Pantheon Report

Generated at 2018-12-11 06:05:12 (UTC).

Data path: GCE Sydney on `ens4` (*local*) →GCE Iowa on `ens4` (*remote*).

Repeated the test of 19 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 `time.google.com` and have been applied to correct the timestamps in logs.
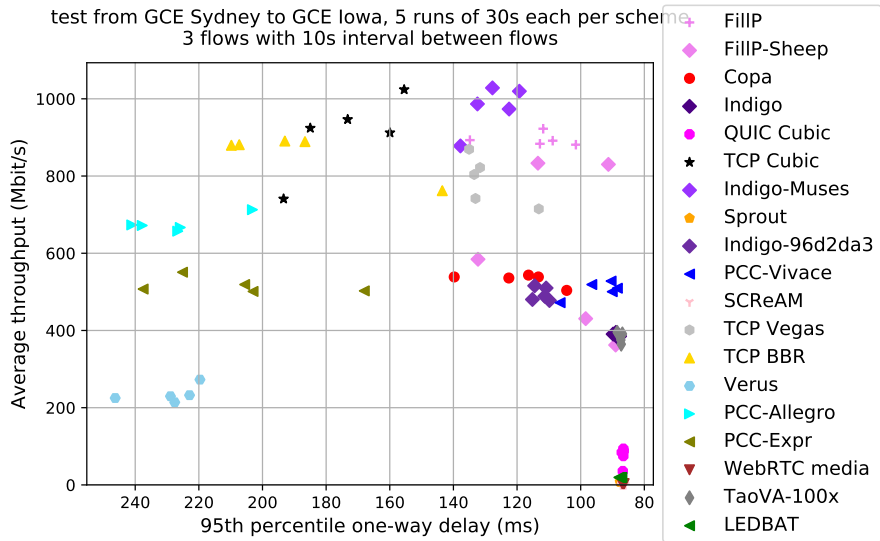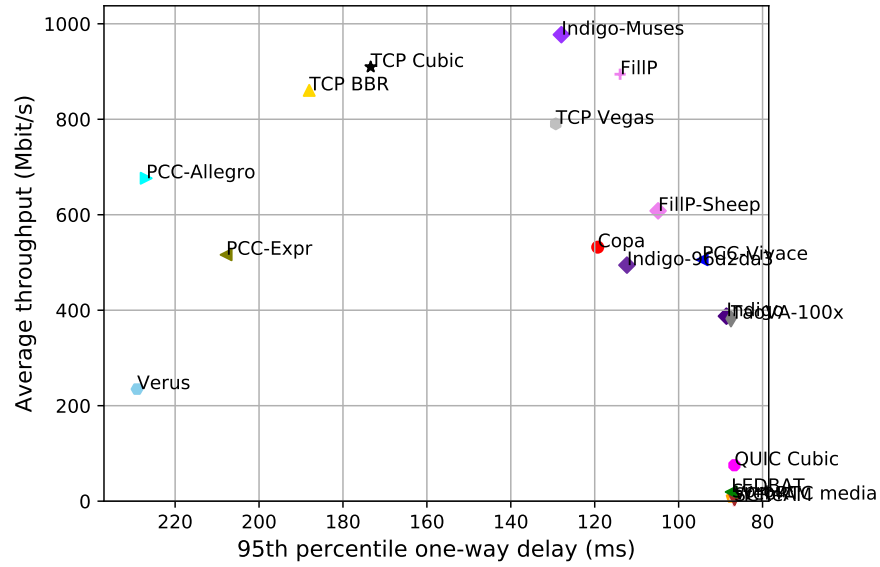
```
System info:
Linux 4.15.0-1024-gcp
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912

Git summary:
branch: muses @ 7b6dad87cde3ab65f7c4052140eb54098aa58e9d
third_party/fillp @ d6da1459332fcee56963885d7eba17e6a32d4519
third_party/fillp-sheep @ 0e5bb722943babcd2b090d2c64fcd45e12e923f9
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdfe58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d
third_party/indigo-96d2da3 @ 8413272d46f8aa0bcb967ed7048b6a8f994abb95
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/muses @ 65ac1b19bbefed0c6349ae986009b4fa8643c40a
third_party/pantheon-tunnel @ f866d3f58d27afd942717625ee3a354cc2e802bd
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 GCE Sydney to GCE Iowa, 5 runs of 30s each per scheme
3 flows with 10s interval between flows (mean of all runs by scheme)

test from GCE Sydney to GCE Iowa, 5 runs of 30s each per scheme
3 flows with 10s interval between flows

scheme	# runs	mean avg tput (Mbit/s)			mean 95th-%ile delay (ms)			mean loss rate (%)		
		flow 1	flow 2	flow 3	flow 1	flow 2	flow 3	flow 1	flow 2	flow 3
TCP BBR	5	452.09	420.73	386.39	177.81	177.80	217.51	1.06	1.21	2.42
Copa	5	294.66	246.02	221.42	109.57	118.11	134.49	0.00	0.03	0.00
TCP Cubic	5	475.53	454.09	395.74	148.28	149.26	152.51	0.10	0.14	0.66
FillP	5	567.02	359.79	265.21	124.78	91.49	91.27	0.41	0.01	0.01
FillP-Sheep	5	304.79	336.45	239.85	110.83	90.09	88.82	0.23	0.00	0.00
Indigo	5	206.46	195.06	163.34	88.49	88.79	88.59	0.00	0.10	0.00
Indigo-96d2da3	5	263.28	243.81	213.90	112.82	112.31	109.81	0.11	0.12	0.00
LEDBAT	5	12.52	8.11	4.07	87.52	87.31	86.99	0.00	0.01	0.00
Indigo-Muses	5	537.73	490.12	352.26	126.80	131.25	117.46	0.02	0.18	0.12
PCC-Allegro	5	392.91	308.25	239.08	228.89	198.37	168.62	7.36	1.00	0.87
PCC-Expr	5	299.59	248.70	155.01	189.09	214.57	122.13	2.73	4.68	0.04
QUIC Cubic	5	39.97	41.98	22.85	86.71	86.61	86.52	0.00	0.00	0.00
SCReAM	5	0.22	0.22	0.22	86.57	86.58	86.64	0.00	0.00	0.00
Sprout	5	4.24	4.05	3.63	87.23	87.34	87.01	0.00	0.00	0.00
TaoVA-100x	5	197.42	186.89	181.53	87.15	87.83	87.90	0.00	0.00	0.00
TCP Vegas	5	464.94	339.71	298.28	118.87	113.72	124.87	0.06	0.08	0.01
Verus	5	141.61	114.14	54.33	218.64	197.30	123.31	3.63	0.57	0.35
PCC-Vivace	5	320.09	201.56	156.29	105.49	87.99	97.24	0.04	0.00	0.00
WebRTC media	5	1.87	1.10	0.41	86.58	86.46	86.69	0.00	0.00	0.00

```
Run 1: Statistics of TCP BBR

Start at: 2018-12-11 00:49:17
End at: 2018-12-11 00:49:47
Local clock offset: 0.399 ms
Remote clock offset: 0.02 ms


# Below is generated by plot.py at 2018-12-11 04:00:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 890.66 Mbit/s
95th percentile per-packet one-way delay: 192.982 ms
Loss rate: 0.65%
-- Flow 1:
Average throughput: 479.01 Mbit/s
95th percentile per-packet one-way delay: 188.608 ms
Loss rate: 0.56%
-- Flow 2:
Average throughput: 430.20 Mbit/s
95th percentile per-packet one-way delay: 180.713 ms
Loss rate: 0.36%
-- Flow 3:
Average throughput: 375.91 Mbit/s
95th percentile per-packet one-way delay: 231.082 ms
Loss rate: 1.67%
```
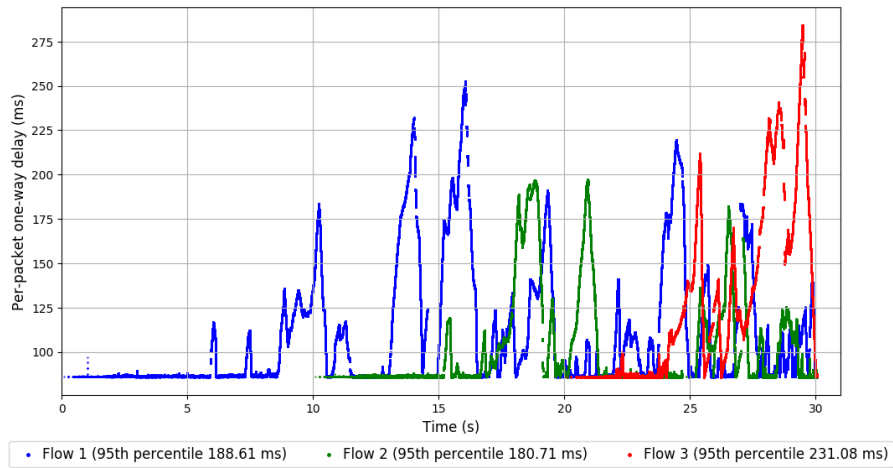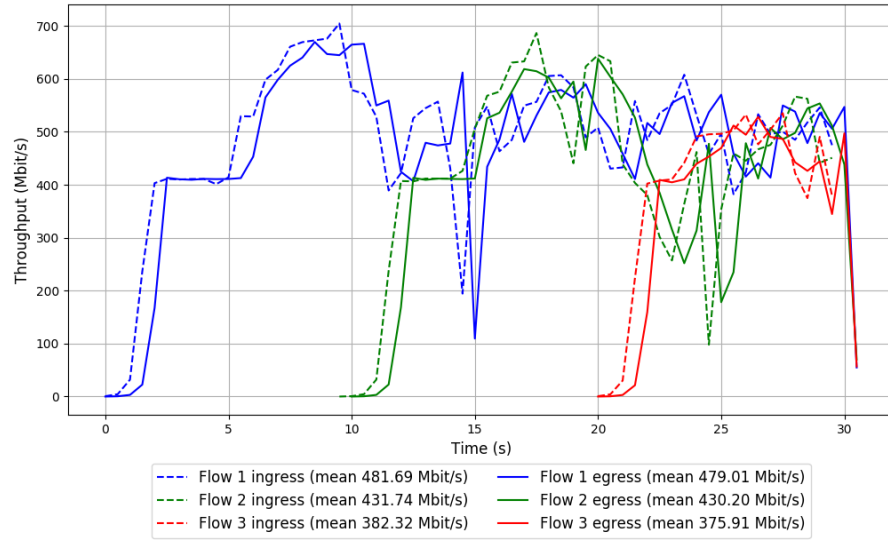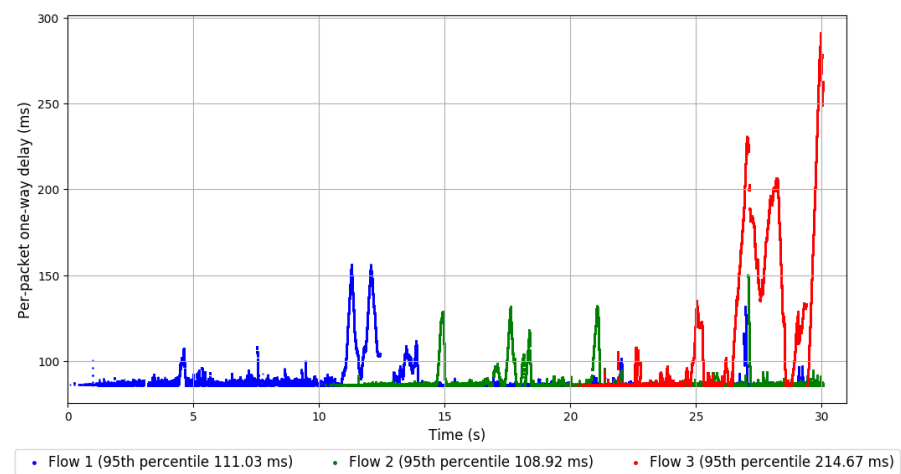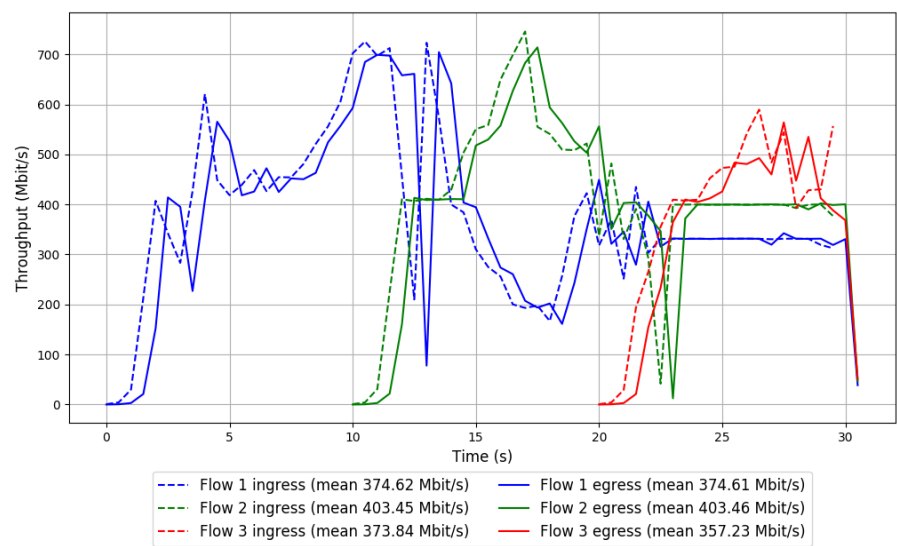
Run 1: Report of TCP BBR — Data Link

Flow 1 ingress (mean 481.69 Mbit/s) --- Flow 1 egress (mean 479.01 Mbit/s)
Flow 2 ingress (mean 431.74 Mbit/s) --- Flow 2 egress (mean 430.20 Mbit/s)
Flow 3 ingress (mean 382.32 Mbit/s) --- Flow 3 egress (mean 375.91 Mbit/s)

Flow 1 (95th percentile 188.61 ms)   Flow 2 (95th percentile 180.71 ms)   Flow 3 (95th percentile 231.08 ms)

```
Run 2: Statistics of TCP BBR

Start at: 2018-12-11 01:23:11
End at: 2018-12-11 01:23:41
Local clock offset: 0.085 ms
Remote clock offset: -0.09 ms


# Below is generated by plot.py at 2018-12-11 04:00:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 762.04 Mbit/s
95th percentile per-packet one-way delay: 143.494 ms
Loss rate: 0.72%
-- Flow 1:
Average throughput: 374.61 Mbit/s
95th percentile per-packet one-way delay: 111.030 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 403.46 Mbit/s
95th percentile per-packet one-way delay: 108.922 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 357.23 Mbit/s
95th percentile per-packet one-way delay: 214.668 ms
Loss rate: 4.43%
```
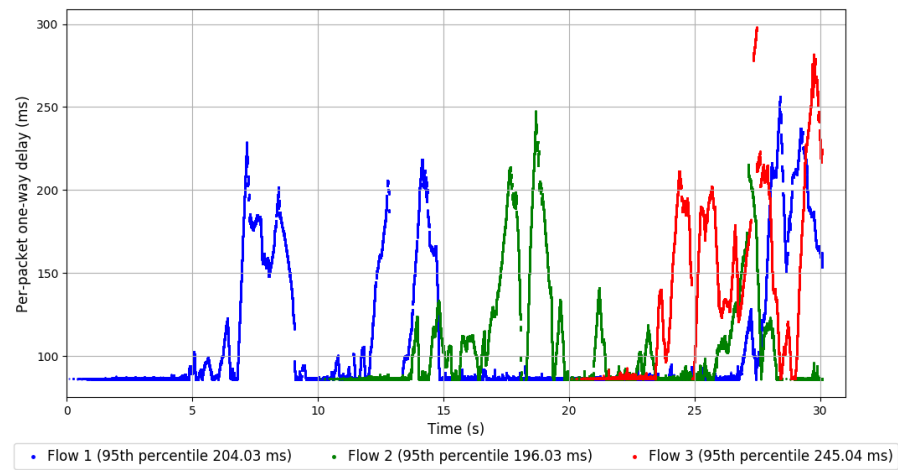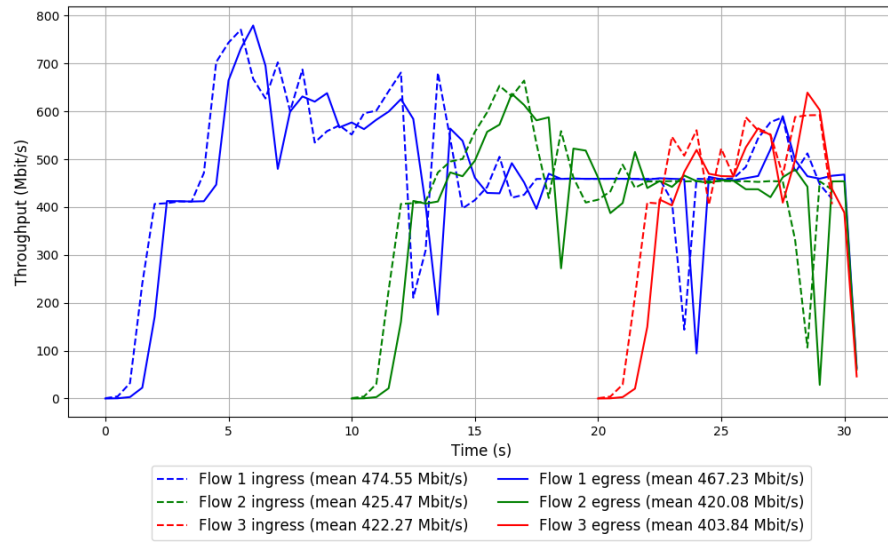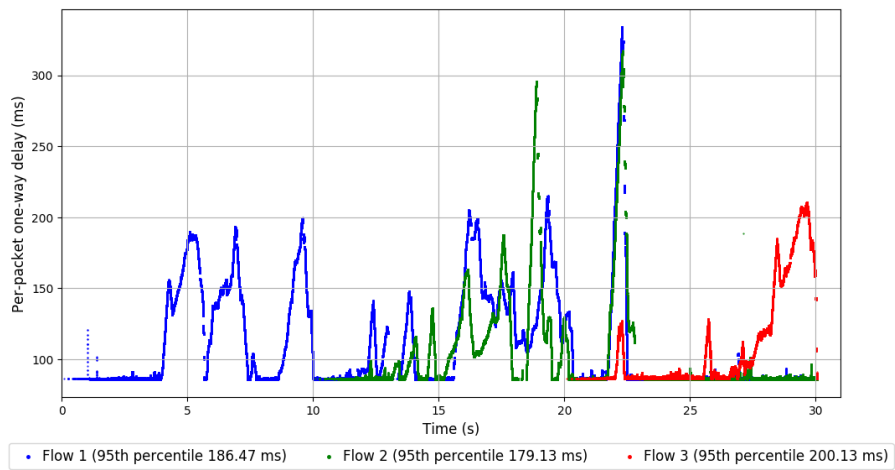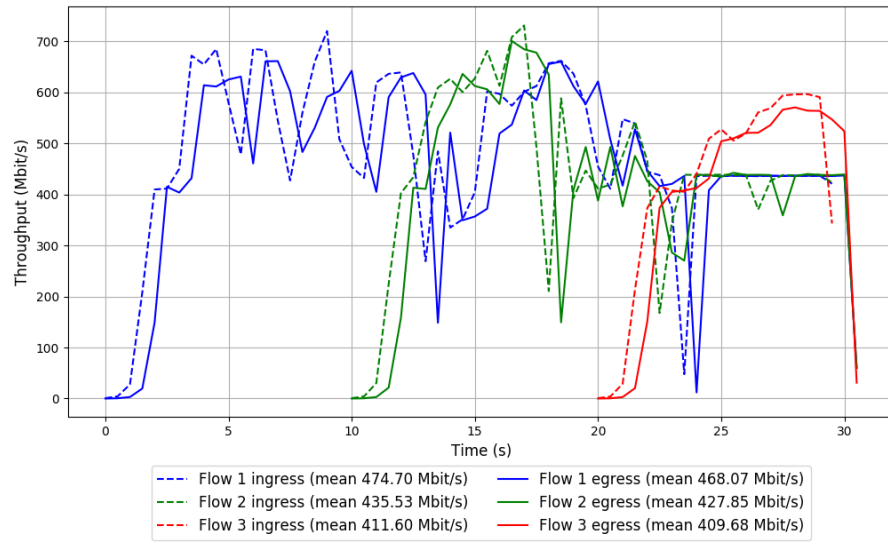
Run 2: Report of TCP BBR — Data Link

Flow 1 ingress (mean 374.62 Mbit/s)   Flow 1 egress (mean 374.61 Mbit/s)
Flow 2 ingress (mean 403.45 Mbit/s)   Flow 2 egress (mean 403.46 Mbit/s)
Flow 3 ingress (mean 373.84 Mbit/s)   Flow 3 egress (mean 357.23 Mbit/s)

Flow 1 (95th percentile 111.03 ms)   Flow 2 (95th percentile 108.92 ms)   Flow 3 (95th percentile 214.67 ms)

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```
Run 3: Statistics of TCP BBR

Start at: 2018-12-11 01:56:35
End at: 2018-12-11 01:57:05
Local clock offset: -0.074 ms
Remote clock offset: 0.065 ms


# Below is generated by plot.py at 2018-12-11 04:00:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 881.21 Mbit/s
95th percentile per-packet one-way delay: 207.300 ms
Loss rate: 1.90%
-- Flow 1:
Average throughput: 467.23 Mbit/s
95th percentile per-packet one-way delay: 204.035 ms
Loss rate: 1.54%
-- Flow 2:
Average throughput: 420.08 Mbit/s
95th percentile per-packet one-way delay: 196.030 ms
Loss rate: 1.27%
-- Flow 3:
Average throughput: 403.84 Mbit/s
95th percentile per-packet one-way delay: 245.044 ms
Loss rate: 4.37%
```
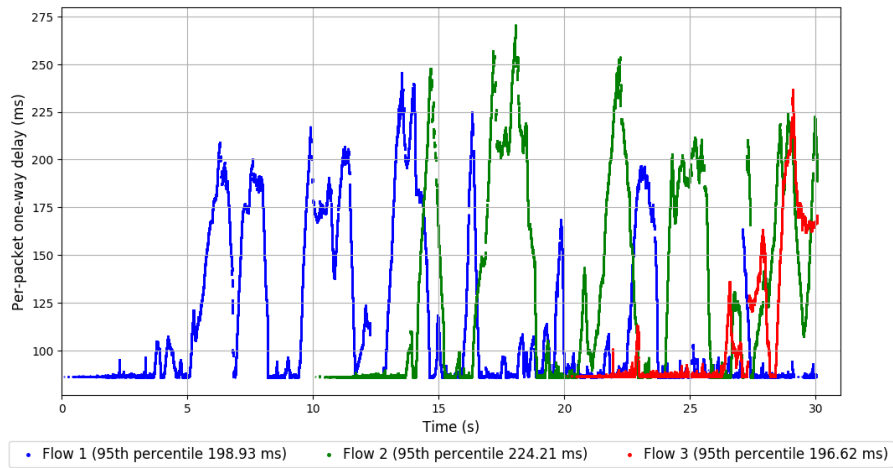
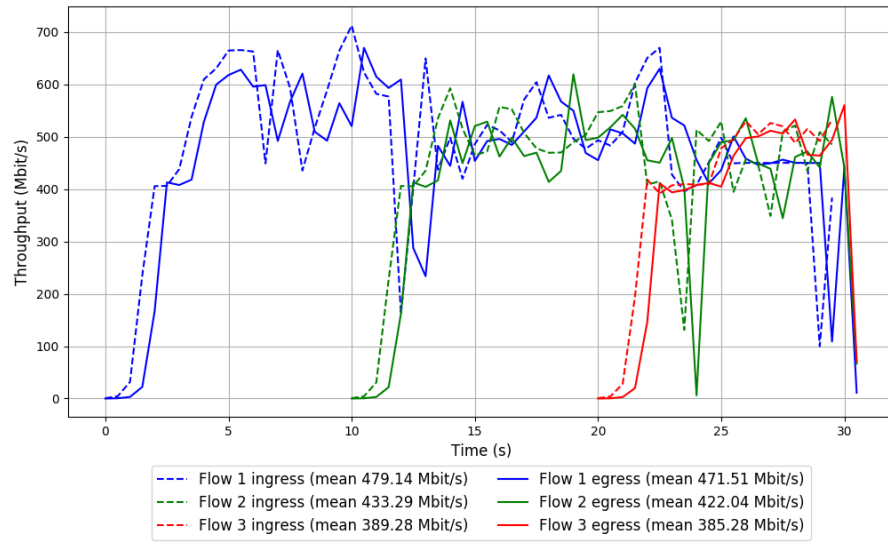Run 3: Report of TCP BBR — Data Link

```
Run 4: Statistics of TCP BBR

Start at: 2018-12-11 02:30:37
End at: 2018-12-11 02:31:07
Local clock offset: 0.065 ms
Remote clock offset: -0.159 ms


# Below is generated by plot.py at 2018-12-11 04:00:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 889.19 Mbit/s
95th percentile per-packet one-way delay: 186.650 ms
Loss rate: 1.37%
-- Flow 1:
Average throughput: 468.07 Mbit/s
95th percentile per-packet one-way delay: 186.474 ms
Loss rate: 1.40%
-- Flow 2:
Average throughput: 427.85 Mbit/s
95th percentile per-packet one-way delay: 179.129 ms
Loss rate: 1.75%
-- Flow 3:
Average throughput: 409.68 Mbit/s
95th percentile per-packet one-way delay: 200.130 ms
Loss rate: 0.46%
```
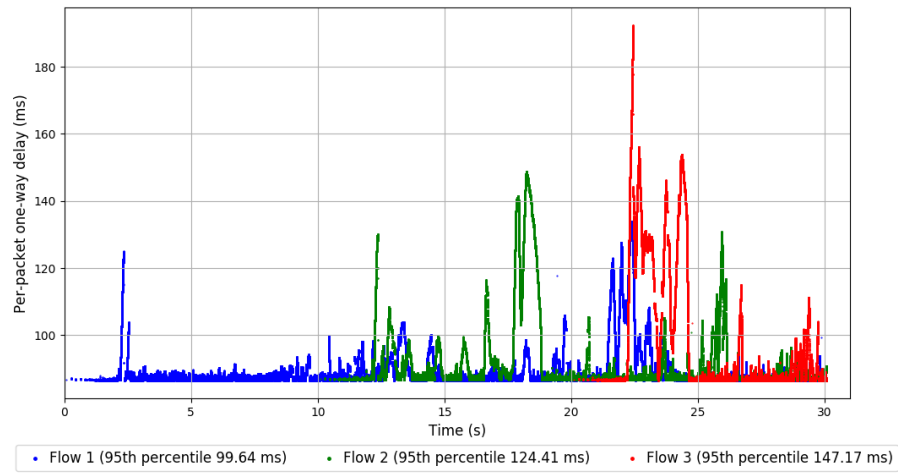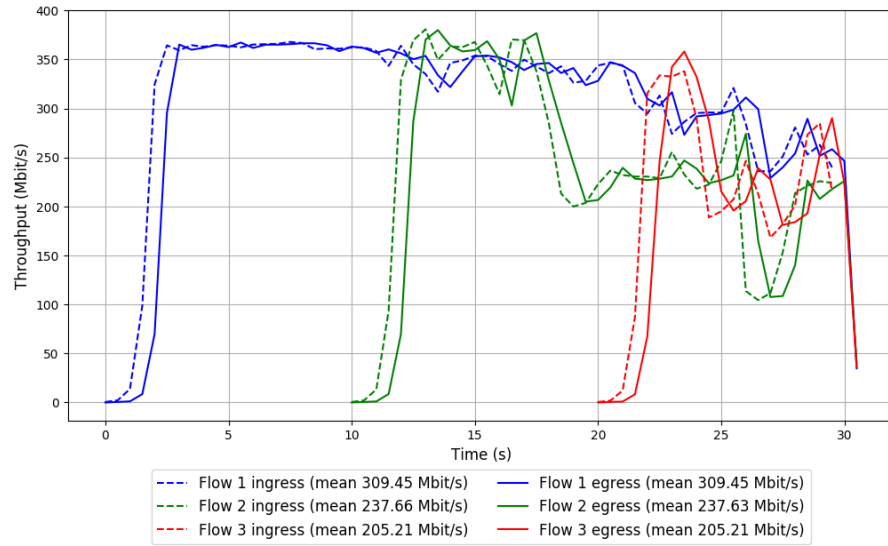
Run 4: Report of TCP BBR — Data Link

Flow 1 ingress (mean 474.70 Mbit/s) --- Flow 1 egress (mean 468.07 Mbit/s)
Flow 2 ingress (mean 435.53 Mbit/s) --- Flow 2 egress (mean 427.85 Mbit/s)
Flow 3 ingress (mean 411.60 Mbit/s) --- Flow 3 egress (mean 409.68 Mbit/s)

Flow 1 (95th percentile 186.47 ms) ● Flow 2 (95th percentile 179.13 ms) ● Flow 3 (95th percentile 200.13 ms)

```
Run 5: Statistics of TCP BBR

Start at: 2018-12-11 03:04:43
End at: 2018-12-11 03:05:13
Local clock offset: 0.036 ms
Remote clock offset: -0.049 ms


# Below is generated by plot.py at 2018-12-11 04:00:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 879.68 Mbit/s
95th percentile per-packet one-way delay: 209.773 ms
Loss rate: 1.99%
-- Flow 1:
Average throughput: 471.51 Mbit/s
95th percentile per-packet one-way delay: 198.927 ms
Loss rate: 1.80%
-- Flow 2:
Average throughput: 422.04 Mbit/s
95th percentile per-packet one-way delay: 224.208 ms
Loss rate: 2.66%
-- Flow 3:
Average throughput: 385.28 Mbit/s
95th percentile per-packet one-way delay: 196.617 ms
Loss rate: 1.16%
```
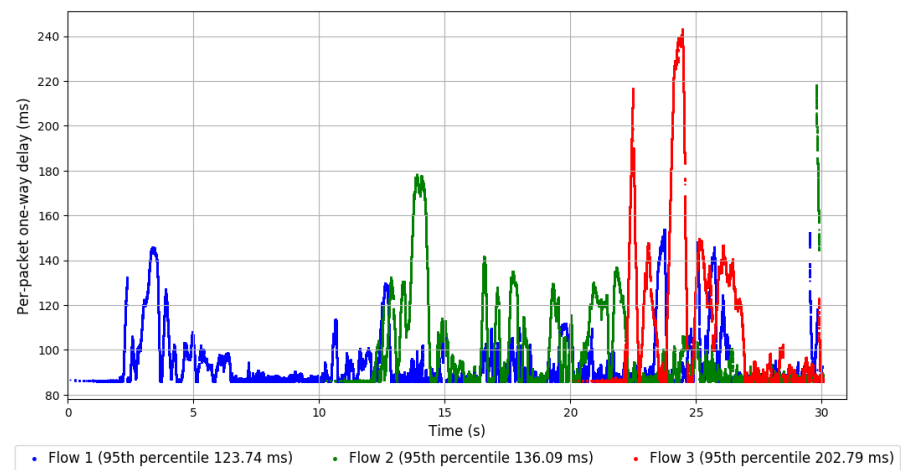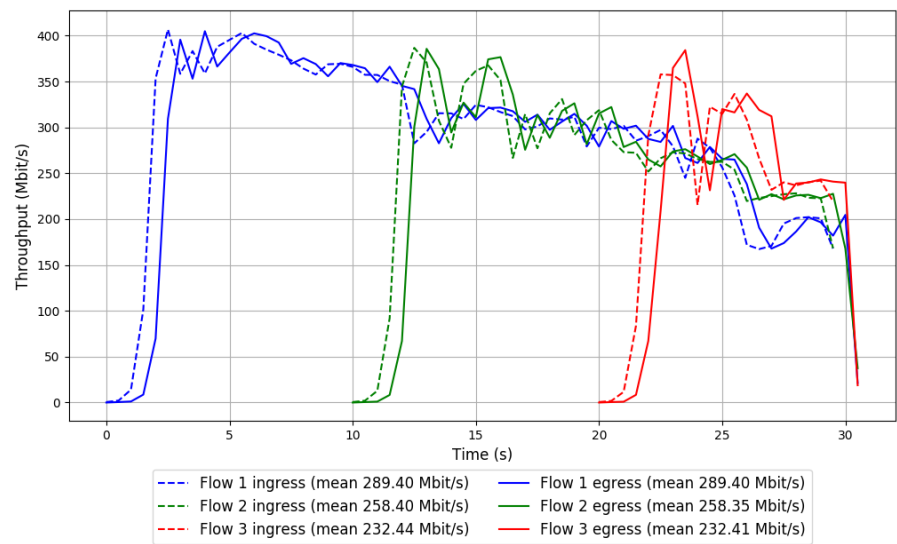
Run 5: Report of TCP BBR — Data Link

Flow 1 ingress (mean 479.14 Mbit/s) --- Flow 1 egress (mean 471.51 Mbit/s)
Flow 2 ingress (mean 433.29 Mbit/s) --- Flow 2 egress (mean 422.04 Mbit/s)
Flow 3 ingress (mean 389.28 Mbit/s) --- Flow 3 egress (mean 385.28 Mbit/s)

Flow 1 (95th percentile 198.93 ms)   Flow 2 (95th percentile 224.21 ms)   Flow 3 (95th percentile 196.62 ms)

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```
Run 1: Statistics of Copa

Start at: 2018-12-11 00:54:34
End at: 2018-12-11 00:55:04
Local clock offset: -0.167 ms
Remote clock offset: -0.038 ms


# Below is generated by plot.py at 2018-12-11 04:01:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 535.88 Mbit/s
95th percentile per-packet one-way delay: 122.583 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 309.45 Mbit/s
95th percentile per-packet one-way delay: 99.638 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 237.63 Mbit/s
95th percentile per-packet one-way delay: 124.414 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 205.21 Mbit/s
95th percentile per-packet one-way delay: 147.169 ms
Loss rate: 0.00%
```
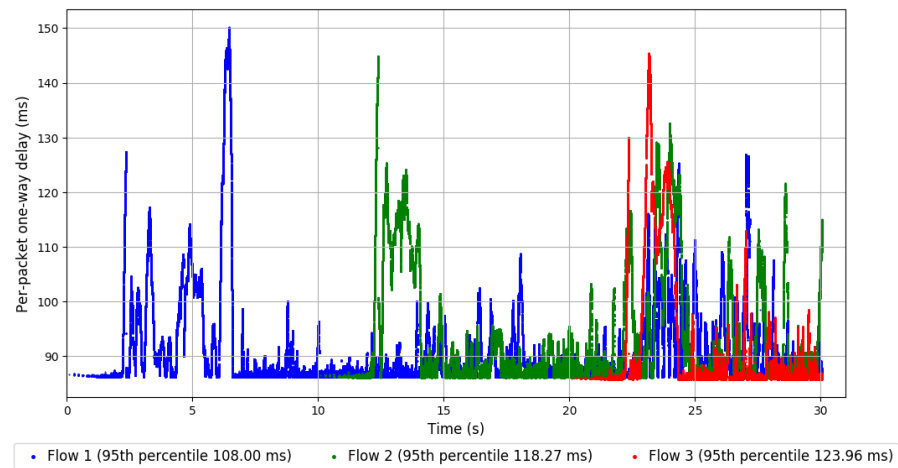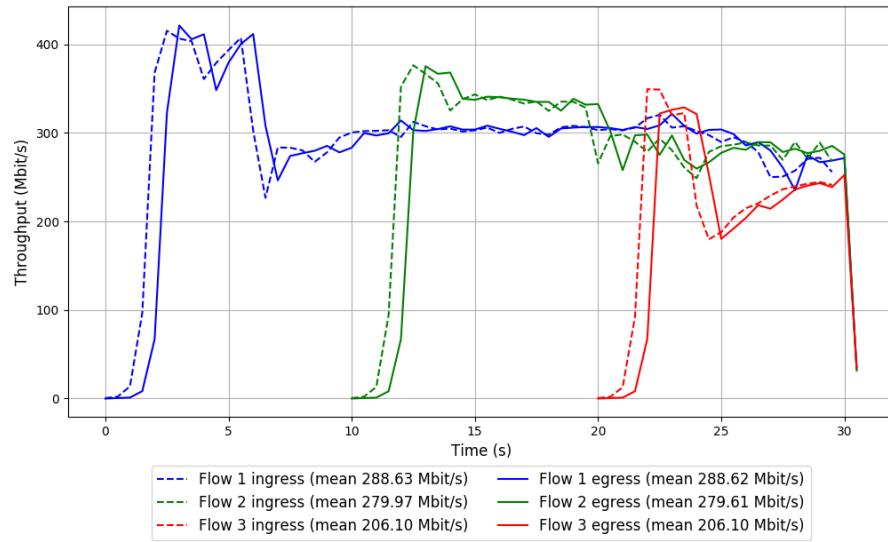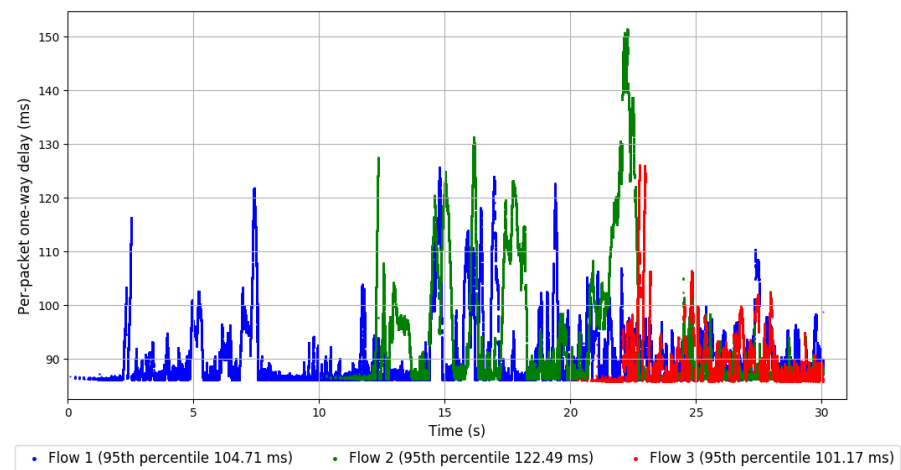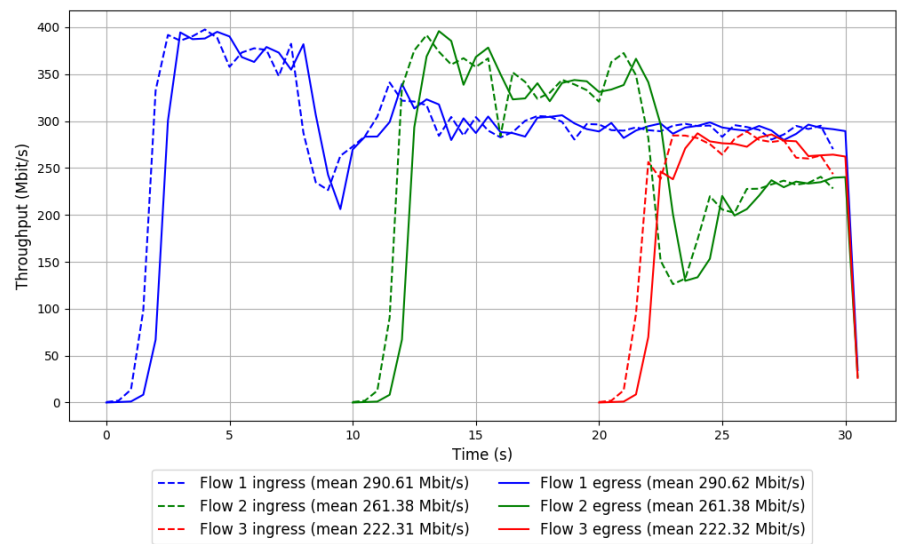
Run 1: Report of Copa — Data Link

Flow 1 ingress (mean 309.45 Mbit/s) ---- Flow 1 egress (mean 309.45 Mbit/s) ——
Flow 2 ingress (mean 237.66 Mbit/s) ---- Flow 2 egress (mean 237.63 Mbit/s) ——
Flow 3 ingress (mean 205.21 Mbit/s) ---- Flow 3 egress (mean 205.21 Mbit/s) ——

• Flow 1 (95th percentile 99.64 ms)   • Flow 2 (95th percentile 124.41 ms)   • Flow 3 (95th percentile 147.17 ms)

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```
Run 2: Statistics of Copa

Start at: 2018-12-11 01:28:20
End at: 2018-12-11 01:28:50
Local clock offset: 0.077 ms
Remote clock offset: -0.1 ms


# Below is generated by plot.py at 2018-12-11 04:02:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 538.62 Mbit/s
95th percentile per-packet one-way delay: 139.746 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 289.40 Mbit/s
95th percentile per-packet one-way delay: 123.742 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 258.35 Mbit/s
95th percentile per-packet one-way delay: 136.087 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 232.41 Mbit/s
95th percentile per-packet one-way delay: 202.790 ms
Loss rate: 0.00%
```
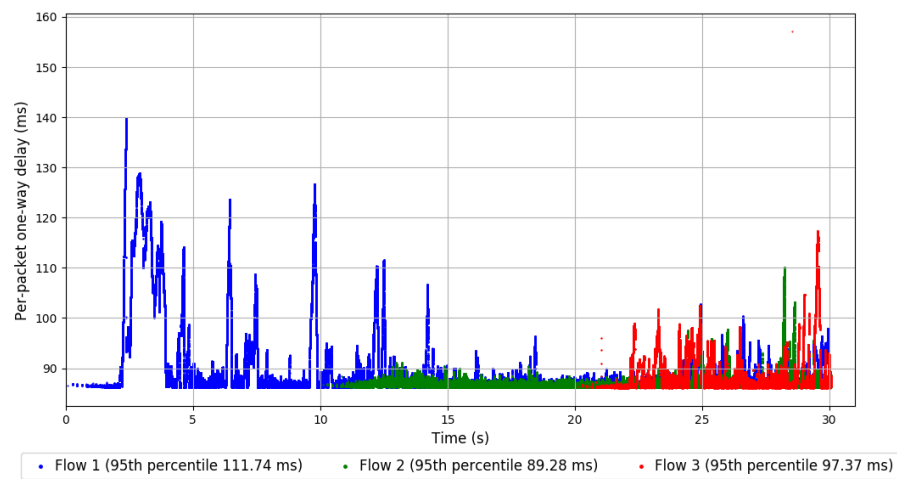
Run 2: Report of Copa — Data Link

Flow 1 ingress (mean 289.40 Mbit/s) --- Flow 1 egress (mean 289.40 Mbit/s)
Flow 2 ingress (mean 258.40 Mbit/s) --- Flow 2 egress (mean 258.35 Mbit/s)
Flow 3 ingress (mean 232.44 Mbit/s) --- Flow 3 egress (mean 232.41 Mbit/s)

Flow 1 (95th percentile 123.74 ms)   Flow 2 (95th percentile 136.09 ms)   Flow 3 (95th percentile 202.79 ms)
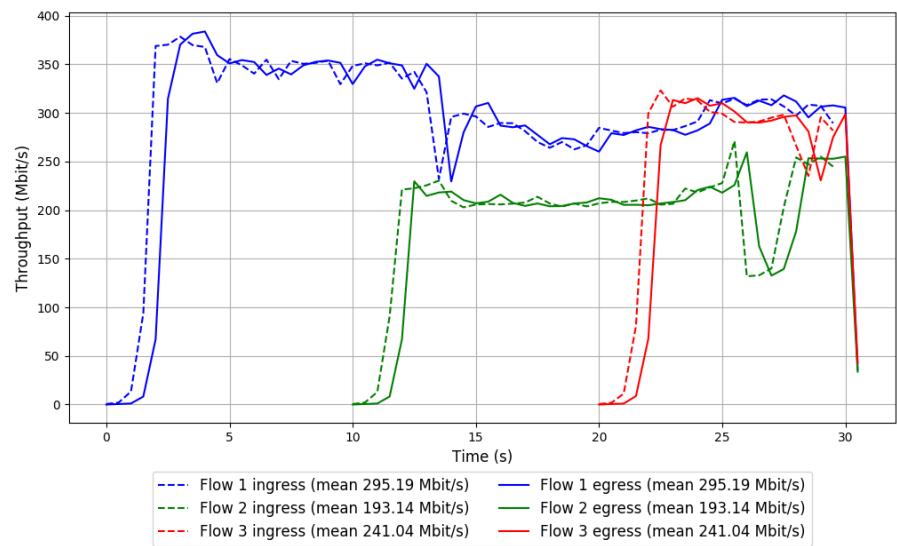
18

```
Run 3: Statistics of Copa

Start at: 2018-12-11 02:02:05
End at: 2018-12-11 02:02:36
Local clock offset: -0.067 ms
Remote clock offset: 0.101 ms


# Below is generated by plot.py at 2018-12-11 04:02:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 543.37 Mbit/s
95th percentile per-packet one-way delay: 116.395 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 288.62 Mbit/s
95th percentile per-packet one-way delay: 108.000 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 279.61 Mbit/s
95th percentile per-packet one-way delay: 118.266 ms
Loss rate: 0.12%
-- Flow 3:
Average throughput: 206.10 Mbit/s
95th percentile per-packet one-way delay: 123.956 ms
Loss rate: 0.00%
```
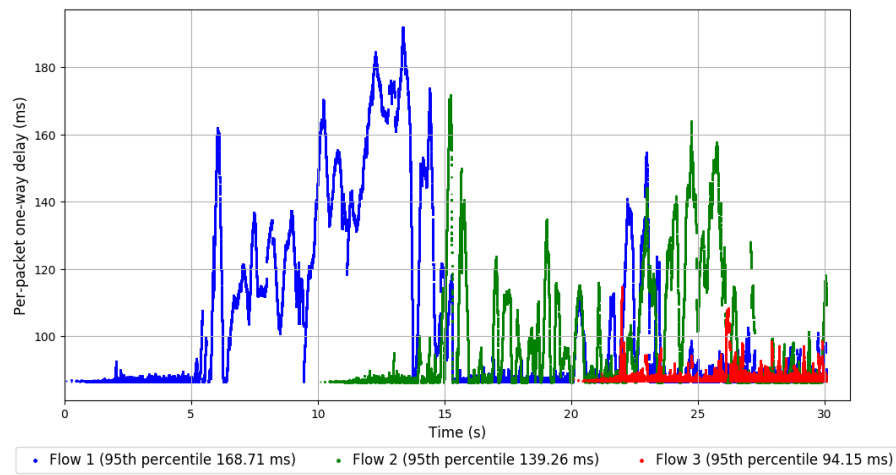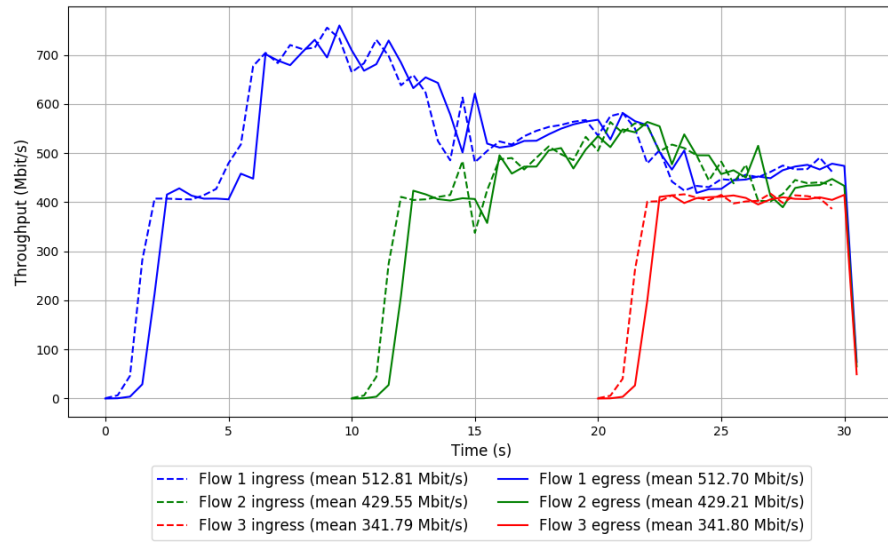
Run 3: Report of Copa — Data Link

Flow 1 ingress (mean 288.63 Mbit/s) — Flow 1 egress (mean 288.62 Mbit/s)
Flow 2 ingress (mean 279.97 Mbit/s) — Flow 2 egress (mean 279.61 Mbit/s)
Flow 3 ingress (mean 206.10 Mbit/s) — Flow 3 egress (mean 206.10 Mbit/s)

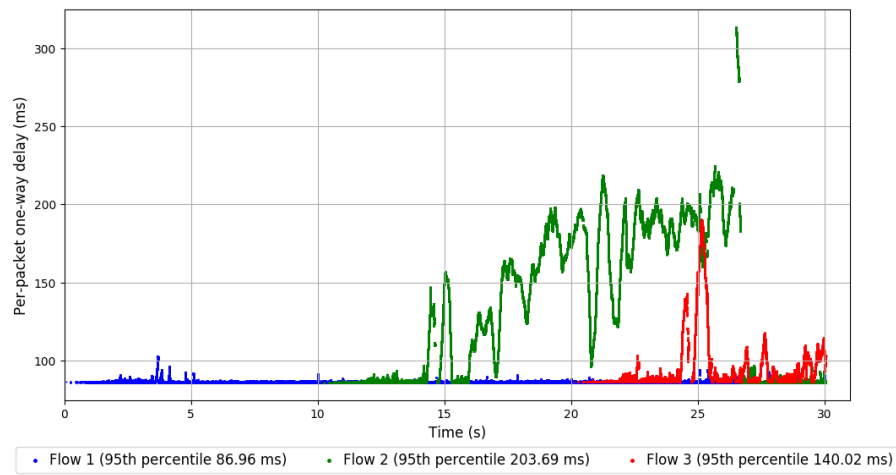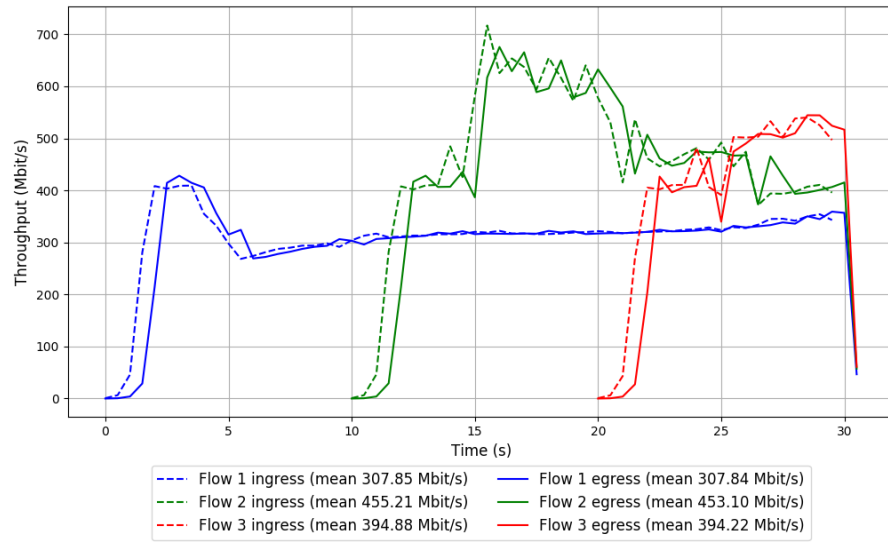Flow 1 (95th percentile 108.00 ms)   Flow 2 (95th percentile 118.27 ms)   Flow 3 (95th percentile 123.96 ms)

```
Run 4: Statistics of Copa

Start at: 2018-12-11 02:35:55
End at: 2018-12-11 02:36:25
Local clock offset: -0.125 ms
Remote clock offset: -0.195 ms


# Below is generated by plot.py at 2018-12-11 04:15:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 538.59 Mbit/s
95th percentile per-packet one-way delay: 113.302 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 290.62 Mbit/s
95th percentile per-packet one-way delay: 104.710 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 261.38 Mbit/s
95th percentile per-packet one-way delay: 122.493 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 222.32 Mbit/s
95th percentile per-packet one-way delay: 101.165 ms
Loss rate: 0.00%
```

Run 4: Report of Copa — Data Link

Flow 1 ingress (mean 290.61 Mbit/s) ---- Flow 1 egress (mean 290.62 Mbit/s) ——
Flow 2 ingress (mean 261.38 Mbit/s) ---- Flow 2 egress (mean 261.38 Mbit/s) ——
Flow 3 ingress (mean 222.31 Mbit/s) ---- Flow 3 egress (mean 222.32 Mbit/s) ——

Flow 1 (95th percentile 104.71 ms)   Flow 2 (95th percentile 122.49 ms)   Flow 3 (95th percentile 101.17 ms)

```
Run 5: Statistics of Copa

Start at: 2018-12-11 03:10:01
End at: 2018-12-11 03:10:31
Local clock offset: -0.025 ms
Remote clock offset: -0.053 ms

# Below is generated by plot.py at 2018-12-11 04:17:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 503.83 Mbit/s
95th percentile per-packet one-way delay: 104.399 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 295.19 Mbit/s
95th percentile per-packet one-way delay: 111.737 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 193.14 Mbit/s
95th percentile per-packet one-way delay: 89.283 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 241.04 Mbit/s
95th percentile per-packet one-way delay: 97.372 ms
Loss rate: 0.00%
```
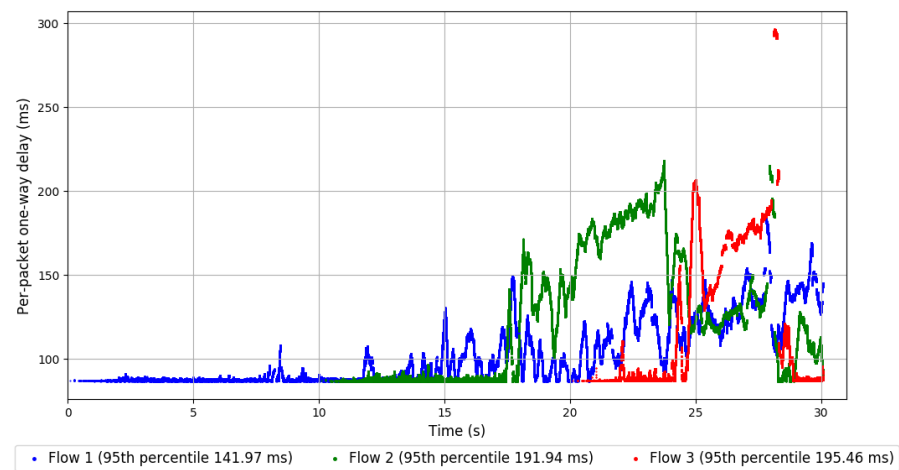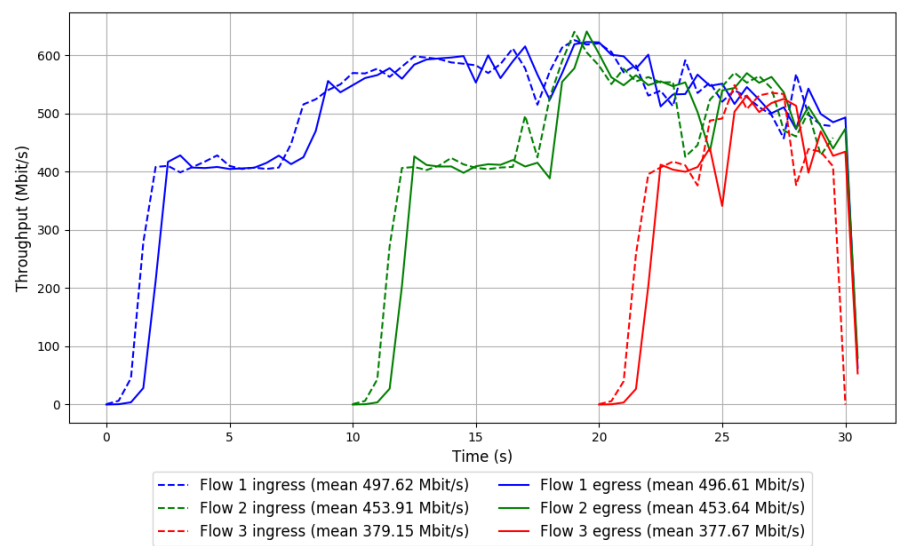
Run 5: Report of Copa — Data Link

Flow 1 ingress (mean 295.19 Mbit/s)   Flow 1 egress (mean 295.19 Mbit/s)
Flow 2 ingress (mean 193.14 Mbit/s)   Flow 2 egress (mean 193.14 Mbit/s)
Flow 3 ingress (mean 241.04 Mbit/s)   Flow 3 egress (mean 241.04 Mbit/s)

Flow 1 (95th percentile 111.74 ms)   Flow 2 (95th percentile 89.28 ms)   Flow 3 (95th percentile 97.37 ms)
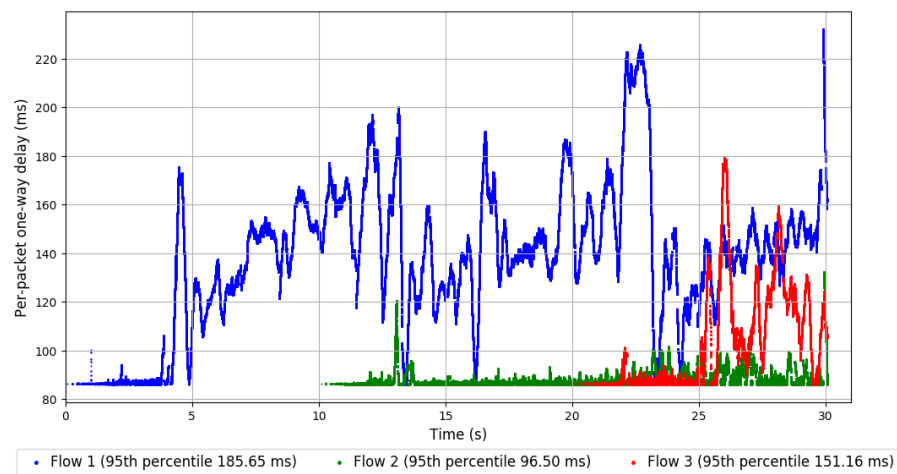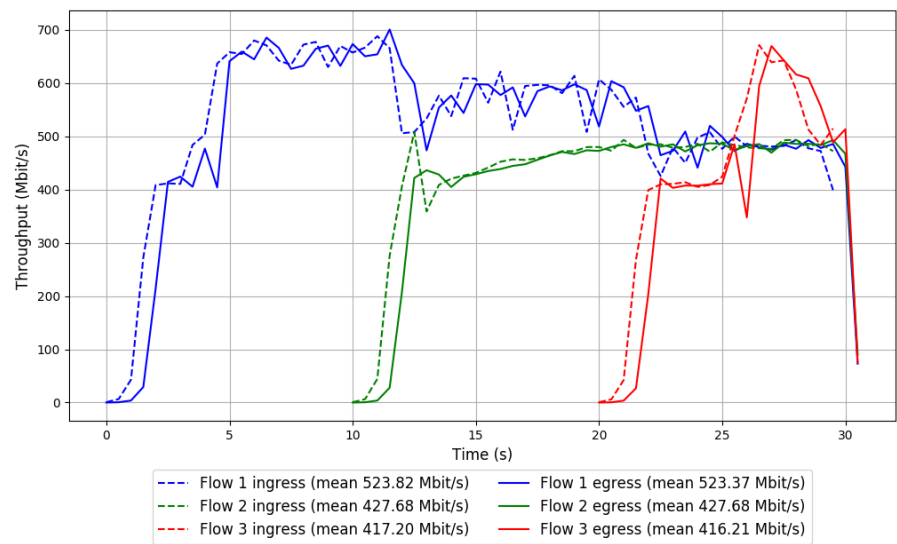
24

```
Run 1: Statistics of TCP Cubic

Start at: 2018-12-11 01:01:57
End at: 2018-12-11 01:02:27
Local clock offset: -0.532 ms
Remote clock offset: -0.077 ms


# Below is generated by plot.py at 2018-12-11 04:17:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 912.16 Mbit/s
95th percentile per-packet one-way delay: 159.939 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 512.70 Mbit/s
95th percentile per-packet one-way delay: 168.708 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 429.21 Mbit/s
95th percentile per-packet one-way delay: 139.265 ms
Loss rate: 0.06%
-- Flow 3:
Average throughput: 341.80 Mbit/s
95th percentile per-packet one-way delay: 94.153 ms
Loss rate: 0.00%
```

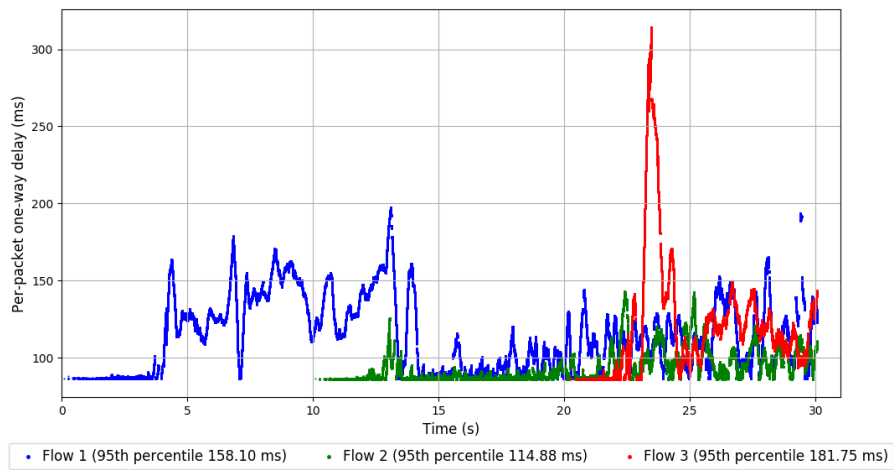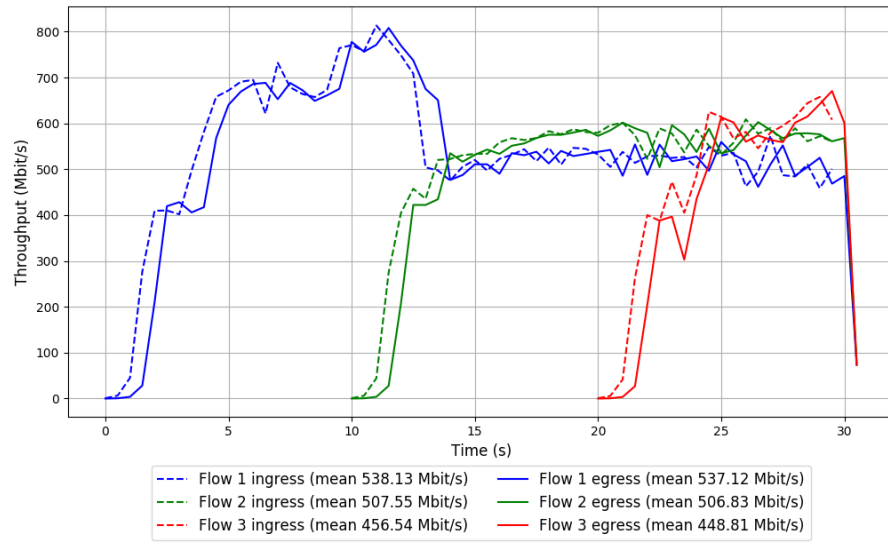Run 1: Report of TCP Cubic — Data Link

```
Run 2: Statistics of TCP Cubic

Start at: 2018-12-11 01:35:30
End at: 2018-12-11 01:36:00
Local clock offset: -0.174 ms
Remote clock offset: -0.105 ms

# Below is generated by plot.py at 2018-12-11 04:17:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 740.82 Mbit/s
95th percentile per-packet one-way delay: 193.377 ms
Loss rate: 0.22%
-- Flow 1:
Average throughput: 307.84 Mbit/s
95th percentile per-packet one-way delay: 86.964 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 453.10 Mbit/s
95th percentile per-packet one-way delay: 203.685 ms
Loss rate: 0.46%
-- Flow 3:
Average throughput: 394.22 Mbit/s
95th percentile per-packet one-way delay: 140.024 ms
Loss rate: 0.16%
```

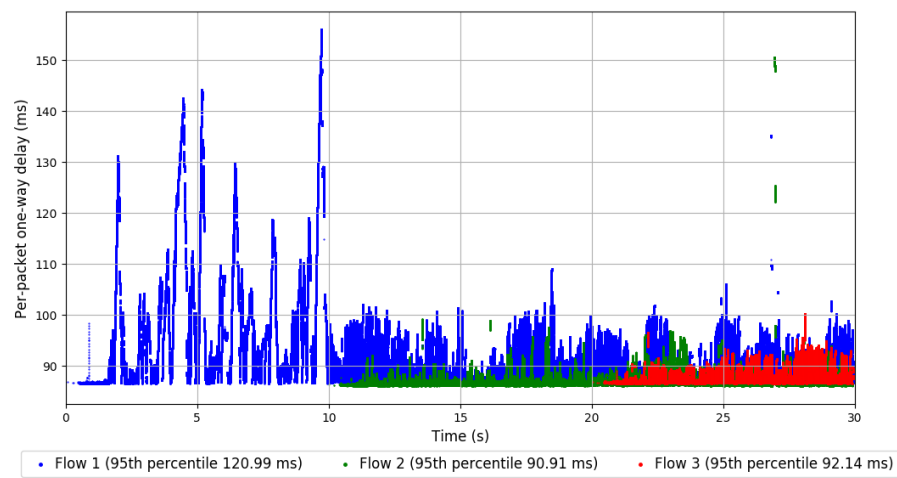Run 2: Report of TCP Cubic — Data Link

```
Run 3: Statistics of TCP Cubic

Start at: 2018-12-11 02:09:08
End at: 2018-12-11 02:09:38
Local clock offset: -0.498 ms
Remote clock offset: 0.113 ms


# Below is generated by plot.py at 2018-12-11 04:17:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 924.17 Mbit/s
95th percentile per-packet one-way delay: 184.978 ms
Loss rate: 0.29%
-- Flow 1:
Average throughput: 496.61 Mbit/s
95th percentile per-packet one-way delay: 141.969 ms
Loss rate: 0.20%
-- Flow 2:
Average throughput: 453.64 Mbit/s
95th percentile per-packet one-way delay: 191.939 ms
Loss rate: 0.06%
-- Flow 3:
Average throughput: 377.67 Mbit/s
95th percentile per-packet one-way delay: 195.456 ms
Loss rate: 1.22%
```

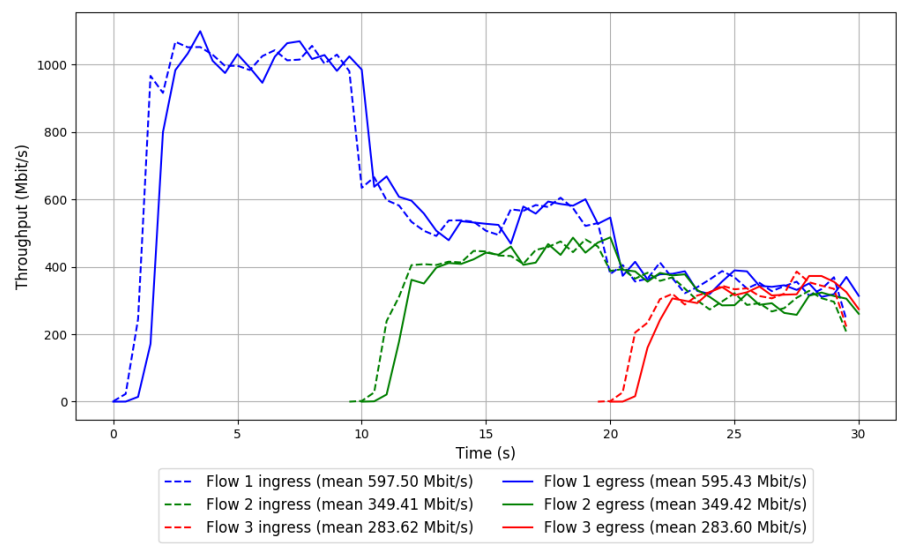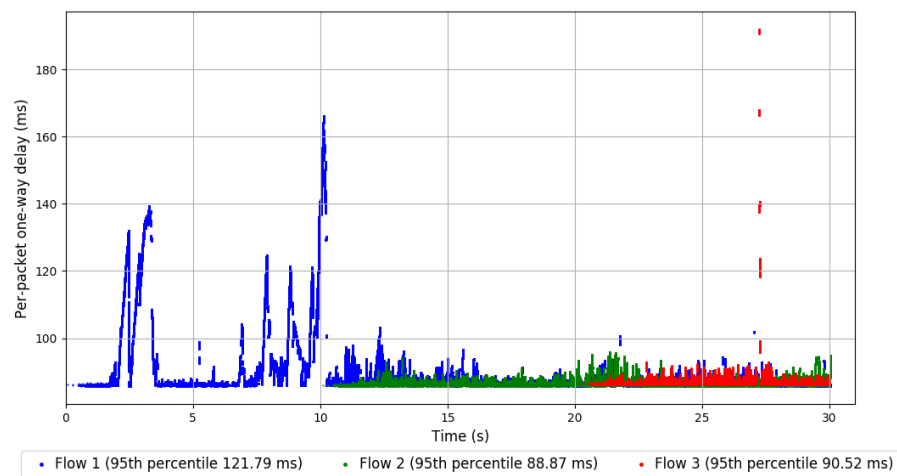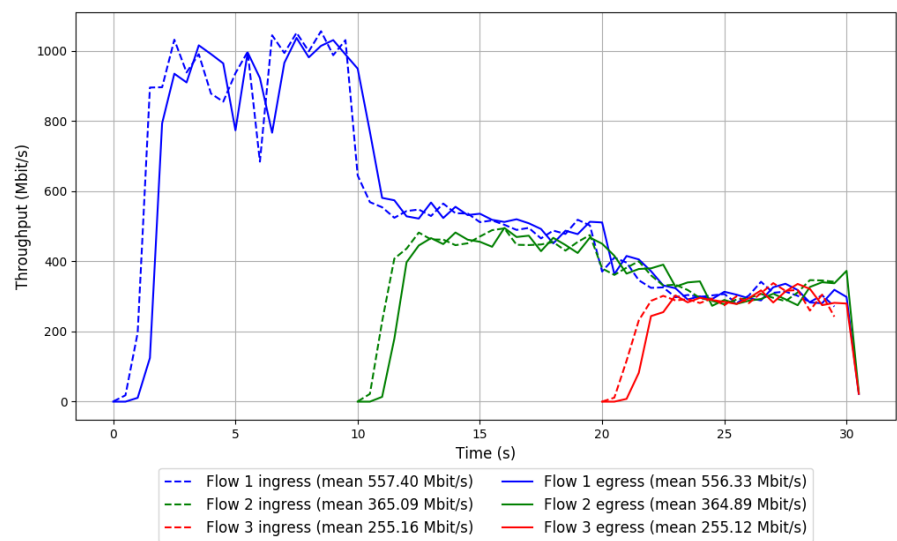Run 3: Report of TCP Cubic — Data Link

```
Run 4: Statistics of TCP Cubic

Start at: 2018-12-11 02:43:21
End at: 2018-12-11 02:43:51
Local clock offset: -0.407 ms
Remote clock offset: -0.186 ms


# Below is generated by plot.py at 2018-12-11 04:19:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 946.59 Mbit/s
95th percentile per-packet one-way delay: 173.234 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 523.37 Mbit/s
95th percentile per-packet one-way delay: 185.647 ms
Loss rate: 0.08%
-- Flow 2:
Average throughput: 427.68 Mbit/s
95th percentile per-packet one-way delay: 96.503 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 416.21 Mbit/s
95th percentile per-packet one-way delay: 151.157 ms
Loss rate: 0.24%
```

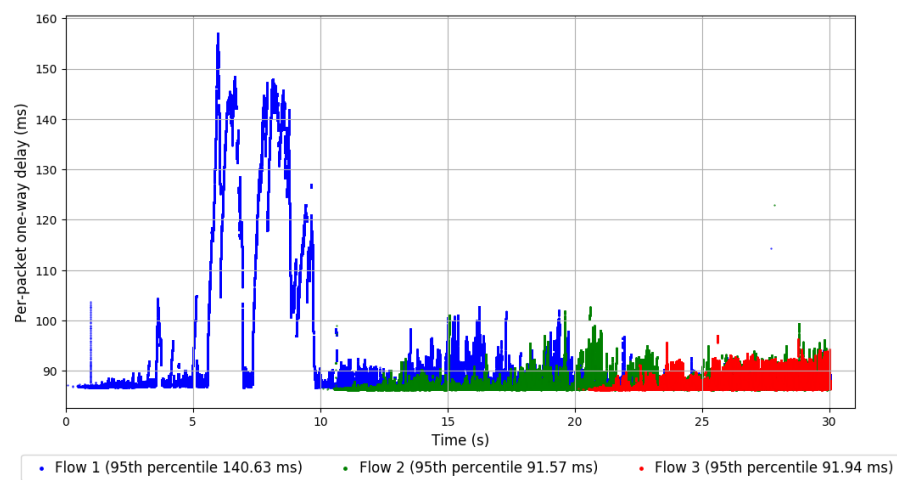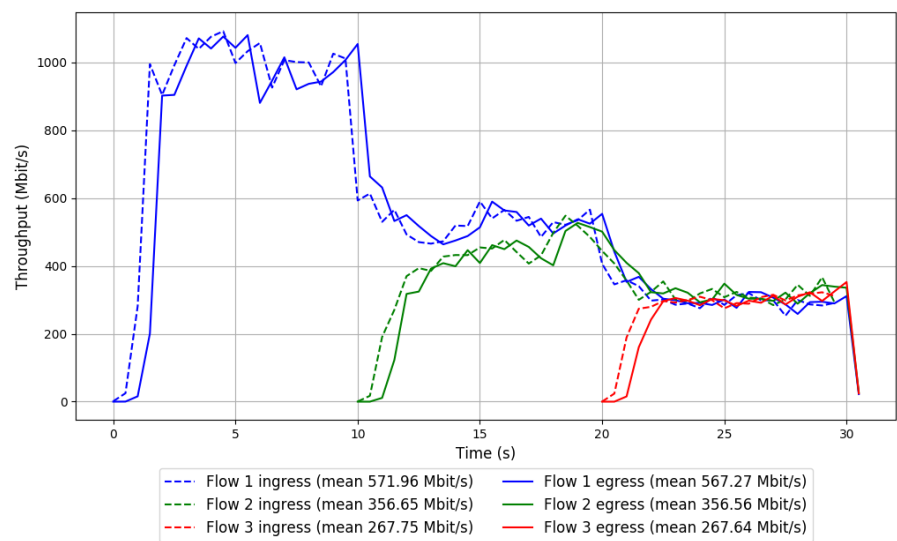Run 4: Report of TCP Cubic — Data Link

```
Run 5: Statistics of TCP Cubic

Start at: 2018-12-11 03:17:01
End at: 2018-12-11 03:17:31
Local clock offset: -0.045 ms
Remote clock offset: -0.062 ms


# Below is generated by plot.py at 2018-12-11 04:21:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1023.87 Mbit/s
95th percentile per-packet one-way delay: 155.477 ms
Loss rate: 0.39%
-- Flow 1:
Average throughput: 537.12 Mbit/s
95th percentile per-packet one-way delay: 158.099 ms
Loss rate: 0.19%
-- Flow 2:
Average throughput: 506.83 Mbit/s
95th percentile per-packet one-way delay: 114.883 ms
Loss rate: 0.14%
-- Flow 3:
Average throughput: 448.81 Mbit/s
95th percentile per-packet one-way delay: 181.750 ms
Loss rate: 1.68%
```

Run 5: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 538.13 Mbit/s)   Flow 1 egress (mean 537.12 Mbit/s)
Flow 2 ingress (mean 507.55 Mbit/s)   Flow 2 egress (mean 506.83 Mbit/s)
Flow 3 ingress (mean 456.54 Mbit/s)   Flow 3 egress (mean 448.81 Mbit/s)

Flow 1 (95th percentile 158.10 ms)   Flow 2 (95th percentile 114.88 ms)   Flow 3 (95th percentile 181.75 ms)

```
Run 1: Statistics of FillP

Start at: 2018-12-11 01:07:22
End at: 2018-12-11 01:07:52
Local clock offset: -0.256 ms
Remote clock offset: -0.042 ms


# Below is generated by plot.py at 2018-12-11 04:22:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 922.49 Mbit/s
95th percentile per-packet one-way delay: 111.781 ms
Loss rate: 0.22%
-- Flow 1:
Average throughput: 595.43 Mbit/s
95th percentile per-packet one-way delay: 120.992 ms
Loss rate: 0.34%
-- Flow 2:
Average throughput: 349.42 Mbit/s
95th percentile per-packet one-way delay: 90.907 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 283.60 Mbit/s
95th percentile per-packet one-way delay: 92.136 ms
Loss rate: 0.00%
```
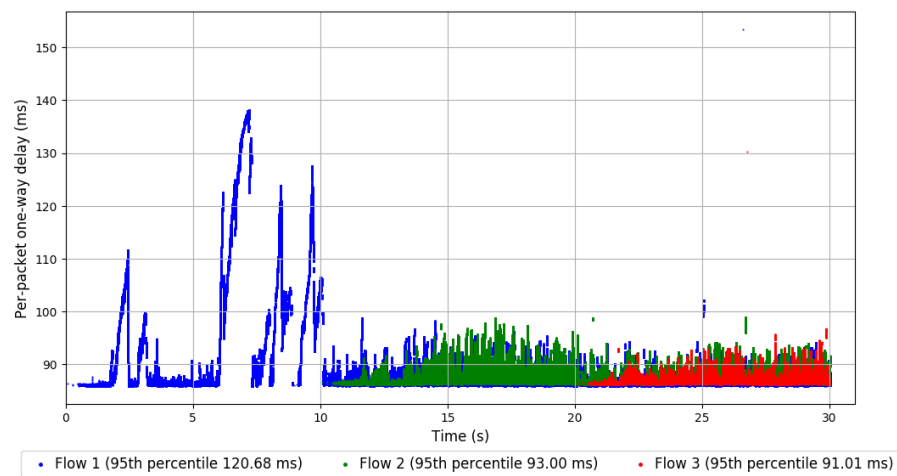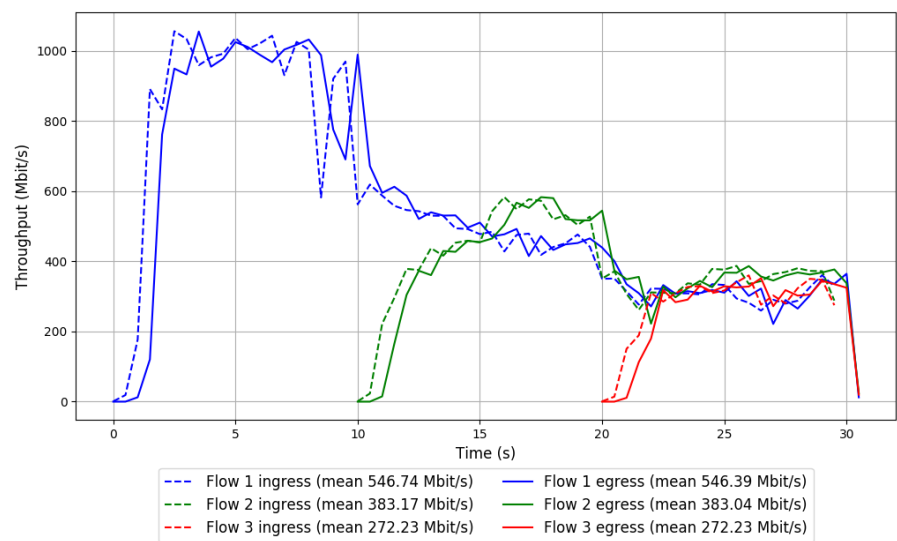
Run 1: Report of FillP — Data Link

```
Run 2: Statistics of FillP

Start at: 2018-12-11 01:40:49
End at: 2018-12-11 01:41:19
Local clock offset: -0.093 ms
Remote clock offset: -0.033 ms

# Below is generated by plot.py at 2018-12-11 04:33:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 883.49 Mbit/s
95th percentile per-packet one-way delay: 112.816 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 556.33 Mbit/s
95th percentile per-packet one-way delay: 121.791 ms
Loss rate: 0.19%
-- Flow 2:
Average throughput: 364.89 Mbit/s
95th percentile per-packet one-way delay: 88.870 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 255.12 Mbit/s
95th percentile per-packet one-way delay: 90.520 ms
Loss rate: 0.02%
```
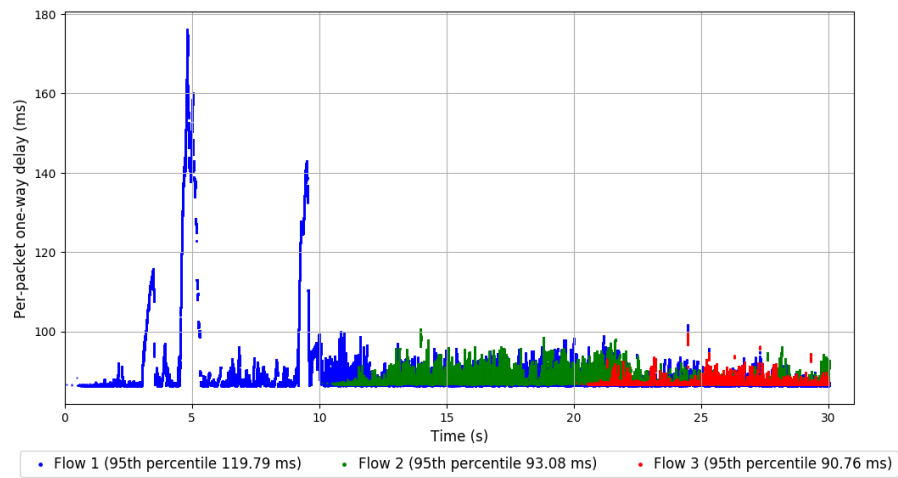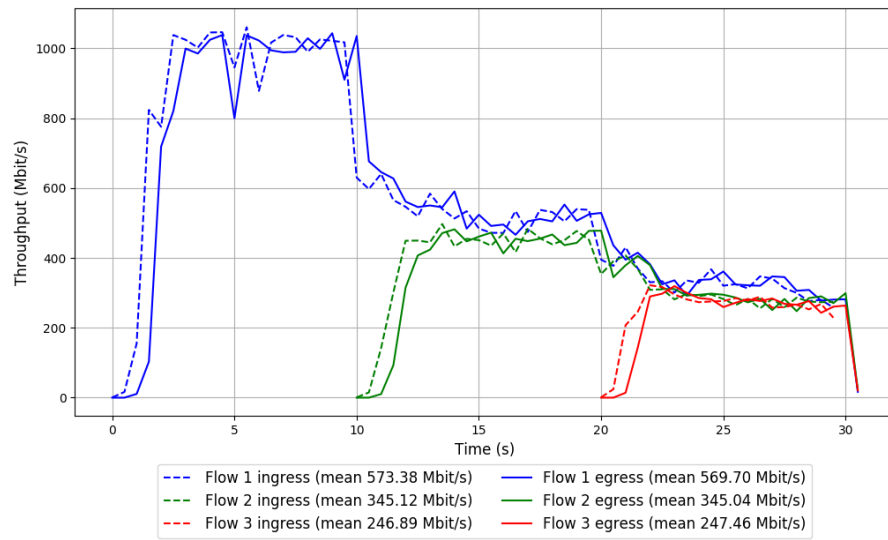
Run 2: Report of FillP — Data Link

```
Run 3: Statistics of FillP

Start at: 2018-12-11 02:14:38
End at: 2018-12-11 02:15:08
Local clock offset: -0.524 ms
Remote clock offset: -0.067 ms


# Below is generated by plot.py at 2018-12-11 04:37:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 893.00 Mbit/s
95th percentile per-packet one-way delay: 134.819 ms
Loss rate: 0.52%
-- Flow 1:
Average throughput: 567.27 Mbit/s
95th percentile per-packet one-way delay: 140.631 ms
Loss rate: 0.81%
-- Flow 2:
Average throughput: 356.56 Mbit/s
95th percentile per-packet one-way delay: 91.574 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 267.64 Mbit/s
95th percentile per-packet one-way delay: 91.945 ms
Loss rate: 0.04%
```
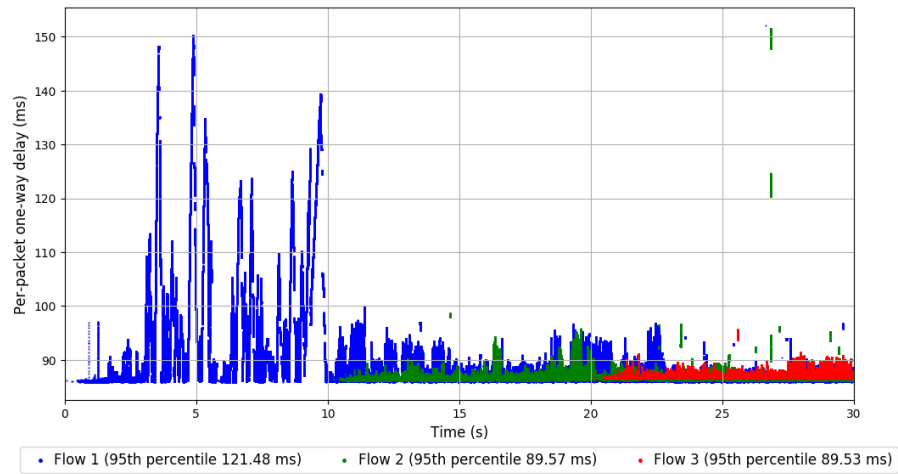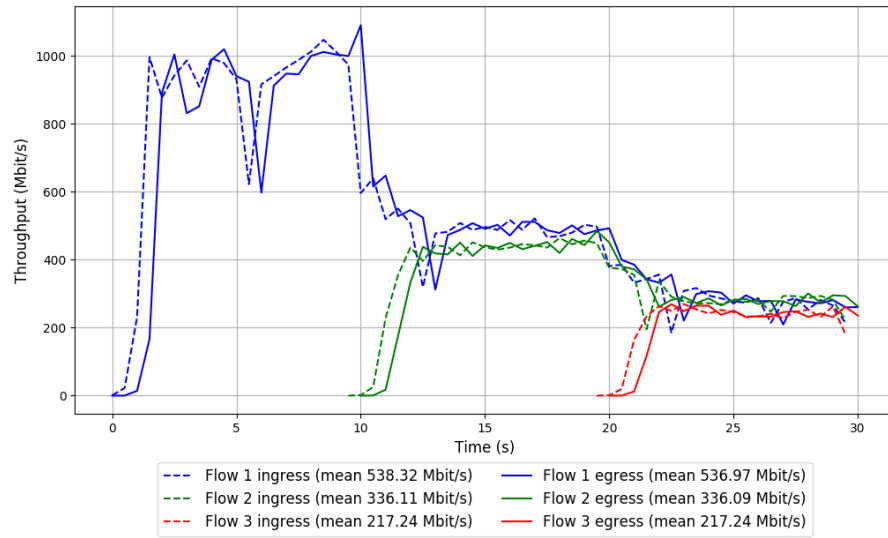
Run 3: Report of FillP — Data Link

- - - - Flow 1 ingress (mean 571.96 Mbit/s) ——— Flow 1 egress (mean 567.27 Mbit/s)
- - - - Flow 2 ingress (mean 356.65 Mbit/s) ——— Flow 2 egress (mean 356.56 Mbit/s)
- - - - Flow 3 ingress (mean 267.75 Mbit/s) ——— Flow 3 egress (mean 267.64 Mbit/s)

- Flow 1 (95th percentile 140.63 ms)   - Flow 2 (95th percentile 91.57 ms)   - Flow 3 (95th percentile 91.94 ms)

```
Run 4: Statistics of FillP

Start at: 2018-12-11 02:48:58
End at: 2018-12-11 02:49:28
Local clock offset: -0.142 ms
Remote clock offset: -0.122 ms


# Below is generated by plot.py at 2018-12-11 04:37:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 891.54 Mbit/s
95th percentile per-packet one-way delay: 108.799 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 546.39 Mbit/s
95th percentile per-packet one-way delay: 120.680 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 383.04 Mbit/s
95th percentile per-packet one-way delay: 93.005 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 272.23 Mbit/s
95th percentile per-packet one-way delay: 91.013 ms
Loss rate: 0.00%
```
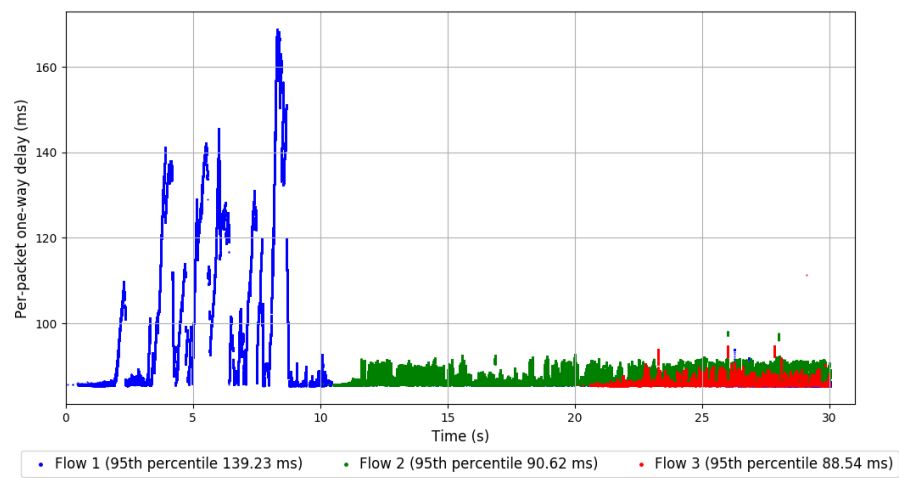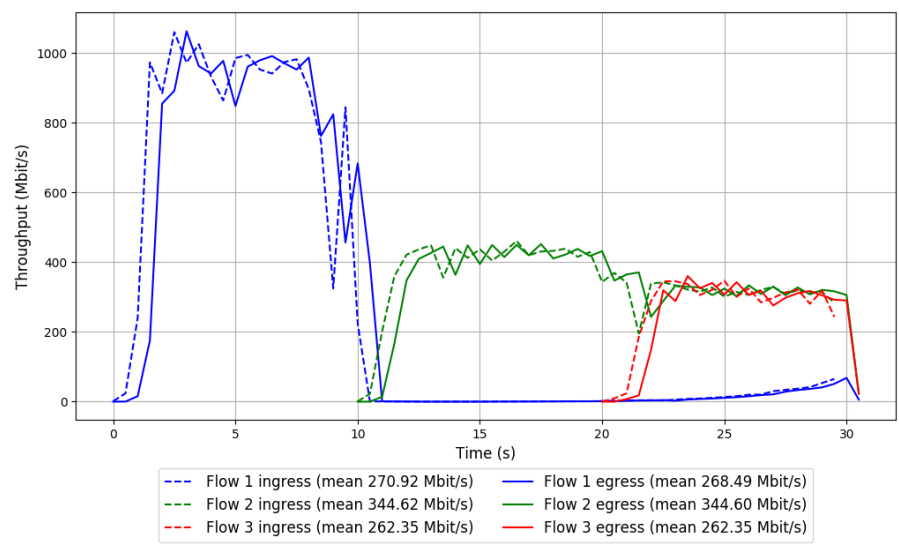
Run 4: Report of FillP — Data Link

Flow 1 ingress (mean 546.74 Mbit/s)   Flow 1 egress (mean 546.39 Mbit/s)
Flow 2 ingress (mean 383.17 Mbit/s)   Flow 2 egress (mean 383.04 Mbit/s)
Flow 3 ingress (mean 272.23 Mbit/s)   Flow 3 egress (mean 272.23 Mbit/s)

Flow 1 (95th percentile 120.68 ms)   Flow 2 (95th percentile 93.00 ms)   Flow 3 (95th percentile 91.01 ms)

```
Run 5: Statistics of FillP

Start at: 2018-12-11 03:22:36
End at: 2018-12-11 03:23:06
Local clock offset: -0.468 ms
Remote clock offset: -0.046 ms


# Below is generated by plot.py at 2018-12-11 04:37:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 881.17 Mbit/s
95th percentile per-packet one-way delay: 101.515 ms
Loss rate: 0.42%
-- Flow 1:
Average throughput: 569.70 Mbit/s
95th percentile per-packet one-way delay: 119.790 ms
Loss rate: 0.64%
-- Flow 2:
Average throughput: 345.04 Mbit/s
95th percentile per-packet one-way delay: 93.082 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 247.46 Mbit/s
95th percentile per-packet one-way delay: 90.757 ms
Loss rate: 0.00%
```
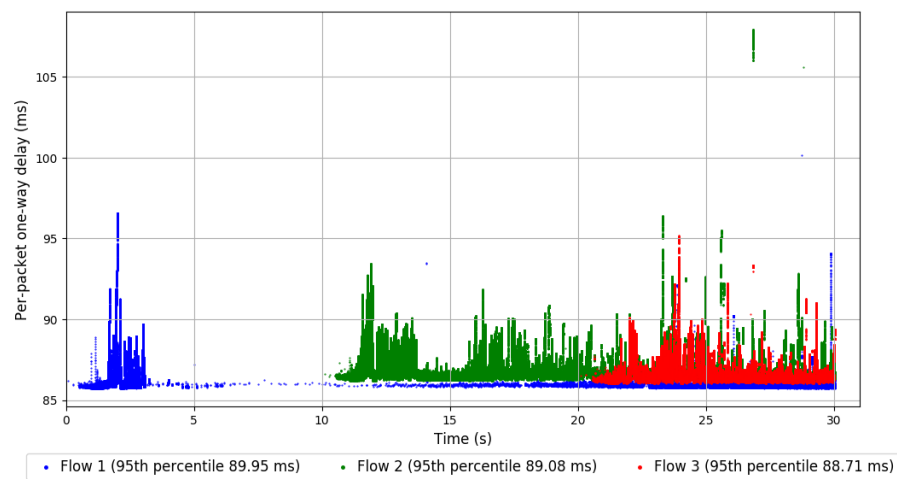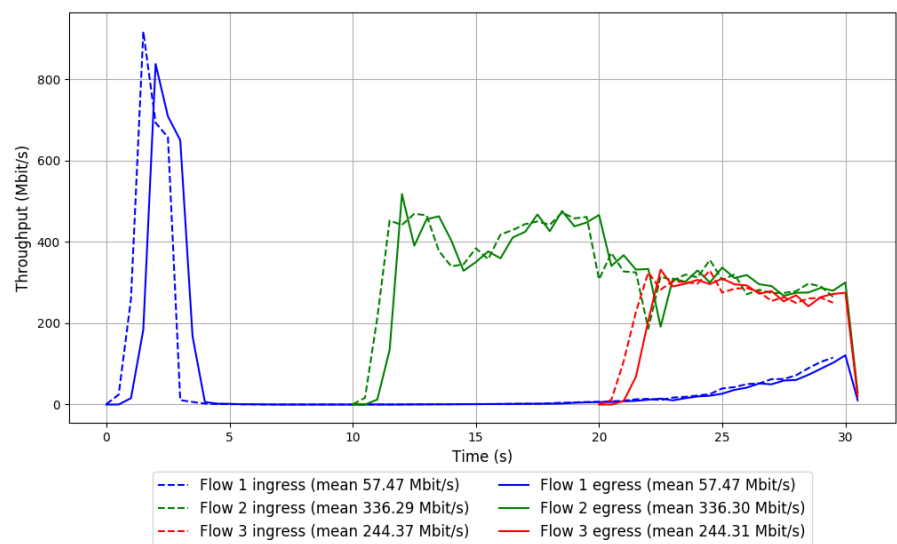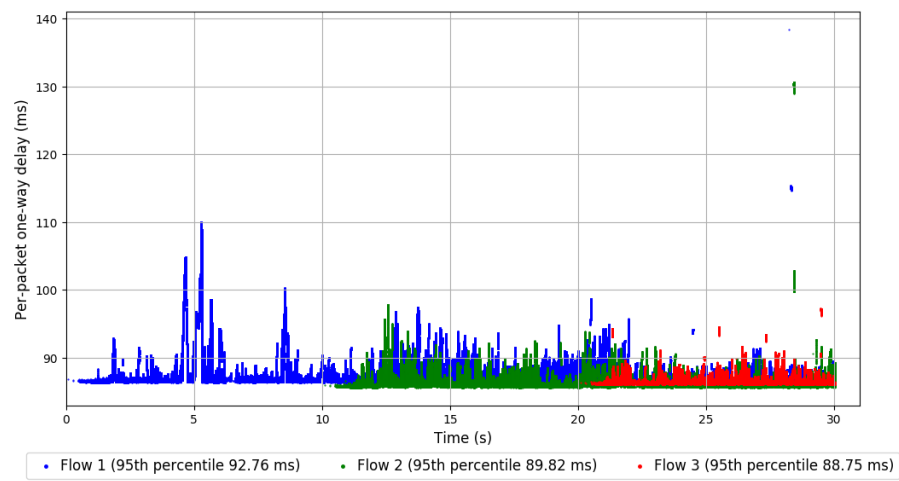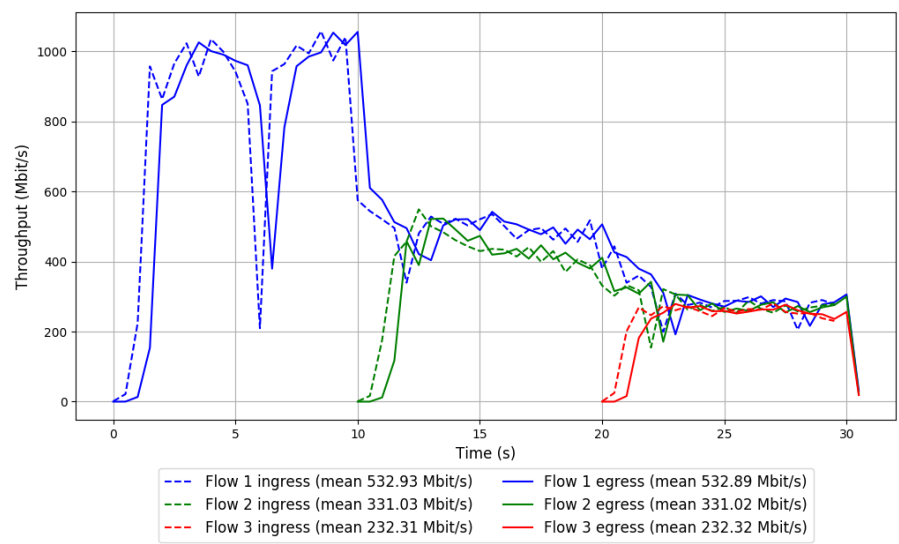
Run 5: Report of FillP — Data Link

Flow 1 ingress (mean 573.38 Mbit/s)   Flow 1 egress (mean 569.70 Mbit/s)
Flow 2 ingress (mean 345.12 Mbit/s)   Flow 2 egress (mean 345.04 Mbit/s)
Flow 3 ingress (mean 246.89 Mbit/s)   Flow 3 egress (mean 247.46 Mbit/s)

Flow 1 (95th percentile 119.79 ms)   Flow 2 (95th percentile 93.08 ms)   Flow 3 (95th percentile 90.76 ms)

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```
Run 1: Statistics of FillP-Sheep

Start at: 2018-12-11 01:00:04
End at: 2018-12-11 01:00:34
Local clock offset: 0.013 ms
Remote clock offset: -0.084 ms


# Below is generated by plot.py at 2018-12-11 04:37:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 833.20 Mbit/s
95th percentile per-packet one-way delay: 113.440 ms
Loss rate: 0.16%
-- Flow 1:
Average throughput: 536.97 Mbit/s
95th percentile per-packet one-way delay: 121.481 ms
Loss rate: 0.25%
-- Flow 2:
Average throughput: 336.09 Mbit/s
95th percentile per-packet one-way delay: 89.570 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 217.24 Mbit/s
95th percentile per-packet one-way delay: 89.525 ms
Loss rate: 0.00%
```

Run 1: Report of FillP-Sheep — Data Link

```
Run 2: Statistics of FillP-Sheep

Start at: 2018-12-11 01:33:49
End at: 2018-12-11 01:34:19
Local clock offset: 0.227 ms
Remote clock offset: -0.106 ms


# Below is generated by plot.py at 2018-12-11 04:37:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 584.43 Mbit/s
95th percentile per-packet one-way delay: 132.273 ms
Loss rate: 0.41%
-- Flow 1:
Average throughput: 268.49 Mbit/s
95th percentile per-packet one-way delay: 139.232 ms
Loss rate: 0.90%
-- Flow 2:
Average throughput: 344.60 Mbit/s
95th percentile per-packet one-way delay: 90.622 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 262.35 Mbit/s
95th percentile per-packet one-way delay: 88.538 ms
Loss rate: 0.00%
```
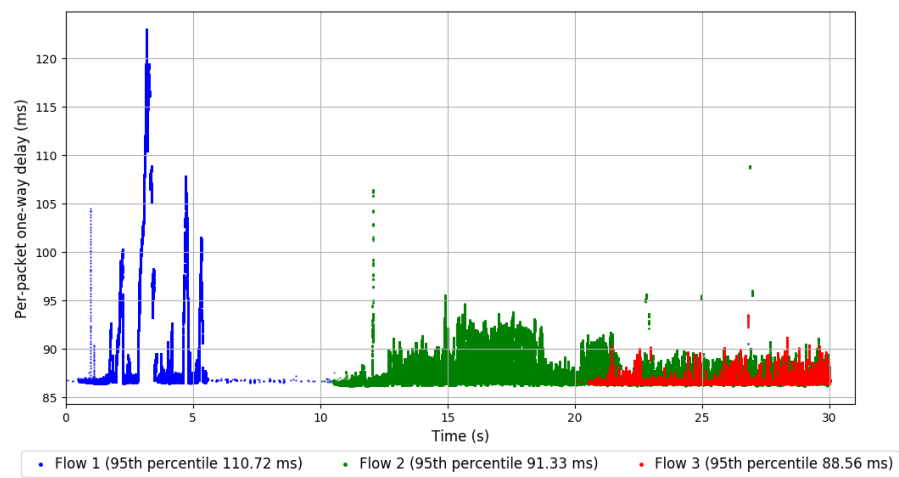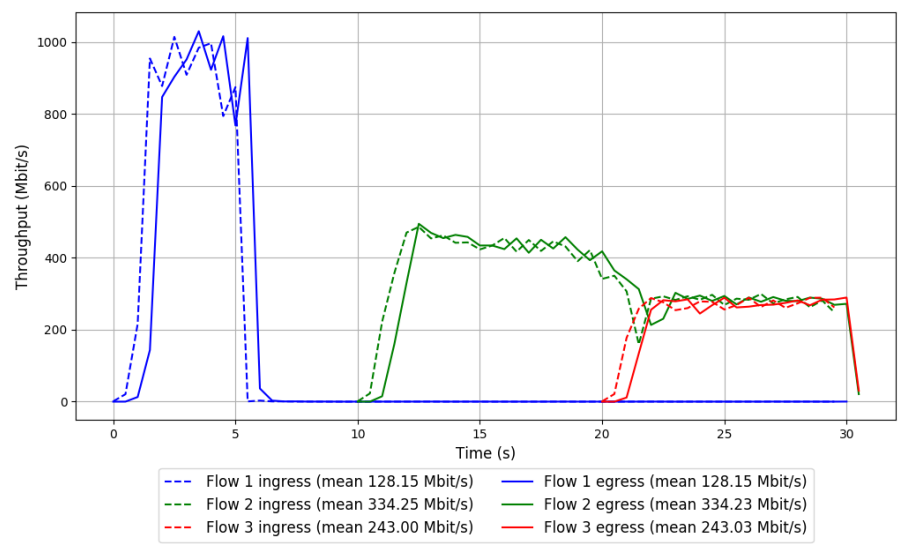
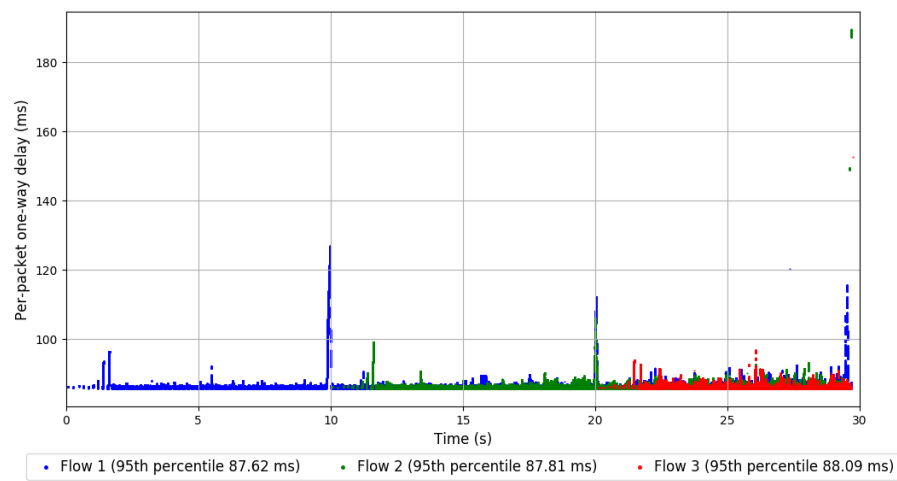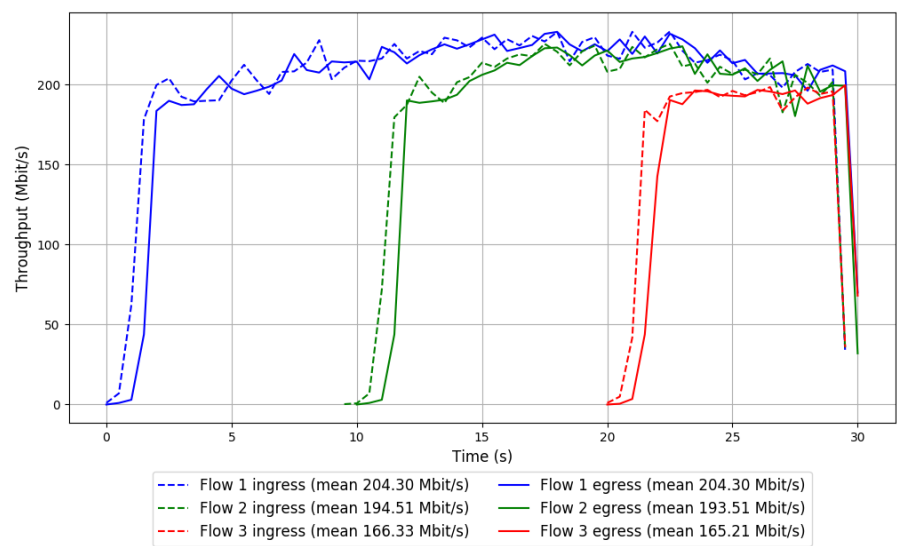Run 2: Report of FillP-Sheep — Data Link

Flow 1 ingress (mean 270.92 Mbit/s) --- Flow 1 egress (mean 268.49 Mbit/s)
Flow 2 ingress (mean 344.62 Mbit/s) --- Flow 2 egress (mean 344.60 Mbit/s)
Flow 3 ingress (mean 262.35 Mbit/s) --- Flow 3 egress (mean 262.35 Mbit/s)

Flow 1 (95th percentile 139.23 ms)   Flow 2 (95th percentile 90.62 ms)   Flow 3 (95th percentile 88.54 ms)

```
Run 3: Statistics of FillP-Sheep

Start at: 2018-12-11 02:07:37
End at: 2018-12-11 02:08:07
Local clock offset: -0.024 ms
Remote clock offset: 0.098 ms


# Below is generated by plot.py at 2018-12-11 04:37:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 362.30 Mbit/s
95th percentile per-packet one-way delay: 89.025 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 57.47 Mbit/s
95th percentile per-packet one-way delay: 89.954 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 336.30 Mbit/s
95th percentile per-packet one-way delay: 89.081 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 244.31 Mbit/s
95th percentile per-packet one-way delay: 88.710 ms
Loss rate: 0.00%
```

Run 3: Report of FillP-Sheep — Data Link
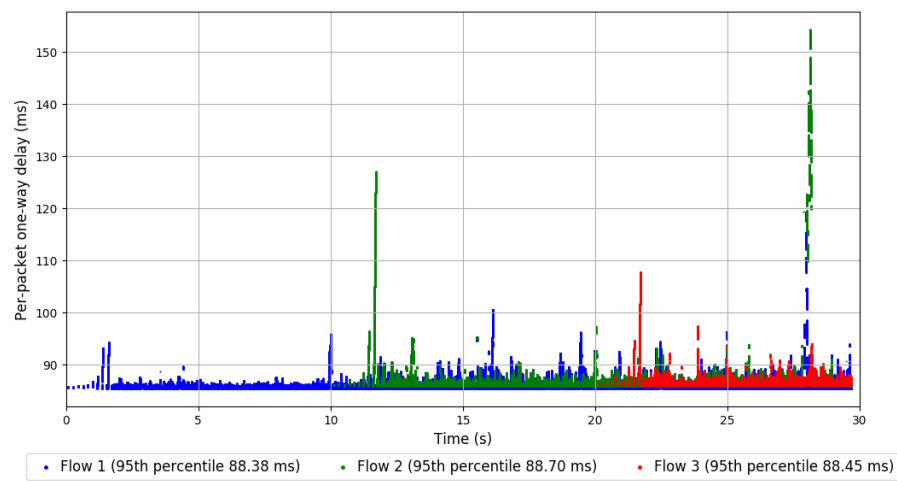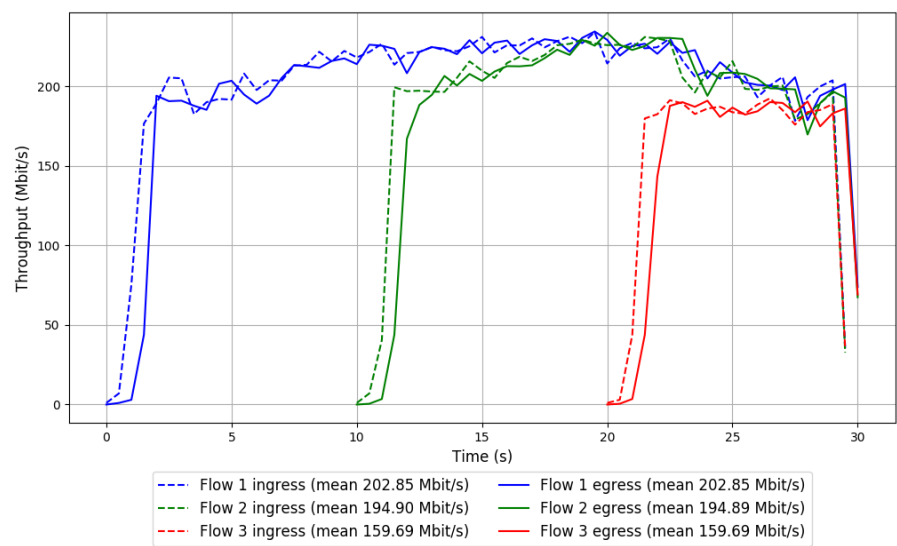
```
Run 4: Statistics of FillP-Sheep

Start at: 2018-12-11 02:41:29
End at: 2018-12-11 02:41:59
Local clock offset: 0.01 ms
Remote clock offset: -0.226 ms


# Below is generated by plot.py at 2018-12-11 04:41:47
# Datalink statistics
-- Total of 3 flows:
Average throughput: 830.14 Mbit/s
95th percentile per-packet one-way delay: 91.291 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 532.89 Mbit/s
95th percentile per-packet one-way delay: 92.761 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 331.02 Mbit/s
95th percentile per-packet one-way delay: 89.817 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 232.32 Mbit/s
95th percentile per-packet one-way delay: 88.747 ms
Loss rate: 0.00%
```
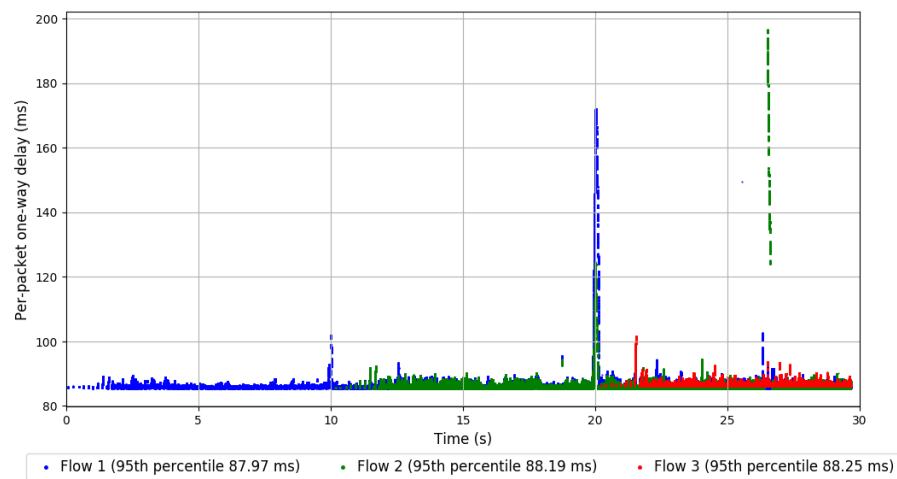
Run 4: Report of FillP-Sheep — Data Link

Flow 1 ingress (mean 532.93 Mbit/s) --- Flow 1 egress (mean 532.89 Mbit/s)
Flow 2 ingress (mean 331.03 Mbit/s) --- Flow 2 egress (mean 331.02 Mbit/s)
Flow 3 ingress (mean 232.31 Mbit/s) --- Flow 3 egress (mean 232.32 Mbit/s)

Flow 1 (95th percentile 92.76 ms) • Flow 2 (95th percentile 89.82 ms) • Flow 3 (95th percentile 88.75 ms)

```
Run 5: Statistics of FillP-Sheep

Start at: 2018-12-11 03:15:26
End at: 2018-12-11 03:15:56
Local clock offset: -0.352 ms
Remote clock offset: -0.13 ms


# Below is generated by plot.py at 2018-12-11 04:41:47
# Datalink statistics
-- Total of 3 flows:
Average throughput: 430.64 Mbit/s
95th percentile per-packet one-way delay: 98.431 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 128.15 Mbit/s
95th percentile per-packet one-way delay: 110.725 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 334.23 Mbit/s
95th percentile per-packet one-way delay: 91.335 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 243.03 Mbit/s
95th percentile per-packet one-way delay: 88.558 ms
Loss rate: 0.00%
```
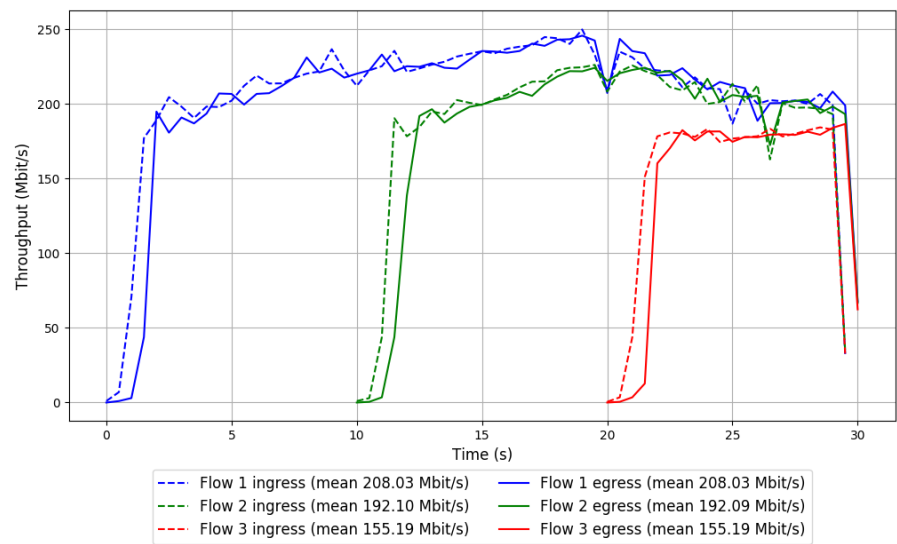
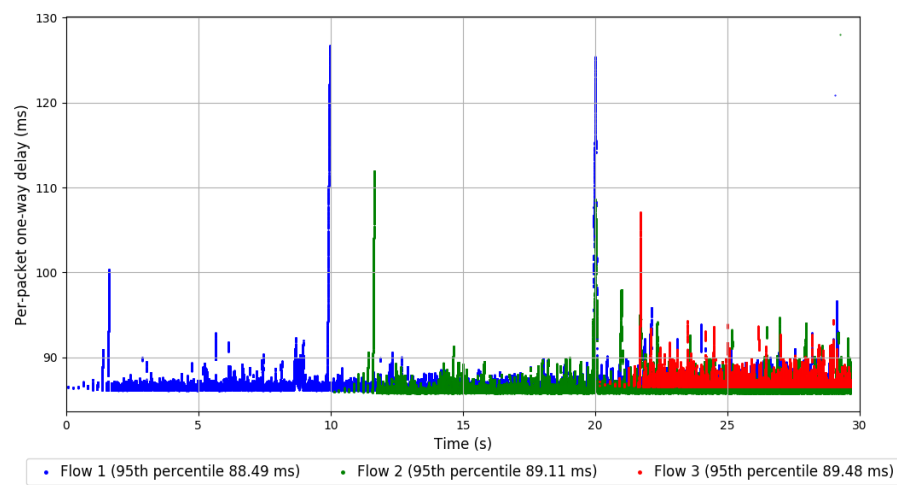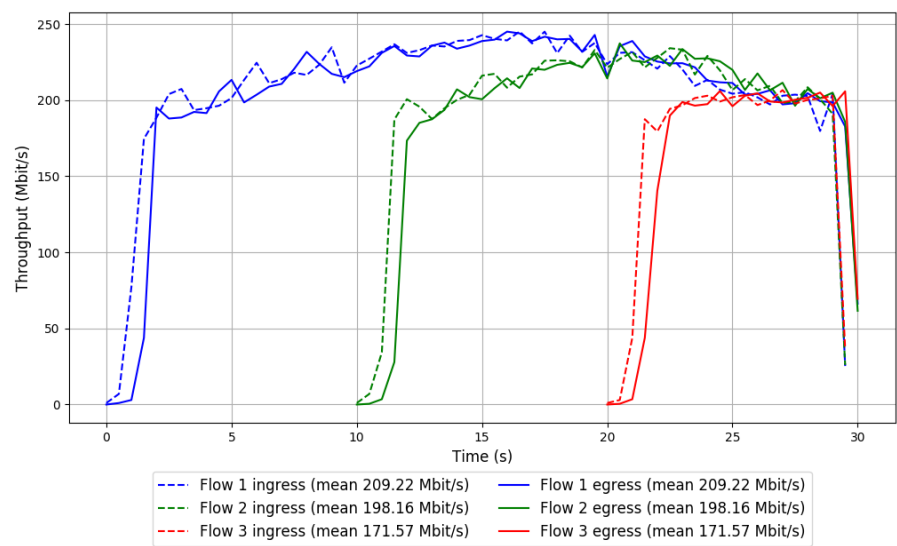Run 5: Report of FillP-Sheep — Data Link

```
Run 1: Statistics of Indigo

Start at: 2018-12-11 00:51:25
End at: 2018-12-11 00:51:55
Local clock offset: 0.434 ms
Remote clock offset: 0.009 ms

# Below is generated by plot.py at 2018-12-11 04:47:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 385.06 Mbit/s
95th percentile per-packet one-way delay: 87.767 ms
Loss rate: 0.17%
-- Flow 1:
Average throughput: 204.30 Mbit/s
95th percentile per-packet one-way delay: 87.621 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 193.51 Mbit/s
95th percentile per-packet one-way delay: 87.811 ms
Loss rate: 0.51%
-- Flow 3:
Average throughput: 165.21 Mbit/s
95th percentile per-packet one-way delay: 88.090 ms
Loss rate: 0.00%
```
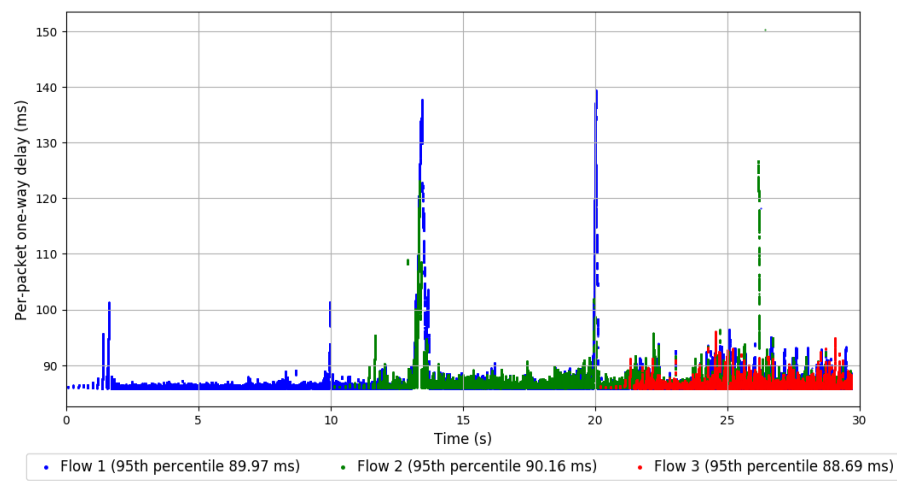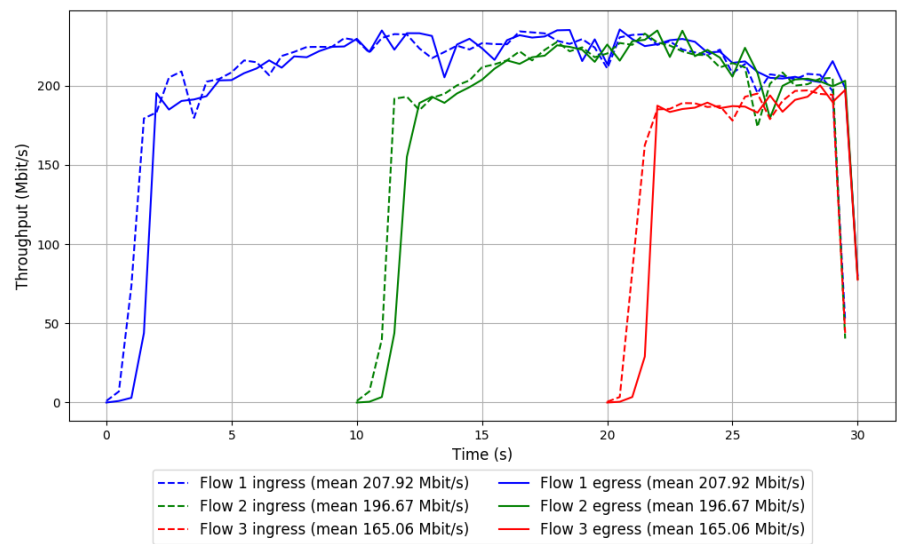
Run 1: Report of Indigo — Data Link

```
Run 2: Statistics of Indigo

Start at: 2018-12-11 01:25:11
End at: 2018-12-11 01:25:41
Local clock offset: 0.216 ms
Remote clock offset: -0.124 ms

# Below is generated by plot.py at 2018-12-11 04:48:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 382.99 Mbit/s
95th percentile per-packet one-way delay: 88.499 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 202.85 Mbit/s
95th percentile per-packet one-way delay: 88.382 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 194.89 Mbit/s
95th percentile per-packet one-way delay: 88.697 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 159.69 Mbit/s
95th percentile per-packet one-way delay: 88.451 ms
Loss rate: 0.00%
```
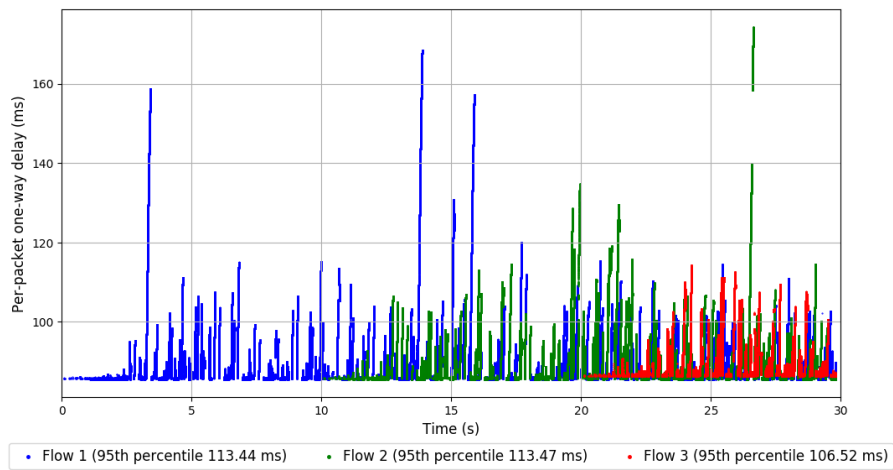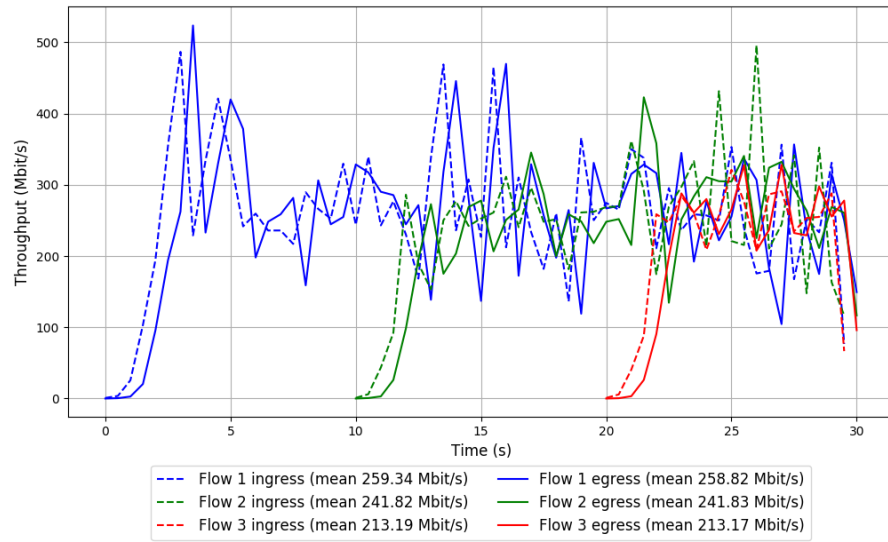
Run 2: Report of Indigo — Data Link

```
Run 3: Statistics of Indigo

Start at: 2018-12-11 01:58:46
End at: 2018-12-11 01:59:16
Local clock offset: 0.306 ms
Remote clock offset: 0.065 ms


# Below is generated by plot.py at 2018-12-11 04:51:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 384.09 Mbit/s
95th percentile per-packet one-way delay: 88.077 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 208.03 Mbit/s
95th percentile per-packet one-way delay: 87.973 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 192.09 Mbit/s
95th percentile per-packet one-way delay: 88.185 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 155.19 Mbit/s
95th percentile per-packet one-way delay: 88.246 ms
Loss rate: 0.00%
```

Run 3: Report of Indigo — Data Link

```
Run 4: Statistics of Indigo

Start at: 2018-12-11 02:32:44
End at: 2018-12-11 02:33:14
Local clock offset: -0.127 ms
Remote clock offset: -0.181 ms


# Below is generated by plot.py at 2018-12-11 04:52:24
# Datalink statistics
-- Total of 3 flows:
Average throughput: 395.10 Mbit/s
95th percentile per-packet one-way delay: 88.913 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 209.22 Mbit/s
95th percentile per-packet one-way delay: 88.494 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 198.16 Mbit/s
95th percentile per-packet one-way delay: 89.108 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 171.57 Mbit/s
95th percentile per-packet one-way delay: 89.485 ms
Loss rate: 0.00%
```
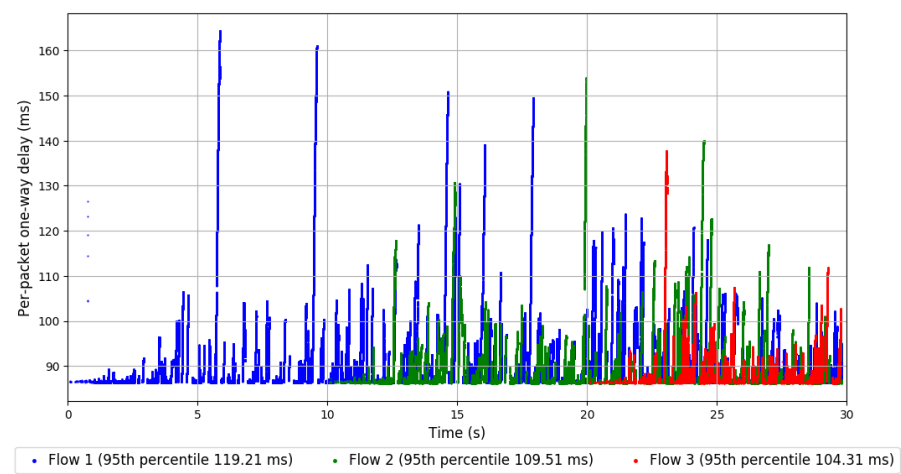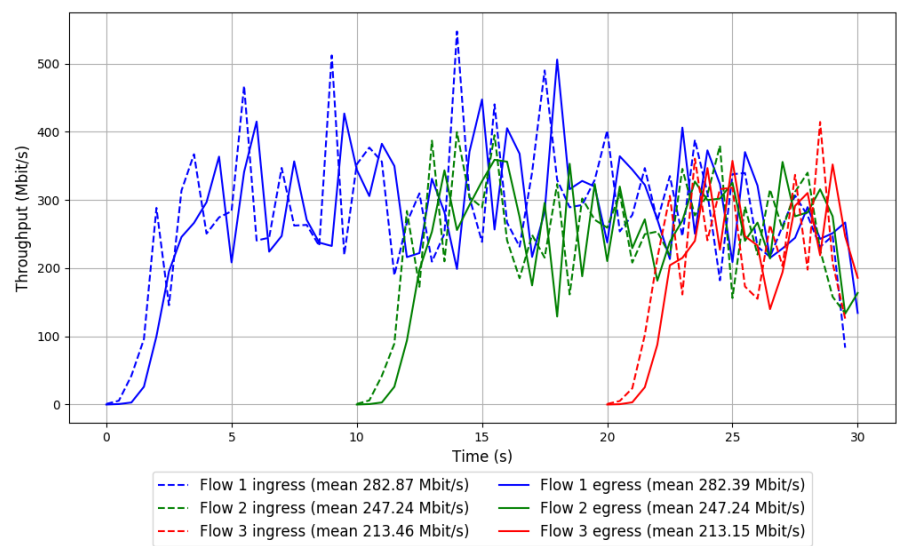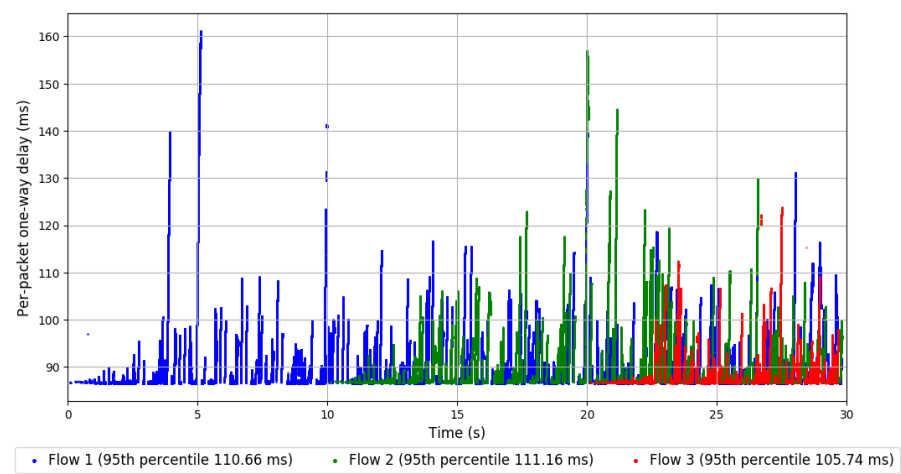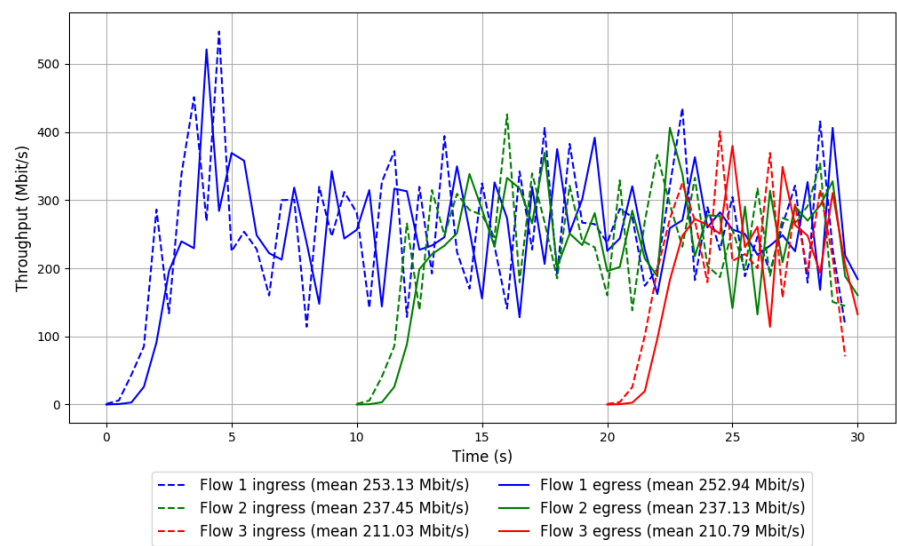
Run 4: Report of Indigo — Data Link

Flow 1 ingress (mean 209.22 Mbit/s) ---- Flow 1 egress (mean 209.22 Mbit/s)
Flow 2 ingress (mean 198.16 Mbit/s) ---- Flow 2 egress (mean 198.16 Mbit/s)
Flow 3 ingress (mean 171.57 Mbit/s) ---- Flow 3 egress (mean 171.57 Mbit/s)

Flow 1 (95th percentile 88.49 ms)   Flow 2 (95th percentile 89.11 ms)   Flow 3 (95th percentile 89.48 ms)

```
Run 5: Statistics of Indigo

Start at: 2018-12-11 03:06:52
End at: 2018-12-11 03:07:22
Local clock offset: -0.127 ms
Remote clock offset: -0.042 ms


# Below is generated by plot.py at 2018-12-11 04:52:24
# Datalink statistics
-- Total of 3 flows:
Average throughput: 390.63 Mbit/s
95th percentile per-packet one-way delay: 89.805 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 207.92 Mbit/s
95th percentile per-packet one-way delay: 89.968 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 196.67 Mbit/s
95th percentile per-packet one-way delay: 90.162 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 165.06 Mbit/s
95th percentile per-packet one-way delay: 88.685 ms
Loss rate: 0.00%
```
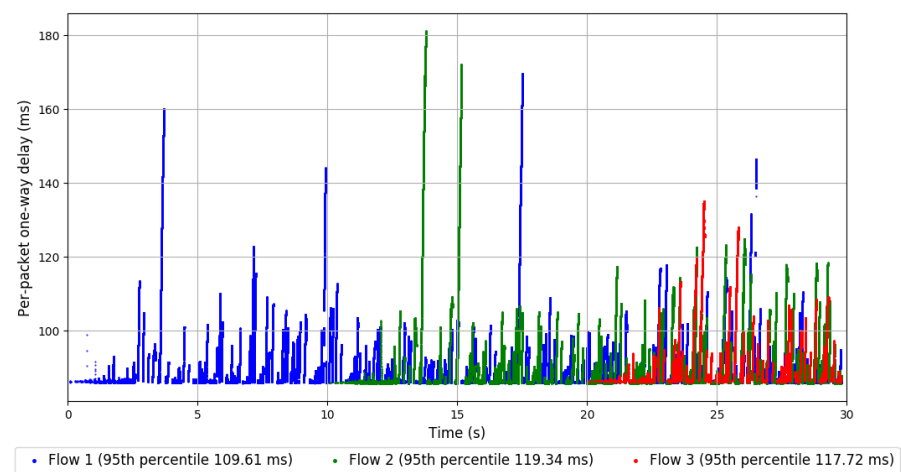
Run 5: Report of Indigo — Data Link

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

Start at: 2018-12-11 01:11:12
End at: 2018-12-11 01:11:42
Local clock offset: 0.262 ms
Remote clock offset: -0.074 ms


# Below is generated by plot.py at 2018-12-11 04:52:24
# Datalink statistics
-- Total of 3 flows:
Average throughput: 488.64 Mbit/s
95th percentile per-packet one-way delay: 111.294 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 258.82 Mbit/s
95th percentile per-packet one-way delay: 113.445 ms
Loss rate: 0.20%
-- Flow 2:
Average throughput: 241.83 Mbit/s
95th percentile per-packet one-way delay: 113.471 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 213.17 Mbit/s
95th percentile per-packet one-way delay: 106.519 ms
Loss rate: 0.01%
```
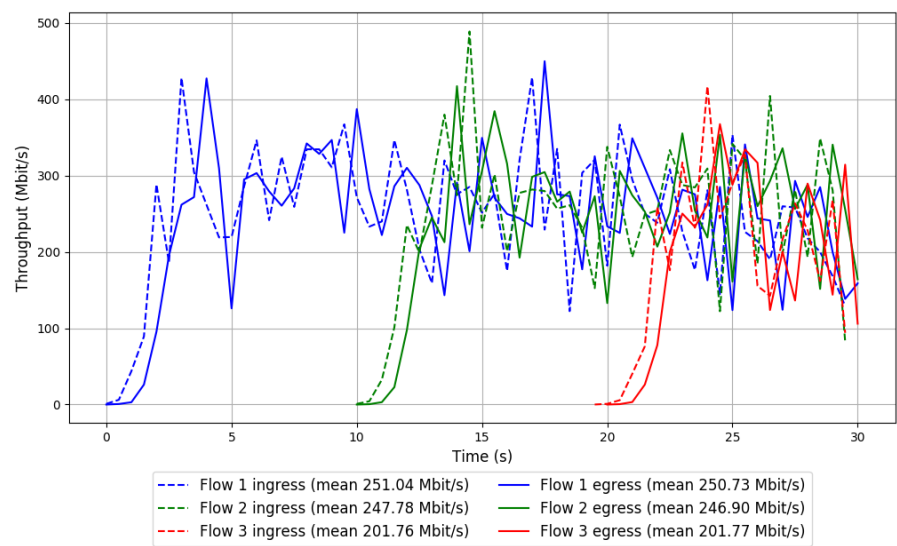
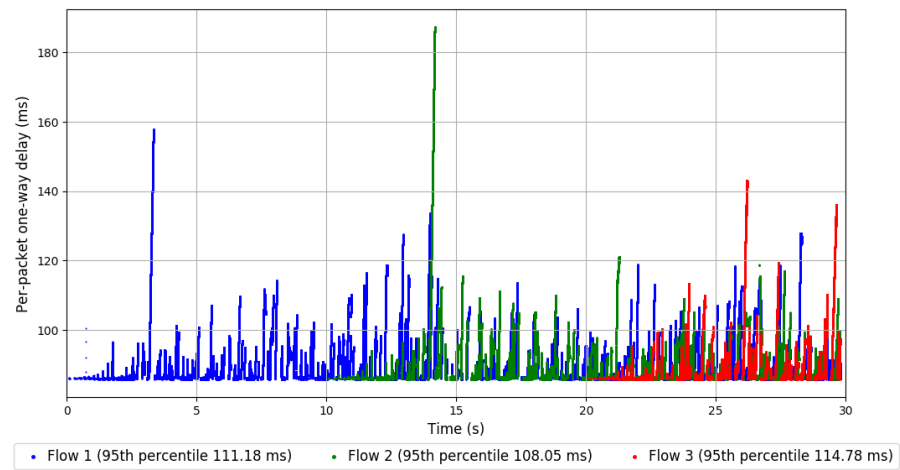Run 1: Report of Indigo-96d2da3 — Data Link

```
Run 2: Statistics of Indigo-96d2da3

Start at: 2018-12-11 01:44:39
End at: 2018-12-11 01:45:09
Local clock offset: -0.108 ms
Remote clock offset: 0.03 ms


# Below is generated by plot.py at 2018-12-11 04:52:24
# Datalink statistics
-- Total of 3 flows:
Average throughput: 515.80 Mbit/s
95th percentile per-packet one-way delay: 114.464 ms
Loss rate: 0.09%
-- Flow 1:
Average throughput: 282.39 Mbit/s
95th percentile per-packet one-way delay: 119.212 ms
Loss rate: 0.17%
-- Flow 2:
Average throughput: 247.24 Mbit/s
95th percentile per-packet one-way delay: 109.507 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 213.15 Mbit/s
95th percentile per-packet one-way delay: 104.307 ms
Loss rate: 0.00%
```
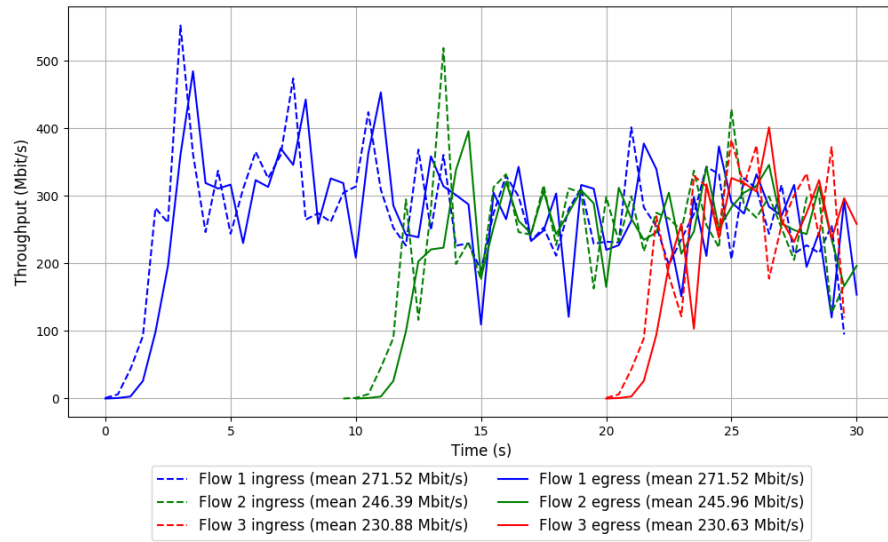
Run 2: Report of Indigo-96d2da3 — Data Link

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

Start at: 2018-12-11 02:18:36
End at: 2018-12-11 02:19:06
Local clock offset: -0.369 ms
Remote clock offset: -0.072 ms


# Below is generated by plot.py at 2018-12-11 04:52:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 477.62 Mbit/s
95th percentile per-packet one-way delay: 109.828 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 252.94 Mbit/s
95th percentile per-packet one-way delay: 110.660 ms
Loss rate: 0.07%
-- Flow 2:
Average throughput: 237.13 Mbit/s
95th percentile per-packet one-way delay: 111.161 ms
Loss rate: 0.13%
-- Flow 3:
Average throughput: 210.79 Mbit/s
95th percentile per-packet one-way delay: 105.742 ms
Loss rate: 0.00%
```
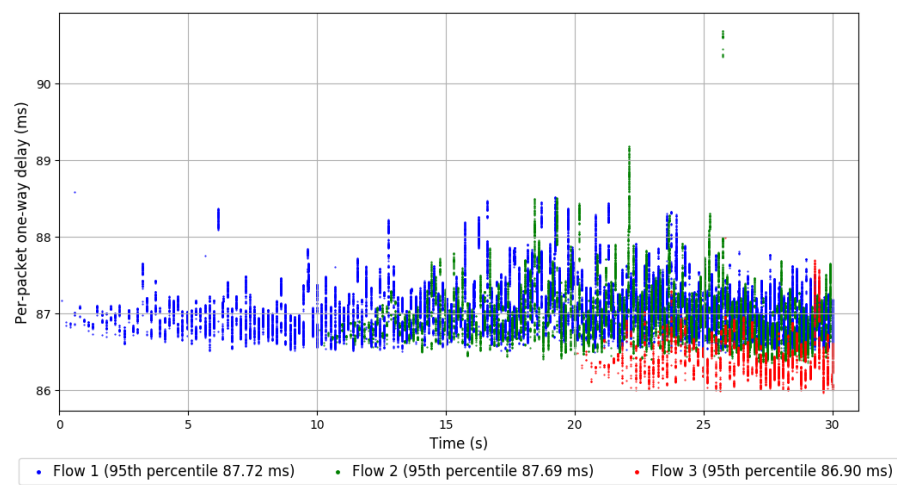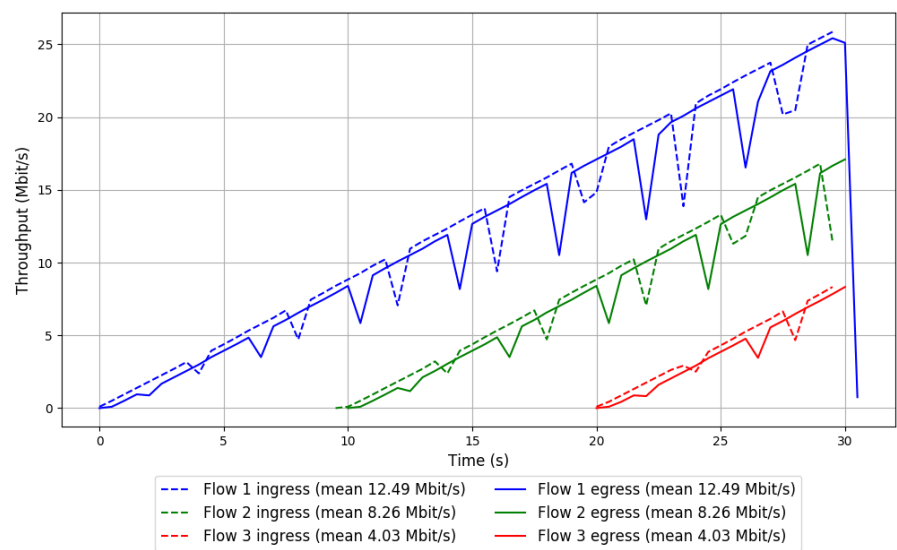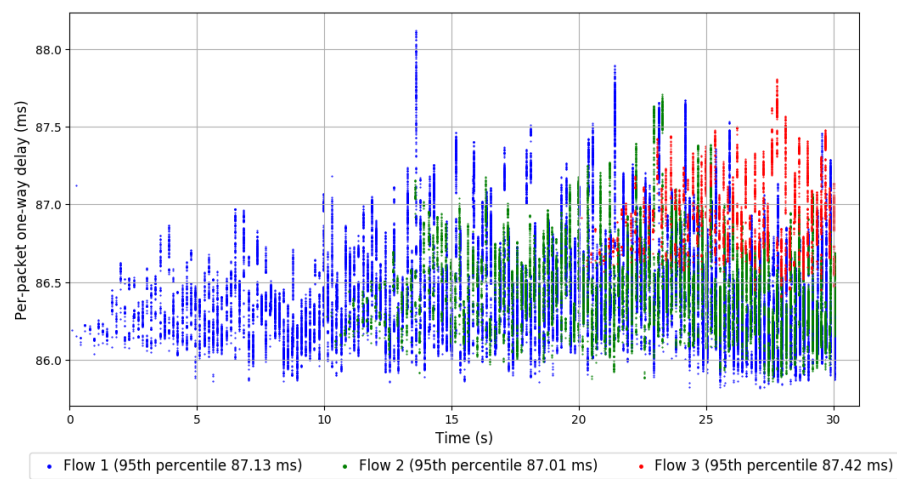
Run 3: Report of Indigo-96d2da3 — Data Link

Flow 1 ingress (mean 253.13 Mbit/s) --- Flow 1 egress (mean 252.94 Mbit/s)
Flow 2 ingress (mean 237.45 Mbit/s) --- Flow 2 egress (mean 237.13 Mbit/s)
Flow 3 ingress (mean 211.03 Mbit/s) --- Flow 3 egress (mean 210.79 Mbit/s)

Flow 1 (95th percentile 110.66 ms)   Flow 2 (95th percentile 111.16 ms)   Flow 3 (95th percentile 105.74 ms)

70

```
Run 4: Statistics of Indigo-96d2da3

Start at: 2018-12-11 02:52:48
End at: 2018-12-11 02:53:18
Local clock offset: -0.183 ms
Remote clock offset: -0.128 ms


# Below is generated by plot.py at 2018-12-11 04:56:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 480.28 Mbit/s
95th percentile per-packet one-way delay: 115.167 ms
Loss rate: 0.18%
-- Flow 1:
Average throughput: 250.73 Mbit/s
95th percentile per-packet one-way delay: 109.613 ms
Loss rate: 0.12%
-- Flow 2:
Average throughput: 246.90 Mbit/s
95th percentile per-packet one-way delay: 119.340 ms
Loss rate: 0.35%
-- Flow 3:
Average throughput: 201.77 Mbit/s
95th percentile per-packet one-way delay: 117.724 ms
Loss rate: 0.00%
```

Run 4: Report of Indigo-96d2da3 — Data Link
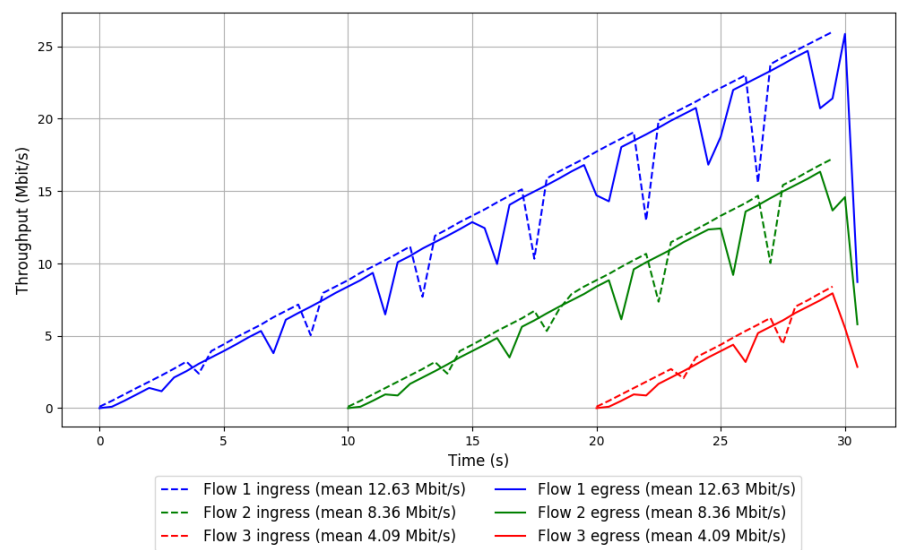
```
Run 5: Statistics of Indigo-96d2da3

Start at: 2018-12-11 03:26:22
End at: 2018-12-11 03:26:52
Local clock offset: -0.1 ms
Remote clock offset: -0.002 ms

# Below is generated by plot.py at 2018-12-11 04:57:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 509.93 Mbit/s
95th percentile per-packet one-way delay: 110.862 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 271.52 Mbit/s
95th percentile per-packet one-way delay: 111.176 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 245.96 Mbit/s
95th percentile per-packet one-way delay: 108.047 ms
Loss rate: 0.11%
-- Flow 3:
Average throughput: 230.63 Mbit/s
95th percentile per-packet one-way delay: 114.777 ms
Loss rate: 0.00%
```
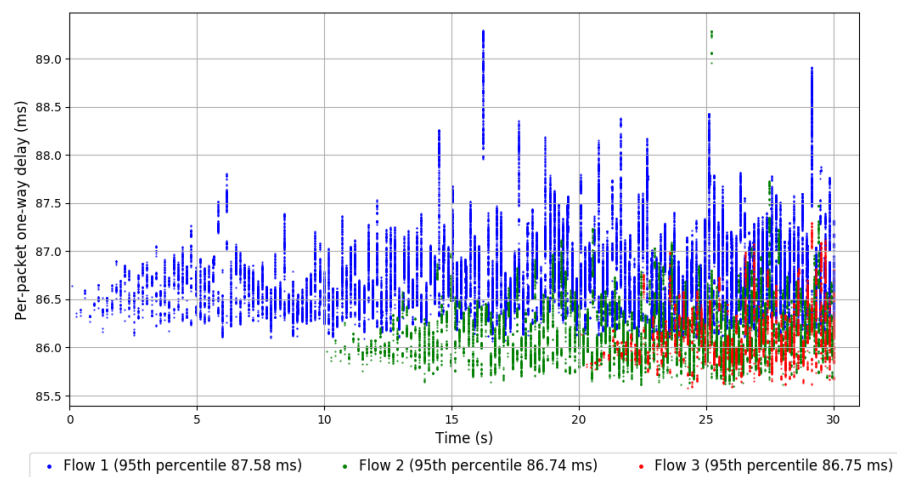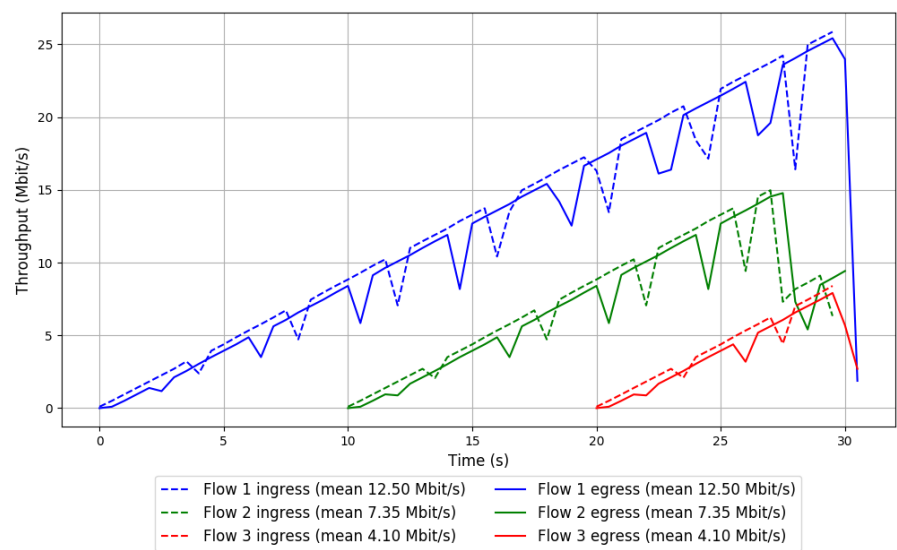
Run 5: Report of Indigo-96d2da3 — Data Link

- Flow 1 ingress (mean 271.52 Mbit/s)
- Flow 1 egress (mean 271.52 Mbit/s)
- Flow 2 ingress (mean 246.39 Mbit/s)
- Flow 2 egress (mean 245.96 Mbit/s)
- Flow 3 ingress (mean 230.88 Mbit/s)
- Flow 3 egress (mean 230.63 Mbit/s)

- Flow 1 (95th percentile 111.18 ms)
- Flow 2 (95th percentile 108.05 ms)
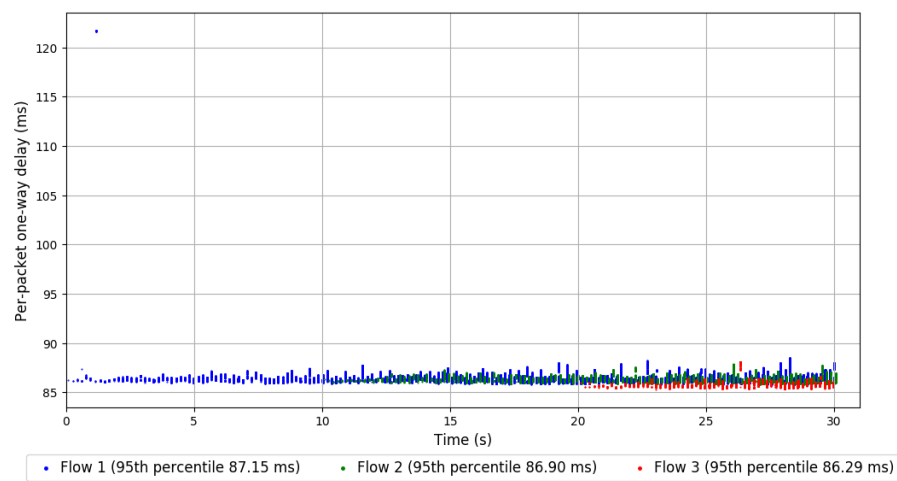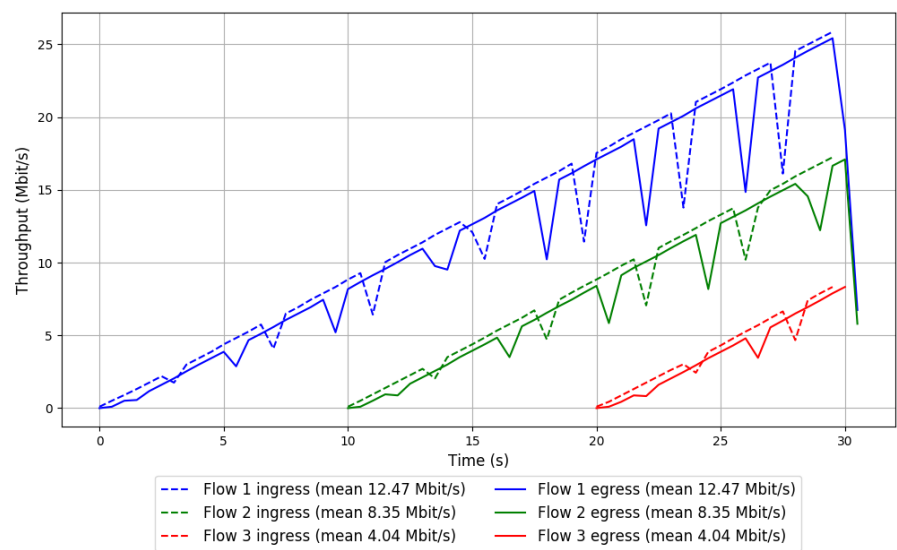- Flow 3 (95th percentile 114.78 ms)

```
Run 1: Statistics of LEDBAT

Start at: 2018-12-11 00:44:48
End at: 2018-12-11 00:45:18
Local clock offset: -0.162 ms
Remote clock offset: 0.082 ms

# Below is generated by plot.py at 2018-12-11 04:57:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 19.30 Mbit/s
95th percentile per-packet one-way delay: 87.687 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 12.49 Mbit/s
95th percentile per-packet one-way delay: 87.721 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 8.26 Mbit/s
95th percentile per-packet one-way delay: 87.690 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 4.03 Mbit/s
95th percentile per-packet one-way delay: 86.900 ms
Loss rate: 0.00%
```

Run 1: Report of LEDBAT — Data Link

```
Run 2: Statistics of LEDBAT

Start at: 2018-12-11 01:18:41
End at: 2018-12-11 01:19:11
Local clock offset: -0.199 ms
Remote clock offset: -0.074 ms

# Below is generated by plot.py at 2018-12-11 04:57:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 19.55 Mbit/s
95th percentile per-packet one-way delay: 87.175 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 12.63 Mbit/s
95th percentile per-packet one-way delay: 87.132 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 8.36 Mbit/s
95th percentile per-packet one-way delay: 87.014 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 4.09 Mbit/s
95th percentile per-packet one-way delay: 87.418 ms
Loss rate: 0.00%
```
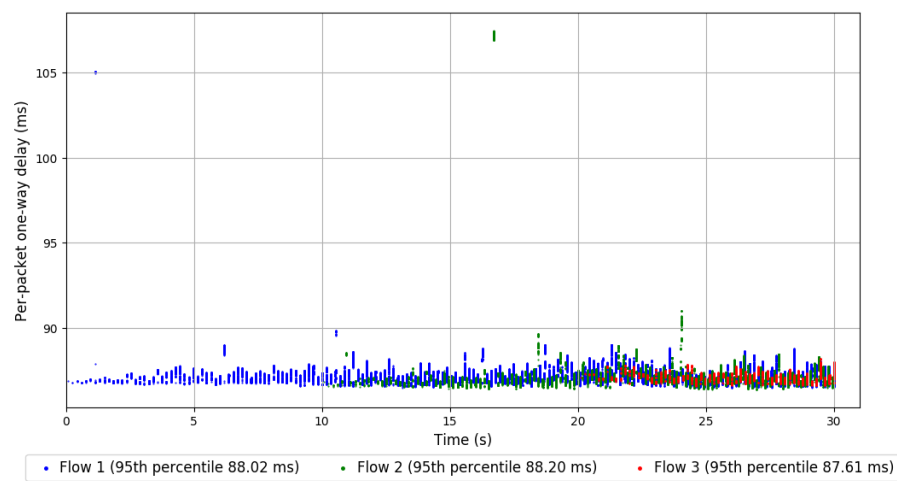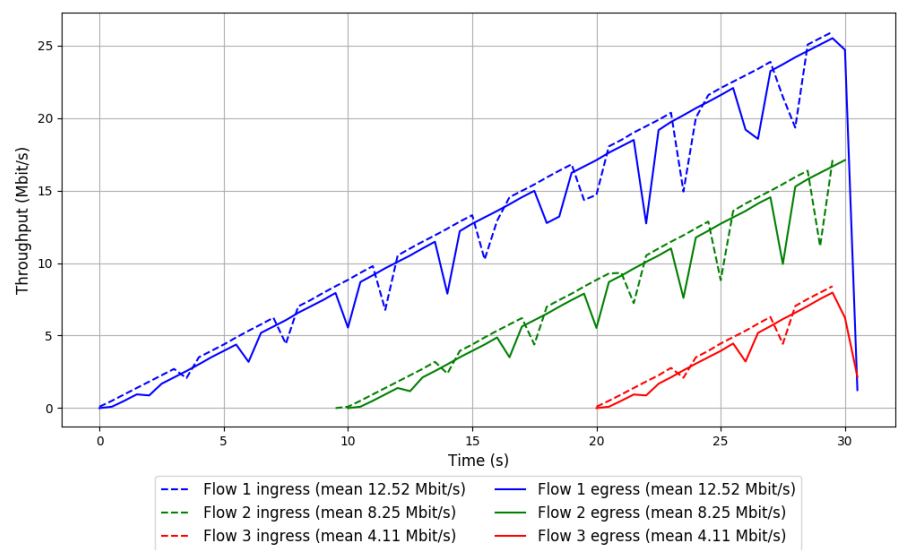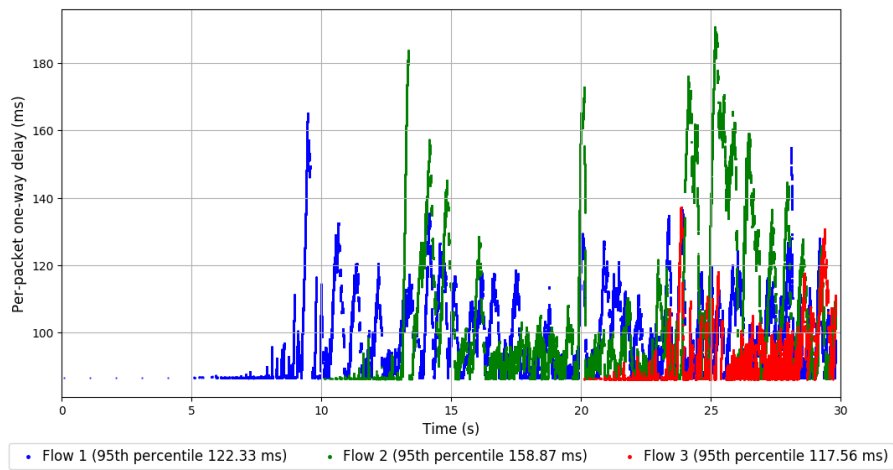
Run 2: Report of LEDBAT — Data Link

```
Run 3: Statistics of LEDBAT

Start at: 2018-12-11 01:52:07
End at: 2018-12-11 01:52:37
Local clock offset: 0.143 ms
Remote clock offset: 0.049 ms

# Below is generated by plot.py at 2018-12-11 04:57:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 18.72 Mbit/s
95th percentile per-packet one-way delay: 87.437 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 12.50 Mbit/s
95th percentile per-packet one-way delay: 87.579 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 7.35 Mbit/s
95th percentile per-packet one-way delay: 86.739 ms
Loss rate: 0.07%
-- Flow 3:
Average throughput: 4.10 Mbit/s
95th percentile per-packet one-way delay: 86.752 ms
Loss rate: 0.00%
```
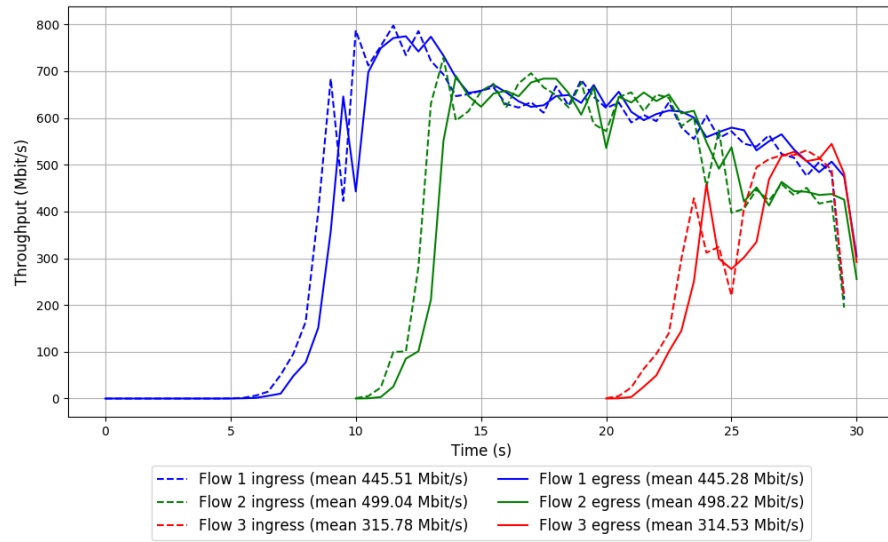
Run 3: Report of LEDBAT — Data Link

```
Run 4: Statistics of LEDBAT

Start at: 2018-12-11 02:26:10
End at: 2018-12-11 02:26:40
Local clock offset: 0.312 ms
Remote clock offset: -0.171 ms


# Below is generated by plot.py at 2018-12-11 04:57:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 19.34 Mbit/s
95th percentile per-packet one-way delay: 87.074 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 12.47 Mbit/s
95th percentile per-packet one-way delay: 87.148 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 8.35 Mbit/s
95th percentile per-packet one-way delay: 86.901 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 4.04 Mbit/s
95th percentile per-packet one-way delay: 86.291 ms
Loss rate: 0.00%
```

Run 4: Report of LEDBAT — Data Link

```
Run 5: Statistics of LEDBAT

Start at: 2018-12-11 03:00:18
End at: 2018-12-11 03:00:48
Local clock offset: -0.363 ms
Remote clock offset: -0.06 ms


# Below is generated by plot.py at 2018-12-11 04:57:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 19.36 Mbit/s
95th percentile per-packet one-way delay: 88.012 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 12.52 Mbit/s
95th percentile per-packet one-way delay: 88.020 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 8.25 Mbit/s
95th percentile per-packet one-way delay: 88.197 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 4.11 Mbit/s
95th percentile per-packet one-way delay: 87.606 ms
Loss rate: 0.00%
```
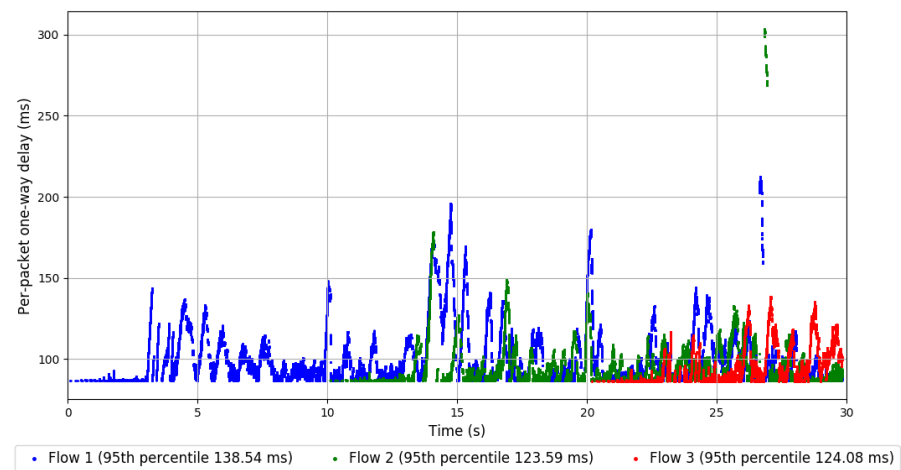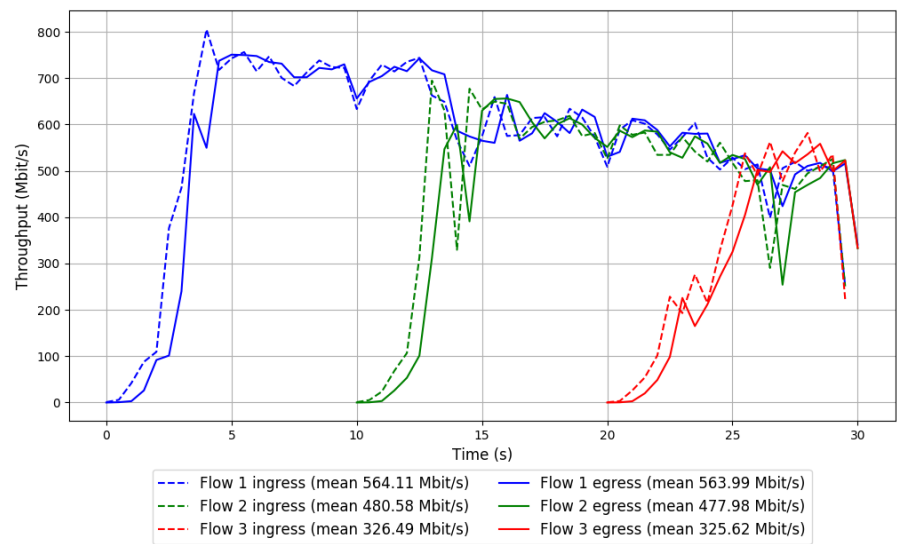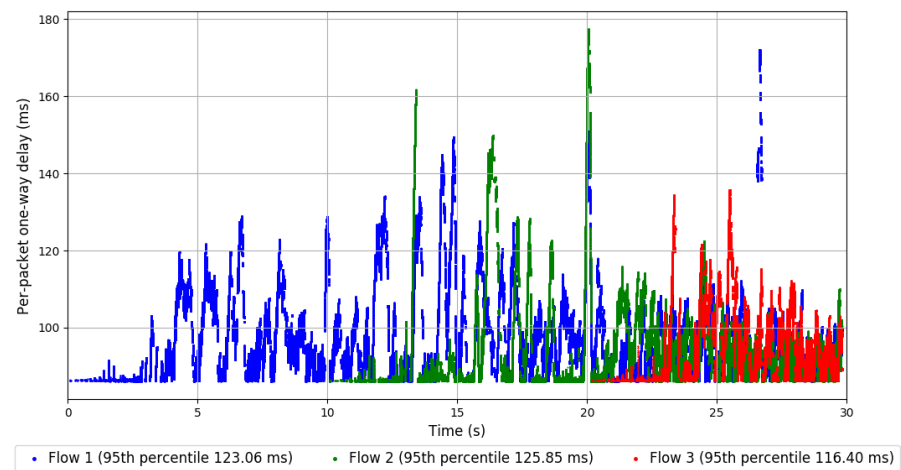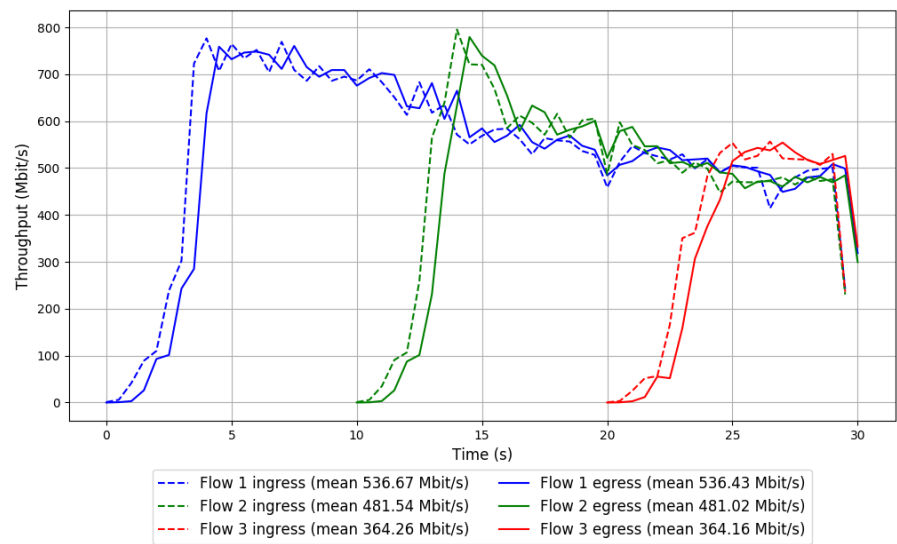
Run 5: Report of LEDBAT — Data Link

Flow 1 ingress (mean 12.52 Mbit/s) --- Flow 1 egress (mean 12.52 Mbit/s)
Flow 2 ingress (mean 8.25 Mbit/s) --- Flow 2 egress (mean 8.25 Mbit/s)
Flow 3 ingress (mean 4.11 Mbit/s) --- Flow 3 egress (mean 4.11 Mbit/s)

Flow 1 (95th percentile 88.02 ms) • Flow 2 (95th percentile 88.20 ms) • Flow 3 (95th percentile 87.61 ms)

```
Run 1: Statistics of Indigo-Muses

Start at: 2018-12-11 00:39:01
End at: 2018-12-11 00:39:31
Local clock offset: 0.049 ms
Remote clock offset: 0.239 ms

# Below is generated by plot.py at 2018-12-11 05:06:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 877.94 Mbit/s
95th percentile per-packet one-way delay: 137.795 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 445.28 Mbit/s
95th percentile per-packet one-way delay: 122.330 ms
Loss rate: 0.05%
-- Flow 2:
Average throughput: 498.22 Mbit/s
95th percentile per-packet one-way delay: 158.872 ms
Loss rate: 0.16%
-- Flow 3:
Average throughput: 314.53 Mbit/s
95th percentile per-packet one-way delay: 117.565 ms
Loss rate: 0.32%
```

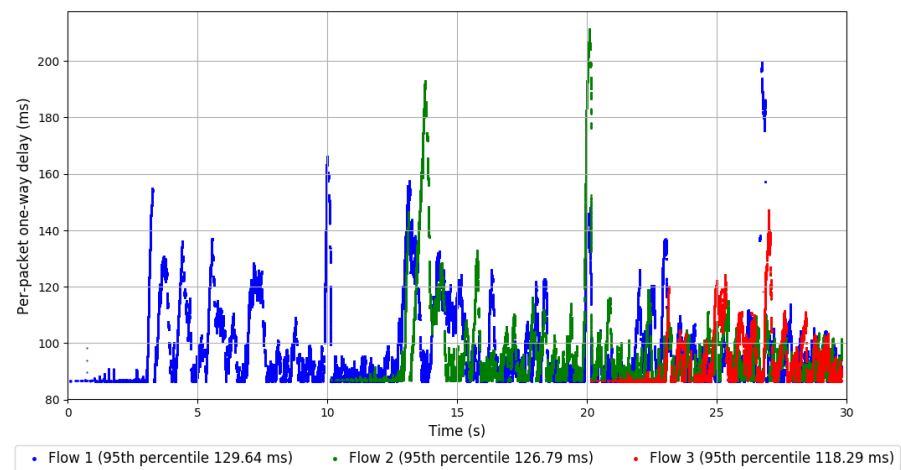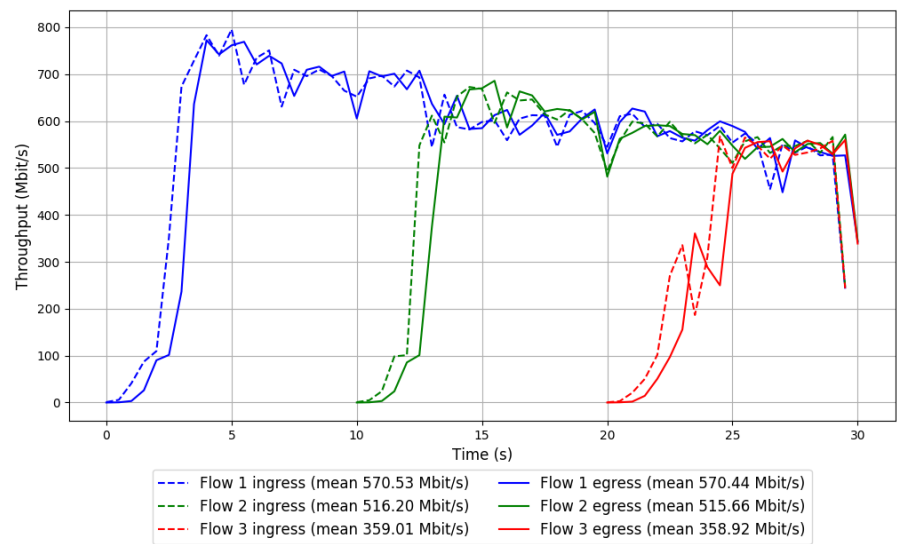Run 1: Report of Indigo-Muses — Data Link

```
Run 2: Statistics of Indigo-Muses

Start at: 2018-12-11 01:12:54
End at: 2018-12-11 01:13:24
Local clock offset: -0.572 ms
Remote clock offset: -0.074 ms


# Below is generated by plot.py at 2018-12-11 05:08:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 986.66 Mbit/s
95th percentile per-packet one-way delay: 132.449 ms
Loss rate: 0.21%
-- Flow 1:
Average throughput: 563.99 Mbit/s
95th percentile per-packet one-way delay: 138.540 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 477.98 Mbit/s
95th percentile per-packet one-way delay: 123.594 ms
Loss rate: 0.53%
-- Flow 3:
Average throughput: 325.62 Mbit/s
95th percentile per-packet one-way delay: 124.083 ms
Loss rate: 0.24%
```
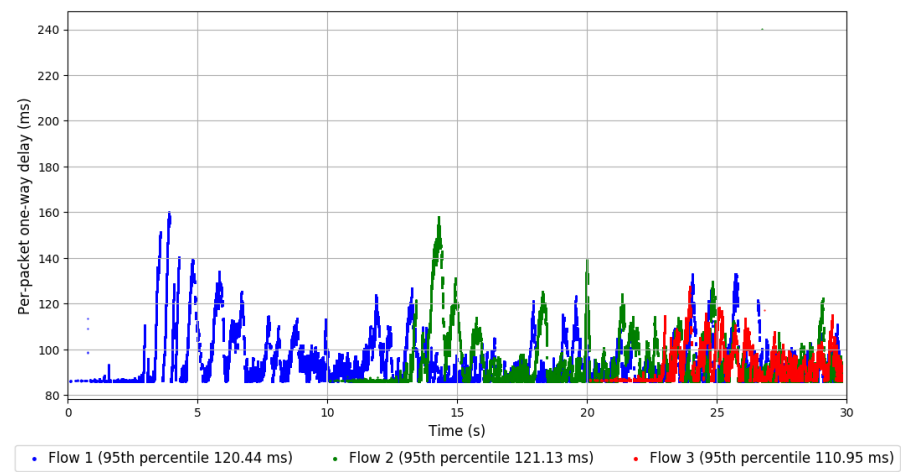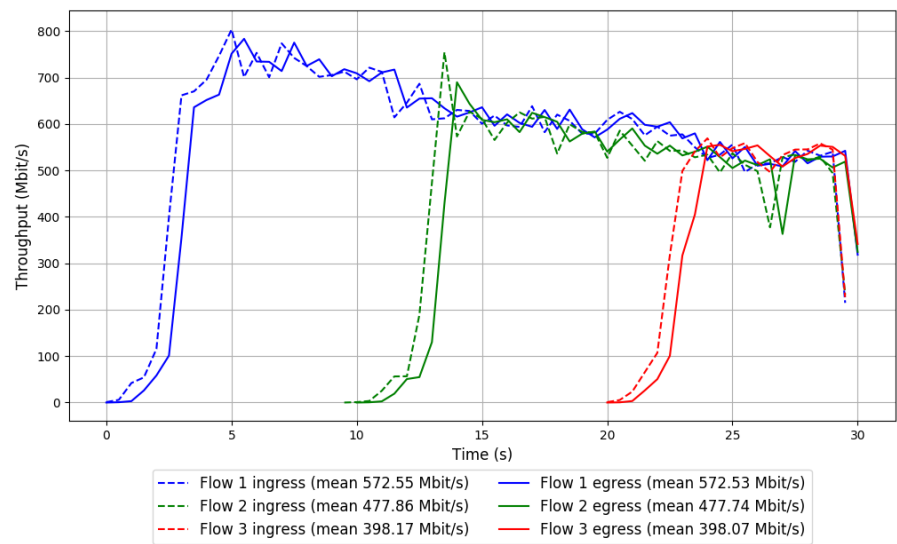
Run 2: Report of Indigo-Muses — Data Link

```
Run 3: Statistics of Indigo-Muses

Start at: 2018-12-11 01:46:22
End at: 2018-12-11 01:46:52
Local clock offset: 0.07 ms
Remote clock offset: 0.017 ms


# Below is generated by plot.py at 2018-12-11 05:09:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 973.47 Mbit/s
95th percentile per-packet one-way delay: 122.495 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 536.43 Mbit/s
95th percentile per-packet one-way delay: 123.056 ms
Loss rate: 0.04%
-- Flow 2:
Average throughput: 481.02 Mbit/s
95th percentile per-packet one-way delay: 125.853 ms
Loss rate: 0.11%
-- Flow 3:
Average throughput: 364.16 Mbit/s
95th percentile per-packet one-way delay: 116.399 ms
Loss rate: 0.01%
```

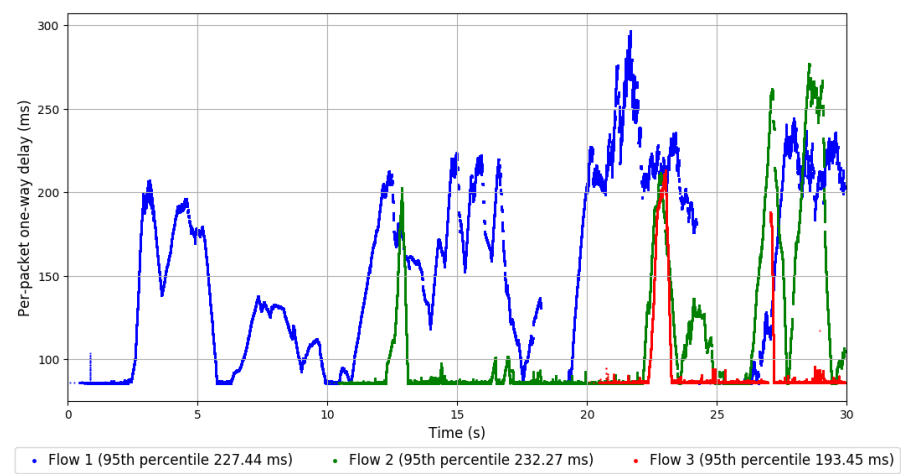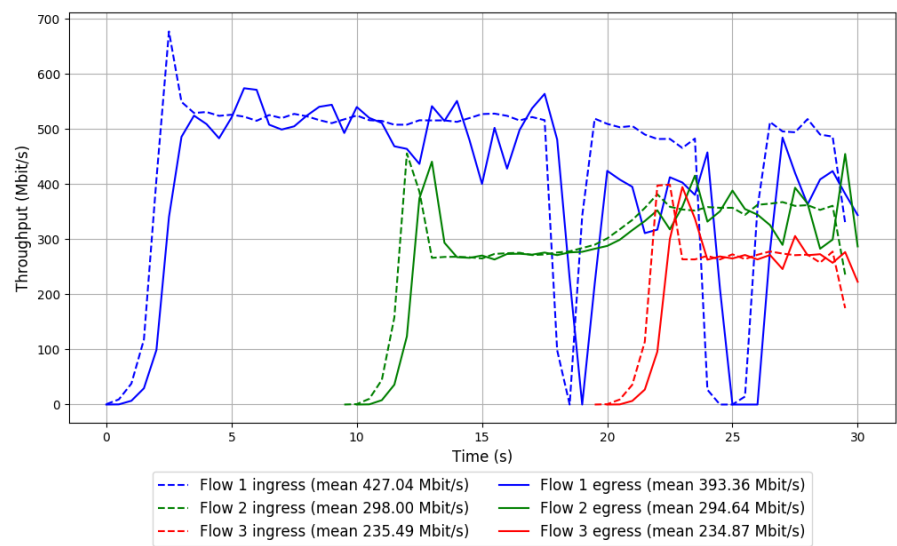Run 3: Report of Indigo-Muses — Data Link

Flow 1 ingress (mean 536.67 Mbit/s) --- Flow 1 egress (mean 536.43 Mbit/s)
Flow 2 ingress (mean 481.54 Mbit/s) --- Flow 2 egress (mean 481.02 Mbit/s)
Flow 3 ingress (mean 364.26 Mbit/s) --- Flow 3 egress (mean 364.16 Mbit/s)

• Flow 1 (95th percentile 123.06 ms)   • Flow 2 (95th percentile 125.85 ms)   • Flow 3 (95th percentile 116.40 ms)

90

```
Run 4: Statistics of Indigo-Muses

Start at: 2018-12-11 02:20:21
End at: 2018-12-11 02:20:51
Local clock offset: -0.325 ms
Remote clock offset: -0.107 ms

# Below is generated by plot.py at 2018-12-11 05:10:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1028.27 Mbit/s
95th percentile per-packet one-way delay: 127.730 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 570.44 Mbit/s
95th percentile per-packet one-way delay: 129.642 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 515.66 Mbit/s
95th percentile per-packet one-way delay: 126.787 ms
Loss rate: 0.08%
-- Flow 3:
Average throughput: 358.92 Mbit/s
95th percentile per-packet one-way delay: 118.293 ms
Loss rate: 0.00%
```
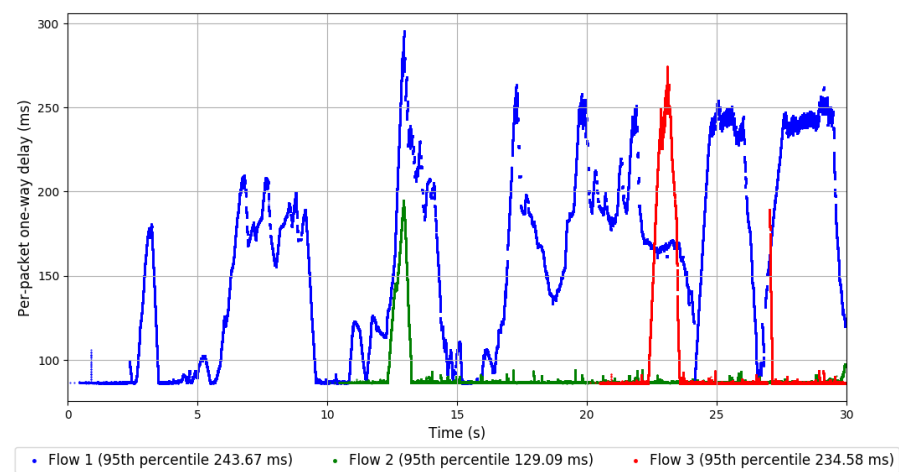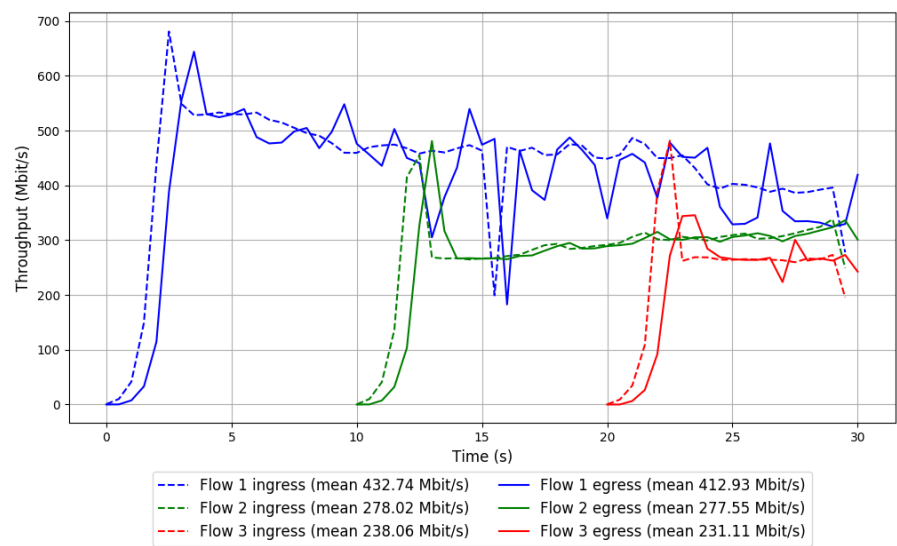
Run 4: Report of Indigo-Muses — Data Link

```
Run 5: Statistics of Indigo-Muses

Start at: 2018-12-11 02:54:30
End at: 2018-12-11 02:55:00
Local clock offset: 0.059 ms
Remote clock offset: -0.094 ms


# Below is generated by plot.py at 2018-12-11 05:10:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1019.66 Mbit/s
95th percentile per-packet one-way delay: 119.271 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 572.53 Mbit/s
95th percentile per-packet one-way delay: 120.440 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 477.74 Mbit/s
95th percentile per-packet one-way delay: 121.130 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 398.07 Mbit/s
95th percentile per-packet one-way delay: 110.954 ms
Loss rate: 0.03%
```

Run 5: Report of Indigo-Muses — Data Link

```
Run 1: Statistics of PCC-Allegro

Start at: 2018-12-11 01:04:01
End at: 2018-12-11 01:04:31
Local clock offset: 0.16 ms
Remote clock offset: -0.051 ms


# Below is generated by plot.py at 2018-12-11 05:15:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 666.75 Mbit/s
95th percentile per-packet one-way delay: 225.831 ms
Loss rate: 5.13%
-- Flow 1:
Average throughput: 393.36 Mbit/s
95th percentile per-packet one-way delay: 227.442 ms
Loss rate: 7.88%
-- Flow 2:
Average throughput: 294.64 Mbit/s
95th percentile per-packet one-way delay: 232.266 ms
Loss rate: 1.11%
-- Flow 3:
Average throughput: 234.87 Mbit/s
95th percentile per-packet one-way delay: 193.449 ms
Loss rate: 0.26%
```
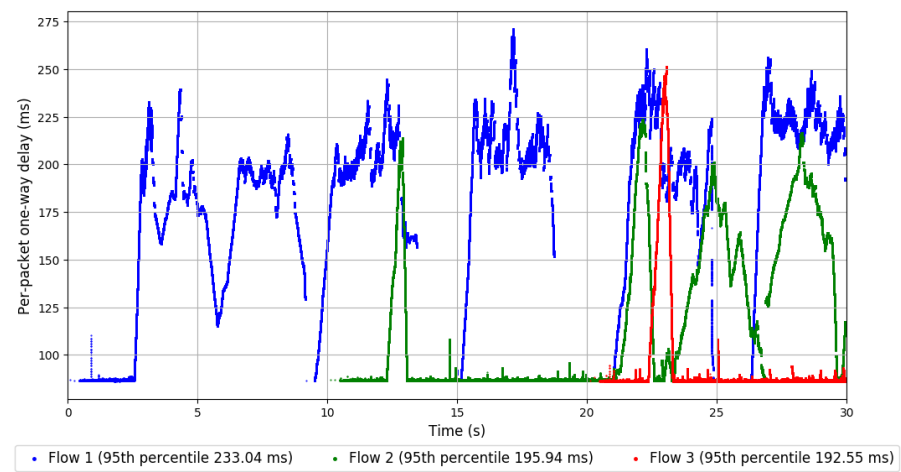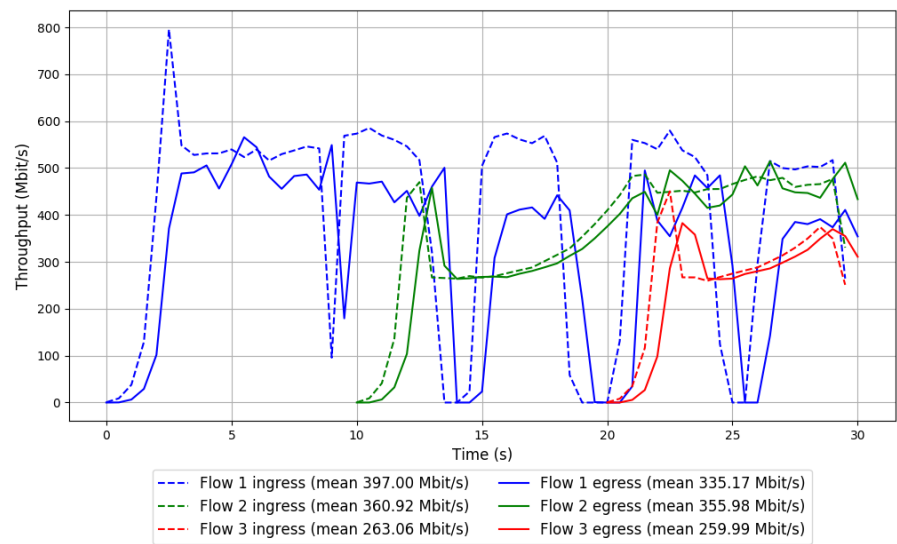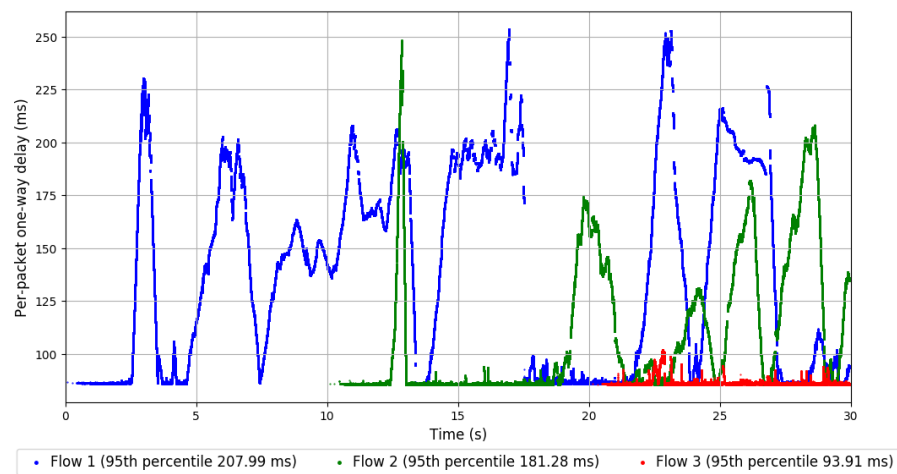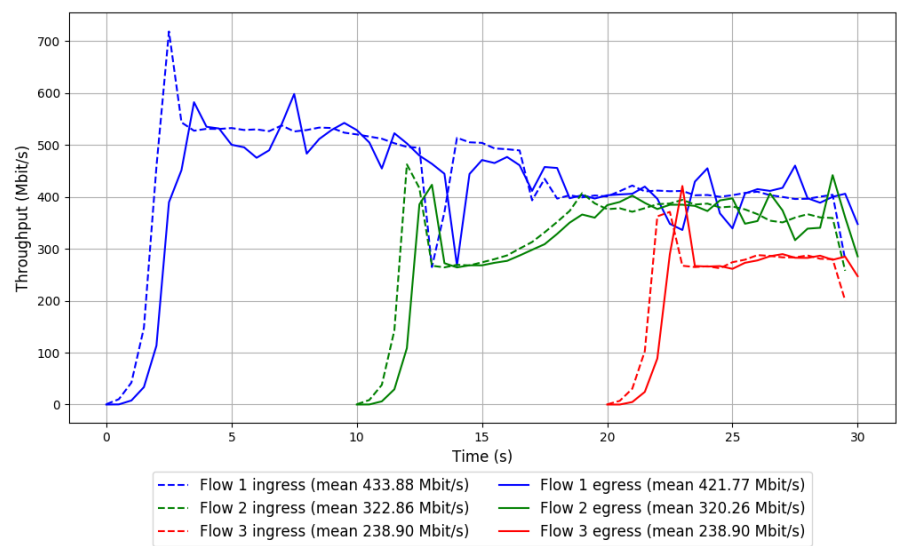
Run 1: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 427.04 Mbit/s) --- Flow 1 egress (mean 393.36 Mbit/s)
Flow 2 ingress (mean 298.00 Mbit/s) --- Flow 2 egress (mean 294.64 Mbit/s)
Flow 3 ingress (mean 235.49 Mbit/s) --- Flow 3 egress (mean 234.87 Mbit/s)

Flow 1 (95th percentile 227.44 ms)   Flow 2 (95th percentile 232.27 ms)   Flow 3 (95th percentile 193.45 ms)
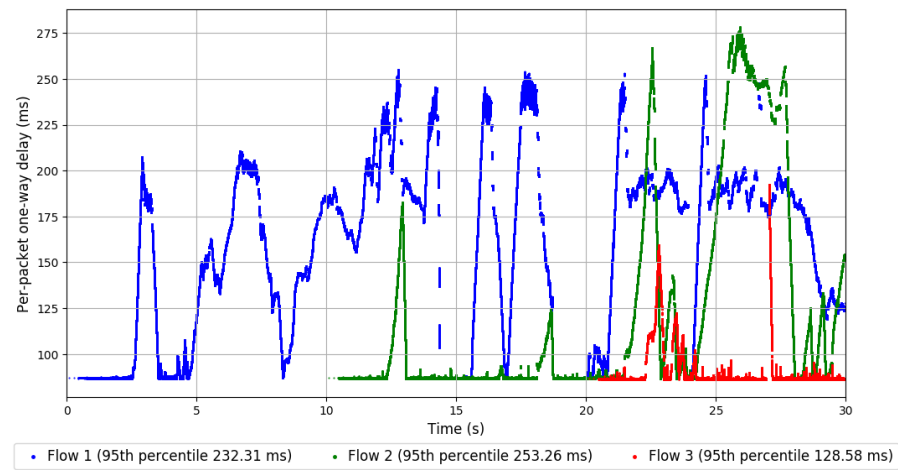
```
Run 2: Statistics of PCC-Allegro

Start at: 2018-12-11 01:37:25
End at: 2018-12-11 01:37:55
Local clock offset: -0.026 ms
Remote clock offset: -0.058 ms


# Below is generated by plot.py at 2018-12-11 05:19:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 673.35 Mbit/s
95th percentile per-packet one-way delay: 241.078 ms
Loss rate: 3.22%
-- Flow 1:
Average throughput: 412.93 Mbit/s
95th percentile per-packet one-way delay: 243.672 ms
Loss rate: 4.58%
-- Flow 2:
Average throughput: 277.55 Mbit/s
95th percentile per-packet one-way delay: 129.094 ms
Loss rate: 0.16%
-- Flow 3:
Average throughput: 231.11 Mbit/s
95th percentile per-packet one-way delay: 234.584 ms
Loss rate: 2.92%
```
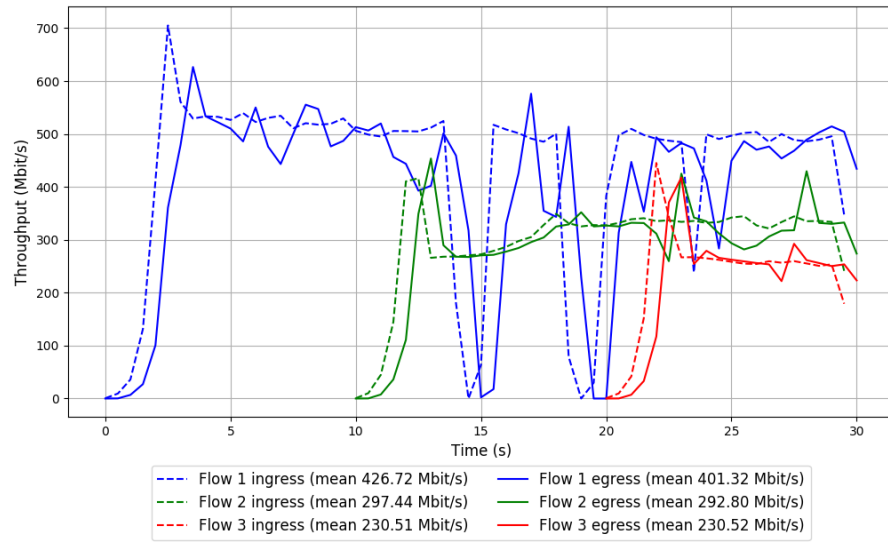
Run 2: Report of PCC-Allegro — Data Link

```
Run 3: Statistics of PCC-Allegro

Start at: 2018-12-11 02:11:14
End at: 2018-12-11 02:11:44
Local clock offset: -0.089 ms
Remote clock offset: 0.01 ms


# Below is generated by plot.py at 2018-12-11 05:20:24
# Datalink statistics
-- Total of 3 flows:
Average throughput: 657.21 Mbit/s
95th percentile per-packet one-way delay: 226.629 ms
Loss rate: 9.14%
-- Flow 1:
Average throughput: 335.17 Mbit/s
95th percentile per-packet one-way delay: 233.036 ms
Loss rate: 15.57%
-- Flow 2:
Average throughput: 355.98 Mbit/s
95th percentile per-packet one-way delay: 195.942 ms
Loss rate: 1.37%
-- Flow 3:
Average throughput: 259.99 Mbit/s
95th percentile per-packet one-way delay: 192.552 ms
Loss rate: 1.15%
```

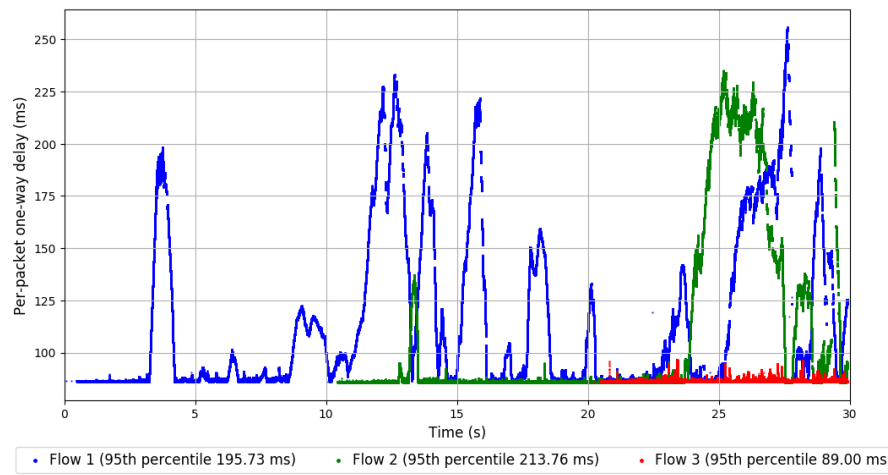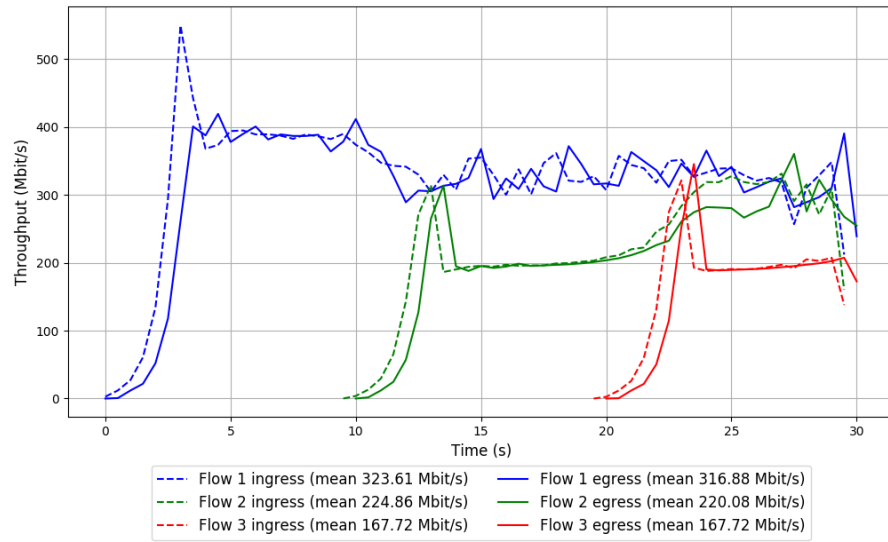Run 3: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 397.00 Mbit/s) --- Flow 1 egress (mean 335.17 Mbit/s)
Flow 2 ingress (mean 360.92 Mbit/s) --- Flow 2 egress (mean 355.98 Mbit/s)
Flow 3 ingress (mean 263.06 Mbit/s) --- Flow 3 egress (mean 259.99 Mbit/s)

Flow 1 (95th percentile 233.04 ms)   Flow 2 (95th percentile 195.94 ms)   Flow 3 (95th percentile 192.55 ms)

```
Run 4: Statistics of PCC-Allegro

Start at: 2018-12-11 02:45:31
End at: 2018-12-11 02:46:01
Local clock offset: 0.036 ms
Remote clock offset: -0.189 ms


# Below is generated by plot.py at 2018-12-11 05:33:24
# Datalink statistics
-- Total of 3 flows:
Average throughput: 712.84 Mbit/s
95th percentile per-packet one-way delay: 203.161 ms
Loss rate: 1.91%
-- Flow 1:
Average throughput: 421.77 Mbit/s
95th percentile per-packet one-way delay: 207.989 ms
Loss rate: 2.80%
-- Flow 2:
Average throughput: 320.26 Mbit/s
95th percentile per-packet one-way delay: 181.279 ms
Loss rate: 0.80%
-- Flow 3:
Average throughput: 238.90 Mbit/s
95th percentile per-packet one-way delay: 93.911 ms
Loss rate: 0.00%
```

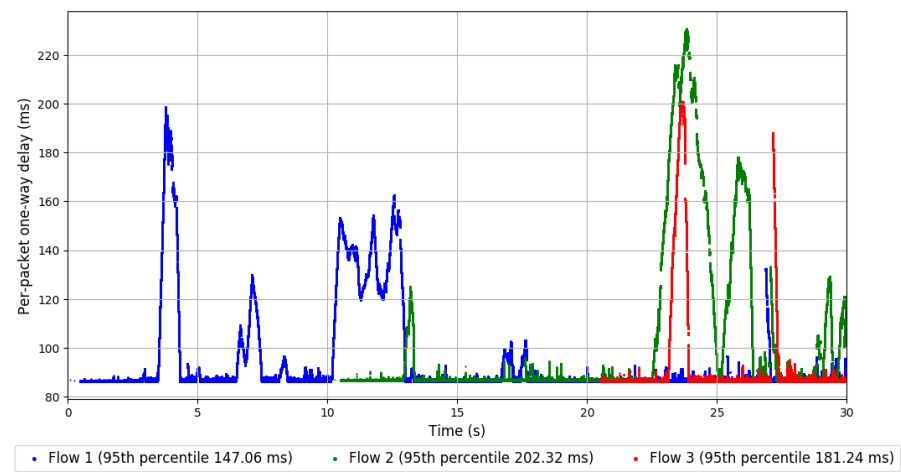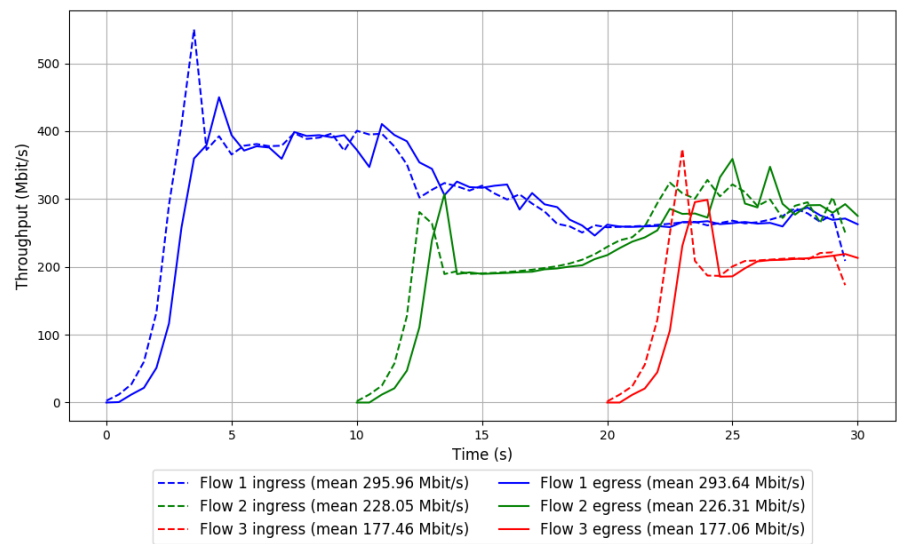Run 4: Report of PCC-Allegro — Data Link

```
Run 5: Statistics of PCC-Allegro

Start at: 2018-12-11 03:19:11
End at: 2018-12-11 03:19:41
Local clock offset: -0.499 ms
Remote clock offset: -0.057 ms


# Below is generated by plot.py at 2018-12-11 05:34:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 671.90 Mbit/s
95th percentile per-packet one-way delay: 237.789 ms
Loss rate: 4.06%
-- Flow 1:
Average throughput: 401.32 Mbit/s
95th percentile per-packet one-way delay: 232.306 ms
Loss rate: 5.95%
-- Flow 2:
Average throughput: 292.80 Mbit/s
95th percentile per-packet one-way delay: 253.263 ms
Loss rate: 1.56%
-- Flow 3:
Average throughput: 230.52 Mbit/s
95th percentile per-packet one-way delay: 128.584 ms
Loss rate: 0.00%
```

Run 5: Report of PCC-Allegro — Data Link

```
Run 1: Statistics of PCC-Expr

Start at: 2018-12-11 00:57:58
End at: 2018-12-11 00:58:28
Local clock offset: 0.11 ms
Remote clock offset: -0.106 ms


# Below is generated by plot.py at 2018-12-11 05:34:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 519.01 Mbit/s
95th percentile per-packet one-way delay: 205.611 ms
Loss rate: 1.87%
-- Flow 1:
Average throughput: 316.88 Mbit/s
95th percentile per-packet one-way delay: 195.726 ms
Loss rate: 2.08%
-- Flow 2:
Average throughput: 220.08 Mbit/s
95th percentile per-packet one-way delay: 213.765 ms
Loss rate: 2.12%
-- Flow 3:
Average throughput: 167.72 Mbit/s
95th percentile per-packet one-way delay: 88.997 ms
Loss rate: 0.00%
```
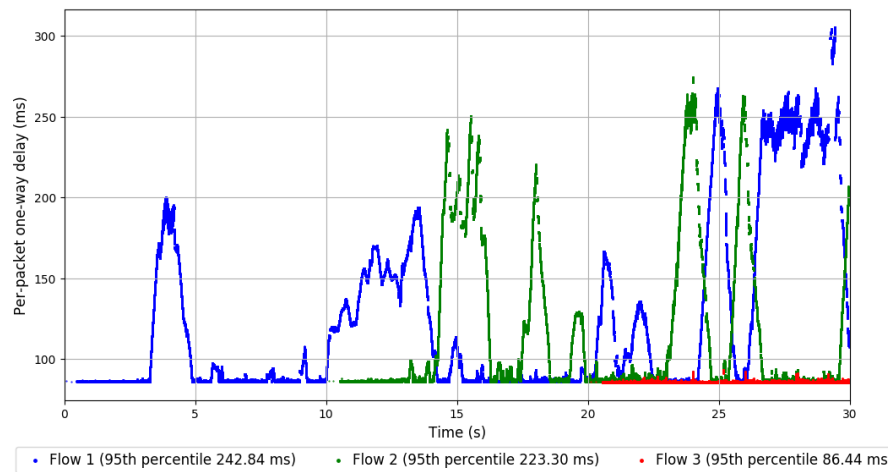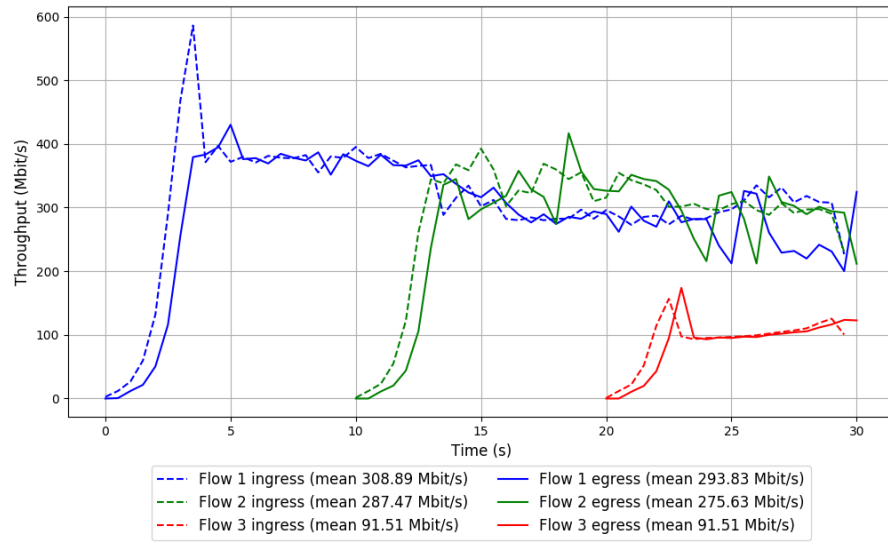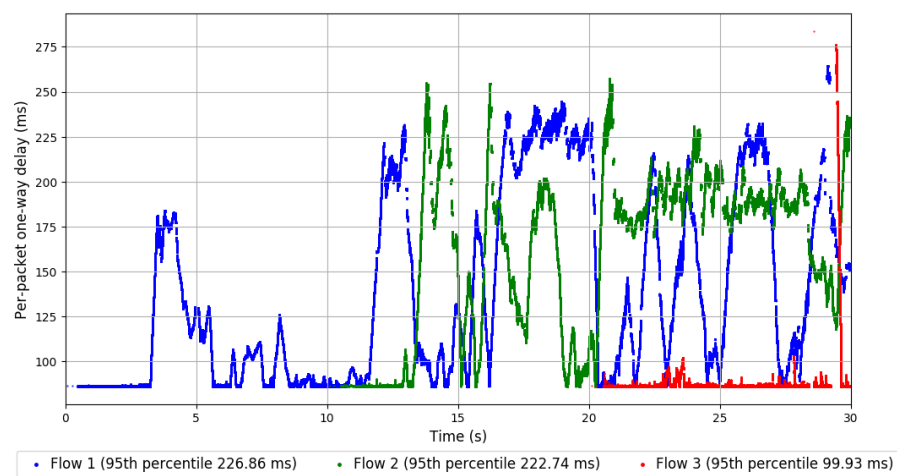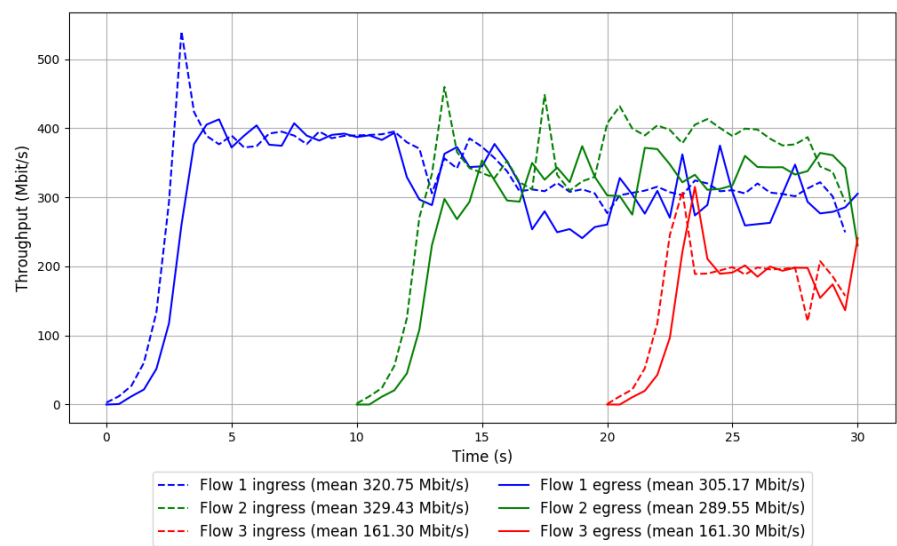
Run 1: Report of PCC-Expr — Data Link

```
Run 2: Statistics of PCC-Expr

Start at: 2018-12-11 01:31:44
End at: 2018-12-11 01:32:14
Local clock offset: -0.14 ms
Remote clock offset: -0.142 ms


# Below is generated by plot.py at 2018-12-11 05:34:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 502.53 Mbit/s
95th percentile per-packet one-way delay: 168.017 ms
Loss rate: 0.72%
-- Flow 1:
Average throughput: 293.64 Mbit/s
95th percentile per-packet one-way delay: 147.057 ms
Loss rate: 0.79%
-- Flow 2:
Average throughput: 226.31 Mbit/s
95th percentile per-packet one-way delay: 202.321 ms
Loss rate: 0.78%
-- Flow 3:
Average throughput: 177.06 Mbit/s
95th percentile per-packet one-way delay: 181.236 ms
Loss rate: 0.22%
```

Run 2: Report of PCC-Expr — Data Link

```
Run 3: Statistics of PCC-Expr

Start at: 2018-12-11 02:05:31
End at: 2018-12-11 02:06:01
Local clock offset: 0.214 ms
Remote clock offset: 0.04 ms


# Below is generated by plot.py at 2018-12-11 05:34:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 507.25 Mbit/s
95th percentile per-packet one-way delay: 237.516 ms
Loss rate: 4.32%
-- Flow 1:
Average throughput: 293.83 Mbit/s
95th percentile per-packet one-way delay: 242.839 ms
Loss rate: 4.88%
-- Flow 2:
Average throughput: 275.63 Mbit/s
95th percentile per-packet one-way delay: 223.296 ms
Loss rate: 4.11%
-- Flow 3:
Average throughput: 91.51 Mbit/s
95th percentile per-packet one-way delay: 86.438 ms
Loss rate: 0.00%
```
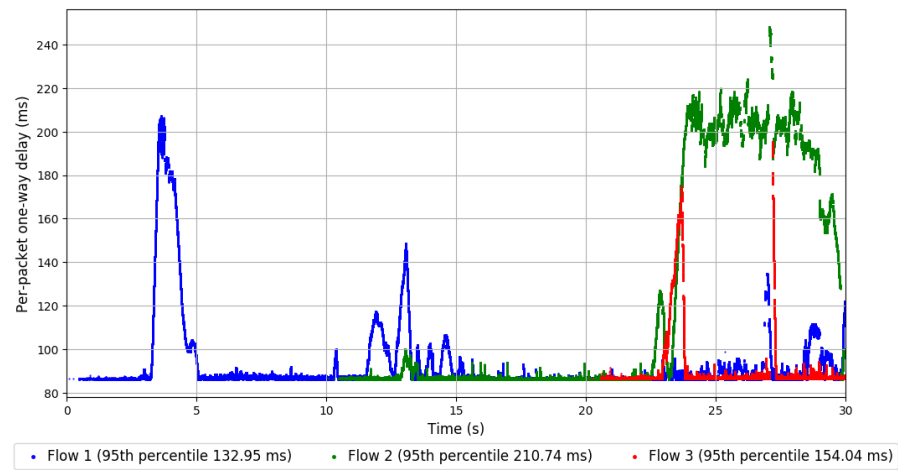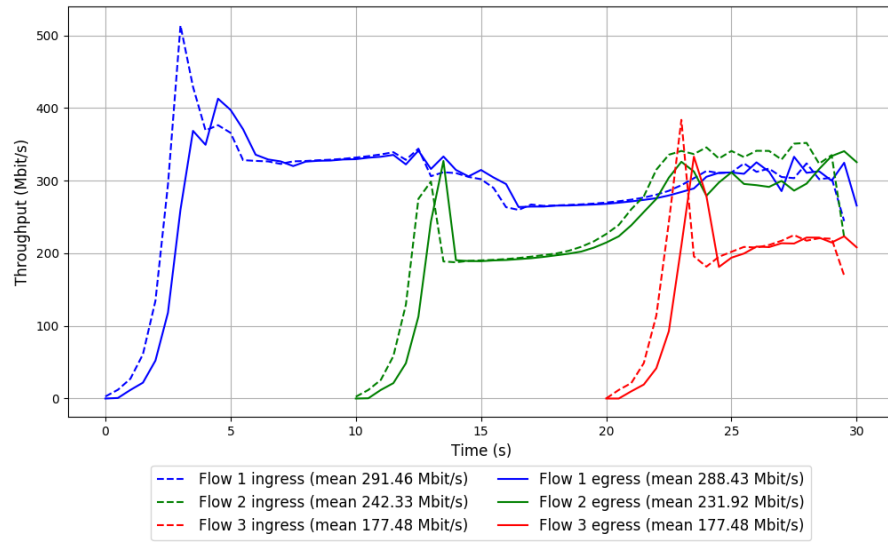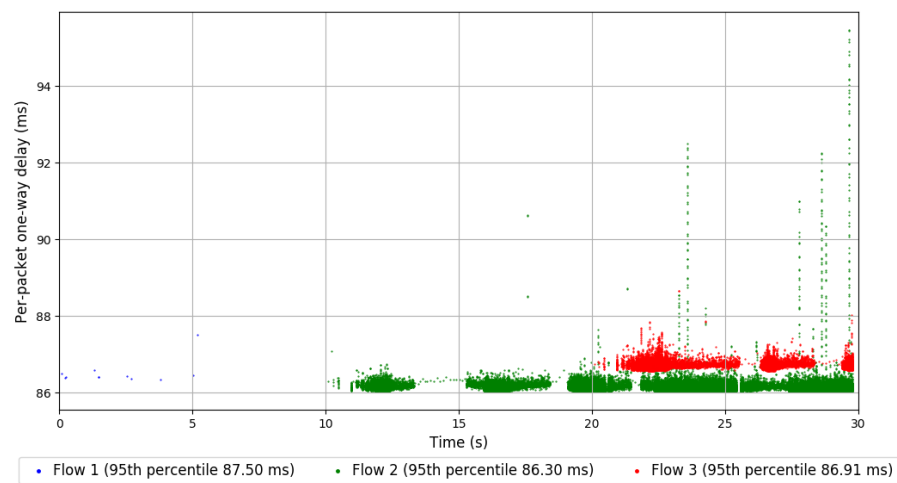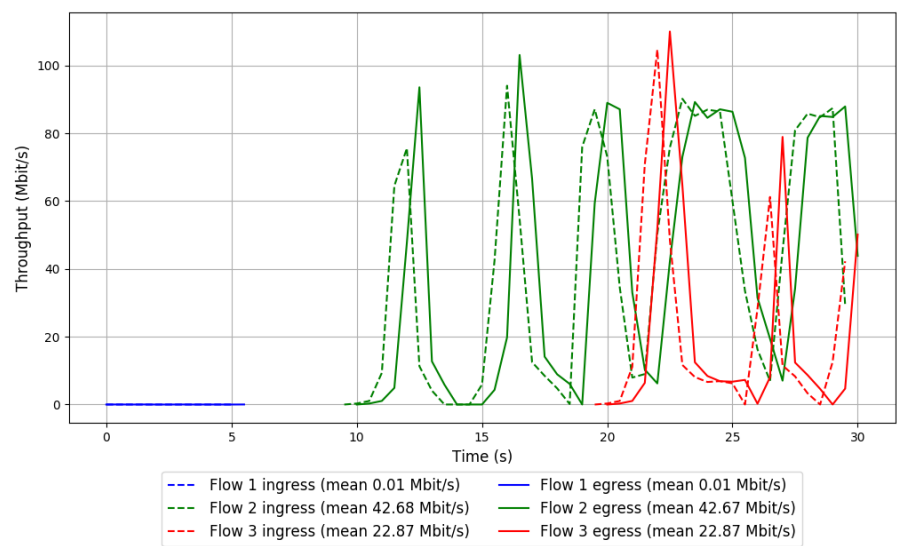
Run 3: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 308.89 Mbit/s)   Flow 1 egress (mean 293.83 Mbit/s)
Flow 2 ingress (mean 287.47 Mbit/s)   Flow 2 egress (mean 275.63 Mbit/s)
Flow 3 ingress (mean 91.51 Mbit/s)   Flow 3 egress (mean 91.51 Mbit/s)

Flow 1 (95th percentile 242.84 ms)   Flow 2 (95th percentile 223.30 ms)   Flow 3 (95th percentile 86.44 ms)

```
Run 4: Statistics of PCC-Expr

Start at: 2018-12-11 02:39:19
End at: 2018-12-11 02:39:49
Local clock offset: -0.003 ms
Remote clock offset: -0.176 ms


# Below is generated by plot.py at 2018-12-11 05:36:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 550.85 Mbit/s
95th percentile per-packet one-way delay: 225.146 ms
Loss rate: 7.10%
-- Flow 1:
Average throughput: 305.17 Mbit/s
95th percentile per-packet one-way delay: 226.858 ms
Loss rate: 4.86%
-- Flow 2:
Average throughput: 289.55 Mbit/s
95th percentile per-packet one-way delay: 222.741 ms
Loss rate: 12.10%
-- Flow 3:
Average throughput: 161.30 Mbit/s
95th percentile per-packet one-way delay: 99.928 ms
Loss rate: 0.00%
```

Run 4: Report of PCC-Expr — Data Link

```
Run 5: Statistics of PCC-Expr

Start at: 2018-12-11 03:13:21
End at: 2018-12-11 03:13:51
Local clock offset: -0.088 ms
Remote clock offset: -0.01 ms


# Below is generated by plot.py at 2018-12-11 05:38:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 501.14 Mbit/s
95th percentile per-packet one-way delay: 202.974 ms
Loss rate: 1.95%
-- Flow 1:
Average throughput: 288.43 Mbit/s
95th percentile per-packet one-way delay: 132.950 ms
Loss rate: 1.04%
-- Flow 2:
Average throughput: 231.92 Mbit/s
95th percentile per-packet one-way delay: 210.735 ms
Loss rate: 4.29%
-- Flow 3:
Average throughput: 177.48 Mbit/s
95th percentile per-packet one-way delay: 154.044 ms
Loss rate: 0.00%
```
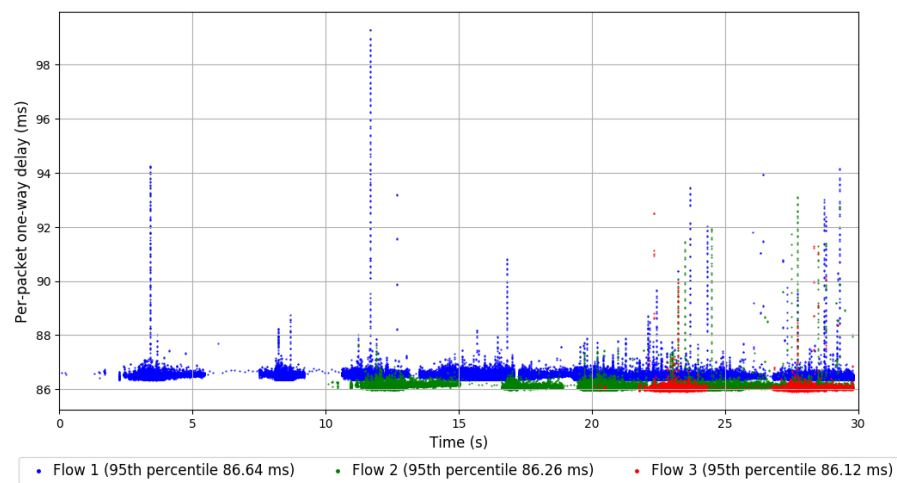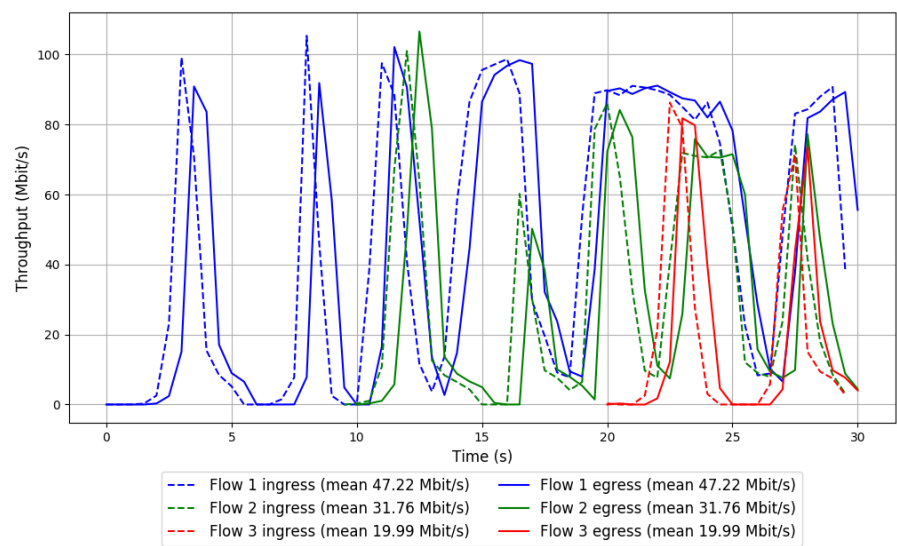
Run 5: Report of PCC-Expr — Data Link

```
Run 1: Statistics of QUIC Cubic

Start at: 2018-12-11 01:06:05
End at: 2018-12-11 01:06:35
Local clock offset: -0.332 ms
Remote clock offset: -0.054 ms


# Below is generated by plot.py at 2018-12-11 05:38:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 35.78 Mbit/s
95th percentile per-packet one-way delay: 86.772 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 87.504 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 42.67 Mbit/s
95th percentile per-packet one-way delay: 86.296 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 22.87 Mbit/s
95th percentile per-packet one-way delay: 86.905 ms
Loss rate: 0.00%
```
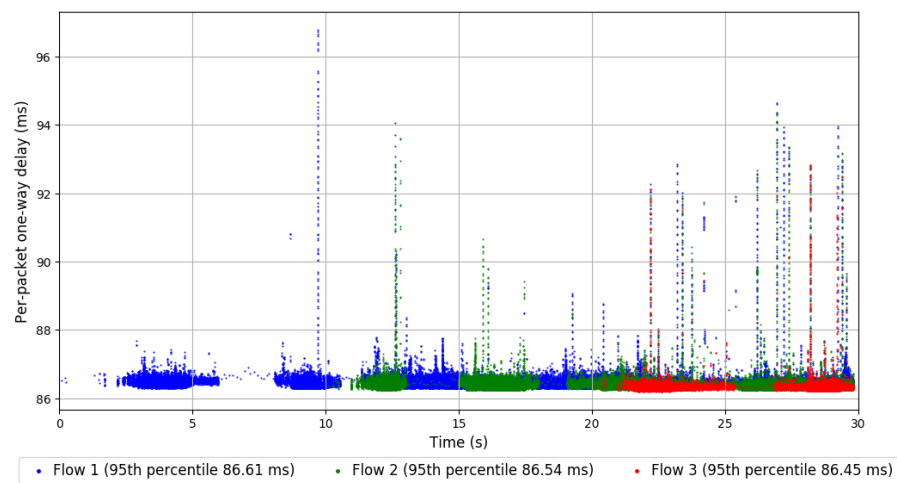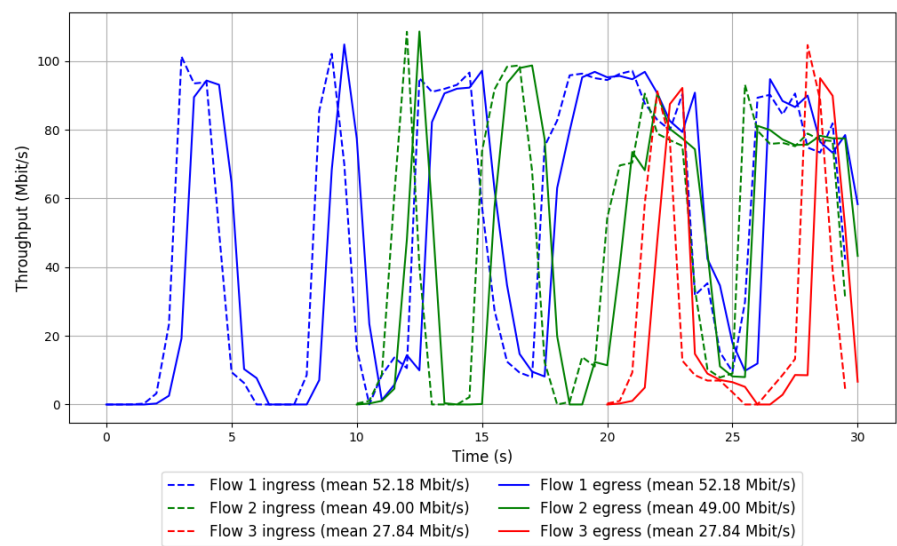
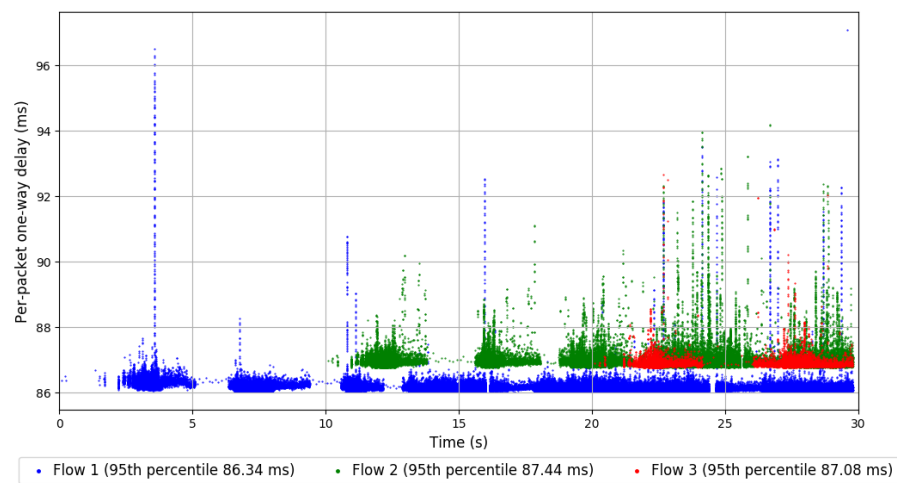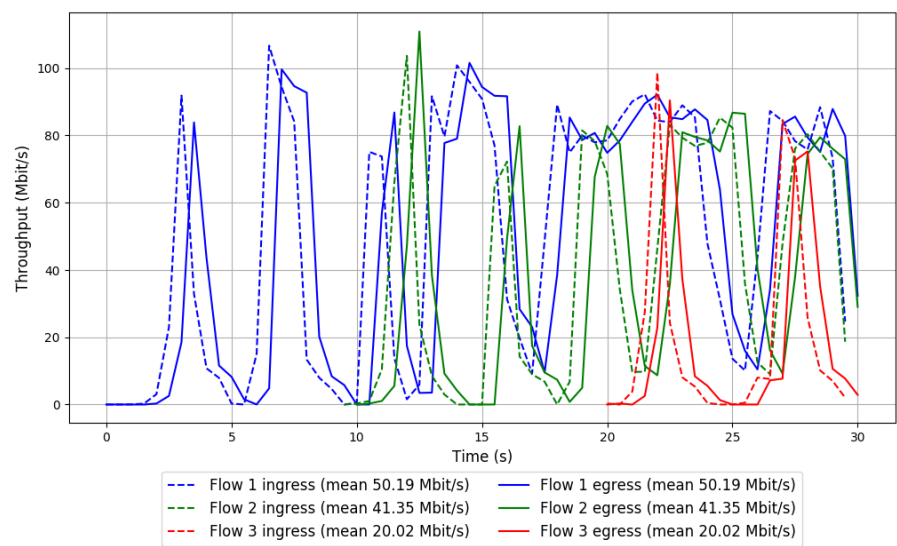Run 1: Report of QUIC Cubic — Data Link

```
Run 2: Statistics of QUIC Cubic

Start at: 2018-12-11 01:39:29
End at: 2018-12-11 01:39:59
Local clock offset: -0.326 ms
Remote clock offset: -0.05 ms

# Below is generated by plot.py at 2018-12-11 05:38:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 74.82 Mbit/s
95th percentile per-packet one-way delay: 86.606 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 47.22 Mbit/s
95th percentile per-packet one-way delay: 86.644 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 31.76 Mbit/s
95th percentile per-packet one-way delay: 86.257 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 19.99 Mbit/s
95th percentile per-packet one-way delay: 86.121 ms
Loss rate: 0.00%
```
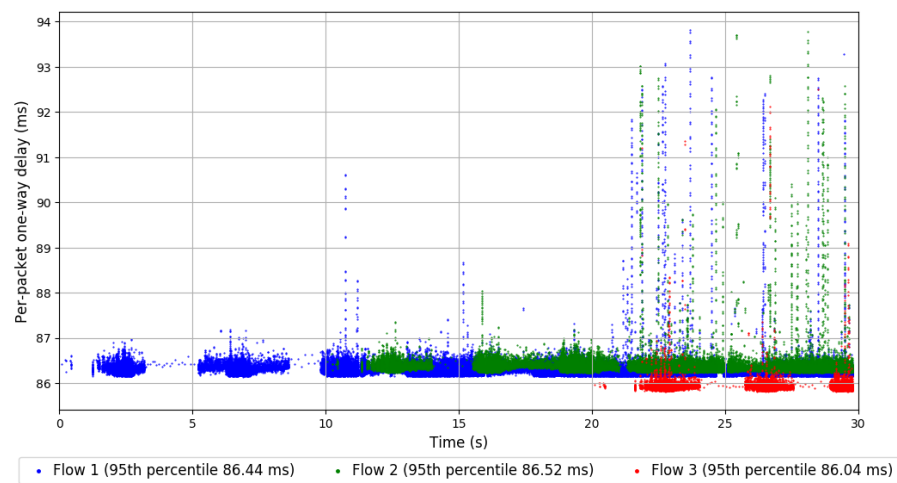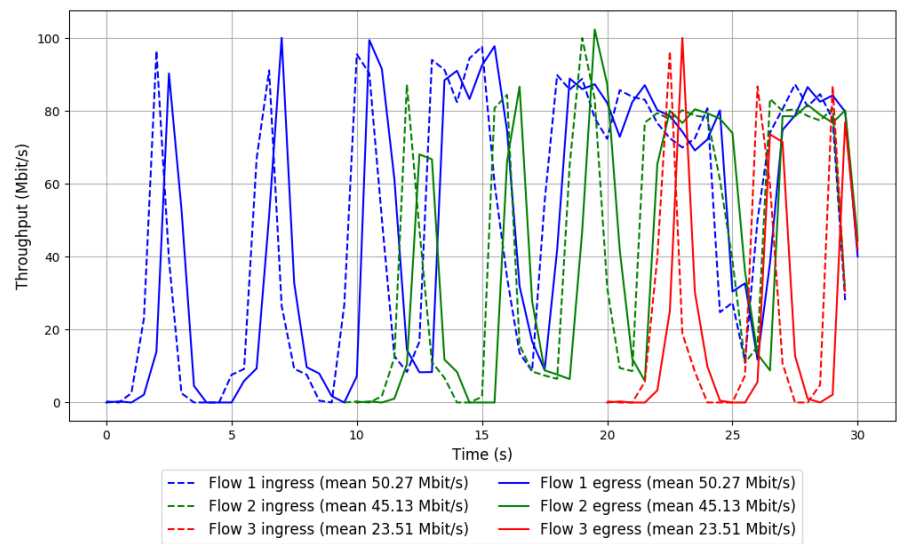
Run 2: Report of QUIC Cubic — Data Link

```
Run 3: Statistics of QUIC Cubic

Start at: 2018-12-11 02:13:17
End at: 2018-12-11 02:13:47
Local clock offset: -0.115 ms
Remote clock offset: -0.05 ms


# Below is generated by plot.py at 2018-12-11 05:38:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.74 Mbit/s
95th percentile per-packet one-way delay: 86.587 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 52.18 Mbit/s
95th percentile per-packet one-way delay: 86.615 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 49.00 Mbit/s
95th percentile per-packet one-way delay: 86.543 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 27.84 Mbit/s
95th percentile per-packet one-way delay: 86.446 ms
Loss rate: 0.00%
```

Run 3: Report of QUIC Cubic — Data Link

```
Run 4: Statistics of QUIC Cubic

Start at: 2018-12-11 02:47:38
End at: 2018-12-11 02:48:08
Local clock offset: -0.367 ms
Remote clock offset: -0.102 ms


# Below is generated by plot.py at 2018-12-11 05:38:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 84.15 Mbit/s
95th percentile per-packet one-way delay: 87.107 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 50.19 Mbit/s
95th percentile per-packet one-way delay: 86.337 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 41.35 Mbit/s
95th percentile per-packet one-way delay: 87.437 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 20.02 Mbit/s
95th percentile per-packet one-way delay: 87.081 ms
Loss rate: 0.00%
```
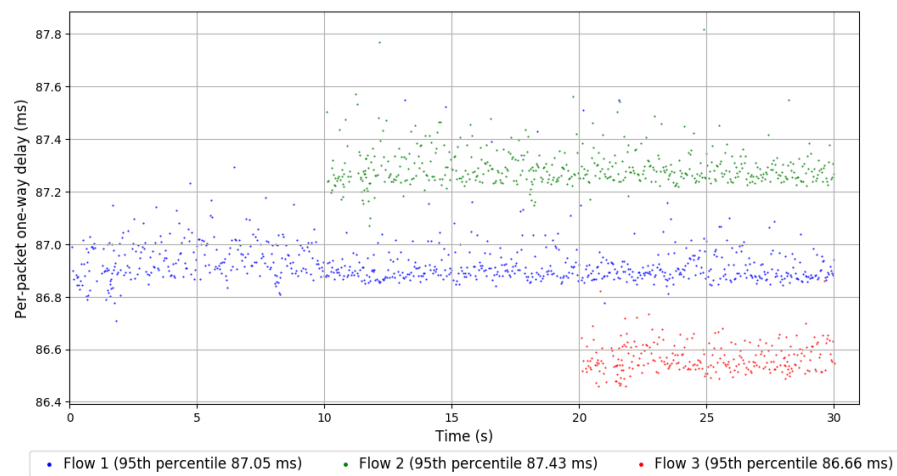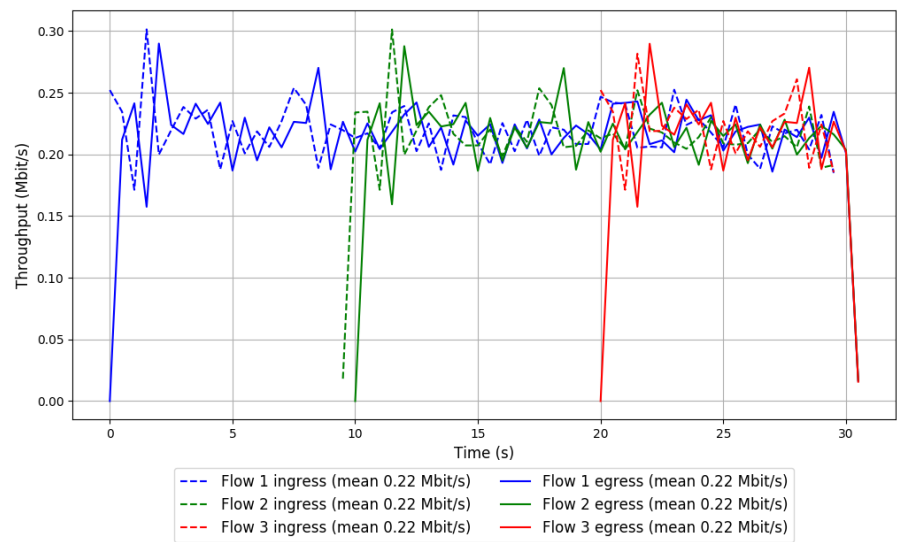
Run 4: Report of QUIC Cubic — Data Link

```
Run 5: Statistics of QUIC Cubic

Start at: 2018-12-11 03:21:16
End at: 2018-12-11 03:21:46
Local clock offset: -0.101 ms
Remote clock offset: -0.054 ms


# Below is generated by plot.py at 2018-12-11 05:38:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 87.90 Mbit/s
95th percentile per-packet one-way delay: 86.472 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 50.27 Mbit/s
95th percentile per-packet one-way delay: 86.442 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 45.13 Mbit/s
95th percentile per-packet one-way delay: 86.519 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 23.51 Mbit/s
95th percentile per-packet one-way delay: 86.044 ms
Loss rate: 0.00%
```
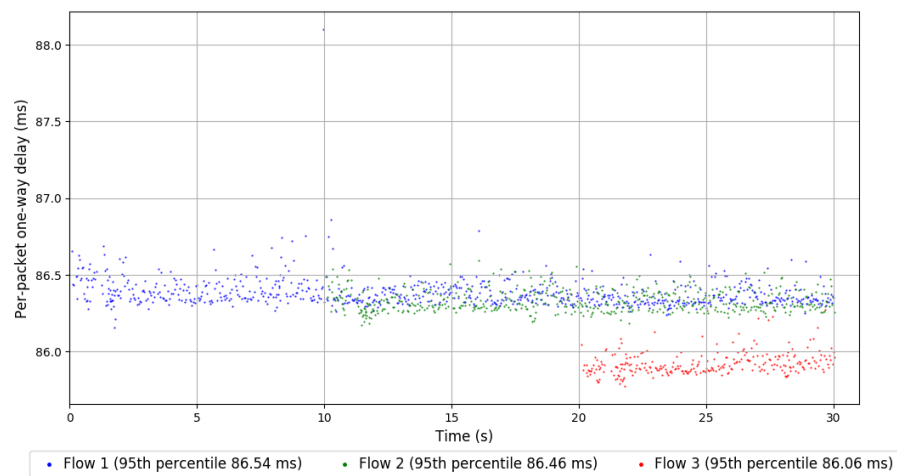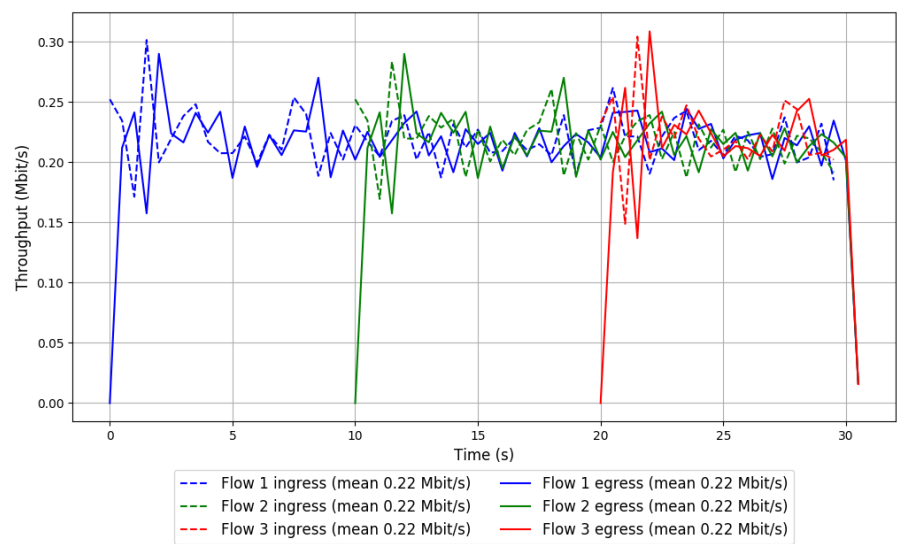
Run 5: Report of QUIC Cubic — Data Link

```
Run 1: Statistics of SCReAM

Start at: 2018-12-11 00:56:44
End at: 2018-12-11 00:57:14
Local clock offset: -0.417 ms
Remote clock offset: -0.076 ms

# Below is generated by plot.py at 2018-12-11 05:38:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 87.351 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 87.049 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 87.426 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.660 ms
Loss rate: 0.00%
```

Run 1: Report of SCReAM — Data Link

```
Run 2: Statistics of SCReAM

Start at: 2018-12-11 01:30:29
End at: 2018-12-11 01:30:59
Local clock offset: 0.069 ms
Remote clock offset: -0.067 ms


# Below is generated by plot.py at 2018-12-11 05:38:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 86.492 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.538 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.460 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.060 ms
Loss rate: 0.00%
```
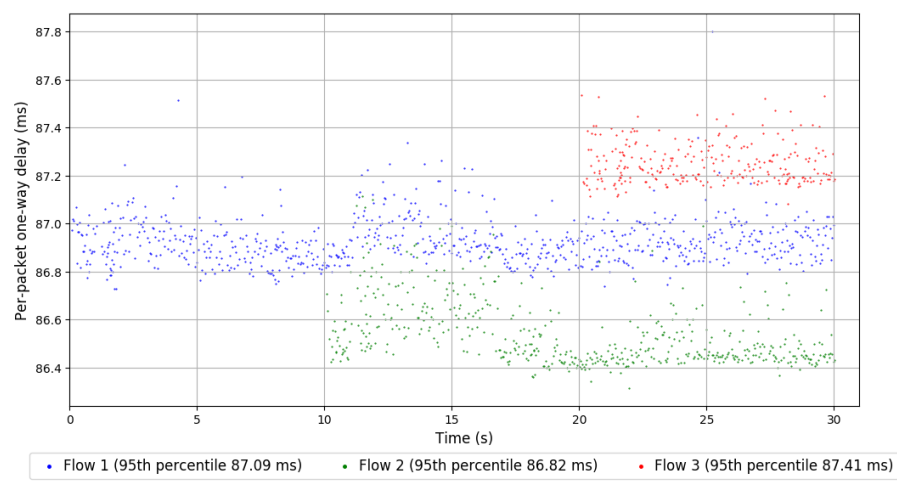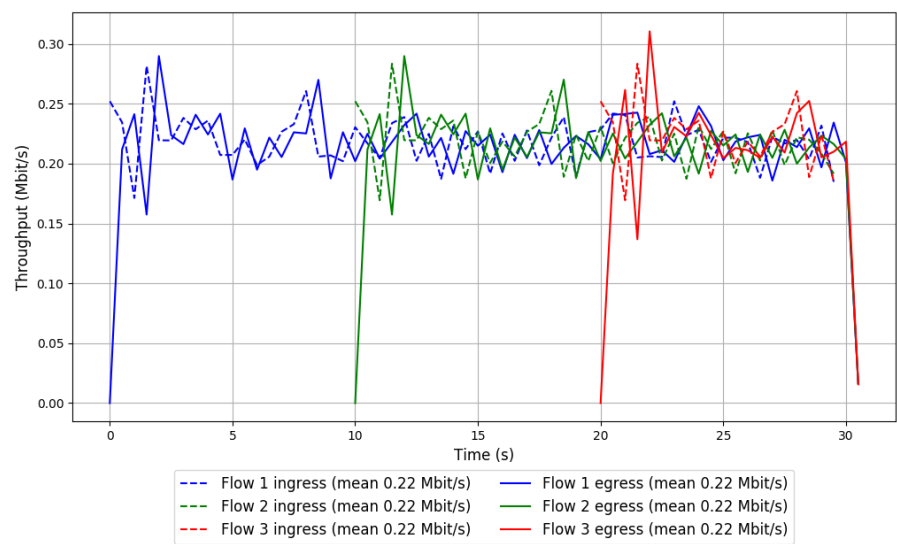
Run 2: Report of SCReAM — Data Link

```
Run 3: Statistics of SCReAM

Start at: 2018-12-11 02:04:17
End at: 2018-12-11 02:04:47
Local clock offset: -0.484 ms
Remote clock offset: 0.059 ms


# Below is generated by plot.py at 2018-12-11 05:38:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 87.290 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 87.092 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.816 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 87.408 ms
Loss rate: 0.00%
```
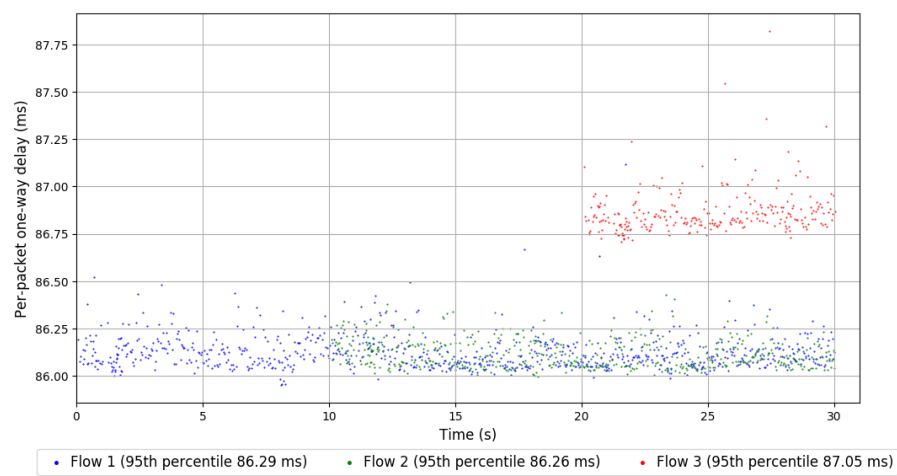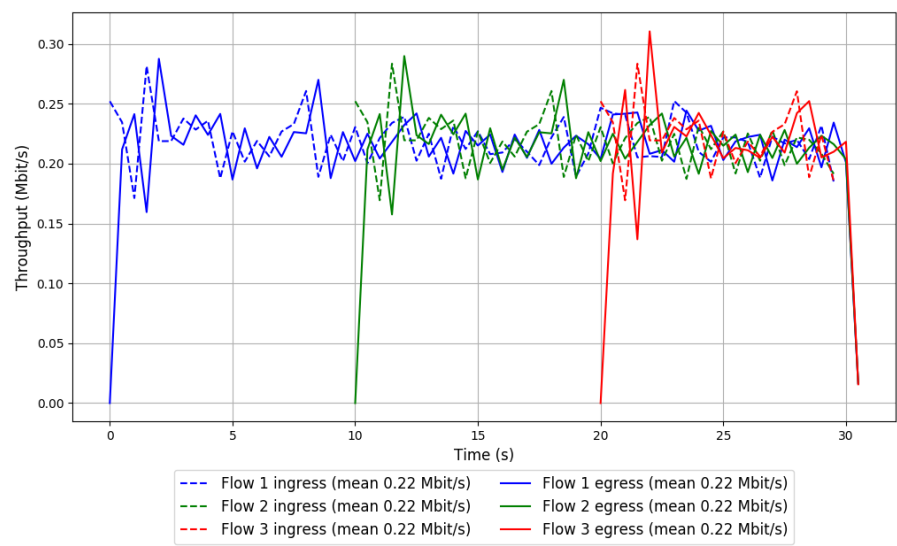
Run 3: Report of SCReAM — Data Link

```
Run 4: Statistics of SCReAM

Start at: 2018-12-11 02:38:04
End at: 2018-12-11 02:38:34
Local clock offset: -0.178 ms
Remote clock offset: -0.18 ms


# Below is generated by plot.py at 2018-12-11 05:38:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 86.881 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.291 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.257 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 87.053 ms
Loss rate: 0.00%
```
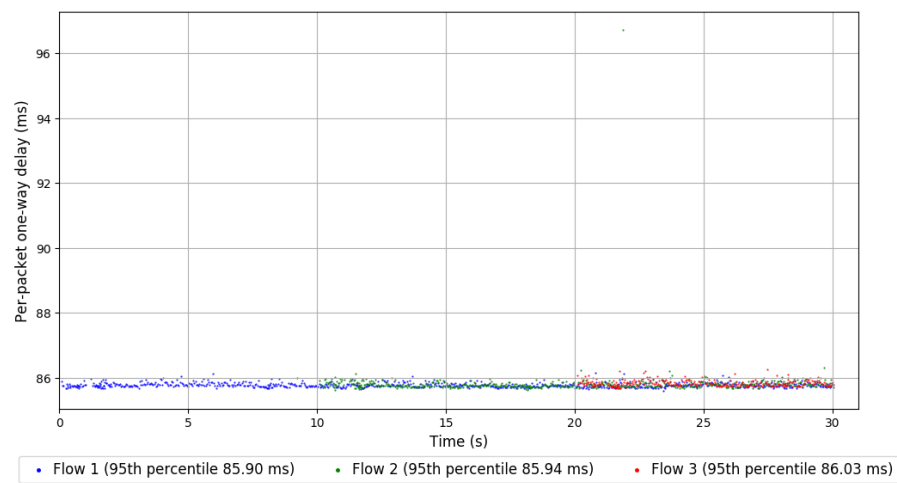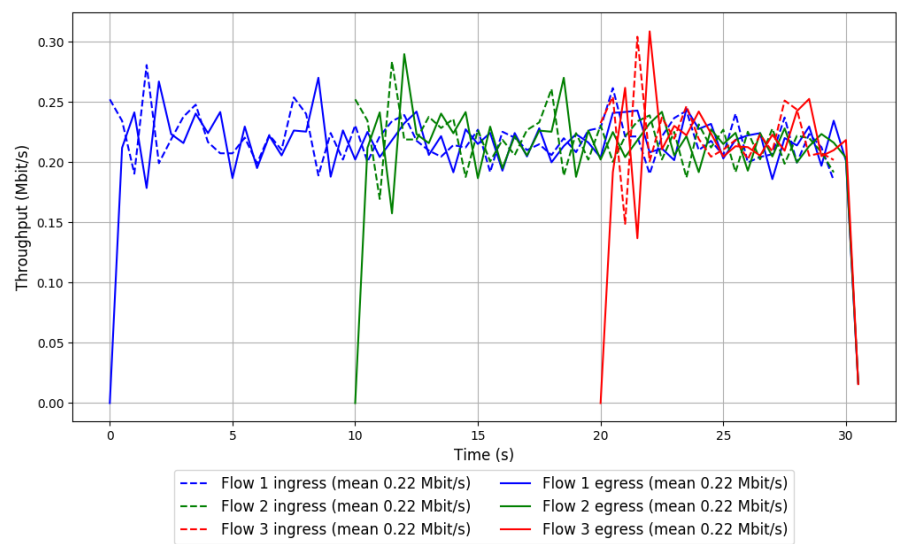
Run 4: Report of SCReAM — Data Link

```
Run 5: Statistics of SCReAM

Start at: 2018-12-11 03:12:07
End at: 2018-12-11 03:12:37
Local clock offset: 0.276 ms
Remote clock offset: -0.034 ms


# Below is generated by plot.py at 2018-12-11 05:38:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 85.948 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 85.903 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 85.940 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.030 ms
Loss rate: 0.00%
```
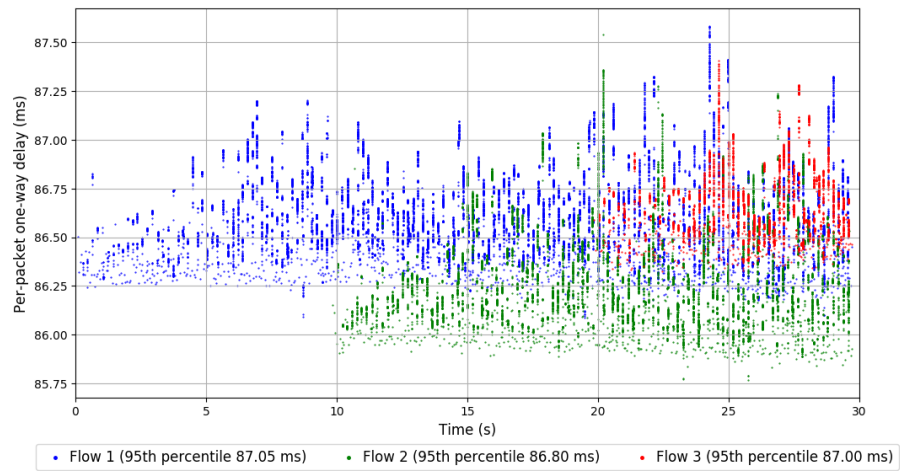
Run 5: Report of SCReAM — Data Link

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```
Run 1: Statistics of Sprout

Start at: 2018-12-11 00:46:05
End at: 2018-12-11 00:46:35
Local clock offset: 0.159 ms
Remote clock offset: 0.076 ms


# Below is generated by plot.py at 2018-12-11 05:38:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.18 Mbit/s
95th percentile per-packet one-way delay: 86.991 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 4.16 Mbit/s
95th percentile per-packet one-way delay: 87.045 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 4.24 Mbit/s
95th percentile per-packet one-way delay: 86.803 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 3.56 Mbit/s
95th percentile per-packet one-way delay: 87.005 ms
Loss rate: 0.00%
```
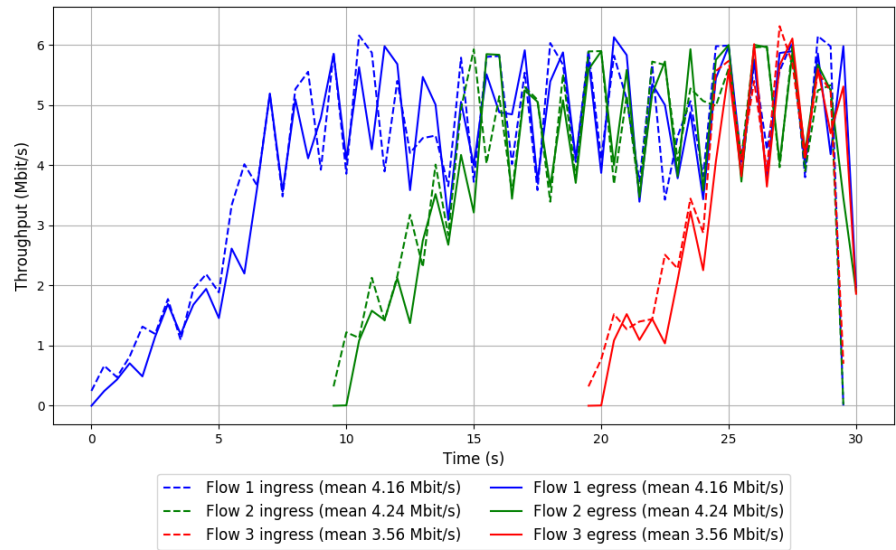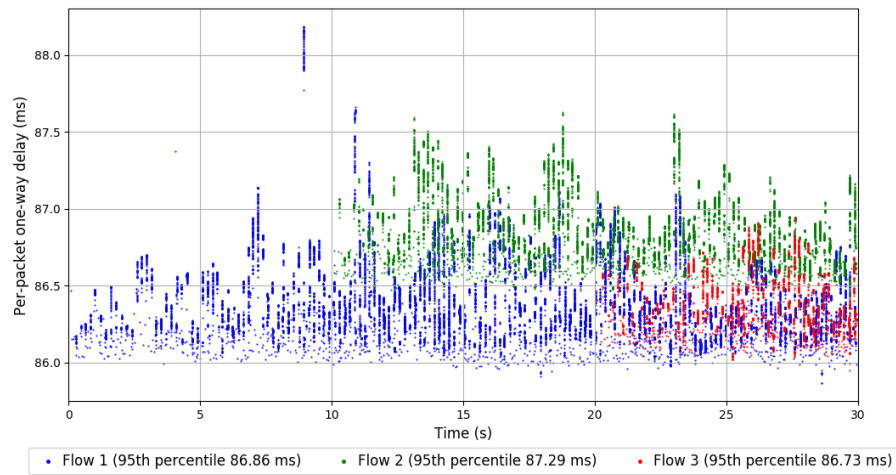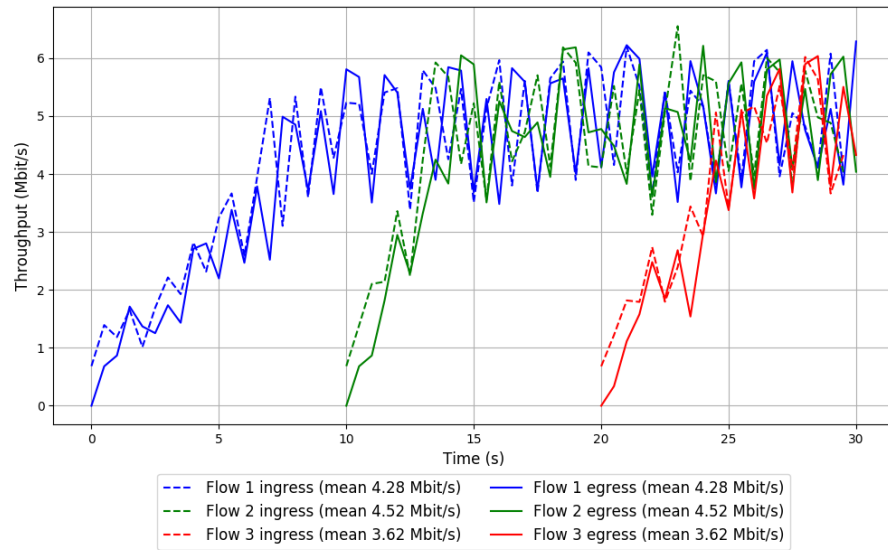
Run 1: Report of Sprout — Data Link

```
Run 2: Statistics of Sprout

Start at: 2018-12-11 01:19:59
End at: 2018-12-11 01:20:29
Local clock offset: -0.196 ms
Remote clock offset: -0.094 ms


# Below is generated by plot.py at 2018-12-11 05:38:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.47 Mbit/s
95th percentile per-packet one-way delay: 87.161 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 4.28 Mbit/s
95th percentile per-packet one-way delay: 86.859 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 4.52 Mbit/s
95th percentile per-packet one-way delay: 87.293 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 3.62 Mbit/s
95th percentile per-packet one-way delay: 86.734 ms
Loss rate: 0.00%
```
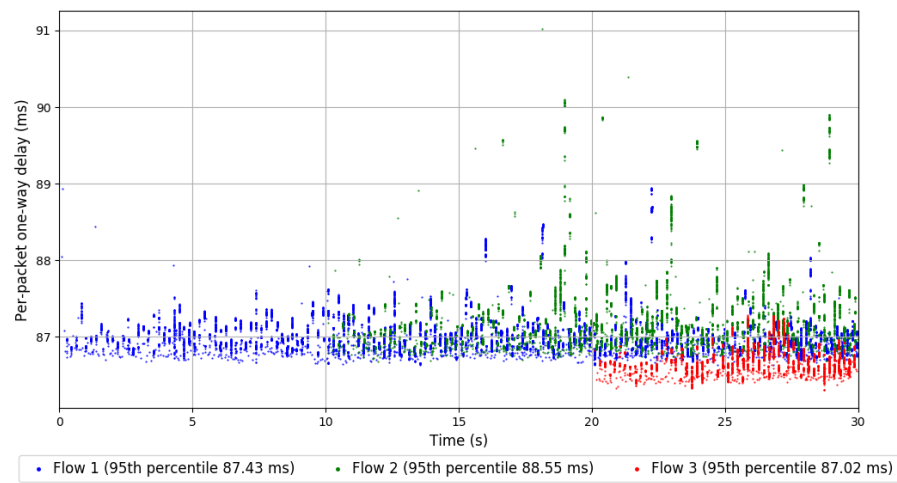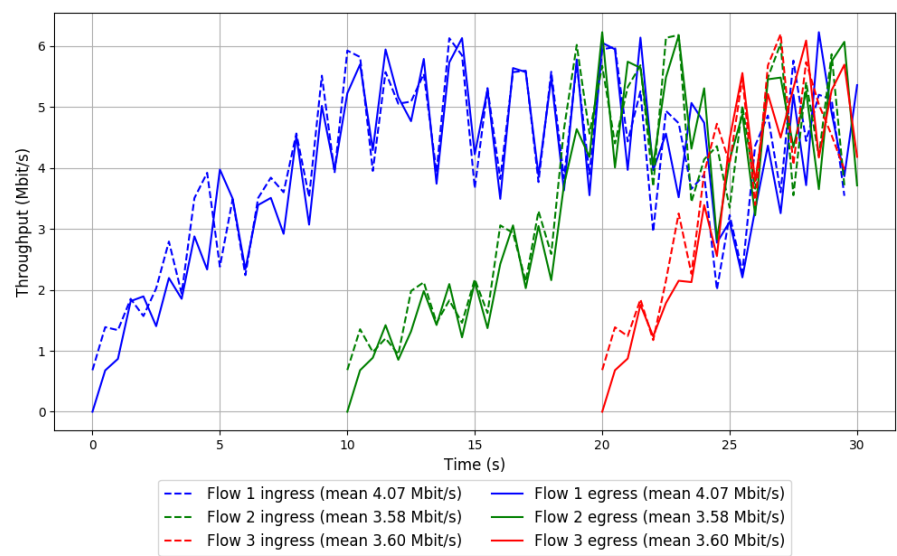
Run 2: Report of Sprout — Data Link

```
Run 3: Statistics of Sprout

Start at: 2018-12-11 01:53:24
End at: 2018-12-11 01:53:54
Local clock offset: -0.082 ms
Remote clock offset: 0.09 ms


# Below is generated by plot.py at 2018-12-11 05:38:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 7.64 Mbit/s
95th percentile per-packet one-way delay: 87.655 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 4.07 Mbit/s
95th percentile per-packet one-way delay: 87.431 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 3.58 Mbit/s
95th percentile per-packet one-way delay: 88.548 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 3.60 Mbit/s
95th percentile per-packet one-way delay: 87.016 ms
Loss rate: 0.00%
```
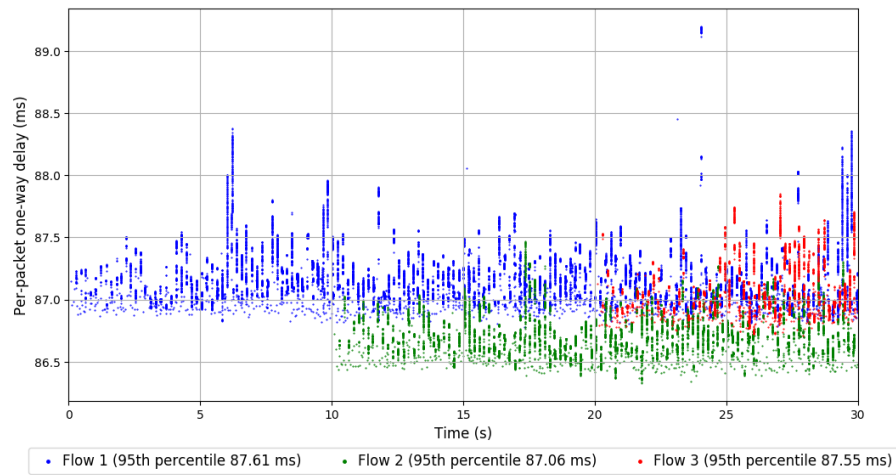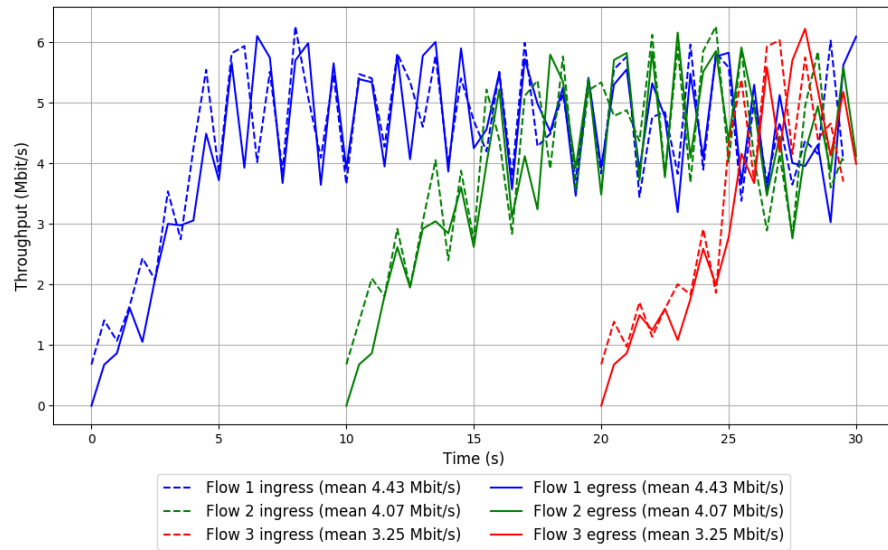
Run 3: Report of Sprout — Data Link

```
Run 4: Statistics of Sprout

Start at: 2018-12-11 02:27:27
End at: 2018-12-11 02:27:57
Local clock offset: -0.533 ms
Remote clock offset: -0.158 ms


# Below is generated by plot.py at 2018-12-11 05:38:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.21 Mbit/s
95th percentile per-packet one-way delay: 87.518 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 4.43 Mbit/s
95th percentile per-packet one-way delay: 87.611 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 4.07 Mbit/s
95th percentile per-packet one-way delay: 87.055 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 3.25 Mbit/s
95th percentile per-packet one-way delay: 87.547 ms
Loss rate: 0.00%
```
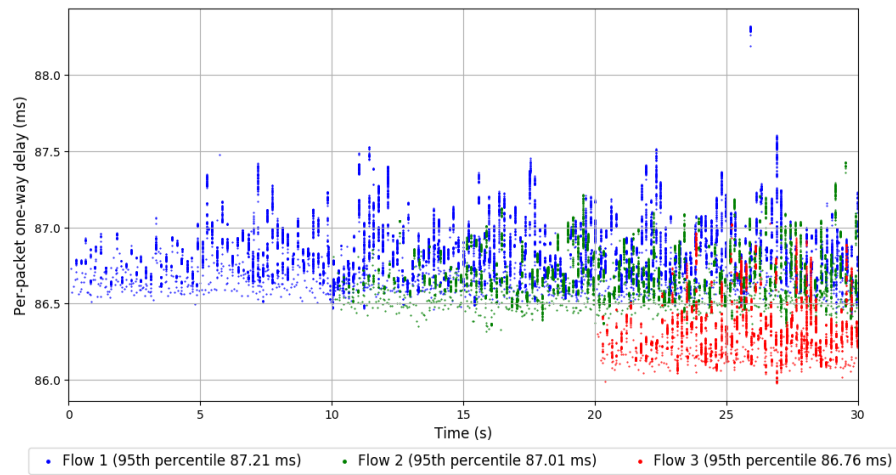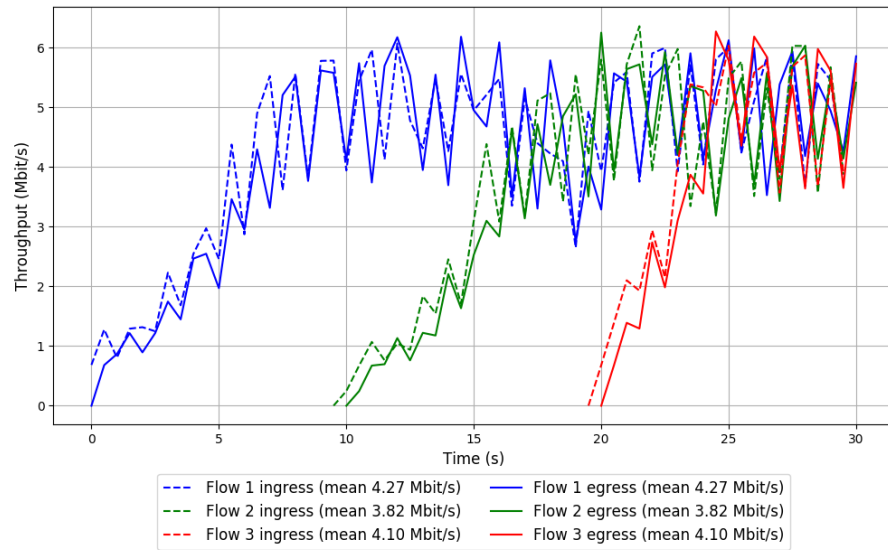
Run 4: Report of Sprout — Data Link

```
Run 5: Statistics of Sprout

Start at: 2018-12-11 03:01:35
End at: 2018-12-11 03:02:05
Local clock offset: -0.156 ms
Remote clock offset: -0.071 ms


# Below is generated by plot.py at 2018-12-11 05:38:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.17 Mbit/s
95th percentile per-packet one-way delay: 87.135 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 4.27 Mbit/s
95th percentile per-packet one-way delay: 87.213 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 3.82 Mbit/s
95th percentile per-packet one-way delay: 87.014 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 4.10 Mbit/s
95th percentile per-packet one-way delay: 86.756 ms
Loss rate: 0.00%
```
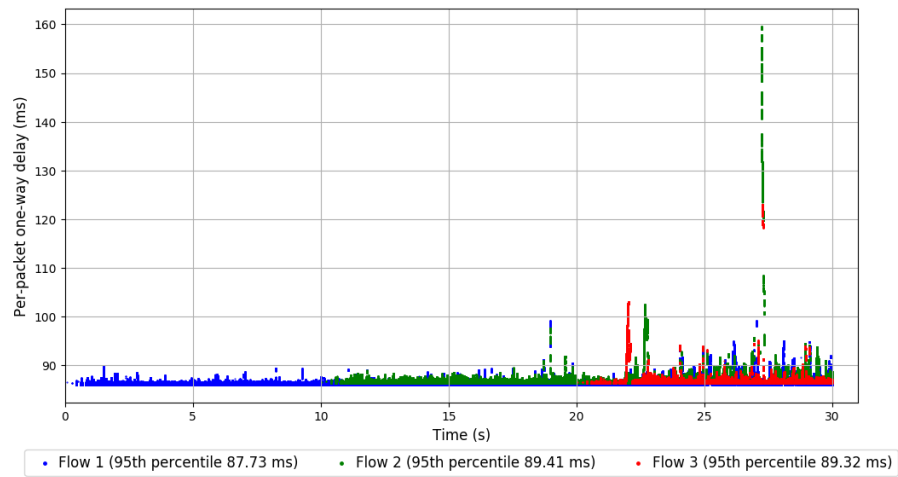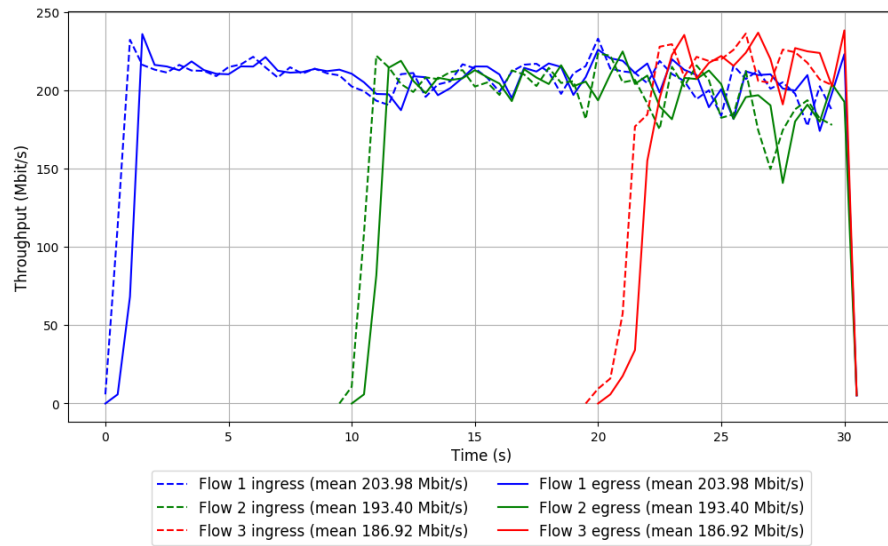
Run 5: Report of Sprout — Data Link

```
Run 1: Statistics of TaoVA-100x

Start at: 2018-12-11 00:47:22
End at: 2018-12-11 00:47:52
Local clock offset: -0.181 ms
Remote clock offset: 0.041 ms

# Below is generated by plot.py at 2018-12-11 05:44:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 395.20 Mbit/s
95th percentile per-packet one-way delay: 88.518 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 203.98 Mbit/s
95th percentile per-packet one-way delay: 87.727 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 193.40 Mbit/s
95th percentile per-packet one-way delay: 89.412 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 186.92 Mbit/s
95th percentile per-packet one-way delay: 89.324 ms
Loss rate: 0.00%
```

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

```
Run 2: Statistics of TaoVA-100x

Start at: 2018-12-11 01:21:15
End at: 2018-12-11 01:21:45
Local clock offset: 0.075 ms
Remote clock offset: -0.08 ms

# Below is generated by plot.py at 2018-12-11 05:44:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 391.06 Mbit/s
95th percentile per-packet one-way delay: 86.893 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 201.70 Mbit/s
95th percentile per-packet one-way delay: 86.250 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 188.33 Mbit/s
95th percentile per-packet one-way delay: 87.274 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 192.49 Mbit/s
95th percentile per-packet one-way delay: 86.978 ms
Loss rate: 0.00%
```
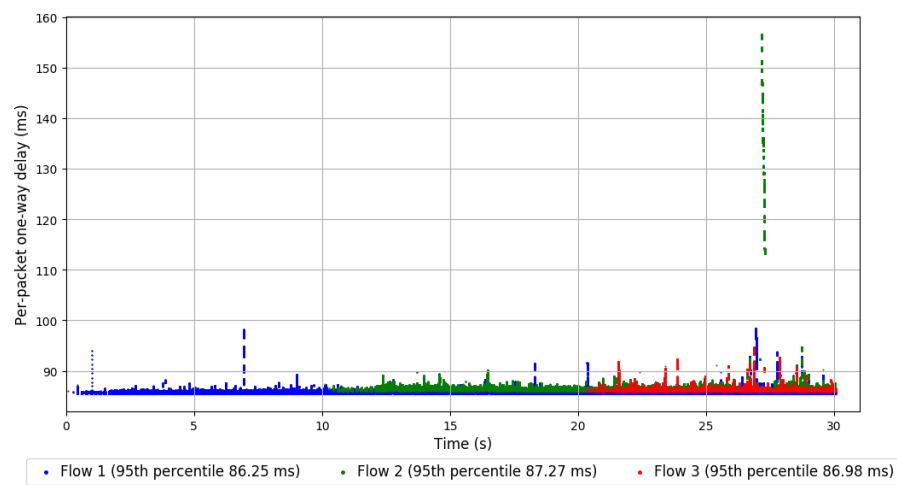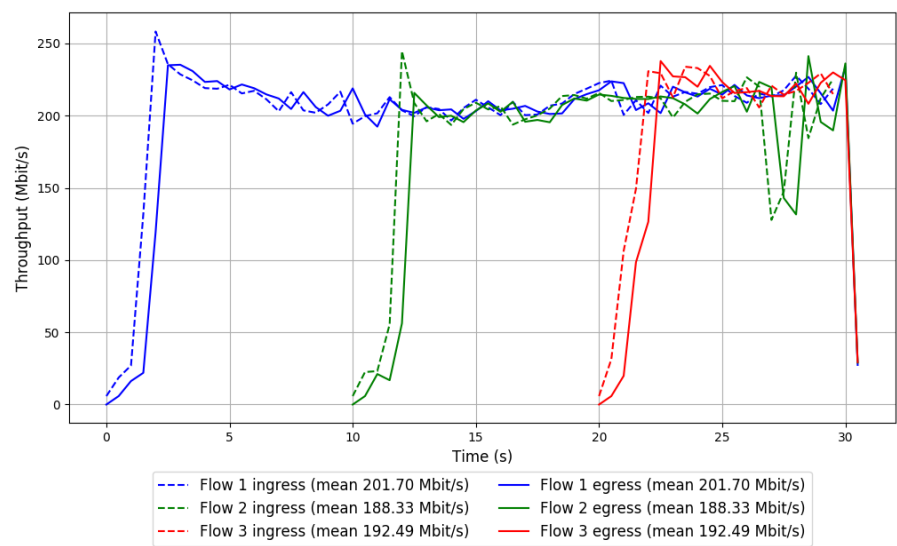
Run 2: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 201.70 Mbit/s) --- Flow 1 egress (mean 201.70 Mbit/s)
Flow 2 ingress (mean 188.33 Mbit/s) --- Flow 2 egress (mean 188.33 Mbit/s)
Flow 3 ingress (mean 192.49 Mbit/s) --- Flow 3 egress (mean 192.49 Mbit/s)

Flow 1 (95th percentile 86.25 ms)   Flow 2 (95th percentile 87.27 ms)   Flow 3 (95th percentile 86.98 ms)

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```
Run 3: Statistics of TaoVA-100x

Start at: 2018-12-11 01:54:40
End at: 2018-12-11 01:55:10
Local clock offset: -0.078 ms
Remote clock offset: 0.037 ms


# Below is generated by plot.py at 2018-12-11 05:44:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 375.24 Mbit/s
95th percentile per-packet one-way delay: 87.387 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 195.07 Mbit/s
95th percentile per-packet one-way delay: 86.830 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 190.87 Mbit/s
95th percentile per-packet one-way delay: 87.738 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 159.78 Mbit/s
95th percentile per-packet one-way delay: 88.212 ms
Loss rate: 0.00%
```
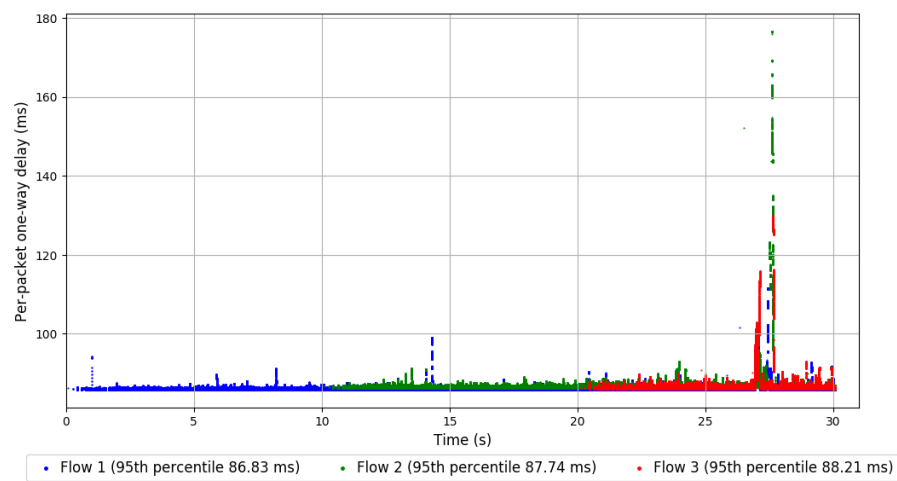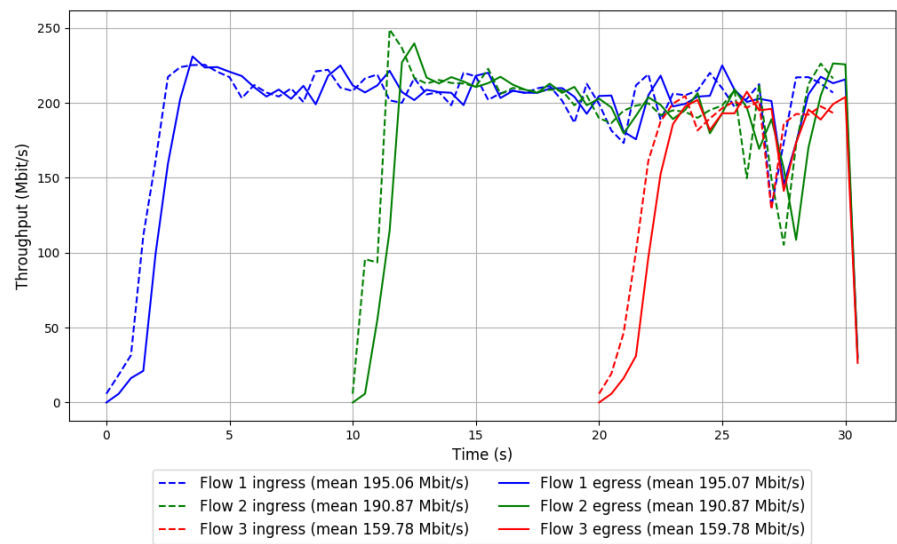
Run 3: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 195.06 Mbit/s)   Flow 1 egress (mean 195.07 Mbit/s)
Flow 2 ingress (mean 190.87 Mbit/s)   Flow 2 egress (mean 190.87 Mbit/s)
Flow 3 ingress (mean 159.78 Mbit/s)   Flow 3 egress (mean 159.78 Mbit/s)

Flow 1 (95th percentile 86.83 ms)   Flow 2 (95th percentile 87.74 ms)   Flow 3 (95th percentile 88.21 ms)
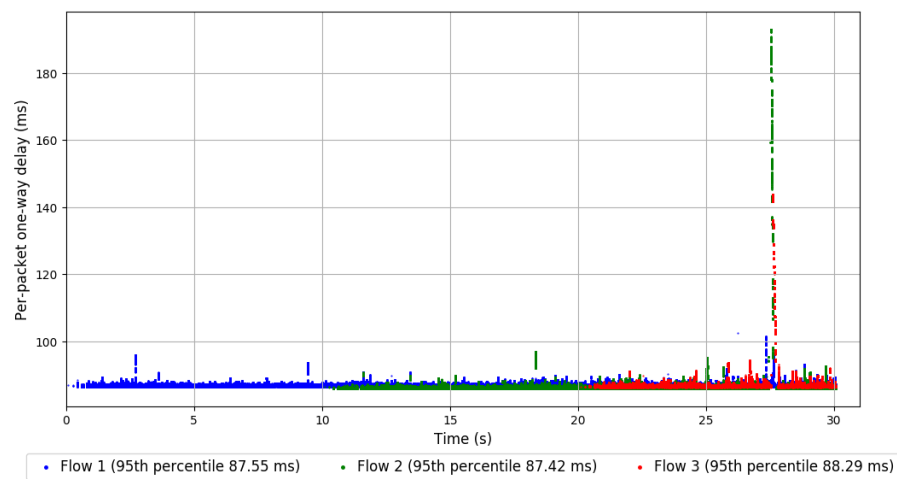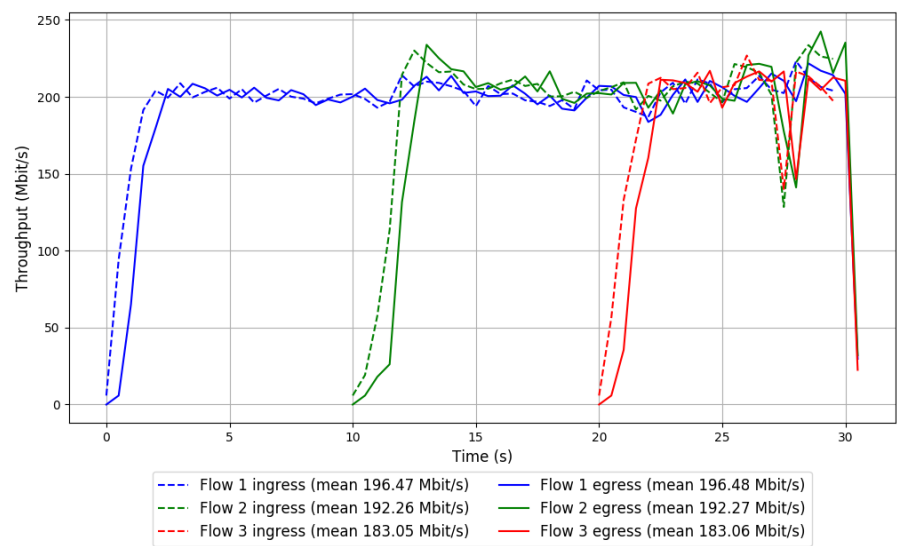
```
Run 4: Statistics of TaoVA-100x

Start at: 2018-12-11 02:28:43
End at: 2018-12-11 02:29:13
Local clock offset: -0.161 ms
Remote clock offset: -0.146 ms


# Below is generated by plot.py at 2018-12-11 05:44:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 385.33 Mbit/s
95th percentile per-packet one-way delay: 87.574 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 196.48 Mbit/s
95th percentile per-packet one-way delay: 87.554 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 192.27 Mbit/s
95th percentile per-packet one-way delay: 87.424 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 183.06 Mbit/s
95th percentile per-packet one-way delay: 88.292 ms
Loss rate: 0.00%
```

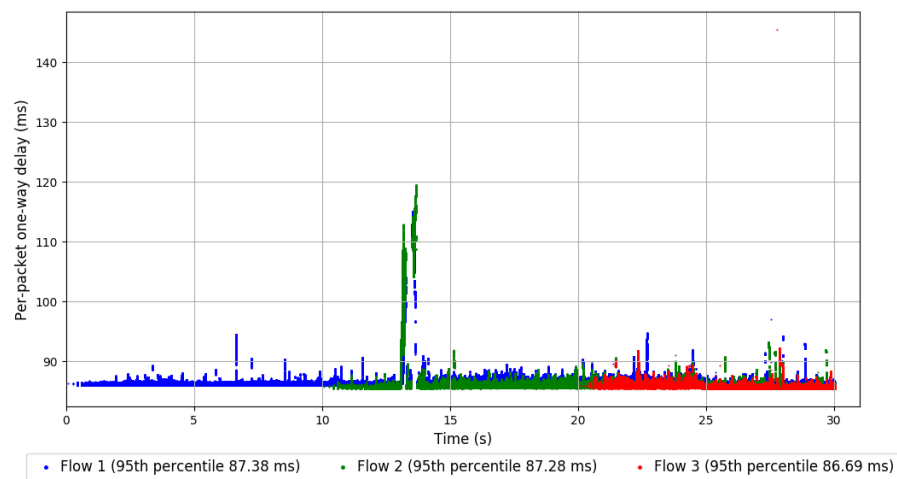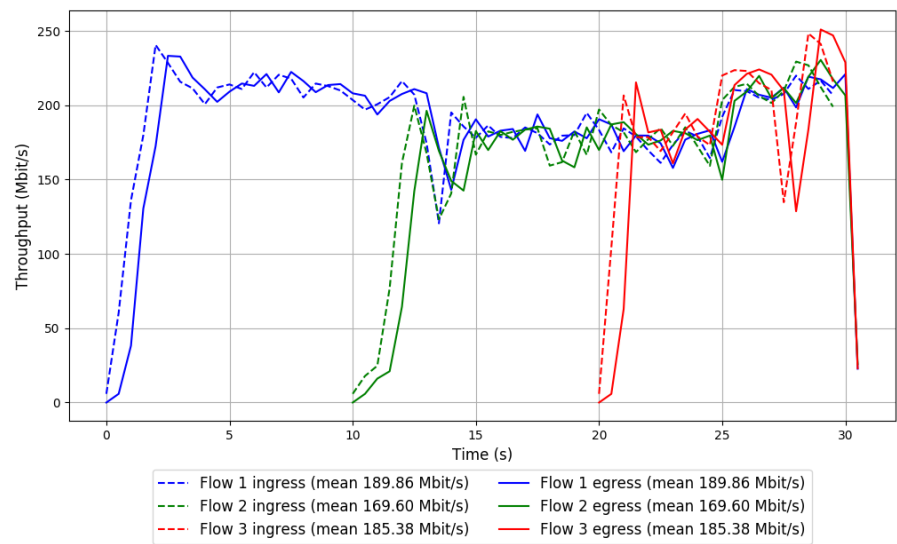Run 4: Report of TaoVA-100x — Data Link

```
Run 5: Statistics of TaoVA-100x

Start at: 2018-12-11 03:02:51
End at: 2018-12-11 03:03:21
Local clock offset: 0.225 ms
Remote clock offset: -0.034 ms


# Below is generated by plot.py at 2018-12-11 05:46:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 364.46 Mbit/s
95th percentile per-packet one-way delay: 87.258 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 189.86 Mbit/s
95th percentile per-packet one-way delay: 87.380 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 169.60 Mbit/s
95th percentile per-packet one-way delay: 87.285 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 185.38 Mbit/s
95th percentile per-packet one-way delay: 86.693 ms
Loss rate: 0.00%
```

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

Flow 1 ingress (mean 189.86 Mbit/s) Flow 1 egress (mean 189.86 Mbit/s)
Flow 2 ingress (mean 169.60 Mbit/s) Flow 2 egress (mean 169.60 Mbit/s)
Flow 3 ingress (mean 185.38 Mbit/s) Flow 3 egress (mean 185.38 Mbit/s)

Flow 1 (95th percentile 87.38 ms)   Flow 2 (95th percentile 87.28 ms)   Flow 3 (95th percentile 86.69 ms)

```
Run 1: Statistics of TCP Vegas

Start at: 2018-12-11 00:42:47
End at: 2018-12-11 00:43:17
Local clock offset: 0.02 ms
Remote clock offset: 0.173 ms


# Below is generated by plot.py at 2018-12-11 05:52:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 869.34 Mbit/s
95th percentile per-packet one-way delay: 135.072 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 483.32 Mbit/s
95th percentile per-packet one-way delay: 124.431 ms
Loss rate: 0.09%
-- Flow 2:
Average throughput: 431.78 Mbit/s
95th percentile per-packet one-way delay: 141.903 ms
Loss rate: 0.20%
-- Flow 3:
Average throughput: 294.99 Mbit/s
95th percentile per-packet one-way delay: 112.560 ms
Loss rate: 0.00%
```
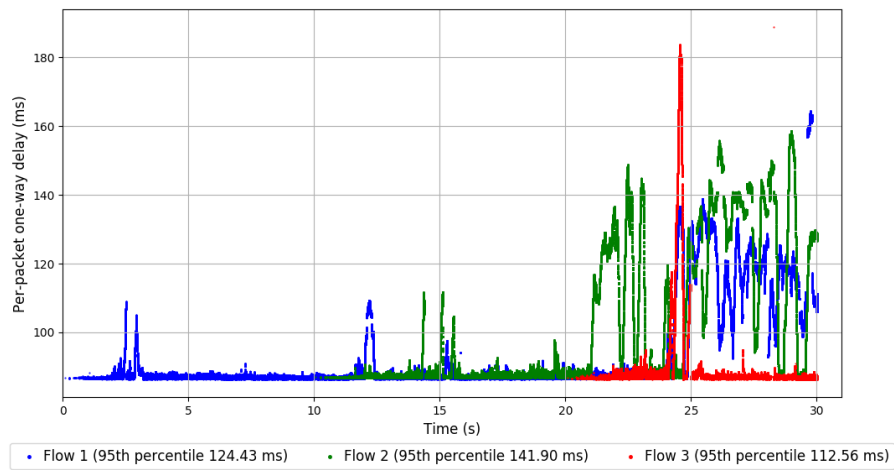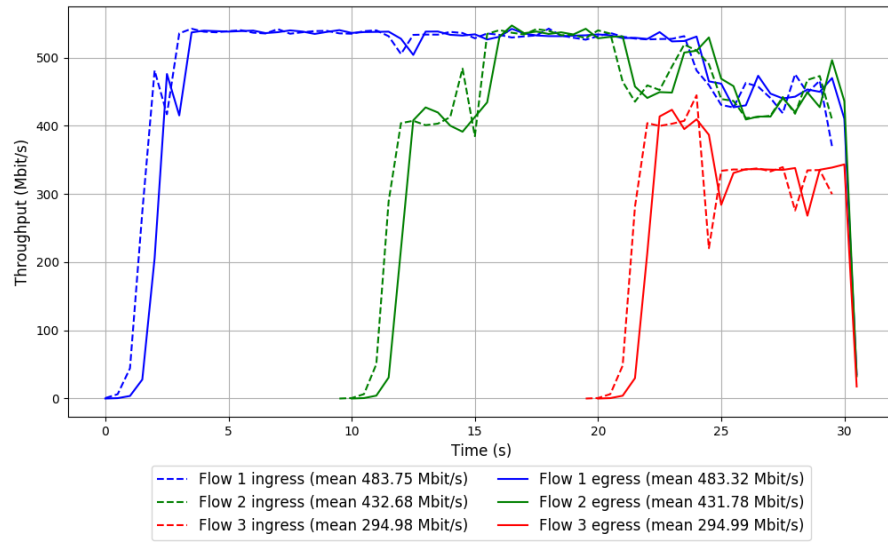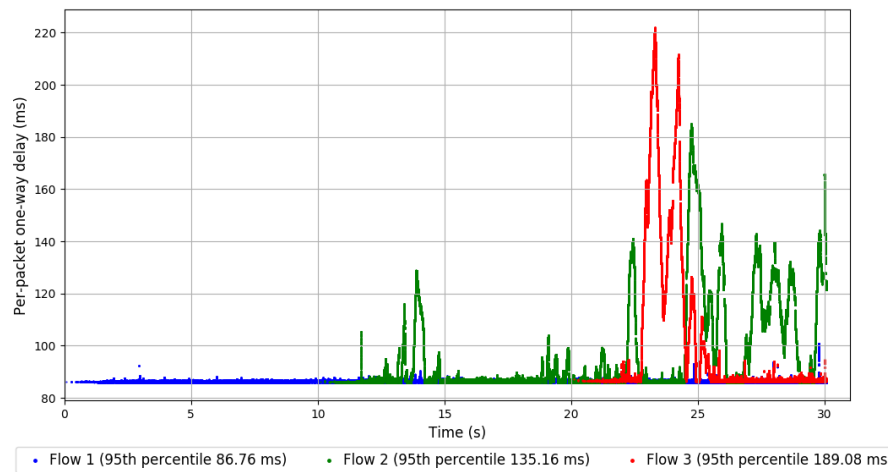
Run 1: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 483.75 Mbit/s)   Flow 1 egress (mean 483.32 Mbit/s)
Flow 2 ingress (mean 432.68 Mbit/s)   Flow 2 egress (mean 431.78 Mbit/s)
Flow 3 ingress (mean 294.98 Mbit/s)   Flow 3 egress (mean 294.99 Mbit/s)

Flow 1 (95th percentile 124.43 ms)   Flow 2 (95th percentile 141.90 ms)   Flow 3 (95th percentile 112.56 ms)
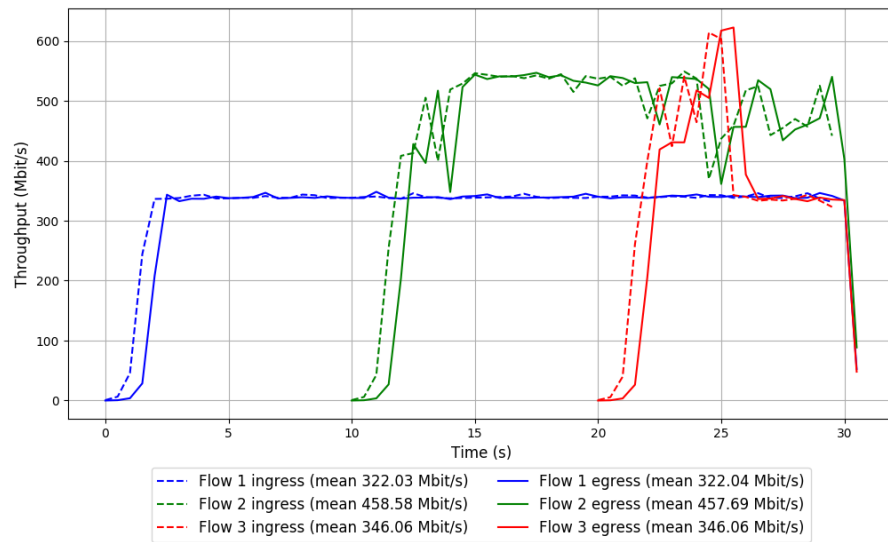
```
Run 2: Statistics of TCP Vegas

Start at: 2018-12-11 01:16:42
End at: 2018-12-11 01:17:12
Local clock offset: -0.175 ms
Remote clock offset: -0.052 ms


# Below is generated by plot.py at 2018-12-11 05:52:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 741.86 Mbit/s
95th percentile per-packet one-way delay: 133.065 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 322.04 Mbit/s
95th percentile per-packet one-way delay: 86.756 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 457.69 Mbit/s
95th percentile per-packet one-way delay: 135.158 ms
Loss rate: 0.19%
-- Flow 3:
Average throughput: 346.06 Mbit/s
95th percentile per-packet one-way delay: 189.081 ms
Loss rate: 0.00%
```
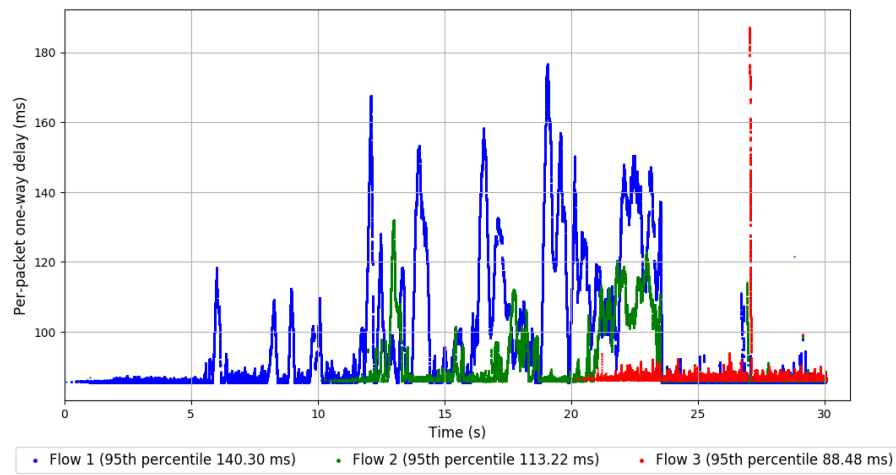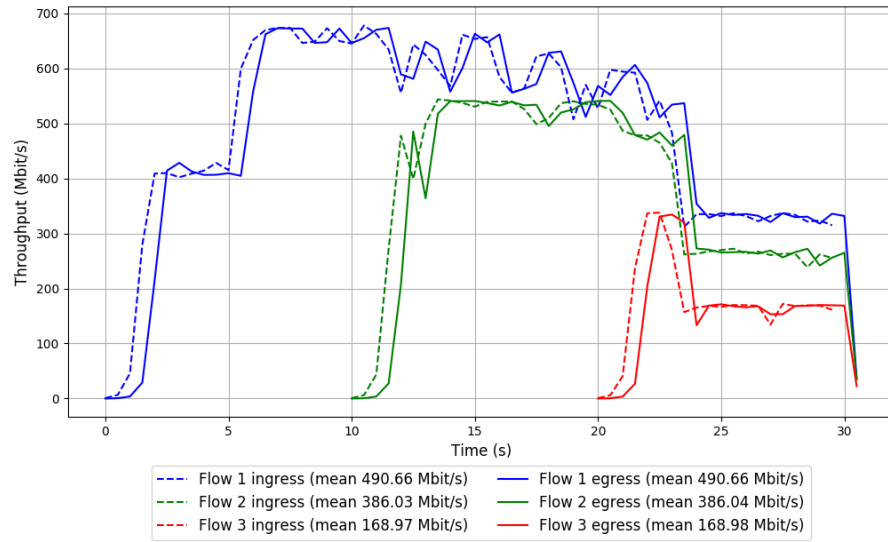
Run 2: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 322.03 Mbit/s)   Flow 1 egress (mean 322.04 Mbit/s)
Flow 2 ingress (mean 458.58 Mbit/s)   Flow 2 egress (mean 457.69 Mbit/s)
Flow 3 ingress (mean 346.06 Mbit/s)   Flow 3 egress (mean 346.06 Mbit/s)

Flow 1 (95th percentile 86.76 ms)   Flow 2 (95th percentile 135.16 ms)   Flow 3 (95th percentile 189.08 ms)

```
Run 3: Statistics of TCP Vegas

Start at: 2018-12-11 01:50:09
End at: 2018-12-11 01:50:39
Local clock offset: 0.338 ms
Remote clock offset: 0.057 ms


# Below is generated by plot.py at 2018-12-11 05:56:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 803.95 Mbit/s
95th percentile per-packet one-way delay: 133.474 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 490.66 Mbit/s
95th percentile per-packet one-way delay: 140.298 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 386.04 Mbit/s
95th percentile per-packet one-way delay: 113.222 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 168.98 Mbit/s
95th percentile per-packet one-way delay: 88.480 ms
Loss rate: 0.00%
```

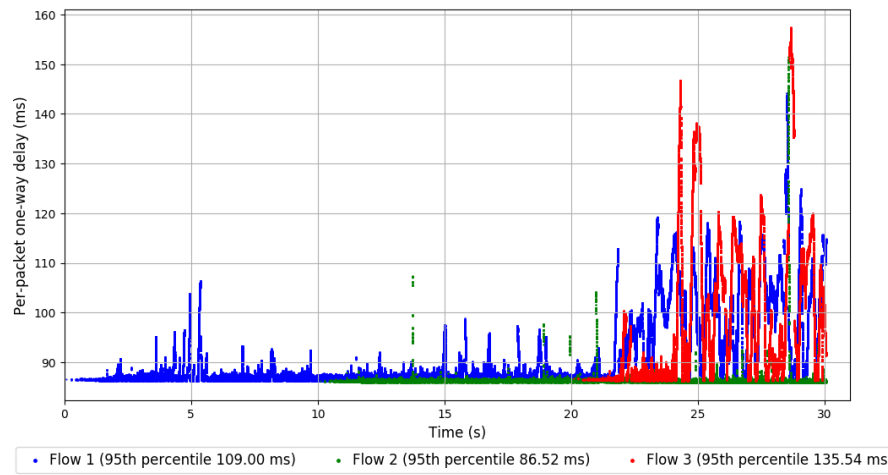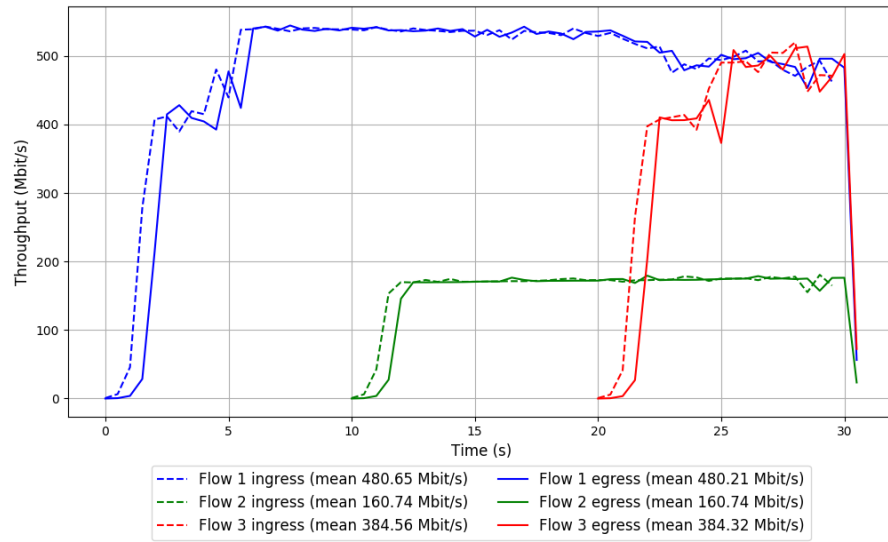Run 3: Report of TCP Vegas — Data Link

```
Run 4: Statistics of TCP Vegas

Start at: 2018-12-11 02:24:16
End at: 2018-12-11 02:24:46
Local clock offset: -0.192 ms
Remote clock offset: -0.117 ms


# Below is generated by plot.py at 2018-12-11 05:58:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 714.91 Mbit/s
95th percentile per-packet one-way delay: 113.167 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 480.21 Mbit/s
95th percentile per-packet one-way delay: 109.001 ms
Loss rate: 0.09%
-- Flow 2:
Average throughput: 160.74 Mbit/s
95th percentile per-packet one-way delay: 86.518 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 384.32 Mbit/s
95th percentile per-packet one-way delay: 135.544 ms
Loss rate: 0.07%
```

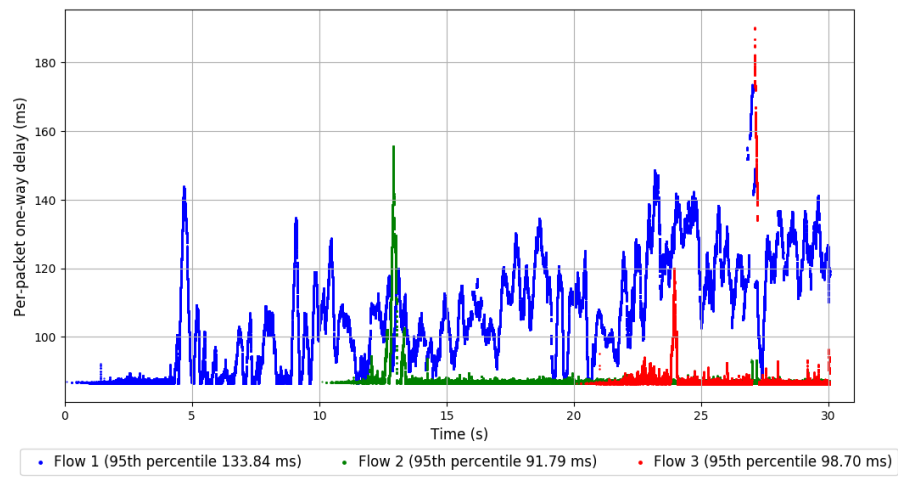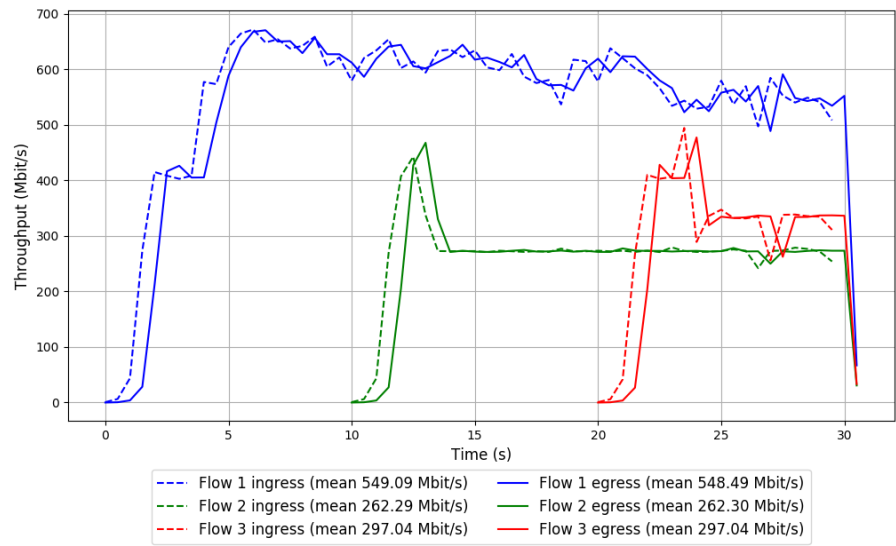Run 4: Report of TCP Vegas — Data Link

```
Run 5: Statistics of TCP Vegas

Start at: 2018-12-11 02:58:18
End at: 2018-12-11 02:58:48
Local clock offset: -0.309 ms
Remote clock offset: -0.033 ms


# Below is generated by plot.py at 2018-12-11 06:01:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 821.88 Mbit/s
95th percentile per-packet one-way delay: 131.639 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 548.49 Mbit/s
95th percentile per-packet one-way delay: 133.842 ms
Loss rate: 0.11%
-- Flow 2:
Average throughput: 262.30 Mbit/s
95th percentile per-packet one-way delay: 91.791 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 297.04 Mbit/s
95th percentile per-packet one-way delay: 98.705 ms
Loss rate: 0.00%
```

Run 5: Report of TCP Vegas — Data Link

```
Run 1: Statistics of Verus

Start at: 2018-12-11 00:41:04
End at: 2018-12-11 00:41:34
Local clock offset: -0.174 ms
Remote clock offset: 0.186 ms


# Below is generated by plot.py at 2018-12-11 06:01:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 272.72 Mbit/s
95th percentile per-packet one-way delay: 219.655 ms
Loss rate: 3.32%
-- Flow 1:
Average throughput: 200.30 Mbit/s
95th percentile per-packet one-way delay: 220.385 ms
Loss rate: 4.20%
-- Flow 2:
Average throughput: 59.86 Mbit/s
95th percentile per-packet one-way delay: 136.252 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 99.82 Mbit/s
95th percentile per-packet one-way delay: 231.237 ms
Loss rate: 1.75%
```
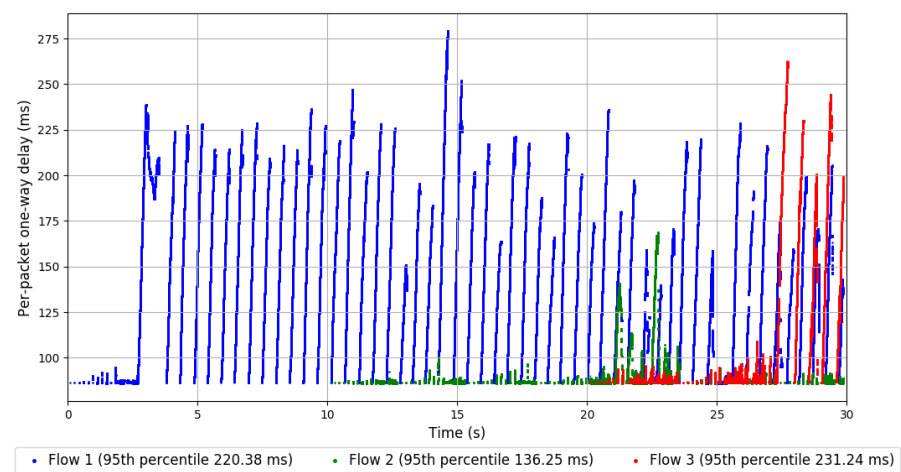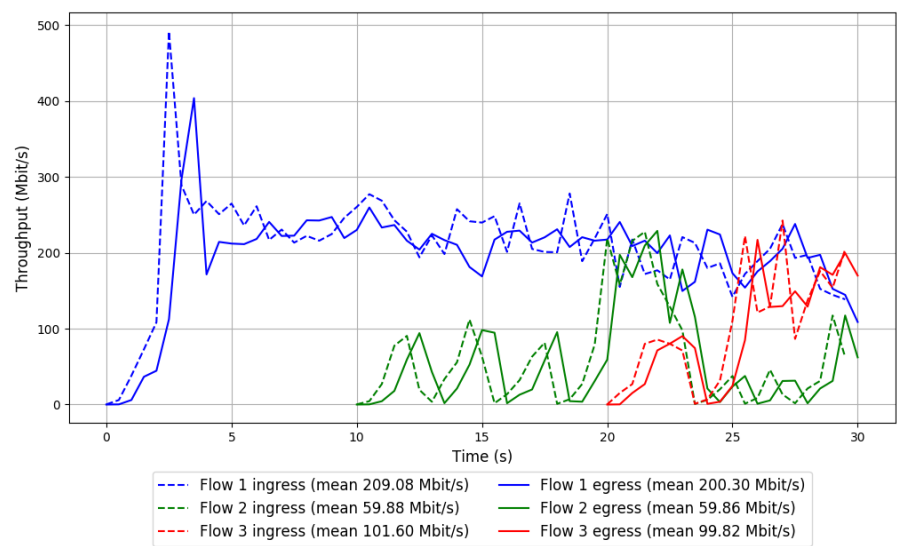
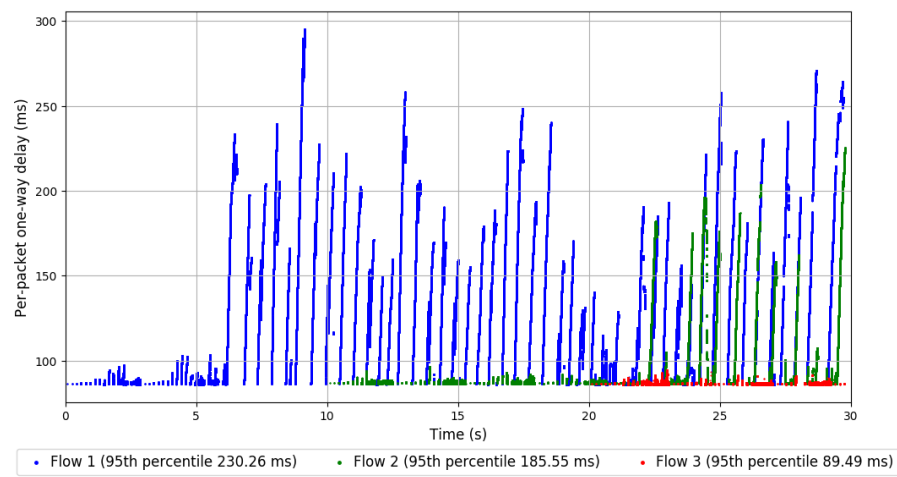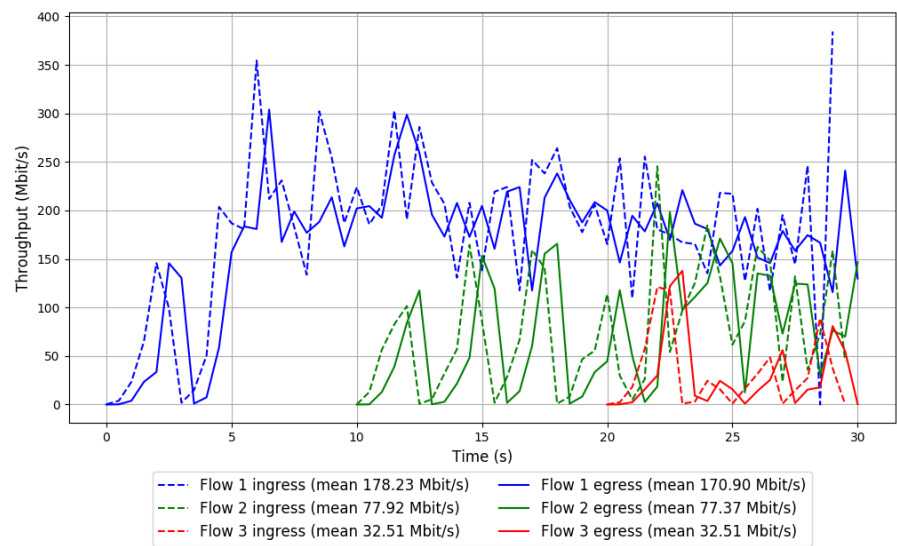Run 1: Report of Verus — Data Link

```
Run 2: Statistics of Verus

Start at: 2018-12-11 01:15:02
End at: 2018-12-11 01:15:32
Local clock offset: -0.396 ms
Remote clock offset: -0.078 ms


# Below is generated by plot.py at 2018-12-11 06:01:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 232.40 Mbit/s
95th percentile per-packet one-way delay: 222.924 ms
Loss rate: 2.64%
-- Flow 1:
Average throughput: 170.90 Mbit/s
95th percentile per-packet one-way delay: 230.263 ms
Loss rate: 3.57%
-- Flow 2:
Average throughput: 77.37 Mbit/s
95th percentile per-packet one-way delay: 185.553 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 32.51 Mbit/s
95th percentile per-packet one-way delay: 89.493 ms
Loss rate: 0.00%
```
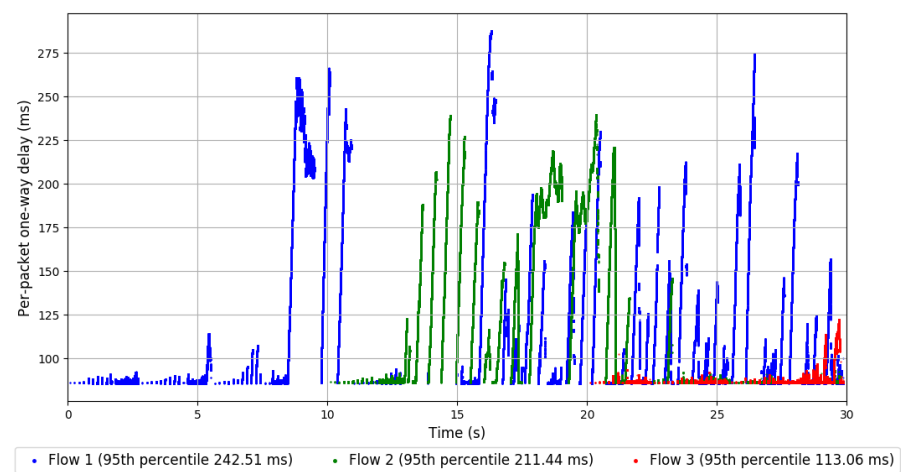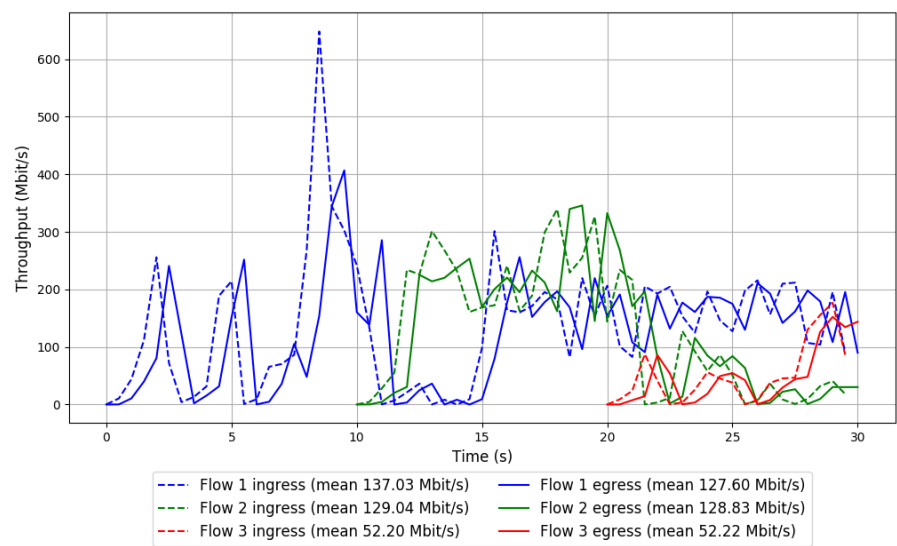
Run 2: Report of Verus — Data Link

```
Run 3: Statistics of Verus

Start at: 2018-12-11 01:48:30
End at: 2018-12-11 01:49:00
Local clock offset: -0.087 ms
Remote clock offset: 0.001 ms


# Below is generated by plot.py at 2018-12-11 06:01:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 229.69 Mbit/s
95th percentile per-packet one-way delay: 228.920 ms
Loss rate: 4.00%
-- Flow 1:
Average throughput: 127.60 Mbit/s
95th percentile per-packet one-way delay: 242.507 ms
Loss rate: 6.88%
-- Flow 2:
Average throughput: 128.83 Mbit/s
95th percentile per-packet one-way delay: 211.439 ms
Loss rate: 0.15%
-- Flow 3:
Average throughput: 52.22 Mbit/s
95th percentile per-packet one-way delay: 113.059 ms
Loss rate: 0.00%
```

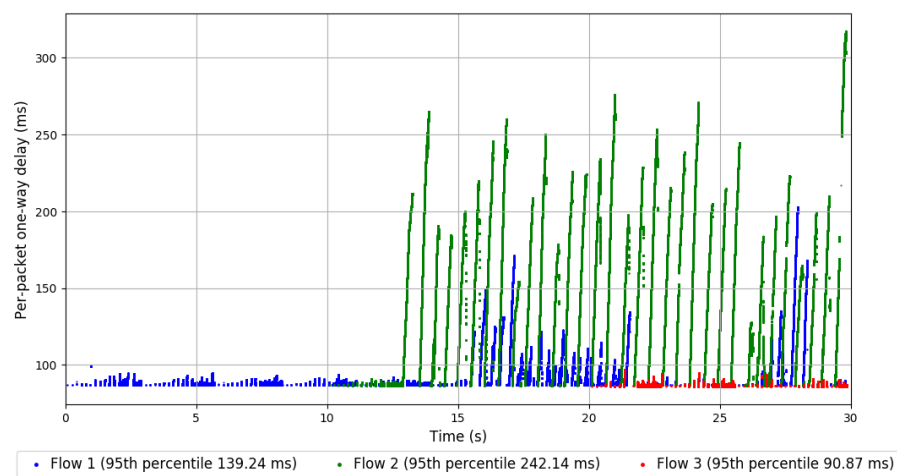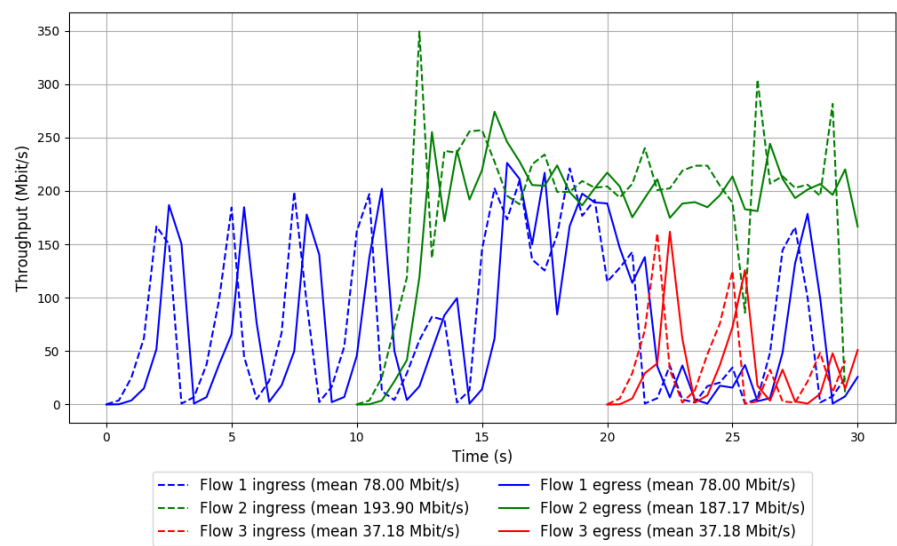## Run 3: Report of Verus — Data Link

```
Run 4: Statistics of Verus

Start at: 2018-12-11 02:22:37
End at: 2018-12-11 02:23:07
Local clock offset: -0.432 ms
Remote clock offset: -0.094 ms


# Below is generated by plot.py at 2018-12-11 06:01:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 213.97 Mbit/s
95th percentile per-packet one-way delay: 227.576 ms
Loss rate: 1.56%
-- Flow 1:
Average throughput: 78.00 Mbit/s
95th percentile per-packet one-way delay: 139.242 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 187.17 Mbit/s
95th percentile per-packet one-way delay: 242.141 ms
Loss rate: 2.65%
-- Flow 3:
Average throughput: 37.18 Mbit/s
95th percentile per-packet one-way delay: 90.867 ms
Loss rate: 0.00%
```
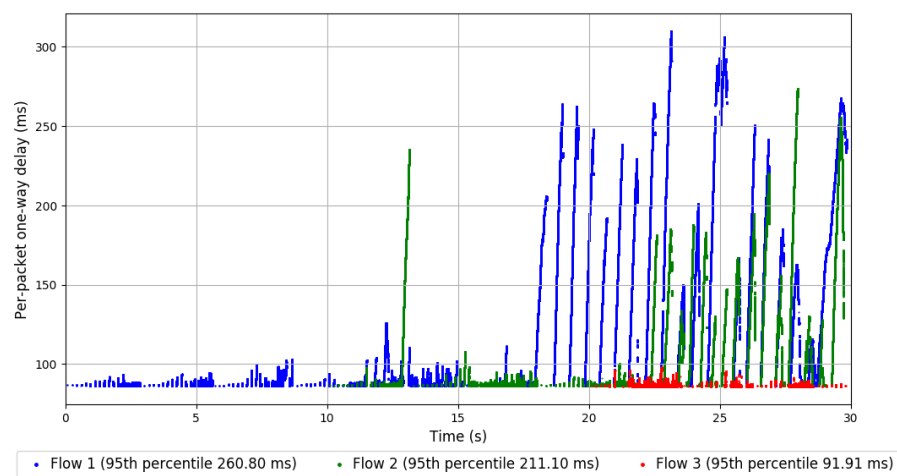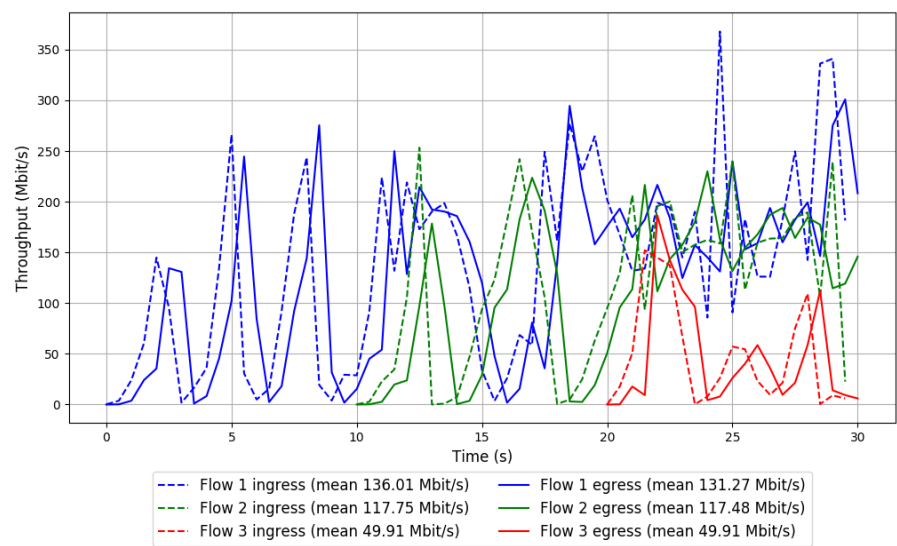
Run 4: Report of Verus — Data Link

```
Run 5: Statistics of Verus

Start at: 2018-12-11 02:56:40
End at: 2018-12-11 02:57:10
Local clock offset: -0.124 ms
Remote clock offset: -0.069 ms


# Below is generated by plot.py at 2018-12-11 06:01:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 225.06 Mbit/s
95th percentile per-packet one-way delay: 246.287 ms
Loss rate: 2.07%
-- Flow 1:
Average throughput: 131.27 Mbit/s
95th percentile per-packet one-way delay: 260.804 ms
Loss rate: 3.49%
-- Flow 2:
Average throughput: 117.48 Mbit/s
95th percentile per-packet one-way delay: 211.099 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 49.91 Mbit/s
95th percentile per-packet one-way delay: 91.914 ms
Loss rate: 0.00%
```

Run 5: Report of Verus — Data Link

Flow 1 ingress (mean 136.01 Mbit/s)   Flow 1 egress (mean 131.27 Mbit/s)
Flow 2 ingress (mean 117.75 Mbit/s)   Flow 2 egress (mean 117.48 Mbit/s)
Flow 3 ingress (mean 49.91 Mbit/s)   Flow 3 egress (mean 49.91 Mbit/s)

Flow 1 (95th percentile 260.80 ms)   Flow 2 (95th percentile 211.10 ms)   Flow 3 (95th percentile 91.91 ms)
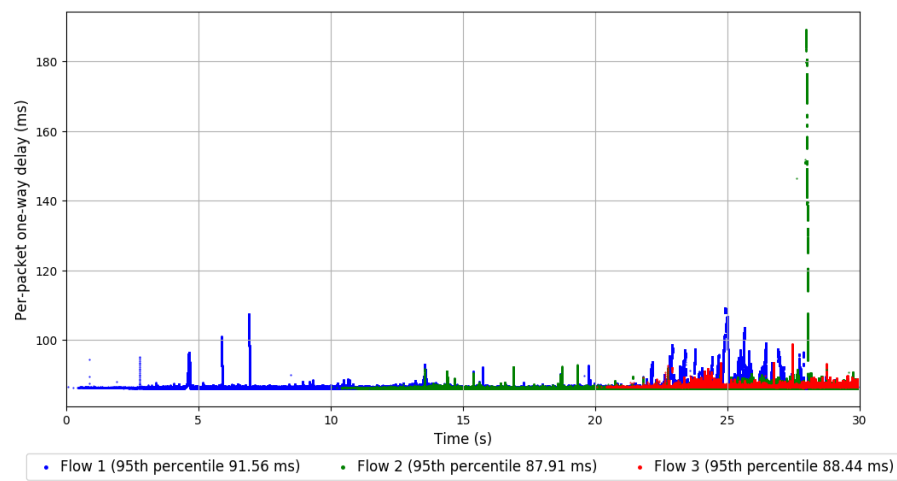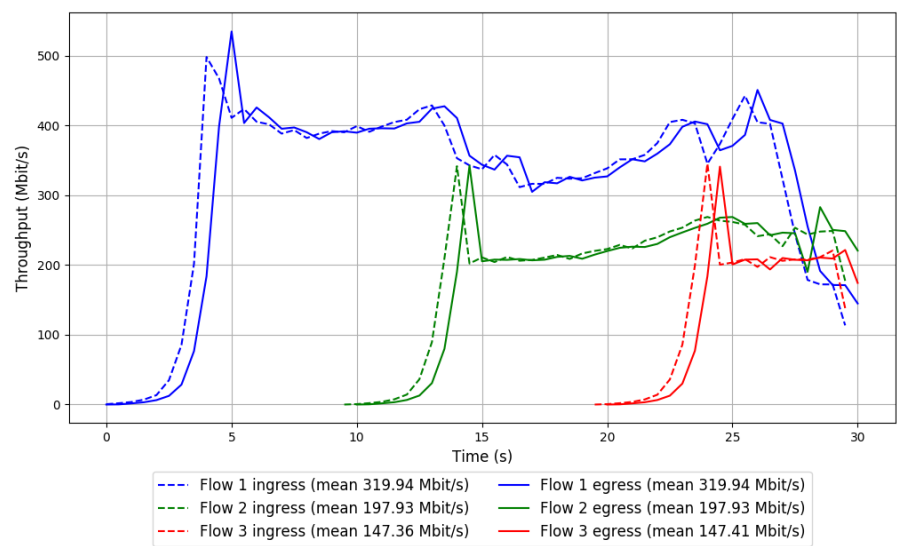
174

```
Run 1: Statistics of PCC-Vivace

Start at: 2018-12-11 01:09:20
End at: 2018-12-11 01:09:50
Local clock offset: -0.052 ms
Remote clock offset: -0.131 ms

# Below is generated by plot.py at 2018-12-11 06:03:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 500.45 Mbit/s
95th percentile per-packet one-way delay: 90.094 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 319.94 Mbit/s
95th percentile per-packet one-way delay: 91.565 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 197.93 Mbit/s
95th percentile per-packet one-way delay: 87.908 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 147.41 Mbit/s
95th percentile per-packet one-way delay: 88.442 ms
Loss rate: 0.00%
```

Run 1: Report of PCC-Vivace — Data Link

Flow 1 ingress (mean 319.94 Mbit/s)   Flow 1 egress (mean 319.94 Mbit/s)
Flow 2 ingress (mean 197.93 Mbit/s)   Flow 2 egress (mean 197.93 Mbit/s)
Flow 3 ingress (mean 147.36 Mbit/s)   Flow 3 egress (mean 147.41 Mbit/s)

Flow 1 (95th percentile 91.56 ms)   Flow 2 (95th percentile 87.91 ms)   Flow 3 (95th percentile 88.44 ms)

```
Run 2: Statistics of PCC-Vivace

Start at: 2018-12-11 01:42:44
End at: 2018-12-11 01:43:14
Local clock offset: -0.145 ms
Remote clock offset: 0.005 ms


# Below is generated by plot.py at 2018-12-11 06:04:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 509.45 Mbit/s
95th percentile per-packet one-way delay: 88.491 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 326.67 Mbit/s
95th percentile per-packet one-way delay: 88.280 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 198.02 Mbit/s
95th percentile per-packet one-way delay: 88.587 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 154.92 Mbit/s
95th percentile per-packet one-way delay: 89.540 ms
Loss rate: 0.00%
```
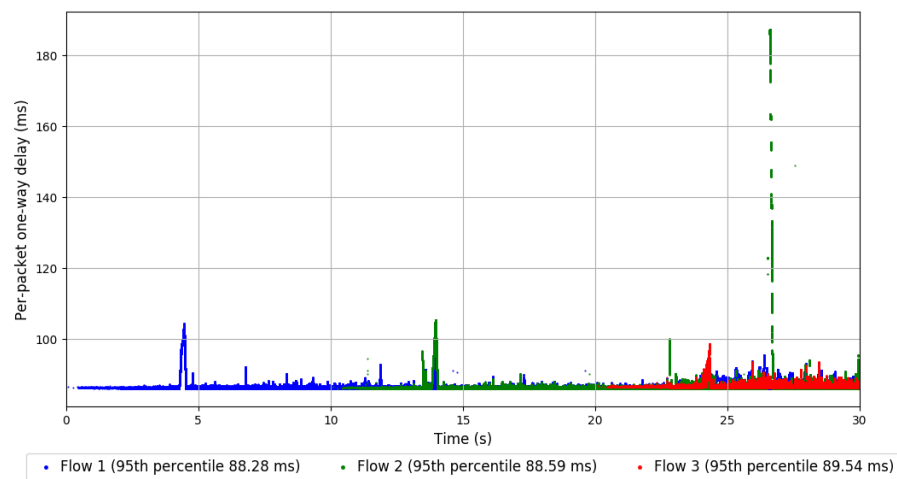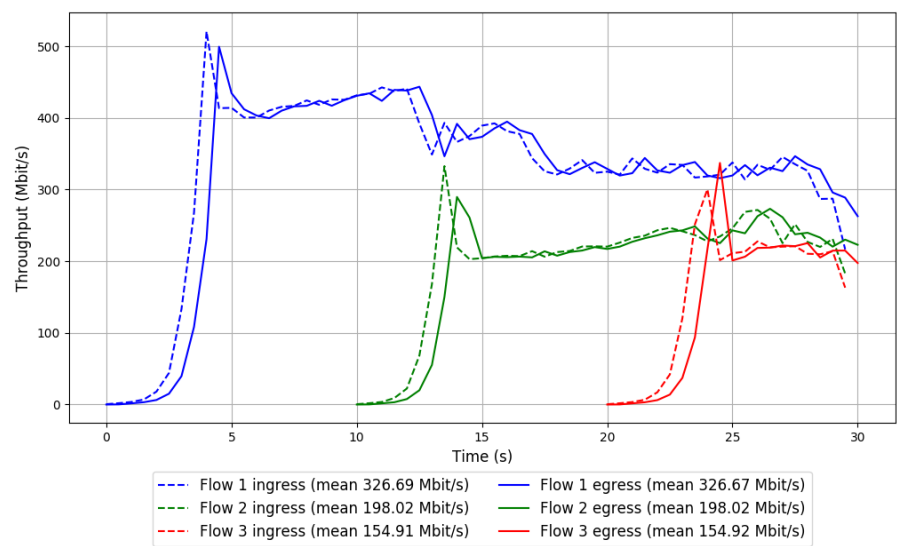
Run 2: Report of PCC-Vivace — Data Link

Flow 1 ingress (mean 326.69 Mbit/s) --- Flow 1 egress (mean 326.67 Mbit/s)
Flow 2 ingress (mean 198.02 Mbit/s) --- Flow 2 egress (mean 198.02 Mbit/s)
Flow 3 ingress (mean 154.91 Mbit/s) --- Flow 3 egress (mean 154.92 Mbit/s)

Flow 1 (95th percentile 88.28 ms) Flow 2 (95th percentile 88.59 ms) Flow 3 (95th percentile 89.54 ms)

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```
Run 3: Statistics of PCC-Vivace

Start at: 2018-12-11 02:16:34
End at: 2018-12-11 02:17:04
Local clock offset: -0.147 ms
Remote clock offset: -0.08 ms

# Below is generated by plot.py at 2018-12-11 06:05:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 527.88 Mbit/s
95th percentile per-packet one-way delay: 90.458 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 306.27 Mbit/s
95th percentile per-packet one-way delay: 87.759 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 210.82 Mbit/s
95th percentile per-packet one-way delay: 88.275 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 246.84 Mbit/s
95th percentile per-packet one-way delay: 133.361 ms
Loss rate: 0.01%
```
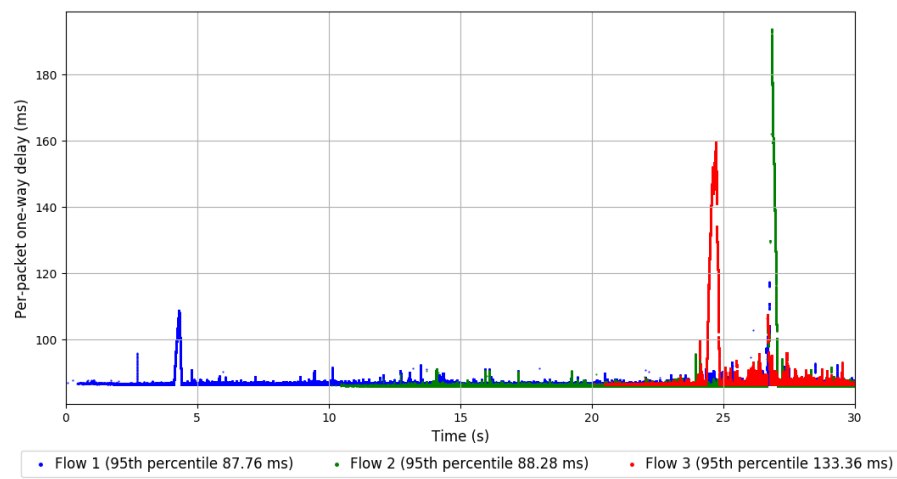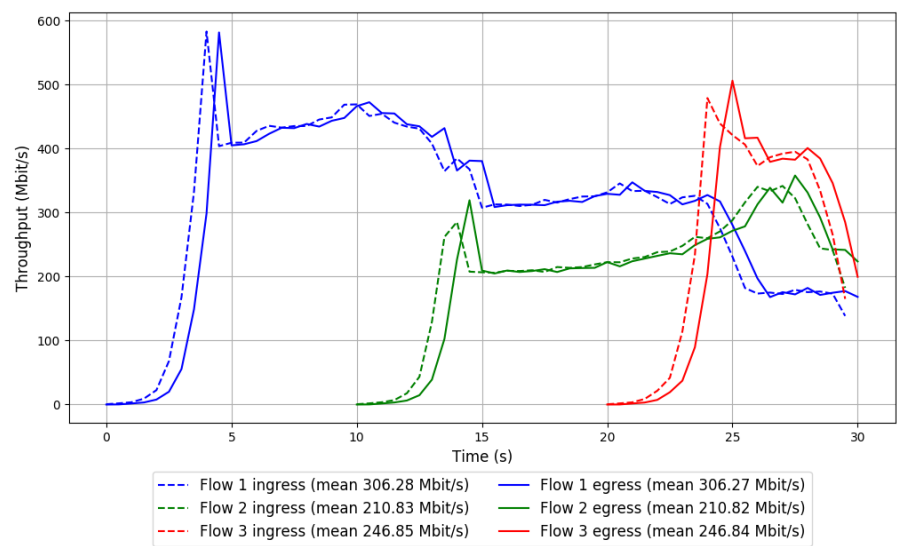
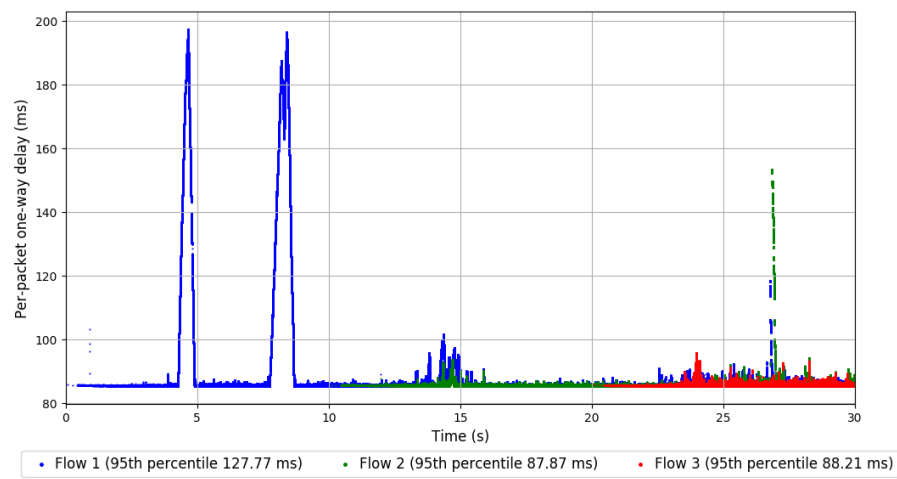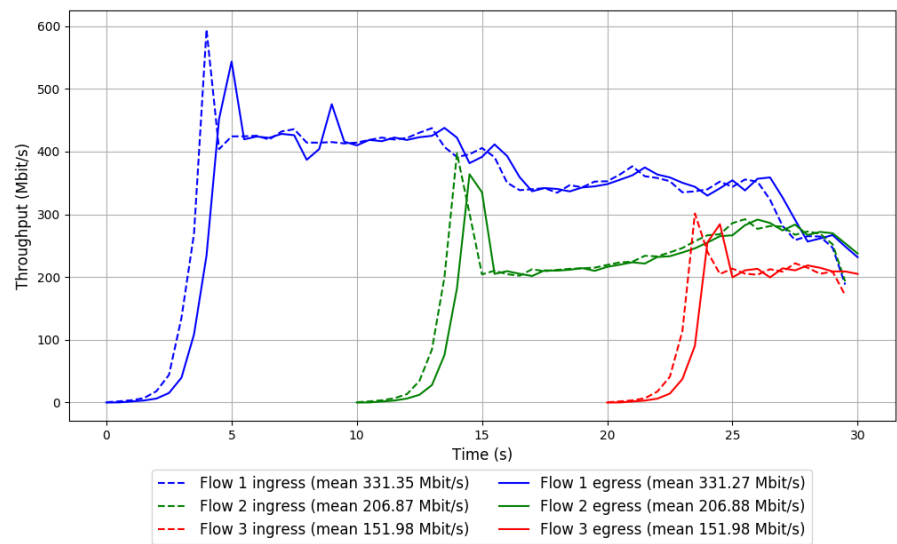Run 3: Report of PCC-Vivace — Data Link

```
Run 4: Statistics of PCC-Vivace

Start at: 2018-12-11 02:50:53
End at: 2018-12-11 02:51:23
Local clock offset: 0.278 ms
Remote clock offset: -0.111 ms


# Below is generated by plot.py at 2018-12-11 06:05:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 518.97 Mbit/s
95th percentile per-packet one-way delay: 96.518 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 331.27 Mbit/s
95th percentile per-packet one-way delay: 127.770 ms
Loss rate: 0.03%
-- Flow 2:
Average throughput: 206.88 Mbit/s
95th percentile per-packet one-way delay: 87.869 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 151.98 Mbit/s
95th percentile per-packet one-way delay: 88.212 ms
Loss rate: 0.00%
```

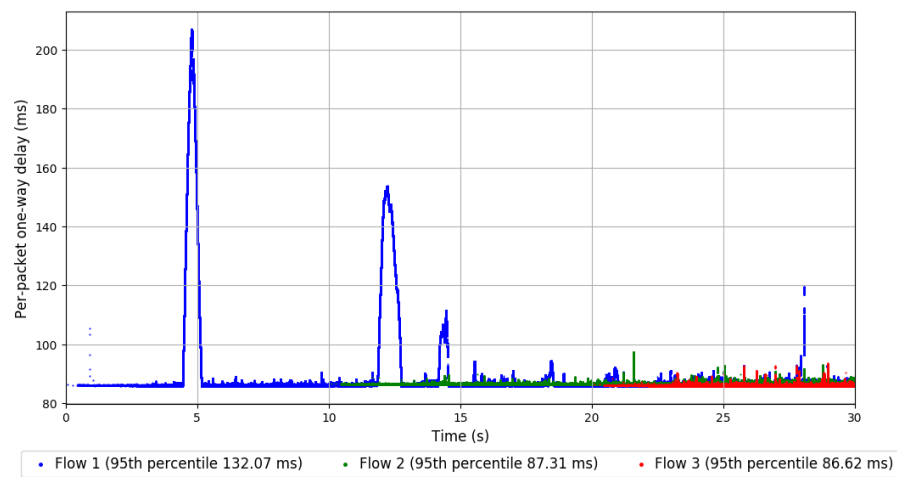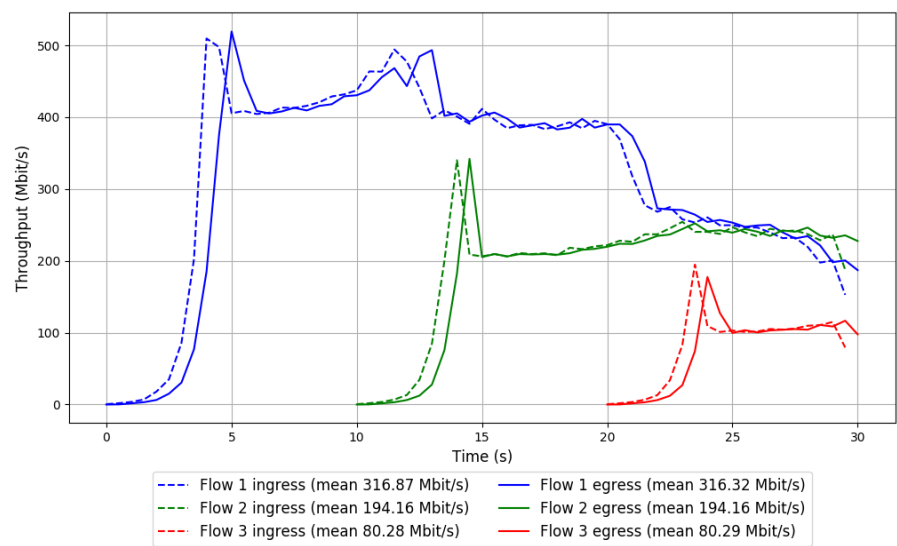## Run 4: Report of PCC-Vivace — Data Link

```
Run 5: Statistics of PCC-Vivace

Start at: 2018-12-11 03:24:32
End at: 2018-12-11 03:25:02
Local clock offset: -0.139 ms
Remote clock offset: -0.018 ms


# Below is generated by plot.py at 2018-12-11 06:05:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 471.94 Mbit/s
95th percentile per-packet one-way delay: 106.473 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 316.32 Mbit/s
95th percentile per-packet one-way delay: 132.074 ms
Loss rate: 0.17%
-- Flow 2:
Average throughput: 194.16 Mbit/s
95th percentile per-packet one-way delay: 87.314 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 80.29 Mbit/s
95th percentile per-packet one-way delay: 86.624 ms
Loss rate: 0.00%
```

Run 5: Report of PCC-Vivace — Data Link

Flow 1 ingress (mean 316.87 Mbit/s)   Flow 1 egress (mean 316.32 Mbit/s)
Flow 2 ingress (mean 194.16 Mbit/s)   Flow 2 egress (mean 194.16 Mbit/s)
Flow 3 ingress (mean 80.28 Mbit/s)   Flow 3 egress (mean 80.29 Mbit/s)

Flow 1 (95th percentile 132.07 ms)   Flow 2 (95th percentile 87.31 ms)   Flow 3 (95th percentile 86.62 ms)

```
Run 1: Statistics of WebRTC media

Start at: 2018-12-11 00:53:19
End at: 2018-12-11 00:53:49
Local clock offset: 0.005 ms
Remote clock offset: -0.04 ms


# Below is generated by plot.py at 2018-12-11 06:05:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.61 Mbit/s
95th percentile per-packet one-way delay: 86.915 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 2.01 Mbit/s
95th percentile per-packet one-way delay: 86.991 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.20 Mbit/s
95th percentile per-packet one-way delay: 86.551 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 86.827 ms
Loss rate: 0.00%
```
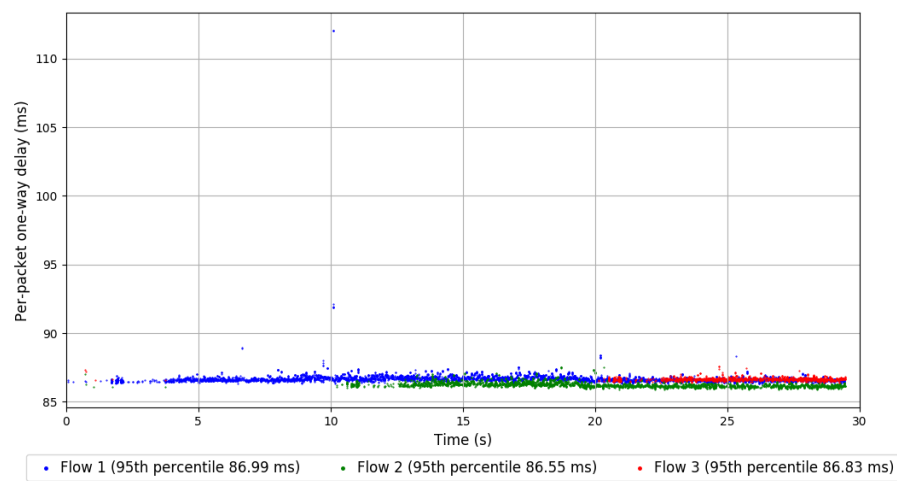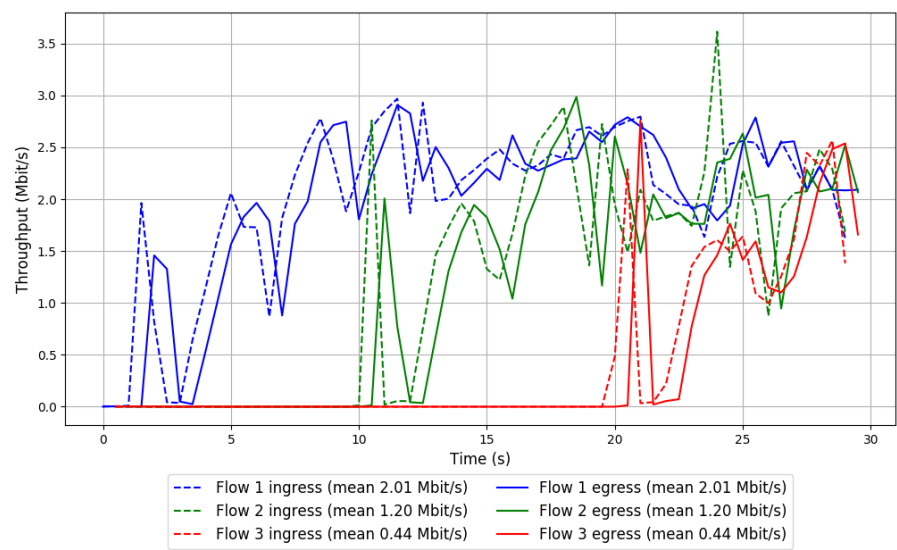
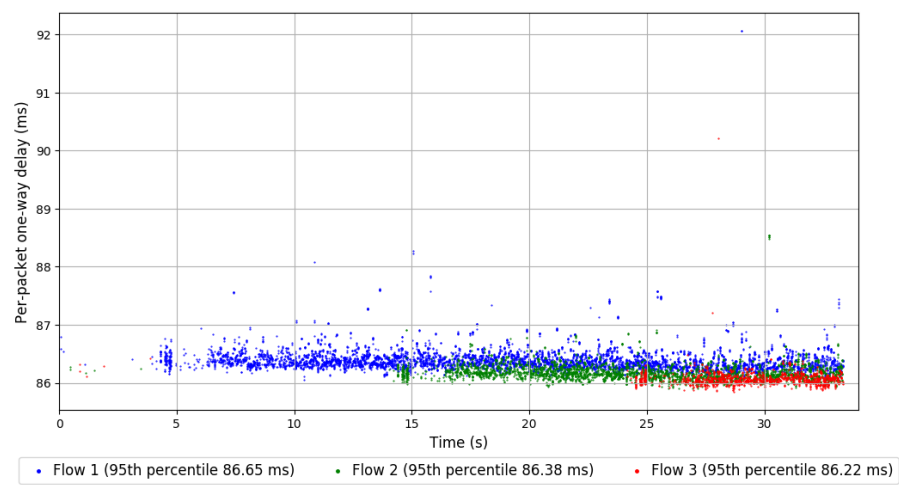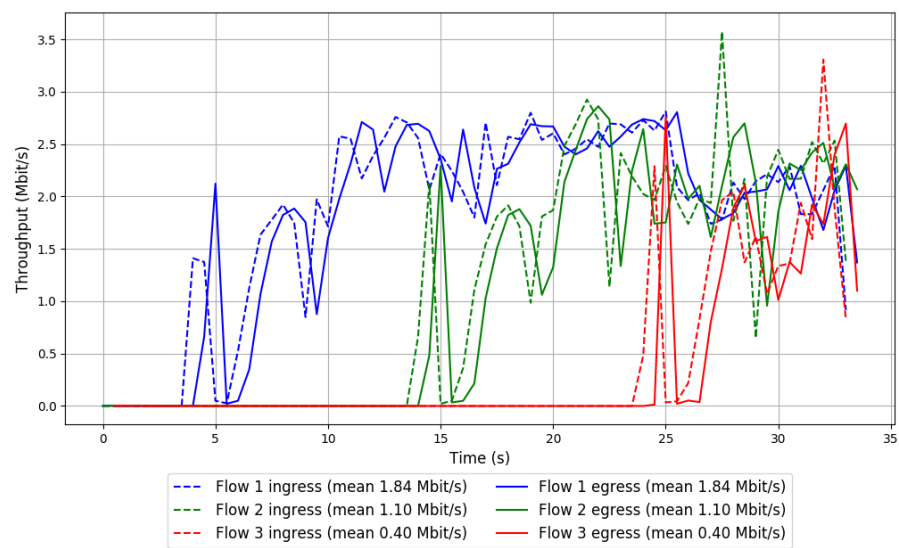Run 1: Report of WebRTC media — Data Link

```
Run 2: Statistics of WebRTC media

Start at: 2018-12-11 01:27:05
End at: 2018-12-11 01:27:35
Local clock offset: 0.22 ms
Remote clock offset: -0.099 ms


# Below is generated by plot.py at 2018-12-11 06:05:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.31 Mbit/s
95th percentile per-packet one-way delay: 86.576 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.84 Mbit/s
95th percentile per-packet one-way delay: 86.647 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.10 Mbit/s
95th percentile per-packet one-way delay: 86.384 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.40 Mbit/s
95th percentile per-packet one-way delay: 86.221 ms
Loss rate: 0.00%
```

Run 2: Report of WebRTC media — Data Link

```
Run 3: Statistics of WebRTC media

Start at: 2018-12-11 02:00:49
End at: 2018-12-11 02:01:19
Local clock offset: 0.319 ms
Remote clock offset: 0.071 ms


# Below is generated by plot.py at 2018-12-11 06:05:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.30 Mbit/s
95th percentile per-packet one-way delay: 86.337 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.86 Mbit/s
95th percentile per-packet one-way delay: 86.331 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.06 Mbit/s
95th percentile per-packet one-way delay: 85.966 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.40 Mbit/s
95th percentile per-packet one-way delay: 86.428 ms
Loss rate: 0.00%
```
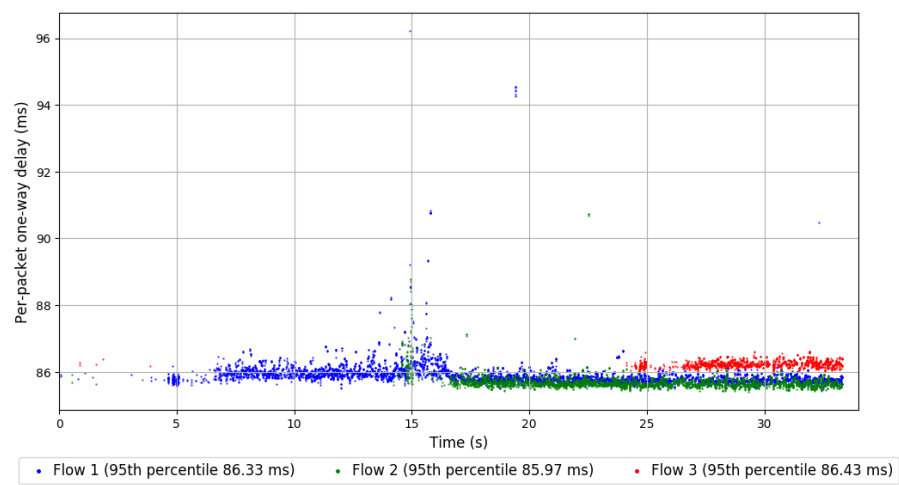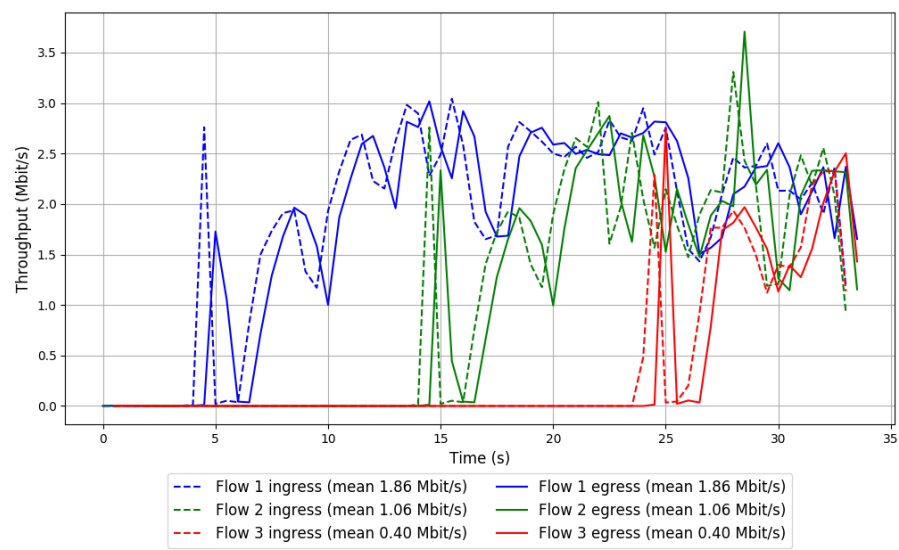
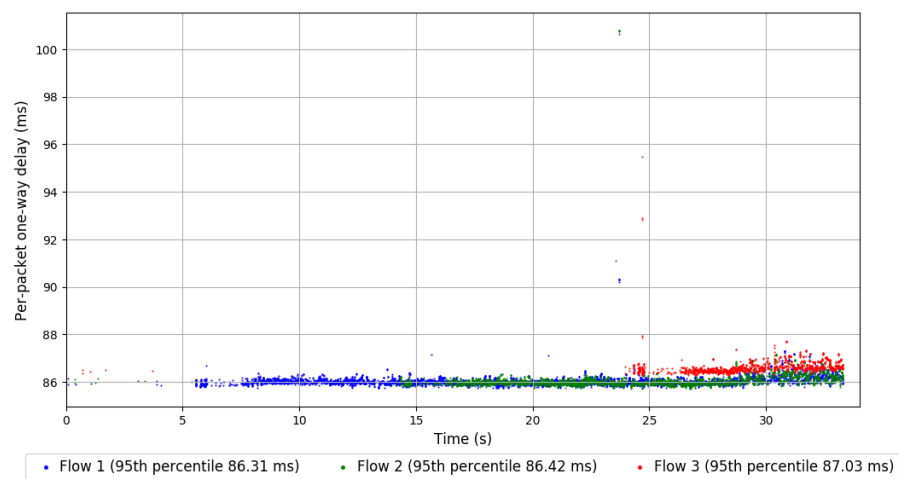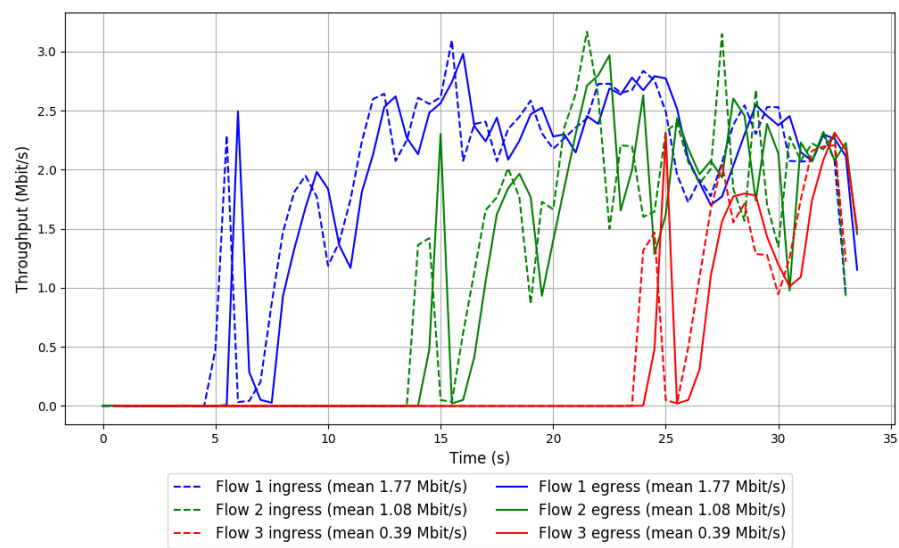Run 3: Report of WebRTC media — Data Link

```
Run 4: Statistics of WebRTC media

Start at: 2018-12-11 02:34:40
End at: 2018-12-11 02:35:10
Local clock offset: -0.004 ms
Remote clock offset: -0.185 ms


# Below is generated by plot.py at 2018-12-11 06:05:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.23 Mbit/s
95th percentile per-packet one-way delay: 86.628 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.77 Mbit/s
95th percentile per-packet one-way delay: 86.312 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.08 Mbit/s
95th percentile per-packet one-way delay: 86.416 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.39 Mbit/s
95th percentile per-packet one-way delay: 87.025 ms
Loss rate: 0.00%
```

Run 4: Report of WebRTC media — Data Link

```
Run 5: Statistics of WebRTC media

Start at: 2018-12-11 03:08:46
End at: 2018-12-11 03:09:16
Local clock offset: -0.352 ms
Remote clock offset: -0.031 ms


# Below is generated by plot.py at 2018-12-11 06:05:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.36 Mbit/s
95th percentile per-packet one-way delay: 86.922 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.89 Mbit/s
95th percentile per-packet one-way delay: 86.599 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.08 Mbit/s
95th percentile per-packet one-way delay: 86.990 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.40 Mbit/s
95th percentile per-packet one-way delay: 86.932 ms
Loss rate: 0.00%
```

Run 5: Report of WebRTC media — Data Link