

Pantheon Report

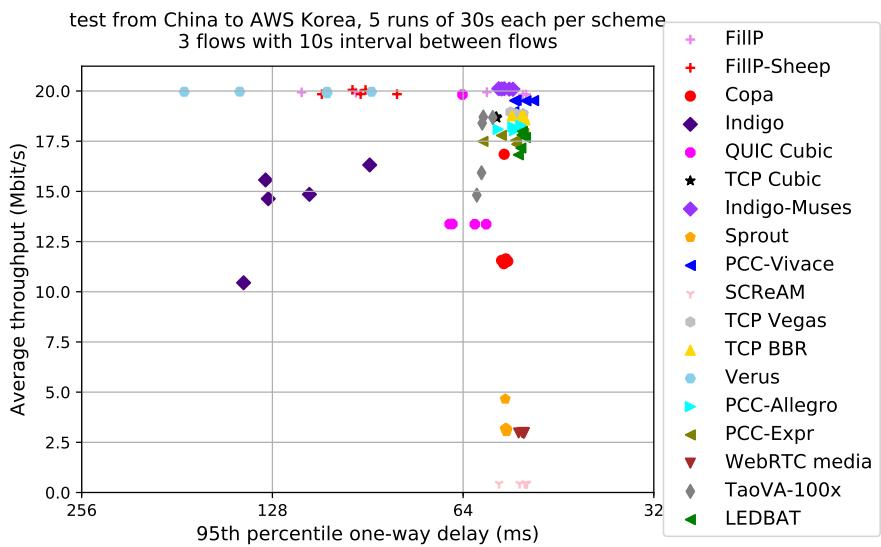
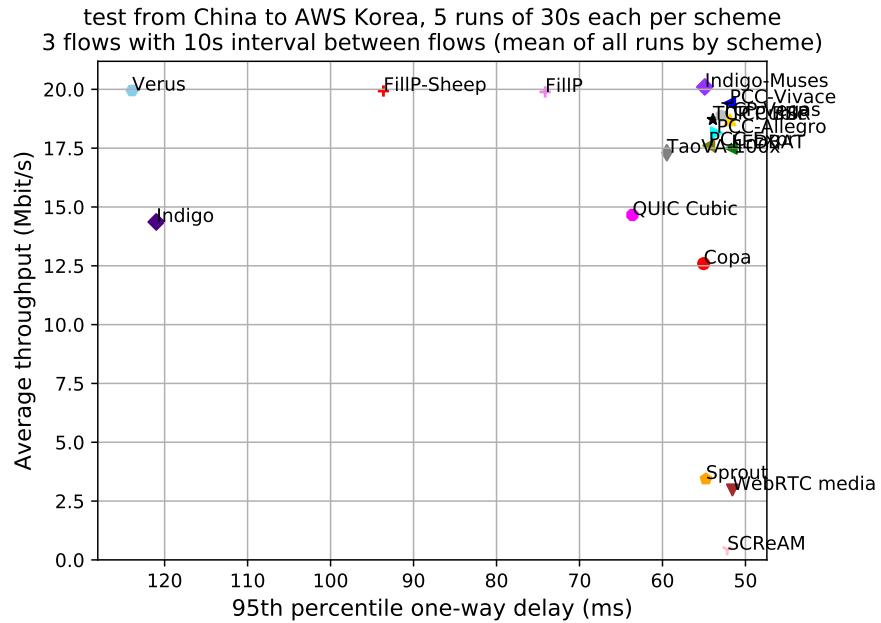
Generated at 2018-09-06 21:07:53 (UTC).
Data path: China on `eno1` (*remote*) → AWS Korea on `ens5` (*local*).
Repeated the test of 18 congestion control schemes 5 times.
Each test lasted for 30 seconds running 3 flows with 10-second interval between two flows.
NTP offsets were measured against `ntp.nict.jp` and have been applied to correct the timestamps in logs.

System info:

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

Git summary:

```
branch: muses @ f392ce15d580343f4432c3d7e068b3290f03eb4a
third_party/fillp @ d47f4fa1b454a5e3c0537115c5a28436dbd4b834
third_party/fillp-sheep @ daed0c84f98531712514b2231f43ec6901114ffe
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdf58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/muses @ a28d20fb82a95a965a3da65fd1eb71b8994e9b84
third_party/pantheon-tunnel @ cbfce6db5ff5740dafe1771f813cd646339e1952
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
```



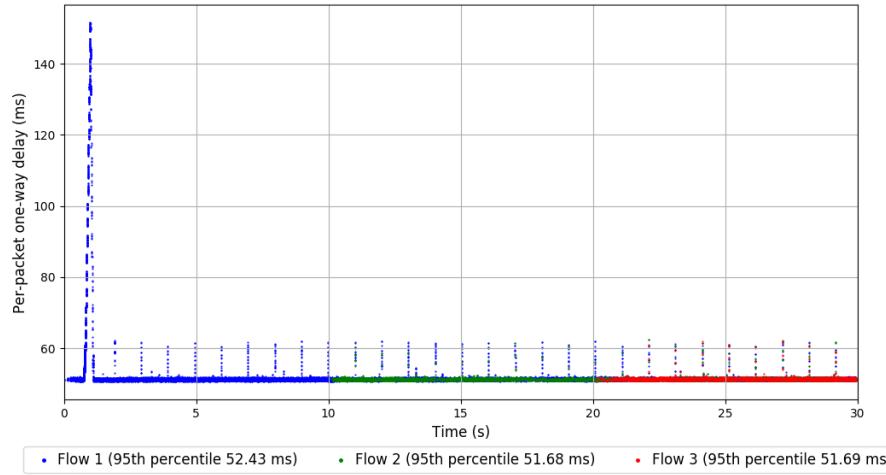
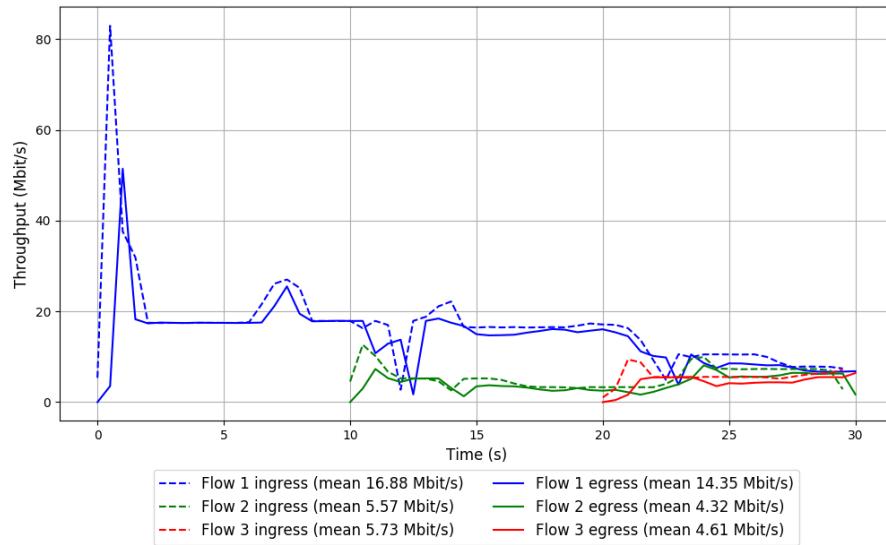
scheme	# runs	mean avg tput (Mbit/s)			mean 95th-%ile delay (ms)			mean loss rate (%)		
		flow 1	flow 2	flow 3	flow 1	flow 2	flow 3	flow 1	flow 2	flow 3
TCP BBR	5	13.82	4.73	5.27	53.07	51.68	51.68	16.33	23.29	21.42
Copa	5	2.56	13.05	4.34	51.95	54.47	50.95	86.65	65.59	70.26
TCP Cubic	5	8.57	9.70	11.19	58.44	53.67	52.43	9.17	9.77	7.04
FillP	5	11.76	8.19	8.17	93.64	51.25	51.26	23.43	24.41	26.14
FillP-Sheep	5	12.41	8.23	6.26	117.26	51.45	51.11	32.13	33.87	35.87
Indigo	5	29.38	5.64	4.67	98.14	107.46	108.01	70.72	83.80	88.13
LEDBAT	5	10.05	7.73	7.20	51.69	51.57	51.56	1.43	2.19	2.06
Indigo-Muses	5	18.11	2.02	1.97	55.74	51.98	53.08	42.07	48.64	50.80
PCC-Allegro	5	13.28	6.31	2.06	59.63	51.23	51.22	44.24	11.55	16.36
PCC-Expr	5	10.80	7.62	5.30	60.52	53.23	50.99	56.59	41.21	30.15
QUIC Cubic	5	2.59	13.38	9.86	54.17	62.89	50.89	2.10	10.93	5.04
SCReAM	5	0.22	0.22	0.22	52.22	51.87	51.61	0.26	0.43	1.01
Sprout	5	2.52	5.85	8.28	51.88	54.40	54.74	8.04	9.44	0.69
TaoVA-100x	5	10.86	9.99	7.23	60.34	59.61	51.30	21.50	22.34	17.46
TCP Vegas	5	9.82	8.95	9.38	57.34	51.56	51.40	7.69	8.35	5.89
Verus	5	17.95	2.91	0.27	104.56	136.88	93.46	52.64	68.68	57.62
PCC-Vivace	5	14.53	6.00	2.78	53.86	50.83	50.72	9.33	7.81	9.45
WebRTC media	5	1.60	0.97	0.40	51.51	51.53	51.36	0.22	0.43	0.50

Run 1: Statistics of TCP BBR

```
Start at: 2018-09-06 19:23:40
End at: 2018-09-06 19:24:10
Local clock offset: 8.101 ms
Remote clock offset: 11.192 ms

# Below is generated by plot.py at 2018-09-06 21:04:24
# Datalink statistics
-- Total of 3 flows:
Average throughput: 18.73 Mbit/s
95th percentile per-packet one-way delay: 51.771 ms
Loss rate: 16.94%
-- Flow 1:
Average throughput: 14.35 Mbit/s
95th percentile per-packet one-way delay: 52.426 ms
Loss rate: 15.25%
-- Flow 2:
Average throughput: 4.32 Mbit/s
95th percentile per-packet one-way delay: 51.678 ms
Loss rate: 22.86%
-- Flow 3:
Average throughput: 4.61 Mbit/s
95th percentile per-packet one-way delay: 51.694 ms
Loss rate: 20.35%
```

Run 1: Report of TCP BBR — Data Link

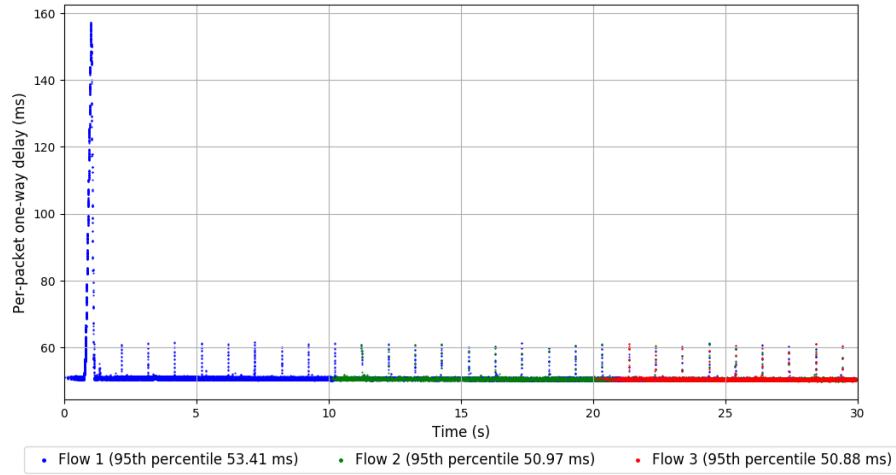
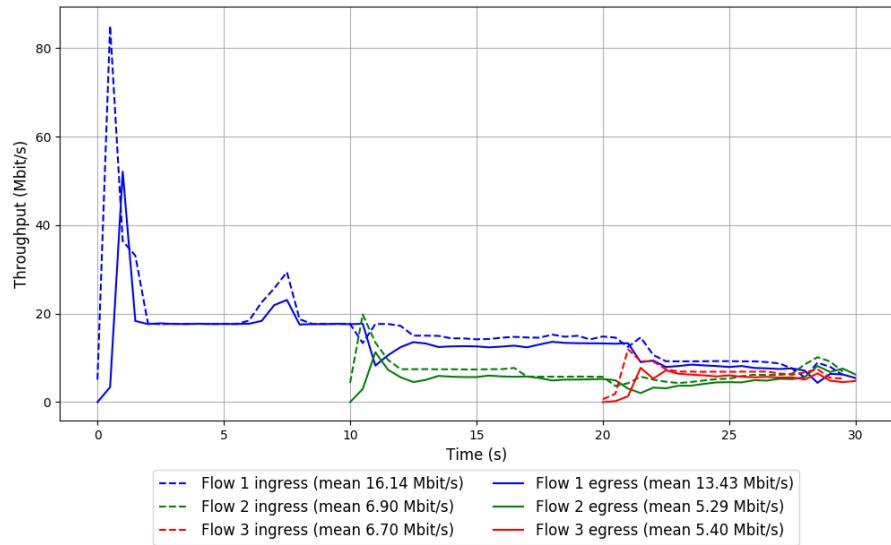


Run 2: Statistics of TCP BBR

```
Start at: 2018-09-06 19:45:58
End at: 2018-09-06 19:46:28
Local clock offset: 3.816 ms
Remote clock offset: -14.57 ms

# Below is generated by plot.py at 2018-09-06 21:04:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 18.72 Mbit/s
95th percentile per-packet one-way delay: 51.305 ms
Loss rate: 18.66%
-- Flow 1:
Average throughput: 13.43 Mbit/s
95th percentile per-packet one-way delay: 53.409 ms
Loss rate: 17.04%
-- Flow 2:
Average throughput: 5.29 Mbit/s
95th percentile per-packet one-way delay: 50.965 ms
Loss rate: 23.62%
-- Flow 3:
Average throughput: 5.40 Mbit/s
95th percentile per-packet one-way delay: 50.878 ms
Loss rate: 20.16%
```

Run 2: Report of TCP BBR — Data Link

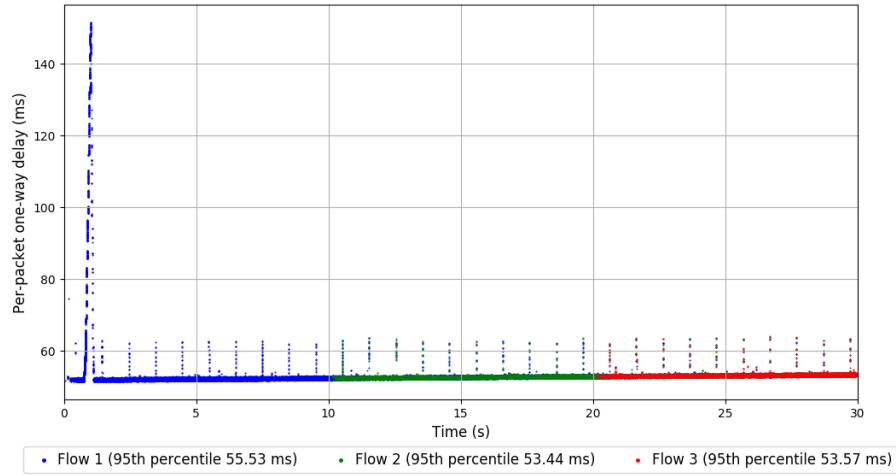
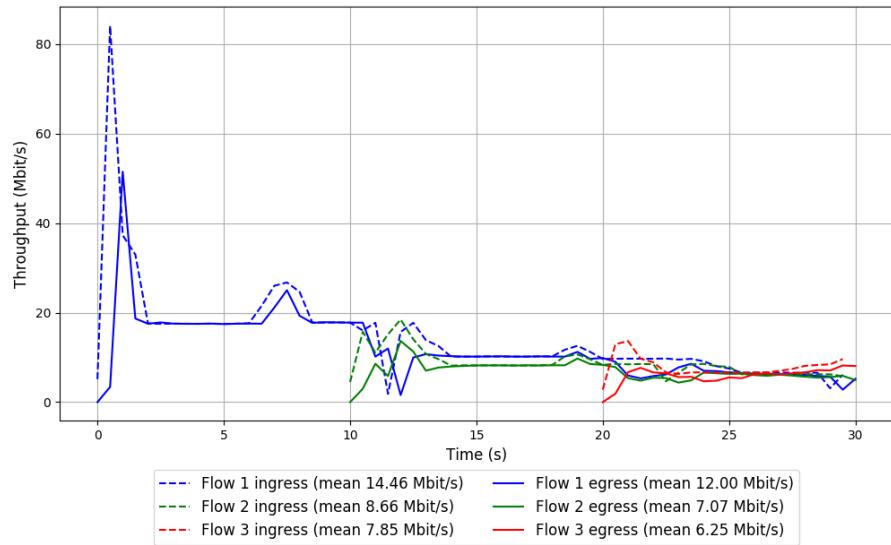


Run 3: Statistics of TCP BBR

```
Start at: 2018-09-06 20:08:22
End at: 2018-09-06 20:08:52
Local clock offset: 0.182 ms
Remote clock offset: -32.904 ms

# Below is generated by plot.py at 2018-09-06 21:04:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 18.76 Mbit/s
95th percentile per-packet one-way delay: 53.590 ms
Loss rate: 18.10%
-- Flow 1:
Average throughput: 12.00 Mbit/s
95th percentile per-packet one-way delay: 55.532 ms
Loss rate: 17.27%
-- Flow 2:
Average throughput: 7.07 Mbit/s
95th percentile per-packet one-way delay: 53.436 ms
Loss rate: 18.80%
-- Flow 3:
Average throughput: 6.25 Mbit/s
95th percentile per-packet one-way delay: 53.571 ms
Loss rate: 21.11%
```

Run 3: Report of TCP BBR — Data Link

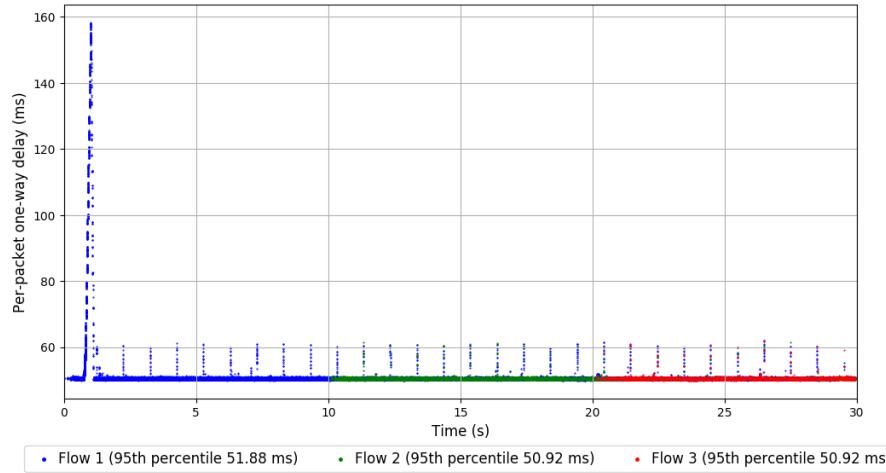
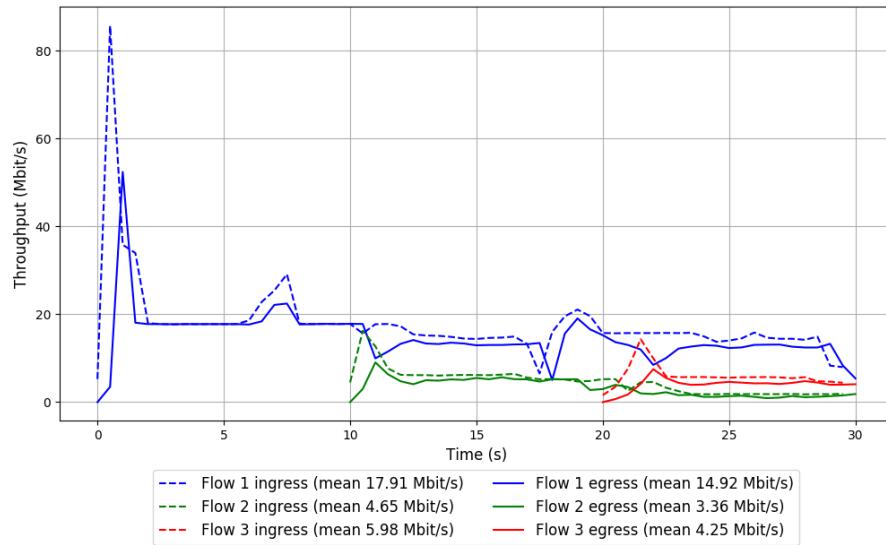


Run 4: Statistics of TCP BBR

```
Start at: 2018-09-06 20:30:47
End at: 2018-09-06 20:31:17
Local clock offset: 0.725 ms
Remote clock offset: -12.074 ms

# Below is generated by plot.py at 2018-09-06 21:04:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 18.56 Mbit/s
95th percentile per-packet one-way delay: 51.112 ms
Loss rate: 19.47%
-- Flow 1:
Average throughput: 14.92 Mbit/s
95th percentile per-packet one-way delay: 51.876 ms
Loss rate: 16.90%
-- Flow 2:
Average throughput: 3.36 Mbit/s
95th percentile per-packet one-way delay: 50.924 ms
Loss rate: 27.89%
-- Flow 3:
Average throughput: 4.25 Mbit/s
95th percentile per-packet one-way delay: 50.920 ms
Loss rate: 29.54%
```

Run 4: Report of TCP BBR — Data Link

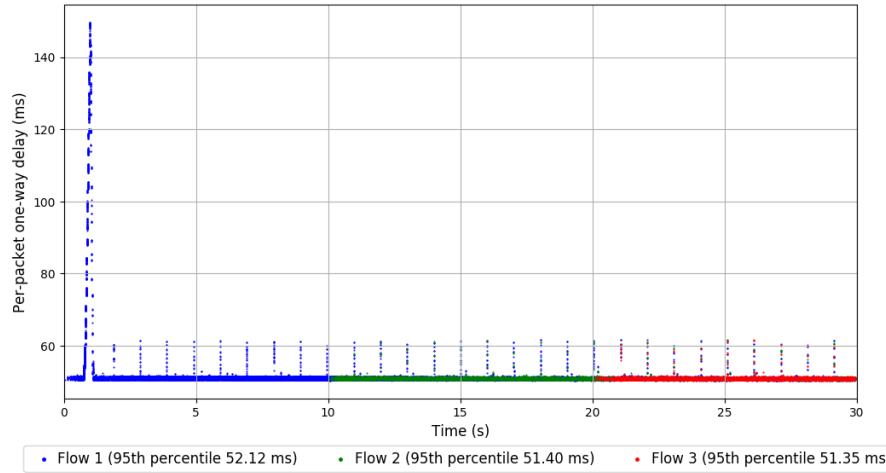
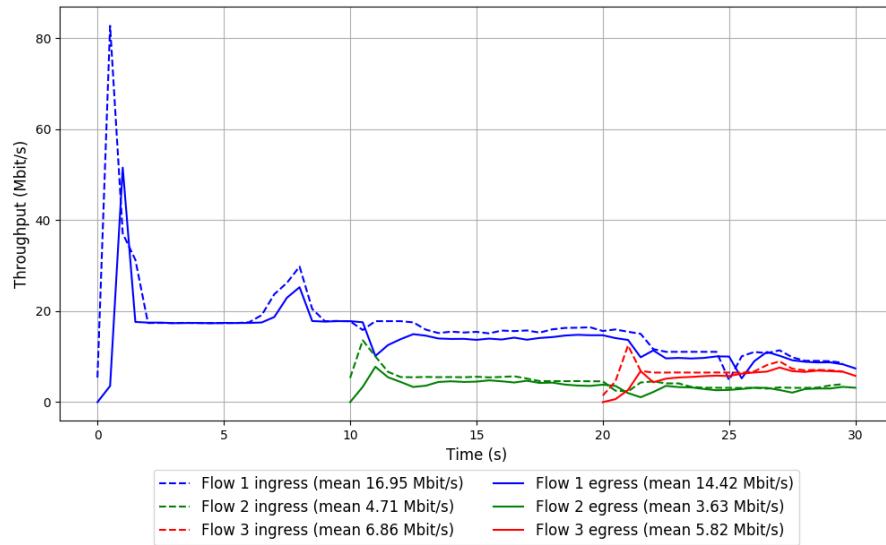


Run 5: Statistics of TCP BBR

```
Start at: 2018-09-06 20:53:08
End at: 2018-09-06 20:53:38
Local clock offset: -0.951 ms
Remote clock offset: -20.879 ms

# Below is generated by plot.py at 2018-09-06 21:04:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 18.75 Mbit/s
95th percentile per-packet one-way delay: 51.532 ms
Loss rate: 16.39%
-- Flow 1:
Average throughput: 14.42 Mbit/s
95th percentile per-packet one-way delay: 52.123 ms
Loss rate: 15.17%
-- Flow 2:
Average throughput: 3.63 Mbit/s
95th percentile per-packet one-way delay: 51.397 ms
Loss rate: 23.28%
-- Flow 3:
Average throughput: 5.82 Mbit/s
95th percentile per-packet one-way delay: 51.354 ms
Loss rate: 15.95%
```

Run 5: Report of TCP BBR — Data Link

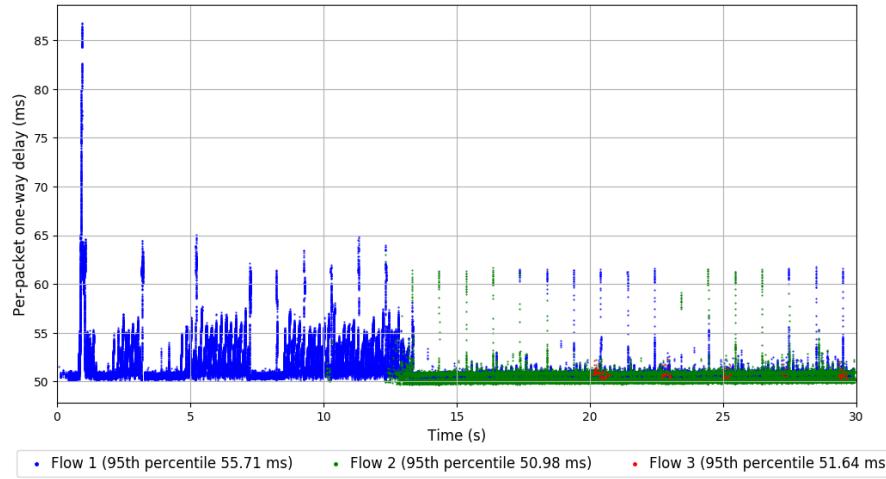
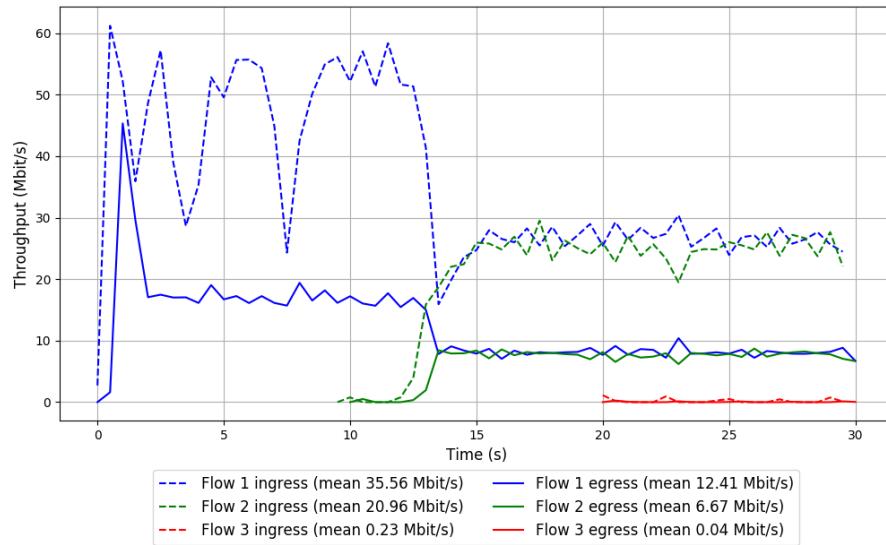


Run 1: Statistics of Copa

```
Start at: 2018-09-06 19:21:09
End at: 2018-09-06 19:21:39
Local clock offset: 8.813 ms
Remote clock offset: 11.388 ms

# Below is generated by plot.py at 2018-09-06 21:05:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 16.85 Mbit/s
95th percentile per-packet one-way delay: 55.124 ms
Loss rate: 66.11%
-- Flow 1:
Average throughput: 12.41 Mbit/s
95th percentile per-packet one-way delay: 55.710 ms
Loss rate: 65.21%
-- Flow 2:
Average throughput: 6.67 Mbit/s
95th percentile per-packet one-way delay: 50.983 ms
Loss rate: 68.33%
-- Flow 3:
Average throughput: 0.04 Mbit/s
95th percentile per-packet one-way delay: 51.636 ms
Loss rate: 80.41%
```

Run 1: Report of Copa — Data Link

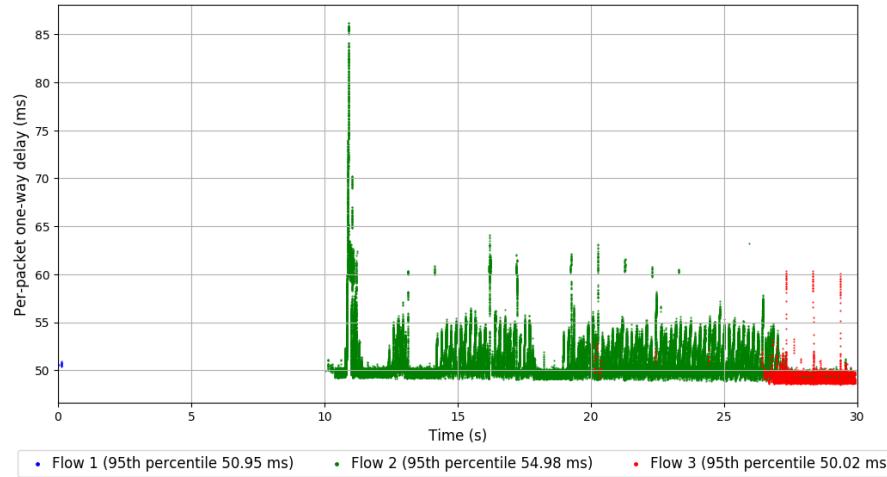
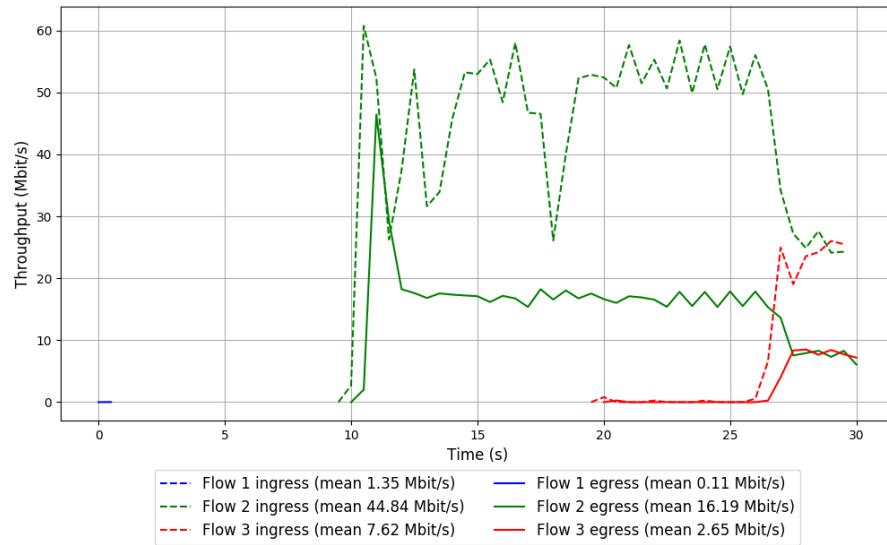


Run 2: Statistics of Copa

```
Start at: 2018-09-06 19:43:20
End at: 2018-09-06 19:43:50
Local clock offset: 4.173 ms
Remote clock offset: -10.833 ms

# Below is generated by plot.py at 2018-09-06 21:05:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 11.64 Mbit/s
95th percentile per-packet one-way delay: 54.807 ms
Loss rate: 64.16%
-- Flow 1:
Average throughput: 0.11 Mbit/s
95th percentile per-packet one-way delay: 50.948 ms
Loss rate: 91.62%
-- Flow 2:
Average throughput: 16.19 Mbit/s
95th percentile per-packet one-way delay: 54.978 ms
Loss rate: 64.04%
-- Flow 3:
Average throughput: 2.65 Mbit/s
95th percentile per-packet one-way delay: 50.015 ms
Loss rate: 65.45%
```

Run 2: Report of Copa — Data Link

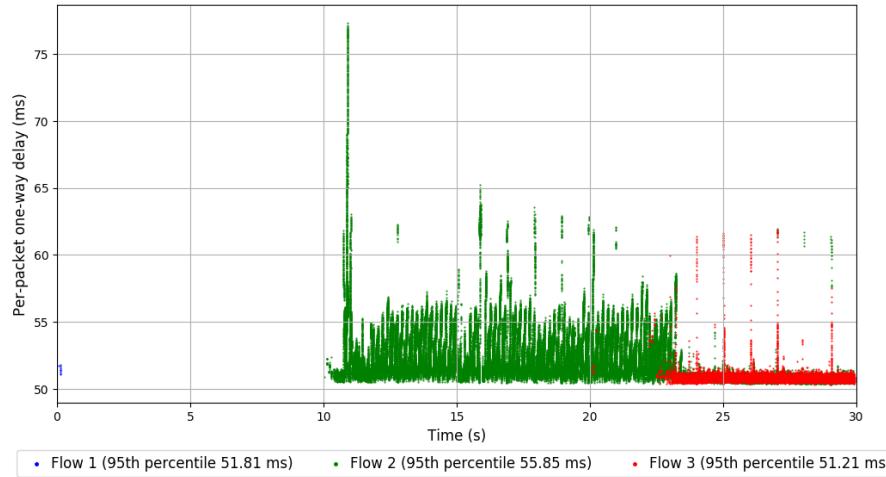
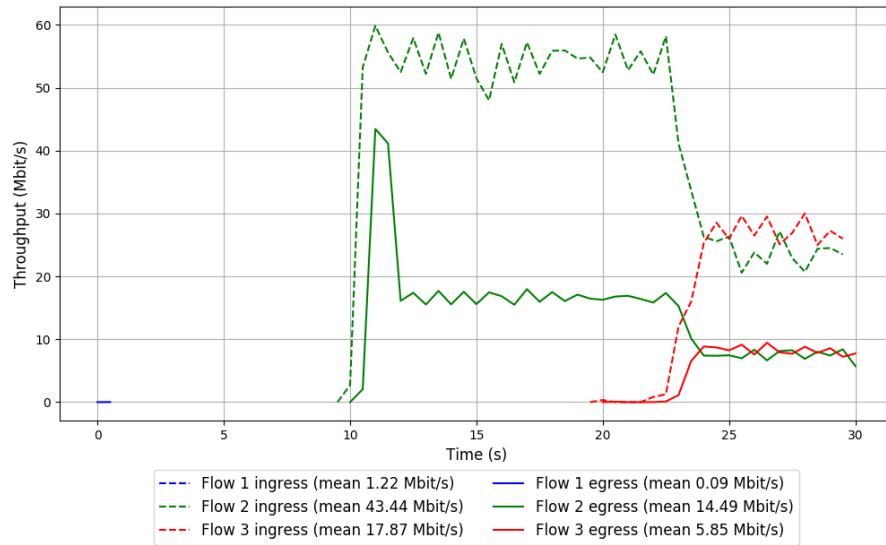


Run 3: Statistics of Copa

```
Start at: 2018-09-06 20:05:46
End at: 2018-09-06 20:06:16
Local clock offset: 0.592 ms
Remote clock offset: -32.883 ms

# Below is generated by plot.py at 2018-09-06 21:05:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 11.56 Mbit/s
95th percentile per-packet one-way delay: 55.654 ms
Loss rate: 66.94%
-- Flow 1:
Average throughput: 0.09 Mbit/s
95th percentile per-packet one-way delay: 51.813 ms
Loss rate: 92.39%
-- Flow 2:
Average throughput: 14.49 Mbit/s
95th percentile per-packet one-way delay: 55.855 ms
Loss rate: 66.81%
-- Flow 3:
Average throughput: 5.85 Mbit/s
95th percentile per-packet one-way delay: 51.210 ms
Loss rate: 67.54%
```

Run 3: Report of Copa — Data Link

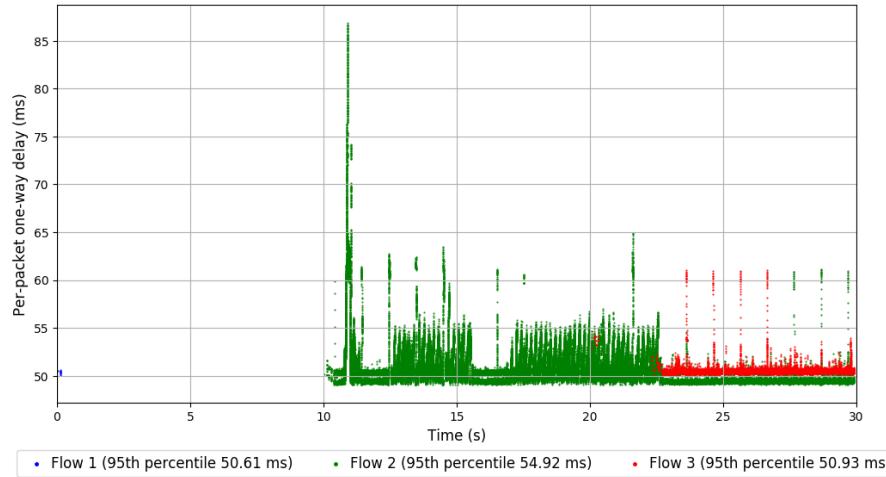
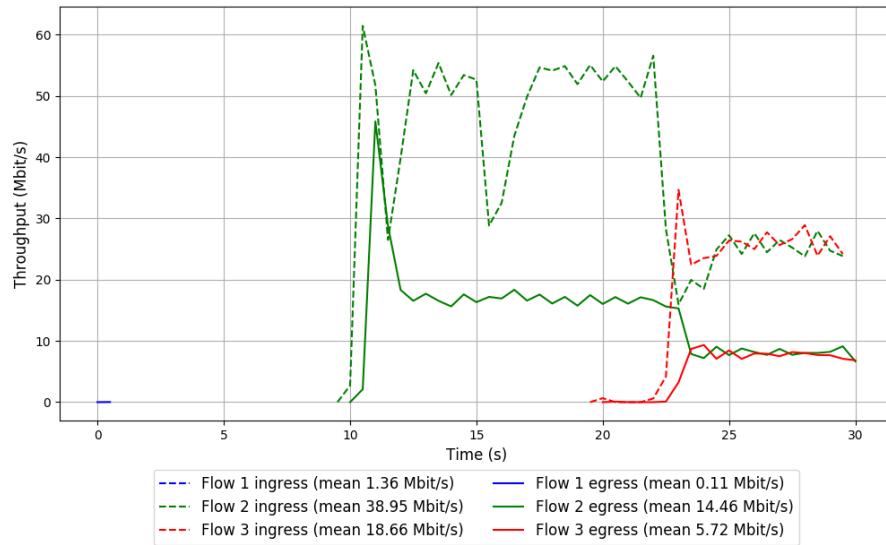


Run 4: Statistics of Copa

```
Start at: 2018-09-06 20:28:08
End at: 2018-09-06 20:28:38
Local clock offset: 0.67 ms
Remote clock offset: -12.299 ms

# Below is generated by plot.py at 2018-09-06 21:05:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 11.52 Mbit/s
95th percentile per-packet one-way delay: 54.409 ms
Loss rate: 64.24%
-- Flow 1:
Average throughput: 0.11 Mbit/s
95th percentile per-packet one-way delay: 50.607 ms
Loss rate: 91.62%
-- Flow 2:
Average throughput: 14.46 Mbit/s
95th percentile per-packet one-way delay: 54.921 ms
Loss rate: 62.94%
-- Flow 3:
Average throughput: 5.72 Mbit/s
95th percentile per-packet one-way delay: 50.933 ms
Loss rate: 69.63%
```

Run 4: Report of Copa — Data Link

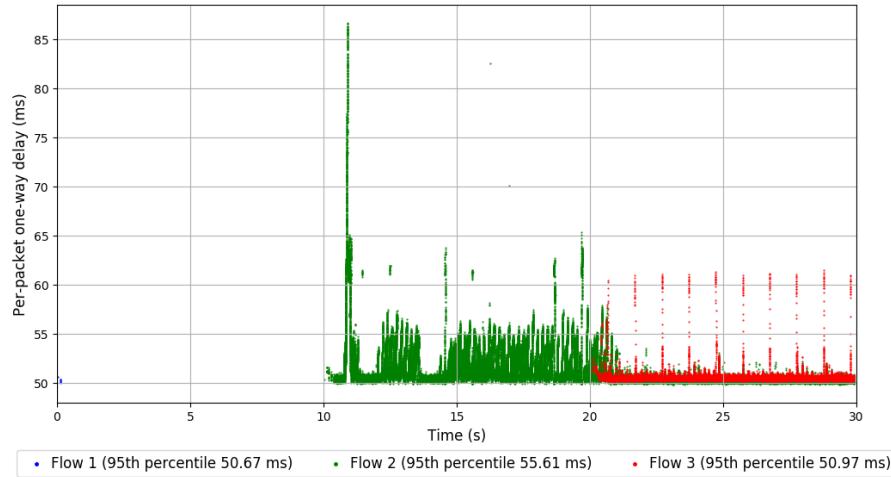
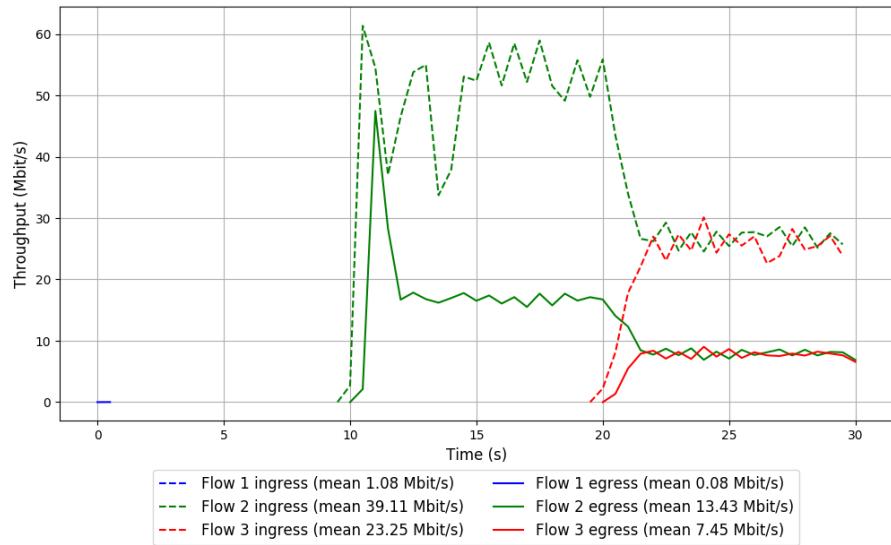


Run 5: Statistics of Copa

```
Start at: 2018-09-06 20:50:32
End at: 2018-09-06 20:51:02
Local clock offset: -0.777 ms
Remote clock offset: -19.625 ms

# Below is generated by plot.py at 2018-09-06 21:05:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 11.40 Mbit/s
95th percentile per-packet one-way delay: 55.192 ms
Loss rate: 66.38%
-- Flow 1:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 50.669 ms
Loss rate: 92.39%
-- Flow 2:
Average throughput: 13.43 Mbit/s
95th percentile per-packet one-way delay: 55.609 ms
Loss rate: 65.82%
-- Flow 3:
Average throughput: 7.45 Mbit/s
95th percentile per-packet one-way delay: 50.971 ms
Loss rate: 68.26%
```

Run 5: Report of Copa — Data Link

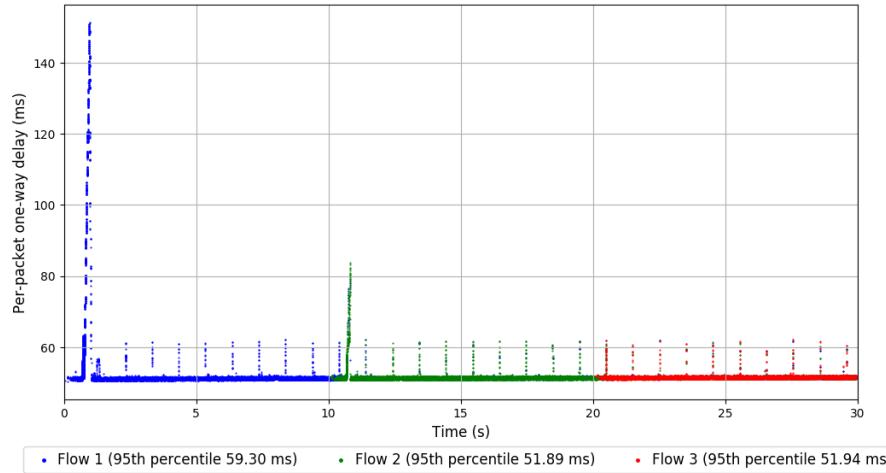
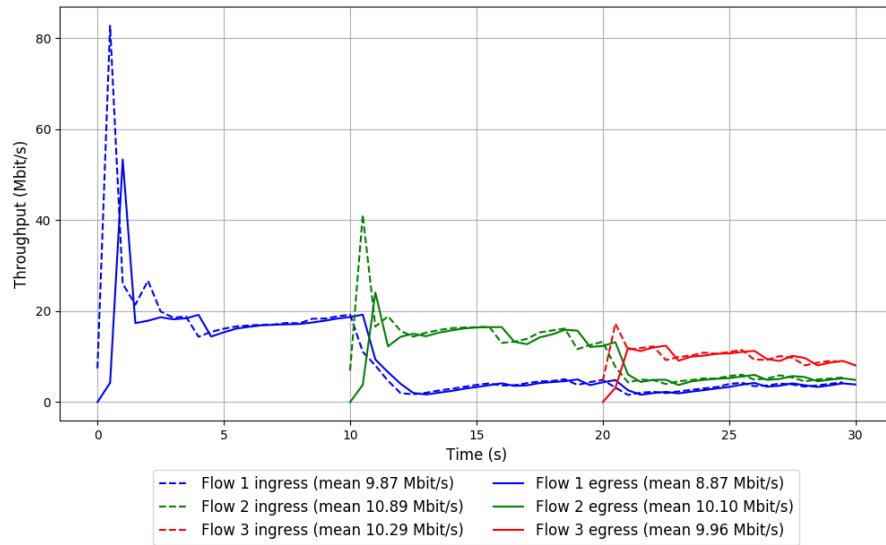


```
Run 1: Statistics of TCP Cubic
```

```
Start at: 2018-09-06 19:14:54
End at: 2018-09-06 19:15:24
Local clock offset: 12.696 ms
Remote clock offset: 11.268 ms

# Below is generated by plot.py at 2018-09-06 21:05:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 18.87 Mbit/s
95th percentile per-packet one-way delay: 53.235 ms
Loss rate: 8.34%
-- Flow 1:
Average throughput: 8.87 Mbit/s
95th percentile per-packet one-way delay: 59.298 ms
Loss rate: 10.34%
-- Flow 2:
Average throughput: 10.10 Mbit/s
95th percentile per-packet one-way delay: 51.891 ms
Loss rate: 7.62%
-- Flow 3:
Average throughput: 9.96 Mbit/s
95th percentile per-packet one-way delay: 51.939 ms
Loss rate: 4.06%
```

Run 1: Report of TCP Cubic — Data Link

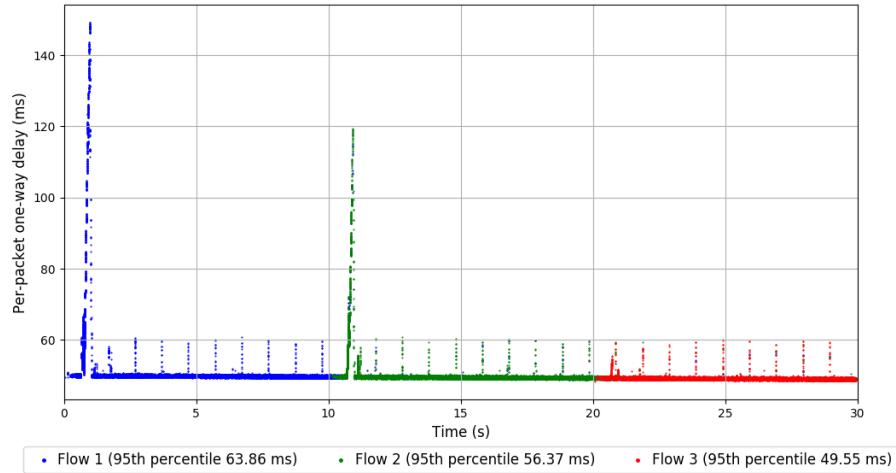
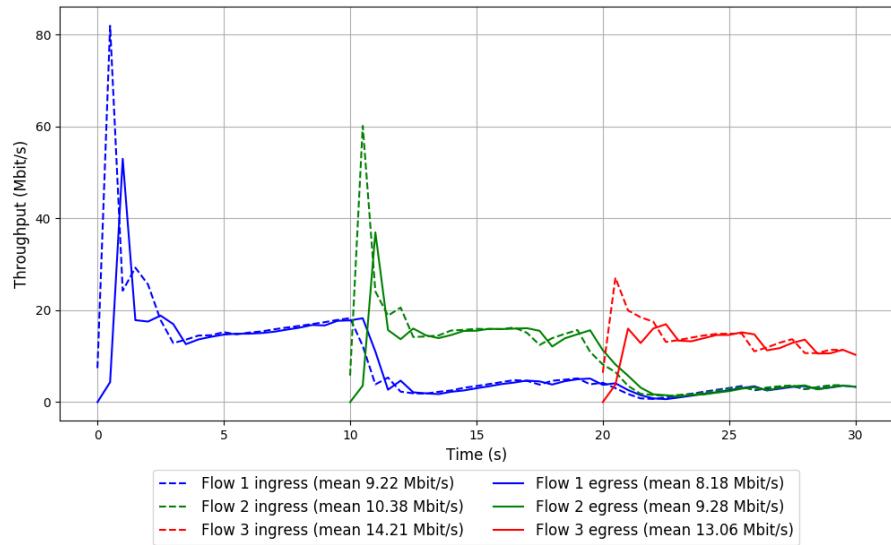


Run 2: Statistics of TCP Cubic

```
Start at: 2018-09-06 19:37:11
End at: 2018-09-06 19:37:41
Local clock offset: 4.822 ms
Remote clock offset: 0.853 ms

# Below is generated by plot.py at 2018-09-06 21:05:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 18.66 Mbit/s
95th percentile per-packet one-way delay: 56.594 ms
Loss rate: 10.78%
-- Flow 1:
Average throughput: 8.18 Mbit/s
95th percentile per-packet one-way delay: 63.862 ms
Loss rate: 11.59%
-- Flow 2:
Average throughput: 9.28 Mbit/s
95th percentile per-packet one-way delay: 56.366 ms
Loss rate: 11.01%
-- Flow 3:
Average throughput: 13.06 Mbit/s
95th percentile per-packet one-way delay: 49.547 ms
Loss rate: 8.89%
```

Run 2: Report of TCP Cubic — Data Link

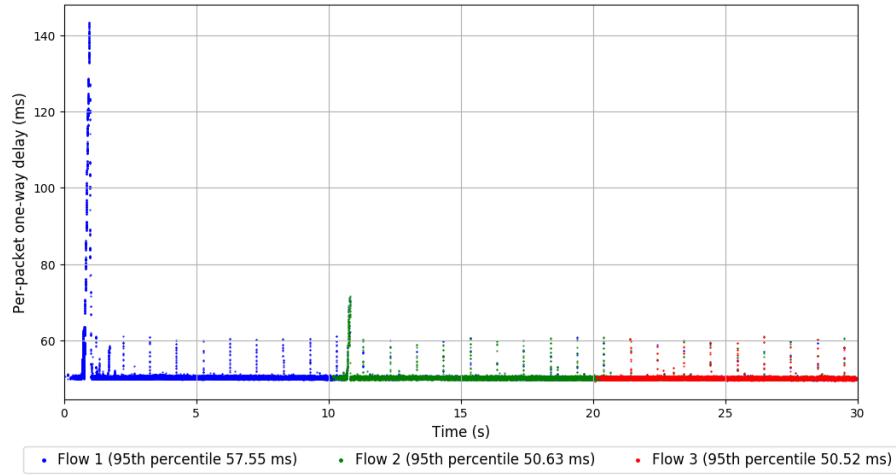
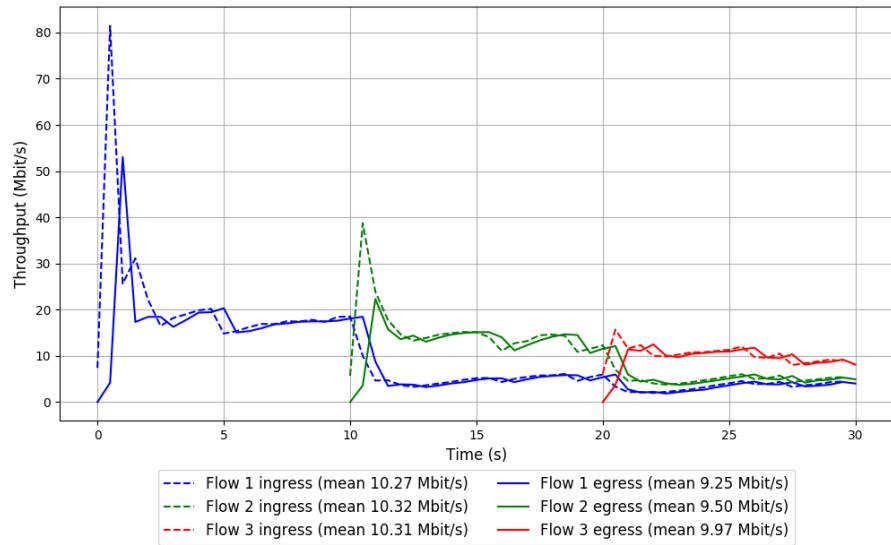


Run 3: Statistics of TCP Cubic

```
Start at: 2018-09-06 19:59:30
End at: 2018-09-06 20:00:00
Local clock offset: 1.231 ms
Remote clock offset: -27.087 ms

# Below is generated by plot.py at 2018-09-06 21:05:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 18.85 Mbit/s
95th percentile per-packet one-way delay: 51.492 ms
Loss rate: 8.57%
-- Flow 1:
Average throughput: 9.25 Mbit/s
95th percentile per-packet one-way delay: 57.548 ms
Loss rate: 10.23%
-- Flow 2:
Average throughput: 9.50 Mbit/s
95th percentile per-packet one-way delay: 50.632 ms
Loss rate: 8.31%
-- Flow 3:
Average throughput: 9.97 Mbit/s
95th percentile per-packet one-way delay: 50.518 ms
Loss rate: 4.11%
```

Run 3: Report of TCP Cubic — Data Link

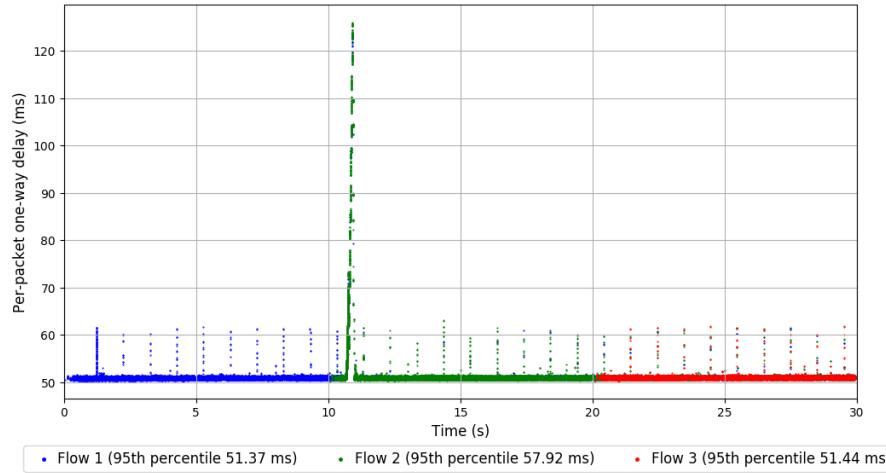
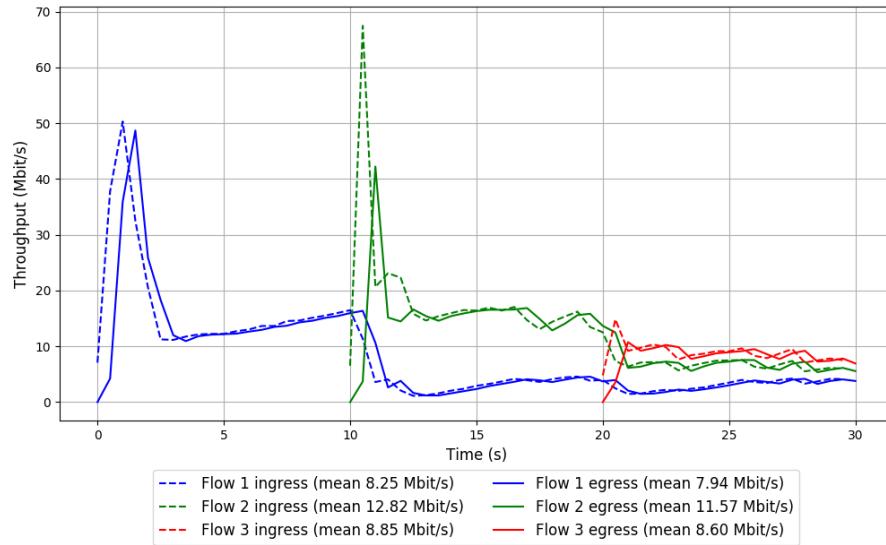


Run 4: Statistics of TCP Cubic

```
Start at: 2018-09-06 20:21:55
End at: 2018-09-06 20:22:25
Local clock offset: 0.382 ms
Remote clock offset: -13.875 ms

# Below is generated by plot.py at 2018-09-06 21:05:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 18.47 Mbit/s
95th percentile per-packet one-way delay: 51.533 ms
Loss rate: 6.58%
-- Flow 1:
Average throughput: 7.94 Mbit/s
95th percentile per-packet one-way delay: 51.370 ms
Loss rate: 3.98%
-- Flow 2:
Average throughput: 11.57 Mbit/s
95th percentile per-packet one-way delay: 57.925 ms
Loss rate: 10.11%
-- Flow 3:
Average throughput: 8.60 Mbit/s
95th percentile per-packet one-way delay: 51.437 ms
Loss rate: 3.64%
```

Run 4: Report of TCP Cubic — Data Link

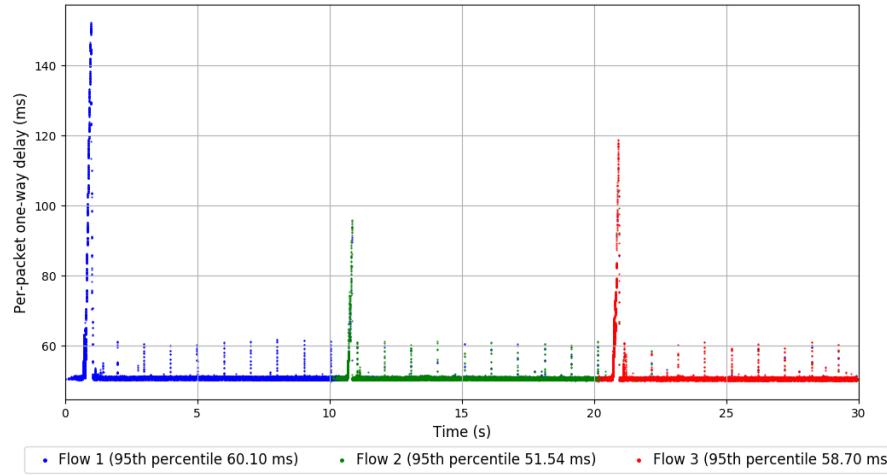
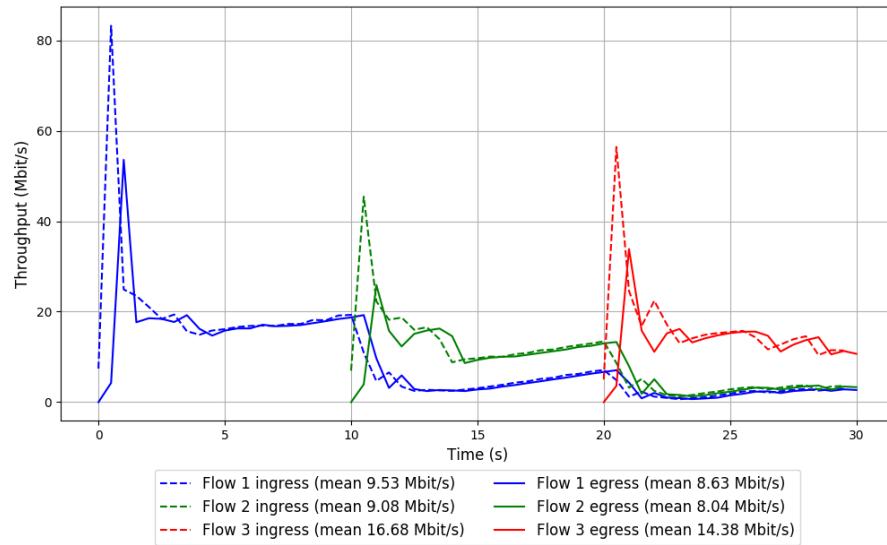


Run 5: Statistics of TCP Cubic

```
Start at: 2018-09-06 20:44:25
End at: 2018-09-06 20:44:55
Local clock offset: 0.127 ms
Remote clock offset: -15.866 ms

# Below is generated by plot.py at 2018-09-06 21:05:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 18.72 Mbit/s
95th percentile per-packet one-way delay: 56.745 ms
Loss rate: 11.57%
-- Flow 1:
Average throughput: 8.63 Mbit/s
95th percentile per-packet one-way delay: 60.105 ms
Loss rate: 9.70%
-- Flow 2:
Average throughput: 8.04 Mbit/s
95th percentile per-packet one-way delay: 51.541 ms
Loss rate: 11.82%
-- Flow 3:
Average throughput: 14.38 Mbit/s
95th percentile per-packet one-way delay: 58.697 ms
Loss rate: 14.52%
```

Run 5: Report of TCP Cubic — Data Link

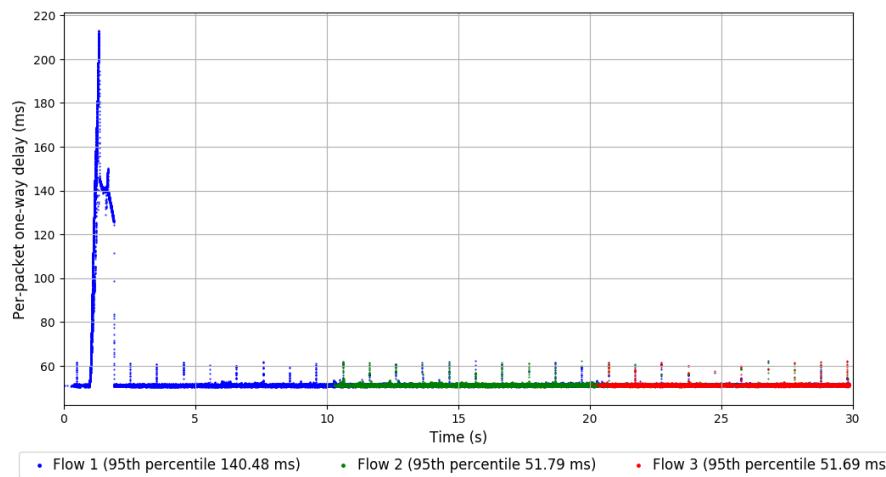
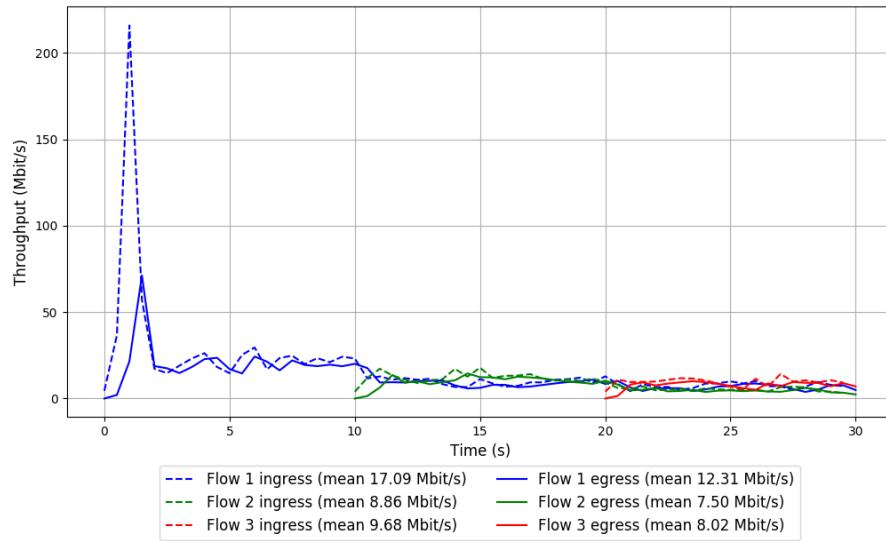


```
Run 1: Statistics of FillP

Start at: 2018-09-06 19:19:48
End at: 2018-09-06 19:20:18
Local clock offset: 9.81 ms
Remote clock offset: 11.806 ms

# Below is generated by plot.py at 2018-09-06 21:05:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 19.94 Mbit/s
95th percentile per-packet one-way delay: 115.117 ms
Loss rate: 24.09%
-- Flow 1:
Average throughput: 12.31 Mbit/s
95th percentile per-packet one-way delay: 140.479 ms
Loss rate: 28.17%
-- Flow 2:
Average throughput: 7.50 Mbit/s
95th percentile per-packet one-way delay: 51.793 ms
Loss rate: 15.68%
-- Flow 3:
Average throughput: 8.02 Mbit/s
95th percentile per-packet one-way delay: 51.688 ms
Loss rate: 17.84%
```

Run 1: Report of FillP — Data Link

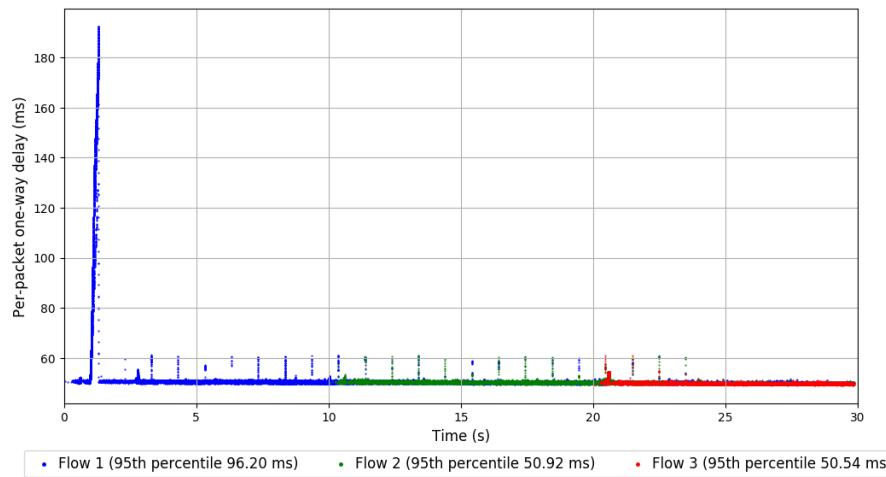
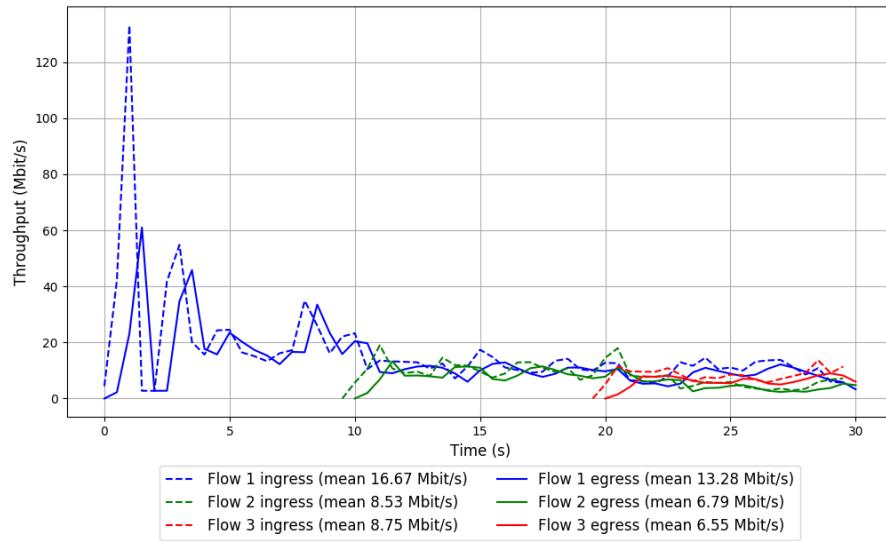


Run 2: Statistics of FillP

```
Start at: 2018-09-06 19:42:06
End at: 2018-09-06 19:42:36
Local clock offset: 4.342 ms
Remote clock offset: -9.495 ms

# Below is generated by plot.py at 2018-09-06 21:05:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 19.94 Mbit/s
95th percentile per-packet one-way delay: 58.699 ms
Loss rate: 21.25%
-- Flow 1:
Average throughput: 13.28 Mbit/s
95th percentile per-packet one-way delay: 96.198 ms
Loss rate: 20.61%
-- Flow 2:
Average throughput: 6.79 Mbit/s
95th percentile per-packet one-way delay: 50.917 ms
Loss rate: 20.76%
-- Flow 3:
Average throughput: 6.55 Mbit/s
95th percentile per-packet one-way delay: 50.541 ms
Loss rate: 25.87%
```

Run 2: Report of FillP — Data Link

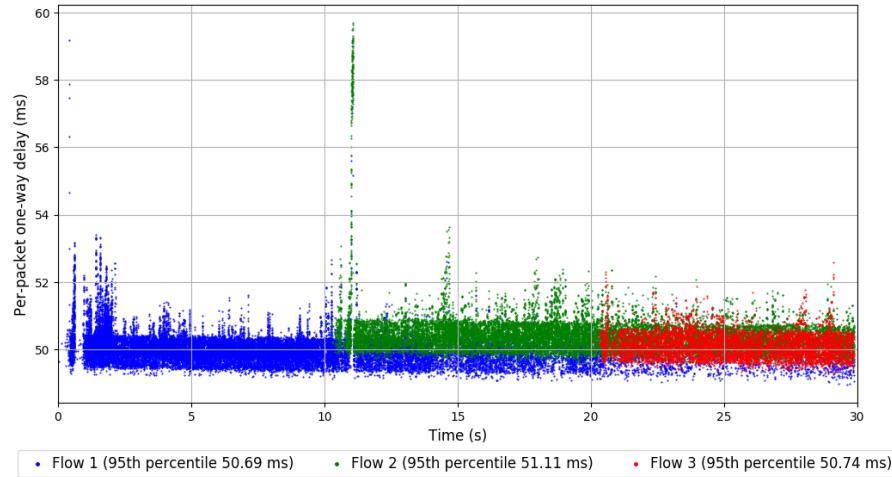
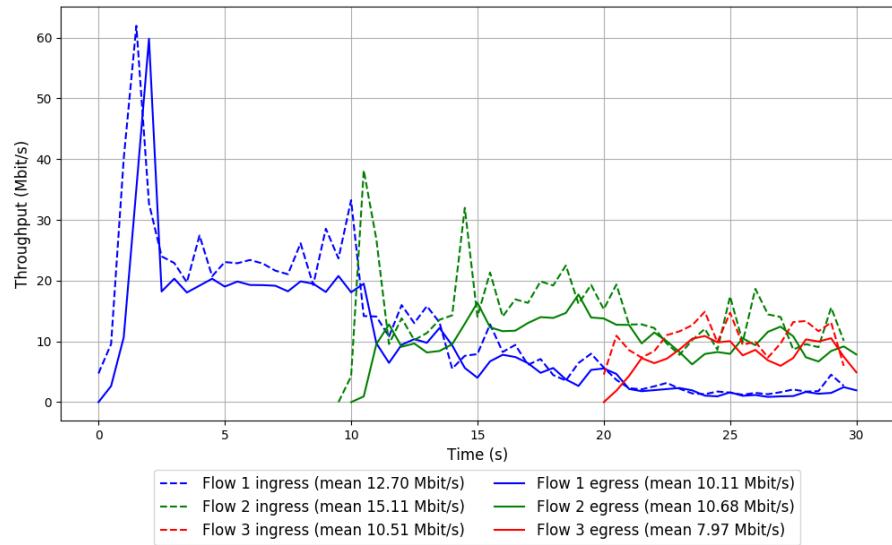


```
Run 3: Statistics of FillP
```

```
Start at: 2018-09-06 20:04:32
End at: 2018-09-06 20:05:02
Local clock offset: 0.569 ms
Remote clock offset: -31.198 ms

# Below is generated by plot.py at 2018-09-06 21:05:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 19.83 Mbit/s
95th percentile per-packet one-way delay: 50.898 ms
Loss rate: 24.67%
-- Flow 1:
Average throughput: 10.11 Mbit/s
95th percentile per-packet one-way delay: 50.688 ms
Loss rate: 20.70%
-- Flow 2:
Average throughput: 10.68 Mbit/s
95th percentile per-packet one-way delay: 51.106 ms
Loss rate: 29.63%
-- Flow 3:
Average throughput: 7.97 Mbit/s
95th percentile per-packet one-way delay: 50.743 ms
Loss rate: 24.83%
```

Run 3: Report of FillP — Data Link

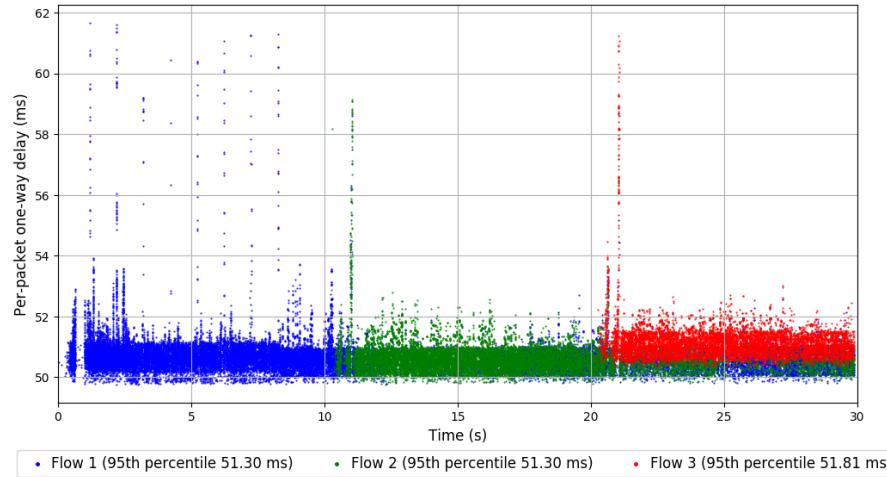
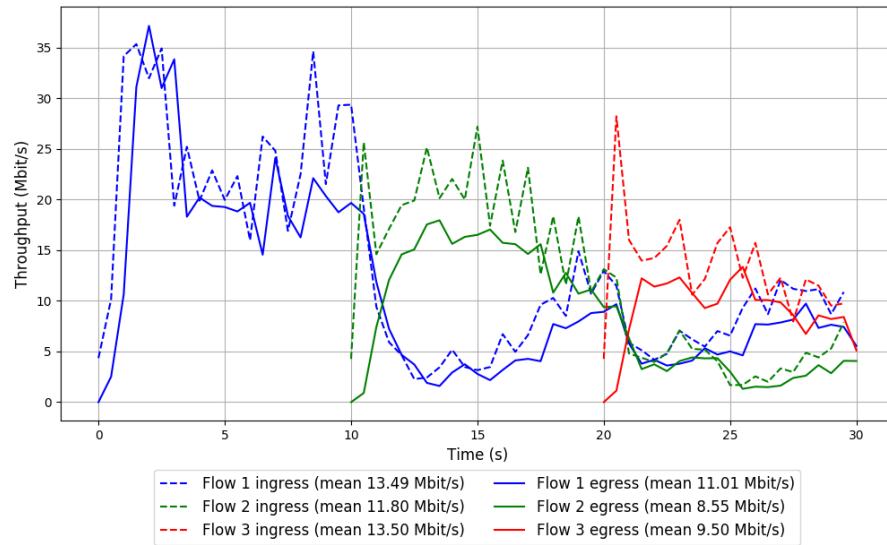


Run 4: Statistics of FillP

```
Start at: 2018-09-06 20:26:49
End at: 2018-09-06 20:27:19
Local clock offset: 0.762 ms
Remote clock offset: -12.479 ms

# Below is generated by plot.py at 2018-09-06 21:05:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 19.82 Mbit/s
95th percentile per-packet one-way delay: 51.489 ms
Loss rate: 23.45%
-- Flow 1:
Average throughput: 11.01 Mbit/s
95th percentile per-packet one-way delay: 51.302 ms
Loss rate: 18.61%
-- Flow 2:
Average throughput: 8.55 Mbit/s
95th percentile per-packet one-way delay: 51.297 ms
Loss rate: 27.91%
-- Flow 3:
Average throughput: 9.50 Mbit/s
95th percentile per-packet one-way delay: 51.806 ms
Loss rate: 30.21%
```

Run 4: Report of FillP — Data Link

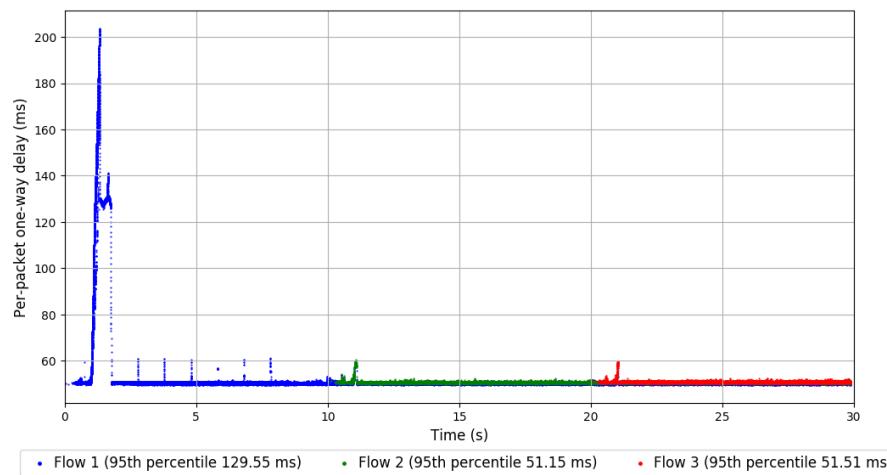
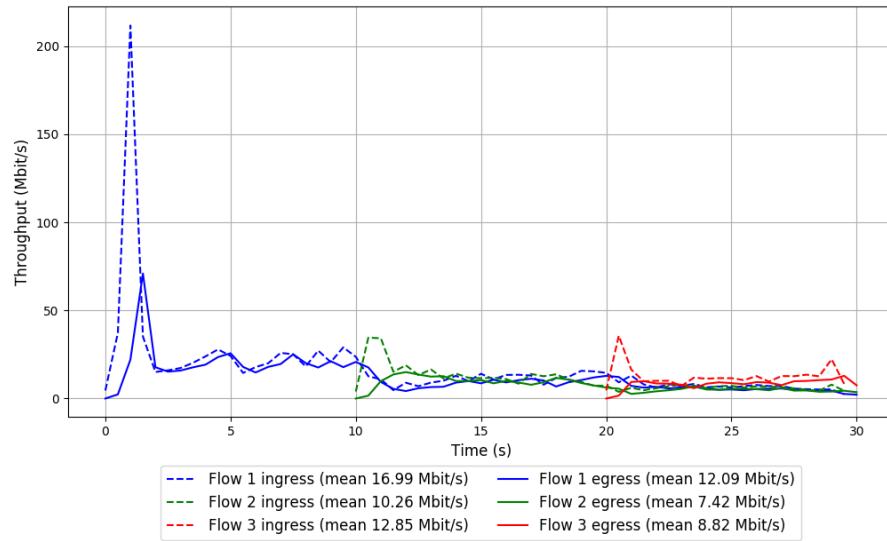


```
Run 5: Statistics of FillP
```

```
Start at: 2018-09-06 20:49:18
End at: 2018-09-06 20:49:48
Local clock offset: -0.282 ms
Remote clock offset: -18.722 ms

# Below is generated by plot.py at 2018-09-06 21:05:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 19.92 Mbit/s
95th percentile per-packet one-way delay: 94.506 ms
Loss rate: 29.24%
-- Flow 1:
Average throughput: 12.09 Mbit/s
95th percentile per-packet one-way delay: 129.552 ms
Loss rate: 29.04%
-- Flow 2:
Average throughput: 7.42 Mbit/s
95th percentile per-packet one-way delay: 51.152 ms
Loss rate: 28.05%
-- Flow 3:
Average throughput: 8.82 Mbit/s
95th percentile per-packet one-way delay: 51.506 ms
Loss rate: 31.96%
```

Run 5: Report of FillP — Data Link

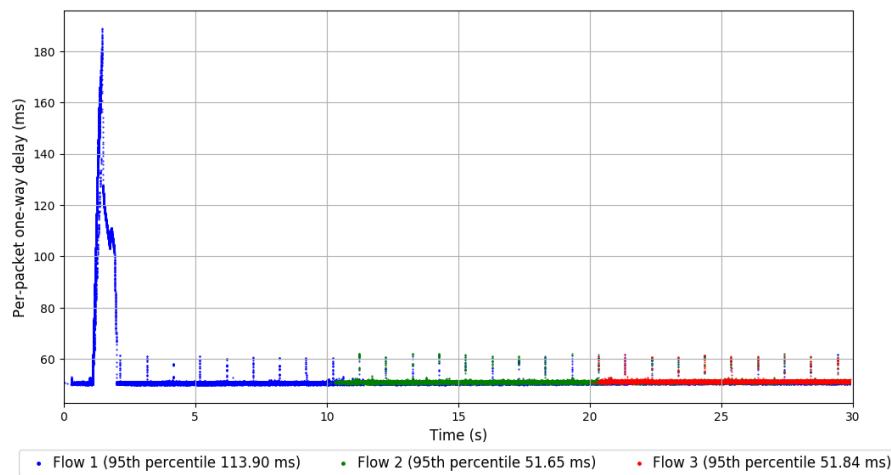
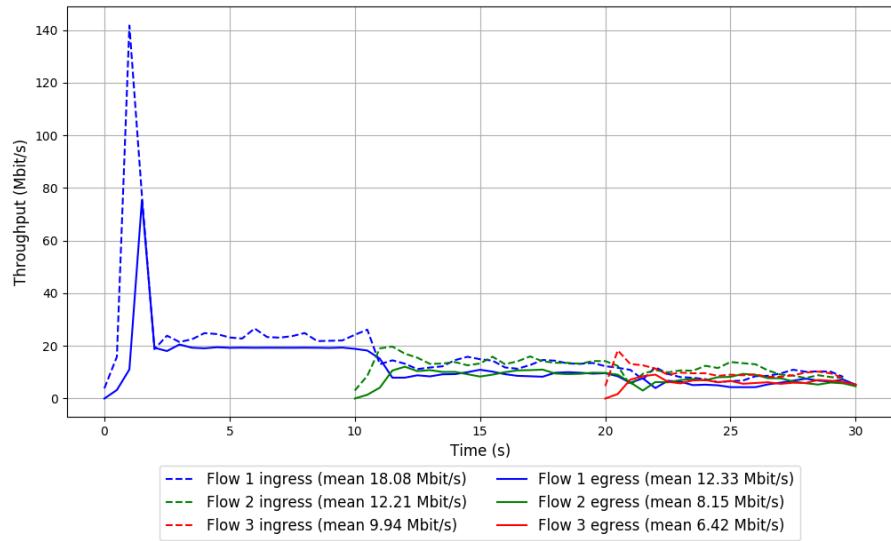


```
Run 1: Statistics of FillP-Sheep
```

```
Start at: 2018-09-06 19:16:07
End at: 2018-09-06 19:16:37
Local clock offset: 12.121 ms
Remote clock offset: 11.803 ms

# Below is generated by plot.py at 2018-09-06 21:05:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 19.85 Mbit/s
95th percentile per-packet one-way delay: 92.890 ms
Loss rate: 32.86%
-- Flow 1:
Average throughput: 12.33 Mbit/s
95th percentile per-packet one-way delay: 113.898 ms
Loss rate: 32.01%
-- Flow 2:
Average throughput: 8.15 Mbit/s
95th percentile per-packet one-way delay: 51.650 ms
Loss rate: 33.50%
-- Flow 3:
Average throughput: 6.42 Mbit/s
95th percentile per-packet one-way delay: 51.835 ms
Loss rate: 35.95%
```

Run 1: Report of FillP-Sheep — Data Link

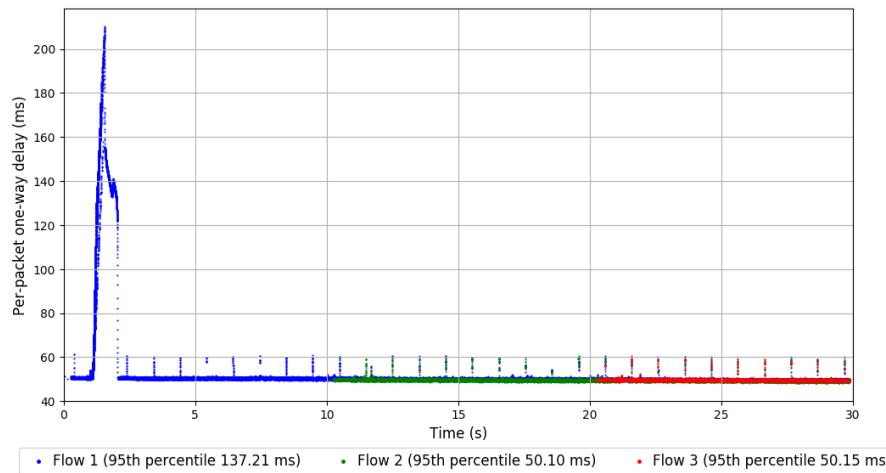
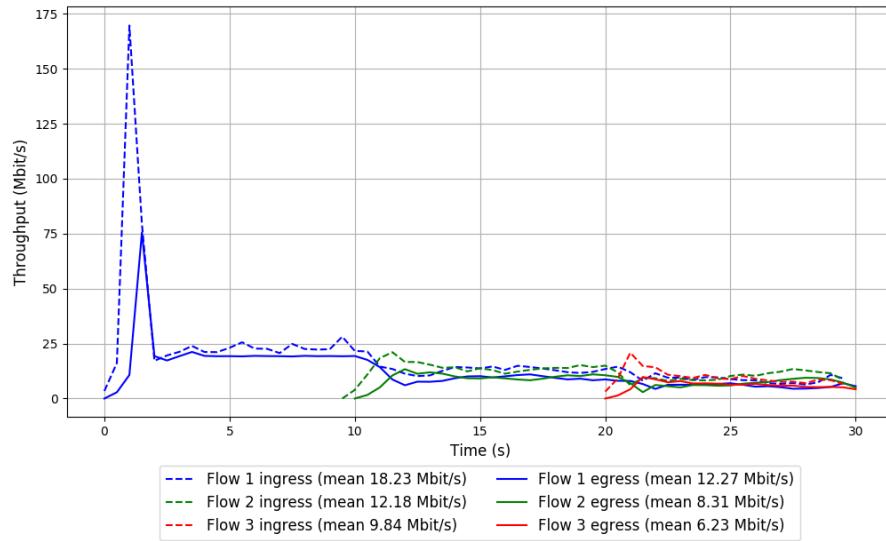


Run 2: Statistics of FillP-Sheep

```
Start at: 2018-09-06 19:38:24
End at: 2018-09-06 19:38:54
Local clock offset: 4.953 ms
Remote clock offset: -1.953 ms

# Below is generated by plot.py at 2018-09-06 21:05:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 19.84 Mbit/s
95th percentile per-packet one-way delay: 106.941 ms
Loss rate: 33.14%
-- Flow 1:
Average throughput: 12.27 Mbit/s
95th percentile per-packet one-way delay: 137.208 ms
Loss rate: 32.92%
-- Flow 2:
Average throughput: 8.31 Mbit/s
95th percentile per-packet one-way delay: 50.101 ms
Loss rate: 32.04%
-- Flow 3:
Average throughput: 6.23 Mbit/s
95th percentile per-packet one-way delay: 50.148 ms
Loss rate: 37.17%
```

Run 2: Report of FillP-Sheep — Data Link

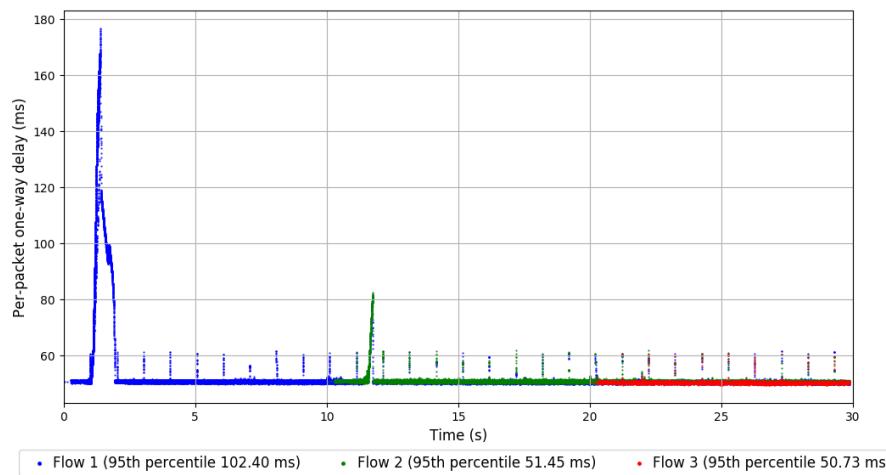
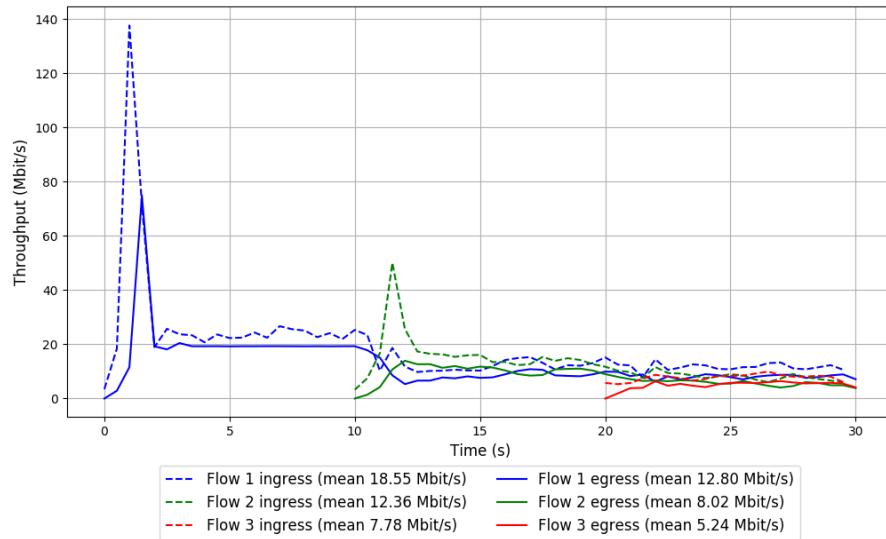


Run 3: Statistics of FillP-Sheep

```
Start at: 2018-09-06 20:00:43
End at: 2018-09-06 20:01:13
Local clock offset: 0.885 ms
Remote clock offset: -28.592 ms

# Below is generated by plot.py at 2018-09-06 21:05:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 19.84 Mbit/s
95th percentile per-packet one-way delay: 81.383 ms
Loss rate: 32.57%
-- Flow 1:
Average throughput: 12.80 Mbit/s
95th percentile per-packet one-way delay: 102.399 ms
Loss rate: 31.22%
-- Flow 2:
Average throughput: 8.02 Mbit/s
95th percentile per-packet one-way delay: 51.447 ms
Loss rate: 35.42%
-- Flow 3:
Average throughput: 5.24 Mbit/s
95th percentile per-packet one-way delay: 50.734 ms
Loss rate: 33.23%
```

Run 3: Report of FillP-Sheep — Data Link

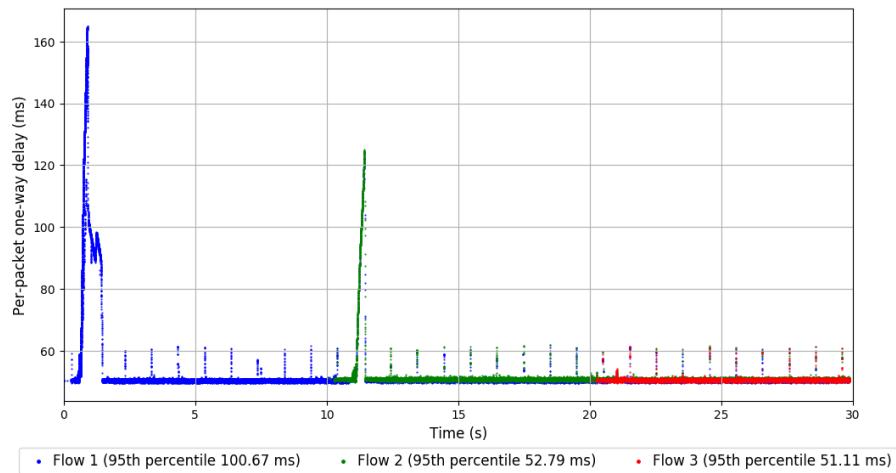
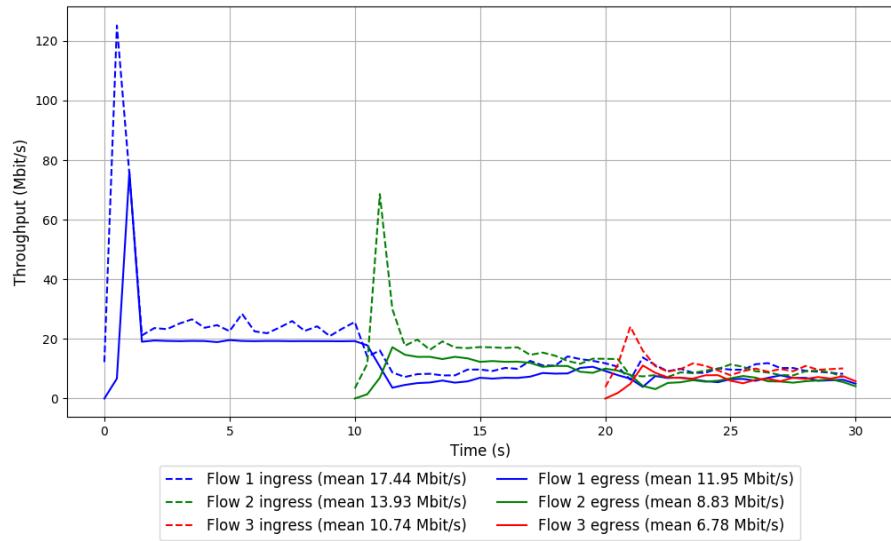


Run 4: Statistics of FillP-Sheep

```
Start at: 2018-09-06 20:23:08
End at: 2018-09-06 20:23:38
Local clock offset: 0.734 ms
Remote clock offset: -12.746 ms

# Below is generated by plot.py at 2018-09-06 21:05:24
# Datalink statistics
-- Total of 3 flows:
Average throughput: 20.05 Mbit/s
95th percentile per-packet one-way delay: 91.242 ms
Loss rate: 33.95%
-- Flow 1:
Average throughput: 11.95 Mbit/s
95th percentile per-packet one-way delay: 100.668 ms
Loss rate: 31.66%
-- Flow 2:
Average throughput: 8.83 Mbit/s
95th percentile per-packet one-way delay: 52.794 ms
Loss rate: 36.92%
-- Flow 3:
Average throughput: 6.78 Mbit/s
95th percentile per-packet one-way delay: 51.108 ms
Loss rate: 37.37%
```

Run 4: Report of FillP-Sheep — Data Link

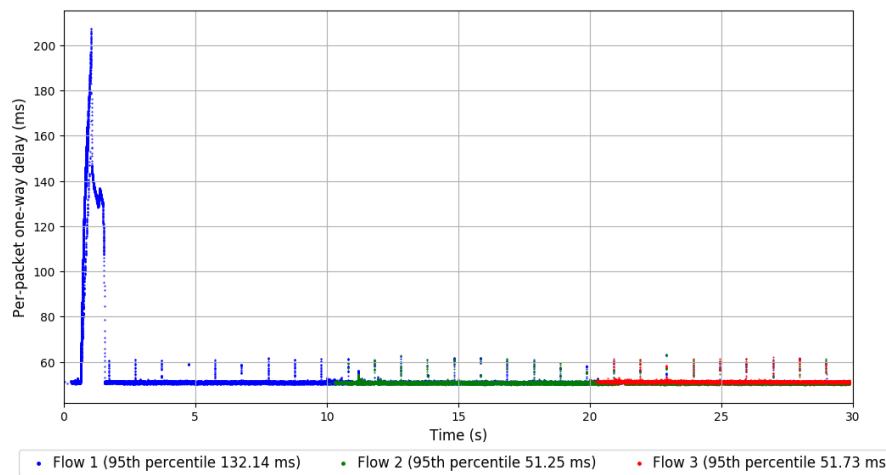
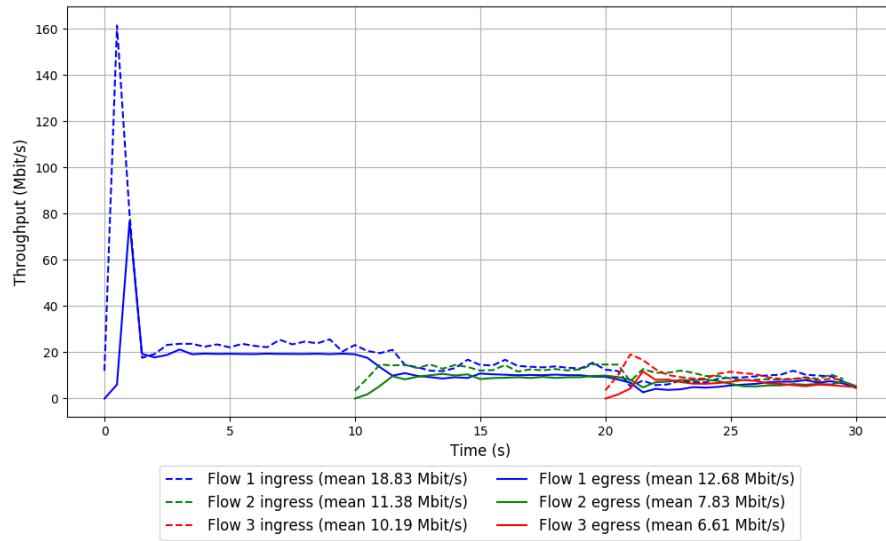


Run 5: Statistics of FillP-Sheep

```
Start at: 2018-09-06 20:45:38
End at: 2018-09-06 20:46:08
Local clock offset: 0.184 ms
Remote clock offset: -16.695 ms

# Below is generated by plot.py at 2018-09-06 21:05:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 20.06 Mbit/s
95th percentile per-packet one-way delay: 95.686 ms
Loss rate: 32.82%
-- Flow 1:
Average throughput: 12.68 Mbit/s
95th percentile per-packet one-way delay: 132.137 ms
Loss rate: 32.86%
-- Flow 2:
Average throughput: 7.83 Mbit/s
95th percentile per-packet one-way delay: 51.251 ms
Loss rate: 31.47%
-- Flow 3:
Average throughput: 6.61 Mbit/s
95th percentile per-packet one-way delay: 51.734 ms
Loss rate: 35.62%
```

Run 5: Report of FillP-Sheep — Data Link

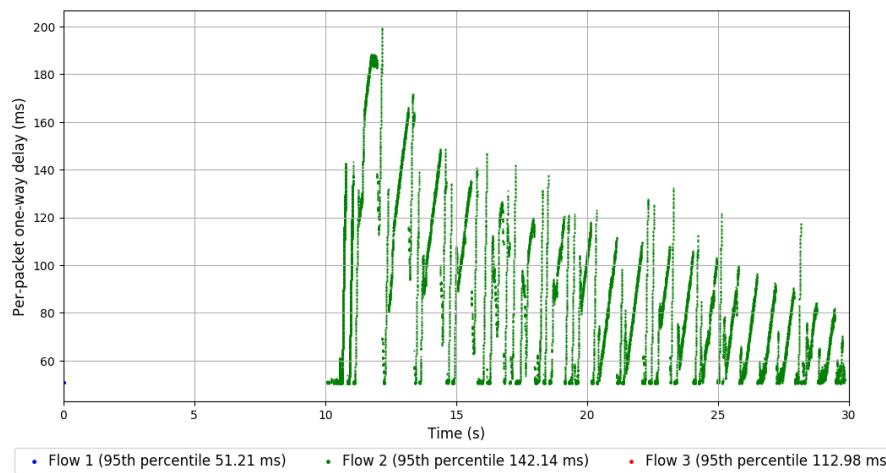
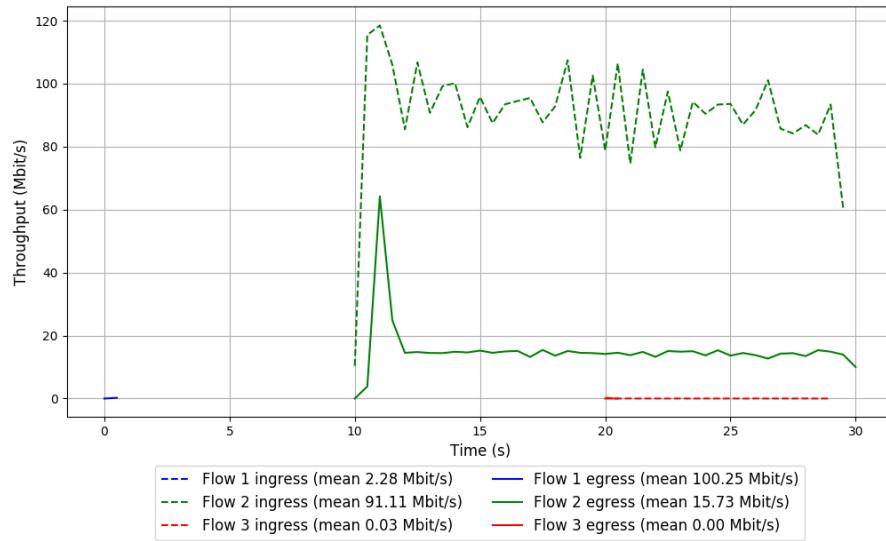


Run 1: Statistics of Indigo

```
Start at: 2018-09-06 19:12:29
End at: 2018-09-06 19:12:59
Local clock offset: 12.712 ms
Remote clock offset: 11.495 ms

# Below is generated by plot.py at 2018-09-06 21:05:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 10.45 Mbit/s
95th percentile per-packet one-way delay: 142.132 ms
Loss rate: 82.81%
-- Flow 1:
Average throughput: 100.25 Mbit/s
95th percentile per-packet one-way delay: 51.210 ms
Loss rate: 41.36%
-- Flow 2:
Average throughput: 15.73 Mbit/s
95th percentile per-packet one-way delay: 142.143 ms
Loss rate: 82.81%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 112.980 ms
Loss rate: 99.71%
```

Run 1: Report of Indigo — Data Link

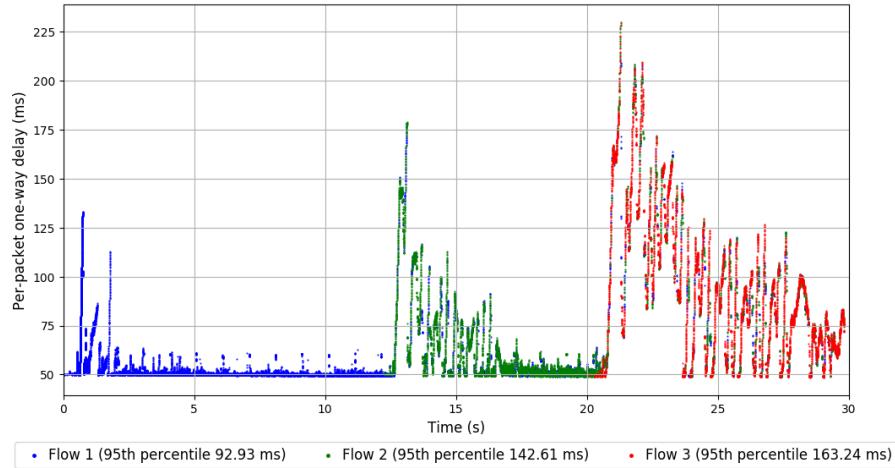
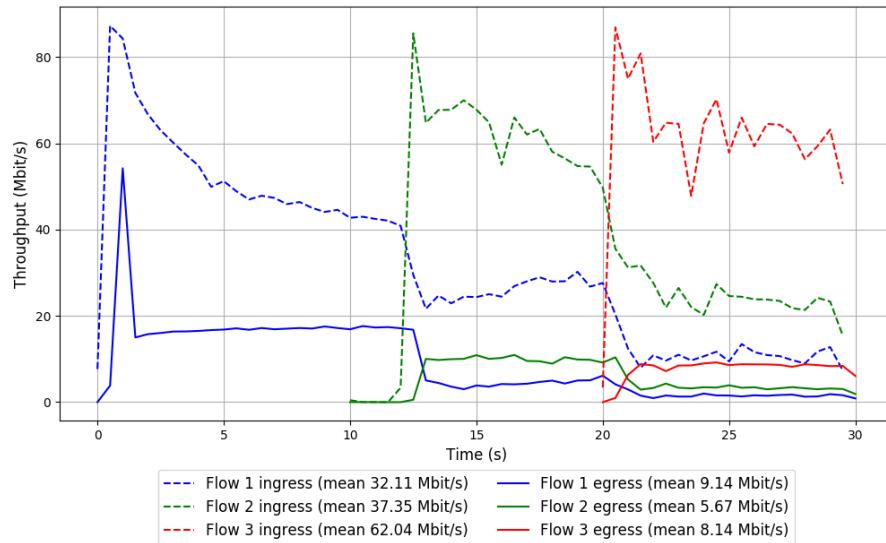


Run 2: Statistics of Indigo

```
Start at: 2018-09-06 19:34:37
End at: 2018-09-06 19:35:07
Local clock offset: 5.453 ms
Remote clock offset: 7.286 ms

# Below is generated by plot.py at 2018-09-06 21:05:43
# Datalink statistics
-- Total of 3 flows:
Average throughput: 15.57 Mbit/s
95th percentile per-packet one-way delay: 131.219 ms
Loss rate: 79.92%
-- Flow 1:
Average throughput: 9.14 Mbit/s
95th percentile per-packet one-way delay: 92.933 ms
Loss rate: 71.56%
-- Flow 2:
Average throughput: 5.67 Mbit/s
95th percentile per-packet one-way delay: 142.613 ms
Loss rate: 84.90%
-- Flow 3:
Average throughput: 8.14 Mbit/s
95th percentile per-packet one-way delay: 163.235 ms
Loss rate: 87.00%
```

Run 2: Report of Indigo — Data Link

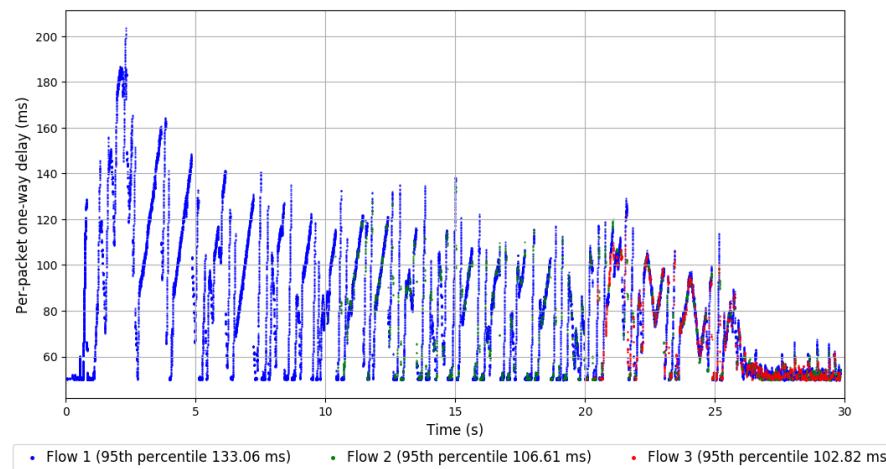
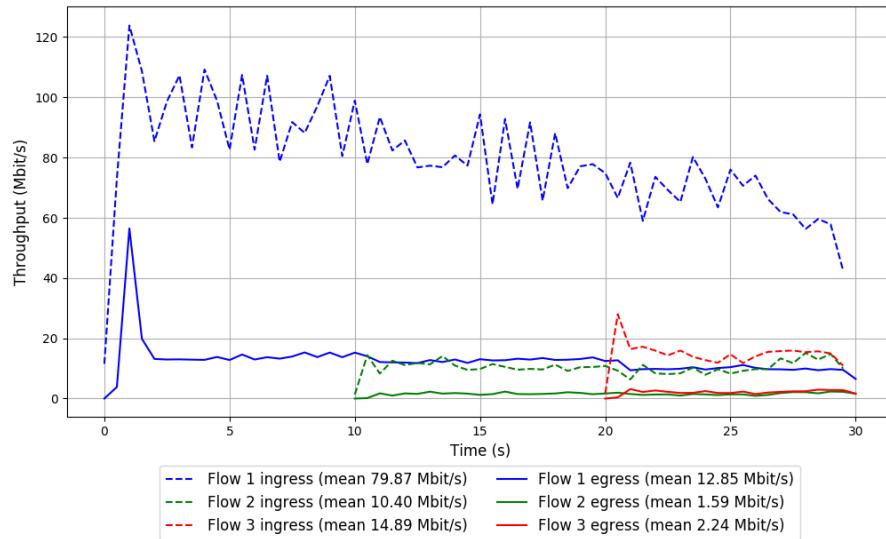


Run 3: Statistics of Indigo

```
Start at: 2018-09-06 19:56:56
End at: 2018-09-06 19:57:26
Local clock offset: 1.647 ms
Remote clock offset: -25.094 ms

# Below is generated by plot.py at 2018-09-06 21:05:47
# Datalink statistics
-- Total of 3 flows:
Average throughput: 14.63 Mbit/s
95th percentile per-packet one-way delay: 129.933 ms
Loss rate: 84.08%
-- Flow 1:
Average throughput: 12.85 Mbit/s
95th percentile per-packet one-way delay: 133.063 ms
Loss rate: 83.96%
-- Flow 2:
Average throughput: 1.59 Mbit/s
95th percentile per-packet one-way delay: 106.611 ms
Loss rate: 84.76%
-- Flow 3:
Average throughput: 2.24 Mbit/s
95th percentile per-packet one-way delay: 102.823 ms
Loss rate: 85.12%
```

Run 3: Report of Indigo — Data Link

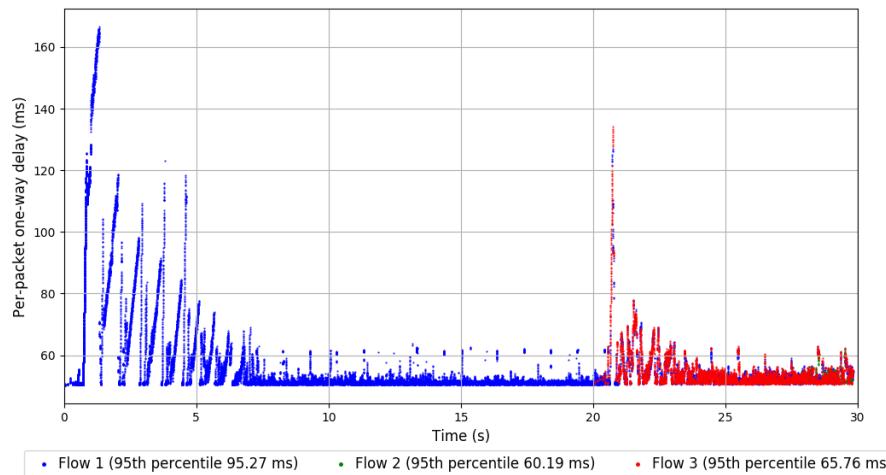
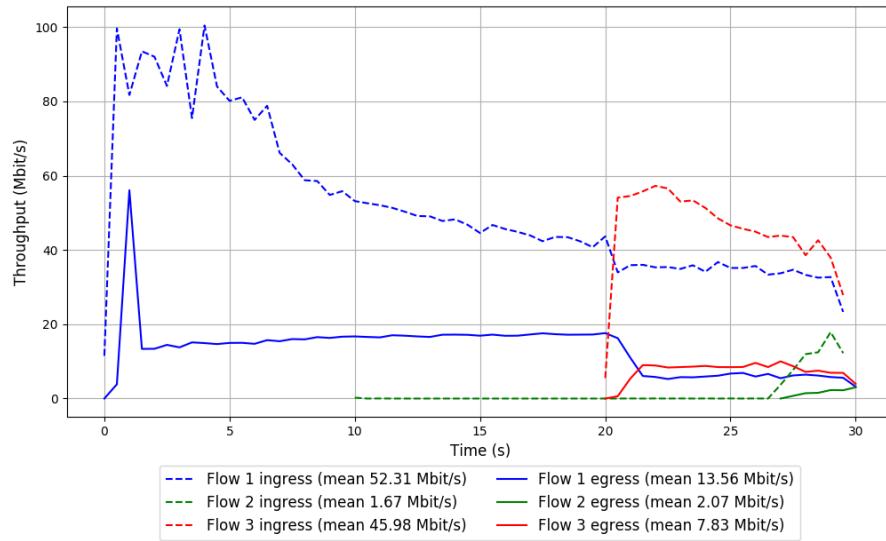


Run 4: Statistics of Indigo

```
Start at: 2018-09-06 20:19:21
End at: 2018-09-06 20:19:51
Local clock offset: 0.172 ms
Remote clock offset: -15.153 ms

# Below is generated by plot.py at 2018-09-06 21:05:47
# Datalink statistics
-- Total of 3 flows:
Average throughput: 16.32 Mbit/s
95th percentile per-packet one-way delay: 89.871 ms
Loss rate: 76.27%
-- Flow 1:
Average throughput: 13.56 Mbit/s
95th percentile per-packet one-way delay: 95.267 ms
Loss rate: 74.14%
-- Flow 2:
Average throughput: 2.07 Mbit/s
95th percentile per-packet one-way delay: 60.189 ms
Loss rate: 83.06%
-- Flow 3:
Average throughput: 7.83 Mbit/s
95th percentile per-packet one-way delay: 65.756 ms
Loss rate: 83.12%
```

Run 4: Report of Indigo — Data Link

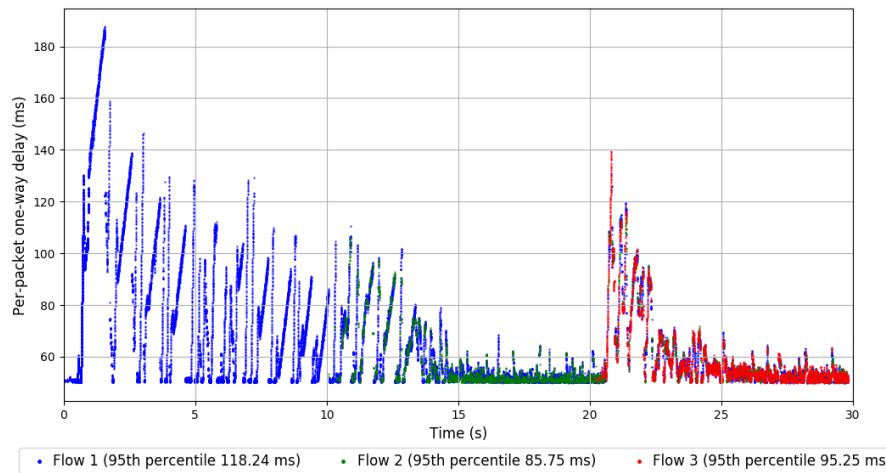
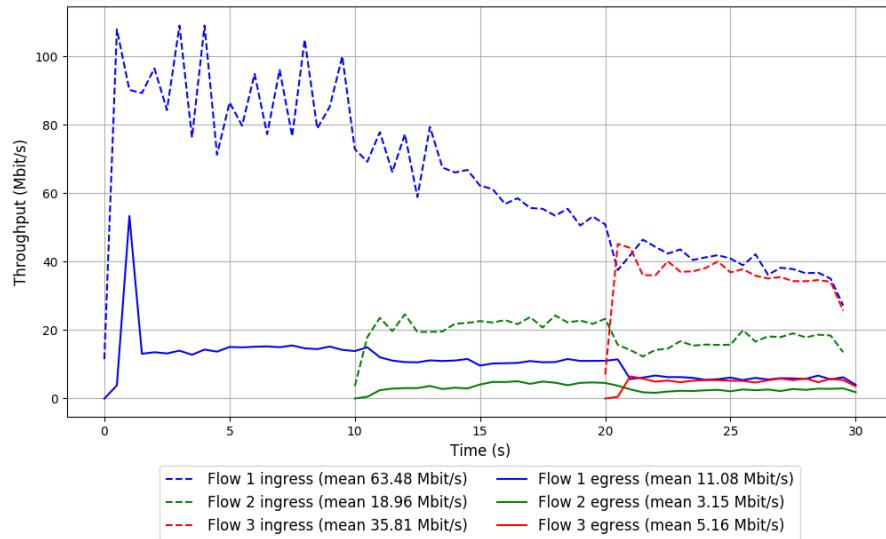


Run 5: Statistics of Indigo

```
Start at: 2018-09-06 20:41:50
End at: 2018-09-06 20:42:20
Local clock offset: 0.464 ms
Remote clock offset: -13.413 ms

# Below is generated by plot.py at 2018-09-06 21:05:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 14.85 Mbit/s
95th percentile per-packet one-way delay: 111.888 ms
Loss rate: 83.14%
-- Flow 1:
Average throughput: 11.08 Mbit/s
95th percentile per-packet one-way delay: 118.242 ms
Loss rate: 82.60%
-- Flow 2:
Average throughput: 3.15 Mbit/s
95th percentile per-packet one-way delay: 85.752 ms
Loss rate: 83.45%
-- Flow 3:
Average throughput: 5.16 Mbit/s
95th percentile per-packet one-way delay: 95.253 ms
Loss rate: 85.72%
```

Run 5: Report of Indigo — Data Link

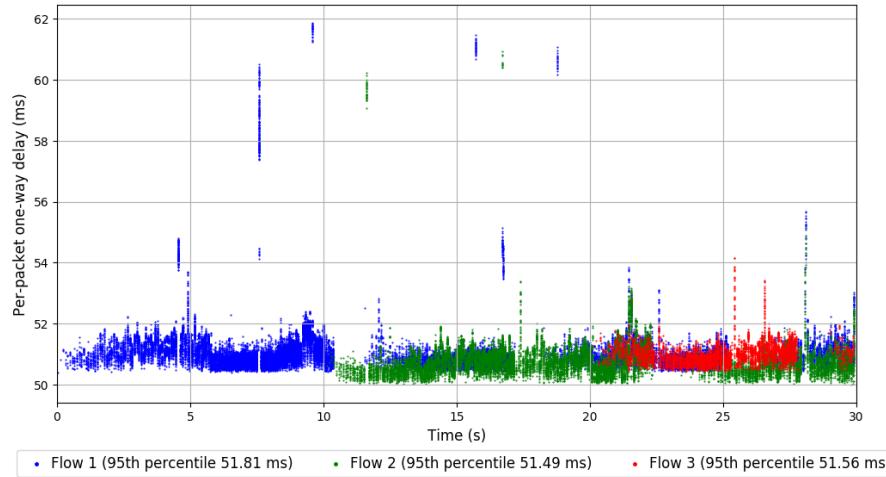
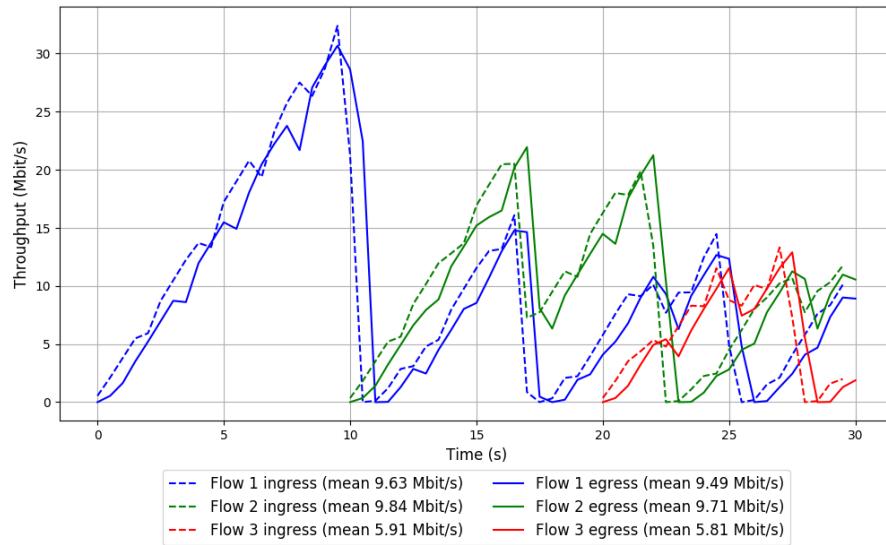


```
Run 1: Statistics of LEDBAT

Start at: 2018-09-06 19:31:00
End at: 2018-09-06 19:31:30
Local clock offset: 5.727 ms
Remote clock offset: 9.866 ms

# Below is generated by plot.py at 2018-09-06 21:05:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 17.81 Mbit/s
95th percentile per-packet one-way delay: 51.673 ms
Loss rate: 1.80%
-- Flow 1:
Average throughput: 9.49 Mbit/s
95th percentile per-packet one-way delay: 51.808 ms
Loss rate: 1.72%
-- Flow 2:
Average throughput: 9.71 Mbit/s
95th percentile per-packet one-way delay: 51.495 ms
Loss rate: 1.72%
-- Flow 3:
Average throughput: 5.81 Mbit/s
95th percentile per-packet one-way delay: 51.561 ms
Loss rate: 2.49%
```

Run 1: Report of LEDBAT — Data Link

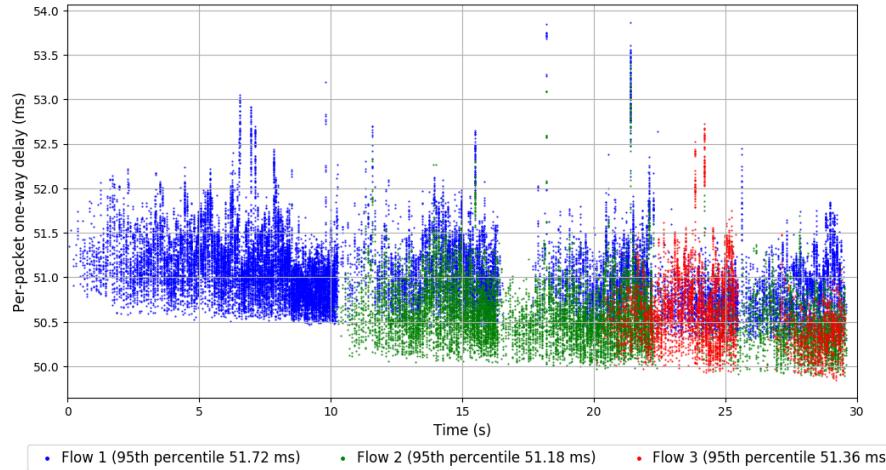
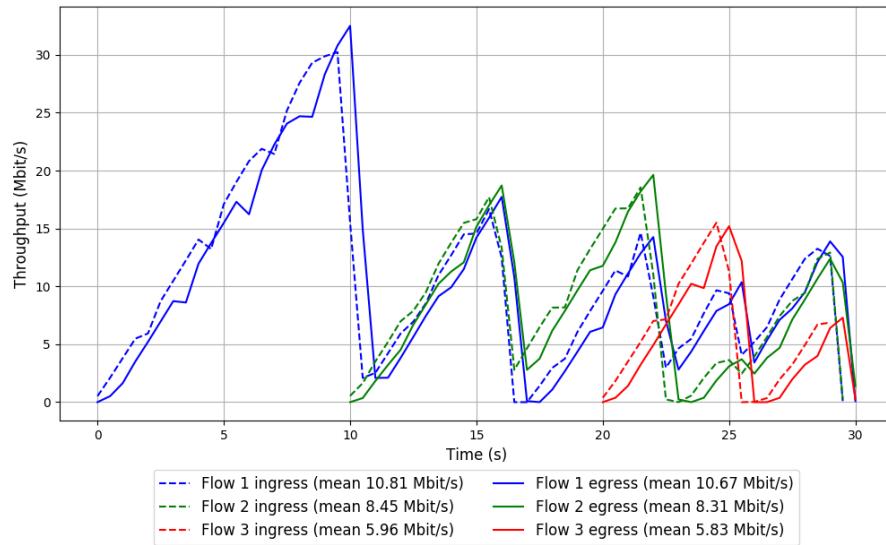


Run 2: Statistics of LEDBAT

```
Start at: 2018-09-06 19:53:19
End at: 2018-09-06 19:53:49
Local clock offset: 2.304 ms
Remote clock offset: -22.308 ms

# Below is generated by plot.py at 2018-09-06 21:05:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 17.99 Mbit/s
95th percentile per-packet one-way delay: 51.603 ms
Loss rate: 1.49%
-- Flow 1:
Average throughput: 10.67 Mbit/s
95th percentile per-packet one-way delay: 51.717 ms
Loss rate: 1.24%
-- Flow 2:
Average throughput: 8.31 Mbit/s
95th percentile per-packet one-way delay: 51.179 ms
Loss rate: 1.77%
-- Flow 3:
Average throughput: 5.83 Mbit/s
95th percentile per-packet one-way delay: 51.356 ms
Loss rate: 2.12%
```

Run 2: Report of LEDBAT — Data Link

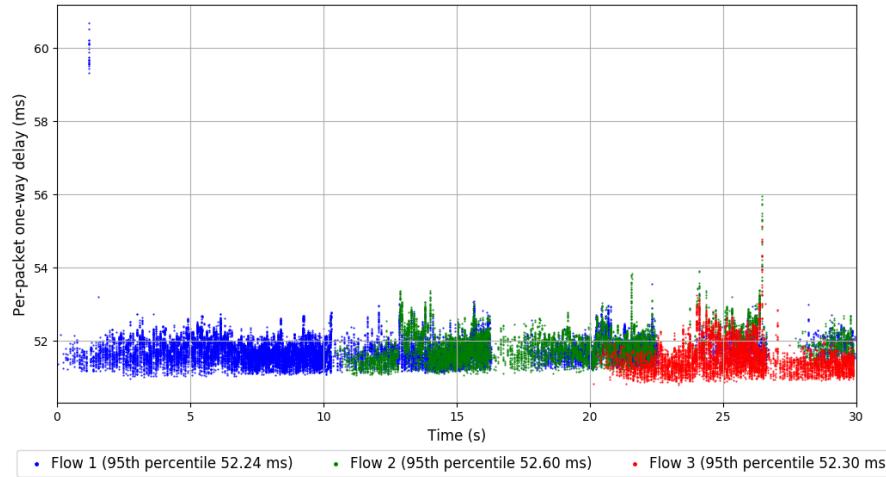
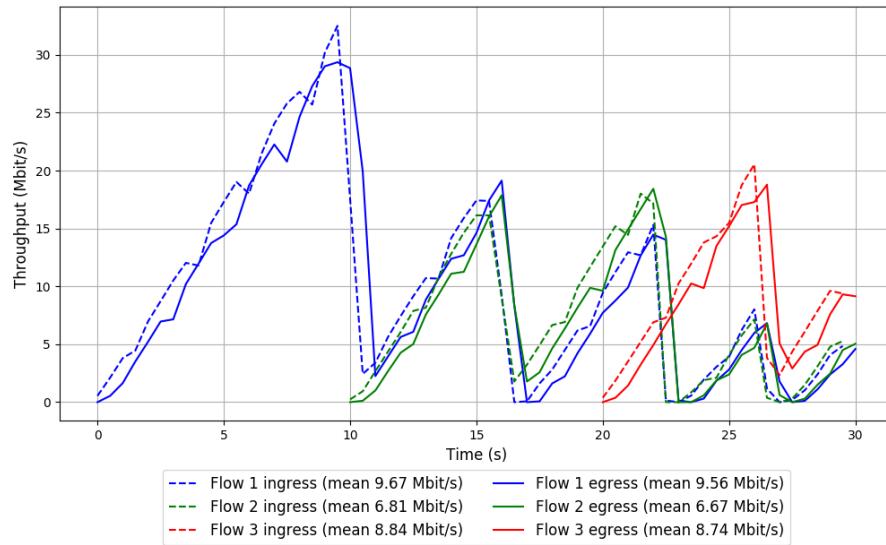


Run 3: Statistics of LEDBAT

```
Start at: 2018-09-06 20:15:44
End at: 2018-09-06 20:16:14
Local clock offset: -0.333 ms
Remote clock offset: -18.767 ms

# Below is generated by plot.py at 2018-09-06 21:05:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 16.82 Mbit/s
95th percentile per-packet one-way delay: 52.366 ms
Loss rate: 1.78%
-- Flow 1:
Average throughput: 9.56 Mbit/s
95th percentile per-packet one-way delay: 52.243 ms
Loss rate: 1.38%
-- Flow 2:
Average throughput: 6.67 Mbit/s
95th percentile per-packet one-way delay: 52.604 ms
Loss rate: 2.52%
-- Flow 3:
Average throughput: 8.74 Mbit/s
95th percentile per-packet one-way delay: 52.299 ms
Loss rate: 1.94%
```

Run 3: Report of LEDBAT — Data Link

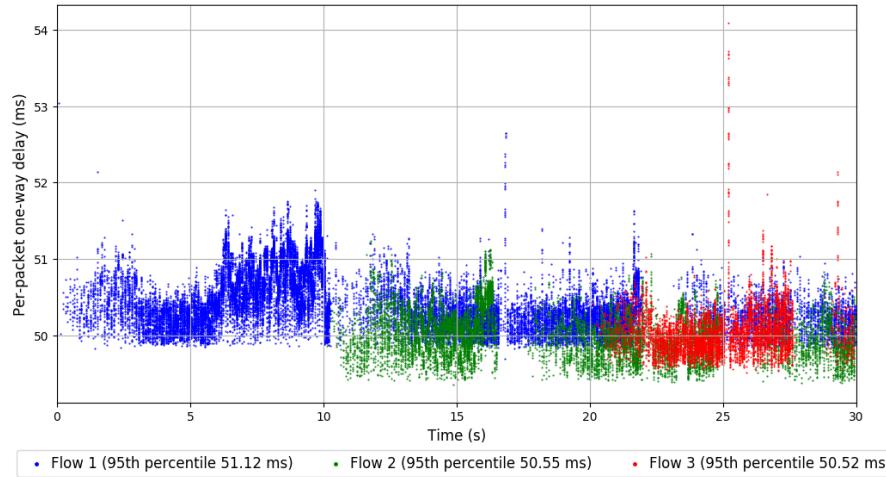
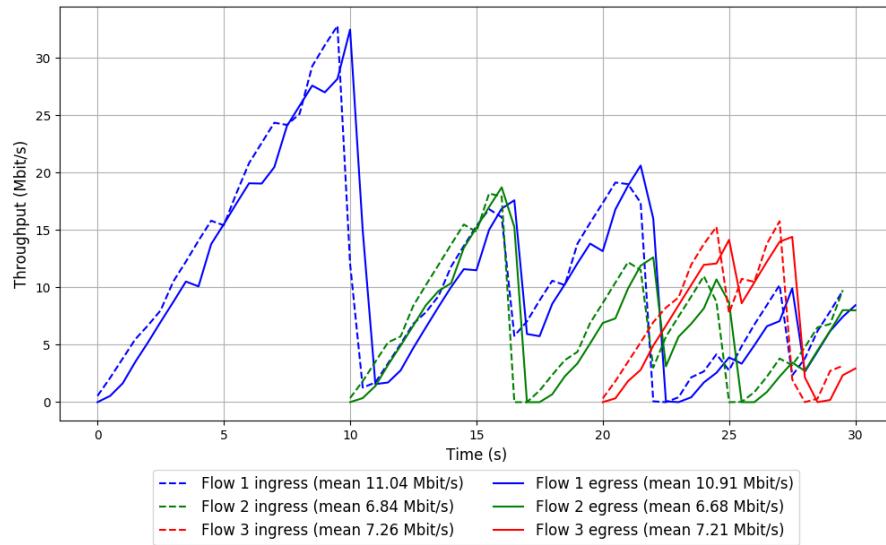


Run 4: Statistics of LEDBAT

```
Start at: 2018-09-06 20:38:13
End at: 2018-09-06 20:38:43
Local clock offset: 0.462 ms
Remote clock offset: -13.011 ms

# Below is generated by plot.py at 2018-09-06 21:05:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 17.69 Mbit/s
95th percentile per-packet one-way delay: 51.028 ms
Loss rate: 1.77%
-- Flow 1:
Average throughput: 10.91 Mbit/s
95th percentile per-packet one-way delay: 51.116 ms
Loss rate: 1.40%
-- Flow 2:
Average throughput: 6.68 Mbit/s
95th percentile per-packet one-way delay: 50.547 ms
Loss rate: 2.79%
-- Flow 3:
Average throughput: 7.21 Mbit/s
95th percentile per-packet one-way delay: 50.524 ms
Loss rate: 1.56%
```

Run 4: Report of LEDBAT — Data Link

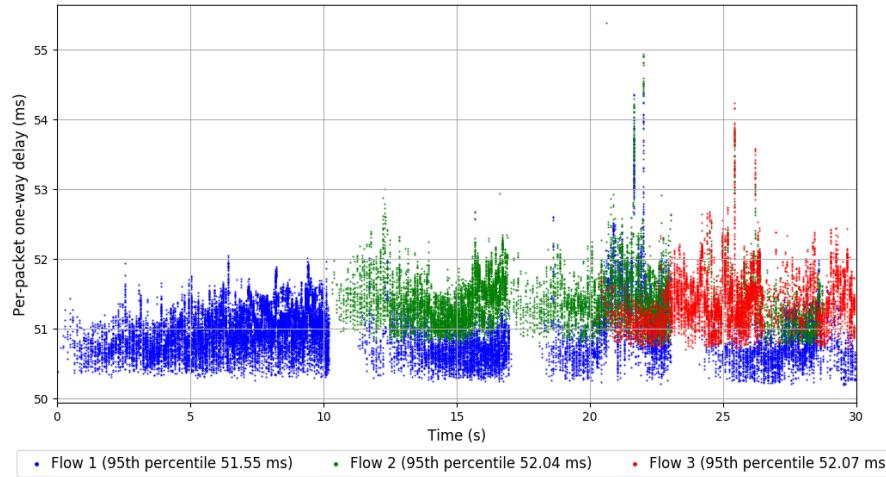
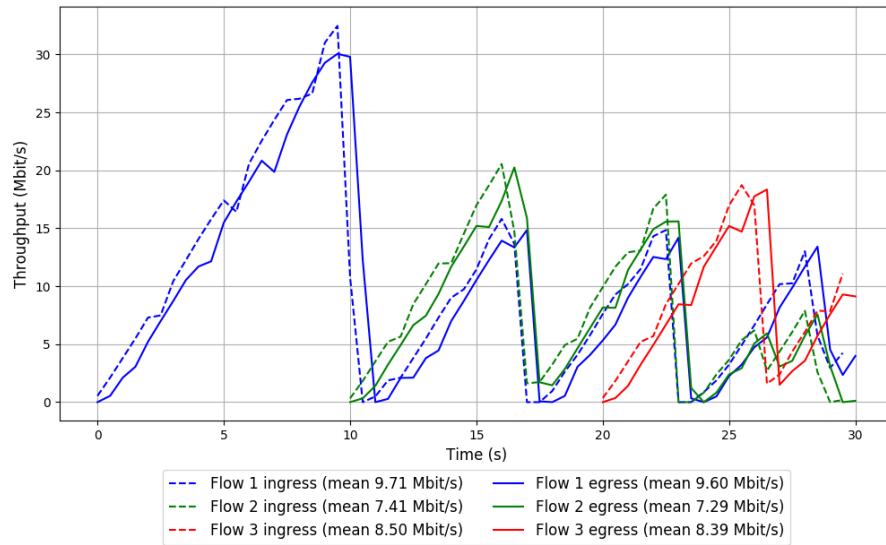


Run 5: Statistics of LEDBAT

```
Start at: 2018-09-06 21:00:37
End at: 2018-09-06 21:01:07
Local clock offset: -1.689 ms
Remote clock offset: -24.238 ms

# Below is generated by plot.py at 2018-09-06 21:05:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 17.16 Mbit/s
95th percentile per-packet one-way delay: 51.889 ms
Loss rate: 1.76%
-- Flow 1:
Average throughput: 9.60 Mbit/s
95th percentile per-packet one-way delay: 51.546 ms
Loss rate: 1.42%
-- Flow 2:
Average throughput: 7.29 Mbit/s
95th percentile per-packet one-way delay: 52.036 ms
Loss rate: 2.17%
-- Flow 3:
Average throughput: 8.39 Mbit/s
95th percentile per-packet one-way delay: 52.073 ms
Loss rate: 2.18%
```

Run 5: Report of LEDBAT — Data Link

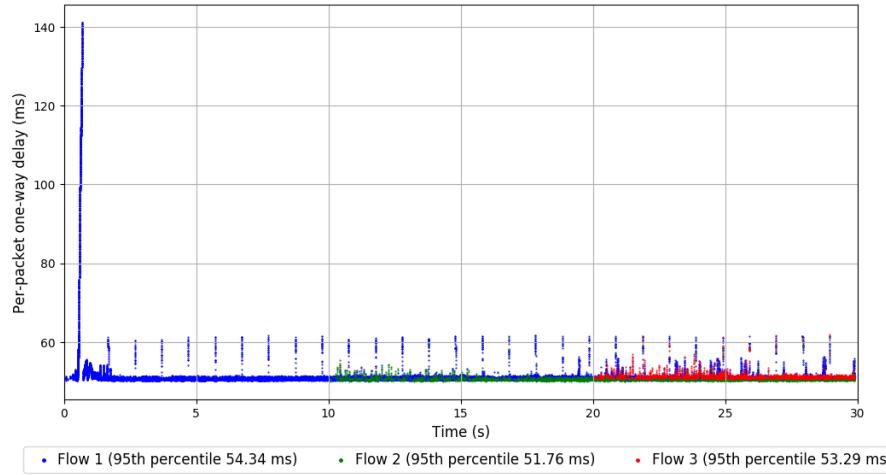
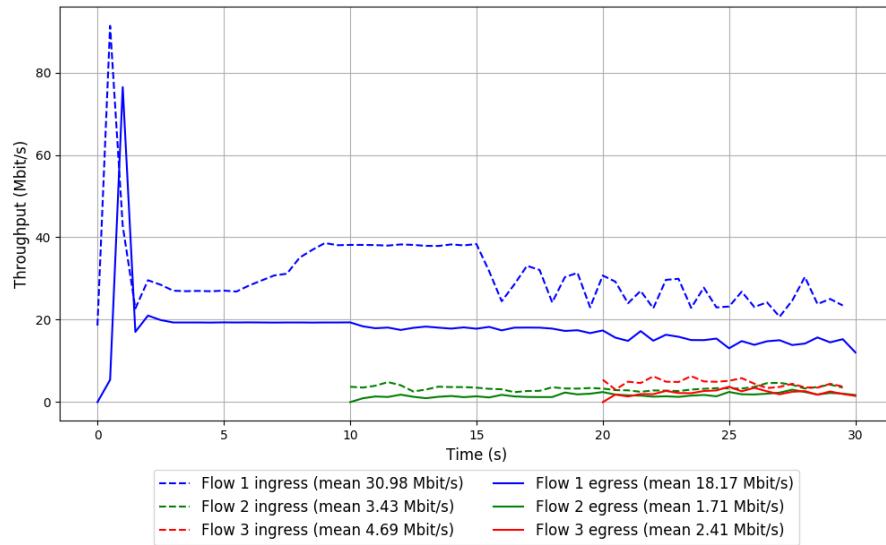


Run 1: Statistics of Indigo-Muses

```
Start at: 2018-09-06 19:26:06
End at: 2018-09-06 19:26:36
Local clock offset: 7.269 ms
Remote clock offset: 10.887 ms

# Below is generated by plot.py at 2018-09-06 21:05:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 20.09 Mbit/s
95th percentile per-packet one-way delay: 54.114 ms
Loss rate: 42.45%
-- Flow 1:
Average throughput: 18.17 Mbit/s
95th percentile per-packet one-way delay: 54.344 ms
Loss rate: 41.53%
-- Flow 2:
Average throughput: 1.71 Mbit/s
95th percentile per-packet one-way delay: 51.763 ms
Loss rate: 50.47%
-- Flow 3:
Average throughput: 2.41 Mbit/s
95th percentile per-packet one-way delay: 53.291 ms
Loss rate: 49.16%
```

Run 1: Report of Indigo-Muses — Data Link

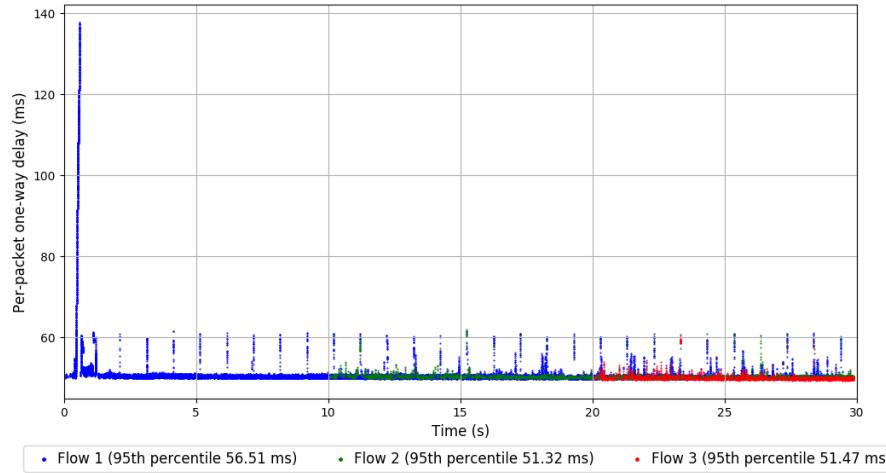
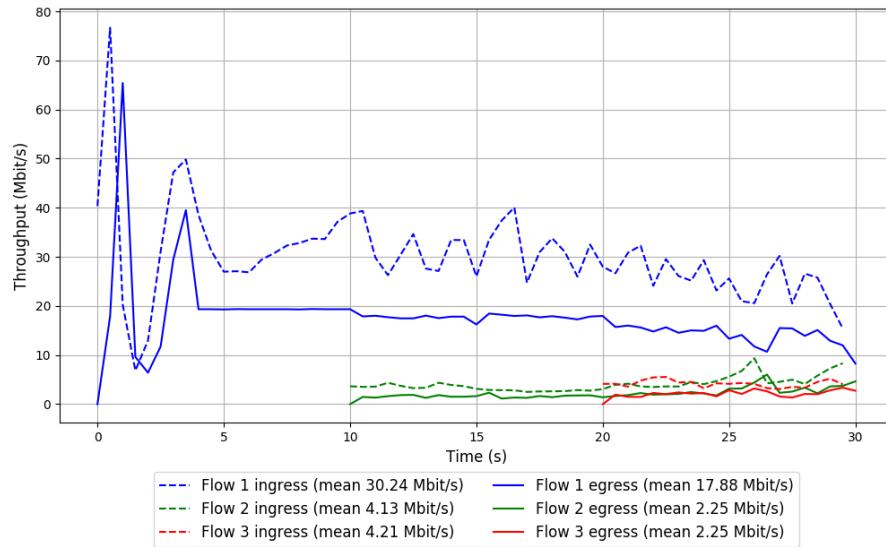


Run 2: Statistics of Indigo-Muses

```
Start at: 2018-09-06 19:48:25
End at: 2018-09-06 19:48:55
Local clock offset: 3.012 ms
Remote clock offset: -17.138 ms

# Below is generated by plot.py at 2018-09-06 21:05:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 20.12 Mbit/s
95th percentile per-packet one-way delay: 55.108 ms
Loss rate: 41.66%
-- Flow 1:
Average throughput: 17.88 Mbit/s
95th percentile per-packet one-way delay: 56.512 ms
Loss rate: 41.03%
-- Flow 2:
Average throughput: 2.25 Mbit/s
95th percentile per-packet one-way delay: 51.320 ms
Loss rate: 45.85%
-- Flow 3:
Average throughput: 2.25 Mbit/s
95th percentile per-packet one-way delay: 51.468 ms
Loss rate: 47.10%
```

Run 2: Report of Indigo-Muses — Data Link

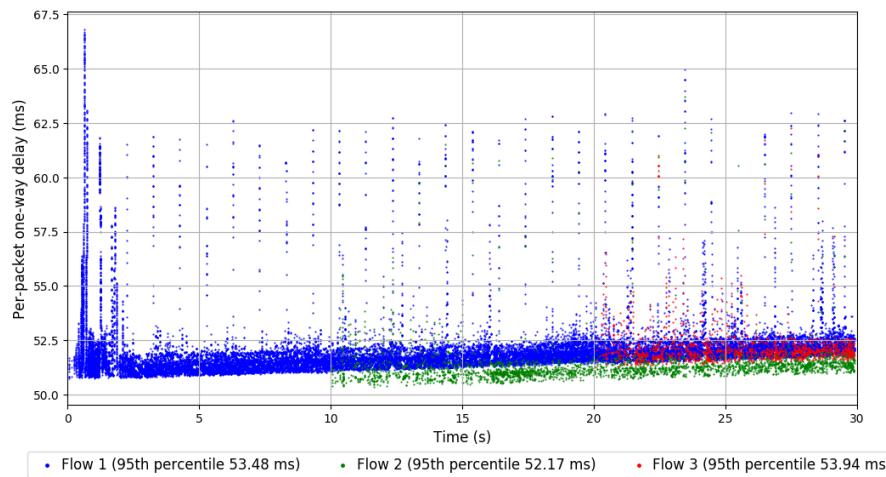
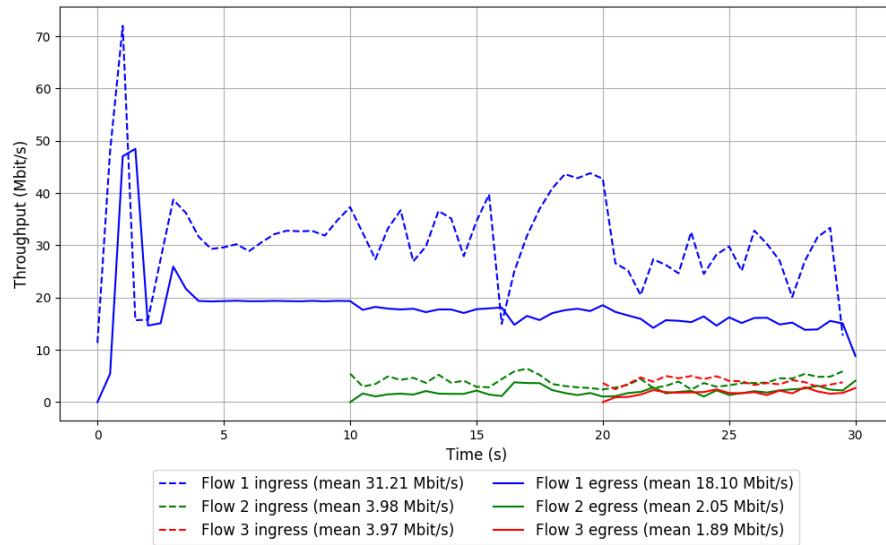


Run 3: Statistics of Indigo-Muses

```
Start at: 2018-09-06 20:10:49
End at: 2018-09-06 20:11:19
Local clock offset: -0.23 ms
Remote clock offset: -26.308 ms

# Below is generated by plot.py at 2018-09-06 21:06:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 20.09 Mbit/s
95th percentile per-packet one-way delay: 53.397 ms
Loss rate: 43.04%
-- Flow 1:
Average throughput: 18.10 Mbit/s
95th percentile per-packet one-way delay: 53.478 ms
Loss rate: 42.17%
-- Flow 2:
Average throughput: 2.05 Mbit/s
95th percentile per-packet one-way delay: 52.168 ms
Loss rate: 48.62%
-- Flow 3:
Average throughput: 1.89 Mbit/s
95th percentile per-packet one-way delay: 53.937 ms
Loss rate: 52.68%
```

Run 3: Report of Indigo-Muses — Data Link

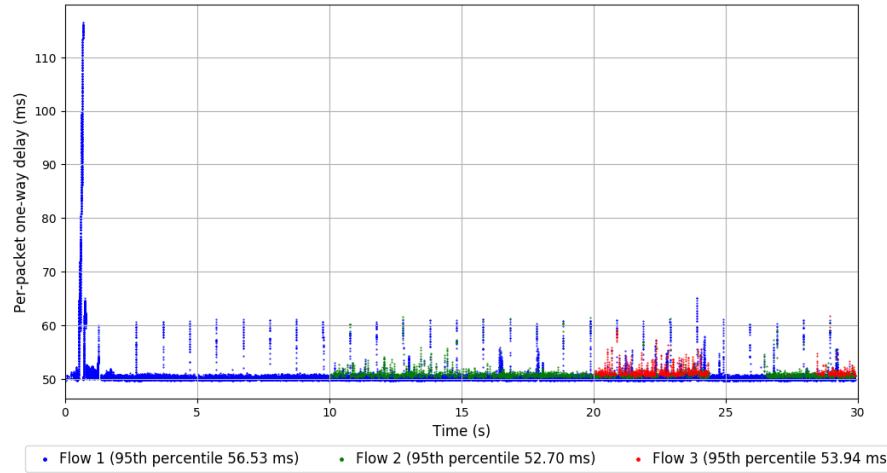
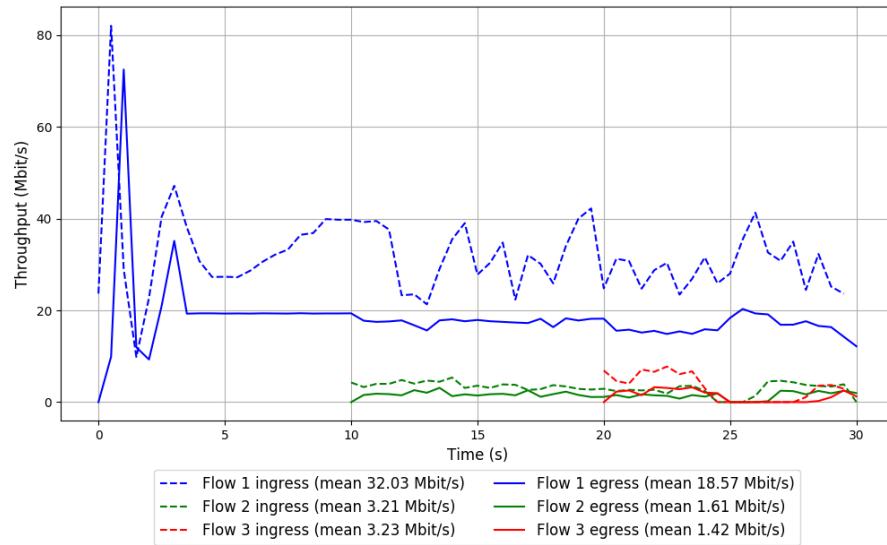


Run 4: Statistics of Indigo-Muses

```
Start at: 2018-09-06 20:33:16
End at: 2018-09-06 20:33:46
Local clock offset: 0.493 ms
Remote clock offset: -12.603 ms

# Below is generated by plot.py at 2018-09-06 21:06:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 20.10 Mbit/s
95th percentile per-packet one-way delay: 55.663 ms
Loss rate: 43.15%
-- Flow 1:
Average throughput: 18.57 Mbit/s
95th percentile per-packet one-way delay: 56.534 ms
Loss rate: 42.21%
-- Flow 2:
Average throughput: 1.61 Mbit/s
95th percentile per-packet one-way delay: 52.697 ms
Loss rate: 50.54%
-- Flow 3:
Average throughput: 1.42 Mbit/s
95th percentile per-packet one-way delay: 53.944 ms
Loss rate: 56.52%
```

Run 4: Report of Indigo-Muses — Data Link

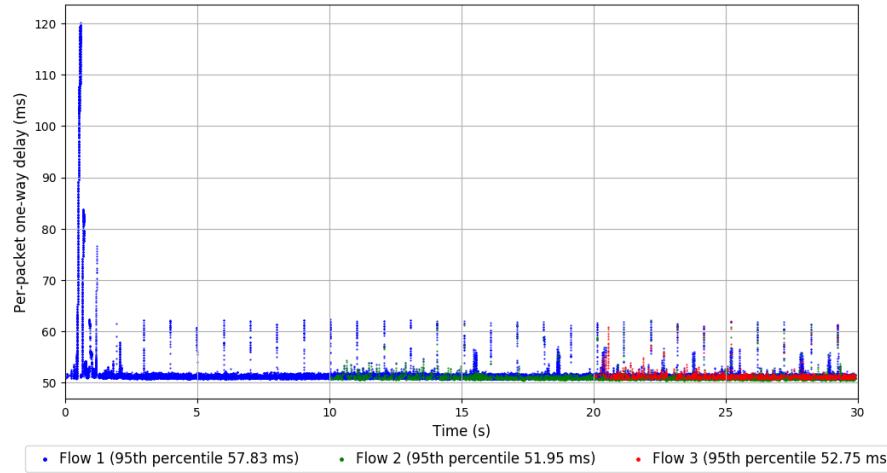
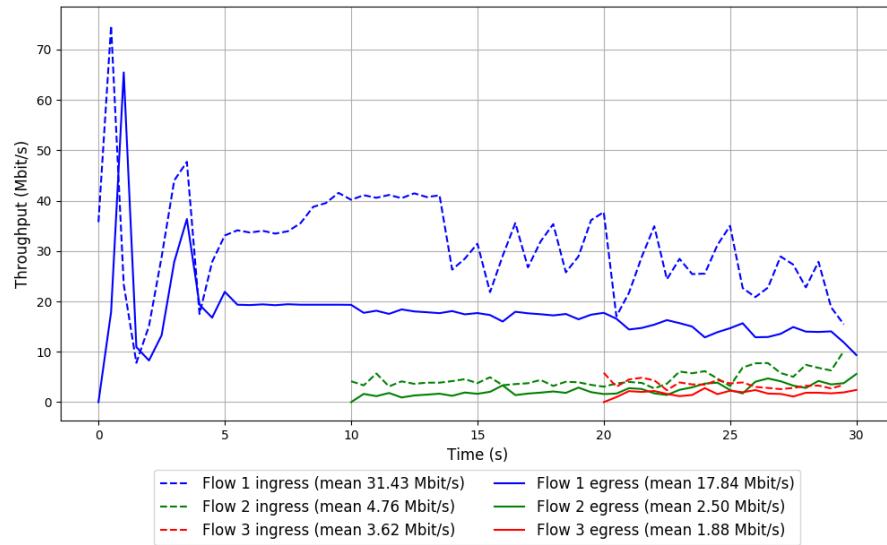


Run 5: Statistics of Indigo-Muses

```
Start at: 2018-09-06 20:55:34
End at: 2018-09-06 20:56:04
Local clock offset: -1.25 ms
Remote clock offset: -22.008 ms

# Below is generated by plot.py at 2018-09-06 21:06:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 20.12 Mbit/s
95th percentile per-packet one-way delay: 56.228 ms
Loss rate: 43.95%
-- Flow 1:
Average throughput: 17.84 Mbit/s
95th percentile per-packet one-way delay: 57.834 ms
Loss rate: 43.40%
-- Flow 2:
Average throughput: 2.50 Mbit/s
95th percentile per-packet one-way delay: 51.952 ms
Loss rate: 47.72%
-- Flow 3:
Average throughput: 1.88 Mbit/s
95th percentile per-packet one-way delay: 52.749 ms
Loss rate: 48.52%
```

Run 5: Report of Indigo-Muses — Data Link

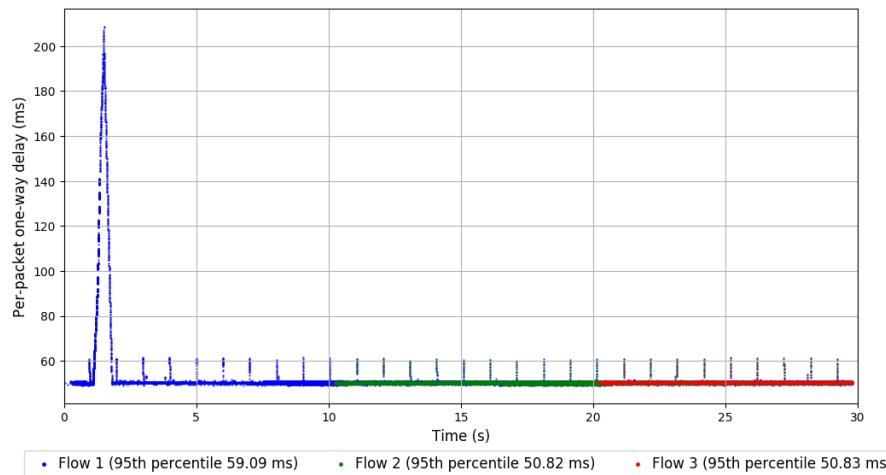
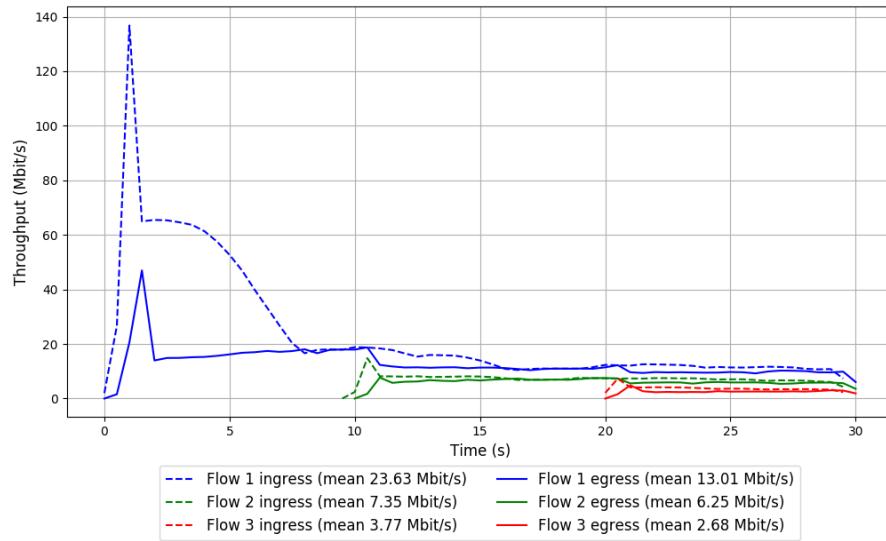


Run 1: Statistics of PCC-Allegro

```
Start at: 2018-09-06 19:27:20
End at: 2018-09-06 19:27:50
Local clock offset: 6.56 ms
Remote clock offset: 10.961 ms

# Below is generated by plot.py at 2018-09-06 21:06:07
# Datalink statistics
-- Total of 3 flows:
Average throughput: 18.03 Mbit/s
95th percentile per-packet one-way delay: 53.062 ms
Loss rate: 39.58%
-- Flow 1:
Average throughput: 13.01 Mbit/s
95th percentile per-packet one-way delay: 59.095 ms
Loss rate: 45.11%
-- Flow 2:
Average throughput: 6.25 Mbit/s
95th percentile per-packet one-way delay: 50.820 ms
Loss rate: 15.42%
-- Flow 3:
Average throughput: 2.68 Mbit/s
95th percentile per-packet one-way delay: 50.831 ms
Loss rate: 29.59%
```

Run 1: Report of PCC-Allegro — Data Link

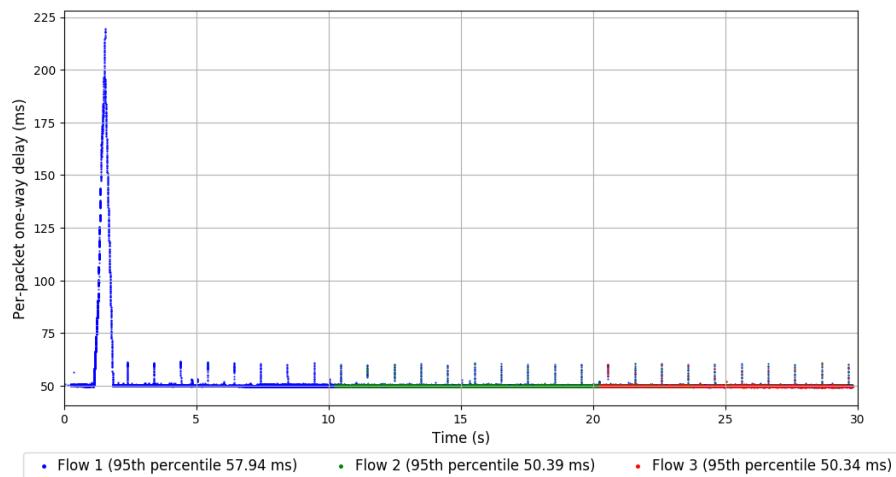
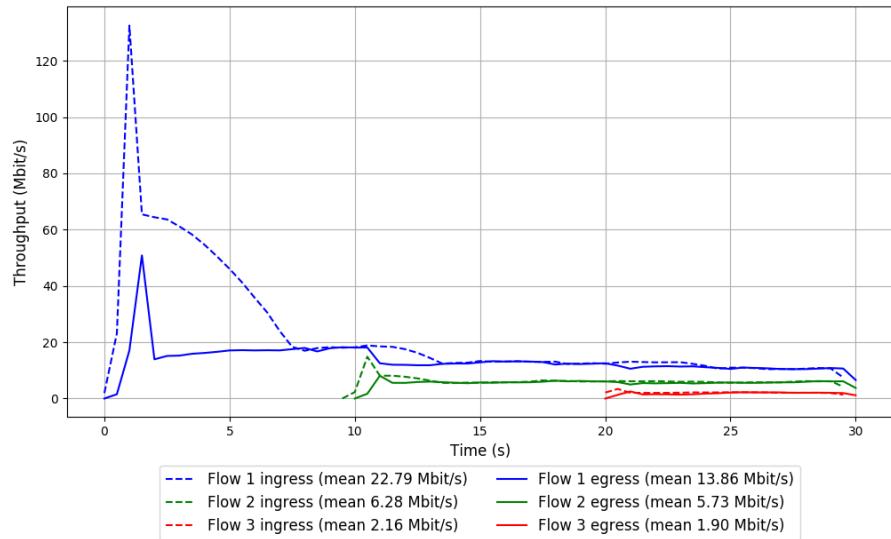


Run 2: Statistics of PCC-Allegro

```
Start at: 2018-09-06 19:49:38
End at: 2018-09-06 19:50:08
Local clock offset: 2.714 ms
Remote clock offset: -18.384 ms

# Below is generated by plot.py at 2018-09-06 21:06:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 18.29 Mbit/s
95th percentile per-packet one-way delay: 51.895 ms
Loss rate: 34.12%
-- Flow 1:
Average throughput: 13.86 Mbit/s
95th percentile per-packet one-way delay: 57.943 ms
Loss rate: 39.37%
-- Flow 2:
Average throughput: 5.73 Mbit/s
95th percentile per-packet one-way delay: 50.394 ms
Loss rate: 9.07%
-- Flow 3:
Average throughput: 1.90 Mbit/s
95th percentile per-packet one-way delay: 50.338 ms
Loss rate: 13.03%
```

Run 2: Report of PCC-Allegro — Data Link

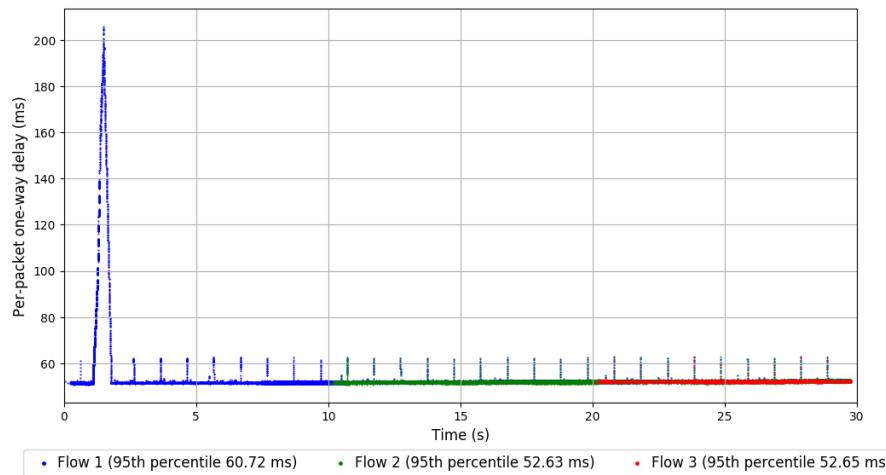
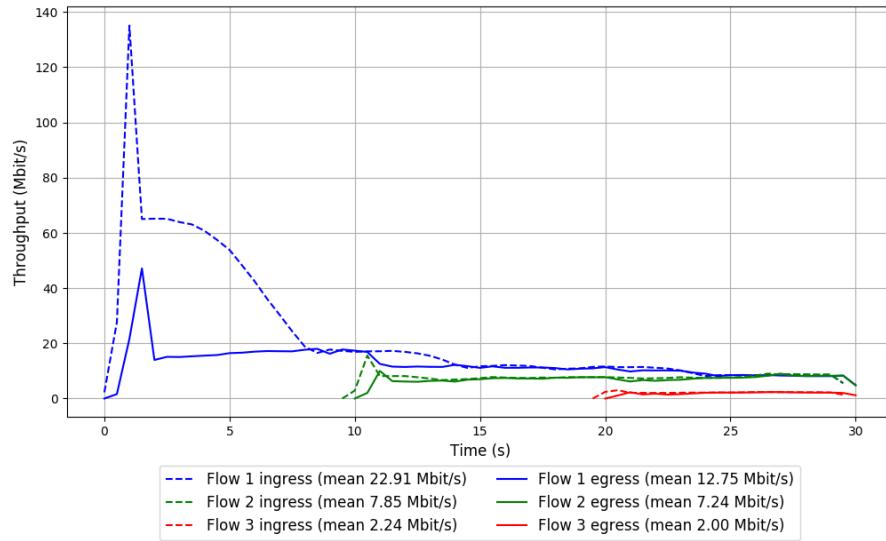


Run 3: Statistics of PCC-Allegro

```
Start at: 2018-09-06 20:12:02
End at: 2018-09-06 20:12:32
Local clock offset: -0.264 ms
Remote clock offset: -24.054 ms

# Below is generated by plot.py at 2018-09-06 21:06:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 18.22 Mbit/s
95th percentile per-packet one-way delay: 53.412 ms
Loss rate: 37.09%
-- Flow 1:
Average throughput: 12.75 Mbit/s
95th percentile per-packet one-way delay: 60.719 ms
Loss rate: 44.51%
-- Flow 2:
Average throughput: 7.24 Mbit/s
95th percentile per-packet one-way delay: 52.627 ms
Loss rate: 8.12%
-- Flow 3:
Average throughput: 2.00 Mbit/s
95th percentile per-packet one-way delay: 52.648 ms
Loss rate: 11.81%
```

Run 3: Report of PCC-Allegro — Data Link

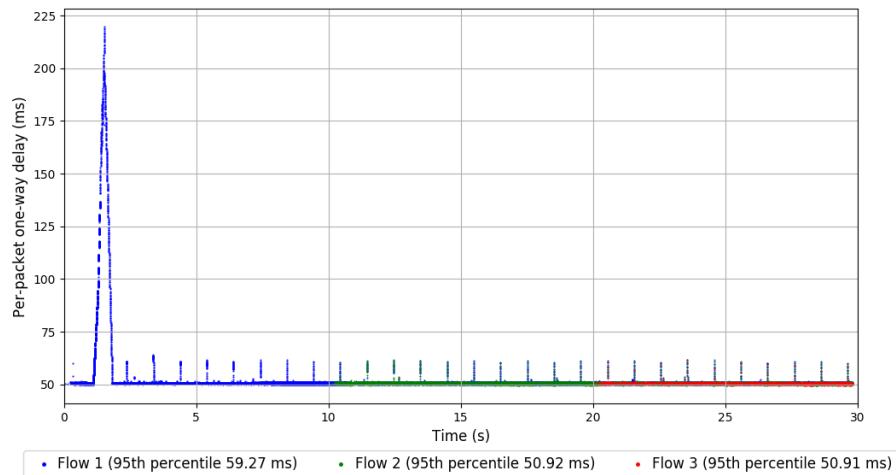
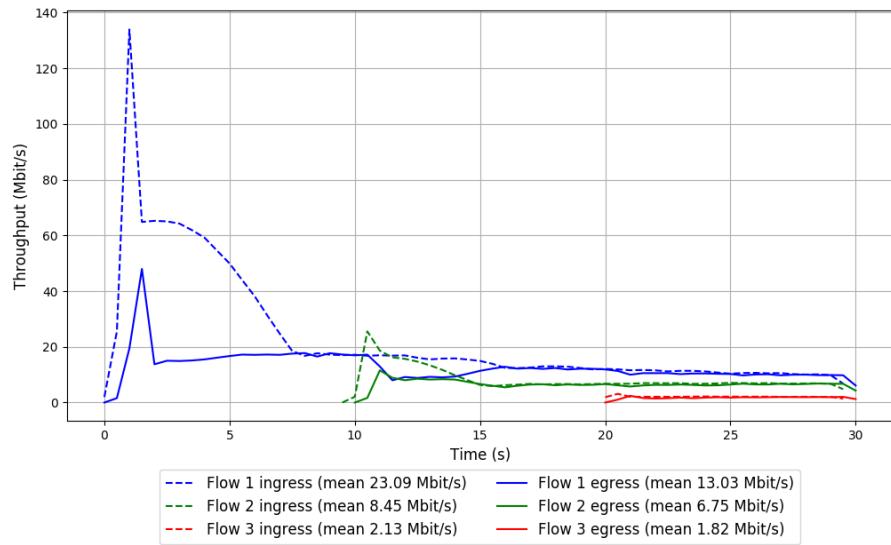


Run 4: Statistics of PCC-Allegro

```
Start at: 2018-09-06 20:34:30
End at: 2018-09-06 20:35:00
Local clock offset: 0.612 ms
Remote clock offset: -12.463 ms

# Below is generated by plot.py at 2018-09-06 21:06:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 18.11 Mbit/s
95th percentile per-packet one-way delay: 52.694 ms
Loss rate: 38.60%
-- Flow 1:
Average throughput: 13.03 Mbit/s
95th percentile per-packet one-way delay: 59.271 ms
Loss rate: 43.73%
-- Flow 2:
Average throughput: 6.75 Mbit/s
95th percentile per-packet one-way delay: 50.923 ms
Loss rate: 20.48%
-- Flow 3:
Average throughput: 1.82 Mbit/s
95th percentile per-packet one-way delay: 50.911 ms
Loss rate: 15.14%
```

Run 4: Report of PCC-Allegro — Data Link

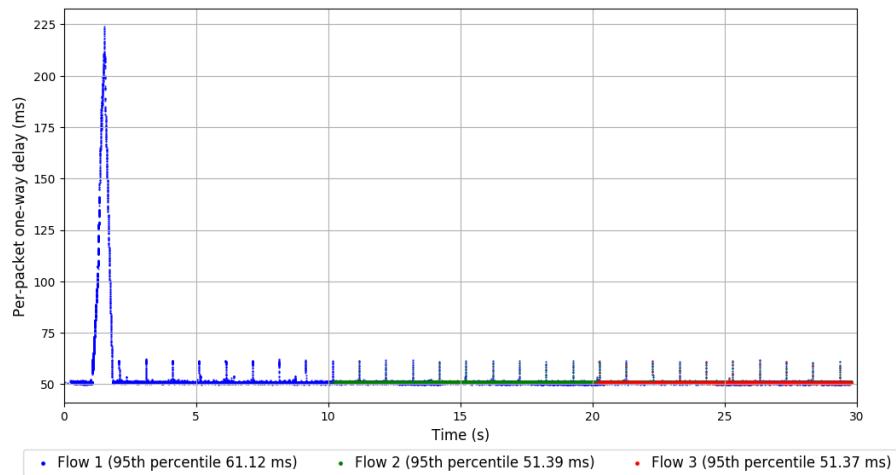
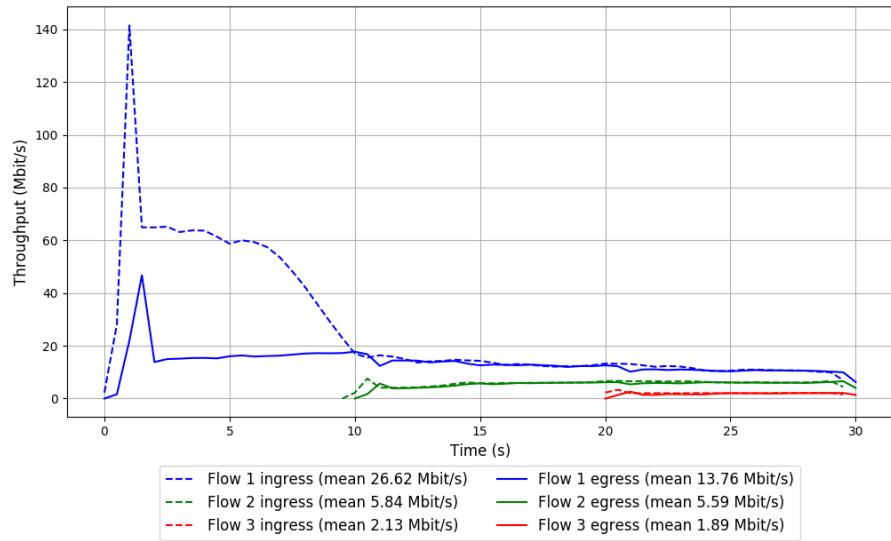


Run 5: Statistics of PCC-Allegro

```
Start at: 2018-09-06 20:56:48
End at: 2018-09-06 20:57:18
Local clock offset: -1.515 ms
Remote clock offset: -22.781 ms

# Below is generated by plot.py at 2018-09-06 21:06:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 18.09 Mbit/s
95th percentile per-packet one-way delay: 56.344 ms
Loss rate: 42.20%
-- Flow 1:
Average throughput: 13.76 Mbit/s
95th percentile per-packet one-way delay: 61.116 ms
Loss rate: 48.47%
-- Flow 2:
Average throughput: 5.59 Mbit/s
95th percentile per-packet one-way delay: 51.389 ms
Loss rate: 4.66%
-- Flow 3:
Average throughput: 1.89 Mbit/s
95th percentile per-packet one-way delay: 51.368 ms
Loss rate: 12.21%
```

Run 5: Report of PCC-Allegro — Data Link

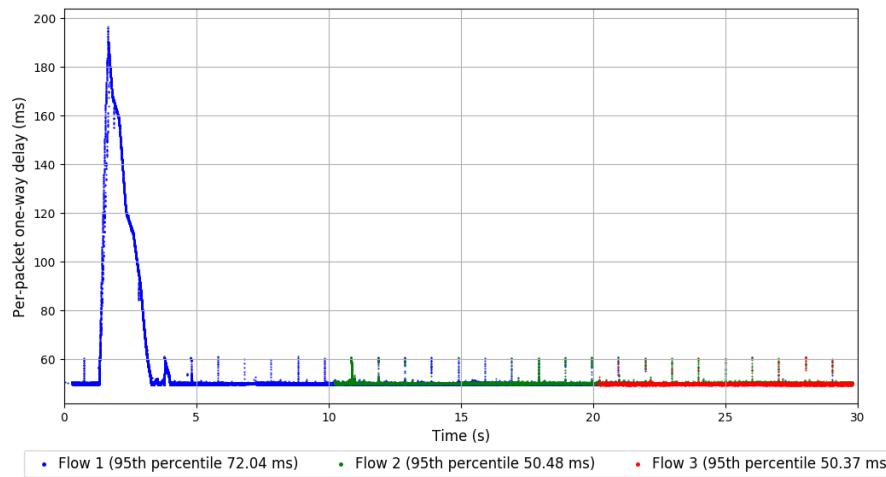
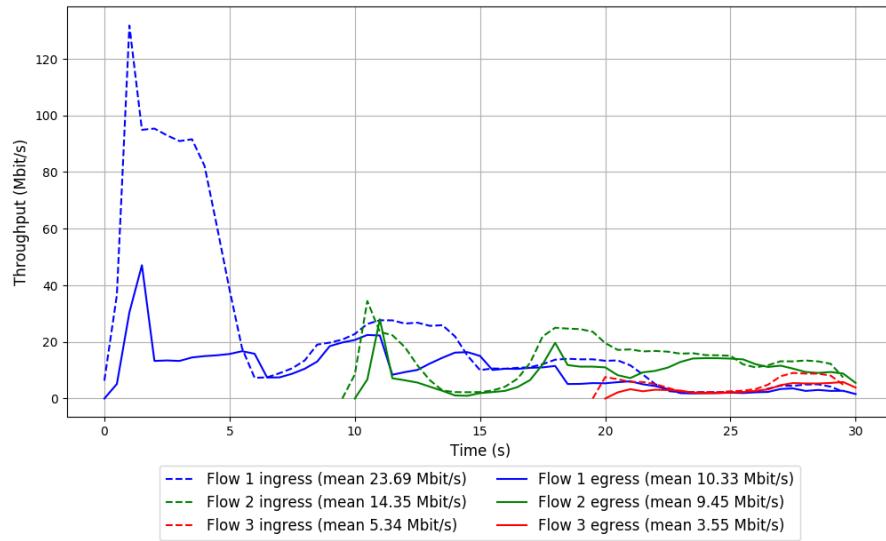


```
Run 1: Statistics of PCC-Expr
```

```
Start at: 2018-09-06 19:29:46
End at: 2018-09-06 19:30:16
Local clock offset: 6.131 ms
Remote clock offset: 10.695 ms

# Below is generated by plot.py at 2018-09-06 21:06:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 17.79 Mbit/s
95th percentile per-packet one-way delay: 55.693 ms
Loss rate: 49.34%
-- Flow 1:
Average throughput: 10.33 Mbit/s
95th percentile per-packet one-way delay: 72.042 ms
Loss rate: 56.50%
-- Flow 2:
Average throughput: 9.45 Mbit/s
95th percentile per-packet one-way delay: 50.477 ms
Loss rate: 34.41%
-- Flow 3:
Average throughput: 3.55 Mbit/s
95th percentile per-packet one-way delay: 50.369 ms
Loss rate: 34.16%
```

Run 1: Report of PCC-Expr — Data Link

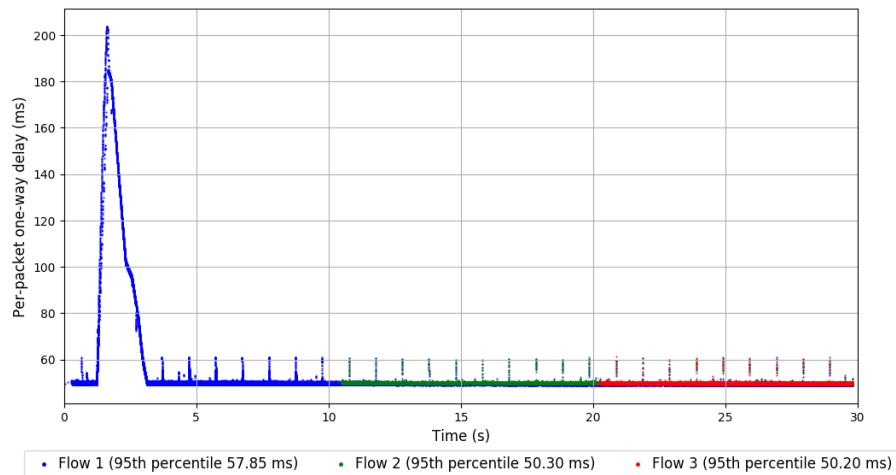
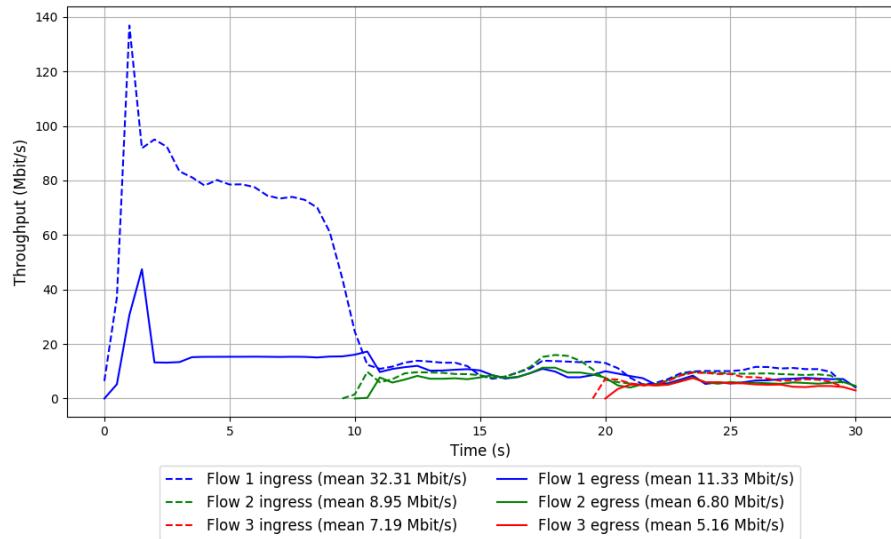


Run 2: Statistics of PCC-Expr

```
Start at: 2018-09-06 19:52:03
End at: 2018-09-06 19:52:33
Local clock offset: 2.312 ms
Remote clock offset: -20.945 ms

# Below is generated by plot.py at 2018-09-06 21:06:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 17.54 Mbit/s
95th percentile per-packet one-way delay: 52.884 ms
Loss rate: 56.97%
-- Flow 1:
Average throughput: 11.33 Mbit/s
95th percentile per-packet one-way delay: 57.850 ms
Loss rate: 65.05%
-- Flow 2:
Average throughput: 6.80 Mbit/s
95th percentile per-packet one-way delay: 50.298 ms
Loss rate: 24.34%
-- Flow 3:
Average throughput: 5.16 Mbit/s
95th percentile per-packet one-way delay: 50.201 ms
Loss rate: 28.92%
```

Run 2: Report of PCC-Expr — Data Link

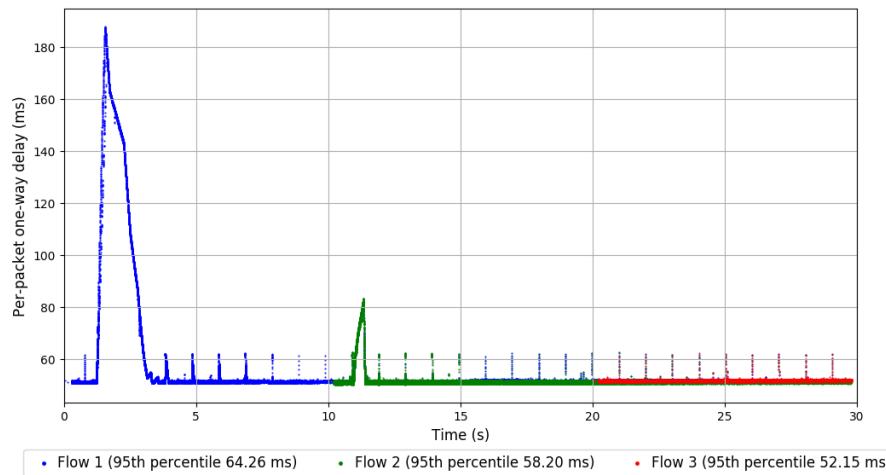
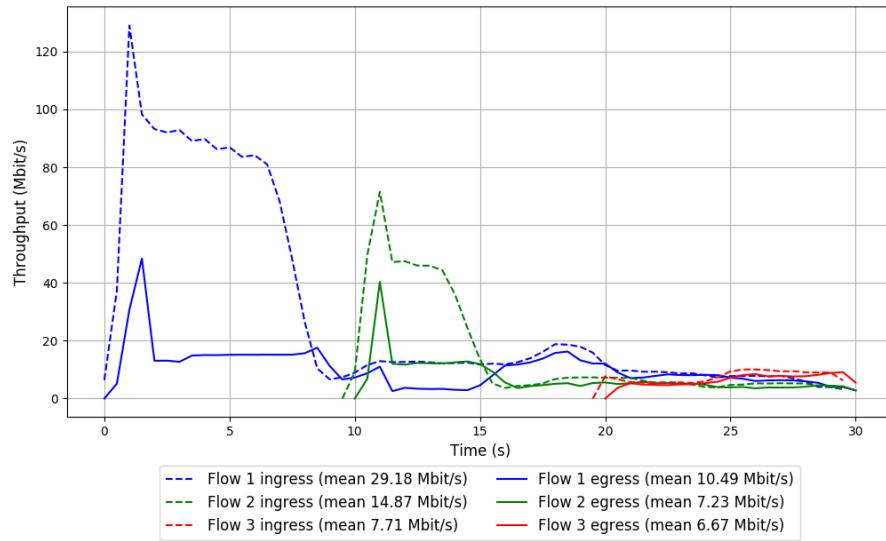


Run 3: Statistics of PCC-Expr

```
Start at: 2018-09-06 20:14:28
End at: 2018-09-06 20:14:58
Local clock offset: -0.435 ms
Remote clock offset: -20.21 ms

# Below is generated by plot.py at 2018-09-06 21:06:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 17.49 Mbit/s
95th percentile per-packet one-way delay: 59.552 ms
Loss rate: 58.11%
-- Flow 1:
Average throughput: 10.49 Mbit/s
95th percentile per-packet one-way delay: 64.264 ms
Loss rate: 64.16%
-- Flow 2:
Average throughput: 7.23 Mbit/s
95th percentile per-packet one-way delay: 58.201 ms
Loss rate: 51.57%
-- Flow 3:
Average throughput: 6.67 Mbit/s
95th percentile per-packet one-way delay: 52.149 ms
Loss rate: 14.25%
```

Run 3: Report of PCC-Expr — Data Link

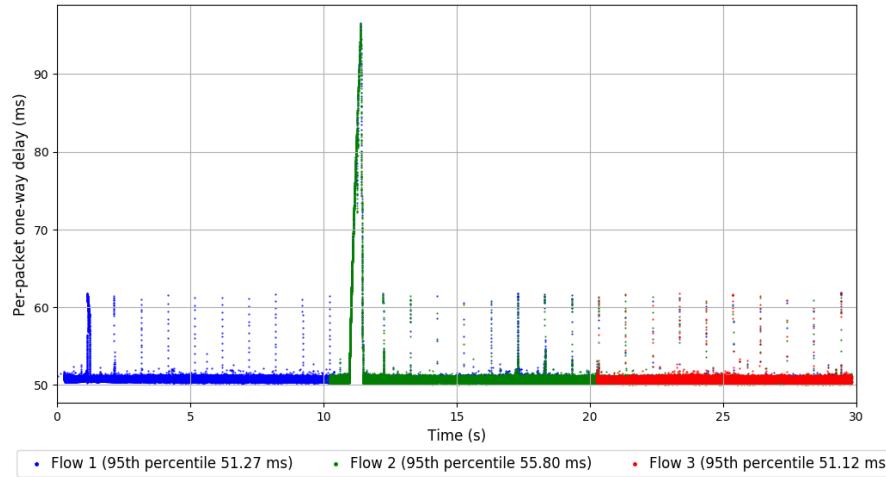
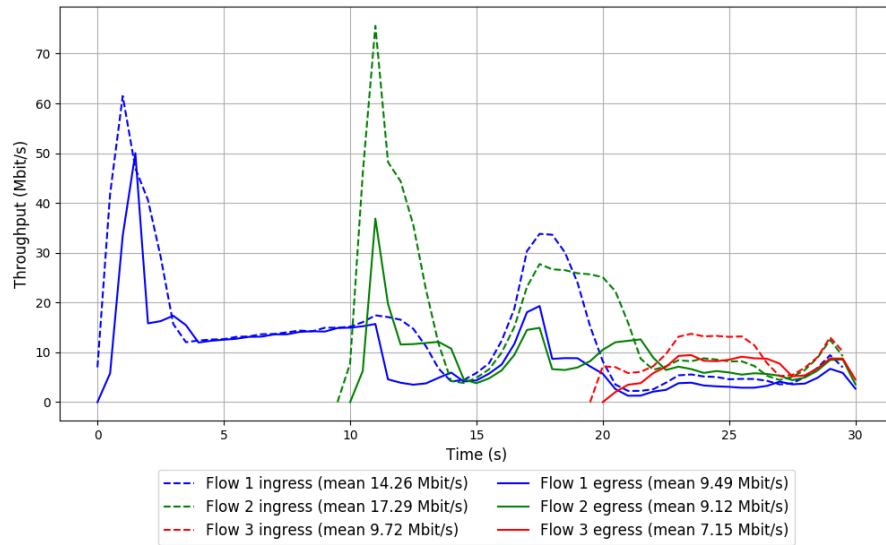


Run 4: Statistics of PCC-Expr

```
Start at: 2018-09-06 20:36:57
End at: 2018-09-06 20:37:27
Local clock offset: 0.544 ms
Remote clock offset: -13.368 ms

# Below is generated by plot.py at 2018-09-06 21:06:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 17.89 Mbit/s
95th percentile per-packet one-way delay: 51.360 ms
Loss rate: 38.45%
-- Flow 1:
Average throughput: 9.49 Mbit/s
95th percentile per-packet one-way delay: 51.267 ms
Loss rate: 33.69%
-- Flow 2:
Average throughput: 9.12 Mbit/s
95th percentile per-packet one-way delay: 55.800 ms
Loss rate: 47.51%
-- Flow 3:
Average throughput: 7.15 Mbit/s
95th percentile per-packet one-way delay: 51.122 ms
Loss rate: 27.10%
```

Run 4: Report of PCC-Expr — Data Link

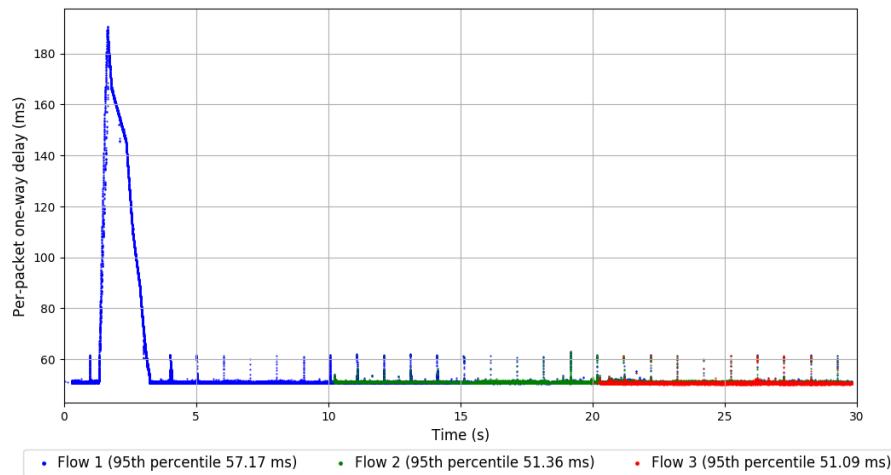
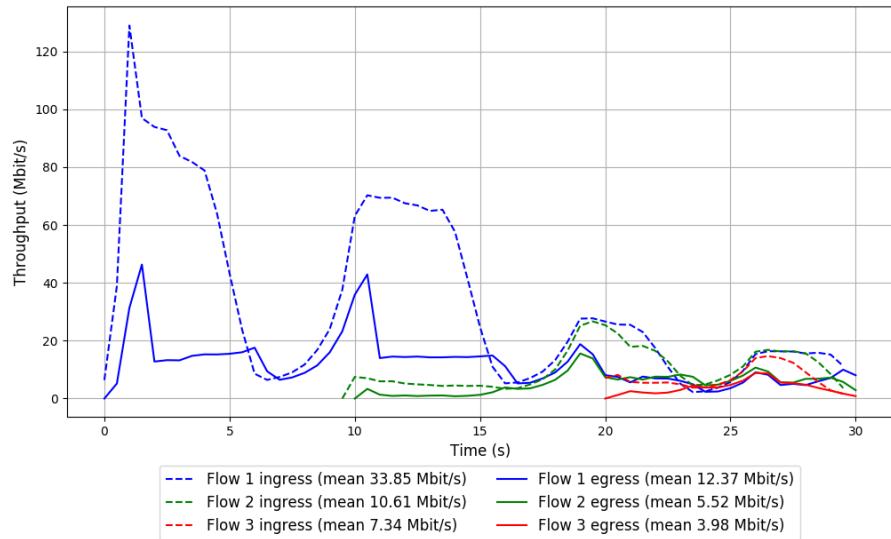


Run 5: Statistics of PCC-Expr

```
Start at: 2018-09-06 20:59:21
End at: 2018-09-06 20:59:51
Local clock offset: -1.722 ms
Remote clock offset: -23.88 ms

# Below is generated by plot.py at 2018-09-06 21:06:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 17.35 Mbit/s
95th percentile per-packet one-way delay: 52.684 ms
Loss rate: 60.09%
-- Flow 1:
Average throughput: 12.37 Mbit/s
95th percentile per-packet one-way delay: 57.168 ms
Loss rate: 63.55%
-- Flow 2:
Average throughput: 5.52 Mbit/s
95th percentile per-packet one-way delay: 51.359 ms
Loss rate: 48.20%
-- Flow 3:
Average throughput: 3.98 Mbit/s
95th percentile per-packet one-way delay: 51.086 ms
Loss rate: 46.30%
```

Run 5: Report of PCC-Expr — Data Link

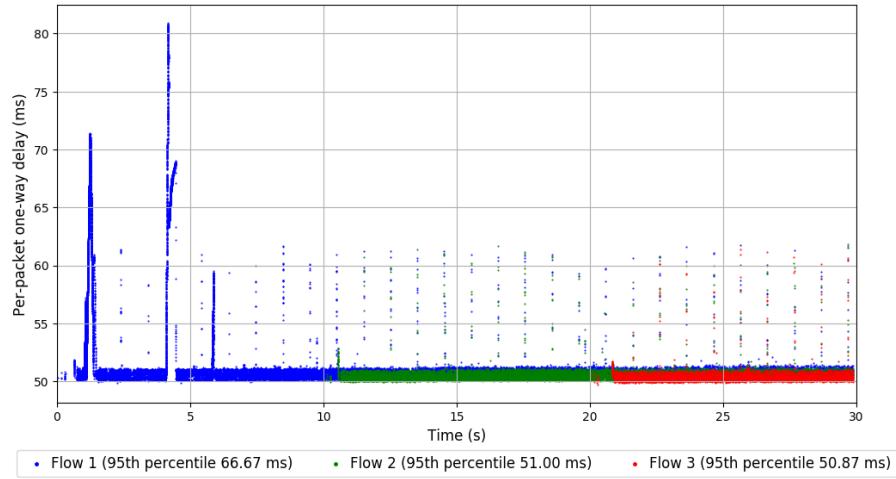
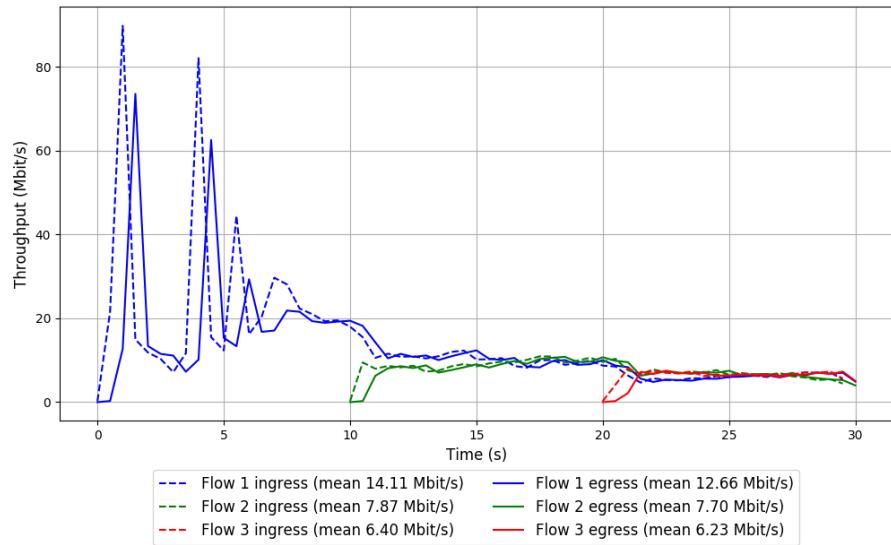


```
Run 1: Statistics of QUIC Cubic

Start at: 2018-09-06 19:18:35
End at: 2018-09-06 19:19:05
Local clock offset: 10.472 ms
Remote clock offset: 12.328 ms

# Below is generated by plot.py at 2018-09-06 21:06:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 19.82 Mbit/s
95th percentile per-packet one-way delay: 64.156 ms
Loss rate: 7.90%
-- Flow 1:
Average throughput: 12.66 Mbit/s
95th percentile per-packet one-way delay: 66.673 ms
Loss rate: 10.52%
-- Flow 2:
Average throughput: 7.70 Mbit/s
95th percentile per-packet one-way delay: 50.996 ms
Loss rate: 2.59%
-- Flow 3:
Average throughput: 6.23 Mbit/s
95th percentile per-packet one-way delay: 50.870 ms
Loss rate: 3.52%
```

Run 1: Report of QUIC Cubic — Data Link

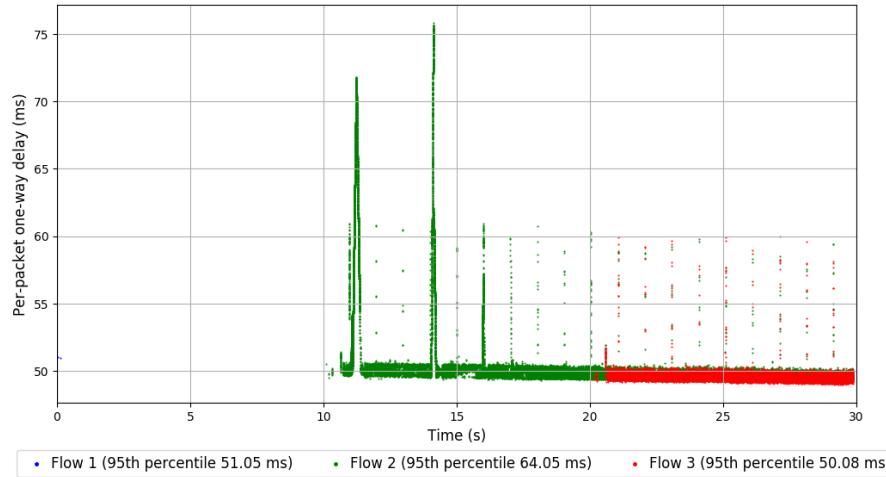
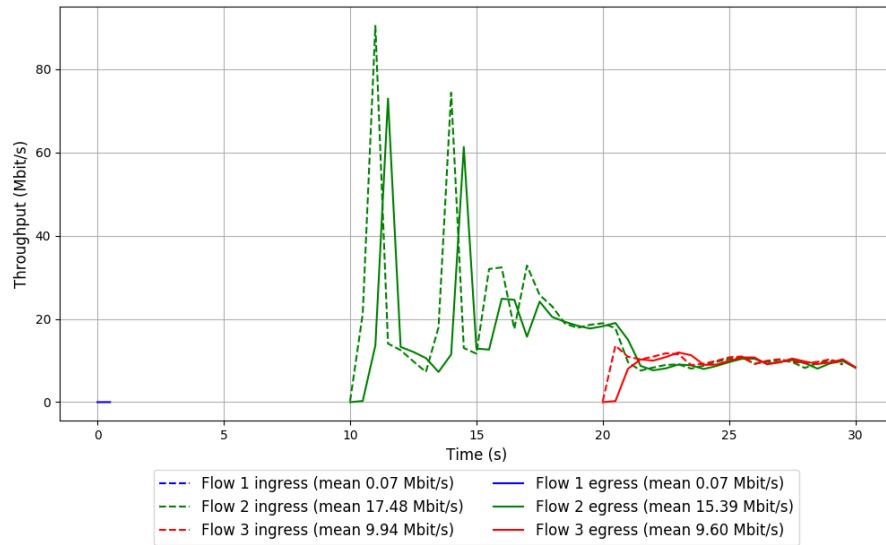


Run 2: Statistics of QUIC Cubic

```
Start at: 2018-09-06 19:40:54
End at: 2018-09-06 19:41:24
Local clock offset: 4.449 ms
Remote clock offset: -6.875 ms

# Below is generated by plot.py at 2018-09-06 21:06:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 13.36 Mbit/s
95th percentile per-packet one-way delay: 61.332 ms
Loss rate: 10.56%
-- Flow 1:
Average throughput: 0.07 Mbit/s
95th percentile per-packet one-way delay: 51.049 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 15.39 Mbit/s
95th percentile per-packet one-way delay: 64.053 ms
Loss rate: 12.34%
-- Flow 3:
Average throughput: 9.60 Mbit/s
95th percentile per-packet one-way delay: 50.083 ms
Loss rate: 4.28%
```

Run 2: Report of QUIC Cubic — Data Link

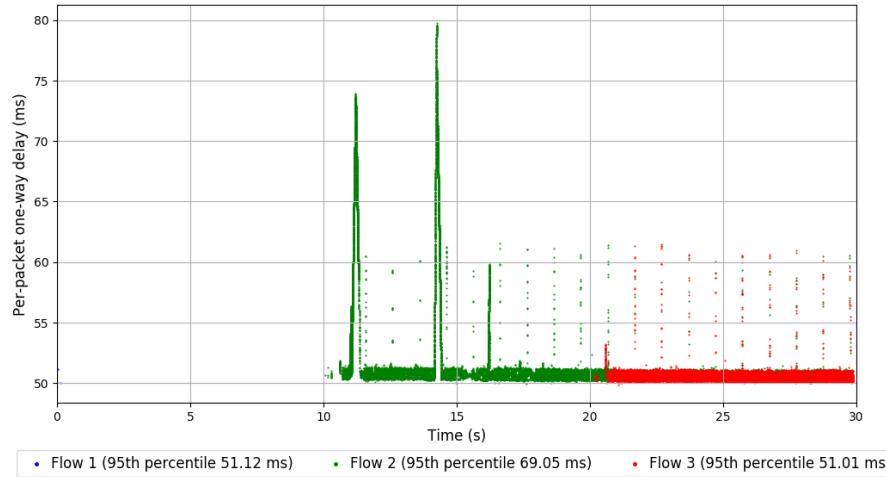
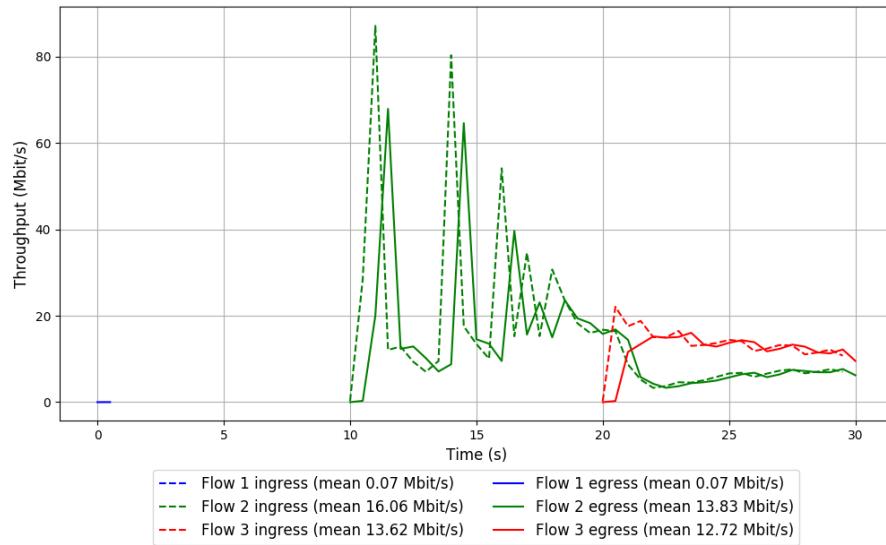


Run 3: Statistics of QUIC Cubic

```
Start at: 2018-09-06 20:03:20
End at: 2018-09-06 20:03:50
Local clock offset: 0.747 ms
Remote clock offset: -30.464 ms

# Below is generated by plot.py at 2018-09-06 21:06:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 13.38 Mbit/s
95th percentile per-packet one-way delay: 66.547 ms
Loss rate: 12.25%
-- Flow 1:
Average throughput: 0.07 Mbit/s
95th percentile per-packet one-way delay: 51.118 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 13.83 Mbit/s
95th percentile per-packet one-way delay: 69.054 ms
Loss rate: 14.28%
-- Flow 3:
Average throughput: 12.72 Mbit/s
95th percentile per-packet one-way delay: 51.010 ms
Loss rate: 7.45%
```

Run 3: Report of QUIC Cubic — Data Link

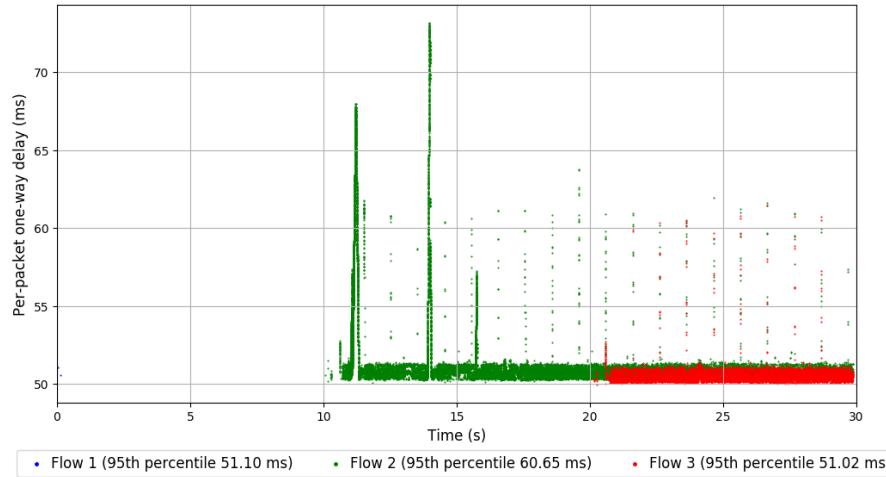
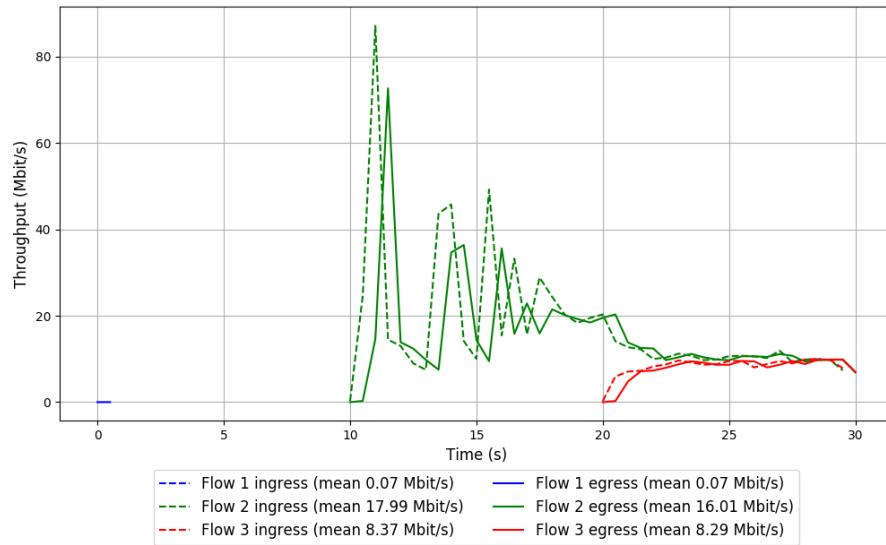


Run 4: Statistics of QUIC Cubic

```
Start at: 2018-09-06 20:25:37
End at: 2018-09-06 20:26:07
Local clock offset: 0.85 ms
Remote clock offset: -12.798 ms

# Below is generated by plot.py at 2018-09-06 21:06:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 13.37 Mbit/s
95th percentile per-packet one-way delay: 58.850 ms
Loss rate: 9.57%
-- Flow 1:
Average throughput: 0.07 Mbit/s
95th percentile per-packet one-way delay: 51.100 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 16.01 Mbit/s
95th percentile per-packet one-way delay: 60.646 ms
Loss rate: 11.36%
-- Flow 3:
Average throughput: 8.29 Mbit/s
95th percentile per-packet one-way delay: 51.021 ms
Loss rate: 1.84%
```

Run 4: Report of QUIC Cubic — Data Link

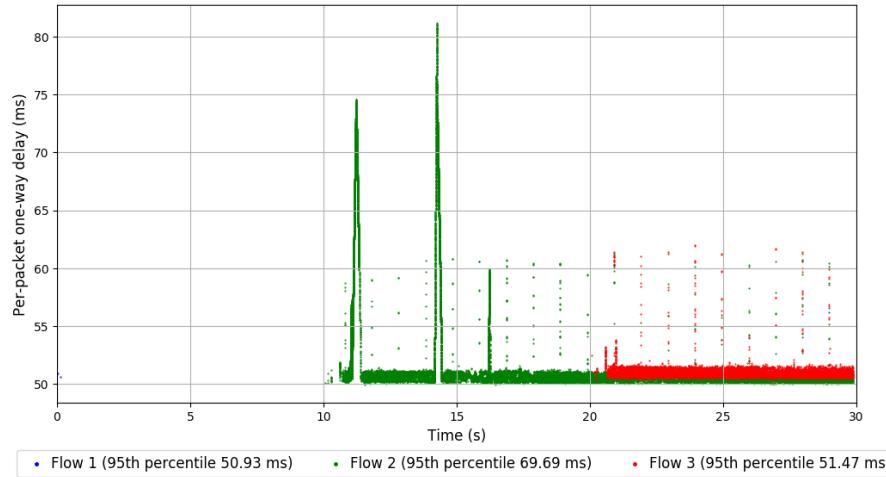
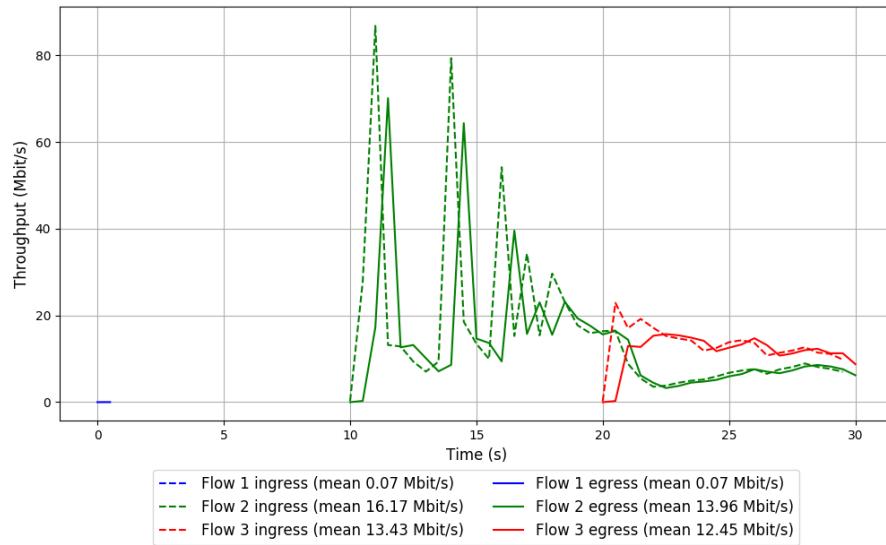


Run 5: Statistics of QUIC Cubic

```
Start at: 2018-09-06 20:48:06
End at: 2018-09-06 20:48:36
Local clock offset: -0.423 ms
Remote clock offset: -18.296 ms

# Below is generated by plot.py at 2018-09-06 21:06:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 13.37 Mbit/s
95th percentile per-packet one-way delay: 67.214 ms
Loss rate: 12.32%
-- Flow 1:
Average throughput: 0.07 Mbit/s
95th percentile per-packet one-way delay: 50.927 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 13.96 Mbit/s
95th percentile per-packet one-way delay: 69.694 ms
Loss rate: 14.06%
-- Flow 3:
Average throughput: 12.45 Mbit/s
95th percentile per-packet one-way delay: 51.465 ms
Loss rate: 8.12%
```

Run 5: Report of QUIC Cubic — Data Link

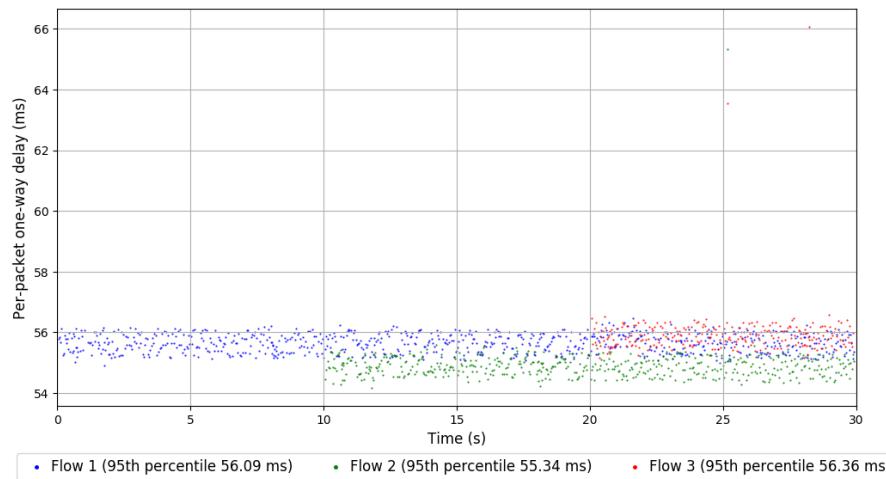
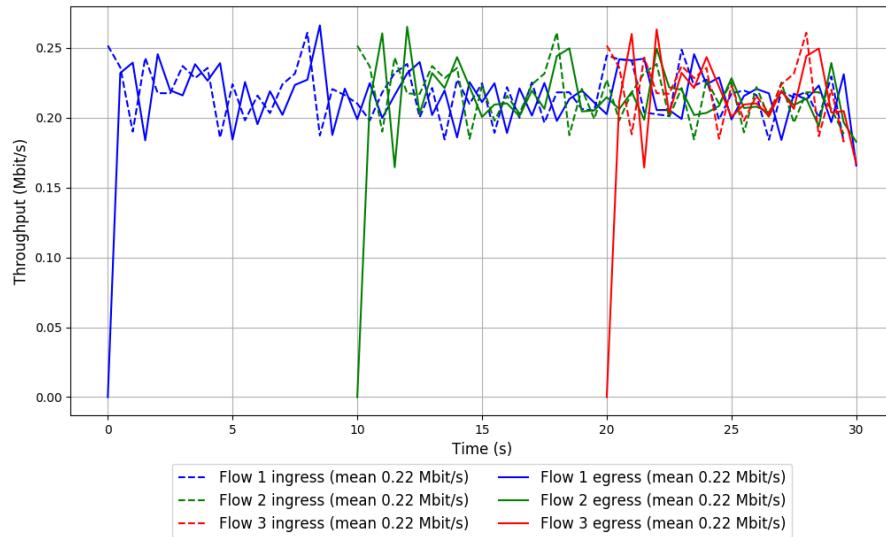


```
Run 1: Statistics of SCReAM

Start at: 2018-09-06 19:13:43
End at: 2018-09-06 19:14:13
Local clock offset: 12.93 ms
Remote clock offset: 7.087 ms

# Below is generated by plot.py at 2018-09-06 21:06:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 56.161 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 56.091 ms
Loss rate: 0.26%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 55.338 ms
Loss rate: 0.39%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 56.356 ms
Loss rate: 1.09%
```

Run 1: Report of SCReAM — Data Link

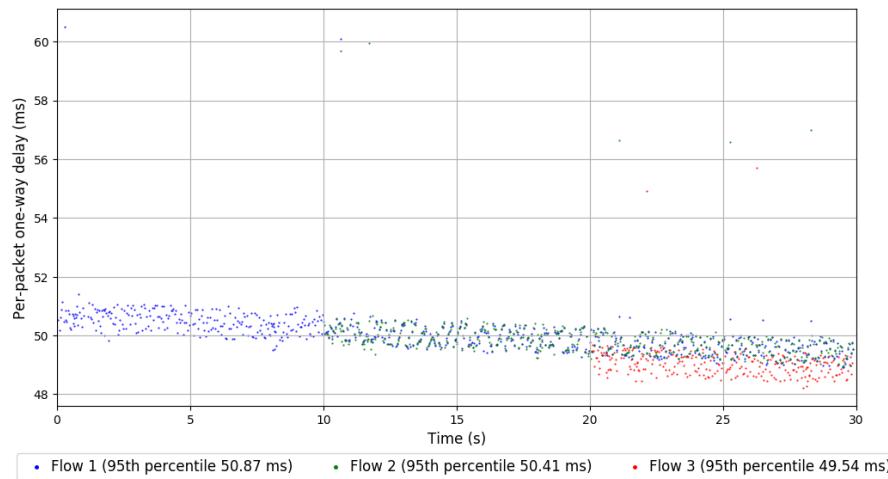
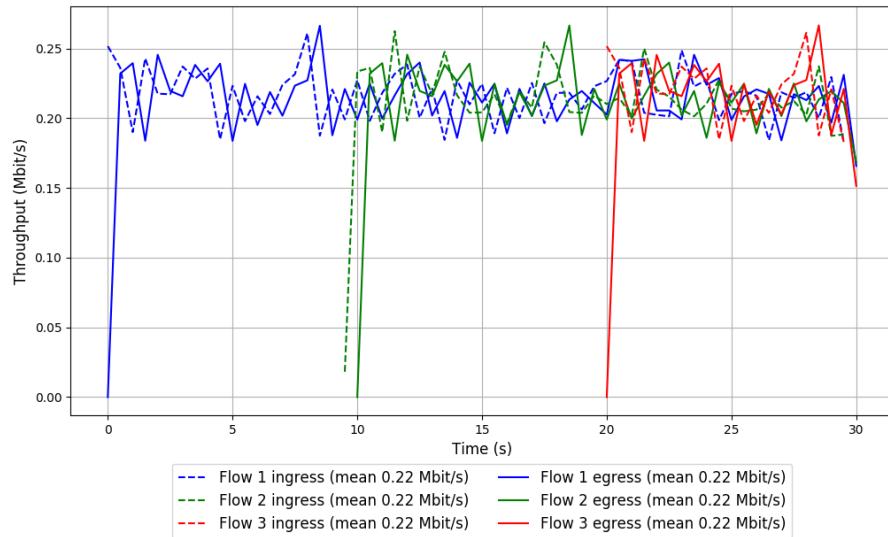


Run 2: Statistics of SCReAM

```
Start at: 2018-09-06 19:36:01
End at: 2018-09-06 19:36:31
Local clock offset: 5.246 ms
Remote clock offset: 3.502 ms

# Below is generated by plot.py at 2018-09-06 21:06:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 50.740 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 50.873 ms
Loss rate: 0.26%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 50.408 ms
Loss rate: 0.39%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 49.539 ms
Loss rate: 1.08%
```

Run 2: Report of SCReAM — Data Link

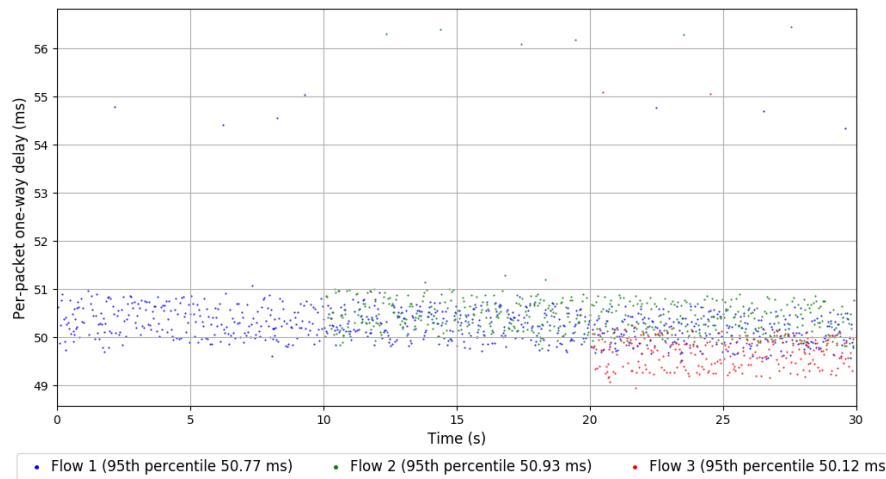
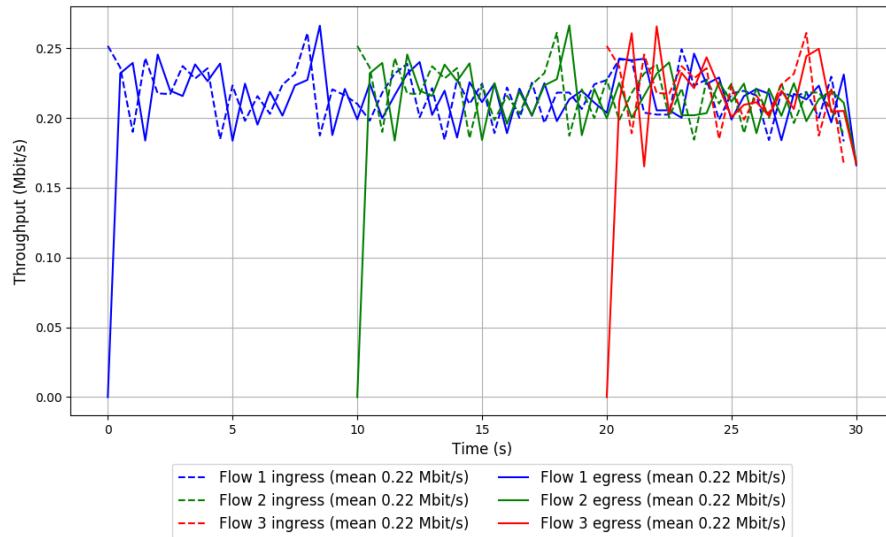


Run 3: Statistics of SCReAM

```
Start at: 2018-09-06 19:58:20
End at: 2018-09-06 19:58:50
Local clock offset: 1.167 ms
Remote clock offset: -26.425 ms

# Below is generated by plot.py at 2018-09-06 21:06:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 50.837 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 50.769 ms
Loss rate: 0.26%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 50.928 ms
Loss rate: 0.39%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 50.119 ms
Loss rate: 0.73%
```

Run 3: Report of SCReAM — Data Link

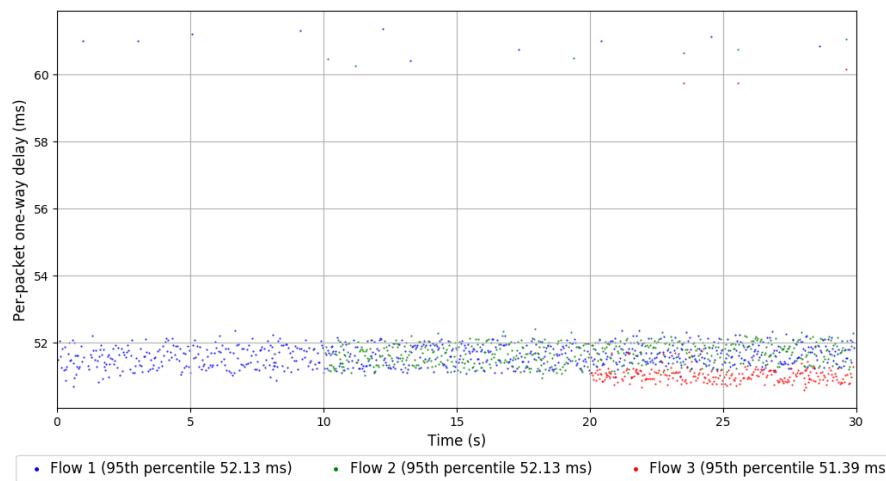
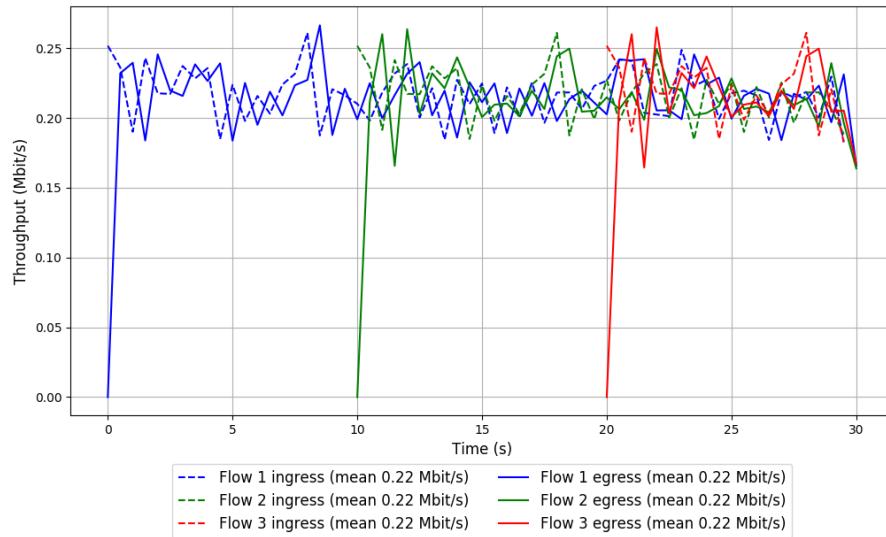


Run 4: Statistics of SCReAM

```
Start at: 2018-09-06 20:20:44
End at: 2018-09-06 20:21:14
Local clock offset: 0.361 ms
Remote clock offset: -14.723 ms

# Below is generated by plot.py at 2018-09-06 21:06:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 52.121 ms
Loss rate: 0.51%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 52.130 ms
Loss rate: 0.26%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 52.133 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 51.387 ms
Loss rate: 1.08%
```

Run 4: Report of SCReAM — Data Link

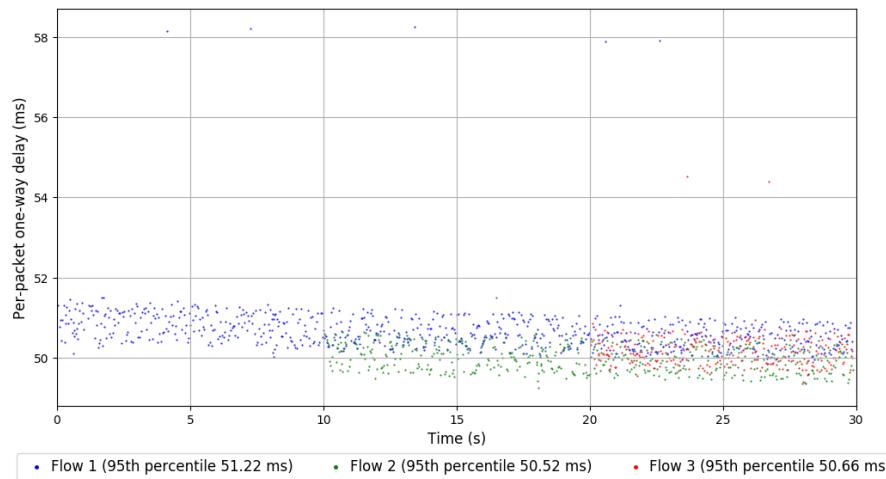
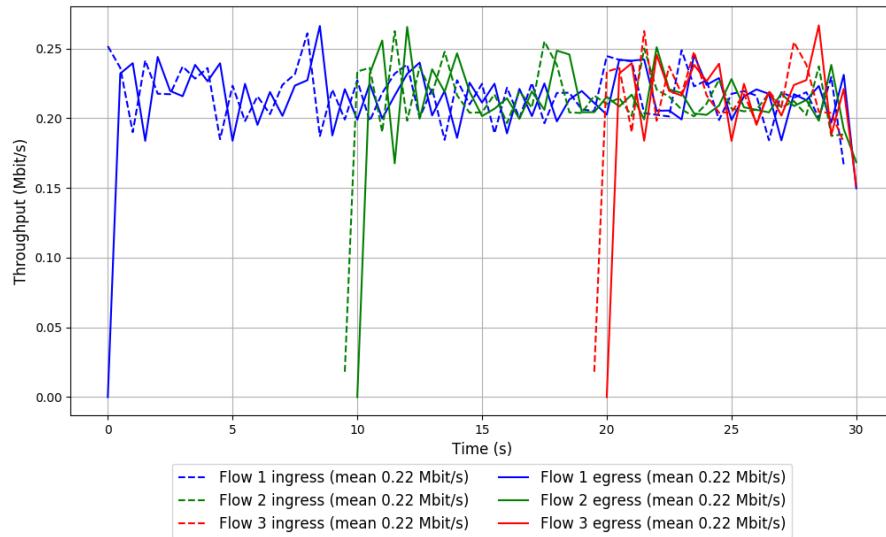


Run 5: Statistics of SCReAM

```
Start at: 2018-09-06 20:43:14
End at: 2018-09-06 20:43:44
Local clock offset: 0.294 ms
Remote clock offset: -14.565 ms

# Below is generated by plot.py at 2018-09-06 21:06:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 51.138 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 51.224 ms
Loss rate: 0.25%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 50.520 ms
Loss rate: 0.39%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 50.661 ms
Loss rate: 1.08%
```

Run 5: Report of SCReAM — Data Link

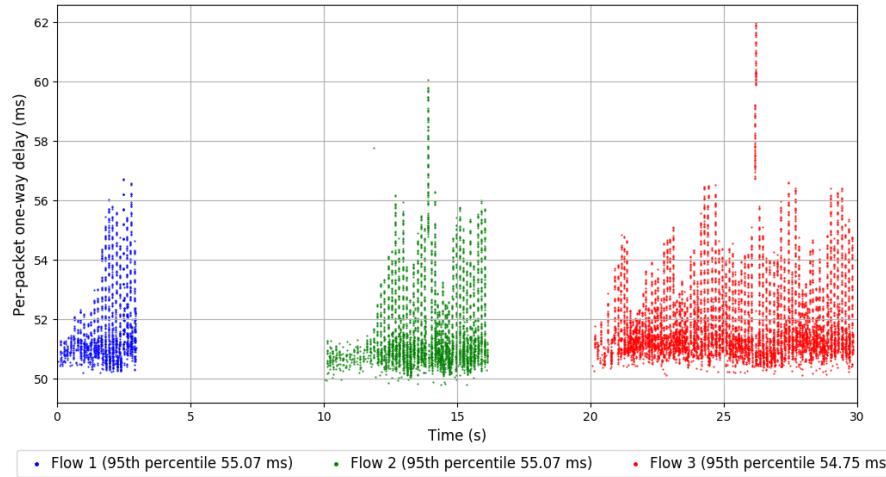
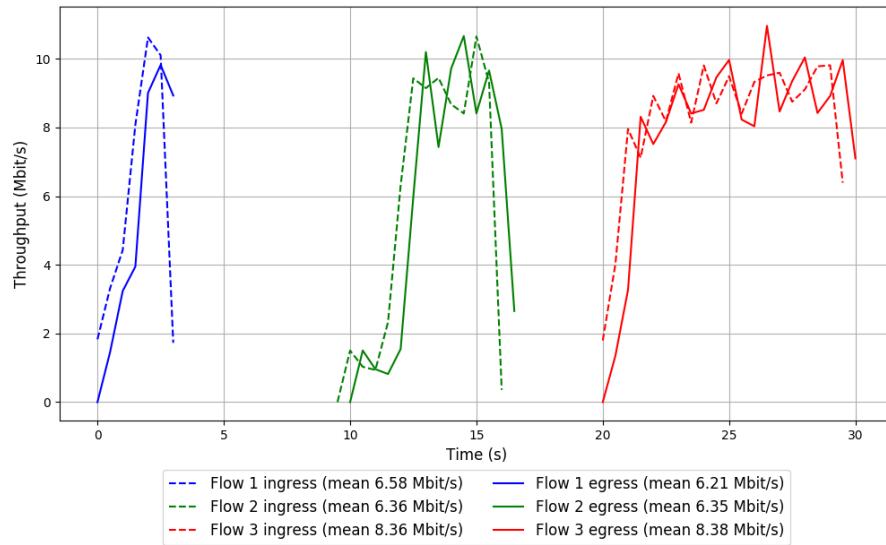


Run 1: Statistics of Sprout

```
Start at: 2018-09-06 19:32:13
End at: 2018-09-06 19:32:43
Local clock offset: 5.484 ms
Remote clock offset: 9.714 ms

# Below is generated by plot.py at 2018-09-06 21:06:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 4.66 Mbit/s
95th percentile per-packet one-way delay: 54.920 ms
Loss rate: 1.57%
-- Flow 1:
Average throughput: 6.21 Mbit/s
95th percentile per-packet one-way delay: 55.066 ms
Loss rate: 9.24%
-- Flow 2:
Average throughput: 6.35 Mbit/s
95th percentile per-packet one-way delay: 55.072 ms
Loss rate: 0.06%
-- Flow 3:
Average throughput: 8.38 Mbit/s
95th percentile per-packet one-way delay: 54.750 ms
Loss rate: 0.42%
```

Run 1: Report of Sprout — Data Link

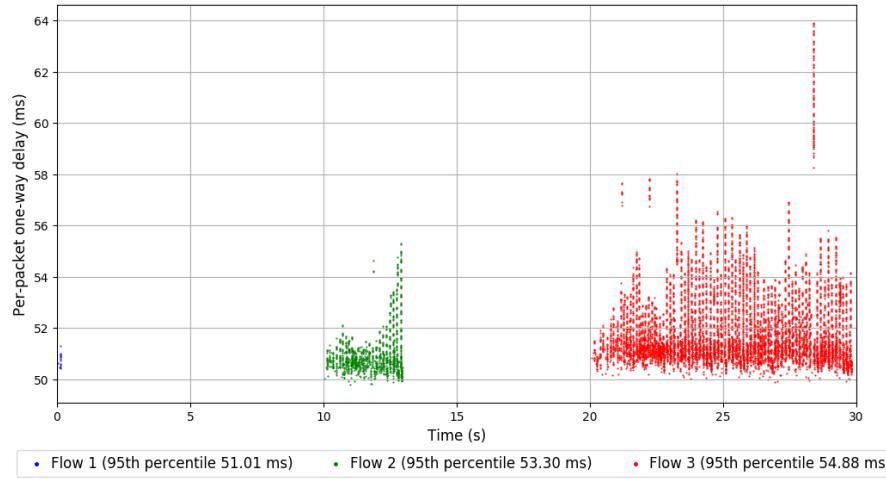
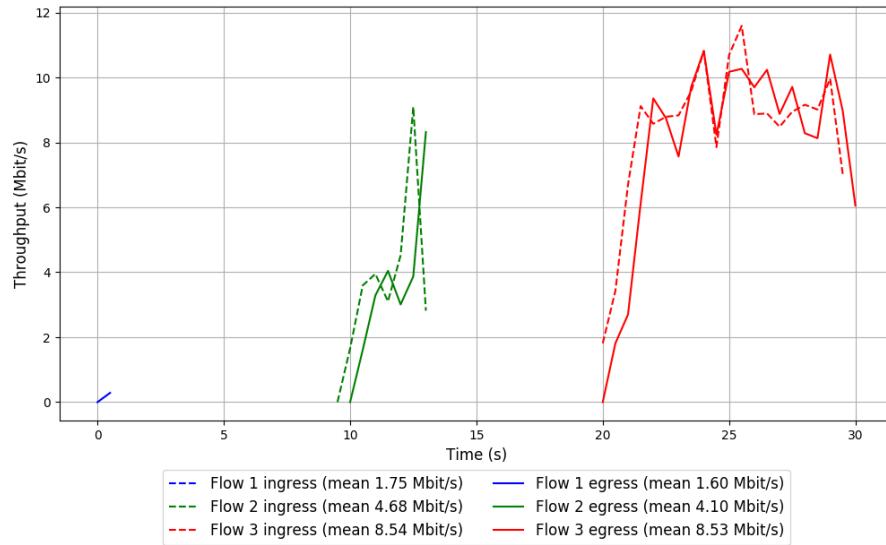


Run 2: Statistics of Sprout

```
Start at: 2018-09-06 19:54:32
End at: 2018-09-06 19:55:02
Local clock offset: 1.823 ms
Remote clock offset: -23.637 ms

# Below is generated by plot.py at 2018-09-06 21:06:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.20 Mbit/s
95th percentile per-packet one-way delay: 54.721 ms
Loss rate: 3.34%
-- Flow 1:
Average throughput: 1.60 Mbit/s
95th percentile per-packet one-way delay: 51.012 ms
Loss rate: 7.74%
-- Flow 2:
Average throughput: 4.10 Mbit/s
95th percentile per-packet one-way delay: 53.299 ms
Loss rate: 16.00%
-- Flow 3:
Average throughput: 8.53 Mbit/s
95th percentile per-packet one-way delay: 54.878 ms
Loss rate: 1.16%
```

Run 2: Report of Sprout — Data Link

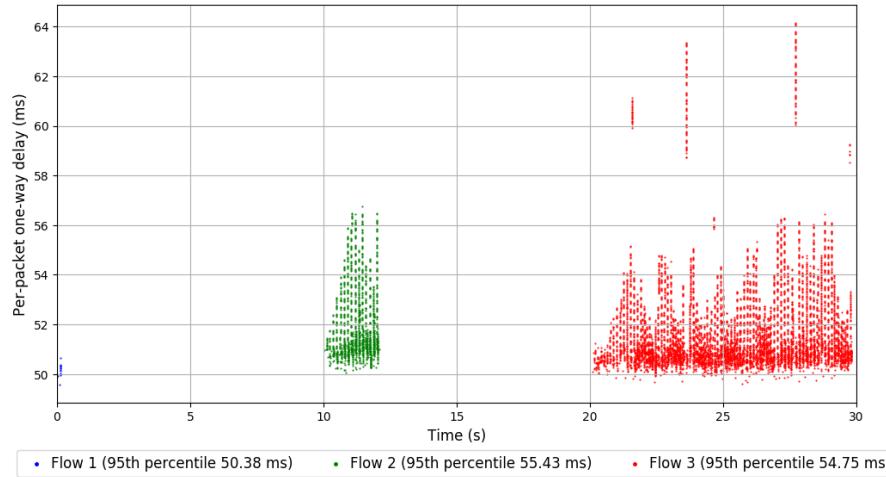
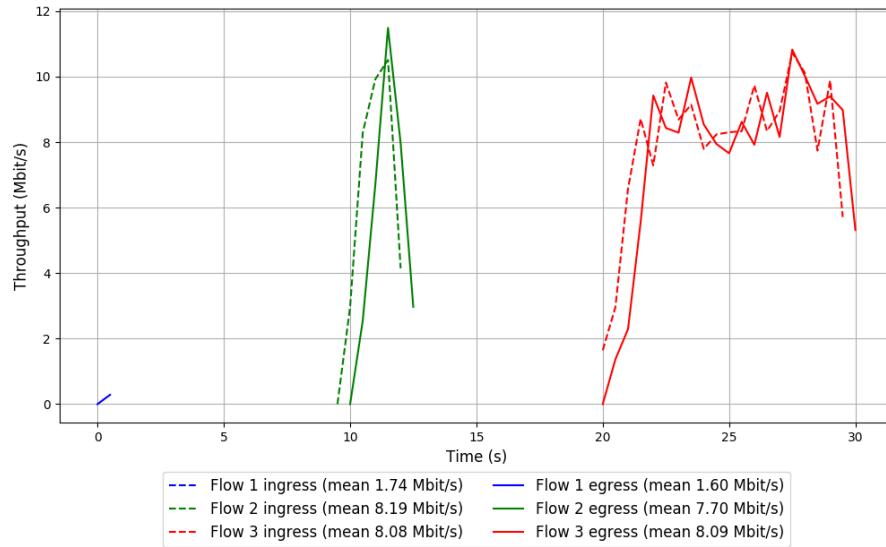


Run 3: Statistics of Sprout

```
Start at: 2018-09-06 20:16:58
End at: 2018-09-06 20:17:28
Local clock offset: -0.131 ms
Remote clock offset: -16.311 ms

# Below is generated by plot.py at 2018-09-06 21:06:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.18 Mbit/s
95th percentile per-packet one-way delay: 54.948 ms
Loss rate: 2.81%
-- Flow 1:
Average throughput: 1.60 Mbit/s
95th percentile per-packet one-way delay: 50.385 ms
Loss rate: 7.74%
-- Flow 2:
Average throughput: 7.70 Mbit/s
95th percentile per-packet one-way delay: 55.429 ms
Loss rate: 11.57%
-- Flow 3:
Average throughput: 8.09 Mbit/s
95th percentile per-packet one-way delay: 54.752 ms
Loss rate: 0.82%
```

Run 3: Report of Sprout — Data Link

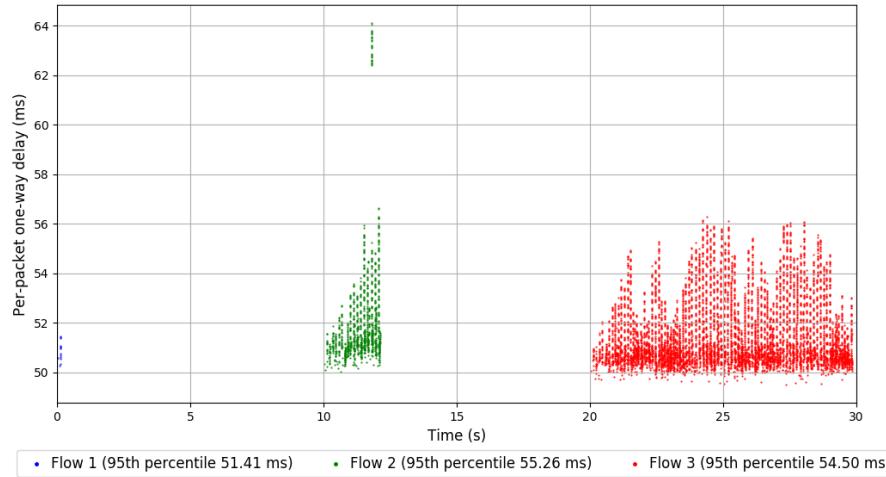
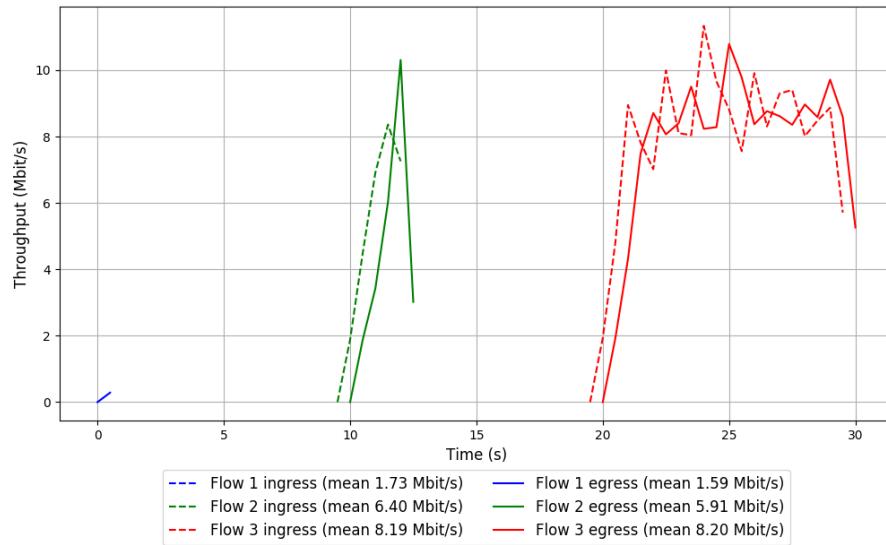


Run 4: Statistics of Sprout

```
Start at: 2018-09-06 20:39:27
End at: 2018-09-06 20:39:57
Local clock offset: 0.385 ms
Remote clock offset: -13.112 ms

# Below is generated by plot.py at 2018-09-06 21:06:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.12 Mbit/s
95th percentile per-packet one-way delay: 54.573 ms
Loss rate: 2.90%
-- Flow 1:
Average throughput: 1.59 Mbit/s
95th percentile per-packet one-way delay: 51.413 ms
Loss rate: 7.74%
-- Flow 2:
Average throughput: 5.91 Mbit/s
95th percentile per-packet one-way delay: 55.260 ms
Loss rate: 14.67%
-- Flow 3:
Average throughput: 8.20 Mbit/s
95th percentile per-packet one-way delay: 54.501 ms
Loss rate: 0.79%
```

Run 4: Report of Sprout — Data Link

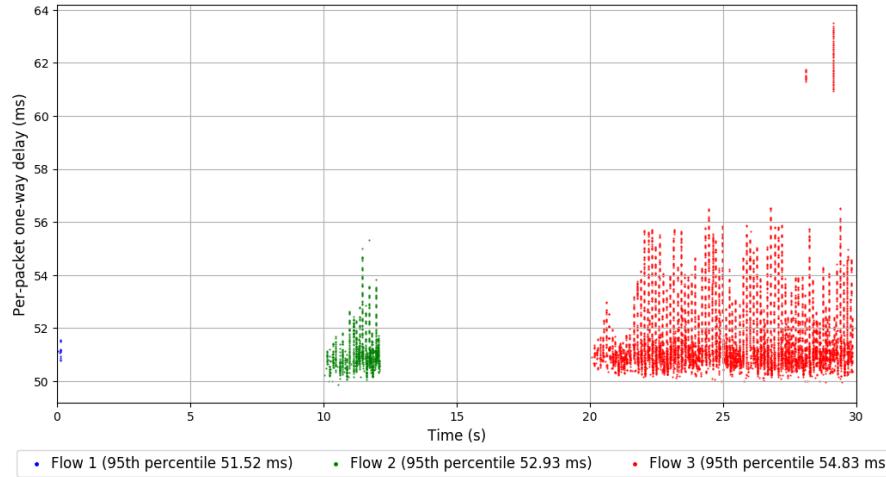
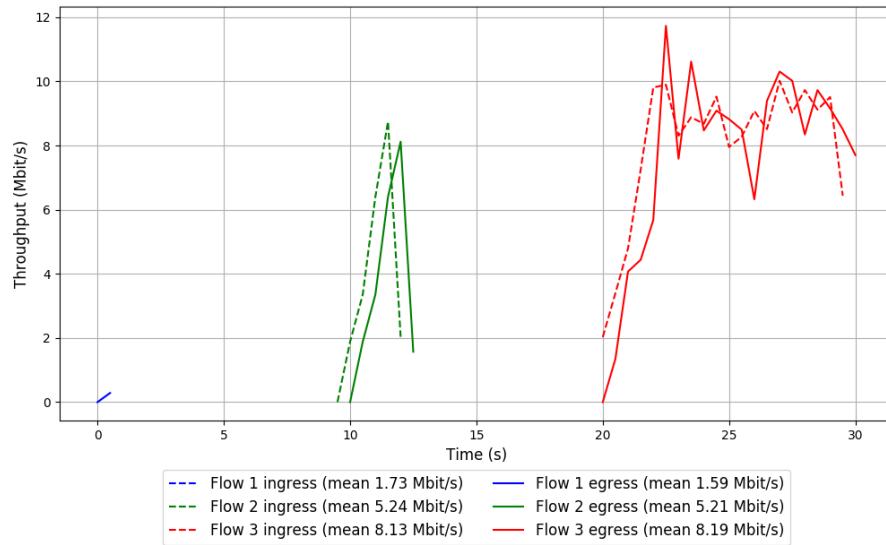


Run 5: Statistics of Sprout

```
Start at: 2018-09-06 21:01:51
End at: 2018-09-06 21:02:21
Local clock offset: -1.872 ms
Remote clock offset: -24.285 ms

# Below is generated by plot.py at 2018-09-06 21:06:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.05 Mbit/s
95th percentile per-packet one-way delay: 54.678 ms
Loss rate: 0.82%
-- Flow 1:
Average throughput: 1.59 Mbit/s
95th percentile per-packet one-way delay: 51.519 ms
Loss rate: 7.74%
-- Flow 2:
Average throughput: 5.21 Mbit/s
95th percentile per-packet one-way delay: 52.929 ms
Loss rate: 4.88%
-- Flow 3:
Average throughput: 8.19 Mbit/s
95th percentile per-packet one-way delay: 54.826 ms
Loss rate: 0.24%
```

Run 5: Report of Sprout — Data Link

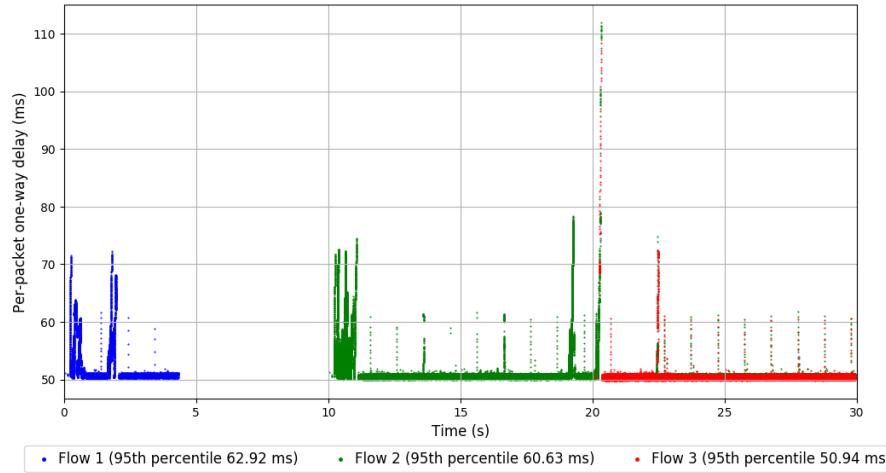
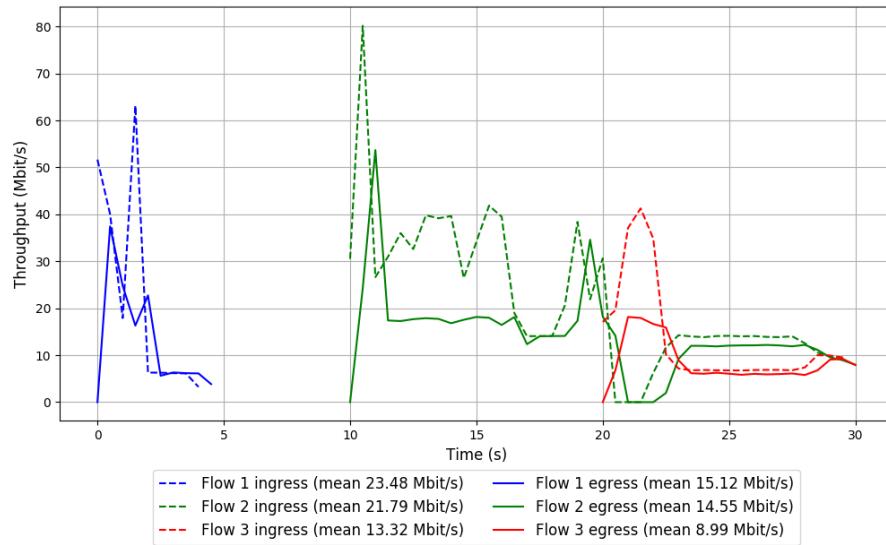


Run 1: Statistics of TaoVA-100x

```
Start at: 2018-09-06 19:22:25
End at: 2018-09-06 19:22:55
Local clock offset: 8.378 ms
Remote clock offset: 11.445 ms

# Below is generated by plot.py at 2018-09-06 21:07:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 14.81 Mbit/s
95th percentile per-packet one-way delay: 60.893 ms
Loss rate: 33.74%
-- Flow 1:
Average throughput: 15.12 Mbit/s
95th percentile per-packet one-way delay: 62.920 ms
Loss rate: 35.62%
-- Flow 2:
Average throughput: 14.55 Mbit/s
95th percentile per-packet one-way delay: 60.628 ms
Loss rate: 33.50%
-- Flow 3:
Average throughput: 8.99 Mbit/s
95th percentile per-packet one-way delay: 50.937 ms
Loss rate: 33.12%
```

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

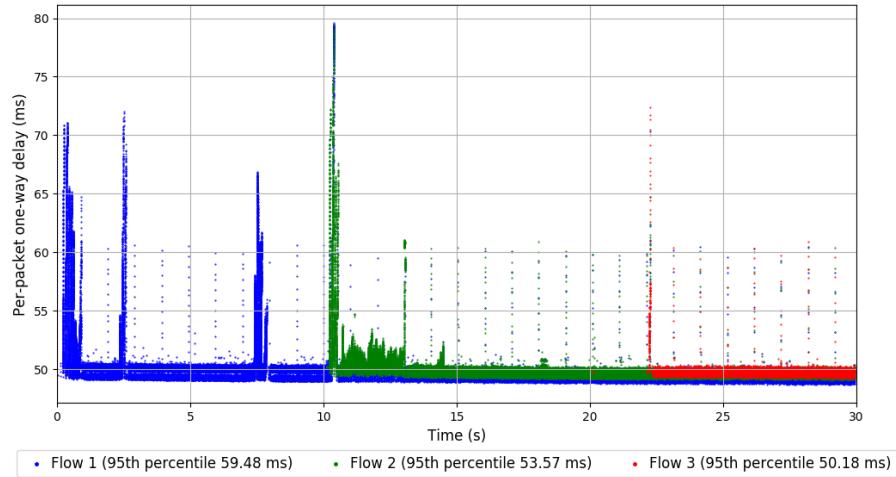
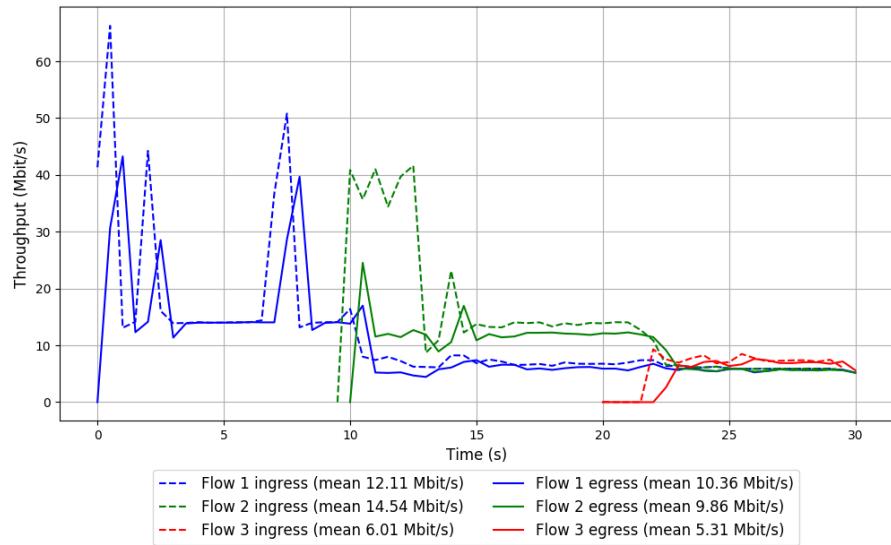


Run 2: Statistics of TaoVA-100x

```
Start at: 2018-09-06 19:44:43
End at: 2018-09-06 19:45:13
Local clock offset: 4.175 ms
Remote clock offset: -12.571 ms

# Below is generated by plot.py at 2018-09-06 21:07:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 18.68 Mbit/s
95th percentile per-packet one-way delay: 57.459 ms
Loss rate: 21.72%
-- Flow 1:
Average throughput: 10.36 Mbit/s
95th percentile per-packet one-way delay: 59.480 ms
Loss rate: 14.67%
-- Flow 2:
Average throughput: 9.86 Mbit/s
95th percentile per-packet one-way delay: 53.569 ms
Loss rate: 32.45%
-- Flow 3:
Average throughput: 5.31 Mbit/s
95th percentile per-packet one-way delay: 50.184 ms
Loss rate: 12.41%
```

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

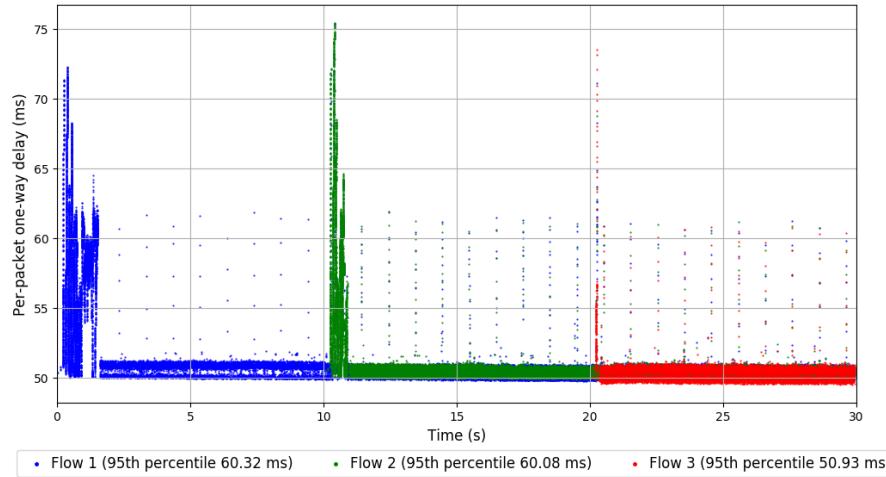
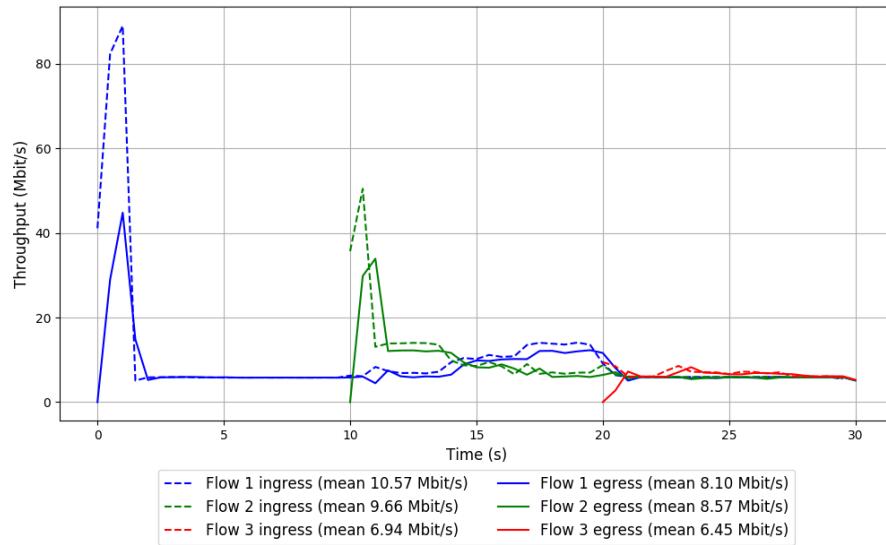


Run 3: Statistics of TaoVA-100x

```
Start at: 2018-09-06 20:07:09
End at: 2018-09-06 20:07:39
Local clock offset: 0.228 ms
Remote clock offset: -33.696 ms

# Below is generated by plot.py at 2018-09-06 21:07:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 15.93 Mbit/s
95th percentile per-packet one-way delay: 59.852 ms
Loss rate: 17.71%
-- Flow 1:
Average throughput: 8.10 Mbit/s
95th percentile per-packet one-way delay: 60.321 ms
Loss rate: 23.57%
-- Flow 2:
Average throughput: 8.57 Mbit/s
95th percentile per-packet one-way delay: 60.080 ms
Loss rate: 11.58%
-- Flow 3:
Average throughput: 6.45 Mbit/s
95th percentile per-packet one-way delay: 50.934 ms
Loss rate: 7.92%
```

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

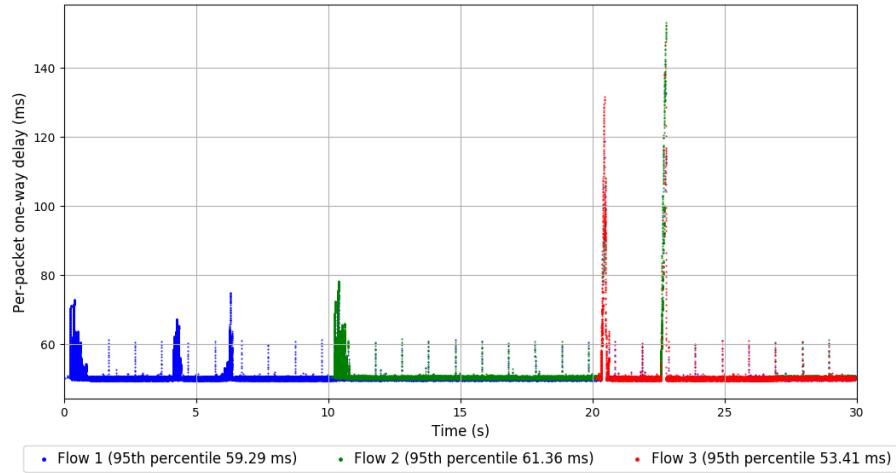
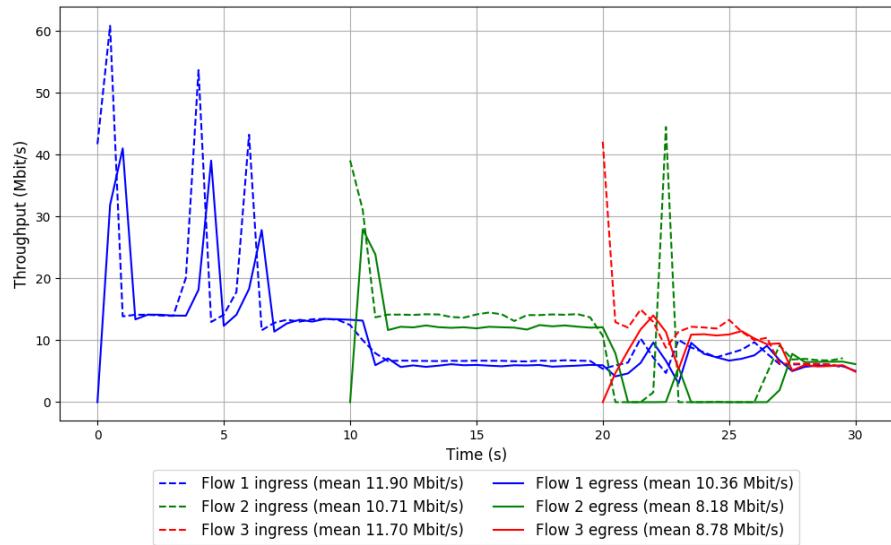


Run 4: Statistics of TaoVA-100x

```
Start at: 2018-09-06 20:29:31
End at: 2018-09-06 20:30:01
Local clock offset: 0.654 ms
Remote clock offset: -12.224 ms

# Below is generated by plot.py at 2018-09-06 21:07:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 18.71 Mbit/s
95th percentile per-packet one-way delay: 59.473 ms
Loss rate: 18.64%
-- Flow 1:
Average throughput: 10.36 Mbit/s
95th percentile per-packet one-way delay: 59.292 ms
Loss rate: 13.20%
-- Flow 2:
Average throughput: 8.18 Mbit/s
95th percentile per-packet one-way delay: 61.358 ms
Loss rate: 23.92%
-- Flow 3:
Average throughput: 8.78 Mbit/s
95th percentile per-packet one-way delay: 53.412 ms
Loss rate: 25.60%
```

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

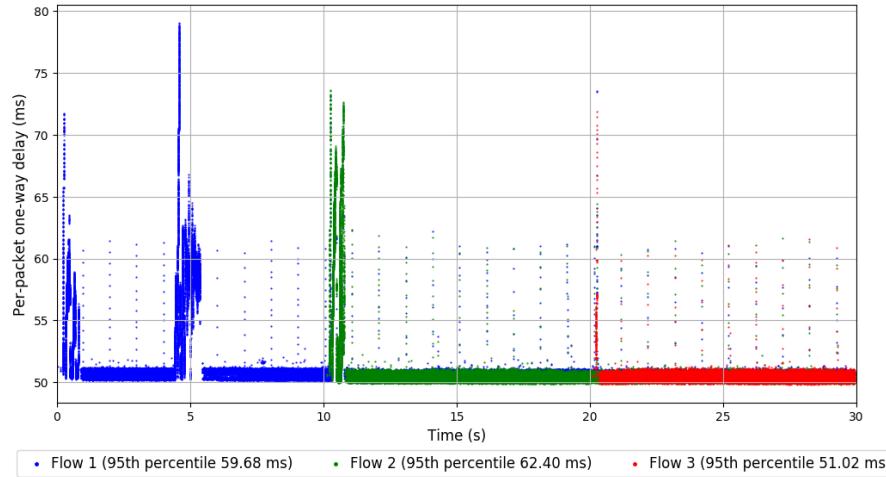
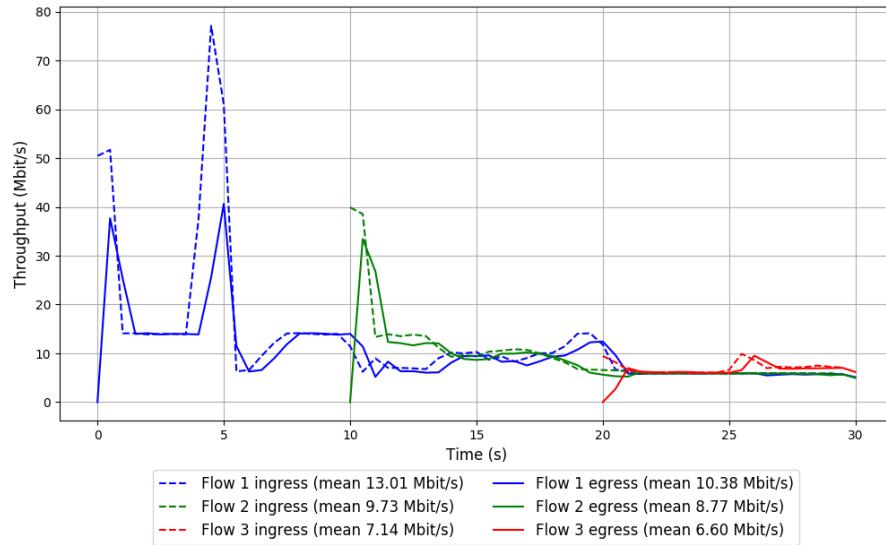


Run 5: Statistics of TaoVA-100x

```
Start at: 2018-09-06 20:51:54
End at: 2018-09-06 20:52:24
Local clock offset: -0.732 ms
Remote clock offset: -20.222 ms

# Below is generated by plot.py at 2018-09-06 21:07:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 18.40 Mbit/s
95th percentile per-packet one-way delay: 59.708 ms
Loss rate: 16.10%
-- Flow 1:
Average throughput: 10.38 Mbit/s
95th percentile per-packet one-way delay: 59.684 ms
Loss rate: 20.44%
-- Flow 2:
Average throughput: 8.77 Mbit/s
95th percentile per-packet one-way delay: 62.401 ms
Loss rate: 10.24%
-- Flow 3:
Average throughput: 6.60 Mbit/s
95th percentile per-packet one-way delay: 51.018 ms
Loss rate: 8.26%
```

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

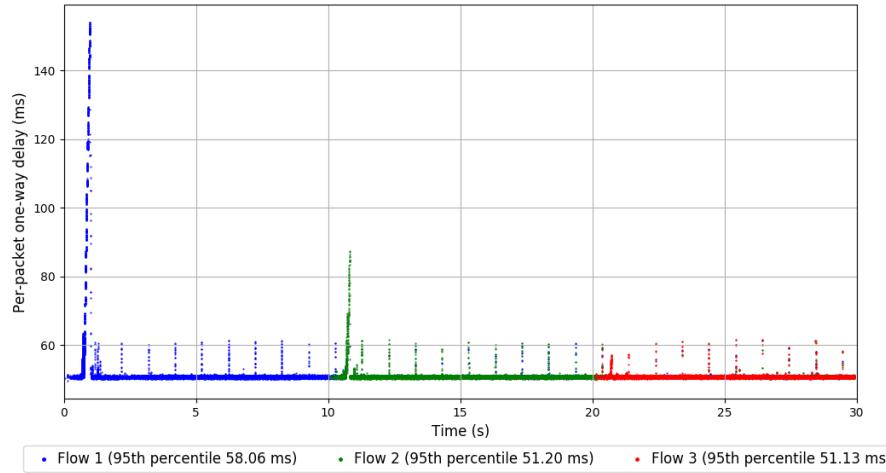
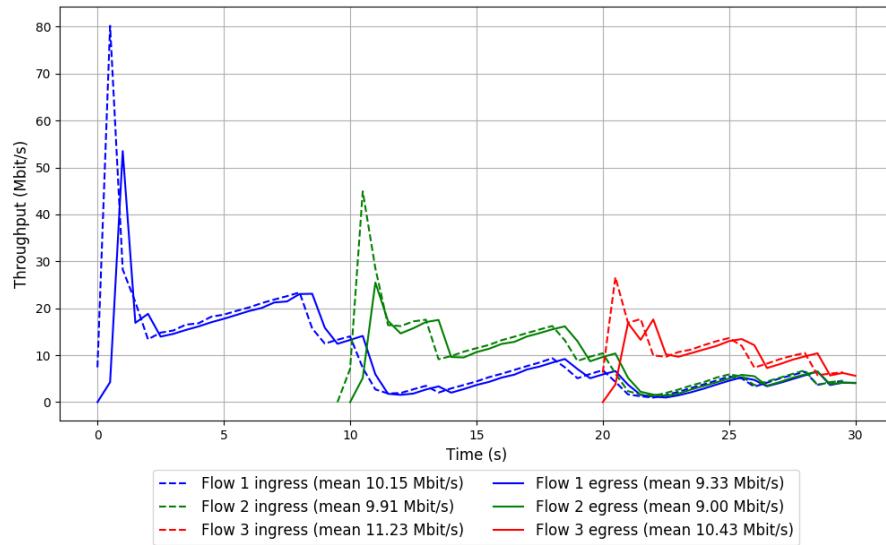


Run 1: Statistics of TCP Vegas

```
Start at: 2018-09-06 19:28:33
End at: 2018-09-06 19:29:03
Local clock offset: 6.238 ms
Remote clock offset: 10.519 ms

# Below is generated by plot.py at 2018-09-06 21:07:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 18.76 Mbit/s
95th percentile per-packet one-way delay: 52.848 ms
Loss rate: 8.66%
-- Flow 1:
Average throughput: 9.33 Mbit/s
95th percentile per-packet one-way delay: 58.065 ms
Loss rate: 8.34%
-- Flow 2:
Average throughput: 9.00 Mbit/s
95th percentile per-packet one-way delay: 51.197 ms
Loss rate: 9.61%
-- Flow 3:
Average throughput: 10.43 Mbit/s
95th percentile per-packet one-way delay: 51.127 ms
Loss rate: 7.83%
```

Run 1: Report of TCP Vegas — Data Link

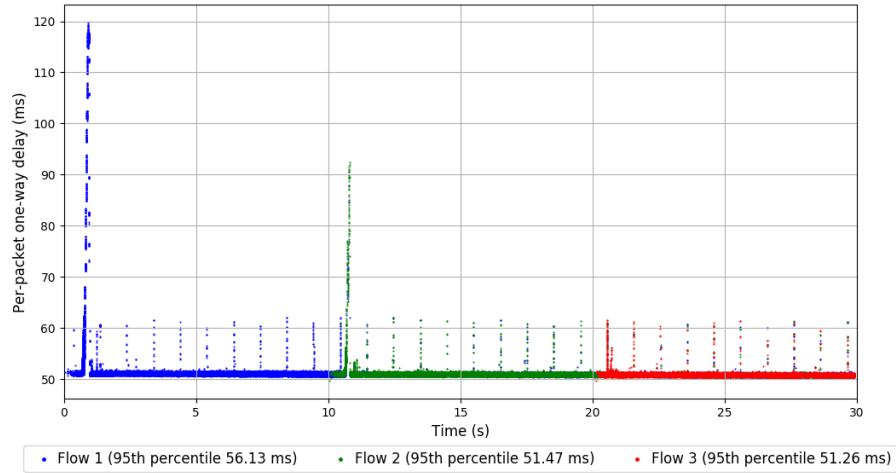
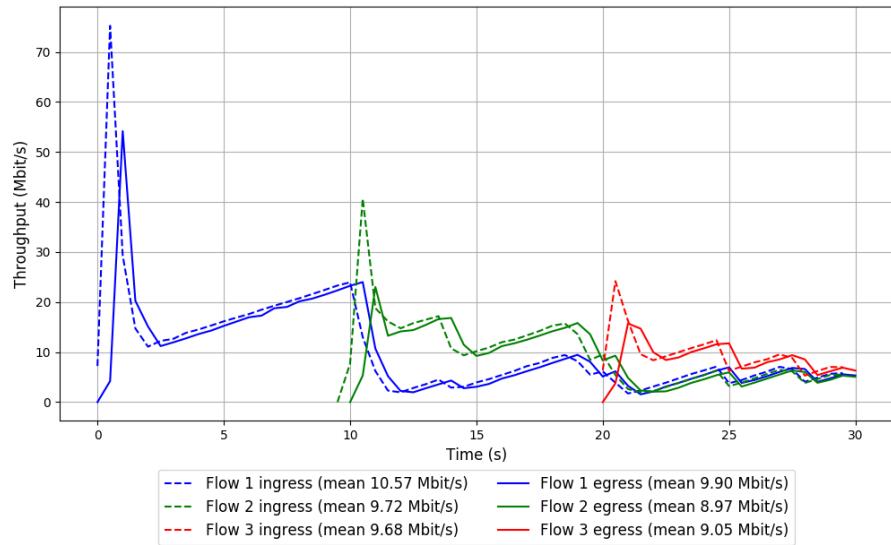


Run 2: Statistics of TCP Vegas

```
Start at: 2018-09-06 19:50:51
End at: 2018-09-06 19:51:21
Local clock offset: 2.547 ms
Remote clock offset: -20.311 ms

# Below is generated by plot.py at 2018-09-06 21:07:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 18.86 Mbit/s
95th percentile per-packet one-way delay: 52.776 ms
Loss rate: 7.17%
-- Flow 1:
Average throughput: 9.90 Mbit/s
95th percentile per-packet one-way delay: 56.135 ms
Loss rate: 6.53%
-- Flow 2:
Average throughput: 8.97 Mbit/s
95th percentile per-packet one-way delay: 51.468 ms
Loss rate: 8.15%
-- Flow 3:
Average throughput: 9.05 Mbit/s
95th percentile per-packet one-way delay: 51.262 ms
Loss rate: 7.31%
```

Run 2: Report of TCP Vegas — Data Link

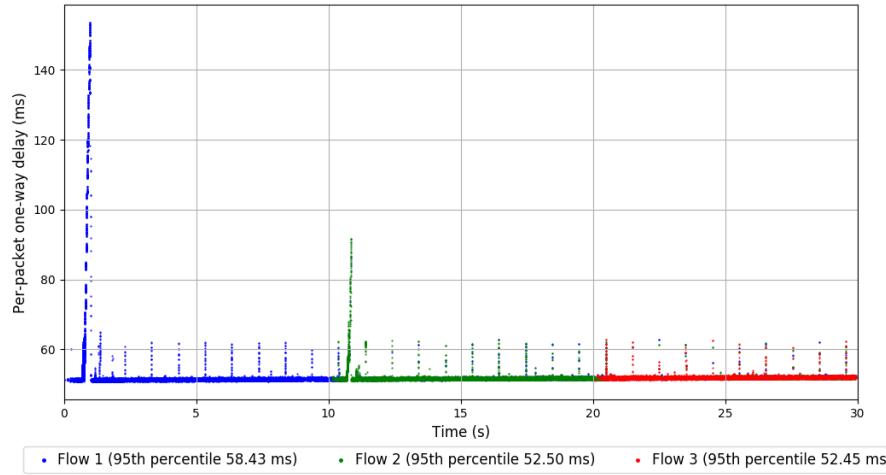
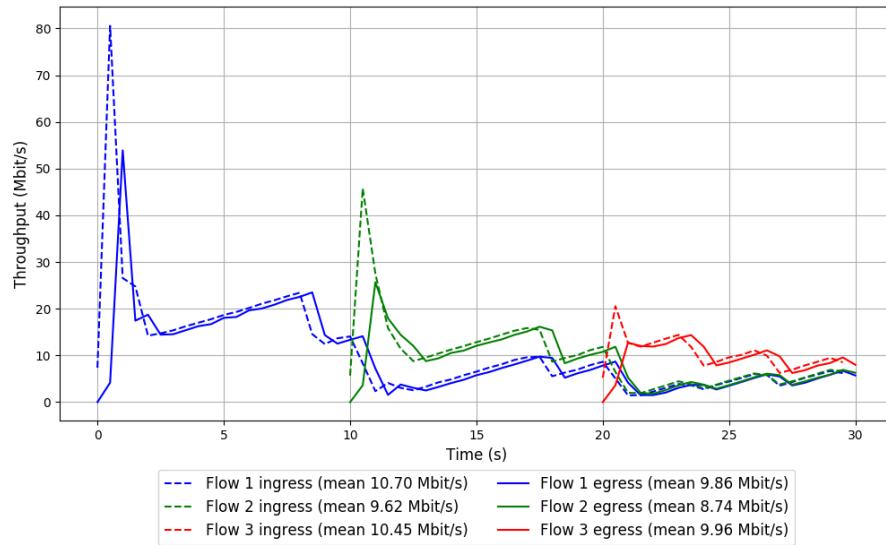


Run 3: Statistics of TCP Vegas

```
Start at: 2018-09-06 20:13:15
End at: 2018-09-06 20:13:45
Local clock offset: -0.319 ms
Remote clock offset: -21.745 ms

# Below is generated by plot.py at 2018-09-06 21:07:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 18.95 Mbit/s
95th percentile per-packet one-way delay: 53.920 ms
Loss rate: 8.13%
-- Flow 1:
Average throughput: 9.86 Mbit/s
95th percentile per-packet one-way delay: 58.427 ms
Loss rate: 8.12%
-- Flow 2:
Average throughput: 8.74 Mbit/s
95th percentile per-packet one-way delay: 52.496 ms
Loss rate: 9.56%
-- Flow 3:
Average throughput: 9.96 Mbit/s
95th percentile per-packet one-way delay: 52.453 ms
Loss rate: 5.56%
```

Run 3: Report of TCP Vegas — Data Link

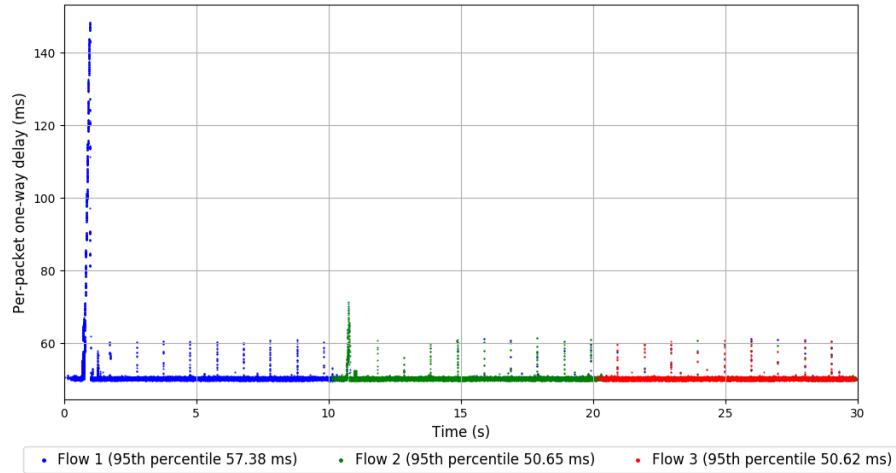
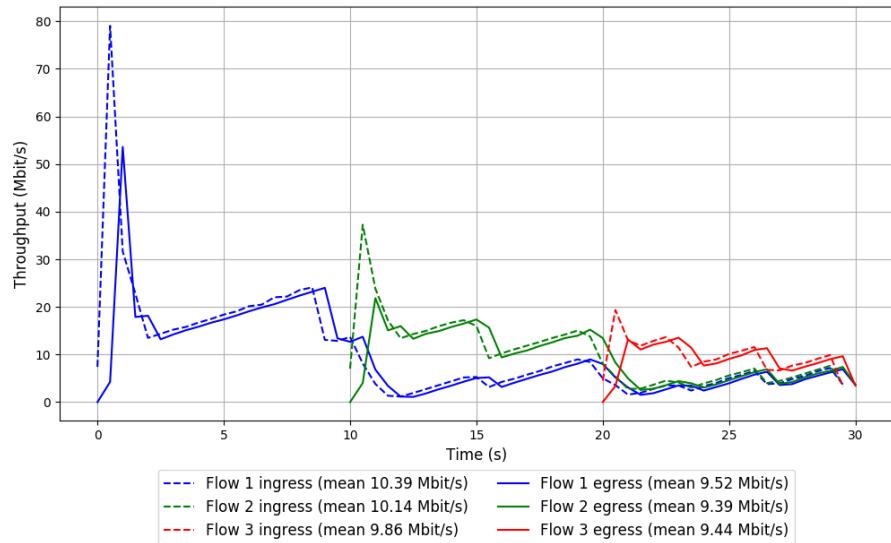


Run 4: Statistics of TCP Vegas

```
Start at: 2018-09-06 20:35:44
End at: 2018-09-06 20:36:14
Local clock offset: 0.59 ms
Remote clock offset: -12.227 ms

# Below is generated by plot.py at 2018-09-06 21:07:24
# Datalink statistics
-- Total of 3 flows:
Average throughput: 18.87 Mbit/s
95th percentile per-packet one-way delay: 51.422 ms
Loss rate: 7.84%
-- Flow 1:
Average throughput: 9.52 Mbit/s
95th percentile per-packet one-way delay: 57.379 ms
Loss rate: 8.69%
-- Flow 2:
Average throughput: 9.39 Mbit/s
95th percentile per-packet one-way delay: 50.647 ms
Loss rate: 7.88%
-- Flow 3:
Average throughput: 9.44 Mbit/s
95th percentile per-packet one-way delay: 50.624 ms
Loss rate: 5.05%
```

Run 4: Report of TCP Vegas — Data Link

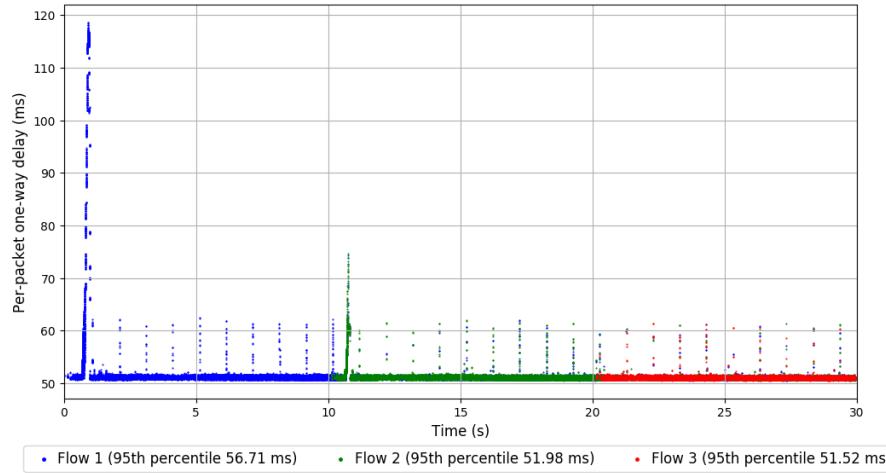
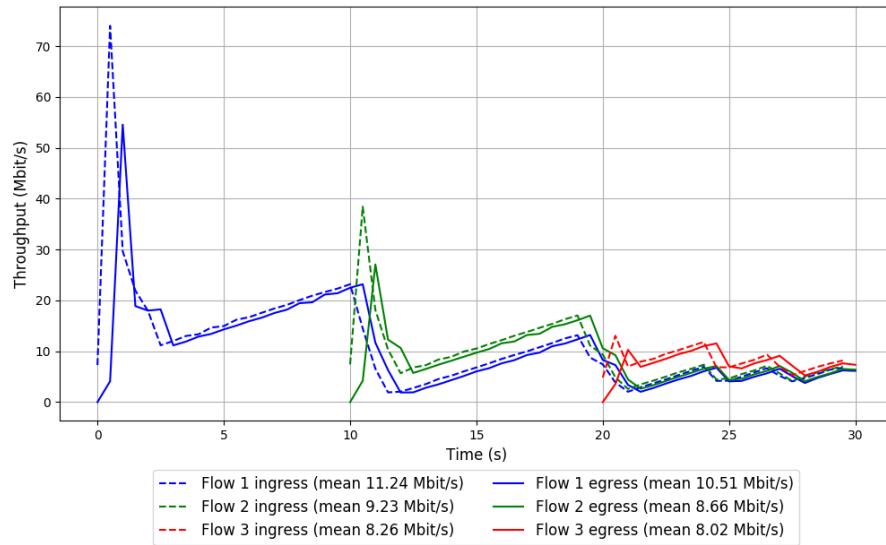


Run 5: Statistics of TCP Vegas

```
Start at: 2018-09-06 20:58:08
End at: 2018-09-06 20:58:38
Local clock offset: -1.449 ms
Remote clock offset: -23.207 ms

# Below is generated by plot.py at 2018-09-06 21:07:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 18.92 Mbit/s
95th percentile per-packet one-way delay: 53.534 ms
Loss rate: 6.27%
-- Flow 1:
Average throughput: 10.51 Mbit/s
95th percentile per-packet one-way delay: 56.711 ms
Loss rate: 6.76%
-- Flow 2:
Average throughput: 8.66 Mbit/s
95th percentile per-packet one-way delay: 51.978 ms
Loss rate: 6.53%
-- Flow 3:
Average throughput: 8.02 Mbit/s
95th percentile per-packet one-way delay: 51.522 ms
Loss rate: 3.70%
```

Run 5: Report of TCP Vegas — Data Link

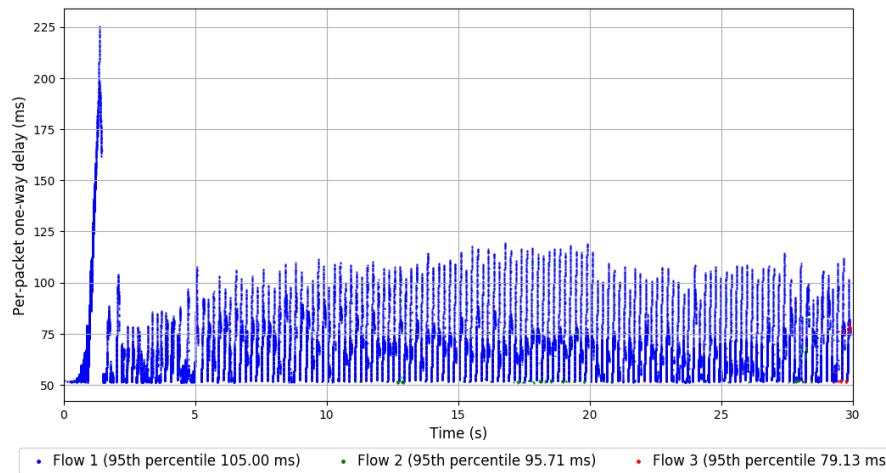
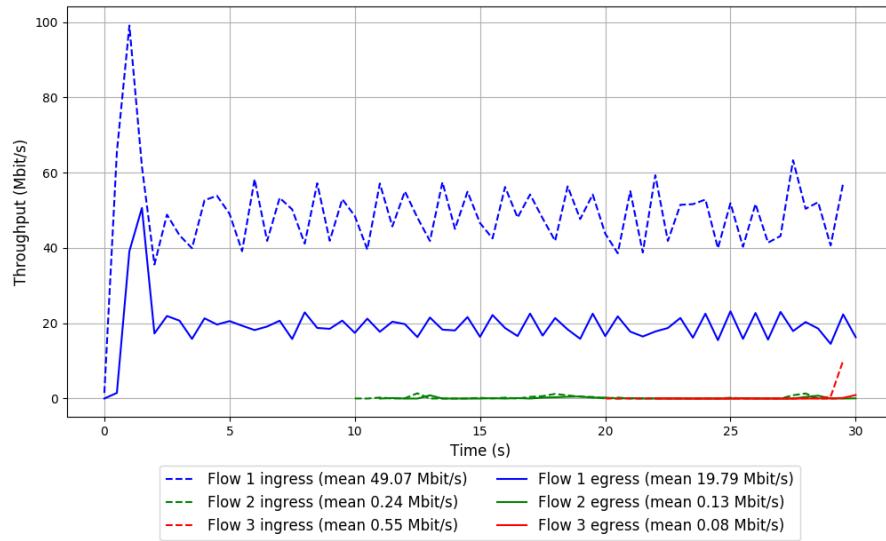


Run 1: Statistics of Verus

```
Start at: 2018-09-06 19:17:21
End at: 2018-09-06 19:17:51
Local clock offset: 11.313 ms
Remote clock offset: 11.643 ms

# Below is generated by plot.py at 2018-09-06 21:07:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 19.89 Mbit/s
95th percentile per-packet one-way delay: 104.972 ms
Loss rate: 59.90%
-- Flow 1:
Average throughput: 19.79 Mbit/s
95th percentile per-packet one-way delay: 104.998 ms
Loss rate: 59.83%
-- Flow 2:
Average throughput: 0.13 Mbit/s
95th percentile per-packet one-way delay: 95.706 ms
Loss rate: 48.48%
-- Flow 3:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 79.126 ms
Loss rate: 89.25%
```

Run 1: Report of Verus — Data Link

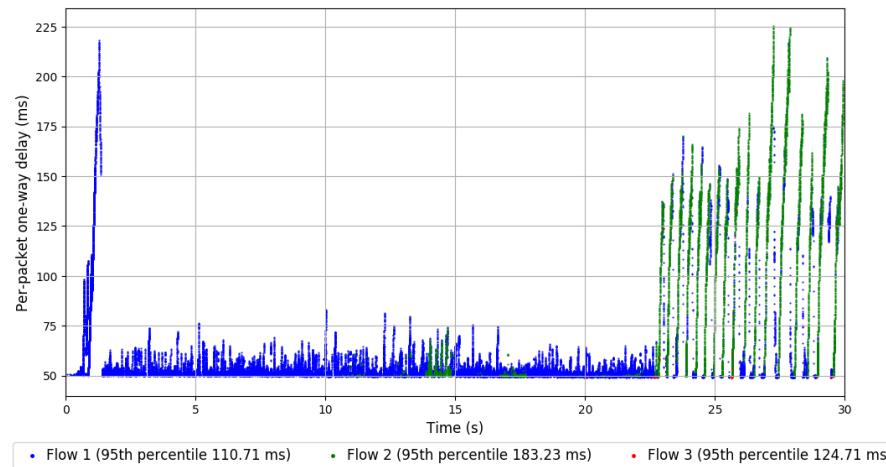
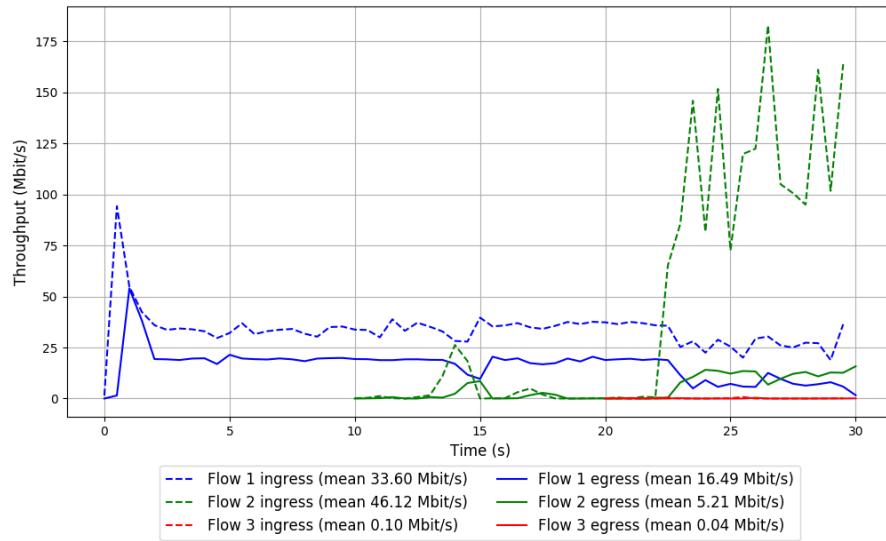


Run 2: Statistics of Verus

```
Start at: 2018-09-06 19:39:39
End at: 2018-09-06 19:40:09
Local clock offset: 4.673 ms
Remote clock offset: -4.461 ms

# Below is generated by plot.py at 2018-09-06 21:07:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 19.97 Mbit/s
95th percentile per-packet one-way delay: 144.122 ms
Loss rate: 68.93%
-- Flow 1:
Average throughput: 16.49 Mbit/s
95th percentile per-packet one-way delay: 110.714 ms
Loss rate: 51.01%
-- Flow 2:
Average throughput: 5.21 Mbit/s
95th percentile per-packet one-way delay: 183.228 ms
Loss rate: 88.66%
-- Flow 3:
Average throughput: 0.04 Mbit/s
95th percentile per-packet one-way delay: 124.706 ms
Loss rate: 63.29%
```

Run 2: Report of Verus — Data Link

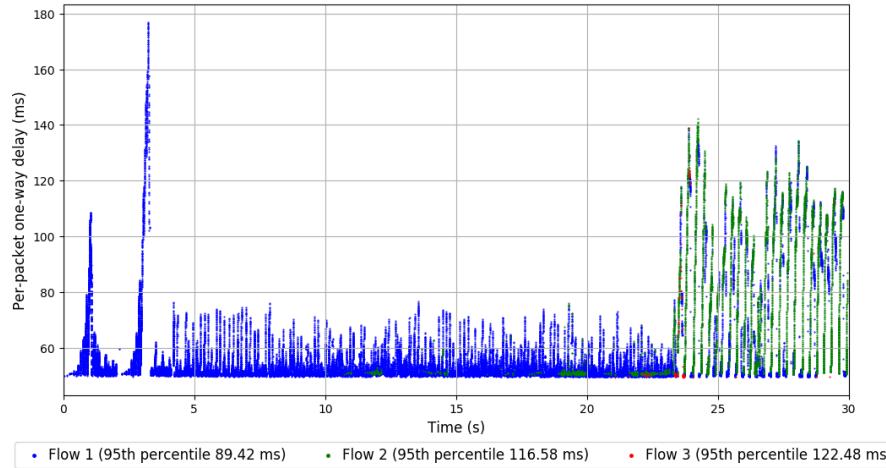
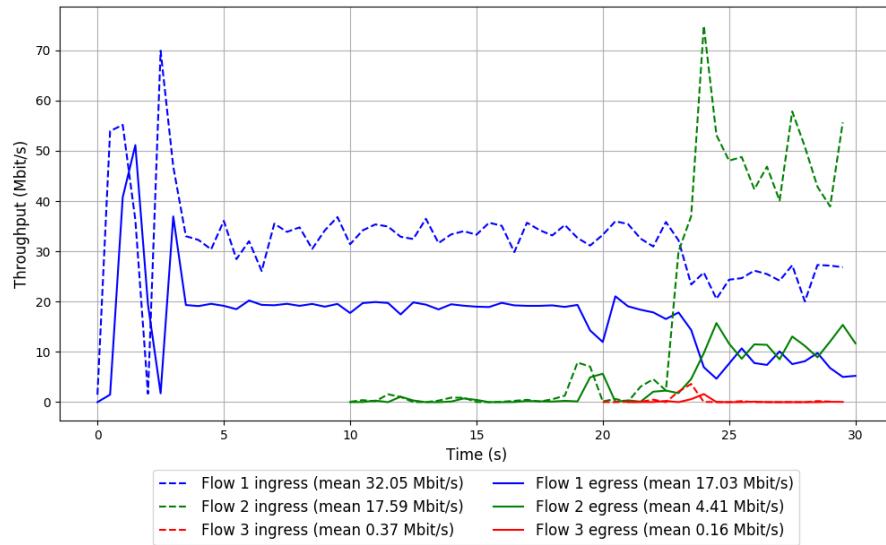


Run 3: Statistics of Verus

```
Start at: 2018-09-06 20:01:57
End at: 2018-09-06 20:02:27
Local clock offset: 0.887 ms
Remote clock offset: -29.286 ms

# Below is generated by plot.py at 2018-09-06 21:07:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 19.96 Mbit/s
95th percentile per-packet one-way delay: 104.932 ms
Loss rate: 54.61%
-- Flow 1:
Average throughput: 17.03 Mbit/s
95th percentile per-packet one-way delay: 89.421 ms
Loss rate: 47.15%
-- Flow 2:
Average throughput: 4.41 Mbit/s
95th percentile per-packet one-way delay: 116.584 ms
Loss rate: 74.99%
-- Flow 3:
Average throughput: 0.16 Mbit/s
95th percentile per-packet one-way delay: 122.481 ms
Loss rate: 61.41%
```

Run 3: Report of Verus — Data Link

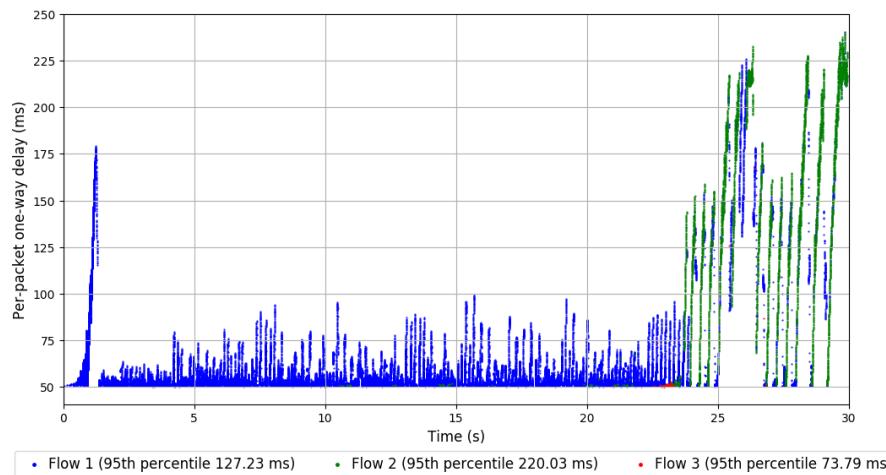
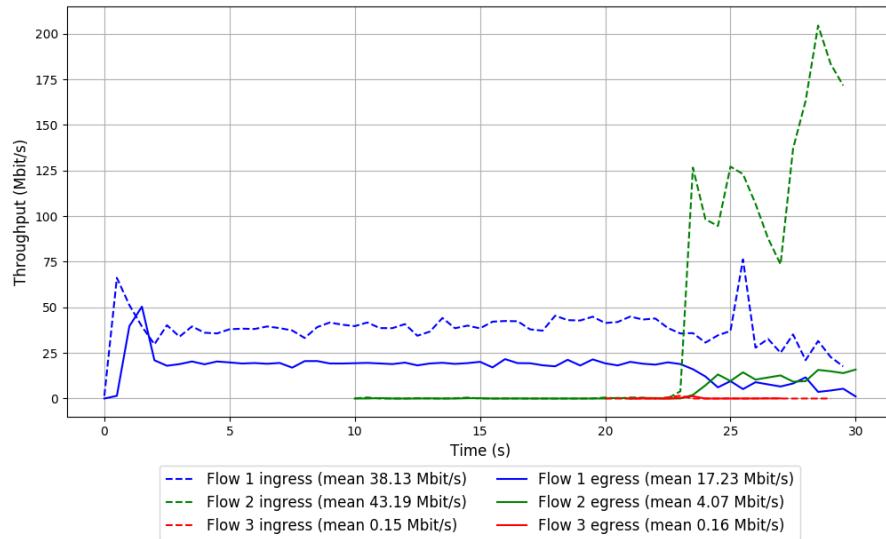


Run 4: Statistics of Verus

```
Start at: 2018-09-06 20:24:22
End at: 2018-09-06 20:24:52
Local clock offset: 0.593 ms
Remote clock offset: -13.134 ms

# Below is generated by plot.py at 2018-09-06 21:07:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 19.96 Mbit/s
95th percentile per-packet one-way delay: 176.335 ms
Loss rate: 70.12%
-- Flow 1:
Average throughput: 17.23 Mbit/s
95th percentile per-packet one-way delay: 127.234 ms
Loss rate: 54.97%
-- Flow 2:
Average throughput: 4.07 Mbit/s
95th percentile per-packet one-way delay: 220.035 ms
Loss rate: 90.50%
-- Flow 3:
Average throughput: 0.16 Mbit/s
95th percentile per-packet one-way delay: 73.791 ms
Loss rate: 33.33%
```

Run 4: Report of Verus — Data Link

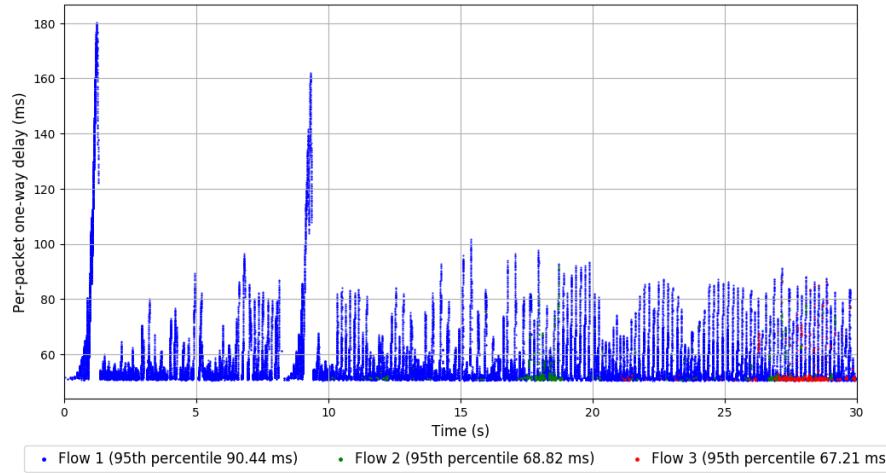
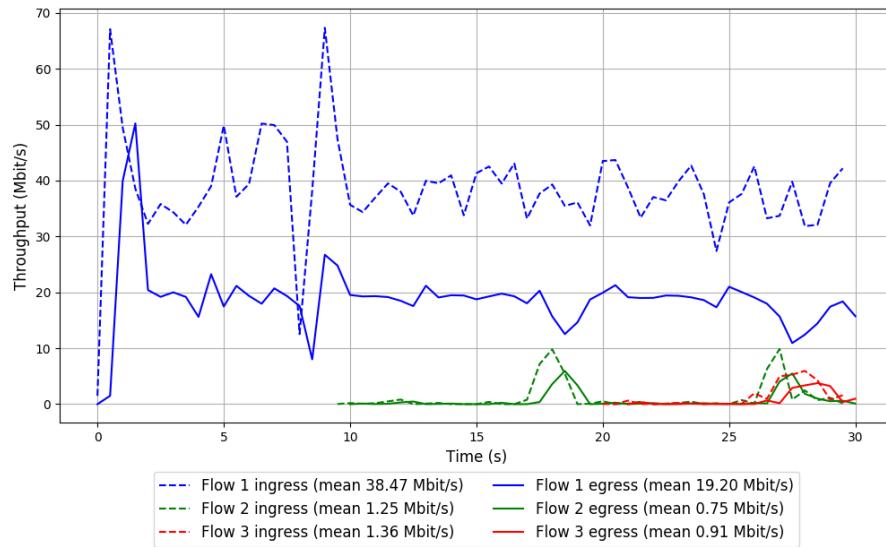


Run 5: Statistics of Verus

```
Start at: 2018-09-06 20:46:52
End at: 2018-09-06 20:47:22
Local clock offset: -0.103 ms
Remote clock offset: -17.725 ms

# Below is generated by plot.py at 2018-09-06 21:07:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 19.96 Mbit/s
95th percentile per-packet one-way delay: 89.253 ms
Loss rate: 49.94%
-- Flow 1:
Average throughput: 19.20 Mbit/s
95th percentile per-packet one-way delay: 90.445 ms
Loss rate: 50.24%
-- Flow 2:
Average throughput: 0.75 Mbit/s
95th percentile per-packet one-way delay: 68.824 ms
Loss rate: 40.78%
-- Flow 3:
Average throughput: 0.91 Mbit/s
95th percentile per-packet one-way delay: 67.209 ms
Loss rate: 40.80%
```

Run 5: Report of Verus — Data Link

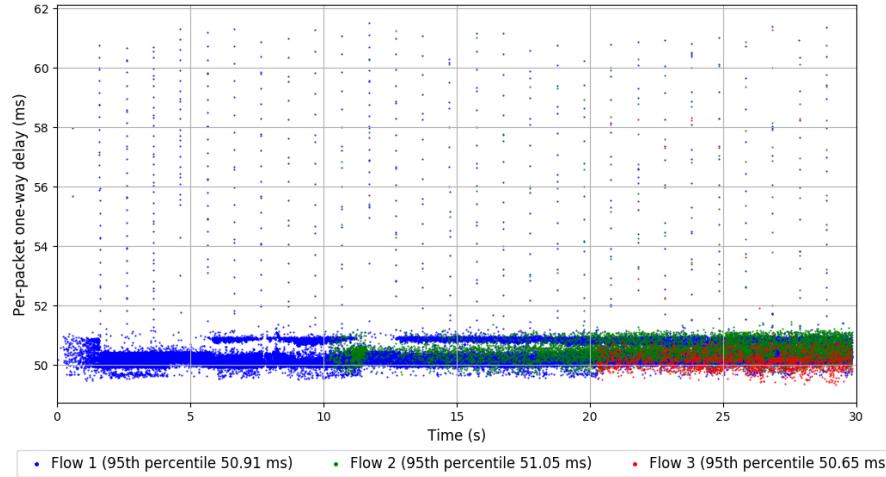
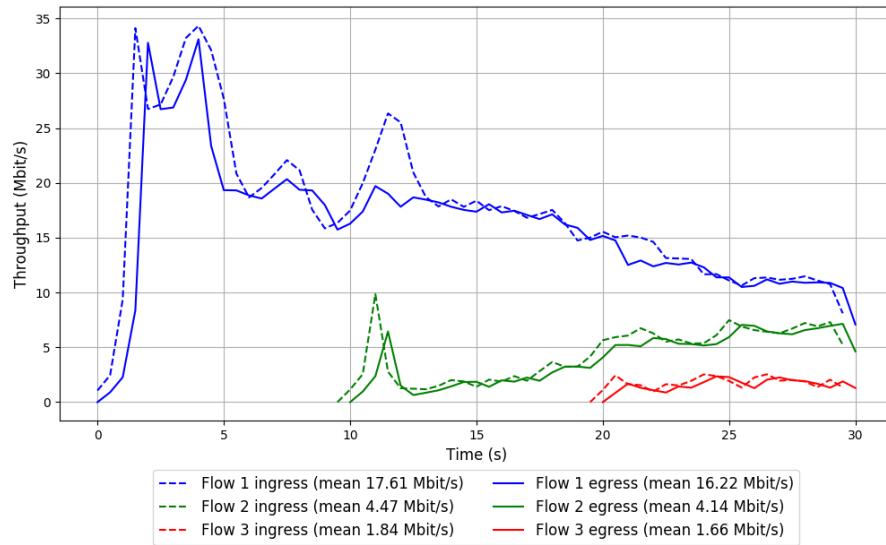


```
Run 1: Statistics of PCC-Vivace
```

```
Start at: 2018-09-06 19:24:53
End at: 2018-09-06 19:25:23
Local clock offset: 7.42 ms
Remote clock offset: 11.457 ms

# Below is generated by plot.py at 2018-09-06 21:07:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 19.51 Mbit/s
95th percentile per-packet one-way delay: 50.928 ms
Loss rate: 8.20%
-- Flow 1:
Average throughput: 16.22 Mbit/s
95th percentile per-packet one-way delay: 50.914 ms
Loss rate: 8.17%
-- Flow 2:
Average throughput: 4.14 Mbit/s
95th percentile per-packet one-way delay: 51.053 ms
Loss rate: 7.84%
-- Flow 3:
Average throughput: 1.66 Mbit/s
95th percentile per-packet one-way delay: 50.645 ms
Loss rate: 10.83%
```

Run 1: Report of PCC-Vivace — Data Link

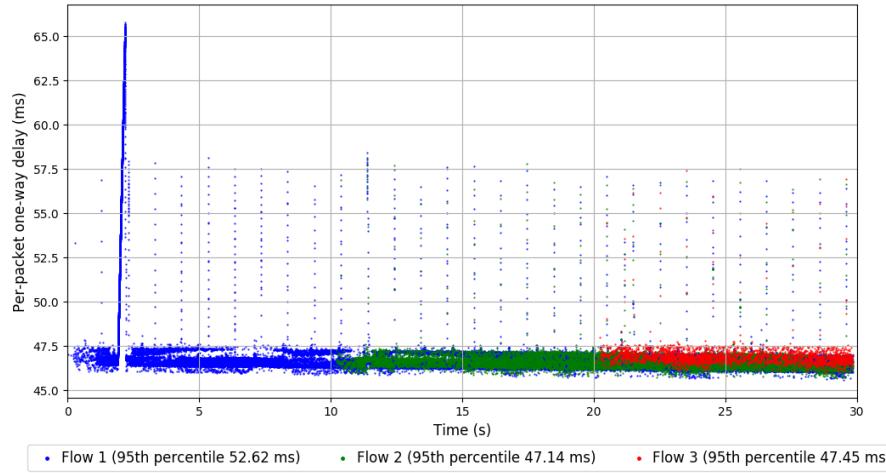
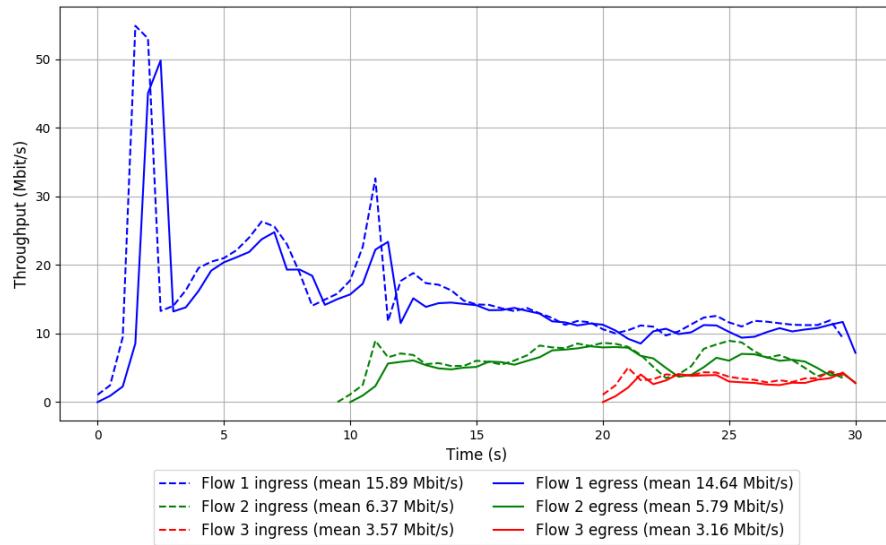


Run 2: Statistics of PCC-Vivace

```
Start at: 2018-09-06 19:47:11
End at: 2018-09-06 19:47:41
Local clock offset: 3.65 ms
Remote clock offset: -12.162 ms

# Below is generated by plot.py at 2018-09-06 21:07:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 19.52 Mbit/s
95th percentile per-packet one-way delay: 49.534 ms
Loss rate: 8.63%
-- Flow 1:
Average throughput: 14.64 Mbit/s
95th percentile per-packet one-way delay: 52.622 ms
Loss rate: 8.11%
-- Flow 2:
Average throughput: 5.79 Mbit/s
95th percentile per-packet one-way delay: 47.140 ms
Loss rate: 9.64%
-- Flow 3:
Average throughput: 3.16 Mbit/s
95th percentile per-packet one-way delay: 47.447 ms
Loss rate: 12.08%
```

Run 2: Report of PCC-Vivace — Data Link

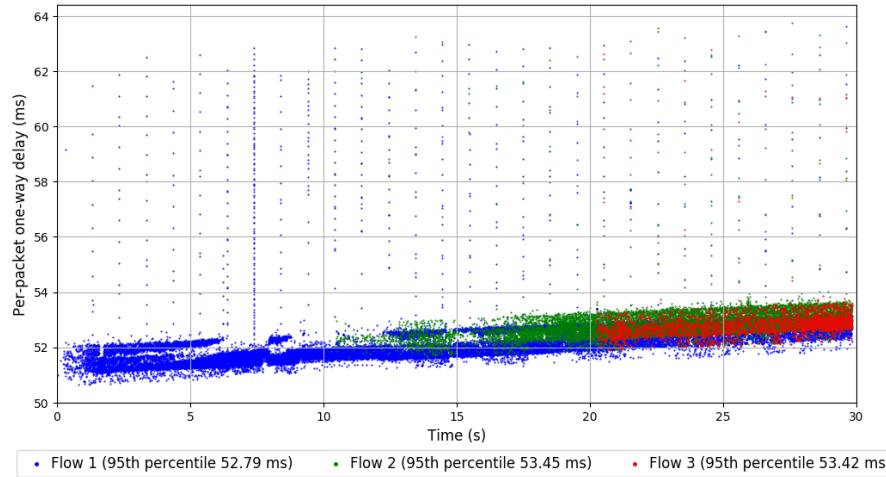
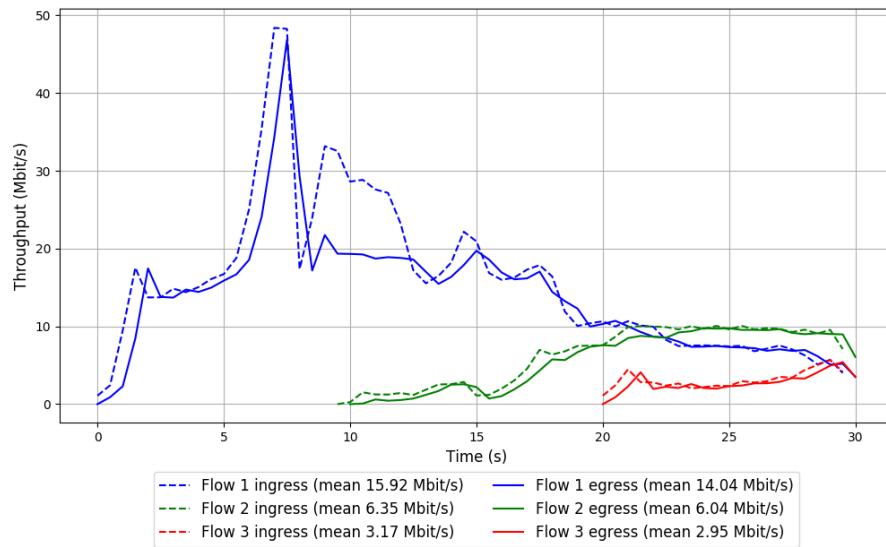


Run 3: Statistics of PCC-Vivace

```
Start at: 2018-09-06 20:09:35
End at: 2018-09-06 20:10:05
Local clock offset: 0.03 ms
Remote clock offset: -29.658 ms

# Below is generated by plot.py at 2018-09-06 21:07:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 18.97 Mbit/s
95th percentile per-packet one-way delay: 53.236 ms
Loss rate: 10.74%
-- Flow 1:
Average throughput: 14.04 Mbit/s
95th percentile per-packet one-way delay: 52.791 ms
Loss rate: 12.04%
-- Flow 2:
Average throughput: 6.04 Mbit/s
95th percentile per-packet one-way delay: 53.451 ms
Loss rate: 6.57%
-- Flow 3:
Average throughput: 2.95 Mbit/s
95th percentile per-packet one-way delay: 53.416 ms
Loss rate: 7.61%
```

Run 3: Report of PCC-Vivace — Data Link

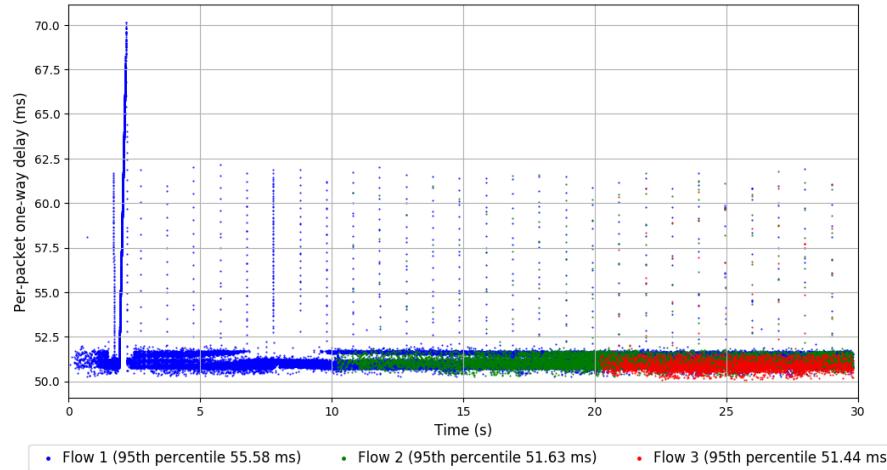
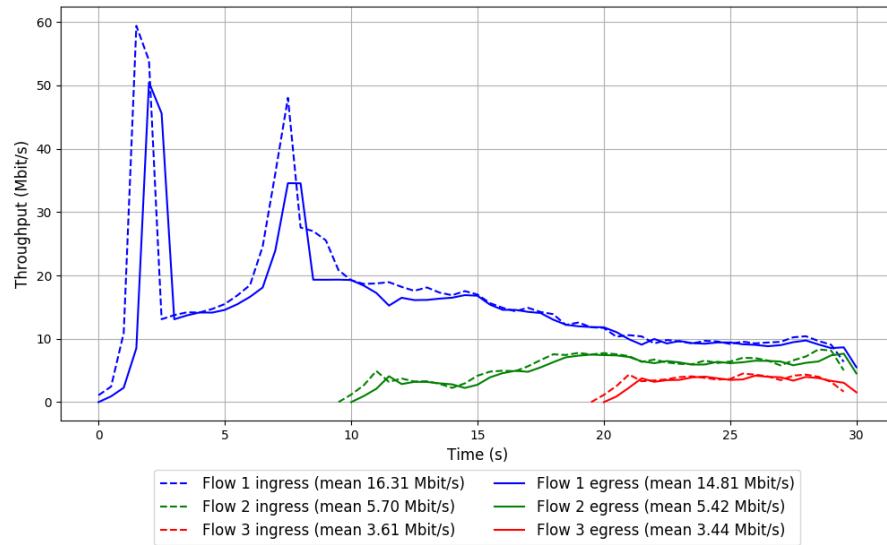


Run 4: Statistics of PCC-Vivace

```
Start at: 2018-09-06 20:32:01
End at: 2018-09-06 20:32:31
Local clock offset: 0.782 ms
Remote clock offset: -12.791 ms

# Below is generated by plot.py at 2018-09-06 21:07:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 19.54 Mbit/s
95th percentile per-packet one-way delay: 52.784 ms
Loss rate: 8.53%
-- Flow 1:
Average throughput: 14.81 Mbit/s
95th percentile per-packet one-way delay: 55.580 ms
Loss rate: 9.50%
-- Flow 2:
Average throughput: 5.42 Mbit/s
95th percentile per-packet one-way delay: 51.626 ms
Loss rate: 5.24%
-- Flow 3:
Average throughput: 3.44 Mbit/s
95th percentile per-packet one-way delay: 51.435 ms
Loss rate: 5.63%
```

Run 4: Report of PCC-Vivace — Data Link

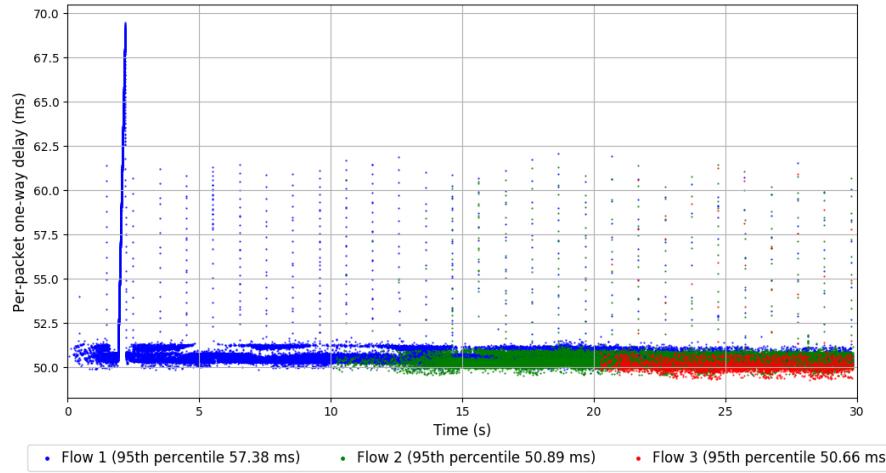
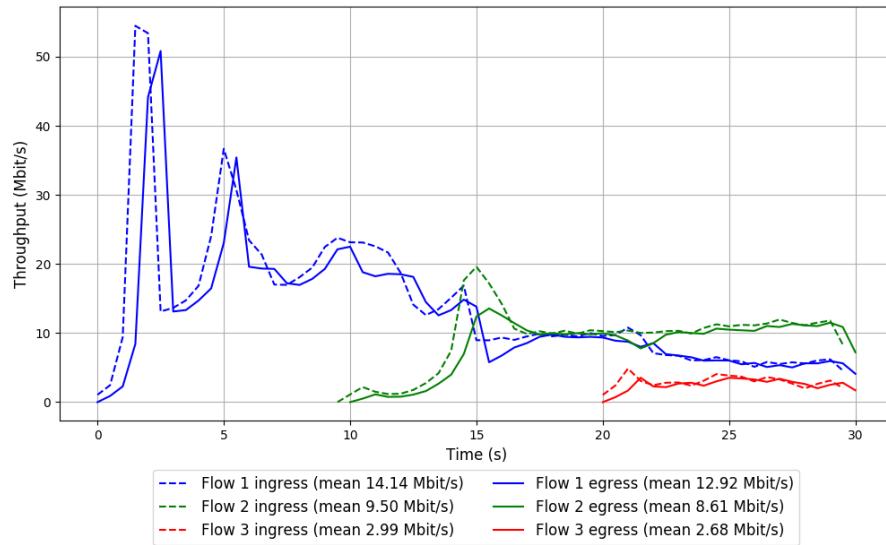


Run 5: Statistics of PCC-Vivace

```
Start at: 2018-09-06 20:54:21
End at: 2018-09-06 20:54:51
Local clock offset: -0.981 ms
Remote clock offset: -21.084 ms

# Below is generated by plot.py at 2018-09-06 21:07:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 19.52 Mbit/s
95th percentile per-packet one-way delay: 53.076 ms
Loss rate: 9.23%
-- Flow 1:
Average throughput: 12.92 Mbit/s
95th percentile per-packet one-way delay: 57.378 ms
Loss rate: 8.84%
-- Flow 2:
Average throughput: 8.61 Mbit/s
95th percentile per-packet one-way delay: 50.893 ms
Loss rate: 9.78%
-- Flow 3:
Average throughput: 2.68 Mbit/s
95th percentile per-packet one-way delay: 50.655 ms
Loss rate: 11.12%
```

Run 5: Report of PCC-Vivace — Data Link

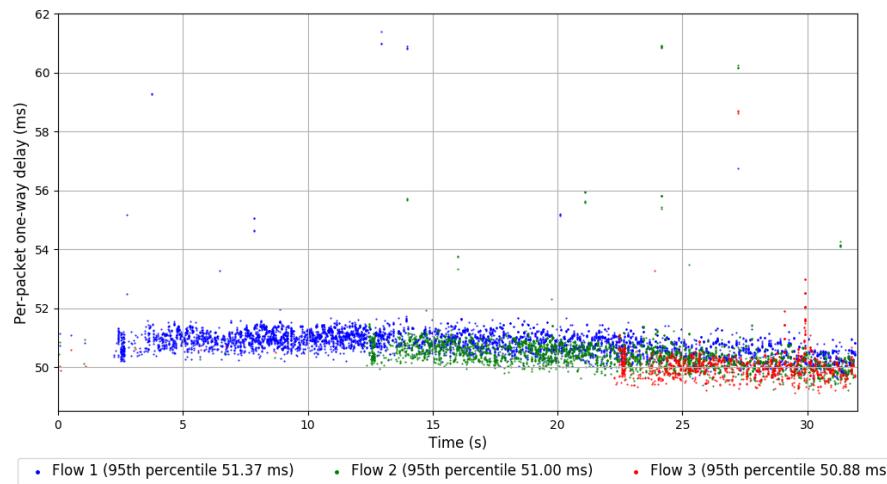
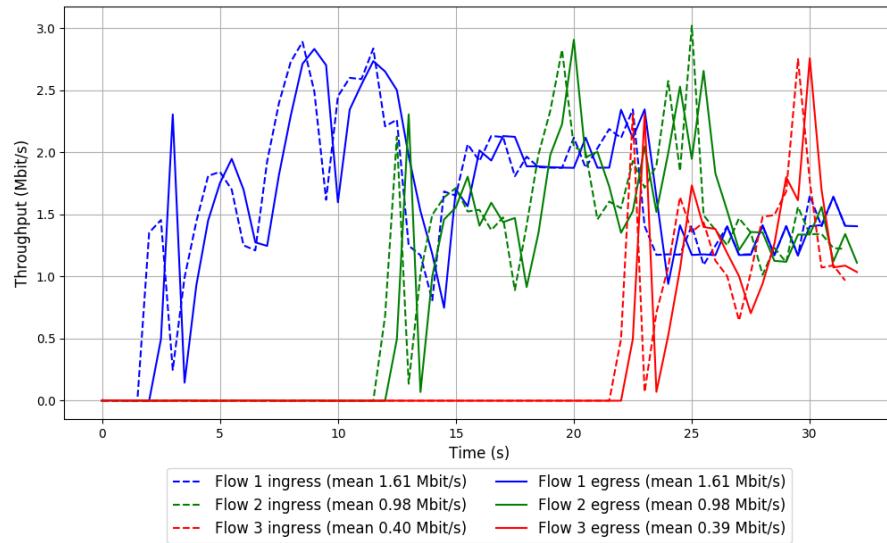


```
Run 1: Statistics of WebRTC media

Start at: 2018-09-06 19:33:25
End at: 2018-09-06 19:33:55
Local clock offset: 5.56 ms
Remote clock offset: 9.885 ms

# Below is generated by plot.py at 2018-09-06 21:07:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.99 Mbit/s
95th percentile per-packet one-way delay: 51.311 ms
Loss rate: 0.27%
-- Flow 1:
Average throughput: 1.61 Mbit/s
95th percentile per-packet one-way delay: 51.366 ms
Loss rate: 0.23%
-- Flow 2:
Average throughput: 0.98 Mbit/s
95th percentile per-packet one-way delay: 51.002 ms
Loss rate: 0.35%
-- Flow 3:
Average throughput: 0.39 Mbit/s
95th percentile per-packet one-way delay: 50.877 ms
Loss rate: 0.26%
```

Run 1: Report of WebRTC media — Data Link

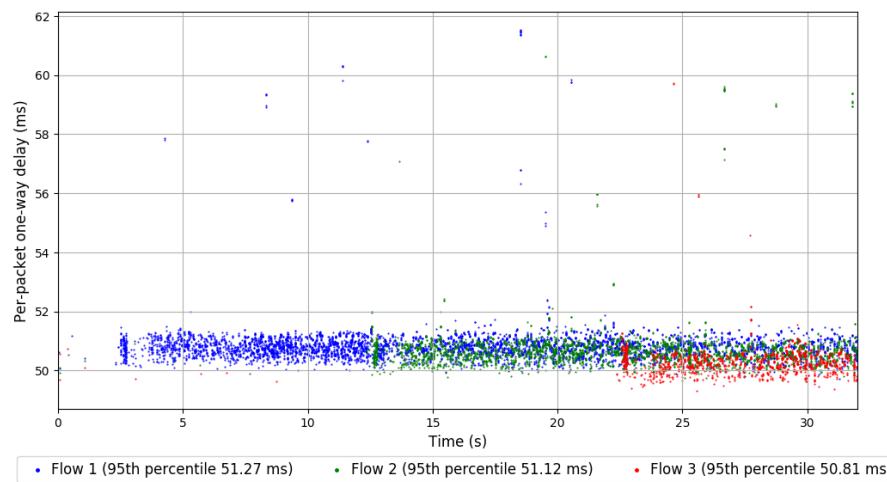
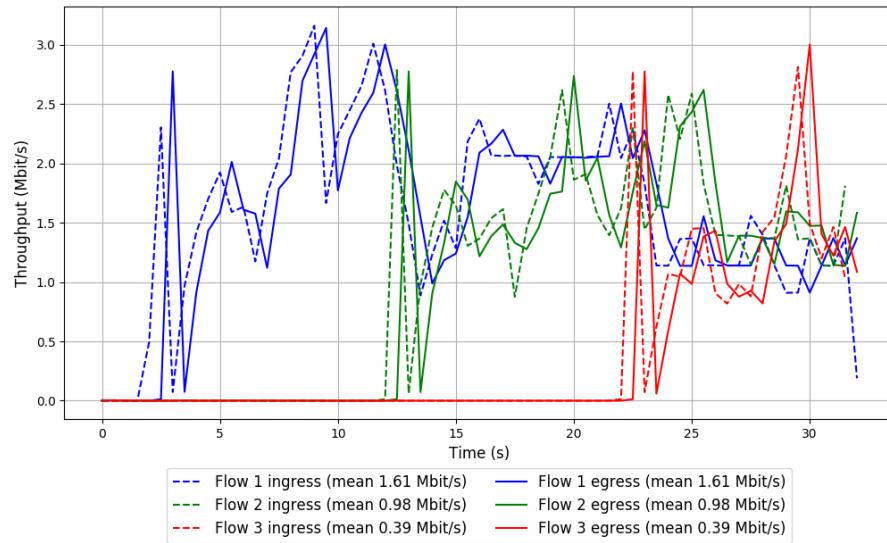


Run 2: Statistics of WebRTC media

```
Start at: 2018-09-06 19:55:44
End at: 2018-09-06 19:56:14
Local clock offset: 1.933 ms
Remote clock offset: -24.234 ms

# Below is generated by plot.py at 2018-09-06 21:07:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.99 Mbit/s
95th percentile per-packet one-way delay: 51.229 ms
Loss rate: 0.26%
-- Flow 1:
Average throughput: 1.61 Mbit/s
95th percentile per-packet one-way delay: 51.265 ms
Loss rate: 0.18%
-- Flow 2:
Average throughput: 0.98 Mbit/s
95th percentile per-packet one-way delay: 51.118 ms
Loss rate: 0.36%
-- Flow 3:
Average throughput: 0.39 Mbit/s
95th percentile per-packet one-way delay: 50.814 ms
Loss rate: 0.31%
```

Run 2: Report of WebRTC media — Data Link

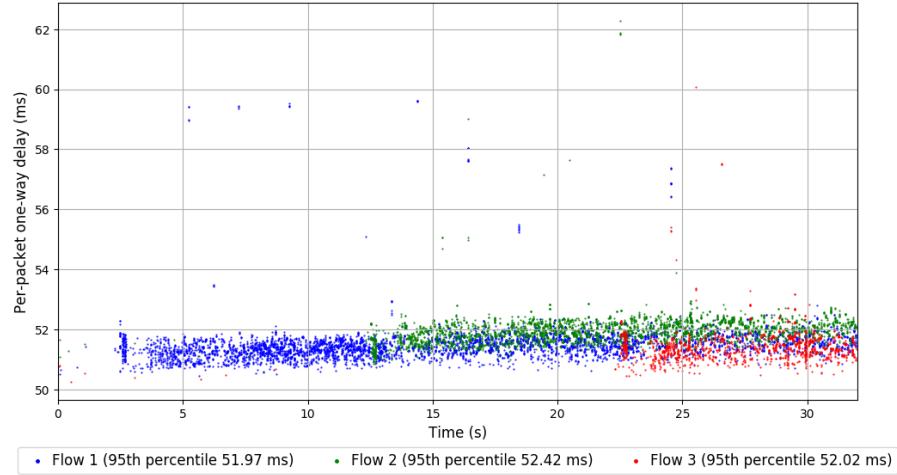
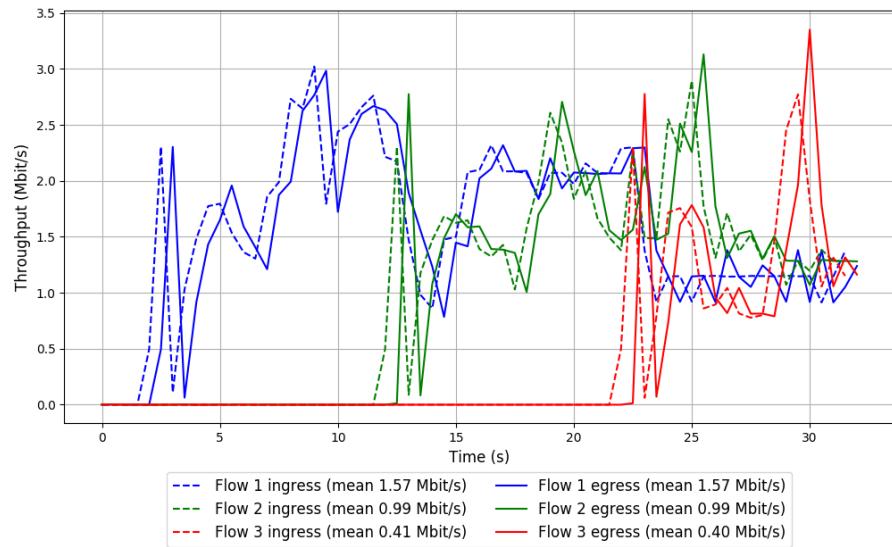


```
Run 3: Statistics of WebRTC media

Start at: 2018-09-06 20:18:09
End at: 2018-09-06 20:18:39
Local clock offset: -0.164 ms
Remote clock offset: -16.626 ms

# Below is generated by plot.py at 2018-09-06 21:07:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.97 Mbit/s
95th percentile per-packet one-way delay: 52.310 ms
Loss rate: 0.30%
-- Flow 1:
Average throughput: 1.57 Mbit/s
95th percentile per-packet one-way delay: 51.972 ms
Loss rate: 0.23%
-- Flow 2:
Average throughput: 0.99 Mbit/s
95th percentile per-packet one-way delay: 52.423 ms
Loss rate: 0.34%
-- Flow 3:
Average throughput: 0.40 Mbit/s
95th percentile per-packet one-way delay: 52.018 ms
Loss rate: 0.46%
```

Run 3: Report of WebRTC media — Data Link

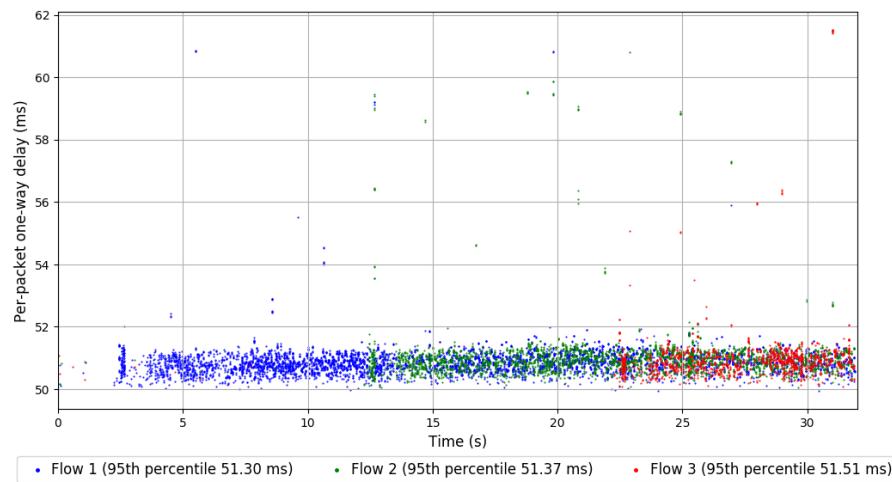
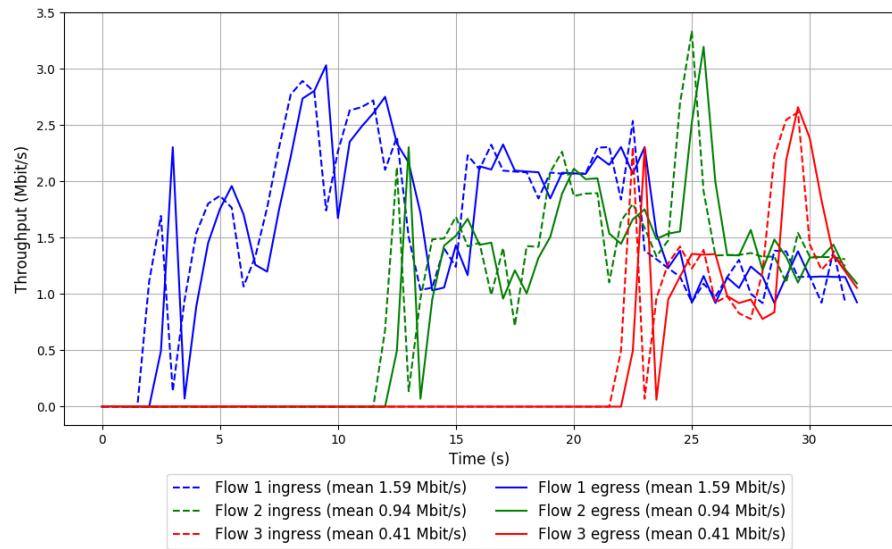


Run 4: Statistics of WebRTC media

```
Start at: 2018-09-06 20:40:38
End at: 2018-09-06 20:41:08
Local clock offset: 0.536 ms
Remote clock offset: -13.475 ms

# Below is generated by plot.py at 2018-09-06 21:07:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.94 Mbit/s
95th percentile per-packet one-way delay: 51.337 ms
Loss rate: 0.53%
-- Flow 1:
Average throughput: 1.59 Mbit/s
95th percentile per-packet one-way delay: 51.300 ms
Loss rate: 0.23%
-- Flow 2:
Average throughput: 0.94 Mbit/s
95th percentile per-packet one-way delay: 51.370 ms
Loss rate: 0.72%
-- Flow 3:
Average throughput: 0.41 Mbit/s
95th percentile per-packet one-way delay: 51.508 ms
Loss rate: 1.23%
```

Run 4: Report of WebRTC media — Data Link



```
Run 5: Statistics of WebRTC media

Start at: 2018-09-06 21:03:02
End at: 2018-09-06 21:03:32
Local clock offset: -2.166 ms
Remote clock offset: -25.251 ms

# Below is generated by plot.py at 2018-09-06 21:07:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.99 Mbit/s
95th percentile per-packet one-way delay: 51.659 ms
Loss rate: 0.28%
-- Flow 1:
Average throughput: 1.61 Mbit/s
95th percentile per-packet one-way delay: 51.627 ms
Loss rate: 0.23%
-- Flow 2:
Average throughput: 0.97 Mbit/s
95th percentile per-packet one-way delay: 51.739 ms
Loss rate: 0.36%
-- Flow 3:
Average throughput: 0.40 Mbit/s
95th percentile per-packet one-way delay: 51.562 ms
Loss rate: 0.26%
```

Run 5: Report of WebRTC media — Data Link

