Pantheon Report

Generated at 2019-02-20 03:47:29 (UTC).

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

Repeated the test of 21 congestion control schemes 5 times.

Each test lasted for 30 seconds running 3 flows with 10-second interval between two flows.

NTP offsets were measured against `time.stanford.edu` and have been applied to correct the timestamps in logs.
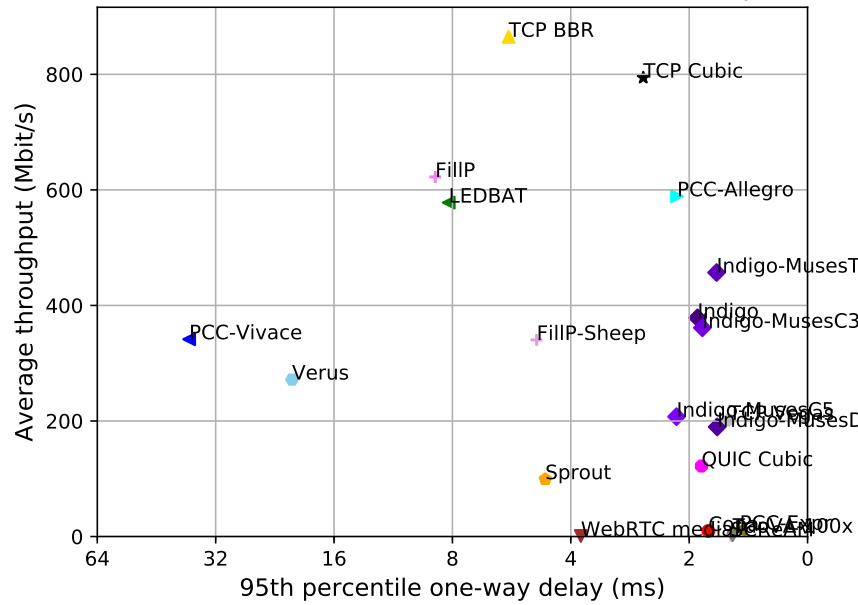
```
System info:
Linux 4.15.0-1031-aws
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912

Git summary:
branch: muses @ 7a686f7c2ed0a333082c0bab1fa5c921ab47e6ee
third_party/fillp @ d6da1459332fcee56963885d7eba17e6a32d4519
third_party/fillp-sheep @ 0e5bb722943babcd2b090d2c64fcd45e12e923f9
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdfe58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/muses @ 5ce721187ad823da20955337730c746486ca4966
third_party/pantheon-tunnel @ f866d3f58d27afd942717625ee3a354cc2e802bd
third_party/pcc @ 1afc958fa0d66d18b623c091a55fec872b4981e1
 M receiver/src/buffer.h
 M receiver/src/core.cpp
 M sender/src/buffer.h
 M sender/src/core.cpp
third_party/pcc-experimental @ cd43e34e3f5f5613e8acd08fab92c4eb24f974ab
third_party/proto-quic @ 77961f1a82733a86b42f1bc8143ebc978f3cff42
third_party/scream-reproduce @ f099118d1421aa3131bf11ff1964974e1da3bdb2
 M src/ScreamClient
 M src/ScreamServer
third_party/sprout @ 366e35c6178b01e31d4a46ad18c74f9415f19a26
 M src/examples/cellsim.cc
 M src/examples/sproutbt2.cc
 M src/network/sproutconn.cc
third_party/verus @ d4b447ea74c6c60a261149af2629562939f9a494
 M src/verus.hpp
 M tools/plot.py
```
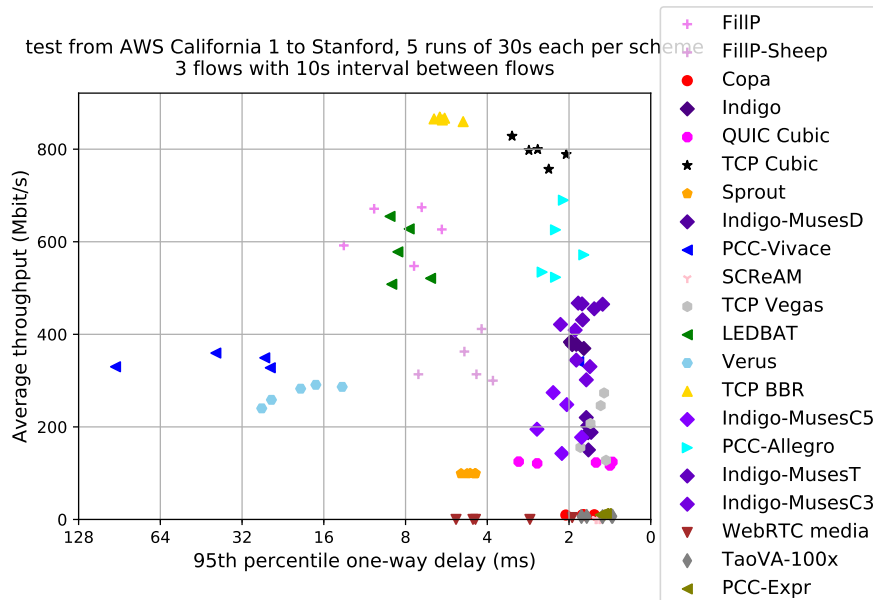
```
third_party/vivace @ 2baf86211435ae071a32f96b7d8c504587f5d7f4
third_party/webrtc @ 3f0cc2a9061a41b6f9dde4735770d143a1fa2851
```

test from 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
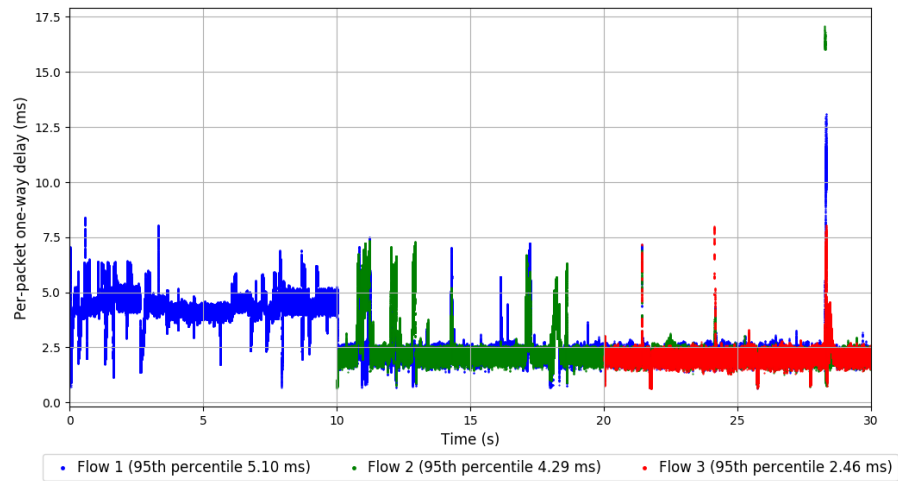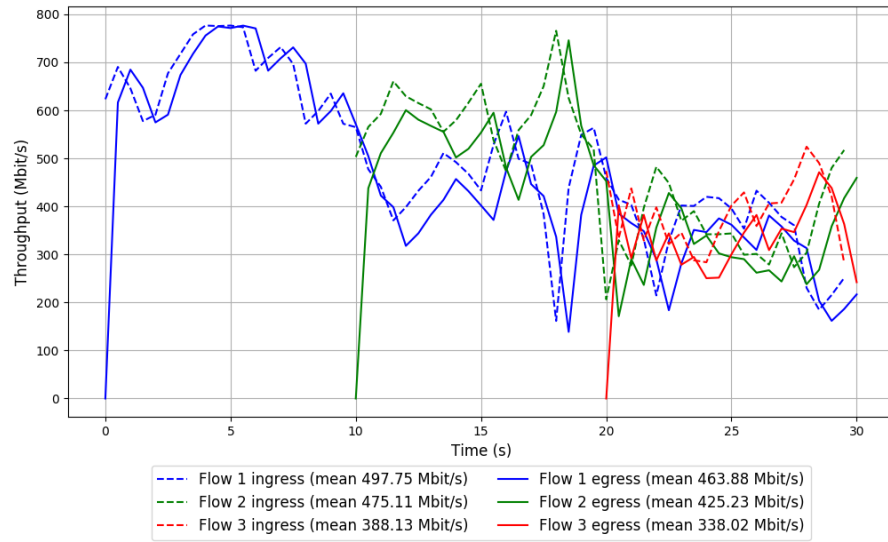3 flows with 10s interval between flows

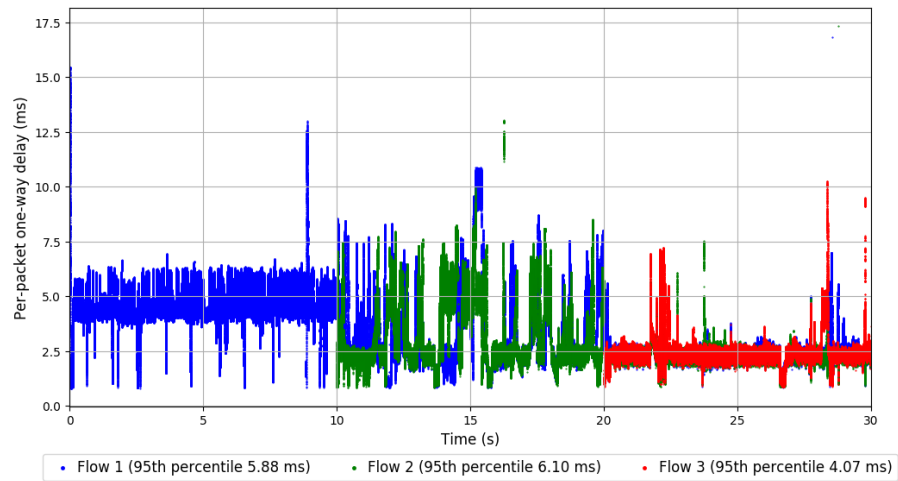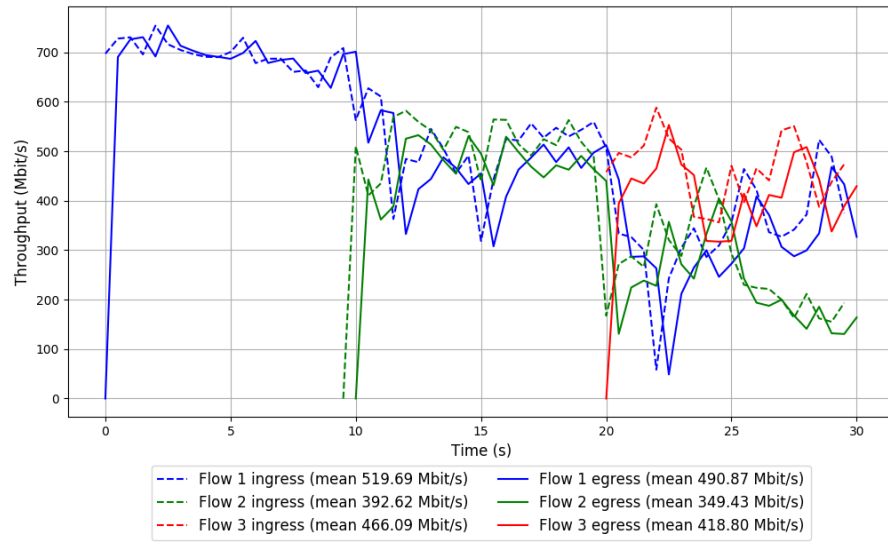| scheme	# runs	mean avg tput (Mbit/s)			mean 95th-%ile delay (ms)			mean loss rate (%)		
		flow 1	flow 2	flow 3	flow 1	flow 2	flow 3	flow 1	flow 2	flow 3
TCP BBR	5	485.67	386.87	365.02	5.68	5.99	3.72	5.58	10.30	11.56
Copa	5	9.98	5.86	7.15	1.64	1.57	1.64	47.84	58.39	48.28
TCP Cubic	5	452.79	360.36	304.54	2.79	2.25	2.42	0.17	0.19	0.22
FillP	5	413.16	256.00	117.18	10.02	4.27	3.26	10.44	15.26	9.86
FillP-Sheep	5	306.47	38.73	24.74	5.01	1.72	3.49	3.41	1.79	4.22
Indigo	5	197.02	185.56	180.25	1.70	1.89	2.17	0.04	0.06	0.08
Indigo-MusesC3	5	187.96	180.95	187.18	1.68	1.84	1.89	0.07	0.10	0.11
Indigo-MusesC5	5	76.10	113.90	184.46	1.77	2.38	2.17	0.09	0.24	0.10
Indigo-MusesD	5	108.91	86.61	81.07	1.54	1.36	1.69	0.07	0.03	0.03
Indigo-MusesT	5	256.32	220.90	191.65	1.47	1.56	1.73	0.06	0.10	0.11
LEDBAT	5	335.05	250.97	245.99	8.95	6.89	5.56	0.20	0.31	0.42
PCC-Allegro	5	393.91	266.93	53.58	2.12	2.19	2.00	0.44	0.46	0.45
PCC-Expr	5	6.66	5.72	4.55	1.16	1.13	1.11	79.75	79.00	79.40
QUIC Cubic	5	66.04	60.62	47.95	1.14	2.24	3.29	0.01	0.01	0.01
SCReAM	5	0.22	0.21	0.22	1.31	1.29	1.30	0.00	0.06	0.00
Sprout	5	49.85	49.75	49.35	4.57	4.54	4.98	0.21	0.22	0.33
TaoVA-100x	5	0.00	5.41	9.00	1.26	1.29	1.22	95.92	28.39	28.61
TCP Vegas	5	78.40	109.42	152.52	1.35	1.29	1.32	0.03	0.05	0.05
Verus	5	138.02	135.64	132.35	12.52	16.77	56.90	3.92	4.58	5.99
PCC-Vivace	5	193.96	155.30	133.93	35.93	2.44	35.49	0.12	0.13	0.33
WebRTC media	5	0.47	0.32	0.14	2.35	3.38	4.65	0.00	0.00	0.00

```
Run 1: Statistics of TCP BBR

Start at: 2019-02-20 00:22:35
End at: 2019-02-20 00:23:05
Local clock offset: -3.76 ms
Remote clock offset: -0.065 ms


# Below is generated by plot.py at 2019-02-20 03:07:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 859.59 Mbit/s
95th percentile per-packet one-way delay: 4.908 ms
Loss rate: 8.88%
-- Flow 1:
Average throughput: 463.88 Mbit/s
95th percentile per-packet one-way delay: 5.104 ms
Loss rate: 6.80%
-- Flow 2:
Average throughput: 425.23 Mbit/s
95th percentile per-packet one-way delay: 4.290 ms
Loss rate: 10.49%
-- Flow 3:
Average throughput: 338.02 Mbit/s
95th percentile per-packet one-way delay: 2.462 ms
Loss rate: 12.91%
```
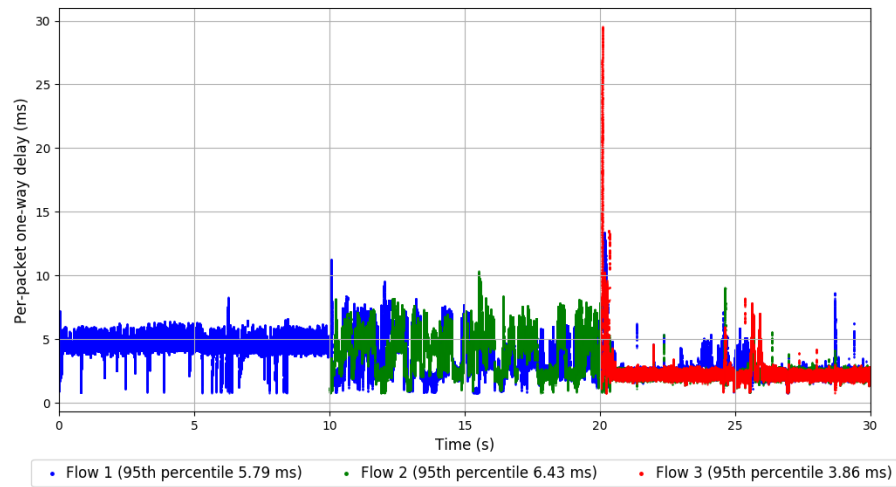
Run 1: Report of TCP BBR — Data Link

Flow 1 ingress (mean 497.75 Mbit/s) ----- Flow 1 egress (mean 463.88 Mbit/s) —
Flow 2 ingress (mean 475.11 Mbit/s) ----- Flow 2 egress (mean 425.23 Mbit/s) —
Flow 3 ingress (mean 388.13 Mbit/s) ----- Flow 3 egress (mean 338.02 Mbit/s) —

Flow 1 (95th percentile 5.10 ms)   Flow 2 (95th percentile 4.29 ms)   Flow 3 (95th percentile 2.46 ms)

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```
Run 2: Statistics of TCP BBR

Start at: 2019-02-20 00:52:23
End at: 2019-02-20 00:52:53
Local clock offset: 0.066 ms
Remote clock offset: -3.455 ms


# Below is generated by plot.py at 2019-02-20 03:07:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 863.17 Mbit/s
95th percentile per-packet one-way delay: 5.855 ms
Loss rate: 7.83%
-- Flow 1:
Average throughput: 490.87 Mbit/s
95th percentile per-packet one-way delay: 5.881 ms
Loss rate: 5.54%
-- Flow 2:
Average throughput: 349.43 Mbit/s
95th percentile per-packet one-way delay: 6.102 ms
Loss rate: 10.99%
-- Flow 3:
Average throughput: 418.80 Mbit/s
95th percentile per-packet one-way delay: 4.069 ms
Loss rate: 10.14%
```
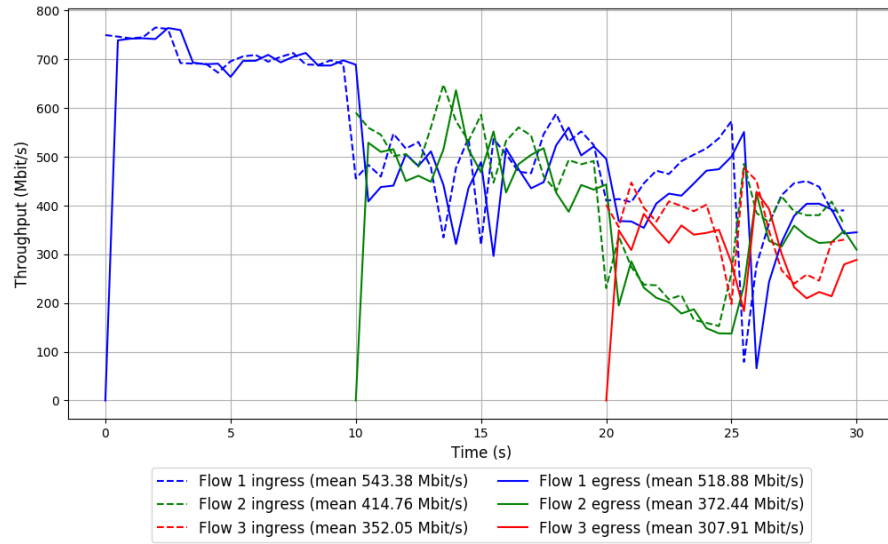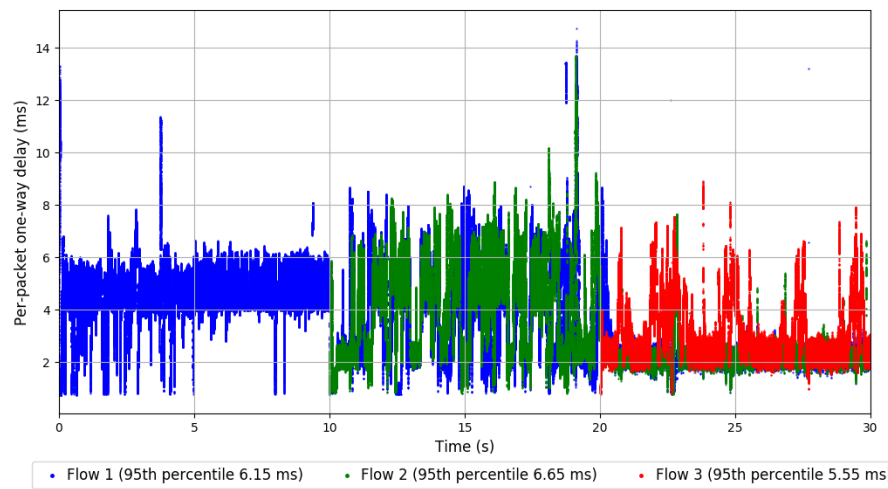
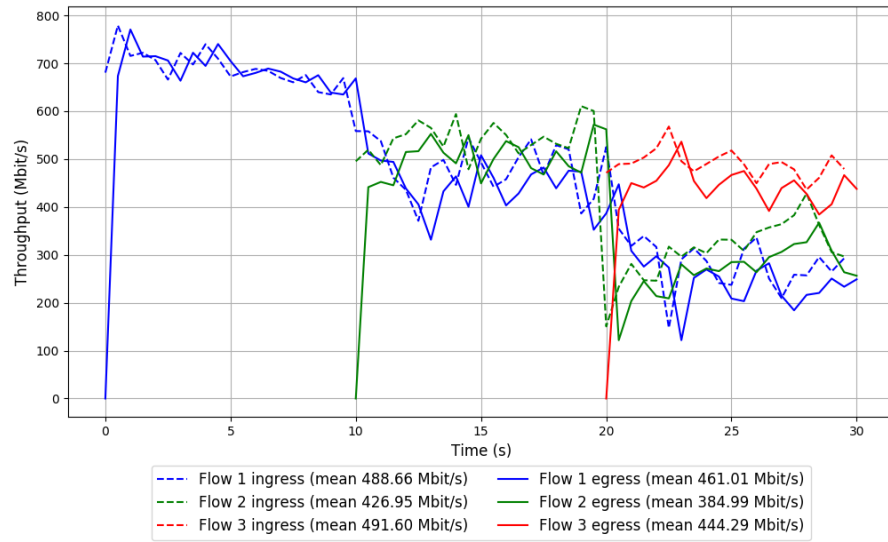Run 2: Report of TCP BBR — Data Link

```
Run 3: Statistics of TCP BBR

Start at: 2019-02-20 01:22:17
End at: 2019-02-20 01:22:48
Local clock offset: 0.34 ms
Remote clock offset: 0.025 ms


# Below is generated by plot.py at 2019-02-20 03:07:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 869.39 Mbit/s
95th percentile per-packet one-way delay: 5.985 ms
Loss rate: 7.19%
-- Flow 1:
Average throughput: 518.88 Mbit/s
95th percentile per-packet one-way delay: 5.787 ms
Loss rate: 4.50%
-- Flow 2:
Average throughput: 372.44 Mbit/s
95th percentile per-packet one-way delay: 6.427 ms
Loss rate: 10.20%
-- Flow 3:
Average throughput: 307.91 Mbit/s
95th percentile per-packet one-way delay: 3.857 ms
Loss rate: 12.53%
```
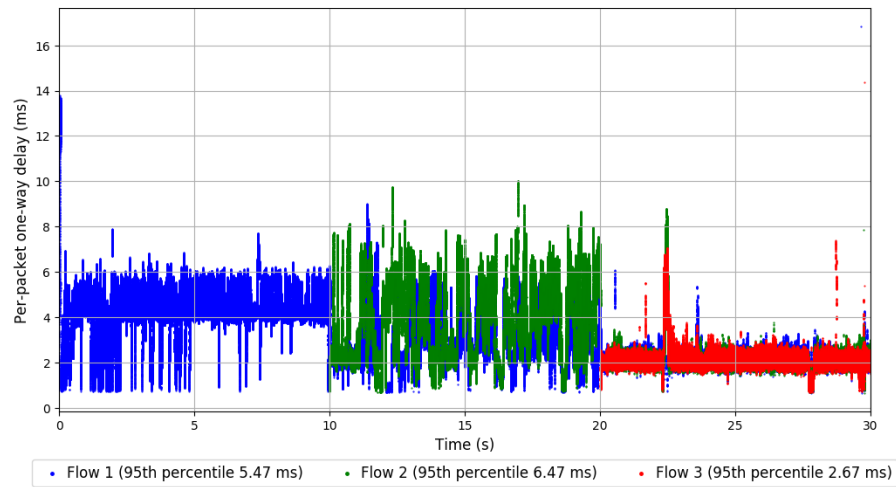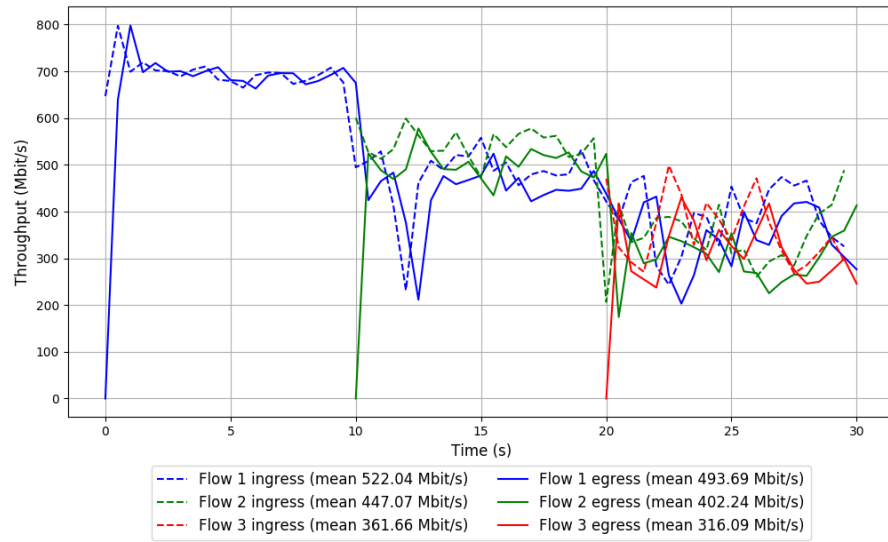
Run 3: Report of TCP BBR — Data Link

Flow 1 ingress (mean 543.38 Mbit/s) --- Flow 1 egress (mean 518.88 Mbit/s)
Flow 2 ingress (mean 414.76 Mbit/s) --- Flow 2 egress (mean 372.44 Mbit/s)
Flow 3 ingress (mean 352.05 Mbit/s) --- Flow 3 egress (mean 307.91 Mbit/s)

Flow 1 (95th percentile 5.79 ms) • Flow 2 (95th percentile 6.43 ms) • Flow 3 (95th percentile 3.86 ms)

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```
Run 4: Statistics of TCP BBR

Start at: 2019-02-20 01:52:19
End at: 2019-02-20 01:52:49
Local clock offset: 0.216 ms
Remote clock offset: -2.955 ms


# Below is generated by plot.py at 2019-02-20 03:07:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 865.44 Mbit/s
95th percentile per-packet one-way delay: 6.282 ms
Loss rate: 7.61%
-- Flow 1:
Average throughput: 461.01 Mbit/s
95th percentile per-packet one-way delay: 6.148 ms
Loss rate: 5.65%
-- Flow 2:
Average throughput: 384.99 Mbit/s
95th percentile per-packet one-way delay: 6.651 ms
Loss rate: 9.82%
-- Flow 3:
Average throughput: 444.29 Mbit/s
95th percentile per-packet one-way delay: 5.554 ms
Loss rate: 9.61%
```
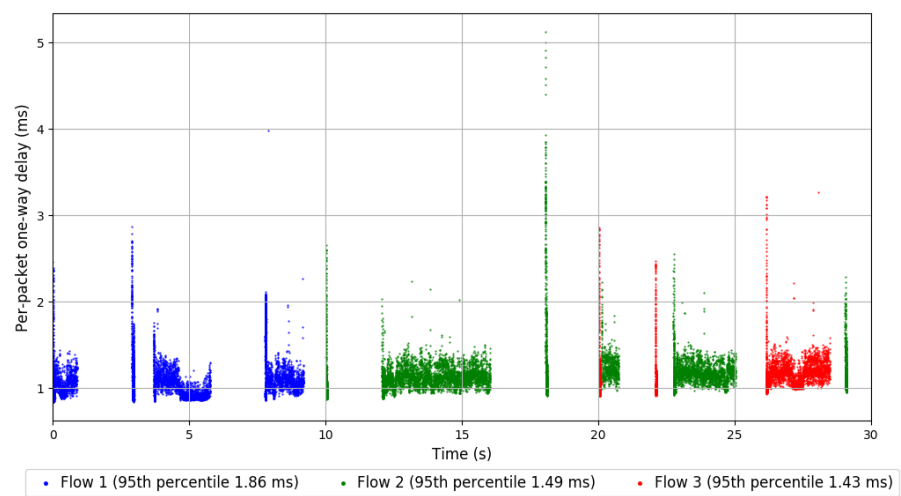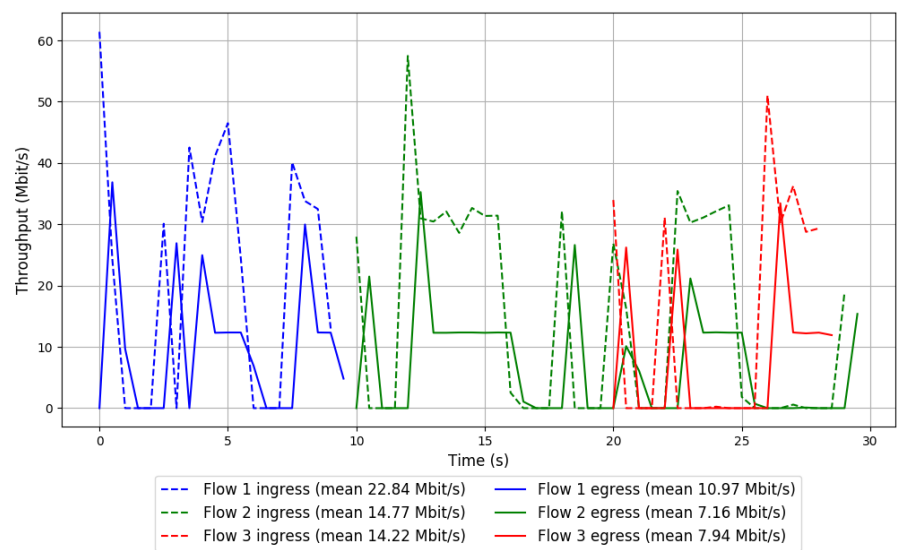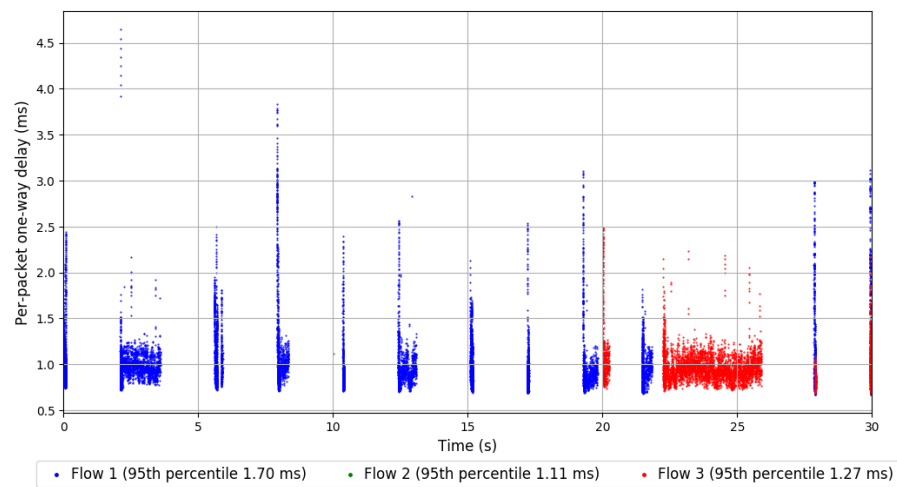
Run 4: Report of TCP BBR — Data Link

Flow 1 ingress (mean 488.66 Mbit/s) — Flow 1 egress (mean 461.01 Mbit/s)
Flow 2 ingress (mean 426.95 Mbit/s) — Flow 2 egress (mean 384.99 Mbit/s)
Flow 3 ingress (mean 491.60 Mbit/s) — Flow 3 egress (mean 444.29 Mbit/s)

Flow 1 (95th percentile 6.15 ms) • Flow 2 (95th percentile 6.65 ms) • Flow 3 (95th percentile 5.55 ms)

```
Run 5: Statistics of TCP BBR

Start at: 2019-02-20 02:22:06
End at: 2019-02-20 02:22:36
Local clock offset: -3.245 ms
Remote clock offset: -0.51 ms


# Below is generated by plot.py at 2019-02-20 03:07:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 867.02 Mbit/s
95th percentile per-packet one-way delay: 5.745 ms
Loss rate: 7.80%
-- Flow 1:
Average throughput: 493.69 Mbit/s
95th percentile per-packet one-way delay: 5.468 ms
Loss rate: 5.43%
-- Flow 2:
Average throughput: 402.24 Mbit/s
95th percentile per-packet one-way delay: 6.473 ms
Loss rate: 10.02%
-- Flow 3:
Average throughput: 316.09 Mbit/s
95th percentile per-packet one-way delay: 2.669 ms
Loss rate: 12.59%
```
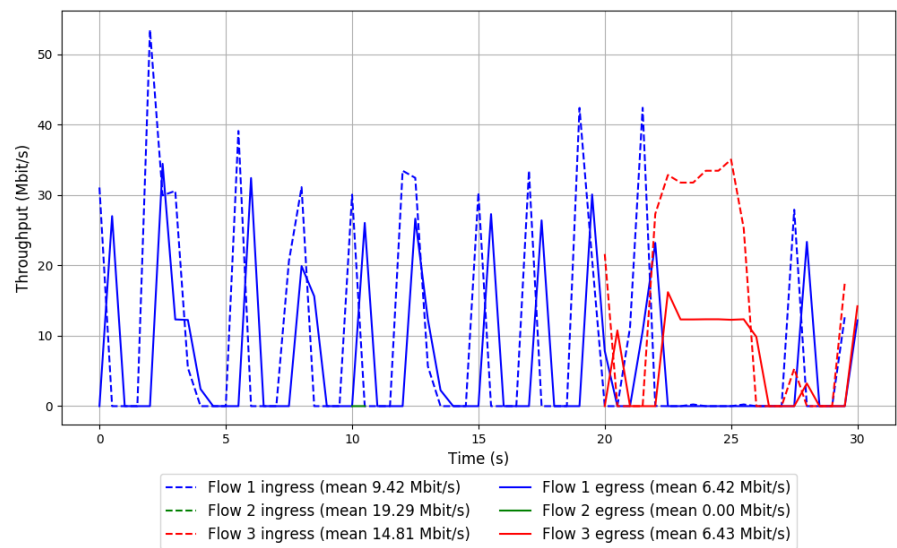
Run 5: Report of TCP BBR — Data Link

```
Run 1: Statistics of Copa

Start at: 2019-02-20 00:41:02
End at: 2019-02-20 00:41:32
Local clock offset: -0.972 ms
Remote clock offset: -2.801 ms


# Below is generated by plot.py at 2019-02-20 03:07:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 10.47 Mbit/s
95th percentile per-packet one-way delay: 1.645 ms
Loss rate: 50.24%
-- Flow 1:
Average throughput: 10.97 Mbit/s
95th percentile per-packet one-way delay: 1.864 ms
Loss rate: 51.99%
-- Flow 2:
Average throughput: 7.16 Mbit/s
95th percentile per-packet one-way delay: 1.488 ms
Loss rate: 51.50%
-- Flow 3:
Average throughput: 7.94 Mbit/s
95th percentile per-packet one-way delay: 1.434 ms
Loss rate: 44.22%
```
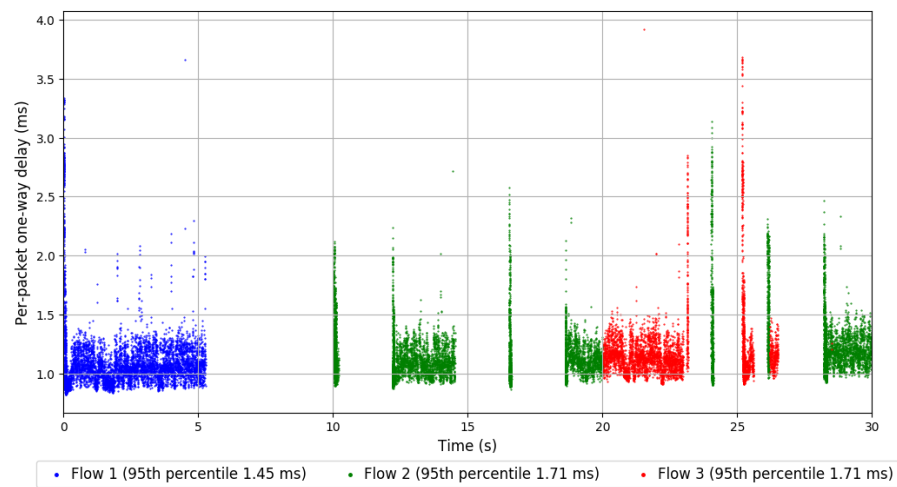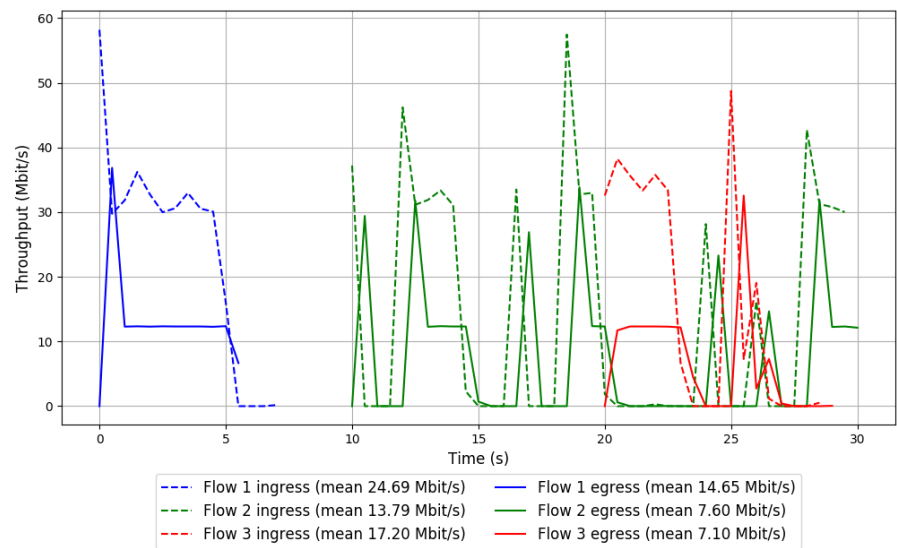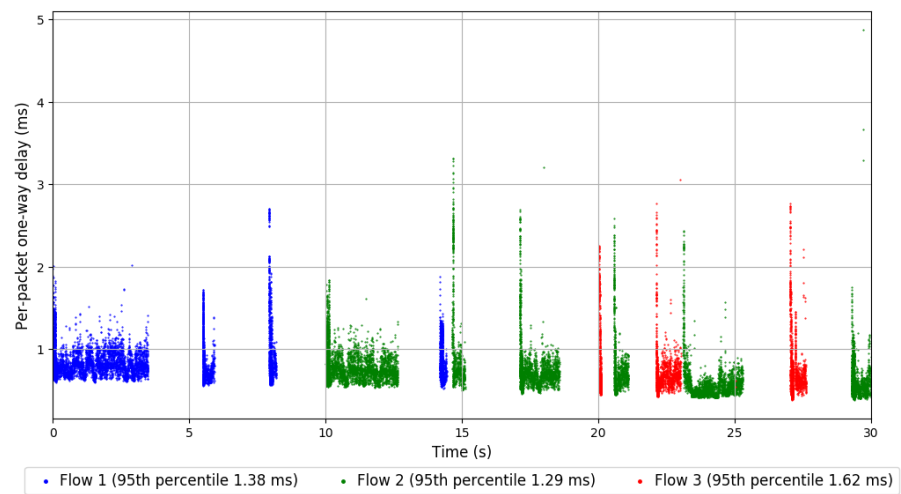
Run 1: Report of Copa — Data Link

```
Run 2: Statistics of Copa

Start at: 2019-02-20 01:10:49
End at: 2019-02-20 01:11:19
Local clock offset: 0.294 ms
Remote clock offset: -1.005 ms


# Below is generated by plot.py at 2019-02-20 03:07:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.55 Mbit/s
95th percentile per-packet one-way delay: 1.622 ms
Loss rate: 40.37%
-- Flow 1:
Average throughput: 6.42 Mbit/s
95th percentile per-packet one-way delay: 1.702 ms
Loss rate: 31.88%
-- Flow 2:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 1.112 ms
Loss rate: 98.33%
-- Flow 3:
Average throughput: 6.43 Mbit/s
95th percentile per-packet one-way delay: 1.268 ms
Loss rate: 56.60%
```
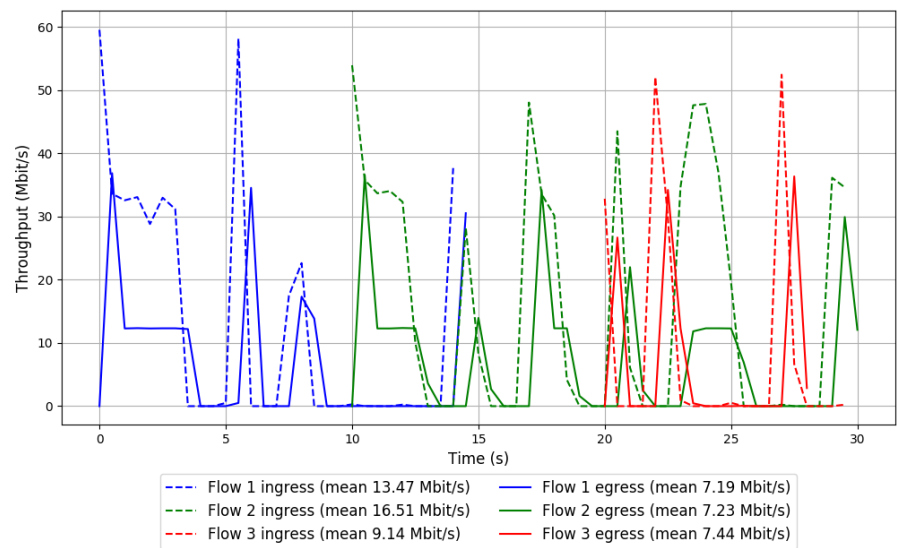
Run 2: Report of Copa — Data Link

```
Run 3: Statistics of Copa

Start at: 2019-02-20 01:40:52
End at: 2019-02-20 01:41:22
Local clock offset: 0.217 ms
Remote clock offset: -1.373 ms


# Below is generated by plot.py at 2019-02-20 03:07:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 9.65 Mbit/s
95th percentile per-packet one-way delay: 1.676 ms
Loss rate: 51.87%
-- Flow 1:
Average throughput: 14.65 Mbit/s
95th percentile per-packet one-way delay: 1.451 ms
Loss rate: 57.00%
-- Flow 2:
Average throughput: 7.60 Mbit/s
95th percentile per-packet one-way delay: 1.708 ms
Loss rate: 44.89%
-- Flow 3:
Average throughput: 7.10 Mbit/s
95th percentile per-packet one-way delay: 1.706 ms
Loss rate: 58.74%
```
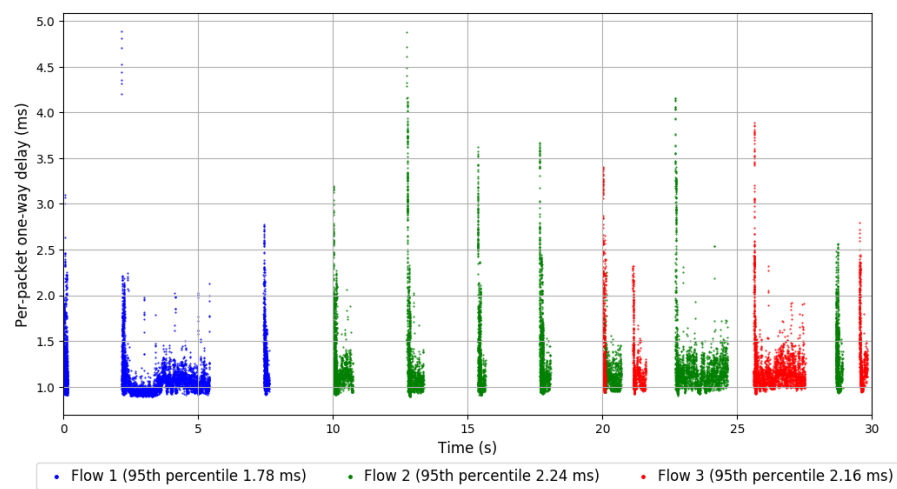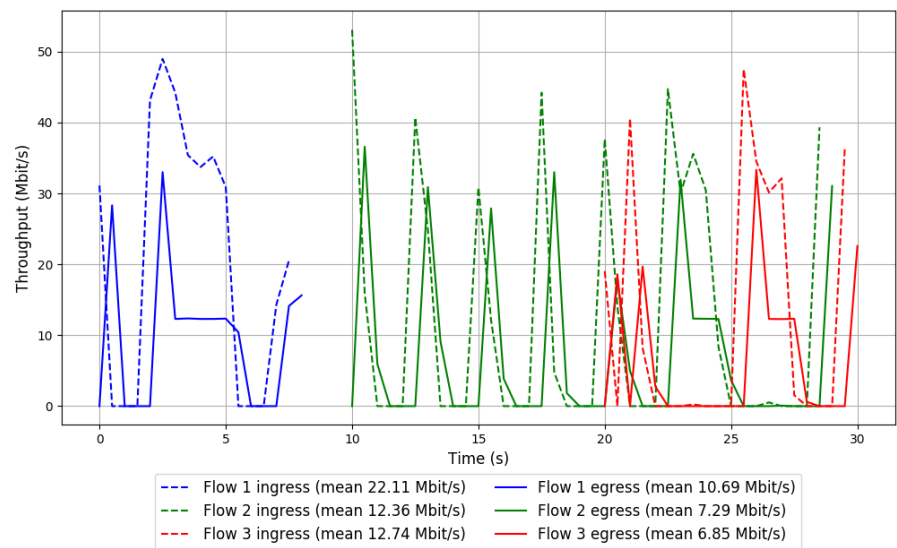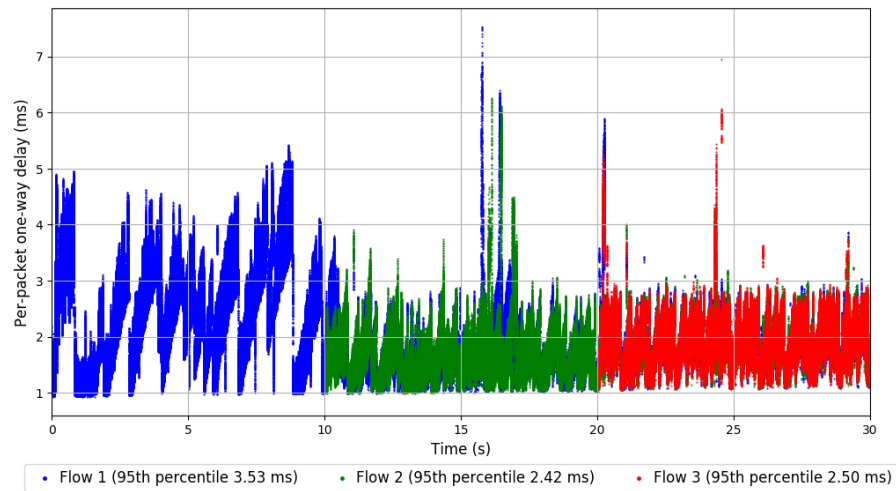
Run 3: Report of Copa — Data Link

- - - Flow 1 ingress (mean 24.69 Mbit/s)   ——— Flow 1 egress (mean 14.65 Mbit/s)
- - - Flow 2 ingress (mean 13.79 Mbit/s)   ——— Flow 2 egress (mean 7.60 Mbit/s)
- - - Flow 3 ingress (mean 17.20 Mbit/s)   ——— Flow 3 egress (mean 7.10 Mbit/s)

• Flow 1 (95th percentile 1.45 ms)   • Flow 2 (95th percentile 1.71 ms)   • Flow 3 (95th percentile 1.71 ms)

```
Run 4: Statistics of Copa

Start at: 2019-02-20 02:10:43
End at: 2019-02-20 02:11:13
Local clock offset: -2.25 ms
Remote clock offset: -2.968 ms


# Below is generated by plot.py at 2019-02-20 03:07:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 10.16 Mbit/s
95th percentile per-packet one-way delay: 1.381 ms
Loss rate: 50.22%
-- Flow 1:
Average throughput: 7.19 Mbit/s
95th percentile per-packet one-way delay: 1.376 ms
Loss rate: 46.65%
-- Flow 2:
Average throughput: 7.23 Mbit/s
95th percentile per-packet one-way delay: 1.290 ms
Loss rate: 56.21%
-- Flow 3:
Average throughput: 7.44 Mbit/s
95th percentile per-packet one-way delay: 1.617 ms
Loss rate: 35.63%
```
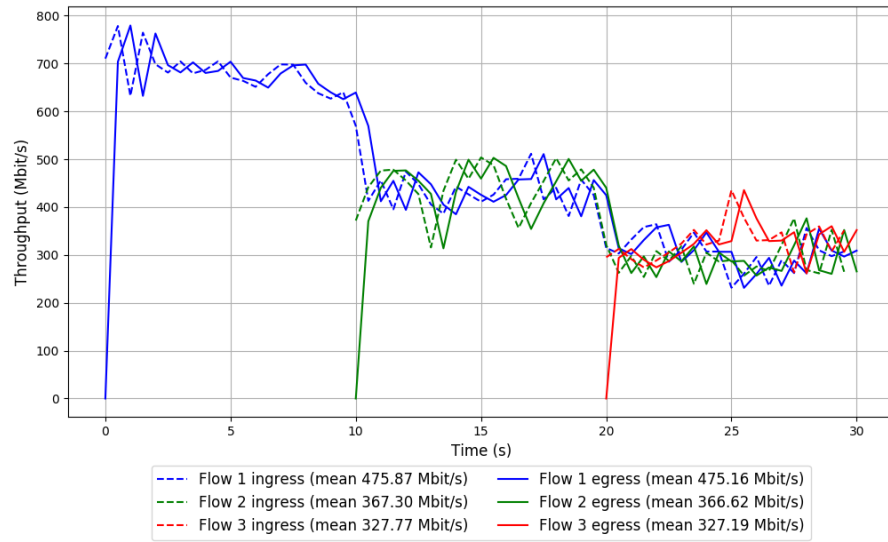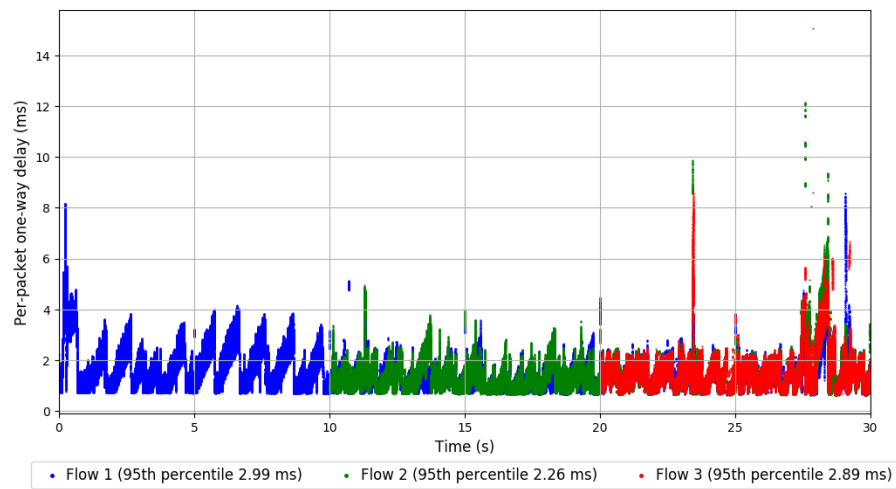
Run 4: Report of Copa — Data Link

```
Run 5: Statistics of Copa

Start at: 2019-02-20 02:40:34
End at: 2019-02-20 02:41:04
Local clock offset: -0.73 ms
Remote clock offset: 0.647 ms


# Below is generated by plot.py at 2019-02-20 03:07:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 9.61 Mbit/s
95th percentile per-packet one-way delay: 2.055 ms
Loss rate: 45.66%
-- Flow 1:
Average throughput: 10.69 Mbit/s
95th percentile per-packet one-way delay: 1.784 ms
Loss rate: 51.67%
-- Flow 2:
Average throughput: 7.29 Mbit/s
95th percentile per-packet one-way delay: 2.237 ms
Loss rate: 41.02%
-- Flow 3:
Average throughput: 6.85 Mbit/s
95th percentile per-packet one-way delay: 2.163 ms
Loss rate: 46.23%
```
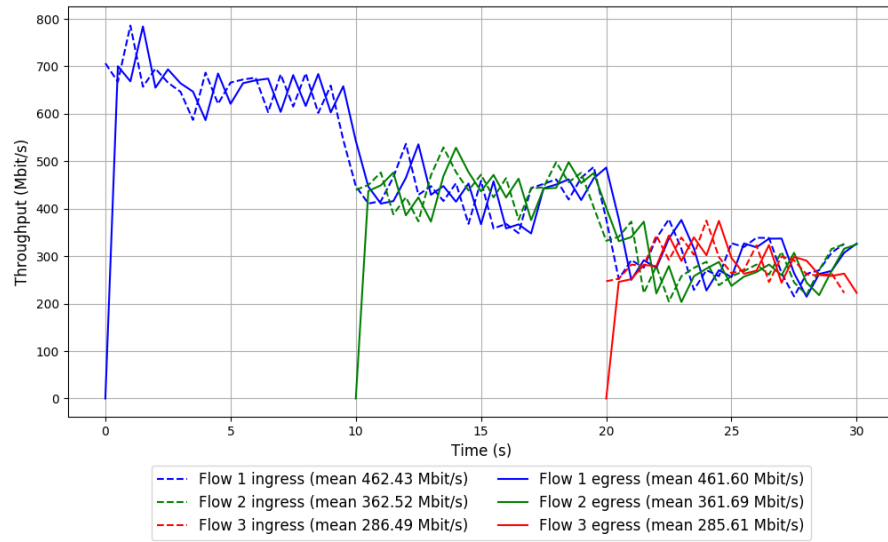
Run 5: Report of Copa — Data Link

```
Run 1: Statistics of TCP Cubic

Start at: 2019-02-20 00:37:51
End at: 2019-02-20 00:38:21
Local clock offset: -1.559 ms
Remote clock offset: -2.401 ms


# Below is generated by plot.py at 2019-02-20 03:07:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 828.25 Mbit/s
95th percentile per-packet one-way delay: 3.242 ms
Loss rate: 0.16%
-- Flow 1:
Average throughput: 475.16 Mbit/s
95th percentile per-packet one-way delay: 3.526 ms
Loss rate: 0.15%
-- Flow 2:
Average throughput: 366.62 Mbit/s
95th percentile per-packet one-way delay: 2.422 ms
Loss rate: 0.18%
-- Flow 3:
Average throughput: 327.19 Mbit/s
95th percentile per-packet one-way delay: 2.497 ms
Loss rate: 0.17%
```
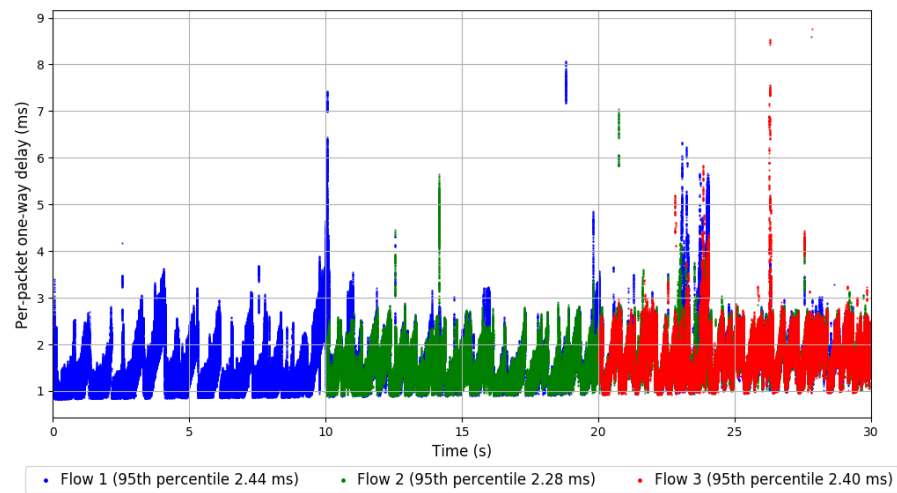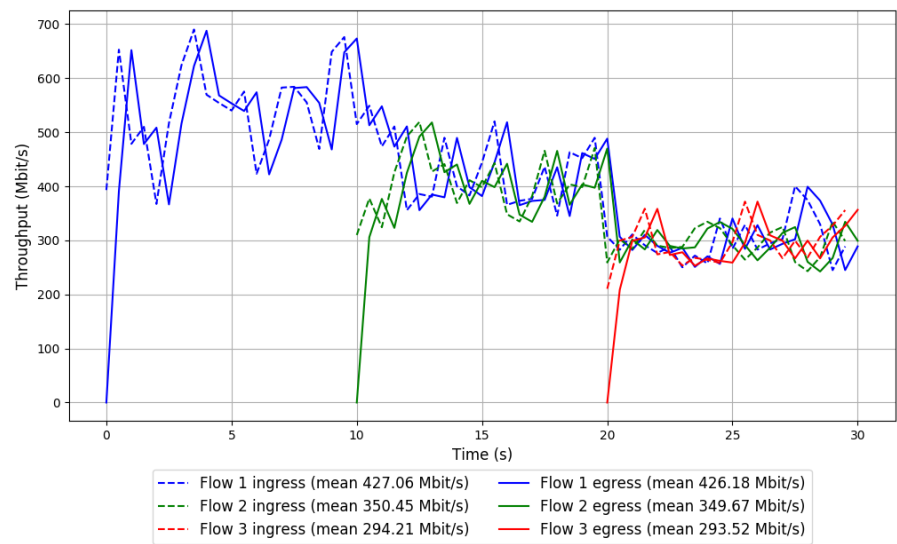
Run 1: Report of TCP Cubic — Data Link

```
Run 2: Statistics of TCP Cubic

Start at: 2019-02-20 01:07:39
End at: 2019-02-20 01:08:09
Local clock offset: 0.258 ms
Remote clock offset: -1.589 ms


# Below is generated by plot.py at 2019-02-20 03:07:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 797.56 Mbit/s
95th percentile per-packet one-way delay: 2.811 ms
Loss rate: 0.21%
-- Flow 1:
Average throughput: 461.60 Mbit/s
95th percentile per-packet one-way delay: 2.988 ms
Loss rate: 0.18%
-- Flow 2:
Average throughput: 361.69 Mbit/s
95th percentile per-packet one-way delay: 2.256 ms
Loss rate: 0.22%
-- Flow 3:
Average throughput: 285.61 Mbit/s
95th percentile per-packet one-way delay: 2.887 ms
Loss rate: 0.30%
```
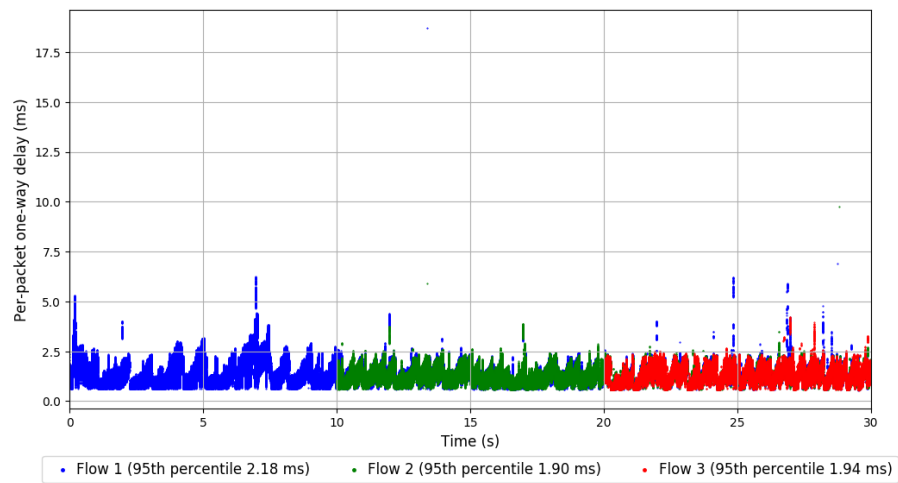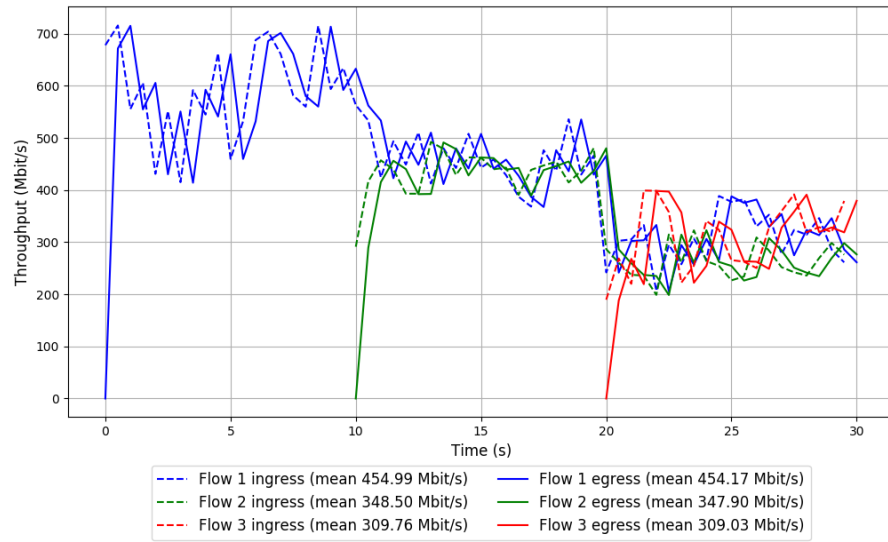
Run 2: Report of TCP Cubic — Data Link

```
Run 3: Statistics of TCP Cubic

Start at: 2019-02-20 01:37:44
End at: 2019-02-20 01:38:14
Local clock offset: 0.229 ms
Remote clock offset: -0.597 ms


# Below is generated by plot.py at 2019-02-20 03:07:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 756.84 Mbit/s
95th percentile per-packet one-way delay: 2.376 ms
Loss rate: 0.21%
-- Flow 1:
Average throughput: 426.18 Mbit/s
95th percentile per-packet one-way delay: 2.436 ms
Loss rate: 0.20%
-- Flow 2:
Average throughput: 349.67 Mbit/s
95th percentile per-packet one-way delay: 2.282 ms
Loss rate: 0.22%
-- Flow 3:
Average throughput: 293.52 Mbit/s
95th percentile per-packet one-way delay: 2.401 ms
Loss rate: 0.23%
```

Run 3: Report of TCP Cubic — Data Link

```
Run 4: Statistics of TCP Cubic

Start at: 2019-02-20 02:07:34
End at: 2019-02-20 02:08:04
Local clock offset: -1.711 ms
Remote clock offset: -3.723 ms


# Below is generated by plot.py at 2019-02-20 03:14:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 788.83 Mbit/s
95th percentile per-packet one-way delay: 2.047 ms
Loss rate: 0.18%
-- Flow 1:
Average throughput: 454.17 Mbit/s
95th percentile per-packet one-way delay: 2.178 ms
Loss rate: 0.18%
-- Flow 2:
Average throughput: 347.90 Mbit/s
95th percentile per-packet one-way delay: 1.900 ms
Loss rate: 0.17%
-- Flow 3:
Average throughput: 309.03 Mbit/s
95th percentile per-packet one-way delay: 1.940 ms
Loss rate: 0.23%
```
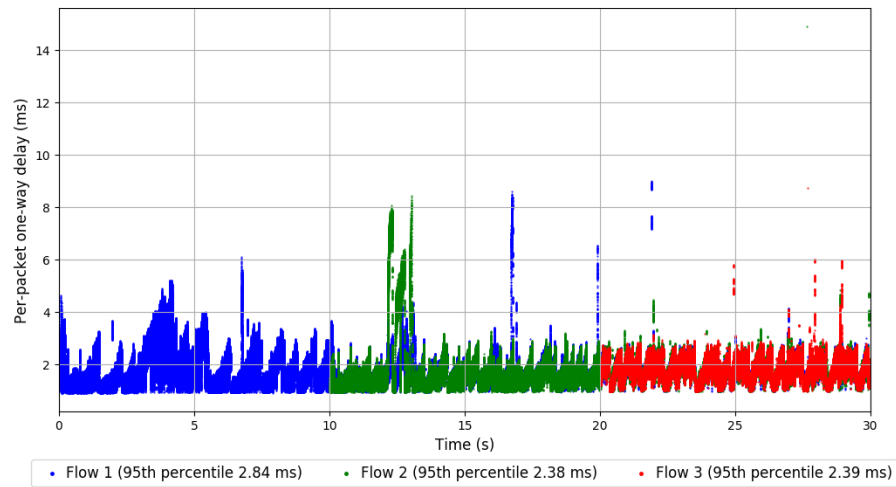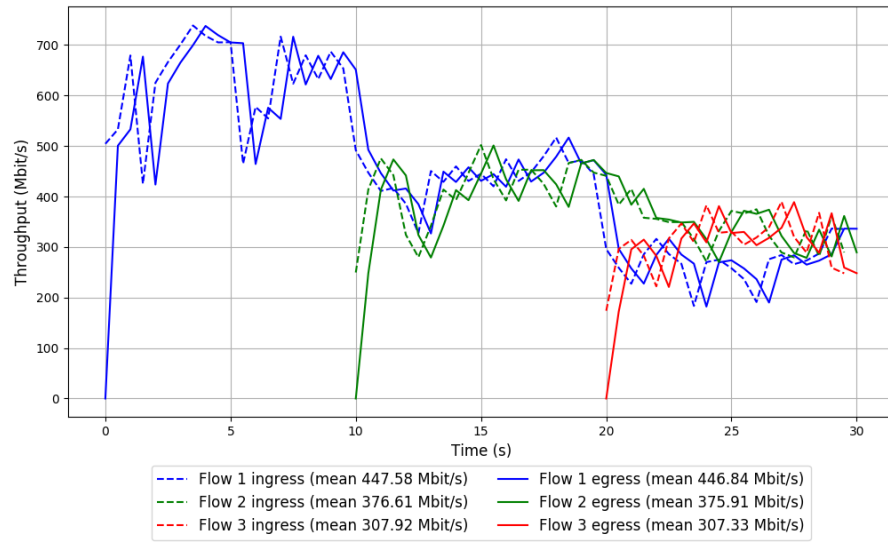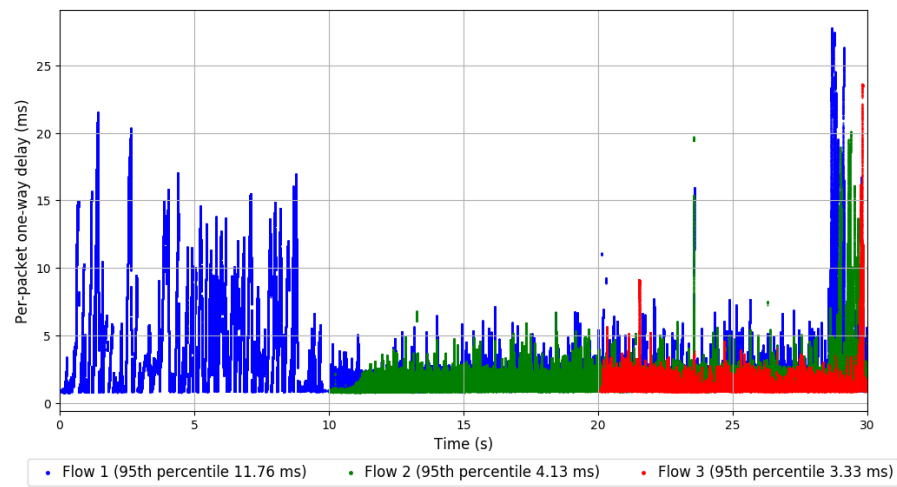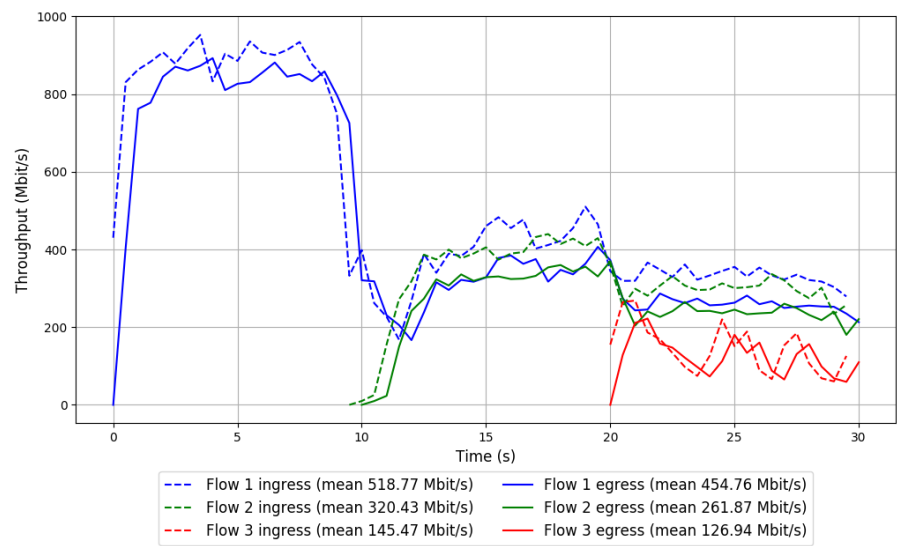
Run 4: Report of TCP Cubic — Data Link

```
Run 5: Statistics of TCP Cubic

Start at: 2019-02-20 02:37:25
End at: 2019-02-20 02:37:55
Local clock offset: -1.321 ms
Remote clock offset: 0.514 ms


# Below is generated by plot.py at 2019-02-20 03:15:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 799.43 Mbit/s
95th percentile per-packet one-way delay: 2.609 ms
Loss rate: 0.17%
-- Flow 1:
Average throughput: 446.84 Mbit/s
95th percentile per-packet one-way delay: 2.839 ms
Loss rate: 0.16%
-- Flow 2:
Average throughput: 375.91 Mbit/s
95th percentile per-packet one-way delay: 2.375 ms
Loss rate: 0.18%
-- Flow 3:
Average throughput: 307.33 Mbit/s
95th percentile per-packet one-way delay: 2.389 ms
Loss rate: 0.19%
```

Run 5: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 447.58 Mbit/s) --- Flow 1 egress (mean 446.84 Mbit/s)
Flow 2 ingress (mean 376.61 Mbit/s) --- Flow 2 egress (mean 375.91 Mbit/s)
Flow 3 ingress (mean 307.92 Mbit/s) --- Flow 3 egress (mean 307.33 Mbit/s)

Flow 1 (95th percentile 2.84 ms) • Flow 2 (95th percentile 2.38 ms) • Flow 3 (95th percentile 2.39 ms)
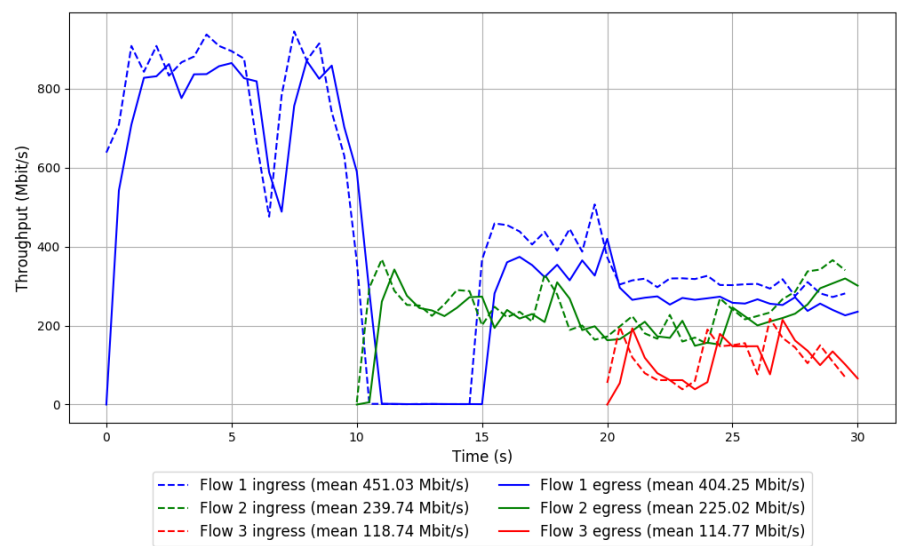
```
Run 1: Statistics of FillP

Start at: 2019-02-20 00:46:38
End at: 2019-02-20 00:47:08
Local clock offset: -0.336 ms
Remote clock offset: -3.215 ms


# Below is generated by plot.py at 2019-02-20 03:16:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 671.26 Mbit/s
95th percentile per-packet one-way delay: 10.440 ms
Loss rate: 13.98%
-- Flow 1:
Average throughput: 454.76 Mbit/s
95th percentile per-packet one-way delay: 11.758 ms
Loss rate: 12.33%
-- Flow 2:
Average throughput: 261.87 Mbit/s
95th percentile per-packet one-way delay: 4.130 ms
Loss rate: 18.26%
-- Flow 3:
Average throughput: 126.94 Mbit/s
95th percentile per-packet one-way delay: 3.331 ms
Loss rate: 12.74%
```
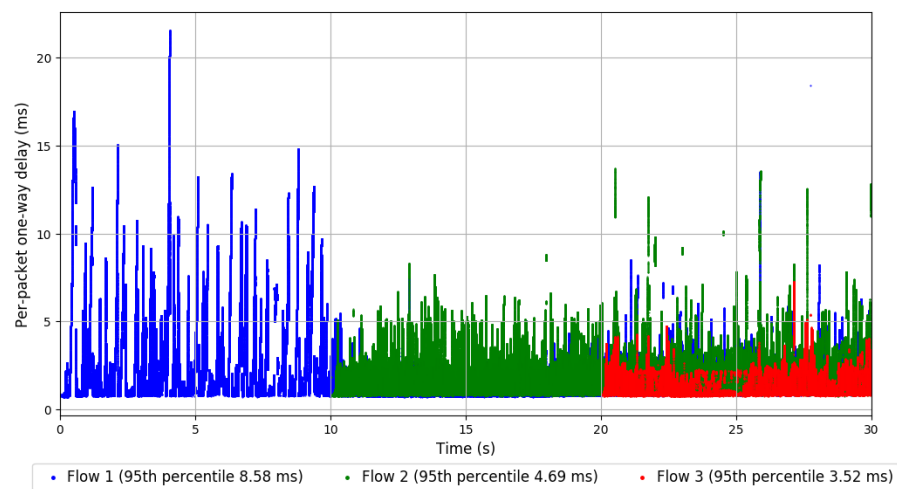
Run 1: Report of FillP — Data Link

```
Run 2: Statistics of FillP

Start at: 2019-02-20 01:16:31
End at: 2019-02-20 01:17:01
Local clock offset: 0.292 ms
Remote clock offset: -0.357 ms


# Below is generated by plot.py at 2019-02-20 03:16:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 592.01 Mbit/s
95th percentile per-packet one-way delay: 13.503 ms
Loss rate: 8.91%
-- Flow 1:
Average throughput: 404.25 Mbit/s
95th percentile per-packet one-way delay: 15.399 ms
Loss rate: 10.37%
-- Flow 2:
Average throughput: 225.02 Mbit/s
95th percentile per-packet one-way delay: 2.990 ms
Loss rate: 6.14%
-- Flow 3:
Average throughput: 114.77 Mbit/s
95th percentile per-packet one-way delay: 2.340 ms
Loss rate: 3.34%
```
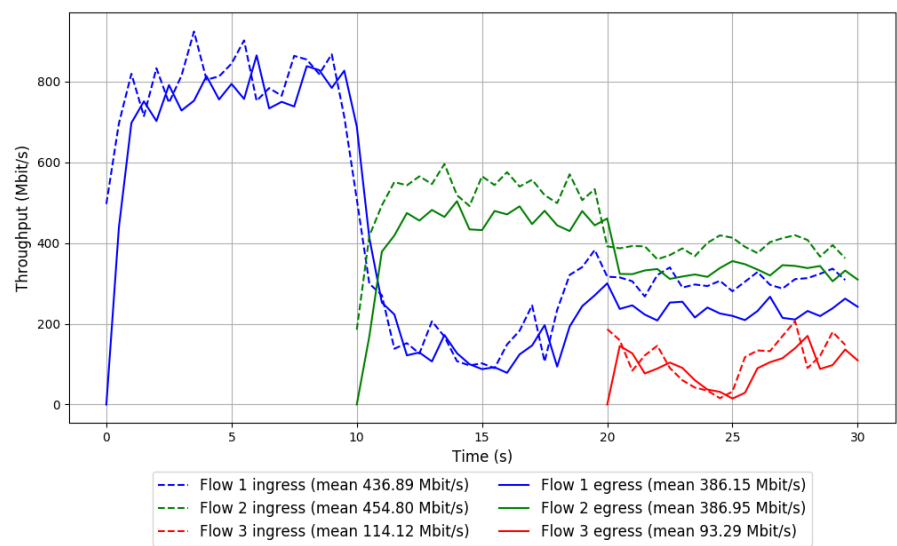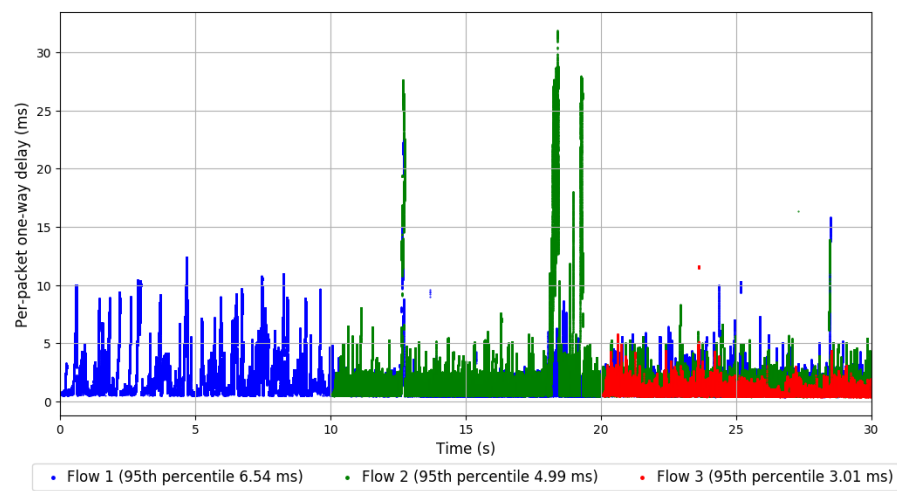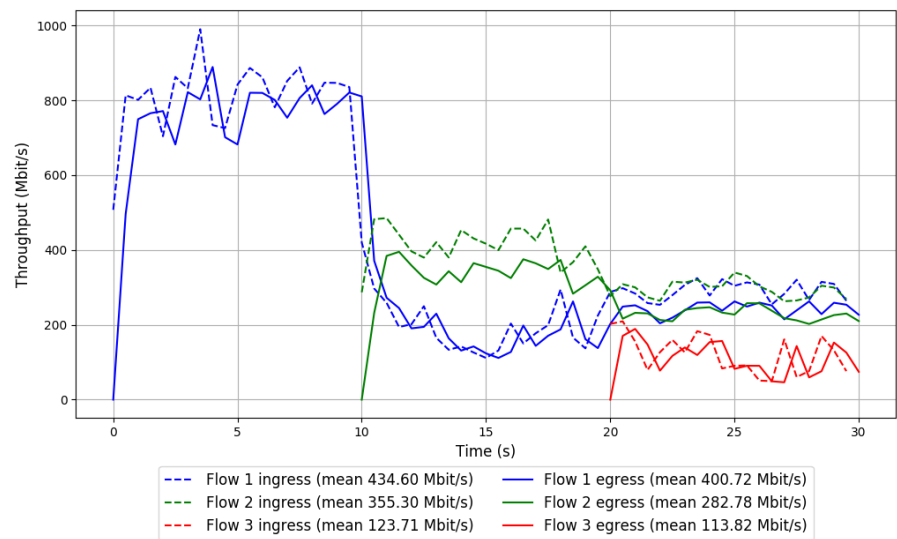
Run 2: Report of FillP — Data Link

```
Run 3: Statistics of FillP

Start at: 2019-02-20 01:46:30
End at: 2019-02-20 01:47:00
Local clock offset: 0.203 ms
Remote clock offset: -2.35 ms

# Below is generated by plot.py at 2019-02-20 03:17:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 674.42 Mbit/s
95th percentile per-packet one-way delay: 6.976 ms
Loss rate: 13.21%
-- Flow 1:
Average throughput: 386.15 Mbit/s
95th percentile per-packet one-way delay: 8.581 ms
Loss rate: 11.61%
-- Flow 2:
Average throughput: 386.95 Mbit/s
95th percentile per-packet one-way delay: 4.688 ms
Loss rate: 14.88%
-- Flow 3:
Average throughput: 93.29 Mbit/s
95th percentile per-packet one-way delay: 3.522 ms
Loss rate: 18.26%
```
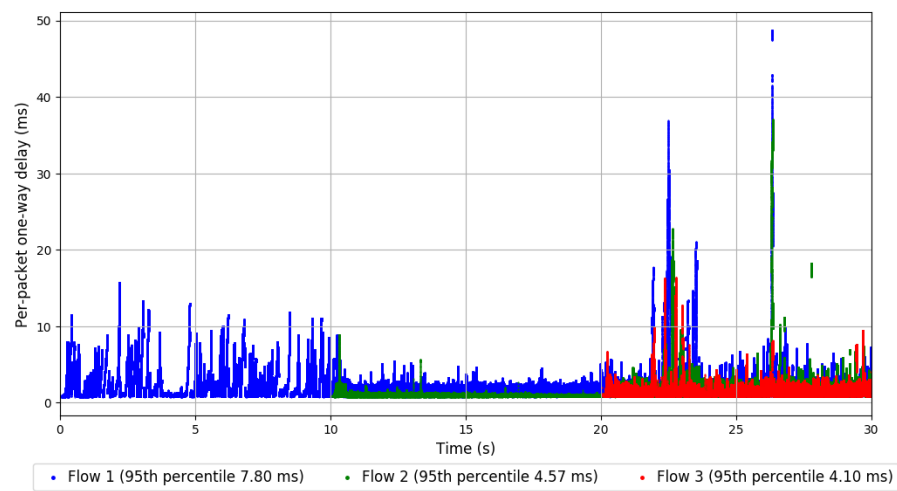
Run 3: Report of FillP — Data Link

- - - - Flow 1 ingress (mean 436.89 Mbit/s)   —— Flow 1 egress (mean 386.15 Mbit/s)
- - - - Flow 2 ingress (mean 454.80 Mbit/s)   —— Flow 2 egress (mean 386.95 Mbit/s)
- - - - Flow 3 ingress (mean 114.12 Mbit/s)   —— Flow 3 egress (mean 93.29 Mbit/s)

- Flow 1 (95th percentile 8.58 ms)   • Flow 2 (95th percentile 4.69 ms)   • Flow 3 (95th percentile 3.52 ms)

```
Run 4: Statistics of FillP

Start at: 2019-02-20 02:16:19
End at: 2019-02-20 02:16:49
Local clock offset: -2.818 ms
Remote clock offset: -1.466 ms


# Below is generated by plot.py at 2019-02-20 03:17:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 626.62 Mbit/s
95th percentile per-packet one-way delay: 5.881 ms
Loss rate: 12.00%
-- Flow 1:
Average throughput: 400.72 Mbit/s
95th percentile per-packet one-way delay: 6.541 ms
Loss rate: 7.80%
-- Flow 2:
Average throughput: 282.78 Mbit/s
95th percentile per-packet one-way delay: 4.985 ms
Loss rate: 20.40%
-- Flow 3:
Average throughput: 113.82 Mbit/s
95th percentile per-packet one-way delay: 3.011 ms
Loss rate: 8.00%
```
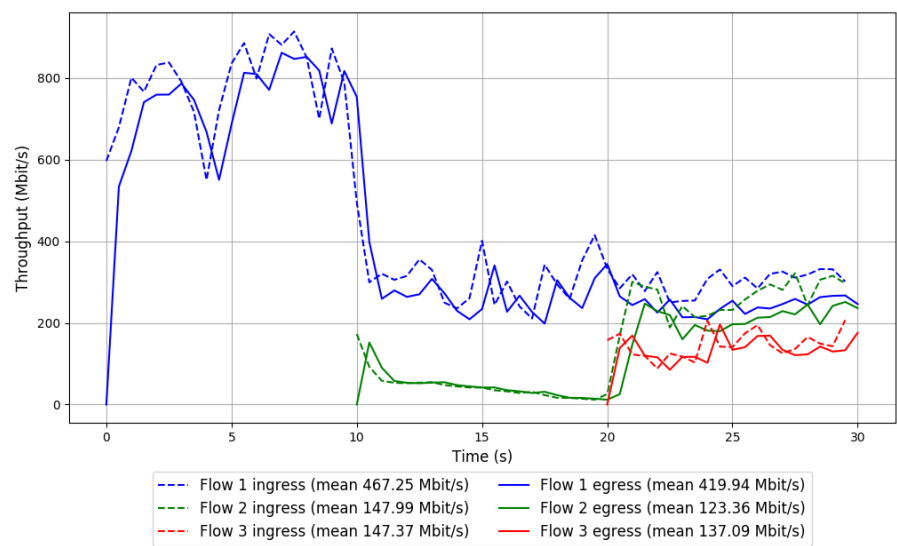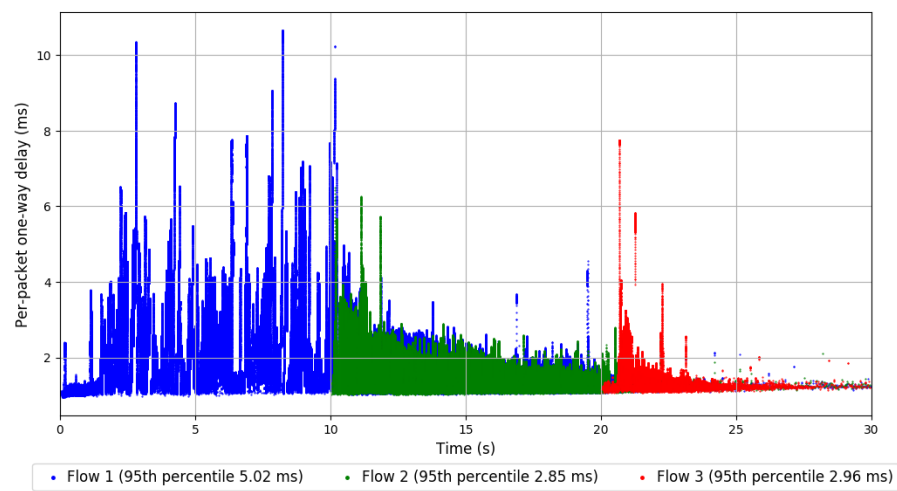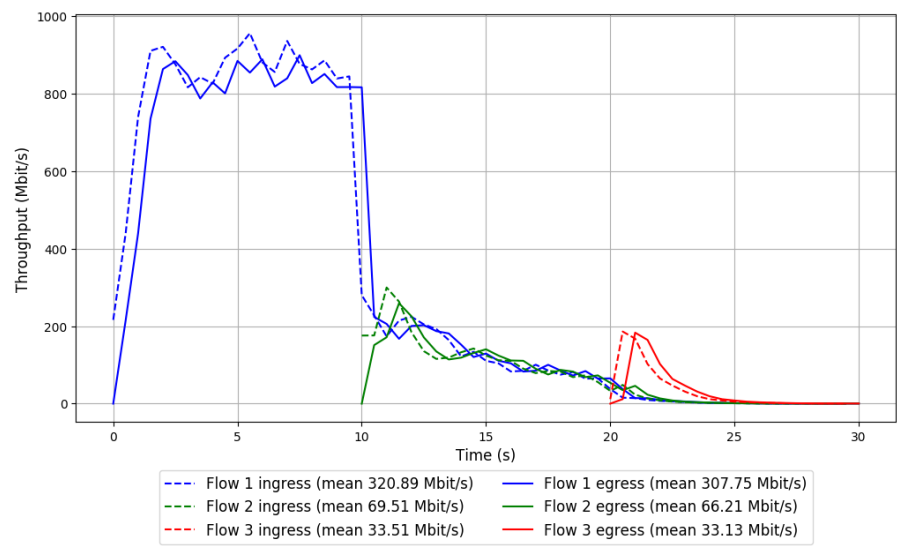
Run 4: Report of FillP — Data Link

```
Run 5: Statistics of FillP

Start at: 2019-02-20 02:46:15
End at: 2019-02-20 02:46:45
Local clock offset: -0.035 ms
Remote clock offset: 0.458 ms

# Below is generated by plot.py at 2019-02-20 03:17:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 547.52 Mbit/s
95th percentile per-packet one-way delay: 7.443 ms
Loss rate: 10.90%
-- Flow 1:
Average throughput: 419.94 Mbit/s
95th percentile per-packet one-way delay: 7.803 ms
Loss rate: 10.11%
-- Flow 2:
Average throughput: 123.36 Mbit/s
95th percentile per-packet one-way delay: 4.567 ms
Loss rate: 16.64%
-- Flow 3:
Average throughput: 137.09 Mbit/s
95th percentile per-packet one-way delay: 4.103 ms
Loss rate: 6.97%
```
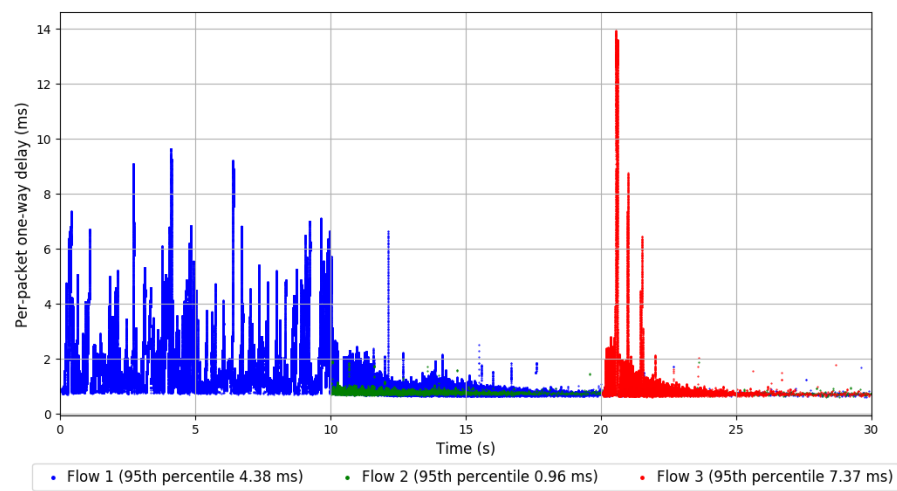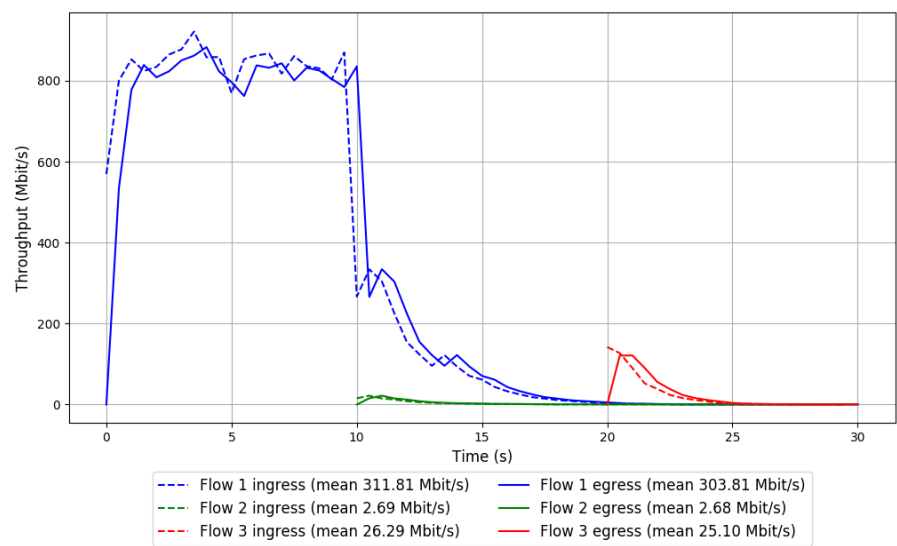
Run 5: Report of FillP — Data Link

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```
Run 1: Statistics of FillP-Sheep

Start at: 2019-02-20 00:36:27
End at: 2019-02-20 00:36:57
Local clock offset: -1.991 ms
Remote clock offset: -2.268 ms


# Below is generated by plot.py at 2019-02-20 03:17:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 362.76 Mbit/s
95th percentile per-packet one-way delay: 4.857 ms
Loss rate: 4.09%
-- Flow 1:
Average throughput: 307.75 Mbit/s
95th percentile per-packet one-way delay: 5.017 ms
Loss rate: 4.09%
-- Flow 2:
Average throughput: 66.21 Mbit/s
95th percentile per-packet one-way delay: 2.854 ms
Loss rate: 4.75%
-- Flow 3:
Average throughput: 33.13 Mbit/s
95th percentile per-packet one-way delay: 2.960 ms
Loss rate: 1.14%
```
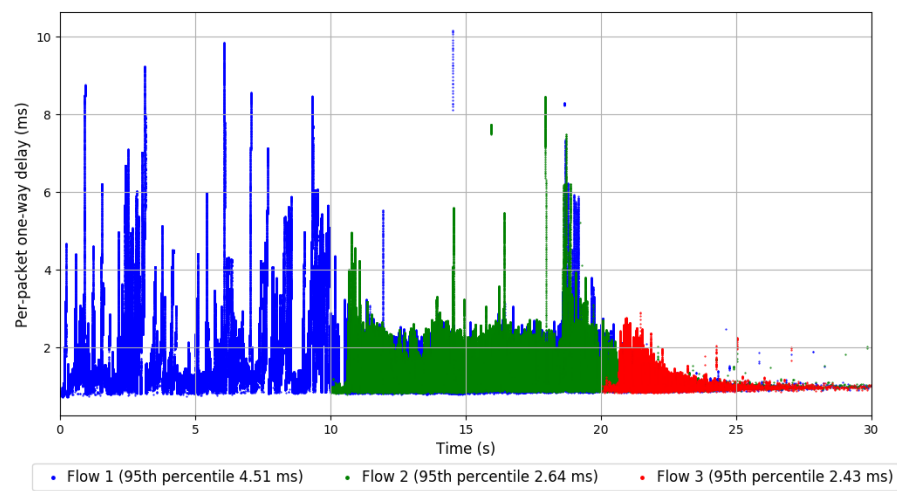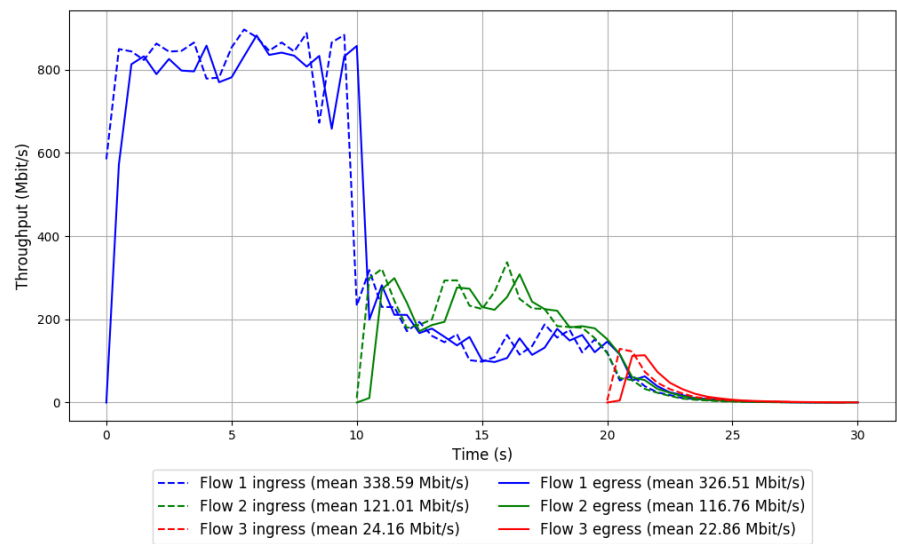
Run 1: Report of FillP-Sheep — Data Link

Flow 1 ingress (mean 320.89 Mbit/s)   Flow 1 egress (mean 307.75 Mbit/s)
Flow 2 ingress (mean 69.51 Mbit/s)   Flow 2 egress (mean 66.21 Mbit/s)
Flow 3 ingress (mean 33.51 Mbit/s)   Flow 3 egress (mean 33.13 Mbit/s)

Flow 1 (95th percentile 5.02 ms)   Flow 2 (95th percentile 2.85 ms)   Flow 3 (95th percentile 2.96 ms)
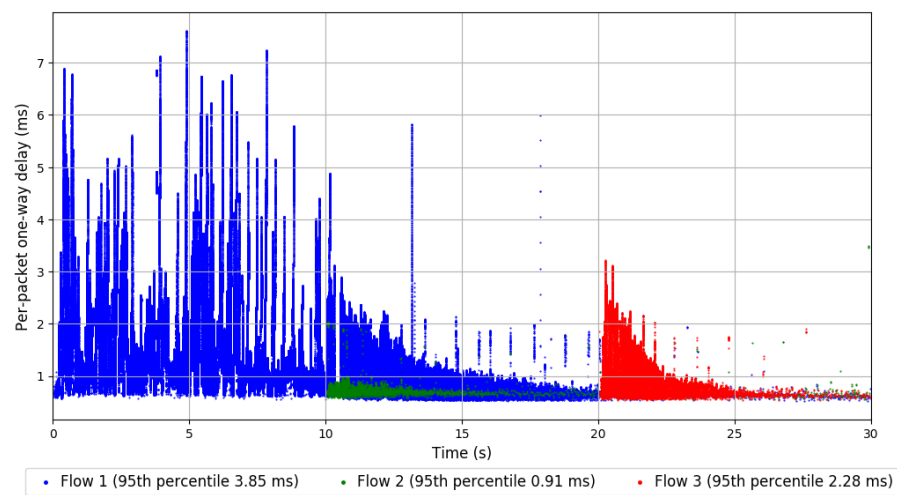
```
Run 2: Statistics of FillP-Sheep

Start at: 2019-02-20 01:06:16
End at: 2019-02-20 01:06:46
Local clock offset: 0.272 ms
Remote clock offset: -1.844 ms


# Below is generated by plot.py at 2019-02-20 03:17:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 313.66 Mbit/s
95th percentile per-packet one-way delay: 4.385 ms
Loss rate: 2.61%
-- Flow 1:
Average throughput: 303.81 Mbit/s
95th percentile per-packet one-way delay: 4.377 ms
Loss rate: 2.57%
-- Flow 2:
Average throughput: 2.68 Mbit/s
95th percentile per-packet one-way delay: 0.959 ms
Loss rate: 0.09%
-- Flow 3:
Average throughput: 25.10 Mbit/s
95th percentile per-packet one-way delay: 7.367 ms
Loss rate: 4.53%
```
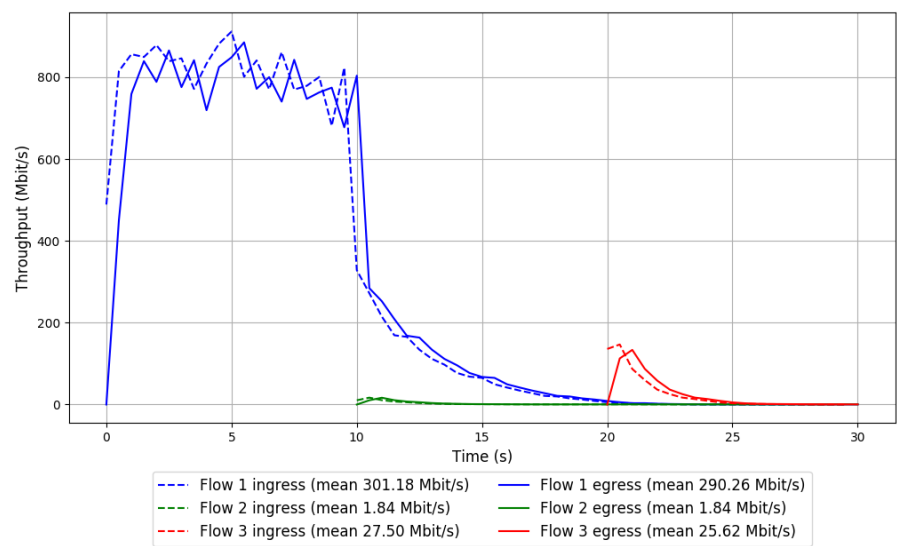
Run 2: Report of FillP-Sheep — Data Link

```
Run 3: Statistics of FillP-Sheep

Start at: 2019-02-20 01:36:18
End at: 2019-02-20 01:36:48
Local clock offset: 0.253 ms
Remote clock offset: -0.173 ms


# Below is generated by plot.py at 2019-02-20 03:20:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 411.60 Mbit/s
95th percentile per-packet one-way delay: 4.198 ms
Loss rate: 3.59%
-- Flow 1:
Average throughput: 326.51 Mbit/s
95th percentile per-packet one-way delay: 4.510 ms
Loss rate: 3.57%
-- Flow 2:
Average throughput: 116.76 Mbit/s
95th percentile per-packet one-way delay: 2.644 ms
Loss rate: 3.51%
-- Flow 3:
Average throughput: 22.86 Mbit/s
95th percentile per-packet one-way delay: 2.431 ms
Loss rate: 5.41%
```
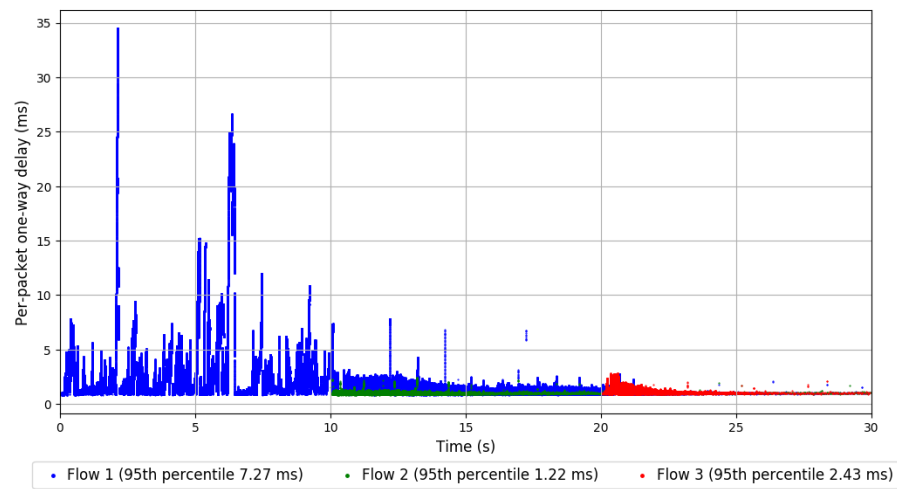
Run 3: Report of FillP-Sheep — Data Link

```
Run 4: Statistics of FillP-Sheep

Start at: 2019-02-20 02:06:11
End at: 2019-02-20 02:06:41
Local clock offset: -1.418 ms
Remote clock offset: -3.598 ms


# Below is generated by plot.py at 2019-02-20 03:20:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 299.97 Mbit/s
95th percentile per-packet one-way delay: 3.813 ms
Loss rate: 3.71%
-- Flow 1:
Average throughput: 290.26 Mbit/s
95th percentile per-packet one-way delay: 3.854 ms
Loss rate: 3.63%
-- Flow 2:
Average throughput: 1.84 Mbit/s
95th percentile per-packet one-way delay: 0.906 ms
Loss rate: 0.43%
-- Flow 3:
Average throughput: 25.62 Mbit/s
95th percentile per-packet one-way delay: 2.284 ms
Loss rate: 6.85%
```
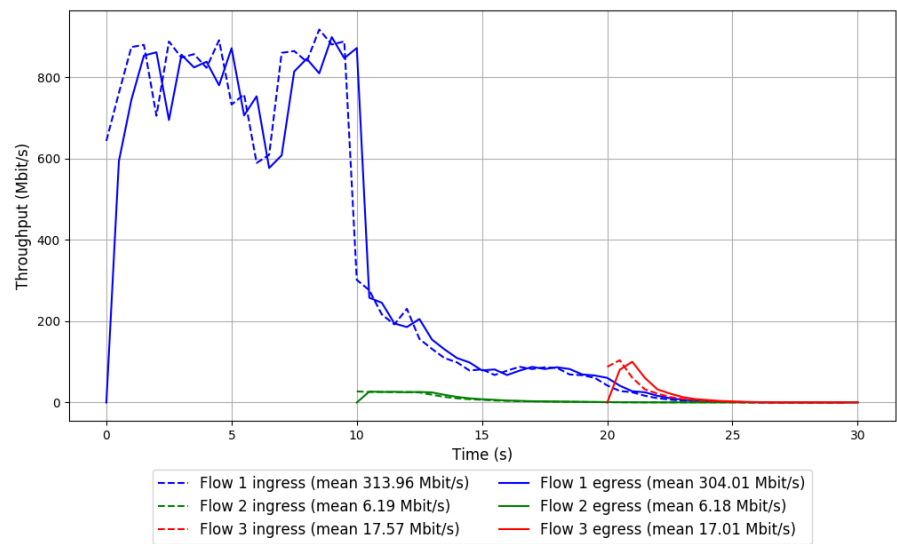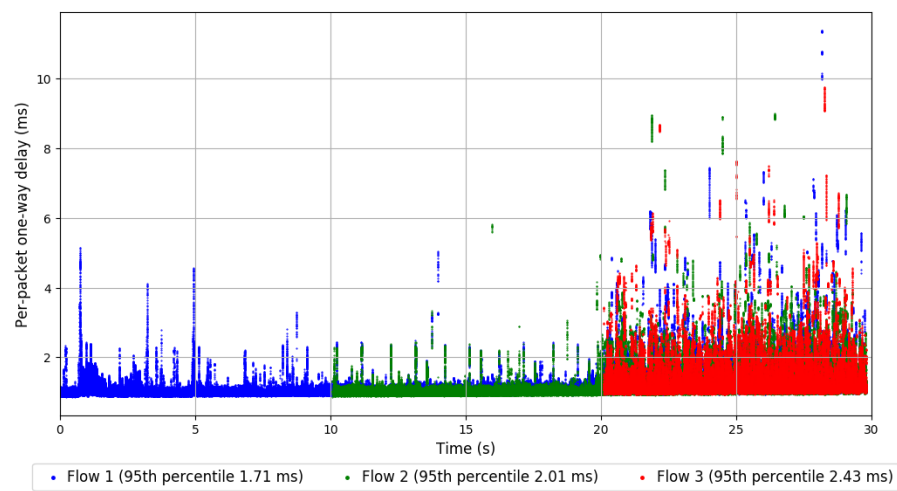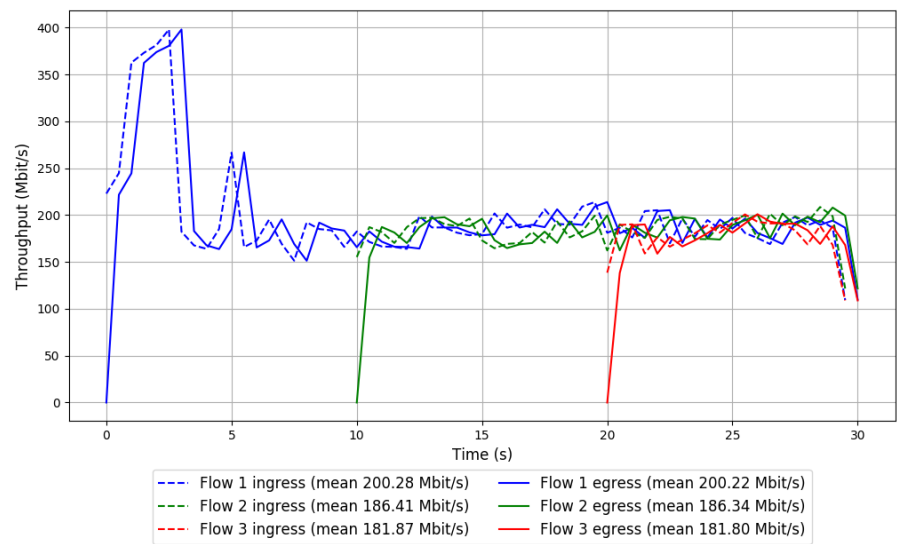
Run 4: Report of FillP-Sheep — Data Link

```
Run 5: Statistics of FillP-Sheep

Start at: 2019-02-20 02:36:02
End at: 2019-02-20 02:36:32
Local clock offset: -1.608 ms
Remote clock offset: 0.438 ms


# Below is generated by plot.py at 2019-02-20 03:20:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 313.63 Mbit/s
95th percentile per-packet one-way delay: 7.174 ms
Loss rate: 3.13%
-- Flow 1:
Average throughput: 304.01 Mbit/s
95th percentile per-packet one-way delay: 7.268 ms
Loss rate: 3.17%
-- Flow 2:
Average throughput: 6.18 Mbit/s
95th percentile per-packet one-way delay: 1.221 ms
Loss rate: 0.16%
-- Flow 3:
Average throughput: 17.01 Mbit/s
95th percentile per-packet one-way delay: 2.429 ms
Loss rate: 3.17%
```
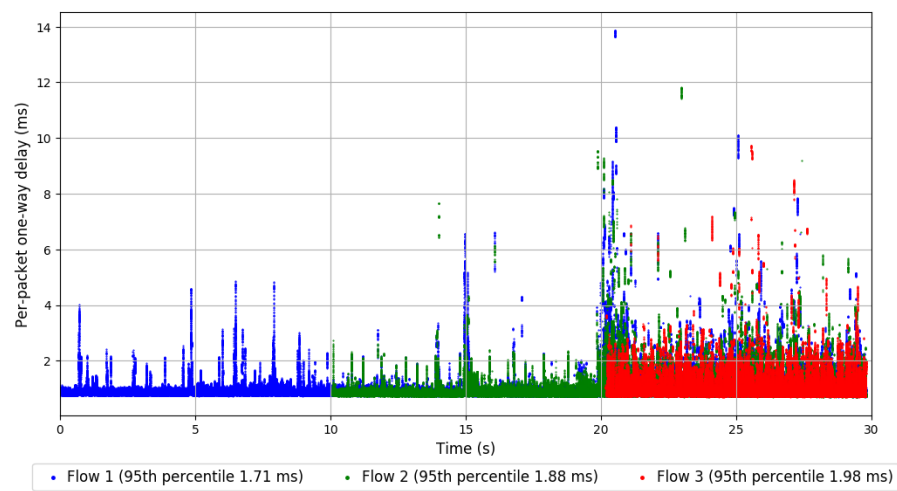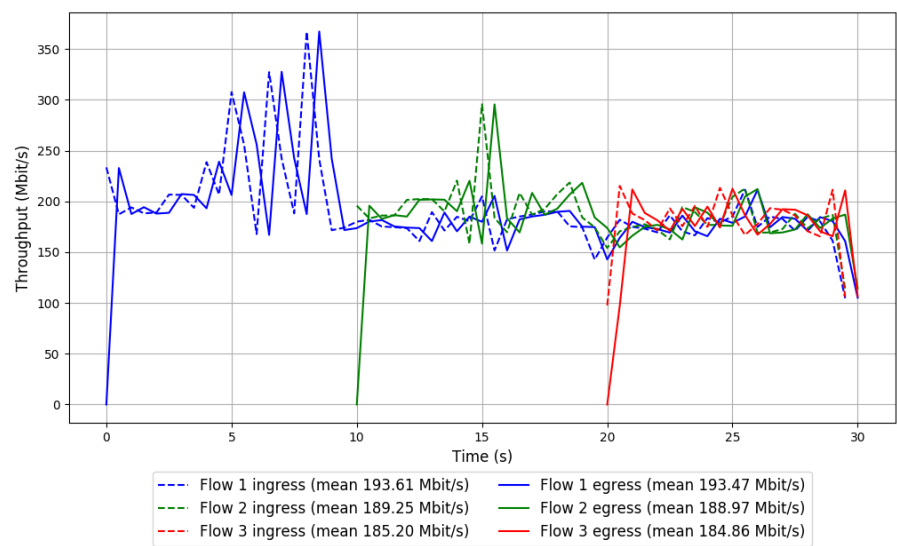
Run 5: Report of FillP-Sheep — Data Link

```
Run 1: Statistics of Indigo

Start at: 2019-02-20 00:43:31
End at: 2019-02-20 00:44:01
Local clock offset: -0.655 ms
Remote clock offset: -2.975 ms


# Below is generated by plot.py at 2019-02-20 03:20:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 382.74 Mbit/s
95th percentile per-packet one-way delay: 1.961 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 200.22 Mbit/s
95th percentile per-packet one-way delay: 1.706 ms
Loss rate: 0.03%
-- Flow 2:
Average throughput: 186.34 Mbit/s
95th percentile per-packet one-way delay: 2.007 ms
Loss rate: 0.04%
-- Flow 3:
Average throughput: 181.80 Mbit/s
95th percentile per-packet one-way delay: 2.429 ms
Loss rate: 0.04%
```
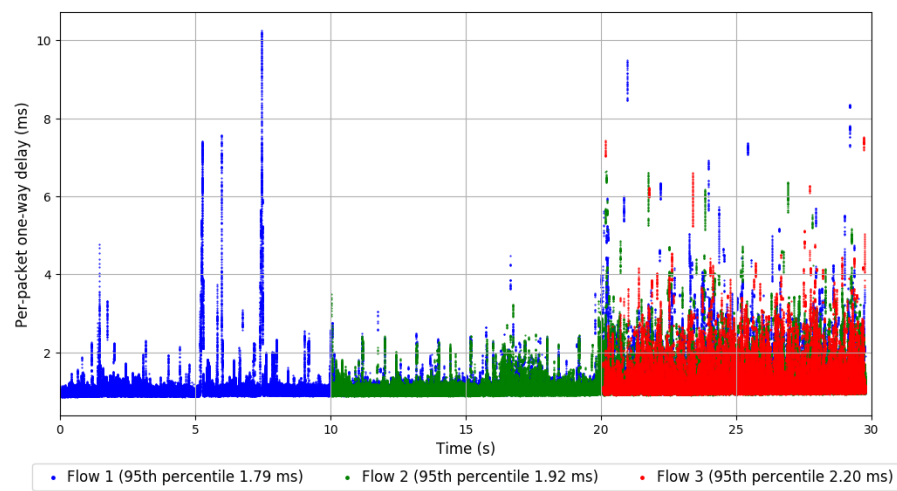
Run 1: Report of Indigo — Data Link

```
Run 2: Statistics of Indigo

Start at: 2019-02-20 01:13:18
End at: 2019-02-20 01:13:48
Local clock offset: 0.26 ms
Remote clock offset: -0.697 ms


# Below is generated by plot.py at 2019-02-20 03:20:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 378.34 Mbit/s
95th percentile per-packet one-way delay: 1.823 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 193.47 Mbit/s
95th percentile per-packet one-way delay: 1.714 ms
Loss rate: 0.08%
-- Flow 2:
Average throughput: 188.97 Mbit/s
95th percentile per-packet one-way delay: 1.877 ms
Loss rate: 0.15%
-- Flow 3:
Average throughput: 184.86 Mbit/s
95th percentile per-packet one-way delay: 1.977 ms
Loss rate: 0.18%
```
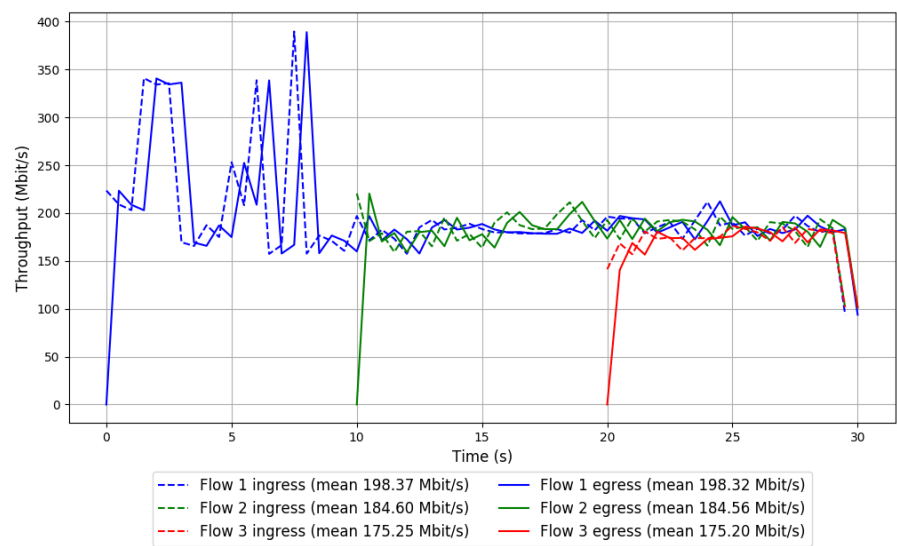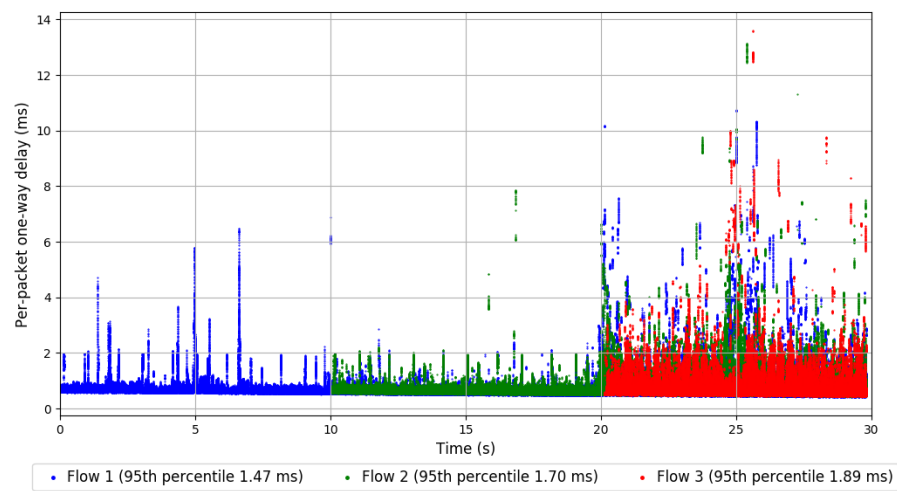
Run 2: Report of Indigo — Data Link

```
Run 3: Statistics of Indigo

Start at: 2019-02-20 01:43:20
End at: 2019-02-20 01:43:50
Local clock offset: 0.197 ms
Remote clock offset: -1.828 ms


# Below is generated by plot.py at 2019-02-20 03:20:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 377.81 Mbit/s
95th percentile per-packet one-way delay: 1.922 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 198.32 Mbit/s
95th percentile per-packet one-way delay: 1.792 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 184.56 Mbit/s
95th percentile per-packet one-way delay: 1.922 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 175.20 Mbit/s
95th percentile per-packet one-way delay: 2.202 ms
Loss rate: 0.03%
```

Run 3: Report of Indigo — Data Link

```
Run 4: Statistics of Indigo

Start at: 2019-02-20 02:13:12
End at: 2019-02-20 02:13:42
Local clock offset: -2.544 ms
Remote clock offset: -2.198 ms


# Below is generated by plot.py at 2019-02-20 03:21:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 369.52 Mbit/s
95th percentile per-packet one-way delay: 1.638 ms
Loss rate: 0.05%
-- Flow 1:
Average throughput: 190.27 Mbit/s
95th percentile per-packet one-way delay: 1.474 ms
Loss rate: 0.04%
-- Flow 2:
Average throughput: 182.42 Mbit/s
95th percentile per-packet one-way delay: 1.697 ms
Loss rate: 0.05%
-- Flow 3:
Average throughput: 179.97 Mbit/s
95th percentile per-packet one-way delay: 1.892 ms
Loss rate: 0.09%
```
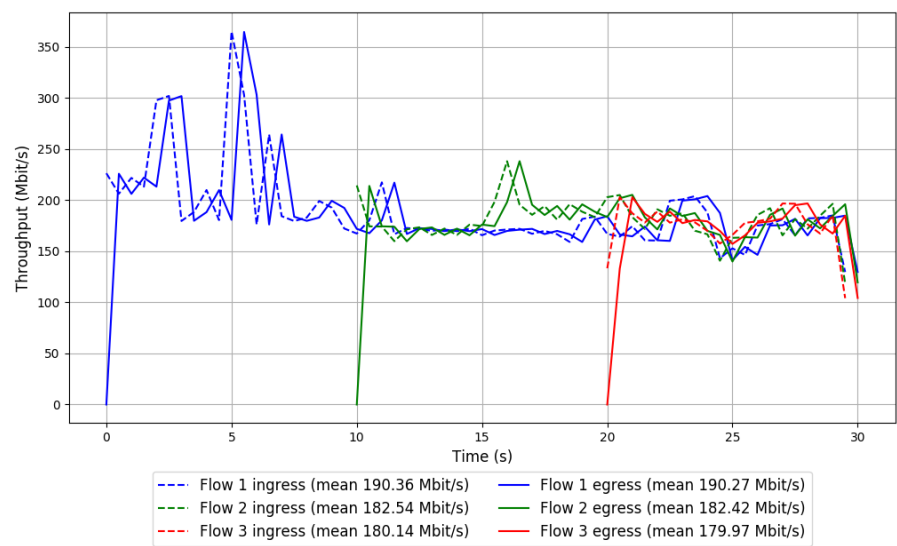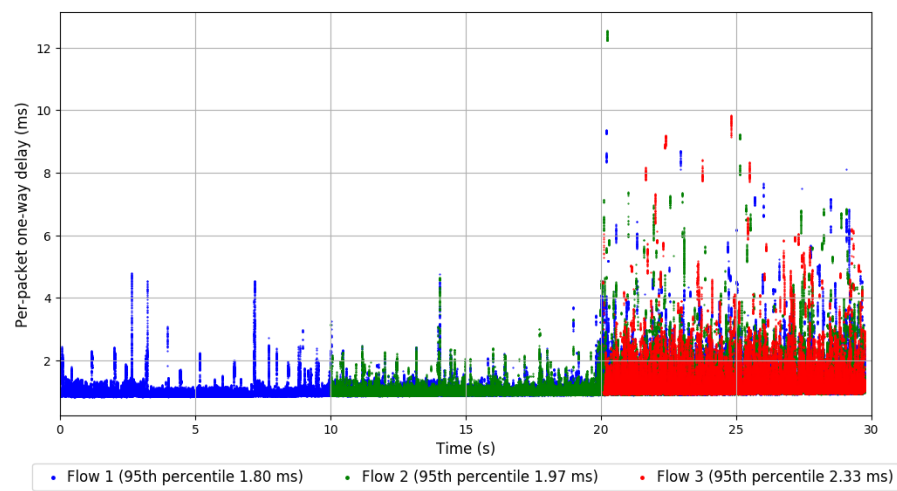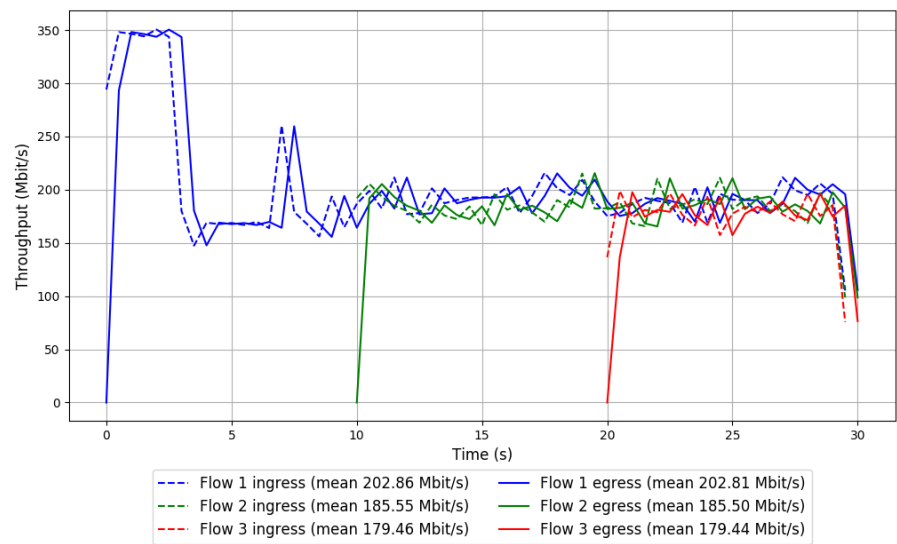
Run 4: Report of Indigo — Data Link

```
Run 5: Statistics of Indigo

Start at: 2019-02-20 02:43:03
End at: 2019-02-20 02:43:33
Local clock offset: -0.398 ms
Remote clock offset: 0.659 ms


# Below is generated by plot.py at 2019-02-20 03:21:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 384.20 Mbit/s
95th percentile per-packet one-way delay: 1.957 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 202.81 Mbit/s
95th percentile per-packet one-way delay: 1.796 ms
Loss rate: 0.03%
-- Flow 2:
Average throughput: 185.50 Mbit/s
95th percentile per-packet one-way delay: 1.971 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 179.44 Mbit/s
95th percentile per-packet one-way delay: 2.333 ms
Loss rate: 0.04%
```
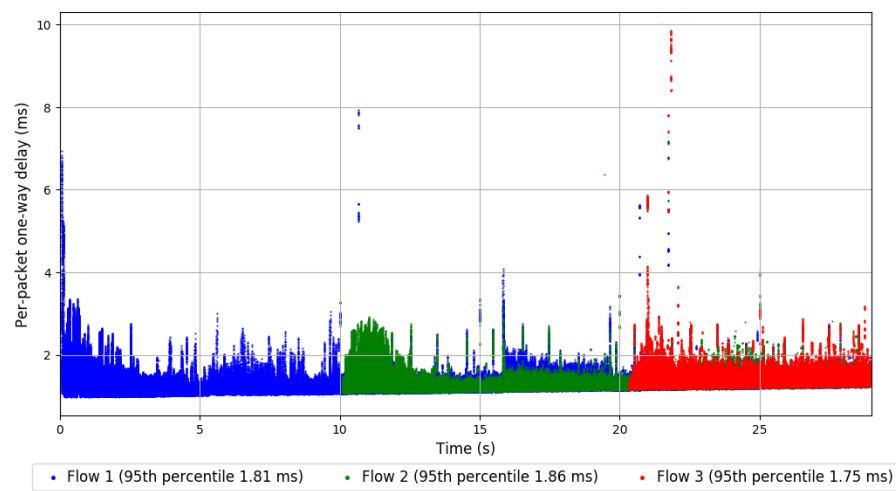
Run 5: Report of Indigo — Data Link

```
Run 1: Statistics of Indigo-MusesC3

Start at: 2019-02-20 00:33:45
End at: 2019-02-20 00:34:15
Local clock offset: -2.737 ms
Remote clock offset: -1.85 ms

# Below is generated by plot.py at 2019-02-20 03:23:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 344.34 Mbit/s
95th percentile per-packet one-way delay: 1.822 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 174.48 Mbit/s
95th percentile per-packet one-way delay: 1.810 ms
Loss rate: 0.10%
-- Flow 2:
Average throughput: 170.70 Mbit/s
95th percentile per-packet one-way delay: 1.862 ms
Loss rate: 0.13%
-- Flow 3:
Average throughput: 197.21 Mbit/s
95th percentile per-packet one-way delay: 1.751 ms
Loss rate: 0.07%
```
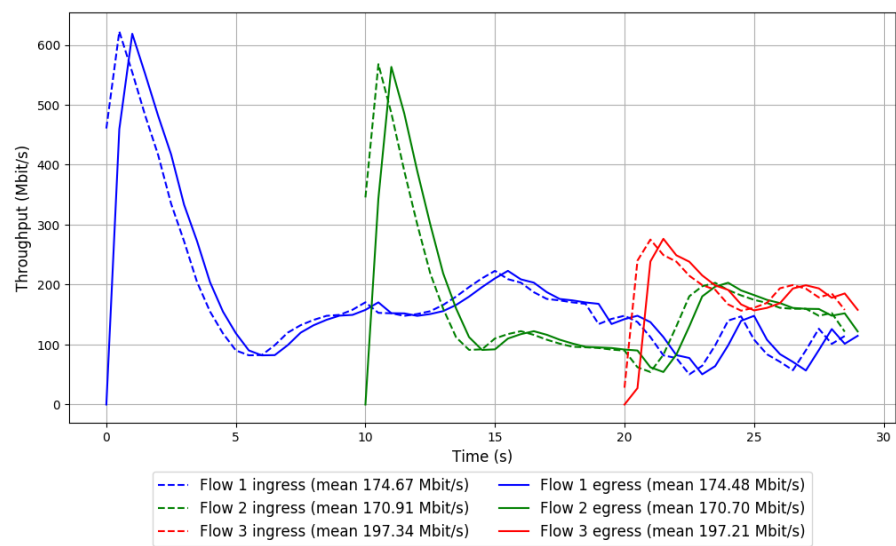
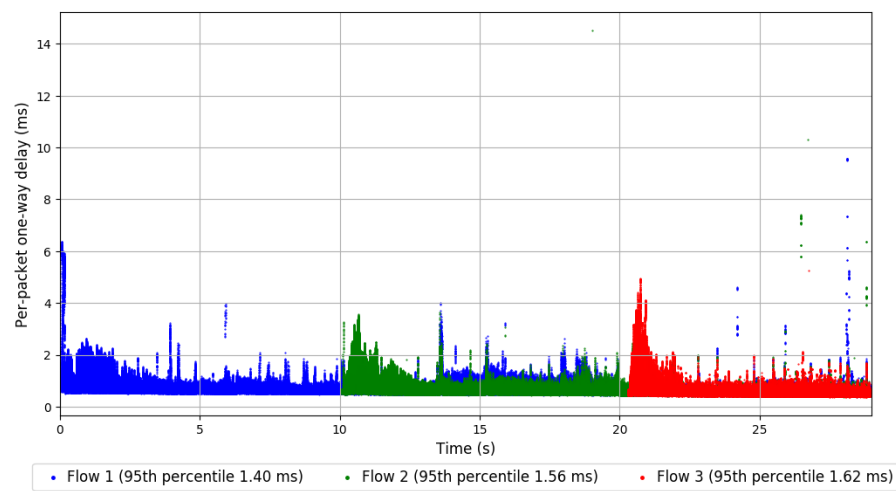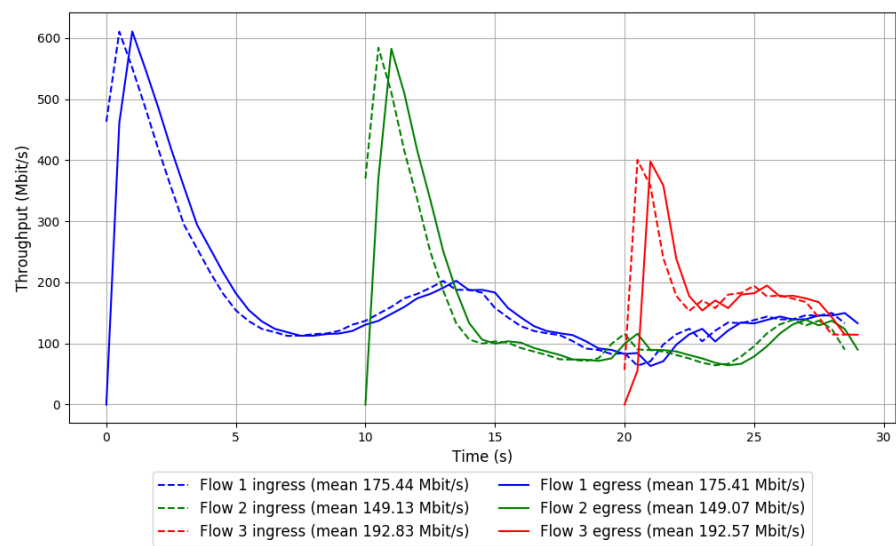Run 1: Report of Indigo-MusesC3 — Data Link

```
Run 2: Statistics of Indigo-MusesC3

Start at: 2019-02-20 01:03:35
End at: 2019-02-20 01:04:05
Local clock offset: 0.294 ms
Remote clock offset: -2.786 ms


# Below is generated by plot.py at 2019-02-20 03:23:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 330.23 Mbit/s
95th percentile per-packet one-way delay: 1.488 ms
Loss rate: 0.05%
-- Flow 1:
Average throughput: 175.41 Mbit/s
95th percentile per-packet one-way delay: 1.396 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 149.07 Mbit/s
95th percentile per-packet one-way delay: 1.564 ms
Loss rate: 0.04%
-- Flow 3:
Average throughput: 192.57 Mbit/s
95th percentile per-packet one-way delay: 1.616 ms
Loss rate: 0.14%
```

Run 2: Report of Indigo-MusesC3 — Data Link

```
Run 3: Statistics of Indigo-MusesC3

Start at: 2019-02-20 01:33:35
End at: 2019-02-20 01:34:05
Local clock offset: 0.317 ms
Remote clock offset: 0.466 ms

# Below is generated by plot.py at 2019-02-20 03:24:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 409.10 Mbit/s
95th percentile per-packet one-way delay: 1.850 ms
Loss rate: 0.18%
-- Flow 1:
Average throughput: 227.69 Mbit/s
95th percentile per-packet one-way delay: 1.573 ms
Loss rate: 0.16%
-- Flow 2:
Average throughput: 186.53 Mbit/s
95th percentile per-packet one-way delay: 2.084 ms
Loss rate: 0.24%
-- Flow 3:
Average throughput: 203.34 Mbit/s
95th percentile per-packet one-way delay: 2.151 ms
Loss rate: 0.17%
```
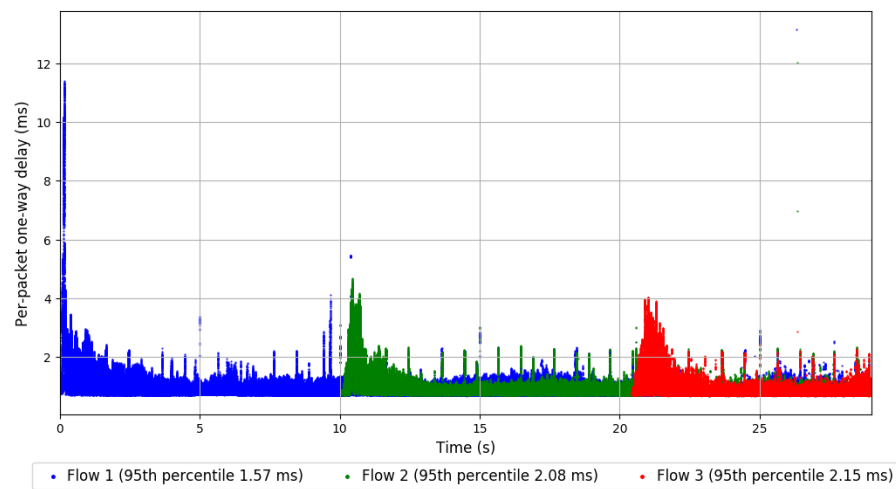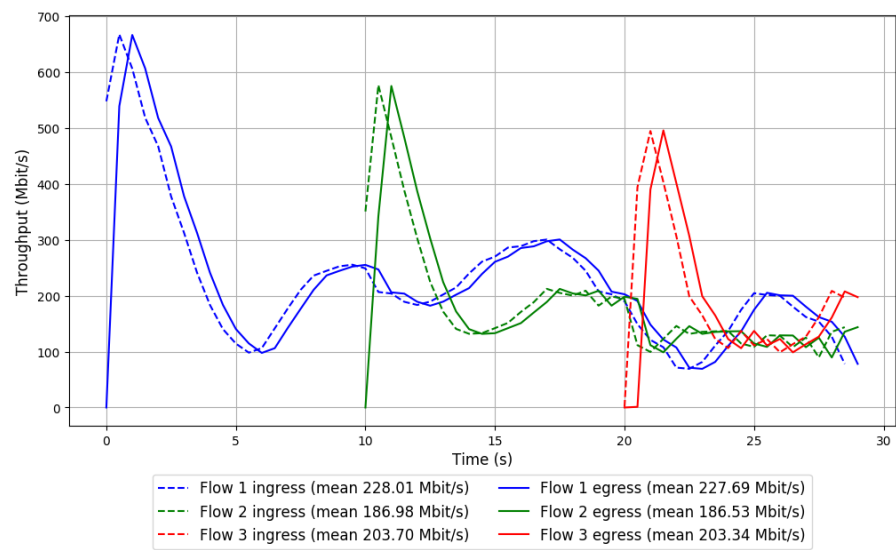
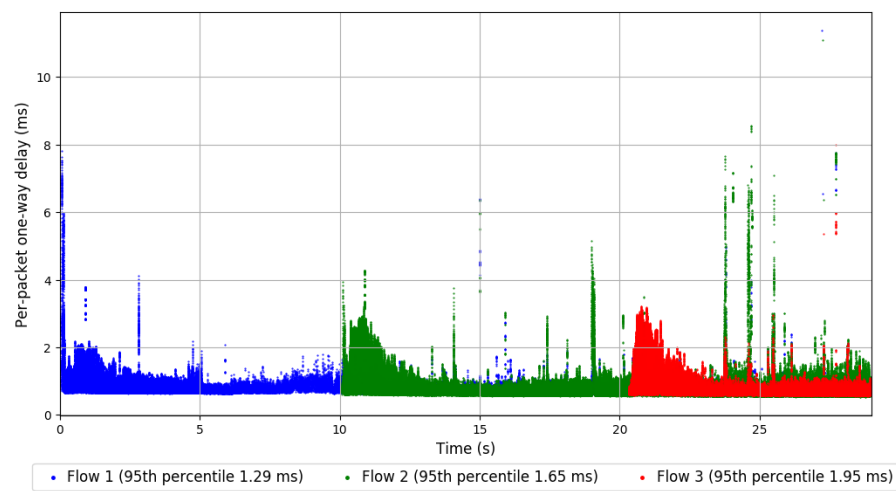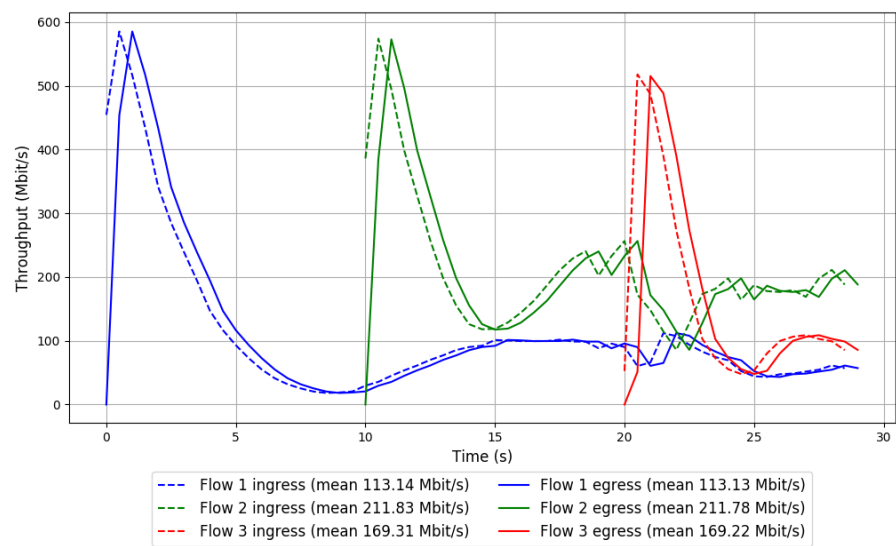Run 3: Report of Indigo-MusesC3 — Data Link

```
Run 4: Statistics of Indigo-MusesC3

Start at: 2019-02-20 02:03:31
End at: 2019-02-20 02:04:01
Local clock offset: -0.773 ms
Remote clock offset: -3.457 ms


# Below is generated by plot.py at 2019-02-20 03:24:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 301.64 Mbit/s
95th percentile per-packet one-way delay: 1.577 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 113.13 Mbit/s
95th percentile per-packet one-way delay: 1.290 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 211.78 Mbit/s
95th percentile per-packet one-way delay: 1.648 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 169.22 Mbit/s
95th percentile per-packet one-way delay: 1.953 ms
Loss rate: 0.06%
```

Run 4: Report of Indigo-MusesC3 — Data Link

```
Run 5: Statistics of Indigo-MusesC3

Start at: 2019-02-20 02:33:17
End at: 2019-02-20 02:33:47
Local clock offset: -2.387 ms
Remote clock offset: 0.276 ms


# Below is generated by plot.py at 2019-02-20 03:25:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 421.35 Mbit/s
95th percentile per-packet one-way delay: 2.150 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 249.09 Mbit/s
95th percentile per-packet one-way delay: 2.328 ms
Loss rate: 0.05%
-- Flow 2:
Average throughput: 186.67 Mbit/s
95th percentile per-packet one-way delay: 2.022 ms
Loss rate: 0.07%
-- Flow 3:
Average throughput: 173.56 Mbit/s
95th percentile per-packet one-way delay: 1.961 ms
Loss rate: 0.10%
```
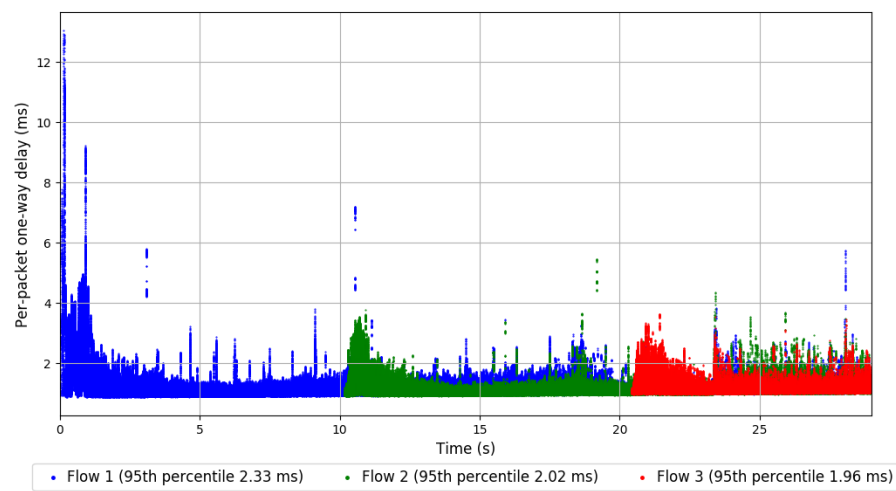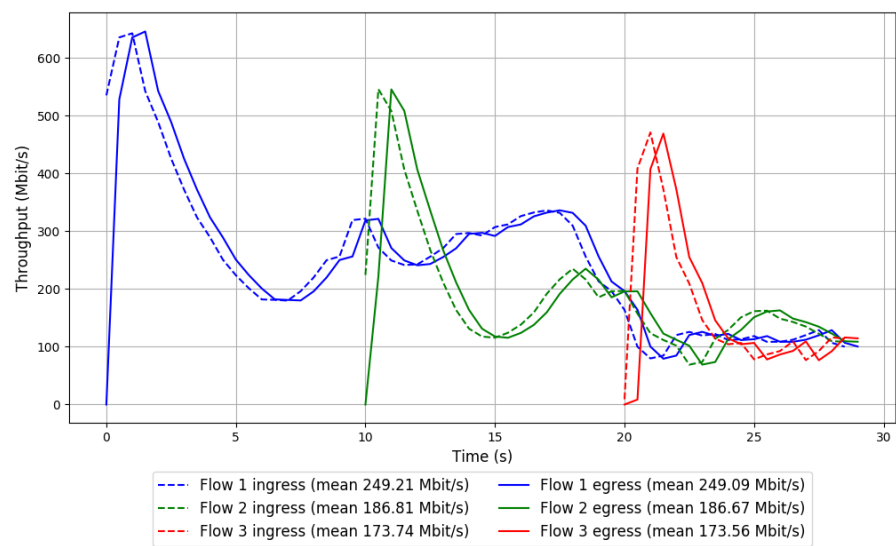
Run 5: Report of Indigo-MusesC3 — Data Link

```
Run 1: Statistics of Indigo-MusesC5

Start at: 2019-02-20 00:21:16
End at: 2019-02-20 00:21:46
Local clock offset: -3.649 ms
Remote clock offset: 0.022 ms

# Below is generated by plot.py at 2019-02-20 03:25:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 177.54 Mbit/s
95th percentile per-packet one-way delay: 1.692 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 87.30 Mbit/s
95th percentile per-packet one-way delay: 1.624 ms
Loss rate: 0.05%
-- Flow 2:
Average throughput: 68.50 Mbit/s
95th percentile per-packet one-way delay: 1.824 ms
Loss rate: 0.22%
-- Flow 3:
Average throughput: 126.82 Mbit/s
95th percentile per-packet one-way delay: 1.738 ms
Loss rate: 0.08%
```
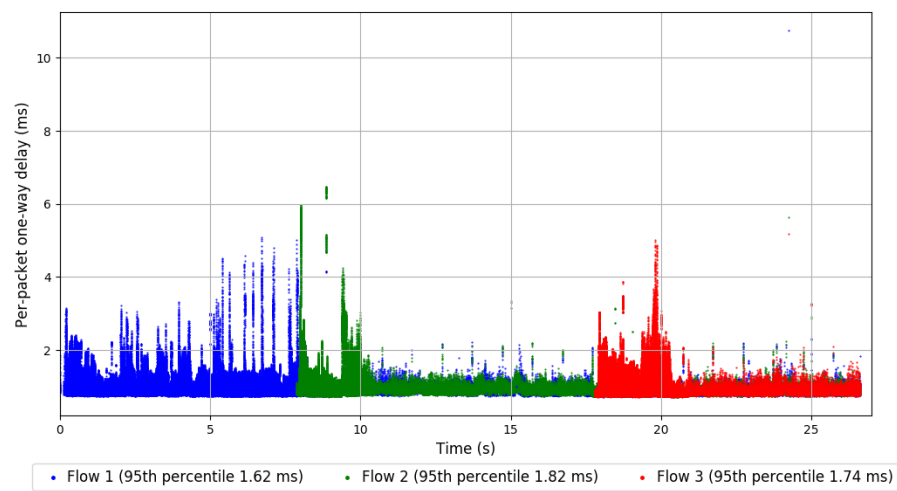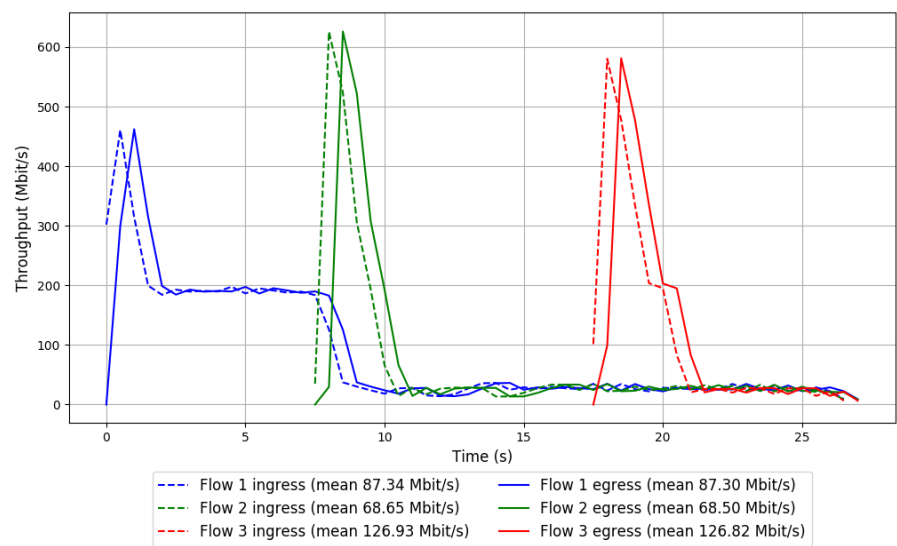
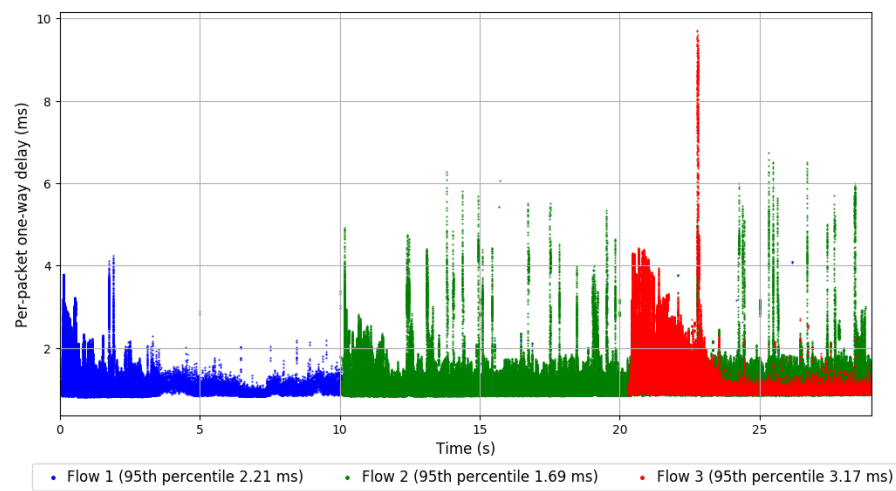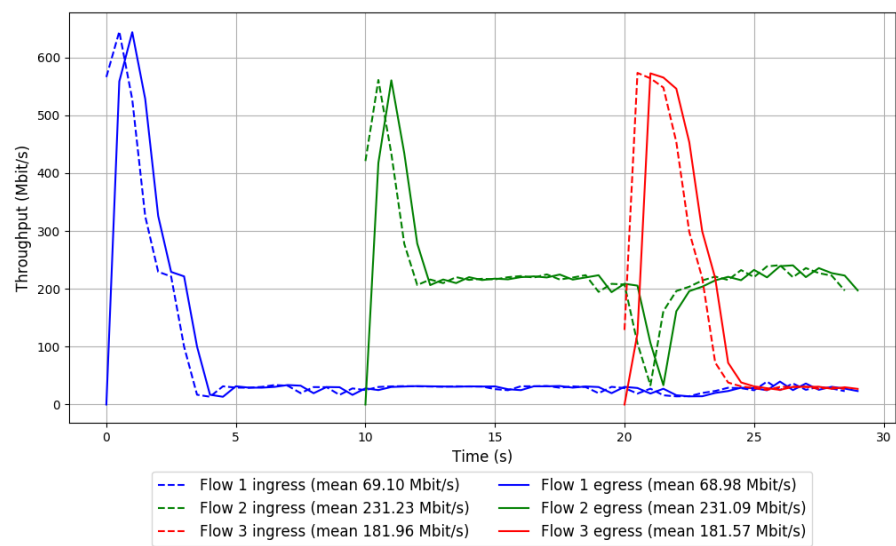Run 1: Report of Indigo-MusesC5 — Data Link

```
Run 2: Statistics of Indigo-MusesC5

Start at: 2019-02-20 00:51:00
End at: 2019-02-20 00:51:30
Local clock offset: 0.011 ms
Remote clock offset: -3.366 ms


# Below is generated by plot.py at 2019-02-20 03:25:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 274.12 Mbit/s
95th percentile per-packet one-way delay: 2.288 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 68.98 Mbit/s
95th percentile per-packet one-way delay: 2.213 ms
Loss rate: 0.18%
-- Flow 2:
Average throughput: 231.09 Mbit/s
95th percentile per-packet one-way delay: 1.689 ms
Loss rate: 0.06%
-- Flow 3:
Average throughput: 181.57 Mbit/s
95th percentile per-packet one-way delay: 3.174 ms
Loss rate: 0.22%
```

Run 2: Report of Indigo-MusesC5 — Data Link

Flow 1 ingress (mean 69.10 Mbit/s) --- Flow 1 egress (mean 68.98 Mbit/s)
Flow 2 ingress (mean 231.23 Mbit/s) --- Flow 2 egress (mean 231.09 Mbit/s)
Flow 3 ingress (mean 181.96 Mbit/s) --- Flow 3 egress (mean 181.57 Mbit/s)

Flow 1 (95th percentile 2.21 ms)　Flow 2 (95th percentile 1.69 ms)　Flow 3 (95th percentile 3.17 ms)
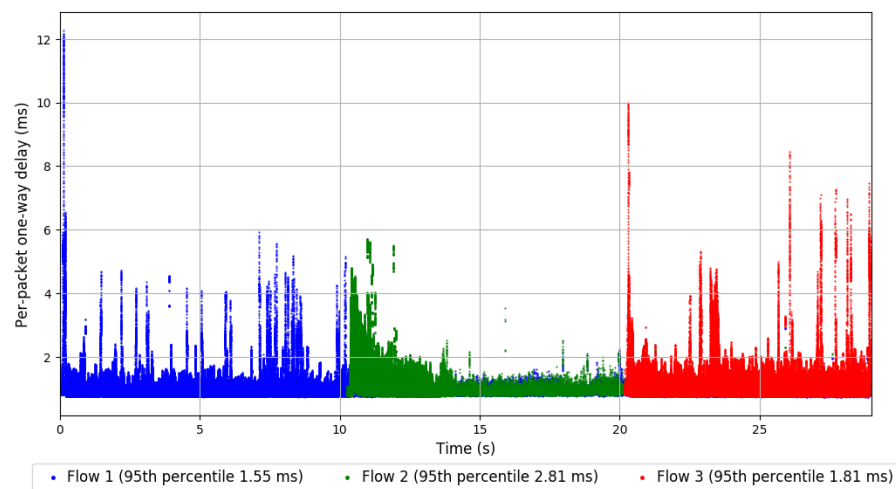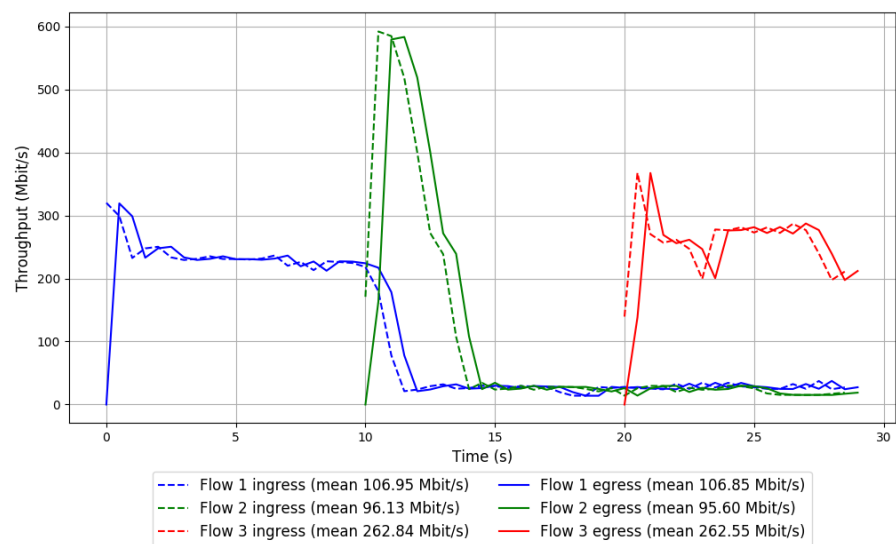
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```
Run 3: Statistics of Indigo-MusesC5

Start at: 2019-02-20 01:20:55
End at: 2019-02-20 01:21:25
Local clock offset: 0.315 ms
Remote clock offset: -0.038 ms


# Below is generated by plot.py at 2019-02-20 03:25:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 248.16 Mbit/s
95th percentile per-packet one-way delay: 2.039 ms
Loss rate: 0.21%
-- Flow 1:
Average throughput: 106.85 Mbit/s
95th percentile per-packet one-way delay: 1.554 ms
Loss rate: 0.09%
-- Flow 2:
Average throughput: 95.60 Mbit/s
95th percentile per-packet one-way delay: 2.815 ms
Loss rate: 0.55%
-- Flow 3:
Average throughput: 262.55 Mbit/s
95th percentile per-packet one-way delay: 1.812 ms
Loss rate: 0.09%
```

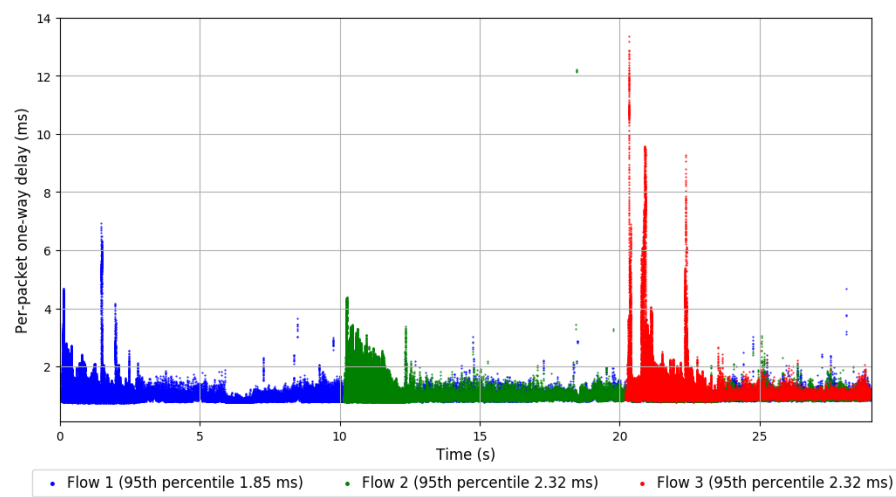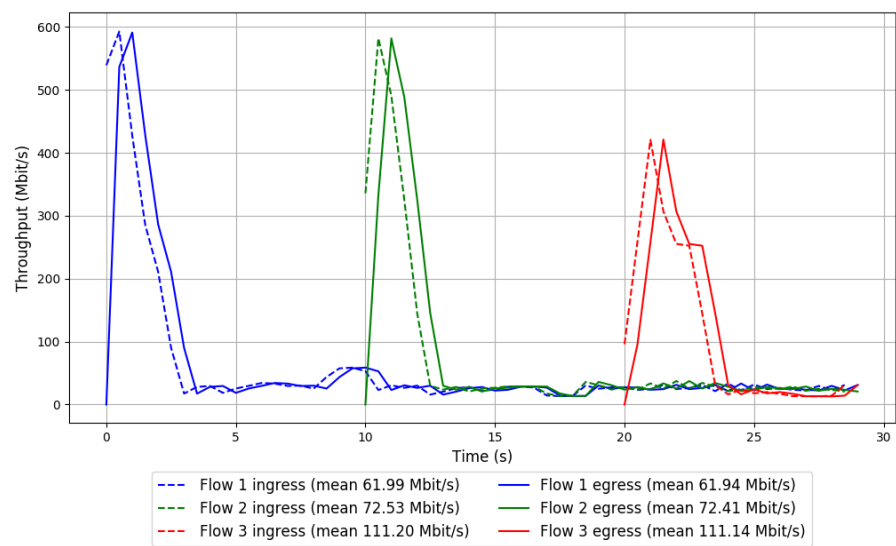Run 3: Report of Indigo-MusesC5 — Data Link

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```
Run 4: Statistics of Indigo-MusesC5

Start at: 2019-02-20 01:51:00
End at: 2019-02-20 01:51:30
Local clock offset: 0.195 ms
Remote clock offset: -2.826 ms


# Below is generated by plot.py at 2019-02-20 03:25:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 142.61 Mbit/s
95th percentile per-packet one-way delay: 2.125 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 61.94 Mbit/s
95th percentile per-packet one-way delay: 1.848 ms
Loss rate: 0.07%
-- Flow 2:
Average throughput: 72.41 Mbit/s
95th percentile per-packet one-way delay: 2.319 ms
Loss rate: 0.17%
-- Flow 3:
Average throughput: 111.14 Mbit/s
95th percentile per-packet one-way delay: 2.318 ms
Loss rate: 0.05%
```

Run 4: Report of Indigo-MusesC5 — Data Link

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```
Run 5: Statistics of Indigo-MusesC5

Start at: 2019-02-20 02:20:45
End at: 2019-02-20 02:21:15
Local clock offset: -3.162 ms
Remote clock offset: -0.65 ms


# Below is generated by plot.py at 2019-02-20 03:25:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 194.96 Mbit/s
95th percentile per-packet one-way delay: 2.625 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 55.45 Mbit/s
95th percentile per-packet one-way delay: 1.608 ms
Loss rate: 0.05%
-- Flow 2:
Average throughput: 101.88 Mbit/s
95th percentile per-packet one-way delay: 3.234 ms
Loss rate: 0.22%
-- Flow 3:
Average throughput: 240.23 Mbit/s
95th percentile per-packet one-way delay: 1.785 ms
Loss rate: 0.08%
```
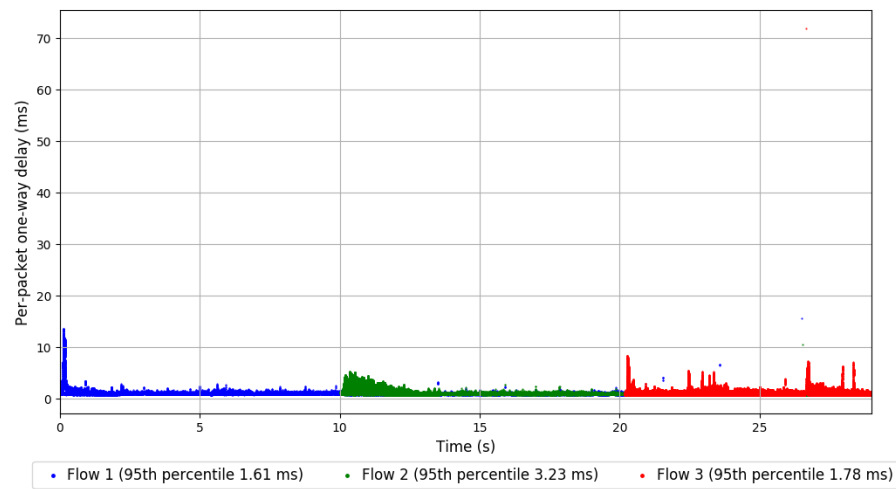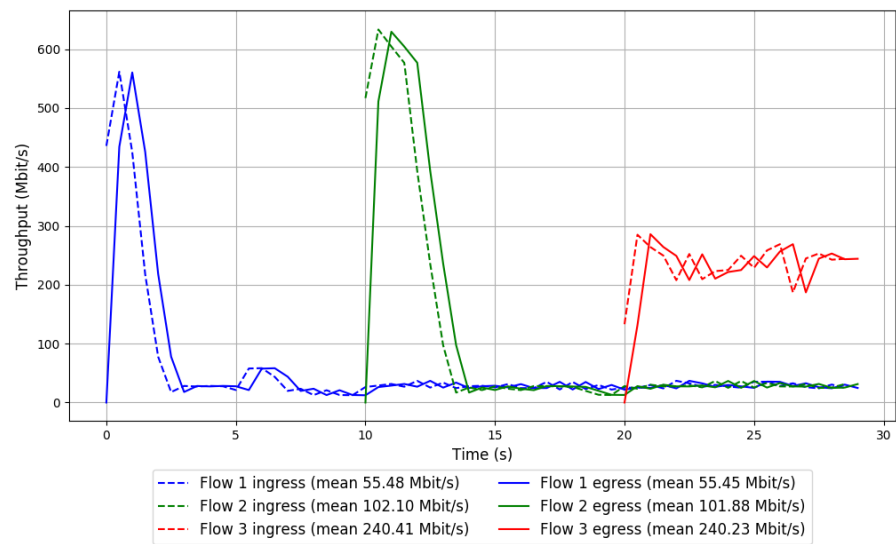
Run 5: Report of Indigo-MusesC5 — Data Link

- Flow 1 ingress (mean 55.48 Mbit/s)   — Flow 1 egress (mean 55.45 Mbit/s)
- Flow 2 ingress (mean 102.10 Mbit/s)   — Flow 2 egress (mean 101.88 Mbit/s)
- Flow 3 ingress (mean 240.41 Mbit/s)   — Flow 3 egress (mean 240.23 Mbit/s)

- Flow 1 (95th percentile 1.61 ms)   • Flow 2 (95th percentile 3.23 ms)   • Flow 3 (95th percentile 1.78 ms)
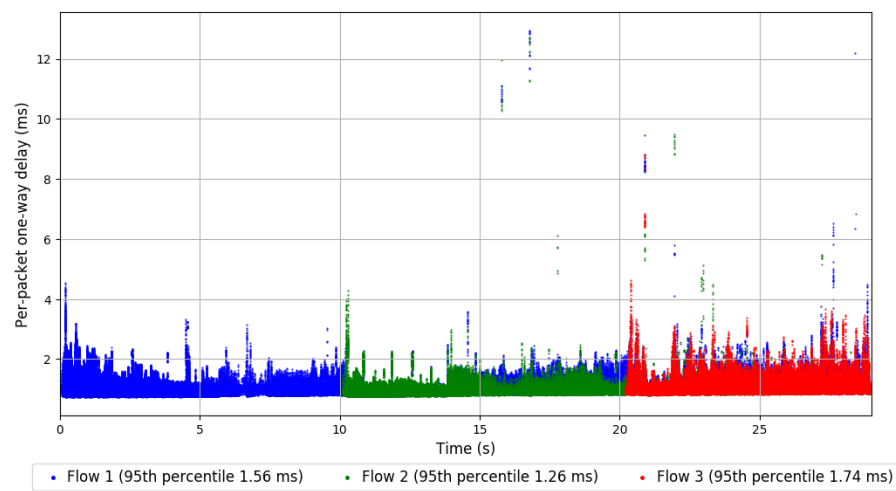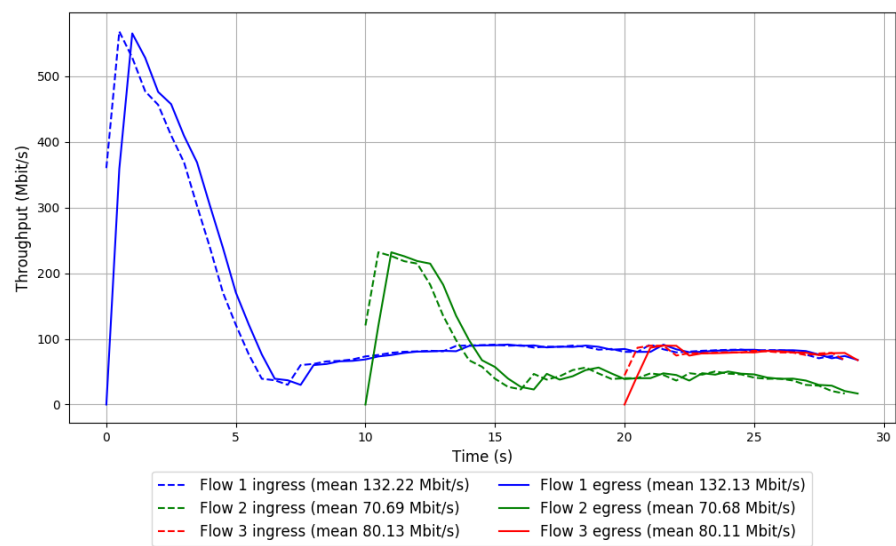
```
Run 1: Statistics of Indigo-MusesD

Start at: 2019-02-20 00:28:24
End at: 2019-02-20 00:28:54
Local clock offset: -4.169 ms
Remote clock offset: -0.669 ms


# Below is generated by plot.py at 2019-02-20 03:26:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 202.28 Mbit/s
95th percentile per-packet one-way delay: 1.541 ms
Loss rate: 0.05%
-- Flow 1:
Average throughput: 132.13 Mbit/s
95th percentile per-packet one-way delay: 1.565 ms
Loss rate: 0.07%
-- Flow 2:
Average throughput: 70.68 Mbit/s
95th percentile per-packet one-way delay: 1.260 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 80.11 Mbit/s
95th percentile per-packet one-way delay: 1.740 ms
Loss rate: 0.03%
```

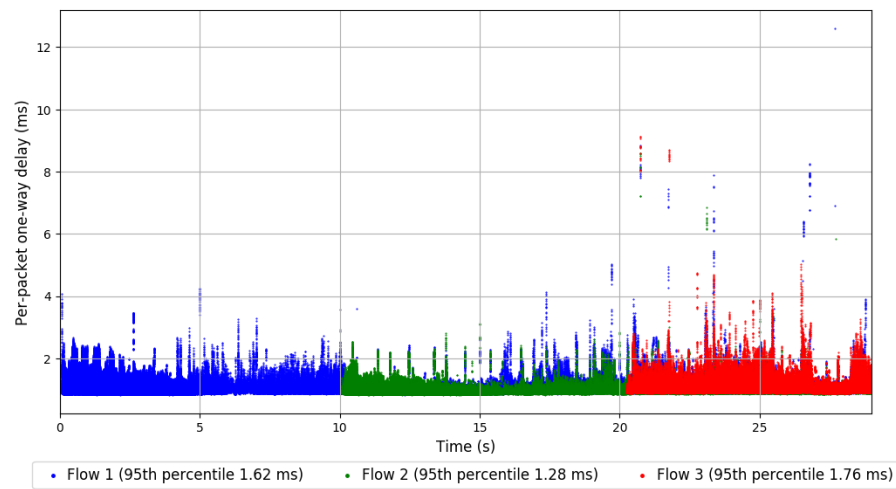Run 1: Report of Indigo-MusesD — Data Link

Flow 1 ingress (mean 132.22 Mbit/s)   Flow 1 egress (mean 132.13 Mbit/s)
Flow 2 ingress (mean 70.69 Mbit/s)   Flow 2 egress (mean 70.68 Mbit/s)
Flow 3 ingress (mean 80.13 Mbit/s)   Flow 3 egress (mean 80.11 Mbit/s)

Flow 1 (95th percentile 1.56 ms)   Flow 2 (95th percentile 1.26 ms)   Flow 3 (95th percentile 1.74 ms)
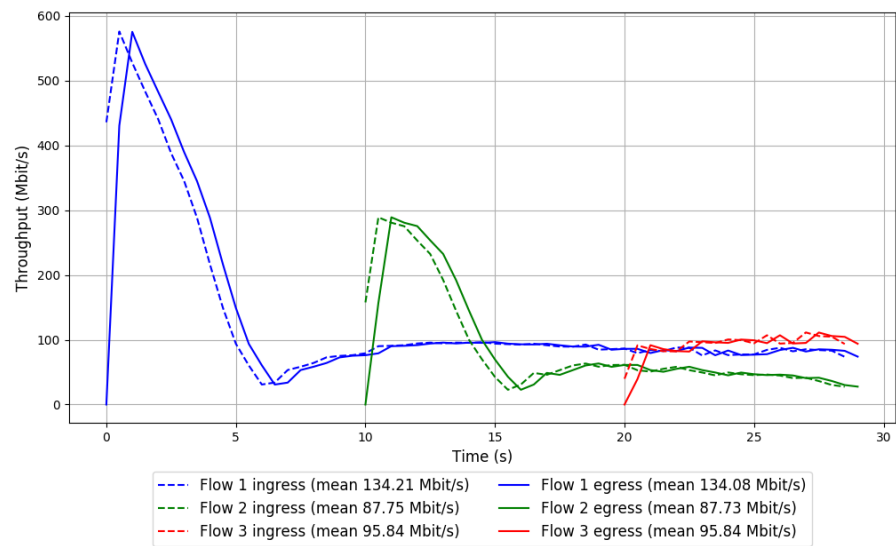
```
Run 2: Statistics of Indigo-MusesD

Start at: 2019-02-20 00:58:09
End at: 2019-02-20 00:58:39
Local clock offset: 0.277 ms
Remote clock offset: -3.661 ms


# Below is generated by plot.py at 2019-02-20 03:26:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 220.21 Mbit/s
95th percentile per-packet one-way delay: 1.578 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 134.08 Mbit/s
95th percentile per-packet one-way delay: 1.616 ms
Loss rate: 0.10%
-- Flow 2:
Average throughput: 87.73 Mbit/s
95th percentile per-packet one-way delay: 1.282 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 95.84 Mbit/s
95th percentile per-packet one-way delay: 1.763 ms
Loss rate: 0.00%
```

Run 2: Report of Indigo-MusesD — Data Link

```
Run 3: Statistics of Indigo-MusesD

Start at: 2019-02-20 01:28:07
End at: 2019-02-20 01:28:37
Local clock offset: 0.384 ms
Remote clock offset: 0.28 ms


# Below is generated by plot.py at 2019-02-20 03:26:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 188.22 Mbit/s
95th percentile per-packet one-way delay: 1.460 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 90.25 Mbit/s
95th percentile per-packet one-way delay: 1.469 ms
Loss rate: 0.05%
-- Flow 2:
Average throughput: 117.36 Mbit/s
95th percentile per-packet one-way delay: 1.422 ms
Loss rate: 0.07%
-- Flow 3:
Average throughput: 72.94 Mbit/s
95th percentile per-packet one-way delay: 1.577 ms
Loss rate: 0.07%
```
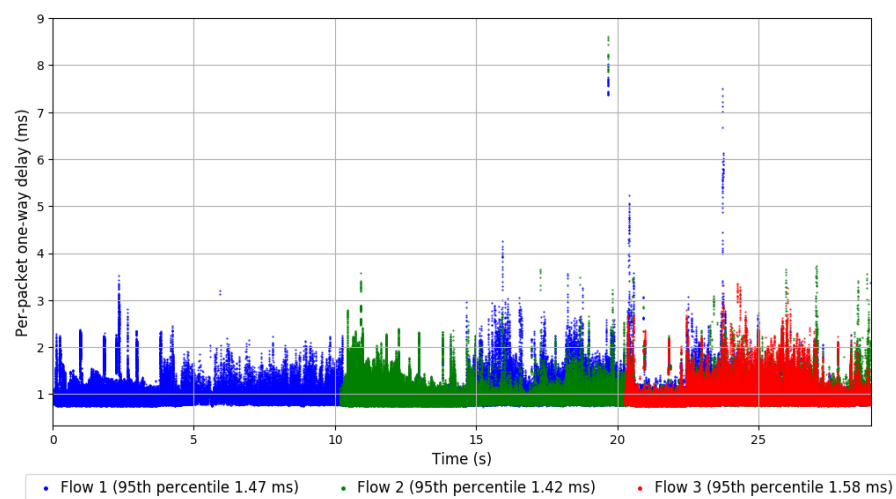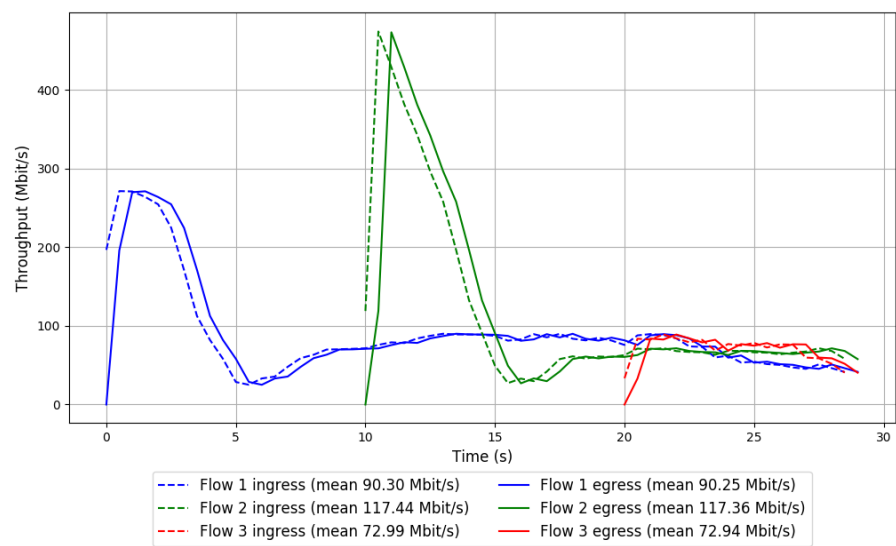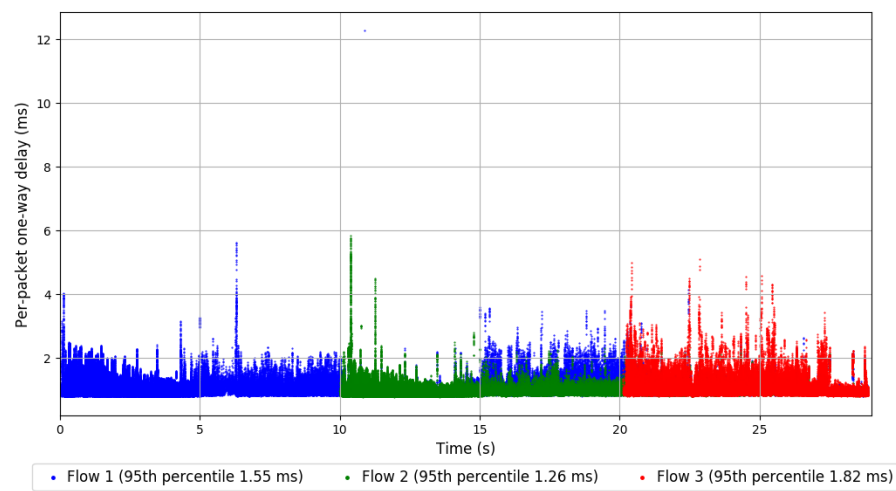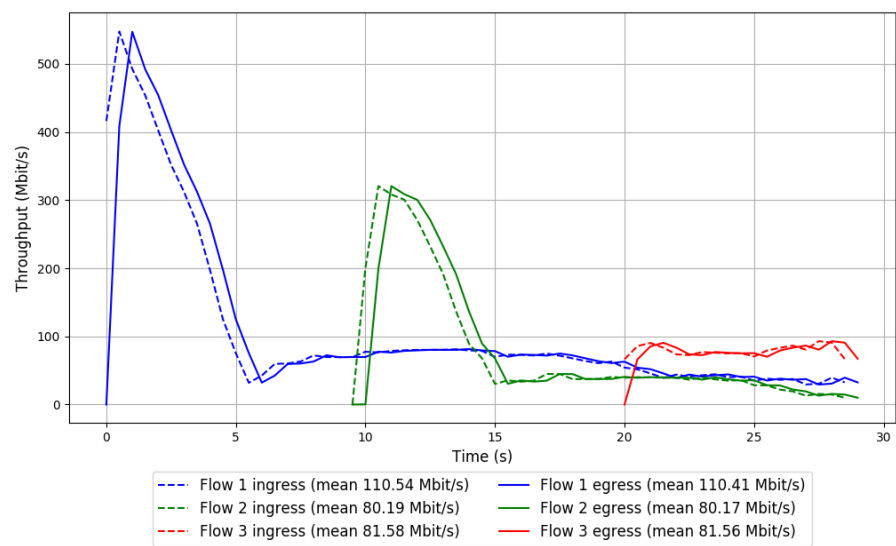
Run 3: Report of Indigo-MusesD — Data Link

- - - - Flow 1 ingress (mean 90.30 Mbit/s)   —— Flow 1 egress (mean 90.25 Mbit/s)
- - - - Flow 2 ingress (mean 117.44 Mbit/s)   —— Flow 2 egress (mean 117.36 Mbit/s)
- - - - Flow 3 ingress (mean 72.99 Mbit/s)   —— Flow 3 egress (mean 72.94 Mbit/s)

- Flow 1 (95th percentile 1.47 ms)   • Flow 2 (95th percentile 1.42 ms)   • Flow 3 (95th percentile 1.58 ms)

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```
Run 4: Statistics of Indigo-MusesD

Start at: 2019-02-20 01:58:08
End at: 2019-02-20 01:58:38
Local clock offset: 0.271 ms
Remote clock offset: -3.261 ms


# Below is generated by plot.py at 2019-02-20 03:26:47
# Datalink statistics
-- Total of 3 flows:
Average throughput: 187.52 Mbit/s
95th percentile per-packet one-way delay: 1.532 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 110.41 Mbit/s
95th percentile per-packet one-way delay: 1.549 ms
Loss rate: 0.11%
-- Flow 2:
Average throughput: 80.17 Mbit/s
95th percentile per-packet one-way delay: 1.265 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 81.56 Mbit/s
95th percentile per-packet one-way delay: 1.819 ms
Loss rate: 0.02%
```
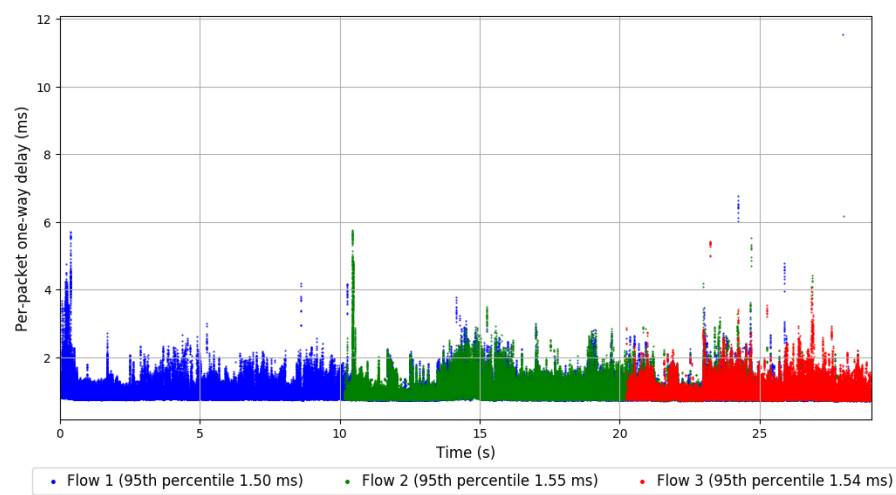
Run 4: Report of Indigo-MusesD — Data Link

```
Run 5: Statistics of Indigo-MusesD

Start at: 2019-02-20 02:27:55
End at: 2019-02-20 02:28:25
Local clock offset: -3.528 ms
Remote clock offset: 0.06 ms


# Below is generated by plot.py at 2019-02-20 03:26:47
# Datalink statistics
-- Total of 3 flows:
Average throughput: 150.26 Mbit/s
95th percentile per-packet one-way delay: 1.525 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 77.67 Mbit/s
95th percentile per-packet one-way delay: 1.498 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 77.10 Mbit/s
95th percentile per-packet one-way delay: 1.552 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 74.90 Mbit/s
95th percentile per-packet one-way delay: 1.545 ms
Loss rate: 0.02%
```
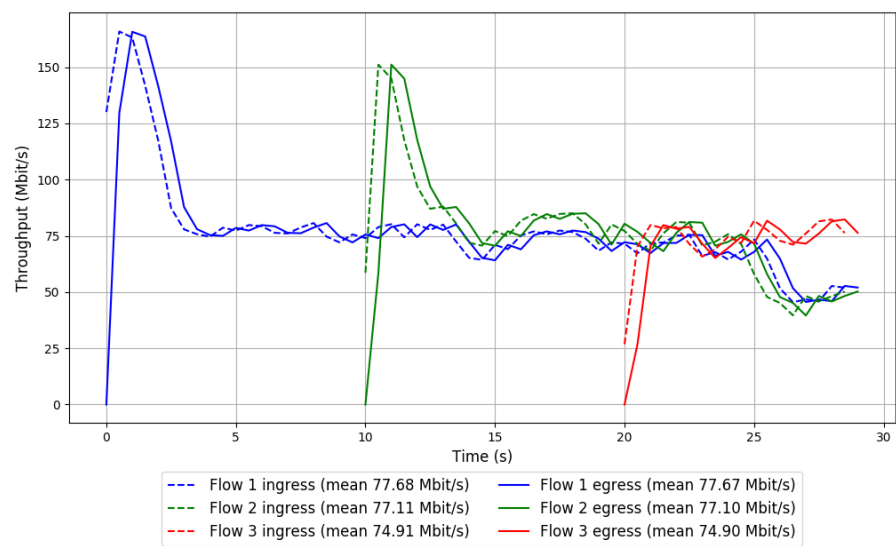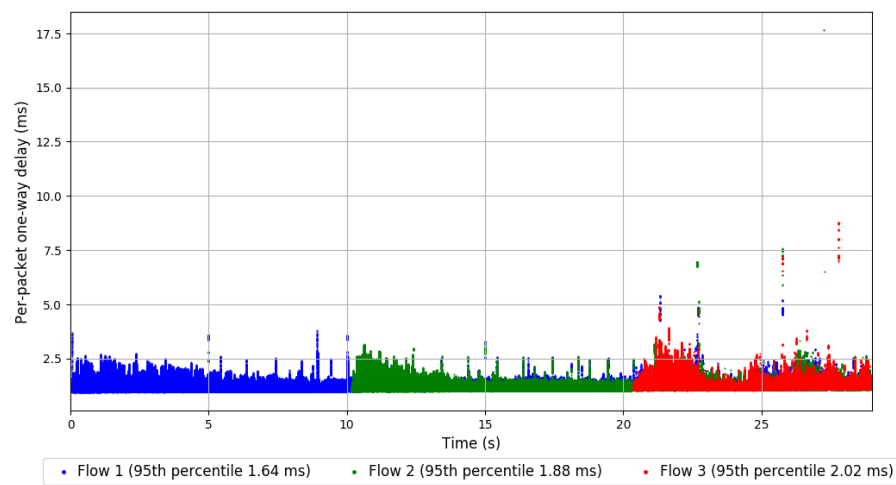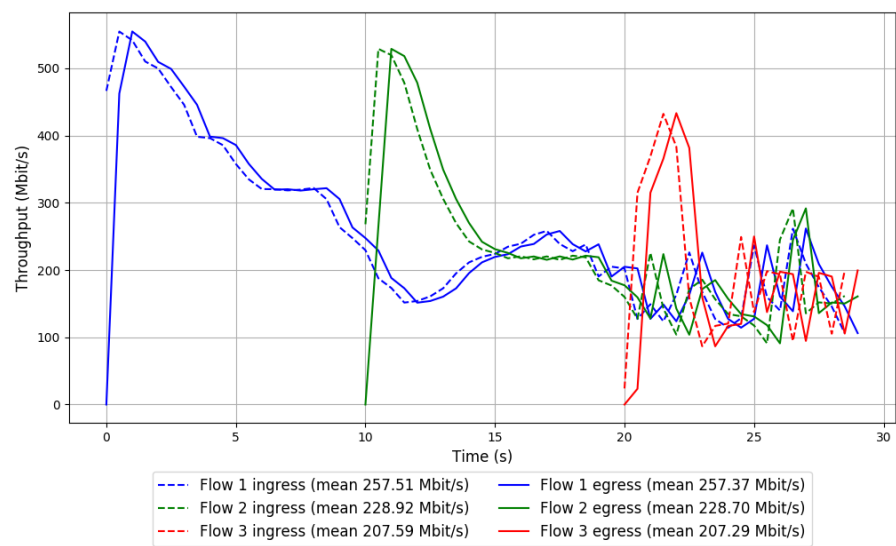
Run 5: Report of Indigo-MusesD — Data Link

- - - - Flow 1 ingress (mean 77.68 Mbit/s)   —— Flow 1 egress (mean 77.67 Mbit/s)
- - - - Flow 2 ingress (mean 77.11 Mbit/s)   —— Flow 2 egress (mean 77.10 Mbit/s)
- - - - Flow 3 ingress (mean 74.91 Mbit/s)   —— Flow 3 egress (mean 74.90 Mbit/s)

- Flow 1 (95th percentile 1.50 ms)   • Flow 2 (95th percentile 1.55 ms)   • Flow 3 (95th percentile 1.54 ms)

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```
Run 1: Statistics of Indigo-MusesT

Start at: 2019-02-20 00:39:33
End at: 2019-02-20 00:40:03
Local clock offset: -1.247 ms
Remote clock offset: -2.598 ms

# Below is generated by plot.py at 2019-02-20 03:29:47
# Datalink statistics
-- Total of 3 flows:
Average throughput: 467.41 Mbit/s
95th percentile per-packet one-way delay: 1.775 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 257.37 Mbit/s
95th percentile per-packet one-way delay: 1.636 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 228.70 Mbit/s
95th percentile per-packet one-way delay: 1.875 ms
Loss rate: 0.10%
-- Flow 3:
Average throughput: 207.29 Mbit/s
95th percentile per-packet one-way delay: 2.025 ms
Loss rate: 0.14%
```

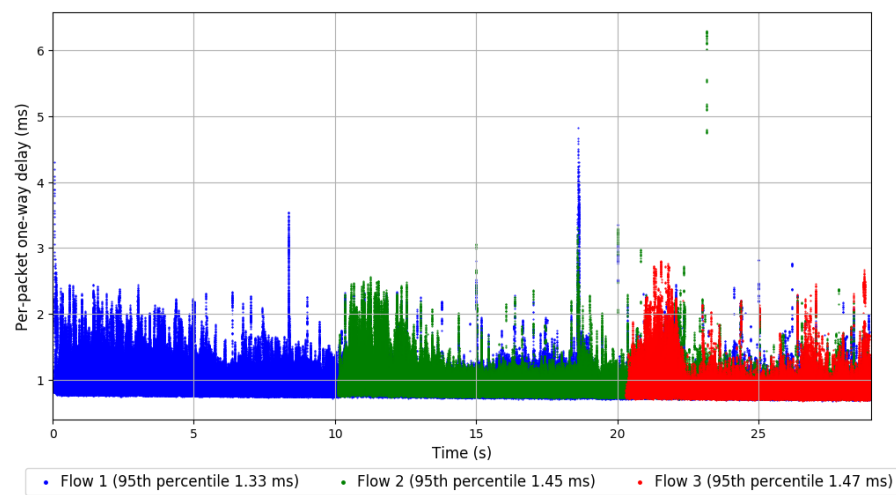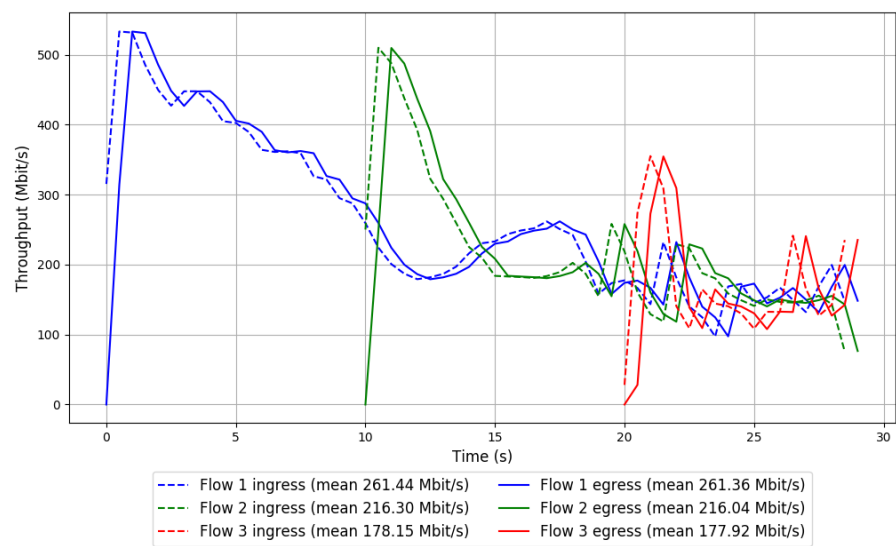# Run 1: Report of Indigo-MusesT — Data Link

```
Run 2: Statistics of Indigo-MusesT

Start at: 2019-02-20 01:09:20
End at: 2019-02-20 01:09:50
Local clock offset: 0.269 ms
Remote clock offset: -1.226 ms


# Below is generated by plot.py at 2019-02-20 03:30:24
# Datalink statistics
-- Total of 3 flows:
Average throughput: 455.21 Mbit/s
95th percentile per-packet one-way delay: 1.383 ms
Loss rate: 0.09%
-- Flow 1:
Average throughput: 261.36 Mbit/s
95th percentile per-packet one-way delay: 1.329 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 216.04 Mbit/s
95th percentile per-packet one-way delay: 1.449 ms
Loss rate: 0.12%
-- Flow 3:
Average throughput: 177.92 Mbit/s
95th percentile per-packet one-way delay: 1.471 ms
Loss rate: 0.13%
```

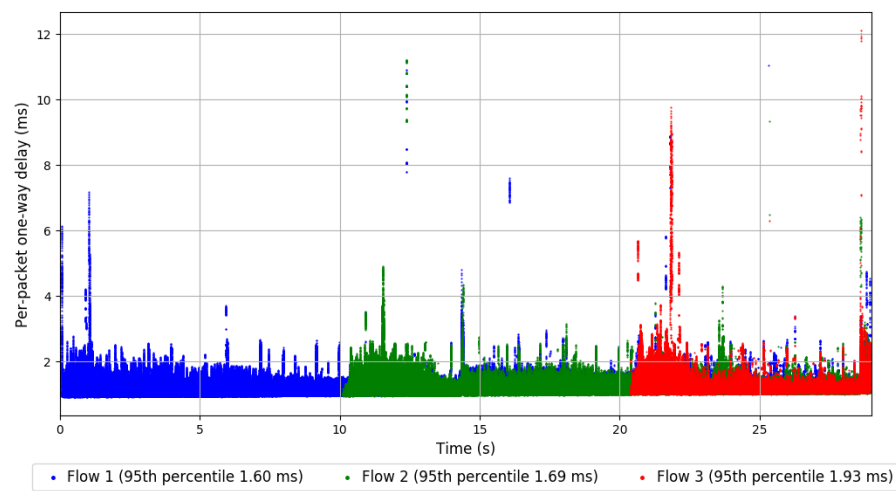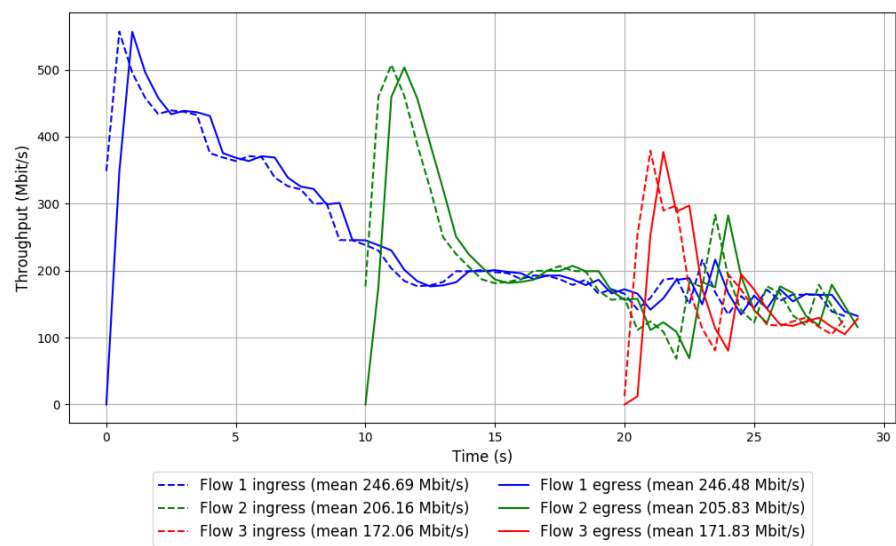Run 2: Report of Indigo-MusesT — Data Link

```
Run 3: Statistics of Indigo-MusesT

Start at: 2019-02-20 01:39:23
End at: 2019-02-20 01:39:53
Local clock offset: 0.218 ms
Remote clock offset: -0.956 ms


# Below is generated by plot.py at 2019-02-20 03:30:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 431.24 Mbit/s
95th percentile per-packet one-way delay: 1.669 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 246.48 Mbit/s
95th percentile per-packet one-way delay: 1.596 ms
Loss rate: 0.08%
-- Flow 2:
Average throughput: 205.83 Mbit/s
95th percentile per-packet one-way delay: 1.688 ms
Loss rate: 0.16%
-- Flow 3:
Average throughput: 171.83 Mbit/s
95th percentile per-packet one-way delay: 1.926 ms
Loss rate: 0.14%
```

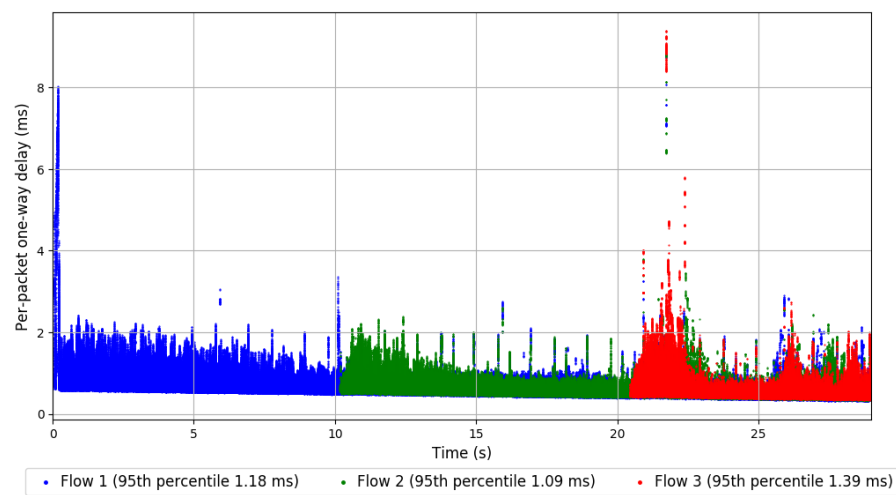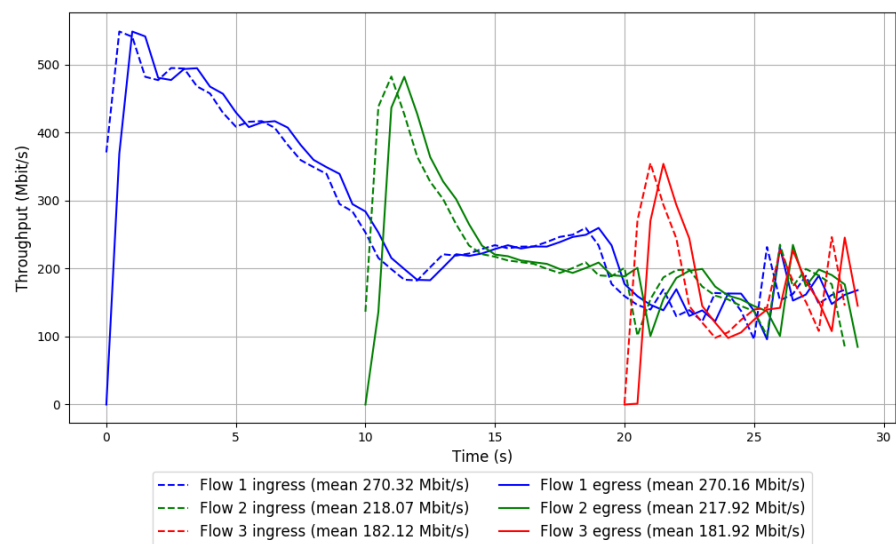Run 3: Report of Indigo-MusesT — Data Link

```
Run 4: Statistics of Indigo-MusesT

Start at: 2019-02-20 02:09:14
End at: 2019-02-20 02:09:44
Local clock offset: -1.979 ms
Remote clock offset: -3.472 ms


# Below is generated by plot.py at 2019-02-20 03:31:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 465.01 Mbit/s
95th percentile per-packet one-way delay: 1.178 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 270.16 Mbit/s
95th percentile per-packet one-way delay: 1.182 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 217.92 Mbit/s
95th percentile per-packet one-way delay: 1.091 ms
Loss rate: 0.07%
-- Flow 3:
Average throughput: 181.92 Mbit/s
95th percentile per-packet one-way delay: 1.390 ms
Loss rate: 0.11%
```

Run 4: Report of Indigo-MusesT — Data Link

```
Run 5: Statistics of Indigo-MusesT

Start at: 2019-02-20 02:39:05
End at: 2019-02-20 02:39:35
Local clock offset: -0.996 ms
Remote clock offset: 0.615 ms


# Below is generated by plot.py at 2019-02-20 03:31:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 465.73 Mbit/s
95th percentile per-packet one-way delay: 1.681 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 246.23 Mbit/s
95th percentile per-packet one-way delay: 1.594 ms
Loss rate: 0.05%
-- Flow 2:
Average throughput: 236.01 Mbit/s
95th percentile per-packet one-way delay: 1.713 ms
Loss rate: 0.07%
-- Flow 3:
Average throughput: 219.31 Mbit/s
95th percentile per-packet one-way delay: 1.847 ms
Loss rate: 0.04%
```
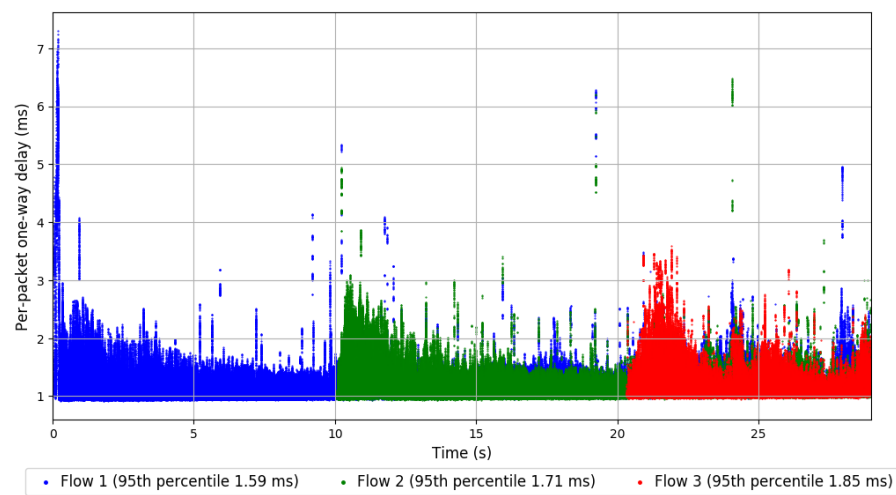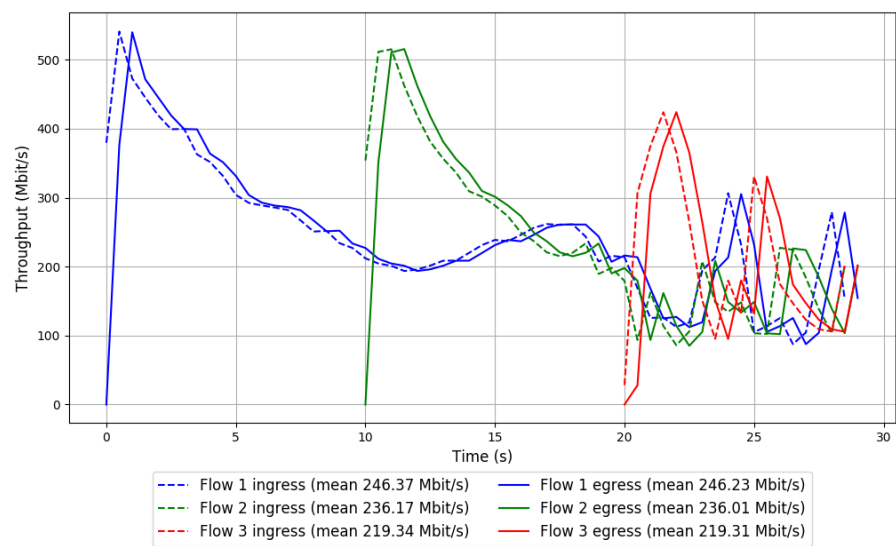
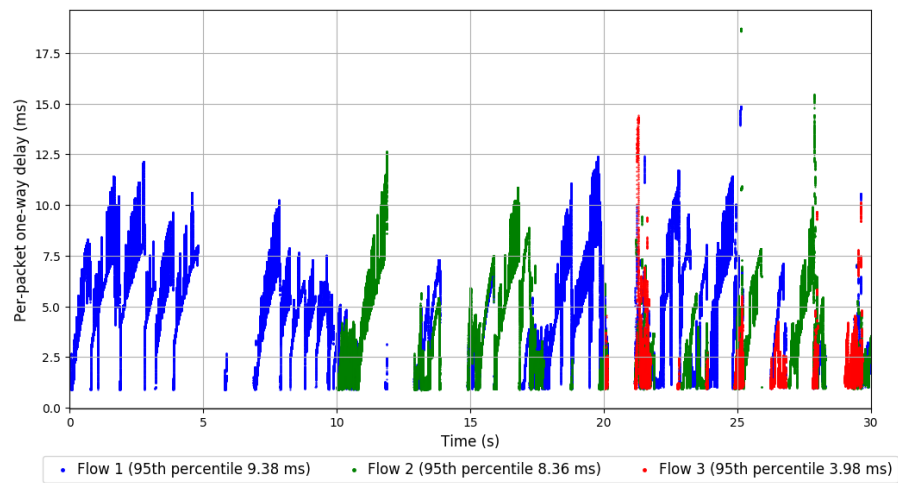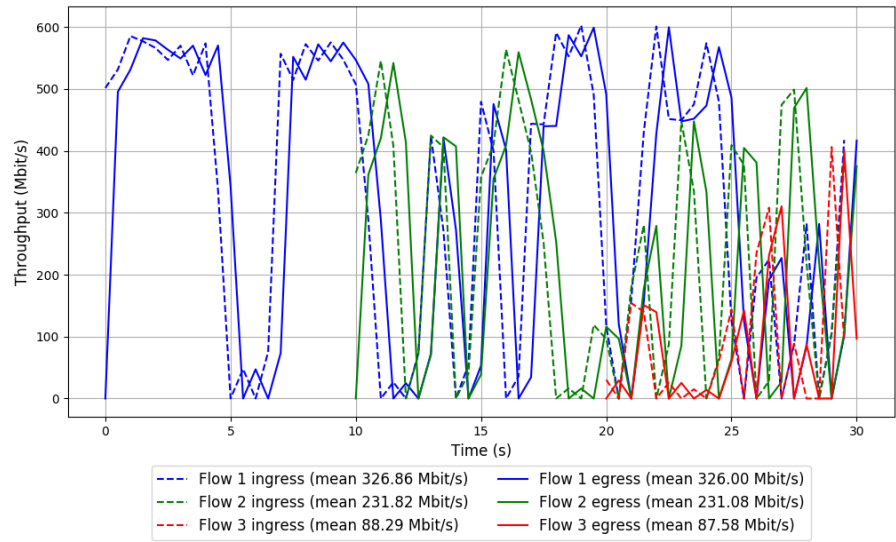# Run 5: Report of Indigo-MusesT — Data Link

```
Run 1: Statistics of LEDBAT

Start at: 2019-02-20 00:45:02
End at: 2019-02-20 00:45:32
Local clock offset: -0.486 ms
Remote clock offset: -3.057 ms

# Below is generated by plot.py at 2019-02-20 03:32:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 508.14 Mbit/s
95th percentile per-packet one-way delay: 8.991 ms
Loss rate: 0.31%
-- Flow 1:
Average throughput: 326.00 Mbit/s
95th percentile per-packet one-way delay: 9.382 ms
Loss rate: 0.26%
-- Flow 2:
Average throughput: 231.08 Mbit/s
95th percentile per-packet one-way delay: 8.359 ms
Loss rate: 0.32%
-- Flow 3:
Average throughput: 87.58 Mbit/s
95th percentile per-packet one-way delay: 3.984 ms
Loss rate: 0.80%
```
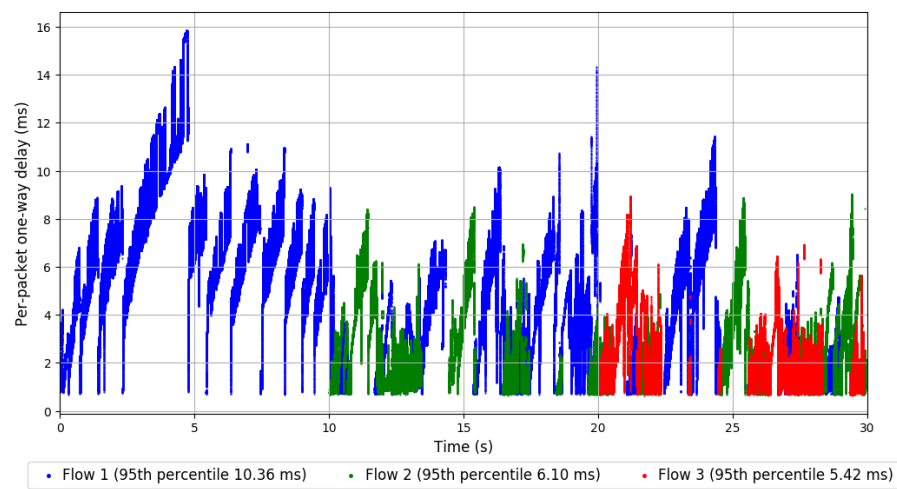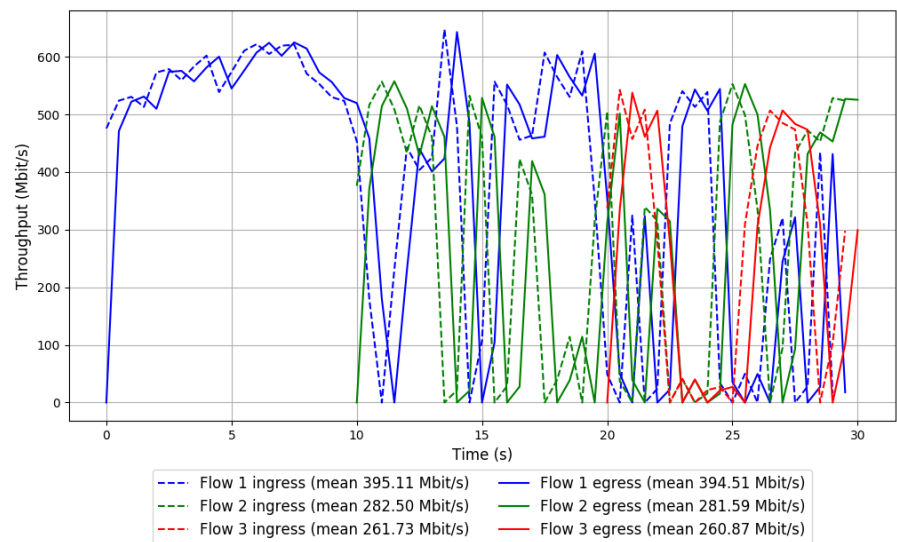
Run 1: Report of LEDBAT — Data Link

Flow 1 ingress (mean 326.86 Mbit/s) — — — Flow 1 egress (mean 326.00 Mbit/s)
Flow 2 ingress (mean 231.82 Mbit/s) — — — Flow 2 egress (mean 231.08 Mbit/s)
Flow 3 ingress (mean 88.29 Mbit/s) — — — Flow 3 egress (mean 87.58 Mbit/s)

• Flow 1 (95th percentile 9.38 ms)   • Flow 2 (95th percentile 8.36 ms)   • Flow 3 (95th percentile 3.98 ms)

```
Run 2: Statistics of LEDBAT

Start at: 2019-02-20 01:14:48
End at: 2019-02-20 01:15:18
Local clock offset: 0.269 ms
Remote clock offset: -0.582 ms


# Below is generated by plot.py at 2019-02-20 03:34:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 654.81 Mbit/s
95th percentile per-packet one-way delay: 9.127 ms
Loss rate: 0.23%
-- Flow 1:
Average throughput: 394.51 Mbit/s
95th percentile per-packet one-way delay: 10.360 ms
Loss rate: 0.15%
-- Flow 2:
Average throughput: 281.59 Mbit/s
95th percentile per-packet one-way delay: 6.098 ms
Loss rate: 0.32%
-- Flow 3:
Average throughput: 260.87 Mbit/s
95th percentile per-packet one-way delay: 5.418 ms
Loss rate: 0.33%
```
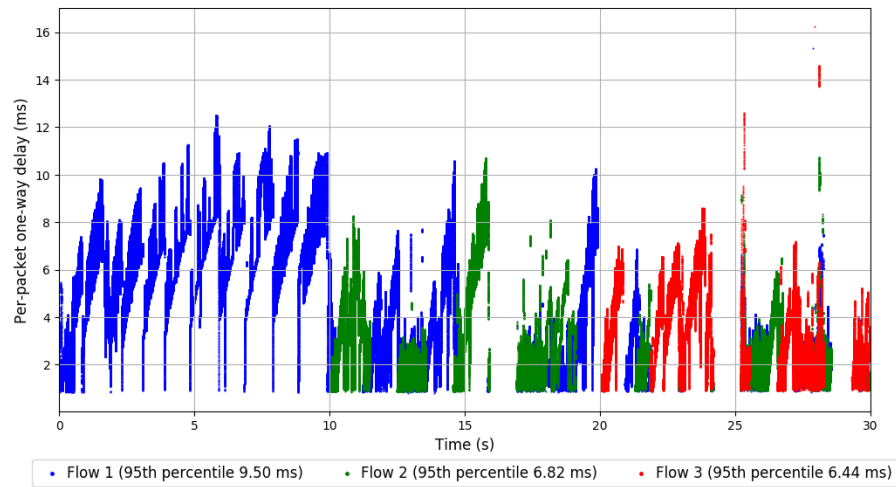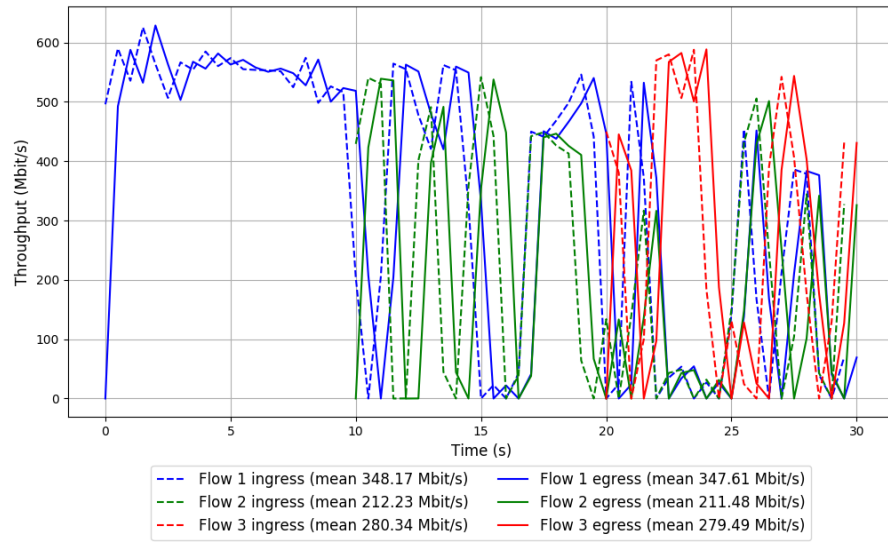
Run 2: Report of LEDBAT — Data Link

- - - - Flow 1 ingress (mean 395.11 Mbit/s) — Flow 1 egress (mean 394.51 Mbit/s)
- - - - Flow 2 ingress (mean 282.50 Mbit/s) — Flow 2 egress (mean 281.59 Mbit/s)
- - - - Flow 3 ingress (mean 261.73 Mbit/s) — Flow 3 egress (mean 260.87 Mbit/s)

- Flow 1 (95th percentile 10.36 ms)   • Flow 2 (95th percentile 6.10 ms)   • Flow 3 (95th percentile 5.42 ms)
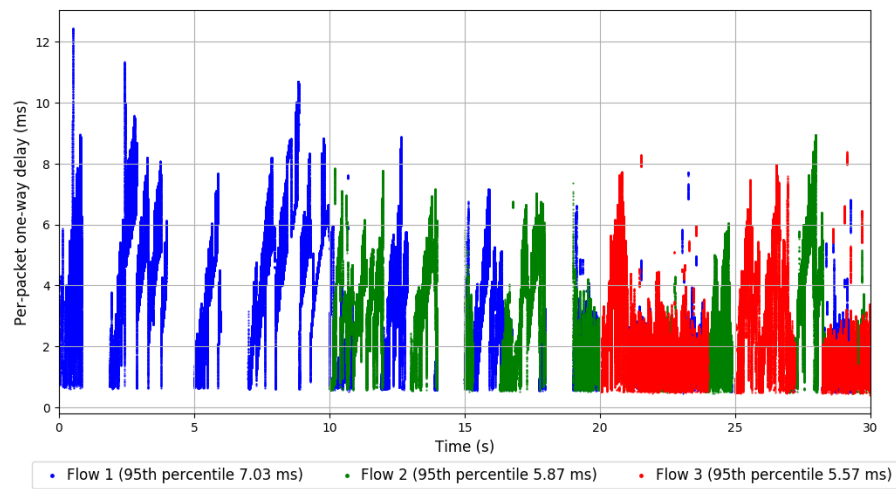
```
Run 3: Statistics of LEDBAT

Start at: 2019-02-20 01:44:51
End at: 2019-02-20 01:45:21
Local clock offset: 0.211 ms
Remote clock offset: -2.075 ms


# Below is generated by plot.py at 2019-02-20 03:34:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 578.12 Mbit/s
95th percentile per-packet one-way delay: 8.539 ms
Loss rate: 0.23%
-- Flow 1:
Average throughput: 347.61 Mbit/s
95th percentile per-packet one-way delay: 9.499 ms
Loss rate: 0.16%
-- Flow 2:
Average throughput: 211.48 Mbit/s
95th percentile per-packet one-way delay: 6.820 ms
Loss rate: 0.36%
-- Flow 3:
Average throughput: 279.49 Mbit/s
95th percentile per-packet one-way delay: 6.436 ms
Loss rate: 0.30%
```

Run 3: Report of LEDBAT — Data Link

```
Run 4: Statistics of LEDBAT

Start at: 2019-02-20 02:14:43
End at: 2019-02-20 02:15:13
Local clock offset: -2.659 ms
Remote clock offset: -1.765 ms


# Below is generated by plot.py at 2019-02-20 03:36:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 520.94 Mbit/s
95th percentile per-packet one-way delay: 6.471 ms
Loss rate: 0.25%
-- Flow 1:
Average throughput: 244.15 Mbit/s
95th percentile per-packet one-way delay: 7.029 ms
Loss rate: 0.23%
-- Flow 2:
Average throughput: 230.79 Mbit/s
95th percentile per-packet one-way delay: 5.866 ms
Loss rate: 0.31%
-- Flow 3:
Average throughput: 386.94 Mbit/s
95th percentile per-packet one-way delay: 5.574 ms
Loss rate: 0.23%
```
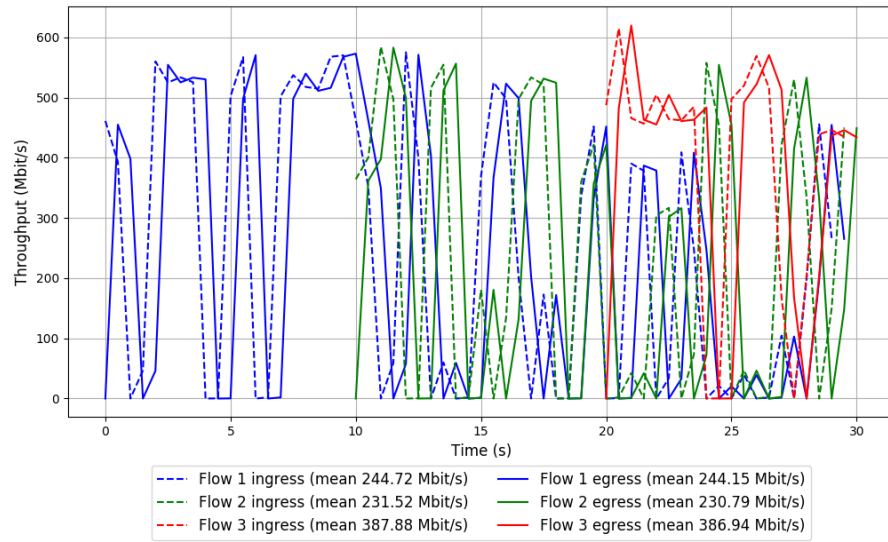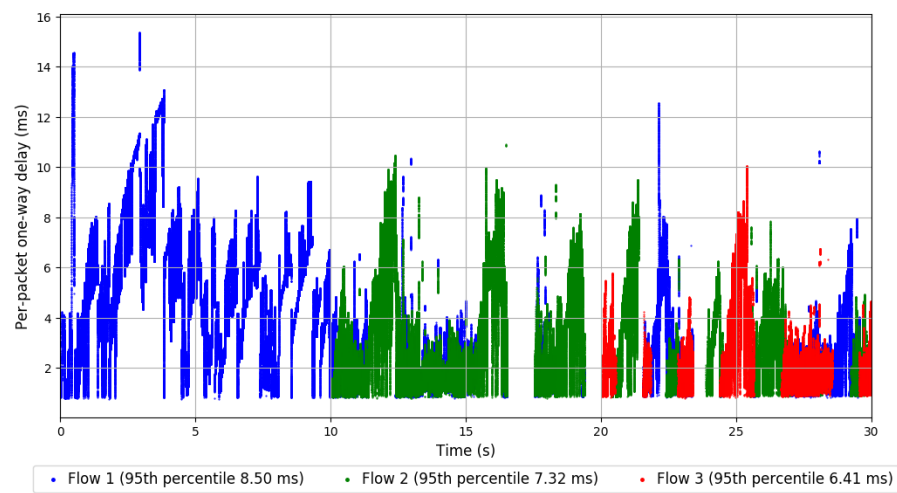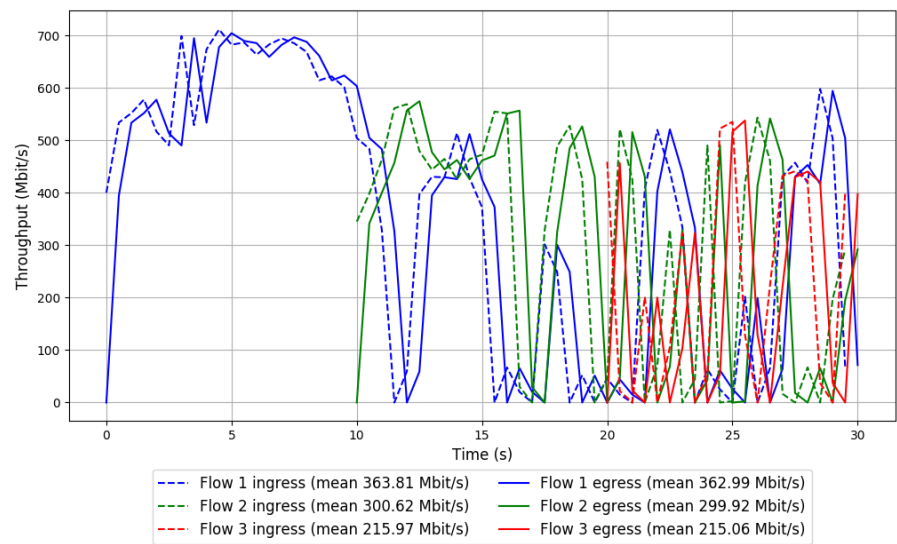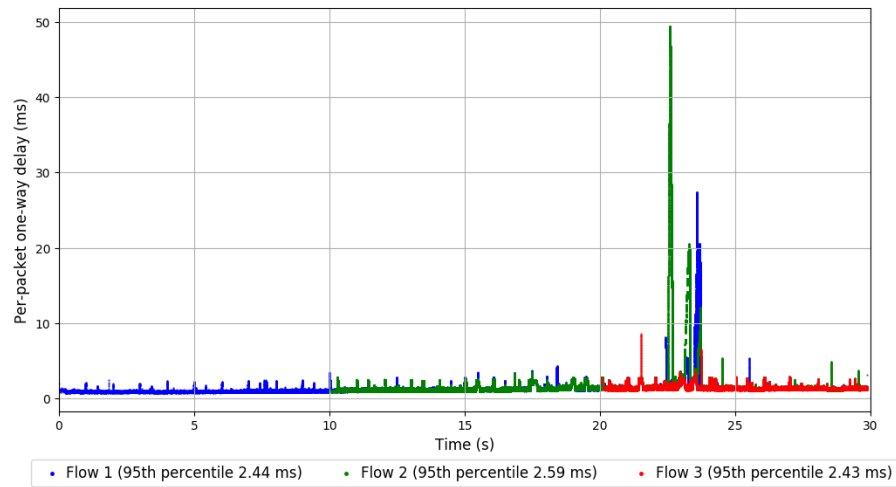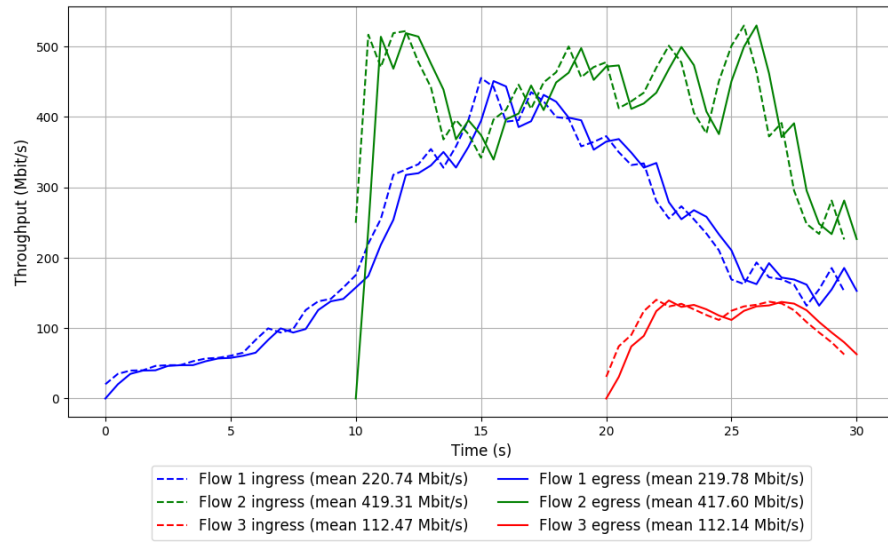
Run 4: Report of LEDBAT — Data Link

- - - Flow 1 ingress (mean 244.72 Mbit/s) ——— Flow 1 egress (mean 244.15 Mbit/s)
- - - Flow 2 ingress (mean 231.52 Mbit/s) ——— Flow 2 egress (mean 230.79 Mbit/s)
- - - Flow 3 ingress (mean 387.88 Mbit/s) ——— Flow 3 egress (mean 386.94 Mbit/s)

• Flow 1 (95th percentile 7.03 ms)　　• Flow 2 (95th percentile 5.87 ms)　　• Flow 3 (95th percentile 5.57 ms)

```
Run 5: Statistics of LEDBAT

Start at: 2019-02-20 02:44:34
End at: 2019-02-20 02:45:04
Local clock offset: -0.208 ms
Remote clock offset: 0.524 ms


# Below is generated by plot.py at 2019-02-20 03:38:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 627.77 Mbit/s
95th percentile per-packet one-way delay: 7.759 ms
Loss rate: 0.25%
-- Flow 1:
Average throughput: 362.99 Mbit/s
95th percentile per-packet one-way delay: 8.502 ms
Loss rate: 0.22%
-- Flow 2:
Average throughput: 299.92 Mbit/s
95th percentile per-packet one-way delay: 7.323 ms
Loss rate: 0.23%
-- Flow 3:
Average throughput: 215.06 Mbit/s
95th percentile per-packet one-way delay: 6.409 ms
Loss rate: 0.42%
```
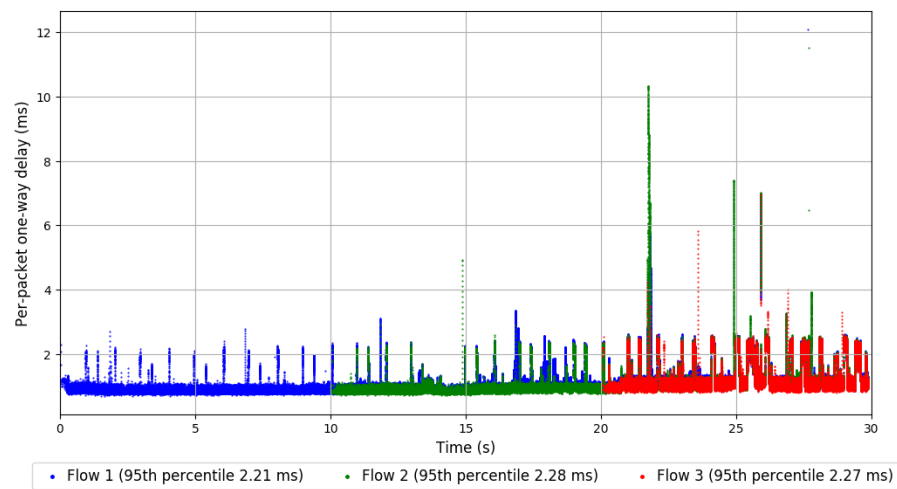
Run 5: Report of LEDBAT — Data Link

```
Run 1: Statistics of PCC-Allegro

Start at: 2019-02-20 00:29:44
End at: 2019-02-20 00:30:14
Local clock offset: -4.259 ms
Remote clock offset: -1.022 ms


# Below is generated by plot.py at 2019-02-20 03:38:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 534.42 Mbit/s
95th percentile per-packet one-way delay: 2.512 ms
Loss rate: 0.41%
-- Flow 1:
Average throughput: 219.78 Mbit/s
95th percentile per-packet one-way delay: 2.436 ms
Loss rate: 0.44%
-- Flow 2:
Average throughput: 417.60 Mbit/s
95th percentile per-packet one-way delay: 2.587 ms
Loss rate: 0.40%
-- Flow 3:
Average throughput: 112.14 Mbit/s
95th percentile per-packet one-way delay: 2.429 ms
Loss rate: 0.31%
```

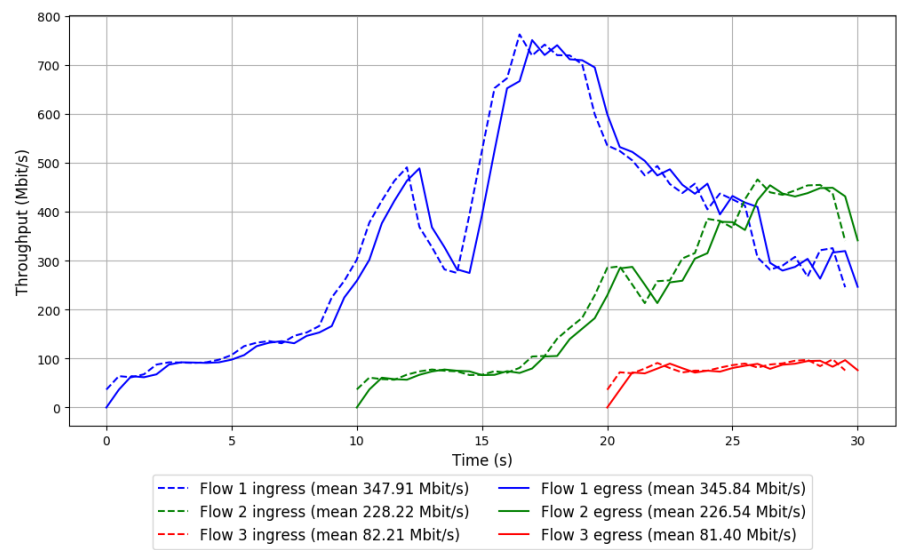Run 1: Report of PCC-Allegro — Data Link

```
Run 2: Statistics of PCC-Allegro

Start at: 2019-02-20 00:59:31
End at: 2019-02-20 01:00:01
Local clock offset: 0.33 ms
Remote clock offset: -3.762 ms


# Below is generated by plot.py at 2019-02-20 03:38:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 523.24 Mbit/s
95th percentile per-packet one-way delay: 2.242 ms
Loss rate: 0.66%
-- Flow 1:
Average throughput: 345.84 Mbit/s
95th percentile per-packet one-way delay: 2.206 ms
Loss rate: 0.60%
-- Flow 2:
Average throughput: 226.54 Mbit/s
95th percentile per-packet one-way delay: 2.283 ms
Loss rate: 0.74%
-- Flow 3:
Average throughput: 81.40 Mbit/s
95th percentile per-packet one-way delay: 2.271 ms
Loss rate: 0.98%
```
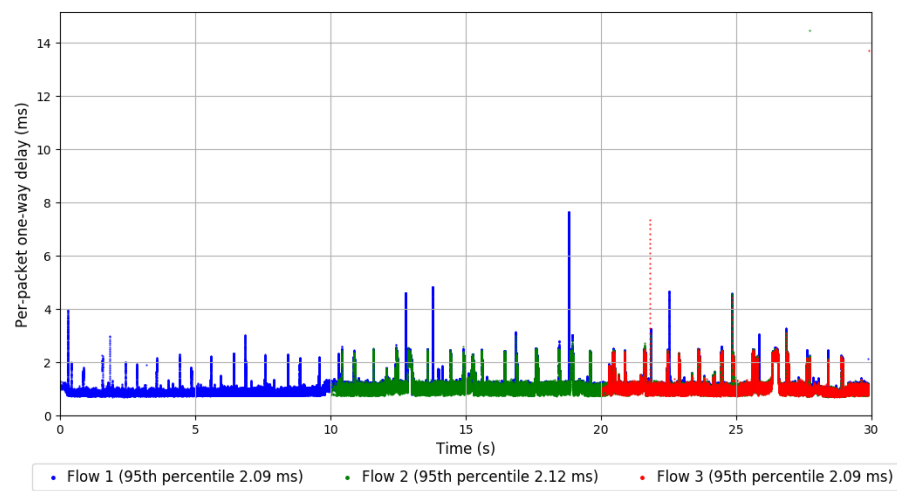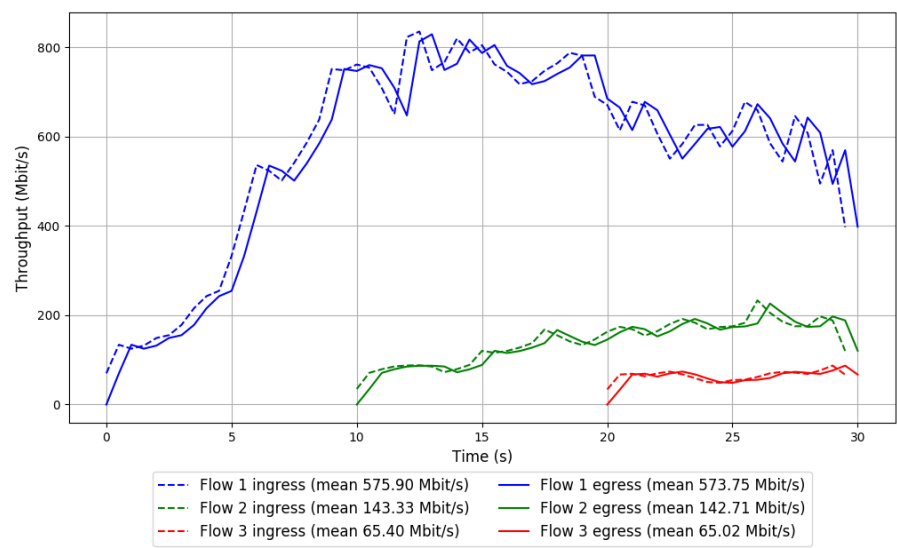
Run 2: Report of PCC-Allegro — Data Link

```
Run 3: Statistics of PCC-Allegro

Start at: 2019-02-20 01:29:27
End at: 2019-02-20 01:29:57
Local clock offset: 0.412 ms
Remote clock offset: 0.356 ms


# Below is generated by plot.py at 2019-02-20 03:39:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 689.81 Mbit/s
95th percentile per-packet one-way delay: 2.098 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 573.75 Mbit/s
95th percentile per-packet one-way delay: 2.092 ms
Loss rate: 0.37%
-- Flow 2:
Average throughput: 142.71 Mbit/s
95th percentile per-packet one-way delay: 2.117 ms
Loss rate: 0.43%
-- Flow 3:
Average throughput: 65.02 Mbit/s
95th percentile per-packet one-way delay: 2.088 ms
Loss rate: 0.46%
```

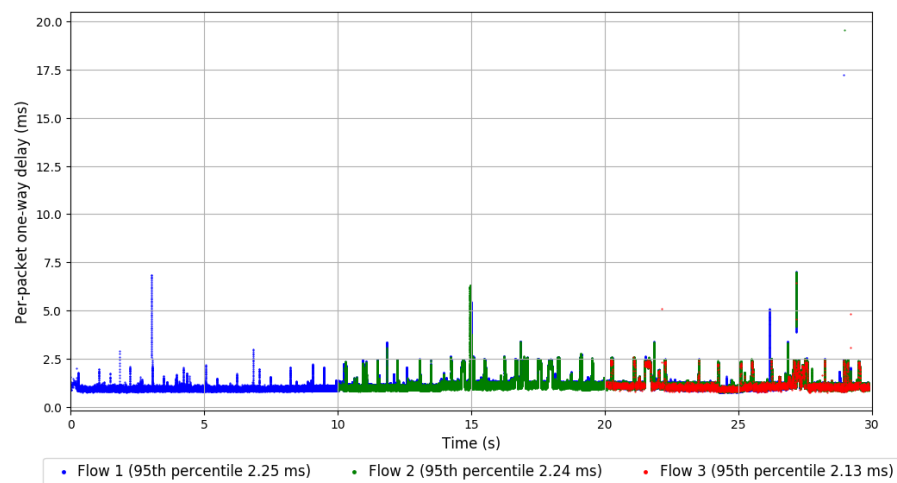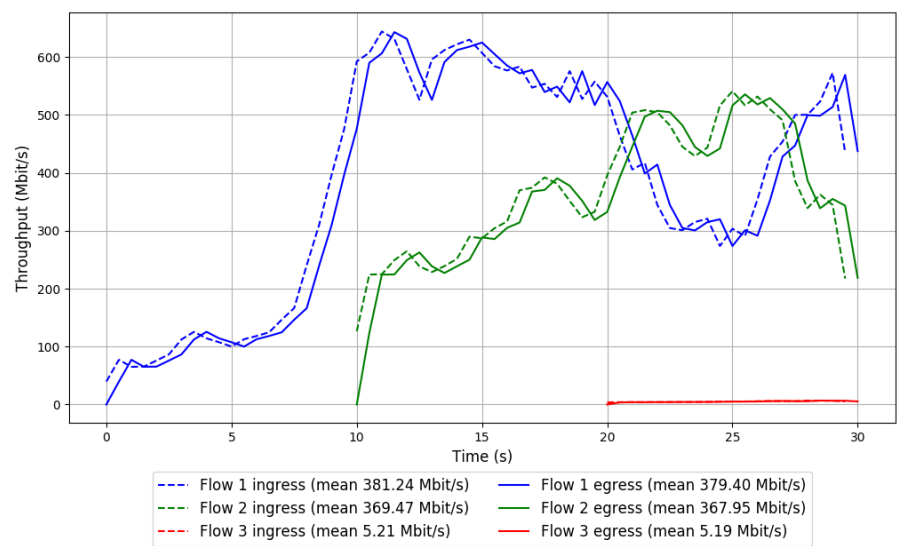Run 3: Report of PCC-Allegro — Data Link

```
Run 4: Statistics of PCC-Allegro

Start at: 2019-02-20 01:59:29
End at: 2019-02-20 01:59:59
Local clock offset: 0.276 ms
Remote clock offset: -3.281 ms


# Below is generated by plot.py at 2019-02-20 03:40:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 625.76 Mbit/s
95th percentile per-packet one-way delay: 2.243 ms
Loss rate: 0.46%
-- Flow 1:
Average throughput: 379.40 Mbit/s
95th percentile per-packet one-way delay: 2.245 ms
Loss rate: 0.48%
-- Flow 2:
Average throughput: 367.95 Mbit/s
95th percentile per-packet one-way delay: 2.242 ms
Loss rate: 0.41%
-- Flow 3:
Average throughput: 5.19 Mbit/s
95th percentile per-packet one-way delay: 2.135 ms
Loss rate: 0.38%
```

Run 4: Report of PCC-Allegro — Data Link

```
Run 5: Statistics of PCC-Allegro

Start at: 2019-02-20 02:29:14
End at: 2019-02-20 02:29:44
Local clock offset: -3.56 ms
Remote clock offset: 0.054 ms


# Below is generated by plot.py at 2019-02-20 03:40:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 571.68 Mbit/s
95th percentile per-packet one-way delay: 1.638 ms
Loss rate: 0.29%
-- Flow 1:
Average throughput: 450.77 Mbit/s
95th percentile per-packet one-way delay: 1.615 ms
Loss rate: 0.29%
-- Flow 2:
Average throughput: 179.85 Mbit/s
95th percentile per-packet one-way delay: 1.720 ms
Loss rate: 0.31%
-- Flow 3:
Average throughput: 4.14 Mbit/s
95th percentile per-packet one-way delay: 1.096 ms
Loss rate: 0.12%
```
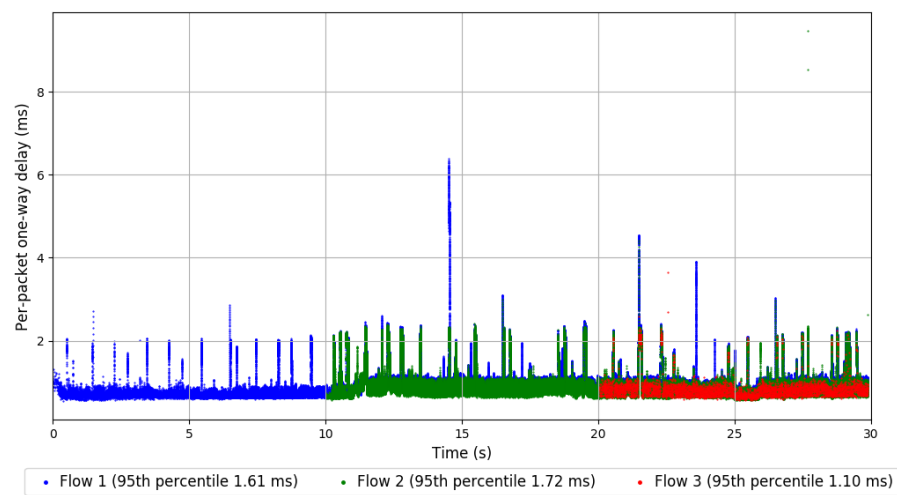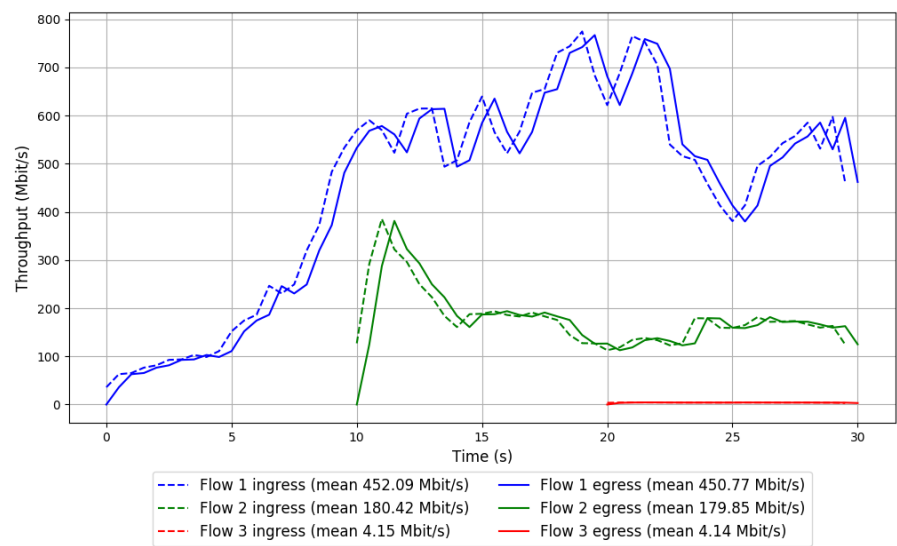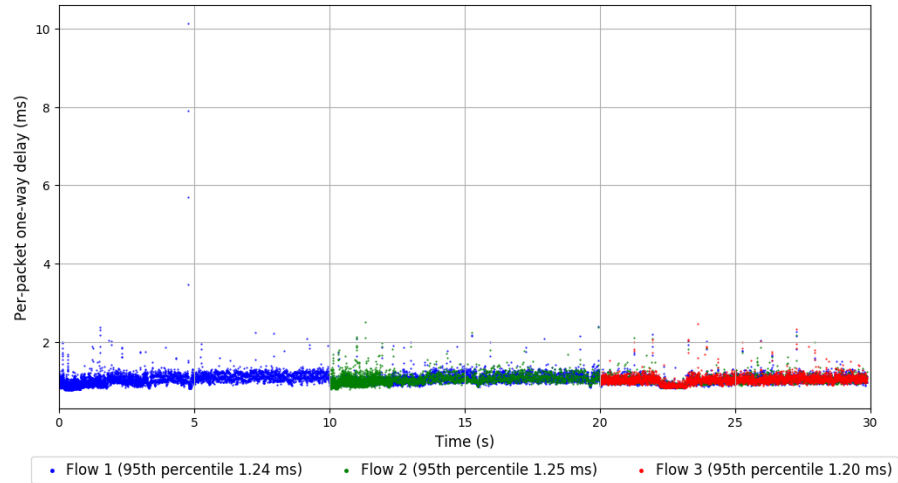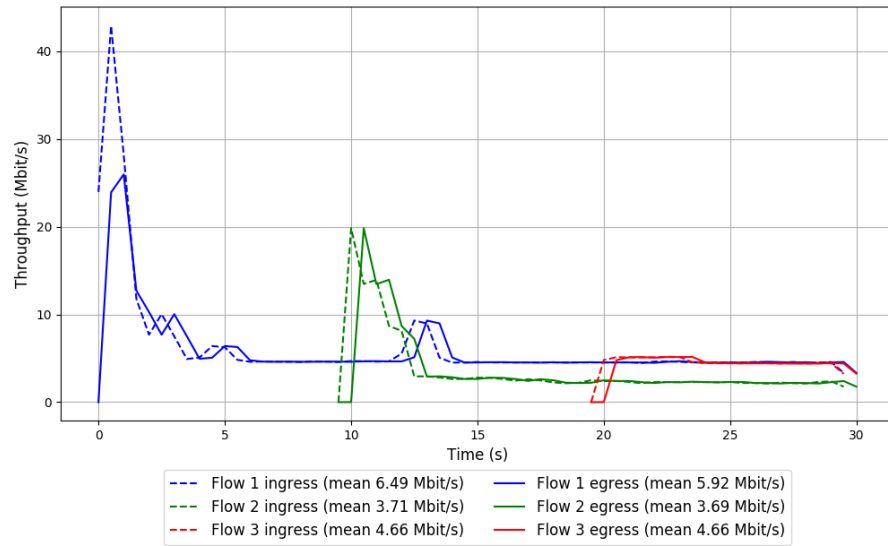
Run 5: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 452.09 Mbit/s) --- Flow 1 egress (mean 450.77 Mbit/s)
Flow 2 ingress (mean 180.42 Mbit/s) --- Flow 2 egress (mean 179.85 Mbit/s)
Flow 3 ingress (mean 4.15 Mbit/s) --- Flow 3 egress (mean 4.14 Mbit/s)

Flow 1 (95th percentile 1.61 ms)   Flow 2 (95th percentile 1.72 ms)   Flow 3 (95th percentile 1.10 ms)

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```
Run 1: Statistics of PCC-Expr

Start at: 2019-02-20 00:48:15
End at: 2019-02-20 00:48:45
Local clock offset: -0.178 ms
Remote clock offset: -3.309 ms

# Below is generated by plot.py at 2019-02-20 03:40:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 9.92 Mbit/s
95th percentile per-packet one-way delay: 1.235 ms
Loss rate: 5.62%
-- Flow 1:
Average throughput: 5.92 Mbit/s
95th percentile per-packet one-way delay: 1.238 ms
Loss rate: 8.86%
-- Flow 2:
Average throughput: 3.69 Mbit/s
95th percentile per-packet one-way delay: 1.245 ms
Loss rate: 0.63%
-- Flow 3:
Average throughput: 4.66 Mbit/s
95th percentile per-packet one-way delay: 1.195 ms
Loss rate: 0.00%
```
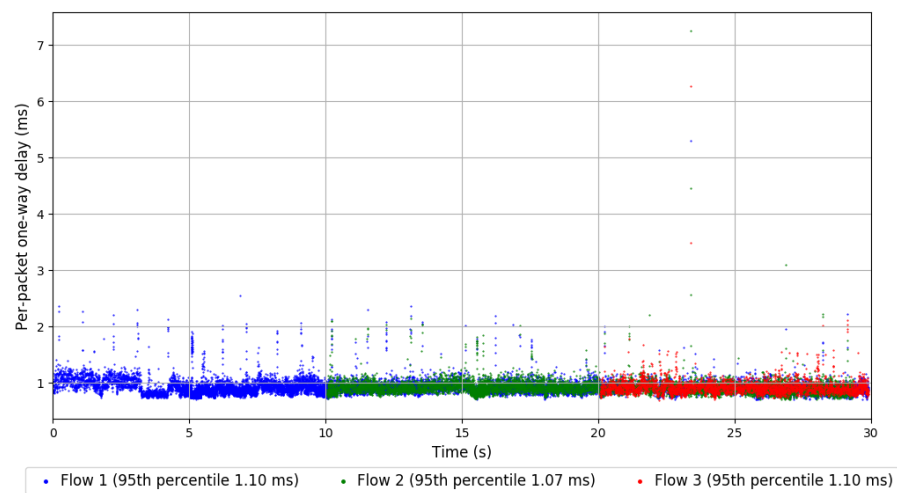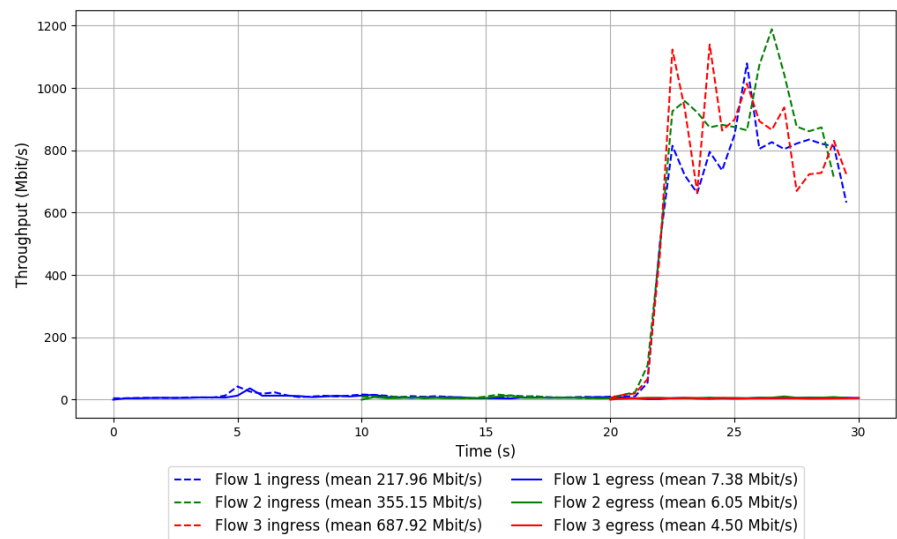
Run 1: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 6.49 Mbit/s) Flow 1 egress (mean 5.92 Mbit/s)
Flow 2 ingress (mean 3.71 Mbit/s) Flow 2 egress (mean 3.69 Mbit/s)
Flow 3 ingress (mean 4.66 Mbit/s) Flow 3 egress (mean 4.66 Mbit/s)

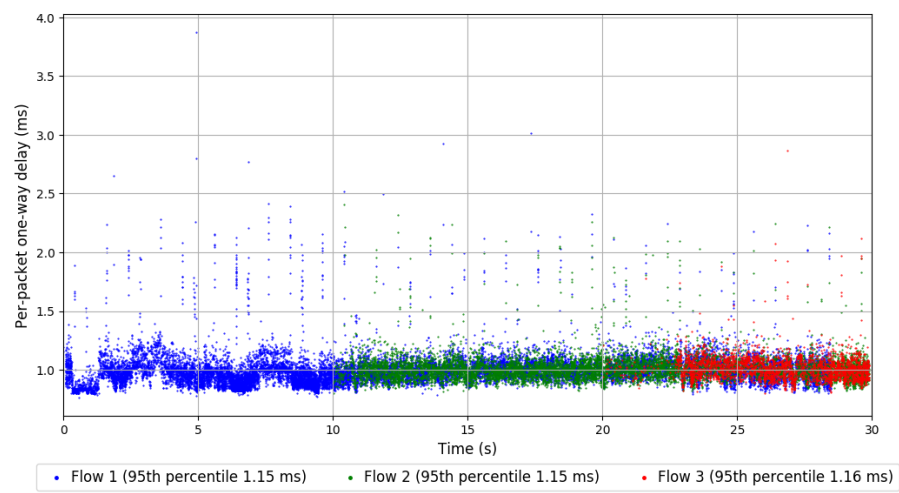Flow 1 (95th percentile 1.24 ms) Flow 2 (95th percentile 1.25 ms) Flow 3 (95th percentile 1.20 ms)

```
Run 2: Statistics of PCC-Expr

Start at: 2019-02-20 01:18:04
End at: 2019-02-20 01:18:34
Local clock offset: 0.287 ms
Remote clock offset: -0.293 ms


# Below is generated by plot.py at 2019-02-20 03:40:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.77 Mbit/s
95th percentile per-packet one-way delay: 1.088 ms
Loss rate: 98.11%
-- Flow 1:
Average throughput: 7.38 Mbit/s
95th percentile per-packet one-way delay: 1.096 ms
Loss rate: 96.62%
-- Flow 2:
Average throughput: 6.05 Mbit/s
95th percentile per-packet one-way delay: 1.067 ms
Loss rate: 98.30%
-- Flow 3:
Average throughput: 4.50 Mbit/s
95th percentile per-packet one-way delay: 1.099 ms
Loss rate: 99.35%
```
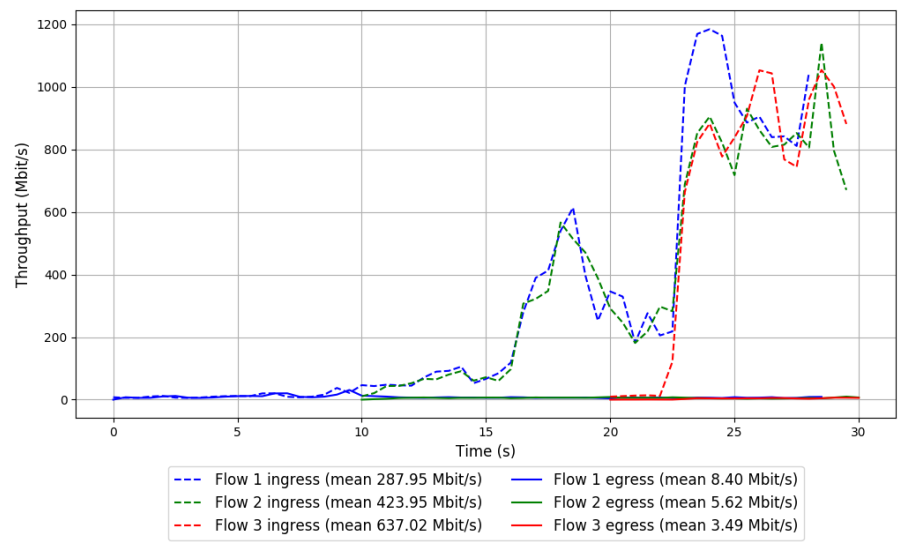
Run 2: Report of PCC-Expr — Data Link

```
Run 3: Statistics of PCC-Expr

Start at: 2019-02-20 01:48:06
End at: 2019-02-20 01:48:36
Local clock offset: 0.209 ms
Remote clock offset: -2.524 ms


# Below is generated by plot.py at 2019-02-20 03:40:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.88 Mbit/s
95th percentile per-packet one-way delay: 1.151 ms
Loss rate: 98.32%
-- Flow 1:
Average throughput: 8.40 Mbit/s
95th percentile per-packet one-way delay: 1.153 ms
Loss rate: 97.08%
-- Flow 2:
Average throughput: 5.62 Mbit/s
95th percentile per-packet one-way delay: 1.146 ms
Loss rate: 98.68%
-- Flow 3:
Average throughput: 3.49 Mbit/s
95th percentile per-packet one-way delay: 1.155 ms
Loss rate: 99.45%
```

Run 3: Report of PCC-Expr — Data Link

```
Run 4: Statistics of PCC-Expr

Start at: 2019-02-20 02:17:53
End at: 2019-02-20 02:18:23
Local clock offset: -2.938 ms
Remote clock offset: -1.049 ms


# Below is generated by plot.py at 2019-02-20 03:40:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 10.79 Mbit/s
95th percentile per-packet one-way delay: 1.106 ms
Loss rate: 98.54%
-- Flow 1:
Average throughput: 5.48 Mbit/s
95th percentile per-packet one-way delay: 1.151 ms
Loss rate: 97.81%
-- Flow 2:
Average throughput: 4.67 Mbit/s
95th percentile per-packet one-way delay: 1.047 ms
Loss rate: 98.67%
-- Flow 3:
Average throughput: 6.82 Mbit/s
95th percentile per-packet one-way delay: 0.939 ms
Loss rate: 99.13%
```
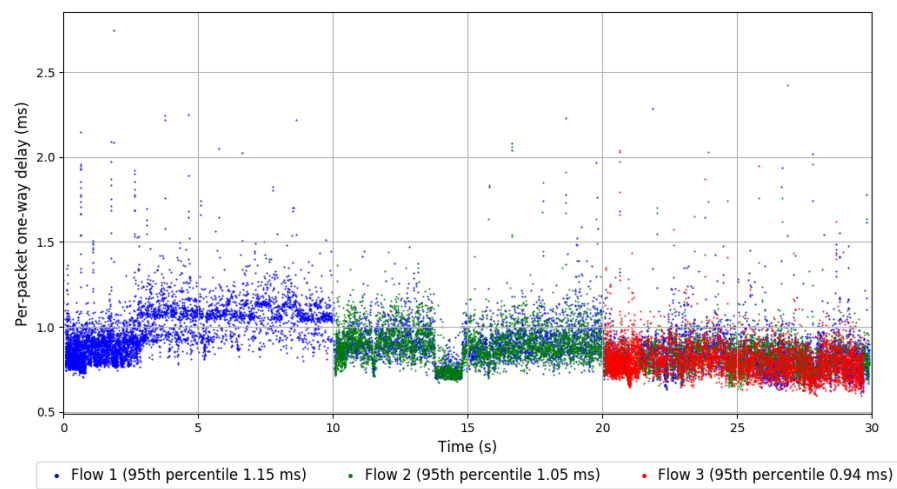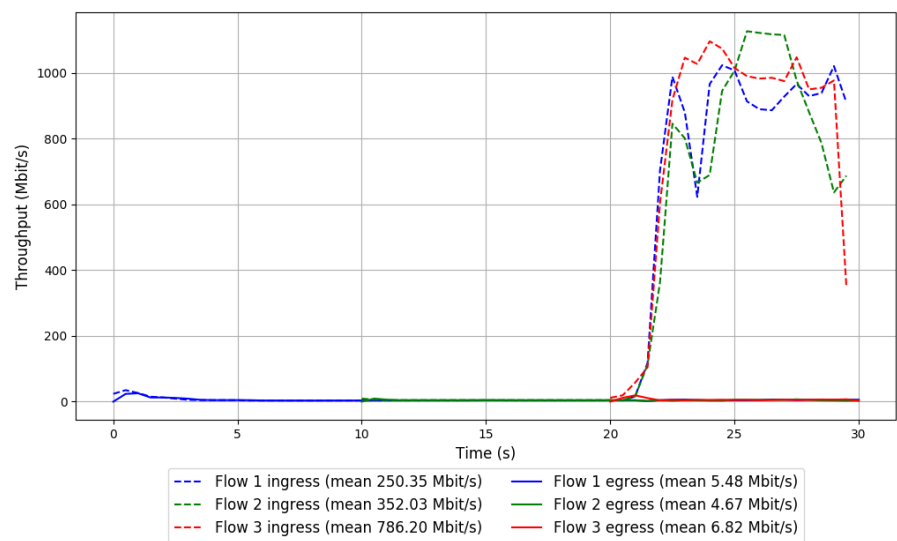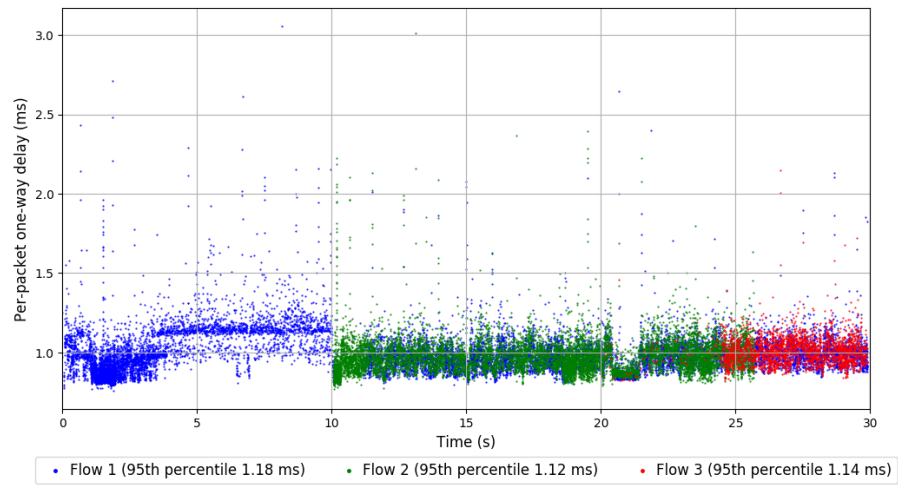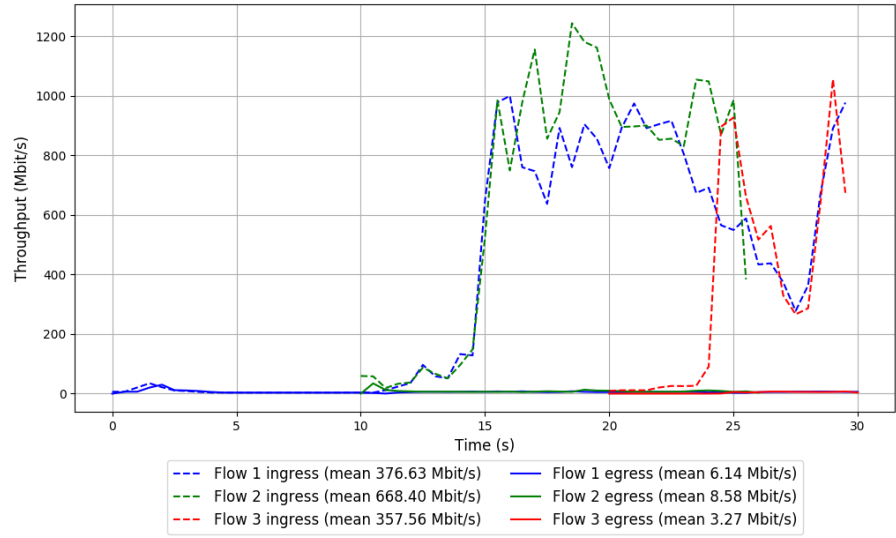
Run 4: Report of PCC-Expr — Data Link

```
Run 5: Statistics of PCC-Expr

Start at: 2019-02-20 02:47:46
End at: 2019-02-20 02:48:16
Local clock offset: 0.078 ms
Remote clock offset: 0.34 ms


# Below is generated by plot.py at 2019-02-20 03:40:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 11.72 Mbit/s
95th percentile per-packet one-way delay: 1.161 ms
Loss rate: 98.61%
-- Flow 1:
Average throughput: 6.14 Mbit/s
95th percentile per-packet one-way delay: 1.183 ms
Loss rate: 98.37%
-- Flow 2:
Average throughput: 8.58 Mbit/s
95th percentile per-packet one-way delay: 1.125 ms
Loss rate: 98.72%
-- Flow 3:
Average throughput: 3.27 Mbit/s
95th percentile per-packet one-way delay: 1.143 ms
Loss rate: 99.09%
```
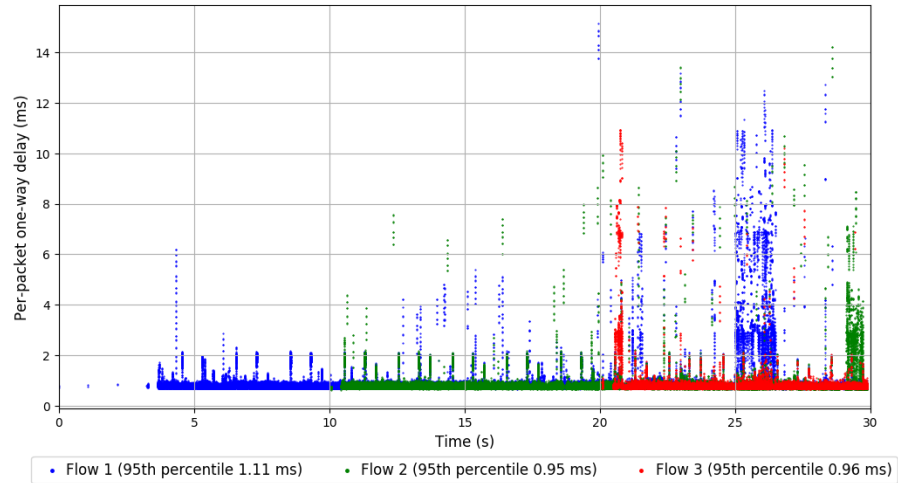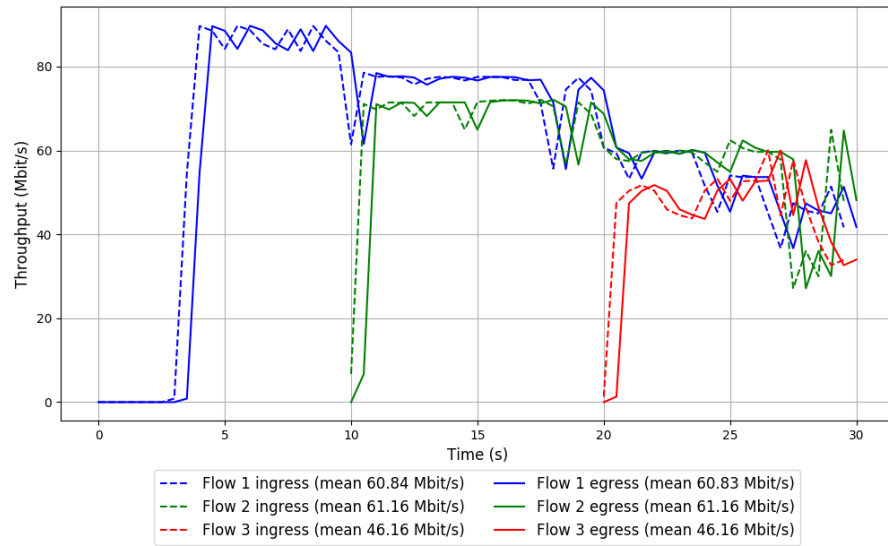
Run 5: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 376.63 Mbit/s) --- Flow 1 egress (mean 6.14 Mbit/s)
Flow 2 ingress (mean 668.40 Mbit/s) --- Flow 2 egress (mean 8.58 Mbit/s)
Flow 3 ingress (mean 357.56 Mbit/s) --- Flow 3 egress (mean 3.27 Mbit/s)

Flow 1 (95th percentile 1.18 ms) Flow 2 (95th percentile 1.12 ms) Flow 3 (95th percentile 1.14 ms)

```
Run 1: Statistics of QUIC Cubic

Start at: 2019-02-20 00:25:40
End at: 2019-02-20 00:26:10
Local clock offset: -3.989 ms
Remote clock offset: 0.018 ms


# Below is generated by plot.py at 2019-02-20 03:40:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 116.61 Mbit/s
95th percentile per-packet one-way delay: 0.999 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 60.83 Mbit/s
95th percentile per-packet one-way delay: 1.112 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 61.16 Mbit/s
95th percentile per-packet one-way delay: 0.950 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 46.16 Mbit/s
95th percentile per-packet one-way delay: 0.959 ms
Loss rate: 0.00%
```

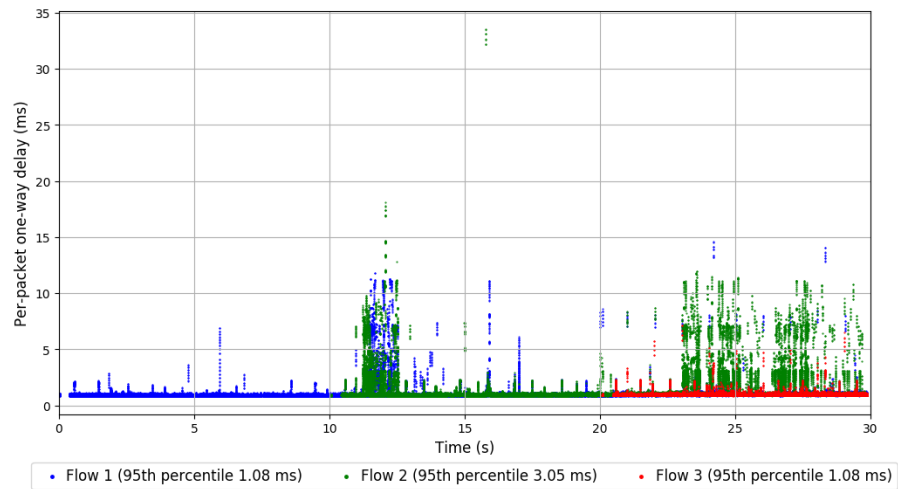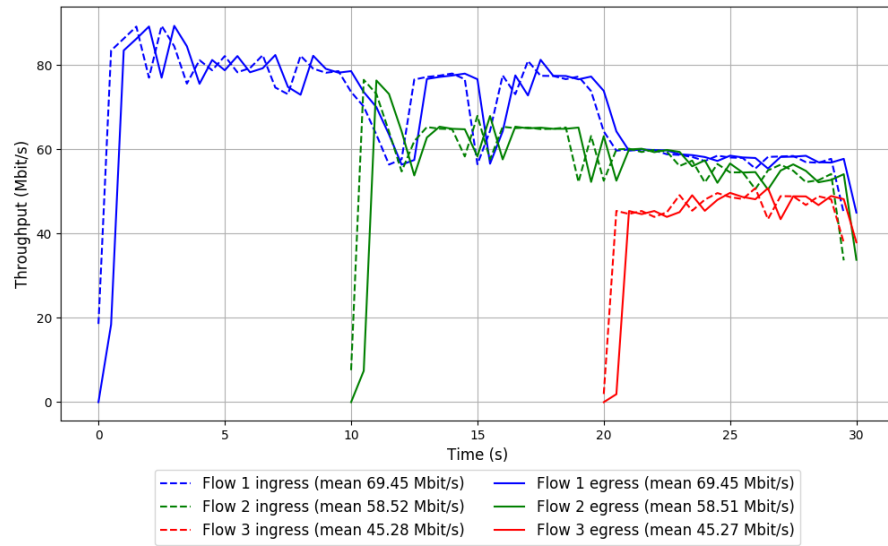Run 1: Report of QUIC Cubic — Data Link

```
Run 2: Statistics of QUIC Cubic

Start at: 2019-02-20 00:55:26
End at: 2019-02-20 00:55:56
Local clock offset: 0.187 ms
Remote clock offset: -3.558 ms


# Below is generated by plot.py at 2019-02-20 03:40:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 123.03 Mbit/s
95th percentile per-packet one-way delay: 1.339 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 69.45 Mbit/s
95th percentile per-packet one-way delay: 1.079 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 58.51 Mbit/s
95th percentile per-packet one-way delay: 3.049 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 45.27 Mbit/s
95th percentile per-packet one-way delay: 1.082 ms
Loss rate: 0.02%
```
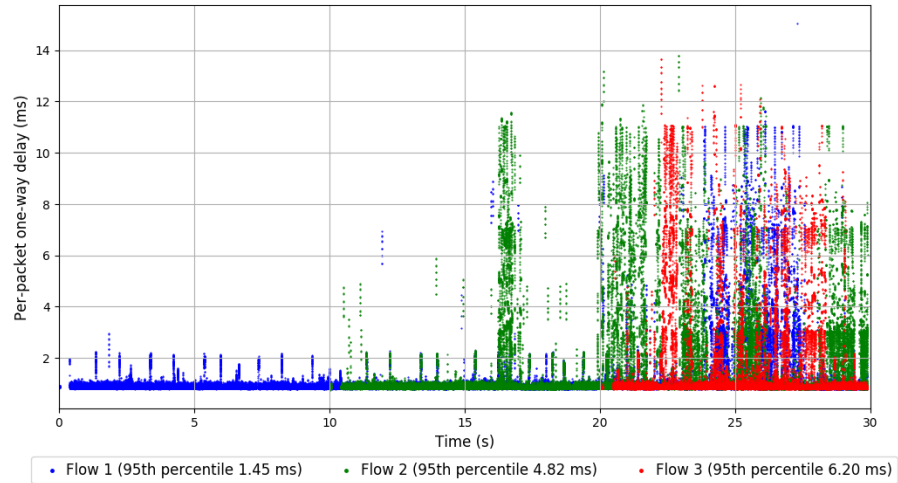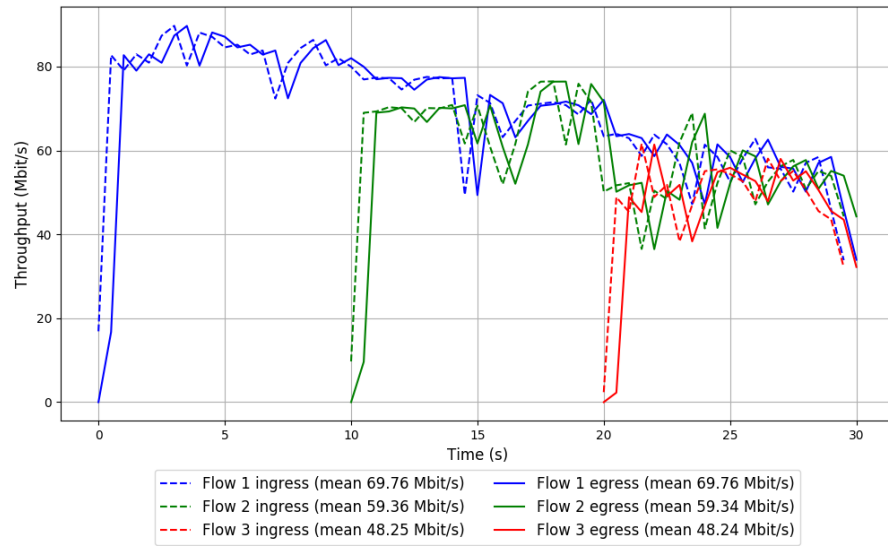
Run 2: Report of QUIC Cubic — Data Link

```
Run 3: Statistics of QUIC Cubic

Start at: 2019-02-20 01:25:21
End at: 2019-02-20 01:25:51
Local clock offset: 0.358 ms
Remote clock offset: 0.223 ms


# Below is generated by plot.py at 2019-02-20 03:40:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 125.03 Mbit/s
95th percentile per-packet one-way delay: 3.065 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 69.76 Mbit/s
95th percentile per-packet one-way delay: 1.452 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 59.34 Mbit/s
95th percentile per-packet one-way delay: 4.821 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 48.24 Mbit/s
95th percentile per-packet one-way delay: 6.201 ms
Loss rate: 0.02%
```
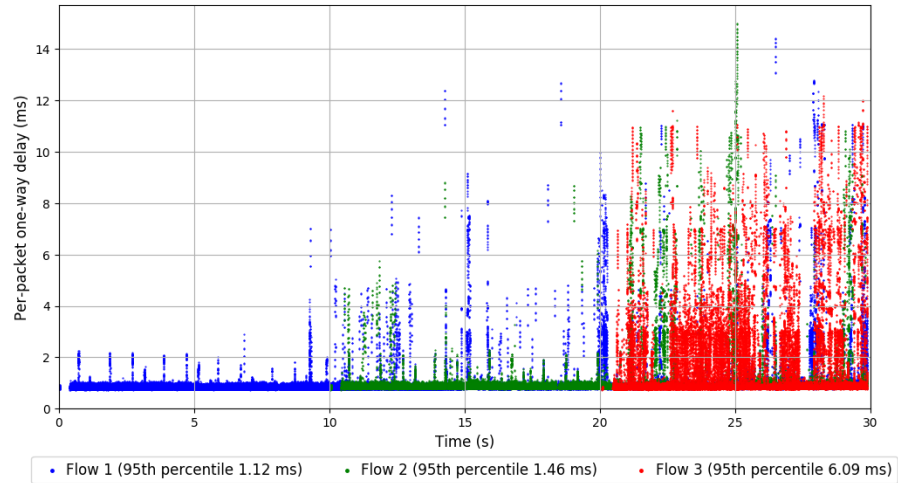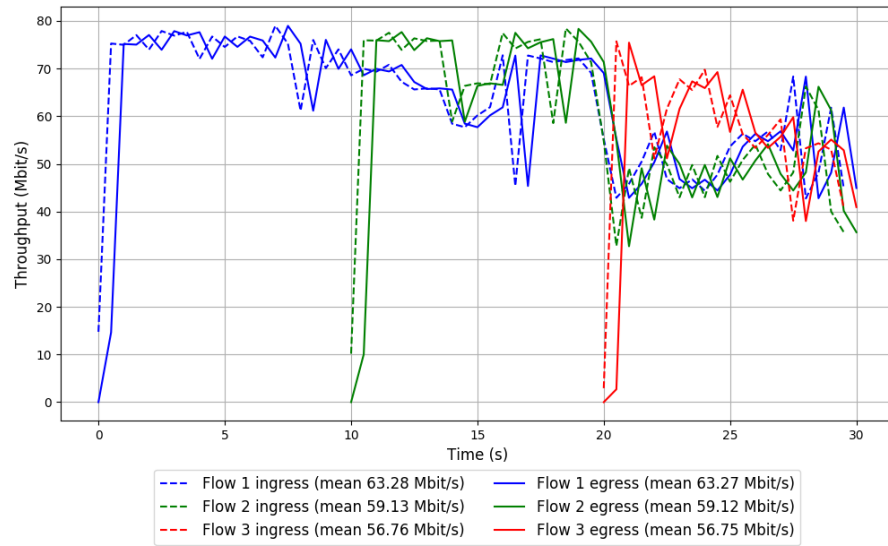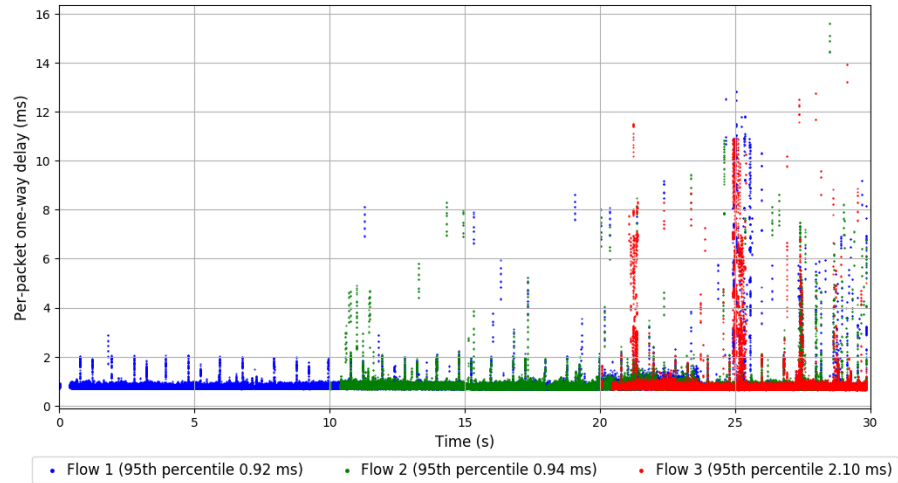
Run 3: Report of QUIC Cubic — Data Link

- - - Flow 1 ingress (mean 69.76 Mbit/s)   —— Flow 1 egress (mean 69.76 Mbit/s)
- - - Flow 2 ingress (mean 59.36 Mbit/s)   —— Flow 2 egress (mean 59.34 Mbit/s)
- - - Flow 3 ingress (mean 48.25 Mbit/s)   —— Flow 3 egress (mean 48.24 Mbit/s)

- Flow 1 (95th percentile 1.45 ms)   • Flow 2 (95th percentile 4.82 ms)   • Flow 3 (95th percentile 6.20 ms)

```
Run 4: Statistics of QUIC Cubic

Start at: 2019-02-20 01:55:23
End at: 2019-02-20 01:55:53
Local clock offset: 0.237 ms
Remote clock offset: -3.152 ms


# Below is generated by plot.py at 2019-02-20 03:40:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 121.20 Mbit/s
95th percentile per-packet one-way delay: 2.620 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 63.27 Mbit/s
95th percentile per-packet one-way delay: 1.125 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 59.12 Mbit/s
95th percentile per-packet one-way delay: 1.456 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 56.75 Mbit/s
95th percentile per-packet one-way delay: 6.090 ms
Loss rate: 0.01%
```
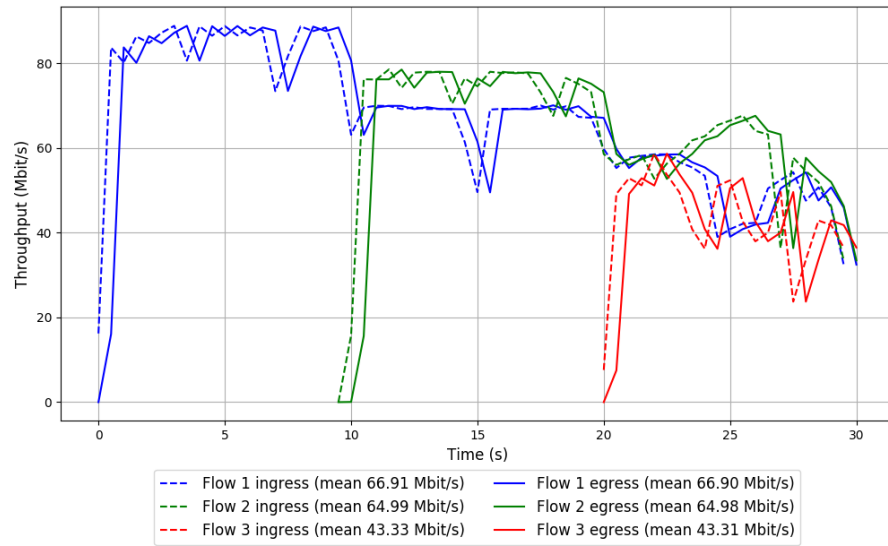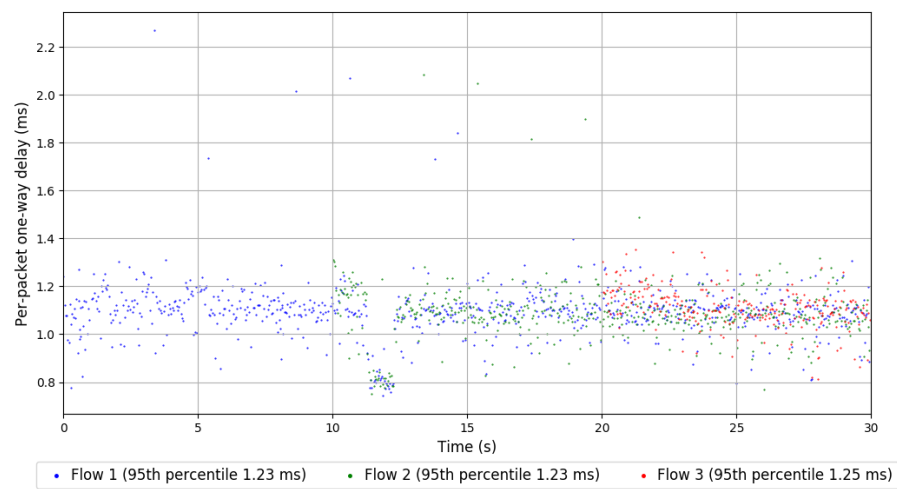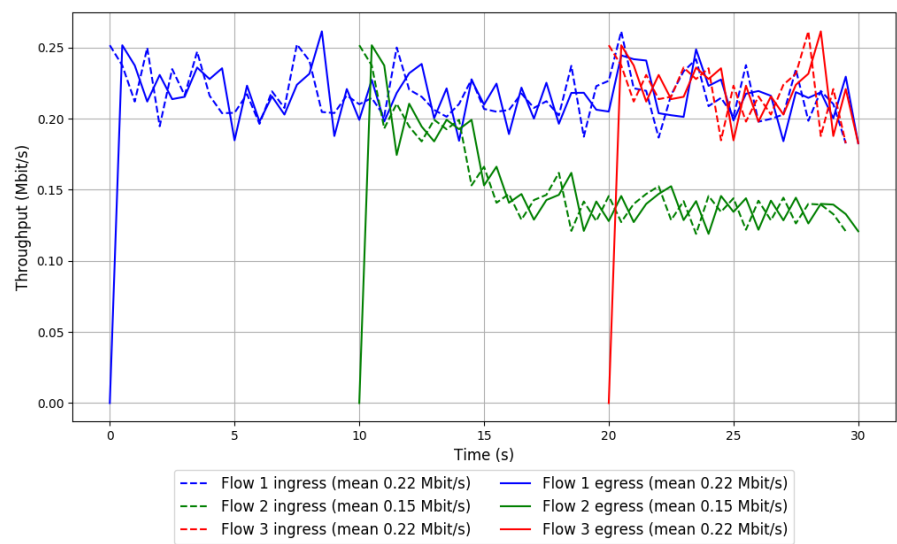
Run 4: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 63.28 Mbit/s) — — — Flow 1 egress (mean 63.27 Mbit/s)
Flow 2 ingress (mean 59.13 Mbit/s) — — — Flow 2 egress (mean 59.12 Mbit/s)
Flow 3 ingress (mean 56.76 Mbit/s) — — — Flow 3 egress (mean 56.75 Mbit/s)

Flow 1 (95th percentile 1.12 ms)   Flow 2 (95th percentile 1.46 ms)   Flow 3 (95th percentile 6.09 ms)

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```
Run 5: Statistics of QUIC Cubic

Start at: 2019-02-20 02:25:09
End at: 2019-02-20 02:25:39
Local clock offset: -3.413 ms
Remote clock offset: -0.203 ms


# Below is generated by plot.py at 2019-02-20 03:41:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 124.37 Mbit/s
95th percentile per-packet one-way delay: 0.939 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 66.90 Mbit/s
95th percentile per-packet one-way delay: 0.916 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 64.98 Mbit/s
95th percentile per-packet one-way delay: 0.942 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 43.31 Mbit/s
95th percentile per-packet one-way delay: 2.099 ms
Loss rate: 0.00%
```

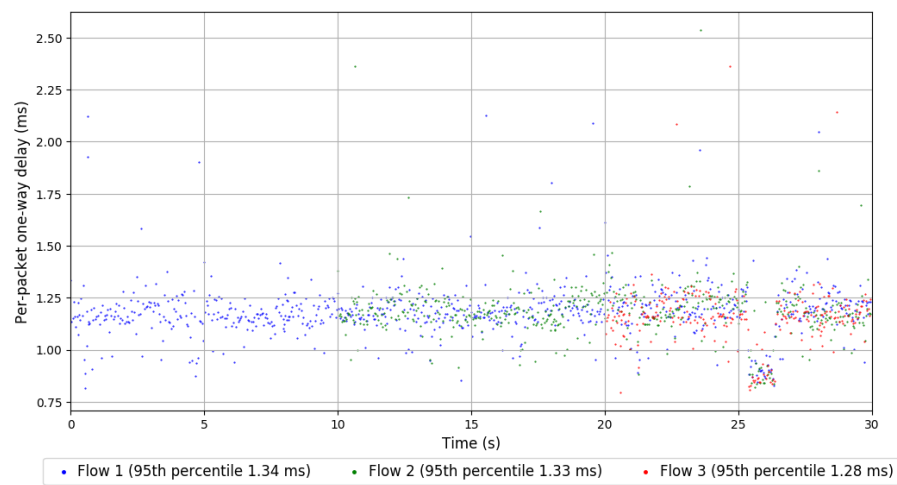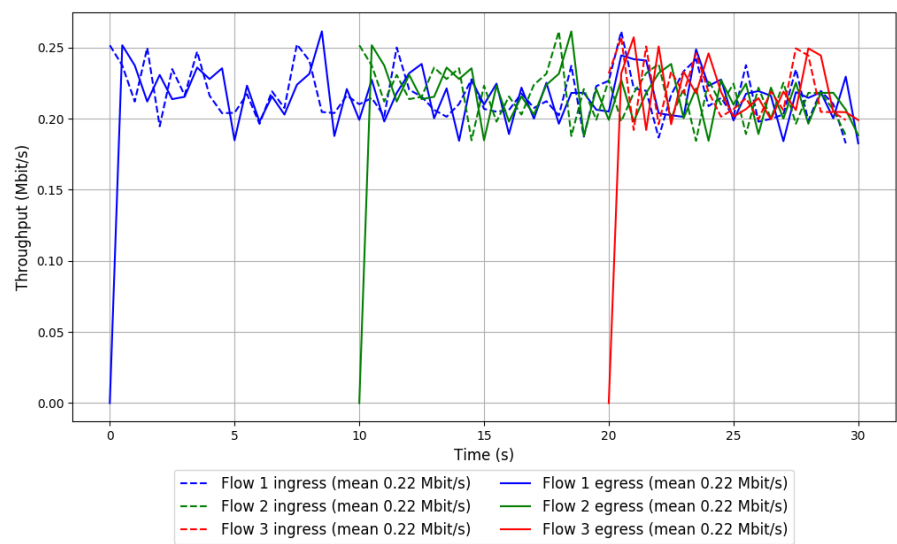# Run 5: Report of QUIC Cubic — Data Link

```
Run 1: Statistics of SCReAM

Start at: 2019-02-20 00:24:26
End at: 2019-02-20 00:24:56
Local clock offset: -3.907 ms
Remote clock offset: 0.051 ms

# Below is generated by plot.py at 2019-02-20 03:41:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.39 Mbit/s
95th percentile per-packet one-way delay: 1.236 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.232 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 1.233 ms
Loss rate: 0.30%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.250 ms
Loss rate: 0.00%
```

Run 1: Report of SCReAM — Data Link

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```
Run 2: Statistics of SCReAM

Start at: 2019-02-20 00:54:12
End at: 2019-02-20 00:54:42
Local clock offset: 0.142 ms
Remote clock offset: -3.577 ms


# Below is generated by plot.py at 2019-02-20 03:41:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 1.327 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.343 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.329 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.283 ms
Loss rate: 0.00%
```
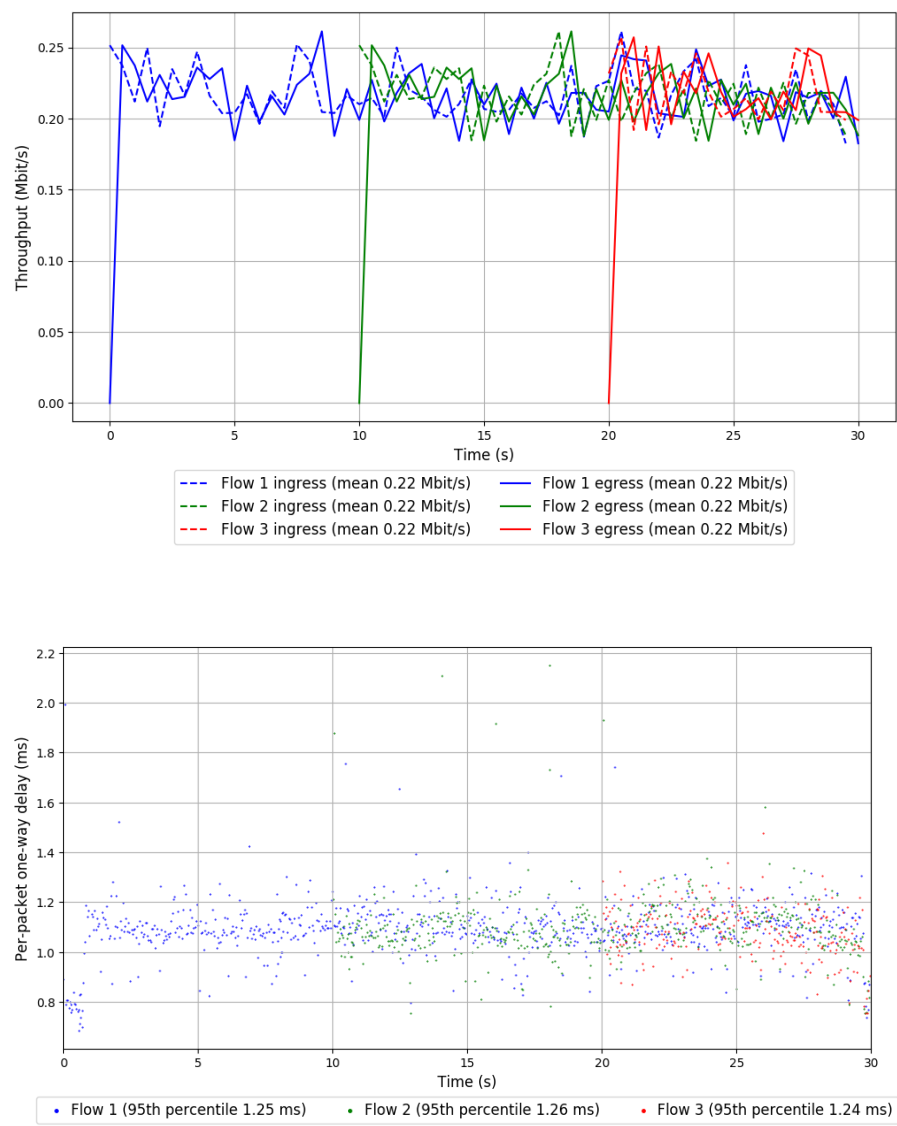
Run 2: Report of SCReAM — Data Link

```
Run 3: Statistics of SCReAM

Start at: 2019-02-20 01:24:07
End at: 2019-02-20 01:24:37
Local clock offset: 0.341 ms
Remote clock offset: 0.086 ms


# Below is generated by plot.py at 2019-02-20 03:41:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 1.251 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.247 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.261 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.243 ms
Loss rate: 0.00%
```
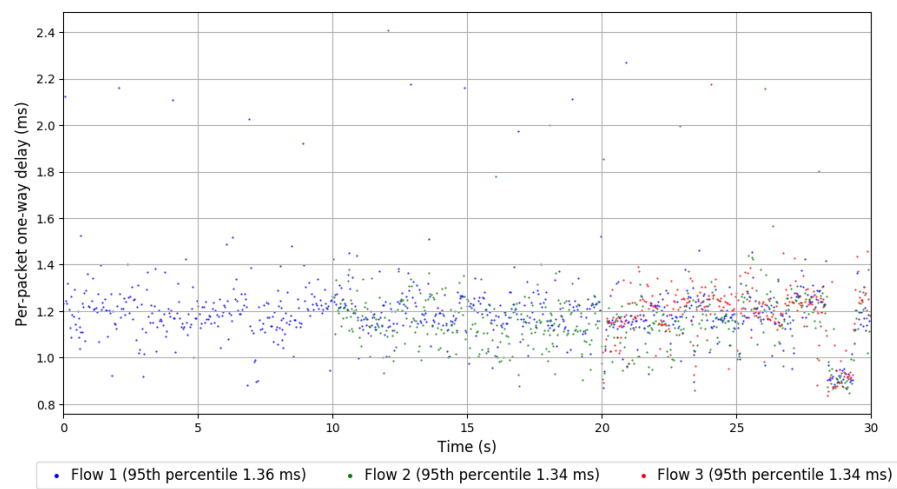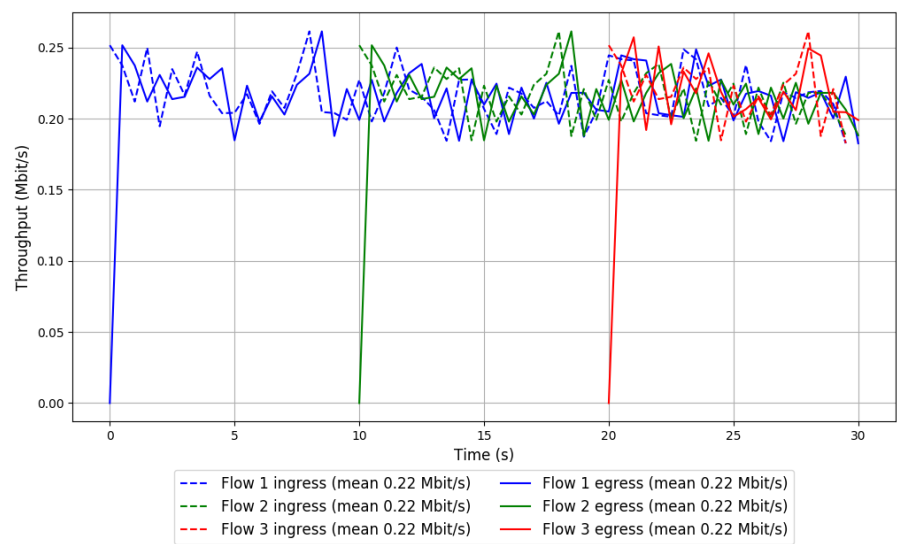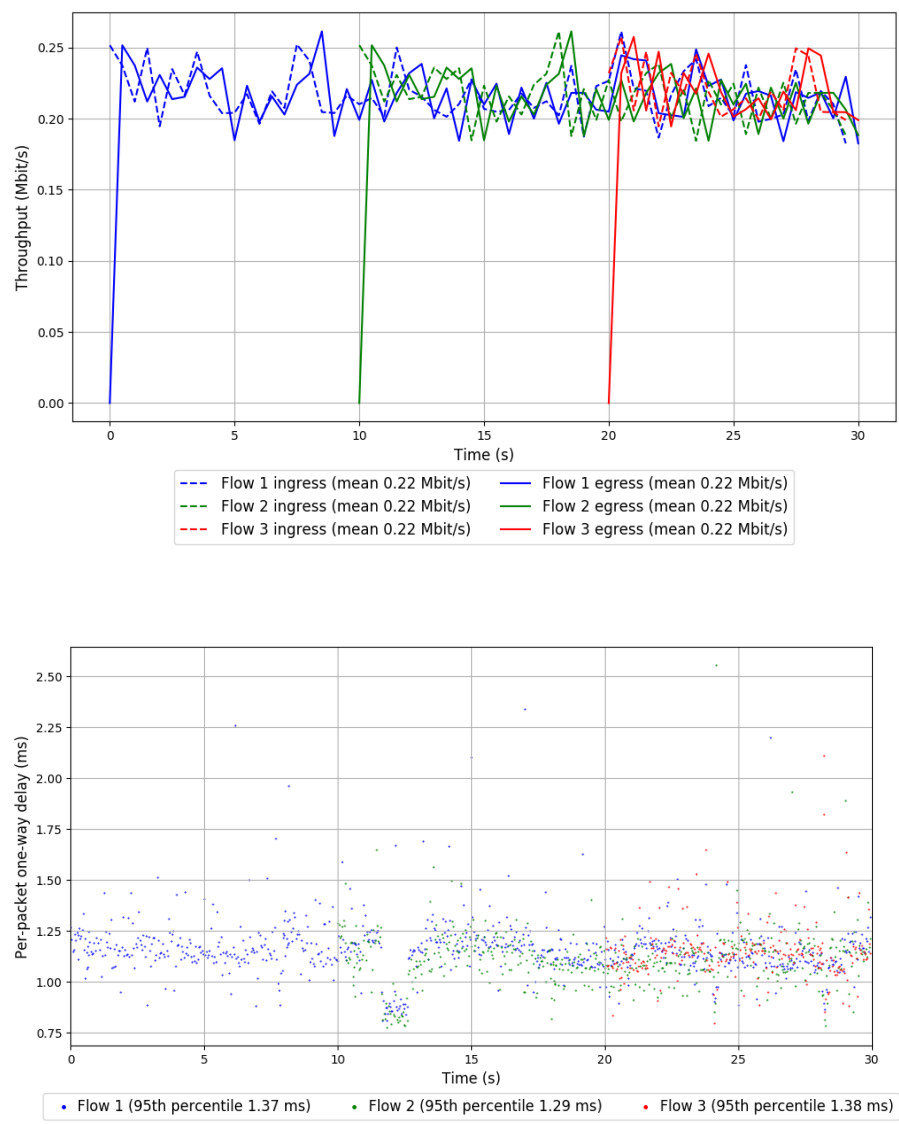
Run 3: Report of SCReAM — Data Link

```
Run 4: Statistics of SCReAM

Start at: 2019-02-20 01:54:08
End at: 2019-02-20 01:54:38
Local clock offset: 0.247 ms
Remote clock offset: -3.02 ms


# Below is generated by plot.py at 2019-02-20 03:41:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 1.344 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.365 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.339 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.342 ms
Loss rate: 0.00%
```
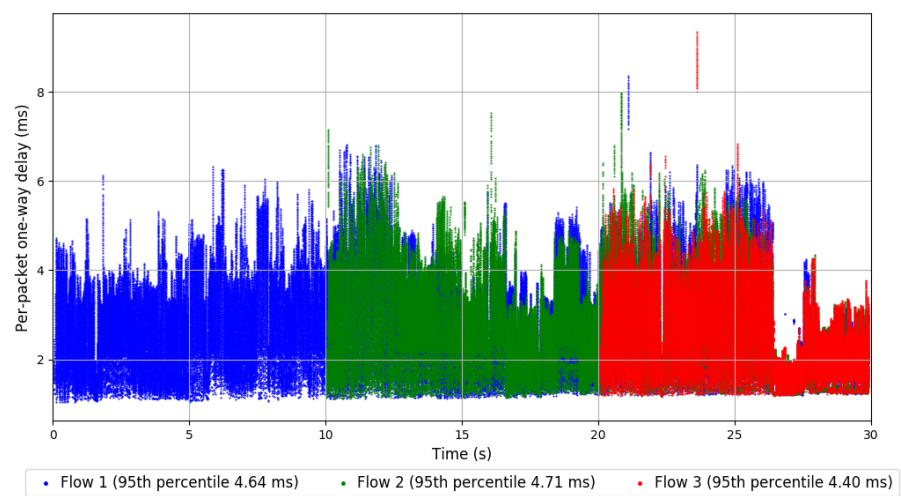
Run 4: Report of SCReAM — Data Link

```
Run 5: Statistics of SCReAM

Start at: 2019-02-20 02:23:55
End at: 2019-02-20 02:24:25
Local clock offset: -3.348 ms
Remote clock offset: -0.243 ms

# Below is generated by plot.py at 2019-02-20 03:41:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 1.339 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.370 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.288 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.377 ms
Loss rate: 0.00%
```
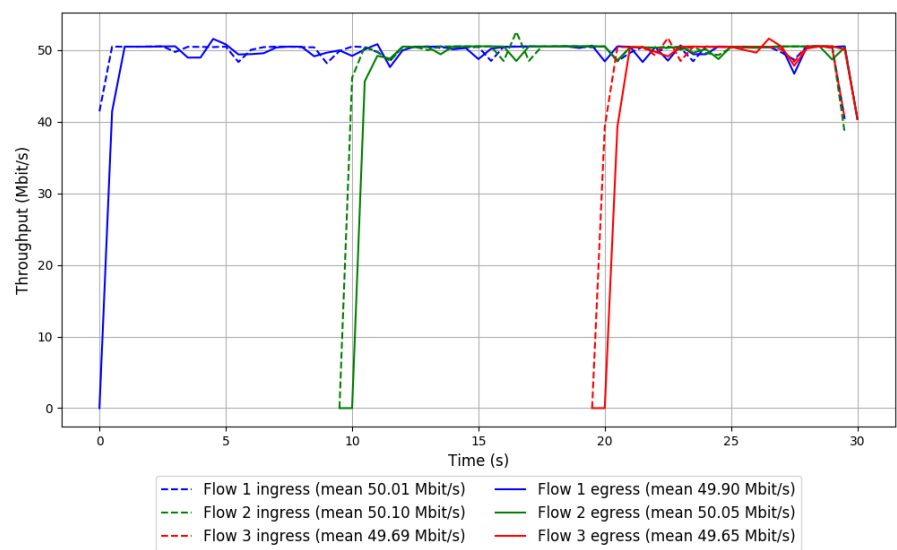
Run 5: Report of SCReAM — Data Link

```
Run 1: Statistics of Sprout

Start at: 2019-02-20 00:35:10
End at: 2019-02-20 00:35:40
Local clock offset: -2.32 ms
Remote clock offset: -2.078 ms


# Below is generated by plot.py at 2019-02-20 03:41:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 99.65 Mbit/s
95th percentile per-packet one-way delay: 4.626 ms
Loss rate: 0.15%
-- Flow 1:
Average throughput: 49.90 Mbit/s
95th percentile per-packet one-way delay: 4.639 ms
Loss rate: 0.21%
-- Flow 2:
Average throughput: 50.05 Mbit/s
95th percentile per-packet one-way delay: 4.706 ms
Loss rate: 0.09%
-- Flow 3:
Average throughput: 49.65 Mbit/s
95th percentile per-packet one-way delay: 4.399 ms
Loss rate: 0.07%
```
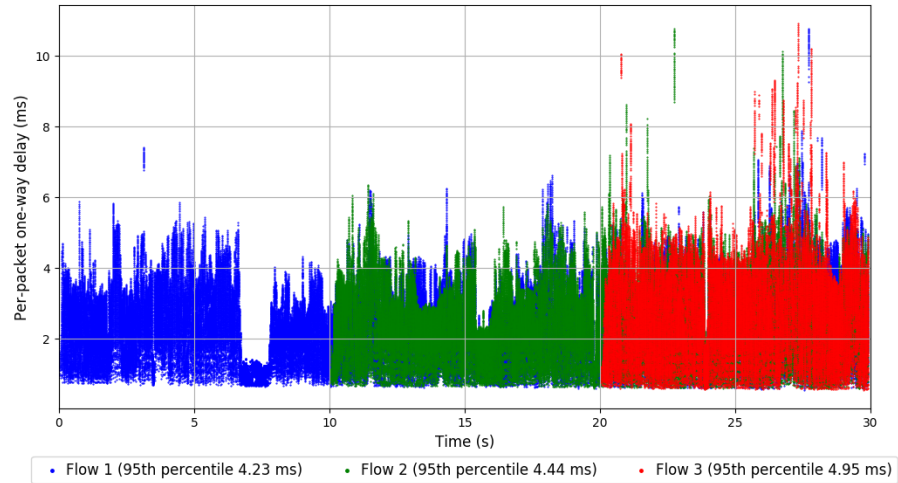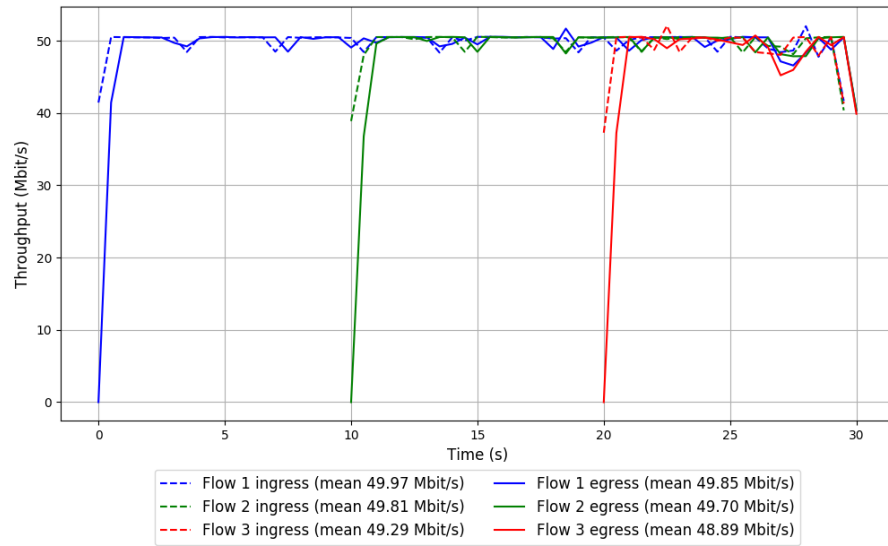
Run 1: Report of Sprout — Data Link

```
Run 2: Statistics of Sprout

Start at: 2019-02-20 01:05:00
End at: 2019-02-20 01:05:30
Local clock offset: 0.277 ms
Remote clock offset: -2.278 ms


# Below is generated by plot.py at 2019-02-20 03:41:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 99.08 Mbit/s
95th percentile per-packet one-way delay: 4.442 ms
Loss rate: 0.30%
-- Flow 1:
Average throughput: 49.85 Mbit/s
95th percentile per-packet one-way delay: 4.228 ms
Loss rate: 0.23%
-- Flow 2:
Average throughput: 49.70 Mbit/s
95th percentile per-packet one-way delay: 4.437 ms
Loss rate: 0.18%
-- Flow 3:
Average throughput: 48.89 Mbit/s
95th percentile per-packet one-way delay: 4.949 ms
Loss rate: 0.78%
```
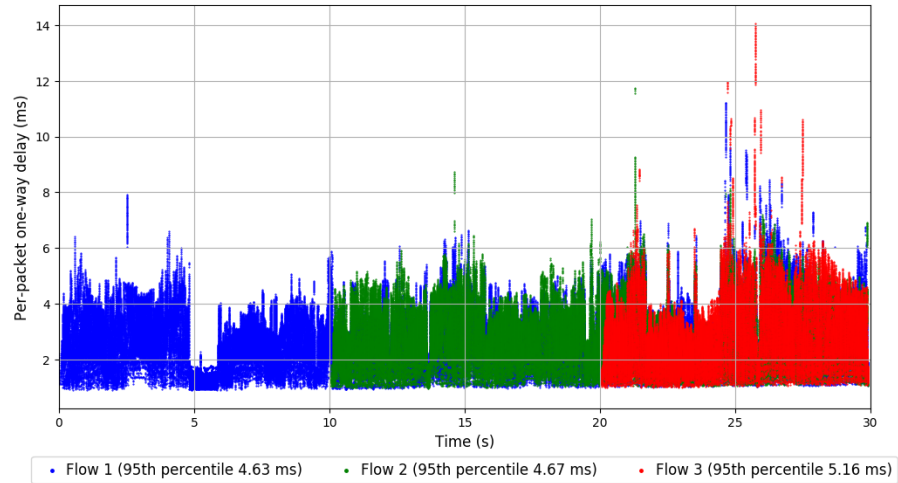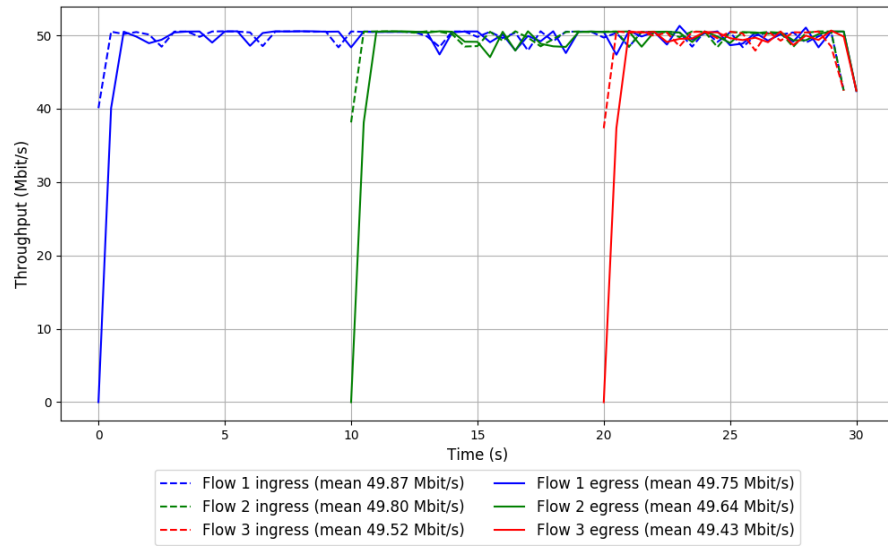
Run 2: Report of Sprout — Data Link

```
Run 3: Statistics of Sprout

Start at: 2019-02-20 01:35:02
End at: 2019-02-20 01:35:32
Local clock offset: 0.28 ms
Remote clock offset: 0.355 ms


# Below is generated by plot.py at 2019-02-20 03:41:24
# Datalink statistics
-- Total of 3 flows:
Average throughput: 99.10 Mbit/s
95th percentile per-packet one-way delay: 4.747 ms
Loss rate: 0.26%
-- Flow 1:
Average throughput: 49.75 Mbit/s
95th percentile per-packet one-way delay: 4.626 ms
Loss rate: 0.25%
-- Flow 2:
Average throughput: 49.64 Mbit/s
95th percentile per-packet one-way delay: 4.674 ms
Loss rate: 0.32%
-- Flow 3:
Average throughput: 49.43 Mbit/s
95th percentile per-packet one-way delay: 5.159 ms
Loss rate: 0.19%
```
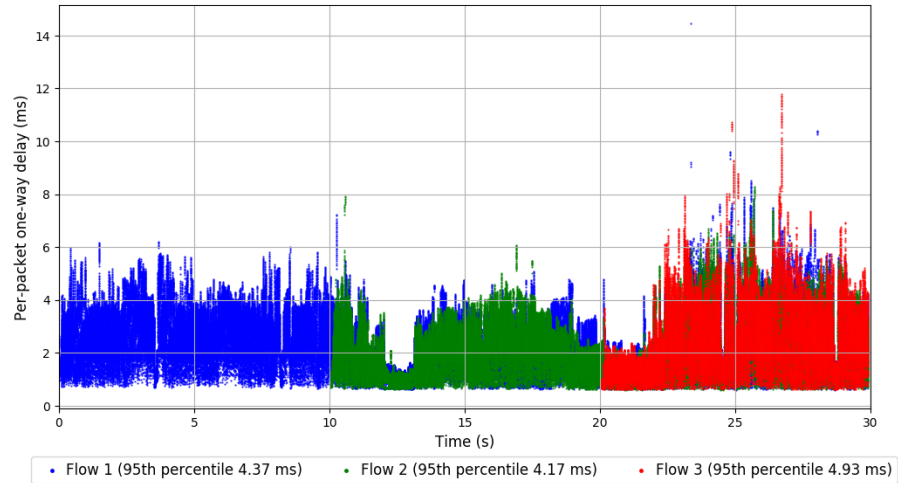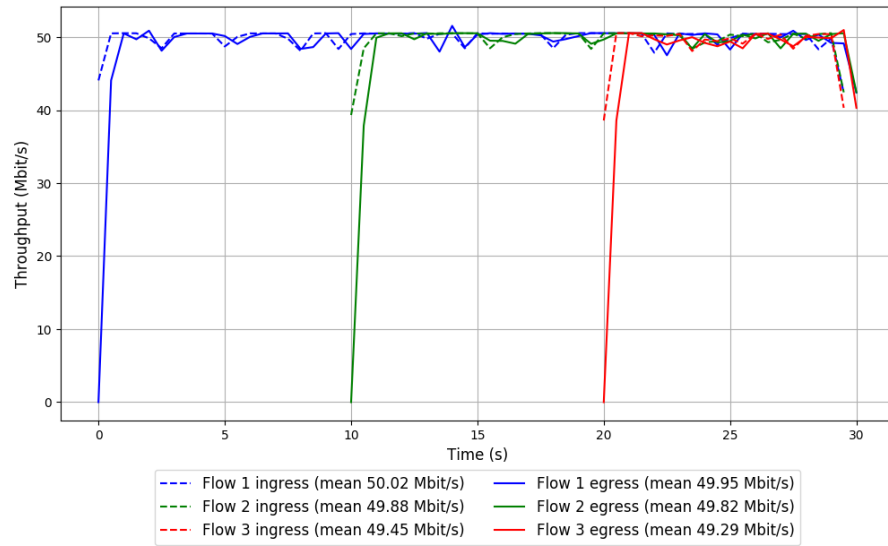
Run 3: Report of Sprout — Data Link

```
Run 4: Statistics of Sprout

Start at: 2019-02-20 02:04:55
End at: 2019-02-20 02:05:25
Local clock offset: -1.184 ms
Remote clock offset: -3.596 ms


# Below is generated by plot.py at 2019-02-20 03:41:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 99.38 Mbit/s
95th percentile per-packet one-way delay: 4.420 ms
Loss rate: 0.15%
-- Flow 1:
Average throughput: 49.95 Mbit/s
95th percentile per-packet one-way delay: 4.368 ms
Loss rate: 0.13%
-- Flow 2:
Average throughput: 49.82 Mbit/s
95th percentile per-packet one-way delay: 4.167 ms
Loss rate: 0.11%
-- Flow 3:
Average throughput: 49.29 Mbit/s
95th percentile per-packet one-way delay: 4.930 ms
Loss rate: 0.29%
```
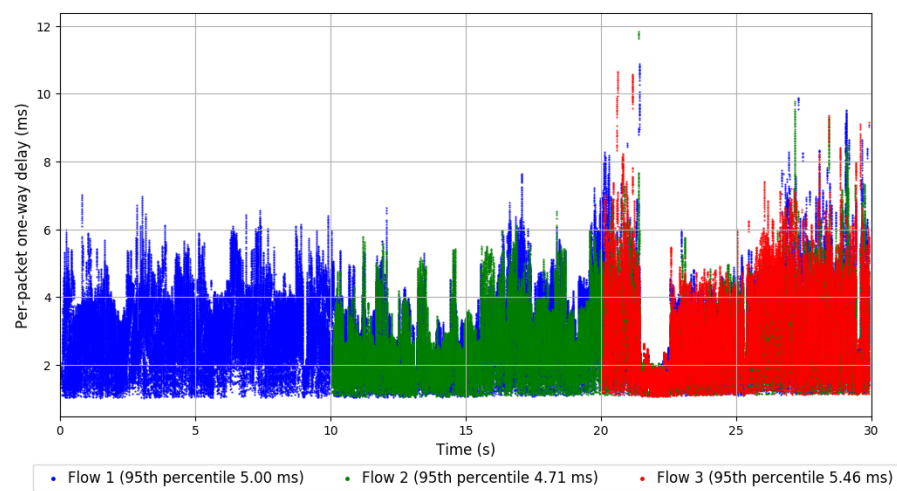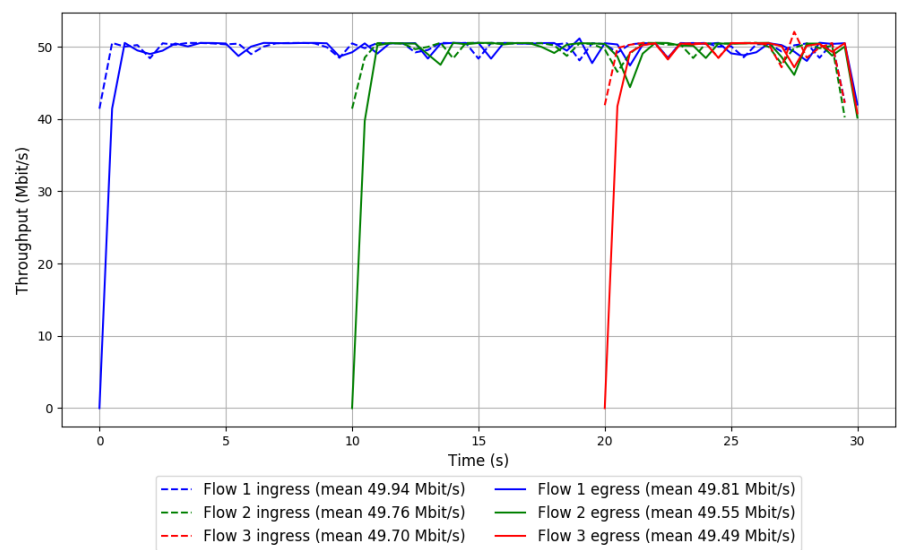
Run 4: Report of Sprout — Data Link

Flow 1 ingress (mean 50.02 Mbit/s) Flow 1 egress (mean 49.95 Mbit/s)
Flow 2 ingress (mean 49.88 Mbit/s) Flow 2 egress (mean 49.82 Mbit/s)
Flow 3 ingress (mean 49.45 Mbit/s) Flow 3 egress (mean 49.29 Mbit/s)

Flow 1 (95th percentile 4.37 ms)   Flow 2 (95th percentile 4.17 ms)   Flow 3 (95th percentile 4.93 ms)

```
Run 5: Statistics of Sprout

Start at: 2019-02-20 02:34:45
End at: 2019-02-20 02:35:15
Local clock offset: -2.001 ms
Remote clock offset: 0.411 ms


# Below is generated by plot.py at 2019-02-20 03:41:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 99.12 Mbit/s
95th percentile per-packet one-way delay: 4.995 ms
Loss rate: 0.31%
-- Flow 1:
Average throughput: 49.81 Mbit/s
95th percentile per-packet one-way delay: 4.997 ms
Loss rate: 0.23%
-- Flow 2:
Average throughput: 49.55 Mbit/s
95th percentile per-packet one-way delay: 4.707 ms
Loss rate: 0.42%
-- Flow 3:
Average throughput: 49.49 Mbit/s
95th percentile per-packet one-way delay: 5.459 ms
Loss rate: 0.34%
```
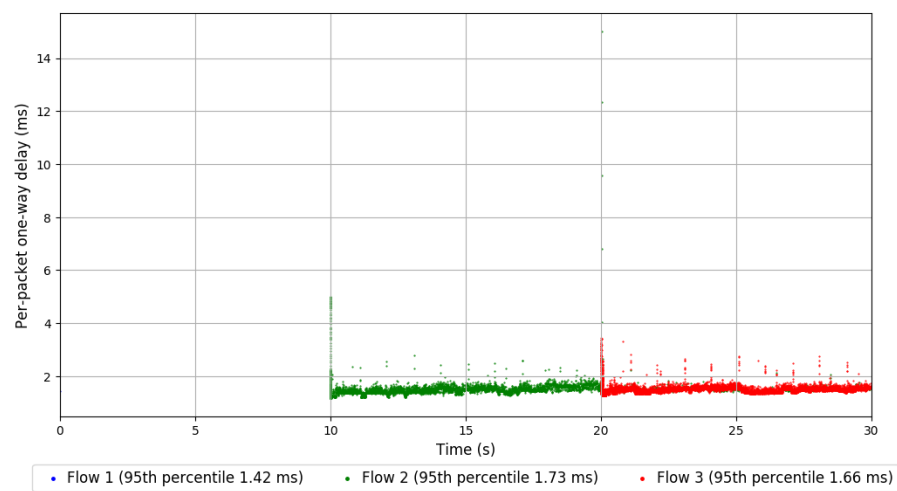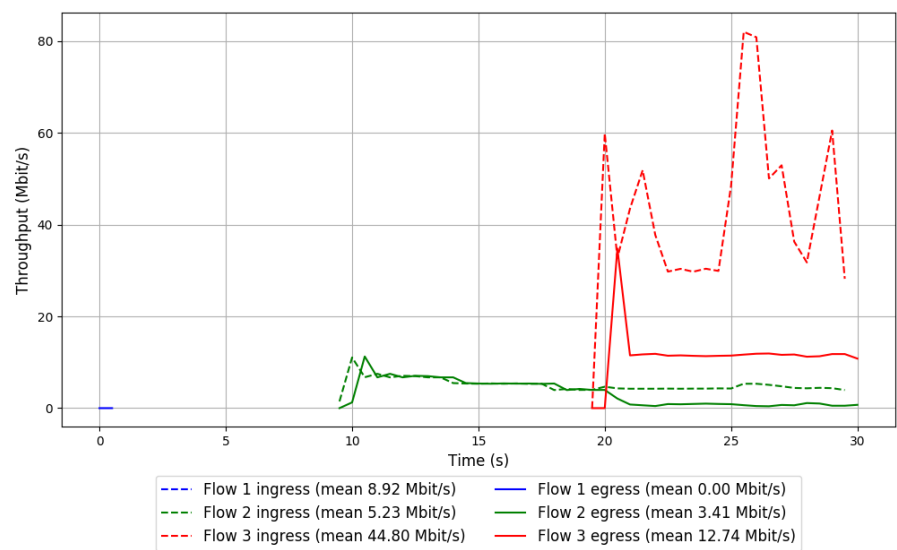
Run 5: Report of Sprout — Data Link

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

Start at: 2019-02-20 00:31:11
End at: 2019-02-20 00:31:41
Local clock offset: -3.764 ms
Remote clock offset: -1.309 ms


# Below is generated by plot.py at 2019-02-20 03:41:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 6.51 Mbit/s
95th percentile per-packet one-way delay: 1.696 ms
Loss rate: 64.62%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 1.422 ms
Loss rate: 95.92%
-- Flow 2:
Average throughput: 3.41 Mbit/s
95th percentile per-packet one-way delay: 1.733 ms
Loss rate: 34.97%
-- Flow 3:
Average throughput: 12.74 Mbit/s
95th percentile per-packet one-way delay: 1.662 ms
Loss rate: 71.56%
```

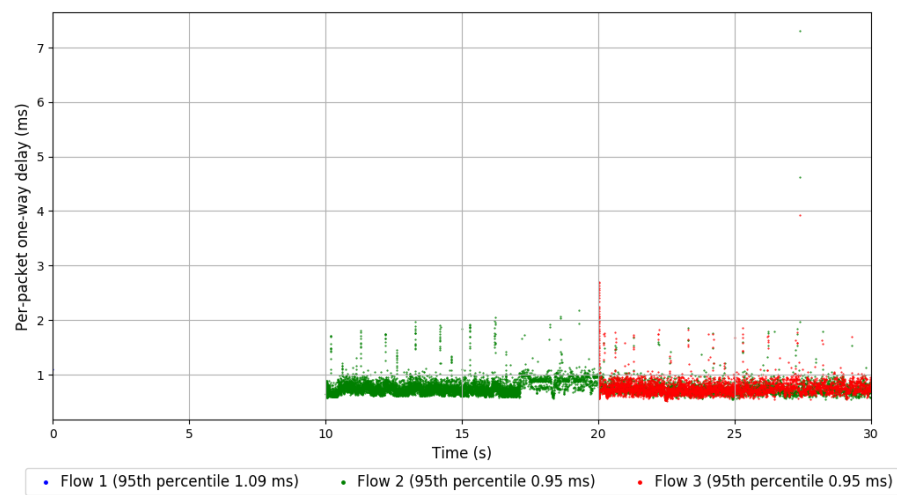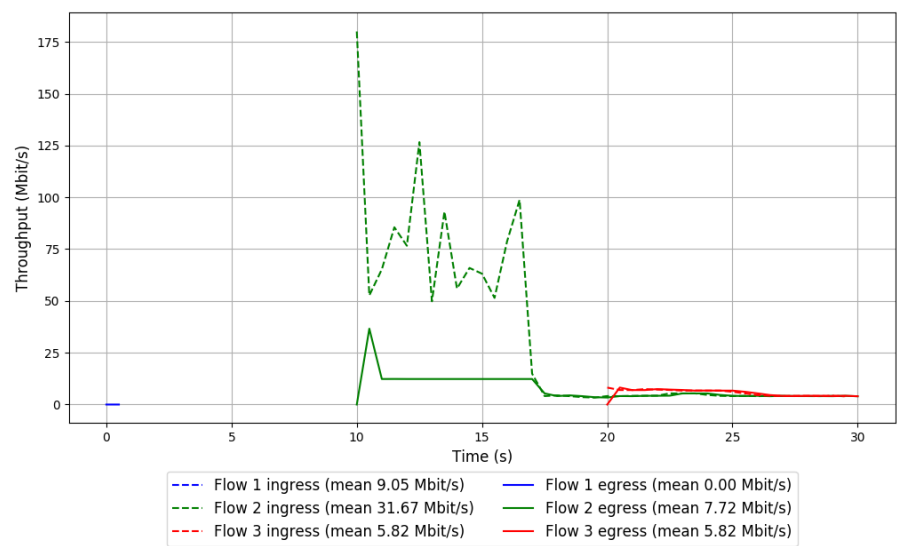Run 1: Report of TaoVA-100x — Data Link

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

Start at: 2019-02-20 01:00:57
End at: 2019-02-20 01:01:27
Local clock offset: 0.309 ms
Remote clock offset: -3.619 ms


# Below is generated by plot.py at 2019-02-20 03:41:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 7.08 Mbit/s
95th percentile per-packet one-way delay: 0.952 ms
Loss rate: 69.27%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 1.095 ms
Loss rate: 95.92%
-- Flow 2:
Average throughput: 7.72 Mbit/s
95th percentile per-packet one-way delay: 0.953 ms
Loss rate: 75.61%
-- Flow 3:
Average throughput: 5.82 Mbit/s
95th percentile per-packet one-way delay: 0.951 ms
Loss rate: 0.00%
```

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

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

Start at: 2019-02-20 01:30:58
End at: 2019-02-20 01:31:28
Local clock offset: 0.386 ms
Remote clock offset: 0.415 ms


# Below is generated by plot.py at 2019-02-20 03:41:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 5.97 Mbit/s
95th percentile per-packet one-way delay: 1.179 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 1.106 ms
Loss rate: 95.92%
-- Flow 2:
Average throughput: 5.29 Mbit/s
95th percentile per-packet one-way delay: 1.199 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 7.35 Mbit/s
95th percentile per-packet one-way delay: 1.108 ms
Loss rate: 0.02%
```
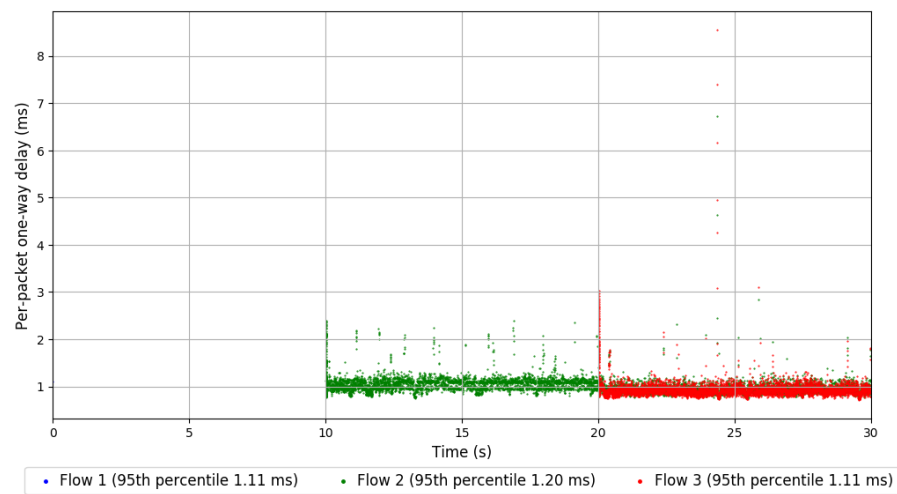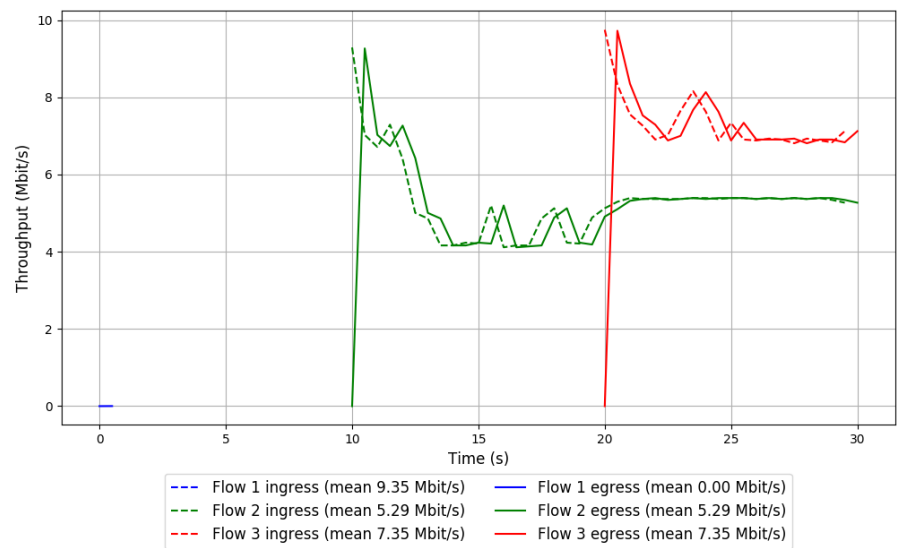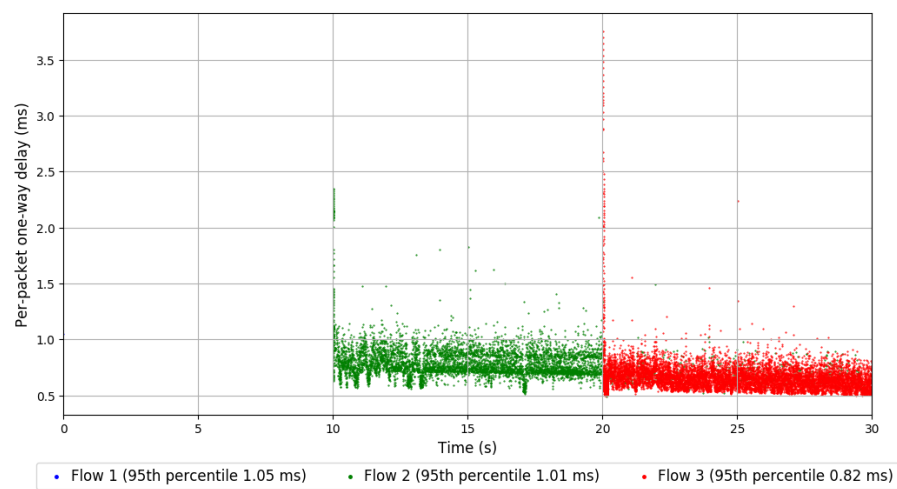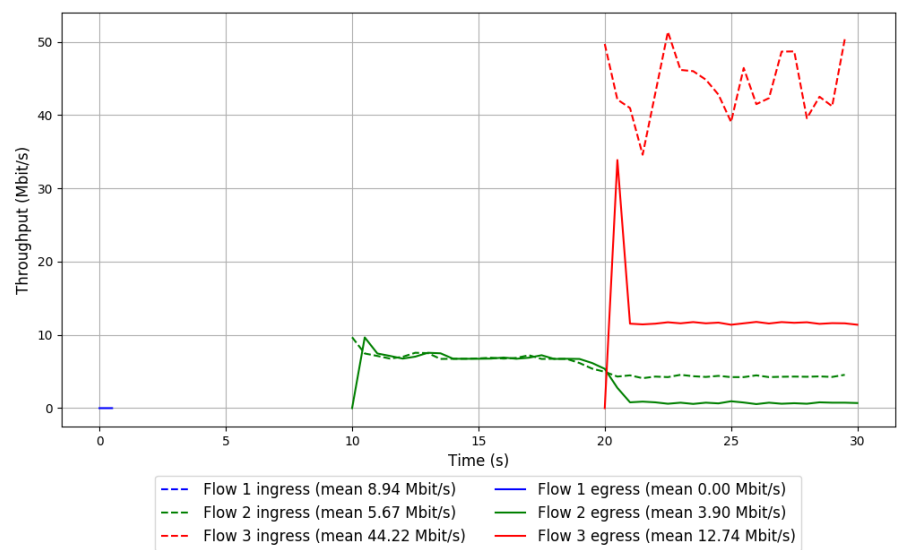
Run 3: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 9.35 Mbit/s) --- Flow 1 egress (mean 0.00 Mbit/s)
Flow 2 ingress (mean 5.29 Mbit/s) --- Flow 2 egress (mean 5.29 Mbit/s)
Flow 3 ingress (mean 7.35 Mbit/s) --- Flow 3 egress (mean 7.35 Mbit/s)

Flow 1 (95th percentile 1.11 ms) · Flow 2 (95th percentile 1.20 ms) · Flow 3 (95th percentile 1.11 ms)

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

Start at: 2019-02-20 02:00:58
End at: 2019-02-20 02:01:28
Local clock offset: -0.006 ms
Remote clock offset: -3.395 ms


# Below is generated by plot.py at 2019-02-20 03:41:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 6.84 Mbit/s
95th percentile per-packet one-way delay: 0.937 ms
Loss rate: 63.01%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 1.047 ms
Loss rate: 95.92%
-- Flow 2:
Average throughput: 3.90 Mbit/s
95th percentile per-packet one-way delay: 1.009 ms
Loss rate: 31.21%
-- Flow 3:
Average throughput: 12.74 Mbit/s
95th percentile per-packet one-way delay: 0.822 ms
Loss rate: 71.18%
```
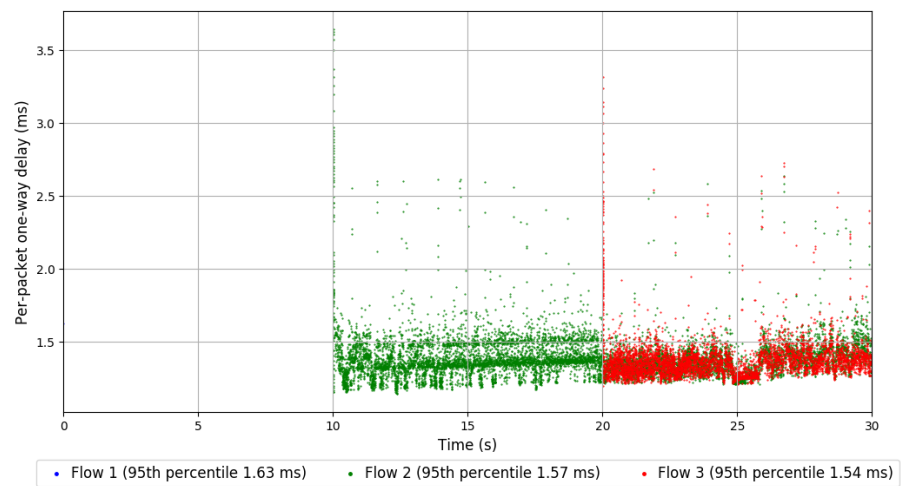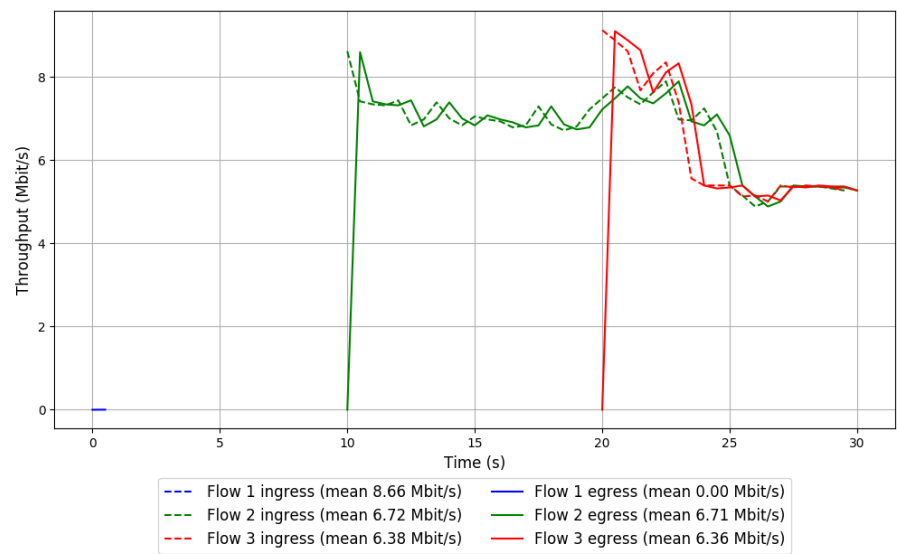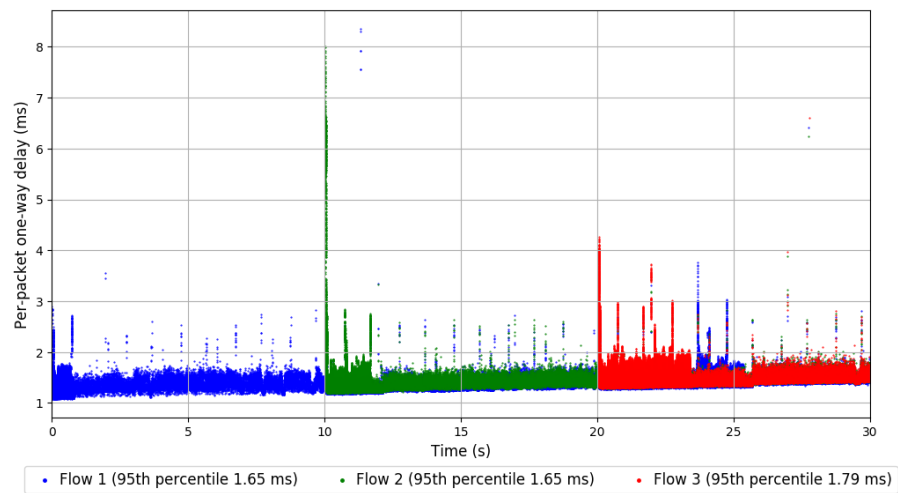
Run 4: Report of TaoVA-100x — Data Link

- - - Flow 1 ingress (mean 8.94 Mbit/s) ——— Flow 1 egress (mean 0.00 Mbit/s)
- - - Flow 2 ingress (mean 5.67 Mbit/s) ——— Flow 2 egress (mean 3.90 Mbit/s)
- - - Flow 3 ingress (mean 44.22 Mbit/s) ——— Flow 3 egress (mean 12.74 Mbit/s)

• Flow 1 (95th percentile 1.05 ms)　　• Flow 2 (95th percentile 1.01 ms)　　• Flow 3 (95th percentile 0.82 ms)

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

Start at: 2019-02-20 02:30:42
End at: 2019-02-20 02:31:12
Local clock offset: -3.415 ms
Remote clock offset: 0.254 ms

# Below is generated by plot.py at 2019-02-20 03:41:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 6.59 Mbit/s
95th percentile per-packet one-way delay: 1.566 ms
Loss rate: 0.22%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 1.627 ms
Loss rate: 95.92%
-- Flow 2:
Average throughput: 6.71 Mbit/s
95th percentile per-packet one-way delay: 1.569 ms
Loss rate: 0.17%
-- Flow 3:
Average throughput: 6.36 Mbit/s
95th percentile per-packet one-way delay: 1.543 ms
Loss rate: 0.28%
```
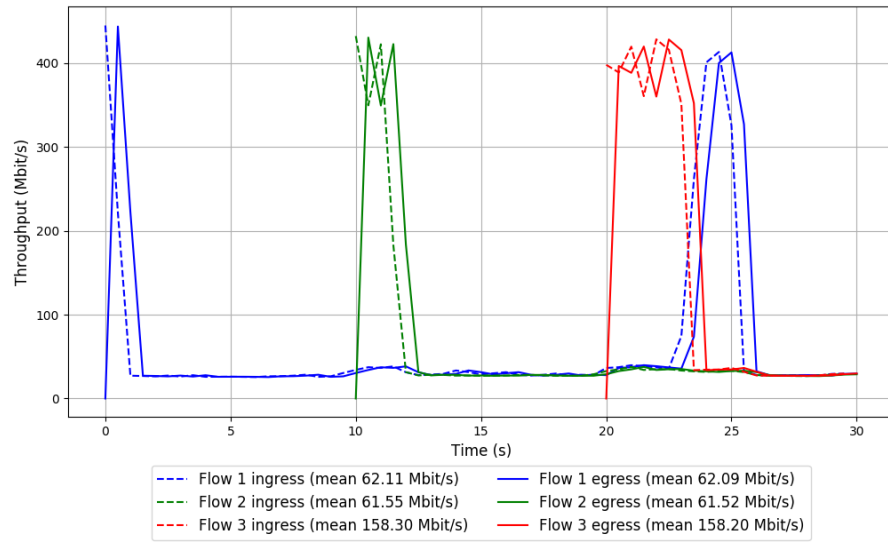
Run 5: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 8.66 Mbit/s) --- Flow 1 egress (mean 0.00 Mbit/s) ---
Flow 2 ingress (mean 6.72 Mbit/s) --- Flow 2 egress (mean 6.71 Mbit/s) ---
Flow 3 ingress (mean 6.38 Mbit/s) --- Flow 3 egress (mean 6.36 Mbit/s) ---

Flow 1 (95th percentile 1.63 ms) Flow 2 (95th percentile 1.57 ms) Flow 3 (95th percentile 1.54 ms)
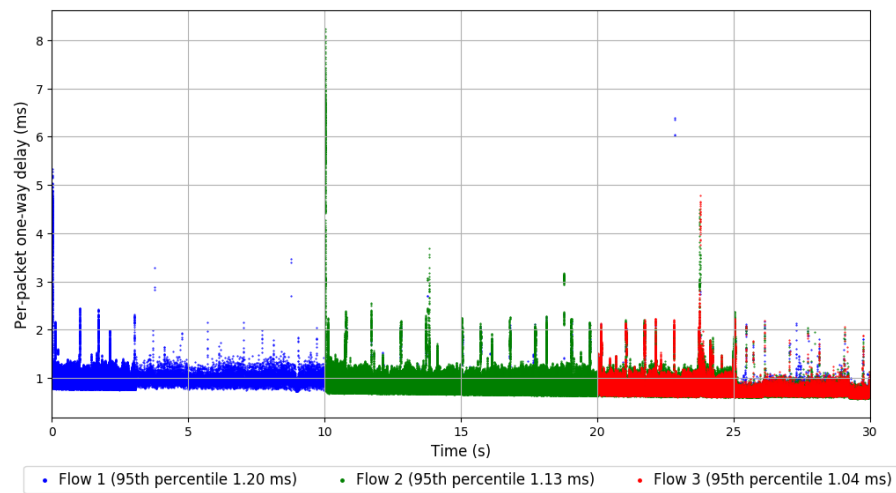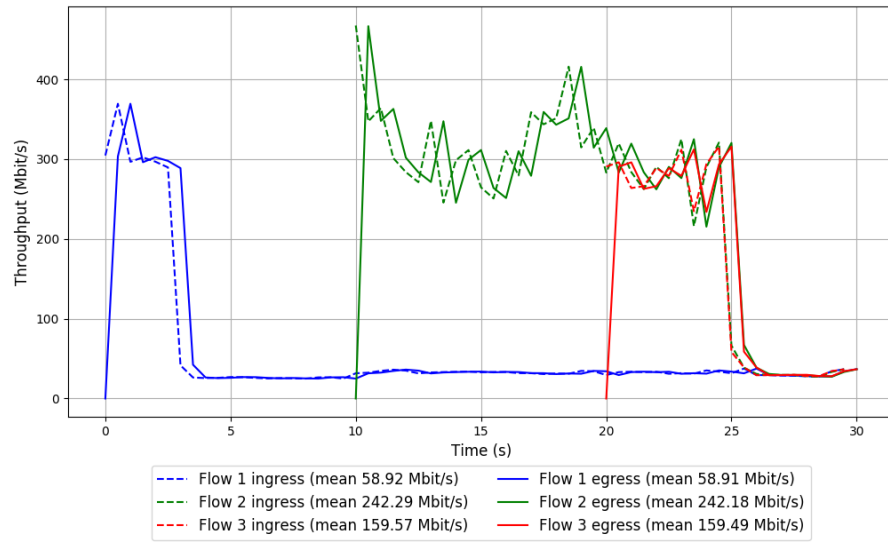
```
Run 1: Statistics of TCP Vegas

Start at: 2019-02-20 00:32:26
End at: 2019-02-20 00:32:56
Local clock offset: -3.219 ms
Remote clock offset: -1.505 ms


# Below is generated by plot.py at 2019-02-20 03:42:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 155.67 Mbit/s
95th percentile per-packet one-way delay: 1.722 ms
Loss rate: 0.05%
-- Flow 1:
Average throughput: 62.09 Mbit/s
95th percentile per-packet one-way delay: 1.652 ms
Loss rate: 0.04%
-- Flow 2:
Average throughput: 61.52 Mbit/s
95th percentile per-packet one-way delay: 1.648 ms
Loss rate: 0.05%
-- Flow 3:
Average throughput: 158.20 Mbit/s
95th percentile per-packet one-way delay: 1.789 ms
Loss rate: 0.06%
```

Run 1: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 62.11 Mbit/s) --- Flow 1 egress (mean 62.09 Mbit/s)
Flow 2 ingress (mean 61.55 Mbit/s) --- Flow 2 egress (mean 61.52 Mbit/s)
Flow 3 ingress (mean 158.30 Mbit/s) --- Flow 3 egress (mean 158.20 Mbit/s)

Flow 1 (95th percentile 1.65 ms) · Flow 2 (95th percentile 1.65 ms) · Flow 3 (95th percentile 1.79 ms)

```
Run 2: Statistics of TCP Vegas

Start at: 2019-02-20 01:02:12
End at: 2019-02-20 01:02:42
Local clock offset: 0.312 ms
Remote clock offset: -3.023 ms


# Below is generated by plot.py at 2019-02-20 03:44:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 273.29 Mbit/s
95th percentile per-packet one-way delay: 1.142 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 58.91 Mbit/s
95th percentile per-packet one-way delay: 1.196 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 242.18 Mbit/s
95th percentile per-packet one-way delay: 1.126 ms
Loss rate: 0.05%
-- Flow 3:
Average throughput: 159.49 Mbit/s
95th percentile per-packet one-way delay: 1.036 ms
Loss rate: 0.05%
```
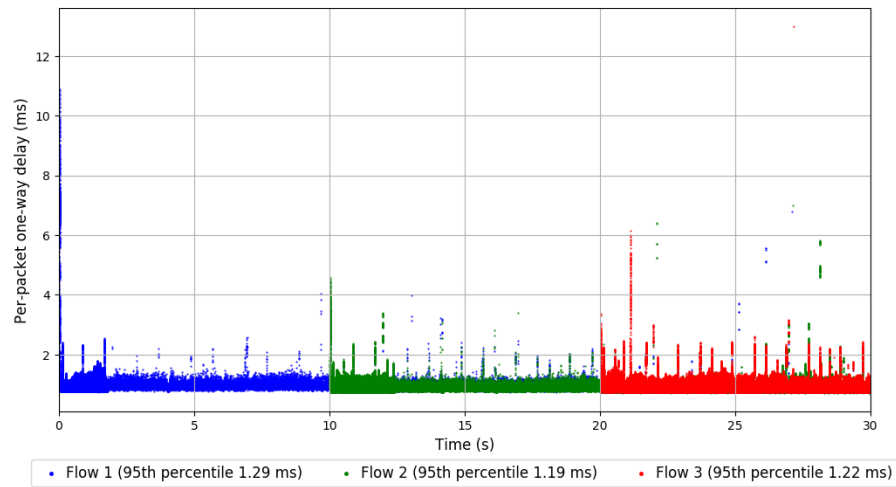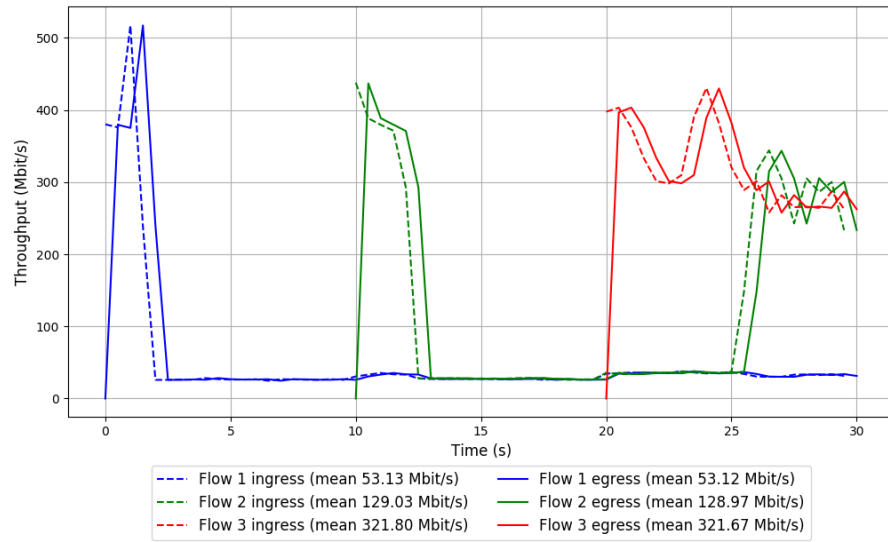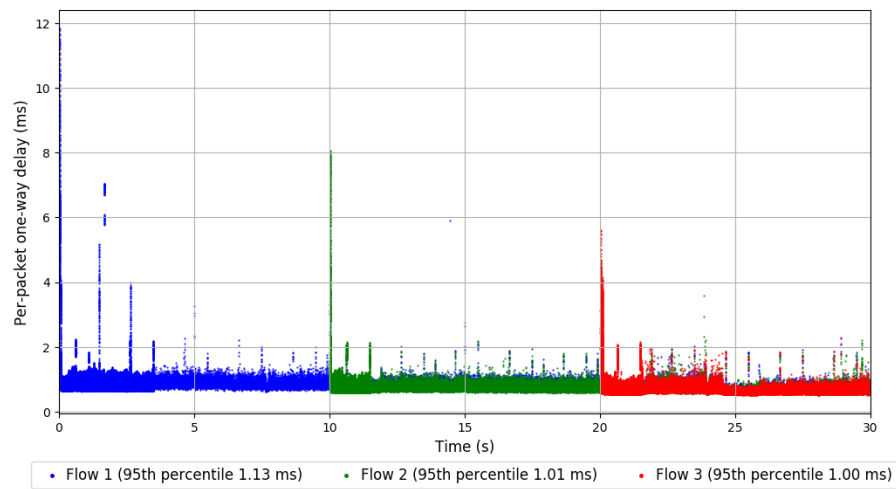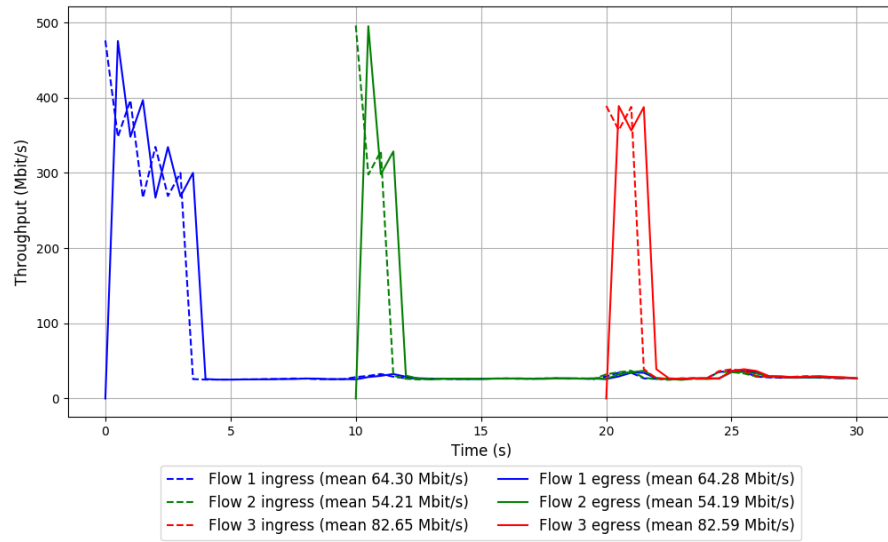
Run 2: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 58.92 Mbit/s) --- Flow 1 egress (mean 58.91 Mbit/s)
Flow 2 ingress (mean 242.29 Mbit/s) --- Flow 2 egress (mean 242.18 Mbit/s)
Flow 3 ingress (mean 159.57 Mbit/s) --- Flow 3 egress (mean 159.49 Mbit/s)

Flow 1 (95th percentile 1.20 ms) Flow 2 (95th percentile 1.13 ms) Flow 3 (95th percentile 1.04 ms)

```
Run 3: Statistics of TCP Vegas

Start at: 2019-02-20 01:32:12
End at: 2019-02-20 01:32:42
Local clock offset: 0.339 ms
Remote clock offset: 0.466 ms


# Below is generated by plot.py at 2019-02-20 03:44:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 246.00 Mbit/s
95th percentile per-packet one-way delay: 1.225 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 53.12 Mbit/s
95th percentile per-packet one-way delay: 1.287 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 128.97 Mbit/s
95th percentile per-packet one-way delay: 1.189 ms
Loss rate: 0.04%
-- Flow 3:
Average throughput: 321.67 Mbit/s
95th percentile per-packet one-way delay: 1.219 ms
Loss rate: 0.04%
```
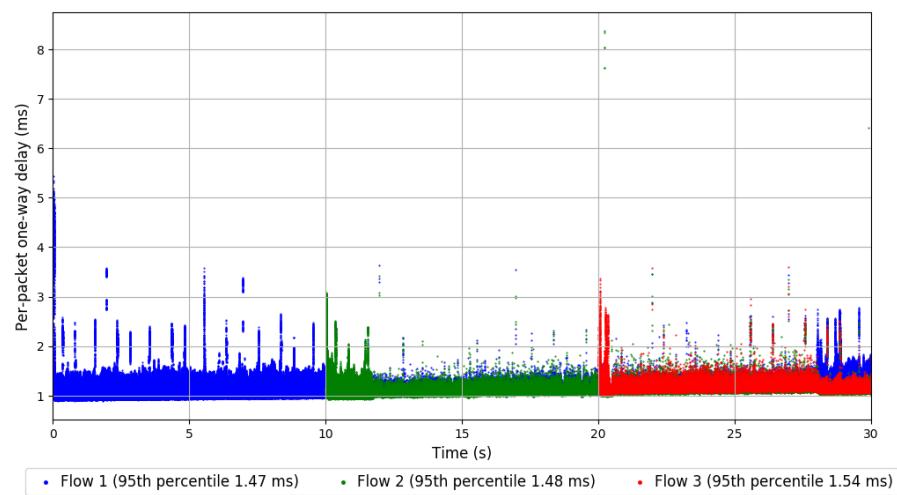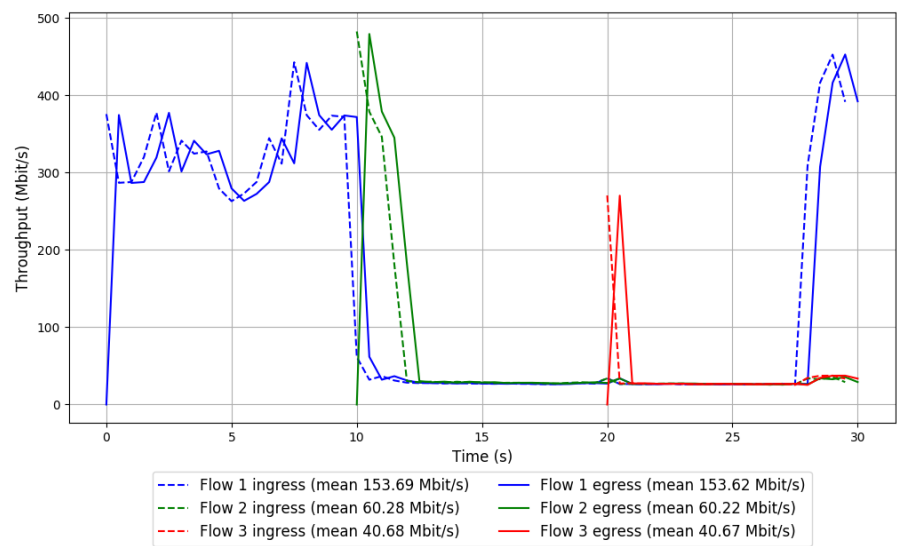
Run 3: Report of TCP Vegas — Data Link

```
Run 4: Statistics of TCP Vegas

Start at: 2019-02-20 02:02:12
End at: 2019-02-20 02:02:42
Local clock offset: -0.452 ms
Remote clock offset: -3.459 ms


# Below is generated by plot.py at 2019-02-20 03:44:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 127.85 Mbit/s
95th percentile per-packet one-way delay: 1.094 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 64.28 Mbit/s
95th percentile per-packet one-way delay: 1.128 ms
Loss rate: 0.03%
-- Flow 2:
Average throughput: 54.19 Mbit/s
95th percentile per-packet one-way delay: 1.010 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 82.59 Mbit/s
95th percentile per-packet one-way delay: 0.998 ms
Loss rate: 0.07%
```
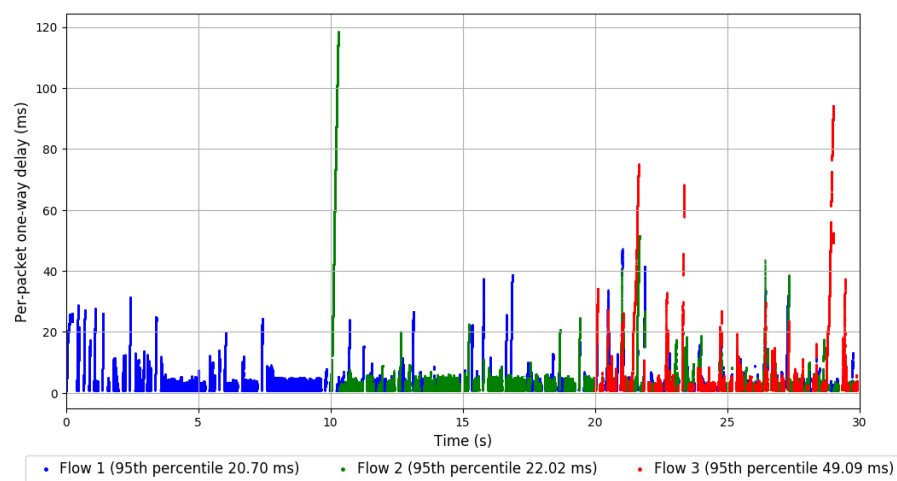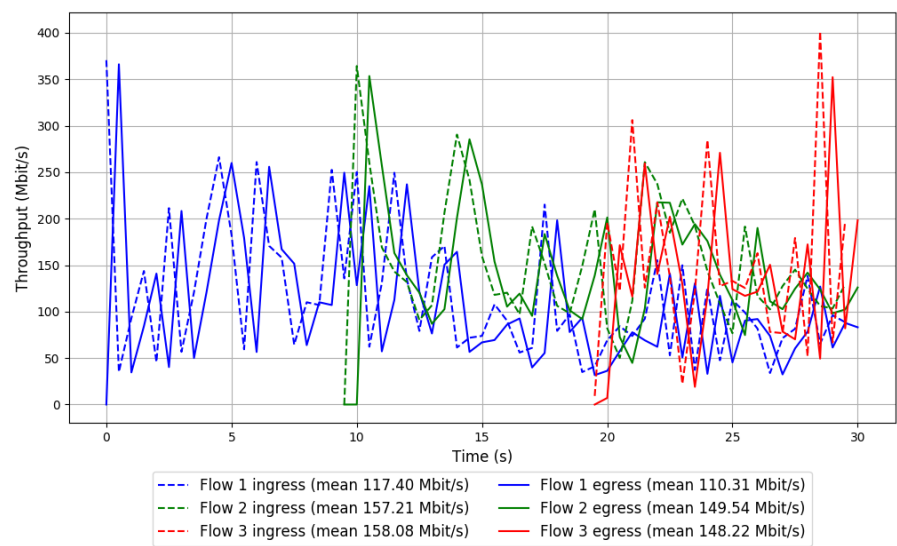
Run 4: Report of TCP Vegas — Data Link

```
Run 5: Statistics of TCP Vegas

Start at: 2019-02-20 02:31:56
End at: 2019-02-20 02:32:26
Local clock offset: -2.855 ms
Remote clock offset: 0.224 ms


# Below is generated by plot.py at 2019-02-20 03:44:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 207.28 Mbit/s
95th percentile per-packet one-way delay: 1.475 ms
Loss rate: 0.05%
-- Flow 1:
Average throughput: 153.62 Mbit/s
95th percentile per-packet one-way delay: 1.470 ms
Loss rate: 0.04%
-- Flow 2:
Average throughput: 60.22 Mbit/s
95th percentile per-packet one-way delay: 1.477 ms
Loss rate: 0.10%
-- Flow 3:
Average throughput: 40.67 Mbit/s
95th percentile per-packet one-way delay: 1.545 ms
Loss rate: 0.03%
```

Run 5: Report of TCP Vegas — Data Link

```
Run 1: Statistics of Verus

Start at: 2019-02-20 00:26:58
End at: 2019-02-20 00:27:28
Local clock offset: -4.076 ms
Remote clock offset: -0.232 ms


# Below is generated by plot.py at 2019-02-20 03:44:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 258.46 Mbit/s
95th percentile per-packet one-way delay: 24.949 ms
Loss rate: 5.63%
-- Flow 1:
Average throughput: 110.31 Mbit/s
95th percentile per-packet one-way delay: 20.702 ms
Loss rate: 6.03%
-- Flow 2:
Average throughput: 149.54 Mbit/s
95th percentile per-packet one-way delay: 22.021 ms
Loss rate: 4.87%
-- Flow 3:
Average throughput: 148.22 Mbit/s
95th percentile per-packet one-way delay: 49.093 ms
Loss rate: 6.23%
```
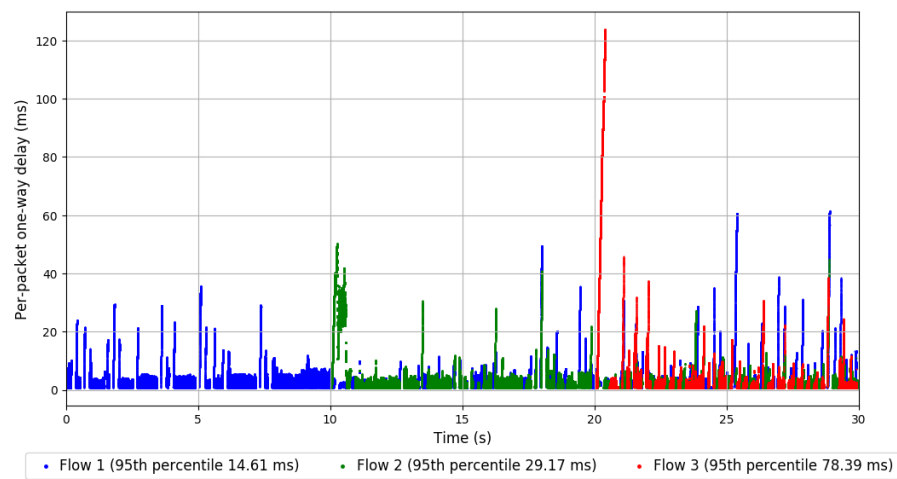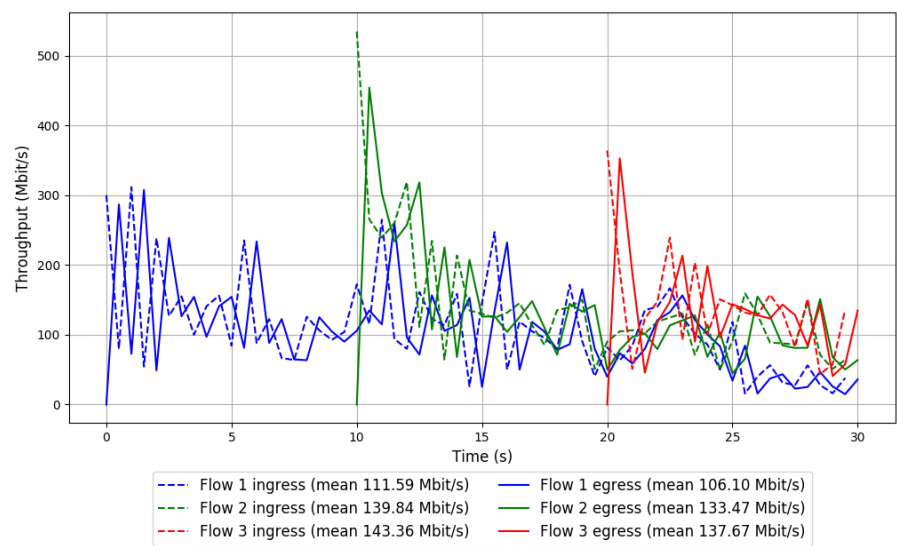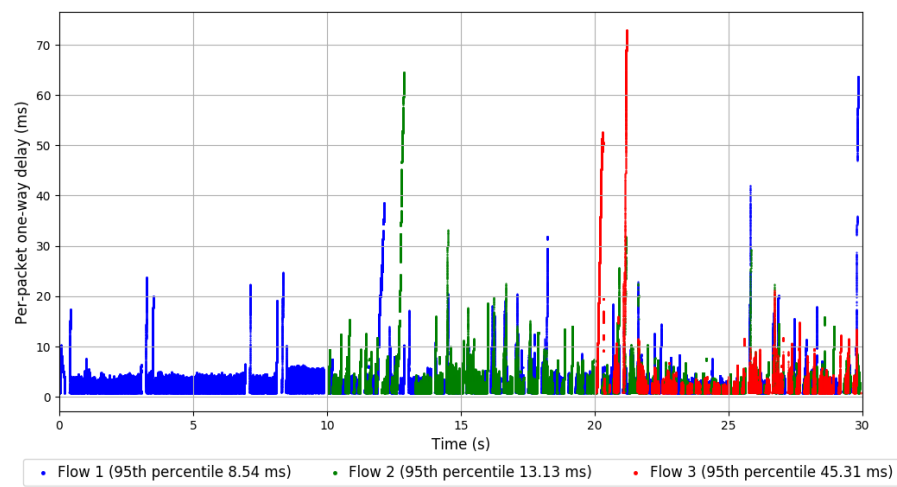
Run 1: Report of Verus — Data Link

```
Run 2: Statistics of Verus

Start at: 2019-02-20 00:56:44
End at: 2019-02-20 00:57:14
Local clock offset: 0.243 ms
Remote clock offset: -3.69 ms


# Below is generated by plot.py at 2019-02-20 03:44:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 240.05 Mbit/s
95th percentile per-packet one-way delay: 27.087 ms
Loss rate: 4.59%
-- Flow 1:
Average throughput: 106.10 Mbit/s
95th percentile per-packet one-way delay: 14.613 ms
Loss rate: 4.90%
-- Flow 2:
Average throughput: 133.47 Mbit/s
95th percentile per-packet one-way delay: 29.172 ms
Loss rate: 4.55%
-- Flow 3:
Average throughput: 137.67 Mbit/s
95th percentile per-packet one-way delay: 78.392 ms
Loss rate: 3.95%
```
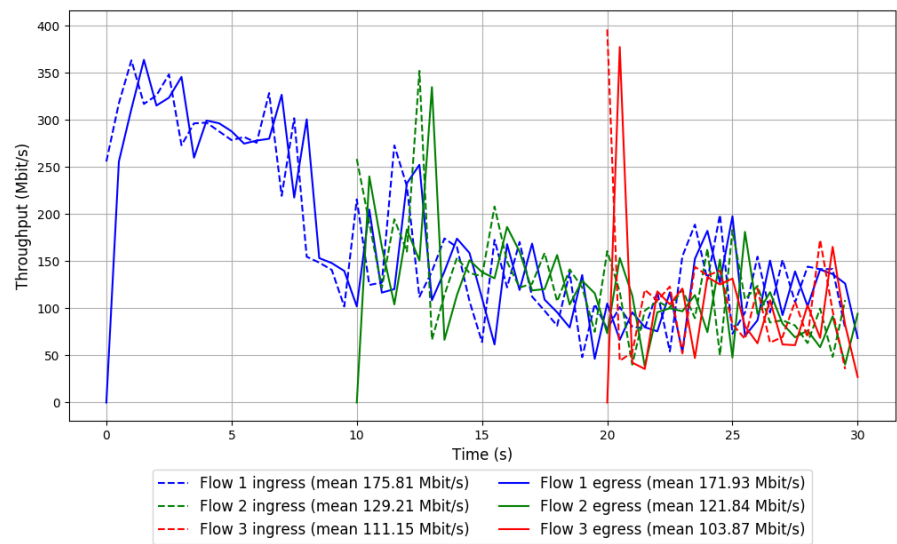
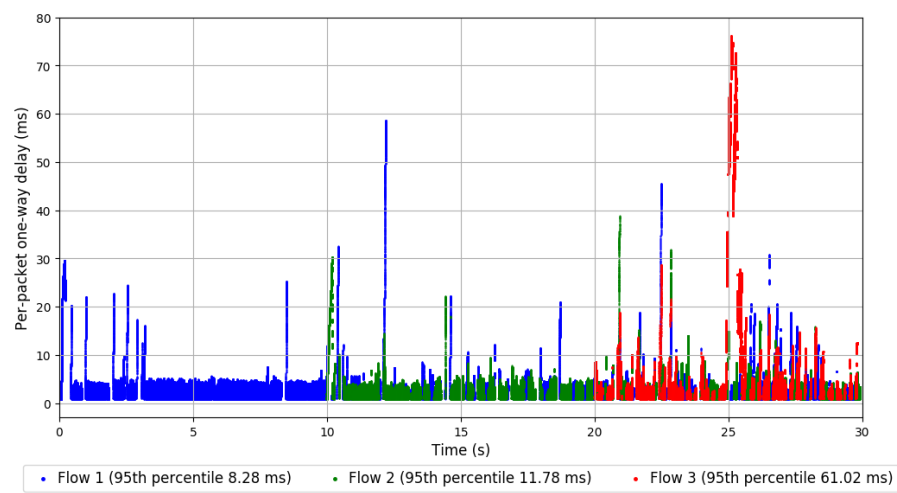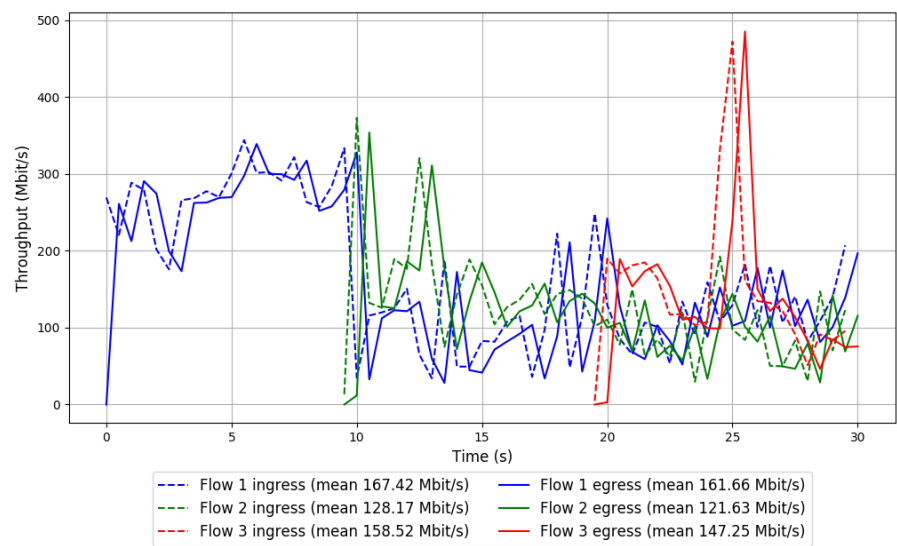# Run 2: Report of Verus — Data Link

```
Run 3: Statistics of Verus

Start at: 2019-02-20 01:26:40
End at: 2019-02-20 01:27:10
Local clock offset: 0.354 ms
Remote clock offset: 0.171 ms


# Below is generated by plot.py at 2019-02-20 03:44:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 286.47 Mbit/s
95th percentile per-packet one-way delay: 13.691 ms
Loss rate: 3.63%
-- Flow 1:
Average throughput: 171.93 Mbit/s
95th percentile per-packet one-way delay: 8.535 ms
Loss rate: 2.00%
-- Flow 2:
Average throughput: 121.84 Mbit/s
95th percentile per-packet one-way delay: 13.135 ms
Loss rate: 5.70%
-- Flow 3:
Average throughput: 103.87 Mbit/s
95th percentile per-packet one-way delay: 45.315 ms
Loss rate: 6.55%
```

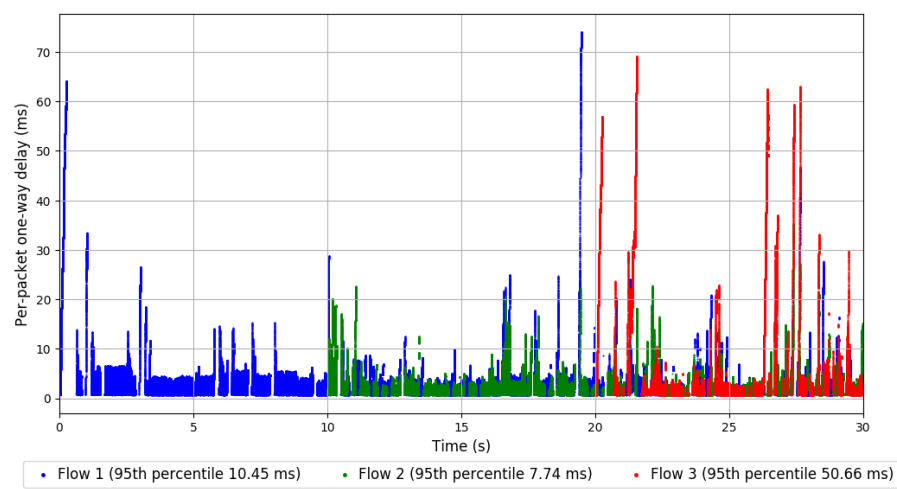## Run 3: Report of Verus — Data Link

```
Run 4: Statistics of Verus

Start at: 2019-02-20 01:56:41
End at: 2019-02-20 01:57:11
Local clock offset: 0.25 ms
Remote clock offset: -3.136 ms


# Below is generated by plot.py at 2019-02-20 03:45:47
# Datalink statistics
-- Total of 3 flows:
Average throughput: 290.89 Mbit/s
95th percentile per-packet one-way delay: 17.115 ms
Loss rate: 4.51%
-- Flow 1:
Average throughput: 161.66 Mbit/s
95th percentile per-packet one-way delay: 8.279 ms
Loss rate: 3.44%
-- Flow 2:
Average throughput: 121.63 Mbit/s
95th percentile per-packet one-way delay: 11.784 ms
Loss rate: 5.09%
-- Flow 3:
Average throughput: 147.25 Mbit/s
95th percentile per-packet one-way delay: 61.015 ms
Loss rate: 7.00%
```
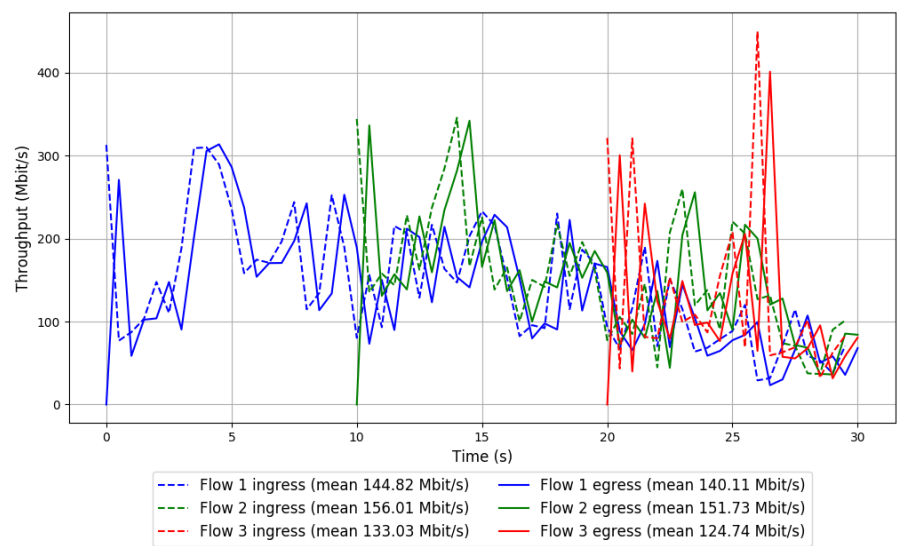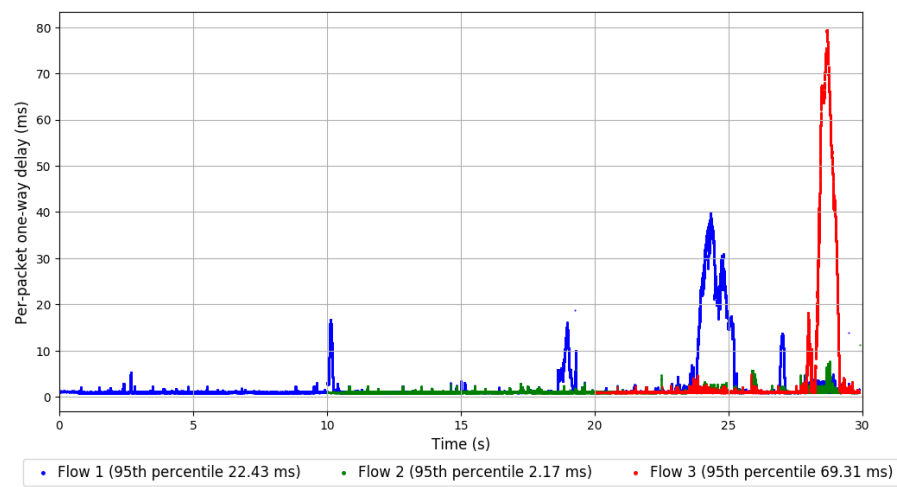
Run 4: Report of Verus — Data Link

```
Run 5: Statistics of Verus

Start at: 2019-02-20 02:26:28
End at: 2019-02-20 02:26:58
Local clock offset: -3.454 ms
Remote clock offset: -0.108 ms

# Below is generated by plot.py at 2019-02-20 03:45:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 282.56 Mbit/s
95th percentile per-packet one-way delay: 19.473 ms
Loss rate: 3.51%
-- Flow 1:
Average throughput: 140.11 Mbit/s
95th percentile per-packet one-way delay: 10.454 ms
Loss rate: 3.25%
-- Flow 2:
Average throughput: 151.73 Mbit/s
95th percentile per-packet one-way delay: 7.741 ms
Loss rate: 2.71%
-- Flow 3:
Average throughput: 124.74 Mbit/s
95th percentile per-packet one-way delay: 50.662 ms
Loss rate: 6.23%
```
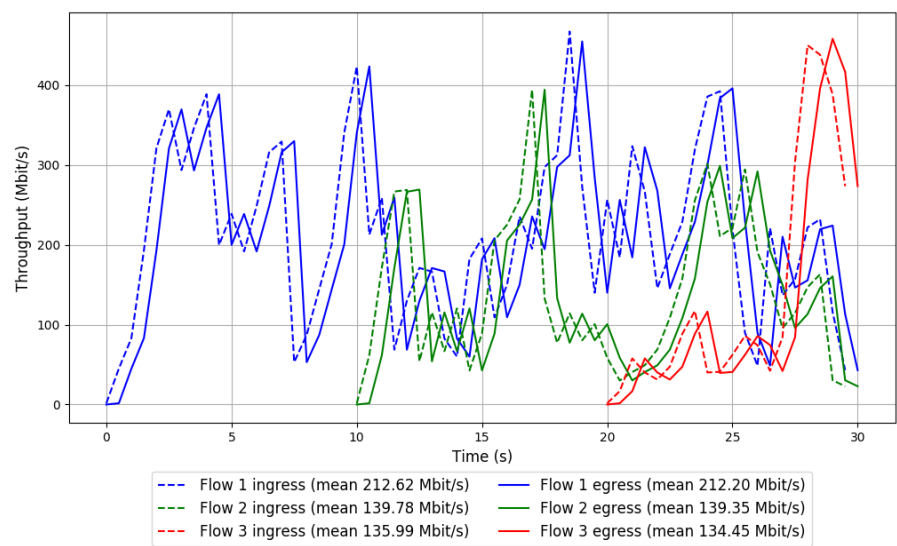
Run 5: Report of Verus — Data Link

```
Run 1: Statistics of PCC-Vivace

Start at: 2019-02-20 00:49:29
End at: 2019-02-20 00:49:59
Local clock offset: -0.103 ms
Remote clock offset: -3.299 ms


# Below is generated by plot.py at 2019-02-20 03:47:07
# Datalink statistics
-- Total of 3 flows:
Average throughput: 349.22 Mbit/s
95th percentile per-packet one-way delay: 26.404 ms
Loss rate: 0.34%
-- Flow 1:
Average throughput: 212.20 Mbit/s
95th percentile per-packet one-way delay: 22.434 ms
Loss rate: 0.20%
-- Flow 2:
Average throughput: 139.35 Mbit/s
95th percentile per-packet one-way delay: 2.173 ms
Loss rate: 0.25%
-- Flow 3:
Average throughput: 134.45 Mbit/s
95th percentile per-packet one-way delay: 69.314 ms
Loss rate: 1.15%
```

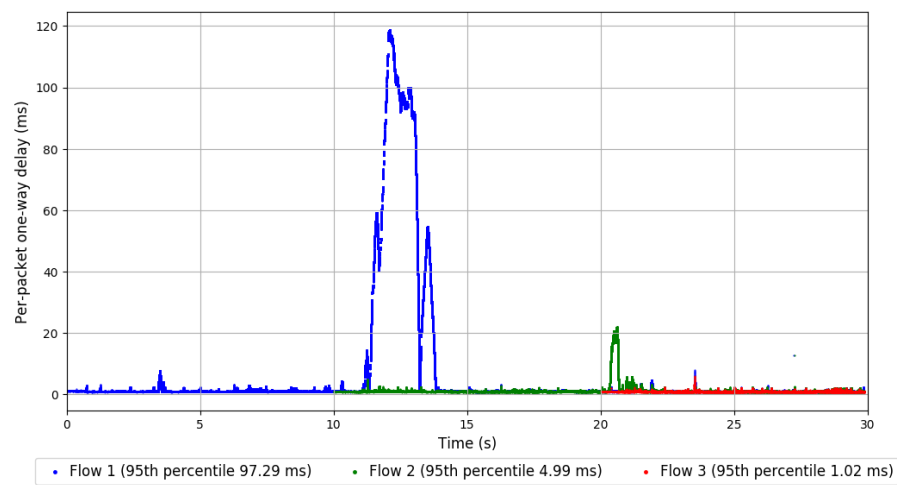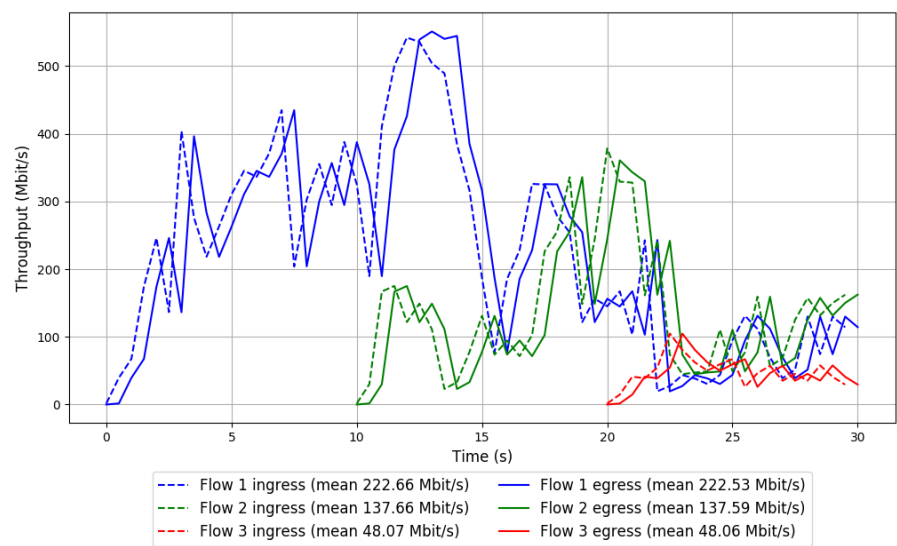Run 1: Report of PCC-Vivace — Data Link

```
Run 2: Statistics of PCC-Vivace

Start at: 2019-02-20 01:19:26
End at: 2019-02-20 01:19:56
Local clock offset: 0.303 ms
Remote clock offset: -0.105 ms


# Below is generated by plot.py at 2019-02-20 03:47:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 329.91 Mbit/s
95th percentile per-packet one-way delay: 93.594 ms
Loss rate: 0.05%
-- Flow 1:
Average throughput: 222.53 Mbit/s
95th percentile per-packet one-way delay: 97.289 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 137.59 Mbit/s
95th percentile per-packet one-way delay: 4.987 ms
Loss rate: 0.05%
-- Flow 3:
Average throughput: 48.06 Mbit/s
95th percentile per-packet one-way delay: 1.025 ms
Loss rate: 0.03%
```
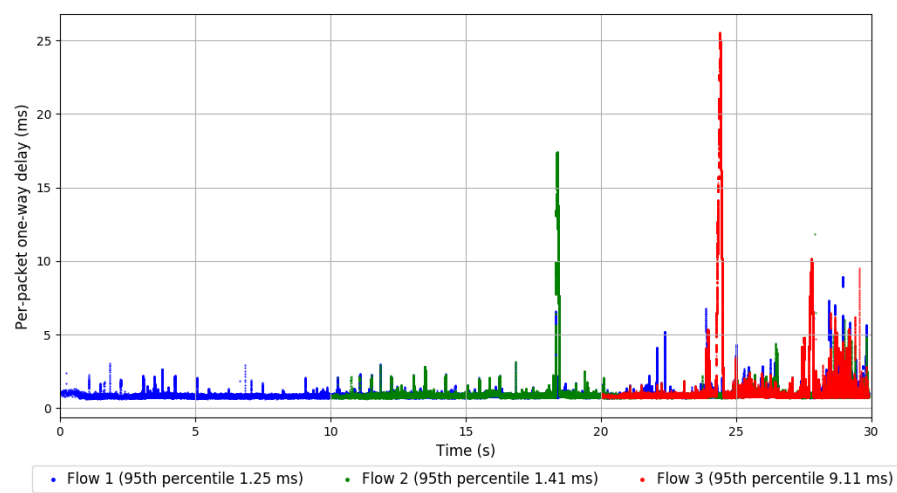
Run 2: Report of PCC-Vivace — Data Link

```
Run 3: Statistics of PCC-Vivace

Start at: 2019-02-20 01:49:30
End at: 2019-02-20 01:50:00
Local clock offset: 0.207 ms
Remote clock offset: -2.76 ms


# Below is generated by plot.py at 2019-02-20 03:47:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 340.85 Mbit/s
95th percentile per-packet one-way delay: 1.764 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 172.70 Mbit/s
95th percentile per-packet one-way delay: 1.249 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 170.44 Mbit/s
95th percentile per-packet one-way delay: 1.407 ms
Loss rate: 0.08%
-- Flow 3:
Average throughput: 165.96 Mbit/s
95th percentile per-packet one-way delay: 9.111 ms
Loss rate: 0.10%
```
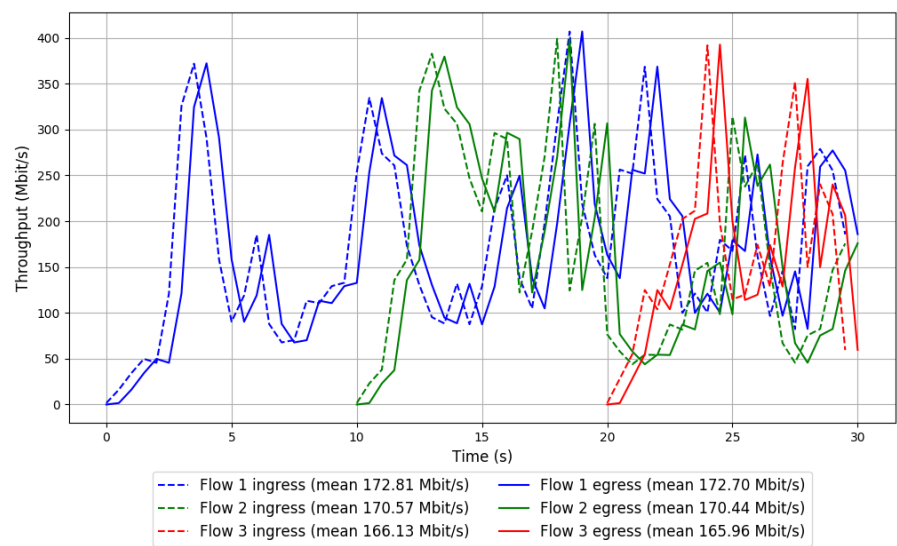
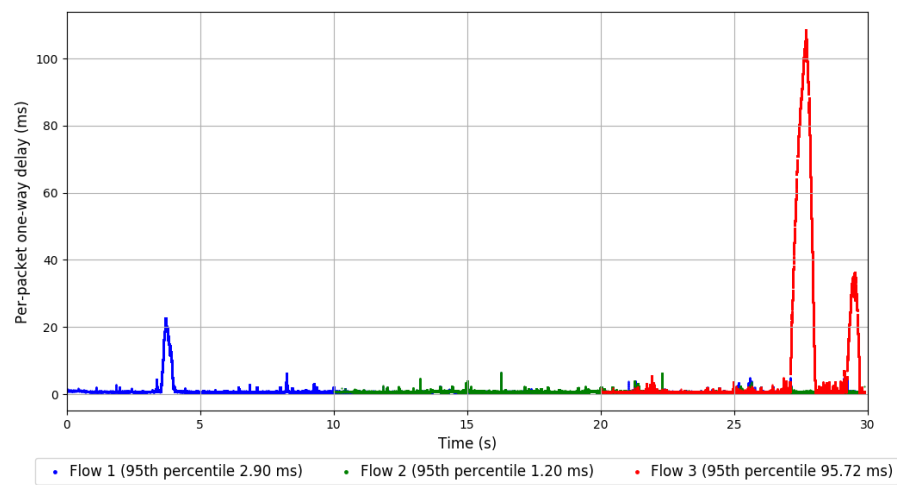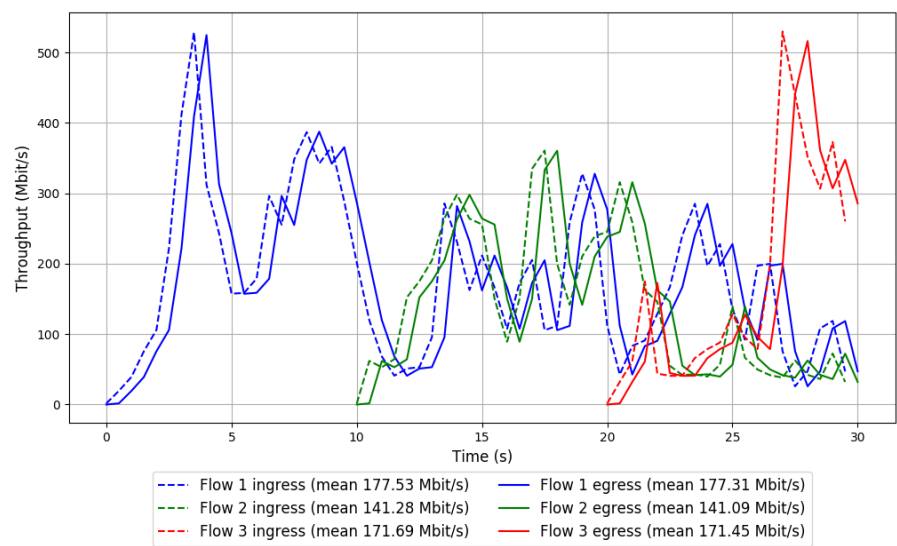Run 3: Report of PCC-Vivace — Data Link

```
Run 4: Statistics of PCC-Vivace

Start at: 2019-02-20 02:19:16
End at: 2019-02-20 02:19:46
Local clock offset: -3.055 ms
Remote clock offset: -0.825 ms


# Below is generated by plot.py at 2019-02-20 03:47:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 327.73 Mbit/s
95th percentile per-packet one-way delay: 25.196 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 177.31 Mbit/s
95th percentile per-packet one-way delay: 2.898 ms
Loss rate: 0.12%
-- Flow 2:
Average throughput: 141.09 Mbit/s
95th percentile per-packet one-way delay: 1.202 ms
Loss rate: 0.12%
-- Flow 3:
Average throughput: 171.45 Mbit/s
95th percentile per-packet one-way delay: 95.715 ms
Loss rate: 0.15%
```

Run 4: Report of PCC-Vivace — Data Link

```
Run 5: Statistics of PCC-Vivace

Start at: 2019-02-20 02:49:11
End at: 2019-02-20 02:49:41
Local clock offset: 0.196 ms
Remote clock offset: 0.419 ms


# Below is generated by plot.py at 2019-02-20 03:47:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 359.53 Mbit/s
95th percentile per-packet one-way delay: 39.974 ms
Loss rate: 0.16%
-- Flow 1:
Average throughput: 185.04 Mbit/s
95th percentile per-packet one-way delay: 55.758 ms
Loss rate: 0.15%
-- Flow 2:
Average throughput: 188.04 Mbit/s
95th percentile per-packet one-way delay: 2.447 ms
Loss rate: 0.16%
-- Flow 3:
Average throughput: 149.74 Mbit/s
95th percentile per-packet one-way delay: 2.304 ms
Loss rate: 0.20%
```
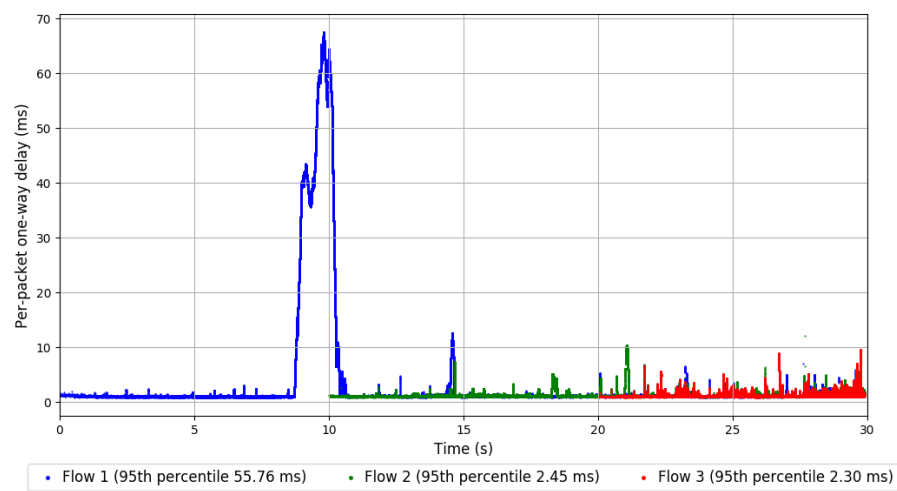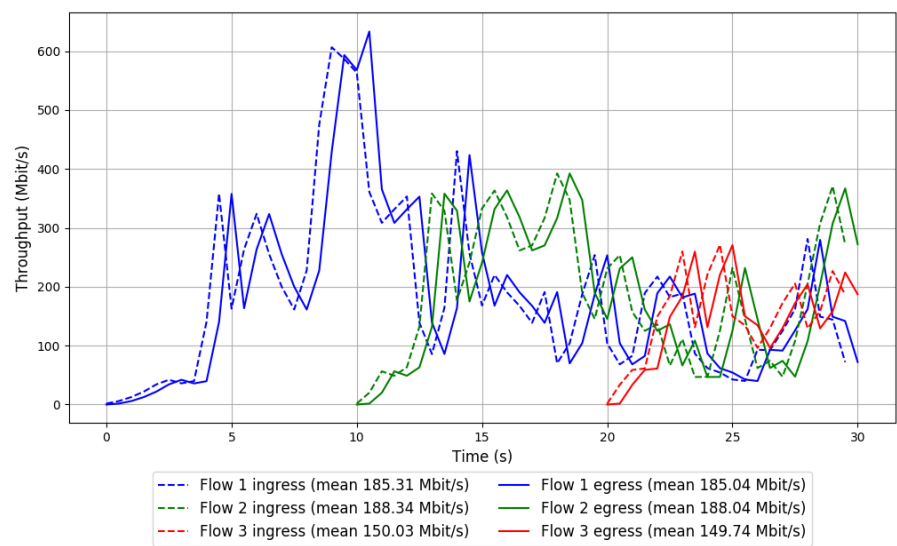
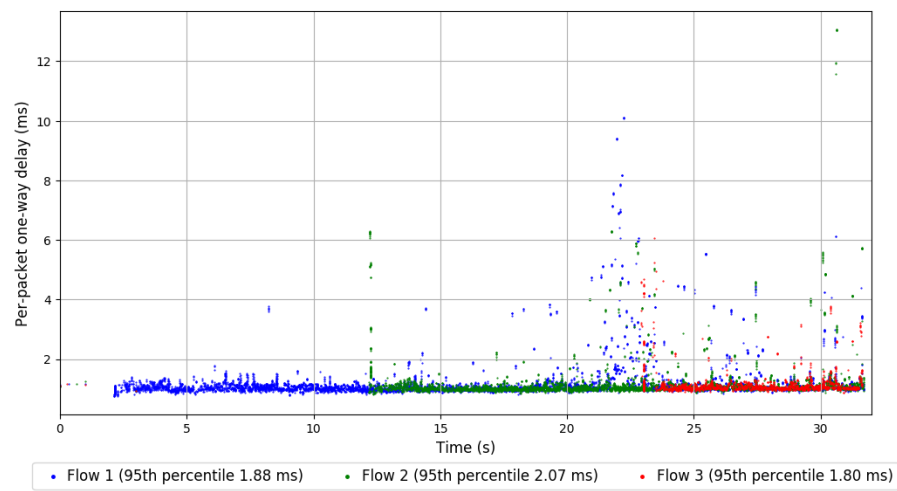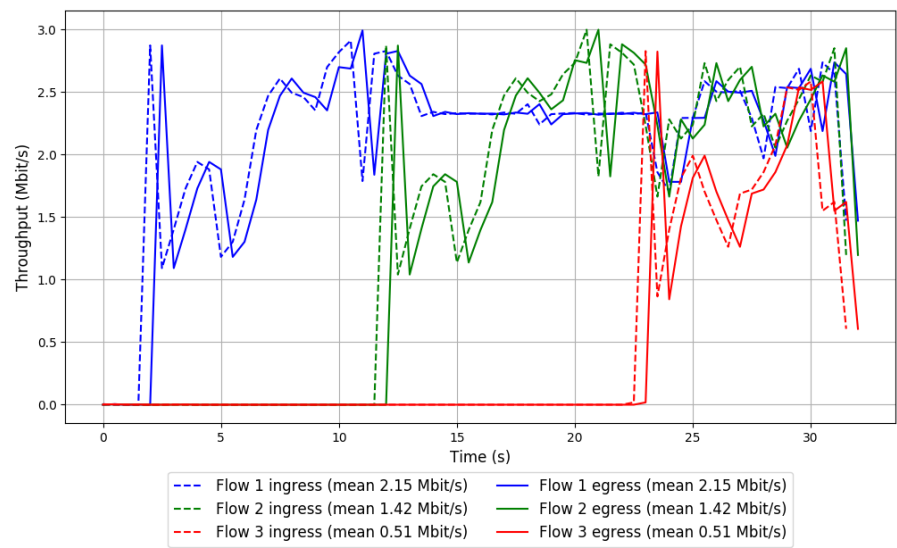## Run 5: Report of PCC-Vivace — Data Link

```
Run 1: Statistics of WebRTC media

Start at: 2019-02-20 00:42:17
End at: 2019-02-20 00:42:47
Local clock offset: -0.818 ms
Remote clock offset: -2.928 ms


# Below is generated by plot.py at 2019-02-20 03:47:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 4.08 Mbit/s
95th percentile per-packet one-way delay: 1.922 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 2.15 Mbit/s
95th percentile per-packet one-way delay: 1.881 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.42 Mbit/s
95th percentile per-packet one-way delay: 2.066 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.51 Mbit/s
95th percentile per-packet one-way delay: 1.799 ms
Loss rate: 0.00%
```

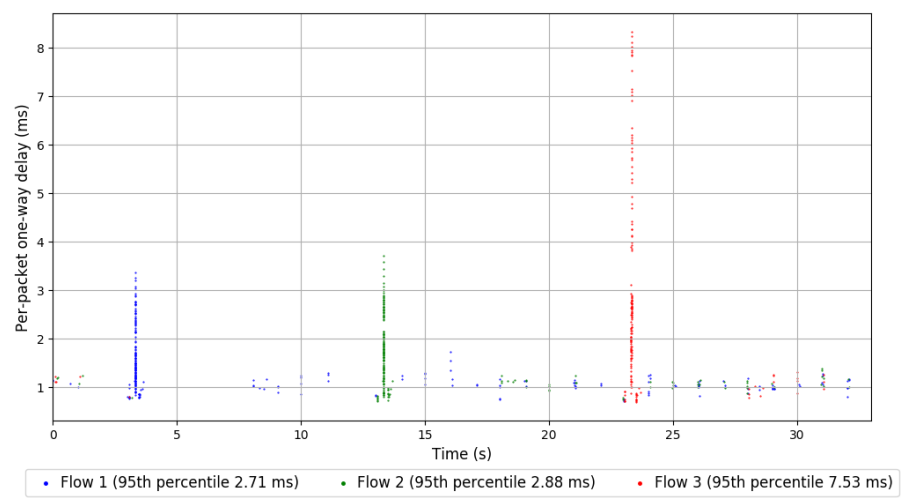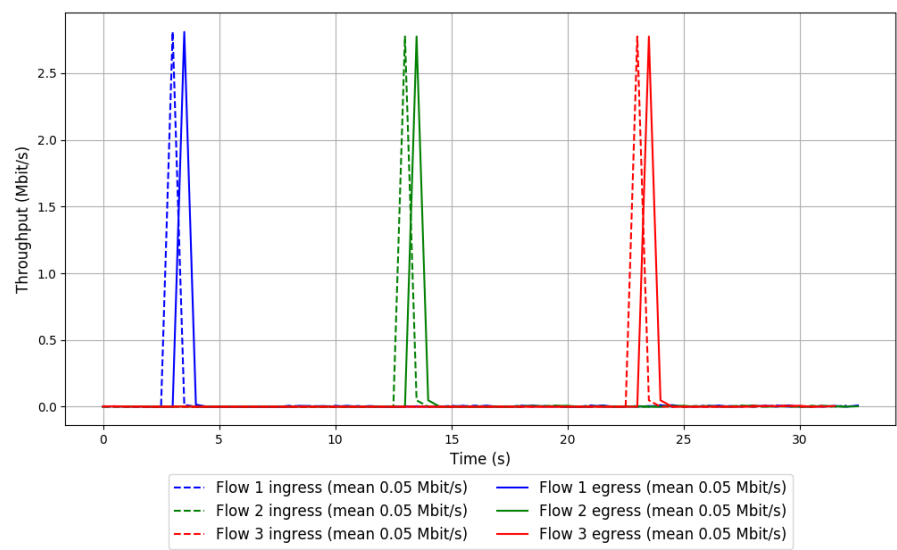Run 1: Report of WebRTC media — Data Link

```
Run 2: Statistics of WebRTC media

Start at: 2019-02-20 01:12:04
End at: 2019-02-20 01:12:34
Local clock offset: 0.26 ms
Remote clock offset: -0.829 ms


# Below is generated by plot.py at 2019-02-20 03:47:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 4.423 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 2.708 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 2.877 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 7.526 ms
Loss rate: 0.00%
```

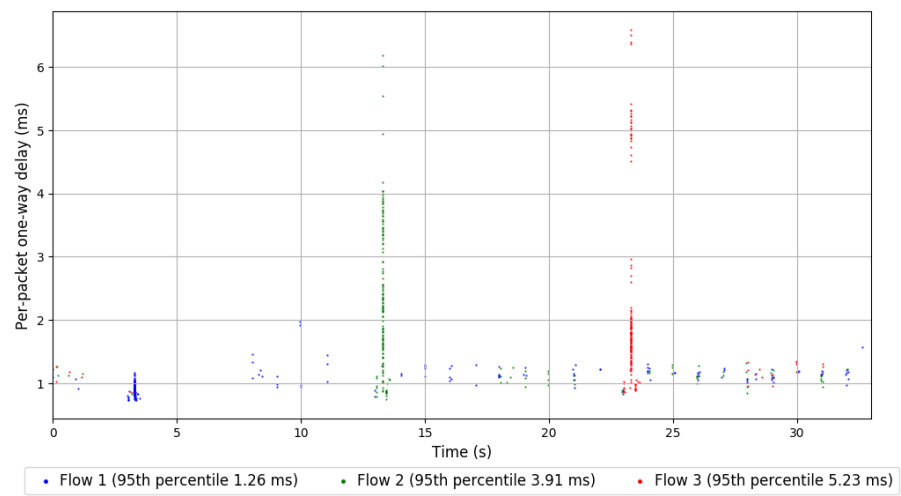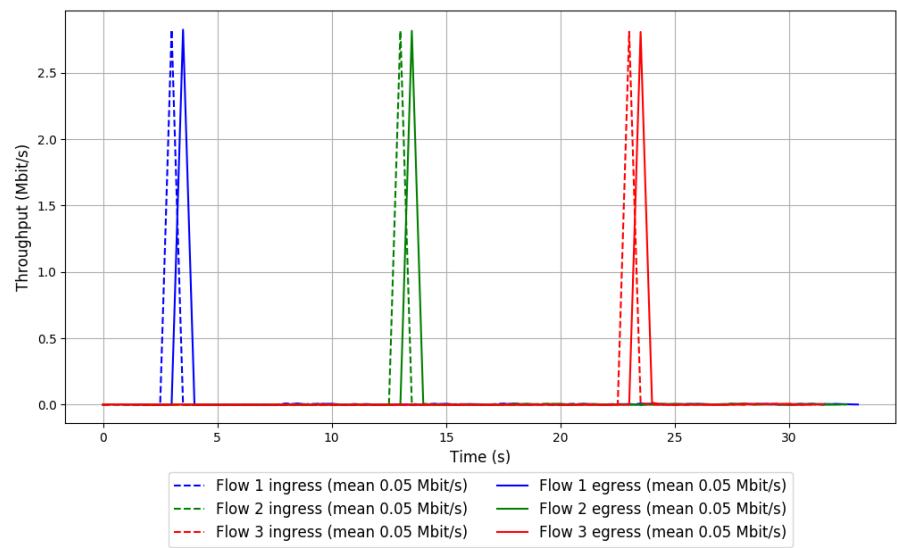Run 2: Report of WebRTC media — Data Link

```
Run 3: Statistics of WebRTC media

Start at: 2019-02-20 01:42:06
End at: 2019-02-20 01:42:36
Local clock offset: 0.192 ms
Remote clock offset: -1.692 ms


# Below is generated by plot.py at 2019-02-20 03:47:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.13 Mbit/s
95th percentile per-packet one-way delay: 4.516 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 1.258 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 3.913 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 5.227 ms
Loss rate: 0.00%
```

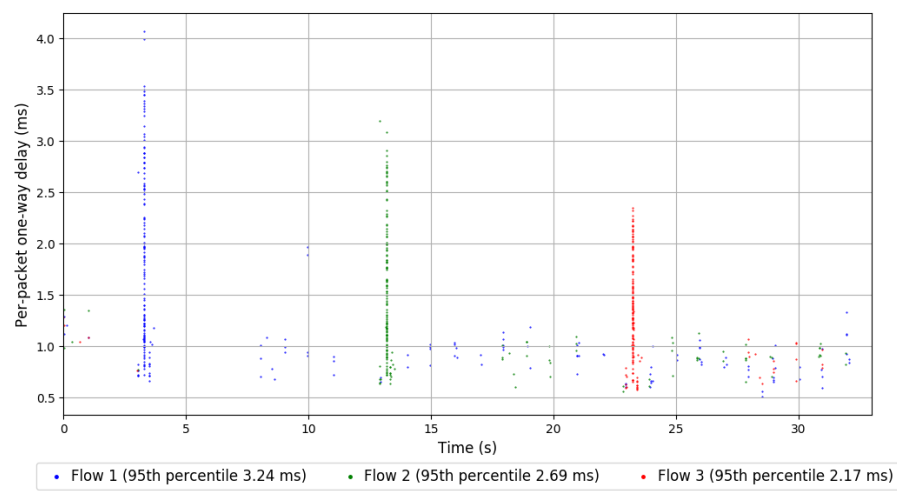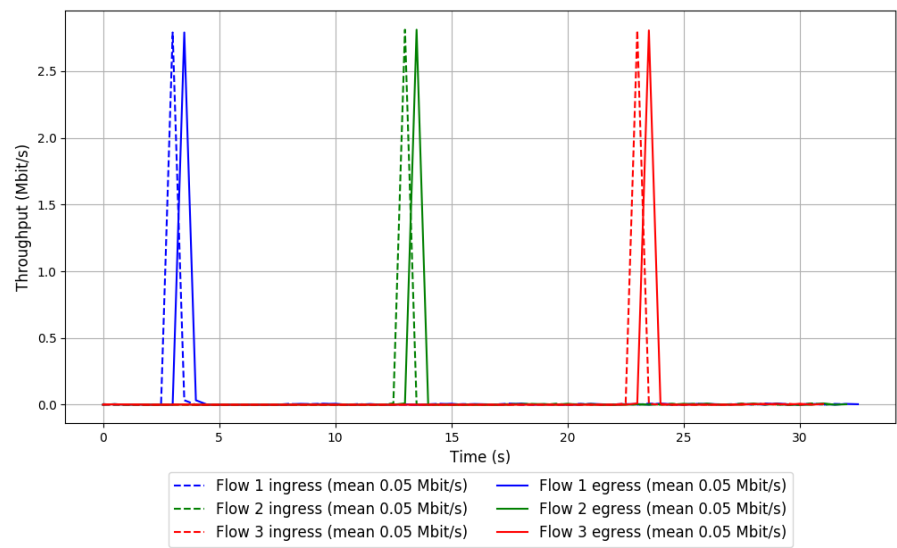Run 3: Report of WebRTC media — Data Link

```
Run 4: Statistics of WebRTC media

Start at: 2019-02-20 02:11:58
End at: 2019-02-20 02:12:28
Local clock offset: -2.388 ms
Remote clock offset: -2.399 ms


# Below is generated by plot.py at 2019-02-20 03:47:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 2.787 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 3.241 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: 2.169 ms
Loss rate: 0.00%
```

Run 4: Report of WebRTC media — Data Link

```
Run 5: Statistics of WebRTC media

Start at: 2019-02-20 02:41:49
End at: 2019-02-20 02:42:19
Local clock offset: -0.524 ms
Remote clock offset: 0.703 ms


# Below is generated by plot.py at 2019-02-20 03:47:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 5.214 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 2.649 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 5.343 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 6.514 ms
Loss rate: 0.00%
```

Run 5: Report of WebRTC media — Data Link