Pantheon Report

Generated at 2018-12-12 15:15:03 (UTC).

Data path: GCE Sydney on `ens4` (*local*) →GCE Tokyo 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.
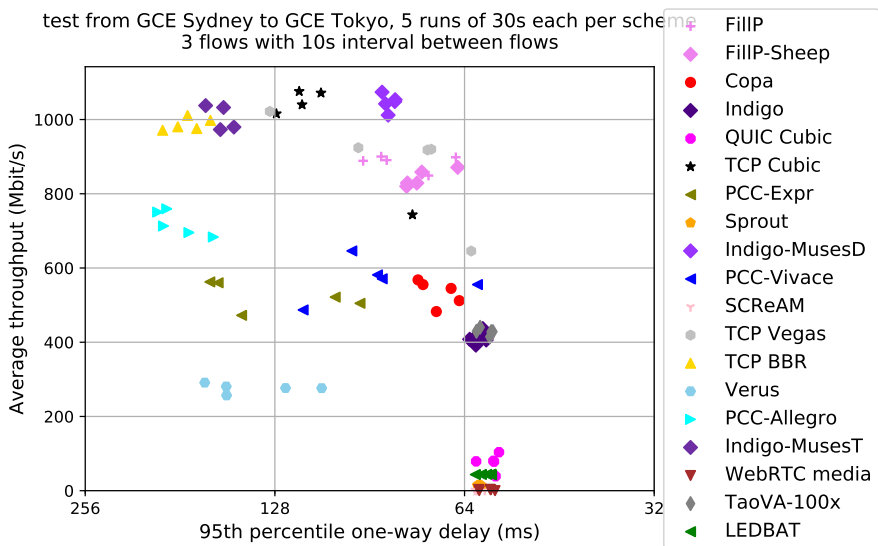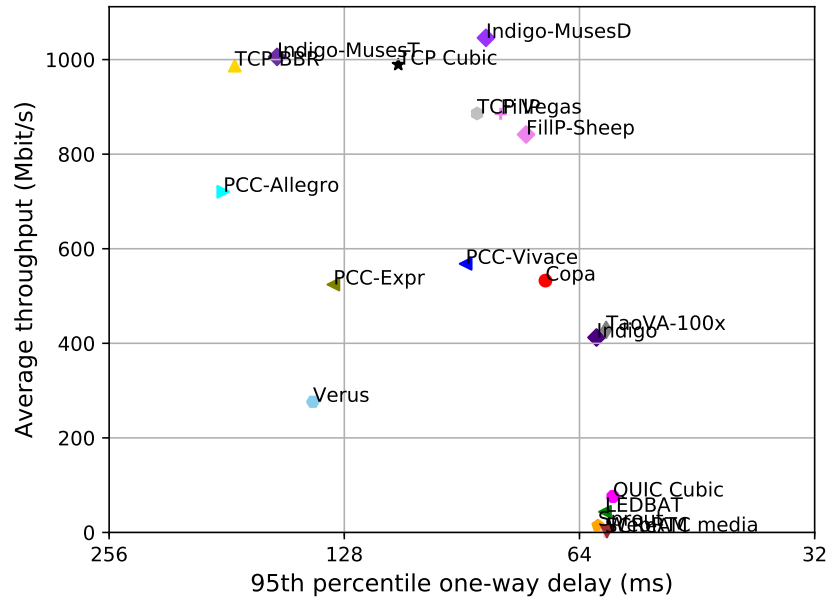
```
System info:
Linux 4.15.0-1024-gcp
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912

Git summary:
branch: muses @ c654af0b7d59d4ef4b914cfac404e1fc2e96dc68
third_party/fillp @ d6da1459332fcee56963885d7eba17e6a32d4519
third_party/fillp-sheep @ 0e5bb722943babcd2b090d2c64fcd45e12e923f9
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdfe58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/muses @ 65ac1b19bbefed0c6349ae986009b4fa8643c40a
third_party/muses-refactored @ 31f8f0ba8ef8b1da76c2bc0cd0a7850c33ff64fb
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 Tokyo, 5 runs of 30s each per scheme
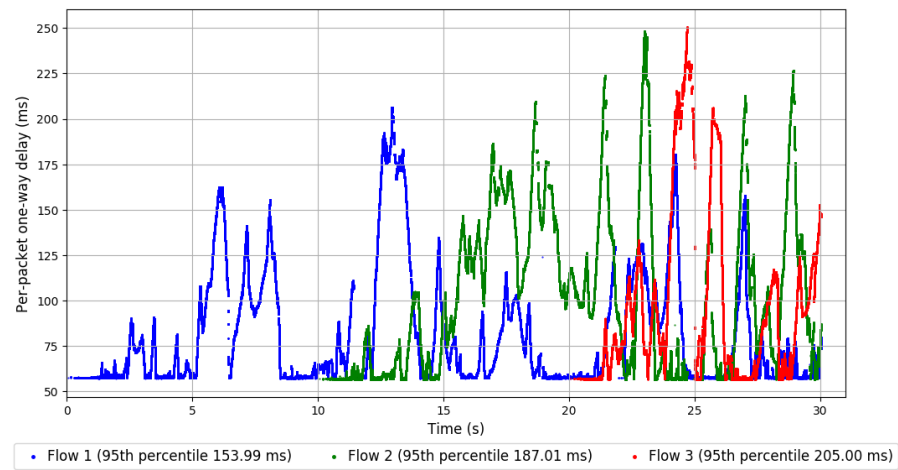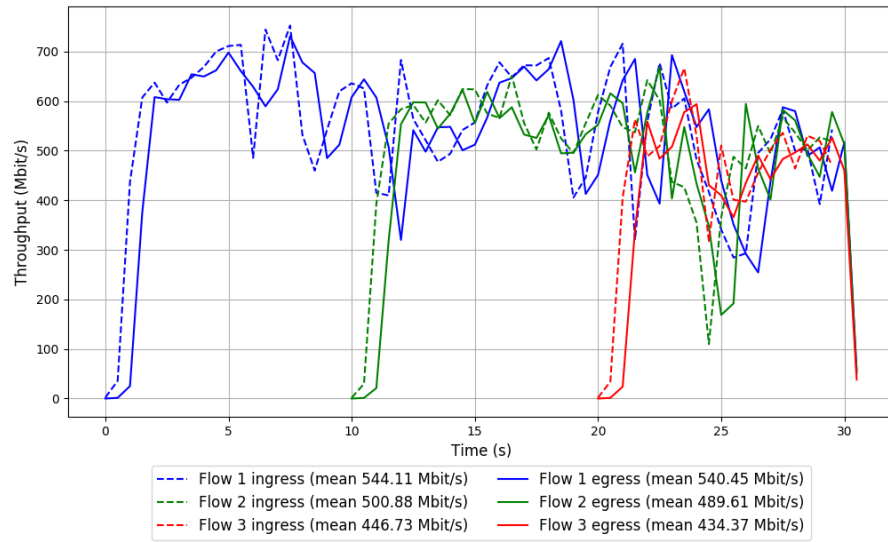3 flows with 10s interval between flows (mean of all runs by scheme)

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

3

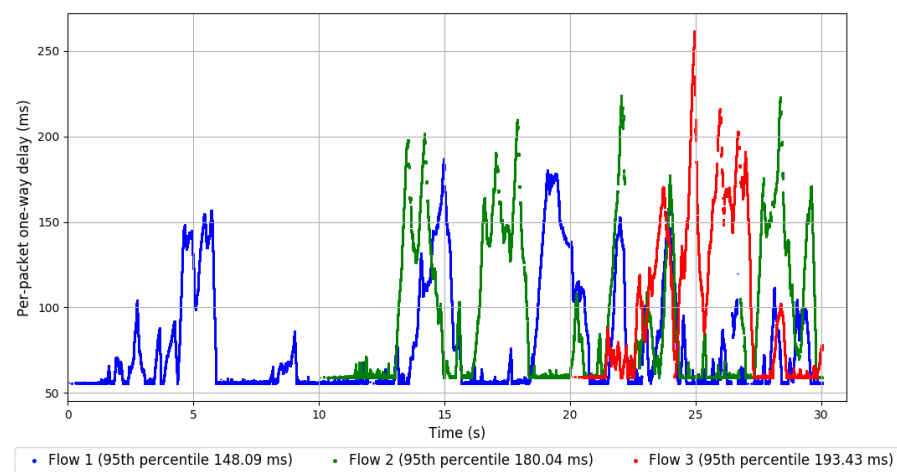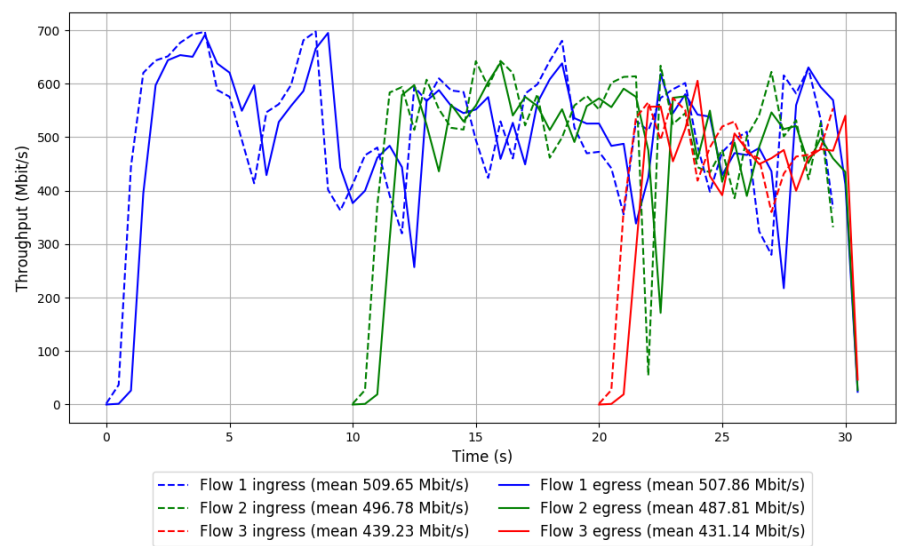| scheme	# runs	mean avg tput (Mbit/s)			mean 95th-%ile delay (ms)			mean loss rate (%)		
		flow 1	flow 2	flow 3	flow 1	flow 2	flow 3	flow 1	flow 2	flow 3
TCP BBR	5	516.51	482.23	449.99	171.45	172.95	175.92	1.02	1.44	1.68
Copa	5	283.60	254.57	239.08	67.33	71.28	80.20	0.01	0.01	0.00
TCP Cubic	5	533.96	459.06	450.01	105.99	92.08	99.20	0.06	0.06	0.23
FillP	5	571.38	352.80	240.78	85.59	61.56	59.70	0.23	0.01	0.00
FillP-Sheep	5	540.37	331.16	243.77	83.13	61.85	61.45	0.07	0.02	0.01
Indigo	5	218.25	205.46	179.01	60.15	60.78	60.22	0.00	0.01	0.01
Indigo-MusesD	5	570.27	514.21	412.55	83.96	85.19	81.75	0.01	0.03	0.06
Indigo-MusesT	4	617.75	408.69	407.73	162.61	104.24	92.93	0.34	0.14	0.21
LEDBAT	5	28.10	18.82	9.29	58.62	58.95	58.60	0.00	0.00	0.00
PCC-Allegro	5	407.25	339.78	265.40	184.11	129.39	105.46	3.74	1.07	0.45
PCC-Expr	5	298.74	250.34	178.63	134.68	121.39	102.48	1.43	0.40	0.80
QUIC Cubic	5	40.24	40.28	27.78	57.24	58.05	57.97	0.00	0.00	0.00
SCReAM	5	0.22	0.22	0.22	58.71	59.29	58.63	0.03	0.00	0.00
Sprout	5	7.45	7.09	6.81	57.44	59.51	59.33	0.00	0.02	0.00
TaoVA-100x	5	219.87	213.41	199.32	58.58	58.47	58.18	0.01	0.01	0.01
TCP Vegas	5	449.35	434.29	443.52	78.05	71.80	90.37	0.01	0.01	0.02
Verus	5	167.23	131.25	66.84	130.51	148.90	81.12	0.10	0.46	0.07
PCC-Vivace	5	344.08	265.72	143.69	70.45	104.30	87.73	0.01	0.01	0.08
WebRTC media	5	1.28	0.54	0.14	57.88	58.47	59.03	0.00	0.00	0.00

```
Run 1: Statistics of TCP BBR

Start at: 2018-12-12 09:57:14
End at: 2018-12-12 09:57:44
Local clock offset: -0.041 ms
Remote clock offset: -0.063 ms


# Below is generated by plot.py at 2018-12-12 12:58:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1011.02 Mbit/s
95th percentile per-packet one-way delay: 176.098 ms
Loss rate: 1.48%
-- Flow 1:
Average throughput: 540.45 Mbit/s
95th percentile per-packet one-way delay: 153.988 ms
Loss rate: 0.67%
-- Flow 2:
Average throughput: 489.61 Mbit/s
95th percentile per-packet one-way delay: 187.015 ms
Loss rate: 2.24%
-- Flow 3:
Average throughput: 434.37 Mbit/s
95th percentile per-packet one-way delay: 205.000 ms
Loss rate: 2.76%
```
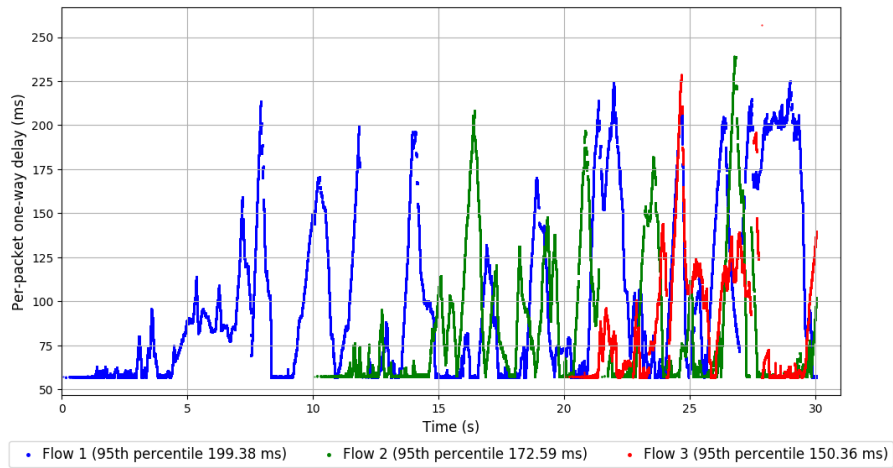
Run 1: Report of TCP BBR — Data Link

```
Run 2: Statistics of TCP BBR

Start at: 2018-12-12 10:30:55
End at: 2018-12-12 10:31:25
Local clock offset: -0.135 ms
Remote clock offset: -1.497 ms


# Below is generated by plot.py at 2018-12-12 12:58:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 975.81 Mbit/s
95th percentile per-packet one-way delay: 170.314 ms
Loss rate: 1.07%
-- Flow 1:
Average throughput: 507.86 Mbit/s
95th percentile per-packet one-way delay: 148.093 ms
Loss rate: 0.35%
-- Flow 2:
Average throughput: 487.81 Mbit/s
95th percentile per-packet one-way delay: 180.045 ms
Loss rate: 1.82%
-- Flow 3:
Average throughput: 431.14 Mbit/s
95th percentile per-packet one-way delay: 193.426 ms
Loss rate: 1.87%
```
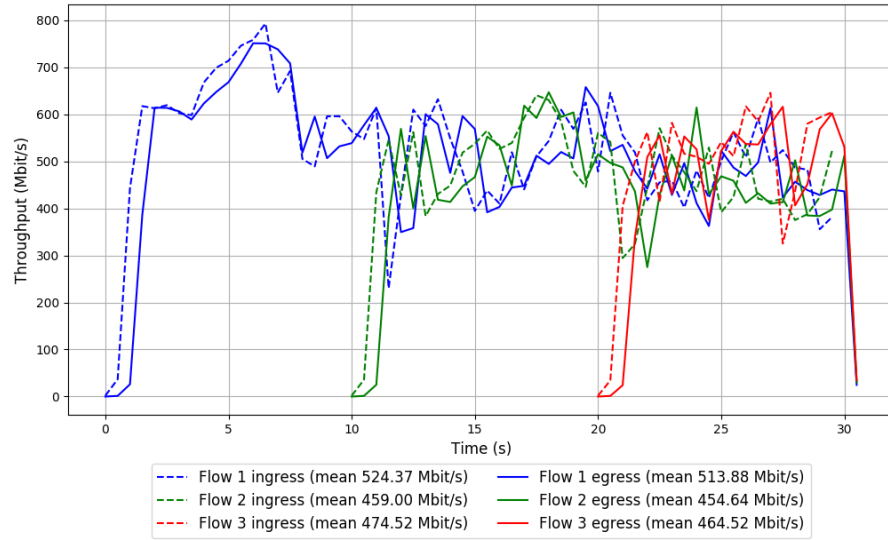
Run 2: Report of TCP BBR — Data Link

Flow 1 ingress (mean 509.65 Mbit/s) --- Flow 1 egress (mean 507.86 Mbit/s)
Flow 2 ingress (mean 496.78 Mbit/s) --- Flow 2 egress (mean 487.81 Mbit/s)
Flow 3 ingress (mean 439.23 Mbit/s) --- Flow 3 egress (mean 431.14 Mbit/s)

Flow 1 (95th percentile 148.09 ms)   Flow 2 (95th percentile 180.04 ms)   Flow 3 (95th percentile 193.43 ms)
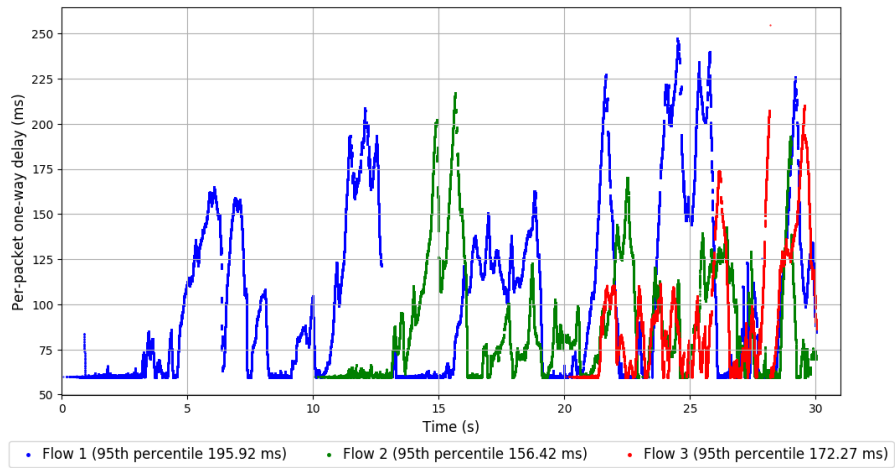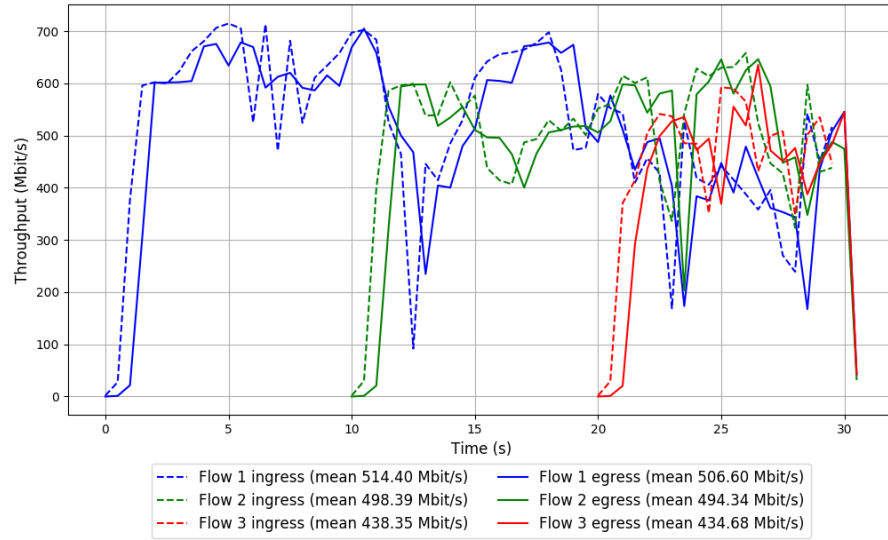
```
Run 3: Statistics of TCP BBR

Start at: 2018-12-12 11:05:25
End at: 2018-12-12 11:05:55
Local clock offset: -0.151 ms
Remote clock offset: -0.172 ms


# Below is generated by plot.py at 2018-12-12 12:58:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 971.17 Mbit/s
95th percentile per-packet one-way delay: 192.938 ms
Loss rate: 1.69%
-- Flow 1:
Average throughput: 513.88 Mbit/s
95th percentile per-packet one-way delay: 199.382 ms
Loss rate: 2.00%
-- Flow 2:
Average throughput: 454.64 Mbit/s
95th percentile per-packet one-way delay: 172.593 ms
Loss rate: 0.95%
-- Flow 3:
Average throughput: 464.52 Mbit/s
95th percentile per-packet one-way delay: 150.357 ms
Loss rate: 2.10%
```
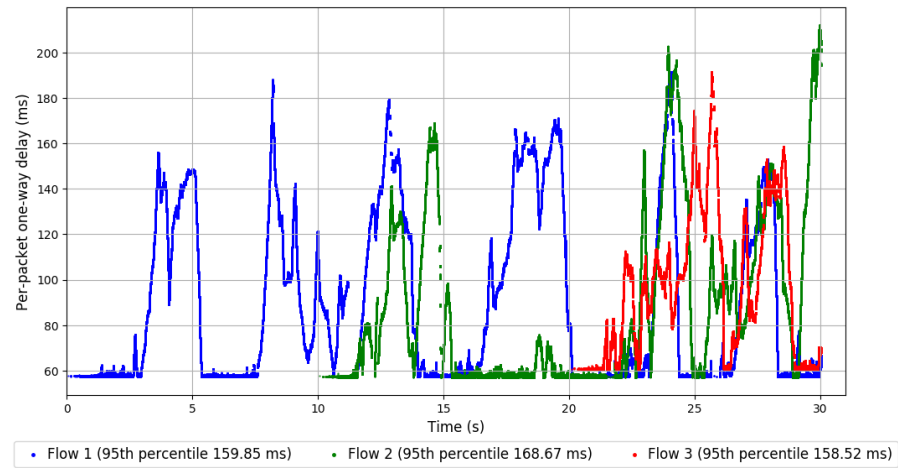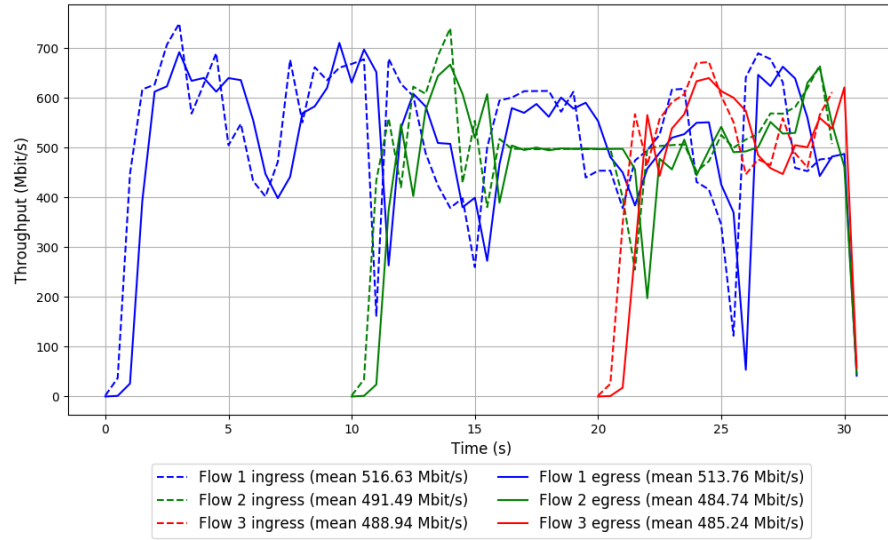
Run 3: Report of TCP BBR — Data Link

- - - Flow 1 ingress (mean 524.37 Mbit/s) —— Flow 1 egress (mean 513.88 Mbit/s)
- - - Flow 2 ingress (mean 459.00 Mbit/s) —— Flow 2 egress (mean 454.64 Mbit/s)
- - - Flow 3 ingress (mean 474.52 Mbit/s) —— Flow 3 egress (mean 464.52 Mbit/s)

• Flow 1 (95th percentile 199.38 ms)   • Flow 2 (95th percentile 172.59 ms)   • Flow 3 (95th percentile 150.36 ms)

```
Run 4: Statistics of TCP BBR

Start at: 2018-12-12 11:40:13
End at: 2018-12-12 11:40:43
Local clock offset: 0.341 ms
Remote clock offset: -0.326 ms


# Below is generated by plot.py at 2018-12-12 12:58:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 980.42 Mbit/s
95th percentile per-packet one-way delay: 182.515 ms
Loss rate: 1.19%
-- Flow 1:
Average throughput: 506.60 Mbit/s
95th percentile per-packet one-way delay: 195.918 ms
Loss rate: 1.52%
-- Flow 2:
Average throughput: 494.34 Mbit/s
95th percentile per-packet one-way delay: 156.421 ms
Loss rate: 0.82%
-- Flow 3:
Average throughput: 434.68 Mbit/s
95th percentile per-packet one-way delay: 172.272 ms
Loss rate: 0.86%
```
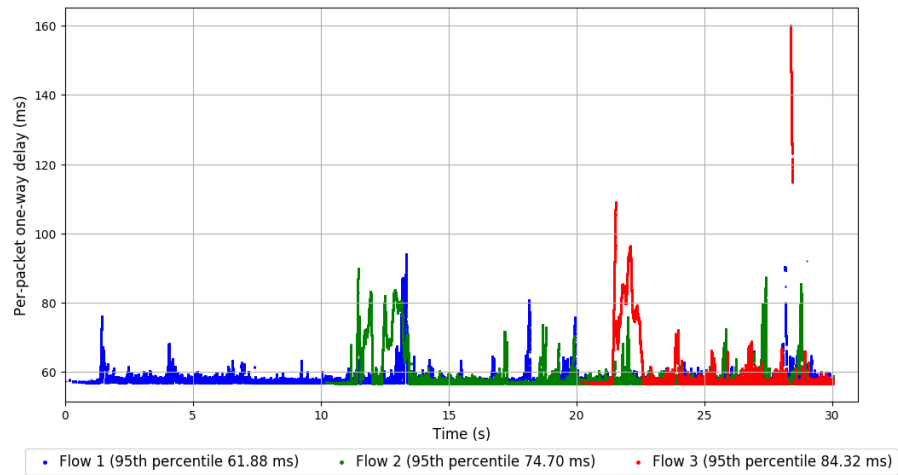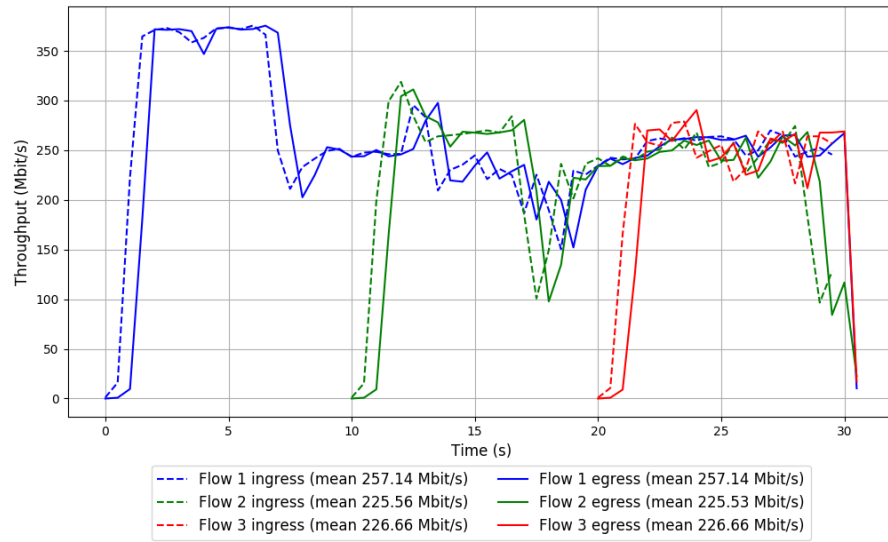
Run 4: Report of TCP BBR — Data Link

Flow 1 ingress (mean 514.40 Mbit/s)   Flow 1 egress (mean 506.60 Mbit/s)
Flow 2 ingress (mean 498.39 Mbit/s)   Flow 2 egress (mean 494.34 Mbit/s)
Flow 3 ingress (mean 438.35 Mbit/s)   Flow 3 egress (mean 434.68 Mbit/s)

Flow 1 (95th percentile 195.92 ms)   Flow 2 (95th percentile 156.42 ms)   Flow 3 (95th percentile 172.27 ms)
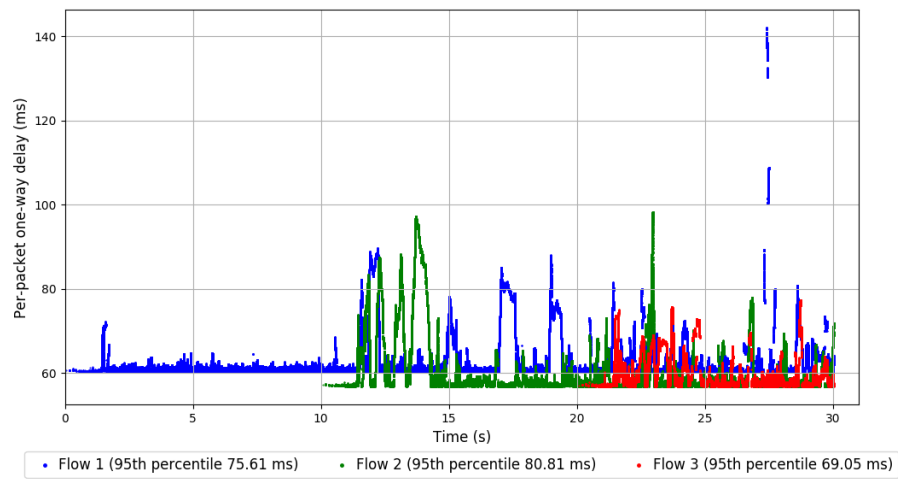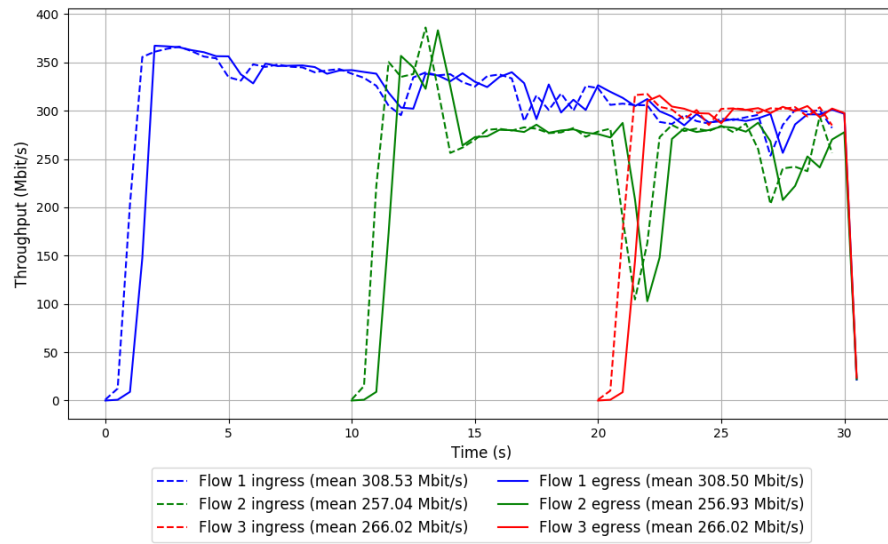
12

```
Run 5: Statistics of TCP BBR

Start at: 2018-12-12 12:15:41
End at: 2018-12-12 12:16:11
Local clock offset: -0.489 ms
Remote clock offset: -0.183 ms


# Below is generated by plot.py at 2018-12-12 12:58:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 997.64 Mbit/s
95th percentile per-packet one-way delay: 161.993 ms
Loss rate: 0.86%
-- Flow 1:
Average throughput: 513.76 Mbit/s
95th percentile per-packet one-way delay: 159.847 ms
Loss rate: 0.55%
-- Flow 2:
Average throughput: 484.74 Mbit/s
95th percentile per-packet one-way delay: 168.667 ms
Loss rate: 1.36%
-- Flow 3:
Average throughput: 485.24 Mbit/s
95th percentile per-packet one-way delay: 158.521 ms
Loss rate: 0.79%
```

Run 5: Report of TCP BBR — Data Link

Flow 1 ingress (mean 516.63 Mbit/s) --- Flow 1 egress (mean 513.76 Mbit/s)
Flow 2 ingress (mean 491.49 Mbit/s) --- Flow 2 egress (mean 484.74 Mbit/s)
Flow 3 ingress (mean 488.94 Mbit/s) --- Flow 3 egress (mean 485.24 Mbit/s)

Flow 1 (95th percentile 159.85 ms)   Flow 2 (95th percentile 168.67 ms)   Flow 3 (95th percentile 158.52 ms)
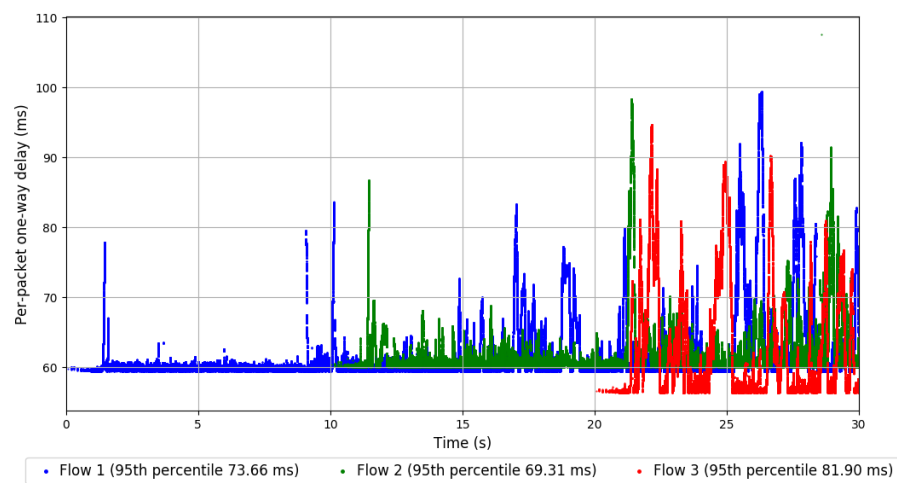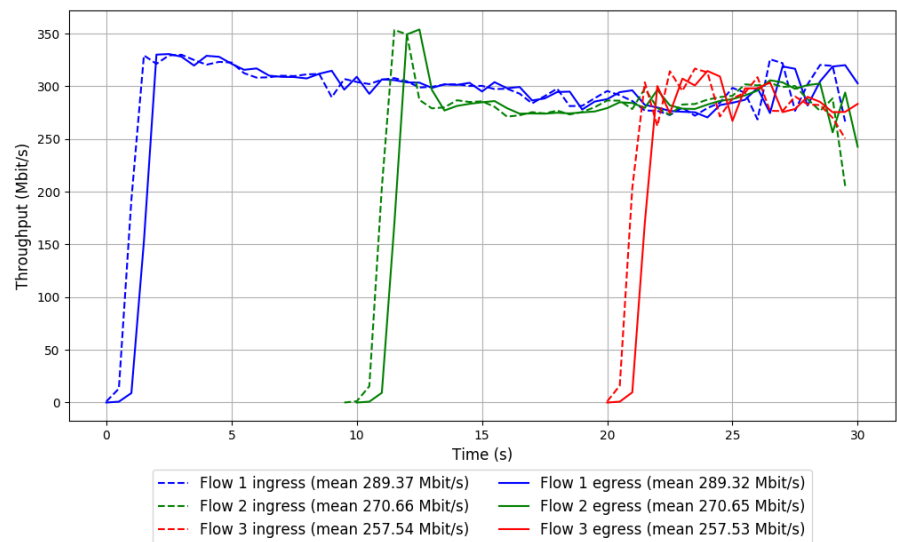
14

```
Run 1: Statistics of Copa

Start at: 2018-12-12 09:37:57
End at: 2018-12-12 09:38:27
Local clock offset: 0.165 ms
Remote clock offset: -0.201 ms


# Below is generated by plot.py at 2018-12-12 12:58:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 482.65 Mbit/s
95th percentile per-packet one-way delay: 70.949 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 257.14 Mbit/s
95th percentile per-packet one-way delay: 61.884 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 225.53 Mbit/s
95th percentile per-packet one-way delay: 74.705 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 226.66 Mbit/s
95th percentile per-packet one-way delay: 84.319 ms
Loss rate: 0.00%
```
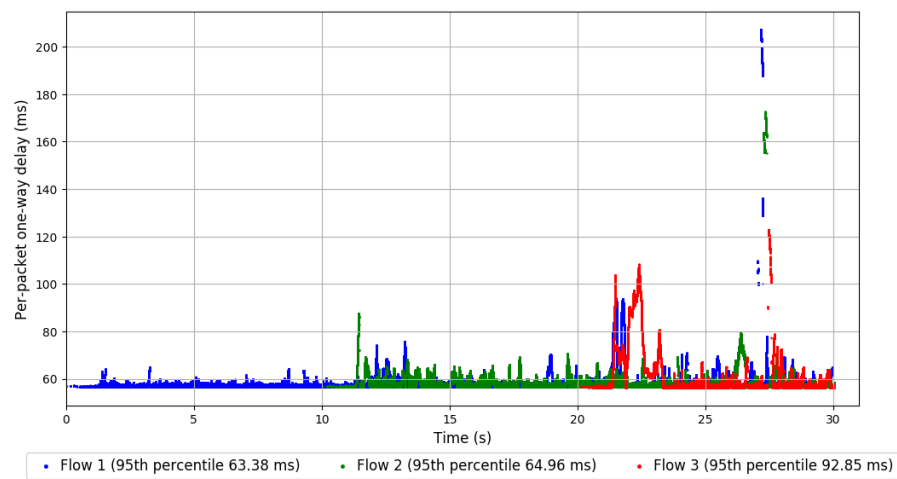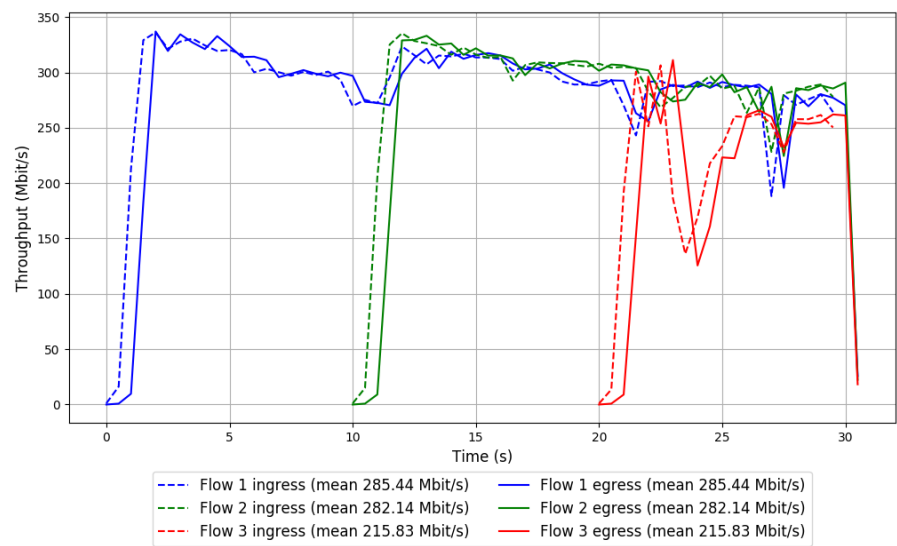
Run 1: Report of Copa — Data Link

Flow 1 ingress (mean 257.14 Mbit/s) --- Flow 1 egress (mean 257.14 Mbit/s)
Flow 2 ingress (mean 225.56 Mbit/s) --- Flow 2 egress (mean 225.53 Mbit/s)
Flow 3 ingress (mean 226.66 Mbit/s) --- Flow 3 egress (mean 226.66 Mbit/s)

Flow 1 (95th percentile 61.88 ms)   Flow 2 (95th percentile 74.70 ms)   Flow 3 (95th percentile 84.32 ms)

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```
Run 2: Statistics of Copa

Start at: 2018-12-12 10:11:16
End at: 2018-12-12 10:11:46
Local clock offset: -0.092 ms
Remote clock offset: -0.178 ms


# Below is generated by plot.py at 2018-12-12 12:59:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 567.98 Mbit/s
95th percentile per-packet one-way delay: 75.861 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 308.50 Mbit/s
95th percentile per-packet one-way delay: 75.611 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 256.93 Mbit/s
95th percentile per-packet one-way delay: 80.815 ms
Loss rate: 0.04%
-- Flow 3:
Average throughput: 266.02 Mbit/s
95th percentile per-packet one-way delay: 69.051 ms
Loss rate: 0.00%
```
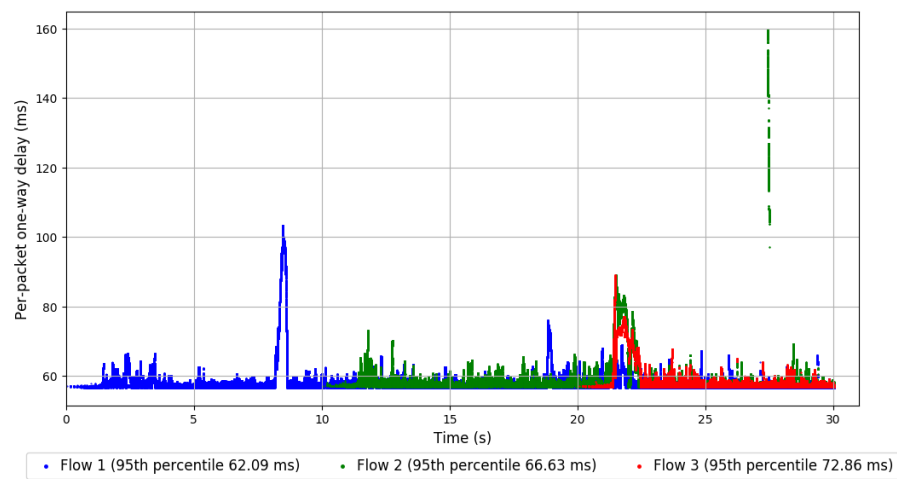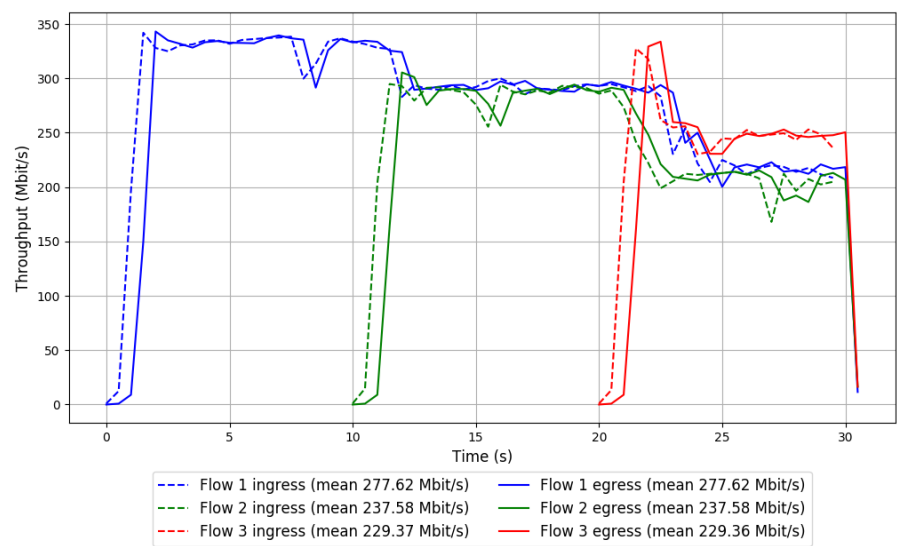
Run 2: Report of Copa — Data Link

```
Run 3: Statistics of Copa

Start at: 2018-12-12 10:45:13
End at: 2018-12-12 10:45:43
Local clock offset: 0.315 ms
Remote clock offset: -0.204 ms


# Below is generated by plot.py at 2018-12-12 12:59:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 555.29 Mbit/s
95th percentile per-packet one-way delay: 74.493 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 289.32 Mbit/s
95th percentile per-packet one-way delay: 73.660 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 270.65 Mbit/s
95th percentile per-packet one-way delay: 69.311 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 257.53 Mbit/s
95th percentile per-packet one-way delay: 81.900 ms
Loss rate: 0.00%
```
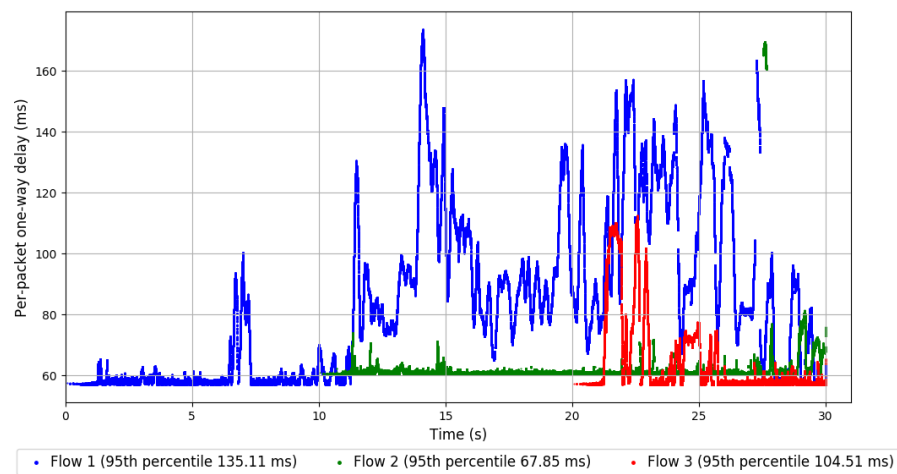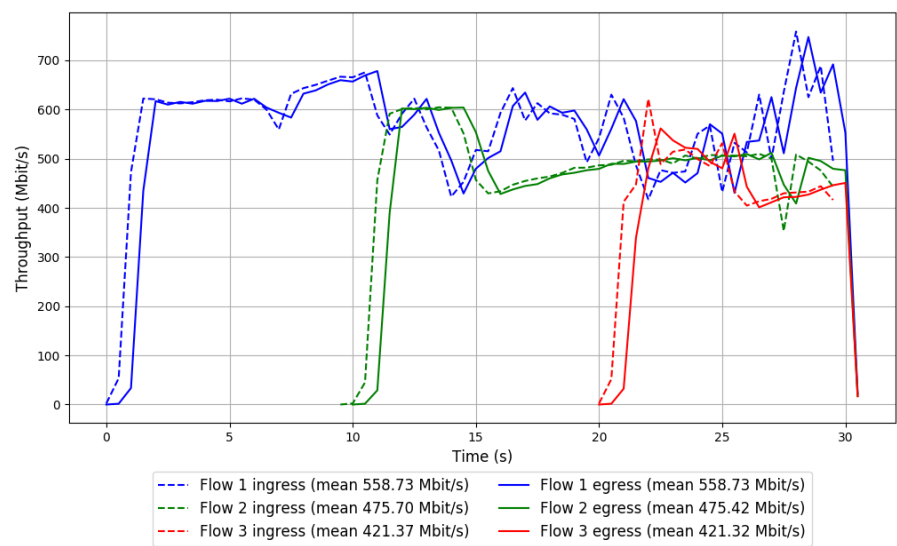
Run 3: Report of Copa — Data Link

```
Run 4: Statistics of Copa

Start at: 2018-12-12 11:19:51
End at: 2018-12-12 11:20:21
Local clock offset: 0.111 ms
Remote clock offset: -0.262 ms

# Below is generated by plot.py at 2018-12-12 13:14:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 545.04 Mbit/s
95th percentile per-packet one-way delay: 67.222 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 285.44 Mbit/s
95th percentile per-packet one-way delay: 63.384 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 282.14 Mbit/s
95th percentile per-packet one-way delay: 64.959 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 215.83 Mbit/s
95th percentile per-packet one-way delay: 92.846 ms
Loss rate: 0.00%
```

Run 4: Report of Copa — Data Link

```
Run 5: Statistics of Copa

Start at: 2018-12-12 11:54:41
End at: 2018-12-12 11:55:11
Local clock offset: -0.086 ms
Remote clock offset: -0.509 ms


# Below is generated by plot.py at 2018-12-12 13:15:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 512.04 Mbit/s
95th percentile per-packet one-way delay: 65.236 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 277.62 Mbit/s
95th percentile per-packet one-way delay: 62.089 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 237.58 Mbit/s
95th percentile per-packet one-way delay: 66.626 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 229.36 Mbit/s
95th percentile per-packet one-way delay: 72.863 ms
Loss rate: 0.00%
```
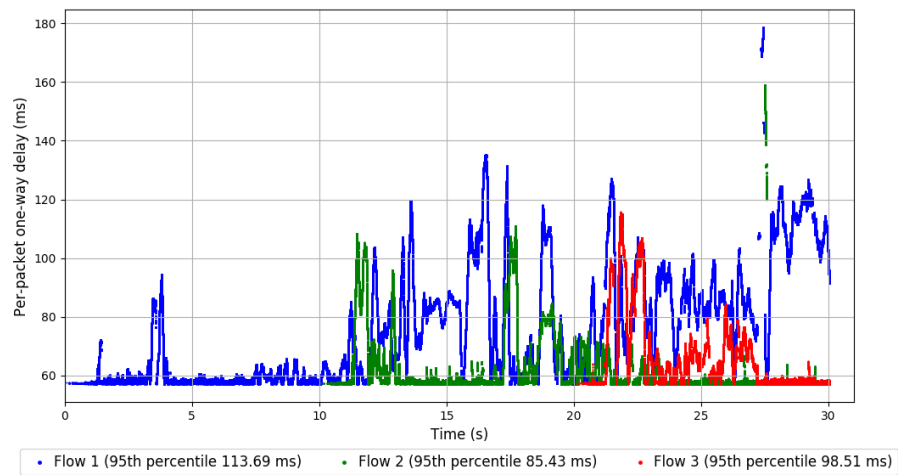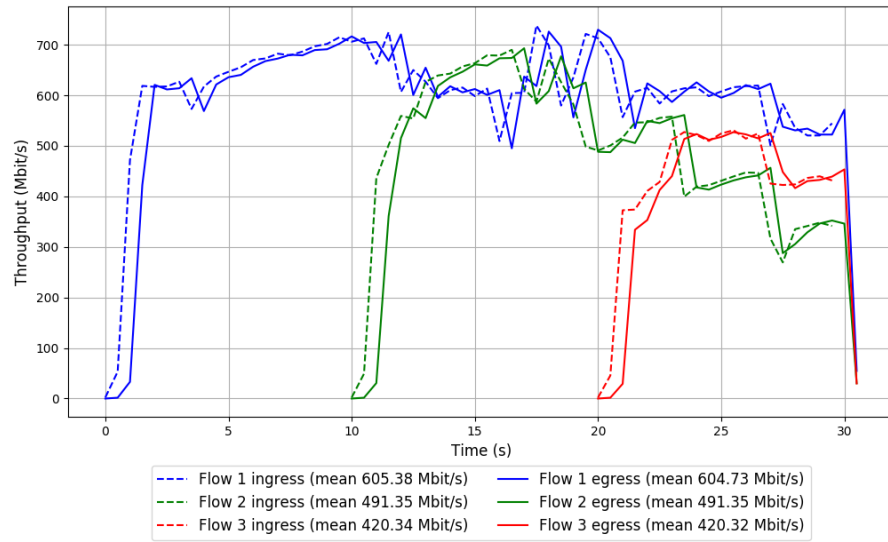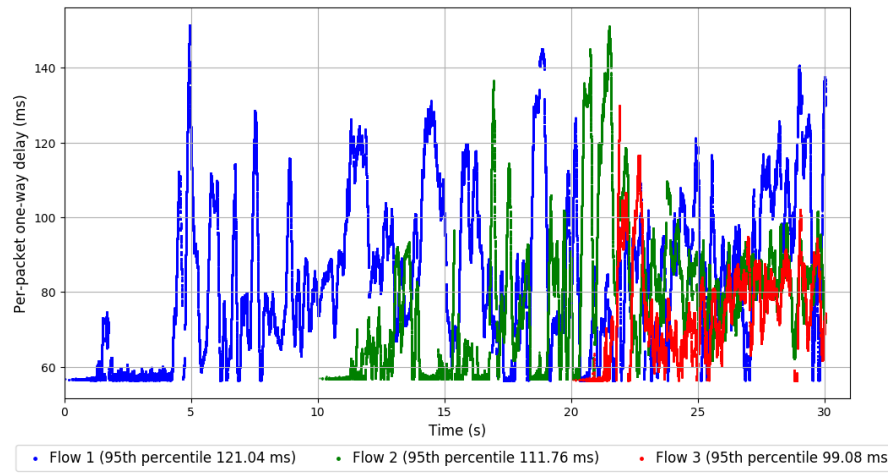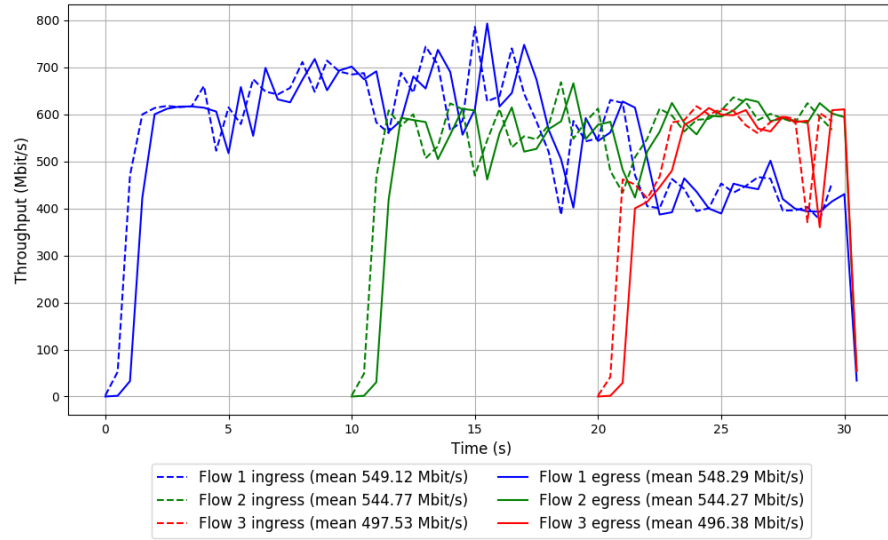
Run 5: Report of Copa — Data Link

```
Run 1: Statistics of TCP Cubic

Start at: 2018-12-12 09:46:02
End at: 2018-12-12 09:46:32
Local clock offset: -0.129 ms
Remote clock offset: -0.122 ms

# Below is generated by plot.py at 2018-12-12 13:16:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1015.58 Mbit/s
95th percentile per-packet one-way delay: 127.316 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 558.73 Mbit/s
95th percentile per-packet one-way delay: 135.112 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 475.42 Mbit/s
95th percentile per-packet one-way delay: 67.853 ms
Loss rate: 0.08%
-- Flow 3:
Average throughput: 421.32 Mbit/s
95th percentile per-packet one-way delay: 104.512 ms
Loss rate: 0.01%
```
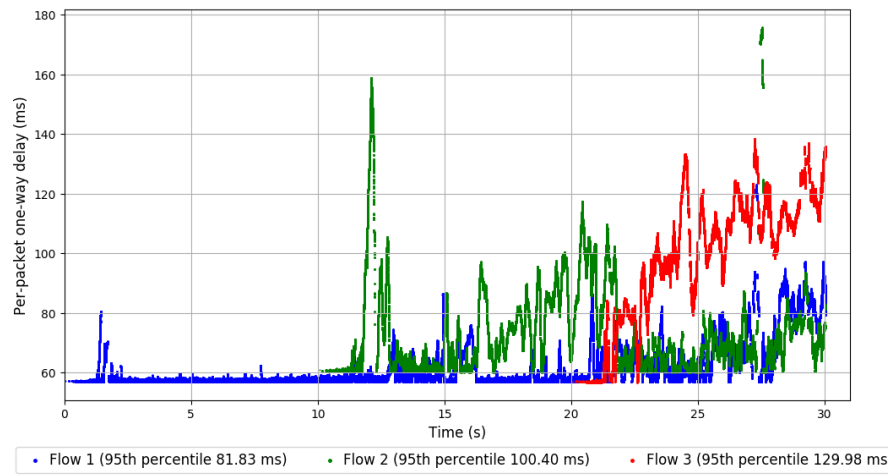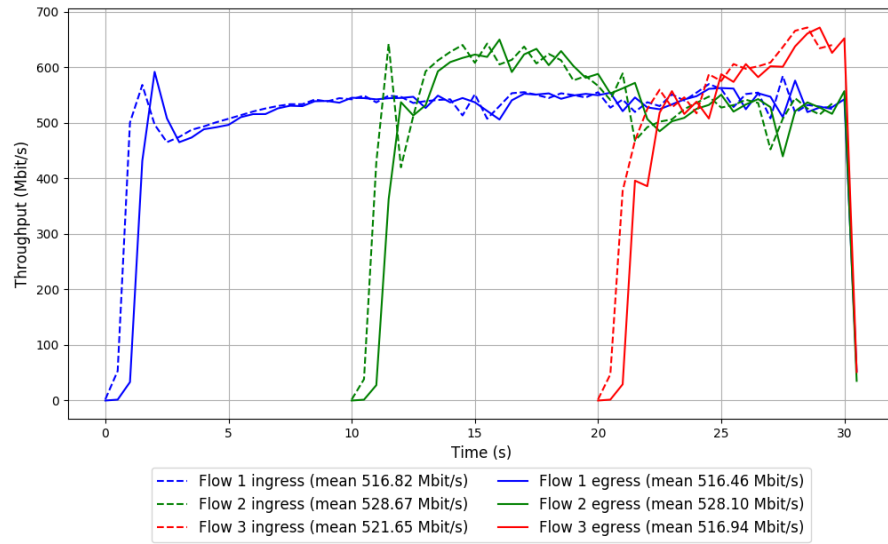
Run 1: Report of TCP Cubic — Data Link

```
Run 2: Statistics of TCP Cubic

Start at: 2018-12-12 10:19:39
End at: 2018-12-12 10:20:09
Local clock offset: -0.13 ms
Remote clock offset: 0.047 ms


# Below is generated by plot.py at 2018-12-12 13:17:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1071.69 Mbit/s
95th percentile per-packet one-way delay: 108.157 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 604.73 Mbit/s
95th percentile per-packet one-way delay: 113.685 ms
Loss rate: 0.10%
-- Flow 2:
Average throughput: 491.35 Mbit/s
95th percentile per-packet one-way delay: 85.434 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 420.32 Mbit/s
95th percentile per-packet one-way delay: 98.510 ms
Loss rate: 0.00%
```
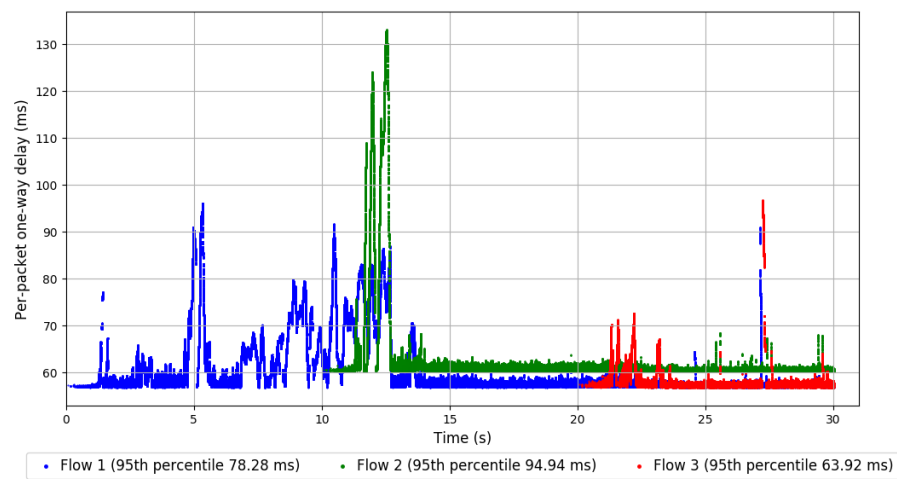
Run 2: Report of TCP Cubic — Data Link

```
Run 3: Statistics of TCP Cubic

Start at: 2018-12-12 10:53:56
End at: 2018-12-12 10:54:26
Local clock offset: 0.282 ms
Remote clock offset: -0.259 ms


# Below is generated by plot.py at 2018-12-12 13:18:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1075.83 Mbit/s
95th percentile per-packet one-way delay: 117.109 ms
Loss rate: 0.14%
-- Flow 1:
Average throughput: 548.29 Mbit/s
95th percentile per-packet one-way delay: 121.043 ms
Loss rate: 0.15%
-- Flow 2:
Average throughput: 544.27 Mbit/s
95th percentile per-packet one-way delay: 111.760 ms
Loss rate: 0.09%
-- Flow 3:
Average throughput: 496.38 Mbit/s
95th percentile per-packet one-way delay: 99.085 ms
Loss rate: 0.23%
```

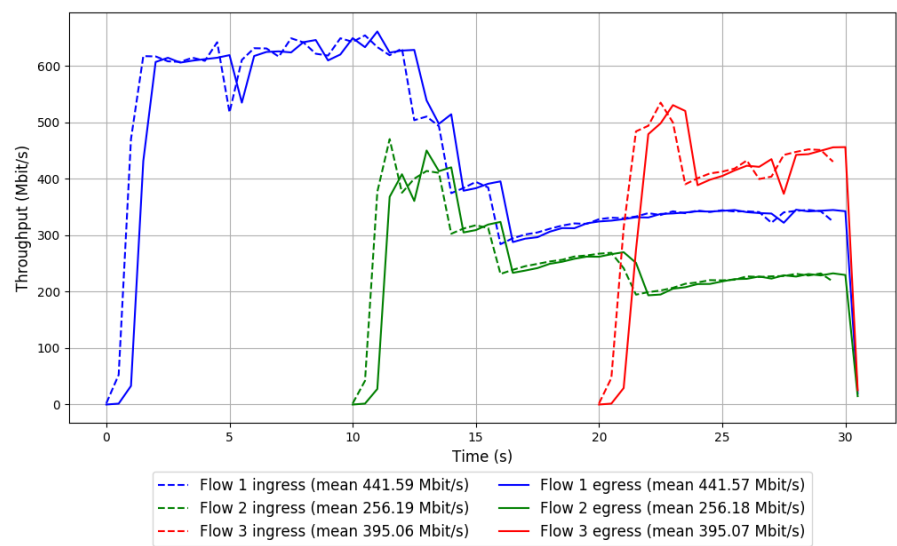Run 3: Report of TCP Cubic — Data Link

```
Run 4: Statistics of TCP Cubic

Start at: 2018-12-12 11:28:34
End at: 2018-12-12 11:29:04
Local clock offset: -0.105 ms
Remote clock offset: -0.243 ms


# Below is generated by plot.py at 2018-12-12 13:18:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1039.98 Mbit/s
95th percentile per-packet one-way delay: 115.888 ms
Loss rate: 0.22%
-- Flow 1:
Average throughput: 516.46 Mbit/s
95th percentile per-packet one-way delay: 81.825 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 528.10 Mbit/s
95th percentile per-packet one-way delay: 100.401 ms
Loss rate: 0.12%
-- Flow 3:
Average throughput: 516.94 Mbit/s
95th percentile per-packet one-way delay: 129.978 ms
Loss rate: 0.89%
```

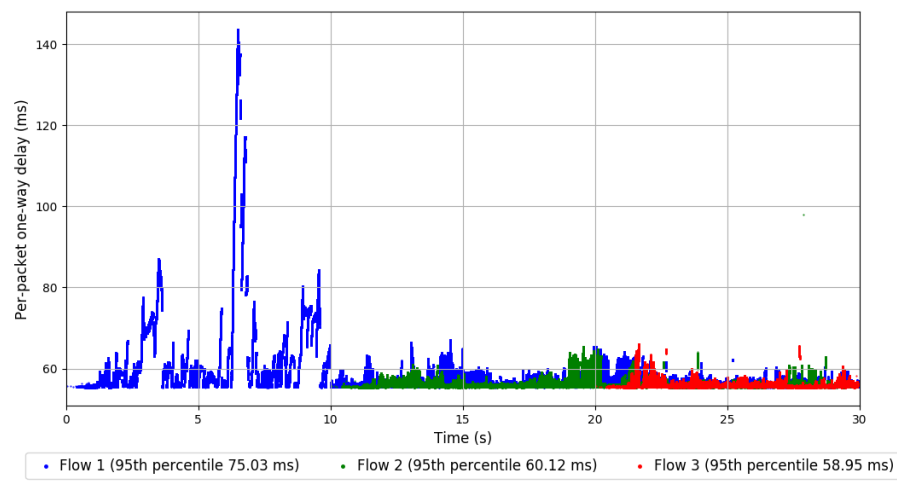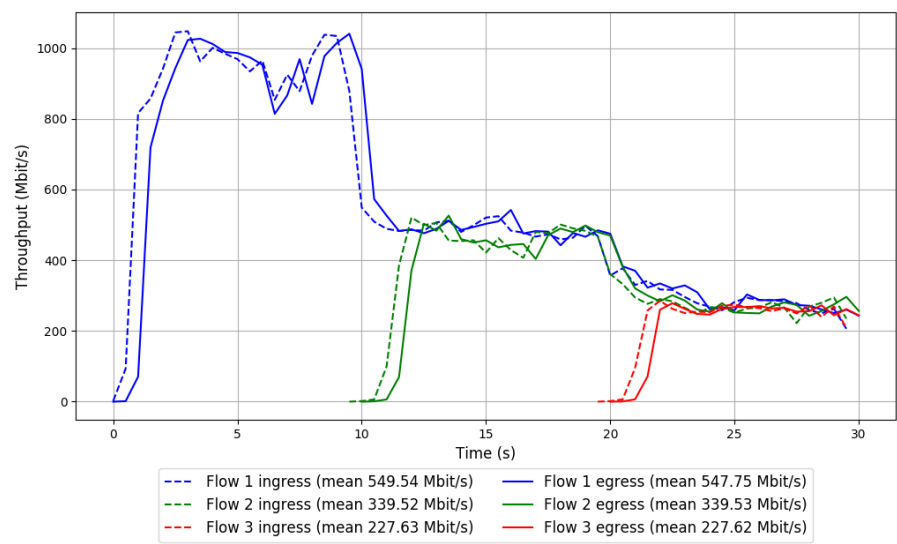Run 4: Report of TCP Cubic — Data Link

```
Run 5: Statistics of TCP Cubic

Start at: 2018-12-12 12:03:56
End at: 2018-12-12 12:04:26
Local clock offset: -0.094 ms
Remote clock offset: -0.243 ms

# Below is generated by plot.py at 2018-12-12 13:18:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 743.51 Mbit/s
95th percentile per-packet one-way delay: 77.421 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 441.57 Mbit/s
95th percentile per-packet one-way delay: 78.278 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 256.18 Mbit/s
95th percentile per-packet one-way delay: 94.940 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 395.07 Mbit/s
95th percentile per-packet one-way delay: 63.918 ms
Loss rate: 0.00%
```

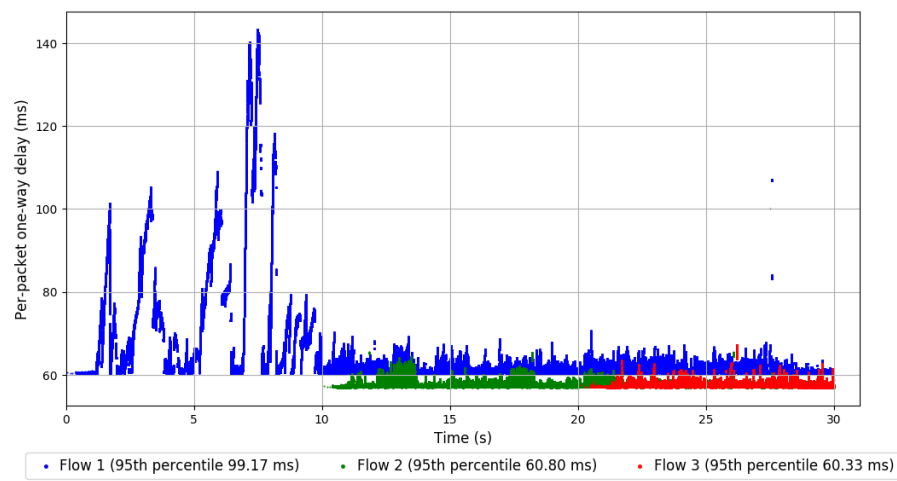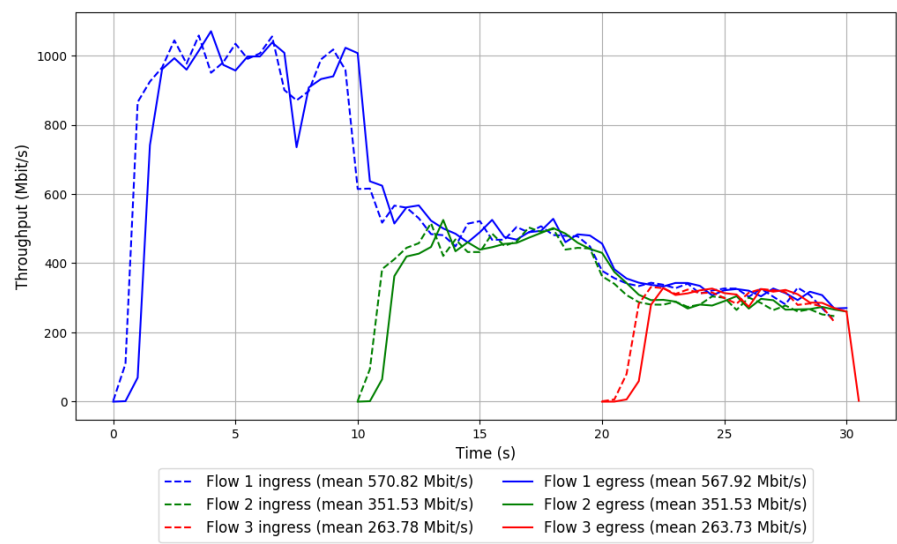Run 5: Report of TCP Cubic — Data Link

```
Run 1: Statistics of FillP

Start at: 2018-12-12 09:32:14
End at: 2018-12-12 09:32:44
Local clock offset: 0.16 ms
Remote clock offset: -1.475 ms


# Below is generated by plot.py at 2018-12-12 13:18:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 849.02 Mbit/s
95th percentile per-packet one-way delay: 73.011 ms
Loss rate: 0.21%
-- Flow 1:
Average throughput: 547.75 Mbit/s
95th percentile per-packet one-way delay: 75.027 ms
Loss rate: 0.32%
-- Flow 2:
Average throughput: 339.53 Mbit/s
95th percentile per-packet one-way delay: 60.117 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 227.62 Mbit/s
95th percentile per-packet one-way delay: 58.951 ms
Loss rate: 0.00%
```

Run 1: Report of FillP — Data Link

```
Run 2: Statistics of FillP

Start at: 2018-12-12 10:05:35
End at: 2018-12-12 10:06:05
Local clock offset: -0.344 ms
Remote clock offset: -0.406 ms


# Below is generated by plot.py at 2018-12-12 13:32:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 888.71 Mbit/s
95th percentile per-packet one-way delay: 92.708 ms
Loss rate: 0.33%
-- Flow 1:
Average throughput: 567.92 Mbit/s
95th percentile per-packet one-way delay: 99.169 ms
Loss rate: 0.51%
-- Flow 2:
Average throughput: 351.53 Mbit/s
95th percentile per-packet one-way delay: 60.802 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 263.73 Mbit/s
95th percentile per-packet one-way delay: 60.333 ms
Loss rate: 0.00%
```
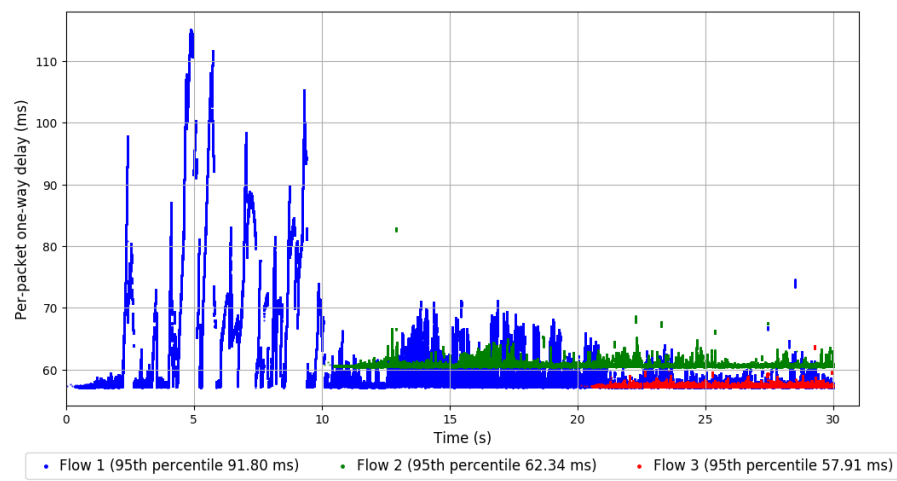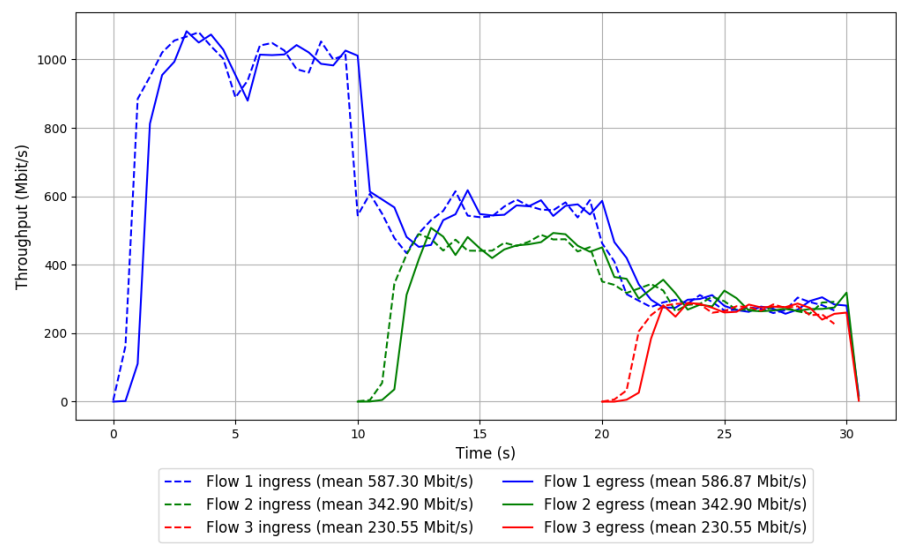
Run 2: Report of FillP — Data Link

- - - - Flow 1 ingress (mean 570.82 Mbit/s) —— Flow 1 egress (mean 567.92 Mbit/s)
- - - - Flow 2 ingress (mean 351.53 Mbit/s) —— Flow 2 egress (mean 351.53 Mbit/s)
- - - - Flow 3 ingress (mean 263.78 Mbit/s) —— Flow 3 egress (mean 263.73 Mbit/s)

- Flow 1 (95th percentile 99.17 ms) • Flow 2 (95th percentile 60.80 ms) • Flow 3 (95th percentile 60.33 ms)

```
Run 3: Statistics of FillP

Start at: 2018-12-12 10:39:24
End at: 2018-12-12 10:39:54
Local clock offset: -0.102 ms
Remote clock offset: 0.069 ms


# Below is generated by plot.py at 2018-12-12 13:35:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 890.66 Mbit/s
95th percentile per-packet one-way delay: 85.055 ms
Loss rate: 0.05%
-- Flow 1:
Average throughput: 586.87 Mbit/s
95th percentile per-packet one-way delay: 91.799 ms
Loss rate: 0.07%
-- Flow 2:
Average throughput: 342.90 Mbit/s
95th percentile per-packet one-way delay: 62.344 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 230.55 Mbit/s
95th percentile per-packet one-way delay: 57.910 ms
Loss rate: 0.00%
```
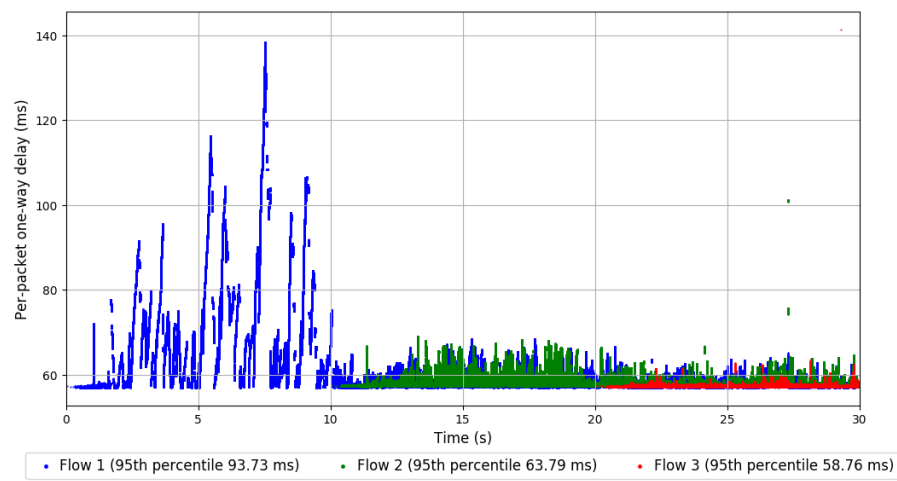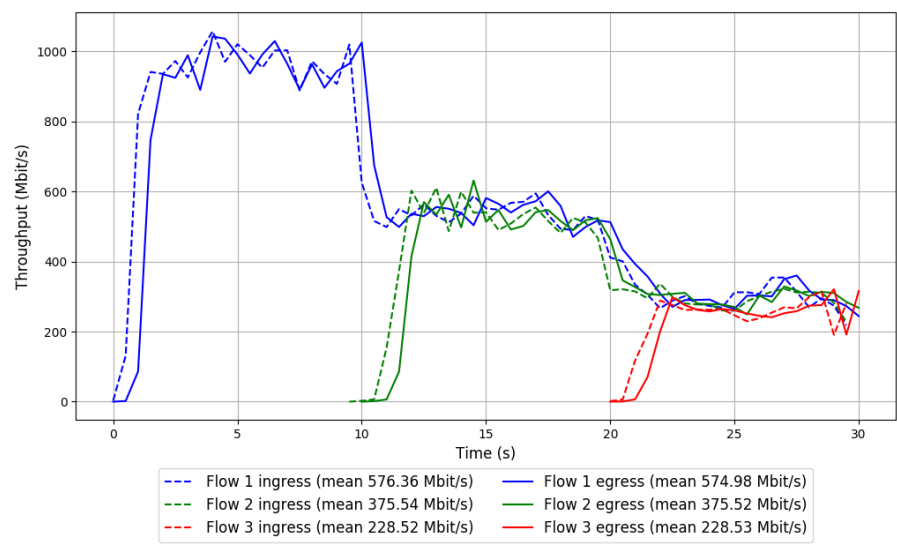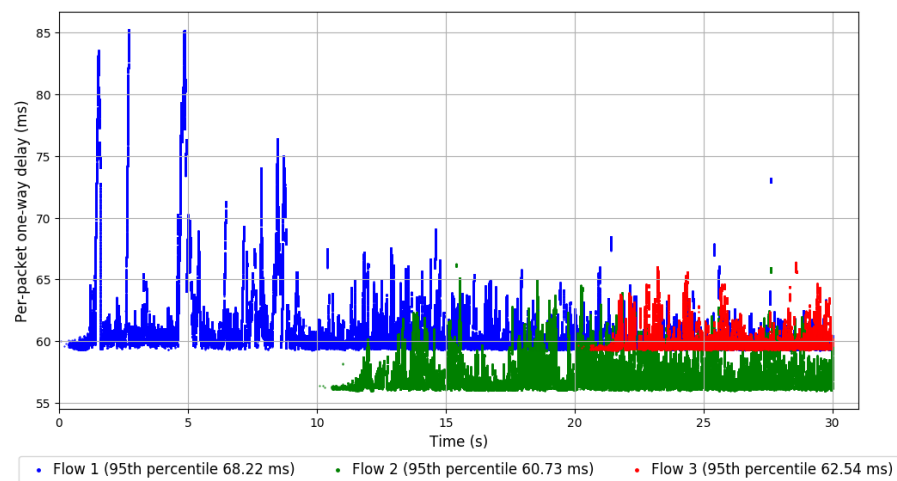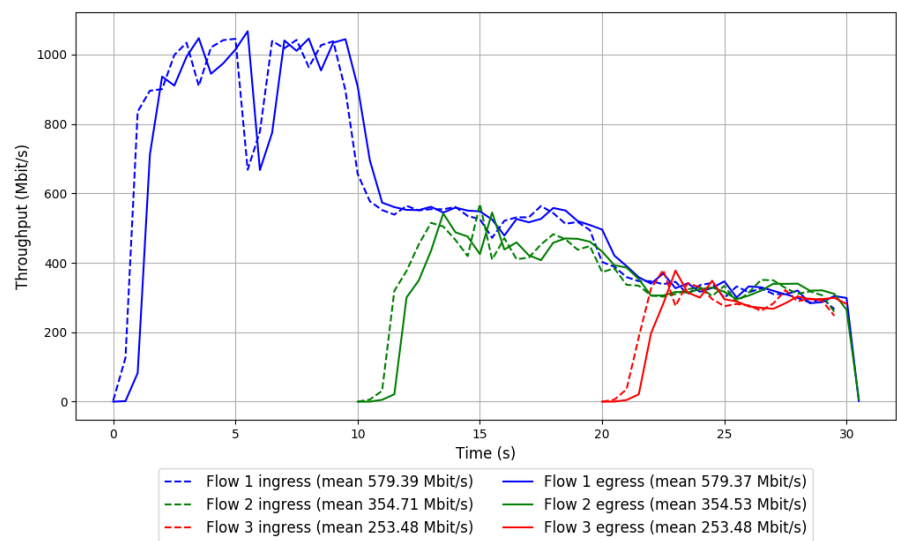
Run 3: Report of FillP — Data Link

```
Run 4: Statistics of FillP

Start at: 2018-12-12 11:13:42
End at: 2018-12-12 11:14:12
Local clock offset: -0.321 ms
Remote clock offset: 0.004 ms


# Below is generated by plot.py at 2018-12-12 13:35:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 900.30 Mbit/s
95th percentile per-packet one-way delay: 86.801 ms
Loss rate: 0.15%
-- Flow 1:
Average throughput: 574.98 Mbit/s
95th percentile per-packet one-way delay: 93.733 ms
Loss rate: 0.24%
-- Flow 2:
Average throughput: 375.52 Mbit/s
95th percentile per-packet one-way delay: 63.792 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 228.53 Mbit/s
95th percentile per-packet one-way delay: 58.761 ms
Loss rate: 0.00%
```
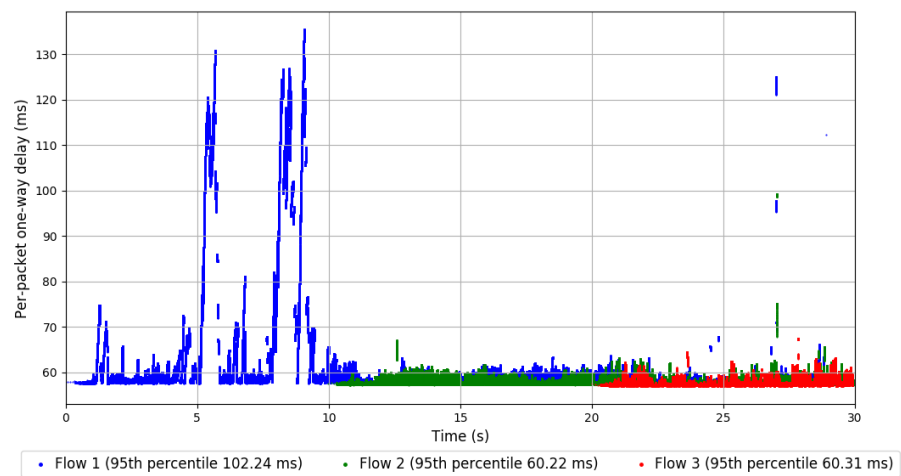
Run 4: Report of FillP — Data Link

Flow 1 ingress (mean 576.36 Mbit/s) ----   Flow 1 egress (mean 574.98 Mbit/s) ——
Flow 2 ingress (mean 375.54 Mbit/s) ----   Flow 2 egress (mean 375.52 Mbit/s) ——
Flow 3 ingress (mean 228.52 Mbit/s) ----   Flow 3 egress (mean 228.53 Mbit/s) ——

• Flow 1 (95th percentile 93.73 ms)   • Flow 2 (95th percentile 63.79 ms)   • Flow 3 (95th percentile 58.76 ms)

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```
Run 5: Statistics of FillP

Start at: 2018-12-12 11:48:34
End at: 2018-12-12 11:49:04
Local clock offset: 0.123 ms
Remote clock offset: -0.896 ms


# Below is generated by plot.py at 2018-12-12 13:37:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 898.37 Mbit/s
95th percentile per-packet one-way delay: 66.074 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 579.37 Mbit/s
95th percentile per-packet one-way delay: 68.223 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 354.53 Mbit/s
95th percentile per-packet one-way delay: 60.726 ms
Loss rate: 0.05%
-- Flow 3:
Average throughput: 253.48 Mbit/s
95th percentile per-packet one-way delay: 62.542 ms
Loss rate: 0.00%
```
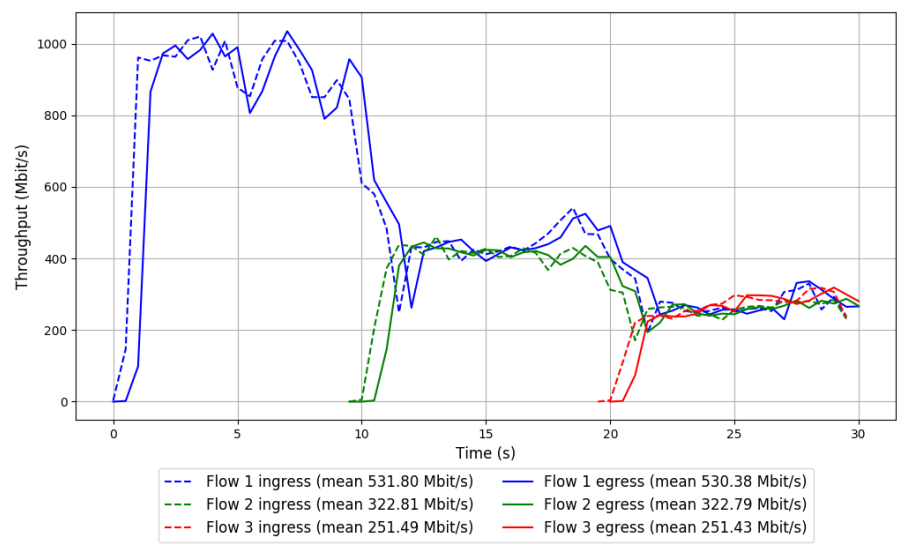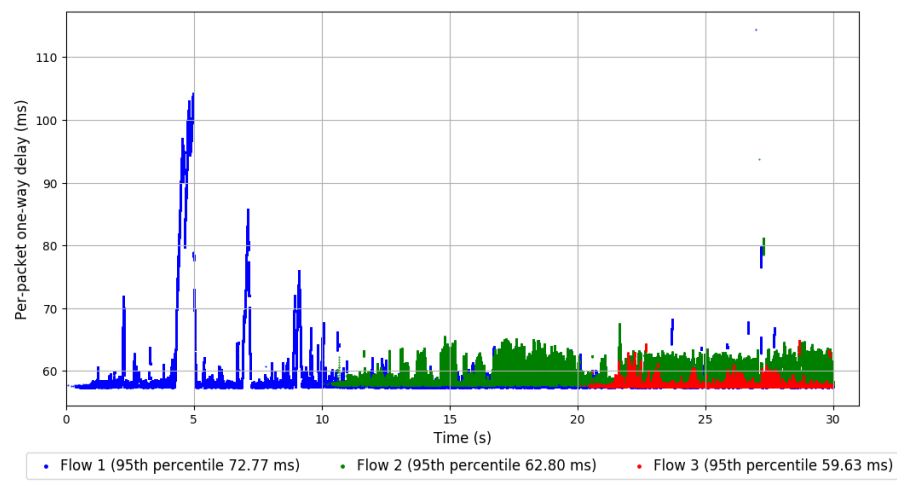
Run 5: Report of FillP — Data Link

```
Run 1: Statistics of FillP-Sheep

Start at: 2018-12-12 09:52:08
End at: 2018-12-12 09:52:38
Local clock offset: -0.16 ms
Remote clock offset: 0.082 ms


# Below is generated by plot.py at 2018-12-12 13:37:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 829.10 Mbit/s
95th percentile per-packet one-way delay: 78.860 ms
Loss rate: 0.17%
-- Flow 1:
Average throughput: 530.38 Mbit/s
95th percentile per-packet one-way delay: 102.243 ms
Loss rate: 0.27%
-- Flow 2:
Average throughput: 322.79 Mbit/s
95th percentile per-packet one-way delay: 60.219 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 251.43 Mbit/s
95th percentile per-packet one-way delay: 60.314 ms
Loss rate: 0.01%
```
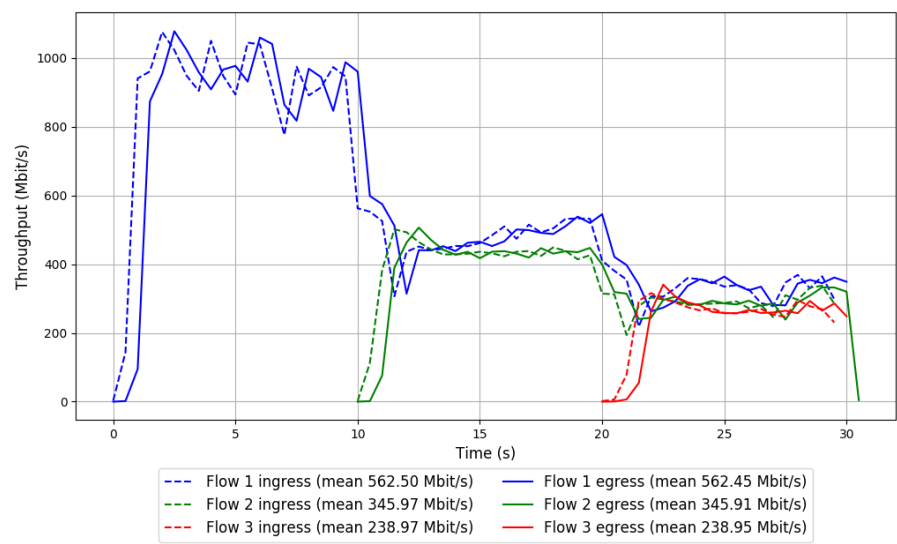
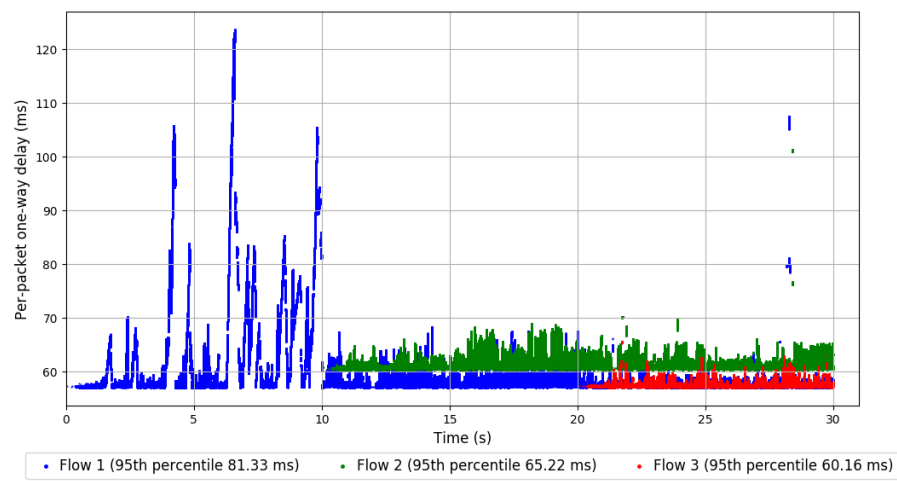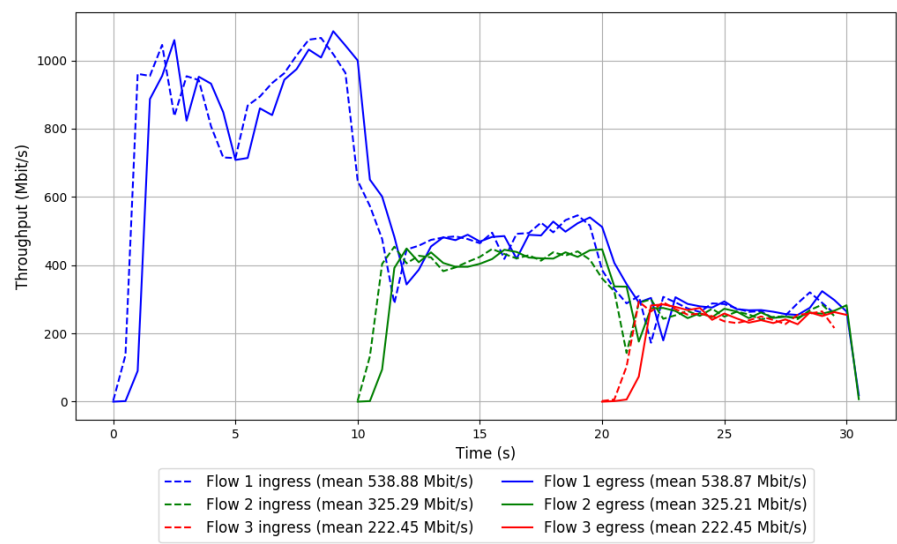Run 1: Report of FillP-Sheep — Data Link

- - - - Flow 1 ingress (mean 531.80 Mbit/s) ——— Flow 1 egress (mean 530.38 Mbit/s)
- - - - Flow 2 ingress (mean 322.81 Mbit/s) ——— Flow 2 egress (mean 322.79 Mbit/s)
- - - - Flow 3 ingress (mean 251.49 Mbit/s) ——— Flow 3 egress (mean 251.43 Mbit/s)

- Flow 1 (95th percentile 102.24 ms)　　- Flow 2 (95th percentile 60.22 ms)　　- Flow 3 (95th percentile 60.31 ms)

```
Run 2: Statistics of FillP-Sheep

Start at: 2018-12-12 10:25:48
End at: 2018-12-12 10:26:18
Local clock offset: -0.133 ms
Remote clock offset: 0.319 ms

# Below is generated by plot.py at 2018-12-12 13:37:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 871.17 Mbit/s
95th percentile per-packet one-way delay: 65.612 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 562.45 Mbit/s
95th percentile per-packet one-way delay: 72.771 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 345.91 Mbit/s
95th percentile per-packet one-way delay: 62.803 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 238.95 Mbit/s
95th percentile per-packet one-way delay: 59.629 ms
Loss rate: 0.01%
```
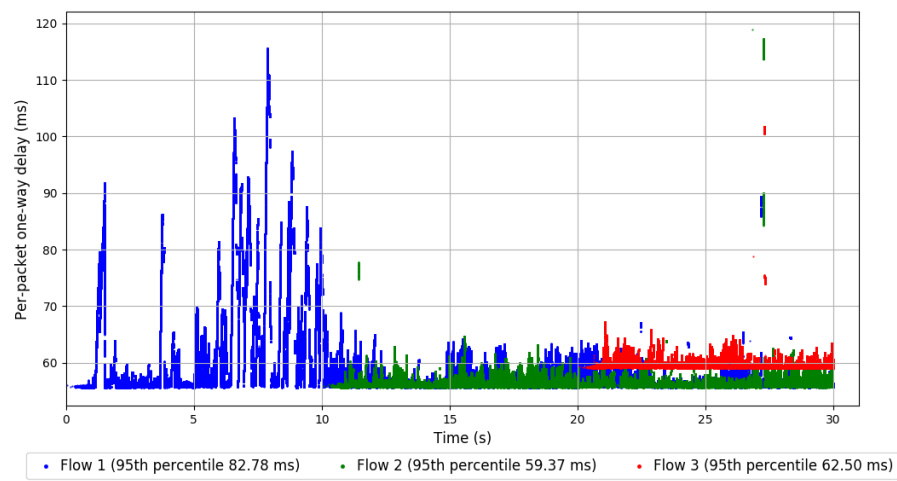
Run 2: Report of FillP-Sheep — Data Link

```
Run 3: Statistics of FillP-Sheep

Start at: 2018-12-12 11:00:19
End at: 2018-12-12 11:00:49
Local clock offset: -0.35 ms
Remote clock offset: -0.232 ms


# Below is generated by plot.py at 2018-12-12 13:37:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 828.77 Mbit/s
95th percentile per-packet one-way delay: 76.187 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 538.87 Mbit/s
95th percentile per-packet one-way delay: 81.331 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 325.21 Mbit/s
95th percentile per-packet one-way delay: 65.222 ms
Loss rate: 0.04%
-- Flow 3:
Average throughput: 222.45 Mbit/s
95th percentile per-packet one-way delay: 60.157 ms
Loss rate: 0.00%
```
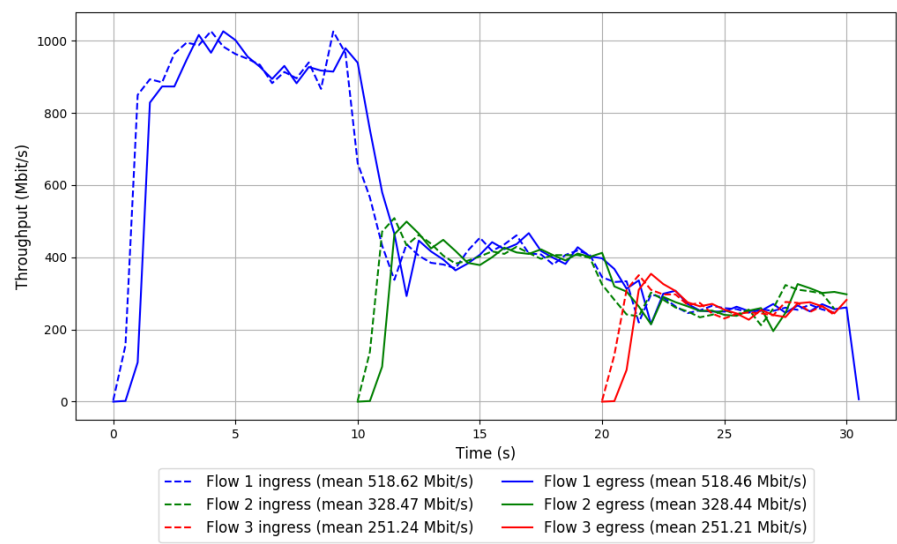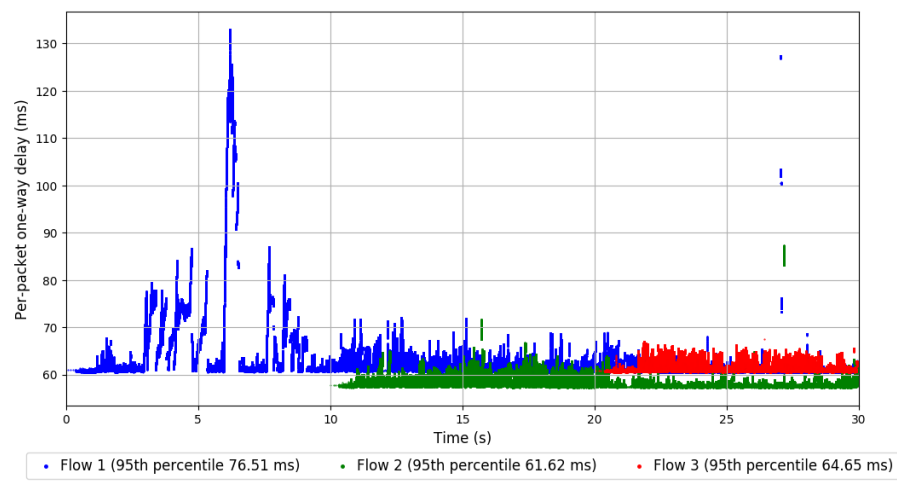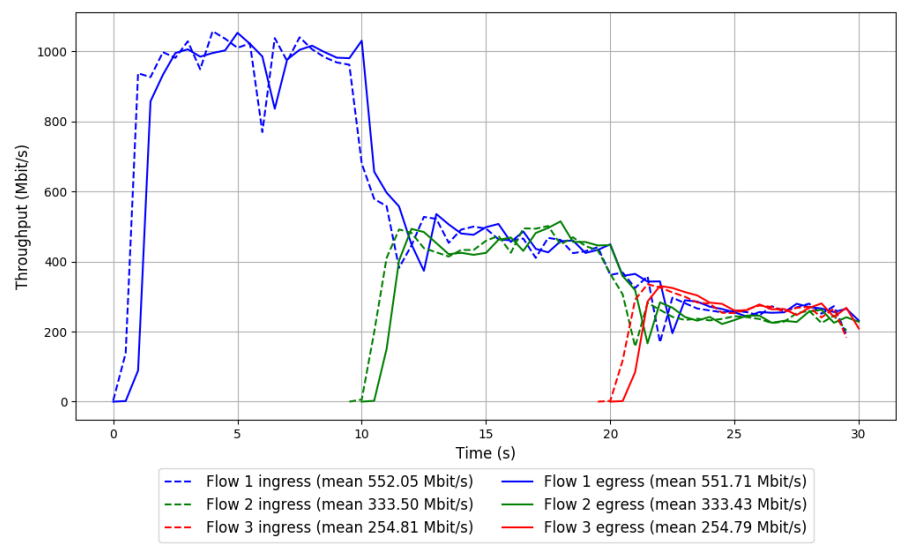
Run 3: Report of FillP-Sheep — Data Link

Flow 1 ingress (mean 538.88 Mbit/s)   Flow 1 egress (mean 538.87 Mbit/s)
Flow 2 ingress (mean 325.29 Mbit/s)   Flow 2 egress (mean 325.21 Mbit/s)
Flow 3 ingress (mean 222.45 Mbit/s)   Flow 3 egress (mean 222.45 Mbit/s)

Flow 1 (95th percentile 81.33 ms)   Flow 2 (95th percentile 65.22 ms)   Flow 3 (95th percentile 60.16 ms)

```
Run 4: Statistics of FillP-Sheep

Start at: 2018-12-12 11:34:53
End at: 2018-12-12 11:35:23
Local clock offset: -0.083 ms
Remote clock offset: -1.43 ms


# Below is generated by plot.py at 2018-12-12 13:37:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 820.15 Mbit/s
95th percentile per-packet one-way delay: 79.079 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 518.46 Mbit/s
95th percentile per-packet one-way delay: 82.775 ms
Loss rate: 0.03%
-- Flow 2:
Average throughput: 328.44 Mbit/s
95th percentile per-packet one-way delay: 59.371 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 251.21 Mbit/s
95th percentile per-packet one-way delay: 62.499 ms
Loss rate: 0.01%
```

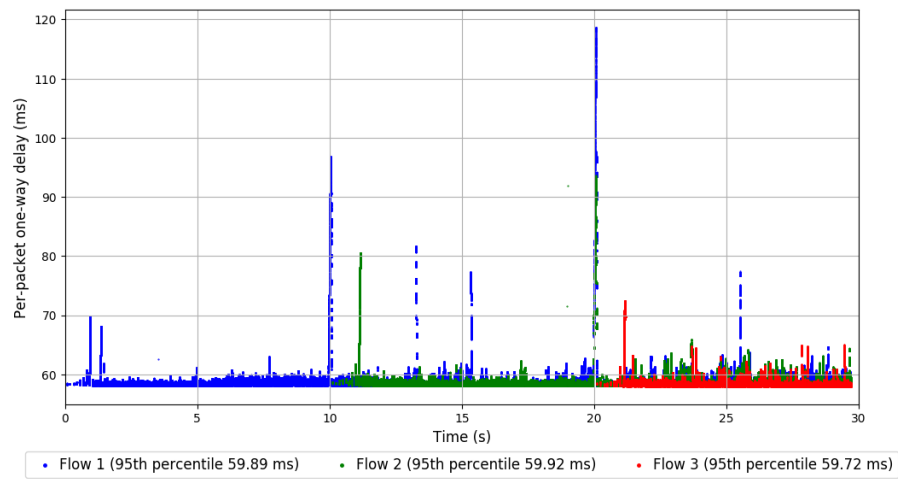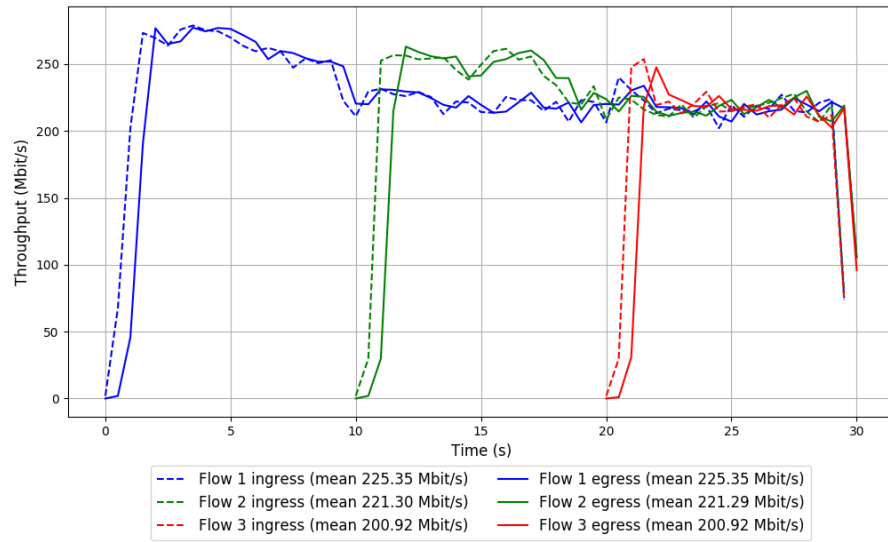Run 4: Report of FillP-Sheep — Data Link

```
Run 5: Statistics of FillP-Sheep

Start at: 2018-12-12 12:09:59
End at: 2018-12-12 12:10:29
Local clock offset: -0.549 ms
Remote clock offset: -0.401 ms


# Below is generated by plot.py at 2018-12-12 13:52:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 858.54 Mbit/s
95th percentile per-packet one-way delay: 74.823 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 551.71 Mbit/s
95th percentile per-packet one-way delay: 76.508 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 333.43 Mbit/s
95th percentile per-packet one-way delay: 61.619 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 254.79 Mbit/s
95th percentile per-packet one-way delay: 64.654 ms
Loss rate: 0.00%
```

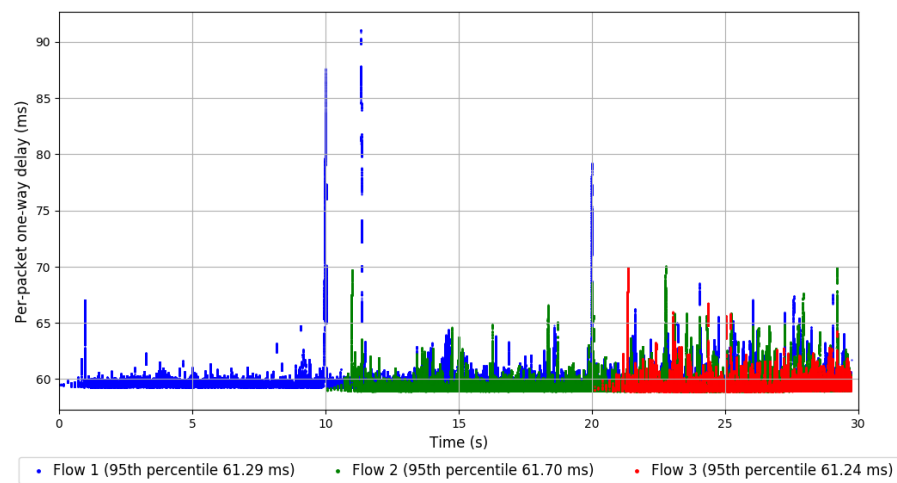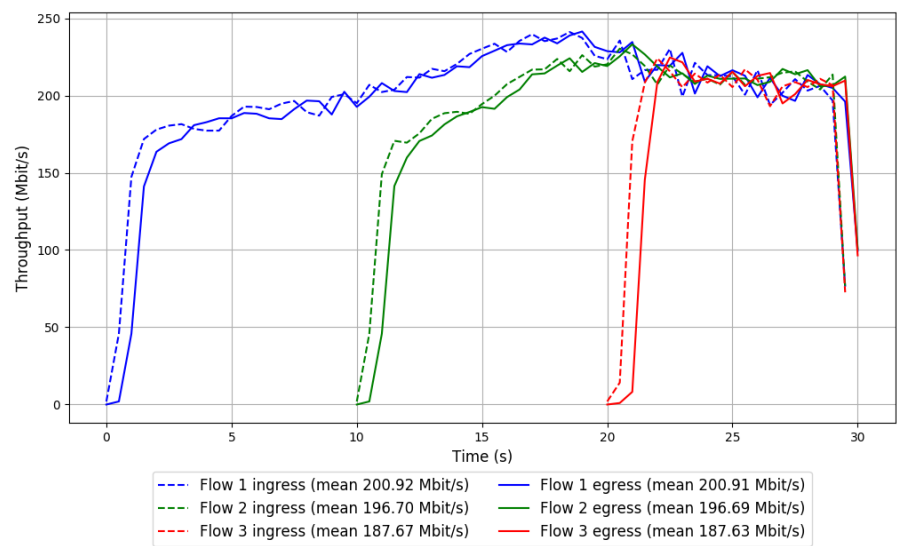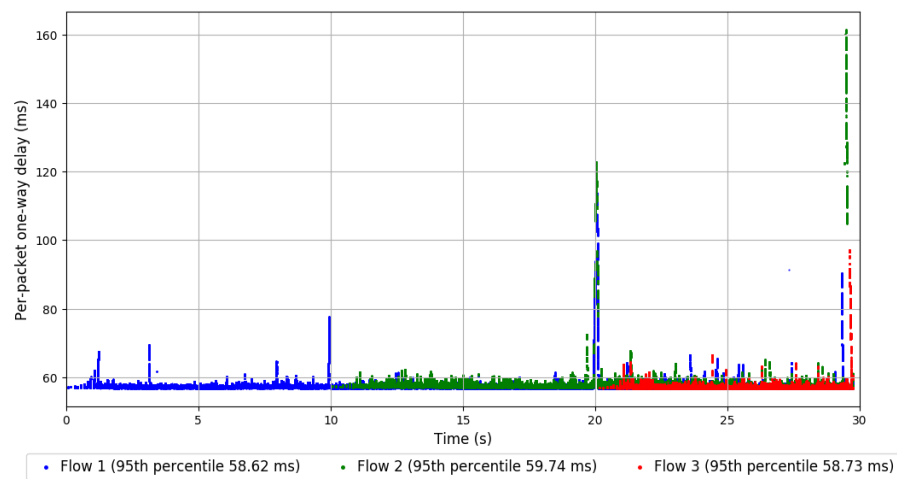Run 5: Report of FillP-Sheep — Data Link

```
Run 1: Statistics of Indigo

Start at: 2018-12-12 10:01:49
End at: 2018-12-12 10:02:19
Local clock offset: 0.049 ms
Remote clock offset: 1.074 ms


# Below is generated by plot.py at 2018-12-12 13:52:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 436.77 Mbit/s
95th percentile per-packet one-way delay: 59.882 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 225.35 Mbit/s
95th percentile per-packet one-way delay: 59.889 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 221.29 Mbit/s
95th percentile per-packet one-way delay: 59.919 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 200.92 Mbit/s
95th percentile per-packet one-way delay: 59.723 ms
Loss rate: 0.01%
```
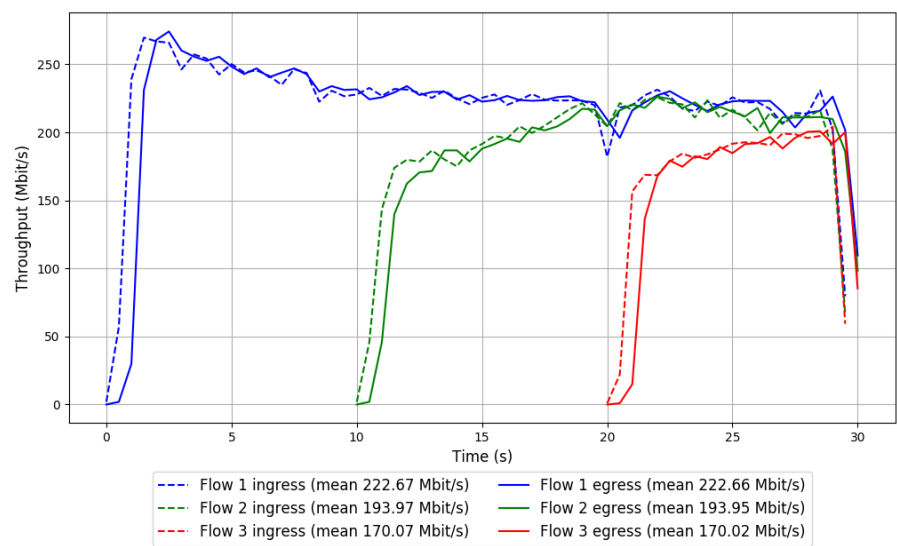
Run 1: Report of Indigo — Data Link

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```
Run 2: Statistics of Indigo

Start at: 2018-12-12 10:35:28
End at: 2018-12-12 10:35:58
Local clock offset: 0.13 ms
Remote clock offset: -1.146 ms


# Below is generated by plot.py at 2018-12-12 13:52:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 392.10 Mbit/s
95th percentile per-packet one-way delay: 61.408 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 200.91 Mbit/s
95th percentile per-packet one-way delay: 61.290 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 196.69 Mbit/s
95th percentile per-packet one-way delay: 61.704 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 187.63 Mbit/s
95th percentile per-packet one-way delay: 61.241 ms
Loss rate: 0.03%
```
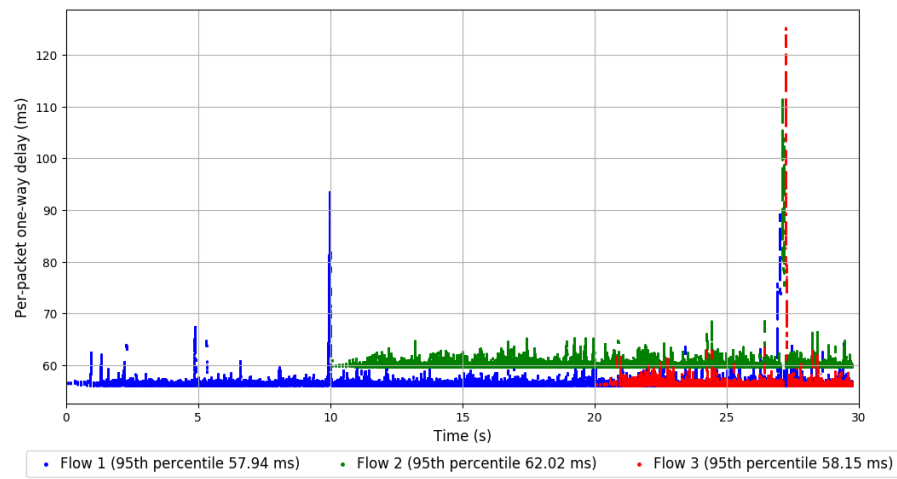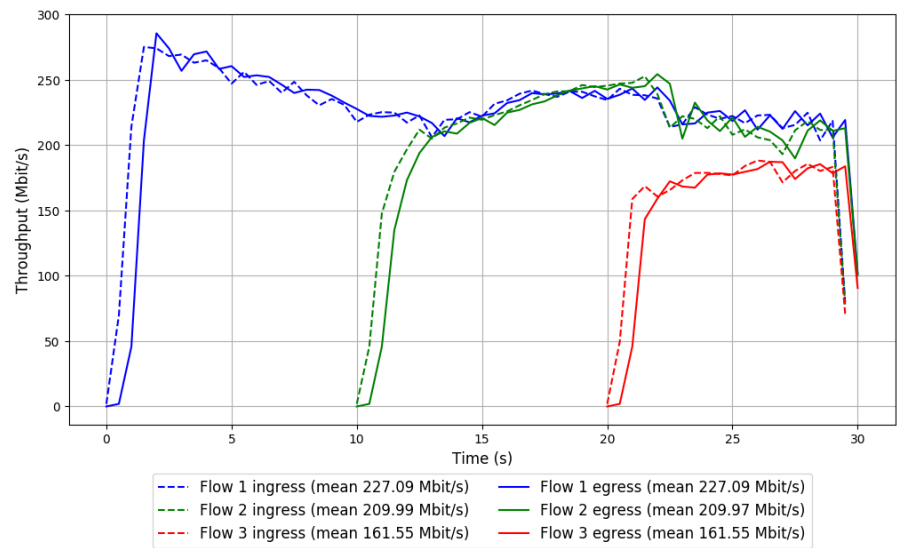
Run 2: Report of Indigo — Data Link

Flow 1 ingress (mean 200.92 Mbit/s)   Flow 1 egress (mean 200.91 Mbit/s)
Flow 2 ingress (mean 196.70 Mbit/s)   Flow 2 egress (mean 196.69 Mbit/s)
Flow 3 ingress (mean 187.67 Mbit/s)   Flow 3 egress (mean 187.63 Mbit/s)

Flow 1 (95th percentile 61.29 ms)   Flow 2 (95th percentile 61.70 ms)   Flow 3 (95th percentile 61.24 ms)

```
Run 3: Statistics of Indigo

Start at: 2018-12-12 11:09:59
End at: 2018-12-12 11:10:29
Local clock offset: -0.284 ms
Remote clock offset: -0.252 ms


# Below is generated by plot.py at 2018-12-12 13:52:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 405.97 Mbit/s
95th percentile per-packet one-way delay: 59.127 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 222.66 Mbit/s
95th percentile per-packet one-way delay: 58.616 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 193.95 Mbit/s
95th percentile per-packet one-way delay: 59.741 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 170.02 Mbit/s
95th percentile per-packet one-way delay: 58.726 ms
Loss rate: 0.02%
```
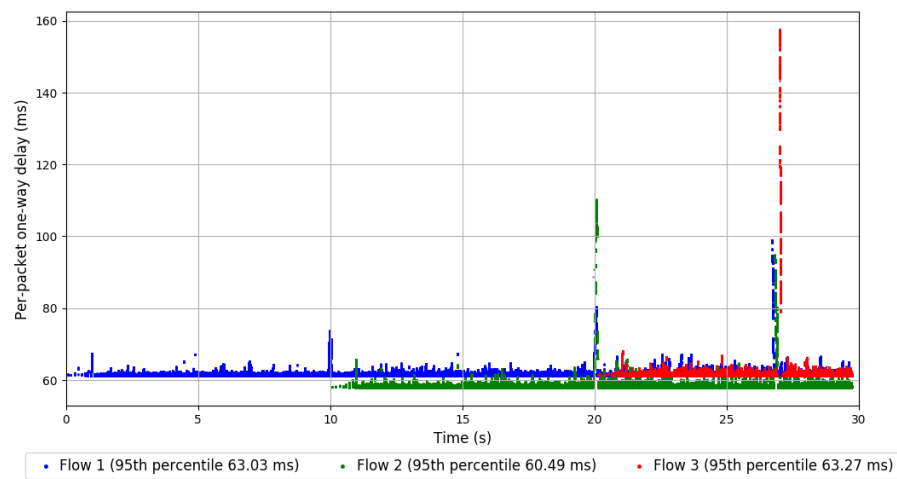
Run 3: Report of Indigo — Data Link

```
Run 4: Statistics of Indigo

Start at: 2018-12-12 11:44:46
End at: 2018-12-12 11:45:16
Local clock offset: -0.09 ms
Remote clock offset: -0.76 ms

# Below is generated by plot.py at 2018-12-12 13:52:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 418.82 Mbit/s
95th percentile per-packet one-way delay: 61.114 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 227.09 Mbit/s
95th percentile per-packet one-way delay: 57.943 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 209.97 Mbit/s
95th percentile per-packet one-way delay: 62.023 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 161.55 Mbit/s
95th percentile per-packet one-way delay: 58.154 ms
Loss rate: 0.00%
```
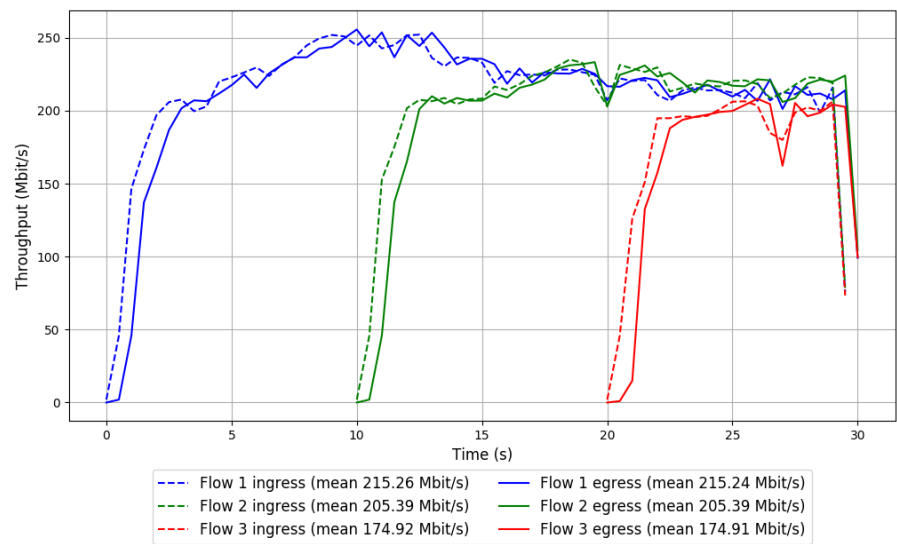
Run 4: Report of Indigo — Data Link

```
Run 5: Statistics of Indigo

Start at: 2018-12-12 12:20:27
End at: 2018-12-12 12:20:57
Local clock offset: 0.214 ms
Remote clock offset: 1.066 ms


# Below is generated by plot.py at 2018-12-12 13:52:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 407.96 Mbit/s
95th percentile per-packet one-way delay: 62.815 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 215.24 Mbit/s
95th percentile per-packet one-way delay: 63.027 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 205.39 Mbit/s
95th percentile per-packet one-way delay: 60.495 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 174.91 Mbit/s
95th percentile per-packet one-way delay: 63.274 ms
Loss rate: 0.01%
```
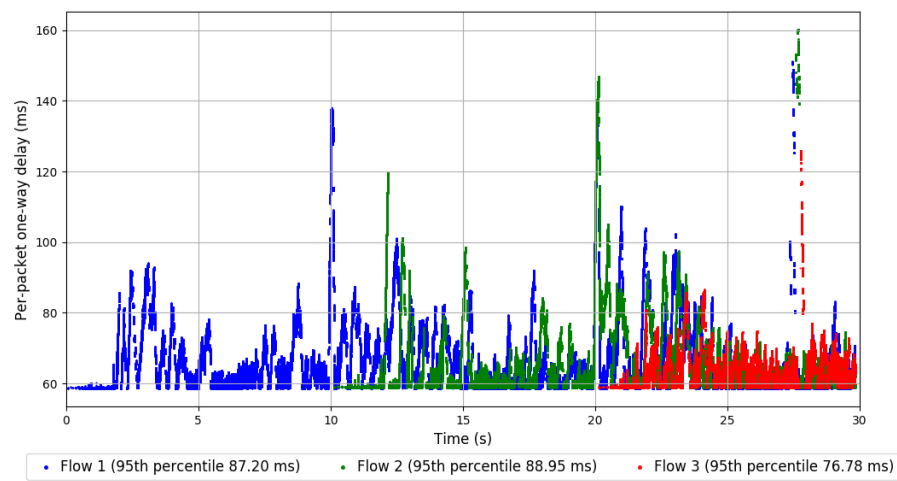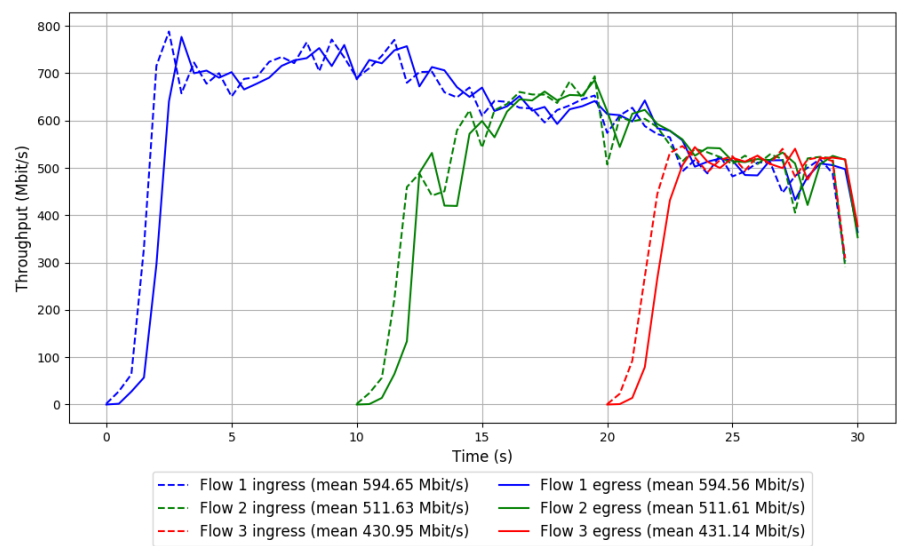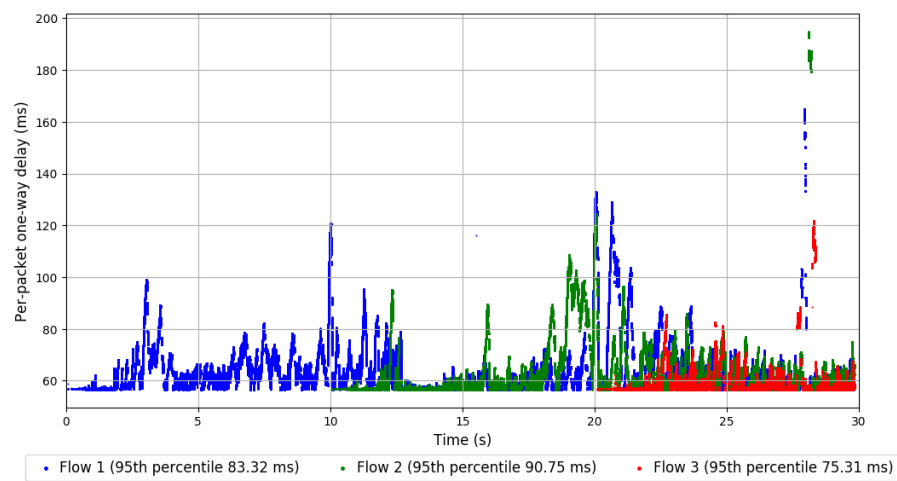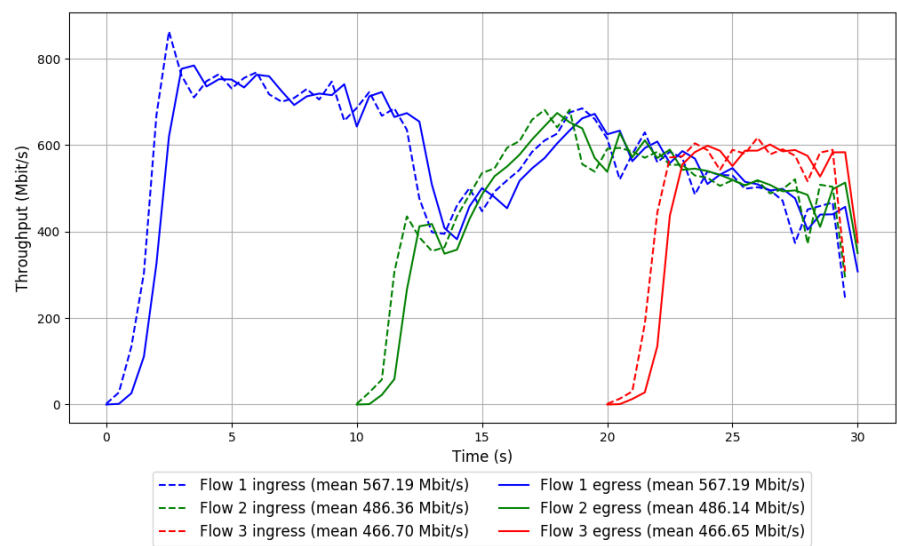
Run 5: Report of Indigo — Data Link

```
Run 1: Statistics of Indigo-MusesD

Start at: 2018-12-12 09:55:08
End at: 2018-12-12 09:55:38
Local clock offset: -0.321 ms
Remote clock offset: 1.148 ms


# Below is generated by plot.py at 2018-12-12 13:57:07
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1073.86 Mbit/s
95th percentile per-packet one-way delay: 86.514 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 594.56 Mbit/s
95th percentile per-packet one-way delay: 87.204 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 511.61 Mbit/s
95th percentile per-packet one-way delay: 88.955 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 431.14 Mbit/s
95th percentile per-packet one-way delay: 76.780 ms
Loss rate: 0.01%
```
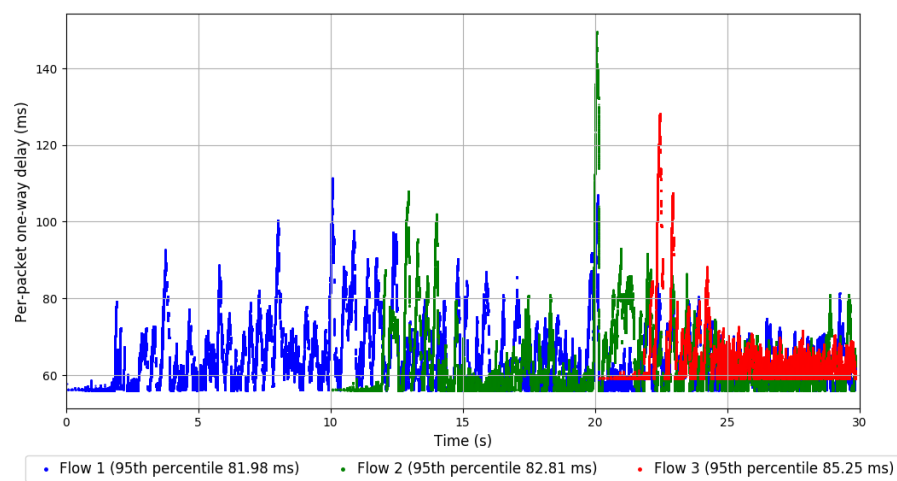
Run 1: Report of Indigo-MusesD — Data Link

```
Run 2: Statistics of Indigo-MusesD

Start at: 2018-12-12 10:28:50
End at: 2018-12-12 10:29:20
Local clock offset: 0.27 ms
Remote clock offset: -0.074 ms


# Below is generated by plot.py at 2018-12-12 13:57:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1042.28 Mbit/s
95th percentile per-packet one-way delay: 85.425 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 567.19 Mbit/s
95th percentile per-packet one-way delay: 83.319 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 486.14 Mbit/s
95th percentile per-packet one-way delay: 90.748 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 466.65 Mbit/s
95th percentile per-packet one-way delay: 75.312 ms
Loss rate: 0.01%
```
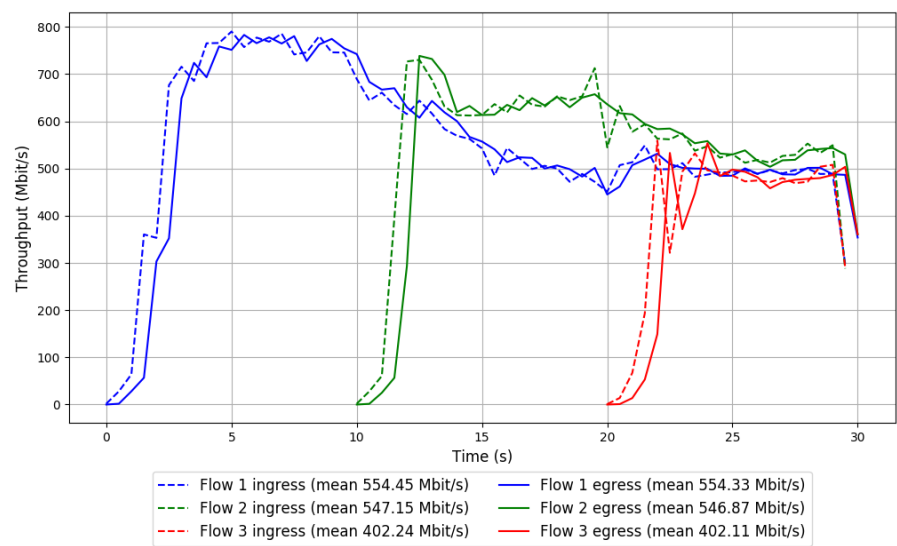
Run 2: Report of Indigo-MusesD — Data Link

```
Run 3: Statistics of Indigo-MusesD

Start at: 2018-12-12 11:03:20
End at: 2018-12-12 11:03:50
Local clock offset: -0.126 ms
Remote clock offset: -1.127 ms


# Below is generated by plot.py at 2018-12-12 14:10:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1048.35 Mbit/s
95th percentile per-packet one-way delay: 82.580 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 554.33 Mbit/s
95th percentile per-packet one-way delay: 81.977 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 546.87 Mbit/s
95th percentile per-packet one-way delay: 82.815 ms
Loss rate: 0.04%
-- Flow 3:
Average throughput: 402.11 Mbit/s
95th percentile per-packet one-way delay: 85.251 ms
Loss rate: 0.06%
```
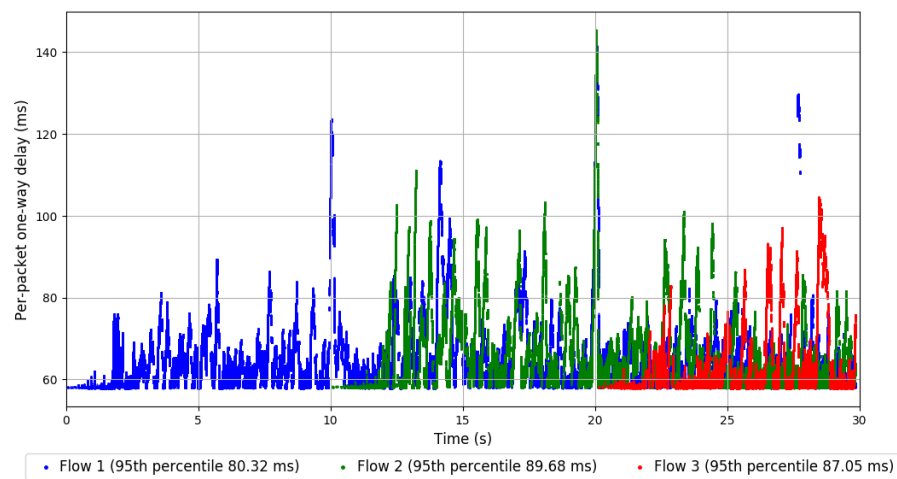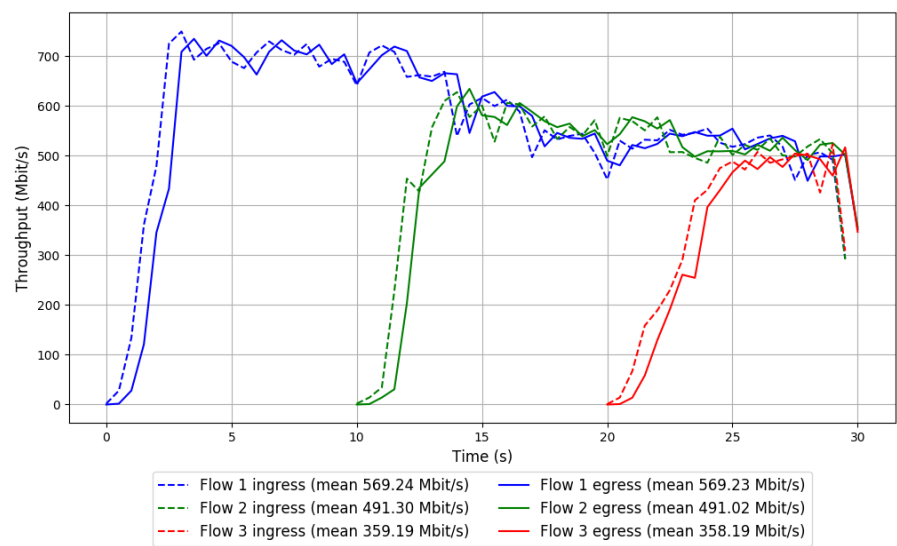
Run 3: Report of Indigo-MusesD — Data Link

```
Run 4: Statistics of Indigo-MusesD

Start at: 2018-12-12 11:37:55
End at: 2018-12-12 11:38:25
Local clock offset: 0.296 ms
Remote clock offset: 1.128 ms


# Below is generated by plot.py at 2018-12-12 14:10:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1011.89 Mbit/s
95th percentile per-packet one-way delay: 84.610 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 569.23 Mbit/s
95th percentile per-packet one-way delay: 80.318 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 491.02 Mbit/s
95th percentile per-packet one-way delay: 89.679 ms
Loss rate: 0.05%
-- Flow 3:
Average throughput: 358.19 Mbit/s
95th percentile per-packet one-way delay: 87.053 ms
Loss rate: 0.18%
```
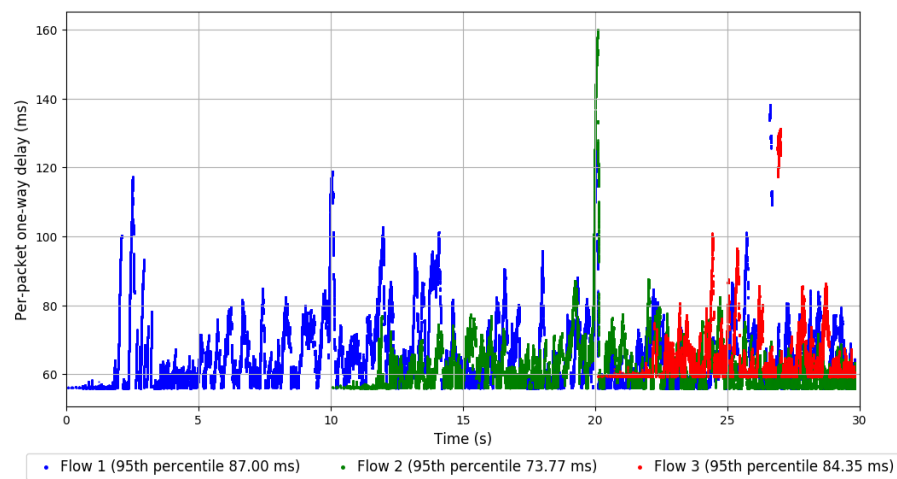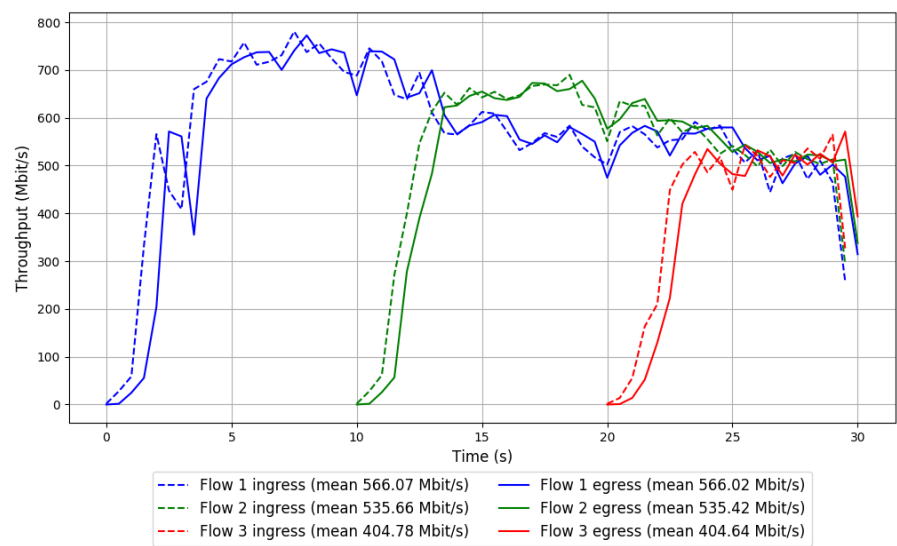
Run 4: Report of Indigo-MusesD — Data Link

```
Run 5: Statistics of Indigo-MusesD

Start at: 2018-12-12 12:13:05
End at: 2018-12-12 12:13:35
Local clock offset: -0.331 ms
Remote clock offset: -1.43 ms


# Below is generated by plot.py at 2018-12-12 14:12:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1053.55 Mbit/s
95th percentile per-packet one-way delay: 82.473 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 566.02 Mbit/s
95th percentile per-packet one-way delay: 87.003 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 535.42 Mbit/s
95th percentile per-packet one-way delay: 73.772 ms
Loss rate: 0.04%
-- Flow 3:
Average throughput: 404.64 Mbit/s
95th percentile per-packet one-way delay: 84.350 ms
Loss rate: 0.06%
```

Run 5: Report of Indigo-MusesD — Data Link
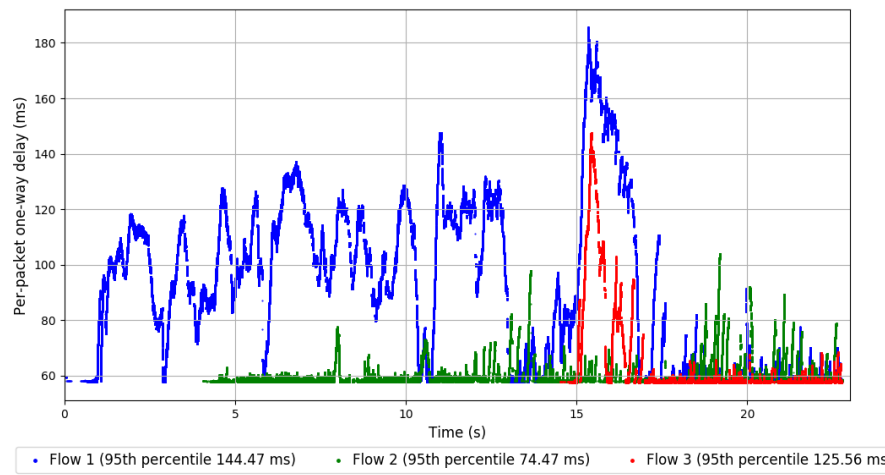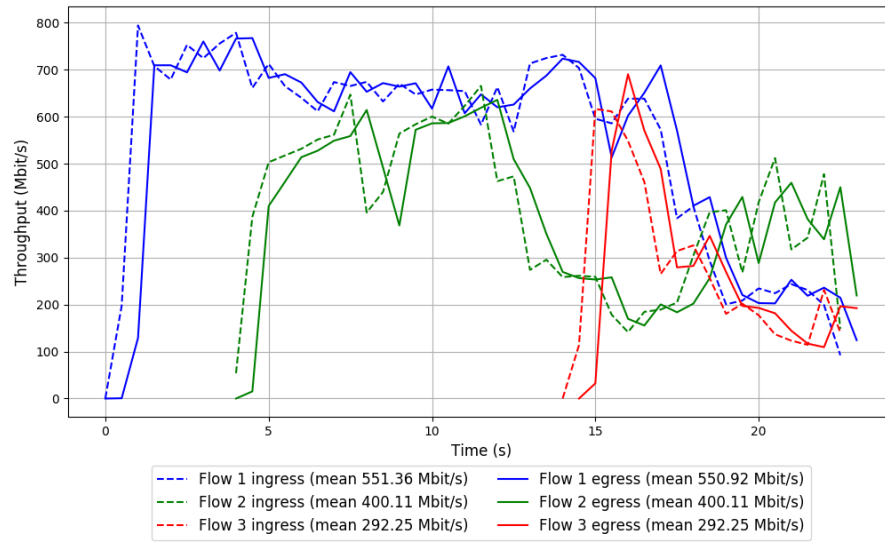

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Run 1: Statistics of Indigo-MusesT

Start at: 2018-12-12 09:44:07
End at: 2018-12-12 09:44:37
Local clock offset: 0.352 ms
Remote clock offset: 1.127 ms

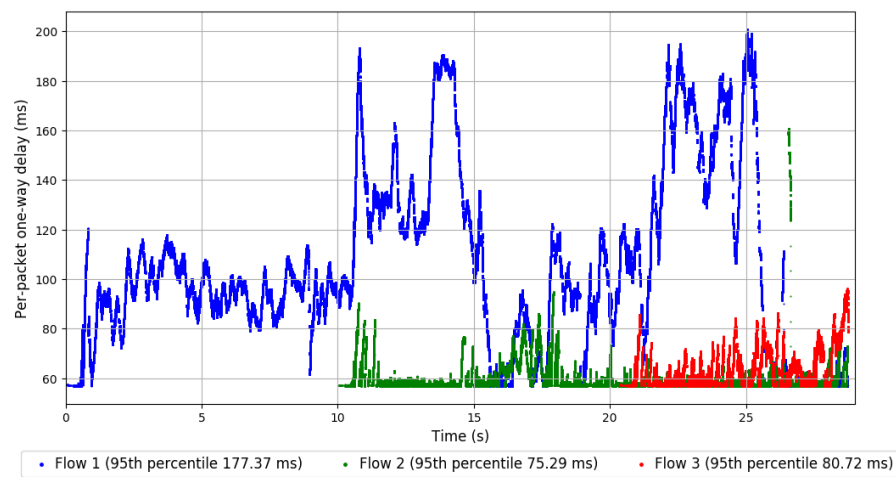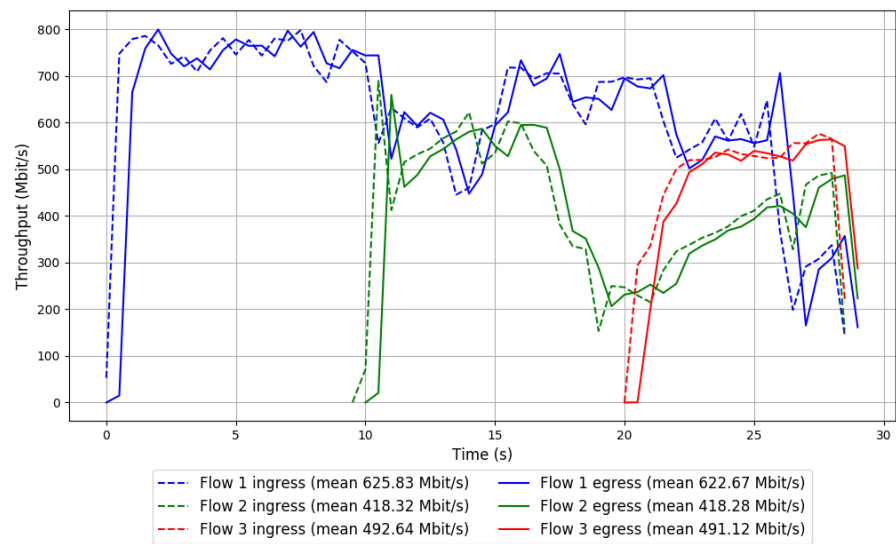Run 1: Report of Indigo-MusesT — Data Link

```
Run 2: Statistics of Indigo-MusesT

Start at: 2018-12-12 10:17:37
End at: 2018-12-12 10:18:07
Local clock offset: -0.118 ms
Remote clock offset: -0.165 ms


# Below is generated by plot.py at 2018-12-12 14:12:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1037.60 Mbit/s
95th percentile per-packet one-way delay: 164.853 ms
Loss rate: 0.34%
-- Flow 1:
Average throughput: 622.67 Mbit/s
95th percentile per-packet one-way delay: 177.369 ms
Loss rate: 0.49%
-- Flow 2:
Average throughput: 418.28 Mbit/s
95th percentile per-packet one-way delay: 75.287 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 491.12 Mbit/s
95th percentile per-packet one-way delay: 80.717 ms
Loss rate: 0.31%
```
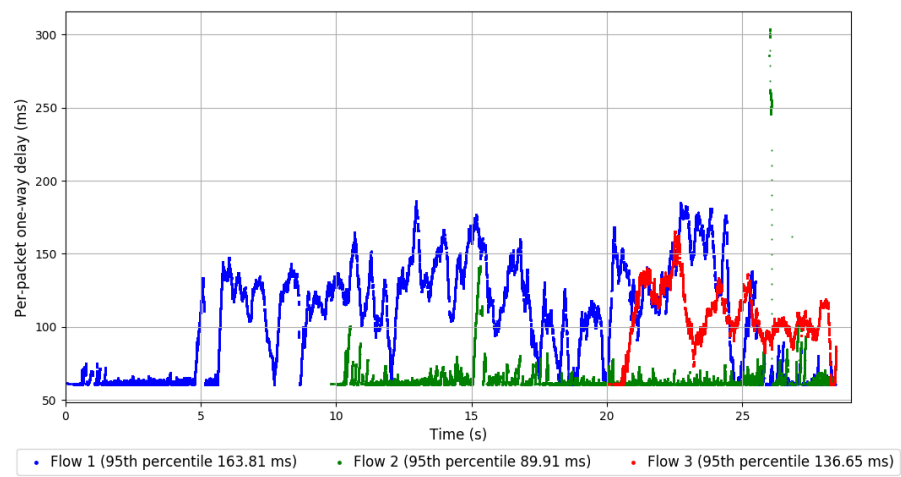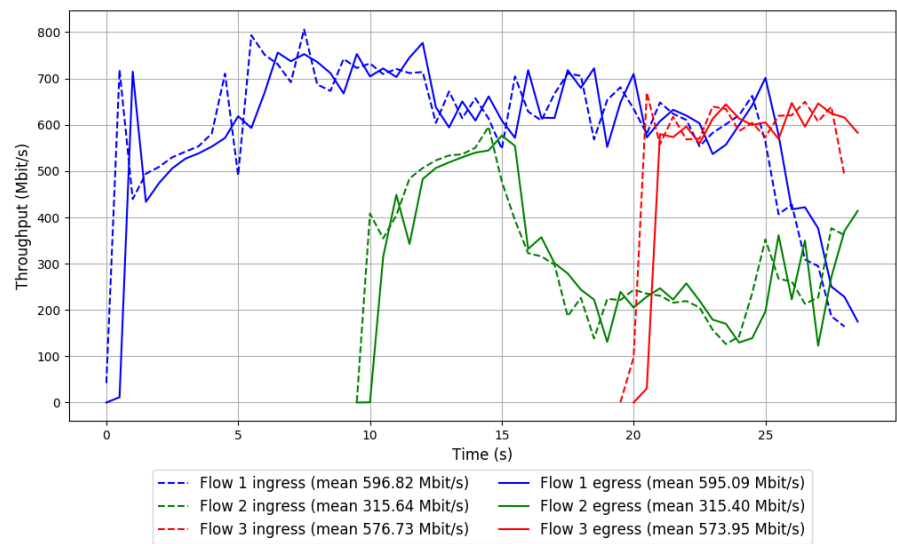
Run 2: Report of Indigo-MusesT — Data Link

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```
Run 3: Statistics of Indigo-MusesT

Start at: 2018-12-12 10:51:46
End at: 2018-12-12 10:52:16
Local clock offset: -0.549 ms
Remote clock offset: -0.246 ms


# Below is generated by plot.py at 2018-12-12 14:12:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 972.97 Mbit/s
95th percentile per-packet one-way delay: 156.230 ms
Loss rate: 0.27%
-- Flow 1:
Average throughput: 595.09 Mbit/s
95th percentile per-packet one-way delay: 163.810 ms
Loss rate: 0.29%
-- Flow 2:
Average throughput: 315.40 Mbit/s
95th percentile per-packet one-way delay: 89.905 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 573.95 Mbit/s
95th percentile per-packet one-way delay: 136.652 ms
Loss rate: 0.50%
```
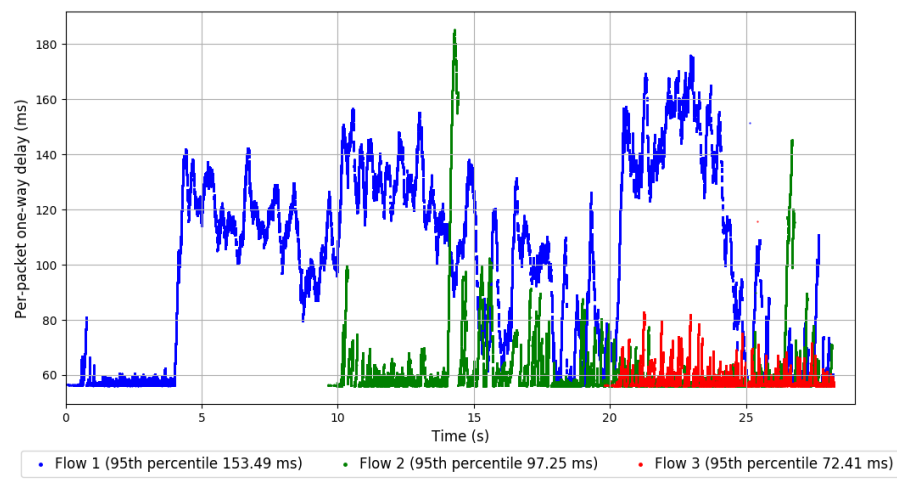
Run 3: Report of Indigo-MusesT — Data Link

Flow 1 ingress (mean 596.82 Mbit/s) --- Flow 1 egress (mean 595.09 Mbit/s)
Flow 2 ingress (mean 315.64 Mbit/s) --- Flow 2 egress (mean 315.40 Mbit/s)
Flow 3 ingress (mean 576.73 Mbit/s) --- Flow 3 egress (mean 573.95 Mbit/s)

Flow 1 (95th percentile 163.81 ms) • Flow 2 (95th percentile 89.91 ms) • Flow 3 (95th percentile 136.65 ms)
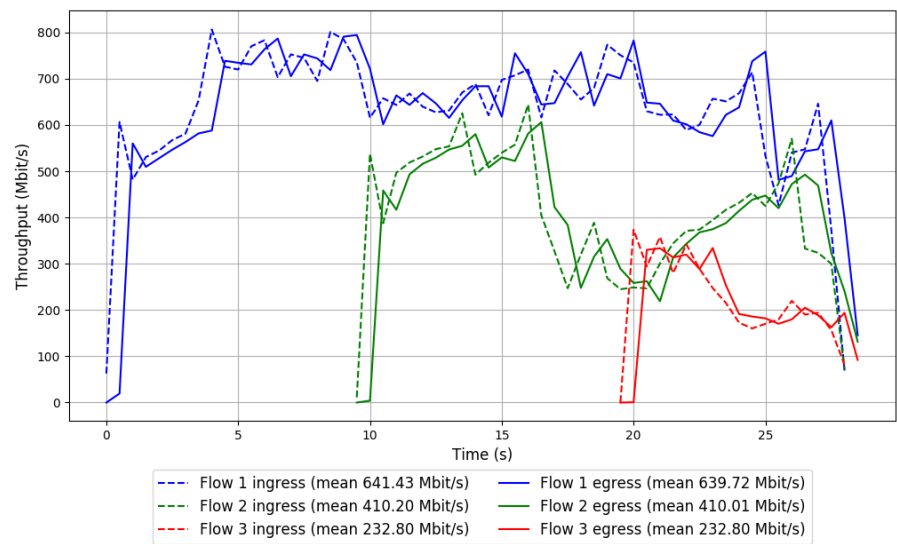
```
Run 4: Statistics of Indigo-MusesT

Start at: 2018-12-12 11:26:27
End at: 2018-12-12 11:26:57
Local clock offset: -0.355 ms
Remote clock offset: -1.502 ms


# Below is generated by plot.py at 2018-12-12 14:15:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 979.76 Mbit/s
95th percentile per-packet one-way delay: 148.683 ms
Loss rate: 0.19%
-- Flow 1:
Average throughput: 639.72 Mbit/s
95th percentile per-packet one-way delay: 153.493 ms
Loss rate: 0.27%
-- Flow 2:
Average throughput: 410.01 Mbit/s
95th percentile per-packet one-way delay: 97.255 ms
Loss rate: 0.05%
-- Flow 3:
Average throughput: 232.80 Mbit/s
95th percentile per-packet one-way delay: 72.405 ms
Loss rate: 0.00%
```

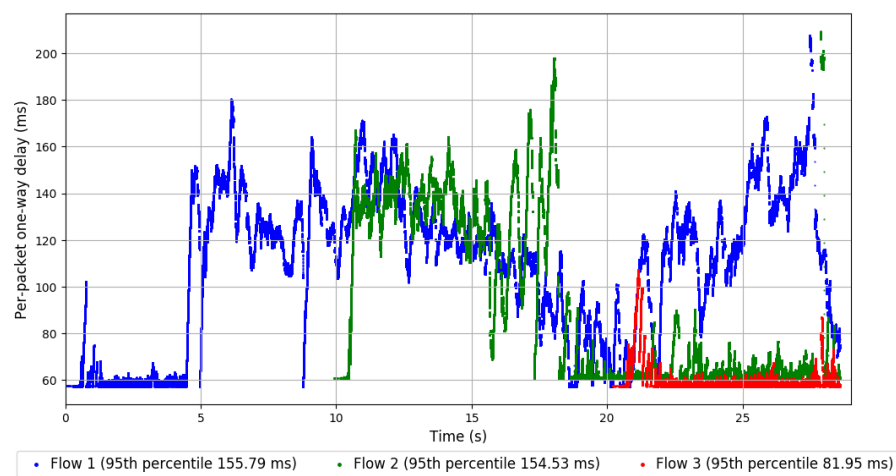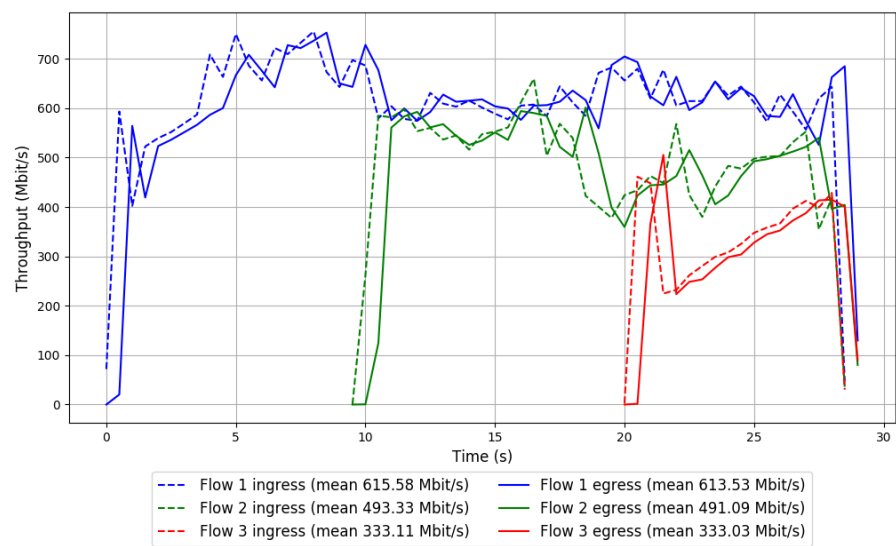Run 4: Report of Indigo-MusesT — Data Link

```
Run 5: Statistics of Indigo-MusesT

Start at: 2018-12-12 12:01:44
End at: 2018-12-12 12:02:14
Local clock offset: -0.26 ms
Remote clock offset: -0.209 ms


# Below is generated by plot.py at 2018-12-12 14:16:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1032.48 Mbit/s
95th percentile per-packet one-way delay: 154.415 ms
Loss rate: 0.34%
-- Flow 1:
Average throughput: 613.53 Mbit/s
95th percentile per-packet one-way delay: 155.786 ms
Loss rate: 0.32%
-- Flow 2:
Average throughput: 491.09 Mbit/s
95th percentile per-packet one-way delay: 154.528 ms
Loss rate: 0.47%
-- Flow 3:
Average throughput: 333.03 Mbit/s
95th percentile per-packet one-way delay: 81.950 ms
Loss rate: 0.02%
```
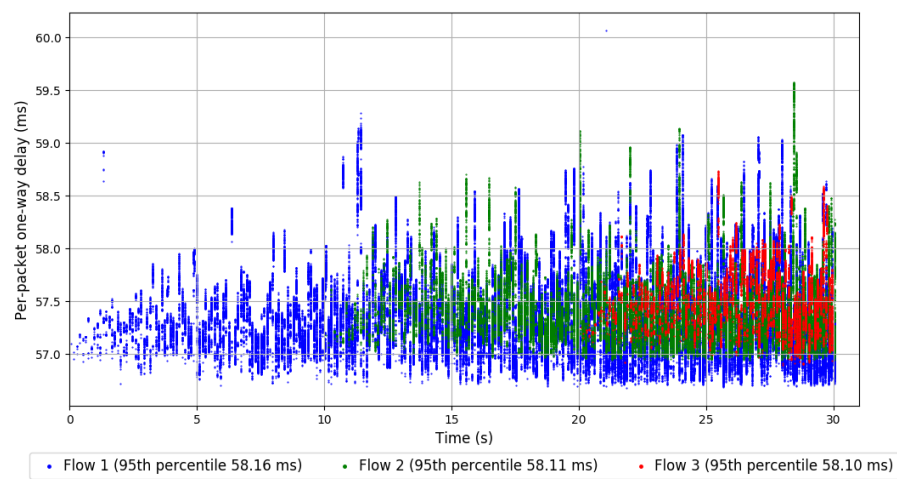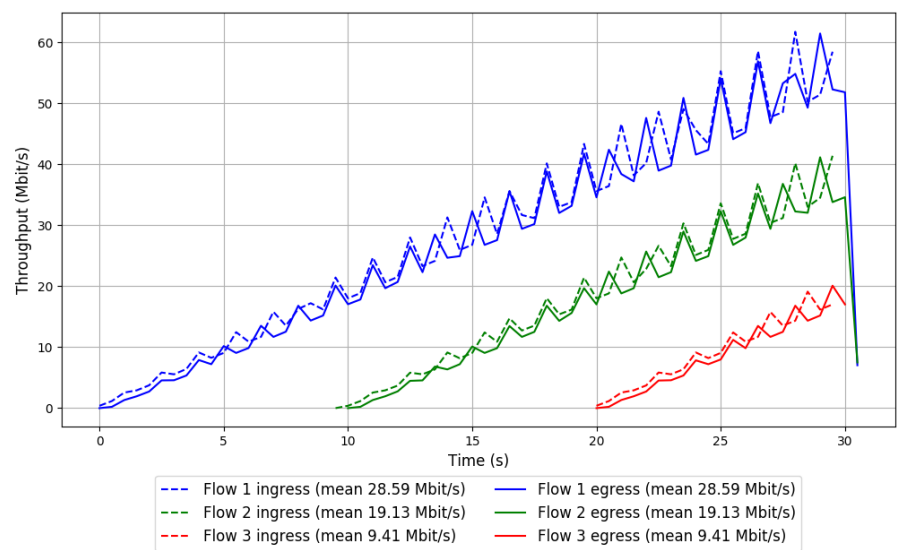
Run 5: Report of Indigo-MusesT — Data Link

Flow 1 ingress (mean 615.58 Mbit/s) — — — Flow 1 egress (mean 613.53 Mbit/s)
Flow 2 ingress (mean 493.33 Mbit/s) — — — Flow 2 egress (mean 491.09 Mbit/s)
Flow 3 ingress (mean 333.11 Mbit/s) — — — Flow 3 egress (mean 333.03 Mbit/s)

Flow 1 (95th percentile 155.79 ms)   •   Flow 2 (95th percentile 154.53 ms)   •   Flow 3 (95th percentile 81.95 ms)

```
Run 1: Statistics of LEDBAT

Start at: 2018-12-12 09:42:50
End at: 2018-12-12 09:43:20
Local clock offset: -0.133 ms
Remote clock offset: -0.173 ms


# Below is generated by plot.py at 2018-12-12 14:16:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 44.44 Mbit/s
95th percentile per-packet one-way delay: 58.145 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 28.59 Mbit/s
95th percentile per-packet one-way delay: 58.158 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 19.13 Mbit/s
95th percentile per-packet one-way delay: 58.111 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 9.41 Mbit/s
95th percentile per-packet one-way delay: 58.105 ms
Loss rate: 0.00%
```
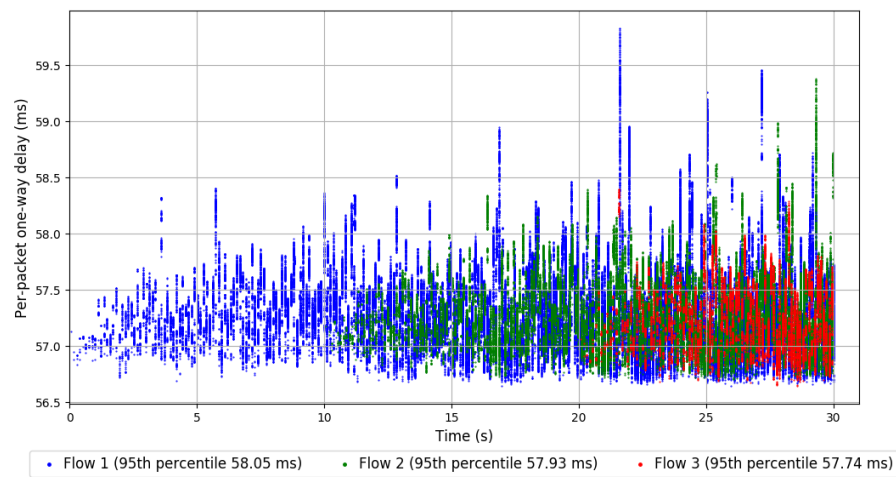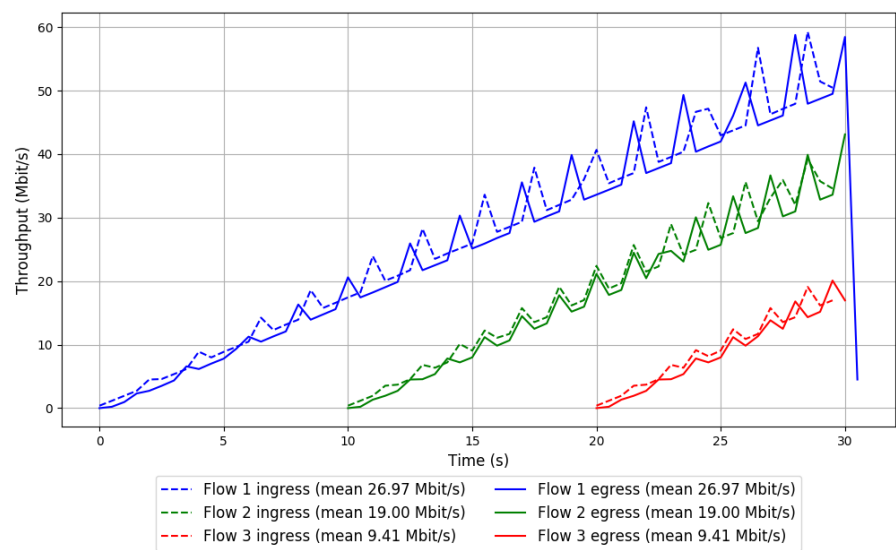
Run 1: Report of LEDBAT — Data Link

```
Run 2: Statistics of LEDBAT

Start at: 2018-12-12 10:16:20
End at: 2018-12-12 10:16:50
Local clock offset: 0.174 ms
Remote clock offset: -0.073 ms


# Below is generated by plot.py at 2018-12-12 14:16:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 42.70 Mbit/s
95th percentile per-packet one-way delay: 57.980 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 26.97 Mbit/s
95th percentile per-packet one-way delay: 58.049 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 19.00 Mbit/s
95th percentile per-packet one-way delay: 57.931 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 9.41 Mbit/s
95th percentile per-packet one-way delay: 57.739 ms
Loss rate: 0.00%
```

Run 2: Report of LEDBAT — Data Link

```
Run 3: Statistics of LEDBAT

Start at: 2018-12-12 10:50:29
End at: 2018-12-12 10:50:59
Local clock offset: -0.12 ms
Remote clock offset: 0.121 ms


# Below is generated by plot.py at 2018-12-12 14:16:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 43.49 Mbit/s
95th percentile per-packet one-way delay: 61.530 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 28.50 Mbit/s
95th percentile per-packet one-way delay: 58.927 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 17.92 Mbit/s
95th percentile per-packet one-way delay: 62.190 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 9.29 Mbit/s
95th percentile per-packet one-way delay: 58.068 ms
Loss rate: 0.00%
```
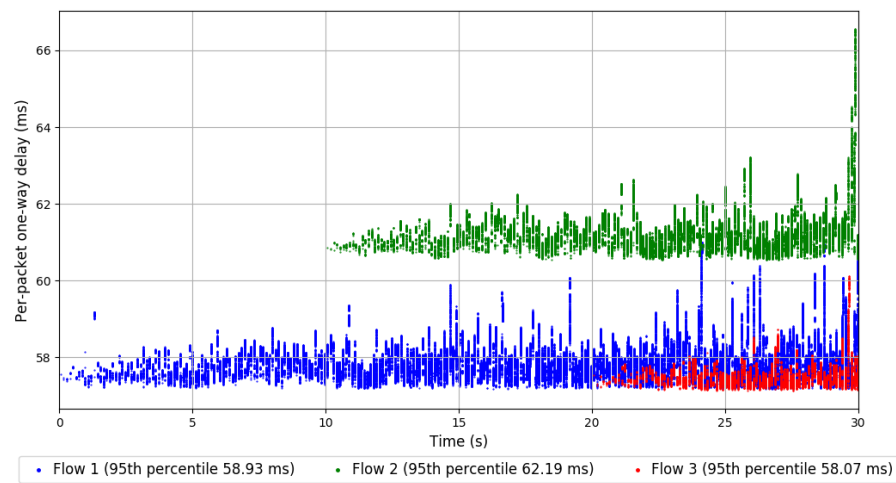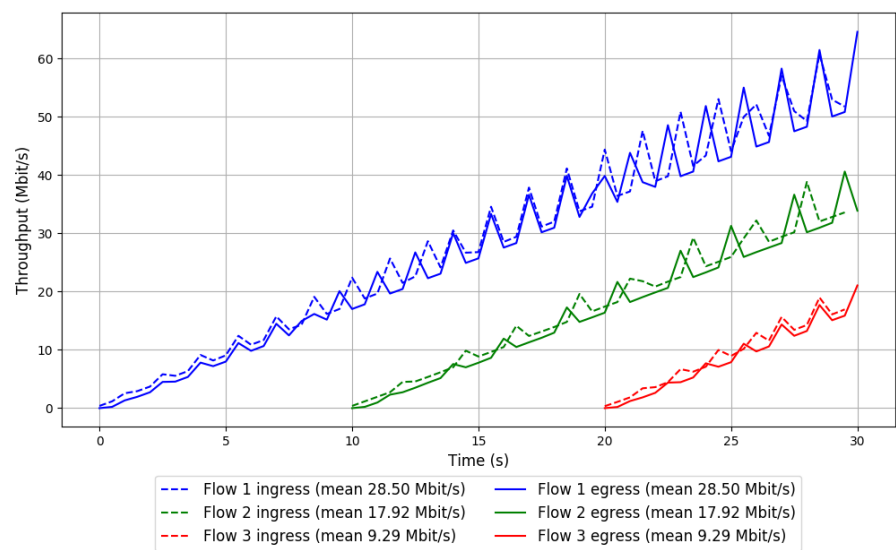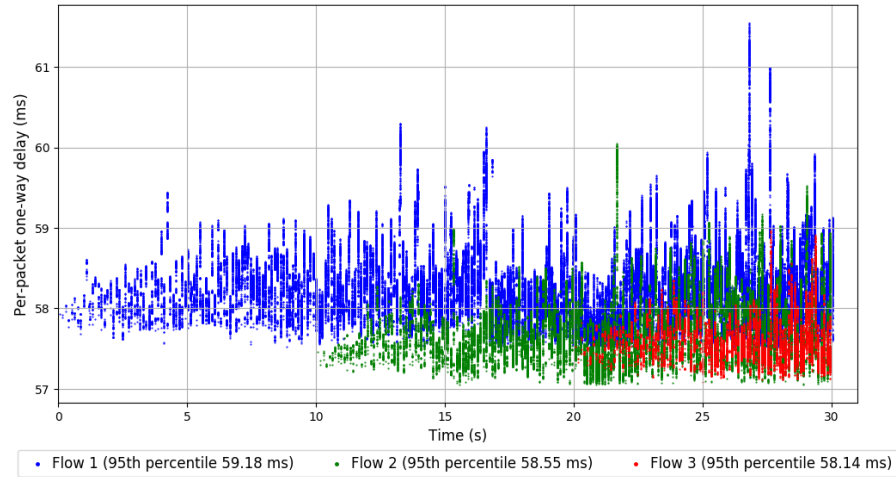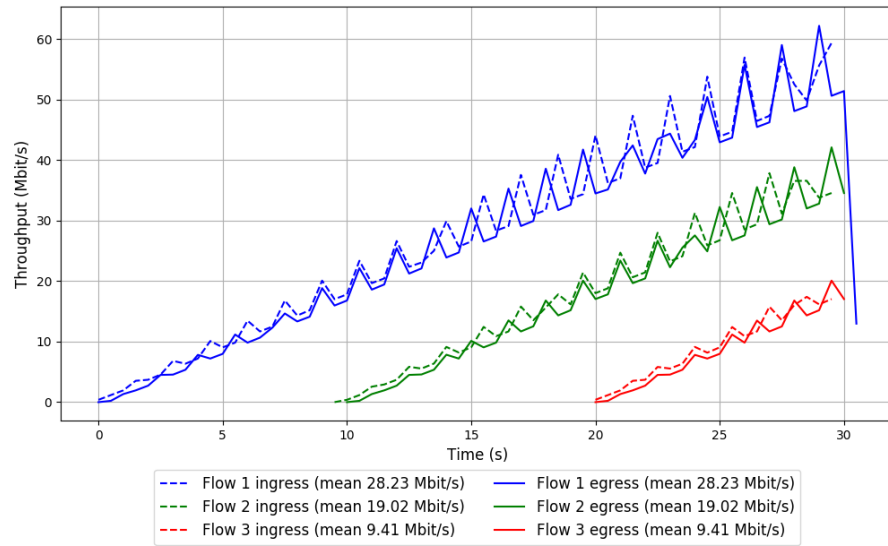
Run 3: Report of LEDBAT — Data Link

Flow 1 ingress (mean 28.50 Mbit/s) — Flow 1 egress (mean 28.50 Mbit/s)
Flow 2 ingress (mean 17.92 Mbit/s) — Flow 2 egress (mean 17.92 Mbit/s)
Flow 3 ingress (mean 9.29 Mbit/s) — Flow 3 egress (mean 9.29 Mbit/s)

Flow 1 (95th percentile 58.93 ms)   Flow 2 (95th percentile 62.19 ms)   Flow 3 (95th percentile 58.07 ms)

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```
Run 4: Statistics of LEDBAT

Start at: 2018-12-12 11:25:09
End at: 2018-12-12 11:25:39
Local clock offset: -0.371 ms
Remote clock offset: -0.159 ms


# Below is generated by plot.py at 2018-12-12 14:16:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 43.95 Mbit/s
95th percentile per-packet one-way delay: 59.022 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 28.23 Mbit/s
95th percentile per-packet one-way delay: 59.177 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 19.02 Mbit/s
95th percentile per-packet one-way delay: 58.555 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 9.41 Mbit/s
95th percentile per-packet one-way delay: 58.143 ms
Loss rate: 0.00%
```

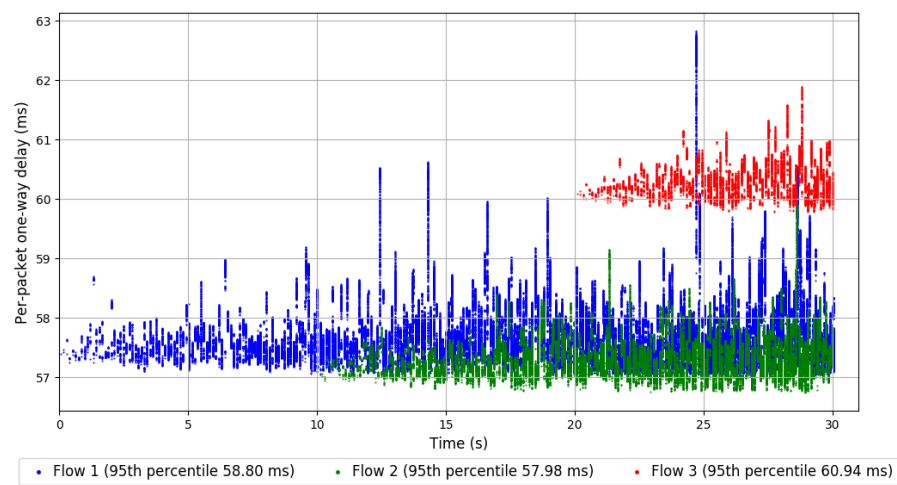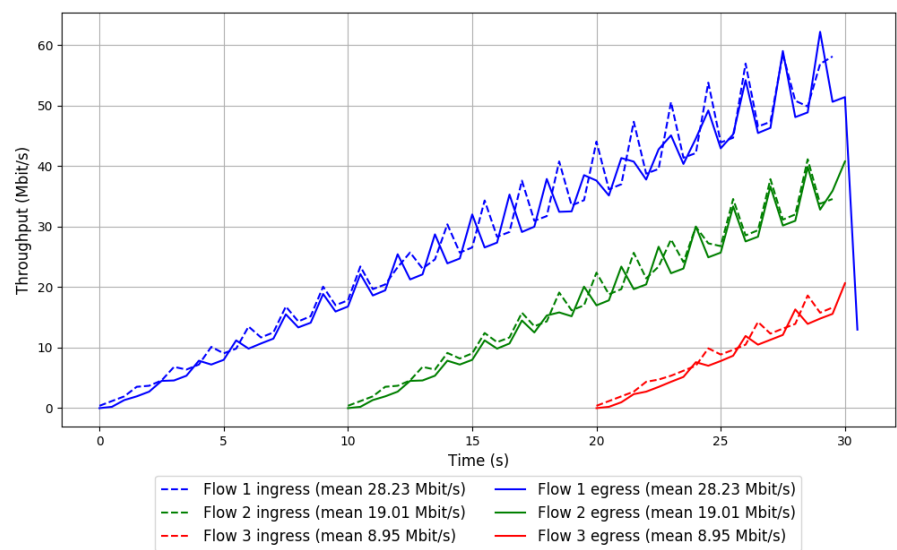Run 4: Report of LEDBAT — Data Link

```
Run 5: Statistics of LEDBAT

Start at: 2018-12-12 12:00:26
End at: 2018-12-12 12:00:56
Local clock offset: 0.14 ms
Remote clock offset: -0.132 ms


# Below is generated by plot.py at 2018-12-12 14:16:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 43.81 Mbit/s
95th percentile per-packet one-way delay: 60.186 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 28.23 Mbit/s
95th percentile per-packet one-way delay: 58.802 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 19.01 Mbit/s
95th percentile per-packet one-way delay: 57.977 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 8.95 Mbit/s
95th percentile per-packet one-way delay: 60.935 ms
Loss rate: 0.00%
```
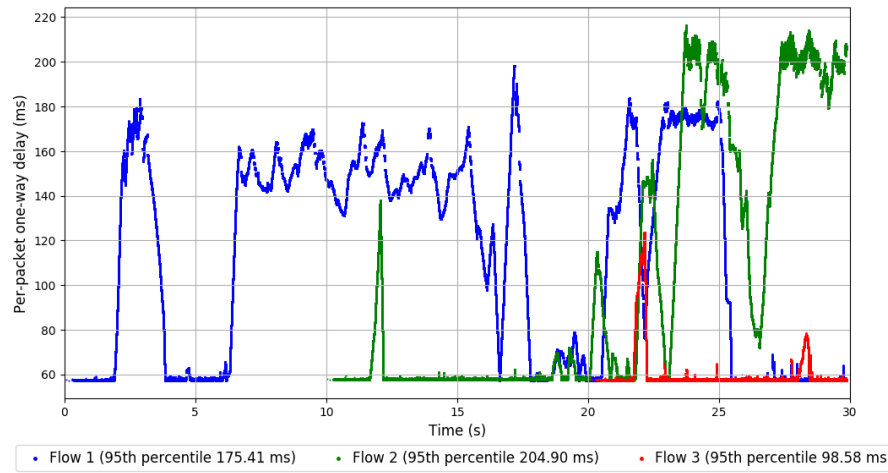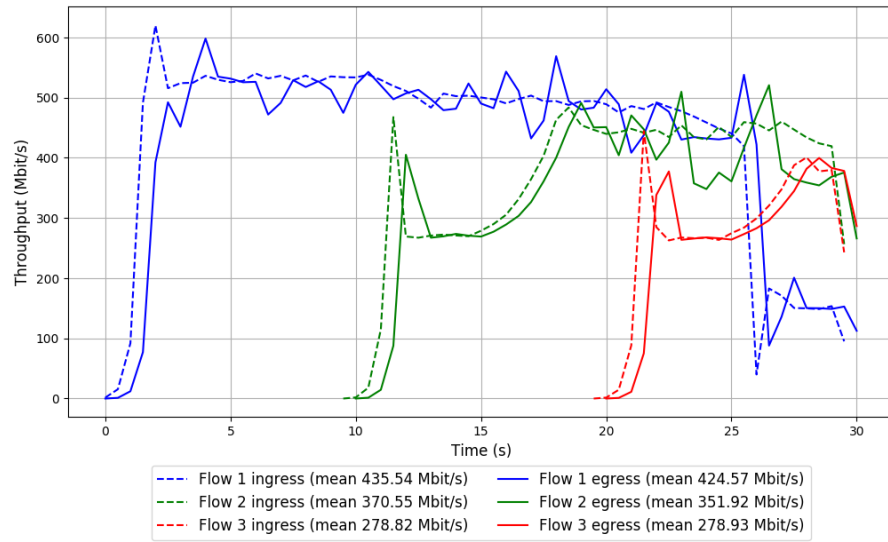
Run 5: Report of LEDBAT — Data Link

```
Run 1: Statistics of PCC-Allegro

Start at: 2018-12-12 09:34:02
End at: 2018-12-12 09:34:32
Local clock offset: -0.523 ms
Remote clock offset: -0.304 ms


# Below is generated by plot.py at 2018-12-12 14:38:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 750.64 Mbit/s
95th percentile per-packet one-way delay: 196.447 ms
Loss rate: 3.02%
-- Flow 1:
Average throughput: 424.57 Mbit/s
95th percentile per-packet one-way delay: 175.414 ms
Loss rate: 2.52%
-- Flow 2:
Average throughput: 351.92 Mbit/s
95th percentile per-packet one-way delay: 204.904 ms
Loss rate: 5.02%
-- Flow 3:
Average throughput: 278.93 Mbit/s
95th percentile per-packet one-way delay: 98.583 ms
Loss rate: 0.00%
```

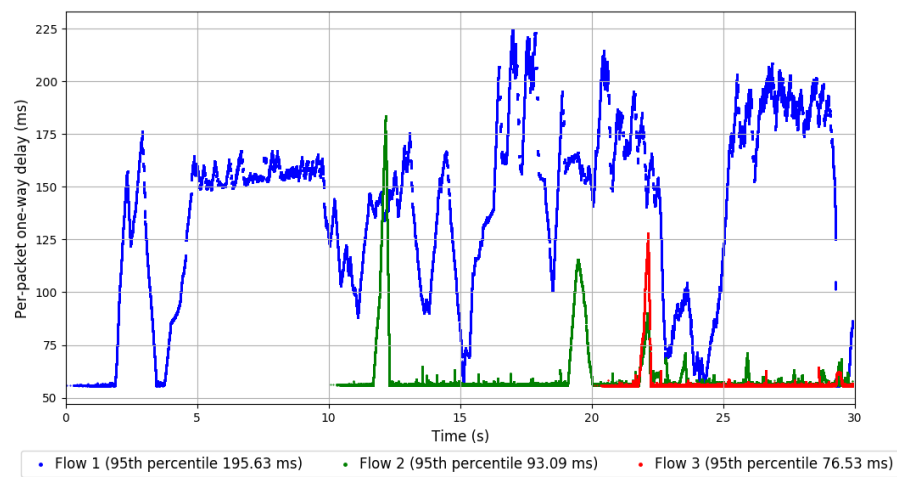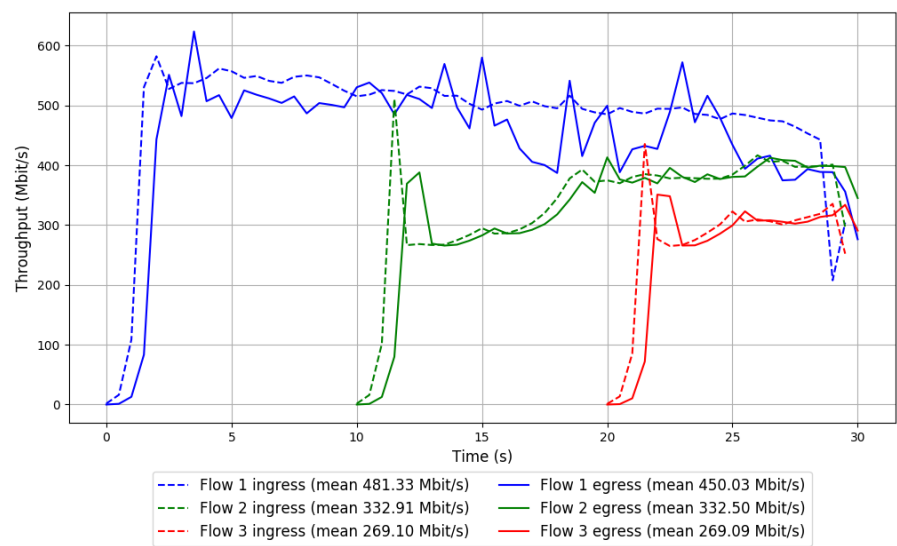Run 1: Report of PCC-Allegro — Data Link

```
Run 2: Statistics of PCC-Allegro

Start at: 2018-12-12 10:07:25
End at: 2018-12-12 10:07:55
Local clock offset: -0.057 ms
Remote clock offset: -1.396 ms


# Below is generated by plot.py at 2018-12-12 14:39:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 759.43 Mbit/s
95th percentile per-packet one-way delay: 190.020 ms
Loss rate: 4.00%
-- Flow 1:
Average throughput: 450.03 Mbit/s
95th percentile per-packet one-way delay: 195.631 ms
Loss rate: 6.51%
-- Flow 2:
Average throughput: 332.50 Mbit/s
95th percentile per-packet one-way delay: 93.090 ms
Loss rate: 0.12%
-- Flow 3:
Average throughput: 269.09 Mbit/s
95th percentile per-packet one-way delay: 76.532 ms
Loss rate: 0.01%
```

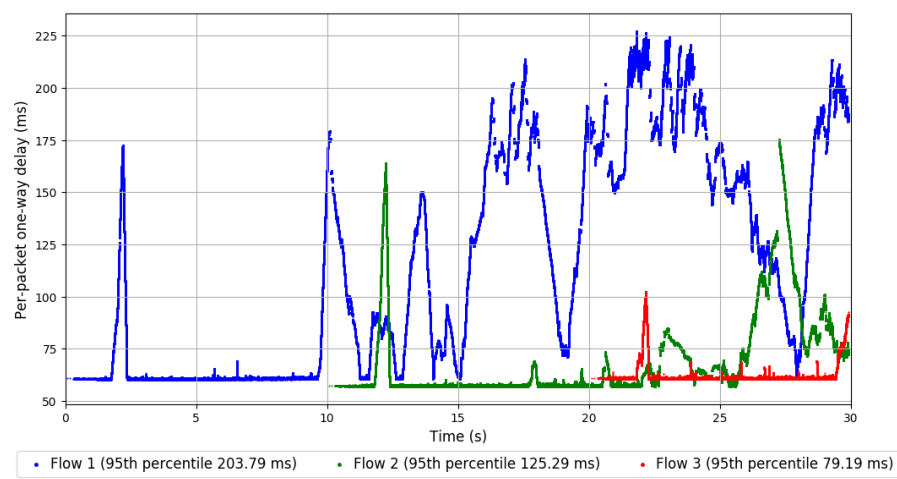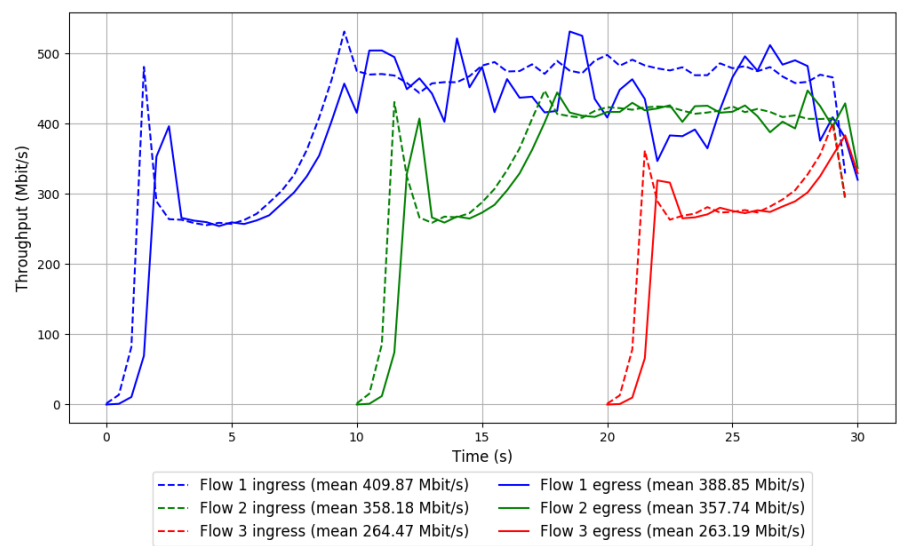Run 2: Report of PCC-Allegro — Data Link

```
Run 3: Statistics of PCC-Allegro

Start at: 2018-12-12 10:41:16
End at: 2018-12-12 10:41:46
Local clock offset: -0.155 ms
Remote clock offset: -0.009 ms


# Below is generated by plot.py at 2018-12-12 14:39:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 713.16 Mbit/s
95th percentile per-packet one-way delay: 192.318 ms
Loss rate: 2.96%
-- Flow 1:
Average throughput: 388.85 Mbit/s
95th percentile per-packet one-way delay: 203.791 ms
Loss rate: 5.14%
-- Flow 2:
Average throughput: 357.74 Mbit/s
95th percentile per-packet one-way delay: 125.289 ms
Loss rate: 0.12%
-- Flow 3:
Average throughput: 263.19 Mbit/s
95th percentile per-packet one-way delay: 79.194 ms
Loss rate: 0.50%
```
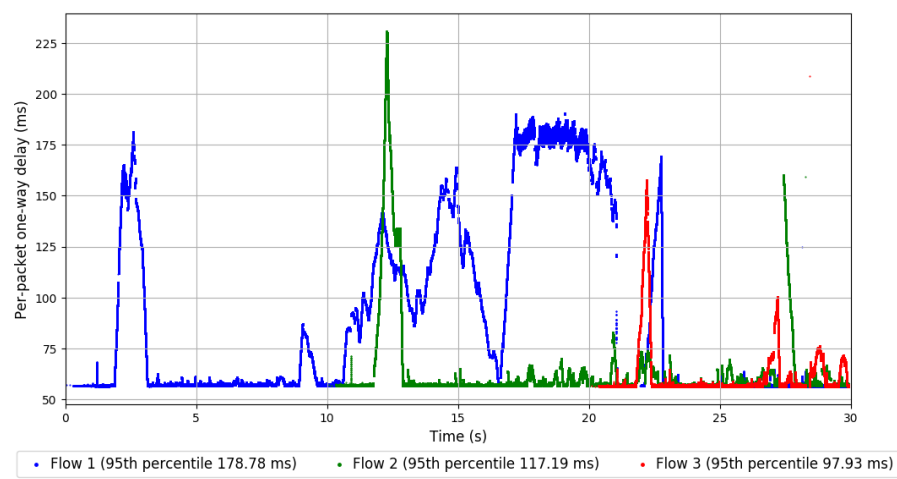
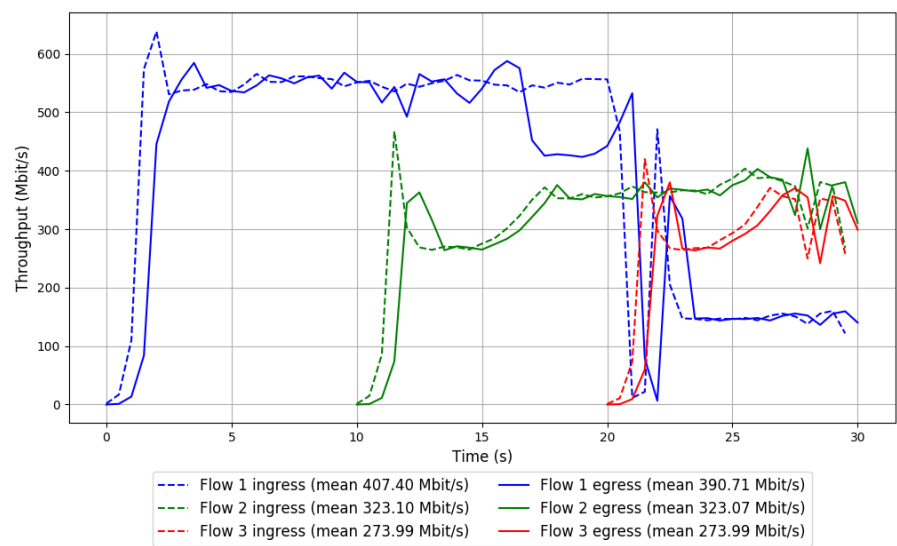Run 3: Report of PCC-Allegro — Data Link

```
Run 4: Statistics of PCC-Allegro

Start at: 2018-12-12 11:15:38
End at: 2018-12-12 11:16:08
Local clock offset: -0.316 ms
Remote clock offset: -0.786 ms


# Below is generated by plot.py at 2018-12-12 14:39:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 695.46 Mbit/s
95th percentile per-packet one-way delay: 175.241 ms
Loss rate: 2.35%
-- Flow 1:
Average throughput: 390.71 Mbit/s
95th percentile per-packet one-way delay: 178.776 ms
Loss rate: 4.10%
-- Flow 2:
Average throughput: 323.07 Mbit/s
95th percentile per-packet one-way delay: 117.188 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 273.99 Mbit/s
95th percentile per-packet one-way delay: 97.927 ms
Loss rate: 0.00%
```

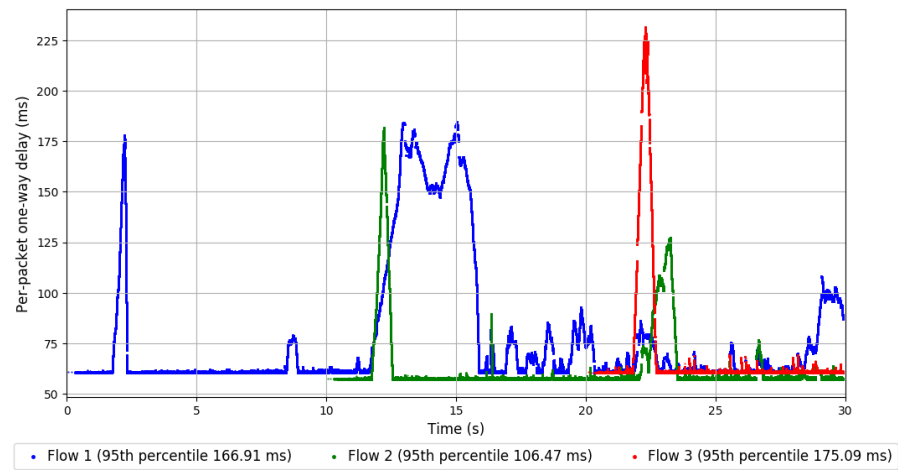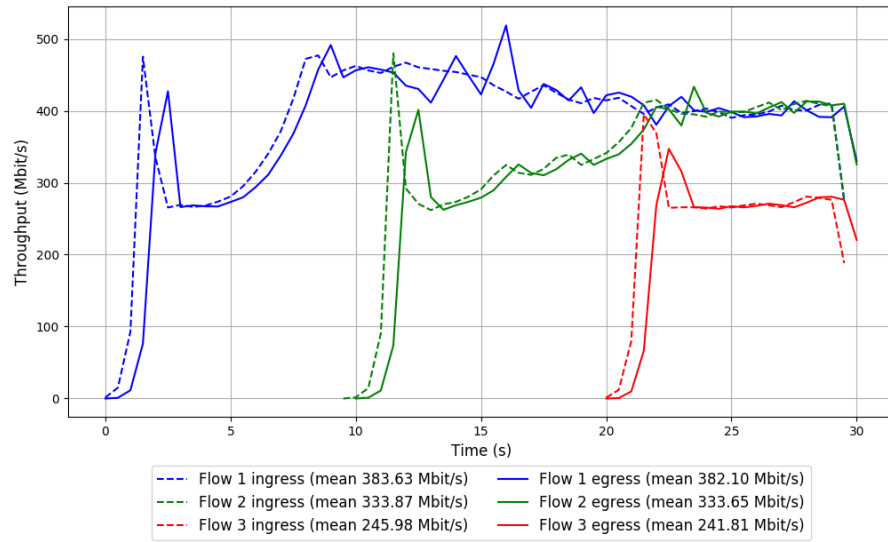Run 4: Report of PCC-Allegro — Data Link

```
Run 5: Statistics of PCC-Allegro

Start at: 2018-12-12 11:50:25
End at: 2018-12-12 11:50:55
Local clock offset: -0.353 ms
Remote clock offset: -0.286 ms


# Below is generated by plot.py at 2018-12-12 14:39:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 683.47 Mbit/s
95th percentile per-packet one-way delay: 160.283 ms
Loss rate: 0.45%
-- Flow 1:
Average throughput: 382.10 Mbit/s
95th percentile per-packet one-way delay: 166.913 ms
Loss rate: 0.41%
-- Flow 2:
Average throughput: 333.65 Mbit/s
95th percentile per-packet one-way delay: 106.466 ms
Loss rate: 0.06%
-- Flow 3:
Average throughput: 241.81 Mbit/s
95th percentile per-packet one-way delay: 175.085 ms
Loss rate: 1.72%
```

Run 5: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 383.63 Mbit/s) — — — Flow 1 egress (mean 382.10 Mbit/s)
Flow 2 ingress (mean 333.87 Mbit/s) — — — Flow 2 egress (mean 333.65 Mbit/s)
Flow 3 ingress (mean 245.98 Mbit/s) — — — Flow 3 egress (mean 241.81 Mbit/s)

Flow 1 (95th percentile 166.91 ms) • Flow 2 (95th percentile 106.47 ms) • Flow 3 (95th percentile 175.09 ms)
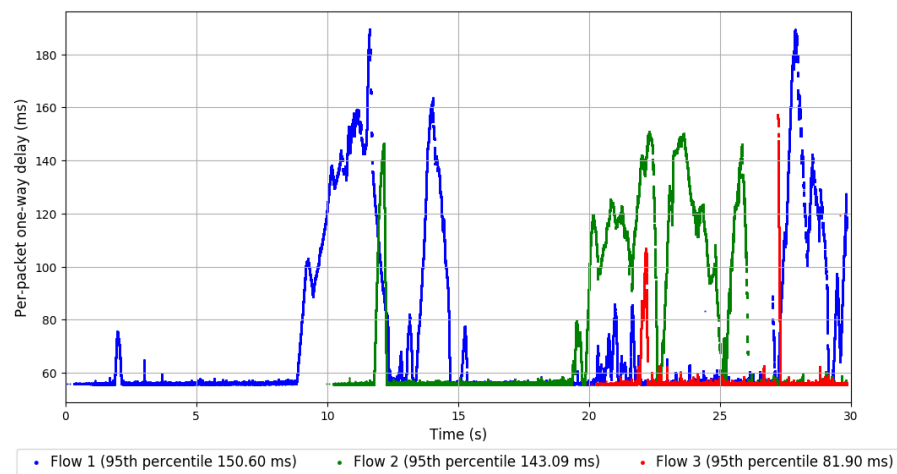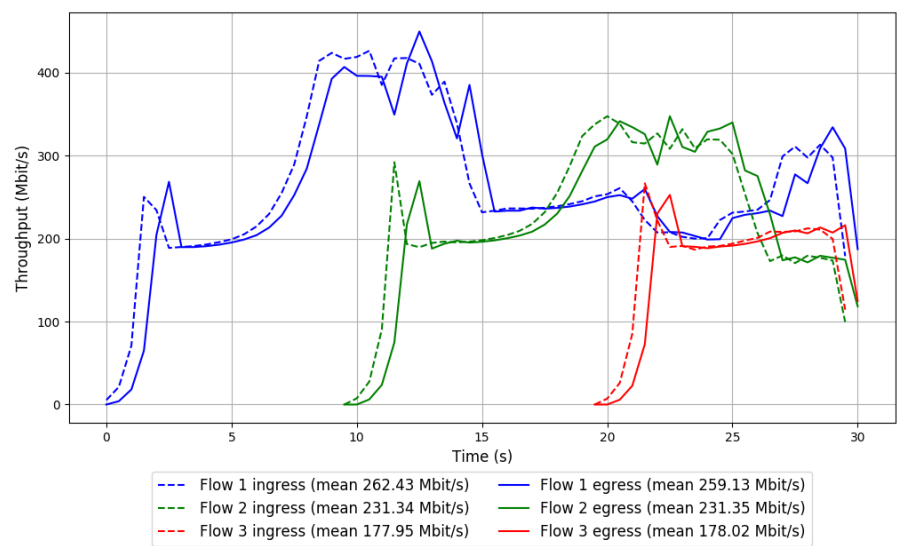
```
Run 1: Statistics of PCC-Expr

Start at: 2018-12-12 09:50:13
End at: 2018-12-12 09:50:43
Local clock offset: -0.047 ms
Remote clock offset: -1.371 ms


# Below is generated by plot.py at 2018-12-12 14:39:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 472.43 Mbit/s
95th percentile per-packet one-way delay: 144.578 ms
Loss rate: 0.69%
-- Flow 1:
Average throughput: 259.13 Mbit/s
95th percentile per-packet one-way delay: 150.601 ms
Loss rate: 1.25%
-- Flow 2:
Average throughput: 231.35 Mbit/s
95th percentile per-packet one-way delay: 143.088 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 178.02 Mbit/s
95th percentile per-packet one-way delay: 81.902 ms
Loss rate: 0.01%
```
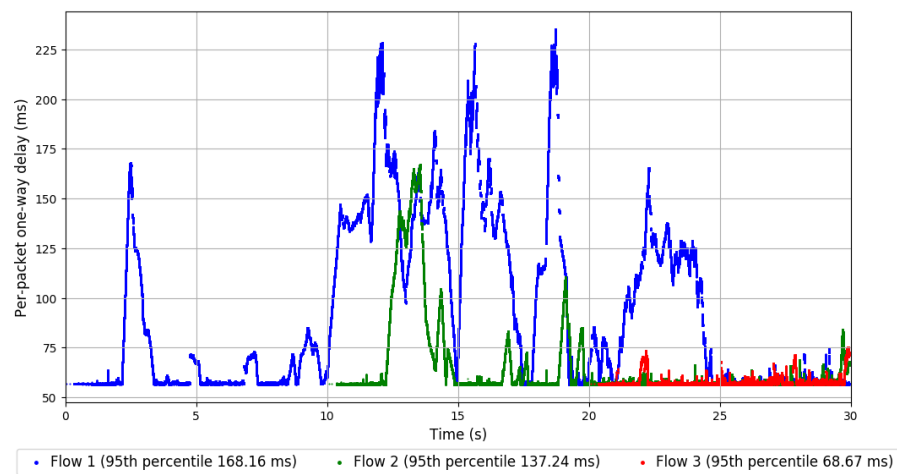
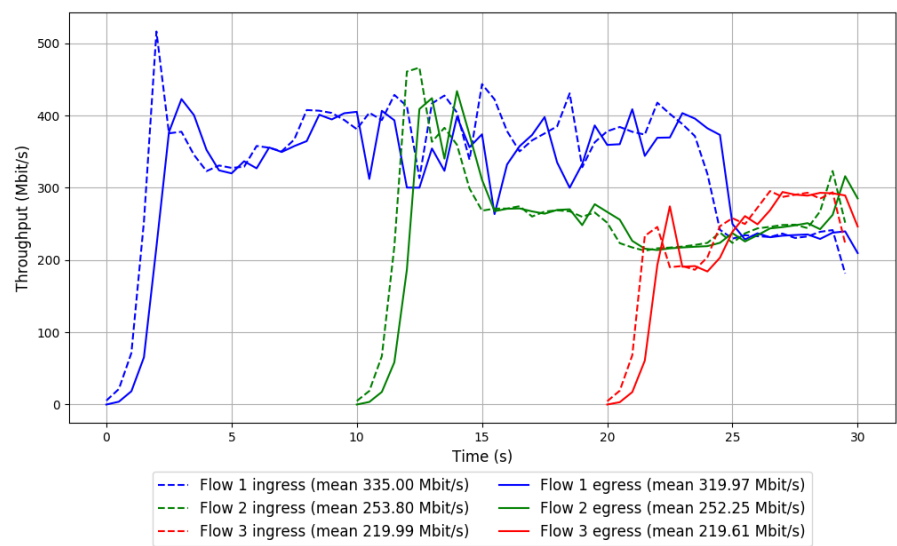Run 1: Report of PCC-Expr — Data Link

```
Run 2: Statistics of PCC-Expr

Start at: 2018-12-12 10:23:45
End at: 2018-12-12 10:24:15
Local clock offset: 0.324 ms
Remote clock offset: -0.023 ms

# Below is generated by plot.py at 2018-12-12 14:39:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 560.13 Mbit/s
95th percentile per-packet one-way delay: 157.519 ms
Loss rate: 2.81%
-- Flow 1:
Average throughput: 319.97 Mbit/s
95th percentile per-packet one-way delay: 168.164 ms
Loss rate: 4.49%
-- Flow 2:
Average throughput: 252.25 Mbit/s
95th percentile per-packet one-way delay: 137.238 ms
Loss rate: 0.60%
-- Flow 3:
Average throughput: 219.61 Mbit/s
95th percentile per-packet one-way delay: 68.675 ms
Loss rate: 0.16%
```
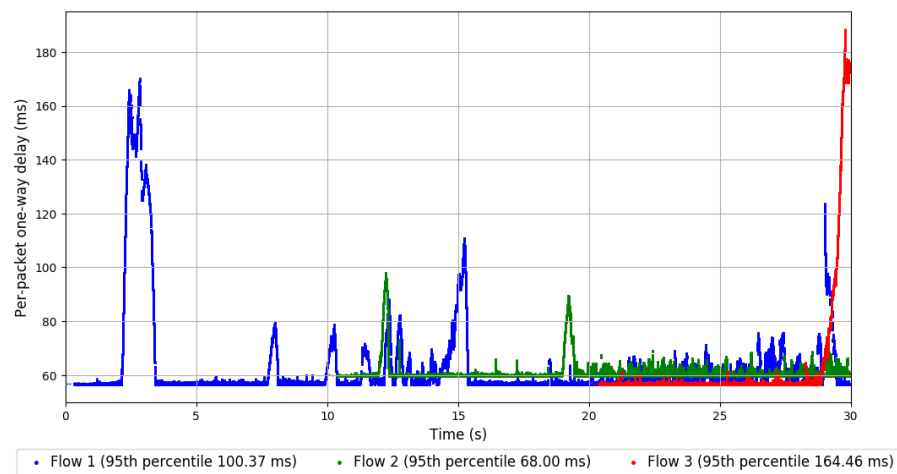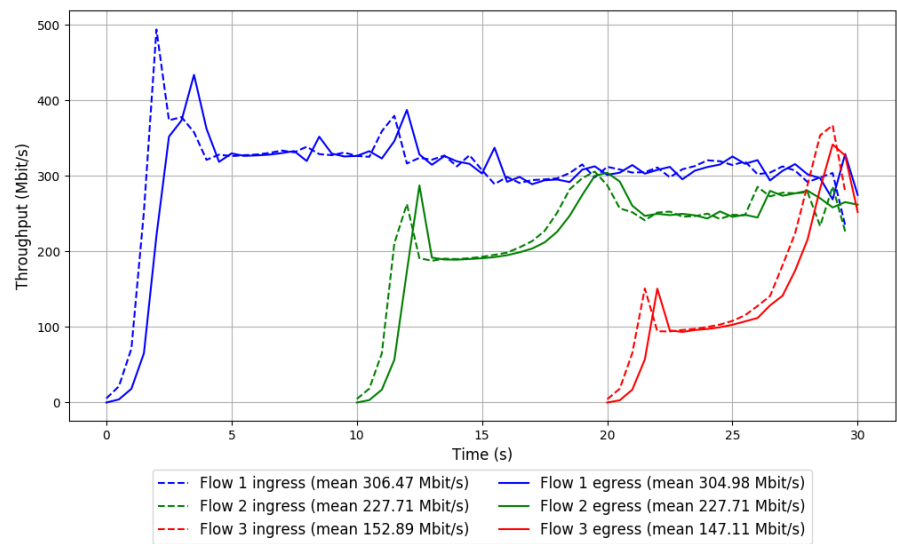
Run 2: Report of PCC-Expr — Data Link

```
Run 3: Statistics of PCC-Expr

Start at: 2018-12-12 10:58:15
End at: 2018-12-12 10:58:45
Local clock offset: 0.301 ms
Remote clock offset: -0.115 ms


# Below is generated by plot.py at 2018-12-12 14:39:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 504.84 Mbit/s
95th percentile per-packet one-way delay: 93.796 ms
Loss rate: 0.67%
-- Flow 1:
Average throughput: 304.98 Mbit/s
95th percentile per-packet one-way delay: 100.367 ms
Loss rate: 0.49%
-- Flow 2:
Average throughput: 227.71 Mbit/s
95th percentile per-packet one-way delay: 67.998 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 147.11 Mbit/s
95th percentile per-packet one-way delay: 164.458 ms
Loss rate: 3.80%
```

Run 3: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 306.47 Mbit/s) --- Flow 1 egress (mean 304.98 Mbit/s)
Flow 2 ingress (mean 227.71 Mbit/s) --- Flow 2 egress (mean 227.71 Mbit/s)
Flow 3 ingress (mean 152.89 Mbit/s) --- Flow 3 egress (mean 147.11 Mbit/s)

Flow 1 (95th percentile 100.37 ms)   Flow 2 (95th percentile 68.00 ms)   Flow 3 (95th percentile 164.46 ms)
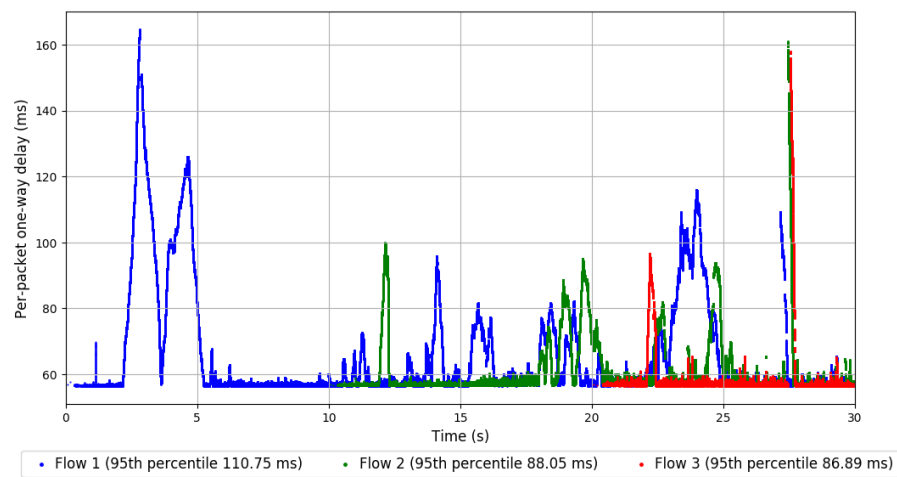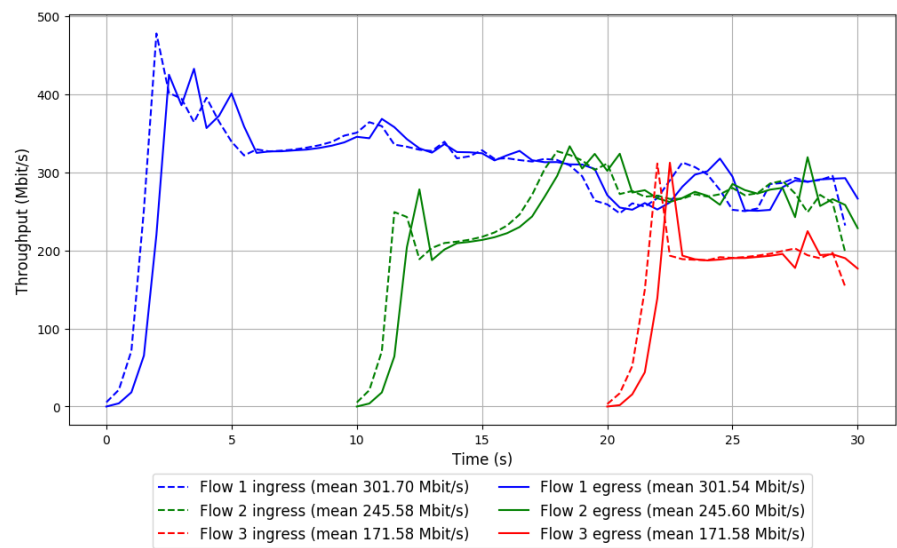
110

```
Run 4: Statistics of PCC-Expr

Start at: 2018-12-12 11:32:43
End at: 2018-12-12 11:33:13
Local clock offset: -0.082 ms
Remote clock offset: -0.557 ms


# Below is generated by plot.py at 2018-12-12 14:44:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 521.53 Mbit/s
95th percentile per-packet one-way delay: 102.689 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 301.54 Mbit/s
95th percentile per-packet one-way delay: 110.749 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 245.60 Mbit/s
95th percentile per-packet one-way delay: 88.050 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 171.58 Mbit/s
95th percentile per-packet one-way delay: 86.894 ms
Loss rate: 0.01%
```
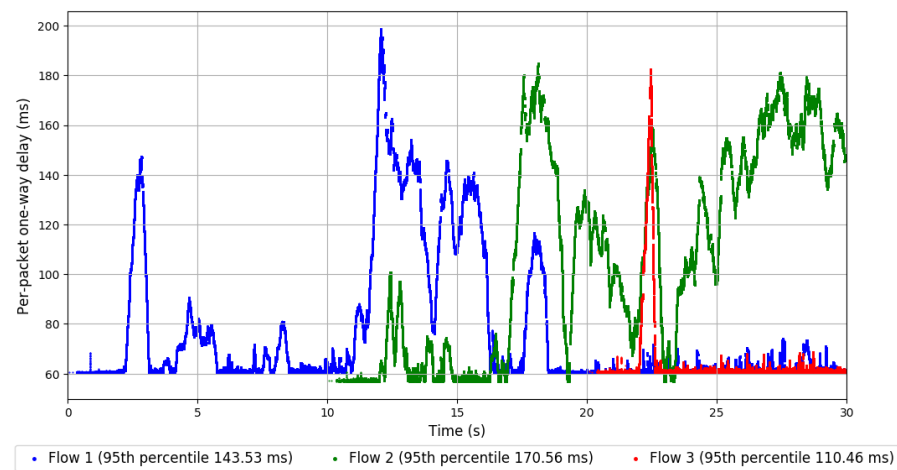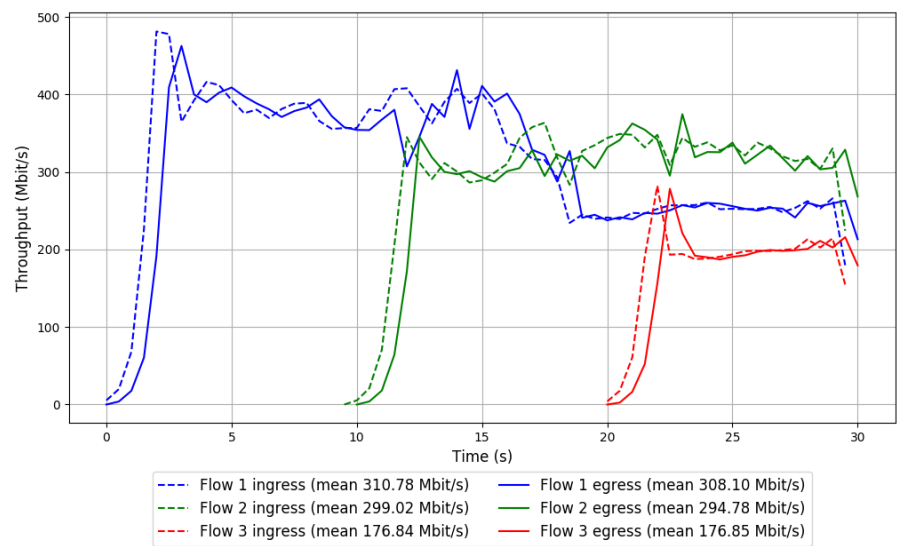
Run 4: Report of PCC-Expr — Data Link

```
Run 5: Statistics of PCC-Expr

Start at: 2018-12-12 12:07:43
End at: 2018-12-12 12:08:13
Local clock offset: -0.11 ms
Remote clock offset: -0.184 ms

# Below is generated by plot.py at 2018-12-12 14:54:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 562.51 Mbit/s
95th percentile per-packet one-way delay: 162.368 ms
Loss rate: 0.97%
-- Flow 1:
Average throughput: 308.10 Mbit/s
95th percentile per-packet one-way delay: 143.527 ms
Loss rate: 0.87%
-- Flow 2:
Average throughput: 294.78 Mbit/s
95th percentile per-packet one-way delay: 170.556 ms
Loss rate: 1.41%
-- Flow 3:
Average throughput: 176.85 Mbit/s
95th percentile per-packet one-way delay: 110.458 ms
Loss rate: 0.02%
```

Run 5: Report of PCC-Expr — Data Link

```
Run 1: Statistics of QUIC Cubic

Start at: 2018-12-12 09:41:36
End at: 2018-12-12 09:42:06
Local clock offset: -0.088 ms
Remote clock offset: -0.04 ms

# Below is generated by plot.py at 2018-12-12 14:54:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 38.97 Mbit/s
95th percentile per-packet one-way delay: 57.145 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 57.280 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 50.36 Mbit/s
95th percentile per-packet one-way delay: 57.024 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 16.90 Mbit/s
95th percentile per-packet one-way delay: 57.288 ms
Loss rate: 0.00%
```
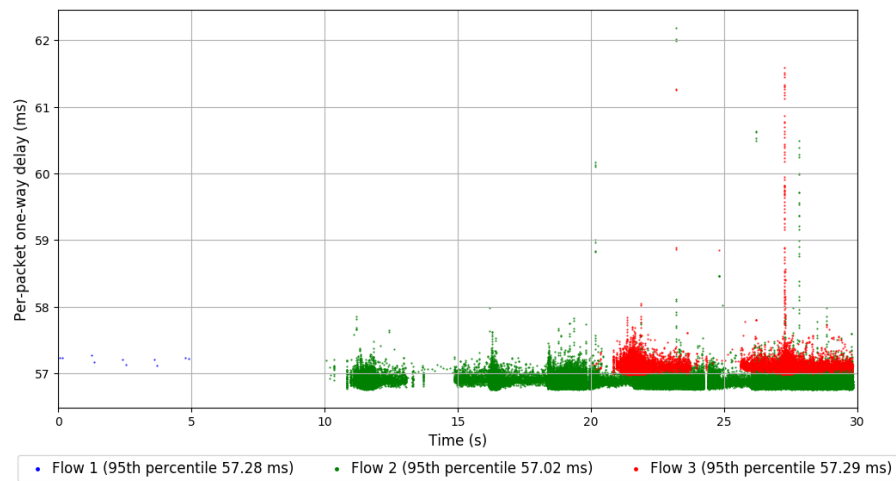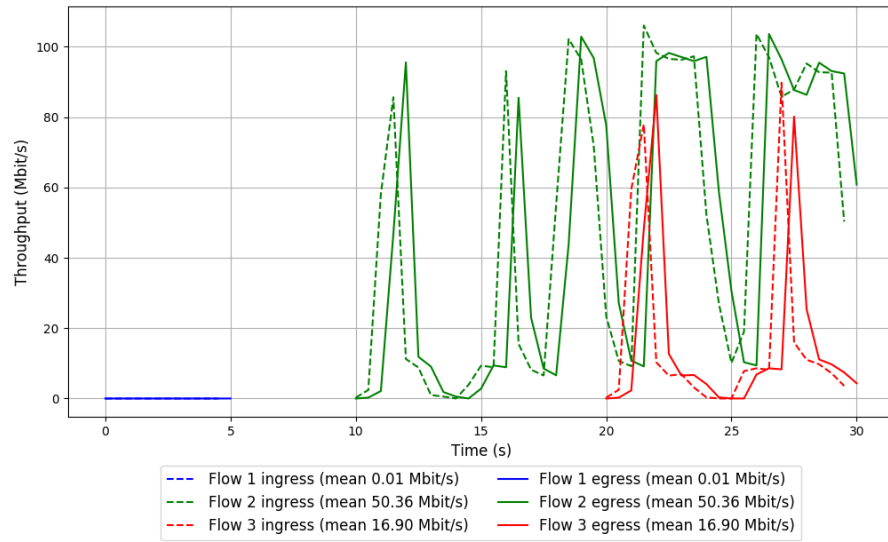
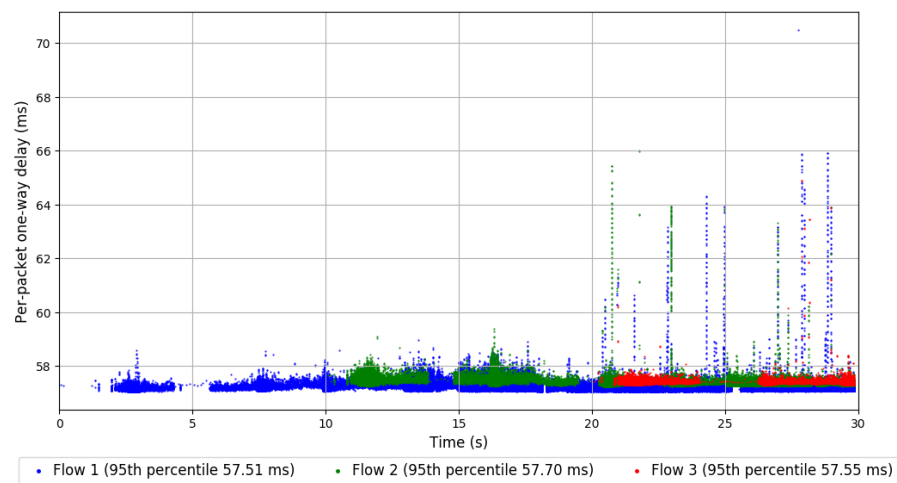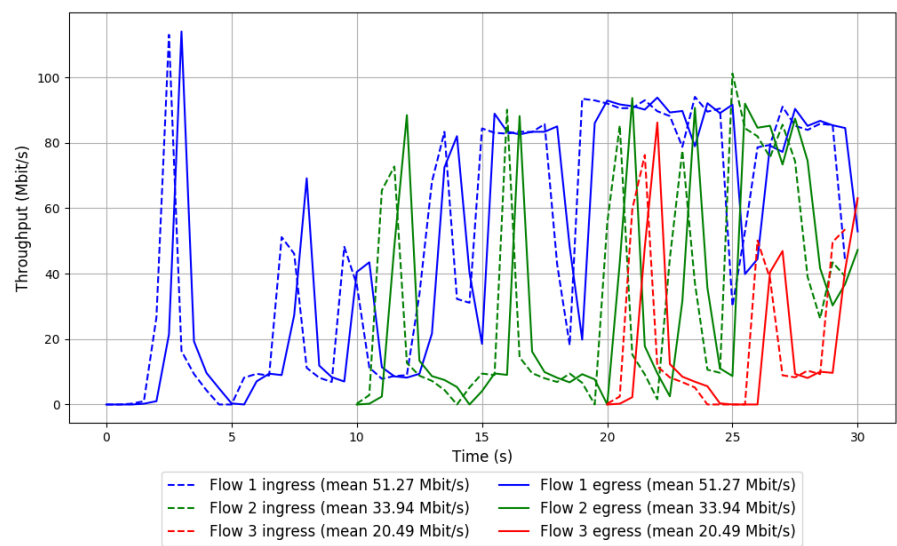Run 1: Report of QUIC Cubic — Data Link

```
Run 2: Statistics of QUIC Cubic

Start at: 2018-12-12 10:15:03
End at: 2018-12-12 10:15:33
Local clock offset: -0.505 ms
Remote clock offset: -0.133 ms


# Below is generated by plot.py at 2018-12-12 14:54:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 80.50 Mbit/s
95th percentile per-packet one-way delay: 57.591 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 51.27 Mbit/s
95th percentile per-packet one-way delay: 57.508 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 33.94 Mbit/s
95th percentile per-packet one-way delay: 57.697 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 20.49 Mbit/s
95th percentile per-packet one-way delay: 57.552 ms
Loss rate: 0.00%
```

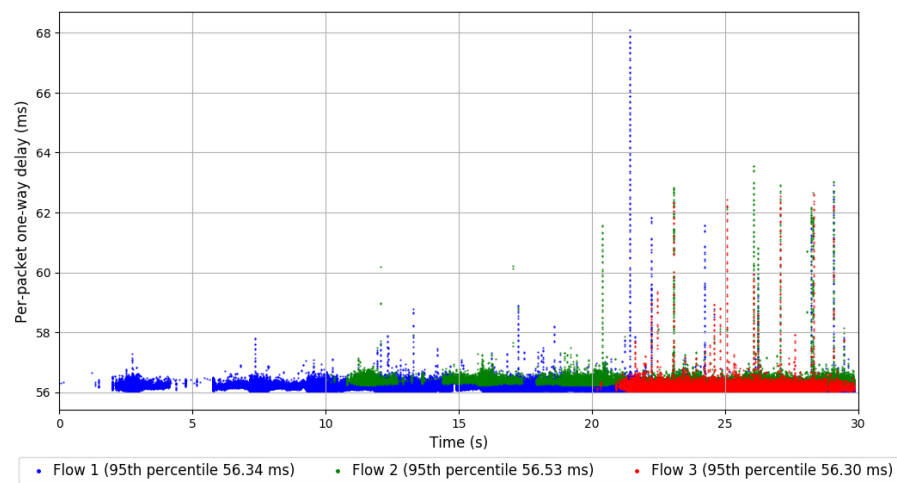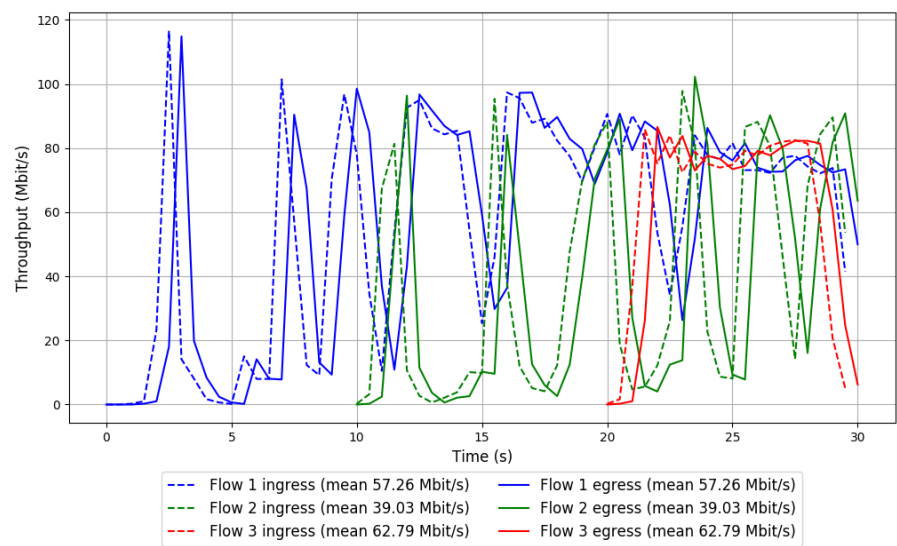Run 2: Report of QUIC Cubic — Data Link

```
Run 3: Statistics of QUIC Cubic

Start at: 2018-12-12 10:49:09
End at: 2018-12-12 10:49:39
Local clock offset: 0.124 ms
Remote clock offset: -0.495 ms

# Below is generated by plot.py at 2018-12-12 14:54:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 103.74 Mbit/s
95th percentile per-packet one-way delay: 56.430 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 57.26 Mbit/s
95th percentile per-packet one-way delay: 56.339 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 39.03 Mbit/s
95th percentile per-packet one-way delay: 56.527 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 62.79 Mbit/s
95th percentile per-packet one-way delay: 56.298 ms
Loss rate: 0.00%
```

Run 3: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 57.26 Mbit/s) — Flow 1 egress (mean 57.26 Mbit/s)
Flow 2 ingress (mean 39.03 Mbit/s) — Flow 2 egress (mean 39.03 Mbit/s)
Flow 3 ingress (mean 62.79 Mbit/s) — Flow 3 egress (mean 62.79 Mbit/s)

Flow 1 (95th percentile 56.34 ms)   Flow 2 (95th percentile 56.53 ms)   Flow 3 (95th percentile 56.30 ms)
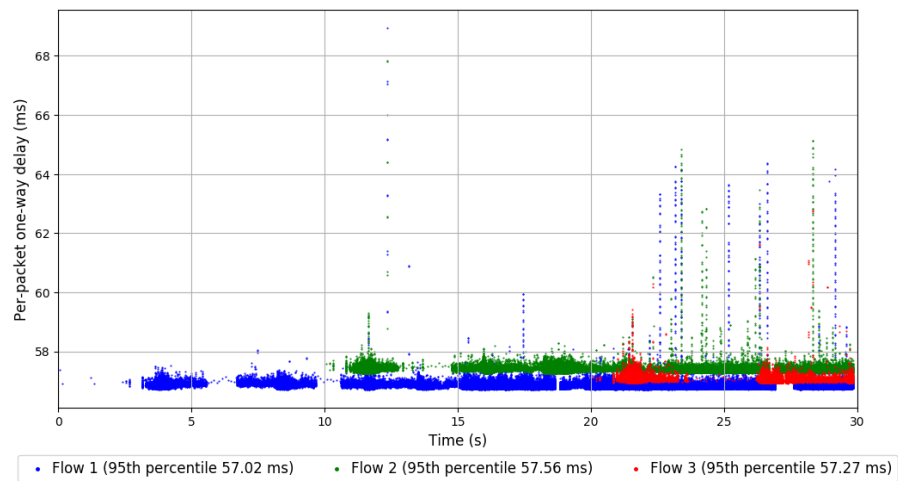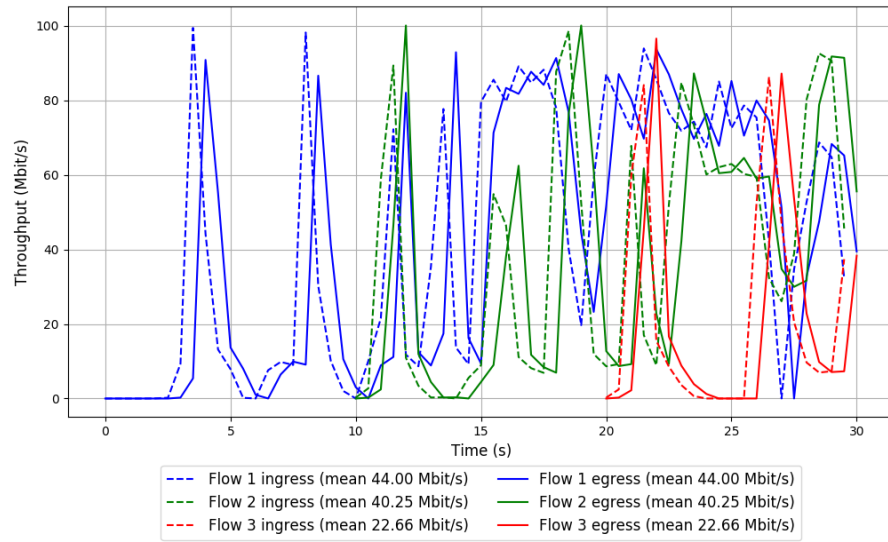
120

```
Run 4: Statistics of QUIC Cubic

Start at: 2018-12-12 11:23:51
End at: 2018-12-12 11:24:21
Local clock offset: -0.129 ms
Remote clock offset: -0.127 ms


# Below is generated by plot.py at 2018-12-12 14:54:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 78.16 Mbit/s
95th percentile per-packet one-way delay: 57.466 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 44.00 Mbit/s
95th percentile per-packet one-way delay: 57.021 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 40.25 Mbit/s
95th percentile per-packet one-way delay: 57.556 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 22.66 Mbit/s
95th percentile per-packet one-way delay: 57.268 ms
Loss rate: 0.00%
```

Run 4: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 44.00 Mbit/s) — Flow 1 egress (mean 44.00 Mbit/s)
Flow 2 ingress (mean 40.25 Mbit/s) — Flow 2 egress (mean 40.25 Mbit/s)
Flow 3 ingress (mean 22.66 Mbit/s) — Flow 3 egress (mean 22.66 Mbit/s)

Flow 1 (95th percentile 57.02 ms)   Flow 2 (95th percentile 57.56 ms)   Flow 3 (95th percentile 57.27 ms)

122

```
Run 5: Statistics of QUIC Cubic

Start at: 2018-12-12 11:59:07
End at: 2018-12-12 11:59:37
Local clock offset: -0.316 ms
Remote clock offset: 0.509 ms


# Below is generated by plot.py at 2018-12-12 14:54:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 78.98 Mbit/s
95th percentile per-packet one-way delay: 61.350 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 48.64 Mbit/s
95th percentile per-packet one-way delay: 58.054 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 37.80 Mbit/s
95th percentile per-packet one-way delay: 61.468 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 16.04 Mbit/s
95th percentile per-packet one-way delay: 61.453 ms
Loss rate: 0.00%
```
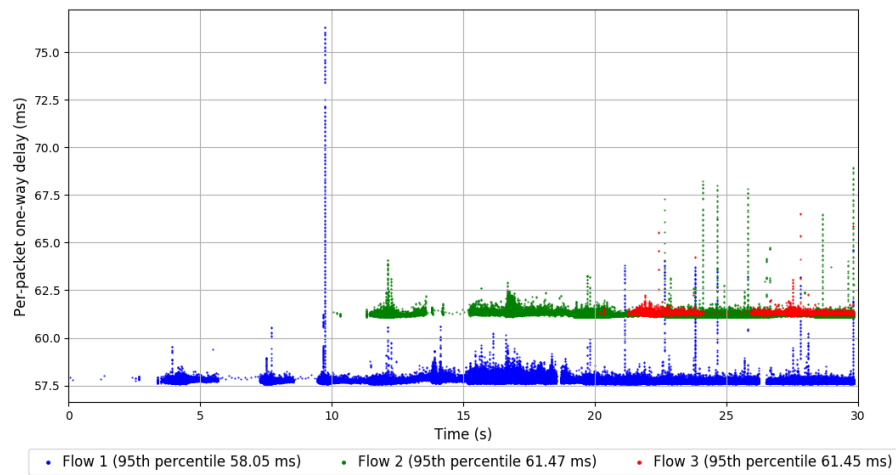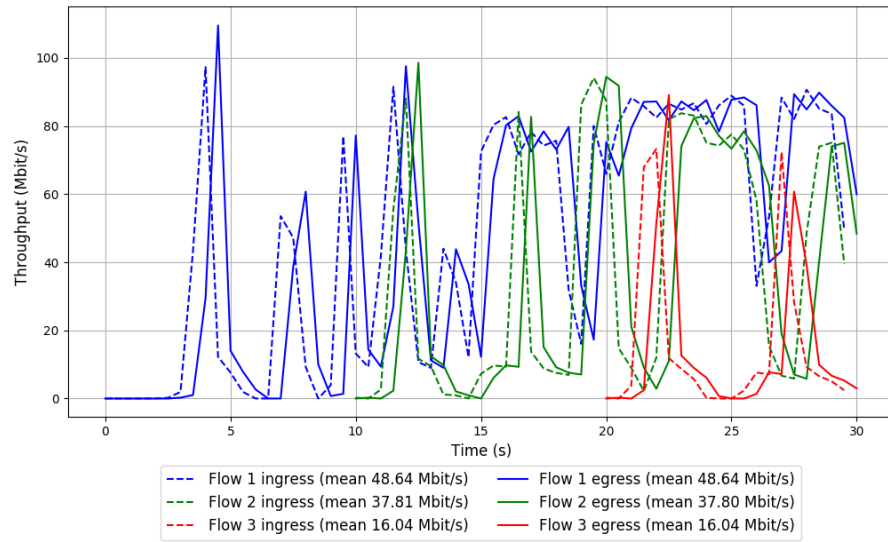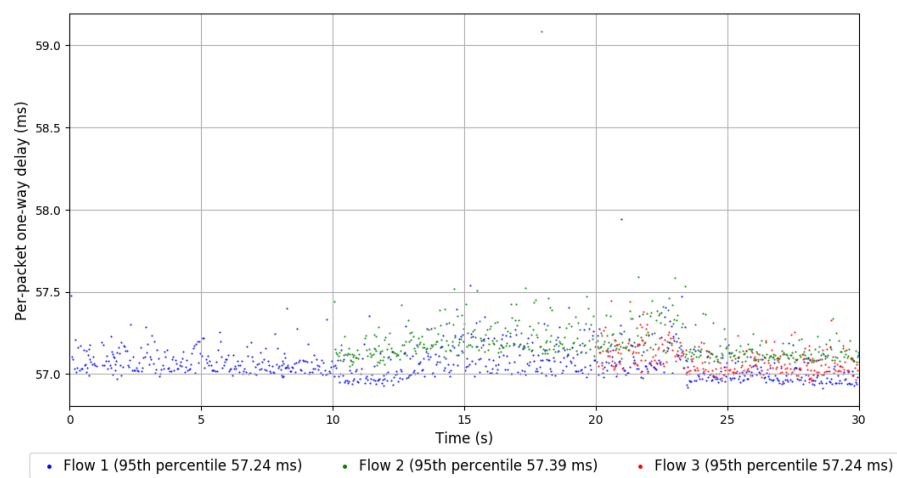
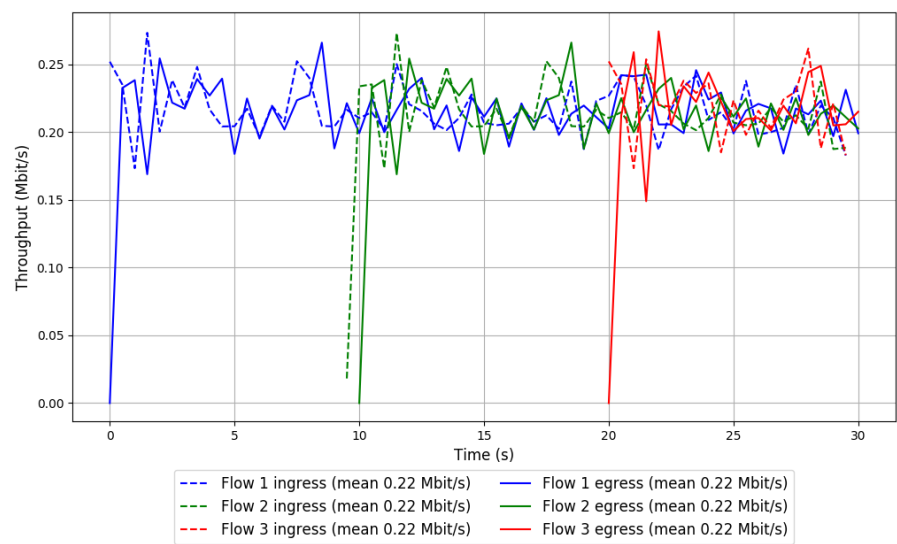Run 5: Report of QUIC Cubic — Data Link

```
Run 1: Statistics of SCReAM

Start at: 2018-12-12 09:59:24
End at: 2018-12-12 09:59:54
Local clock offset: -0.067 ms
Remote clock offset: -0.21 ms


# Below is generated by plot.py at 2018-12-12 14:54:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 57.312 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 57.241 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 57.386 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 57.241 ms
Loss rate: 0.00%
```
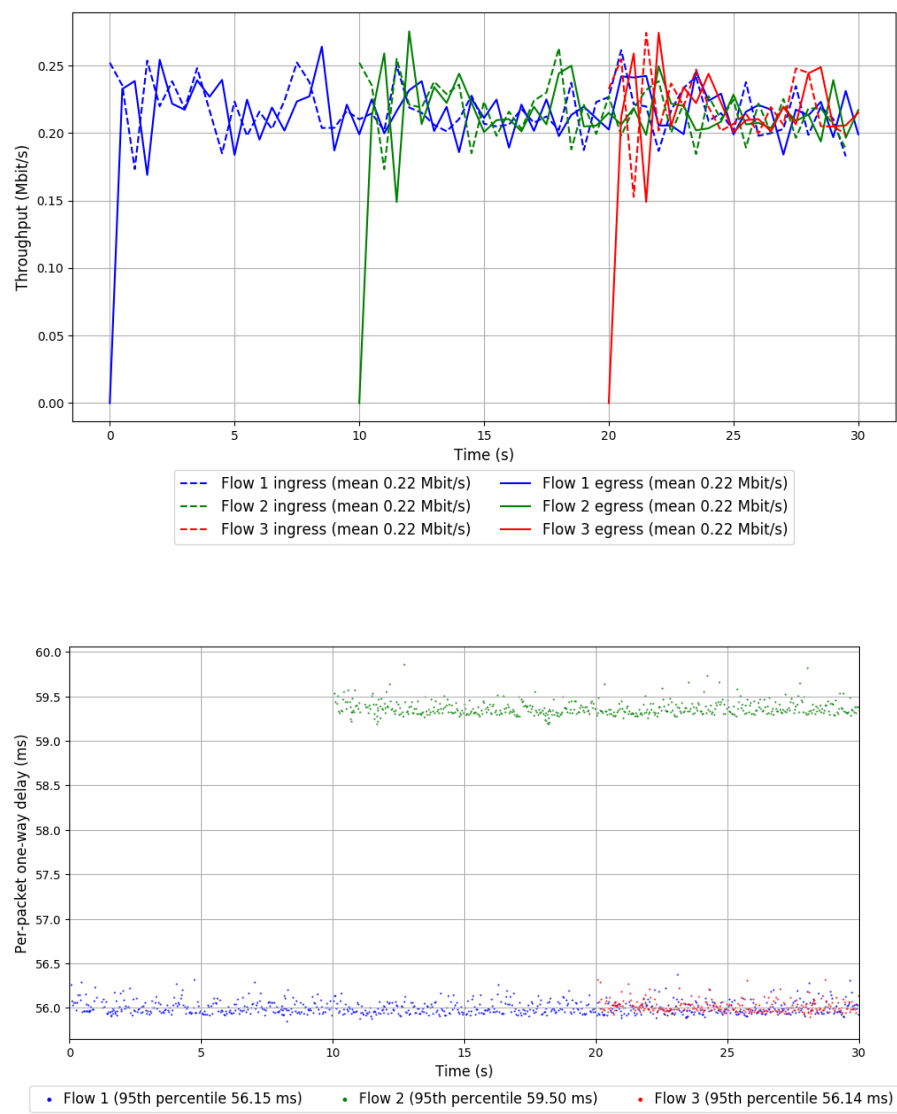
Run 1: Report of SCReAM — Data Link

```
Run 2: Statistics of SCReAM

Start at: 2018-12-12 10:33:04
End at: 2018-12-12 10:33:34
Local clock offset: -0.371 ms
Remote clock offset: -1.503 ms

# Below is generated by plot.py at 2018-12-12 14:54:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 59.438 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 56.149 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 59.503 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 56.142 ms
Loss rate: 0.00%
```
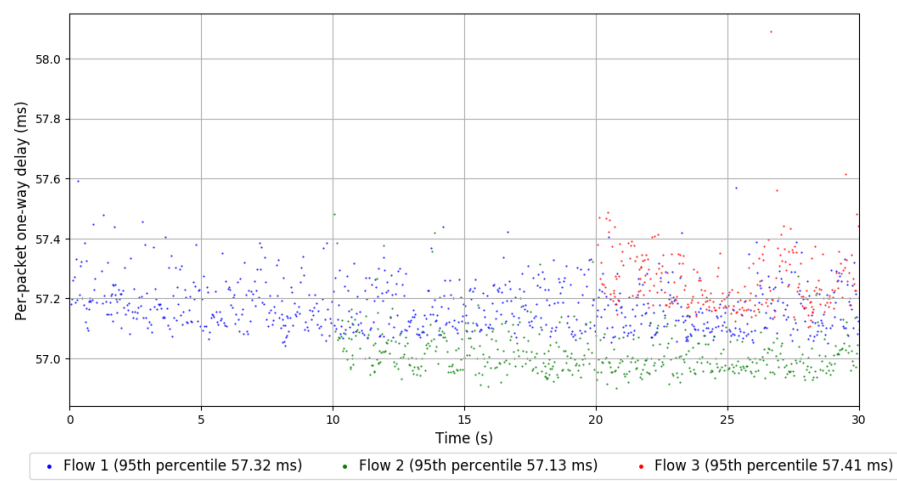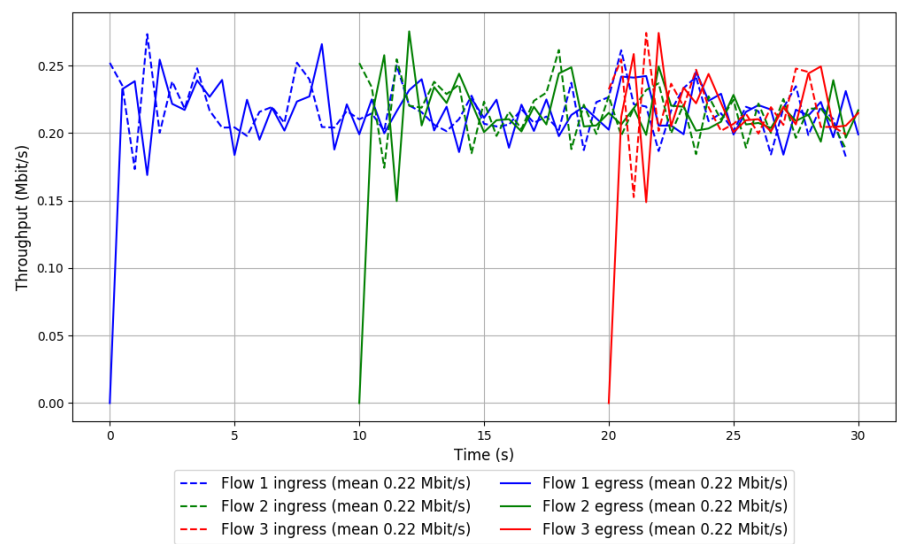
Run 2: Report of SCReAM — Data Link

```
Run 3: Statistics of SCReAM

Start at: 2018-12-12 11:07:34
End at: 2018-12-12 11:08:04
Local clock offset: -0.121 ms
Remote clock offset: -0.147 ms


# Below is generated by plot.py at 2018-12-12 14:54:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 57.343 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 57.322 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 57.134 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 57.414 ms
Loss rate: 0.00%
```

Run 3: Report of SCReAM — Data Link

Flow 1 ingress (mean 0.22 Mbit/s)   Flow 1 egress (mean 0.22 Mbit/s)
Flow 2 ingress (mean 0.22 Mbit/s)   Flow 2 egress (mean 0.22 Mbit/s)
Flow 3 ingress (mean 0.22 Mbit/s)   Flow 3 egress (mean 0.22 Mbit/s)

Flow 1 (95th percentile 57.32 ms)   Flow 2 (95th percentile 57.13 ms)   Flow 3 (95th percentile 57.41 ms)

```
Run 4: Statistics of SCReAM

Start at: 2018-12-12 11:42:22
End at: 2018-12-12 11:42:52
Local clock offset: -0.517 ms
Remote clock offset: 0.158 ms


# Below is generated by plot.py at 2018-12-12 14:54:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 61.664 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 61.709 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 61.471 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 61.471 ms
Loss rate: 0.00%
```
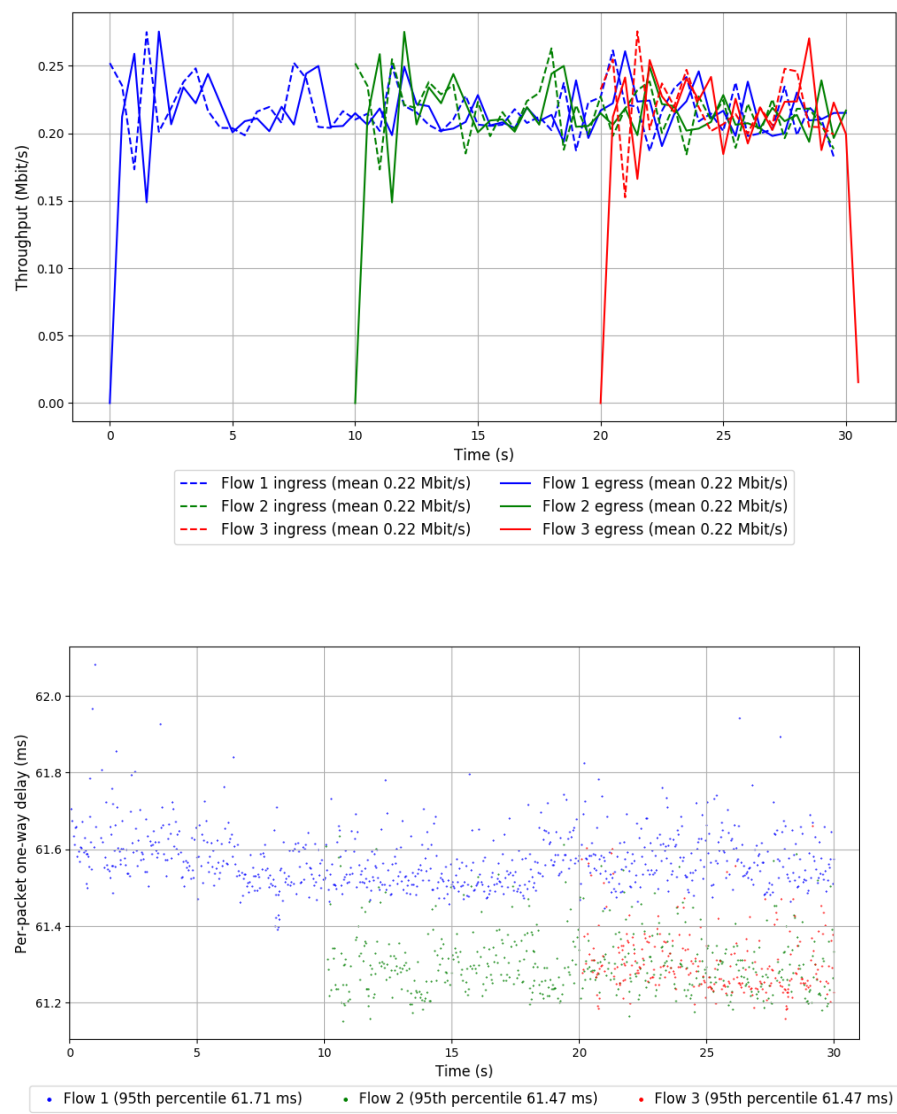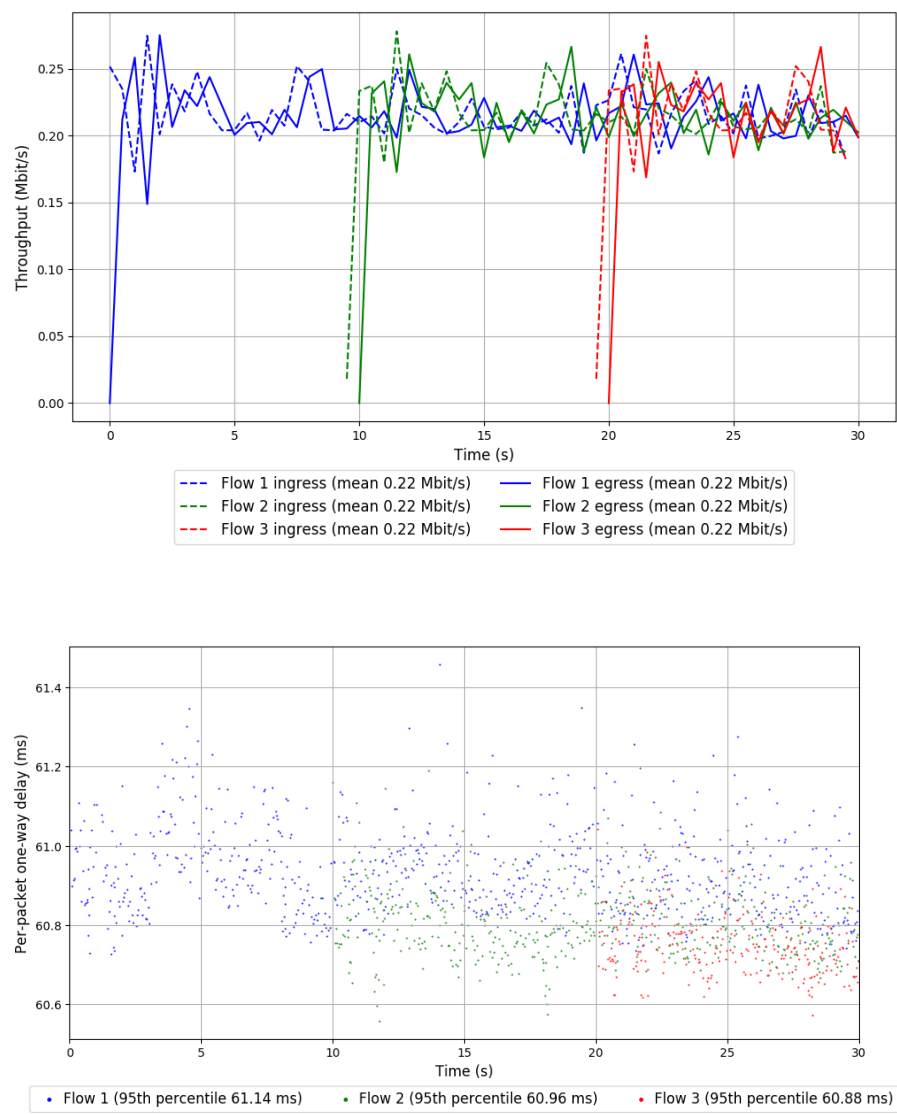
Run 4: Report of SCReAM — Data Link

```
Run 5: Statistics of SCReAM

Start at: 2018-12-12 12:18:02
End at: 2018-12-12 12:18:32
Local clock offset: -0.48 ms
Remote clock offset: -0.385 ms


# Below is generated by plot.py at 2018-12-12 14:54:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 61.087 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 61.142 ms
Loss rate: 0.13%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 60.959 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 60.877 ms
Loss rate: 0.00%
```
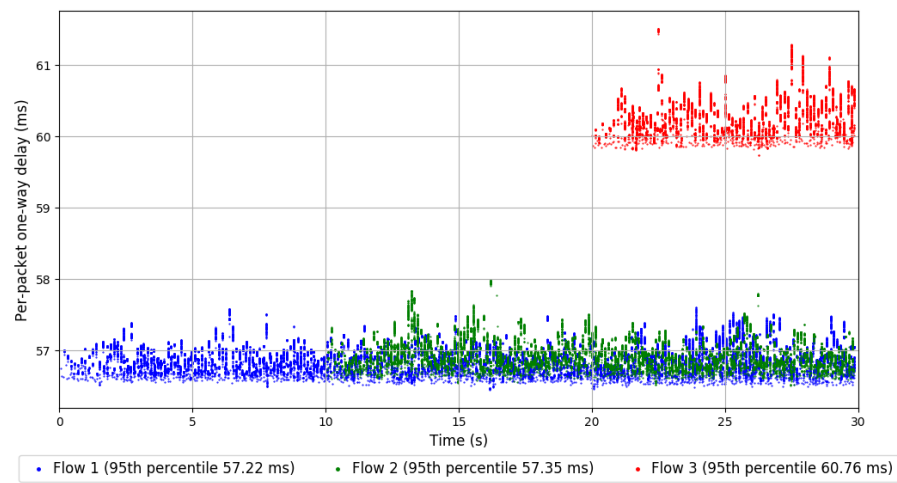
Run 5: Report of SCReAM — Data Link

Flow 1 ingress (mean 0.22 Mbit/s) Flow 1 egress (mean 0.22 Mbit/s)
Flow 2 ingress (mean 0.22 Mbit/s) Flow 2 egress (mean 0.22 Mbit/s)
Flow 3 ingress (mean 0.22 Mbit/s) Flow 3 egress (mean 0.22 Mbit/s)

Flow 1 (95th percentile 61.14 ms) Flow 2 (95th percentile 60.96 ms) Flow 3 (95th percentile 60.88 ms)
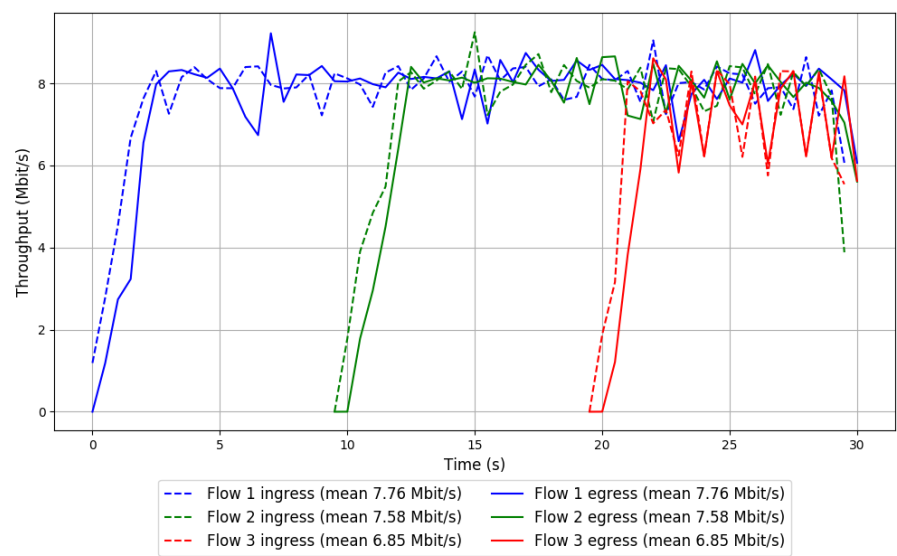
```
Run 1: Statistics of Sprout

Start at: 2018-12-12 09:53:54
End at: 2018-12-12 09:54:24
Local clock offset: 0.349 ms
Remote clock offset: -0.238 ms


# Below is generated by plot.py at 2018-12-12 14:54:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 15.08 Mbit/s
95th percentile per-packet one-way delay: 60.373 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 7.76 Mbit/s
95th percentile per-packet one-way delay: 57.216 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 7.58 Mbit/s
95th percentile per-packet one-way delay: 57.350 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 6.85 Mbit/s
95th percentile per-packet one-way delay: 60.758 ms
Loss rate: 0.00%
```
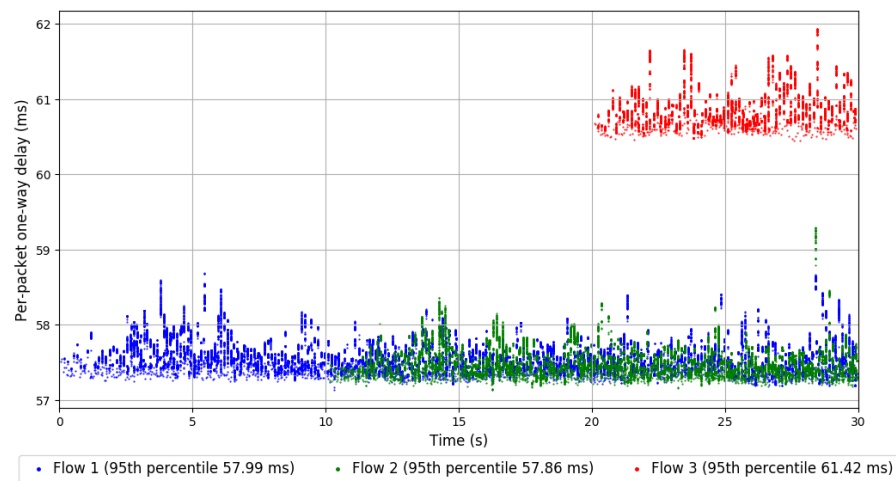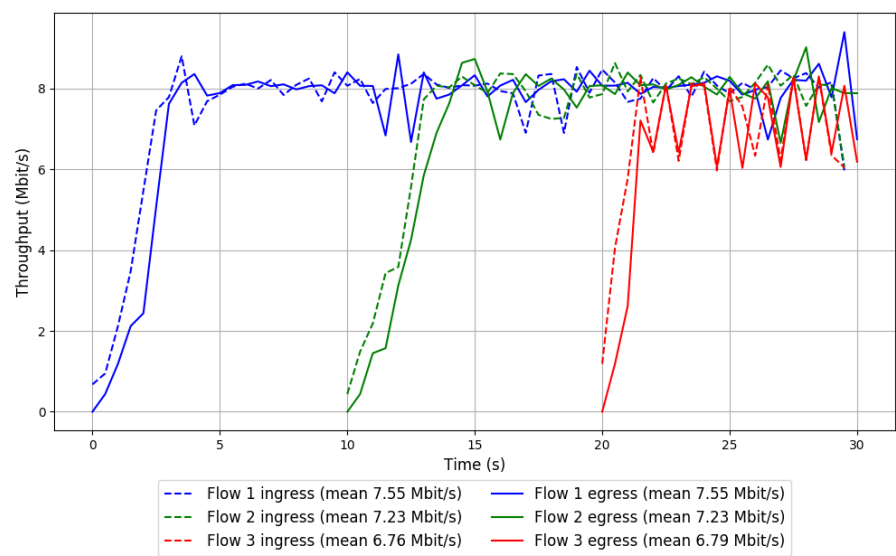
Run 1: Report of Sprout — Data Link

```
Run 2: Statistics of Sprout

Start at: 2018-12-12 10:27:36
End at: 2018-12-12 10:28:06
Local clock offset: -0.305 ms
Remote clock offset: -0.155 ms


# Below is generated by plot.py at 2018-12-12 14:54:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 14.58 Mbit/s
95th percentile per-packet one-way delay: 60.933 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 7.55 Mbit/s
95th percentile per-packet one-way delay: 57.991 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 7.23 Mbit/s
95th percentile per-packet one-way delay: 57.858 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 6.79 Mbit/s
95th percentile per-packet one-way delay: 61.420 ms
Loss rate: 0.00%
```
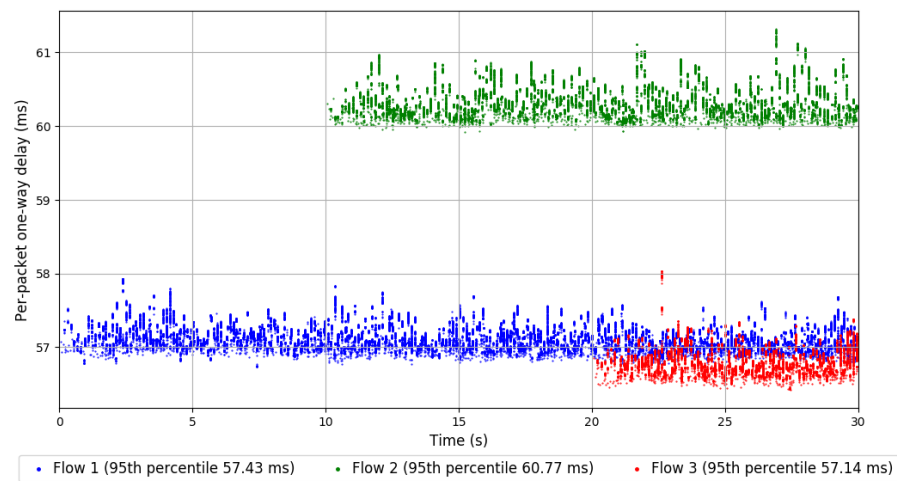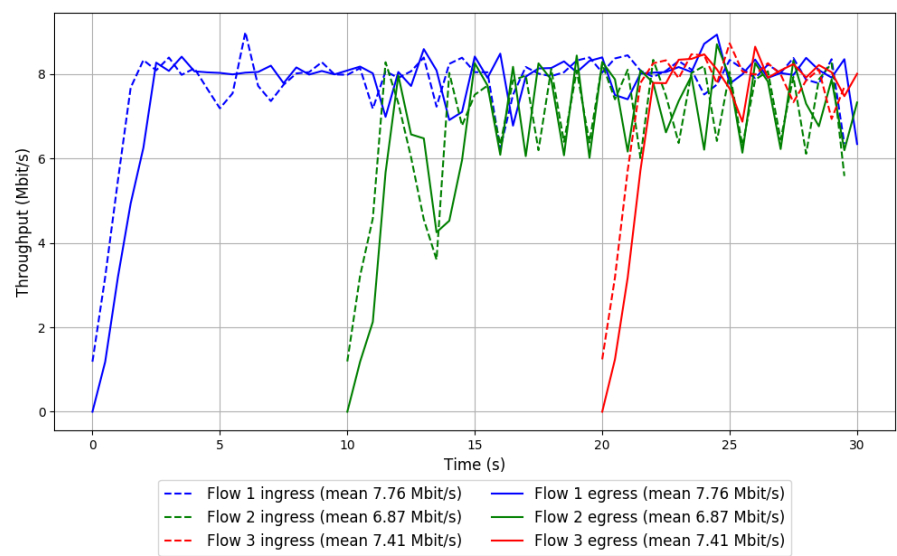
Run 2: Report of Sprout — Data Link

```
Run 3: Statistics of Sprout

Start at: 2018-12-12 11:02:06
End at: 2018-12-12 11:02:36
Local clock offset: 0.136 ms
Remote clock offset: -0.223 ms


# Below is generated by plot.py at 2018-12-12 14:54:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 14.77 Mbit/s
95th percentile per-packet one-way delay: 60.533 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 7.76 Mbit/s
95th percentile per-packet one-way delay: 57.432 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 6.87 Mbit/s
95th percentile per-packet one-way delay: 60.773 ms
Loss rate: 0.12%
-- Flow 3:
Average throughput: 7.41 Mbit/s
95th percentile per-packet one-way delay: 57.142 ms
Loss rate: 0.00%
```
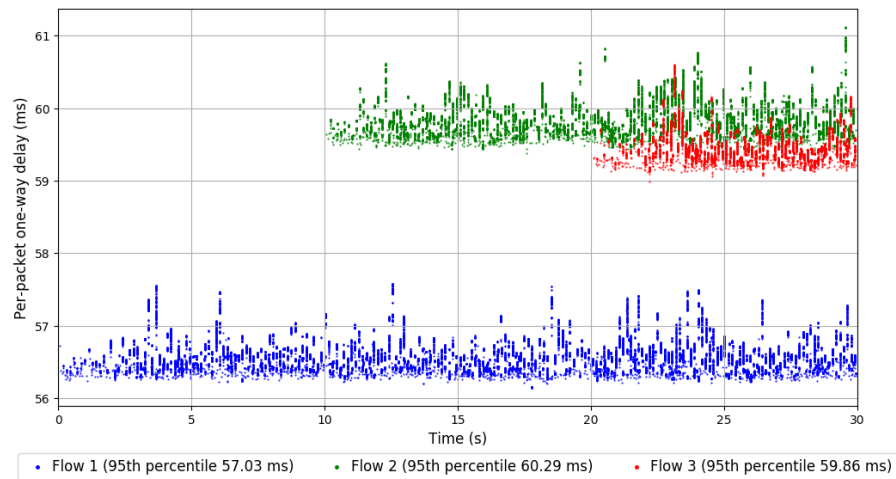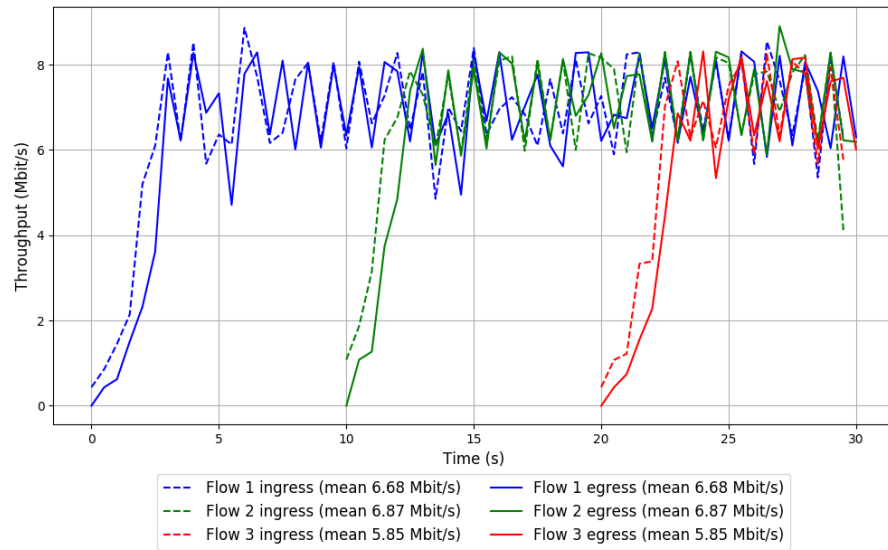
Run 3: Report of Sprout — Data Link

```
Run 4: Statistics of Sprout

Start at: 2018-12-12 11:36:42
End at: 2018-12-12 11:37:12
Local clock offset: 0.341 ms
Remote clock offset: -0.728 ms


# Below is generated by plot.py at 2018-12-12 14:54:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 13.16 Mbit/s
95th percentile per-packet one-way delay: 60.105 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 6.68 Mbit/s
95th percentile per-packet one-way delay: 57.029 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 6.87 Mbit/s
95th percentile per-packet one-way delay: 60.294 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 5.85 Mbit/s
95th percentile per-packet one-way delay: 59.863 ms
Loss rate: 0.00%
```
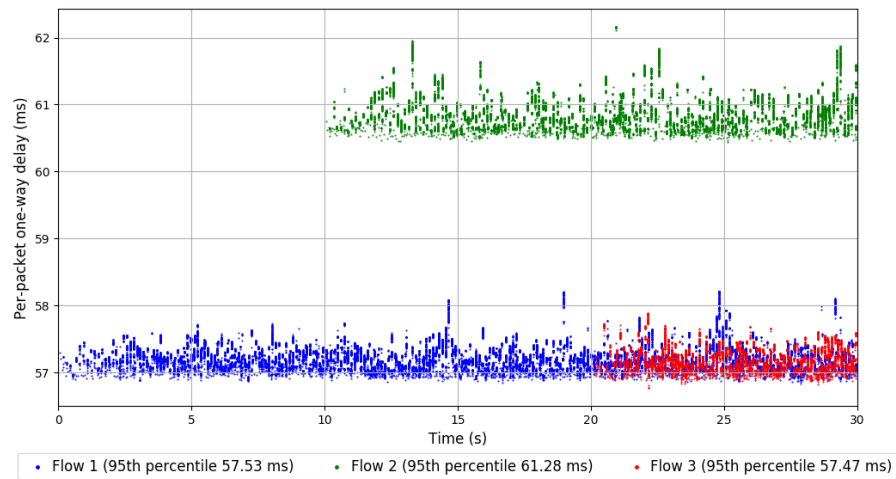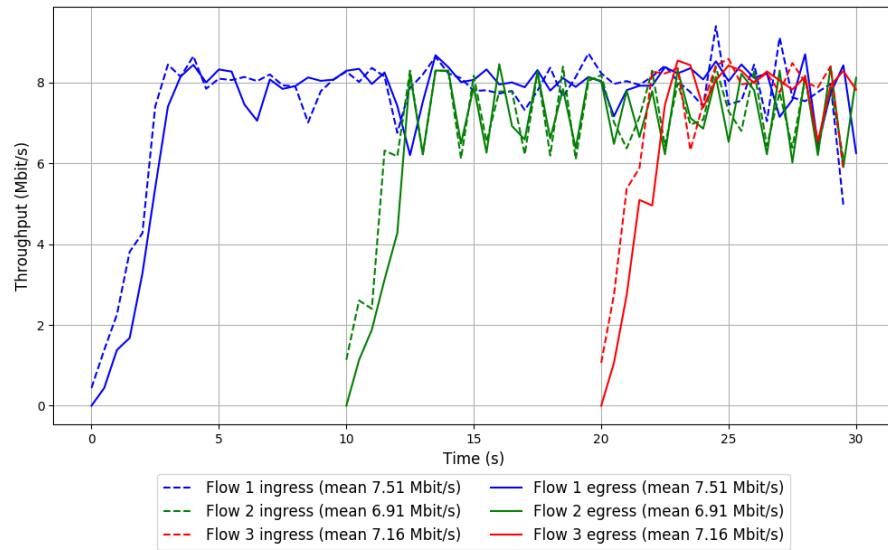
Run 4: Report of Sprout — Data Link

```
Run 5: Statistics of Sprout

Start at: 2018-12-12 12:11:51
End at: 2018-12-12 12:12:21
Local clock offset: -0.019 ms
Remote clock offset: -0.38 ms


# Below is generated by plot.py at 2018-12-12 14:54:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 14.46 Mbit/s
95th percentile per-packet one-way delay: 61.067 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 7.51 Mbit/s
95th percentile per-packet one-way delay: 57.528 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 6.91 Mbit/s
95th percentile per-packet one-way delay: 61.284 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 7.16 Mbit/s
95th percentile per-packet one-way delay: 57.471 ms
Loss rate: 0.00%
```
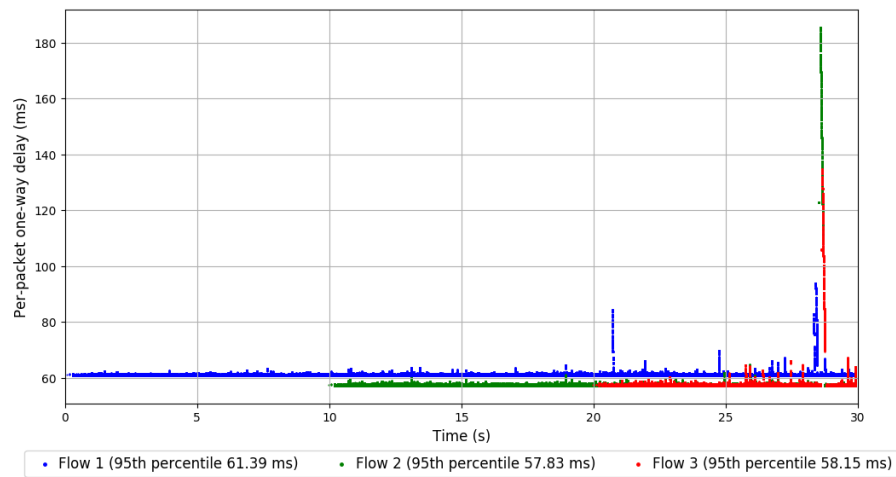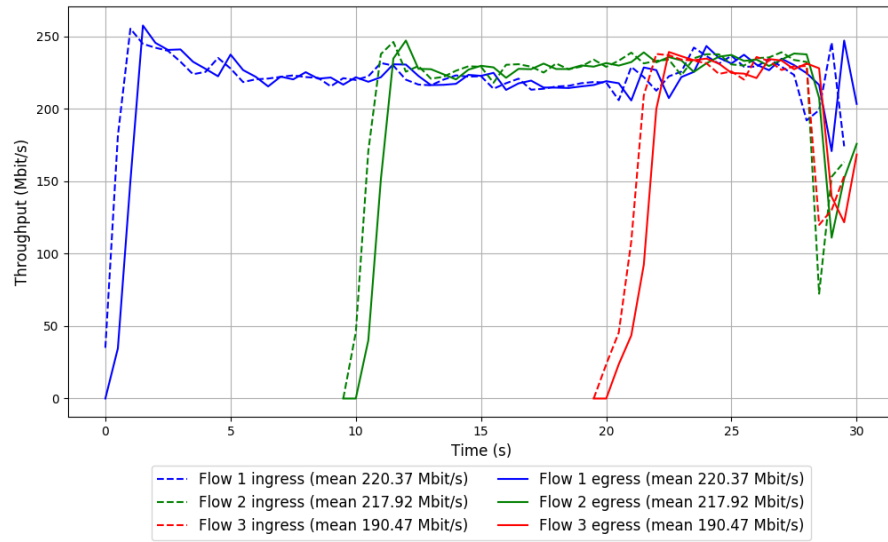
Run 5: Report of Sprout — Data Link

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

Start at: 2018-12-12 09:30:17
End at: 2018-12-12 09:30:47
Local clock offset: 0.075 ms
Remote clock offset: 0.339 ms


# Below is generated by plot.py at 2018-12-12 14:54:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 429.46 Mbit/s
95th percentile per-packet one-way delay: 61.273 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 220.37 Mbit/s
95th percentile per-packet one-way delay: 61.388 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 217.92 Mbit/s
95th percentile per-packet one-way delay: 57.825 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 190.47 Mbit/s
95th percentile per-packet one-way delay: 58.153 ms
Loss rate: 0.00%
```

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

Flow 1 ingress (mean 220.37 Mbit/s) --- Flow 1 egress (mean 220.37 Mbit/s)
Flow 2 ingress (mean 217.92 Mbit/s) --- Flow 2 egress (mean 217.92 Mbit/s)
Flow 3 ingress (mean 190.47 Mbit/s) --- Flow 3 egress (mean 190.47 Mbit/s)

Flow 1 (95th percentile 61.39 ms) Flow 2 (95th percentile 57.83 ms) Flow 3 (95th percentile 58.15 ms)
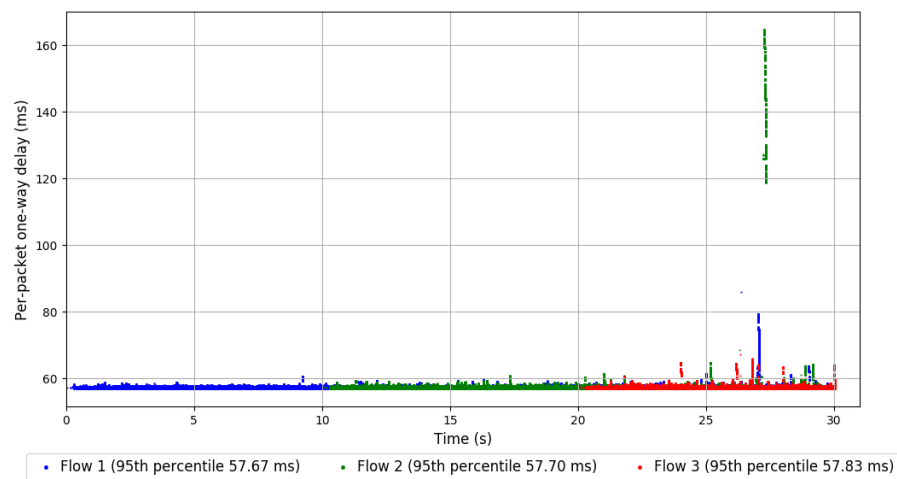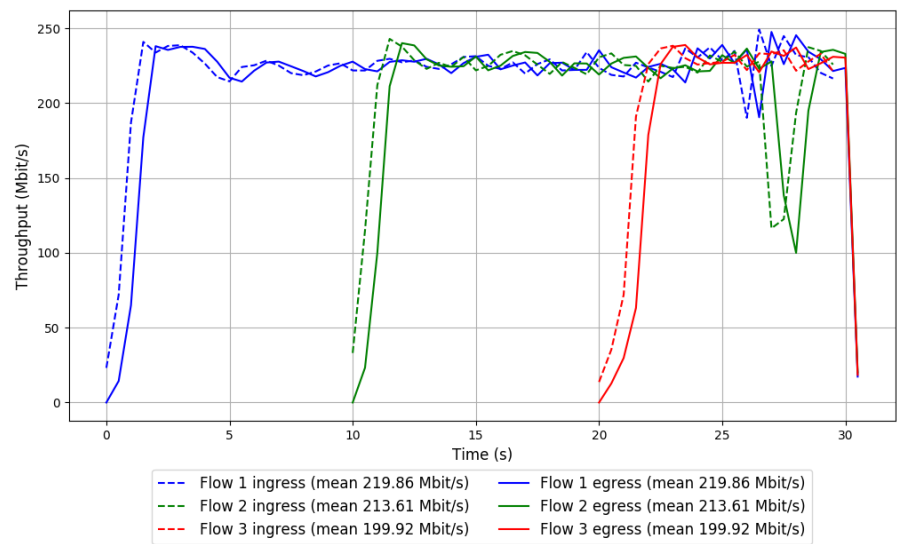
146

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

Start at: 2018-12-12 10:03:42
End at: 2018-12-12 10:04:12
Local clock offset: -0.1 ms
Remote clock offset: -0.061 ms


# Below is generated by plot.py at 2018-12-12 14:54:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 428.54 Mbit/s
95th percentile per-packet one-way delay: 57.701 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 219.86 Mbit/s
95th percentile per-packet one-way delay: 57.672 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 213.61 Mbit/s
95th percentile per-packet one-way delay: 57.696 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 199.92 Mbit/s
95th percentile per-packet one-way delay: 57.829 ms
Loss rate: 0.00%
```

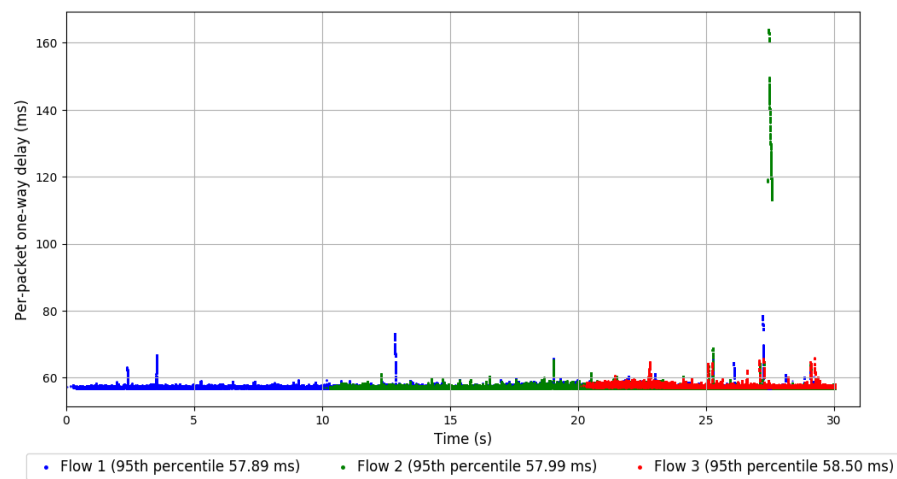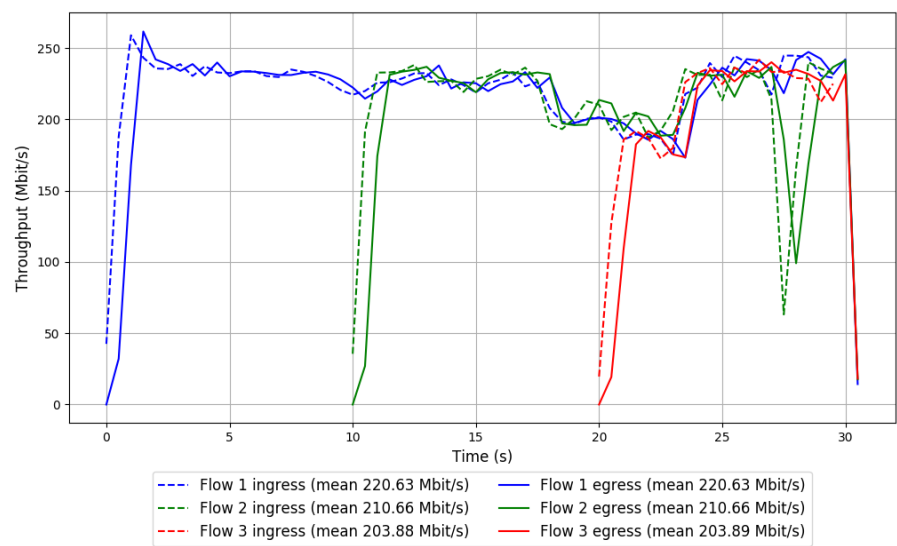# Run 2: Report of TaoVA-100x — Data Link

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

Start at: 2018-12-12 10:37:22
End at: 2018-12-12 10:37:52
Local clock offset: -0.142 ms
Remote clock offset: -0.305 ms


# Below is generated by plot.py at 2018-12-12 14:54:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 428.57 Mbit/s
95th percentile per-packet one-way delay: 58.060 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 220.63 Mbit/s
95th percentile per-packet one-way delay: 57.886 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 210.66 Mbit/s
95th percentile per-packet one-way delay: 57.991 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 203.89 Mbit/s
95th percentile per-packet one-way delay: 58.499 ms
Loss rate: 0.00%
```

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

- Flow 1 ingress (mean 220.63 Mbit/s)
- Flow 1 egress (mean 220.63 Mbit/s)
- Flow 2 ingress (mean 210.66 Mbit/s)
- Flow 2 egress (mean 210.66 Mbit/s)
- Flow 3 ingress (mean 203.88 Mbit/s)
- Flow 3 egress (mean 203.89 Mbit/s)

- Flow 1 (95th percentile 57.89 ms)
- Flow 2 (95th percentile 57.99 ms)
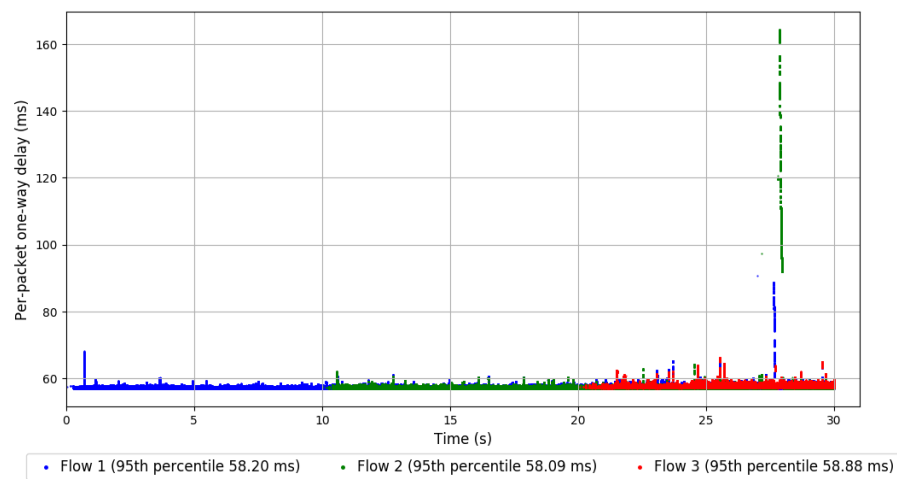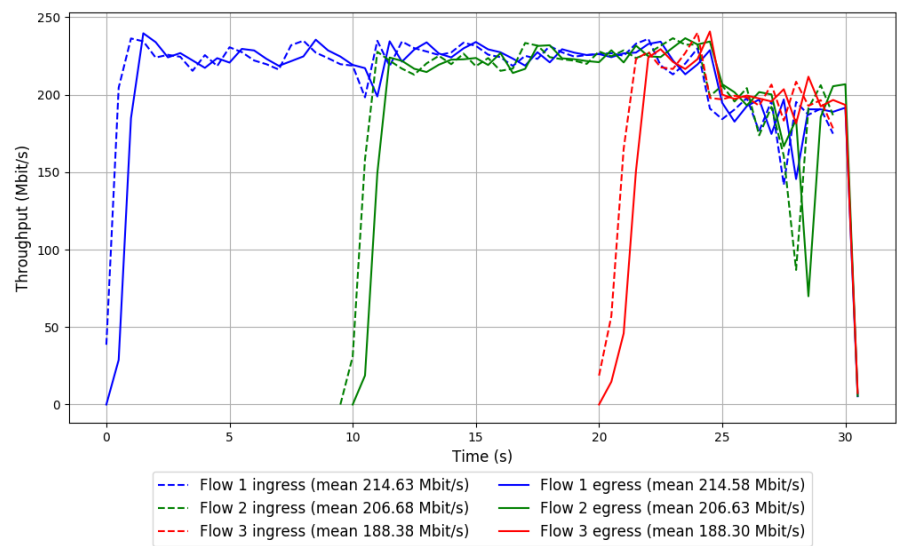- Flow 3 (95th percentile 58.50 ms)

```
Run 4: Statistics of TaoVA-100x

Start at: 2018-12-12 11:11:49
End at: 2018-12-12 11:12:19
Local clock offset: -0.397 ms
Remote clock offset: -0.311 ms

# Below is generated by plot.py at 2018-12-12 14:54:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 414.75 Mbit/s
95th percentile per-packet one-way delay: 58.354 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 214.58 Mbit/s
95th percentile per-packet one-way delay: 58.195 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 206.63 Mbit/s
95th percentile per-packet one-way delay: 58.092 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 188.30 Mbit/s
95th percentile per-packet one-way delay: 58.882 ms
Loss rate: 0.03%
```

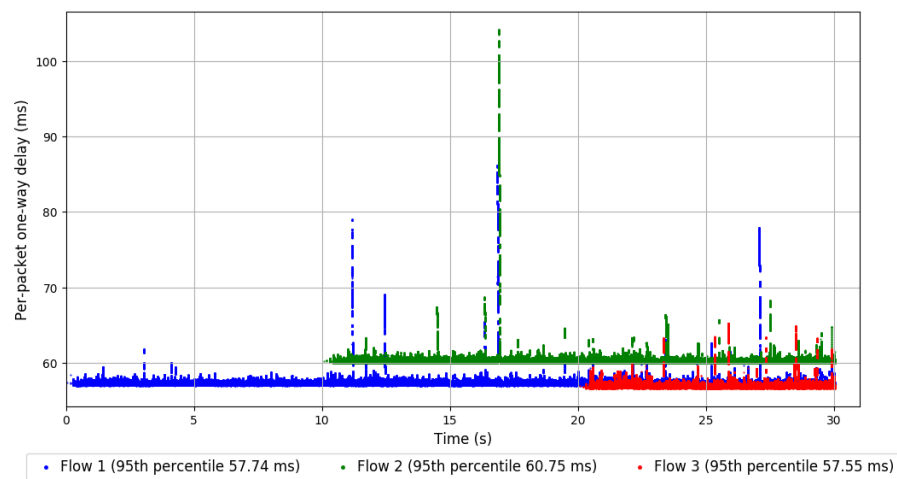Run 4: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 214.63 Mbit/s) --- Flow 1 egress (mean 214.58 Mbit/s)
Flow 2 ingress (mean 206.68 Mbit/s) --- Flow 2 egress (mean 206.63 Mbit/s)
Flow 3 ingress (mean 188.38 Mbit/s) --- Flow 3 egress (mean 188.30 Mbit/s)

Flow 1 (95th percentile 58.20 ms)   Flow 2 (95th percentile 58.09 ms)   Flow 3 (95th percentile 58.88 ms)
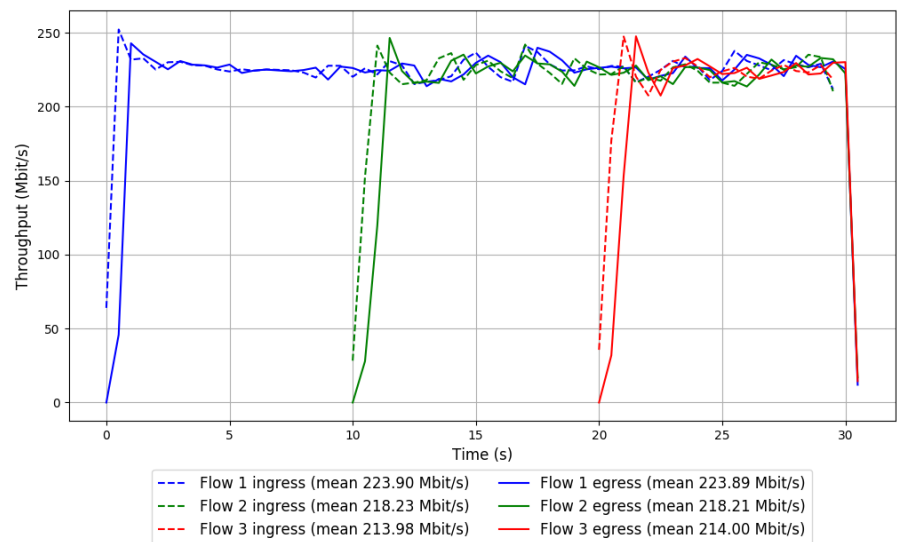
```
Run 5: Statistics of TaoVA-100x

Start at: 2018-12-12 11:46:39
End at: 2018-12-12 11:47:09
Local clock offset: 0.152 ms
Remote clock offset: -0.218 ms


# Below is generated by plot.py at 2018-12-12 14:54:47
# Datalink statistics
-- Total of 3 flows:
Average throughput: 440.24 Mbit/s
95th percentile per-packet one-way delay: 60.456 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 223.89 Mbit/s
95th percentile per-packet one-way delay: 57.744 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 218.21 Mbit/s
95th percentile per-packet one-way delay: 60.753 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 214.00 Mbit/s
95th percentile per-packet one-way delay: 57.553 ms
Loss rate: 0.01%
```
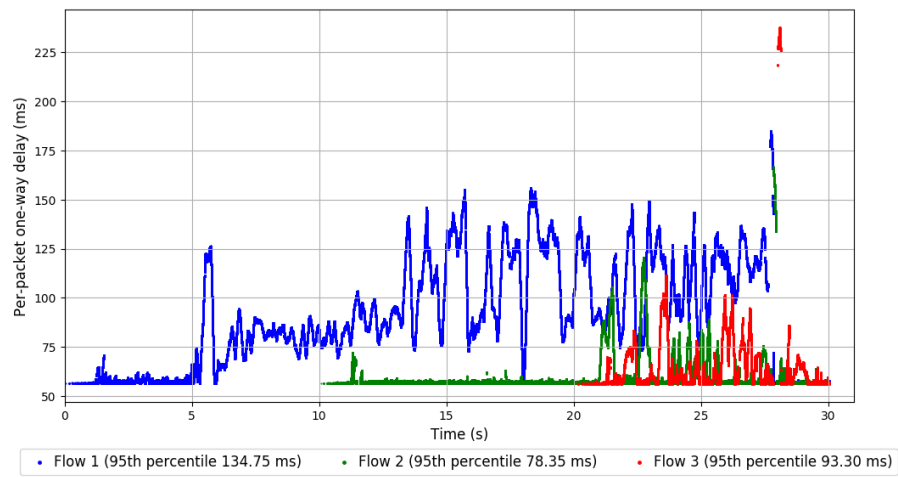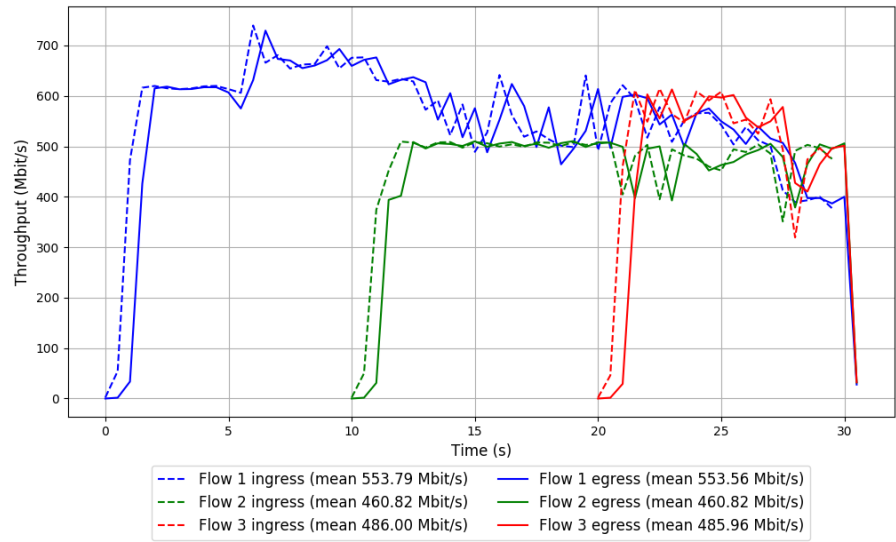
Run 5: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 223.90 Mbit/s)   Flow 1 egress (mean 223.89 Mbit/s)
Flow 2 ingress (mean 218.23 Mbit/s)   Flow 2 egress (mean 218.21 Mbit/s)
Flow 3 ingress (mean 213.98 Mbit/s)   Flow 3 egress (mean 214.00 Mbit/s)

Flow 1 (95th percentile 57.74 ms)   Flow 2 (95th percentile 60.75 ms)   Flow 3 (95th percentile 57.55 ms)

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```
Run 1: Statistics of TCP Vegas

Start at: 2018-12-12 09:48:09
End at: 2018-12-12 09:48:39
Local clock offset: -0.308 ms
Remote clock offset: -0.83 ms


# Below is generated by plot.py at 2018-12-12 14:57:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1021.83 Mbit/s
95th percentile per-packet one-way delay: 130.405 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 553.56 Mbit/s
95th percentile per-packet one-way delay: 134.752 ms
Loss rate: 0.04%
-- Flow 2:
Average throughput: 460.82 Mbit/s
95th percentile per-packet one-way delay: 78.349 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 485.96 Mbit/s
95th percentile per-packet one-way delay: 93.300 ms
Loss rate: 0.01%
```

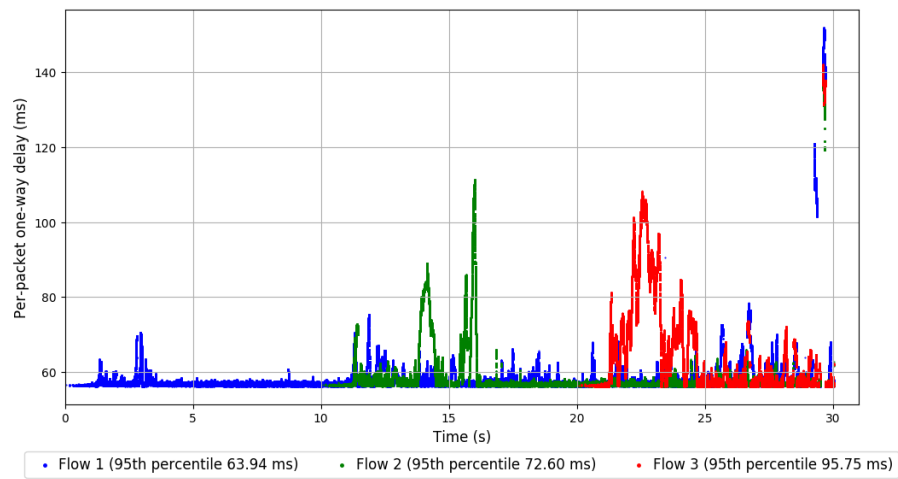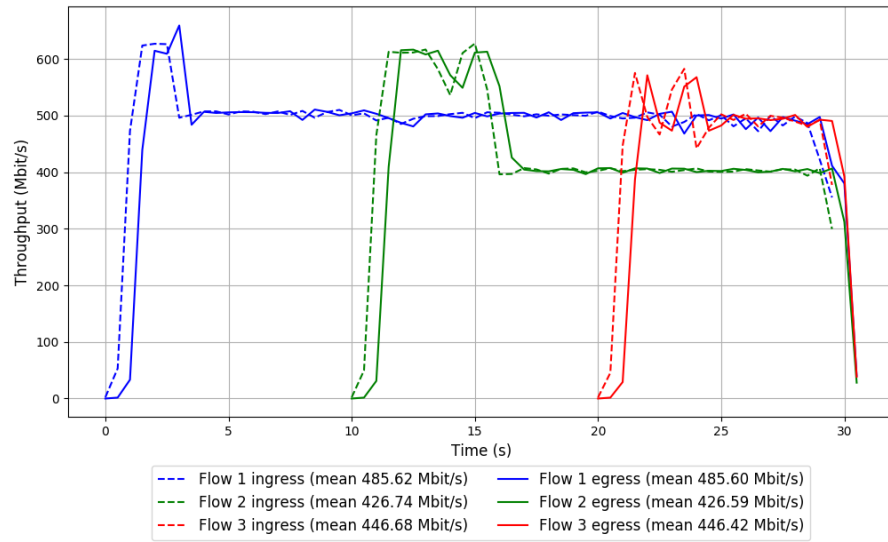# Run 1: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 553.79 Mbit/s) — Flow 1 egress (mean 553.56 Mbit/s)
Flow 2 ingress (mean 460.82 Mbit/s) — Flow 2 egress (mean 460.82 Mbit/s)
Flow 3 ingress (mean 486.00 Mbit/s) — Flow 3 egress (mean 485.96 Mbit/s)

Flow 1 (95th percentile 134.75 ms) • Flow 2 (95th percentile 78.35 ms) • Flow 3 (95th percentile 93.30 ms)
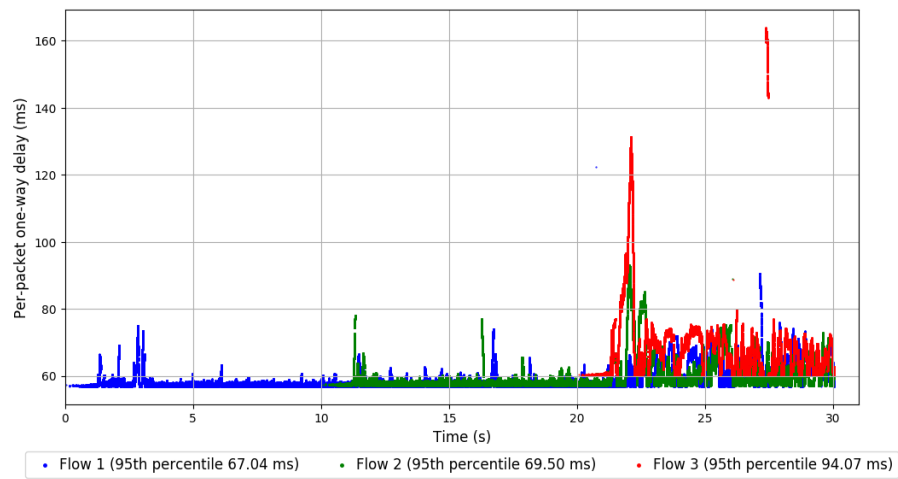
156

```
Run 2: Statistics of TCP Vegas

Start at: 2018-12-12 10:21:47
End at: 2018-12-12 10:22:17
Local clock offset: 0.294 ms
Remote clock offset: -0.389 ms


# Below is generated by plot.py at 2018-12-12 15:03:24
# Datalink statistics
-- Total of 3 flows:
Average throughput: 918.13 Mbit/s
95th percentile per-packet one-way delay: 73.264 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 485.60 Mbit/s
95th percentile per-packet one-way delay: 63.938 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 426.59 Mbit/s
95th percentile per-packet one-way delay: 72.603 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 446.42 Mbit/s
95th percentile per-packet one-way delay: 95.746 ms
Loss rate: 0.02%
```

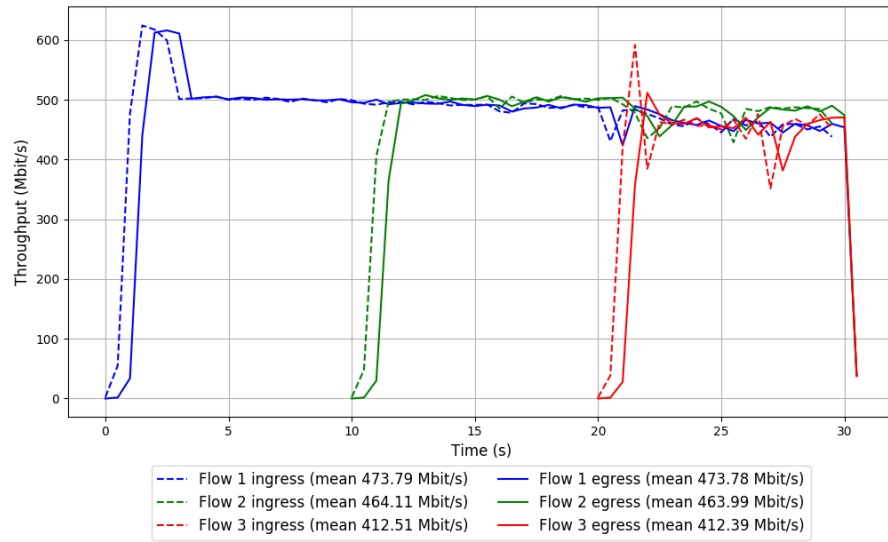Run 2: Report of TCP Vegas — Data Link

```
Run 3: Statistics of TCP Vegas

Start at: 2018-12-12 10:56:09
End at: 2018-12-12 10:56:39
Local clock offset: 0.065 ms
Remote clock offset: -0.057 ms


# Below is generated by plot.py at 2018-12-12 15:10:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 919.98 Mbit/s
95th percentile per-packet one-way delay: 72.289 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 473.78 Mbit/s
95th percentile per-packet one-way delay: 67.036 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 463.99 Mbit/s
95th percentile per-packet one-way delay: 69.496 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 412.39 Mbit/s
95th percentile per-packet one-way delay: 94.071 ms
Loss rate: 0.06%
```

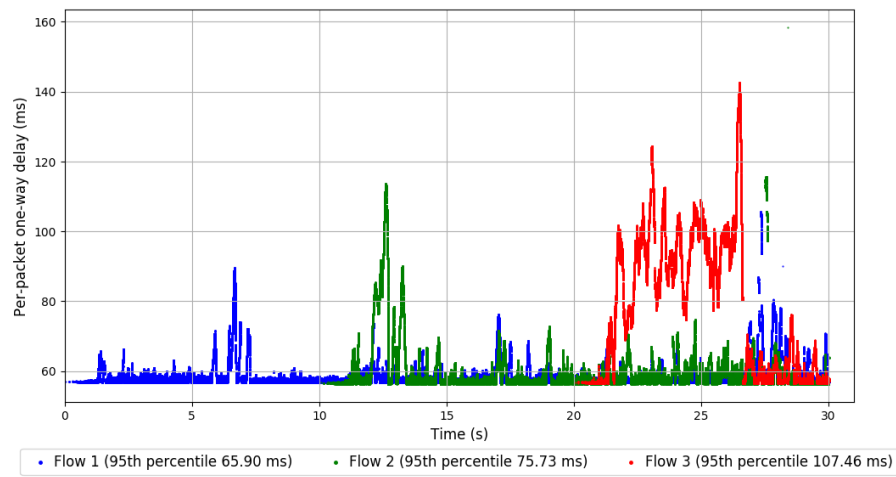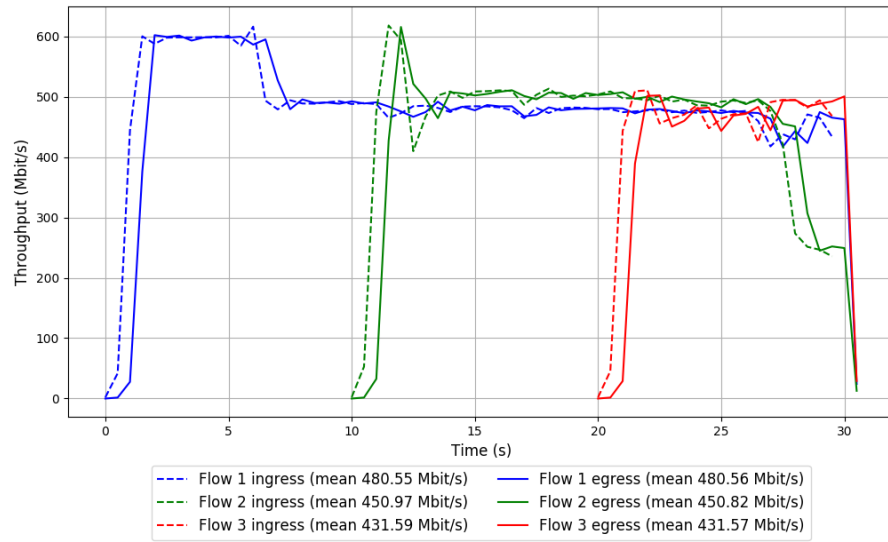# Run 3: Report of TCP Vegas — Data Link

```
Run 4: Statistics of TCP Vegas

Start at: 2018-12-12 11:30:41
End at: 2018-12-12 11:31:11
Local clock offset: 0.296 ms
Remote clock offset: -0.215 ms


# Below is generated by plot.py at 2018-12-12 15:11:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 924.05 Mbit/s
95th percentile per-packet one-way delay: 94.355 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 480.56 Mbit/s
95th percentile per-packet one-way delay: 65.900 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 450.82 Mbit/s
95th percentile per-packet one-way delay: 75.728 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 431.57 Mbit/s
95th percentile per-packet one-way delay: 107.464 ms
Loss rate: 0.00%
```
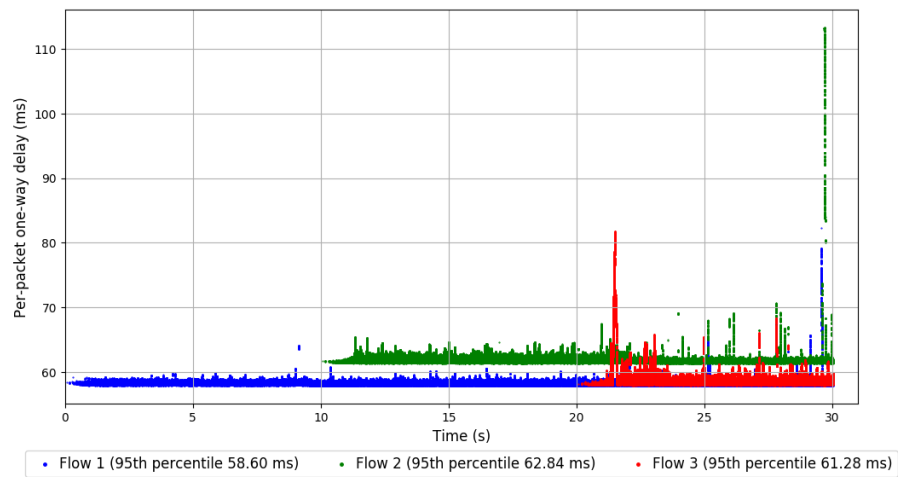
Run 4: Report of TCP Vegas — Data Link

```
Run 5: Statistics of TCP Vegas

Start at: 2018-12-12 12:05:51
End at: 2018-12-12 12:06:21
Local clock offset: -0.33 ms
Remote clock offset: 0.529 ms


# Below is generated by plot.py at 2018-12-12 15:11:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 645.76 Mbit/s
95th percentile per-packet one-way delay: 62.458 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 253.26 Mbit/s
95th percentile per-packet one-way delay: 58.603 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 369.24 Mbit/s
95th percentile per-packet one-way delay: 62.843 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 441.27 Mbit/s
95th percentile per-packet one-way delay: 61.279 ms
Loss rate: 0.00%
```
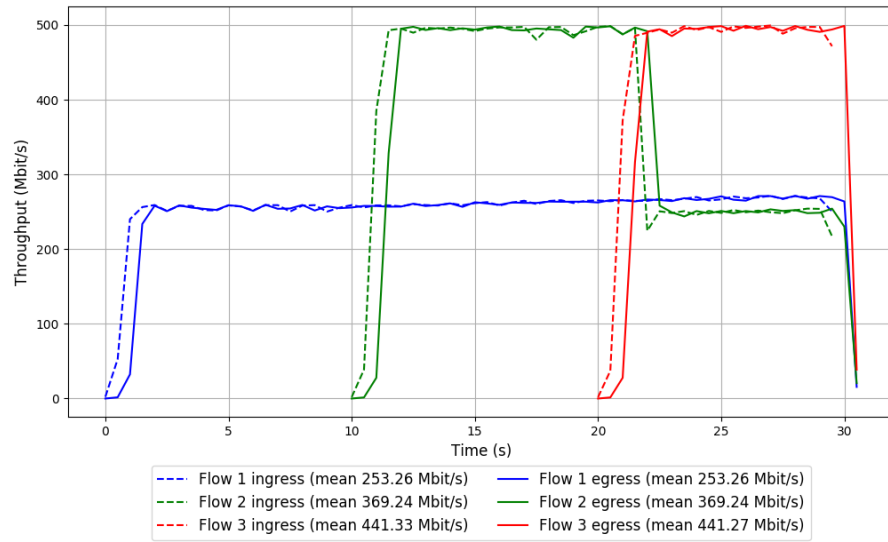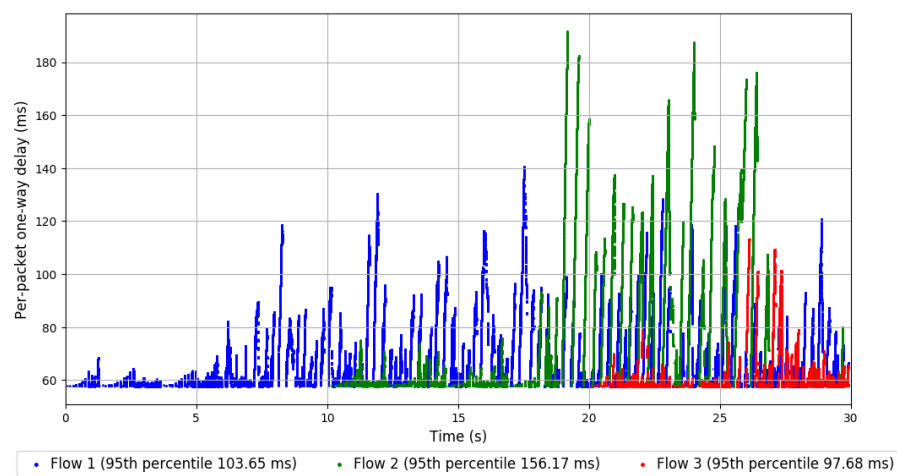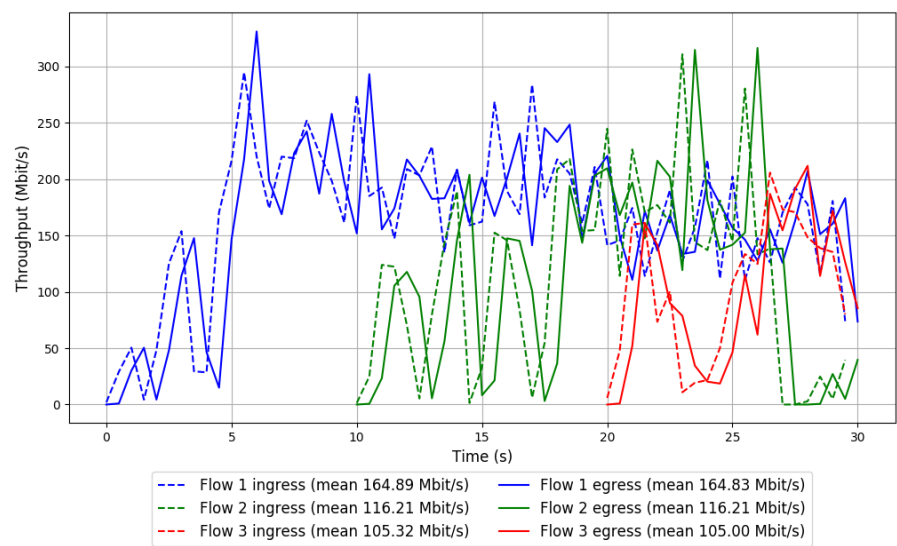
Run 5: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 253.26 Mbit/s) --- Flow 1 egress (mean 253.26 Mbit/s)
Flow 2 ingress (mean 369.24 Mbit/s) --- Flow 2 egress (mean 369.24 Mbit/s)
Flow 3 ingress (mean 441.33 Mbit/s) --- Flow 3 egress (mean 441.27 Mbit/s)

Flow 1 (95th percentile 58.60 ms) • Flow 2 (95th percentile 62.84 ms) • Flow 3 (95th percentile 61.28 ms)

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```
Run 1: Statistics of Verus

Start at: 2018-12-12 09:39:56
End at: 2018-12-12 09:40:26
Local clock offset: -0.252 ms
Remote clock offset: 0.376 ms


# Below is generated by plot.py at 2018-12-12 15:11:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 276.61 Mbit/s
95th percentile per-packet one-way delay: 123.109 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 164.83 Mbit/s
95th percentile per-packet one-way delay: 103.647 ms
Loss rate: 0.04%
-- Flow 2:
Average throughput: 116.21 Mbit/s
95th percentile per-packet one-way delay: 156.167 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 105.00 Mbit/s
95th percentile per-packet one-way delay: 97.684 ms
Loss rate: 0.29%
```
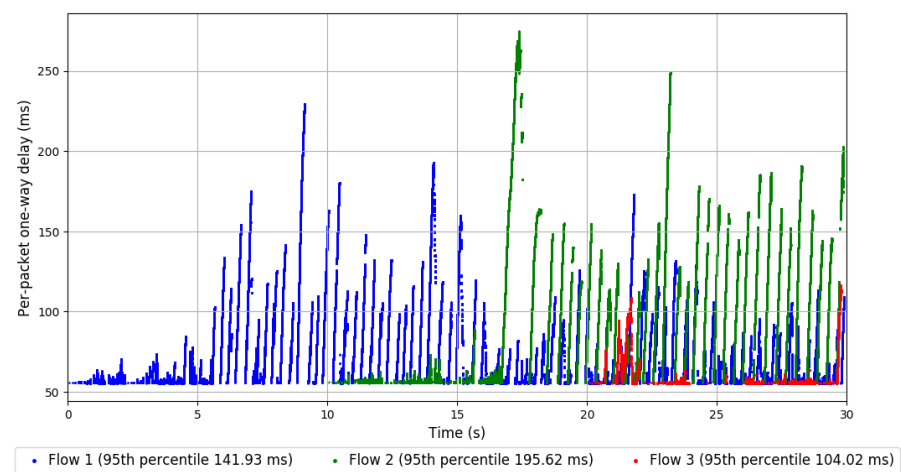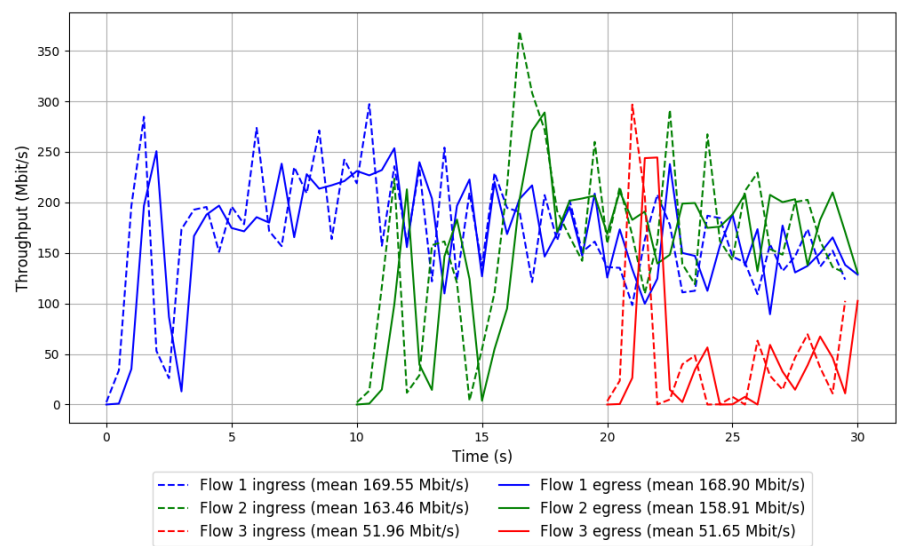
Run 1: Report of Verus — Data Link

```
Run 2: Statistics of Verus

Start at: 2018-12-12 10:13:22
End at: 2018-12-12 10:13:52
Local clock offset: -0.106 ms
Remote clock offset: -1.65 ms


# Below is generated by plot.py at 2018-12-12 15:11:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 291.18 Mbit/s
95th percentile per-packet one-way delay: 165.400 ms
Loss rate: 0.95%
-- Flow 1:
Average throughput: 168.90 Mbit/s
95th percentile per-packet one-way delay: 141.927 ms
Loss rate: 0.25%
-- Flow 2:
Average throughput: 158.91 Mbit/s
95th percentile per-packet one-way delay: 195.619 ms
Loss rate: 2.20%
-- Flow 3:
Average throughput: 51.65 Mbit/s
95th percentile per-packet one-way delay: 104.019 ms
Loss rate: 0.00%
```
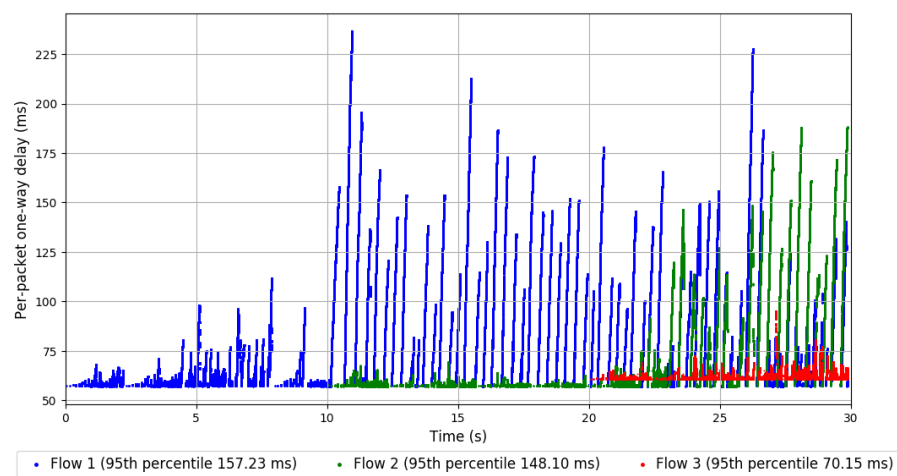
Run 2: Report of Verus — Data Link

```
Run 3: Statistics of Verus

Start at: 2018-12-12 10:47:26
End at: 2018-12-12 10:47:56
Local clock offset: -0.136 ms
Remote clock offset: 0.084 ms


# Below is generated by plot.py at 2018-12-12 15:11:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 280.77 Mbit/s
95th percentile per-packet one-way delay: 152.901 ms
Loss rate: 0.15%
-- Flow 1:
Average throughput: 178.84 Mbit/s
95th percentile per-packet one-way delay: 157.230 ms
Loss rate: 0.20%
-- Flow 2:
Average throughput: 117.11 Mbit/s
95th percentile per-packet one-way delay: 148.099 ms
Loss rate: 0.07%
-- Flow 3:
Average throughput: 73.54 Mbit/s
95th percentile per-packet one-way delay: 70.153 ms
Loss rate: 0.03%
```
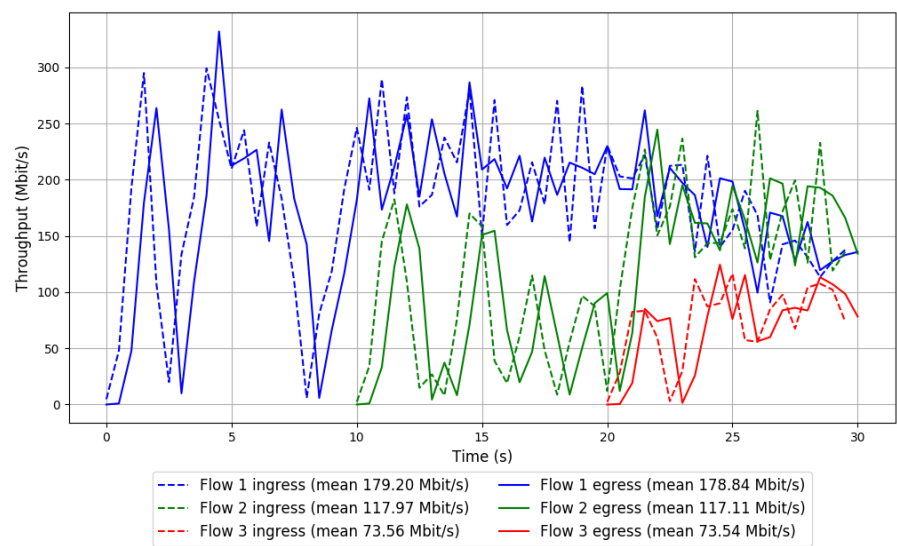
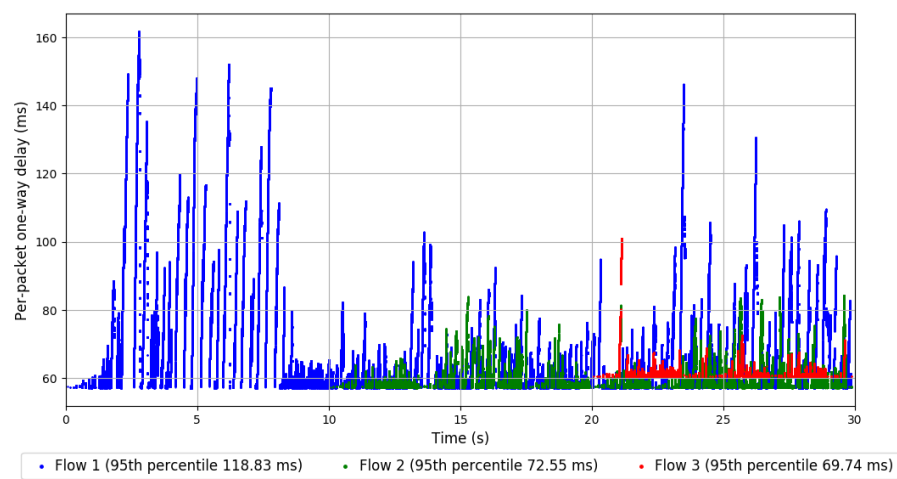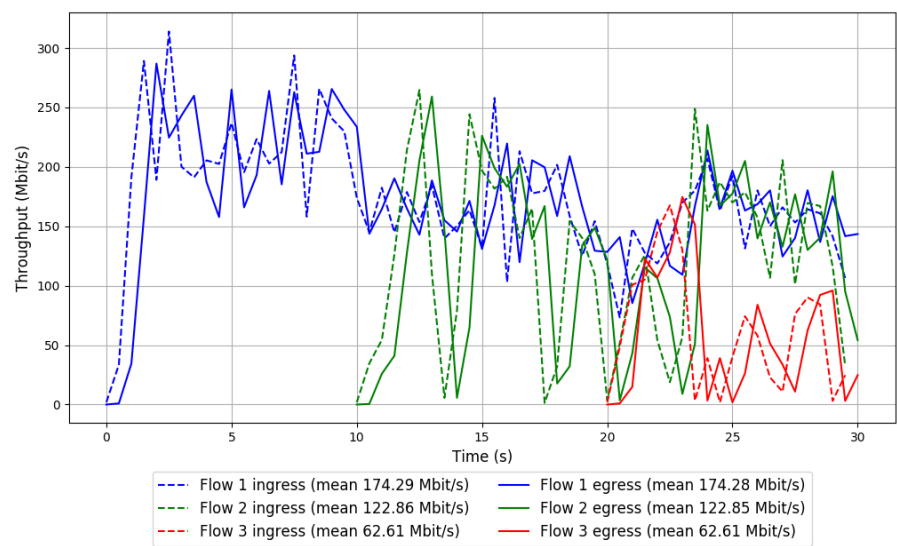Run 3: Report of Verus — Data Link

```
Run 4: Statistics of Verus

Start at: 2018-12-12 11:22:06
End at: 2018-12-12 11:22:36
Local clock offset: -0.223 ms
Remote clock offset: -0.159 ms


# Below is generated by plot.py at 2018-12-12 15:11:07
# Datalink statistics
-- Total of 3 flows:
Average throughput: 276.31 Mbit/s
95th percentile per-packet one-way delay: 107.879 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 174.28 Mbit/s
95th percentile per-packet one-way delay: 118.829 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 122.85 Mbit/s
95th percentile per-packet one-way delay: 72.552 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 62.61 Mbit/s
95th percentile per-packet one-way delay: 69.736 ms
Loss rate: 0.00%
```
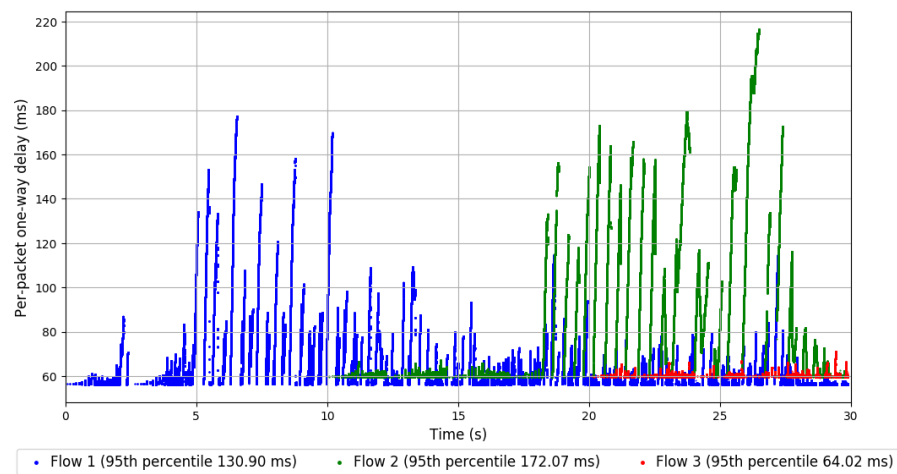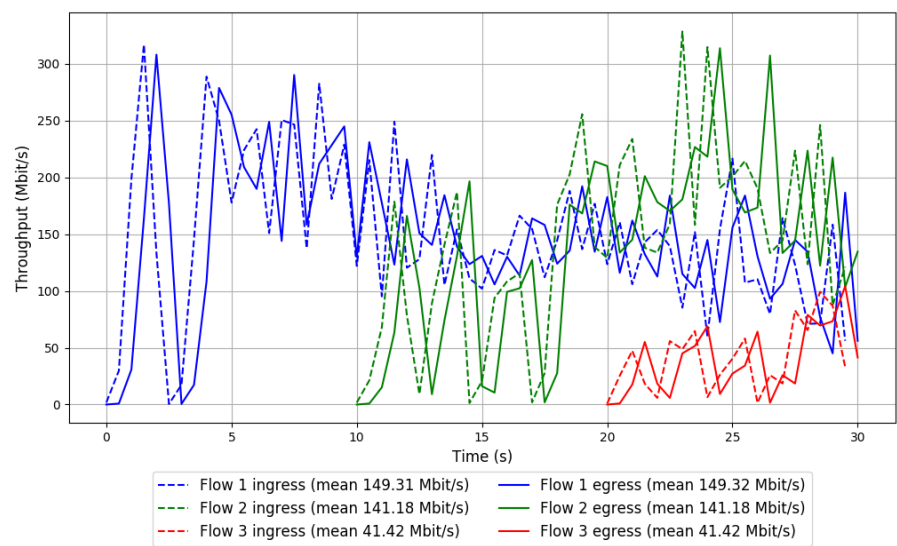
Run 4: Report of Verus — Data Link

Flow 1 ingress (mean 174.29 Mbit/s) --- Flow 1 egress (mean 174.28 Mbit/s)
Flow 2 ingress (mean 122.86 Mbit/s) --- Flow 2 egress (mean 122.85 Mbit/s)
Flow 3 ingress (mean 62.61 Mbit/s) --- Flow 3 egress (mean 62.61 Mbit/s)

Flow 1 (95th percentile 118.83 ms) • Flow 2 (95th percentile 72.55 ms) • Flow 3 (95th percentile 69.74 ms)

```
Run 5: Statistics of Verus

Start at: 2018-12-12 11:57:16
End at: 2018-12-12 11:57:46
Local clock offset: -0.332 ms
Remote clock offset: -1.212 ms


# Below is generated by plot.py at 2018-12-12 15:12:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 256.73 Mbit/s
95th percentile per-packet one-way delay: 152.722 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 149.32 Mbit/s
95th percentile per-packet one-way delay: 130.895 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 141.18 Mbit/s
95th percentile per-packet one-way delay: 172.071 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 41.42 Mbit/s
95th percentile per-packet one-way delay: 64.016 ms
Loss rate: 0.03%
```

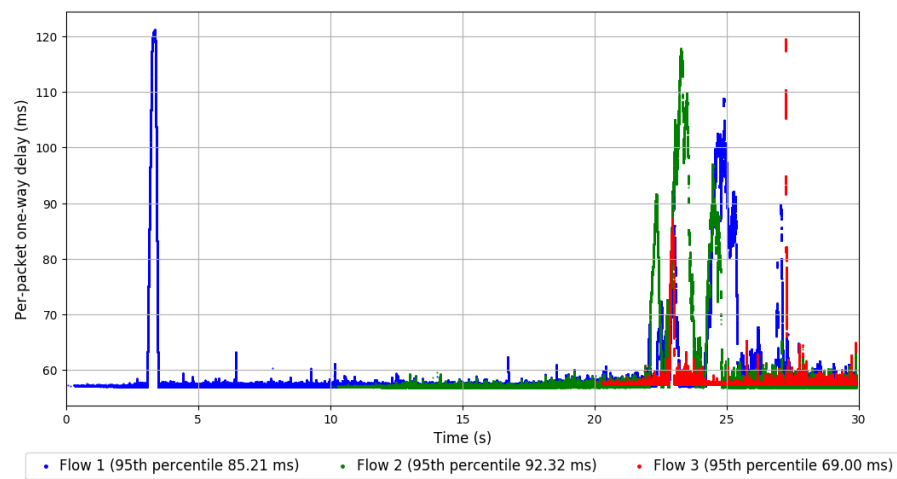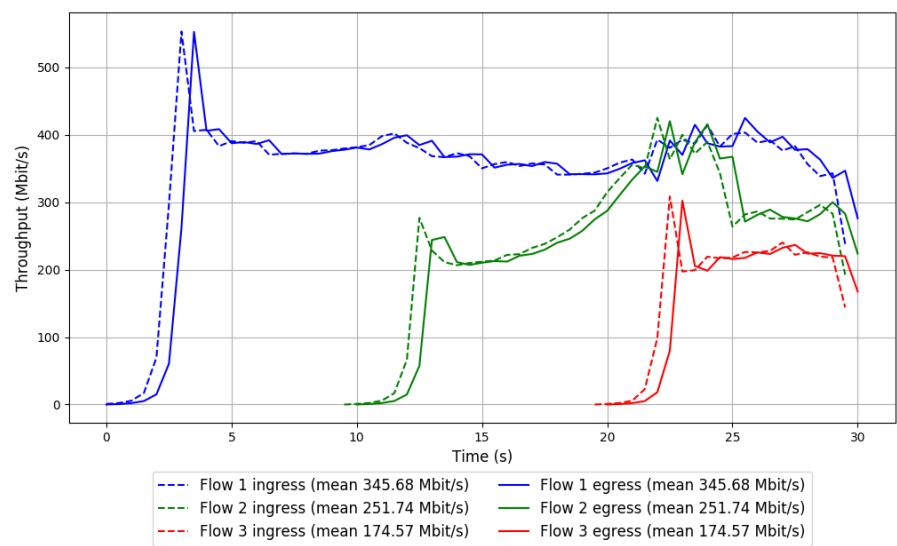Run 5: Report of Verus — Data Link

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```
Run 1: Statistics of PCC-Vivace

Start at: 2018-12-12 09:36:05
End at: 2018-12-12 09:36:35
Local clock offset: -0.529 ms
Remote clock offset: -0.403 ms


# Below is generated by plot.py at 2018-12-12 15:14:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 570.91 Mbit/s
95th percentile per-packet one-way delay: 86.479 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 345.68 Mbit/s
95th percentile per-packet one-way delay: 85.211 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 251.74 Mbit/s
95th percentile per-packet one-way delay: 92.318 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 174.57 Mbit/s
95th percentile per-packet one-way delay: 69.002 ms
Loss rate: 0.00%
```

Run 1: Report of PCC-Vivace — Data Link

```
Run 2: Statistics of PCC-Vivace

Start at: 2018-12-12 10:09:29
End at: 2018-12-12 10:09:59
Local clock offset: -0.068 ms
Remote clock offset: 0.146 ms


# Below is generated by plot.py at 2018-12-12 15:14:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 486.99 Mbit/s
95th percentile per-packet one-way delay: 115.457 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 302.20 Mbit/s
95th percentile per-packet one-way delay: 76.813 ms
Loss rate: 0.04%
-- Flow 2:
Average throughput: 254.44 Mbit/s
95th percentile per-packet one-way delay: 166.393 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 47.34 Mbit/s
95th percentile per-packet one-way delay: 57.700 ms
Loss rate: 0.00%
```
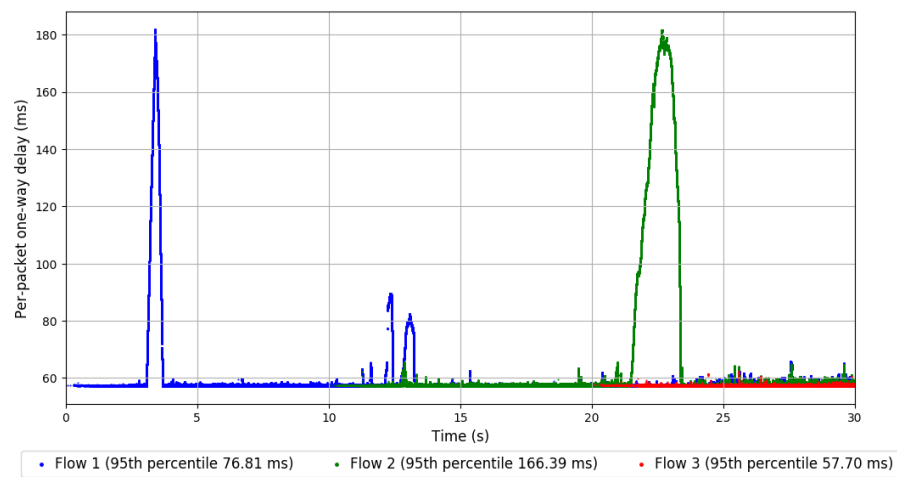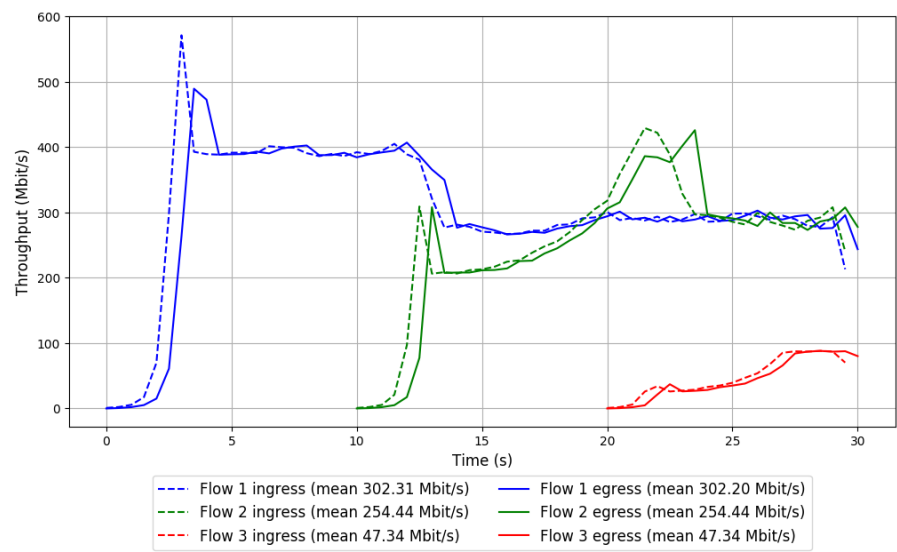
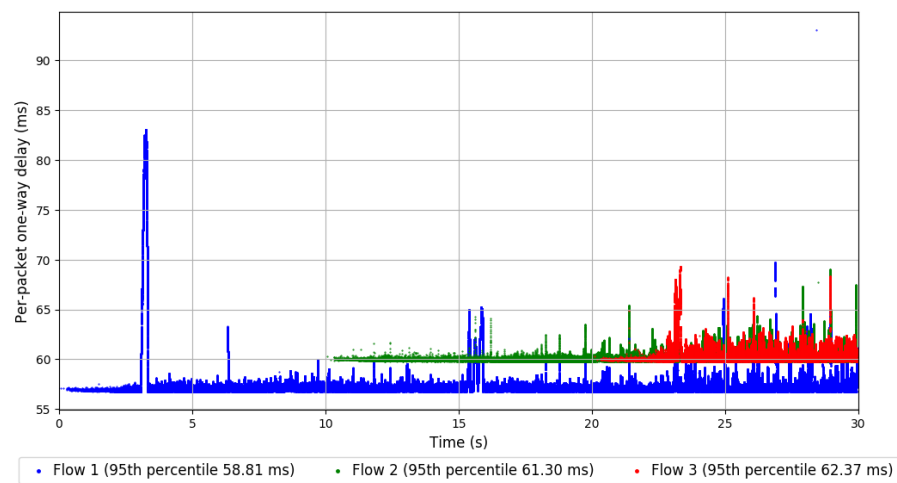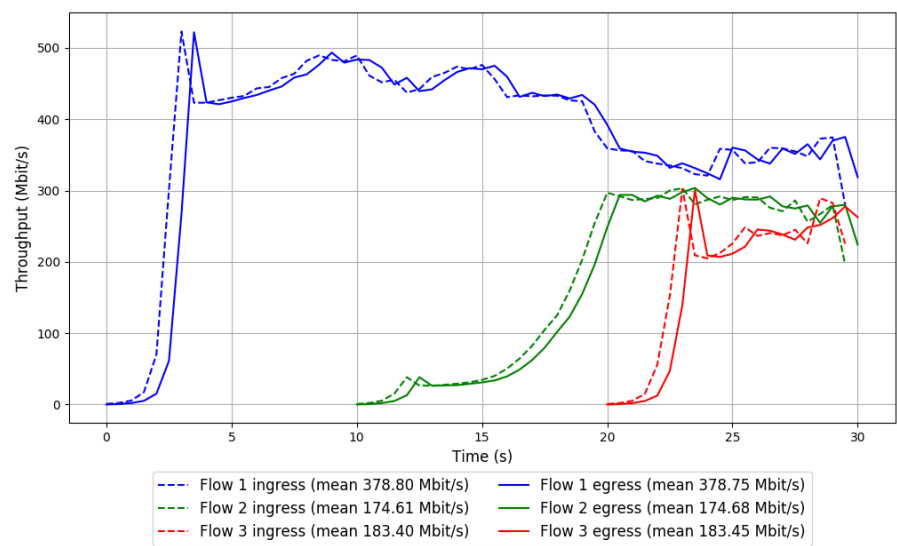Run 2: Report of PCC-Vivace — Data Link

Flow 1 ingress (mean 302.31 Mbit/s) ----
Flow 1 egress (mean 302.20 Mbit/s) ——
Flow 2 ingress (mean 254.44 Mbit/s) ----
Flow 2 egress (mean 254.44 Mbit/s) ——
Flow 3 ingress (mean 47.34 Mbit/s) ----
Flow 3 egress (mean 47.34 Mbit/s) ——

Flow 1 (95th percentile 76.81 ms) •
Flow 2 (95th percentile 166.39 ms) •
Flow 3 (95th percentile 57.70 ms) •

```
Run 3: Statistics of PCC-Vivace

Start at: 2018-12-12 10:43:19
End at: 2018-12-12 10:43:49
Local clock offset: 0.103 ms
Remote clock offset: -0.044 ms


# Below is generated by plot.py at 2018-12-12 15:14:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 555.35 Mbit/s
95th percentile per-packet one-way delay: 61.057 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 378.75 Mbit/s
95th percentile per-packet one-way delay: 58.807 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 174.68 Mbit/s
95th percentile per-packet one-way delay: 61.304 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 183.45 Mbit/s
95th percentile per-packet one-way delay: 62.371 ms
Loss rate: 0.03%
```

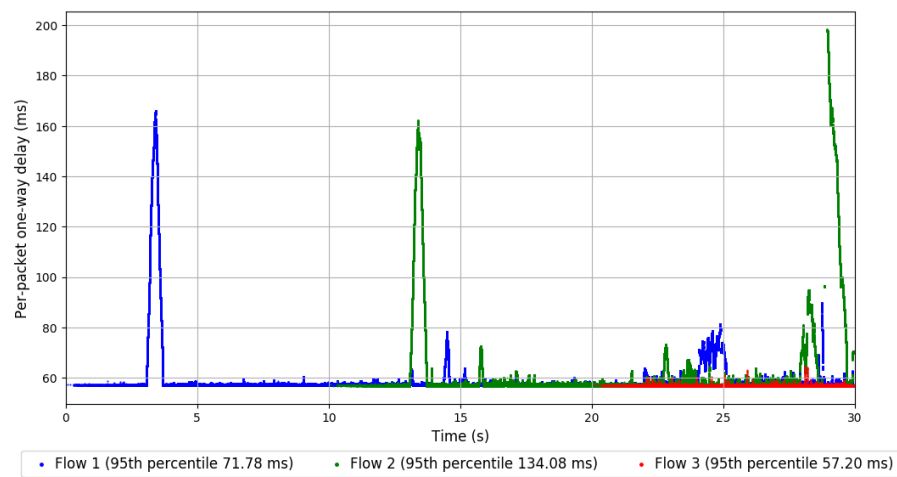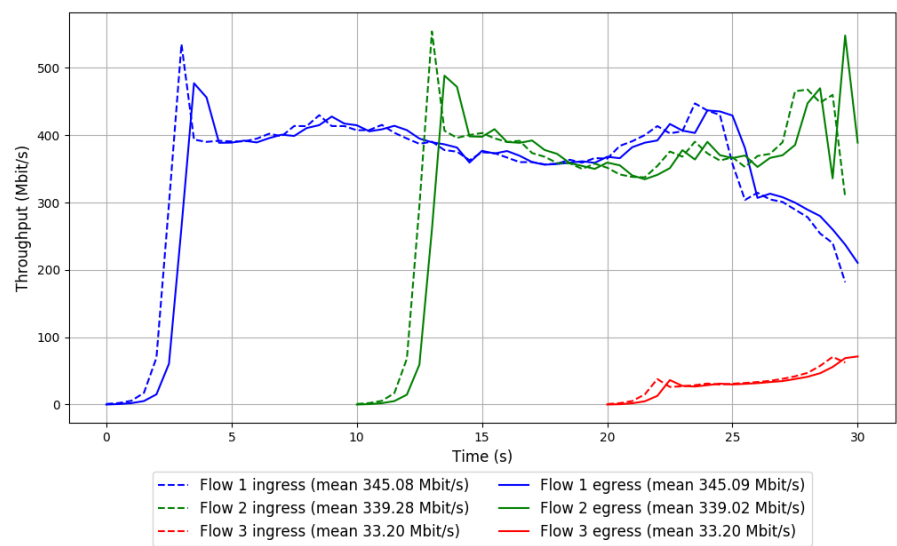# Run 3: Report of PCC-Vivace — Data Link

```
Run 4: Statistics of PCC-Vivace

Start at: 2018-12-12 11:17:45
End at: 2018-12-12 11:18:15
Local clock offset: -0.285 ms
Remote clock offset: -0.198 ms


# Below is generated by plot.py at 2018-12-12 15:14:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 581.42 Mbit/s
95th percentile per-packet one-way delay: 87.986 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 345.09 Mbit/s
95th percentile per-packet one-way delay: 71.784 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 339.02 Mbit/s
95th percentile per-packet one-way delay: 134.078 ms
Loss rate: 0.07%
-- Flow 3:
Average throughput: 33.20 Mbit/s
95th percentile per-packet one-way delay: 57.198 ms
Loss rate: 0.00%
```

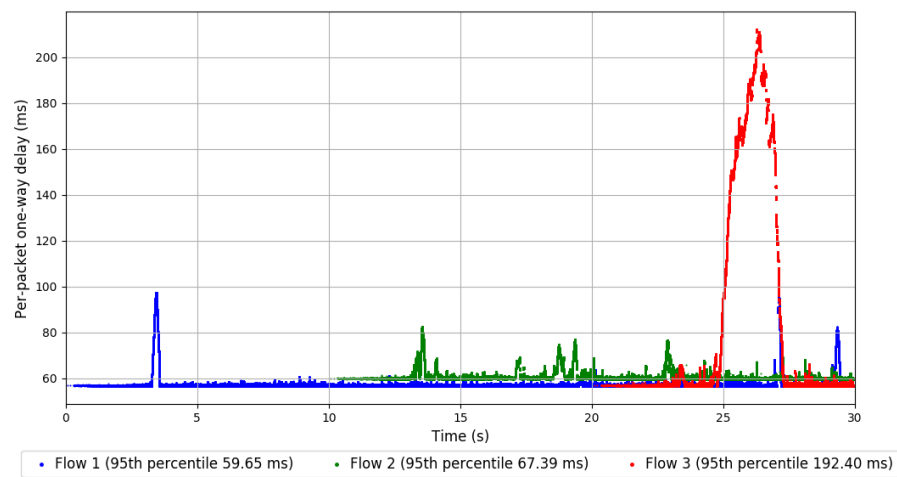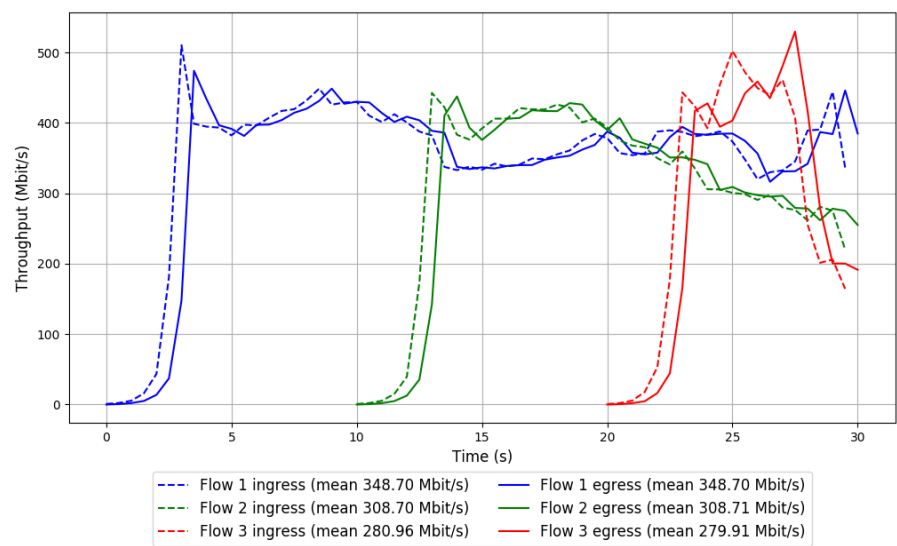## Run 4: Report of PCC-Vivace — Data Link

```
Run 5: Statistics of PCC-Vivace

Start at: 2018-12-12 11:52:33
End at: 2018-12-12 11:53:03
Local clock offset: 0.284 ms
Remote clock offset: -0.245 ms


# Below is generated by plot.py at 2018-12-12 15:14:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 646.02 Mbit/s
95th percentile per-packet one-way delay: 96.632 ms
Loss rate: 0.05%
-- Flow 1:
Average throughput: 348.70 Mbit/s
95th percentile per-packet one-way delay: 59.648 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 308.71 Mbit/s
95th percentile per-packet one-way delay: 67.389 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 279.91 Mbit/s
95th percentile per-packet one-way delay: 192.401 ms
Loss rate: 0.37%
```

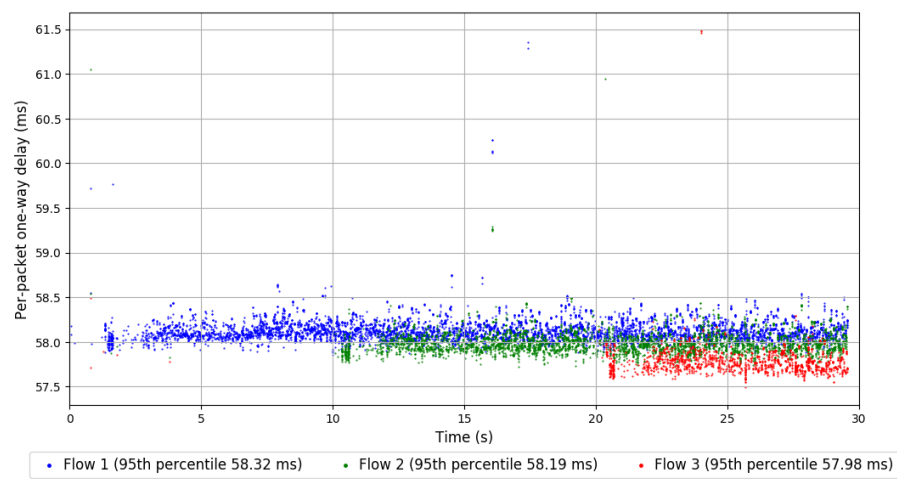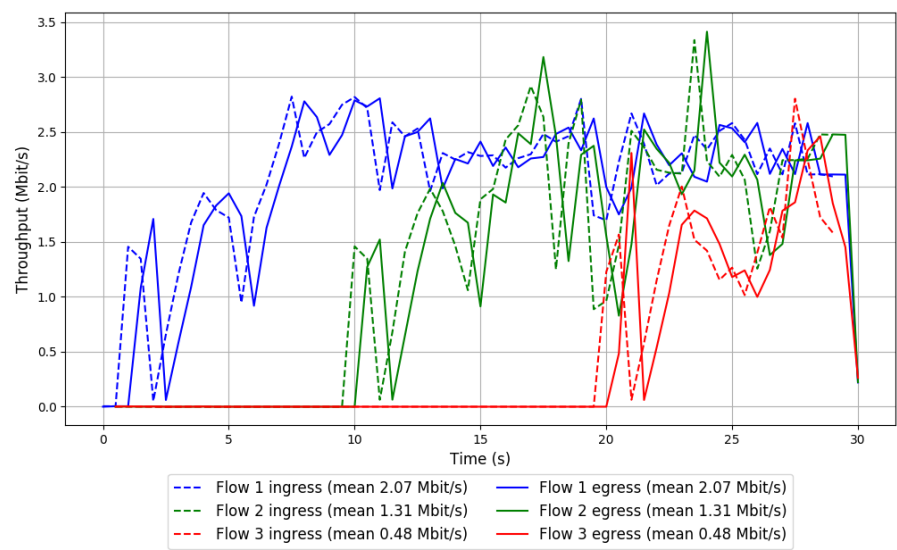Run 5: Report of PCC-Vivace — Data Link

```
Run 1: Statistics of WebRTC media

Start at: 2018-12-12 10:00:36
End at: 2018-12-12 10:01:06
Local clock offset: -0.226 ms
Remote clock offset: 0.54 ms


# Below is generated by plot.py at 2018-12-12 15:14:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.81 Mbit/s
95th percentile per-packet one-way delay: 58.281 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 2.07 Mbit/s
95th percentile per-packet one-way delay: 58.320 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.31 Mbit/s
95th percentile per-packet one-way delay: 58.187 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.48 Mbit/s
95th percentile per-packet one-way delay: 57.983 ms
Loss rate: 0.00%
```

Run 1: Report of WebRTC media — Data Link

```
Run 2: Statistics of WebRTC media

Start at: 2018-12-12 10:34:16
End at: 2018-12-12 10:34:46
Local clock offset: 0.12 ms
Remote clock offset: 0.06 ms


# Below is generated by plot.py at 2018-12-12 15:14:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 57.245 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 57.062 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 57.316 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 57.236 ms
Loss rate: 0.00%
```
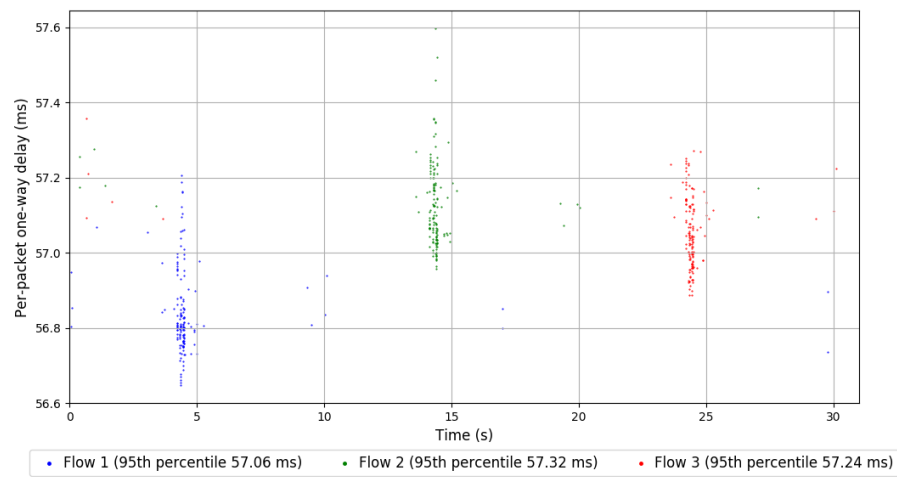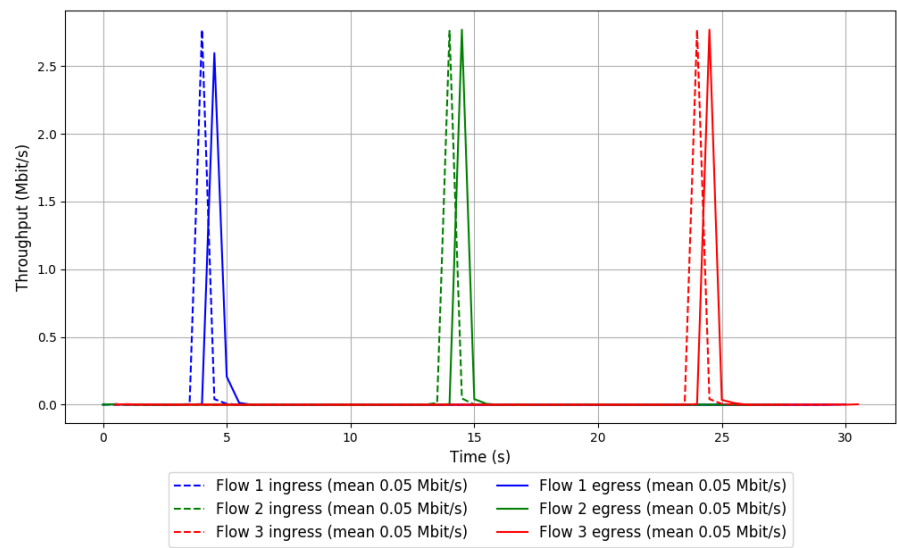
Run 2: Report of WebRTC media — Data Link

```
Run 3: Statistics of WebRTC media

Start at: 2018-12-12 11:08:46
End at: 2018-12-12 11:09:16
Local clock offset: -0.143 ms
Remote clock offset: 0.574 ms


# Below is generated by plot.py at 2018-12-12 15:14:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.18 Mbit/s
95th percentile per-packet one-way delay: 58.147 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 2.10 Mbit/s
95th percentile per-packet one-way delay: 58.135 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 58.273 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 58.316 ms
Loss rate: 0.00%
```
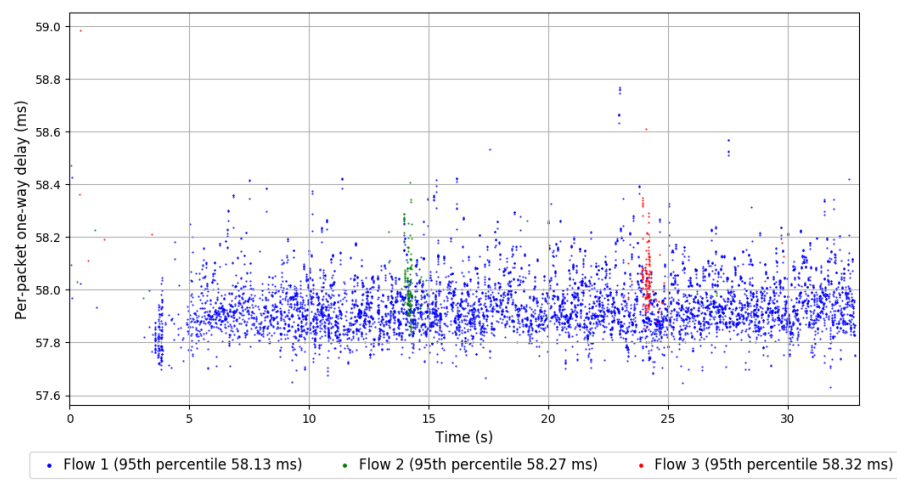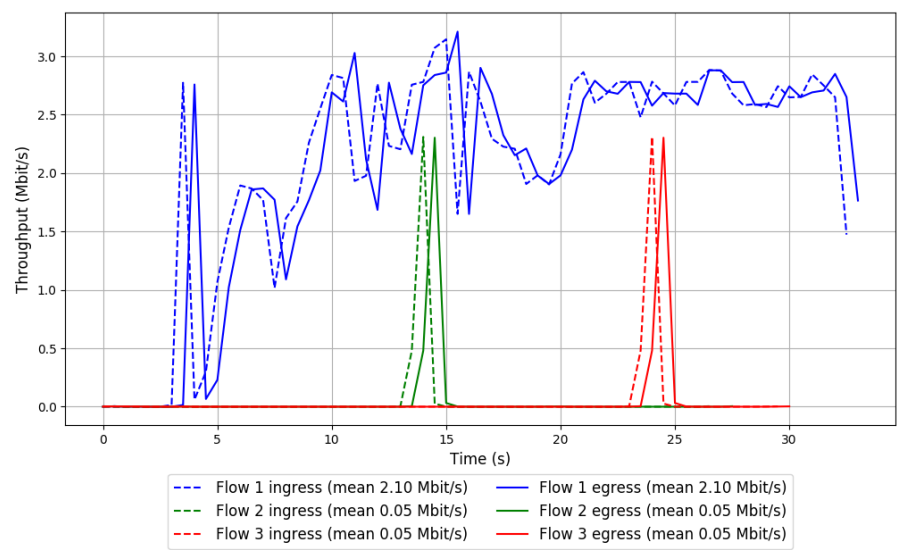
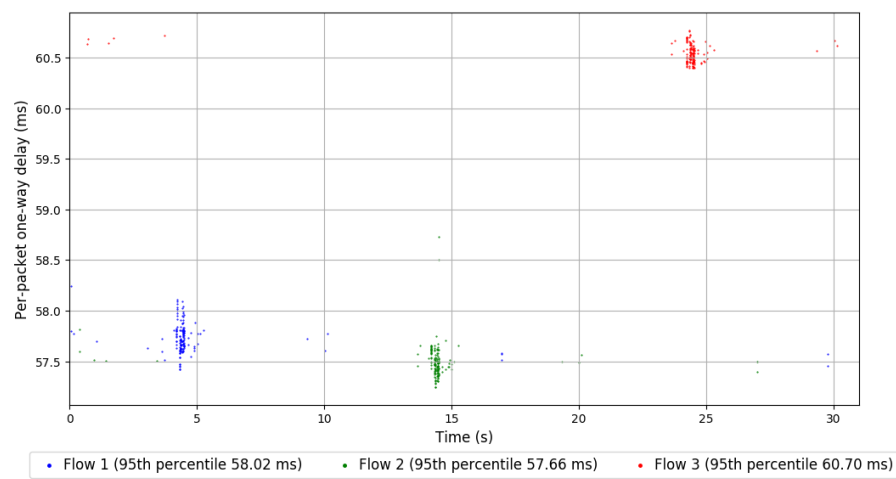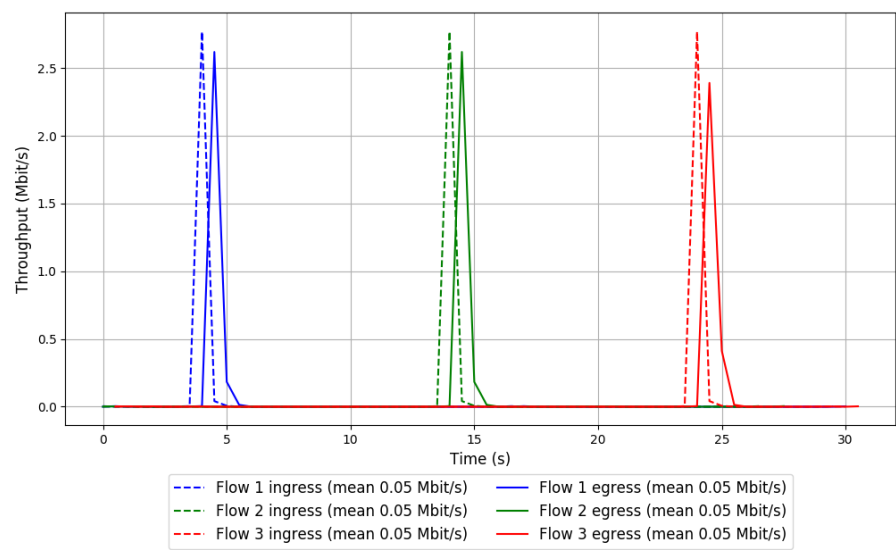Run 3: Report of WebRTC media — Data Link

```
Run 4: Statistics of WebRTC media

Start at: 2018-12-12 11:43:35
End at: 2018-12-12 11:44:05
Local clock offset: -0.331 ms
Remote clock offset: -0.097 ms


# Below is generated by plot.py at 2018-12-12 15:14:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 60.652 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 58.018 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 57.660 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 60.698 ms
Loss rate: 0.00%
```

Run 4: Report of WebRTC media — Data Link

```
Run 5: Statistics of WebRTC media

Start at: 2018-12-12 12:19:14
End at: 2018-12-12 12:19:44
Local clock offset: -0.335 ms
Remote clock offset: -0.165 ms


# Below is generated by plot.py at 2018-12-12 15:14:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.42 Mbit/s
95th percentile per-packet one-way delay: 60.773 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 2.13 Mbit/s
95th percentile per-packet one-way delay: 57.843 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.24 Mbit/s
95th percentile per-packet one-way delay: 60.899 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 60.913 ms
Loss rate: 0.00%
```

Run 5: Report of WebRTC media — Data Link