Pantheon Report

Generated at 2019-03-27 15:38:40 (UTC).

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

Repeated the test of 21 congestion control schemes 5 times.

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

NTP offsets were measured against `time.stanford.edu` and have been applied to correct the timestamps in logs.
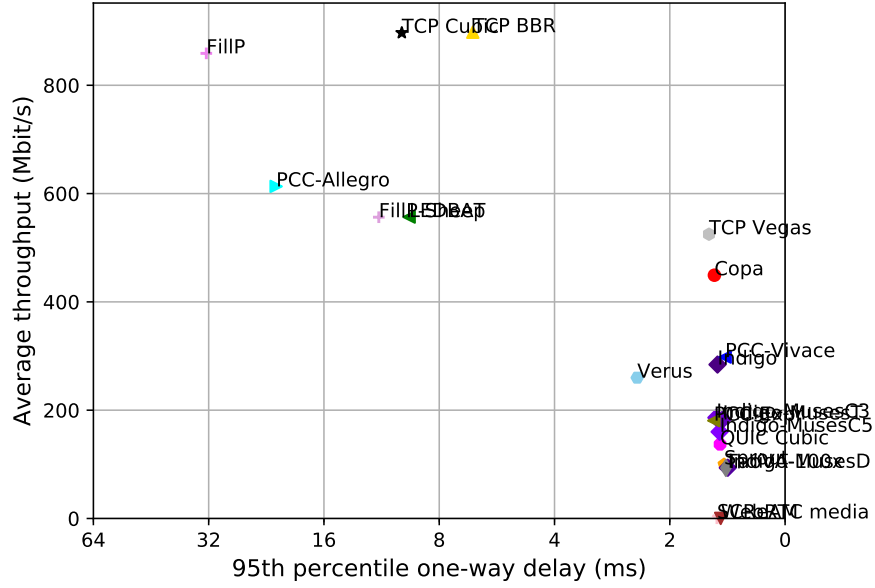
```
System info:
Linux 4.15.0-1034-aws
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912

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
```
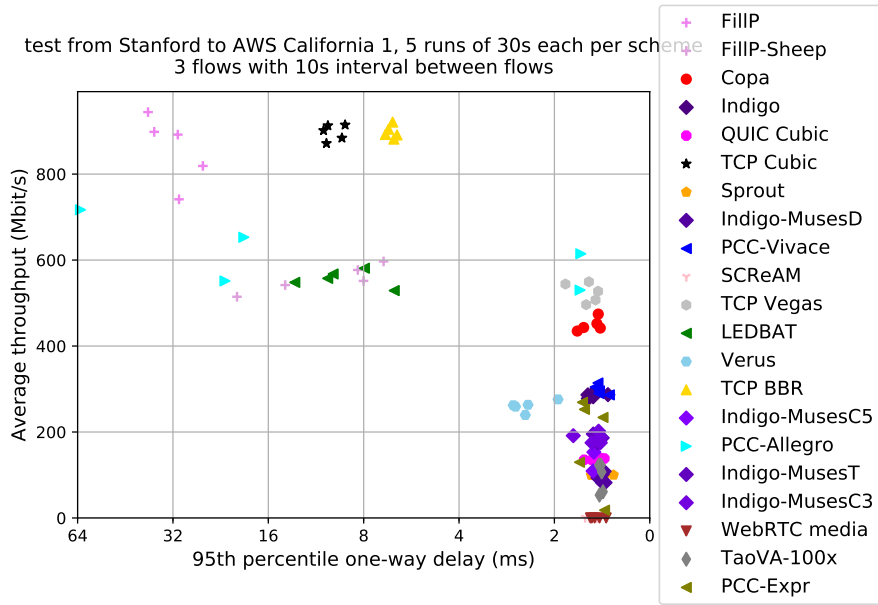
```
third_party/vivace @ 2baf86211435ae071a32f96b7d8c504587f5d7f4
third_party/webrtc @ 3f0cc2a9061a41b6f9dde4735770d143a1fa2851
```

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

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

3

scheme	# runs	mean avg tput (Mbit/s)			mean 95th-%ile delay (ms)			mean loss rate (%)		
		flow 1	flow 2	flow 3	flow 1	flow 2	flow 3	flow 1	flow 2	flow 3
TCP BBR	5	519.65	404.18	328.39	6.63	5.97	6.29	0.01	0.02	0.06
Copa	5	267.74	208.61	128.16	1.25	1.18	1.05	0.00	0.01	0.03
TCP Cubic	5	521.58	402.87	321.47	10.48	7.60	7.78	0.03	0.03	0.08
FillP	5	505.22	389.94	284.38	28.56	30.78	31.78	0.06	0.07	0.27
FillP-Sheep	5	413.26	199.20	32.60	12.30	5.25	3.72	0.00	0.00	0.00
Indigo	5	153.49	140.31	114.24	1.11	1.20	1.33	0.01	0.00	0.02
Indigo-MusesC3	5	134.68	68.81	30.74	1.18	1.21	1.14	0.00	0.02	0.03
Indigo-MusesC5	5	123.03	42.64	37.40	1.14	1.11	1.04	0.00	0.01	0.01
Indigo-MusesD	5	59.95	34.69	43.43	1.00	0.97	0.96	0.00	0.01	0.00
Indigo-MusesT	5	136.43	58.07	37.32	1.09	1.05	1.00	0.00	0.01	0.03
LEDBAT	5	342.61	231.47	180.54	10.64	2.85	2.29	0.00	0.01	0.02
PCC-Allegro	5	475.27	147.50	121.48	26.14	1.49	2.00	0.11	0.01	0.01
PCC-Expr	5	128.28	62.06	33.77	1.18	1.30	1.08	0.01	0.02	0.01
QUIC Cubic	5	73.89	68.39	53.05	1.12	1.13	1.14	0.01	0.02	0.02
SCReAM	5	0.22	0.22	0.22	1.19	1.15	1.13	0.00	0.00	0.21
Sprout	5	50.21	50.11	49.91	1.06	1.04	1.03	0.00	0.02	0.00
TaoVA-100x	5	53.09	36.23	48.42	1.02	1.01	1.07	0.01	0.00	0.01
TCP Vegas	5	253.30	269.48	277.06	1.60	1.43	2.02	0.00	0.01	0.01
Verus	5	162.83	107.94	76.74	2.60	1.81	1.62	0.00	0.01	0.00
PCC-Vivace	5	199.93	111.56	72.52	1.01	1.08	1.28	0.00	0.01	0.02
WebRTC media	5	0.05	0.05	0.05	1.11	1.14	1.12	0.01	0.04	0.01

```
Run 1: Statistics of TCP BBR

Start at: 2019-03-27 12:11:26
End at: 2019-03-27 12:11:56
Local clock offset: 6.147 ms
Remote clock offset: -1.427 ms


# Below is generated by plot.py at 2019-03-27 14:48:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 891.09 Mbit/s
95th percentile per-packet one-way delay: 6.278 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 512.62 Mbit/s
95th percentile per-packet one-way delay: 6.264 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 404.57 Mbit/s
95th percentile per-packet one-way delay: 6.232 ms
Loss rate: 0.03%
-- Flow 3:
Average throughput: 327.81 Mbit/s
95th percentile per-packet one-way delay: 6.438 ms
Loss rate: 0.06%
```
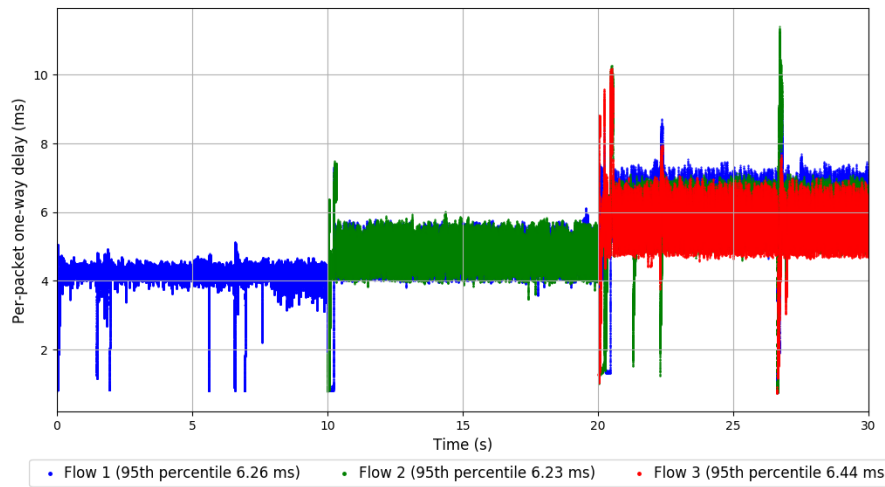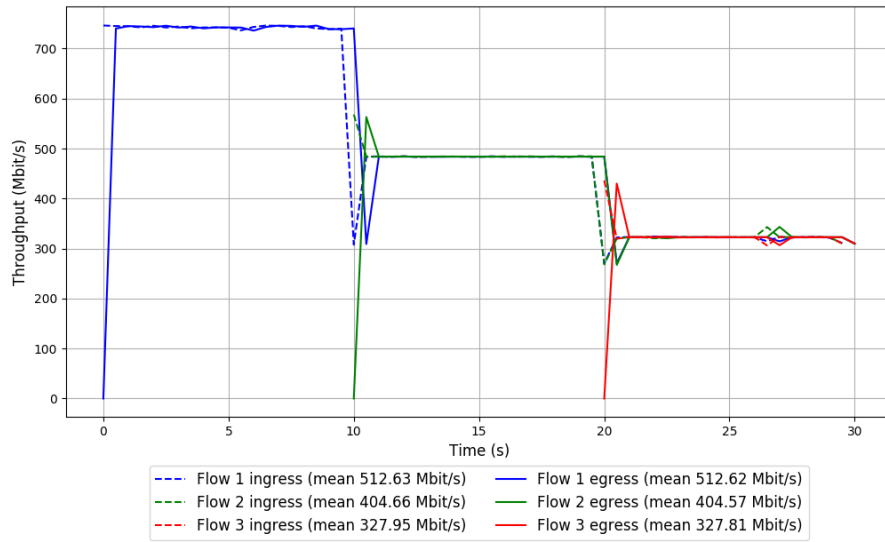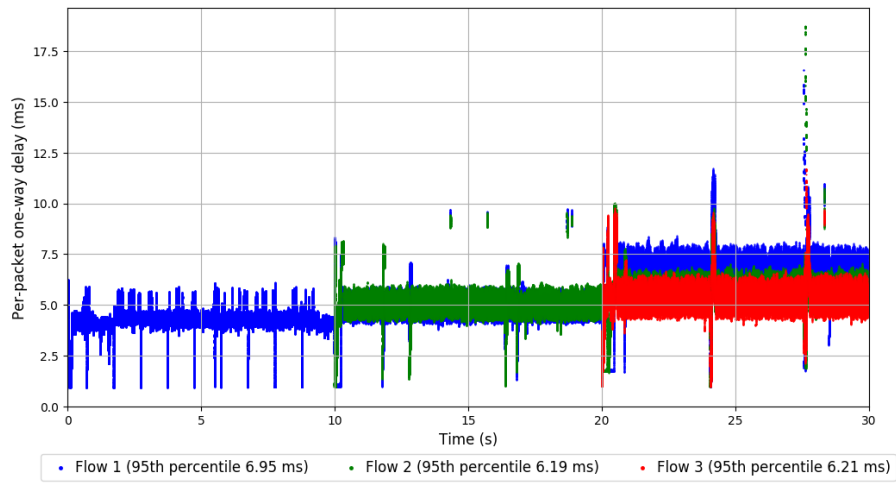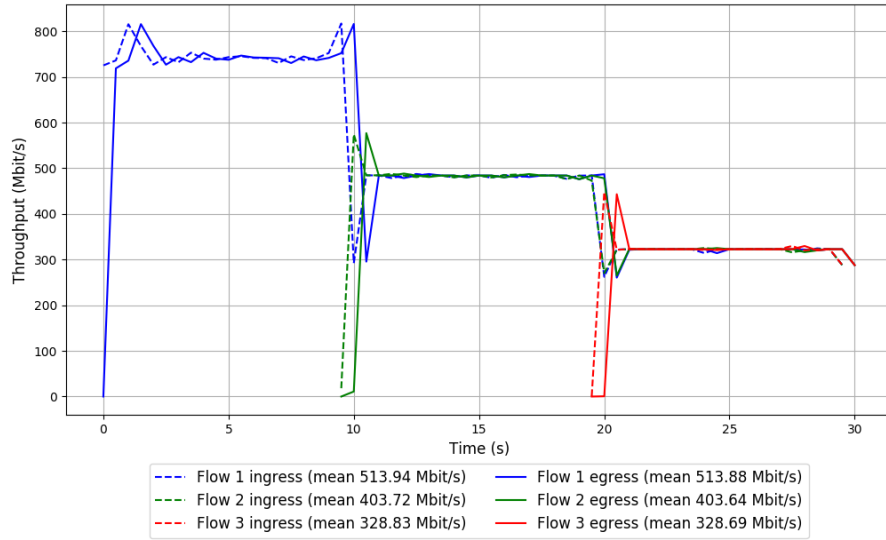
Run 1: Report of TCP BBR — Data Link

```
Run 2: Statistics of TCP BBR

Start at: 2019-03-27 12:41:56
End at: 2019-03-27 12:42:26
Local clock offset: 6.229 ms
Remote clock offset: -3.876 ms

# Below is generated by plot.py at 2019-03-27 14:48:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 892.27 Mbit/s
95th percentile per-packet one-way delay: 6.828 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 513.88 Mbit/s
95th percentile per-packet one-way delay: 6.947 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 403.64 Mbit/s
95th percentile per-packet one-way delay: 6.190 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 328.69 Mbit/s
95th percentile per-packet one-way delay: 6.214 ms
Loss rate: 0.06%
```
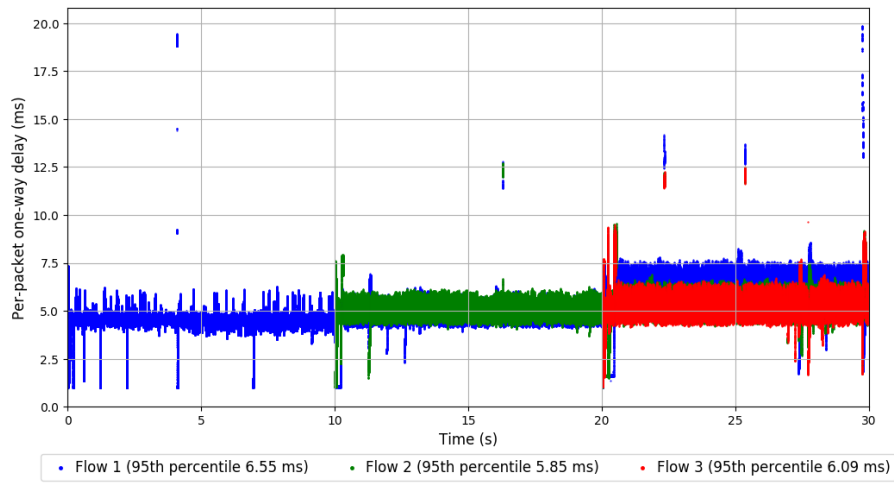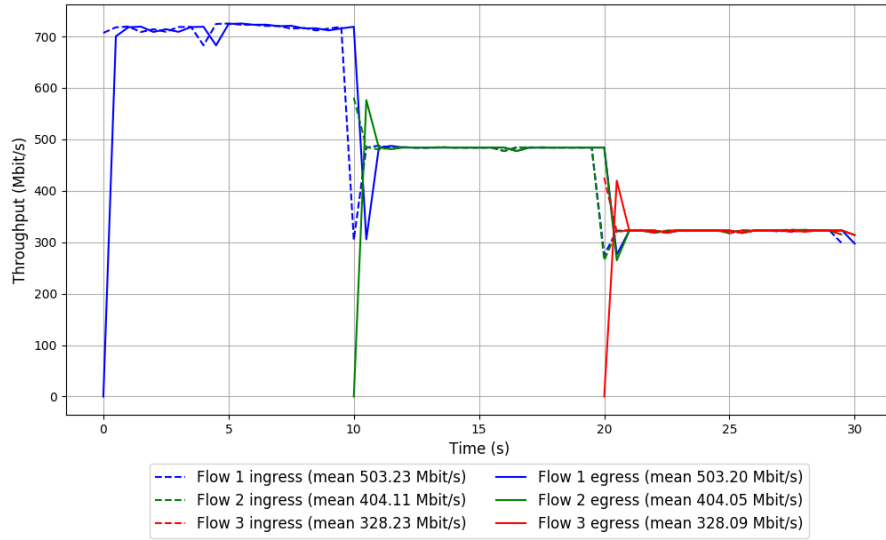
Run 2: Report of TCP BBR — Data Link

```
Run 3: Statistics of TCP BBR

Start at: 2019-03-27 13:12:16
End at: 2019-03-27 13:12:46
Local clock offset: 4.925 ms
Remote clock offset: -3.328 ms


# Below is generated by plot.py at 2019-03-27 14:48:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 881.36 Mbit/s
95th percentile per-packet one-way delay: 6.423 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 503.20 Mbit/s
95th percentile per-packet one-way delay: 6.554 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 404.05 Mbit/s
95th percentile per-packet one-way delay: 5.849 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 328.09 Mbit/s
95th percentile per-packet one-way delay: 6.090 ms
Loss rate: 0.06%
```
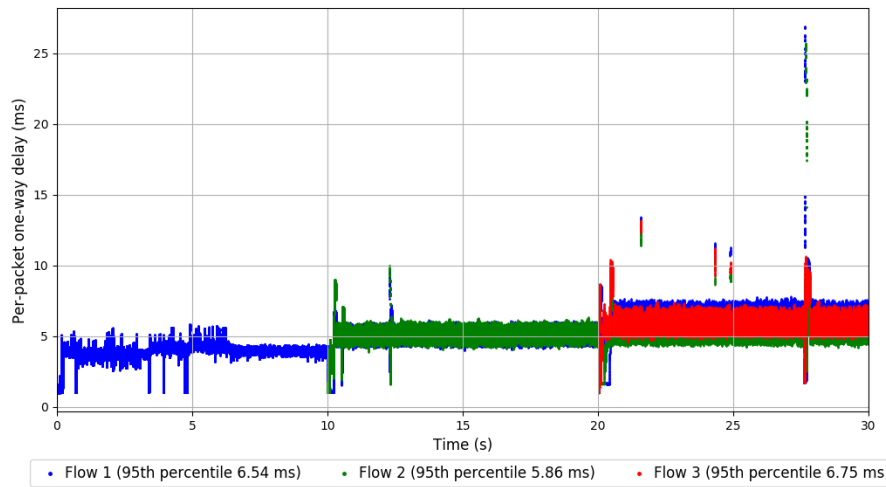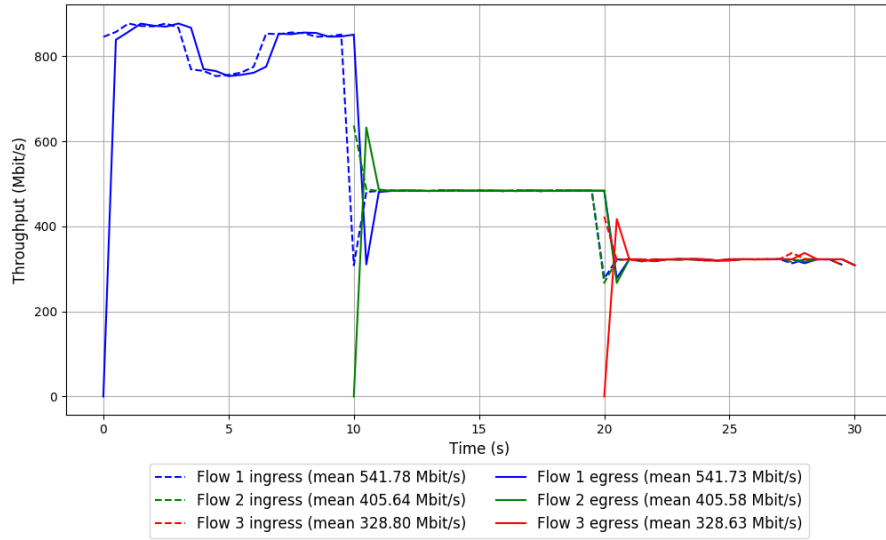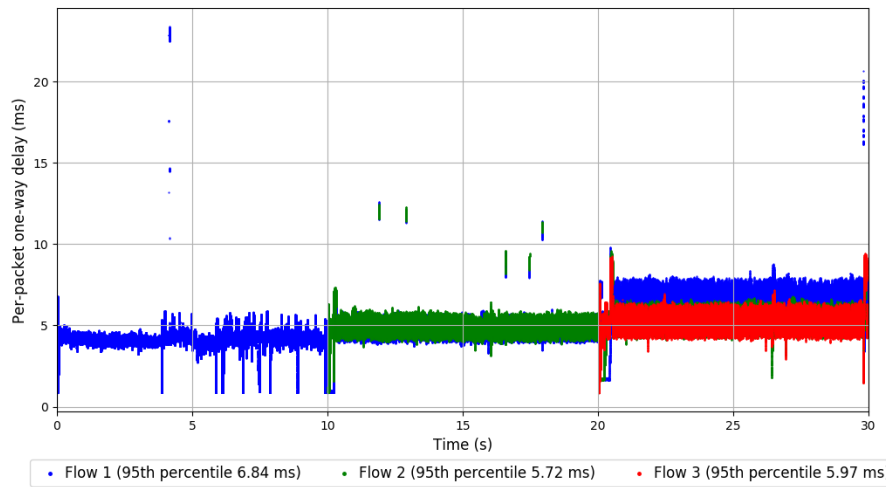
Run 3: Report of TCP BBR — Data Link

Flow 1 ingress (mean 503.23 Mbit/s) - - - - Flow 1 egress (mean 503.20 Mbit/s) ——
Flow 2 ingress (mean 404.11 Mbit/s) - - - - Flow 2 egress (mean 404.05 Mbit/s) ——
Flow 3 ingress (mean 328.23 Mbit/s) - - - - Flow 3 egress (mean 328.09 Mbit/s) ——

Flow 1 (95th percentile 6.55 ms) • Flow 2 (95th percentile 5.85 ms) • Flow 3 (95th percentile 6.09 ms)

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```
Run 4: Statistics of TCP BBR

Start at: 2019-03-27 13:42:39
End at: 2019-03-27 13:43:09
Local clock offset: 5.331 ms
Remote clock offset: 4.593 ms


# Below is generated by plot.py at 2019-03-27 14:48:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 920.99 Mbit/s
95th percentile per-packet one-way delay: 6.481 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 541.73 Mbit/s
95th percentile per-packet one-way delay: 6.542 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 405.58 Mbit/s
95th percentile per-packet one-way delay: 5.858 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 328.63 Mbit/s
95th percentile per-packet one-way delay: 6.755 ms
Loss rate: 0.07%
```
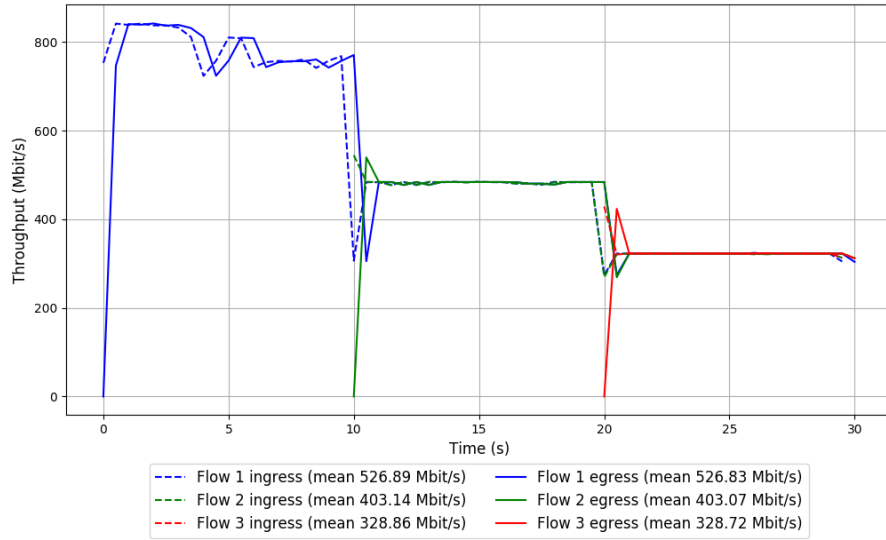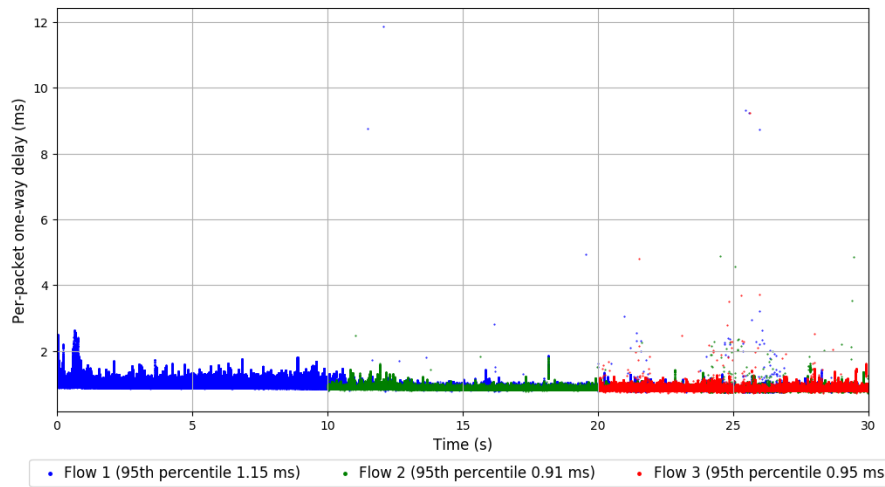
Run 4: Report of TCP BBR — Data Link

```
Run 5: Statistics of TCP BBR

Start at: 2019-03-27 14:12:58
End at: 2019-03-27 14:13:28
Local clock offset: 4.696 ms
Remote clock offset: -3.464 ms


# Below is generated by plot.py at 2019-03-27 14:48:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 904.43 Mbit/s
95th percentile per-packet one-way delay: 6.680 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 526.83 Mbit/s
95th percentile per-packet one-way delay: 6.836 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 403.07 Mbit/s
95th percentile per-packet one-way delay: 5.720 ms
Loss rate: 0.03%
-- Flow 3:
Average throughput: 328.72 Mbit/s
95th percentile per-packet one-way delay: 5.968 ms
Loss rate: 0.07%
```
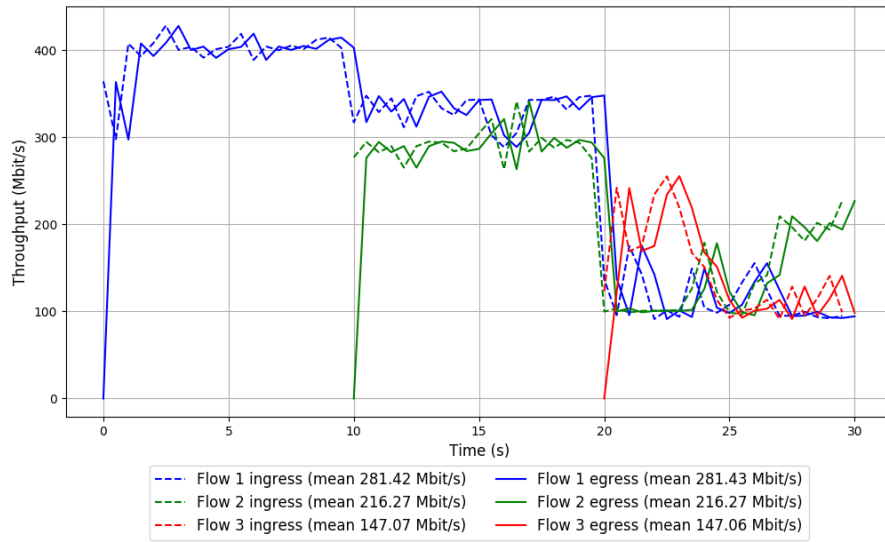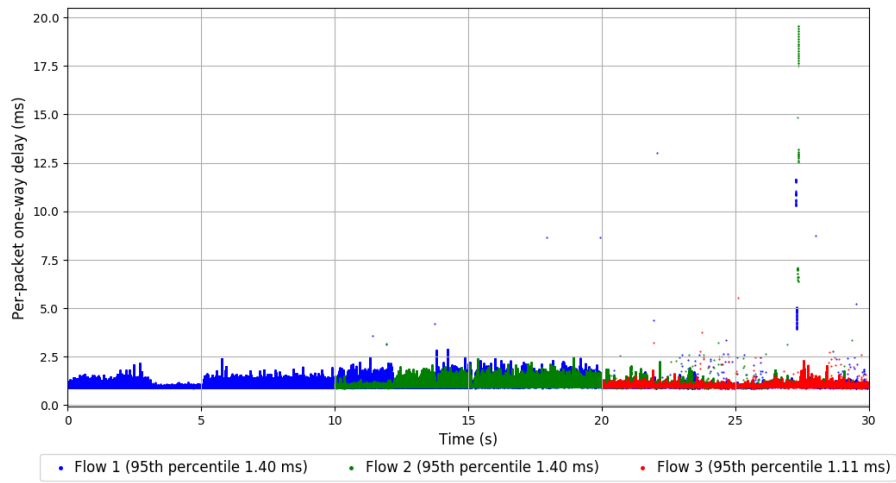
Run 5: Report of TCP BBR — Data Link

Flow 1 ingress (mean 526.89 Mbit/s)   Flow 1 egress (mean 526.83 Mbit/s)
Flow 2 ingress (mean 403.14 Mbit/s)   Flow 2 egress (mean 403.07 Mbit/s)
Flow 3 ingress (mean 328.86 Mbit/s)   Flow 3 egress (mean 328.72 Mbit/s)

Flow 1 (95th percentile 6.84 ms)   Flow 2 (95th percentile 5.72 ms)   Flow 3 (95th percentile 5.97 ms)

```
Run 1: Statistics of Copa

Start at: 2019-03-27 12:13:10
End at: 2019-03-27 12:13:40
Local clock offset: 6.156 ms
Remote clock offset: -1.819 ms


# Below is generated by plot.py at 2019-03-27 14:48:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 474.32 Mbit/s
95th percentile per-packet one-way delay: 1.080 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 281.43 Mbit/s
95th percentile per-packet one-way delay: 1.149 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 216.27 Mbit/s
95th percentile per-packet one-way delay: 0.905 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 147.06 Mbit/s
95th percentile per-packet one-way delay: 0.950 ms
Loss rate: 0.02%
```
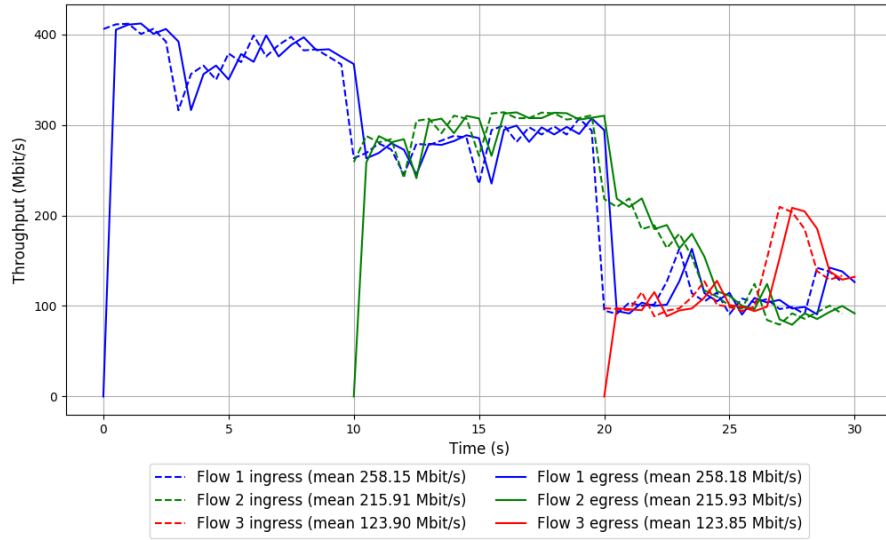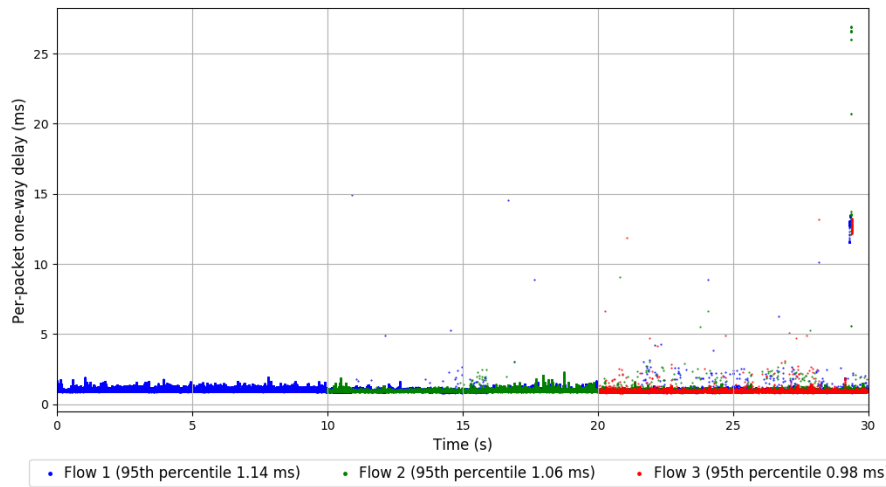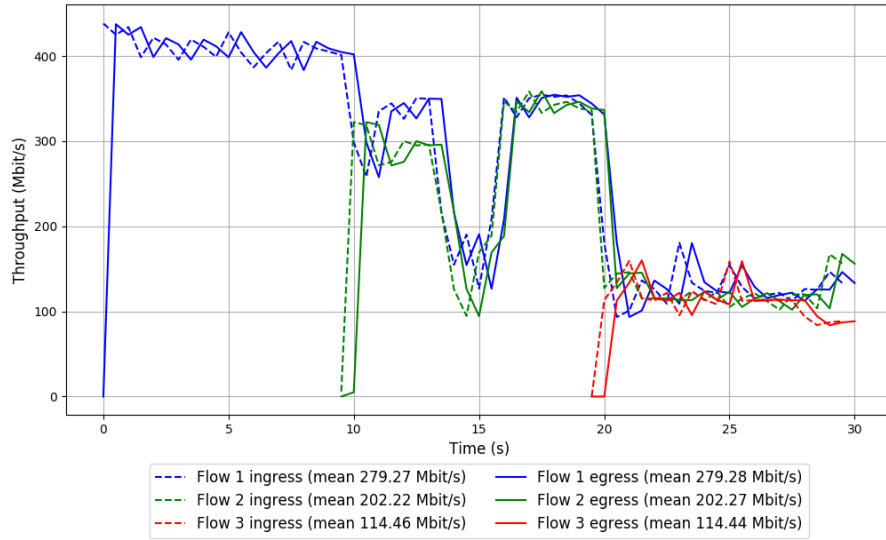
Run 1: Report of Copa — Data Link

```
Run 2: Statistics of Copa

Start at: 2019-03-27 12:43:40
End at: 2019-03-27 12:44:10
Local clock offset: 6.27 ms
Remote clock offset: -3.65 ms


# Below is generated by plot.py at 2019-03-27 14:48:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 443.13 Mbit/s
95th percentile per-packet one-way delay: 1.386 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 258.18 Mbit/s
95th percentile per-packet one-way delay: 1.402 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 215.93 Mbit/s
95th percentile per-packet one-way delay: 1.403 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 123.85 Mbit/s
95th percentile per-packet one-way delay: 1.111 ms
Loss rate: 0.06%
```
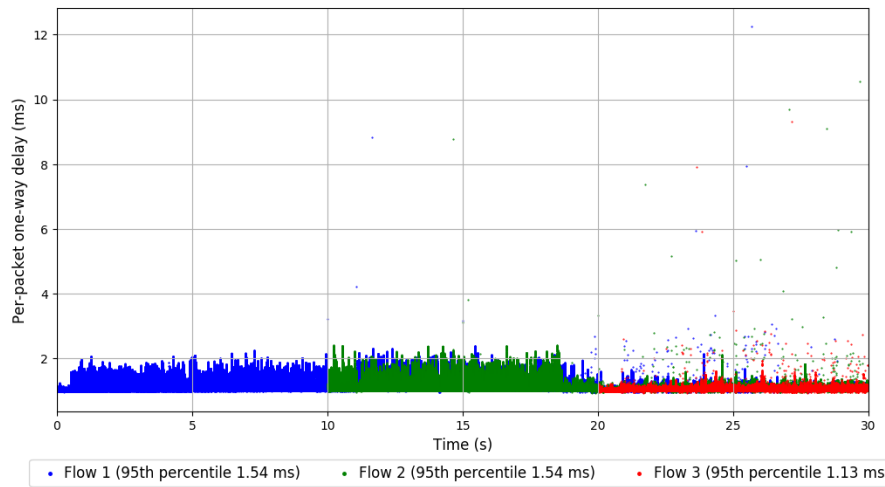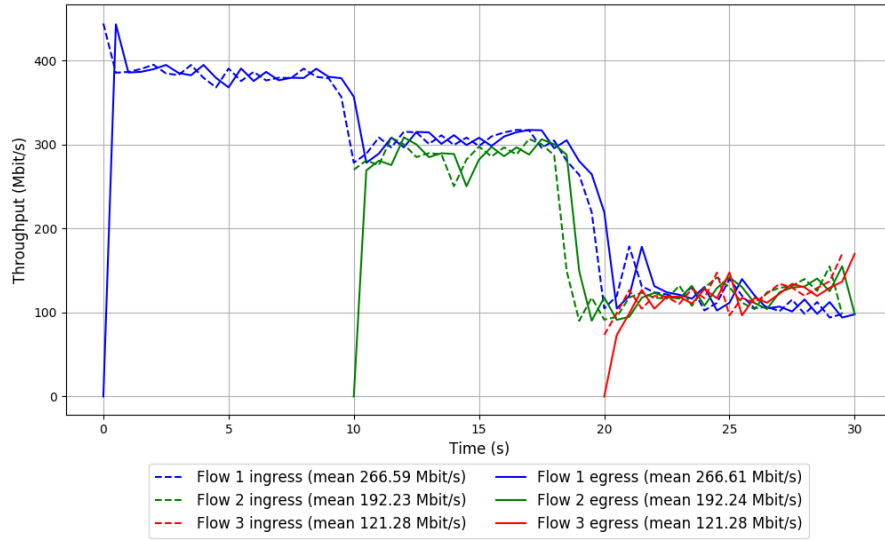
Run 2: Report of Copa — Data Link

Flow 1 ingress (mean 258.15 Mbit/s)   Flow 1 egress (mean 258.18 Mbit/s)
Flow 2 ingress (mean 215.91 Mbit/s)   Flow 2 egress (mean 215.93 Mbit/s)
Flow 3 ingress (mean 123.90 Mbit/s)   Flow 3 egress (mean 123.85 Mbit/s)

Flow 1 (95th percentile 1.40 ms)   Flow 2 (95th percentile 1.40 ms)   Flow 3 (95th percentile 1.11 ms)

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```
Run 3: Statistics of Copa

Start at: 2019-03-27 13:13:59
End at: 2019-03-27 13:14:29
Local clock offset: 4.892 ms
Remote clock offset: -3.22 ms


# Below is generated by plot.py at 2019-03-27 14:48:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 452.09 Mbit/s
95th percentile per-packet one-way delay: 1.108 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 279.28 Mbit/s
95th percentile per-packet one-way delay: 1.139 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 202.27 Mbit/s
95th percentile per-packet one-way delay: 1.061 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 114.44 Mbit/s
95th percentile per-packet one-way delay: 0.980 ms
Loss rate: 0.03%
```
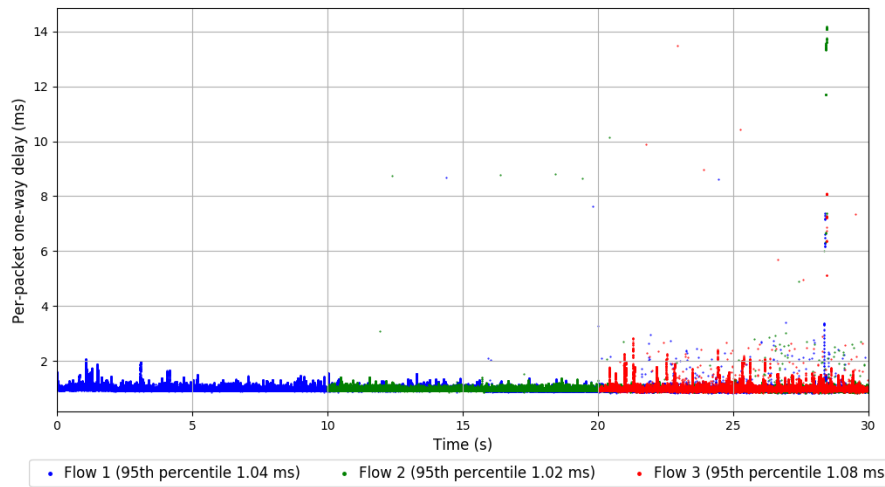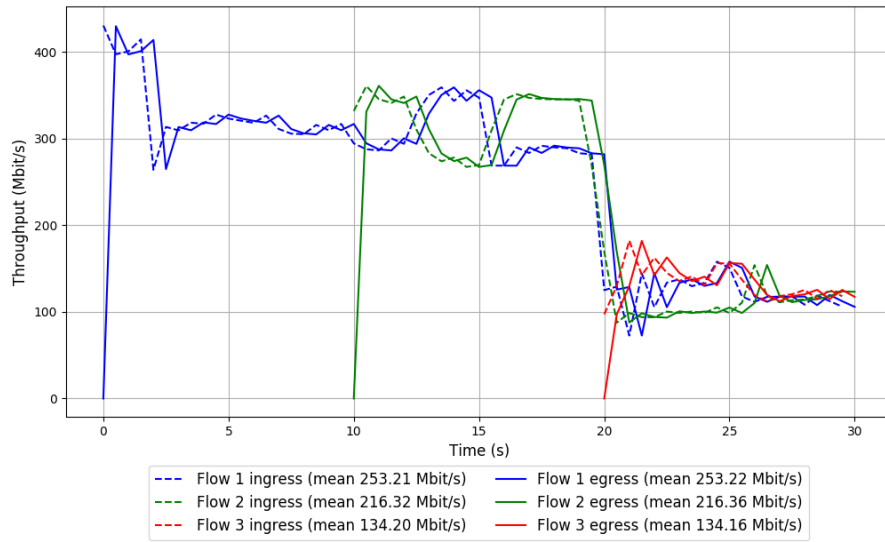
Run 3: Report of Copa — Data Link

```
Run 4: Statistics of Copa

Start at: 2019-03-27 13:44:24
End at: 2019-03-27 13:44:54
Local clock offset: 5.339 ms
Remote clock offset: 4.782 ms


# Below is generated by plot.py at 2019-03-27 14:57:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 434.87 Mbit/s
95th percentile per-packet one-way delay: 1.520 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 266.61 Mbit/s
95th percentile per-packet one-way delay: 1.539 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 192.24 Mbit/s
95th percentile per-packet one-way delay: 1.538 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 121.28 Mbit/s
95th percentile per-packet one-way delay: 1.133 ms
Loss rate: 0.02%
```
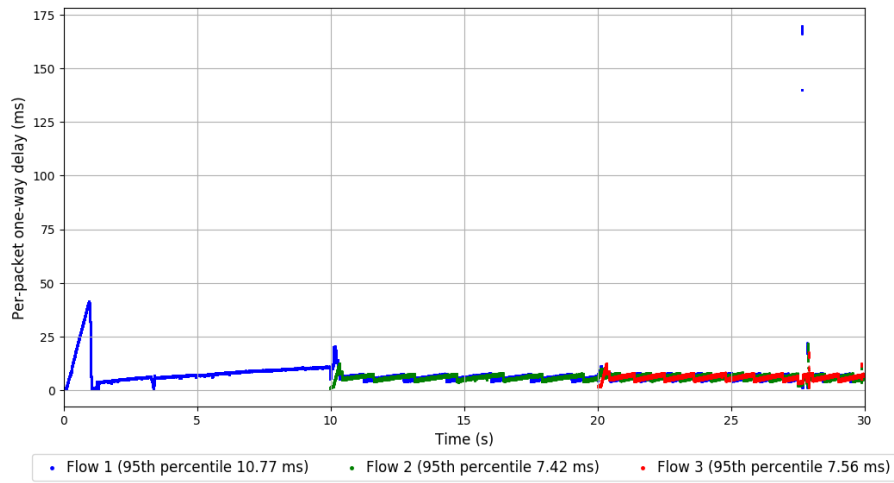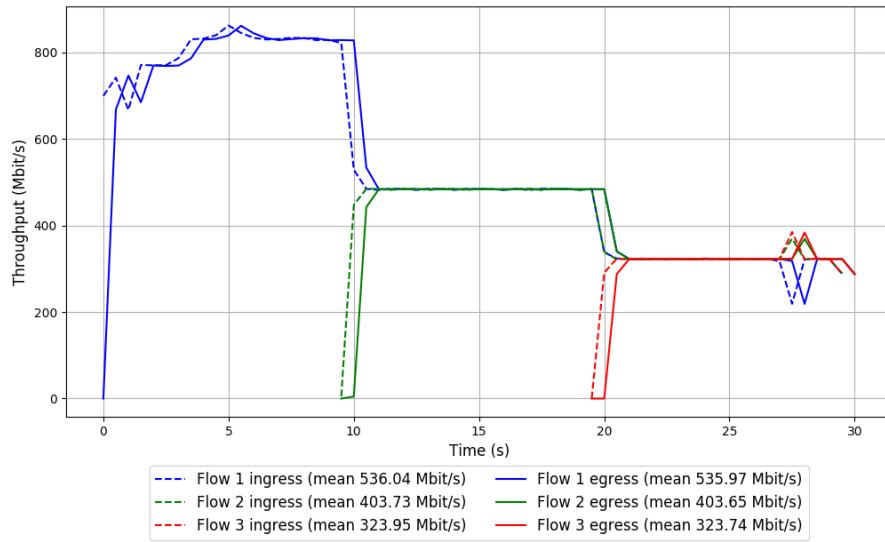
Run 4: Report of Copa — Data Link

```
Run 5: Statistics of Copa

Start at: 2019-03-27 14:14:42
End at: 2019-03-27 14:15:12
Local clock offset: 4.7 ms
Remote clock offset: -3.697 ms


# Below is generated by plot.py at 2019-03-27 14:57:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 441.86 Mbit/s
95th percentile per-packet one-way delay: 1.038 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 253.22 Mbit/s
95th percentile per-packet one-way delay: 1.044 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 216.36 Mbit/s
95th percentile per-packet one-way delay: 1.017 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 134.16 Mbit/s
95th percentile per-packet one-way delay: 1.085 ms
Loss rate: 0.03%
```
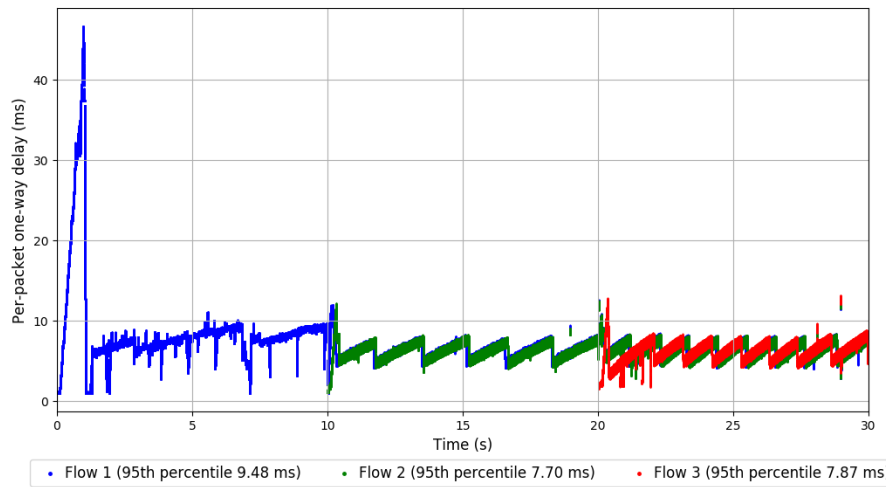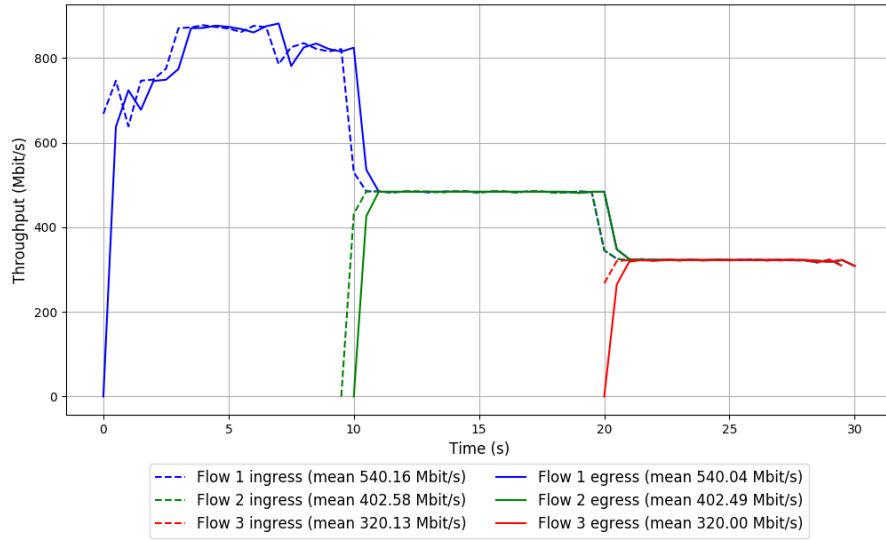
Run 5: Report of Copa — Data Link

```
Run 1: Statistics of TCP Cubic

Start at: 2019-03-27 12:20:26
End at: 2019-03-27 12:20:56
Local clock offset: 6.136 ms
Remote clock offset: -2.667 ms


# Below is generated by plot.py at 2019-03-27 14:58:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 912.74 Mbit/s
95th percentile per-packet one-way delay: 10.377 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 535.97 Mbit/s
95th percentile per-packet one-way delay: 10.768 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 403.65 Mbit/s
95th percentile per-packet one-way delay: 7.415 ms
Loss rate: 0.03%
-- Flow 3:
Average throughput: 323.74 Mbit/s
95th percentile per-packet one-way delay: 7.559 ms
Loss rate: 0.09%
```

Run 1: Report of TCP Cubic — Data Link

```
Run 2: Statistics of TCP Cubic

Start at: 2019-03-27 12:50:52
End at: 2019-03-27 12:51:22
Local clock offset: 5.718 ms
Remote clock offset: -3.335 ms


# Below is generated by plot.py at 2019-03-27 14:58:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 914.49 Mbit/s
95th percentile per-packet one-way delay: 9.156 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 540.04 Mbit/s
95th percentile per-packet one-way delay: 9.480 ms
Loss rate: 0.03%
-- Flow 2:
Average throughput: 402.49 Mbit/s
95th percentile per-packet one-way delay: 7.699 ms
Loss rate: 0.04%
-- Flow 3:
Average throughput: 320.00 Mbit/s
95th percentile per-packet one-way delay: 7.865 ms
Loss rate: 0.07%
```
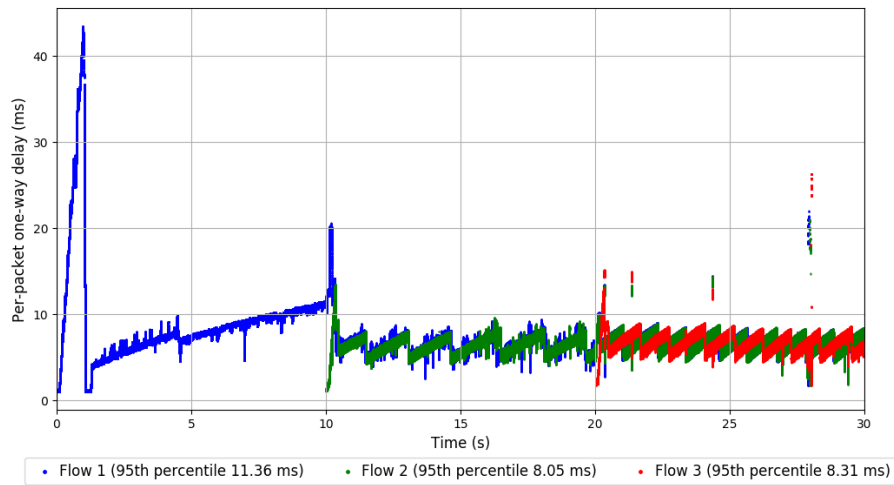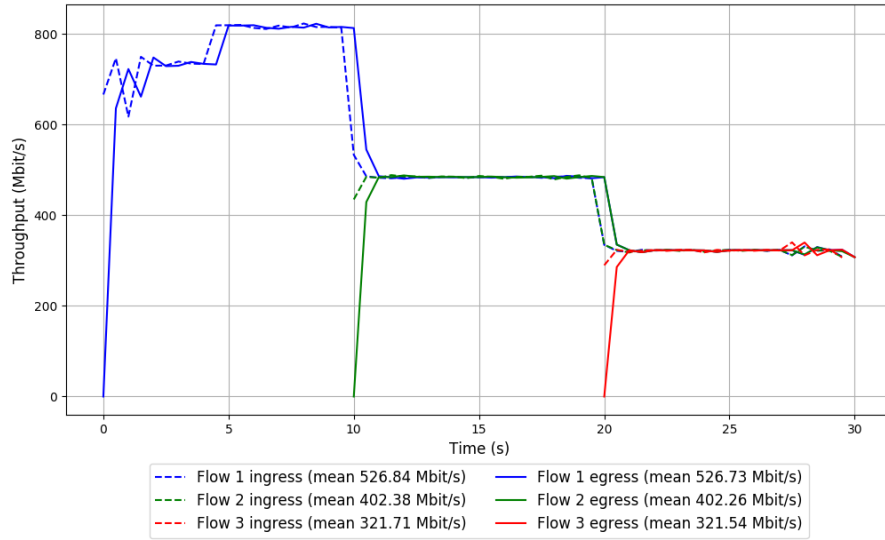
Run 2: Report of TCP Cubic — Data Link

```
Run 3: Statistics of TCP Cubic

Start at: 2019-03-27 13:21:14
End at: 2019-03-27 13:21:44
Local clock offset: 5.051 ms
Remote clock offset: 0.017 ms


# Below is generated by plot.py at 2019-03-27 14:58:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 901.50 Mbit/s
95th percentile per-packet one-way delay: 10.709 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 526.73 Mbit/s
95th percentile per-packet one-way delay: 11.355 ms
Loss rate: 0.03%
-- Flow 2:
Average throughput: 402.26 Mbit/s
95th percentile per-packet one-way delay: 8.054 ms
Loss rate: 0.03%
-- Flow 3:
Average throughput: 321.54 Mbit/s
95th percentile per-packet one-way delay: 8.313 ms
Loss rate: 0.08%
```
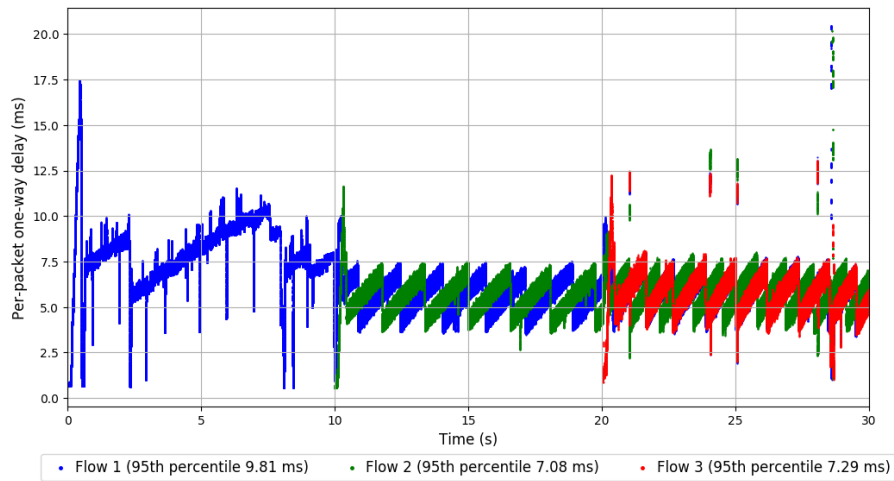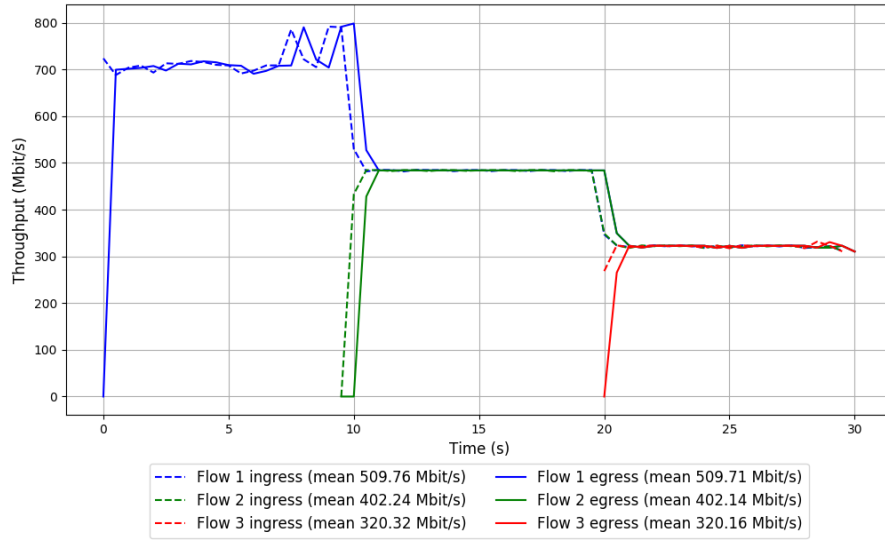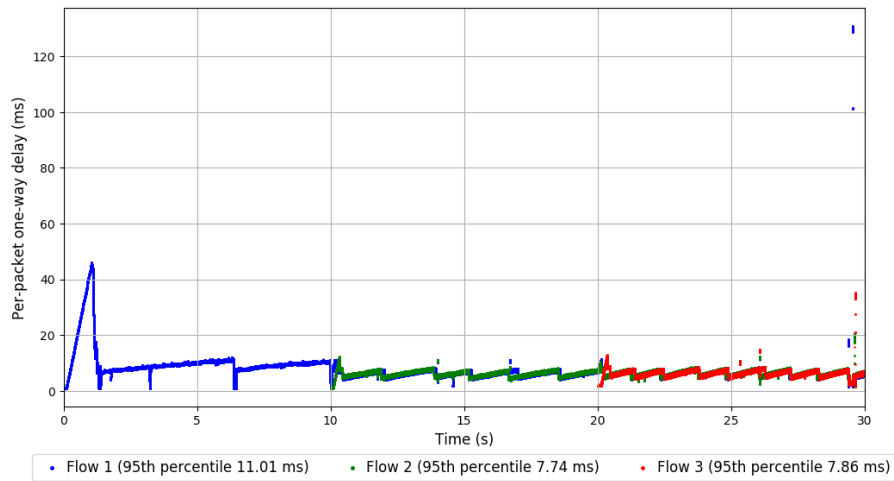
Run 3: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 526.84 Mbit/s) --- Flow 1 egress (mean 526.73 Mbit/s)
Flow 2 ingress (mean 402.38 Mbit/s) --- Flow 2 egress (mean 402.26 Mbit/s)
Flow 3 ingress (mean 321.71 Mbit/s) --- Flow 3 egress (mean 321.54 Mbit/s)

Flow 1 (95th percentile 11.36 ms) • Flow 2 (95th percentile 8.05 ms) • Flow 3 (95th percentile 8.31 ms)

```
Run 4: Statistics of TCP Cubic

Start at: 2019-03-27 13:51:39
End at: 2019-03-27 13:52:09
Local clock offset: 5.056 ms
Remote clock offset: 3.703 ms


# Below is generated by plot.py at 2019-03-27 14:58:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 884.04 Mbit/s
95th percentile per-packet one-way delay: 9.371 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 509.71 Mbit/s
95th percentile per-packet one-way delay: 9.808 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 402.14 Mbit/s
95th percentile per-packet one-way delay: 7.080 ms
Loss rate: 0.03%
-- Flow 3:
Average throughput: 320.16 Mbit/s
95th percentile per-packet one-way delay: 7.295 ms
Loss rate: 0.07%
```
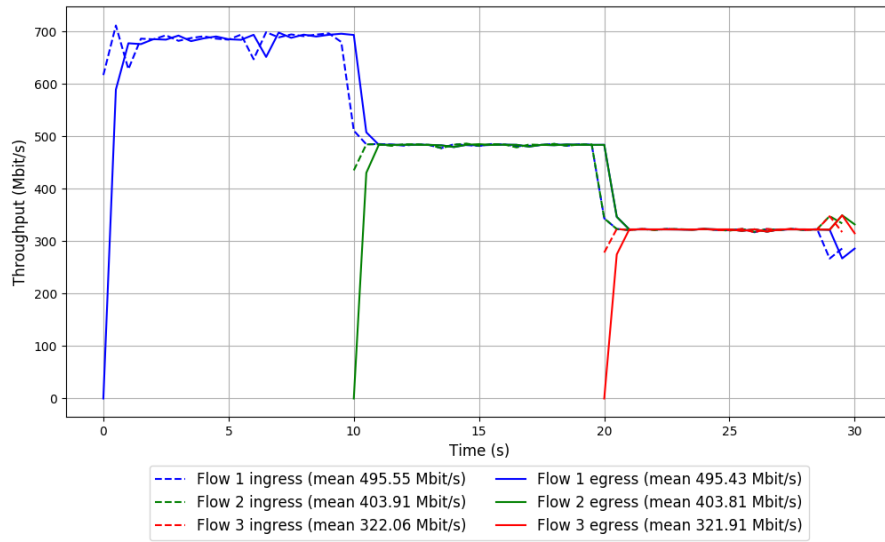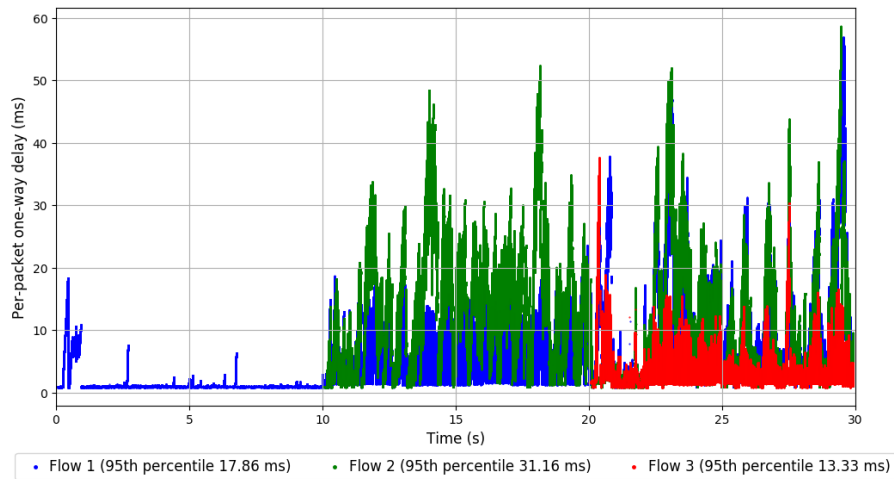
Run 4: Report of TCP Cubic — Data Link

```
Run 5: Statistics of TCP Cubic

Start at: 2019-03-27 14:21:58
End at: 2019-03-27 14:22:28
Local clock offset: 4.984 ms
Remote clock offset: -4.23 ms


# Below is generated by plot.py at 2019-03-27 14:58:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 871.38 Mbit/s
95th percentile per-packet one-way delay: 10.486 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 495.43 Mbit/s
95th percentile per-packet one-way delay: 11.012 ms
Loss rate: 0.03%
-- Flow 2:
Average throughput: 403.81 Mbit/s
95th percentile per-packet one-way delay: 7.736 ms
Loss rate: 0.03%
-- Flow 3:
Average throughput: 321.91 Mbit/s
95th percentile per-packet one-way delay: 7.860 ms
Loss rate: 0.08%
```
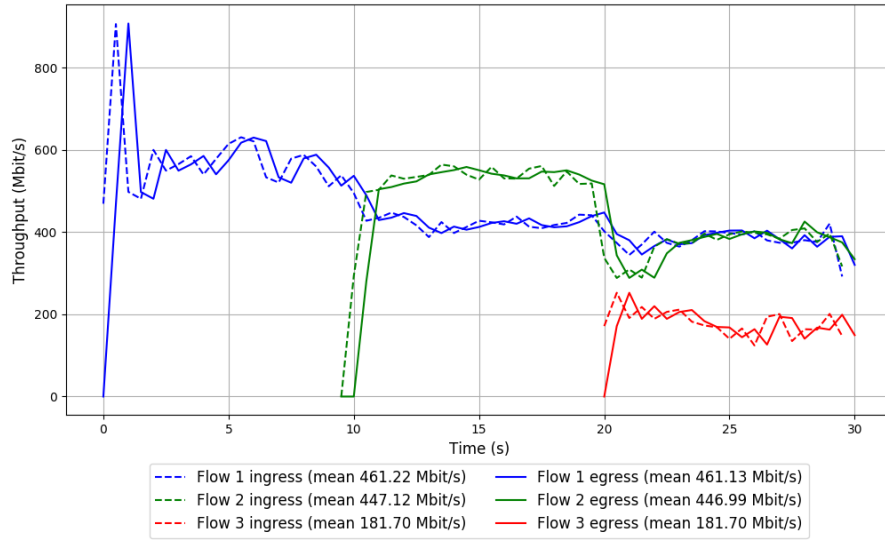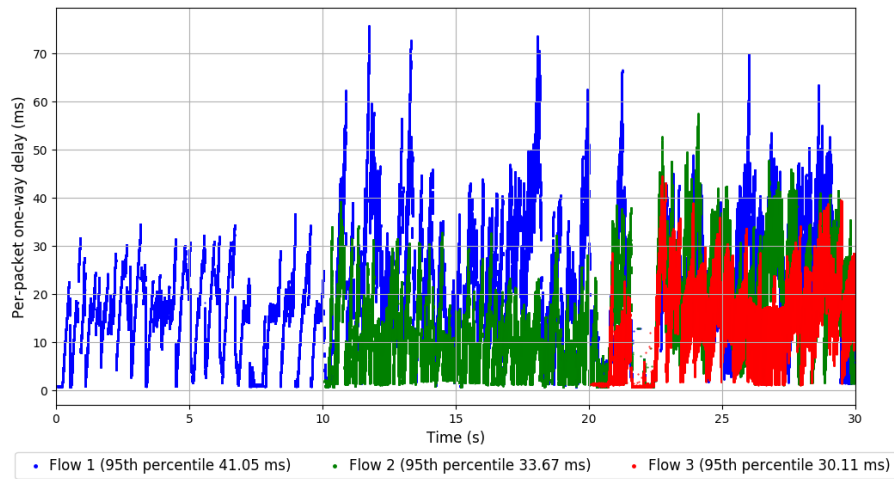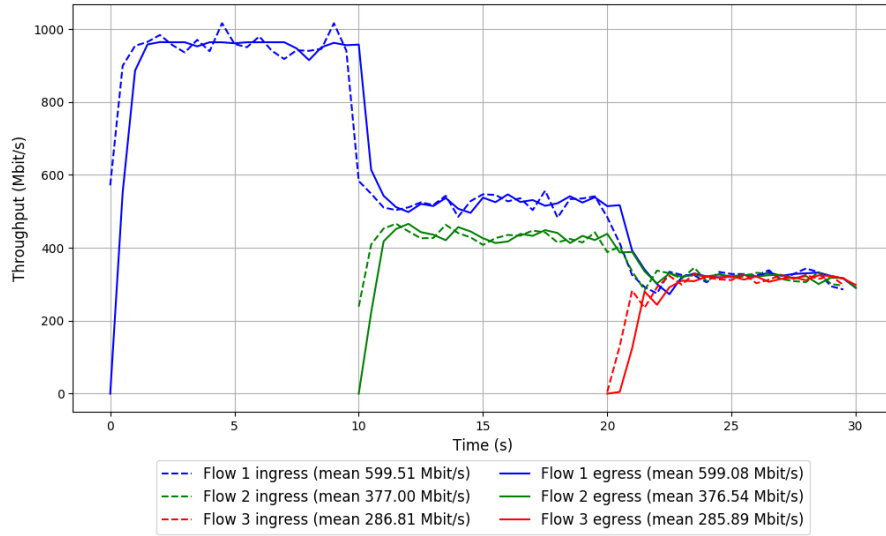
Run 5: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 495.55 Mbit/s)   Flow 1 egress (mean 495.43 Mbit/s)
Flow 2 ingress (mean 403.91 Mbit/s)   Flow 2 egress (mean 403.81 Mbit/s)
Flow 3 ingress (mean 322.06 Mbit/s)   Flow 3 egress (mean 321.91 Mbit/s)

Flow 1 (95th percentile 11.01 ms)   Flow 2 (95th percentile 7.74 ms)   Flow 3 (95th percentile 7.86 ms)

```
Run 1: Statistics of FillP

Start at: 2019-03-27 12:01:23
End at: 2019-03-27 12:01:53
Local clock offset: 6.241 ms
Remote clock offset: -0.346 ms


# Below is generated by plot.py at 2019-03-27 15:00:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 818.95 Mbit/s
95th percentile per-packet one-way delay: 25.745 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 461.13 Mbit/s
95th percentile per-packet one-way delay: 17.864 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 446.99 Mbit/s
95th percentile per-packet one-way delay: 31.160 ms
Loss rate: 0.04%
-- Flow 3:
Average throughput: 181.70 Mbit/s
95th percentile per-packet one-way delay: 13.330 ms
Loss rate: 0.00%
```
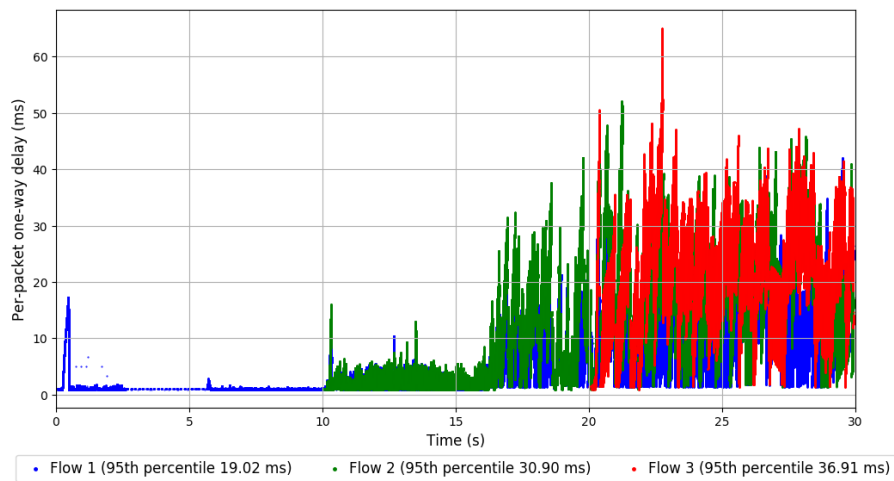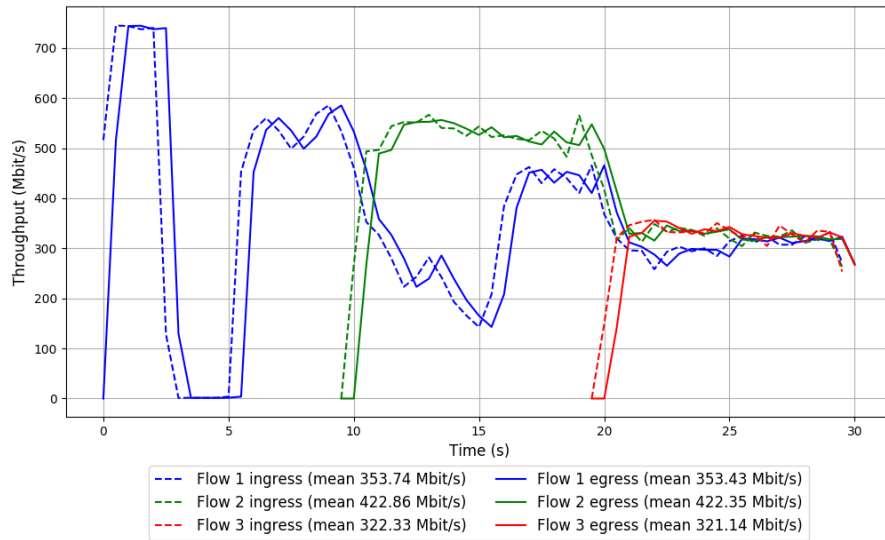
Run 1: Report of FillP — Data Link

```
Run 2: Statistics of FillP

Start at: 2019-03-27 12:31:52
End at: 2019-03-27 12:32:22
Local clock offset: 6.16 ms
Remote clock offset: -3.487 ms


# Below is generated by plot.py at 2019-03-27 15:10:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 944.21 Mbit/s
95th percentile per-packet one-way delay: 38.350 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 599.08 Mbit/s
95th percentile per-packet one-way delay: 41.053 ms
Loss rate: 0.07%
-- Flow 2:
Average throughput: 376.54 Mbit/s
95th percentile per-packet one-way delay: 33.668 ms
Loss rate: 0.13%
-- Flow 3:
Average throughput: 285.89 Mbit/s
95th percentile per-packet one-way delay: 30.113 ms
Loss rate: 0.25%
```
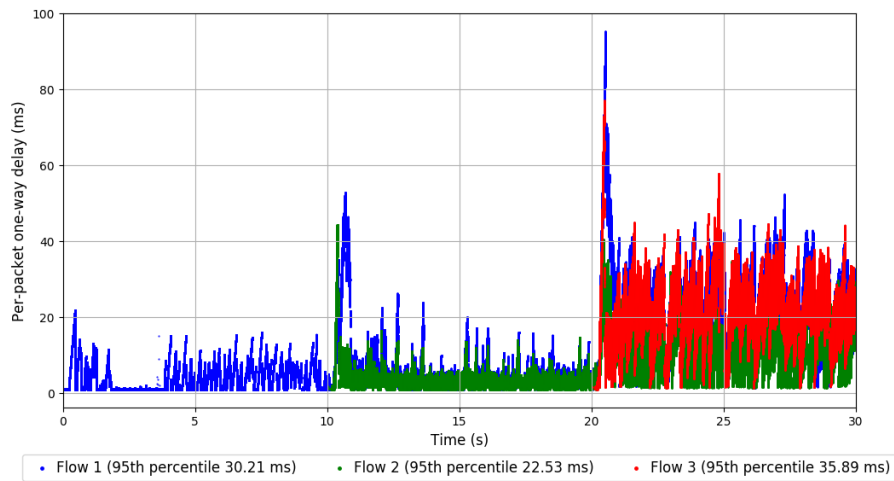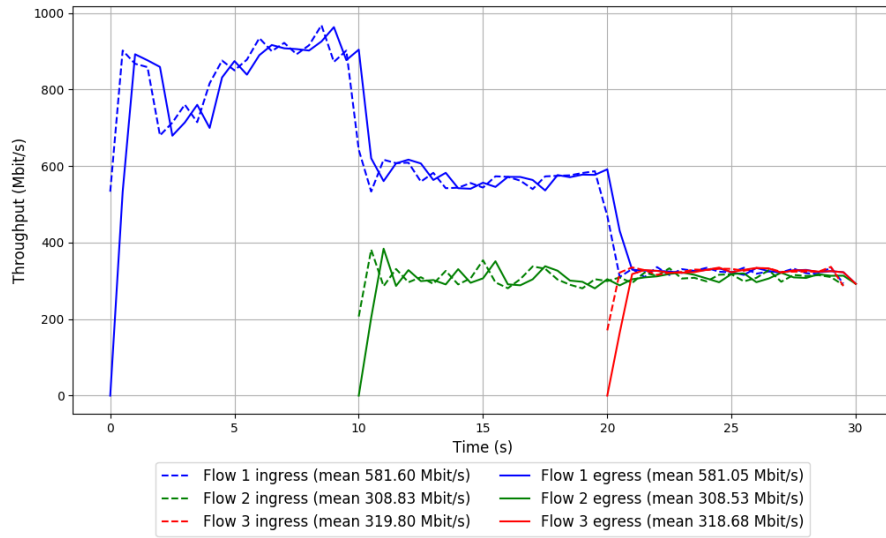
Run 2: Report of FillP — Data Link

```
Run 3: Statistics of FillP

Start at: 2019-03-27 13:02:12
End at: 2019-03-27 13:02:42
Local clock offset: 5.108 ms
Remote clock offset: -3.261 ms


# Below is generated by plot.py at 2019-03-27 15:10:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 741.32 Mbit/s
95th percentile per-packet one-way delay: 30.621 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 353.43 Mbit/s
95th percentile per-packet one-way delay: 19.016 ms
Loss rate: 0.09%
-- Flow 2:
Average throughput: 422.35 Mbit/s
95th percentile per-packet one-way delay: 30.902 ms
Loss rate: 0.05%
-- Flow 3:
Average throughput: 321.14 Mbit/s
95th percentile per-packet one-way delay: 36.912 ms
Loss rate: 0.31%
```

Run 3: Report of FillP — Data Link

```
Run 4: Statistics of FillP

Start at: 2019-03-27 13:32:41
End at: 2019-03-27 13:33:11
Local clock offset: 5.252 ms
Remote clock offset: 3.269 ms


# Below is generated by plot.py at 2019-03-27 15:10:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 891.83 Mbit/s
95th percentile per-packet one-way delay: 30.895 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 581.05 Mbit/s
95th percentile per-packet one-way delay: 30.207 ms
Loss rate: 0.08%
-- Flow 2:
Average throughput: 308.53 Mbit/s
95th percentile per-packet one-way delay: 22.533 ms
Loss rate: 0.03%
-- Flow 3:
Average throughput: 318.68 Mbit/s
95th percentile per-packet one-way delay: 35.889 ms
Loss rate: 0.38%
```
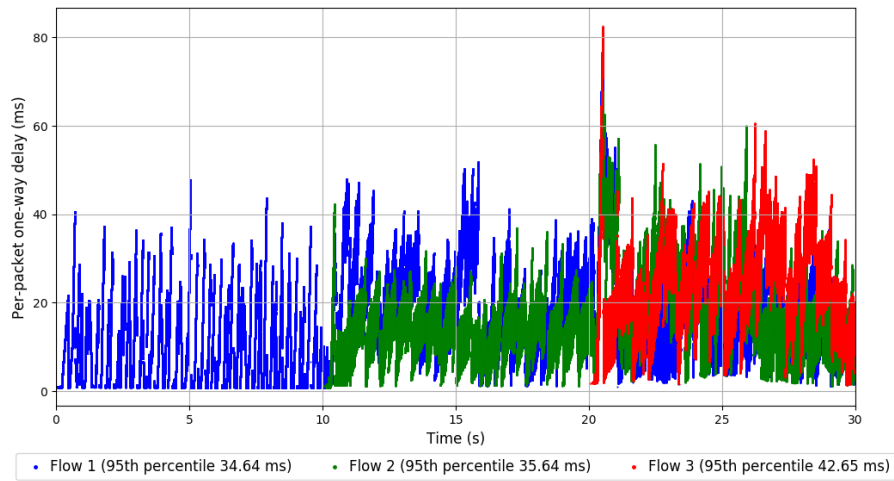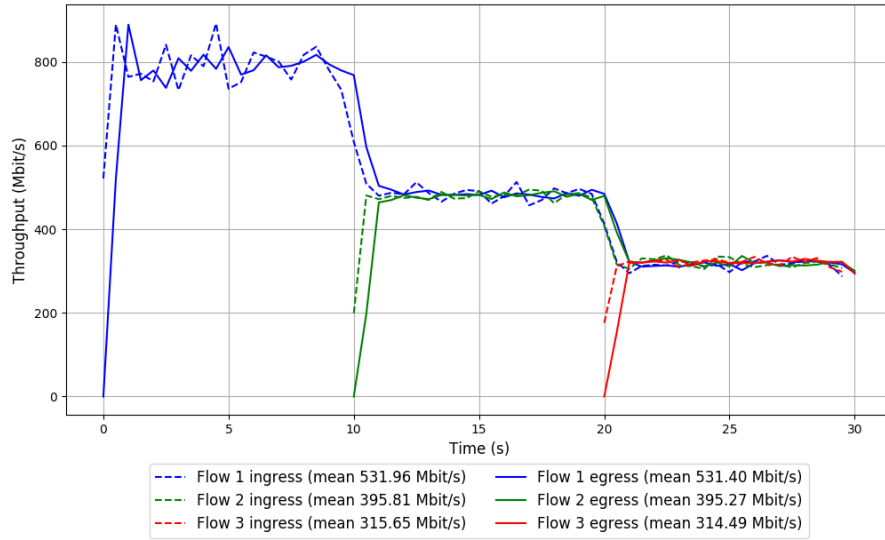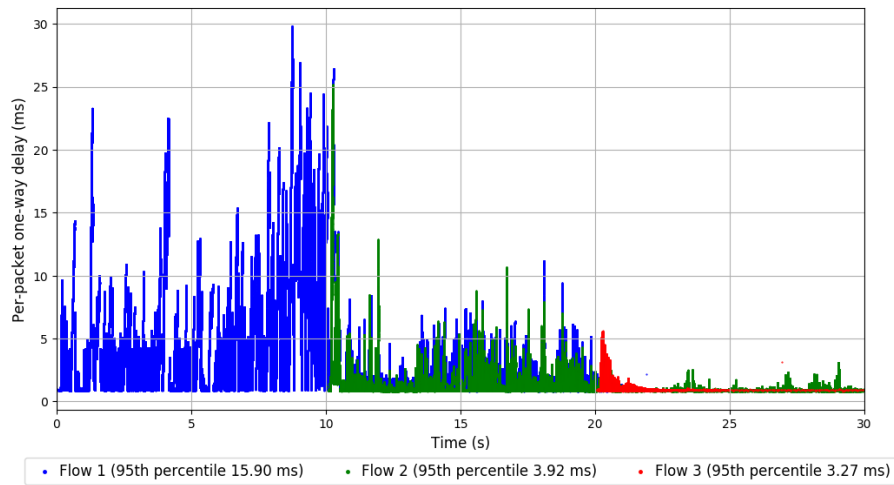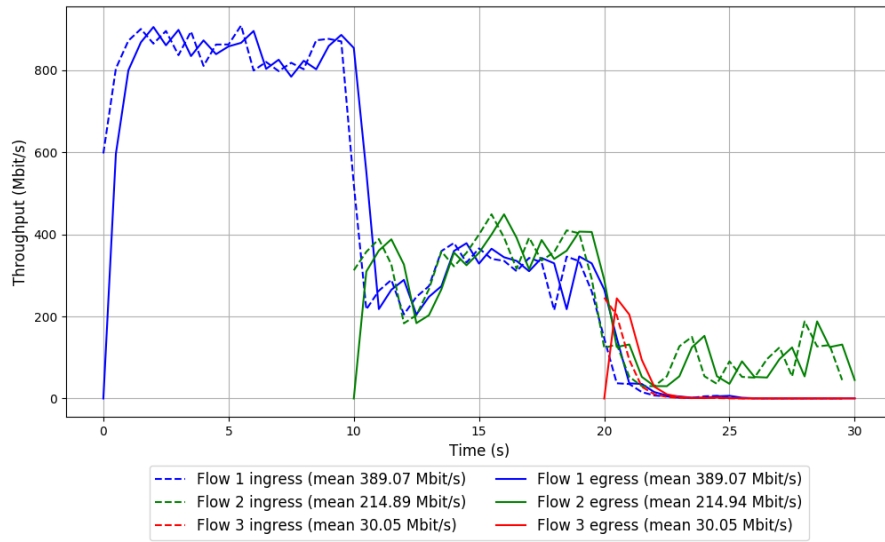
Run 4: Report of FillP — Data Link

Flow 1 ingress (mean 581.60 Mbit/s)   Flow 1 egress (mean 581.05 Mbit/s)
Flow 2 ingress (mean 308.83 Mbit/s)   Flow 2 egress (mean 308.53 Mbit/s)
Flow 3 ingress (mean 319.80 Mbit/s)   Flow 3 egress (mean 318.68 Mbit/s)

Flow 1 (95th percentile 30.21 ms)   Flow 2 (95th percentile 22.53 ms)   Flow 3 (95th percentile 35.89 ms)

```
Run 5: Statistics of FillP

Start at: 2019-03-27 14:02:49
End at: 2019-03-27 14:03:19
Local clock offset: 4.793 ms
Remote clock offset: -1.783 ms


# Below is generated by plot.py at 2019-03-27 15:10:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 898.28 Mbit/s
95th percentile per-packet one-way delay: 36.668 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 531.40 Mbit/s
95th percentile per-packet one-way delay: 34.640 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 395.27 Mbit/s
95th percentile per-packet one-way delay: 35.640 ms
Loss rate: 0.12%
-- Flow 3:
Average throughput: 314.49 Mbit/s
95th percentile per-packet one-way delay: 42.651 ms
Loss rate: 0.40%
```
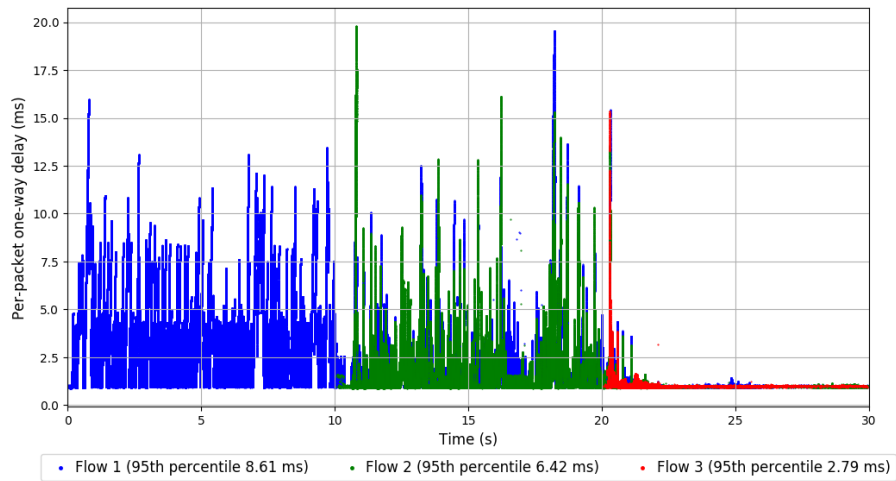
Run 5: Report of FillP — Data Link

```
Run 1: Statistics of FillP-Sheep

Start at: 2019-03-27 12:27:37
End at: 2019-03-27 12:28:07
Local clock offset: 6.121 ms
Remote clock offset: -3.279 ms


# Below is generated by plot.py at 2019-03-27 15:10:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 541.86 Mbit/s
95th percentile per-packet one-way delay: 14.156 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 389.07 Mbit/s
95th percentile per-packet one-way delay: 15.905 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 214.94 Mbit/s
95th percentile per-packet one-way delay: 3.923 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 30.05 Mbit/s
95th percentile per-packet one-way delay: 3.267 ms
Loss rate: 0.00%
```
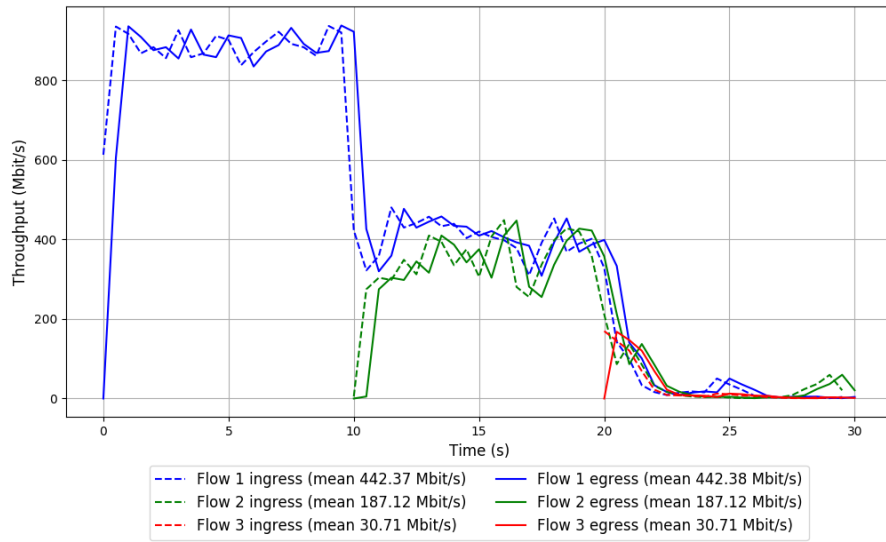
Run 1: Report of FillP-Sheep — Data Link

```
Run 2: Statistics of FillP-Sheep

Start at: 2019-03-27 12:57:56
End at: 2019-03-27 12:58:26
Local clock offset: 5.274 ms
Remote clock offset: -3.205 ms


# Below is generated by plot.py at 2019-03-27 15:10:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 576.95 Mbit/s
95th percentile per-packet one-way delay: 8.349 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 442.38 Mbit/s
95th percentile per-packet one-way delay: 8.608 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 187.12 Mbit/s
95th percentile per-packet one-way delay: 6.415 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 30.71 Mbit/s
95th percentile per-packet one-way delay: 2.785 ms
Loss rate: 0.00%
```
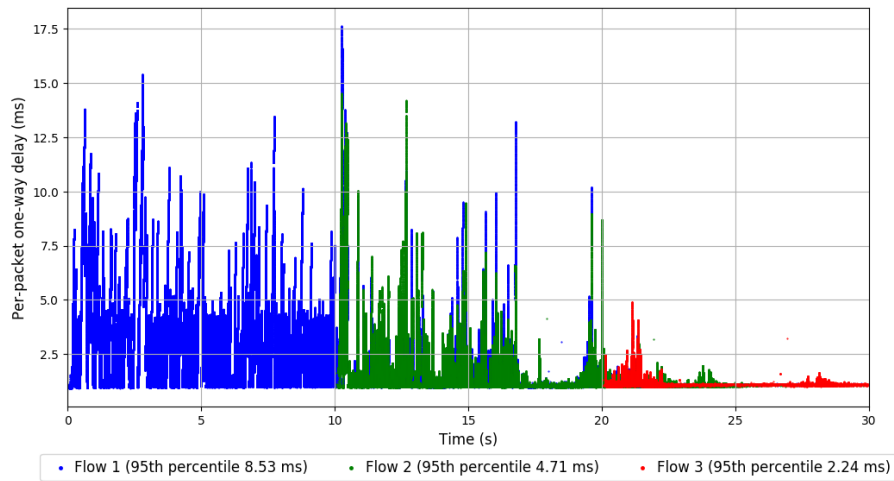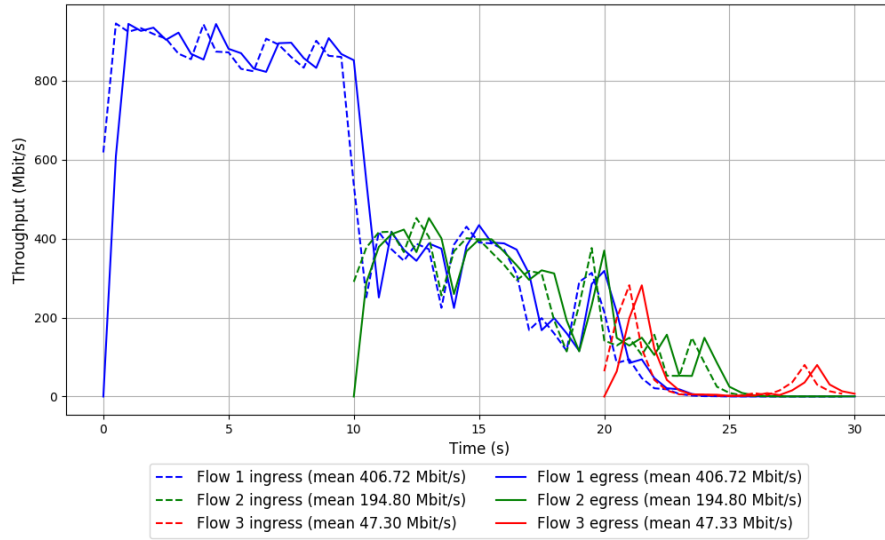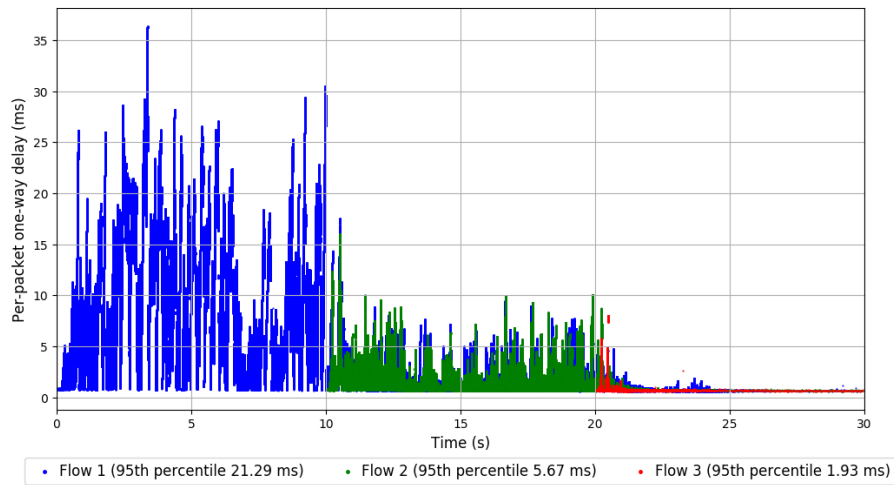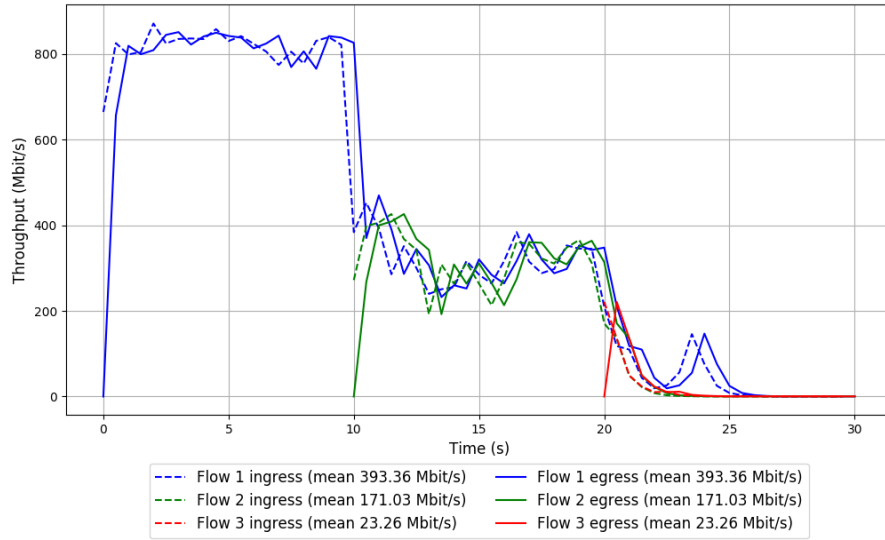
Run 2: Report of FillP-Sheep — Data Link

Flow 1 ingress (mean 442.37 Mbit/s) ---- Flow 1 egress (mean 442.38 Mbit/s)
Flow 2 ingress (mean 187.12 Mbit/s) ---- Flow 2 egress (mean 187.12 Mbit/s)
Flow 3 ingress (mean 30.71 Mbit/s) ---- Flow 3 egress (mean 30.71 Mbit/s)

Flow 1 (95th percentile 8.61 ms)   Flow 2 (95th percentile 6.42 ms)   Flow 3 (95th percentile 2.79 ms)

48

```
Run 3: Statistics of FillP-Sheep

Start at: 2019-03-27 13:28:26
End at: 2019-03-27 13:28:56
Local clock offset: 5.191 ms
Remote clock offset: 2.424 ms


# Below is generated by plot.py at 2019-03-27 15:10:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 551.49 Mbit/s
95th percentile per-packet one-way delay: 8.011 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 406.72 Mbit/s
95th percentile per-packet one-way delay: 8.526 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 194.80 Mbit/s
95th percentile per-packet one-way delay: 4.713 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 47.33 Mbit/s
95th percentile per-packet one-way delay: 2.238 ms
Loss rate: 0.00%
```
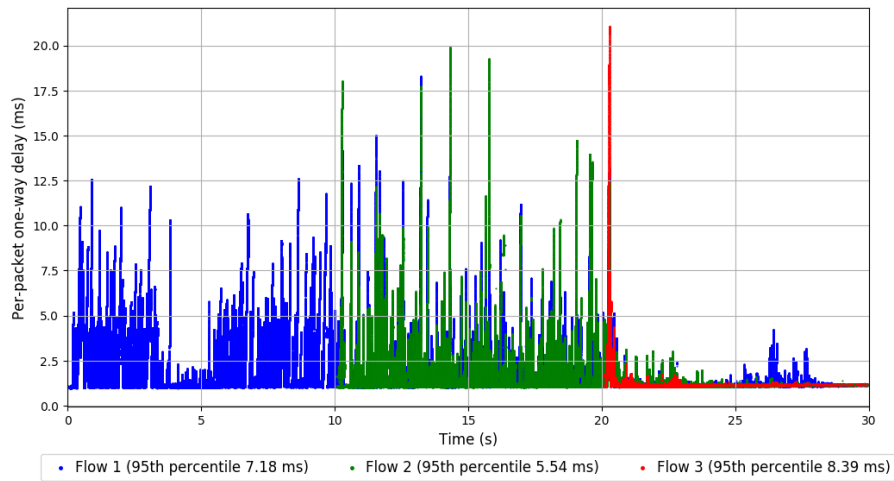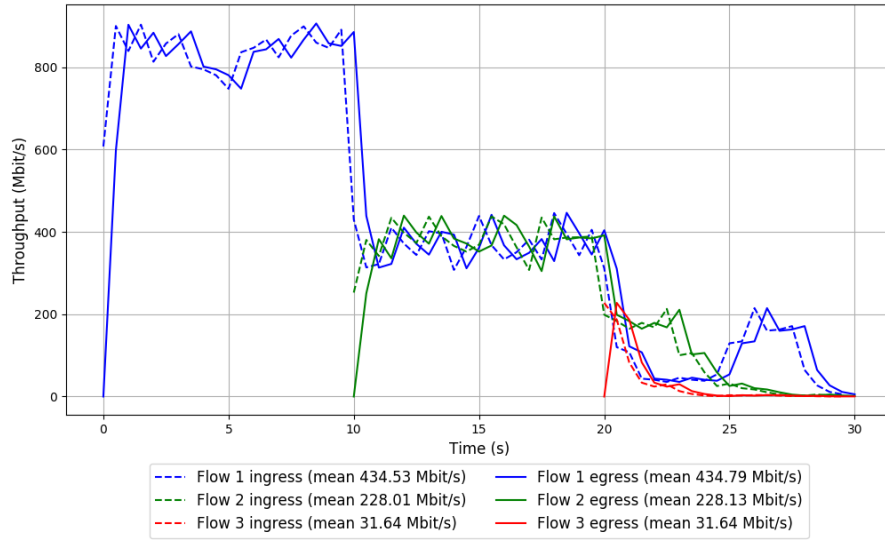
Run 3: Report of FillP-Sheep — Data Link

```
Run 4: Statistics of FillP-Sheep

Start at: 2019-03-27 13:58:36
End at: 2019-03-27 13:59:06
Local clock offset: 4.871 ms
Remote clock offset: -0.41 ms


# Below is generated by plot.py at 2019-03-27 15:10:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 514.66 Mbit/s
95th percentile per-packet one-way delay: 20.088 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 393.36 Mbit/s
95th percentile per-packet one-way delay: 21.287 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 171.03 Mbit/s
95th percentile per-packet one-way delay: 5.666 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 23.26 Mbit/s
95th percentile per-packet one-way delay: 1.933 ms
Loss rate: 0.00%
```
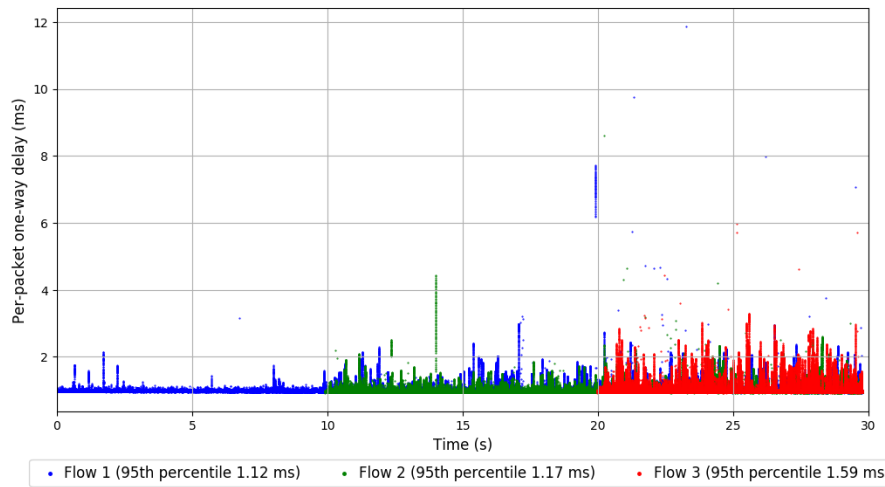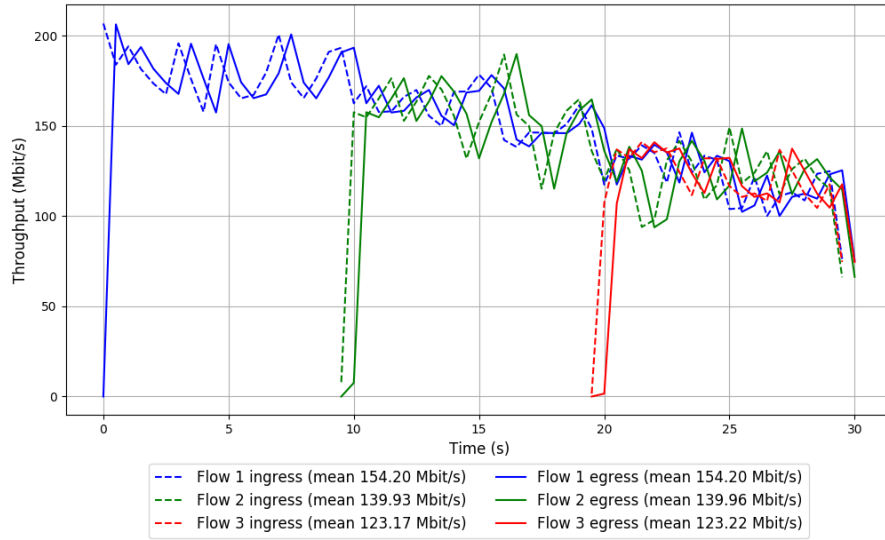
Run 4: Report of FillP-Sheep — Data Link

```
Run 5: Statistics of FillP-Sheep

Start at: 2019-03-27 14:29:09
End at: 2019-03-27 14:29:39
Local clock offset: 5.147 ms
Remote clock offset: -2.432 ms


# Below is generated by plot.py at 2019-03-27 15:14:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 596.83 Mbit/s
95th percentile per-packet one-way delay: 6.922 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 434.79 Mbit/s
95th percentile per-packet one-way delay: 7.180 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 228.13 Mbit/s
95th percentile per-packet one-way delay: 5.538 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 31.64 Mbit/s
95th percentile per-packet one-way delay: 8.387 ms
Loss rate: 0.00%
```
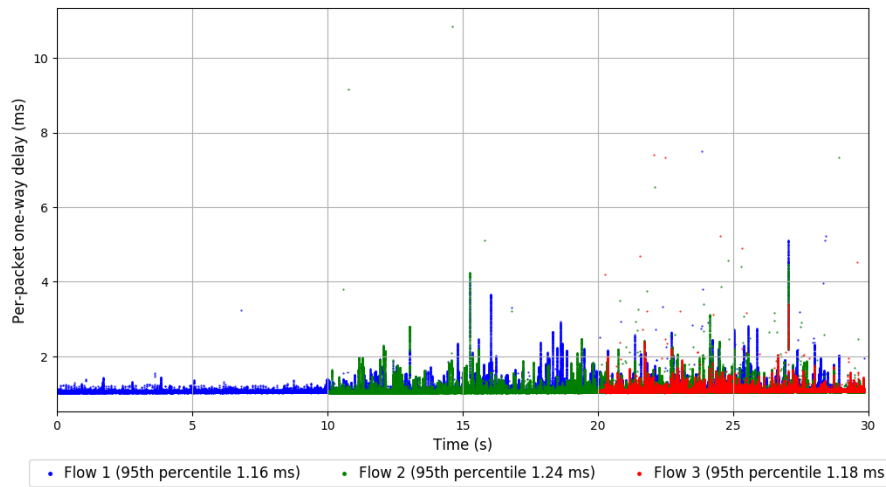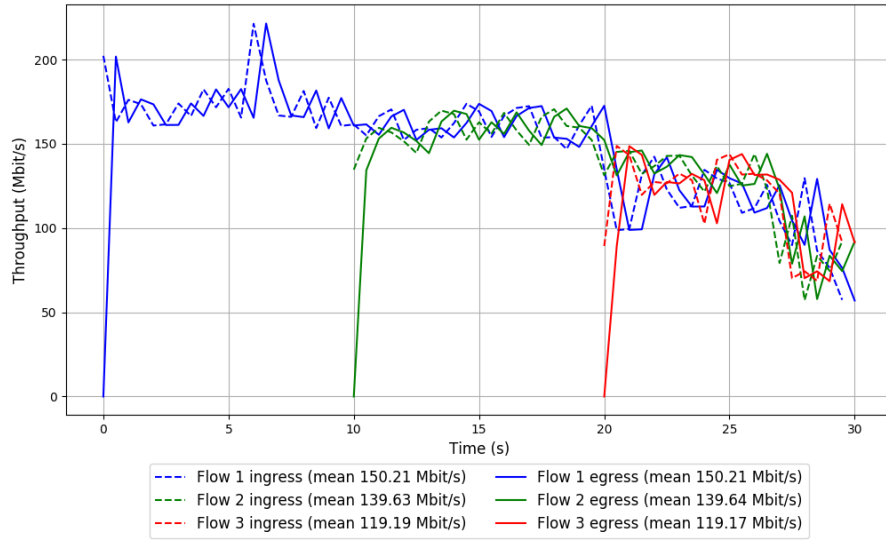
Run 5: Report of FillP-Sheep — Data Link

```
Run 1: Statistics of Indigo

Start at: 2019-03-27 12:24:56
End at: 2019-03-27 12:25:26
Local clock offset: 6.113 ms
Remote clock offset: -3.174 ms


# Below is generated by plot.py at 2019-03-27 15:14:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 288.05 Mbit/s
95th percentile per-packet one-way delay: 1.212 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 154.20 Mbit/s
95th percentile per-packet one-way delay: 1.125 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 139.96 Mbit/s
95th percentile per-packet one-way delay: 1.166 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 123.22 Mbit/s
95th percentile per-packet one-way delay: 1.592 ms
Loss rate: 0.00%
```

Run 1: Report of Indigo — Data Link

```
Run 2: Statistics of Indigo

Start at: 2019-03-27 12:55:16
End at: 2019-03-27 12:55:46
Local clock offset: 5.384 ms
Remote clock offset: -3.302 ms

# Below is generated by plot.py at 2019-03-27 15:14:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 281.99 Mbit/s
95th percentile per-packet one-way delay: 1.187 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 150.21 Mbit/s
95th percentile per-packet one-way delay: 1.162 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 139.64 Mbit/s
95th percentile per-packet one-way delay: 1.240 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 119.17 Mbit/s
95th percentile per-packet one-way delay: 1.175 ms
Loss rate: 0.03%
```
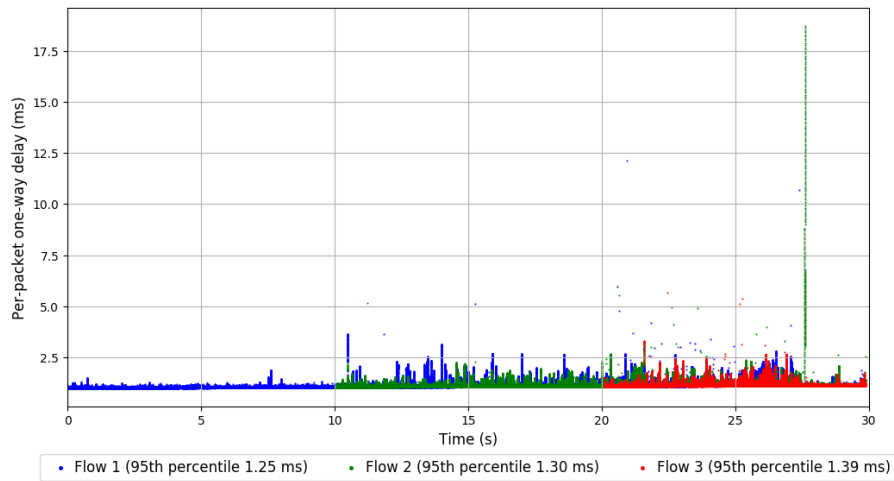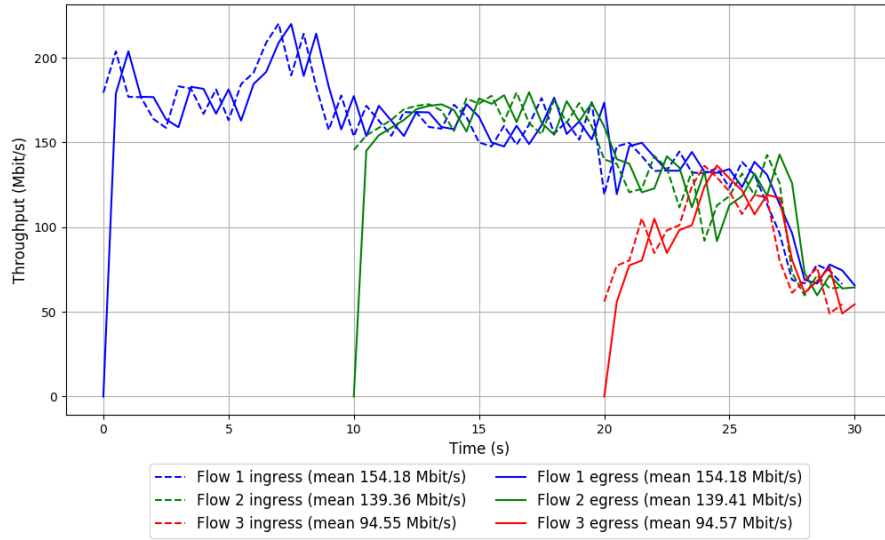
Run 2: Report of Indigo — Data Link

```
Run 3: Statistics of Indigo

Start at: 2019-03-27 13:25:45
End at: 2019-03-27 13:26:15
Local clock offset: 5.147 ms
Remote clock offset: 1.697 ms


# Below is generated by plot.py at 2019-03-27 15:14:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 277.75 Mbit/s
95th percentile per-packet one-way delay: 1.290 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 154.18 Mbit/s
95th percentile per-packet one-way delay: 1.247 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 139.41 Mbit/s
95th percentile per-packet one-way delay: 1.301 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 94.57 Mbit/s
95th percentile per-packet one-way delay: 1.385 ms
Loss rate: 0.02%
```
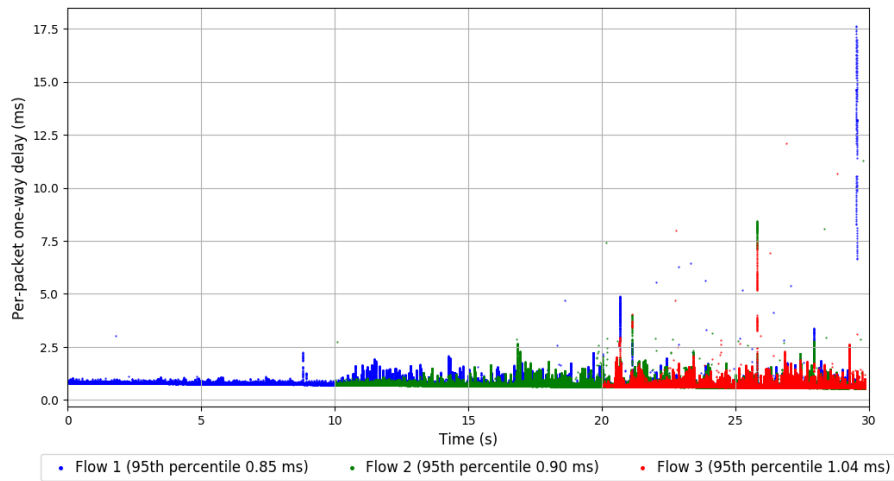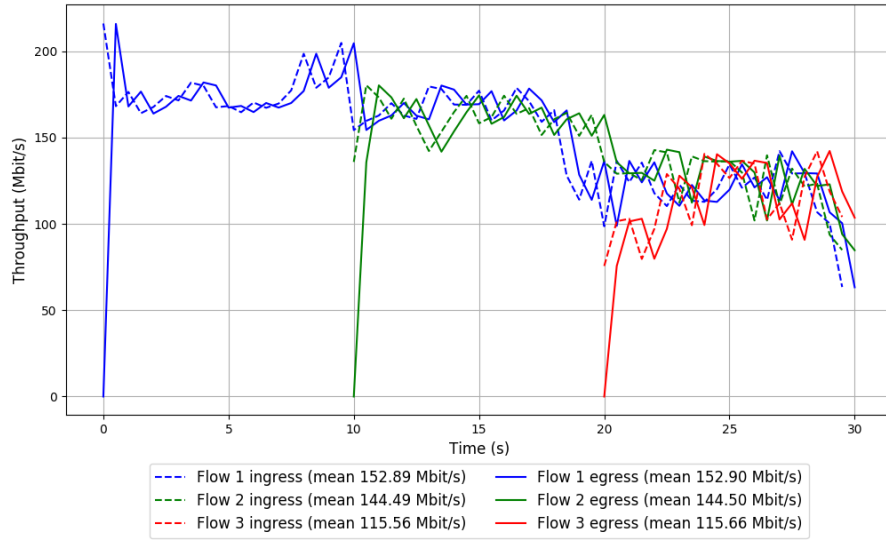
Run 3: Report of Indigo — Data Link

```
Run 4: Statistics of Indigo

Start at: 2019-03-27 13:55:55
End at: 2019-03-27 13:56:25
Local clock offset: 4.935 ms
Remote clock offset: 0.802 ms


# Below is generated by plot.py at 2019-03-27 15:14:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 286.96 Mbit/s
95th percentile per-packet one-way delay: 0.877 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 152.90 Mbit/s
95th percentile per-packet one-way delay: 0.849 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 144.50 Mbit/s
95th percentile per-packet one-way delay: 0.900 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 115.66 Mbit/s
95th percentile per-packet one-way delay: 1.042 ms
Loss rate: 0.02%
```
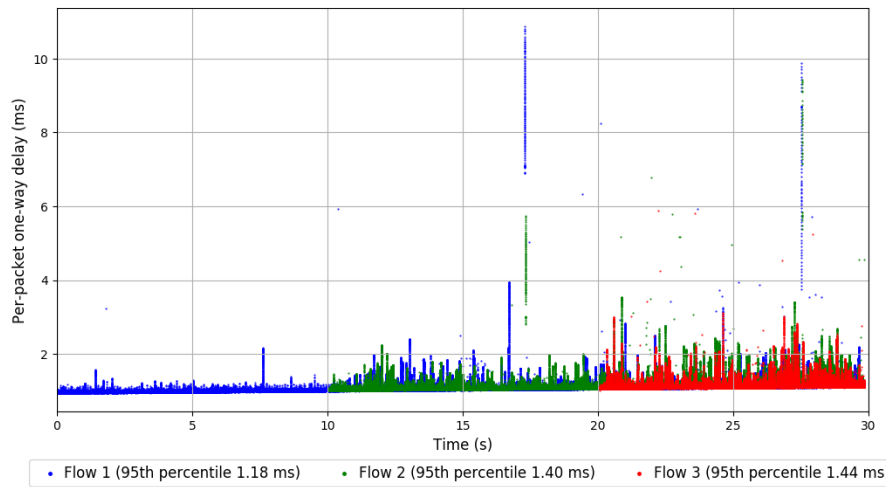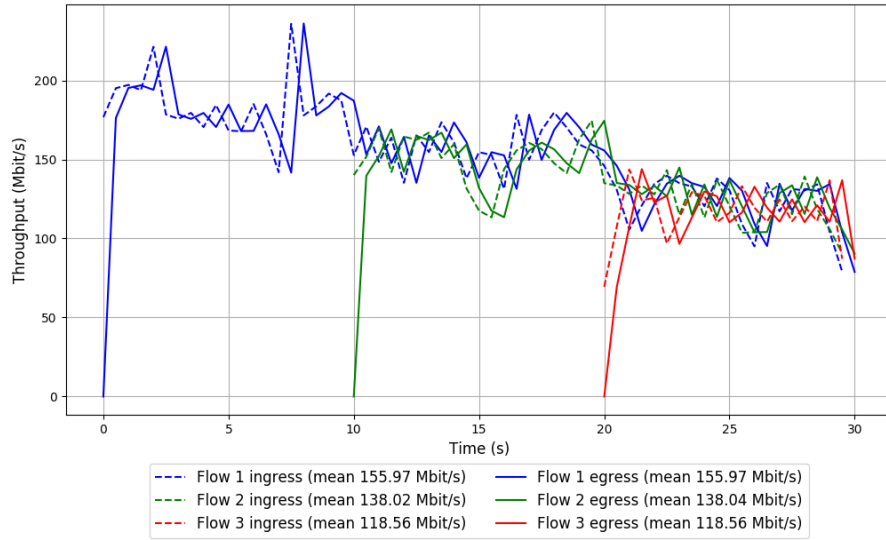
Run 4: Report of Indigo — Data Link

```
Run 5: Statistics of Indigo

Start at: 2019-03-27 14:26:28
End at: 2019-03-27 14:26:58
Local clock offset: 5.084 ms
Remote clock offset: -3.203 ms


# Below is generated by plot.py at 2019-03-27 15:14:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 286.45 Mbit/s
95th percentile per-packet one-way delay: 1.298 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 155.97 Mbit/s
95th percentile per-packet one-way delay: 1.176 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 138.04 Mbit/s
95th percentile per-packet one-way delay: 1.403 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 118.56 Mbit/s
95th percentile per-packet one-way delay: 1.436 ms
Loss rate: 0.01%
```
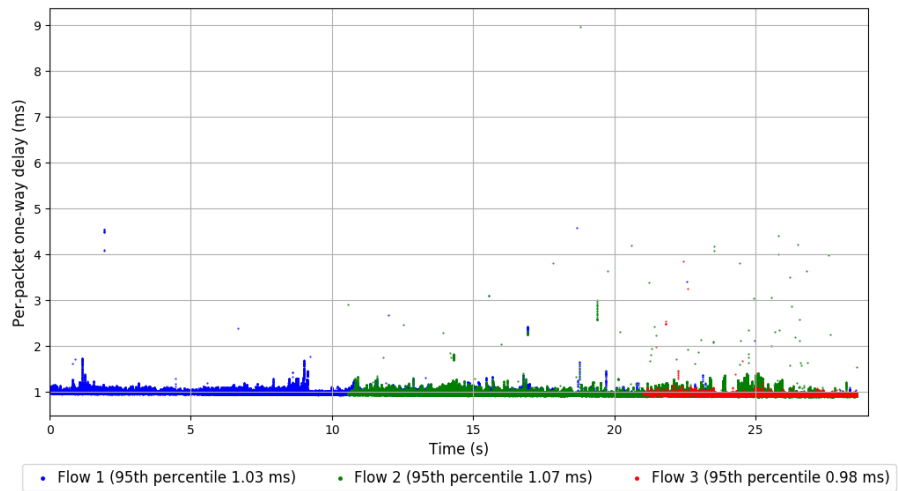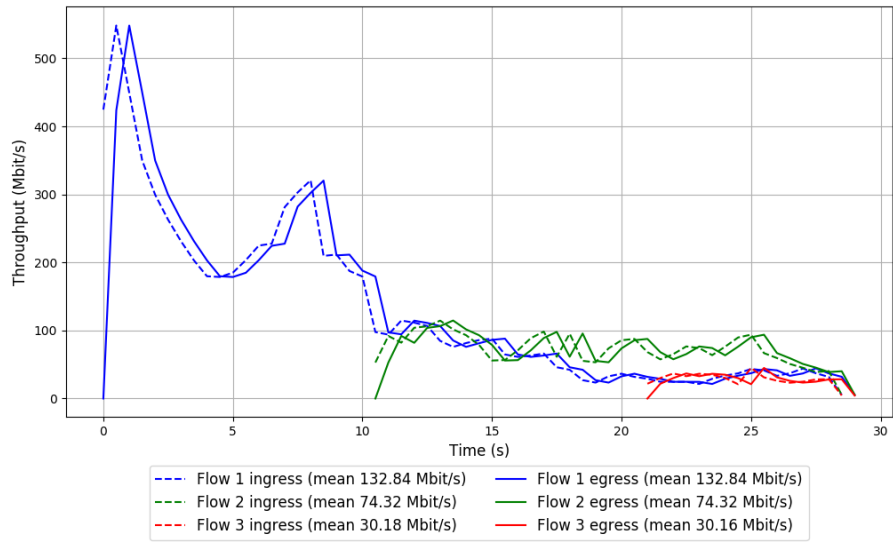
Run 5: Report of Indigo — Data Link

```
Run 1: Statistics of Indigo-MusesC3

Start at: 2019-03-27 12:14:54
End at: 2019-03-27 12:15:24
Local clock offset: 6.164 ms
Remote clock offset: -2.175 ms


# Below is generated by plot.py at 2019-03-27 15:14:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 187.64 Mbit/s
95th percentile per-packet one-way delay: 1.036 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 132.84 Mbit/s
95th percentile per-packet one-way delay: 1.030 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 74.32 Mbit/s
95th percentile per-packet one-way delay: 1.072 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 30.16 Mbit/s
95th percentile per-packet one-way delay: 0.980 ms
Loss rate: 0.08%
```
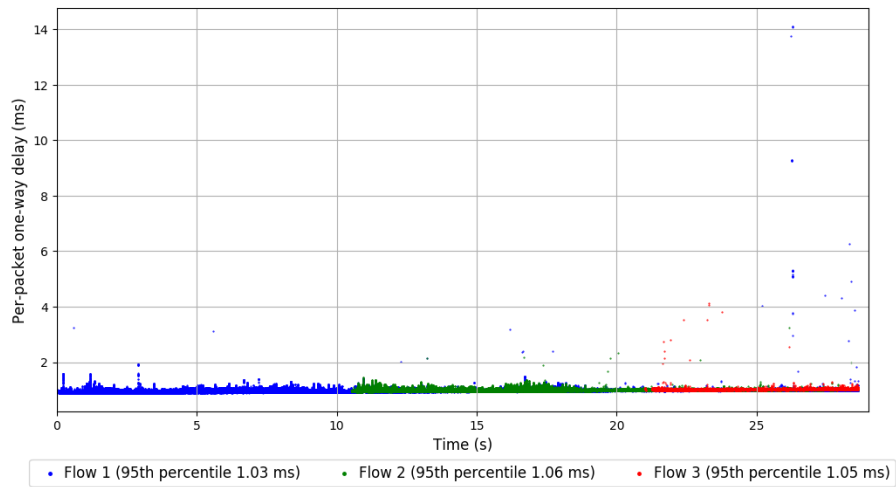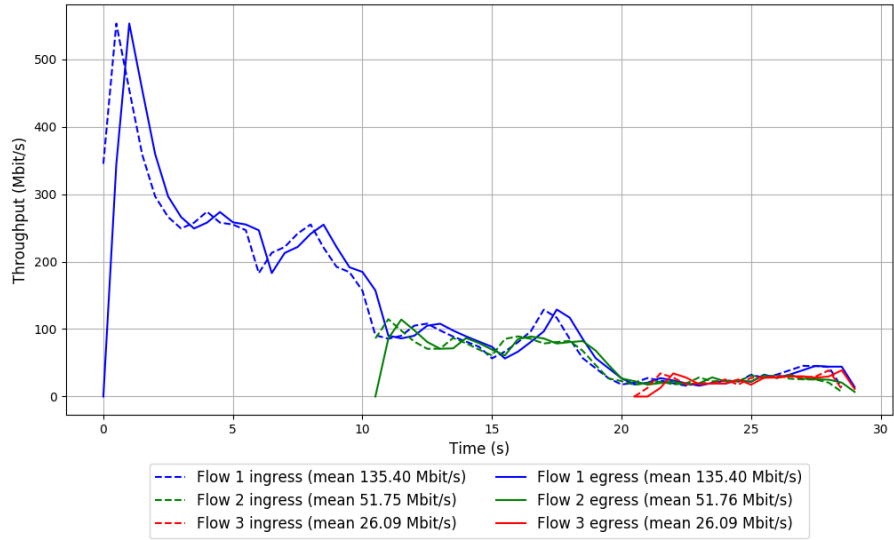
Run 1: Report of Indigo-MusesC3 — Data Link

```
Run 2: Statistics of Indigo-MusesC3

Start at: 2019-03-27 12:45:22
End at: 2019-03-27 12:45:52
Local clock offset: 6.294 ms
Remote clock offset: -3.509 ms


# Below is generated by plot.py at 2019-03-27 15:14:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 175.08 Mbit/s
95th percentile per-packet one-way delay: 1.037 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 135.40 Mbit/s
95th percentile per-packet one-way delay: 1.028 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 51.76 Mbit/s
95th percentile per-packet one-way delay: 1.058 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 26.09 Mbit/s
95th percentile per-packet one-way delay: 1.051 ms
Loss rate: 0.00%
```

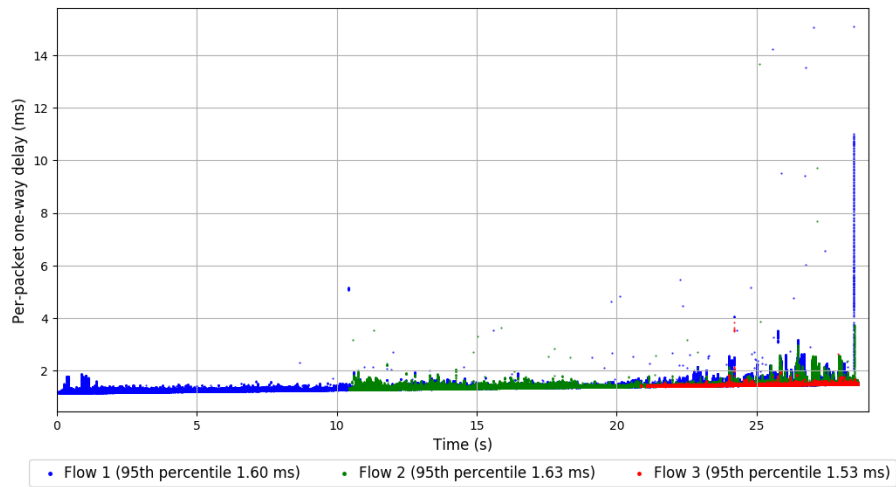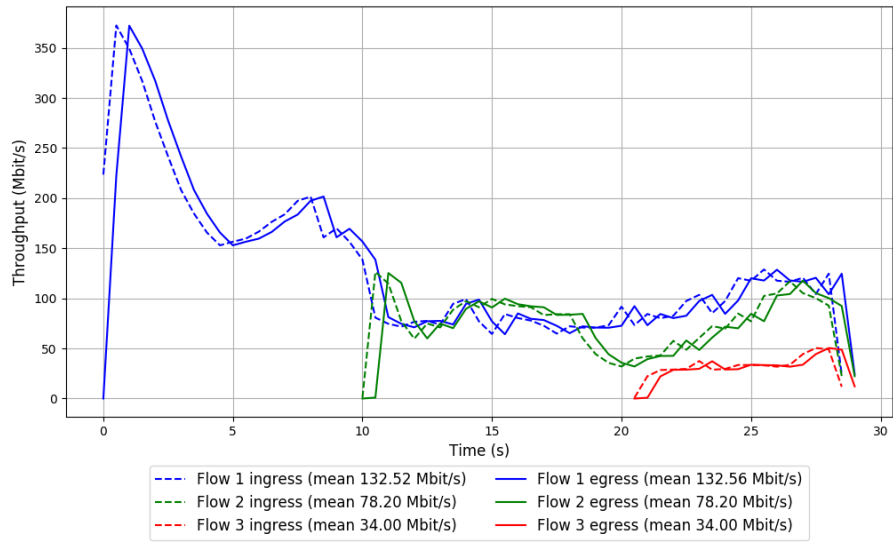Run 2: Report of Indigo-MusesC3 — Data Link

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```
Run 3: Statistics of Indigo-MusesC3

Start at: 2019-03-27 13:15:42
End at: 2019-03-27 13:16:12
Local clock offset: 4.879 ms
Remote clock offset: -3.248 ms


# Below is generated by plot.py at 2019-03-27 15:14:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 191.43 Mbit/s
95th percentile per-packet one-way delay: 1.604 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 132.56 Mbit/s
95th percentile per-packet one-way delay: 1.601 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 78.20 Mbit/s
95th percentile per-packet one-way delay: 1.629 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 34.00 Mbit/s
95th percentile per-packet one-way delay: 1.531 ms
Loss rate: 0.00%
```

Run 3: Report of Indigo-MusesC3 — Data Link

```
Run 4: Statistics of Indigo-MusesC3

Start at: 2019-03-27 13:46:06
End at: 2019-03-27 13:46:36
Local clock offset: 5.342 ms
Remote clock offset: 4.96 ms


# Below is generated by plot.py at 2019-03-27 15:14:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 175.01 Mbit/s
95th percentile per-packet one-way delay: 1.211 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 116.53 Mbit/s
95th percentile per-packet one-way delay: 1.181 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 81.64 Mbit/s
95th percentile per-packet one-way delay: 1.298 ms
Loss rate: 0.03%
-- Flow 3:
Average throughput: 28.86 Mbit/s
95th percentile per-packet one-way delay: 1.161 ms
Loss rate: 0.09%
```
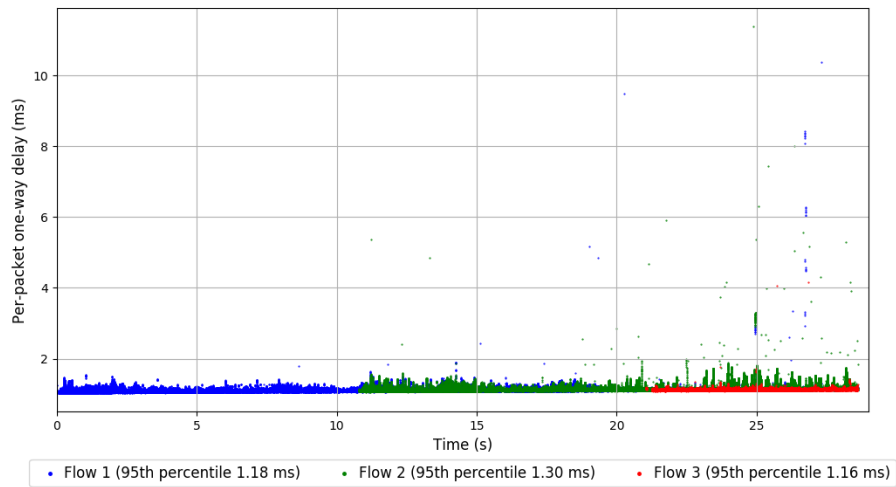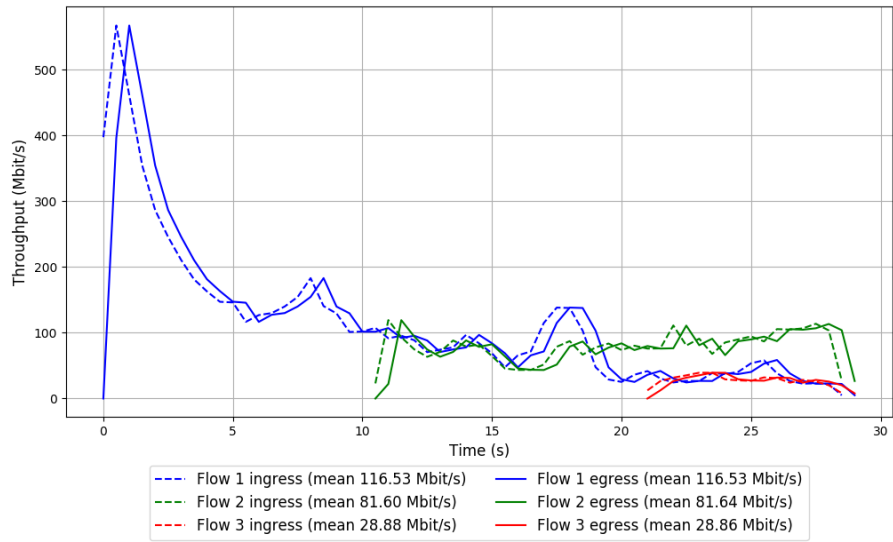
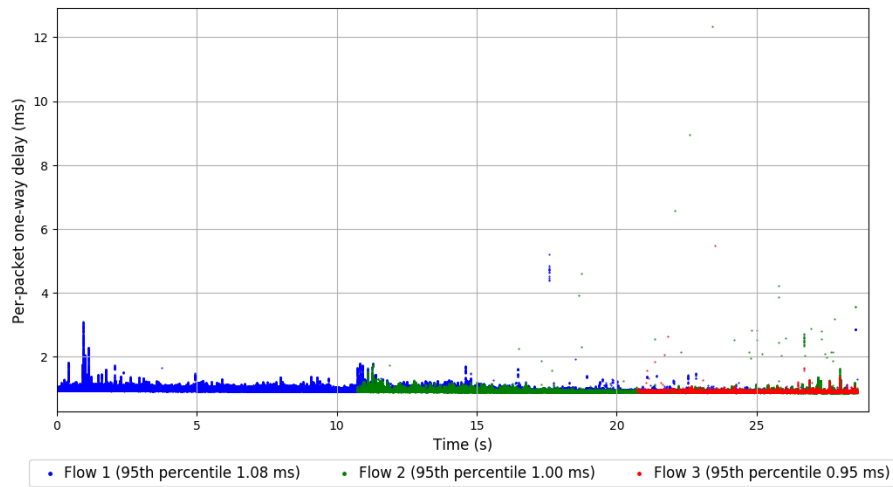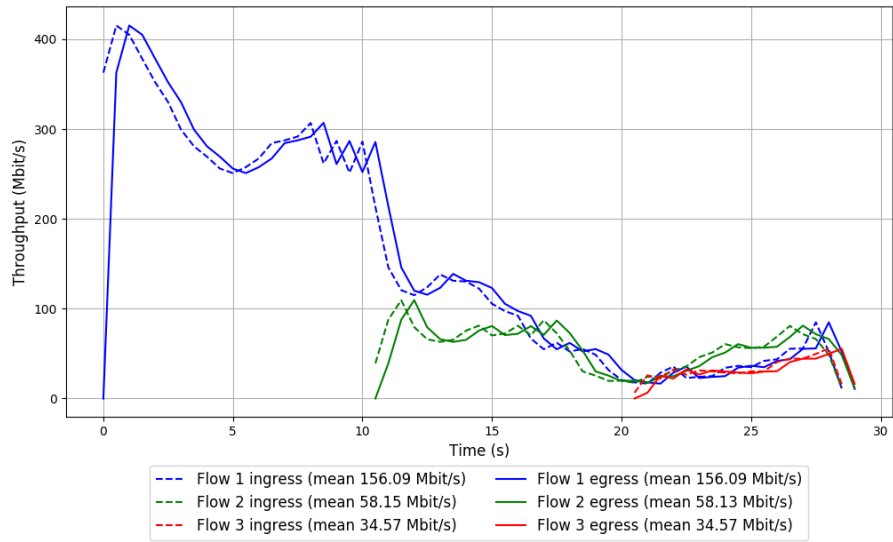Run 4: Report of Indigo-MusesC3 — Data Link

```
Run 5: Statistics of Indigo-MusesC3

Start at: 2019-03-27 14:16:25
End at: 2019-03-27 14:16:55
Local clock offset: 4.722 ms
Remote clock offset: -3.863 ms


# Below is generated by plot.py at 2019-03-27 15:14:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 201.92 Mbit/s
95th percentile per-packet one-way delay: 1.073 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 156.09 Mbit/s
95th percentile per-packet one-way delay: 1.081 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 58.13 Mbit/s
95th percentile per-packet one-way delay: 1.004 ms
Loss rate: 0.03%
-- Flow 3:
Average throughput: 34.57 Mbit/s
95th percentile per-packet one-way delay: 0.955 ms
Loss rate: 0.00%
```
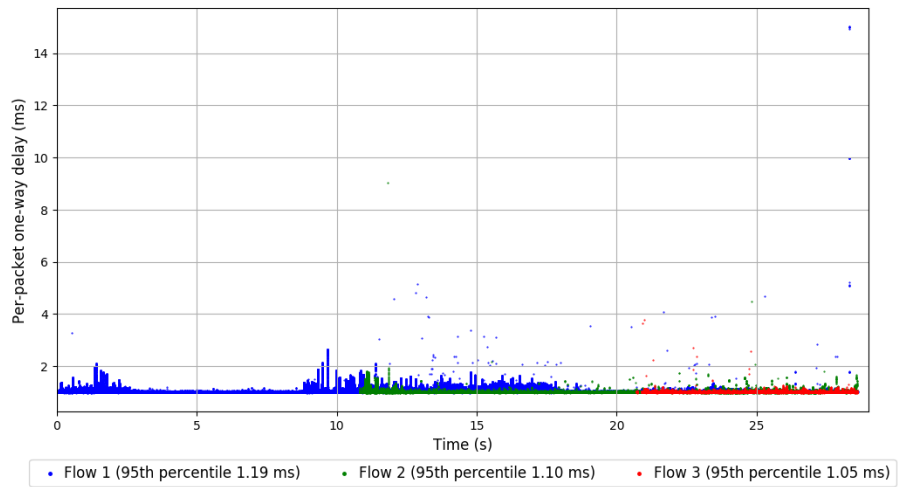
Run 5: Report of Indigo-MusesC3 — Data Link

- - - Flow 1 ingress (mean 156.09 Mbit/s)   —— Flow 1 egress (mean 156.09 Mbit/s)
- - - Flow 2 ingress (mean 58.15 Mbit/s)   —— Flow 2 egress (mean 58.13 Mbit/s)
- - - Flow 3 ingress (mean 34.57 Mbit/s)   —— Flow 3 egress (mean 34.57 Mbit/s)

• Flow 1 (95th percentile 1.08 ms)   • Flow 2 (95th percentile 1.00 ms)   • Flow 3 (95th percentile 0.95 ms)

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```
Run 1: Statistics of Indigo-MusesC5

Start at: 2019-03-27 12:06:00
End at: 2019-03-27 12:06:30
Local clock offset: 6.15 ms
Remote clock offset: -0.468 ms


# Below is generated by plot.py at 2019-03-27 15:14:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 153.13 Mbit/s
95th percentile per-packet one-way delay: 1.172 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 127.61 Mbit/s
95th percentile per-packet one-way delay: 1.187 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 25.67 Mbit/s
95th percentile per-packet one-way delay: 1.101 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 34.63 Mbit/s
95th percentile per-packet one-way delay: 1.049 ms
Loss rate: 0.00%
```
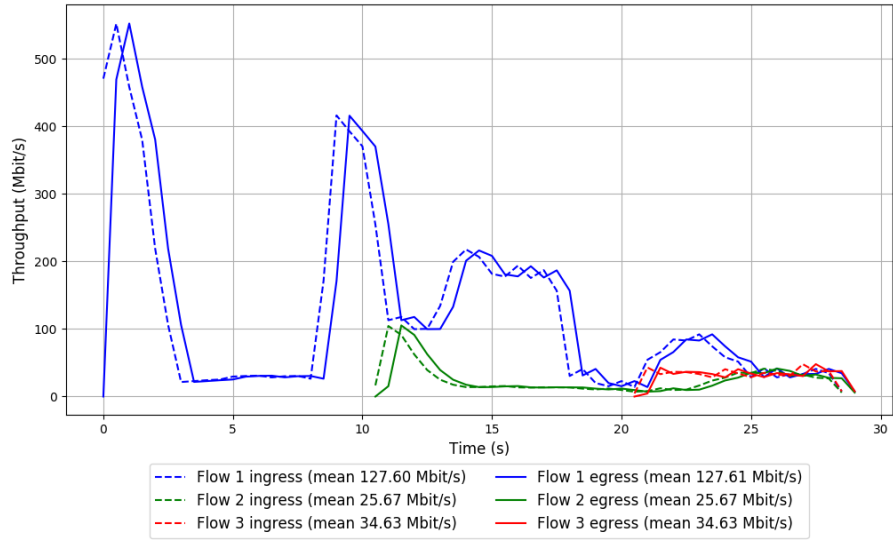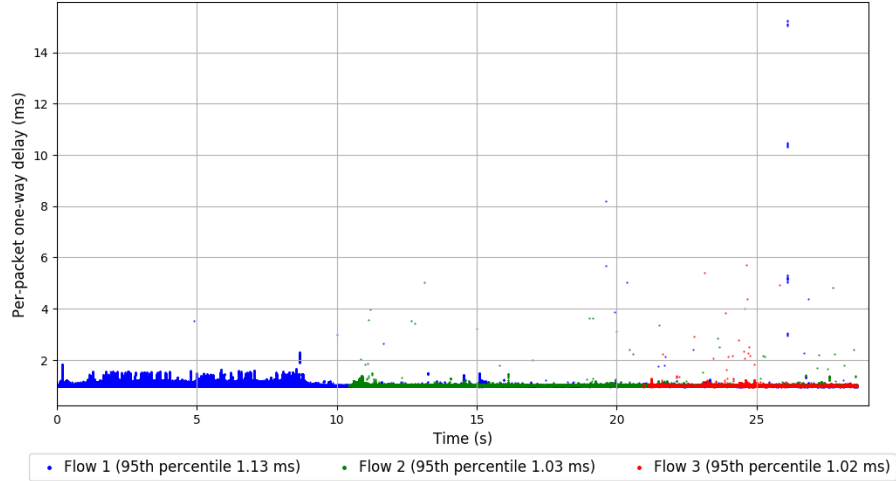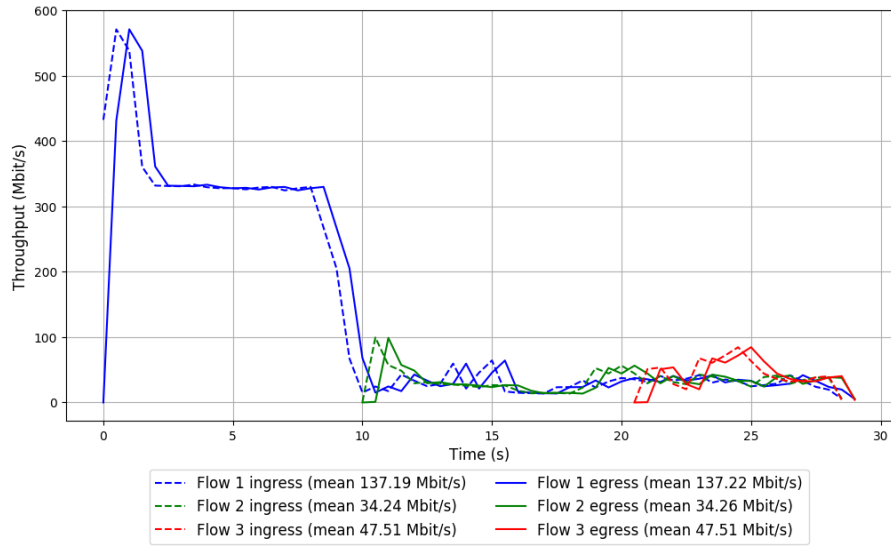
Run 1: Report of Indigo-MusesC5 — Data Link

- - - Flow 1 ingress (mean 127.60 Mbit/s) —— Flow 1 egress (mean 127.61 Mbit/s)
- - - Flow 2 ingress (mean 25.67 Mbit/s) —— Flow 2 egress (mean 25.67 Mbit/s)
- - - Flow 3 ingress (mean 34.63 Mbit/s) —— Flow 3 egress (mean 34.63 Mbit/s)

• Flow 1 (95th percentile 1.19 ms)   • Flow 2 (95th percentile 1.10 ms)   • Flow 3 (95th percentile 1.05 ms)

76

```
Run 2: Statistics of Indigo-MusesC5

Start at: 2019-03-27 12:36:30
End at: 2019-03-27 12:37:00
Local clock offset: 6.186 ms
Remote clock offset: -3.782 ms


# Below is generated by plot.py at 2019-03-27 15:14:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 171.70 Mbit/s
95th percentile per-packet one-way delay: 1.111 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 137.22 Mbit/s
95th percentile per-packet one-way delay: 1.127 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 34.26 Mbit/s
95th percentile per-packet one-way delay: 1.035 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 47.51 Mbit/s
95th percentile per-packet one-way delay: 1.016 ms
Loss rate: 0.00%
```
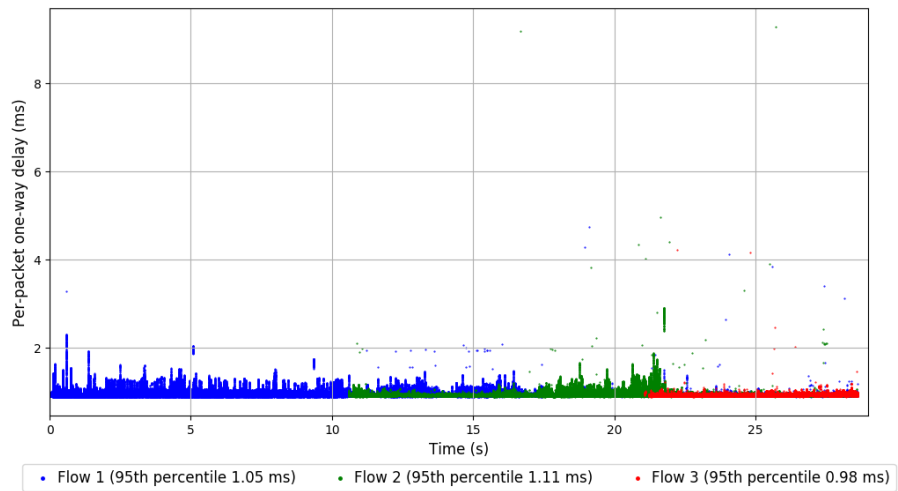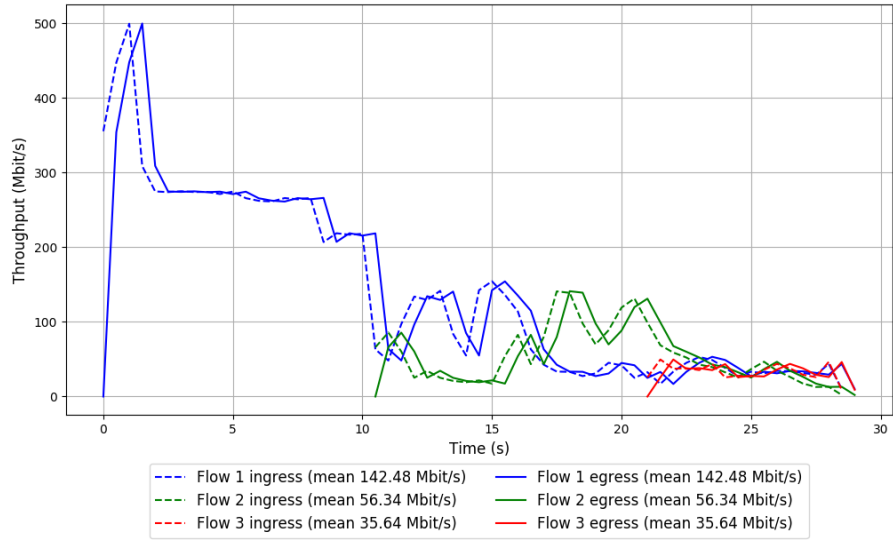
Run 2: Report of Indigo-MusesC5 — Data Link

```
Run 3: Statistics of Indigo-MusesC5

Start at: 2019-03-27 13:06:47
End at: 2019-03-27 13:07:17
Local clock offset: 5.004 ms
Remote clock offset: -3.196 ms


# Below is generated by plot.py at 2019-03-27 15:14:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 187.36 Mbit/s
95th percentile per-packet one-way delay: 1.056 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 142.48 Mbit/s
95th percentile per-packet one-way delay: 1.048 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 56.34 Mbit/s
95th percentile per-packet one-way delay: 1.114 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 35.64 Mbit/s
95th percentile per-packet one-way delay: 0.983 ms
Loss rate: 0.02%
```
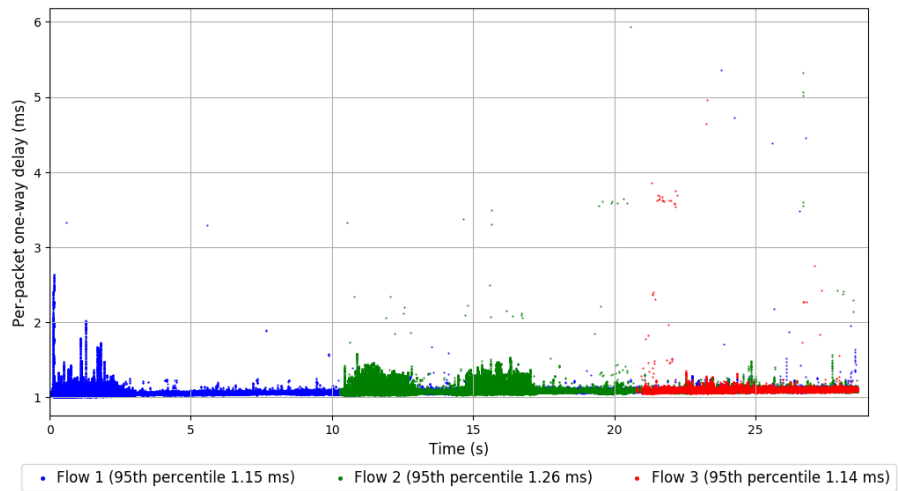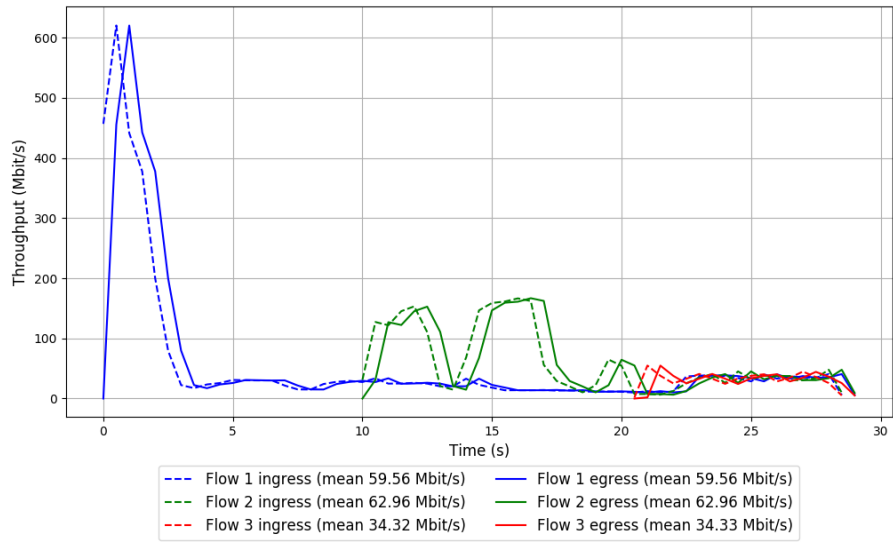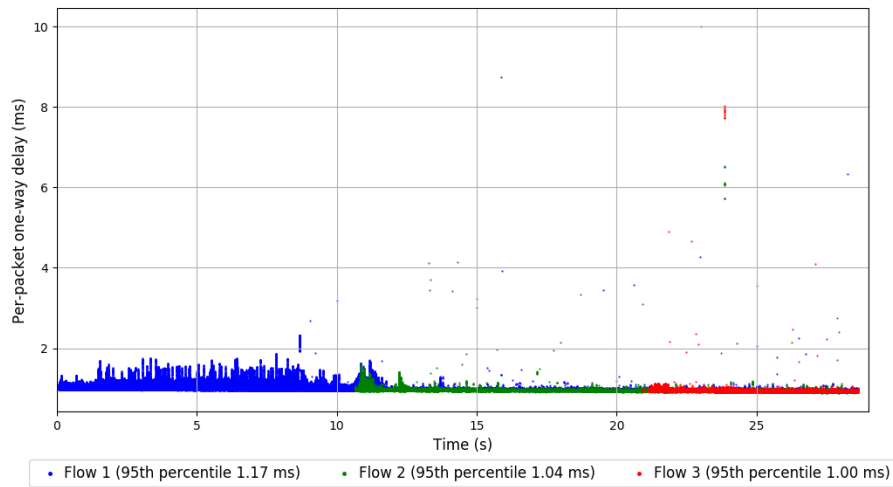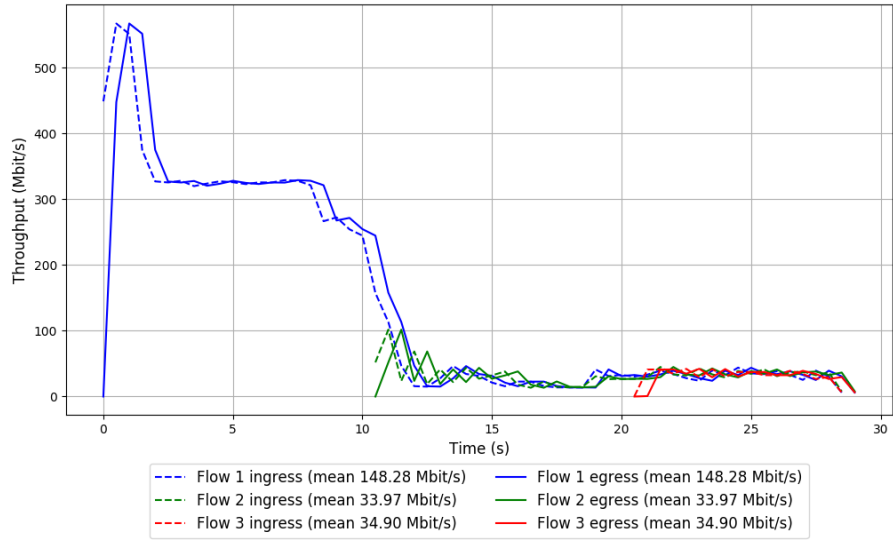
Run 3: Report of Indigo-MusesC5 — Data Link

- - - Flow 1 ingress (mean 142.48 Mbit/s) —— Flow 1 egress (mean 142.48 Mbit/s)
- - - Flow 2 ingress (mean 56.34 Mbit/s) —— Flow 2 egress (mean 56.34 Mbit/s)
- - - Flow 3 ingress (mean 35.64 Mbit/s) —— Flow 3 egress (mean 35.64 Mbit/s)

• Flow 1 (95th percentile 1.05 ms)   • Flow 2 (95th percentile 1.11 ms)   • Flow 3 (95th percentile 0.98 ms)

```
Run 4: Statistics of Indigo-MusesC5

Start at: 2019-03-27 13:37:19
End at: 2019-03-27 13:37:49
Local clock offset: 5.282 ms
Remote clock offset: 3.947 ms


# Below is generated by plot.py at 2019-03-27 15:14:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 109.27 Mbit/s
95th percentile per-packet one-way delay: 1.188 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 59.56 Mbit/s
95th percentile per-packet one-way delay: 1.150 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 62.96 Mbit/s
95th percentile per-packet one-way delay: 1.259 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 34.33 Mbit/s
95th percentile per-packet one-way delay: 1.138 ms
Loss rate: 0.01%
```

Run 4: Report of Indigo-MusesC5 — Data Link

```
Run 5: Statistics of Indigo-MusesC5

Start at: 2019-03-27 14:07:29
End at: 2019-03-27 14:07:59
Local clock offset: 4.756 ms
Remote clock offset: -2.835 ms


# Below is generated by plot.py at 2019-03-27 15:15:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 178.94 Mbit/s
95th percentile per-packet one-way delay: 1.153 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 148.28 Mbit/s
95th percentile per-packet one-way delay: 1.170 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 33.97 Mbit/s
95th percentile per-packet one-way delay: 1.036 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 34.90 Mbit/s
95th percentile per-packet one-way delay: 1.005 ms
Loss rate: 0.00%
```
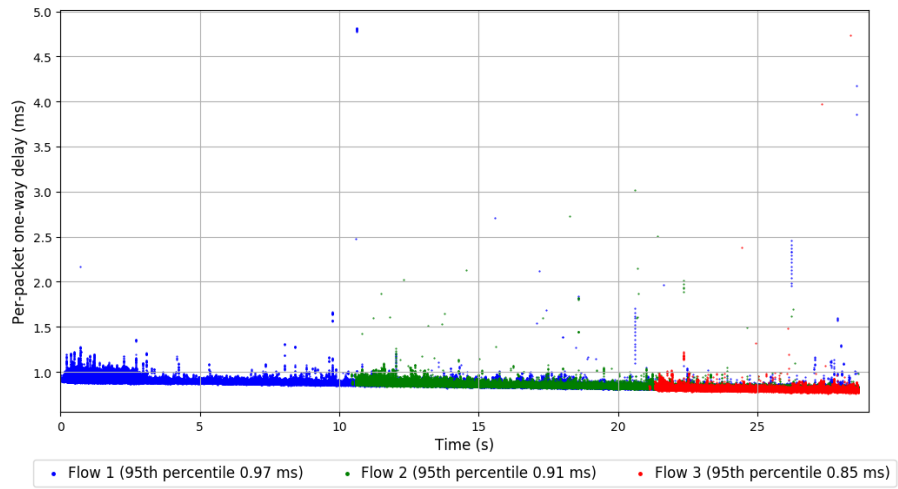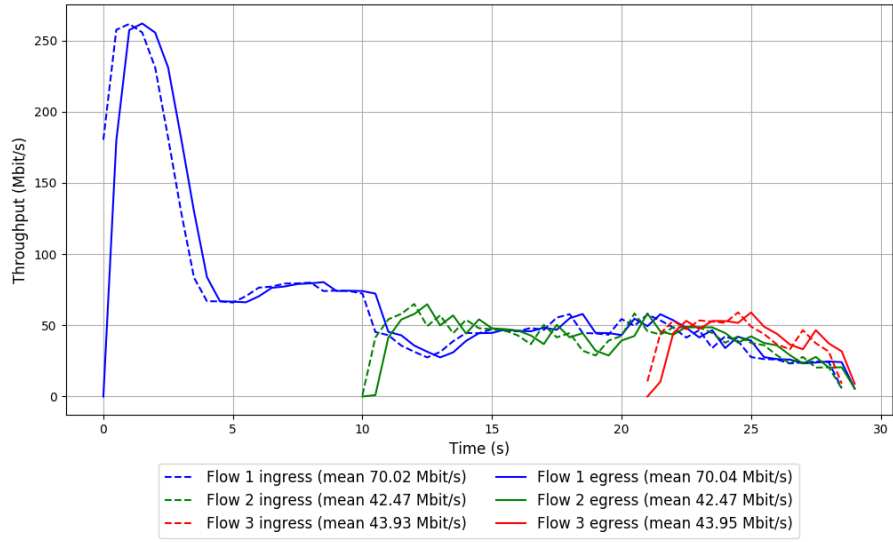
Run 5: Report of Indigo-MusesC5 — Data Link

```
Run 1: Statistics of Indigo-MusesD

Start at: 2019-03-27 12:10:09
End at: 2019-03-27 12:10:39
Local clock offset: 6.142 ms
Remote clock offset: -1.211 ms


# Below is generated by plot.py at 2019-03-27 15:15:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 108.51 Mbit/s
95th percentile per-packet one-way delay: 0.957 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 70.04 Mbit/s
95th percentile per-packet one-way delay: 0.975 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 42.47 Mbit/s
95th percentile per-packet one-way delay: 0.906 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 43.95 Mbit/s
95th percentile per-packet one-way delay: 0.851 ms
Loss rate: 0.01%
```
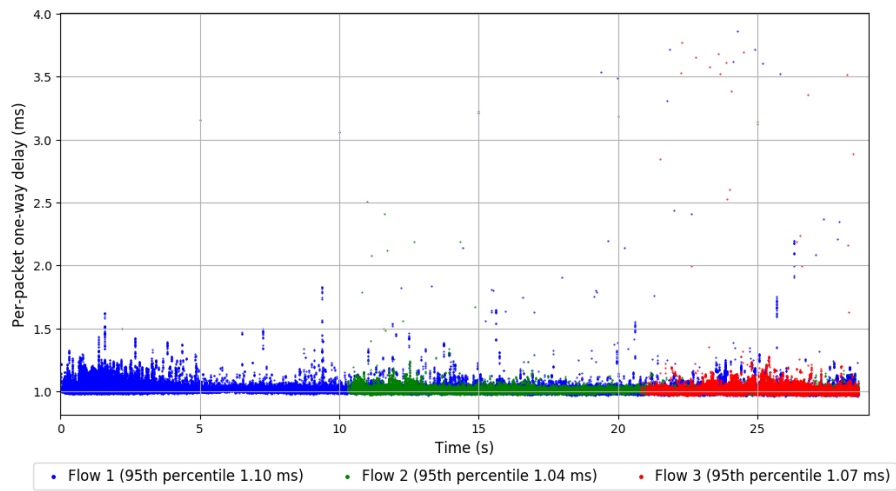
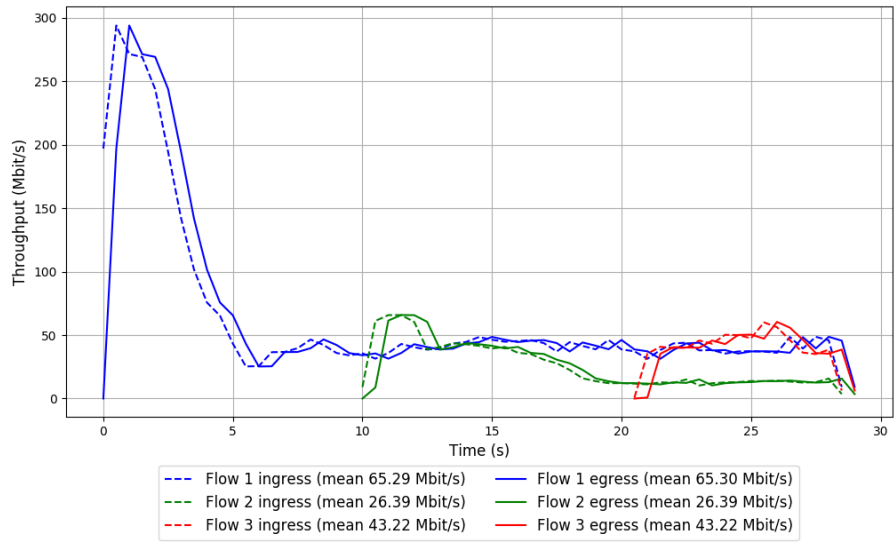Run 1: Report of Indigo-MusesD — Data Link

```
Run 2: Statistics of Indigo-MusesD

Start at: 2019-03-27 12:40:39
End at: 2019-03-27 12:41:09
Local clock offset: 6.234 ms
Remote clock offset: -3.934 ms


# Below is generated by plot.py at 2019-03-27 15:15:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.91 Mbit/s
95th percentile per-packet one-way delay: 1.088 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 65.30 Mbit/s
95th percentile per-packet one-way delay: 1.098 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 26.39 Mbit/s
95th percentile per-packet one-way delay: 1.044 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 43.22 Mbit/s
95th percentile per-packet one-way delay: 1.075 ms
Loss rate: 0.00%
```

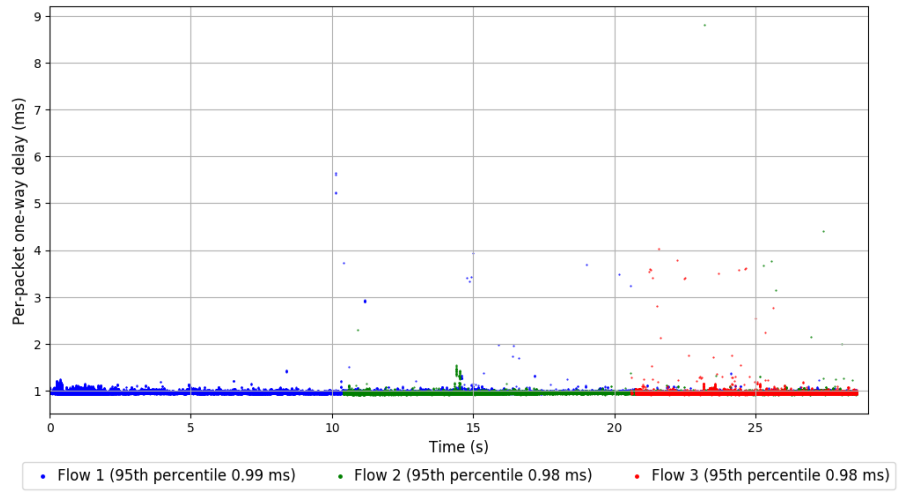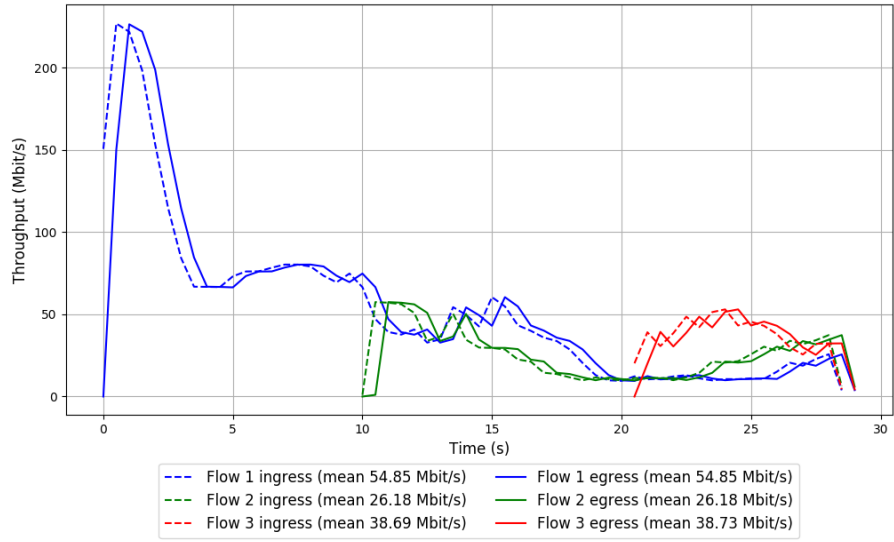Run 2: Report of Indigo-MusesD — Data Link

```
Run 3: Statistics of Indigo-MusesD

Start at: 2019-03-27 13:10:59
End at: 2019-03-27 13:11:29
Local clock offset: 4.933 ms
Remote clock offset: -3.233 ms


# Below is generated by plot.py at 2019-03-27 15:15:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 82.30 Mbit/s
95th percentile per-packet one-way delay: 0.991 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 54.85 Mbit/s
95th percentile per-packet one-way delay: 0.995 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 26.18 Mbit/s
95th percentile per-packet one-way delay: 0.980 ms
Loss rate: 0.03%
-- Flow 3:
Average throughput: 38.73 Mbit/s
95th percentile per-packet one-way delay: 0.984 ms
Loss rate: 0.00%
```
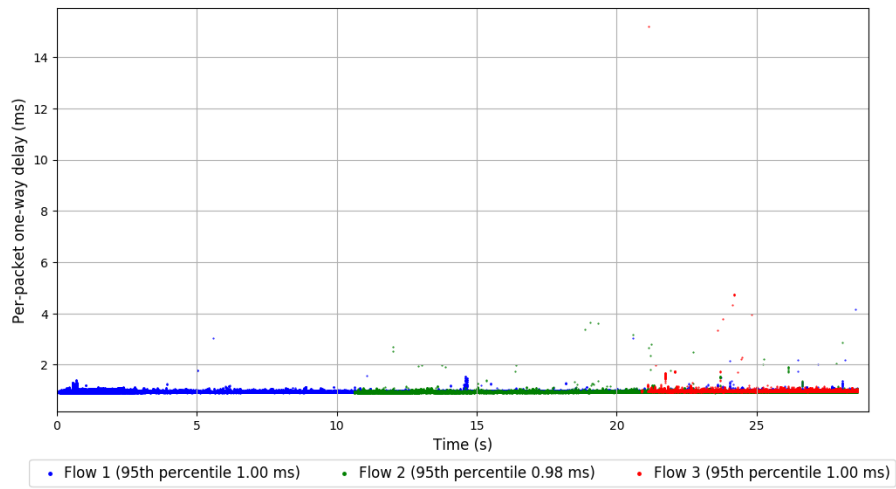
Run 3: Report of Indigo-MusesD — Data Link

```
Run 4: Statistics of Indigo-MusesD

Start at: 2019-03-27 13:41:22
End at: 2019-03-27 13:41:52
Local clock offset: 5.321 ms
Remote clock offset: 4.564 ms

# Below is generated by plot.py at 2019-03-27 15:15:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 101.38 Mbit/s
95th percentile per-packet one-way delay: 0.998 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 60.65 Mbit/s
95th percentile per-packet one-way delay: 1.003 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 40.42 Mbit/s
95th percentile per-packet one-way delay: 0.977 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 56.84 Mbit/s
95th percentile per-packet one-way delay: 1.002 ms
Loss rate: 0.00%
```
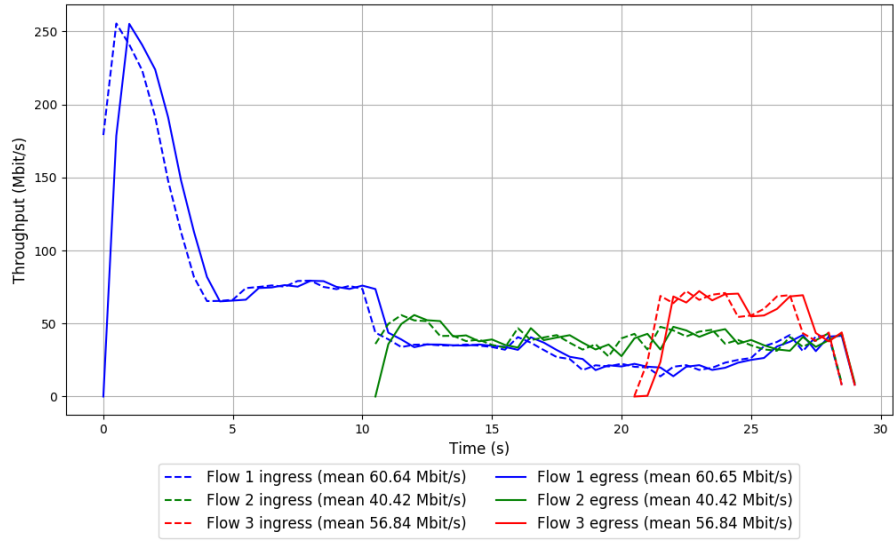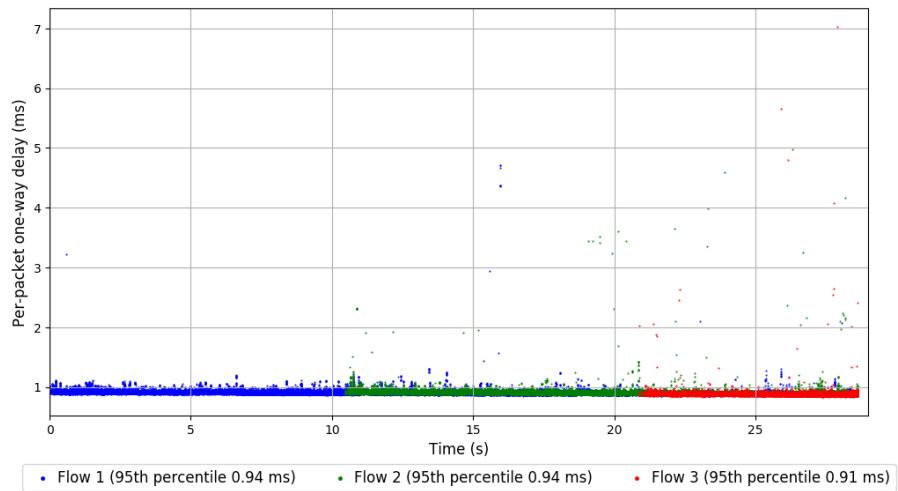
Run 4: Report of Indigo-MusesD — Data Link

```
Run 5: Statistics of Indigo-MusesD

Start at: 2019-03-27 14:11:41
End at: 2019-03-27 14:12:11
Local clock offset: 4.721 ms
Remote clock offset: -3.32 ms


# Below is generated by plot.py at 2019-03-27 15:15:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 82.32 Mbit/s
95th percentile per-packet one-way delay: 0.937 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 48.92 Mbit/s
95th percentile per-packet one-way delay: 0.941 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 38.00 Mbit/s
95th percentile per-packet one-way delay: 0.935 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 34.43 Mbit/s
95th percentile per-packet one-way delay: 0.910 ms
Loss rate: 0.01%
```
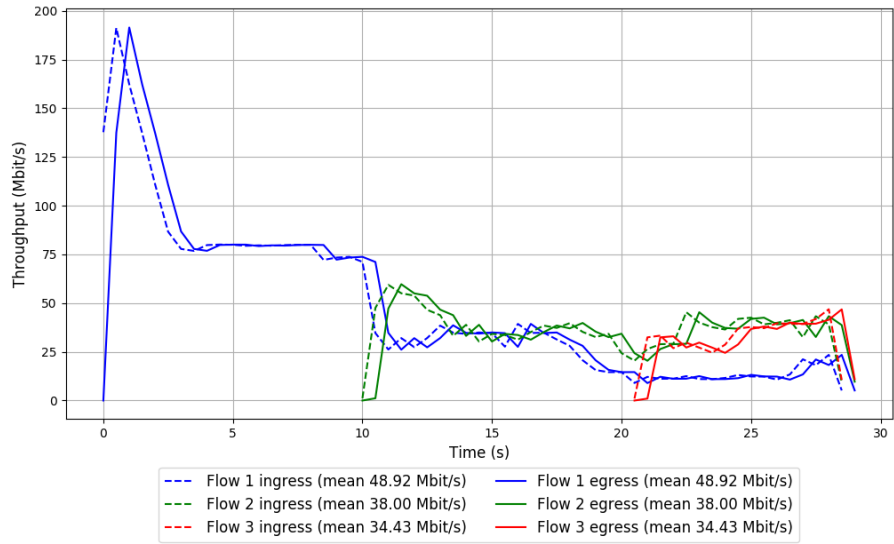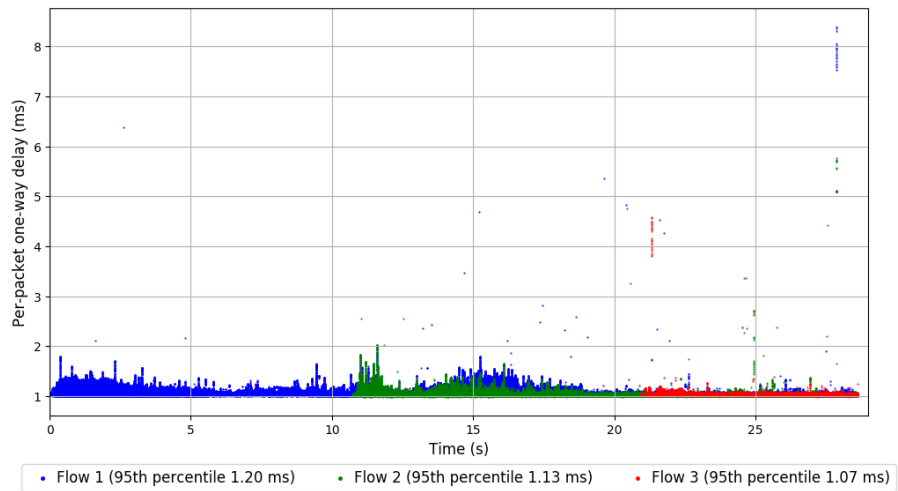
Run 5: Report of Indigo-MusesD — Data Link

Flow 1 ingress (mean 48.92 Mbit/s) — Flow 1 egress (mean 48.92 Mbit/s)
Flow 2 ingress (mean 38.00 Mbit/s) — Flow 2 egress (mean 38.00 Mbit/s)
Flow 3 ingress (mean 34.43 Mbit/s) — Flow 3 egress (mean 34.43 Mbit/s)

Flow 1 (95th percentile 0.94 ms) • Flow 2 (95th percentile 0.94 ms) • Flow 3 (95th percentile 0.91 ms)

```
Run 1: Statistics of Indigo-MusesT

Start at: 2019-03-27 11:58:36
End at: 2019-03-27 11:59:06
Local clock offset: 6.335 ms
Remote clock offset: -0.346 ms

# Below is generated by plot.py at 2019-03-27 15:16:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 195.36 Mbit/s
95th percentile per-packet one-way delay: 1.184 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 146.83 Mbit/s
95th percentile per-packet one-way delay: 1.200 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 62.57 Mbit/s
95th percentile per-packet one-way delay: 1.133 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 34.92 Mbit/s
95th percentile per-packet one-way delay: 1.071 ms
Loss rate: 0.00%
```
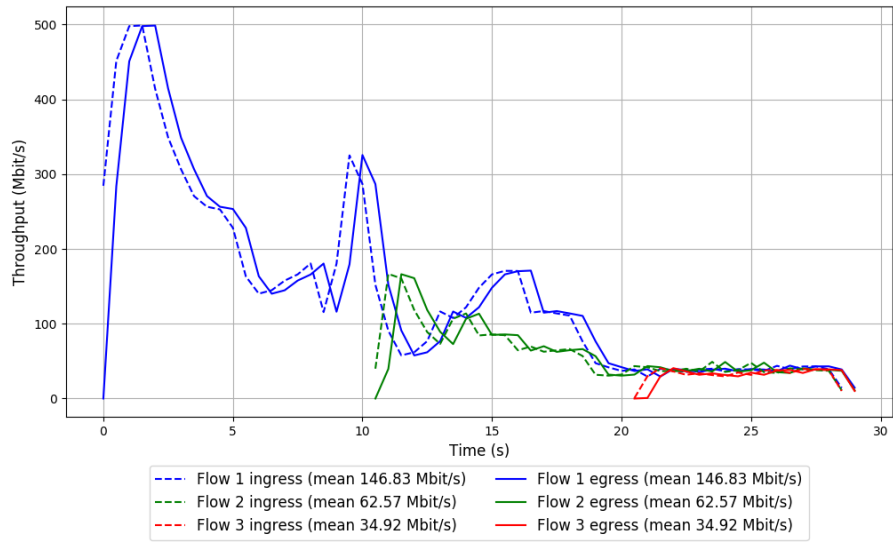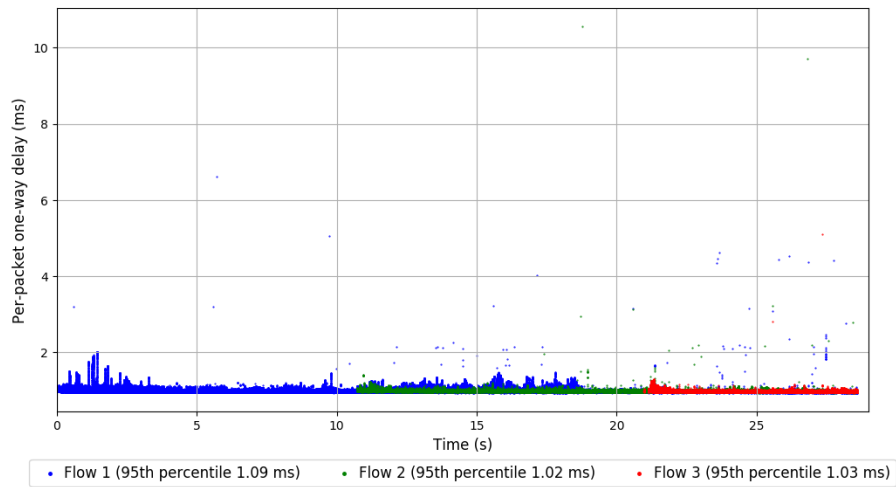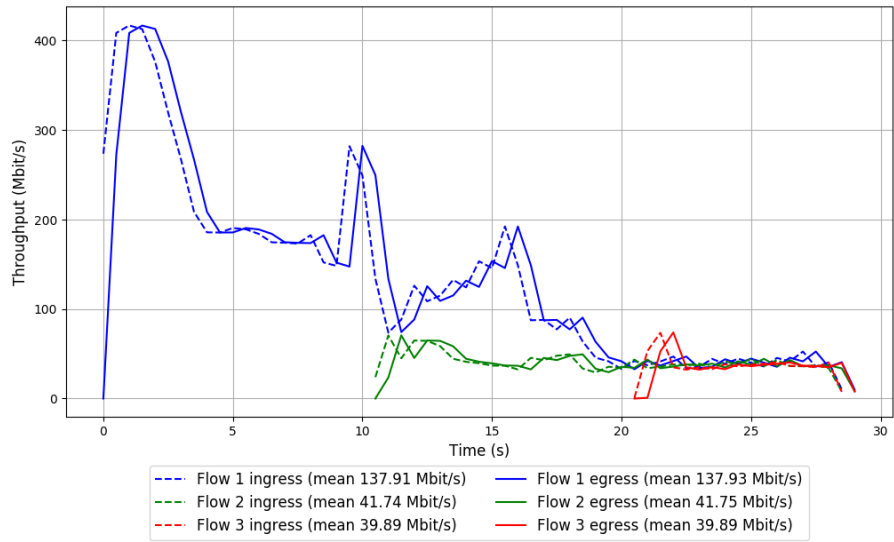
Run 1: Report of Indigo-MusesT — Data Link

```
Run 2: Statistics of Indigo-MusesT

Start at: 2019-03-27 12:29:05
End at: 2019-03-27 12:29:35
Local clock offset: 6.142 ms
Remote clock offset: -3.424 ms


# Below is generated by plot.py at 2019-03-27 15:16:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 174.65 Mbit/s
95th percentile per-packet one-way delay: 1.086 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 137.93 Mbit/s
95th percentile per-packet one-way delay: 1.095 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 41.75 Mbit/s
95th percentile per-packet one-way delay: 1.018 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 39.89 Mbit/s
95th percentile per-packet one-way delay: 1.029 ms
Loss rate: 0.00%
```
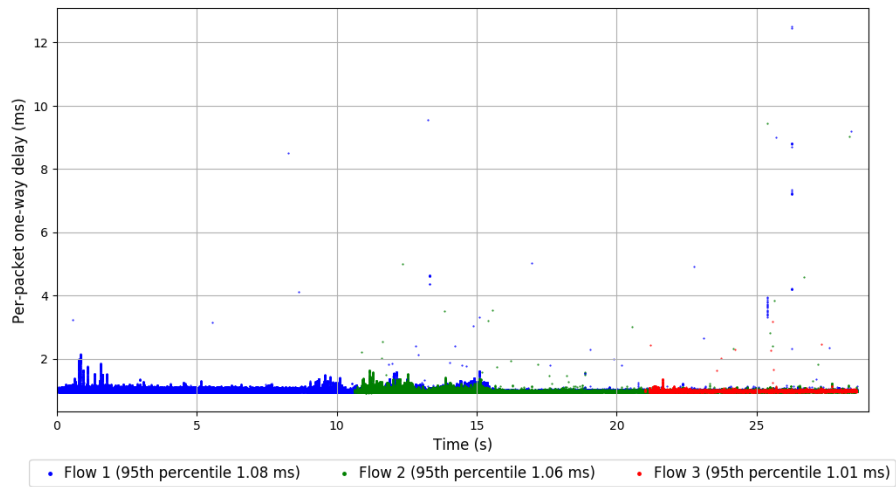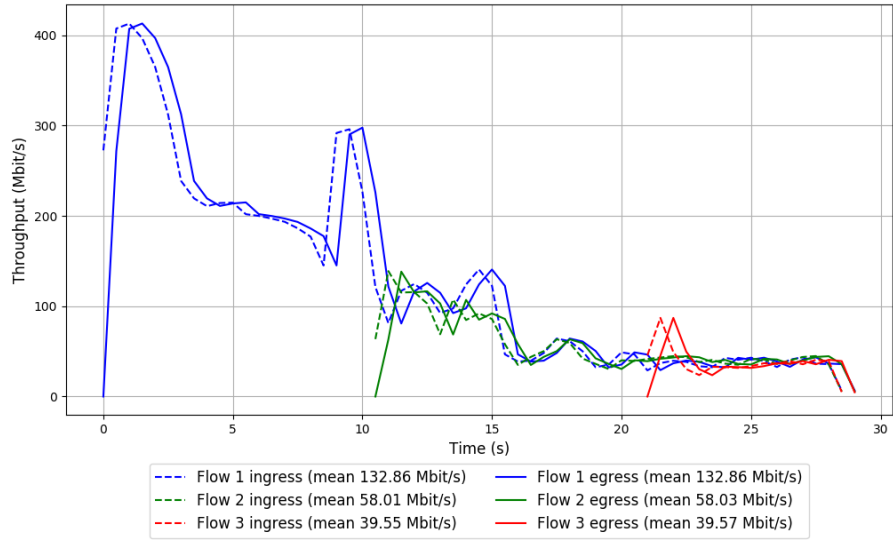
Run 2: Report of Indigo-MusesT — Data Link

```
Run 3: Statistics of Indigo-MusesT

Start at: 2019-03-27 12:59:26
End at: 2019-03-27 12:59:56
Local clock offset: 5.207 ms
Remote clock offset: -3.206 ms


# Below is generated by plot.py at 2019-03-27 15:16:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 179.80 Mbit/s
95th percentile per-packet one-way delay: 1.075 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 132.86 Mbit/s
95th percentile per-packet one-way delay: 1.079 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 58.03 Mbit/s
95th percentile per-packet one-way delay: 1.059 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 39.57 Mbit/s
95th percentile per-packet one-way delay: 1.011 ms
Loss rate: 0.05%
```

Run 3: Report of Indigo-MusesT — Data Link

```
Run 4: Statistics of Indigo-MusesT

Start at: 2019-03-27 13:29:55
End at: 2019-03-27 13:30:25
Local clock offset: 5.216 ms
Remote clock offset: 2.809 ms


# Below is generated by plot.py at 2019-03-27 15:16:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 178.23 Mbit/s
95th percentile per-packet one-way delay: 1.073 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 128.59 Mbit/s
95th percentile per-packet one-way delay: 1.073 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 61.72 Mbit/s
95th percentile per-packet one-way delay: 1.084 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 38.54 Mbit/s
95th percentile per-packet one-way delay: 1.047 ms
Loss rate: 0.00%
```
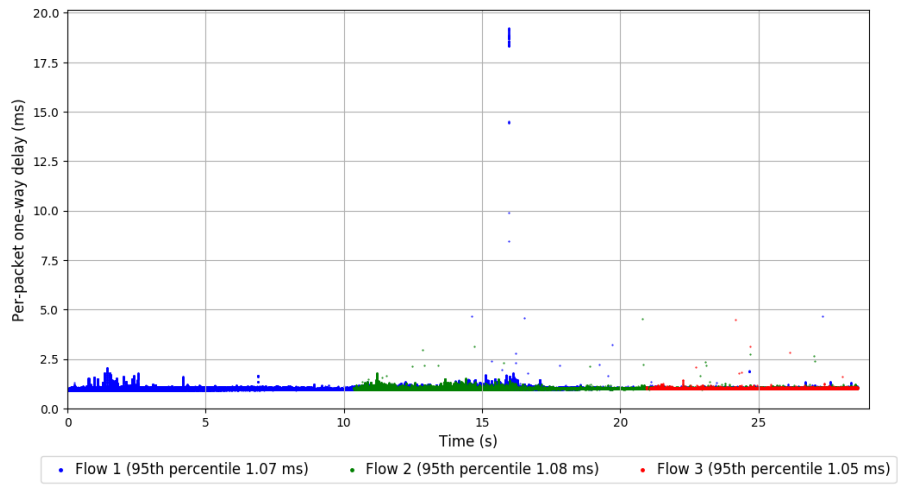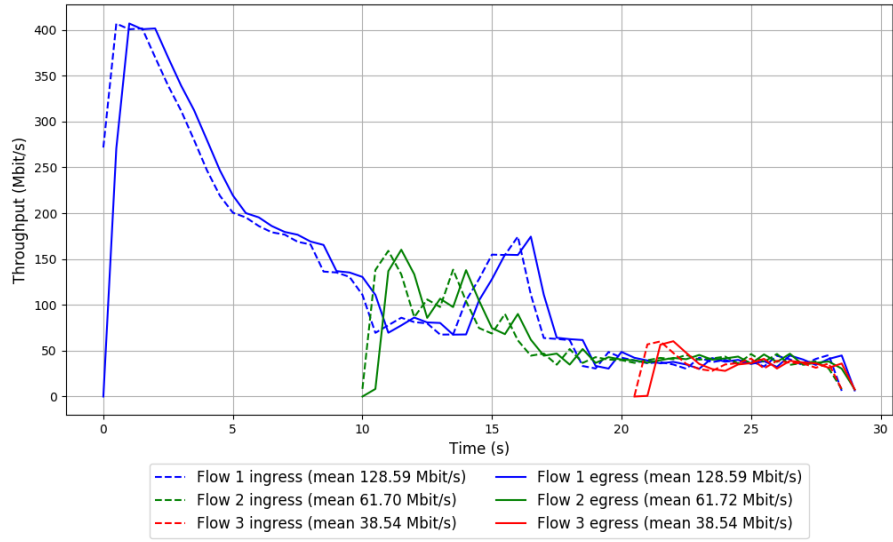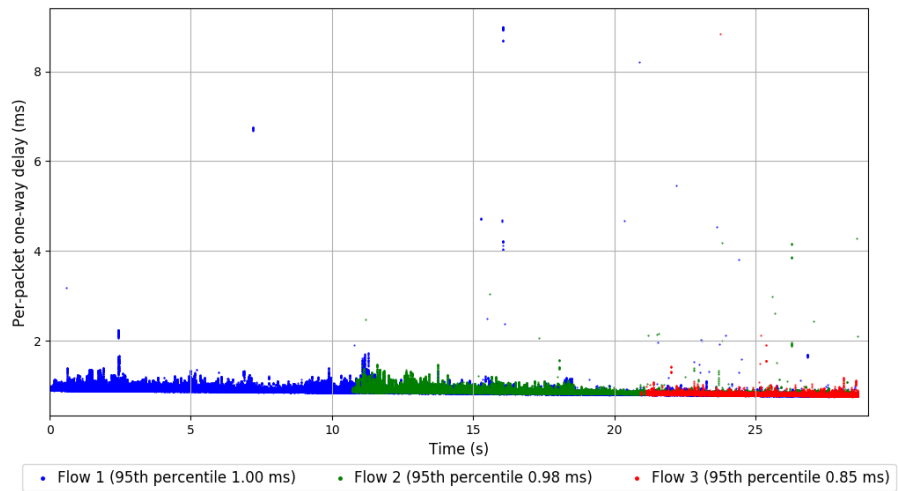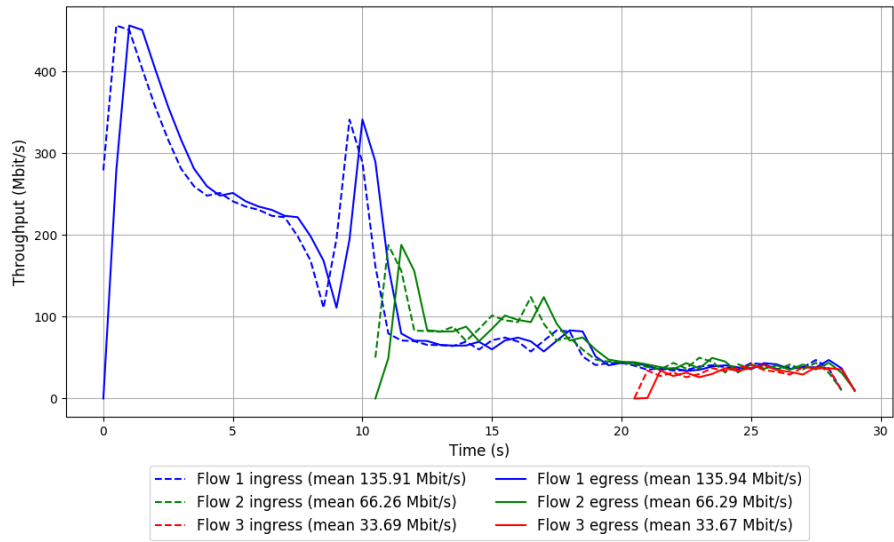
Run 4: Report of Indigo-MusesT — Data Link

Flow 1 ingress (mean 128.59 Mbit/s) ---- Flow 1 egress (mean 128.59 Mbit/s)
Flow 2 ingress (mean 61.70 Mbit/s) ---- Flow 2 egress (mean 61.72 Mbit/s)
Flow 3 ingress (mean 38.54 Mbit/s) ---- Flow 3 egress (mean 38.54 Mbit/s)

Flow 1 (95th percentile 1.07 ms)   Flow 2 (95th percentile 1.08 ms)   Flow 3 (95th percentile 1.05 ms)

```
Run 5: Statistics of Indigo-MusesT

Start at: 2019-03-27 14:00:04
End at: 2019-03-27 14:00:34
Local clock offset: 4.828 ms
Remote clock offset: -1.063 ms


# Below is generated by plot.py at 2019-03-27 15:16:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 186.41 Mbit/s
95th percentile per-packet one-way delay: 0.997 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 135.94 Mbit/s
95th percentile per-packet one-way delay: 1.004 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 66.29 Mbit/s
95th percentile per-packet one-way delay: 0.979 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 33.67 Mbit/s
95th percentile per-packet one-way delay: 0.847 ms
Loss rate: 0.08%
```
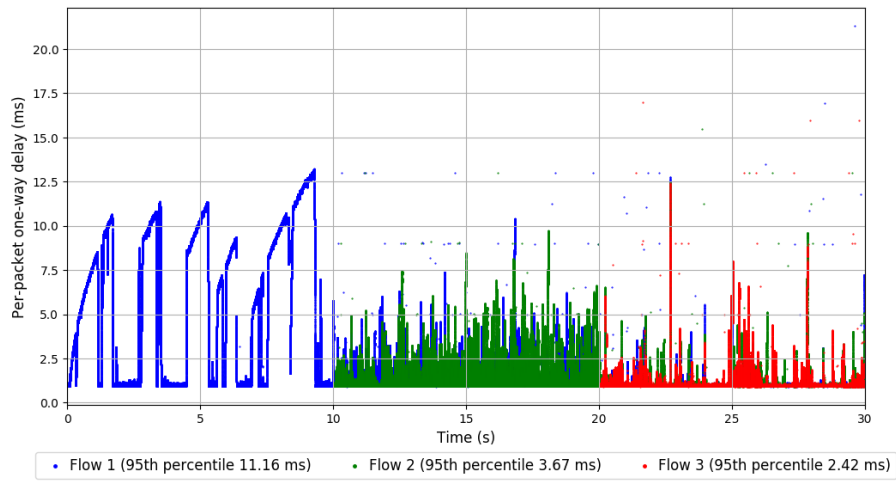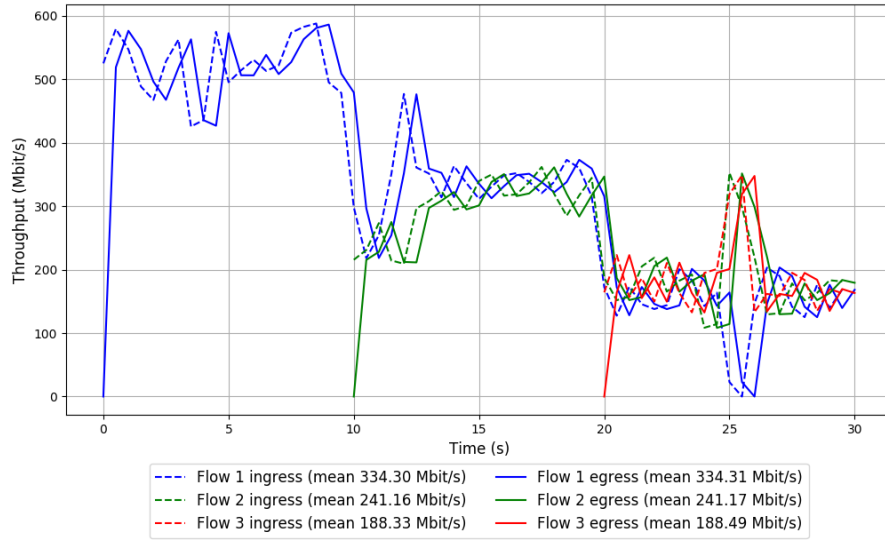
Run 5: Report of Indigo-MusesT — Data Link

```
Run 1: Statistics of LEDBAT

Start at: 2019-03-27 12:17:33
End at: 2019-03-27 12:18:03
Local clock offset: 6.148 ms
Remote clock offset: -2.504 ms


# Below is generated by plot.py at 2019-03-27 15:21:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 557.40 Mbit/s
95th percentile per-packet one-way delay: 10.393 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 334.31 Mbit/s
95th percentile per-packet one-way delay: 11.165 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 241.17 Mbit/s
95th percentile per-packet one-way delay: 3.665 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 188.49 Mbit/s
95th percentile per-packet one-way delay: 2.415 ms
Loss rate: 0.00%
```
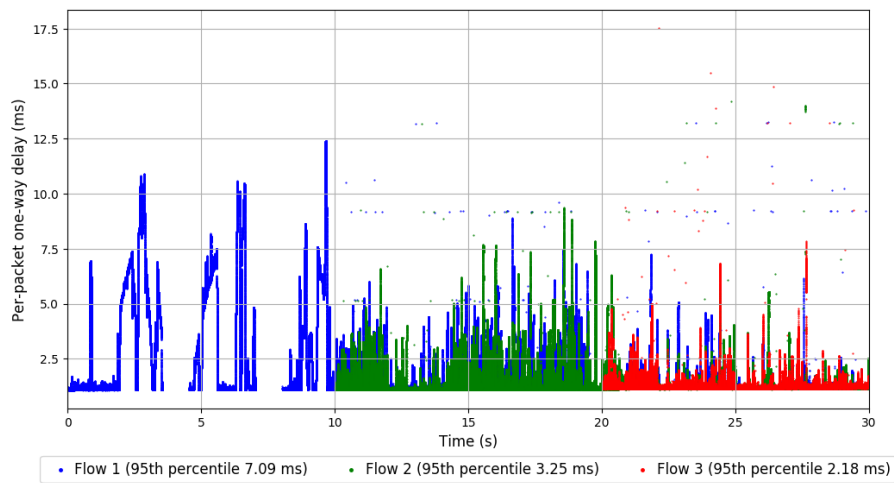
Run 1: Report of LEDBAT — Data Link

Flow 1 ingress (mean 334.30 Mbit/s)   Flow 1 egress (mean 334.31 Mbit/s)
Flow 2 ingress (mean 241.16 Mbit/s)   Flow 2 egress (mean 241.17 Mbit/s)
Flow 3 ingress (mean 188.33 Mbit/s)   Flow 3 egress (mean 188.49 Mbit/s)

Flow 1 (95th percentile 11.16 ms)   Flow 2 (95th percentile 3.67 ms)   Flow 3 (95th percentile 2.42 ms)

```
Run 2: Statistics of LEDBAT

Start at: 2019-03-27 12:48:01
End at: 2019-03-27 12:48:31
Local clock offset: 6.008 ms
Remote clock offset: -3.486 ms


# Below is generated by plot.py at 2019-03-27 15:21:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 529.03 Mbit/s
95th percentile per-packet one-way delay: 6.408 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 308.92 Mbit/s
95th percentile per-packet one-way delay: 7.092 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 234.52 Mbit/s
95th percentile per-packet one-way delay: 3.253 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 192.43 Mbit/s
95th percentile per-packet one-way delay: 2.179 ms
Loss rate: 0.02%
```
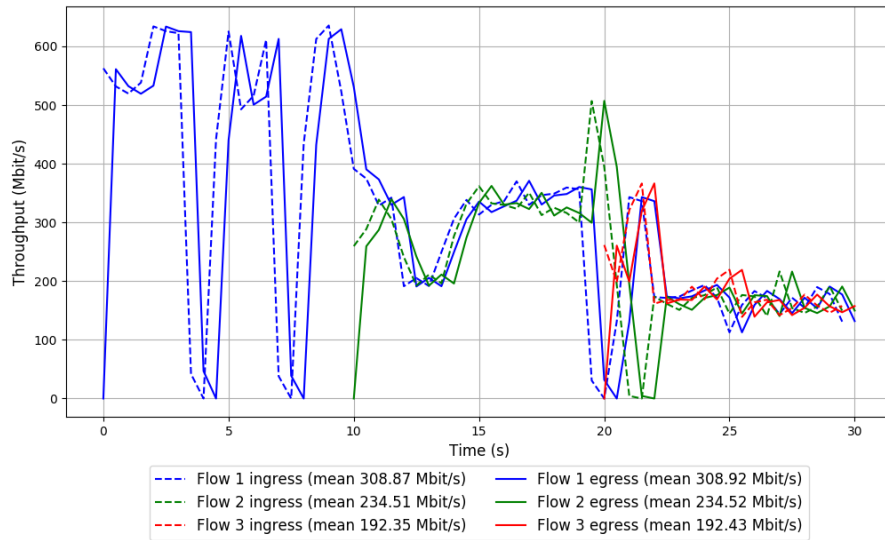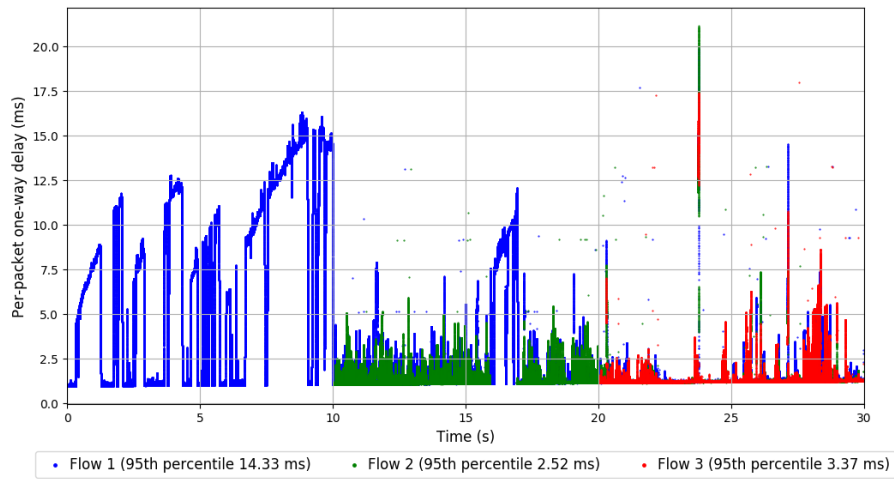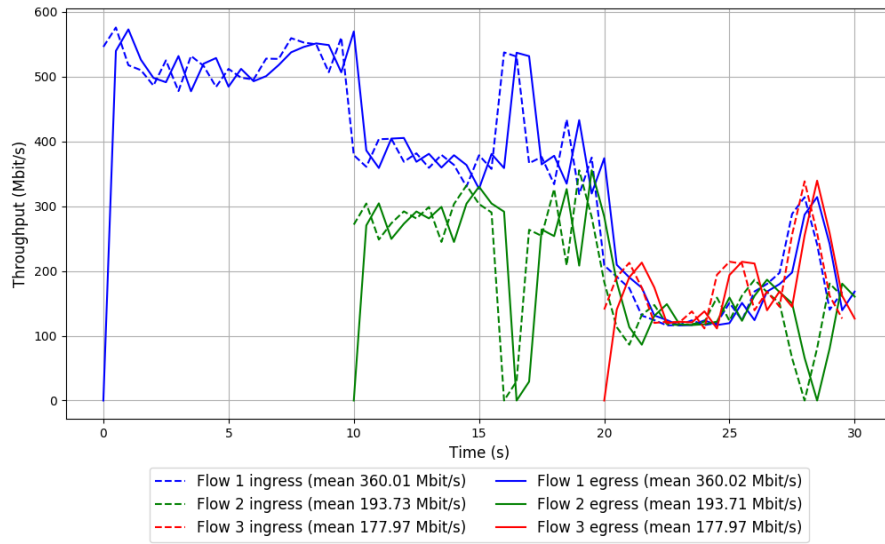
Run 2: Report of LEDBAT — Data Link

Flow 1 ingress (mean 308.87 Mbit/s) ---- Flow 1 egress (mean 308.92 Mbit/s) ——
Flow 2 ingress (mean 234.51 Mbit/s) ---- Flow 2 egress (mean 234.52 Mbit/s) ——
Flow 3 ingress (mean 192.35 Mbit/s) ---- Flow 3 egress (mean 192.43 Mbit/s) ——

Flow 1 (95th percentile 7.09 ms) • Flow 2 (95th percentile 3.25 ms) • Flow 3 (95th percentile 2.18 ms)

```
Run 3: Statistics of LEDBAT

Start at: 2019-03-27 13:18:21
End at: 2019-03-27 13:18:51
Local clock offset: 4.963 ms
Remote clock offset: -1.302 ms


# Below is generated by plot.py at 2019-03-27 15:21:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 548.03 Mbit/s
95th percentile per-packet one-way delay: 13.201 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 360.02 Mbit/s
95th percentile per-packet one-way delay: 14.328 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 193.71 Mbit/s
95th percentile per-packet one-way delay: 2.523 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 177.97 Mbit/s
95th percentile per-packet one-way delay: 3.373 ms
Loss rate: 0.01%
```
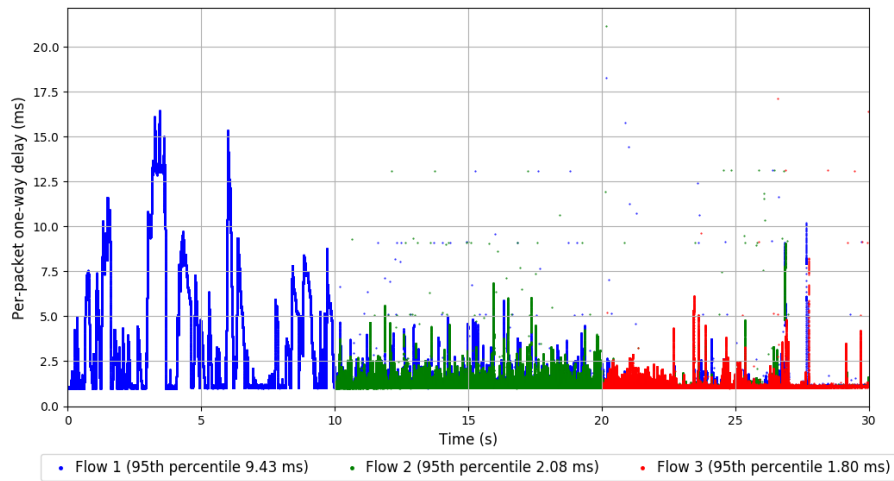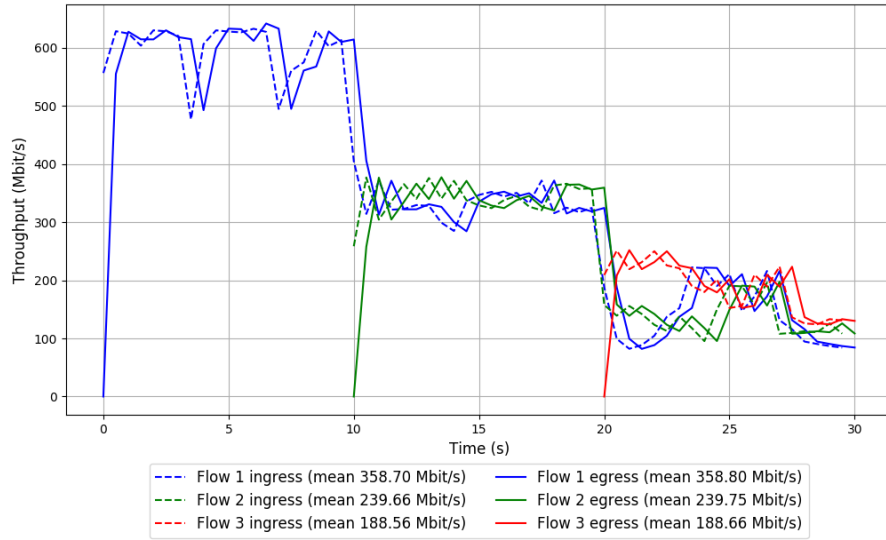
Run 3: Report of LEDBAT — Data Link

```
Run 4: Statistics of LEDBAT

Start at: 2019-03-27 13:48:45
End at: 2019-03-27 13:49:15
Local clock offset: 5.18 ms
Remote clock offset: 5.244 ms


# Below is generated by plot.py at 2019-03-27 15:23:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 581.01 Mbit/s
95th percentile per-packet one-way delay: 7.958 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 358.80 Mbit/s
95th percentile per-packet one-way delay: 9.425 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 239.75 Mbit/s
95th percentile per-packet one-way delay: 2.084 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 188.66 Mbit/s
95th percentile per-packet one-way delay: 1.796 ms
Loss rate: 0.03%
```
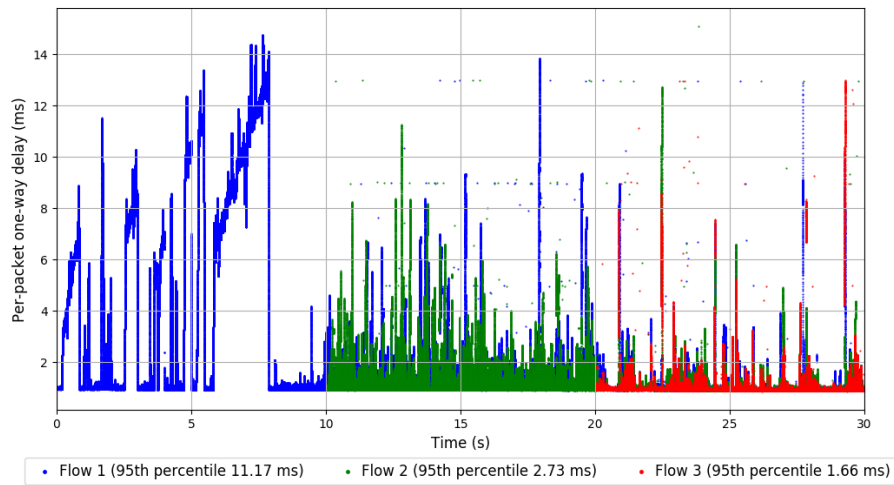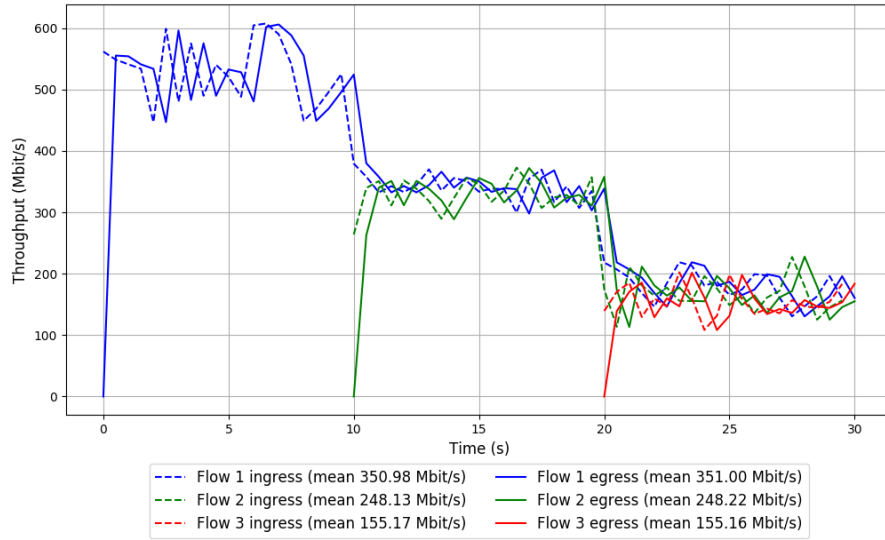
Run 4: Report of LEDBAT — Data Link

```
Run 5: Statistics of LEDBAT

Start at: 2019-03-27 14:19:05
End at: 2019-03-27 14:19:35
Local clock offset: 4.859 ms
Remote clock offset: -4.052 ms


# Below is generated by plot.py at 2019-03-27 15:23:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 567.69 Mbit/s
95th percentile per-packet one-way delay: 9.990 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 351.00 Mbit/s
95th percentile per-packet one-way delay: 11.166 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 248.22 Mbit/s
95th percentile per-packet one-way delay: 2.732 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 155.16 Mbit/s
95th percentile per-packet one-way delay: 1.662 ms
Loss rate: 0.02%
```
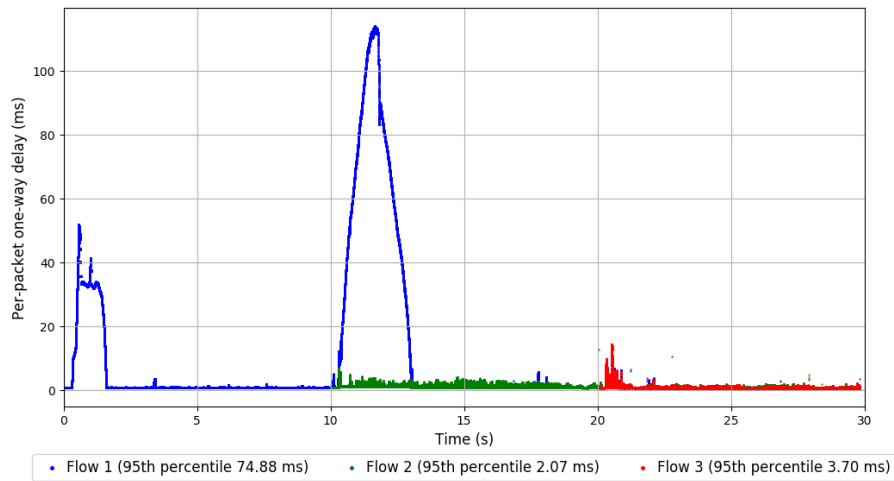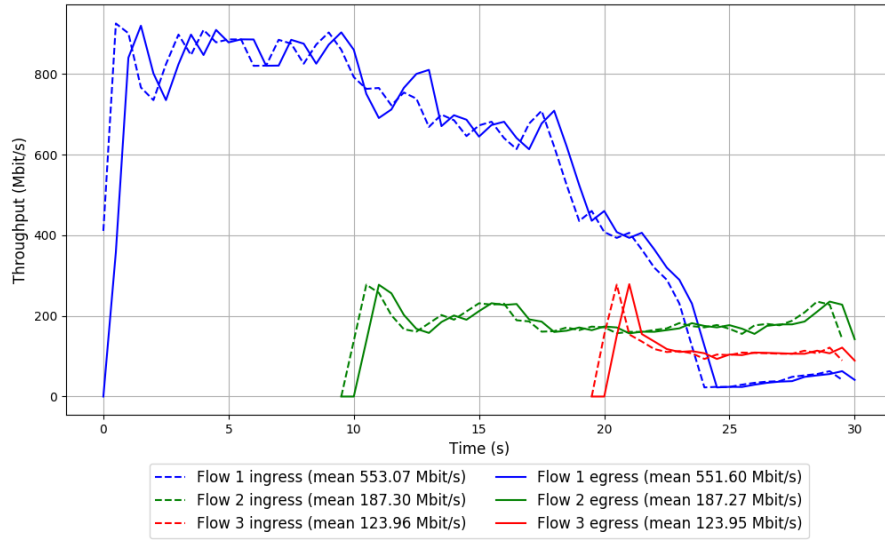
Run 5: Report of LEDBAT — Data Link

- - - Flow 1 ingress (mean 350.98 Mbit/s)   —— Flow 1 egress (mean 351.00 Mbit/s)
- - - Flow 2 ingress (mean 248.13 Mbit/s)   —— Flow 2 egress (mean 248.22 Mbit/s)
- - - Flow 3 ingress (mean 155.17 Mbit/s)   —— Flow 3 egress (mean 155.16 Mbit/s)

- Flow 1 (95th percentile 11.17 ms)   • Flow 2 (95th percentile 2.73 ms)   • Flow 3 (95th percentile 1.66 ms)

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```
Run 1: Statistics of PCC-Allegro

Start at: 2019-03-27 12:08:37
End at: 2019-03-27 12:09:07
Local clock offset: 6.142 ms
Remote clock offset: -0.766 ms


# Below is generated by plot.py at 2019-03-27 15:24:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 717.00 Mbit/s
95th percentile per-packet one-way delay: 62.682 ms
Loss rate: 0.21%
-- Flow 1:
Average throughput: 551.60 Mbit/s
95th percentile per-packet one-way delay: 74.884 ms
Loss rate: 0.26%
-- Flow 2:
Average throughput: 187.27 Mbit/s
95th percentile per-packet one-way delay: 2.069 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 123.95 Mbit/s
95th percentile per-packet one-way delay: 3.698 ms
Loss rate: 0.02%
```
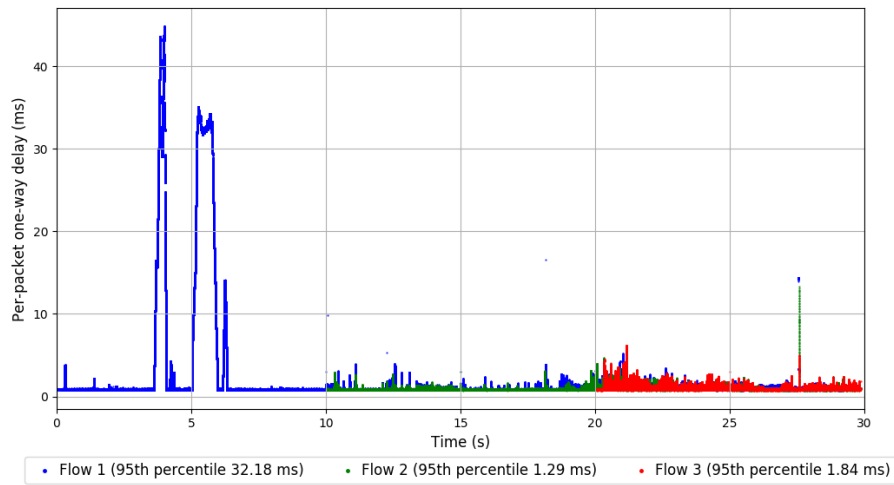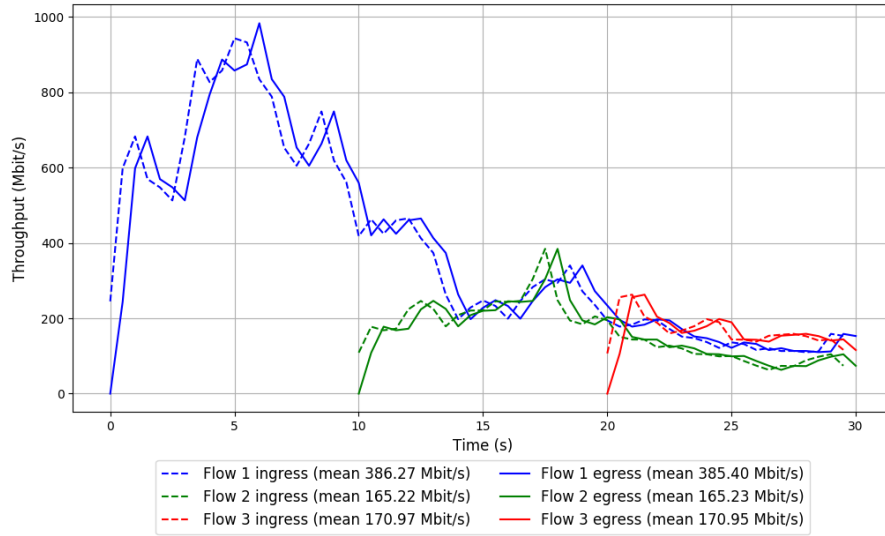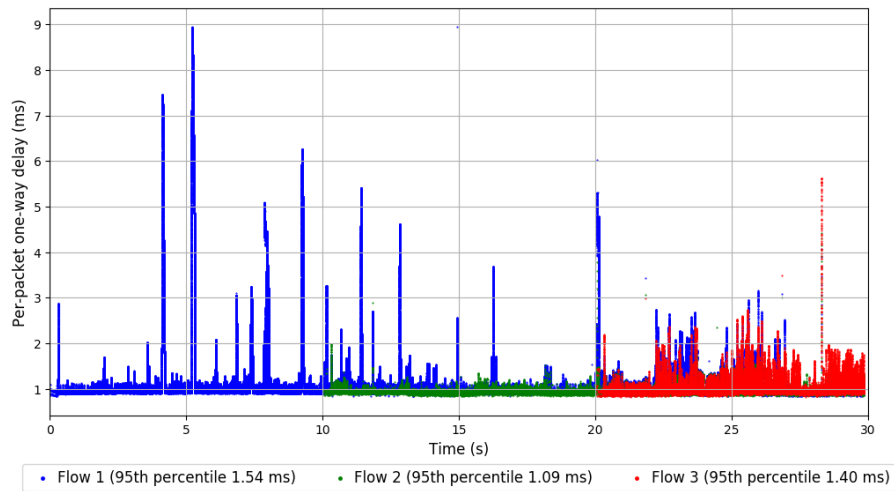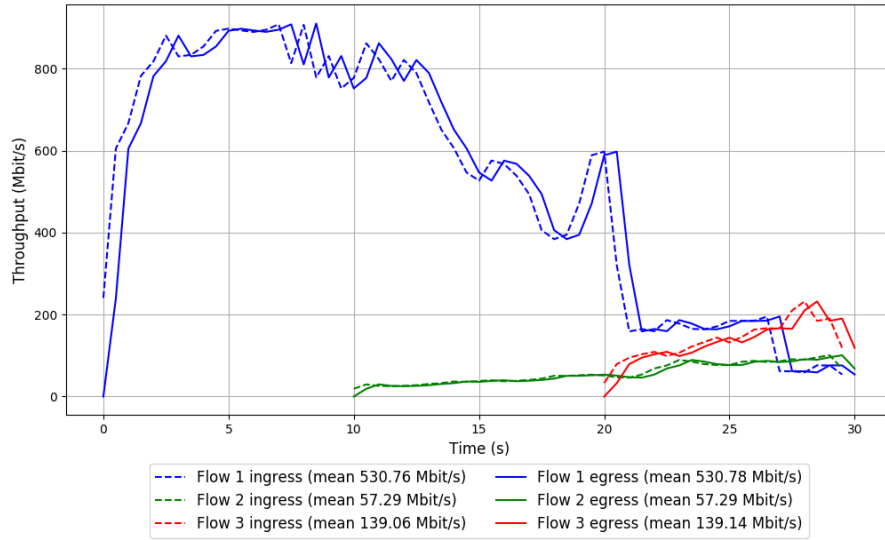
Run 1: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 553.07 Mbit/s)   Flow 1 egress (mean 551.60 Mbit/s)
Flow 2 ingress (mean 187.30 Mbit/s)   Flow 2 egress (mean 187.27 Mbit/s)
Flow 3 ingress (mean 123.96 Mbit/s)   Flow 3 egress (mean 123.95 Mbit/s)

• Flow 1 (95th percentile 74.88 ms)   • Flow 2 (95th percentile 2.07 ms)   • Flow 3 (95th percentile 3.70 ms)

```
Run 2: Statistics of PCC-Allegro

Start at: 2019-03-27 12:39:11
End at: 2019-03-27 12:39:41
Local clock offset: 6.203 ms
Remote clock offset: -3.733 ms


# Below is generated by plot.py at 2019-03-27 15:24:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 551.45 Mbit/s
95th percentile per-packet one-way delay: 21.929 ms
Loss rate: 0.17%
-- Flow 1:
Average throughput: 385.40 Mbit/s
95th percentile per-packet one-way delay: 32.176 ms
Loss rate: 0.23%
-- Flow 2:
Average throughput: 165.23 Mbit/s
95th percentile per-packet one-way delay: 1.286 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 170.95 Mbit/s
95th percentile per-packet one-way delay: 1.838 ms
Loss rate: 0.02%
```
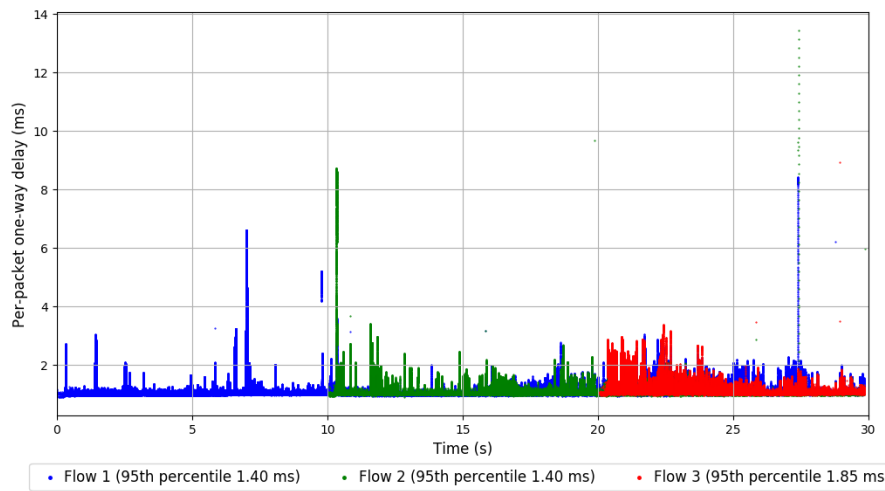
Run 2: Report of PCC-Allegro — Data Link

```
Run 3: Statistics of PCC-Allegro

Start at: 2019-03-27 13:09:29
End at: 2019-03-27 13:09:59
Local clock offset: 4.951 ms
Remote clock offset: -3.218 ms


# Below is generated by plot.py at 2019-03-27 15:24:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 614.60 Mbit/s
95th percentile per-packet one-way delay: 1.446 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 530.78 Mbit/s
95th percentile per-packet one-way delay: 1.537 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 57.29 Mbit/s
95th percentile per-packet one-way delay: 1.089 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 139.14 Mbit/s
95th percentile per-packet one-way delay: 1.400 ms
Loss rate: 0.00%
```
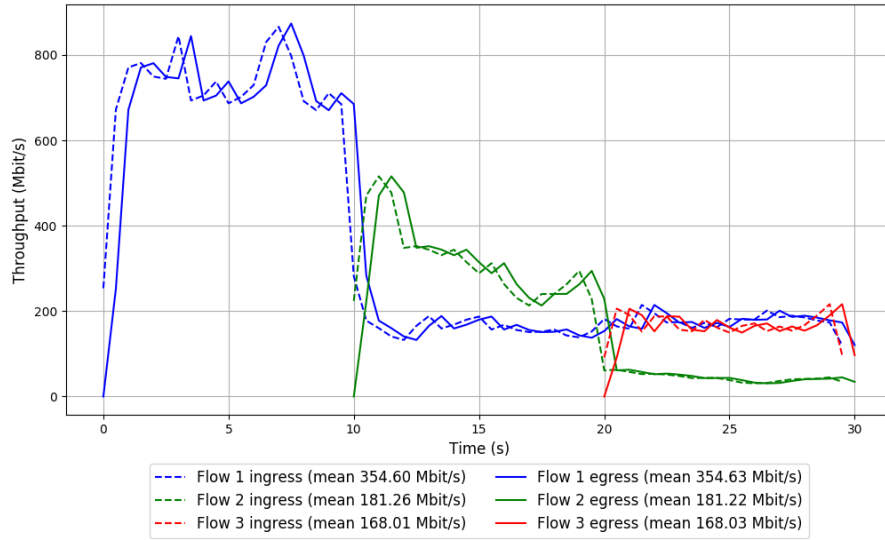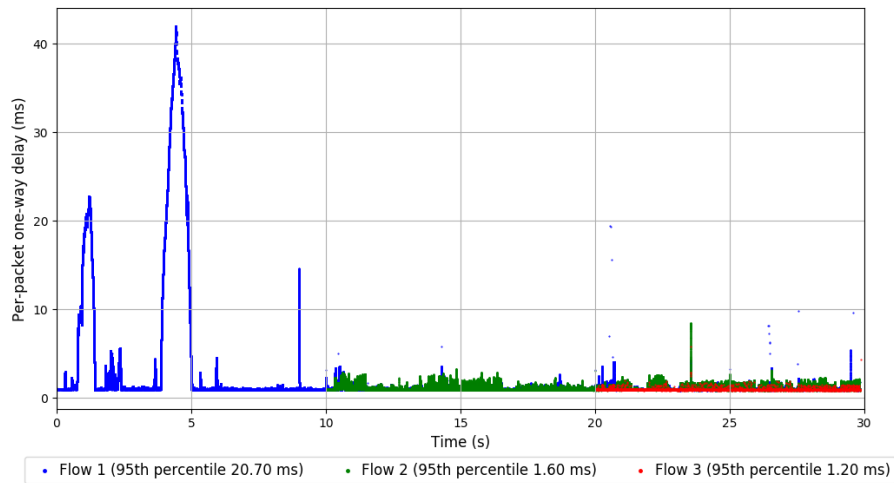
Run 3: Report of PCC-Allegro — Data Link

```
Run 4: Statistics of PCC-Allegro

Start at: 2019-03-27 13:39:55
End at: 2019-03-27 13:40:25
Local clock offset: 5.316 ms
Remote clock offset: 4.305 ms


# Below is generated by plot.py at 2019-03-27 15:27:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 530.10 Mbit/s
95th percentile per-packet one-way delay: 1.461 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 354.63 Mbit/s
95th percentile per-packet one-way delay: 1.395 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 181.22 Mbit/s
95th percentile per-packet one-way delay: 1.401 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 168.03 Mbit/s
95th percentile per-packet one-way delay: 1.849 ms
Loss rate: 0.01%
```
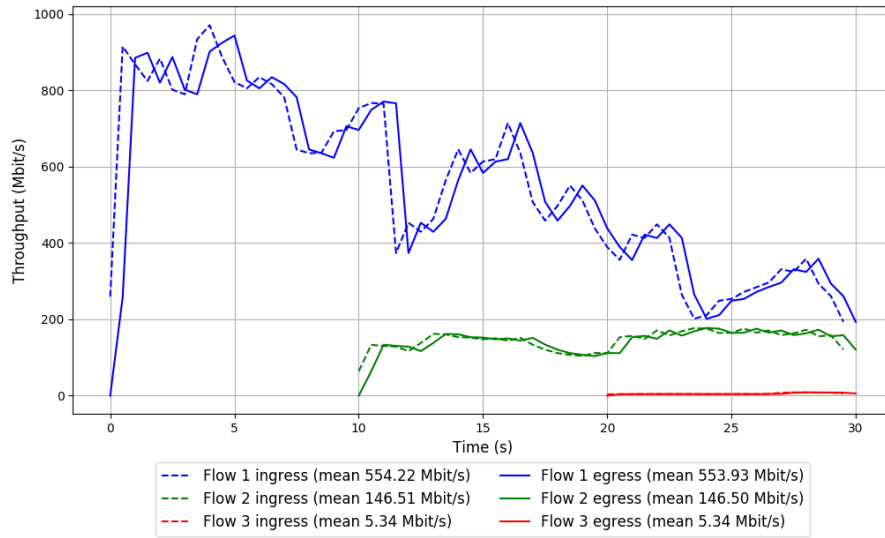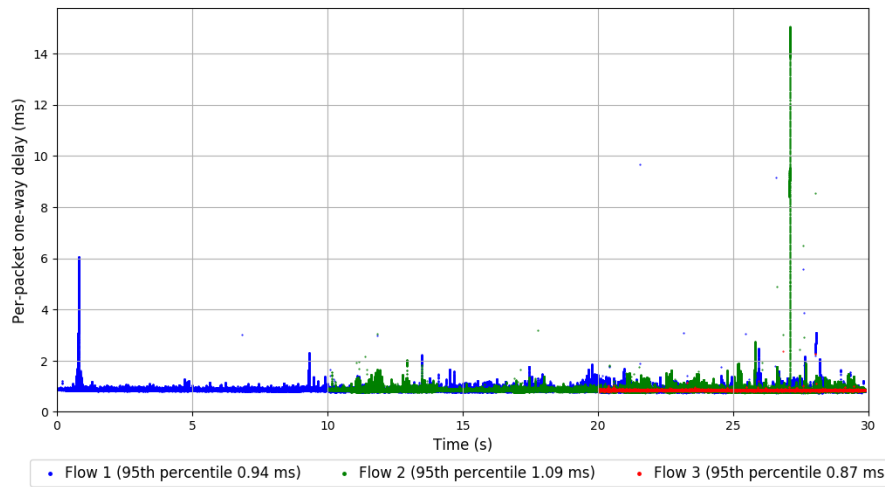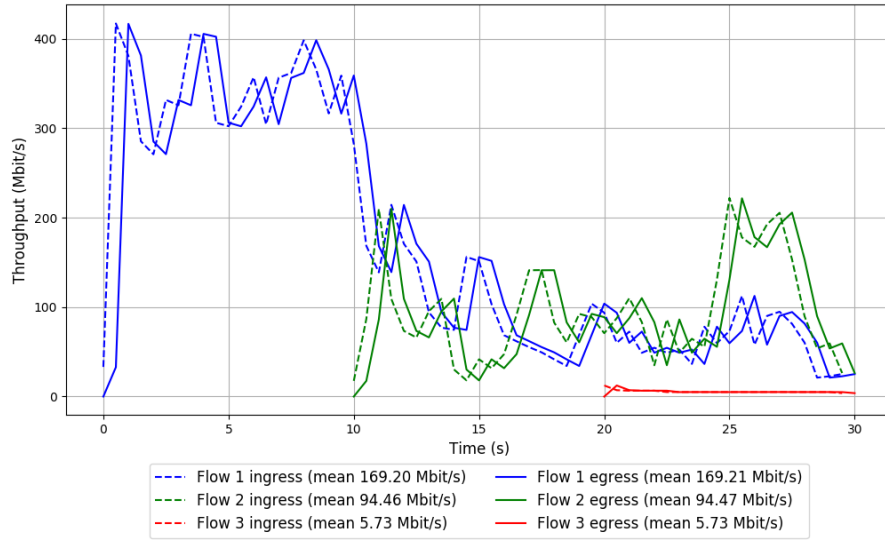
Run 4: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 354.60 Mbit/s) --- Flow 1 egress (mean 354.63 Mbit/s)
Flow 2 ingress (mean 181.26 Mbit/s) --- Flow 2 egress (mean 181.22 Mbit/s)
Flow 3 ingress (mean 168.01 Mbit/s) --- Flow 3 egress (mean 168.03 Mbit/s)

Flow 1 (95th percentile 1.40 ms) Flow 2 (95th percentile 1.40 ms) Flow 3 (95th percentile 1.85 ms)

```
Run 5: Statistics of PCC-Allegro

Start at: 2019-03-27 14:10:11
End at: 2019-03-27 14:10:41
Local clock offset: 4.713 ms
Remote clock offset: -3.18 ms


# Below is generated by plot.py at 2019-03-27 15:29:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 652.96 Mbit/s
95th percentile per-packet one-way delay: 19.118 ms
Loss rate: 0.05%
-- Flow 1:
Average throughput: 553.93 Mbit/s
95th percentile per-packet one-way delay: 20.696 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 146.50 Mbit/s
95th percentile per-packet one-way delay: 1.598 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 5.34 Mbit/s
95th percentile per-packet one-way delay: 1.200 ms
Loss rate: 0.00%
```
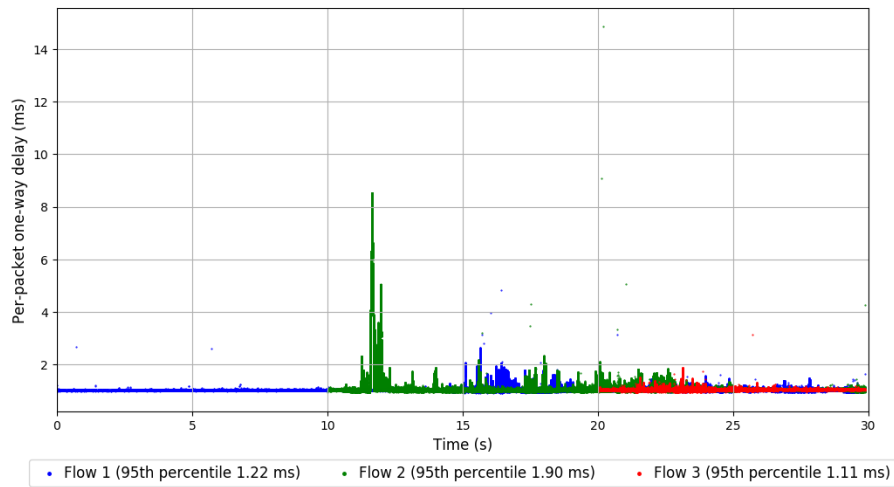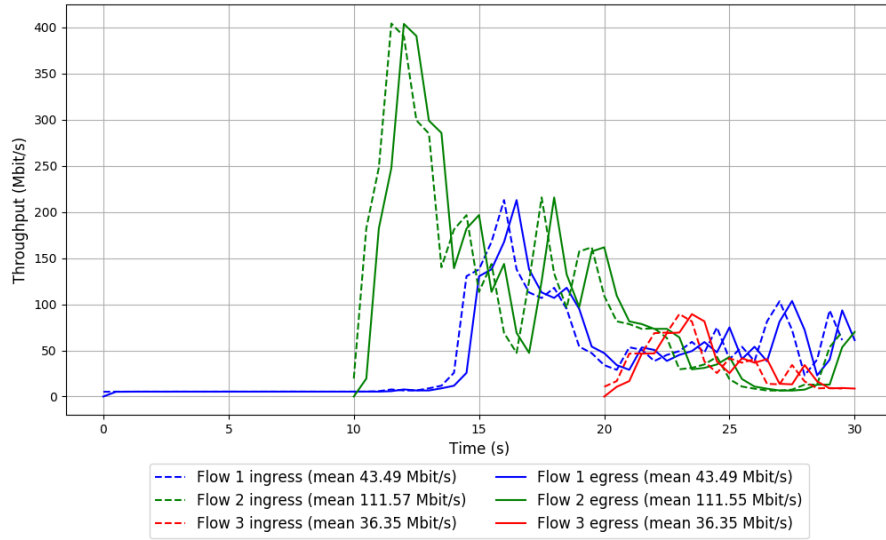
Run 5: Report of PCC-Allegro — Data Link

- - - - Flow 1 ingress (mean 554.22 Mbit/s) ——— Flow 1 egress (mean 553.93 Mbit/s)
- - - - Flow 2 ingress (mean 146.51 Mbit/s) ——— Flow 2 egress (mean 146.50 Mbit/s)
- - - - Flow 3 ingress (mean 5.34 Mbit/s) ——— Flow 3 egress (mean 5.34 Mbit/s)

- Flow 1 (95th percentile 20.70 ms) • Flow 2 (95th percentile 1.60 ms) • Flow 3 (95th percentile 1.20 ms)

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```
Run 1: Statistics of PCC-Expr

Start at: 2019-03-27 12:23:27
End at: 2019-03-27 12:23:57
Local clock offset: 6.118 ms
Remote clock offset: -2.933 ms


# Below is generated by plot.py at 2019-03-27 15:29:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 233.92 Mbit/s
95th percentile per-packet one-way delay: 0.981 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 169.21 Mbit/s
95th percentile per-packet one-way delay: 0.944 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 94.47 Mbit/s
95th percentile per-packet one-way delay: 1.089 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 5.73 Mbit/s
95th percentile per-packet one-way delay: 0.874 ms
Loss rate: 0.02%
```
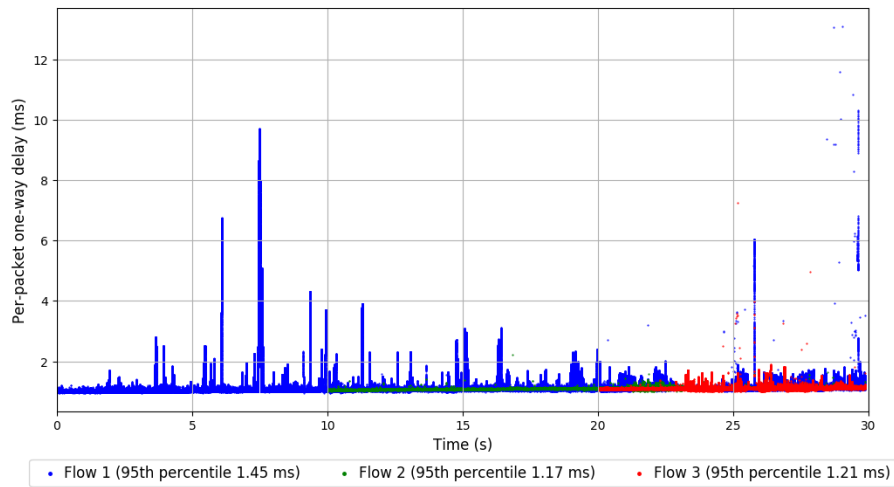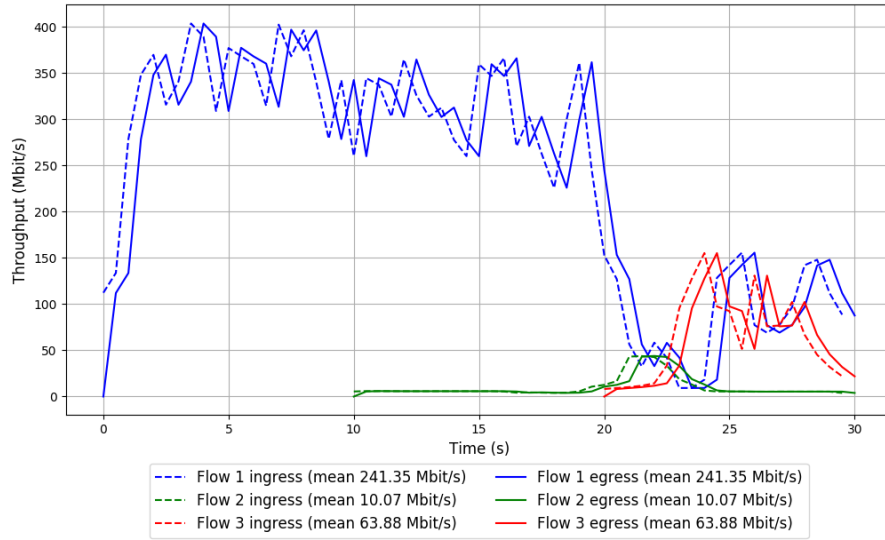
Run 1: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 169.20 Mbit/s) --- Flow 1 egress (mean 169.21 Mbit/s)
Flow 2 ingress (mean 94.46 Mbit/s) --- Flow 2 egress (mean 94.47 Mbit/s)
Flow 3 ingress (mean 5.73 Mbit/s) --- Flow 3 egress (mean 5.73 Mbit/s)

Flow 1 (95th percentile 0.94 ms) · Flow 2 (95th percentile 1.09 ms) · Flow 3 (95th percentile 0.87 ms)

```
Run 2: Statistics of PCC-Expr

Start at: 2019-03-27 12:53:53
End at: 2019-03-27 12:54:23
Local clock offset: 5.475 ms
Remote clock offset: -3.271 ms


# Below is generated by plot.py at 2019-03-27 15:29:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 129.67 Mbit/s
95th percentile per-packet one-way delay: 1.474 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 43.49 Mbit/s
95th percentile per-packet one-way delay: 1.217 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 111.55 Mbit/s
95th percentile per-packet one-way delay: 1.903 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 36.35 Mbit/s
95th percentile per-packet one-way delay: 1.109 ms
Loss rate: 0.00%
```
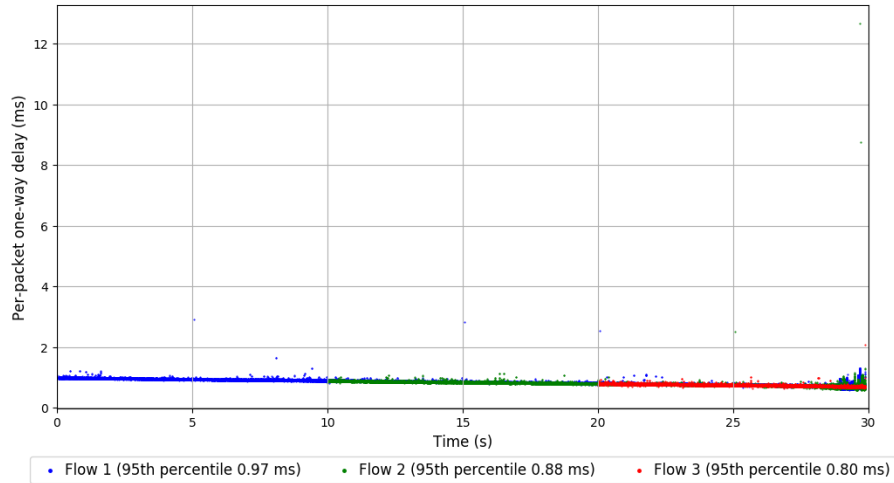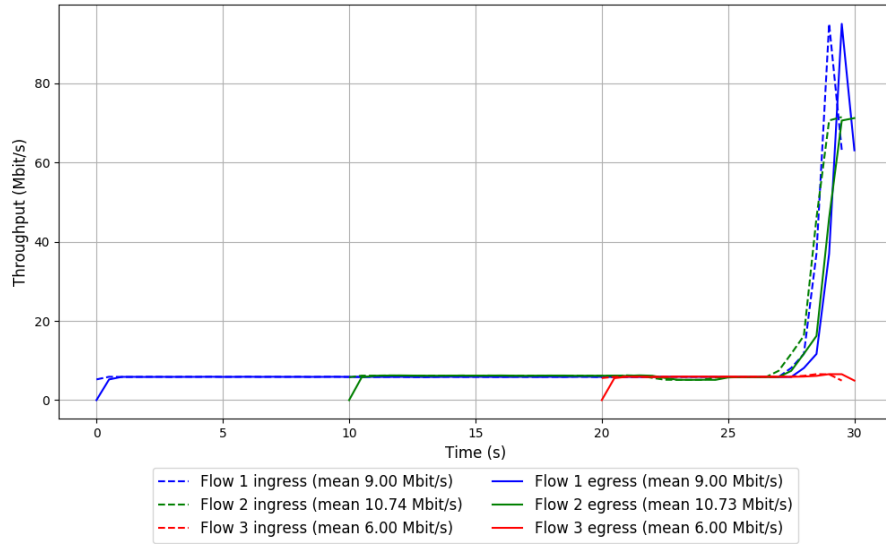
Run 2: Report of PCC-Expr — Data Link

```
Run 3: Statistics of PCC-Expr

Start at: 2019-03-27 13:24:14
End at: 2019-03-27 13:24:44
Local clock offset: 5.12 ms
Remote clock offset: 1.266 ms


# Below is generated by plot.py at 2019-03-27 15:29:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 269.11 Mbit/s
95th percentile per-packet one-way delay: 1.412 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 241.35 Mbit/s
95th percentile per-packet one-way delay: 1.450 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 10.07 Mbit/s
95th percentile per-packet one-way delay: 1.171 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 63.88 Mbit/s
95th percentile per-packet one-way delay: 1.212 ms
Loss rate: 0.01%
```
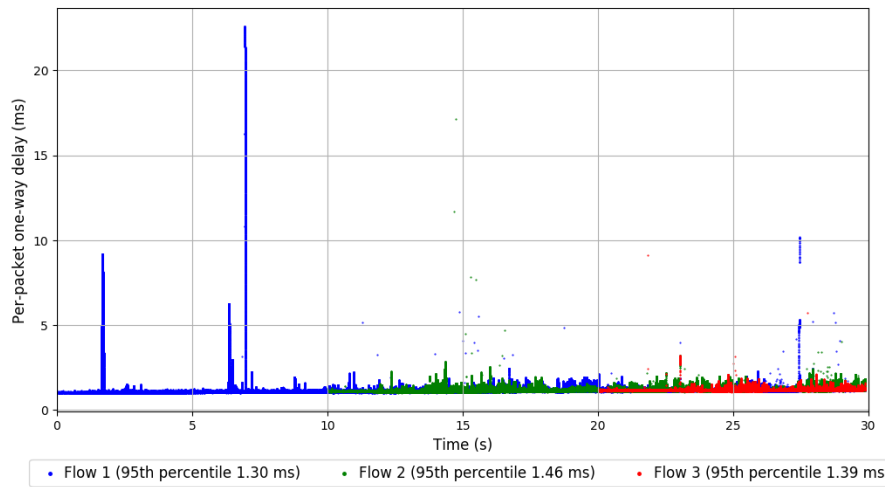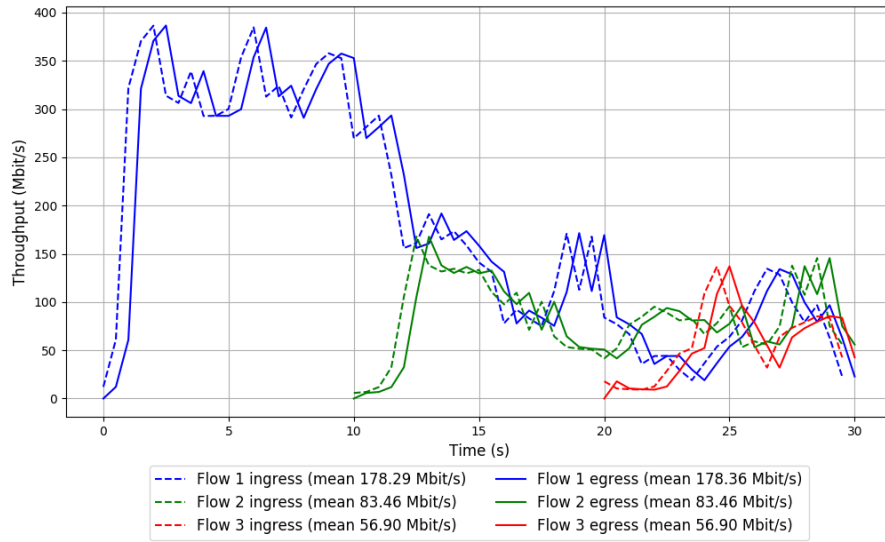
Run 3: Report of PCC-Expr — Data Link

```
Run 4: Statistics of PCC-Expr

Start at: 2019-03-27 13:54:39
End at: 2019-03-27 13:55:09
Local clock offset: 4.94 ms
Remote clock offset: 1.326 ms


# Below is generated by plot.py at 2019-03-27 15:29:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 18.12 Mbit/s
95th percentile per-packet one-way delay: 0.949 ms
Loss rate: 0.05%
-- Flow 1:
Average throughput: 9.00 Mbit/s
95th percentile per-packet one-way delay: 0.970 ms
Loss rate: 0.04%
-- Flow 2:
Average throughput: 10.73 Mbit/s
95th percentile per-packet one-way delay: 0.876 ms
Loss rate: 0.08%
-- Flow 3:
Average throughput: 6.00 Mbit/s
95th percentile per-packet one-way delay: 0.801 ms
Loss rate: 0.00%
```
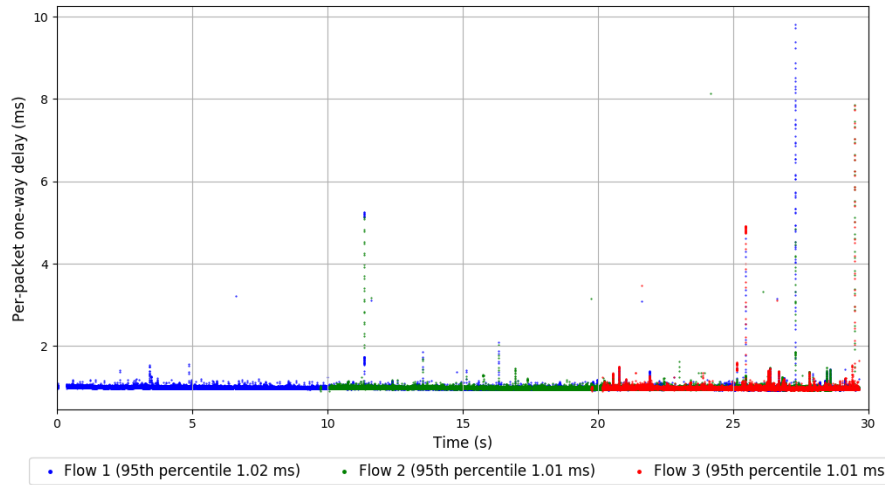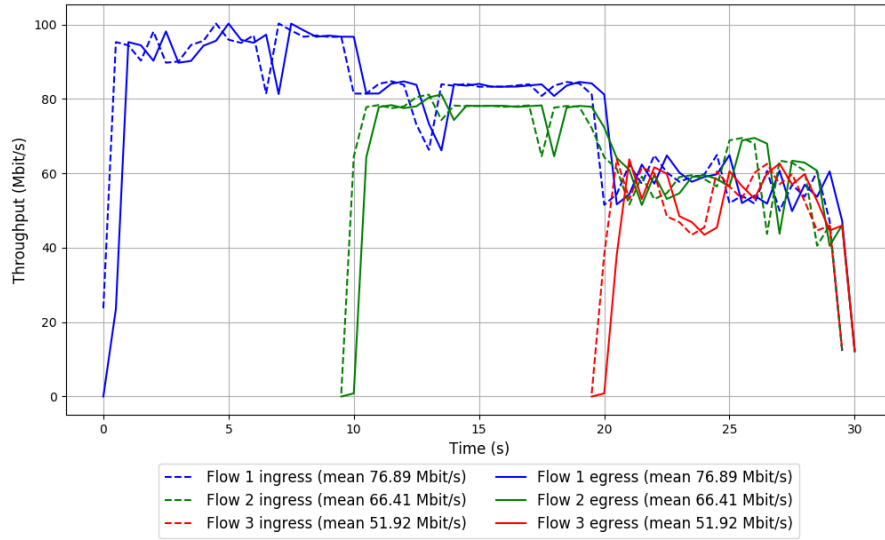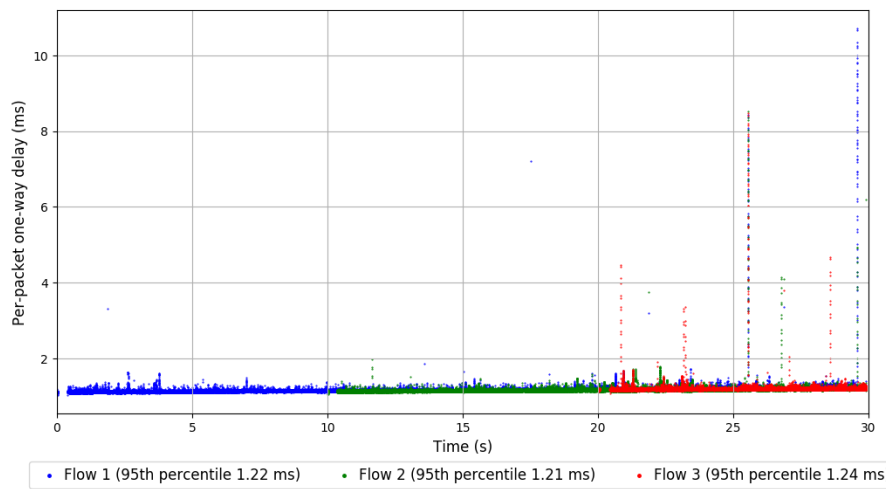
Run 4: Report of PCC-Expr — Data Link

- - - Flow 1 ingress (mean 9.00 Mbit/s) —— Flow 1 egress (mean 9.00 Mbit/s)
- - - Flow 2 ingress (mean 10.74 Mbit/s) —— Flow 2 egress (mean 10.73 Mbit/s)
- - - Flow 3 ingress (mean 6.00 Mbit/s) —— Flow 3 egress (mean 6.00 Mbit/s)

• Flow 1 (95th percentile 0.97 ms)   • Flow 2 (95th percentile 0.88 ms)   • Flow 3 (95th percentile 0.80 ms)

```
Run 5: Statistics of PCC-Expr

Start at: 2019-03-27 14:24:58
End at: 2019-03-27 14:25:28
Local clock offset: 5.057 ms
Remote clock offset: -3.821 ms


# Below is generated by plot.py at 2019-03-27 15:29:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 252.62 Mbit/s
95th percentile per-packet one-way delay: 1.370 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 178.36 Mbit/s
95th percentile per-packet one-way delay: 1.297 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 83.46 Mbit/s
95th percentile per-packet one-way delay: 1.462 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 56.90 Mbit/s
95th percentile per-packet one-way delay: 1.390 ms
Loss rate: 0.01%
```
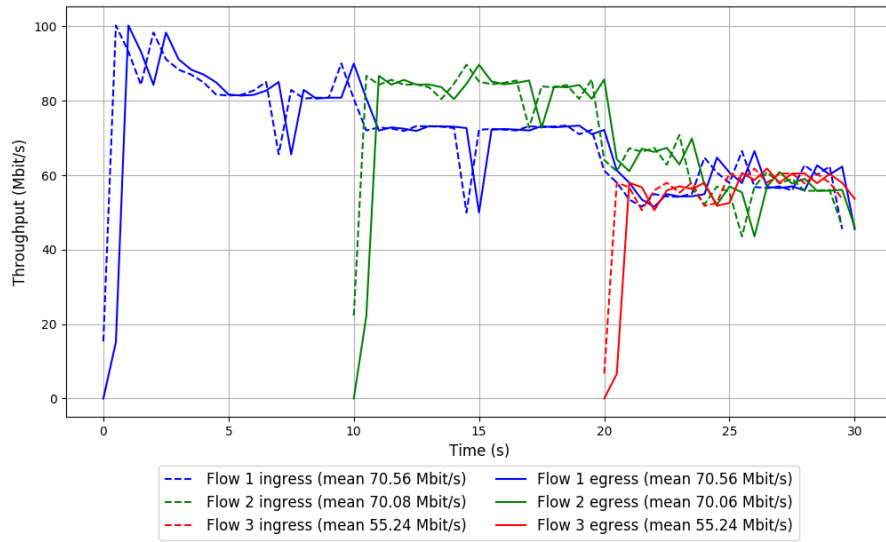
Run 5: Report of PCC-Expr — Data Link

```
Run 1: Statistics of QUIC Cubic

Start at: 2019-03-27 12:16:14
End at: 2019-03-27 12:16:44
Local clock offset: 6.171 ms
Remote clock offset: -2.349 ms


# Below is generated by plot.py at 2019-03-27 15:29:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 138.83 Mbit/s
95th percentile per-packet one-way delay: 1.013 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 76.89 Mbit/s
95th percentile per-packet one-way delay: 1.016 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 66.41 Mbit/s
95th percentile per-packet one-way delay: 1.009 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 51.92 Mbit/s
95th percentile per-packet one-way delay: 1.010 ms
Loss rate: 0.01%
```
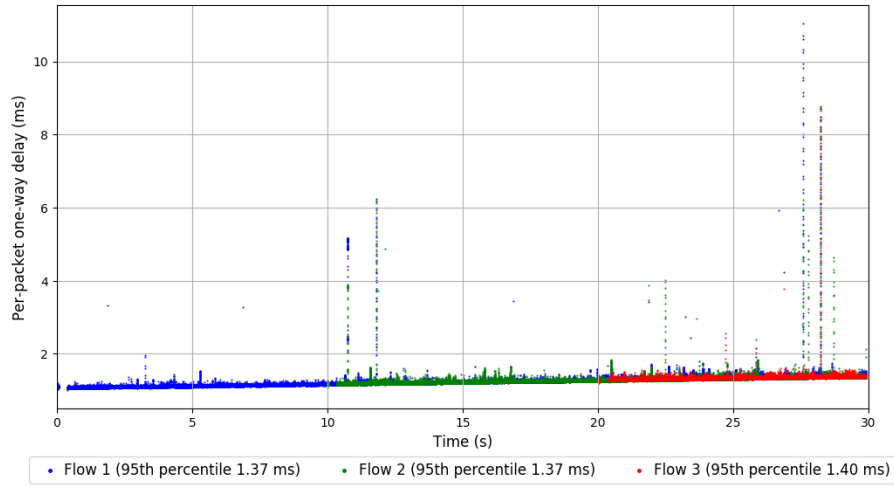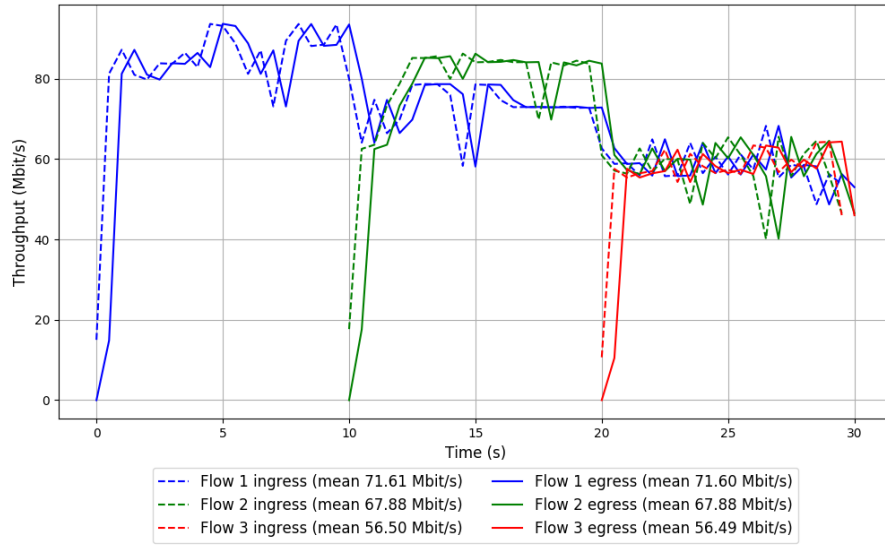
Run 1: Report of QUIC Cubic — Data Link

```
Run 2: Statistics of QUIC Cubic

Start at: 2019-03-27 12:46:42
End at: 2019-03-27 12:47:12
Local clock offset: 6.212 ms
Remote clock offset: -3.514 ms


# Below is generated by plot.py at 2019-03-27 15:29:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 135.42 Mbit/s
95th percentile per-packet one-way delay: 1.220 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 70.56 Mbit/s
95th percentile per-packet one-way delay: 1.217 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 70.06 Mbit/s
95th percentile per-packet one-way delay: 1.210 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 55.24 Mbit/s
95th percentile per-packet one-way delay: 1.236 ms
Loss rate: 0.02%
```
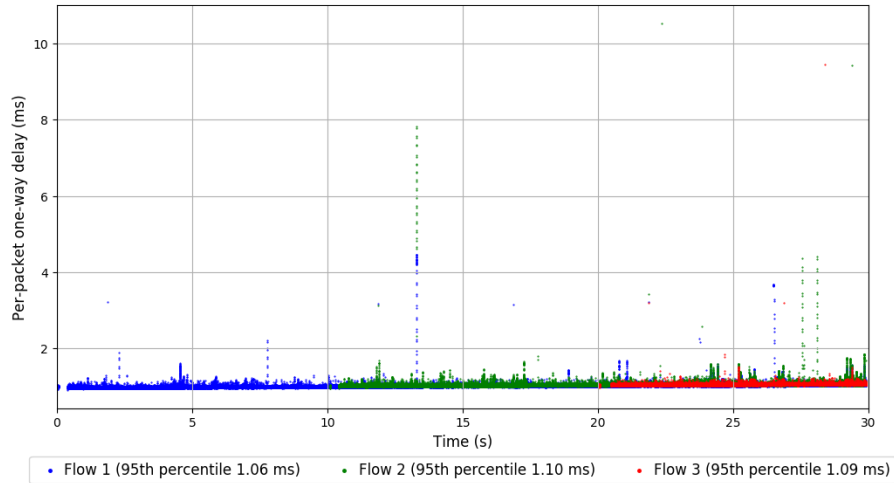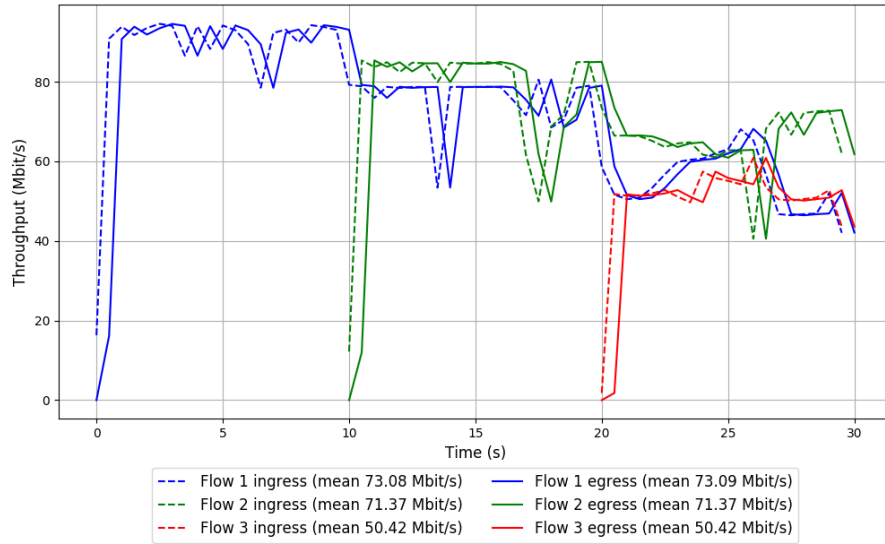
Run 2: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 70.56 Mbit/s) --- Flow 1 egress (mean 70.56 Mbit/s)
Flow 2 ingress (mean 70.08 Mbit/s) --- Flow 2 egress (mean 70.06 Mbit/s)
Flow 3 ingress (mean 55.24 Mbit/s) --- Flow 3 egress (mean 55.24 Mbit/s)

• Flow 1 (95th percentile 1.22 ms)   • Flow 2 (95th percentile 1.21 ms)   • Flow 3 (95th percentile 1.24 ms)

```
Run 3: Statistics of QUIC Cubic

Start at: 2019-03-27 13:17:02
End at: 2019-03-27 13:17:32
Local clock offset: 4.913 ms
Remote clock offset: -2.23 ms


# Below is generated by plot.py at 2019-03-27 15:29:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 135.46 Mbit/s
95th percentile per-packet one-way delay: 1.376 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 71.60 Mbit/s
95th percentile per-packet one-way delay: 1.366 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 67.88 Mbit/s
95th percentile per-packet one-way delay: 1.371 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 56.49 Mbit/s
95th percentile per-packet one-way delay: 1.396 ms
Loss rate: 0.01%
```
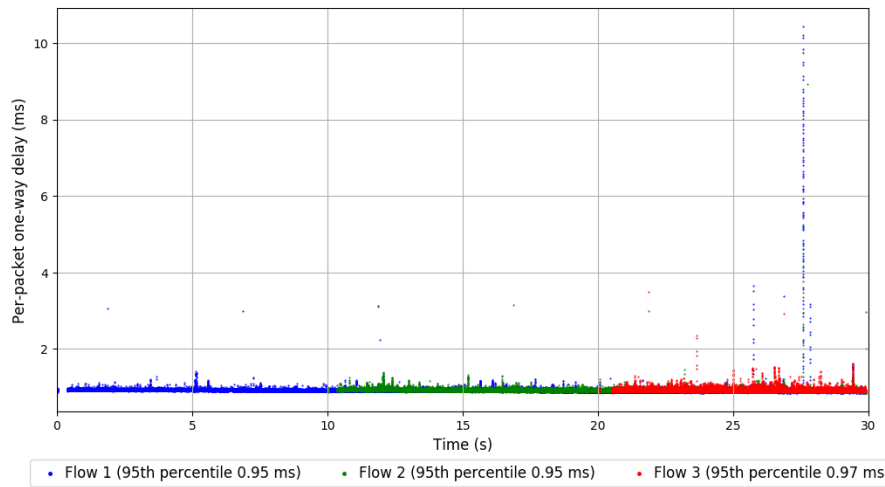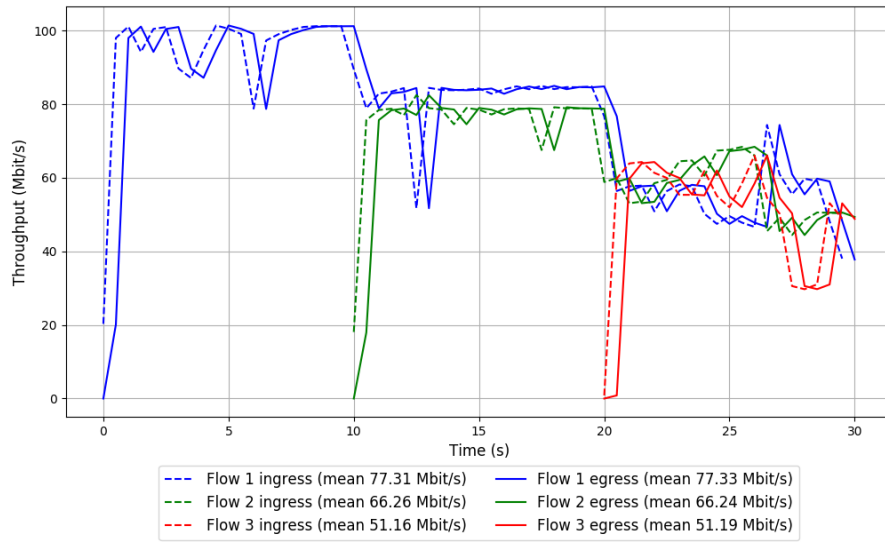
Run 3: Report of QUIC Cubic — Data Link

```
Run 4: Statistics of QUIC Cubic

Start at: 2019-03-27 13:47:26
End at: 2019-03-27 13:47:56
Local clock offset: 5.257 ms
Remote clock offset: 5.164 ms


# Below is generated by plot.py at 2019-03-27 15:29:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 137.08 Mbit/s
95th percentile per-packet one-way delay: 1.081 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 73.09 Mbit/s
95th percentile per-packet one-way delay: 1.057 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 71.37 Mbit/s
95th percentile per-packet one-way delay: 1.098 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 50.42 Mbit/s
95th percentile per-packet one-way delay: 1.087 ms
Loss rate: 0.02%
```
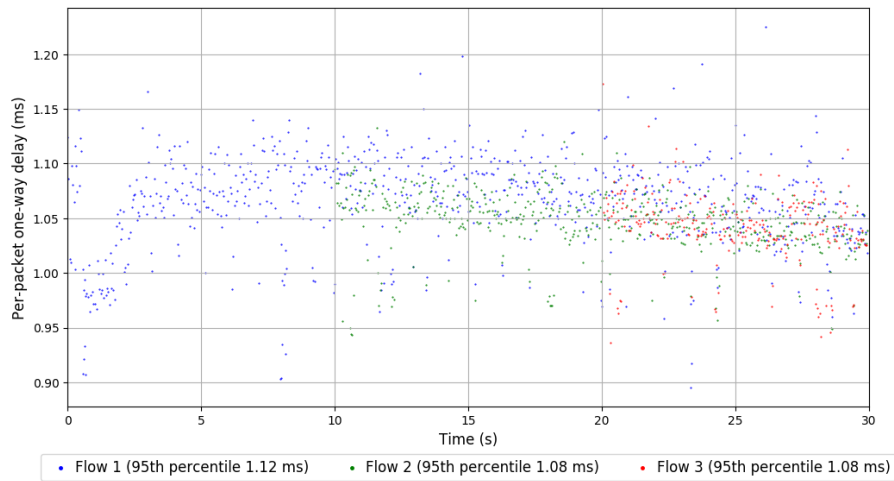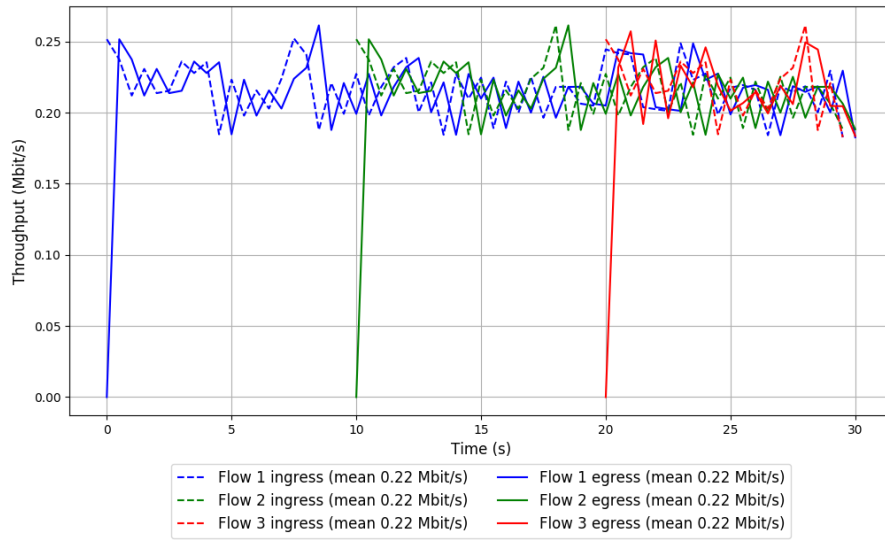
Run 4: Report of QUIC Cubic — Data Link

```
Run 5: Statistics of QUIC Cubic

Start at: 2019-03-27 14:17:46
End at: 2019-03-27 14:18:16
Local clock offset: 4.794 ms
Remote clock offset: -3.945 ms


# Below is generated by plot.py at 2019-03-27 15:29:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 138.31 Mbit/s
95th percentile per-packet one-way delay: 0.952 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 77.33 Mbit/s
95th percentile per-packet one-way delay: 0.950 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 66.24 Mbit/s
95th percentile per-packet one-way delay: 0.952 ms
Loss rate: 0.04%
-- Flow 3:
Average throughput: 51.19 Mbit/s
95th percentile per-packet one-way delay: 0.975 ms
Loss rate: 0.02%
```
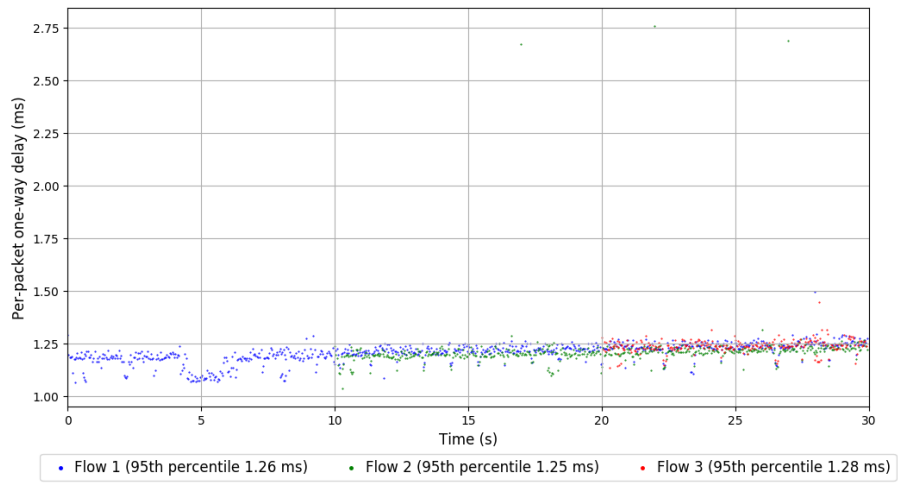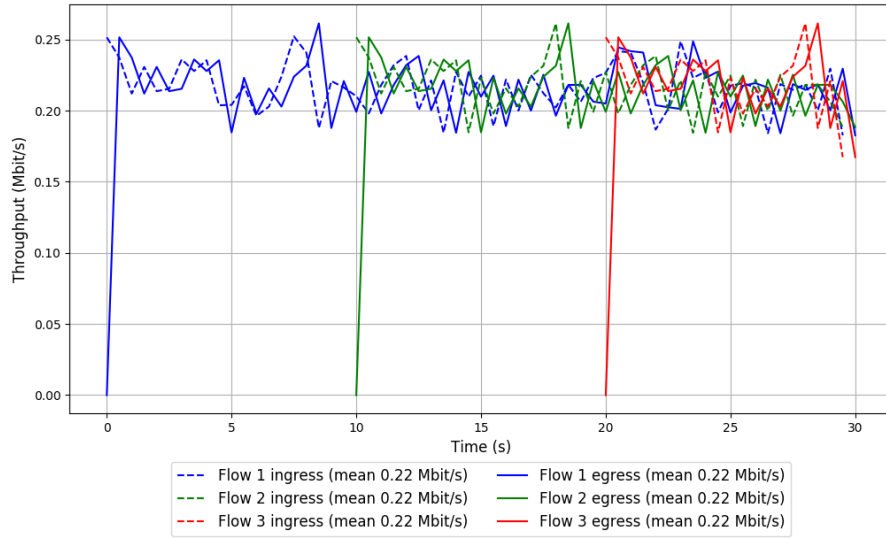
Run 5: Report of QUIC Cubic — Data Link

```
Run 1: Statistics of SCReAM

Start at: 2019-03-27 12:19:12
End at: 2019-03-27 12:19:42
Local clock offset: 6.135 ms
Remote clock offset: -2.65 ms


# Below is generated by plot.py at 2019-03-27 15:29:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 1.111 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.121 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.085 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.083 ms
Loss rate: 0.35%
```
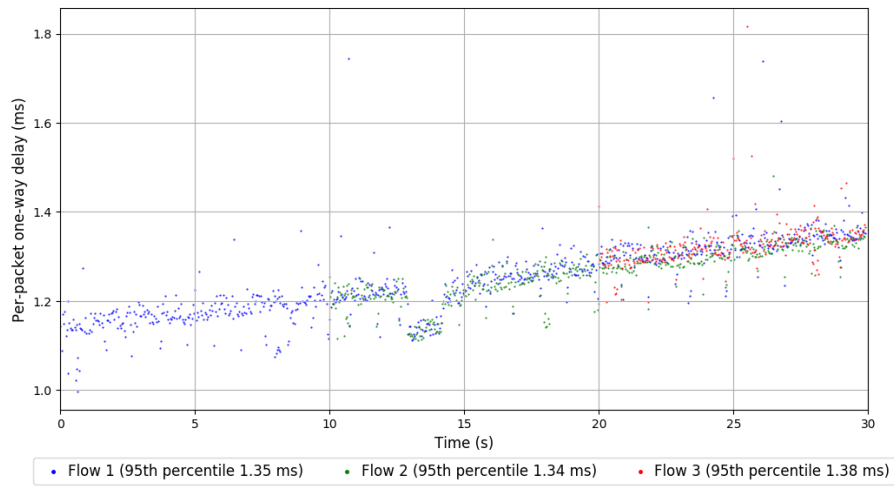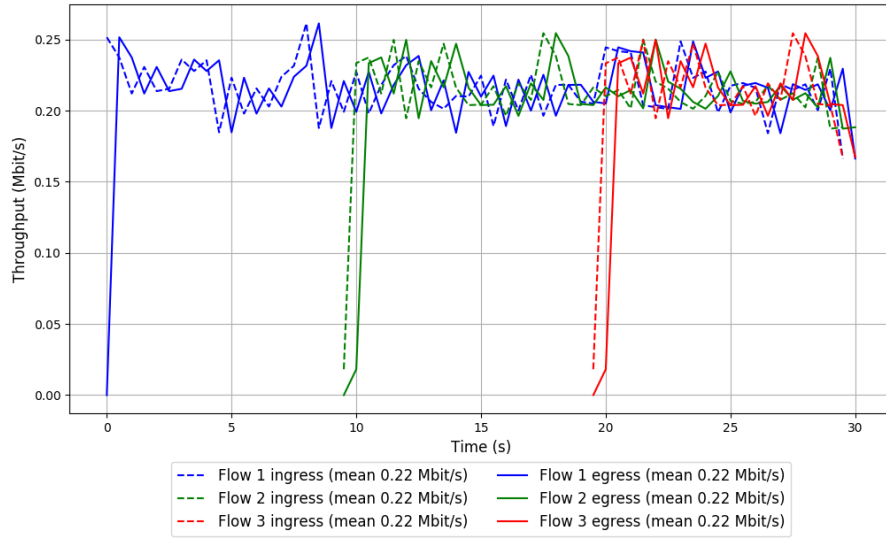
Run 1: Report of SCReAM — Data Link

```
Run 2: Statistics of SCReAM

Start at: 2019-03-27 12:49:38
End at: 2019-03-27 12:50:08
Local clock offset: 5.825 ms
Remote clock offset: -3.39 ms


# Below is generated by plot.py at 2019-03-27 15:29:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 1.264 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.263 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.246 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.278 ms
Loss rate: 0.00%
```
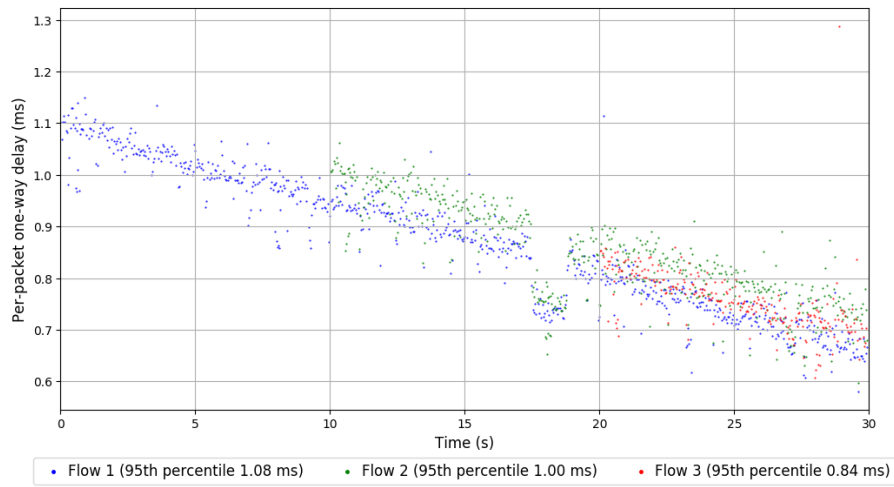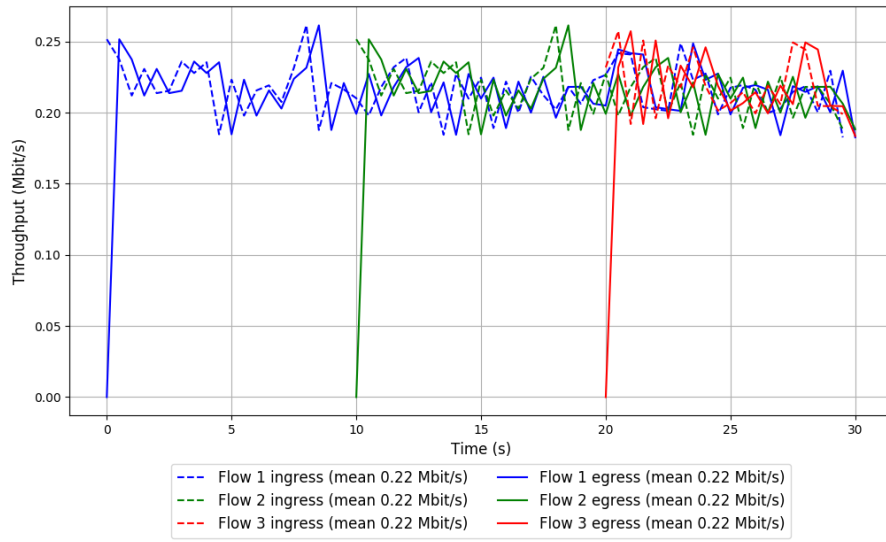
Run 2: Report of SCReAM — Data Link

```
Run 3: Statistics of SCReAM

Start at: 2019-03-27 13:20:00
End at: 2019-03-27 13:20:30
Local clock offset: 5.015 ms
Remote clock offset: -0.467 ms


# Below is generated by plot.py at 2019-03-27 15:29:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 1.356 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.354 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.343 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.376 ms
Loss rate: 0.00%
```
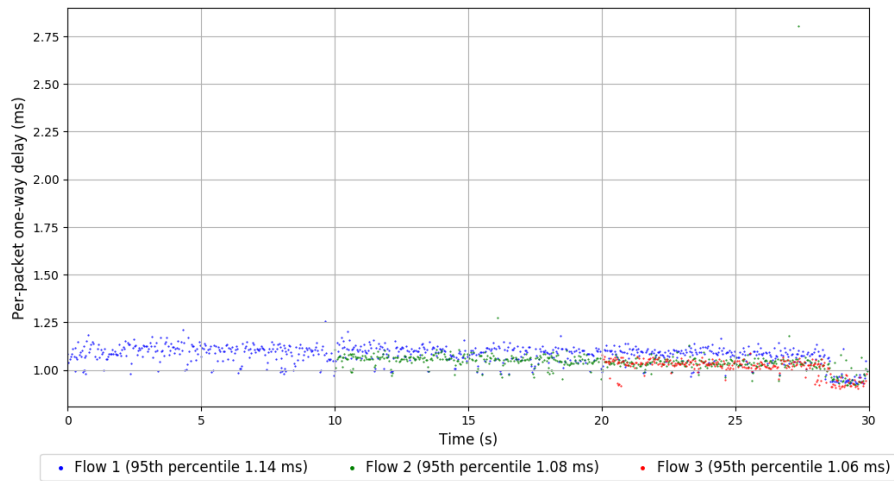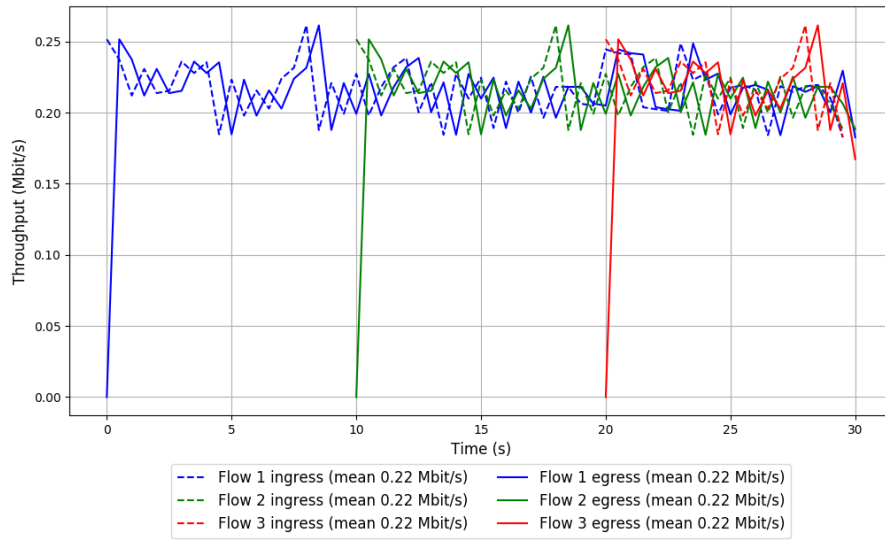
Run 3: Report of SCReAM — Data Link

```
Run 4: Statistics of SCReAM

Start at: 2019-03-27 13:50:25
End at: 2019-03-27 13:50:55
Local clock offset: 5.114 ms
Remote clock offset: 4.501 ms


# Below is generated by plot.py at 2019-03-27 15:29:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 1.048 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.081 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.000 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 0.839 ms
Loss rate: 0.35%
```
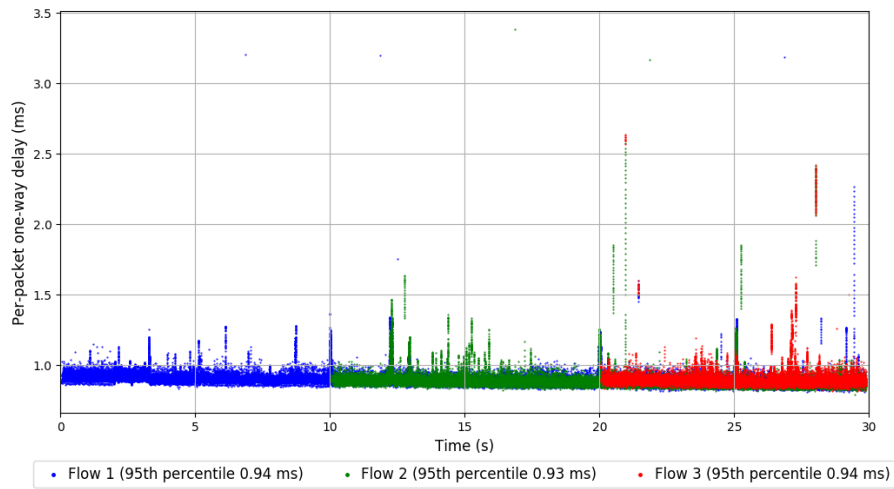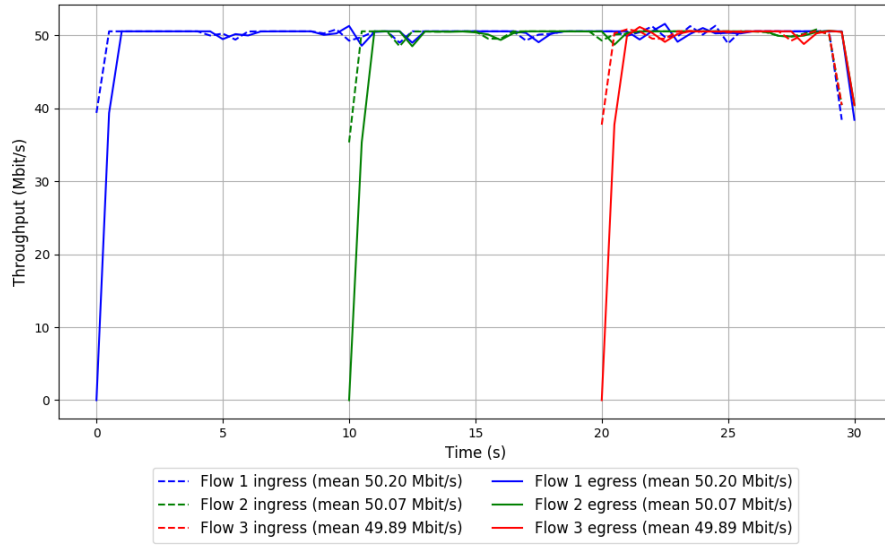
Run 4: Report of SCReAM — Data Link

```
Run 5: Statistics of SCReAM

Start at: 2019-03-27 14:20:44
End at: 2019-03-27 14:21:14
Local clock offset: 4.936 ms
Remote clock offset: -4.155 ms


# Below is generated by plot.py at 2019-03-27 15:29:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 1.129 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.142 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.085 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.061 ms
Loss rate: 0.35%
```
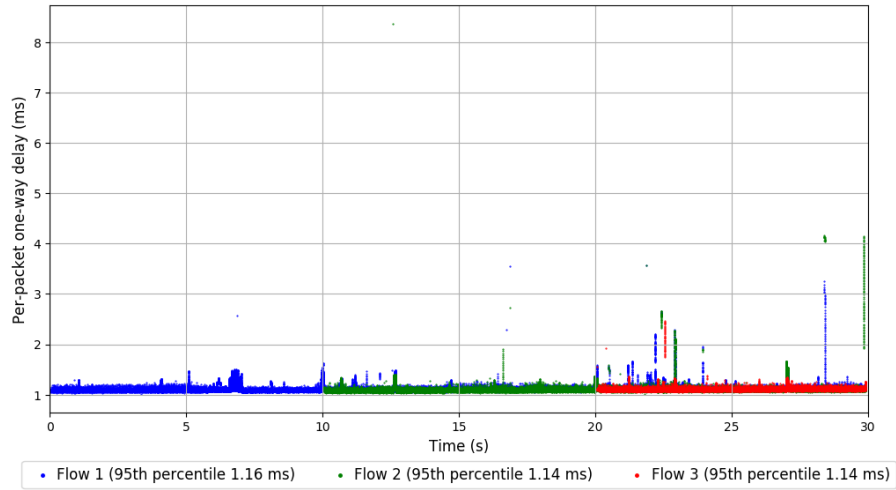
Run 5: Report of SCReAM — Data Link

```
Run 1: Statistics of Sprout

Start at: 2019-03-27 12:22:11
End at: 2019-03-27 12:22:41
Local clock offset: 6.112 ms
Remote clock offset: -2.853 ms


# Below is generated by plot.py at 2019-03-27 15:29:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 99.90 Mbit/s
95th percentile per-packet one-way delay: 0.940 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 50.20 Mbit/s
95th percentile per-packet one-way delay: 0.944 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 50.07 Mbit/s
95th percentile per-packet one-way delay: 0.925 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 49.89 Mbit/s
95th percentile per-packet one-way delay: 0.945 ms
Loss rate: 0.00%
```
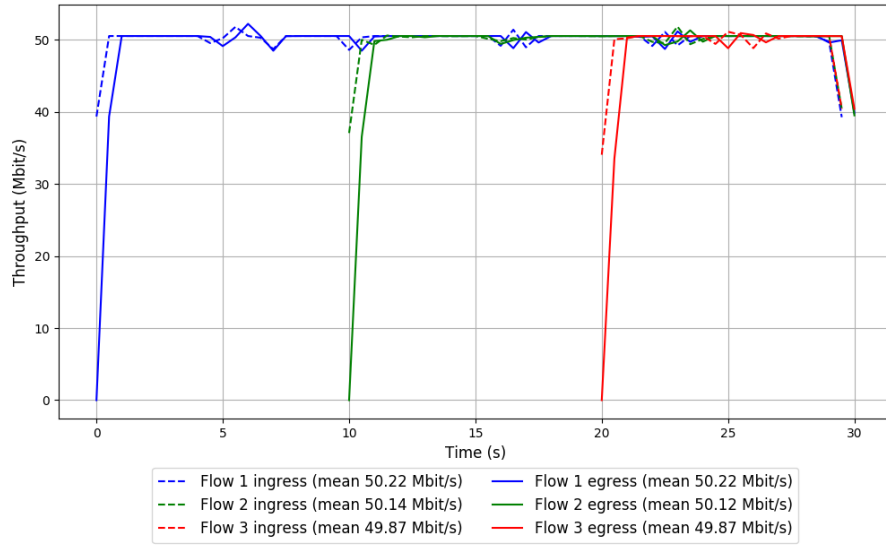
Run 1: Report of Sprout — Data Link

```
Run 2: Statistics of Sprout

Start at: 2019-03-27 12:52:37
End at: 2019-03-27 12:53:07
Local clock offset: 5.57 ms
Remote clock offset: -3.321 ms


# Below is generated by plot.py at 2019-03-27 15:29:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 99.92 Mbit/s
95th percentile per-packet one-way delay: 1.149 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 50.22 Mbit/s
95th percentile per-packet one-way delay: 1.158 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 50.12 Mbit/s
95th percentile per-packet one-way delay: 1.137 ms
Loss rate: 0.05%
-- Flow 3:
Average throughput: 49.87 Mbit/s
95th percentile per-packet one-way delay: 1.144 ms
Loss rate: 0.00%
```
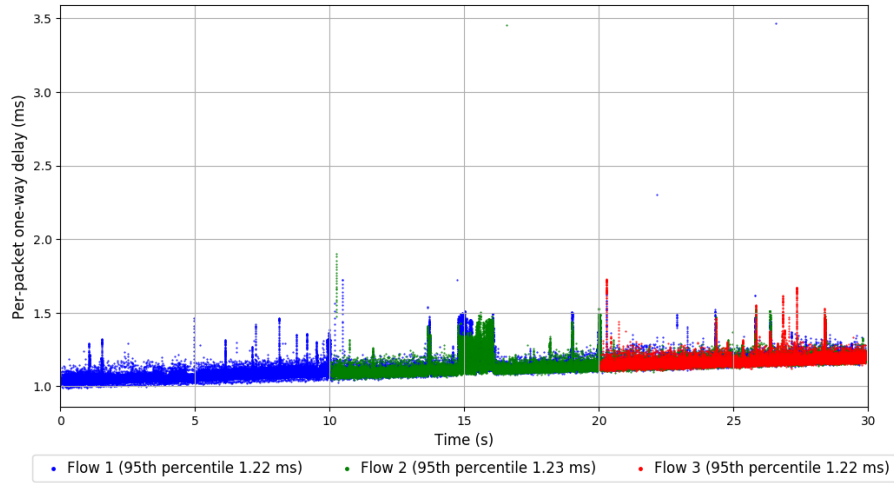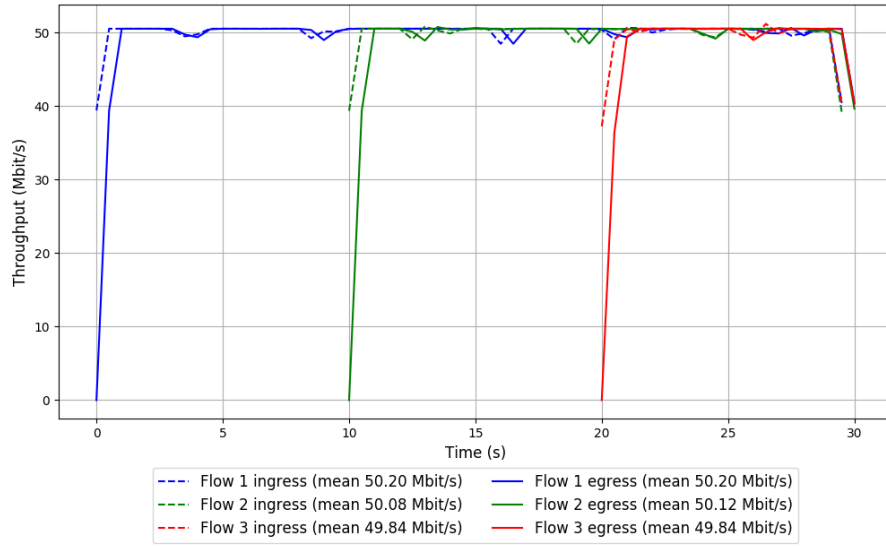
Run 2: Report of Sprout — Data Link

```
Run 3: Statistics of Sprout

Start at: 2019-03-27 13:22:58
End at: 2019-03-27 13:23:28
Local clock offset: 5.099 ms
Remote clock offset: 0.817 ms


# Below is generated by plot.py at 2019-03-27 15:29:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 99.96 Mbit/s
95th percentile per-packet one-way delay: 1.220 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 50.20 Mbit/s
95th percentile per-packet one-way delay: 1.217 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 50.12 Mbit/s
95th percentile per-packet one-way delay: 1.229 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 49.84 Mbit/s
95th percentile per-packet one-way delay: 1.219 ms
Loss rate: 0.00%
```
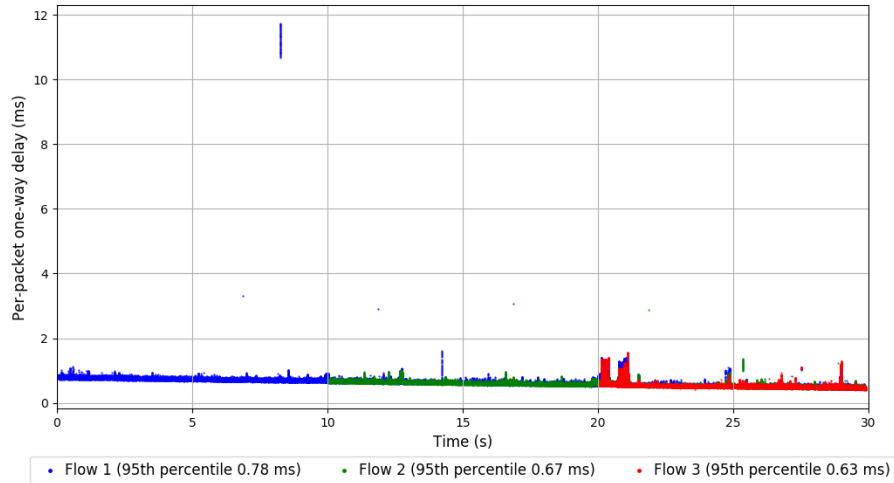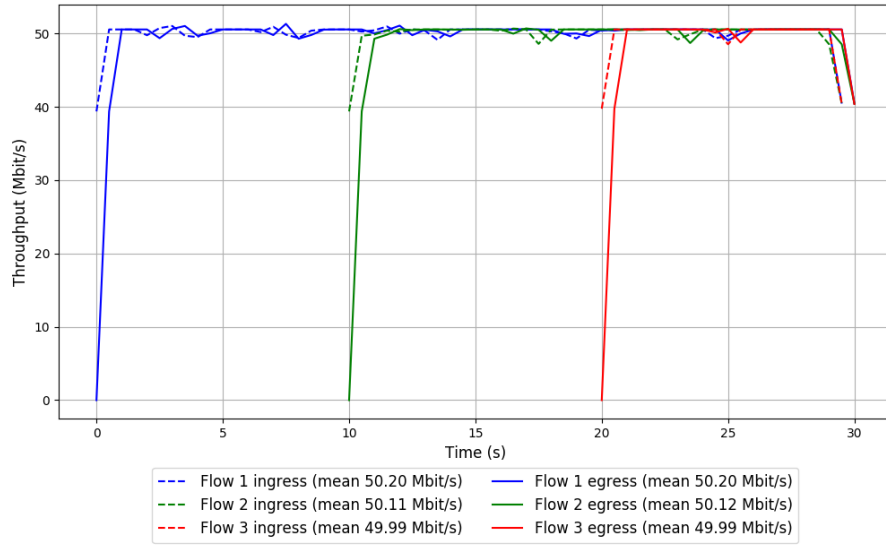
Run 3: Report of Sprout — Data Link

```
Run 4: Statistics of Sprout

Start at: 2019-03-27 13:53:23
End at: 2019-03-27 13:53:53
Local clock offset: 4.999 ms
Remote clock offset: 2.373 ms


# Below is generated by plot.py at 2019-03-27 15:29:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 100.04 Mbit/s
95th percentile per-packet one-way delay: 0.760 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 50.20 Mbit/s
95th percentile per-packet one-way delay: 0.777 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 50.12 Mbit/s
95th percentile per-packet one-way delay: 0.668 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 49.99 Mbit/s
95th percentile per-packet one-way delay: 0.627 ms
Loss rate: 0.00%
```
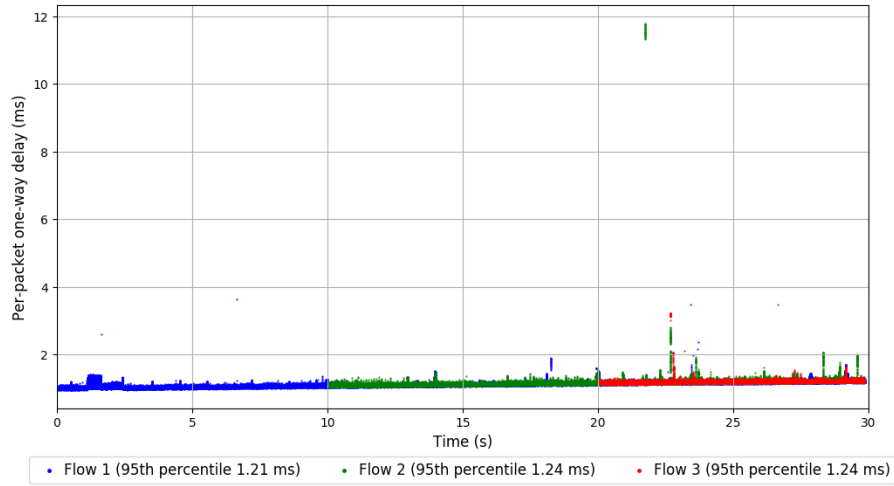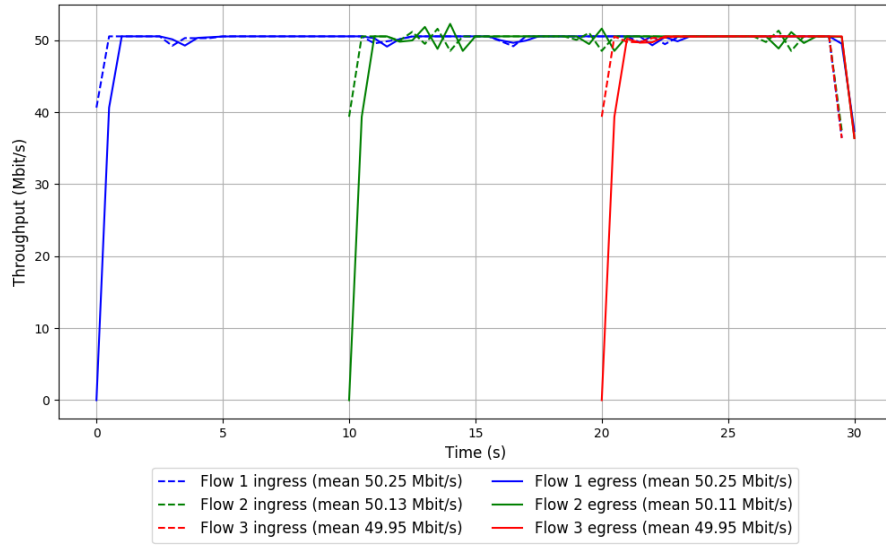
Run 4: Report of Sprout — Data Link

```
Run 5: Statistics of Sprout

Start at: 2019-03-27 14:23:41
End at: 2019-03-27 14:24:11
Local clock offset: 5.015 ms
Remote clock offset: -4.366 ms


# Below is generated by plot.py at 2019-03-27 15:29:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 100.02 Mbit/s
95th percentile per-packet one-way delay: 1.228 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 50.25 Mbit/s
95th percentile per-packet one-way delay: 1.208 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 50.11 Mbit/s
95th percentile per-packet one-way delay: 1.239 ms
Loss rate: 0.05%
-- Flow 3:
Average throughput: 49.95 Mbit/s
95th percentile per-packet one-way delay: 1.237 ms
Loss rate: 0.00%
```
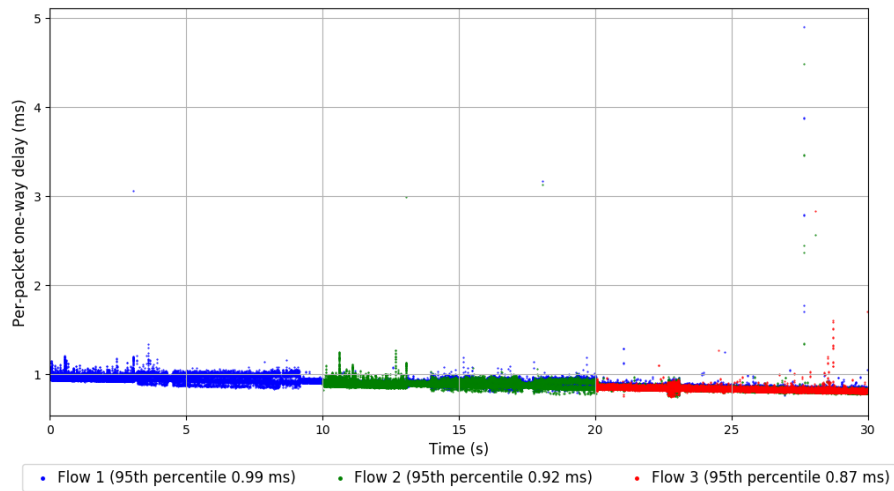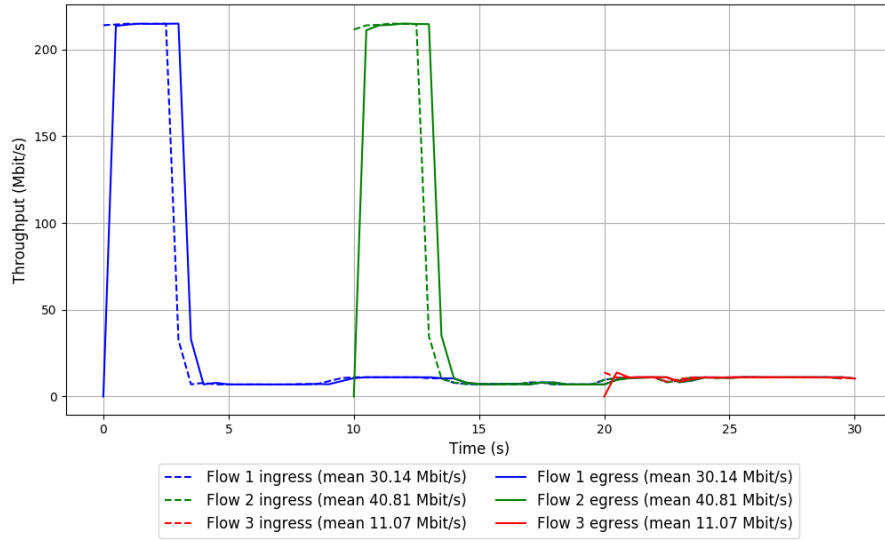
Run 5: Report of Sprout — Data Link

Flow 1 ingress (mean 50.25 Mbit/s) — Flow 1 egress (mean 50.25 Mbit/s)
Flow 2 ingress (mean 50.13 Mbit/s) — Flow 2 egress (mean 50.11 Mbit/s)
Flow 3 ingress (mean 49.95 Mbit/s) — Flow 3 egress (mean 49.95 Mbit/s)

• Flow 1 (95th percentile 1.21 ms)   • Flow 2 (95th percentile 1.24 ms)   • Flow 3 (95th percentile 1.24 ms)

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

Start at: 2019-03-27 12:07:19
End at: 2019-03-27 12:07:49
Local clock offset: 6.146 ms
Remote clock offset: -0.485 ms


# Below is generated by plot.py at 2019-03-27 15:29:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 60.99 Mbit/s
95th percentile per-packet one-way delay: 0.980 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 30.14 Mbit/s
95th percentile per-packet one-way delay: 0.989 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 40.81 Mbit/s
95th percentile per-packet one-way delay: 0.918 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 11.07 Mbit/s
95th percentile per-packet one-way delay: 0.873 ms
Loss rate: 0.01%
```
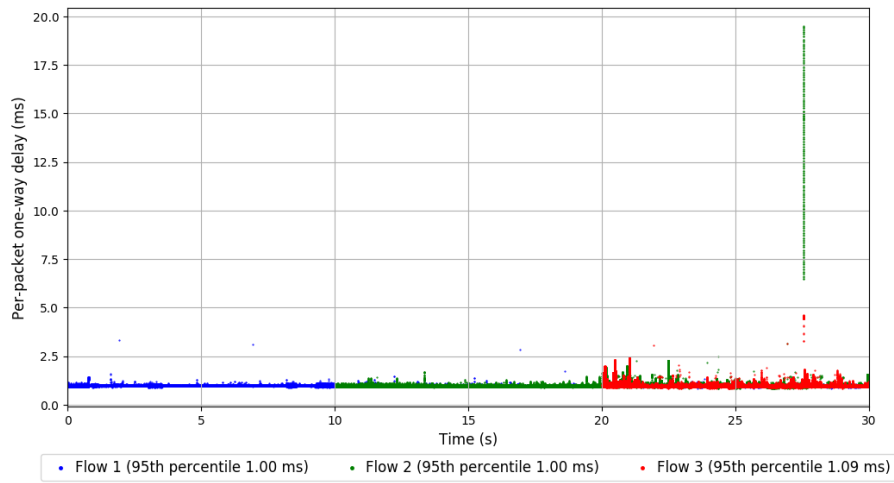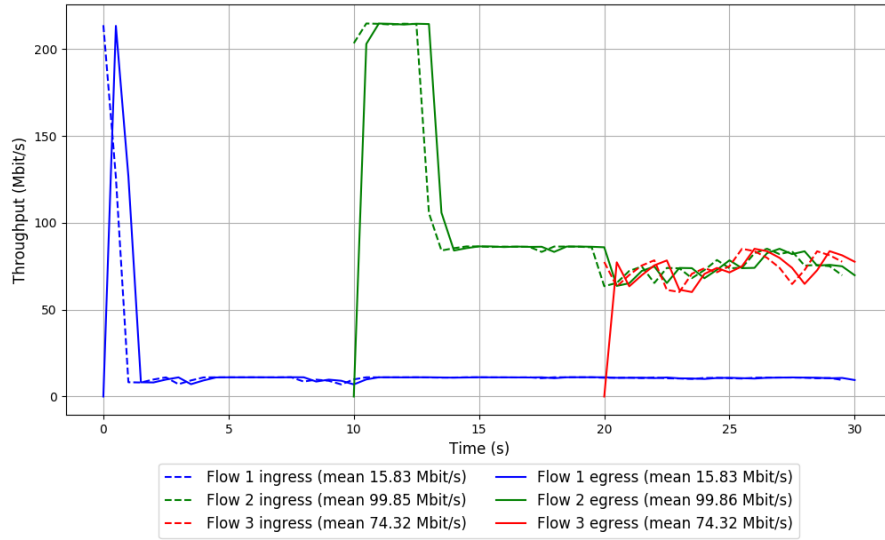
Run 1: Report of TaoVA-100x — Data Link

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

Start at: 2019-03-27 12:37:50
End at: 2019-03-27 12:38:20
Local clock offset: 6.208 ms
Remote clock offset: -3.789 ms

# Below is generated by plot.py at 2019-03-27 15:31:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 106.99 Mbit/s
95th percentile per-packet one-way delay: 1.008 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 15.83 Mbit/s
95th percentile per-packet one-way delay: 1.005 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 99.86 Mbit/s
95th percentile per-packet one-way delay: 0.996 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 74.32 Mbit/s
95th percentile per-packet one-way delay: 1.089 ms
Loss rate: 0.01%
```
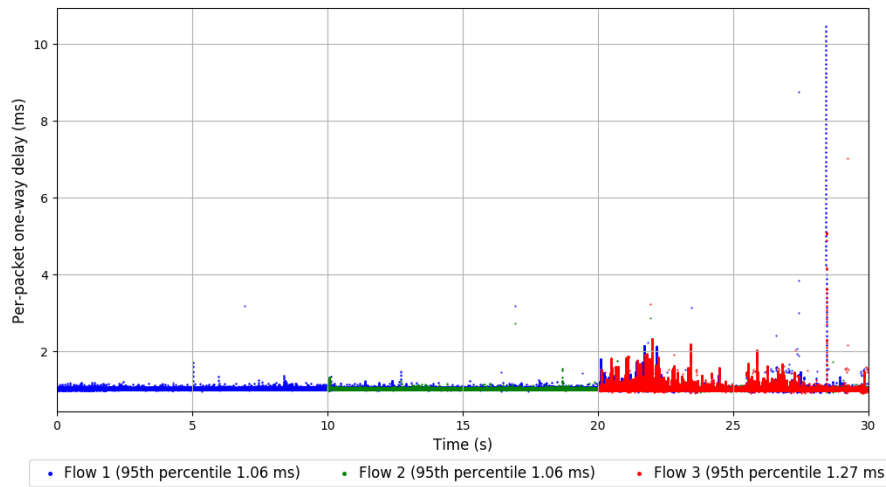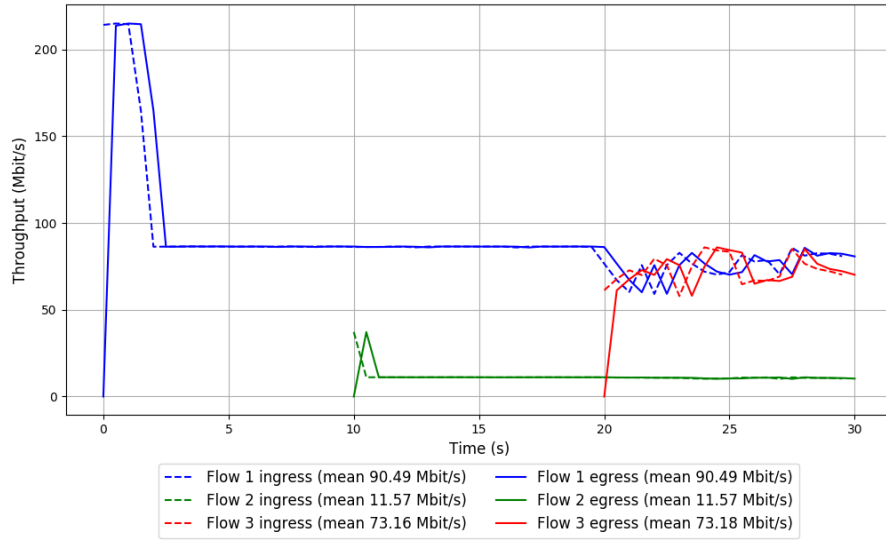
Run 2: Report of TaoVA-100x — Data Link

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

Start at: 2019-03-27 13:08:07
End at: 2019-03-27 13:08:37
Local clock offset: 4.981 ms
Remote clock offset: -3.3 ms


# Below is generated by plot.py at 2019-03-27 15:31:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 122.51 Mbit/s
95th percentile per-packet one-way delay: 1.067 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 90.49 Mbit/s
95th percentile per-packet one-way delay: 1.059 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 11.57 Mbit/s
95th percentile per-packet one-way delay: 1.057 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 73.18 Mbit/s
95th percentile per-packet one-way delay: 1.267 ms
Loss rate: 0.01%
```
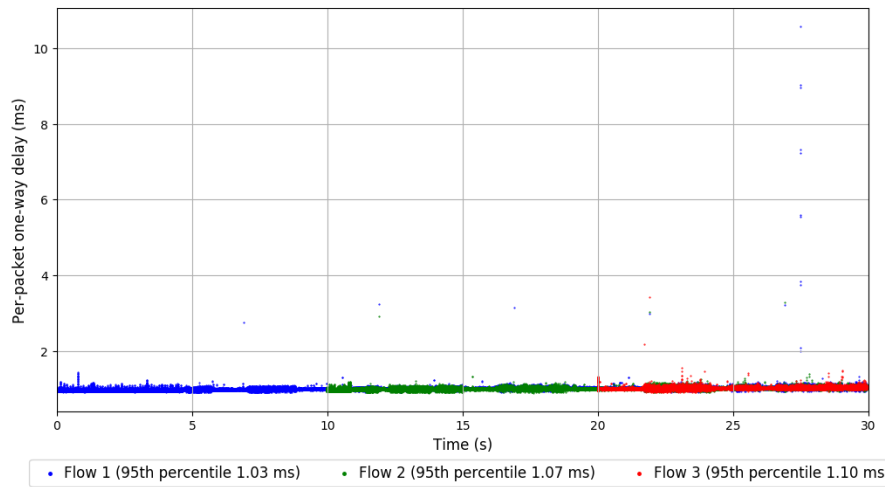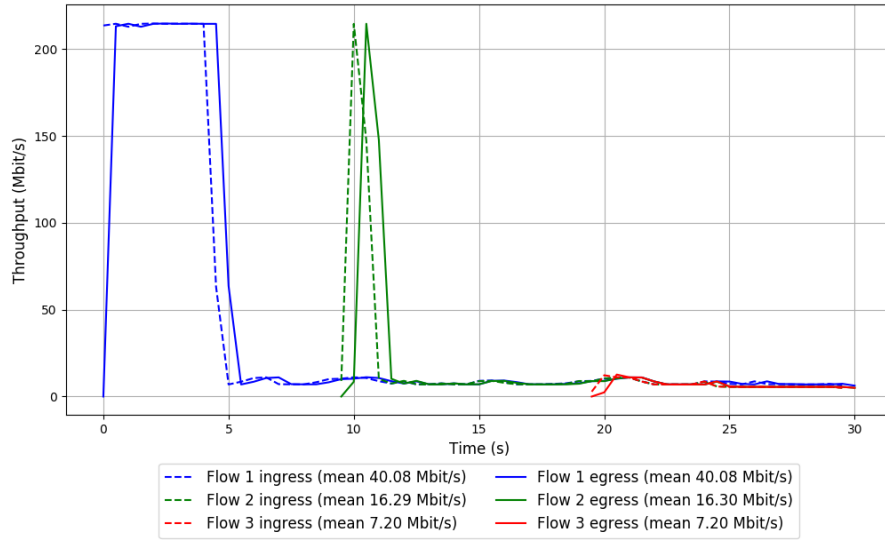
Run 3: Report of TaoVA-100x — Data Link

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

Start at: 2019-03-27 13:38:37
End at: 2019-03-27 13:39:07
Local clock offset: 5.296 ms
Remote clock offset: 4.191 ms

# Below is generated by plot.py at 2019-03-27 15:31:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 53.34 Mbit/s
95th percentile per-packet one-way delay: 1.055 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 40.08 Mbit/s
95th percentile per-packet one-way delay: 1.034 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 16.30 Mbit/s
95th percentile per-packet one-way delay: 1.069 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 7.20 Mbit/s
95th percentile per-packet one-way delay: 1.096 ms
Loss rate: 0.02%
```
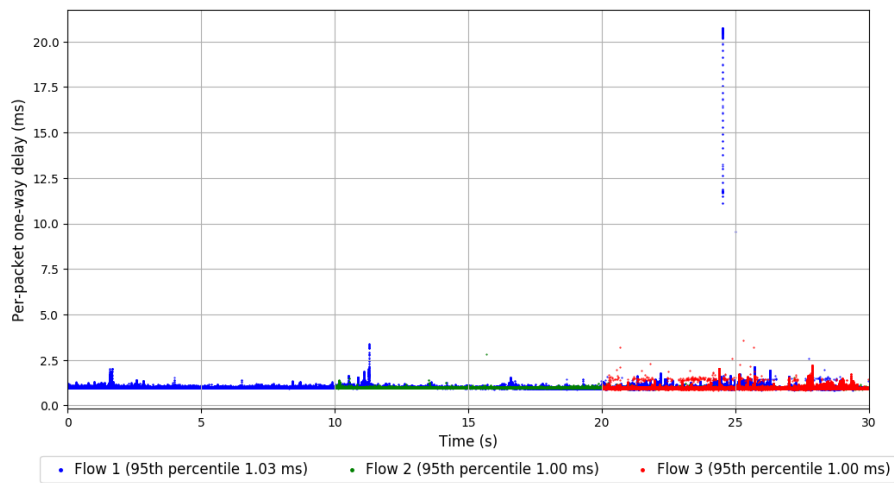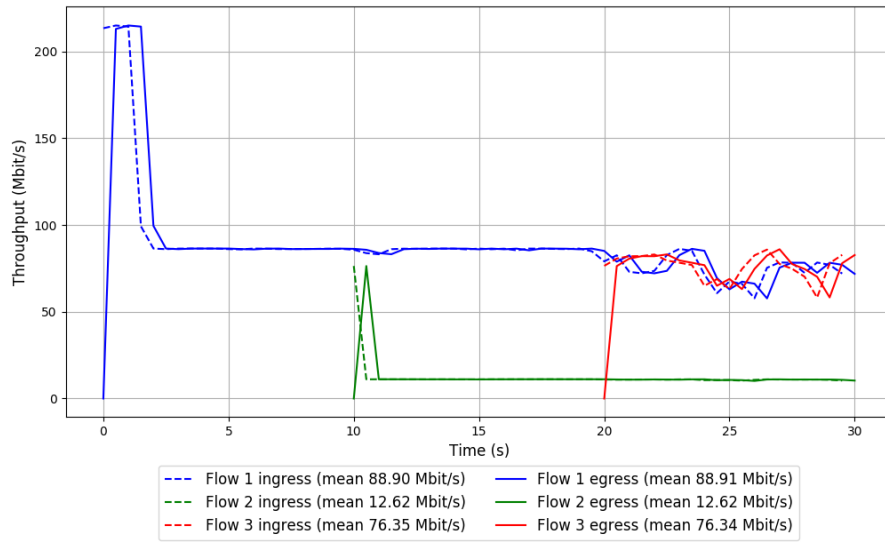
Run 4: Report of TaoVA-100x — Data Link

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

Start at: 2019-03-27 14:08:49
End at: 2019-03-27 14:09:19
Local clock offset: 4.738 ms
Remote clock offset: -3.042 ms


# Below is generated by plot.py at 2019-03-27 15:31:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 122.68 Mbit/s
95th percentile per-packet one-way delay: 1.024 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 88.91 Mbit/s
95th percentile per-packet one-way delay: 1.027 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 12.62 Mbit/s
95th percentile per-packet one-way delay: 1.004 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 76.34 Mbit/s
95th percentile per-packet one-way delay: 1.003 ms
Loss rate: 0.02%
```
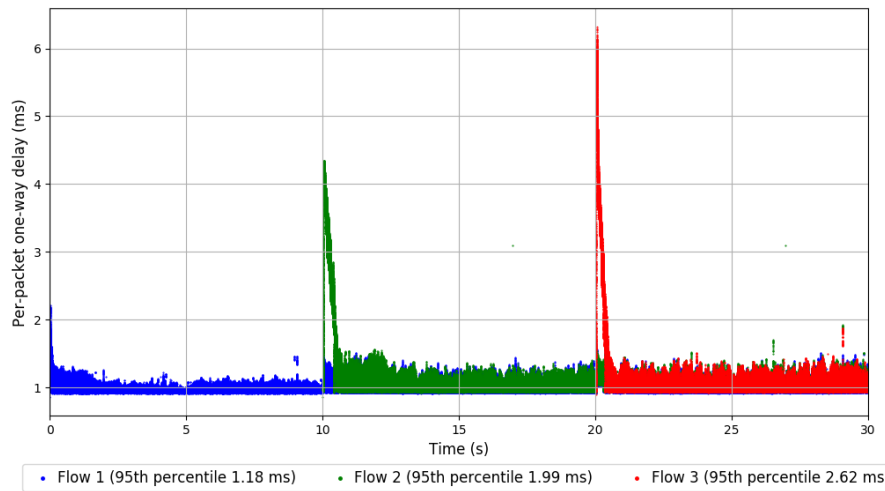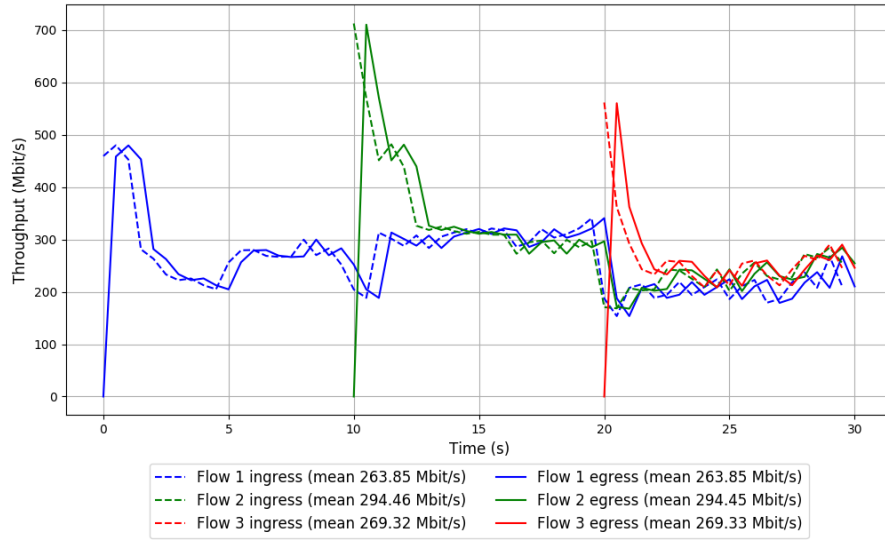
Run 5: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 88.90 Mbit/s) —— Flow 1 egress (mean 88.91 Mbit/s)
Flow 2 ingress (mean 12.62 Mbit/s) —— Flow 2 egress (mean 12.62 Mbit/s)
Flow 3 ingress (mean 76.35 Mbit/s) —— Flow 3 egress (mean 76.34 Mbit/s)

Flow 1 (95th percentile 1.03 ms) Flow 2 (95th percentile 1.00 ms) Flow 3 (95th percentile 1.00 ms)

```
Run 1: Statistics of TCP Vegas

Start at: 2019-03-27 12:02:59
End at: 2019-03-27 12:03:29
Local clock offset: 6.199 ms
Remote clock offset: -0.362 ms


# Below is generated by plot.py at 2019-03-27 15:35:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 549.47 Mbit/s
95th percentile per-packet one-way delay: 1.277 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 263.85 Mbit/s
95th percentile per-packet one-way delay: 1.180 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 294.45 Mbit/s
95th percentile per-packet one-way delay: 1.989 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 269.33 Mbit/s
95th percentile per-packet one-way delay: 2.615 ms
Loss rate: 0.01%
```
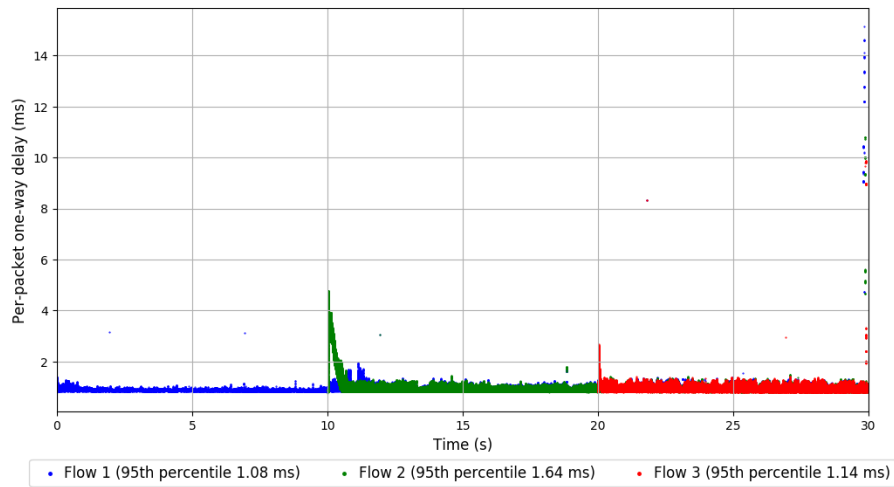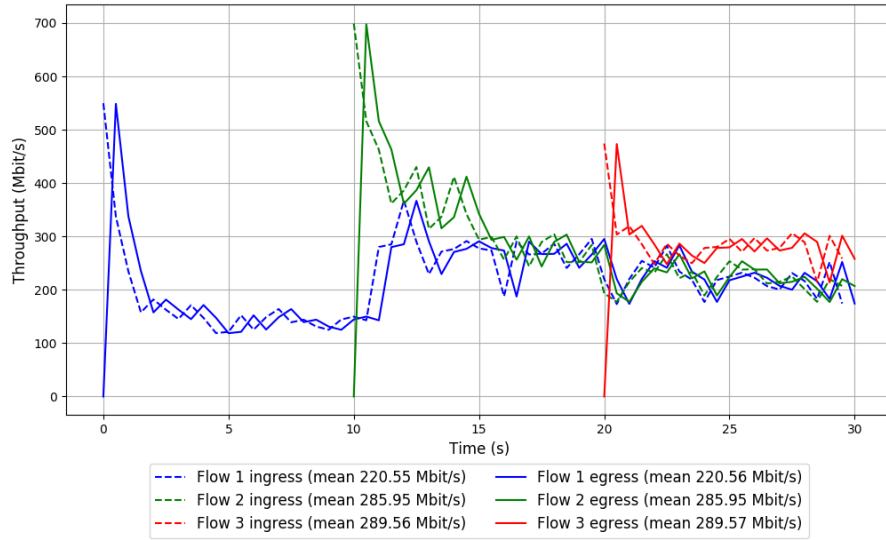
Run 1: Report of TCP Vegas — Data Link

```
Run 2: Statistics of TCP Vegas

Start at: 2019-03-27 12:33:32
End at: 2019-03-27 12:34:02
Local clock offset: 6.165 ms
Remote clock offset: -3.507 ms


# Below is generated by plot.py at 2019-03-27 15:35:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 507.28 Mbit/s
95th percentile per-packet one-way delay: 1.138 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 220.56 Mbit/s
95th percentile per-packet one-way delay: 1.080 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 285.95 Mbit/s
95th percentile per-packet one-way delay: 1.640 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 289.57 Mbit/s
95th percentile per-packet one-way delay: 1.138 ms
Loss rate: 0.02%
```
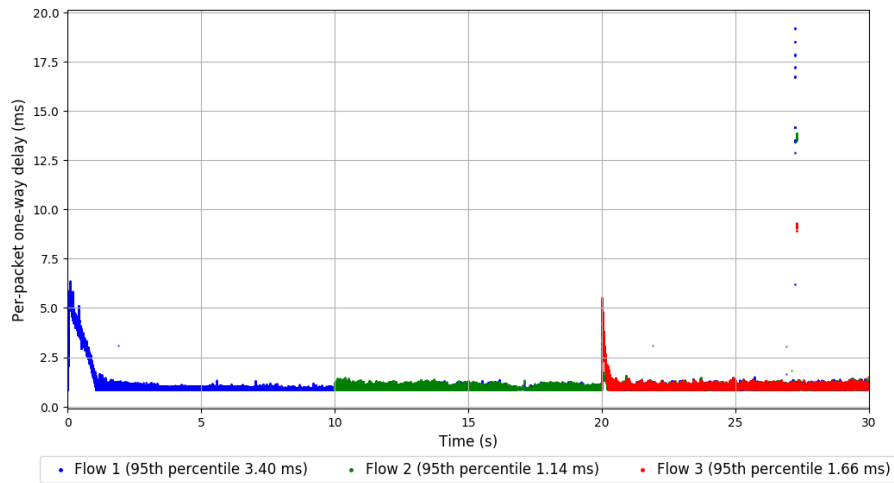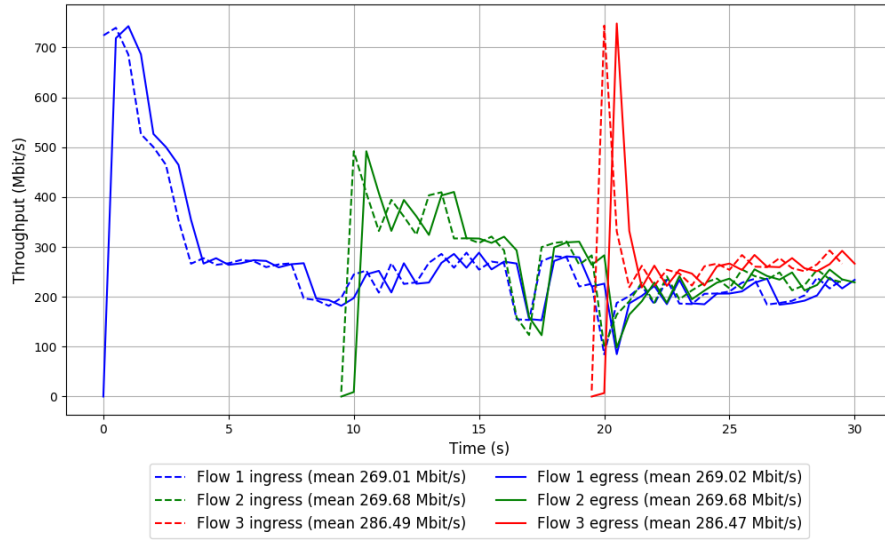
Run 2: Report of TCP Vegas — Data Link

```
Run 3: Statistics of TCP Vegas

Start at: 2019-03-27 13:03:47
End at: 2019-03-27 13:04:17
Local clock offset: 5.073 ms
Remote clock offset: -3.151 ms


# Below is generated by plot.py at 2019-03-27 15:35:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 544.16 Mbit/s
95th percentile per-packet one-way delay: 1.769 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 269.02 Mbit/s
95th percentile per-packet one-way delay: 3.401 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 269.68 Mbit/s
95th percentile per-packet one-way delay: 1.138 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 286.47 Mbit/s
95th percentile per-packet one-way delay: 1.655 ms
Loss rate: 0.01%
```
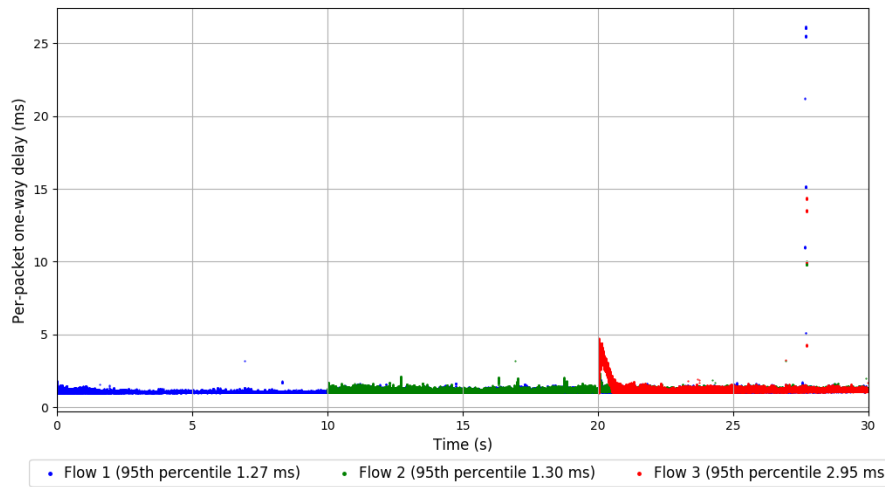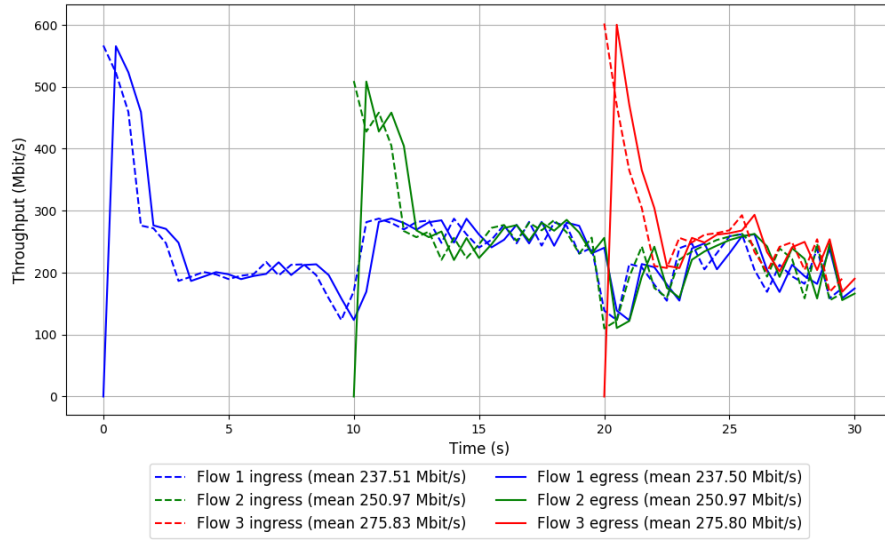
Run 3: Report of TCP Vegas — Data Link

```
Run 4: Statistics of TCP Vegas

Start at: 2019-03-27 13:34:20
End at: 2019-03-27 13:34:50
Local clock offset: 5.276 ms
Remote clock offset: 3.562 ms


# Below is generated by plot.py at 2019-03-27 15:35:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 496.26 Mbit/s
95th percentile per-packet one-way delay: 1.334 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 237.50 Mbit/s
95th percentile per-packet one-way delay: 1.267 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 250.97 Mbit/s
95th percentile per-packet one-way delay: 1.298 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 275.80 Mbit/s
95th percentile per-packet one-way delay: 2.948 ms
Loss rate: 0.01%
```
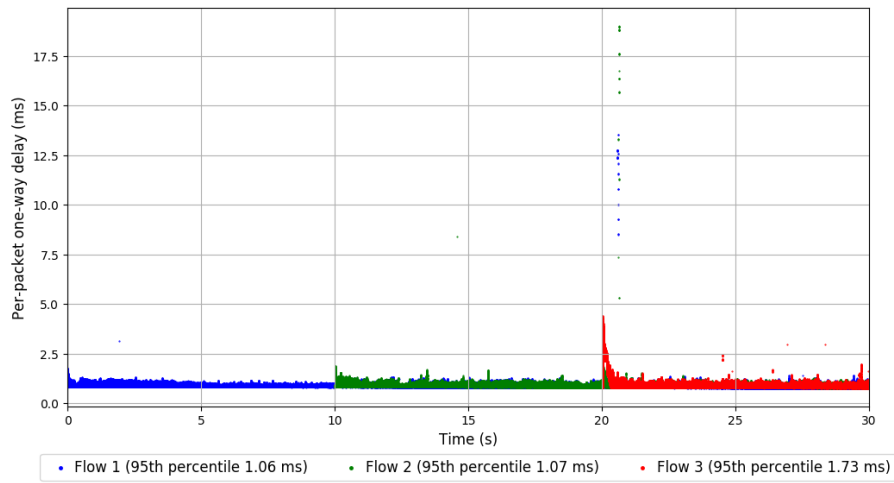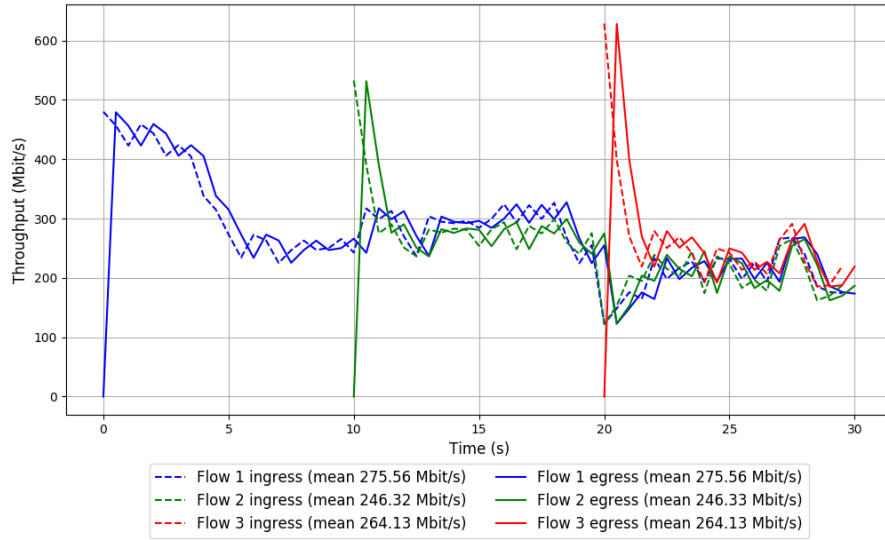
Run 4: Report of TCP Vegas — Data Link

```
Run 5: Statistics of TCP Vegas

Start at: 2019-03-27 14:04:29
End at: 2019-03-27 14:04:59
Local clock offset: 4.781 ms
Remote clock offset: -2.159 ms


# Below is generated by plot.py at 2019-03-27 15:36:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 527.39 Mbit/s
95th percentile per-packet one-way delay: 1.084 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 275.56 Mbit/s
95th percentile per-packet one-way delay: 1.060 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 246.33 Mbit/s
95th percentile per-packet one-way delay: 1.068 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 264.13 Mbit/s
95th percentile per-packet one-way delay: 1.727 ms
Loss rate: 0.02%
```
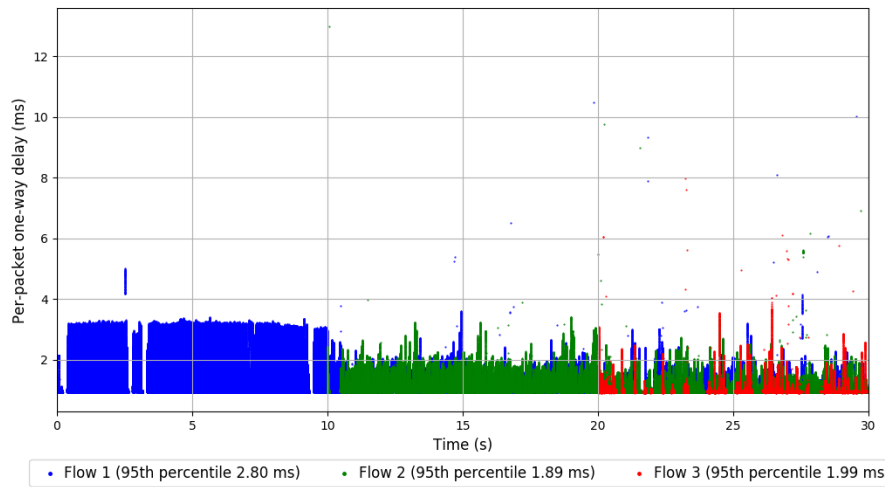
Run 5: Report of TCP Vegas — Data Link

```
Run 1: Statistics of Verus

Start at: 2019-03-27 11:59:57
End at: 2019-03-27 12:00:27
Local clock offset: 6.275 ms
Remote clock offset: -0.311 ms


# Below is generated by plot.py at 2019-03-27 15:36:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 259.05 Mbit/s
95th percentile per-packet one-way delay: 2.652 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 176.15 Mbit/s
95th percentile per-packet one-way delay: 2.802 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 105.04 Mbit/s
95th percentile per-packet one-way delay: 1.887 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 38.90 Mbit/s
95th percentile per-packet one-way delay: 1.989 ms
Loss rate: 0.00%
```
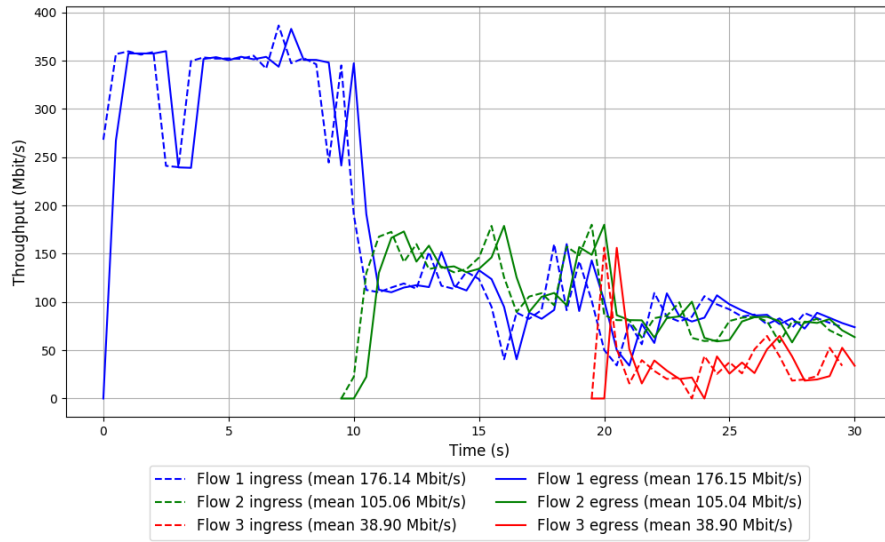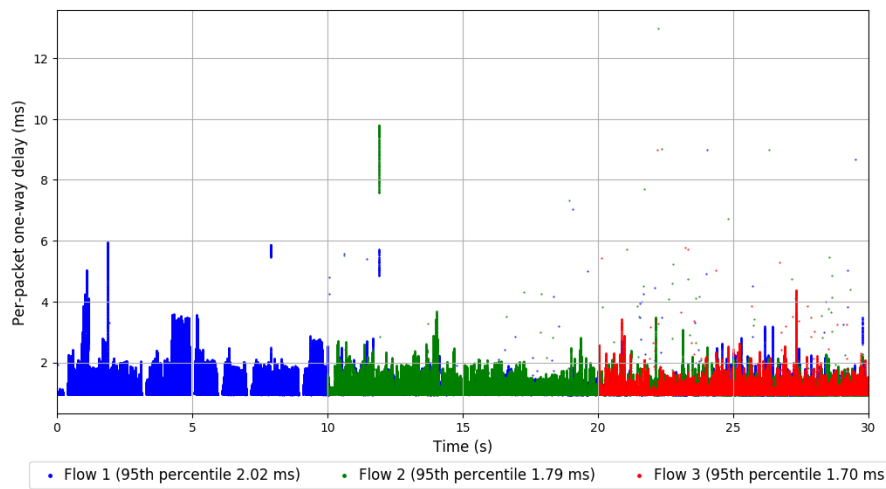
Run 1: Report of Verus — Data Link

```
Run 2: Statistics of Verus

Start at: 2019-03-27 12:30:25
End at: 2019-03-27 12:30:55
Local clock offset: 6.155 ms
Remote clock offset: -3.481 ms


# Below is generated by plot.py at 2019-03-27 15:36:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 275.92 Mbit/s
95th percentile per-packet one-way delay: 1.924 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 174.11 Mbit/s
95th percentile per-packet one-way delay: 2.020 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 109.16 Mbit/s
95th percentile per-packet one-way delay: 1.793 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 88.63 Mbit/s
95th percentile per-packet one-way delay: 1.702 ms
Loss rate: 0.00%
```
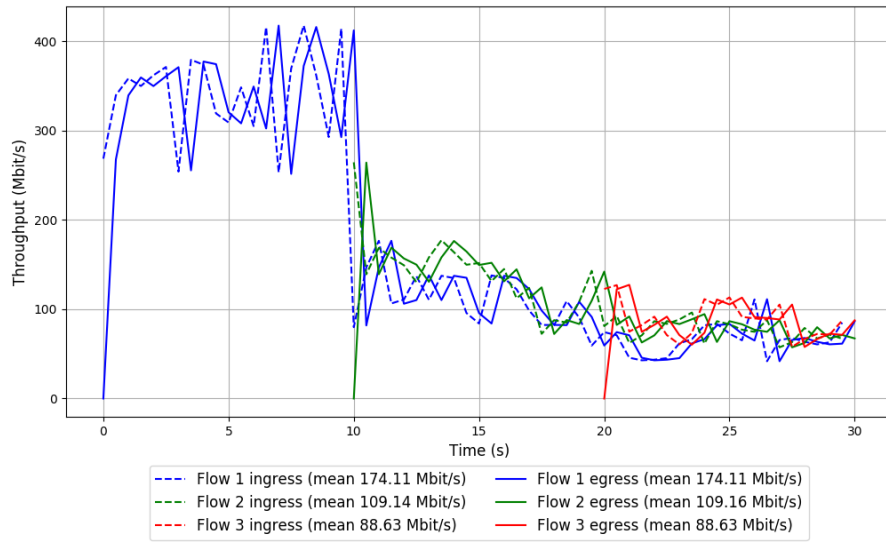
Run 2: Report of Verus — Data Link

```
Run 3: Statistics of Verus

Start at: 2019-03-27 13:00:46
End at: 2019-03-27 13:01:16
Local clock offset: 5.156 ms
Remote clock offset: -3.168 ms


# Below is generated by plot.py at 2019-03-27 15:36:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 262.26 Mbit/s
95th percentile per-packet one-way delay: 2.697 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 165.71 Mbit/s
95th percentile per-packet one-way delay: 2.851 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 106.67 Mbit/s
95th percentile per-packet one-way delay: 1.930 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 78.27 Mbit/s
95th percentile per-packet one-way delay: 1.263 ms
Loss rate: 0.00%
```
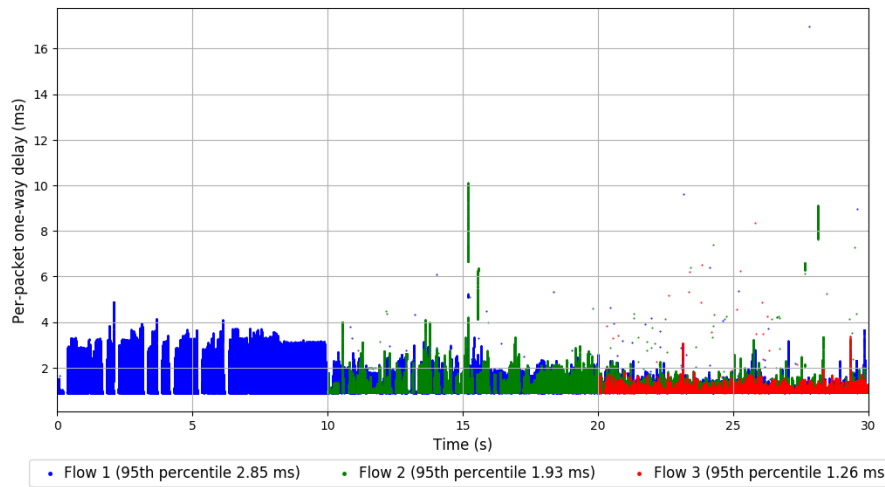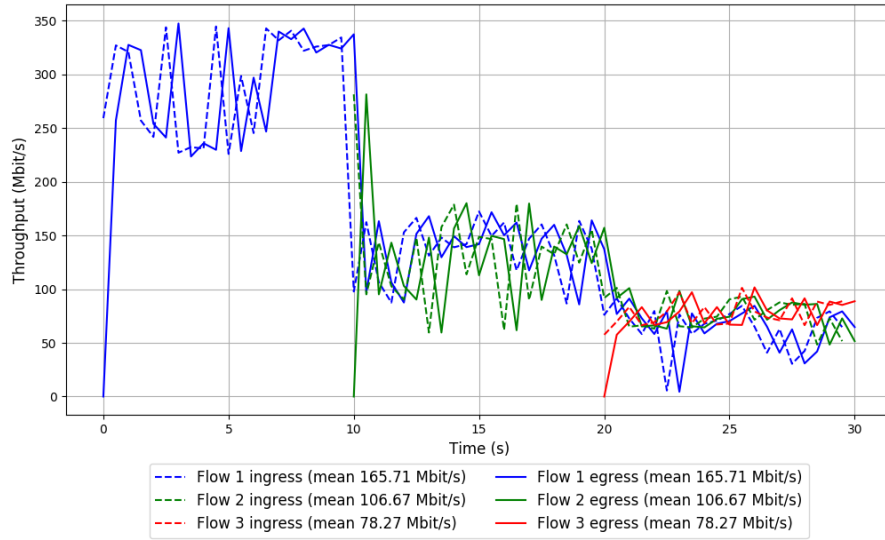
Run 3: Report of Verus — Data Link

```
Run 4: Statistics of Verus

Start at: 2019-03-27 13:31:15
End at: 2019-03-27 13:31:45
Local clock offset: 5.224 ms
Remote clock offset: 2.981 ms


# Below is generated by plot.py at 2019-03-27 15:37:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 263.31 Mbit/s
95th percentile per-packet one-way delay: 2.423 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 157.76 Mbit/s
95th percentile per-packet one-way delay: 2.635 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 109.70 Mbit/s
95th percentile per-packet one-way delay: 1.889 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 97.91 Mbit/s
95th percentile per-packet one-way delay: 1.733 ms
Loss rate: 0.00%
```
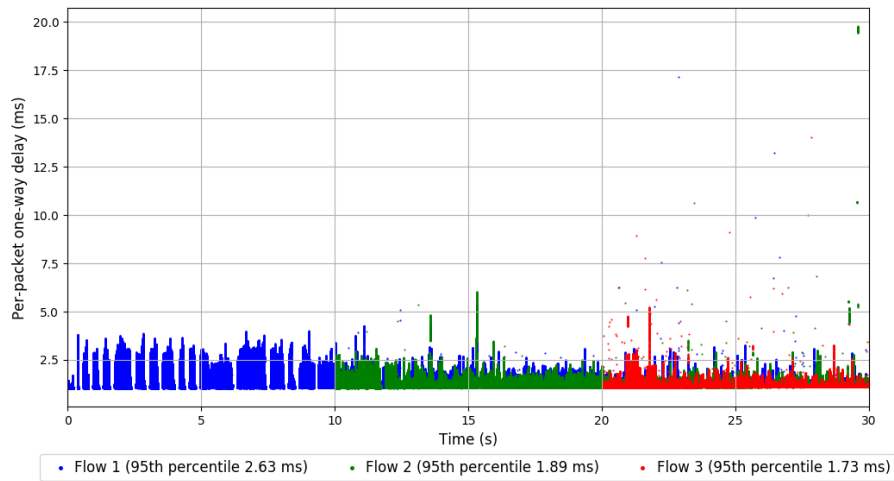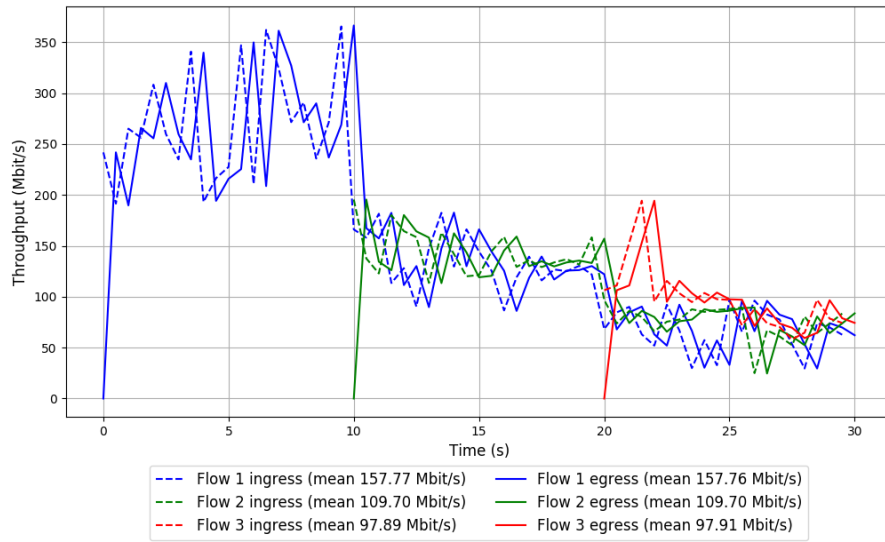
Run 4: Report of Verus — Data Link

Flow 1 ingress (mean 157.77 Mbit/s) — — — Flow 1 egress (mean 157.76 Mbit/s)
Flow 2 ingress (mean 109.70 Mbit/s) — — — Flow 2 egress (mean 109.70 Mbit/s)
Flow 3 ingress (mean 97.89 Mbit/s) — — — Flow 3 egress (mean 97.91 Mbit/s)

Flow 1 (95th percentile 2.63 ms)   Flow 2 (95th percentile 1.89 ms)   Flow 3 (95th percentile 1.73 ms)

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```
Run 5: Statistics of Verus

Start at: 2019-03-27 14:01:24
End at: 2019-03-27 14:01:54
Local clock offset: 4.814 ms
Remote clock offset: -1.462 ms


# Below is generated by plot.py at 2019-03-27 15:37:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 239.59 Mbit/s
95th percentile per-packet one-way delay: 2.471 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 140.40 Mbit/s
95th percentile per-packet one-way delay: 2.687 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 109.12 Mbit/s
95th percentile per-packet one-way delay: 1.570 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 80.01 Mbit/s
95th percentile per-packet one-way delay: 1.423 ms
Loss rate: 0.00%
```
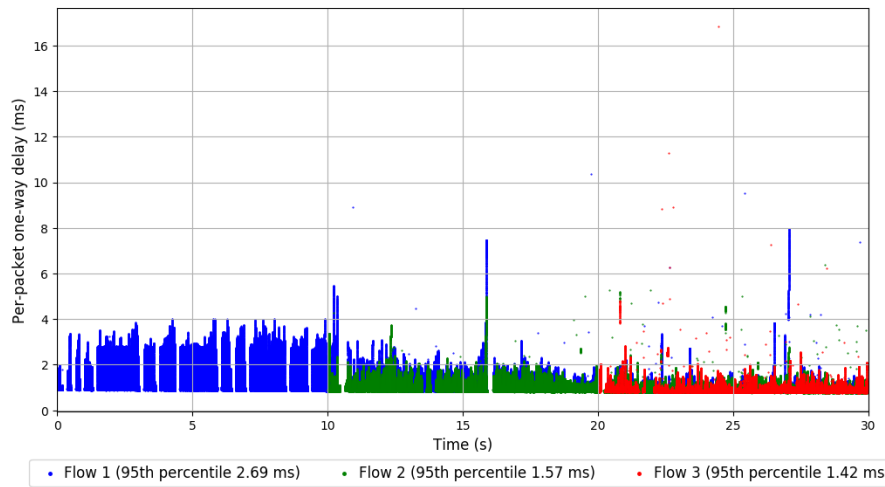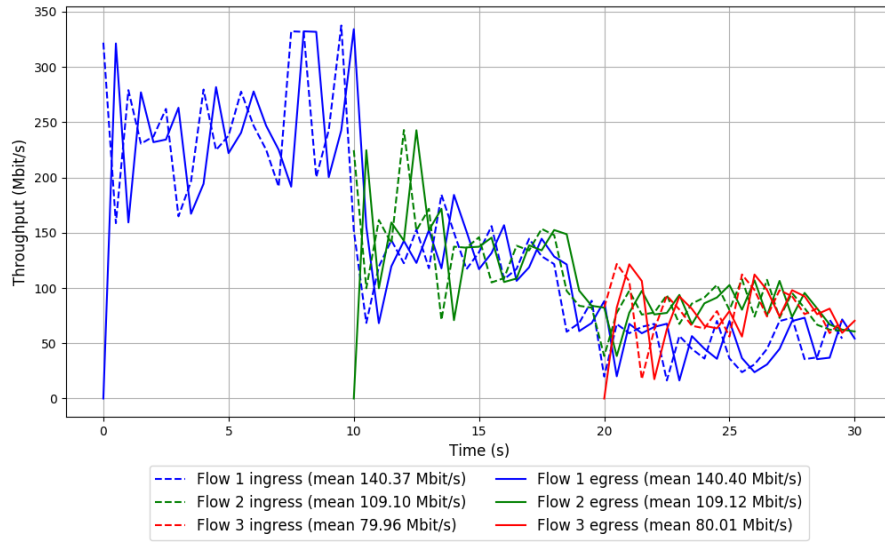
Run 5: Report of Verus — Data Link

```
Run 1: Statistics of PCC-Vivace

Start at: 2019-03-27 12:04:31
End at: 2019-03-27 12:05:01
Local clock offset: 6.175 ms
Remote clock offset: -0.39 ms


# Below is generated by plot.py at 2019-03-27 15:38:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 314.10 Mbit/s
95th percentile per-packet one-way delay: 1.087 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 214.84 Mbit/s
95th percentile per-packet one-way delay: 1.003 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 112.53 Mbit/s
95th percentile per-packet one-way delay: 1.236 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 73.66 Mbit/s
95th percentile per-packet one-way delay: 1.384 ms
Loss rate: 0.01%
```
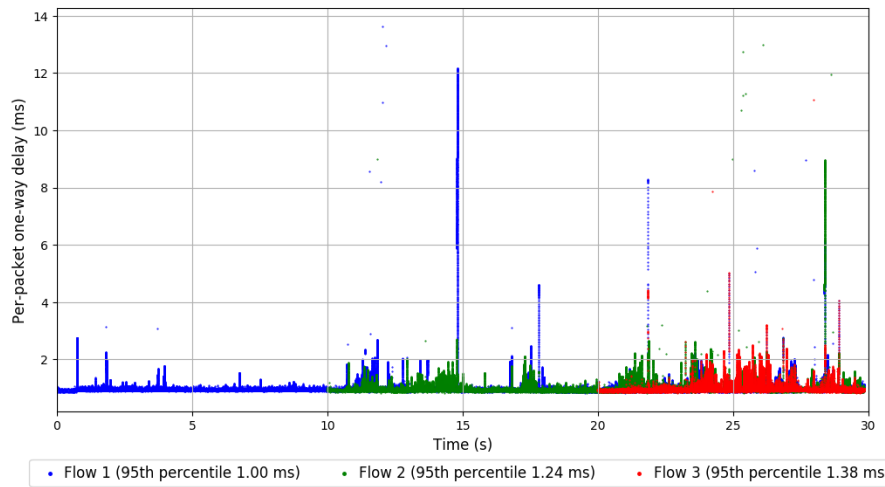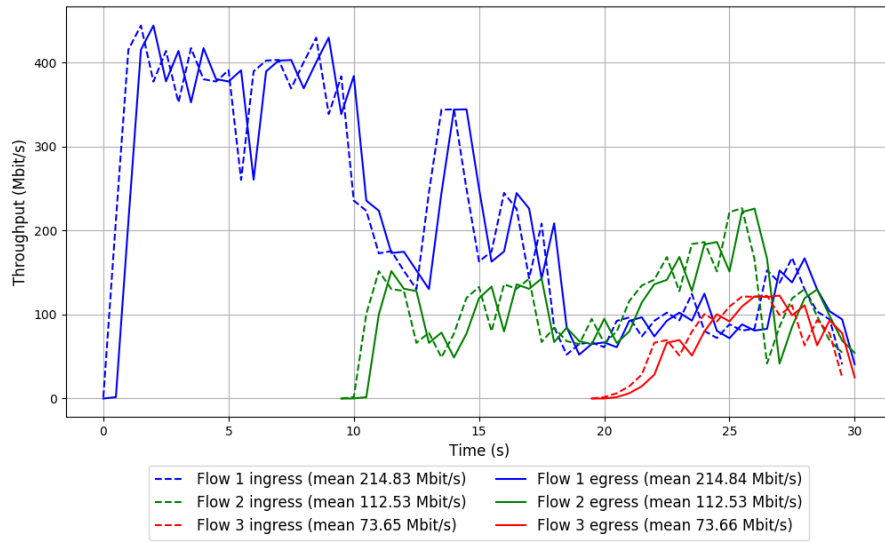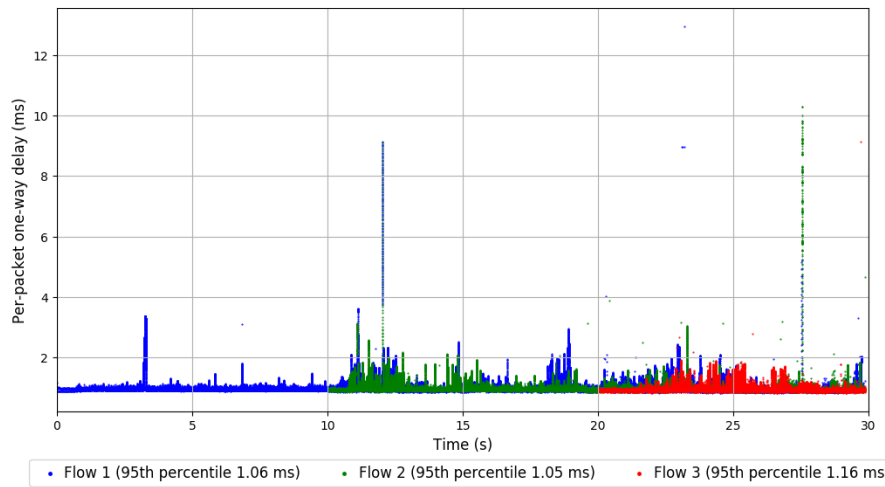
Run 1: Report of PCC-Vivace — Data Link

Flow 1 ingress (mean 214.83 Mbit/s) --- Flow 1 egress (mean 214.84 Mbit/s)
Flow 2 ingress (mean 112.53 Mbit/s) --- Flow 2 egress (mean 112.53 Mbit/s)
Flow 3 ingress (mean 73.65 Mbit/s) --- Flow 3 egress (mean 73.66 Mbit/s)

Flow 1 (95th percentile 1.00 ms)   Flow 2 (95th percentile 1.24 ms)   Flow 3 (95th percentile 1.38 ms)

```
Run 2: Statistics of PCC-Vivace

Start at: 2019-03-27 12:35:03
End at: 2019-03-27 12:35:33
Local clock offset: 6.191 ms
Remote clock offset: -3.664 ms


# Below is generated by plot.py at 2019-03-27 15:38:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 289.75 Mbit/s
95th percentile per-packet one-way delay: 1.068 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 181.53 Mbit/s
95th percentile per-packet one-way delay: 1.065 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 131.54 Mbit/s
95th percentile per-packet one-way delay: 1.054 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 62.91 Mbit/s
95th percentile per-packet one-way delay: 1.155 ms
Loss rate: 0.01%
```
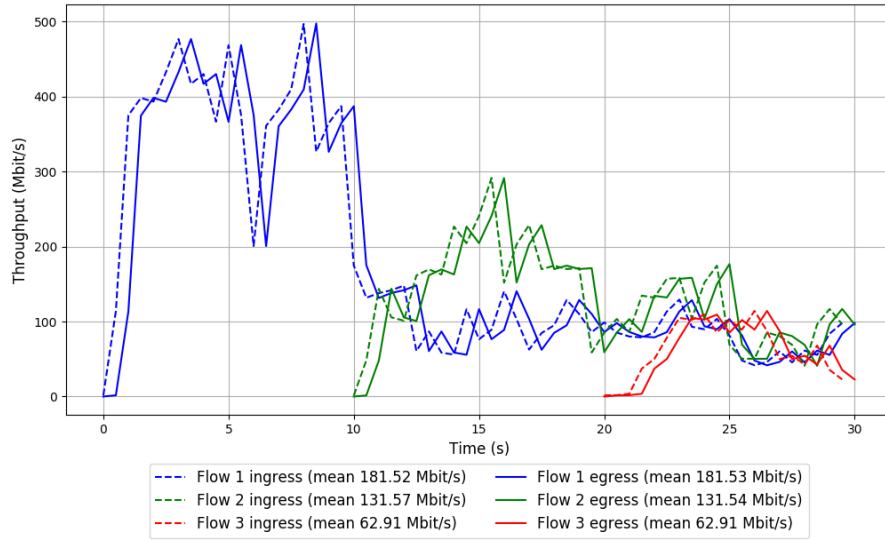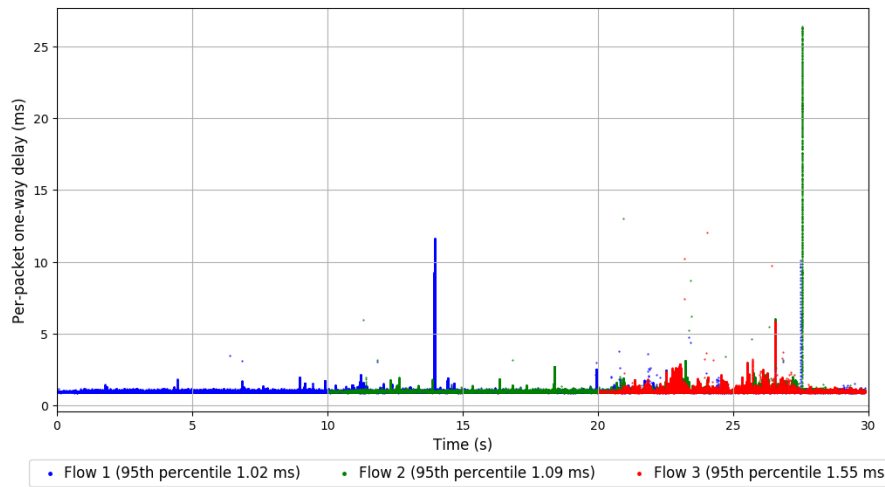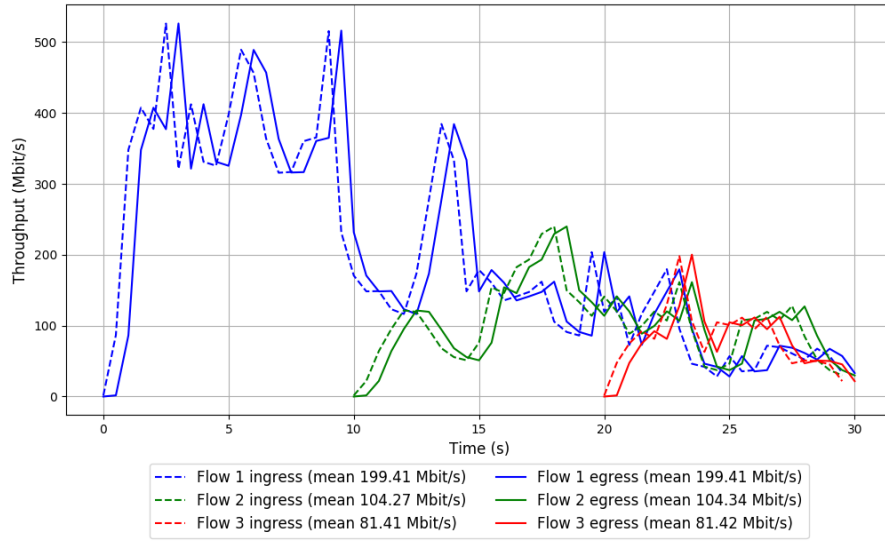
Run 2: Report of PCC-Vivace — Data Link

```
Run 3: Statistics of PCC-Vivace

Start at: 2019-03-27 13:05:19
End at: 2019-03-27 13:05:49
Local clock offset: 5.043 ms
Remote clock offset: -3.251 ms


# Below is generated by plot.py at 2019-03-27 15:38:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 295.63 Mbit/s
95th percentile per-packet one-way delay: 1.056 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 199.41 Mbit/s
95th percentile per-packet one-way delay: 1.025 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 104.34 Mbit/s
95th percentile per-packet one-way delay: 1.093 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 81.42 Mbit/s
95th percentile per-packet one-way delay: 1.553 ms
Loss rate: 0.01%
```

Run 3: Report of PCC-Vivace — Data Link

```
Run 4: Statistics of PCC-Vivace

Start at: 2019-03-27 13:35:51
End at: 2019-03-27 13:36:21
Local clock offset: 5.274 ms
Remote clock offset: 3.759 ms


# Below is generated by plot.py at 2019-03-27 15:38:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 304.43 Mbit/s
95th percentile per-packet one-way delay: 1.146 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 207.94 Mbit/s
95th percentile per-packet one-way delay: 1.114 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 108.12 Mbit/s
95th percentile per-packet one-way delay: 1.143 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 74.77 Mbit/s
95th percentile per-packet one-way delay: 1.404 ms
Loss rate: 0.05%
```
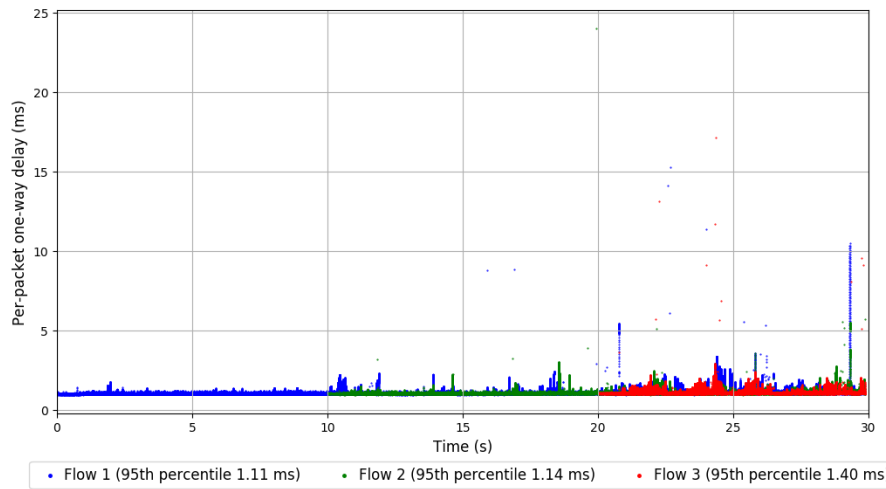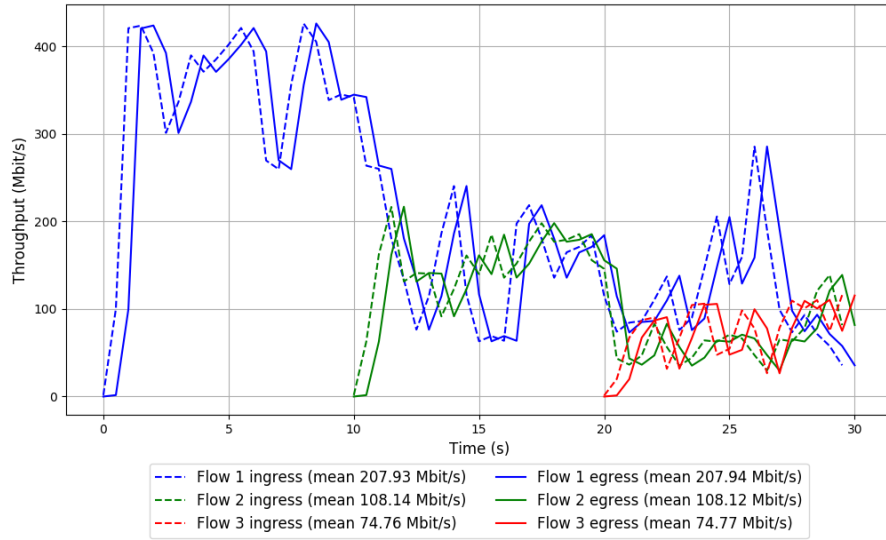
Run 4: Report of PCC-Vivace — Data Link

```
Run 5: Statistics of PCC-Vivace

Start at: 2019-03-27 14:06:01
End at: 2019-03-27 14:06:31
Local clock offset: 4.757 ms
Remote clock offset: -2.427 ms


# Below is generated by plot.py at 2019-03-27 15:38:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 286.33 Mbit/s
95th percentile per-packet one-way delay: 0.848 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 195.94 Mbit/s
95th percentile per-packet one-way delay: 0.840 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 101.29 Mbit/s
95th percentile per-packet one-way delay: 0.887 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 69.86 Mbit/s
95th percentile per-packet one-way delay: 0.917 ms
Loss rate: 0.01%
```
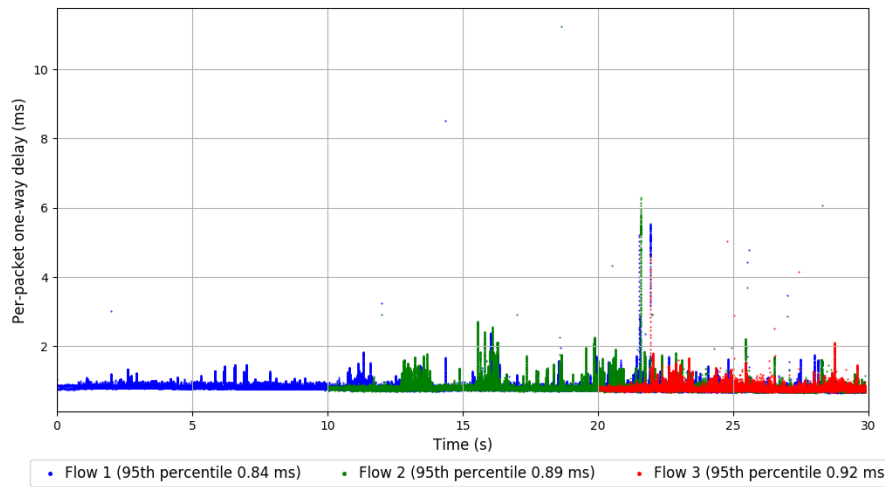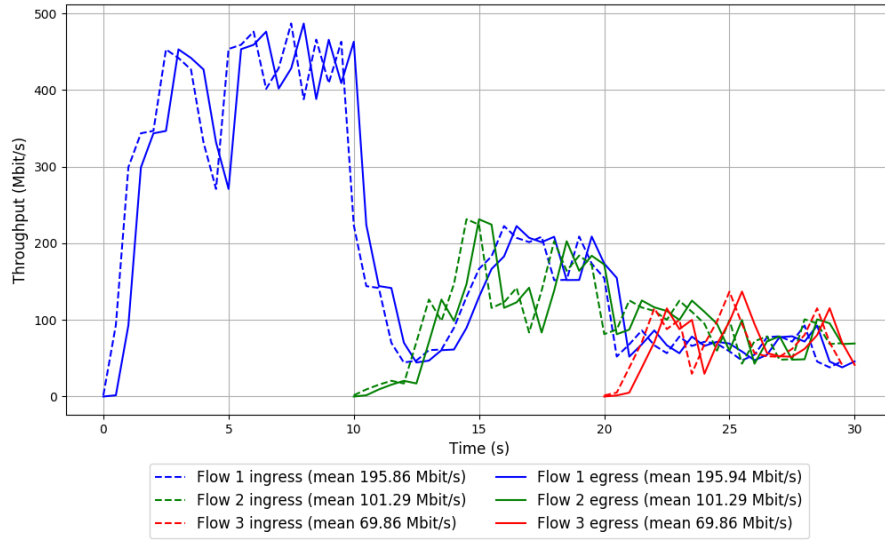
Run 5: Report of PCC-Vivace — Data Link

```
Run 1: Statistics of WebRTC media

Start at: 2019-03-27 12:26:23
End at: 2019-03-27 12:26:53
Local clock offset: 6.12 ms
Remote clock offset: -3.246 ms


# Below is generated by plot.py at 2019-03-27 15:38:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 1.055 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 1.052 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 1.040 ms
Loss rate: 0.06%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 1.095 ms
Loss rate: 0.00%
```
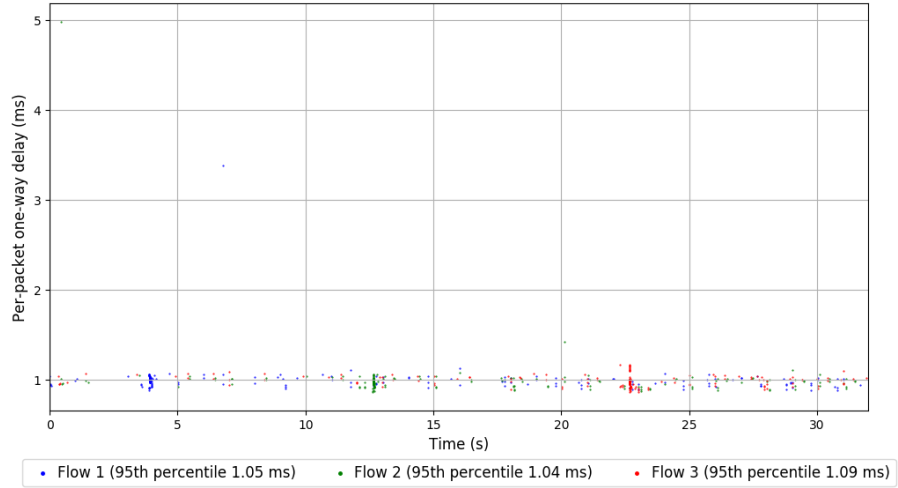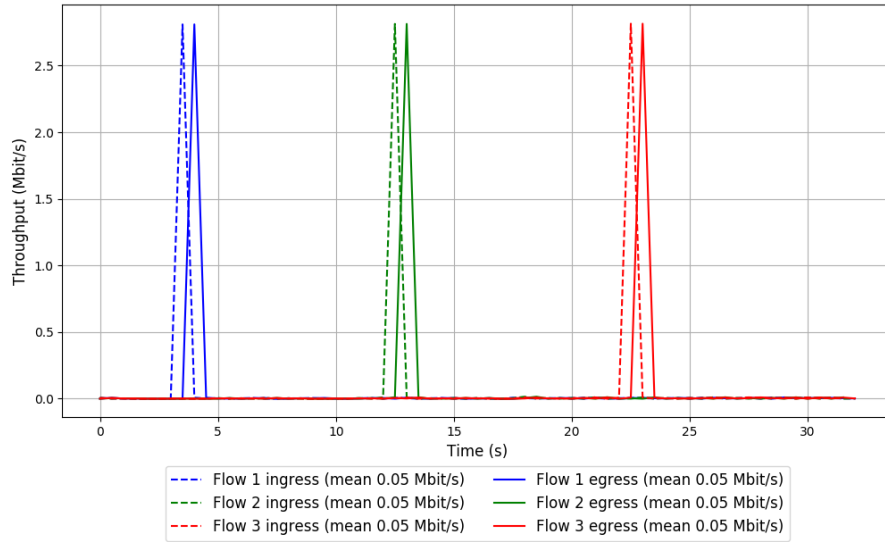
Run 1: Report of WebRTC media — Data Link

```
Run 2: Statistics of WebRTC media

Start at: 2019-03-27 12:56:42
End at: 2019-03-27 12:57:12
Local clock offset: 5.315 ms
Remote clock offset: -3.257 ms


# Below is generated by plot.py at 2019-03-27 15:38:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 1.157 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 1.158 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 1.162 ms
Loss rate: 0.05%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 1.134 ms
Loss rate: 0.00%
```
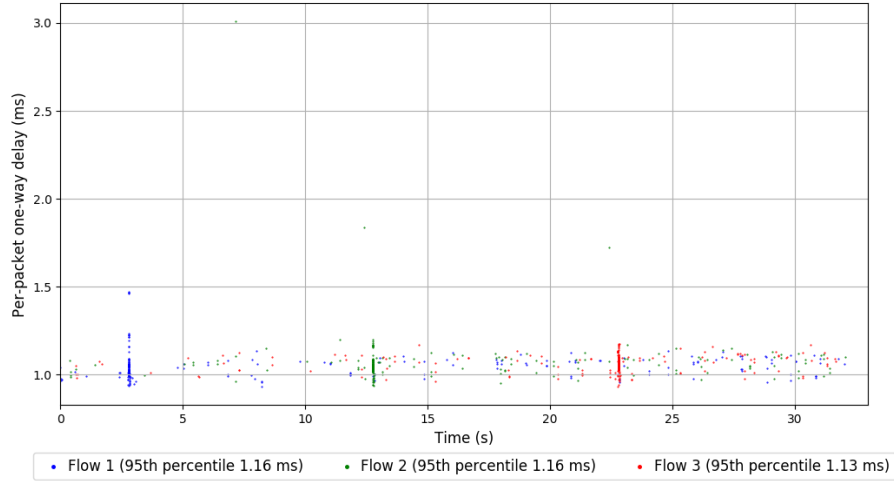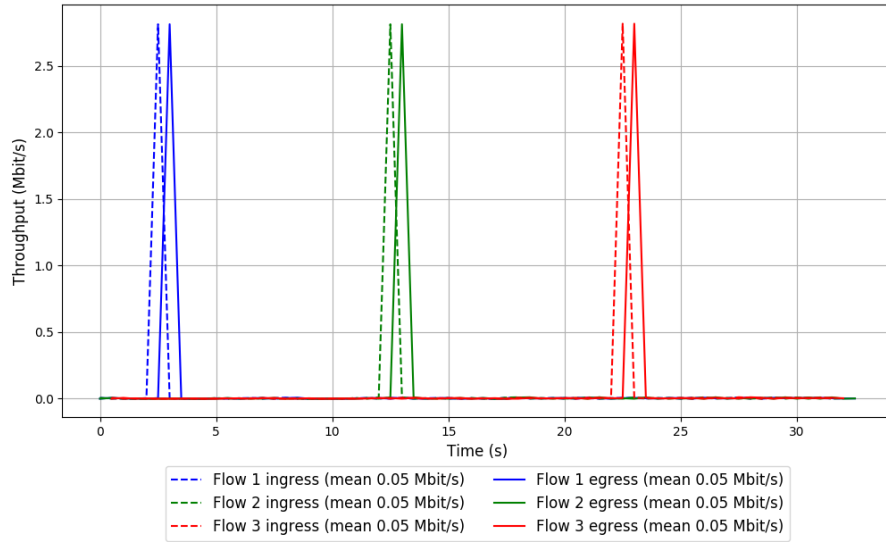
Run 2: Report of WebRTC media — Data Link

```
Run 3: Statistics of WebRTC media

Start at: 2019-03-27 13:27:12
End at: 2019-03-27 13:27:42
Local clock offset: 5.177 ms
Remote clock offset: 2.068 ms


# Below is generated by plot.py at 2019-03-27 15:38:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 1.244 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 1.261 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 1.233 ms
Loss rate: 0.05%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 1.247 ms
Loss rate: 0.00%
```
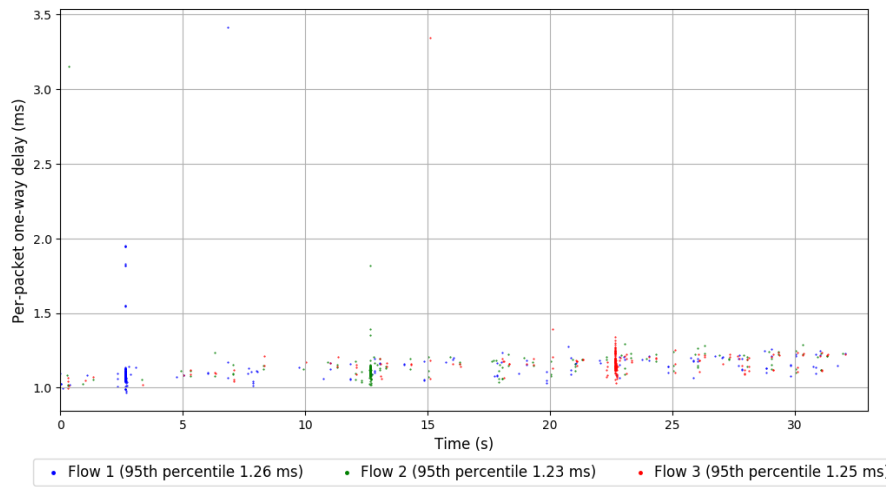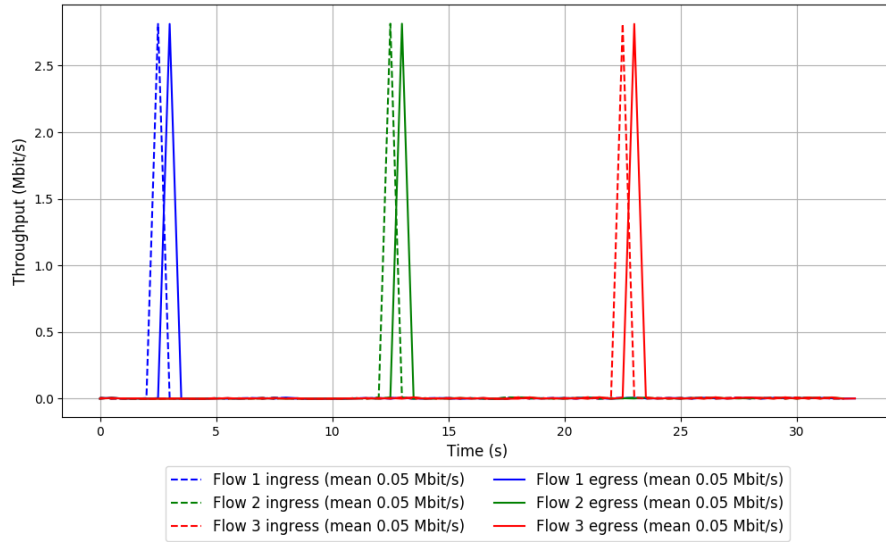
Run 3: Report of WebRTC media — Data Link

```
Run 4: Statistics of WebRTC media

Start at: 2019-03-27 13:57:22
End at: 2019-03-27 13:57:52
Local clock offset: 4.882 ms
Remote clock offset: 0.081 ms


# Below is generated by plot.py at 2019-03-27 15:38:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 0.914 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 0.896 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 1.042 ms
Loss rate: 0.05%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 0.912 ms
Loss rate: 0.05%
```
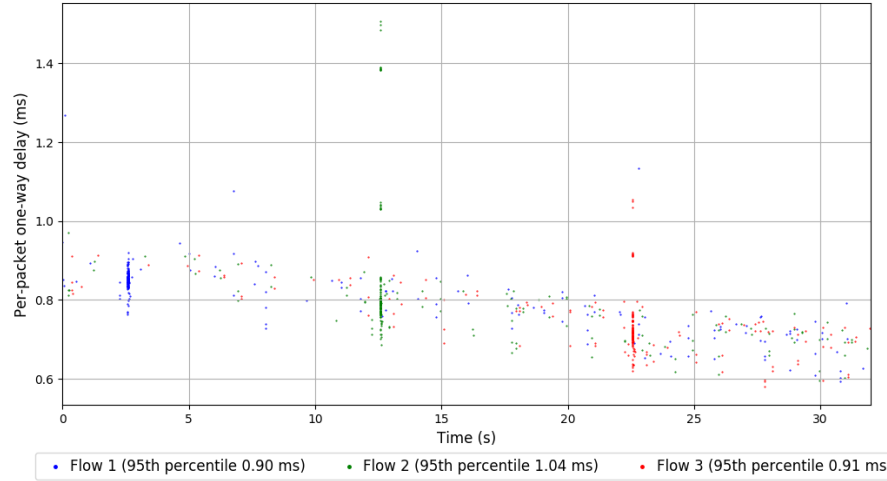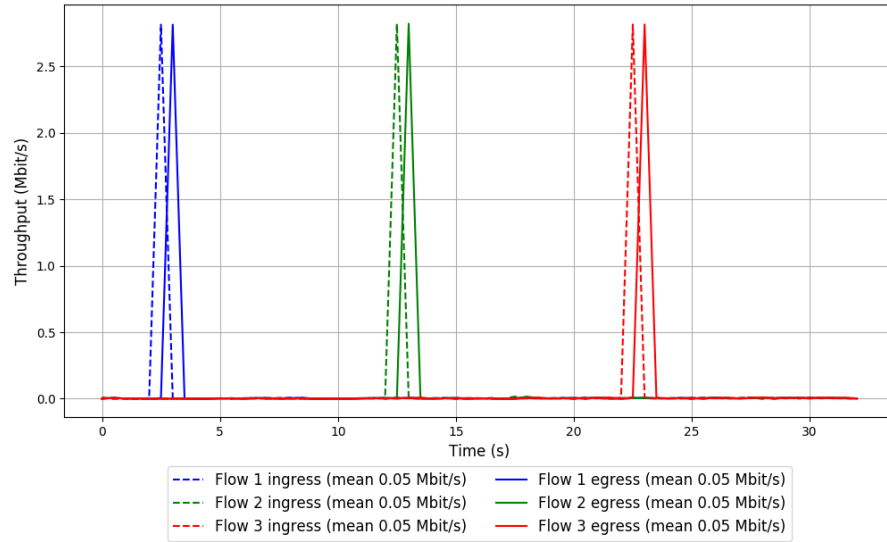
Run 4: Report of WebRTC media — Data Link

```
Run 5: Statistics of WebRTC media

Start at: 2019-03-27 14:27:55
End at: 2019-03-27 14:28:25
Local clock offset: 5.13 ms
Remote clock offset: -2.763 ms


# Below is generated by plot.py at 2019-03-27 15:38:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 1.216 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 1.201 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 1.210 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 1.226 ms
Loss rate: 0.00%
```

Run 5: Report of WebRTC media — Data Link