Pantheon Report

Generated at 2019-05-30 14:27:07 (UTC).

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

Repeated the test of 21 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.
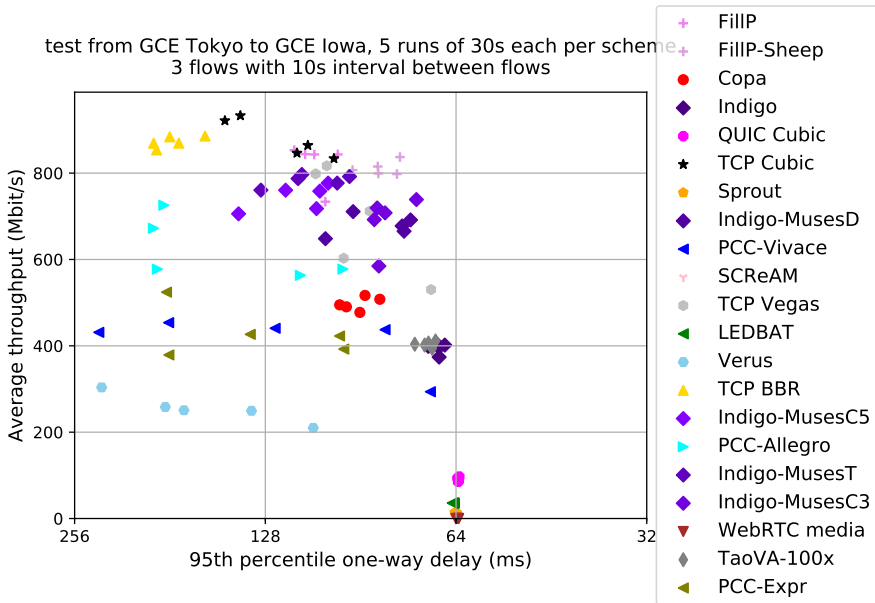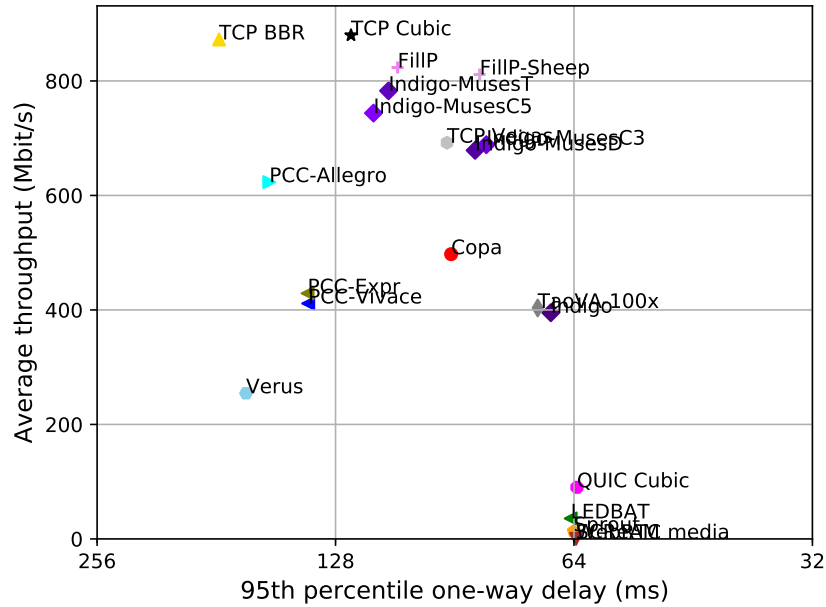
```
System info:
Linux 4.15.0-1029-gcp
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912

Git summary:
branch: muses @ 7a686f7c2ed0a333082c0bab1fa5c921ab47e6ee
third_party/fillp @ d6da1459332fcee56963885d7eba17e6a32d4519
third_party/fillp-sheep @ 0e5bb722943babcd2b090d2c64fcd45e12e923f9
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdfe58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/muses @ 5ce721187ad823da20955337730c746486ca4966
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 Tokyo to GCE Iowa, 5 runs of 30s each per scheme
3 flows with 10s interval between flows (mean of all runs by scheme)

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

scheme	# runs	mean avg tput (Mbit/s)			mean 95th-%ile delay (ms)			mean loss rate (%)		
		flow 1	flow 2	flow 3	flow 1	flow 2	flow 3	flow 1	flow 2	flow 3
TCP BBR	5	445.73	438.85	409.92	180.79	178.08	135.85	1.52	1.59	2.13
Copa	5	251.53	253.78	234.68	92.60	93.16	83.69	0.41	0.71	1.32
TCP Cubic	5	468.37	428.00	385.19	121.41	100.25	95.10	0.42	0.64	1.53
FillP	5	505.59	355.51	251.85	114.32	68.74	66.47	1.04	0.57	1.55
FillP-Sheep	5	513.77	326.86	245.60	93.93	66.68	66.39	0.41	0.61	1.48
Indigo	5	209.82	193.55	169.21	69.55	68.34	66.02	0.43	0.67	1.56
Indigo-MusesC3	5	407.21	341.60	238.95	89.37	75.13	68.52	0.36	0.69	2.54
Indigo-MusesC5	5	462.89	397.71	98.08	110.55	130.46	64.08	0.39	0.65	1.87
Indigo-MusesD	5	386.60	344.60	258.61	87.22	88.72	69.07	0.35	0.74	2.04
Indigo-MusesT	5	462.30	383.64	279.40	114.91	97.89	74.55	0.37	0.70	2.15
LEDBAT	5	23.10	15.44	7.58	64.80	64.38	64.17	0.84	1.27	2.57
PCC-Allegro	5	353.38	285.61	246.35	155.44	117.24	134.64	3.55	3.58	1.89
PCC-Expr	5	235.20	216.50	153.18	146.13	109.40	97.96	2.26	1.23	1.63
QUIC Cubic	5	55.20	40.70	21.57	63.40	63.33	63.52	0.58	1.24	2.84
SCReAM	5	0.22	0.22	0.22	63.49	63.51	63.29	0.38	0.65	1.38
Sprout	5	6.79	6.72	6.46	64.07	64.04	64.16	0.40	0.71	1.35
TaoVA-100x	5	207.13	198.72	194.99	71.54	72.13	68.26	0.51	0.75	1.60
TCP Vegas	5	340.68	334.12	392.36	87.15	90.71	106.12	0.40	0.57	1.36
Verus	5	147.67	119.85	82.84	168.77	145.04	100.78	1.09	1.43	1.79
PCC-Vivace	5	259.72	168.62	121.36	149.60	103.30	67.71	0.58	1.54	2.37
WebRTC media	5	0.05	0.05	0.05	63.57	64.18	63.45	0.01	0.00	0.00

```
Run 1: Statistics of TCP BBR

Start at: 2019-05-30 08:50:31
End at: 2019-05-30 08:51:01
Local clock offset: -0.316 ms
Remote clock offset: 0.299 ms


# Below is generated by plot.py at 2019-05-30 12:14:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 885.87 Mbit/s
95th percentile per-packet one-way delay: 159.357 ms
Loss rate: 0.89%
-- Flow 1:
Average throughput: 460.46 Mbit/s
95th percentile per-packet one-way delay: 169.895 ms
Loss rate: 0.99%
-- Flow 2:
Average throughput: 454.92 Mbit/s
95th percentile per-packet one-way delay: 125.741 ms
Loss rate: 0.42%
-- Flow 3:
Average throughput: 373.83 Mbit/s
95th percentile per-packet one-way delay: 80.460 ms
Loss rate: 1.68%
```
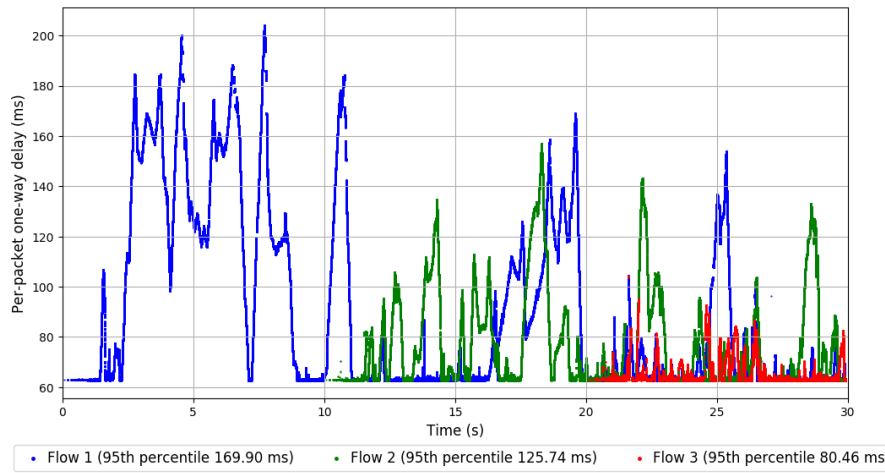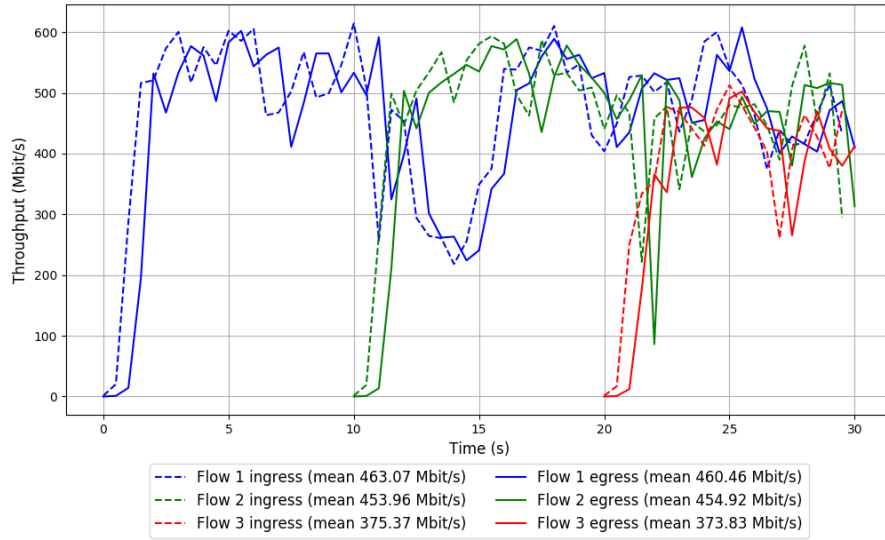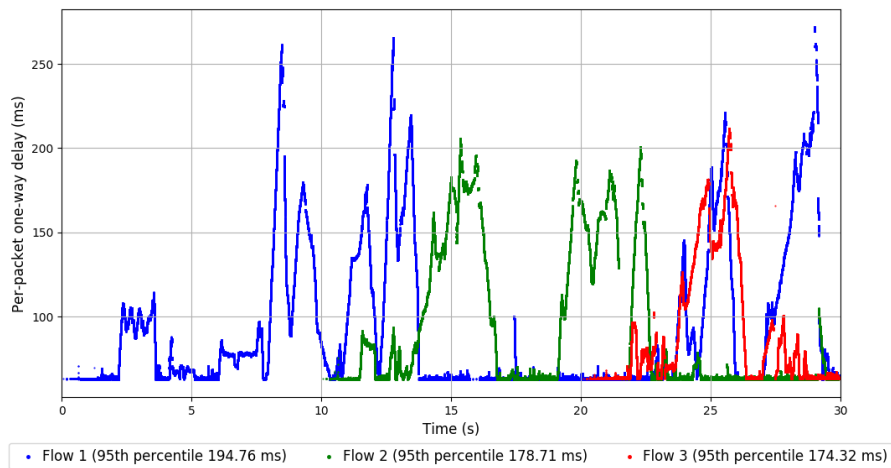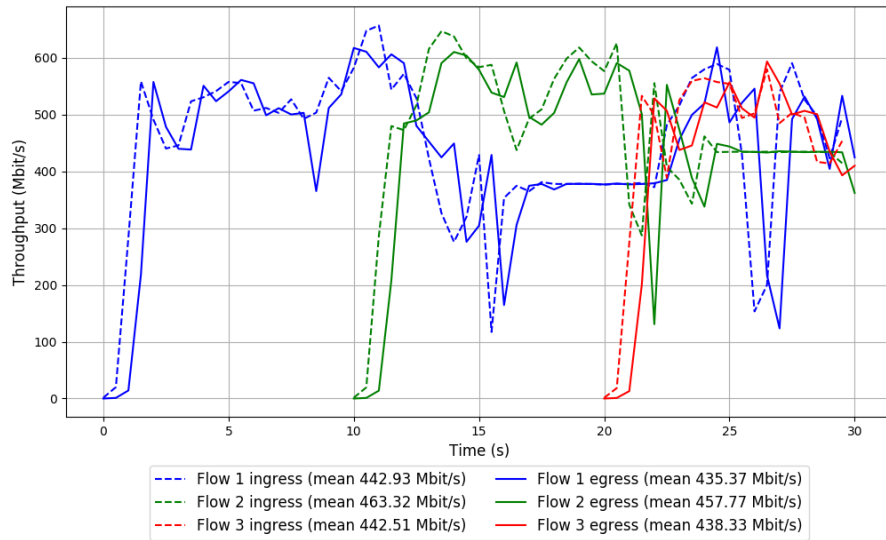
Run 1: Report of TCP BBR — Data Link

```
Run 2: Statistics of TCP BBR

Start at: 2019-05-30 09:26:22
End at: 2019-05-30 09:26:52
Local clock offset: -0.357 ms
Remote clock offset: 0.137 ms


# Below is generated by plot.py at 2019-05-30 12:14:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 884.14 Mbit/s
95th percentile per-packet one-way delay: 181.162 ms
Loss rate: 2.03%
-- Flow 1:
Average throughput: 435.37 Mbit/s
95th percentile per-packet one-way delay: 194.761 ms
Loss rate: 2.12%
-- Flow 2:
Average throughput: 457.77 Mbit/s
95th percentile per-packet one-way delay: 178.714 ms
Loss rate: 1.83%
-- Flow 3:
Average throughput: 438.33 Mbit/s
95th percentile per-packet one-way delay: 174.320 ms
Loss rate: 2.21%
```
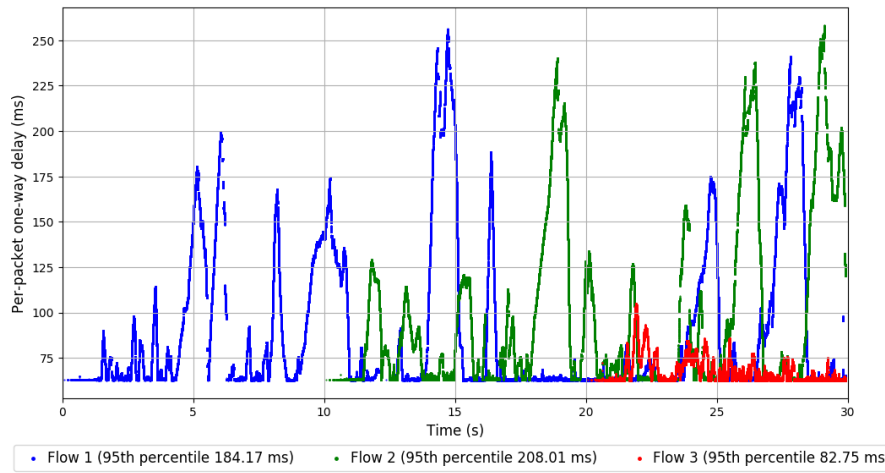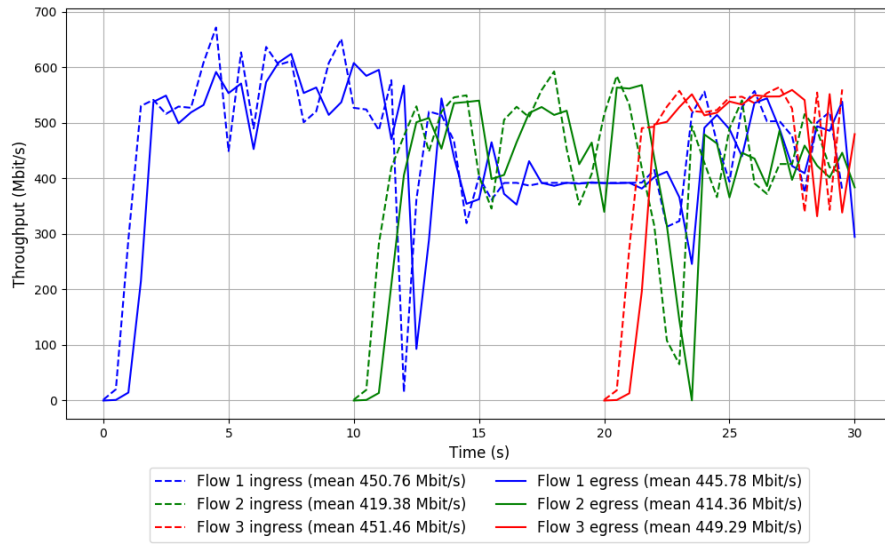
Run 2: Report of TCP BBR — Data Link

```
Run 3: Statistics of TCP BBR

Start at: 2019-05-30 10:02:15
End at: 2019-05-30 10:02:45
Local clock offset: -0.22 ms
Remote clock offset: 0.395 ms


# Below is generated by plot.py at 2019-05-30 12:14:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 869.21 Mbit/s
95th percentile per-packet one-way delay: 192.090 ms
Loss rate: 1.66%
-- Flow 1:
Average throughput: 445.78 Mbit/s
95th percentile per-packet one-way delay: 184.174 ms
Loss rate: 1.53%
-- Flow 2:
Average throughput: 414.36 Mbit/s
95th percentile per-packet one-way delay: 208.015 ms
Loss rate: 1.83%
-- Flow 3:
Average throughput: 449.29 Mbit/s
95th percentile per-packet one-way delay: 82.753 ms
Loss rate: 1.75%
```
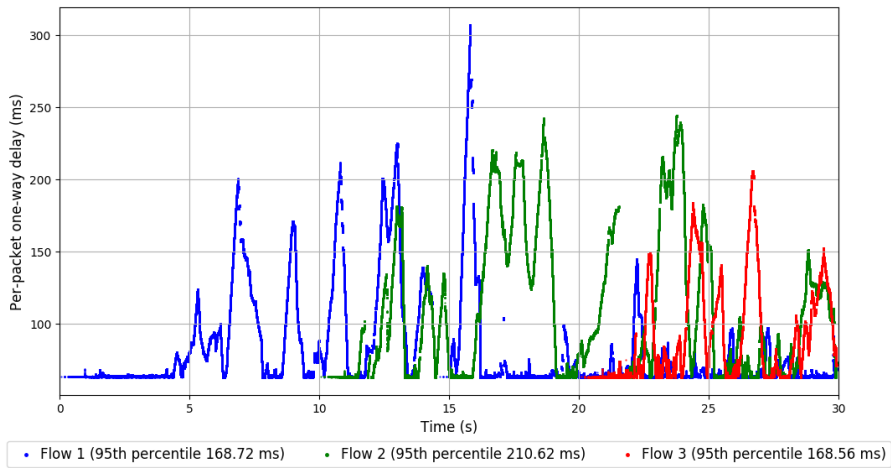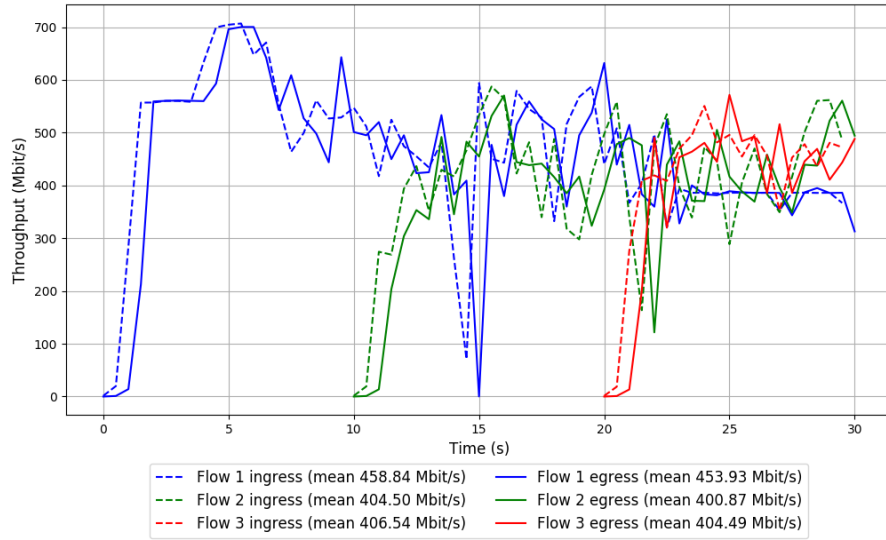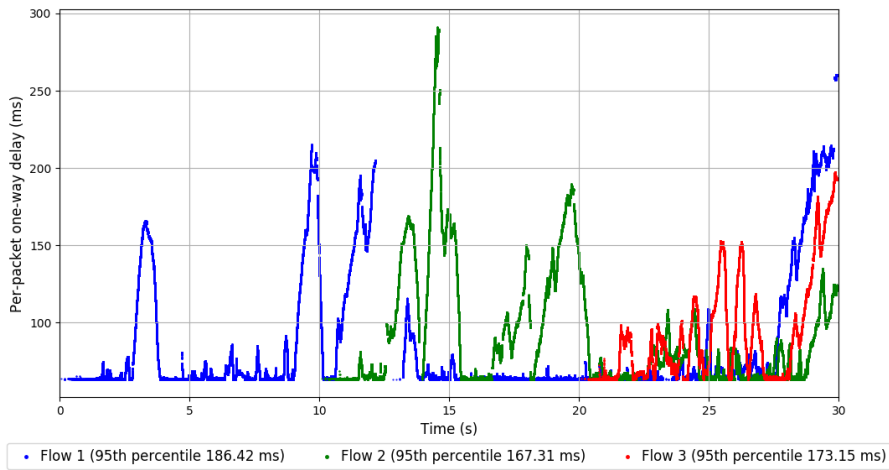
Run 3: Report of TCP BBR — Data Link

```
Run 4: Statistics of TCP BBR

Start at: 2019-05-30 10:38:28
End at: 2019-05-30 10:38:58
Local clock offset: -0.202 ms
Remote clock offset: 0.348 ms


# Below is generated by plot.py at 2019-05-30 12:14:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 853.75 Mbit/s
95th percentile per-packet one-way delay: 190.013 ms
Loss rate: 1.54%
-- Flow 1:
Average throughput: 453.93 Mbit/s
95th percentile per-packet one-way delay: 168.717 ms
Loss rate: 1.49%
-- Flow 2:
Average throughput: 400.87 Mbit/s
95th percentile per-packet one-way delay: 210.623 ms
Loss rate: 1.53%
-- Flow 3:
Average throughput: 404.49 Mbit/s
95th percentile per-packet one-way delay: 168.557 ms
Loss rate: 1.77%
```

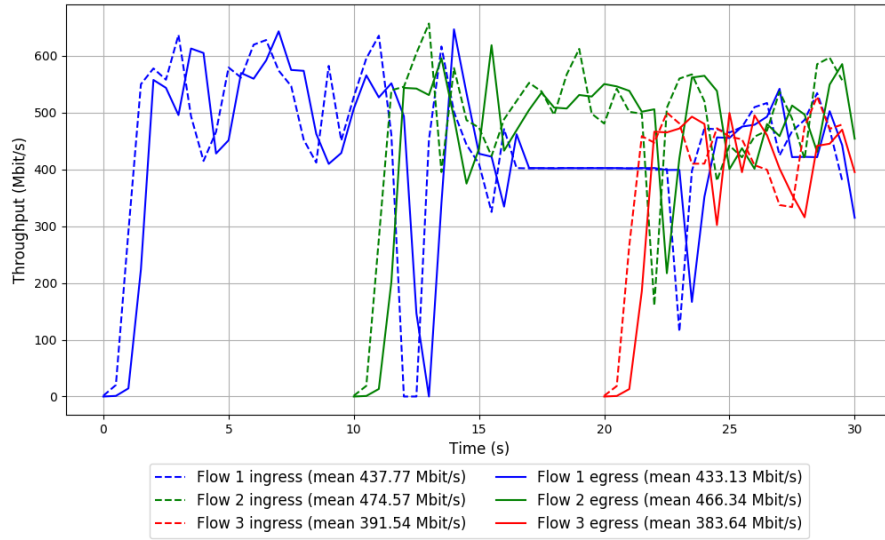# Run 4: Report of TCP BBR — Data Link

Flow 1 ingress (mean 458.84 Mbit/s) --- Flow 1 egress (mean 453.93 Mbit/s)
Flow 2 ingress (mean 404.50 Mbit/s) --- Flow 2 egress (mean 400.87 Mbit/s)
Flow 3 ingress (mean 406.54 Mbit/s) --- Flow 3 egress (mean 404.49 Mbit/s)

Flow 1 (95th percentile 168.72 ms) Flow 2 (95th percentile 210.62 ms) Flow 3 (95th percentile 168.56 ms)

```
Run 5: Statistics of TCP BBR

Start at: 2019-05-30 11:14:57
End at: 2019-05-30 11:15:27
Local clock offset: 0.117 ms
Remote clock offset: -0.274 ms


# Below is generated by plot.py at 2019-05-30 12:14:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 869.52 Mbit/s
95th percentile per-packet one-way delay: 175.266 ms
Loss rate: 2.06%
-- Flow 1:
Average throughput: 433.13 Mbit/s
95th percentile per-packet one-way delay: 186.419 ms
Loss rate: 1.48%
-- Flow 2:
Average throughput: 466.34 Mbit/s
95th percentile per-packet one-way delay: 167.307 ms
Loss rate: 2.36%
-- Flow 3:
Average throughput: 383.64 Mbit/s
95th percentile per-packet one-way delay: 173.148 ms
Loss rate: 3.26%
```
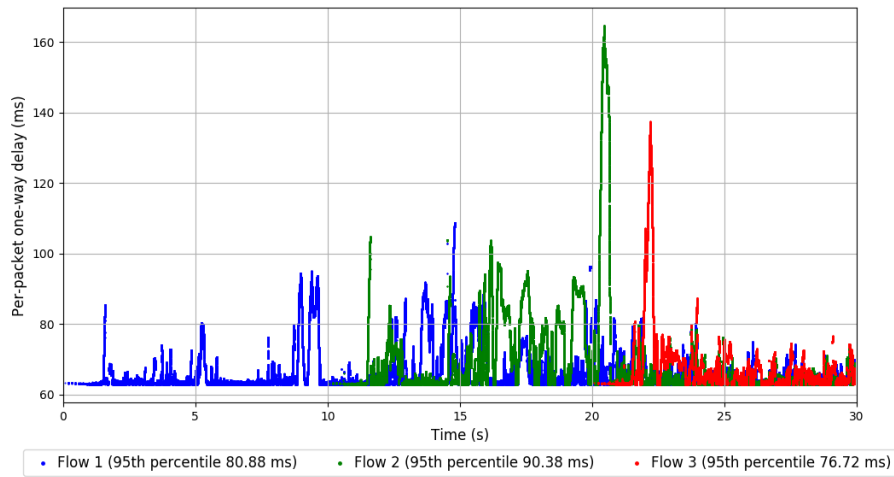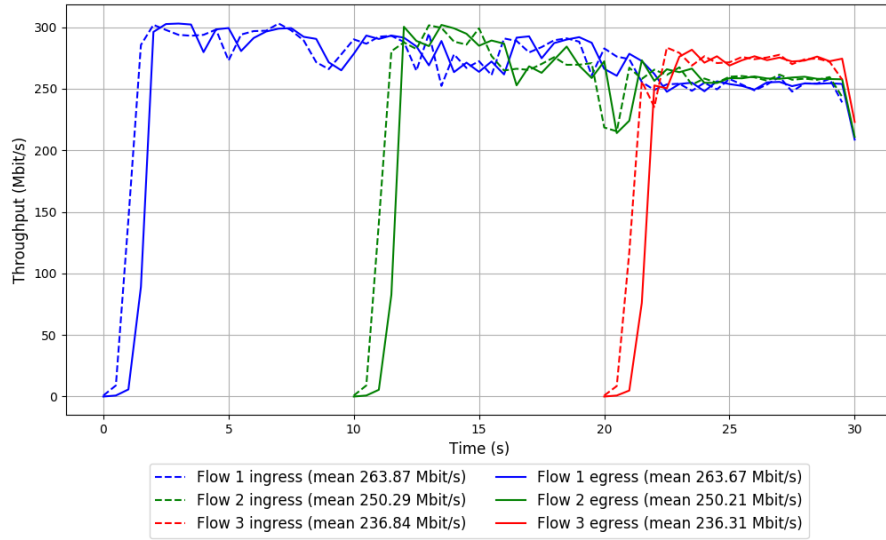
Run 5: Report of TCP BBR — Data Link

```
Run 1: Statistics of Copa

Start at: 2019-05-30 08:57:25
End at: 2019-05-30 08:57:55
Local clock offset: -0.308 ms
Remote clock offset: 0.172 ms


# Below is generated by plot.py at 2019-05-30 12:15:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 507.85 Mbit/s
95th percentile per-packet one-way delay: 84.427 ms
Loss rate: 0.70%
-- Flow 1:
Average throughput: 263.67 Mbit/s
95th percentile per-packet one-way delay: 80.877 ms
Loss rate: 0.49%
-- Flow 2:
Average throughput: 250.21 Mbit/s
95th percentile per-packet one-way delay: 90.379 ms
Loss rate: 0.66%
-- Flow 3:
Average throughput: 236.31 Mbit/s
95th percentile per-packet one-way delay: 76.719 ms
Loss rate: 1.49%
```
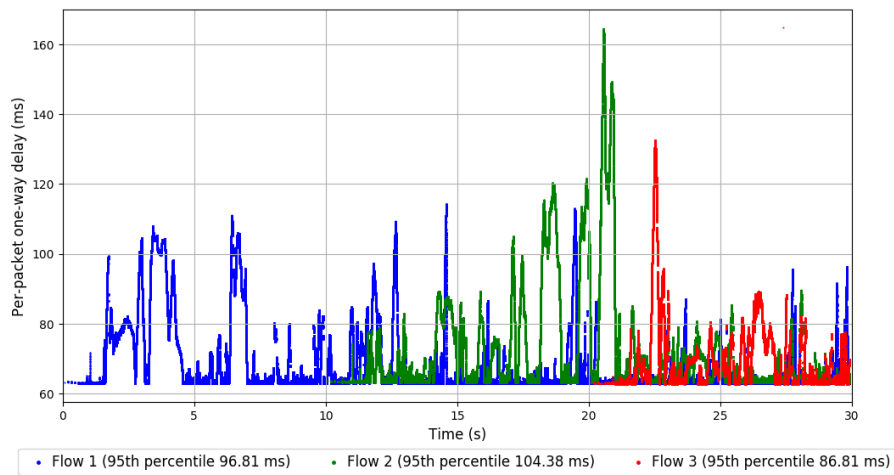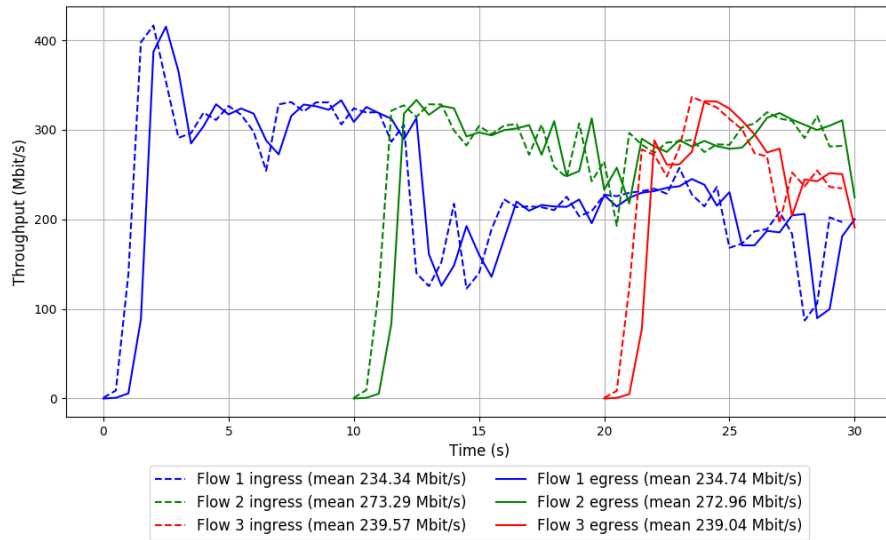
Run 1: Report of Copa — Data Link

```
Run 2: Statistics of Copa

Start at: 2019-05-30 09:33:20
End at: 2019-05-30 09:33:50
Local clock offset: -0.345 ms
Remote clock offset: 0.295 ms


# Below is generated by plot.py at 2019-05-30 12:15:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 494.87 Mbit/s
95th percentile per-packet one-way delay: 97.689 ms
Loss rate: 0.63%
-- Flow 1:
Average throughput: 234.74 Mbit/s
95th percentile per-packet one-way delay: 96.807 ms
Loss rate: 0.25%
-- Flow 2:
Average throughput: 272.96 Mbit/s
95th percentile per-packet one-way delay: 104.376 ms
Loss rate: 0.75%
-- Flow 3:
Average throughput: 239.04 Mbit/s
95th percentile per-packet one-way delay: 86.810 ms
Loss rate: 1.49%
```
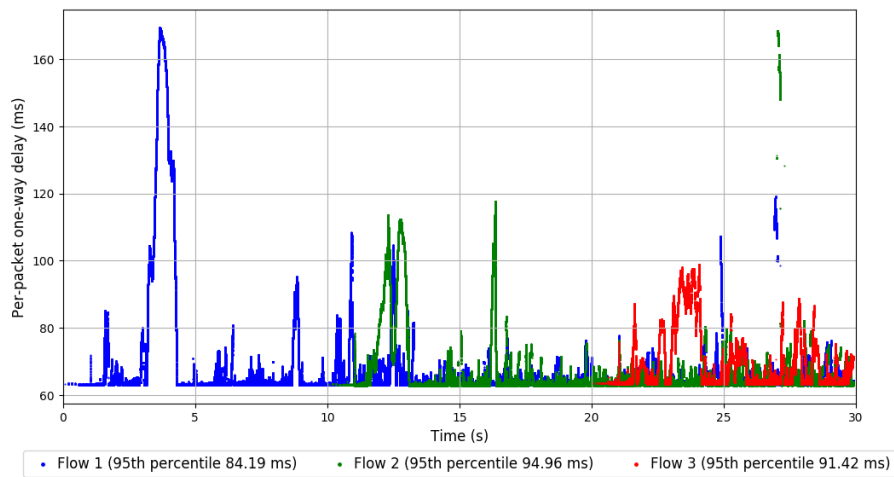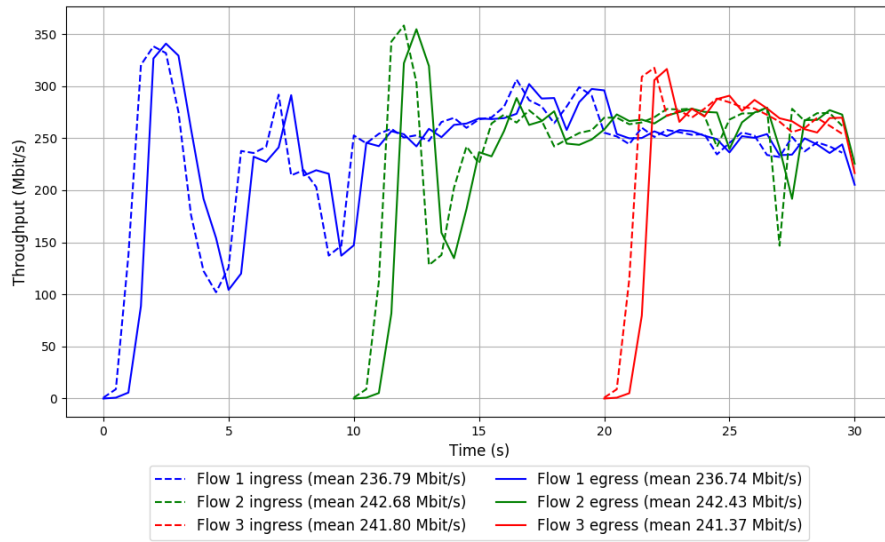
Run 2: Report of Copa — Data Link

Flow 1 ingress (mean 234.34 Mbit/s) — — — Flow 1 egress (mean 234.74 Mbit/s)
Flow 2 ingress (mean 273.29 Mbit/s) — — — Flow 2 egress (mean 272.96 Mbit/s)
Flow 3 ingress (mean 239.57 Mbit/s) — — — Flow 3 egress (mean 239.04 Mbit/s)

• Flow 1 (95th percentile 96.81 ms)   • Flow 2 (95th percentile 104.38 ms)   • Flow 3 (95th percentile 86.81 ms)

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```
Run 3: Statistics of Copa

Start at: 2019-05-30 10:09:15
End at: 2019-05-30 10:09:45
Local clock offset: -0.258 ms
Remote clock offset: 0.215 ms


# Below is generated by plot.py at 2019-05-30 12:15:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 477.38 Mbit/s
95th percentile per-packet one-way delay: 90.777 ms
Loss rate: 0.71%
-- Flow 1:
Average throughput: 236.74 Mbit/s
95th percentile per-packet one-way delay: 84.186 ms
Loss rate: 0.45%
-- Flow 2:
Average throughput: 242.43 Mbit/s
95th percentile per-packet one-way delay: 94.956 ms
Loss rate: 0.73%
-- Flow 3:
Average throughput: 241.37 Mbit/s
95th percentile per-packet one-way delay: 91.415 ms
Loss rate: 1.44%
```
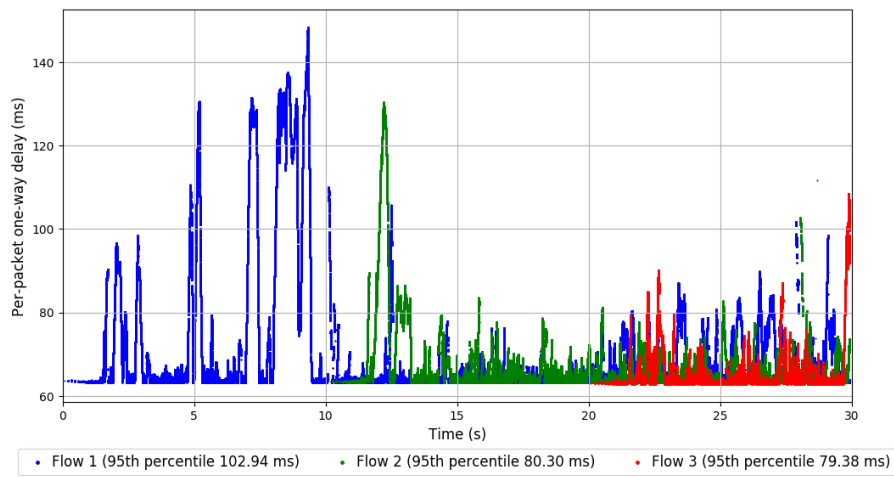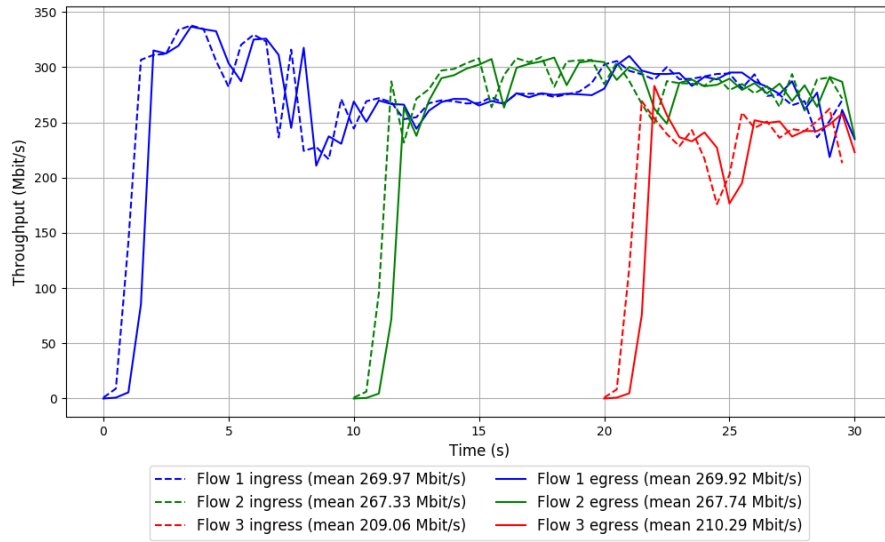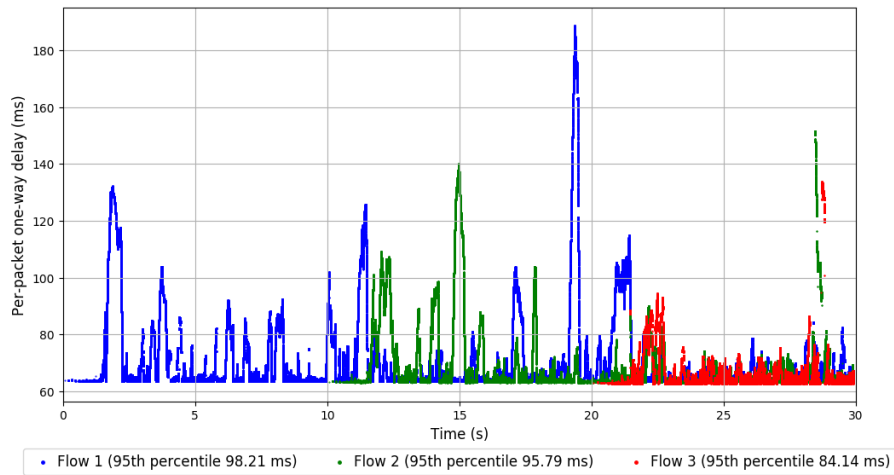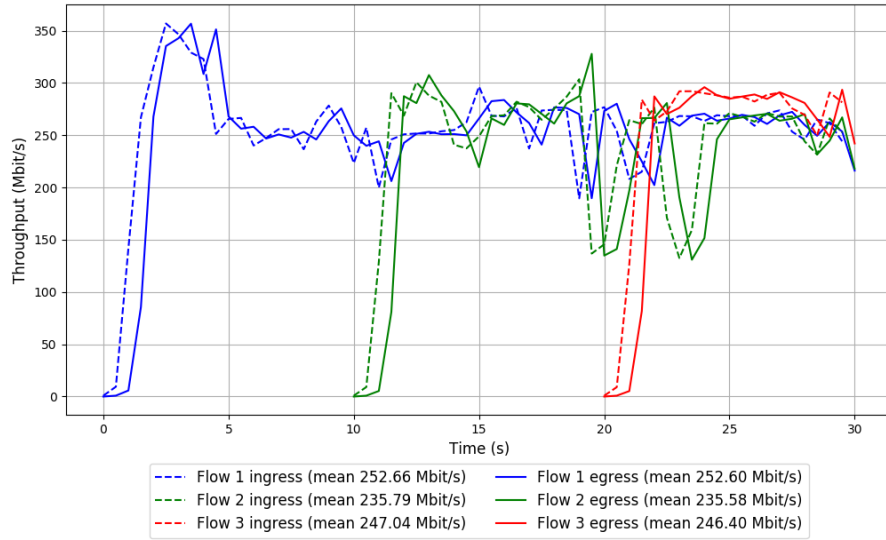
Run 3: Report of Copa — Data Link

```
Run 4: Statistics of Copa

Start at: 2019-05-30 10:45:29
End at: 2019-05-30 10:45:59
Local clock offset: -0.118 ms
Remote clock offset: -0.08 ms

# Below is generated by plot.py at 2019-05-30 12:31:43
# Datalink statistics
-- Total of 3 flows:
Average throughput: 516.73 Mbit/s
95th percentile per-packet one-way delay: 89.097 ms
Loss rate: 0.56%
-- Flow 1:
Average throughput: 269.92 Mbit/s
95th percentile per-packet one-way delay: 102.941 ms
Loss rate: 0.44%
-- Flow 2:
Average throughput: 267.74 Mbit/s
95th percentile per-packet one-way delay: 80.304 ms
Loss rate: 0.70%
-- Flow 3:
Average throughput: 210.29 Mbit/s
95th percentile per-packet one-way delay: 79.378 ms
Loss rate: 0.67%
```

Run 4: Report of Copa — Data Link

```
Run 5: Statistics of Copa

Start at: 2019-05-30 11:21:53
End at: 2019-05-30 11:22:23
Local clock offset: 0.024 ms
Remote clock offset: -0.291 ms


# Below is generated by plot.py at 2019-05-30 12:31:43
# Datalink statistics
-- Total of 3 flows:
Average throughput: 490.34 Mbit/s
95th percentile per-packet one-way delay: 95.337 ms
Loss rate: 0.71%
-- Flow 1:
Average throughput: 252.60 Mbit/s
95th percentile per-packet one-way delay: 98.212 ms
Loss rate: 0.44%
-- Flow 2:
Average throughput: 235.58 Mbit/s
95th percentile per-packet one-way delay: 95.789 ms
Loss rate: 0.72%
-- Flow 3:
Average throughput: 246.40 Mbit/s
95th percentile per-packet one-way delay: 84.137 ms
Loss rate: 1.52%
```
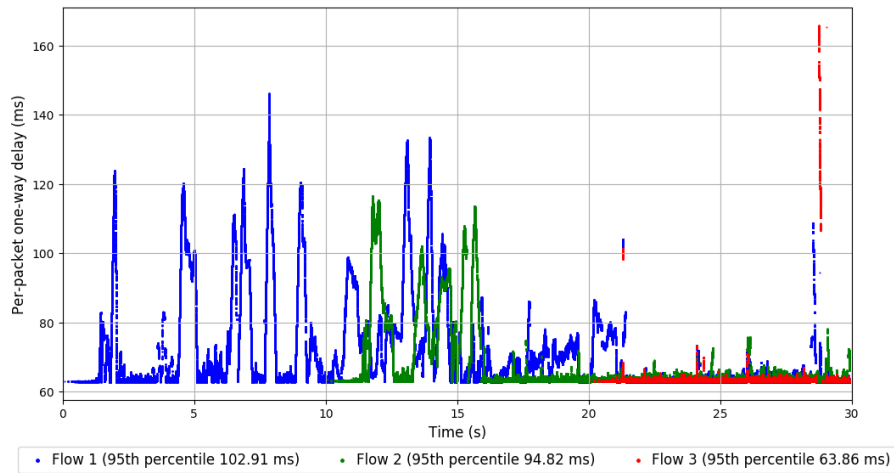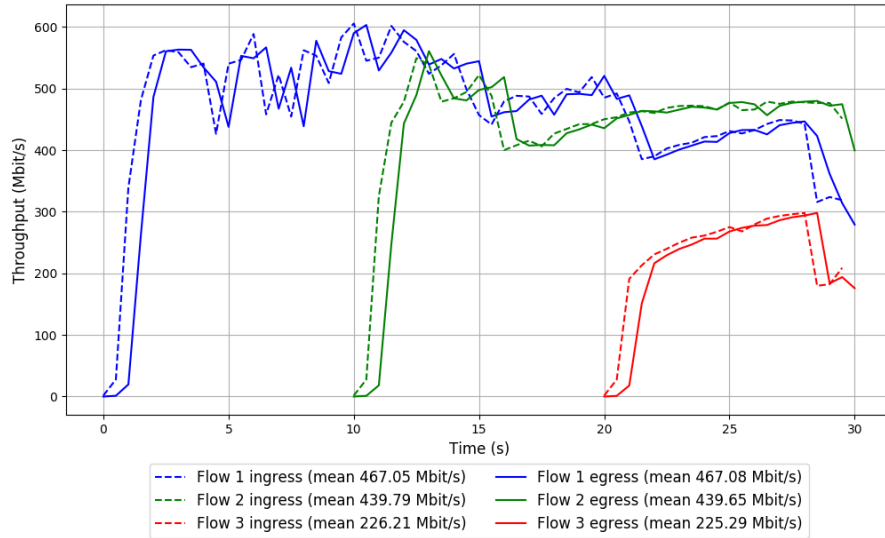
Run 5: Report of Copa — Data Link

```
Run 1: Statistics of TCP Cubic

Start at: 2019-05-30 09:10:24
End at: 2019-05-30 09:10:54
Local clock offset: -0.243 ms
Remote clock offset: 0.273 ms


# Below is generated by plot.py at 2019-05-30 12:31:43
# Datalink statistics
-- Total of 3 flows:
Average throughput: 833.64 Mbit/s
95th percentile per-packet one-way delay: 99.756 ms
Loss rate: 0.62%
-- Flow 1:
Average throughput: 467.08 Mbit/s
95th percentile per-packet one-way delay: 102.913 ms
Loss rate: 0.42%
-- Flow 2:
Average throughput: 439.65 Mbit/s
95th percentile per-packet one-way delay: 94.816 ms
Loss rate: 0.67%
-- Flow 3:
Average throughput: 225.29 Mbit/s
95th percentile per-packet one-way delay: 63.861 ms
Loss rate: 1.66%
```
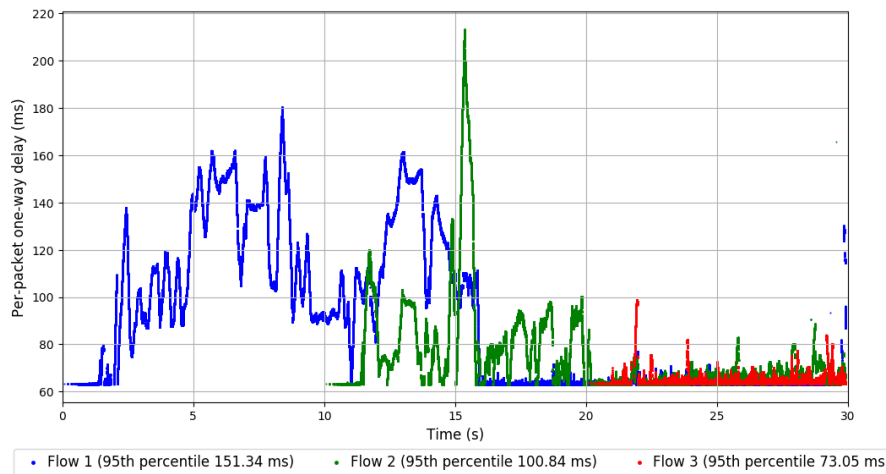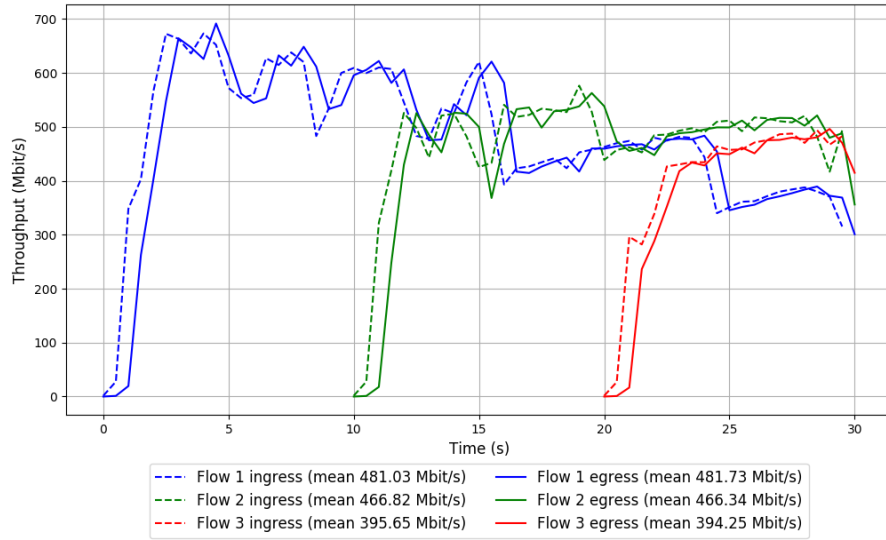
Run 1: Report of TCP Cubic — Data Link

```
Run 2: Statistics of TCP Cubic

Start at: 2019-05-30 09:46:11
End at: 2019-05-30 09:46:41
Local clock offset: -0.223 ms
Remote clock offset: 0.237 ms


# Below is generated by plot.py at 2019-05-30 12:31:43
# Datalink statistics
-- Total of 3 flows:
Average throughput: 921.52 Mbit/s
95th percentile per-packet one-way delay: 148.255 ms
Loss rate: 0.62%
-- Flow 1:
Average throughput: 481.73 Mbit/s
95th percentile per-packet one-way delay: 151.341 ms
Loss rate: 0.27%
-- Flow 2:
Average throughput: 466.34 Mbit/s
95th percentile per-packet one-way delay: 100.840 ms
Loss rate: 0.74%
-- Flow 3:
Average throughput: 394.25 Mbit/s
95th percentile per-packet one-way delay: 73.054 ms
Loss rate: 1.61%
```
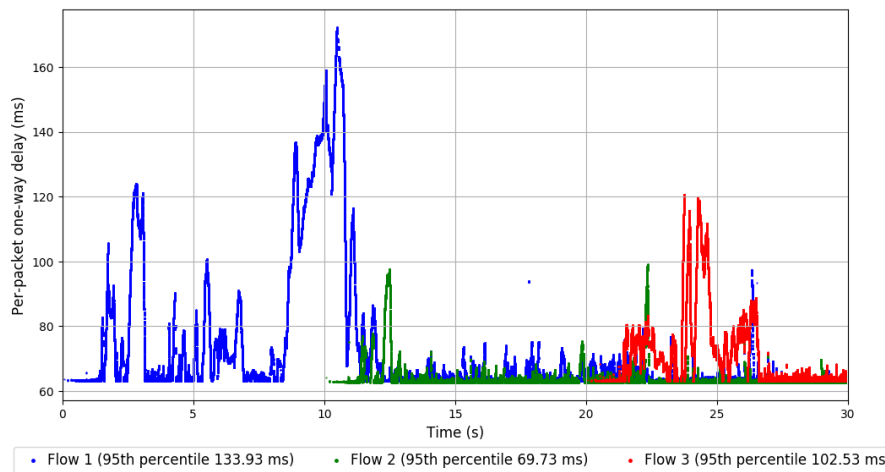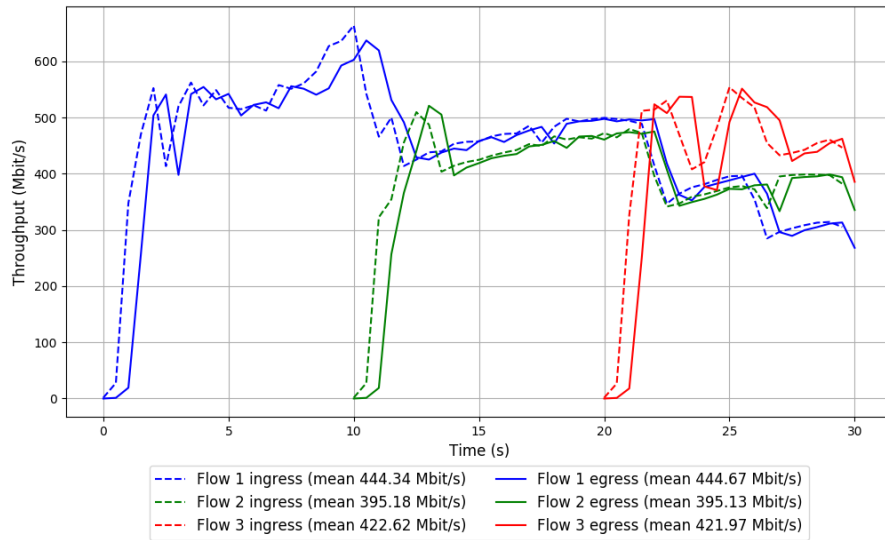
Run 2: Report of TCP Cubic — Data Link

```
Run 3: Statistics of TCP Cubic

Start at: 2019-05-30 10:22:22
End at: 2019-05-30 10:22:52
Local clock offset: -0.275 ms
Remote clock offset: 0.189 ms


# Below is generated by plot.py at 2019-05-30 12:31:43
# Datalink statistics
-- Total of 3 flows:
Average throughput: 846.48 Mbit/s
95th percentile per-packet one-way delay: 114.089 ms
Loss rate: 0.62%
-- Flow 1:
Average throughput: 444.67 Mbit/s
95th percentile per-packet one-way delay: 133.934 ms
Loss rate: 0.35%
-- Flow 2:
Average throughput: 395.13 Mbit/s
95th percentile per-packet one-way delay: 69.730 ms
Loss rate: 0.65%
-- Flow 3:
Average throughput: 421.97 Mbit/s
95th percentile per-packet one-way delay: 102.531 ms
Loss rate: 1.42%
```

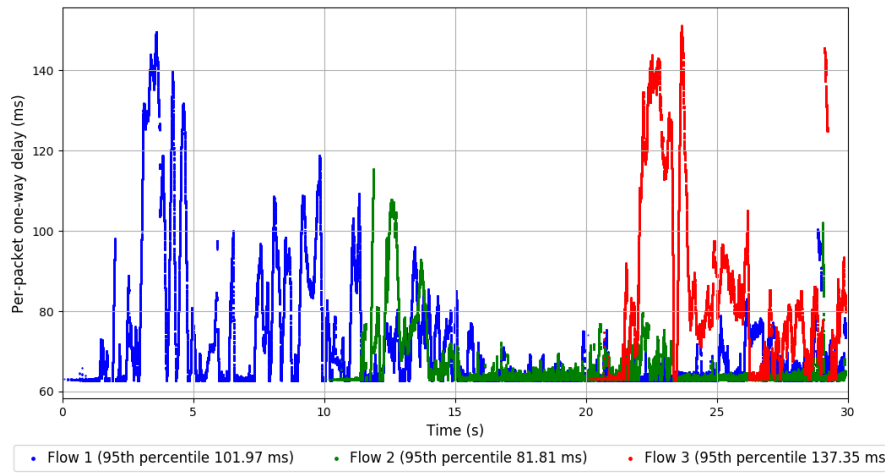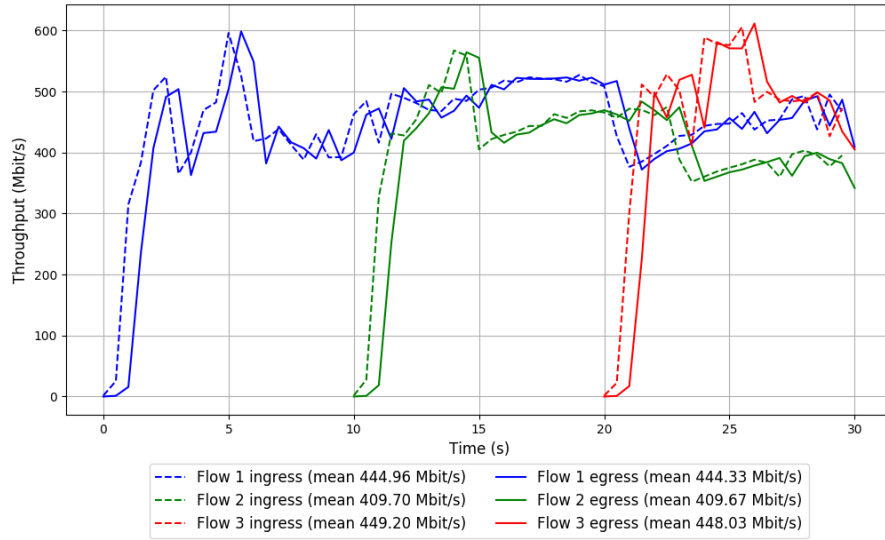Run 3: Report of TCP Cubic — Data Link

- - - Flow 1 ingress (mean 444.34 Mbit/s) —— Flow 1 egress (mean 444.67 Mbit/s)
- - - Flow 2 ingress (mean 395.18 Mbit/s) —— Flow 2 egress (mean 395.13 Mbit/s)
- - - Flow 3 ingress (mean 422.62 Mbit/s) —— Flow 3 egress (mean 421.97 Mbit/s)

• Flow 1 (95th percentile 133.93 ms)　　• Flow 2 (95th percentile 69.73 ms)　　• Flow 3 (95th percentile 102.53 ms)
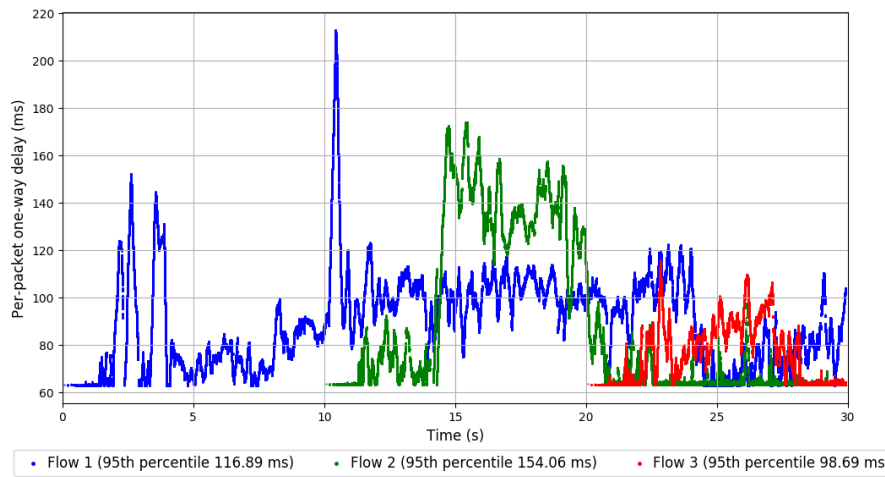
```
Run 4: Statistics of TCP Cubic

Start at: 2019-05-30 10:58:39
End at: 2019-05-30 10:59:09
Local clock offset: 0.015 ms
Remote clock offset: -0.035 ms


# Below is generated by plot.py at 2019-05-30 12:31:43
# Datalink statistics
-- Total of 3 flows:
Average throughput: 864.30 Mbit/s
95th percentile per-packet one-way delay: 109.675 ms
Loss rate: 0.75%
-- Flow 1:
Average throughput: 444.33 Mbit/s
95th percentile per-packet one-way delay: 101.965 ms
Loss rate: 0.56%
-- Flow 2:
Average throughput: 409.67 Mbit/s
95th percentile per-packet one-way delay: 81.813 ms
Loss rate: 0.63%
-- Flow 3:
Average throughput: 448.03 Mbit/s
95th percentile per-packet one-way delay: 137.354 ms
Loss rate: 1.54%
```

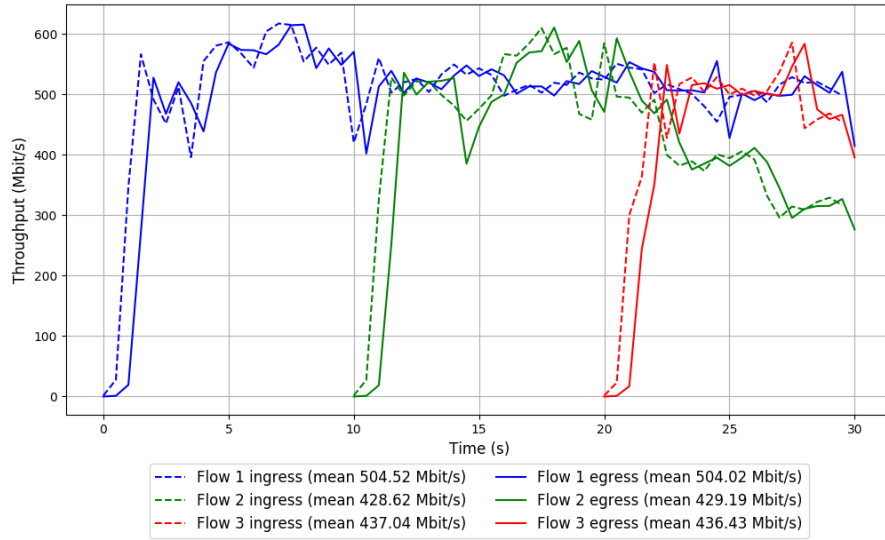Run 4: Report of TCP Cubic — Data Link

```
Run 5: Statistics of TCP Cubic

Start at: 2019-05-30 11:34:49
End at: 2019-05-30 11:35:19
Local clock offset: -0.033 ms
Remote clock offset: -0.354 ms


# Below is generated by plot.py at 2019-05-30 12:32:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 933.20 Mbit/s
95th percentile per-packet one-way delay: 140.137 ms
Loss rate: 0.65%
-- Flow 1:
Average throughput: 504.02 Mbit/s
95th percentile per-packet one-way delay: 116.891 ms
Loss rate: 0.52%
-- Flow 2:
Average throughput: 429.19 Mbit/s
95th percentile per-packet one-way delay: 154.055 ms
Loss rate: 0.50%
-- Flow 3:
Average throughput: 436.43 Mbit/s
95th percentile per-packet one-way delay: 98.685 ms
Loss rate: 1.40%
```
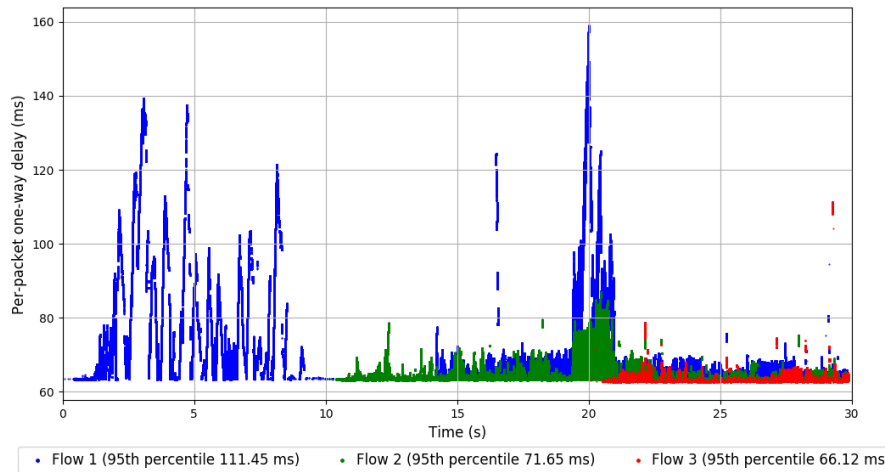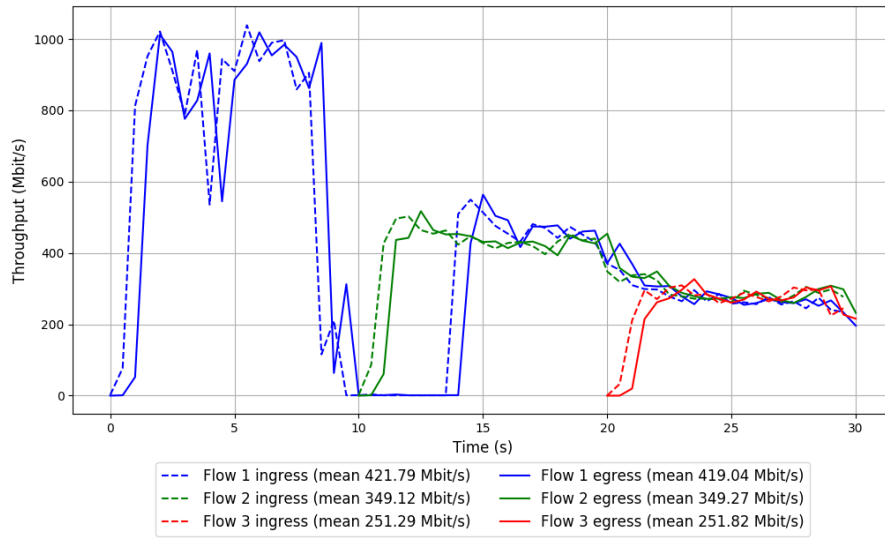
Run 5: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 504.52 Mbit/s) --- Flow 1 egress (mean 504.02 Mbit/s)
Flow 2 ingress (mean 428.62 Mbit/s) --- Flow 2 egress (mean 429.19 Mbit/s)
Flow 3 ingress (mean 437.04 Mbit/s) --- Flow 3 egress (mean 436.43 Mbit/s)

Flow 1 (95th percentile 116.89 ms)   Flow 2 (95th percentile 154.06 ms)   Flow 3 (95th percentile 98.69 ms)

```
Run 1: Statistics of FillP

Start at: 2019-05-30 08:52:37
End at: 2019-05-30 08:53:07
Local clock offset: -0.278 ms
Remote clock offset: 0.263 ms


# Below is generated by plot.py at 2019-05-30 12:32:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 733.83 Mbit/s
95th percentile per-packet one-way delay: 102.912 ms
Loss rate: 0.89%
-- Flow 1:
Average throughput: 419.04 Mbit/s
95th percentile per-packet one-way delay: 111.455 ms
Loss rate: 1.04%
-- Flow 2:
Average throughput: 349.27 Mbit/s
95th percentile per-packet one-way delay: 71.650 ms
Loss rate: 0.50%
-- Flow 3:
Average throughput: 251.82 Mbit/s
95th percentile per-packet one-way delay: 66.120 ms
Loss rate: 1.22%
```
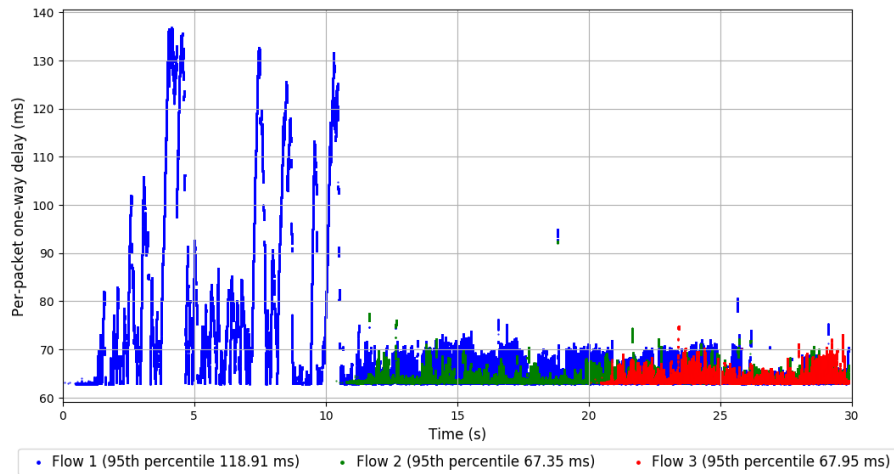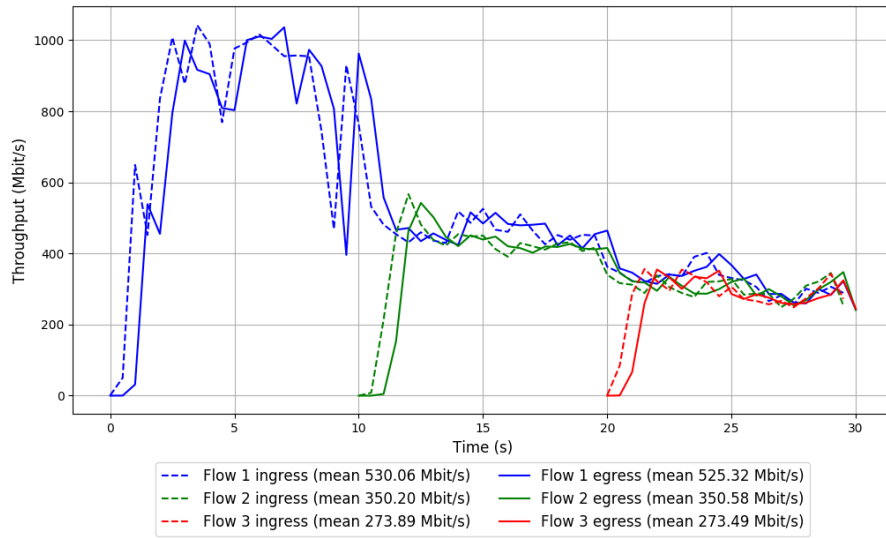
Run 1: Report of FillP — Data Link

```
Run 2: Statistics of FillP

Start at: 2019-05-30 09:28:26
End at: 2019-05-30 09:28:56
Local clock offset: -0.345 ms
Remote clock offset: 0.215 ms

# Below is generated by plot.py at 2019-05-30 12:48:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 844.04 Mbit/s
95th percentile per-packet one-way delay: 110.756 ms
Loss rate: 1.12%
-- Flow 1:
Average throughput: 525.32 Mbit/s
95th percentile per-packet one-way delay: 118.907 ms
Loss rate: 1.28%
-- Flow 2:
Average throughput: 350.58 Mbit/s
95th percentile per-packet one-way delay: 67.349 ms
Loss rate: 0.57%
-- Flow 3:
Average throughput: 273.49 Mbit/s
95th percentile per-packet one-way delay: 67.948 ms
Loss rate: 1.59%
```
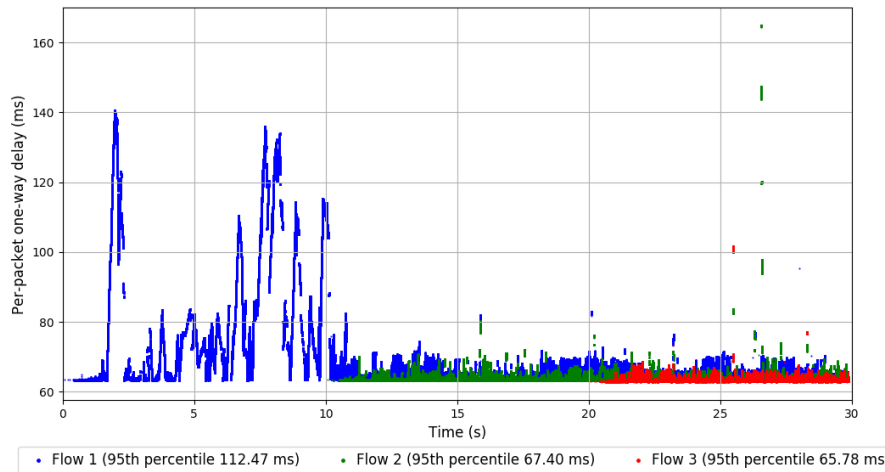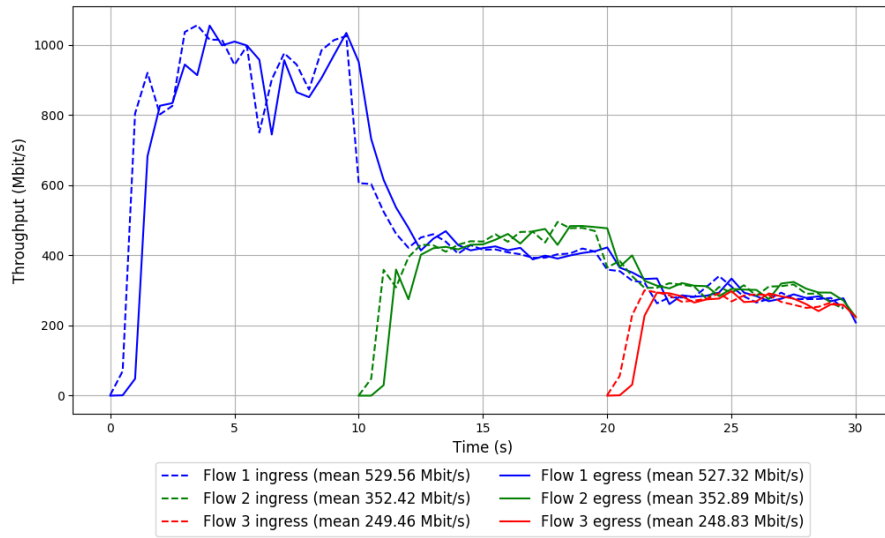
Run 2: Report of FillP — Data Link

```
Run 3: Statistics of FillP

Start at: 2019-05-30 10:04:19
End at: 2019-05-30 10:04:49
Local clock offset: -0.222 ms
Remote clock offset: 0.239 ms


# Below is generated by plot.py at 2019-05-30 12:48:24
# Datalink statistics
-- Total of 3 flows:
Average throughput: 843.16 Mbit/s
95th percentile per-packet one-way delay: 107.116 ms
Loss rate: 0.85%
-- Flow 1:
Average throughput: 527.32 Mbit/s
95th percentile per-packet one-way delay: 112.473 ms
Loss rate: 0.91%
-- Flow 2:
Average throughput: 352.89 Mbit/s
95th percentile per-packet one-way delay: 67.397 ms
Loss rate: 0.44%
-- Flow 3:
Average throughput: 248.83 Mbit/s
95th percentile per-packet one-way delay: 65.775 ms
Loss rate: 1.60%
```
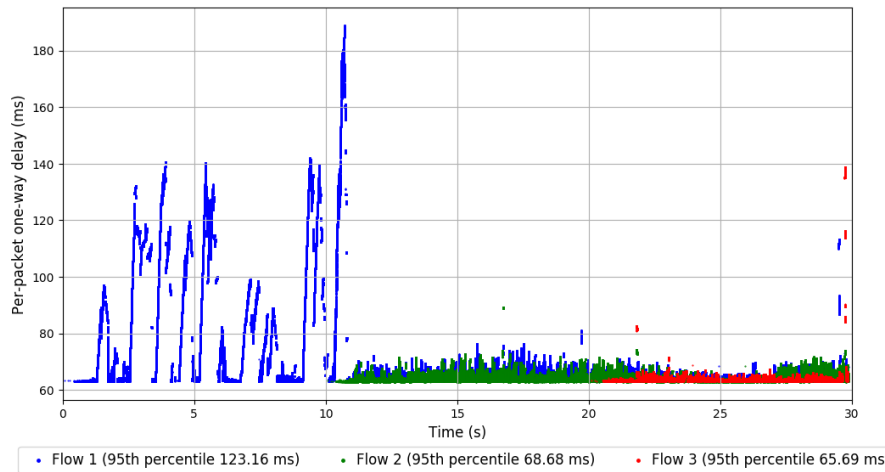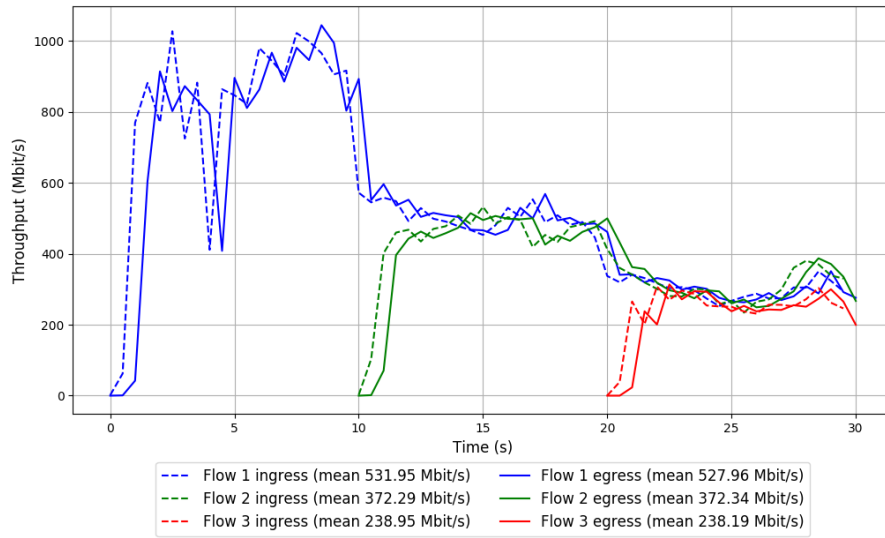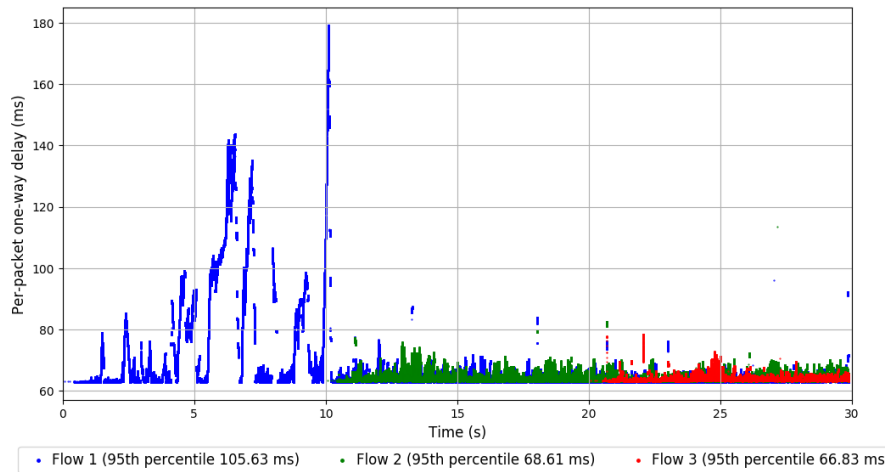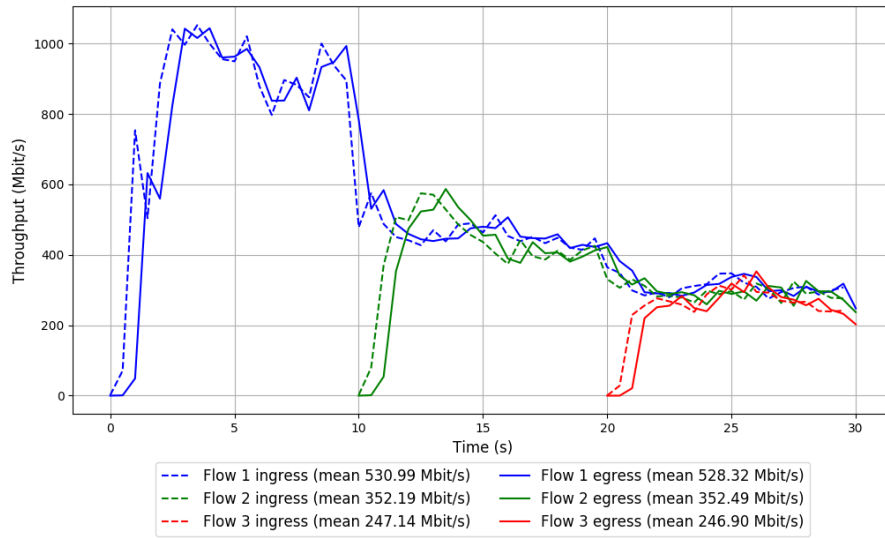
Run 3: Report of FillP — Data Link

- - - - Flow 1 ingress (mean 529.56 Mbit/s) ——— Flow 1 egress (mean 527.32 Mbit/s)
- - - - Flow 2 ingress (mean 352.42 Mbit/s) ——— Flow 2 egress (mean 352.89 Mbit/s)
- - - - Flow 3 ingress (mean 249.46 Mbit/s) ——— Flow 3 egress (mean 248.83 Mbit/s)

- Flow 1 (95th percentile 112.47 ms) • Flow 2 (95th percentile 67.40 ms) • Flow 3 (95th percentile 65.78 ms)

40

```
Run 4: Statistics of FillP

Start at: 2019-05-30 10:40:33
End at: 2019-05-30 10:41:03
Local clock offset: -0.208 ms
Remote clock offset: 0.339 ms


# Below is generated by plot.py at 2019-05-30 12:49:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 853.09 Mbit/s
95th percentile per-packet one-way delay: 115.187 ms
Loss rate: 1.07%
-- Flow 1:
Average throughput: 527.96 Mbit/s
95th percentile per-packet one-way delay: 123.163 ms
Loss rate: 1.12%
-- Flow 2:
Average throughput: 372.34 Mbit/s
95th percentile per-packet one-way delay: 68.680 ms
Loss rate: 0.72%
-- Flow 3:
Average throughput: 238.19 Mbit/s
95th percentile per-packet one-way delay: 65.690 ms
Loss rate: 1.81%
```

Run 4: Report of FillP — Data Link

```
Run 5: Statistics of FillP

Start at: 2019-05-30 11:17:02
End at: 2019-05-30 11:17:32
Local clock offset: 0.083 ms
Remote clock offset: -0.137 ms


# Below is generated by plot.py at 2019-05-30 12:49:24
# Datalink statistics
-- Total of 3 flows:
Average throughput: 843.23 Mbit/s
95th percentile per-packet one-way delay: 98.365 ms
Loss rate: 0.86%
-- Flow 1:
Average throughput: 528.32 Mbit/s
95th percentile per-packet one-way delay: 105.626 ms
Loss rate: 0.87%
-- Flow 2:
Average throughput: 352.49 Mbit/s
95th percentile per-packet one-way delay: 68.605 ms
Loss rate: 0.62%
-- Flow 3:
Average throughput: 246.90 Mbit/s
95th percentile per-packet one-way delay: 66.828 ms
Loss rate: 1.54%
```
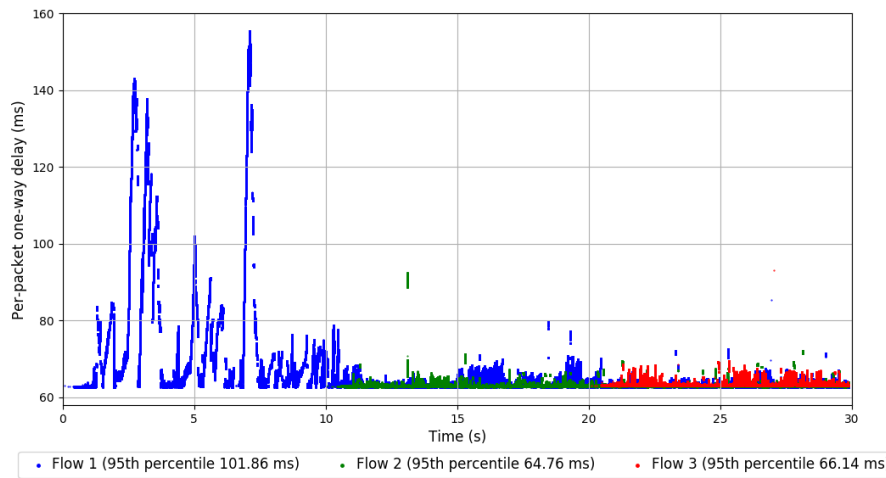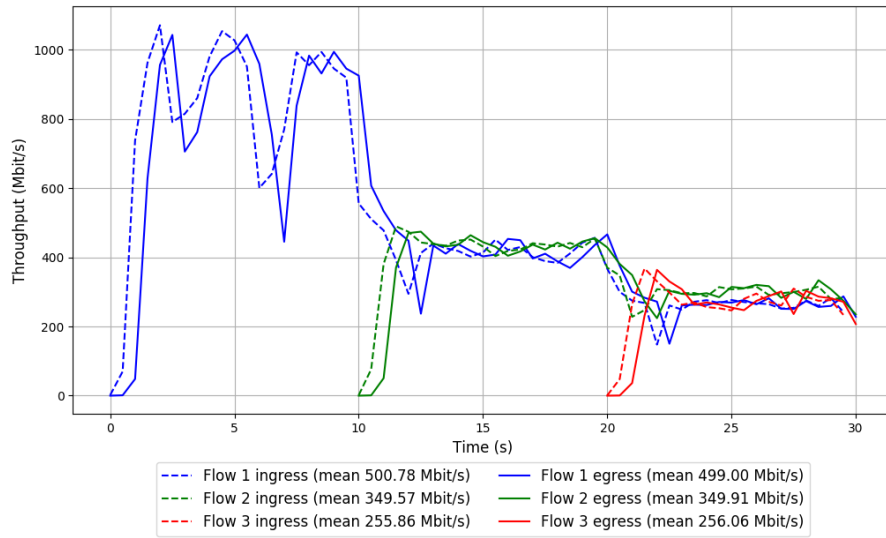
Run 5: Report of FillP — Data Link

```
Run 1: Statistics of FillP-Sheep

Start at: 2019-05-30 08:59:26
End at: 2019-05-30 08:59:56
Local clock offset: -0.227 ms
Remote clock offset: 0.295 ms


# Below is generated by plot.py at 2019-05-30 12:49:24
# Datalink statistics
-- Total of 3 flows:
Average throughput: 815.29 Mbit/s
95th percentile per-packet one-way delay: 85.054 ms
Loss rate: 0.75%
-- Flow 1:
Average throughput: 499.00 Mbit/s
95th percentile per-packet one-way delay: 101.855 ms
Loss rate: 0.71%
-- Flow 2:
Average throughput: 349.91 Mbit/s
95th percentile per-packet one-way delay: 64.758 ms
Loss rate: 0.63%
-- Flow 3:
Average throughput: 256.06 Mbit/s
95th percentile per-packet one-way delay: 66.138 ms
Loss rate: 1.32%
```
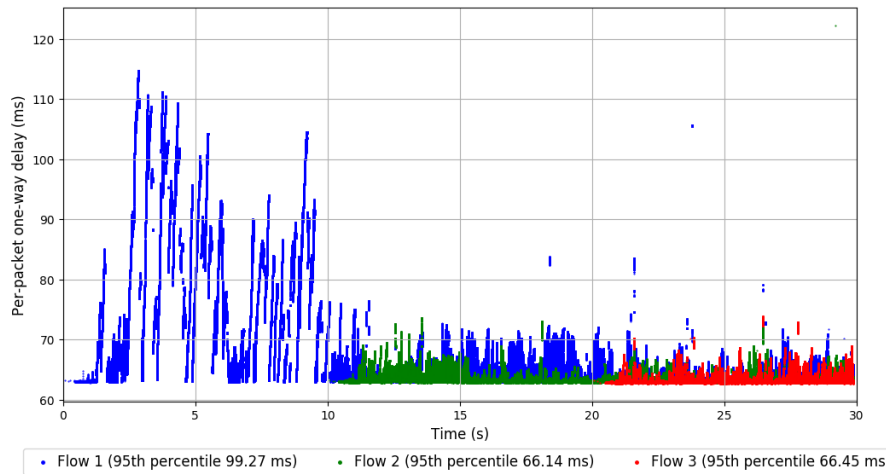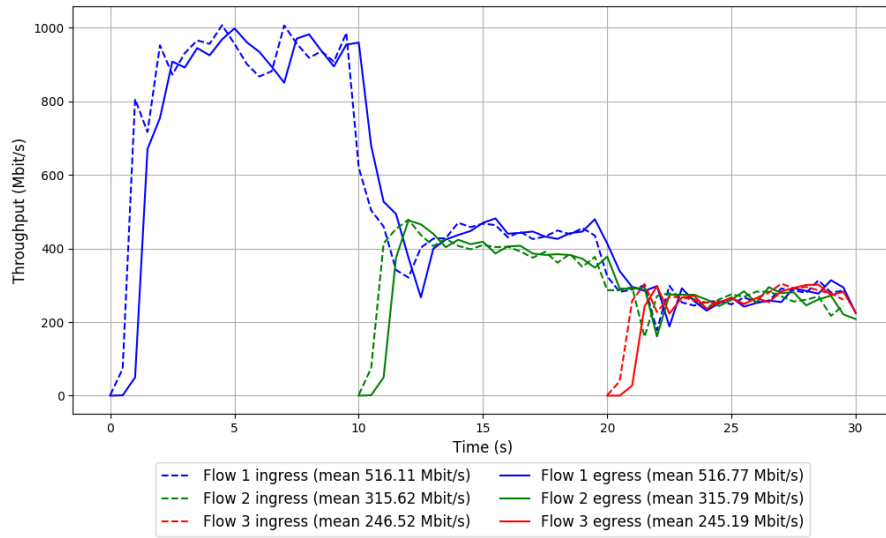
Run 1: Report of FillP-Sheep — Data Link

- - - - Flow 1 ingress (mean 500.78 Mbit/s)   ——— Flow 1 egress (mean 499.00 Mbit/s)
- - - - Flow 2 ingress (mean 349.57 Mbit/s)   ——— Flow 2 egress (mean 349.91 Mbit/s)
- - - - Flow 3 ingress (mean 255.86 Mbit/s)   ——— Flow 3 egress (mean 256.06 Mbit/s)

• Flow 1 (95th percentile 101.86 ms)   • Flow 2 (95th percentile 64.76 ms)   • Flow 3 (95th percentile 66.14 ms)

```
Run 2: Statistics of FillP-Sheep

Start at: 2019-05-30 09:35:21
End at: 2019-05-30 09:35:51
Local clock offset: -0.312 ms
Remote clock offset: 0.306 ms


# Below is generated by plot.py at 2019-05-30 12:49:24
# Datalink statistics
-- Total of 3 flows:
Average throughput: 806.98 Mbit/s
95th percentile per-packet one-way delay: 93.227 ms
Loss rate: 0.54%
-- Flow 1:
Average throughput: 516.77 Mbit/s
95th percentile per-packet one-way delay: 99.268 ms
Loss rate: 0.34%
-- Flow 2:
Average throughput: 315.79 Mbit/s
95th percentile per-packet one-way delay: 66.140 ms
Loss rate: 0.50%
-- Flow 3:
Average throughput: 245.19 Mbit/s
95th percentile per-packet one-way delay: 66.454 ms
Loss rate: 1.92%
```
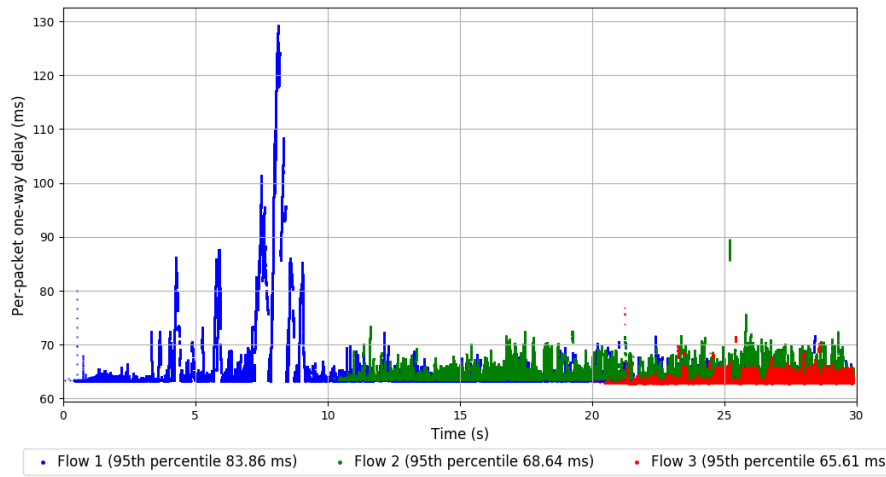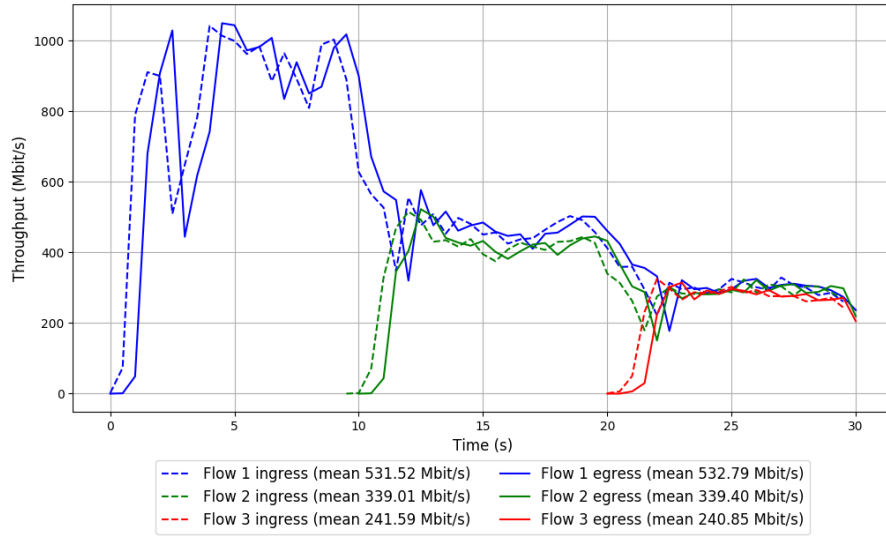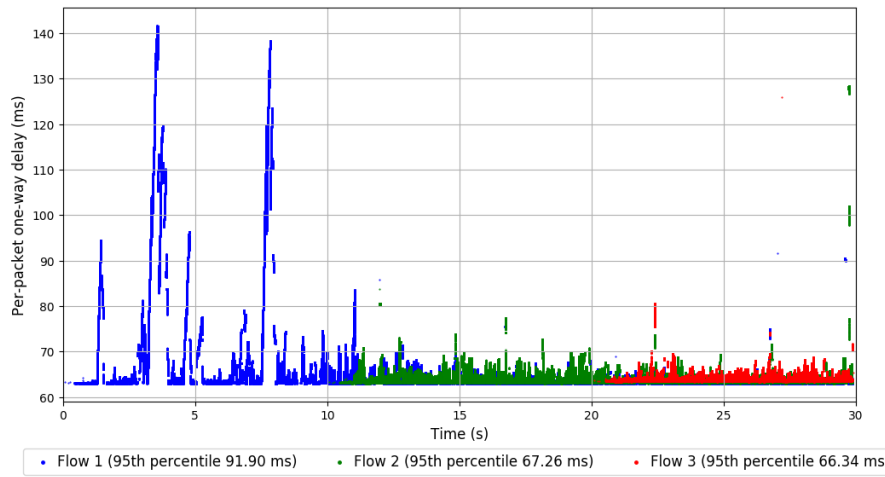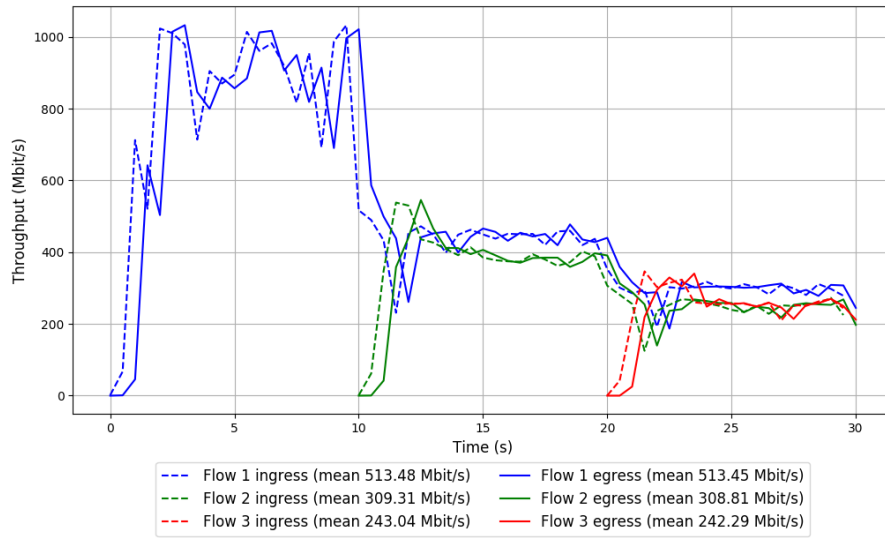
Run 2: Report of FillP-Sheep — Data Link

Flow 1 ingress (mean 516.11 Mbit/s)   Flow 1 egress (mean 516.77 Mbit/s)
Flow 2 ingress (mean 315.62 Mbit/s)   Flow 2 egress (mean 315.79 Mbit/s)
Flow 3 ingress (mean 246.52 Mbit/s)   Flow 3 egress (mean 245.19 Mbit/s)

Flow 1 (95th percentile 99.27 ms)   Flow 2 (95th percentile 66.14 ms)   Flow 3 (95th percentile 66.45 ms)

```
Run 3: Statistics of FillP-Sheep

Start at: 2019-05-30 10:11:14
End at: 2019-05-30 10:11:44
Local clock offset: -0.209 ms
Remote clock offset: 0.225 ms


# Below is generated by plot.py at 2019-05-30 12:50:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 837.24 Mbit/s
95th percentile per-packet one-way delay: 78.471 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 532.79 Mbit/s
95th percentile per-packet one-way delay: 83.862 ms
Loss rate: 0.21%
-- Flow 2:
Average throughput: 339.40 Mbit/s
95th percentile per-packet one-way delay: 68.635 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 240.85 Mbit/s
95th percentile per-packet one-way delay: 65.608 ms
Loss rate: 1.44%
```
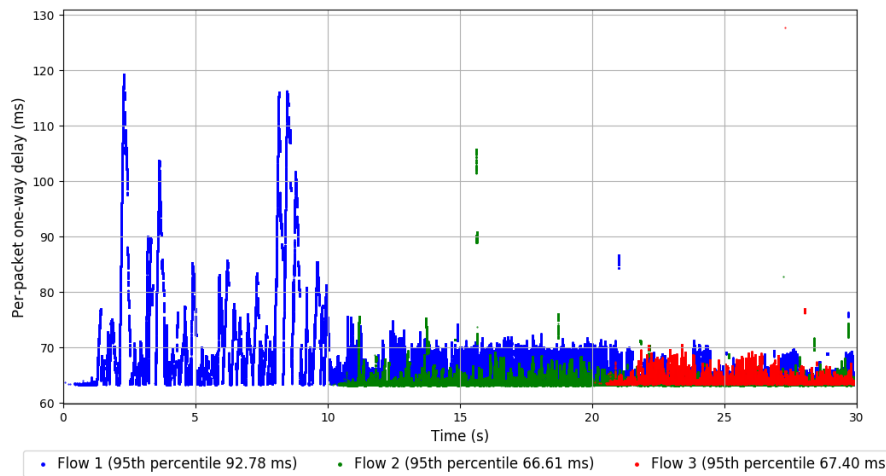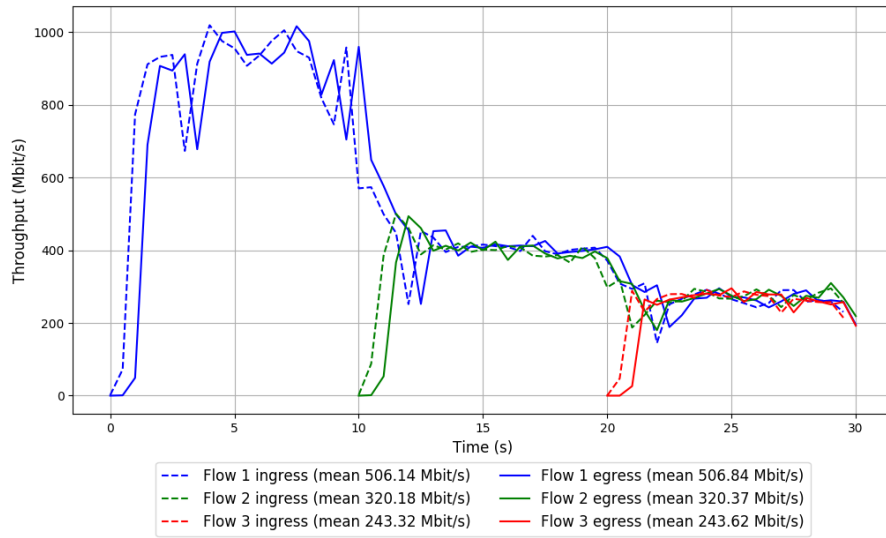
Run 3: Report of FillP-Sheep — Data Link

```
Run 4: Statistics of FillP-Sheep

Start at: 2019-05-30 10:47:33
End at: 2019-05-30 10:48:03
Local clock offset: -0.104 ms
Remote clock offset: -0.001 ms


# Below is generated by plot.py at 2019-05-30 12:50:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 797.89 Mbit/s
95th percentile per-packet one-way delay: 79.337 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 513.45 Mbit/s
95th percentile per-packet one-way delay: 91.898 ms
Loss rate: 0.46%
-- Flow 2:
Average throughput: 308.81 Mbit/s
95th percentile per-packet one-way delay: 67.262 ms
Loss rate: 0.76%
-- Flow 3:
Average throughput: 242.29 Mbit/s
95th percentile per-packet one-way delay: 66.336 ms
Loss rate: 1.49%
```

Run 4: Report of FillP-Sheep — Data Link

```
Run 5: Statistics of FillP-Sheep

Start at: 2019-05-30 11:23:54
End at: 2019-05-30 11:24:24
Local clock offset: 0.002 ms
Remote clock offset: -0.363 ms


# Below is generated by plot.py at 2019-05-30 13:06:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 799.22 Mbit/s
95th percentile per-packet one-way delay: 84.889 ms
Loss rate: 0.49%
-- Flow 1:
Average throughput: 506.84 Mbit/s
95th percentile per-packet one-way delay: 92.781 ms
Loss rate: 0.35%
-- Flow 2:
Average throughput: 320.37 Mbit/s
95th percentile per-packet one-way delay: 66.609 ms
Loss rate: 0.55%
-- Flow 3:
Average throughput: 243.62 Mbit/s
95th percentile per-packet one-way delay: 67.397 ms
Loss rate: 1.25%
```
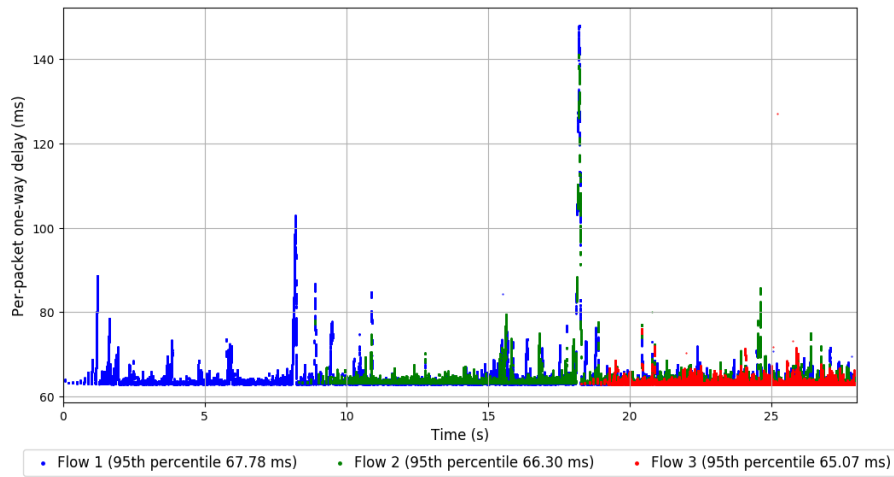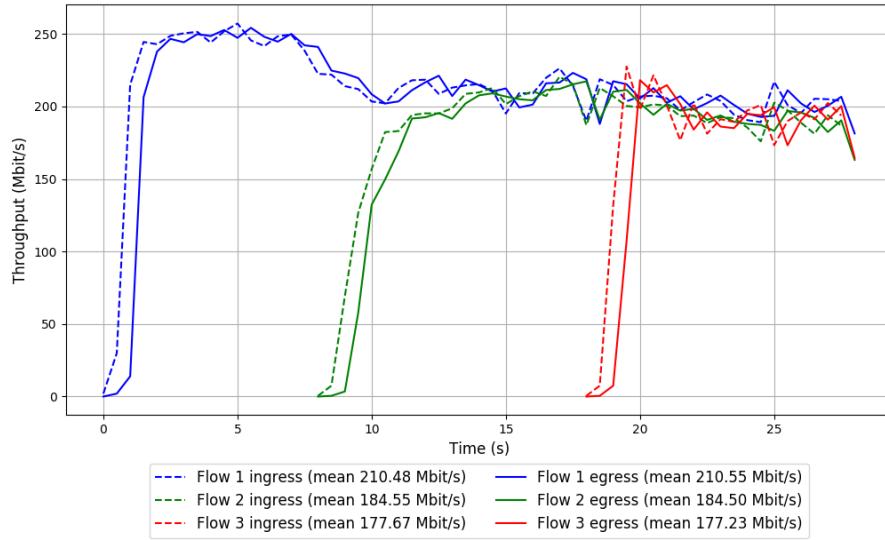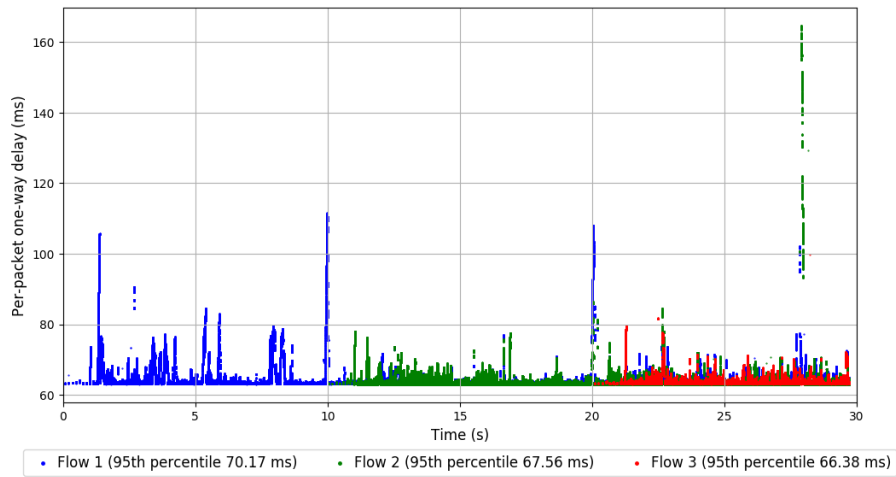
Run 5: Report of FillP-Sheep — Data Link

Flow 1 ingress (mean 506.14 Mbit/s) --- Flow 1 egress (mean 506.84 Mbit/s)
Flow 2 ingress (mean 320.18 Mbit/s) --- Flow 2 egress (mean 320.37 Mbit/s)
Flow 3 ingress (mean 243.32 Mbit/s) --- Flow 3 egress (mean 243.62 Mbit/s)

Flow 1 (95th percentile 92.78 ms)   Flow 2 (95th percentile 66.61 ms)   Flow 3 (95th percentile 67.40 ms)

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```
Run 1: Statistics of Indigo

Start at: 2019-05-30 09:04:25
End at: 2019-05-30 09:04:55
Local clock offset: -0.301 ms
Remote clock offset: 0.028 ms


# Below is generated by plot.py at 2019-05-30 13:06:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 401.70 Mbit/s
95th percentile per-packet one-way delay: 66.674 ms
Loss rate: 0.68%
-- Flow 1:
Average throughput: 210.55 Mbit/s
95th percentile per-packet one-way delay: 67.783 ms
Loss rate: 0.42%
-- Flow 2:
Average throughput: 184.50 Mbit/s
95th percentile per-packet one-way delay: 66.300 ms
Loss rate: 0.68%
-- Flow 3:
Average throughput: 177.23 Mbit/s
95th percentile per-packet one-way delay: 65.072 ms
Loss rate: 1.55%
```
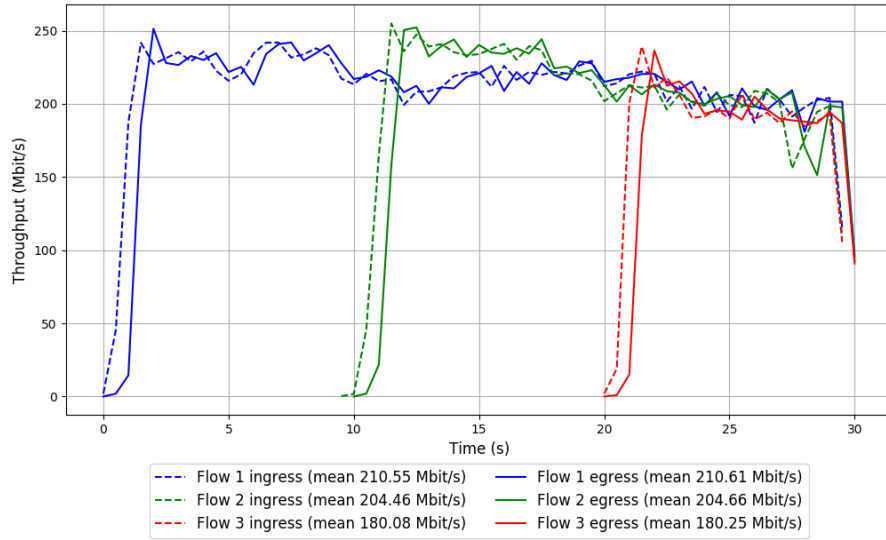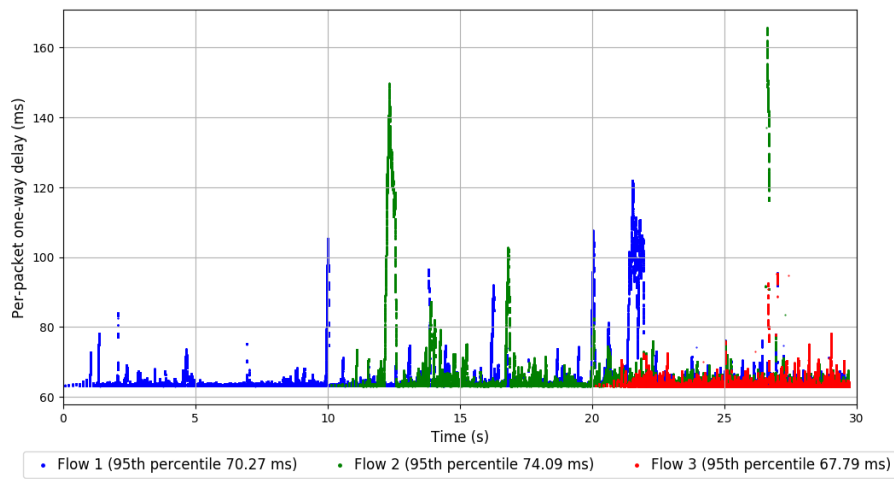
Run 1: Report of Indigo — Data Link

```
Run 2: Statistics of Indigo

Start at: 2019-05-30 09:40:17
End at: 2019-05-30 09:40:47
Local clock offset: -0.274 ms
Remote clock offset: 0.151 ms

# Below is generated by plot.py at 2019-05-30 13:06:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 404.76 Mbit/s
95th percentile per-packet one-way delay: 68.662 ms
Loss rate: 0.57%
-- Flow 1:
Average throughput: 210.61 Mbit/s
95th percentile per-packet one-way delay: 70.165 ms
Loss rate: 0.40%
-- Flow 2:
Average throughput: 204.66 Mbit/s
95th percentile per-packet one-way delay: 67.565 ms
Loss rate: 0.55%
-- Flow 3:
Average throughput: 180.25 Mbit/s
95th percentile per-packet one-way delay: 66.384 ms
Loss rate: 1.21%
```
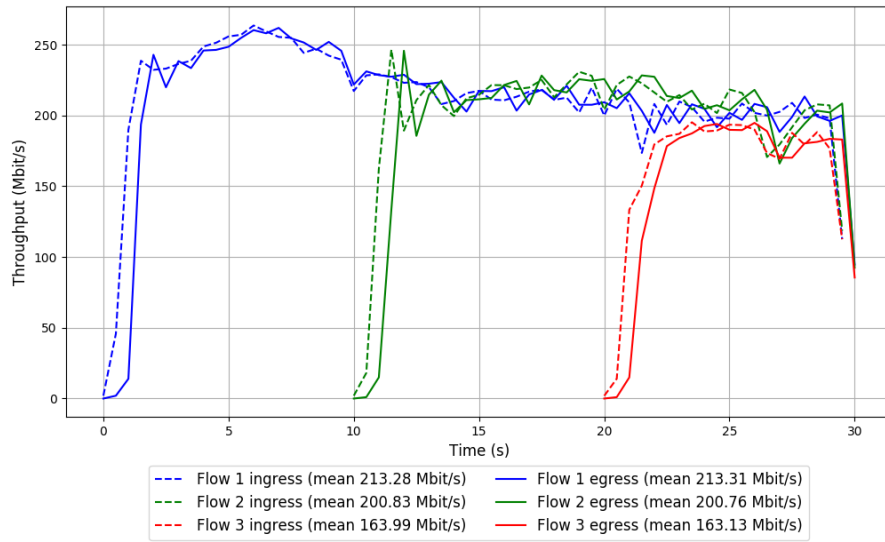
Run 2: Report of Indigo — Data Link

```
Run 3: Statistics of Indigo

Start at: 2019-05-30 10:16:25
End at: 2019-05-30 10:16:56
Local clock offset: -0.227 ms
Remote clock offset: 0.26 ms


# Below is generated by plot.py at 2019-05-30 13:06:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 398.72 Mbit/s
95th percentile per-packet one-way delay: 70.780 ms
Loss rate: 0.70%
-- Flow 1:
Average throughput: 213.31 Mbit/s
95th percentile per-packet one-way delay: 70.274 ms
Loss rate: 0.41%
-- Flow 2:
Average throughput: 200.76 Mbit/s
95th percentile per-packet one-way delay: 74.086 ms
Loss rate: 0.68%
-- Flow 3:
Average throughput: 163.13 Mbit/s
95th percentile per-packet one-way delay: 67.786 ms
Loss rate: 1.87%
```
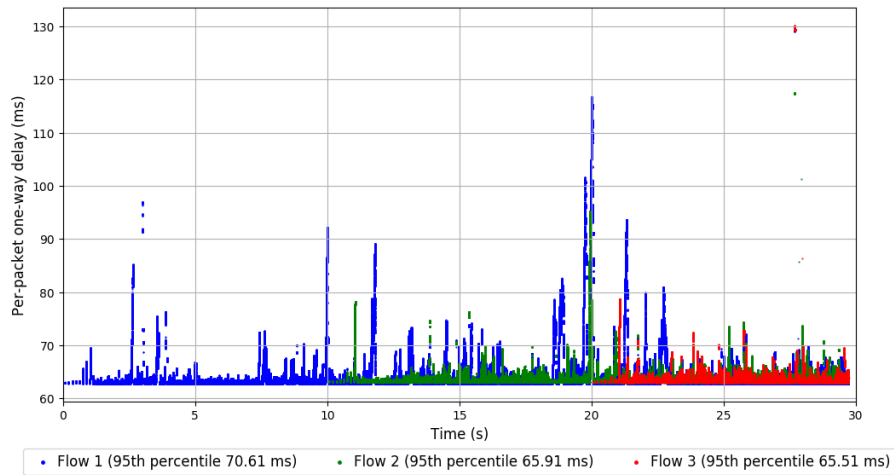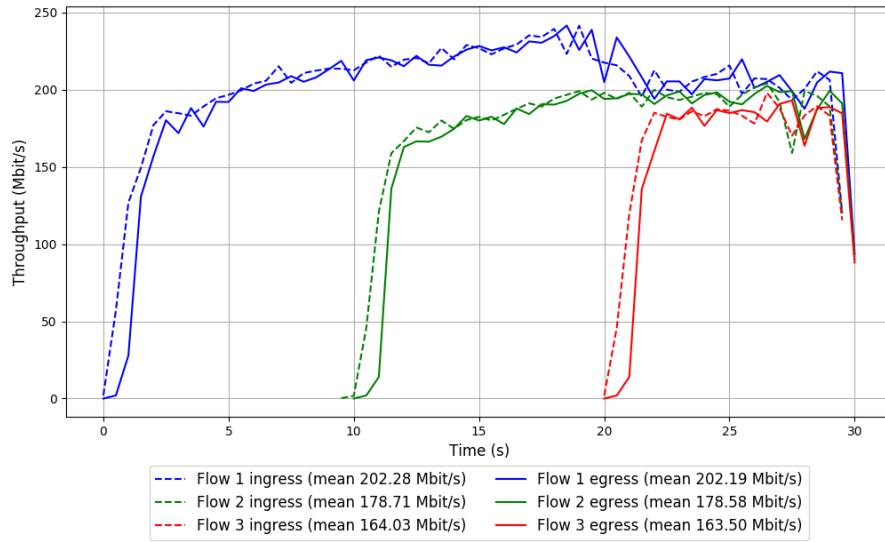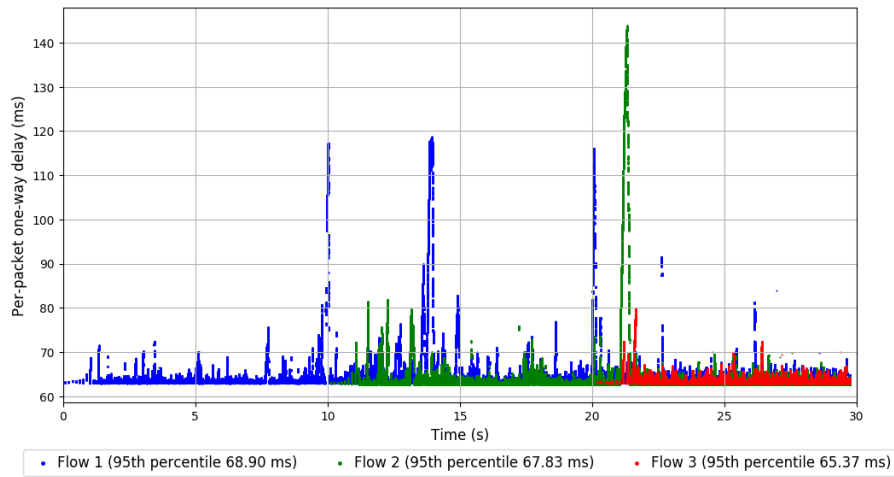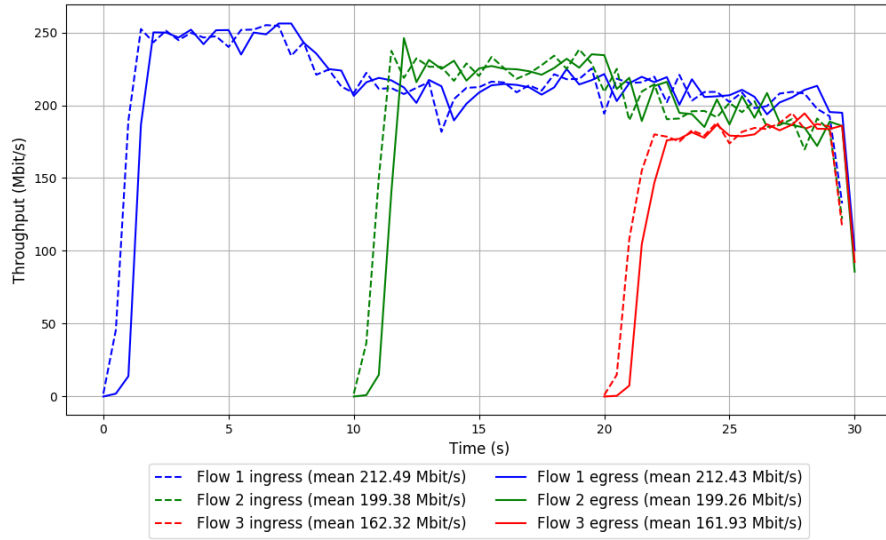
Run 3: Report of Indigo — Data Link

```
Run 4: Statistics of Indigo

Start at: 2019-05-30 10:52:42
End at: 2019-05-30 10:53:12
Local clock offset: -0.05 ms
Remote clock offset: -0.051 ms


# Below is generated by plot.py at 2019-05-30 13:06:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 373.87 Mbit/s
95th percentile per-packet one-way delay: 68.048 ms
Loss rate: 0.71%
-- Flow 1:
Average throughput: 202.19 Mbit/s
95th percentile per-packet one-way delay: 70.612 ms
Loss rate: 0.47%
-- Flow 2:
Average throughput: 178.58 Mbit/s
95th percentile per-packet one-way delay: 65.914 ms
Loss rate: 0.72%
-- Flow 3:
Average throughput: 163.50 Mbit/s
95th percentile per-packet one-way delay: 65.509 ms
Loss rate: 1.60%
```

Run 4: Report of Indigo — Data Link

```
Run 5: Statistics of Indigo

Start at: 2019-05-30 11:28:52
End at: 2019-05-30 11:29:22
Local clock offset: -0.055 ms
Remote clock offset: -0.175 ms


# Below is generated by plot.py at 2019-05-30 13:06:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 396.39 Mbit/s
95th percentile per-packet one-way delay: 68.112 ms
Loss rate: 0.68%
-- Flow 1:
Average throughput: 212.43 Mbit/s
95th percentile per-packet one-way delay: 68.901 ms
Loss rate: 0.45%
-- Flow 2:
Average throughput: 199.26 Mbit/s
95th percentile per-packet one-way delay: 67.830 ms
Loss rate: 0.70%
-- Flow 3:
Average throughput: 161.93 Mbit/s
95th percentile per-packet one-way delay: 65.372 ms
Loss rate: 1.55%
```
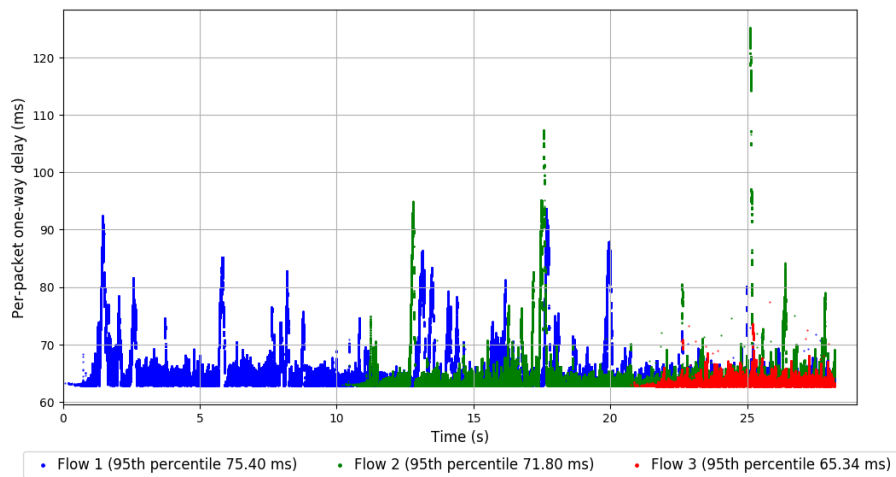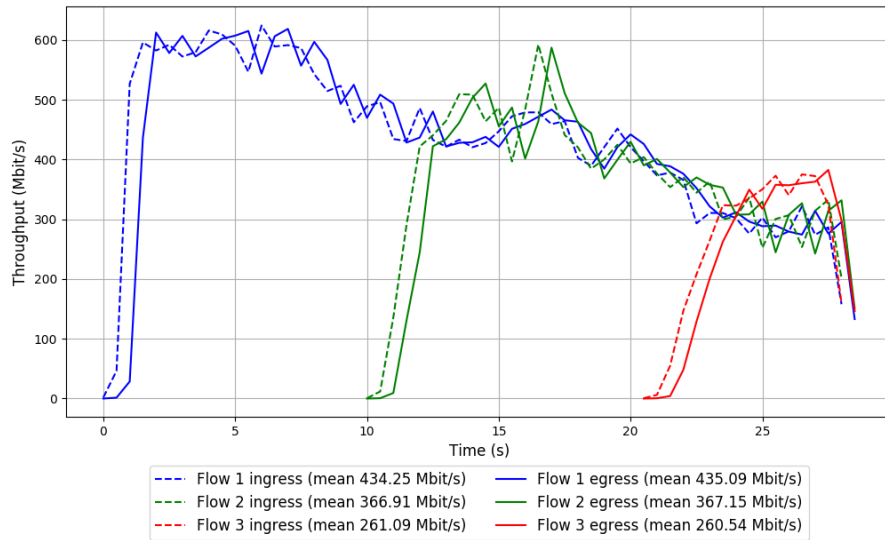
Run 5: Report of Indigo — Data Link

```
Run 1: Statistics of Indigo-MusesC3

Start at: 2019-05-30 09:12:20
End at: 2019-05-30 09:12:50
Local clock offset: -0.323 ms
Remote clock offset: 0.378 ms


# Below is generated by plot.py at 2019-05-30 13:06:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 738.79 Mbit/s
95th percentile per-packet one-way delay: 73.918 ms
Loss rate: 0.54%
-- Flow 1:
Average throughput: 435.09 Mbit/s
95th percentile per-packet one-way delay: 75.400 ms
Loss rate: 0.26%
-- Flow 2:
Average throughput: 367.15 Mbit/s
95th percentile per-packet one-way delay: 71.796 ms
Loss rate: 0.65%
-- Flow 3:
Average throughput: 260.54 Mbit/s
95th percentile per-packet one-way delay: 65.337 ms
Loss rate: 1.88%
```
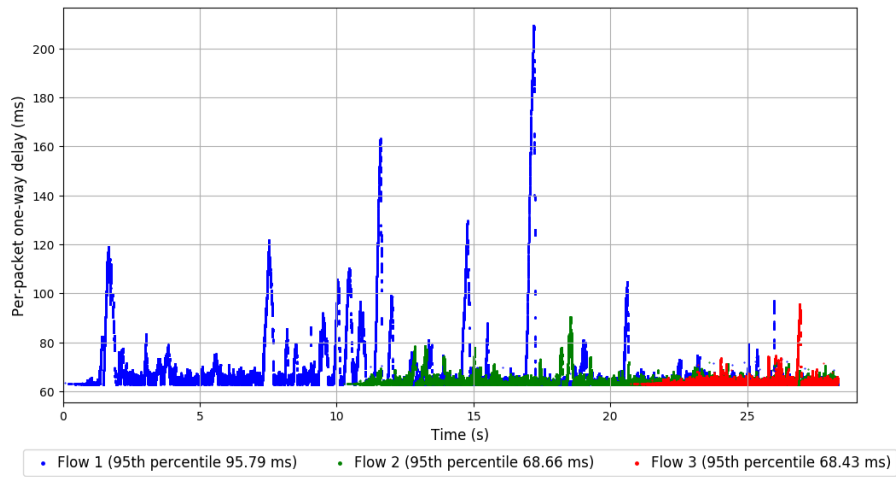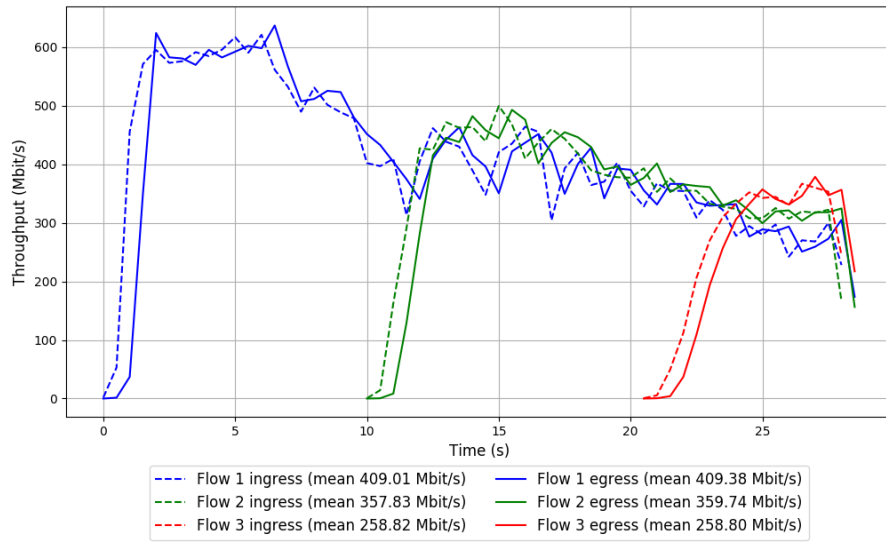
Run 1: Report of Indigo-MusesC3 — Data Link

```
Run 2: Statistics of Indigo-MusesC3

Start at: 2019-05-30 09:48:12
End at: 2019-05-30 09:48:42
Local clock offset: -0.254 ms
Remote clock offset: 0.371 ms


# Below is generated by plot.py at 2019-05-30 13:06:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 707.96 Mbit/s
95th percentile per-packet one-way delay: 82.828 ms
Loss rate: 0.50%
-- Flow 1:
Average throughput: 409.38 Mbit/s
95th percentile per-packet one-way delay: 95.789 ms
Loss rate: 0.37%
-- Flow 2:
Average throughput: 359.74 Mbit/s
95th percentile per-packet one-way delay: 68.657 ms
Loss rate: 0.37%
-- Flow 3:
Average throughput: 258.80 Mbit/s
95th percentile per-packet one-way delay: 68.432 ms
Loss rate: 1.66%
```
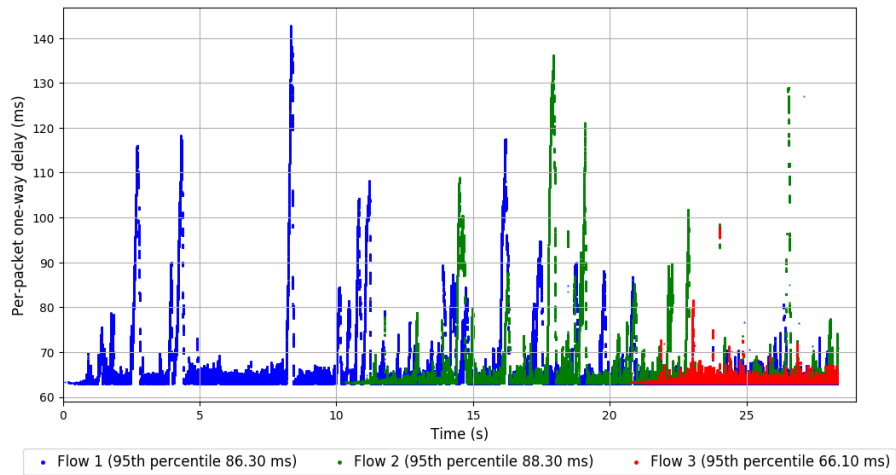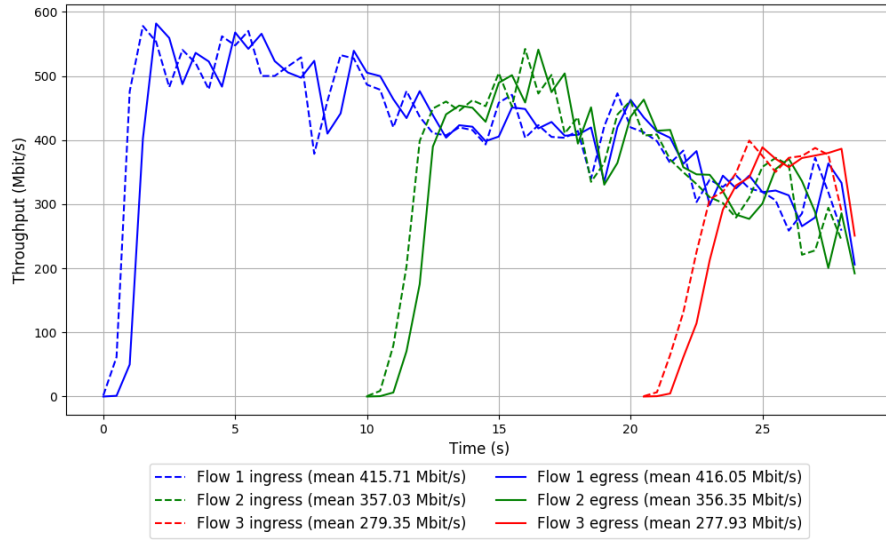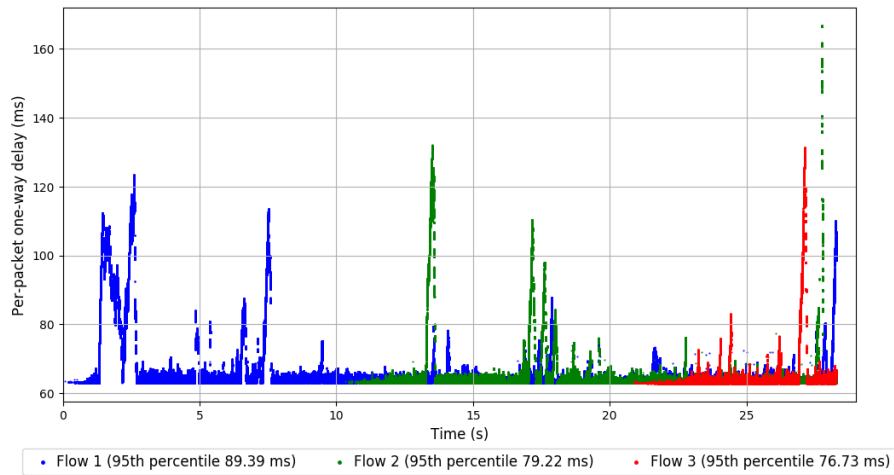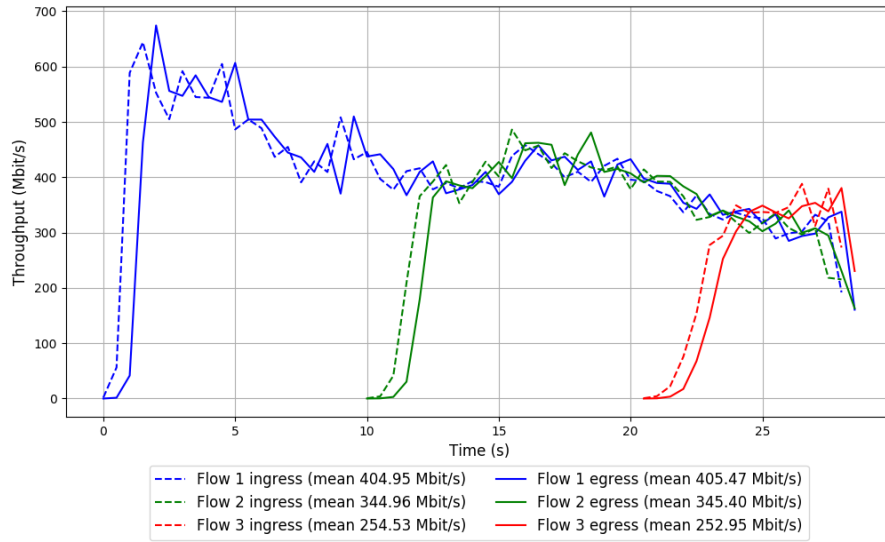
Run 2: Report of Indigo-MusesC3 — Data Link

- - - - Flow 1 ingress (mean 409.01 Mbit/s) —— Flow 1 egress (mean 409.38 Mbit/s)
- - - - Flow 2 ingress (mean 357.83 Mbit/s) —— Flow 2 egress (mean 359.74 Mbit/s)
- - - - Flow 3 ingress (mean 258.82 Mbit/s) —— Flow 3 egress (mean 258.80 Mbit/s)

• Flow 1 (95th percentile 95.79 ms)   • Flow 2 (95th percentile 68.66 ms)   • Flow 3 (95th percentile 68.43 ms)

```
Run 3: Statistics of Indigo-MusesC3

Start at: 2019-05-30 10:24:19
End at: 2019-05-30 10:24:49
Local clock offset: -0.225 ms
Remote clock offset: 0.251 ms


# Below is generated by plot.py at 2019-05-30 13:14:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 719.35 Mbit/s
95th percentile per-packet one-way delay: 85.244 ms
Loss rate: 0.72%
-- Flow 1:
Average throughput: 416.05 Mbit/s
95th percentile per-packet one-way delay: 86.303 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 356.35 Mbit/s
95th percentile per-packet one-way delay: 88.301 ms
Loss rate: 0.88%
-- Flow 3:
Average throughput: 277.93 Mbit/s
95th percentile per-packet one-way delay: 66.100 ms
Loss rate: 2.14%
```
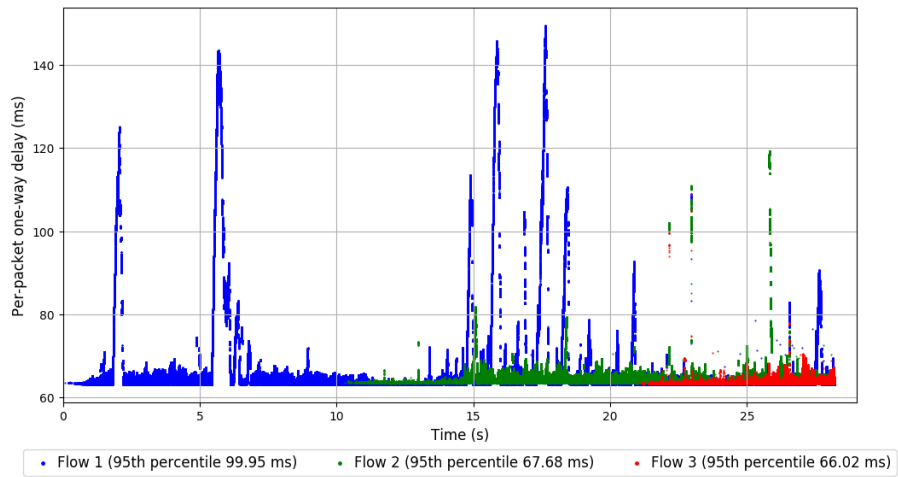
Run 3: Report of Indigo-MusesC3 — Data Link

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```
Run 4: Statistics of Indigo-MusesC3

Start at: 2019-05-30 11:00:38
End at: 2019-05-30 11:01:08
Local clock offset: 0.03 ms
Remote clock offset: -0.067 ms


# Below is generated by plot.py at 2019-05-30 13:14:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 692.26 Mbit/s
95th percentile per-packet one-way delay: 86.155 ms
Loss rate: 0.65%
-- Flow 1:
Average throughput: 405.47 Mbit/s
95th percentile per-packet one-way delay: 89.392 ms
Loss rate: 0.33%
-- Flow 2:
Average throughput: 345.40 Mbit/s
95th percentile per-packet one-way delay: 79.217 ms
Loss rate: 0.67%
-- Flow 3:
Average throughput: 252.95 Mbit/s
95th percentile per-packet one-way delay: 76.728 ms
Loss rate: 2.47%
```

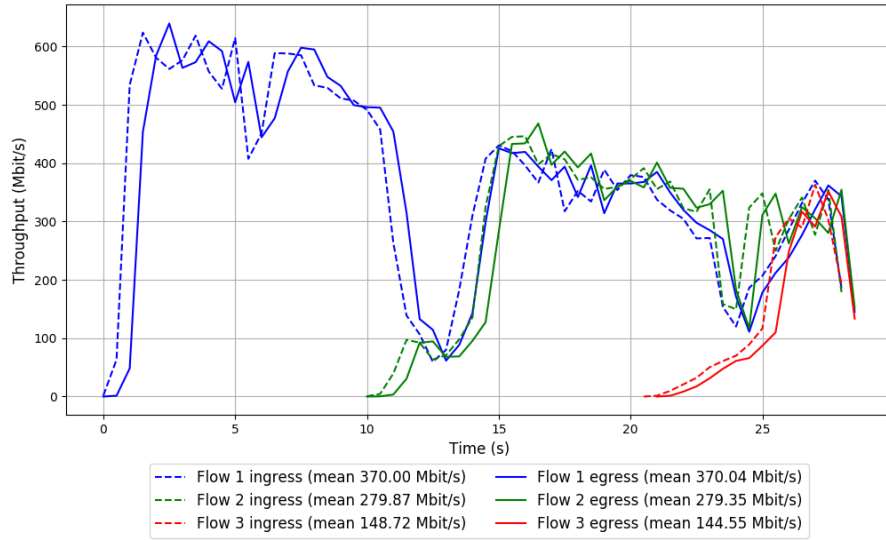Run 4: Report of Indigo-MusesC3 — Data Link

```
Run 5: Statistics of Indigo-MusesC3

Start at: 2019-05-30 11:36:51
End at: 2019-05-30 11:37:21
Local clock offset: -0.049 ms
Remote clock offset: -0.357 ms


# Below is generated by plot.py at 2019-05-30 13:14:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 584.79 Mbit/s
95th percentile per-packet one-way delay: 84.722 ms
Loss rate: 0.84%
-- Flow 1:
Average throughput: 370.04 Mbit/s
95th percentile per-packet one-way delay: 99.949 ms
Loss rate: 0.44%
-- Flow 2:
Average throughput: 279.35 Mbit/s
95th percentile per-packet one-way delay: 67.677 ms
Loss rate: 0.89%
-- Flow 3:
Average throughput: 144.55 Mbit/s
95th percentile per-packet one-way delay: 66.017 ms
Loss rate: 4.54%
```
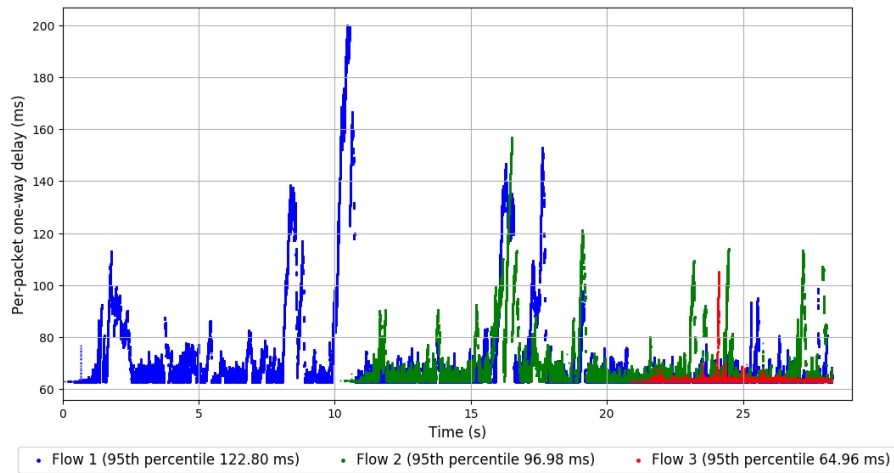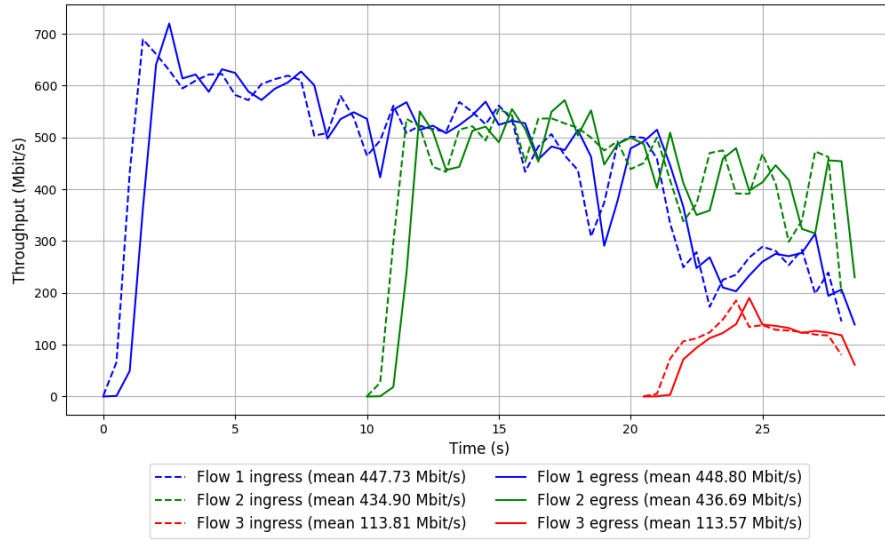
Run 5: Report of Indigo-MusesC3 — Data Link

Flow 1 ingress (mean 370.00 Mbit/s) --- Flow 1 egress (mean 370.04 Mbit/s)
Flow 2 ingress (mean 279.87 Mbit/s) --- Flow 2 egress (mean 279.35 Mbit/s)
Flow 3 ingress (mean 148.72 Mbit/s) --- Flow 3 egress (mean 144.55 Mbit/s)

Flow 1 (95th percentile 99.95 ms)   Flow 2 (95th percentile 67.68 ms)   Flow 3 (95th percentile 66.02 ms)

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```
Run 1: Statistics of Indigo-MusesC5

Start at: 2019-05-30 08:46:50
End at: 2019-05-30 08:47:20
Local clock offset: -0.311 ms
Remote clock offset: 0.068 ms


# Below is generated by plot.py at 2019-05-30 13:16:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 758.21 Mbit/s
95th percentile per-packet one-way delay: 105.014 ms
Loss rate: 0.31%
-- Flow 1:
Average throughput: 448.80 Mbit/s
95th percentile per-packet one-way delay: 122.796 ms
Loss rate: 0.21%
-- Flow 2:
Average throughput: 436.69 Mbit/s
95th percentile per-packet one-way delay: 96.984 ms
Loss rate: 0.31%
-- Flow 3:
Average throughput: 113.57 Mbit/s
95th percentile per-packet one-way delay: 64.958 ms
Loss rate: 1.84%
```
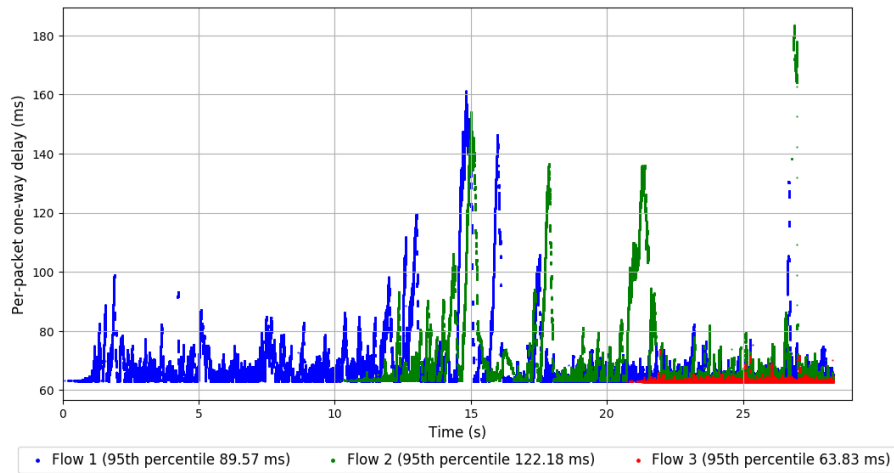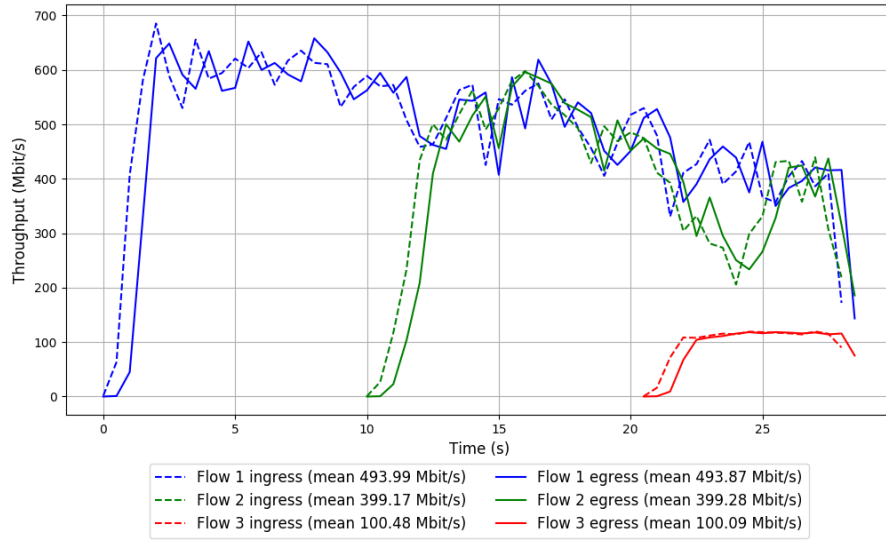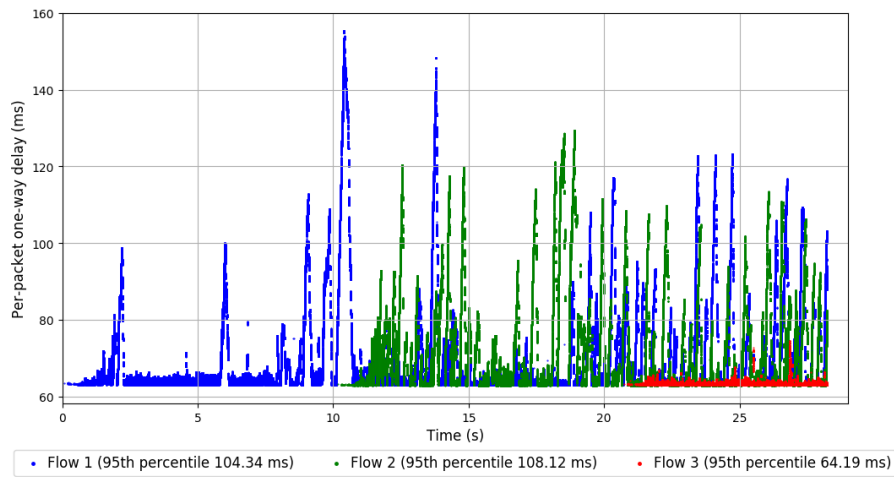
Run 1: Report of Indigo-MusesC5 — Data Link

Flow 1 ingress (mean 447.73 Mbit/s) --- Flow 1 egress (mean 448.80 Mbit/s)
Flow 2 ingress (mean 434.90 Mbit/s) --- Flow 2 egress (mean 436.69 Mbit/s)
Flow 3 ingress (mean 113.81 Mbit/s) --- Flow 3 egress (mean 113.57 Mbit/s)

Flow 1 (95th percentile 122.80 ms)   Flow 2 (95th percentile 96.98 ms)   Flow 3 (95th percentile 64.96 ms)

```
Run 2: Statistics of Indigo-MusesC5

Start at: 2019-05-30 09:22:39
End at: 2019-05-30 09:23:09
Local clock offset: -0.298 ms
Remote clock offset: 0.276 ms

# Below is generated by plot.py at 2019-05-30 13:16:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 776.89 Mbit/s
95th percentile per-packet one-way delay: 101.871 ms
Loss rate: 0.45%
-- Flow 1:
Average throughput: 493.87 Mbit/s
95th percentile per-packet one-way delay: 89.566 ms
Loss rate: 0.31%
-- Flow 2:
Average throughput: 399.28 Mbit/s
95th percentile per-packet one-way delay: 122.184 ms
Loss rate: 0.56%
-- Flow 3:
Average throughput: 100.09 Mbit/s
95th percentile per-packet one-way delay: 63.825 ms
Loss rate: 1.99%
```
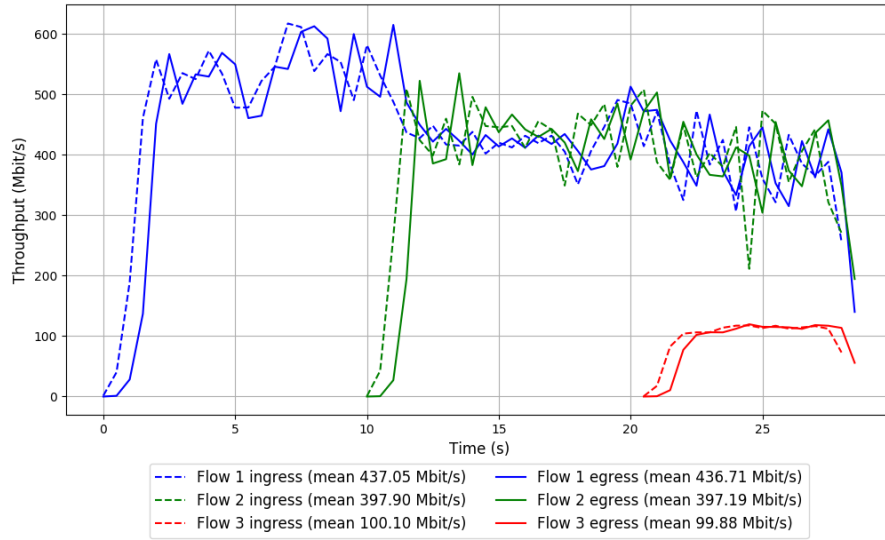
Run 2: Report of Indigo-MusesC5 — Data Link

```
Run 3: Statistics of Indigo-MusesC5

Start at: 2019-05-30 09:58:24
End at: 2019-05-30 09:58:54
Local clock offset: -0.24 ms
Remote clock offset: 0.231 ms


# Below is generated by plot.py at 2019-05-30 13:16:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 717.86 Mbit/s
95th percentile per-packet one-way delay: 106.283 ms
Loss rate: 0.71%
-- Flow 1:
Average throughput: 436.71 Mbit/s
95th percentile per-packet one-way delay: 104.345 ms
Loss rate: 0.54%
-- Flow 2:
Average throughput: 397.19 Mbit/s
95th percentile per-packet one-way delay: 108.117 ms
Loss rate: 0.87%
-- Flow 3:
Average throughput: 99.88 Mbit/s
95th percentile per-packet one-way delay: 64.187 ms
Loss rate: 1.88%
```
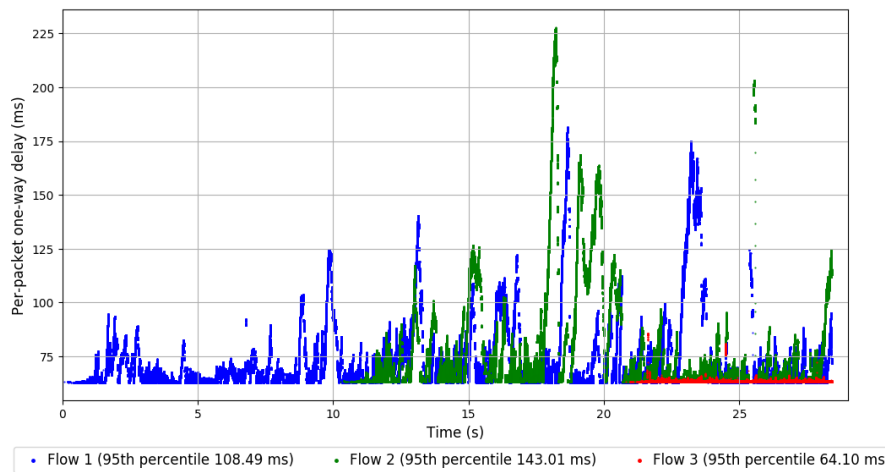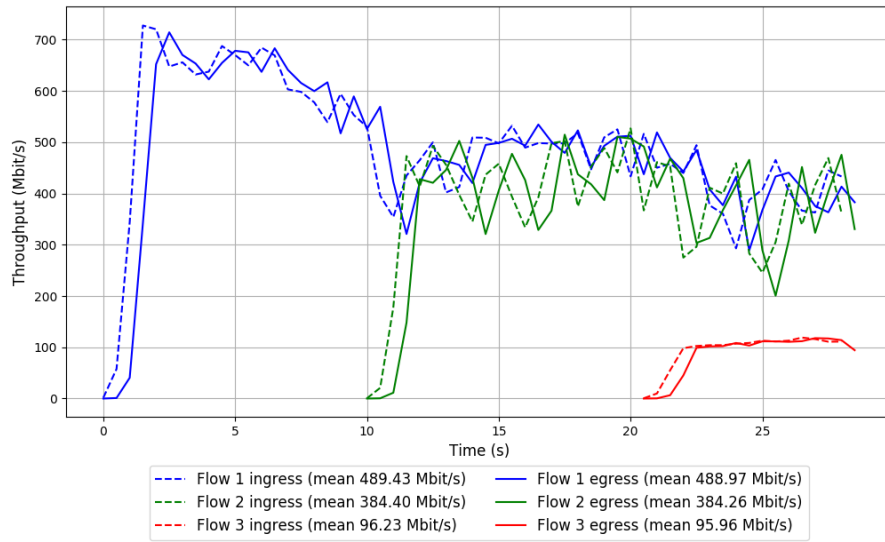
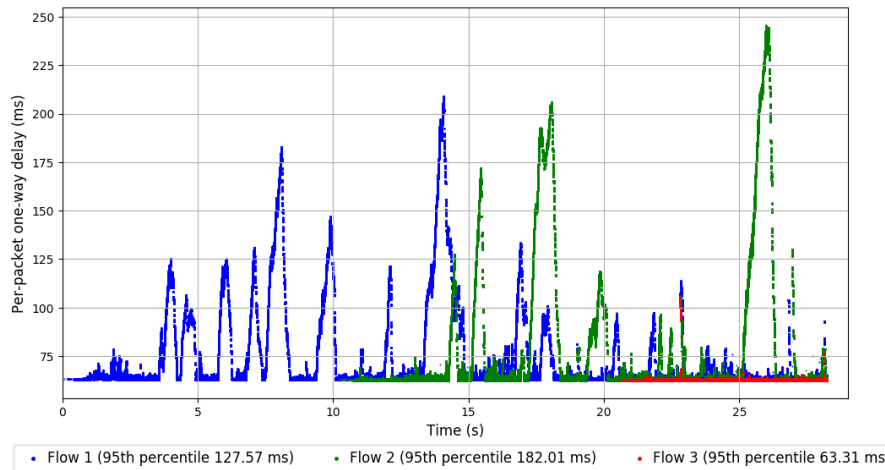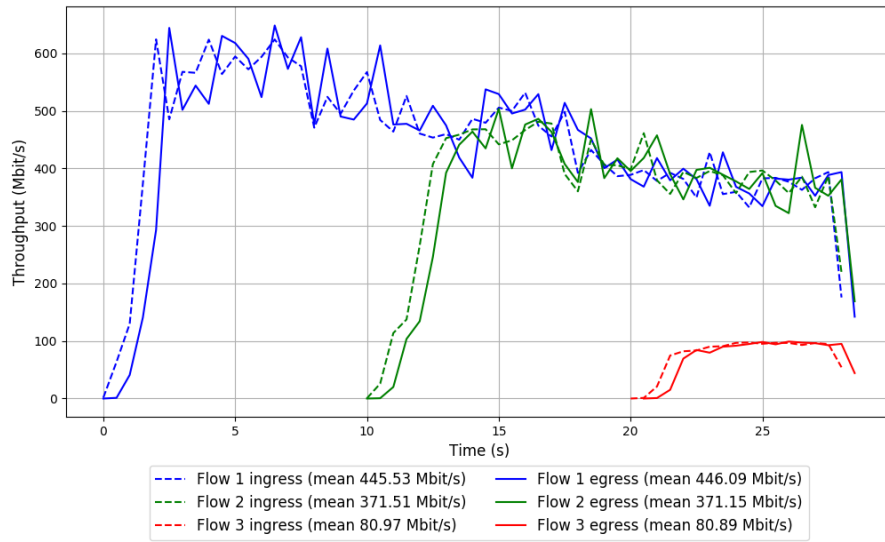# Run 3: Report of Indigo-MusesC5 — Data Link

Flow 1 ingress (mean 437.05 Mbit/s) --- Flow 1 egress (mean 436.71 Mbit/s)
Flow 2 ingress (mean 397.90 Mbit/s) --- Flow 2 egress (mean 397.19 Mbit/s)
Flow 3 ingress (mean 100.10 Mbit/s) --- Flow 3 egress (mean 99.88 Mbit/s)

Flow 1 (95th percentile 104.34 ms) • Flow 2 (95th percentile 108.12 ms) • Flow 3 (95th percentile 64.19 ms)

```
Run 4: Statistics of Indigo-MusesC5

Start at: 2019-05-30 10:34:37
End at: 2019-05-30 10:35:07
Local clock offset: -0.232 ms
Remote clock offset: 0.266 ms


# Below is generated by plot.py at 2019-05-30 13:16:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 760.49 Mbit/s
95th percentile per-packet one-way delay: 118.898 ms
Loss rate: 0.65%
-- Flow 1:
Average throughput: 488.97 Mbit/s
95th percentile per-packet one-way delay: 108.487 ms
Loss rate: 0.54%
-- Flow 2:
Average throughput: 384.26 Mbit/s
95th percentile per-packet one-way delay: 143.015 ms
Loss rate: 0.72%
-- Flow 3:
Average throughput: 95.96 Mbit/s
95th percentile per-packet one-way delay: 64.099 ms
Loss rate: 1.93%
```
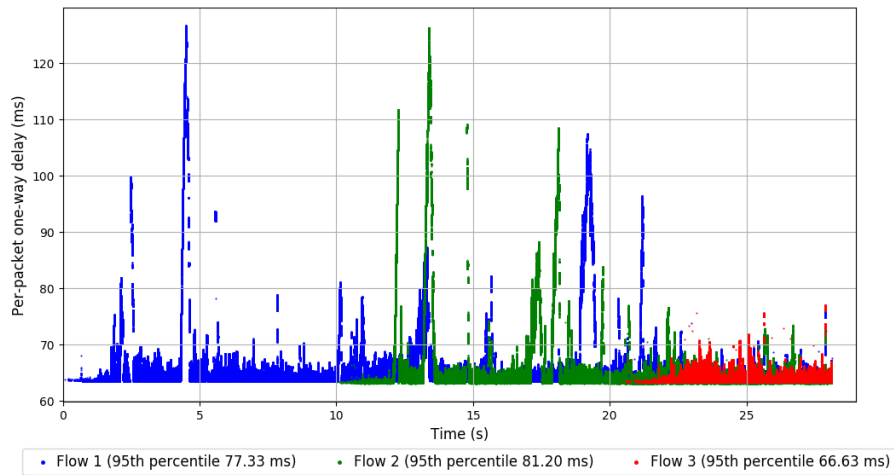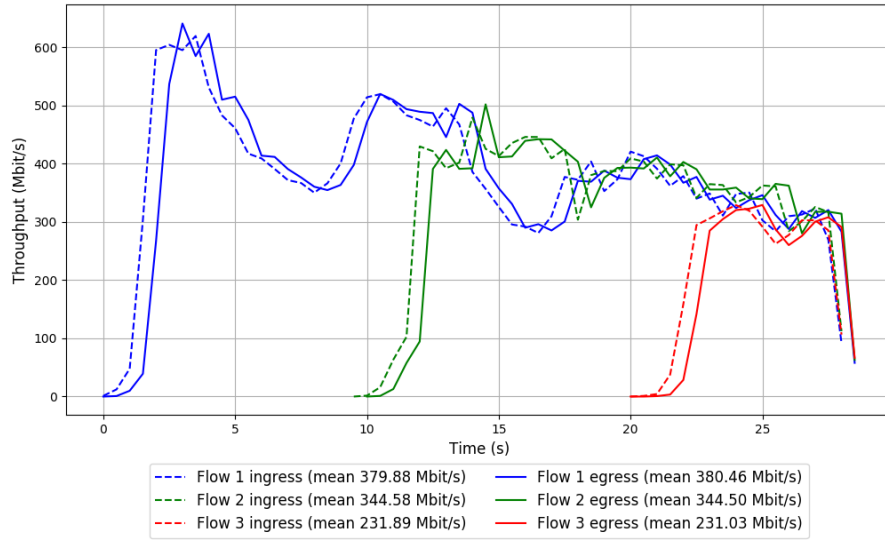
Run 4: Report of Indigo-MusesC5 — Data Link

```
Run 5: Statistics of Indigo-MusesC5

Start at: 2019-05-30 11:11:15
End at: 2019-05-30 11:11:45
Local clock offset: 0.047 ms
Remote clock offset: -0.045 ms


# Below is generated by plot.py at 2019-05-30 13:19:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 705.74 Mbit/s
95th percentile per-packet one-way delay: 141.071 ms
Loss rate: 0.54%
-- Flow 1:
Average throughput: 446.09 Mbit/s
95th percentile per-packet one-way delay: 127.569 ms
Loss rate: 0.34%
-- Flow 2:
Average throughput: 371.15 Mbit/s
95th percentile per-packet one-way delay: 182.015 ms
Loss rate: 0.79%
-- Flow 3:
Average throughput: 80.89 Mbit/s
95th percentile per-packet one-way delay: 63.307 ms
Loss rate: 1.72%
```
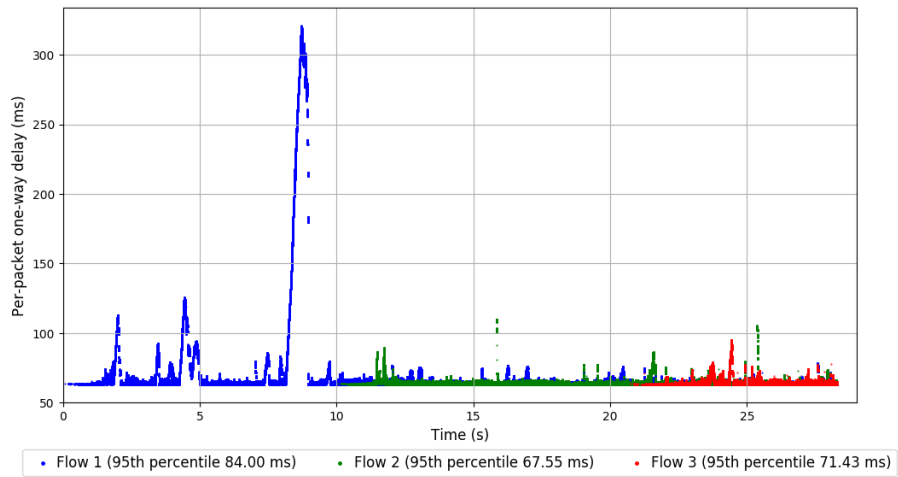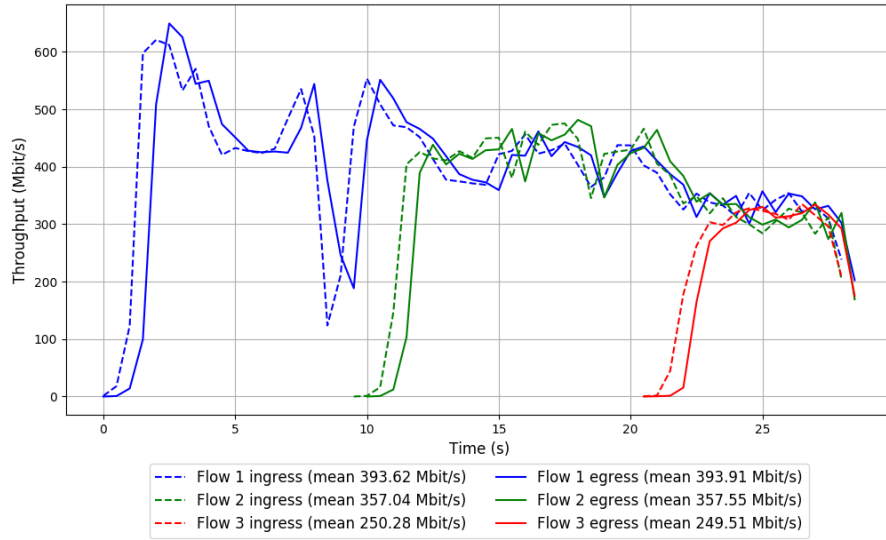
Run 5: Report of Indigo-MusesC5 — Data Link

- Flow 1 ingress (mean 445.53 Mbit/s)
- Flow 1 egress (mean 446.09 Mbit/s)
- Flow 2 ingress (mean 371.51 Mbit/s)
- Flow 2 egress (mean 371.15 Mbit/s)
- Flow 3 ingress (mean 80.97 Mbit/s)
- Flow 3 egress (mean 80.89 Mbit/s)

- Flow 1 (95th percentile 127.57 ms)
- Flow 2 (95th percentile 182.01 ms)
- Flow 3 (95th percentile 63.31 ms)

```
Run 1: Statistics of Indigo-MusesD

Start at: 2019-05-30 08:45:05
End at: 2019-05-30 08:45:35
Local clock offset: -0.245 ms
Remote clock offset: -0.049 ms


# Below is generated by plot.py at 2019-05-30 13:25:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 665.47 Mbit/s
95th percentile per-packet one-way delay: 77.310 ms
Loss rate: 0.60%
-- Flow 1:
Average throughput: 380.46 Mbit/s
95th percentile per-packet one-way delay: 77.330 ms
Loss rate: 0.29%
-- Flow 2:
Average throughput: 344.50 Mbit/s
95th percentile per-packet one-way delay: 81.204 ms
Loss rate: 0.72%
-- Flow 3:
Average throughput: 231.03 Mbit/s
95th percentile per-packet one-way delay: 66.630 ms
Loss rate: 2.01%
```
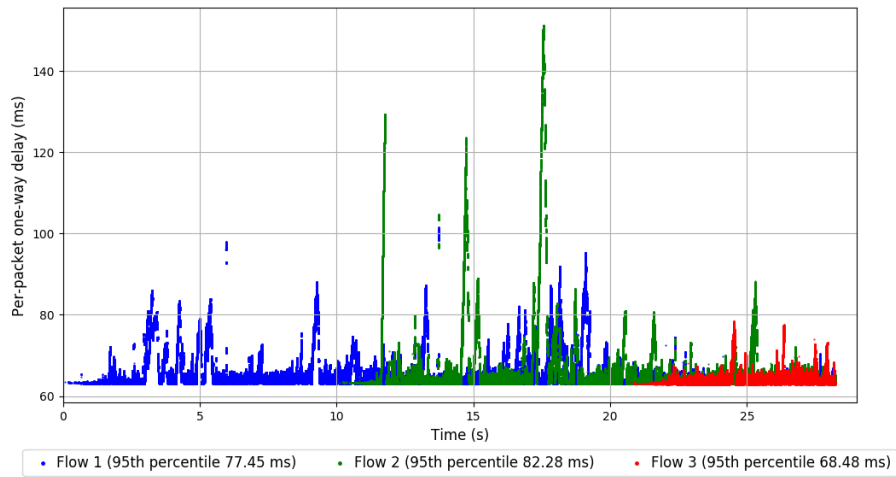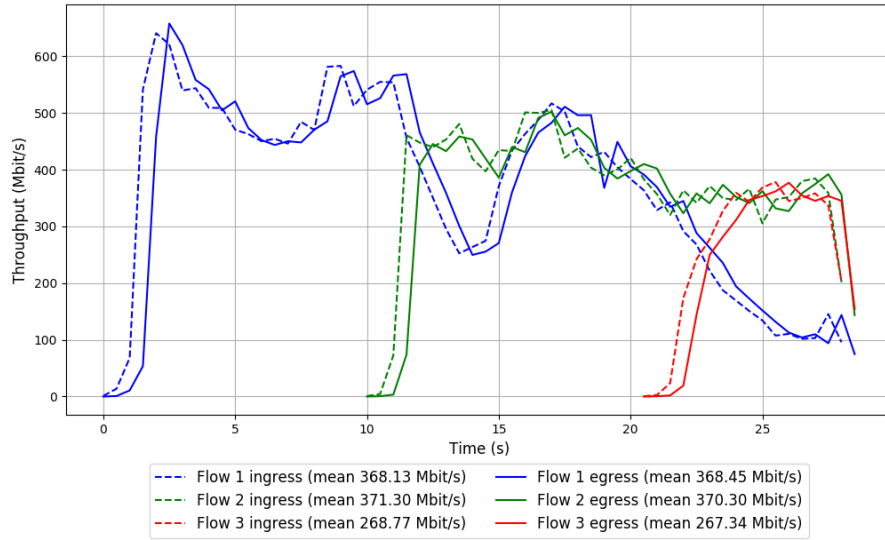
Run 1: Report of Indigo-MusesD — Data Link

```
Run 2: Statistics of Indigo-MusesD

Start at: 2019-05-30 09:20:52
End at: 2019-05-30 09:21:22
Local clock offset: -0.308 ms
Remote clock offset: 0.107 ms


# Below is generated by plot.py at 2019-05-30 13:27:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 691.58 Mbit/s
95th percentile per-packet one-way delay: 75.509 ms
Loss rate: 0.58%
-- Flow 1:
Average throughput: 393.91 Mbit/s
95th percentile per-packet one-way delay: 84.003 ms
Loss rate: 0.36%
-- Flow 2:
Average throughput: 357.55 Mbit/s
95th percentile per-packet one-way delay: 67.553 ms
Loss rate: 0.55%
-- Flow 3:
Average throughput: 249.51 Mbit/s
95th percentile per-packet one-way delay: 71.431 ms
Loss rate: 1.99%
```
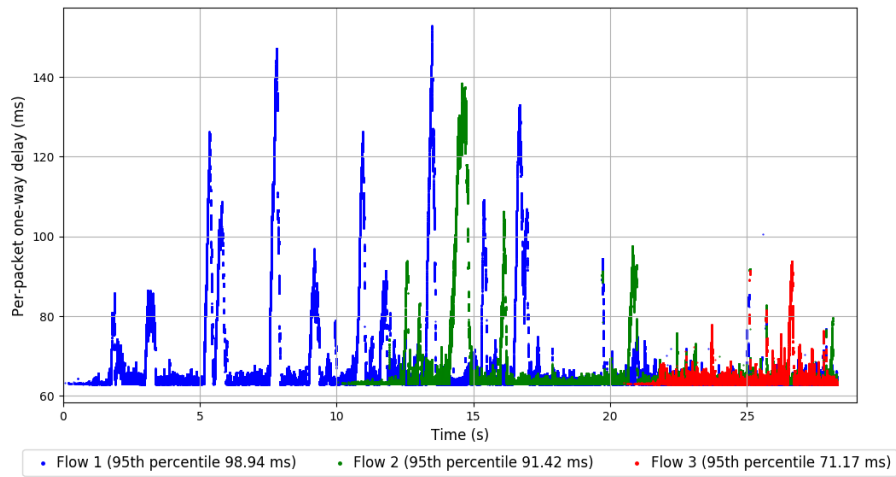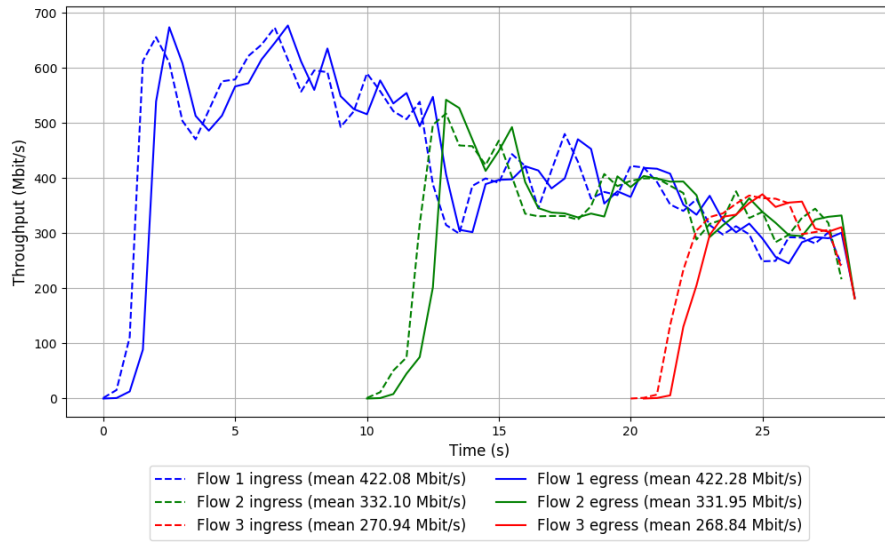
Run 2: Report of Indigo-MusesD — Data Link

```
Run 3: Statistics of Indigo-MusesD

Start at: 2019-05-30 09:56:37
End at: 2019-05-30 09:57:07
Local clock offset: -0.231 ms
Remote clock offset: 0.279 ms


# Below is generated by plot.py at 2019-05-30 13:27:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 677.66 Mbit/s
95th percentile per-packet one-way delay: 77.848 ms
Loss rate: 0.78%
-- Flow 1:
Average throughput: 368.45 Mbit/s
95th percentile per-packet one-way delay: 77.453 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 370.30 Mbit/s
95th percentile per-packet one-way delay: 82.281 ms
Loss rate: 0.97%
-- Flow 3:
Average throughput: 267.34 Mbit/s
95th percentile per-packet one-way delay: 68.477 ms
Loss rate: 2.19%
```

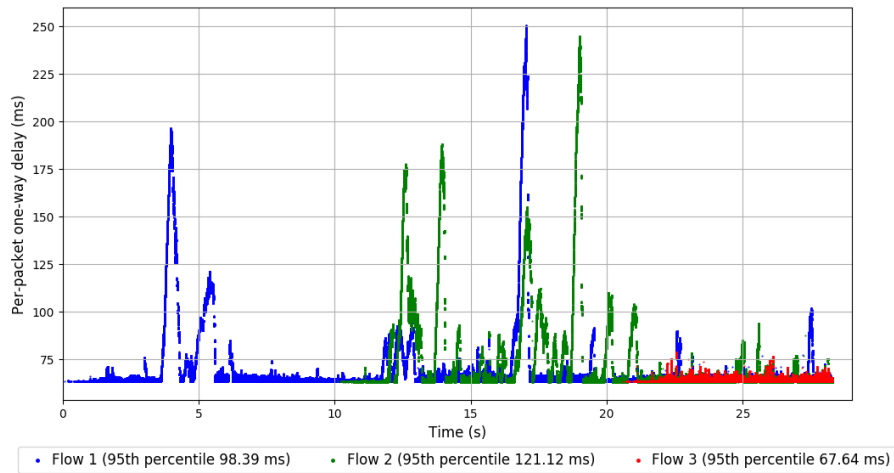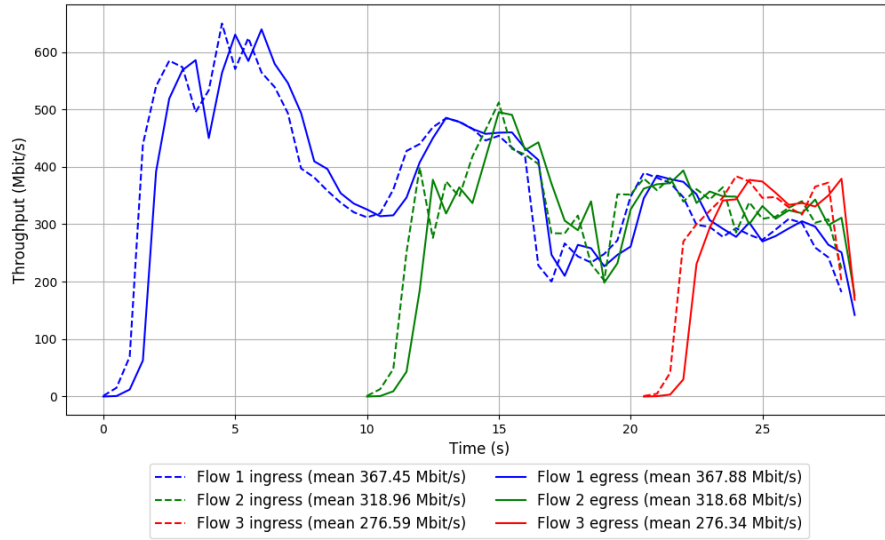# Run 3: Report of Indigo-MusesD — Data Link

```
Run 4: Statistics of Indigo-MusesD

Start at: 2019-05-30 10:32:48
End at: 2019-05-30 10:33:18
Local clock offset: -0.222 ms
Remote clock offset: 0.281 ms


# Below is generated by plot.py at 2019-05-30 13:28:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 710.90 Mbit/s
95th percentile per-packet one-way delay: 93.027 ms
Loss rate: 0.69%
-- Flow 1:
Average throughput: 422.28 Mbit/s
95th percentile per-packet one-way delay: 98.936 ms
Loss rate: 0.37%
-- Flow 2:
Average throughput: 331.95 Mbit/s
95th percentile per-packet one-way delay: 91.420 ms
Loss rate: 0.73%
-- Flow 3:
Average throughput: 268.84 Mbit/s
95th percentile per-packet one-way delay: 71.165 ms
Loss rate: 2.31%
```
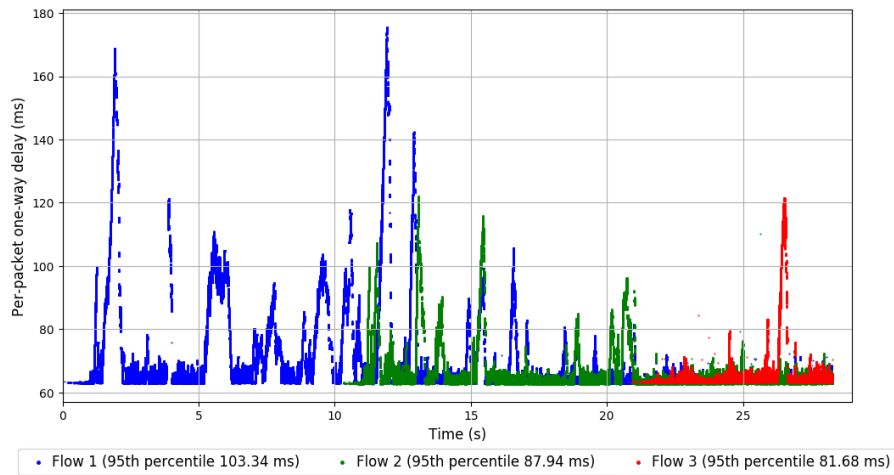
Run 4: Report of Indigo-MusesD — Data Link

```
Run 5: Statistics of Indigo-MusesD

Start at: 2019-05-30 11:09:30
End at: 2019-05-30 11:10:00
Local clock offset: 0.055 ms
Remote clock offset: -0.213 ms


# Below is generated by plot.py at 2019-05-30 13:28:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 648.19 Mbit/s
95th percentile per-packet one-way delay: 102.879 ms
Loss rate: 0.63%
-- Flow 1:
Average throughput: 367.88 Mbit/s
95th percentile per-packet one-way delay: 98.387 ms
Loss rate: 0.34%
-- Flow 2:
Average throughput: 318.68 Mbit/s
95th percentile per-packet one-way delay: 121.123 ms
Loss rate: 0.75%
-- Flow 3:
Average throughput: 276.34 Mbit/s
95th percentile per-packet one-way delay: 67.642 ms
Loss rate: 1.71%
```
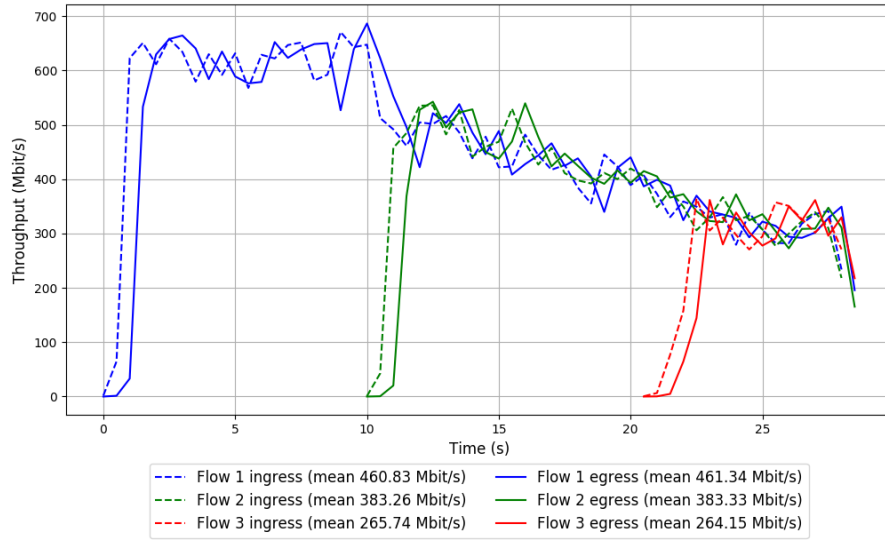
Run 5: Report of Indigo-MusesD — Data Link

```
Run 1: Statistics of Indigo-MusesT

Start at: 2019-05-30 08:55:34
End at: 2019-05-30 08:56:04
Local clock offset: -0.274 ms
Remote clock offset: 0.138 ms


# Below is generated by plot.py at 2019-05-30 13:31:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 776.91 Mbit/s
95th percentile per-packet one-way delay: 98.572 ms
Loss rate: 0.63%
-- Flow 1:
Average throughput: 461.34 Mbit/s
95th percentile per-packet one-way delay: 103.343 ms
Loss rate: 0.35%
-- Flow 2:
Average throughput: 383.33 Mbit/s
95th percentile per-packet one-way delay: 87.944 ms
Loss rate: 0.67%
-- Flow 3:
Average throughput: 264.15 Mbit/s
95th percentile per-packet one-way delay: 81.677 ms
Loss rate: 2.32%
```
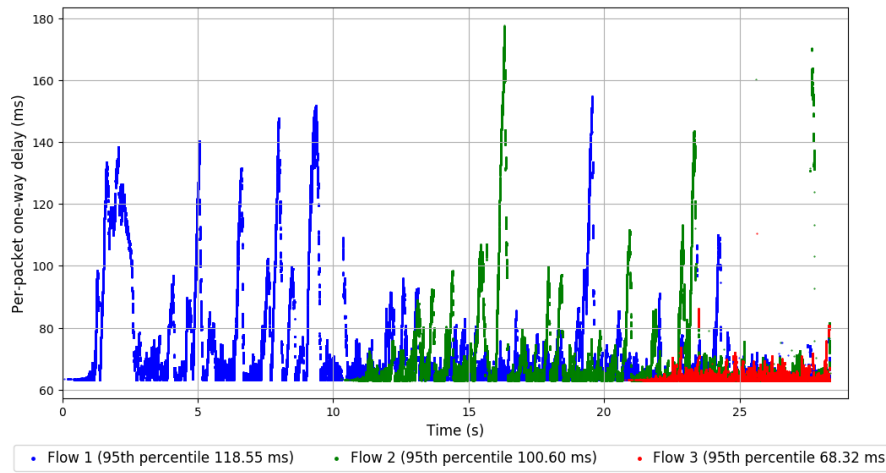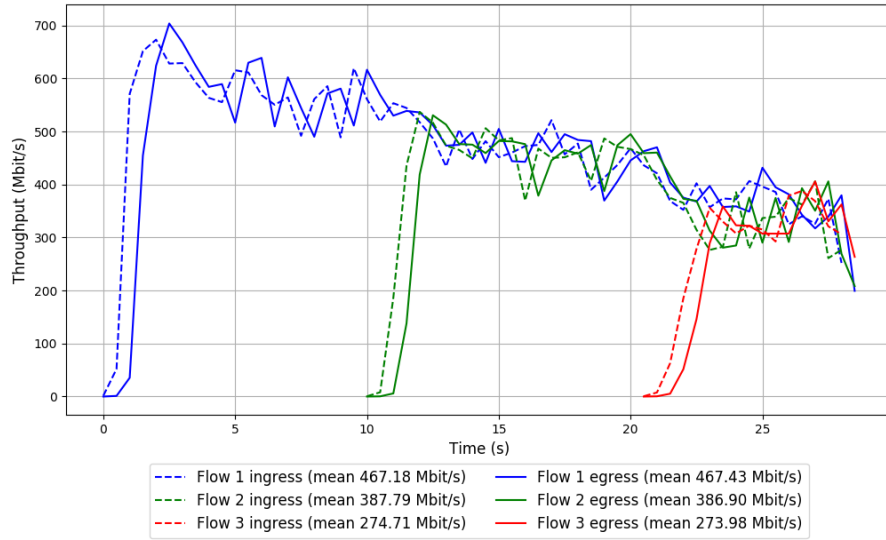
Run 1: Report of Indigo-MusesT — Data Link

```
Run 2: Statistics of Indigo-MusesT

Start at: 2019-05-30 09:31:28
End at: 2019-05-30 09:31:58
Local clock offset: -0.357 ms
Remote clock offset: 0.095 ms


# Below is generated by plot.py at 2019-05-30 13:31:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 787.29 Mbit/s
95th percentile per-packet one-way delay: 113.635 ms
Loss rate: 0.70%
-- Flow 1:
Average throughput: 467.43 Mbit/s
95th percentile per-packet one-way delay: 118.554 ms
Loss rate: 0.40%
-- Flow 2:
Average throughput: 386.90 Mbit/s
95th percentile per-packet one-way delay: 100.596 ms
Loss rate: 0.91%
-- Flow 3:
Average throughput: 273.98 Mbit/s
95th percentile per-packet one-way delay: 68.316 ms
Loss rate: 1.92%
```
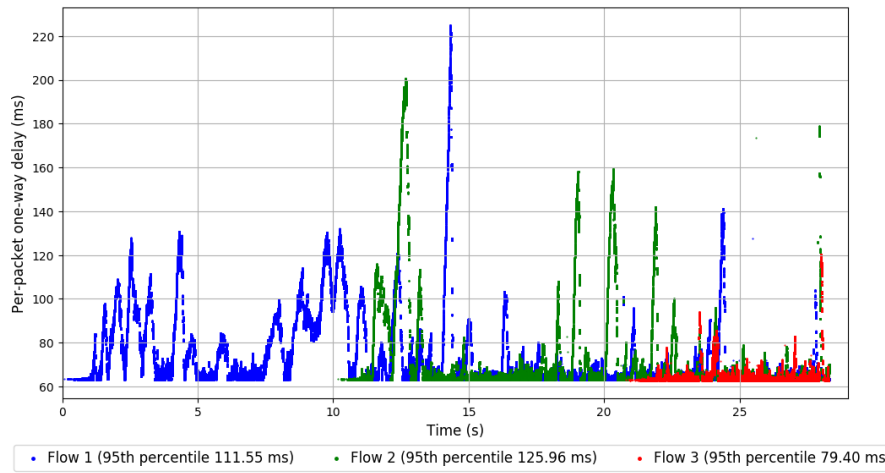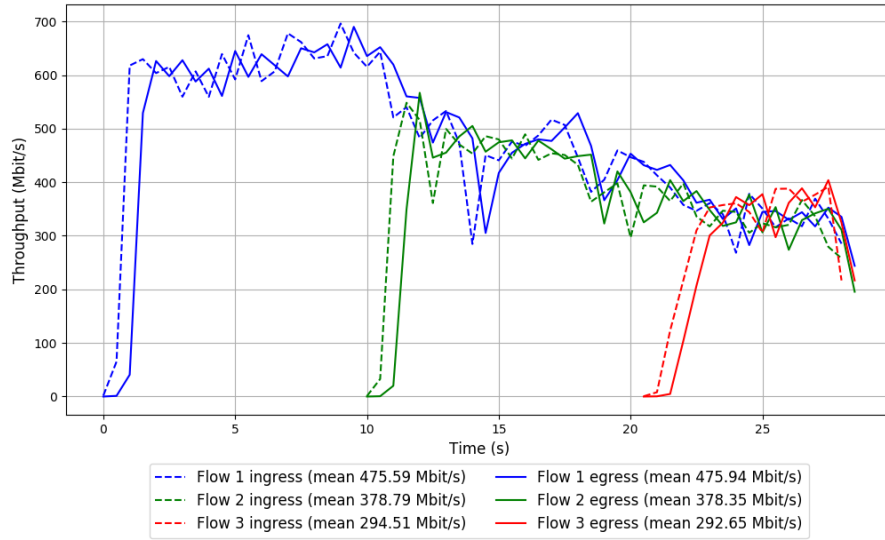
Run 2: Report of Indigo-MusesT — Data Link

```
Run 3: Statistics of Indigo-MusesT

Start at: 2019-05-30 10:07:23
End at: 2019-05-30 10:07:53
Local clock offset: -0.188 ms
Remote clock offset: 0.221 ms

# Below is generated by plot.py at 2019-05-30 13:34:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 796.88 Mbit/s
95th percentile per-packet one-way delay: 112.092 ms
Loss rate: 0.71%
-- Flow 1:
Average throughput: 475.94 Mbit/s
95th percentile per-packet one-way delay: 111.546 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 378.35 Mbit/s
95th percentile per-packet one-way delay: 125.958 ms
Loss rate: 0.78%
-- Flow 3:
Average throughput: 292.65 Mbit/s
95th percentile per-packet one-way delay: 79.401 ms
Loss rate: 2.45%
```
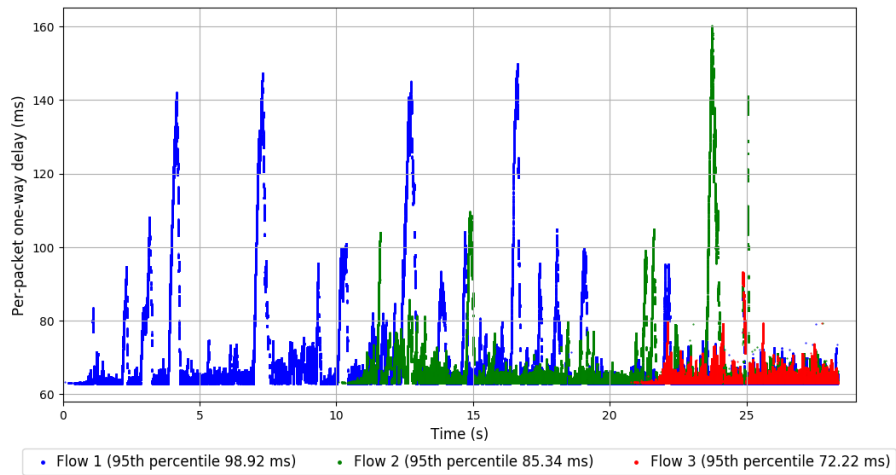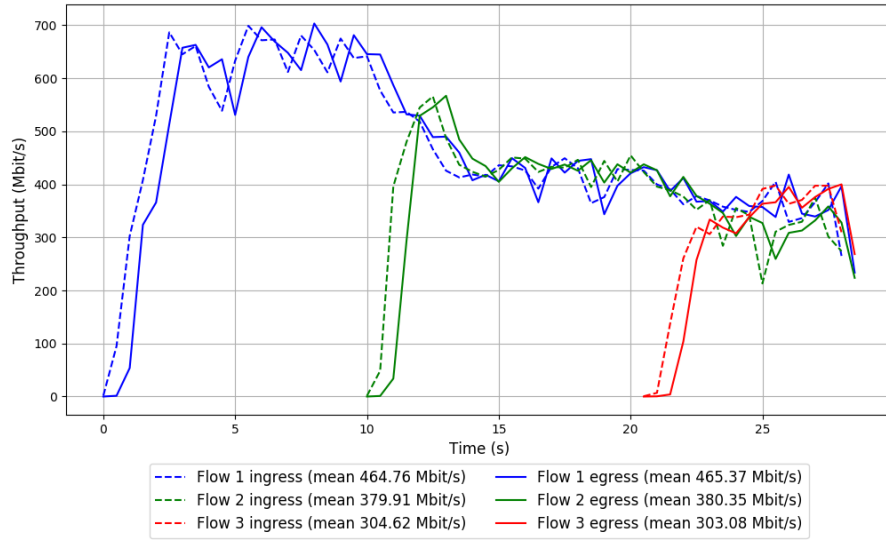
Run 3: Report of Indigo-MusesT — Data Link

```
Run 4: Statistics of Indigo-MusesT

Start at: 2019-05-30 10:43:37
End at: 2019-05-30 10:44:07
Local clock offset: -0.161 ms
Remote clock offset: 0.11 ms


# Below is generated by plot.py at 2019-05-30 13:38:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 792.04 Mbit/s
95th percentile per-packet one-way delay: 94.259 ms
Loss rate: 0.58%
-- Flow 1:
Average throughput: 465.37 Mbit/s
95th percentile per-packet one-way delay: 98.924 ms
Loss rate: 0.32%
-- Flow 2:
Average throughput: 380.35 Mbit/s
95th percentile per-packet one-way delay: 85.345 ms
Loss rate: 0.55%
-- Flow 3:
Average throughput: 303.08 Mbit/s
95th percentile per-packet one-way delay: 72.225 ms
Loss rate: 2.14%
```

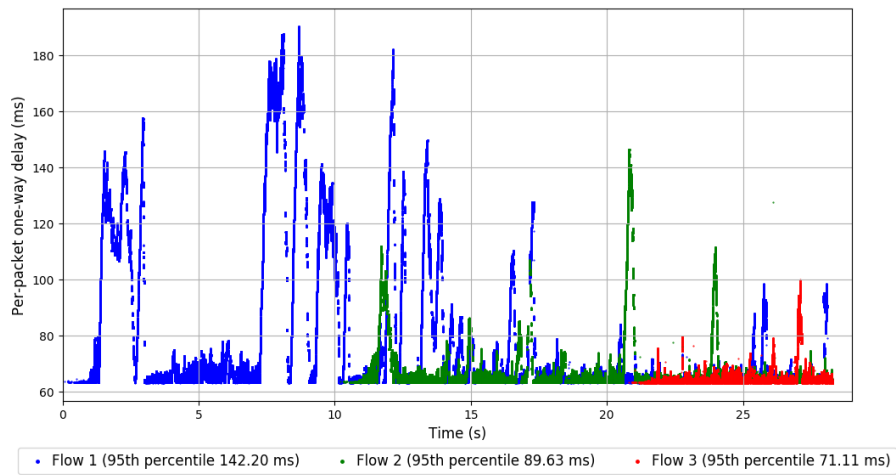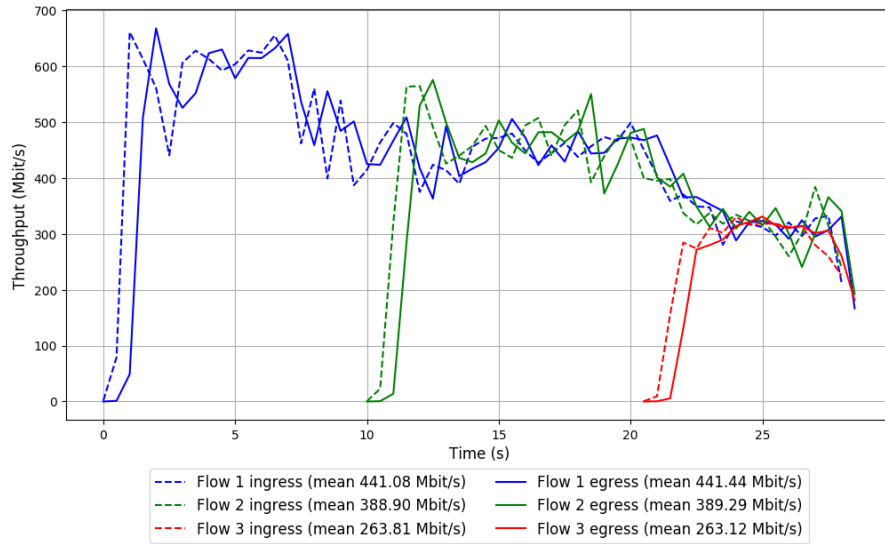Run 4: Report of Indigo-MusesT — Data Link

```
Run 5: Statistics of Indigo-MusesT

Start at: 2019-05-30 11:20:03
End at: 2019-05-30 11:20:33
Local clock offset: 0.023 ms
Remote clock offset: -0.243 ms


# Below is generated by plot.py at 2019-05-30 13:39:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 760.62 Mbit/s
95th percentile per-packet one-way delay: 130.065 ms
Loss rate: 0.61%
-- Flow 1:
Average throughput: 441.44 Mbit/s
95th percentile per-packet one-way delay: 142.203 ms
Loss rate: 0.40%
-- Flow 2:
Average throughput: 389.29 Mbit/s
95th percentile per-packet one-way delay: 89.627 ms
Loss rate: 0.60%
-- Flow 3:
Average throughput: 263.12 Mbit/s
95th percentile per-packet one-way delay: 71.113 ms
Loss rate: 1.90%
```
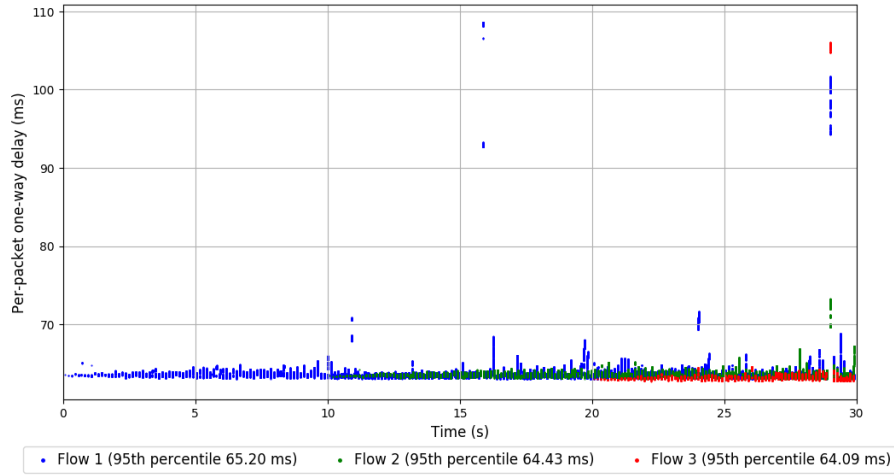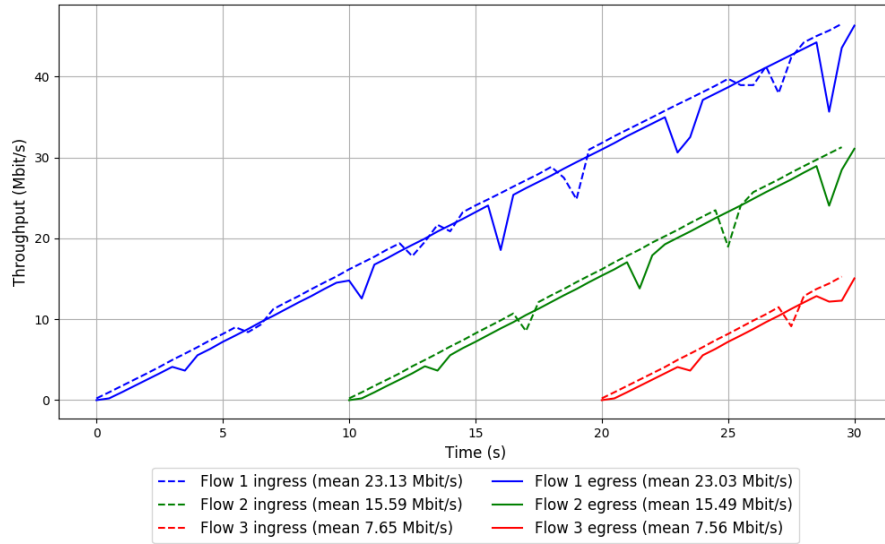
Run 5: Report of Indigo-MusesT — Data Link

Legend:
- Flow 1 ingress (mean 441.08 Mbit/s)
- Flow 1 egress (mean 441.44 Mbit/s)
- Flow 2 ingress (mean 388.90 Mbit/s)
- Flow 2 egress (mean 389.29 Mbit/s)
- Flow 3 ingress (mean 263.81 Mbit/s)
- Flow 3 egress (mean 263.12 Mbit/s)

Legend:
- Flow 1 (95th percentile 142.20 ms)
- Flow 2 (95th percentile 89.63 ms)
- Flow 3 (95th percentile 71.11 ms)

```
Run 1: Statistics of LEDBAT

Start at: 2019-05-30 08:40:24
End at: 2019-05-30 08:40:54
Local clock offset: -0.263 ms
Remote clock offset: 0.085 ms


# Below is generated by plot.py at 2019-05-30 13:39:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 35.81 Mbit/s
95th percentile per-packet one-way delay: 64.892 ms
Loss rate: 1.09%
-- Flow 1:
Average throughput: 23.03 Mbit/s
95th percentile per-packet one-way delay: 65.204 ms
Loss rate: 0.84%
-- Flow 2:
Average throughput: 15.49 Mbit/s
95th percentile per-packet one-way delay: 64.429 ms
Loss rate: 1.27%
-- Flow 3:
Average throughput: 7.56 Mbit/s
95th percentile per-packet one-way delay: 64.095 ms
Loss rate: 2.56%
```
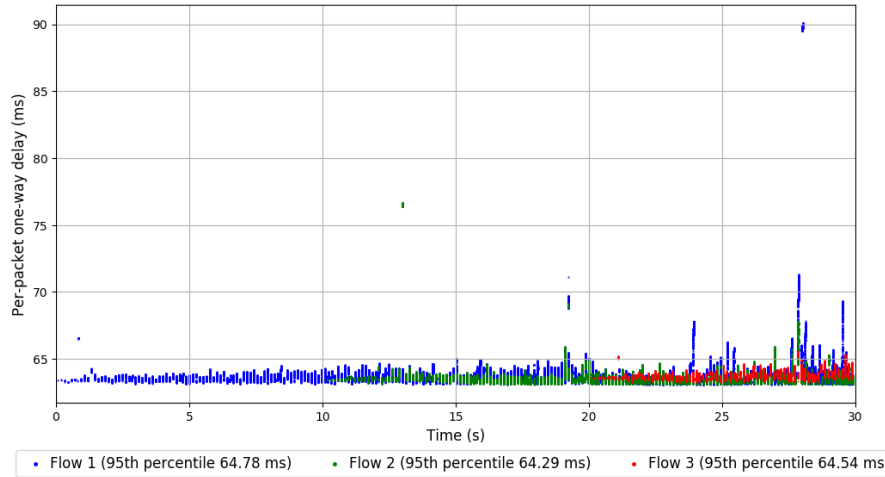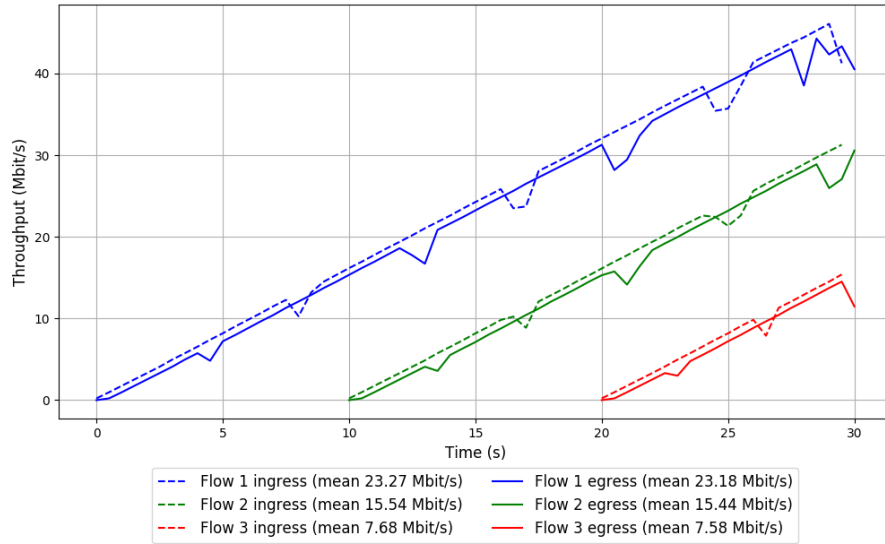
Run 1: Report of LEDBAT — Data Link

```
Run 2: Statistics of LEDBAT

Start at: 2019-05-30 09:16:02
End at: 2019-05-30 09:16:32
Local clock offset: -0.304 ms
Remote clock offset: 0.094 ms


# Below is generated by plot.py at 2019-05-30 13:39:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 35.93 Mbit/s
95th percentile per-packet one-way delay: 64.632 ms
Loss rate: 1.09%
-- Flow 1:
Average throughput: 23.18 Mbit/s
95th percentile per-packet one-way delay: 64.775 ms
Loss rate: 0.84%
-- Flow 2:
Average throughput: 15.44 Mbit/s
95th percentile per-packet one-way delay: 64.294 ms
Loss rate: 1.27%
-- Flow 3:
Average throughput: 7.58 Mbit/s
95th percentile per-packet one-way delay: 64.539 ms
Loss rate: 2.57%
```
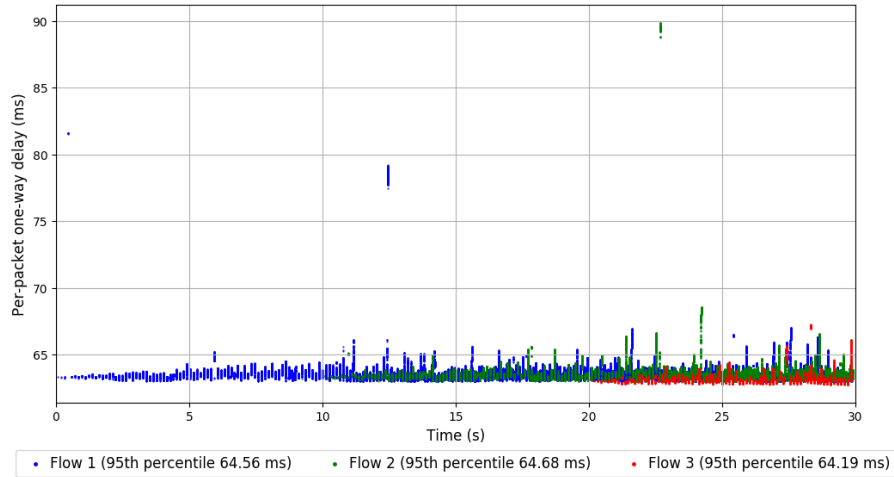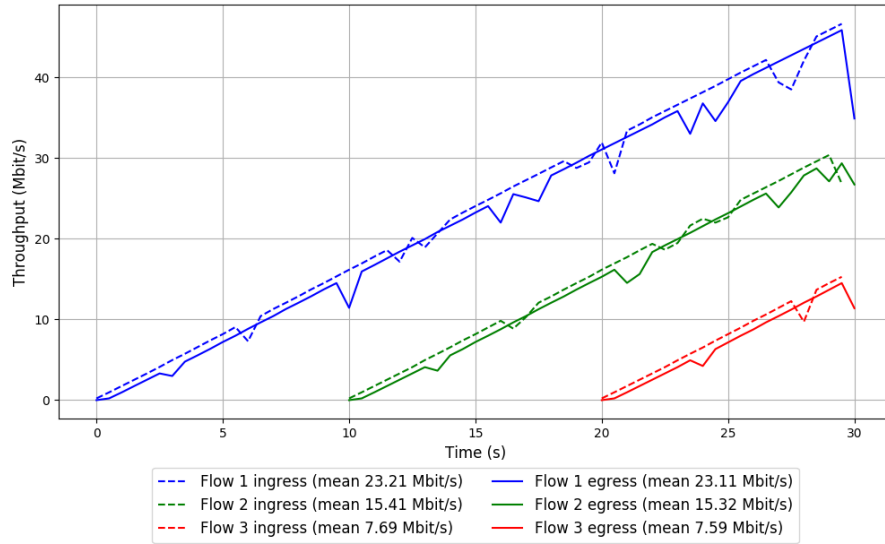
Run 2: Report of LEDBAT — Data Link

```
Run 3: Statistics of LEDBAT

Start at: 2019-05-30 09:51:52
End at: 2019-05-30 09:52:22
Local clock offset: -0.202 ms
Remote clock offset: 0.287 ms


# Below is generated by plot.py at 2019-05-30 13:39:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 35.73 Mbit/s
95th percentile per-packet one-way delay: 64.583 ms
Loss rate: 1.09%
-- Flow 1:
Average throughput: 23.11 Mbit/s
95th percentile per-packet one-way delay: 64.564 ms
Loss rate: 0.85%
-- Flow 2:
Average throughput: 15.32 Mbit/s
95th percentile per-packet one-way delay: 64.682 ms
Loss rate: 1.26%
-- Flow 3:
Average throughput: 7.59 Mbit/s
95th percentile per-packet one-way delay: 64.195 ms
Loss rate: 2.56%
```
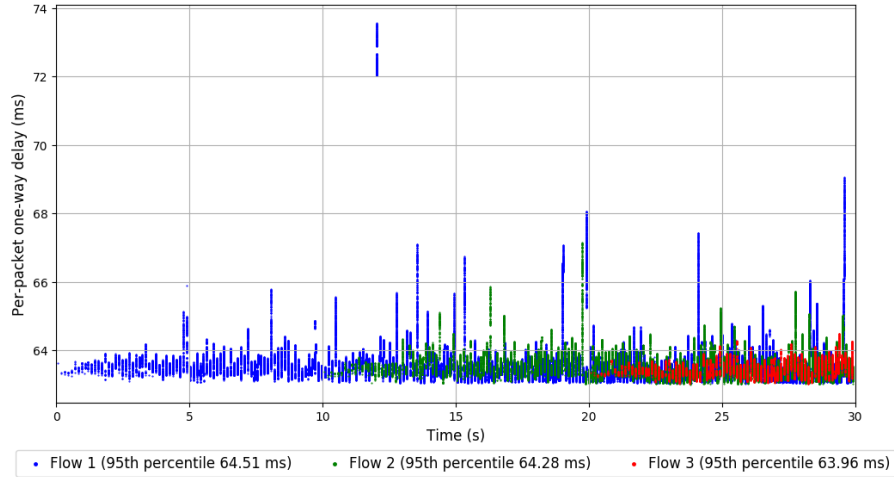
Run 3: Report of LEDBAT — Data Link

```
Run 4: Statistics of LEDBAT

Start at: 2019-05-30 10:28:00
End at: 2019-05-30 10:28:30
Local clock offset: -0.226 ms
Remote clock offset: 0.279 ms

# Below is generated by plot.py at 2019-05-30 13:39:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 35.78 Mbit/s
95th percentile per-packet one-way delay: 64.375 ms
Loss rate: 1.09%
-- Flow 1:
Average throughput: 23.10 Mbit/s
95th percentile per-packet one-way delay: 64.508 ms
Loss rate: 0.84%
-- Flow 2:
Average throughput: 15.44 Mbit/s
95th percentile per-packet one-way delay: 64.283 ms
Loss rate: 1.27%
-- Flow 3:
Average throughput: 7.57 Mbit/s
95th percentile per-packet one-way delay: 63.960 ms
Loss rate: 2.57%
```
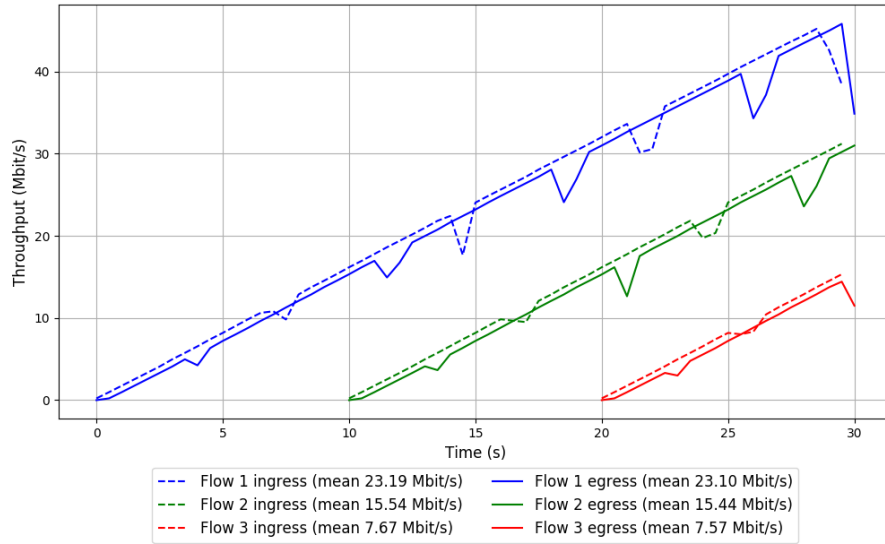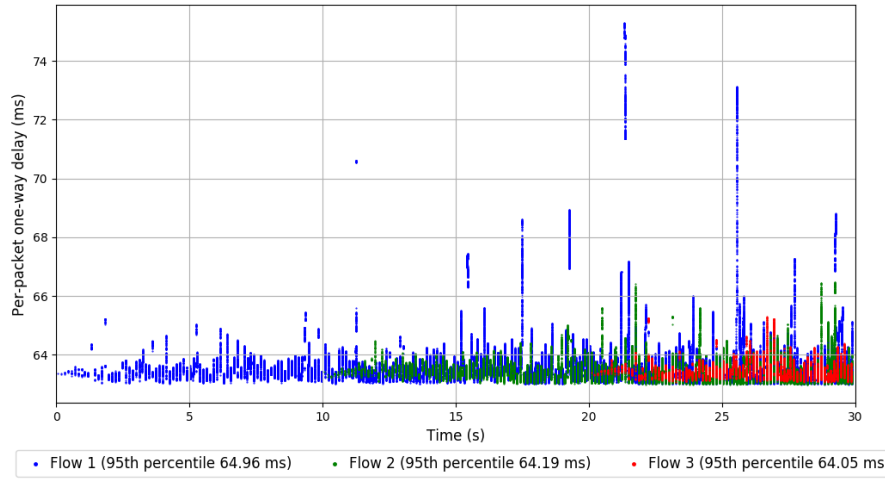
Run 4: Report of LEDBAT — Data Link

```
Run 5: Statistics of LEDBAT

Start at: 2019-05-30 11:04:18
End at: 2019-05-30 11:04:48
Local clock offset: 0.061 ms
Remote clock offset: -0.116 ms


# Below is generated by plot.py at 2019-05-30 13:39:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 35.83 Mbit/s
95th percentile per-packet one-way delay: 64.633 ms
Loss rate: 1.09%
-- Flow 1:
Average throughput: 23.06 Mbit/s
95th percentile per-packet one-way delay: 64.957 ms
Loss rate: 0.85%
-- Flow 2:
Average throughput: 15.49 Mbit/s
95th percentile per-packet one-way delay: 64.191 ms
Loss rate: 1.27%
-- Flow 3:
Average throughput: 7.60 Mbit/s
95th percentile per-packet one-way delay: 64.050 ms
Loss rate: 2.57%
```
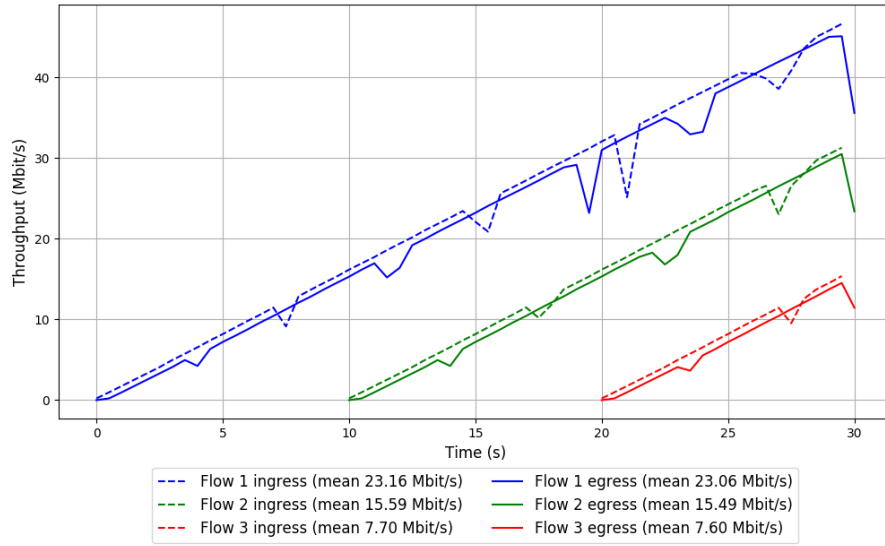
Run 5: Report of LEDBAT — Data Link

```
Run 1: Statistics of PCC-Allegro

Start at: 2019-05-30 08:48:40
End at: 2019-05-30 08:49:10
Local clock offset: -0.28 ms
Remote clock offset: 0.02 ms


# Below is generated by plot.py at 2019-05-30 13:49:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 563.17 Mbit/s
95th percentile per-packet one-way delay: 112.687 ms
Loss rate: 1.01%
-- Flow 1:
Average throughput: 285.71 Mbit/s
95th percentile per-packet one-way delay: 112.391 ms
Loss rate: 0.96%
-- Flow 2:
Average throughput: 297.76 Mbit/s
95th percentile per-packet one-way delay: 126.140 ms
Loss rate: 0.90%
-- Flow 3:
Average throughput: 245.17 Mbit/s
95th percentile per-packet one-way delay: 83.951 ms
Loss rate: 1.47%
```
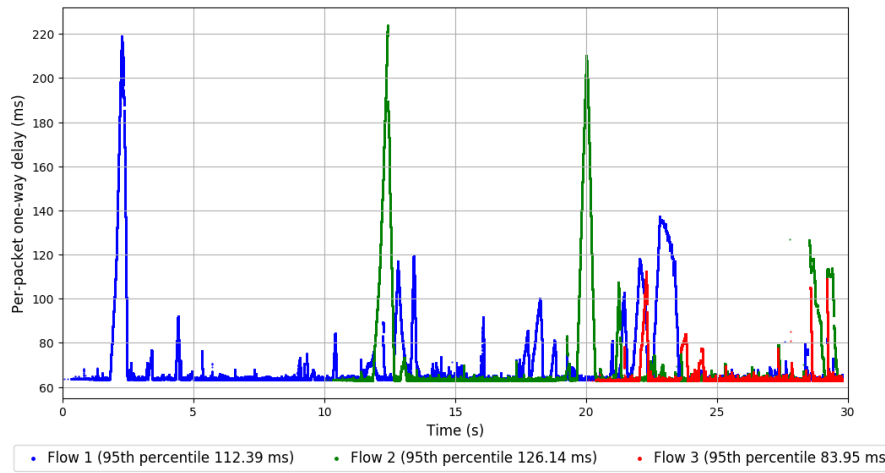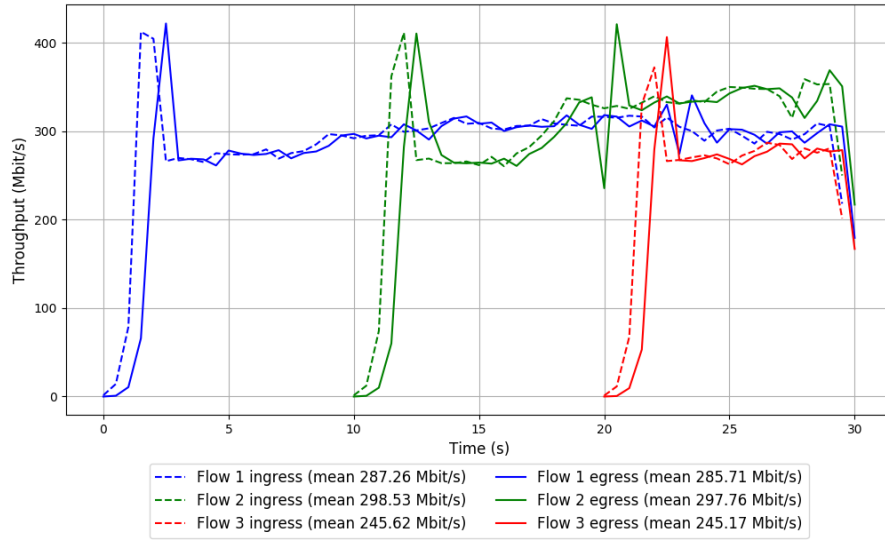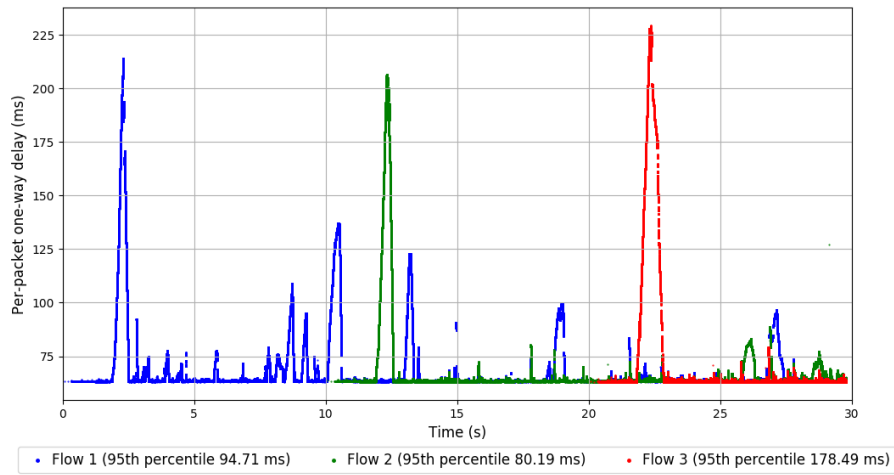
Run 1: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 287.26 Mbit/s) — Flow 1 egress (mean 285.71 Mbit/s)
Flow 2 ingress (mean 298.53 Mbit/s) — Flow 2 egress (mean 297.76 Mbit/s)
Flow 3 ingress (mean 245.62 Mbit/s) — Flow 3 egress (mean 245.17 Mbit/s)

Flow 1 (95th percentile 112.39 ms)   Flow 2 (95th percentile 126.14 ms)   Flow 3 (95th percentile 83.95 ms)

```
Run 2: Statistics of PCC-Allegro

Start at: 2019-05-30 09:24:30
End at: 2019-05-30 09:25:00
Local clock offset: -0.331 ms
Remote clock offset: 0.097 ms


# Below is generated by plot.py at 2019-05-30 13:50:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 577.71 Mbit/s
95th percentile per-packet one-way delay: 96.524 ms
Loss rate: 1.44%
-- Flow 1:
Average throughput: 298.36 Mbit/s
95th percentile per-packet one-way delay: 94.706 ms
Loss rate: 1.05%
-- Flow 2:
Average throughput: 297.70 Mbit/s
95th percentile per-packet one-way delay: 80.192 ms
Loss rate: 1.60%
-- Flow 3:
Average throughput: 250.97 Mbit/s
95th percentile per-packet one-way delay: 178.490 ms
Loss rate: 2.50%
```
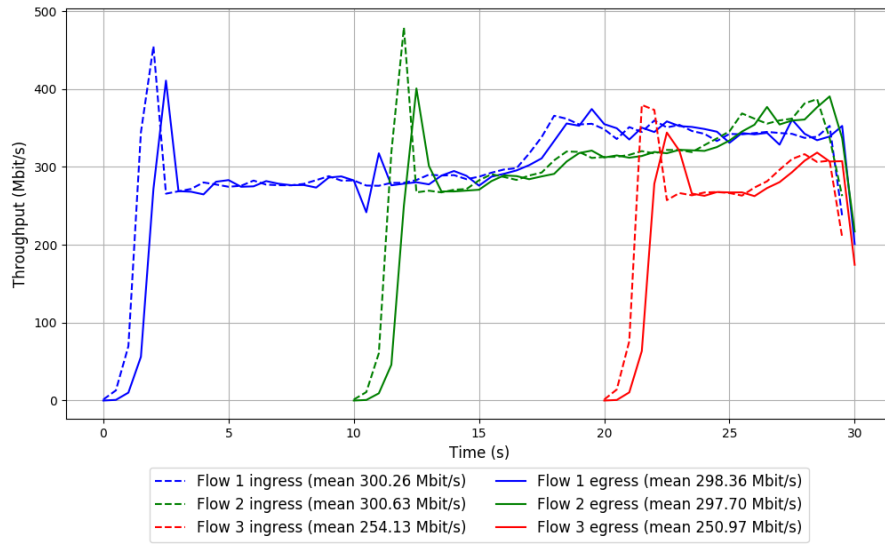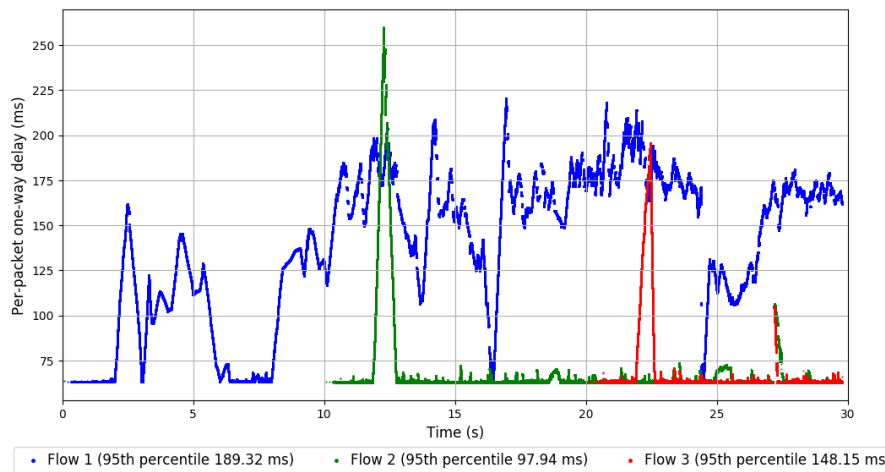
Run 2: Report of PCC-Allegro — Data Link

```
Run 3: Statistics of PCC-Allegro

Start at: 2019-05-30 10:00:12
End at: 2019-05-30 10:00:42
Local clock offset: -0.195 ms
Remote clock offset: 0.275 ms


# Below is generated by plot.py at 2019-05-30 13:56:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 725.58 Mbit/s
95th percentile per-packet one-way delay: 185.056 ms
Loss rate: 3.90%
-- Flow 1:
Average throughput: 458.85 Mbit/s
95th percentile per-packet one-way delay: 189.324 ms
Loss rate: 4.98%
-- Flow 2:
Average throughput: 285.39 Mbit/s
95th percentile per-packet one-way delay: 97.940 ms
Loss rate: 2.16%
-- Flow 3:
Average throughput: 237.07 Mbit/s
95th percentile per-packet one-way delay: 148.152 ms
Loss rate: 1.56%
```
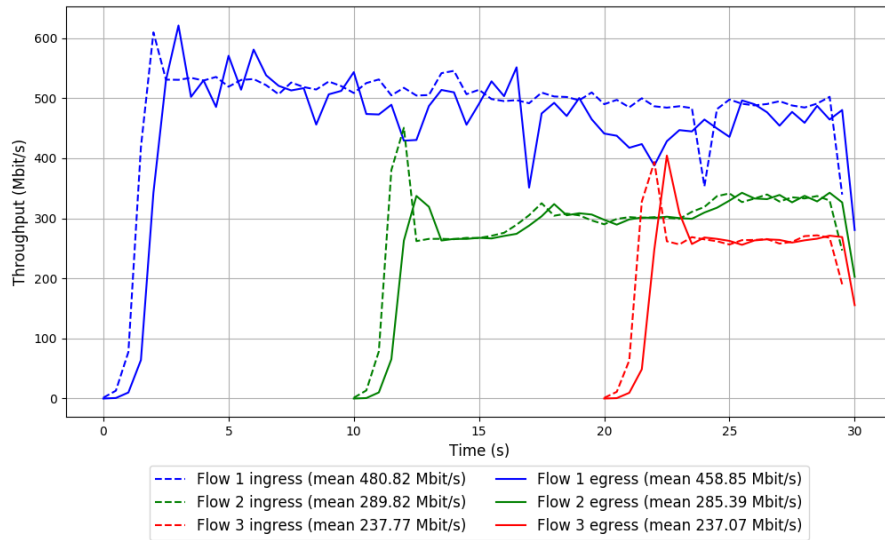
Run 3: Report of PCC-Allegro — Data Link

```
Run 4: Statistics of PCC-Allegro

Start at: 2019-05-30 10:36:28
End at: 2019-05-30 10:36:58
Local clock offset: -0.229 ms
Remote clock offset: 0.086 ms


# Below is generated by plot.py at 2019-05-30 13:56:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 672.23 Mbit/s
95th percentile per-packet one-way delay: 192.200 ms
Loss rate: 4.47%
-- Flow 1:
Average throughput: 418.87 Mbit/s
95th percentile per-packet one-way delay: 187.313 ms
Loss rate: 3.03%
-- Flow 2:
Average throughput: 258.97 Mbit/s
95th percentile per-packet one-way delay: 207.152 ms
Loss rate: 8.69%
-- Flow 3:
Average throughput: 249.42 Mbit/s
95th percentile per-packet one-way delay: 160.670 ms
Loss rate: 2.39%
```
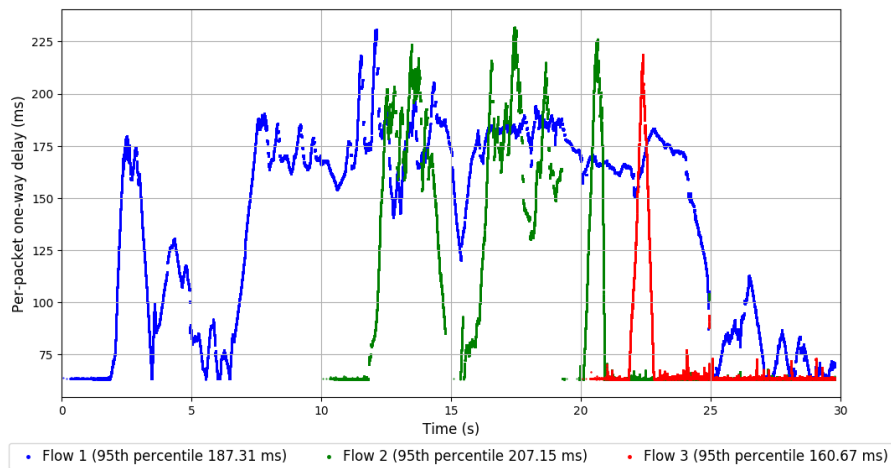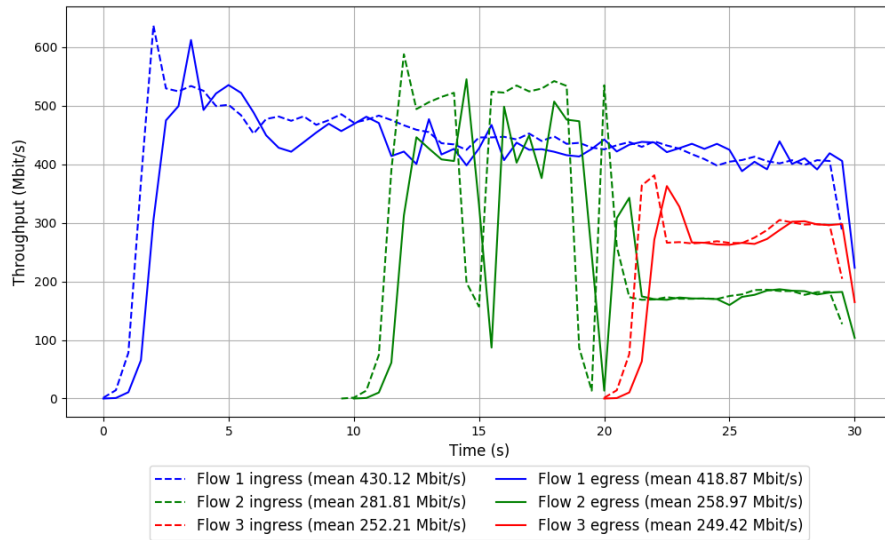
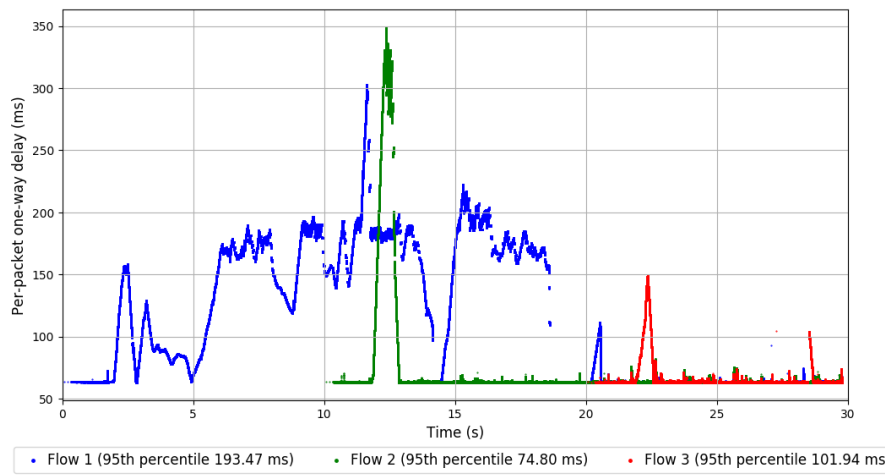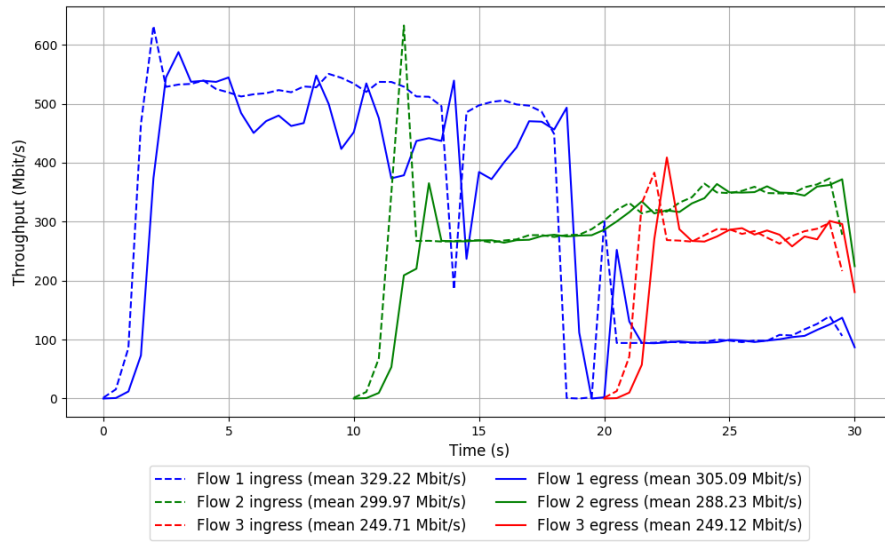# Run 4: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 430.12 Mbit/s) Flow 1 egress (mean 418.87 Mbit/s)
Flow 2 ingress (mean 281.81 Mbit/s) Flow 2 egress (mean 258.97 Mbit/s)
Flow 3 ingress (mean 252.21 Mbit/s) Flow 3 egress (mean 249.42 Mbit/s)

Flow 1 (95th percentile 187.31 ms)   Flow 2 (95th percentile 207.15 ms)   Flow 3 (95th percentile 160.67 ms)

```
Run 5: Statistics of PCC-Allegro

Start at: 2019-05-30 11:13:04
End at: 2019-05-30 11:13:34
Local clock offset: 0.087 ms
Remote clock offset: -0.228 ms


# Below is generated by plot.py at 2019-05-30 13:56:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 577.64 Mbit/s
95th percentile per-packet one-way delay: 189.464 ms
Loss rate: 5.84%
-- Flow 1:
Average throughput: 305.09 Mbit/s
95th percentile per-packet one-way delay: 193.473 ms
Loss rate: 7.72%
-- Flow 2:
Average throughput: 288.23 Mbit/s
95th percentile per-packet one-way delay: 74.799 ms
Loss rate: 4.53%
-- Flow 3:
Average throughput: 249.12 Mbit/s
95th percentile per-packet one-way delay: 101.943 ms
Loss rate: 1.51%
```
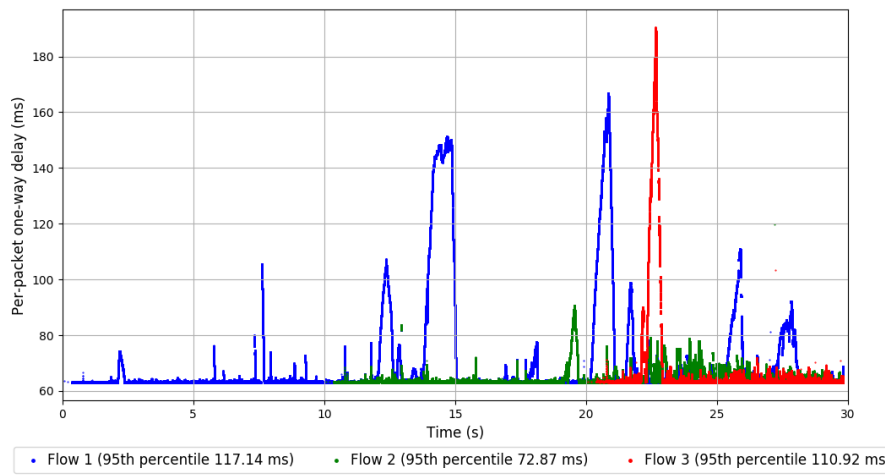
Run 5: Report of PCC-Allegro — Data Link

```
Run 1: Statistics of PCC-Expr

Start at: 2019-05-30 09:02:32
End at: 2019-05-30 09:03:02
Local clock offset: -0.273 ms
Remote clock offset: 0.191 ms


# Below is generated by plot.py at 2019-05-30 13:56:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 422.75 Mbit/s
95th percentile per-packet one-way delay: 97.738 ms
Loss rate: 0.67%
-- Flow 1:
Average throughput: 234.96 Mbit/s
95th percentile per-packet one-way delay: 117.142 ms
Loss rate: 0.50%
-- Flow 2:
Average throughput: 200.60 Mbit/s
95th percentile per-packet one-way delay: 72.868 ms
Loss rate: 0.63%
-- Flow 3:
Average throughput: 167.16 Mbit/s
95th percentile per-packet one-way delay: 110.919 ms
Loss rate: 1.51%
```
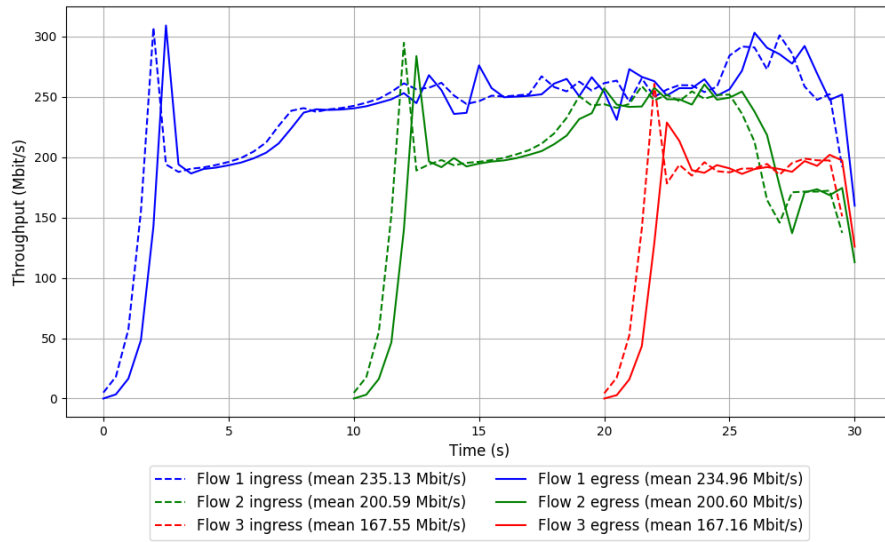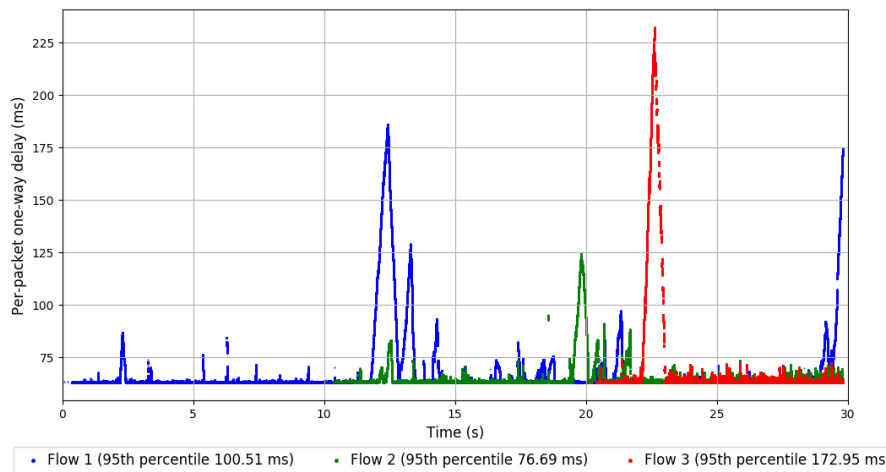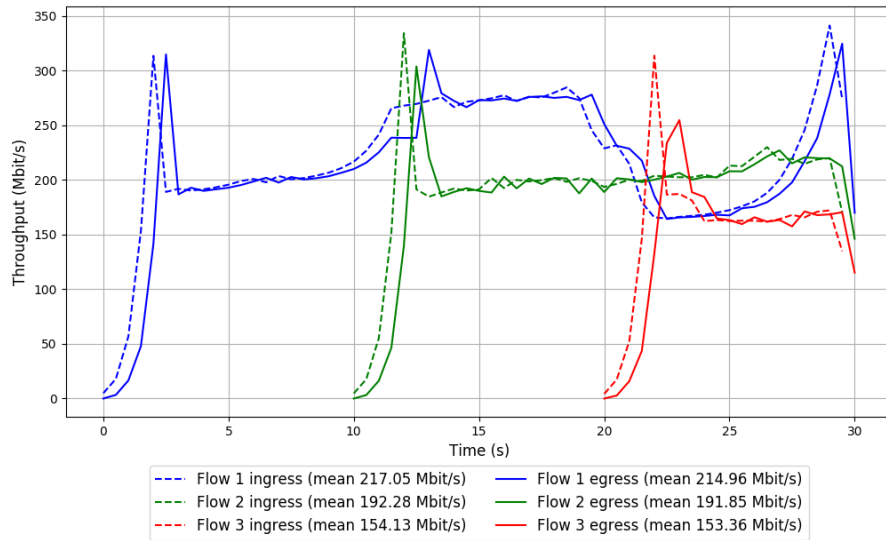
Run 1: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 235.13 Mbit/s) --- Flow 1 egress (mean 234.96 Mbit/s)
Flow 2 ingress (mean 200.59 Mbit/s) --- Flow 2 egress (mean 200.60 Mbit/s)
Flow 3 ingress (mean 167.55 Mbit/s) --- Flow 3 egress (mean 167.16 Mbit/s)

Flow 1 (95th percentile 117.14 ms)   Flow 2 (95th percentile 72.87 ms)   Flow 3 (95th percentile 110.92 ms)

```
Run 2: Statistics of PCC-Expr

Start at: 2019-05-30 09:38:26
End at: 2019-05-30 09:38:56
Local clock offset: -0.286 ms
Remote clock offset: 0.149 ms


# Below is generated by plot.py at 2019-05-30 13:56:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 392.43 Mbit/s
95th percentile per-packet one-way delay: 96.253 ms
Loss rate: 1.27%
-- Flow 1:
Average throughput: 214.96 Mbit/s
95th percentile per-packet one-way delay: 100.508 ms
Loss rate: 1.39%
-- Flow 2:
Average throughput: 191.85 Mbit/s
95th percentile per-packet one-way delay: 76.691 ms
Loss rate: 0.86%
-- Flow 3:
Average throughput: 153.36 Mbit/s
95th percentile per-packet one-way delay: 172.946 ms
Loss rate: 1.78%
```
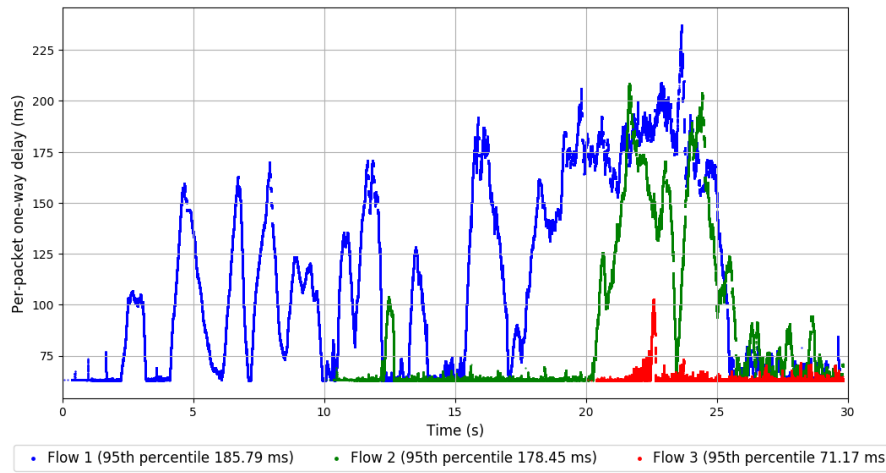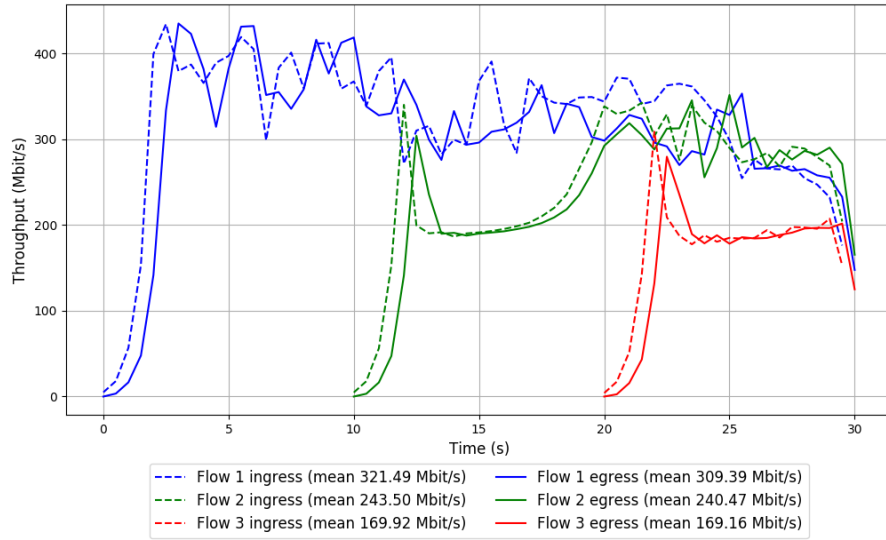
Run 2: Report of PCC-Expr — Data Link

```
Run 3: Statistics of PCC-Expr

Start at: 2019-05-30 10:14:22
End at: 2019-05-30 10:14:52
Local clock offset: -0.184 ms
Remote clock offset: 0.338 ms


# Below is generated by plot.py at 2019-05-30 13:59:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 524.29 Mbit/s
95th percentile per-packet one-way delay: 183.320 ms
Loss rate: 3.23%
-- Flow 1:
Average throughput: 309.39 Mbit/s
95th percentile per-packet one-way delay: 185.787 ms
Loss rate: 4.17%
-- Flow 2:
Average throughput: 240.47 Mbit/s
95th percentile per-packet one-way delay: 178.453 ms
Loss rate: 1.87%
-- Flow 3:
Average throughput: 169.16 Mbit/s
95th percentile per-packet one-way delay: 71.175 ms
Loss rate: 1.75%
```
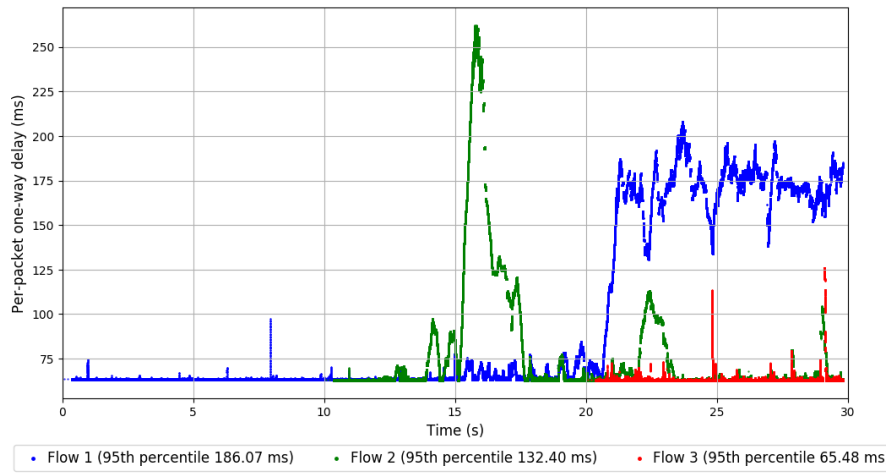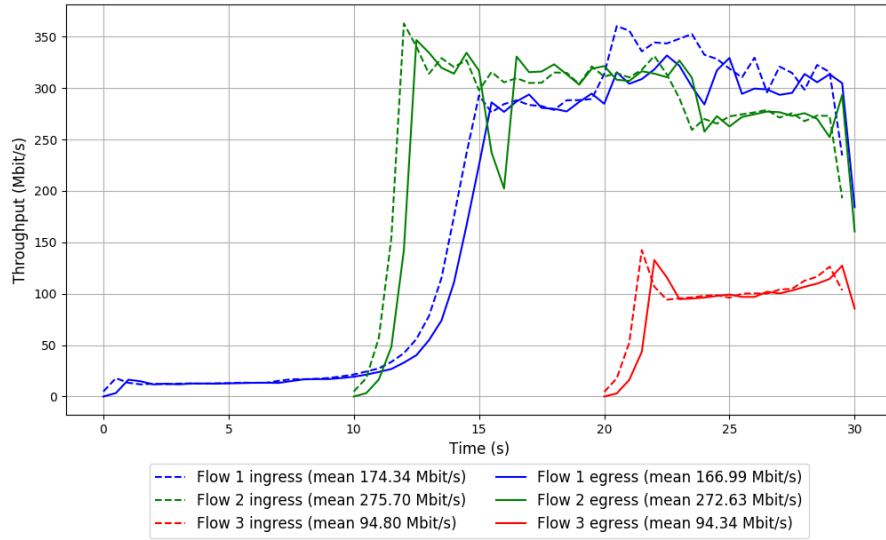
Run 3: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 321.49 Mbit/s) — Flow 1 egress (mean 309.39 Mbit/s)
Flow 2 ingress (mean 243.50 Mbit/s) — Flow 2 egress (mean 240.47 Mbit/s)
Flow 3 ingress (mean 169.92 Mbit/s) — Flow 3 egress (mean 169.16 Mbit/s)

Flow 1 (95th percentile 185.79 ms)   Flow 2 (95th percentile 178.45 ms)   Flow 3 (95th percentile 71.17 ms)

```
Run 4: Statistics of PCC-Expr

Start at: 2019-05-30 10:50:45
End at: 2019-05-30 10:51:15
Local clock offset: -0.035 ms
Remote clock offset: 0.13 ms


# Below is generated by plot.py at 2019-05-30 14:02:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 378.87 Mbit/s
95th percentile per-packet one-way delay: 181.734 ms
Loss rate: 3.04%
-- Flow 1:
Average throughput: 166.99 Mbit/s
95th percentile per-packet one-way delay: 186.070 ms
Loss rate: 4.62%
-- Flow 2:
Average throughput: 272.63 Mbit/s
95th percentile per-packet one-way delay: 132.396 ms
Loss rate: 1.75%
-- Flow 3:
Average throughput: 94.34 Mbit/s
95th percentile per-packet one-way delay: 65.476 ms
Loss rate: 1.78%
```
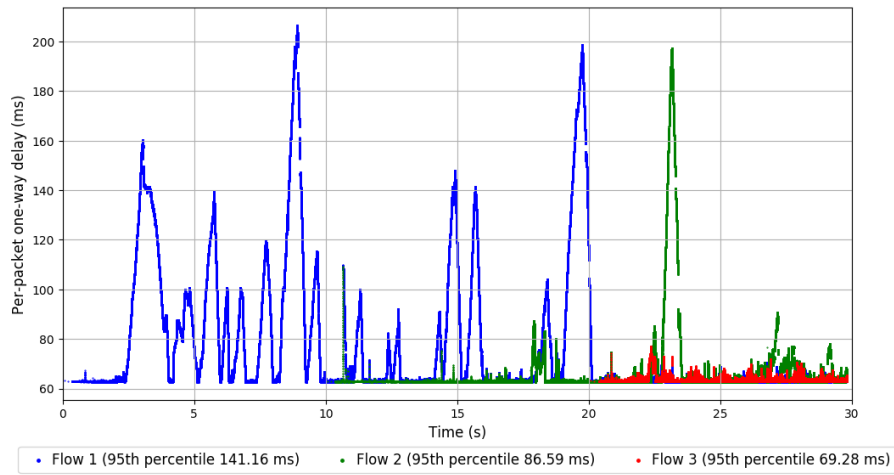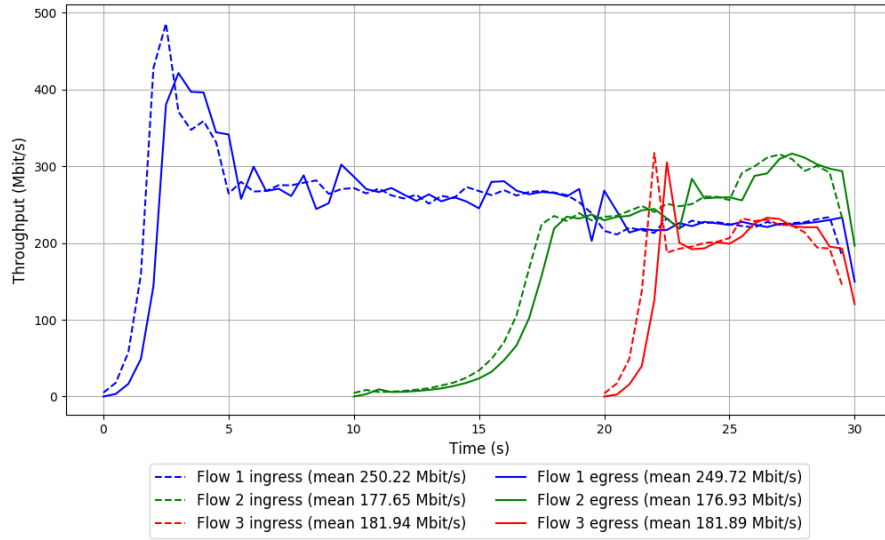
Run 4: Report of PCC-Expr — Data Link

```
Run 5: Statistics of PCC-Expr

Start at: 2019-05-30 11:26:59
End at: 2019-05-30 11:27:29
Local clock offset: 0.011 ms
Remote clock offset: -0.229 ms


# Below is generated by plot.py at 2019-05-30 14:03:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 426.62 Mbit/s
95th percentile per-packet one-way delay: 135.212 ms
Loss rate: 0.84%
-- Flow 1:
Average throughput: 249.72 Mbit/s
95th percentile per-packet one-way delay: 141.157 ms
Loss rate: 0.62%
-- Flow 2:
Average throughput: 176.93 Mbit/s
95th percentile per-packet one-way delay: 86.586 ms
Loss rate: 1.04%
-- Flow 3:
Average throughput: 181.89 Mbit/s
95th percentile per-packet one-way delay: 69.283 ms
Loss rate: 1.33%
```
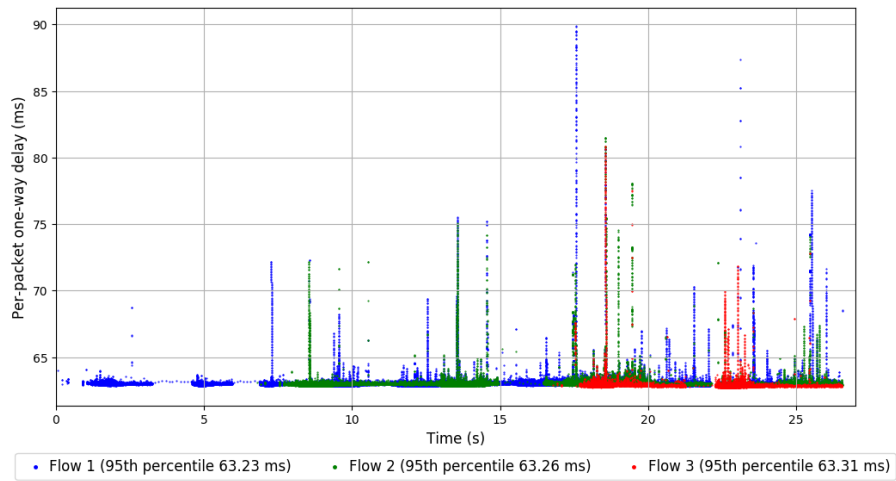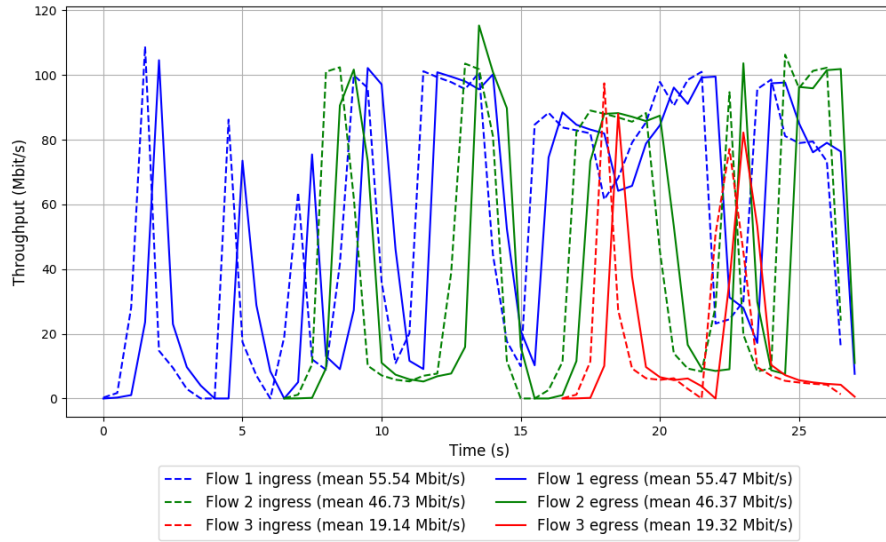
Run 5: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 250.22 Mbit/s) --- Flow 1 egress (mean 249.72 Mbit/s)
Flow 2 ingress (mean 177.65 Mbit/s) --- Flow 2 egress (mean 176.93 Mbit/s)
Flow 3 ingress (mean 181.94 Mbit/s) --- Flow 3 egress (mean 181.89 Mbit/s)

Flow 1 (95th percentile 141.16 ms) Flow 2 (95th percentile 86.59 ms) Flow 3 (95th percentile 69.28 ms)

```
Run 1: Statistics of QUIC Cubic

Start at: 2019-05-30 09:01:14
End at: 2019-05-30 09:01:44
Local clock offset: -0.283 ms
Remote clock offset: 0.08 ms


# Below is generated by plot.py at 2019-05-30 14:03:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 97.20 Mbit/s
95th percentile per-packet one-way delay: 63.239 ms
Loss rate: 0.87%
-- Flow 1:
Average throughput: 55.47 Mbit/s
95th percentile per-packet one-way delay: 63.226 ms
Loss rate: 0.60%
-- Flow 2:
Average throughput: 46.37 Mbit/s
95th percentile per-packet one-way delay: 63.256 ms
Loss rate: 1.40%
-- Flow 3:
Average throughput: 19.32 Mbit/s
95th percentile per-packet one-way delay: 63.314 ms
Loss rate: 0.37%
```
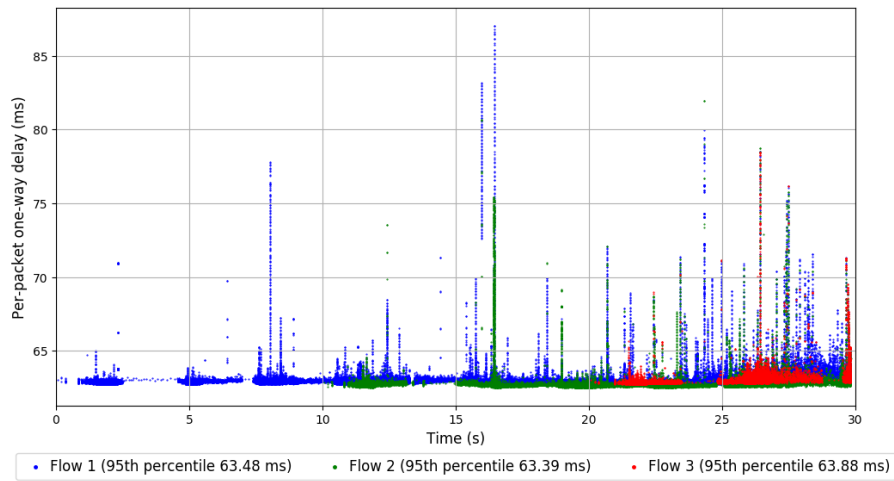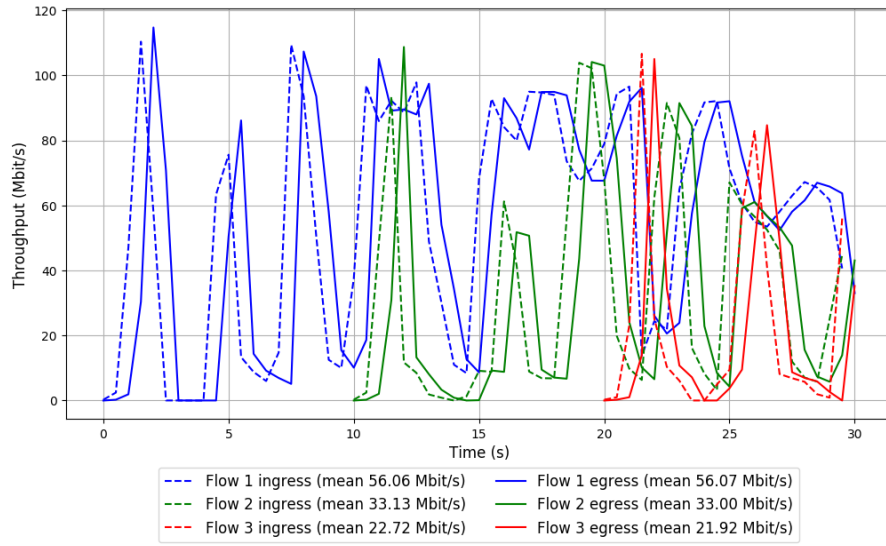
Run 1: Report of QUIC Cubic — Data Link

```
Run 2: Statistics of QUIC Cubic

Start at: 2019-05-30 09:37:08
End at: 2019-05-30 09:37:38
Local clock offset: -0.257 ms
Remote clock offset: 0.502 ms


# Below is generated by plot.py at 2019-05-30 14:03:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 85.15 Mbit/s
95th percentile per-packet one-way delay: 63.530 ms
Loss rate: 0.96%
-- Flow 1:
Average throughput: 56.07 Mbit/s
95th percentile per-packet one-way delay: 63.482 ms
Loss rate: 0.41%
-- Flow 2:
Average throughput: 33.00 Mbit/s
95th percentile per-packet one-way delay: 63.391 ms
Loss rate: 1.04%
-- Flow 3:
Average throughput: 21.92 Mbit/s
95th percentile per-packet one-way delay: 63.879 ms
Loss rate: 4.82%
```
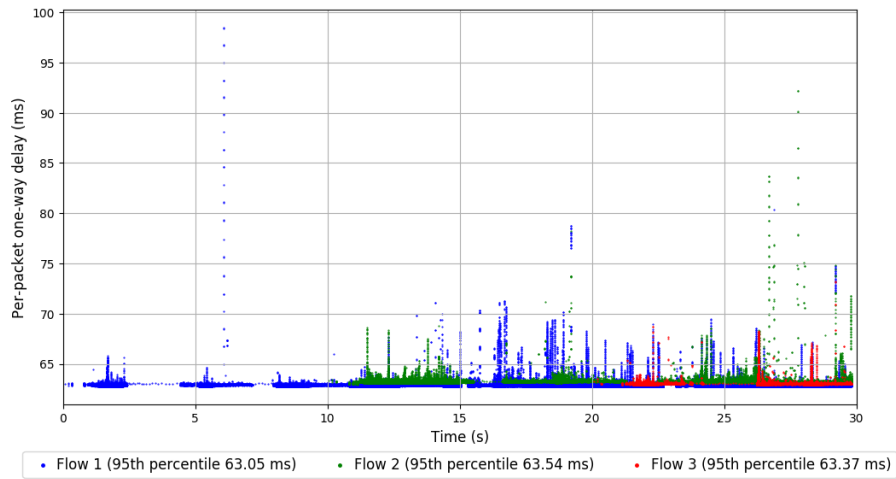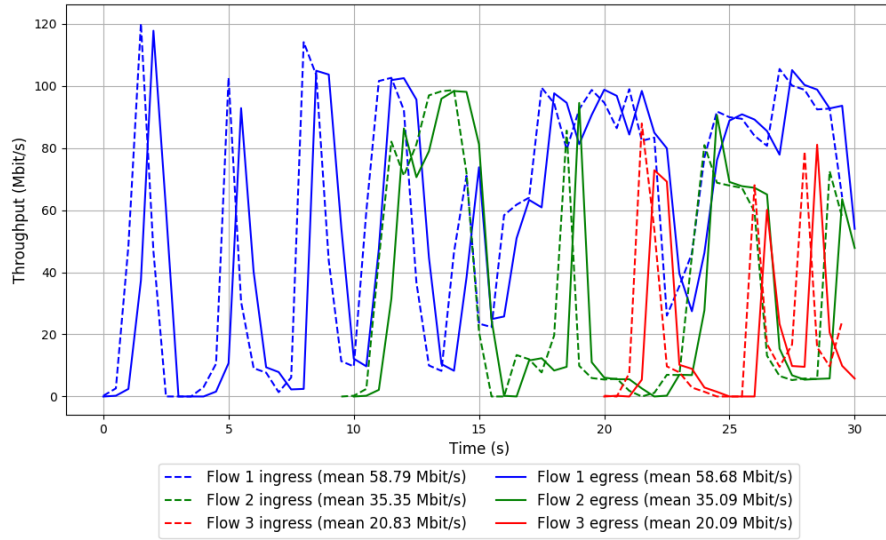
Run 2: Report of QUIC Cubic — Data Link

```
Run 3: Statistics of QUIC Cubic

Start at: 2019-05-30 10:13:03
End at: 2019-05-30 10:13:33
Local clock offset: -0.24 ms
Remote clock offset: 0.332 ms


# Below is generated by plot.py at 2019-05-30 14:03:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 88.57 Mbit/s
95th percentile per-packet one-way delay: 63.352 ms
Loss rate: 1.14%
-- Flow 1:
Average throughput: 58.68 Mbit/s
95th percentile per-packet one-way delay: 63.054 ms
Loss rate: 0.61%
-- Flow 2:
Average throughput: 35.09 Mbit/s
95th percentile per-packet one-way delay: 63.536 ms
Loss rate: 1.39%
-- Flow 3:
Average throughput: 20.09 Mbit/s
95th percentile per-packet one-way delay: 63.373 ms
Loss rate: 4.79%
```
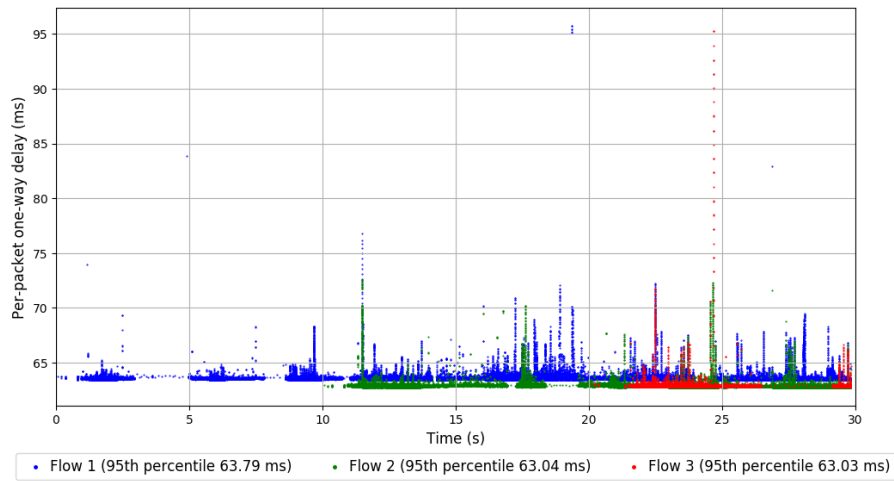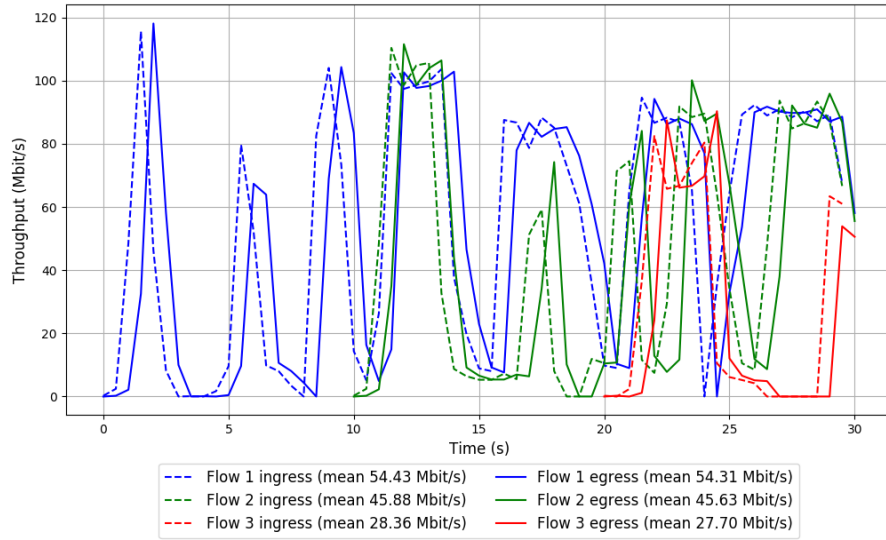
Run 3: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 58.79 Mbit/s)   Flow 1 egress (mean 58.68 Mbit/s)
Flow 2 ingress (mean 35.35 Mbit/s)   Flow 2 egress (mean 35.09 Mbit/s)
Flow 3 ingress (mean 20.83 Mbit/s)   Flow 3 egress (mean 20.09 Mbit/s)

Flow 1 (95th percentile 63.05 ms)   Flow 2 (95th percentile 63.54 ms)   Flow 3 (95th percentile 63.37 ms)

```
Run 4: Statistics of QUIC Cubic

Start at: 2019-05-30 10:49:20
End at: 2019-05-30 10:49:50
Local clock offset: -0.066 ms
Remote clock offset: -0.117 ms


# Below is generated by plot.py at 2019-05-30 14:03:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.65 Mbit/s
95th percentile per-packet one-way delay: 63.688 ms
Loss rate: 1.10%
-- Flow 1:
Average throughput: 54.31 Mbit/s
95th percentile per-packet one-way delay: 63.787 ms
Loss rate: 0.65%
-- Flow 2:
Average throughput: 45.63 Mbit/s
95th percentile per-packet one-way delay: 63.038 ms
Loss rate: 1.15%
-- Flow 3:
Average throughput: 27.70 Mbit/s
95th percentile per-packet one-way delay: 63.029 ms
Loss rate: 3.57%
```
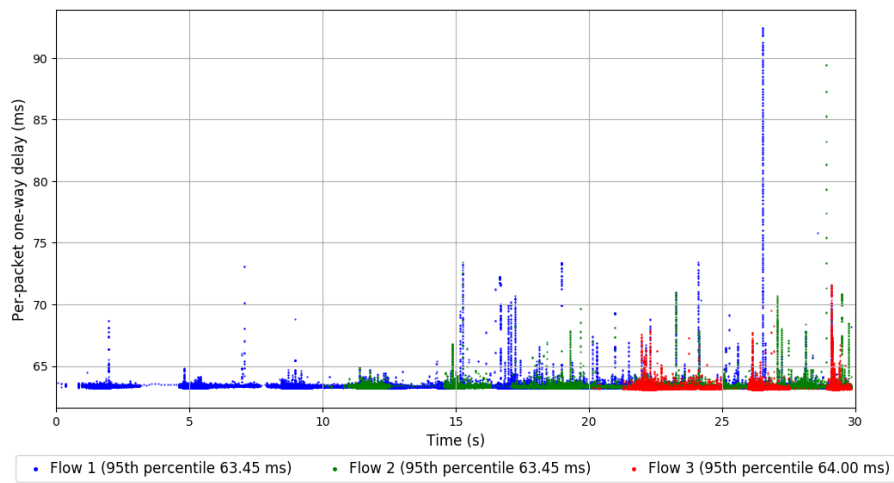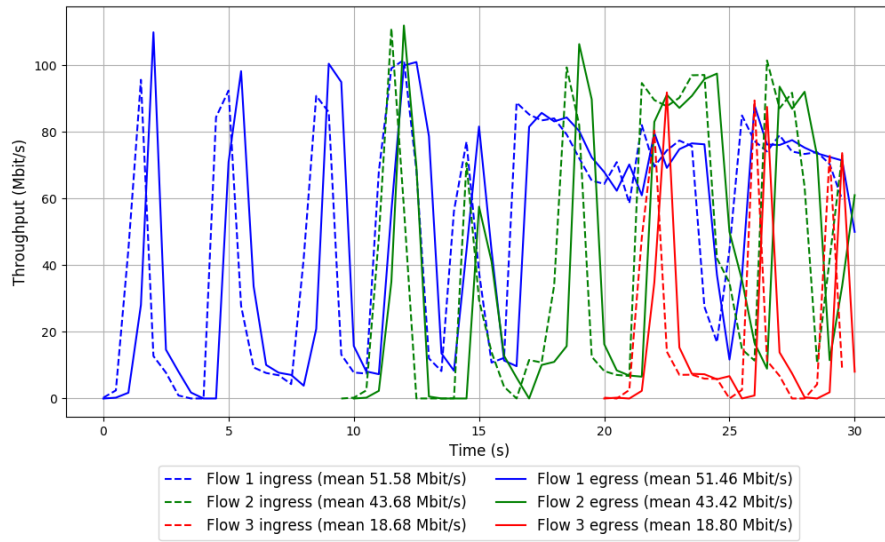
Run 4: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 54.43 Mbit/s)
Flow 1 egress (mean 54.31 Mbit/s)
Flow 2 ingress (mean 45.88 Mbit/s)
Flow 2 egress (mean 45.63 Mbit/s)
Flow 3 ingress (mean 28.36 Mbit/s)
Flow 3 egress (mean 27.70 Mbit/s)

Flow 1 (95th percentile 63.79 ms)
Flow 2 (95th percentile 63.04 ms)
Flow 3 (95th percentile 63.03 ms)

```
Run 5: Statistics of QUIC Cubic

Start at: 2019-05-30 11:25:41
End at: 2019-05-30 11:26:11
Local clock offset: 0.009 ms
Remote clock offset: -0.383 ms


# Below is generated by plot.py at 2019-05-30 14:03:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 86.44 Mbit/s
95th percentile per-packet one-way delay: 63.462 ms
Loss rate: 0.83%
-- Flow 1:
Average throughput: 51.46 Mbit/s
95th percentile per-packet one-way delay: 63.451 ms
Loss rate: 0.63%
-- Flow 2:
Average throughput: 43.42 Mbit/s
95th percentile per-packet one-way delay: 63.451 ms
Loss rate: 1.22%
-- Flow 3:
Average throughput: 18.80 Mbit/s
95th percentile per-packet one-way delay: 64.004 ms
Loss rate: 0.65%
```
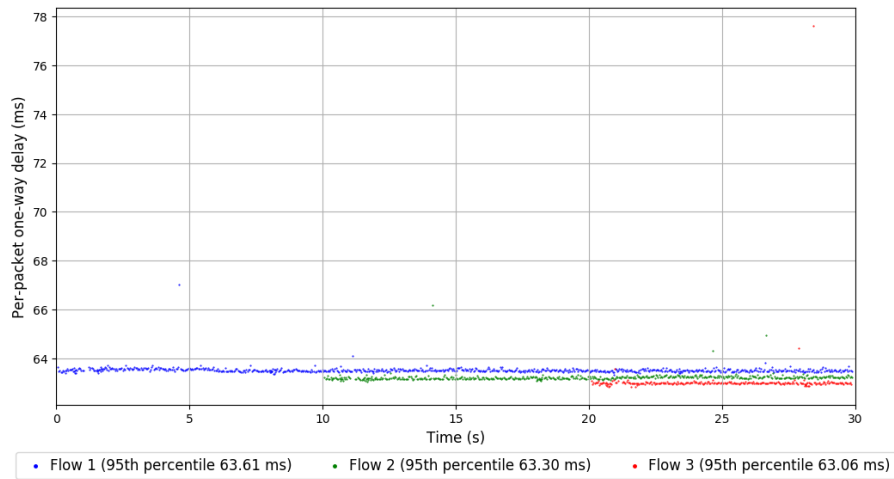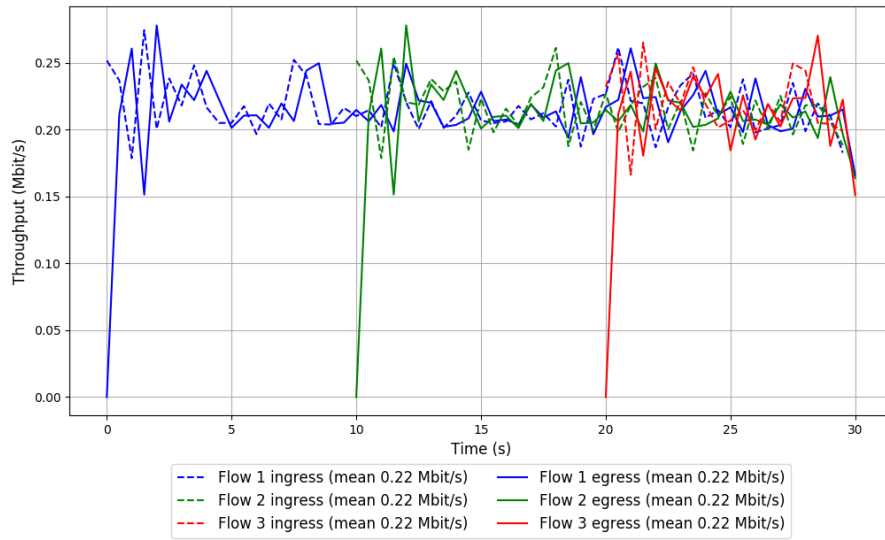
Run 5: Report of QUIC Cubic — Data Link

```
Run 1: Statistics of SCReAM

Start at: 2019-05-30 09:09:11
End at: 2019-05-30 09:09:41
Local clock offset: -0.306 ms
Remote clock offset: 0.195 ms


# Below is generated by plot.py at 2019-05-30 14:03:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 63.586 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.611 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.303 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.059 ms
Loss rate: 1.45%
```
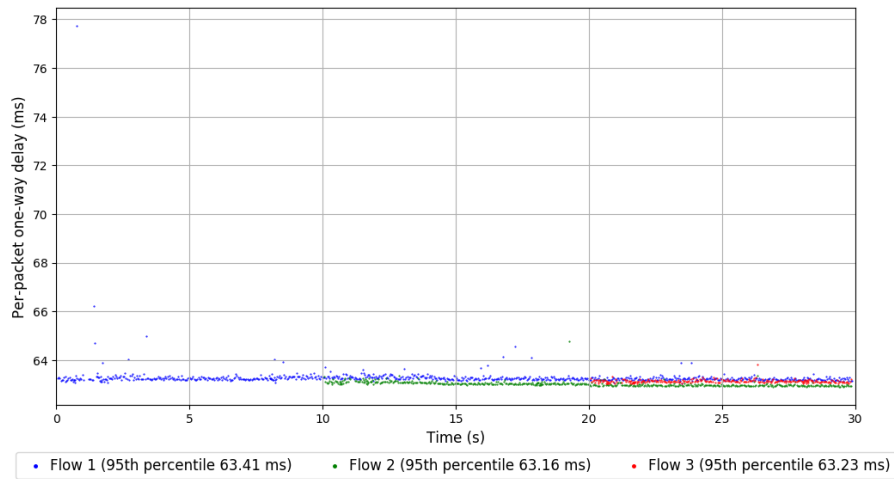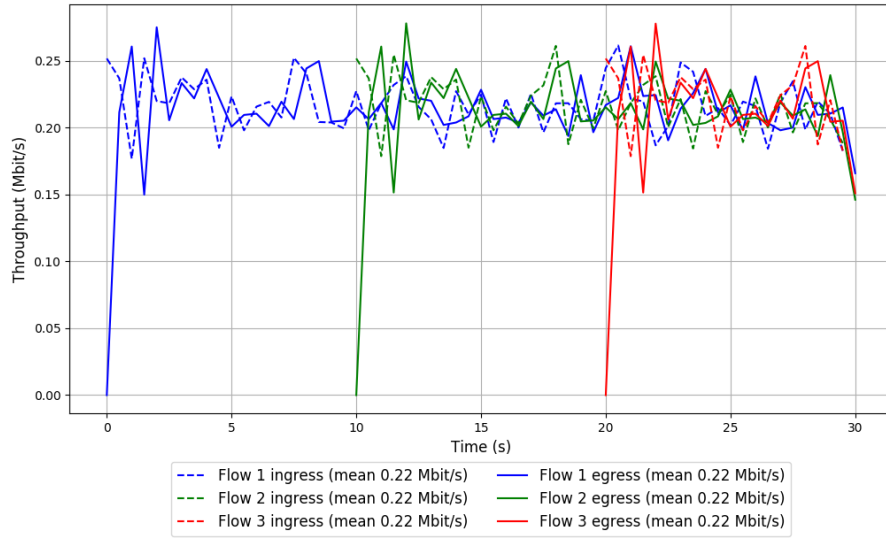
Run 1: Report of SCReAM — Data Link

```
Run 2: Statistics of SCReAM

Start at: 2019-05-30 09:44:58
End at: 2019-05-30 09:45:28
Local clock offset: -0.267 ms
Remote clock offset: 0.315 ms


# Below is generated by plot.py at 2019-05-30 14:03:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 63.351 ms
Loss rate: 0.71%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.411 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.159 ms
Loss rate: 0.82%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.227 ms
Loss rate: 1.45%
```
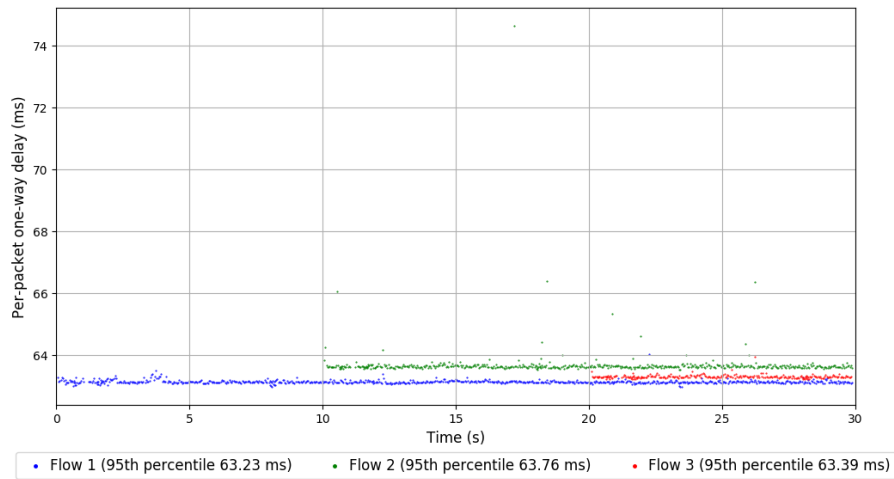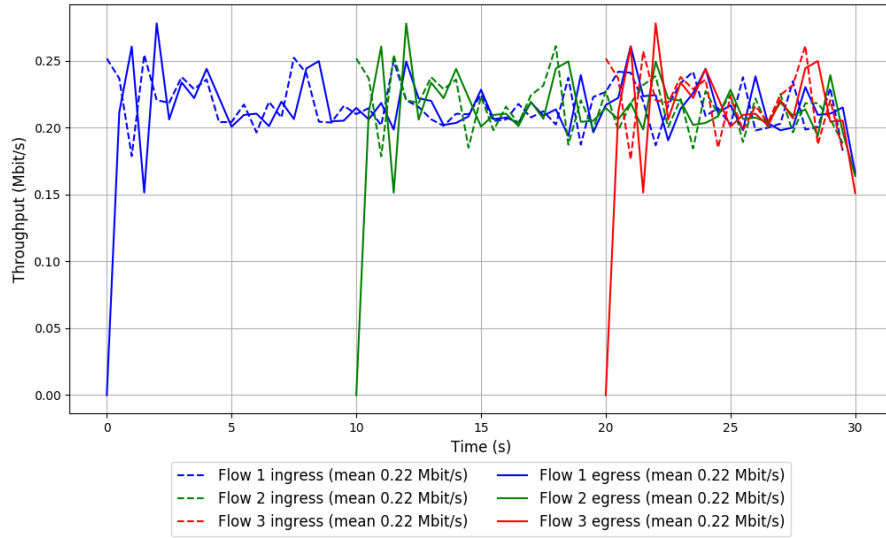
Run 2: Report of SCReAM — Data Link

```
Run 3: Statistics of SCReAM

Start at: 2019-05-30 10:21:09
End at: 2019-05-30 10:21:39
Local clock offset: -0.233 ms
Remote clock offset: 0.198 ms


# Below is generated by plot.py at 2019-05-30 14:03:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 63.683 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.229 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.756 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.394 ms
Loss rate: 1.45%
```
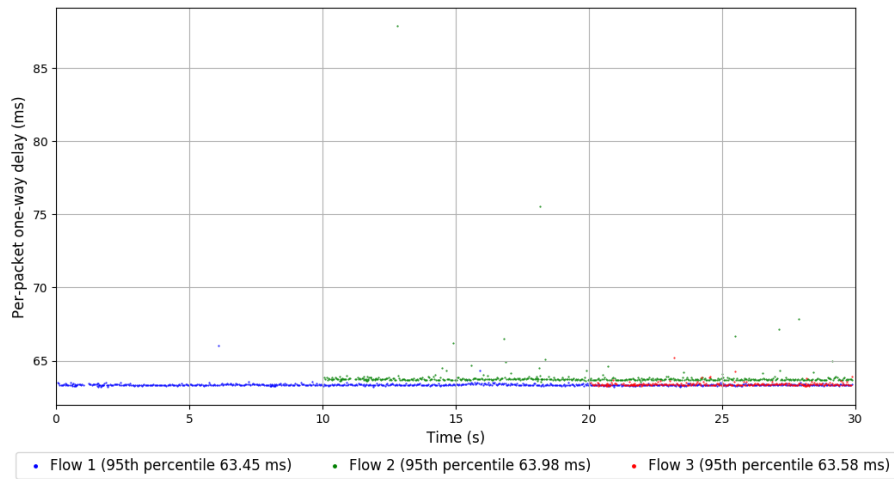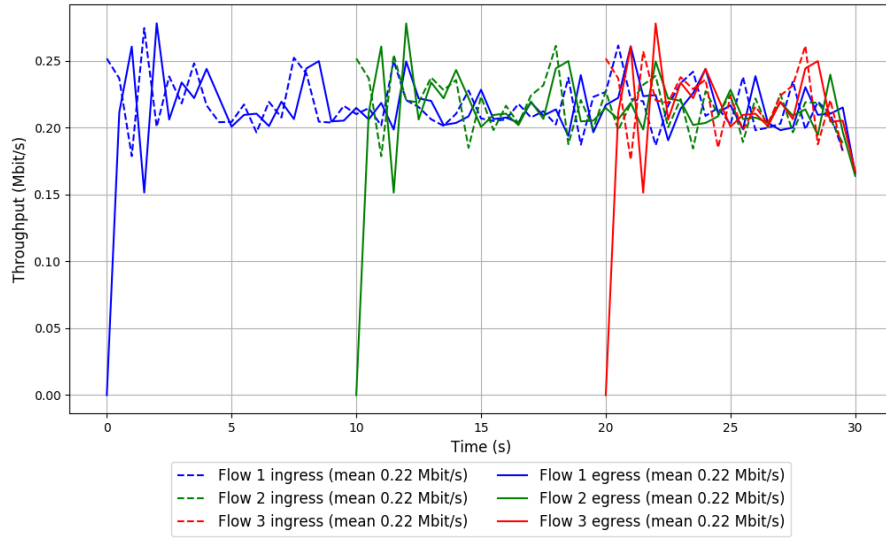
Run 3: Report of SCReAM — Data Link

```
Run 4: Statistics of SCReAM

Start at: 2019-05-30 10:57:27
End at: 2019-05-30 10:57:57
Local clock offset: 0.012 ms
Remote clock offset: -0.152 ms


# Below is generated by plot.py at 2019-05-30 14:03:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 63.843 ms
Loss rate: 0.58%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.449 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.981 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.579 ms
Loss rate: 1.08%
```
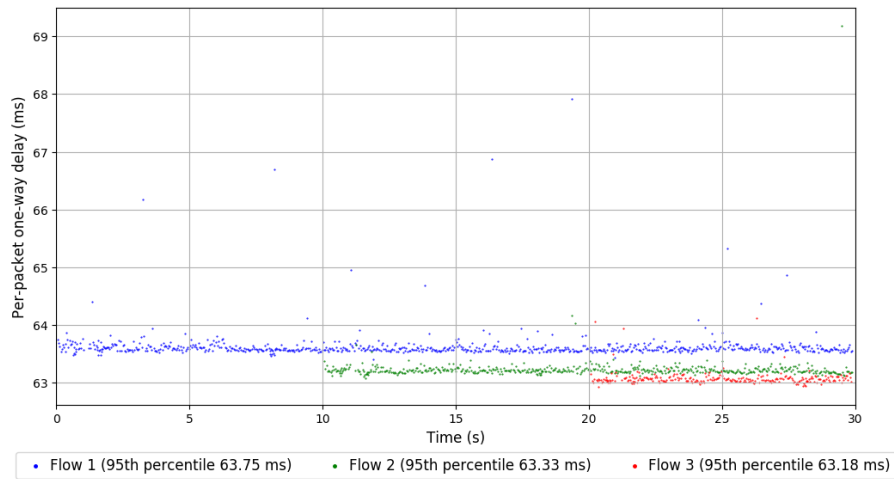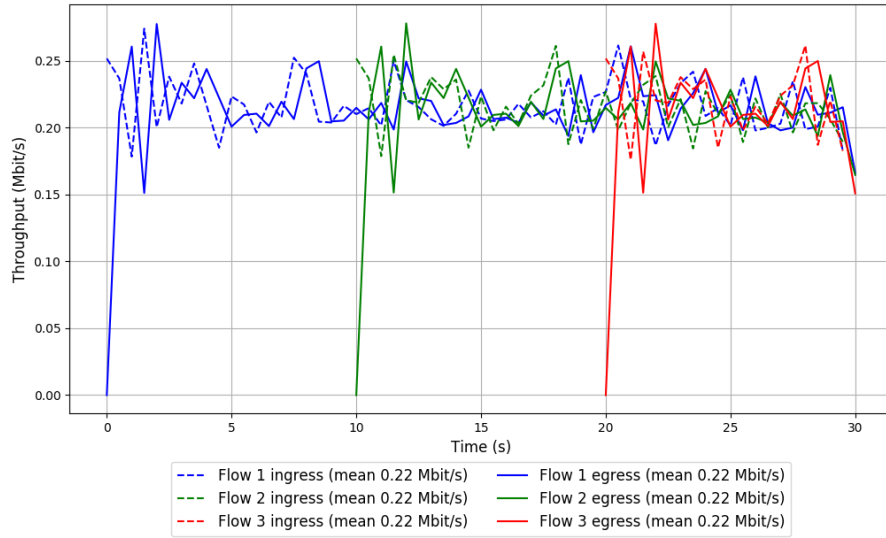
Run 4: Report of SCReAM — Data Link

```
Run 5: Statistics of SCReAM

Start at: 2019-05-30 11:33:36
End at: 2019-05-30 11:34:06
Local clock offset: -0.05 ms
Remote clock offset: -0.178 ms


# Below is generated by plot.py at 2019-05-30 14:03:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 63.700 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.749 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.330 ms
Loss rate: 0.62%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.176 ms
Loss rate: 1.45%
```
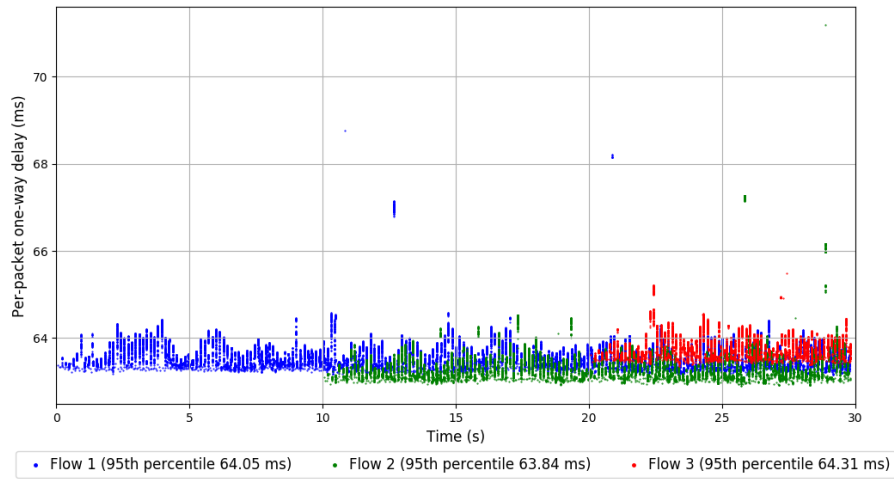
Run 5: Report of SCReAM — Data Link

```
Run 1: Statistics of Sprout

Start at: 2019-05-30 09:07:57
End at: 2019-05-30 09:08:27
Local clock offset: -0.338 ms
Remote clock offset: 0.095 ms


# Below is generated by plot.py at 2019-05-30 14:03:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 13.38 Mbit/s
95th percentile per-packet one-way delay: 64.093 ms
Loss rate: 0.75%
-- Flow 1:
Average throughput: 6.82 Mbit/s
95th percentile per-packet one-way delay: 64.052 ms
Loss rate: 0.50%
-- Flow 2:
Average throughput: 6.71 Mbit/s
95th percentile per-packet one-way delay: 63.841 ms
Loss rate: 0.73%
-- Flow 3:
Average throughput: 6.46 Mbit/s
95th percentile per-packet one-way delay: 64.305 ms
Loss rate: 1.61%
```
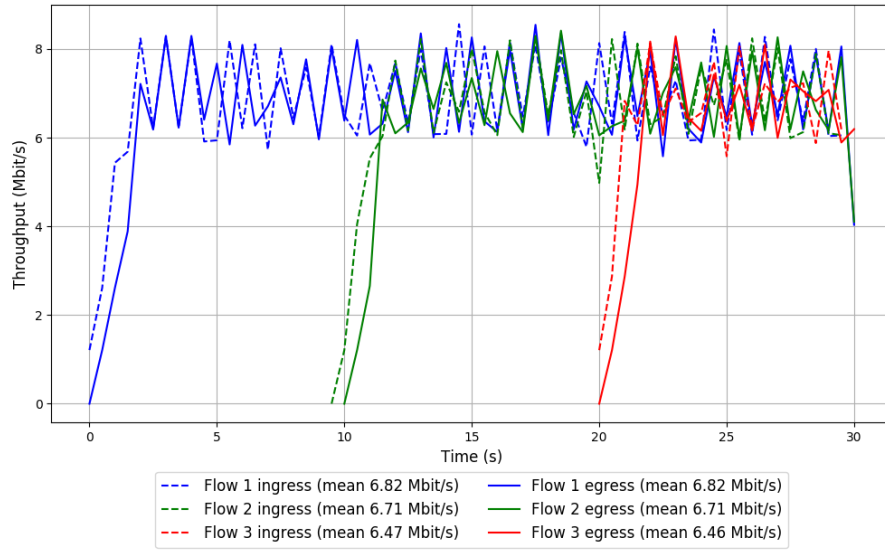
Run 1: Report of Sprout — Data Link

```
Run 2: Statistics of Sprout

Start at: 2019-05-30 09:43:45
End at: 2019-05-30 09:44:15
Local clock offset: -0.223 ms
Remote clock offset: 0.226 ms


# Below is generated by plot.py at 2019-05-30 14:03:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 13.35 Mbit/s
95th percentile per-packet one-way delay: 64.302 ms
Loss rate: 0.53%
-- Flow 1:
Average throughput: 6.82 Mbit/s
95th percentile per-packet one-way delay: 64.354 ms
Loss rate: 0.05%
-- Flow 2:
Average throughput: 6.65 Mbit/s
95th percentile per-packet one-way delay: 64.206 ms
Loss rate: 0.76%
-- Flow 3:
Average throughput: 6.46 Mbit/s
95th percentile per-packet one-way delay: 64.416 ms
Loss rate: 1.59%
```
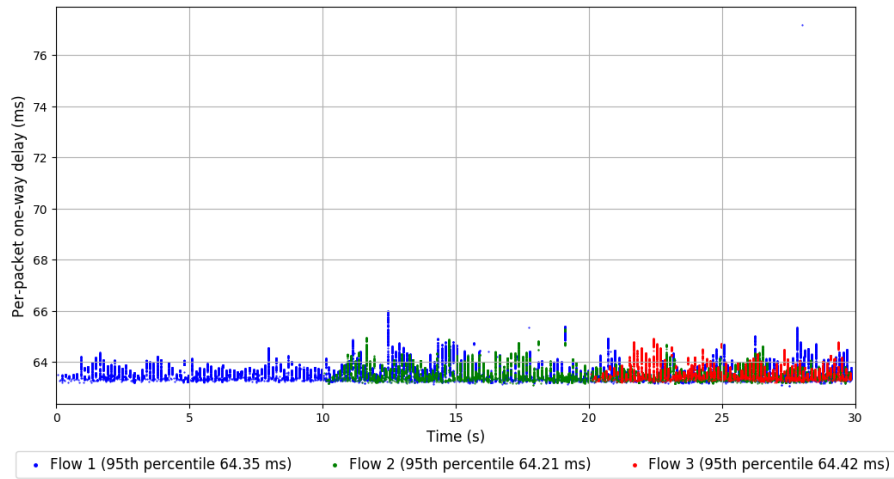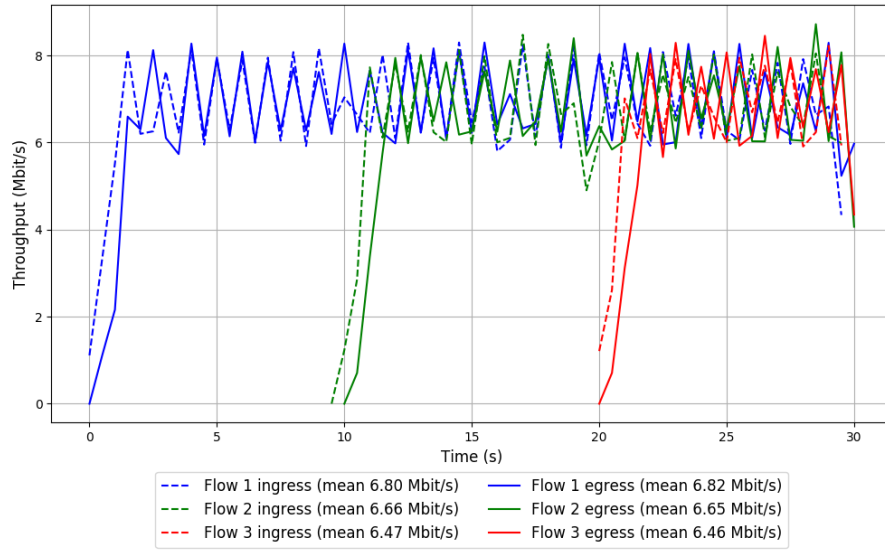
Run 2: Report of Sprout — Data Link

```
Run 3: Statistics of Sprout

Start at: 2019-05-30 10:19:55
End at: 2019-05-30 10:20:25
Local clock offset: -0.254 ms
Remote clock offset: 0.23 ms


# Below is generated by plot.py at 2019-05-30 14:03:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 13.38 Mbit/s
95th percentile per-packet one-way delay: 63.998 ms
Loss rate: 0.75%
-- Flow 1:
Average throughput: 6.78 Mbit/s
95th percentile per-packet one-way delay: 63.963 ms
Loss rate: 0.49%
-- Flow 2:
Average throughput: 6.74 Mbit/s
95th percentile per-packet one-way delay: 64.036 ms
Loss rate: 0.73%
-- Flow 3:
Average throughput: 6.50 Mbit/s
95th percentile per-packet one-way delay: 64.006 ms
Loss rate: 1.62%
```
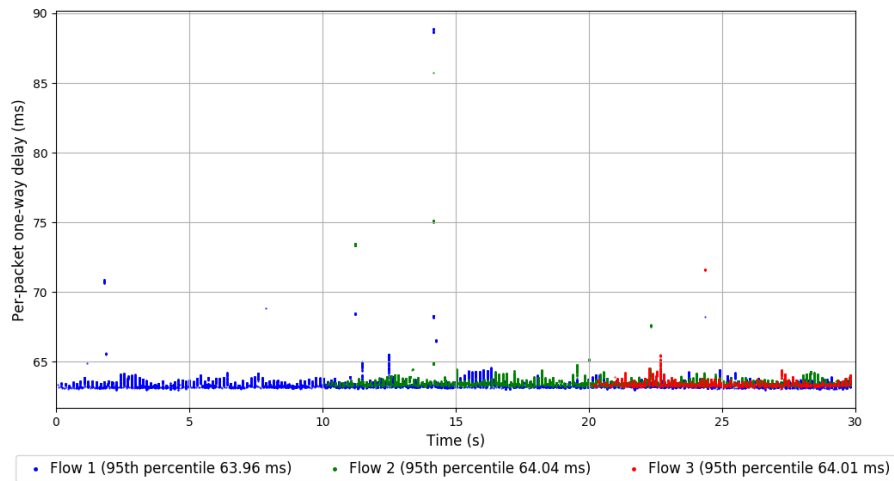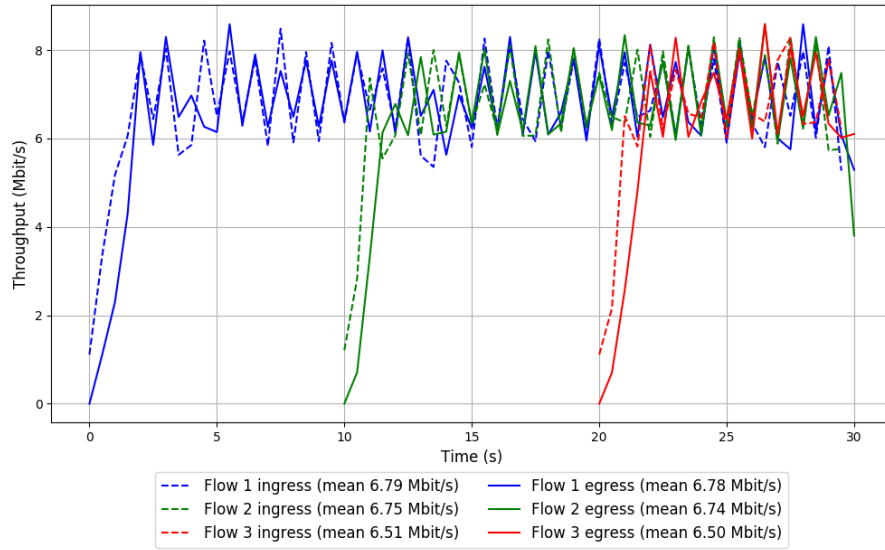
Run 3: Report of Sprout — Data Link

```
Run 4: Statistics of Sprout

Start at: 2019-05-30 10:56:13
End at: 2019-05-30 10:56:43
Local clock offset: -0.024 ms
Remote clock offset: -0.184 ms


# Below is generated by plot.py at 2019-05-30 14:03:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 13.32 Mbit/s
95th percentile per-packet one-way delay: 63.849 ms
Loss rate: 0.55%
-- Flow 1:
Average throughput: 6.76 Mbit/s
95th percentile per-packet one-way delay: 63.793 ms
Loss rate: 0.48%
-- Flow 2:
Average throughput: 6.76 Mbit/s
95th percentile per-packet one-way delay: 63.854 ms
Loss rate: 0.71%
-- Flow 3:
Average throughput: 6.38 Mbit/s
95th percentile per-packet one-way delay: 63.989 ms
Loss rate: 0.43%
```
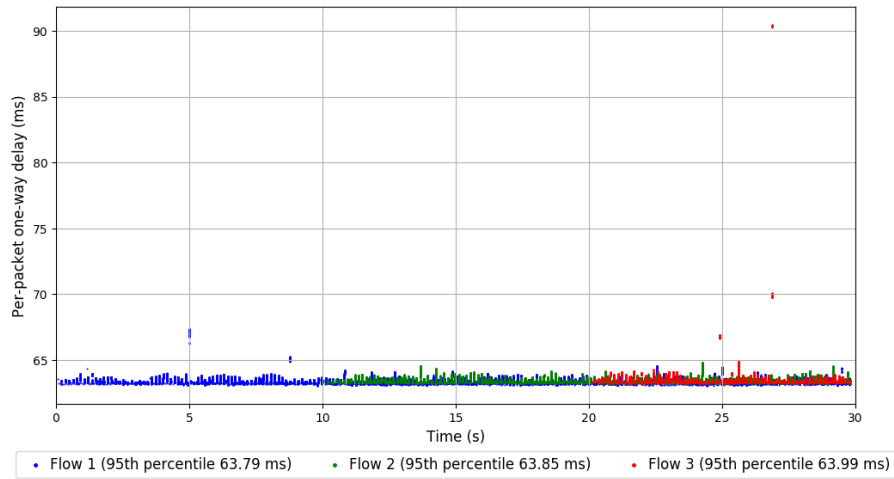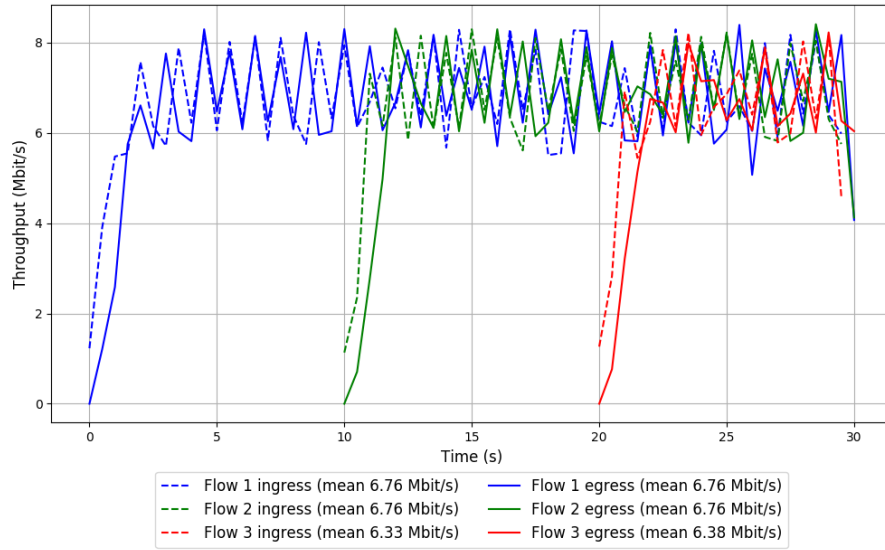
Run 4: Report of Sprout — Data Link

```
Run 5: Statistics of Sprout

Start at: 2019-05-30 11:32:22
End at: 2019-05-30 11:32:52
Local clock offset: -0.045 ms
Remote clock offset: -0.503 ms


# Below is generated by plot.py at 2019-05-30 14:03:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 13.34 Mbit/s
95th percentile per-packet one-way delay: 64.199 ms
Loss rate: 0.70%
-- Flow 1:
Average throughput: 6.76 Mbit/s
95th percentile per-packet one-way delay: 64.181 ms
Loss rate: 0.49%
-- Flow 2:
Average throughput: 6.72 Mbit/s
95th percentile per-packet one-way delay: 64.260 ms
Loss rate: 0.63%
-- Flow 3:
Average throughput: 6.49 Mbit/s
95th percentile per-packet one-way delay: 64.063 ms
Loss rate: 1.50%
```
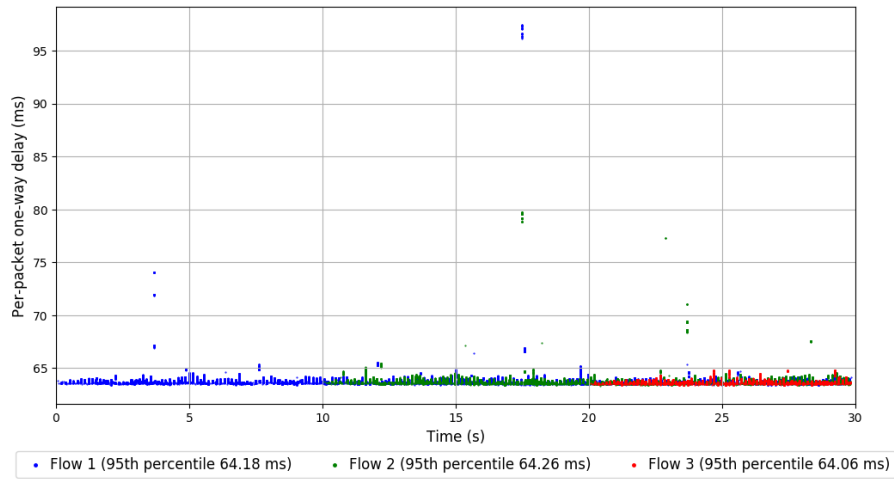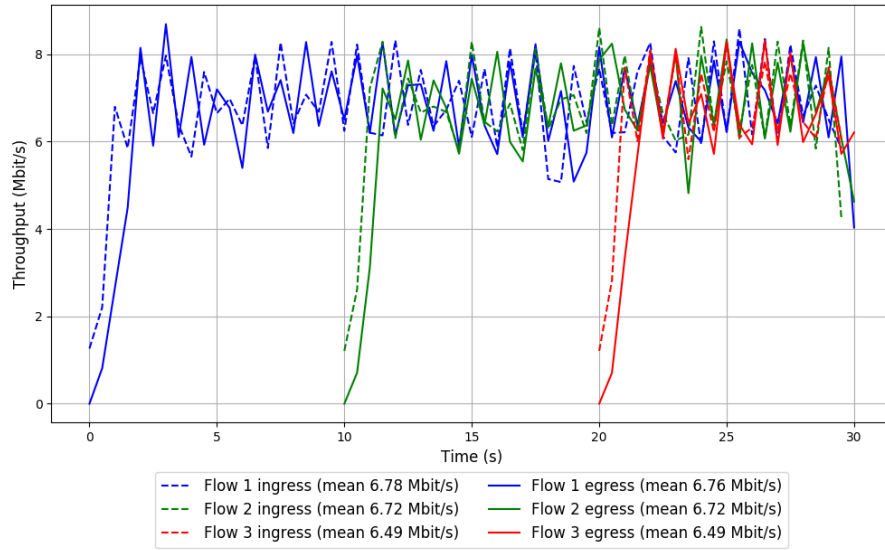
Run 5: Report of Sprout — Data Link

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

Start at: 2019-05-30 09:14:09
End at: 2019-05-30 09:14:39
Local clock offset: -0.267 ms
Remote clock offset: 0.16 ms


# Below is generated by plot.py at 2019-05-30 14:10:07
# Datalink statistics
-- Total of 3 flows:
Average throughput: 411.26 Mbit/s
95th percentile per-packet one-way delay: 68.960 ms
Loss rate: 0.75%
-- Flow 1:
Average throughput: 214.43 Mbit/s
95th percentile per-packet one-way delay: 69.712 ms
Loss rate: 0.47%
-- Flow 2:
Average throughput: 196.22 Mbit/s
95th percentile per-packet one-way delay: 71.165 ms
Loss rate: 0.80%
-- Flow 3:
Average throughput: 201.64 Mbit/s
95th percentile per-packet one-way delay: 64.774 ms
Loss rate: 1.54%
```
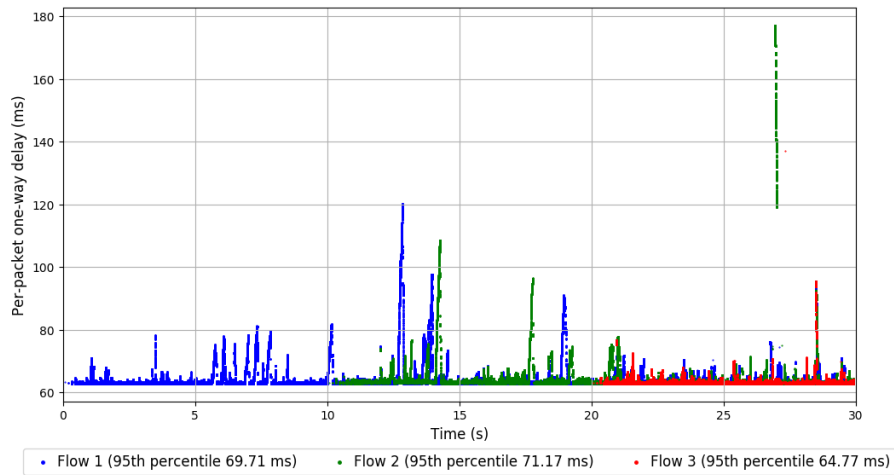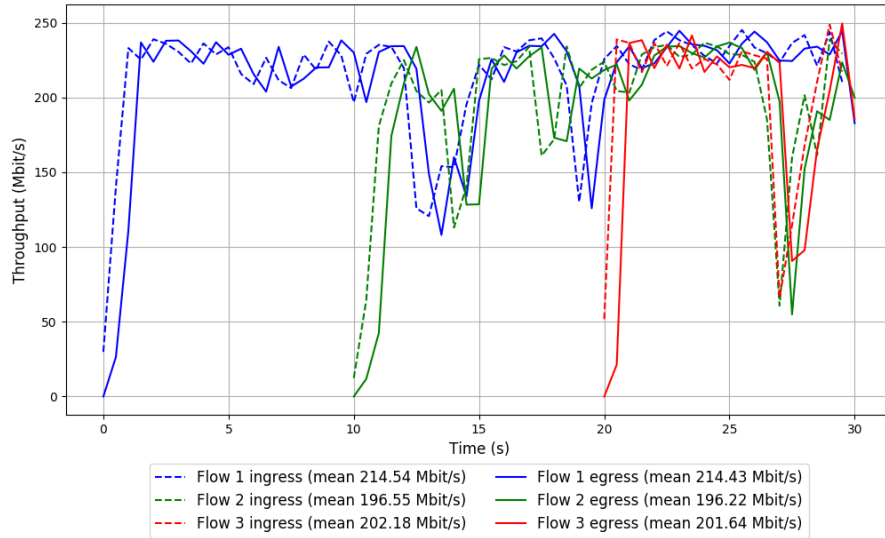
Run 1: Report of TaoVA-100x — Data Link

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

Start at: 2019-05-30 09:50:00
End at: 2019-05-30 09:50:30
Local clock offset: -0.242 ms
Remote clock offset: 0.203 ms


# Below is generated by plot.py at 2019-05-30 14:10:07
# Datalink statistics
-- Total of 3 flows:
Average throughput: 401.85 Mbit/s
95th percentile per-packet one-way delay: 71.748 ms
Loss rate: 0.74%
-- Flow 1:
Average throughput: 200.83 Mbit/s
95th percentile per-packet one-way delay: 73.235 ms
Loss rate: 0.54%
-- Flow 2:
Average throughput: 205.70 Mbit/s
95th percentile per-packet one-way delay: 70.835 ms
Loss rate: 0.60%
-- Flow 3:
Average throughput: 195.27 Mbit/s
95th percentile per-packet one-way delay: 67.717 ms
Loss rate: 1.66%
```
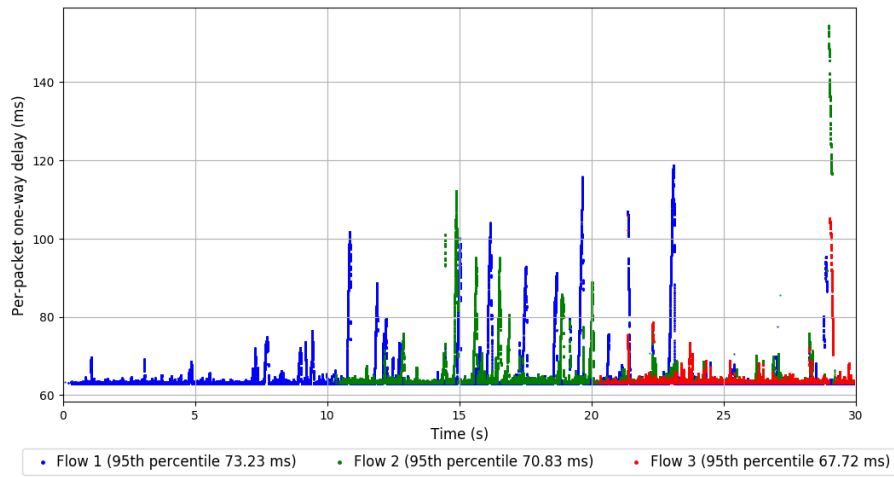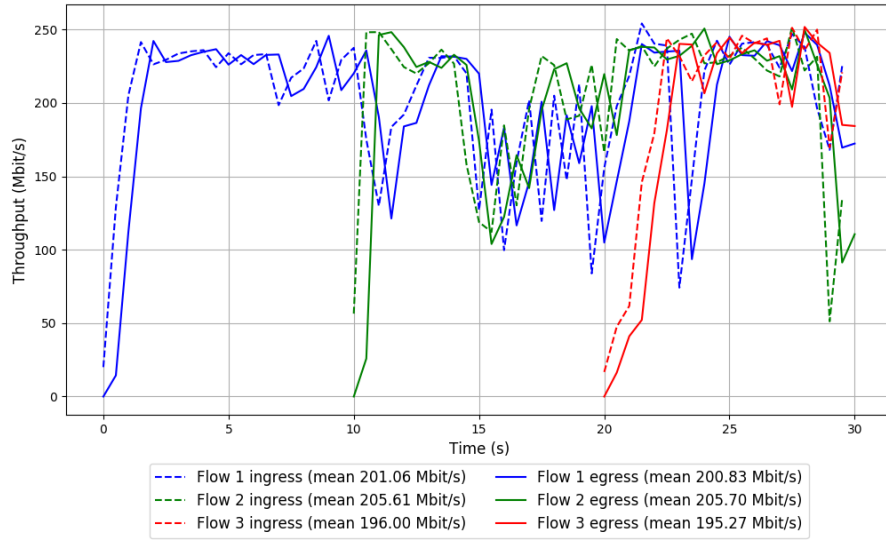
Run 2: Report of TaoVA-100x — Data Link

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

Start at: 2019-05-30 10:26:08
End at: 2019-05-30 10:26:38
Local clock offset: -0.242 ms
Remote clock offset: 0.131 ms

# Below is generated by plot.py at 2019-05-30 14:10:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 403.73 Mbit/s
95th percentile per-packet one-way delay: 74.351 ms
Loss rate: 0.74%
-- Flow 1:
Average throughput: 204.28 Mbit/s
95th percentile per-packet one-way delay: 74.879 ms
Loss rate: 0.52%
-- Flow 2:
Average throughput: 198.74 Mbit/s
95th percentile per-packet one-way delay: 74.766 ms
Loss rate: 0.68%
-- Flow 3:
Average throughput: 204.51 Mbit/s
95th percentile per-packet one-way delay: 72.544 ms
Loss rate: 1.51%
```
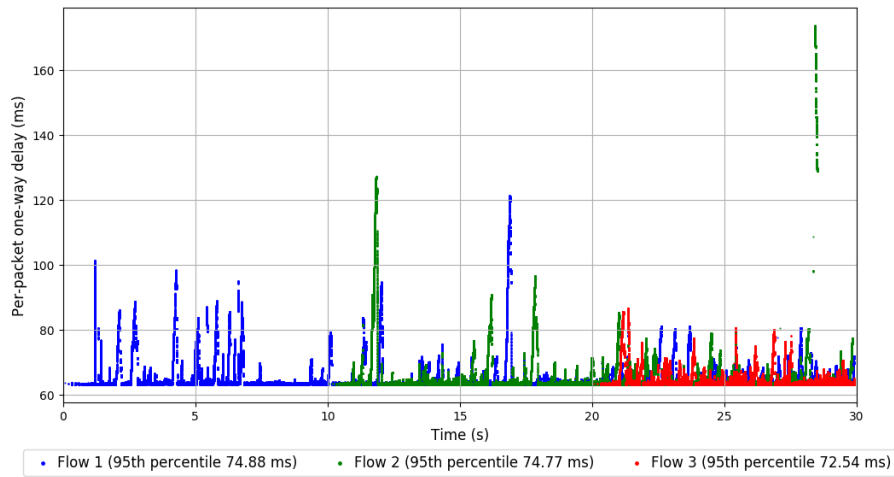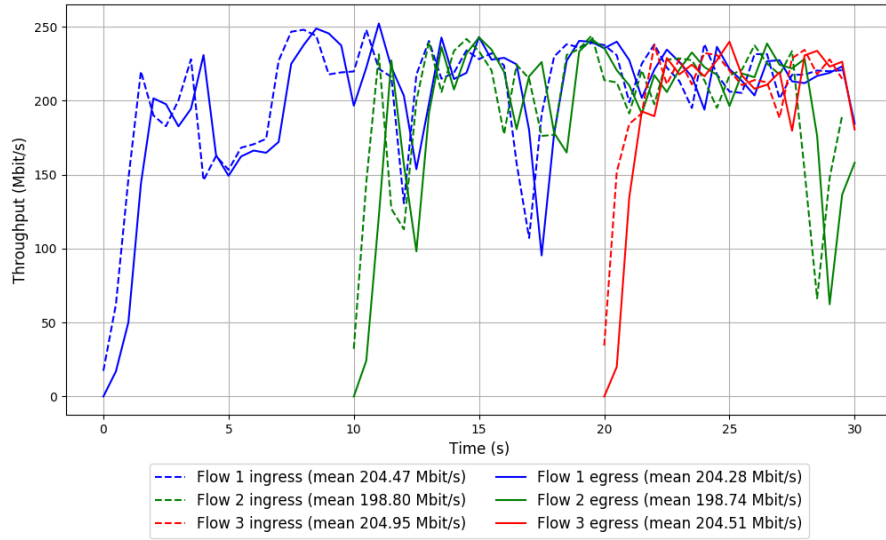
Run 3: Report of TaoVA-100x — Data Link

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

Start at: 2019-05-30 11:02:26
End at: 2019-05-30 11:02:56
Local clock offset: 0.014 ms
Remote clock offset: -0.421 ms


# Below is generated by plot.py at 2019-05-30 14:10:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 406.42 Mbit/s
95th percentile per-packet one-way delay: 70.749 ms
Loss rate: 0.77%
-- Flow 1:
Average throughput: 211.33 Mbit/s
95th percentile per-packet one-way delay: 70.757 ms
Loss rate: 0.49%
-- Flow 2:
Average throughput: 202.40 Mbit/s
95th percentile per-packet one-way delay: 71.375 ms
Loss rate: 0.81%
-- Flow 3:
Average throughput: 183.86 Mbit/s
95th percentile per-packet one-way delay: 69.266 ms
Loss rate: 1.66%
```
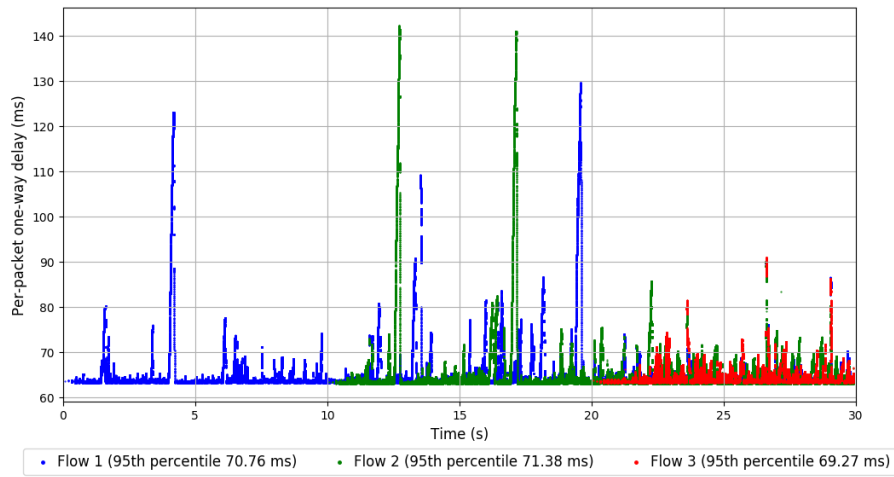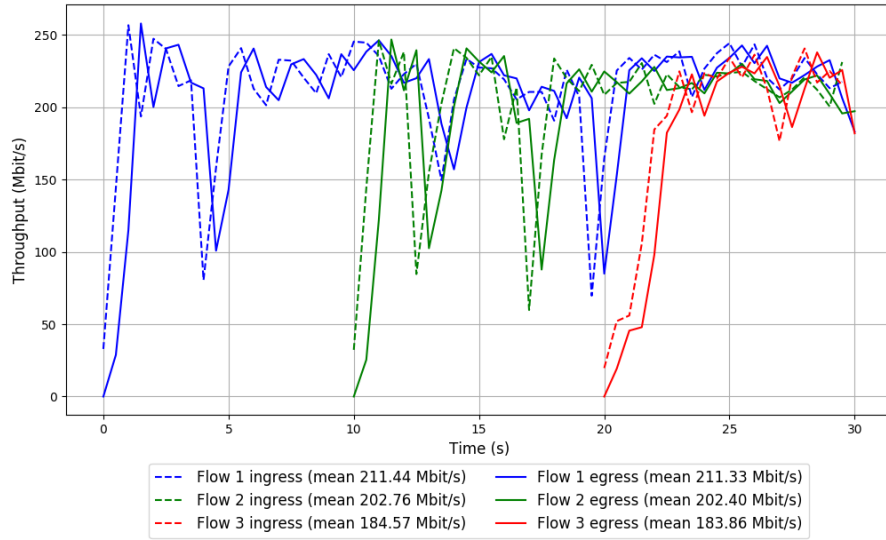
Run 4: Report of TaoVA-100x — Data Link

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

Start at: 2019-05-30 11:38:33
End at: 2019-05-30 11:39:03
Local clock offset: -0.041 ms
Remote clock offset: -0.214 ms


# Below is generated by plot.py at 2019-05-30 14:11:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 394.06 Mbit/s
95th percentile per-packet one-way delay: 69.792 ms
Loss rate: 0.82%
-- Flow 1:
Average throughput: 204.78 Mbit/s
95th percentile per-packet one-way delay: 69.135 ms
Loss rate: 0.52%
-- Flow 2:
Average throughput: 190.54 Mbit/s
95th percentile per-packet one-way delay: 72.499 ms
Loss rate: 0.88%
-- Flow 3:
Average throughput: 189.69 Mbit/s
95th percentile per-packet one-way delay: 67.001 ms
Loss rate: 1.65%
```
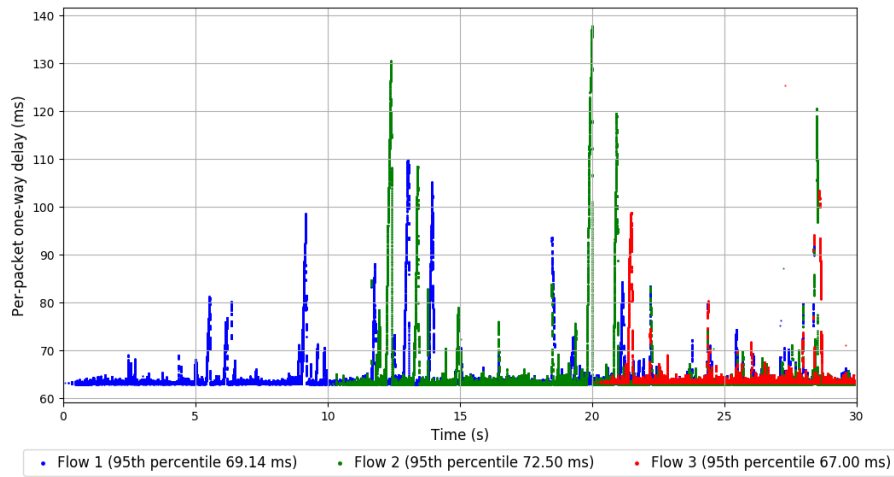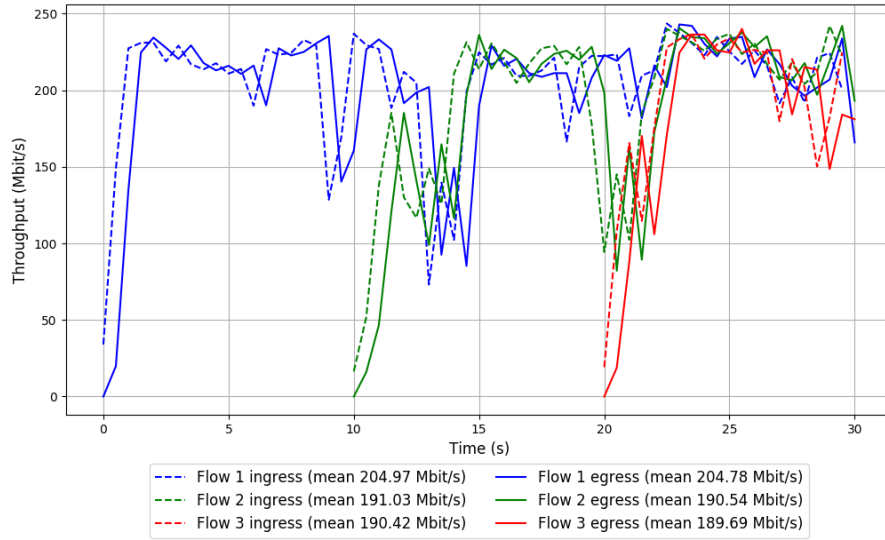
Run 5: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 204.97 Mbit/s) --- Flow 1 egress (mean 204.78 Mbit/s)
Flow 2 ingress (mean 191.03 Mbit/s) --- Flow 2 egress (mean 190.54 Mbit/s)
Flow 3 ingress (mean 190.42 Mbit/s) --- Flow 3 egress (mean 189.69 Mbit/s)

Flow 1 (95th percentile 69.14 ms) Flow 2 (95th percentile 72.50 ms) Flow 3 (95th percentile 67.00 ms)

```
Run 1: Statistics of TCP Vegas

Start at: 2019-05-30 08:43:25
End at: 2019-05-30 08:43:55
Local clock offset: -0.288 ms
Remote clock offset: 0.141 ms


# Below is generated by plot.py at 2019-05-30 14:11:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 530.28 Mbit/s
95th percentile per-packet one-way delay: 70.082 ms
Loss rate: 0.72%
-- Flow 1:
Average throughput: 248.73 Mbit/s
95th percentile per-packet one-way delay: 66.255 ms
Loss rate: 0.36%
-- Flow 2:
Average throughput: 222.06 Mbit/s
95th percentile per-packet one-way delay: 63.735 ms
Loss rate: 0.68%
-- Flow 3:
Average throughput: 406.65 Mbit/s
95th percentile per-packet one-way delay: 76.237 ms
Loss rate: 1.44%
```
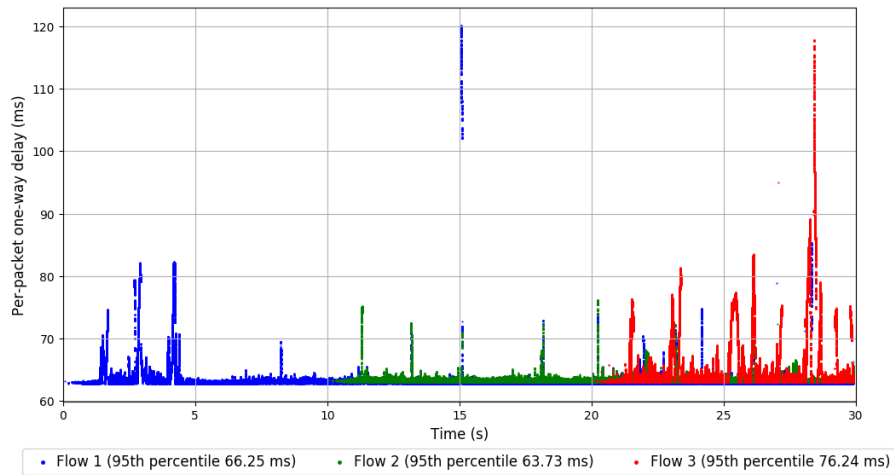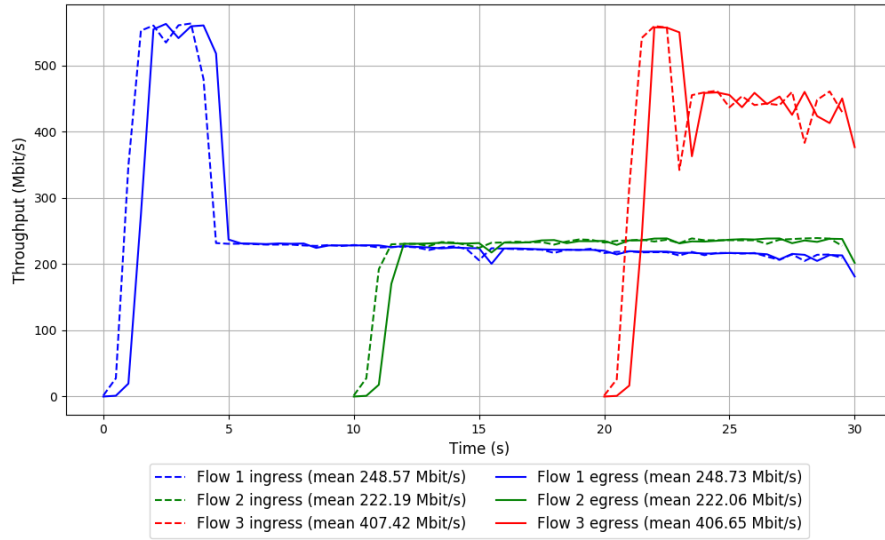
Run 1: Report of TCP Vegas — Data Link

```
Run 2: Statistics of TCP Vegas

Start at: 2019-05-30 09:19:02
End at: 2019-05-30 09:19:32
Local clock offset: -0.316 ms
Remote clock offset: 0.226 ms


# Below is generated by plot.py at 2019-05-30 14:16:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 711.82 Mbit/s
95th percentile per-packet one-way delay: 87.575 ms
Loss rate: 0.70%
-- Flow 1:
Average throughput: 304.93 Mbit/s
95th percentile per-packet one-way delay: 77.467 ms
Loss rate: 0.37%
-- Flow 2:
Average throughput: 415.09 Mbit/s
95th percentile per-packet one-way delay: 95.080 ms
Loss rate: 0.70%
-- Flow 3:
Average throughput: 397.30 Mbit/s
95th percentile per-packet one-way delay: 91.823 ms
Loss rate: 1.46%
```
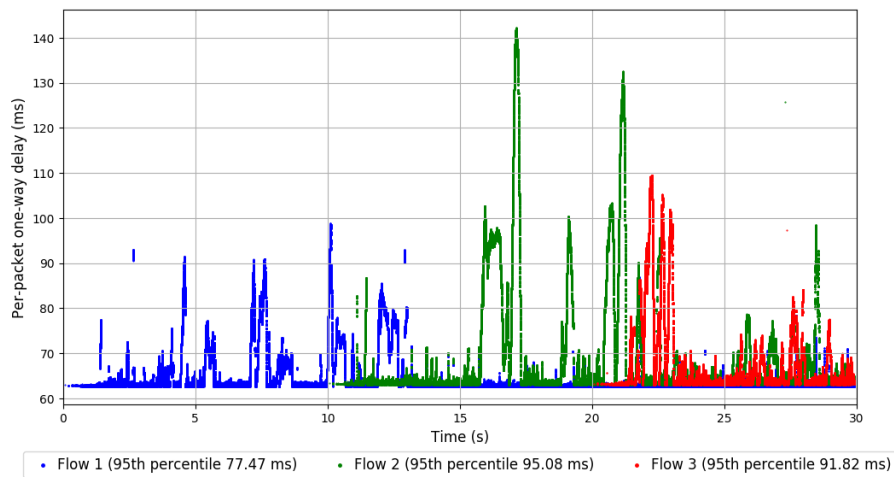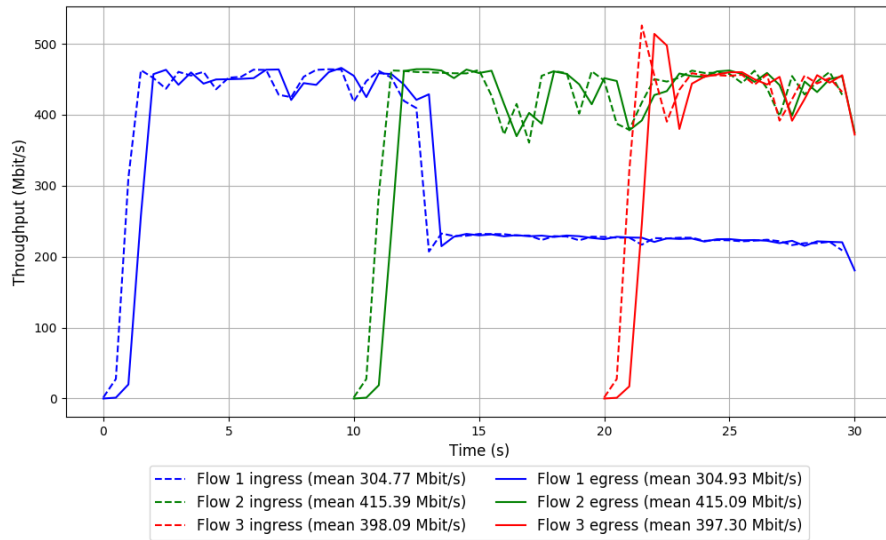
Run 2: Report of TCP Vegas — Data Link

```
Run 3: Statistics of TCP Vegas

Start at: 2019-05-30 09:54:42
End at: 2019-05-30 09:55:12
Local clock offset: -0.212 ms
Remote clock offset: 0.278 ms


# Below is generated by plot.py at 2019-05-30 14:21:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 798.37 Mbit/s
95th percentile per-packet one-way delay: 106.589 ms
Loss rate: 0.60%
-- Flow 1:
Average throughput: 415.61 Mbit/s
95th percentile per-packet one-way delay: 103.490 ms
Loss rate: 0.45%
-- Flow 2:
Average throughput: 386.06 Mbit/s
95th percentile per-packet one-way delay: 108.556 ms
Loss rate: 0.37%
-- Flow 3:
Average throughput: 383.17 Mbit/s
95th percentile per-packet one-way delay: 104.643 ms
Loss rate: 1.54%
```
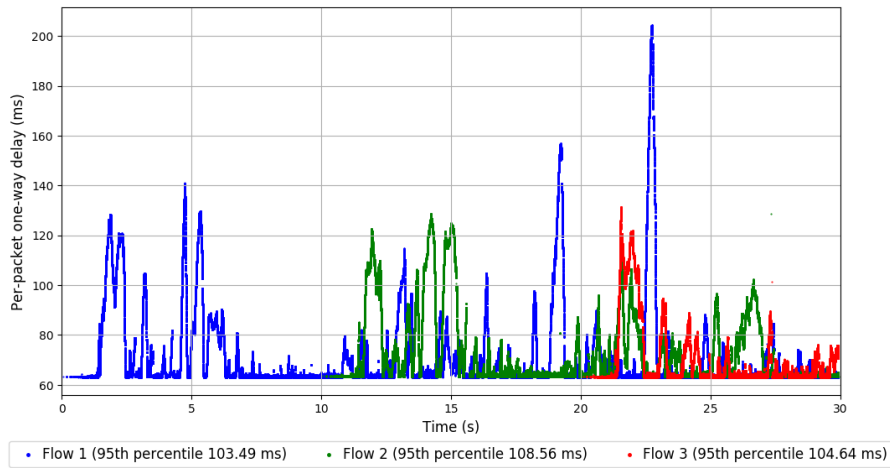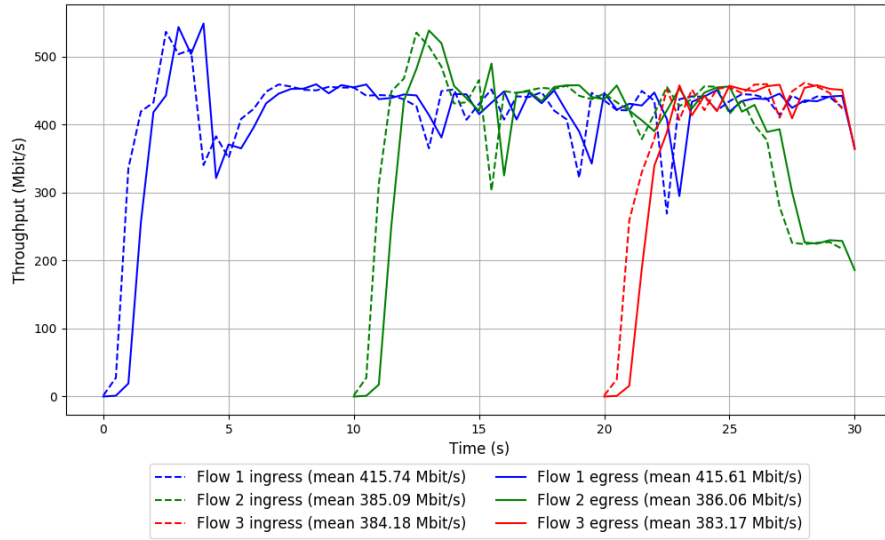
Run 3: Report of TCP Vegas — Data Link

```
Run 4: Statistics of TCP Vegas

Start at: 2019-05-30 10:31:00
End at: 2019-05-30 10:31:30
Local clock offset: -0.223 ms
Remote clock offset: 0.444 ms


# Below is generated by plot.py at 2019-05-30 14:21:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 602.87 Mbit/s
95th percentile per-packet one-way delay: 96.286 ms
Loss rate: 0.67%
-- Flow 1:
Average throughput: 315.55 Mbit/s
95th percentile per-packet one-way delay: 89.419 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 265.64 Mbit/s
95th percentile per-packet one-way delay: 96.285 ms
Loss rate: 0.72%
-- Flow 3:
Average throughput: 335.93 Mbit/s
95th percentile per-packet one-way delay: 129.563 ms
Loss rate: 1.39%
```
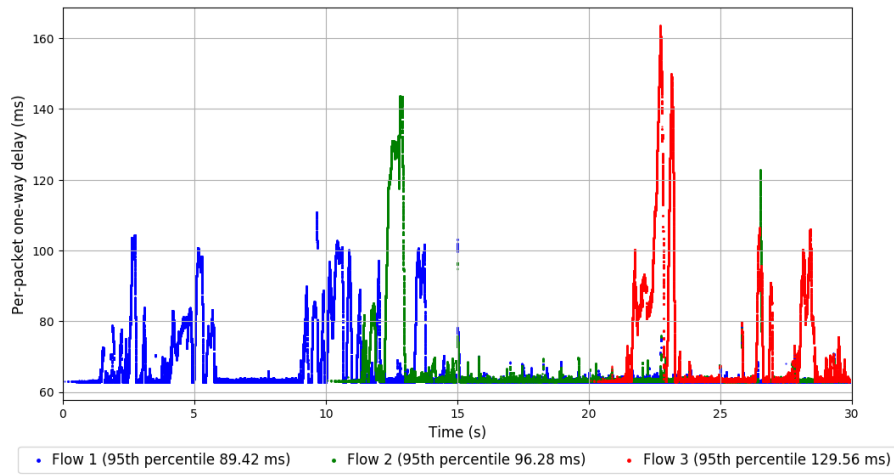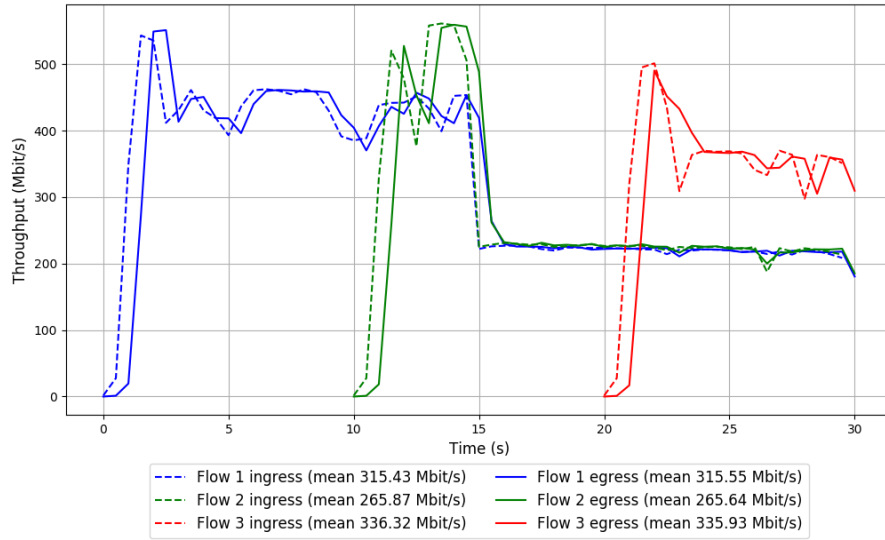
Run 4: Report of TCP Vegas — Data Link

```
Run 5: Statistics of TCP Vegas

Start at: 2019-05-30 11:07:35
End at: 2019-05-30 11:08:05
Local clock offset: 0.062 ms
Remote clock offset: 0.089 ms


# Below is generated by plot.py at 2019-05-30 14:25:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 816.91 Mbit/s
95th percentile per-packet one-way delay: 102.364 ms
Loss rate: 0.53%
-- Flow 1:
Average throughput: 418.56 Mbit/s
95th percentile per-packet one-way delay: 99.116 ms
Loss rate: 0.46%
-- Flow 2:
Average throughput: 381.74 Mbit/s
95th percentile per-packet one-way delay: 89.899 ms
Loss rate: 0.37%
-- Flow 3:
Average throughput: 438.73 Mbit/s
95th percentile per-packet one-way delay: 128.342 ms
Loss rate: 0.98%
```
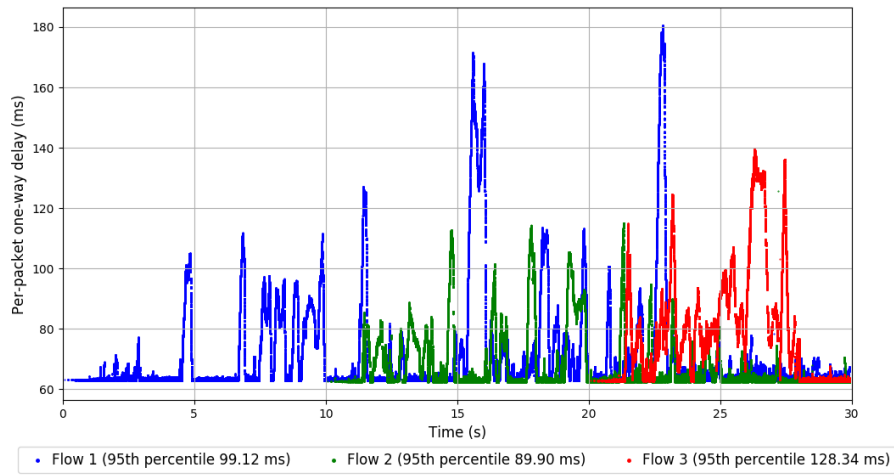
Run 5: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 418.74 Mbit/s) --- Flow 1 egress (mean 418.56 Mbit/s)
Flow 2 ingress (mean 380.77 Mbit/s) --- Flow 2 egress (mean 381.74 Mbit/s)
Flow 3 ingress (mean 437.45 Mbit/s) --- Flow 3 egress (mean 438.73 Mbit/s)

Flow 1 (95th percentile 99.12 ms)   Flow 2 (95th percentile 89.90 ms)   Flow 3 (95th percentile 128.34 ms)

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```
Run 1: Statistics of Verus

Start at: 2019-05-30 09:06:14
End at: 2019-05-30 09:06:44
Local clock offset: -0.3 ms
Remote clock offset: 0.193 ms


# Below is generated by plot.py at 2019-05-30 14:25:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 303.69 Mbit/s
95th percentile per-packet one-way delay: 232.008 ms
Loss rate: 2.36%
-- Flow 1:
Average throughput: 167.17 Mbit/s
95th percentile per-packet one-way delay: 166.510 ms
Loss rate: 0.99%
-- Flow 2:
Average throughput: 176.45 Mbit/s
95th percentile per-packet one-way delay: 259.462 ms
Loss rate: 4.12%
-- Flow 3:
Average throughput: 57.11 Mbit/s
95th percentile per-packet one-way delay: 80.586 ms
Loss rate: 3.19%
```
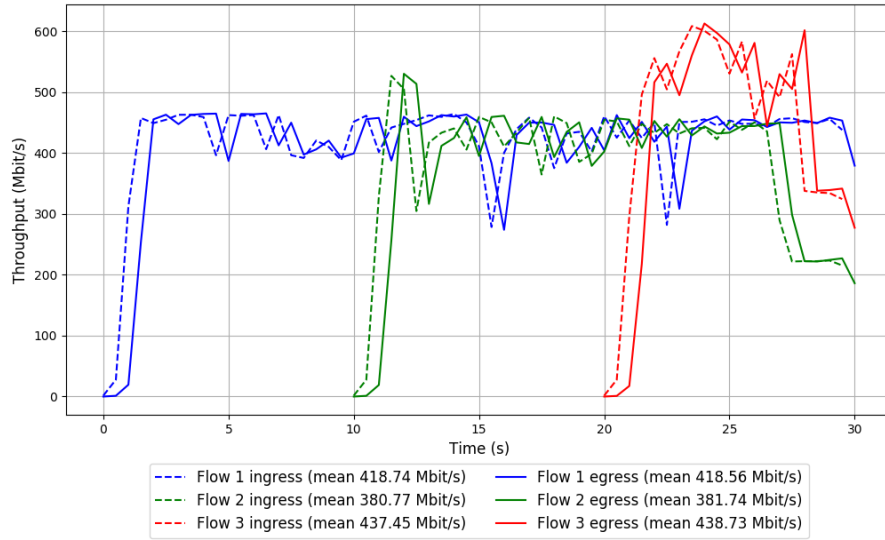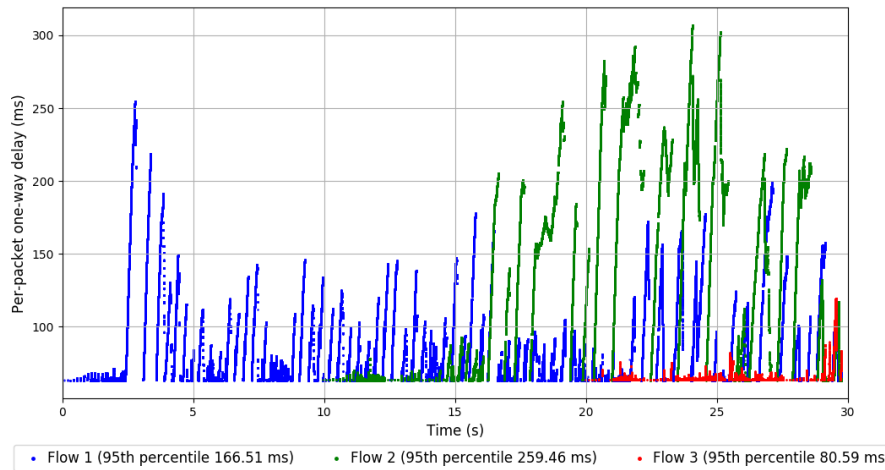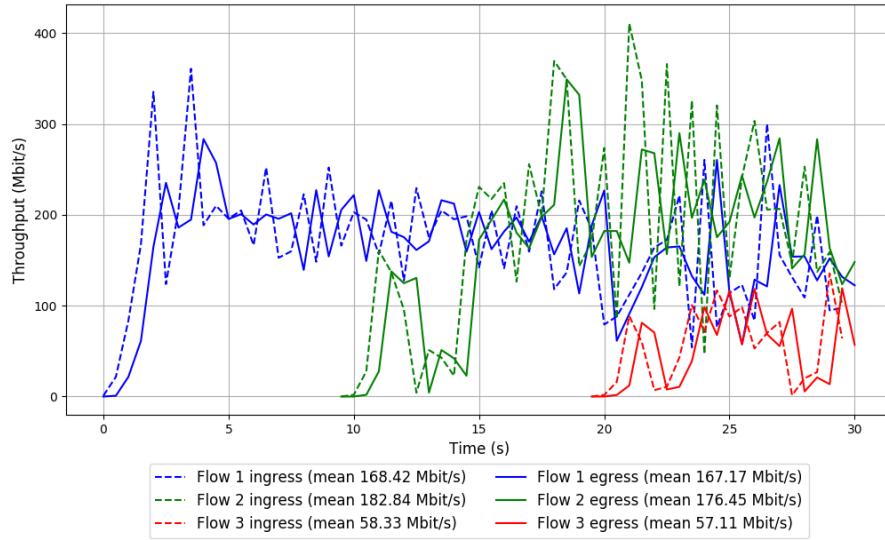
Run 1: Report of Verus — Data Link

```
Run 2: Statistics of Verus

Start at: 2019-05-30 09:42:10
End at: 2019-05-30 09:42:40
Local clock offset: -0.27 ms
Remote clock offset: 0.241 ms


# Below is generated by plot.py at 2019-05-30 14:25:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 209.99 Mbit/s
95th percentile per-packet one-way delay: 107.530 ms
Loss rate: 0.72%
-- Flow 1:
Average throughput: 108.97 Mbit/s
95th percentile per-packet one-way delay: 120.343 ms
Loss rate: 0.54%
-- Flow 2:
Average throughput: 103.48 Mbit/s
95th percentile per-packet one-way delay: 101.909 ms
Loss rate: 0.78%
-- Flow 3:
Average throughput: 98.62 Mbit/s
95th percentile per-packet one-way delay: 96.257 ms
Loss rate: 1.21%
```
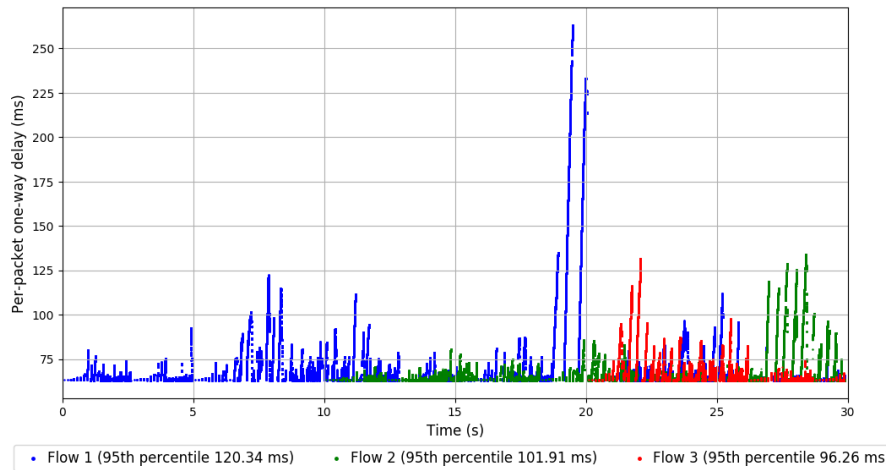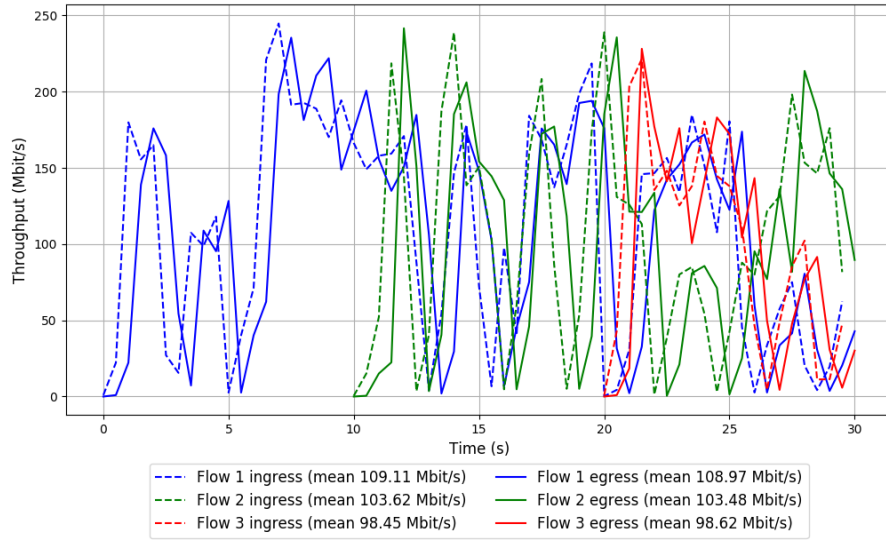
Run 2: Report of Verus — Data Link

```
Run 3: Statistics of Verus

Start at: 2019-05-30 10:18:17
End at: 2019-05-30 10:18:47
Local clock offset: -0.23 ms
Remote clock offset: 0.161 ms


# Below is generated by plot.py at 2019-05-30 14:25:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 250.73 Mbit/s
95th percentile per-packet one-way delay: 172.032 ms
Loss rate: 1.43%
-- Flow 1:
Average throughput: 131.29 Mbit/s
95th percentile per-packet one-way delay: 212.175 ms
Loss rate: 2.10%
-- Flow 2:
Average throughput: 143.87 Mbit/s
95th percentile per-packet one-way delay: 163.786 ms
Loss rate: 0.23%
-- Flow 3:
Average throughput: 73.07 Mbit/s
95th percentile per-packet one-way delay: 107.559 ms
Loss rate: 2.41%
```
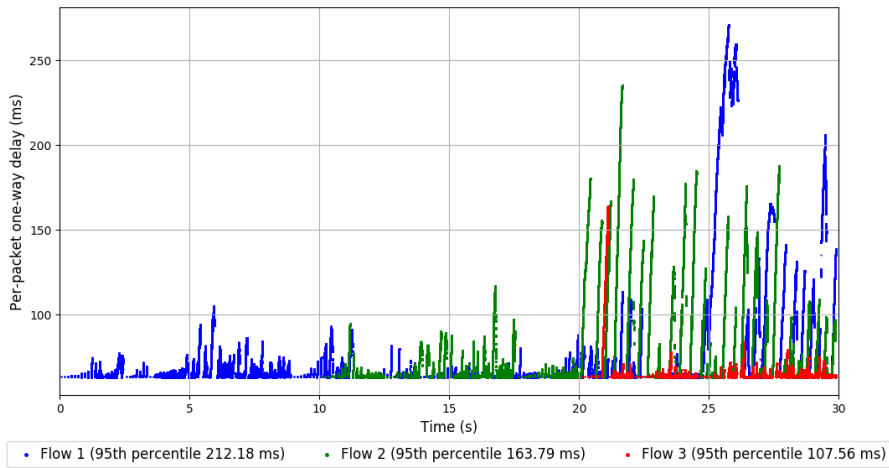
Run 3: Report of Verus — Data Link

Flow 1 ingress (mean 134.23 Mbit/s)   Flow 1 egress (mean 131.29 Mbit/s)
Flow 2 ingress (mean 143.08 Mbit/s)   Flow 2 egress (mean 143.87 Mbit/s)
Flow 3 ingress (mean 73.89 Mbit/s)   Flow 3 egress (mean 73.07 Mbit/s)

Flow 1 (95th percentile 212.18 ms)   Flow 2 (95th percentile 163.79 ms)   Flow 3 (95th percentile 107.56 ms)

```
Run 4: Statistics of Verus

Start at: 2019-05-30 10:54:32
End at: 2019-05-30 10:55:02
Local clock offset: -0.011 ms
Remote clock offset: -0.139 ms


# Below is generated by plot.py at 2019-05-30 14:25:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 258.25 Mbit/s
95th percentile per-packet one-way delay: 184.103 ms
Loss rate: 1.21%
-- Flow 1:
Average throughput: 176.47 Mbit/s
95th percentile per-packet one-way delay: 193.536 ms
Loss rate: 1.29%
-- Flow 2:
Average throughput: 69.85 Mbit/s
95th percentile per-packet one-way delay: 87.309 ms
Loss rate: 0.57%
-- Flow 3:
Average throughput: 107.85 Mbit/s
95th percentile per-packet one-way delay: 150.338 ms
Loss rate: 1.63%
```
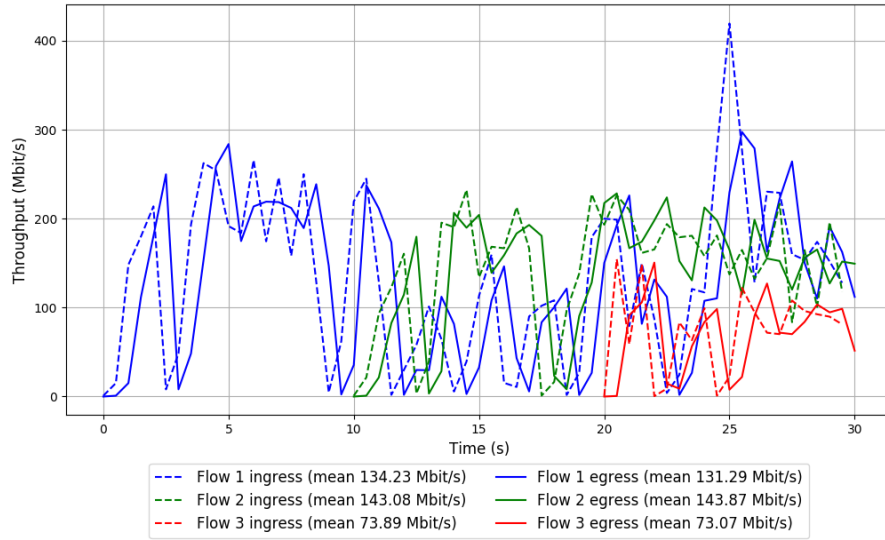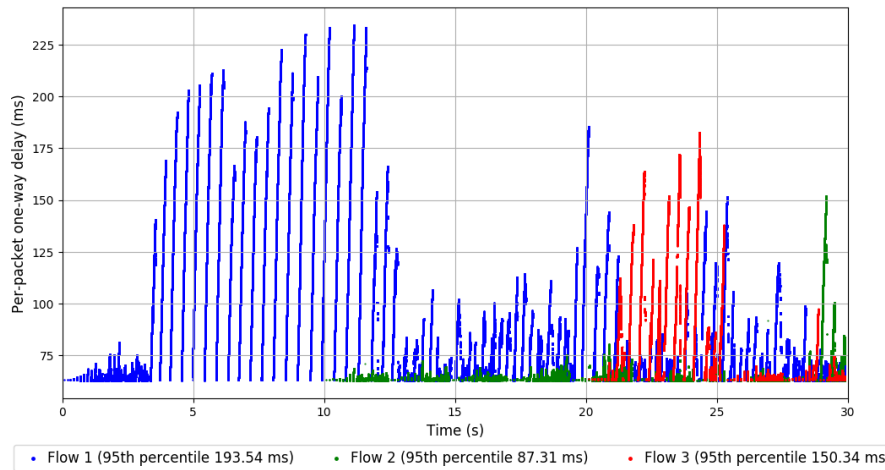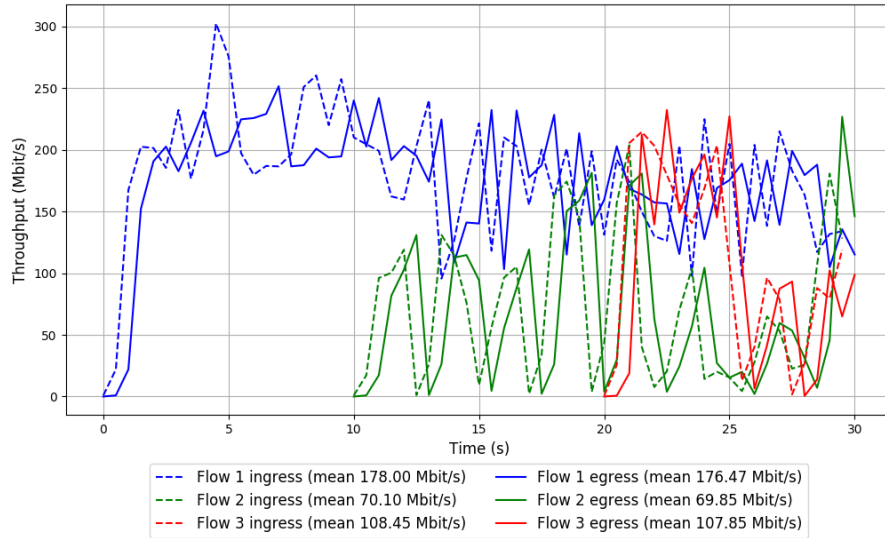
Run 4: Report of Verus — Data Link

Flow 1 ingress (mean 178.00 Mbit/s) --- Flow 1 egress (mean 176.47 Mbit/s)
Flow 2 ingress (mean 70.10 Mbit/s) --- Flow 2 egress (mean 69.85 Mbit/s)
Flow 3 ingress (mean 108.45 Mbit/s) --- Flow 3 egress (mean 107.85 Mbit/s)

Flow 1 (95th percentile 193.54 ms) • Flow 2 (95th percentile 87.31 ms) • Flow 3 (95th percentile 150.34 ms)

```
Run 5: Statistics of Verus

Start at: 2019-05-30 11:30:44
End at: 2019-05-30 11:31:14
Local clock offset: -0.061 ms
Remote clock offset: -0.321 ms


# Below is generated by plot.py at 2019-05-30 14:25:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 249.52 Mbit/s
95th percentile per-packet one-way delay: 134.601 ms
Loss rate: 0.79%
-- Flow 1:
Average throughput: 154.45 Mbit/s
95th percentile per-packet one-way delay: 151.302 ms
Loss rate: 0.53%
-- Flow 2:
Average throughput: 105.62 Mbit/s
95th percentile per-packet one-way delay: 112.743 ms
Loss rate: 1.46%
-- Flow 3:
Average throughput: 77.55 Mbit/s
95th percentile per-packet one-way delay: 69.156 ms
Loss rate: 0.51%
```
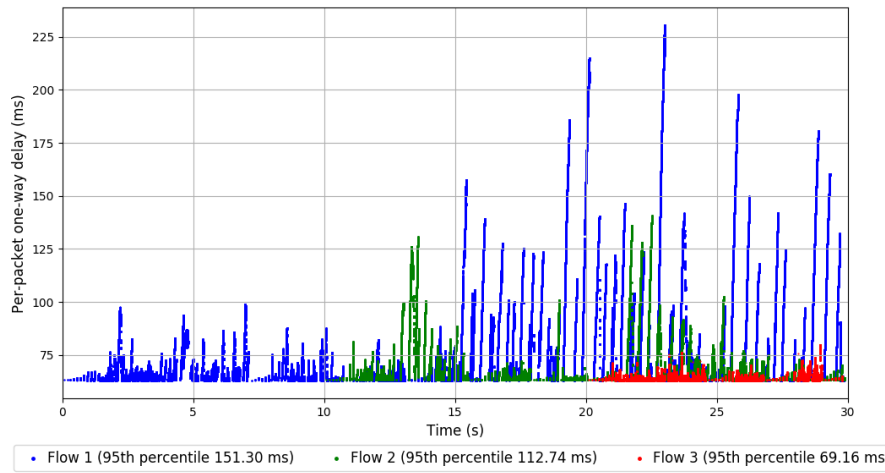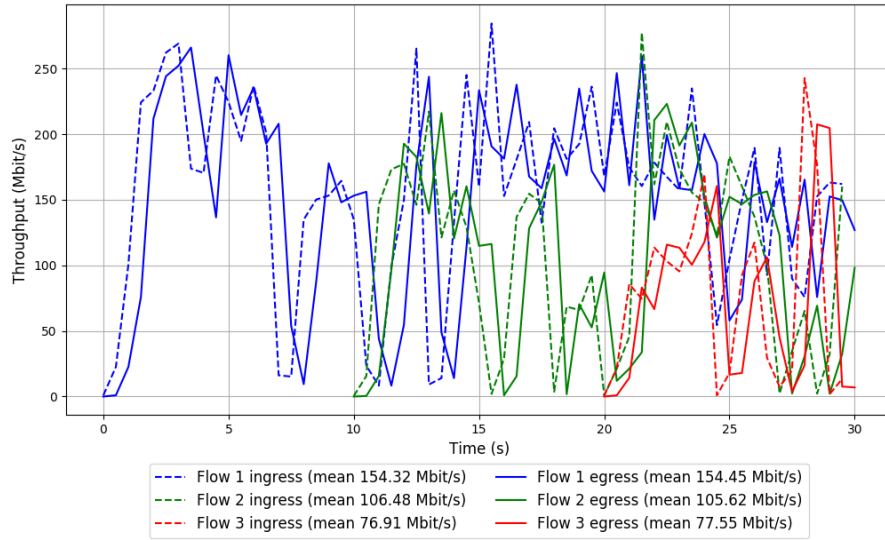
Run 5: Report of Verus — Data Link

```
Run 1: Statistics of PCC-Vivace

Start at: 2019-05-30 08:41:40
End at: 2019-05-30 08:42:10
Local clock offset: -0.282 ms
Remote clock offset: 0.025 ms


# Below is generated by plot.py at 2019-05-30 14:25:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 440.66 Mbit/s
95th percentile per-packet one-way delay: 123.525 ms
Loss rate: 0.70%
-- Flow 1:
Average throughput: 331.75 Mbit/s
95th percentile per-packet one-way delay: 132.596 ms
Loss rate: 0.44%
-- Flow 2:
Average throughput: 81.59 Mbit/s
95th percentile per-packet one-way delay: 63.378 ms
Loss rate: 1.22%
-- Flow 3:
Average throughput: 167.57 Mbit/s
95th percentile per-packet one-way delay: 74.810 ms
Loss rate: 1.79%
```
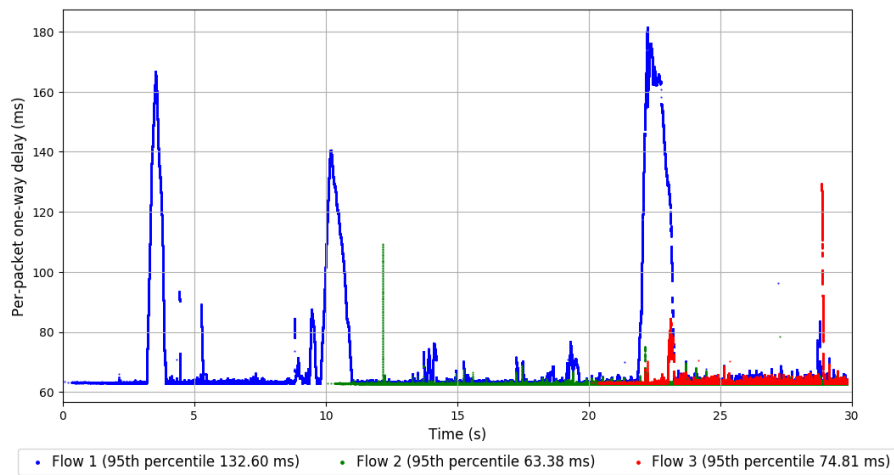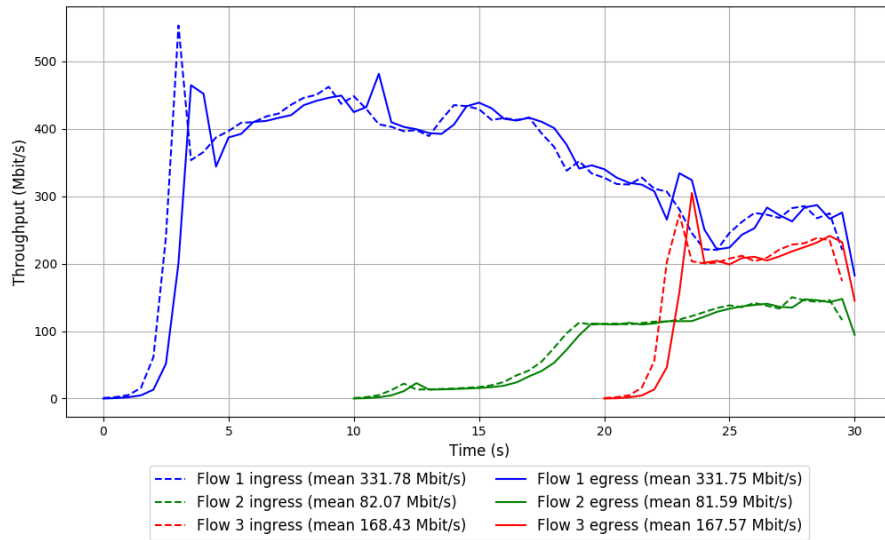
Run 1: Report of PCC-Vivace — Data Link

- - - Flow 1 ingress (mean 331.78 Mbit/s)   —— Flow 1 egress (mean 331.75 Mbit/s)
- - - Flow 2 ingress (mean 82.07 Mbit/s)   —— Flow 2 egress (mean 81.59 Mbit/s)
- - - Flow 3 ingress (mean 168.43 Mbit/s)   —— Flow 3 egress (mean 167.57 Mbit/s)

- Flow 1 (95th percentile 132.60 ms)   • Flow 2 (95th percentile 63.38 ms)   • Flow 3 (95th percentile 74.81 ms)

```
Run 2: Statistics of PCC-Vivace

Start at: 2019-05-30 09:17:18
End at: 2019-05-30 09:17:48
Local clock offset: -0.33 ms
Remote clock offset: 0.209 ms


# Below is generated by plot.py at 2019-05-30 14:26:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 437.38 Mbit/s
95th percentile per-packet one-way delay: 82.844 ms
Loss rate: 0.70%
-- Flow 1:
Average throughput: 228.74 Mbit/s
95th percentile per-packet one-way delay: 107.540 ms
Loss rate: 0.48%
-- Flow 2:
Average throughput: 237.78 Mbit/s
95th percentile per-packet one-way delay: 74.115 ms
Loss rate: 0.58%
-- Flow 3:
Average throughput: 155.38 Mbit/s
95th percentile per-packet one-way delay: 71.619 ms
Loss rate: 2.02%
```
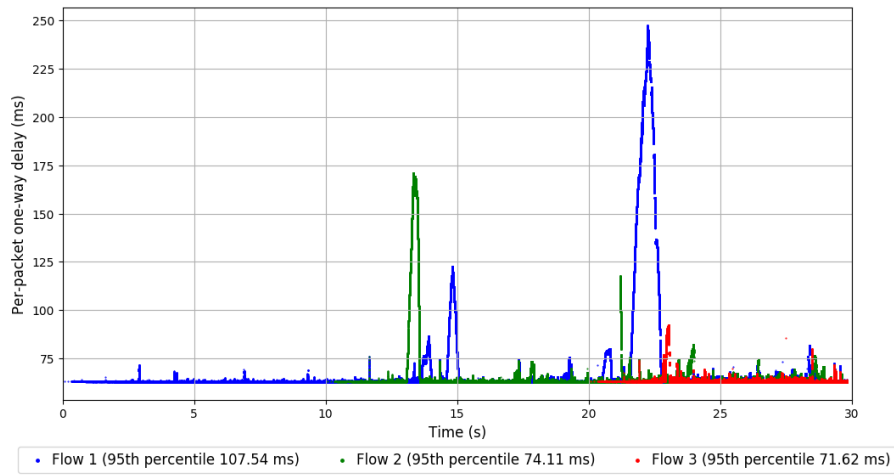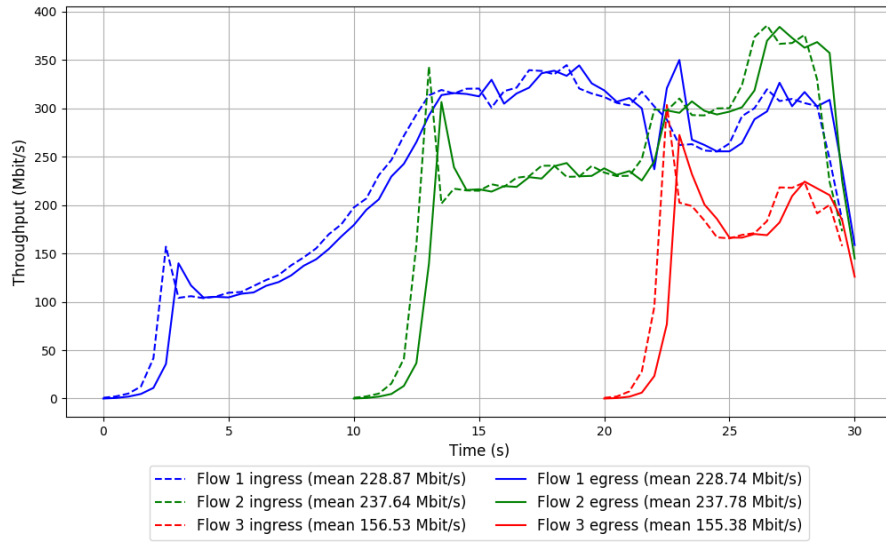
Run 2: Report of PCC-Vivace — Data Link

```
Run 3: Statistics of PCC-Vivace

Start at: 2019-05-30 09:53:09
End at: 2019-05-30 09:53:39
Local clock offset: -0.238 ms
Remote clock offset: 0.118 ms


# Below is generated by plot.py at 2019-05-30 14:26:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 293.65 Mbit/s
95th percentile per-packet one-way delay: 70.259 ms
Loss rate: 0.82%
-- Flow 1:
Average throughput: 238.14 Mbit/s
95th percentile per-packet one-way delay: 74.526 ms
Loss rate: 0.58%
-- Flow 2:
Average throughput: 39.59 Mbit/s
95th percentile per-packet one-way delay: 63.214 ms
Loss rate: 1.92%
-- Flow 3:
Average throughput: 89.33 Mbit/s
95th percentile per-packet one-way delay: 63.327 ms
Loss rate: 1.82%
```
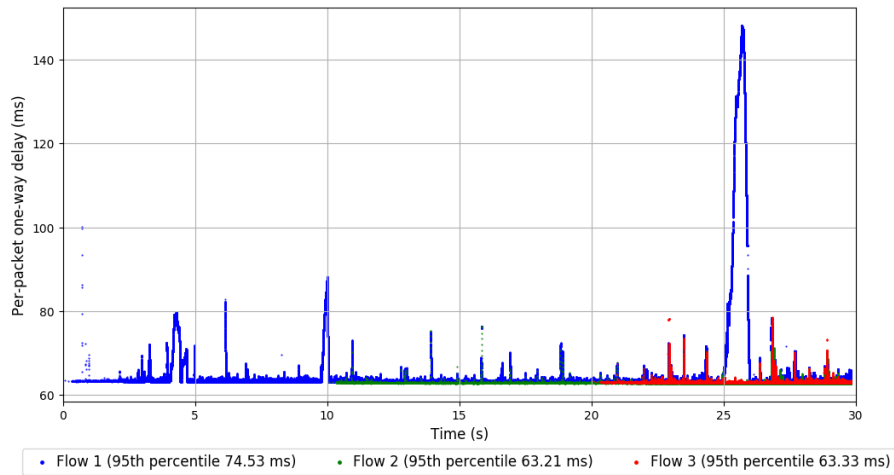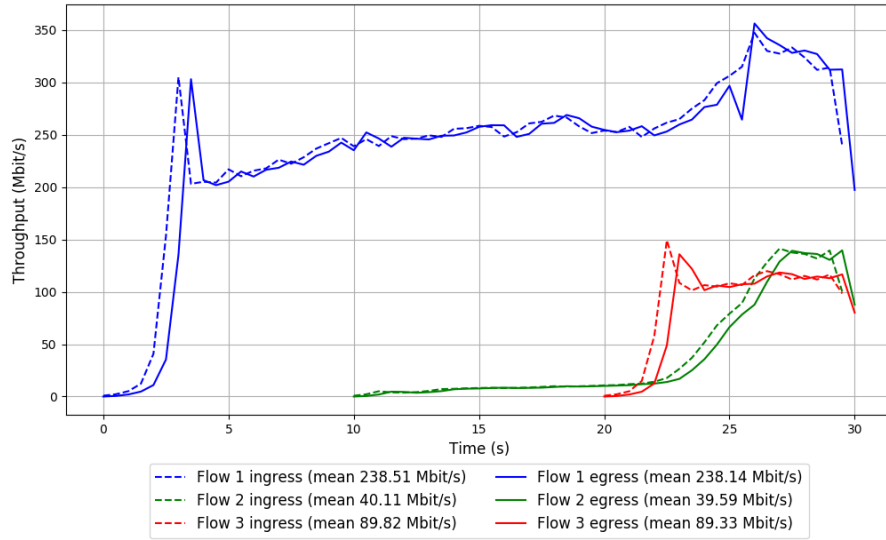
Run 3: Report of PCC-Vivace — Data Link

Flow 1 ingress (mean 238.51 Mbit/s) --- Flow 1 egress (mean 238.14 Mbit/s)
Flow 2 ingress (mean 40.11 Mbit/s) --- Flow 2 egress (mean 39.59 Mbit/s)
Flow 3 ingress (mean 89.82 Mbit/s) --- Flow 3 egress (mean 89.33 Mbit/s)

Flow 1 (95th percentile 74.53 ms) • Flow 2 (95th percentile 63.21 ms) • Flow 3 (95th percentile 63.33 ms)

```
Run 4: Statistics of PCC-Vivace

Start at: 2019-05-30 10:29:16
End at: 2019-05-30 10:29:46
Local clock offset: -0.24 ms
Remote clock offset: 0.177 ms


# Below is generated by plot.py at 2019-05-30 14:26:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 431.18 Mbit/s
95th percentile per-packet one-way delay: 234.448 ms
Loss rate: 1.91%
-- Flow 1:
Average throughput: 219.91 Mbit/s
95th percentile per-packet one-way delay: 220.559 ms
Loss rate: 0.64%
-- Flow 2:
Average throughput: 297.68 Mbit/s
95th percentile per-packet one-way delay: 248.467 ms
Loss rate: 3.10%
-- Flow 3:
Average throughput: 41.93 Mbit/s
95th percentile per-packet one-way delay: 63.770 ms
Loss rate: 4.56%
```
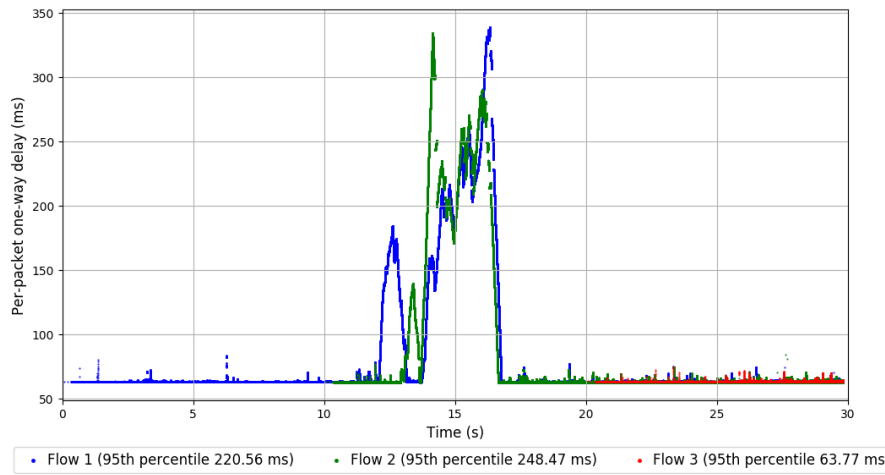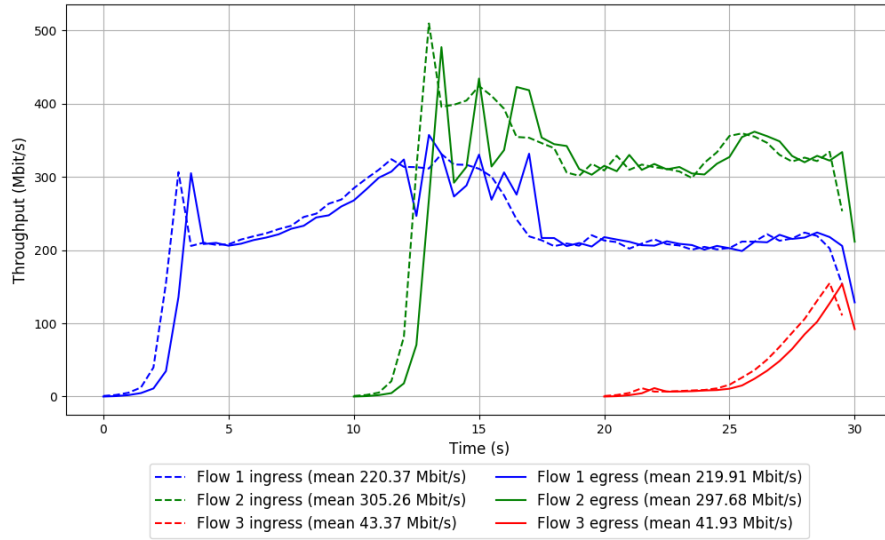
Run 4: Report of PCC-Vivace — Data Link

Flow 1 ingress (mean 220.37 Mbit/s) --- Flow 1 egress (mean 219.91 Mbit/s)
Flow 2 ingress (mean 305.26 Mbit/s) --- Flow 2 egress (mean 297.68 Mbit/s)
Flow 3 ingress (mean 43.37 Mbit/s) --- Flow 3 egress (mean 41.93 Mbit/s)

Flow 1 (95th percentile 220.56 ms) • Flow 2 (95th percentile 248.47 ms) • Flow 3 (95th percentile 63.77 ms)

```
Run 5: Statistics of PCC-Vivace

Start at: 2019-05-30 11:05:39
End at: 2019-05-30 11:06:09
Local clock offset: 0.036 ms
Remote clock offset: -0.23 ms


# Below is generated by plot.py at 2019-05-30 14:27:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 453.71 Mbit/s
95th percentile per-packet one-way delay: 181.893 ms
Loss rate: 0.88%
-- Flow 1:
Average throughput: 280.05 Mbit/s
95th percentile per-packet one-way delay: 212.768 ms
Loss rate: 0.75%
-- Flow 2:
Average throughput: 186.48 Mbit/s
95th percentile per-packet one-way delay: 67.322 ms
Loss rate: 0.87%
-- Flow 3:
Average throughput: 152.60 Mbit/s
95th percentile per-packet one-way delay: 65.023 ms
Loss rate: 1.64%
```
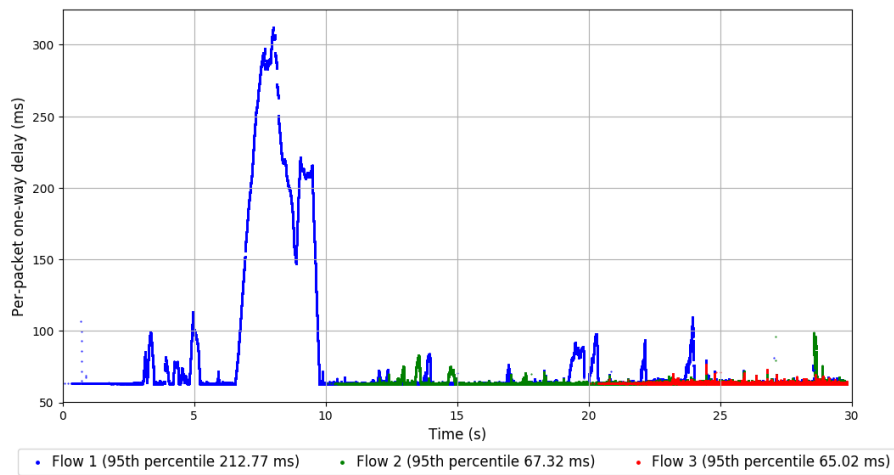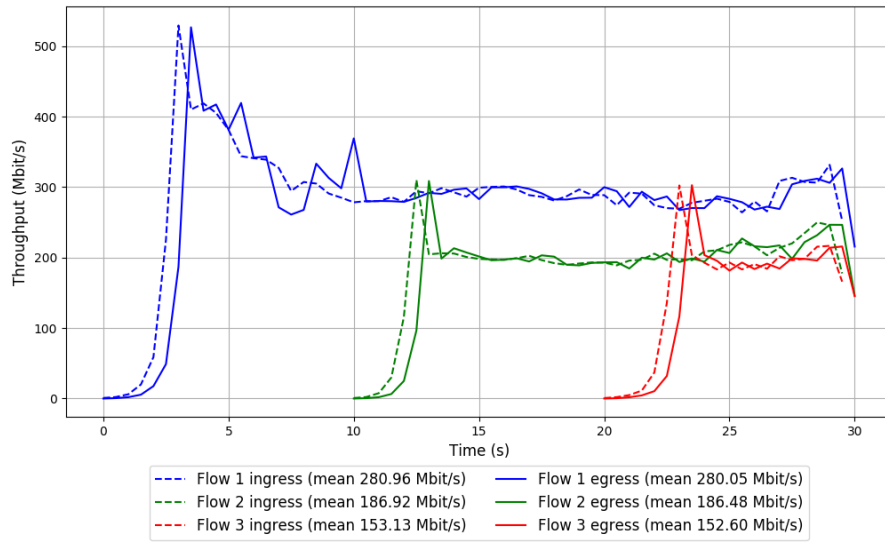
Run 5: Report of PCC-Vivace — Data Link

```
Run 1: Statistics of WebRTC media

Start at: 2019-05-30 08:54:22
End at: 2019-05-30 08:54:52
Local clock offset: -0.24 ms
Remote clock offset: 0.205 ms


# Below is generated by plot.py at 2019-05-30 14:27:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 64.035 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 65.001 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 66.301 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 63.425 ms
Loss rate: 0.00%
```
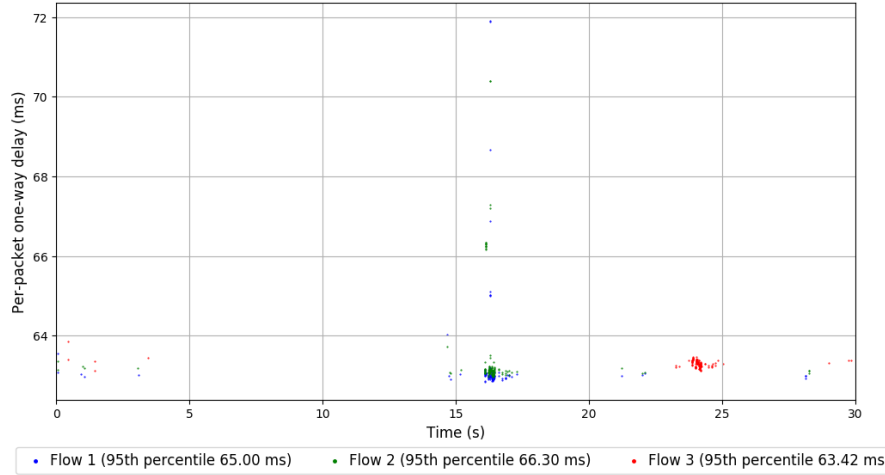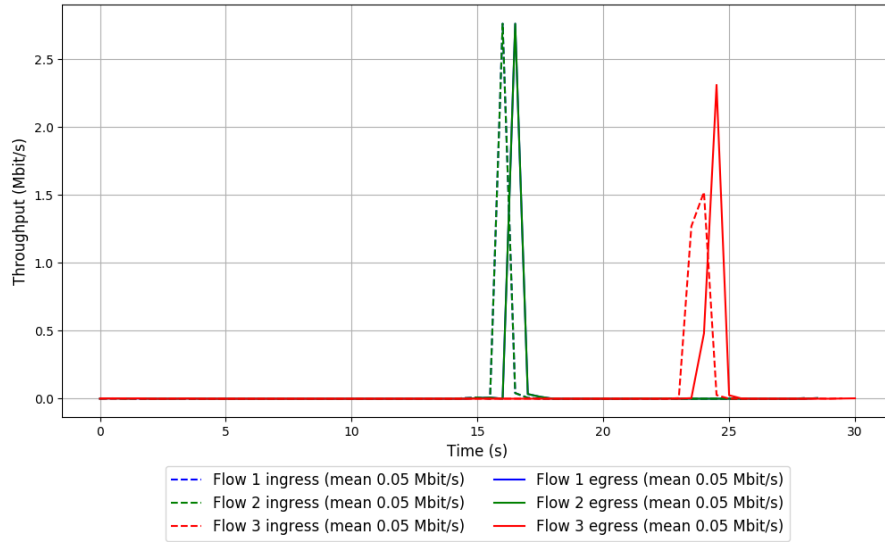
Run 1: Report of WebRTC media — Data Link

```
Run 2: Statistics of WebRTC media

Start at: 2019-05-30 09:30:15
End at: 2019-05-30 09:30:45
Local clock offset: -0.33 ms
Remote clock offset: 0.196 ms


# Below is generated by plot.py at 2019-05-30 14:27:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 63.432 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 63.156 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 63.460 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 63.407 ms
Loss rate: 0.00%
```
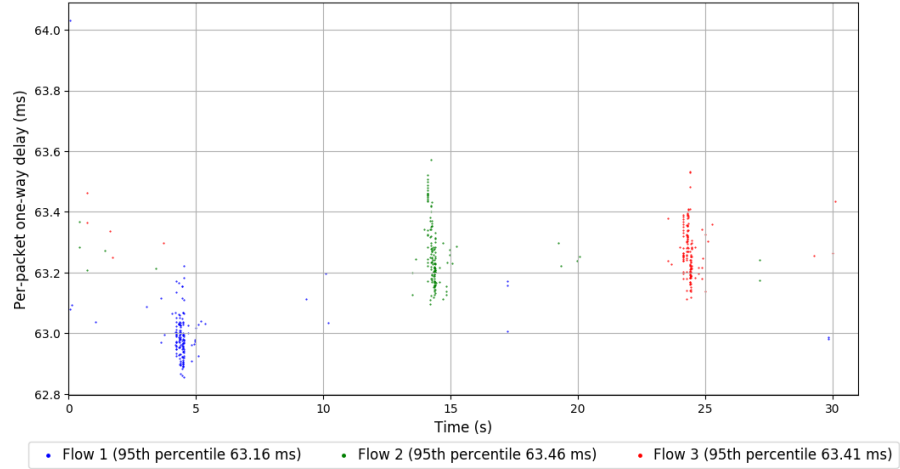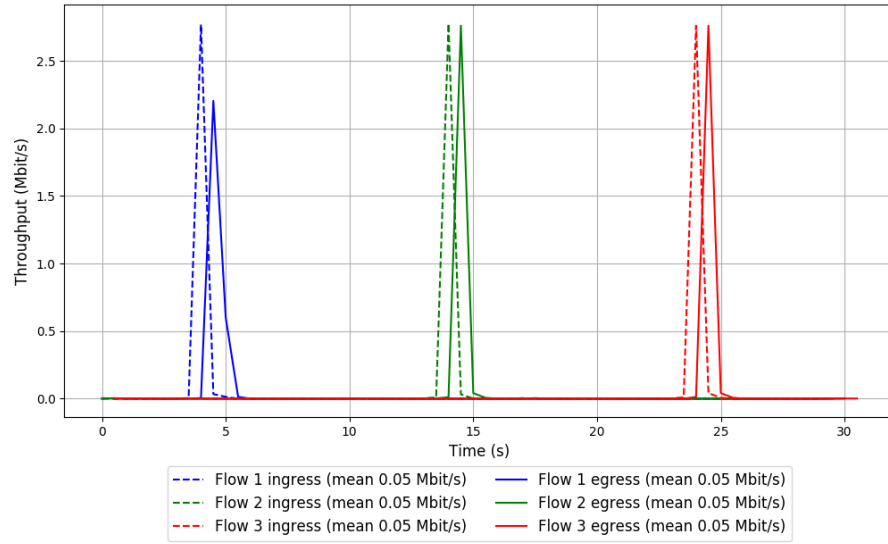
Run 2: Report of WebRTC media — Data Link

```
Run 3: Statistics of WebRTC media

Start at: 2019-05-30 10:06:10
End at: 2019-05-30 10:06:40
Local clock offset: -0.219 ms
Remote clock offset: 0.213 ms


# Below is generated by plot.py at 2019-05-30 14:27:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 63.635 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 63.131 ms
Loss rate: 0.05%
-- Flow 2:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 63.024 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 63.717 ms
Loss rate: 0.00%
```
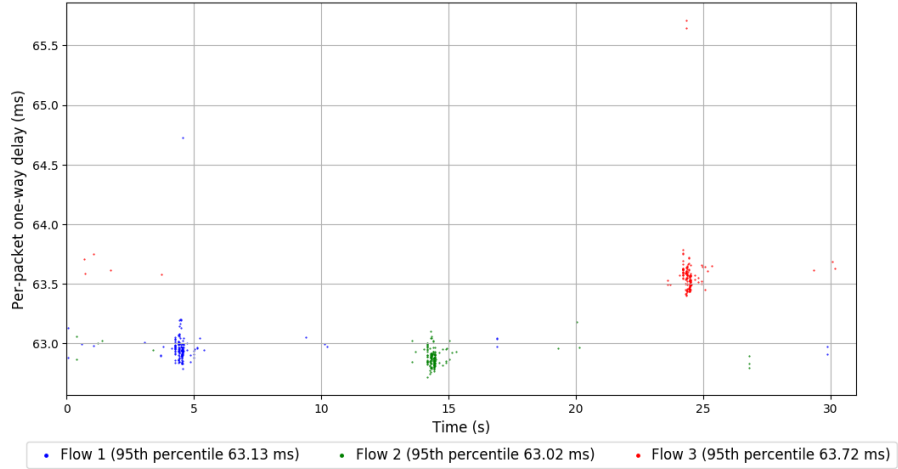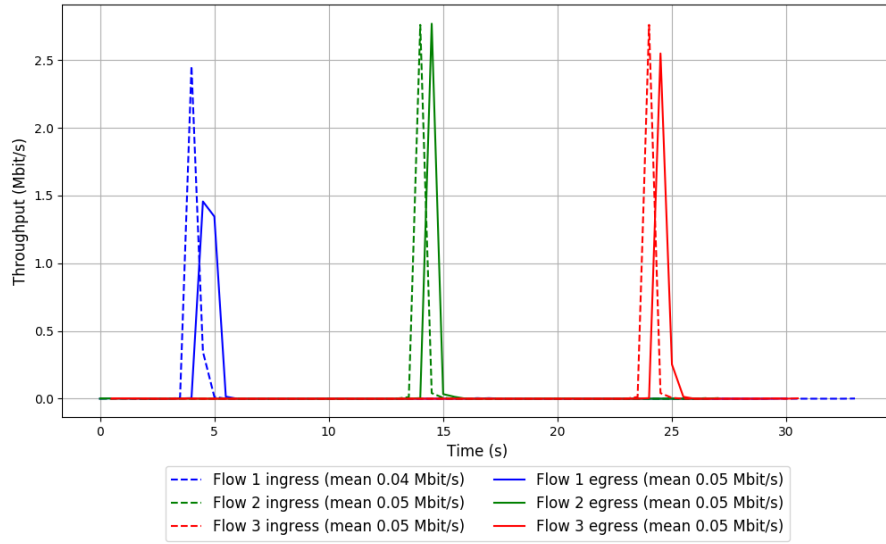
Run 3: Report of WebRTC media — Data Link

```
Run 4: Statistics of WebRTC media

Start at: 2019-05-30 10:42:25
End at: 2019-05-30 10:42:55
Local clock offset: -0.181 ms
Remote clock offset: 0.22 ms


# Below is generated by plot.py at 2019-05-30 14:27:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 63.403 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 63.131 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 64.440 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 63.312 ms
Loss rate: 0.00%
```
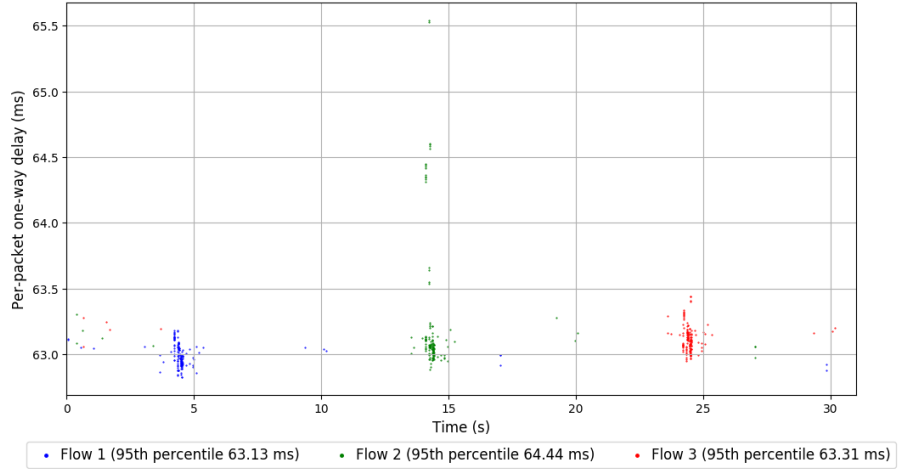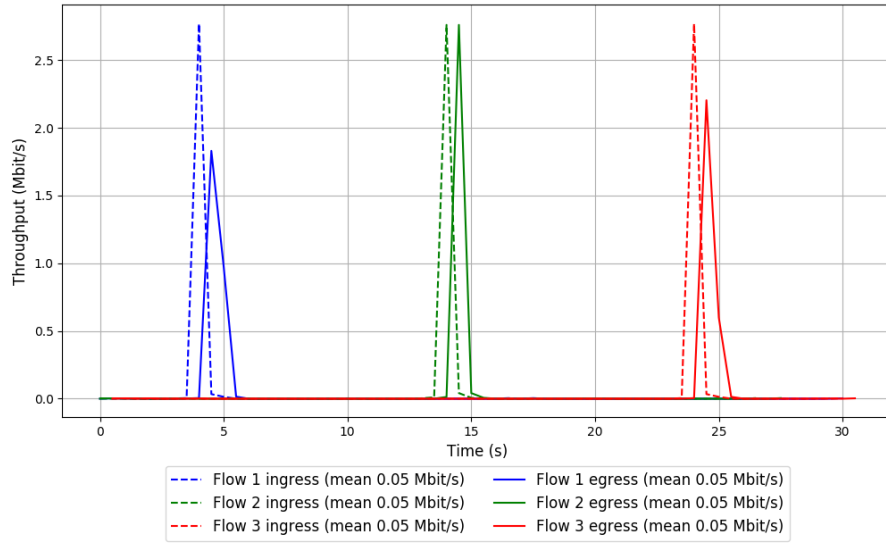
Run 4: Report of WebRTC media — Data Link

```
Run 5: Statistics of WebRTC media

Start at: 2019-05-30 11:18:51
End at: 2019-05-30 11:19:21
Local clock offset: 0.053 ms
Remote clock offset: -0.194 ms


# Below is generated by plot.py at 2019-05-30 14:27:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 63.602 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 63.410 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 63.665 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 63.414 ms
Loss rate: 0.00%
```

Run 5: Report of WebRTC media — Data Link