Pantheon Report

Generated at 2019-06-28 04:06:52 (UTC).

Data path: AWS California 1 on **ens5** (*local*) →Stanford on **eno1** (*remote*).

Repeated the test of 22 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.stanford.edu` and have been applied to correct the timestamps in logs.
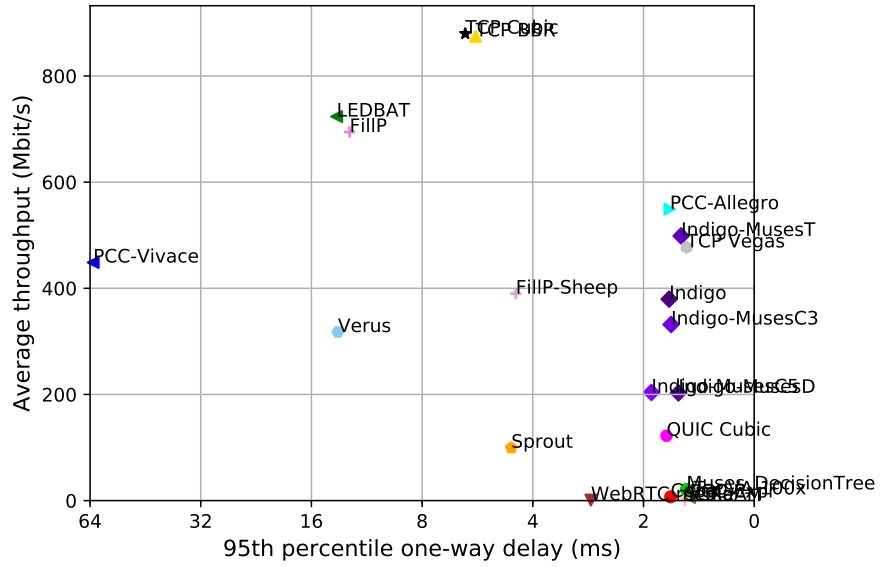
```
System info:
Linux 4.15.0-1039-aws
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912

Git summary:
branch: muses @ c3953d08f32ec7ebbdede2d2f0cbdeed262571ef
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/muses_dtree @ 11c9498ecb1596b02ccd896791a02d03172af7ed
 M helpers/__init__.pyc
 M helpers/context.pyc
 M helpers/utils.pyc
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
```
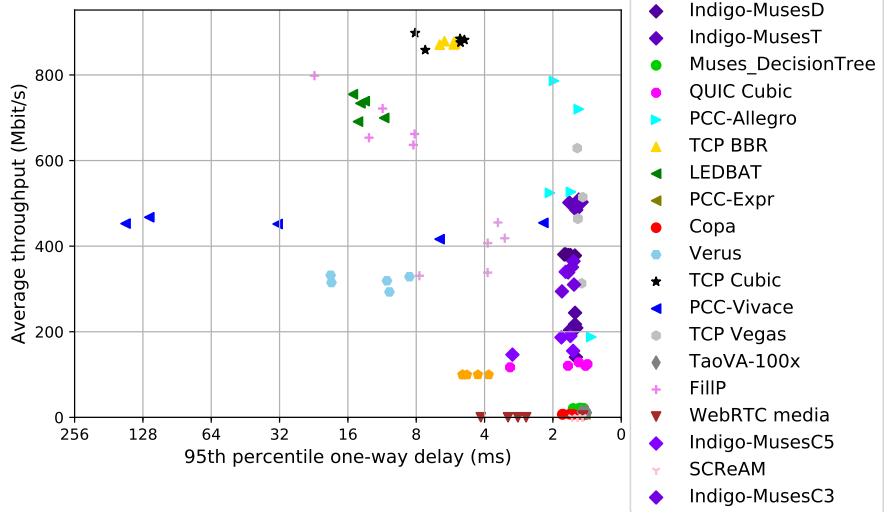
```
 M src/network/sproutconn.cc
third_party/verus @ d4b447ea74c6c60a261149af2629562939f9a494
 M src/verus.hpp
 M tools/plot.py
third_party/vivace @ 2baf86211435ae071a32f96b7d8c504587f5d7f4
third_party/webrtc @ 3f0cc2a9061a41b6f9dde4735770d143a1fa2851
```

test from AWS California 1 to Stanford, 5 runs of 30s each per scheme
3 flows with 10s interval between flows (mean of all runs by scheme)

test from AWS California 1 to Stanford, 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	493.97	413.25	316.77	5.45	5.81	4.27	4.82	7.92	11.31
Copa	5	0.00	7.67	6.92	1.22	1.52	1.51	97.60	51.08	53.95
TCP Cubic	5	515.33	391.19	312.15	6.61	2.89	3.89	0.06	0.06	0.09
FillP	5	502.98	212.79	151.02	13.52	6.21	4.23	7.75	9.81	11.85
FillP-Sheep	5	322.26	86.04	32.07	4.77	2.14	2.87	2.16	1.06	3.17
Indigo	5	196.04	187.89	183.00	1.39	1.51	1.88	0.00	0.00	0.00
Indigo-MusesC3	5	148.11	178.50	232.18	1.27	1.78	1.55	0.00	0.00	0.00
Indigo-MusesC5	5	106.86	89.27	131.94	1.30	2.27	1.71	0.02	0.02	0.01
Indigo-MusesD	5	121.09	87.94	84.97	1.38	1.30	1.40	0.00	0.00	0.00
Indigo-MusesT	5	285.14	242.01	200.38	1.28	1.33	1.49	0.00	0.01	0.01
LEDBAT	5	421.04	316.27	299.05	15.15	9.04	7.75	0.10	0.22	0.30
Muses_DecisionTree	5	10.44	10.89	10.77	1.23	1.24	1.17	0.00	0.00	0.01
PCC-Allegro	5	284.75	339.61	116.65	1.32	1.41	1.23	0.01	0.03	0.03
PCC-Expr	5	0.79	5.81	6.04	1.14	1.18	1.12	85.71	16.91	16.37
QUIC Cubic	5	65.46	61.24	48.85	1.58	1.75	1.90	0.00	0.00	0.00
SCReAM	5	0.22	0.22	0.22	1.25	1.24	1.27	0.00	0.00	0.00
Sprout	5	49.98	49.94	49.51	4.49	4.62	4.62	0.02	0.05	0.14
TaoVA-100x	5	6.41	7.27	2.13	1.12	1.07	0.99	46.62	68.17	79.64
TCP Vegas	5	217.41	217.27	345.45	1.22	1.22	1.47	0.00	0.01	0.00
Verus	5	176.92	143.75	137.50	8.96	26.68	19.68	1.45	3.01	3.57
PCC-Vivace	5	231.08	250.60	153.88	10.06	89.56	27.01	0.13	0.91	1.05
WebRTC media	5	0.47	0.33	0.16	2.46	2.32	3.58	0.01	0.01	0.00

```
Run 1: Statistics of TCP BBR

Start at: 2019-06-28 00:29:32
End at: 2019-06-28 00:30:02
Local clock offset: 0.334 ms
Remote clock offset: -1.647 ms


# Below is generated by plot.py at 2019-06-28 03:20:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 878.16 Mbit/s
95th percentile per-packet one-way delay: 5.435 ms
Loss rate: 6.97%
-- Flow 1:
Average throughput: 486.46 Mbit/s
95th percentile per-packet one-way delay: 5.049 ms
Loss rate: 4.96%
-- Flow 2:
Average throughput: 323.97 Mbit/s
95th percentile per-packet one-way delay: 4.184 ms
Loss rate: 12.00%
-- Flow 3:
Average throughput: 529.19 Mbit/s
95th percentile per-packet one-way delay: 6.369 ms
Loss rate: 5.86%
```
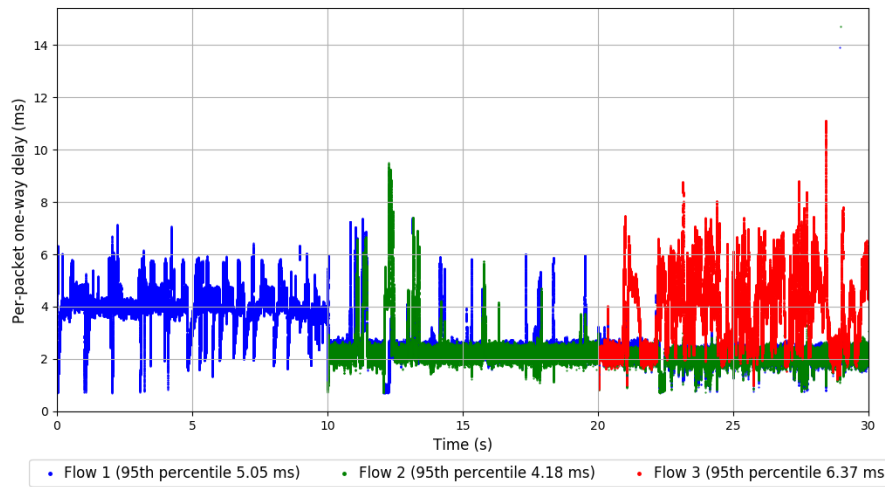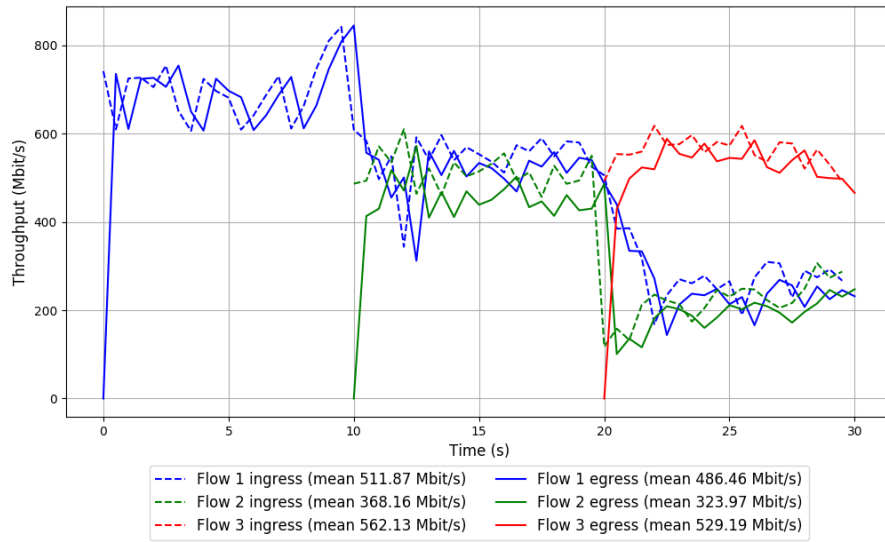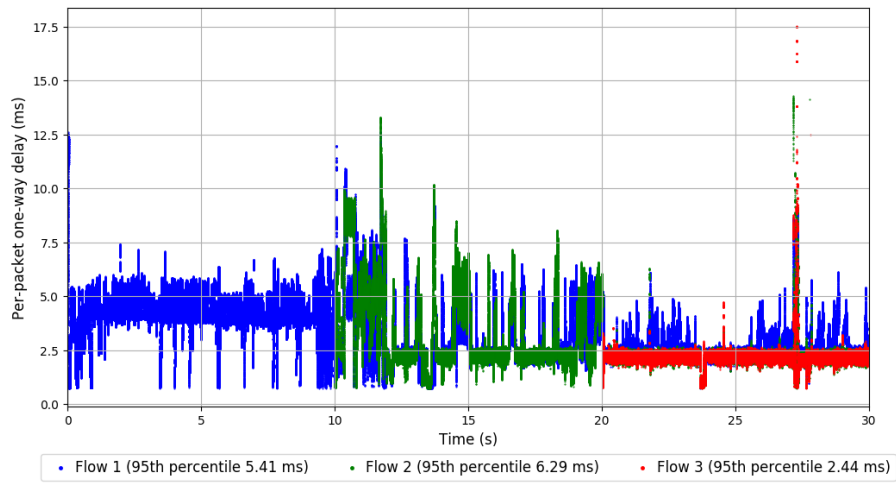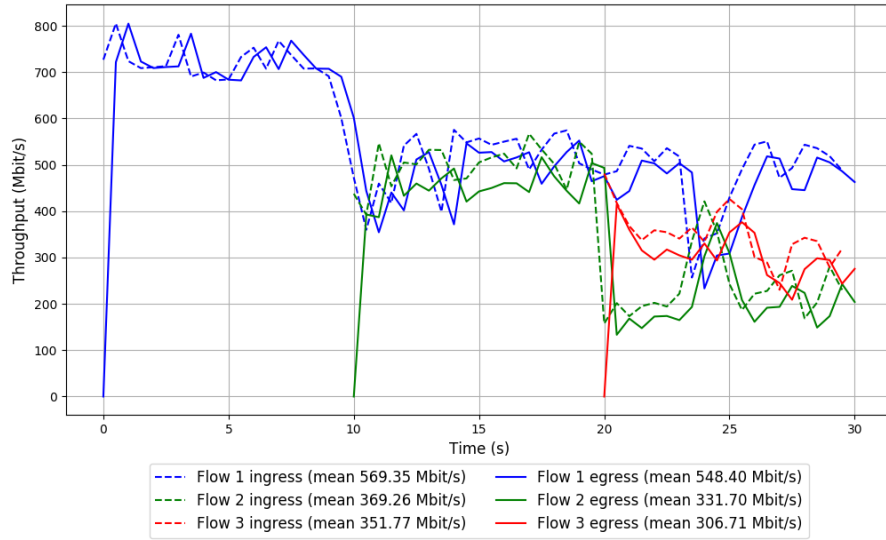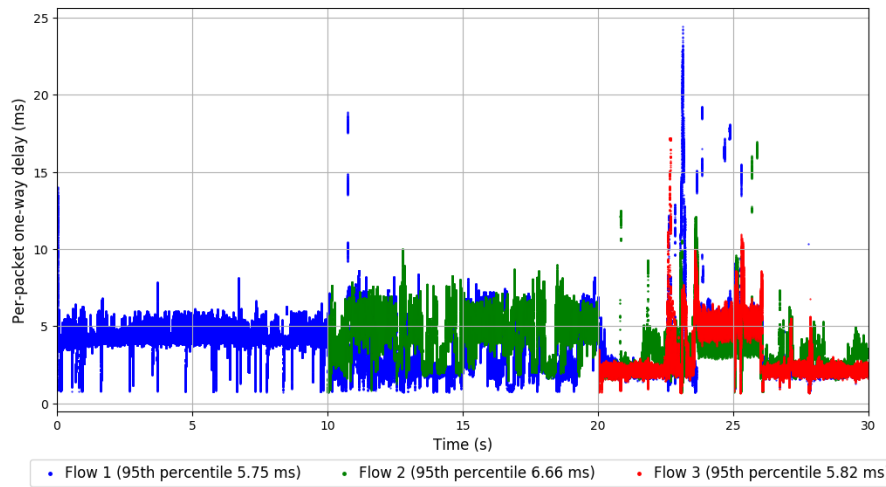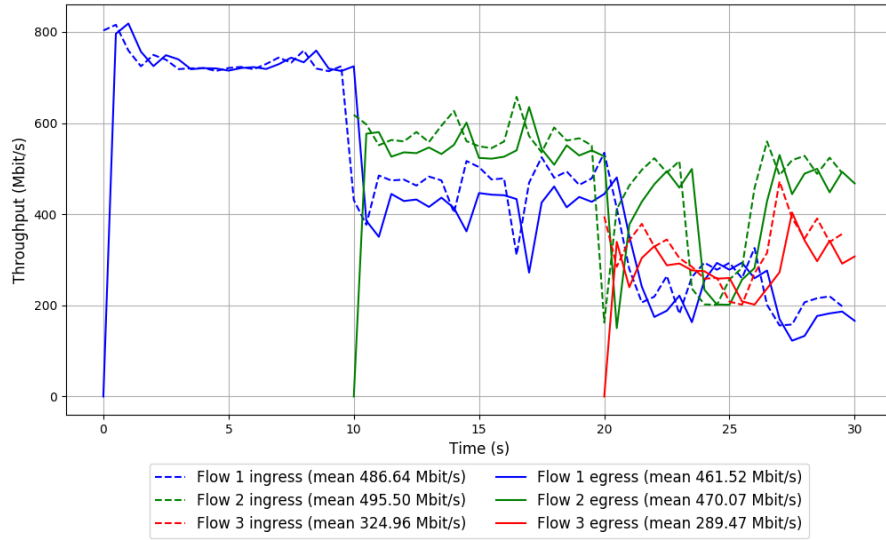
Run 1: Report of TCP BBR — Data Link

Flow 1 ingress (mean 511.87 Mbit/s) --- Flow 1 egress (mean 486.46 Mbit/s)
Flow 2 ingress (mean 368.16 Mbit/s) --- Flow 2 egress (mean 323.97 Mbit/s)
Flow 3 ingress (mean 562.13 Mbit/s) --- Flow 3 egress (mean 529.19 Mbit/s)

Flow 1 (95th percentile 5.05 ms)   Flow 2 (95th percentile 4.18 ms)   Flow 3 (95th percentile 6.37 ms)

```
Run 2: Statistics of TCP BBR

Start at: 2019-06-28 01:01:24
End at: 2019-06-28 01:01:54
Local clock offset: -0.687 ms
Remote clock offset: -2.723 ms


# Below is generated by plot.py at 2019-06-28 03:20:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 871.30 Mbit/s
95th percentile per-packet one-way delay: 5.467 ms
Loss rate: 6.53%
-- Flow 1:
Average throughput: 548.40 Mbit/s
95th percentile per-packet one-way delay: 5.408 ms
Loss rate: 3.68%
-- Flow 2:
Average throughput: 331.70 Mbit/s
95th percentile per-packet one-way delay: 6.294 ms
Loss rate: 10.16%
-- Flow 3:
Average throughput: 306.71 Mbit/s
95th percentile per-packet one-way delay: 2.444 ms
Loss rate: 12.81%
```
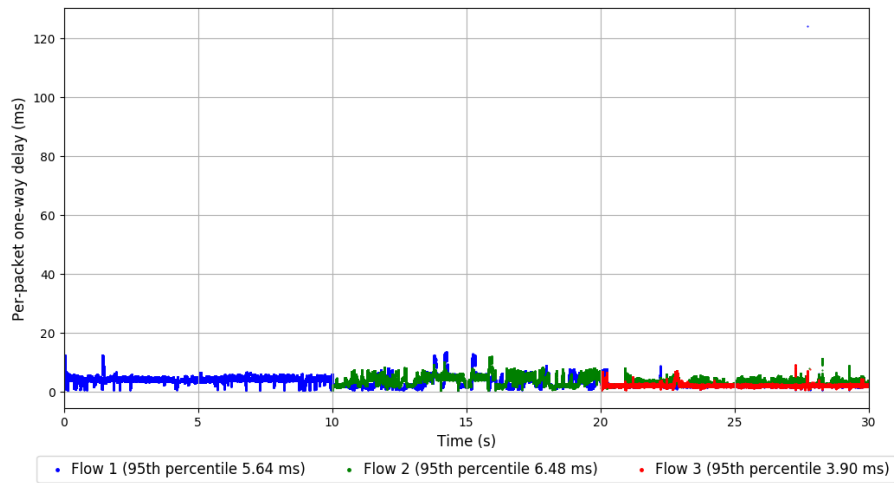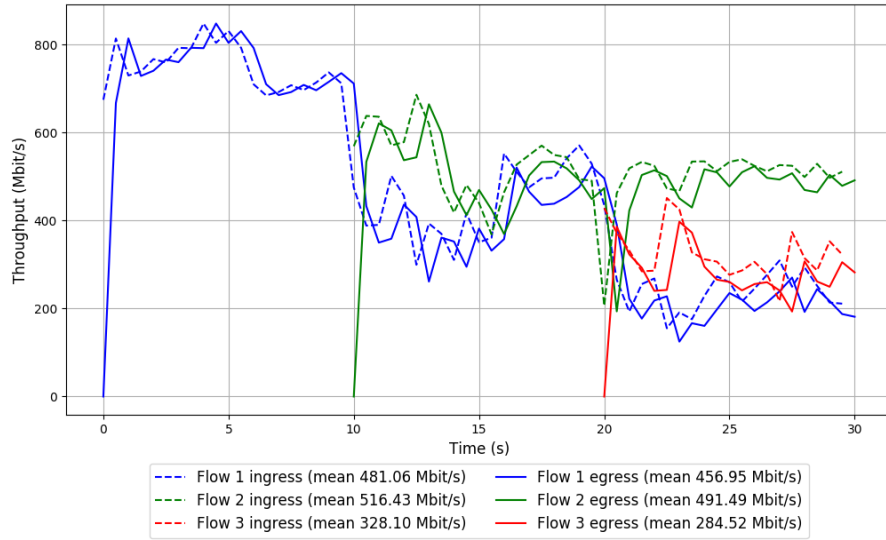
Run 2: Report of TCP BBR — Data Link

```
Run 3: Statistics of TCP BBR

Start at: 2019-06-28 01:33:11
End at: 2019-06-28 01:33:41
Local clock offset: 0.189 ms
Remote clock offset: -1.153 ms


# Below is generated by plot.py at 2019-06-28 03:20:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 870.83 Mbit/s
95th percentile per-packet one-way delay: 6.306 ms
Loss rate: 5.82%
-- Flow 1:
Average throughput: 461.52 Mbit/s
95th percentile per-packet one-way delay: 5.755 ms
Loss rate: 5.16%
-- Flow 2:
Average throughput: 470.07 Mbit/s
95th percentile per-packet one-way delay: 6.655 ms
Loss rate: 5.12%
-- Flow 3:
Average throughput: 289.47 Mbit/s
95th percentile per-packet one-way delay: 5.817 ms
Loss rate: 10.91%
```
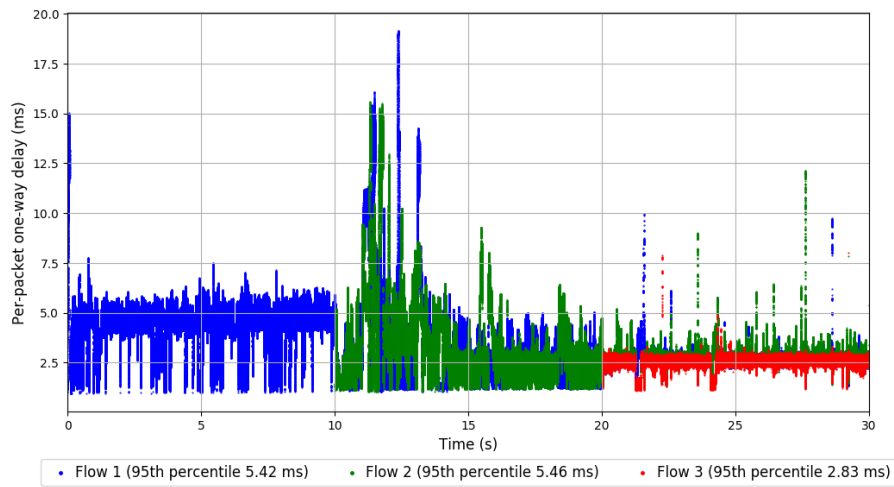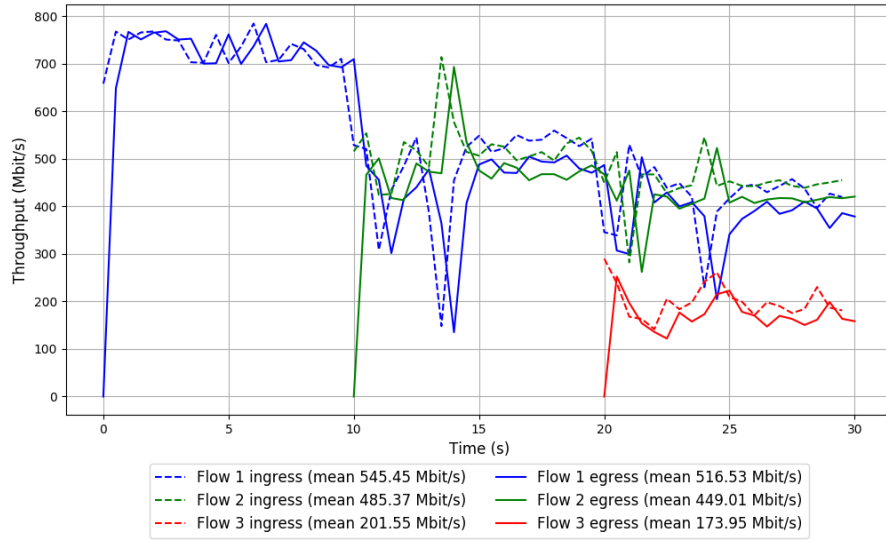
Run 3: Report of TCP BBR — Data Link

```
Run 4: Statistics of TCP BBR

Start at: 2019-06-28 02:04:50
End at: 2019-06-28 02:05:20
Local clock offset: 3.058 ms
Remote clock offset: 0.966 ms


# Below is generated by plot.py at 2019-06-28 03:20:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 878.95 Mbit/s
95th percentile per-packet one-way delay: 6.009 ms
Loss rate: 5.91%
-- Flow 1:
Average throughput: 456.95 Mbit/s
95th percentile per-packet one-way delay: 5.639 ms
Loss rate: 5.01%
-- Flow 2:
Average throughput: 491.49 Mbit/s
95th percentile per-packet one-way delay: 6.479 ms
Loss rate: 4.82%
-- Flow 3:
Average throughput: 284.52 Mbit/s
95th percentile per-packet one-way delay: 3.899 ms
Loss rate: 13.28%
```
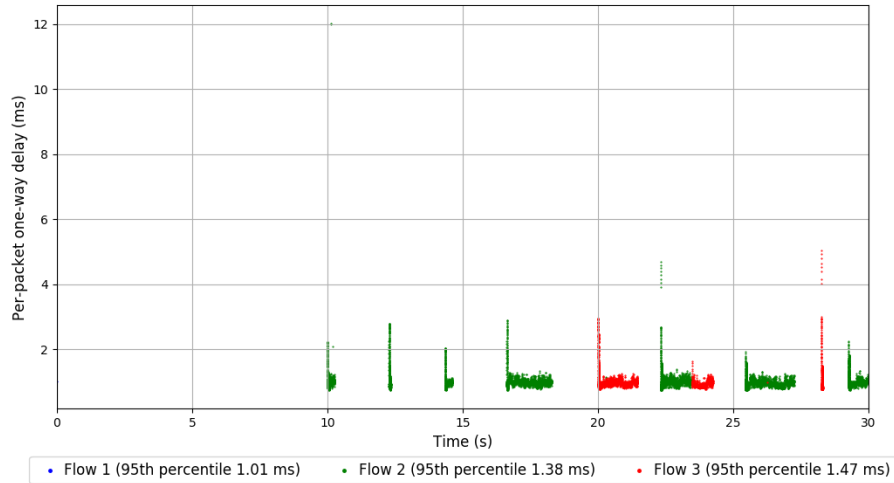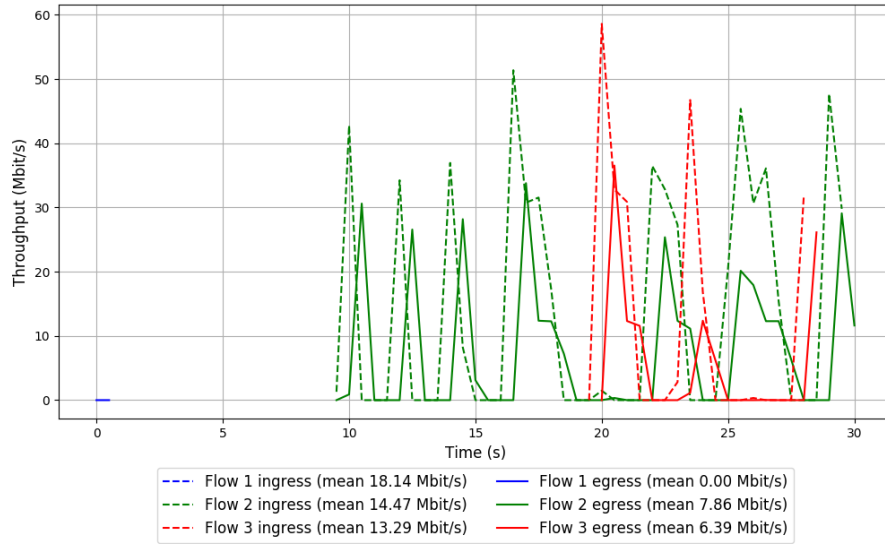
Run 4: Report of TCP BBR — Data Link

Flow 1 ingress (mean 481.06 Mbit/s) --- Flow 1 egress (mean 456.95 Mbit/s)
Flow 2 ingress (mean 516.43 Mbit/s) --- Flow 2 egress (mean 491.49 Mbit/s)
Flow 3 ingress (mean 328.10 Mbit/s) --- Flow 3 egress (mean 284.52 Mbit/s)

Flow 1 (95th percentile 5.64 ms)   Flow 2 (95th percentile 6.48 ms)   Flow 3 (95th percentile 3.90 ms)

```
Run 5: Statistics of TCP BBR

Start at: 2019-06-28 02:36:22
End at: 2019-06-28 02:36:53
Local clock offset: 3.626 ms
Remote clock offset: 1.107 ms


# Below is generated by plot.py at 2019-06-28 03:20:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 873.50 Mbit/s
95th percentile per-packet one-way delay: 5.381 ms
Loss rate: 6.65%
-- Flow 1:
Average throughput: 516.53 Mbit/s
95th percentile per-packet one-way delay: 5.415 ms
Loss rate: 5.29%
-- Flow 2:
Average throughput: 449.01 Mbit/s
95th percentile per-packet one-way delay: 5.461 ms
Loss rate: 7.48%
-- Flow 3:
Average throughput: 173.95 Mbit/s
95th percentile per-packet one-way delay: 2.826 ms
Loss rate: 13.69%
```
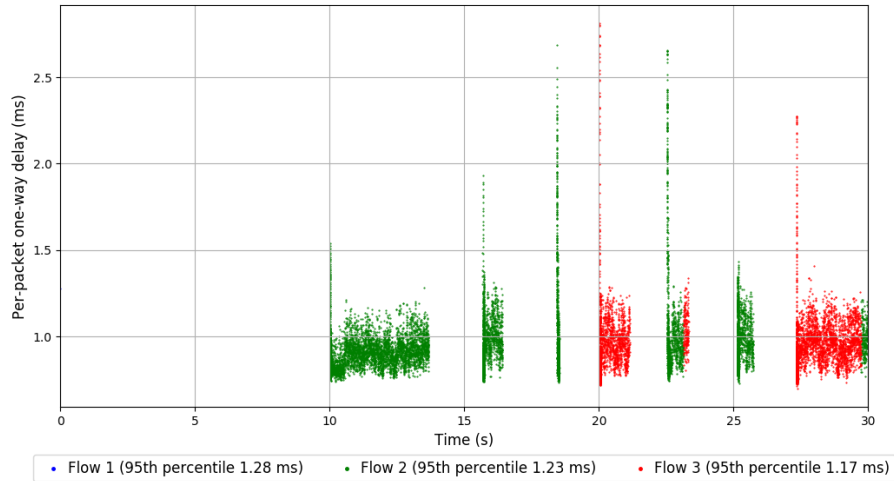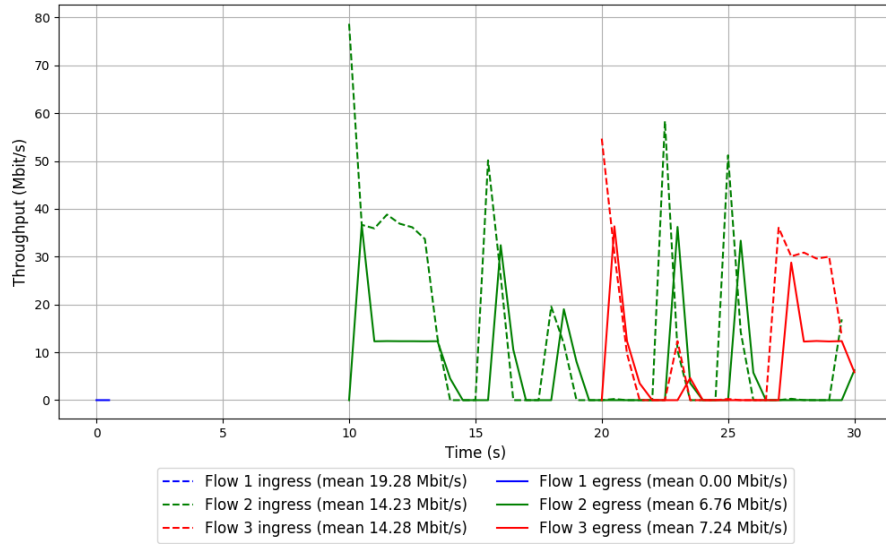
Run 5: Report of TCP BBR — Data Link

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```
Run 1: Statistics of Copa

Start at: 2019-06-28 00:34:03
End at: 2019-06-28 00:34:33
Local clock offset: -0.222 ms
Remote clock offset: -2.178 ms


# Below is generated by plot.py at 2019-06-28 03:20:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 7.01 Mbit/s
95th percentile per-packet one-way delay: 1.406 ms
Loss rate: 47.42%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 1.010 ms
Loss rate: 97.92%
-- Flow 2:
Average throughput: 7.86 Mbit/s
95th percentile per-packet one-way delay: 1.382 ms
Loss rate: 45.70%
-- Flow 3:
Average throughput: 6.39 Mbit/s
95th percentile per-packet one-way delay: 1.465 ms
Loss rate: 51.90%
```
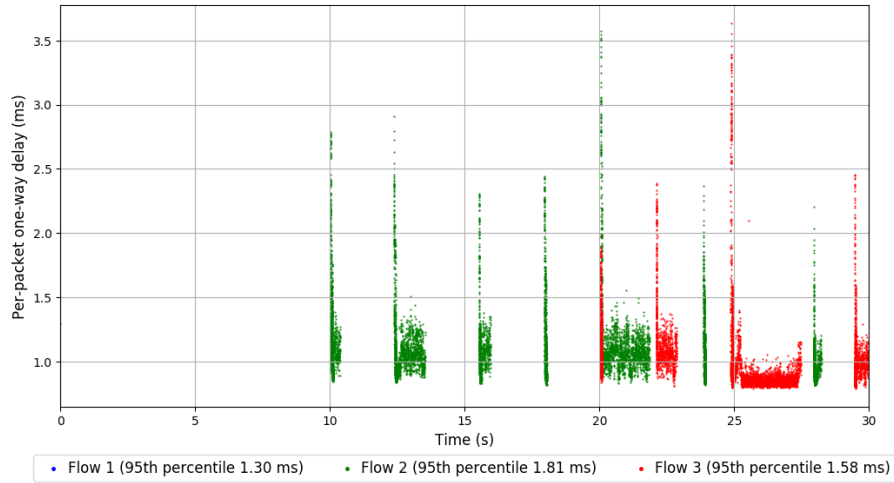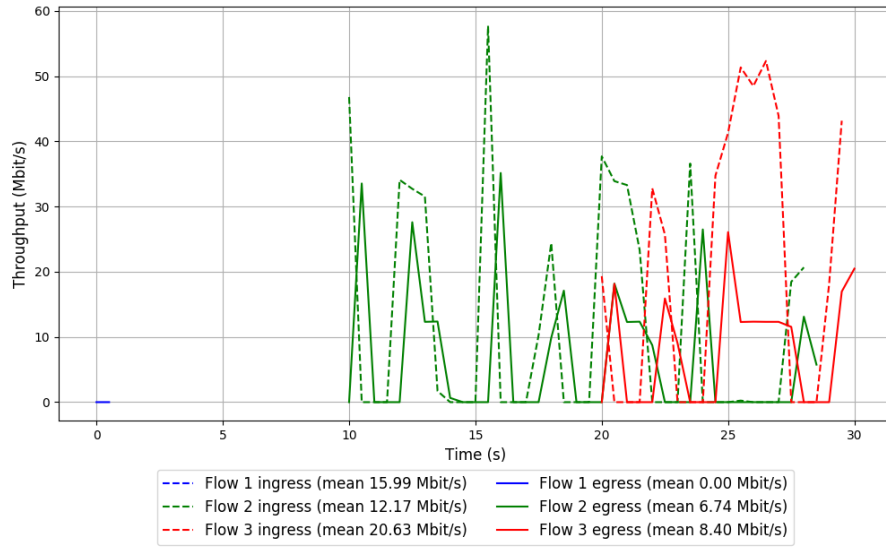
Run 1: Report of Copa — Data Link

Flow 1 ingress (mean 18.14 Mbit/s) --- Flow 1 egress (mean 0.00 Mbit/s)
Flow 2 ingress (mean 14.47 Mbit/s) --- Flow 2 egress (mean 7.86 Mbit/s)
Flow 3 ingress (mean 13.29 Mbit/s) --- Flow 3 egress (mean 6.39 Mbit/s)

Flow 1 (95th percentile 1.01 ms)   Flow 2 (95th percentile 1.38 ms)   Flow 3 (95th percentile 1.47 ms)

```
Run 2: Statistics of Copa

Start at: 2019-06-28 01:05:55
End at: 2019-06-28 01:06:25
Local clock offset: -0.749 ms
Remote clock offset: -2.634 ms


# Below is generated by plot.py at 2019-06-28 03:20:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 6.85 Mbit/s
95th percentile per-packet one-way delay: 1.202 ms
Loss rate: 51.46%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 1.278 ms
Loss rate: 98.33%
-- Flow 2:
Average throughput: 6.76 Mbit/s
95th percentile per-packet one-way delay: 1.225 ms
Loss rate: 52.49%
-- Flow 3:
Average throughput: 7.24 Mbit/s
95th percentile per-packet one-way delay: 1.172 ms
Loss rate: 49.34%
```
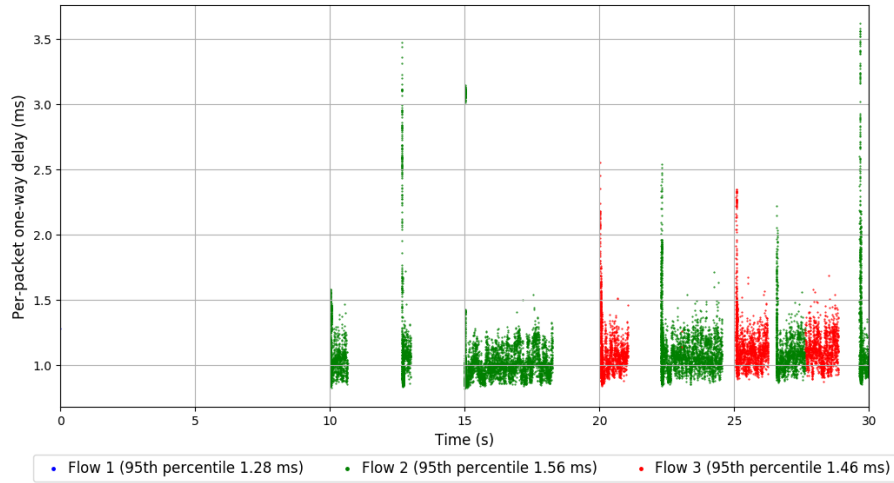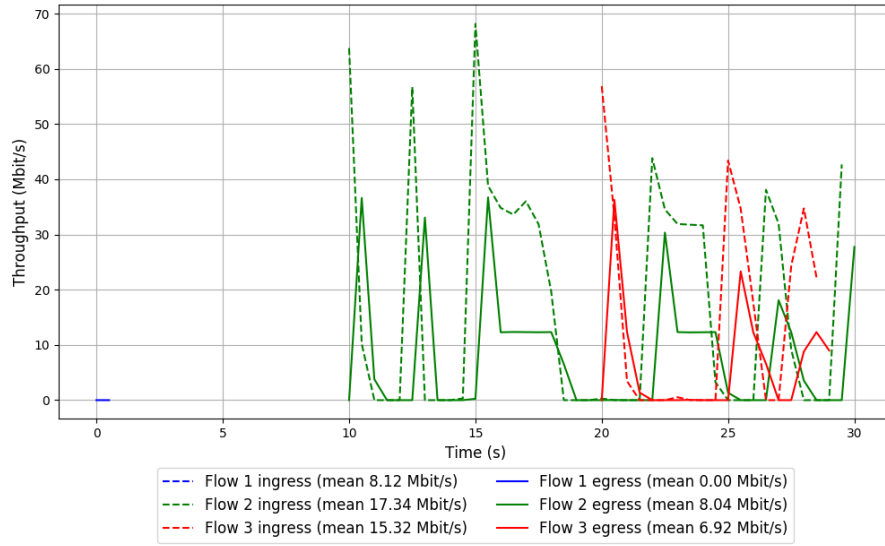
Run 2: Report of Copa — Data Link

```
Run 3: Statistics of Copa

Start at: 2019-06-28 01:37:38
End at: 2019-06-28 01:38:08
Local clock offset: 0.293 ms
Remote clock offset: -0.372 ms


# Below is generated by plot.py at 2019-06-28 03:20:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 6.89 Mbit/s
95th percentile per-packet one-way delay: 1.725 ms
Loss rate: 51.69%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 1.299 ms
Loss rate: 97.92%
-- Flow 2:
Average throughput: 6.74 Mbit/s
95th percentile per-packet one-way delay: 1.812 ms
Loss rate: 44.64%
-- Flow 3:
Average throughput: 8.40 Mbit/s
95th percentile per-packet one-way delay: 1.579 ms
Loss rate: 59.28%
```
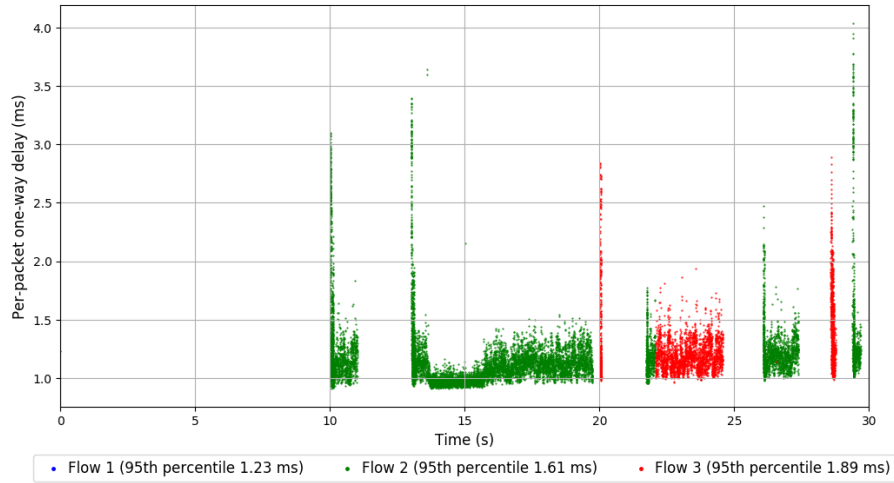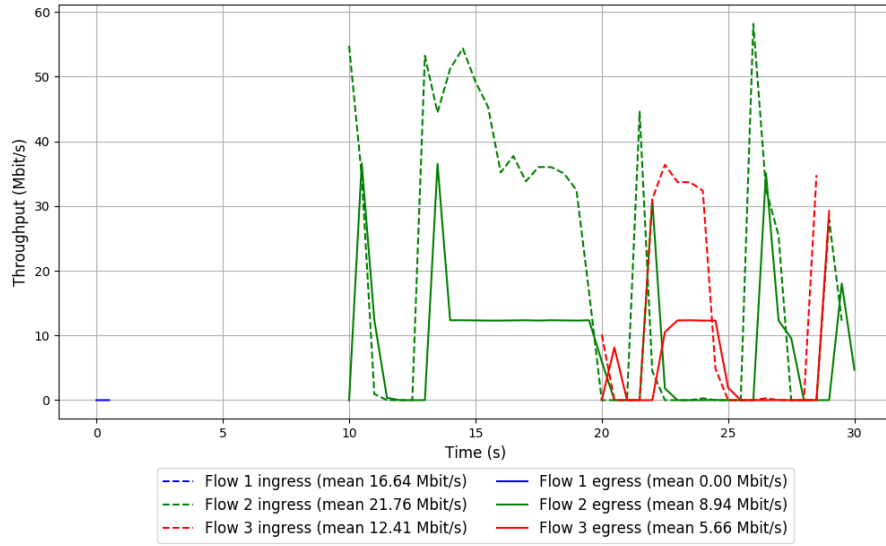
Run 3: Report of Copa — Data Link

```
Run 4: Statistics of Copa

Start at: 2019-06-28 02:09:21
End at: 2019-06-28 02:09:51
Local clock offset: 3.357 ms
Remote clock offset: 0.879 ms


# Below is generated by plot.py at 2019-06-28 03:20:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 7.39 Mbit/s
95th percentile per-packet one-way delay: 1.511 ms
Loss rate: 54.00%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 1.280 ms
Loss rate: 95.92%
-- Flow 2:
Average throughput: 8.04 Mbit/s
95th percentile per-packet one-way delay: 1.564 ms
Loss rate: 53.66%
-- Flow 3:
Average throughput: 6.92 Mbit/s
95th percentile per-packet one-way delay: 1.455 ms
Loss rate: 54.85%
```
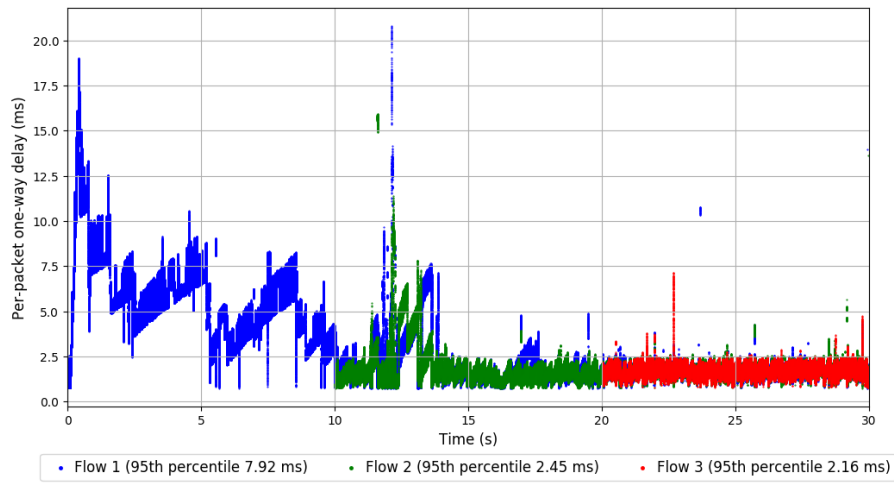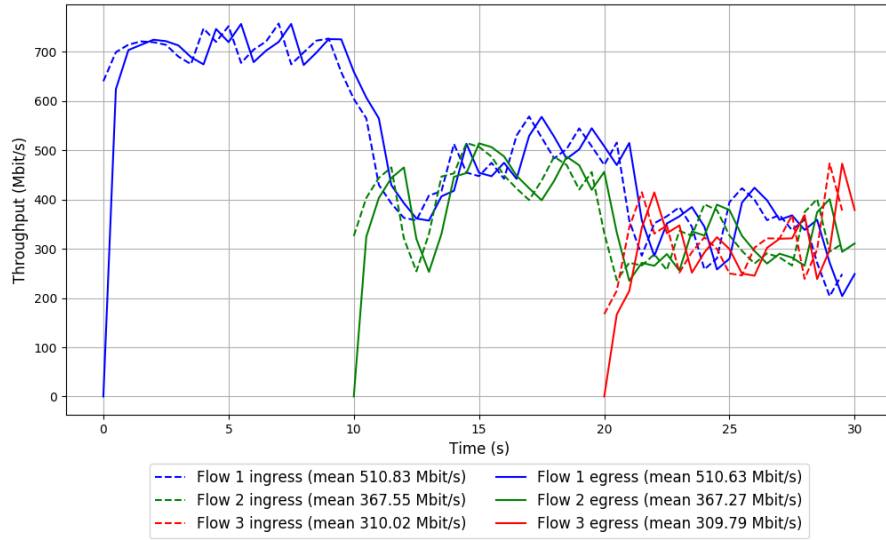
Run 4: Report of Copa — Data Link

Flow 1 ingress (mean 8.12 Mbit/s) --- Flow 1 egress (mean 0.00 Mbit/s)
Flow 2 ingress (mean 17.34 Mbit/s) --- Flow 2 egress (mean 8.04 Mbit/s)
Flow 3 ingress (mean 15.32 Mbit/s) --- Flow 3 egress (mean 6.92 Mbit/s)

Flow 1 (95th percentile 1.28 ms) • Flow 2 (95th percentile 1.56 ms) • Flow 3 (95th percentile 1.46 ms)

```
Run 5: Statistics of Copa

Start at: 2019-06-28 02:40:50
End at: 2019-06-28 02:41:20
Local clock offset: 3.774 ms
Remote clock offset: -0.624 ms


# Below is generated by plot.py at 2019-06-28 03:20:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 7.60 Mbit/s
95th percentile per-packet one-way delay: 1.708 ms
Loss rate: 57.99%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 1.229 ms
Loss rate: 97.92%
-- Flow 2:
Average throughput: 8.94 Mbit/s
95th percentile per-packet one-way delay: 1.610 ms
Loss rate: 58.90%
-- Flow 3:
Average throughput: 5.66 Mbit/s
95th percentile per-packet one-way delay: 1.887 ms
Loss rate: 54.39%
```
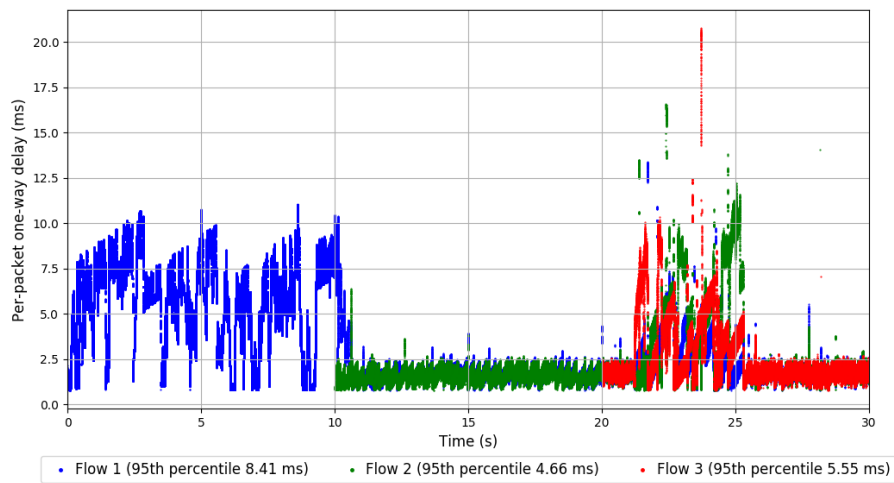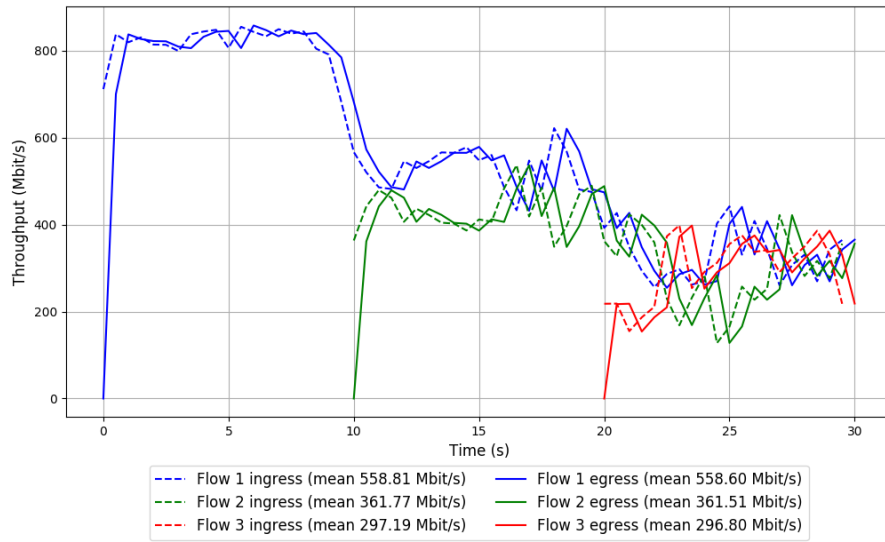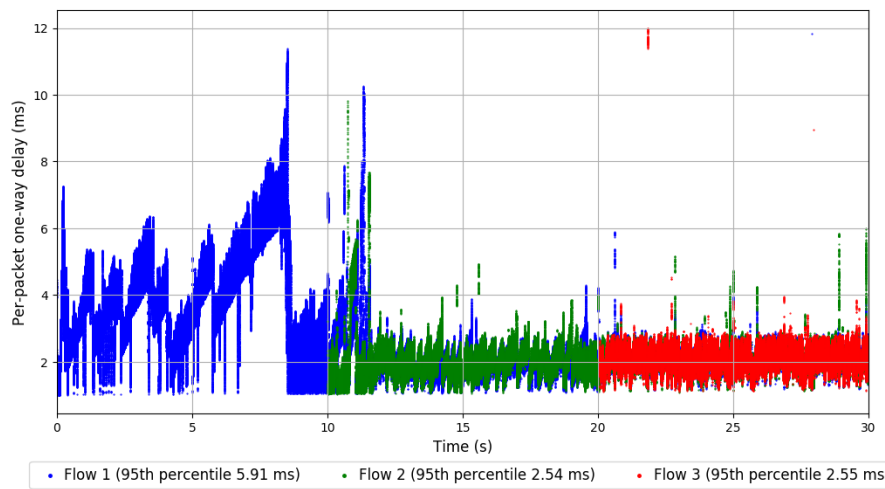
Run 5: Report of Copa — Data Link

Flow 1 ingress (mean 16.64 Mbit/s) --- Flow 1 egress (mean 0.00 Mbit/s)
Flow 2 ingress (mean 21.76 Mbit/s) --- Flow 2 egress (mean 8.94 Mbit/s)
Flow 3 ingress (mean 12.41 Mbit/s) --- Flow 3 egress (mean 5.66 Mbit/s)

Flow 1 (95th percentile 1.23 ms) Flow 2 (95th percentile 1.61 ms) Flow 3 (95th percentile 1.89 ms)

```
Run 1: Statistics of TCP Cubic

Start at: 2019-06-28 00:44:52
End at: 2019-06-28 00:45:22
Local clock offset: -1.13 ms
Remote clock offset: -2.801 ms


# Below is generated by plot.py at 2019-06-28 03:20:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 858.28 Mbit/s
95th percentile per-packet one-way delay: 7.299 ms
Loss rate: 0.05%
-- Flow 1:
Average throughput: 510.63 Mbit/s
95th percentile per-packet one-way delay: 7.924 ms
Loss rate: 0.04%
-- Flow 2:
Average throughput: 367.27 Mbit/s
95th percentile per-packet one-way delay: 2.450 ms
Loss rate: 0.07%
-- Flow 3:
Average throughput: 309.79 Mbit/s
95th percentile per-packet one-way delay: 2.163 ms
Loss rate: 0.07%
```
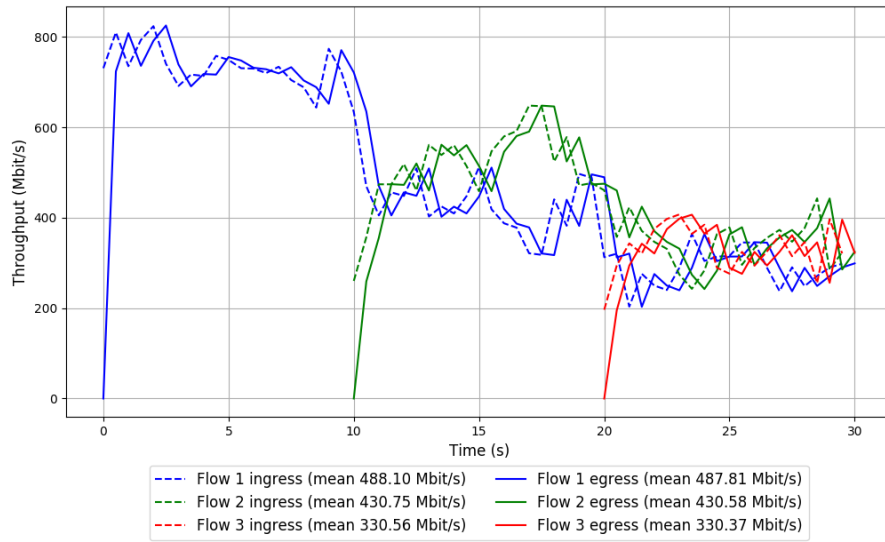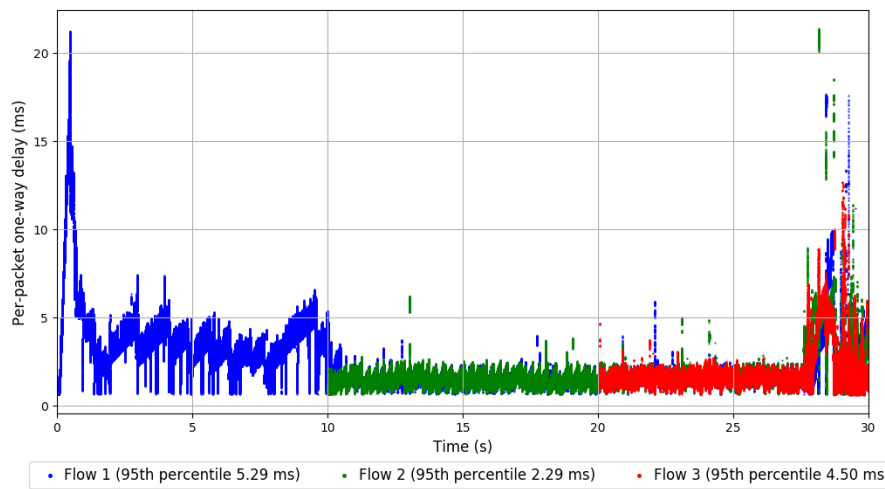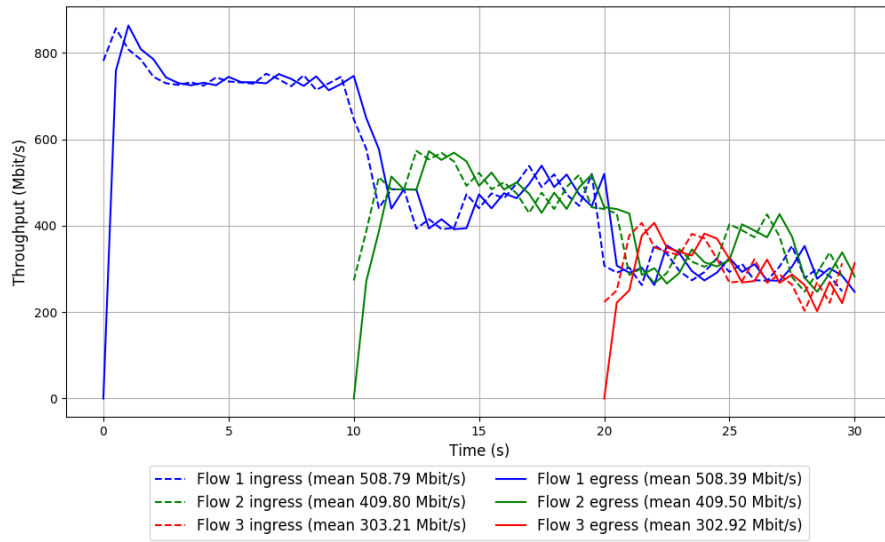
Run 1: Report of TCP Cubic — Data Link

```
Run 2: Statistics of TCP Cubic

Start at: 2019-06-28 01:16:42
End at: 2019-06-28 01:17:12
Local clock offset: -0.693 ms
Remote clock offset: -2.574 ms


# Below is generated by plot.py at 2019-06-28 03:21:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 898.04 Mbit/s
95th percentile per-packet one-way delay: 8.089 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 558.60 Mbit/s
95th percentile per-packet one-way delay: 8.412 ms
Loss rate: 0.04%
-- Flow 2:
Average throughput: 361.51 Mbit/s
95th percentile per-packet one-way delay: 4.664 ms
Loss rate: 0.07%
-- Flow 3:
Average throughput: 296.80 Mbit/s
95th percentile per-packet one-way delay: 5.550 ms
Loss rate: 0.14%
```
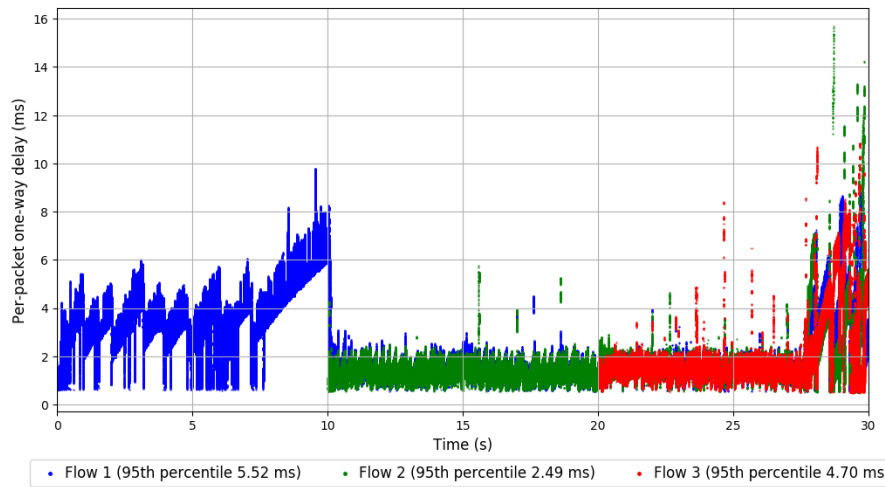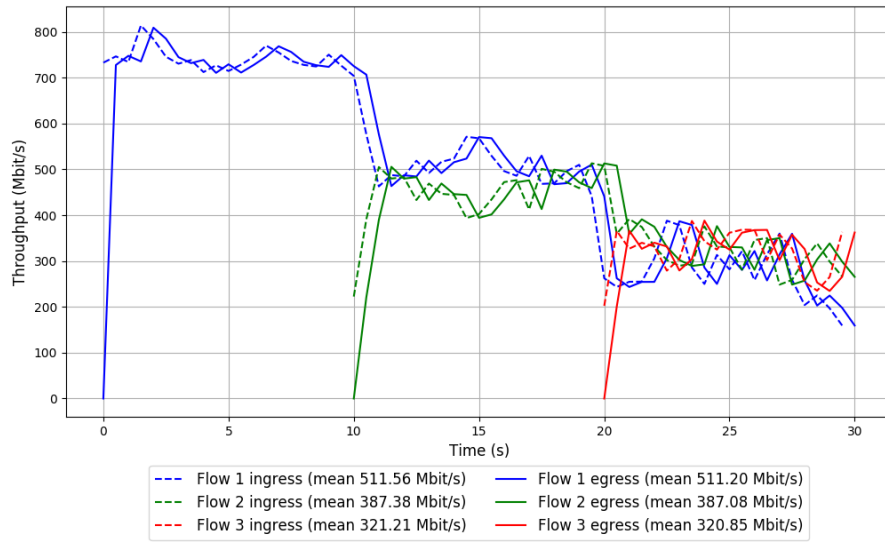
Run 2: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 558.81 Mbit/s) --- Flow 1 egress (mean 558.60 Mbit/s)
Flow 2 ingress (mean 361.77 Mbit/s) --- Flow 2 egress (mean 361.51 Mbit/s)
Flow 3 ingress (mean 297.19 Mbit/s) --- Flow 3 egress (mean 296.80 Mbit/s)

Flow 1 (95th percentile 8.41 ms)   Flow 2 (95th percentile 4.66 ms)   Flow 3 (95th percentile 5.55 ms)

```
Run 3: Statistics of TCP Cubic

Start at: 2019-06-28 01:48:25
End at: 2019-06-28 01:48:55
Local clock offset: 0.443 ms
Remote clock offset: 0.54 ms


# Below is generated by plot.py at 2019-06-28 03:21:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 884.50 Mbit/s
95th percentile per-packet one-way delay: 5.125 ms
Loss rate: 0.05%
-- Flow 1:
Average throughput: 487.81 Mbit/s
95th percentile per-packet one-way delay: 5.907 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 430.58 Mbit/s
95th percentile per-packet one-way delay: 2.543 ms
Loss rate: 0.04%
-- Flow 3:
Average throughput: 330.37 Mbit/s
95th percentile per-packet one-way delay: 2.553 ms
Loss rate: 0.05%
```
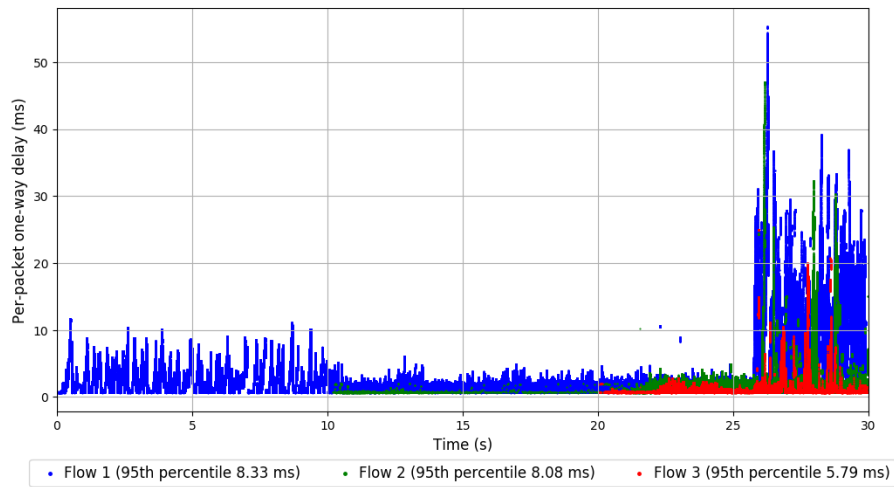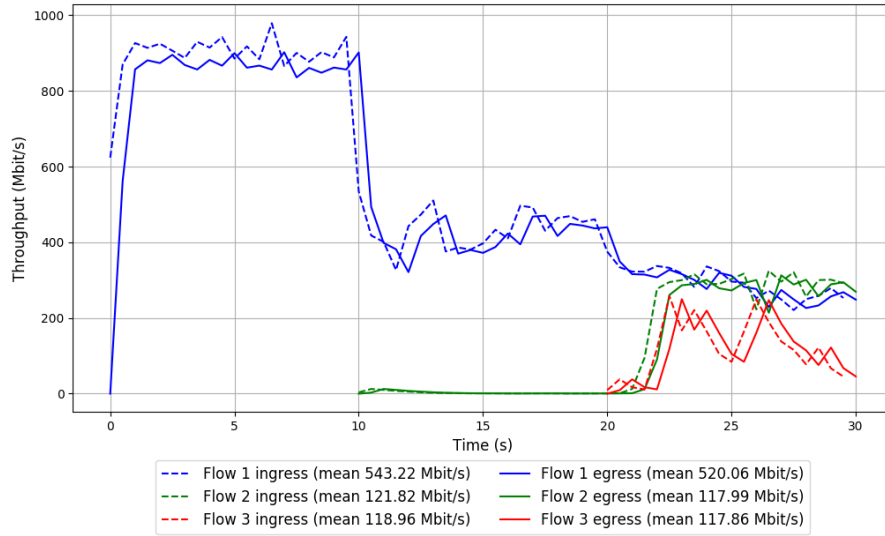
Run 3: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 488.10 Mbit/s) ---- Flow 1 egress (mean 487.81 Mbit/s) ——
Flow 2 ingress (mean 430.75 Mbit/s) ---- Flow 2 egress (mean 430.58 Mbit/s) ——
Flow 3 ingress (mean 330.56 Mbit/s) ---- Flow 3 egress (mean 330.37 Mbit/s) ——

Flow 1 (95th percentile 5.91 ms)   Flow 2 (95th percentile 2.54 ms)   Flow 3 (95th percentile 2.55 ms)

```
Run 4: Statistics of TCP Cubic

Start at: 2019-06-28 02:20:06
End at: 2019-06-28 02:20:36
Local clock offset: 3.747 ms
Remote clock offset: 0.738 ms


# Below is generated by plot.py at 2019-06-28 03:30:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 881.83 Mbit/s
95th percentile per-packet one-way delay: 4.907 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 508.39 Mbit/s
95th percentile per-packet one-way delay: 5.290 ms
Loss rate: 0.08%
-- Flow 2:
Average throughput: 409.50 Mbit/s
95th percentile per-packet one-way delay: 2.289 ms
Loss rate: 0.06%
-- Flow 3:
Average throughput: 302.92 Mbit/s
95th percentile per-packet one-way delay: 4.500 ms
Loss rate: 0.09%
```
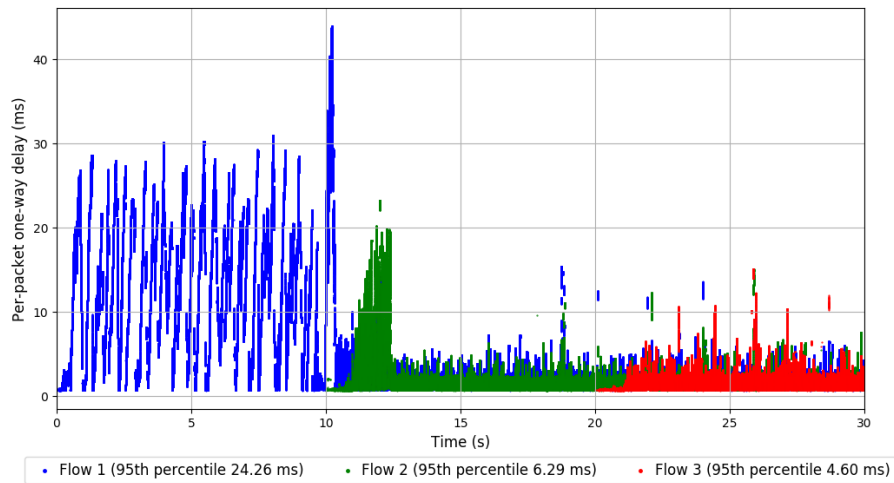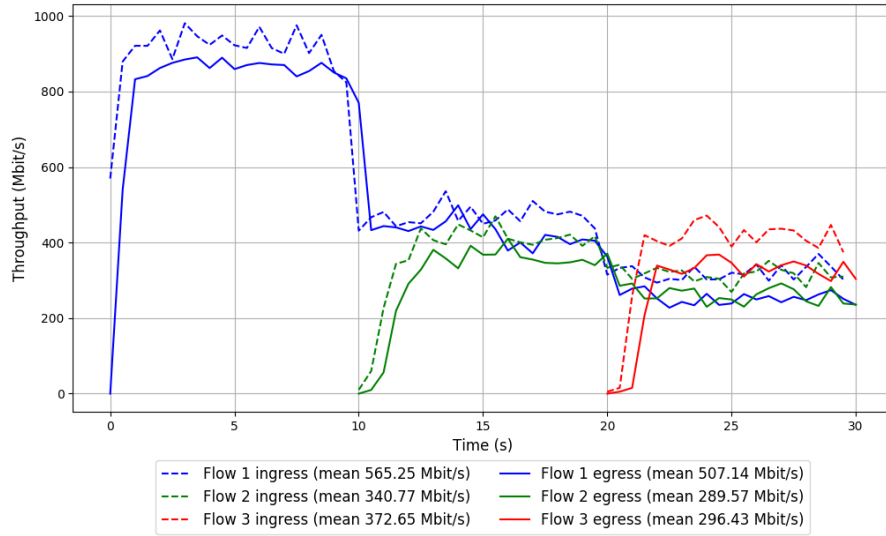
Run 4: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 508.79 Mbit/s) --- Flow 1 egress (mean 508.39 Mbit/s)
Flow 2 ingress (mean 409.80 Mbit/s) --- Flow 2 egress (mean 409.50 Mbit/s)
Flow 3 ingress (mean 303.21 Mbit/s) --- Flow 3 egress (mean 302.92 Mbit/s)

Flow 1 (95th percentile 5.29 ms)   Flow 2 (95th percentile 2.29 ms)   Flow 3 (95th percentile 4.50 ms)

```
Run 5: Statistics of TCP Cubic

Start at: 2019-06-28 02:51:36
End at: 2019-06-28 02:52:06
Local clock offset: 2.666 ms
Remote clock offset: -2.665 ms


# Below is generated by plot.py at 2019-06-28 03:30:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 875.81 Mbit/s
95th percentile per-packet one-way delay: 5.108 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 511.20 Mbit/s
95th percentile per-packet one-way delay: 5.521 ms
Loss rate: 0.07%
-- Flow 2:
Average throughput: 387.08 Mbit/s
95th percentile per-packet one-way delay: 2.491 ms
Loss rate: 0.07%
-- Flow 3:
Average throughput: 320.85 Mbit/s
95th percentile per-packet one-way delay: 4.697 ms
Loss rate: 0.10%
```
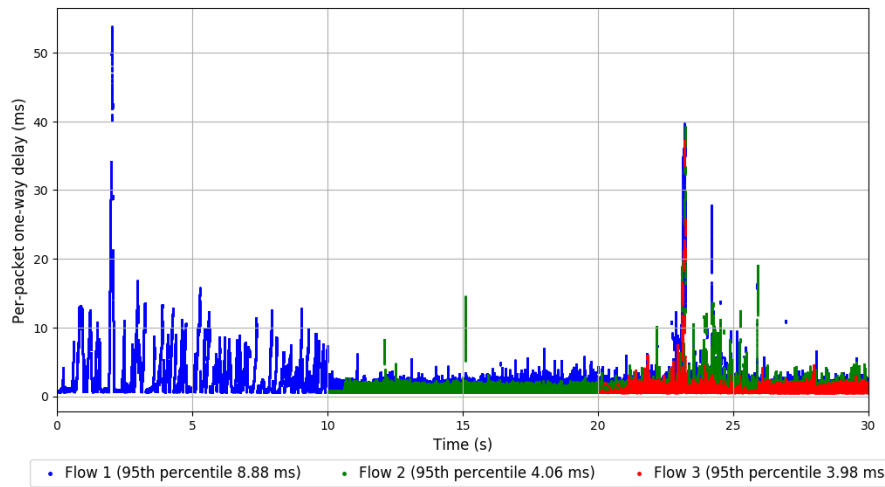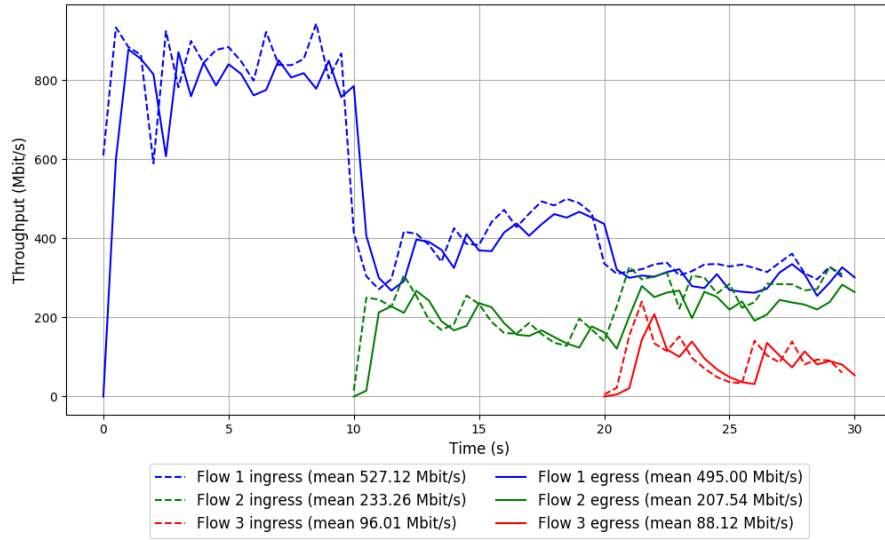
Run 5: Report of TCP Cubic — Data Link

```
Run 1: Statistics of FillP

Start at: 2019-06-28 00:26:38
End at: 2019-06-28 00:27:08
Local clock offset: 0.758 ms
Remote clock offset: -1.136 ms


# Below is generated by plot.py at 2019-06-28 03:30:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 636.52 Mbit/s
95th percentile per-packet one-way delay: 8.235 ms
Loss rate: 4.05%
-- Flow 1:
Average throughput: 520.06 Mbit/s
95th percentile per-packet one-way delay: 8.331 ms
Loss rate: 4.26%
-- Flow 2:
Average throughput: 117.99 Mbit/s
95th percentile per-packet one-way delay: 8.076 ms
Loss rate: 4.09%
-- Flow 3:
Average throughput: 117.86 Mbit/s
95th percentile per-packet one-way delay: 5.787 ms
Loss rate: 0.93%
```
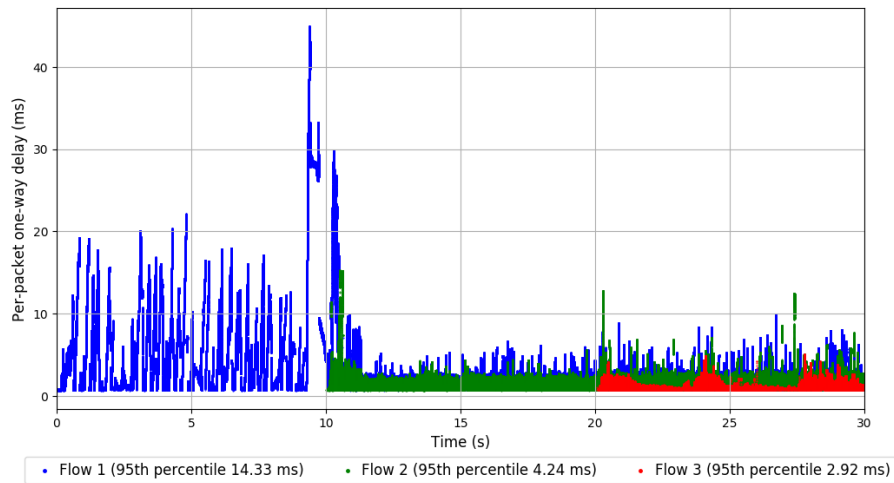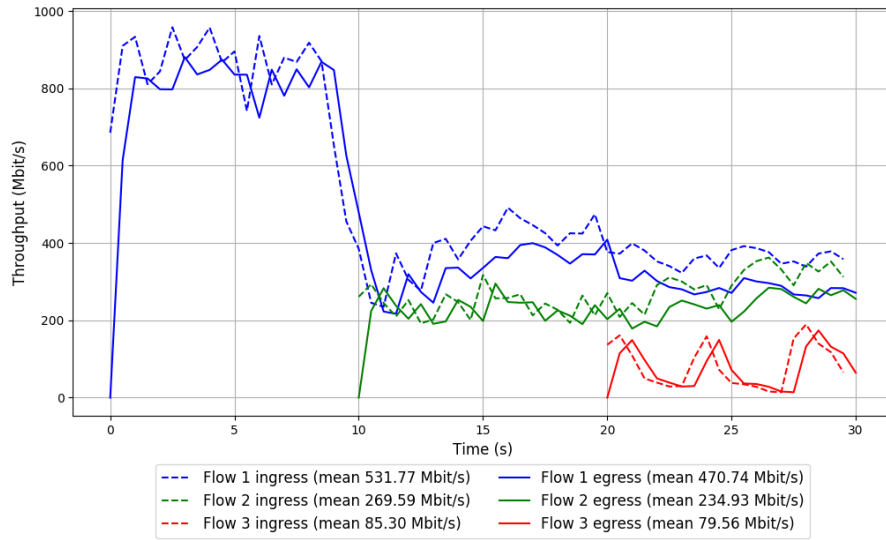
Run 1: Report of FillP — Data Link

```
Run 2: Statistics of FillP

Start at: 2019-06-28 00:58:24
End at: 2019-06-28 00:58:54
Local clock offset: -0.707 ms
Remote clock offset: -2.825 ms


# Below is generated by plot.py at 2019-06-28 03:32:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 798.26 Mbit/s
95th percentile per-packet one-way delay: 22.461 ms
Loss rate: 12.82%
-- Flow 1:
Average throughput: 507.14 Mbit/s
95th percentile per-packet one-way delay: 24.260 ms
Loss rate: 10.27%
-- Flow 2:
Average throughput: 289.57 Mbit/s
95th percentile per-packet one-way delay: 6.286 ms
Loss rate: 15.01%
-- Flow 3:
Average throughput: 296.43 Mbit/s
95th percentile per-packet one-way delay: 4.601 ms
Loss rate: 20.44%
```
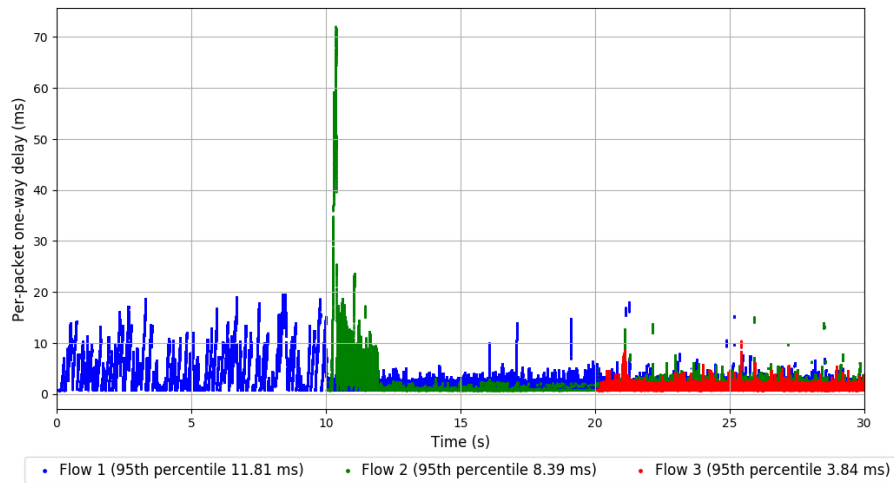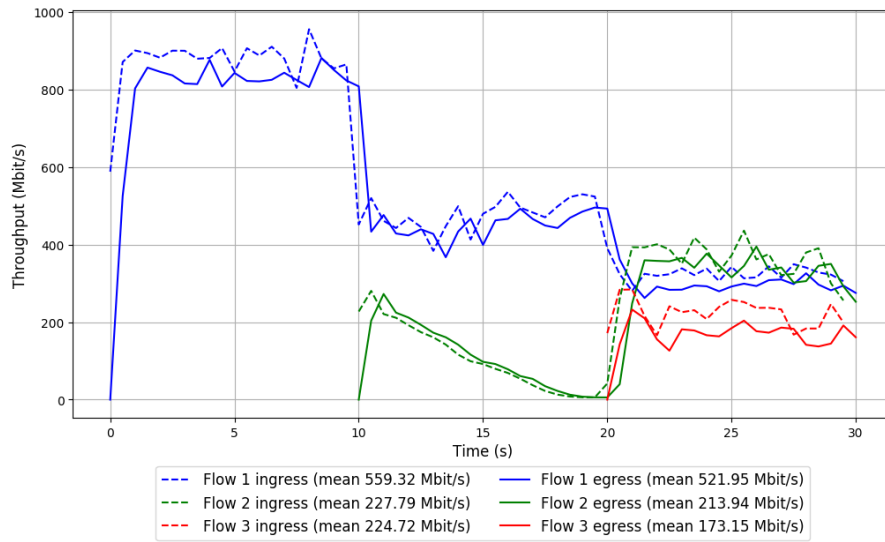
Run 2: Report of FillP — Data Link

```
Run 3: Statistics of FillP

Start at: 2019-06-28 01:30:11
End at: 2019-06-28 01:30:41
Local clock offset: 0.118 ms
Remote clock offset: -1.895 ms

# Below is generated by plot.py at 2019-06-28 03:32:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 662.11 Mbit/s
95th percentile per-packet one-way delay: 8.131 ms
Loss rate: 7.26%
-- Flow 1:
Average throughput: 495.00 Mbit/s
95th percentile per-packet one-way delay: 8.884 ms
Loss rate: 6.09%
-- Flow 2:
Average throughput: 207.54 Mbit/s
95th percentile per-packet one-way delay: 4.056 ms
Loss rate: 11.03%
-- Flow 3:
Average throughput: 88.12 Mbit/s
95th percentile per-packet one-way delay: 3.981 ms
Loss rate: 8.22%
```
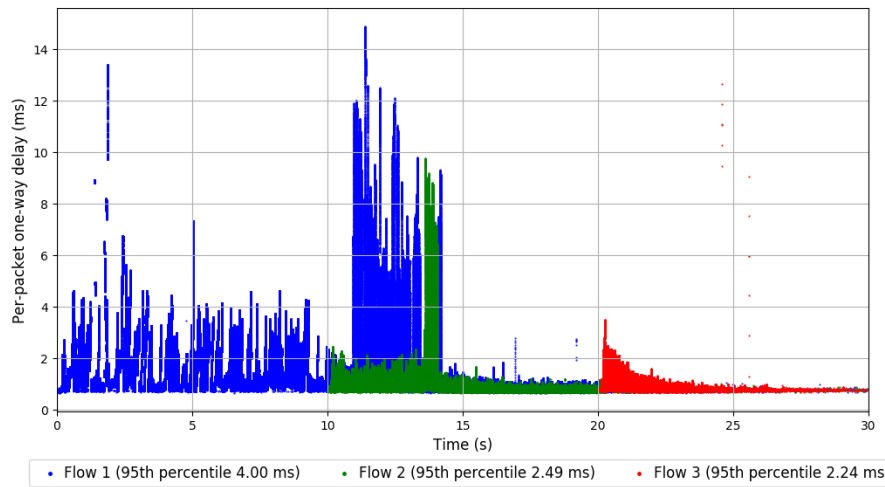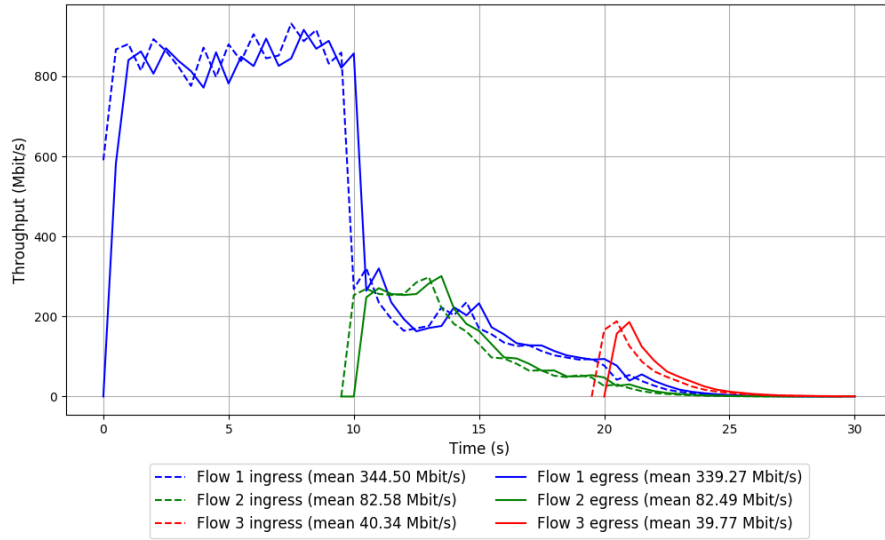
Run 3: Report of FillP — Data Link

```
Run 4: Statistics of FillP

Start at: 2019-06-28 02:01:55
End at: 2019-06-28 02:02:25
Local clock offset: 2.842 ms
Remote clock offset: 1.093 ms


# Below is generated by plot.py at 2019-06-28 03:32:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 653.40 Mbit/s
95th percentile per-packet one-way delay: 12.918 ms
Loss rate: 11.63%
-- Flow 1:
Average throughput: 470.74 Mbit/s
95th percentile per-packet one-way delay: 14.328 ms
Loss rate: 11.47%
-- Flow 2:
Average throughput: 234.93 Mbit/s
95th percentile per-packet one-way delay: 4.236 ms
Loss rate: 12.85%
-- Flow 3:
Average throughput: 79.56 Mbit/s
95th percentile per-packet one-way delay: 2.925 ms
Loss rate: 6.73%
```
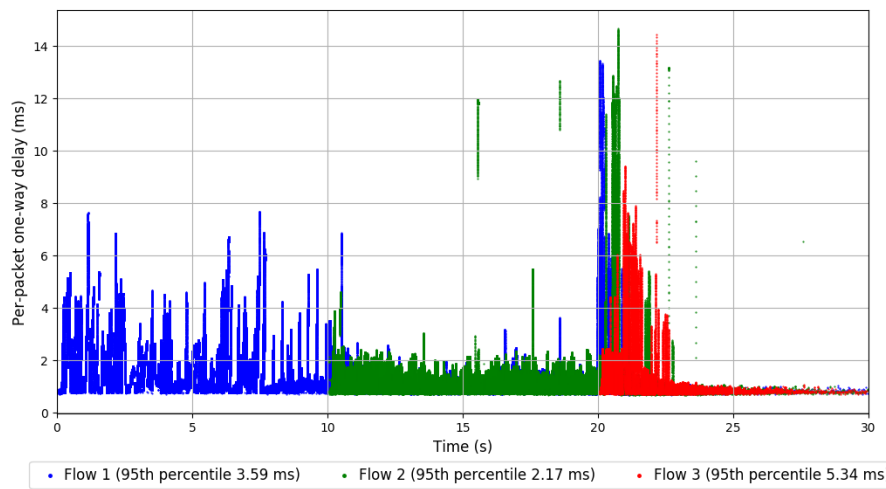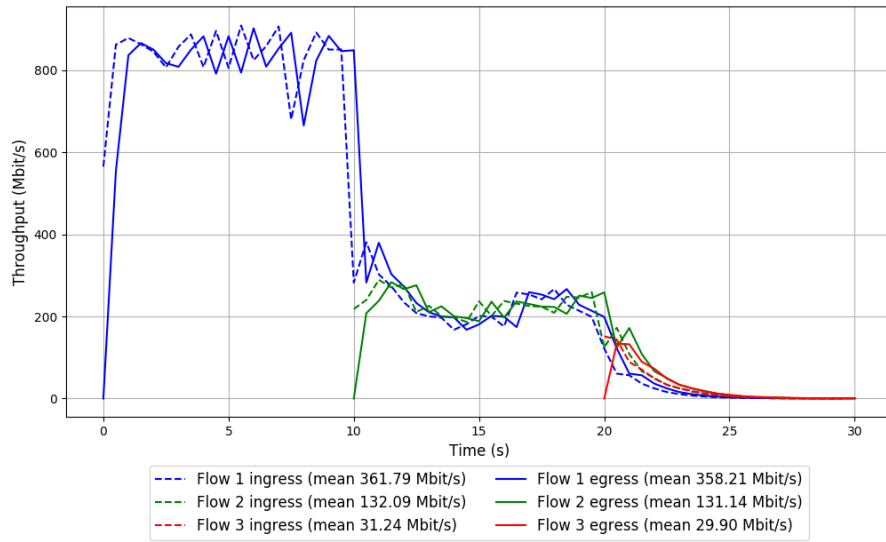
Run 4: Report of FillP — Data Link

```
Run 5: Statistics of FillP

Start at: 2019-06-28 02:33:25
End at: 2019-06-28 02:33:55
Local clock offset: 3.553 ms
Remote clock offset: 1.016 ms


# Below is generated by plot.py at 2019-06-28 03:32:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 721.55 Mbit/s
95th percentile per-packet one-way delay: 11.251 ms
Loss rate: 8.10%
-- Flow 1:
Average throughput: 521.95 Mbit/s
95th percentile per-packet one-way delay: 11.814 ms
Loss rate: 6.67%
-- Flow 2:
Average throughput: 213.94 Mbit/s
95th percentile per-packet one-way delay: 8.394 ms
Loss rate: 6.07%
-- Flow 3:
Average throughput: 173.15 Mbit/s
95th percentile per-packet one-way delay: 3.840 ms
Loss rate: 22.95%
```
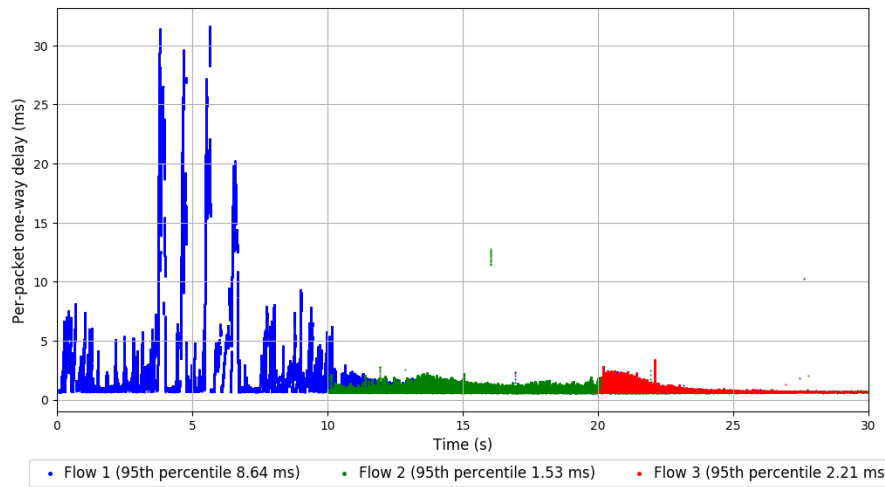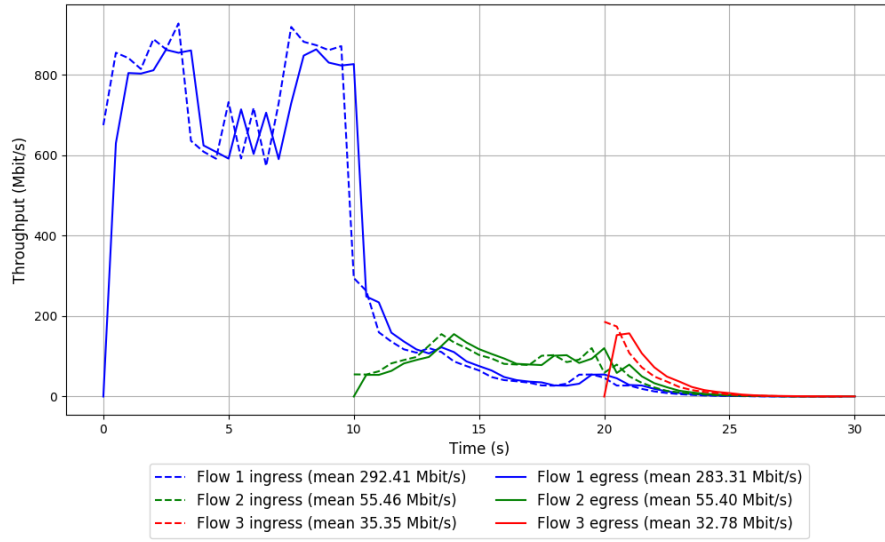
Run 5: Report of FillP — Data Link

```
Run 1: Statistics of FillP-Sheep

Start at: 2019-06-28 00:31:23
End at: 2019-06-28 00:31:53
Local clock offset: 0.064 ms
Remote clock offset: -1.909 ms


# Below is generated by plot.py at 2019-06-28 03:32:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 407.16 Mbit/s
95th percentile per-packet one-way delay: 3.874 ms
Loss rate: 1.33%
-- Flow 1:
Average throughput: 339.27 Mbit/s
95th percentile per-packet one-way delay: 4.000 ms
Loss rate: 1.52%
-- Flow 2:
Average throughput: 82.49 Mbit/s
95th percentile per-packet one-way delay: 2.488 ms
Loss rate: 0.11%
-- Flow 3:
Average throughput: 39.77 Mbit/s
95th percentile per-packet one-way delay: 2.237 ms
Loss rate: 1.42%
```
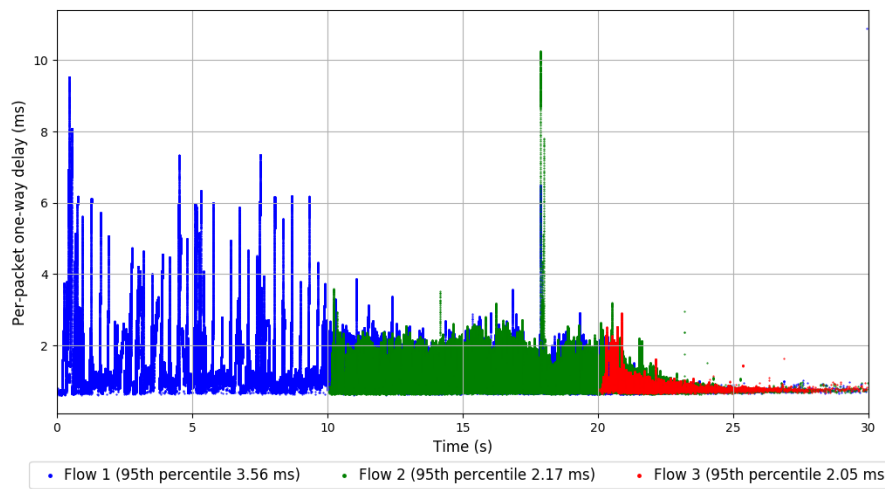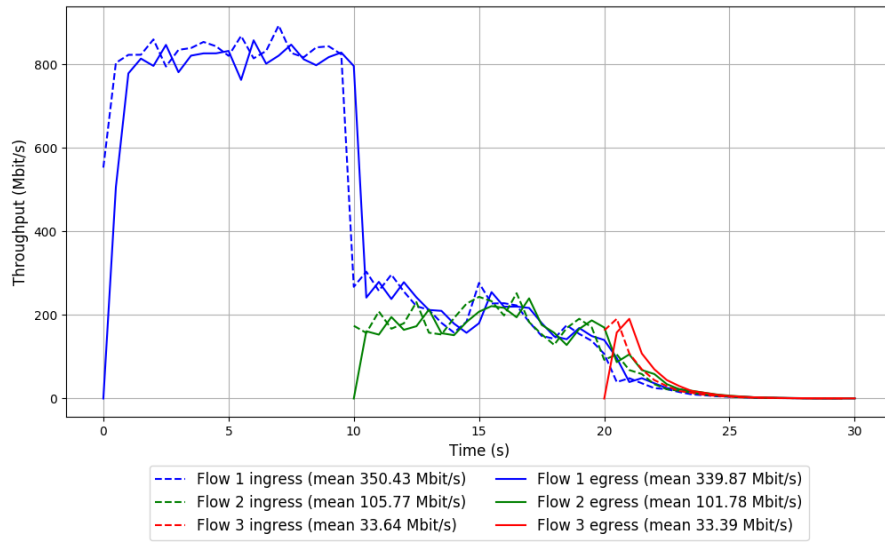
Run 1: Report of FillP-Sheep — Data Link

Flow 1 ingress (mean 344.50 Mbit/s) —— Flow 1 egress (mean 339.27 Mbit/s)
Flow 2 ingress (mean 82.58 Mbit/s) —— Flow 2 egress (mean 82.49 Mbit/s)
Flow 3 ingress (mean 40.34 Mbit/s) —— Flow 3 egress (mean 39.77 Mbit/s)

• Flow 1 (95th percentile 4.00 ms)   • Flow 2 (95th percentile 2.49 ms)   • Flow 3 (95th percentile 2.24 ms)

```
Run 2: Statistics of FillP-Sheep

Start at: 2019-06-28 01:03:14
End at: 2019-06-28 01:03:44
Local clock offset: -0.724 ms
Remote clock offset: -2.664 ms


# Below is generated by plot.py at 2019-06-28 03:33:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 455.29 Mbit/s
95th percentile per-packet one-way delay: 3.494 ms
Loss rate: 1.01%
-- Flow 1:
Average throughput: 358.21 Mbit/s
95th percentile per-packet one-way delay: 3.587 ms
Loss rate: 0.99%
-- Flow 2:
Average throughput: 131.14 Mbit/s
95th percentile per-packet one-way delay: 2.170 ms
Loss rate: 0.71%
-- Flow 3:
Average throughput: 29.90 Mbit/s
95th percentile per-packet one-way delay: 5.340 ms
Loss rate: 4.31%
```
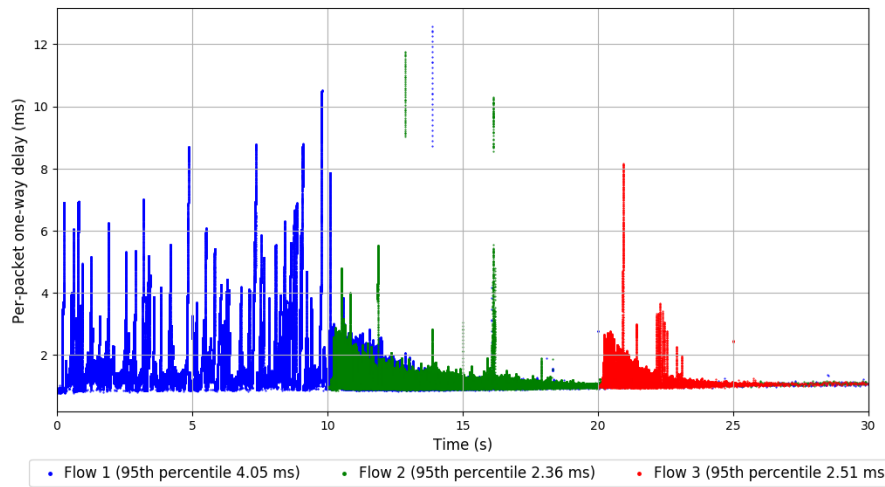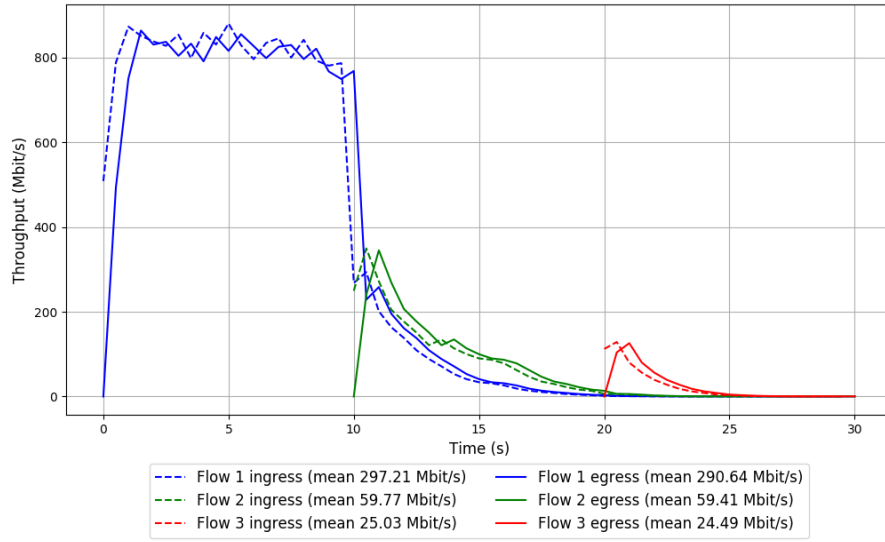
Run 2: Report of FillP-Sheep — Data Link

```
Run 3: Statistics of FillP-Sheep

Start at: 2019-06-28 01:35:00
End at: 2019-06-28 01:35:30
Local clock offset: 0.26 ms
Remote clock offset: -0.866 ms


# Below is generated by plot.py at 2019-06-28 03:34:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 330.85 Mbit/s
95th percentile per-packet one-way delay: 7.748 ms
Loss rate: 2.93%
-- Flow 1:
Average throughput: 283.31 Mbit/s
95th percentile per-packet one-way delay: 8.644 ms
Loss rate: 3.11%
-- Flow 2:
Average throughput: 55.40 Mbit/s
95th percentile per-packet one-way delay: 1.528 ms
Loss rate: 0.11%
-- Flow 3:
Average throughput: 32.78 Mbit/s
95th percentile per-packet one-way delay: 2.211 ms
Loss rate: 7.27%
```
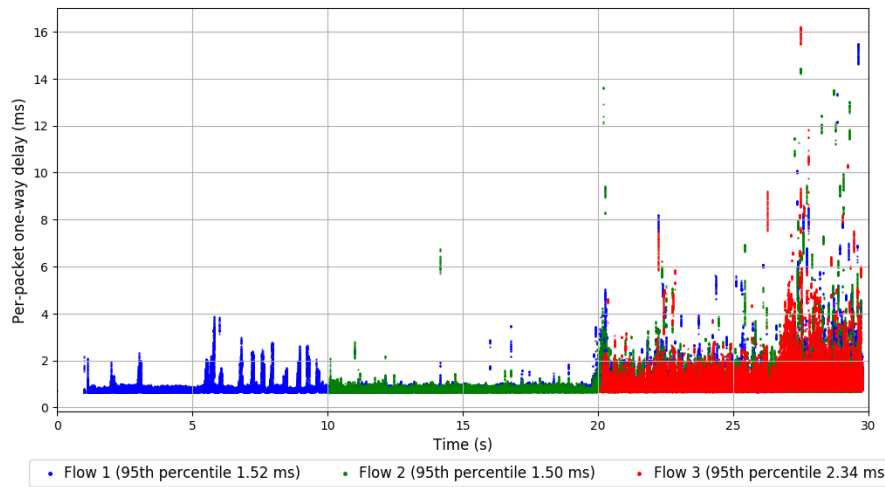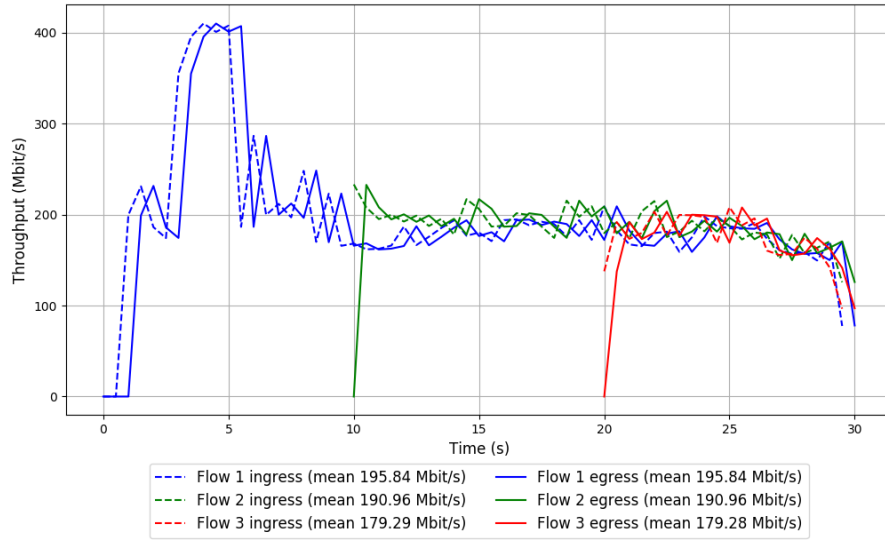
Run 3: Report of FillP-Sheep — Data Link

```
Run 4: Statistics of FillP-Sheep

Start at: 2019-06-28 02:06:40
End at: 2019-06-28 02:07:10
Local clock offset: 3.183 ms
Remote clock offset: 0.821 ms


# Below is generated by plot.py at 2019-06-28 03:36:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 418.49 Mbit/s
95th percentile per-packet one-way delay: 3.259 ms
Loss rate: 3.05%
-- Flow 1:
Average throughput: 339.87 Mbit/s
95th percentile per-packet one-way delay: 3.563 ms
Loss rate: 2.98%
-- Flow 2:
Average throughput: 101.78 Mbit/s
95th percentile per-packet one-way delay: 2.169 ms
Loss rate: 3.77%
-- Flow 3:
Average throughput: 33.39 Mbit/s
95th percentile per-packet one-way delay: 2.049 ms
Loss rate: 0.73%
```
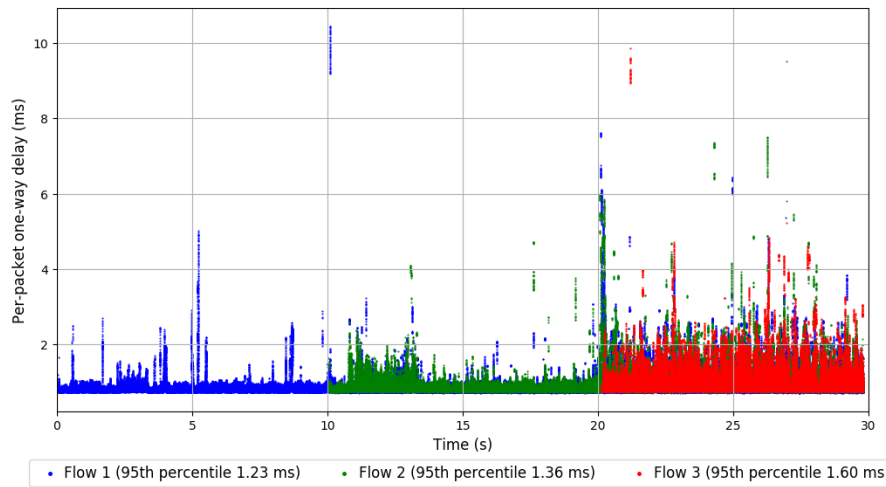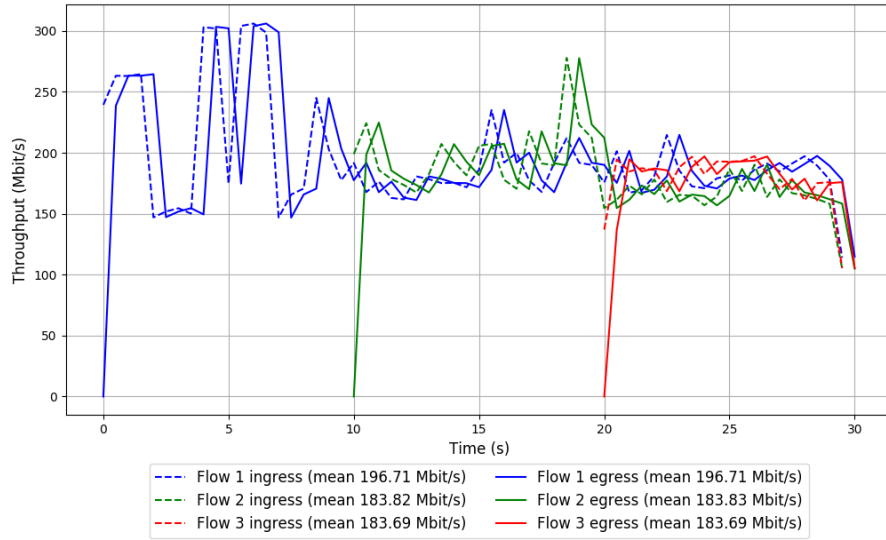
Run 4: Report of FillP-Sheep — Data Link

- - - Flow 1 ingress (mean 350.43 Mbit/s) —— Flow 1 egress (mean 339.87 Mbit/s)
- - - Flow 2 ingress (mean 105.77 Mbit/s) —— Flow 2 egress (mean 101.78 Mbit/s)
- - - Flow 3 ingress (mean 33.64 Mbit/s) —— Flow 3 egress (mean 33.39 Mbit/s)

• Flow 1 (95th percentile 3.56 ms)   • Flow 2 (95th percentile 2.17 ms)   • Flow 3 (95th percentile 2.05 ms)

```
Run 5: Statistics of FillP-Sheep

Start at: 2019-06-28 02:38:11
End at: 2019-06-28 02:38:41
Local clock offset: 3.683 ms
Remote clock offset: 0.255 ms


# Below is generated by plot.py at 2019-06-28 03:36:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 338.26 Mbit/s
95th percentile per-packet one-way delay: 3.878 ms
Loss rate: 2.02%
-- Flow 1:
Average throughput: 290.64 Mbit/s
95th percentile per-packet one-way delay: 4.048 ms
Loss rate: 2.21%
-- Flow 2:
Average throughput: 59.41 Mbit/s
95th percentile per-packet one-way delay: 2.360 ms
Loss rate: 0.60%
-- Flow 3:
Average throughput: 24.49 Mbit/s
95th percentile per-packet one-way delay: 2.513 ms
Loss rate: 2.14%
```
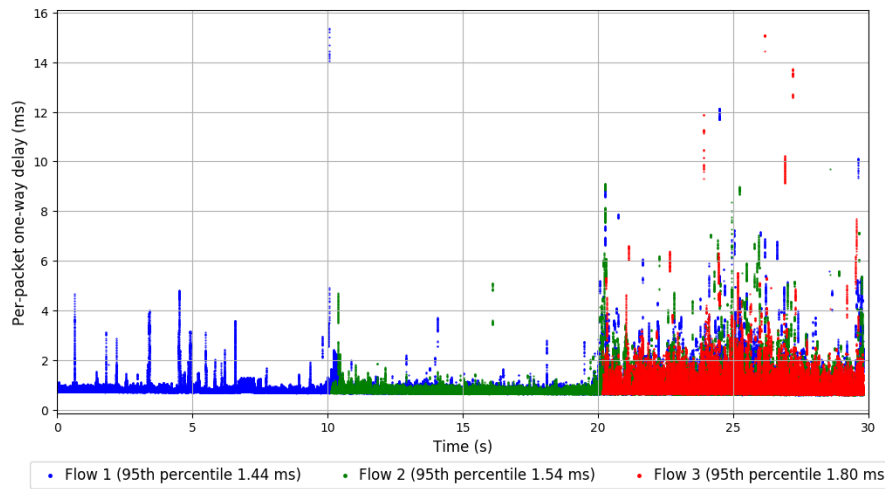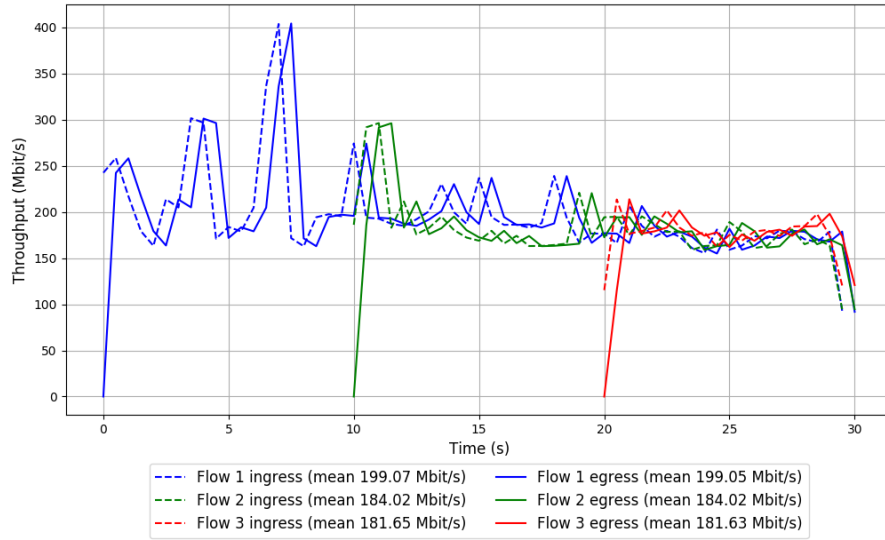
Run 5: Report of FillP-Sheep — Data Link

```
Run 1: Statistics of Indigo

Start at: 2019-06-28 00:25:07
End at: 2019-06-28 00:25:37
Local clock offset: 0.983 ms
Remote clock offset: -0.806 ms


# Below is generated by plot.py at 2019-06-28 03:36:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 380.58 Mbit/s
95th percentile per-packet one-way delay: 1.667 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 195.84 Mbit/s
95th percentile per-packet one-way delay: 1.516 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 190.96 Mbit/s
95th percentile per-packet one-way delay: 1.503 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 179.28 Mbit/s
95th percentile per-packet one-way delay: 2.343 ms
Loss rate: 0.00%
```
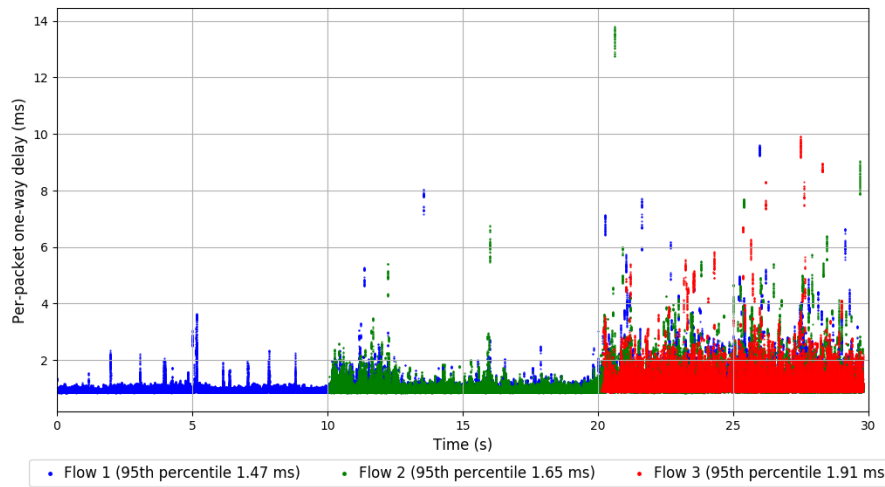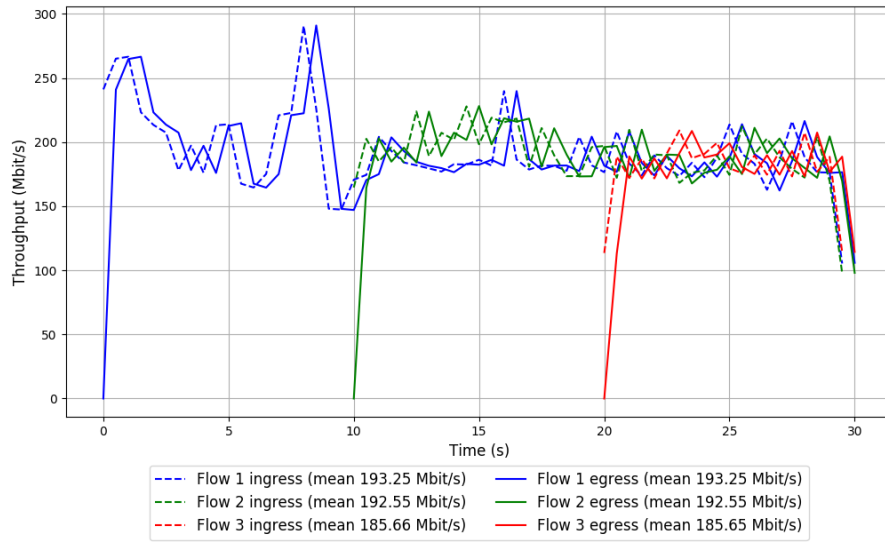
Run 1: Report of Indigo — Data Link

```
Run 2: Statistics of Indigo

Start at: 2019-06-28 00:56:53
End at: 2019-06-28 00:57:23
Local clock offset: -0.741 ms
Remote clock offset: -2.9 ms


# Below is generated by plot.py at 2019-06-28 03:36:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 377.99 Mbit/s
95th percentile per-packet one-way delay: 1.355 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 196.71 Mbit/s
95th percentile per-packet one-way delay: 1.225 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 183.83 Mbit/s
95th percentile per-packet one-way delay: 1.363 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 183.69 Mbit/s
95th percentile per-packet one-way delay: 1.601 ms
Loss rate: 0.00%
```
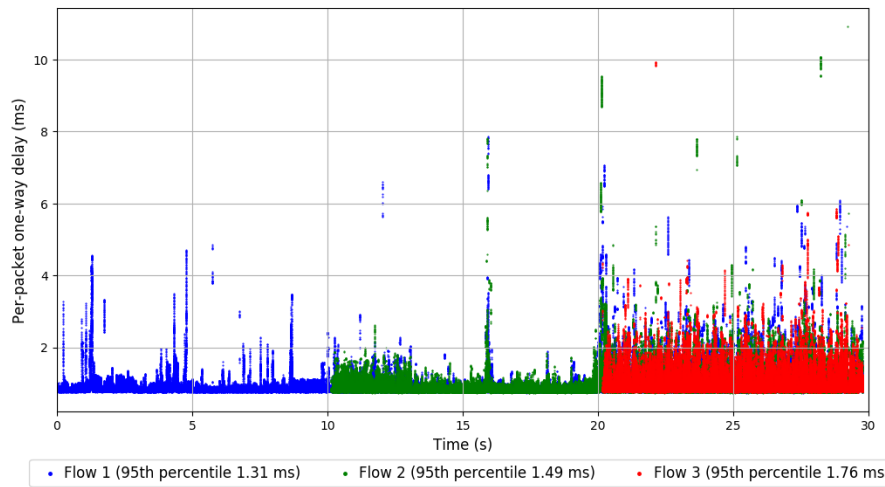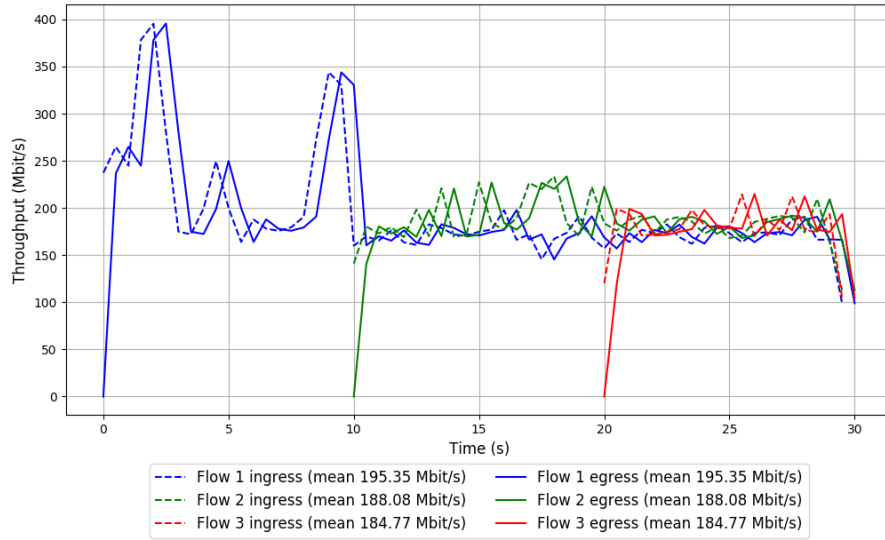
Run 2: Report of Indigo — Data Link

```
Run 3: Statistics of Indigo

Start at: 2019-06-28 01:28:40
End at: 2019-06-28 01:29:10
Local clock offset: 0.044 ms
Remote clock offset: -2.261 ms


# Below is generated by plot.py at 2019-06-28 03:36:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 379.39 Mbit/s
95th percentile per-packet one-way delay: 1.548 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 199.05 Mbit/s
95th percentile per-packet one-way delay: 1.441 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 184.02 Mbit/s
95th percentile per-packet one-way delay: 1.545 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 181.63 Mbit/s
95th percentile per-packet one-way delay: 1.805 ms
Loss rate: 0.01%
```
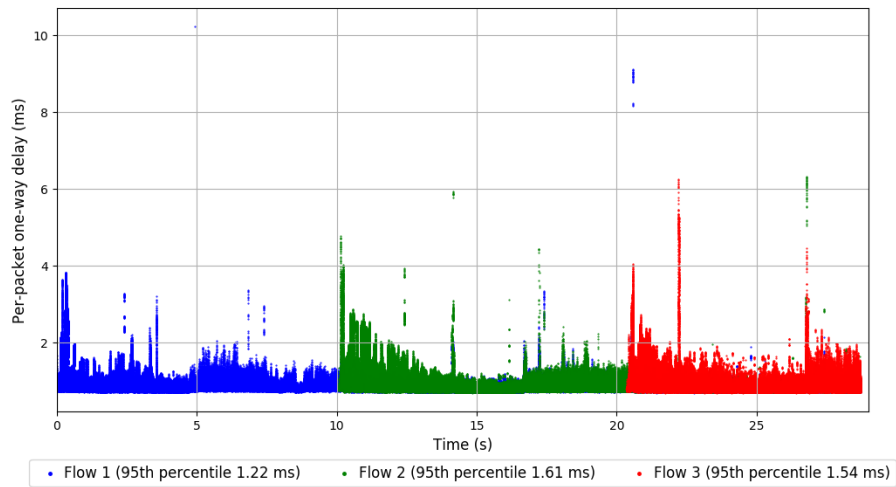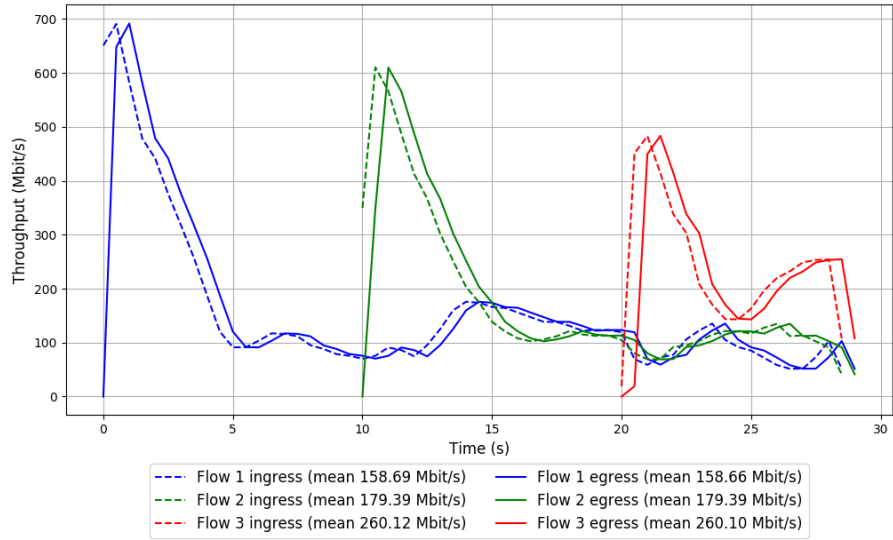
Run 3: Report of Indigo — Data Link

```
Run 4: Statistics of Indigo

Start at: 2019-06-28 02:00:23
End at: 2019-06-28 02:00:53
Local clock offset: 2.69 ms
Remote clock offset: 1.165 ms


# Below is generated by plot.py at 2019-06-28 03:37:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 380.87 Mbit/s
95th percentile per-packet one-way delay: 1.626 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 193.25 Mbit/s
95th percentile per-packet one-way delay: 1.473 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 192.55 Mbit/s
95th percentile per-packet one-way delay: 1.651 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 185.65 Mbit/s
95th percentile per-packet one-way delay: 1.907 ms
Loss rate: 0.00%
```
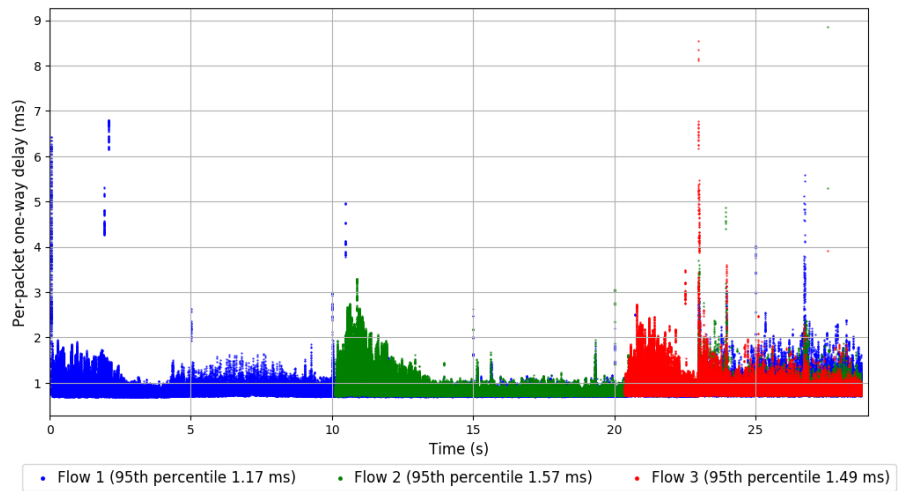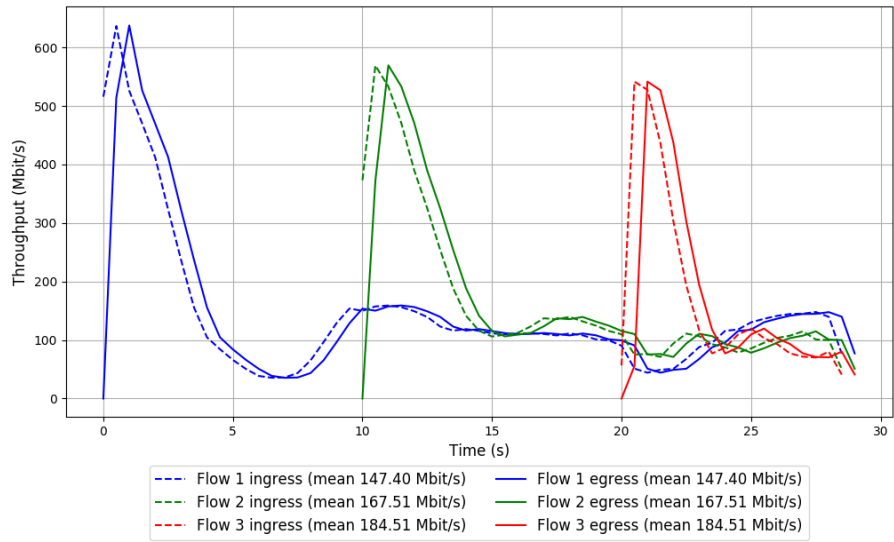
Run 4: Report of Indigo — Data Link

```
Run 5: Statistics of Indigo

Start at: 2019-06-28 02:31:54
End at: 2019-06-28 02:32:24
Local clock offset: 3.561 ms
Remote clock offset: 1.031 ms


# Below is generated by plot.py at 2019-06-28 03:38:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 379.10 Mbit/s
95th percentile per-packet one-way delay: 1.486 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 195.35 Mbit/s
95th percentile per-packet one-way delay: 1.312 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 188.08 Mbit/s
95th percentile per-packet one-way delay: 1.486 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 184.77 Mbit/s
95th percentile per-packet one-way delay: 1.758 ms
Loss rate: 0.00%
```
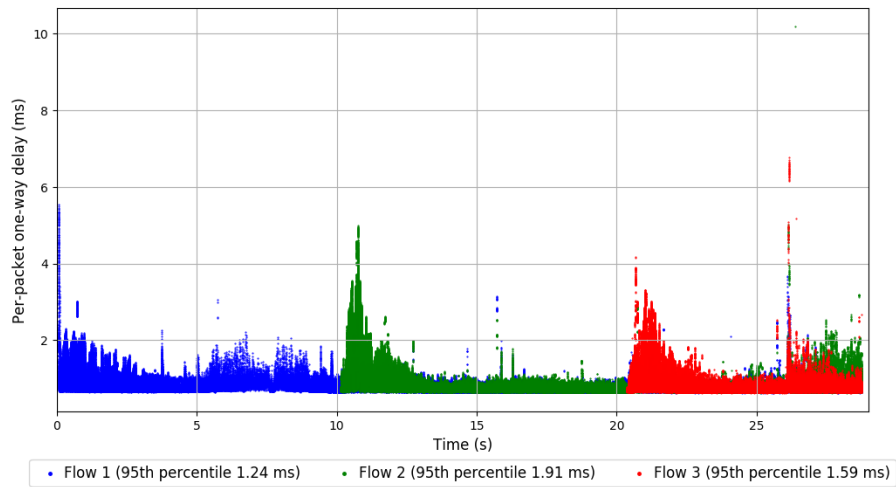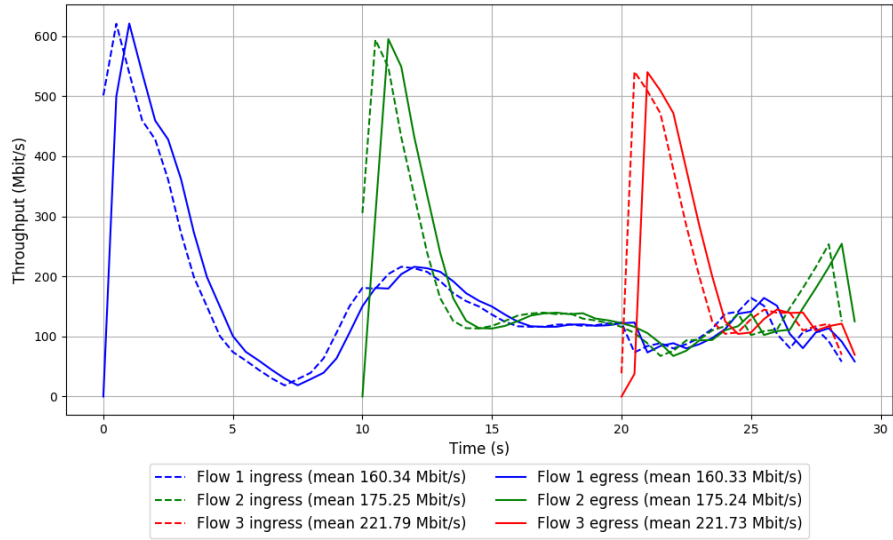
Run 5: Report of Indigo — Data Link

```
Run 1: Statistics of Indigo-MusesC3

Start at: 2019-06-28 00:41:39
End at: 2019-06-28 00:42:09
Local clock offset: -0.895 ms
Remote clock offset: -2.74 ms


# Below is generated by plot.py at 2019-06-28 03:38:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 350.84 Mbit/s
95th percentile per-packet one-way delay: 1.442 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 158.66 Mbit/s
95th percentile per-packet one-way delay: 1.222 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 179.39 Mbit/s
95th percentile per-packet one-way delay: 1.610 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 260.10 Mbit/s
95th percentile per-packet one-way delay: 1.540 ms
Loss rate: 0.00%
```
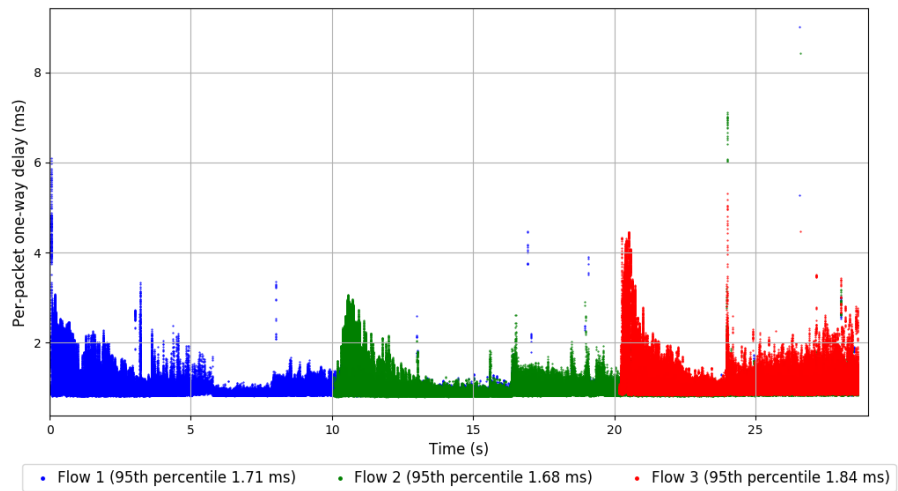
Run 1: Report of Indigo-MusesC3 — Data Link

```
Run 2: Statistics of Indigo-MusesC3

Start at: 2019-06-28 01:13:31
End at: 2019-06-28 01:14:01
Local clock offset: -0.7 ms
Remote clock offset: -2.642 ms


# Below is generated by plot.py at 2019-06-28 03:38:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 310.19 Mbit/s
95th percentile per-packet one-way delay: 1.382 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 147.40 Mbit/s
95th percentile per-packet one-way delay: 1.170 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 167.51 Mbit/s
95th percentile per-packet one-way delay: 1.566 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 184.51 Mbit/s
95th percentile per-packet one-way delay: 1.491 ms
Loss rate: 0.00%
```
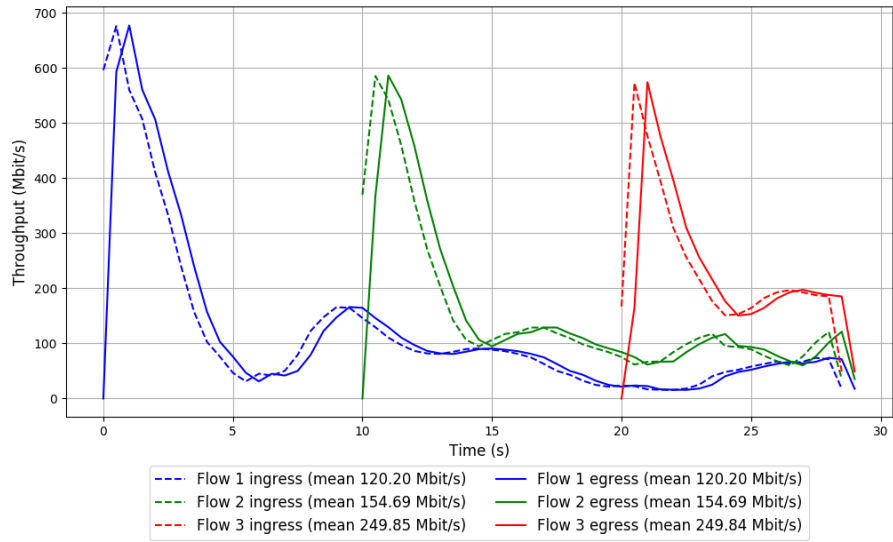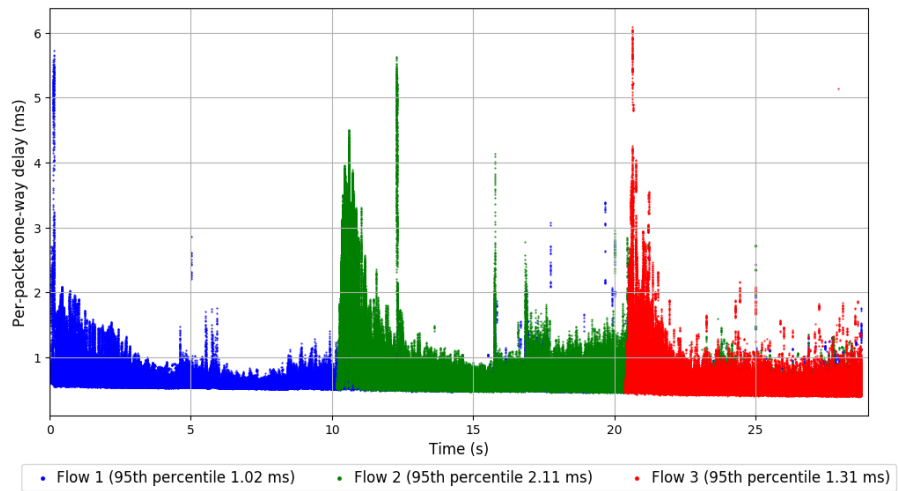
Run 2: Report of Indigo-MusesC3 — Data Link

```
Run 3: Statistics of Indigo-MusesC3

Start at: 2019-06-28 01:45:15
End at: 2019-06-28 01:45:45
Local clock offset: 0.434 ms
Remote clock offset: 0.187 ms

# Below is generated by plot.py at 2019-06-28 03:39:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 338.68 Mbit/s
95th percentile per-packet one-way delay: 1.553 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 160.33 Mbit/s
95th percentile per-packet one-way delay: 1.240 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 175.24 Mbit/s
95th percentile per-packet one-way delay: 1.914 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 221.73 Mbit/s
95th percentile per-packet one-way delay: 1.593 ms
Loss rate: 0.00%
```
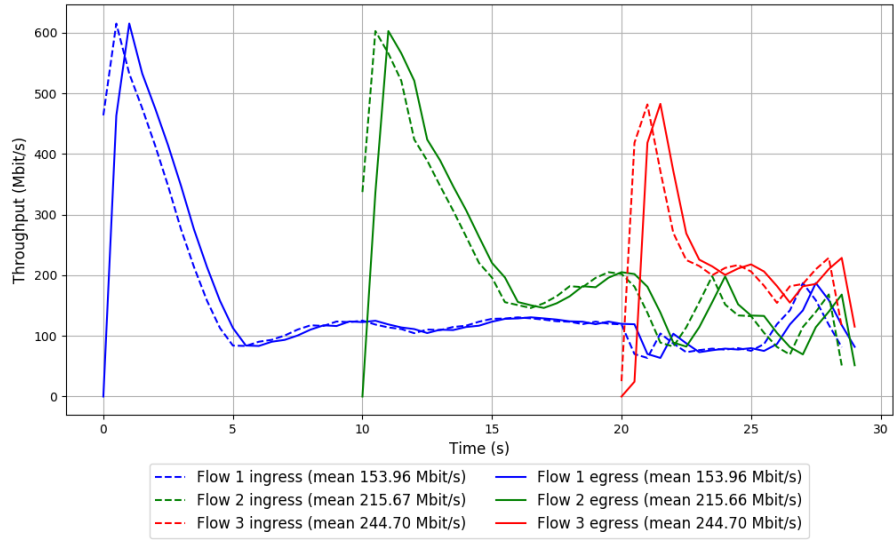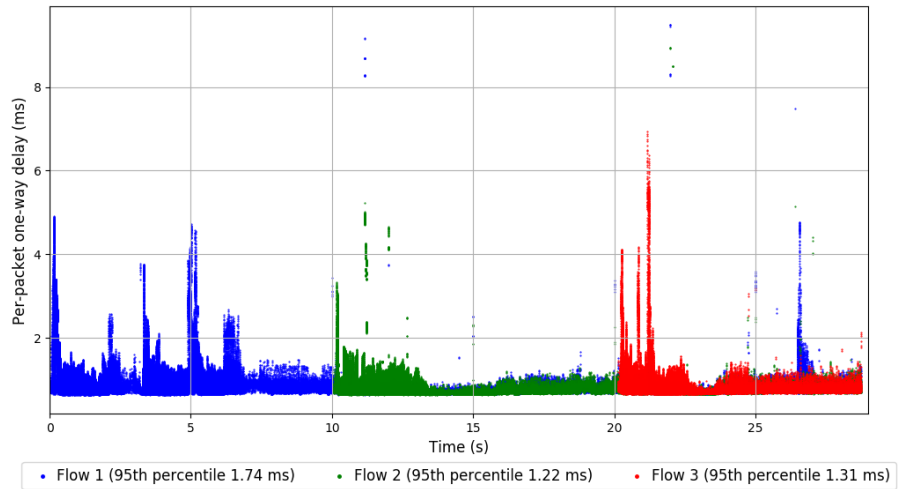
Run 3: Report of Indigo-MusesC3 — Data Link

```
Run 4: Statistics of Indigo-MusesC3

Start at: 2019-06-28 02:16:56
End at: 2019-06-28 02:17:26
Local clock offset: 3.79 ms
Remote clock offset: 0.789 ms


# Below is generated by plot.py at 2019-06-28 03:39:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 294.31 Mbit/s
95th percentile per-packet one-way delay: 1.735 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 120.20 Mbit/s
95th percentile per-packet one-way delay: 1.710 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 154.69 Mbit/s
95th percentile per-packet one-way delay: 1.679 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 249.84 Mbit/s
95th percentile per-packet one-way delay: 1.838 ms
Loss rate: 0.00%
```
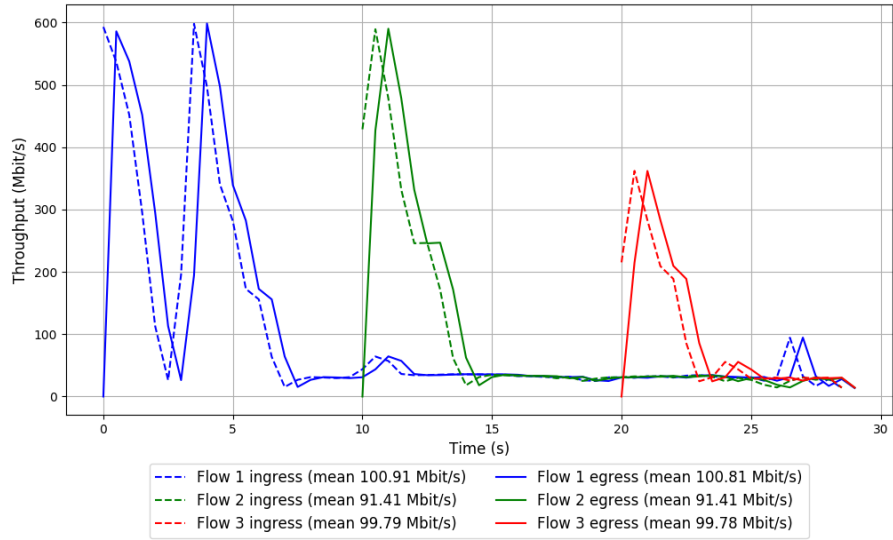
Run 4: Report of Indigo-MusesC3 — Data Link

```
Run 5: Statistics of Indigo-MusesC3

Start at: 2019-06-28 02:48:26
End at: 2019-06-28 02:48:56
Local clock offset: 3.913 ms
Remote clock offset: -2.263 ms


# Below is generated by plot.py at 2019-06-28 03:40:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 364.75 Mbit/s
95th percentile per-packet one-way delay: 1.396 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 153.96 Mbit/s
95th percentile per-packet one-way delay: 1.021 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 215.66 Mbit/s
95th percentile per-packet one-way delay: 2.110 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 244.70 Mbit/s
95th percentile per-packet one-way delay: 1.312 ms
Loss rate: 0.00%
```
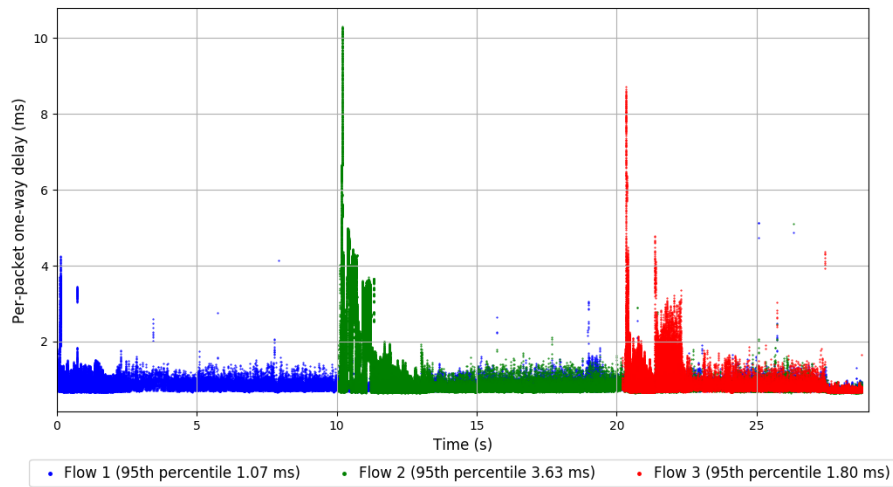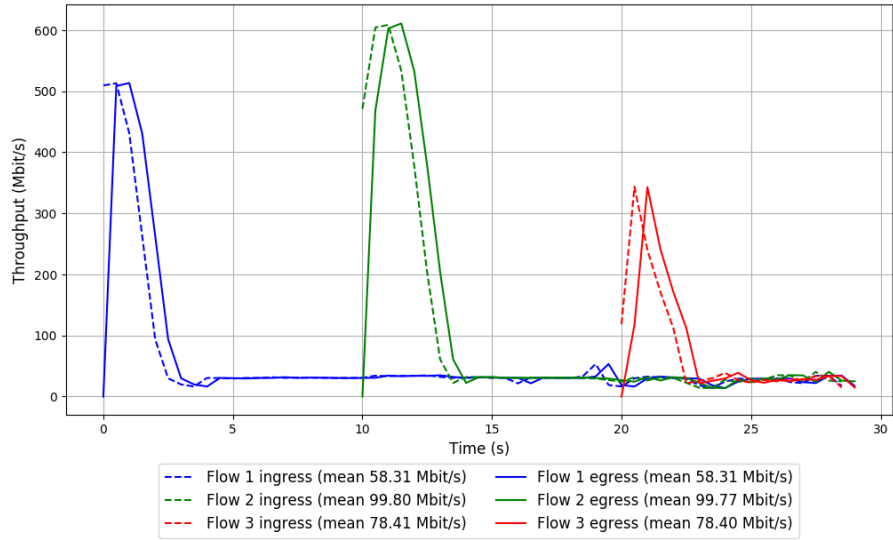
Run 5: Report of Indigo-MusesC3 — Data Link

```
Run 1: Statistics of Indigo-MusesC5

Start at: 2019-06-28 00:28:11
End at: 2019-06-28 00:28:41
Local clock offset: 0.526 ms
Remote clock offset: -1.462 ms


# Below is generated by plot.py at 2019-06-28 03:40:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 190.08 Mbit/s
95th percentile per-packet one-way delay: 1.487 ms
Loss rate: 0.05%
-- Flow 1:
Average throughput: 100.81 Mbit/s
95th percentile per-packet one-way delay: 1.736 ms
Loss rate: 0.10%
-- Flow 2:
Average throughput: 91.41 Mbit/s
95th percentile per-packet one-way delay: 1.220 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 99.78 Mbit/s
95th percentile per-packet one-way delay: 1.308 ms
Loss rate: 0.01%
```
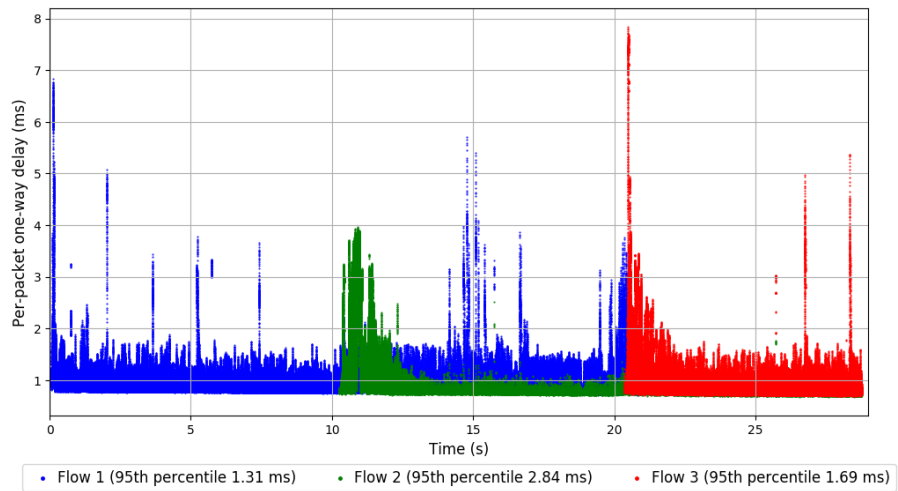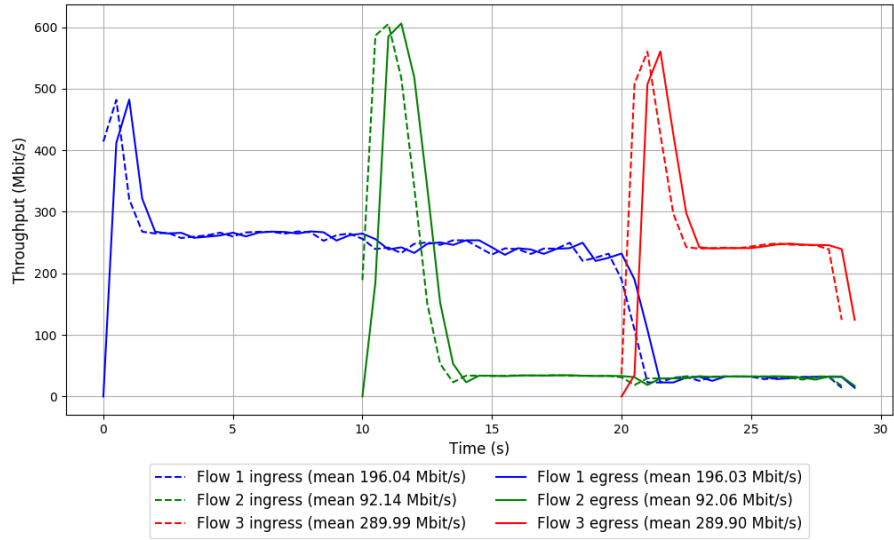
Run 1: Report of Indigo-MusesC5 — Data Link

```
Run 2: Statistics of Indigo-MusesC5

Start at: 2019-06-28 01:00:05
End at: 2019-06-28 01:00:35
Local clock offset: -0.693 ms
Remote clock offset: -2.841 ms


# Below is generated by plot.py at 2019-06-28 03:40:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 146.55 Mbit/s
95th percentile per-packet one-way delay: 3.014 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 58.31 Mbit/s
95th percentile per-packet one-way delay: 1.075 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 99.77 Mbit/s
95th percentile per-packet one-way delay: 3.631 ms
Loss rate: 0.03%
-- Flow 3:
Average throughput: 78.40 Mbit/s
95th percentile per-packet one-way delay: 1.800 ms
Loss rate: 0.00%
```
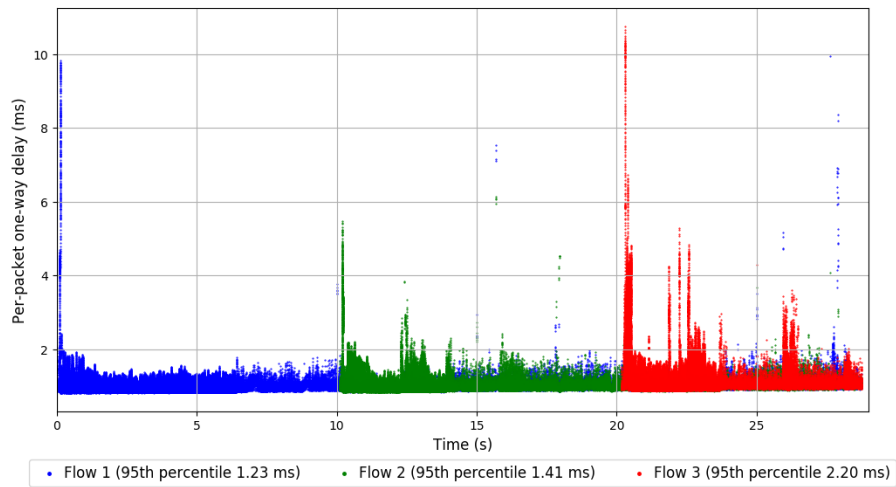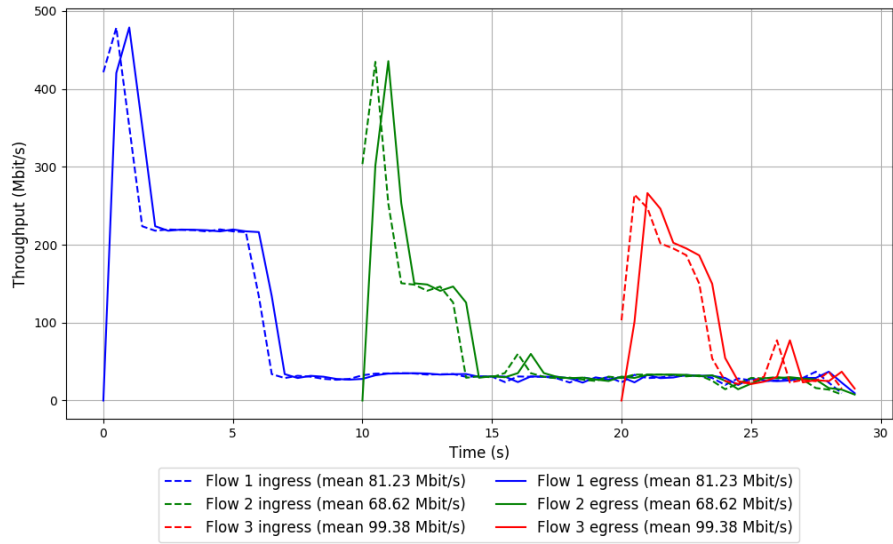
Run 2: Report of Indigo-MusesC5 — Data Link

```
Run 3: Statistics of Indigo-MusesC5

Start at: 2019-06-28 01:31:45
End at: 2019-06-28 01:32:15
Local clock offset: 0.155 ms
Remote clock offset: -1.416 ms

# Below is generated by plot.py at 2019-06-28 03:42:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 339.98 Mbit/s
95th percentile per-packet one-way delay: 1.626 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 196.03 Mbit/s
95th percentile per-packet one-way delay: 1.311 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 92.06 Mbit/s
95th percentile per-packet one-way delay: 2.838 ms
Loss rate: 0.09%
-- Flow 3:
Average throughput: 289.90 Mbit/s
95th percentile per-packet one-way delay: 1.693 ms
Loss rate: 0.03%
```
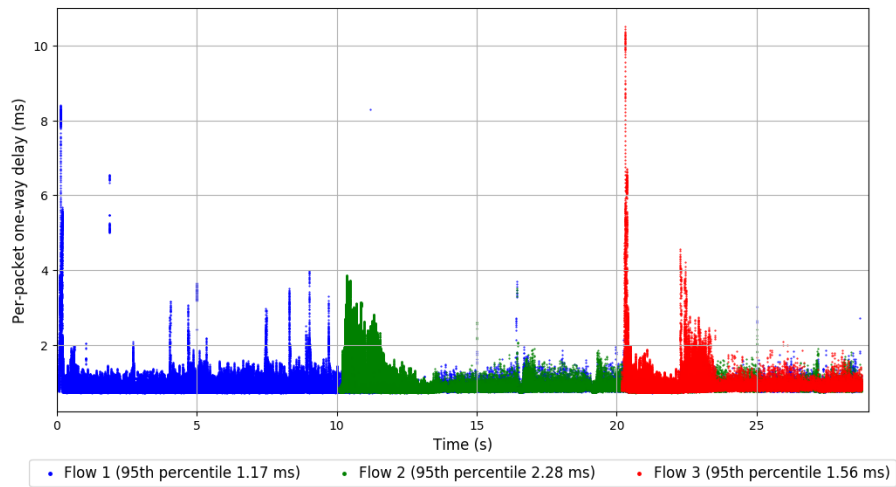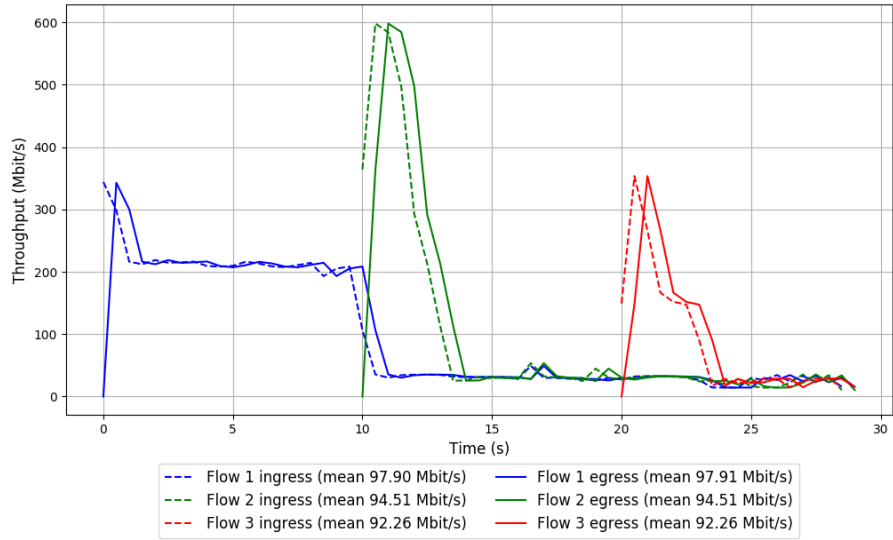
Run 3: Report of Indigo-MusesC5 — Data Link

```
Run 4: Statistics of Indigo-MusesC5

Start at: 2019-06-28 02:03:30
End at: 2019-06-28 02:04:00
Local clock offset: 2.959 ms
Remote clock offset: 1.111 ms


# Below is generated by plot.py at 2019-06-28 03:42:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 155.42 Mbit/s
95th percentile per-packet one-way delay: 1.408 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 81.23 Mbit/s
95th percentile per-packet one-way delay: 1.229 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 68.62 Mbit/s
95th percentile per-packet one-way delay: 1.407 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 99.38 Mbit/s
95th percentile per-packet one-way delay: 2.198 ms
Loss rate: 0.00%
```
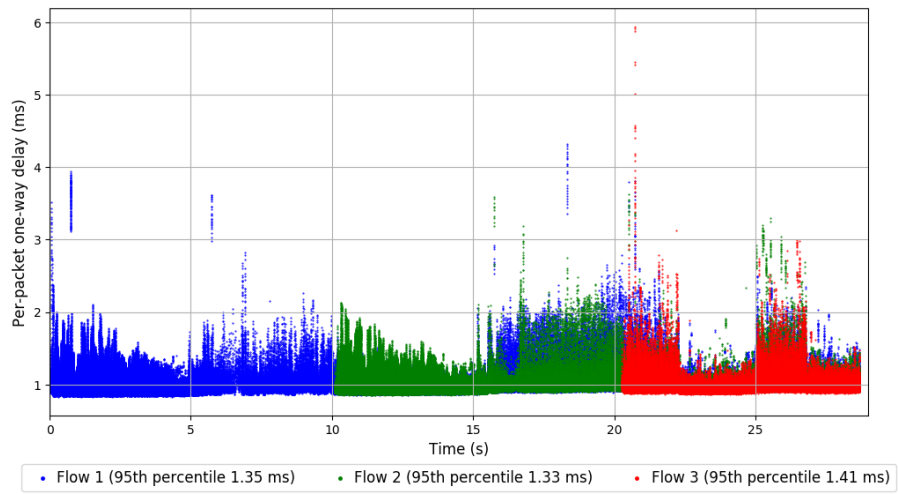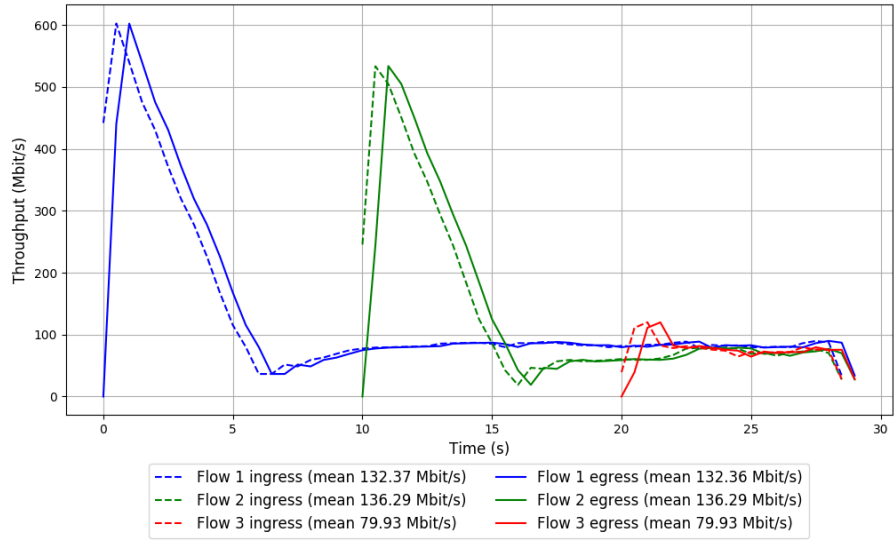
Run 4: Report of Indigo-MusesC5 — Data Link

```
Run 5: Statistics of Indigo-MusesC5

Start at: 2019-06-28 02:35:02
End at: 2019-06-28 02:35:32
Local clock offset: 3.617 ms
Remote clock offset: 1.114 ms


# Below is generated by plot.py at 2019-06-28 03:42:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 186.82 Mbit/s
95th percentile per-packet one-way delay: 1.750 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 97.91 Mbit/s
95th percentile per-packet one-way delay: 1.171 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 94.51 Mbit/s
95th percentile per-packet one-way delay: 2.279 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 92.26 Mbit/s
95th percentile per-packet one-way delay: 1.561 ms
Loss rate: 0.00%
```
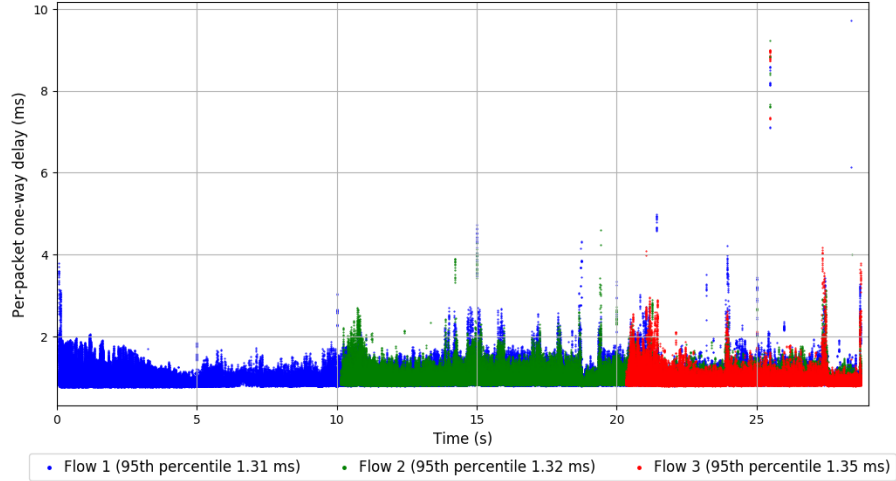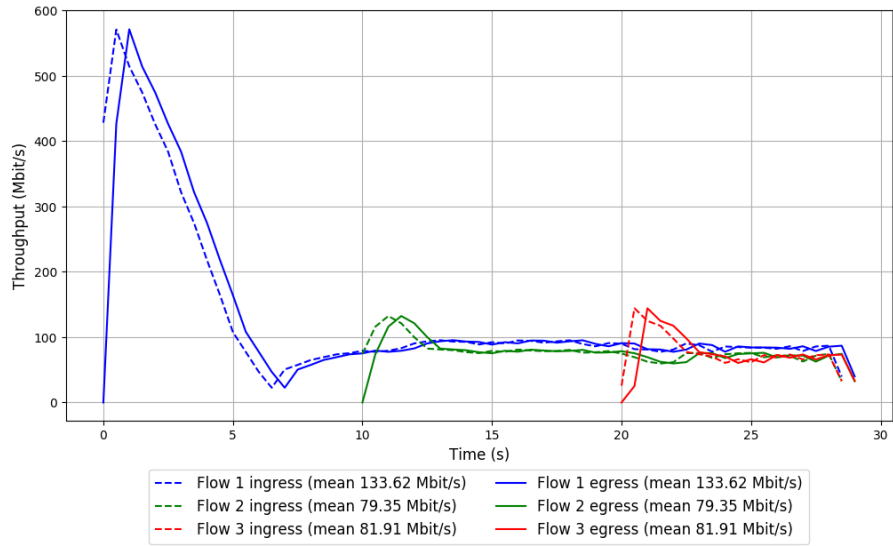
Run 5: Report of Indigo-MusesC5 — Data Link

```
Run 1: Statistics of Indigo-MusesD

Start at: 2019-06-28 00:49:40
End at: 2019-06-28 00:50:10
Local clock offset: -1.227 ms
Remote clock offset: -2.961 ms

# Below is generated by plot.py at 2019-06-28 03:42:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 244.26 Mbit/s
95th percentile per-packet one-way delay: 1.351 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 132.36 Mbit/s
95th percentile per-packet one-way delay: 1.352 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 136.29 Mbit/s
95th percentile per-packet one-way delay: 1.333 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 79.93 Mbit/s
95th percentile per-packet one-way delay: 1.406 ms
Loss rate: 0.00%
```
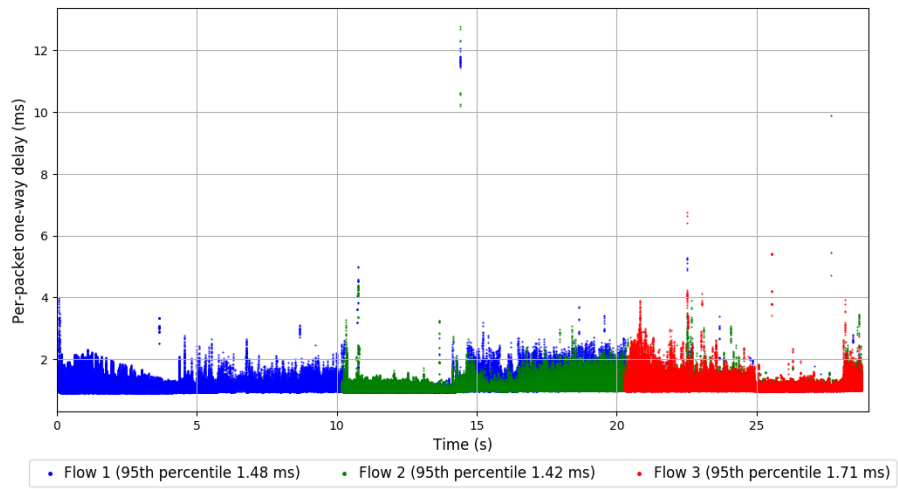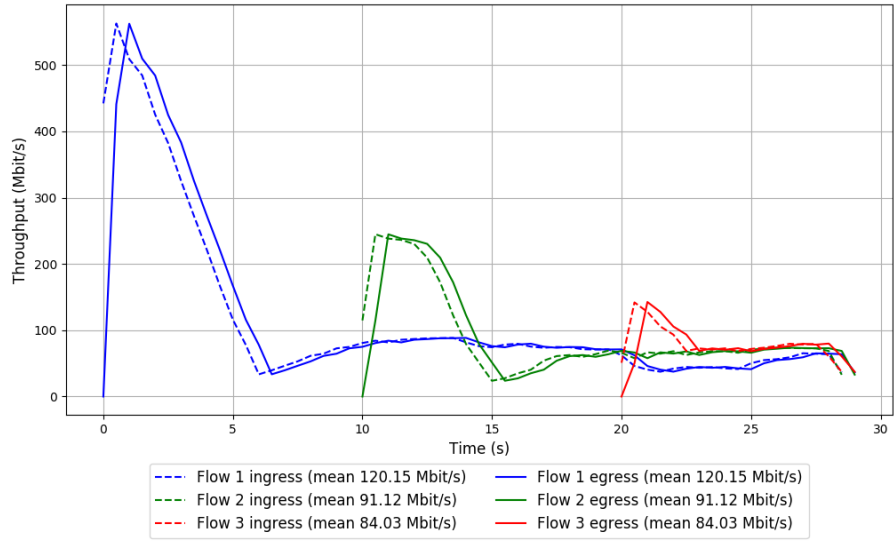
Run 1: Report of Indigo-MusesD — Data Link

```
Run 2: Statistics of Indigo-MusesD

Start at: 2019-06-28 01:21:30
End at: 2019-06-28 01:22:00
Local clock offset: -0.385 ms
Remote clock offset: -2.58 ms

# Below is generated by plot.py at 2019-06-28 03:42:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 209.01 Mbit/s
95th percentile per-packet one-way delay: 1.316 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 133.62 Mbit/s
95th percentile per-packet one-way delay: 1.308 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 79.35 Mbit/s
95th percentile per-packet one-way delay: 1.323 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 81.91 Mbit/s
95th percentile per-packet one-way delay: 1.348 ms
Loss rate: 0.00%
```
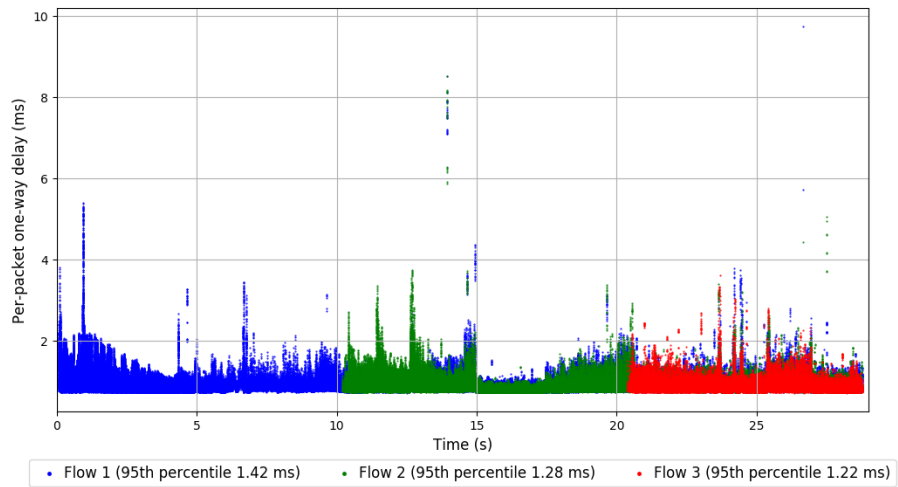
Run 2: Report of Indigo-MusesD — Data Link

```
Run 3: Statistics of Indigo-MusesD

Start at: 2019-06-28 01:53:08
End at: 2019-06-28 01:53:38
Local clock offset: 1.627 ms
Remote clock offset: 0.782 ms

# Below is generated by plot.py at 2019-06-28 03:42:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 203.94 Mbit/s
95th percentile per-packet one-way delay: 1.498 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 120.15 Mbit/s
95th percentile per-packet one-way delay: 1.483 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 91.12 Mbit/s
95th percentile per-packet one-way delay: 1.418 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 84.03 Mbit/s
95th percentile per-packet one-way delay: 1.711 ms
Loss rate: 0.00%
```
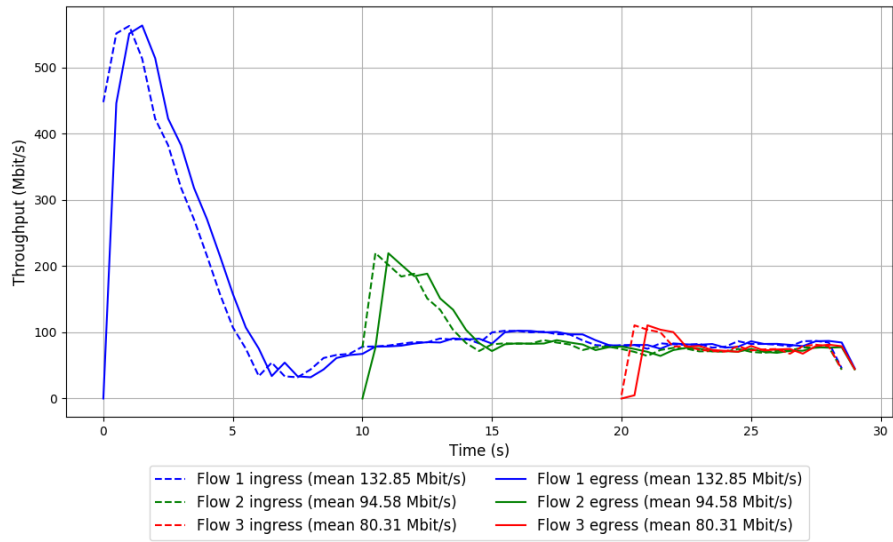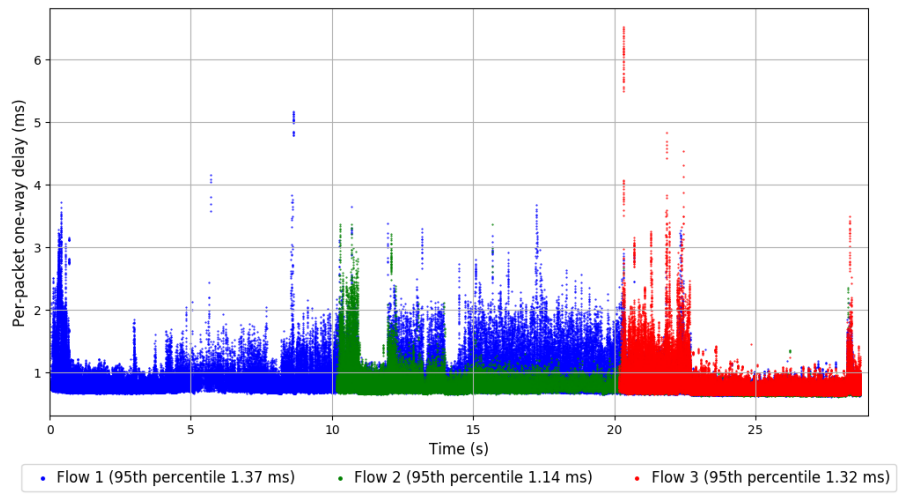
Run 3: Report of Indigo-MusesD — Data Link

```
Run 4: Statistics of Indigo-MusesD

Start at: 2019-06-28 02:24:47
End at: 2019-06-28 02:25:17
Local clock offset: 3.57 ms
Remote clock offset: 0.907 ms


# Below is generated by plot.py at 2019-06-28 03:42:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 217.32 Mbit/s
95th percentile per-packet one-way delay: 1.353 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 132.85 Mbit/s
95th percentile per-packet one-way delay: 1.415 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 94.58 Mbit/s
95th percentile per-packet one-way delay: 1.284 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 80.31 Mbit/s
95th percentile per-packet one-way delay: 1.217 ms
Loss rate: 0.00%
```
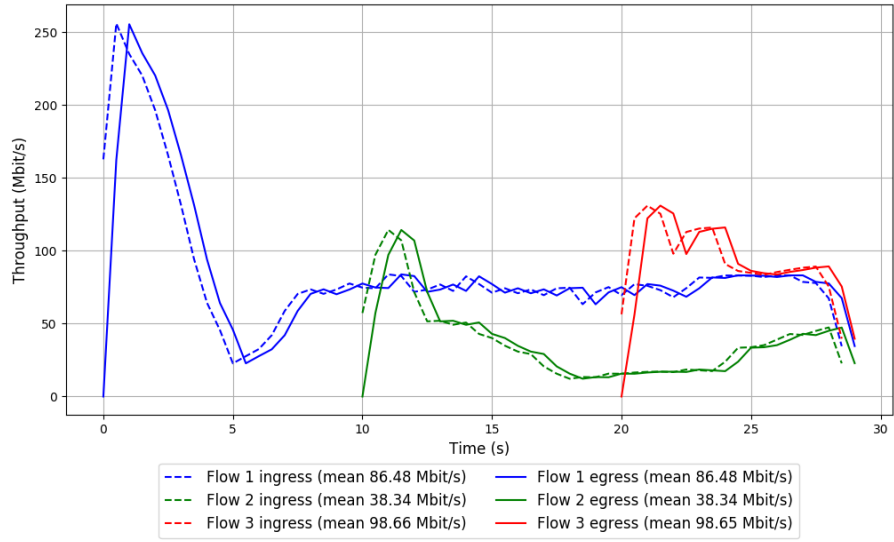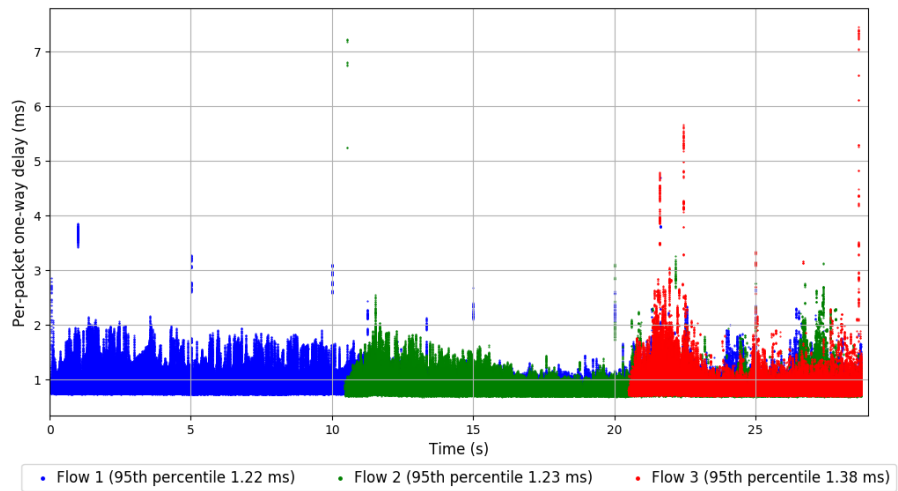
Run 4: Report of Indigo-MusesD — Data Link

```
Run 5: Statistics of Indigo-MusesD

Start at: 2019-06-28 02:56:10
End at: 2019-06-28 02:56:40
Local clock offset: 1.435 ms
Remote clock offset: -3.079 ms


# Below is generated by plot.py at 2019-06-28 03:42:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 140.65 Mbit/s
95th percentile per-packet one-way delay: 1.327 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 86.48 Mbit/s
95th percentile per-packet one-way delay: 1.366 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 38.34 Mbit/s
95th percentile per-packet one-way delay: 1.135 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 98.65 Mbit/s
95th percentile per-packet one-way delay: 1.317 ms
Loss rate: 0.00%
```
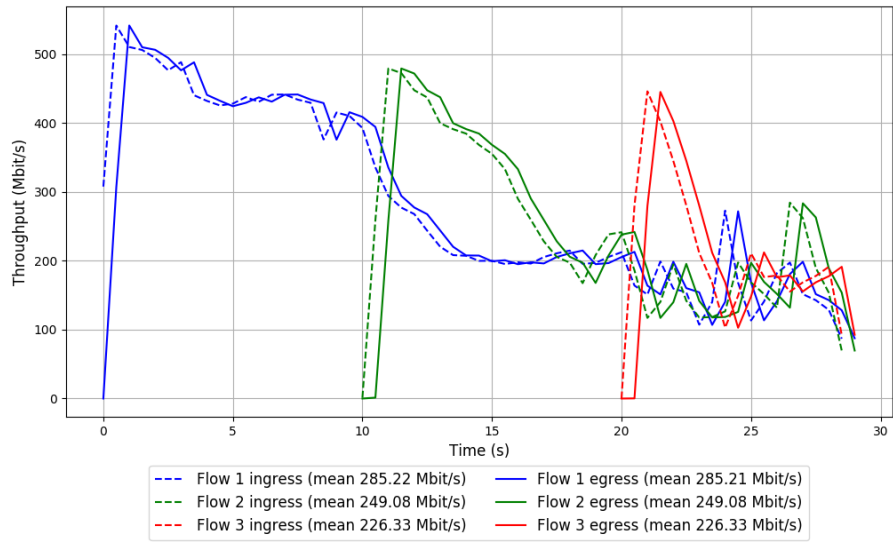
Run 5: Report of Indigo-MusesD — Data Link

```
Run 1: Statistics of Indigo-MusesT

Start at: 2019-06-28 00:46:35
End at: 2019-06-28 00:47:05
Local clock offset: -1.289 ms
Remote clock offset: -2.908 ms


# Below is generated by plot.py at 2019-06-28 03:46:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 508.69 Mbit/s
95th percentile per-packet one-way delay: 1.243 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 285.21 Mbit/s
95th percentile per-packet one-way delay: 1.221 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 249.08 Mbit/s
95th percentile per-packet one-way delay: 1.226 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 226.33 Mbit/s
95th percentile per-packet one-way delay: 1.375 ms
Loss rate: 0.00%
```
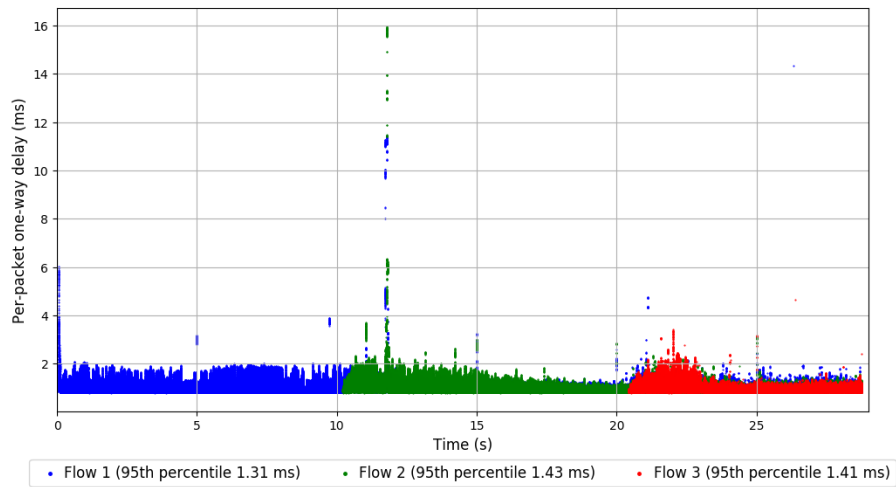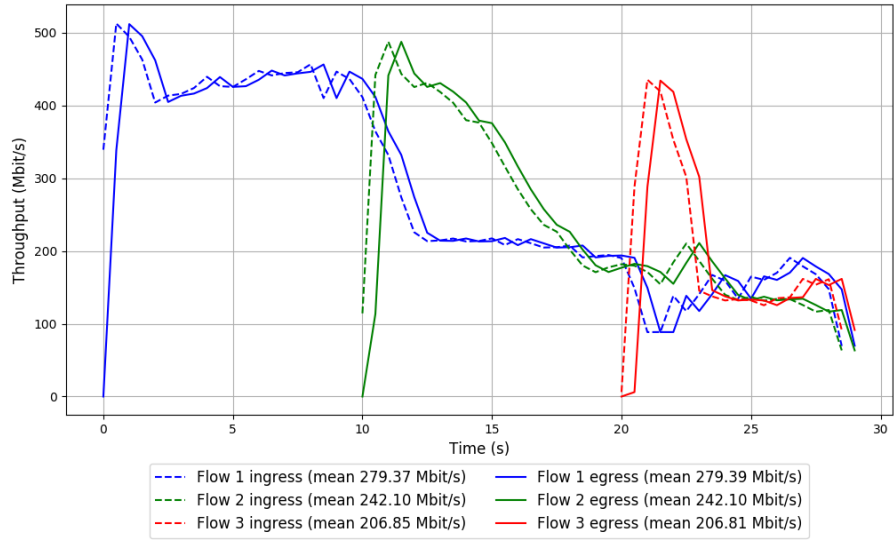
Run 1: Report of Indigo-MusesT — Data Link

```
Run 2: Statistics of Indigo-MusesT

Start at: 2019-06-28 01:18:27
End at: 2019-06-28 01:18:57
Local clock offset: -0.635 ms
Remote clock offset: -2.568 ms


# Below is generated by plot.py at 2019-06-28 03:46:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 495.46 Mbit/s
95th percentile per-packet one-way delay: 1.363 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 279.39 Mbit/s
95th percentile per-packet one-way delay: 1.311 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 242.10 Mbit/s
95th percentile per-packet one-way delay: 1.427 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 206.81 Mbit/s
95th percentile per-packet one-way delay: 1.413 ms
Loss rate: 0.00%
```
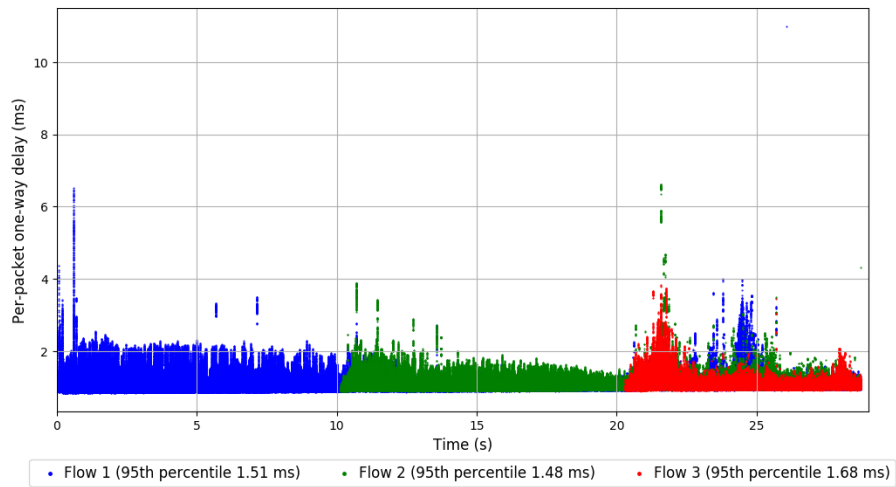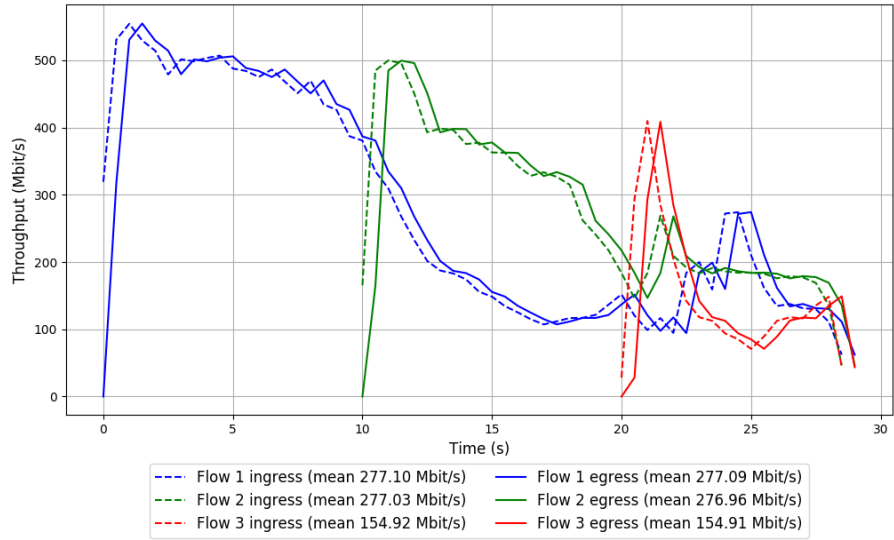
Run 2: Report of Indigo-MusesT — Data Link

```
Run 3: Statistics of Indigo-MusesT

Start at: 2019-06-28 01:50:09
End at: 2019-06-28 01:50:39
Local clock offset: 0.993 ms
Remote clock offset: 0.587 ms


# Below is generated by plot.py at 2019-06-28 03:46:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 501.83 Mbit/s
95th percentile per-packet one-way delay: 1.518 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 277.09 Mbit/s
95th percentile per-packet one-way delay: 1.514 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 276.96 Mbit/s
95th percentile per-packet one-way delay: 1.484 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 154.91 Mbit/s
95th percentile per-packet one-way delay: 1.676 ms
Loss rate: 0.01%
```
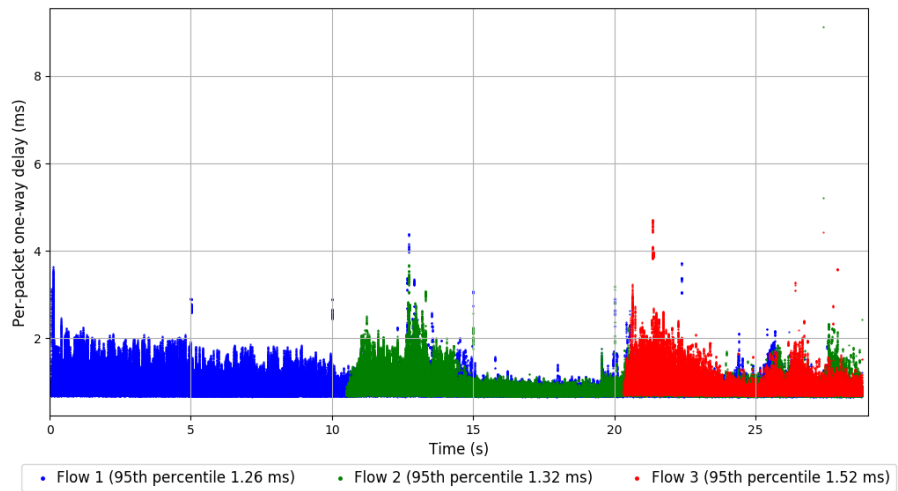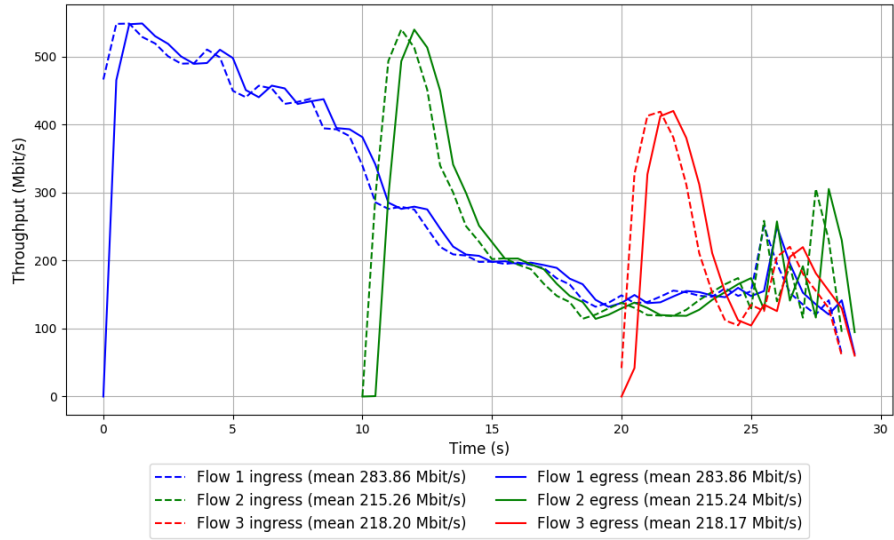
Run 3: Report of Indigo-MusesT — Data Link

```
Run 4: Statistics of Indigo-MusesT

Start at: 2019-06-28 02:21:50
End at: 2019-06-28 02:22:20
Local clock offset: 3.672 ms
Remote clock offset: 0.843 ms


# Below is generated by plot.py at 2019-06-28 03:46:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 484.70 Mbit/s
95th percentile per-packet one-way delay: 1.317 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 283.86 Mbit/s
95th percentile per-packet one-way delay: 1.265 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 215.24 Mbit/s
95th percentile per-packet one-way delay: 1.318 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 218.17 Mbit/s
95th percentile per-packet one-way delay: 1.519 ms
Loss rate: 0.01%
```
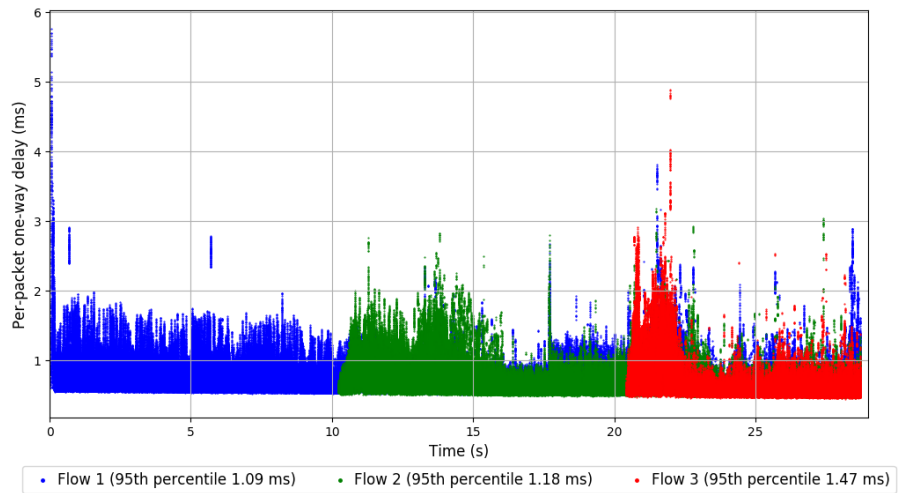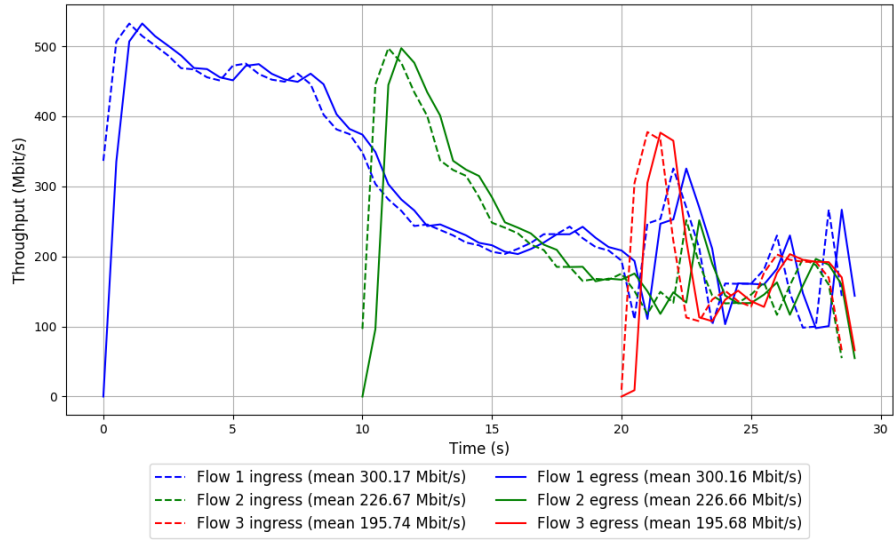
Run 4: Report of Indigo-MusesT — Data Link

```
Run 5: Statistics of Indigo-MusesT

Start at: 2019-06-28 02:53:19
End at: 2019-06-28 02:53:49
Local clock offset: 2.172 ms
Remote clock offset: -2.872 ms


# Below is generated by plot.py at 2019-06-28 03:47:07
# Datalink statistics
-- Total of 3 flows:
Average throughput: 502.73 Mbit/s
95th percentile per-packet one-way delay: 1.160 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 300.16 Mbit/s
95th percentile per-packet one-way delay: 1.094 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 226.66 Mbit/s
95th percentile per-packet one-way delay: 1.181 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 195.68 Mbit/s
95th percentile per-packet one-way delay: 1.465 ms
Loss rate: 0.03%
```
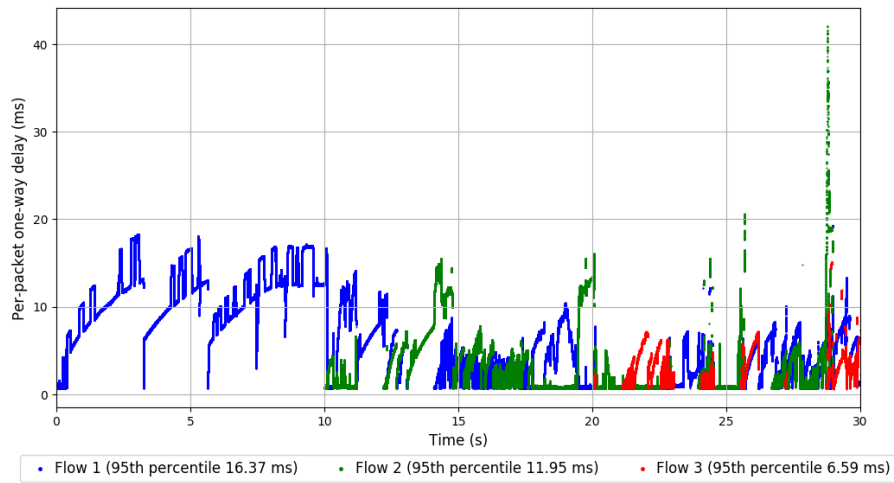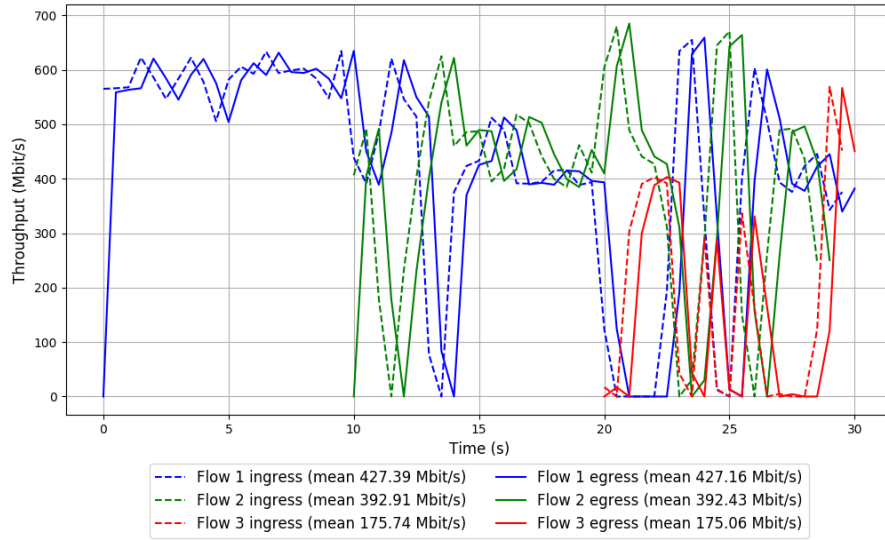
Run 5: Report of Indigo-MusesT — Data Link

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```
Run 1: Statistics of LEDBAT

Start at: 2019-06-28 00:43:05
End at: 2019-06-28 00:43:35
Local clock offset: -1.004 ms
Remote clock offset: -2.846 ms


# Below is generated by plot.py at 2019-06-28 03:50:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 733.63 Mbit/s
95th percentile per-packet one-way delay: 14.093 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 427.16 Mbit/s
95th percentile per-packet one-way delay: 16.372 ms
Loss rate: 0.05%
-- Flow 2:
Average throughput: 392.43 Mbit/s
95th percentile per-packet one-way delay: 11.952 ms
Loss rate: 0.11%
-- Flow 3:
Average throughput: 175.06 Mbit/s
95th percentile per-packet one-way delay: 6.593 ms
Loss rate: 0.37%
```
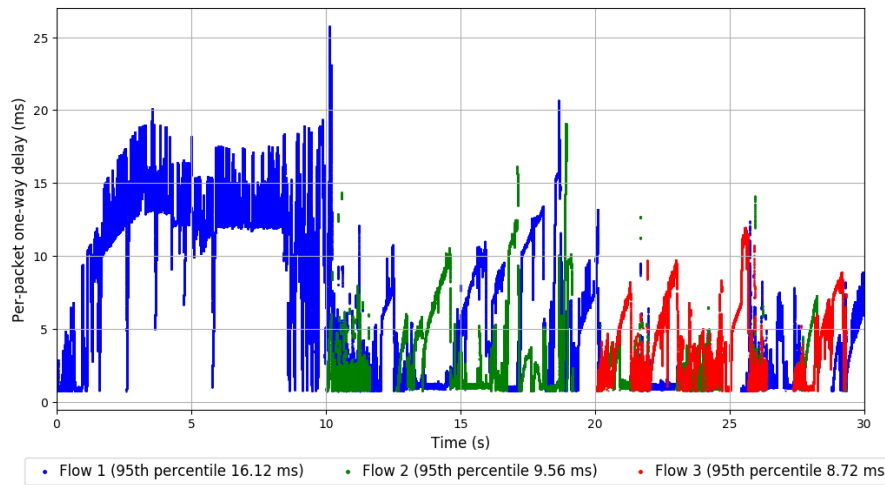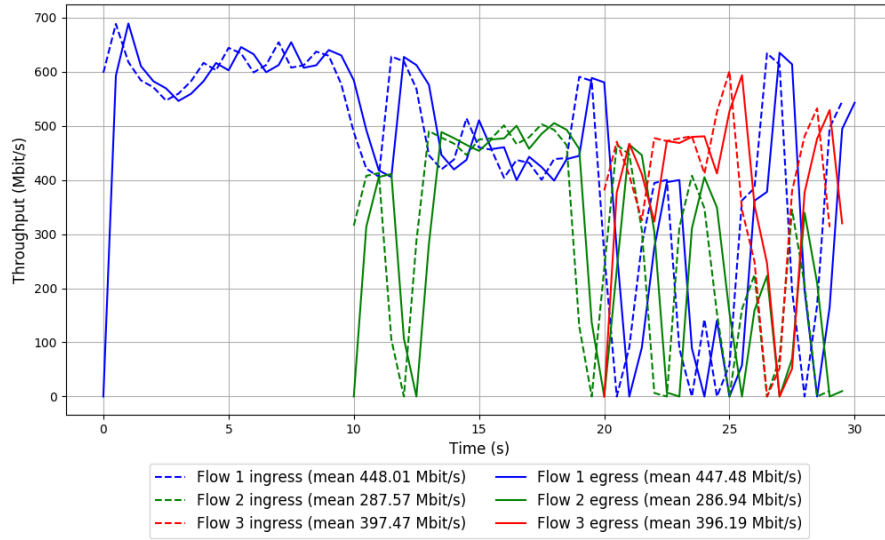
Run 1: Report of LEDBAT — Data Link

```
Run 2: Statistics of LEDBAT

Start at: 2019-06-28 01:14:55
End at: 2019-06-28 01:15:25
Local clock offset: -0.681 ms
Remote clock offset: -2.583 ms


# Below is generated by plot.py at 2019-06-28 03:50:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 754.86 Mbit/s
95th percentile per-packet one-way delay: 15.217 ms
Loss rate: 0.17%
-- Flow 1:
Average throughput: 447.48 Mbit/s
95th percentile per-packet one-way delay: 16.116 ms
Loss rate: 0.12%
-- Flow 2:
Average throughput: 286.94 Mbit/s
95th percentile per-packet one-way delay: 9.556 ms
Loss rate: 0.22%
-- Flow 3:
Average throughput: 396.19 Mbit/s
95th percentile per-packet one-way delay: 8.724 ms
Loss rate: 0.25%
```
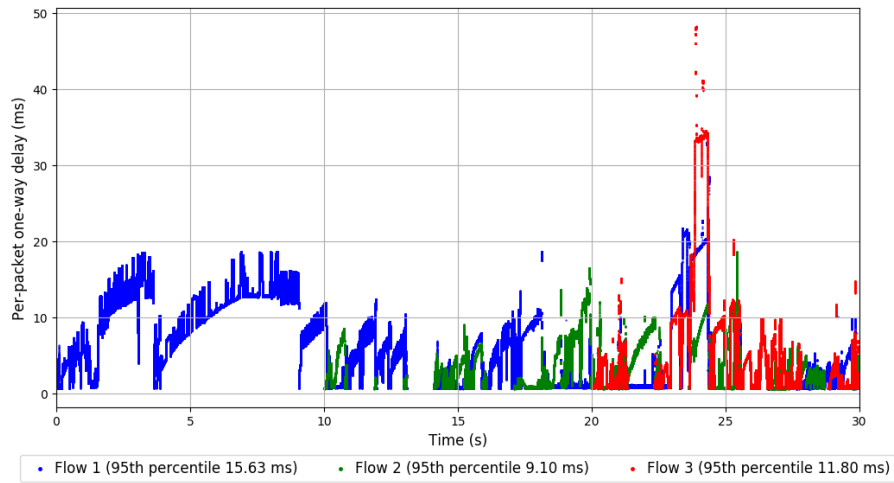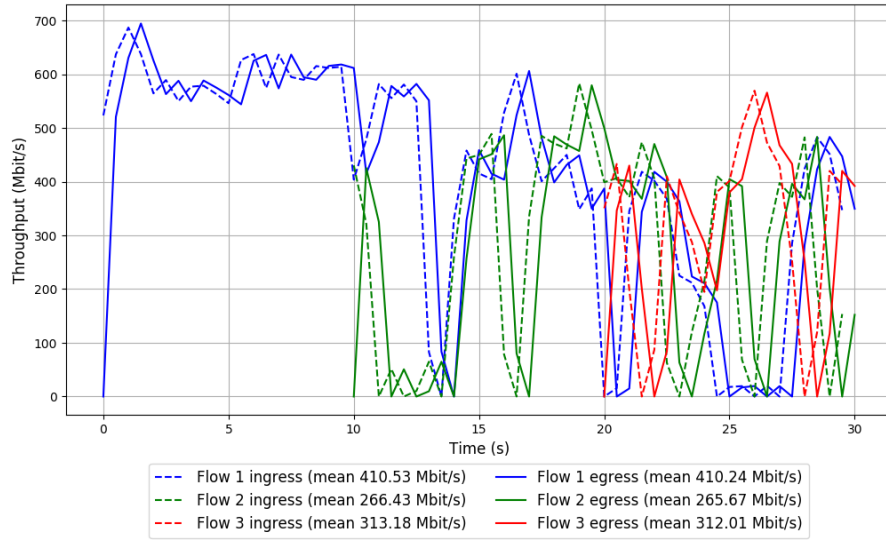
Run 2: Report of LEDBAT — Data Link

Flow 1 ingress (mean 448.01 Mbit/s)   Flow 1 egress (mean 447.48 Mbit/s)
Flow 2 ingress (mean 287.57 Mbit/s)   Flow 2 egress (mean 286.94 Mbit/s)
Flow 3 ingress (mean 397.47 Mbit/s)   Flow 3 egress (mean 396.19 Mbit/s)

Flow 1 (95th percentile 16.12 ms)   Flow 2 (95th percentile 9.56 ms)   Flow 3 (95th percentile 8.72 ms)

```
Run 3: Statistics of LEDBAT

Start at: 2019-06-28 01:46:41
End at: 2019-06-28 01:47:11
Local clock offset: 0.435 ms
Remote clock offset: 0.3 ms


# Below is generated by plot.py at 2019-06-28 03:50:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 690.94 Mbit/s
95th percentile per-packet one-way delay: 14.447 ms
Loss rate: 0.17%
-- Flow 1:
Average throughput: 410.24 Mbit/s
95th percentile per-packet one-way delay: 15.633 ms
Loss rate: 0.07%
-- Flow 2:
Average throughput: 265.67 Mbit/s
95th percentile per-packet one-way delay: 9.095 ms
Loss rate: 0.28%
-- Flow 3:
Average throughput: 312.01 Mbit/s
95th percentile per-packet one-way delay: 11.797 ms
Loss rate: 0.37%
```
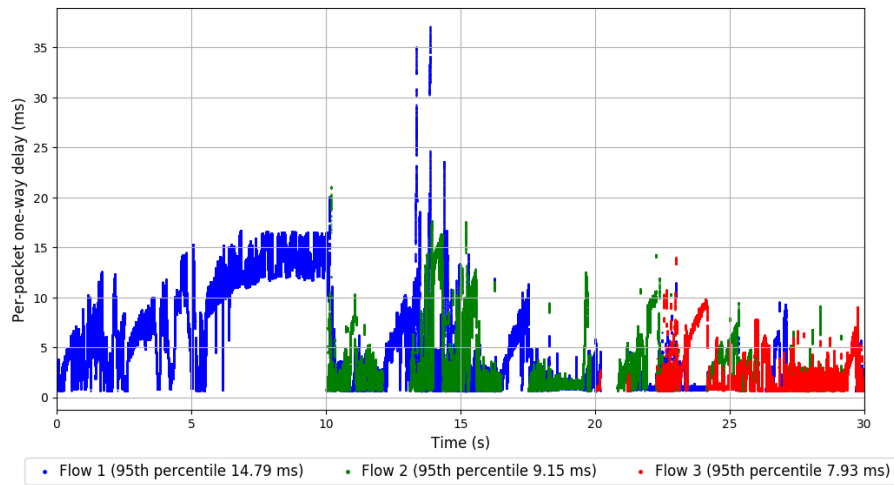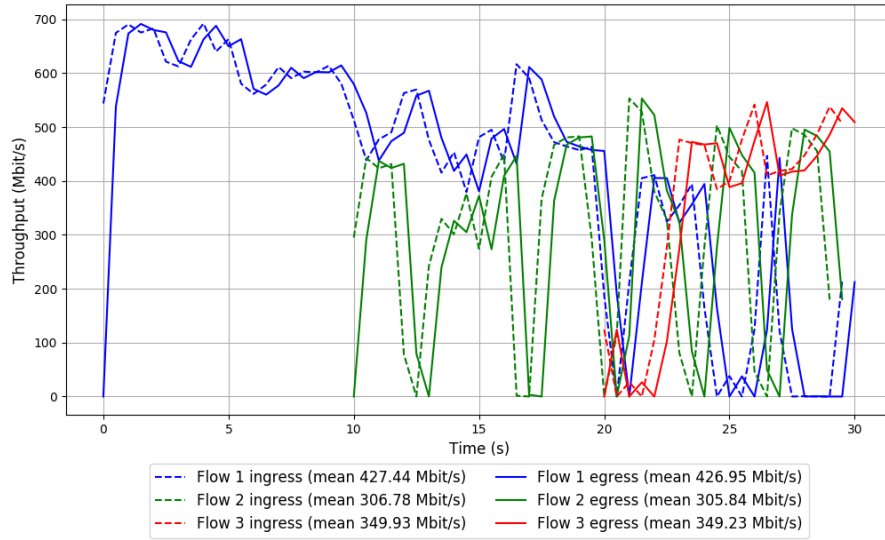
Run 3: Report of LEDBAT — Data Link

```
Run 4: Statistics of LEDBAT

Start at: 2019-06-28 02:18:21
End at: 2019-06-28 02:18:51
Local clock offset: 3.869 ms
Remote clock offset: 0.758 ms

# Below is generated by plot.py at 2019-06-28 03:55:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 738.81 Mbit/s
95th percentile per-packet one-way delay: 13.492 ms
Loss rate: 0.18%
-- Flow 1:
Average throughput: 426.95 Mbit/s
95th percentile per-packet one-way delay: 14.786 ms
Loss rate: 0.12%
-- Flow 2:
Average throughput: 305.84 Mbit/s
95th percentile per-packet one-way delay: 9.155 ms
Loss rate: 0.31%
-- Flow 3:
Average throughput: 349.23 Mbit/s
95th percentile per-packet one-way delay: 7.935 ms
Loss rate: 0.20%
```
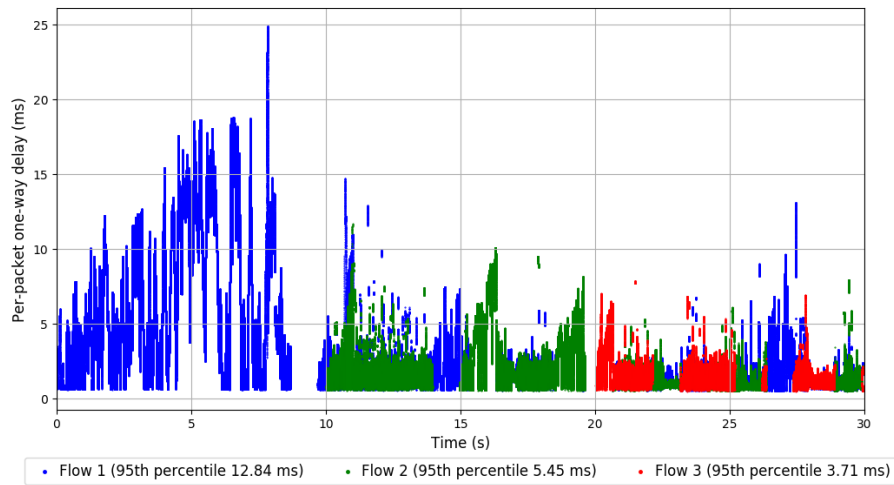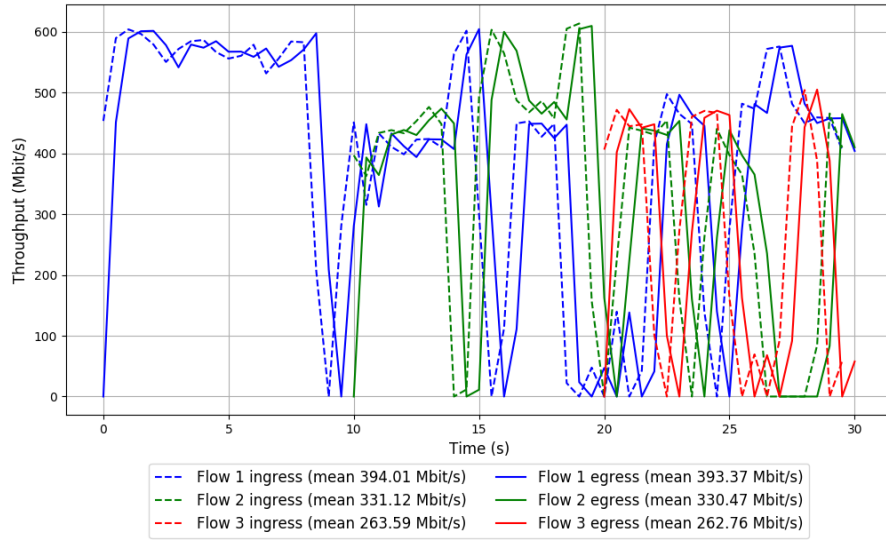
Run 4: Report of LEDBAT — Data Link

```
Run 5: Statistics of LEDBAT

Start at: 2019-06-28 02:49:53
End at: 2019-06-28 02:50:23
Local clock offset: 3.238 ms
Remote clock offset: -2.473 ms

# Below is generated by plot.py at 2019-06-28 03:55:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 699.53 Mbit/s
95th percentile per-packet one-way delay: 11.074 ms
Loss rate: 0.19%
-- Flow 1:
Average throughput: 393.37 Mbit/s
95th percentile per-packet one-way delay: 12.843 ms
Loss rate: 0.16%
-- Flow 2:
Average throughput: 330.47 Mbit/s
95th percentile per-packet one-way delay: 5.450 ms
Loss rate: 0.20%
-- Flow 3:
Average throughput: 262.76 Mbit/s
95th percentile per-packet one-way delay: 3.706 ms
Loss rate: 0.31%
```
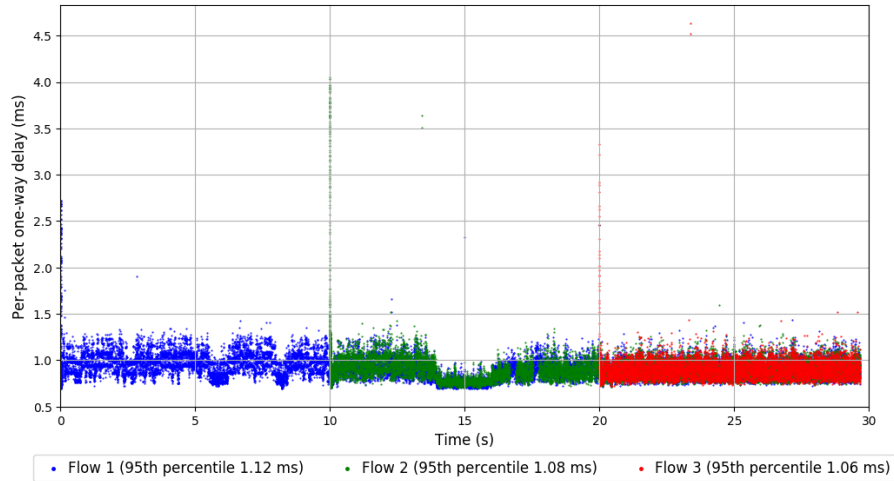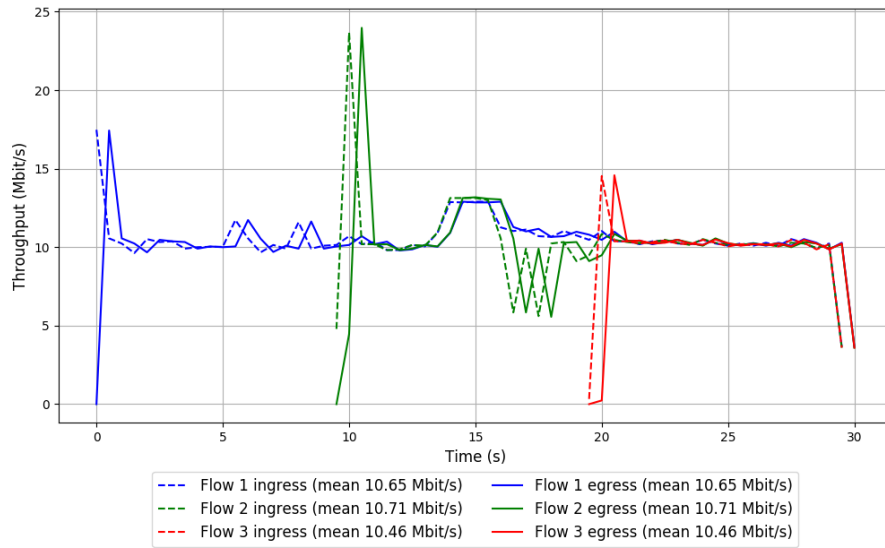
Run 5: Report of LEDBAT — Data Link

```
Run 1: Statistics of Muses\_DecisionTree

Start at: 2019-06-28 00:37:49
End at: 2019-06-28 00:38:19
Local clock offset: -0.574 ms
Remote clock offset: -2.525 ms


# Below is generated by plot.py at 2019-06-28 03:55:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 21.18 Mbit/s
95th percentile per-packet one-way delay: 1.097 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 10.65 Mbit/s
95th percentile per-packet one-way delay: 1.125 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 10.71 Mbit/s
95th percentile per-packet one-way delay: 1.084 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 10.46 Mbit/s
95th percentile per-packet one-way delay: 1.062 ms
Loss rate: 0.00%
```
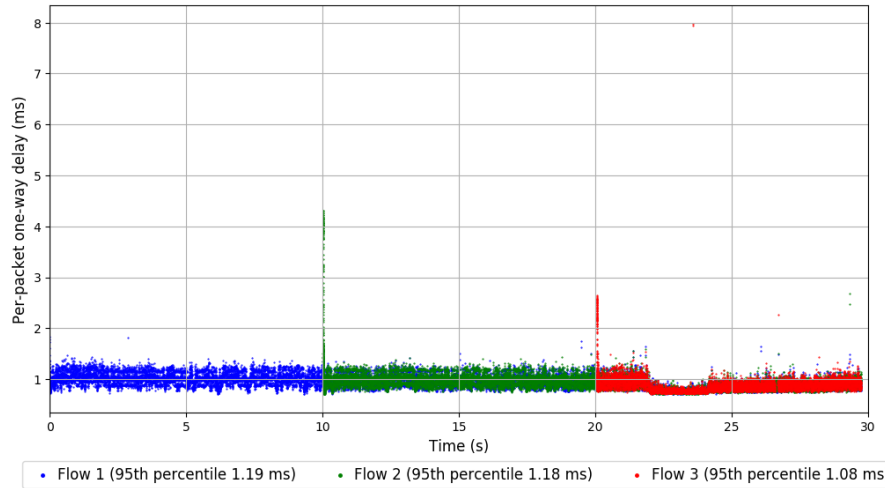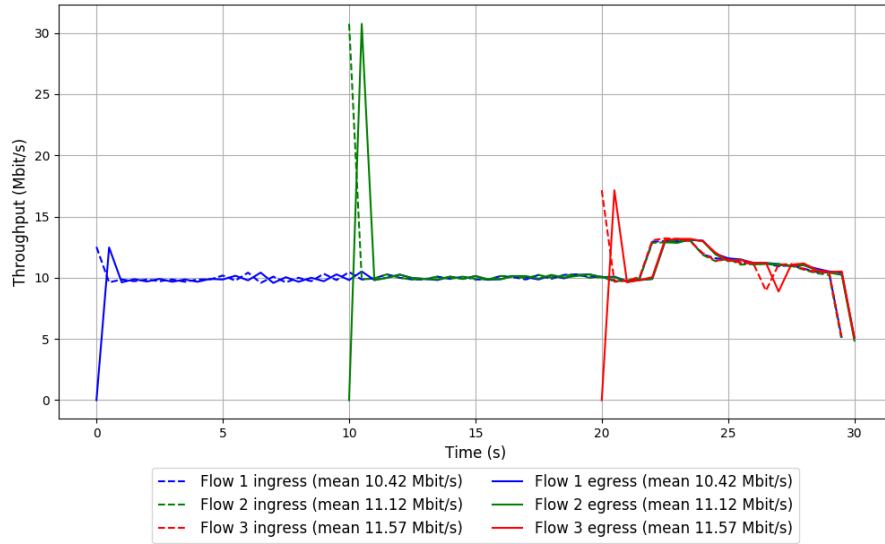
Run 1: Report of Muses_DecisionTree — Data Link

```
Run 2: Statistics of Muses\_DecisionTree

Start at: 2019-06-28 01:09:41
End at: 2019-06-28 01:10:11
Local clock offset: -0.78 ms
Remote clock offset: -2.654 ms


# Below is generated by plot.py at 2019-06-28 03:55:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 21.57 Mbit/s
95th percentile per-packet one-way delay: 1.179 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 10.42 Mbit/s
95th percentile per-packet one-way delay: 1.189 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 11.12 Mbit/s
95th percentile per-packet one-way delay: 1.179 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 11.57 Mbit/s
95th percentile per-packet one-way delay: 1.080 ms
Loss rate: 0.01%
```
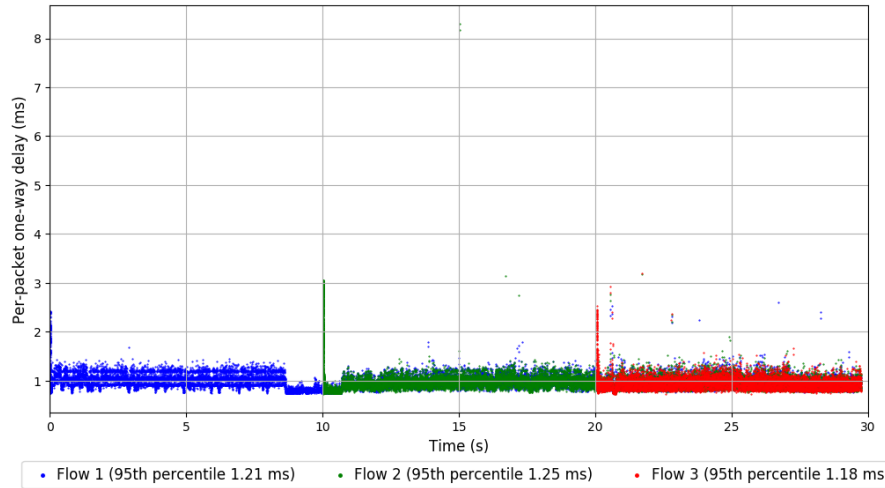
Run 2: Report of Muses_DecisionTree — Data Link

```
Run 3: Statistics of Muses\_DecisionTree

Start at: 2019-06-28 01:41:25
End at: 2019-06-28 01:41:55
Local clock offset: 0.376 ms
Remote clock offset: -0.039 ms

# Below is generated by plot.py at 2019-06-28 03:55:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 21.49 Mbit/s
95th percentile per-packet one-way delay: 1.216 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 10.48 Mbit/s
95th percentile per-packet one-way delay: 1.212 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 11.50 Mbit/s
95th percentile per-packet one-way delay: 1.246 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 10.37 Mbit/s
95th percentile per-packet one-way delay: 1.182 ms
Loss rate: 0.01%
```
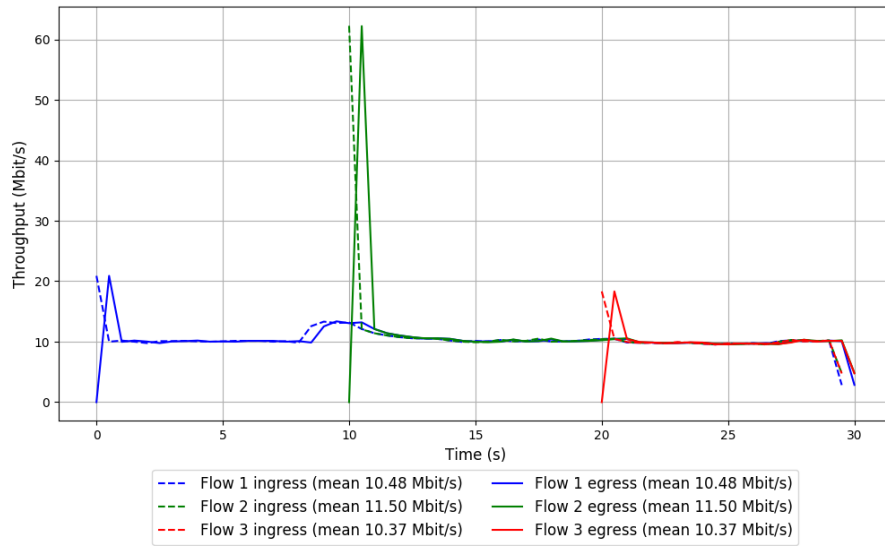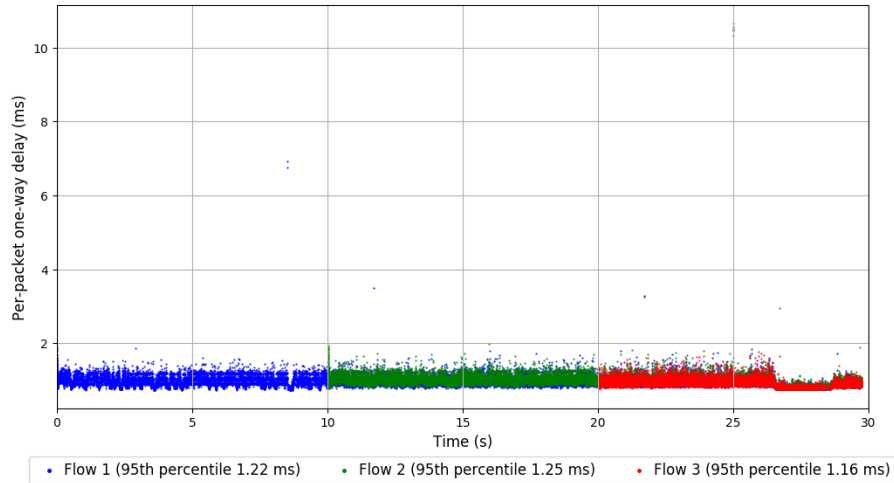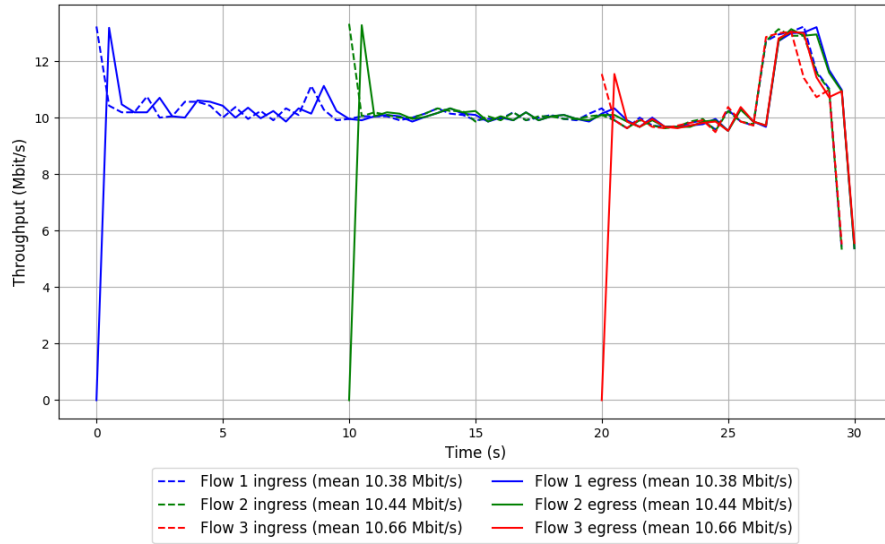
Run 3: Report of Muses_DecisionTree — Data Link

- - - Flow 1 ingress (mean 10.48 Mbit/s) ——— Flow 1 egress (mean 10.48 Mbit/s)
- - - Flow 2 ingress (mean 11.50 Mbit/s) ——— Flow 2 egress (mean 11.50 Mbit/s)
- - - Flow 3 ingress (mean 10.37 Mbit/s) ——— Flow 3 egress (mean 10.37 Mbit/s)

• Flow 1 (95th percentile 1.21 ms)   • Flow 2 (95th percentile 1.25 ms)   • Flow 3 (95th percentile 1.18 ms)

```
Run 4: Statistics of Muses\_DecisionTree

Start at: 2019-06-28 02:13:07
End at: 2019-06-28 02:13:37
Local clock offset: 3.584 ms
Remote clock offset: 0.756 ms


# Below is generated by plot.py at 2019-06-28 03:55:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 20.77 Mbit/s
95th percentile per-packet one-way delay: 1.228 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 10.38 Mbit/s
95th percentile per-packet one-way delay: 1.220 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 10.44 Mbit/s
95th percentile per-packet one-way delay: 1.248 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 10.66 Mbit/s
95th percentile per-packet one-way delay: 1.161 ms
Loss rate: 0.01%
```
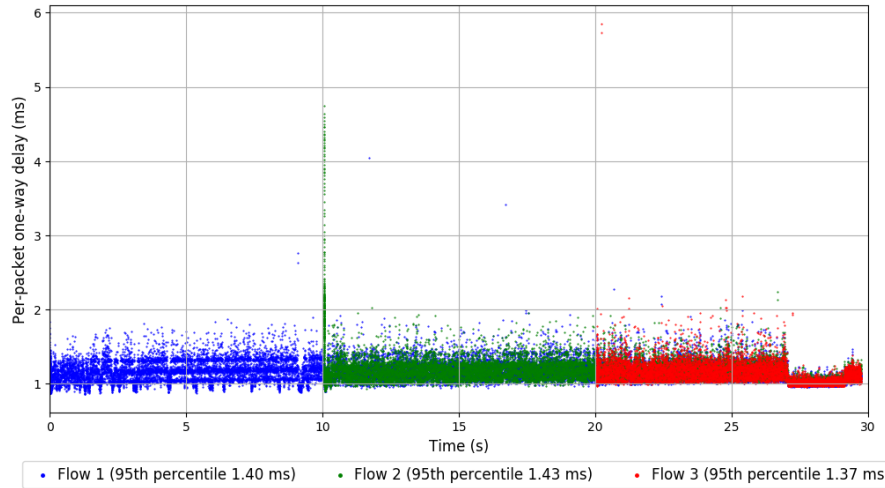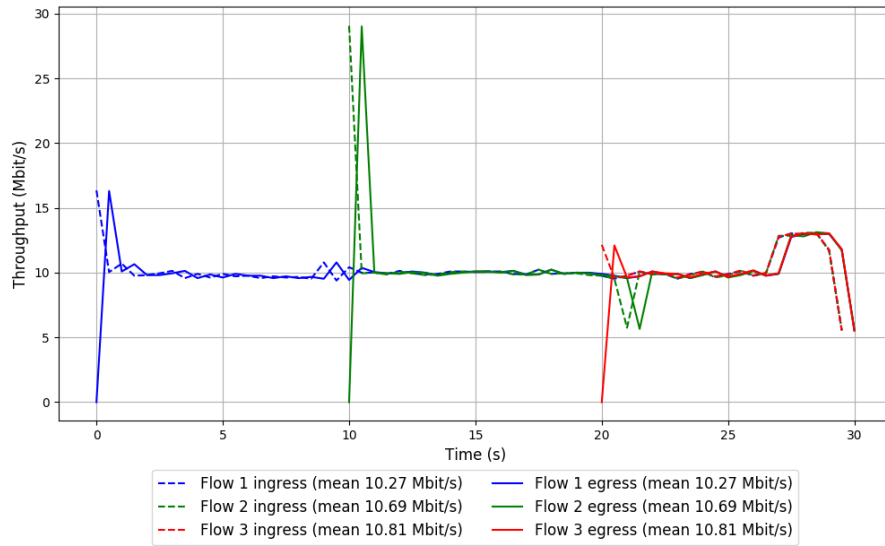
Run 4: Report of Muses_DecisionTree — Data Link

```
Run 5: Statistics of Muses\_DecisionTree

Start at: 2019-06-28 02:44:36
End at: 2019-06-28 02:45:06
Local clock offset: 3.849 ms
Remote clock offset: -1.584 ms


# Below is generated by plot.py at 2019-06-28 03:55:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 20.87 Mbit/s
95th percentile per-packet one-way delay: 1.407 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 10.27 Mbit/s
95th percentile per-packet one-way delay: 1.404 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 10.69 Mbit/s
95th percentile per-packet one-way delay: 1.425 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 10.81 Mbit/s
95th percentile per-packet one-way delay: 1.368 ms
Loss rate: 0.00%
```
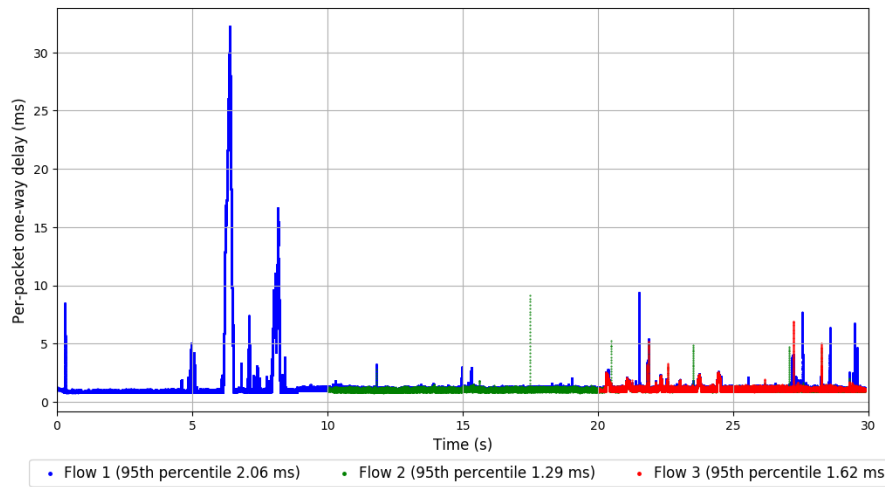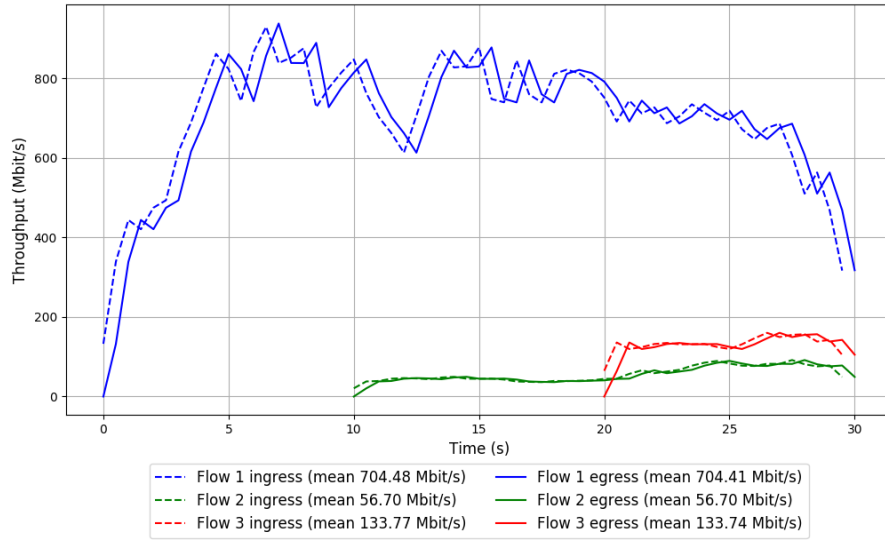
Run 5: Report of Muses_DecisionTree — Data Link

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```
Run 1: Statistics of PCC-Allegro

Start at: 2019-06-28 00:48:06
End at: 2019-06-28 00:48:36
Local clock offset: -1.368 ms
Remote clock offset: -2.932 ms

# Below is generated by plot.py at 2019-06-28 03:57:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 786.19 Mbit/s
95th percentile per-packet one-way delay: 1.967 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 704.41 Mbit/s
95th percentile per-packet one-way delay: 2.061 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 56.70 Mbit/s
95th percentile per-packet one-way delay: 1.295 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 133.74 Mbit/s
95th percentile per-packet one-way delay: 1.622 ms
Loss rate: 0.02%
```
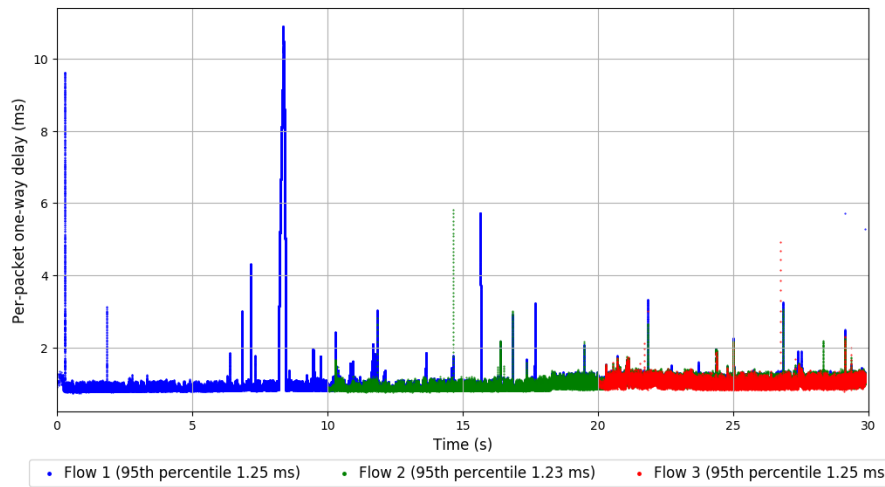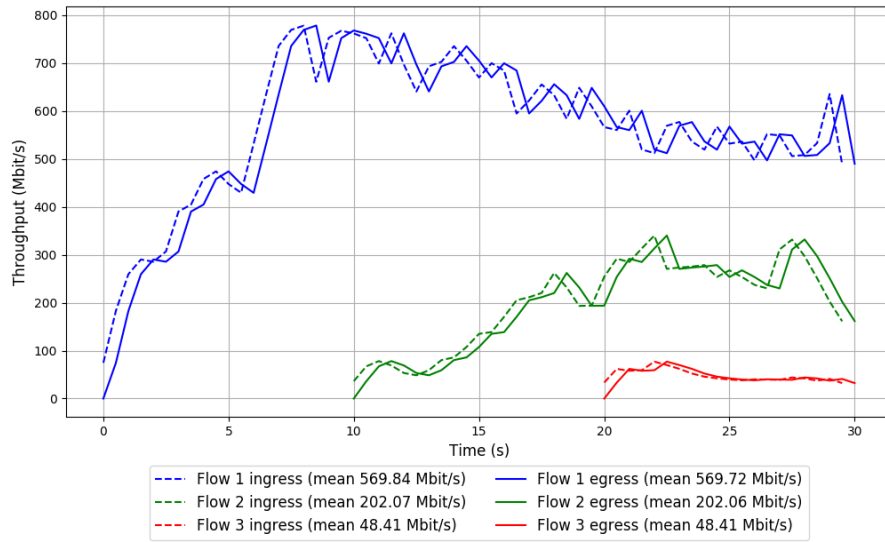
Run 1: Report of PCC-Allegro — Data Link

```
Run 2: Statistics of PCC-Allegro

Start at: 2019-06-28 01:19:57
End at: 2019-06-28 01:20:27
Local clock offset: -0.489 ms
Remote clock offset: -2.538 ms


# Below is generated by plot.py at 2019-06-28 03:57:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 719.97 Mbit/s
95th percentile per-packet one-way delay: 1.243 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 569.72 Mbit/s
95th percentile per-packet one-way delay: 1.246 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 202.06 Mbit/s
95th percentile per-packet one-way delay: 1.233 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 48.41 Mbit/s
95th percentile per-packet one-way delay: 1.246 ms
Loss rate: 0.01%
```
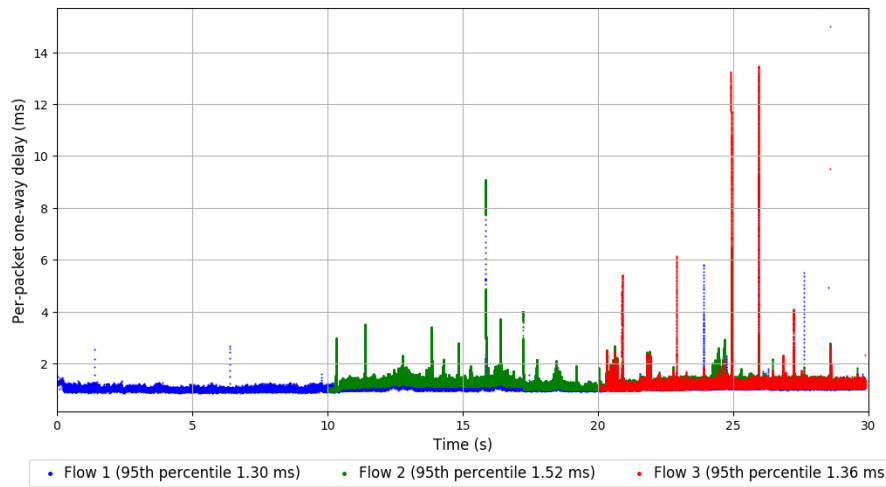
Run 2: Report of PCC-Allegro — Data Link

```
Run 3: Statistics of PCC-Allegro

Start at: 2019-06-28 01:51:40
End at: 2019-06-28 01:52:10
Local clock offset: 1.317 ms
Remote clock offset: 0.704 ms


# Below is generated by plot.py at 2019-06-28 03:57:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 526.66 Mbit/s
95th percentile per-packet one-way delay: 1.472 ms
Loss rate: 0.05%
-- Flow 1:
Average throughput: 64.21 Mbit/s
95th percentile per-packet one-way delay: 1.302 ms
Loss rate: 0.03%
-- Flow 2:
Average throughput: 549.57 Mbit/s
95th percentile per-packet one-way delay: 1.516 ms
Loss rate: 0.05%
-- Flow 3:
Average throughput: 294.25 Mbit/s
95th percentile per-packet one-way delay: 1.363 ms
Loss rate: 0.08%
```
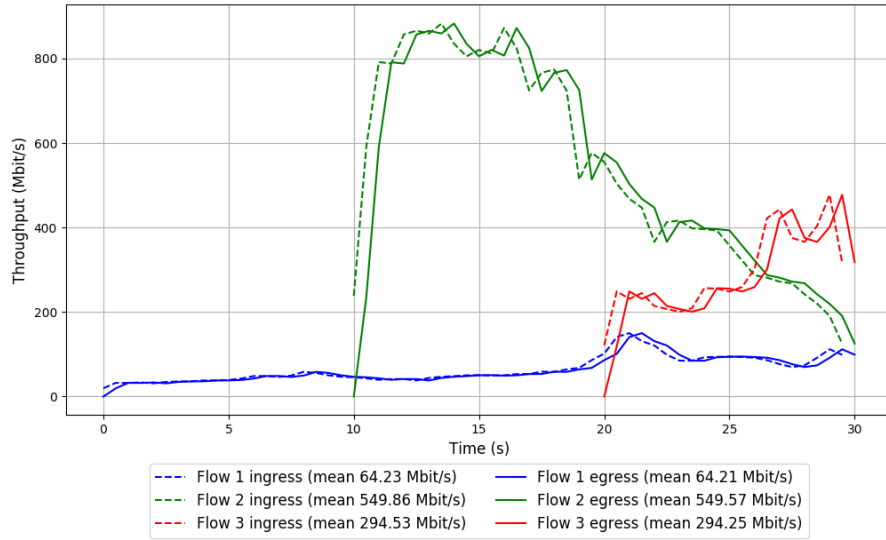
Run 3: Report of PCC-Allegro — Data Link

```
Run 4: Statistics of PCC-Allegro

Start at: 2019-06-28 02:23:20
End at: 2019-06-28 02:23:50
Local clock offset: 3.569 ms
Remote clock offset: 0.798 ms


# Below is generated by plot.py at 2019-06-28 03:57:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 524.48 Mbit/s
95th percentile per-packet one-way delay: 2.060 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 14.56 Mbit/s
95th percentile per-packet one-way delay: 1.121 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 749.39 Mbit/s
95th percentile per-packet one-way delay: 2.117 ms
Loss rate: 0.04%
-- Flow 3:
Average throughput: 35.06 Mbit/s
95th percentile per-packet one-way delay: 1.088 ms
Loss rate: 0.05%
```
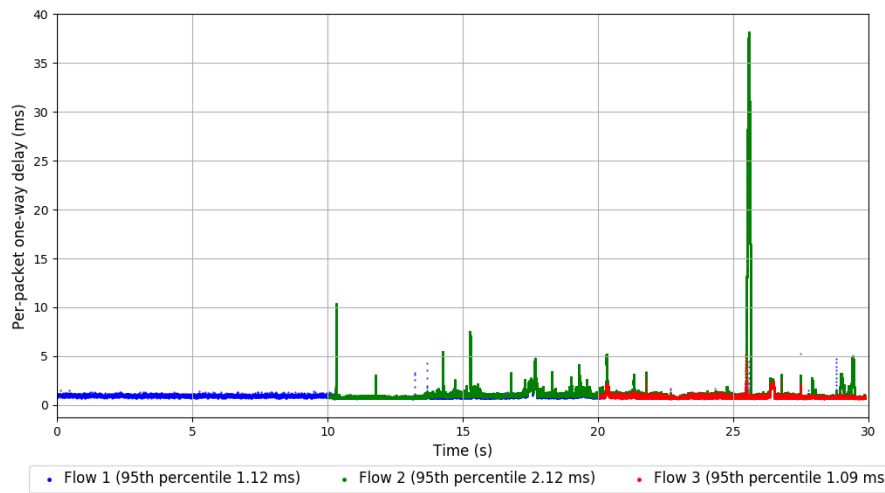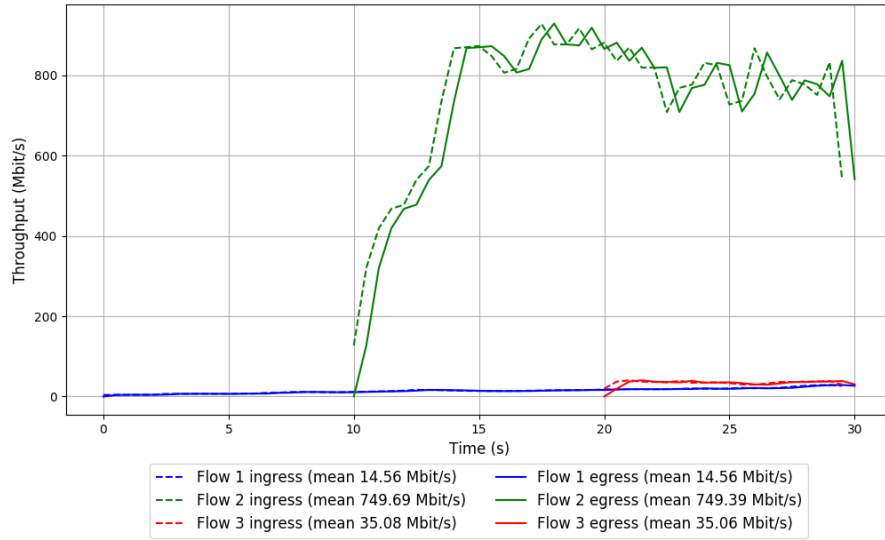
Run 4: Report of PCC-Allegro — Data Link

```
Run 5: Statistics of PCC-Allegro

Start at: 2019-06-28 02:54:50
End at: 2019-06-28 02:55:20
Local clock offset: 1.769 ms
Remote clock offset: -3.002 ms

# Below is generated by plot.py at 2019-06-28 03:57:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 187.84 Mbit/s
95th percentile per-packet one-way delay: 0.875 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 70.85 Mbit/s
95th percentile per-packet one-way delay: 0.857 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 140.32 Mbit/s
95th percentile per-packet one-way delay: 0.898 ms
Loss rate: 0.03%
-- Flow 3:
Average throughput: 71.80 Mbit/s
95th percentile per-packet one-way delay: 0.831 ms
Loss rate: 0.00%
```
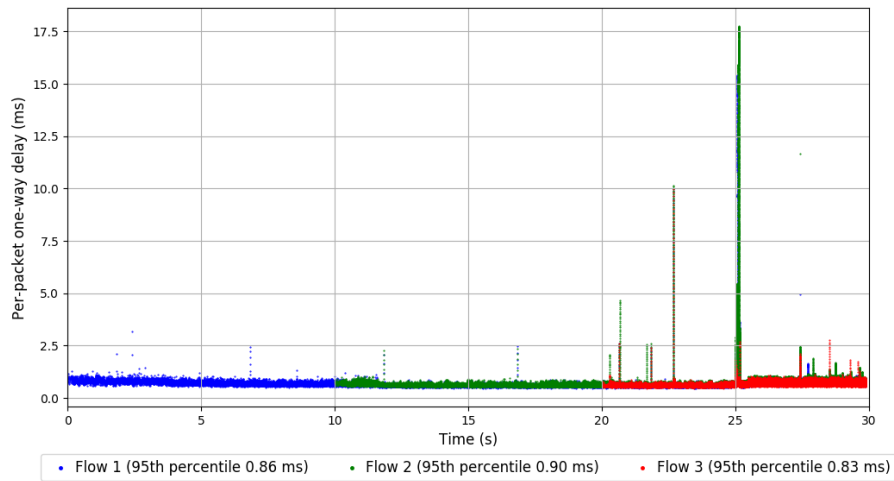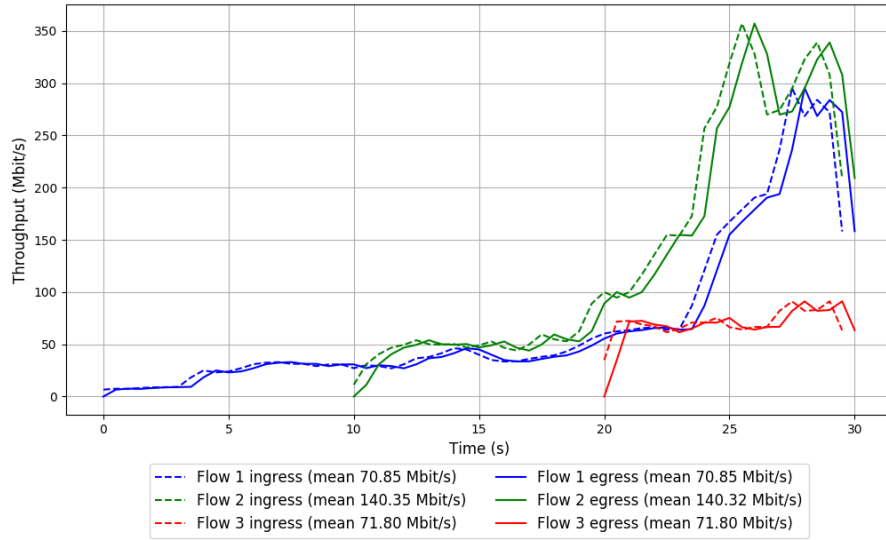
Run 5: Report of PCC-Allegro — Data Link

- - - - Flow 1 ingress (mean 70.85 Mbit/s) —— Flow 1 egress (mean 70.85 Mbit/s)
- - - - Flow 2 ingress (mean 140.35 Mbit/s) —— Flow 2 egress (mean 140.32 Mbit/s)
- - - - Flow 3 ingress (mean 71.80 Mbit/s) —— Flow 3 egress (mean 71.80 Mbit/s)

• Flow 1 (95th percentile 0.86 ms)   • Flow 2 (95th percentile 0.90 ms)   • Flow 3 (95th percentile 0.83 ms)

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```
Run 1: Statistics of PCC-Expr

Start at: 2019-06-28 00:54:08
End at: 2019-06-28 00:54:38
Local clock offset: -0.852 ms
Remote clock offset: -3.008 ms


# Below is generated by plot.py at 2019-06-28 03:57:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 6.16 Mbit/s
95th percentile per-packet one-way delay: 1.163 ms
Loss rate: 32.20%
-- Flow 1:
Average throughput: 0.90 Mbit/s
95th percentile per-packet one-way delay: 0.985 ms
Loss rate: 85.71%
-- Flow 2:
Average throughput: 6.05 Mbit/s
95th percentile per-packet one-way delay: 1.183 ms
Loss rate: 24.71%
-- Flow 3:
Average throughput: 6.44 Mbit/s
95th percentile per-packet one-way delay: 1.065 ms
Loss rate: 42.93%
```
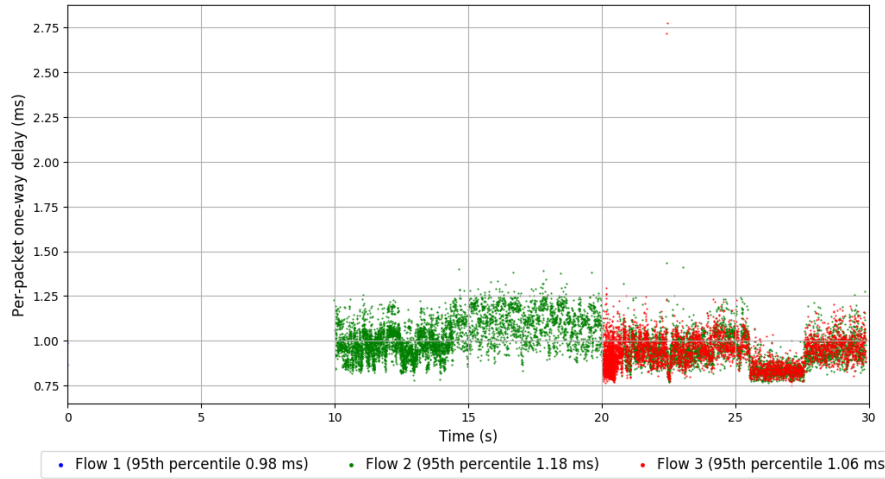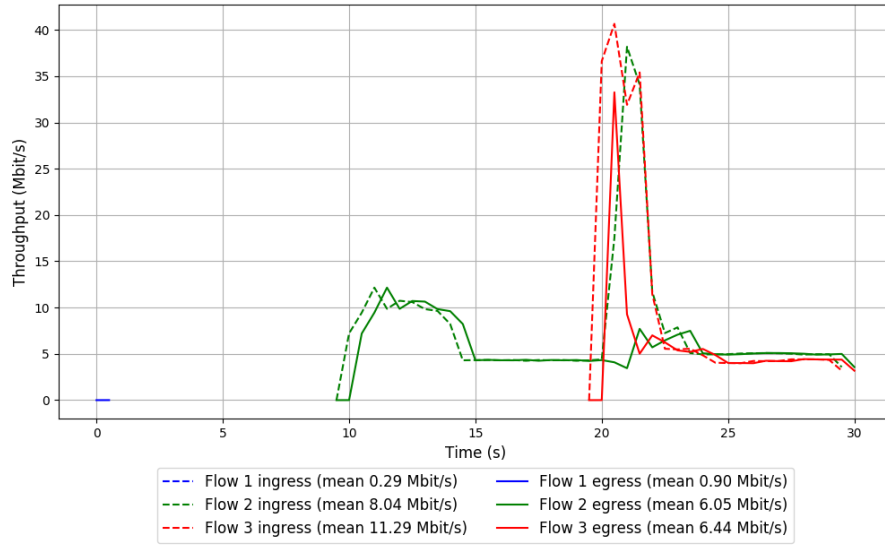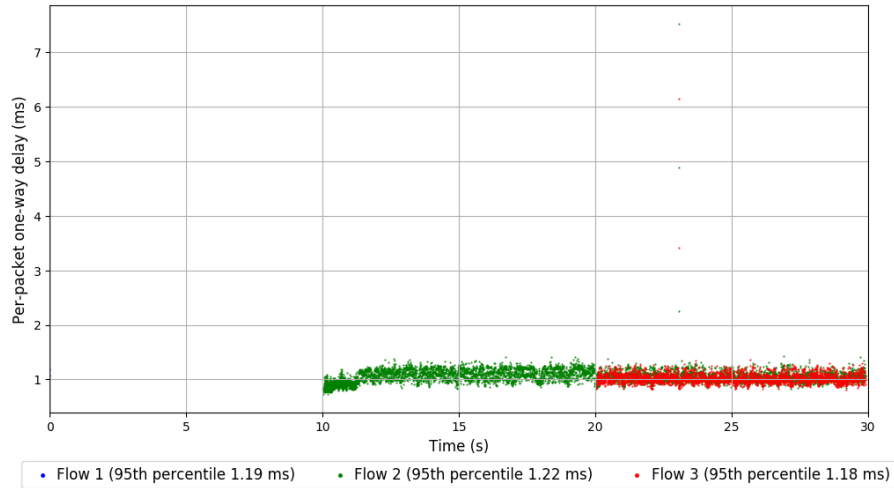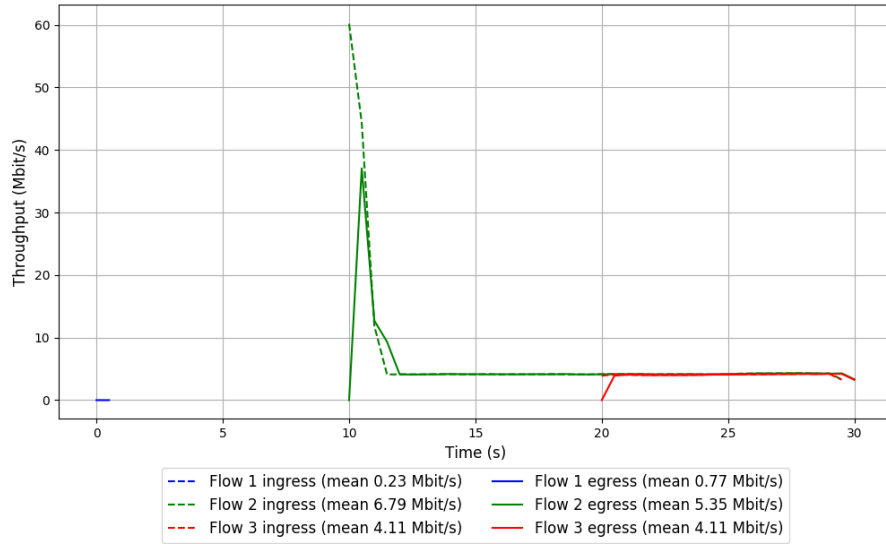
Run 1: Report of PCC-Expr — Data Link

```
Run 2: Statistics of PCC-Expr

Start at: 2019-06-28 01:25:55
End at: 2019-06-28 01:26:25
Local clock offset: -0.062 ms
Remote clock offset: -2.517 ms


# Below is generated by plot.py at 2019-06-28 03:57:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 4.91 Mbit/s
95th percentile per-packet one-way delay: 1.213 ms
Loss rate: 16.32%
-- Flow 1:
Average throughput: 0.77 Mbit/s
95th percentile per-packet one-way delay: 1.188 ms
Loss rate: 85.71%
-- Flow 2:
Average throughput: 5.35 Mbit/s
95th percentile per-packet one-way delay: 1.219 ms
Loss rate: 21.22%
-- Flow 3:
Average throughput: 4.11 Mbit/s
95th percentile per-packet one-way delay: 1.183 ms
Loss rate: 0.00%
```
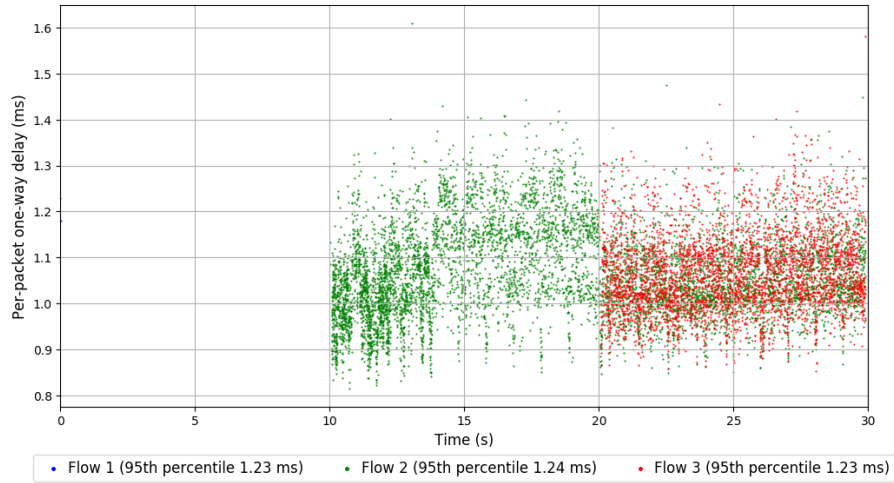
Run 2: Report of PCC-Expr — Data Link

```
Run 3: Statistics of PCC-Expr

Start at: 2019-06-28 01:57:33
End at: 2019-06-28 01:58:03
Local clock offset: 2.365 ms
Remote clock offset: 0.956 ms

# Below is generated by plot.py at 2019-06-28 03:57:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 5.01 Mbit/s
95th percentile per-packet one-way delay: 1.237 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 0.70 Mbit/s
95th percentile per-packet one-way delay: 1.229 ms
Loss rate: 85.71%
-- Flow 2:
Average throughput: 5.01 Mbit/s
95th percentile per-packet one-way delay: 1.242 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 5.10 Mbit/s
95th percentile per-packet one-way delay: 1.226 ms
Loss rate: 0.00%
```
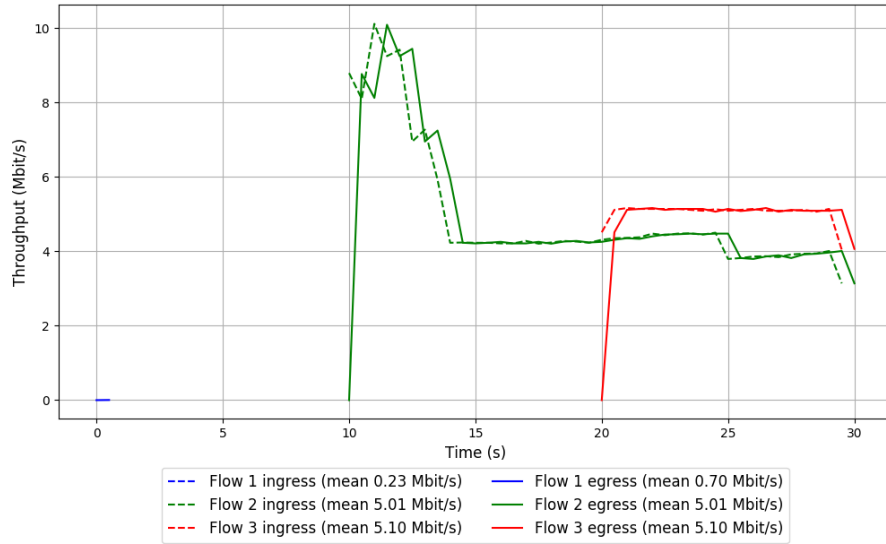
Run 3: Report of PCC-Expr — Data Link

```
Run 4: Statistics of PCC-Expr

Start at: 2019-06-28 02:29:14
End at: 2019-06-28 02:29:44
Local clock offset: 3.552 ms
Remote clock offset: 1.005 ms

# Below is generated by plot.py at 2019-06-28 03:57:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 6.18 Mbit/s
95th percentile per-packet one-way delay: 1.171 ms
Loss rate: 6.23%
-- Flow 1:
Average throughput: 0.71 Mbit/s
95th percentile per-packet one-way delay: 1.248 ms
Loss rate: 85.71%
-- Flow 2:
Average throughput: 5.79 Mbit/s
95th percentile per-packet one-way delay: 1.189 ms
Loss rate: 4.23%
-- Flow 3:
Average throughput: 7.06 Mbit/s
95th percentile per-packet one-way delay: 1.099 ms
Loss rate: 9.33%
```
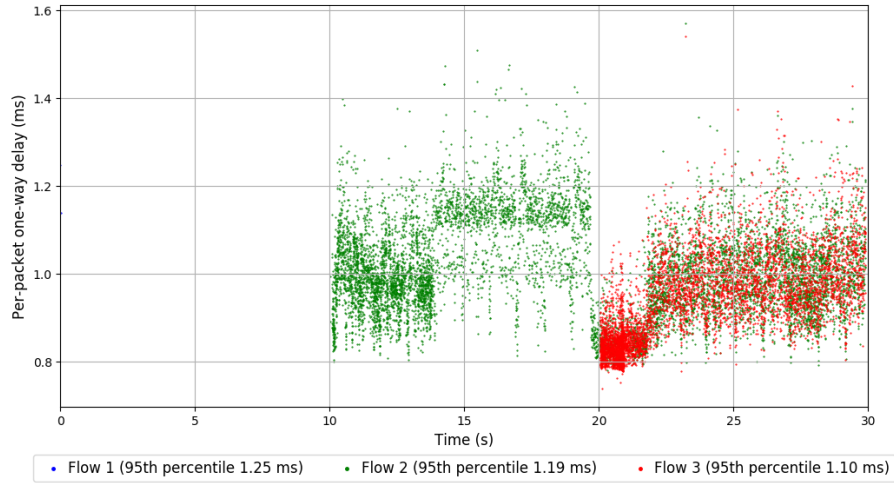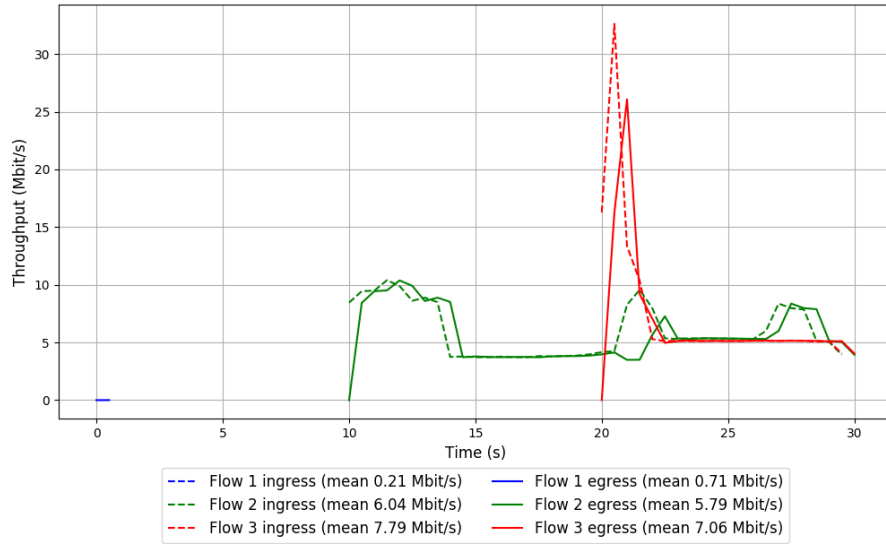
Run 4: Report of PCC-Expr — Data Link

```
Run 5: Statistics of PCC-Expr

Start at: 2019-06-28 03:00:32
End at: 2019-06-28 03:01:02
Local clock offset: 0.727 ms
Remote clock offset: -3.361 ms


# Below is generated by plot.py at 2019-06-28 03:57:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 7.02 Mbit/s
95th percentile per-packet one-way delay: 1.051 ms
Loss rate: 32.79%
-- Flow 1:
Average throughput: 0.87 Mbit/s
95th percentile per-packet one-way delay: 1.041 ms
Loss rate: 85.71%
-- Flow 2:
Average throughput: 6.85 Mbit/s
95th percentile per-packet one-way delay: 1.062 ms
Loss rate: 34.41%
-- Flow 3:
Average throughput: 7.47 Mbit/s
95th percentile per-packet one-way delay: 1.003 ms
Loss rate: 29.57%
```
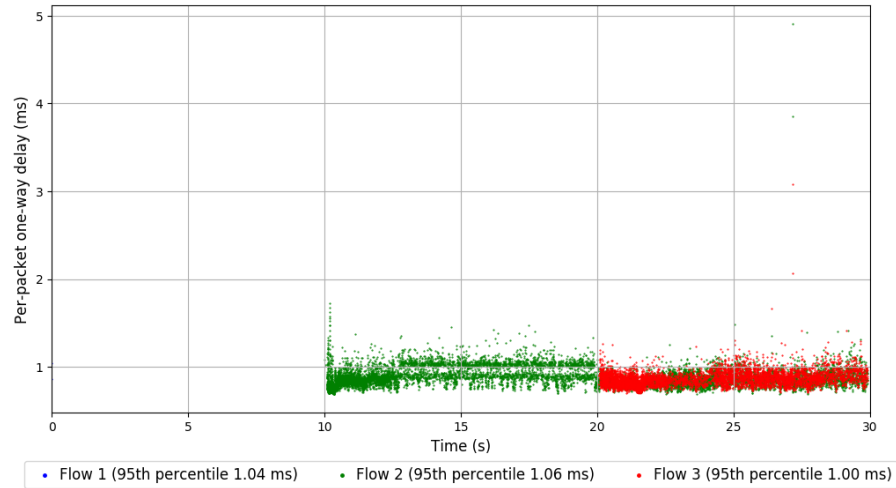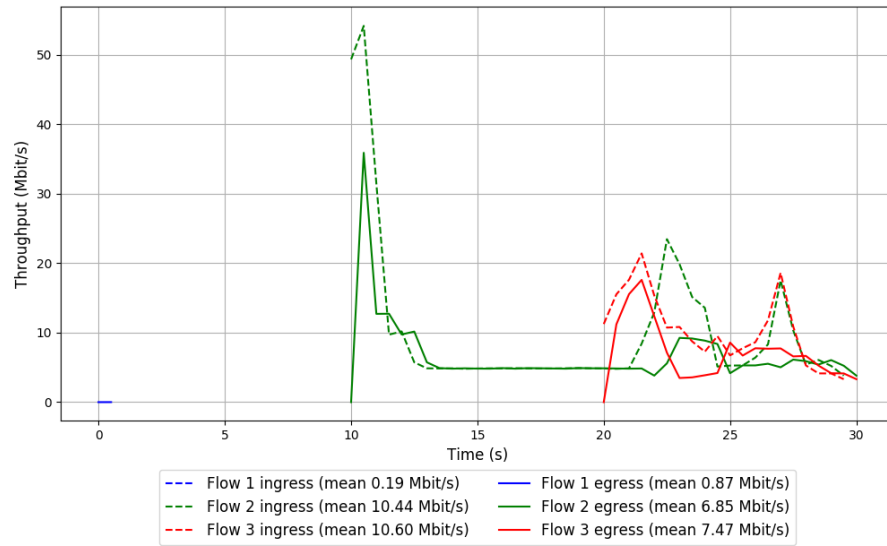
Run 5: Report of PCC-Expr — Data Link

```
Run 1: Statistics of QUIC Cubic

Start at: 2019-06-28 00:40:21
End at: 2019-06-28 00:40:51
Local clock offset: -0.815 ms
Remote clock offset: -2.707 ms


# Below is generated by plot.py at 2019-06-28 03:57:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 117.05 Mbit/s
95th percentile per-packet one-way delay: 3.088 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 60.96 Mbit/s
95th percentile per-packet one-way delay: 3.893 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 59.51 Mbit/s
95th percentile per-packet one-way delay: 2.595 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 50.48 Mbit/s
95th percentile per-packet one-way delay: 0.923 ms
Loss rate: 0.00%
```
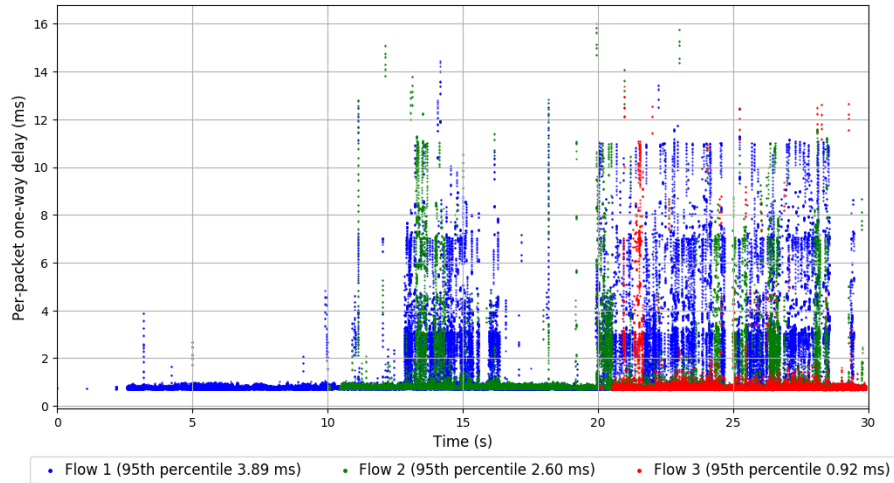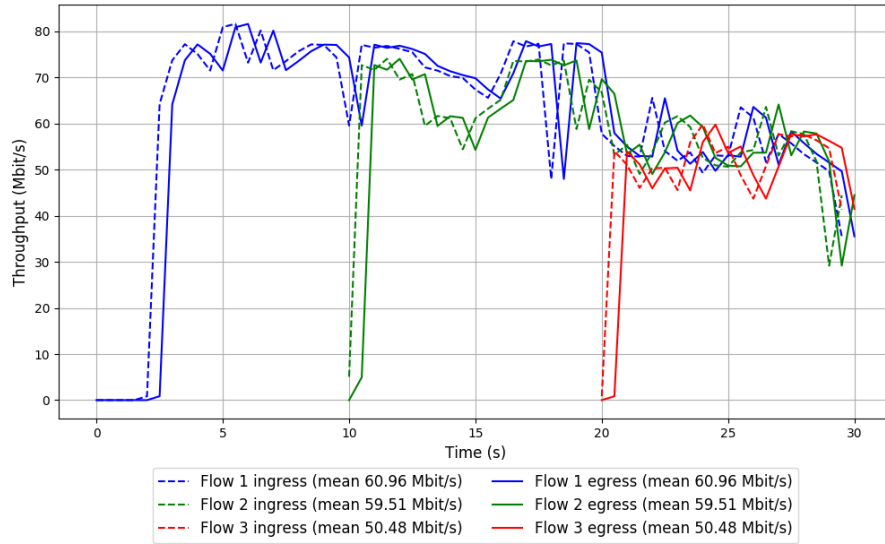
Run 1: Report of QUIC Cubic — Data Link

```
Run 2: Statistics of QUIC Cubic

Start at: 2019-06-28 01:12:12
End at: 2019-06-28 01:12:42
Local clock offset: -0.741 ms
Remote clock offset: -2.583 ms


# Below is generated by plot.py at 2019-06-28 03:57:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 124.30 Mbit/s
95th percentile per-packet one-way delay: 0.988 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 66.50 Mbit/s
95th percentile per-packet one-way delay: 0.935 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 62.01 Mbit/s
95th percentile per-packet one-way delay: 1.919 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 50.61 Mbit/s
95th percentile per-packet one-way delay: 1.163 ms
Loss rate: 0.00%
```
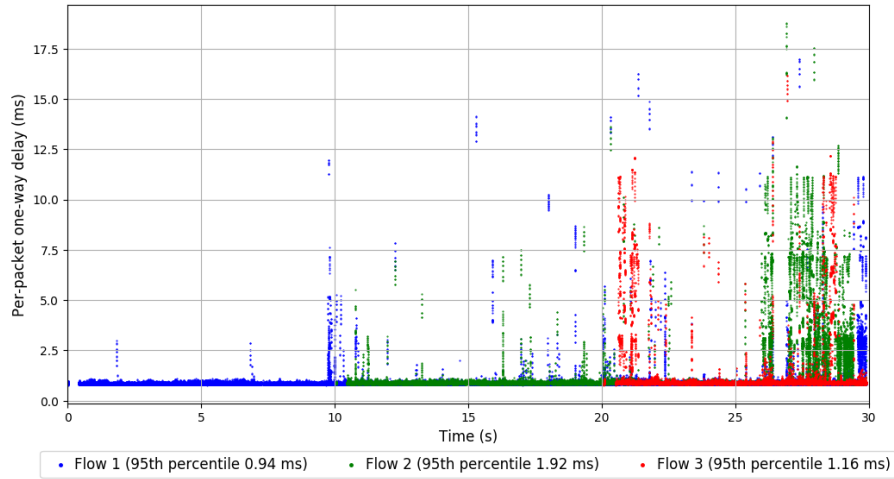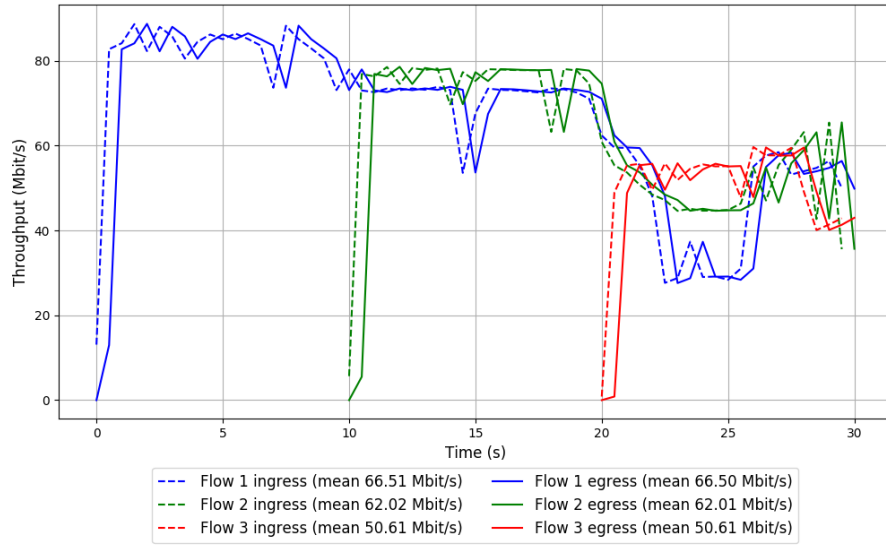
Run 2: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 66.51 Mbit/s) --- Flow 1 egress (mean 66.50 Mbit/s)
Flow 2 ingress (mean 62.02 Mbit/s) --- Flow 2 egress (mean 62.01 Mbit/s)
Flow 3 ingress (mean 50.61 Mbit/s) --- Flow 3 egress (mean 50.61 Mbit/s)

Flow 1 (95th percentile 0.94 ms) • Flow 2 (95th percentile 1.92 ms) • Flow 3 (95th percentile 1.16 ms)

```
Run 3: Statistics of QUIC Cubic

Start at: 2019-06-28 01:43:56
End at: 2019-06-28 01:44:26
Local clock offset: 0.411 ms
Remote clock offset: 0.104 ms


# Below is generated by plot.py at 2019-06-28 03:57:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 128.69 Mbit/s
95th percentile per-packet one-way delay: 1.243 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 70.77 Mbit/s
95th percentile per-packet one-way delay: 0.969 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 61.85 Mbit/s
95th percentile per-packet one-way delay: 1.013 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 51.14 Mbit/s
95th percentile per-packet one-way delay: 3.244 ms
Loss rate: 0.00%
```
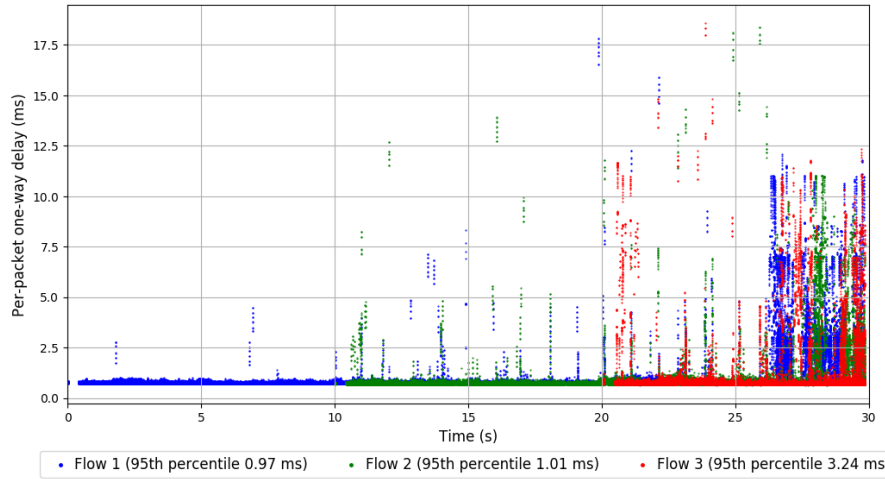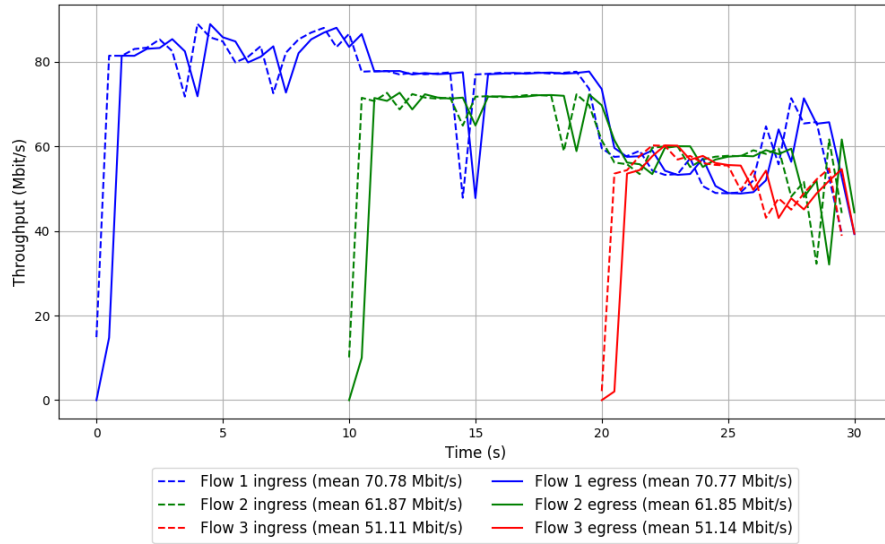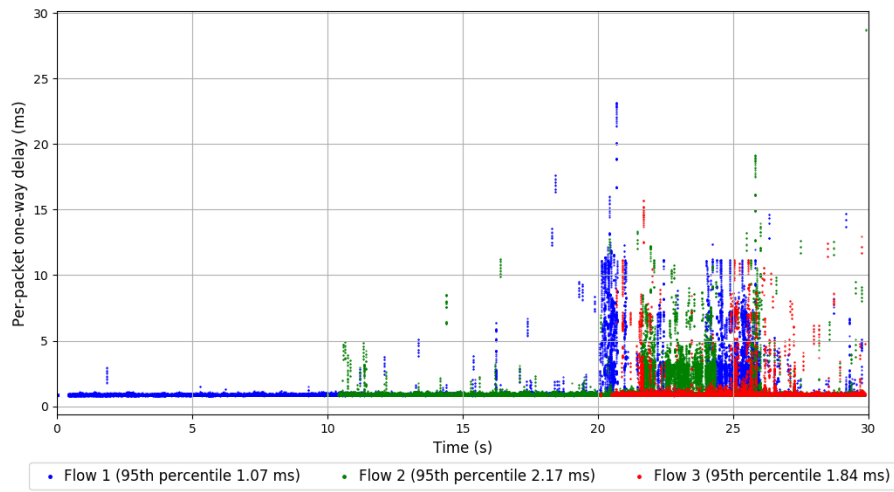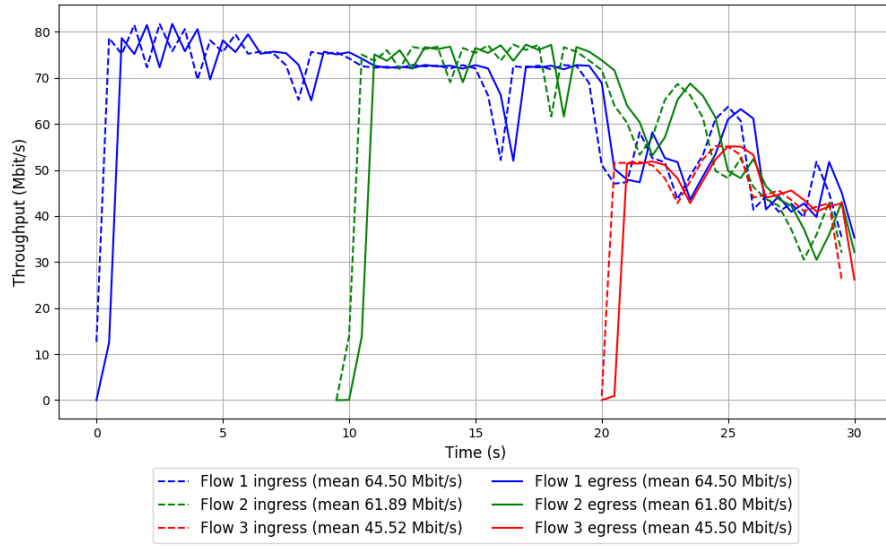
Run 3: Report of QUIC Cubic — Data Link

- Flow 1 ingress (mean 70.78 Mbit/s)
- Flow 1 egress (mean 70.77 Mbit/s)
- Flow 2 ingress (mean 61.87 Mbit/s)
- Flow 2 egress (mean 61.85 Mbit/s)
- Flow 3 ingress (mean 51.11 Mbit/s)
- Flow 3 egress (mean 51.14 Mbit/s)

- Flow 1 (95th percentile 0.97 ms)
- Flow 2 (95th percentile 1.01 ms)
- Flow 3 (95th percentile 3.24 ms)

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```
Run 4: Statistics of QUIC Cubic

Start at: 2019-06-28 02:15:37
End at: 2019-06-28 02:16:07
Local clock offset: 3.735 ms
Remote clock offset: 0.806 ms


# Below is generated by plot.py at 2019-06-28 03:57:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 120.48 Mbit/s
95th percentile per-packet one-way delay: 1.558 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 64.50 Mbit/s
95th percentile per-packet one-way delay: 1.067 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 61.80 Mbit/s
95th percentile per-packet one-way delay: 2.172 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 45.50 Mbit/s
95th percentile per-packet one-way delay: 1.836 ms
Loss rate: 0.00%
```
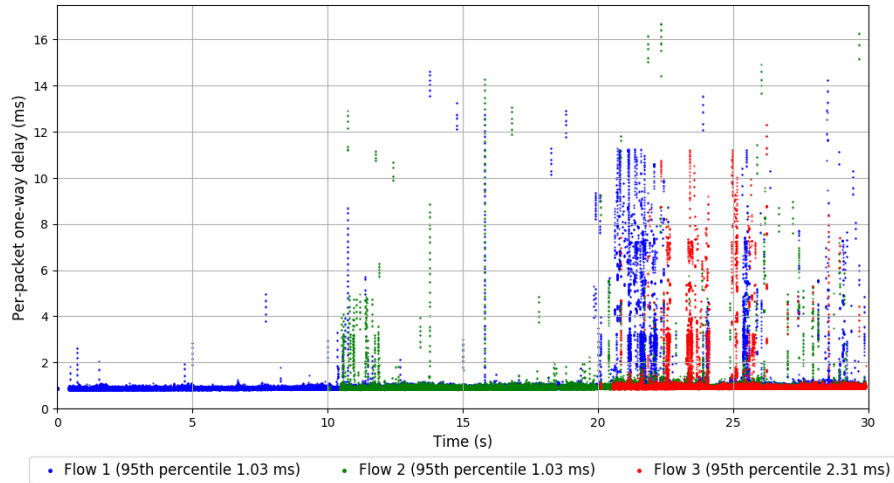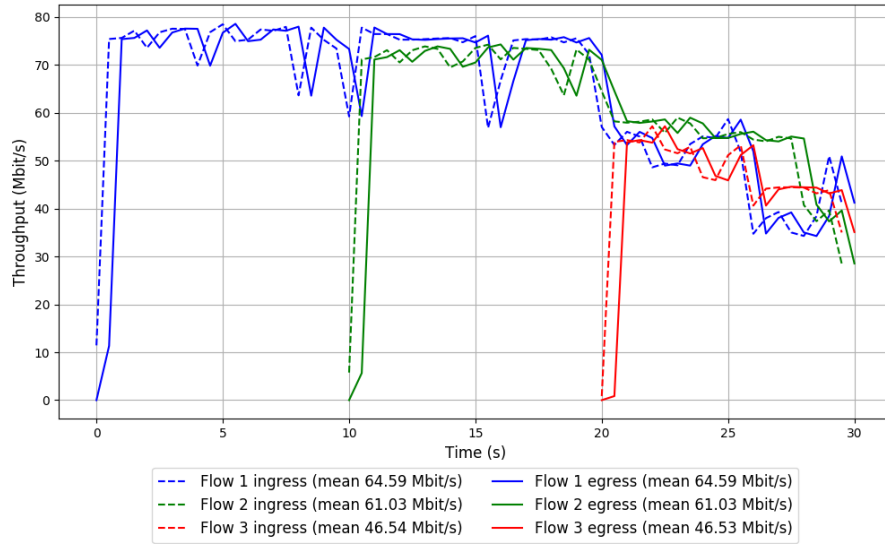
Run 4: Report of QUIC Cubic — Data Link

```
Run 5: Statistics of QUIC Cubic

Start at: 2019-06-28 02:47:07
End at: 2019-06-28 02:47:37
Local clock offset: 3.945 ms
Remote clock offset: -2.102 ms


# Below is generated by plot.py at 2019-06-28 03:57:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 120.40 Mbit/s
95th percentile per-packet one-way delay: 1.044 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 64.59 Mbit/s
95th percentile per-packet one-way delay: 1.034 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 61.03 Mbit/s
95th percentile per-packet one-way delay: 1.031 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 46.53 Mbit/s
95th percentile per-packet one-way delay: 2.310 ms
Loss rate: 0.00%
```

Run 5: Report of QUIC Cubic — Data Link

```
Run 1: Statistics of SCReAM

Start at: 2019-06-28 00:36:35
End at: 2019-06-28 00:37:05
Local clock offset: -0.493 ms
Remote clock offset: -2.476 ms


# Below is generated by plot.py at 2019-06-28 03:57:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 1.127 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.120 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.129 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.143 ms
Loss rate: 0.00%
```
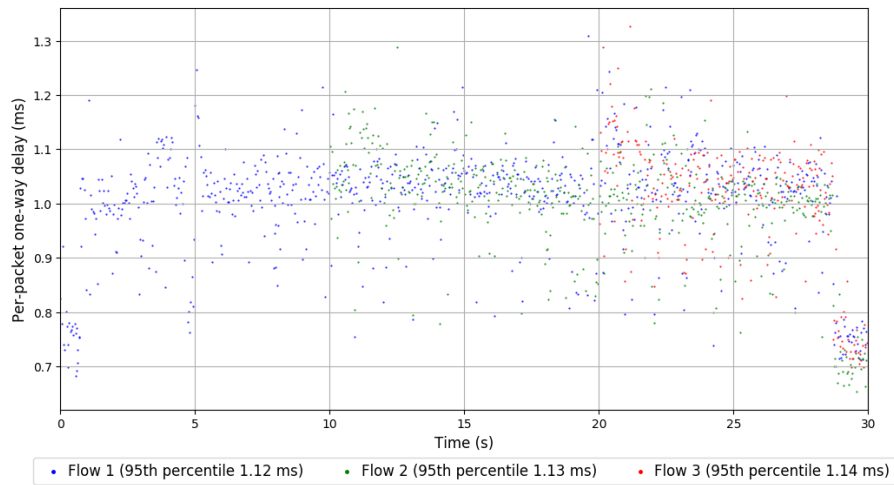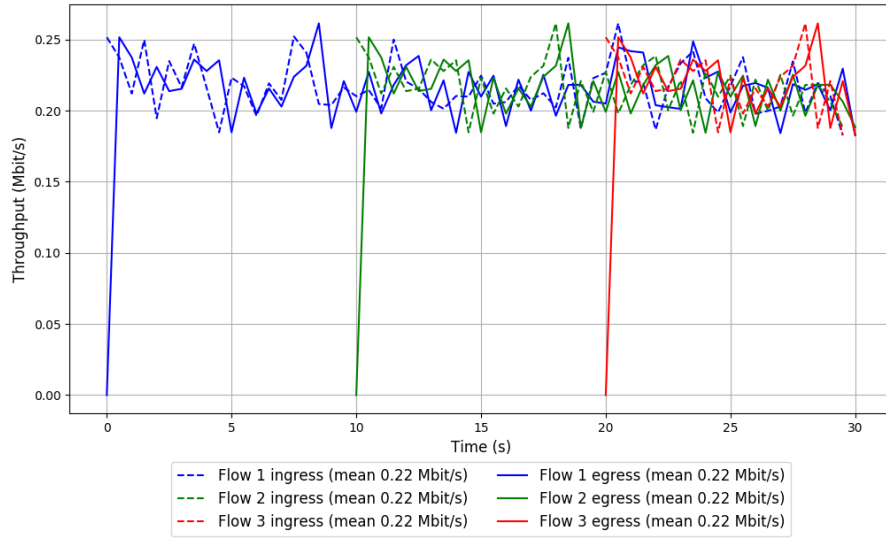
Run 1: Report of SCReAM — Data Link

```
Run 2: Statistics of SCReAM

Start at: 2019-06-28 01:08:27
End at: 2019-06-28 01:08:57
Local clock offset: -0.815 ms
Remote clock offset: -2.624 ms

# Below is generated by plot.py at 2019-06-28 03:57:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 1.281 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.255 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.243 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.337 ms
Loss rate: 0.00%
```
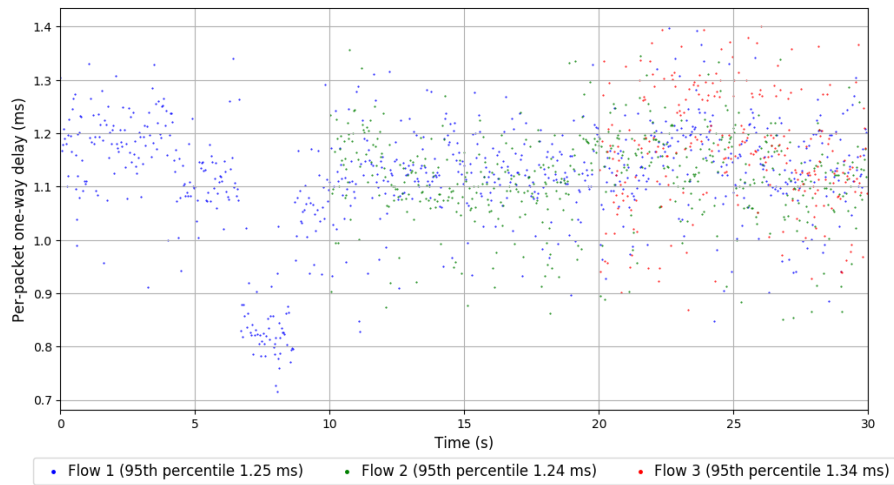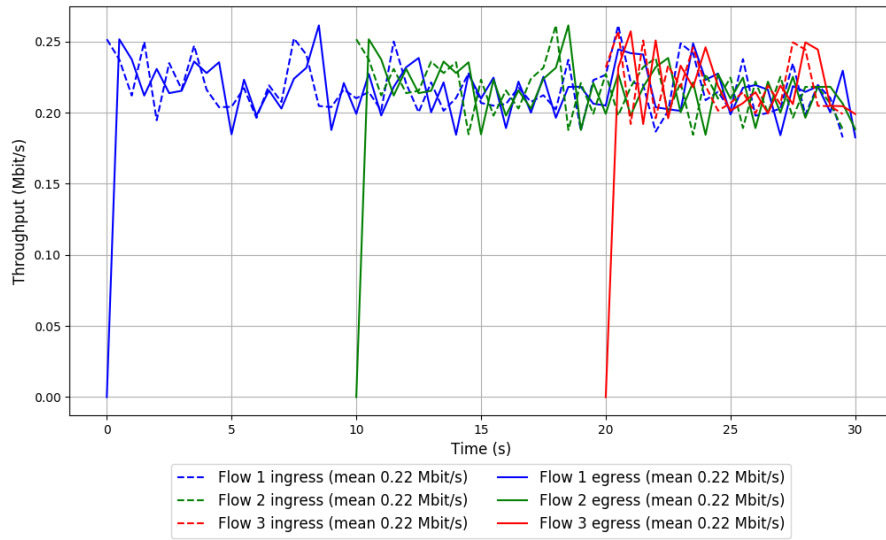
Run 2: Report of SCReAM — Data Link

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```
Run 3: Statistics of SCReAM

Start at: 2019-06-28 01:40:10
End at: 2019-06-28 01:40:40
Local clock offset: 0.342 ms
Remote clock offset: -0.247 ms


# Below is generated by plot.py at 2019-06-28 03:57:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 1.136 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.159 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.122 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.100 ms
Loss rate: 0.00%
```
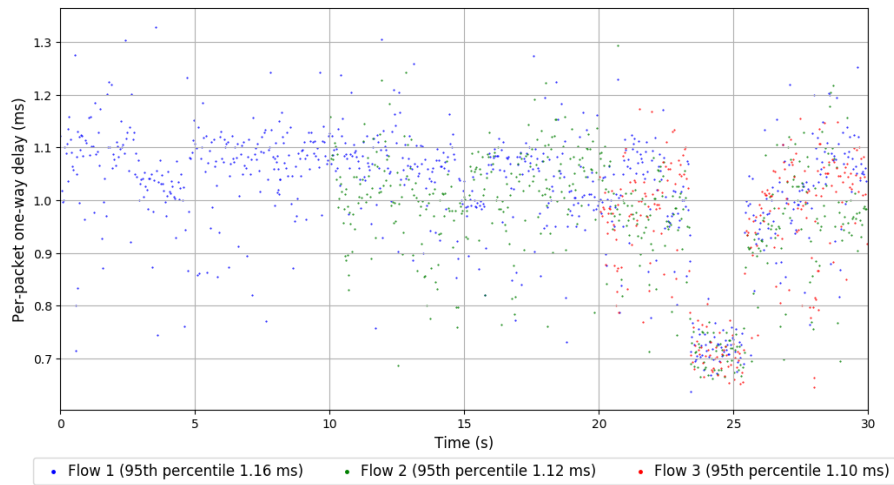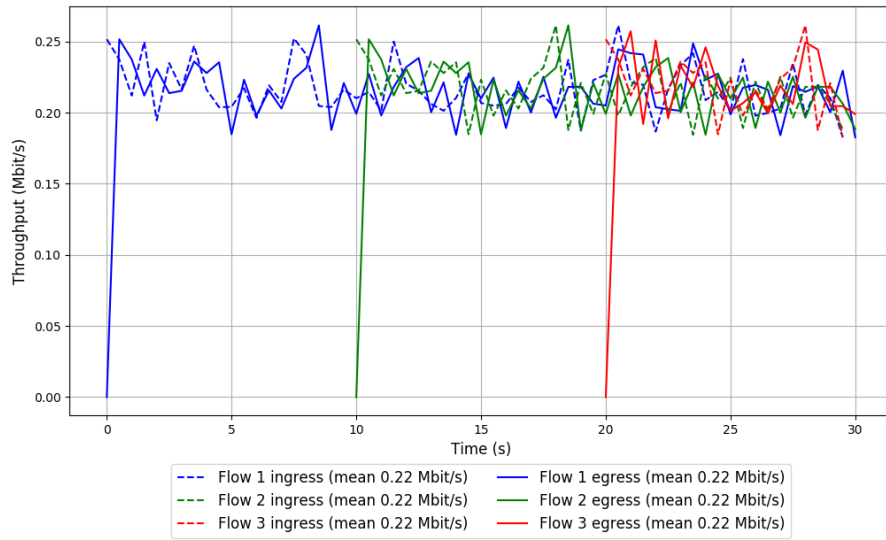
Run 3: Report of SCReAM — Data Link

```
Run 4: Statistics of SCReAM

Start at: 2019-06-28 02:11:52
End at: 2019-06-28 02:12:22
Local clock offset: 3.524 ms
Remote clock offset: 0.827 ms

# Below is generated by plot.py at 2019-06-28 03:57:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 1.279 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.291 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.251 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.282 ms
Loss rate: 0.00%
```
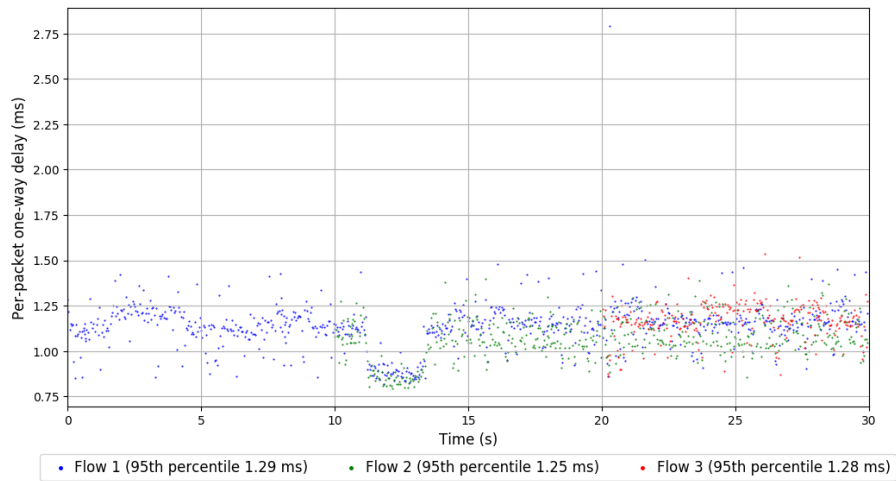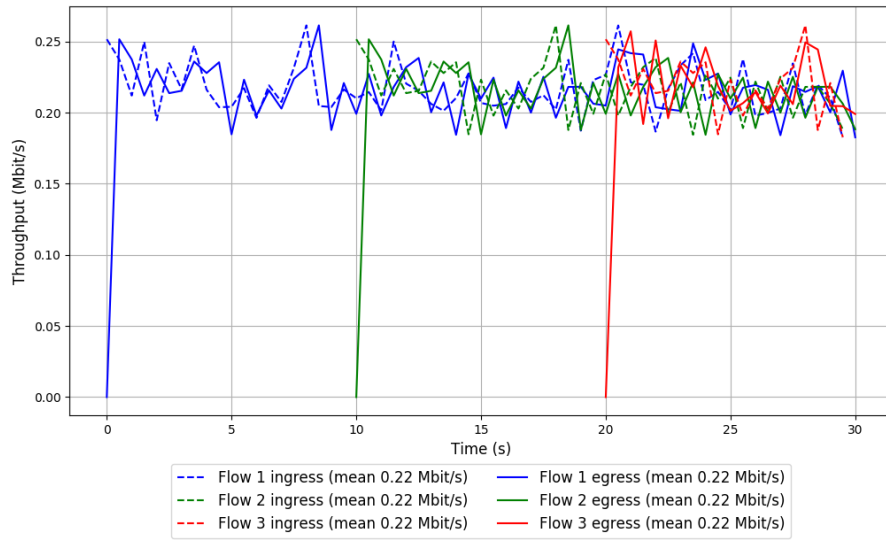
Run 4: Report of SCReAM — Data Link

```
Run 5: Statistics of SCReAM

Start at: 2019-06-28 02:43:22
End at: 2019-06-28 02:43:52
Local clock offset: 3.819 ms
Remote clock offset: -1.3 ms


# Below is generated by plot.py at 2019-06-28 03:57:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 1.438 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.426 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.447 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.477 ms
Loss rate: 0.00%
```
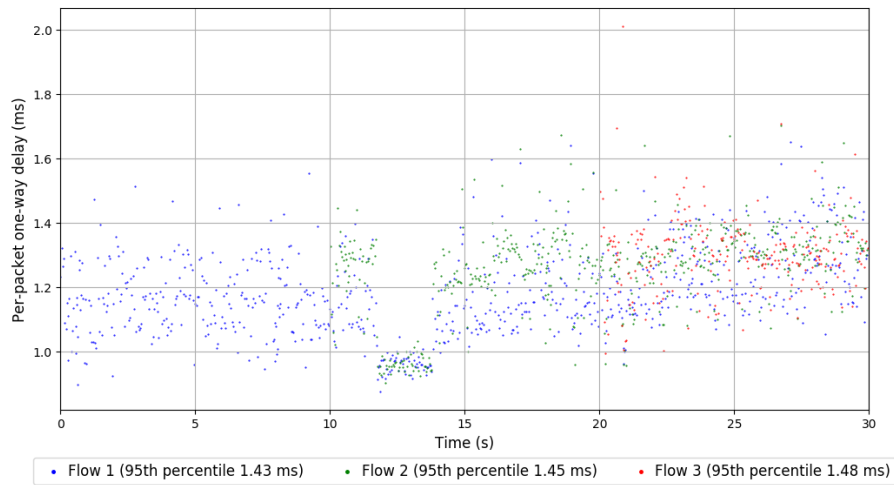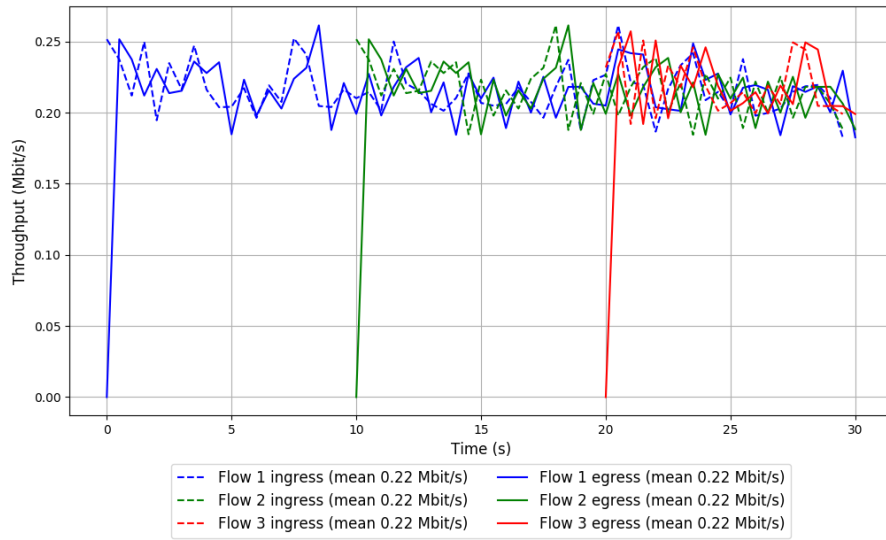
Run 5: Report of SCReAM — Data Link

```
Run 1: Statistics of Sprout

Start at: 2019-06-28 00:35:18
End at: 2019-06-28 00:35:48
Local clock offset: -0.323 ms
Remote clock offset: -2.31 ms


# Below is generated by plot.py at 2019-06-28 03:57:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 99.72 Mbit/s
95th percentile per-packet one-way delay: 4.279 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 50.06 Mbit/s
95th percentile per-packet one-way delay: 4.022 ms
Loss rate: 0.03%
-- Flow 2:
Average throughput: 50.02 Mbit/s
95th percentile per-packet one-way delay: 4.485 ms
Loss rate: 0.07%
-- Flow 3:
Average throughput: 49.50 Mbit/s
95th percentile per-packet one-way delay: 4.440 ms
Loss rate: 0.16%
```
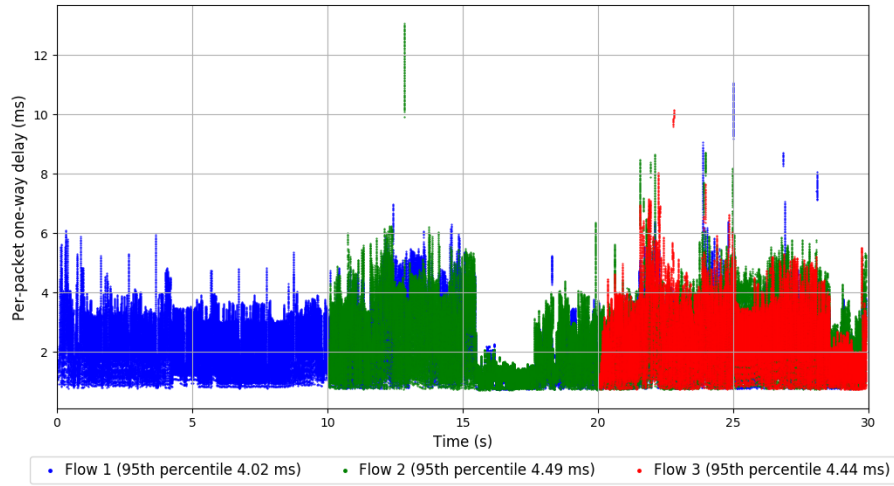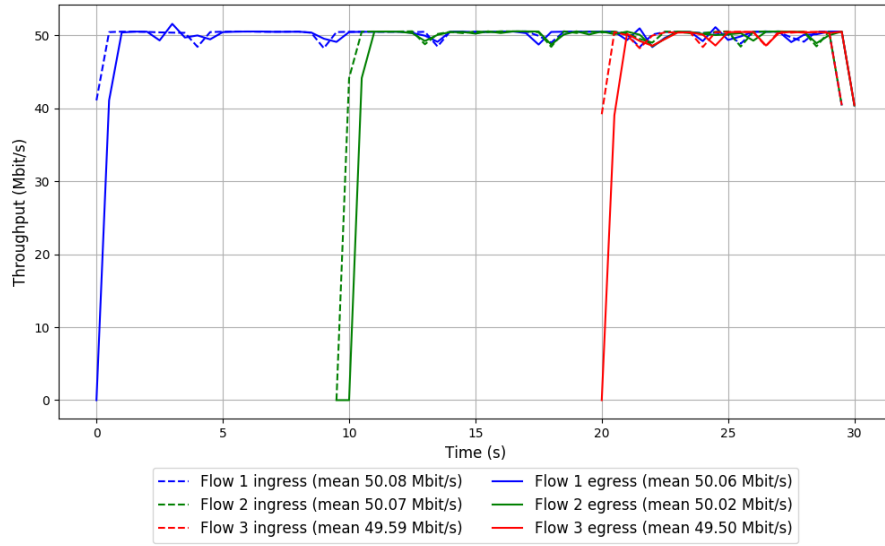
Run 1: Report of Sprout — Data Link

```
Run 2: Statistics of Sprout

Start at: 2019-06-28 01:07:10
End at: 2019-06-28 01:07:40
Local clock offset: -0.788 ms
Remote clock offset: -2.592 ms


# Below is generated by plot.py at 2019-06-28 03:57:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 99.64 Mbit/s
95th percentile per-packet one-way delay: 3.836 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 50.04 Mbit/s
95th percentile per-packet one-way delay: 4.048 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 49.90 Mbit/s
95th percentile per-packet one-way delay: 3.622 ms
Loss rate: 0.05%
-- Flow 3:
Average throughput: 49.66 Mbit/s
95th percentile per-packet one-way delay: 3.438 ms
Loss rate: 0.24%
```
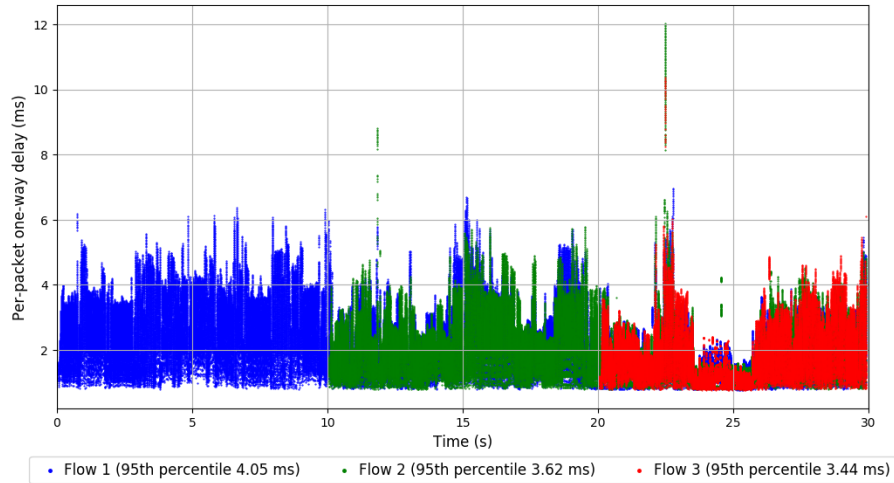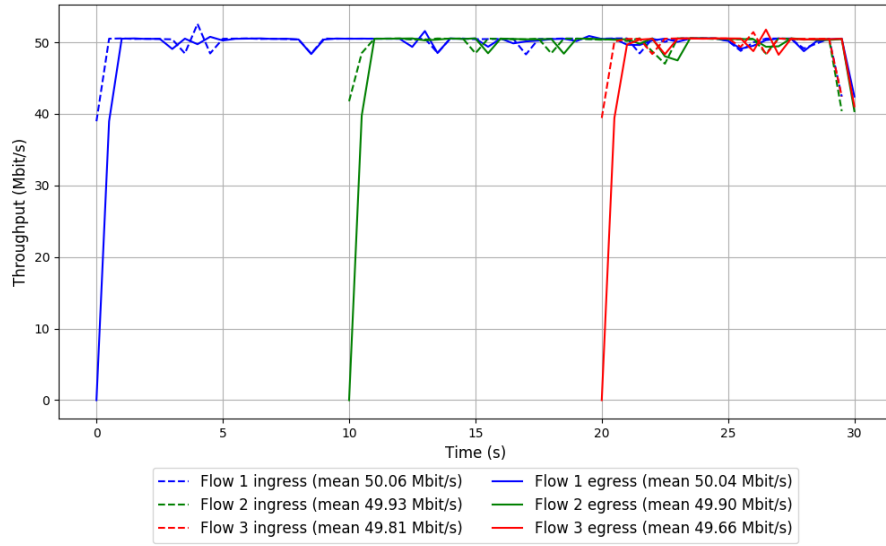
Run 2: Report of Sprout — Data Link

Flow 1 ingress (mean 50.06 Mbit/s)   Flow 1 egress (mean 50.04 Mbit/s)
Flow 2 ingress (mean 49.93 Mbit/s)   Flow 2 egress (mean 49.90 Mbit/s)
Flow 3 ingress (mean 49.81 Mbit/s)   Flow 3 egress (mean 49.66 Mbit/s)

• Flow 1 (95th percentile 4.05 ms)   • Flow 2 (95th percentile 3.62 ms)   • Flow 3 (95th percentile 3.44 ms)

```
Run 3: Statistics of Sprout

Start at: 2019-06-28 01:38:53
End at: 2019-06-28 01:39:23
Local clock offset: 0.327 ms
Remote clock offset: -0.286 ms


# Below is generated by plot.py at 2019-06-28 03:57:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 99.37 Mbit/s
95th percentile per-packet one-way delay: 4.984 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 49.92 Mbit/s
95th percentile per-packet one-way delay: 4.873 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 49.84 Mbit/s
95th percentile per-packet one-way delay: 4.772 ms
Loss rate: 0.12%
-- Flow 3:
Average throughput: 49.33 Mbit/s
95th percentile per-packet one-way delay: 5.763 ms
Loss rate: 0.27%
```
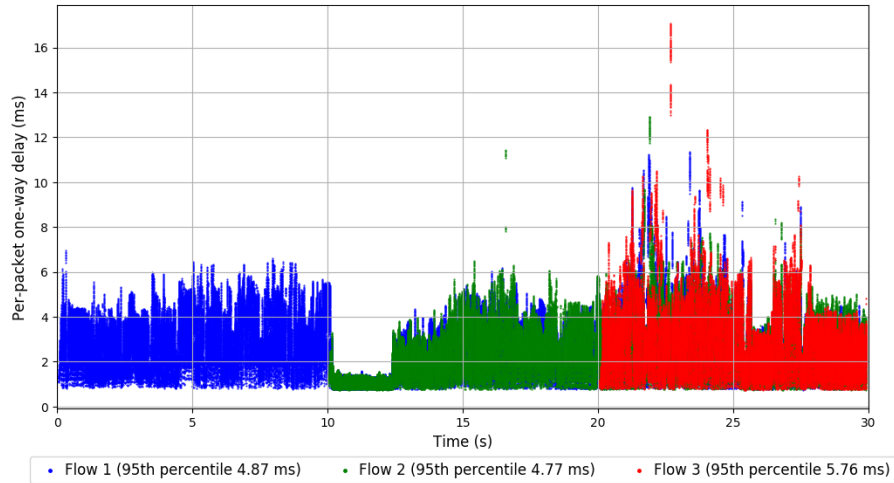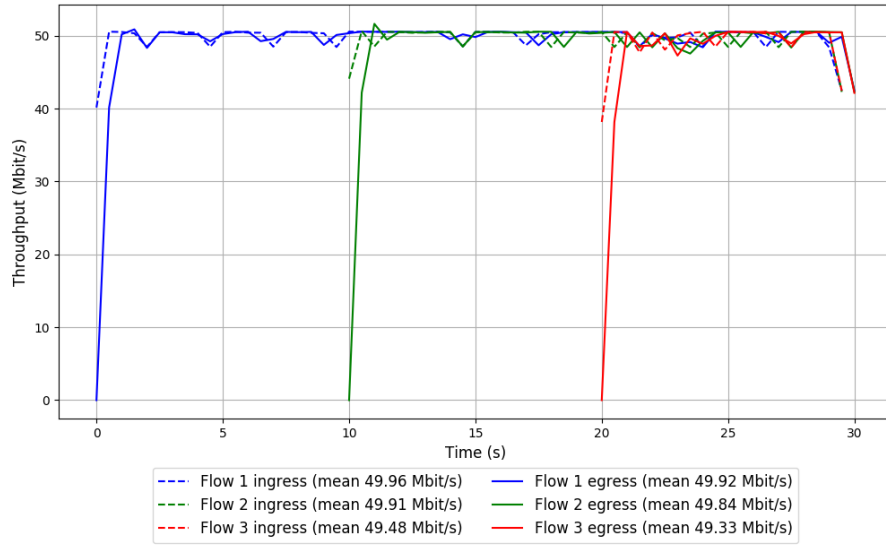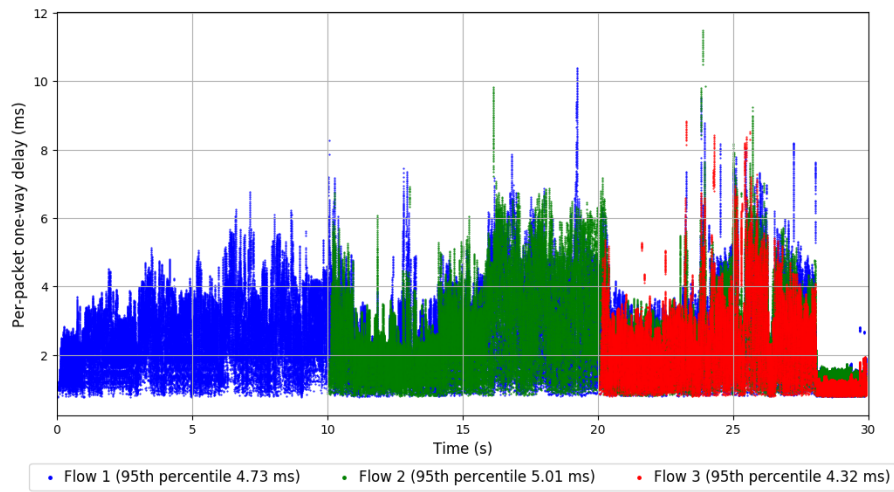
Run 3: Report of Sprout — Data Link

- - - Flow 1 ingress (mean 49.96 Mbit/s) —— Flow 1 egress (mean 49.92 Mbit/s)
- - - Flow 2 ingress (mean 49.91 Mbit/s) —— Flow 2 egress (mean 49.84 Mbit/s)
- - - Flow 3 ingress (mean 49.48 Mbit/s) —— Flow 3 egress (mean 49.33 Mbit/s)

• Flow 1 (95th percentile 4.87 ms)   • Flow 2 (95th percentile 4.77 ms)   • Flow 3 (95th percentile 5.76 ms)

```
Run 4: Statistics of Sprout

Start at: 2019-06-28 02:10:35
End at: 2019-06-28 02:11:05
Local clock offset: 3.445 ms
Remote clock offset: 0.798 ms


# Below is generated by plot.py at 2019-06-28 03:57:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 99.47 Mbit/s
95th percentile per-packet one-way delay: 4.781 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 49.90 Mbit/s
95th percentile per-packet one-way delay: 4.729 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 49.89 Mbit/s
95th percentile per-packet one-way delay: 5.007 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 49.60 Mbit/s
95th percentile per-packet one-way delay: 4.322 ms
Loss rate: 0.00%
```
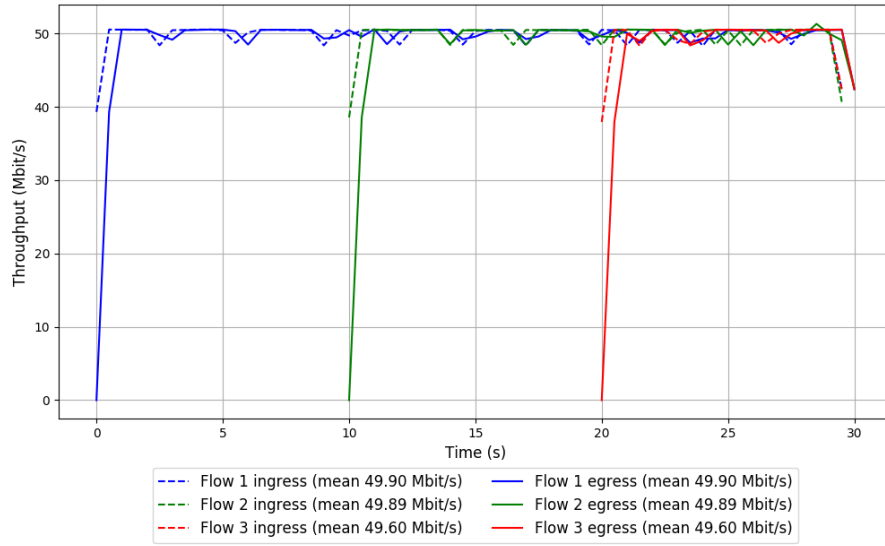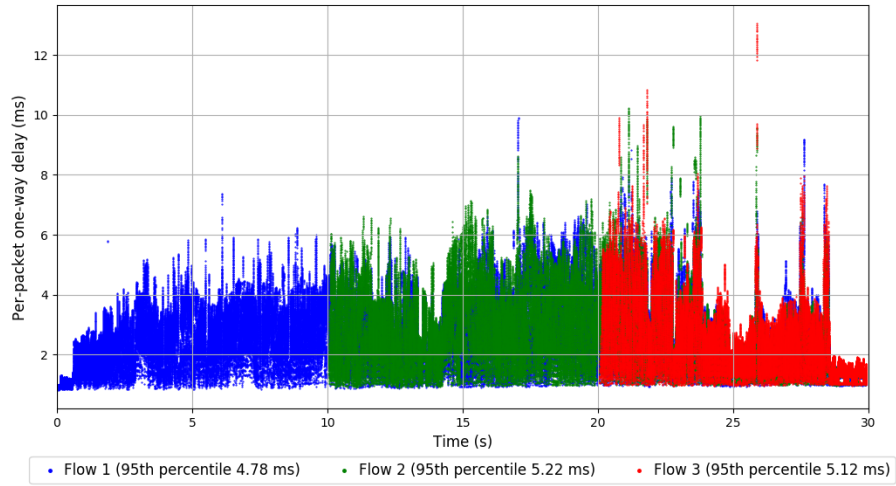
Run 4: Report of Sprout — Data Link

```
Run 5: Statistics of Sprout

Start at: 2019-06-28 02:42:05
End at: 2019-06-28 02:42:35
Local clock offset: 3.774 ms
Remote clock offset: -1.029 ms


# Below is generated by plot.py at 2019-06-28 03:57:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 99.60 Mbit/s
95th percentile per-packet one-way delay: 5.009 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 49.98 Mbit/s
95th percentile per-packet one-way delay: 4.782 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 50.03 Mbit/s
95th percentile per-packet one-way delay: 5.224 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 49.48 Mbit/s
95th percentile per-packet one-way delay: 5.120 ms
Loss rate: 0.02%
```
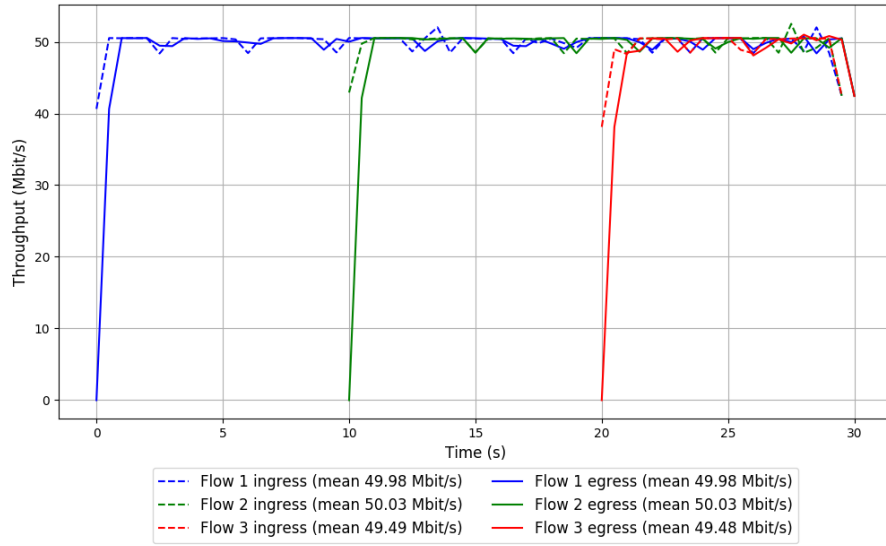
Run 5: Report of Sprout — Data Link

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

Start at: 2019-06-28 00:39:05
End at: 2019-06-28 00:39:35
Local clock offset: -0.697 ms
Remote clock offset: -2.607 ms


# Below is generated by plot.py at 2019-06-28 03:57:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.73 Mbit/s
95th percentile per-packet one-way delay: 1.026 ms
Loss rate: 85.49%
-- Flow 1:
Average throughput: 9.08 Mbit/s
95th percentile per-packet one-way delay: 1.030 ms
Loss rate: 81.63%
-- Flow 2:
Average throughput: 5.49 Mbit/s
95th percentile per-packet one-way delay: 1.013 ms
Loss rate: 90.47%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 0.916 ms
Loss rate: 99.16%
```
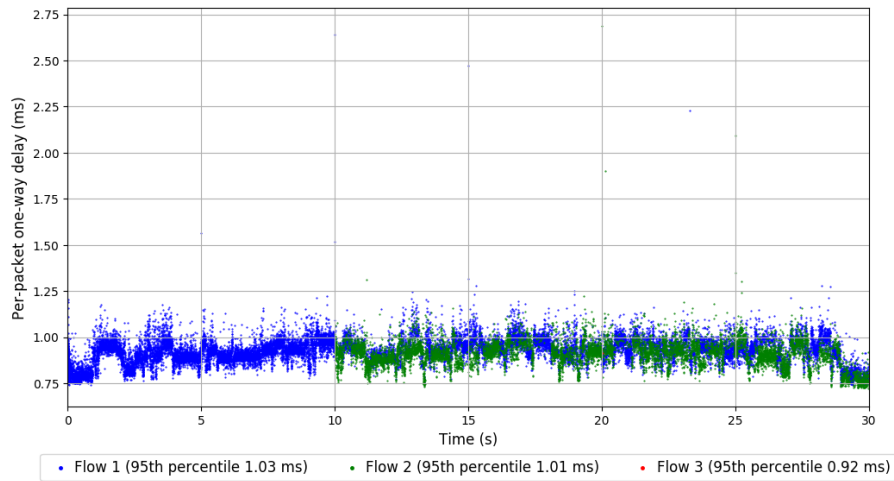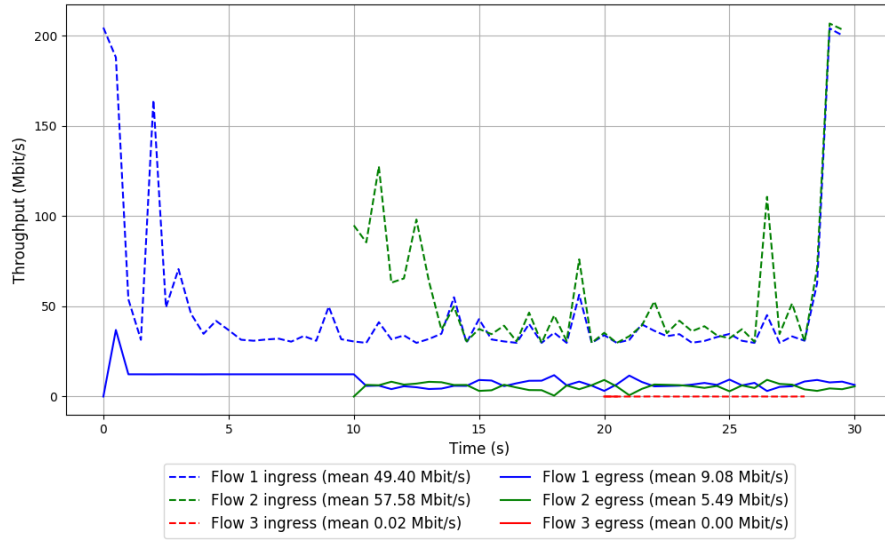
Run 1: Report of TaoVA-100x — Data Link

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

Start at: 2019-06-28 01:10:57
End at: 2019-06-28 01:11:27
Local clock offset: -0.746 ms
Remote clock offset: -2.628 ms

# Below is generated by plot.py at 2019-06-28 03:57:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 11.17 Mbit/s
95th percentile per-packet one-way delay: 1.138 ms
Loss rate: 2.80%
-- Flow 1:
Average throughput: 5.92 Mbit/s
95th percentile per-packet one-way delay: 1.152 ms
Loss rate: 1.93%
-- Flow 2:
Average throughput: 5.73 Mbit/s
95th percentile per-packet one-way delay: 1.117 ms
Loss rate: 2.38%
-- Flow 3:
Average throughput: 4.30 Mbit/s
95th percentile per-packet one-way delay: 1.146 ms
Loss rate: 7.26%
```
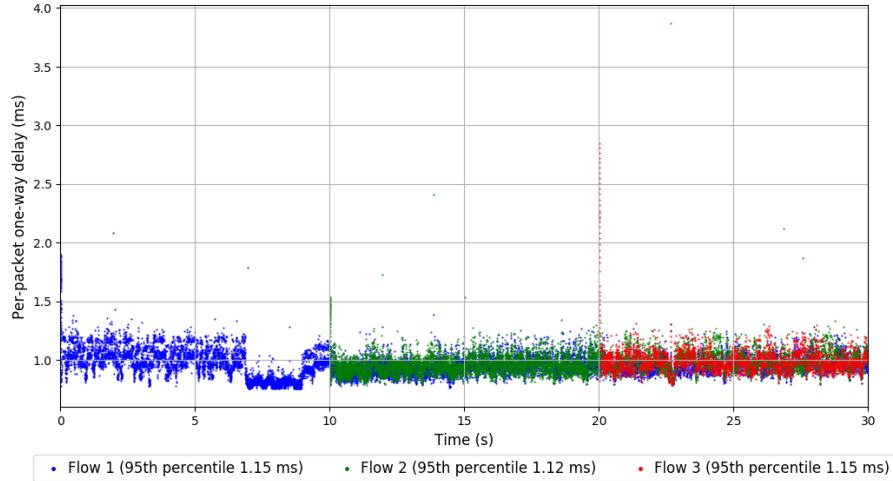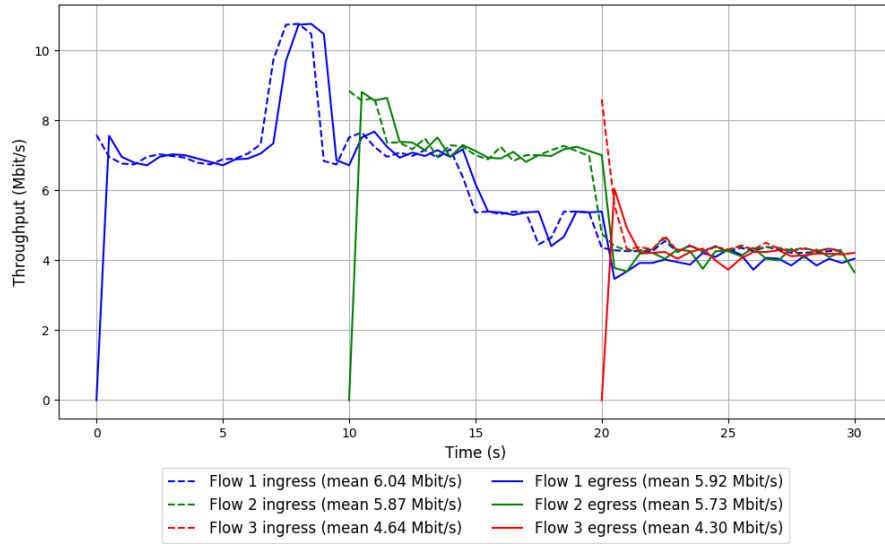
Run 2: Report of TaoVA-100x — Data Link

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

Start at: 2019-06-28 01:42:40
End at: 2019-06-28 01:43:10
Local clock offset: 0.431 ms
Remote clock offset: 0.006 ms


# Below is generated by plot.py at 2019-06-28 03:57:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 10.96 Mbit/s
95th percentile per-packet one-way delay: 0.988 ms
Loss rate: 85.32%
-- Flow 1:
Average throughput: 3.79 Mbit/s
95th percentile per-packet one-way delay: 1.050 ms
Loss rate: 32.39%
-- Flow 2:
Average throughput: 9.27 Mbit/s
95th percentile per-packet one-way delay: 0.930 ms
Loss rate: 83.91%
-- Flow 3:
Average throughput: 6.35 Mbit/s
95th percentile per-packet one-way delay: 0.937 ms
Loss rate: 93.47%
```
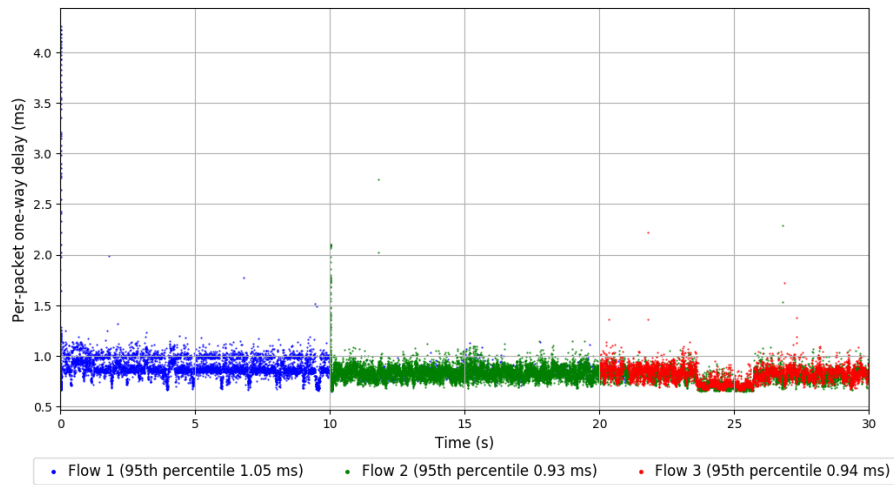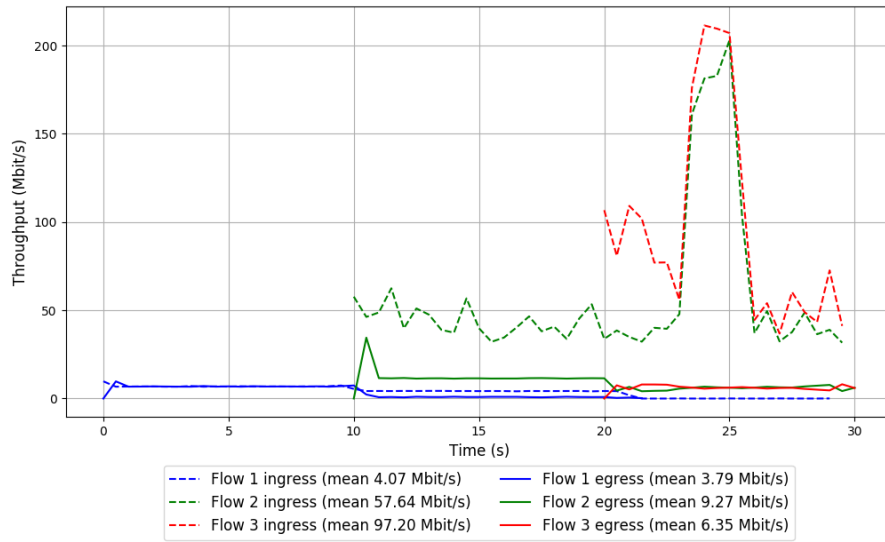
Run 3: Report of TaoVA-100x — Data Link

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

Start at: 2019-06-28 02:14:22
End at: 2019-06-28 02:14:52
Local clock offset: 3.668 ms
Remote clock offset: 0.808 ms


# Below is generated by plot.py at 2019-06-28 03:57:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 11.10 Mbit/s
95th percentile per-packet one-way delay: 1.160 ms
Loss rate: 68.04%
-- Flow 1:
Average throughput: 3.26 Mbit/s
95th percentile per-packet one-way delay: 1.209 ms
Loss rate: 41.17%
-- Flow 2:
Average throughput: 11.77 Mbit/s
95th percentile per-packet one-way delay: 1.105 ms
Loss rate: 73.15%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 0.881 ms
Loss rate: 99.16%
```
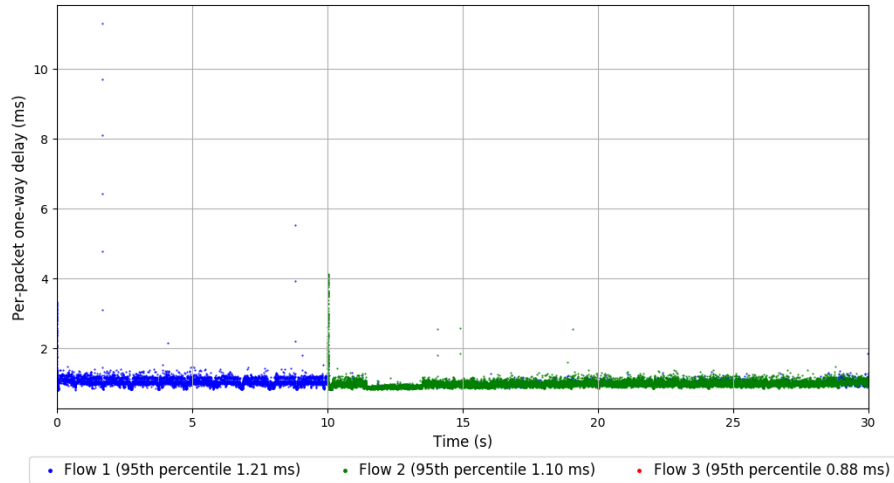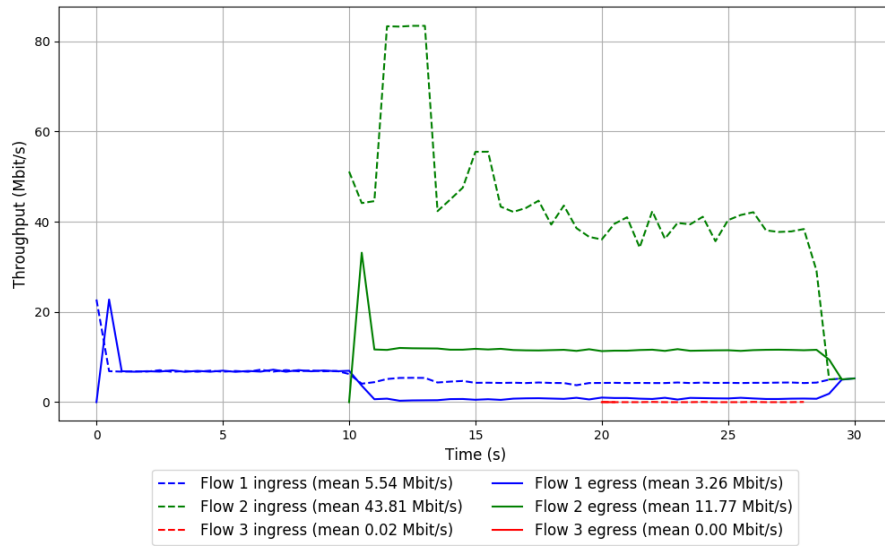
Run 4: Report of TaoVA-100x — Data Link

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

Start at: 2019-06-28 02:45:52
End at: 2019-06-28 02:46:22
Local clock offset: 3.908 ms
Remote clock offset: -1.878 ms


# Below is generated by plot.py at 2019-06-28 03:57:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.73 Mbit/s
95th percentile per-packet one-way delay: 1.171 ms
Loss rate: 82.25%
-- Flow 1:
Average throughput: 10.02 Mbit/s
95th percentile per-packet one-way delay: 1.157 ms
Loss rate: 76.00%
-- Flow 2:
Average throughput: 4.07 Mbit/s
95th percentile per-packet one-way delay: 1.196 ms
Loss rate: 90.95%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 1.085 ms
Loss rate: 99.16%
```
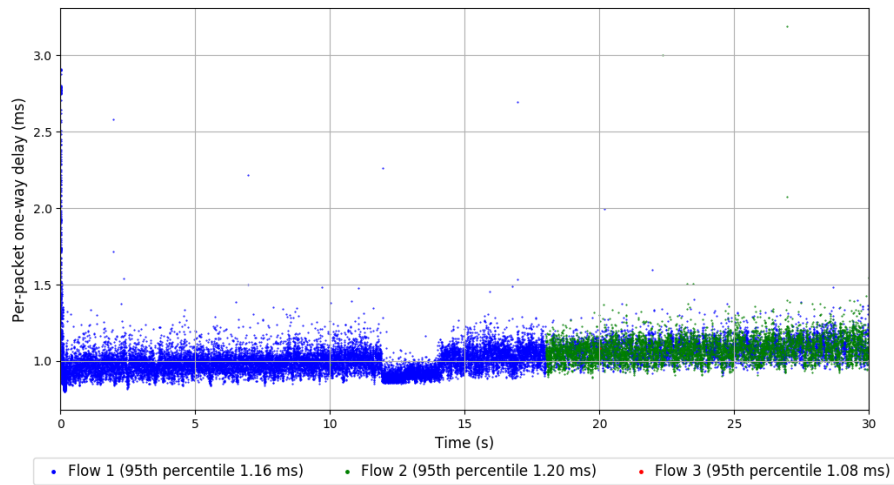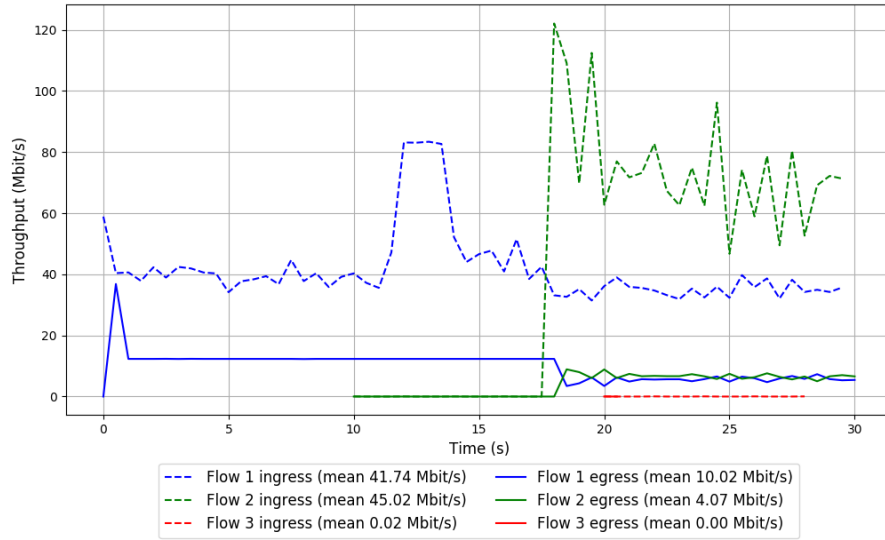
Run 5: Report of TaoVA-100x — Data Link

```
Run 1: Statistics of TCP Vegas

Start at: 2019-06-28 00:55:23
End at: 2019-06-28 00:55:53
Local clock offset: -0.813 ms
Remote clock offset: -2.955 ms


# Below is generated by plot.py at 2019-06-28 04:02:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 464.68 Mbit/s
95th percentile per-packet one-way delay: 1.269 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 186.86 Mbit/s
95th percentile per-packet one-way delay: 1.181 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 237.86 Mbit/s
95th percentile per-packet one-way delay: 1.235 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 358.93 Mbit/s
95th percentile per-packet one-way delay: 2.430 ms
Loss rate: 0.00%
```
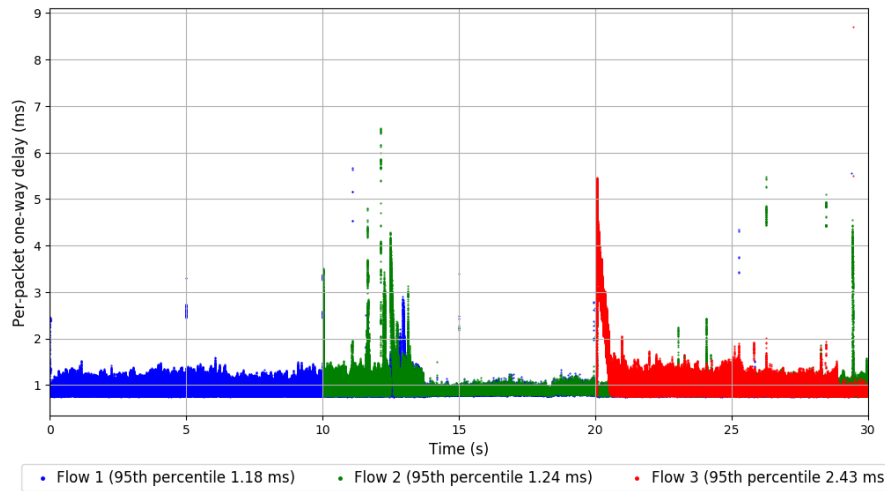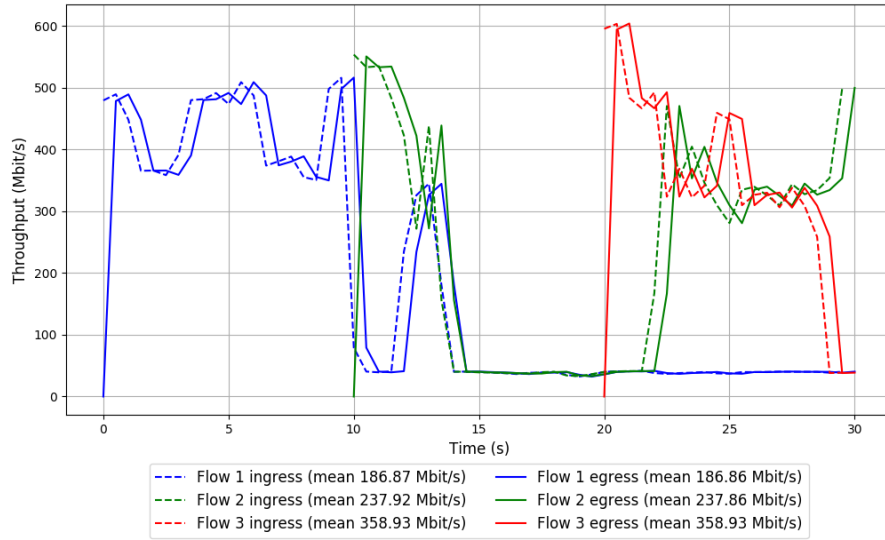
Run 1: Report of TCP Vegas — Data Link

```
Run 2: Statistics of TCP Vegas

Start at: 2019-06-28 01:27:10
End at: 2019-06-28 01:27:40
Local clock offset: -0.017 ms
Remote clock offset: -2.524 ms


# Below is generated by plot.py at 2019-06-28 04:02:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 463.81 Mbit/s
95th percentile per-packet one-way delay: 1.271 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 156.64 Mbit/s
95th percentile per-packet one-way delay: 1.361 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 275.58 Mbit/s
95th percentile per-packet one-way delay: 1.218 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 371.24 Mbit/s
95th percentile per-packet one-way delay: 1.316 ms
Loss rate: 0.01%
```
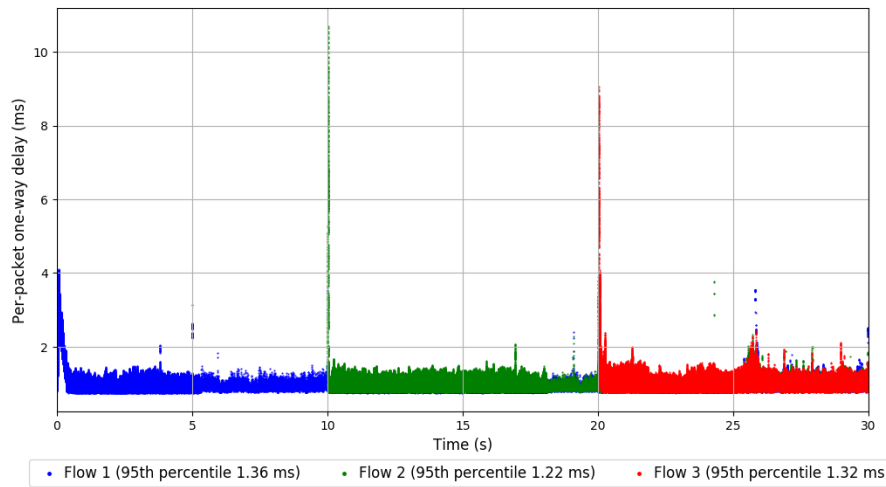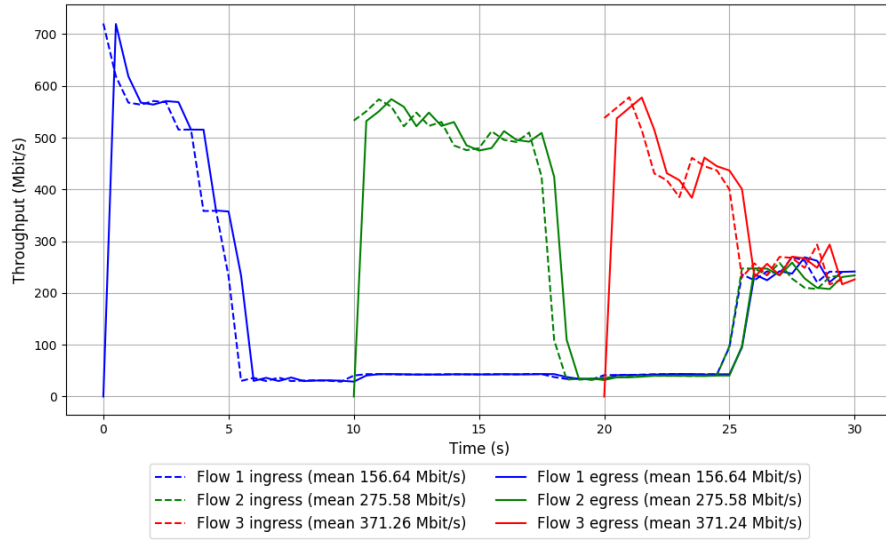
Run 2: Report of TCP Vegas — Data Link

```
Run 3: Statistics of TCP Vegas

Start at: 2019-06-28 01:58:48
End at: 2019-06-28 01:59:18
Local clock offset: 2.501 ms
Remote clock offset: 1.03 ms


# Below is generated by plot.py at 2019-06-28 04:04:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 628.96 Mbit/s
95th percentile per-packet one-way delay: 1.287 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 335.55 Mbit/s
95th percentile per-packet one-way delay: 1.286 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 305.04 Mbit/s
95th percentile per-packet one-way delay: 1.293 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 271.59 Mbit/s
95th percentile per-packet one-way delay: 1.279 ms
Loss rate: 0.00%
```
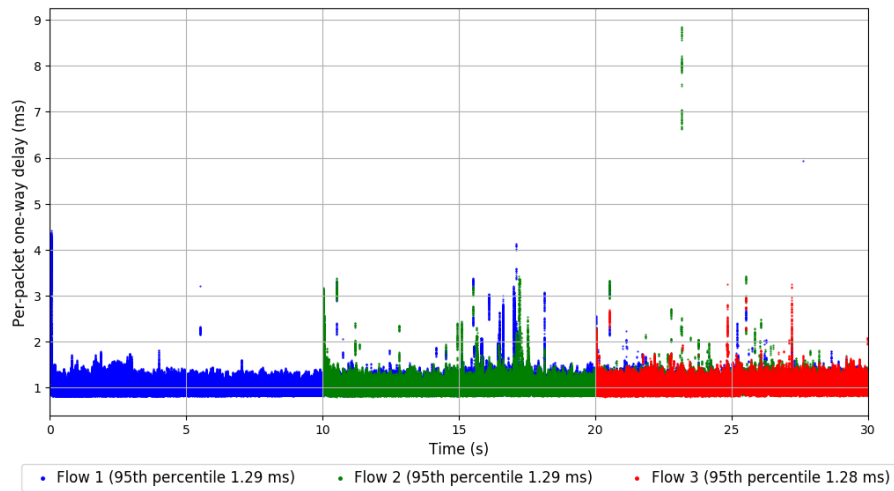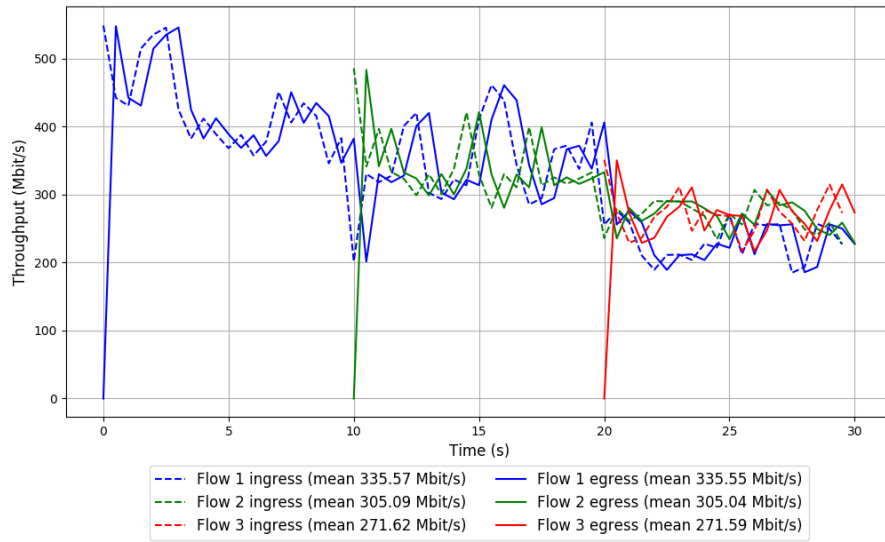
Run 3: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 335.57 Mbit/s)   Flow 1 egress (mean 335.55 Mbit/s)
Flow 2 ingress (mean 305.09 Mbit/s)   Flow 2 egress (mean 305.04 Mbit/s)
Flow 3 ingress (mean 271.62 Mbit/s)   Flow 3 egress (mean 271.59 Mbit/s)

Flow 1 (95th percentile 1.29 ms)   Flow 2 (95th percentile 1.29 ms)   Flow 3 (95th percentile 1.28 ms)

```
Run 4: Statistics of TCP Vegas

Start at: 2019-06-28 02:30:29
End at: 2019-06-28 02:30:59
Local clock offset: 3.551 ms
Remote clock offset: 1.017 ms


# Below is generated by plot.py at 2019-06-28 04:04:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 313.07 Mbit/s
95th percentile per-packet one-way delay: 1.158 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 82.33 Mbit/s
95th percentile per-packet one-way delay: 1.155 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 156.48 Mbit/s
95th percentile per-packet one-way delay: 1.151 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 380.74 Mbit/s
95th percentile per-packet one-way delay: 1.164 ms
Loss rate: 0.00%
```
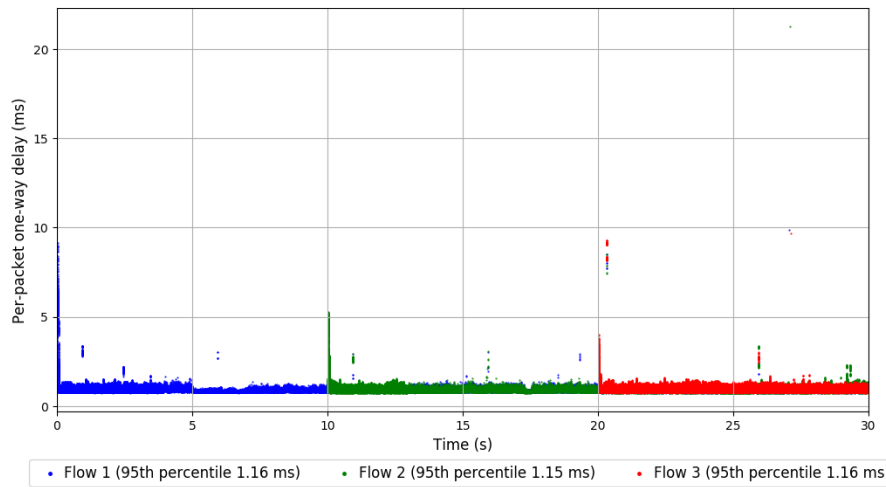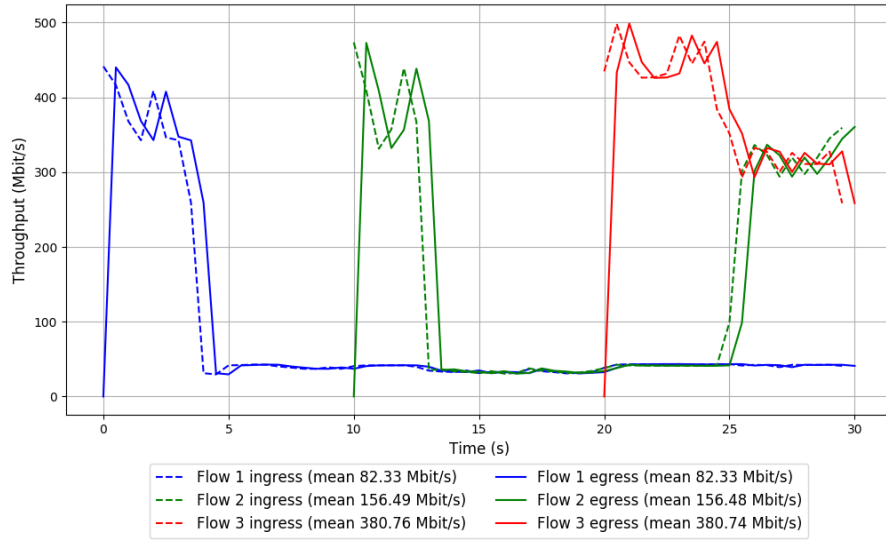
Run 4: Report of TCP Vegas — Data Link

```
Run 5: Statistics of TCP Vegas

Start at: 2019-06-28 03:01:47
End at: 2019-06-28 03:02:17
Local clock offset: 0.564 ms
Remote clock offset: -3.415 ms


# Below is generated by plot.py at 2019-06-28 04:04:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 514.51 Mbit/s
95th percentile per-packet one-way delay: 1.126 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 325.69 Mbit/s
95th percentile per-packet one-way delay: 1.104 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 111.37 Mbit/s
95th percentile per-packet one-way delay: 1.185 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 344.74 Mbit/s
95th percentile per-packet one-way delay: 1.158 ms
Loss rate: 0.00%
```
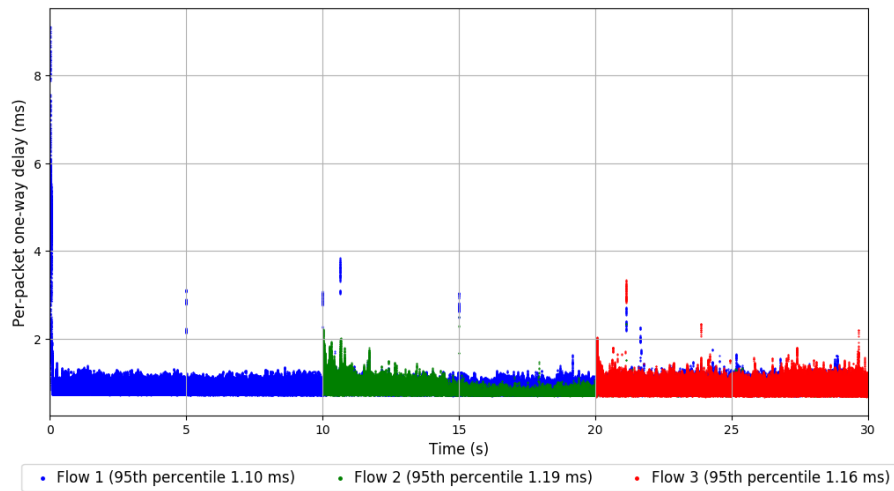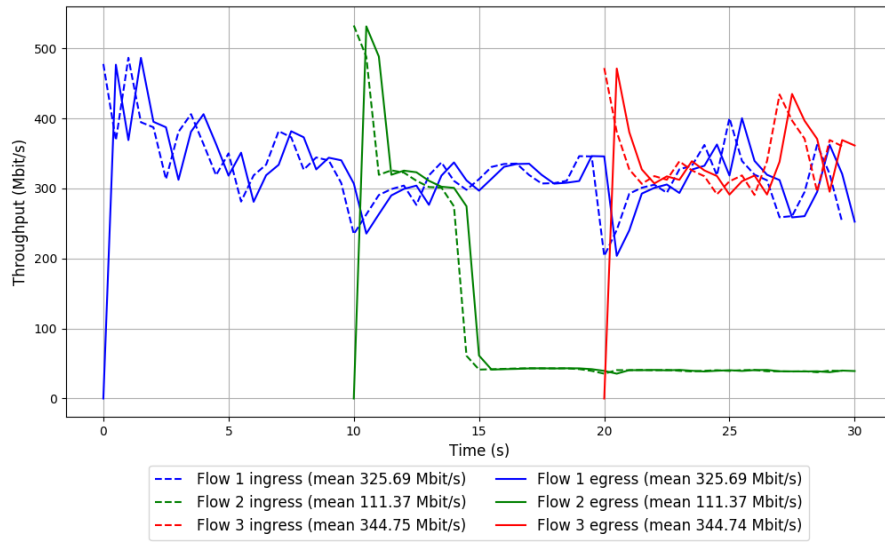
Run 5: Report of TCP Vegas — Data Link

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```
Run 1: Statistics of Verus

Start at: 2019-06-28 00:51:03
End at: 2019-06-28 00:51:33
Local clock offset: -1.087 ms
Remote clock offset: -2.988 ms


# Below is generated by plot.py at 2019-06-28 04:04:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 331.96 Mbit/s
95th percentile per-packet one-way delay: 19.060 ms
Loss rate: 2.49%
-- Flow 1:
Average throughput: 176.74 Mbit/s
95th percentile per-packet one-way delay: 8.701 ms
Loss rate: 1.60%
-- Flow 2:
Average throughput: 167.46 Mbit/s
95th percentile per-packet one-way delay: 27.962 ms
Loss rate: 2.80%
-- Flow 3:
Average throughput: 132.38 Mbit/s
95th percentile per-packet one-way delay: 54.812 ms
Loss rate: 5.14%
```
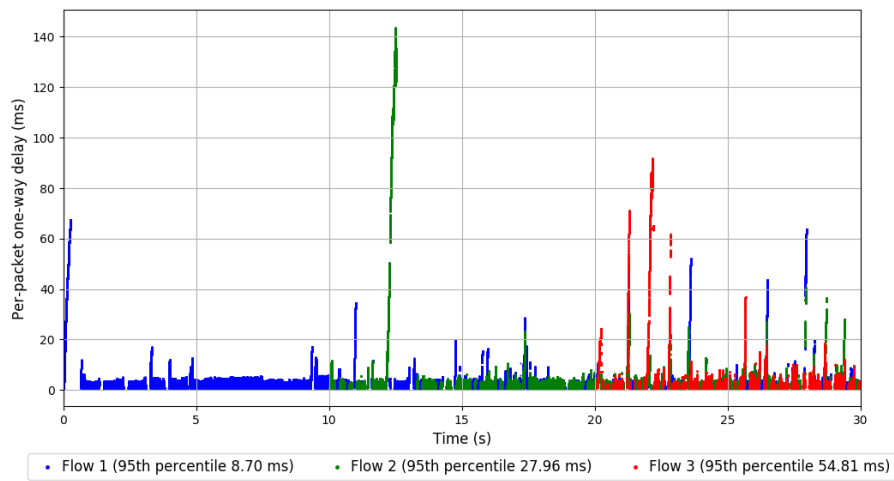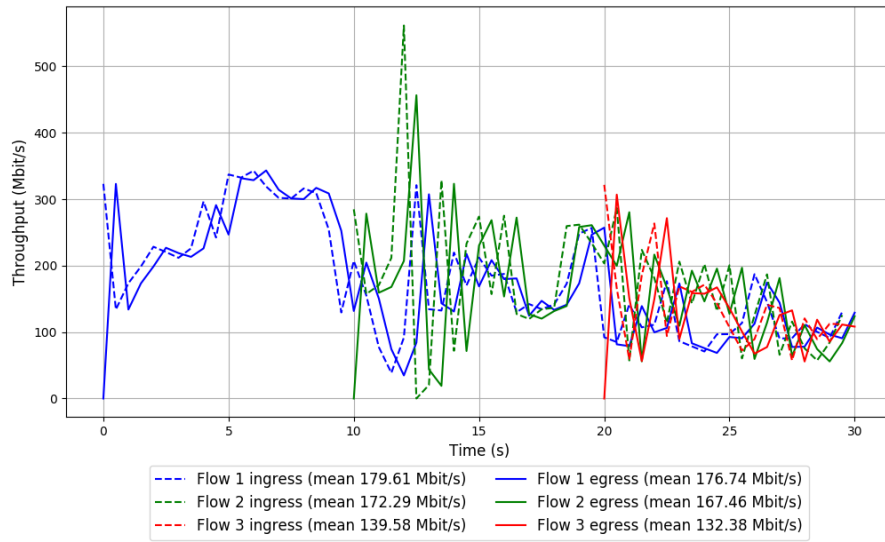
Run 1: Report of Verus — Data Link

```
Run 2: Statistics of Verus

Start at: 2019-06-28 01:22:51
End at: 2019-06-28 01:23:21
Local clock offset: -0.257 ms
Remote clock offset: -2.478 ms


# Below is generated by plot.py at 2019-06-28 04:04:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 315.01 Mbit/s
95th percentile per-packet one-way delay: 18.901 ms
Loss rate: 2.23%
-- Flow 1:
Average throughput: 173.38 Mbit/s
95th percentile per-packet one-way delay: 15.571 ms
Loss rate: 1.71%
-- Flow 2:
Average throughput: 145.53 Mbit/s
95th percentile per-packet one-way delay: 41.545 ms
Loss rate: 2.90%
-- Flow 3:
Average throughput: 135.11 Mbit/s
95th percentile per-packet one-way delay: 6.225 ms
Loss rate: 2.77%
```
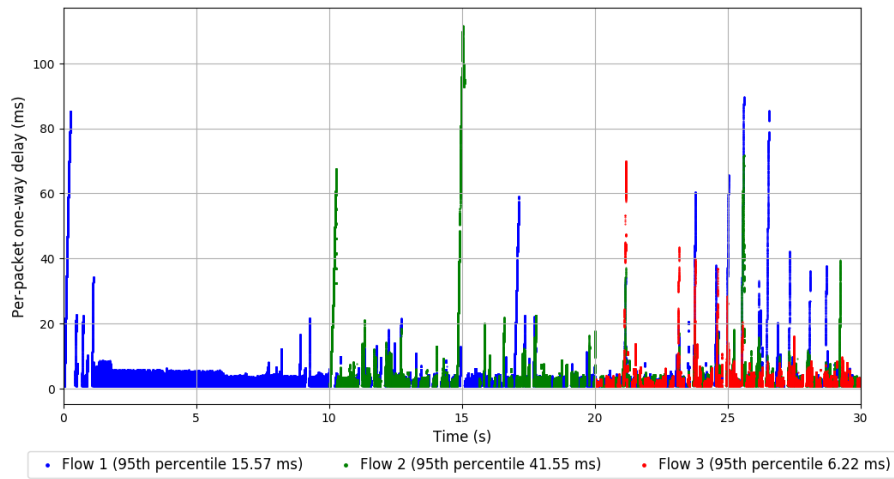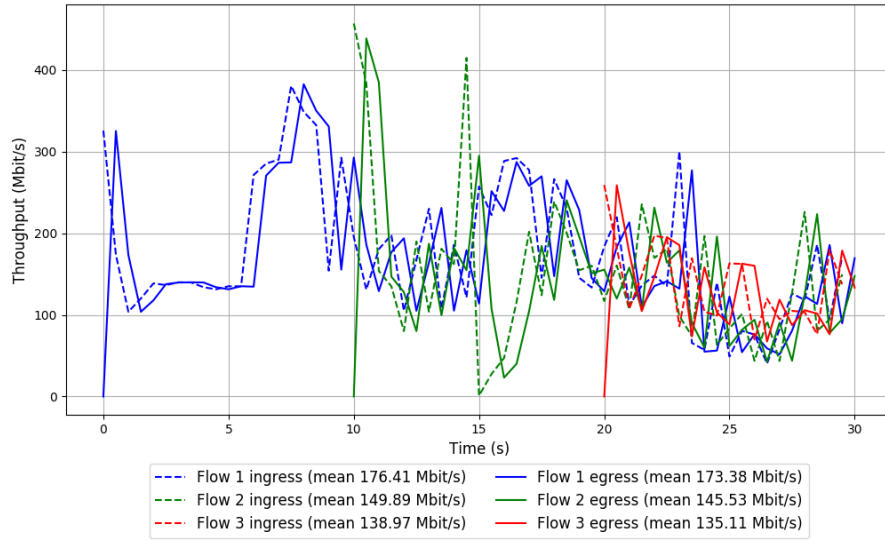
Run 2: Report of Verus — Data Link

- - - Flow 1 ingress (mean 176.41 Mbit/s) — — Flow 1 egress (mean 173.38 Mbit/s)
- - - Flow 2 ingress (mean 149.89 Mbit/s) — — Flow 2 egress (mean 145.53 Mbit/s)
- - - Flow 3 ingress (mean 138.97 Mbit/s) — — Flow 3 egress (mean 135.11 Mbit/s)

- Flow 1 (95th percentile 15.57 ms)   - Flow 2 (95th percentile 41.55 ms)   - Flow 3 (95th percentile 6.22 ms)

```
Run 3: Statistics of Verus

Start at: 2019-06-28 01:54:29
End at: 2019-06-28 01:54:59
Local clock offset: 1.933 ms
Remote clock offset: 0.722 ms


# Below is generated by plot.py at 2019-06-28 04:04:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 293.07 Mbit/s
95th percentile per-packet one-way delay: 10.500 ms
Loss rate: 2.16%
-- Flow 1:
Average throughput: 184.55 Mbit/s
95th percentile per-packet one-way delay: 8.598 ms
Loss rate: 0.97%
-- Flow 2:
Average throughput: 111.31 Mbit/s
95th percentile per-packet one-way delay: 12.209 ms
Loss rate: 3.88%
-- Flow 3:
Average throughput: 107.78 Mbit/s
95th percentile per-packet one-way delay: 10.671 ms
Loss rate: 4.54%
```
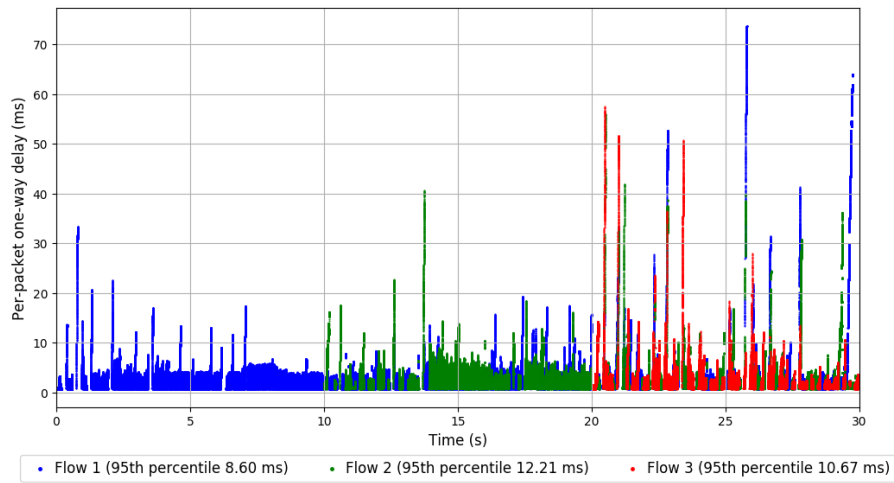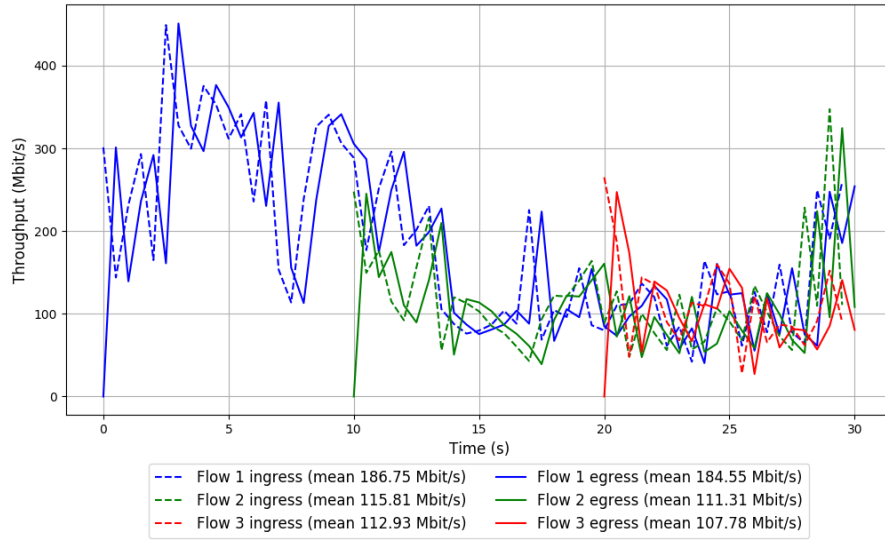
Run 3: Report of Verus — Data Link

- Flow 1 ingress (mean 186.75 Mbit/s)
- Flow 1 egress (mean 184.55 Mbit/s)
- Flow 2 ingress (mean 115.81 Mbit/s)
- Flow 2 egress (mean 111.31 Mbit/s)
- Flow 3 ingress (mean 112.93 Mbit/s)
- Flow 3 egress (mean 107.78 Mbit/s)

- Flow 1 (95th percentile 8.60 ms)
- Flow 2 (95th percentile 12.21 ms)
- Flow 3 (95th percentile 10.67 ms)

```
Run 4: Statistics of Verus

Start at: 2019-06-28 02:26:09
End at: 2019-06-28 02:26:39
Local clock offset: 3.544 ms
Remote clock offset: 0.899 ms


# Below is generated by plot.py at 2019-06-28 04:04:24
# Datalink statistics
-- Total of 3 flows:
Average throughput: 319.07 Mbit/s
95th percentile per-packet one-way delay: 10.764 ms
Loss rate: 2.41%
-- Flow 1:
Average throughput: 169.85 Mbit/s
95th percentile per-packet one-way delay: 5.825 ms
Loss rate: 1.89%
-- Flow 2:
Average throughput: 147.97 Mbit/s
95th percentile per-packet one-way delay: 29.947 ms
Loss rate: 3.39%
-- Flow 3:
Average throughput: 154.80 Mbit/s
95th percentile per-packet one-way delay: 17.253 ms
Loss rate: 2.26%
```
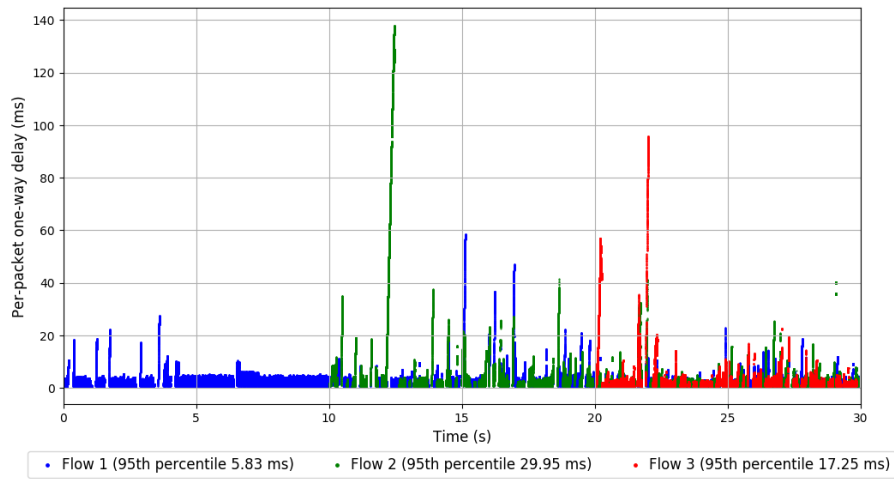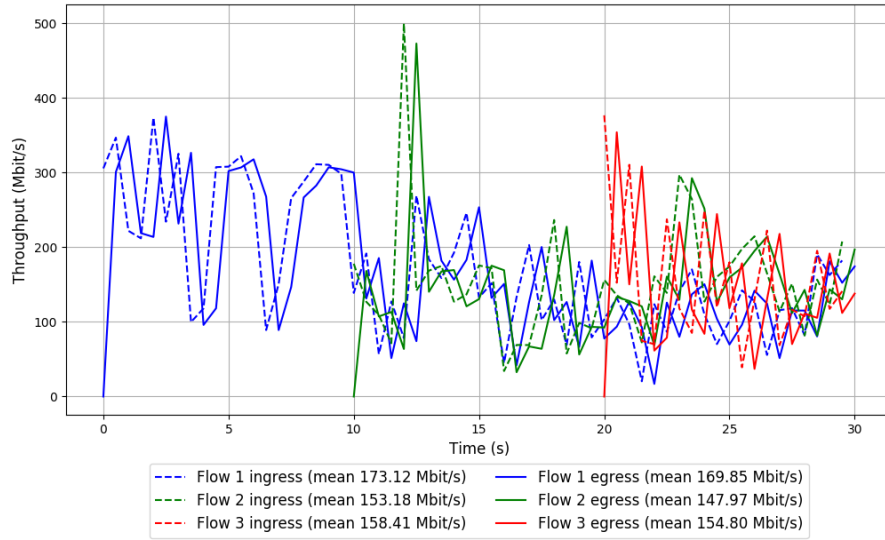
Run 4: Report of Verus — Data Link

```
Run 5: Statistics of Verus

Start at: 2019-06-28 02:57:29
End at: 2019-06-28 02:57:59
Local clock offset: 1.189 ms
Remote clock offset: -3.264 ms


# Below is generated by plot.py at 2019-06-28 04:04:43
# Datalink statistics
-- Total of 3 flows:
Average throughput: 328.60 Mbit/s
95th percentile per-packet one-way delay: 8.571 ms
Loss rate: 1.70%
-- Flow 1:
Average throughput: 180.10 Mbit/s
95th percentile per-packet one-way delay: 6.083 ms
Loss rate: 1.06%
-- Flow 2:
Average throughput: 146.50 Mbit/s
95th percentile per-packet one-way delay: 21.727 ms
Loss rate: 2.10%
-- Flow 3:
Average throughput: 157.42 Mbit/s
95th percentile per-packet one-way delay: 9.456 ms
Loss rate: 3.13%
```
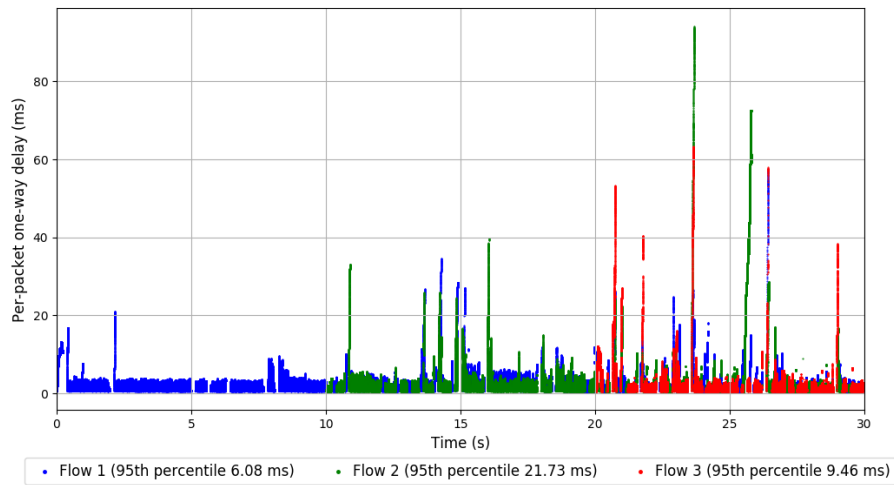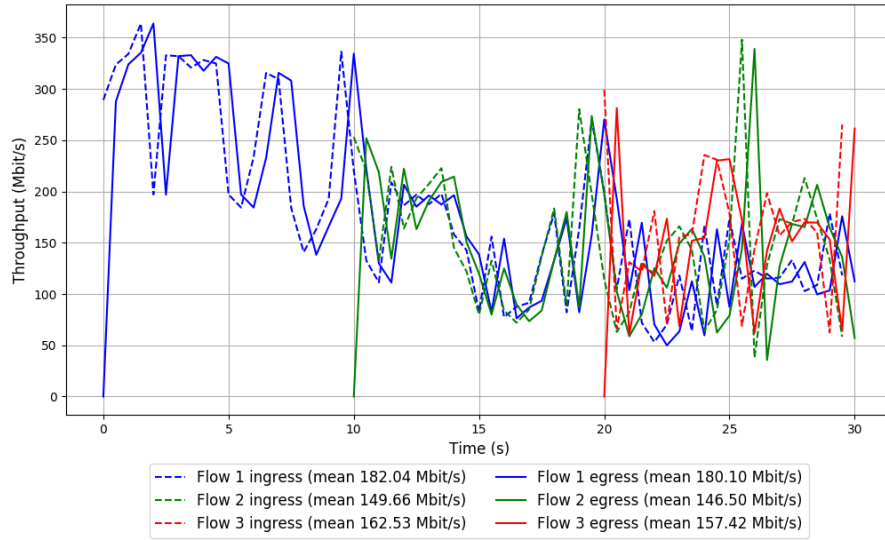
Run 5: Report of Verus — Data Link

```
Run 1: Statistics of PCC-Vivace

Start at: 2019-06-28 00:52:32
End at: 2019-06-28 00:53:02
Local clock offset: -0.958 ms
Remote clock offset: -3.04 ms


# Below is generated by plot.py at 2019-06-28 04:06:07
# Datalink statistics
-- Total of 3 flows:
Average throughput: 452.75 Mbit/s
95th percentile per-packet one-way delay: 152.690 ms
Loss rate: 1.59%
-- Flow 1:
Average throughput: 213.02 Mbit/s
95th percentile per-packet one-way delay: 43.233 ms
Loss rate: 0.58%
-- Flow 2:
Average throughput: 297.72 Mbit/s
95th percentile per-packet one-way delay: 163.948 ms
Loss rate: 2.12%
-- Flow 3:
Average throughput: 126.17 Mbit/s
95th percentile per-packet one-way delay: 112.055 ms
Loss rate: 4.13%
```
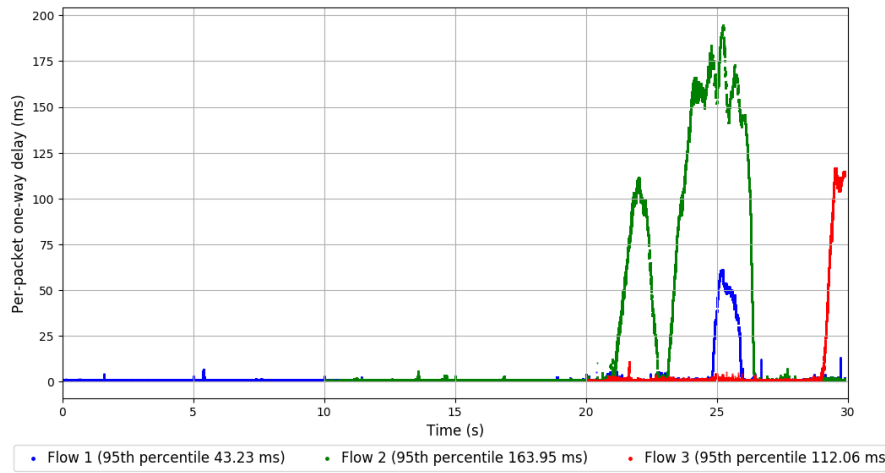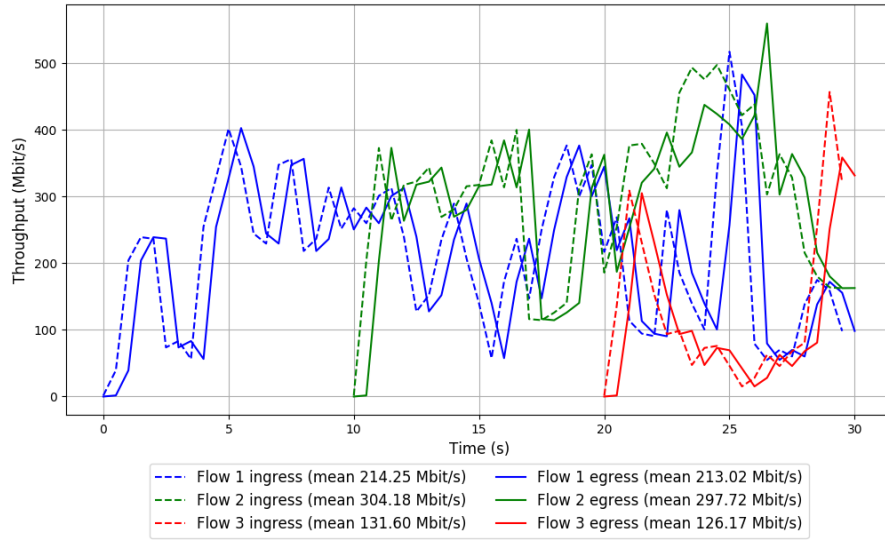
Run 1: Report of PCC-Vivace — Data Link

```
Run 2: Statistics of PCC-Vivace

Start at: 2019-06-28 01:24:19
End at: 2019-06-28 01:24:49
Local clock offset: -0.198 ms
Remote clock offset: -2.513 ms

# Below is generated by plot.py at 2019-06-28 04:06:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 454.41 Mbit/s
95th percentile per-packet one-way delay: 2.203 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 227.59 Mbit/s
95th percentile per-packet one-way delay: 1.219 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 238.72 Mbit/s
95th percentile per-packet one-way delay: 1.581 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 206.37 Mbit/s
95th percentile per-packet one-way delay: 11.518 ms
Loss rate: 0.04%
```
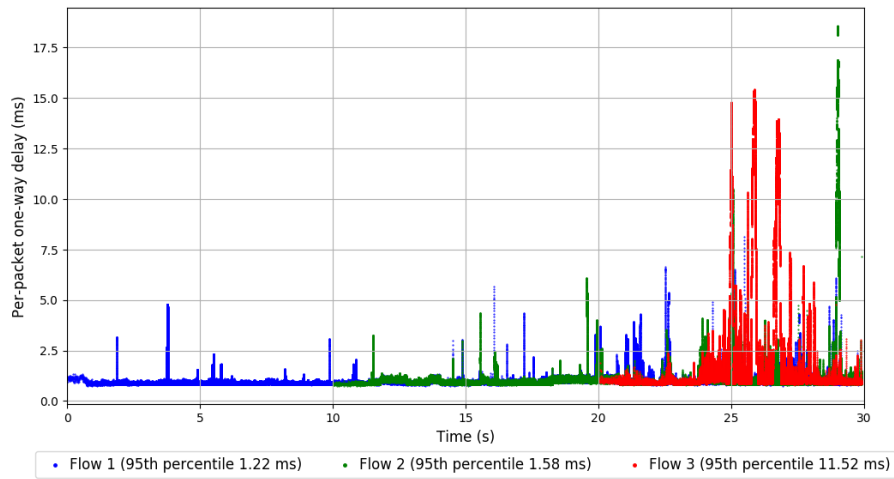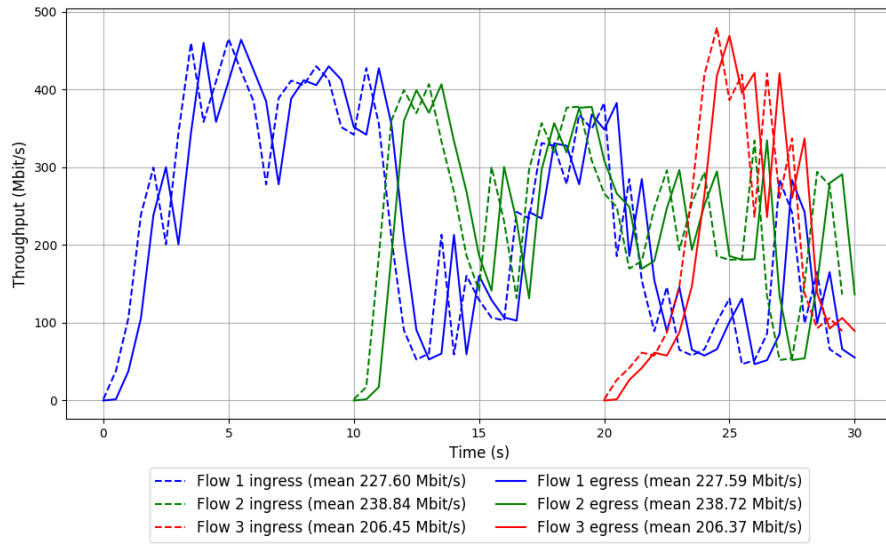
Run 2: Report of PCC-Vivace — Data Link

```
Run 3: Statistics of PCC-Vivace

Start at: 2019-06-28 01:55:57
End at: 2019-06-28 01:56:27
Local clock offset: 2.15 ms
Remote clock offset: 0.845 ms


# Below is generated by plot.py at 2019-06-28 04:06:47
# Datalink statistics
-- Total of 3 flows:
Average throughput: 467.47 Mbit/s
95th percentile per-packet one-way delay: 120.007 ms
Loss rate: 0.83%
-- Flow 1:
Average throughput: 258.74 Mbit/s
95th percentile per-packet one-way delay: 2.853 ms
Loss rate: 0.03%
-- Flow 2:
Average throughput: 231.57 Mbit/s
95th percentile per-packet one-way delay: 180.693 ms
Loss rate: 2.26%
-- Flow 3:
Average throughput: 165.75 Mbit/s
95th percentile per-packet one-way delay: 4.655 ms
Loss rate: 0.47%
```
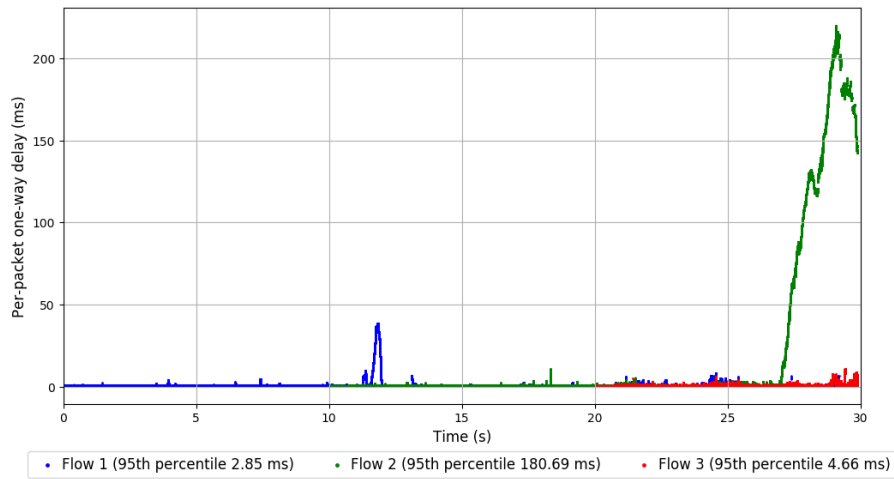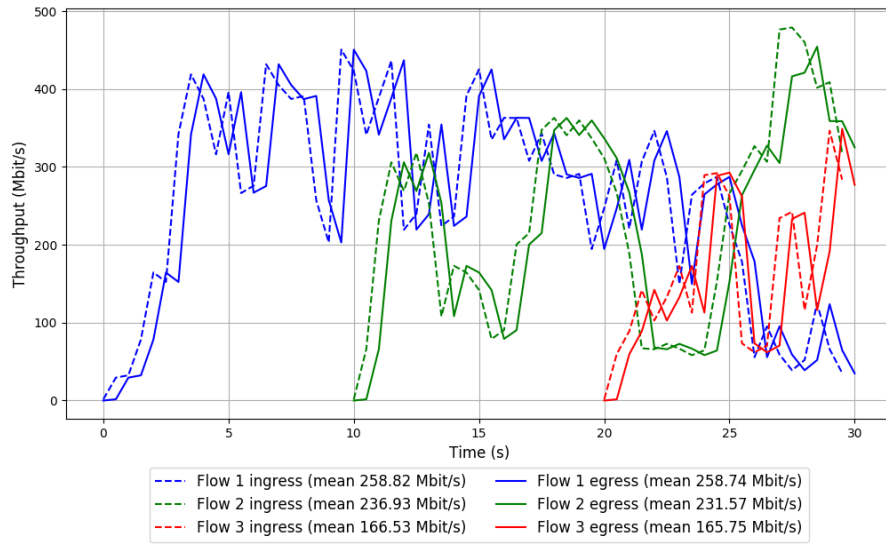
Run 3: Report of PCC-Vivace — Data Link

```
Run 4: Statistics of PCC-Vivace

Start at: 2019-06-28 02:27:38
End at: 2019-06-28 02:28:08
Local clock offset: 3.551 ms
Remote clock offset: 0.97 ms


# Below is generated by plot.py at 2019-06-28 04:06:47
# Datalink statistics
-- Total of 3 flows:
Average throughput: 451.75 Mbit/s
95th percentile per-packet one-way delay: 32.651 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 219.18 Mbit/s
95th percentile per-packet one-way delay: 1.662 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 280.38 Mbit/s
95th percentile per-packet one-way delay: 72.851 ms
Loss rate: 0.05%
-- Flow 3:
Average throughput: 139.62 Mbit/s
95th percentile per-packet one-way delay: 4.606 ms
Loss rate: 0.21%
```
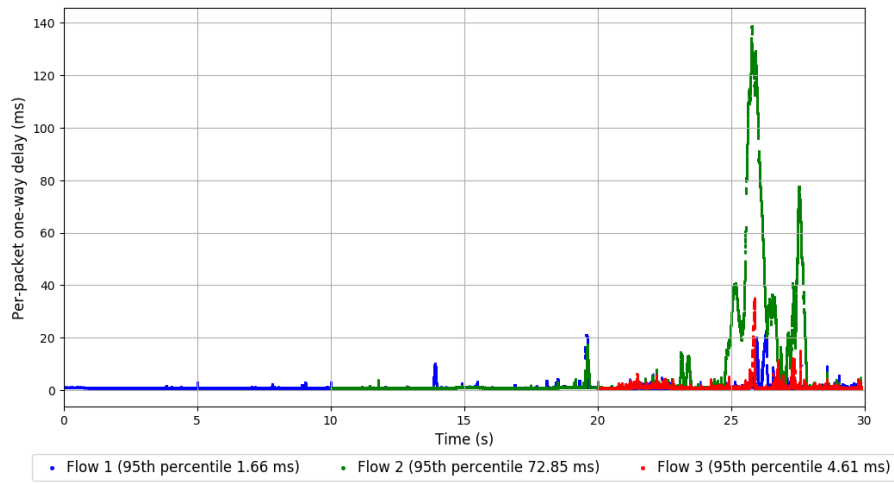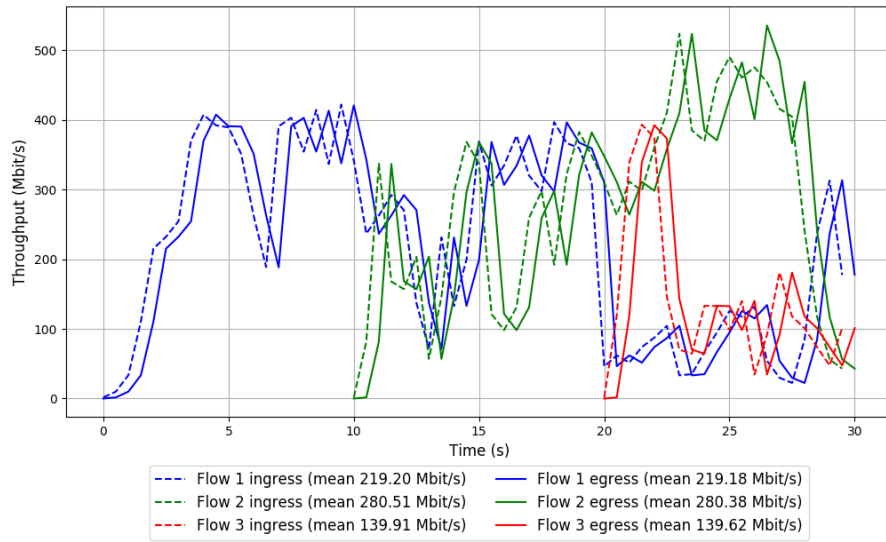
Run 4: Report of PCC-Vivace — Data Link

```
Run 5: Statistics of PCC-Vivace

Start at: 2019-06-28 02:58:58
End at: 2019-06-28 02:59:28
Local clock offset: 0.95 ms
Remote clock offset: -3.304 ms


# Below is generated by plot.py at 2019-06-28 04:06:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 416.36 Mbit/s
95th percentile per-packet one-way delay: 6.313 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 236.85 Mbit/s
95th percentile per-packet one-way delay: 1.340 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 204.59 Mbit/s
95th percentile per-packet one-way delay: 28.703 ms
Loss rate: 0.08%
-- Flow 3:
Average throughput: 131.51 Mbit/s
95th percentile per-packet one-way delay: 2.199 ms
Loss rate: 0.42%
```
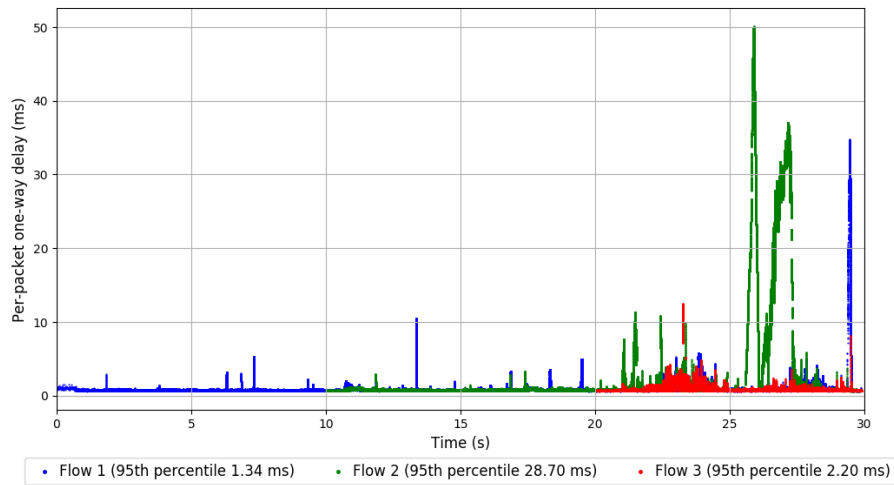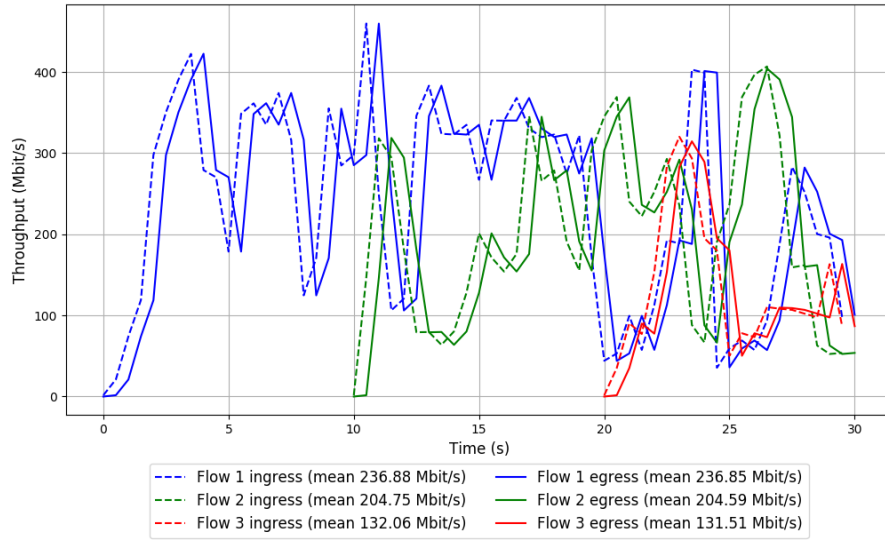
Run 5: Report of PCC-Vivace — Data Link

- - - Flow 1 ingress (mean 236.88 Mbit/s)   —— Flow 1 egress (mean 236.85 Mbit/s)
- - - Flow 2 ingress (mean 204.75 Mbit/s)   —— Flow 2 egress (mean 204.59 Mbit/s)
- - - Flow 3 ingress (mean 132.06 Mbit/s)   —— Flow 3 egress (mean 131.51 Mbit/s)

• Flow 1 (95th percentile 1.34 ms)   • Flow 2 (95th percentile 28.70 ms)   • Flow 3 (95th percentile 2.20 ms)

```
Run 1: Statistics of WebRTC media

Start at: 2019-06-28 00:32:48
End at: 2019-06-28 00:33:19
Local clock offset: -0.093 ms
Remote clock offset: -2.065 ms


# Below is generated by plot.py at 2019-06-28 04:06:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 4.22 Mbit/s
95th percentile per-packet one-way delay: 1.119 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 2.16 Mbit/s
95th percentile per-packet one-way delay: 1.151 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 1.46 Mbit/s
95th percentile per-packet one-way delay: 1.026 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.61 Mbit/s
95th percentile per-packet one-way delay: 1.124 ms
Loss rate: 0.00%
```
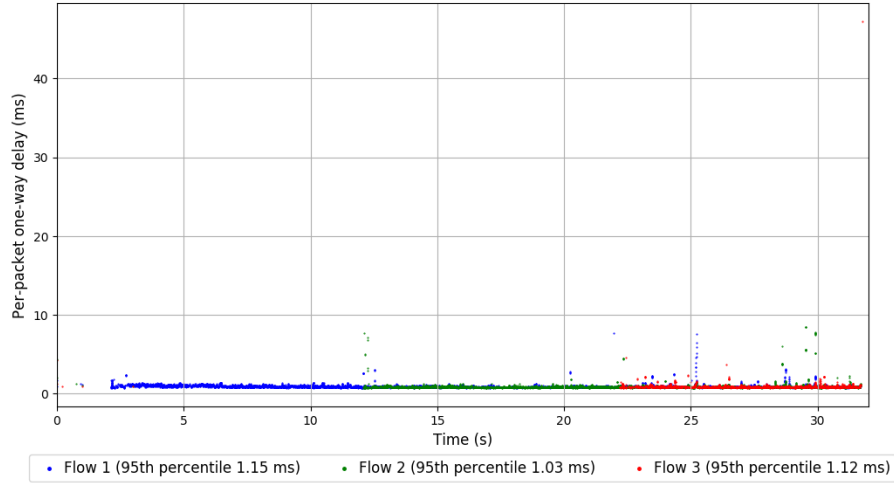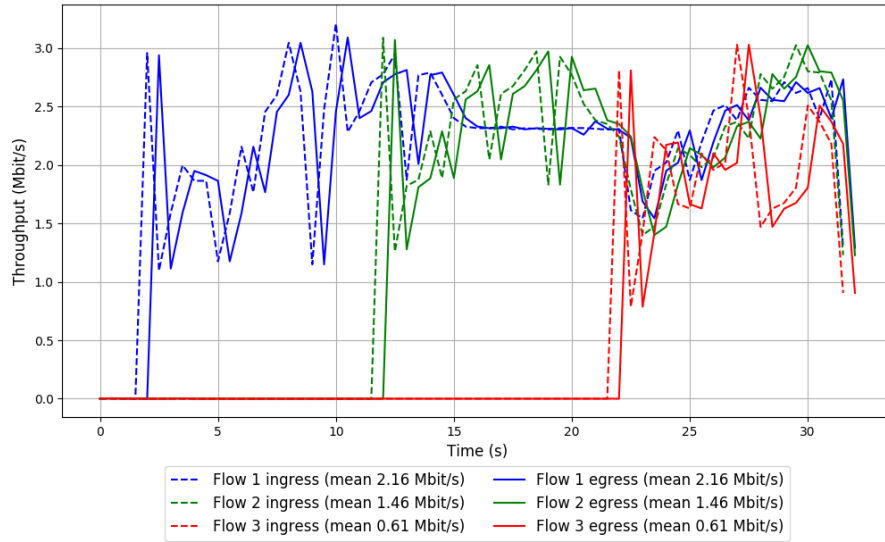
Run 1: Report of WebRTC media — Data Link

```
Run 2: Statistics of WebRTC media

Start at: 2019-06-28 01:04:41
End at: 2019-06-28 01:05:11
Local clock offset: -0.727 ms
Remote clock offset: -2.762 ms


# Below is generated by plot.py at 2019-06-28 04:06:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 3.151 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 4.162 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 2.466 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 3.066 ms
Loss rate: 0.00%
```
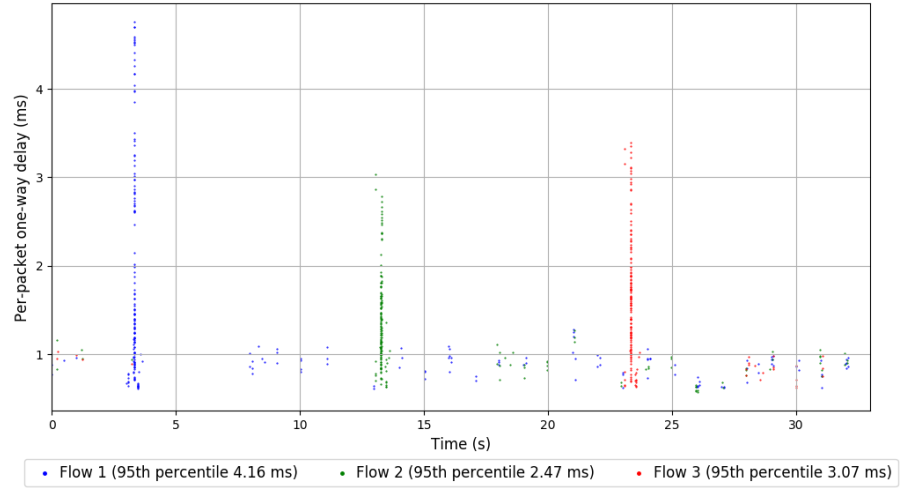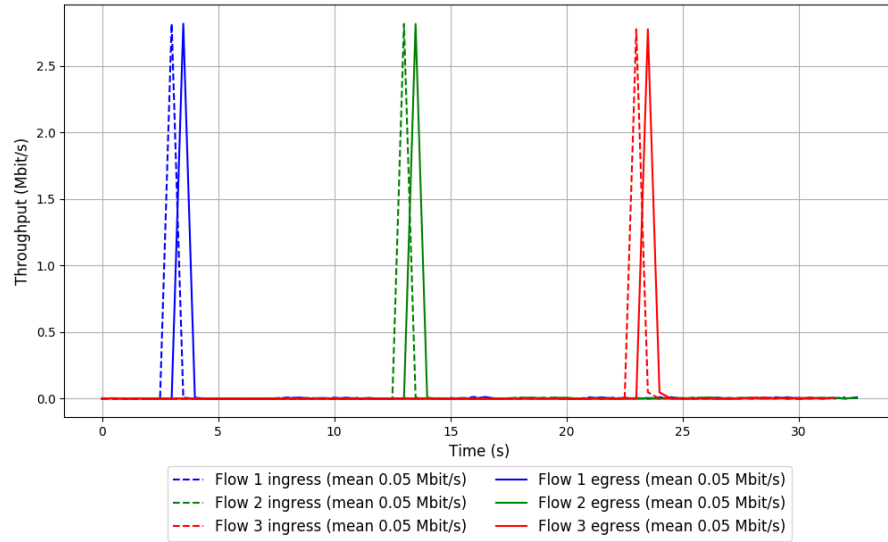
Run 2: Report of WebRTC media — Data Link

```
Run 3: Statistics of WebRTC media

Start at: 2019-06-28 01:36:24
End at: 2019-06-28 01:36:54
Local clock offset: 0.284 ms
Remote clock offset: -0.647 ms


# Below is generated by plot.py at 2019-06-28 04:06:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 2.853 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 2.879 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 2.940 ms
Loss rate: 0.05%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 2.006 ms
Loss rate: 0.00%
```
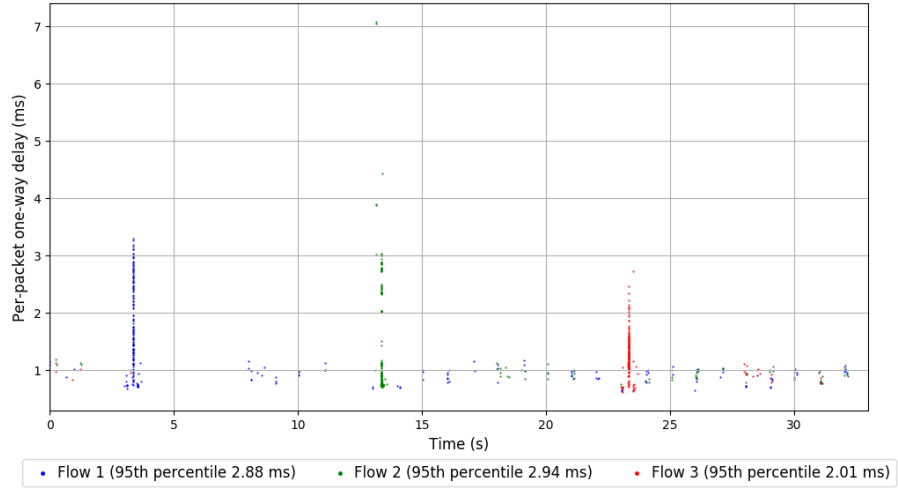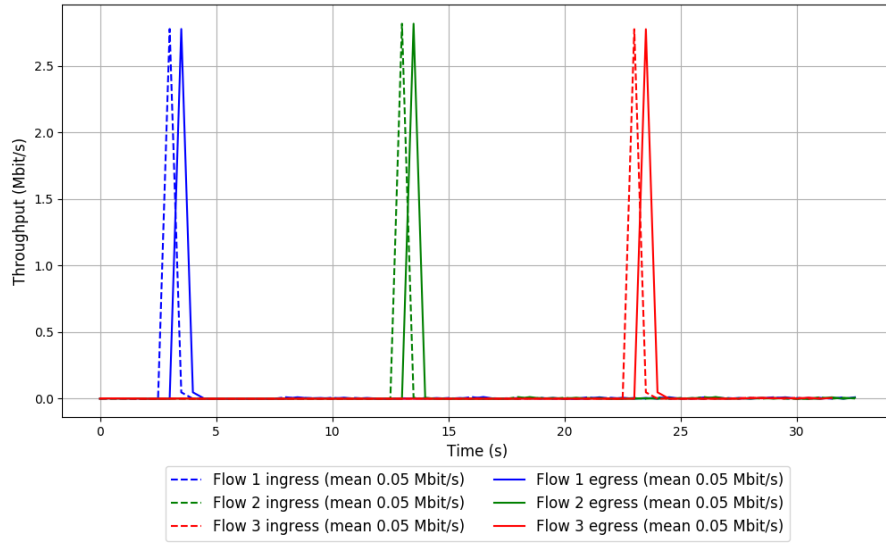
Run 3: Report of WebRTC media — Data Link

```
Run 4: Statistics of WebRTC media

Start at: 2019-06-28 02:08:06
End at: 2019-06-28 02:08:36
Local clock offset: 3.298 ms
Remote clock offset: 0.855 ms


# Below is generated by plot.py at 2019-06-28 04:06:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 4.156 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 2.455 ms
Loss rate: 0.05%
-- Flow 2:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 2.457 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 5.204 ms
Loss rate: 0.00%
```
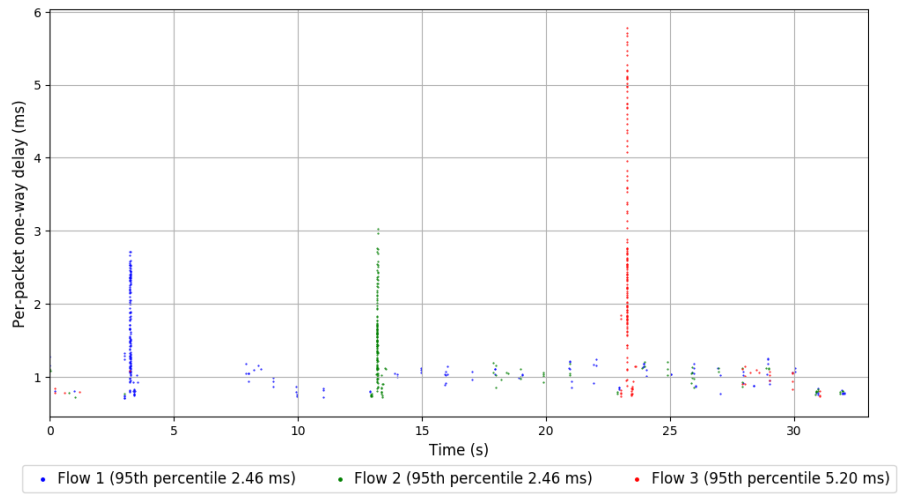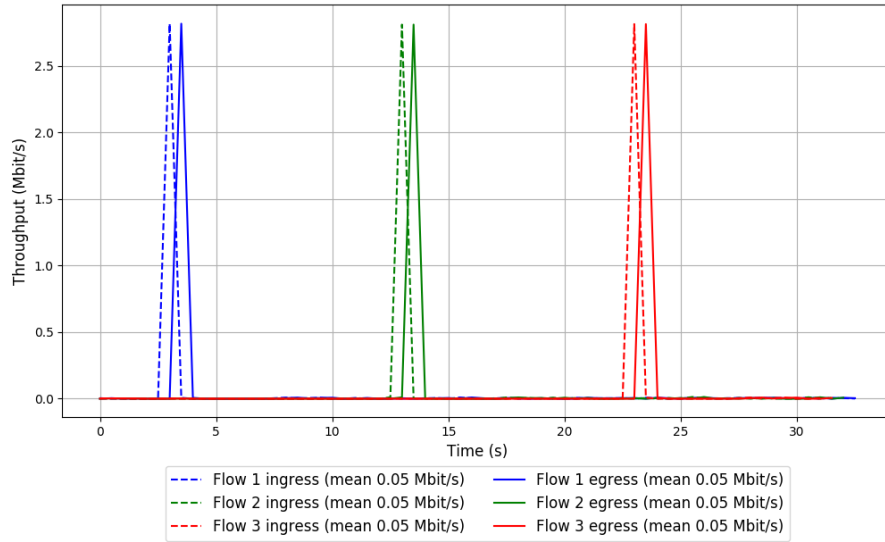
Run 4: Report of WebRTC media — Data Link

```
Run 5: Statistics of WebRTC media

Start at: 2019-06-28 02:39:35
End at: 2019-06-28 02:40:05
Local clock offset: 3.693 ms
Remote clock offset: -0.266 ms


# Below is generated by plot.py at 2019-06-28 04:06:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 2.624 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 1.630 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 2.689 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 6.495 ms
Loss rate: 0.00%
```

Run 5: Report of WebRTC media — Data Link