

Pantheon Report

Generated at 2018-08-22 01:59:23 (UTC).
Data path: AWS Brazil 2 Ethernet (*local*) → Colombia ppp0 ppp0 (*remote*).
Repeated the test of 17 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.

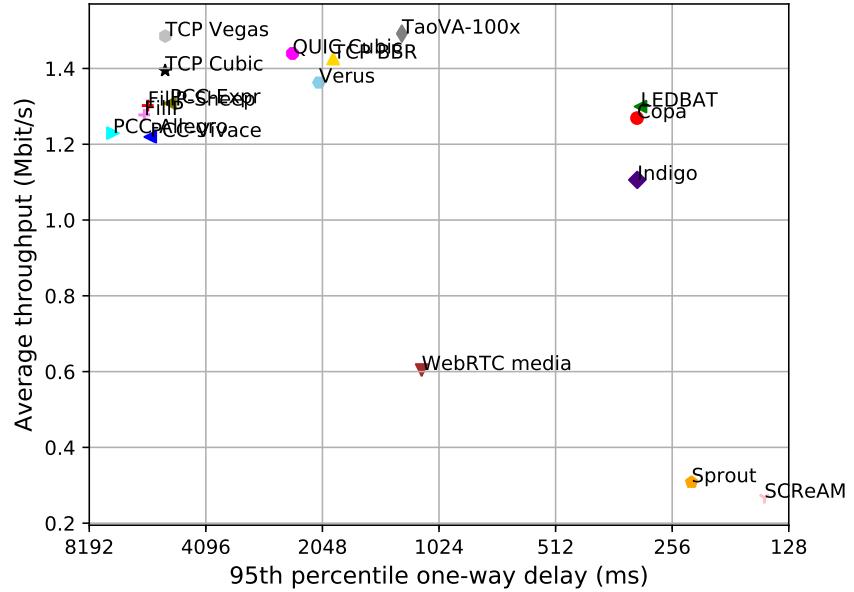
System info:

```
Linux 4.15.0-1017-aws
net.core.default_qdisc = fq_codel
net.core.rmem_default = 16777216
net.core.rmem_max = 33554432
net.core.wmem_default = 212992
net.core.wmem_max = 212992
net.ipv4.tcp_rmem = 4096 87380 6291456
net.ipv4.tcp_wmem = 4096 16384 4194304
```

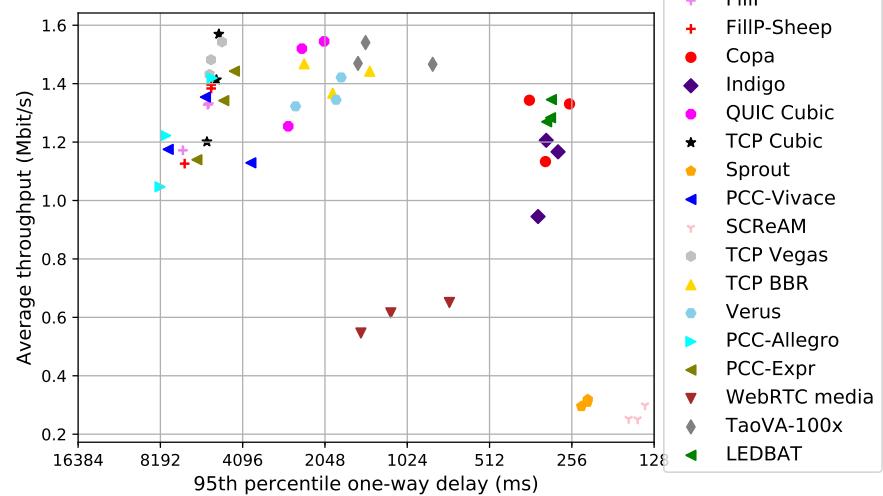
Git summary:

```
branch: master @ 7719b900495aa706f8452ab7d4a94dd562e9296e
third_party/fillp @ d47f4fa1b454a5e3c0537115c5a28436dbd4b834
third_party/fillp-sheep @ daed0c84f98531712514b2231f43ec6901114ffe
third_party/genericCC @ d0153f8e594aa89e93b032143cedbfe58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/pantheon-tunnel @ 6f038ed31259d366f9840f65b82cbe8f464b1b39
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
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 ppp0, 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 ppp0, 3 runs of 30s each per scheme
3 flows with 10s interval between flows



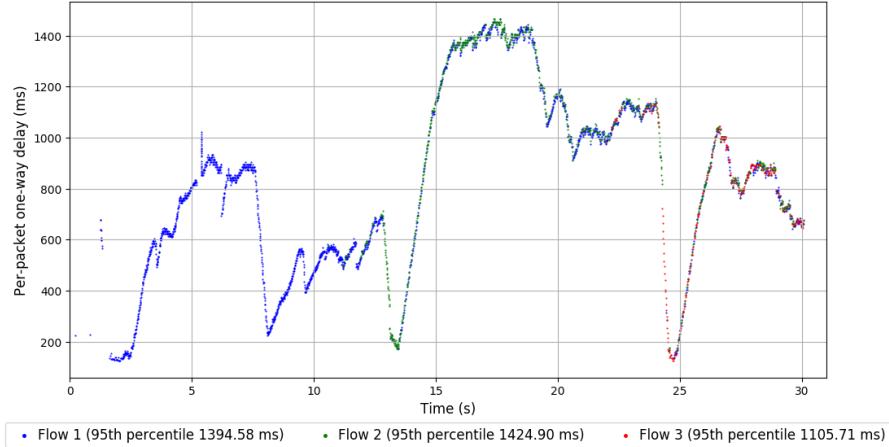
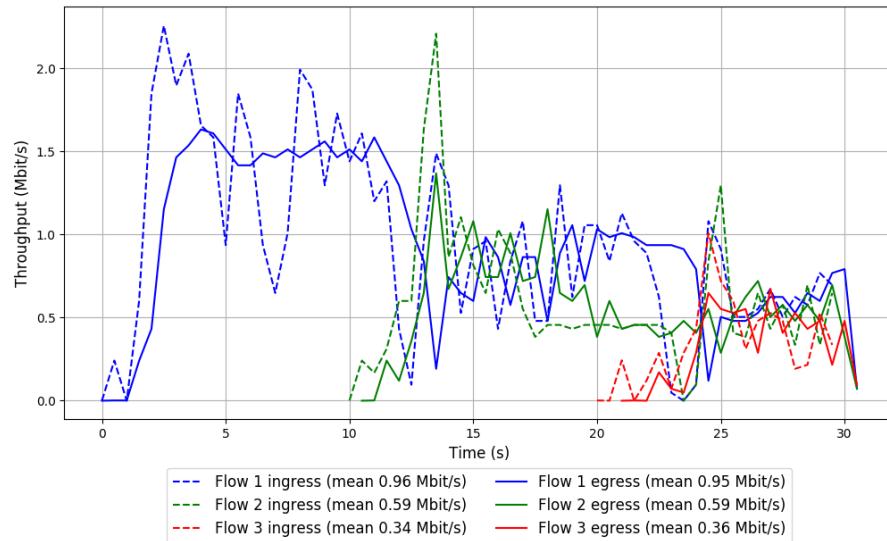
scheme	# runs	mean avg tput (Mbit/s)			mean 95th-%ile delay (ms)			mean loss rate (%)		
		flow 1	flow 2	flow 3	flow 1	flow 2	flow 3	flow 1	flow 2	flow 3
TCP BBR	3	0.92	0.63	0.31	1858.27	1934.31	1787.23	1.71	5.26	12.65
Copa		0.74	0.57	0.45	335.78	281.82	279.98	0.60	0.51	0.84
TCP Cubic		1.30	0.18	0.00	5191.50	4961.81	5261.93	20.32	32.43	76.73
FillP		1.28	0.01	0.00	5904.17	5424.76	5240.89	94.99	29.78	81.99
FillP-Sheep		0.88	0.74	0.00	5568.71	5846.97	5786.82	30.21	73.01	81.52
Indigo		0.59	0.51	0.53	295.05	288.84	435.15	0.12	0.24	0.79
LEDBAT		0.99	0.33	0.28	305.26	322.23	318.90	0.31	0.48	3.11
PCC-Allegro		1.23	0.00	0.00	7116.64	6372.17	5910.92	88.28	0.00	43.74
PCC-Expr		1.31	0.00	0.00	5072.50	4695.65	4618.92	77.71	73.05	81.10
QUIC Cubic		1.15	0.39	0.11	2333.62	2522.82	2513.16	5.83	14.59	44.16
SCReAM		0.08	0.17	0.22	140.92	150.89	150.98	0.13	0.32	0.43
Sprout		0.15	0.15	0.16	226.26	210.04	256.21	0.10	0.41	0.46
TaoVA-100x		0.88	0.63	0.61	785.46	882.82	1733.46	1.27	2.71	5.80
TCP Vegas		1.48	0.01	0.00	5213.89	5176.09	5090.62	22.49	50.95	43.71
Verus		1.35	0.01	0.01	2091.26	2084.66	1767.01	4.10	4.62	6.67
PCC-Vivace		0.91	0.49	0.00	5556.49	5727.51	5460.67	30.82	43.38	44.52
WebRTC media		0.37	0.17	0.07	1039.63	1154.70	1034.37	0.01	0.11	0.76

Run 1: Statistics of TCP BBR

```
Start at: 2018-08-22 01:08:47
End at: 2018-08-22 01:09:17
Local clock offset: -13.89 ms
Remote clock offset: 6.967 ms

# Below is generated by plot.py at 2018-08-22 01:58:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.44 Mbit/s
95th percentile per-packet one-way delay: 1404.815 ms
Loss rate: 2.23%
-- Flow 1:
Average throughput: 0.95 Mbit/s
95th percentile per-packet one-way delay: 1394.583 ms
Loss rate: 1.38%
-- Flow 2:
Average throughput: 0.59 Mbit/s
95th percentile per-packet one-way delay: 1424.899 ms
Loss rate: 3.35%
-- Flow 3:
Average throughput: 0.36 Mbit/s
95th percentile per-packet one-way delay: 1105.712 ms
Loss rate: 5.61%
```

Run 1: Report of TCP BBR — Data Link

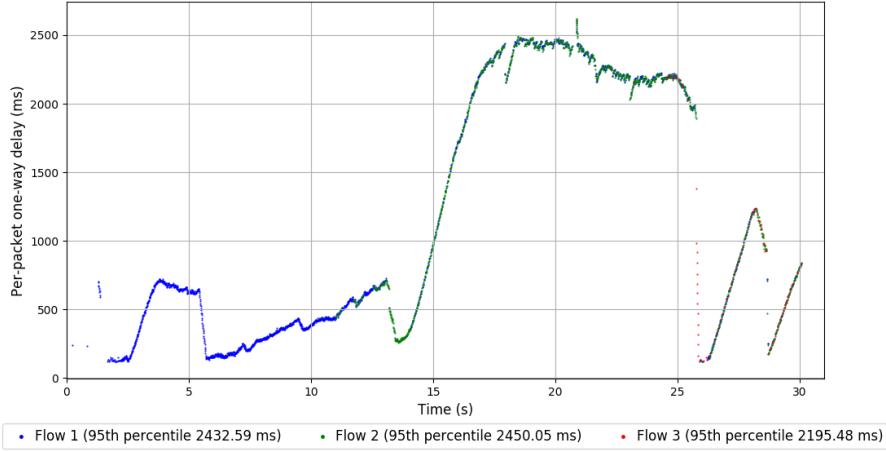
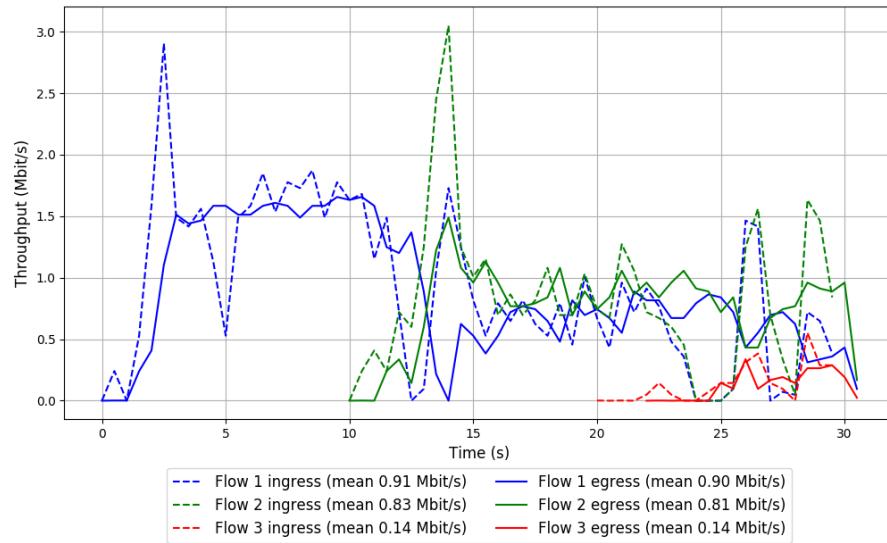


Run 2: Statistics of TCP BBR

```
Start at: 2018-08-22 01:29:11
End at: 2018-08-22 01:29:41
Local clock offset: -15.449 ms
Remote clock offset: 1.633 ms

# Below is generated by plot.py at 2018-08-22 01:58:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.47 Mbit/s
95th percentile per-packet one-way delay: 2439.786 ms
Loss rate: 2.82%
-- Flow 1:
Average throughput: 0.90 Mbit/s
95th percentile per-packet one-way delay: 2432.595 ms
Loss rate: 1.19%
-- Flow 2:
Average throughput: 0.81 Mbit/s
95th percentile per-packet one-way delay: 2450.048 ms
Loss rate: 4.36%
-- Flow 3:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 2195.481 ms
Loss rate: 17.07%
```

Run 2: Report of TCP BBR — Data Link

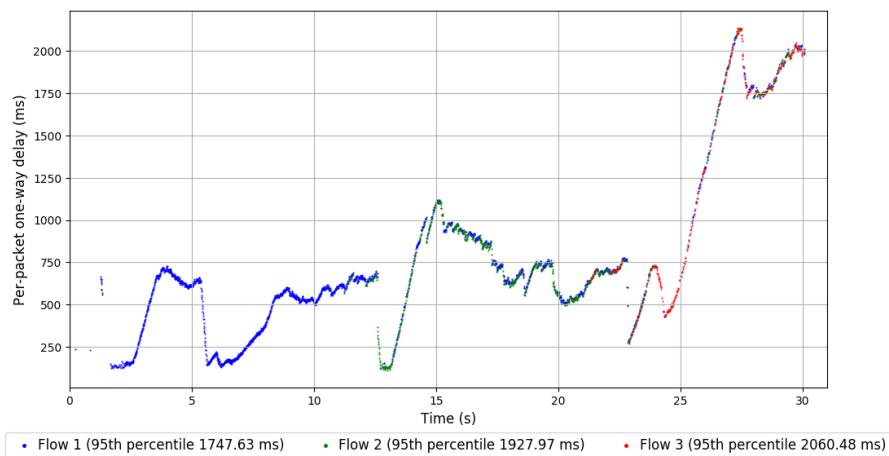
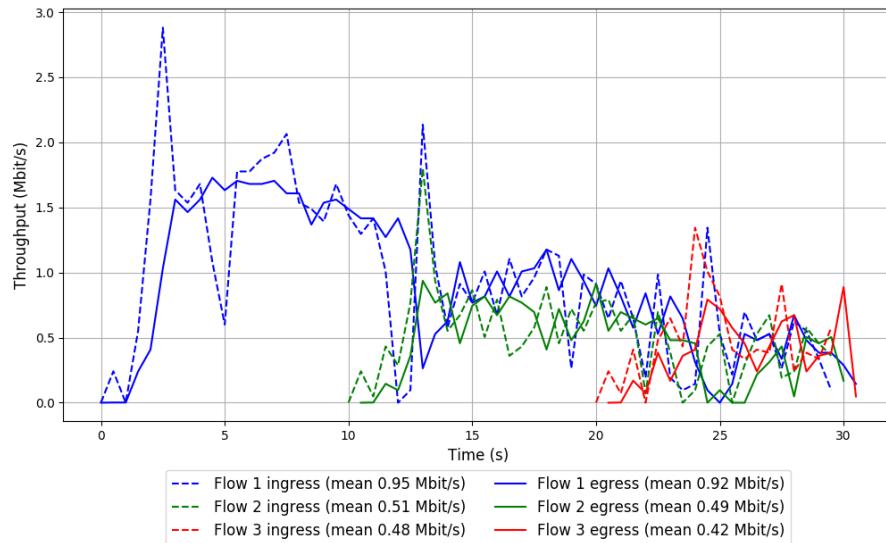


Run 3: Statistics of TCP BBR

```
Start at: 2018-08-22 01:49:36
End at: 2018-08-22 01:50:06
Local clock offset: -5.839 ms
Remote clock offset: 2.978 ms

# Below is generated by plot.py at 2018-08-22 01:58:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.37 Mbit/s
95th percentile per-packet one-way delay: 1918.434 ms
Loss rate: 5.24%
-- Flow 1:
Average throughput: 0.92 Mbit/s
95th percentile per-packet one-way delay: 1747.628 ms
Loss rate: 2.55%
-- Flow 2:
Average throughput: 0.49 Mbit/s
95th percentile per-packet one-way delay: 1927.969 ms
Loss rate: 8.08%
-- Flow 3:
Average throughput: 0.42 Mbit/s
95th percentile per-packet one-way delay: 2060.482 ms
Loss rate: 15.26%
```

Run 3: Report of TCP BBR — Data Link

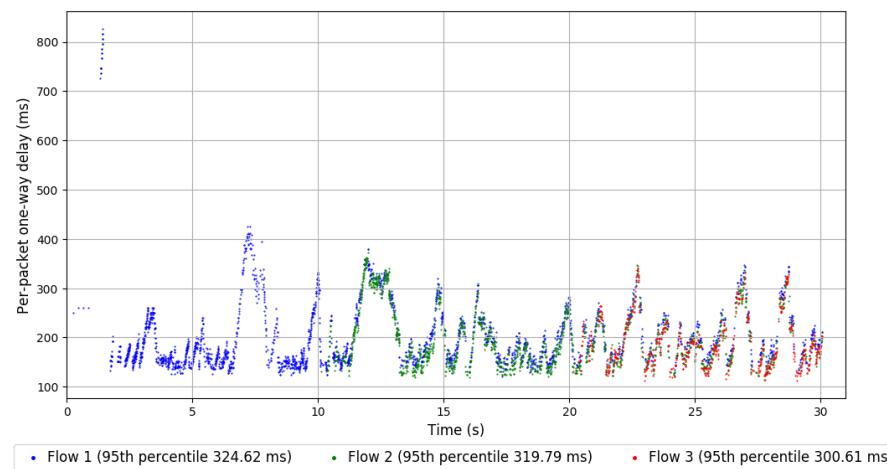
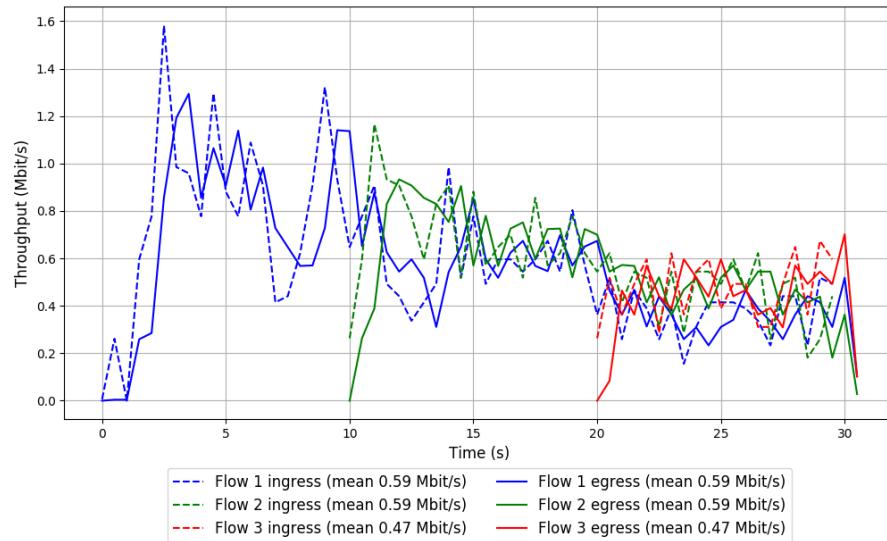


Run 1: Statistics of Copa

```
Start at: 2018-08-22 01:06:23
End at: 2018-08-22 01:06:53
Local clock offset: -13.621 ms
Remote clock offset: 4.742 ms

# Below is generated by plot.py at 2018-08-22 01:58:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.13 Mbit/s
95th percentile per-packet one-way delay: 319.651 ms
Loss rate: 0.72%
-- Flow 1:
Average throughput: 0.59 Mbit/s
95th percentile per-packet one-way delay: 324.623 ms
Loss rate: 0.74%
-- Flow 2:
Average throughput: 0.59 Mbit/s
95th percentile per-packet one-way delay: 319.786 ms
Loss rate: 0.65%
-- Flow 3:
Average throughput: 0.47 Mbit/s
95th percentile per-packet one-way delay: 300.613 ms
Loss rate: 0.83%
```

Run 1: Report of Copa — Data Link

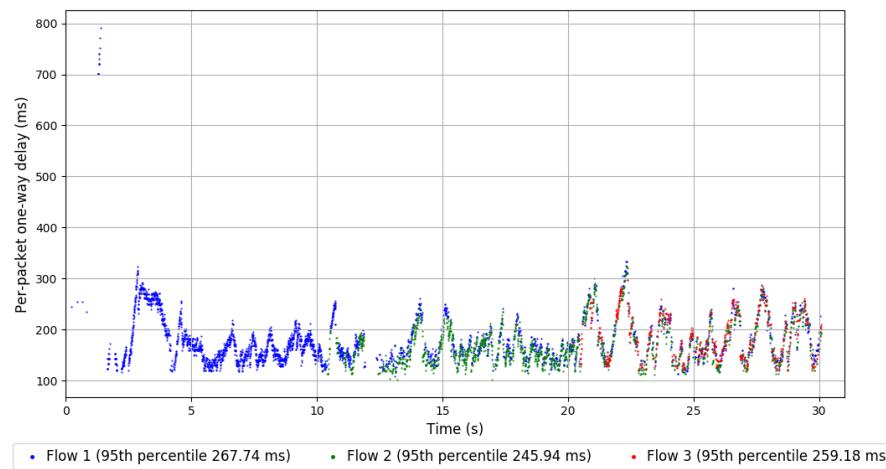
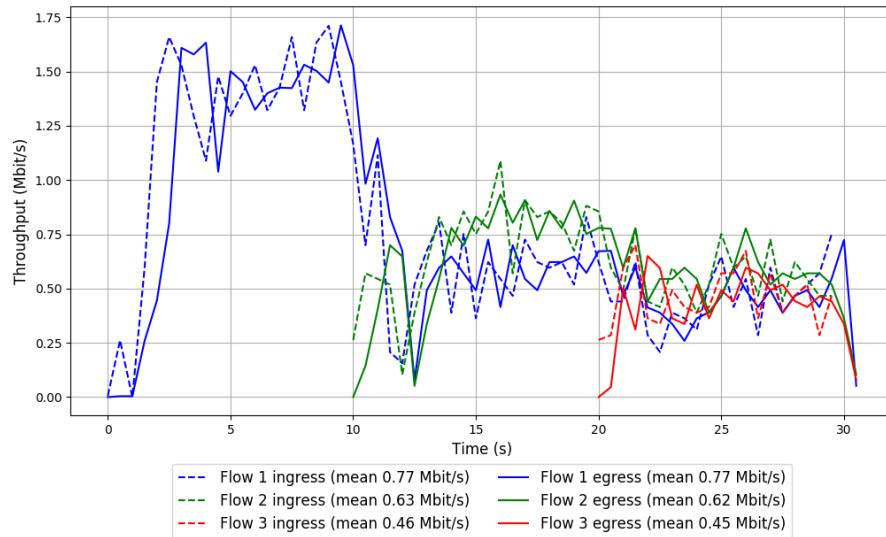


Run 2: Statistics of Copa

```
Start at: 2018-08-22 01:26:47
End at: 2018-08-22 01:27:17
Local clock offset: -14.463 ms
Remote clock offset: 1.29 ms

# Below is generated by plot.py at 2018-08-22 01:58:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.33 Mbit/s
95th percentile per-packet one-way delay: 261.027 ms
Loss rate: 0.71%
-- Flow 1:
Average throughput: 0.77 Mbit/s
95th percentile per-packet one-way delay: 267.740 ms
Loss rate: 0.56%
-- Flow 2:
Average throughput: 0.62 Mbit/s
95th percentile per-packet one-way delay: 245.942 ms
Loss rate: 0.62%
-- Flow 3:
Average throughput: 0.45 Mbit/s
95th percentile per-packet one-way delay: 259.177 ms
Loss rate: 1.68%
```

Run 2: Report of Copa — Data Link

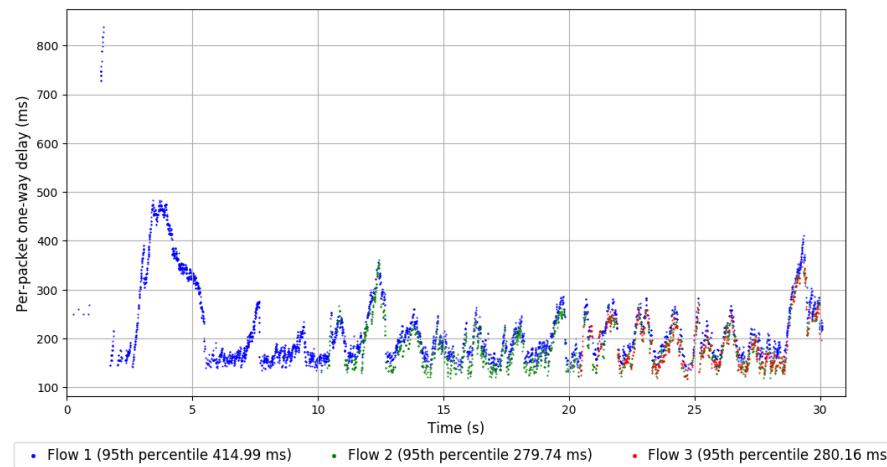
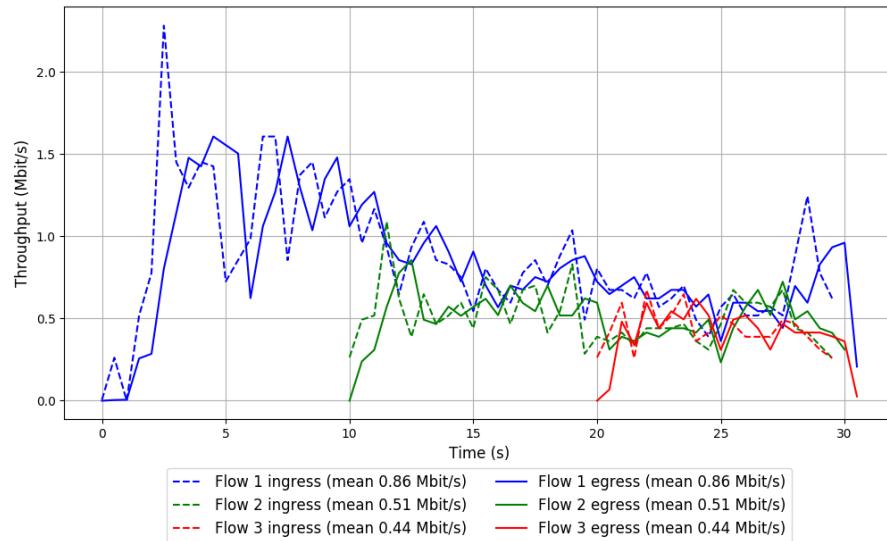


Run 3: Statistics of Copa

```
Start at: 2018-08-22 01:47:12
End at: 2018-08-22 01:47:42
Local clock offset: -6.91 ms
Remote clock offset: 7.887 ms

# Below is generated by plot.py at 2018-08-22 01:58:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.34 Mbit/s
95th percentile per-packet one-way delay: 365.943 ms
Loss rate: 0.39%
-- Flow 1:
Average throughput: 0.86 Mbit/s
95th percentile per-packet one-way delay: 414.990 ms
Loss rate: 0.50%
-- Flow 2:
Average throughput: 0.51 Mbit/s
95th percentile per-packet one-way delay: 279.737 ms
Loss rate: 0.26%
-- Flow 3:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 280.158 ms
Loss rate: 0.00%
```

Run 3: Report of Copa — Data Link

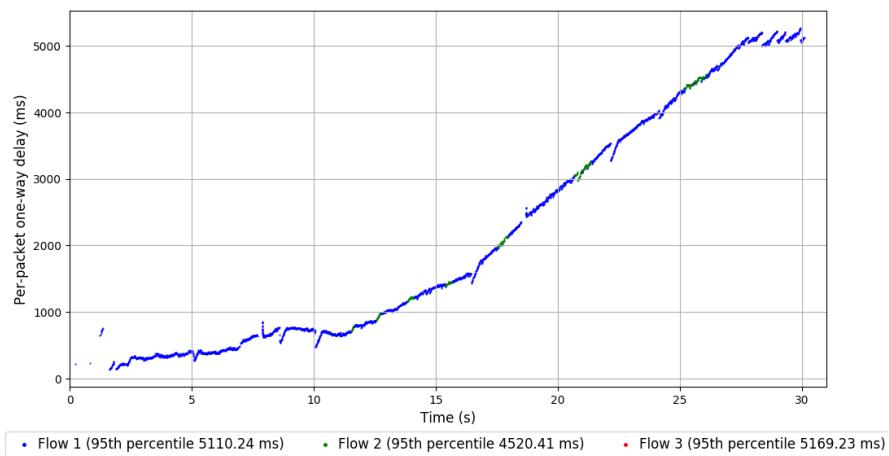
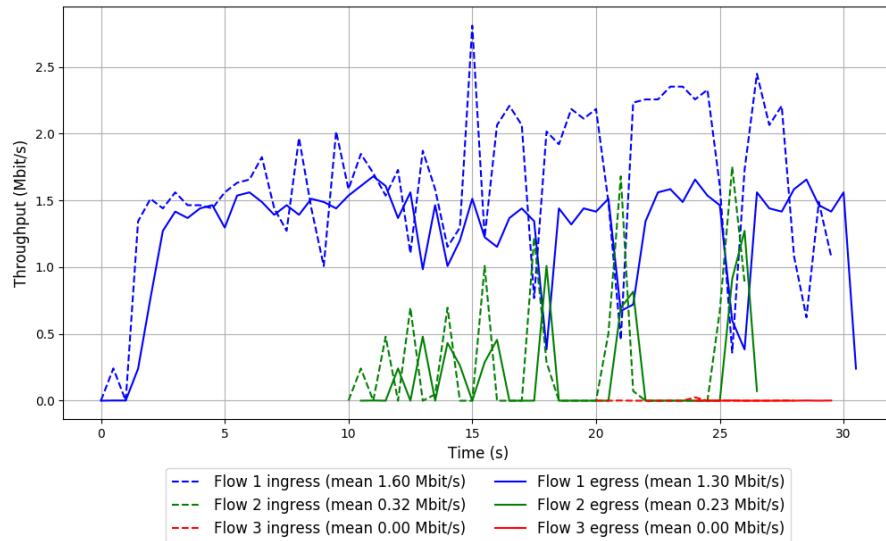


```
Run 1: Statistics of TCP Cubic
```

```
Start at: 2018-08-22 01:05:11
End at: 2018-08-22 01:05:41
Local clock offset: -11.972 ms
Remote clock offset: 6.907 ms

# Below is generated by plot.py at 2018-08-22 01:58:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.41 Mbit/s
95th percentile per-packet one-way delay: 5109.508 ms
Loss rate: 20.53%
-- Flow 1:
Average throughput: 1.30 Mbit/s
95th percentile per-packet one-way delay: 5110.238 ms
Loss rate: 19.24%
-- Flow 2:
Average throughput: 0.23 Mbit/s
95th percentile per-packet one-way delay: 4520.406 ms
Loss rate: 32.30%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 5169.225 ms
Loss rate: 82.43%
```

Run 1: Report of TCP Cubic — Data Link

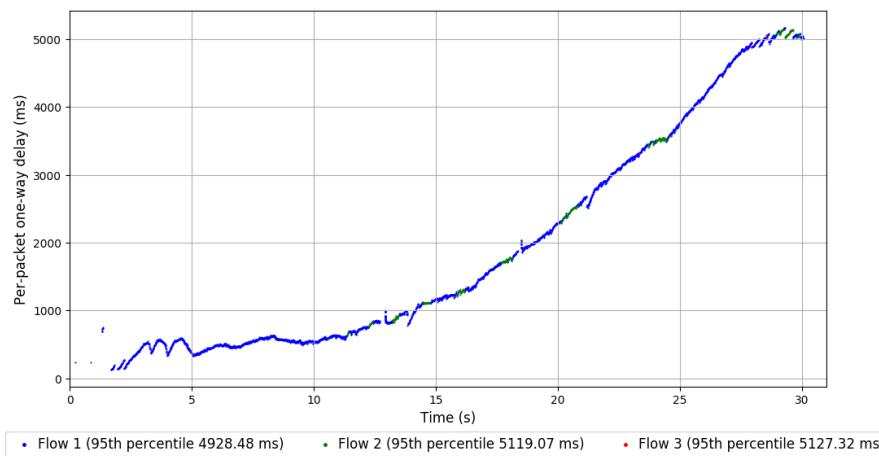
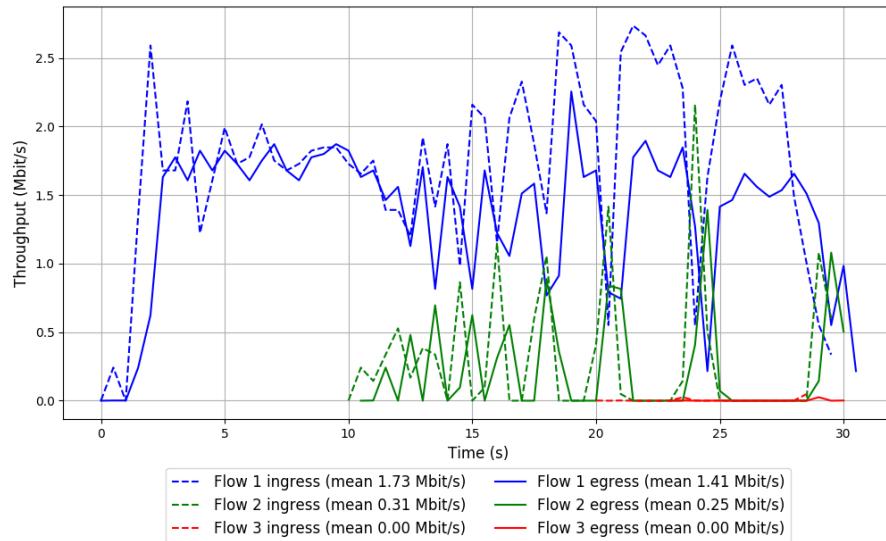


Run 2: Statistics of TCP Cubic

```
Start at: 2018-08-22 01:25:35
End at: 2018-08-22 01:26:05
Local clock offset: -14.368 ms
Remote clock offset: 1.214 ms

# Below is generated by plot.py at 2018-08-22 01:58:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.57 Mbit/s
95th percentile per-packet one-way delay: 5008.249 ms
Loss rate: 19.42%
-- Flow 1:
Average throughput: 1.41 Mbit/s
95th percentile per-packet one-way delay: 4928.477 ms
Loss rate: 19.02%
-- Flow 2:
Average throughput: 0.25 Mbit/s
95th percentile per-packet one-way delay: 5119.073 ms
Loss rate: 22.50%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 5127.323 ms
Loss rate: 61.79%
```

Run 2: Report of TCP Cubic — Data Link

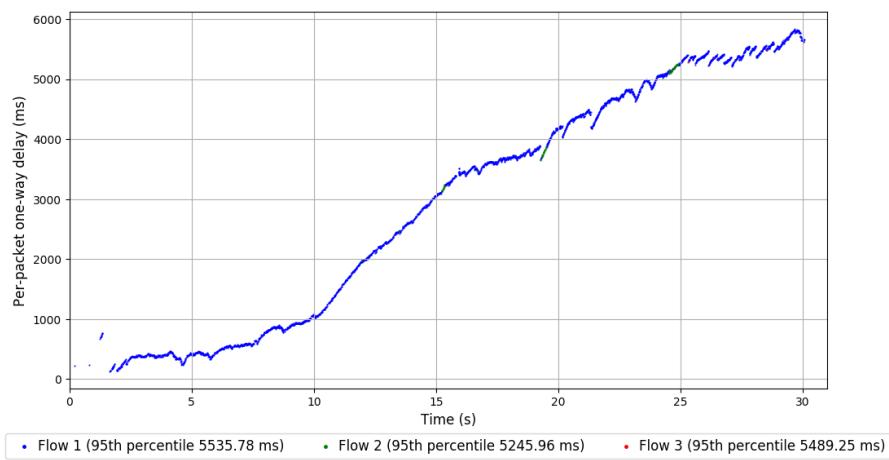
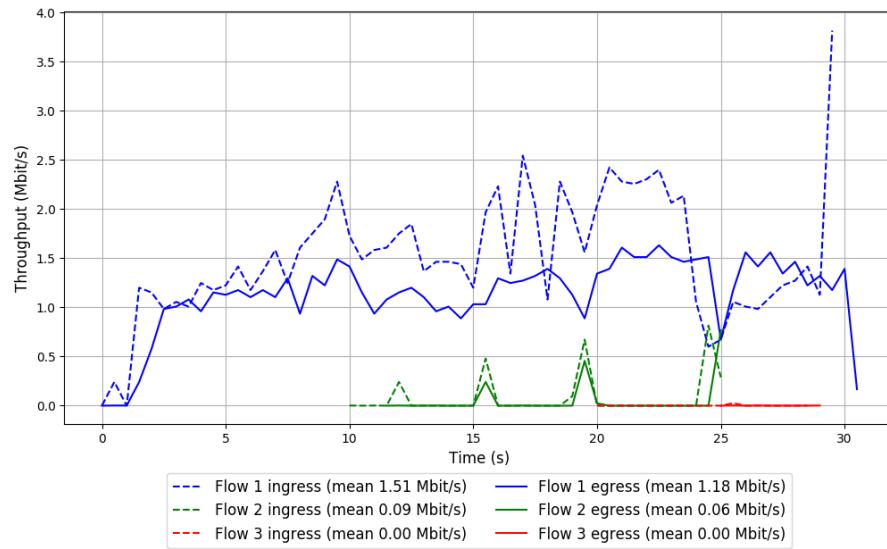


Run 3: Statistics of TCP Cubic

```
Start at: 2018-08-22 01:46:00
End at: 2018-08-22 01:46:30
Local clock offset: -7.434 ms
Remote clock offset: 1.835 ms

# Below is generated by plot.py at 2018-08-22 01:58:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.20 Mbit/s
95th percentile per-packet one-way delay: 5535.653 ms
Loss rate: 23.27%
-- Flow 1:
Average throughput: 1.18 Mbit/s
95th percentile per-packet one-way delay: 5535.780 ms
Loss rate: 22.70%
-- Flow 2:
Average throughput: 0.06 Mbit/s
95th percentile per-packet one-way delay: 5245.957 ms
Loss rate: 42.50%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 5489.248 ms
Loss rate: 85.96%
```

Run 3: Report of TCP Cubic — Data Link

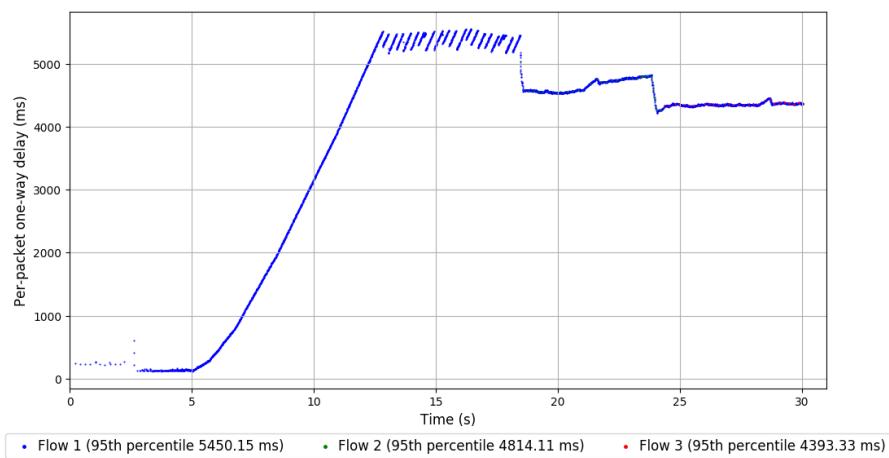
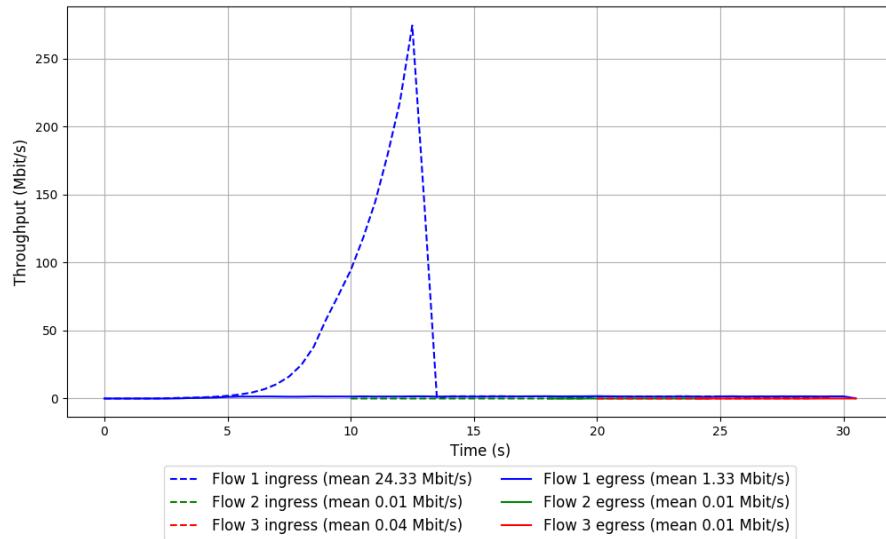


```
Run 1: Statistics of FillP

Start at: 2018-08-22 00:59:10
End at: 2018-08-22 00:59:40
Local clock offset: -12.875 ms
Remote clock offset: 1.721 ms

# Below is generated by plot.py at 2018-08-22 01:59:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.33 Mbit/s
95th percentile per-packet one-way delay: 5450.066 ms
Loss rate: 94.55%
-- Flow 1:
Average throughput: 1.33 Mbit/s
95th percentile per-packet one-way delay: 5450.148 ms
Loss rate: 94.56%
-- Flow 2:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 4814.106 ms
Loss rate: 25.29%
-- Flow 3:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 4393.326 ms
Loss rate: 92.02%
```

Run 1: Report of FillP — Data Link

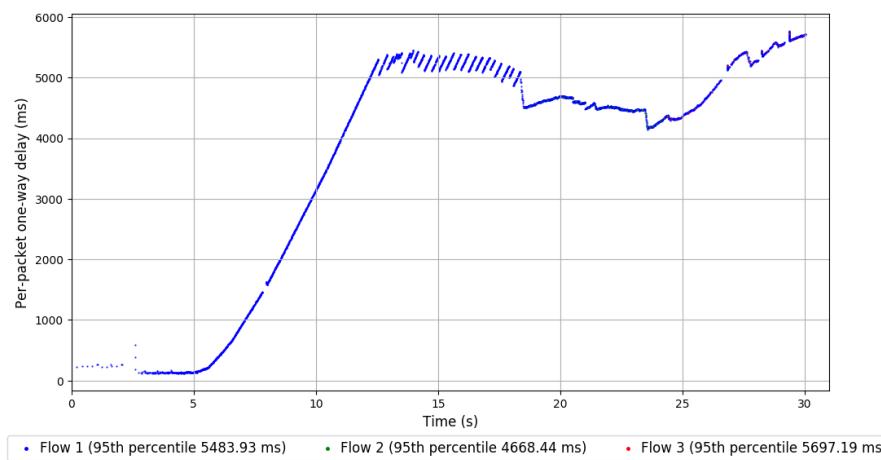
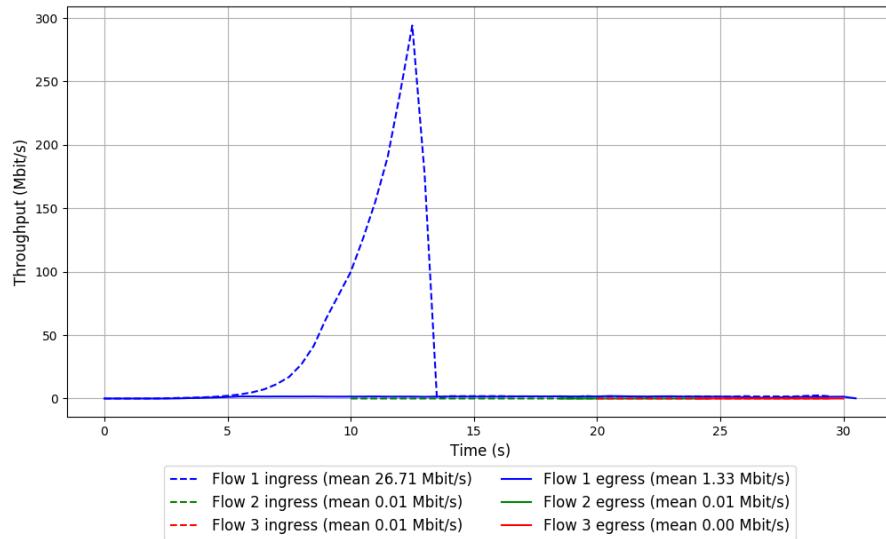


Run 2: Statistics of FillP

```
Start at: 2018-08-22 01:19:35
End at: 2018-08-22 01:20:05
Local clock offset: -13.93 ms
Remote clock offset: 4.87 ms

# Below is generated by plot.py at 2018-08-22 01:59:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.33 Mbit/s
95th percentile per-packet one-way delay: 5496.630 ms
Loss rate: 95.05%
-- Flow 1:
Average throughput: 1.33 Mbit/s
95th percentile per-packet one-way delay: 5483.934 ms
Loss rate: 95.06%
-- Flow 2:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 4668.440 ms
Loss rate: 31.59%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 5697.195 ms
Loss rate: 77.65%
```

Run 2: Report of FillP — Data Link

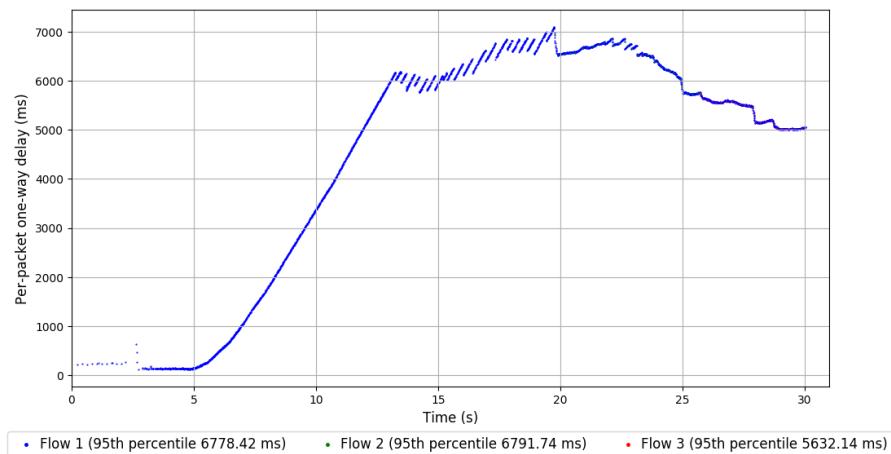
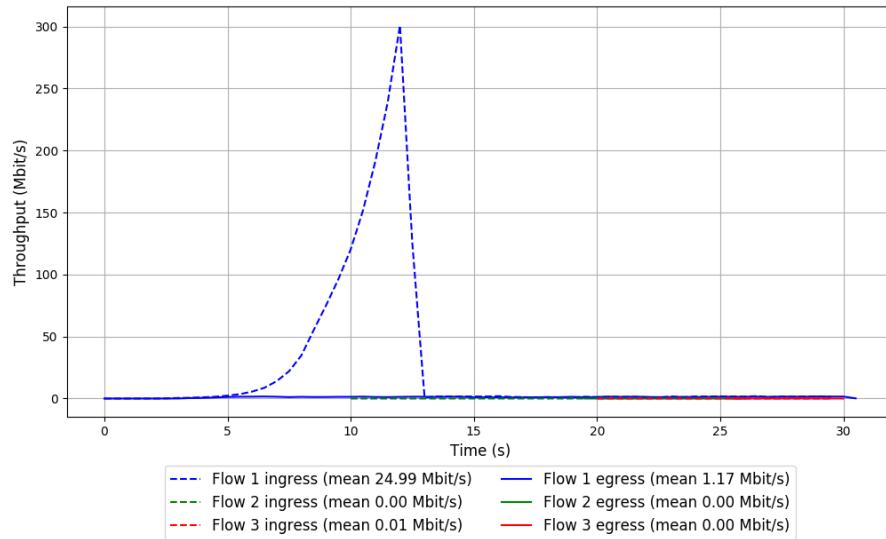


Run 3: Statistics of FillP

```
Start at: 2018-08-22 01:40:00
End at: 2018-08-22 01:40:30
Local clock offset: -12.098 ms
Remote clock offset: 5.546 ms

# Below is generated by plot.py at 2018-08-22 01:59:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.17 Mbit/s
95th percentile per-packet one-way delay: 6778.423 ms
Loss rate: 95.33%
-- Flow 1:
Average throughput: 1.17 Mbit/s
95th percentile per-packet one-way delay: 6778.423 ms
Loss rate: 95.34%
-- Flow 2:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 6791.738 ms
Loss rate: 32.47%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 5632.139 ms
Loss rate: 76.30%
```

Run 3: Report of FillP — Data Link

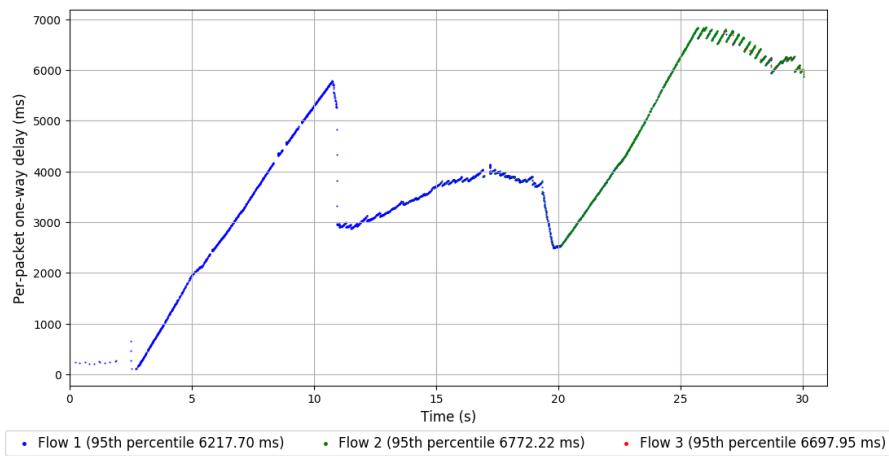
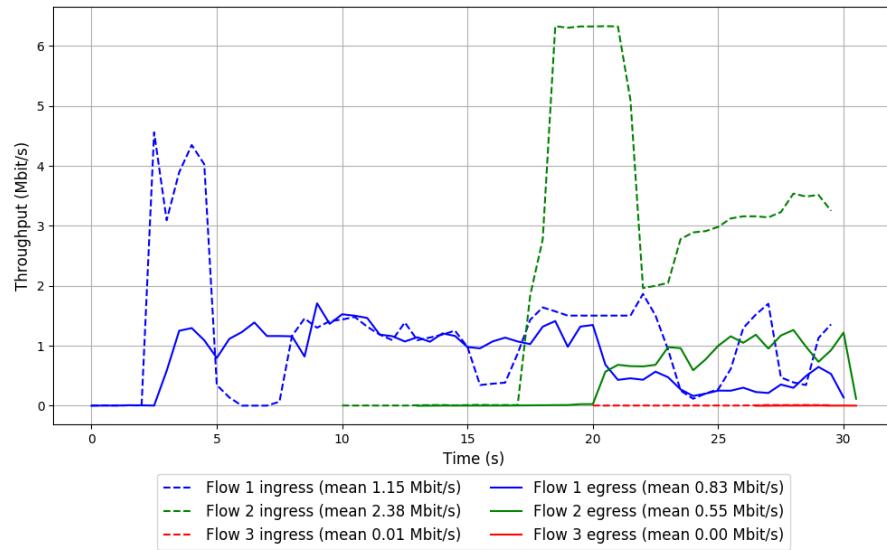


Run 1: Statistics of FillP-Sheep

```
Start at: 2018-08-22 01:01:34
End at: 2018-08-22 01:02:04
Local clock offset: -12.389 ms
Remote clock offset: 1.979 ms

# Below is generated by plot.py at 2018-08-22 01:59:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.13 Mbit/s
95th percentile per-packet one-way delay: 6676.410 ms
Loss rate: 59.09%
-- Flow 1:
Average throughput: 0.83 Mbit/s
95th percentile per-packet one-way delay: 6217.696 ms
Loss rate: 29.47%
-- Flow 2:
Average throughput: 0.55 Mbit/s
95th percentile per-packet one-way delay: 6772.220 ms
Loss rate: 80.59%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 6697.955 ms
Loss rate: 82.28%
```

Run 1: Report of FillP-Sheep — Data Link

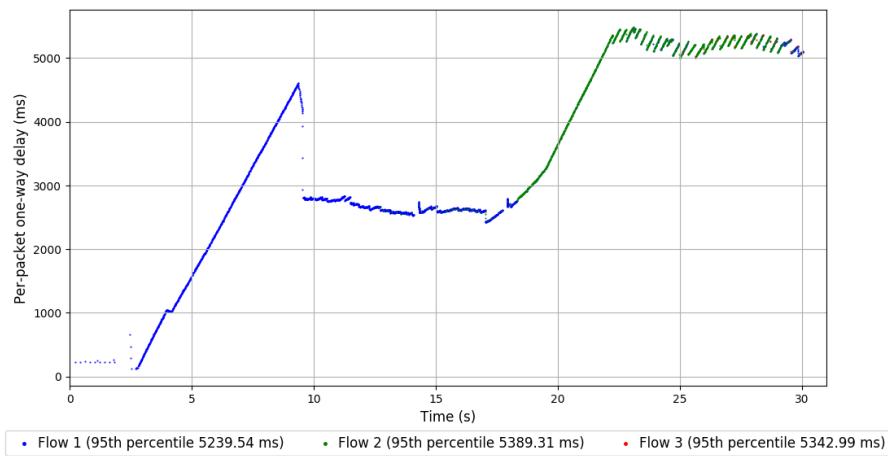
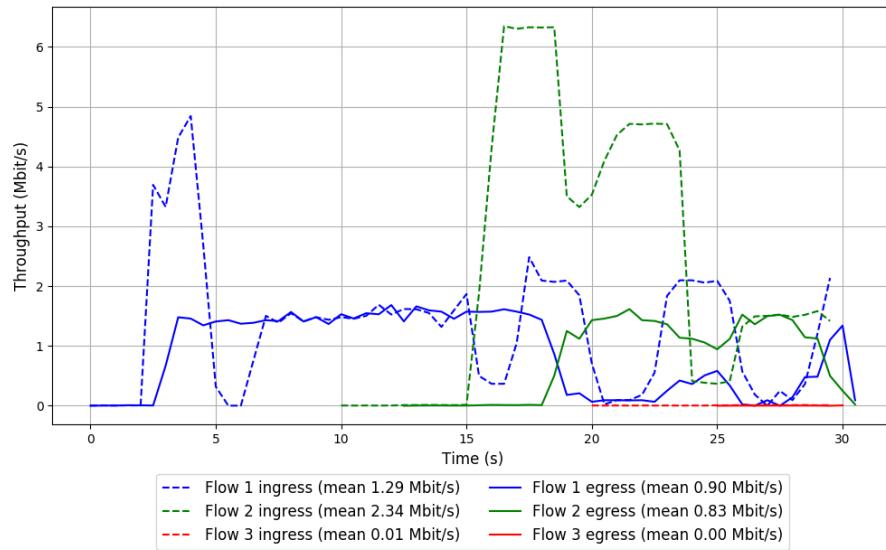


Run 2: Statistics of FillP-Sheep

```
Start at: 2018-08-22 01:21:59
End at: 2018-08-22 01:22:29
Local clock offset: -13.345 ms
Remote clock offset: 0.689 ms

# Below is generated by plot.py at 2018-08-22 01:59:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.38 Mbit/s
95th percentile per-packet one-way delay: 5340.548 ms
Loss rate: 51.74%
-- Flow 1:
Average throughput: 0.90 Mbit/s
95th percentile per-packet one-way delay: 5239.536 ms
Loss rate: 30.82%
-- Flow 2:
Average throughput: 0.83 Mbit/s
95th percentile per-packet one-way delay: 5389.305 ms
Loss rate: 69.03%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 5342.992 ms
Loss rate: 79.47%
```

Run 2: Report of FillP-Sheep — Data Link

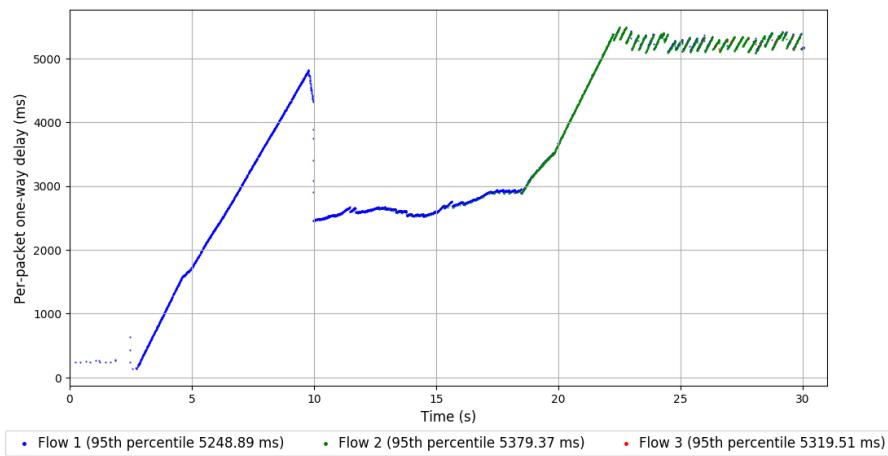
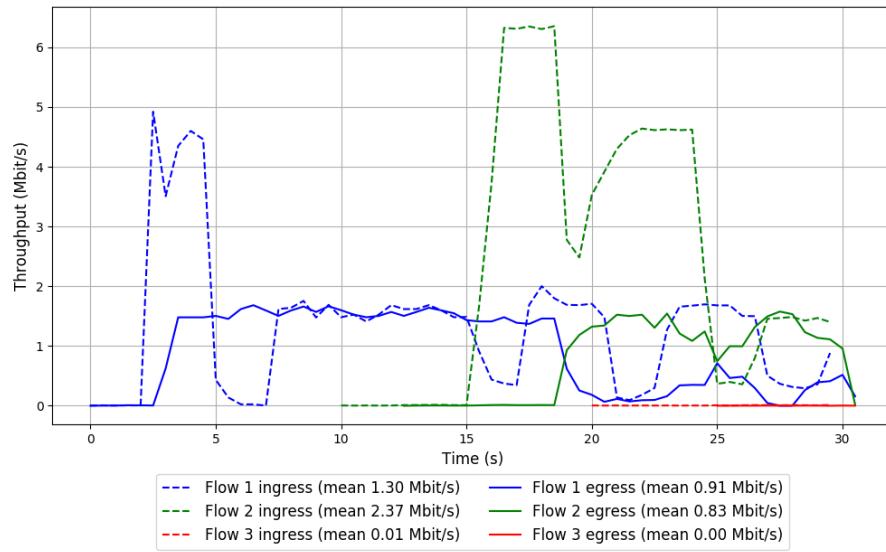


Run 3: Statistics of FillP-Sheep

```
Start at: 2018-08-22 01:42:24
End at: 2018-08-22 01:42:54
Local clock offset: -10.718 ms
Remote clock offset: 5.605 ms

# Below is generated by plot.py at 2018-08-22 01:59:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.40 Mbit/s
95th percentile per-packet one-way delay: 5339.318 ms
Loss rate: 51.76%
-- Flow 1:
Average throughput: 0.91 Mbit/s
95th percentile per-packet one-way delay: 5248.890 ms
Loss rate: 30.34%
-- Flow 2:
Average throughput: 0.83 Mbit/s
95th percentile per-packet one-way delay: 5379.373 ms
Loss rate: 69.40%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 5319.505 ms
Loss rate: 82.80%
```

Run 3: Report of FillP-Sheep — Data Link

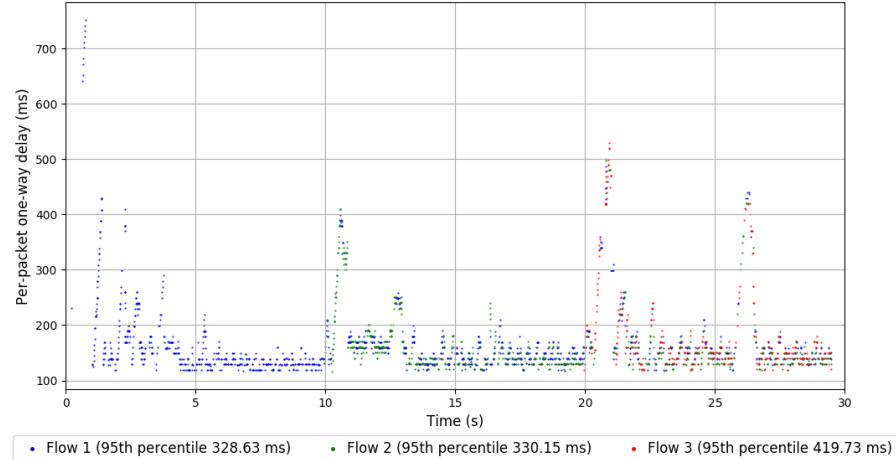
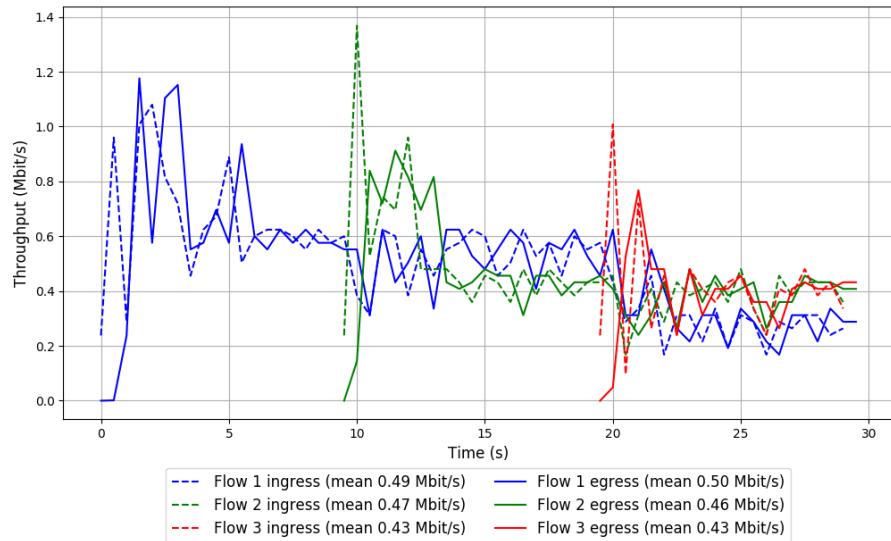


Run 1: Statistics of Indigo

```
Start at: 2018-08-22 00:57:58
End at: 2018-08-22 00:58:28
Local clock offset: -11.968 ms
Remote clock offset: 3.509 ms

# Below is generated by plot.py at 2018-08-22 01:59:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.95 Mbit/s
95th percentile per-packet one-way delay: 340.282 ms
Loss rate: 0.35%
-- Flow 1:
Average throughput: 0.50 Mbit/s
95th percentile per-packet one-way delay: 328.633 ms
Loss rate: 0.17%
-- Flow 2:
Average throughput: 0.46 Mbit/s
95th percentile per-packet one-way delay: 330.152 ms
Loss rate: 0.53%
-- Flow 3:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 419.733 ms
Loss rate: 0.59%
```

Run 1: Report of Indigo — Data Link

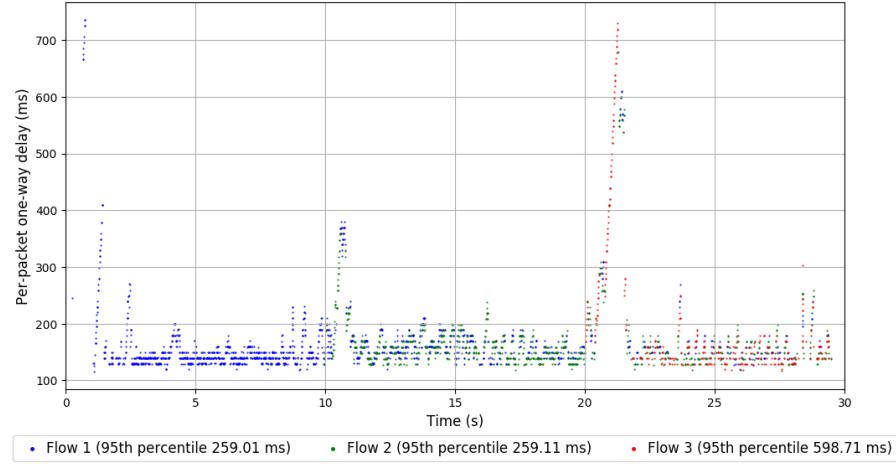
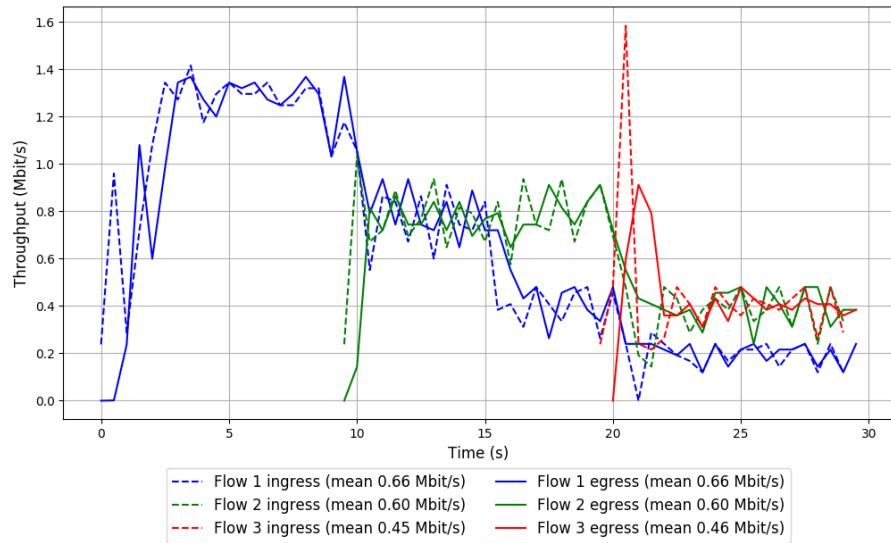


Run 2: Statistics of Indigo

```
Start at: 2018-08-22 01:18:22
End at: 2018-08-22 01:18:52
Local clock offset: -14.671 ms
Remote clock offset: 0.548 ms

# Below is generated by plot.py at 2018-08-22 01:59:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.21 Mbit/s
95th percentile per-packet one-way delay: 317.619 ms
Loss rate: 0.14%
-- Flow 1:
Average throughput: 0.66 Mbit/s
95th percentile per-packet one-way delay: 259.012 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.60 Mbit/s
95th percentile per-packet one-way delay: 259.108 ms
Loss rate: 0.20%
-- Flow 3:
Average throughput: 0.46 Mbit/s
95th percentile per-packet one-way delay: 598.705 ms
Loss rate: 0.56%
```

Run 2: Report of Indigo — Data Link

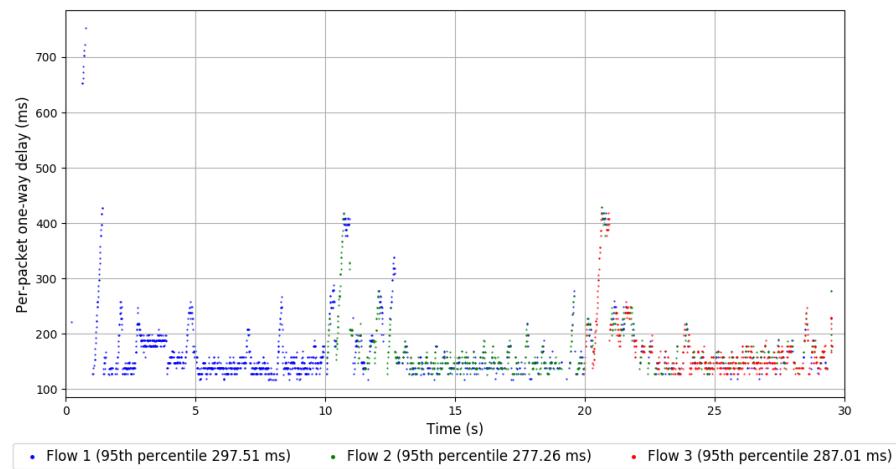
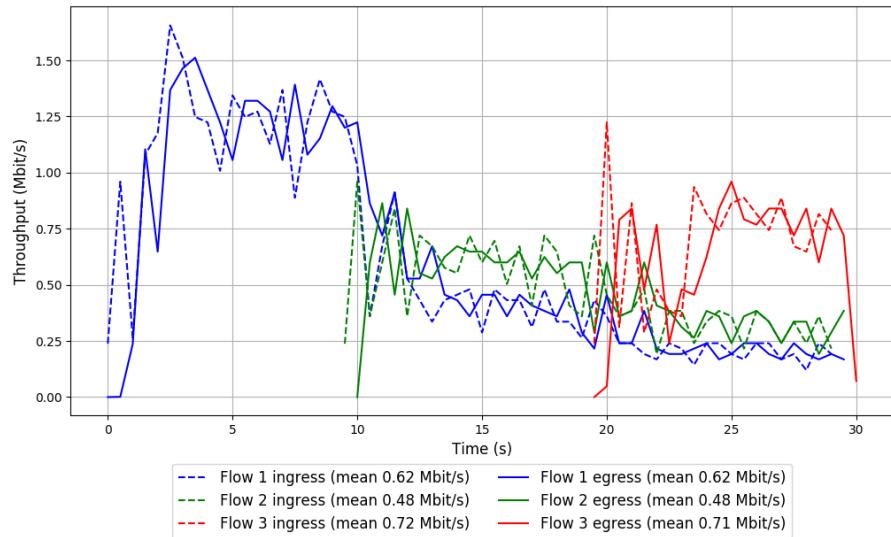


Run 3: Statistics of Indigo

```
Start at: 2018-08-22 01:38:48
End at: 2018-08-22 01:39:18
Local clock offset: -13.386 ms
Remote clock offset: 2.899 ms

# Below is generated by plot.py at 2018-08-22 01:59:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.17 Mbit/s
95th percentile per-packet one-way delay: 287.529 ms
Loss rate: 0.35%
-- Flow 1:
Average throughput: 0.62 Mbit/s
95th percentile per-packet one-way delay: 297.511 ms
Loss rate: 0.20%
-- Flow 2:
Average throughput: 0.48 Mbit/s
95th percentile per-packet one-way delay: 277.258 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.71 Mbit/s
95th percentile per-packet one-way delay: 287.014 ms
Loss rate: 1.22%
```

Run 3: Report of Indigo — Data Link

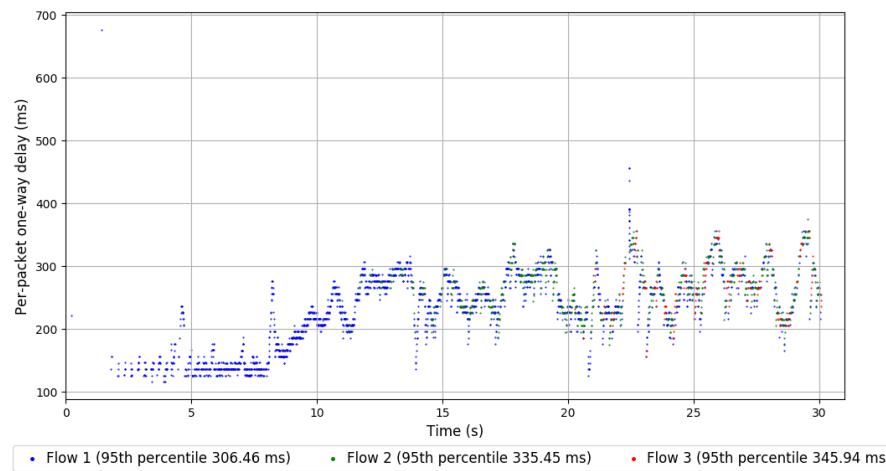
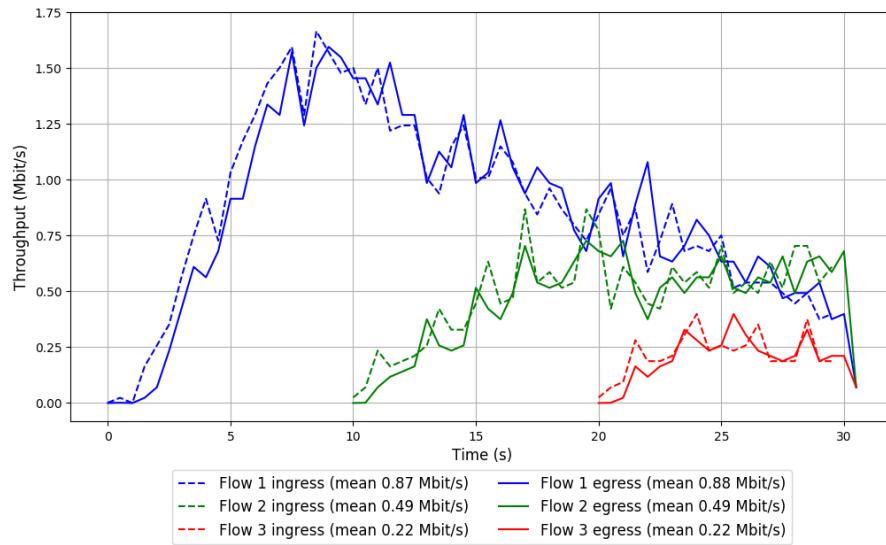


```
Run 1: Statistics of LEDBAT
```

```
Start at: 2018-08-22 01:07:35
End at: 2018-08-22 01:08:05
Local clock offset: -12.949 ms
Remote clock offset: 5.787 ms

# Below is generated by plot.py at 2018-08-22 01:59:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.27 Mbit/s
95th percentile per-packet one-way delay: 316.562 ms
Loss rate: 0.65%
-- Flow 1:
Average throughput: 0.88 Mbit/s
95th percentile per-packet one-way delay: 306.465 ms
Loss rate: 0.22%
-- Flow 2:
Average throughput: 0.49 Mbit/s
95th percentile per-packet one-way delay: 335.450 ms
Loss rate: 1.44%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 345.943 ms
Loss rate: 2.13%
```

Run 1: Report of LEDBAT — Data Link

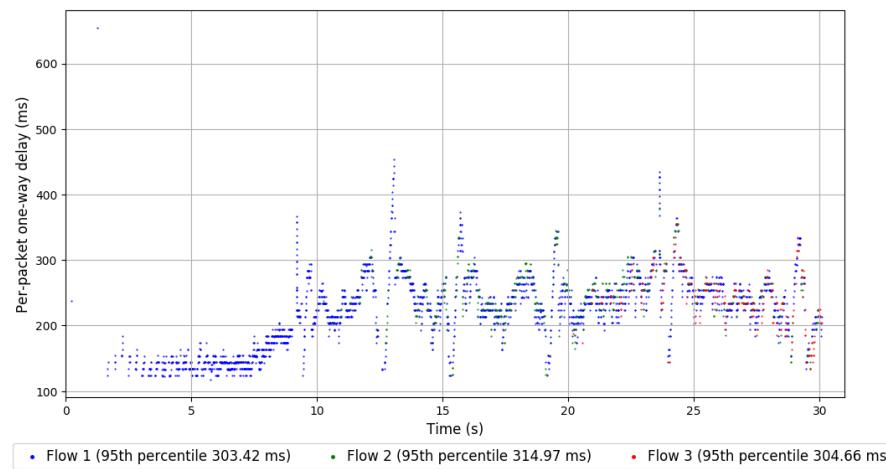
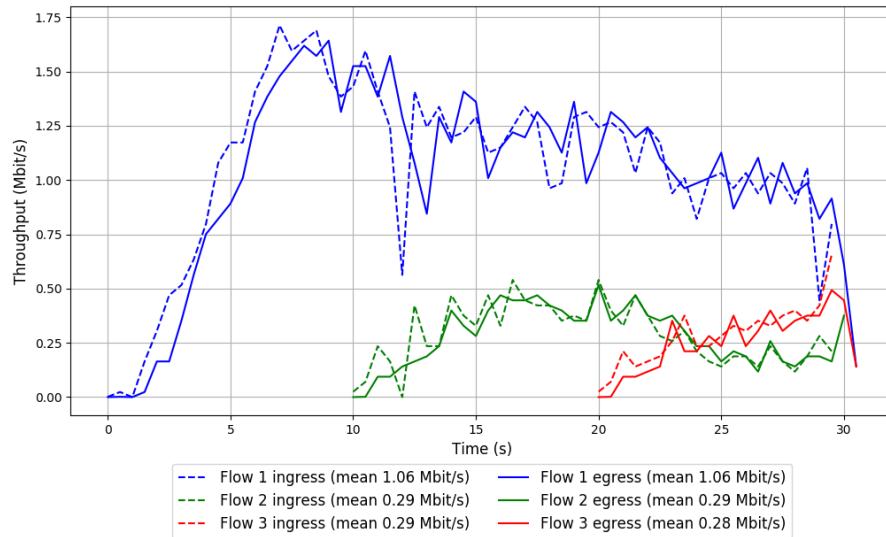


Run 2: Statistics of LEDBAT

```
Start at: 2018-08-22 01:27:59
End at: 2018-08-22 01:28:29
Local clock offset: -14.535 ms
Remote clock offset: 2.552 ms

# Below is generated by plot.py at 2018-08-22 01:59:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.35 Mbit/s
95th percentile per-packet one-way delay: 304.108 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 1.06 Mbit/s
95th percentile per-packet one-way delay: 303.416 ms
Loss rate: 0.30%
-- Flow 2:
Average throughput: 0.29 Mbit/s
95th percentile per-packet one-way delay: 314.968 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.28 Mbit/s
95th percentile per-packet one-way delay: 304.664 ms
Loss rate: 2.88%
```

Run 2: Report of LEDBAT — Data Link

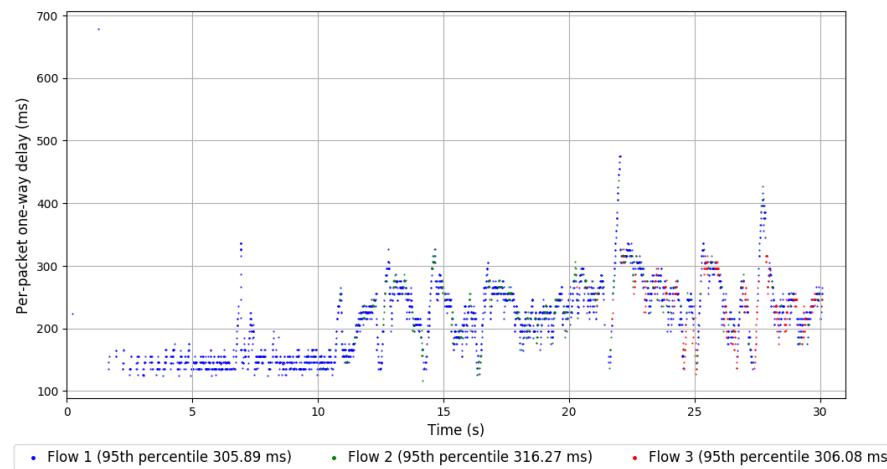
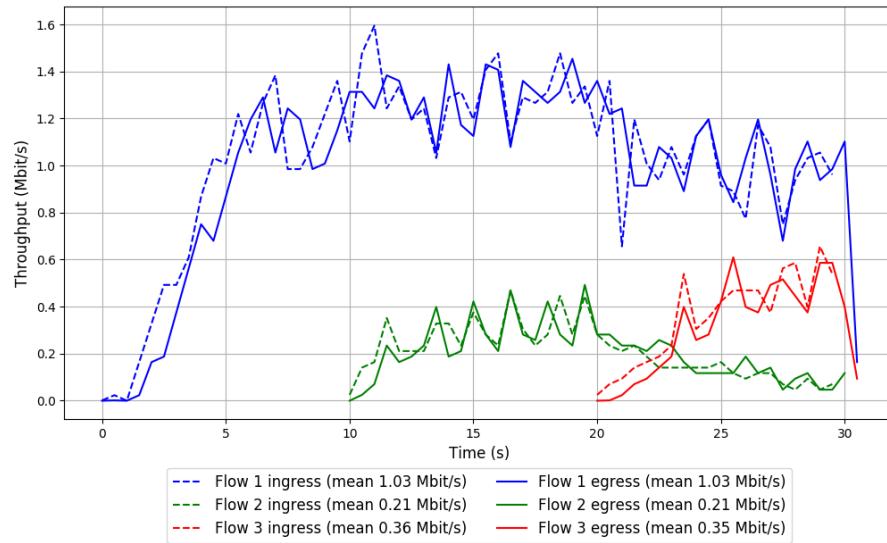


Run 3: Statistics of LEDBAT

```
Start at: 2018-08-22 01:48:24
End at: 2018-08-22 01:48:54
Local clock offset: -7.027 ms
Remote clock offset: 7.855 ms

# Below is generated by plot.py at 2018-08-22 01:59:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.28 Mbit/s
95th percentile per-packet one-way delay: 306.368 ms
Loss rate: 0.73%
-- Flow 1:
Average throughput: 1.03 Mbit/s
95th percentile per-packet one-way delay: 305.886 ms
Loss rate: 0.42%
-- Flow 2:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 316.269 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.35 Mbit/s
95th percentile per-packet one-way delay: 306.079 ms
Loss rate: 4.32%
```

Run 3: Report of LEDBAT — Data Link

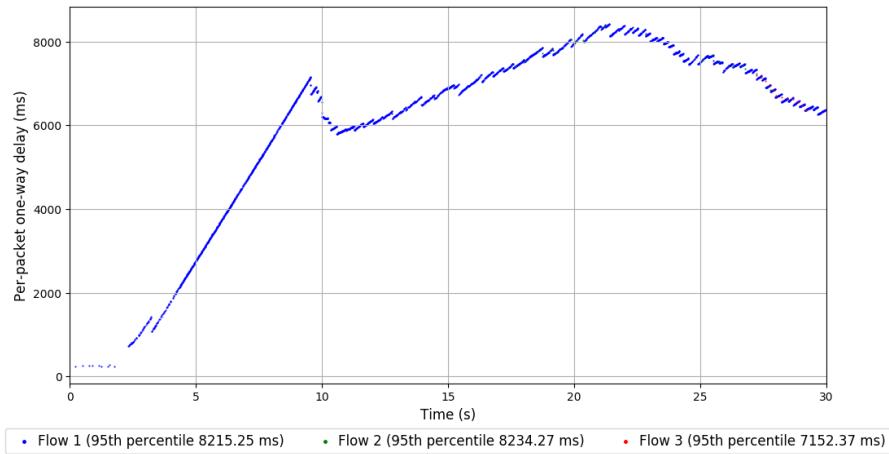
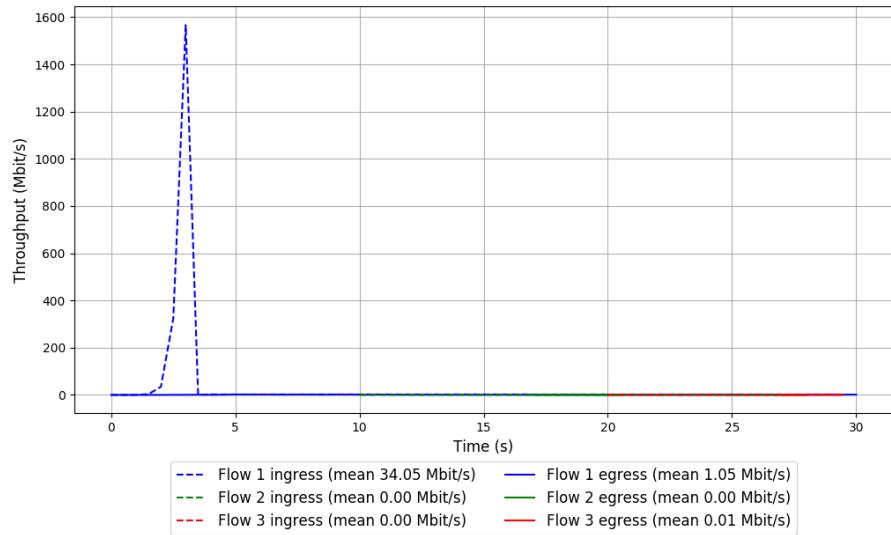


```
Run 1: Statistics of PCC-Allegro
```

```
Start at: 2018-08-22 01:00:22
End at: 2018-08-22 01:00:52
Local clock offset: -13.008 ms
Remote clock offset: 6.587 ms

# Below is generated by plot.py at 2018-08-22 01:59:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.05 Mbit/s
95th percentile per-packet one-way delay: 8215.248 ms
Loss rate: 96.94%
-- Flow 1:
Average throughput: 1.05 Mbit/s
95th percentile per-packet one-way delay: 8215.248 ms
Loss rate: 96.95%
-- Flow 2:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 8234.271 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 7152.373 ms
Loss rate: 41.55%
```

Run 1: Report of PCC-Allegro — Data Link

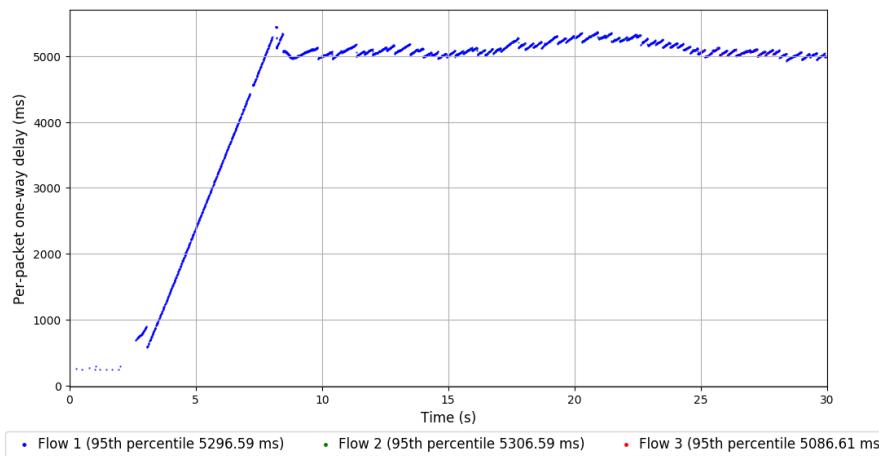
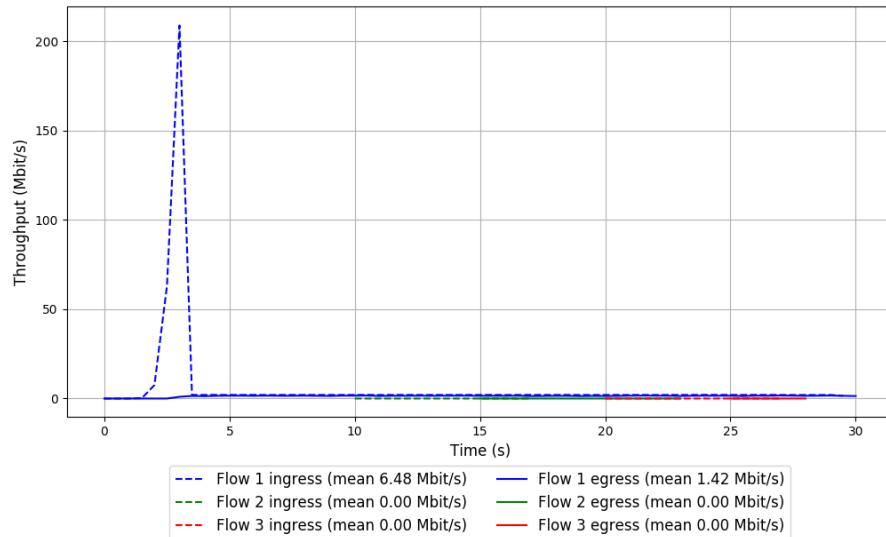


Run 2: Statistics of PCC-Allegro

```
Start at: 2018-08-22 01:20:47
End at: 2018-08-22 01:21:17
Local clock offset: -14.024 ms
Remote clock offset: 3.251 ms

# Below is generated by plot.py at 2018-08-22 01:59:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.42 Mbit/s
95th percentile per-packet one-way delay: 5296.594 ms
Loss rate: 78.21%
-- Flow 1:
Average throughput: 1.42 Mbit/s
95th percentile per-packet one-way delay: 5296.586 ms
Loss rate: 78.23%
-- Flow 2:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 5306.591 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 5086.615 ms
Loss rate: 44.83%
```

Run 2: Report of PCC-Allegro — Data Link

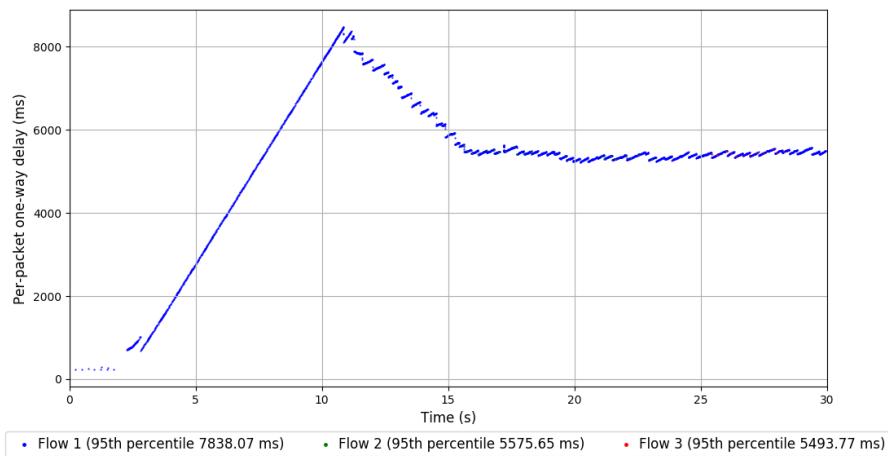
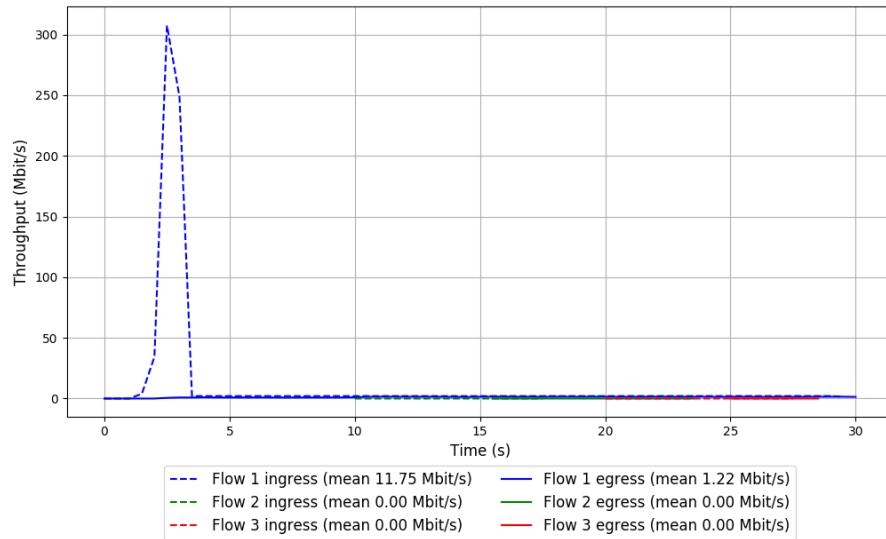


Run 3: Statistics of PCC-Allegro

```
Start at: 2018-08-22 01:41:12
End at: 2018-08-22 01:41:42
Local clock offset: -10.258 ms
Remote clock offset: 3.024 ms

# Below is generated by plot.py at 2018-08-22 01:59:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.22 Mbit/s
95th percentile per-packet one-way delay: 7837.428 ms
Loss rate: 89.65%
-- Flow 1:
Average throughput: 1.22 Mbit/s
95th percentile per-packet one-way delay: 7838.074 ms
Loss rate: 89.66%
-- Flow 2:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 5575.653 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 5493.773 ms
Loss rate: 44.83%
```

Run 3: Report of PCC-Allegro — Data Link

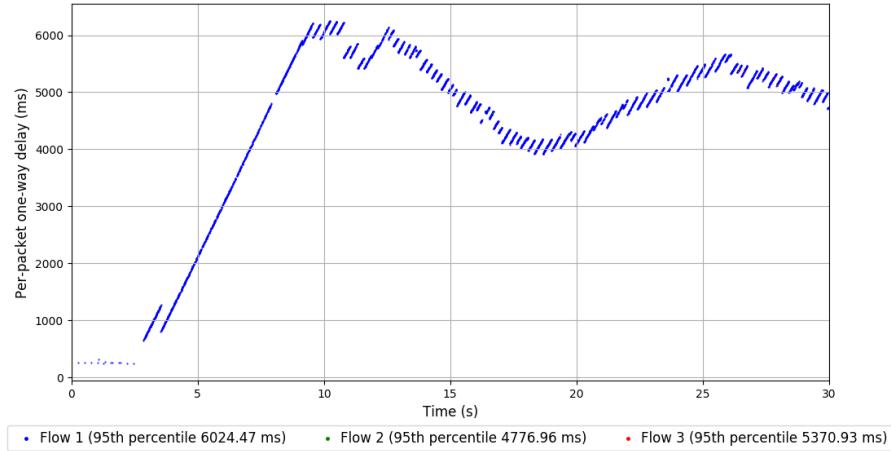
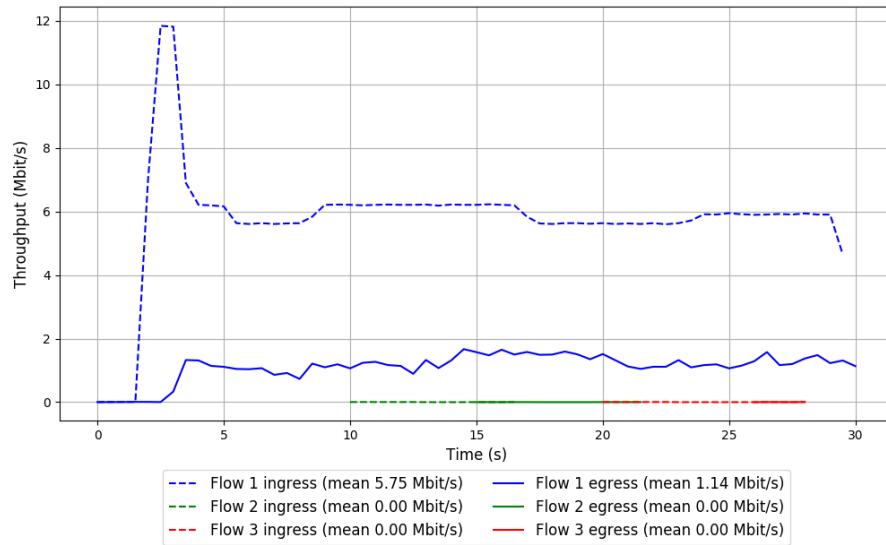


```
Run 1: Statistics of PCC-Expr
```

```
Start at: 2018-08-22 01:15:58
End at: 2018-08-22 01:16:28
Local clock offset: -14.503 ms
Remote clock offset: 0.67 ms

# Below is generated by plot.py at 2018-08-22 01:59:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.14 Mbit/s
95th percentile per-packet one-way delay: 6024.472 ms
Loss rate: 80.30%
-- Flow 1:
Average throughput: 1.14 Mbit/s
95th percentile per-packet one-way delay: 6024.472 ms
Loss rate: 80.30%
-- Flow 2:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 4776.958 ms
Loss rate: 65.27%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 5370.933 ms
Loss rate: 76.30%
```

Run 1: Report of PCC-Expr — Data Link

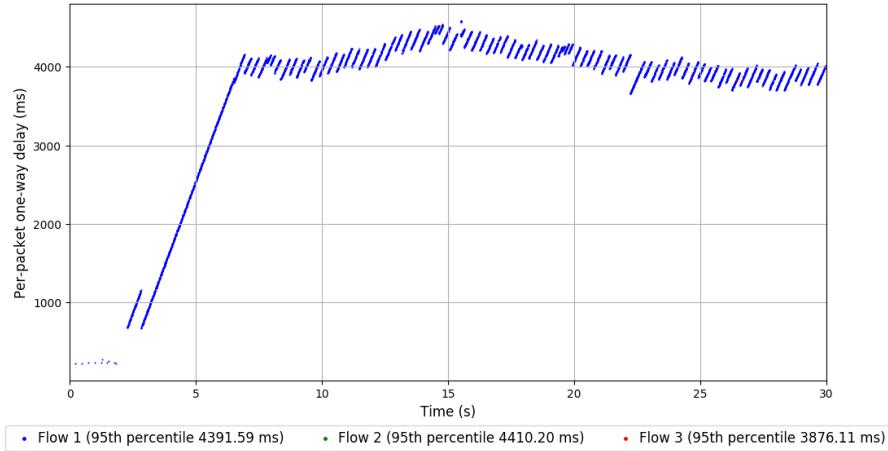
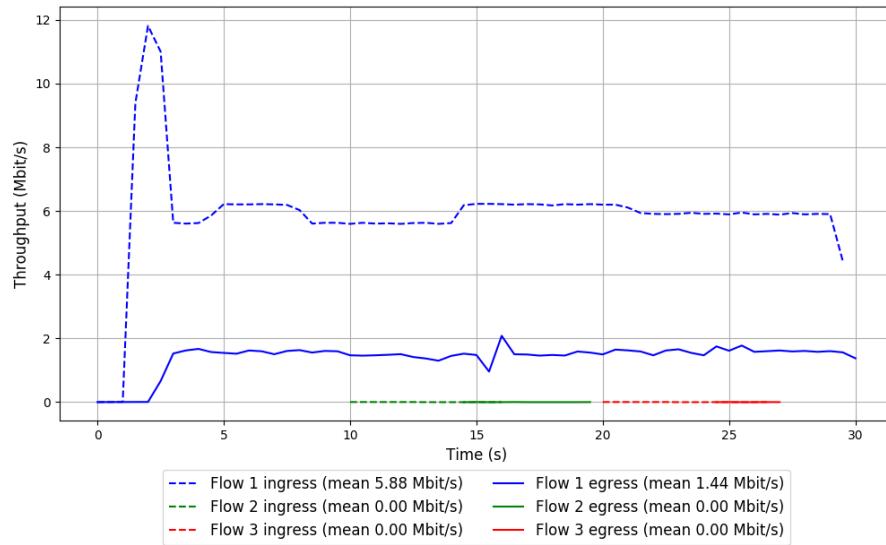


Run 2: Statistics of PCC-Expr

```
Start at: 2018-08-22 01:36:24
End at: 2018-08-22 01:36:54
Local clock offset: -15.935 ms
Remote clock offset: 3.058 ms

# Below is generated by plot.py at 2018-08-22 01:59:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.44 Mbit/s
95th percentile per-packet one-way delay: 4391.587 ms
Loss rate: 75.59%
-- Flow 1:
Average throughput: 1.44 Mbit/s
95th percentile per-packet one-way delay: 4391.587 ms
Loss rate: 75.59%
-- Flow 2:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 4410.204 ms
Loss rate: 73.05%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 3876.105 ms
Loss rate: 80.84%
```

Run 2: Report of PCC-Expr — Data Link

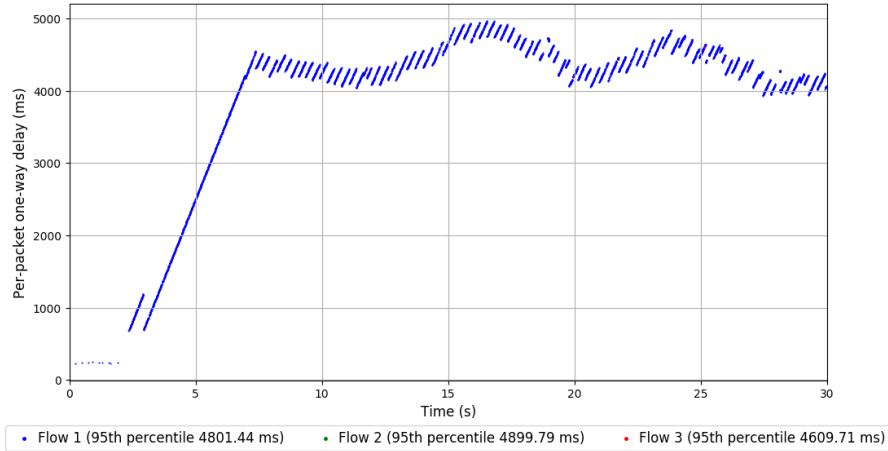
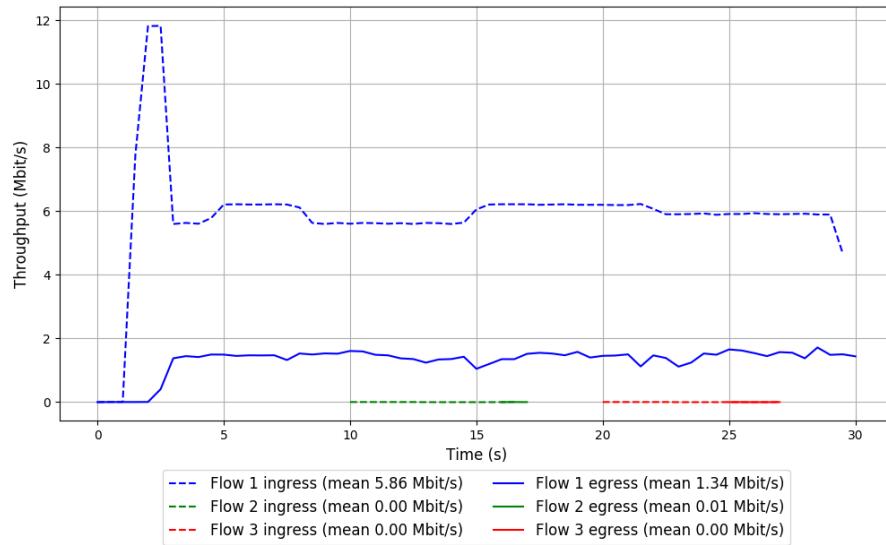


Run 3: Statistics of PCC-Expr

```
Start at: 2018-08-22 01:56:48
End at: 2018-08-22 01:57:18
Local clock offset: -4.403 ms
Remote clock offset: 2.078 ms

# Below is generated by plot.py at 2018-08-22 01:59:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.34 Mbit/s
95th percentile per-packet one-way delay: 4803.232 ms
Loss rate: 77.23%
-- Flow 1:
Average throughput: 1.34 Mbit/s
95th percentile per-packet one-way delay: 4801.436 ms
Loss rate: 77.23%
-- Flow 2:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 4899.794 ms
Loss rate: 80.84%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 4609.709 ms
Loss rate: 86.15%
```

Run 3: Report of PCC-Expr — Data Link

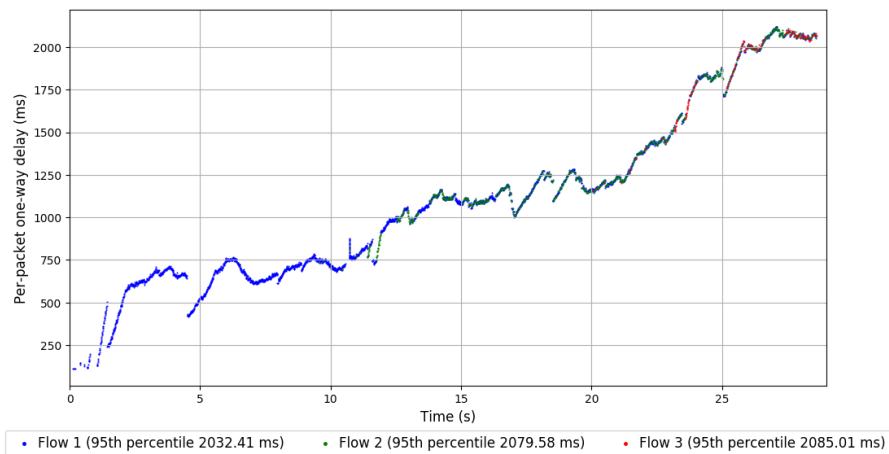
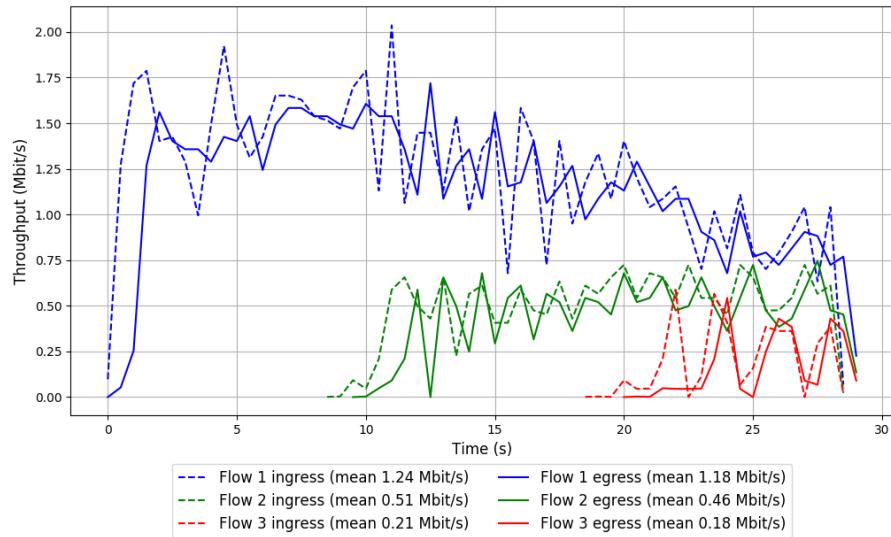


Run 1: Statistics of QUIC Cubic

```
Start at: 2018-08-22 01:03:59
End at: 2018-08-22 01:04:29
Local clock offset: -11.837 ms
Remote clock offset: 1.856 ms

# Below is generated by plot.py at 2018-08-22 01:59:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.54 Mbit/s
95th percentile per-packet one-way delay: 2062.351 ms
Loss rate: 7.42%
-- Flow 1:
Average throughput: 1.18 Mbit/s
95th percentile per-packet one-way delay: 2032.406 ms
Loss rate: 5.10%
-- Flow 2:
Average throughput: 0.46 Mbit/s
95th percentile per-packet one-way delay: 2079.578 ms
Loss rate: 12.10%
-- Flow 3:
Average throughput: 0.18 Mbit/s
95th percentile per-packet one-way delay: 2085.009 ms
Loss rate: 24.77%
```

Run 1: Report of QUIC Cubic — Data Link

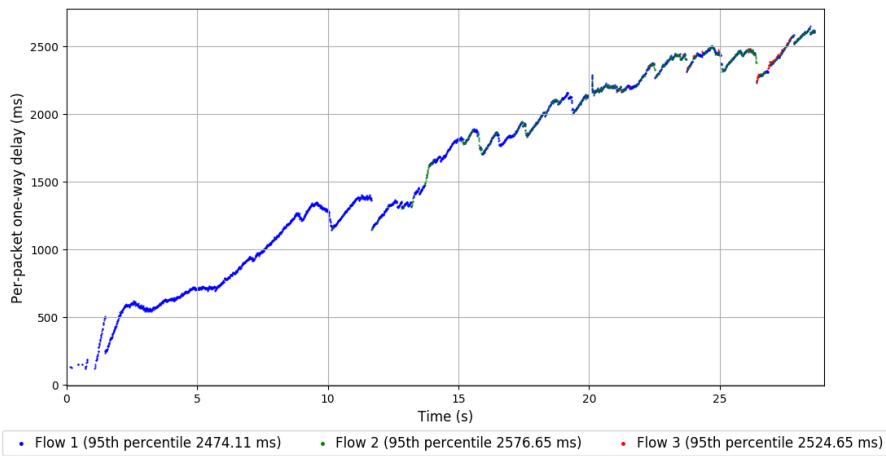
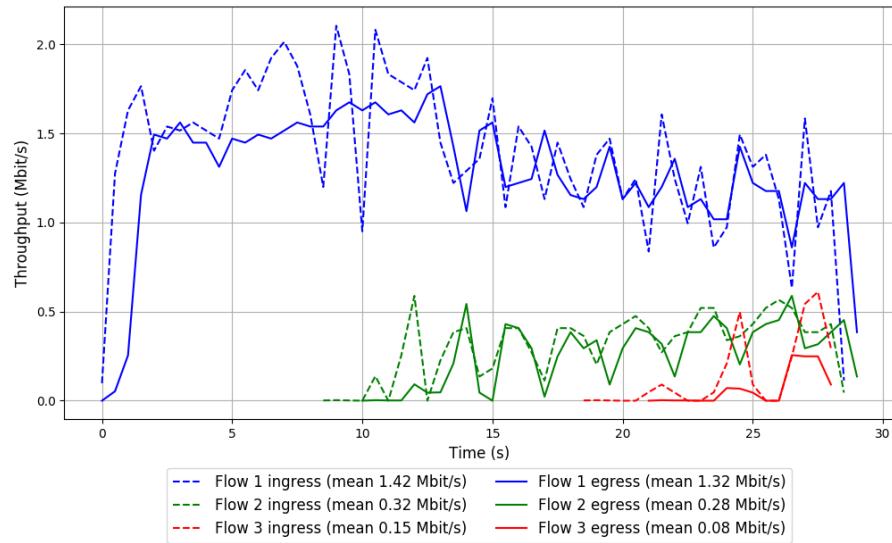


Run 2: Statistics of QUIC Cubic

```
Start at: 2018-08-22 01:24:23
End at: 2018-08-22 01:24:53
Local clock offset: -14.369 ms
Remote clock offset: 2.167 ms

# Below is generated by plot.py at 2018-08-22 01:59:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.52 Mbit/s
95th percentile per-packet one-way delay: 2487.226 ms
Loss rate: 9.95%
-- Flow 1:
Average throughput: 1.32 Mbit/s
95th percentile per-packet one-way delay: 2474.113 ms
Loss rate: 6.89%
-- Flow 2:
Average throughput: 0.28 Mbit/s
95th percentile per-packet one-way delay: 2576.654 ms
Loss rate: 18.26%
-- Flow 3:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 2524.653 ms
Loss rate: 62.13%
```

Run 2: Report of QUIC Cubic — Data Link

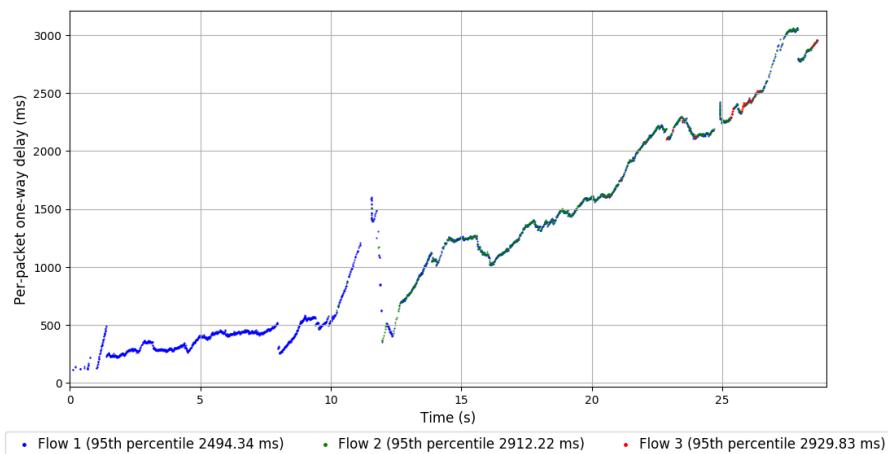
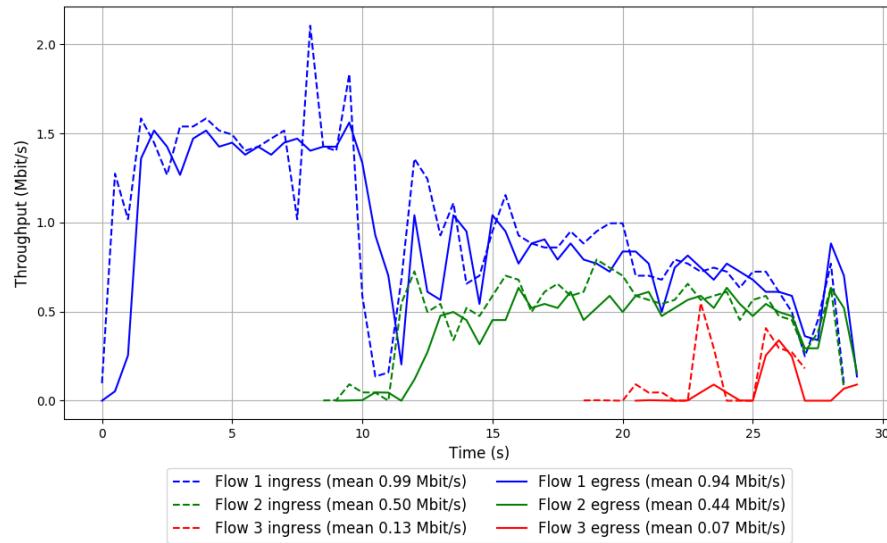


Run 3: Statistics of QUIC Cubic

```
Start at: 2018-08-22 01:44:48
End at: 2018-08-22 01:45:18
Local clock offset: -7.368 ms
Remote clock offset: 1.754 ms

# Below is generated by plot.py at 2018-08-22 01:59:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.25 Mbit/s
95th percentile per-packet one-way delay: 2790.539 ms
Loss rate: 8.59%
-- Flow 1:
Average throughput: 0.94 Mbit/s
95th percentile per-packet one-way delay: 2494.335 ms
Loss rate: 5.49%
-- Flow 2:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 2912.216 ms
Loss rate: 13.40%
-- Flow 3:
Average throughput: 0.07 Mbit/s
95th percentile per-packet one-way delay: 2929.827 ms
Loss rate: 45.57%
```

Run 3: Report of QUIC Cubic — Data Link

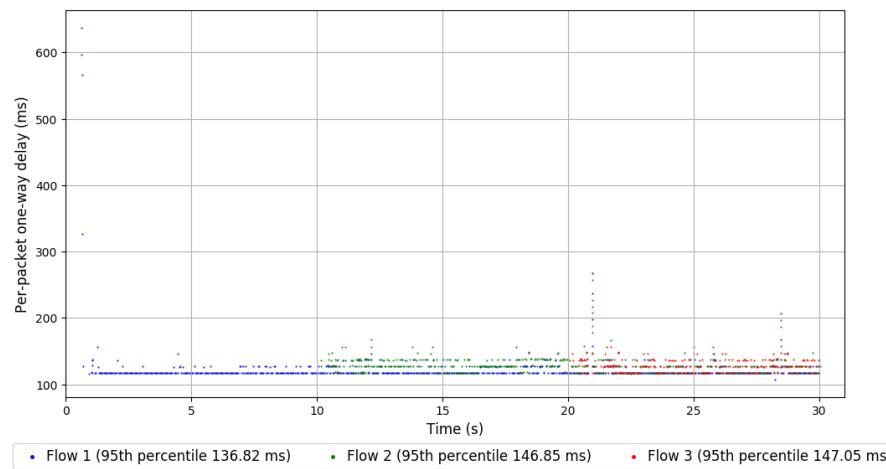
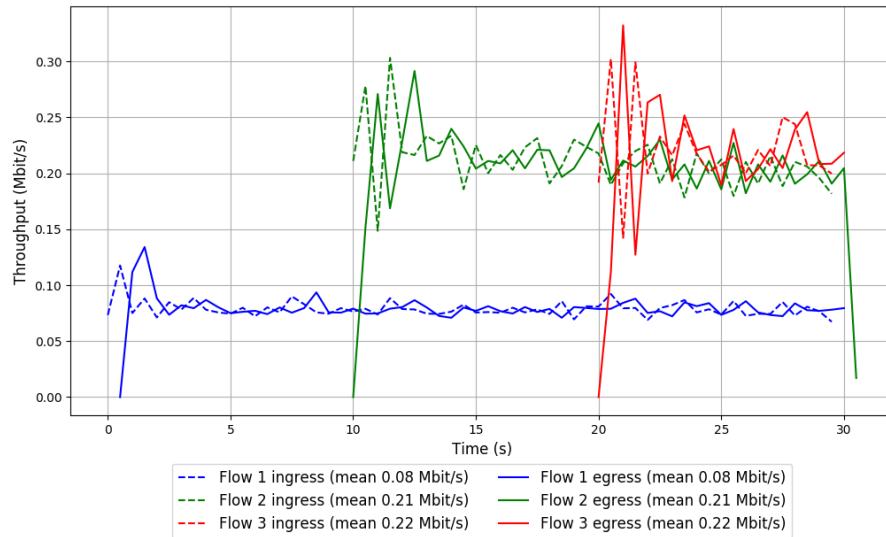


```
Run 1: Statistics of SCReAM
```

```
Start at: 2018-08-22 01:17:11
End at: 2018-08-22 01:17:41
Local clock offset: -14.586 ms
Remote clock offset: 0.638 ms

# Below is generated by plot.py at 2018-08-22 01:59:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.30 Mbit/s
95th percentile per-packet one-way delay: 138.210 ms
Loss rate: 0.30%
-- Flow 1:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 136.824 ms
Loss rate: 0.13%
-- Flow 2:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 146.848 ms
Loss rate: 0.19%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 147.054 ms
Loss rate: 0.70%
```

Run 1: Report of SCReAM — Data Link

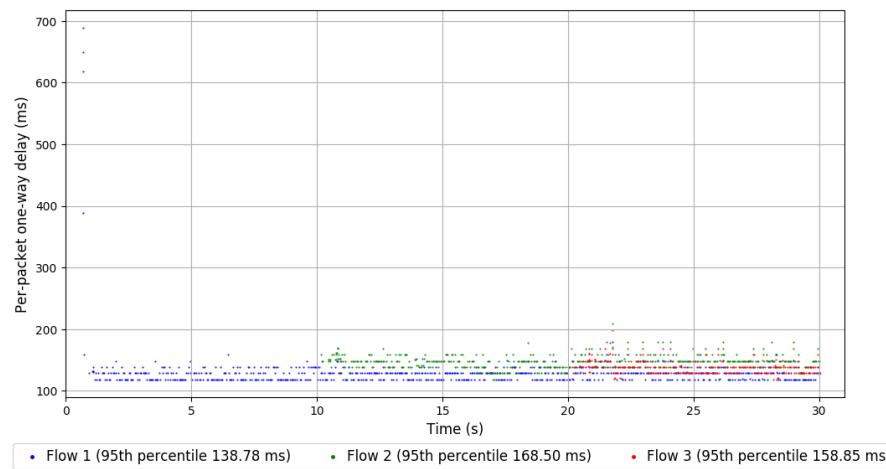
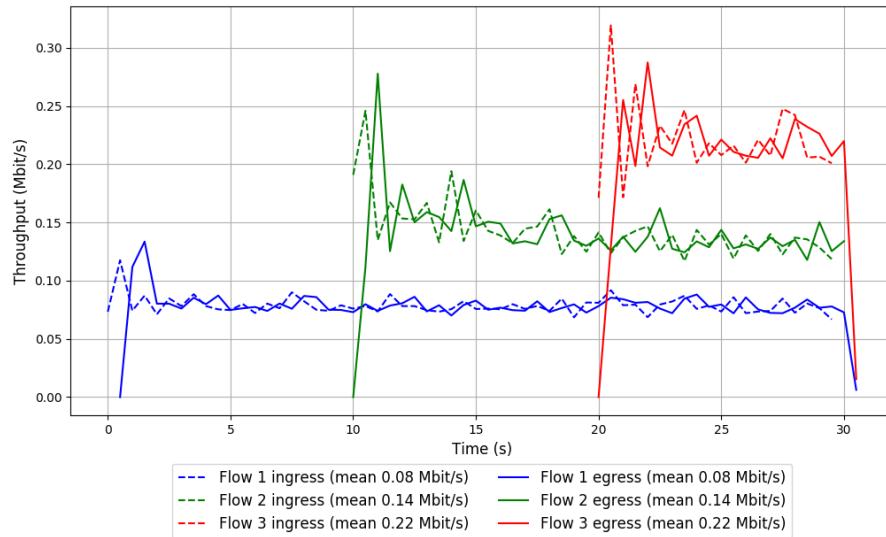


Run 2: Statistics of SCReAM

```
Start at: 2018-08-22 01:37:36
End at: 2018-08-22 01:38:06
Local clock offset: -15.491 ms
Remote clock offset: 2.916 ms

# Below is generated by plot.py at 2018-08-22 01:59:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.25 Mbit/s
95th percentile per-packet one-way delay: 158.602 ms
Loss rate: 0.37%
-- Flow 1:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 138.776 ms
Loss rate: 0.13%
-- Flow 2:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 168.505 ms
Loss rate: 0.59%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 158.854 ms
Loss rate: 0.35%
```

Run 2: Report of SCReAM — Data Link

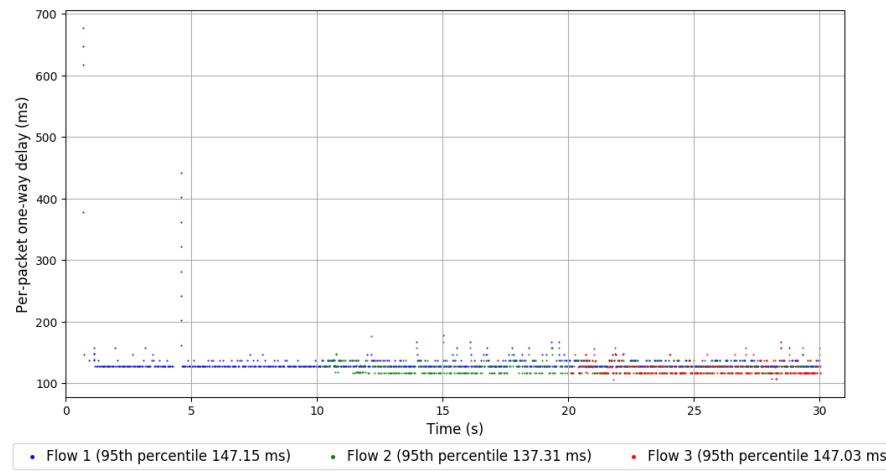
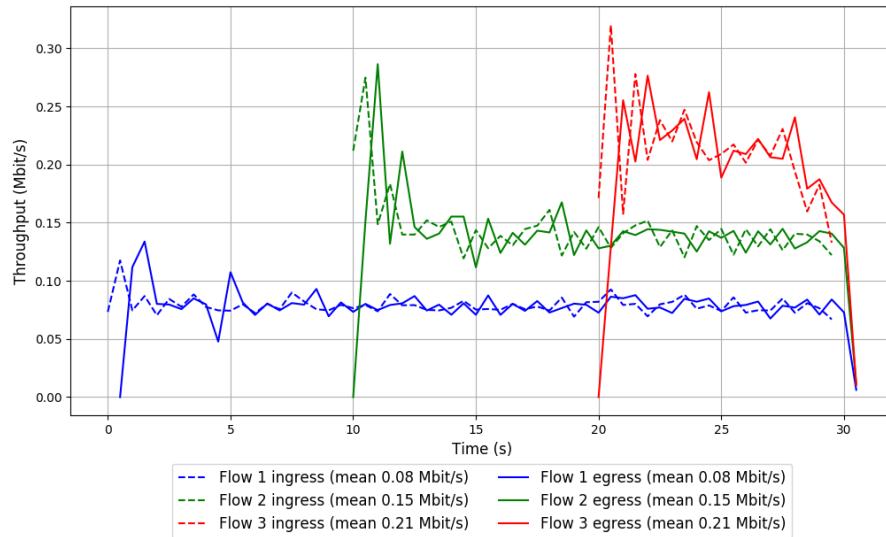


Run 3: Statistics of SCReAM

```
Start at: 2018-08-22 01:58:01
End at: 2018-08-22 01:58:31
Local clock offset: -4.046 ms
Remote clock offset: 2.109 ms

# Below is generated by plot.py at 2018-08-22 01:59:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.25 Mbit/s
95th percentile per-packet one-way delay: 147.088 ms
Loss rate: 0.18%
-- Flow 1:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 147.146 ms
Loss rate: 0.13%
-- Flow 2:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 137.313 ms
Loss rate: 0.18%
-- Flow 3:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 147.025 ms
Loss rate: 0.25%
```

Run 3: Report of SCReAM — Data Link

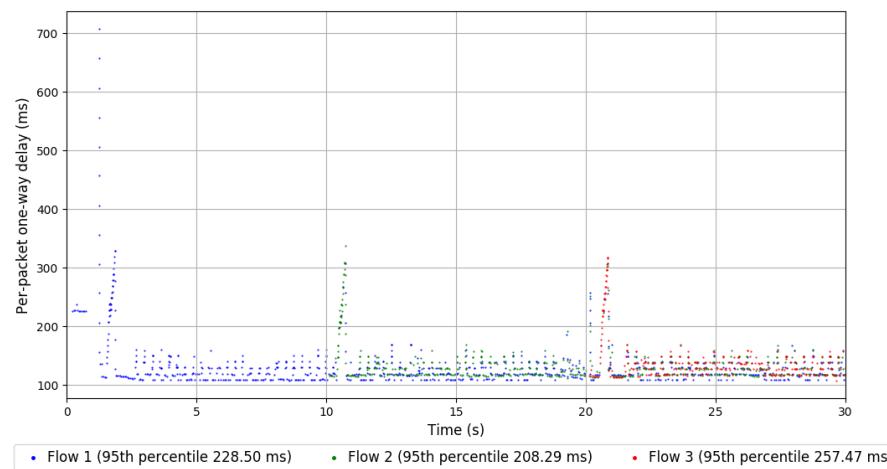
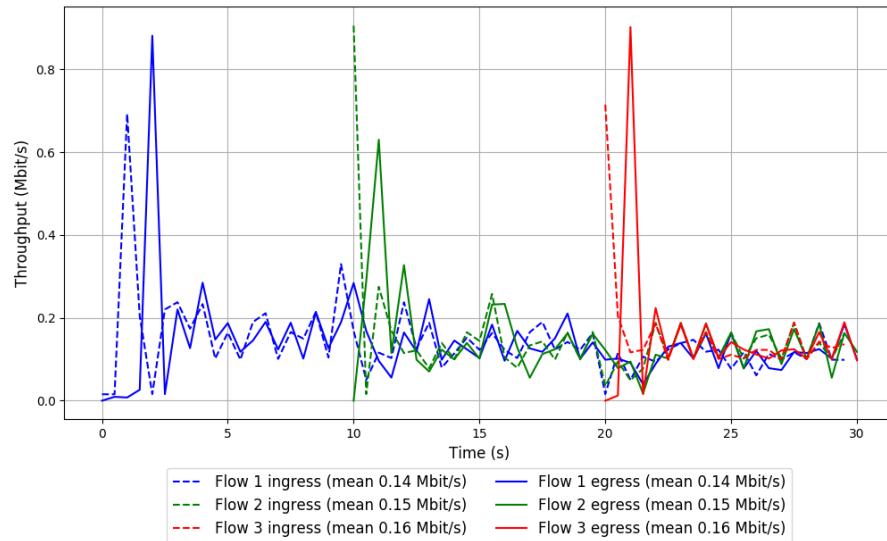


Run 1: Statistics of Sprout

```
Start at: 2018-08-22 01:02:47
End at: 2018-08-22 01:03:17
Local clock offset: -12.508 ms
Remote clock offset: 5.79 ms

# Below is generated by plot.py at 2018-08-22 01:59:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.30 Mbit/s
95th percentile per-packet one-way delay: 236.188 ms
Loss rate: 0.66%
-- Flow 1:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 228.505 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 208.288 ms
Loss rate: 1.20%
-- Flow 3:
Average throughput: 0.16 Mbit/s
95th percentile per-packet one-way delay: 257.473 ms
Loss rate: 1.34%
```

Run 1: Report of Sprout — Data Link

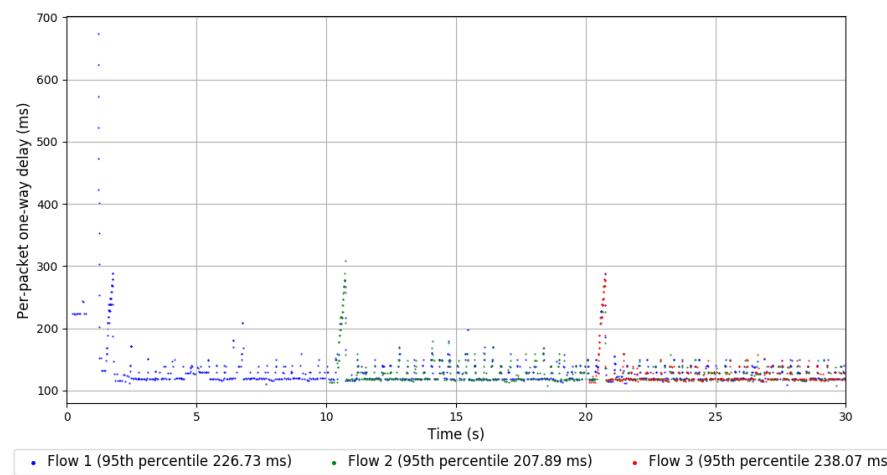
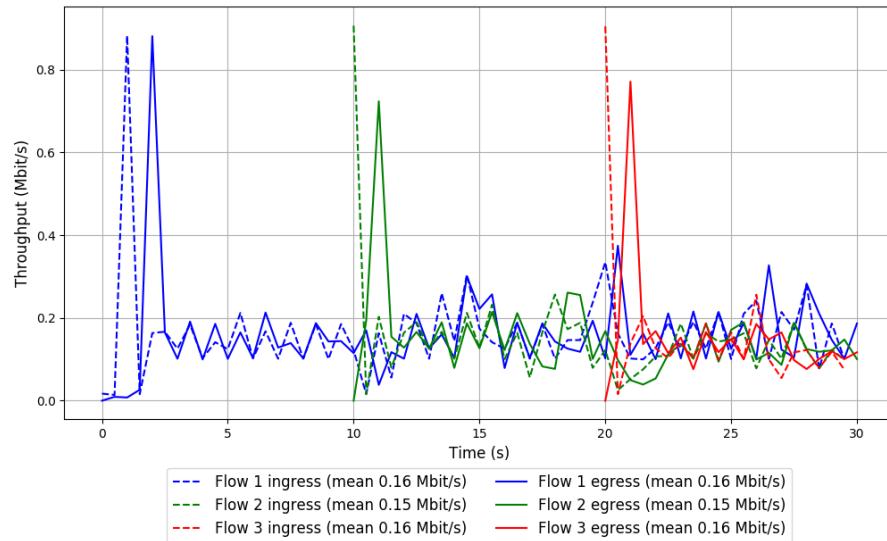


Run 2: Statistics of Sprout

```
Start at: 2018-08-22 01:23:11
End at: 2018-08-22 01:23:41
Local clock offset: -14.203 ms
Remote clock offset: 0.868 ms

# Below is generated by plot.py at 2018-08-22 01:59:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.32 Mbit/s
95th percentile per-packet one-way delay: 223.804 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 0.16 Mbit/s
95th percentile per-packet one-way delay: 226.732 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 207.894 ms
Loss rate: 0.03%
-- Flow 3:
Average throughput: 0.16 Mbit/s
95th percentile per-packet one-way delay: 238.073 ms
Loss rate: 0.05%
```

Run 2: Report of Sprout — Data Link

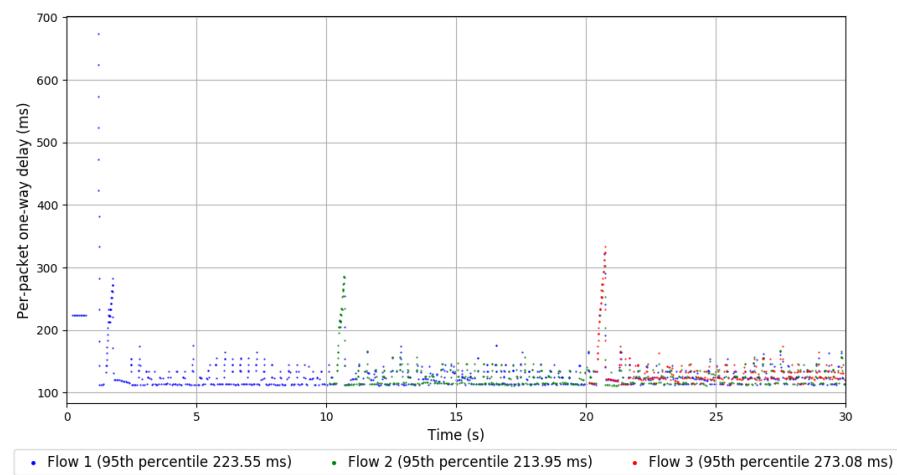
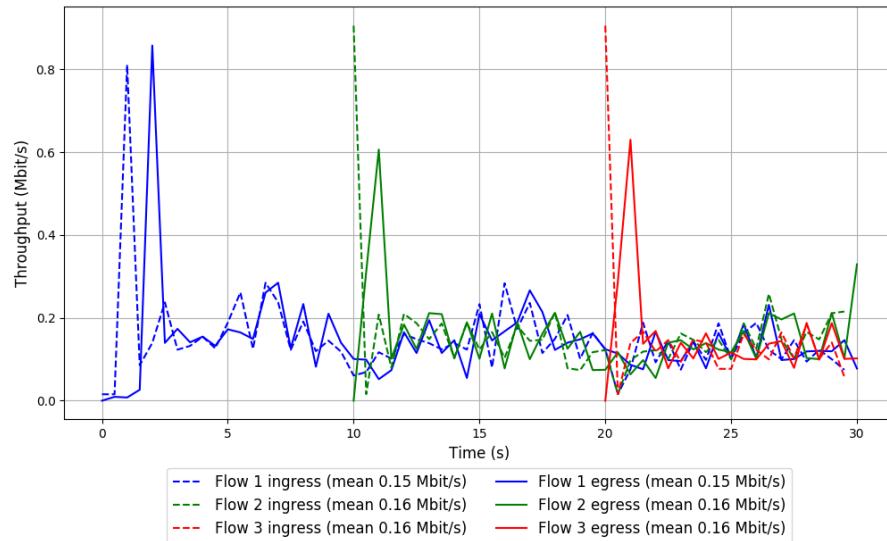


Run 3: Statistics of Sprout

```
Start at: 2018-08-22 01:43:36
End at: 2018-08-22 01:44:06
Local clock offset: -9.054 ms
Remote clock offset: 2.952 ms

# Below is generated by plot.py at 2018-08-22 01:59:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.31 Mbit/s
95th percentile per-packet one-way delay: 224.459 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 223.550 ms
Loss rate: 0.26%
-- Flow 2:
Average throughput: 0.16 Mbit/s
95th percentile per-packet one-way delay: 213.950 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.16 Mbit/s
95th percentile per-packet one-way delay: 273.084 ms
Loss rate: 0.00%
```

Run 3: Report of Sprout — Data Link

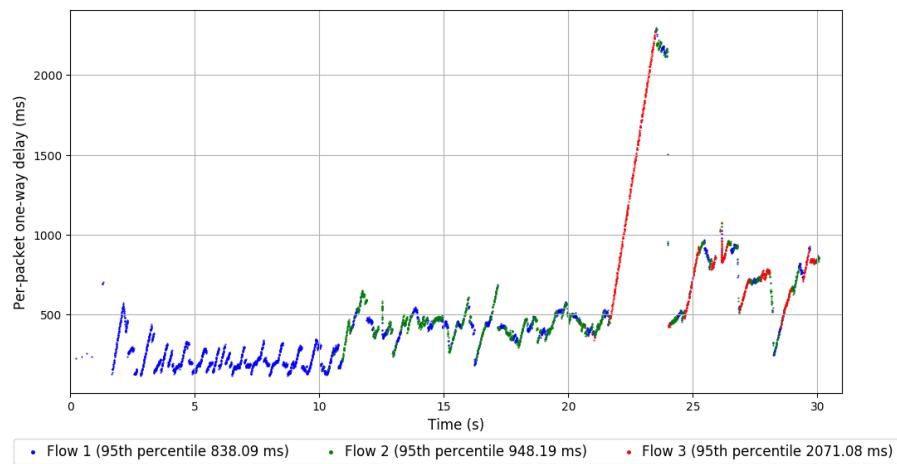
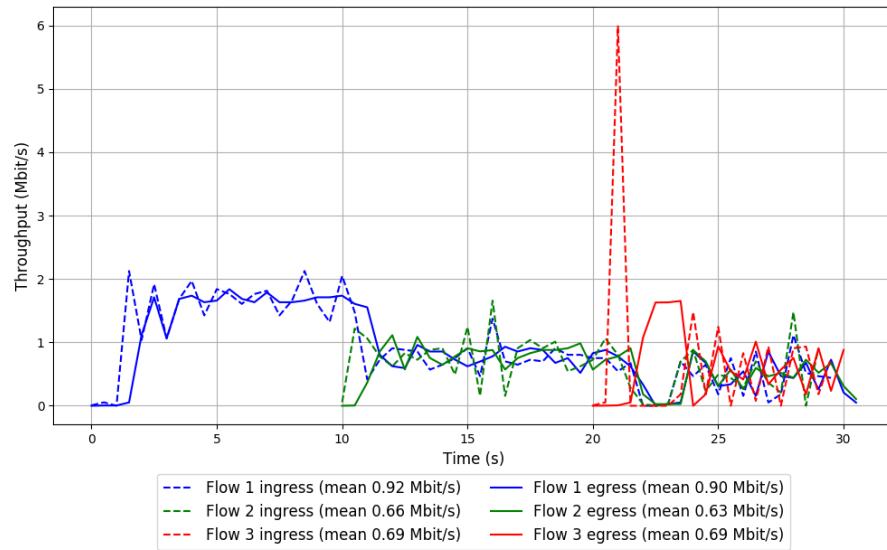


Run 1: Statistics of TaoVA-100x

```
Start at: 2018-08-22 01:12:23
End at: 2018-08-22 01:12:53
Local clock offset: -13.387 ms
Remote clock offset: 4.376 ms

# Below is generated by plot.py at 2018-08-22 01:59:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.54 Mbit/s
95th percentile per-packet one-way delay: 1454.862 ms
Loss rate: 2.20%
-- Flow 1:
Average throughput: 0.90 Mbit/s
95th percentile per-packet one-way delay: 838.092 ms
Loss rate: 1.51%
-- Flow 2:
Average throughput: 0.63 Mbit/s
95th percentile per-packet one-way delay: 948.187 ms
Loss rate: 1.93%
-- Flow 3:
Average throughput: 0.69 Mbit/s
95th percentile per-packet one-way delay: 2071.082 ms
Loss rate: 5.47%
```

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

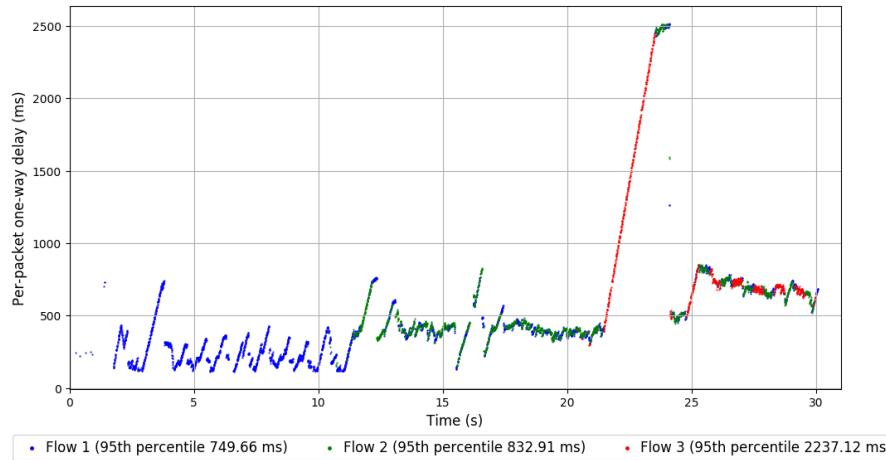
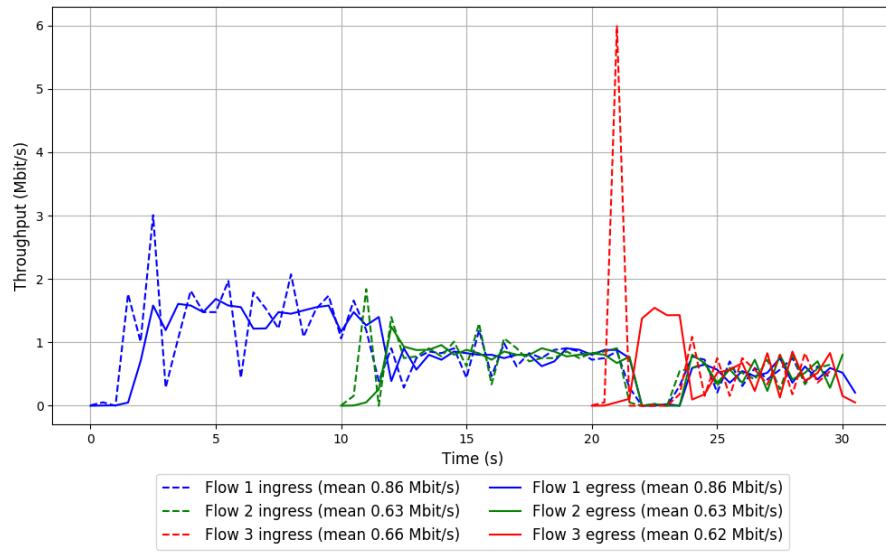


Run 2: Statistics of TaoVA-100x

```
Start at: 2018-08-22 01:32:48
End at: 2018-08-22 01:33:18
Local clock offset: -14.133 ms
Remote clock offset: 2.809 ms

# Below is generated by plot.py at 2018-08-22 01:59:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.47 Mbit/s
95th percentile per-packet one-way delay: 1550.501 ms
Loss rate: 2.25%
-- Flow 1:
Average throughput: 0.86 Mbit/s
95th percentile per-packet one-way delay: 749.659 ms
Loss rate: 1.00%
-- Flow 2:
Average throughput: 0.63 Mbit/s
95th percentile per-packet one-way delay: 832.911 ms
Loss rate: 2.86%
-- Flow 3:
Average throughput: 0.62 Mbit/s
95th percentile per-packet one-way delay: 2237.125 ms
Loss rate: 6.09%
```

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

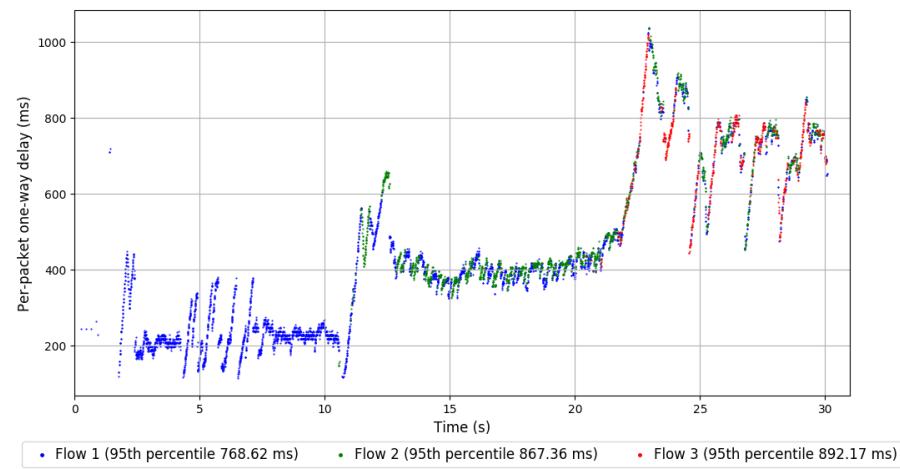
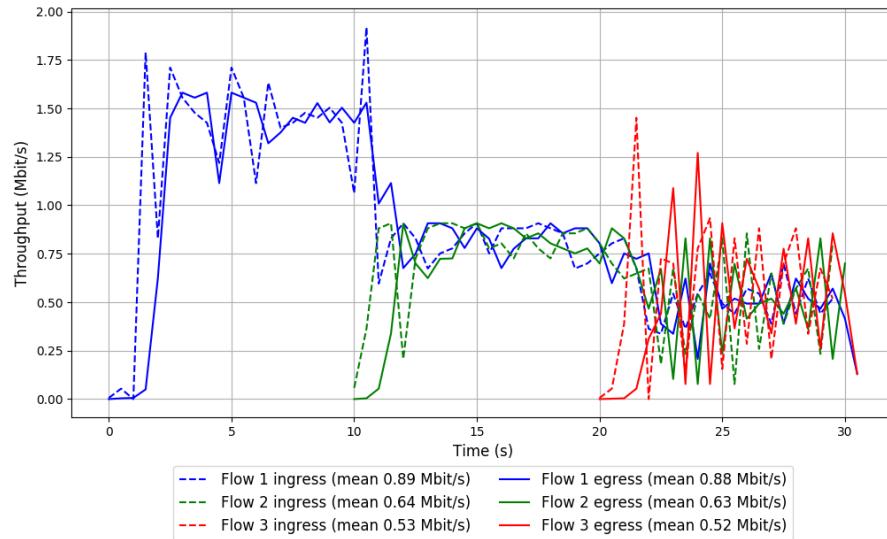


Run 3: Statistics of TaoVA-100x

```
Start at: 2018-08-22 01:53:12
End at: 2018-08-22 01:53:42
Local clock offset: -5.304 ms
Remote clock offset: 1.928 ms

# Below is generated by plot.py at 2018-08-22 01:59:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.47 Mbit/s
95th percentile per-packet one-way delay: 826.571 ms
Loss rate: 2.43%
-- Flow 1:
Average throughput: 0.88 Mbit/s
95th percentile per-packet one-way delay: 768.621 ms
Loss rate: 1.31%
-- Flow 2:
Average throughput: 0.63 Mbit/s
95th percentile per-packet one-way delay: 867.356 ms
Loss rate: 3.33%
-- Flow 3:
Average throughput: 0.52 Mbit/s
95th percentile per-packet one-way delay: 892.168 ms
Loss rate: 5.85%
```

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

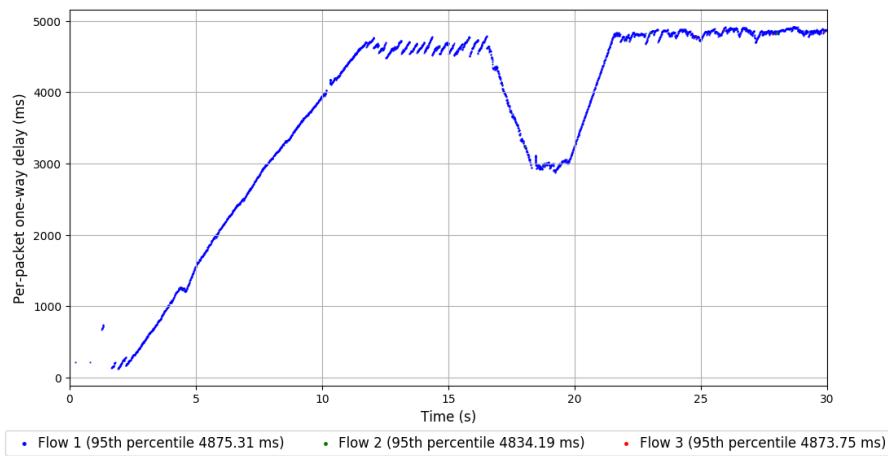
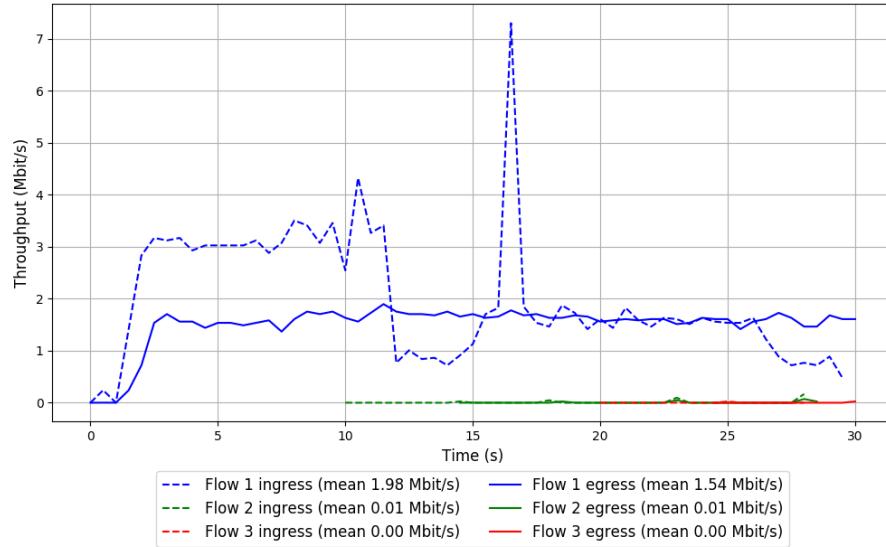


Run 1: Statistics of TCP Vegas

```
Start at: 2018-08-22 01:13:35
End at: 2018-08-22 01:14:05
Local clock offset: -14.228 ms
Remote clock offset: 4.55 ms

# Below is generated by plot.py at 2018-08-22 01:59:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.54 Mbit/s
95th percentile per-packet one-way delay: 4875.304 ms
Loss rate: 22.53%
-- Flow 1:
Average throughput: 1.54 Mbit/s
95th percentile per-packet one-way delay: 4875.313 ms
Loss rate: 22.46%
-- Flow 2:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 4834.186 ms
Loss rate: 48.72%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 4873.749 ms
Loss rate: 8.58%
```

Run 1: Report of TCP Vegas — Data Link

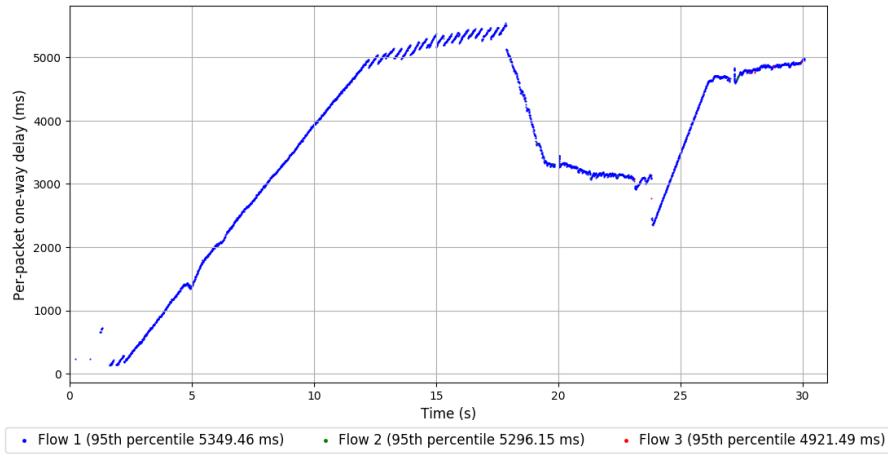
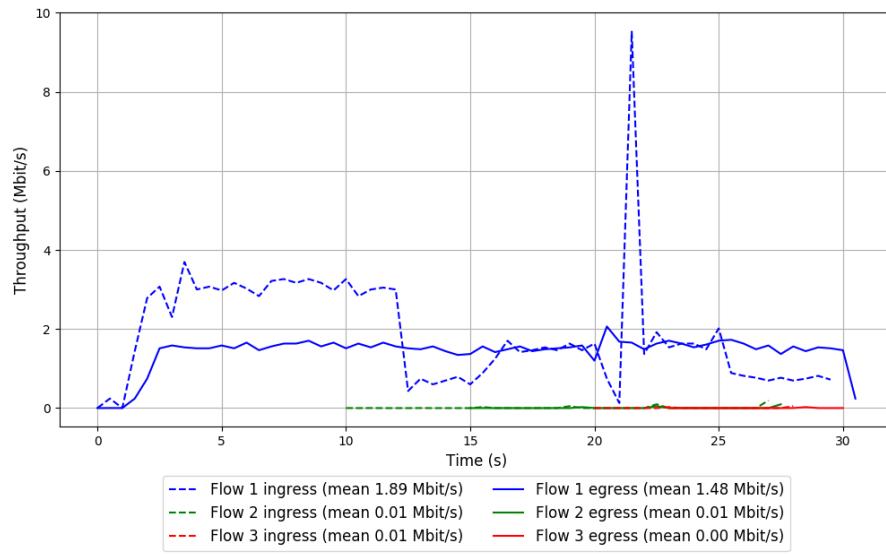


Run 2: Statistics of TCP Vegas

```
Start at: 2018-08-22 01:34:00
End at: 2018-08-22 01:34:30
Local clock offset: -15.05 ms
Remote clock offset: 6.77 ms

# Below is generated by plot.py at 2018-08-22 01:59:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.48 Mbit/s
95th percentile per-packet one-way delay: 5349.464 ms
Loss rate: 22.04%
-- Flow 1:
Average throughput: 1.48 Mbit/s
95th percentile per-packet one-way delay: 5349.464 ms
Loss rate: 21.91%
-- Flow 2:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 5296.145 ms
Loss rate: 52.06%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 4921.492 ms
Loss rate: 60.75%
```

Run 2: Report of TCP Vegas — Data Link

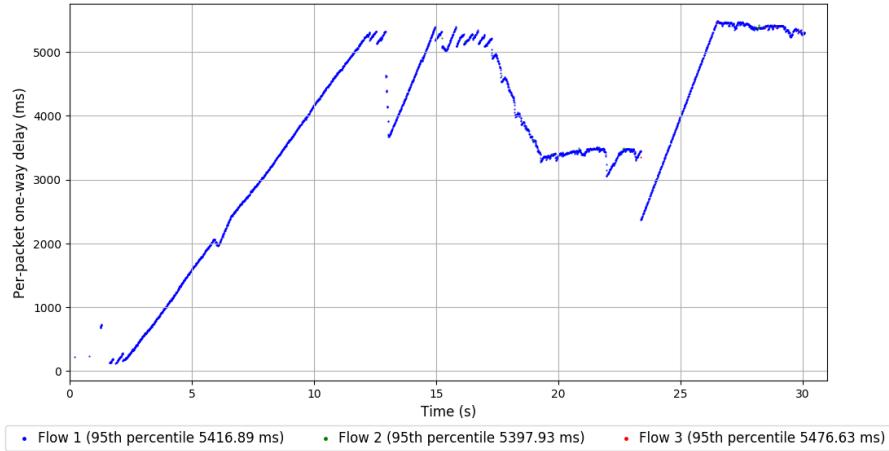
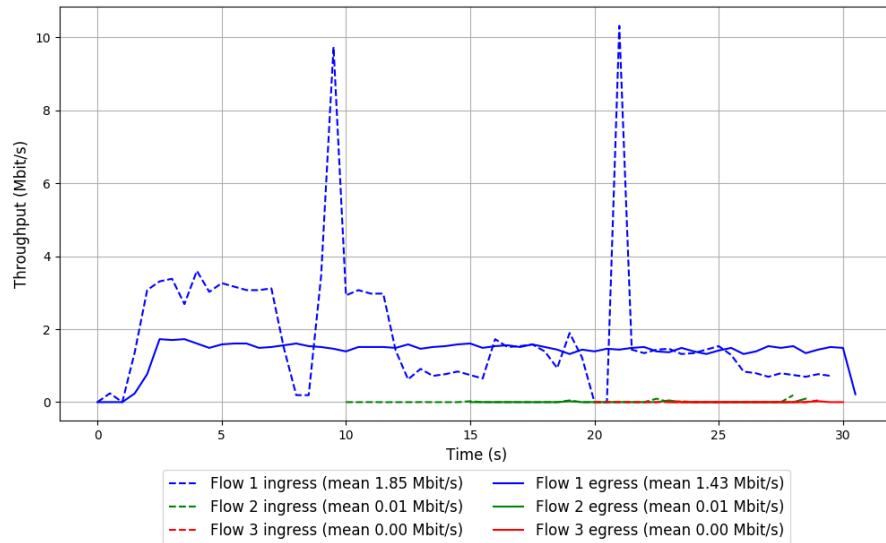


Run 3: Statistics of TCP Vegas

```
Start at: 2018-08-22 01:54:24
End at: 2018-08-22 01:54:54
Local clock offset: -4.935 ms
Remote clock offset: 2.917 ms

# Below is generated by plot.py at 2018-08-22 01:59:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.43 Mbit/s
95th percentile per-packet one-way delay: 5416.896 ms
Loss rate: 23.22%
-- Flow 1:
Average throughput: 1.43 Mbit/s
95th percentile per-packet one-way delay: 5416.894 ms
Loss rate: 23.09%
-- Flow 2:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 5397.932 ms
Loss rate: 52.06%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 5476.626 ms
Loss rate: 61.79%
```

Run 3: Report of TCP Vegas — Data Link

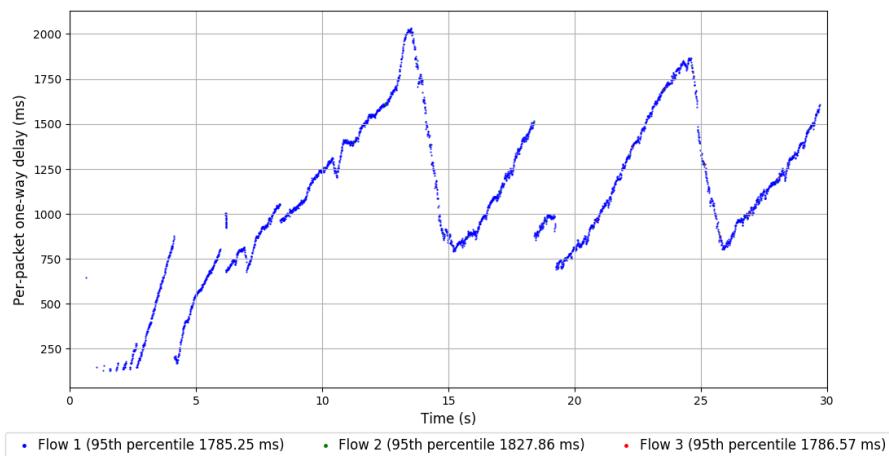
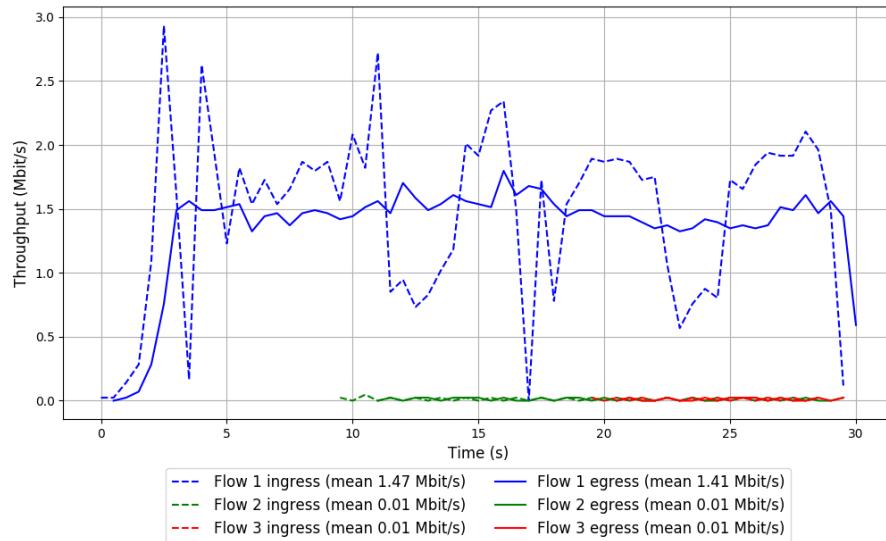


Run 1: Statistics of Verus

```
Start at: 2018-08-22 01:11:11
End at: 2018-08-22 01:11:41
Local clock offset: -14.04 ms
Remote clock offset: 1.867 ms

# Below is generated by plot.py at 2018-08-22 01:59:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.42 Mbit/s
95th percentile per-packet one-way delay: 1786.571 ms
Loss rate: 5.98%
-- Flow 1:
Average throughput: 1.41 Mbit/s
95th percentile per-packet one-way delay: 1785.248 ms
Loss rate: 5.97%
-- Flow 2:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 1827.858 ms
Loss rate: 4.76%
-- Flow 3:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 1786.571 ms
Loss rate: 10.00%
```

Run 1: Report of Verus — Data Link

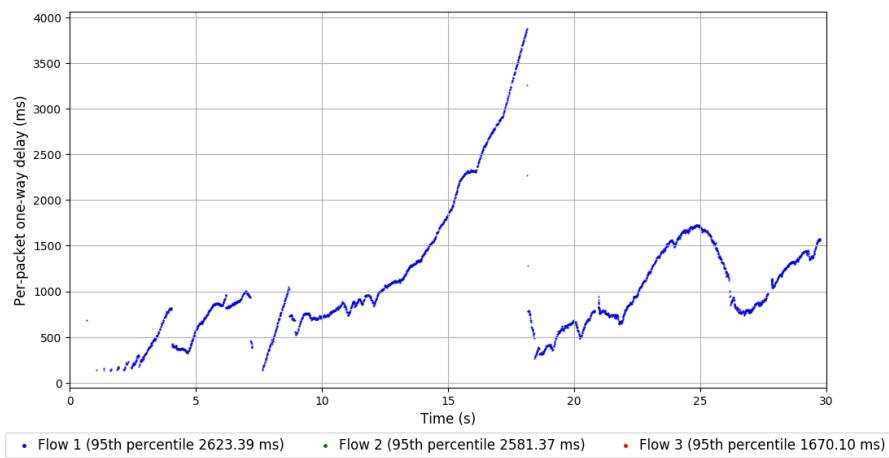
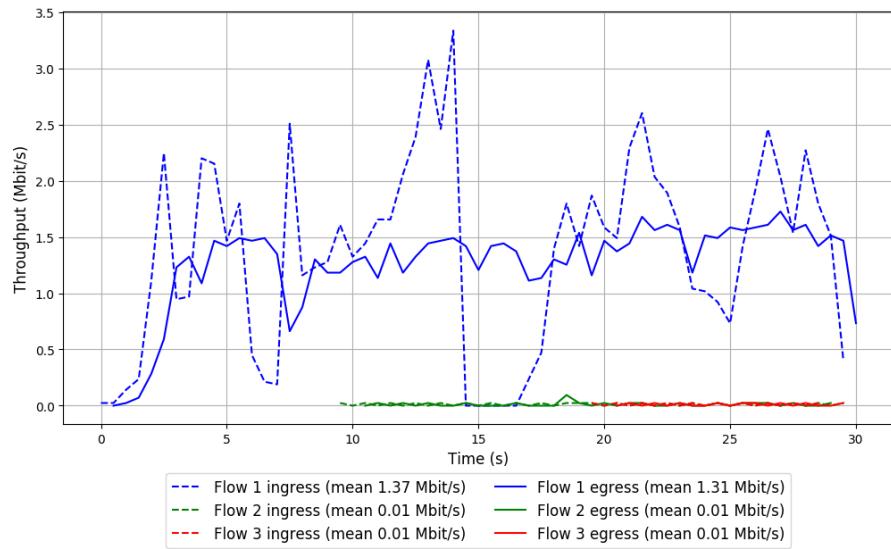


Run 2: Statistics of Verus

```
Start at: 2018-08-22 01:31:35
End at: 2018-08-22 01:32:05
Local clock offset: -14.821 ms
Remote clock offset: 6.703 ms

# Below is generated by plot.py at 2018-08-22 01:59:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.32 Mbit/s
95th percentile per-packet one-way delay: 2623.389 ms
Loss rate: 6.07%
-- Flow 1:
Average throughput: 1.31 Mbit/s
95th percentile per-packet one-way delay: 2623.389 ms
Loss rate: 6.04%
-- Flow 2:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 2581.371 ms
Loss rate: 9.09%
-- Flow 3:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 1670.101 ms
Loss rate: 10.00%
```

Run 2: Report of Verus — Data Link

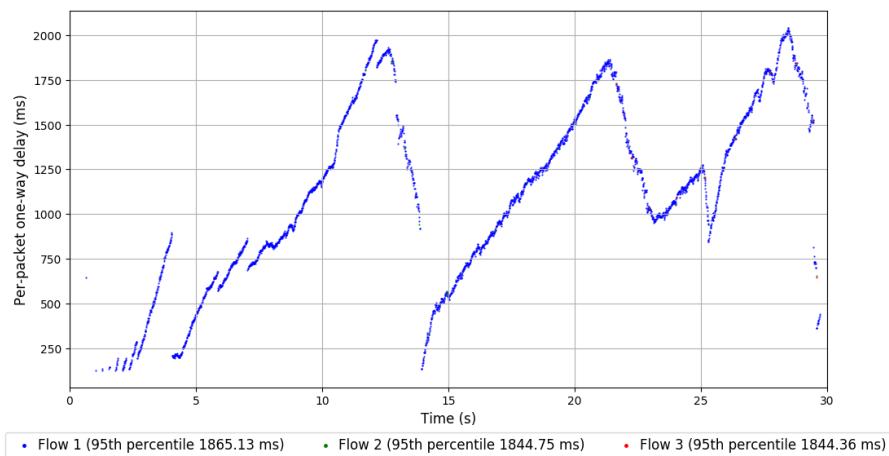
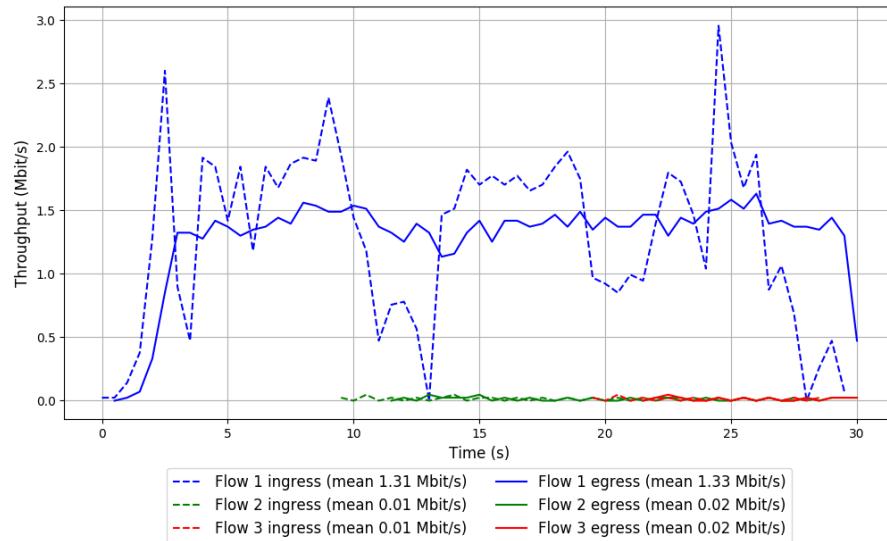


Run 3: Statistics of Verus

```
Start at: 2018-08-22 01:52:00
End at: 2018-08-22 01:52:30
Local clock offset: -4.882 ms
Remote clock offset: 1.943 ms

# Below is generated by plot.py at 2018-08-22 01:59:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.34 Mbit/s
95th percentile per-packet one-way delay: 1864.577 ms
Loss rate: 0.30%
-- Flow 1:
Average throughput: 1.33 Mbit/s
95th percentile per-packet one-way delay: 1865.132 ms
Loss rate: 0.30%
-- Flow 2:
Average throughput: 0.02 Mbit/s
95th percentile per-packet one-way delay: 1844.750 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.02 Mbit/s
95th percentile per-packet one-way delay: 1844.362 ms
Loss rate: 0.00%
```

Run 3: Report of Verus — Data Link

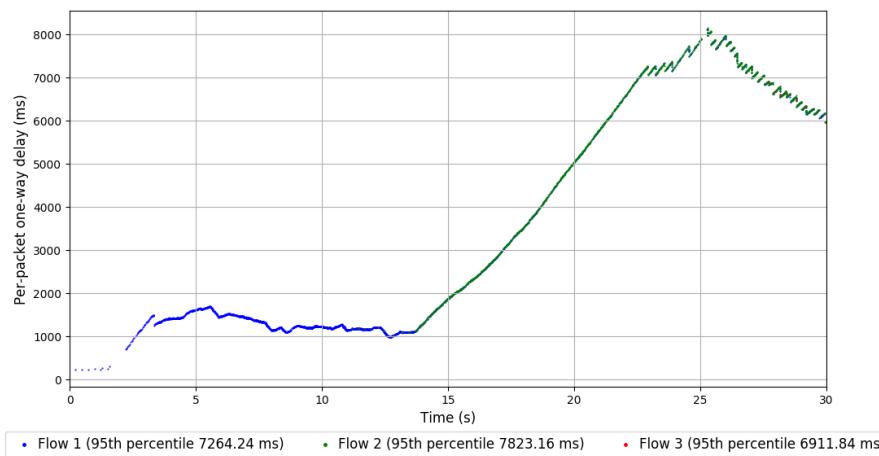
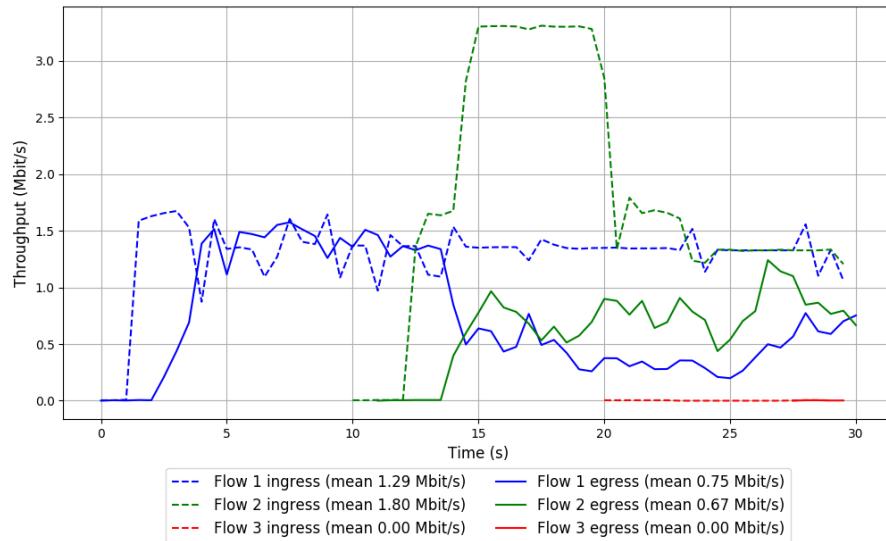


Run 1: Statistics of PCC-Vivace

```
Start at: 2018-08-22 01:09:59
End at: 2018-08-22 01:10:29
Local clock offset: -14.013 ms
Remote clock offset: 1.878 ms

# Below is generated by plot.py at 2018-08-22 01:59:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.18 Mbit/s
95th percentile per-packet one-way delay: 7671.340 ms
Loss rate: 53.02%
-- Flow 1:
Average throughput: 0.75 Mbit/s
95th percentile per-packet one-way delay: 7264.237 ms
Loss rate: 41.83%
-- Flow 2:
Average throughput: 0.67 Mbit/s
95th percentile per-packet one-way delay: 7823.159 ms
Loss rate: 65.03%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 6911.836 ms
Loss rate: 68.93%
```

Run 1: Report of PCC-Vivace — Data Link

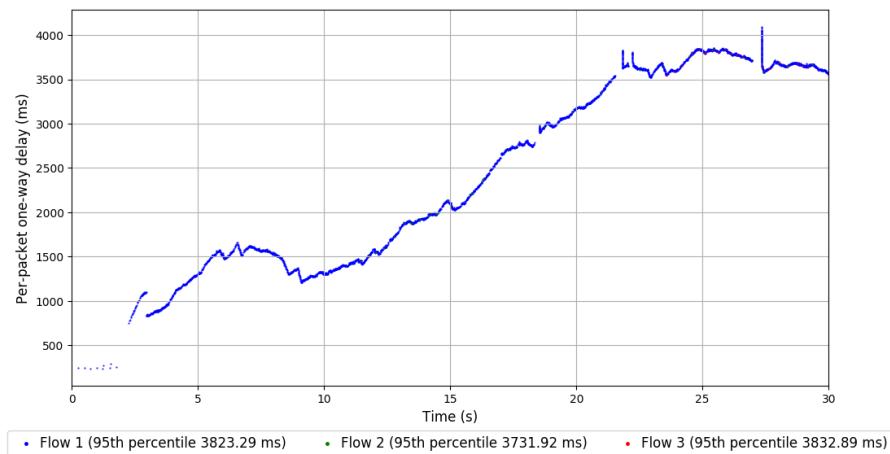
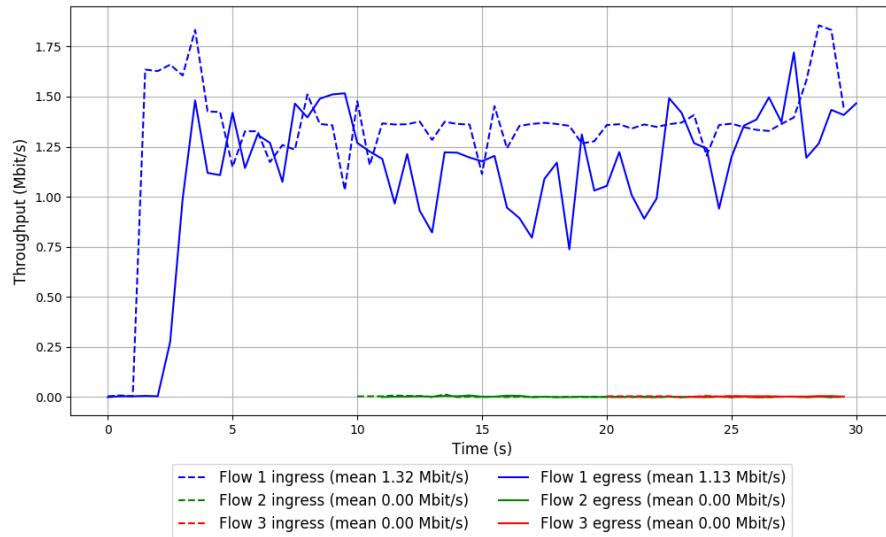


Run 2: Statistics of PCC-Vivace

```
Start at: 2018-08-22 01:30:23
End at: 2018-08-22 01:30:53
Local clock offset: -13.96 ms
Remote clock offset: 1.563 ms

# Below is generated by plot.py at 2018-08-22 01:59:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.13 Mbit/s
95th percentile per-packet one-way delay: 3823.501 ms
Loss rate: 15.07%
-- Flow 1:
Average throughput: 1.13 Mbit/s
95th percentile per-packet one-way delay: 3823.290 ms
Loss rate: 15.07%
-- Flow 2:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 3731.921 ms
Loss rate: 10.64%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 3832.893 ms
Loss rate: 10.61%
```

Run 2: Report of PCC-Vivace — Data Link

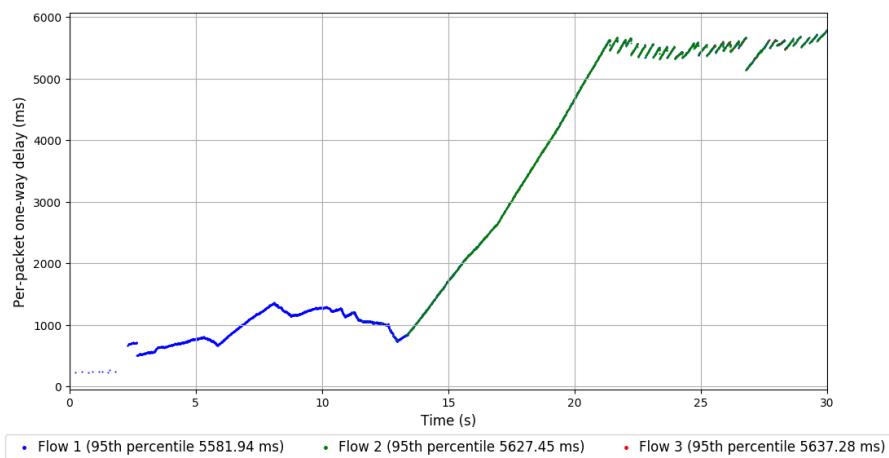
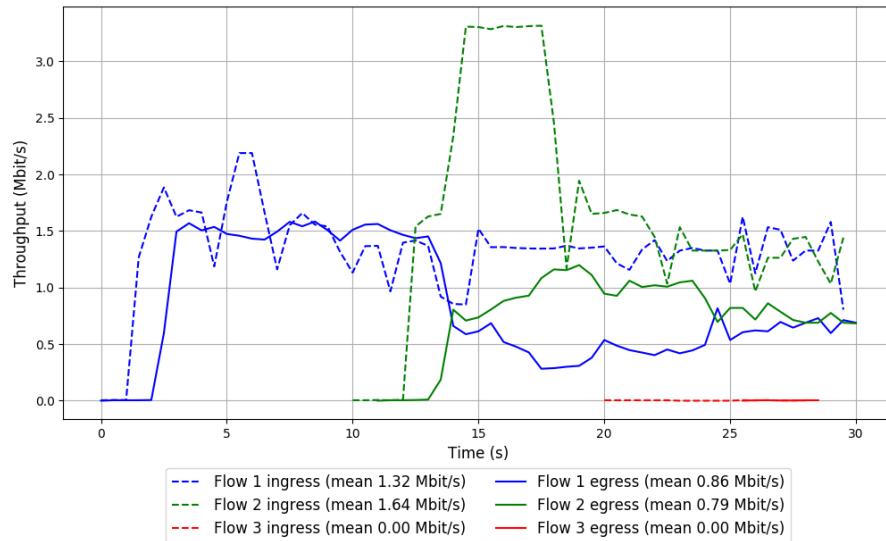


Run 3: Statistics of PCC-Vivace

```
Start at: 2018-08-22 01:50:48
End at: 2018-08-22 01:51:18
Local clock offset: -4.617 ms
Remote clock offset: 2.925 ms

# Below is generated by plot.py at 2018-08-22 01:59:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.35 Mbit/s
95th percentile per-packet one-way delay: 5606.821 ms
Loss rate: 44.09%
-- Flow 1:
Average throughput: 0.86 Mbit/s
95th percentile per-packet one-way delay: 5581.944 ms
Loss rate: 35.55%
-- Flow 2:
Average throughput: 0.79 Mbit/s
95th percentile per-packet one-way delay: 5627.451 ms
Loss rate: 54.46%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 5637.278 ms
Loss rate: 54.02%
```

Run 3: Report of PCC-Vivace — Data Link

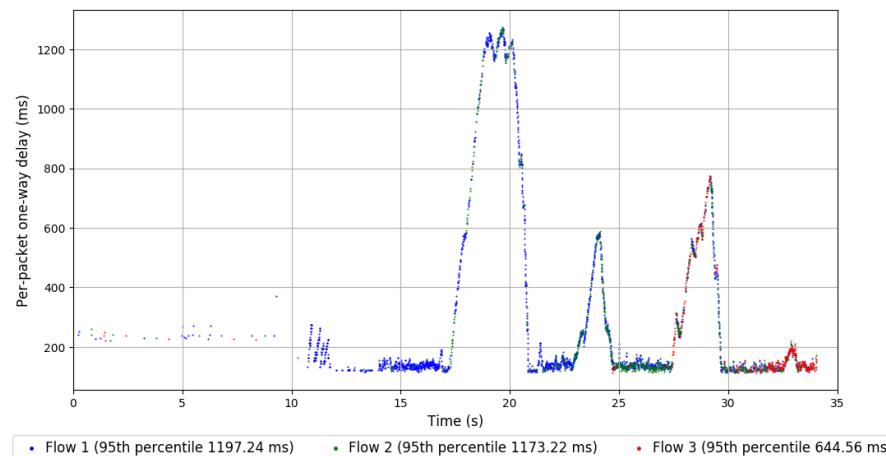
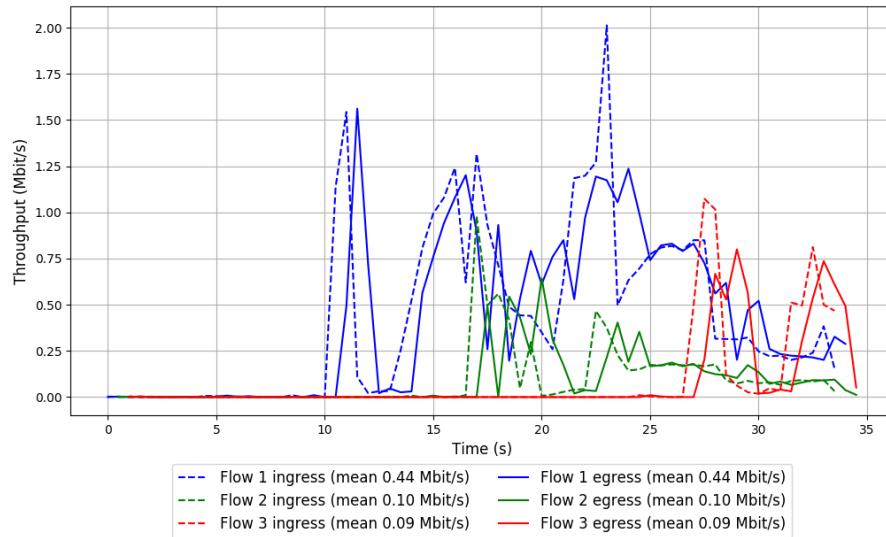


Run 1: Statistics of WebRTC media

```
Start at: 2018-08-22 01:14:47
End at: 2018-08-22 01:15:17
Local clock offset: -14.343 ms
Remote clock offset: 5.461 ms

# Below is generated by plot.py at 2018-08-22 01:59:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.62 Mbit/s
95th percentile per-packet one-way delay: 1175.955 ms
Loss rate: 0.18%
-- Flow 1:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 1197.242 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.10 Mbit/s
95th percentile per-packet one-way delay: 1173.216 ms
Loss rate: 0.06%
-- Flow 3:
Average throughput: 0.09 Mbit/s
95th percentile per-packet one-way delay: 644.563 ms
Loss rate: 1.21%
```

Run 1: Report of WebRTC media — Data Link

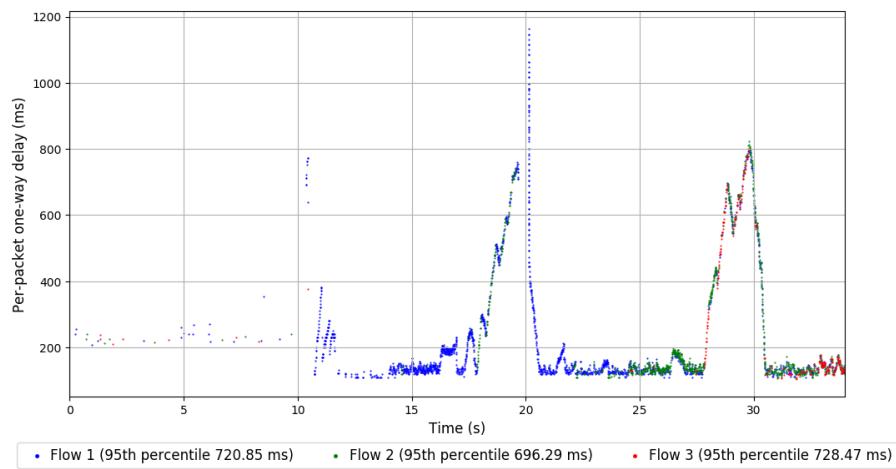
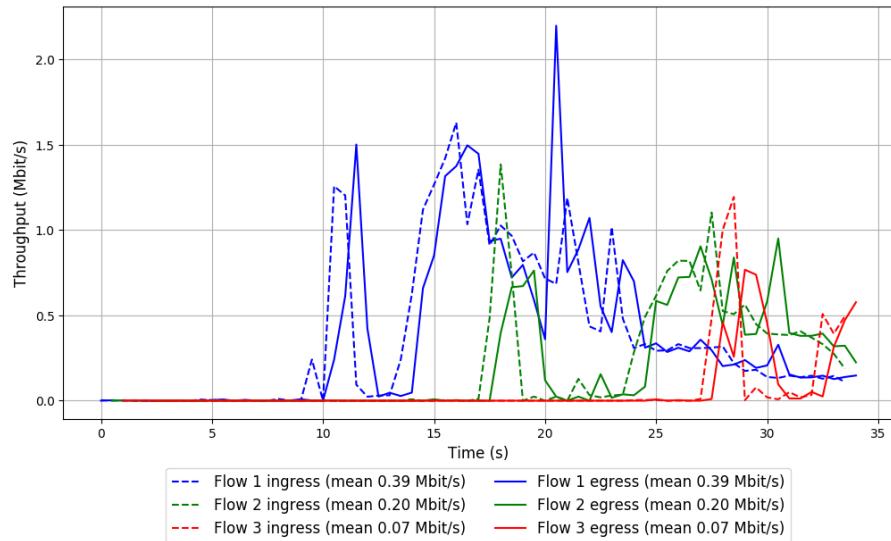


Run 2: Statistics of WebRTC media

```
Start at: 2018-08-22 01:35:12
End at: 2018-08-22 01:35:42
Local clock offset: -14.307 ms
Remote clock offset: 2.864 ms

# Below is generated by plot.py at 2018-08-22 01:59:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.65 Mbit/s
95th percentile per-packet one-way delay: 717.778 ms
Loss rate: 0.19%
-- Flow 1:
Average throughput: 0.39 Mbit/s
95th percentile per-packet one-way delay: 720.846 ms
Loss rate: 0.03%
-- Flow 2:
Average throughput: 0.20 Mbit/s
95th percentile per-packet one-way delay: 696.287 ms
Loss rate: 0.20%
-- Flow 3:
Average throughput: 0.07 Mbit/s
95th percentile per-packet one-way delay: 728.467 ms
Loss rate: 1.07%
```

Run 2: Report of WebRTC media — Data Link



Run 3: Statistics of WebRTC media

```
Start at: 2018-08-22 01:55:36
End at: 2018-08-22 01:56:06
Local clock offset: -3.907 ms
Remote clock offset: 5.736 ms

# Below is generated by plot.py at 2018-08-22 01:59:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.55 Mbit/s
95th percentile per-packet one-way delay: 1512.866 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 0.29 Mbit/s
95th percentile per-packet one-way delay: 1200.804 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1594.611 ms
Loss rate: 0.07%
-- Flow 3:
Average throughput: 0.04 Mbit/s
95th percentile per-packet one-way delay: 1730.083 ms
Loss rate: 0.00%
```

Run 3: Report of WebRTC media — Data Link

