

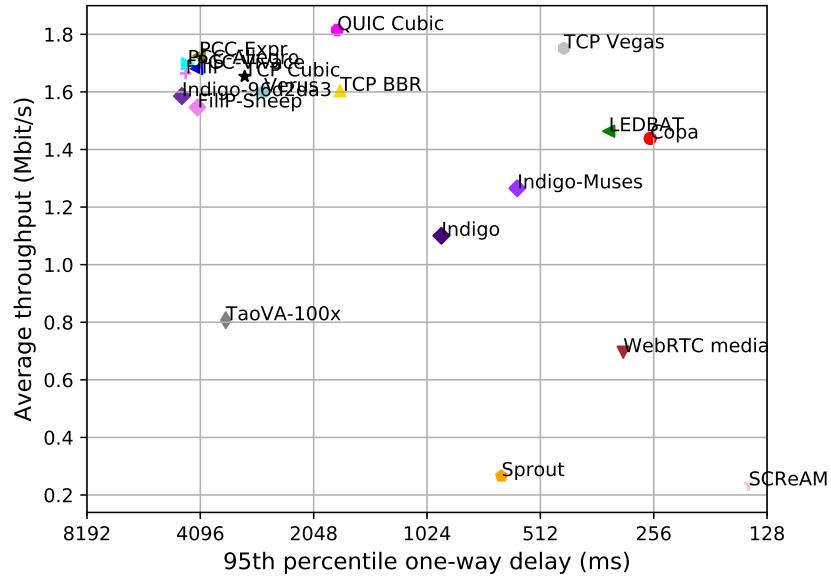
Pantheon Report

Generated at 2018-12-02 04:17:55 (UTC).
Data path: AWS Brazil 2 on `ens5 (local)` → Colombia cellular on `ppp0 (remote)`.
Repeated the test of 19 congestion control schemes 3 times.
Each test lasted for 30 seconds running 3 flows with 10-second interval between two flows.
NTP offsets were measured against `gps.ntp.br` and have been applied to correct the timestamps in logs.

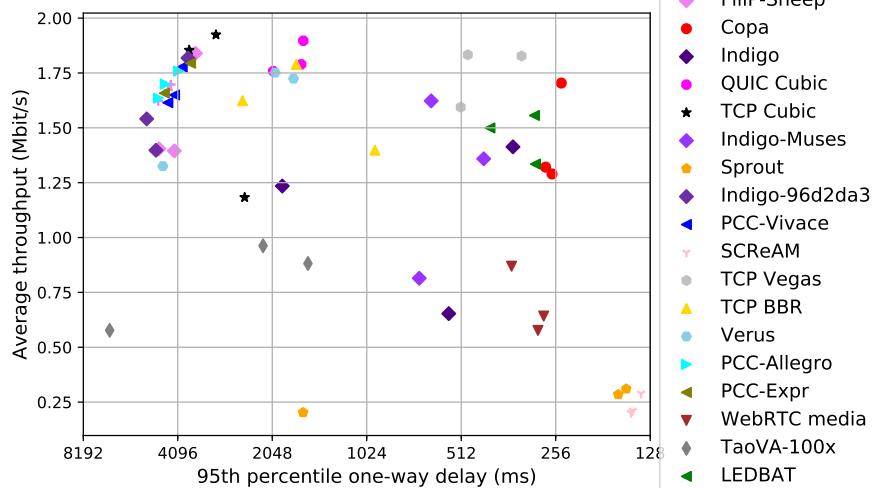
```
System info:  
Linux 4.15.0-1027-aws  
net.core.default_qdisc = fq  
net.core.rmem_default = 16777216  
net.core.rmem_max = 536870912  
net.core.wmem_default = 16777216  
net.core.wmem_max = 536870912  
net.ipv4.tcp_rmem = 4096 16777216 536870912  
net.ipv4.tcp_wmem = 4096 16777216 536870912  
  
Git summary:  
branch: muses @ 7b6dad87cde3ab65f7c4052140eb54098aa58e9d  
third_party/fillp @ d6da1459332fce56963885d7eba17e6a32d4519  
third_party/fillp-sheep @ 0e5bb722943babcd2b090d2c64fc45e12e923f9  
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdf58e562f4  
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d  
third_party/indigo-96d2da3 @ 8413272d46f8aa0bcb967ed7048b6a8f994abb95  
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf  
third_party/muses @ 65ac1b19bbefed0c6349ae986009b4fa8643c40a  
third_party/pantheon-tunnel @ f866d3f58d27af942717625ee3a354cc2e802bd  
third_party/pcc @ 1afc958fa0d66d18b623c091a55fec872b4981e1  
M receiver/src/buffer.h  
M receiver/src/core.cpp  
M sender/src/buffer.h  
M sender/src/core.cpp  
third_party/pcc-experimental @ cd43e34e3f5f5613e8acd08fab92c4eb24f974ab  
third_party/proto-quic @ 77961f1a82733a86b42f1bc8143ebc978f3cff42  
third_party/scream-reproduce @ f099118d1421aa3131bf11ff1964974e1da3bdb2  
M src/ScreamClient  
M src/ScreamServer  
third_party/sprout @ 366e35c6178b01e31d4a46ad18c74f9415f19a26  
M src/examples/cellsim.cc  
M src/examples/sproutbt2.cc  
M src/network/sproutconn.cc  
third_party/verus @ d4b447ea74c6c60a261149af2629562939f9a494
```

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

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



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



4

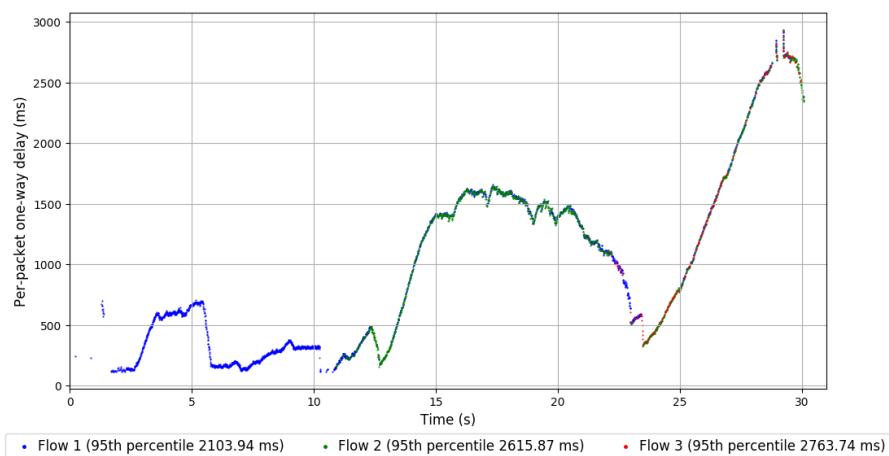
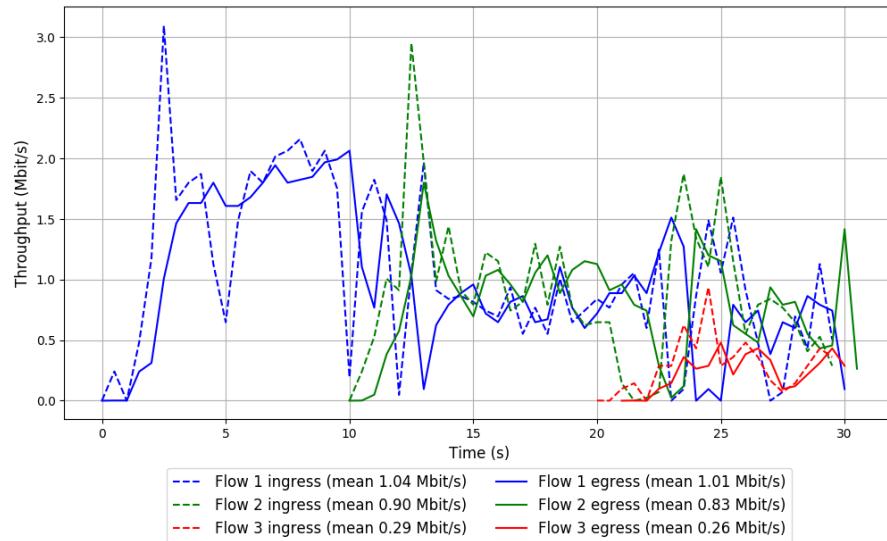
scheme	# runs	mean avg tput (Mbit/s)			mean 95th-%ile delay (ms)			mean loss rate (%)		
		flow 1	flow 2	flow 3	flow 1	flow 2	flow 3	flow 1	flow 2	flow 3
TCP BBR	3	1.06	0.72	0.23	1592.75	1761.66	1591.04	2.67	4.06	14.08
Copa	3	0.86	0.55	0.63	269.27	246.43	291.66	0.20	0.31	0.63
TCP Cubic	3	1.35	0.43	0.11	3060.90	3145.42	2981.64	9.50	26.19	45.69
FillP	3	1.18	0.78	0.01	4403.68	4523.31	4490.45	28.52	50.89	99.18
FillP-Sheep	3	0.86	0.91	0.39	4212.27	4007.64	4150.64	13.03	21.07	86.79
Indigo	3	0.62	0.54	0.36	421.68	2815.00	405.93	0.33	0.33	0.41
Indigo-96d2da3	3	1.13	0.59	0.31	4501.58	4622.90	4324.34	67.44	58.36	63.26
LEDBAT	3	1.09	0.40	0.35	332.02	347.59	299.27	0.44	1.64	2.23
Indigo-Muses	3	0.68	0.60	0.56	714.47	418.46	576.40	0.23	0.38	1.20
PCC-Allegro	3	1.70	0.00	0.00	4427.78	4117.94	4316.37	67.81	3.64	18.28
PCC-Expr	2	1.73	0.00	0.00	4125.00	3865.16	3176.74	69.45	53.64	73.57
QUIC Cubic	3	1.35	0.59	0.23	1729.26	1795.25	1829.74	4.66	8.59	23.94
SCReAM	3	0.08	0.14	0.18	134.71	141.51	153.31	0.22	0.26	0.46
Sprout	3	0.12	0.14	0.14	445.41	565.73	887.15	0.88	1.30	3.27
TaoVA-100x	3	0.01	0.85	0.81	252.17	3328.54	1767.17	85.45	2.40	3.50
TCP Vegas	3	0.86	0.82	1.05	405.80	452.09	447.46	0.29	0.34	1.47
Verus	3	1.47	0.13	0.16	2853.10	2296.46	2113.88	11.14	7.24	7.46
PCC-Vivace	3	0.97	1.07	0.00	4176.09	4198.26	4138.14	25.88	32.63	7.47
WebRTC media	3	0.38	0.21	0.12	285.84	338.62	333.50	0.22	0.37	0.99

Run 1: Statistics of TCP BBR

```
Start at: 2018-12-02 03:12:34
End at: 2018-12-02 03:13:04
Local clock offset: -6.167 ms
Remote clock offset: 17.911 ms

# Below is generated by plot.py at 2018-12-02 04:17:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.62 Mbit/s
95th percentile per-packet one-way delay: 2546.881 ms
Loss rate: 6.27%
-- Flow 1:
Average throughput: 1.01 Mbit/s
95th percentile per-packet one-way delay: 2103.944 ms
Loss rate: 4.56%
-- Flow 2:
Average throughput: 0.83 Mbit/s
95th percentile per-packet one-way delay: 2615.871 ms
Loss rate: 6.64%
-- Flow 3:
Average throughput: 0.26 Mbit/s
95th percentile per-packet one-way delay: 2763.745 ms
Loss rate: 22.48%
```

Run 1: Report of TCP BBR — Data Link

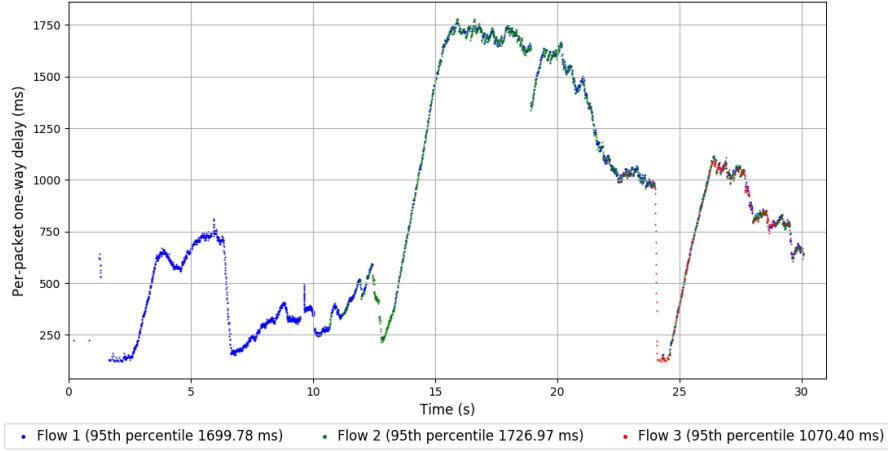
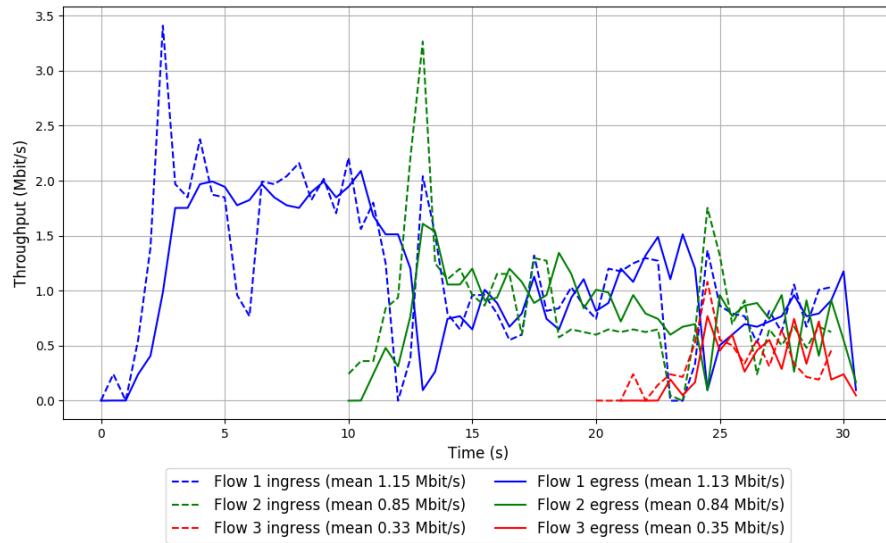


Run 2: Statistics of TCP BBR

```
Start at: 2018-12-02 03:35:54
End at: 2018-12-02 03:36:24
Local clock offset: -6.288 ms
Remote clock offset: 20.24 ms

# Below is generated by plot.py at 2018-12-02 04:17:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.79 Mbit/s
95th percentile per-packet one-way delay: 1716.755 ms
Loss rate: 2.13%
-- Flow 1:
Average throughput: 1.13 Mbit/s
95th percentile per-packet one-way delay: 1699.779 ms
Loss rate: 1.75%
-- Flow 2:
Average throughput: 0.84 Mbit/s
95th percentile per-packet one-way delay: 1726.973 ms
Loss rate: 1.91%
-- Flow 3:
Average throughput: 0.35 Mbit/s
95th percentile per-packet one-way delay: 1070.399 ms
Loss rate: 7.32%
```

Run 2: Report of TCP BBR — Data Link

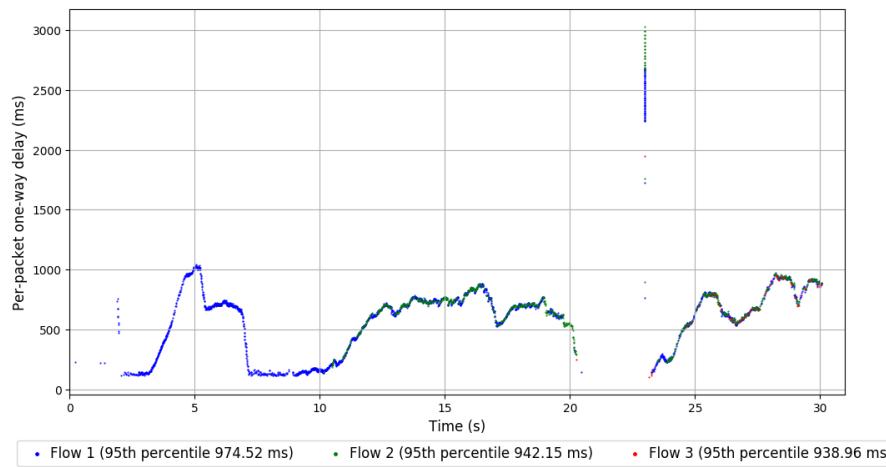
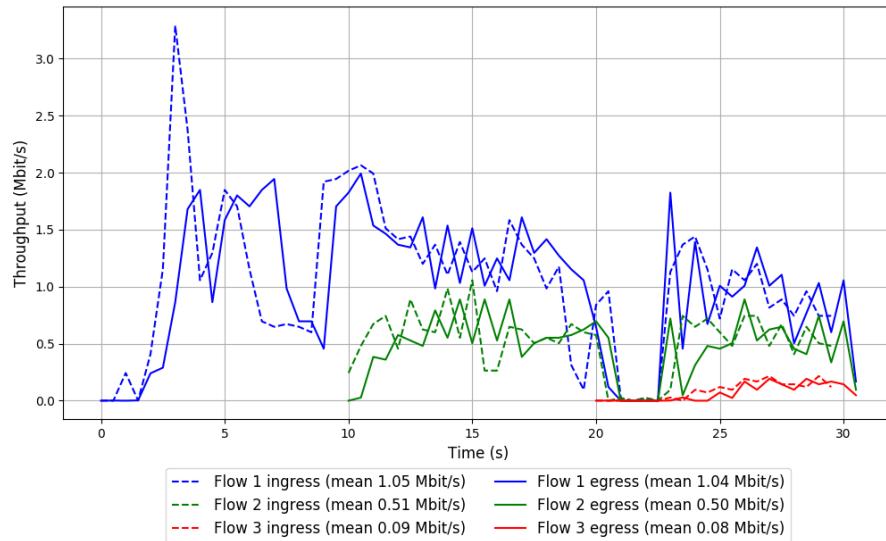


Run 3: Statistics of TCP BBR

```
Start at: 2018-12-02 03:59:16
End at: 2018-12-02 03:59:46
Local clock offset: -6.439 ms
Remote clock offset: 18.709 ms

# Below is generated by plot.py at 2018-12-02 04:17:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.40 Mbit/s
95th percentile per-packet one-way delay: 964.472 ms
Loss rate: 2.39%
-- Flow 1:
Average throughput: 1.04 Mbit/s
95th percentile per-packet one-way delay: 974.517 ms
Loss rate: 1.71%
-- Flow 2:
Average throughput: 0.50 Mbit/s
95th percentile per-packet one-way delay: 942.146 ms
Loss rate: 3.63%
-- Flow 3:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 938.962 ms
Loss rate: 12.45%
```

Run 3: Report of TCP BBR — Data Link

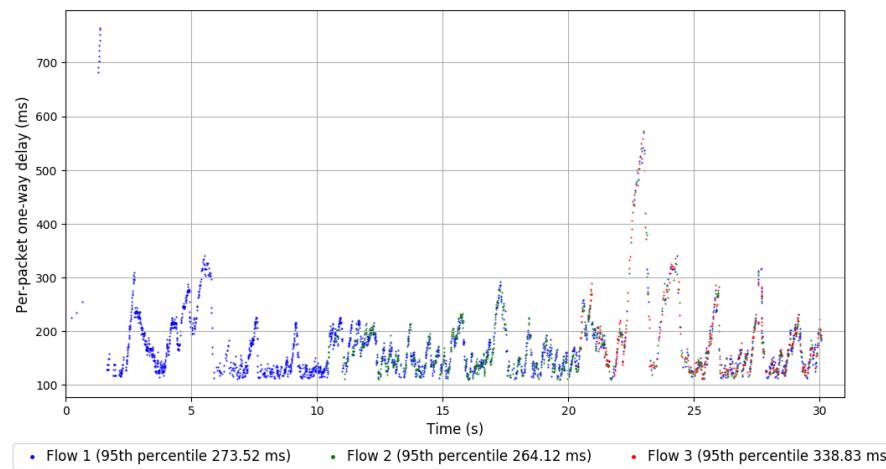
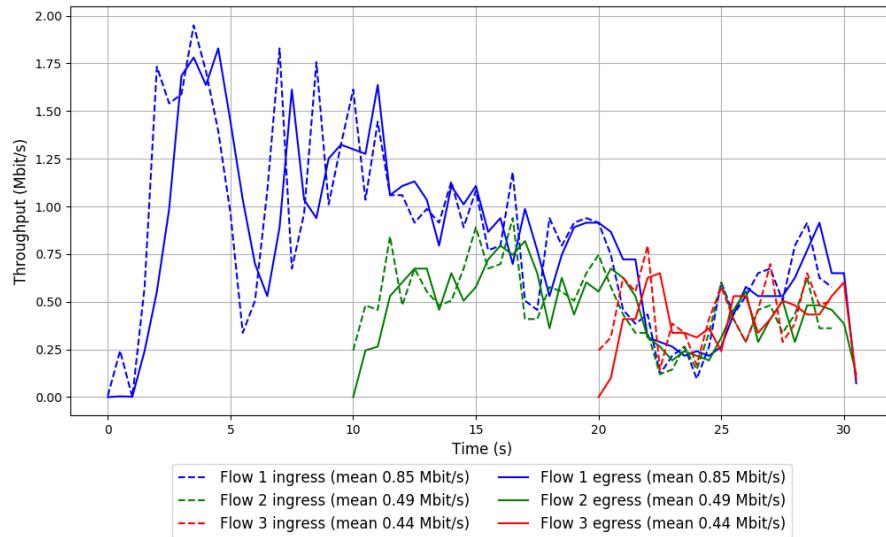


Run 1: Statistics of Copa

```
Start at: 2018-12-02 03:22:23
End at: 2018-12-02 03:22:53
Local clock offset: -5.605 ms
Remote clock offset: 14.967 ms

# Below is generated by plot.py at 2018-12-02 04:17:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.32 Mbit/s
95th percentile per-packet one-way delay: 275.754 ms
Loss rate: 0.24%
-- Flow 1:
Average throughput: 0.85 Mbit/s
95th percentile per-packet one-way delay: 273.522 ms
Loss rate: 0.24%
-- Flow 2:
Average throughput: 0.49 Mbit/s
95th percentile per-packet one-way delay: 264.125 ms
Loss rate: 0.12%
-- Flow 3:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 338.827 ms
Loss rate: 0.55%
```

Run 1: Report of Copa — Data Link

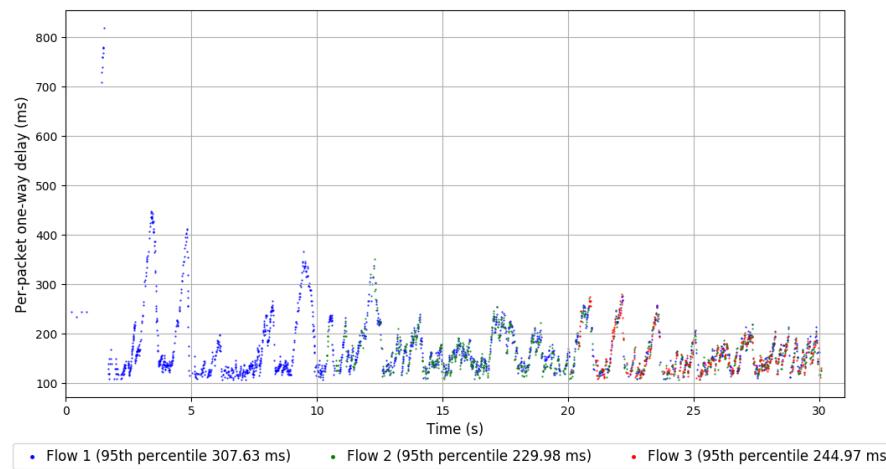
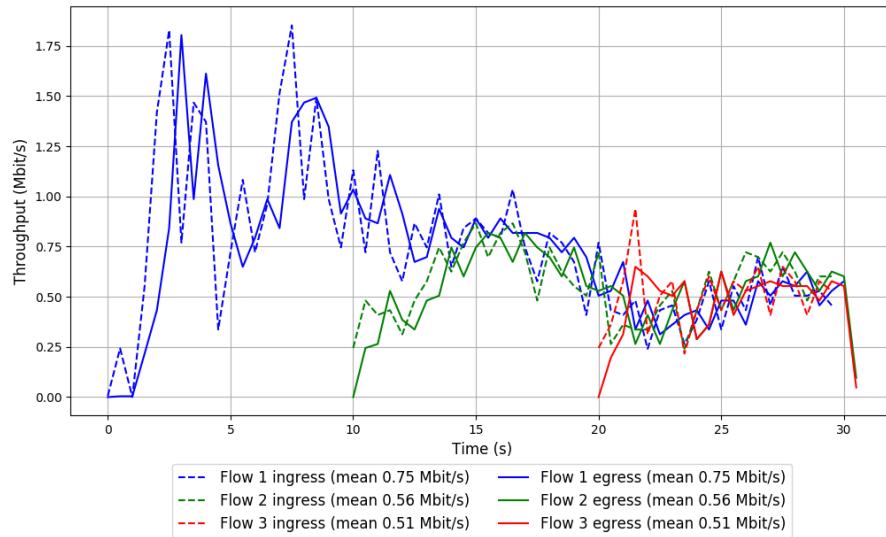


Run 2: Statistics of Copa

```
Start at: 2018-12-02 03:45:44
End at: 2018-12-02 03:46:14
Local clock offset: -5.661 ms
Remote clock offset: 17.089 ms

# Below is generated by plot.py at 2018-12-02 04:17:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.29 Mbit/s
95th percentile per-packet one-way delay: 262.993 ms
Loss rate: 0.28%
-- Flow 1:
Average throughput: 0.75 Mbit/s
95th percentile per-packet one-way delay: 307.628 ms
Loss rate: 0.16%
-- Flow 2:
Average throughput: 0.56 Mbit/s
95th percentile per-packet one-way delay: 229.984 ms
Loss rate: 0.32%
-- Flow 3:
Average throughput: 0.51 Mbit/s
95th percentile per-packet one-way delay: 244.974 ms
Loss rate: 0.71%
```

Run 2: Report of Copa — Data Link

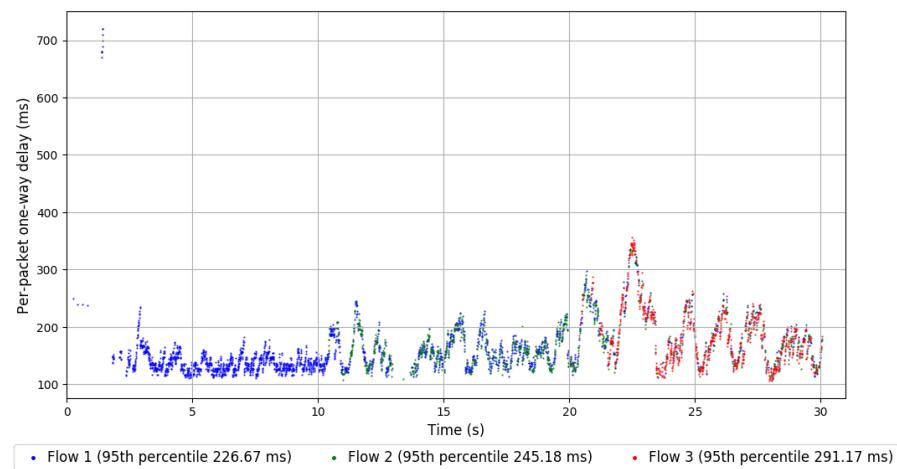
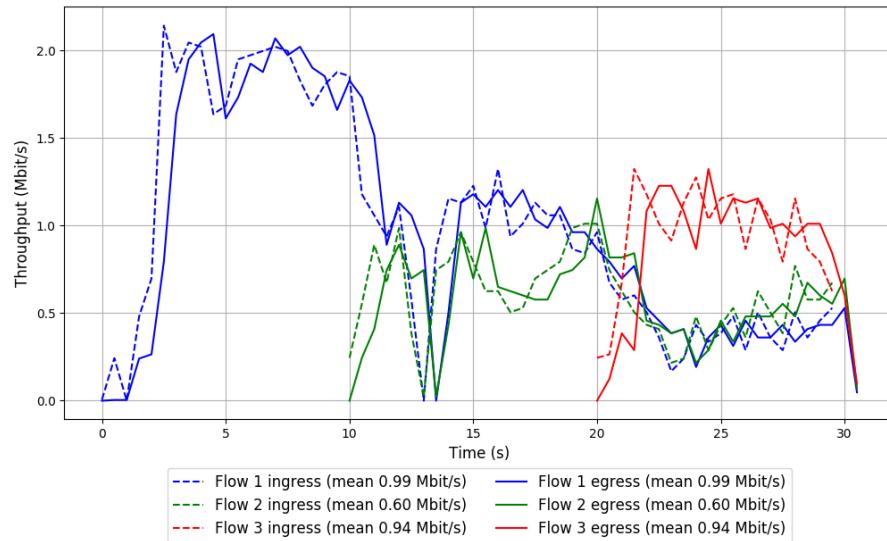


Run 3: Statistics of Copa

```
Start at: 2018-12-02 04:09:07
End at: 2018-12-02 04:09:37
Local clock offset: -5.753 ms
Remote clock offset: 23.694 ms

# Below is generated by plot.py at 2018-12-02 04:17:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.70 Mbit/s
95th percentile per-packet one-way delay: 245.794 ms
Loss rate: 0.35%
-- Flow 1:
Average throughput: 0.99 Mbit/s
95th percentile per-packet one-way delay: 226.667 ms
Loss rate: 0.20%
-- Flow 2:
Average throughput: 0.60 Mbit/s
95th percentile per-packet one-way delay: 245.181 ms
Loss rate: 0.50%
-- Flow 3:
Average throughput: 0.94 Mbit/s
95th percentile per-packet one-way delay: 291.174 ms
Loss rate: 0.64%
```

Run 3: Report of Copa — Data Link

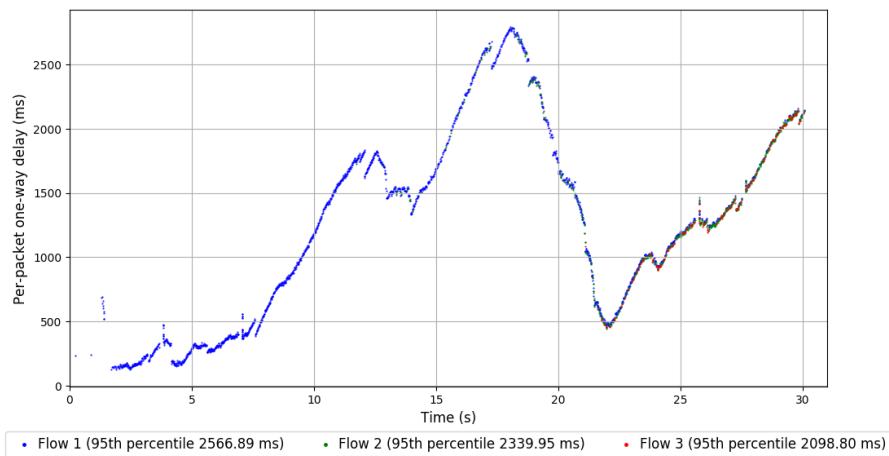
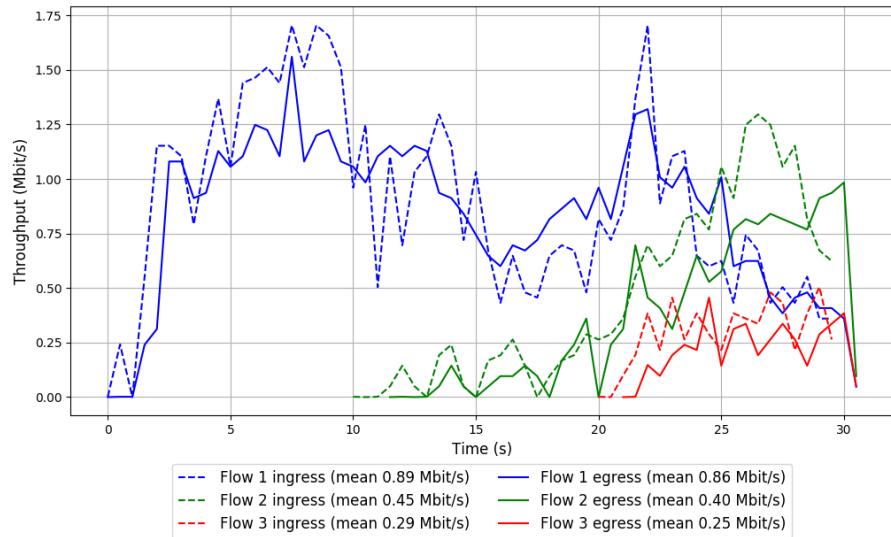


Run 1: Statistics of TCP Cubic

```
Start at: 2018-12-02 03:29:45
End at: 2018-12-02 03:30:15
Local clock offset: -6.345 ms
Remote clock offset: 14.758 ms

# Below is generated by plot.py at 2018-12-02 04:17:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.18 Mbit/s
95th percentile per-packet one-way delay: 2507.704 ms
Loss rate: 8.89%
-- Flow 1:
Average throughput: 0.86 Mbit/s
95th percentile per-packet one-way delay: 2566.886 ms
Loss rate: 3.64%
-- Flow 2:
Average throughput: 0.40 Mbit/s
95th percentile per-packet one-way delay: 2339.949 ms
Loss rate: 19.17%
-- Flow 3:
Average throughput: 0.25 Mbit/s
95th percentile per-packet one-way delay: 2098.802 ms
Loss rate: 24.97%
```

Run 1: Report of TCP Cubic — Data Link

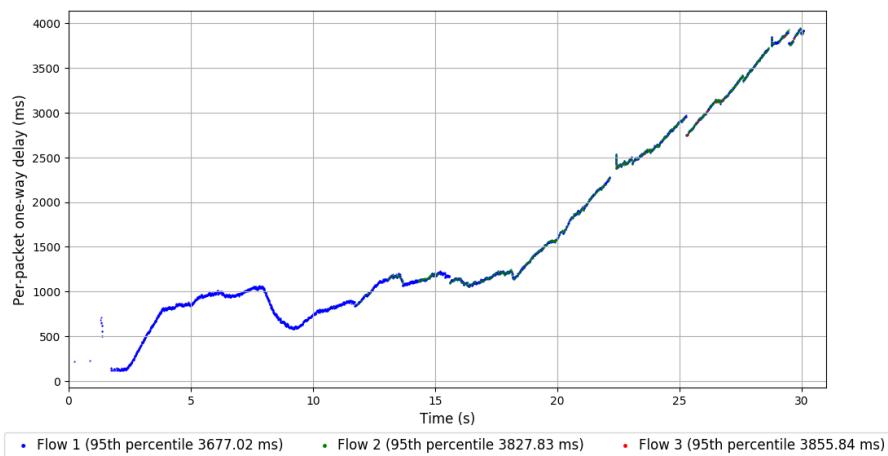
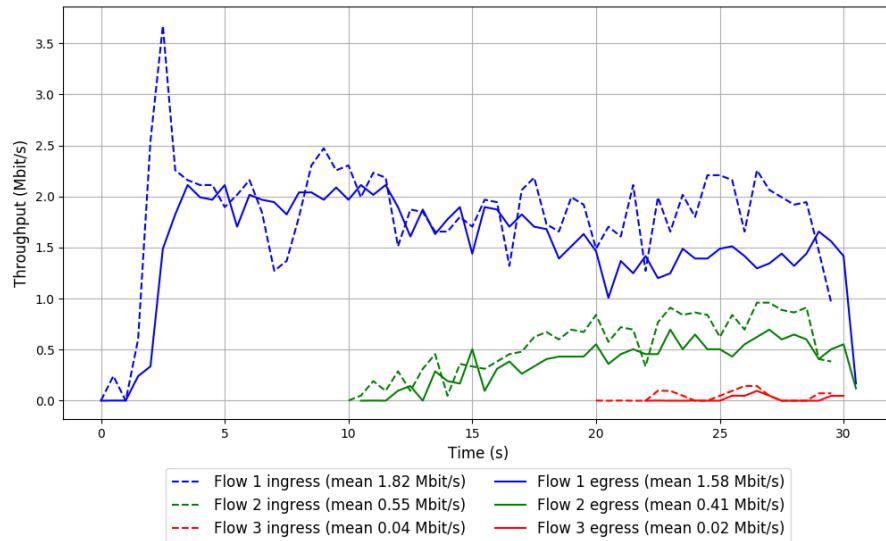


Run 2: Statistics of TCP Cubic

```
Start at: 2018-12-02 03:53:07
End at: 2018-12-02 03:53:37
Local clock offset: -6.465 ms
Remote clock offset: 23.319 ms

# Below is generated by plot.py at 2018-12-02 04:17:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.85 Mbit/s
95th percentile per-packet one-way delay: 3765.275 ms
Loss rate: 16.16%
-- Flow 1:
Average throughput: 1.58 Mbit/s
95th percentile per-packet one-way delay: 3677.020 ms
Loss rate: 13.40%
-- Flow 2:
Average throughput: 0.41 Mbit/s
95th percentile per-packet one-way delay: 3827.832 ms
Loss rate: 28.07%
-- Flow 3:
Average throughput: 0.02 Mbit/s
95th percentile per-packet one-way delay: 3855.844 ms
Loss rate: 60.70%
```

Run 2: Report of TCP Cubic — Data Link

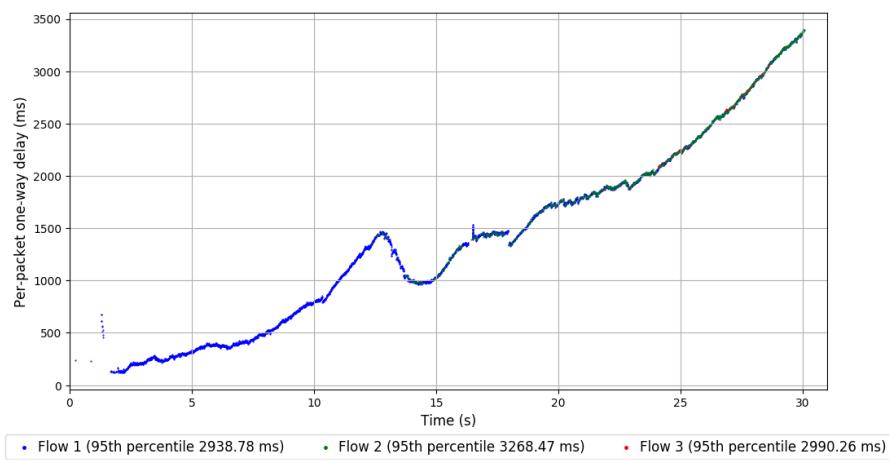
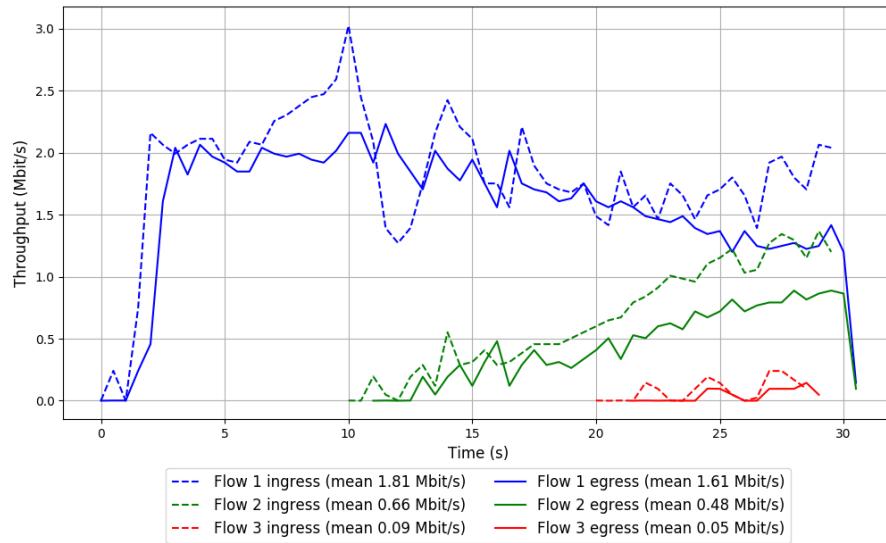


Run 3: Statistics of TCP Cubic

```
Start at: 2018-12-02 04:16:29
End at: 2018-12-02 04:16:59
Local clock offset: -6.645 ms
Remote clock offset: 19.227 ms

# Below is generated by plot.py at 2018-12-02 04:17:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.92 Mbit/s
95th percentile per-packet one-way delay: 3094.879 ms
Loss rate: 15.75%
-- Flow 1:
Average throughput: 1.61 Mbit/s
95th percentile per-packet one-way delay: 2938.784 ms
Loss rate: 11.46%
-- Flow 2:
Average throughput: 0.48 Mbit/s
95th percentile per-packet one-way delay: 3268.470 ms
Loss rate: 31.33%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 2990.265 ms
Loss rate: 51.41%
```

Run 3: Report of TCP Cubic — Data Link

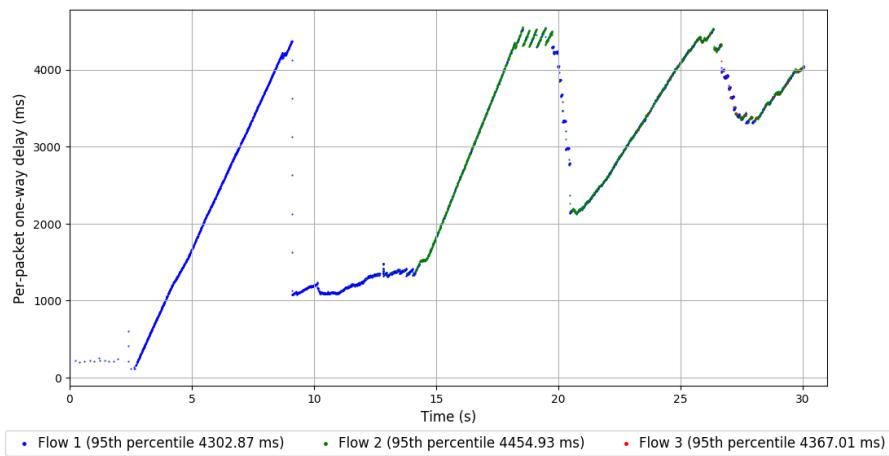
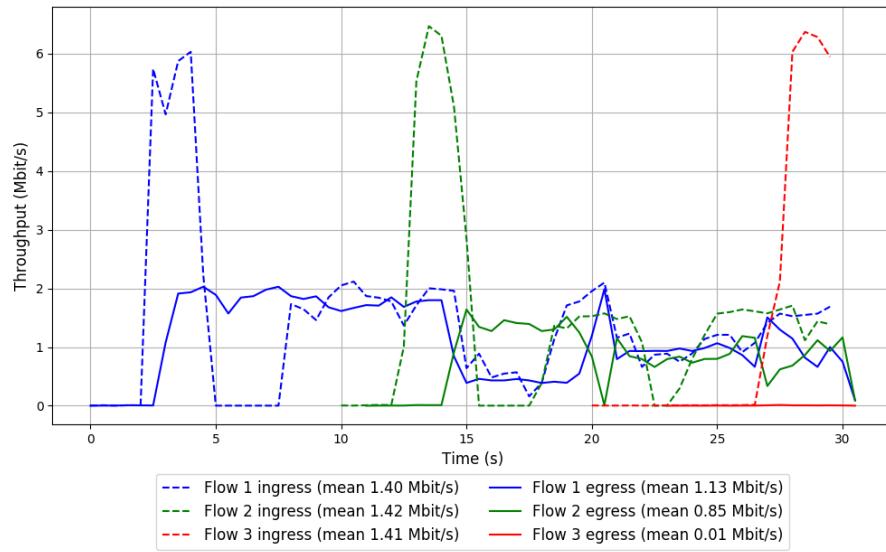


```
Run 1: Statistics of FillP

Start at: 2018-12-02 03:21:09
End at: 2018-12-02 03:21:39
Local clock offset: -6.312 ms
Remote clock offset: 19.929 ms

# Below is generated by plot.py at 2018-12-02 04:17:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.67 Mbit/s
95th percentile per-packet one-way delay: 4396.553 ms
Loss rate: 40.81%
-- Flow 1:
Average throughput: 1.13 Mbit/s
95th percentile per-packet one-way delay: 4302.867 ms
Loss rate: 19.41%
-- Flow 2:
Average throughput: 0.85 Mbit/s
95th percentile per-packet one-way delay: 4454.930 ms
Loss rate: 43.33%
-- Flow 3:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 4367.005 ms
Loss rate: 99.75%
```

Run 1: Report of FillP — Data Link

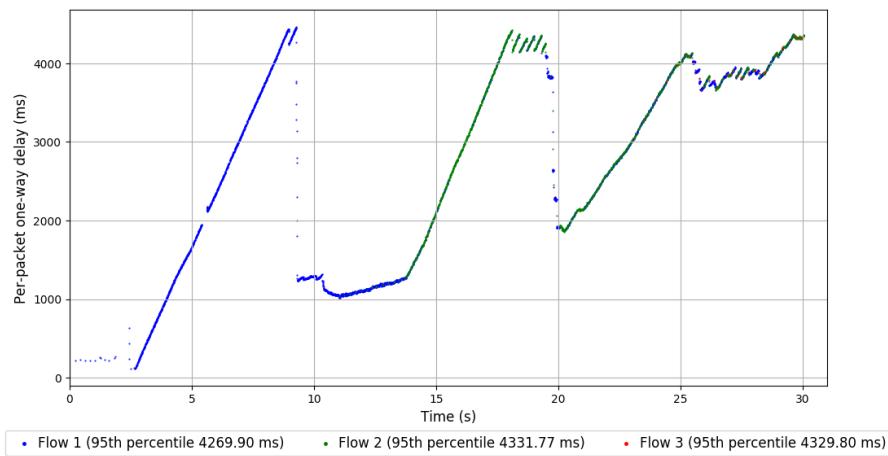
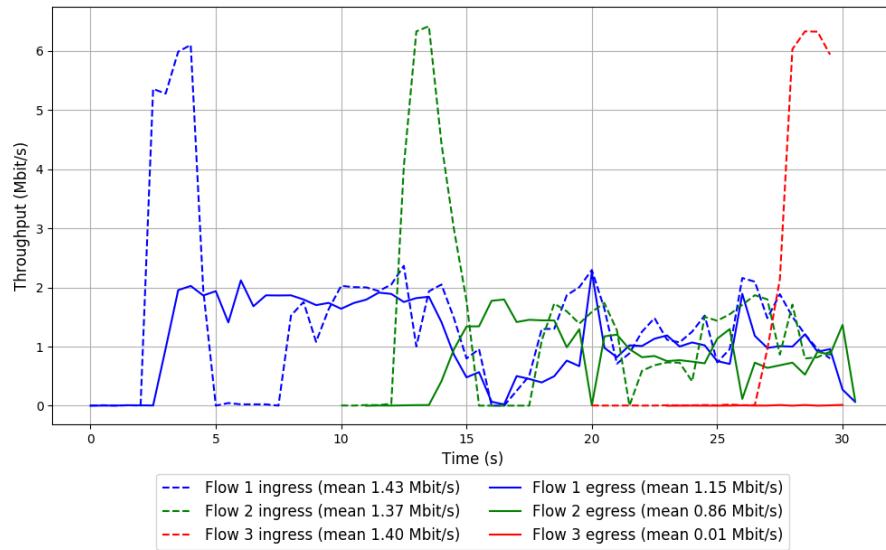


Run 2: Statistics of FillP

```
Start at: 2018-12-02 03:44:30
End at: 2018-12-02 03:45:00
Local clock offset: -5.651 ms
Remote clock offset: 22.394 ms

# Below is generated by plot.py at 2018-12-02 04:17:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.70 Mbit/s
95th percentile per-packet one-way delay: 4311.706 ms
Loss rate: 39.79%
-- Flow 1:
Average throughput: 1.15 Mbit/s
95th percentile per-packet one-way delay: 4269.904 ms
Loss rate: 20.21%
-- Flow 2:
Average throughput: 0.86 Mbit/s
95th percentile per-packet one-way delay: 4331.767 ms
Loss rate: 39.96%
-- Flow 3:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 4329.800 ms
Loss rate: 99.74%
```

Run 2: Report of FillP — Data Link

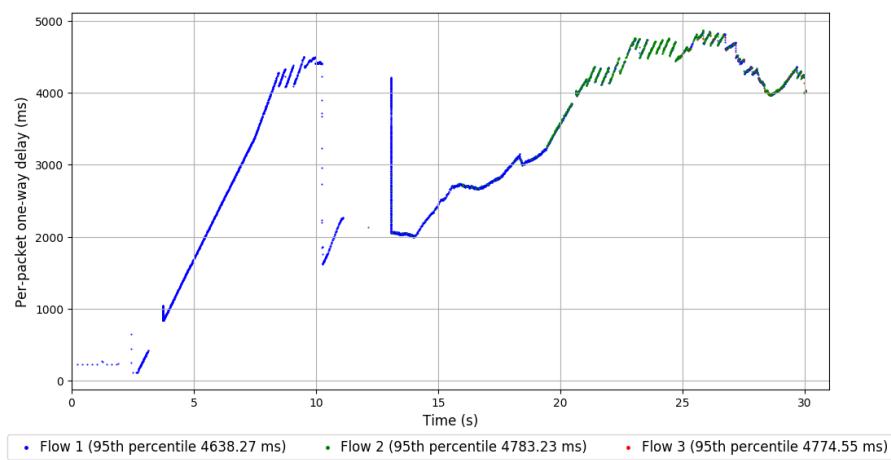
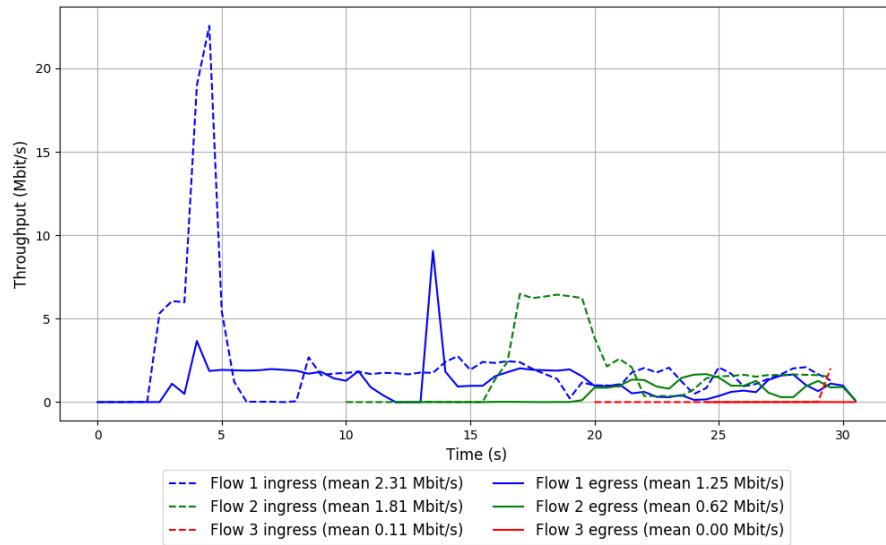


Run 3: Statistics of FillP

```
Start at: 2018-12-02 04:07:53
End at: 2018-12-02 04:08:23
Local clock offset: -5.805 ms
Remote clock offset: 23.73 ms

# Below is generated by plot.py at 2018-12-02 04:17:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.62 Mbit/s
95th percentile per-packet one-way delay: 4728.139 ms
Loss rate: 54.46%
-- Flow 1:
Average throughput: 1.25 Mbit/s
95th percentile per-packet one-way delay: 4638.271 ms
Loss rate: 45.95%
-- Flow 2:
Average throughput: 0.62 Mbit/s
95th percentile per-packet one-way delay: 4783.229 ms
Loss rate: 69.39%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 4774.550 ms
Loss rate: 98.04%
```

Run 3: Report of FillP — Data Link

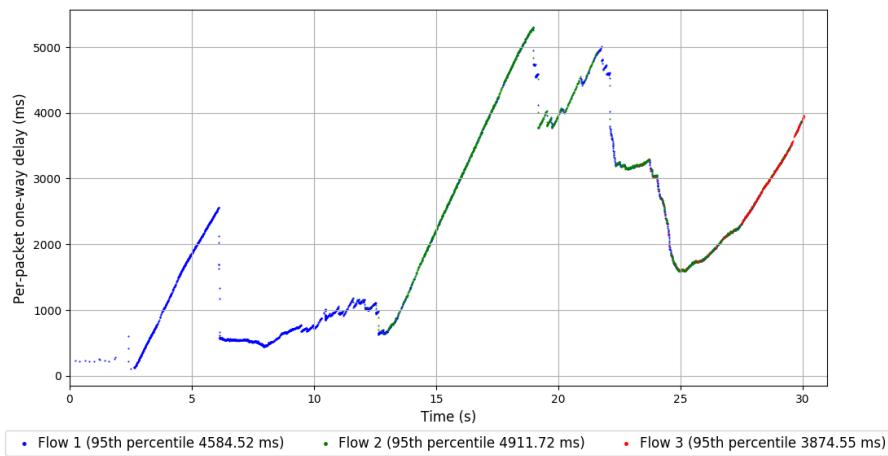
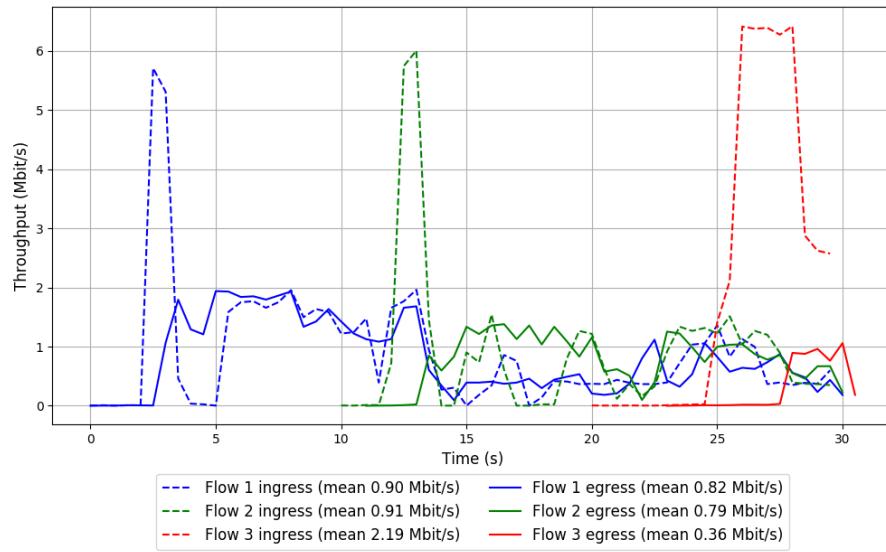


Run 1: Statistics of FillP-Sheep

```
Start at: 2018-12-02 03:24:51
End at: 2018-12-02 03:25:21
Local clock offset: -5.511 ms
Remote clock offset: 19.205 ms

# Below is generated by plot.py at 2018-12-02 04:17:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.40 Mbit/s
95th percentile per-packet one-way delay: 4702.498 ms
Loss rate: 37.19%
-- Flow 1:
Average throughput: 0.82 Mbit/s
95th percentile per-packet one-way delay: 4584.525 ms
Loss rate: 9.10%
-- Flow 2:
Average throughput: 0.79 Mbit/s
95th percentile per-packet one-way delay: 4911.722 ms
Loss rate: 16.70%
-- Flow 3:
Average throughput: 0.36 Mbit/s
95th percentile per-packet one-way delay: 3874.549 ms
Loss rate: 88.85%
```

Run 1: Report of FillP-Sheep — Data Link

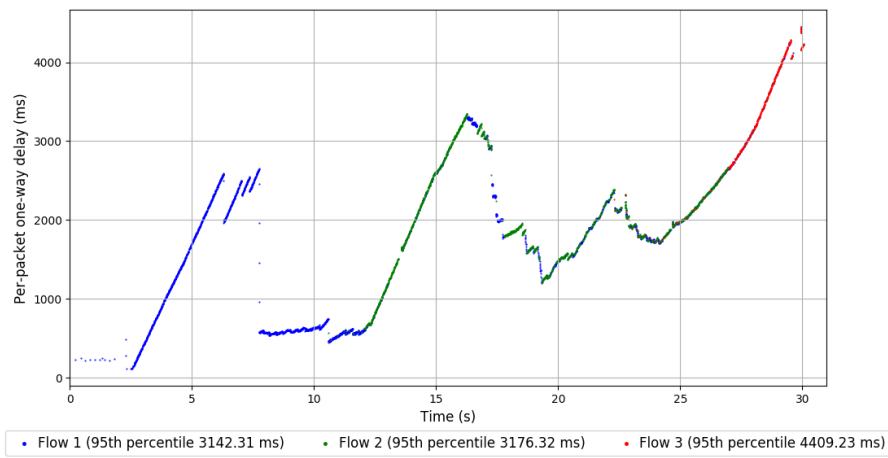
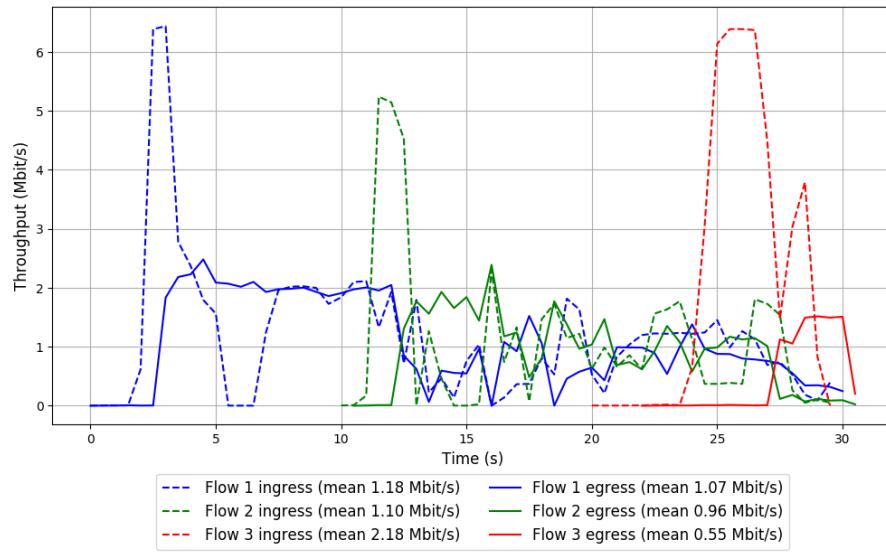


Run 2: Statistics of FillP-Sheep

```
Start at: 2018-12-02 03:48:11
End at: 2018-12-02 03:48:41
Local clock offset: -6.384 ms
Remote clock offset: 21.518 ms

# Below is generated by plot.py at 2018-12-02 04:17:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.84 Mbit/s
95th percentile per-packet one-way delay: 3596.522 ms
Loss rate: 30.07%
-- Flow 1:
Average throughput: 1.07 Mbit/s
95th percentile per-packet one-way delay: 3142.310 ms
Loss rate: 9.36%
-- Flow 2:
Average throughput: 0.96 Mbit/s
95th percentile per-packet one-way delay: 3176.321 ms
Loss rate: 14.63%
-- Flow 3:
Average throughput: 0.55 Mbit/s
95th percentile per-packet one-way delay: 4409.228 ms
Loss rate: 80.14%
```

Run 2: Report of FillP-Sheep — Data Link

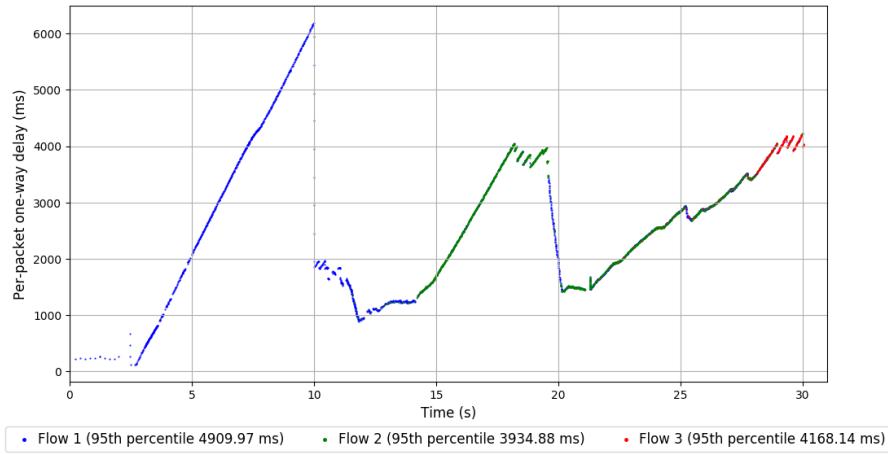
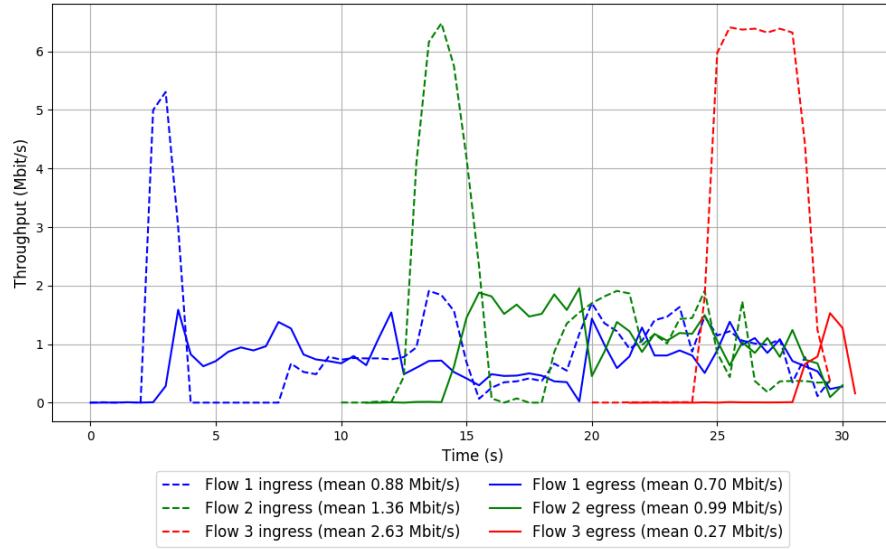


Run 3: Statistics of FillP-Sheep

```
Start at: 2018-12-02 04:11:34
End at: 2018-12-02 04:12:04
Local clock offset: -6.607 ms
Remote clock offset: 24.103 ms

# Below is generated by plot.py at 2018-12-02 04:17:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.39 Mbit/s
95th percentile per-packet one-way delay: 4200.480 ms
Loss rate: 47.64%
-- Flow 1:
Average throughput: 0.70 Mbit/s
95th percentile per-packet one-way delay: 4909.967 ms
Loss rate: 20.62%
-- Flow 2:
Average throughput: 0.99 Mbit/s
95th percentile per-packet one-way delay: 3934.884 ms
Loss rate: 31.87%
-- Flow 3:
Average throughput: 0.27 Mbit/s
95th percentile per-packet one-way delay: 4168.144 ms
Loss rate: 91.39%
```

Run 3: Report of FillP-Sheep — Data Link

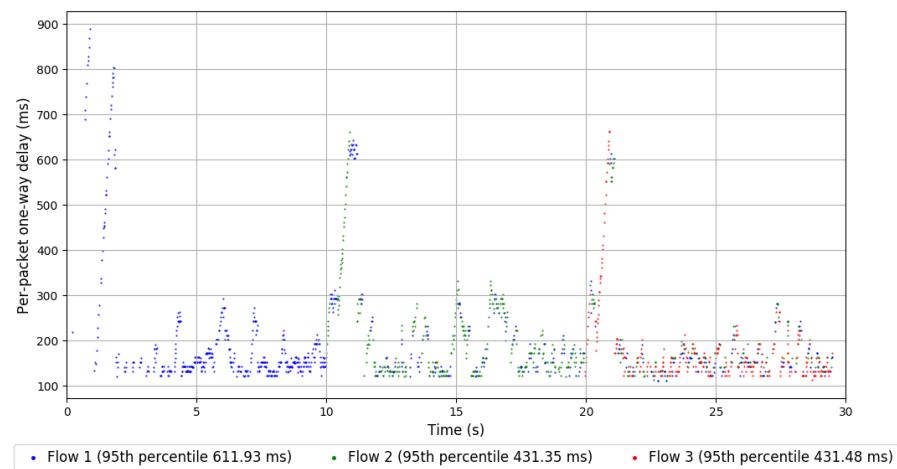
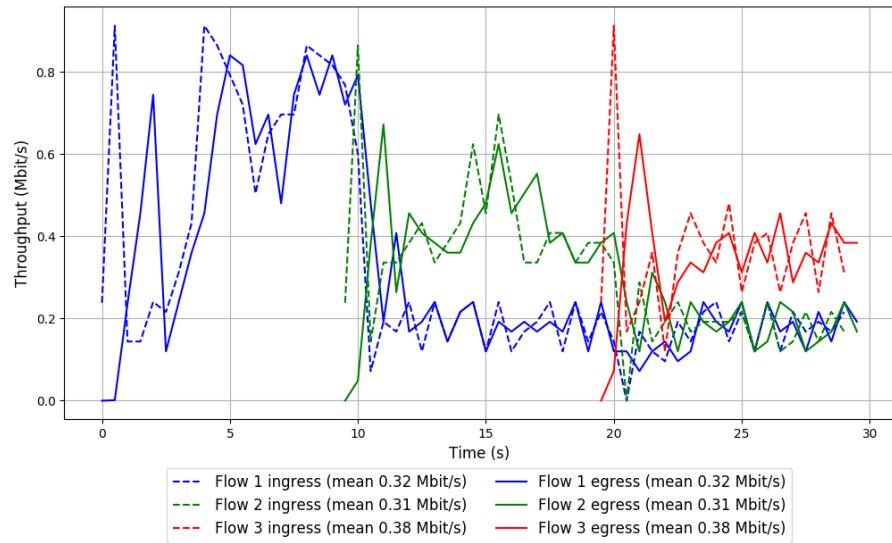


Run 1: Statistics of Indigo

```
Start at: 2018-12-02 03:11:21
End at: 2018-12-02 03:11:51
Local clock offset: -6.111 ms
Remote clock offset: 13.849 ms

# Below is generated by plot.py at 2018-12-02 04:17:24
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.65 Mbit/s
95th percentile per-packet one-way delay: 561.047 ms
Loss rate: 0.62%
-- Flow 1:
Average throughput: 0.32 Mbit/s
95th percentile per-packet one-way delay: 611.931 ms
Loss rate: 0.63%
-- Flow 2:
Average throughput: 0.31 Mbit/s
95th percentile per-packet one-way delay: 431.353 ms
Loss rate: 0.39%
-- Flow 3:
Average throughput: 0.38 Mbit/s
95th percentile per-packet one-way delay: 431.483 ms
Loss rate: 0.99%
```

Run 1: Report of Indigo — Data Link

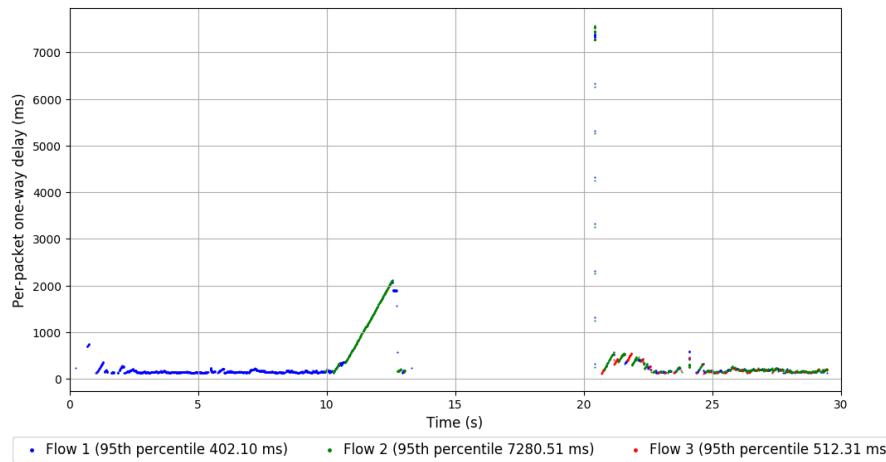
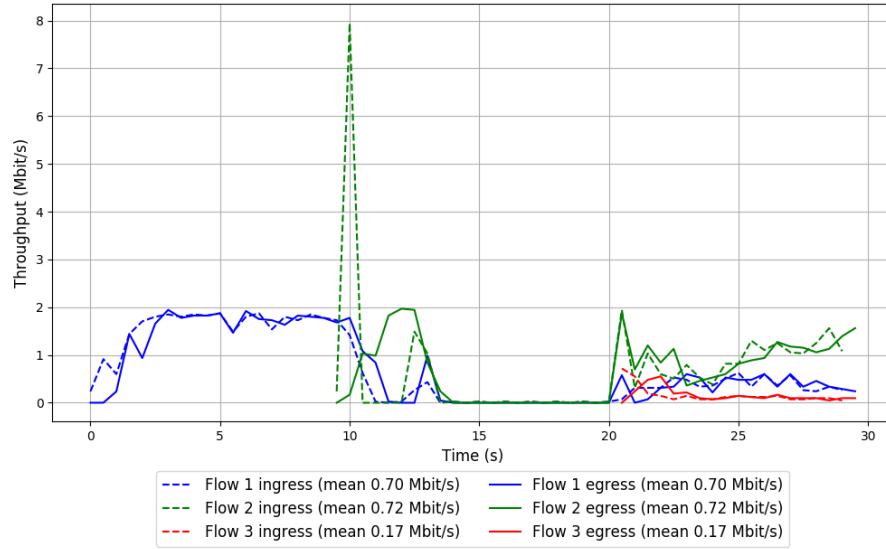


Run 2: Statistics of Indigo

```
Start at: 2018-12-02 03:34:40
End at: 2018-12-02 03:35:10
Local clock offset: -6.359 ms
Remote clock offset: 19.061 ms

# Below is generated by plot.py at 2018-12-02 04:17:24
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.23 Mbit/s
95th percentile per-packet one-way delay: 1902.477 ms
Loss rate: 0.33%
-- Flow 1:
Average throughput: 0.70 Mbit/s
95th percentile per-packet one-way delay: 402.098 ms
Loss rate: 0.17%
-- Flow 2:
Average throughput: 0.72 Mbit/s
95th percentile per-packet one-way delay: 7280.509 ms
Loss rate: 0.60%
-- Flow 3:
Average throughput: 0.17 Mbit/s
95th percentile per-packet one-way delay: 512.307 ms
Loss rate: 0.00%
```

Run 2: Report of Indigo — Data Link

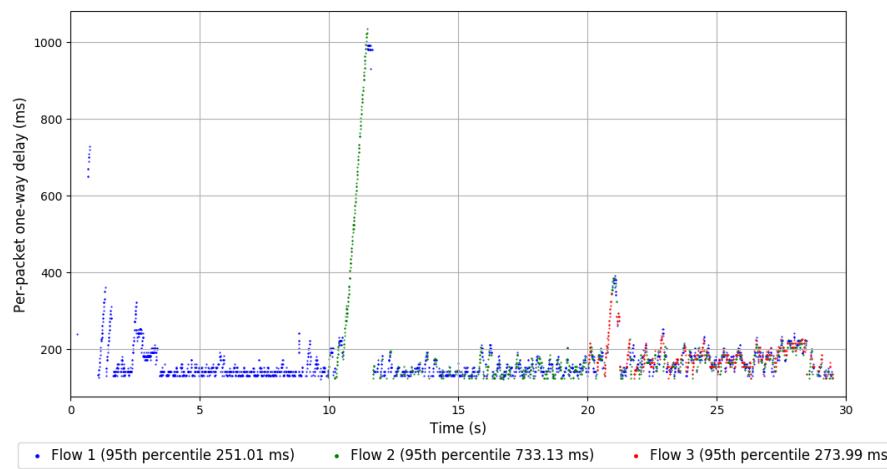
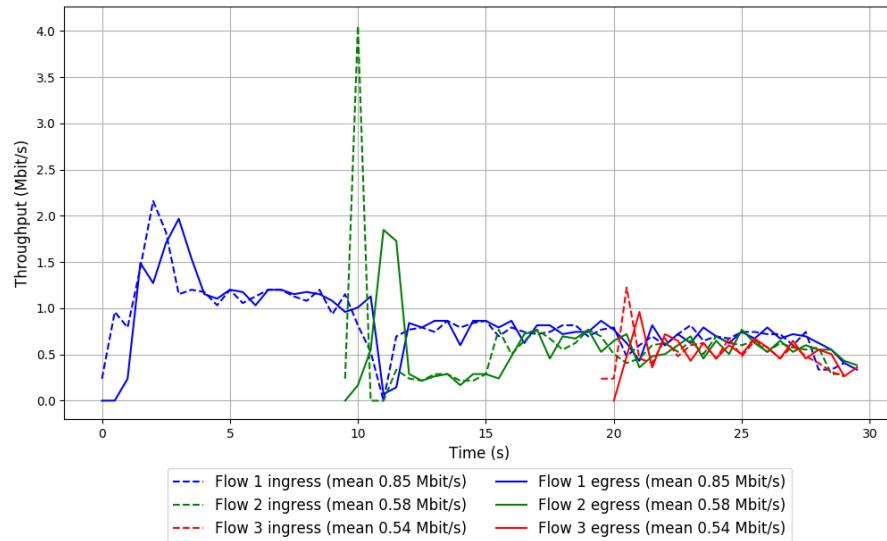


Run 3: Statistics of Indigo

```
Start at: 2018-12-02 03:58:02
End at: 2018-12-02 03:58:32
Local clock offset: -6.428 ms
Remote clock offset: 22.437 ms

# Below is generated by plot.py at 2018-12-02 04:17:24
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.41 Mbit/s
95th percentile per-packet one-way delay: 350.315 ms
Loss rate: 0.14%
-- Flow 1:
Average throughput: 0.85 Mbit/s
95th percentile per-packet one-way delay: 251.010 ms
Loss rate: 0.19%
-- Flow 2:
Average throughput: 0.58 Mbit/s
95th percentile per-packet one-way delay: 733.126 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.54 Mbit/s
95th percentile per-packet one-way delay: 273.988 ms
Loss rate: 0.23%
```

Run 3: Report of Indigo — Data Link

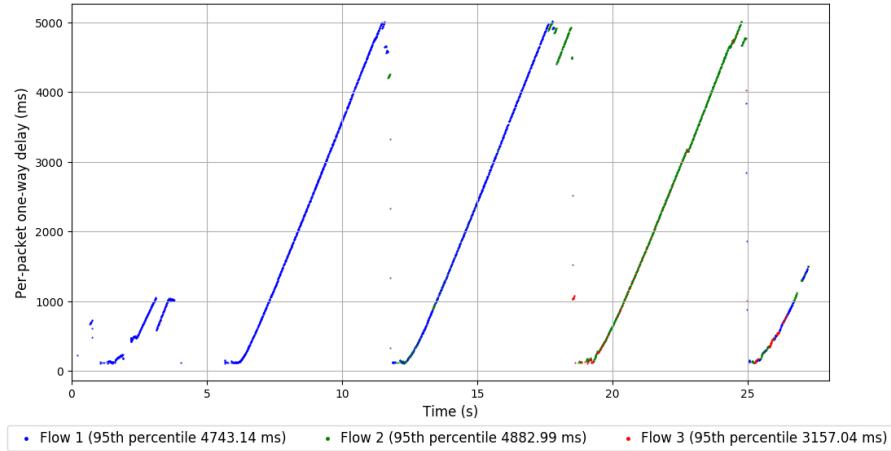
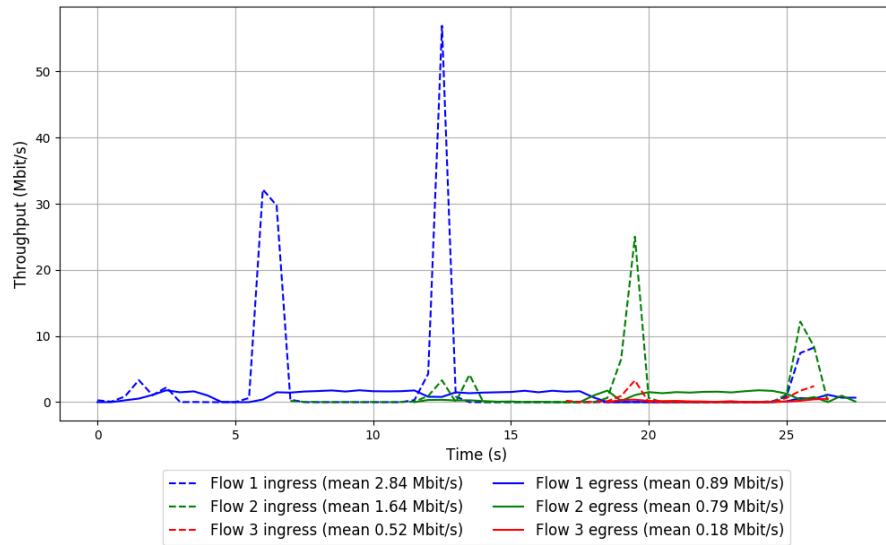


```
Run 1: Statistics of Indigo-96d2da3
```

```
Start at: 2018-12-02 03:16:15
End at: 2018-12-02 03:16:45
Local clock offset: -5.624 ms
Remote clock offset: 18.327 ms

# Below is generated by plot.py at 2018-12-02 04:17:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.40 Mbit/s
95th percentile per-packet one-way delay: 4807.435 ms
Loss rate: 66.10%
-- Flow 1:
Average throughput: 0.89 Mbit/s
95th percentile per-packet one-way delay: 4743.144 ms
Loss rate: 68.04%
-- Flow 2:
Average throughput: 0.79 Mbit/s
95th percentile per-packet one-way delay: 4882.987 ms
Loss rate: 61.04%
-- Flow 3:
Average throughput: 0.18 Mbit/s
95th percentile per-packet one-way delay: 3157.037 ms
Loss rate: 69.37%
```

Run 1: Report of Indigo-96d2da3 — Data Link

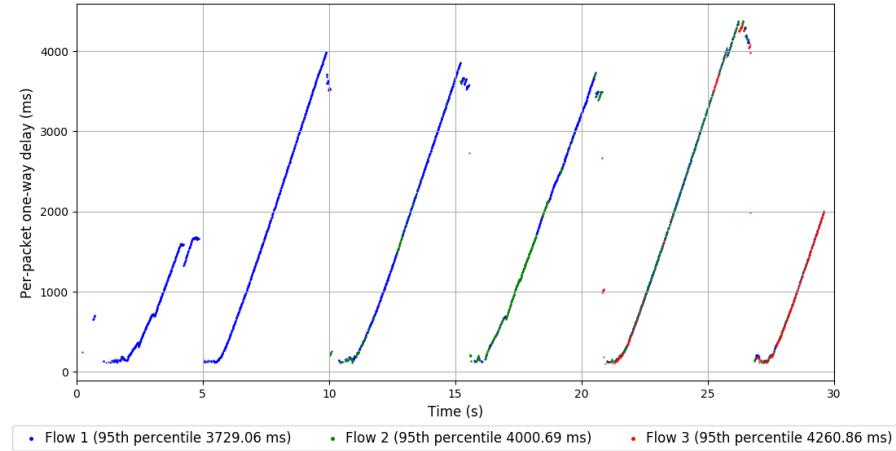
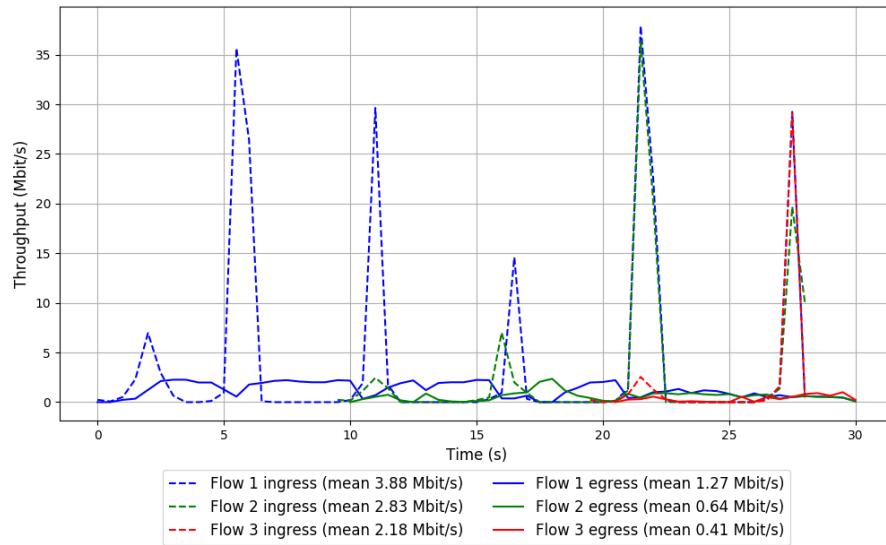


Run 2: Statistics of Indigo-96d2da3

```
Start at: 2018-12-02 03:39:35
End at: 2018-12-02 03:40:05
Local clock offset: -6.324 ms
Remote clock offset: 15.611 ms

# Below is generated by plot.py at 2018-12-02 04:17:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.82 Mbit/s
95th percentile per-packet one-way delay: 3799.781 ms
Loss rate: 70.51%
-- Flow 1:
Average throughput: 1.27 Mbit/s
95th percentile per-packet one-way delay: 3729.056 ms
Loss rate: 66.04%
-- Flow 2:
Average throughput: 0.64 Mbit/s
95th percentile per-packet one-way delay: 4000.688 ms
Loss rate: 76.37%
-- Flow 3:
Average throughput: 0.41 Mbit/s
95th percentile per-packet one-way delay: 4260.861 ms
Loss rate: 80.54%
```

Run 2: Report of Indigo-96d2da3 — Data Link

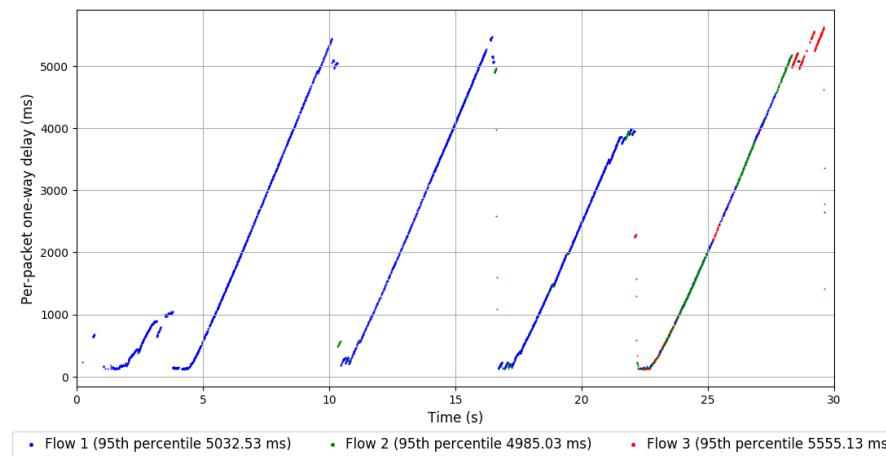
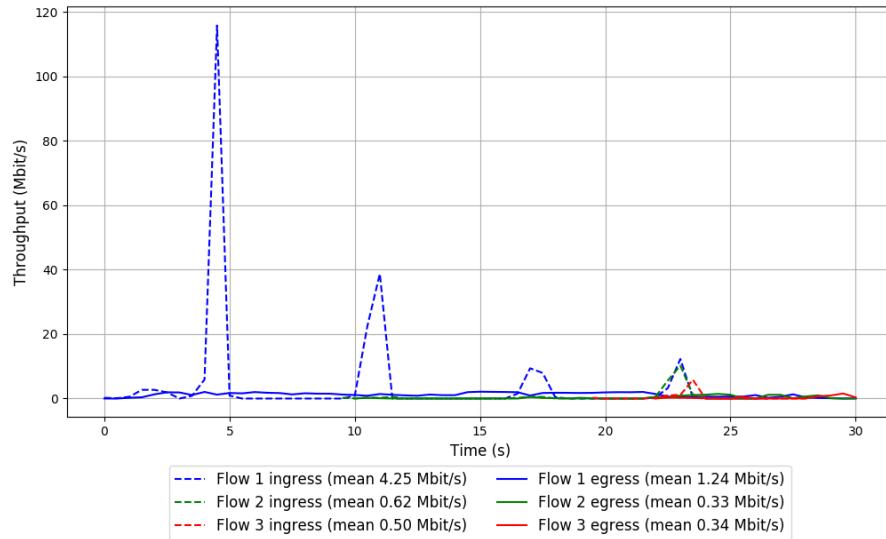


```
Run 3: Statistics of Indigo-96d2da3
```

```
Start at: 2018-12-02 04:02:57
End at: 2018-12-02 04:03:27
Local clock offset: -6.449 ms
Remote clock offset: 23.032 ms

# Below is generated by plot.py at 2018-12-02 04:17:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.54 Mbit/s
95th percentile per-packet one-way delay: 5145.453 ms
Loss rate: 64.90%
-- Flow 1:
Average throughput: 1.24 Mbit/s
95th percentile per-packet one-way delay: 5032.534 ms
Loss rate: 68.23%
-- Flow 2:
Average throughput: 0.33 Mbit/s
95th percentile per-packet one-way delay: 4985.029 ms
Loss rate: 37.66%
-- Flow 3:
Average throughput: 0.34 Mbit/s
95th percentile per-packet one-way delay: 5555.126 ms
Loss rate: 39.88%
```

Run 3: Report of Indigo-96d2da3 — Data Link

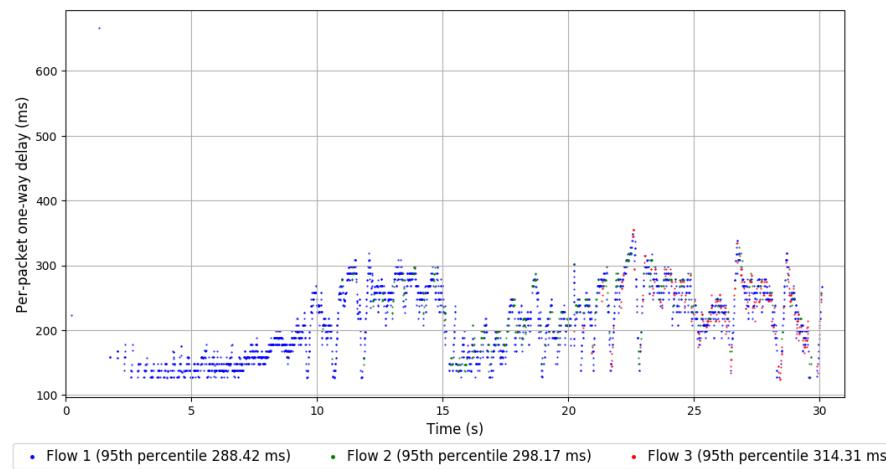
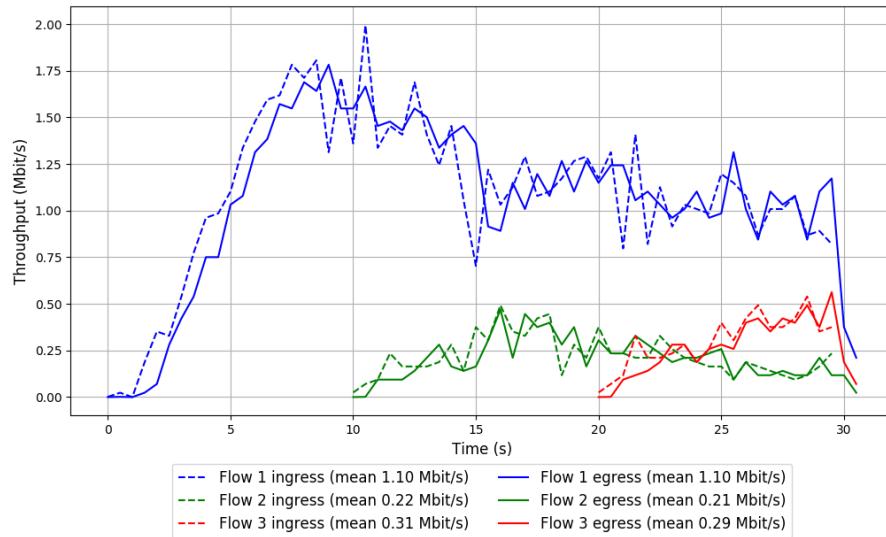


```
Run 1: Statistics of LEDBAT
```

```
Start at: 2018-12-02 03:18:42
End at: 2018-12-02 03:19:12
Local clock offset: -6.364 ms
Remote clock offset: 19.628 ms

# Below is generated by plot.py at 2018-12-02 04:17:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.33 Mbit/s
95th percentile per-packet one-way delay: 297.135 ms
Loss rate: 1.11%
-- Flow 1:
Average throughput: 1.10 Mbit/s
95th percentile per-packet one-way delay: 288.416 ms
Loss rate: 0.64%
-- Flow 2:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 298.174 ms
Loss rate: 2.95%
-- Flow 3:
Average throughput: 0.29 Mbit/s
95th percentile per-packet one-way delay: 314.312 ms
Loss rate: 3.53%
```

Run 1: Report of LEDBAT — Data Link

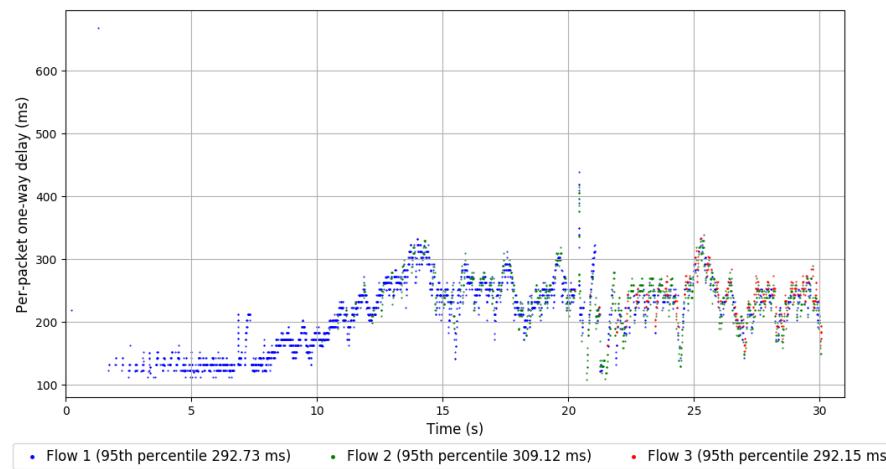
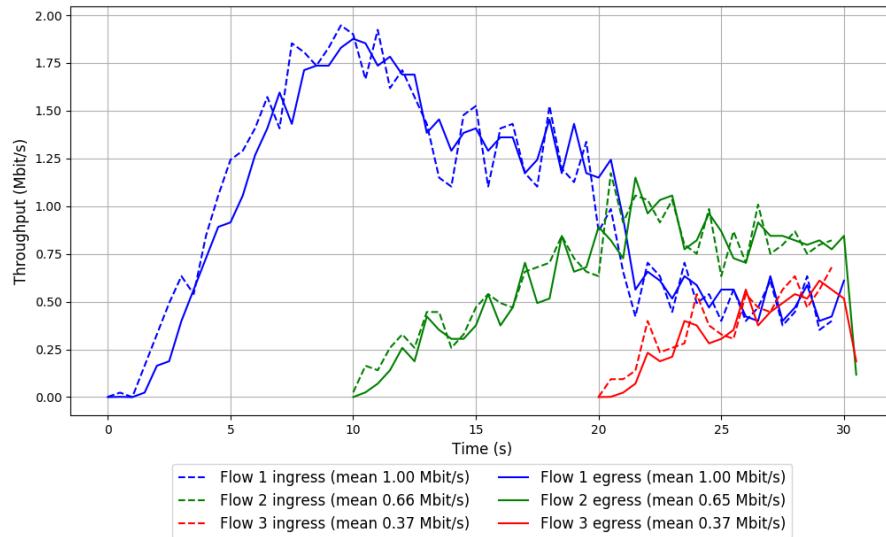


Run 2: Statistics of LEDBAT

```
Start at: 2018-12-02 03:42:03
End at: 2018-12-02 03:42:33
Local clock offset: -5.567 ms
Remote clock offset: 15.857 ms

# Below is generated by plot.py at 2018-12-02 04:17:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.56 Mbit/s
95th percentile per-packet one-way delay: 299.228 ms
Loss rate: 0.45%
-- Flow 1:
Average throughput: 1.00 Mbit/s
95th percentile per-packet one-way delay: 292.730 ms
Loss rate: 0.12%
-- Flow 2:
Average throughput: 0.65 Mbit/s
95th percentile per-packet one-way delay: 309.125 ms
Loss rate: 0.72%
-- Flow 3:
Average throughput: 0.37 Mbit/s
95th percentile per-packet one-way delay: 292.146 ms
Loss rate: 2.22%
```

Run 2: Report of LEDBAT — Data Link

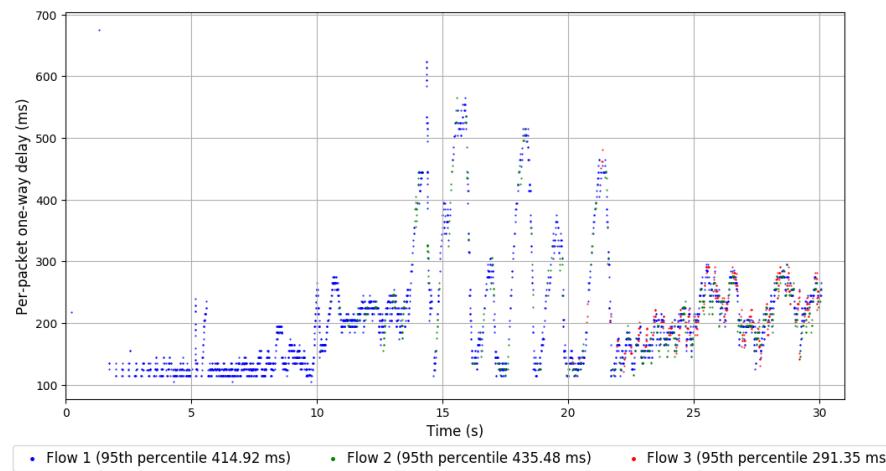
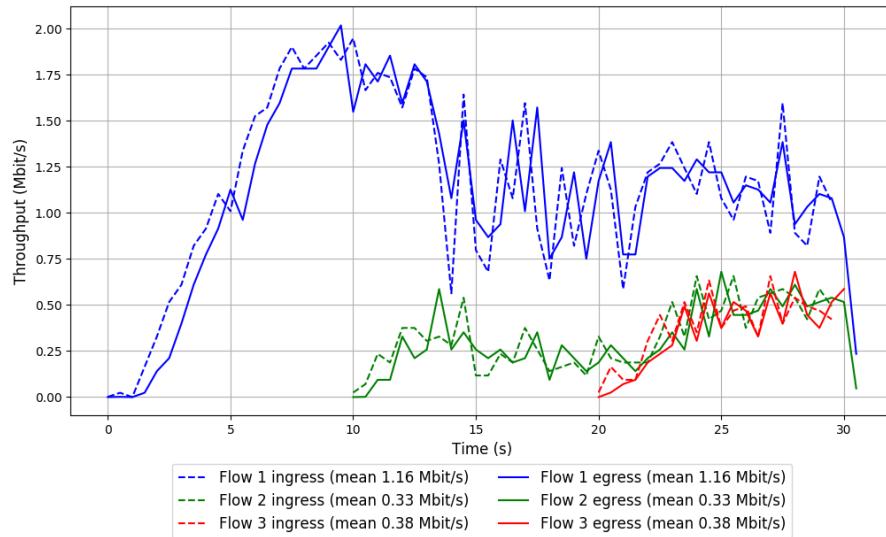


Run 3: Statistics of LEDBAT

```
Start at: 2018-12-02 04:05:25
End at: 2018-12-02 04:05:55
Local clock offset: -5.716 ms
Remote clock offset: 19.162 ms

# Below is generated by plot.py at 2018-12-02 04:17:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.50 Mbit/s
95th percentile per-packet one-way delay: 414.824 ms
Loss rate: 0.70%
-- Flow 1:
Average throughput: 1.16 Mbit/s
95th percentile per-packet one-way delay: 414.924 ms
Loss rate: 0.57%
-- Flow 2:
Average throughput: 0.33 Mbit/s
95th percentile per-packet one-way delay: 435.476 ms
Loss rate: 1.24%
-- Flow 3:
Average throughput: 0.38 Mbit/s
95th percentile per-packet one-way delay: 291.347 ms
Loss rate: 0.93%
```

Run 3: Report of LEDBAT — Data Link

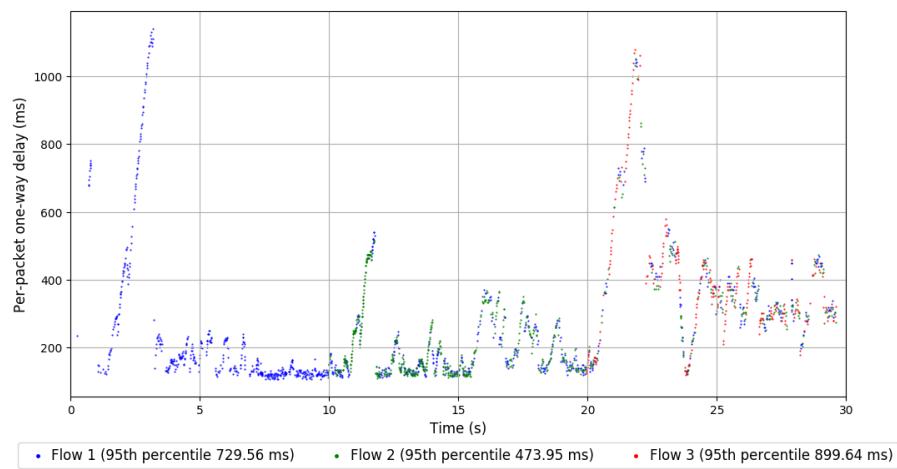
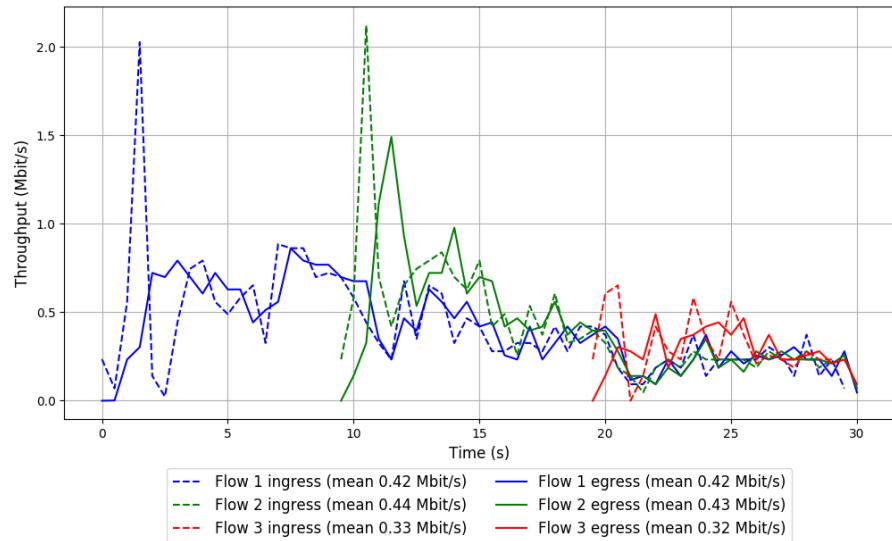


Run 1: Statistics of Indigo-Muses

```
Start at: 2018-12-02 03:10:07
End at: 2018-12-02 03:10:37
Local clock offset: -6.102 ms
Remote clock offset: 12.438 ms

# Below is generated by plot.py at 2018-12-02 04:17:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.81 Mbit/s
95th percentile per-packet one-way delay: 696.603 ms
Loss rate: 0.73%
-- Flow 1:
Average throughput: 0.42 Mbit/s
95th percentile per-packet one-way delay: 729.557 ms
Loss rate: 0.56%
-- Flow 2:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 473.954 ms
Loss rate: 0.68%
-- Flow 3:
Average throughput: 0.32 Mbit/s
95th percentile per-packet one-way delay: 899.642 ms
Loss rate: 1.48%
```

Run 1: Report of Indigo-Muses — Data Link

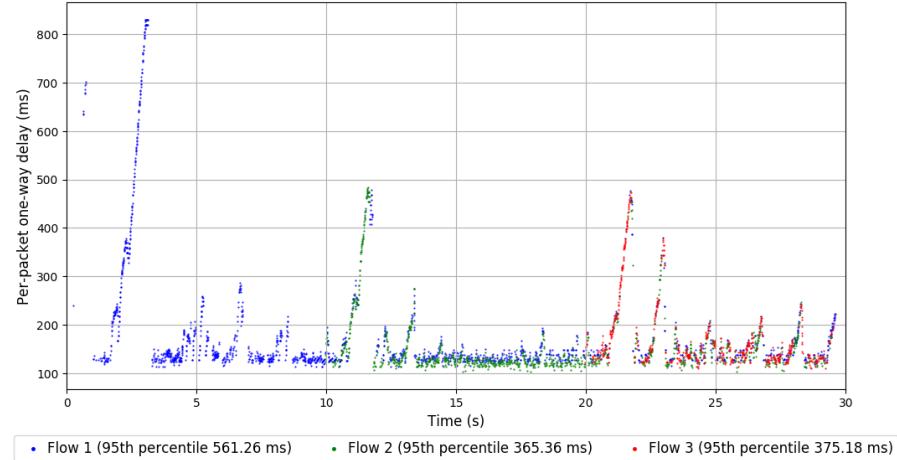
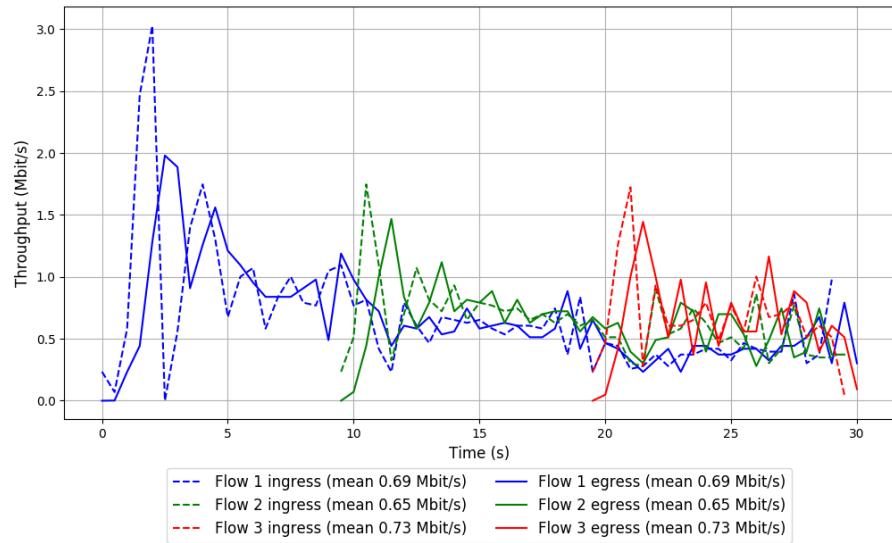


Run 2: Statistics of Indigo-Muses

```
Start at: 2018-12-02 03:33:27
End at: 2018-12-02 03:33:57
Local clock offset: -6.289 ms
Remote clock offset: 15.095 ms

# Below is generated by plot.py at 2018-12-02 04:17:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.36 Mbit/s
95th percentile per-packet one-way delay: 434.199 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 0.69 Mbit/s
95th percentile per-packet one-way delay: 561.257 ms
Loss rate: 0.12%
-- Flow 2:
Average throughput: 0.65 Mbit/s
95th percentile per-packet one-way delay: 365.357 ms
Loss rate: 0.45%
-- Flow 3:
Average throughput: 0.73 Mbit/s
95th percentile per-packet one-way delay: 375.175 ms
Loss rate: 0.98%
```

Run 2: Report of Indigo-Muses — Data Link

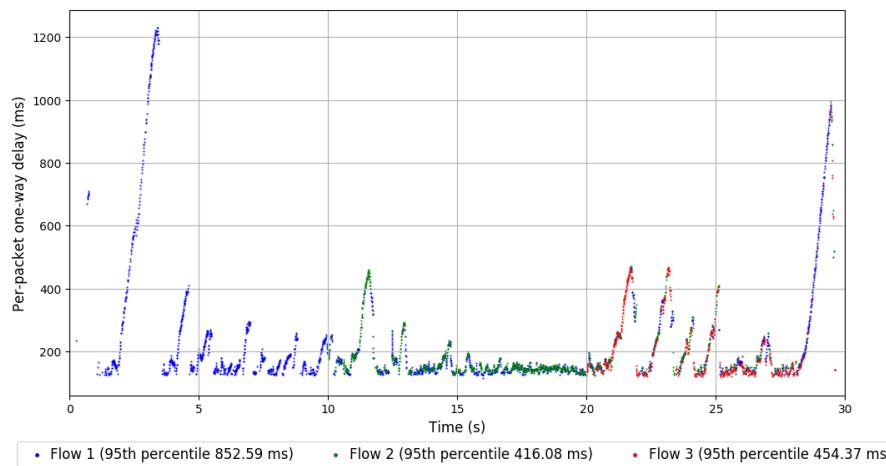
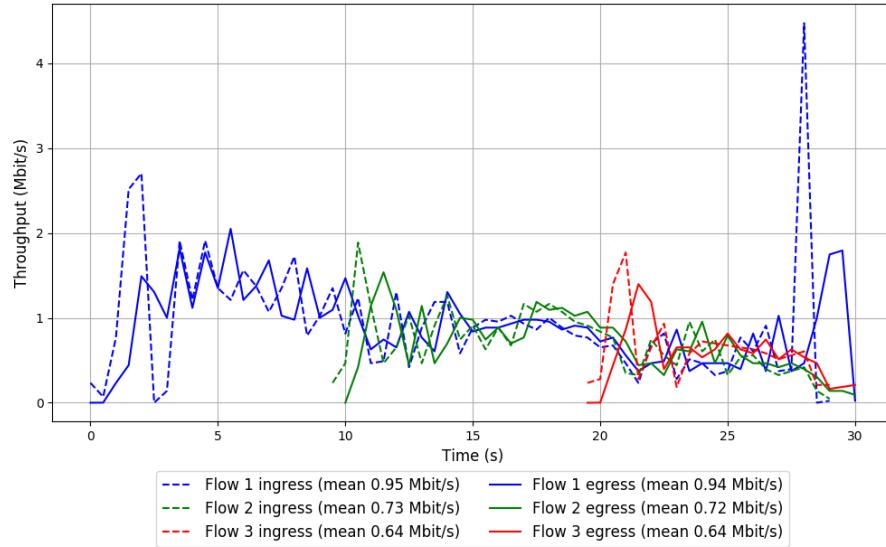


Run 3: Statistics of Indigo-Muses

```
Start at: 2018-12-02 03:56:49
End at: 2018-12-02 03:57:19
Local clock offset: -6.417 ms
Remote clock offset: 22.391 ms

# Below is generated by plot.py at 2018-12-02 04:17:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.62 Mbit/s
95th percentile per-packet one-way delay: 638.204 ms
Loss rate: 0.15%
-- Flow 1:
Average throughput: 0.94 Mbit/s
95th percentile per-packet one-way delay: 852.586 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.72 Mbit/s
95th percentile per-packet one-way delay: 416.081 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.64 Mbit/s
95th percentile per-packet one-way delay: 454.374 ms
Loss rate: 1.13%
```

Run 3: Report of Indigo-Muses — Data Link

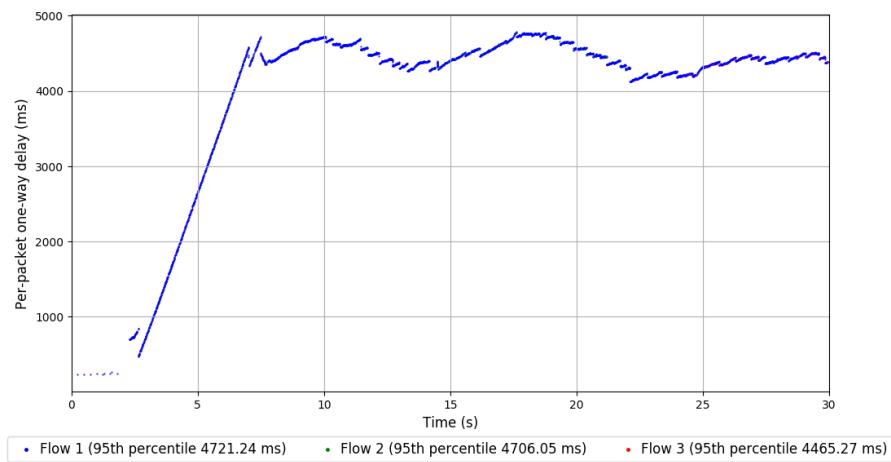
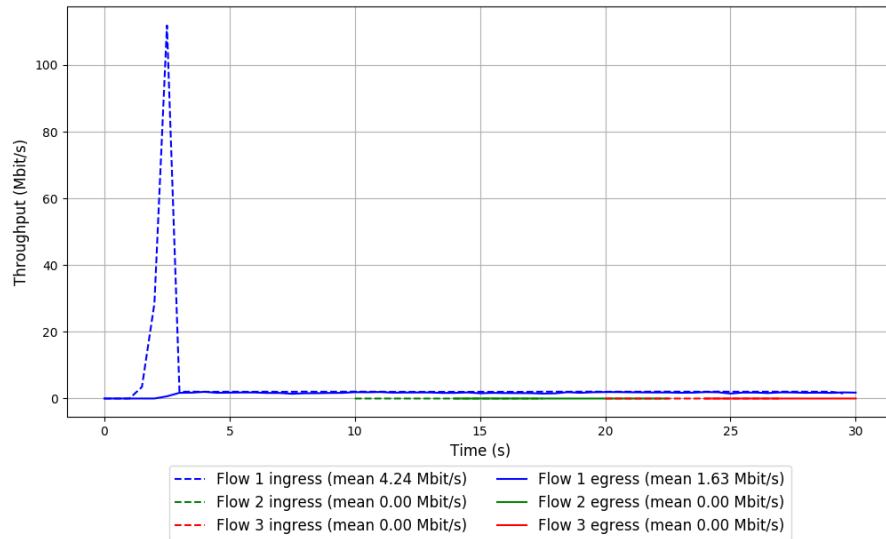


Run 1: Statistics of PCC-Allegro

```
Start at: 2018-12-02 03:07:39
End at: 2018-12-02 03:08:09
Local clock offset: -5.875 ms
Remote clock offset: 17.335 ms

# Below is generated by plot.py at 2018-12-02 04:17:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.63 Mbit/s
95th percentile per-packet one-way delay: 4720.834 ms
Loss rate: 61.69%
-- Flow 1:
Average throughput: 1.63 Mbit/s
95th percentile per-packet one-way delay: 4721.240 ms
Loss rate: 61.71%
-- Flow 2:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 4706.053 ms
Loss rate: 5.31%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 4465.271 ms
Loss rate: 21.22%
```

Run 1: Report of PCC-Allegro — Data Link

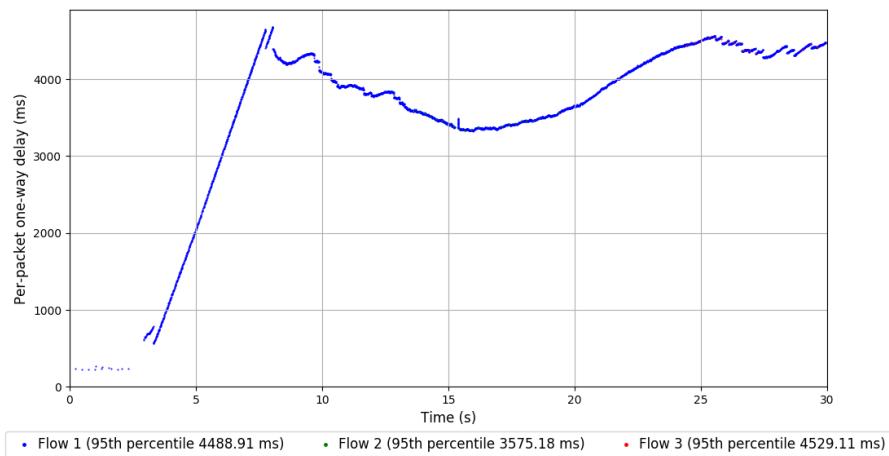
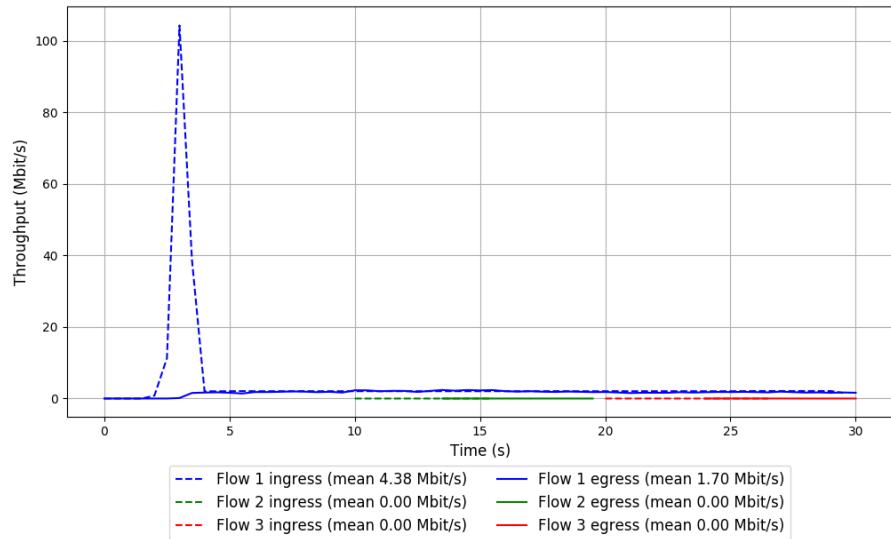


Run 2: Statistics of PCC-Allegro

```
Start at: 2018-12-02 03:30:59
End at: 2018-12-02 03:31:29
Local clock offset: -5.495 ms
Remote clock offset: 14.78 ms

# Below is generated by plot.py at 2018-12-02 04:17:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.70 Mbit/s
95th percentile per-packet one-way delay: 4489.966 ms
Loss rate: 61.40%
-- Flow 1:
Average throughput: 1.70 Mbit/s
95th percentile per-packet one-way delay: 4488.912 ms
Loss rate: 61.42%
-- Flow 2:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 3575.176 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 4529.115 ms
Loss rate: 28.02%
```

Run 2: Report of PCC-Allegro — Data Link

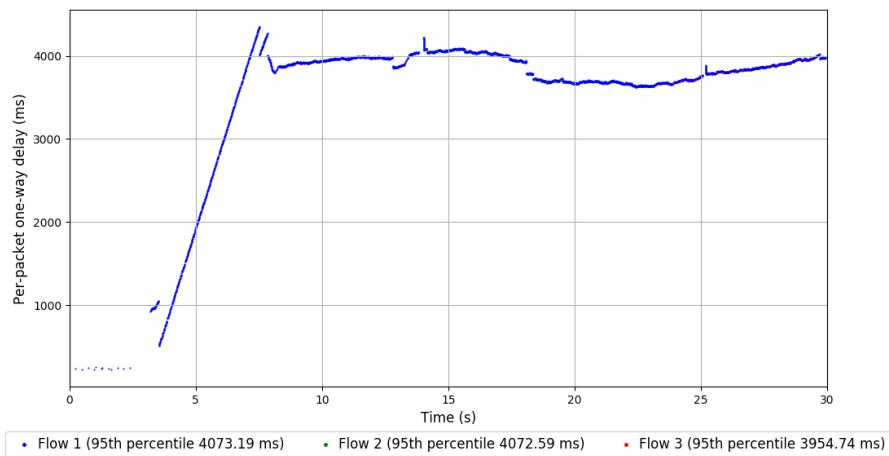
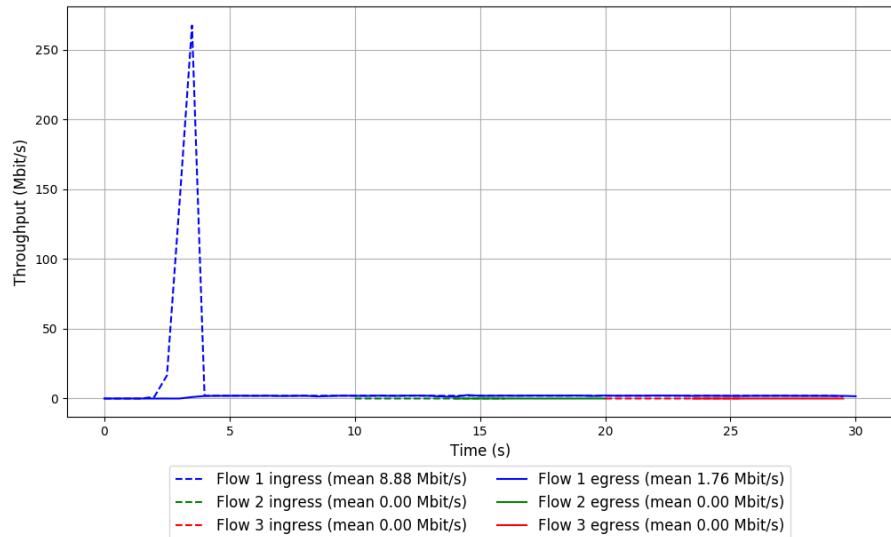


Run 3: Statistics of PCC-Allegro

```
Start at: 2018-12-02 03:54:21
End at: 2018-12-02 03:54:51
Local clock offset: -5.636 ms
Remote clock offset: 16.978 ms

# Below is generated by plot.py at 2018-12-02 04:17:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.76 Mbit/s
95th percentile per-packet one-way delay: 4073.193 ms
Loss rate: 80.29%
-- Flow 1:
Average throughput: 1.76 Mbit/s
95th percentile per-packet one-way delay: 4073.193 ms
Loss rate: 80.31%
-- Flow 2:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 4072.591 ms
Loss rate: 5.60%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 3954.739 ms
Loss rate: 5.60%
```

Run 3: Report of PCC-Allegro — Data Link



Run 1: Statistics of PCC-Expr

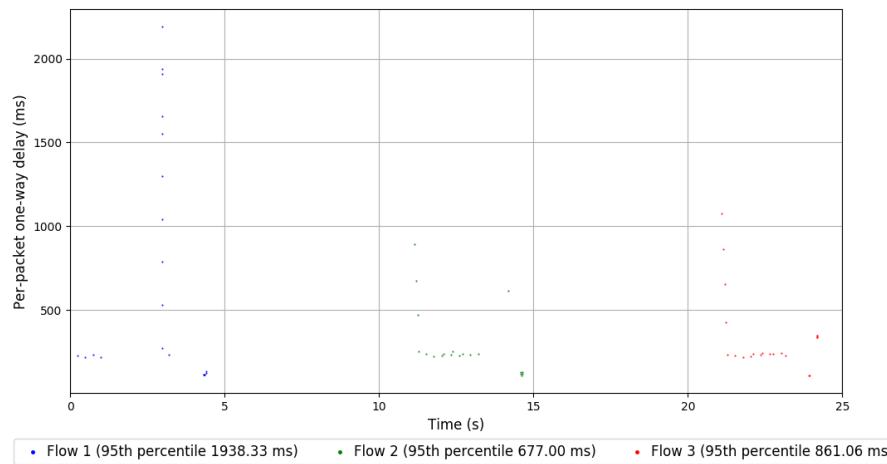
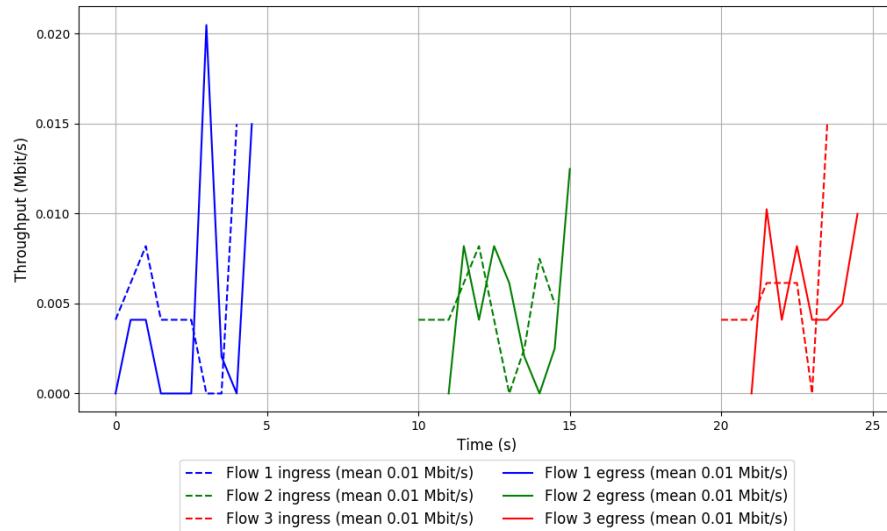
Start at: 2018-12-02 03:17:29

End at: 2018-12-02 03:17:59

Local clock offset: -5.678 ms

Remote clock offset: 13.477 ms

Run 1: Report of PCC-Expr — Data Link

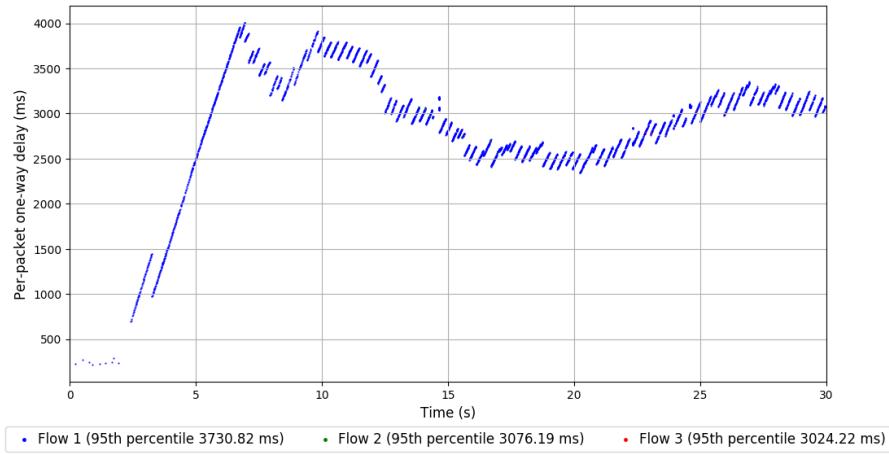
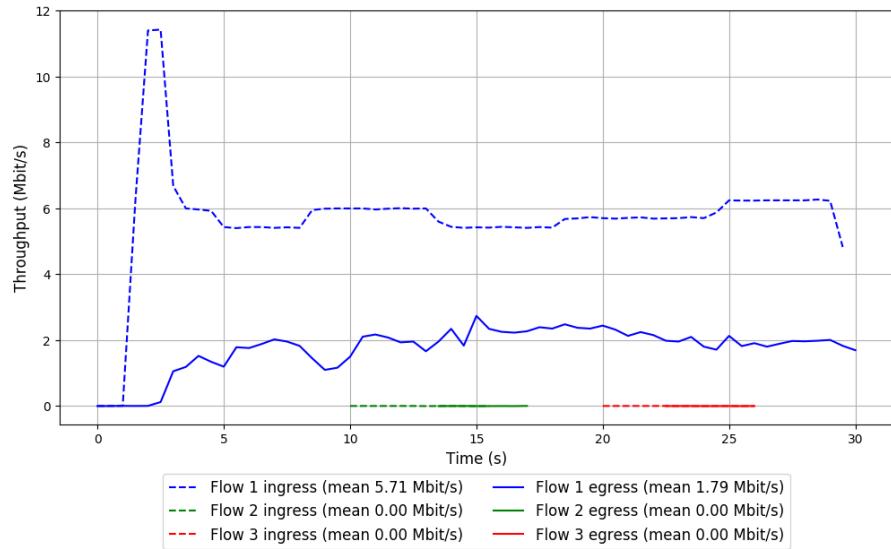


Run 2: Statistics of PCC-Expr

```
Start at: 2018-12-02 03:40:49
End at: 2018-12-02 03:41:19
Local clock offset: -5.56 ms
Remote clock offset: 15.525 ms

# Below is generated by plot.py at 2018-12-02 04:17:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.79 Mbit/s
95th percentile per-packet one-way delay: 3730.298 ms
Loss rate: 68.76%
-- Flow 1:
Average throughput: 1.79 Mbit/s
95th percentile per-packet one-way delay: 3730.820 ms
Loss rate: 68.76%
-- Flow 2:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 3076.188 ms
Loss rate: 61.85%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 3024.222 ms
Loss rate: 74.09%
```

Run 2: Report of PCC-Expr — Data Link

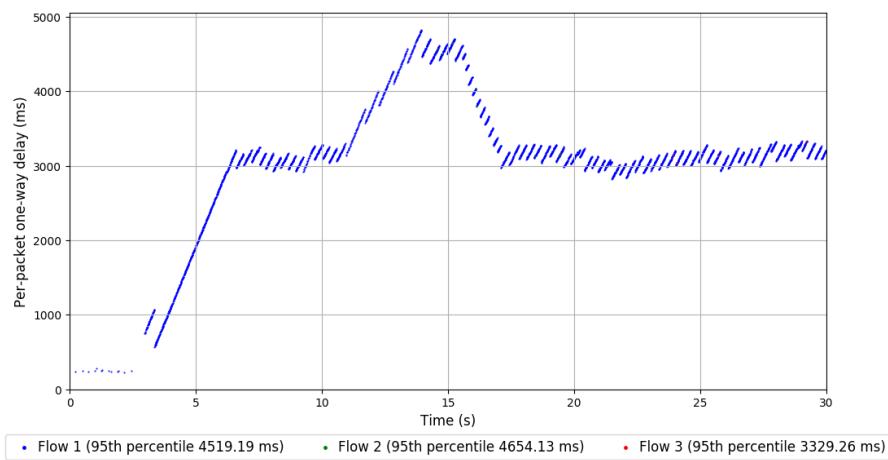
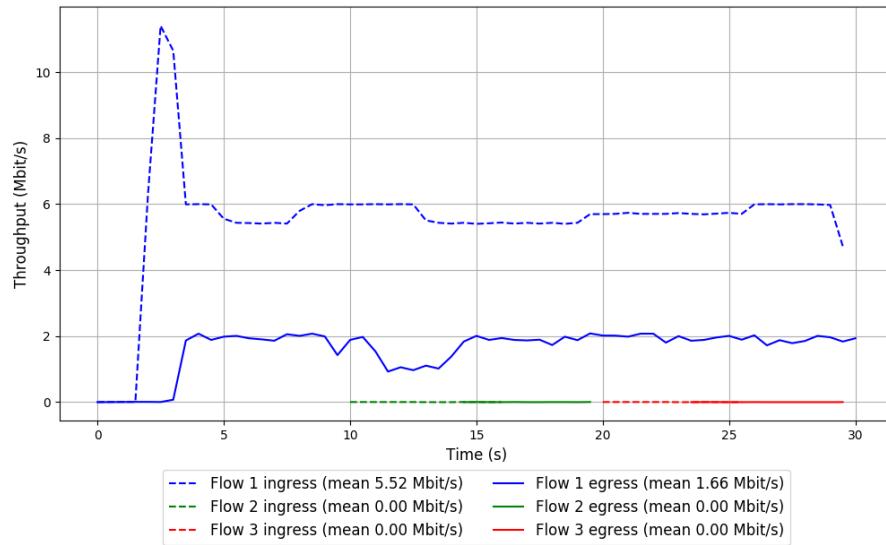


Run 3: Statistics of PCC-Expr

```
Start at: 2018-12-02 04:04:11
End at: 2018-12-02 04:04:41
Local clock offset: -5.701 ms
Remote clock offset: 24.18 ms

# Below is generated by plot.py at 2018-12-02 04:17:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.66 Mbit/s
95th percentile per-packet one-way delay: 4520.057 ms
Loss rate: 70.14%
-- Flow 1:
Average throughput: 1.66 Mbit/s
95th percentile per-packet one-way delay: 4519.188 ms
Loss rate: 70.14%
-- Flow 2:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 4654.127 ms
Loss rate: 45.42%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 3329.261 ms
Loss rate: 73.05%
```

Run 3: Report of PCC-Expr — Data Link

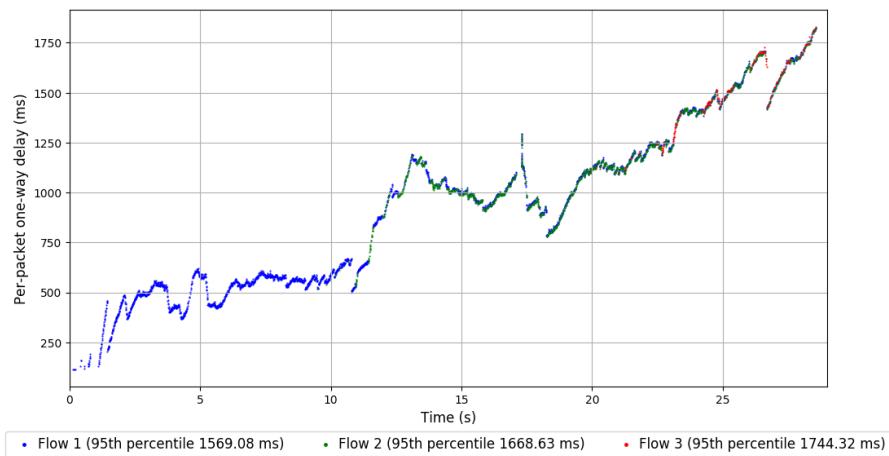
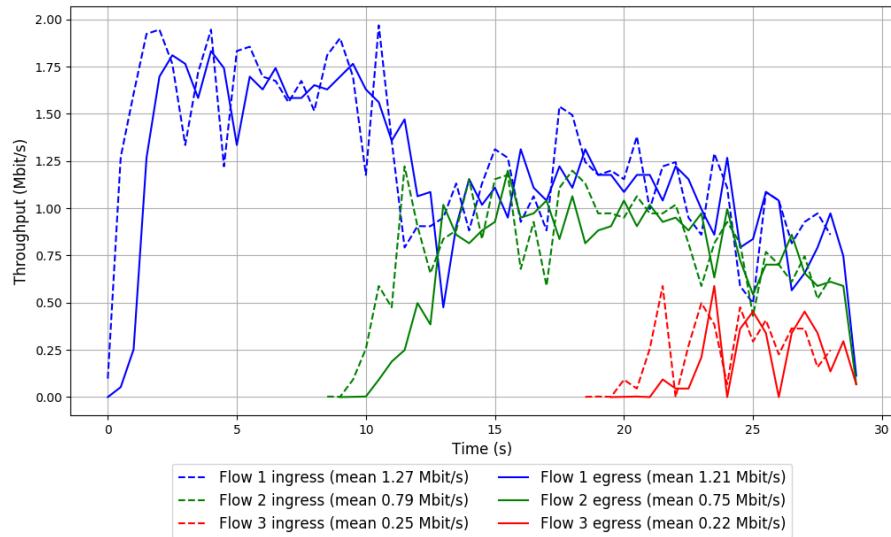


Run 1: Statistics of QUIC Cubic

```
Start at: 2018-12-02 03:08:53
End at: 2018-12-02 03:09:23
Local clock offset: -5.979 ms
Remote clock offset: 13.542 ms

# Below is generated by plot.py at 2018-12-02 04:17:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.79 Mbit/s
95th percentile per-packet one-way delay: 1656.017 ms
Loss rate: 5.91%
-- Flow 1:
Average throughput: 1.21 Mbit/s
95th percentile per-packet one-way delay: 1569.082 ms
Loss rate: 4.44%
-- Flow 2:
Average throughput: 0.75 Mbit/s
95th percentile per-packet one-way delay: 1668.628 ms
Loss rate: 7.11%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1744.321 ms
Loss rate: 20.50%
```

Run 1: Report of QUIC Cubic — Data Link

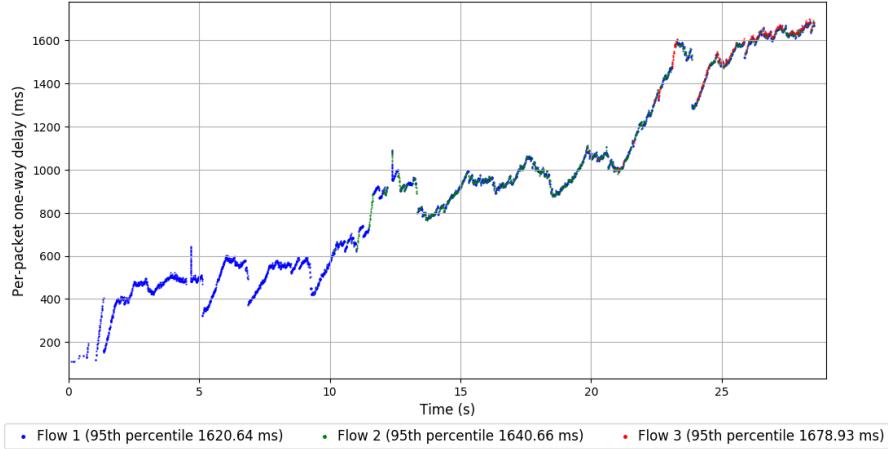
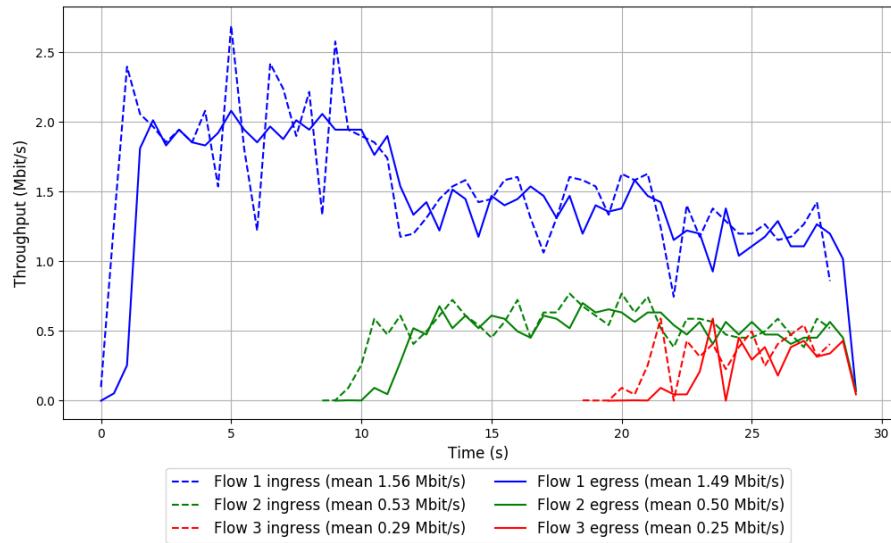


Run 2: Statistics of QUIC Cubic

```
Start at: 2018-12-02 03:32:13
End at: 2018-12-02 03:32:43
Local clock offset: -6.326 ms
Remote clock offset: 14.812 ms

# Below is generated by plot.py at 2018-12-02 04:17:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.90 Mbit/s
95th percentile per-packet one-way delay: 1630.936 ms
Loss rate: 6.18%
-- Flow 1:
Average throughput: 1.49 Mbit/s
95th percentile per-packet one-way delay: 1620.644 ms
Loss rate: 4.52%
-- Flow 2:
Average throughput: 0.50 Mbit/s
95th percentile per-packet one-way delay: 1640.660 ms
Loss rate: 8.19%
-- Flow 3:
Average throughput: 0.25 Mbit/s
95th percentile per-packet one-way delay: 1678.930 ms
Loss rate: 24.84%
```

Run 2: Report of QUIC Cubic — Data Link

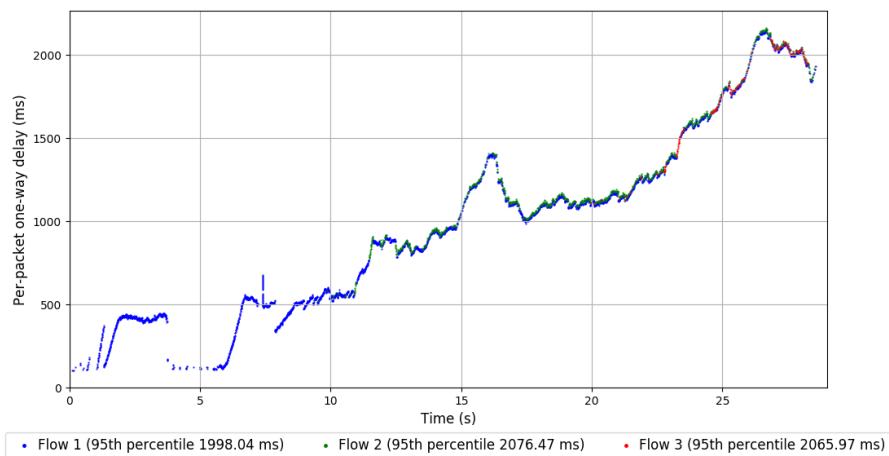
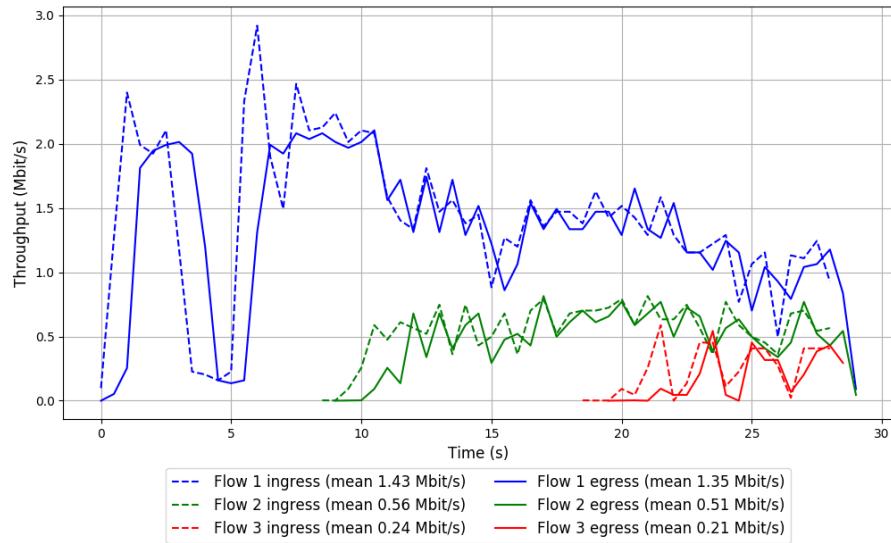


Run 3: Statistics of QUIC Cubic

```
Start at: 2018-12-02 03:55:35
End at: 2018-12-02 03:56:05
Local clock offset: -5.637 ms
Remote clock offset: 17.144 ms

# Below is generated by plot.py at 2018-12-02 04:17:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.76 Mbit/s
95th percentile per-packet one-way delay: 2033.876 ms
Loss rate: 7.08%
-- Flow 1:
Average throughput: 1.35 Mbit/s
95th percentile per-packet one-way delay: 1998.041 ms
Loss rate: 5.03%
-- Flow 2:
Average throughput: 0.51 Mbit/s
95th percentile per-packet one-way delay: 2076.473 ms
Loss rate: 10.47%
-- Flow 3:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 2065.971 ms
Loss rate: 26.49%
```

Run 3: Report of QUIC Cubic — Data Link

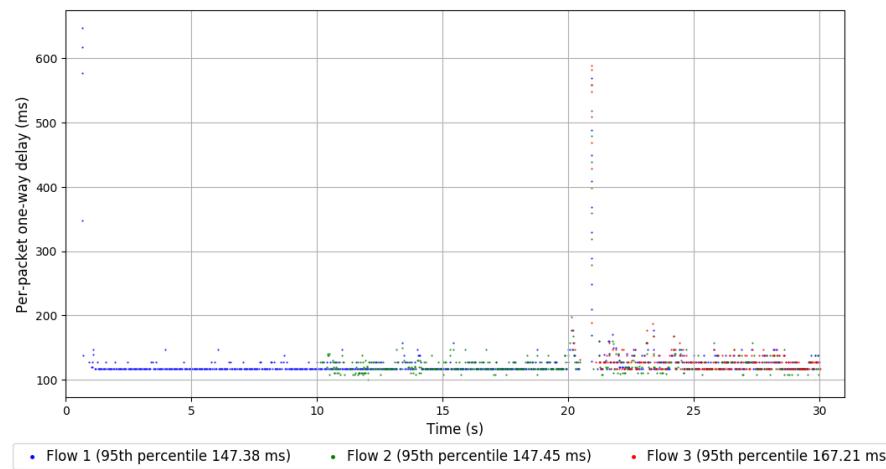
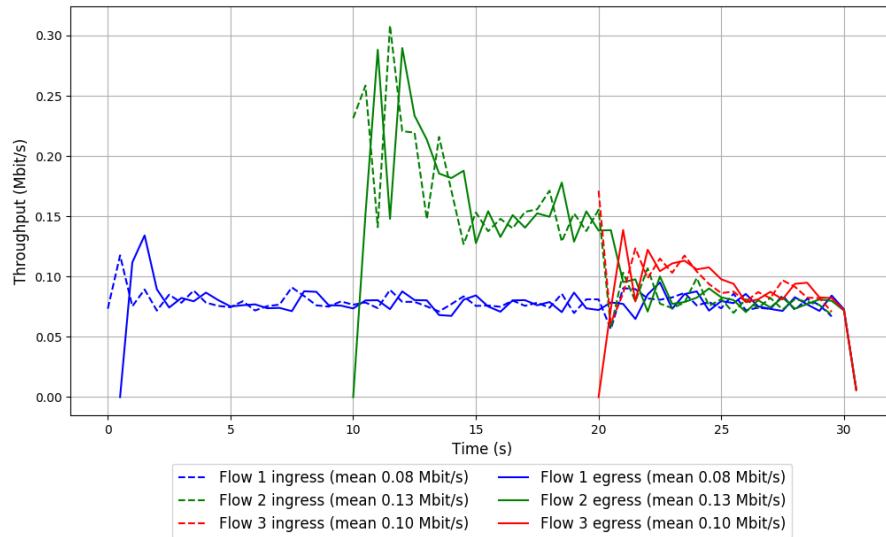


Run 1: Statistics of SCReAM

```
Start at: 2018-12-02 03:13:48
End at: 2018-12-02 03:14:18
Local clock offset: -6.227 ms
Remote clock offset: 14.162 ms

# Below is generated by plot.py at 2018-12-02 04:17:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.20 Mbit/s
95th percentile per-packet one-way delay: 147.414 ms
Loss rate: 0.42%
-- Flow 1:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 147.384 ms
Loss rate: 0.51%
-- Flow 2:
Average throughput: 0.13 Mbit/s
95th percentile per-packet one-way delay: 147.448 ms
Loss rate: 0.25%
-- Flow 3:
Average throughput: 0.10 Mbit/s
95th percentile per-packet one-way delay: 167.213 ms
Loss rate: 0.68%
```

Run 1: Report of SCReAM — Data Link

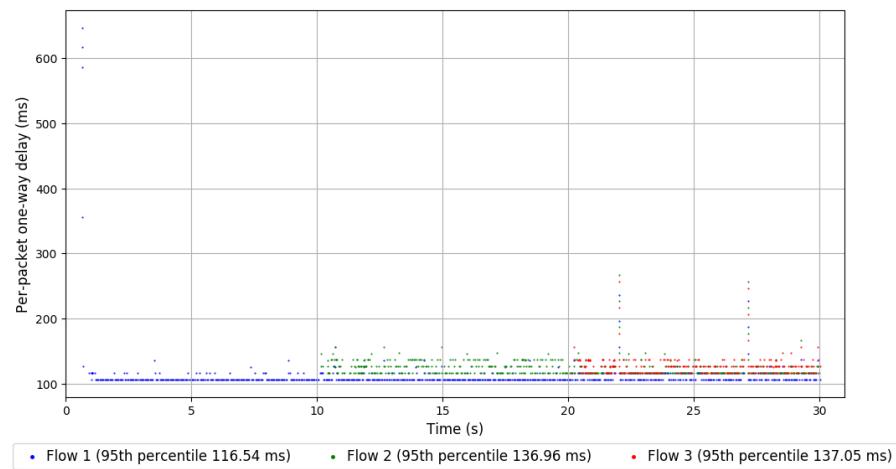
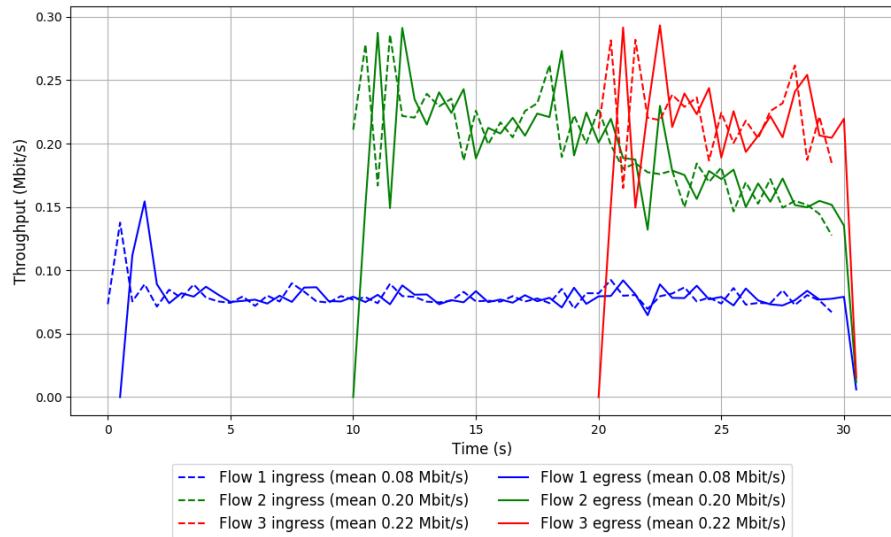


Run 2: Statistics of SCReAM

```
Start at: 2018-12-02 03:37:08
End at: 2018-12-02 03:37:38
Local clock offset: -5.536 ms
Remote clock offset: 16.47 ms

# Below is generated by plot.py at 2018-12-02 04:17:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.29 Mbit/s
95th percentile per-packet one-way delay: 136.899 ms
Loss rate: 0.25%
-- Flow 1:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 116.539 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.20 Mbit/s
95th percentile per-packet one-way delay: 136.960 ms
Loss rate: 0.35%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 137.051 ms
Loss rate: 0.35%
```

Run 2: Report of SCReAM — Data Link

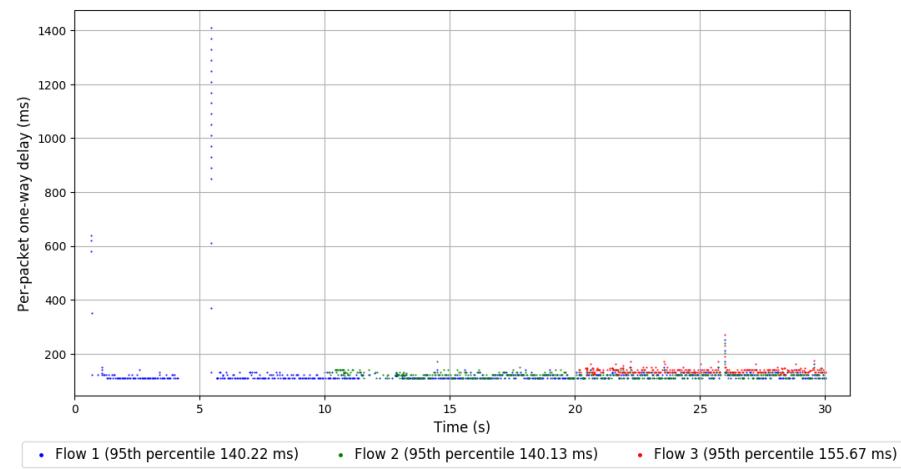
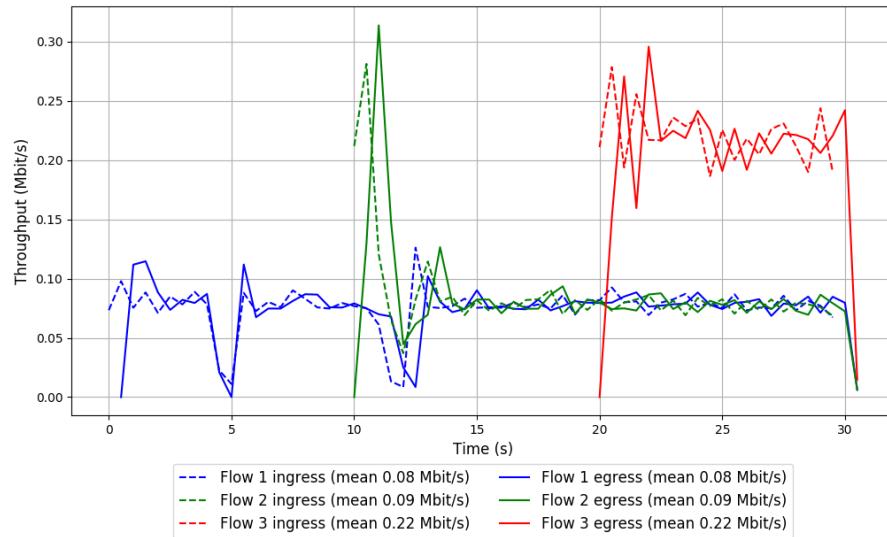


Run 3: Statistics of SCReAM

```
Start at: 2018-12-02 04:00:31
End at: 2018-12-02 04:01:01
Local clock offset: -6.428 ms
Remote clock offset: 21.589 ms

# Below is generated by plot.py at 2018-12-02 04:17:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 145.447 ms
Loss rate: 0.22%
-- Flow 1:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 140.217 ms
Loss rate: 0.15%
-- Flow 2:
Average throughput: 0.09 Mbit/s
95th percentile per-packet one-way delay: 140.134 ms
Loss rate: 0.17%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 155.668 ms
Loss rate: 0.34%
```

Run 3: Report of SCReAM — Data Link

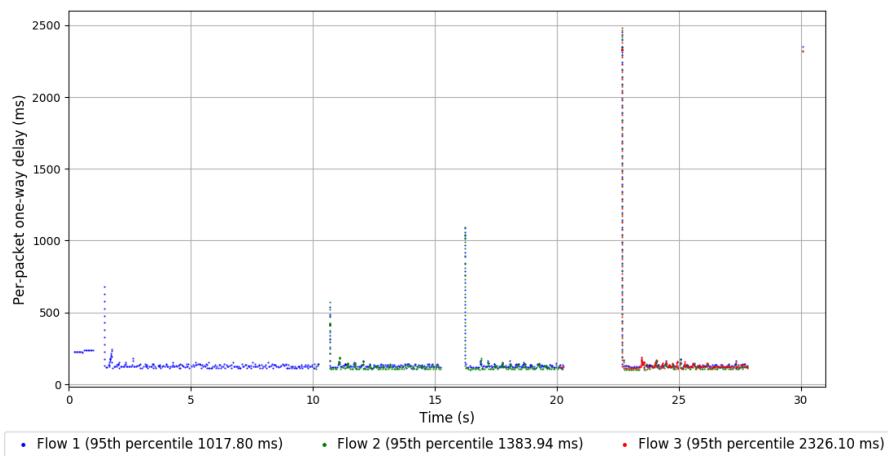
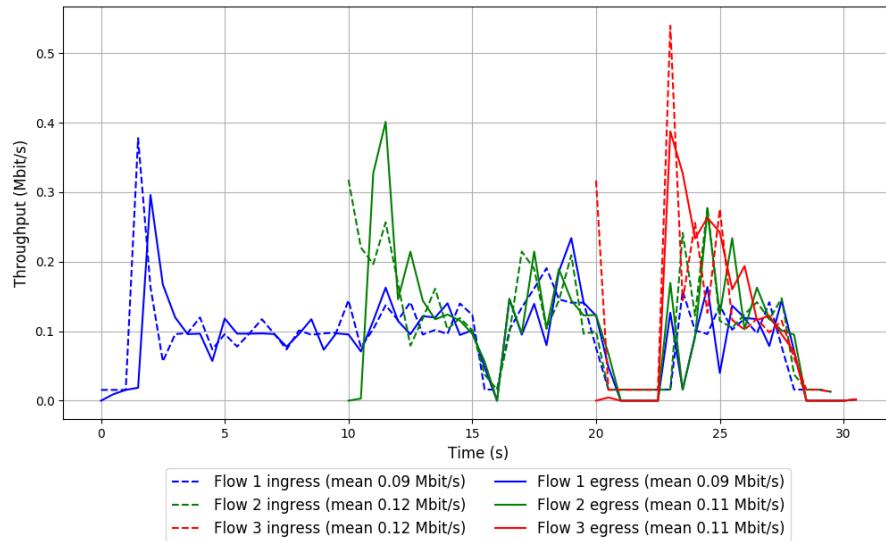


Run 1: Statistics of Sprout

```
Start at: 2018-12-02 03:19:56
End at: 2018-12-02 03:20:26
Local clock offset: -6.334 ms
Remote clock offset: 18.67 ms

# Below is generated by plot.py at 2018-12-02 04:17:43
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.20 Mbit/s
95th percentile per-packet one-way delay: 1633.598 ms
Loss rate: 3.94%
-- Flow 1:
Average throughput: 0.09 Mbit/s
95th percentile per-packet one-way delay: 1017.798 ms
Loss rate: 2.59%
-- Flow 2:
Average throughput: 0.11 Mbit/s
95th percentile per-packet one-way delay: 1383.944 ms
Loss rate: 3.85%
-- Flow 3:
Average throughput: 0.11 Mbit/s
95th percentile per-packet one-way delay: 2326.096 ms
Loss rate: 7.26%
```

Run 1: Report of Sprout — Data Link

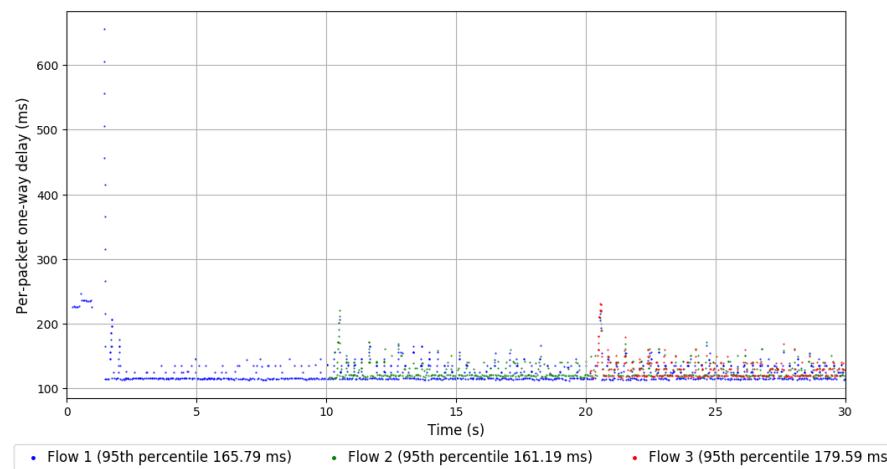
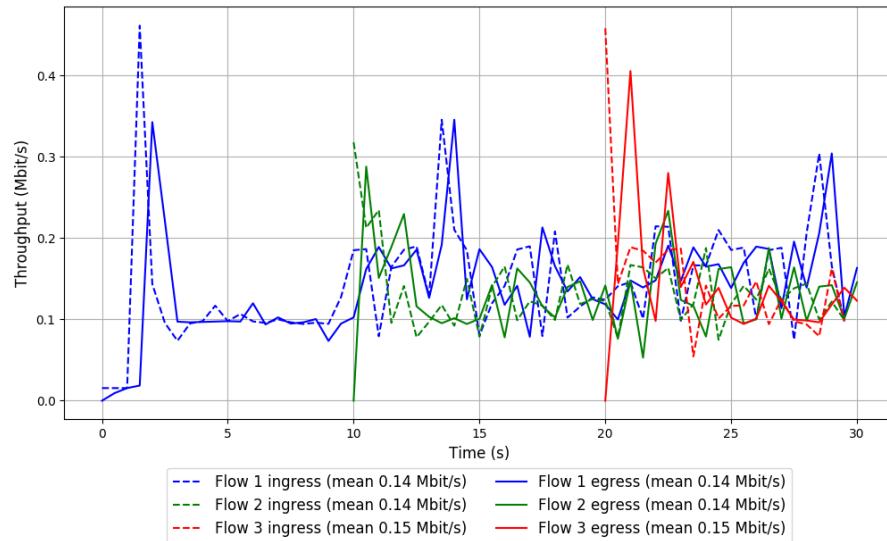


Run 2: Statistics of Sprout

```
Start at: 2018-12-02 03:43:16
End at: 2018-12-02 03:43:46
Local clock offset: -5.575 ms
Remote clock offset: 21.111 ms

# Below is generated by plot.py at 2018-12-02 04:17:43
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.28 Mbit/s
95th percentile per-packet one-way delay: 161.787 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 165.793 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 161.191 ms
Loss rate: 0.03%
-- Flow 3:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 179.591 ms
Loss rate: 0.05%
```

Run 2: Report of Sprout — Data Link

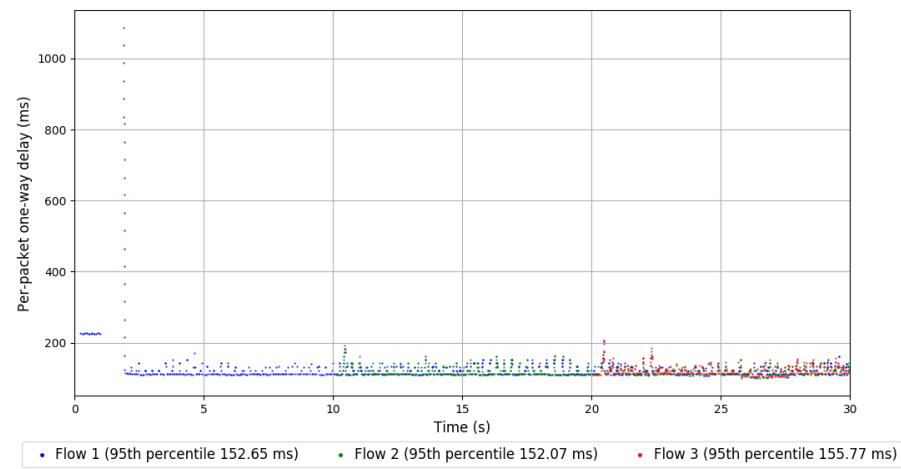
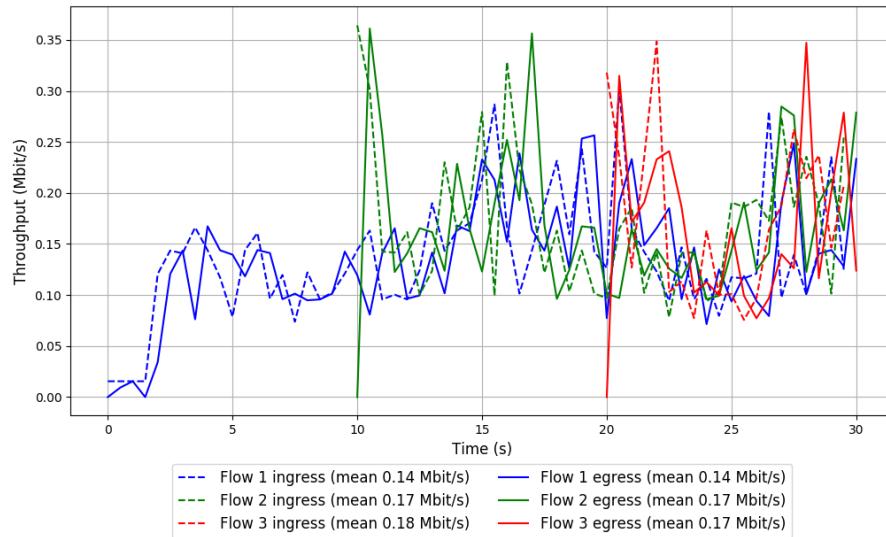


Run 3: Statistics of Sprout

```
Start at: 2018-12-02 04:06:39
End at: 2018-12-02 04:07:09
Local clock offset: -5.728 ms
Remote clock offset: 22.195 ms

# Below is generated by plot.py at 2018-12-02 04:17:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.31 Mbit/s
95th percentile per-packet one-way delay: 152.613 ms
Loss rate: 0.50%
-- Flow 1:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 152.653 ms
Loss rate: 0.04%
-- Flow 2:
Average throughput: 0.17 Mbit/s
95th percentile per-packet one-way delay: 152.067 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 0.17 Mbit/s
95th percentile per-packet one-way delay: 155.770 ms
Loss rate: 2.50%
```

Run 3: Report of Sprout — Data Link

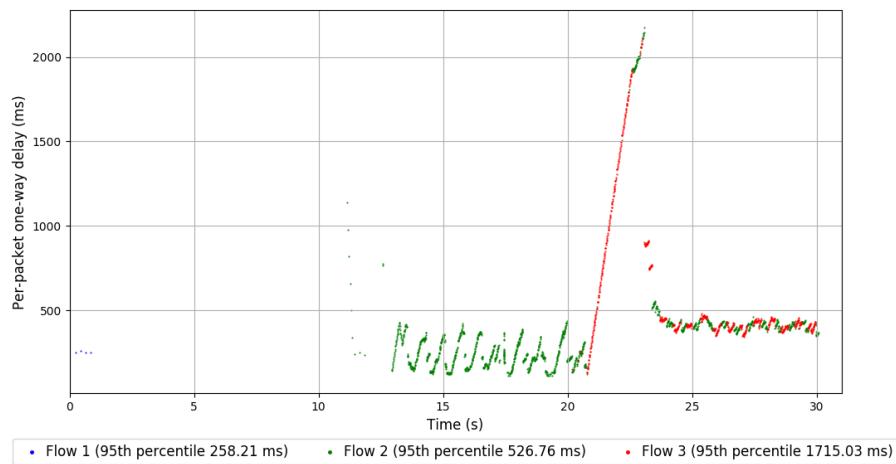
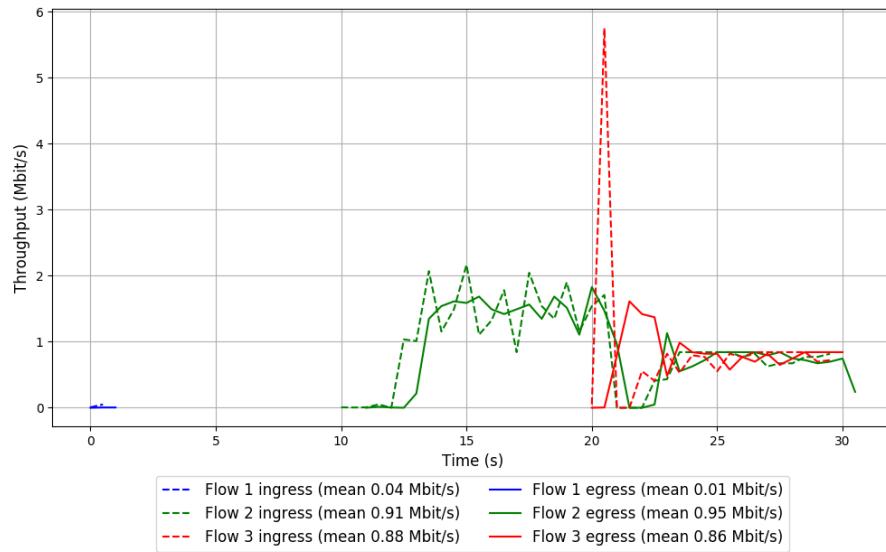


Run 1: Statistics of TaoVA-100x

```
Start at: 2018-12-02 03:15:01
End at: 2018-12-02 03:15:31
Local clock offset: -5.559 ms
Remote clock offset: 18.244 ms

# Below is generated by plot.py at 2018-12-02 04:17:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.88 Mbit/s
95th percentile per-packet one-way delay: 1576.354 ms
Loss rate: 2.19%
-- Flow 1:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 258.206 ms
Loss rate: 85.45%
-- Flow 2:
Average throughput: 0.95 Mbit/s
95th percentile per-packet one-way delay: 526.765 ms
Loss rate: 1.26%
-- Flow 3:
Average throughput: 0.86 Mbit/s
95th percentile per-packet one-way delay: 1715.030 ms
Loss rate: 3.86%
```

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

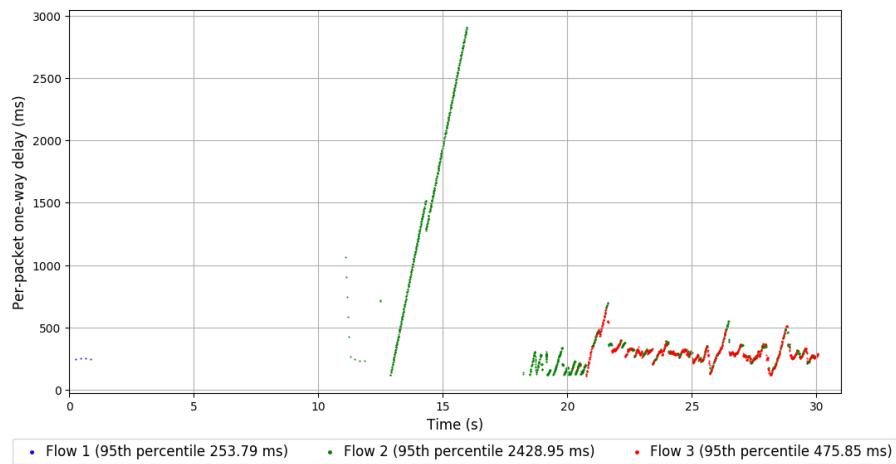
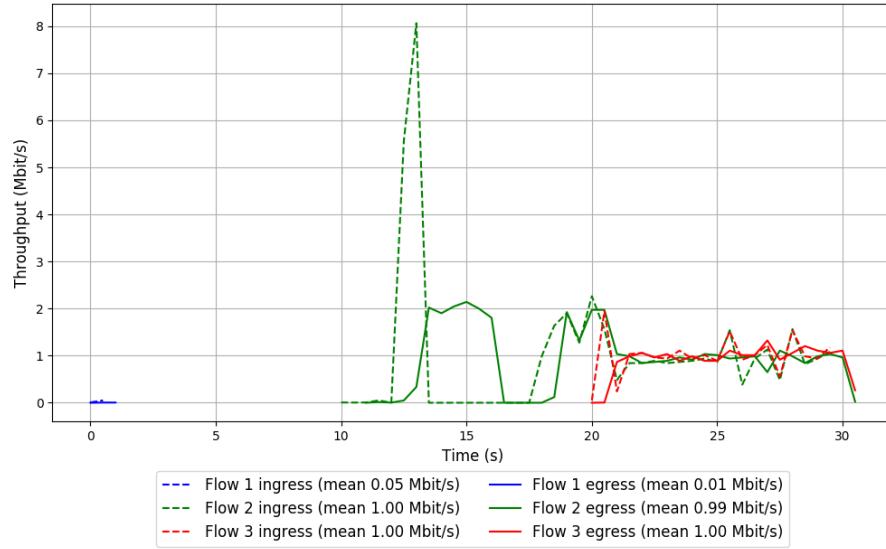


Run 2: Statistics of TaoVA-100x

```
Start at: 2018-12-02 03:38:21
End at: 2018-12-02 03:38:51
Local clock offset: -6.309 ms
Remote clock offset: 15.517 ms

# Below is generated by plot.py at 2018-12-02 04:17:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.96 Mbit/s
95th percentile per-packet one-way delay: 2190.950 ms
Loss rate: 3.95%
-- Flow 1:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 253.787 ms
Loss rate: 85.45%
-- Flow 2:
Average throughput: 0.99 Mbit/s
95th percentile per-packet one-way delay: 2428.954 ms
Loss rate: 5.04%
-- Flow 3:
Average throughput: 1.00 Mbit/s
95th percentile per-packet one-way delay: 475.853 ms
Loss rate: 1.56%
```

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

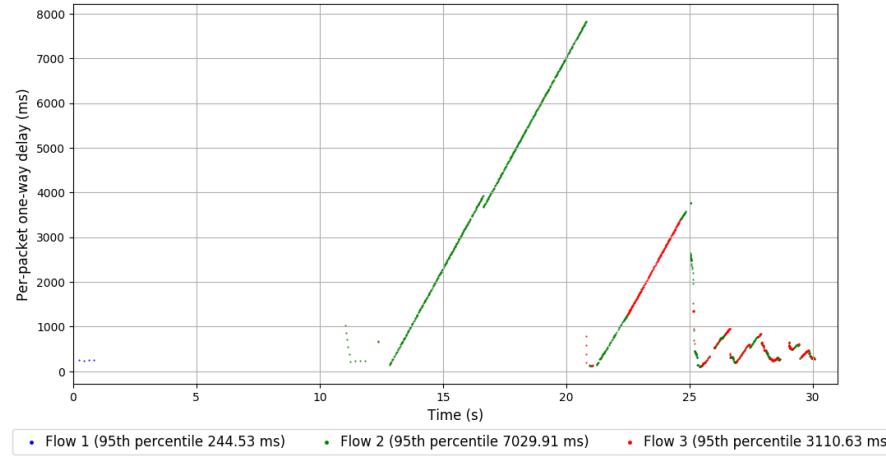
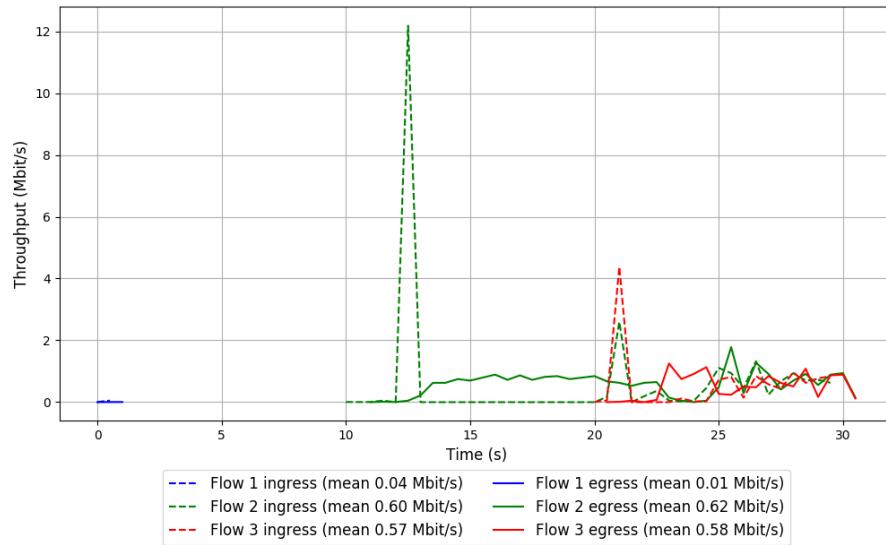


Run 3: Statistics of TaoVA-100x

```
Start at: 2018-12-02 04:01:44
End at: 2018-12-02 04:02:14
Local clock offset: -5.751 ms
Remote clock offset: 18.871 ms

# Below is generated by plot.py at 2018-12-02 04:17:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.58 Mbit/s
95th percentile per-packet one-way delay: 6751.184 ms
Loss rate: 2.39%
-- Flow 1:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 244.529 ms
Loss rate: 85.45%
-- Flow 2:
Average throughput: 0.62 Mbit/s
95th percentile per-packet one-way delay: 7029.912 ms
Loss rate: 0.91%
-- Flow 3:
Average throughput: 0.58 Mbit/s
95th percentile per-packet one-way delay: 3110.629 ms
Loss rate: 5.09%
```

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

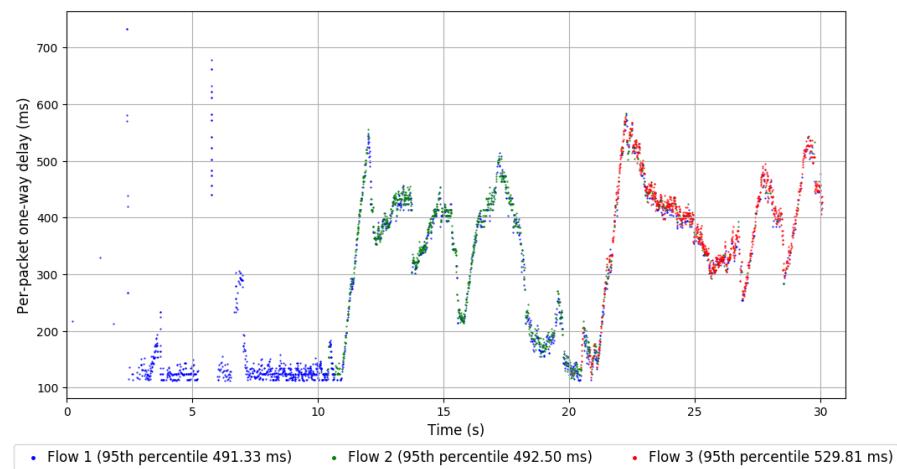
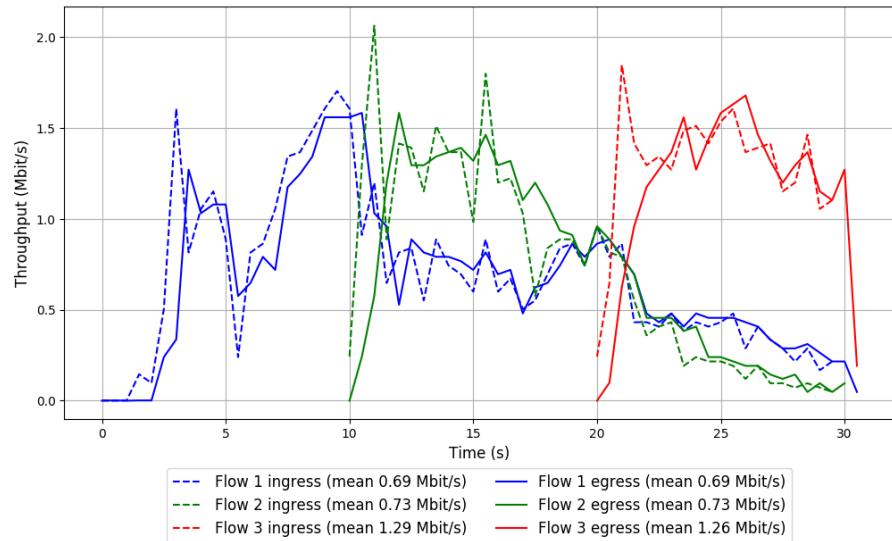


Run 1: Statistics of TCP Vegas

```
Start at: 2018-12-02 03:26:04
End at: 2018-12-02 03:26:34
Local clock offset: -6.273 ms
Remote clock offset: 15.348 ms

# Below is generated by plot.py at 2018-12-02 04:17:47
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.59 Mbit/s
95th percentile per-packet one-way delay: 514.080 ms
Loss rate: 1.02%
-- Flow 1:
Average throughput: 0.69 Mbit/s
95th percentile per-packet one-way delay: 491.329 ms
Loss rate: 0.35%
-- Flow 2:
Average throughput: 0.73 Mbit/s
95th percentile per-packet one-way delay: 492.501 ms
Loss rate: 0.33%
-- Flow 3:
Average throughput: 1.26 Mbit/s
95th percentile per-packet one-way delay: 529.807 ms
Loss rate: 2.89%
```

Run 1: Report of TCP Vegas — Data Link

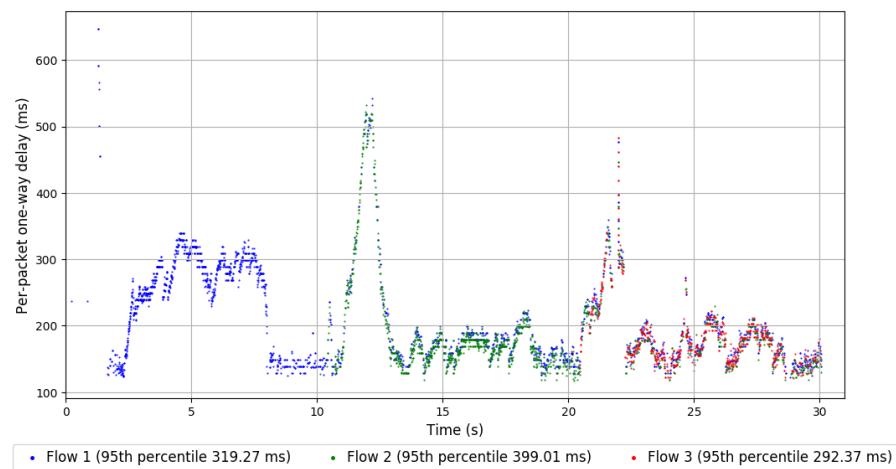
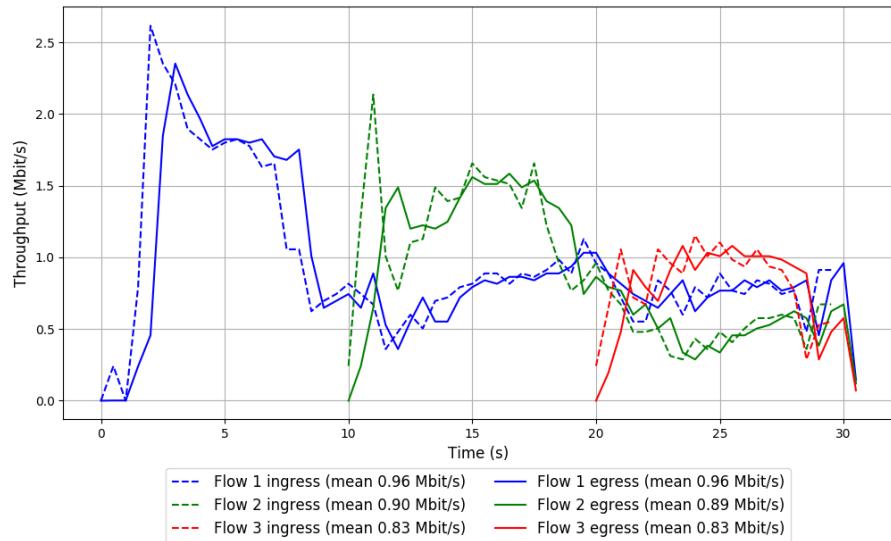


Run 2: Statistics of TCP Vegas

```
Start at: 2018-12-02 03:49:25
End at: 2018-12-02 03:49:55
Local clock offset: -6.396 ms
Remote clock offset: 17.724 ms

# Below is generated by plot.py at 2018-12-02 04:17:47
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.83 Mbit/s
95th percentile per-packet one-way delay: 328.924 ms
Loss rate: 0.39%
-- Flow 1:
Average throughput: 0.96 Mbit/s
95th percentile per-packet one-way delay: 319.270 ms
Loss rate: 0.25%
-- Flow 2:
Average throughput: 0.89 Mbit/s
95th percentile per-packet one-way delay: 399.006 ms
Loss rate: 0.47%
-- Flow 3:
Average throughput: 0.83 Mbit/s
95th percentile per-packet one-way delay: 292.372 ms
Loss rate: 0.73%
```

Run 2: Report of TCP Vegas — Data Link

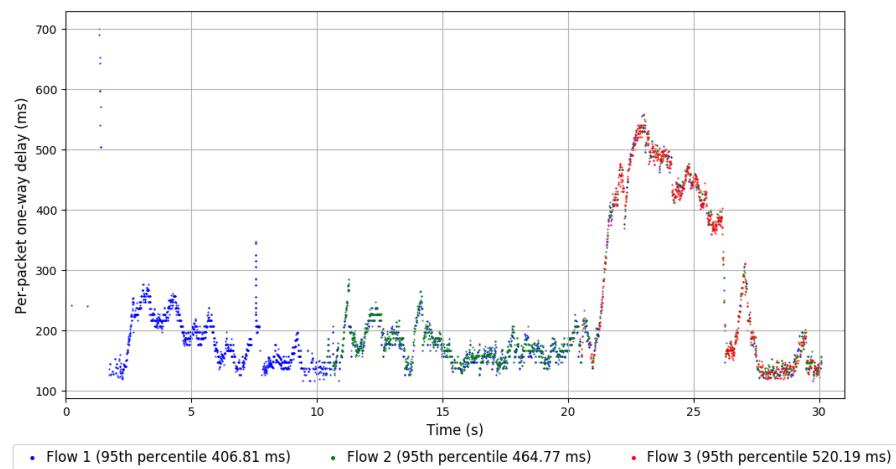
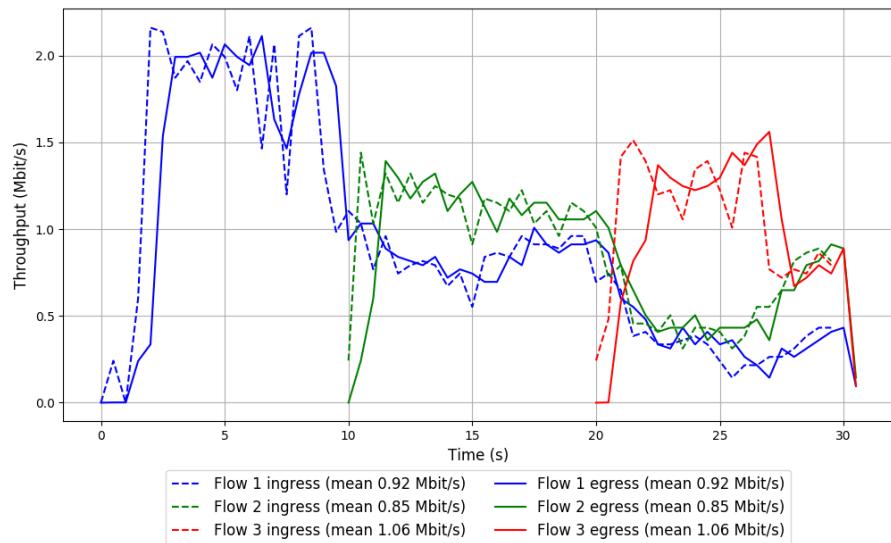


Run 3: Statistics of TCP Vegas

```
Start at: 2018-12-02 04:12:48
End at: 2018-12-02 04:13:18
Local clock offset: -6.544 ms
Remote clock offset: 23.917 ms

# Below is generated by plot.py at 2018-12-02 04:17:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.83 Mbit/s
95th percentile per-packet one-way delay: 487.929 ms
Loss rate: 0.35%
-- Flow 1:
Average throughput: 0.92 Mbit/s
95th percentile per-packet one-way delay: 406.813 ms
Loss rate: 0.26%
-- Flow 2:
Average throughput: 0.85 Mbit/s
95th percentile per-packet one-way delay: 464.770 ms
Loss rate: 0.21%
-- Flow 3:
Average throughput: 1.06 Mbit/s
95th percentile per-packet one-way delay: 520.191 ms
Loss rate: 0.80%
```

Run 3: Report of TCP Vegas — Data Link

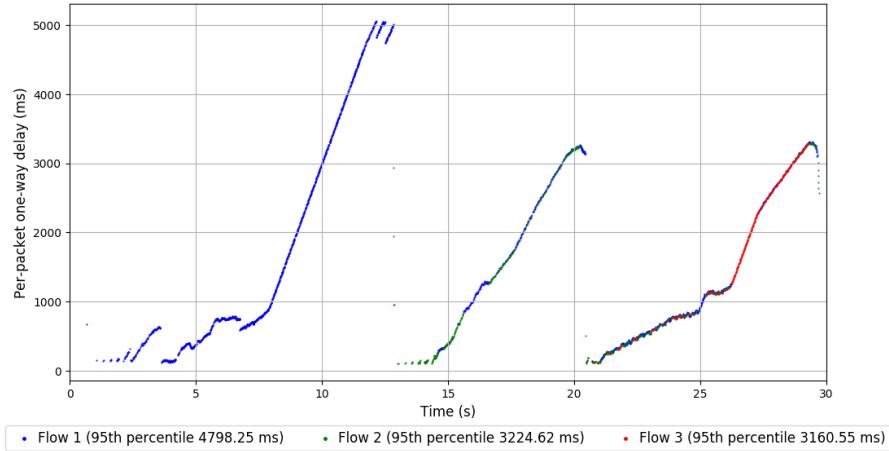
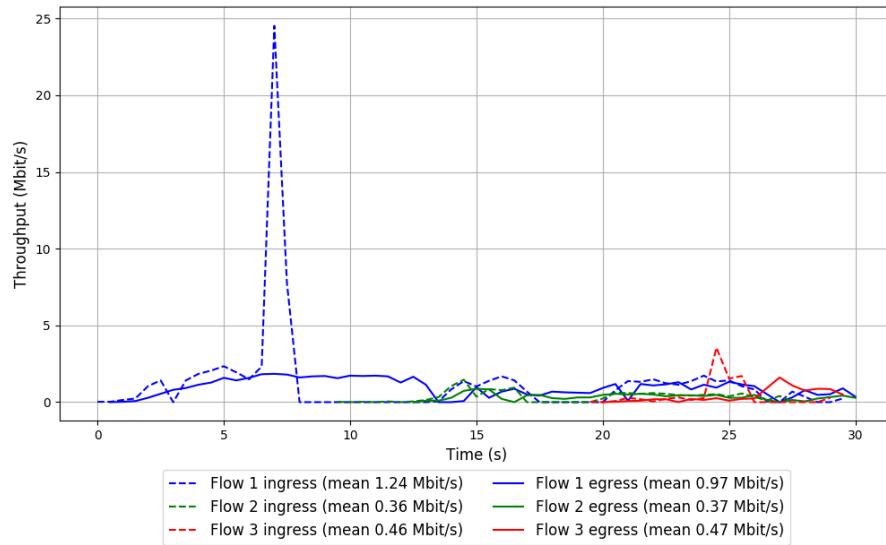


Run 1: Statistics of Verus

```
Start at: 2018-12-02 03:23:37
End at: 2018-12-02 03:24:07
Local clock offset: -5.518 ms
Remote clock offset: 13.954 ms

# Below is generated by plot.py at 2018-12-02 04:17:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.33 Mbit/s
95th percentile per-packet one-way delay: 4569.666 ms
Loss rate: 18.94%
-- Flow 1:
Average throughput: 0.97 Mbit/s
95th percentile per-packet one-way delay: 4798.251 ms
Loss rate: 23.55%
-- Flow 2:
Average throughput: 0.37 Mbit/s
95th percentile per-packet one-way delay: 3224.623 ms
Loss rate: 3.12%
-- Flow 3:
Average throughput: 0.47 Mbit/s
95th percentile per-packet one-way delay: 3160.553 ms
Loss rate: 3.30%
```

Run 1: Report of Verus — Data Link

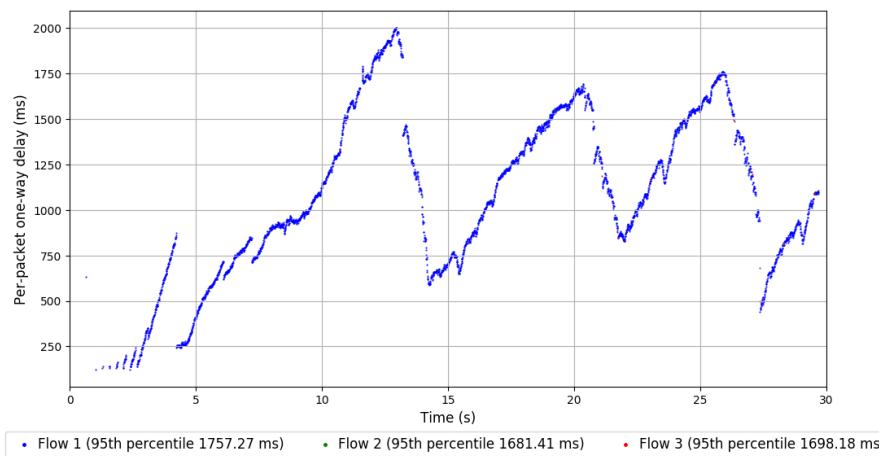
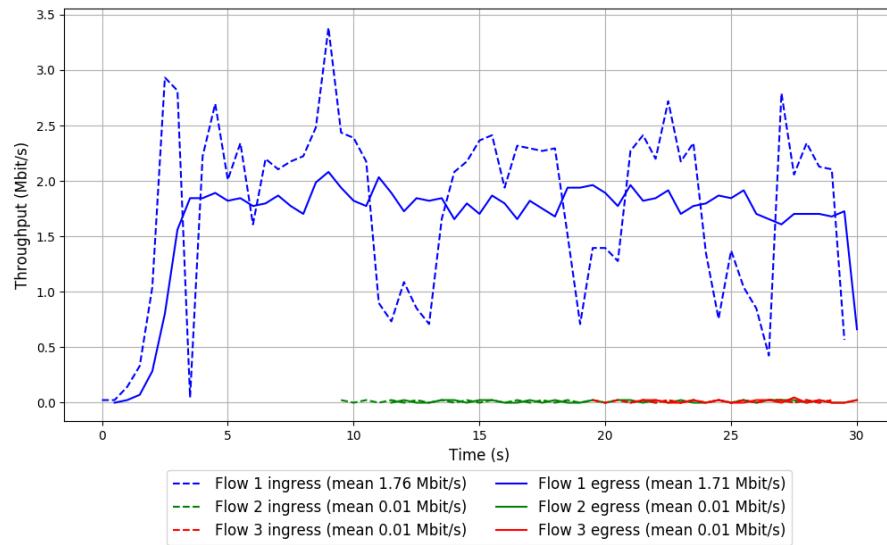


Run 2: Statistics of Verus

```
Start at: 2018-12-02 03:46:57
End at: 2018-12-02 03:47:27
Local clock offset: -6.445 ms
Remote clock offset: 21.352 ms

# Below is generated by plot.py at 2018-12-02 04:17:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.72 Mbit/s
95th percentile per-packet one-way delay: 1751.634 ms
Loss rate: 4.44%
-- Flow 1:
Average throughput: 1.71 Mbit/s
95th percentile per-packet one-way delay: 1757.269 ms
Loss rate: 4.41%
-- Flow 2:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 1681.413 ms
Loss rate: 9.52%
-- Flow 3:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 1698.178 ms
Loss rate: 9.09%
```

Run 2: Report of Verus — Data Link

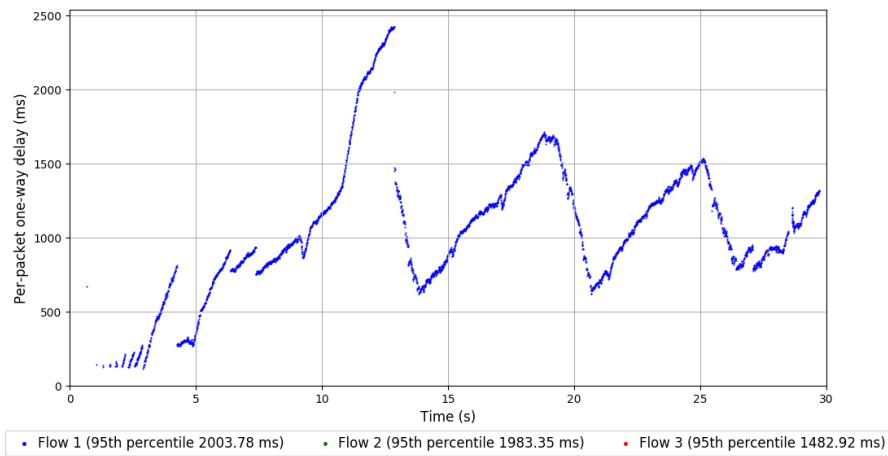
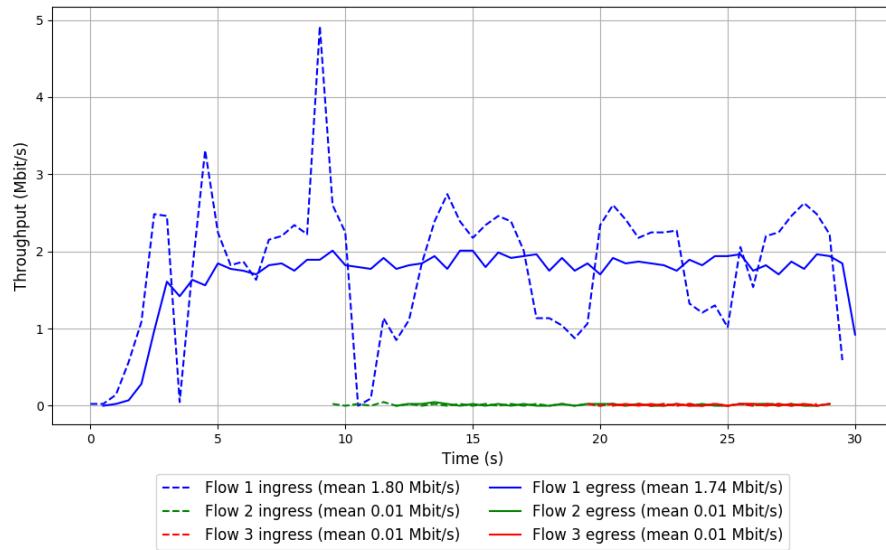


Run 3: Statistics of Verus

```
Start at: 2018-12-02 04:10:20
End at: 2018-12-02 04:10:50
Local clock offset: -6.568 ms
Remote clock offset: 23.892 ms

# Below is generated by plot.py at 2018-12-02 04:17:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.75 Mbit/s
95th percentile per-packet one-way delay: 2003.779 ms
Loss rate: 5.49%
-- Flow 1:
Average throughput: 1.74 Mbit/s
95th percentile per-packet one-way delay: 2003.779 ms
Loss rate: 5.46%
-- Flow 2:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 1983.349 ms
Loss rate: 9.09%
-- Flow 3:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 1482.918 ms
Loss rate: 10.00%
```

Run 3: Report of Verus — Data Link

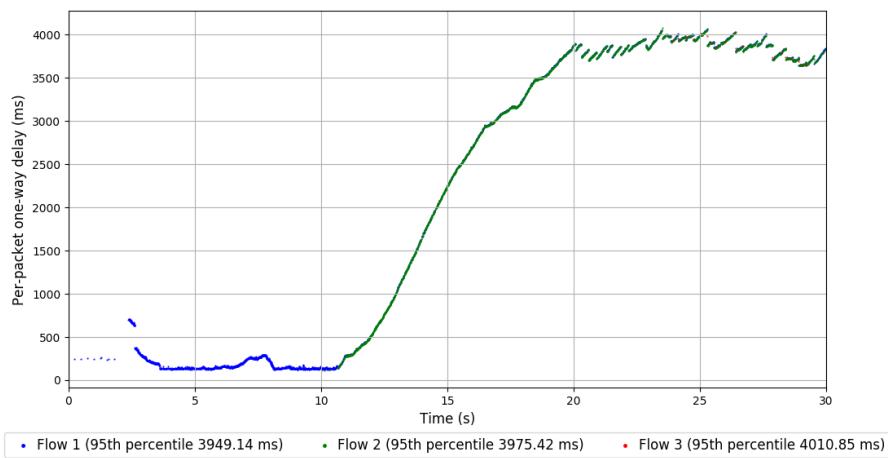
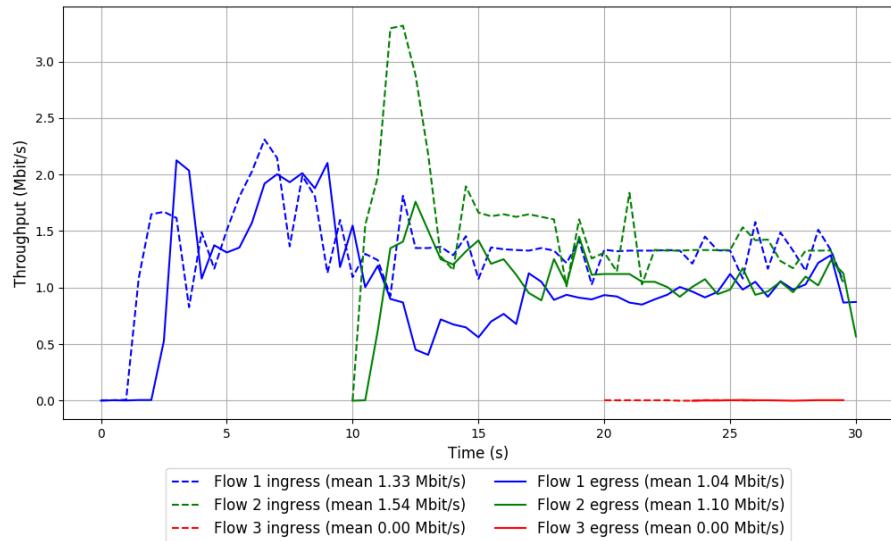


Run 1: Statistics of PCC-Vivace

```
Start at: 2018-12-02 03:27:18
End at: 2018-12-02 03:27:48
Local clock offset: -6.271 ms
Remote clock offset: 18.563 ms

# Below is generated by plot.py at 2018-12-02 04:17:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.78 Mbit/s
95th percentile per-packet one-way delay: 3965.639 ms
Loss rate: 24.94%
-- Flow 1:
Average throughput: 1.04 Mbit/s
95th percentile per-packet one-way delay: 3949.145 ms
Loss rate: 21.97%
-- Flow 2:
Average throughput: 1.10 Mbit/s
95th percentile per-packet one-way delay: 3975.417 ms
Loss rate: 28.81%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 4010.847 ms
Loss rate: 5.60%
```

Run 1: Report of PCC-Vivace — Data Link

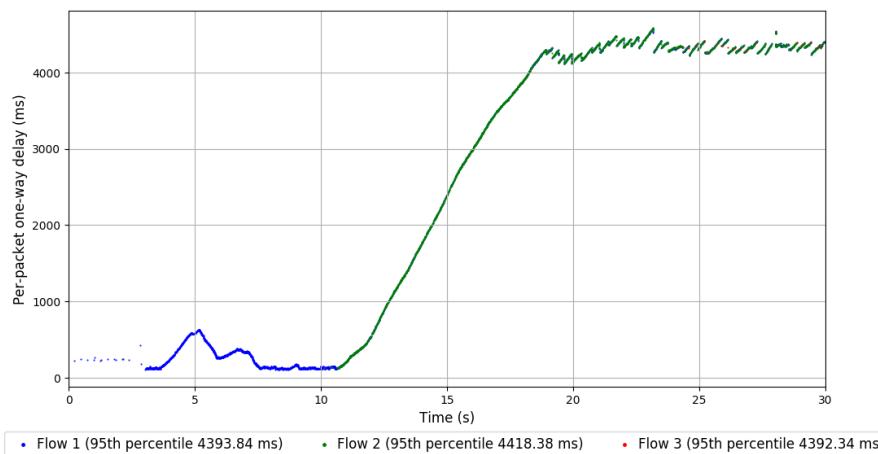
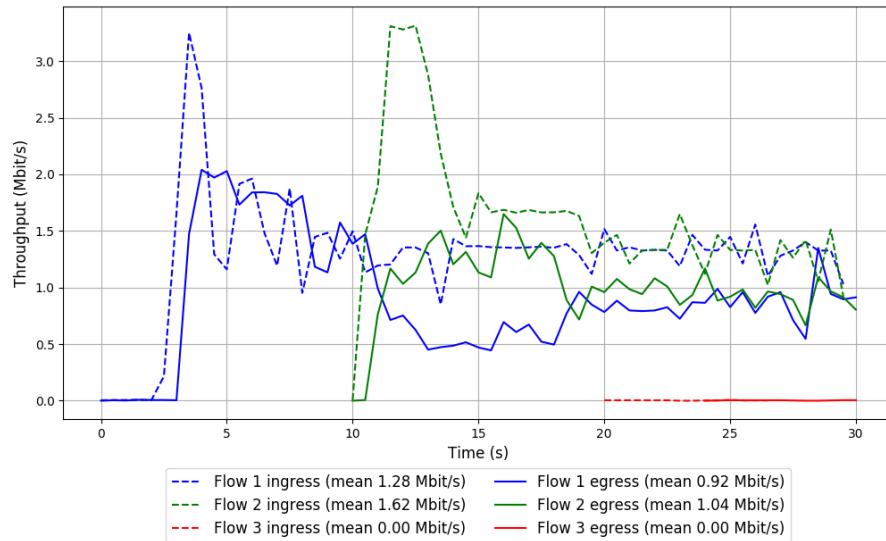


Run 2: Statistics of PCC-Vivace

```
Start at: 2018-12-02 03:50:39
End at: 2018-12-02 03:51:09
Local clock offset: -6.373 ms
Remote clock offset: 16.745 ms

# Below is generated by plot.py at 2018-12-02 04:17:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.61 Mbit/s
95th percentile per-packet one-way delay: 4405.822 ms
Loss rate: 31.74%
-- Flow 1:
Average throughput: 0.92 Mbit/s
95th percentile per-packet one-way delay: 4393.844 ms
Loss rate: 28.42%
-- Flow 2:
Average throughput: 1.04 Mbit/s
95th percentile per-packet one-way delay: 4418.382 ms
Loss rate: 35.69%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 4392.342 ms
Loss rate: 16.81%
```

Run 2: Report of PCC-Vivace — Data Link

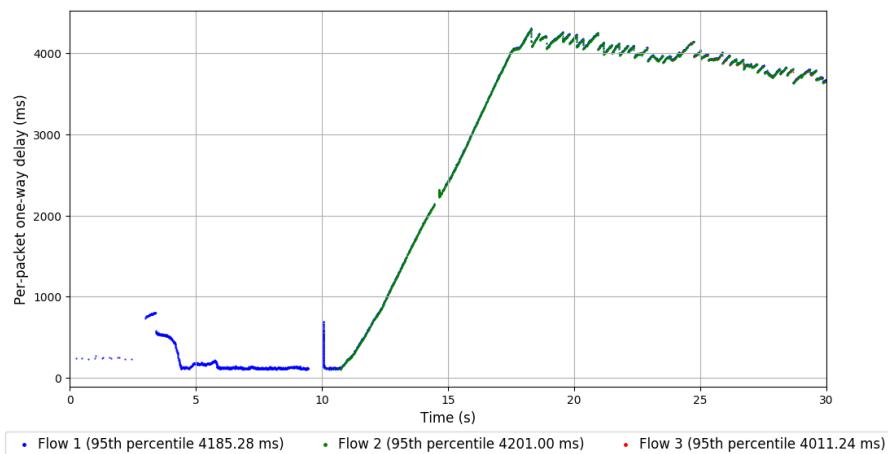
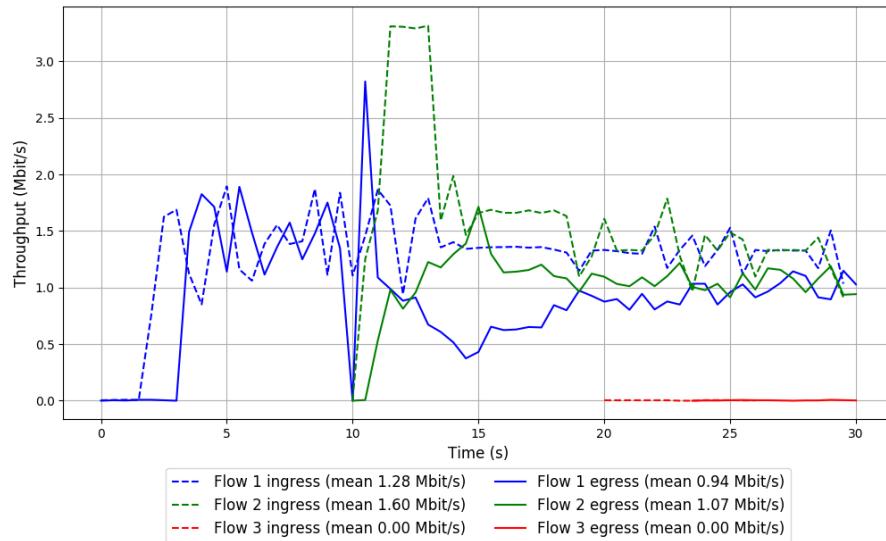


Run 3: Statistics of PCC-Vivace

```
Start at: 2018-12-02 04:14:01
End at: 2018-12-02 04:14:31
Local clock offset: -5.788 ms
Remote clock offset: 19.068 ms

# Below is generated by plot.py at 2018-12-02 04:17:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.65 Mbit/s
95th percentile per-packet one-way delay: 4194.925 ms
Loss rate: 30.02%
-- Flow 1:
Average throughput: 0.94 Mbit/s
95th percentile per-packet one-way delay: 4185.283 ms
Loss rate: 27.25%
-- Flow 2:
Average throughput: 1.07 Mbit/s
95th percentile per-packet one-way delay: 4200.996 ms
Loss rate: 33.38%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 4011.238 ms
Loss rate: 0.00%
```

Run 3: Report of PCC-Vivace — Data Link

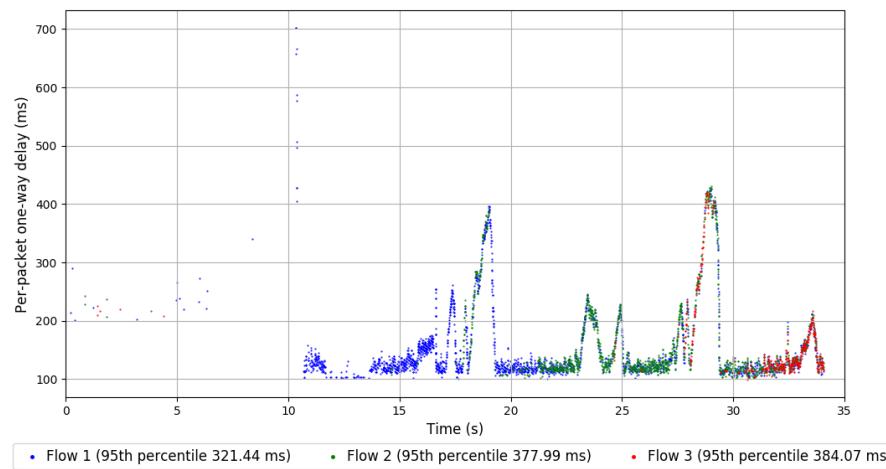
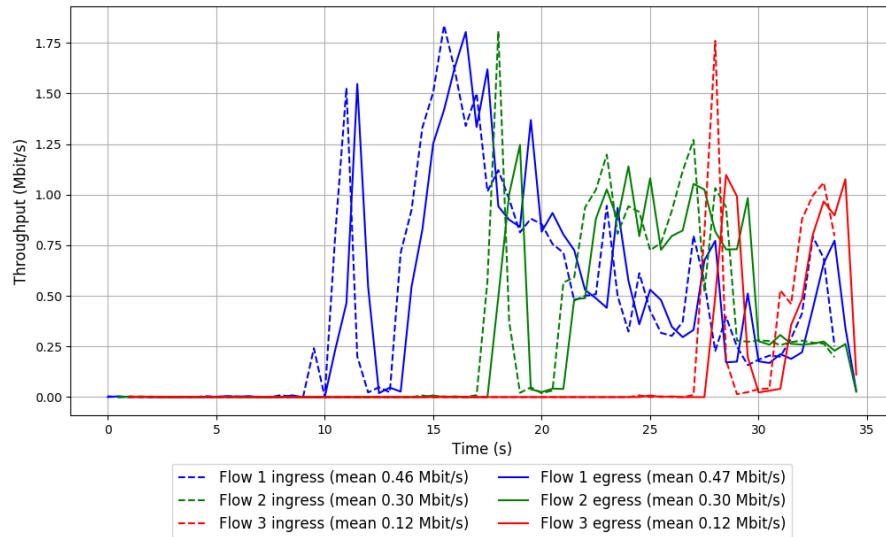


Run 1: Statistics of WebRTC media

```
Start at: 2018-12-02 03:28:32
End at: 2018-12-02 03:29:02
Local clock offset: -5.498 ms
Remote clock offset: 15.608 ms

# Below is generated by plot.py at 2018-12-02 04:17:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.87 Mbit/s
95th percentile per-packet one-way delay: 353.910 ms
Loss rate: 0.22%
-- Flow 1:
Average throughput: 0.47 Mbit/s
95th percentile per-packet one-way delay: 321.445 ms
Loss rate: 0.19%
-- Flow 2:
Average throughput: 0.30 Mbit/s
95th percentile per-packet one-way delay: 377.993 ms
Loss rate: 0.20%
-- Flow 3:
Average throughput: 0.12 Mbit/s
95th percentile per-packet one-way delay: 384.075 ms
Loss rate: 0.43%
```

Run 1: Report of WebRTC media — Data Link

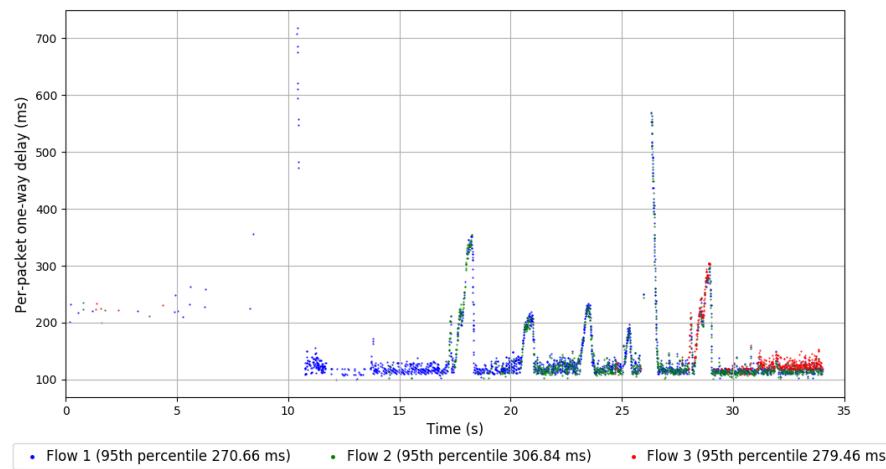
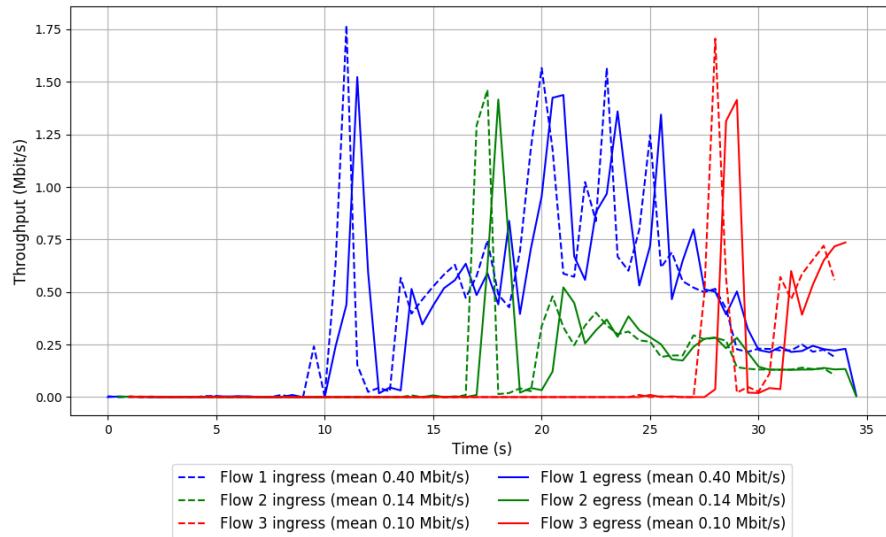


Run 2: Statistics of WebRTC media

```
Start at: 2018-12-02 03:51:53
End at: 2018-12-02 03:52:23
Local clock offset: -5.619 ms
Remote clock offset: 17.968 ms

# Below is generated by plot.py at 2018-12-02 04:17:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.64 Mbit/s
95th percentile per-packet one-way delay: 279.676 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 0.40 Mbit/s
95th percentile per-packet one-way delay: 270.661 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 306.839 ms
Loss rate: 0.04%
-- Flow 3:
Average throughput: 0.10 Mbit/s
95th percentile per-packet one-way delay: 279.458 ms
Loss rate: 0.13%
```

Run 2: Report of WebRTC media — Data Link



Run 3: Statistics of WebRTC media

```
Start at: 2018-12-02 04:15:15
End at: 2018-12-02 04:15:45
Local clock offset: -6.567 ms
Remote clock offset: 24.181 ms

# Below is generated by plot.py at 2018-12-02 04:17:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.58 Mbit/s
95th percentile per-packet one-way delay: 291.609 ms
Loss rate: 0.98%
-- Flow 1:
Average throughput: 0.28 Mbit/s
95th percentile per-packet one-way delay: 265.424 ms
Loss rate: 0.40%
-- Flow 2:
Average throughput: 0.18 Mbit/s
95th percentile per-packet one-way delay: 331.023 ms
Loss rate: 0.88%
-- Flow 3:
Average throughput: 0.13 Mbit/s
95th percentile per-packet one-way delay: 336.956 ms
Loss rate: 2.40%
```

Run 3: Report of WebRTC media — Data Link

