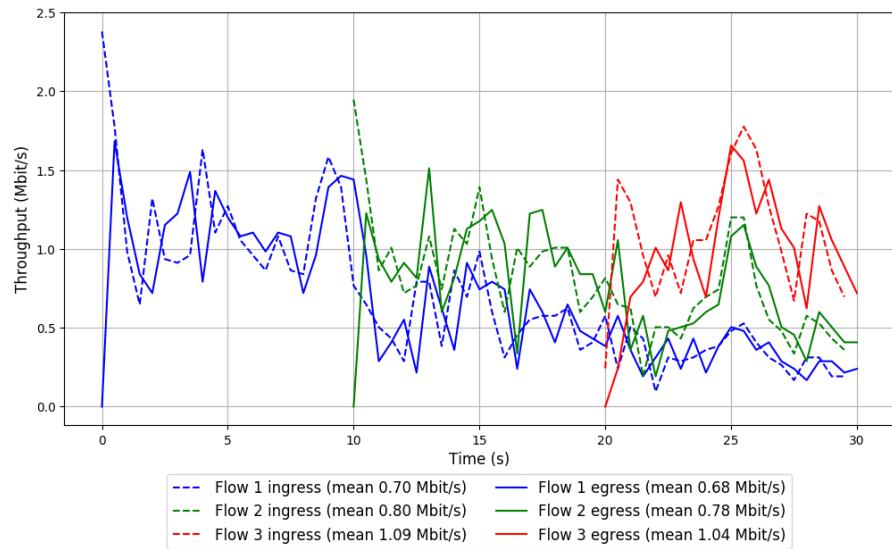


Run 3: Statistics of TCP BBR

```
Start at: 2019-01-21 10:20:03
End at: 2019-01-21 10:20:33
Local clock offset: -2.774 ms
Remote clock offset: -13.839 ms

# Below is generated by plot.py at 2019-01-21 10:25:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.54 Mbit/s
95th percentile per-packet one-way delay: 717.610 ms
Loss rate: 3.46%
-- Flow 1:
Average throughput: 0.68 Mbit/s
95th percentile per-packet one-way delay: 703.892 ms
Loss rate: 2.67%
-- Flow 2:
Average throughput: 0.78 Mbit/s
95th percentile per-packet one-way delay: 738.200 ms
Loss rate: 2.77%
-- Flow 3:
Average throughput: 1.04 Mbit/s
95th percentile per-packet one-way delay: 696.760 ms
Loss rate: 6.00%
```

Run 3: Report of TCP BBR — Data Link

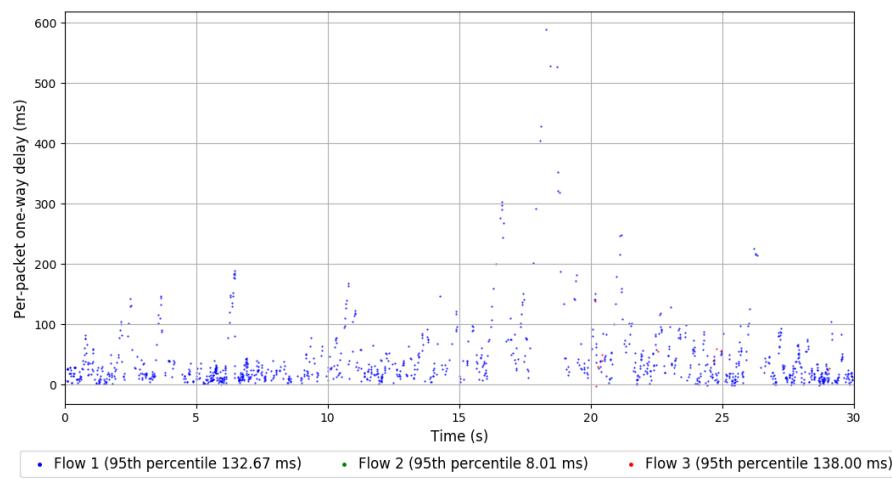
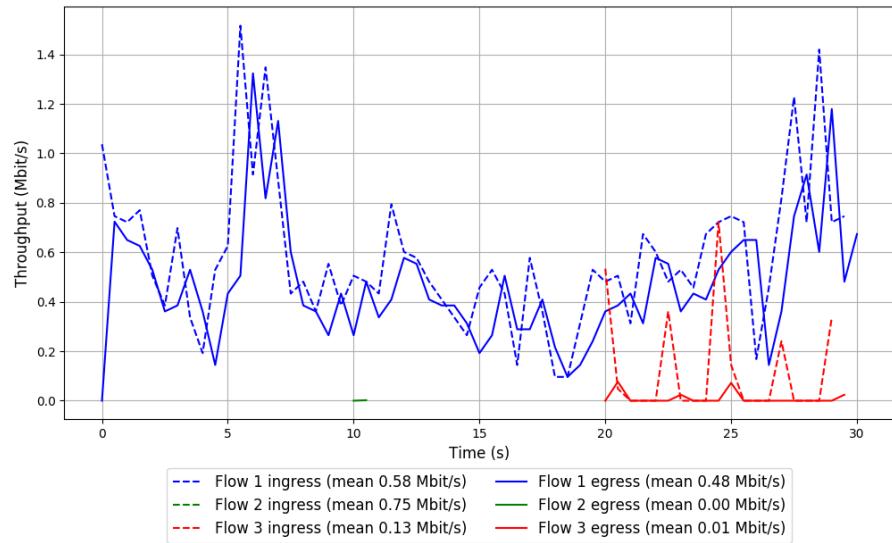


Run 1: Statistics of Copa

```
Start at: 2019-01-21 09:24:20
End at: 2019-01-21 09:24:51
Local clock offset: 0.837 ms
Remote clock offset: -19.53 ms

# Below is generated by plot.py at 2019-01-21 10:25:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.48 Mbit/s
95th percentile per-packet one-way delay: 133.620 ms
Loss rate: 23.12%
-- Flow 1:
Average throughput: 0.48 Mbit/s
95th percentile per-packet one-way delay: 132.668 ms
Loss rate: 18.13%
-- Flow 2:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 8.013 ms
Loss rate: 98.60%
-- Flow 3:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 138.002 ms
Loss rate: 91.76%
```

Run 1: Report of Copa — Data Link

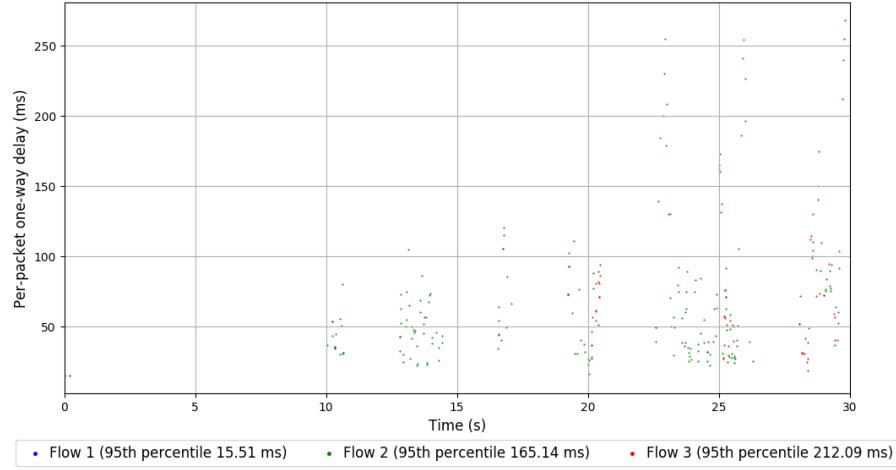
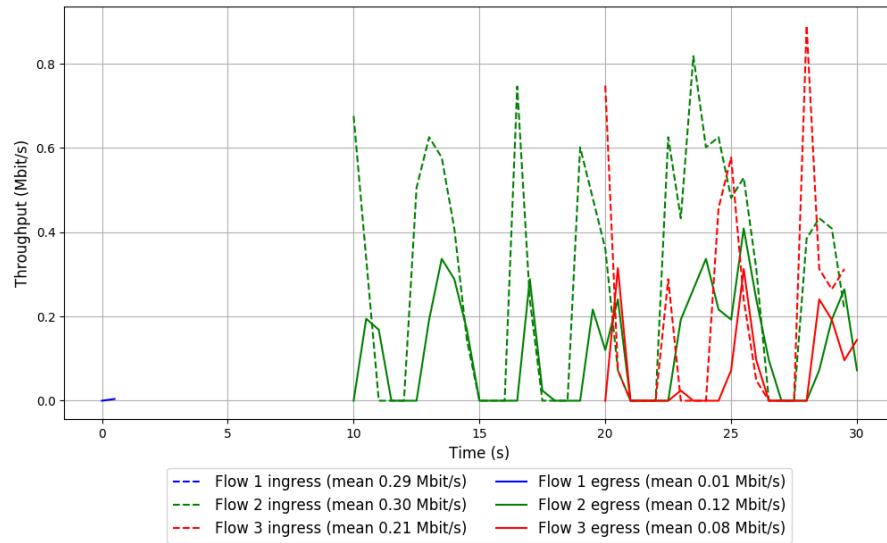


Run 2: Statistics of Copa

```
Start at: 2019-01-21 09:48:44
End at: 2019-01-21 09:49:14
Local clock offset: 0.812 ms
Remote clock offset: -3.0 ms

# Below is generated by plot.py at 2019-01-21 10:25:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.11 Mbit/s
95th percentile per-packet one-way delay: 184.115 ms
Loss rate: 60.66%
-- Flow 1:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 15.506 ms
Loss rate: 96.71%
-- Flow 2:
Average throughput: 0.12 Mbit/s
95th percentile per-packet one-way delay: 165.140 ms
Loss rate: 58.87%
-- Flow 3:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 212.086 ms
Loss rate: 64.54%
```

Run 2: Report of Copa — Data Link

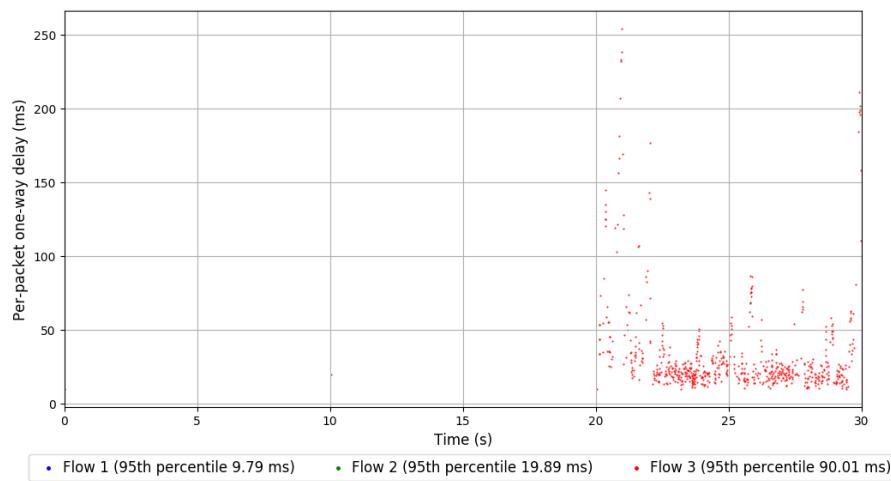
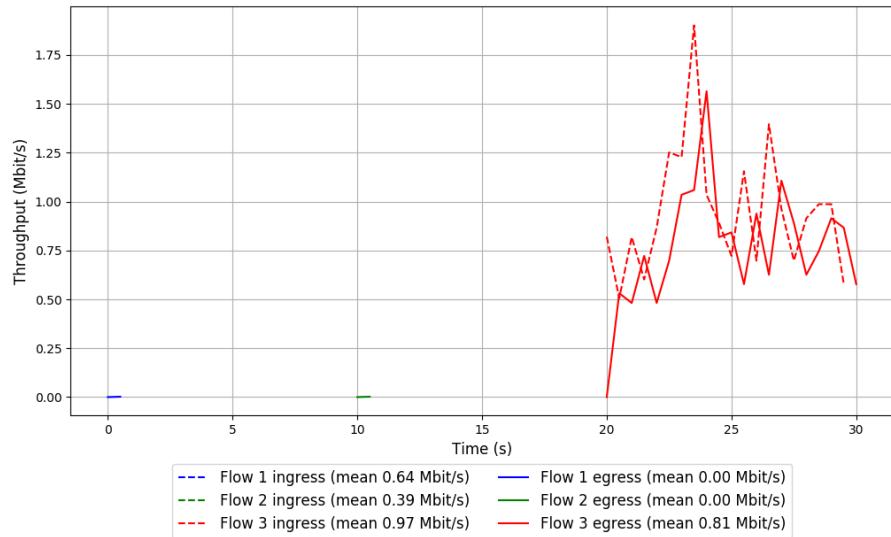


Run 3: Statistics of Copa

```
Start at: 2019-01-21 10:13:07
End at: 2019-01-21 10:13:37
Local clock offset: 1.13 ms
Remote clock offset: -8.344 ms

# Below is generated by plot.py at 2019-01-21 10:25:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.27 Mbit/s
95th percentile per-packet one-way delay: 86.313 ms
Loss rate: 16.27%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 9.785 ms
Loss rate: 98.33%
-- Flow 2:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 19.892 ms
Loss rate: 97.92%
-- Flow 3:
Average throughput: 0.81 Mbit/s
95th percentile per-packet one-way delay: 90.006 ms
Loss rate: 15.31%
```

Run 3: Report of Copa — Data Link

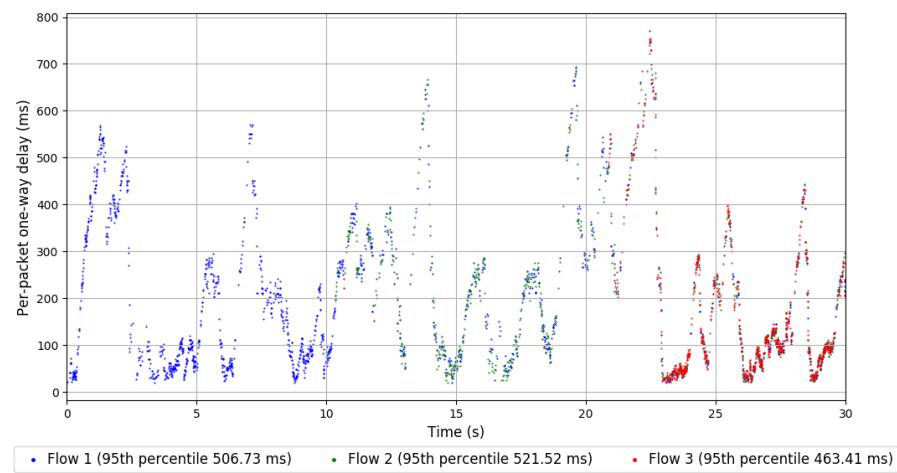
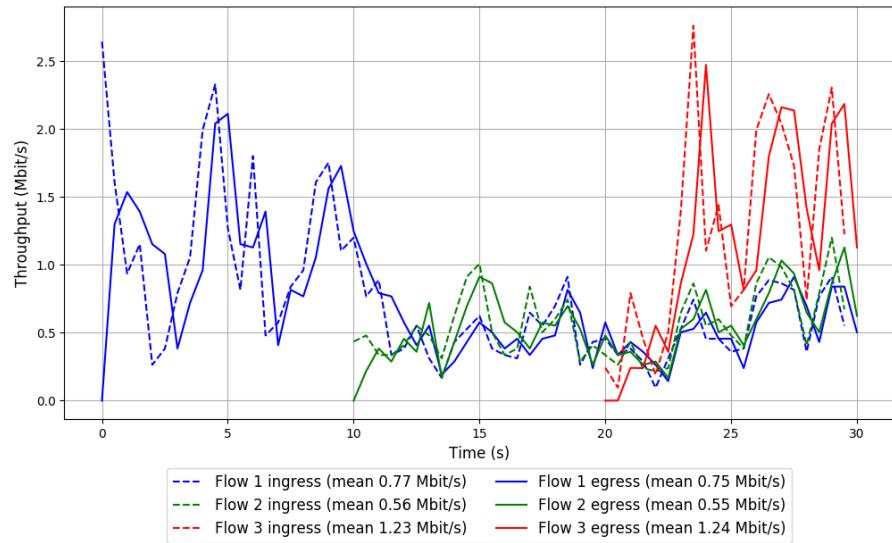


```
Run 1: Statistics of TCP Cubic
```

```
Start at: 2019-01-21 09:16:13
End at: 2019-01-21 09:16:44
Local clock offset: -4.203 ms
Remote clock offset: -2.491 ms

# Below is generated by plot.py at 2019-01-21 10:25:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.52 Mbit/s
95th percentile per-packet one-way delay: 505.512 ms
Loss rate: 1.96%
-- Flow 1:
Average throughput: 0.75 Mbit/s
95th percentile per-packet one-way delay: 506.731 ms
Loss rate: 1.68%
-- Flow 2:
Average throughput: 0.55 Mbit/s
95th percentile per-packet one-way delay: 521.517 ms
Loss rate: 2.34%
-- Flow 3:
Average throughput: 1.24 Mbit/s
95th percentile per-packet one-way delay: 463.412 ms
Loss rate: 2.14%
```

Run 1: Report of TCP Cubic — Data Link

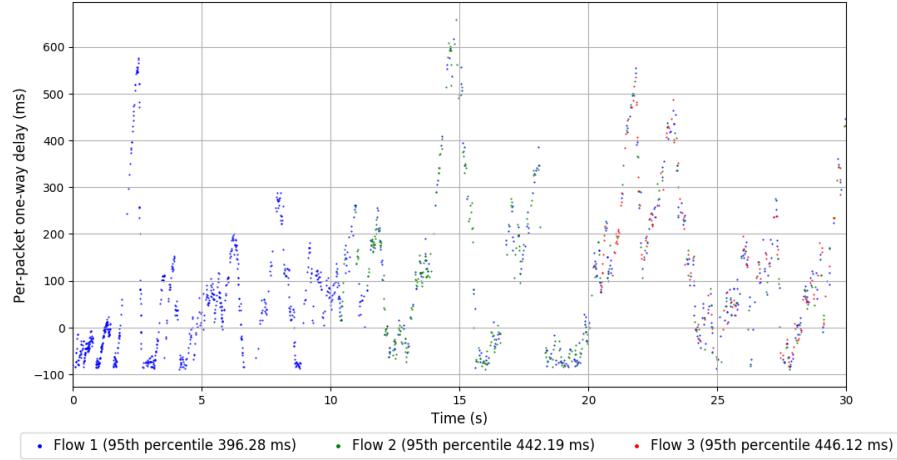
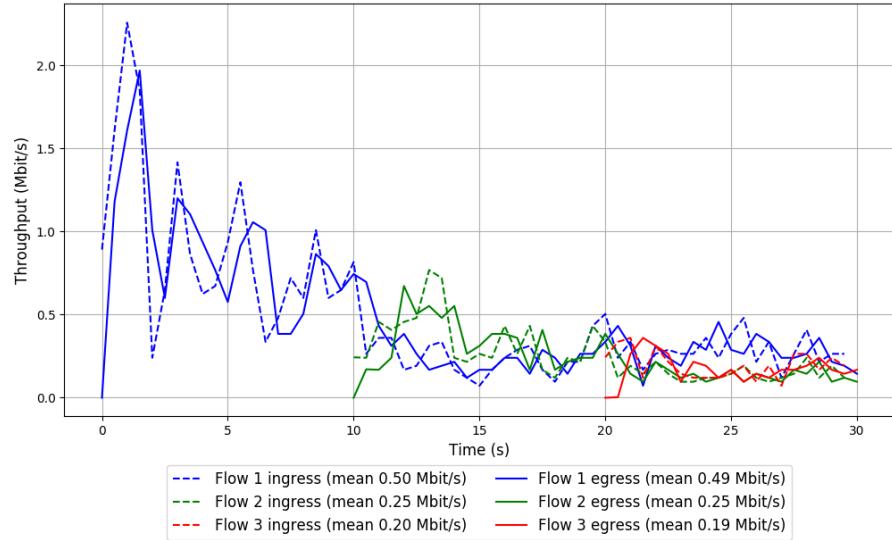


Run 2: Statistics of TCP Cubic

```
Start at: 2019-01-21 09:40:37
End at: 2019-01-21 09:41:07
Local clock offset: 0.609 ms
Remote clock offset: -110.511 ms

# Below is generated by plot.py at 2019-01-21 10:25:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.71 Mbit/s
95th percentile per-packet one-way delay: 422.108 ms
Loss rate: 2.91%
-- Flow 1:
Average throughput: 0.49 Mbit/s
95th percentile per-packet one-way delay: 396.283 ms
Loss rate: 1.86%
-- Flow 2:
Average throughput: 0.25 Mbit/s
95th percentile per-packet one-way delay: 442.192 ms
Loss rate: 4.04%
-- Flow 3:
Average throughput: 0.19 Mbit/s
95th percentile per-packet one-way delay: 446.125 ms
Loss rate: 7.97%
```

Run 2: Report of TCP Cubic — Data Link

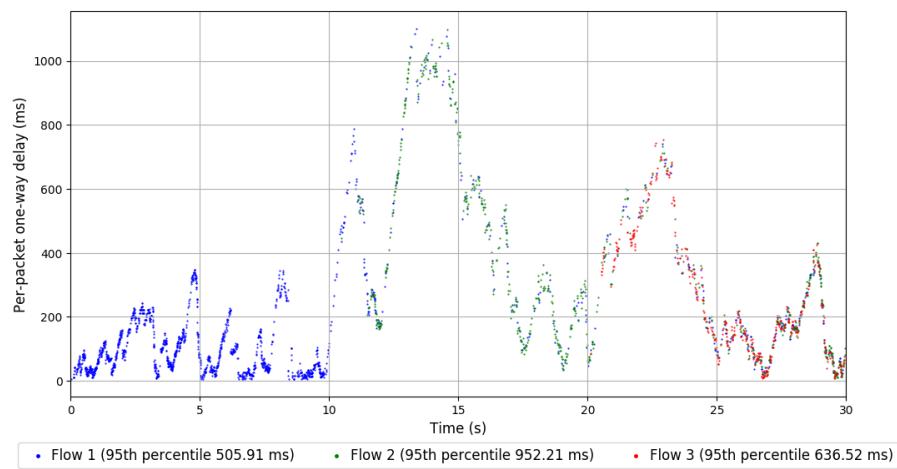
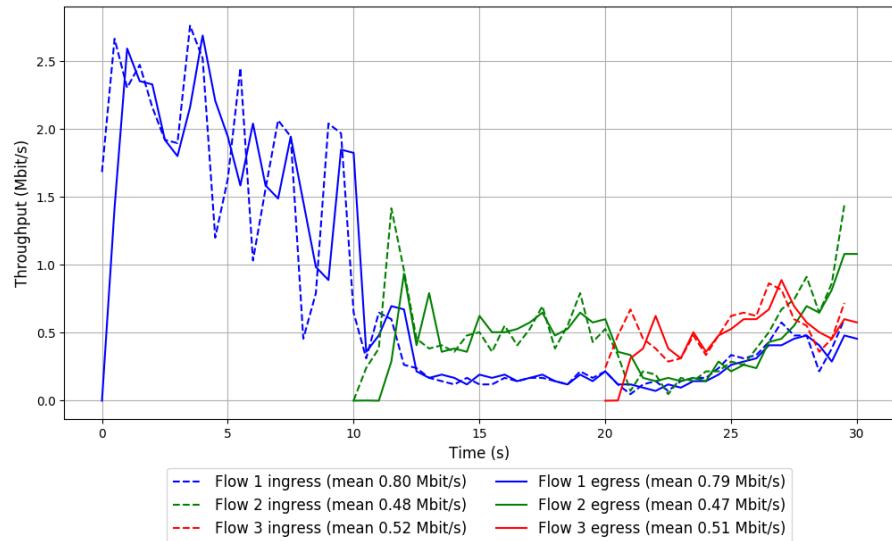


Run 3: Statistics of TCP Cubic

```
Start at: 2019-01-21 10:05:01
End at: 2019-01-21 10:05:31
Local clock offset: -1.643 ms
Remote clock offset: -16.402 ms

# Below is generated by plot.py at 2019-01-21 10:25:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.26 Mbit/s
95th percentile per-packet one-way delay: 665.872 ms
Loss rate: 2.51%
-- Flow 1:
Average throughput: 0.79 Mbit/s
95th percentile per-packet one-way delay: 505.906 ms
Loss rate: 1.25%
-- Flow 2:
Average throughput: 0.47 Mbit/s
95th percentile per-packet one-way delay: 952.211 ms
Loss rate: 5.26%
-- Flow 3:
Average throughput: 0.51 Mbit/s
95th percentile per-packet one-way delay: 636.520 ms
Loss rate: 3.25%
```

Run 3: Report of TCP Cubic — Data Link

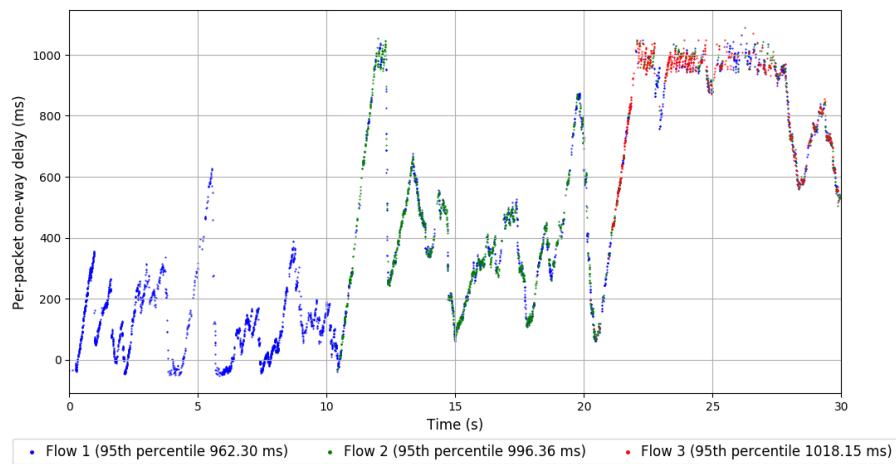
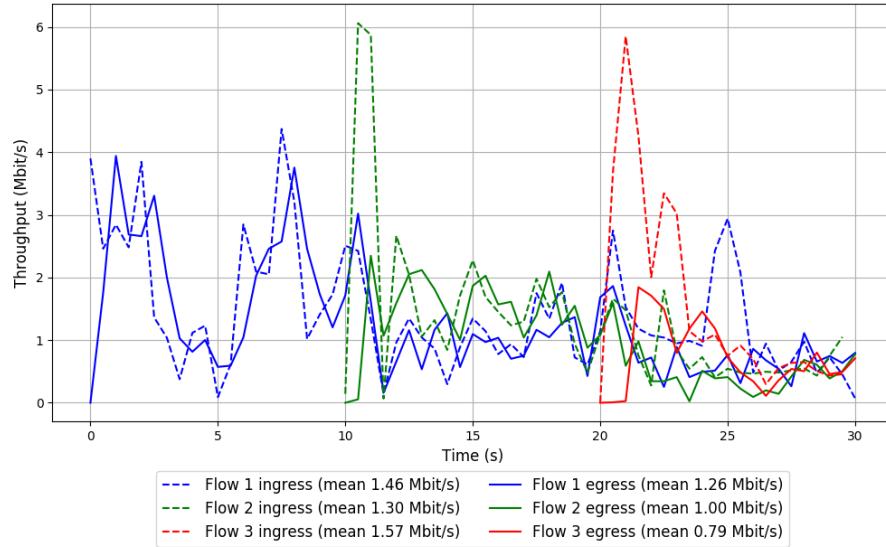


```
Run 1: Statistics of FillP

Start at: 2019-01-21 09:27:49
End at: 2019-01-21 09:28:19
Local clock offset: -0.45 ms
Remote clock offset: -69.981 ms

# Below is generated by plot.py at 2019-01-21 10:25:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.17 Mbit/s
95th percentile per-packet one-way delay: 992.710 ms
Loss rate: 23.62%
-- Flow 1:
Average throughput: 1.26 Mbit/s
95th percentile per-packet one-way delay: 962.304 ms
Loss rate: 13.63%
-- Flow 2:
Average throughput: 1.00 Mbit/s
95th percentile per-packet one-way delay: 996.363 ms
Loss rate: 23.76%
-- Flow 3:
Average throughput: 0.79 Mbit/s
95th percentile per-packet one-way delay: 1018.151 ms
Loss rate: 51.31%
```

Run 1: Report of FillP — Data Link

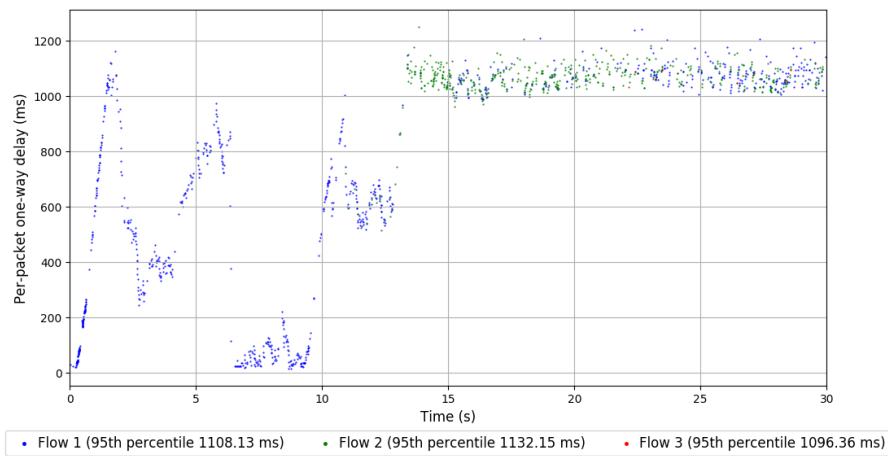
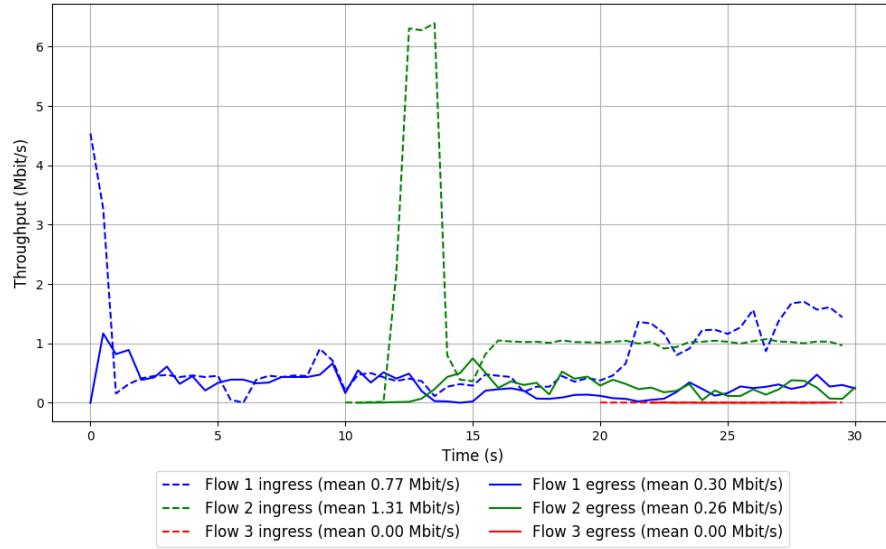


Run 2: Statistics of FillP

```
Start at: 2019-01-21 09:52:13
End at: 2019-01-21 09:52:43
Local clock offset: 0.808 ms
Remote clock offset: -2.455 ms

# Below is generated by plot.py at 2019-01-21 10:25:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.47 Mbit/s
95th percentile per-packet one-way delay: 1122.121 ms
Loss rate: 71.65%
-- Flow 1:
Average throughput: 0.30 Mbit/s
95th percentile per-packet one-way delay: 1108.135 ms
Loss rate: 61.09%
-- Flow 2:
Average throughput: 0.26 Mbit/s
95th percentile per-packet one-way delay: 1132.149 ms
Loss rate: 80.97%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 1096.363 ms
Loss rate: 81.83%
```

Run 2: Report of FillP — Data Link

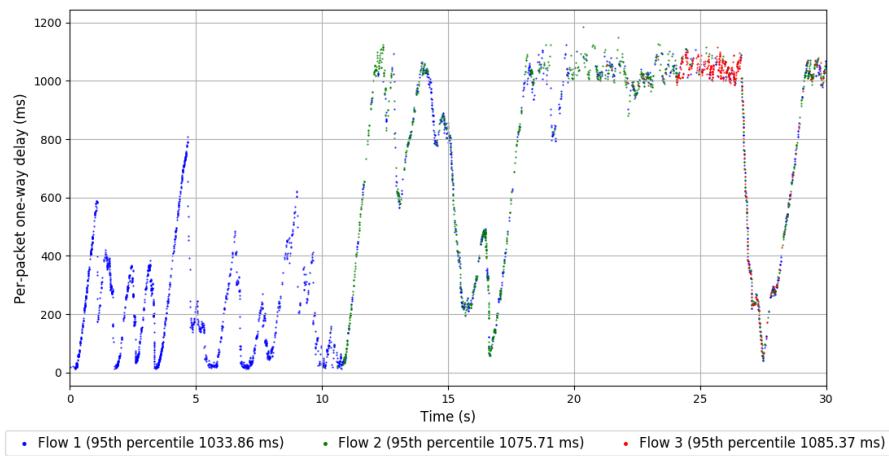
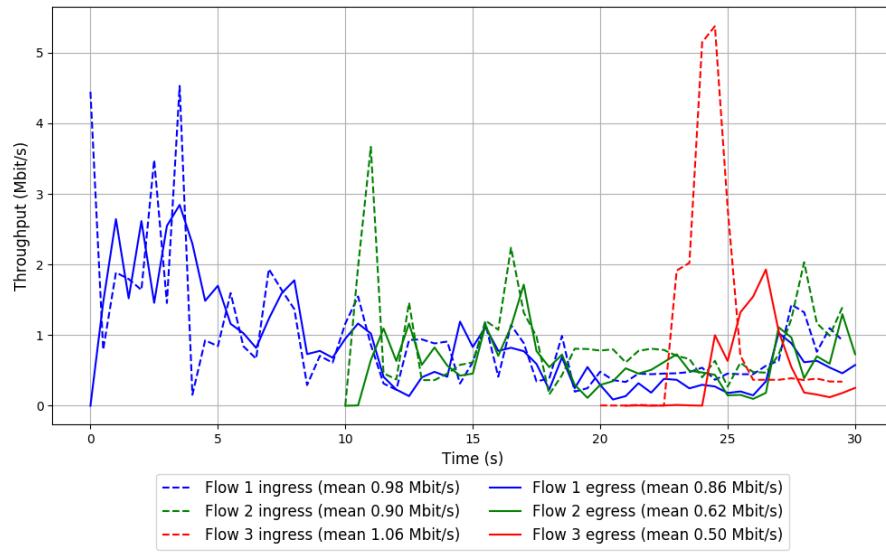


```
Run 3: Statistics of FillP
```

```
Start at: 2019-01-21 10:16:35
End at: 2019-01-21 10:17:05
Local clock offset: 0.743 ms
Remote clock offset: -5.601 ms

# Below is generated by plot.py at 2019-01-21 10:25:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.42 Mbit/s
95th percentile per-packet one-way delay: 1063.832 ms
Loss rate: 25.89%
-- Flow 1:
Average throughput: 0.86 Mbit/s
95th percentile per-packet one-way delay: 1033.860 ms
Loss rate: 11.91%
-- Flow 2:
Average throughput: 0.62 Mbit/s
95th percentile per-packet one-way delay: 1075.712 ms
Loss rate: 30.50%
-- Flow 3:
Average throughput: 0.50 Mbit/s
95th percentile per-packet one-way delay: 1085.366 ms
Loss rate: 57.18%
```

Run 3: Report of FillP — Data Link

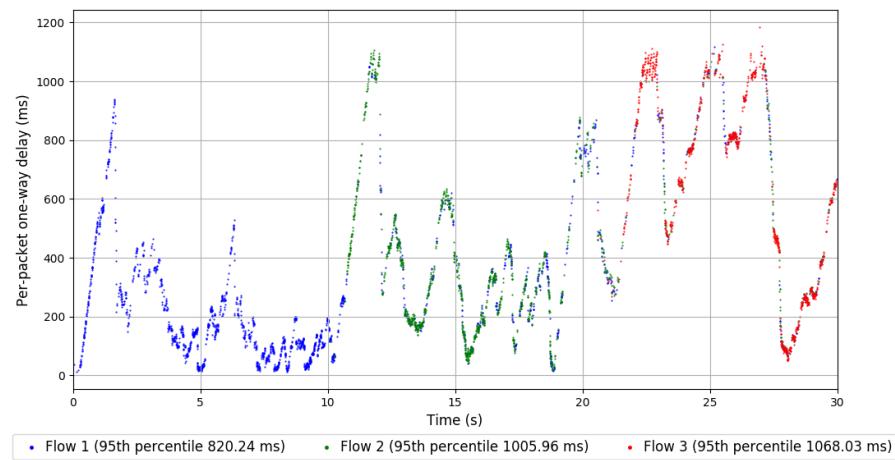
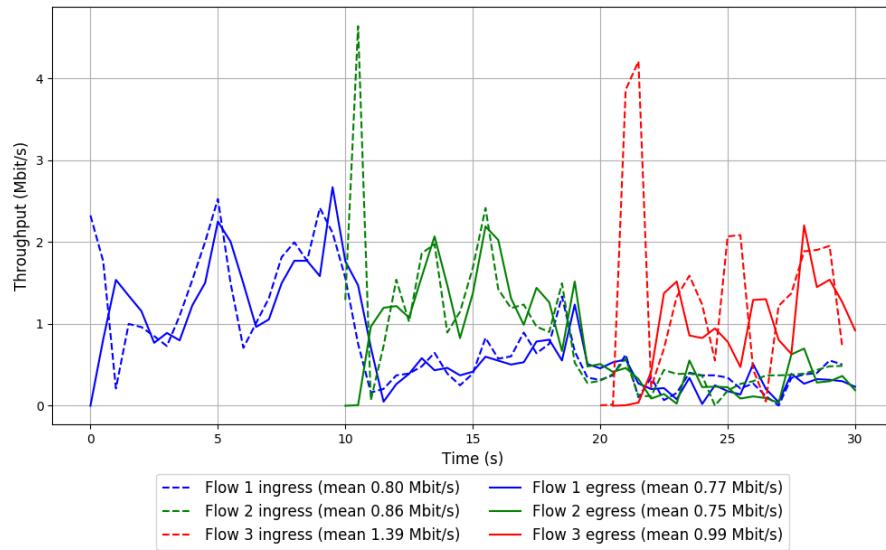


Run 1: Statistics of FillP-Sheep

```
Start at: 2019-01-21 09:33:39
End at: 2019-01-21 09:34:09
Local clock offset: -0.291 ms
Remote clock offset: -5.953 ms

# Below is generated by plot.py at 2019-01-21 10:25:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.57 Mbit/s
95th percentile per-packet one-way delay: 1021.969 ms
Loss rate: 14.04%
-- Flow 1:
Average throughput: 0.77 Mbit/s
95th percentile per-packet one-way delay: 820.242 ms
Loss rate: 4.64%
-- Flow 2:
Average throughput: 0.75 Mbit/s
95th percentile per-packet one-way delay: 1005.957 ms
Loss rate: 12.86%
-- Flow 3:
Average throughput: 0.99 Mbit/s
95th percentile per-packet one-way delay: 1068.026 ms
Loss rate: 32.00%
```

Run 1: Report of FillP-Sheep — Data Link

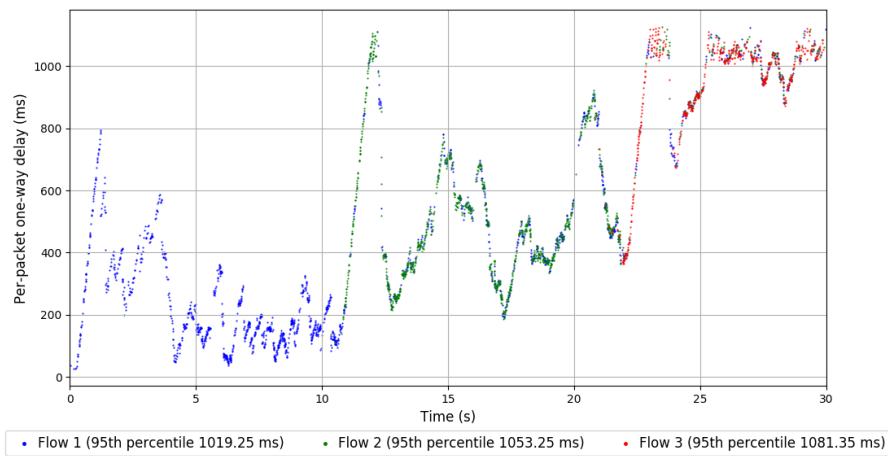
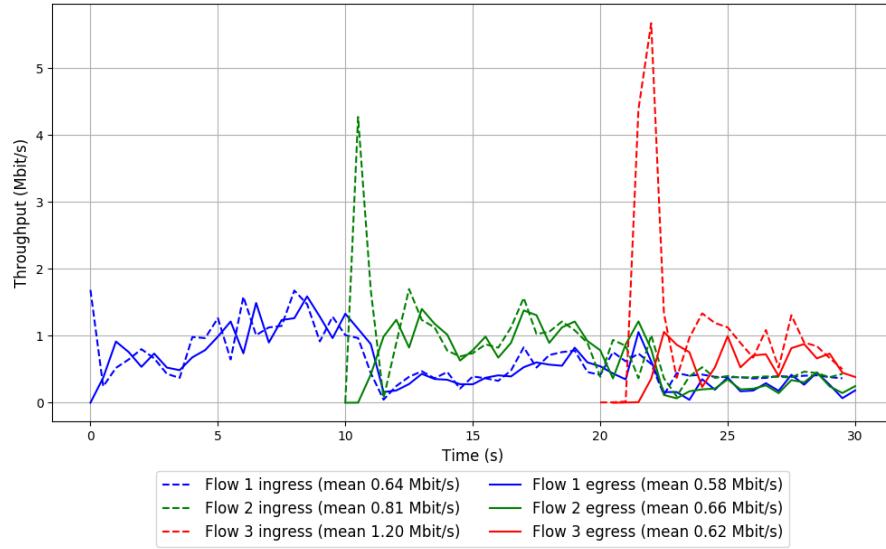


Run 2: Statistics of FillP-Sheep

```
Start at: 2019-01-21 09:58:02
End at: 2019-01-21 09:58:32
Local clock offset: 0.929 ms
Remote clock offset: -5.087 ms

# Below is generated by plot.py at 2019-01-21 10:25:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.19 Mbit/s
95th percentile per-packet one-way delay: 1053.405 ms
Loss rate: 24.39%
-- Flow 1:
Average throughput: 0.58 Mbit/s
95th percentile per-packet one-way delay: 1019.247 ms
Loss rate: 9.60%
-- Flow 2:
Average throughput: 0.66 Mbit/s
95th percentile per-packet one-way delay: 1053.250 ms
Loss rate: 20.53%
-- Flow 3:
Average throughput: 0.62 Mbit/s
95th percentile per-packet one-way delay: 1081.353 ms
Loss rate: 53.44%
```

Run 2: Report of FillP-Sheep — Data Link

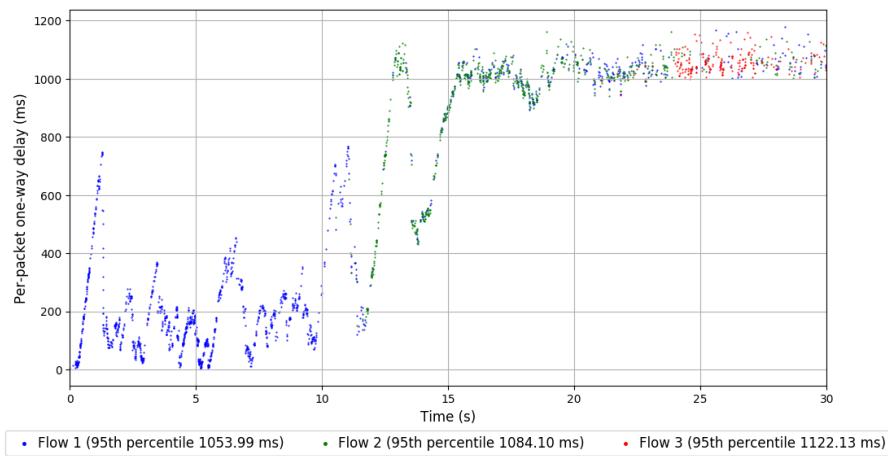
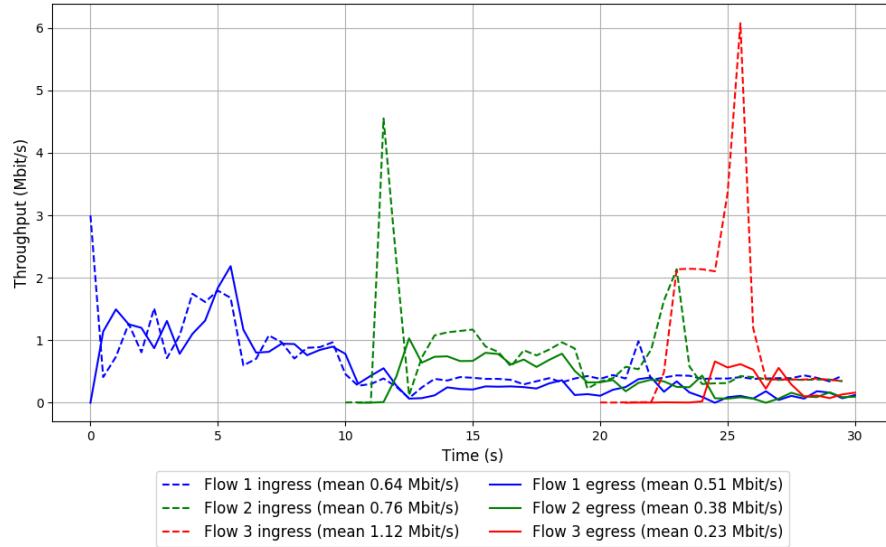


Run 3: Statistics of FillP-Sheep

```
Start at: 2019-01-21 10:22:22
End at: 2019-01-21 10:22:52
Local clock offset: -1.813 ms
Remote clock offset: -19.581 ms

# Below is generated by plot.py at 2019-01-21 10:25:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.82 Mbit/s
95th percentile per-packet one-way delay: 1077.660 ms
Loss rate: 46.12%
-- Flow 1:
Average throughput: 0.51 Mbit/s
95th percentile per-packet one-way delay: 1053.995 ms
Loss rate: 20.94%
-- Flow 2:
Average throughput: 0.38 Mbit/s
95th percentile per-packet one-way delay: 1084.102 ms
Loss rate: 52.01%
-- Flow 3:
Average throughput: 0.23 Mbit/s
95th percentile per-packet one-way delay: 1122.134 ms
Loss rate: 81.69%
```

Run 3: Report of FillP-Sheep — Data Link

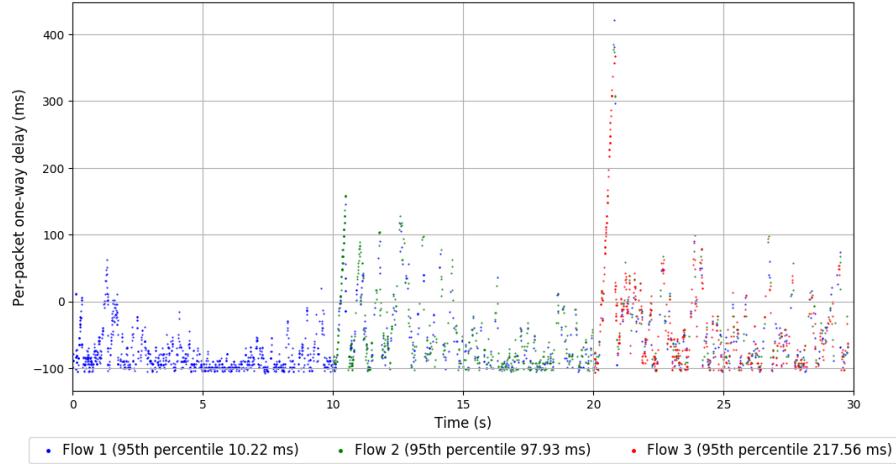
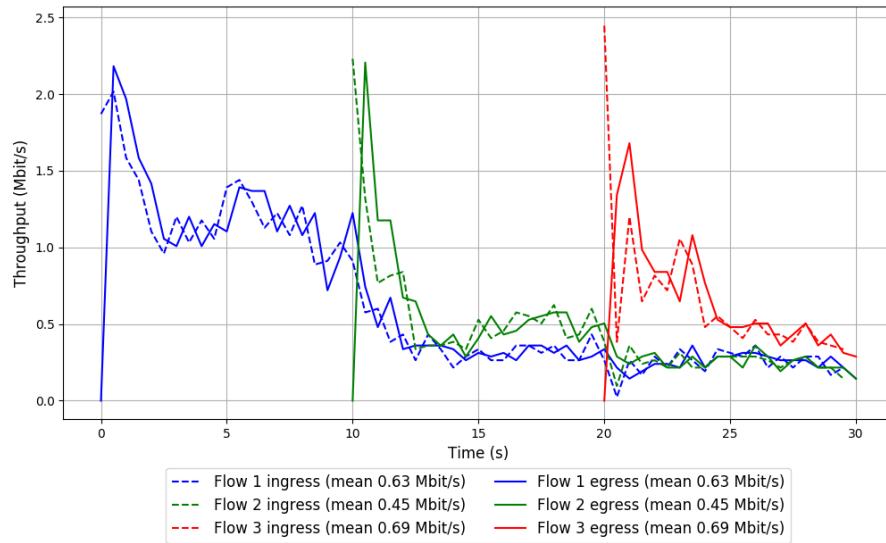


Run 1: Statistics of Indigo

```
Start at: 2019-01-21 09:30:09
End at: 2019-01-21 09:30:39
Local clock offset: -0.913 ms
Remote clock offset: -126.43 ms

# Below is generated by plot.py at 2019-01-21 10:25:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.16 Mbit/s
95th percentile per-packet one-way delay: 68.056 ms
Loss rate: 0.21%
-- Flow 1:
Average throughput: 0.63 Mbit/s
95th percentile per-packet one-way delay: 10.219 ms
Loss rate: 0.13%
-- Flow 2:
Average throughput: 0.45 Mbit/s
95th percentile per-packet one-way delay: 97.934 ms
Loss rate: 0.13%
-- Flow 3:
Average throughput: 0.69 Mbit/s
95th percentile per-packet one-way delay: 217.562 ms
Loss rate: 0.54%
```

Run 1: Report of Indigo — Data Link

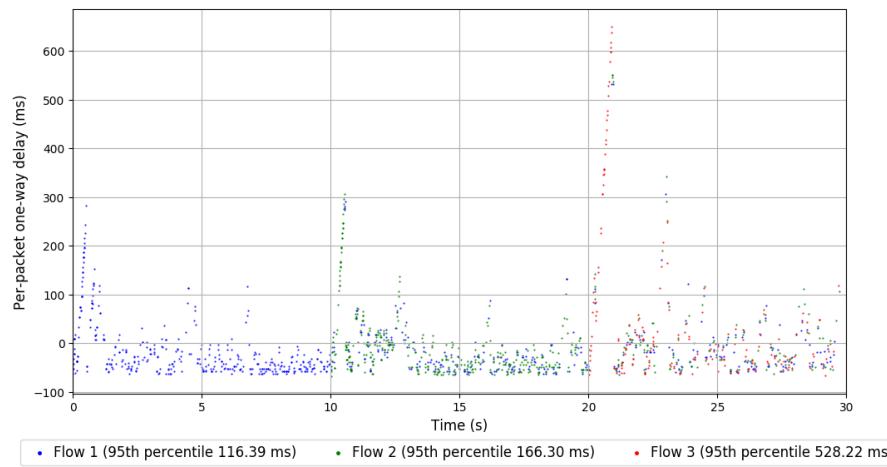
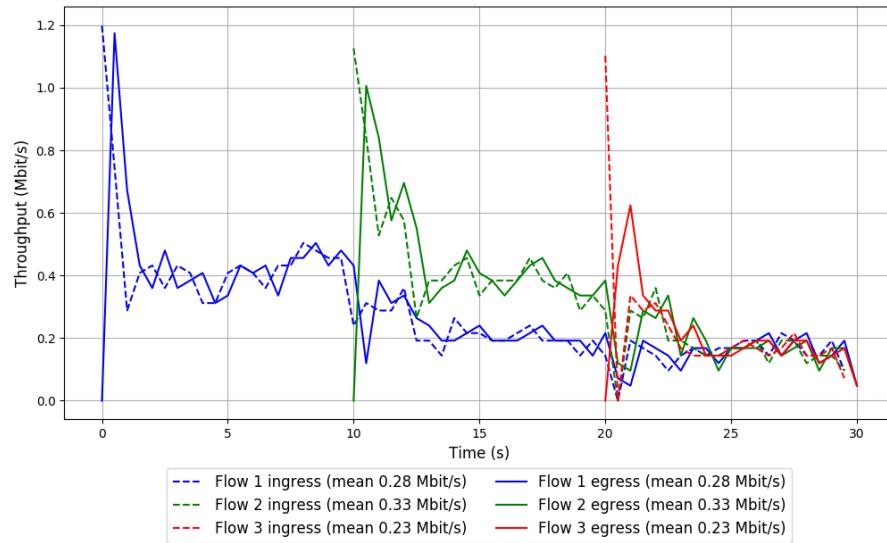


Run 2: Statistics of Indigo

```
Start at: 2019-01-21 09:54:32
End at: 2019-01-21 09:55:02
Local clock offset: 0.96 ms
Remote clock offset: -85.677 ms

# Below is generated by plot.py at 2019-01-21 10:25:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 186.026 ms
Loss rate: 0.49%
-- Flow 1:
Average throughput: 0.28 Mbit/s
95th percentile per-packet one-way delay: 116.390 ms
Loss rate: 0.29%
-- Flow 2:
Average throughput: 0.33 Mbit/s
95th percentile per-packet one-way delay: 166.297 ms
Loss rate: 0.37%
-- Flow 3:
Average throughput: 0.23 Mbit/s
95th percentile per-packet one-way delay: 528.217 ms
Loss rate: 1.61%
```

Run 2: Report of Indigo — Data Link

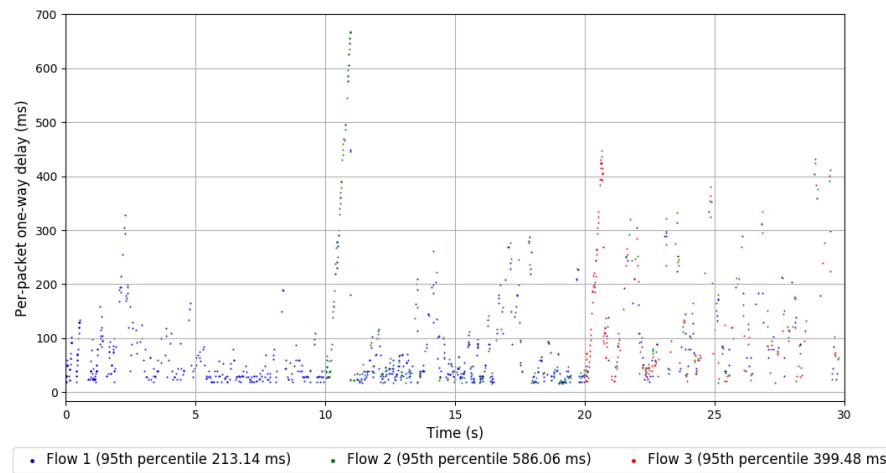
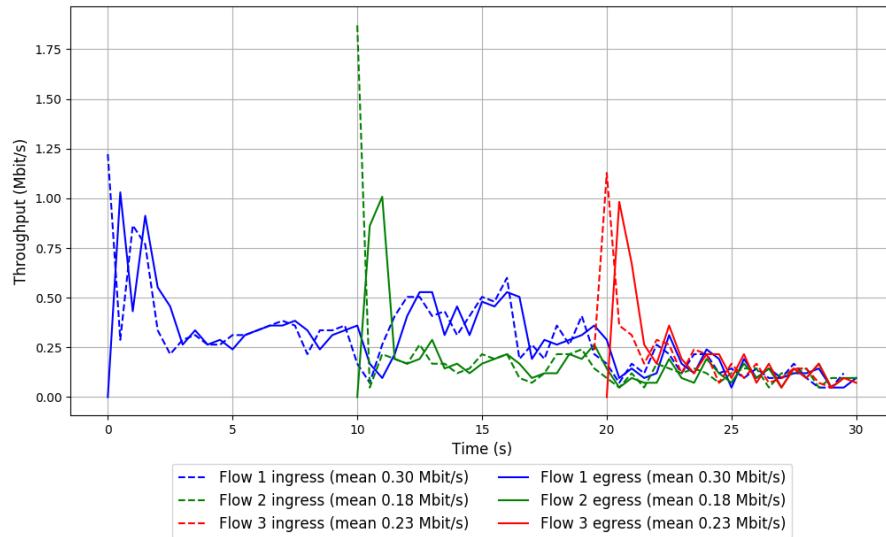


Run 3: Statistics of Indigo

```
Start at: 2019-01-21 10:18:54
End at: 2019-01-21 10:19:24
Local clock offset: -1.327 ms
Remote clock offset: -5.253 ms

# Below is generated by plot.py at 2019-01-21 10:25:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.49 Mbit/s
95th percentile per-packet one-way delay: 369.890 ms
Loss rate: 0.89%
-- Flow 1:
Average throughput: 0.30 Mbit/s
95th percentile per-packet one-way delay: 213.139 ms
Loss rate: 0.54%
-- Flow 2:
Average throughput: 0.18 Mbit/s
95th percentile per-packet one-way delay: 586.058 ms
Loss rate: 0.99%
-- Flow 3:
Average throughput: 0.23 Mbit/s
95th percentile per-packet one-way delay: 399.477 ms
Loss rate: 2.13%
```

Run 3: Report of Indigo — Data Link

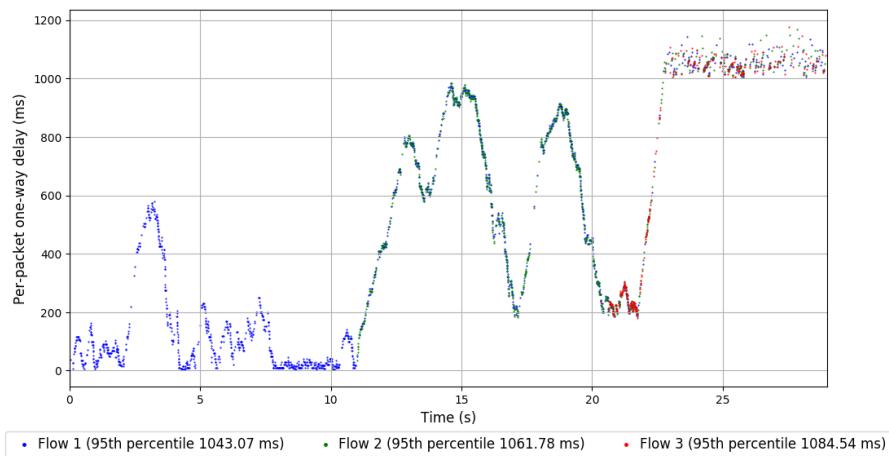
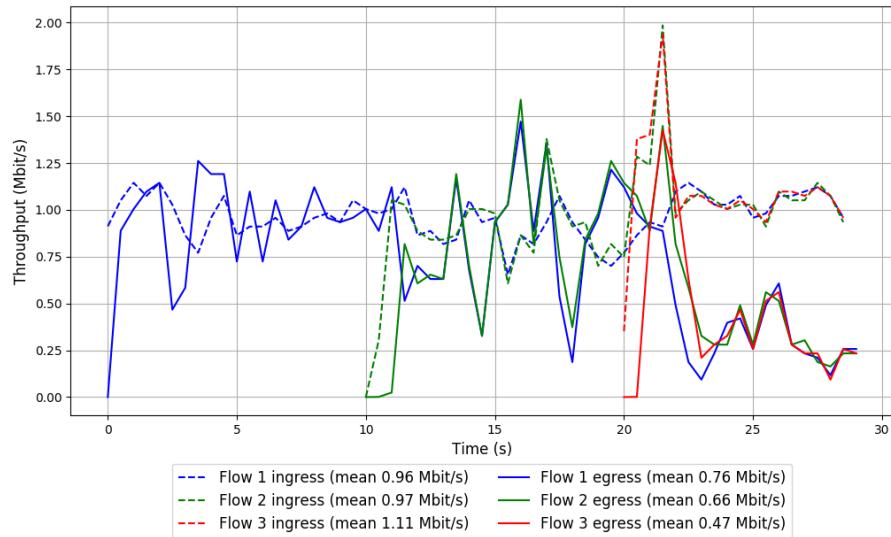


Run 1: Statistics of Indigo-MusesC3

```
Start at: 2019-01-21 09:19:42
End at: 2019-01-21 09:20:12
Local clock offset: 0.413 ms
Remote clock offset: -14.574 ms

# Below is generated by plot.py at 2019-01-21 10:25:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.33 Mbit/s
95th percentile per-packet one-way delay: 1058.553 ms
Loss rate: 31.53%
-- Flow 1:
Average throughput: 0.76 Mbit/s
95th percentile per-packet one-way delay: 1043.073 ms
Loss rate: 21.68%
-- Flow 2:
Average throughput: 0.66 Mbit/s
95th percentile per-packet one-way delay: 1061.779 ms
Loss rate: 31.84%
-- Flow 3:
Average throughput: 0.47 Mbit/s
95th percentile per-packet one-way delay: 1084.543 ms
Loss rate: 58.93%
```

Run 1: Report of Indigo-MusesC3 — Data Link

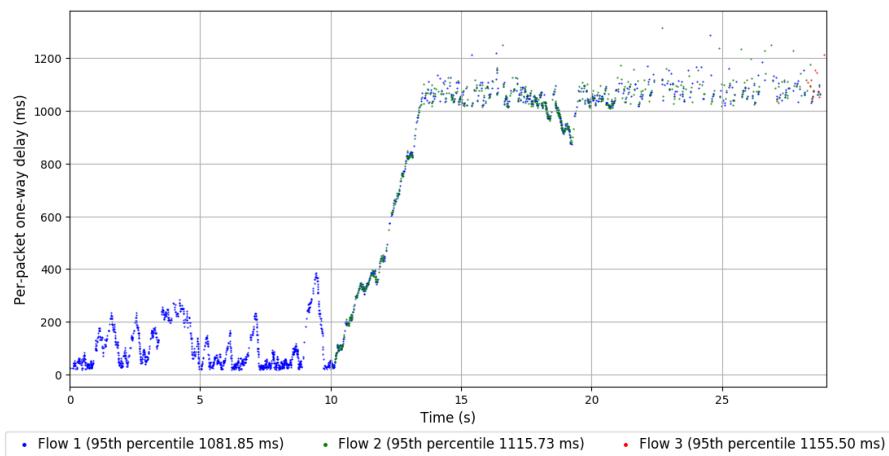
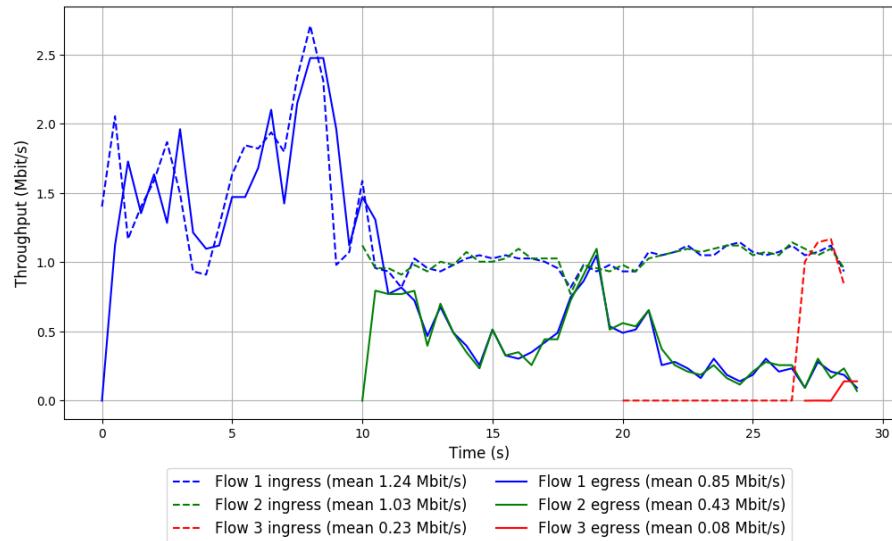


Run 2: Statistics of Indigo-MusesC3

```
Start at: 2019-01-21 09:44:06
End at: 2019-01-21 09:44:36
Local clock offset: -0.736 ms
Remote clock offset: -1.712 ms

# Below is generated by plot.py at 2019-01-21 10:25:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.13 Mbit/s
95th percentile per-packet one-way delay: 1097.109 ms
Loss rate: 43.17%
-- Flow 1:
Average throughput: 0.85 Mbit/s
95th percentile per-packet one-way delay: 1081.845 ms
Loss rate: 31.83%
-- Flow 2:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 1115.729 ms
Loss rate: 58.68%
-- Flow 3:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 1155.501 ms
Loss rate: 93.26%
```

Run 2: Report of Indigo-MusesC3 — Data Link

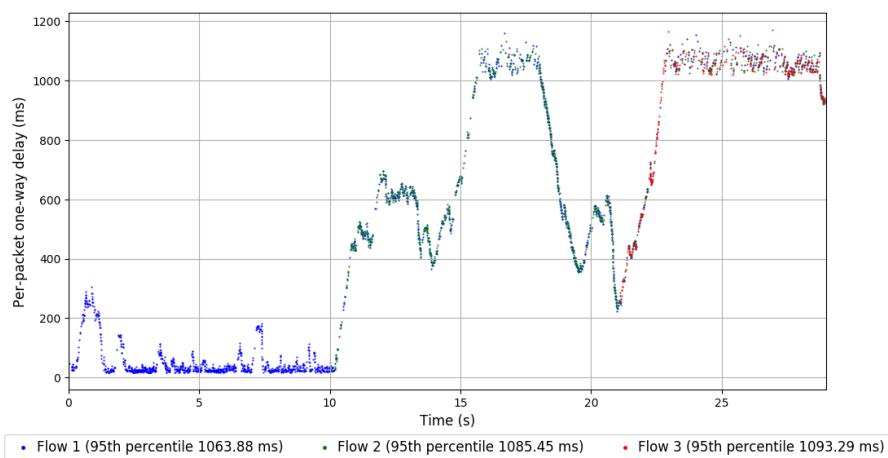
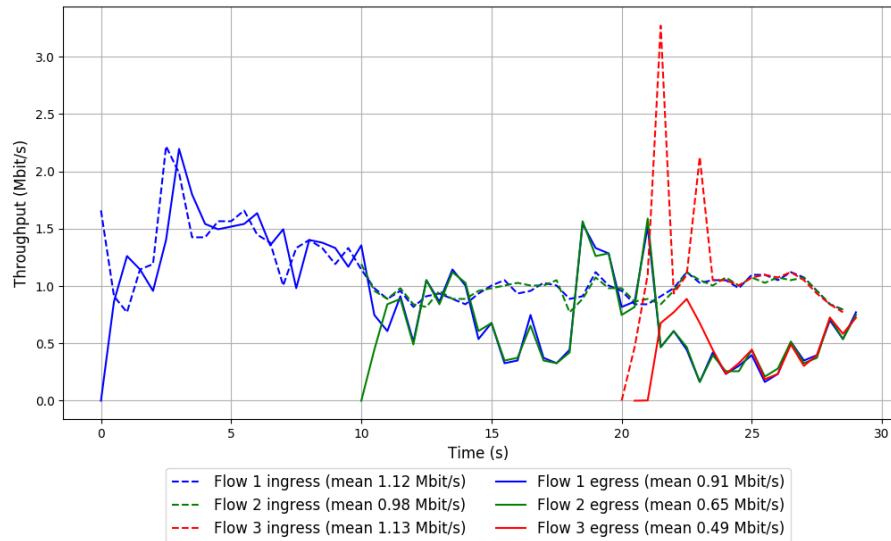


Run 3: Statistics of Indigo-MusesC3

```
Start at: 2019-01-21 10:08:29
End at: 2019-01-21 10:08:59
Local clock offset: 2.078 ms
Remote clock offset: -2.011 ms

# Below is generated by plot.py at 2019-01-21 10:25:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.47 Mbit/s
95th percentile per-packet one-way delay: 1078.207 ms
Loss rate: 30.14%
-- Flow 1:
Average throughput: 0.91 Mbit/s
95th percentile per-packet one-way delay: 1063.877 ms
Loss rate: 19.14%
-- Flow 2:
Average throughput: 0.65 Mbit/s
95th percentile per-packet one-way delay: 1085.450 ms
Loss rate: 33.48%
-- Flow 3:
Average throughput: 0.49 Mbit/s
95th percentile per-packet one-way delay: 1093.287 ms
Loss rate: 59.60%
```

Run 3: Report of Indigo-MusesC3 — Data Link

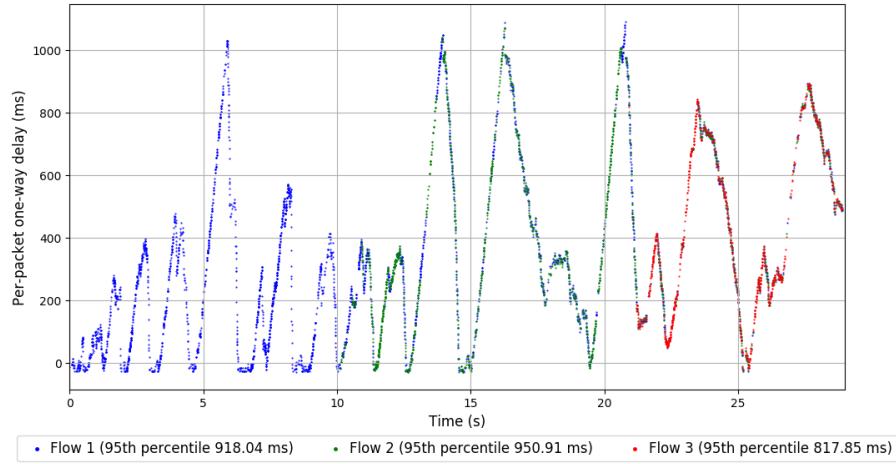
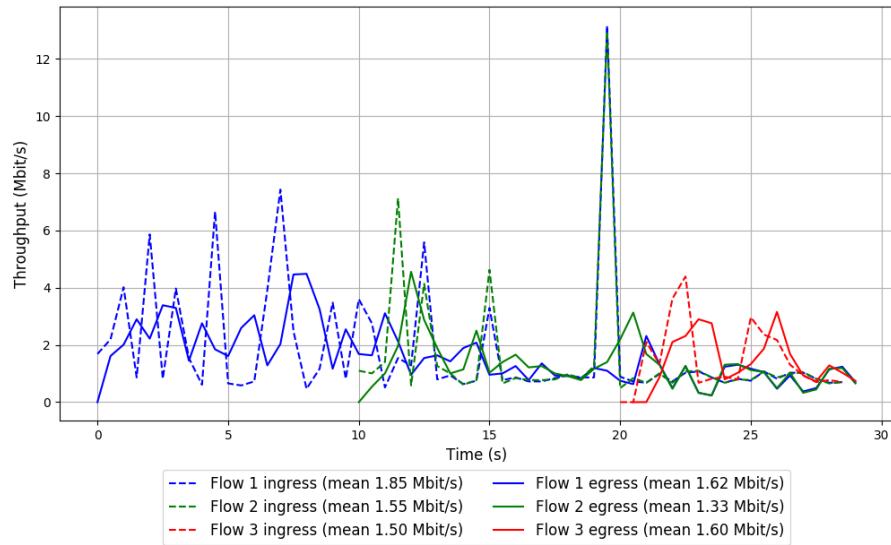


```
Run 1: Statistics of Indigo-MusesC5
```

```
Start at: 2019-01-21 09:15:04
End at: 2019-01-21 09:15:34
Local clock offset: -1.57 ms
Remote clock offset: -49.279 ms

# Below is generated by plot.py at 2019-01-21 10:25:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.93 Mbit/s
95th percentile per-packet one-way delay: 893.471 ms
Loss rate: 11.74%
-- Flow 1:
Average throughput: 1.62 Mbit/s
95th percentile per-packet one-way delay: 918.045 ms
Loss rate: 12.11%
-- Flow 2:
Average throughput: 1.33 Mbit/s
95th percentile per-packet one-way delay: 950.910 ms
Loss rate: 14.63%
-- Flow 3:
Average throughput: 1.60 Mbit/s
95th percentile per-packet one-way delay: 817.851 ms
Loss rate: 3.87%
```

Run 1: Report of Indigo-MusesC5 — Data Link

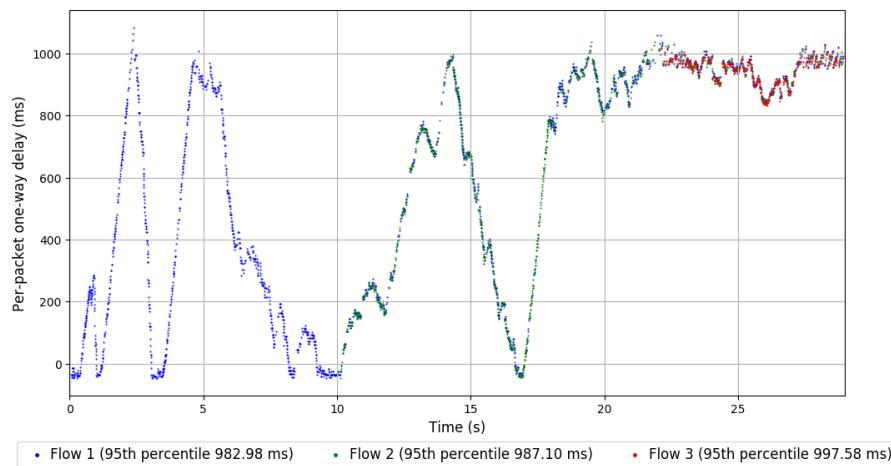
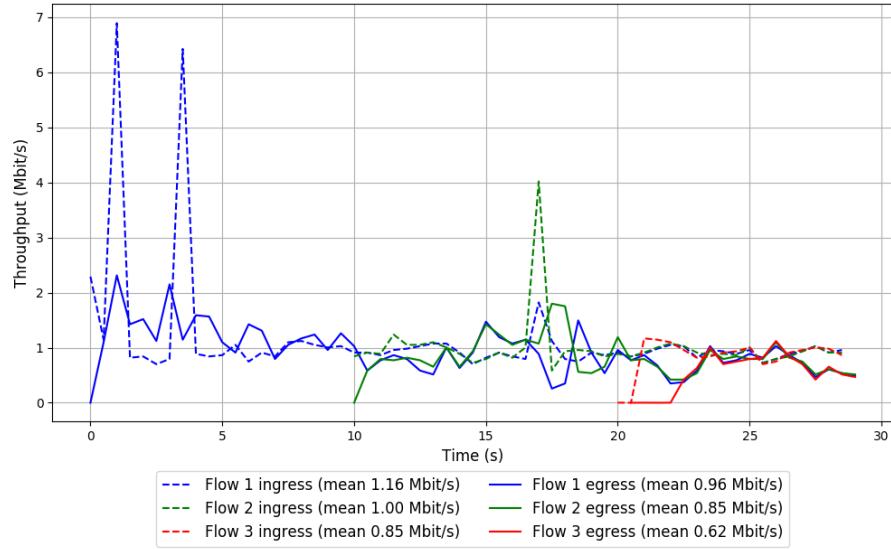


Run 2: Statistics of Indigo-MusesC5

```
Start at: 2019-01-21 09:39:27
End at: 2019-01-21 09:39:57
Local clock offset: 0.87 ms
Remote clock offset: -67.813 ms

# Below is generated by plot.py at 2019-01-21 10:25:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.69 Mbit/s
95th percentile per-packet one-way delay: 987.346 ms
Loss rate: 18.62%
-- Flow 1:
Average throughput: 0.96 Mbit/s
95th percentile per-packet one-way delay: 982.977 ms
Loss rate: 16.77%
-- Flow 2:
Average throughput: 0.85 Mbit/s
95th percentile per-packet one-way delay: 987.100 ms
Loss rate: 15.53%
-- Flow 3:
Average throughput: 0.62 Mbit/s
95th percentile per-packet one-way delay: 997.583 ms
Loss rate: 34.62%
```

Run 2: Report of Indigo-MusesC5 — Data Link

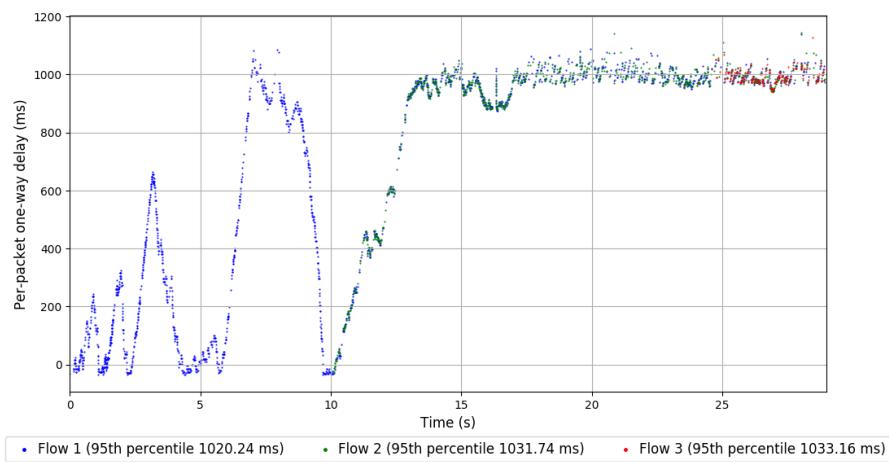
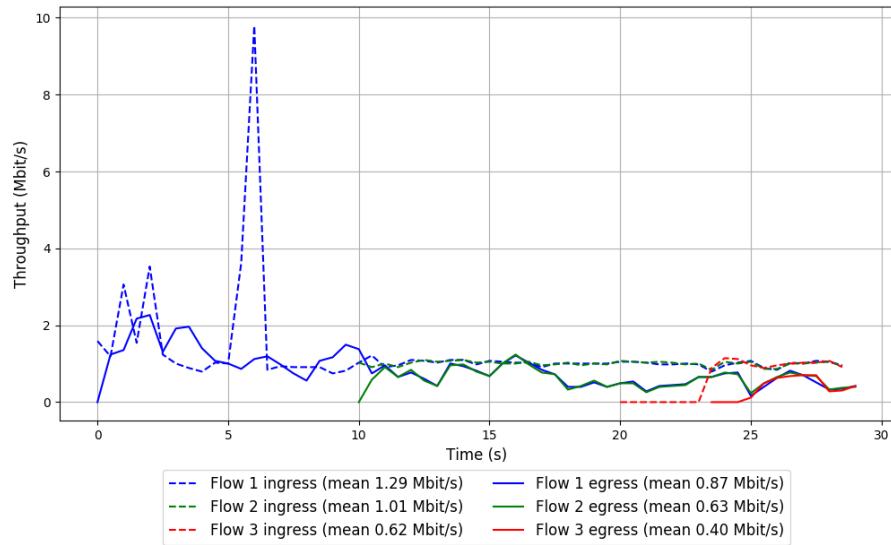


Run 3: Statistics of Indigo-MusesC5

```
Start at: 2019-01-21 10:03:51
End at: 2019-01-21 10:04:21
Local clock offset: -0.81 ms
Remote clock offset: -54.162 ms

# Below is generated by plot.py at 2019-01-21 10:25:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.35 Mbit/s
95th percentile per-packet one-way delay: 1026.291 ms
Loss rate: 36.86%
-- Flow 1:
Average throughput: 0.87 Mbit/s
95th percentile per-packet one-way delay: 1020.243 ms
Loss rate: 32.85%
-- Flow 2:
Average throughput: 0.63 Mbit/s
95th percentile per-packet one-way delay: 1031.736 ms
Loss rate: 37.82%
-- Flow 3:
Average throughput: 0.40 Mbit/s
95th percentile per-packet one-way delay: 1033.157 ms
Loss rate: 60.72%
```

Run 3: Report of Indigo-MusesC5 — Data Link

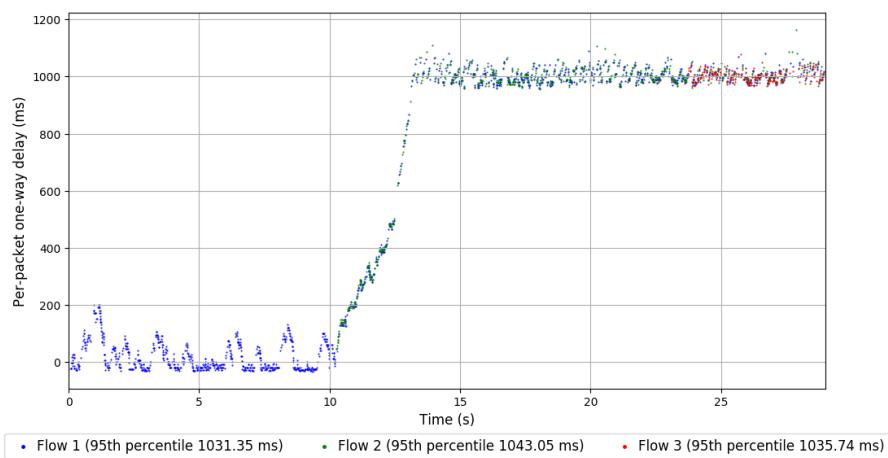
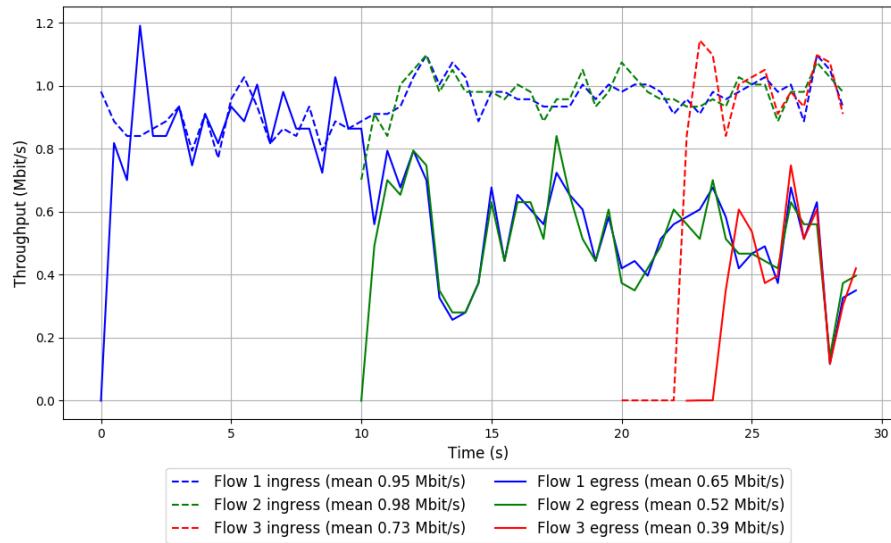


Run 1: Statistics of Indigo-MusesD

```
Start at: 2019-01-21 09:26:39
End at: 2019-01-21 09:27:09
Local clock offset: 0.972 ms
Remote clock offset: -50.649 ms

# Below is generated by plot.py at 2019-01-21 10:25:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.07 Mbit/s
95th percentile per-packet one-way delay: 1037.208 ms
Loss rate: 40.69%
-- Flow 1:
Average throughput: 0.65 Mbit/s
95th percentile per-packet one-way delay: 1031.352 ms
Loss rate: 31.43%
-- Flow 2:
Average throughput: 0.52 Mbit/s
95th percentile per-packet one-way delay: 1043.048 ms
Loss rate: 47.13%
-- Flow 3:
Average throughput: 0.39 Mbit/s
95th percentile per-packet one-way delay: 1035.739 ms
Loss rate: 61.48%
```

Run 1: Report of Indigo-MusesD — Data Link

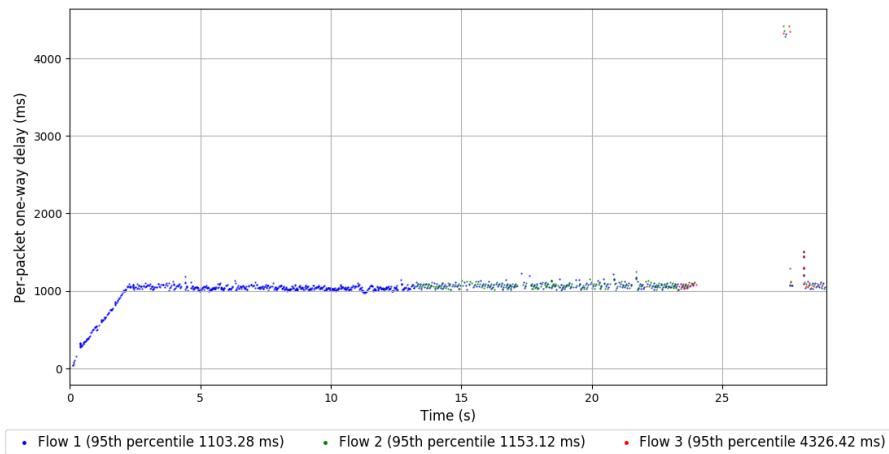
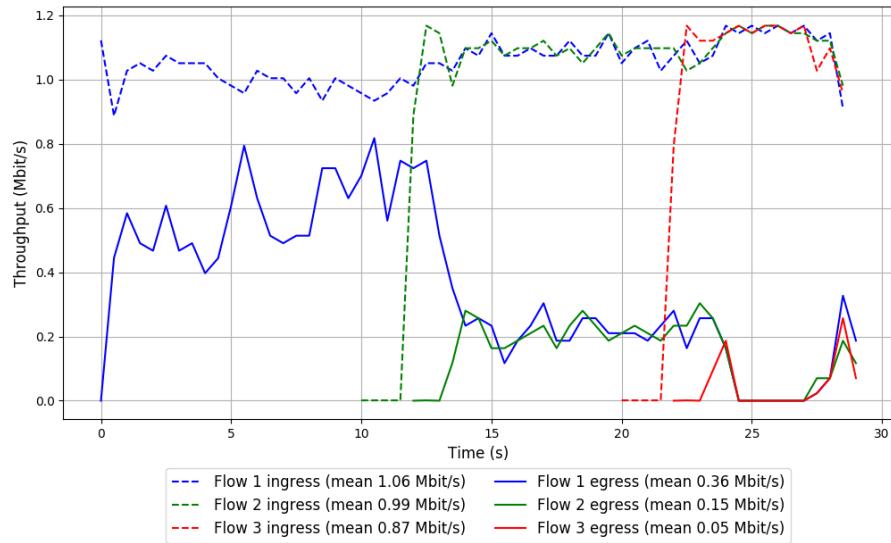


Run 2: Statistics of Indigo-MusesD

```
Start at: 2019-01-21 09:51:04
End at: 2019-01-21 09:51:34
Local clock offset: 0.901 ms
Remote clock offset: -22.514 ms

# Below is generated by plot.py at 2019-01-21 10:25:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.46 Mbit/s
95th percentile per-packet one-way delay: 1122.712 ms
Loss rate: 76.45%
-- Flow 1:
Average throughput: 0.36 Mbit/s
95th percentile per-packet one-way delay: 1103.278 ms
Loss rate: 65.80%
-- Flow 2:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 1153.117 ms
Loss rate: 86.10%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 4326.422 ms
Loss rate: 95.44%
```

Run 2: Report of Indigo-MusesD — Data Link

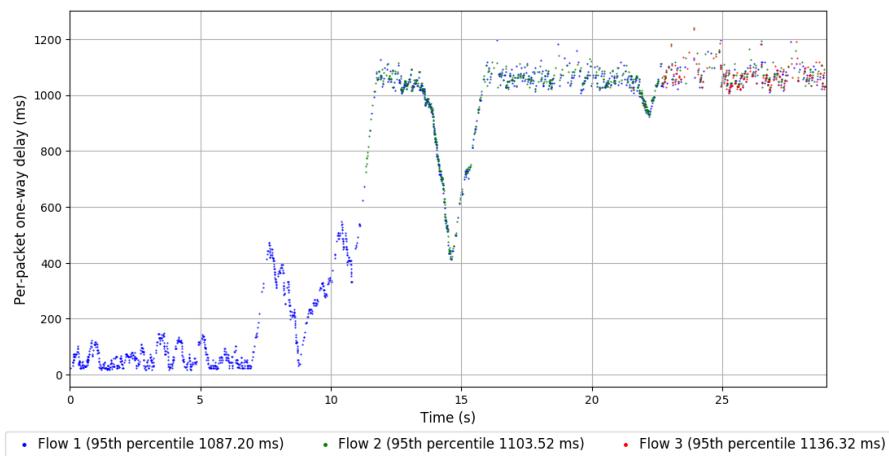
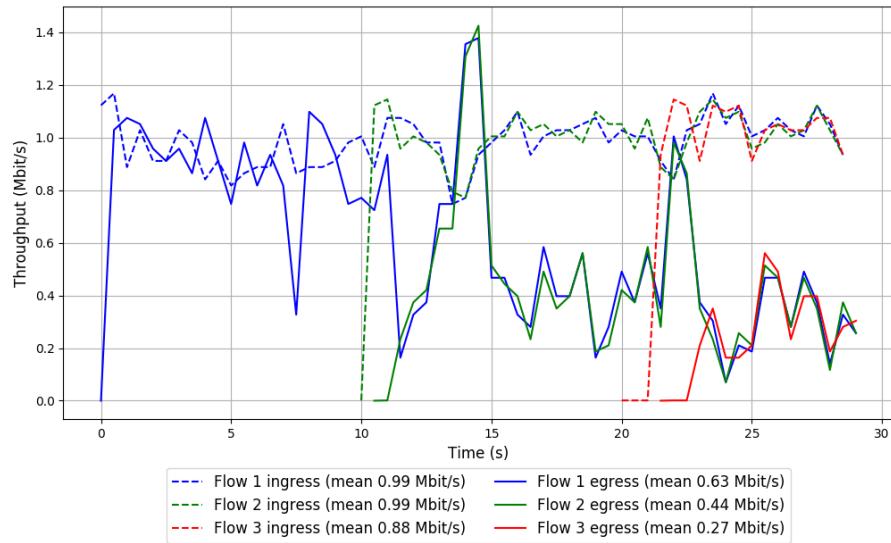


Run 3: Statistics of Indigo-MusesD

```
Start at: 2019-01-21 10:15:26
End at: 2019-01-21 10:15:56
Local clock offset: 0.976 ms
Remote clock offset: -3.474 ms

# Below is generated by plot.py at 2019-01-21 10:25:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.98 Mbit/s
95th percentile per-packet one-way delay: 1097.992 ms
Loss rate: 48.54%
-- Flow 1:
Average throughput: 0.63 Mbit/s
95th percentile per-packet one-way delay: 1087.202 ms
Loss rate: 36.31%
-- Flow 2:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 1103.521 ms
Loss rate: 56.32%
-- Flow 3:
Average throughput: 0.27 Mbit/s
95th percentile per-packet one-way delay: 1136.323 ms
Loss rate: 74.66%
```

Run 3: Report of Indigo-MusesD — Data Link

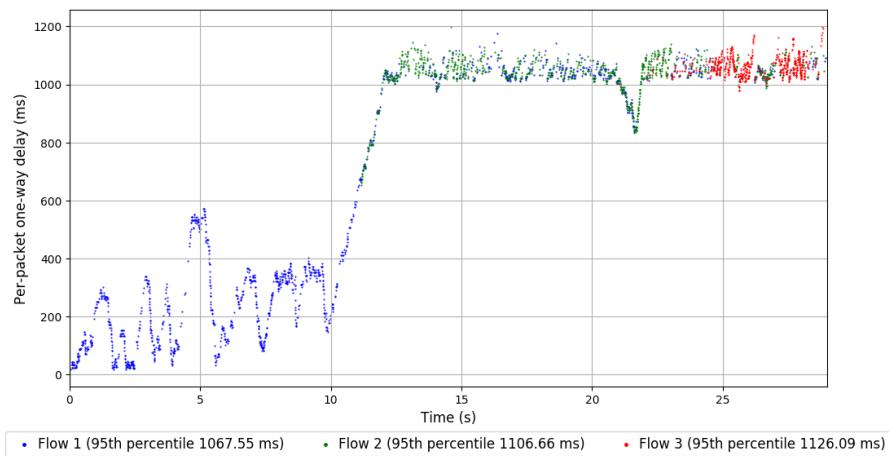
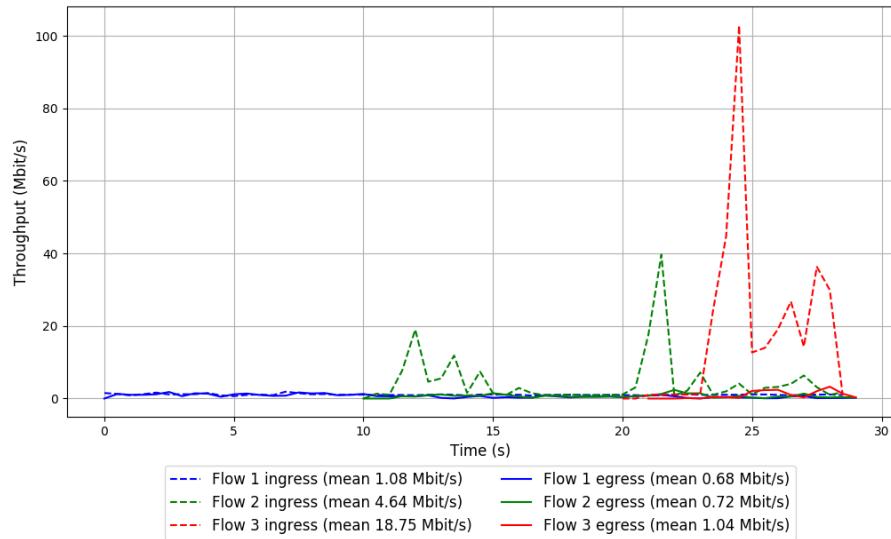


Run 1: Statistics of Indigo-MusesT

```
Start at: 2019-01-21 09:28:59
End at: 2019-01-21 09:29:29
Local clock offset: -1.045 ms
Remote clock offset: -4.284 ms

# Below is generated by plot.py at 2019-01-21 10:25:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.42 Mbit/s
95th percentile per-packet one-way delay: 1102.165 ms
Loss rate: 85.60%
-- Flow 1:
Average throughput: 0.68 Mbit/s
95th percentile per-packet one-way delay: 1067.549 ms
Loss rate: 37.11%
-- Flow 2:
Average throughput: 0.72 Mbit/s
95th percentile per-packet one-way delay: 1106.656 ms
Loss rate: 84.90%
-- Flow 3:
Average throughput: 1.04 Mbit/s
95th percentile per-packet one-way delay: 1126.093 ms
Loss rate: 95.11%
```

Run 1: Report of Indigo-MusesT — Data Link

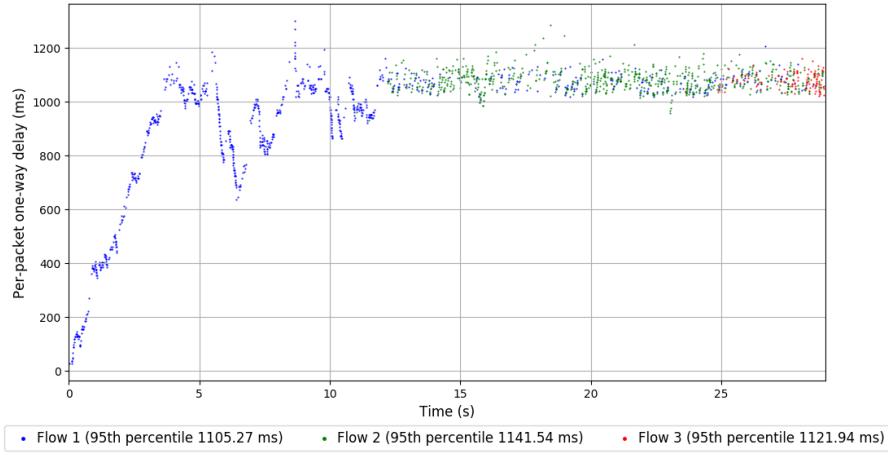
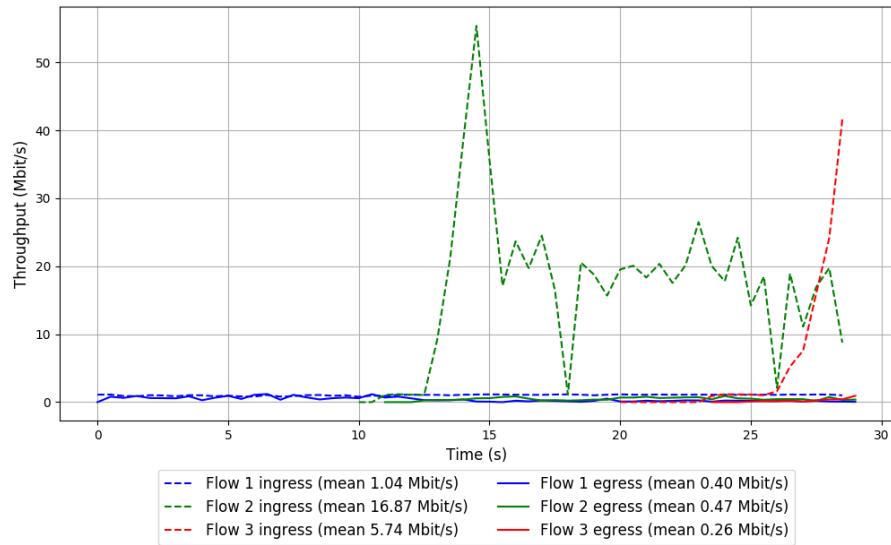


Run 2: Statistics of Indigo-MusesT

```
Start at: 2019-01-21 09:53:22
End at: 2019-01-21 09:53:52
Local clock offset: -0.357 ms
Remote clock offset: -1.53 ms

# Below is generated by plot.py at 2019-01-21 10:25:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.74 Mbit/s
95th percentile per-packet one-way delay: 1129.863 ms
Loss rate: 94.64%
-- Flow 1:
Average throughput: 0.40 Mbit/s
95th percentile per-packet one-way delay: 1105.268 ms
Loss rate: 61.48%
-- Flow 2:
Average throughput: 0.47 Mbit/s
95th percentile per-packet one-way delay: 1141.542 ms
Loss rate: 97.35%
-- Flow 3:
Average throughput: 0.26 Mbit/s
95th percentile per-packet one-way delay: 1121.944 ms
Loss rate: 97.31%
```

Run 2: Report of Indigo-MusesT — Data Link

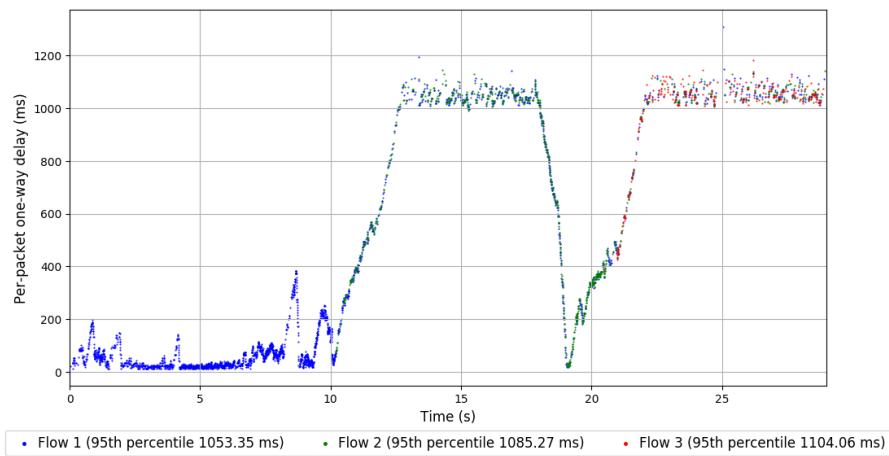
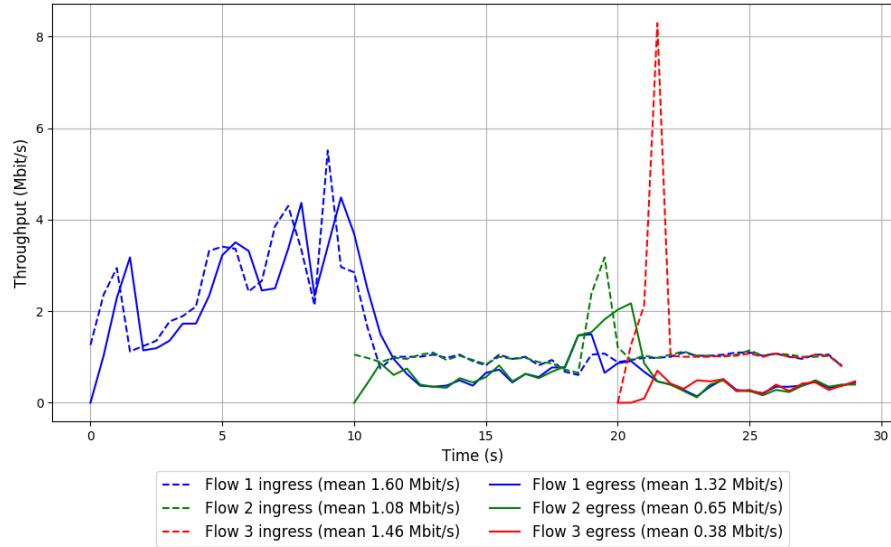


Run 3: Statistics of Indigo-MusesT

```
Start at: 2019-01-21 10:17:45
End at: 2019-01-21 10:18:15
Local clock offset: 1.613 ms
Remote clock offset: -5.22 ms

# Below is generated by plot.py at 2019-01-21 10:25:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.85 Mbit/s
95th percentile per-packet one-way delay: 1071.311 ms
Loss rate: 32.82%
-- Flow 1:
Average throughput: 1.32 Mbit/s
95th percentile per-packet one-way delay: 1053.349 ms
Loss rate: 17.63%
-- Flow 2:
Average throughput: 0.65 Mbit/s
95th percentile per-packet one-way delay: 1085.269 ms
Loss rate: 40.42%
-- Flow 3:
Average throughput: 0.38 Mbit/s
95th percentile per-packet one-way delay: 1104.060 ms
Loss rate: 75.36%
```

Run 3: Report of Indigo-MusesT — Data Link

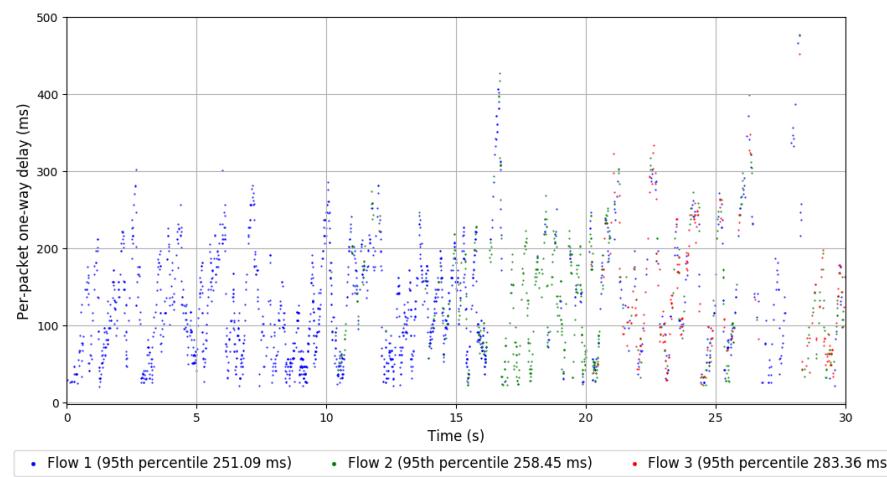
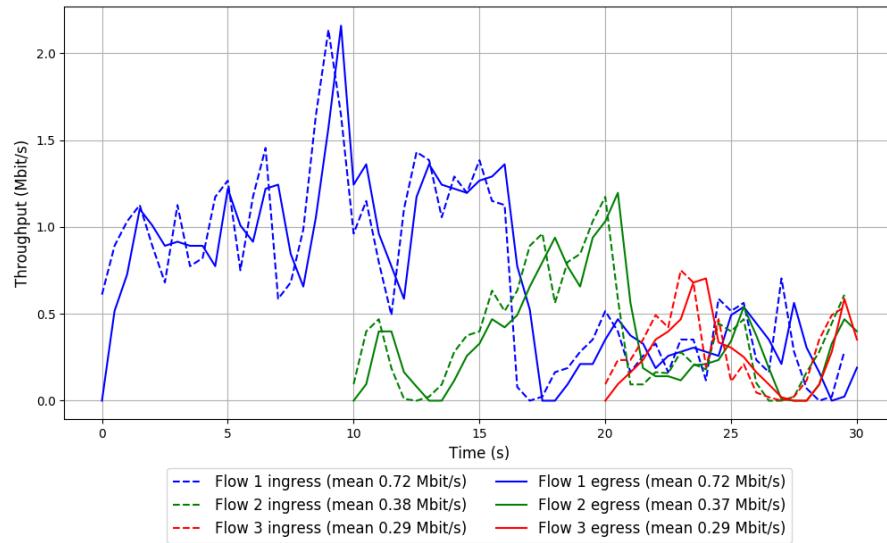


Run 1: Statistics of LEDBAT

```
Start at: 2019-01-21 09:35:59
End at: 2019-01-21 09:36:29
Local clock offset: 0.367 ms
Remote clock offset: -2.575 ms

# Below is generated by plot.py at 2019-01-21 10:25:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.06 Mbit/s
95th percentile per-packet one-way delay: 256.980 ms
Loss rate: 1.36%
-- Flow 1:
Average throughput: 0.72 Mbit/s
95th percentile per-packet one-way delay: 251.095 ms
Loss rate: 0.65%
-- Flow 2:
Average throughput: 0.37 Mbit/s
95th percentile per-packet one-way delay: 258.449 ms
Loss rate: 2.18%
-- Flow 3:
Average throughput: 0.29 Mbit/s
95th percentile per-packet one-way delay: 283.363 ms
Loss rate: 4.42%
```

Run 1: Report of LEDBAT — Data Link

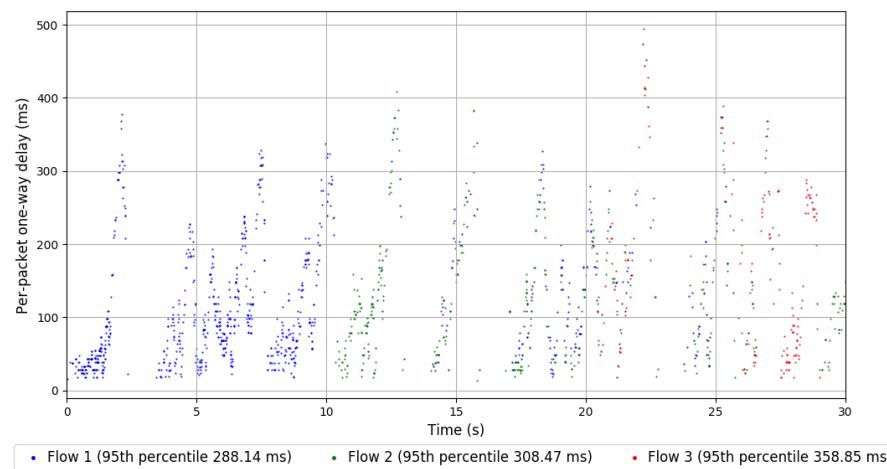
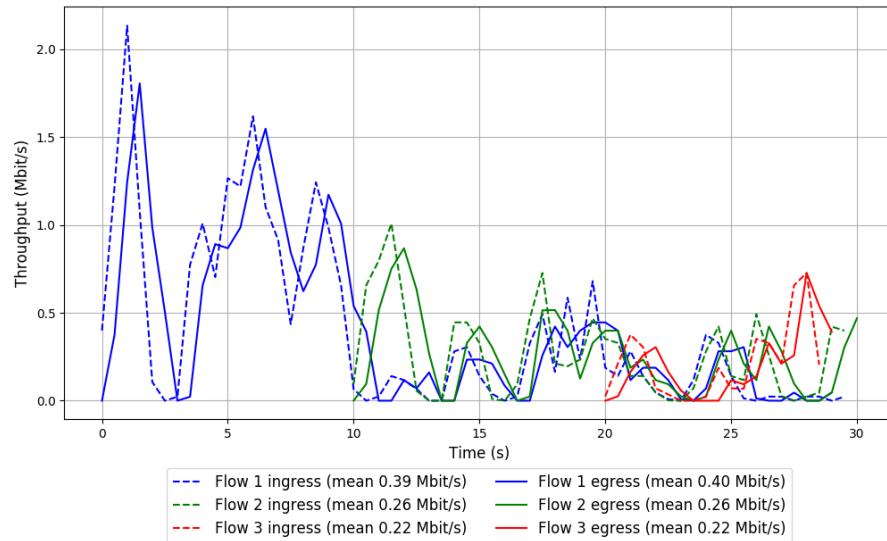


Run 2: Statistics of LEDBAT

```
Start at: 2019-01-21 10:00:22
End at: 2019-01-21 10:00:52
Local clock offset: 0.485 ms
Remote clock offset: -4.86 ms

# Below is generated by plot.py at 2019-01-21 10:25:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.62 Mbit/s
95th percentile per-packet one-way delay: 298.262 ms
Loss rate: 1.06%
-- Flow 1:
Average throughput: 0.40 Mbit/s
95th percentile per-packet one-way delay: 288.138 ms
Loss rate: 0.60%
-- Flow 2:
Average throughput: 0.26 Mbit/s
95th percentile per-packet one-way delay: 308.470 ms
Loss rate: 1.79%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 358.854 ms
Loss rate: 1.83%
```

Run 2: Report of LEDBAT — Data Link

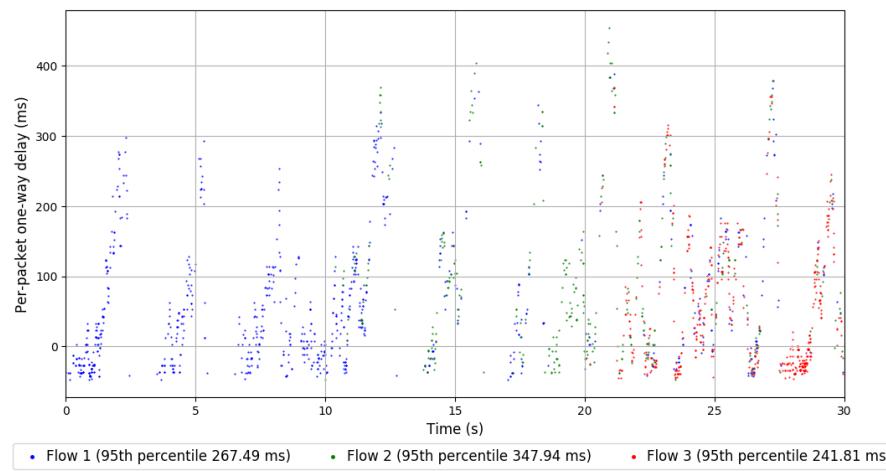
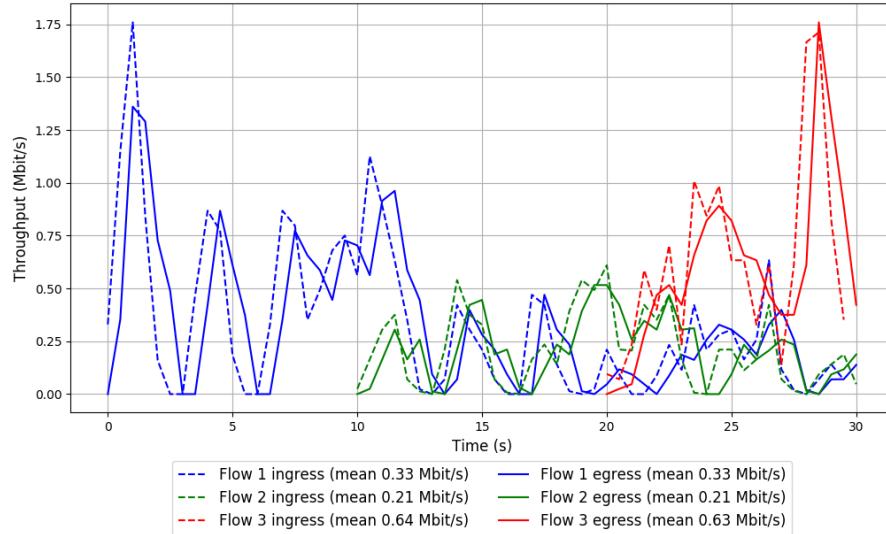


Run 3: Statistics of LEDBAT

```
Start at: 2019-01-21 10:24:41
End at: 2019-01-21 10:25:11
Local clock offset: 0.061 ms
Remote clock offset: -67.6 ms

# Below is generated by plot.py at 2019-01-21 10:25:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.68 Mbit/s
95th percentile per-packet one-way delay: 283.523 ms
Loss rate: 1.42%
-- Flow 1:
Average throughput: 0.33 Mbit/s
95th percentile per-packet one-way delay: 267.494 ms
Loss rate: 1.17%
-- Flow 2:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 347.942 ms
Loss rate: 1.64%
-- Flow 3:
Average throughput: 0.63 Mbit/s
95th percentile per-packet one-way delay: 241.805 ms
Loss rate: 1.67%
```

Run 3: Report of LEDBAT — Data Link

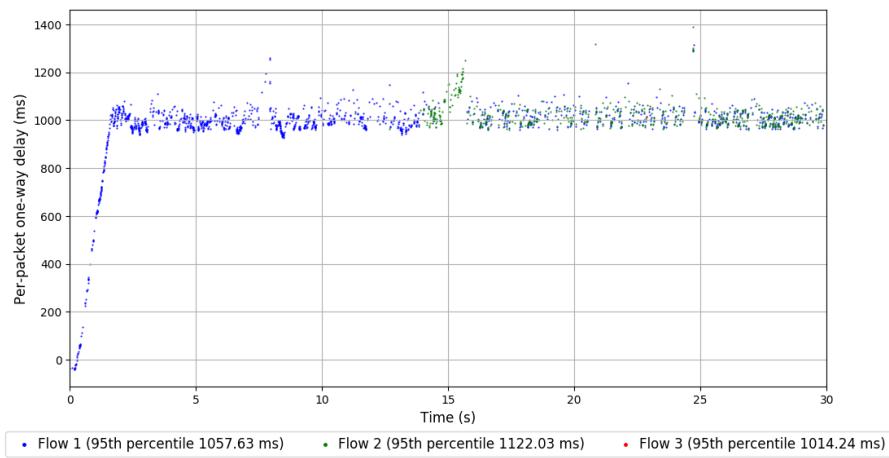
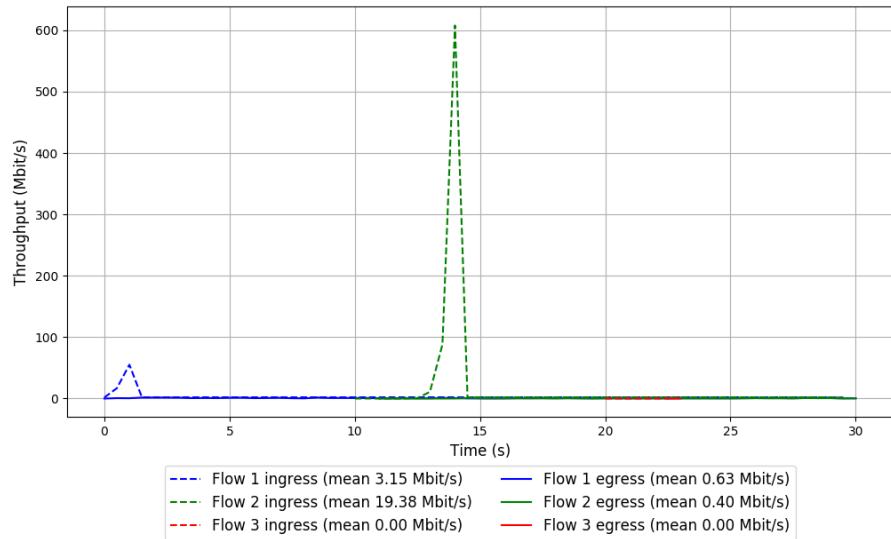


```
Run 1: Statistics of PCC-Allegro
```

```
Start at: 2019-01-21 09:18:33
End at: 2019-01-21 09:19:03
Local clock offset: -3.058 ms
Remote clock offset: -64.075 ms

# Below is generated by plot.py at 2019-01-21 10:25:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.88 Mbit/s
95th percentile per-packet one-way delay: 1071.924 ms
Loss rate: 94.51%
-- Flow 1:
Average throughput: 0.63 Mbit/s
95th percentile per-packet one-way delay: 1057.627 ms
Loss rate: 79.95%
-- Flow 2:
Average throughput: 0.40 Mbit/s
95th percentile per-packet one-way delay: 1122.025 ms
Loss rate: 98.07%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 1014.236 ms
Loss rate: 92.31%
```

Run 1: Report of PCC-Allegro — Data Link

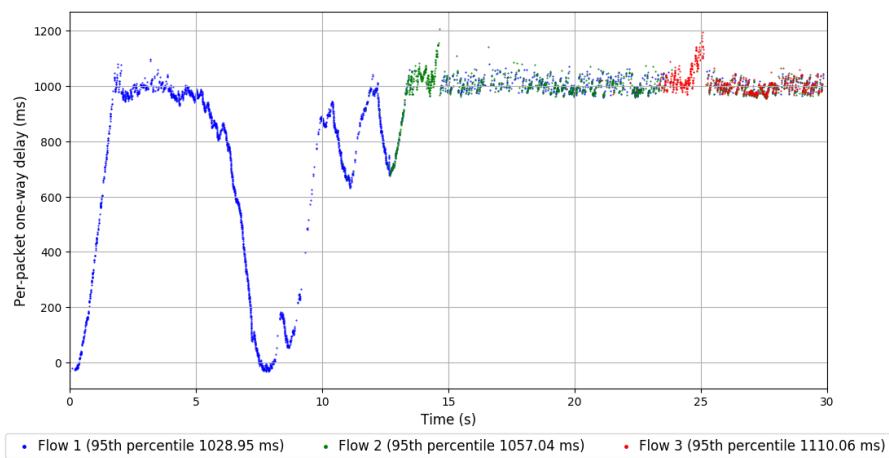
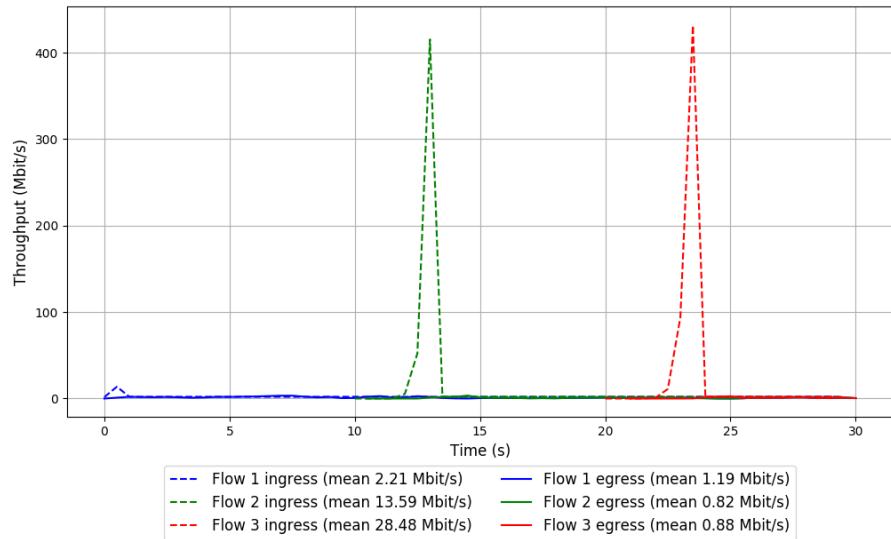


Run 2: Statistics of PCC-Allegro

```
Start at: 2019-01-21 09:42:56
End at: 2019-01-21 09:43:26
Local clock offset: 0.956 ms
Remote clock offset: -54.259 ms

# Below is generated by plot.py at 2019-01-21 10:25:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.97 Mbit/s
95th percentile per-packet one-way delay: 1048.378 ms
Loss rate: 90.44%
-- Flow 1:
Average throughput: 1.19 Mbit/s
95th percentile per-packet one-way delay: 1028.946 ms
Loss rate: 46.18%
-- Flow 2:
Average throughput: 0.82 Mbit/s
95th percentile per-packet one-way delay: 1057.035 ms
Loss rate: 94.18%
-- Flow 3:
Average throughput: 0.88 Mbit/s
95th percentile per-packet one-way delay: 1110.061 ms
Loss rate: 97.26%
```

Run 2: Report of PCC-Allegro — Data Link

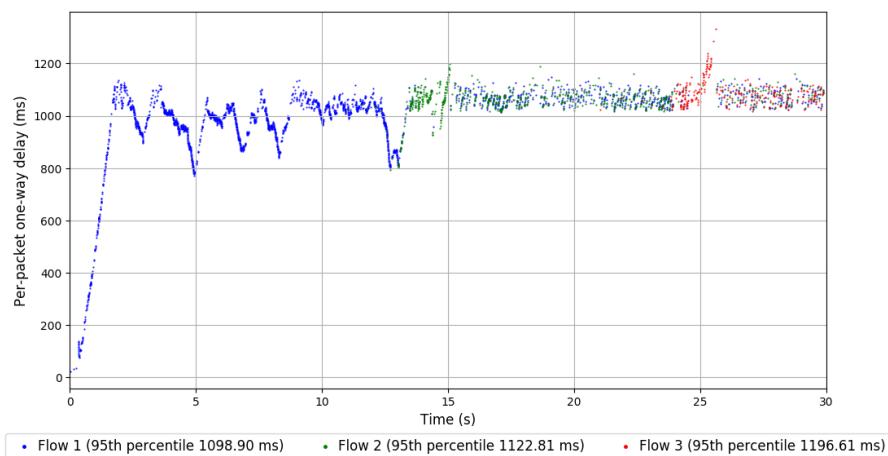
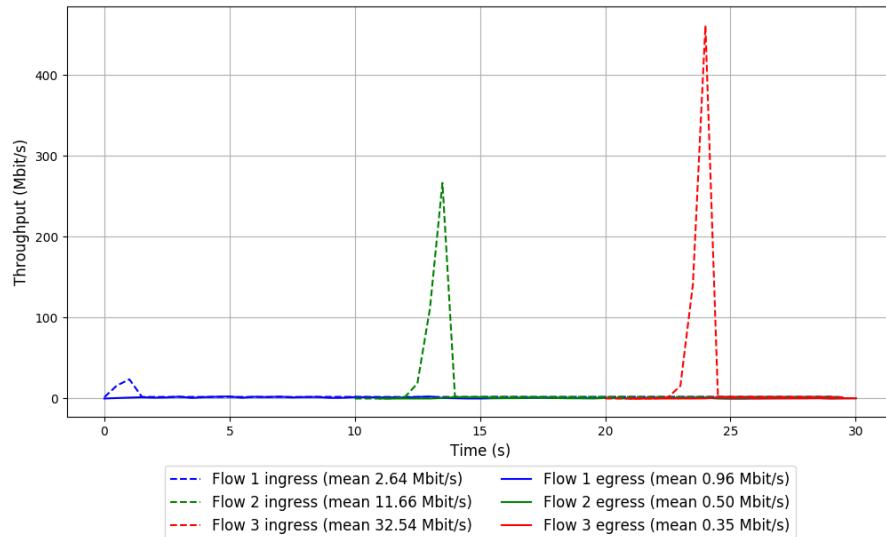


Run 3: Statistics of PCC-Allegro

```
Start at: 2019-01-21 10:07:20
End at: 2019-01-21 10:07:50
Local clock offset: 0.517 ms
Remote clock offset: -1.761 ms

# Below is generated by plot.py at 2019-01-21 10:25:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.38 Mbit/s
95th percentile per-packet one-way delay: 1111.765 ms
Loss rate: 93.47%
-- Flow 1:
Average throughput: 0.96 Mbit/s
95th percentile per-packet one-way delay: 1098.896 ms
Loss rate: 63.61%
-- Flow 2:
Average throughput: 0.50 Mbit/s
95th percentile per-packet one-way delay: 1122.807 ms
Loss rate: 95.93%
-- Flow 3:
Average throughput: 0.35 Mbit/s
95th percentile per-packet one-way delay: 1196.610 ms
Loss rate: 99.03%
```

Run 3: Report of PCC-Allegro — Data Link

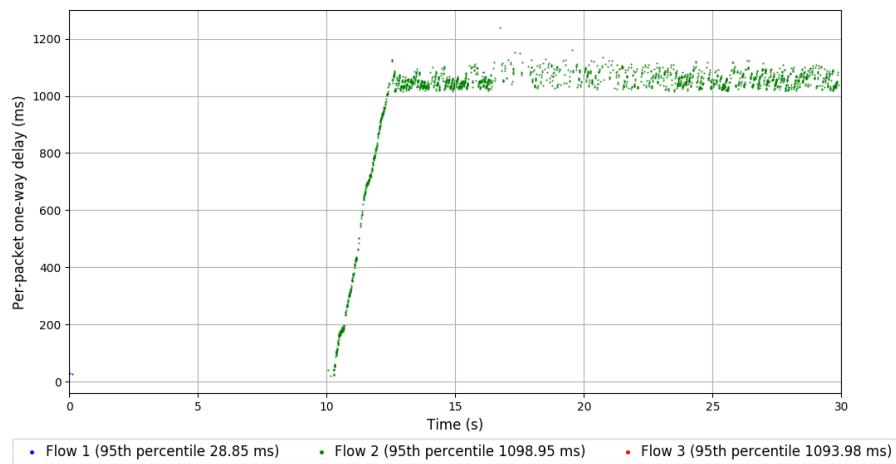
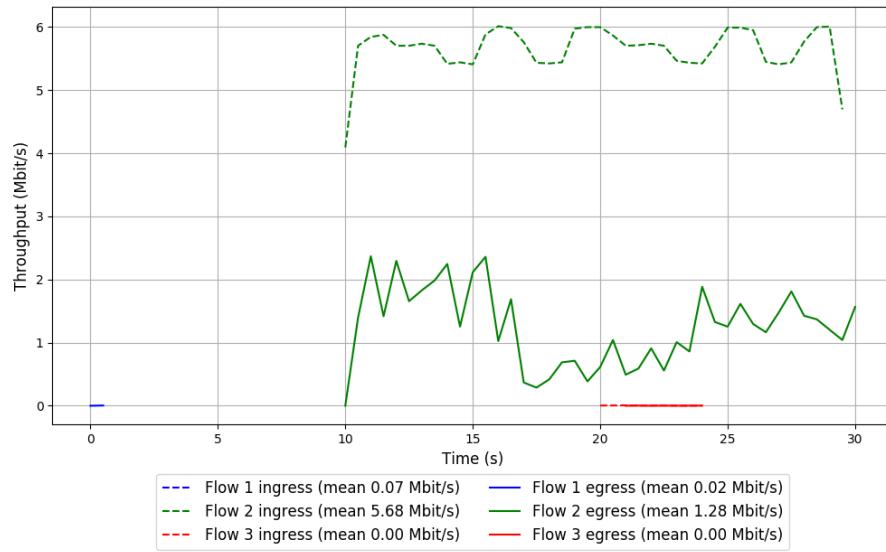


Run 1: Statistics of PCC-Expr

```
Start at: 2019-01-21 09:17:23
End at: 2019-01-21 09:17:53
Local clock offset: -3.958 ms
Remote clock offset: -4.983 ms

# Below is generated by plot.py at 2019-01-21 10:25:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.85 Mbit/s
95th percentile per-packet one-way delay: 1098.820 ms
Loss rate: 77.43%
-- Flow 1:
Average throughput: 0.02 Mbit/s
95th percentile per-packet one-way delay: 28.852 ms
Loss rate: 85.71%
-- Flow 2:
Average throughput: 1.28 Mbit/s
95th percentile per-packet one-way delay: 1098.951 ms
Loss rate: 77.43%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 1093.985 ms
Loss rate: 74.09%
```

Run 1: Report of PCC-Expr — Data Link

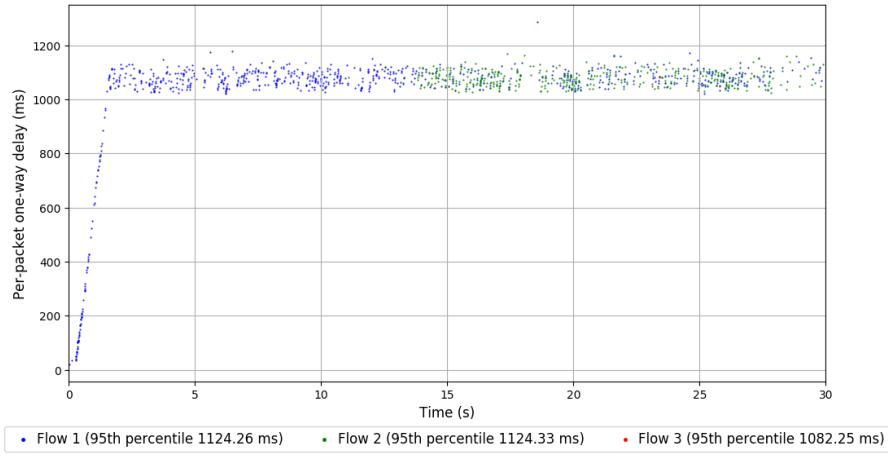
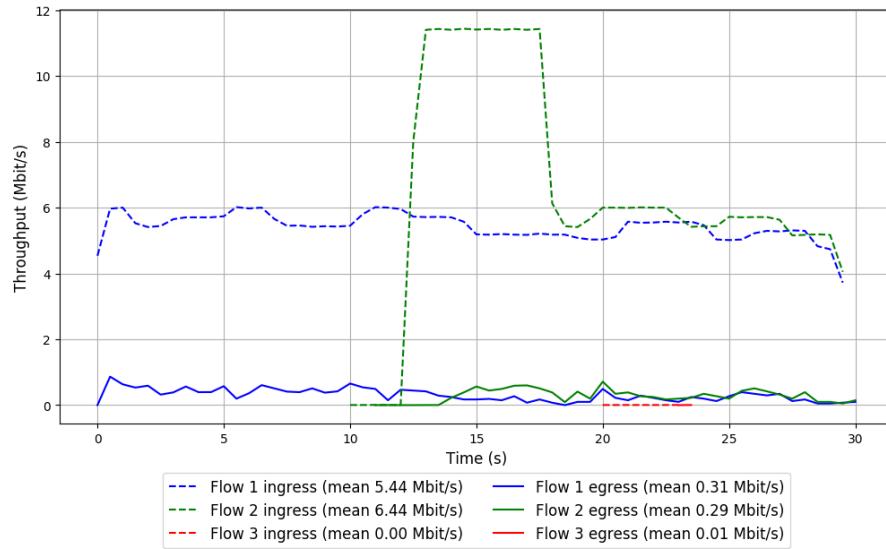


Run 2: Statistics of PCC-Expr

```
Start at: 2019-01-21 09:41:46
End at: 2019-01-21 09:42:16
Local clock offset: -1.502 ms
Remote clock offset: -3.933 ms

# Below is generated by plot.py at 2019-01-21 10:25:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.49 Mbit/s
95th percentile per-packet one-way delay: 1124.260 ms
Loss rate: 94.92%
-- Flow 1:
Average throughput: 0.31 Mbit/s
95th percentile per-packet one-way delay: 1124.260 ms
Loss rate: 94.28%
-- Flow 2:
Average throughput: 0.29 Mbit/s
95th percentile per-packet one-way delay: 1124.325 ms
Loss rate: 95.74%
-- Flow 3:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 1082.248 ms
Loss rate: 86.15%
```

Run 2: Report of PCC-Expr — Data Link

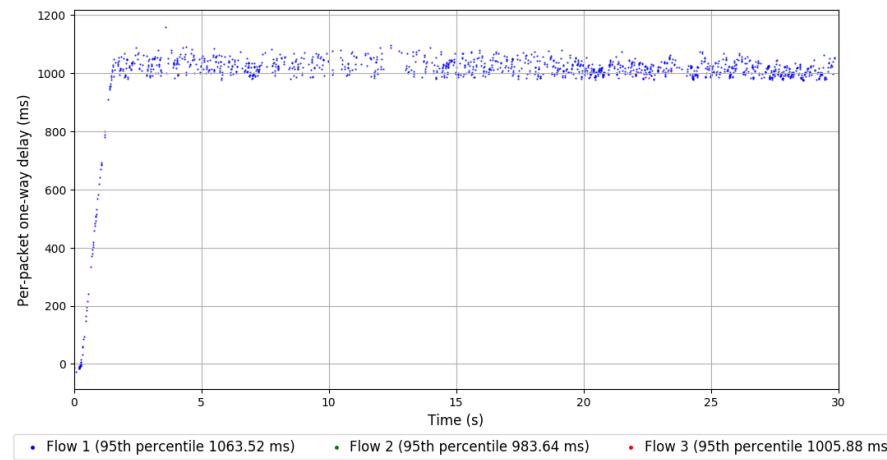
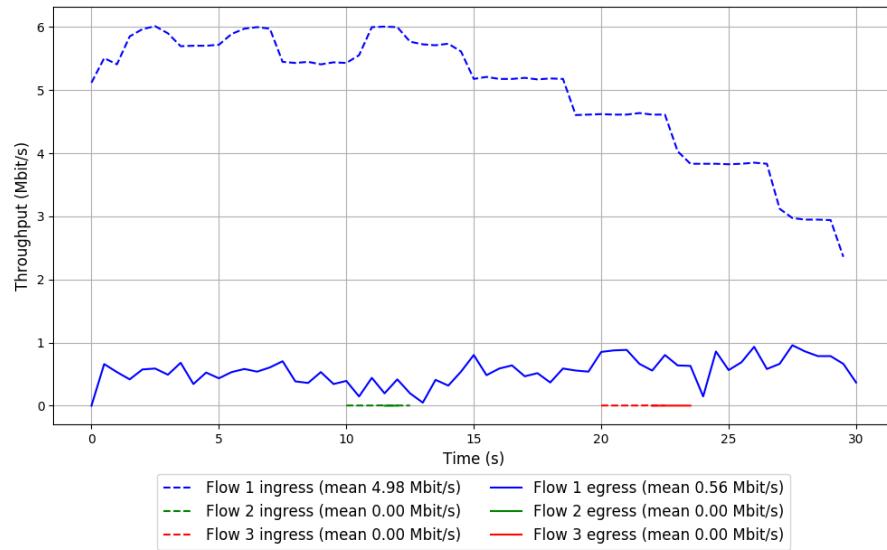


Run 3: Statistics of PCC-Expr

```
Start at: 2019-01-21 10:06:10
End at: 2019-01-21 10:06:40
Local clock offset: -0.257 ms
Remote clock offset: -45.087 ms

# Below is generated by plot.py at 2019-01-21 10:25:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.56 Mbit/s
95th percentile per-packet one-way delay: 1063.517 ms
Loss rate: 88.82%
-- Flow 1:
Average throughput: 0.56 Mbit/s
95th percentile per-packet one-way delay: 1063.517 ms
Loss rate: 88.82%
-- Flow 2:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 983.638 ms
Loss rate: 92.31%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 1005.883 ms
Loss rate: 78.57%
```

Run 3: Report of PCC-Expr — Data Link

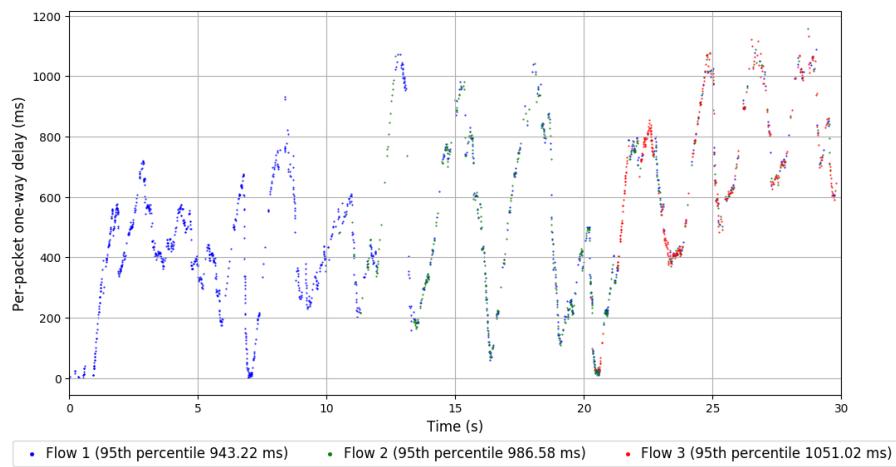
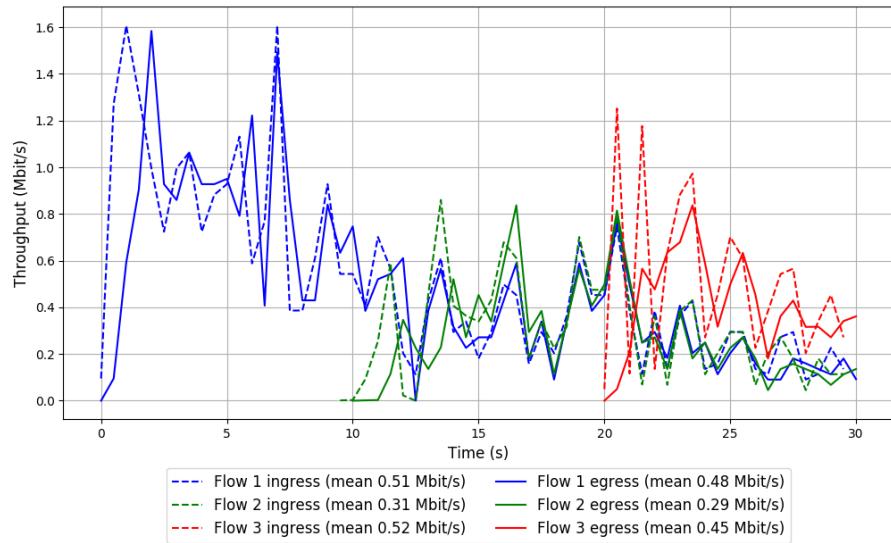


```
Run 1: Statistics of QUIC Cubic
```

```
Start at: 2019-01-21 09:25:30
End at: 2019-01-21 09:26:00
Local clock offset: -0.96 ms
Remote clock offset: -19.678 ms

# Below is generated by plot.py at 2019-01-21 10:25:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.81 Mbit/s
95th percentile per-packet one-way delay: 997.425 ms
Loss rate: 8.88%
-- Flow 1:
Average throughput: 0.48 Mbit/s
95th percentile per-packet one-way delay: 943.221 ms
Loss rate: 5.84%
-- Flow 2:
Average throughput: 0.29 Mbit/s
95th percentile per-packet one-way delay: 986.576 ms
Loss rate: 9.86%
-- Flow 3:
Average throughput: 0.45 Mbit/s
95th percentile per-packet one-way delay: 1051.024 ms
Loss rate: 16.80%
```

Run 1: Report of QUIC Cubic — Data Link

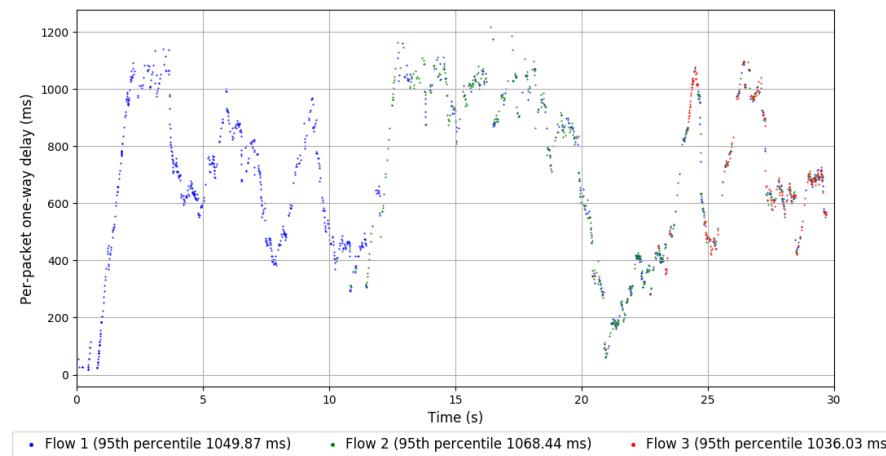
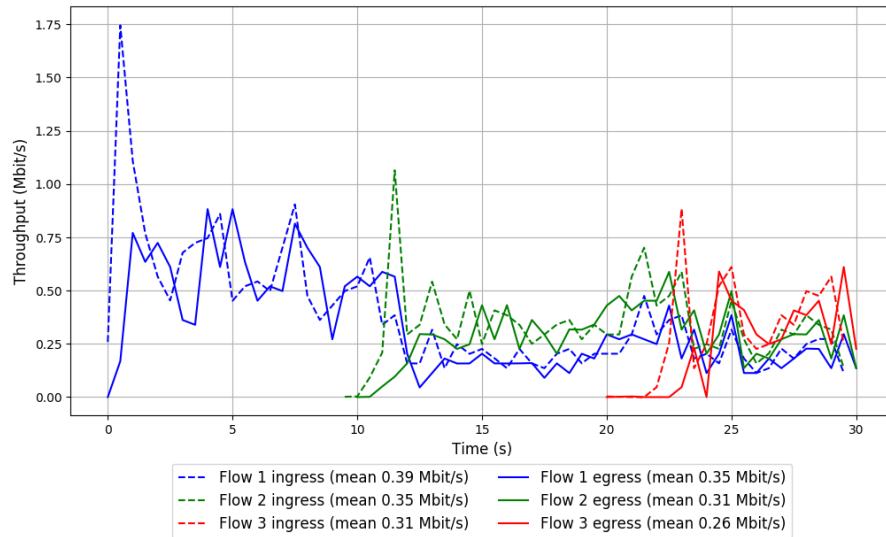


Run 2: Statistics of QUIC Cubic

```
Start at: 2019-01-21 09:49:53
End at: 2019-01-21 09:50:23
Local clock offset: 0.134 ms
Remote clock offset: -2.522 ms

# Below is generated by plot.py at 2019-01-21 10:25:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.63 Mbit/s
95th percentile per-packet one-way delay: 1057.455 ms
Loss rate: 13.45%
-- Flow 1:
Average throughput: 0.35 Mbit/s
95th percentile per-packet one-way delay: 1049.873 ms
Loss rate: 11.46%
-- Flow 2:
Average throughput: 0.31 Mbit/s
95th percentile per-packet one-way delay: 1068.440 ms
Loss rate: 14.58%
-- Flow 3:
Average throughput: 0.26 Mbit/s
95th percentile per-packet one-way delay: 1036.034 ms
Loss rate: 18.52%
```

Run 2: Report of QUIC Cubic — Data Link

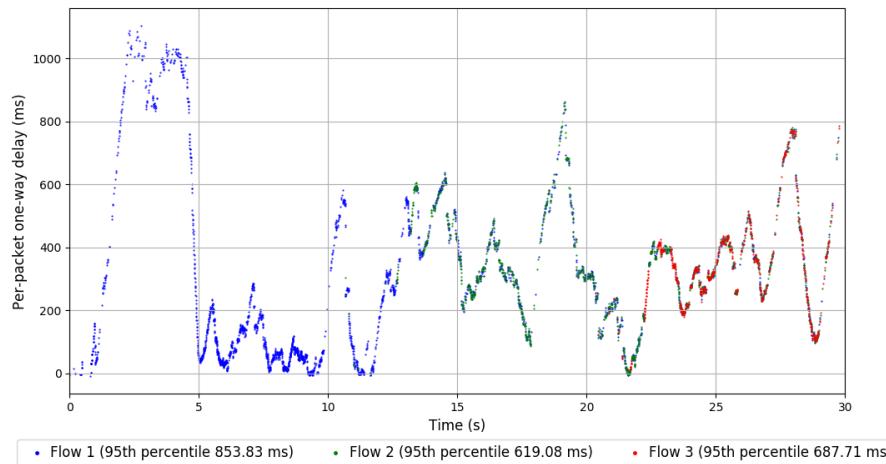
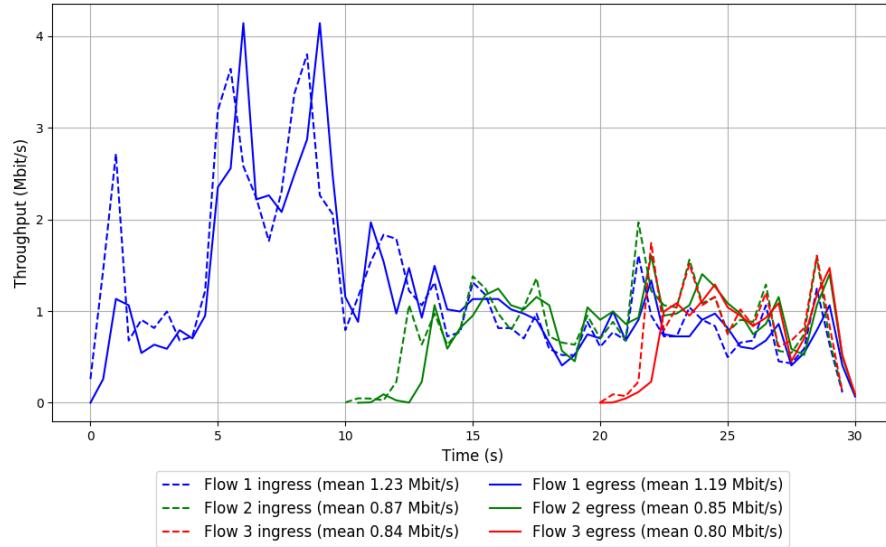


Run 3: Statistics of QUIC Cubic

```
Start at: 2019-01-21 10:14:16
End at: 2019-01-21 10:14:46
Local clock offset: 1.586 ms
Remote clock offset: -27.097 ms

# Below is generated by plot.py at 2019-01-21 10:25:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.99 Mbit/s
95th percentile per-packet one-way delay: 735.947 ms
Loss rate: 3.89%
-- Flow 1:
Average throughput: 1.19 Mbit/s
95th percentile per-packet one-way delay: 853.825 ms
Loss rate: 3.45%
-- Flow 2:
Average throughput: 0.85 Mbit/s
95th percentile per-packet one-way delay: 619.077 ms
Loss rate: 3.50%
-- Flow 3:
Average throughput: 0.80 Mbit/s
95th percentile per-packet one-way delay: 687.711 ms
Loss rate: 6.72%
```

Run 3: Report of QUIC Cubic — Data Link

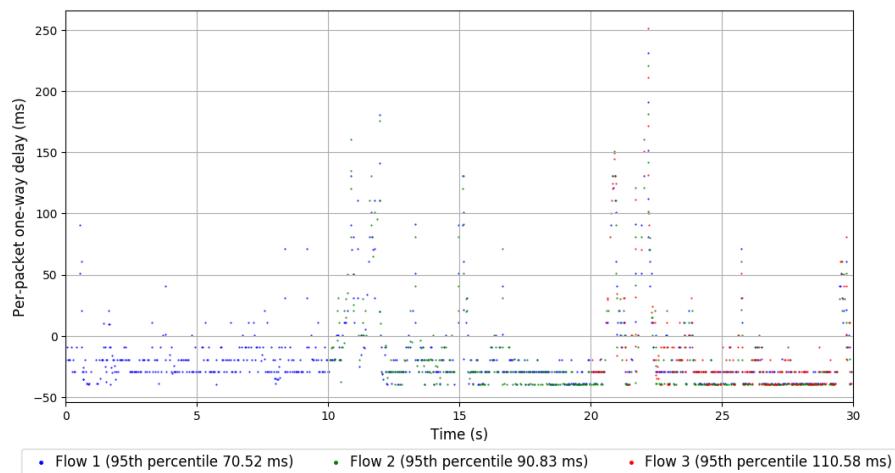
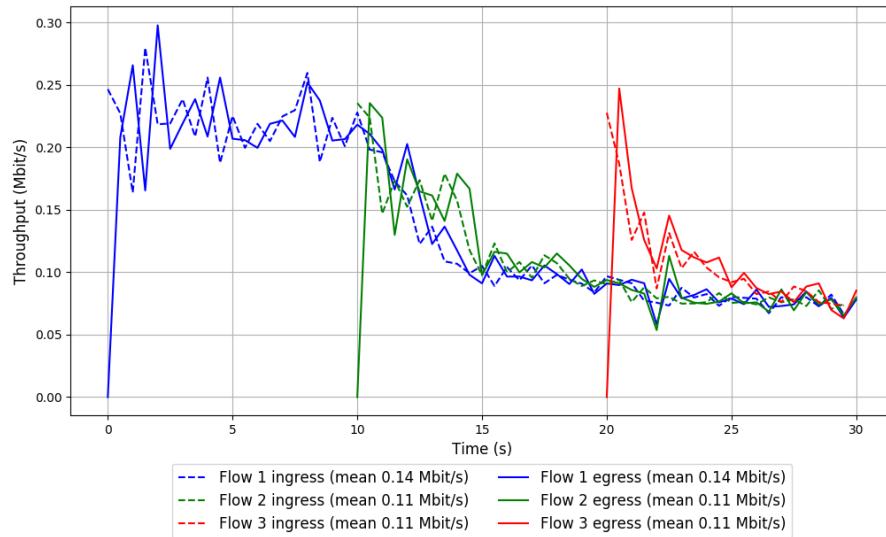


```
Run 1: Statistics of SCReAM

Start at: 2019-01-21 09:20:52
End at: 2019-01-21 09:21:22
Local clock offset: -2.456 ms
Remote clock offset: -61.418 ms

# Below is generated by plot.py at 2019-01-21 10:25:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.25 Mbit/s
95th percentile per-packet one-way delay: 80.671 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 70.516 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.11 Mbit/s
95th percentile per-packet one-way delay: 90.832 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.11 Mbit/s
95th percentile per-packet one-way delay: 110.576 ms
Loss rate: 0.00%
```

Run 1: Report of SCReAM — Data Link

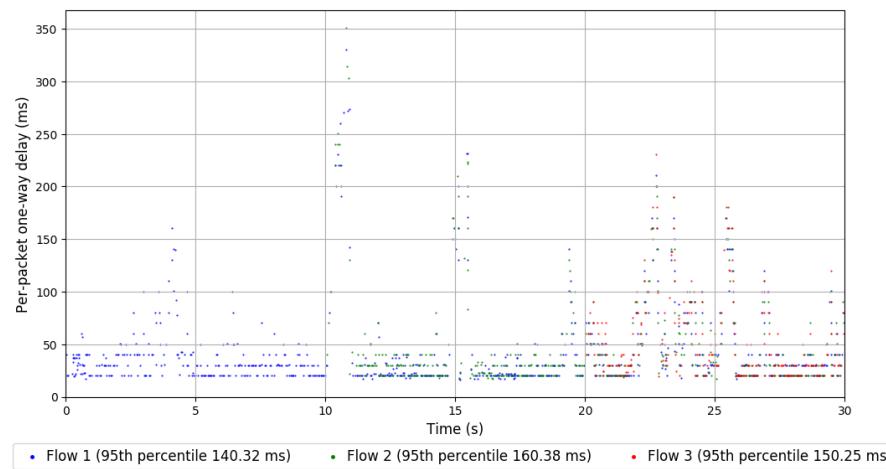
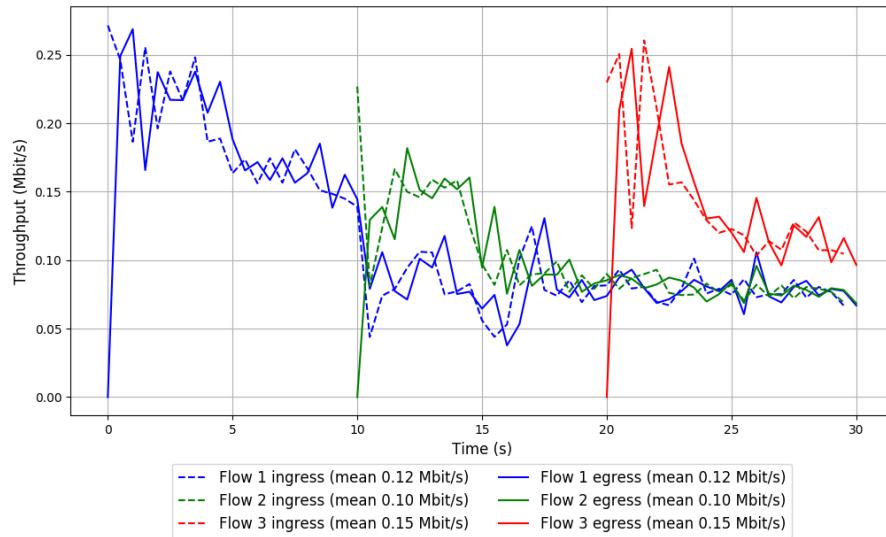


Run 2: Statistics of SCReAM

```
Start at: 2019-01-21 09:45:16
End at: 2019-01-21 09:45:46
Local clock offset: -0.373 ms
Remote clock offset: -1.707 ms

# Below is generated by plot.py at 2019-01-21 10:25:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.23 Mbit/s
95th percentile per-packet one-way delay: 150.241 ms
Loss rate: 0.32%
-- Flow 1:
Average throughput: 0.12 Mbit/s
95th percentile per-packet one-way delay: 140.325 ms
Loss rate: 0.17%
-- Flow 2:
Average throughput: 0.10 Mbit/s
95th percentile per-packet one-way delay: 160.381 ms
Loss rate: 0.63%
-- Flow 3:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 150.249 ms
Loss rate: 0.28%
```

Run 2: Report of SCReAM — Data Link

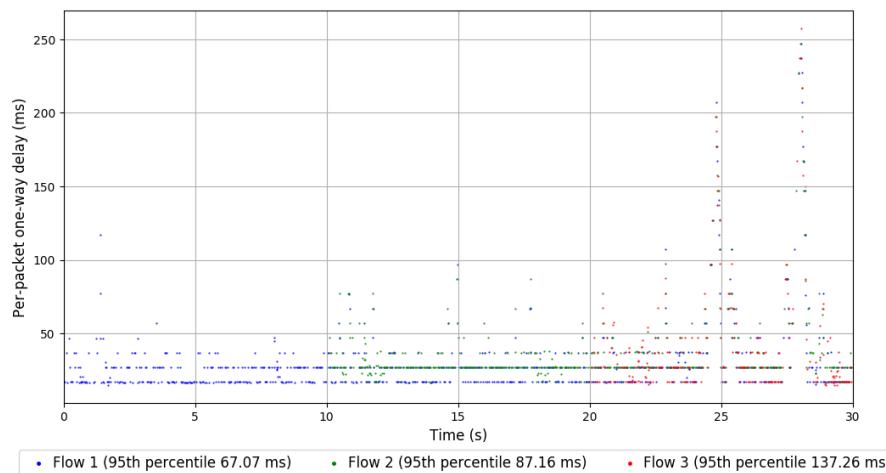
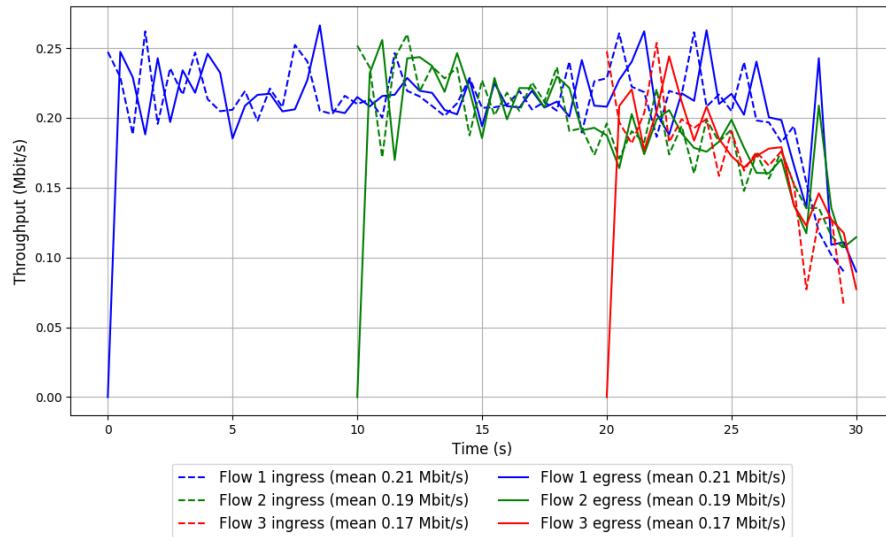


Run 3: Statistics of SCReAM

```
Start at: 2019-01-21 10:09:39
End at: 2019-01-21 10:10:09
Local clock offset: 1.497 ms
Remote clock offset: -2.664 ms

# Below is generated by plot.py at 2019-01-21 10:25:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.40 Mbit/s
95th percentile per-packet one-way delay: 87.075 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 67.070 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.19 Mbit/s
95th percentile per-packet one-way delay: 87.155 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.17 Mbit/s
95th percentile per-packet one-way delay: 137.256 ms
Loss rate: 0.00%
```

Run 3: Report of SCReAM — Data Link

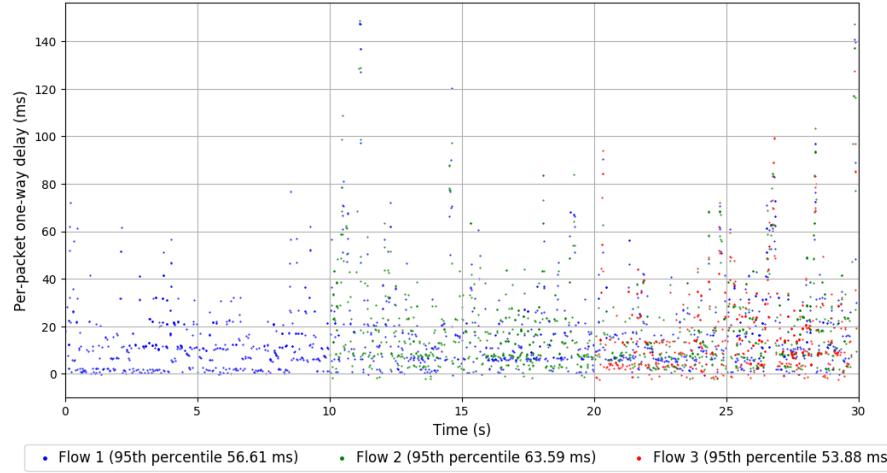
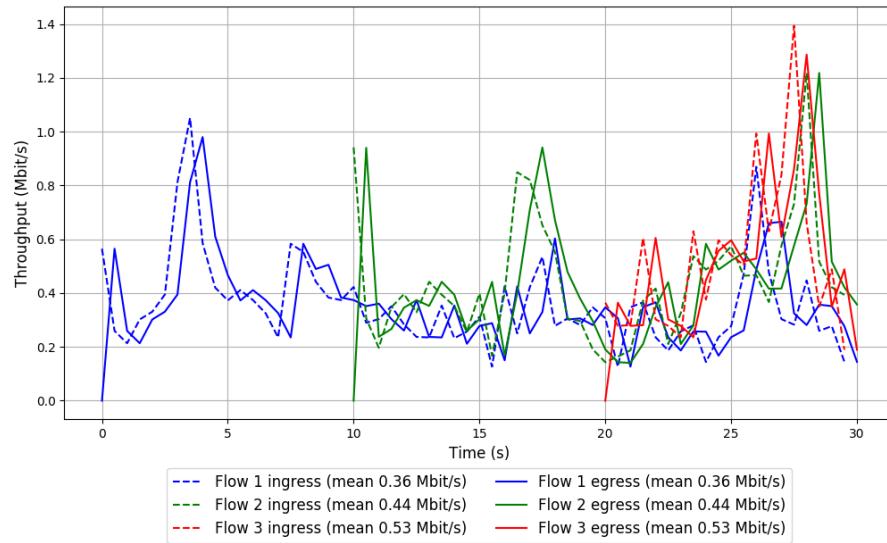


Run 1: Statistics of Sprout

```
Start at: 2019-01-21 09:32:29
End at: 2019-01-21 09:32:59
Local clock offset: -0.016 ms
Remote clock offset: -18.801 ms

# Below is generated by plot.py at 2019-01-21 10:25:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.83 Mbit/s
95th percentile per-packet one-way delay: 61.270 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 0.36 Mbit/s
95th percentile per-packet one-way delay: 56.611 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 63.585 ms
Loss rate: 0.20%
-- Flow 3:
Average throughput: 0.53 Mbit/s
95th percentile per-packet one-way delay: 53.875 ms
Loss rate: 0.00%
```

Run 1: Report of Sprout — Data Link

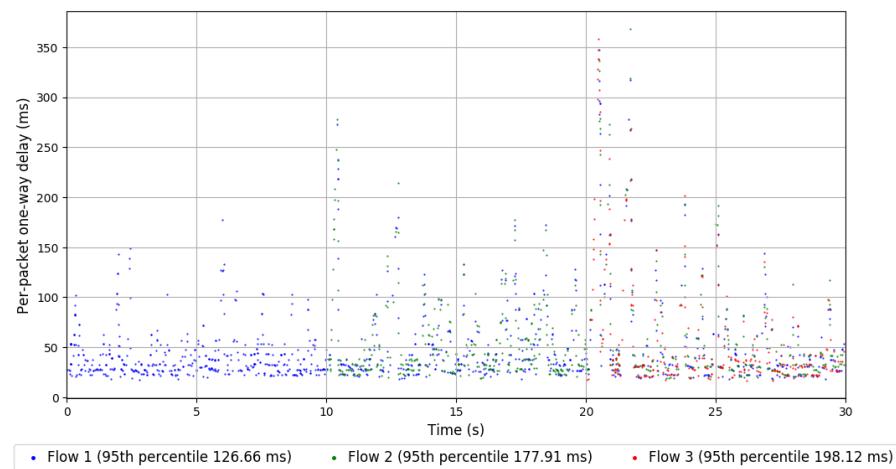
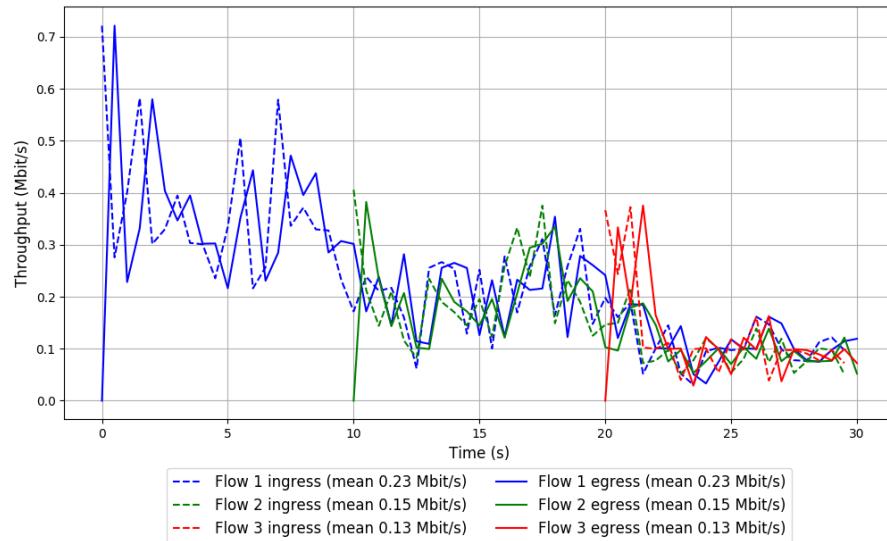


Run 2: Statistics of Sprout

```
Start at: 2019-01-21 09:56:52
End at: 2019-01-21 09:57:22
Local clock offset: -2.123 ms
Remote clock offset: -1.193 ms

# Below is generated by plot.py at 2019-01-21 10:25:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.37 Mbit/s
95th percentile per-packet one-way delay: 162.188 ms
Loss rate: 0.15%
-- Flow 1:
Average throughput: 0.23 Mbit/s
95th percentile per-packet one-way delay: 126.663 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 177.906 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.13 Mbit/s
95th percentile per-packet one-way delay: 198.118 ms
Loss rate: 1.00%
```

Run 2: Report of Sprout — Data Link

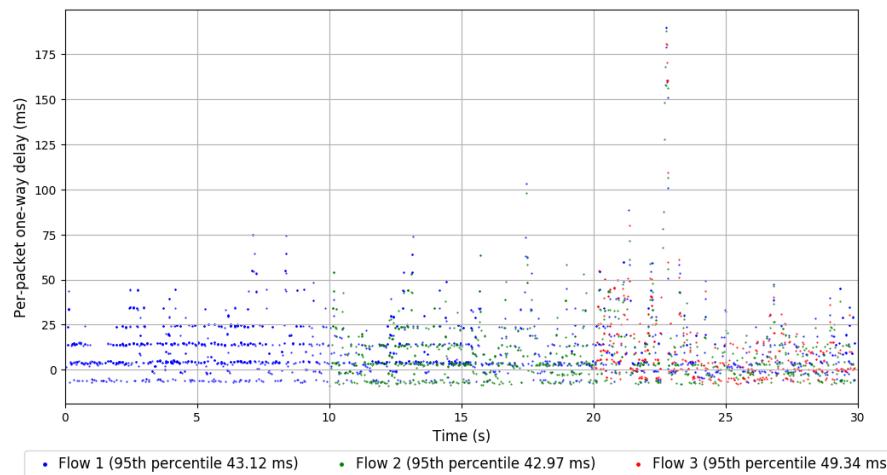
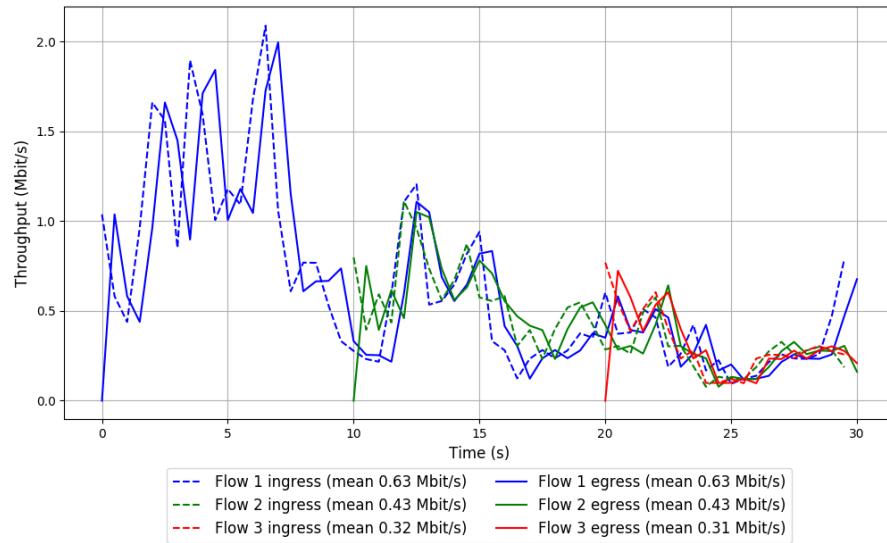


Run 3: Statistics of Sprout

```
Start at: 2019-01-21 10:21:13
End at: 2019-01-21 10:21:43
Local clock offset: -2.458 ms
Remote clock offset: -28.184 ms

# Below is generated by plot.py at 2019-01-21 10:25:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.02 Mbit/s
95th percentile per-packet one-way delay: 43.550 ms
Loss rate: 0.31%
-- Flow 1:
Average throughput: 0.63 Mbit/s
95th percentile per-packet one-way delay: 43.124 ms
Loss rate: 0.30%
-- Flow 2:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 42.968 ms
Loss rate: 0.15%
-- Flow 3:
Average throughput: 0.31 Mbit/s
95th percentile per-packet one-way delay: 49.343 ms
Loss rate: 0.76%
```

Run 3: Report of Sprout — Data Link

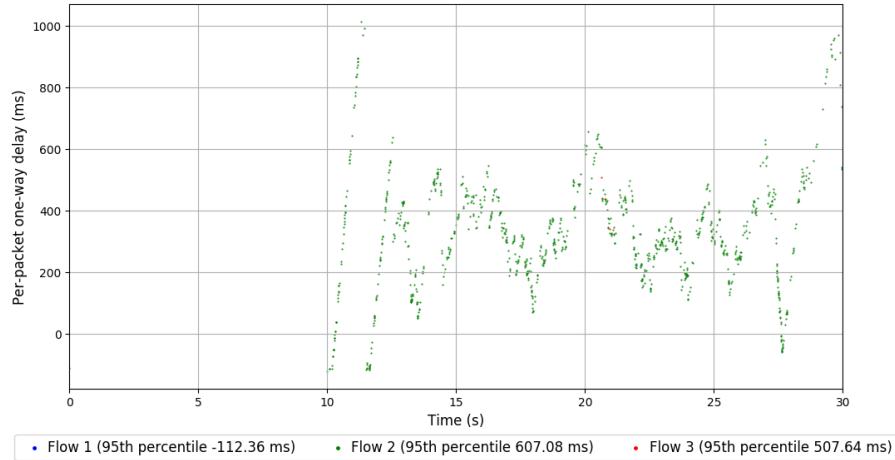
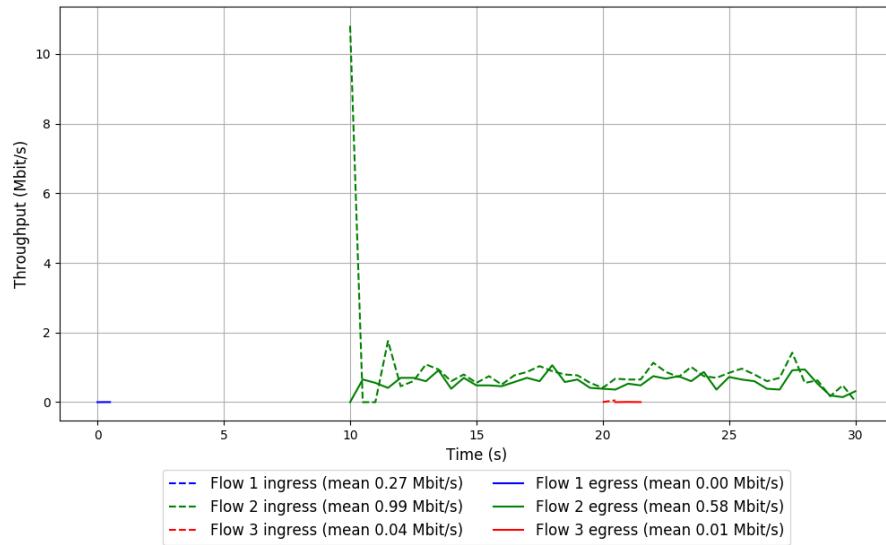


Run 1: Statistics of TaoVA-100x

```
Start at: 2019-01-21 09:34:49
End at: 2019-01-21 09:35:19
Local clock offset: -0.057 ms
Remote clock offset: -143.348 ms

# Below is generated by plot.py at 2019-01-21 10:25:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.39 Mbit/s
95th percentile per-packet one-way delay: 607.077 ms
Loss rate: 41.27%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: -112.360 ms
Loss rate: 95.92%
-- Flow 2:
Average throughput: 0.58 Mbit/s
95th percentile per-packet one-way delay: 607.077 ms
Loss rate: 41.14%
-- Flow 3:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 507.642 ms
Loss rate: 85.45%
```

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

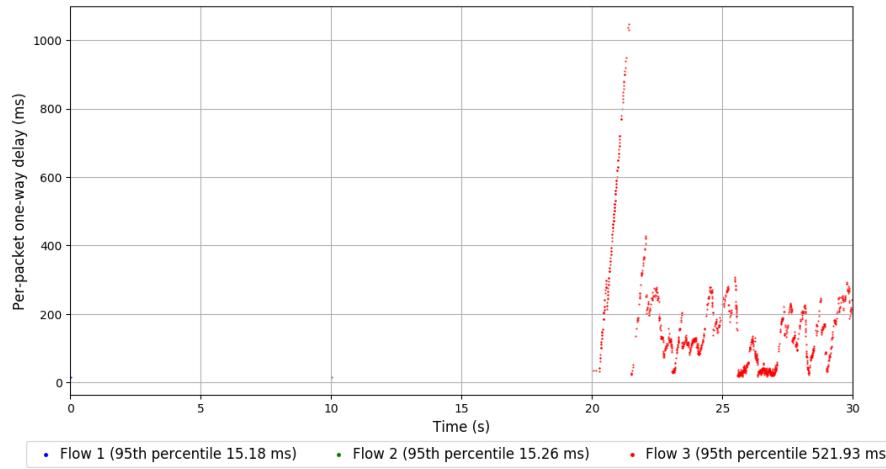
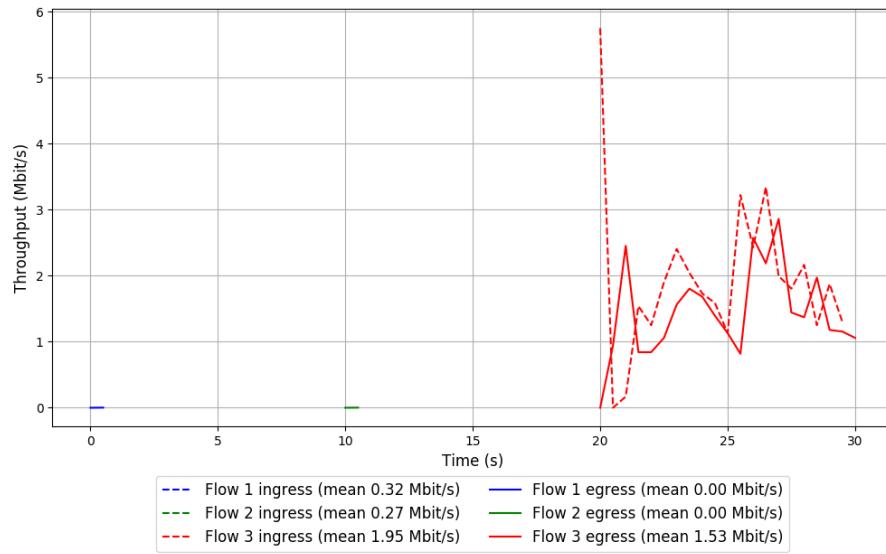


Run 2: Statistics of TaoVA-100x

```
Start at: 2019-01-21 09:59:12
End at: 2019-01-21 09:59:42
Local clock offset: 0.332 ms
Remote clock offset: -3.097 ms

# Below is generated by plot.py at 2019-01-21 10:25:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.51 Mbit/s
95th percentile per-packet one-way delay: 521.928 ms
Loss rate: 22.21%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 15.178 ms
Loss rate: 95.92%
-- Flow 2:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 15.262 ms
Loss rate: 95.92%
-- Flow 3:
Average throughput: 1.53 Mbit/s
95th percentile per-packet one-way delay: 521.928 ms
Loss rate: 22.01%
```

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

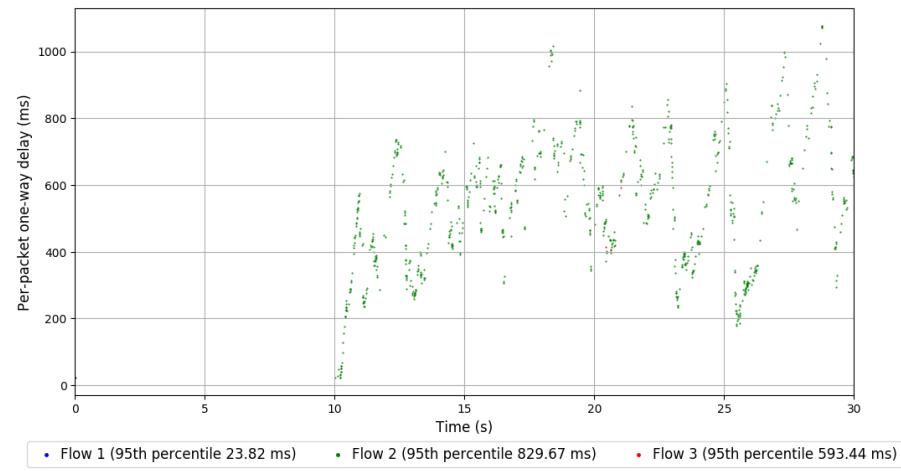
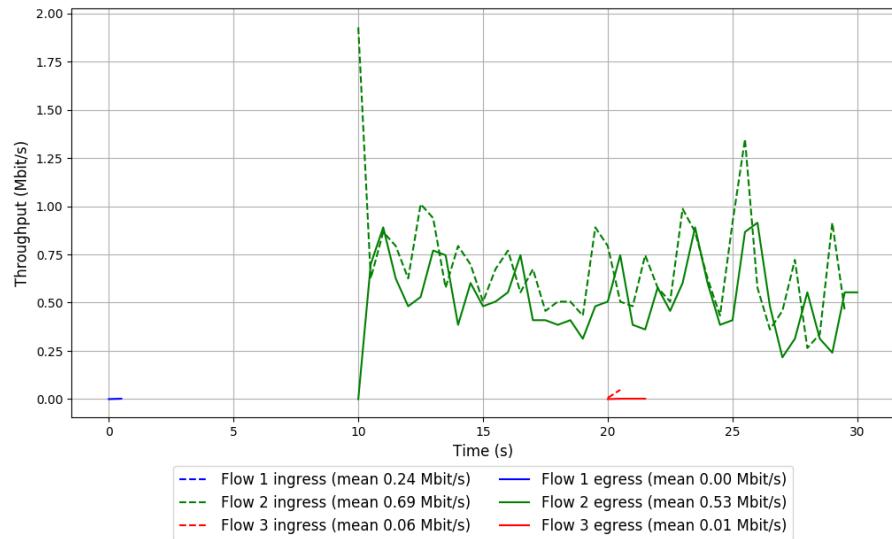


Run 3: Statistics of TaoVA-100x

```
Start at: 2019-01-21 10:23:32
End at: 2019-01-21 10:24:02
Local clock offset: -1.244 ms
Remote clock offset: -3.881 ms

# Below is generated by plot.py at 2019-01-21 10:25:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.36 Mbit/s
95th percentile per-packet one-way delay: 824.467 ms
Loss rate: 23.19%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 23.816 ms
Loss rate: 95.92%
-- Flow 2:
Average throughput: 0.53 Mbit/s
95th percentile per-packet one-way delay: 829.671 ms
Loss rate: 22.93%
-- Flow 3:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 593.436 ms
Loss rate: 88.68%
```

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

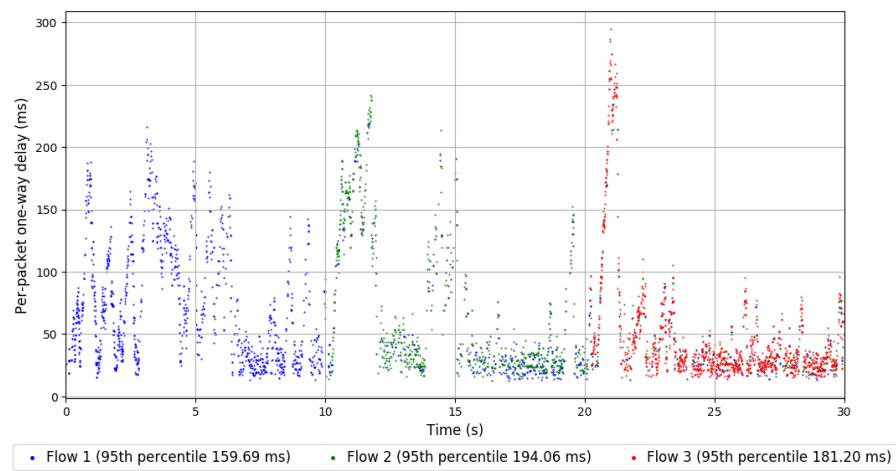
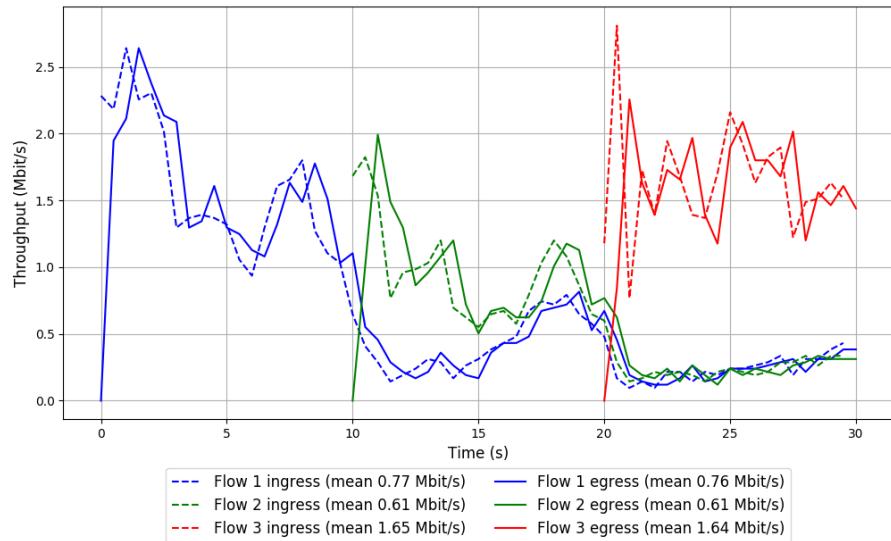


Run 1: Statistics of TCP Vegas

```
Start at: 2019-01-21 09:13:55
End at: 2019-01-21 09:14:25
Local clock offset: -5.857 ms
Remote clock offset: -9.005 ms

# Below is generated by plot.py at 2019-01-21 10:26:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.72 Mbit/s
95th percentile per-packet one-way delay: 173.561 ms
Loss rate: 0.28%
-- Flow 1:
Average throughput: 0.76 Mbit/s
95th percentile per-packet one-way delay: 159.693 ms
Loss rate: 0.10%
-- Flow 2:
Average throughput: 0.61 Mbit/s
95th percentile per-packet one-way delay: 194.065 ms
Loss rate: 0.29%
-- Flow 3:
Average throughput: 1.64 Mbit/s
95th percentile per-packet one-way delay: 181.196 ms
Loss rate: 0.51%
```

Run 1: Report of TCP Vegas — Data Link

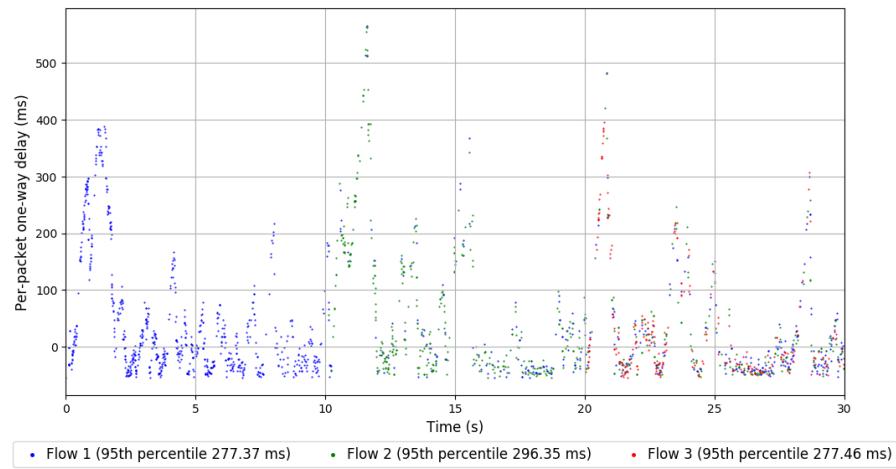
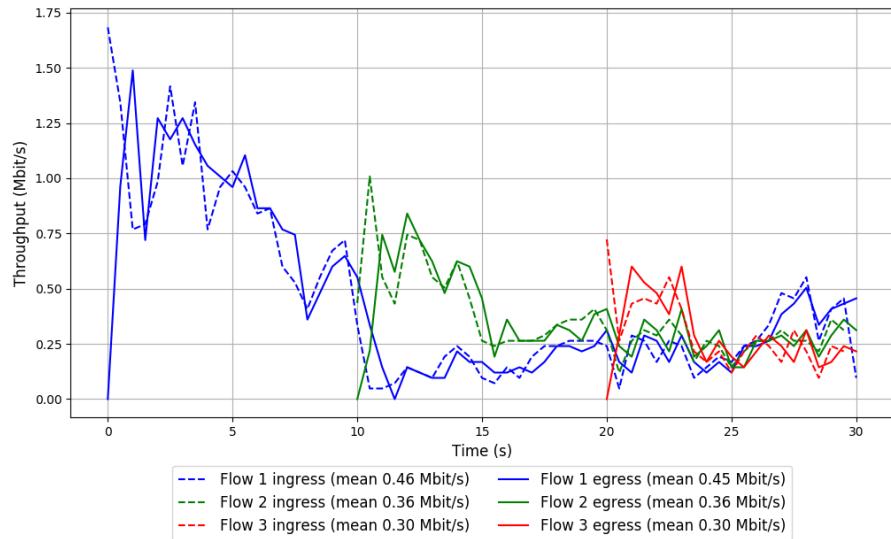


Run 2: Statistics of TCP Vegas

```
Start at: 2019-01-21 09:38:17
End at: 2019-01-21 09:38:47
Local clock offset: -0.379 ms
Remote clock offset: -75.344 ms

# Below is generated by plot.py at 2019-01-21 10:26:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.79 Mbit/s
95th percentile per-packet one-way delay: 278.108 ms
Loss rate: 0.91%
-- Flow 1:
Average throughput: 0.45 Mbit/s
95th percentile per-packet one-way delay: 277.365 ms
Loss rate: 1.05%
-- Flow 2:
Average throughput: 0.36 Mbit/s
95th percentile per-packet one-way delay: 296.352 ms
Loss rate: 0.67%
-- Flow 3:
Average throughput: 0.30 Mbit/s
95th percentile per-packet one-way delay: 277.465 ms
Loss rate: 0.80%
```

Run 2: Report of TCP Vegas — Data Link

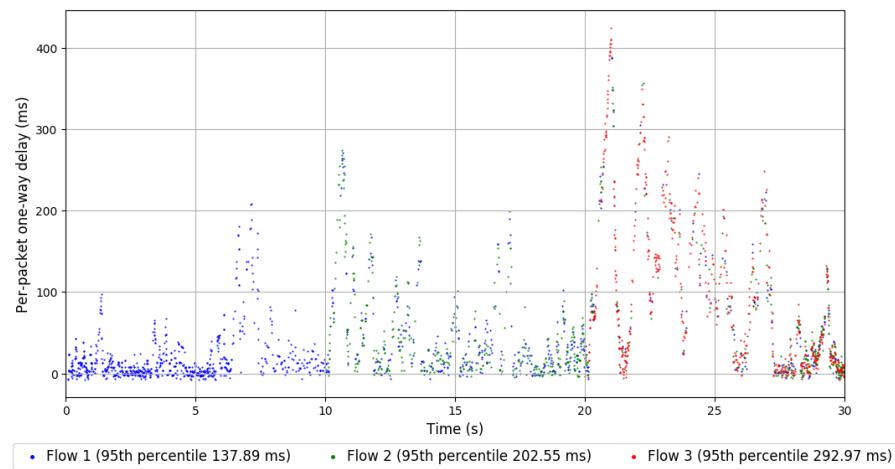
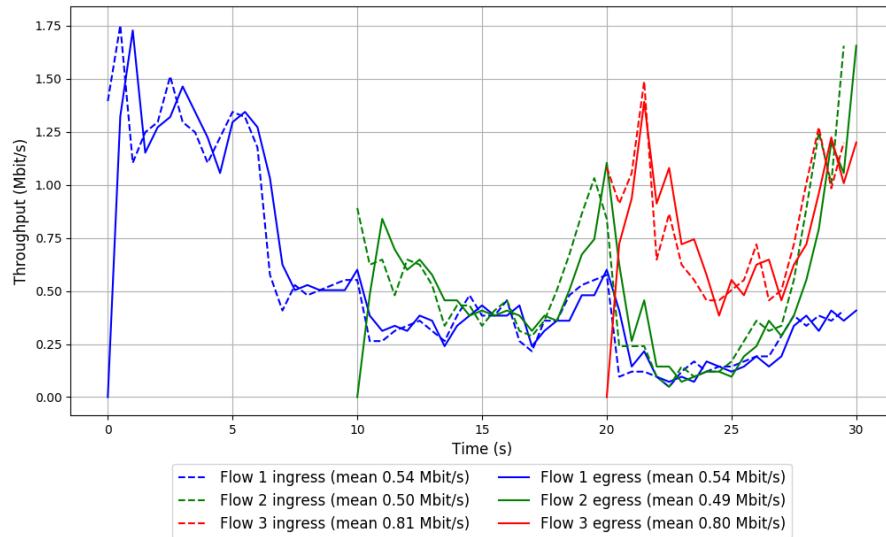


Run 3: Statistics of TCP Vegas

```
Start at: 2019-01-21 10:02:41
End at: 2019-01-21 10:03:11
Local clock offset: -1.355 ms
Remote clock offset: -27.001 ms

# Below is generated by plot.py at 2019-01-21 10:26:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.14 Mbit/s
95th percentile per-packet one-way delay: 220.806 ms
Loss rate: 0.49%
-- Flow 1:
Average throughput: 0.54 Mbit/s
95th percentile per-packet one-way delay: 137.889 ms
Loss rate: 0.15%
-- Flow 2:
Average throughput: 0.49 Mbit/s
95th percentile per-packet one-way delay: 202.553 ms
Loss rate: 0.97%
-- Flow 3:
Average throughput: 0.80 Mbit/s
95th percentile per-packet one-way delay: 292.973 ms
Loss rate: 0.60%
```

Run 3: Report of TCP Vegas — Data Link

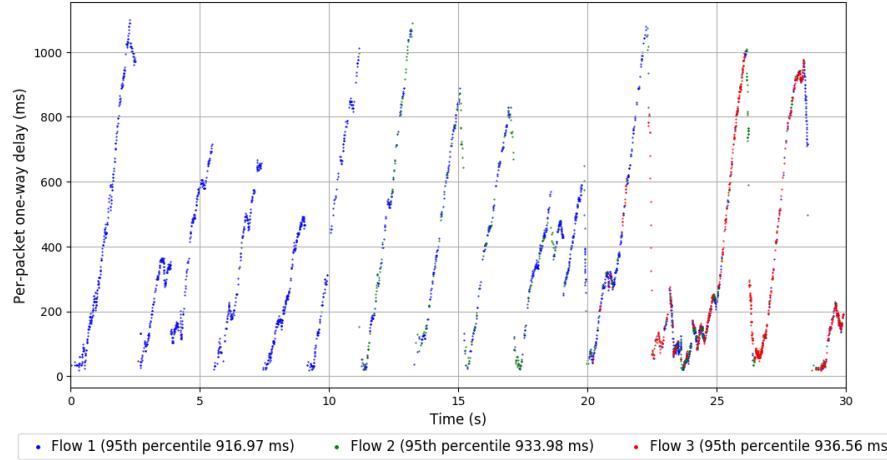
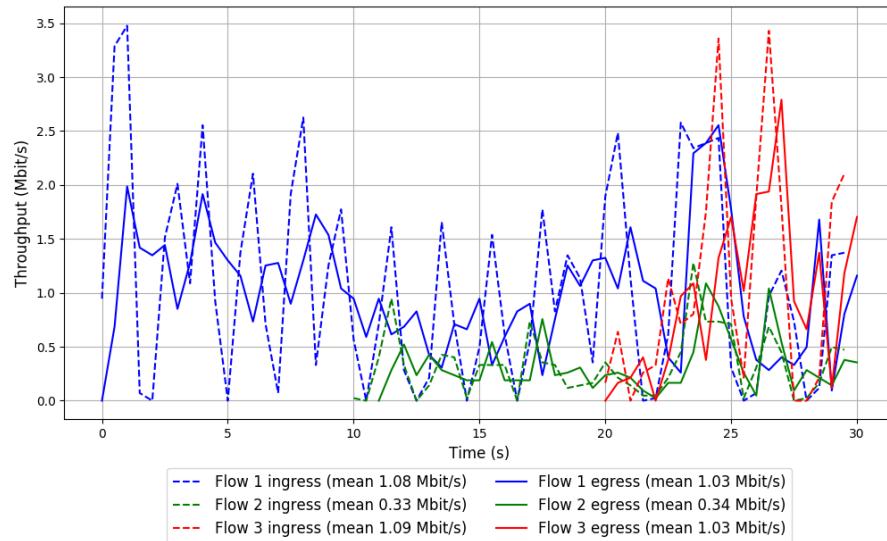


Run 1: Statistics of Verus

```
Start at: 2019-01-21 09:22:01
End at: 2019-01-21 09:22:31
Local clock offset: -0.878 ms
Remote clock offset: -2.006 ms

# Below is generated by plot.py at 2019-01-21 10:26:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.59 Mbit/s
95th percentile per-packet one-way delay: 928.918 ms
Loss rate: 4.49%
-- Flow 1:
Average throughput: 1.03 Mbit/s
95th percentile per-packet one-way delay: 916.974 ms
Loss rate: 4.15%
-- Flow 2:
Average throughput: 0.34 Mbit/s
95th percentile per-packet one-way delay: 933.983 ms
Loss rate: 3.25%
-- Flow 3:
Average throughput: 1.03 Mbit/s
95th percentile per-packet one-way delay: 936.557 ms
Loss rate: 6.24%
```

Run 1: Report of Verus — Data Link

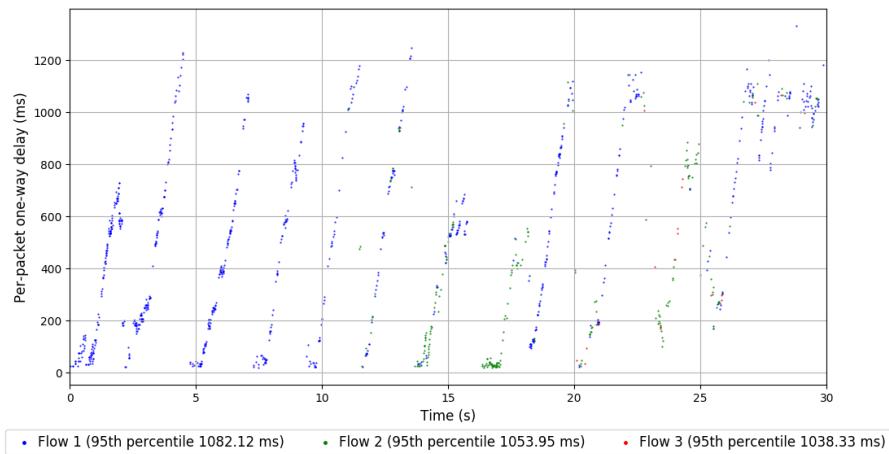
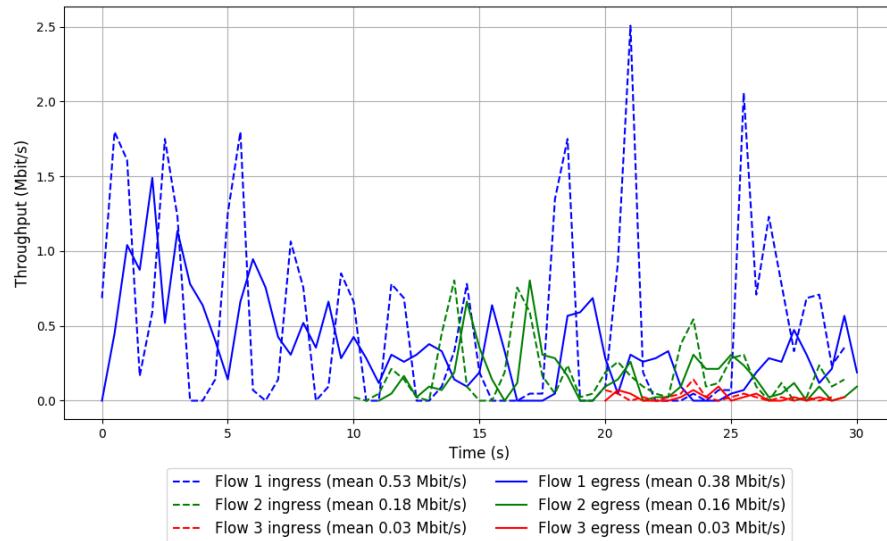


Run 2: Statistics of Verus

```
Start at: 2019-01-21 09:46:25
End at: 2019-01-21 09:46:55
Local clock offset: 0.697 ms
Remote clock offset: -2.624 ms

# Below is generated by plot.py at 2019-01-21 10:26:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.48 Mbit/s
95th percentile per-packet one-way delay: 1073.741 ms
Loss rate: 26.82%
-- Flow 1:
Average throughput: 0.38 Mbit/s
95th percentile per-packet one-way delay: 1082.116 ms
Loss rate: 29.31%
-- Flow 2:
Average throughput: 0.16 Mbit/s
95th percentile per-packet one-way delay: 1053.954 ms
Loss rate: 16.72%
-- Flow 3:
Average throughput: 0.03 Mbit/s
95th percentile per-packet one-way delay: 1038.334 ms
Loss rate: 13.04%
```

Run 2: Report of Verus — Data Link

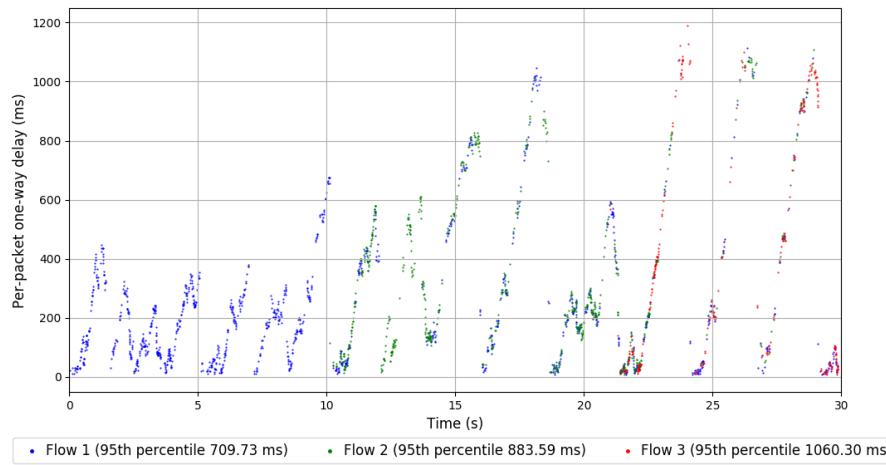
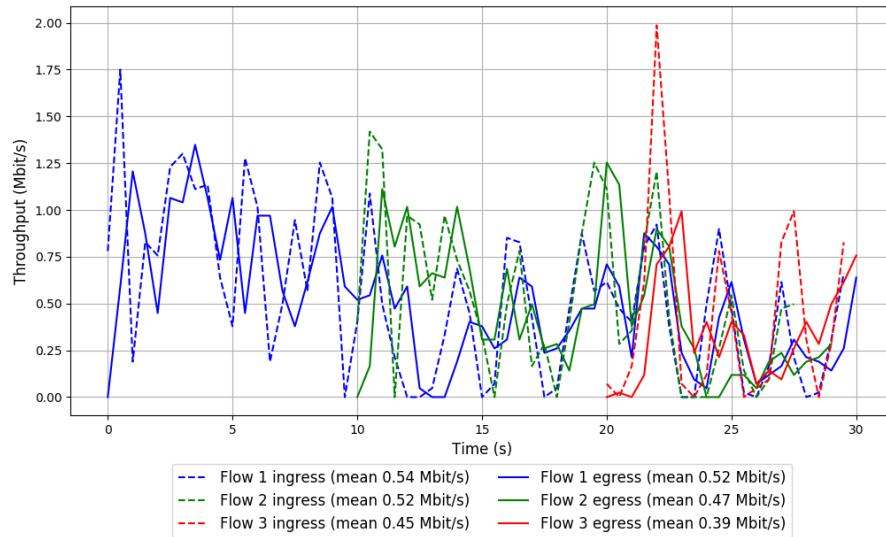


Run 3: Statistics of Verus

```
Start at: 2019-01-21 10:10:48
End at: 2019-01-21 10:11:18
Local clock offset: 1.305 ms
Remote clock offset: -11.801 ms

# Below is generated by plot.py at 2019-01-21 10:26:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.94 Mbit/s
95th percentile per-packet one-way delay: 926.941 ms
Loss rate: 5.91%
-- Flow 1:
Average throughput: 0.52 Mbit/s
95th percentile per-packet one-way delay: 709.729 ms
Loss rate: 3.52%
-- Flow 2:
Average throughput: 0.47 Mbit/s
95th percentile per-packet one-way delay: 883.589 ms
Loss rate: 5.46%
-- Flow 3:
Average throughput: 0.39 Mbit/s
95th percentile per-packet one-way delay: 1060.301 ms
Loss rate: 15.72%
```

Run 3: Report of Verus — Data Link

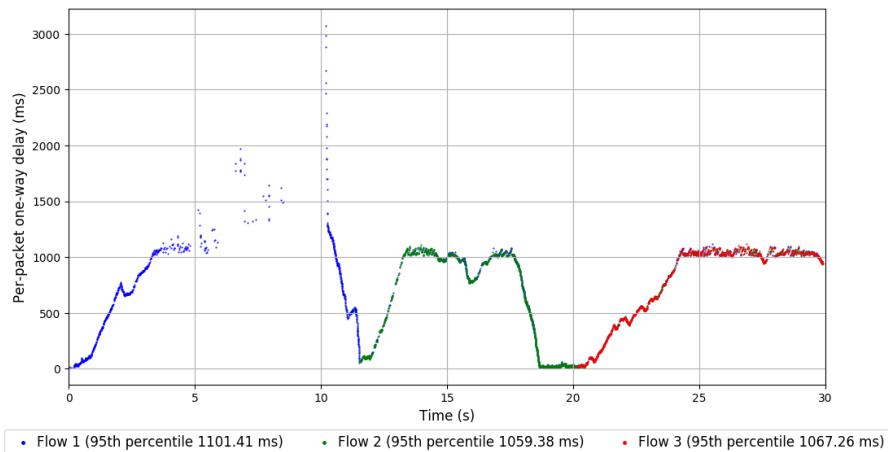
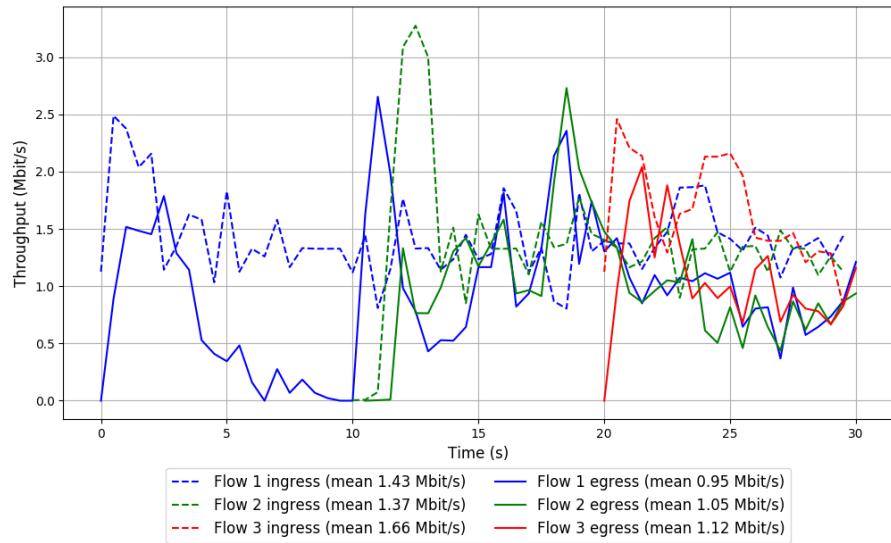


Run 1: Statistics of PCC-Vivace

```
Start at: 2019-01-21 09:12:40
End at: 2019-01-21 09:13:10
Local clock offset: 0.015 ms
Remote clock offset: -4.151 ms

# Below is generated by plot.py at 2019-01-21 10:26:07
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.99 Mbit/s
95th percentile per-packet one-way delay: 1074.713 ms
Loss rate: 31.12%
-- Flow 1:
Average throughput: 0.95 Mbit/s
95th percentile per-packet one-way delay: 1101.408 ms
Loss rate: 33.55%
-- Flow 2:
Average throughput: 1.05 Mbit/s
95th percentile per-packet one-way delay: 1059.385 ms
Loss rate: 26.21%
-- Flow 3:
Average throughput: 1.12 Mbit/s
95th percentile per-packet one-way delay: 1067.255 ms
Loss rate: 32.94%
```

Run 1: Report of PCC-Vivace — Data Link

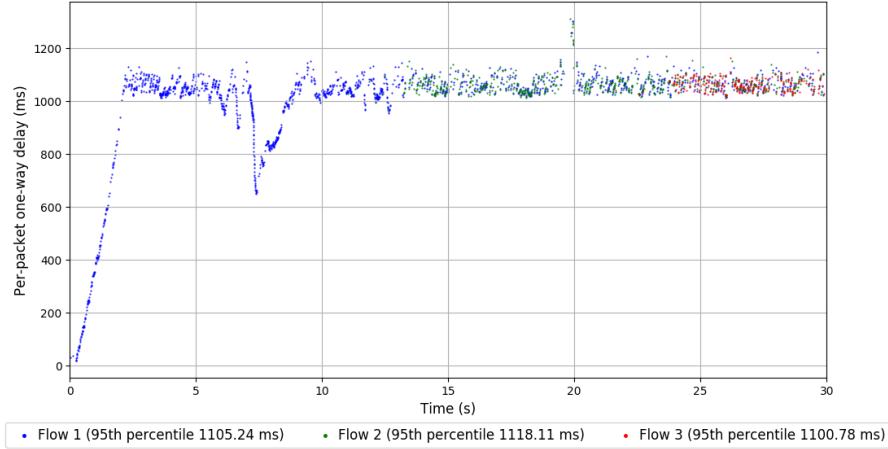
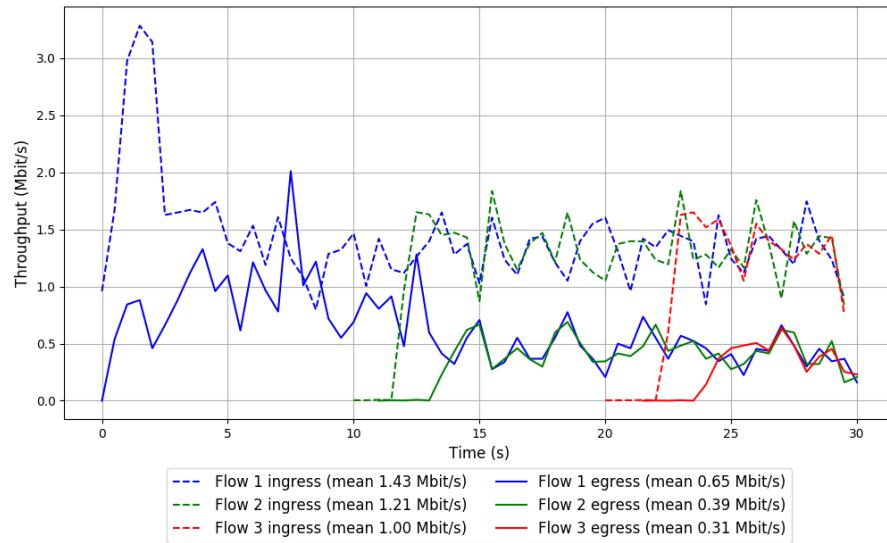


Run 2: Statistics of PCC-Vivace

```
Start at: 2019-01-21 09:37:07
End at: 2019-01-21 09:37:37
Local clock offset: -0.869 ms
Remote clock offset: -2.868 ms

# Below is generated by plot.py at 2019-01-21 10:26:07
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.98 Mbit/s
95th percentile per-packet one-way delay: 1106.457 ms
Loss rate: 62.07%
-- Flow 1:
Average throughput: 0.65 Mbit/s
95th percentile per-packet one-way delay: 1105.243 ms
Loss rate: 54.94%
-- Flow 2:
Average throughput: 0.39 Mbit/s
95th percentile per-packet one-way delay: 1118.113 ms
Loss rate: 69.74%
-- Flow 3:
Average throughput: 0.31 Mbit/s
95th percentile per-packet one-way delay: 1100.782 ms
Loss rate: 74.24%
```

Run 2: Report of PCC-Vivace — Data Link

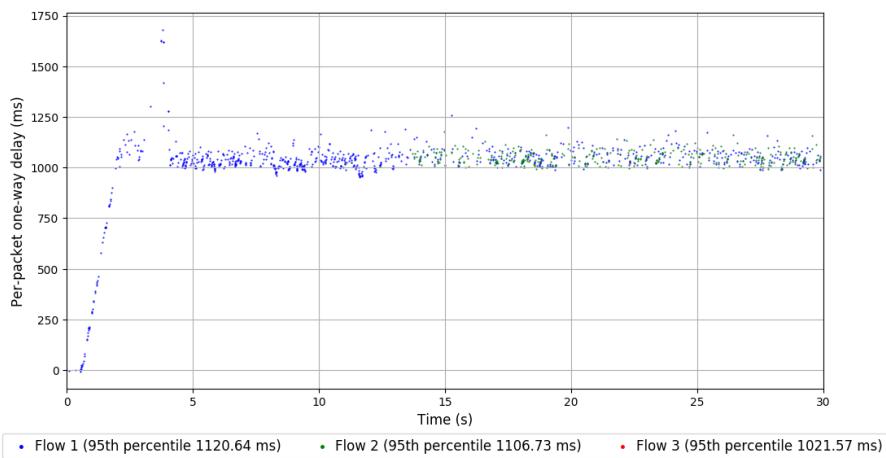
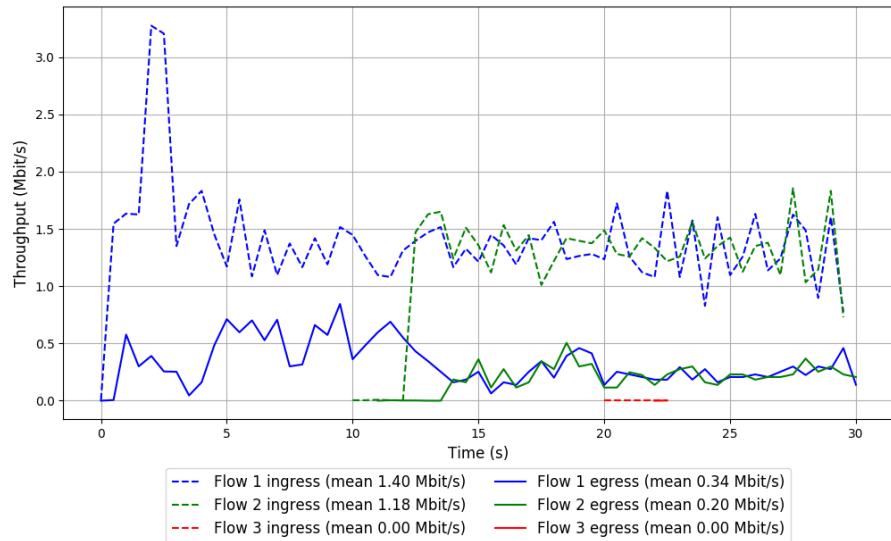


Run 3: Statistics of PCC-Vivace

```
Start at: 2019-01-21 10:01:31
End at: 2019-01-21 10:02:01
Local clock offset: -2.089 ms
Remote clock offset: -33.54 ms

# Below is generated by plot.py at 2019-01-21 10:26:07
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.46 Mbit/s
95th percentile per-packet one-way delay: 1117.807 ms
Loss rate: 78.73%
-- Flow 1:
Average throughput: 0.34 Mbit/s
95th percentile per-packet one-way delay: 1120.645 ms
Loss rate: 75.97%
-- Flow 2:
Average throughput: 0.20 Mbit/s
95th percentile per-packet one-way delay: 1106.733 ms
Loss rate: 83.62%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 1021.567 ms
Loss rate: 91.67%
```

Run 3: Report of PCC-Vivace — Data Link

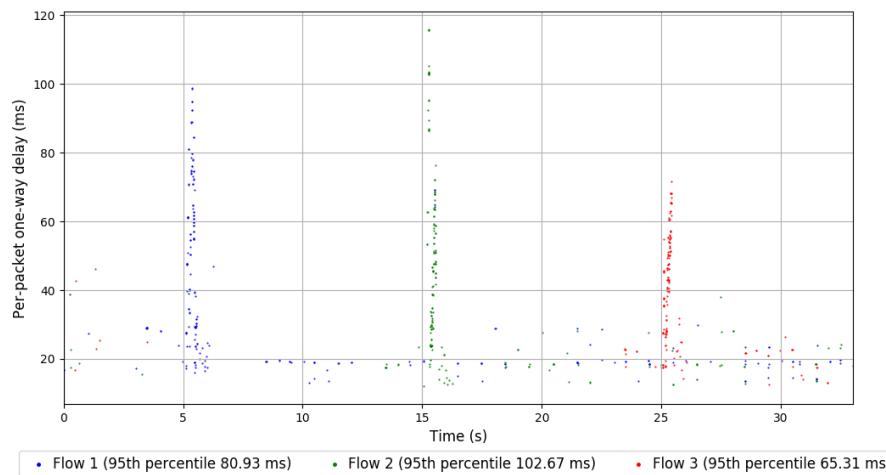
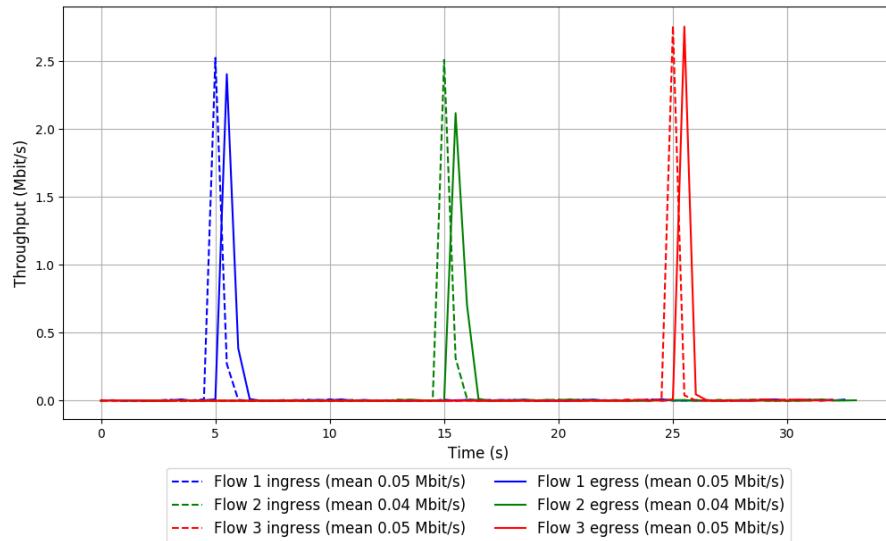


```
Run 1: Statistics of WebRTC media

Start at: 2019-01-21 09:23:11
End at: 2019-01-21 09:23:41
Local clock offset: 1.187 ms
Remote clock offset: -2.405 ms

# Below is generated by plot.py at 2019-01-21 10:26:07
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.13 Mbit/s
95th percentile per-packet one-way delay: 81.112 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 80.929 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.04 Mbit/s
95th percentile per-packet one-way delay: 102.673 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 65.307 ms
Loss rate: 0.00%
```

Run 1: Report of WebRTC media — Data Link

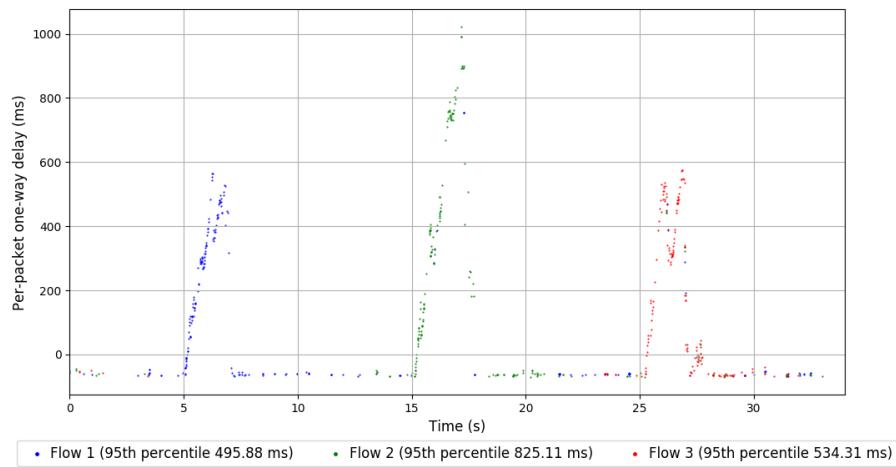
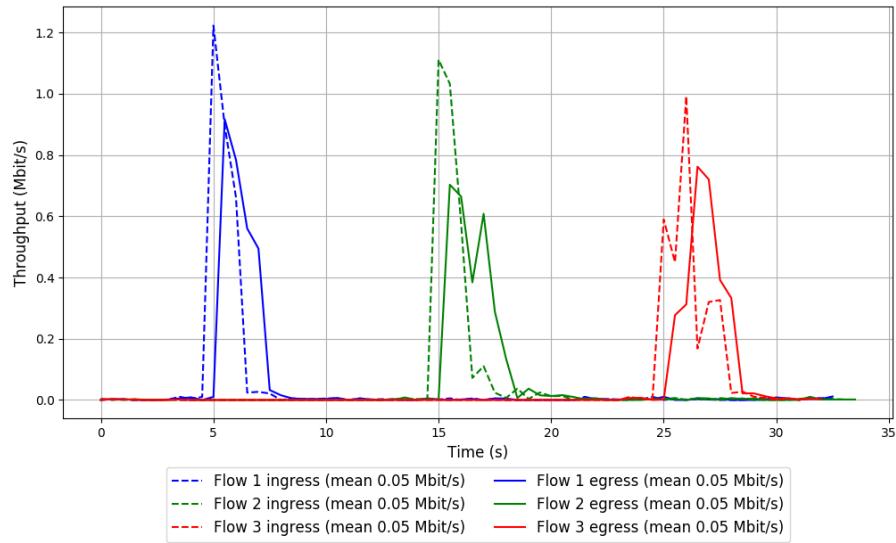


Run 2: Statistics of WebRTC media

```
Start at: 2019-01-21 09:47:35
End at: 2019-01-21 09:48:05
Local clock offset: 0.911 ms
Remote clock offset: -86.383 ms

# Below is generated by plot.py at 2019-01-21 10:26:07
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.13 Mbit/s
95th percentile per-packet one-way delay: 740.974 ms
Loss rate: 2.77%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 495.879 ms
Loss rate: 1.69%
-- Flow 2:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 825.108 ms
Loss rate: 4.64%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 534.308 ms
Loss rate: 1.89%
```

Run 2: Report of WebRTC media — Data Link



```
Run 3: Statistics of WebRTC media

Start at: 2019-01-21 10:11:58
End at: 2019-01-21 10:12:28
Local clock offset: 0.005 ms
Remote clock offset: -33.037 ms

# Below is generated by plot.py at 2019-01-21 10:26:07
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.13 Mbit/s
95th percentile per-packet one-way delay: 172.851 ms
Loss rate: 0.27%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 99.735 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.04 Mbit/s
95th percentile per-packet one-way delay: 133.011 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 243.052 ms
Loss rate: 0.83%
```

Run 3: Report of WebRTC media — Data Link

