Pantheon Report

Generated at 2019-01-22 04:44:54 (UTC).

Data path: Brazil on `p4p1` (*remote*) →AWS Brazil 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 `gps.ntp.br` and have been applied to correct the timestamps in logs.
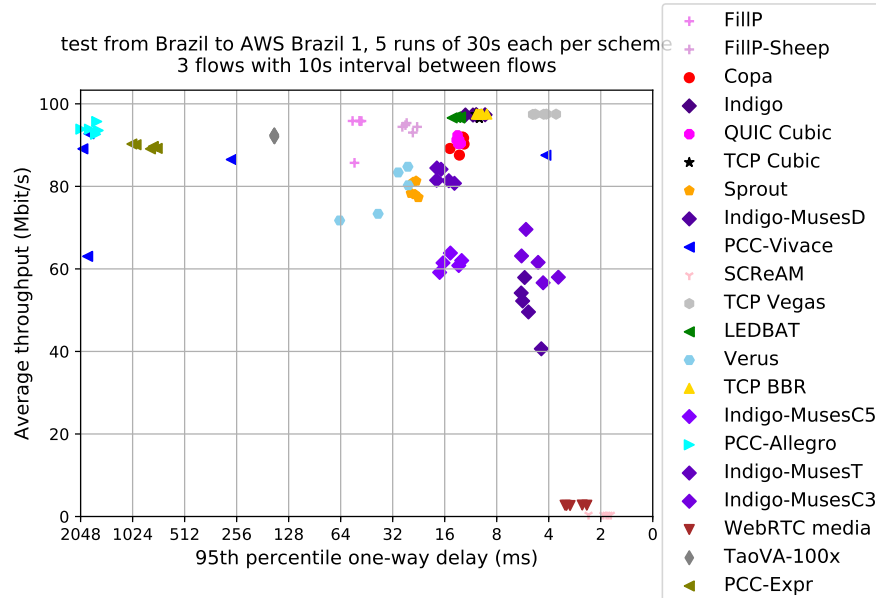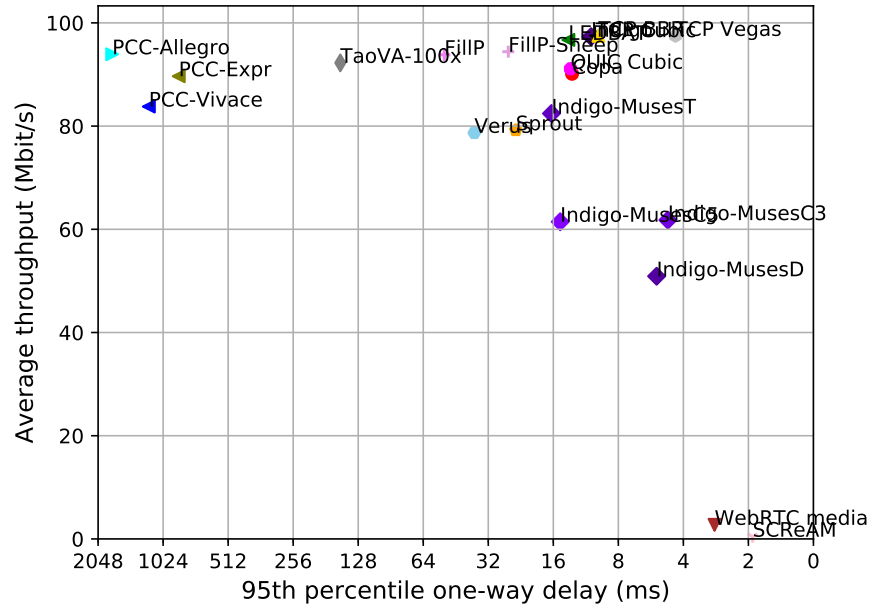
```
System info:
Linux 4.15.0-1031-aws
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912

Git summary:
branch: muses @ 89d24e57783e7fbfec537a619071de937b639e38
third_party/fillp @ d6da1459332fcee56963885d7eba17e6a32d4519
third_party/fillp-sheep @ 0e5bb722943babcd2b090d2c64fcd45e12e923f9
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdfe58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/muses @ 1ddcff131048c6962f123bcd22b4d166a422adde
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 Brazil to AWS Brazil 1, 5 runs of 30s each per scheme
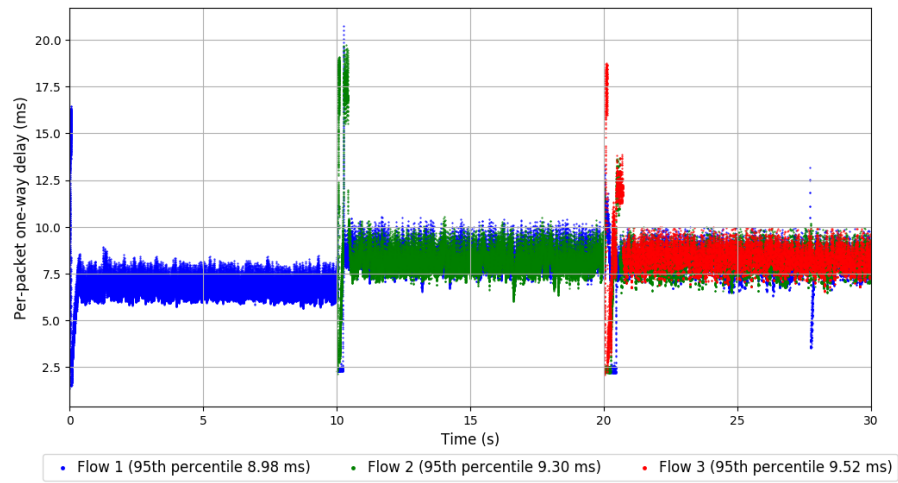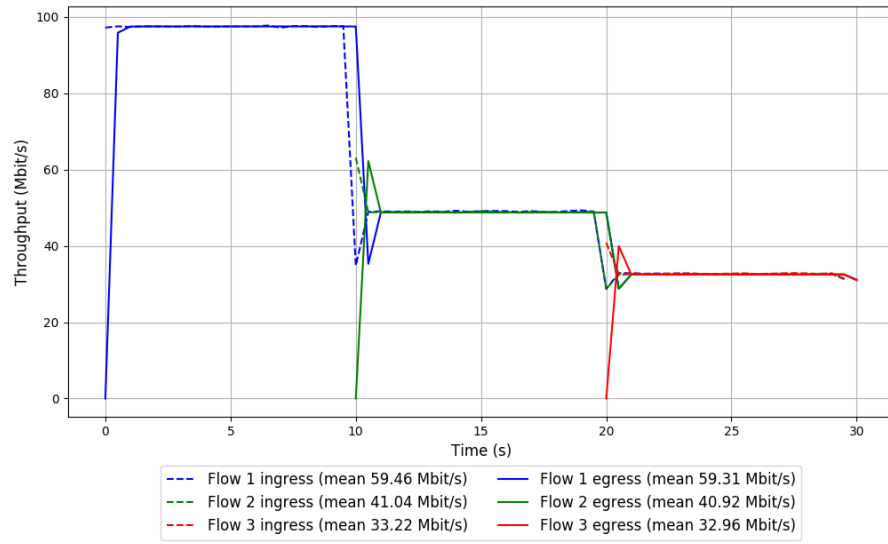3 flows with 10s interval between flows (mean of all runs by scheme)

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

scheme	# runs	mean avg tput (Mbit/s)			mean 95th-%ile delay (ms)			mean loss rate (%)		
		flow 1	flow 2	flow 3	flow 1	flow 2	flow 3	flow 1	flow 2	flow 3
TCP BBR	5	59.28	40.98	32.91	9.54	9.99	10.31	0.24	0.46	0.87
Copa	5	53.57	39.28	31.31	12.47	13.15	14.54	0.04	0.08	0.16
TCP Cubic	5	59.50	40.48	32.47	10.27	10.08	10.22	0.08	0.15	0.23
FillP	5	54.34	43.65	31.36	30.08	54.85	49.48	0.13	2.48	2.59
FillP-Sheep	5	55.47	41.94	33.29	20.01	27.88	28.67	0.02	0.07	0.18
Indigo	5	59.68	40.63	32.33	9.78	11.09	8.59	0.03	0.67	0.10
Indigo-MusesC3	5	43.48	22.56	15.80	4.40	5.10	5.30	0.01	0.04	0.13
Indigo-MusesC5	5	34.93	28.48	31.86	13.26	13.98	17.81	0.03	0.07	0.15
Indigo-MusesD	5	34.83	21.01	10.60	5.38	5.25	4.10	0.01	0.02	0.04
Indigo-MusesT	5	52.34	36.42	27.13	14.08	17.98	18.54	0.04	0.07	0.24
LEDBAT	5	59.06	40.43	32.28	13.44	13.94	13.00	0.13	0.23	0.36
PCC-Allegro	5	65.73	28.40	28.29	1973.41	518.02	42.05	12.35	5.76	0.38
PCC-Expr	5	55.02	37.39	29.65	924.62	518.69	312.25	9.23	3.73	3.74
QUIC Cubic	5	54.19	40.05	31.04	13.07	13.18	14.04	0.16	0.32	0.49
SCReAM	5	0.22	0.22	0.22	1.87	1.87	1.86	0.00	0.00	0.00
Sprout	5	42.99	38.44	32.18	22.61	23.99	25.02	0.11	0.16	0.23
TaoVA-100x	5	55.45	39.40	31.80	153.67	154.76	156.13	0.55	1.11	2.66
TCP Vegas	5	53.33	47.24	38.20	3.48	4.18	4.71	0.01	0.02	0.06
Verus	5	43.68	37.24	30.79	30.26	33.07	154.05	0.03	0.10	0.21
PCC-Vivace	5	49.67	37.75	27.31	374.42	920.15	37.55	1.88	4.70	0.13
WebRTC media	5	1.54	0.79	0.41	2.77	2.90	3.14	0.00	0.00	0.00

```
Run 1: Statistics of TCP BBR

Start at: 2019-01-22 02:47:55
End at: 2019-01-22 02:48:25
Local clock offset: -8.053 ms
Remote clock offset: -0.102 ms


# Below is generated by plot.py at 2019-01-22 04:31:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 97.51 Mbit/s
95th percentile per-packet one-way delay: 9.123 ms
Loss rate: 0.35%
-- Flow 1:
Average throughput: 59.31 Mbit/s
95th percentile per-packet one-way delay: 8.976 ms
Loss rate: 0.27%
-- Flow 2:
Average throughput: 40.92 Mbit/s
95th percentile per-packet one-way delay: 9.303 ms
Loss rate: 0.33%
-- Flow 3:
Average throughput: 32.96 Mbit/s
95th percentile per-packet one-way delay: 9.523 ms
Loss rate: 0.82%
```
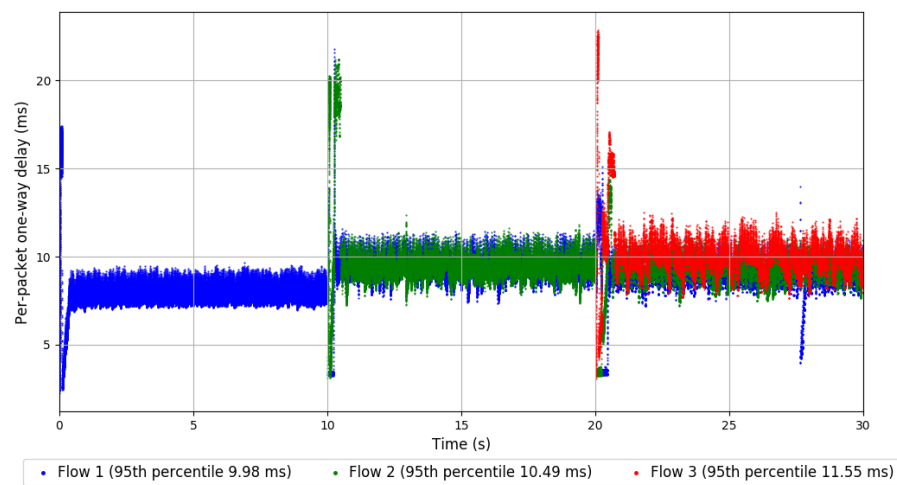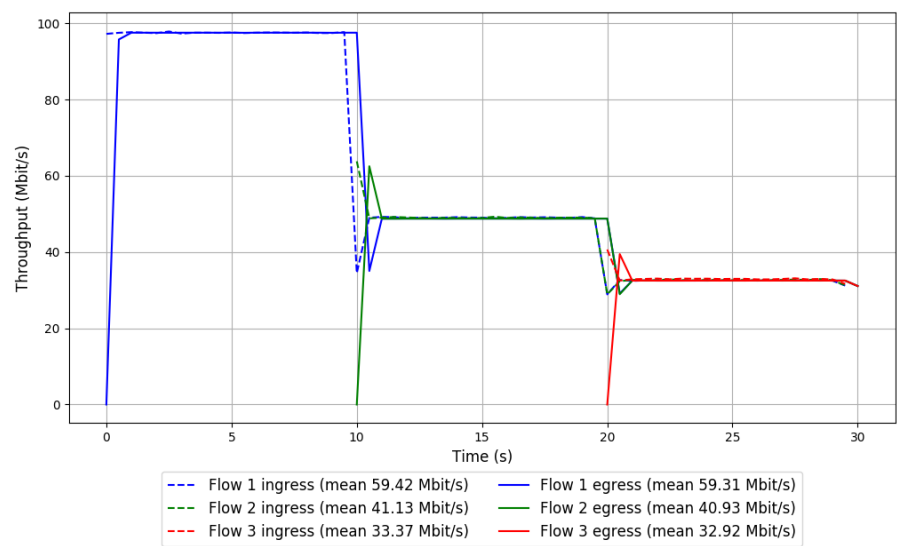
Run 1: Report of TCP BBR — Data Link

```
Run 2: Statistics of TCP BBR

Start at: 2019-01-22 03:12:04
End at: 2019-01-22 03:12:34
Local clock offset: -3.194 ms
Remote clock offset: 0.464 ms


# Below is generated by plot.py at 2019-01-22 04:31:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 97.50 Mbit/s
95th percentile per-packet one-way delay: 10.484 ms
Loss rate: 0.42%
-- Flow 1:
Average throughput: 59.31 Mbit/s
95th percentile per-packet one-way delay: 9.977 ms
Loss rate: 0.21%
-- Flow 2:
Average throughput: 40.93 Mbit/s
95th percentile per-packet one-way delay: 10.491 ms
Loss rate: 0.50%
-- Flow 3:
Average throughput: 32.92 Mbit/s
95th percentile per-packet one-way delay: 11.555 ms
Loss rate: 1.38%
```
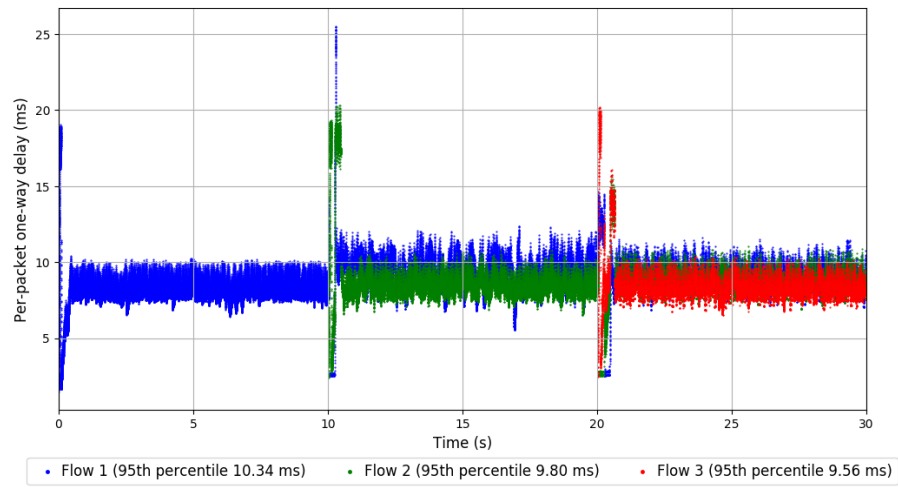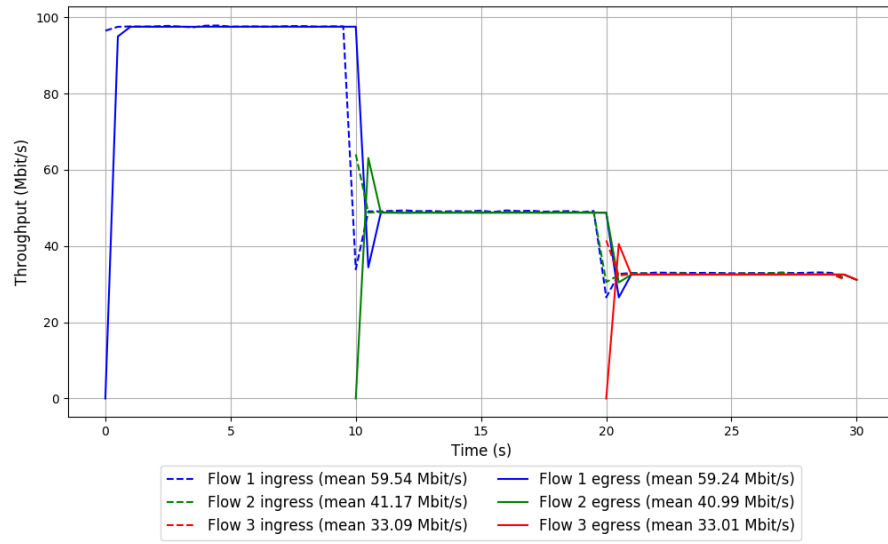
Run 2: Report of TCP BBR — Data Link

Flow 1 ingress (mean 59.42 Mbit/s) --- Flow 1 egress (mean 59.31 Mbit/s)
Flow 2 ingress (mean 41.13 Mbit/s) --- Flow 2 egress (mean 40.93 Mbit/s)
Flow 3 ingress (mean 33.37 Mbit/s) --- Flow 3 egress (mean 32.92 Mbit/s)

Flow 1 (95th percentile 9.98 ms)   Flow 2 (95th percentile 10.49 ms)   Flow 3 (95th percentile 11.55 ms)

8

```
Run 3: Statistics of TCP BBR

Start at: 2019-01-22 03:36:16
End at: 2019-01-22 03:36:46
Local clock offset: -7.42 ms
Remote clock offset: 0.664 ms


# Below is generated by plot.py at 2019-01-22 04:31:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 97.49 Mbit/s
95th percentile per-packet one-way delay: 10.230 ms
Loss rate: 0.47%
-- Flow 1:
Average throughput: 59.24 Mbit/s
95th percentile per-packet one-way delay: 10.344 ms
Loss rate: 0.51%
-- Flow 2:
Average throughput: 40.99 Mbit/s
95th percentile per-packet one-way delay: 9.802 ms
Loss rate: 0.45%
-- Flow 3:
Average throughput: 33.01 Mbit/s
95th percentile per-packet one-way delay: 9.560 ms
Loss rate: 0.27%
```
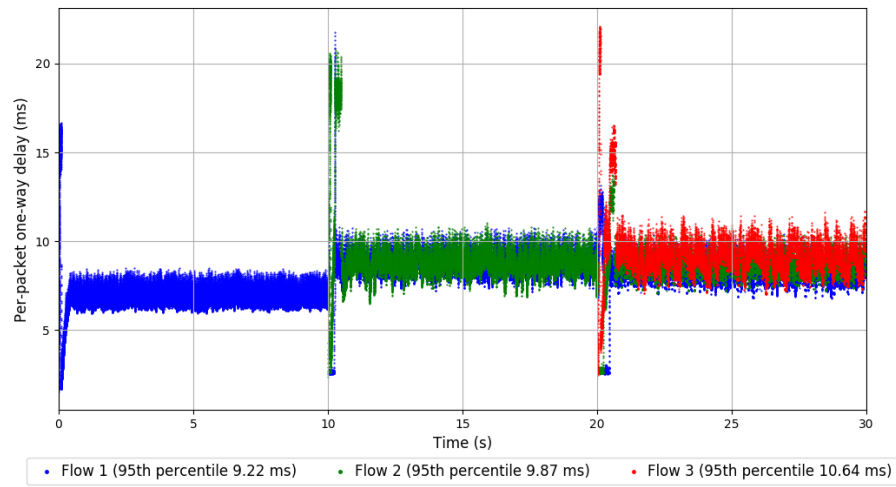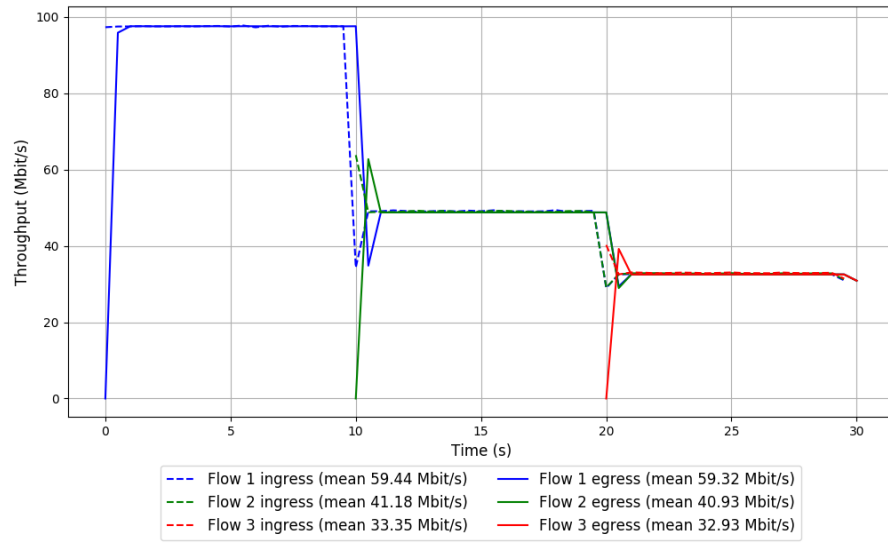
Run 3: Report of TCP BBR — Data Link

Flow 1 ingress (mean 59.54 Mbit/s) --- Flow 1 egress (mean 59.24 Mbit/s)
Flow 2 ingress (mean 41.17 Mbit/s) --- Flow 2 egress (mean 40.99 Mbit/s)
Flow 3 ingress (mean 33.09 Mbit/s) --- Flow 3 egress (mean 33.01 Mbit/s)

Flow 1 (95th percentile 10.34 ms)   Flow 2 (95th percentile 9.80 ms)   Flow 3 (95th percentile 9.56 ms)

10

```
Run 4: Statistics of TCP BBR

Start at: 2019-01-22 04:00:26
End at: 2019-01-22 04:00:56
Local clock offset: -8.235 ms
Remote clock offset: 0.711 ms


# Below is generated by plot.py at 2019-01-22 04:31:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 97.51 Mbit/s
95th percentile per-packet one-way delay: 9.720 ms
Loss rate: 0.45%
-- Flow 1:
Average throughput: 59.32 Mbit/s
95th percentile per-packet one-way delay: 9.216 ms
Loss rate: 0.22%
-- Flow 2:
Average throughput: 40.93 Mbit/s
95th percentile per-packet one-way delay: 9.873 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 32.93 Mbit/s
95th percentile per-packet one-way delay: 10.641 ms
Loss rate: 1.30%
```
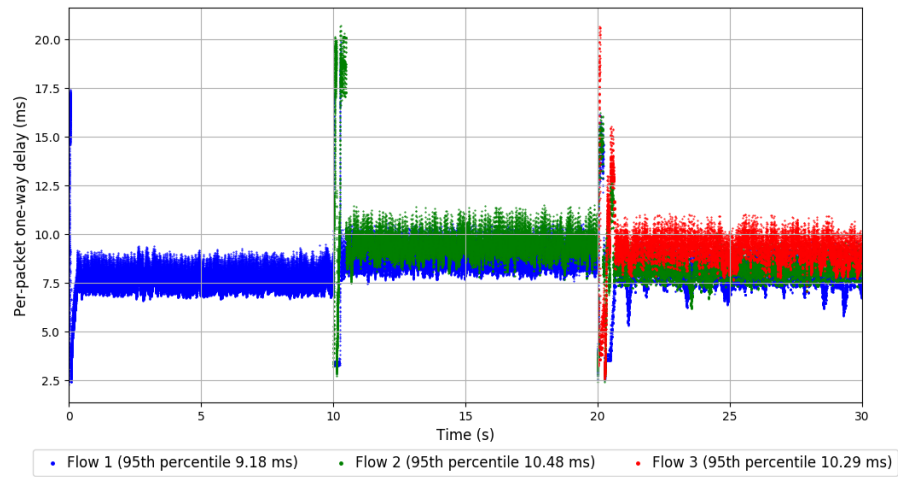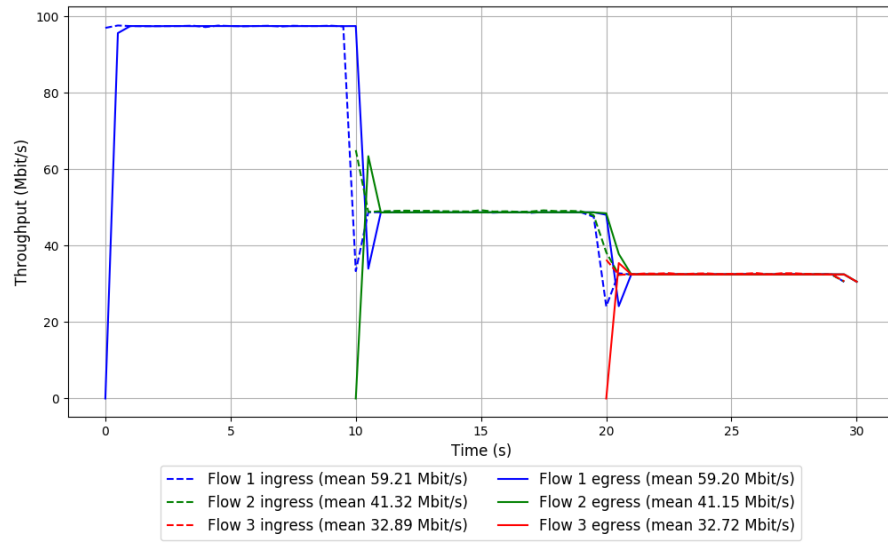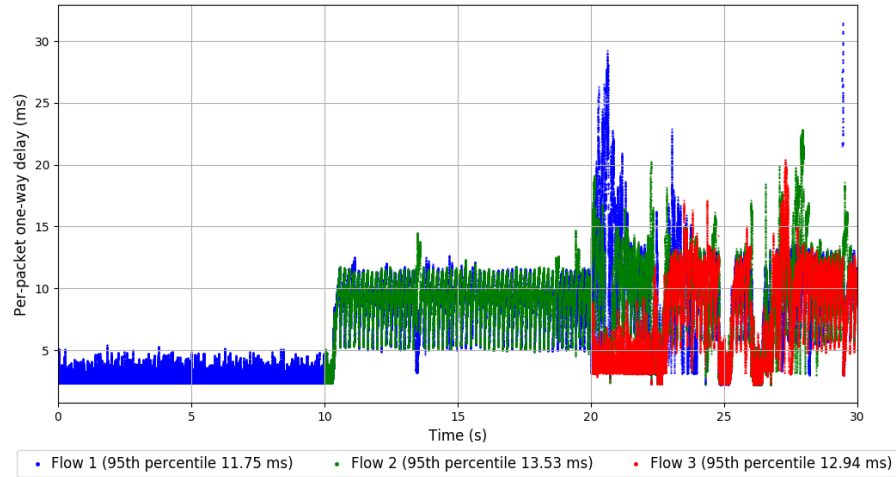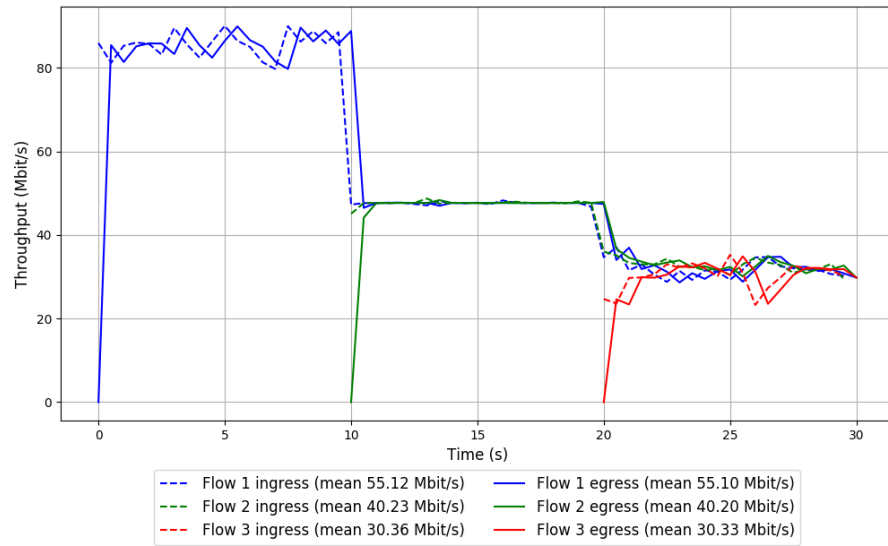
Run 4: Report of TCP BBR — Data Link

Flow 1 ingress (mean 59.44 Mbit/s) --- Flow 1 egress (mean 59.32 Mbit/s)
Flow 2 ingress (mean 41.18 Mbit/s) --- Flow 2 egress (mean 40.93 Mbit/s)
Flow 3 ingress (mean 33.35 Mbit/s) --- Flow 3 egress (mean 32.93 Mbit/s)

• Flow 1 (95th percentile 9.22 ms)   • Flow 2 (95th percentile 9.87 ms)   • Flow 3 (95th percentile 10.64 ms)

```
Run 5: Statistics of TCP BBR

Start at: 2019-01-22 04:24:36
End at: 2019-01-22 04:25:06
Local clock offset: -6.75 ms
Remote clock offset: 0.694 ms


# Below is generated by plot.py at 2019-01-22 04:31:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 97.48 Mbit/s
95th percentile per-packet one-way delay: 9.945 ms
Loss rate: 0.19%
-- Flow 1:
Average throughput: 59.20 Mbit/s
95th percentile per-packet one-way delay: 9.178 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 41.15 Mbit/s
95th percentile per-packet one-way delay: 10.478 ms
Loss rate: 0.43%
-- Flow 3:
Average throughput: 32.72 Mbit/s
95th percentile per-packet one-way delay: 10.291 ms
Loss rate: 0.56%
```
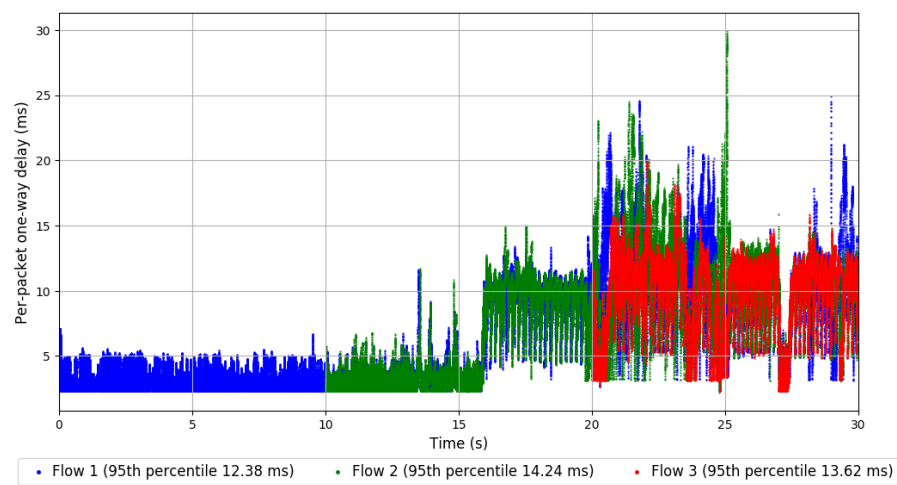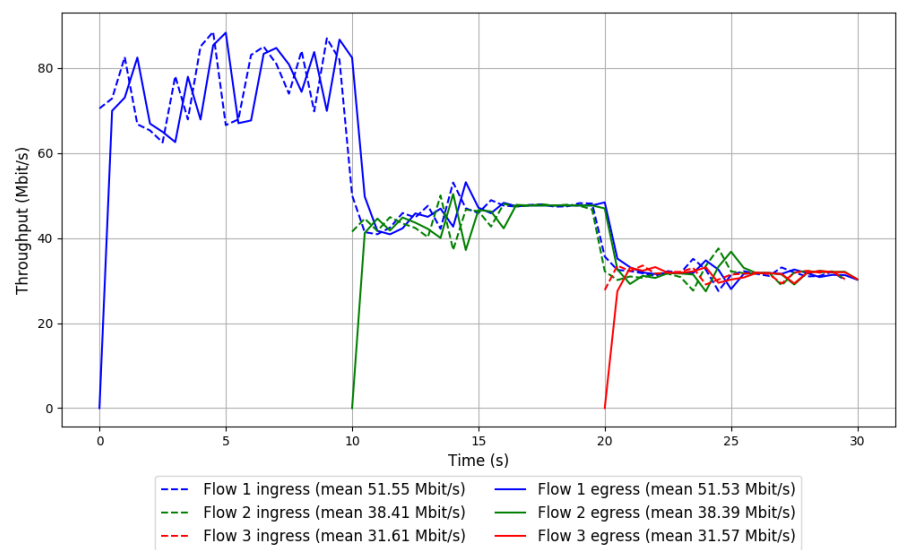
Run 5: Report of TCP BBR — Data Link

Flow 1 ingress (mean 59.21 Mbit/s) --- Flow 1 egress (mean 59.20 Mbit/s)
Flow 2 ingress (mean 41.32 Mbit/s) --- Flow 2 egress (mean 41.15 Mbit/s)
Flow 3 ingress (mean 32.89 Mbit/s) --- Flow 3 egress (mean 32.72 Mbit/s)

Flow 1 (95th percentile 9.18 ms) • Flow 2 (95th percentile 10.48 ms) • Flow 3 (95th percentile 10.29 ms)

```
Run 1: Statistics of Copa

Start at: 2019-01-22 02:45:30
End at: 2019-01-22 02:46:00
Local clock offset: -8.429 ms
Remote clock offset: -0.115 ms


# Below is generated by plot.py at 2019-01-22 04:32:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.95 Mbit/s
95th percentile per-packet one-way delay: 12.610 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 55.10 Mbit/s
95th percentile per-packet one-way delay: 11.752 ms
Loss rate: 0.05%
-- Flow 2:
Average throughput: 40.20 Mbit/s
95th percentile per-packet one-way delay: 13.529 ms
Loss rate: 0.09%
-- Flow 3:
Average throughput: 30.33 Mbit/s
95th percentile per-packet one-way delay: 12.936 ms
Loss rate: 0.14%
```
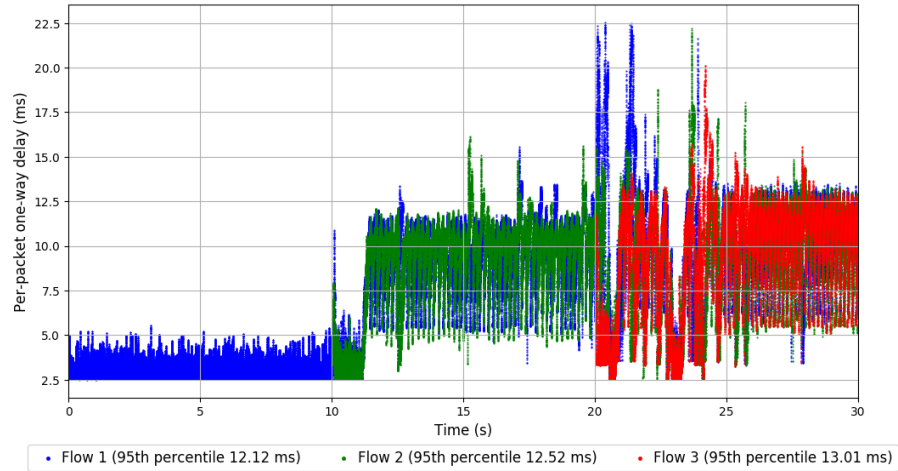
Run 1: Report of Copa — Data Link

```
Run 2: Statistics of Copa

Start at: 2019-01-22 03:09:40
End at: 2019-01-22 03:10:10
Local clock offset: -3.204 ms
Remote clock offset: 0.48 ms


# Below is generated by plot.py at 2019-01-22 04:32:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 87.58 Mbit/s
95th percentile per-packet one-way delay: 13.152 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 51.53 Mbit/s
95th percentile per-packet one-way delay: 12.382 ms
Loss rate: 0.05%
-- Flow 2:
Average throughput: 38.39 Mbit/s
95th percentile per-packet one-way delay: 14.243 ms
Loss rate: 0.06%
-- Flow 3:
Average throughput: 31.57 Mbit/s
95th percentile per-packet one-way delay: 13.615 ms
Loss rate: 0.18%
```
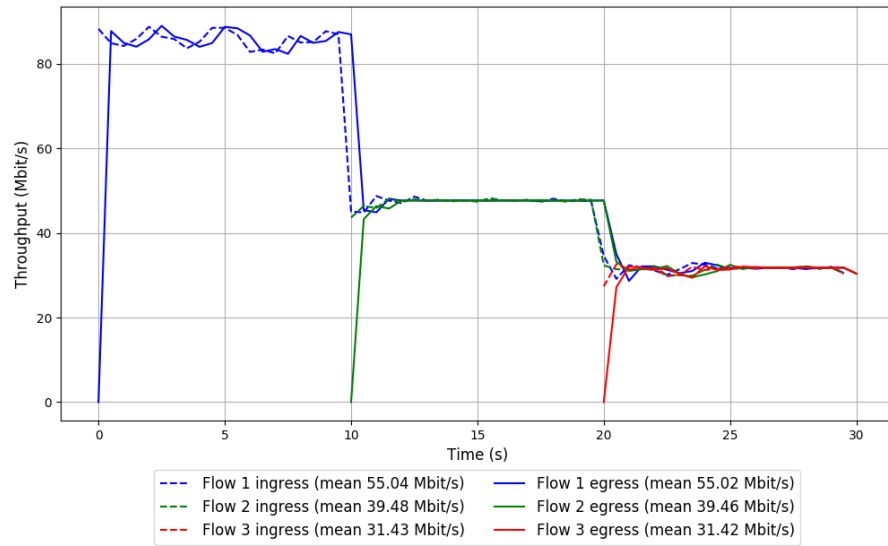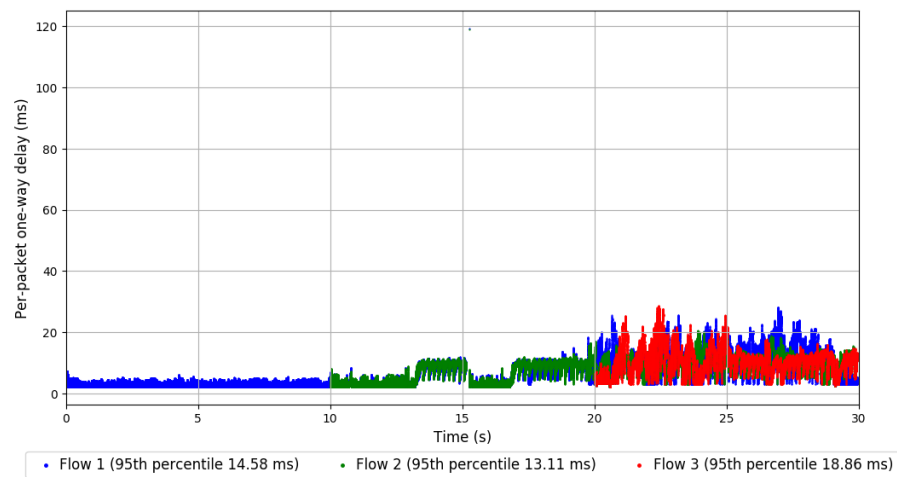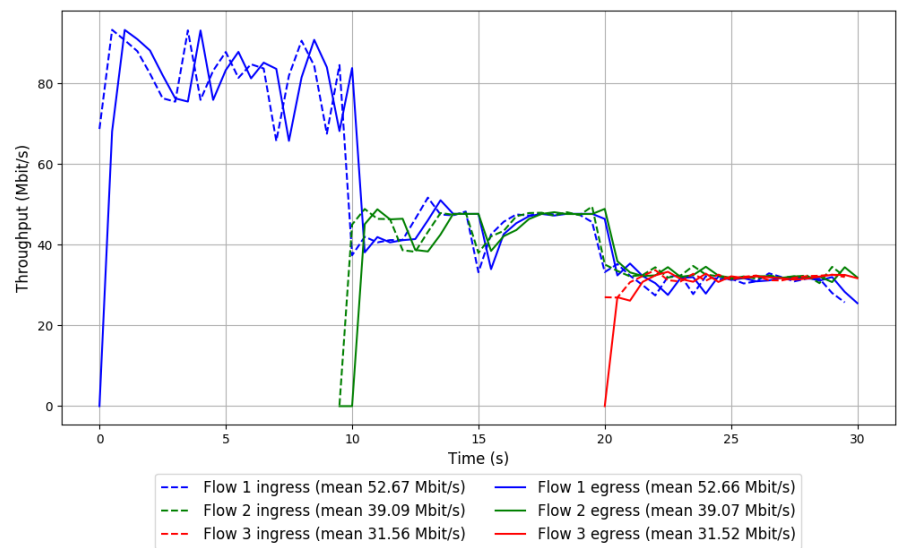
Run 2: Report of Copa — Data Link

- - - Flow 1 ingress (mean 51.55 Mbit/s) —— Flow 1 egress (mean 51.53 Mbit/s)
- - - Flow 2 ingress (mean 38.41 Mbit/s) —— Flow 2 egress (mean 38.39 Mbit/s)
- - - Flow 3 ingress (mean 31.61 Mbit/s) —— Flow 3 egress (mean 31.57 Mbit/s)

• Flow 1 (95th percentile 12.38 ms)   • Flow 2 (95th percentile 14.24 ms)   • Flow 3 (95th percentile 13.62 ms)

18

```
Run 3: Statistics of Copa

Start at: 2019-01-22 03:33:51
End at: 2019-01-22 03:34:21
Local clock offset: -6.428 ms
Remote clock offset: 0.557 ms


# Below is generated by plot.py at 2019-01-22 04:32:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.73 Mbit/s
95th percentile per-packet one-way delay: 12.444 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 55.02 Mbit/s
95th percentile per-packet one-way delay: 12.123 ms
Loss rate: 0.05%
-- Flow 2:
Average throughput: 39.46 Mbit/s
95th percentile per-packet one-way delay: 12.518 ms
Loss rate: 0.07%
-- Flow 3:
Average throughput: 31.42 Mbit/s
95th percentile per-packet one-way delay: 13.006 ms
Loss rate: 0.14%
```
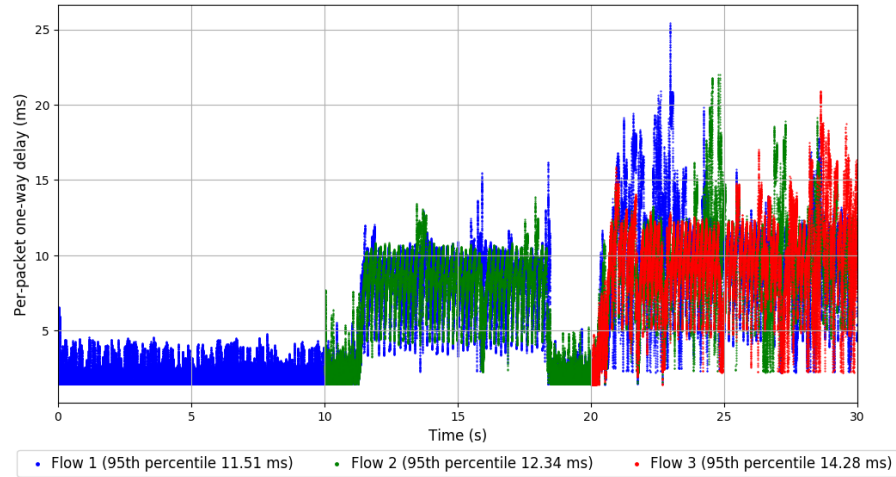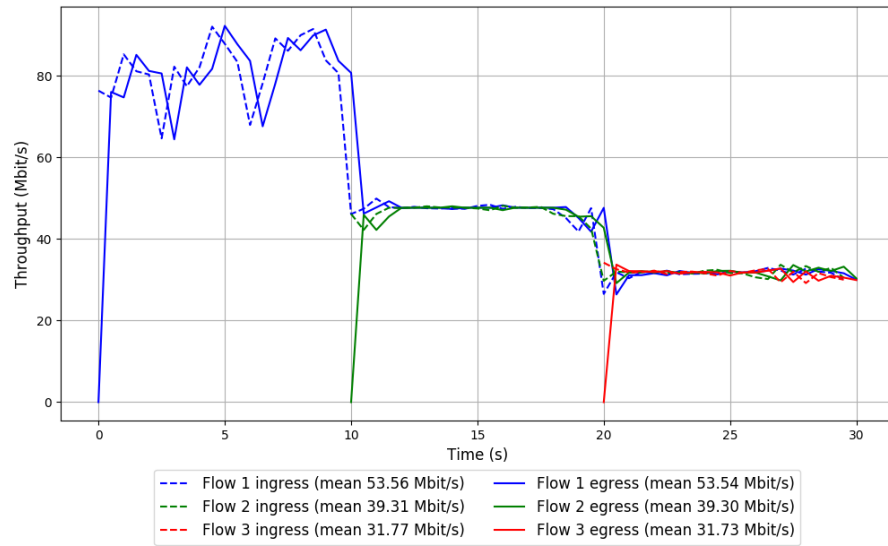
Run 3: Report of Copa — Data Link

- - - - Flow 1 ingress (mean 55.04 Mbit/s) ——— Flow 1 egress (mean 55.02 Mbit/s)
- - - - Flow 2 ingress (mean 39.48 Mbit/s) ——— Flow 2 egress (mean 39.46 Mbit/s)
- - - - Flow 3 ingress (mean 31.43 Mbit/s) ——— Flow 3 egress (mean 31.42 Mbit/s)

- Flow 1 (95th percentile 12.12 ms)   - Flow 2 (95th percentile 12.52 ms)   - Flow 3 (95th percentile 13.01 ms)

```
Run 4: Statistics of Copa

Start at: 2019-01-22 03:58:01
End at: 2019-01-22 03:58:31
Local clock offset: -7.427 ms
Remote clock offset: 0.769 ms


# Below is generated by plot.py at 2019-01-22 04:33:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 89.18 Mbit/s
95th percentile per-packet one-way delay: 14.928 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 52.66 Mbit/s
95th percentile per-packet one-way delay: 14.584 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 39.07 Mbit/s
95th percentile per-packet one-way delay: 13.113 ms
Loss rate: 0.09%
-- Flow 3:
Average throughput: 31.52 Mbit/s
95th percentile per-packet one-way delay: 18.859 ms
Loss rate: 0.17%
```
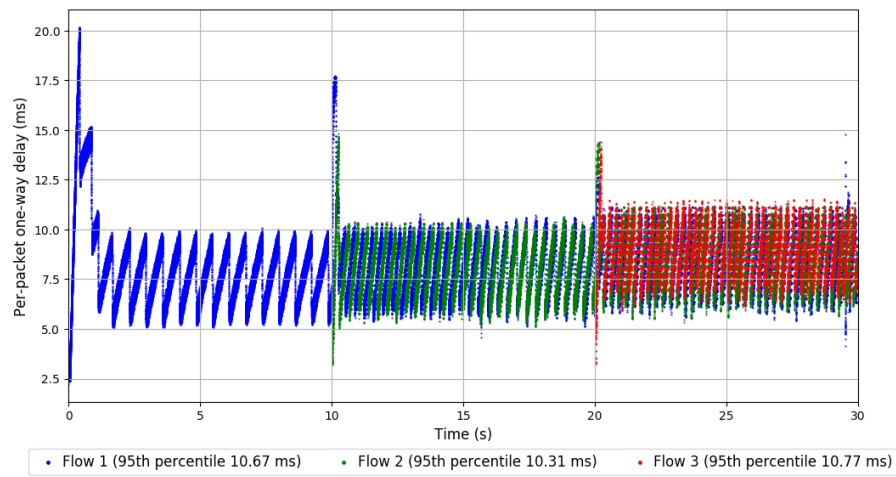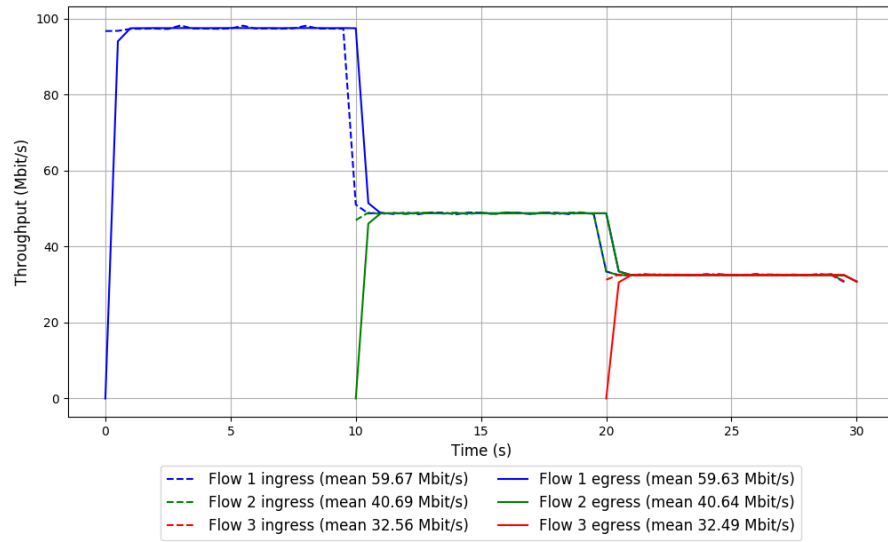
Run 4: Report of Copa — Data Link

```
Run 5: Statistics of Copa

Start at: 2019-01-22 04:22:11
End at: 2019-01-22 04:22:41
Local clock offset: -7.798 ms
Remote clock offset: 0.819 ms


# Below is generated by plot.py at 2019-01-22 04:33:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 90.26 Mbit/s
95th percentile per-packet one-way delay: 12.363 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 53.54 Mbit/s
95th percentile per-packet one-way delay: 11.511 ms
Loss rate: 0.04%
-- Flow 2:
Average throughput: 39.30 Mbit/s
95th percentile per-packet one-way delay: 12.338 ms
Loss rate: 0.07%
-- Flow 3:
Average throughput: 31.73 Mbit/s
95th percentile per-packet one-way delay: 14.279 ms
Loss rate: 0.16%
```

Run 5: Report of Copa — Data Link

```
Run 1: Statistics of TCP Cubic

Start at: 2019-01-22 02:43:12
End at: 2019-01-22 02:43:42
Local clock offset: -8.069 ms
Remote clock offset: -0.128 ms

# Below is generated by plot.py at 2019-01-22 04:33:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 97.48 Mbit/s
95th percentile per-packet one-way delay: 10.605 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 59.63 Mbit/s
95th percentile per-packet one-way delay: 10.670 ms
Loss rate: 0.07%
-- Flow 2:
Average throughput: 40.64 Mbit/s
95th percentile per-packet one-way delay: 10.312 ms
Loss rate: 0.13%
-- Flow 3:
Average throughput: 32.49 Mbit/s
95th percentile per-packet one-way delay: 10.766 ms
Loss rate: 0.25%
```
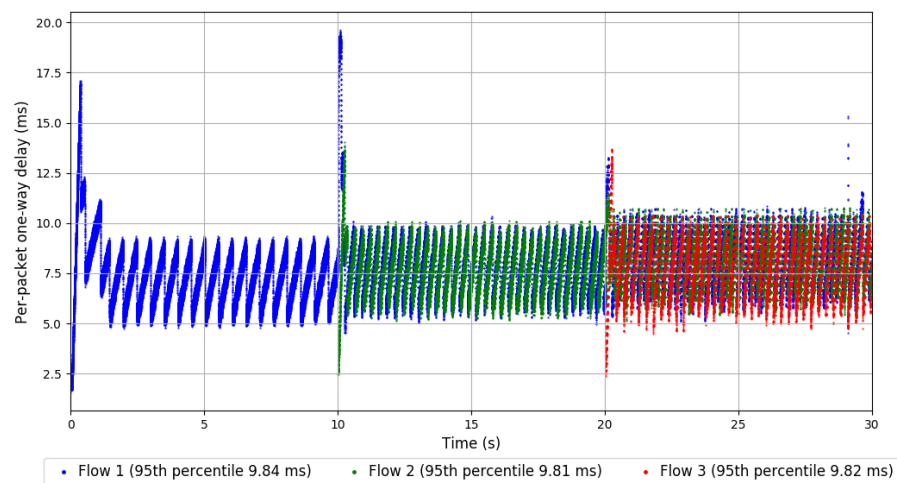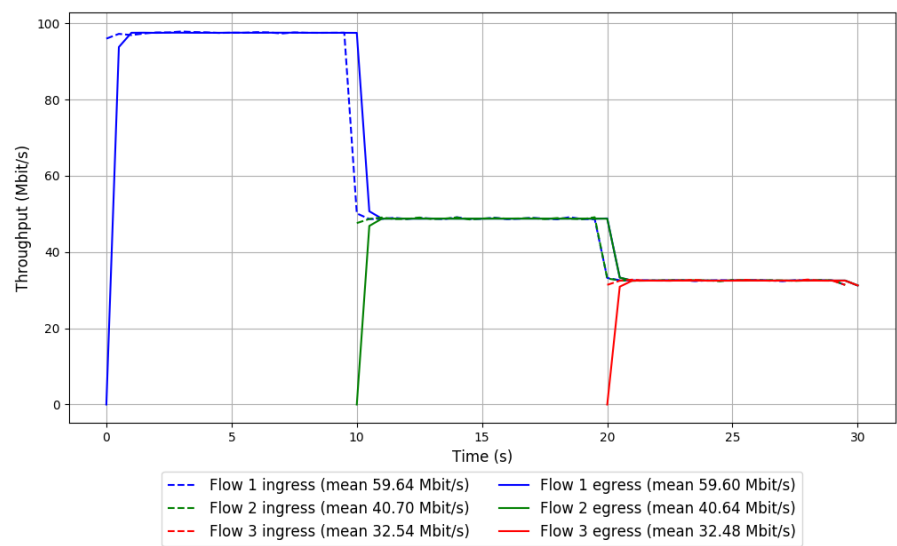
Run 1: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 59.67 Mbit/s) -- Flow 1 egress (mean 59.63 Mbit/s)
Flow 2 ingress (mean 40.69 Mbit/s) -- Flow 2 egress (mean 40.64 Mbit/s)
Flow 3 ingress (mean 32.56 Mbit/s) -- Flow 3 egress (mean 32.49 Mbit/s)

Flow 1 (95th percentile 10.67 ms)   Flow 2 (95th percentile 10.31 ms)   Flow 3 (95th percentile 10.77 ms)

```
Run 2: Statistics of TCP Cubic

Start at: 2019-01-22 03:07:21
End at: 2019-01-22 03:07:51
Local clock offset: -4.085 ms
Remote clock offset: 0.285 ms


# Below is generated by plot.py at 2019-01-22 04:33:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 97.46 Mbit/s
95th percentile per-packet one-way delay: 9.824 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 59.60 Mbit/s
95th percentile per-packet one-way delay: 9.841 ms
Loss rate: 0.08%
-- Flow 2:
Average throughput: 40.64 Mbit/s
95th percentile per-packet one-way delay: 9.808 ms
Loss rate: 0.15%
-- Flow 3:
Average throughput: 32.48 Mbit/s
95th percentile per-packet one-way delay: 9.821 ms
Loss rate: 0.22%
```
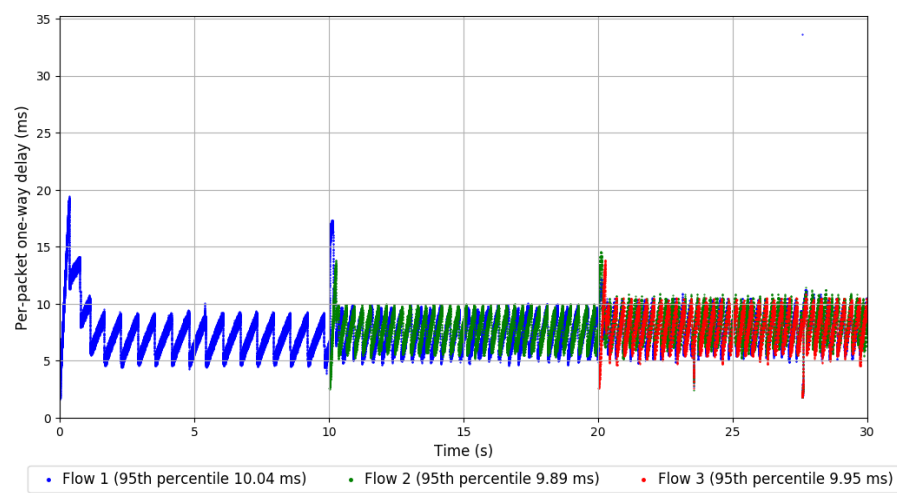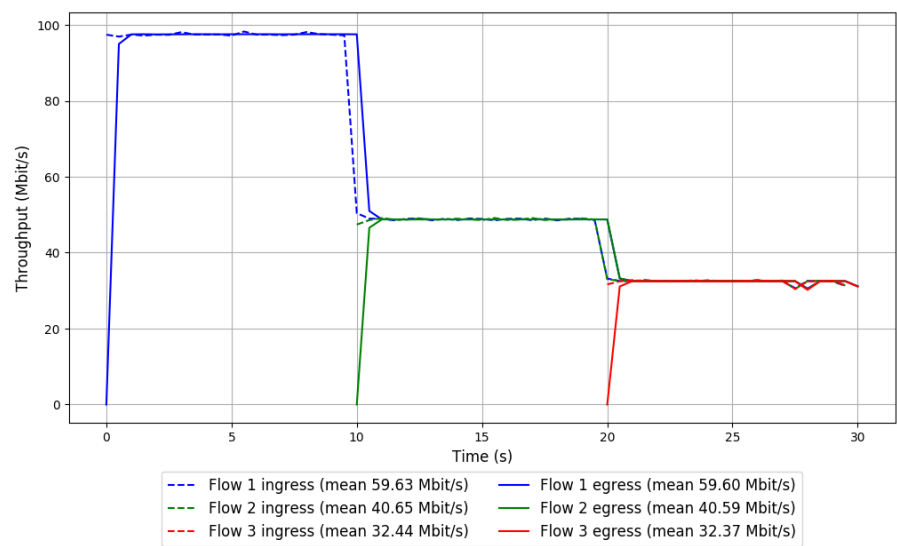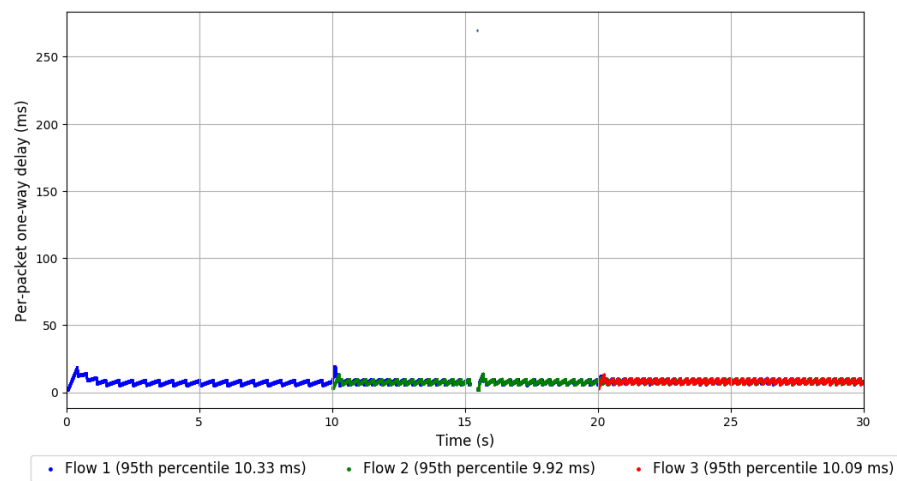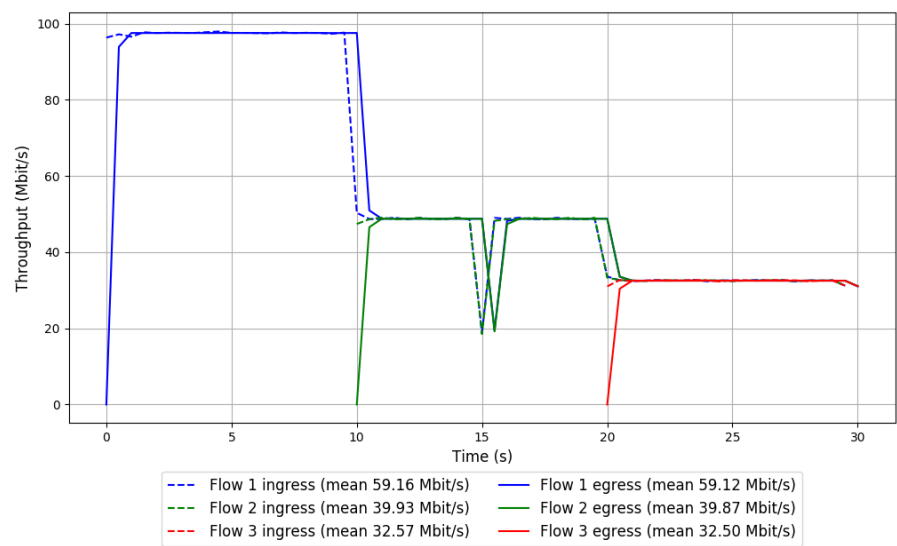
Run 2: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 59.64 Mbit/s) --- Flow 1 egress (mean 59.60 Mbit/s)
Flow 2 ingress (mean 40.70 Mbit/s) --- Flow 2 egress (mean 40.64 Mbit/s)
Flow 3 ingress (mean 32.54 Mbit/s) --- Flow 3 egress (mean 32.48 Mbit/s)

• Flow 1 (95th percentile 9.84 ms)   • Flow 2 (95th percentile 9.81 ms)   • Flow 3 (95th percentile 9.82 ms)

```
Run 3: Statistics of TCP Cubic

Start at: 2019-01-22 03:31:33
End at: 2019-01-22 03:32:03
Local clock offset: -6.938 ms
Remote clock offset: 0.591 ms


# Below is generated by plot.py at 2019-01-22 04:33:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 97.39 Mbit/s
95th percentile per-packet one-way delay: 9.951 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 59.60 Mbit/s
95th percentile per-packet one-way delay: 10.036 ms
Loss rate: 0.07%
-- Flow 2:
Average throughput: 40.59 Mbit/s
95th percentile per-packet one-way delay: 9.889 ms
Loss rate: 0.15%
-- Flow 3:
Average throughput: 32.37 Mbit/s
95th percentile per-packet one-way delay: 9.949 ms
Loss rate: 0.25%
```
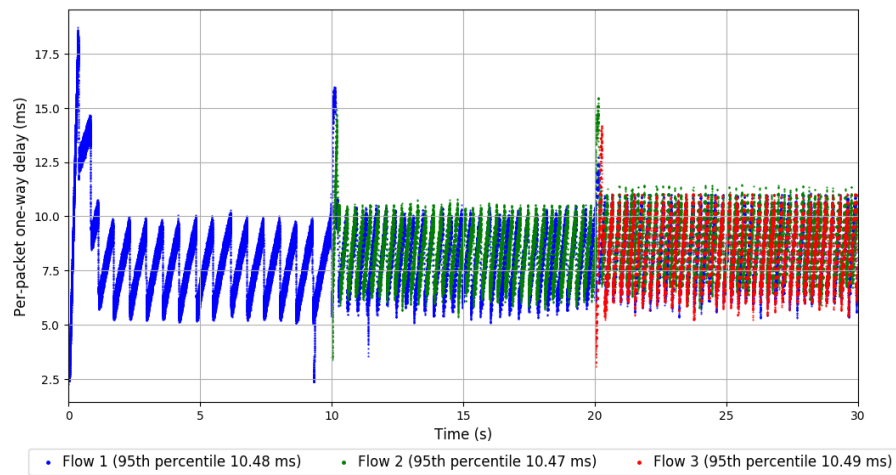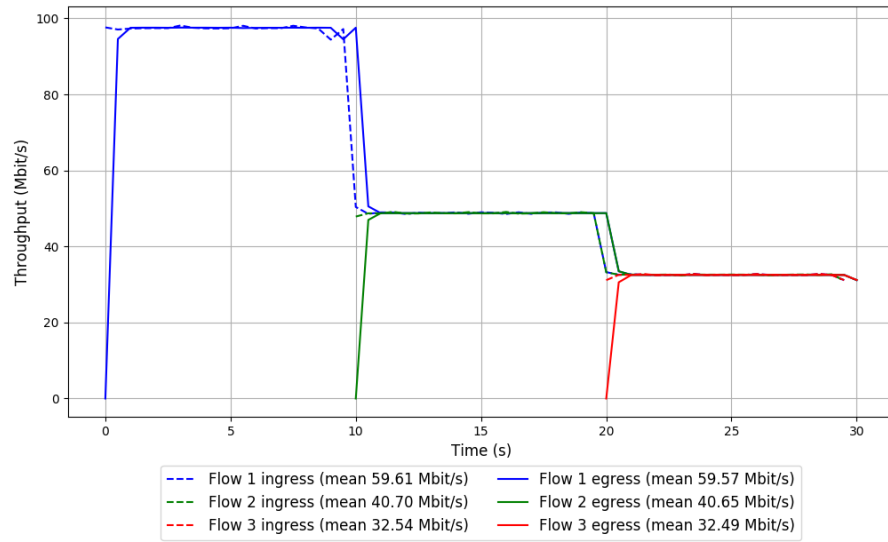
Run 3: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 59.63 Mbit/s)   Flow 1 egress (mean 59.60 Mbit/s)
Flow 2 ingress (mean 40.65 Mbit/s)   Flow 2 egress (mean 40.59 Mbit/s)
Flow 3 ingress (mean 32.44 Mbit/s)   Flow 3 egress (mean 32.37 Mbit/s)

Flow 1 (95th percentile 10.04 ms)   Flow 2 (95th percentile 9.89 ms)   Flow 3 (95th percentile 9.95 ms)

30

```
Run 4: Statistics of TCP Cubic

Start at: 2019-01-22 03:55:43
End at: 2019-01-22 03:56:13
Local clock offset: -8.105 ms
Remote clock offset: 0.595 ms


# Below is generated by plot.py at 2019-01-22 04:33:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.46 Mbit/s
95th percentile per-packet one-way delay: 10.077 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 59.12 Mbit/s
95th percentile per-packet one-way delay: 10.326 ms
Loss rate: 0.08%
-- Flow 2:
Average throughput: 39.87 Mbit/s
95th percentile per-packet one-way delay: 9.919 ms
Loss rate: 0.16%
-- Flow 3:
Average throughput: 32.50 Mbit/s
95th percentile per-packet one-way delay: 10.092 ms
Loss rate: 0.24%
```
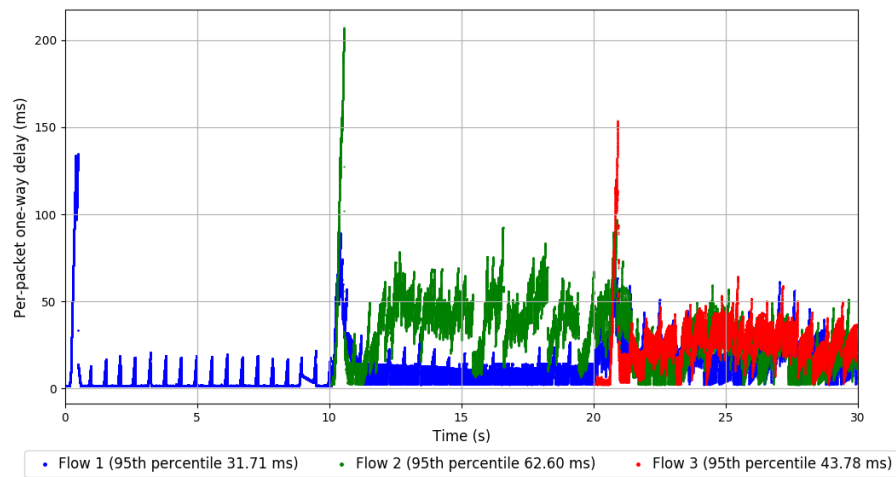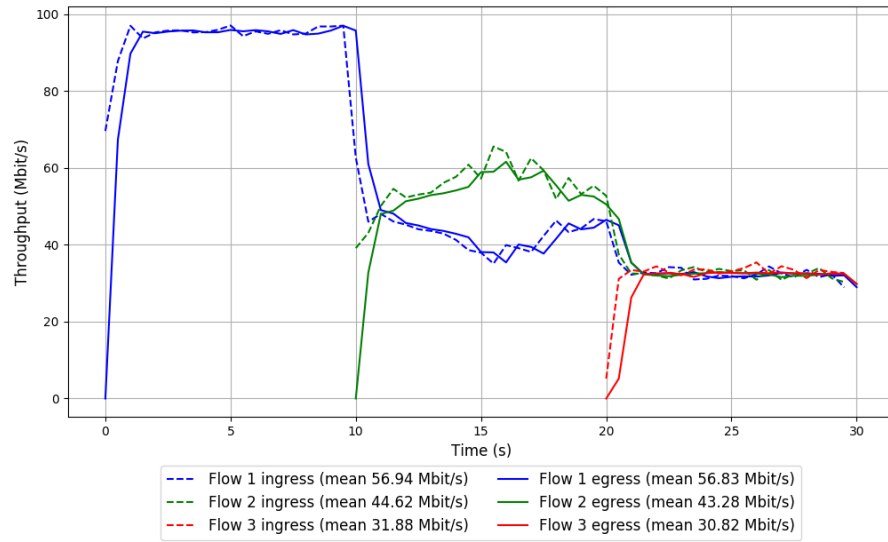
Run 4: Report of TCP Cubic — Data Link

```
Run 5: Statistics of TCP Cubic

Start at: 2019-01-22 04:19:53
End at: 2019-01-22 04:20:23
Local clock offset: -7.345 ms
Remote clock offset: 0.668 ms


# Below is generated by plot.py at 2019-01-22 04:33:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 97.43 Mbit/s
95th percentile per-packet one-way delay: 10.478 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 59.57 Mbit/s
95th percentile per-packet one-way delay: 10.482 ms
Loss rate: 0.09%
-- Flow 2:
Average throughput: 40.65 Mbit/s
95th percentile per-packet one-way delay: 10.467 ms
Loss rate: 0.15%
-- Flow 3:
Average throughput: 32.49 Mbit/s
95th percentile per-packet one-way delay: 10.488 ms
Loss rate: 0.21%
```
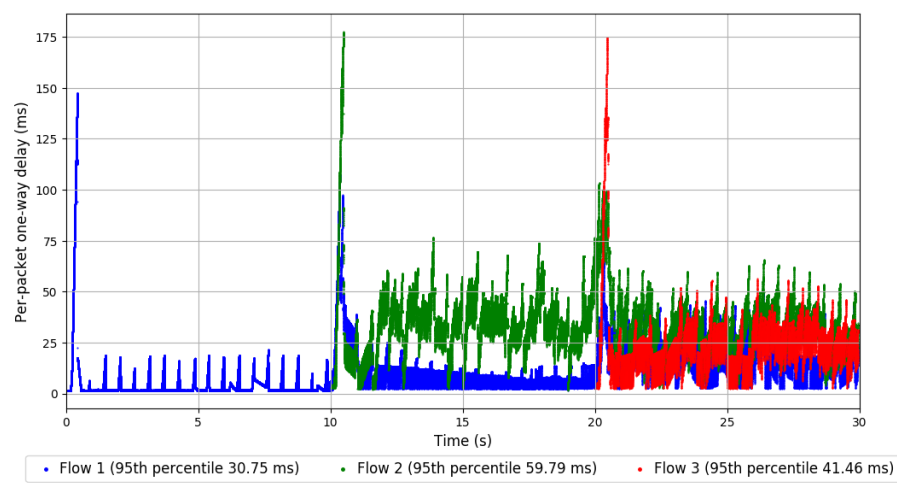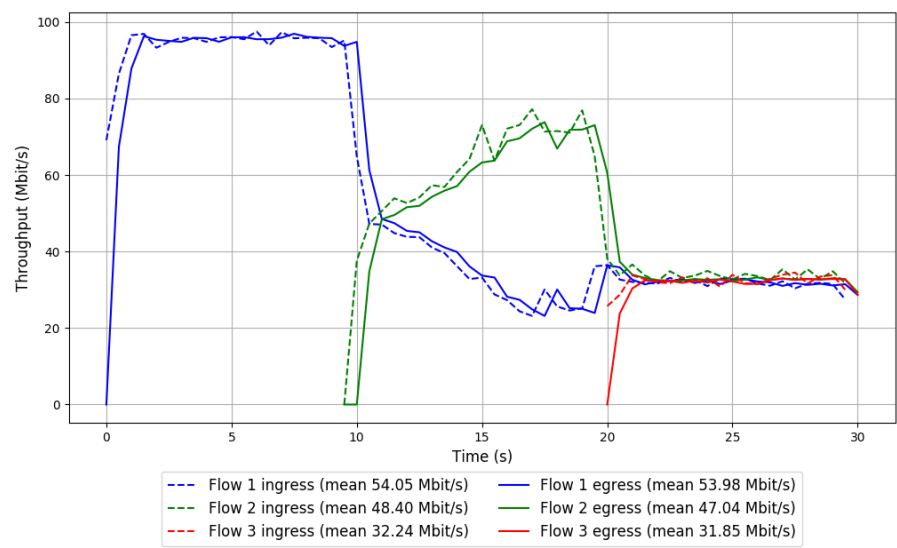
Run 5: Report of TCP Cubic — Data Link

- - - - Flow 1 ingress (mean 59.61 Mbit/s)   —— Flow 1 egress (mean 59.57 Mbit/s)
- - - - Flow 2 ingress (mean 40.70 Mbit/s)   —— Flow 2 egress (mean 40.65 Mbit/s)
- - - - Flow 3 ingress (mean 32.54 Mbit/s)   —— Flow 3 egress (mean 32.49 Mbit/s)

• Flow 1 (95th percentile 10.48 ms)   • Flow 2 (95th percentile 10.47 ms)   • Flow 3 (95th percentile 10.49 ms)

```
Run 1: Statistics of FillP

Start at: 2019-01-22 02:51:26
End at: 2019-01-22 02:51:56
Local clock offset: -6.464 ms
Remote clock offset: 0.058 ms

# Below is generated by plot.py at 2019-01-22 04:34:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.85 Mbit/s
95th percentile per-packet one-way delay: 54.625 ms
Loss rate: 1.39%
-- Flow 1:
Average throughput: 56.83 Mbit/s
95th percentile per-packet one-way delay: 31.707 ms
Loss rate: 0.20%
-- Flow 2:
Average throughput: 43.28 Mbit/s
95th percentile per-packet one-way delay: 62.604 ms
Loss rate: 2.98%
-- Flow 3:
Average throughput: 30.82 Mbit/s
95th percentile per-packet one-way delay: 43.781 ms
Loss rate: 3.29%
```
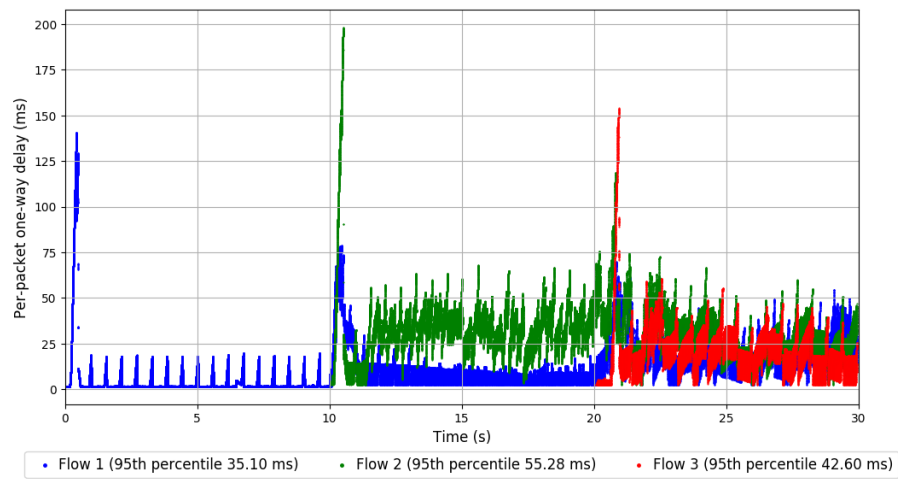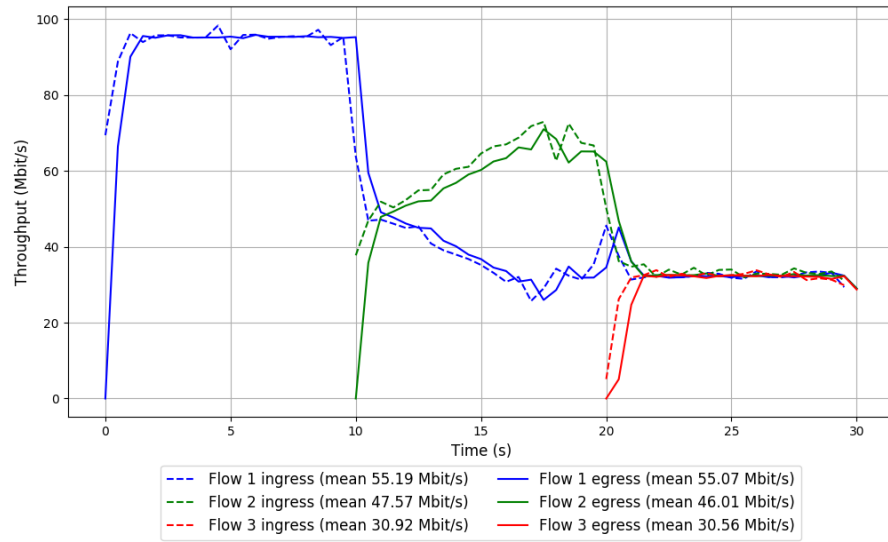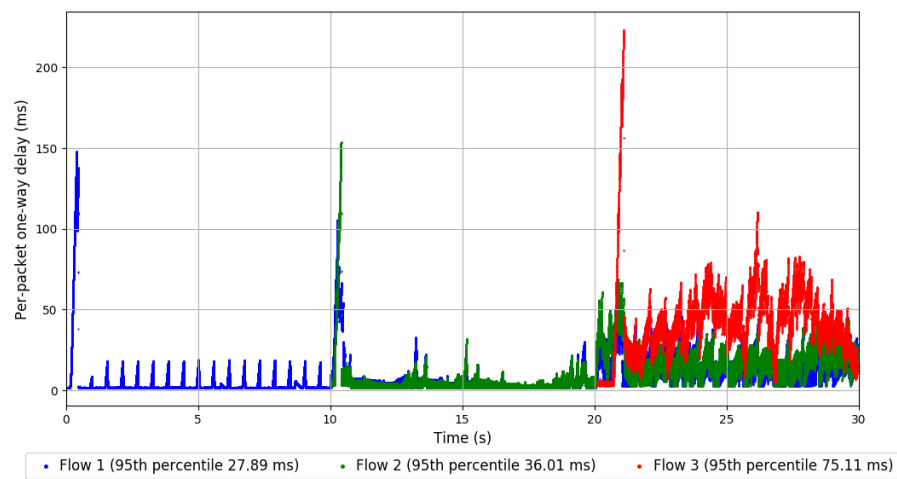
Run 1: Report of FillP — Data Link

Flow 1 ingress (mean 56.94 Mbit/s) Flow 1 egress (mean 56.83 Mbit/s)
Flow 2 ingress (mean 44.62 Mbit/s) Flow 2 egress (mean 43.28 Mbit/s)
Flow 3 ingress (mean 31.88 Mbit/s) Flow 3 egress (mean 30.82 Mbit/s)

Flow 1 (95th percentile 31.71 ms) Flow 2 (95th percentile 62.60 ms) Flow 3 (95th percentile 43.78 ms)

```
Run 2: Statistics of FillP

Start at: 2019-01-22 03:15:35
End at: 2019-01-22 03:16:05
Local clock offset: -3.933 ms
Remote clock offset: 0.579 ms


# Below is generated by plot.py at 2019-01-22 04:34:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.89 Mbit/s
95th percentile per-packet one-way delay: 49.853 ms
Loss rate: 1.10%
-- Flow 1:
Average throughput: 53.98 Mbit/s
95th percentile per-packet one-way delay: 30.755 ms
Loss rate: 0.07%
-- Flow 2:
Average throughput: 47.04 Mbit/s
95th percentile per-packet one-way delay: 59.788 ms
Loss rate: 2.78%
-- Flow 3:
Average throughput: 31.85 Mbit/s
95th percentile per-packet one-way delay: 41.459 ms
Loss rate: 1.22%
```
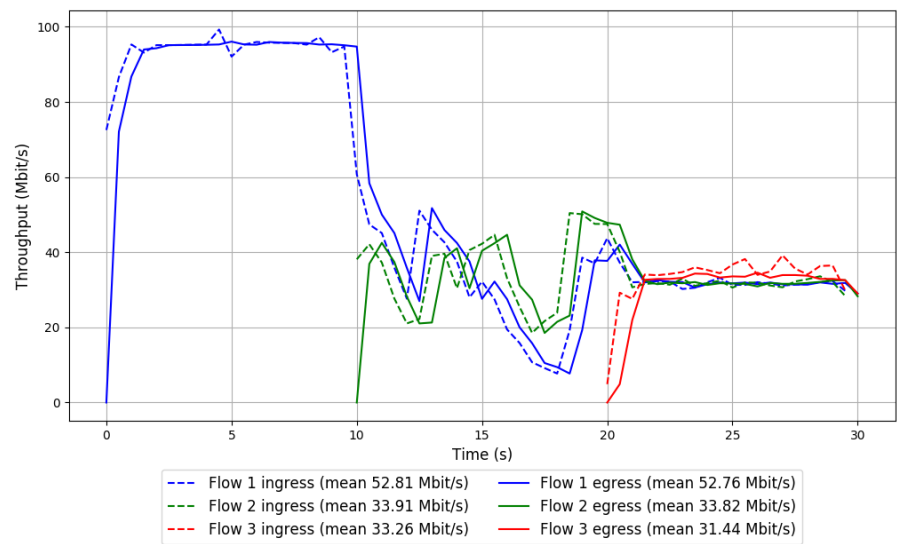
Run 2: Report of FillP — Data Link

```
Run 3: Statistics of FillP

Start at: 2019-01-22 03:39:47
End at: 2019-01-22 03:40:17
Local clock offset: -7.764 ms
Remote clock offset: 0.625 ms


# Below is generated by plot.py at 2019-01-22 04:34:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.83 Mbit/s
95th percentile per-packet one-way delay: 48.498 ms
Loss rate: 1.29%
-- Flow 1:
Average throughput: 55.07 Mbit/s
95th percentile per-packet one-way delay: 35.105 ms
Loss rate: 0.22%
-- Flow 2:
Average throughput: 46.01 Mbit/s
95th percentile per-packet one-way delay: 55.284 ms
Loss rate: 3.20%
-- Flow 3:
Average throughput: 30.56 Mbit/s
95th percentile per-packet one-way delay: 42.601 ms
Loss rate: 1.12%
```
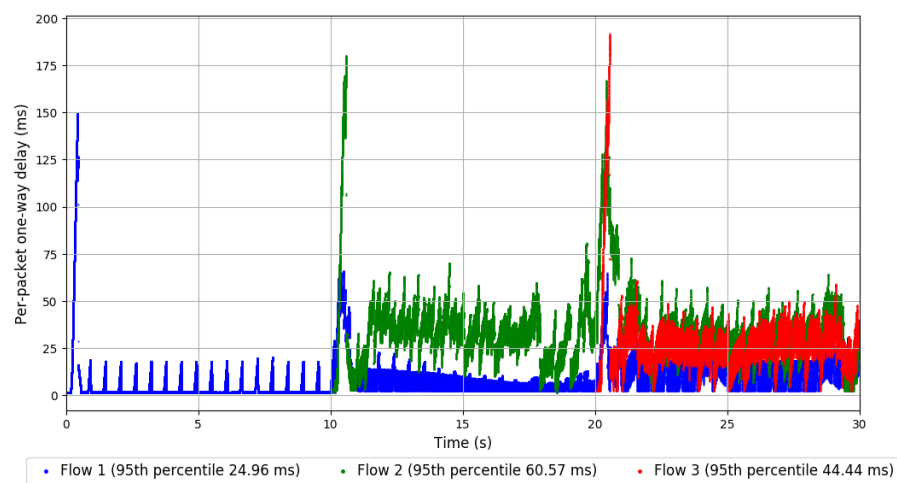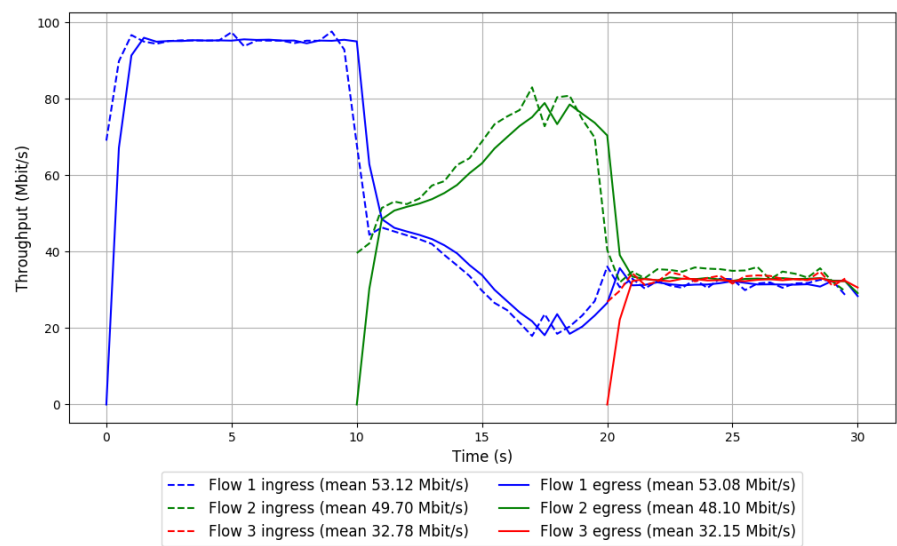
Run 3: Report of FillP — Data Link

```
Run 4: Statistics of FillP

Start at: 2019-01-22 04:03:57
End at: 2019-01-22 04:04:27
Local clock offset: -8.441 ms
Remote clock offset: 0.696 ms


# Below is generated by plot.py at 2019-01-22 04:34:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 85.70 Mbit/s
95th percentile per-packet one-way delay: 53.220 ms
Loss rate: 0.80%
-- Flow 1:
Average throughput: 52.76 Mbit/s
95th percentile per-packet one-way delay: 27.890 ms
Loss rate: 0.09%
-- Flow 2:
Average throughput: 33.82 Mbit/s
95th percentile per-packet one-way delay: 36.011 ms
Loss rate: 0.25%
-- Flow 3:
Average throughput: 31.44 Mbit/s
95th percentile per-packet one-way delay: 75.109 ms
Loss rate: 5.39%
```
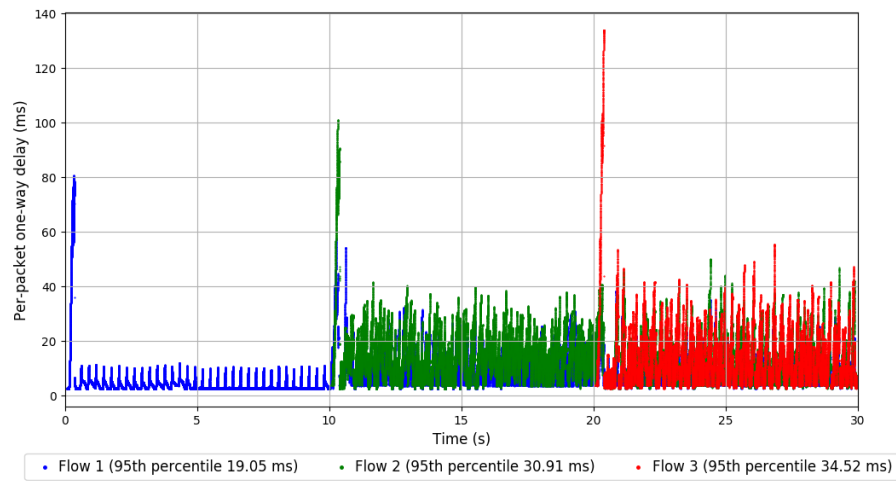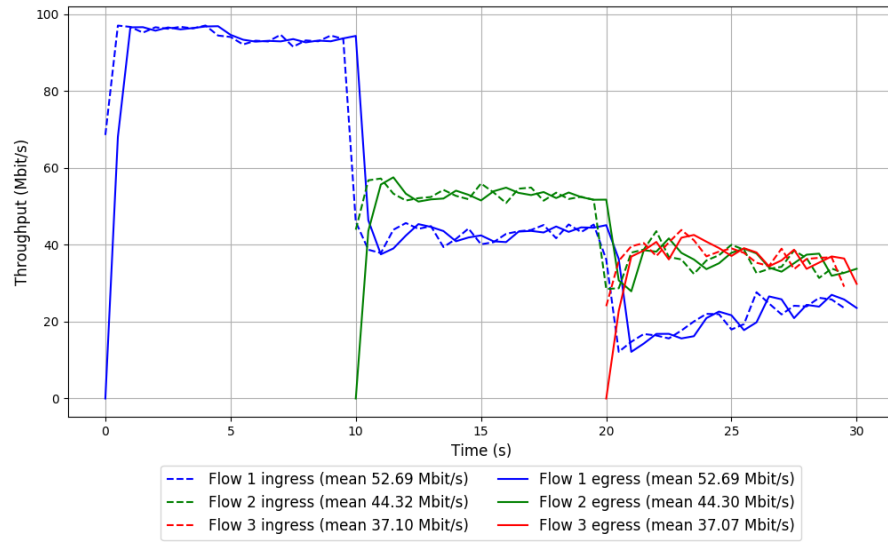
Run 4: Report of FillP — Data Link

Flow 1 ingress (mean 52.81 Mbit/s) --- Flow 1 egress (mean 52.76 Mbit/s)
Flow 2 ingress (mean 33.91 Mbit/s) --- Flow 2 egress (mean 33.82 Mbit/s)
Flow 3 ingress (mean 33.26 Mbit/s) --- Flow 3 egress (mean 31.44 Mbit/s)

Flow 1 (95th percentile 27.89 ms) · Flow 2 (95th percentile 36.01 ms) · Flow 3 (95th percentile 75.11 ms)

42

```
Run 5: Statistics of FillP

Start at: 2019-01-22 04:28:07
End at: 2019-01-22 04:28:37
Local clock offset: -7.298 ms
Remote clock offset: 0.802 ms


# Below is generated by plot.py at 2019-01-22 04:35:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.77 Mbit/s
95th percentile per-packet one-way delay: 49.348 ms
Loss rate: 1.34%
-- Flow 1:
Average throughput: 53.08 Mbit/s
95th percentile per-packet one-way delay: 24.961 ms
Loss rate: 0.08%
-- Flow 2:
Average throughput: 48.10 Mbit/s
95th percentile per-packet one-way delay: 60.566 ms
Loss rate: 3.18%
-- Flow 3:
Average throughput: 32.15 Mbit/s
95th percentile per-packet one-way delay: 44.435 ms
Loss rate: 1.91%
```
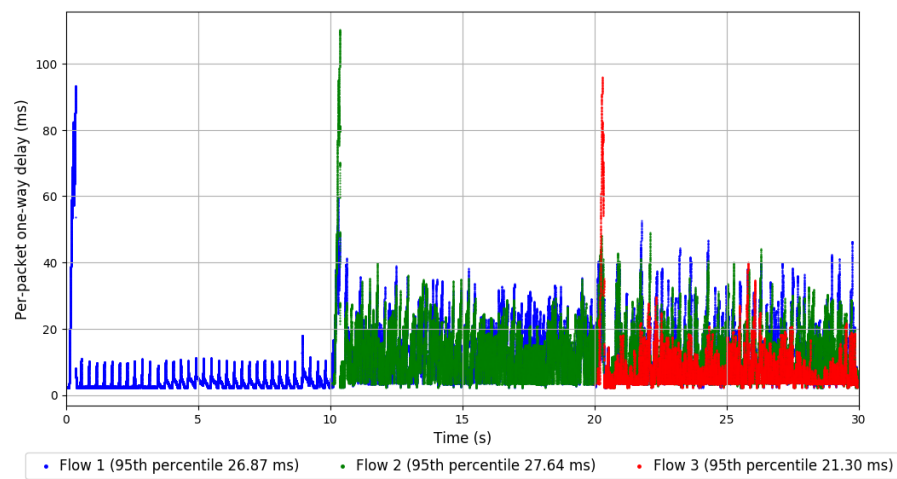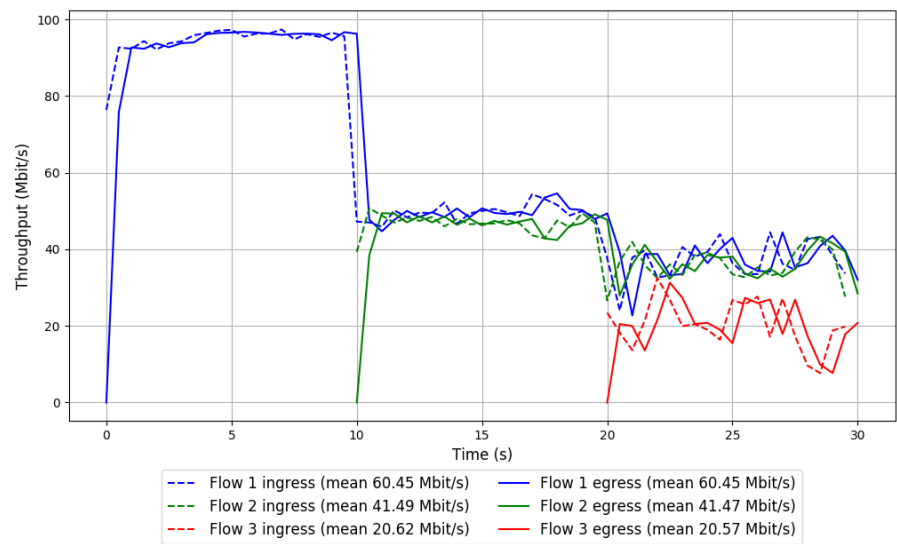
Run 5: Report of FillP — Data Link

Flow 1 ingress (mean 53.12 Mbit/s)   Flow 1 egress (mean 53.08 Mbit/s)
Flow 2 ingress (mean 49.70 Mbit/s)   Flow 2 egress (mean 48.10 Mbit/s)
Flow 3 ingress (mean 32.78 Mbit/s)   Flow 3 egress (mean 32.15 Mbit/s)

Flow 1 (95th percentile 24.96 ms)   Flow 2 (95th percentile 60.57 ms)   Flow 3 (95th percentile 44.44 ms)

44

```
Run 1: Statistics of FillP-Sheep

Start at: 2019-01-22 02:37:35
End at: 2019-01-22 02:38:05
Local clock offset: -7.12 ms
Remote clock offset: -0.299 ms


# Below is generated by plot.py at 2019-01-22 04:35:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.42 Mbit/s
95th percentile per-packet one-way delay: 28.138 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 52.69 Mbit/s
95th percentile per-packet one-way delay: 19.053 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 44.30 Mbit/s
95th percentile per-packet one-way delay: 30.908 ms
Loss rate: 0.04%
-- Flow 3:
Average throughput: 37.07 Mbit/s
95th percentile per-packet one-way delay: 34.515 ms
Loss rate: 0.12%
```
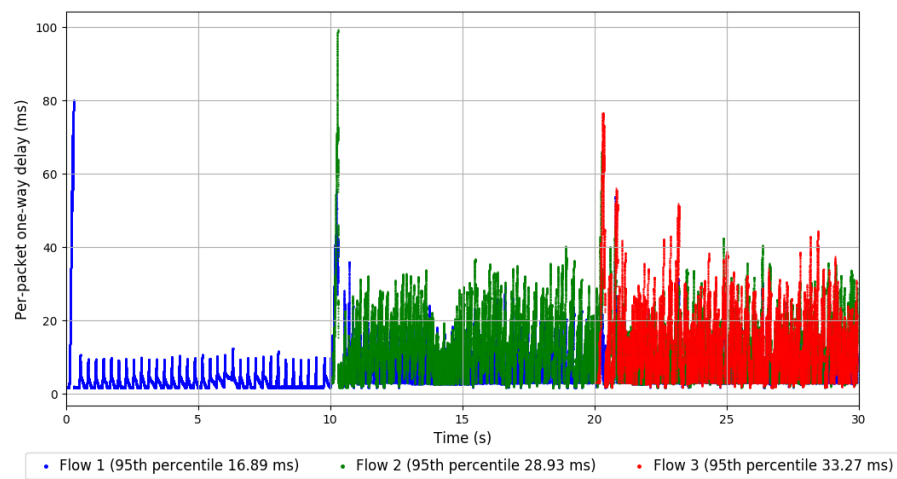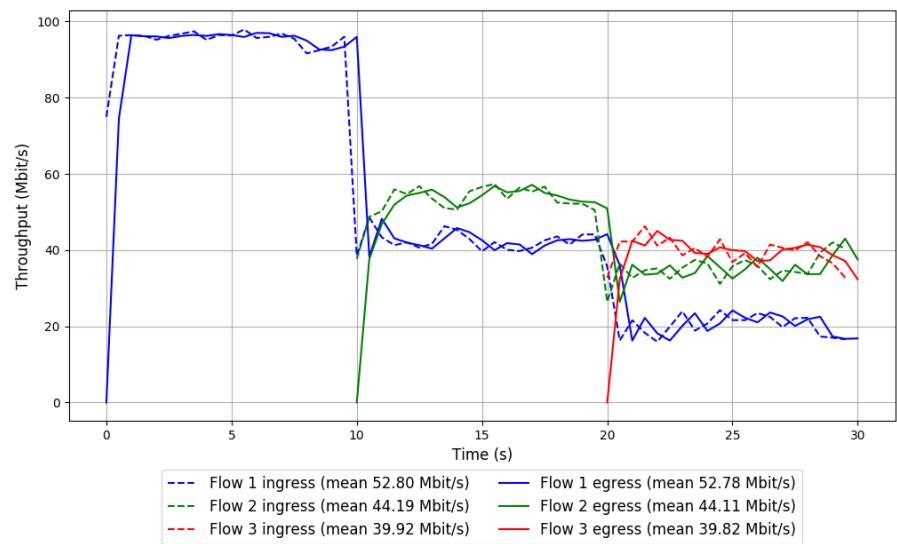
Run 1: Report of FillP-Sheep — Data Link

```
Run 2: Statistics of FillP-Sheep

Start at: 2019-01-22 03:01:43
End at: 2019-01-22 03:02:13
Local clock offset: -3.643 ms
Remote clock offset: 0.222 ms


# Below is generated by plot.py at 2019-01-22 04:35:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.84 Mbit/s
95th percentile per-packet one-way delay: 26.996 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 60.45 Mbit/s
95th percentile per-packet one-way delay: 26.874 ms
Loss rate: 0.07%
-- Flow 2:
Average throughput: 41.47 Mbit/s
95th percentile per-packet one-way delay: 27.640 ms
Loss rate: 0.05%
-- Flow 3:
Average throughput: 20.57 Mbit/s
95th percentile per-packet one-way delay: 21.305 ms
Loss rate: 0.25%
```
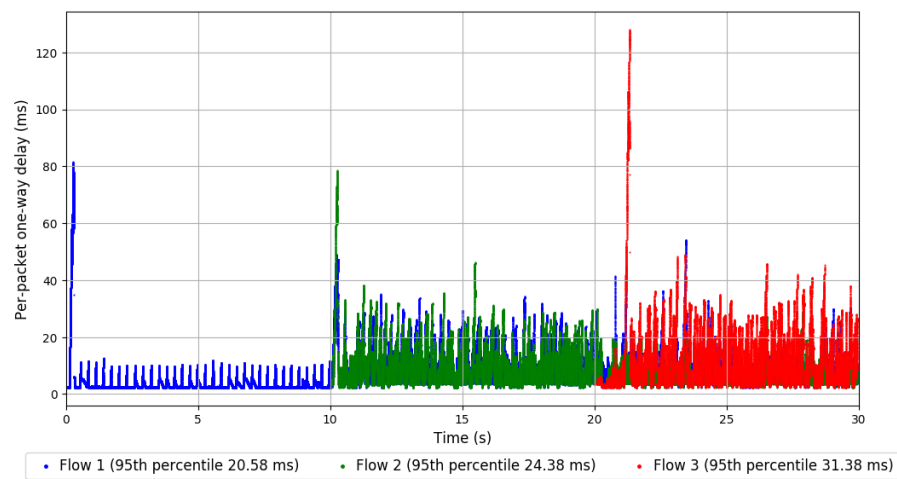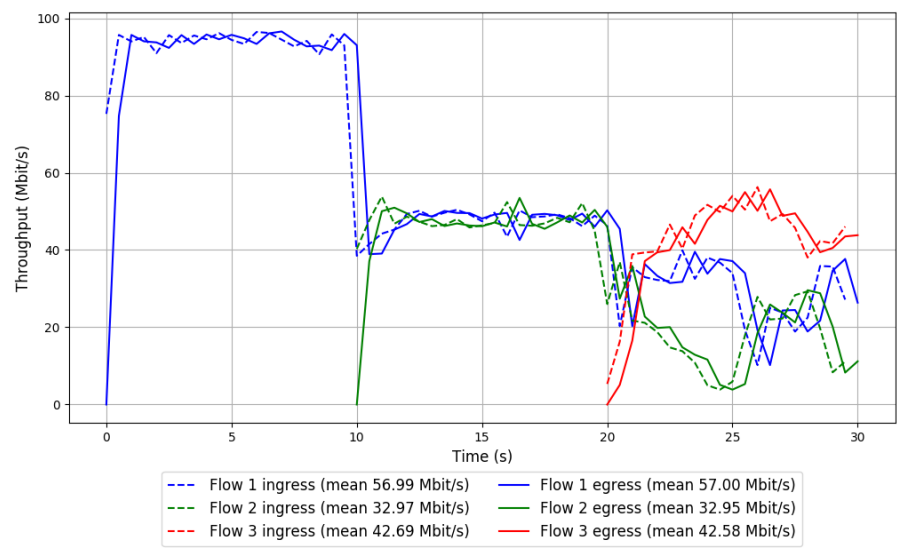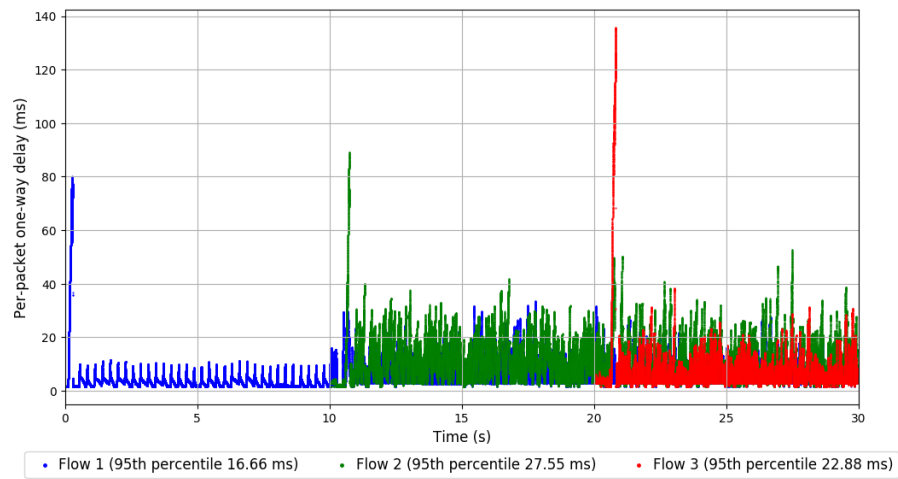
Run 2: Report of FillP-Sheep — Data Link

Flow 1 ingress (mean 60.45 Mbit/s) --- Flow 1 egress (mean 60.45 Mbit/s)
Flow 2 ingress (mean 41.49 Mbit/s) --- Flow 2 egress (mean 41.47 Mbit/s)
Flow 3 ingress (mean 20.62 Mbit/s) --- Flow 3 egress (mean 20.57 Mbit/s)

Flow 1 (95th percentile 26.87 ms) Flow 2 (95th percentile 27.64 ms) Flow 3 (95th percentile 21.30 ms)

48

```
Run 3: Statistics of FillP-Sheep

Start at: 2019-01-22 03:25:53
End at: 2019-01-22 03:26:23
Local clock offset: -6.224 ms
Remote clock offset: 0.579 ms


# Below is generated by plot.py at 2019-01-22 04:35:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.35 Mbit/s
95th percentile per-packet one-way delay: 26.561 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 52.78 Mbit/s
95th percentile per-packet one-way delay: 16.890 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 44.11 Mbit/s
95th percentile per-packet one-way delay: 28.926 ms
Loss rate: 0.19%
-- Flow 3:
Average throughput: 39.82 Mbit/s
95th percentile per-packet one-way delay: 33.268 ms
Loss rate: 0.14%
```
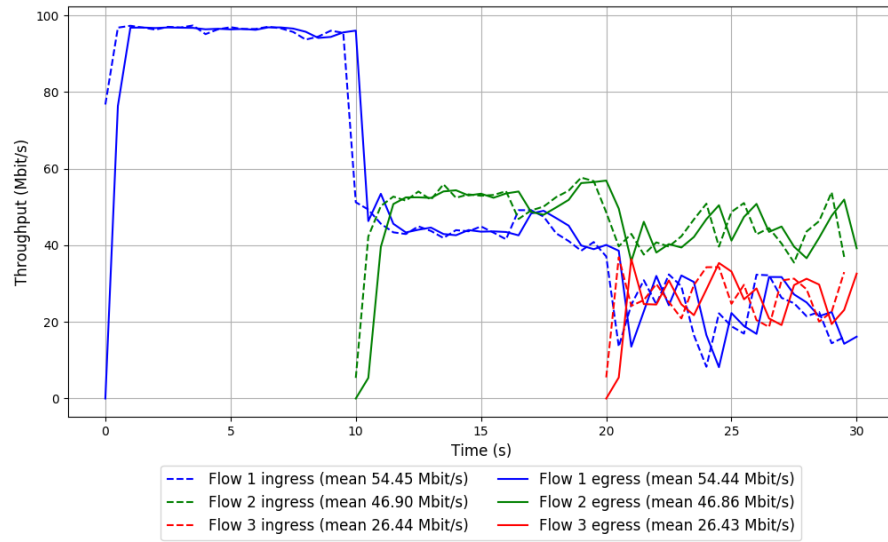
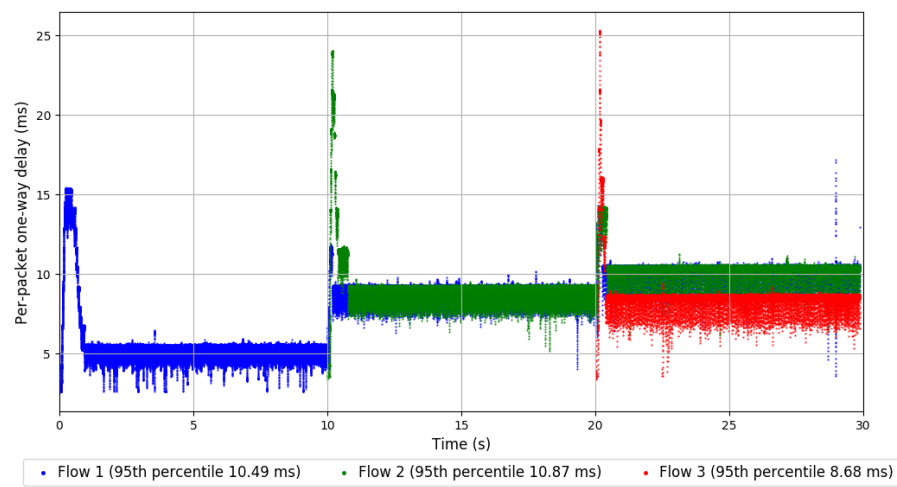Run 3: Report of FillP-Sheep — Data Link

```
Run 4: Statistics of FillP-Sheep

Start at: 2019-01-22 03:50:04
End at: 2019-01-22 03:50:34
Local clock offset: -7.304 ms
Remote clock offset: 0.687 ms


# Below is generated by plot.py at 2019-01-22 04:35:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.04 Mbit/s
95th percentile per-packet one-way delay: 24.467 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 57.00 Mbit/s
95th percentile per-packet one-way delay: 20.584 ms
Loss rate: 0.03%
-- Flow 2:
Average throughput: 32.95 Mbit/s
95th percentile per-packet one-way delay: 24.380 ms
Loss rate: 0.05%
-- Flow 3:
Average throughput: 42.58 Mbit/s
95th percentile per-packet one-way delay: 31.378 ms
Loss rate: 0.27%
```

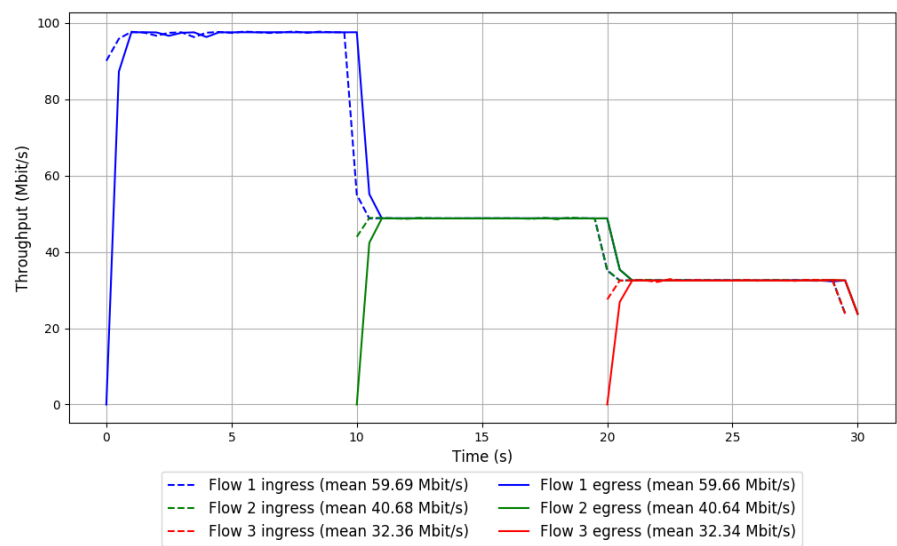Run 4: Report of FillP-Sheep — Data Link

```
Run 5: Statistics of FillP-Sheep

Start at: 2019-01-22 04:14:14
End at: 2019-01-22 04:14:44
Local clock offset: -8.803 ms
Remote clock offset: 0.702 ms


# Below is generated by plot.py at 2019-01-22 04:35:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.42 Mbit/s
95th percentile per-packet one-way delay: 23.102 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 54.44 Mbit/s
95th percentile per-packet one-way delay: 16.656 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 46.86 Mbit/s
95th percentile per-packet one-way delay: 27.547 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 26.43 Mbit/s
95th percentile per-packet one-way delay: 22.884 ms
Loss rate: 0.10%
```
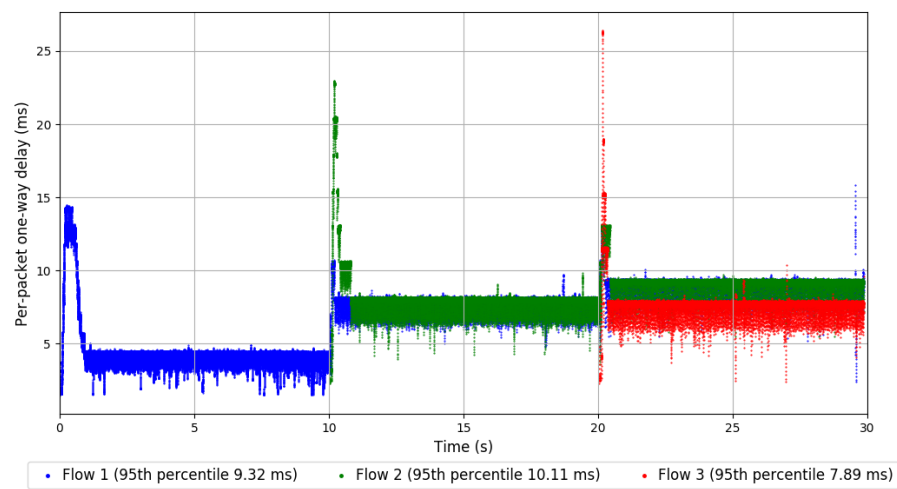
Run 5: Report of FillP-Sheep — Data Link

Flow 1 ingress (mean 54.45 Mbit/s) — Flow 1 egress (mean 54.44 Mbit/s)
Flow 2 ingress (mean 46.90 Mbit/s) — Flow 2 egress (mean 46.86 Mbit/s)
Flow 3 ingress (mean 26.44 Mbit/s) — Flow 3 egress (mean 26.43 Mbit/s)

Flow 1 (95th percentile 16.66 ms) · Flow 2 (95th percentile 27.55 ms) · Flow 3 (95th percentile 22.88 ms)

```
Run 1: Statistics of Indigo

Start at: 2019-01-22 02:35:16
End at: 2019-01-22 02:35:46
Local clock offset: -6.656 ms
Remote clock offset: -0.439 ms


# Below is generated by plot.py at 2019-01-22 04:35:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 97.32 Mbit/s
95th percentile per-packet one-way delay: 10.505 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 59.66 Mbit/s
95th percentile per-packet one-way delay: 10.491 ms
Loss rate: 0.04%
-- Flow 2:
Average throughput: 40.64 Mbit/s
95th percentile per-packet one-way delay: 10.868 ms
Loss rate: 0.12%
-- Flow 3:
Average throughput: 32.34 Mbit/s
95th percentile per-packet one-way delay: 8.682 ms
Loss rate: 0.10%
```
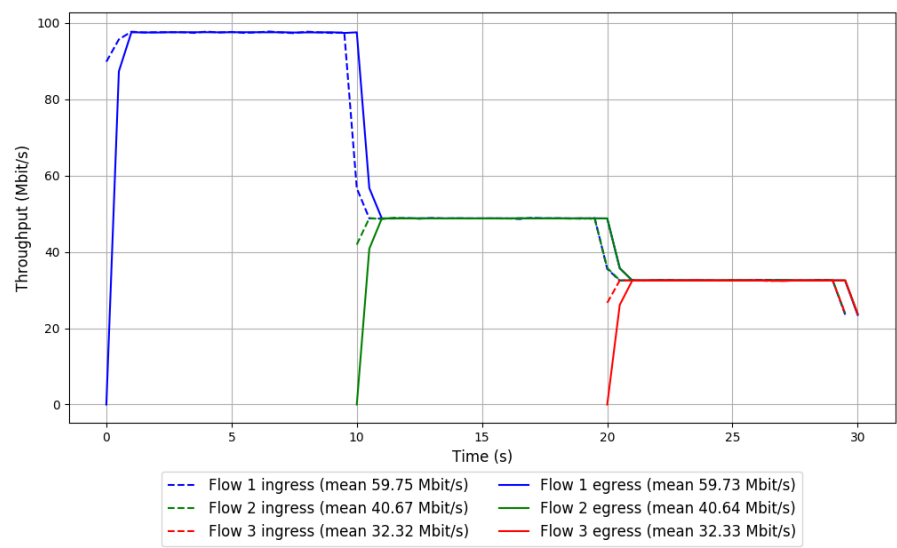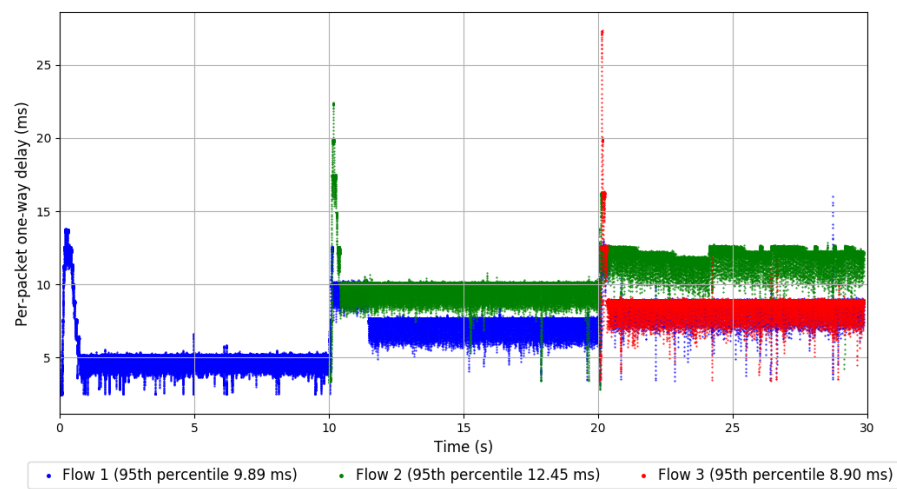
Run 1: Report of Indigo — Data Link

```
Run 2: Statistics of Indigo

Start at: 2019-01-22 02:59:24
End at: 2019-01-22 02:59:54
Local clock offset: -4.651 ms
Remote clock offset: 0.25 ms


# Below is generated by plot.py at 2019-01-22 04:35:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 97.35 Mbit/s
95th percentile per-packet one-way delay: 9.341 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 59.73 Mbit/s
95th percentile per-packet one-way delay: 9.319 ms
Loss rate: 0.04%
-- Flow 2:
Average throughput: 40.64 Mbit/s
95th percentile per-packet one-way delay: 10.114 ms
Loss rate: 0.10%
-- Flow 3:
Average throughput: 32.33 Mbit/s
95th percentile per-packet one-way delay: 7.895 ms
Loss rate: 0.10%
```
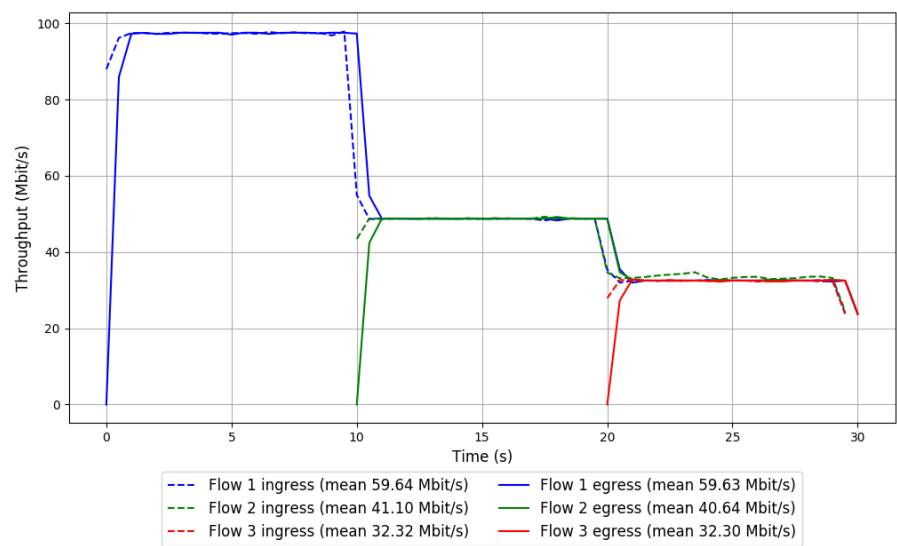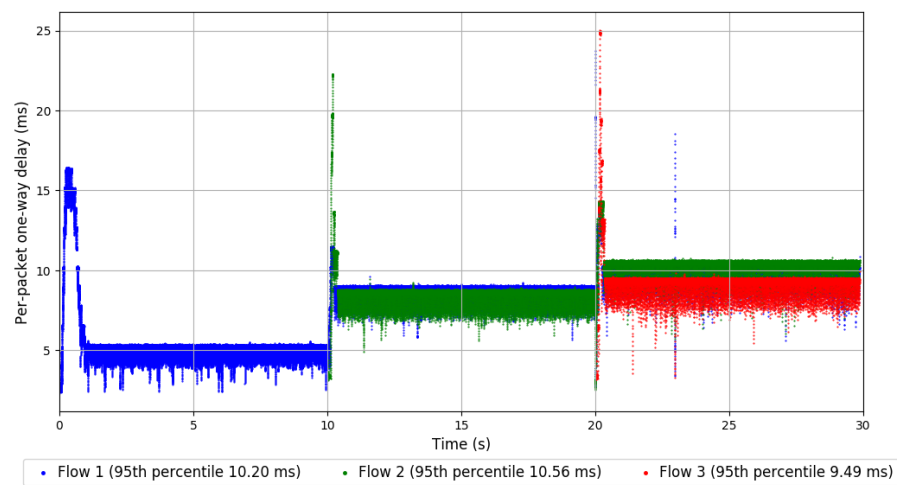
Run 2: Report of Indigo — Data Link

```
Run 3: Statistics of Indigo

Start at: 2019-01-22 03:23:34
End at: 2019-01-22 03:24:04
Local clock offset: -5.064 ms
Remote clock offset: 0.633 ms


# Below is generated by plot.py at 2019-01-22 04:36:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 97.30 Mbit/s
95th percentile per-packet one-way delay: 12.136 ms
Loss rate: 0.34%
-- Flow 1:
Average throughput: 59.63 Mbit/s
95th percentile per-packet one-way delay: 9.893 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 40.64 Mbit/s
95th percentile per-packet one-way delay: 12.445 ms
Loss rate: 1.12%
-- Flow 3:
Average throughput: 32.30 Mbit/s
95th percentile per-packet one-way delay: 8.904 ms
Loss rate: 0.10%
```
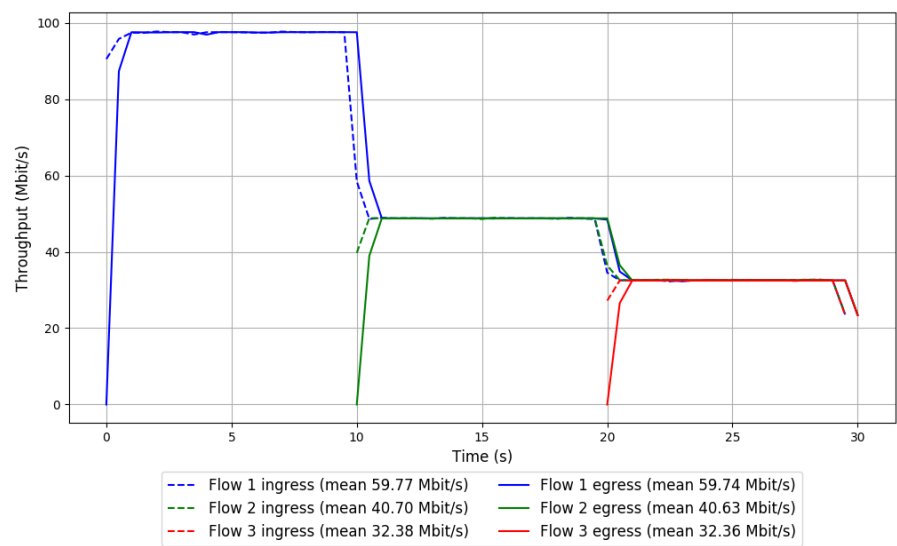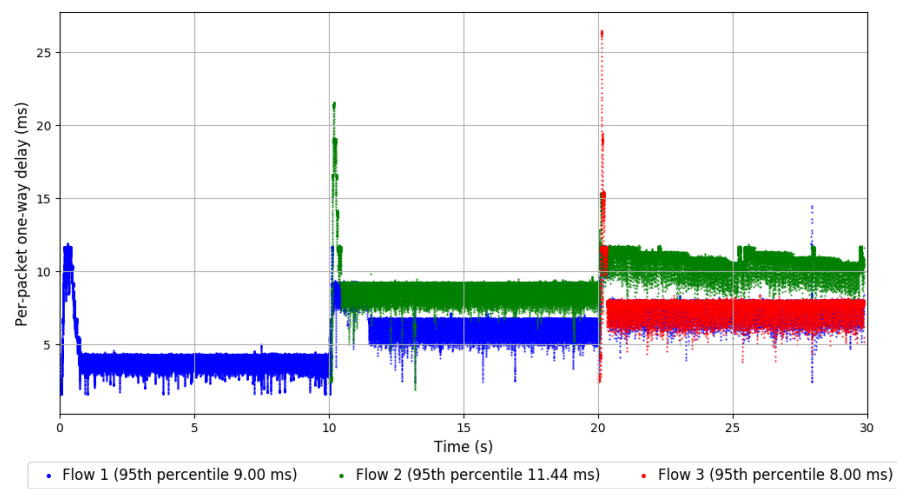
Run 3: Report of Indigo — Data Link

Flow 1 ingress (mean 59.64 Mbit/s) --- Flow 1 egress (mean 59.63 Mbit/s)
Flow 2 ingress (mean 41.10 Mbit/s) --- Flow 2 egress (mean 40.64 Mbit/s)
Flow 3 ingress (mean 32.32 Mbit/s) --- Flow 3 egress (mean 32.30 Mbit/s)

• Flow 1 (95th percentile 9.89 ms)   • Flow 2 (95th percentile 12.45 ms)   • Flow 3 (95th percentile 8.90 ms)

```
Run 4: Statistics of Indigo

Start at: 2019-01-22 03:47:46
End at: 2019-01-22 03:48:16
Local clock offset: -7.33 ms
Remote clock offset: 0.653 ms


# Below is generated by plot.py at 2019-01-22 04:36:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 97.35 Mbit/s
95th percentile per-packet one-way delay: 10.510 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 59.74 Mbit/s
95th percentile per-packet one-way delay: 10.197 ms
Loss rate: 0.05%
-- Flow 2:
Average throughput: 40.63 Mbit/s
95th percentile per-packet one-way delay: 10.565 ms
Loss rate: 0.19%
-- Flow 3:
Average throughput: 32.36 Mbit/s
95th percentile per-packet one-way delay: 9.490 ms
Loss rate: 0.11%
```
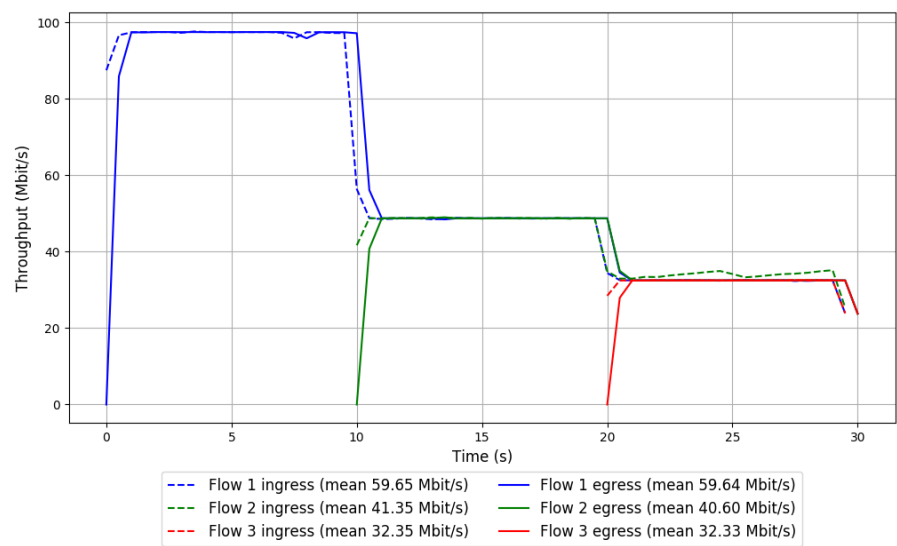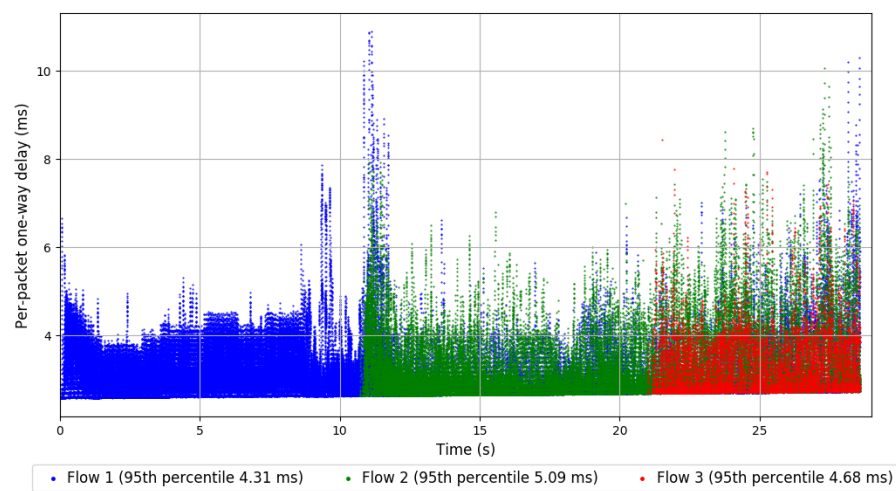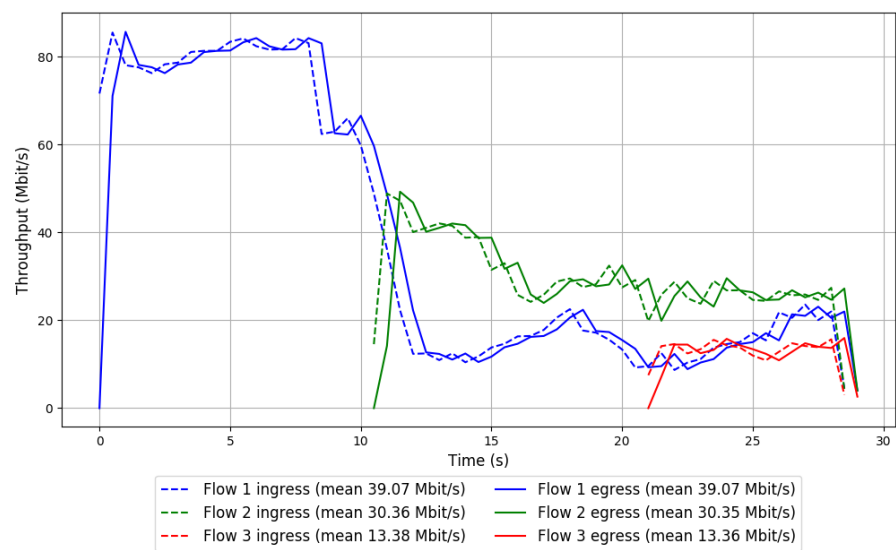
Run 4: Report of Indigo — Data Link

- - - - Flow 1 ingress (mean 59.77 Mbit/s)   —— Flow 1 egress (mean 59.74 Mbit/s)
- - - - Flow 2 ingress (mean 40.70 Mbit/s)   —— Flow 2 egress (mean 40.63 Mbit/s)
- - - - Flow 3 ingress (mean 32.38 Mbit/s)   —— Flow 3 egress (mean 32.36 Mbit/s)

- Flow 1 (95th percentile 10.20 ms)   • Flow 2 (95th percentile 10.56 ms)   • Flow 3 (95th percentile 9.49 ms)

62

```
Run 5: Statistics of Indigo

Start at: 2019-01-22 04:11:55
End at: 2019-01-22 04:12:25
Local clock offset: -8.765 ms
Remote clock offset: 0.756 ms


# Below is generated by plot.py at 2019-01-22 04:36:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 97.29 Mbit/s
95th percentile per-packet one-way delay: 10.978 ms
Loss rate: 0.54%
-- Flow 1:
Average throughput: 59.64 Mbit/s
95th percentile per-packet one-way delay: 8.997 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 40.60 Mbit/s
95th percentile per-packet one-way delay: 11.442 ms
Loss rate: 1.84%
-- Flow 3:
Average throughput: 32.33 Mbit/s
95th percentile per-packet one-way delay: 7.999 ms
Loss rate: 0.10%
```
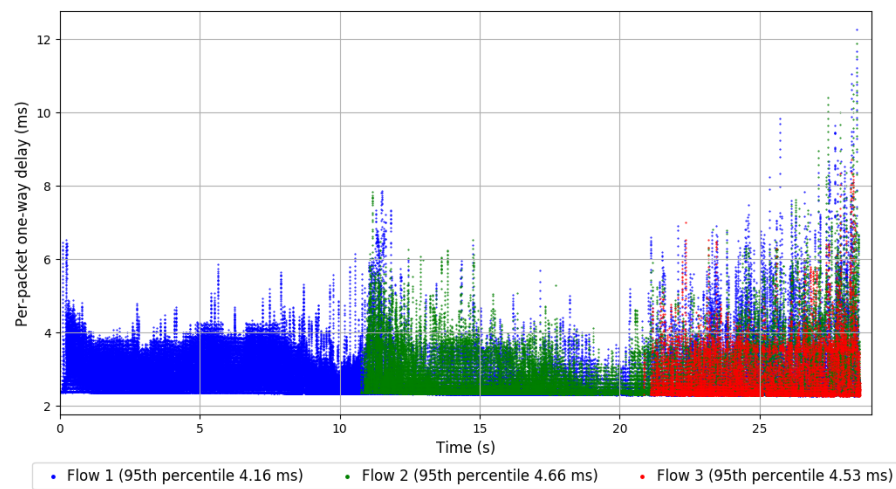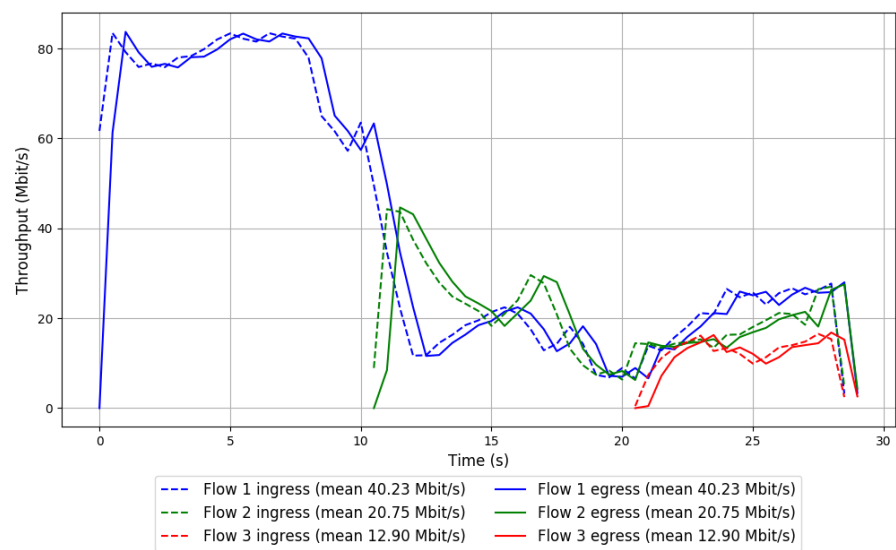
Run 5: Report of Indigo — Data Link

Flow 1 ingress (mean 59.65 Mbit/s)   Flow 1 egress (mean 59.64 Mbit/s)
Flow 2 ingress (mean 41.35 Mbit/s)   Flow 2 egress (mean 40.60 Mbit/s)
Flow 3 ingress (mean 32.35 Mbit/s)   Flow 3 egress (mean 32.33 Mbit/s)

Flow 1 (95th percentile 9.00 ms)   Flow 2 (95th percentile 11.44 ms)   Flow 3 (95th percentile 8.00 ms)

64

```
Run 1: Statistics of Indigo-MusesC3

Start at: 2019-01-22 02:29:33
End at: 2019-01-22 02:30:04
Local clock offset: -5.273 ms
Remote clock offset: -0.508 ms

# Below is generated by plot.py at 2019-01-22 04:36:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 61.58 Mbit/s
95th percentile per-packet one-way delay: 4.608 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 39.07 Mbit/s
95th percentile per-packet one-way delay: 4.312 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 30.35 Mbit/s
95th percentile per-packet one-way delay: 5.095 ms
Loss rate: 0.05%
-- Flow 3:
Average throughput: 13.36 Mbit/s
95th percentile per-packet one-way delay: 4.678 ms
Loss rate: 0.24%
```
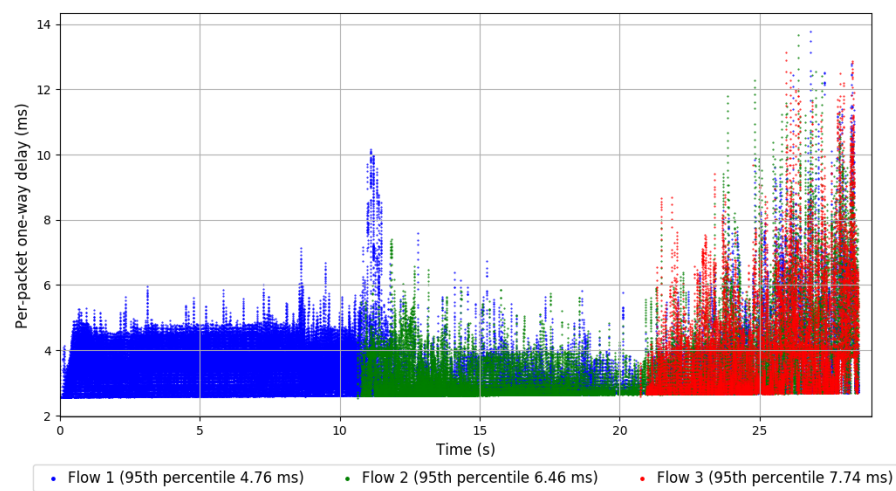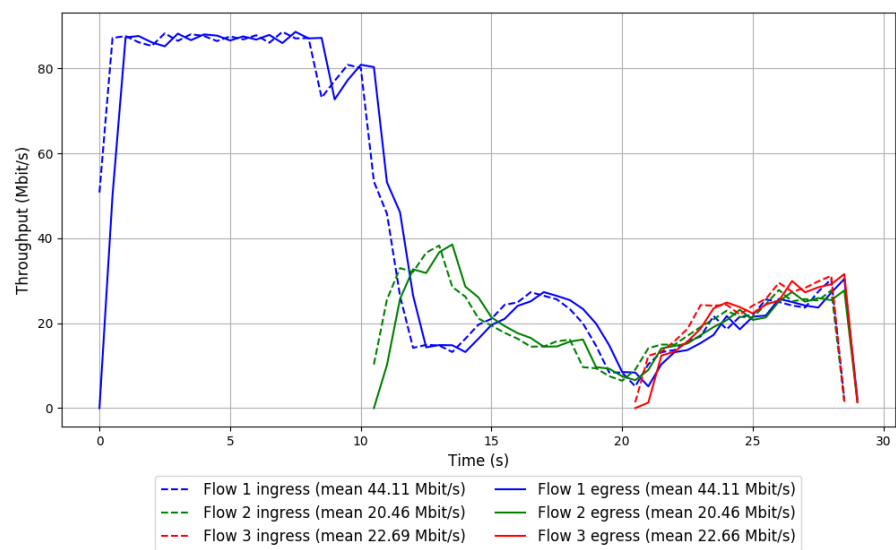
Run 1: Report of Indigo-MusesC3 — Data Link

- - - Flow 1 ingress (mean 39.07 Mbit/s) ——— Flow 1 egress (mean 39.07 Mbit/s)
- - - Flow 2 ingress (mean 30.36 Mbit/s) ——— Flow 2 egress (mean 30.35 Mbit/s)
- - - Flow 3 ingress (mean 13.38 Mbit/s) ——— Flow 3 egress (mean 13.36 Mbit/s)

• Flow 1 (95th percentile 4.31 ms)   • Flow 2 (95th percentile 5.09 ms)   • Flow 3 (95th percentile 4.68 ms)

```
Run 2: Statistics of Indigo-MusesC3

Start at: 2019-01-22 02:53:42
End at: 2019-01-22 02:54:12
Local clock offset: -5.019 ms
Remote clock offset: -0.042 ms


# Below is generated by plot.py at 2019-01-22 04:36:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 56.64 Mbit/s
95th percentile per-packet one-way delay: 4.311 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 40.23 Mbit/s
95th percentile per-packet one-way delay: 4.158 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 20.75 Mbit/s
95th percentile per-packet one-way delay: 4.658 ms
Loss rate: 0.07%
-- Flow 3:
Average throughput: 12.90 Mbit/s
95th percentile per-packet one-way delay: 4.525 ms
Loss rate: 0.00%
```
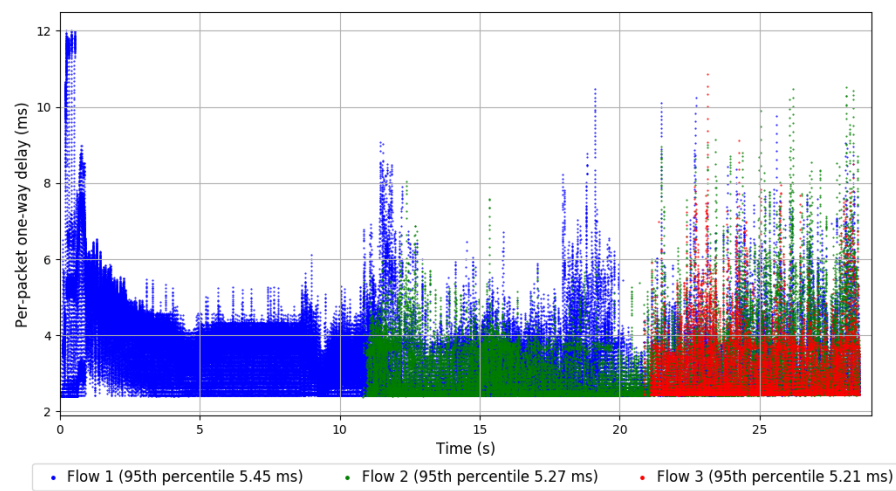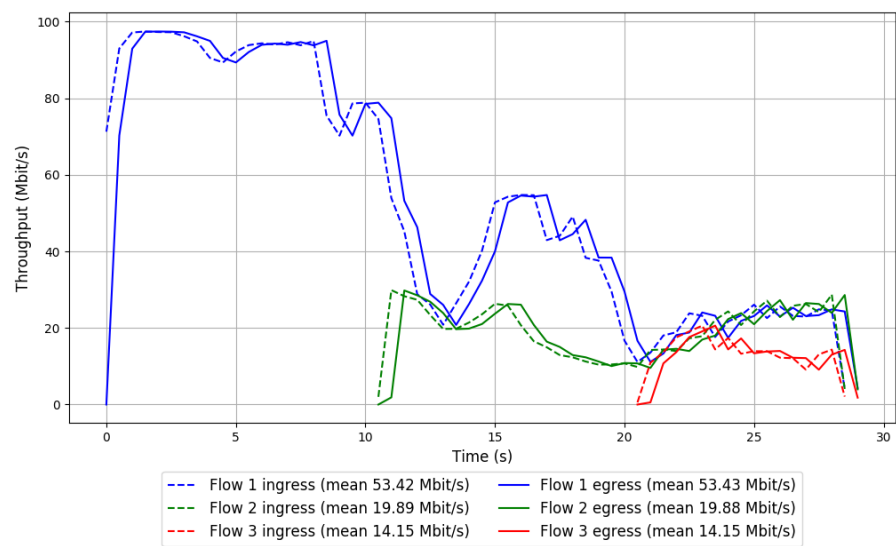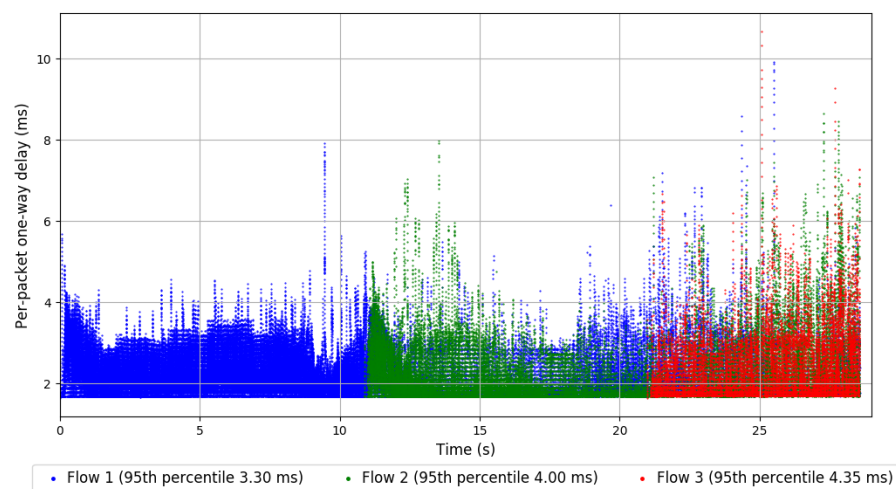
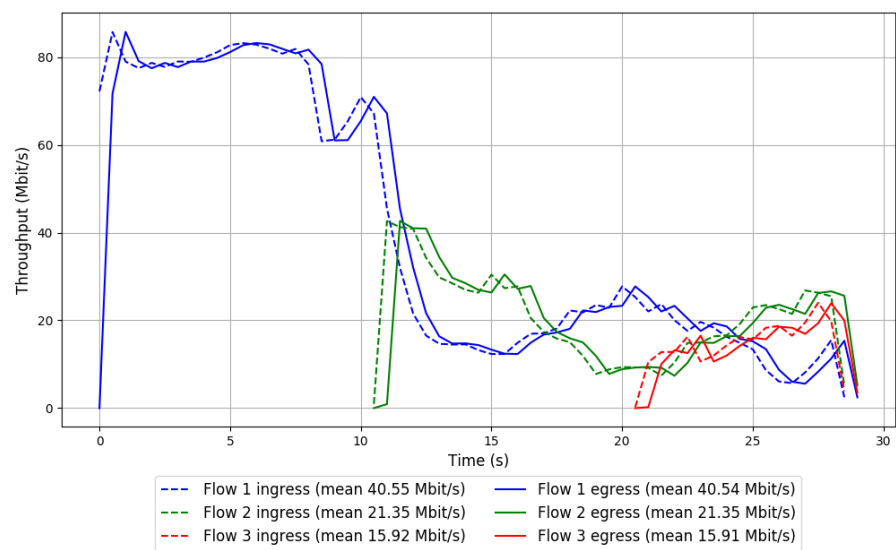Run 2: Report of Indigo-MusesC3 — Data Link

```
Run 3: Statistics of Indigo-MusesC3

Start at: 2019-01-22 03:17:51
End at: 2019-01-22 03:18:21
Local clock offset: -3.721 ms
Remote clock offset: 0.568 ms


# Below is generated by plot.py at 2019-01-22 04:36:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 63.14 Mbit/s
95th percentile per-packet one-way delay: 5.747 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 44.11 Mbit/s
95th percentile per-packet one-way delay: 4.764 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 20.46 Mbit/s
95th percentile per-packet one-way delay: 6.456 ms
Loss rate: 0.05%
-- Flow 3:
Average throughput: 22.66 Mbit/s
95th percentile per-packet one-way delay: 7.744 ms
Loss rate: 0.10%
```
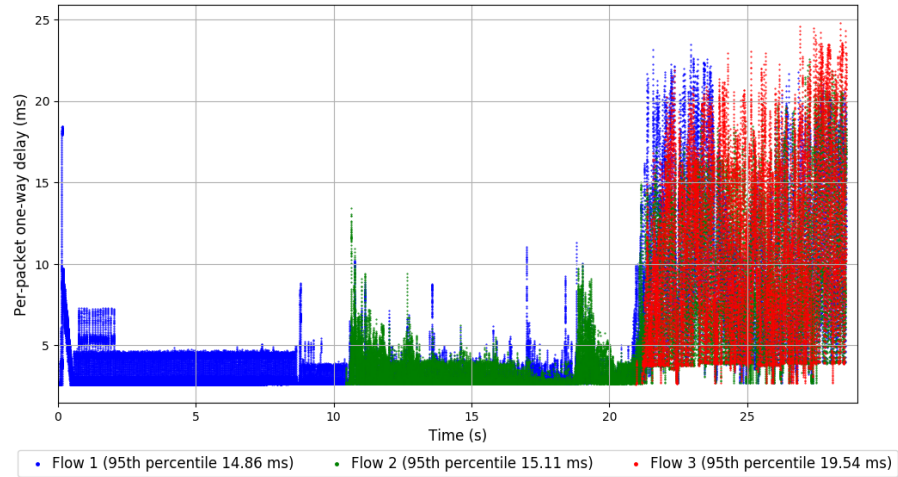
Run 3: Report of Indigo-MusesC3 — Data Link

```
Run 4: Statistics of Indigo-MusesC3

Start at: 2019-01-22 03:42:03
End at: 2019-01-22 03:42:33
Local clock offset: -7.106 ms
Remote clock offset: 0.676 ms


# Below is generated by plot.py at 2019-01-22 04:36:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 69.57 Mbit/s
95th percentile per-packet one-way delay: 5.416 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 53.43 Mbit/s
95th percentile per-packet one-way delay: 5.454 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 19.88 Mbit/s
95th percentile per-packet one-way delay: 5.274 ms
Loss rate: 0.05%
-- Flow 3:
Average throughput: 14.15 Mbit/s
95th percentile per-packet one-way delay: 5.206 ms
Loss rate: 0.18%
```

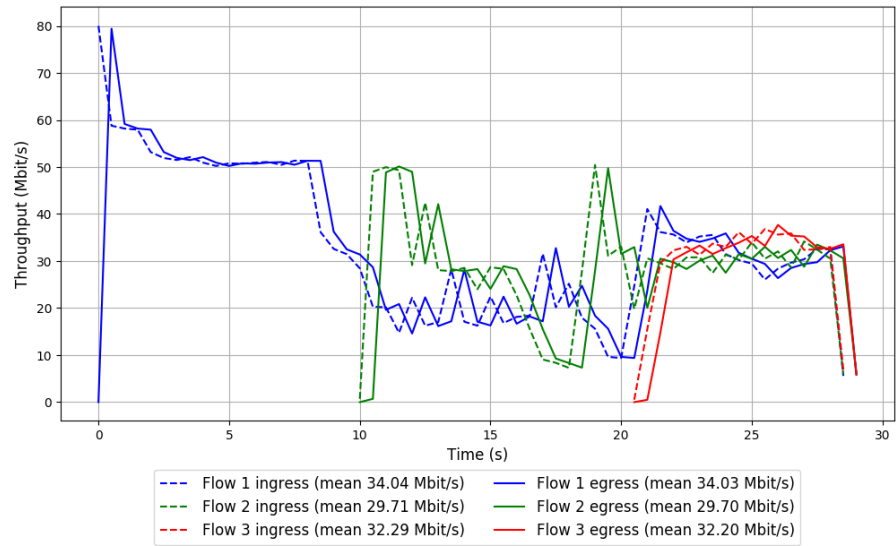Run 4: Report of Indigo-MusesC3 — Data Link

```
Run 5: Statistics of Indigo-MusesC3

Start at: 2019-01-22 04:06:13
End at: 2019-01-22 04:06:43
Local clock offset: -8.484 ms
Remote clock offset: 0.74 ms


# Below is generated by plot.py at 2019-01-22 04:36:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 57.99 Mbit/s
95th percentile per-packet one-way delay: 3.518 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 40.54 Mbit/s
95th percentile per-packet one-way delay: 3.298 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 21.35 Mbit/s
95th percentile per-packet one-way delay: 3.996 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 15.91 Mbit/s
95th percentile per-packet one-way delay: 4.353 ms
Loss rate: 0.14%
```

Run 5: Report of Indigo-MusesC3 — Data Link

```
Run 1: Statistics of Indigo-MusesC5

Start at: 2019-01-22 02:32:58
End at: 2019-01-22 02:33:28
Local clock offset: -6.105 ms
Remote clock offset: -0.414 ms


# Below is generated by plot.py at 2019-01-22 04:36:43
# Datalink statistics
-- Total of 3 flows:
Average throughput: 61.46 Mbit/s
95th percentile per-packet one-way delay: 16.362 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 34.03 Mbit/s
95th percentile per-packet one-way delay: 14.863 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 29.70 Mbit/s
95th percentile per-packet one-way delay: 15.106 ms
Loss rate: 0.08%
-- Flow 3:
Average throughput: 32.20 Mbit/s
95th percentile per-packet one-way delay: 19.542 ms
Loss rate: 0.25%
```
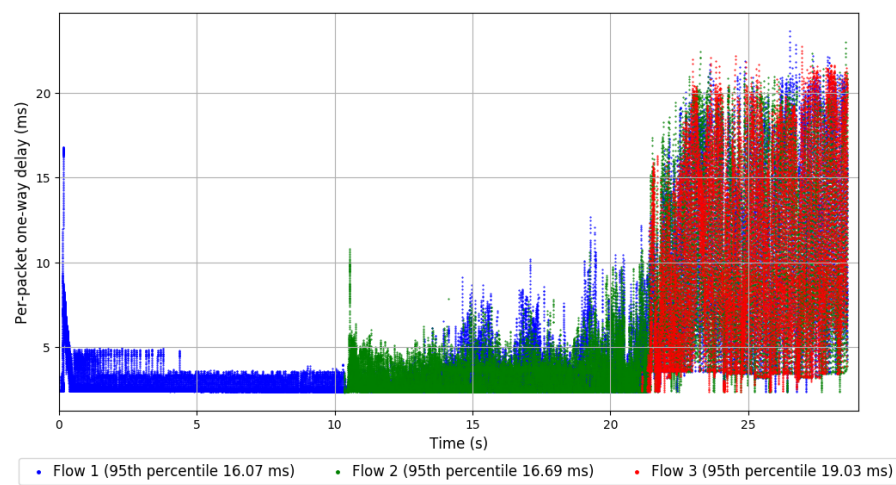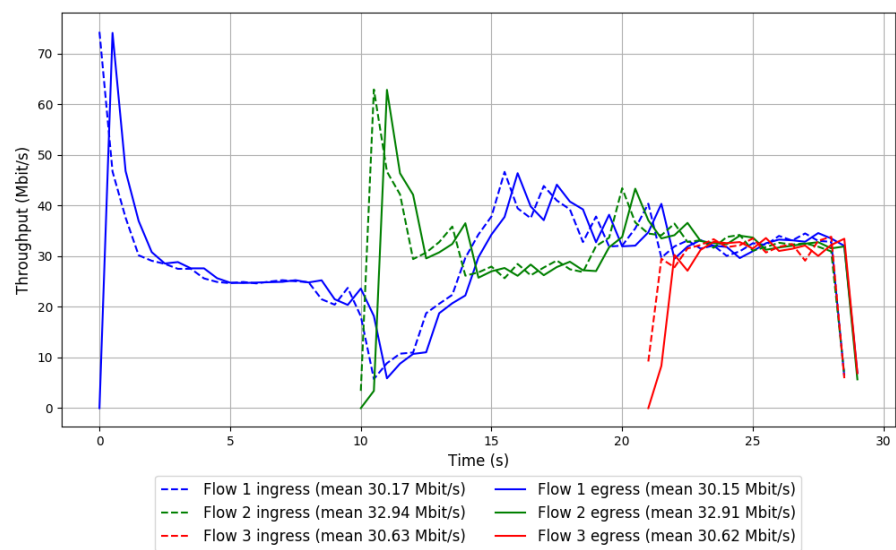
Run 1: Report of Indigo-MusesC5 — Data Link

```
Run 2: Statistics of Indigo-MusesC5

Start at: 2019-01-22 02:57:06
End at: 2019-01-22 02:57:36
Local clock offset: -4.231 ms
Remote clock offset: 0.087 ms

# Below is generated by plot.py at 2019-01-22 04:36:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 59.15 Mbit/s
95th percentile per-packet one-way delay: 17.117 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 30.15 Mbit/s
95th percentile per-packet one-way delay: 16.072 ms
Loss rate: 0.04%
-- Flow 2:
Average throughput: 32.91 Mbit/s
95th percentile per-packet one-way delay: 16.692 ms
Loss rate: 0.08%
-- Flow 3:
Average throughput: 30.62 Mbit/s
95th percentile per-packet one-way delay: 19.033 ms
Loss rate: 0.09%
```
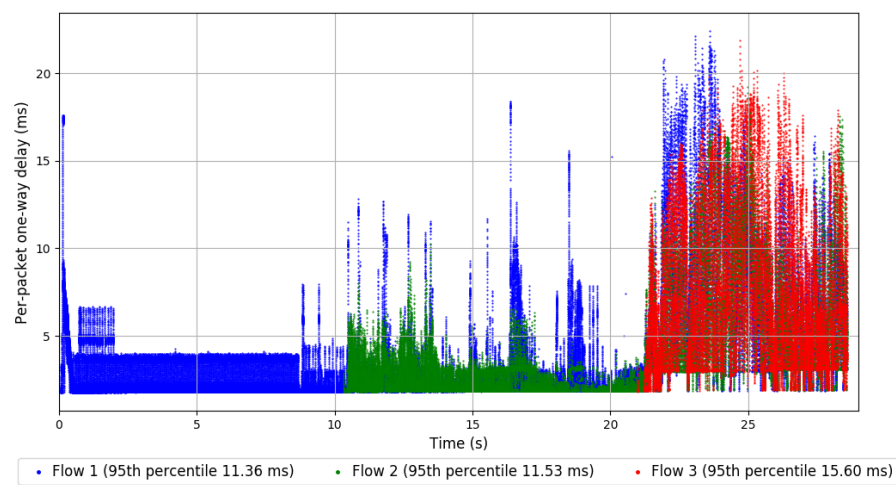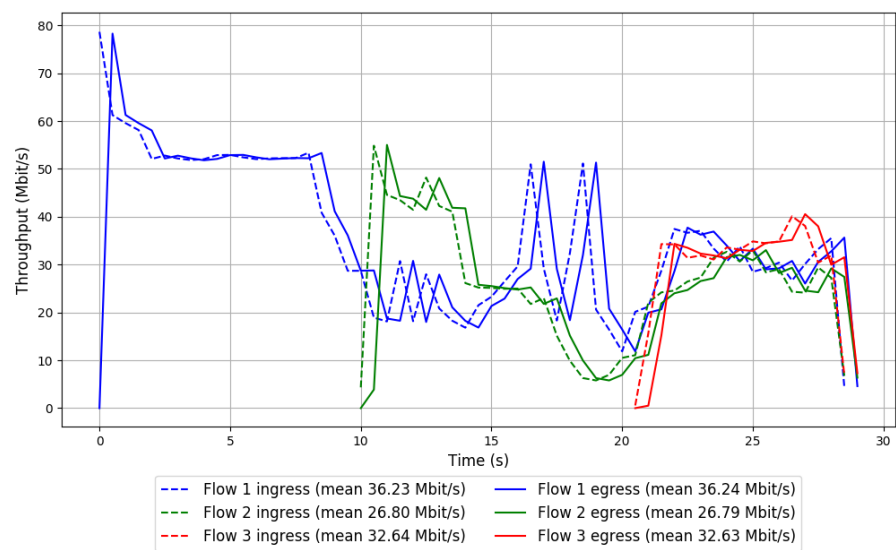
Run 2: Report of Indigo-MusesC5 — Data Link

```
Run 3: Statistics of Indigo-MusesC5

Start at: 2019-01-22 03:21:16
End at: 2019-01-22 03:21:46
Local clock offset: -5.386 ms
Remote clock offset: 0.54 ms


# Below is generated by plot.py at 2019-01-22 04:36:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 62.03 Mbit/s
95th percentile per-packet one-way delay: 12.762 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 36.24 Mbit/s
95th percentile per-packet one-way delay: 11.355 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 26.79 Mbit/s
95th percentile per-packet one-way delay: 11.527 ms
Loss rate: 0.04%
-- Flow 3:
Average throughput: 32.63 Mbit/s
95th percentile per-packet one-way delay: 15.601 ms
Loss rate: 0.10%
```
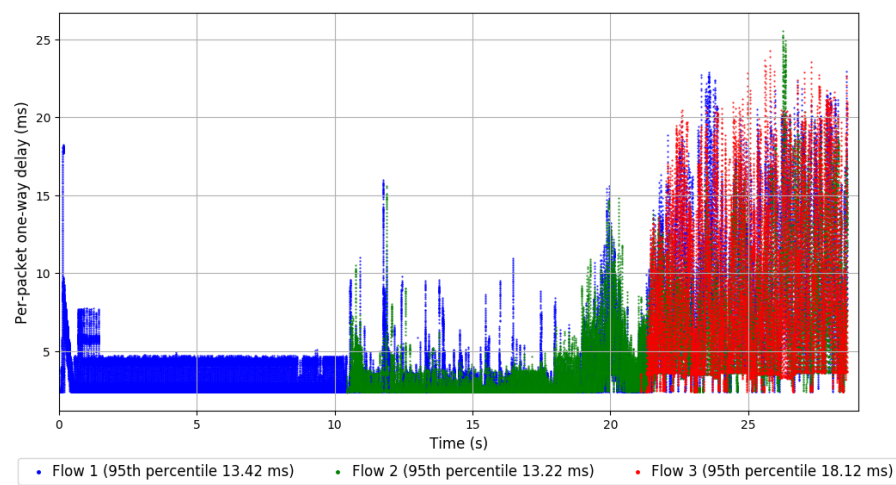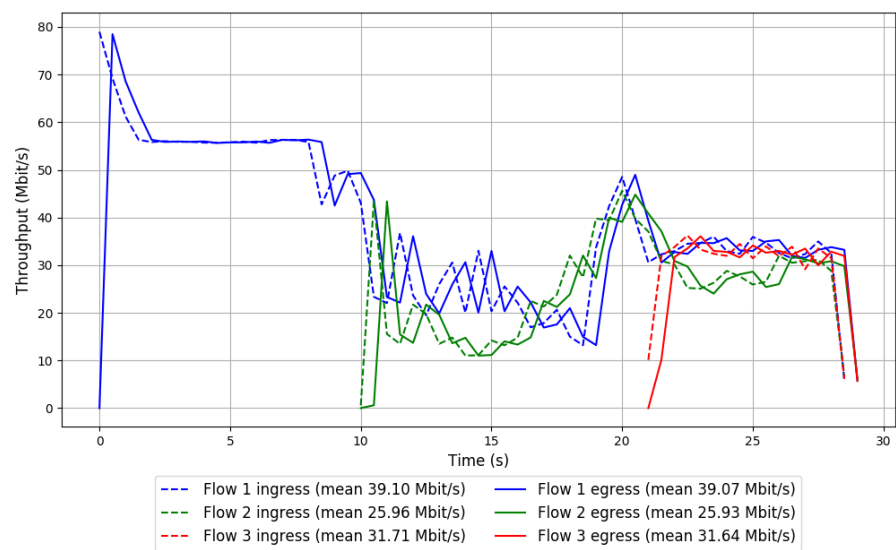
Run 3: Report of Indigo-MusesC5 — Data Link

Flow 1 ingress (mean 36.23 Mbit/s)   Flow 1 egress (mean 36.24 Mbit/s)
Flow 2 ingress (mean 26.80 Mbit/s)   Flow 2 egress (mean 26.79 Mbit/s)
Flow 3 ingress (mean 32.64 Mbit/s)   Flow 3 egress (mean 32.63 Mbit/s)

• Flow 1 (95th percentile 11.36 ms)   • Flow 2 (95th percentile 11.53 ms)   • Flow 3 (95th percentile 15.60 ms)

```
Run 4: Statistics of Indigo-MusesC5

Start at: 2019-01-22 03:45:27
End at: 2019-01-22 03:45:57
Local clock offset: -7.394 ms
Remote clock offset: 0.613 ms


# Below is generated by plot.py at 2019-01-22 04:37:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 63.84 Mbit/s
95th percentile per-packet one-way delay: 14.831 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 39.07 Mbit/s
95th percentile per-packet one-way delay: 13.419 ms
Loss rate: 0.03%
-- Flow 2:
Average throughput: 25.93 Mbit/s
95th percentile per-packet one-way delay: 13.225 ms
Loss rate: 0.08%
-- Flow 3:
Average throughput: 31.64 Mbit/s
95th percentile per-packet one-way delay: 18.121 ms
Loss rate: 0.18%
```
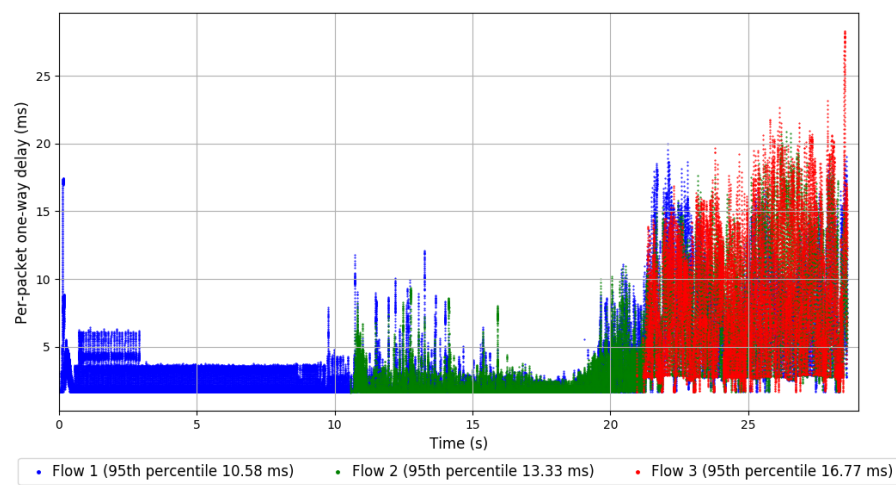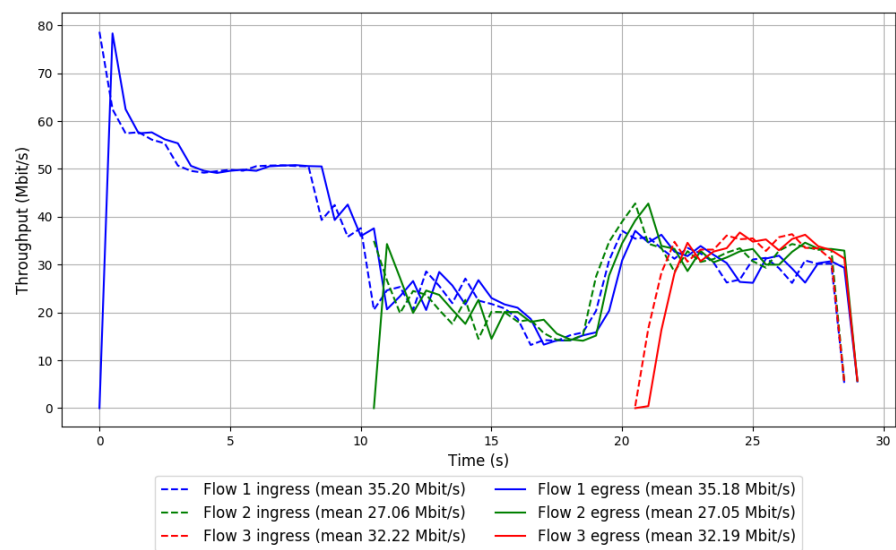
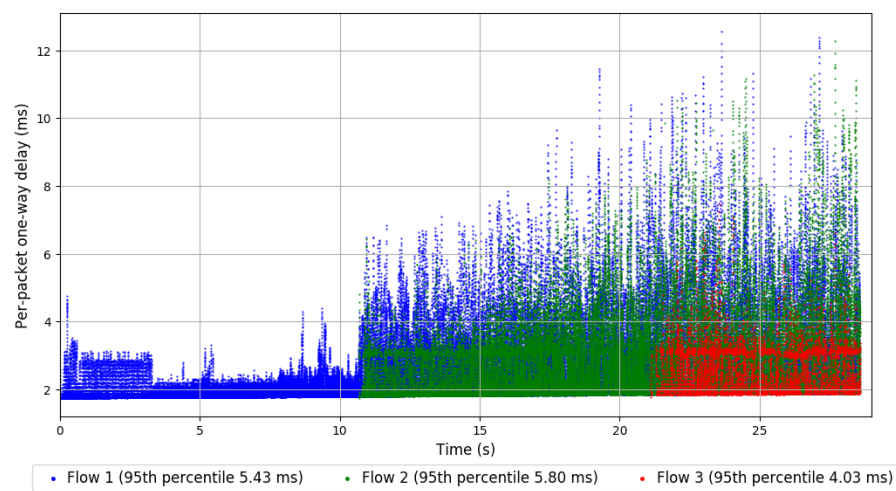Run 4: Report of Indigo-MusesC5 — Data Link

```
Run 5: Statistics of Indigo-MusesC5

Start at: 2019-01-22 04:09:37
End at: 2019-01-22 04:10:07
Local clock offset: -8.614 ms
Remote clock offset: 0.763 ms


# Below is generated by plot.py at 2019-01-22 04:37:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 60.81 Mbit/s
95th percentile per-packet one-way delay: 13.266 ms
Loss rate: 0.05%
-- Flow 1:
Average throughput: 35.18 Mbit/s
95th percentile per-packet one-way delay: 10.577 ms
Loss rate: 0.04%
-- Flow 2:
Average throughput: 27.05 Mbit/s
95th percentile per-packet one-way delay: 13.329 ms
Loss rate: 0.06%
-- Flow 3:
Average throughput: 32.19 Mbit/s
95th percentile per-packet one-way delay: 16.771 ms
Loss rate: 0.12%
```

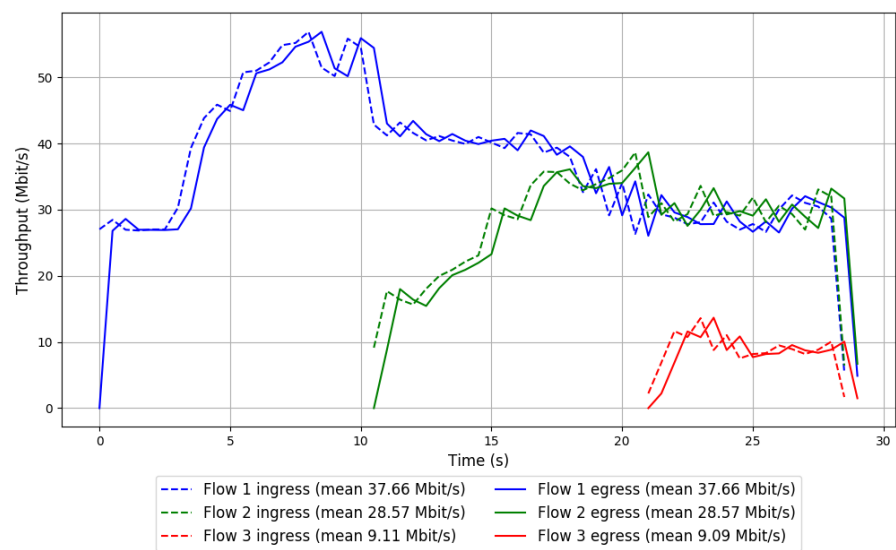Run 5: Report of Indigo-MusesC5 — Data Link

```
Run 1: Statistics of Indigo-MusesD

Start at: 2019-01-22 02:31:50
End at: 2019-01-22 02:32:20
Local clock offset: -6.665 ms
Remote clock offset: -0.415 ms


# Below is generated by plot.py at 2019-01-22 04:37:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 57.91 Mbit/s
95th percentile per-packet one-way delay: 5.513 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 37.66 Mbit/s
95th percentile per-packet one-way delay: 5.432 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 28.57 Mbit/s
95th percentile per-packet one-way delay: 5.801 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 9.09 Mbit/s
95th percentile per-packet one-way delay: 4.026 ms
Loss rate: 0.14%
```
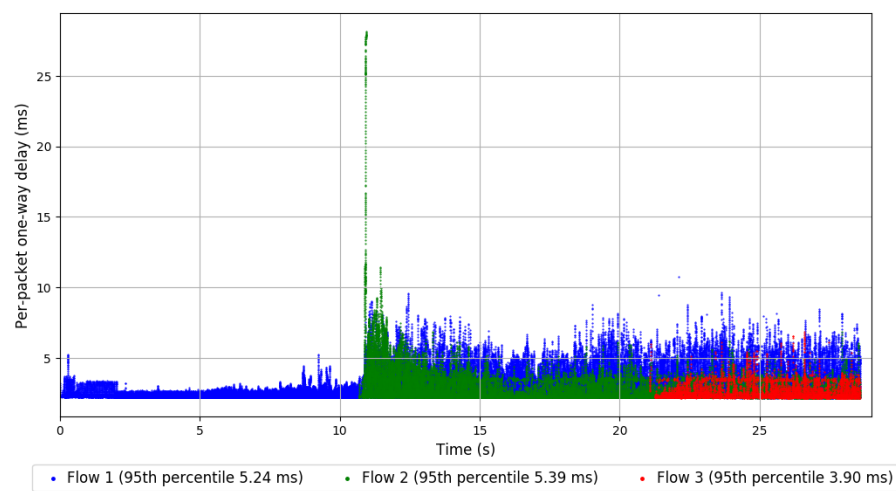
Run 1: Report of Indigo-MusesD — Data Link

```
Run 2: Statistics of Indigo-MusesD

Start at: 2019-01-22 02:55:59
End at: 2019-01-22 02:56:29
Local clock offset: -4.455 ms
Remote clock offset: 0.185 ms


# Below is generated by plot.py at 2019-01-22 04:37:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 49.57 Mbit/s
95th percentile per-packet one-way delay: 5.240 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 37.23 Mbit/s
95th percentile per-packet one-way delay: 5.244 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 16.72 Mbit/s
95th percentile per-packet one-way delay: 5.388 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 7.10 Mbit/s
95th percentile per-packet one-way delay: 3.896 ms
Loss rate: 0.02%
```
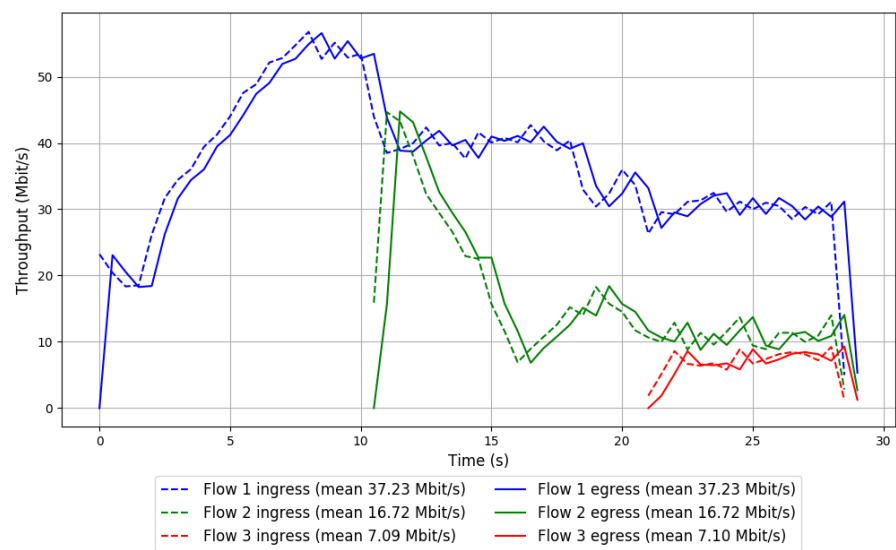
Run 2: Report of Indigo-MusesD — Data Link

```
Run 3: Statistics of Indigo-MusesD

Start at: 2019-01-22 03:20:09
End at: 2019-01-22 03:20:39
Local clock offset: -4.416 ms
Remote clock offset: 0.556 ms


# Below is generated by plot.py at 2019-01-22 04:37:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 52.22 Mbit/s
95th percentile per-packet one-way delay: 5.664 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 38.76 Mbit/s
95th percentile per-packet one-way delay: 5.703 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 15.82 Mbit/s
95th percentile per-packet one-way delay: 5.791 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 13.55 Mbit/s
95th percentile per-packet one-way delay: 4.914 ms
Loss rate: 0.00%
```
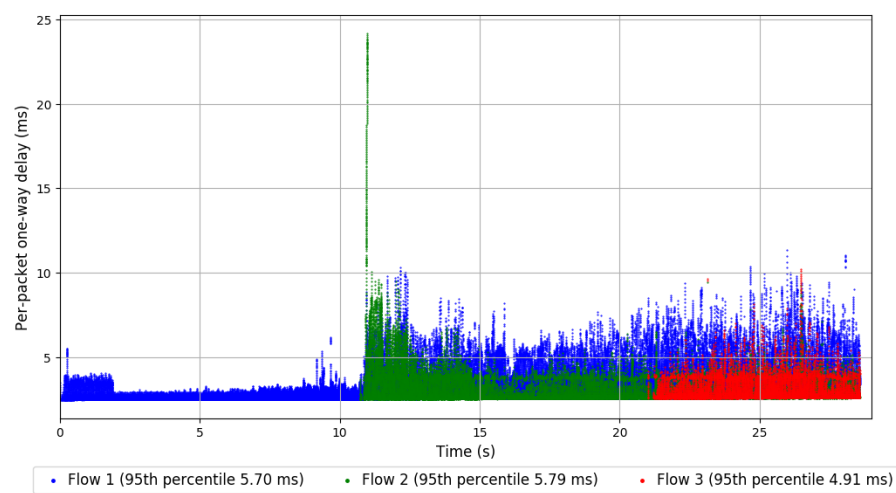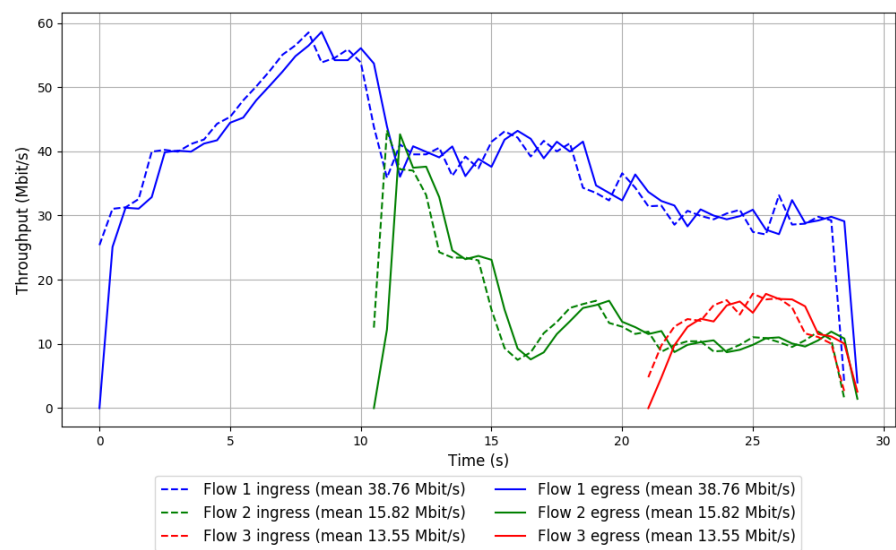
Run 3: Report of Indigo-MusesD — Data Link

90

```
Run 4: Statistics of Indigo-MusesD

Start at: 2019-01-22 03:44:20
End at: 2019-01-22 03:44:50
Local clock offset: -8.094 ms
Remote clock offset: 0.586 ms


# Below is generated by plot.py at 2019-01-22 04:37:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 40.64 Mbit/s
95th percentile per-packet one-way delay: 4.415 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 29.21 Mbit/s
95th percentile per-packet one-way delay: 4.608 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 12.91 Mbit/s
95th percentile per-packet one-way delay: 3.507 ms
Loss rate: 0.04%
-- Flow 3:
Average throughput: 11.67 Mbit/s
95th percentile per-packet one-way delay: 3.639 ms
Loss rate: 0.00%
```
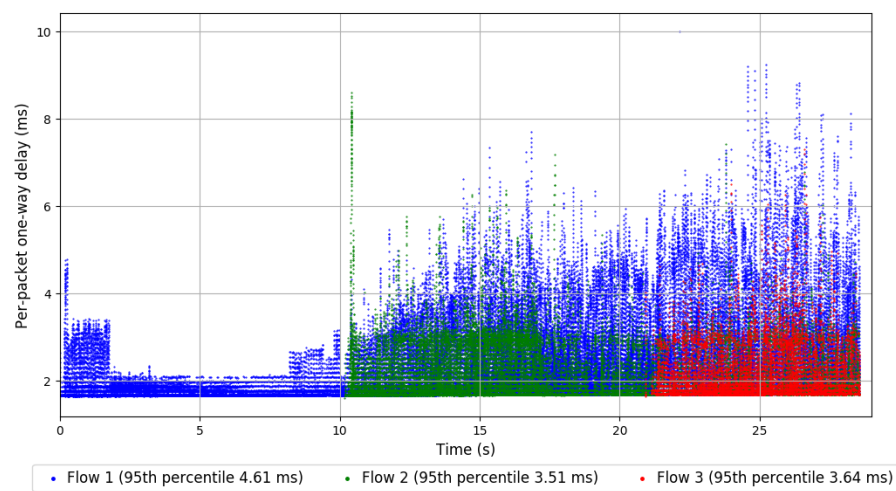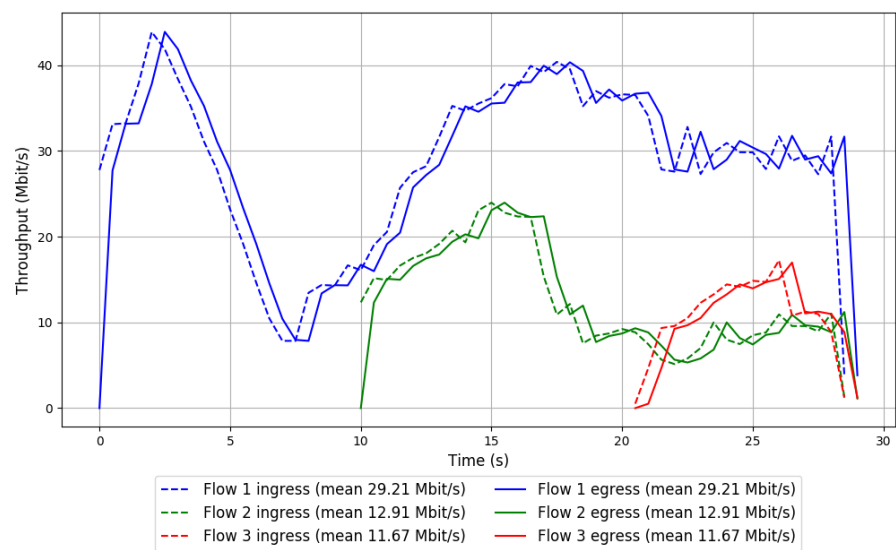
Run 4: Report of Indigo-MusesD — Data Link

```
Run 5: Statistics of Indigo-MusesD

Start at: 2019-01-22 04:08:29
End at: 2019-01-22 04:08:59
Local clock offset: -8.547 ms
Remote clock offset: 0.801 ms


# Below is generated by plot.py at 2019-01-22 04:37:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 54.17 Mbit/s
95th percentile per-packet one-way delay: 5.772 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 31.30 Mbit/s
95th percentile per-packet one-way delay: 5.919 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 31.04 Mbit/s
95th percentile per-packet one-way delay: 5.742 ms
Loss rate: 0.03%
-- Flow 3:
Average throughput: 11.59 Mbit/s
95th percentile per-packet one-way delay: 4.005 ms
Loss rate: 0.03%
```
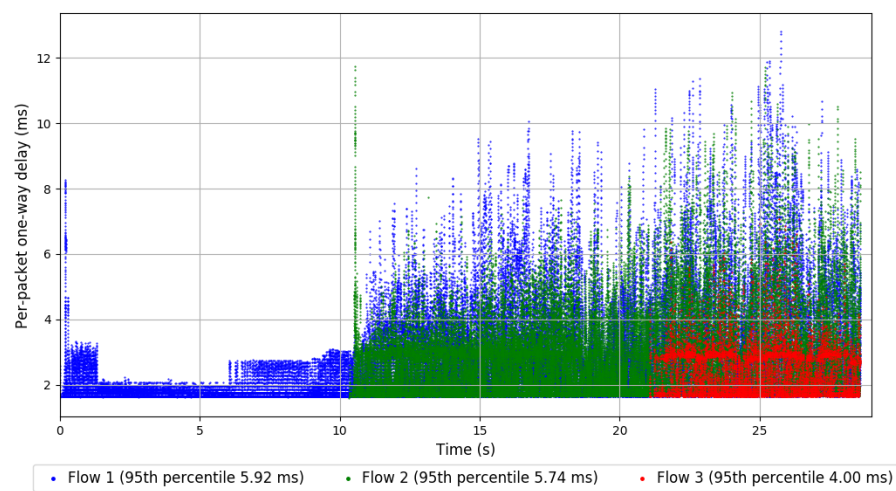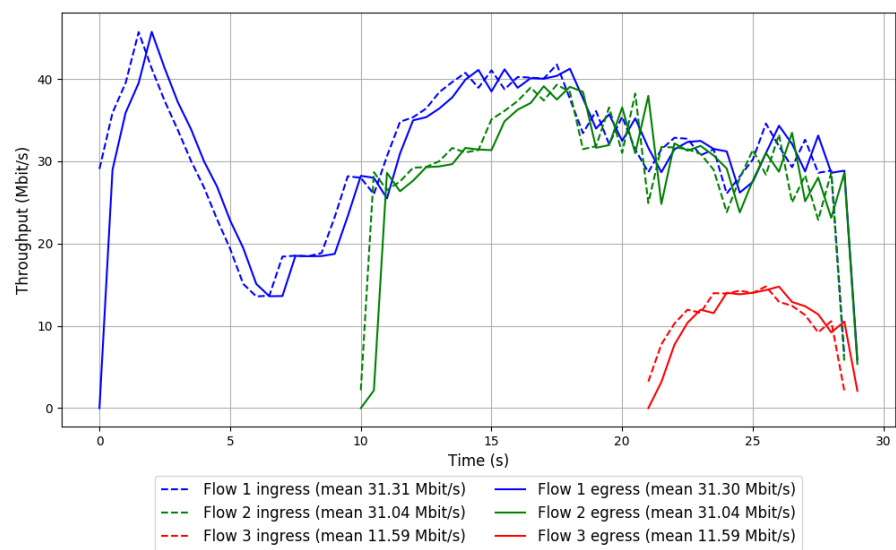
Run 5: Report of Indigo-MusesD — Data Link

Flow 1 ingress (mean 31.31 Mbit/s) -- Flow 1 egress (mean 31.30 Mbit/s)
Flow 2 ingress (mean 31.04 Mbit/s) -- Flow 2 egress (mean 31.04 Mbit/s)
Flow 3 ingress (mean 11.59 Mbit/s) -- Flow 3 egress (mean 11.59 Mbit/s)

Flow 1 (95th percentile 5.92 ms)   Flow 2 (95th percentile 5.74 ms)   Flow 3 (95th percentile 4.00 ms)
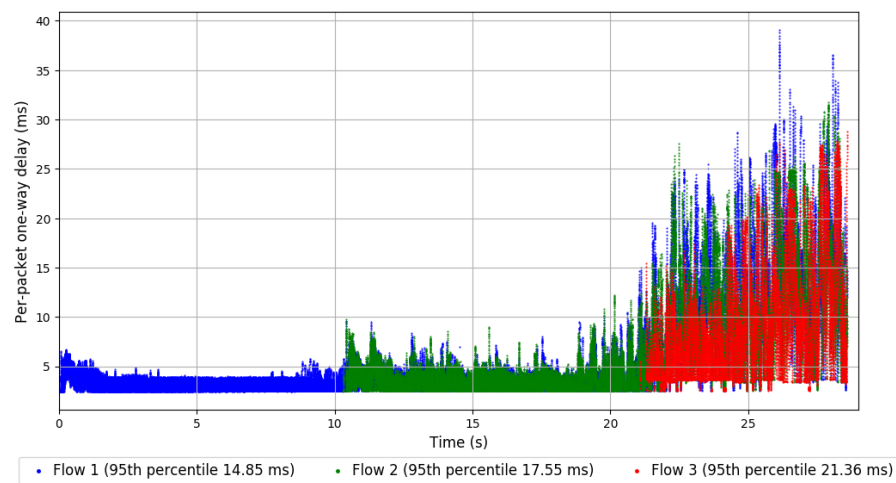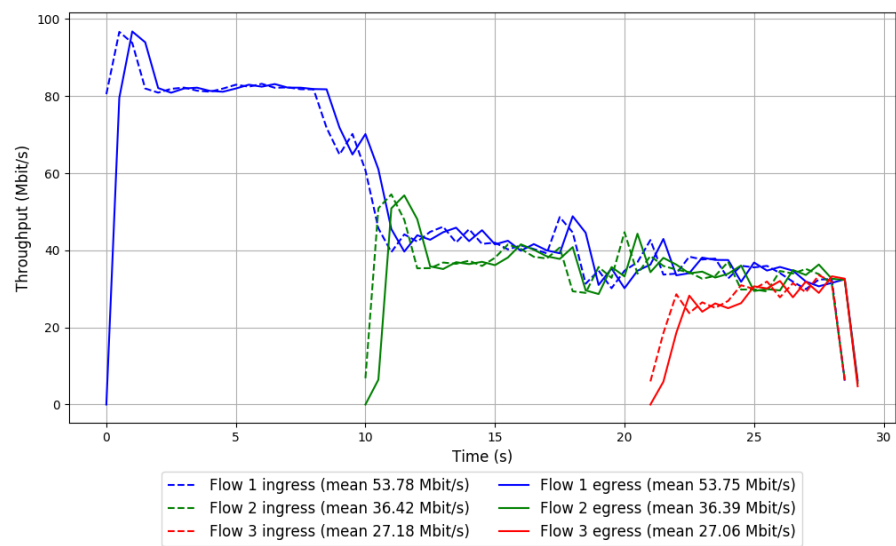
```
Run 1: Statistics of Indigo-MusesT

Start at: 2019-01-22 02:36:26
End at: 2019-01-22 02:36:56
Local clock offset: -6.92 ms
Remote clock offset: -0.318 ms


# Below is generated by plot.py at 2019-01-22 04:37:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 84.14 Mbit/s
95th percentile per-packet one-way delay: 16.795 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 53.75 Mbit/s
95th percentile per-packet one-way delay: 14.845 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 36.39 Mbit/s
95th percentile per-packet one-way delay: 17.553 ms
Loss rate: 0.09%
-- Flow 3:
Average throughput: 27.06 Mbit/s
95th percentile per-packet one-way delay: 21.361 ms
Loss rate: 0.41%
```

Run 1: Report of Indigo-MusesT — Data Link

```
Run 2: Statistics of Indigo-MusesT

Start at: 2019-01-22 03:00:35
End at: 2019-01-22 03:01:05
Local clock offset: -3.744 ms
Remote clock offset: 0.183 ms


# Below is generated by plot.py at 2019-01-22 04:37:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 81.49 Mbit/s
95th percentile per-packet one-way delay: 17.813 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 51.19 Mbit/s
95th percentile per-packet one-way delay: 14.101 ms
Loss rate: 0.05%
-- Flow 2:
Average throughput: 36.18 Mbit/s
95th percentile per-packet one-way delay: 22.048 ms
Loss rate: 0.10%
-- Flow 3:
Average throughput: 28.11 Mbit/s
95th percentile per-packet one-way delay: 17.476 ms
Loss rate: 0.15%
```
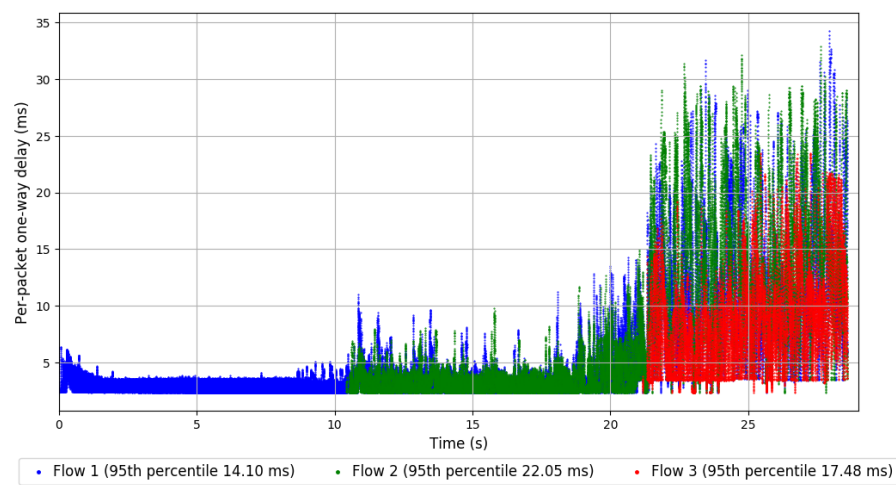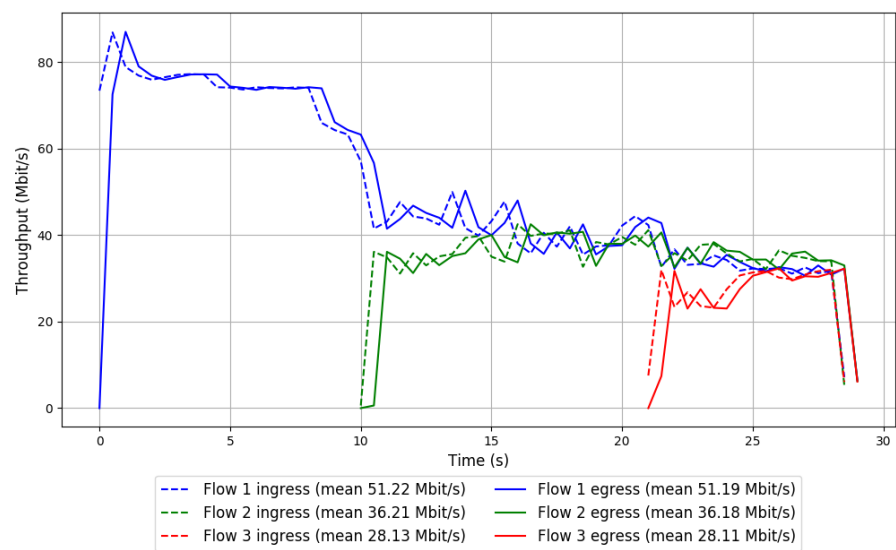
Run 2: Report of Indigo-MusesT — Data Link

```
Run 3: Statistics of Indigo-MusesT

Start at: 2019-01-22 03:24:45
End at: 2019-01-22 03:25:15
Local clock offset: -6.044 ms
Remote clock offset: 0.642 ms


# Below is generated by plot.py at 2019-01-22 04:37:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 80.74 Mbit/s
95th percentile per-packet one-way delay: 14.051 ms
Loss rate: 0.05%
-- Flow 1:
Average throughput: 51.71 Mbit/s
95th percentile per-packet one-way delay: 13.950 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 37.04 Mbit/s
95th percentile per-packet one-way delay: 14.852 ms
Loss rate: 0.05%
-- Flow 3:
Average throughput: 22.53 Mbit/s
95th percentile per-packet one-way delay: 12.643 ms
Loss rate: 0.24%
```
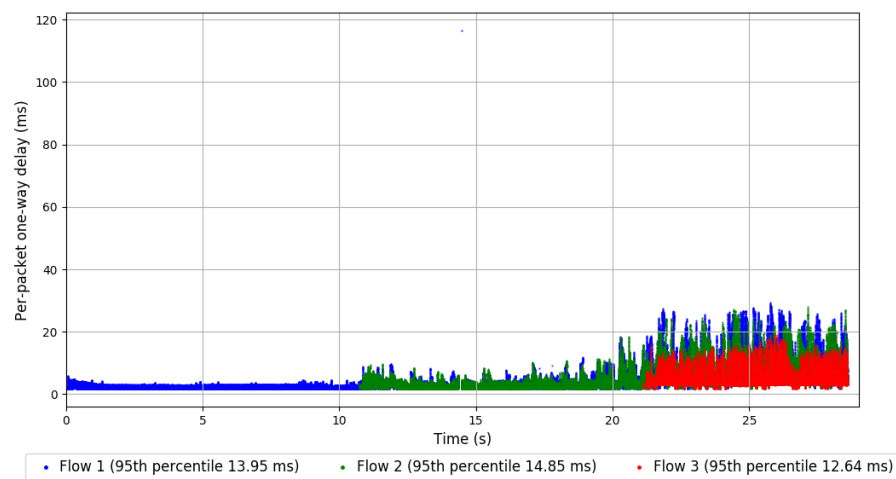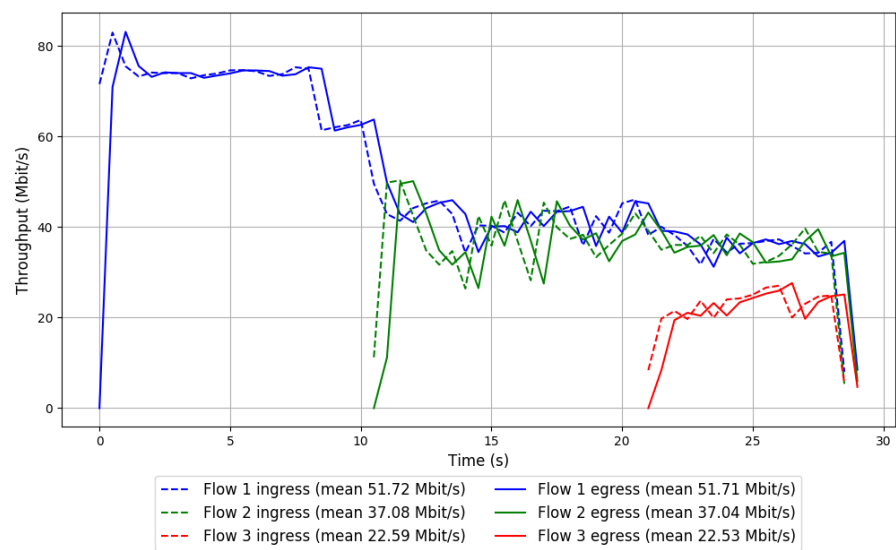
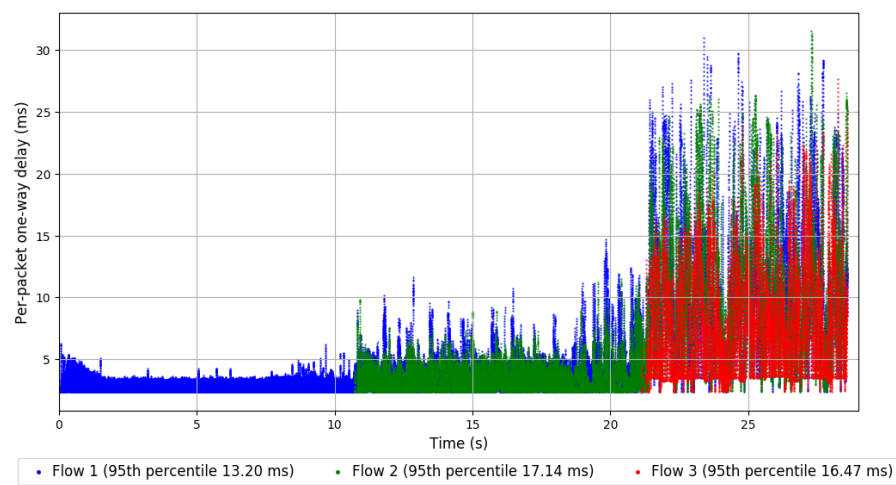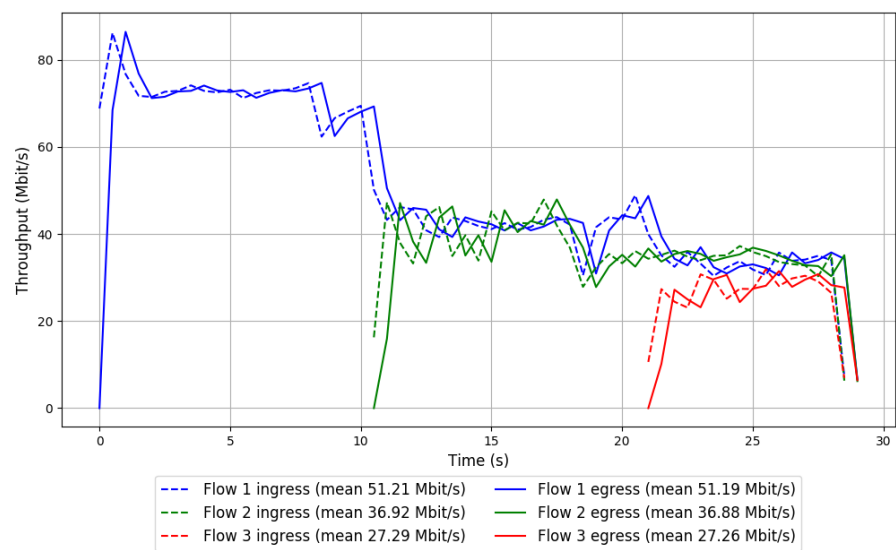Run 3: Report of Indigo-MusesT — Data Link

```
Run 4: Statistics of Indigo-MusesT

Start at: 2019-01-22 03:48:56
End at: 2019-01-22 03:49:26
Local clock offset: -7.366 ms
Remote clock offset: 0.618 ms


# Below is generated by plot.py at 2019-01-22 04:37:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 81.37 Mbit/s
95th percentile per-packet one-way delay: 15.148 ms
Loss rate: 0.05%
-- Flow 1:
Average throughput: 51.19 Mbit/s
95th percentile per-packet one-way delay: 13.203 ms
Loss rate: 0.03%
-- Flow 2:
Average throughput: 36.88 Mbit/s
95th percentile per-packet one-way delay: 17.141 ms
Loss rate: 0.07%
-- Flow 3:
Average throughput: 27.26 Mbit/s
95th percentile per-packet one-way delay: 16.474 ms
Loss rate: 0.15%
```

Run 4: Report of Indigo-MusesT — Data Link

```
Run 5: Statistics of Indigo-MusesT

Start at: 2019-01-22 04:13:05
End at: 2019-01-22 04:13:35
Local clock offset: -7.977 ms
Remote clock offset: 0.812 ms


# Below is generated by plot.py at 2019-01-22 04:37:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 84.45 Mbit/s
95th percentile per-packet one-way delay: 17.769 ms
Loss rate: 0.05%
-- Flow 1:
Average throughput: 53.84 Mbit/s
95th percentile per-packet one-way delay: 14.317 ms
Loss rate: 0.03%
-- Flow 2:
Average throughput: 35.62 Mbit/s
95th percentile per-packet one-way delay: 18.286 ms
Loss rate: 0.05%
-- Flow 3:
Average throughput: 30.68 Mbit/s
95th percentile per-packet one-way delay: 24.754 ms
Loss rate: 0.23%
```
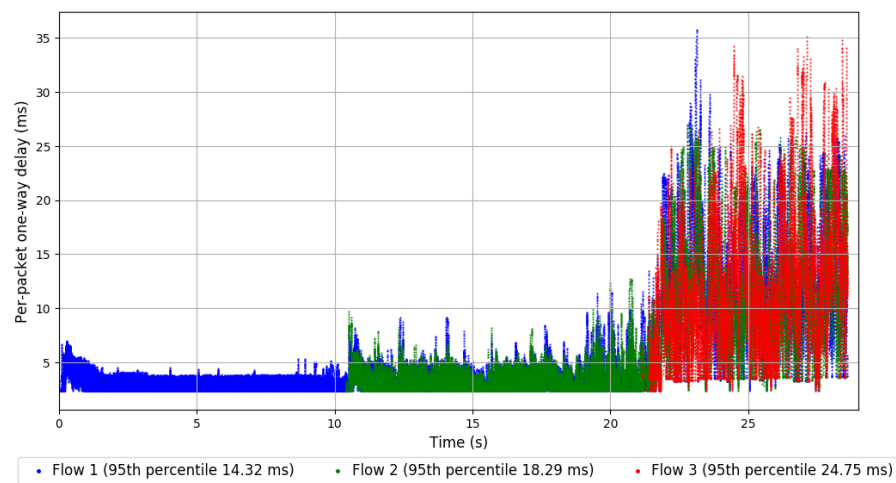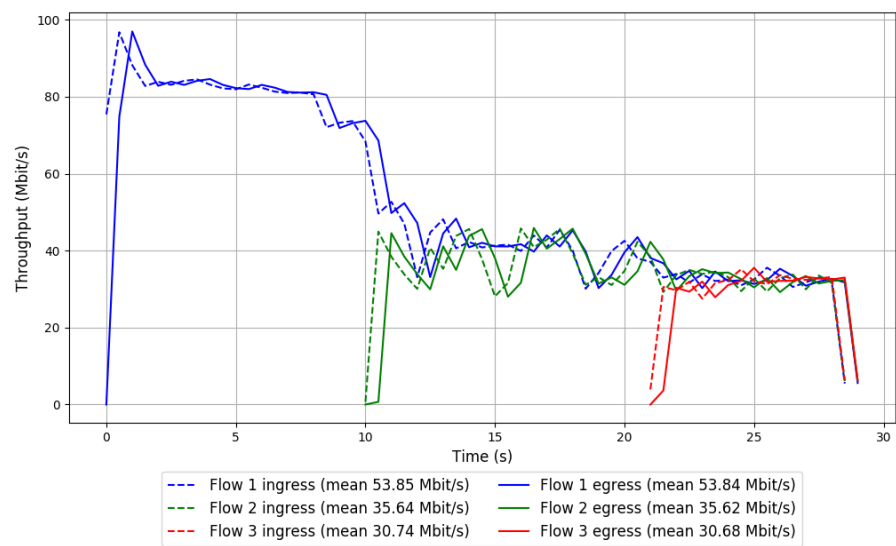
Run 5: Report of Indigo-MusesT — Data Link

Flow 1 ingress (mean 53.85 Mbit/s)   Flow 1 egress (mean 53.84 Mbit/s)
Flow 2 ingress (mean 35.64 Mbit/s)   Flow 2 egress (mean 35.62 Mbit/s)
Flow 3 ingress (mean 30.74 Mbit/s)   Flow 3 egress (mean 30.68 Mbit/s)

Flow 1 (95th percentile 14.32 ms)   Flow 2 (95th percentile 18.29 ms)   Flow 3 (95th percentile 24.75 ms)
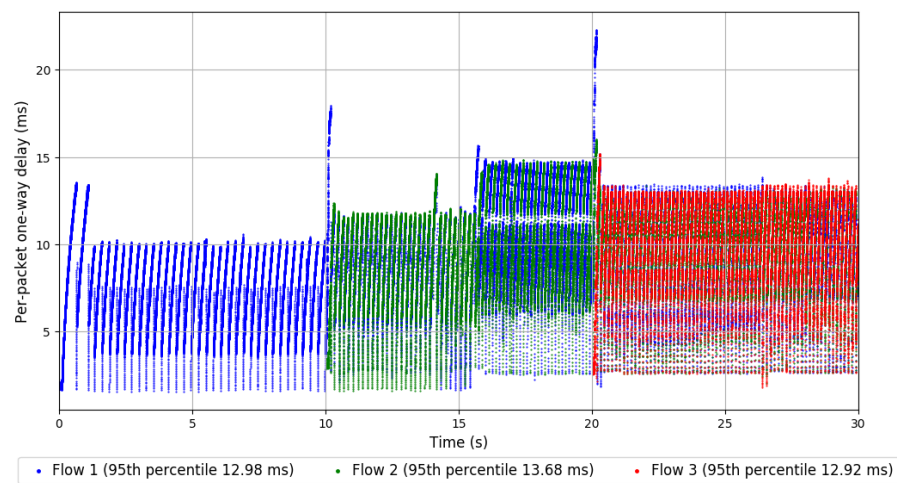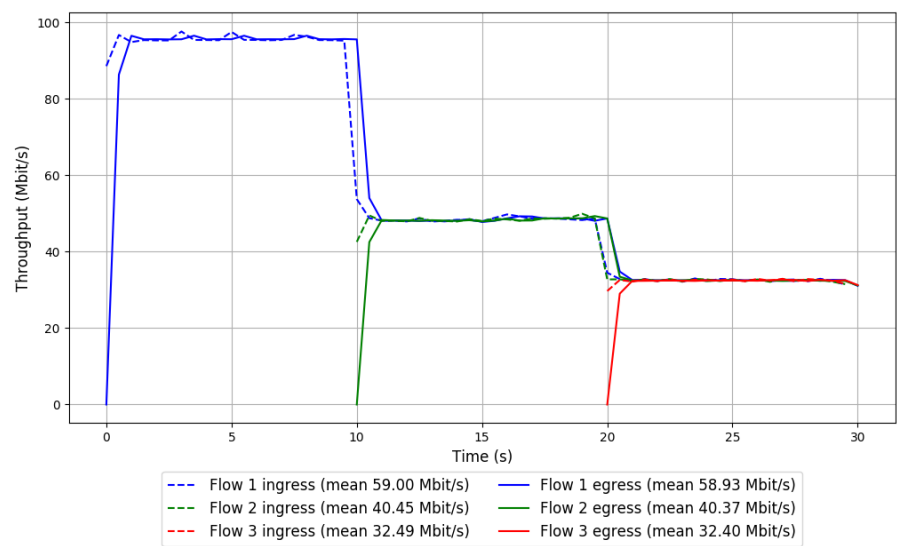
104

```
Run 1: Statistics of LEDBAT

Start at: 2019-01-22 02:34:06
End at: 2019-01-22 02:34:36
Local clock offset: -7.176 ms
Remote clock offset: -0.31 ms


# Below is generated by plot.py at 2019-01-22 04:38:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.56 Mbit/s
95th percentile per-packet one-way delay: 13.089 ms
Loss rate: 0.18%
-- Flow 1:
Average throughput: 58.93 Mbit/s
95th percentile per-packet one-way delay: 12.984 ms
Loss rate: 0.12%
-- Flow 2:
Average throughput: 40.37 Mbit/s
95th percentile per-packet one-way delay: 13.676 ms
Loss rate: 0.22%
-- Flow 3:
Average throughput: 32.40 Mbit/s
95th percentile per-packet one-way delay: 12.920 ms
Loss rate: 0.37%
```

Run 1: Report of LEDBAT — Data Link

Flow 1 ingress (mean 59.00 Mbit/s) --- Flow 1 egress (mean 58.93 Mbit/s)
Flow 2 ingress (mean 40.45 Mbit/s) --- Flow 2 egress (mean 40.37 Mbit/s)
Flow 3 ingress (mean 32.49 Mbit/s) --- Flow 3 egress (mean 32.40 Mbit/s)

Flow 1 (95th percentile 12.98 ms)   Flow 2 (95th percentile 13.68 ms)   Flow 3 (95th percentile 12.92 ms)

106

```
Run 2: Statistics of LEDBAT

Start at: 2019-01-22 02:58:14
End at: 2019-01-22 02:58:44
Local clock offset: -4.08 ms
Remote clock offset: 0.179 ms


# Below is generated by plot.py at 2019-01-22 04:38:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.60 Mbit/s
95th percentile per-packet one-way delay: 14.484 ms
Loss rate: 0.18%
-- Flow 1:
Average throughput: 58.80 Mbit/s
95th percentile per-packet one-way delay: 14.049 ms
Loss rate: 0.12%
-- Flow 2:
Average throughput: 40.71 Mbit/s
95th percentile per-packet one-way delay: 14.955 ms
Loss rate: 0.24%
-- Flow 3:
Average throughput: 32.16 Mbit/s
95th percentile per-packet one-way delay: 13.175 ms
Loss rate: 0.33%
```
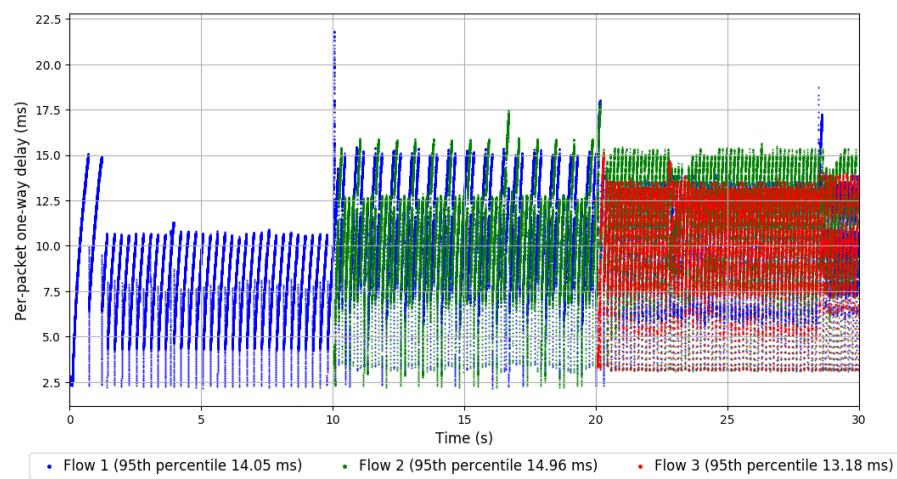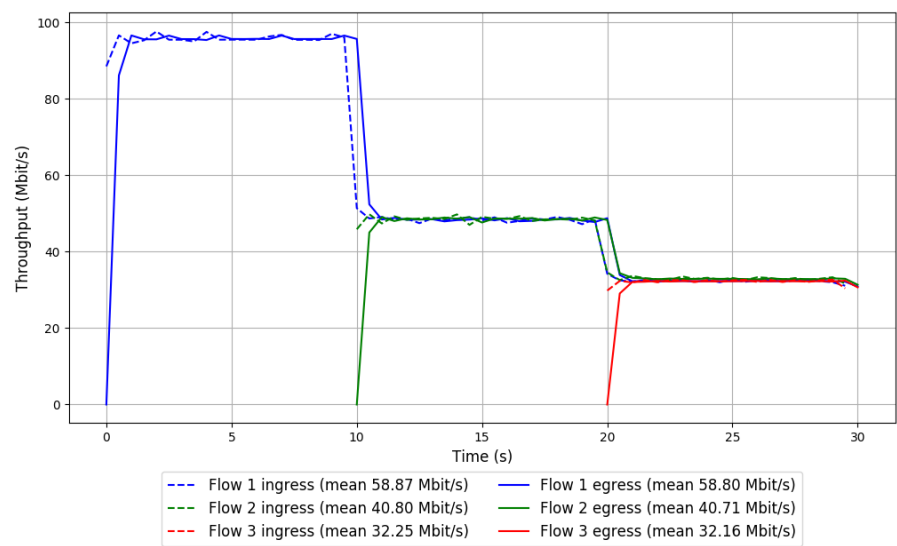
Run 2: Report of LEDBAT — Data Link

```
Run 3: Statistics of LEDBAT

Start at: 2019-01-22 03:22:24
End at: 2019-01-22 03:22:54
Local clock offset: -5.596 ms
Remote clock offset: 0.571 ms


# Below is generated by plot.py at 2019-01-22 04:38:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.73 Mbit/s
95th percentile per-packet one-way delay: 13.812 ms
Loss rate: 0.18%
-- Flow 1:
Average throughput: 59.23 Mbit/s
95th percentile per-packet one-way delay: 13.798 ms
Loss rate: 0.14%
-- Flow 2:
Average throughput: 40.24 Mbit/s
95th percentile per-packet one-way delay: 14.039 ms
Loss rate: 0.21%
-- Flow 3:
Average throughput: 32.23 Mbit/s
95th percentile per-packet one-way delay: 13.027 ms
Loss rate: 0.36%
```
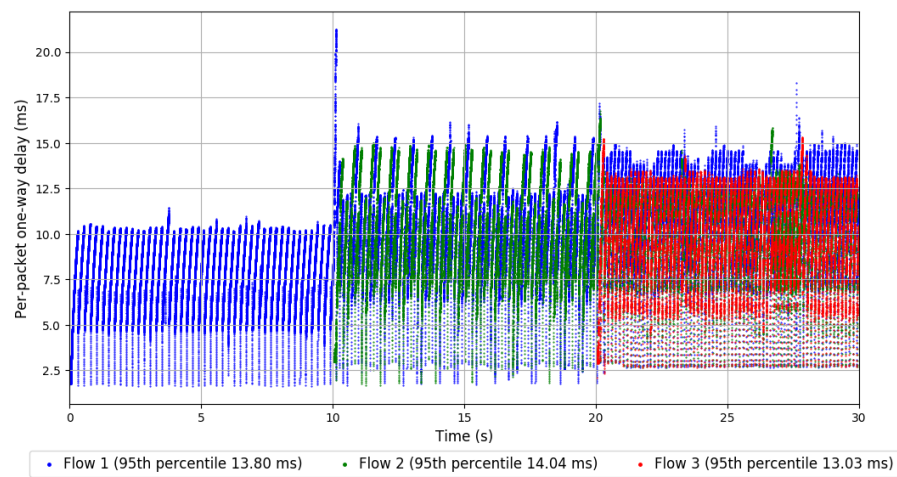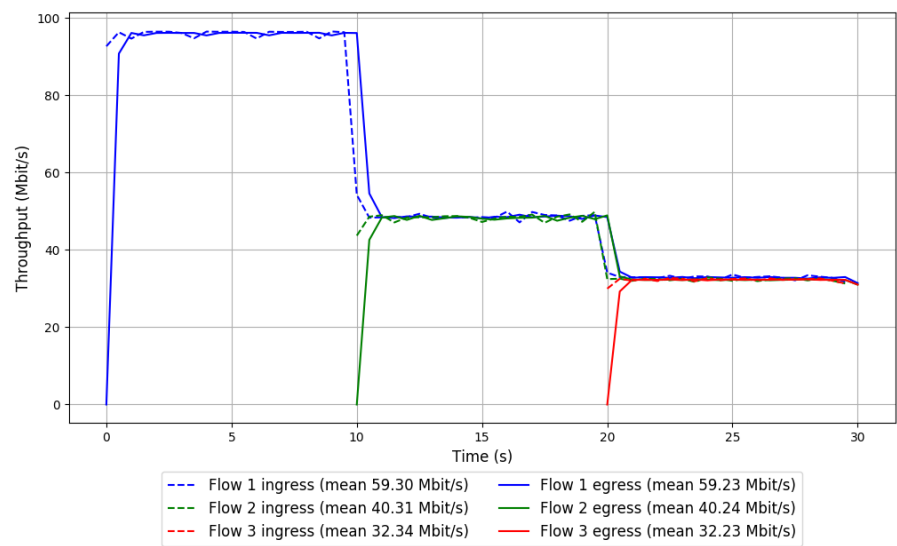
Run 3: Report of LEDBAT — Data Link

Flow 1 ingress (mean 59.30 Mbit/s)   Flow 1 egress (mean 59.23 Mbit/s)
Flow 2 ingress (mean 40.31 Mbit/s)   Flow 2 egress (mean 40.24 Mbit/s)
Flow 3 ingress (mean 32.34 Mbit/s)   Flow 3 egress (mean 32.23 Mbit/s)

Flow 1 (95th percentile 13.80 ms)   Flow 2 (95th percentile 14.04 ms)   Flow 3 (95th percentile 13.03 ms)
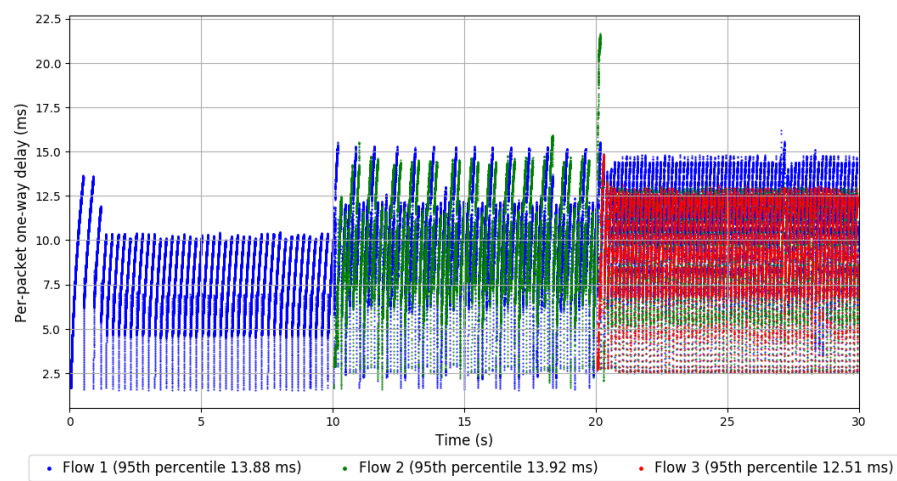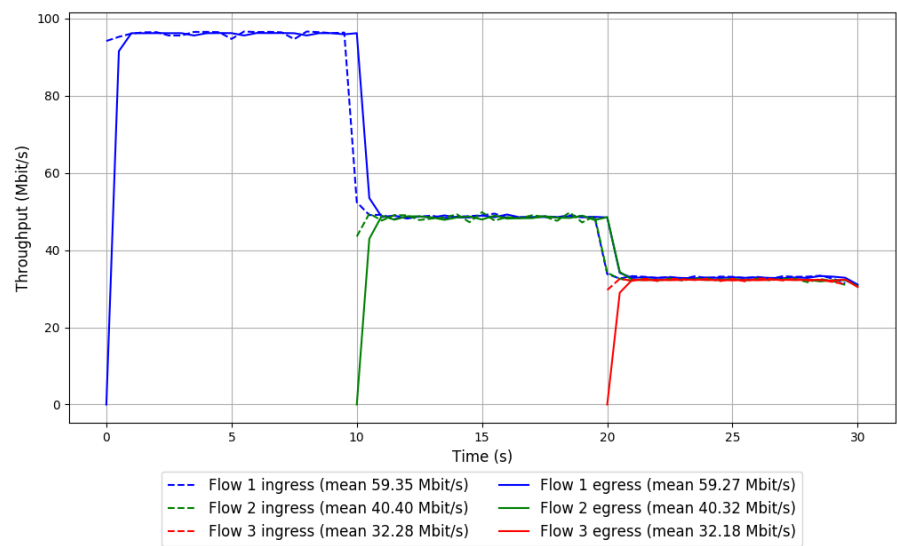
```
Run 4: Statistics of LEDBAT

Start at: 2019-01-22 03:46:35
End at: 2019-01-22 03:47:05
Local clock offset: -8.187 ms
Remote clock offset: 0.521 ms


# Below is generated by plot.py at 2019-01-22 04:38:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.81 Mbit/s
95th percentile per-packet one-way delay: 13.825 ms
Loss rate: 0.18%
-- Flow 1:
Average throughput: 59.27 Mbit/s
95th percentile per-packet one-way delay: 13.883 ms
Loss rate: 0.14%
-- Flow 2:
Average throughput: 40.32 Mbit/s
95th percentile per-packet one-way delay: 13.920 ms
Loss rate: 0.20%
-- Flow 3:
Average throughput: 32.18 Mbit/s
95th percentile per-packet one-way delay: 12.513 ms
Loss rate: 0.35%
```

Run 4: Report of LEDBAT — Data Link

```
Run 5: Statistics of LEDBAT

Start at: 2019-01-22 04:10:45
End at: 2019-01-22 04:11:15
Local clock offset: -8.651 ms
Remote clock offset: 0.745 ms


# Below is generated by plot.py at 2019-01-22 04:38:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.82 Mbit/s
95th percentile per-packet one-way delay: 12.955 ms
Loss rate: 0.20%
-- Flow 1:
Average throughput: 59.09 Mbit/s
95th percentile per-packet one-way delay: 12.493 ms
Loss rate: 0.14%
-- Flow 2:
Average throughput: 40.49 Mbit/s
95th percentile per-packet one-way delay: 13.131 ms
Loss rate: 0.26%
-- Flow 3:
Average throughput: 32.45 Mbit/s
95th percentile per-packet one-way delay: 13.368 ms
Loss rate: 0.37%
```
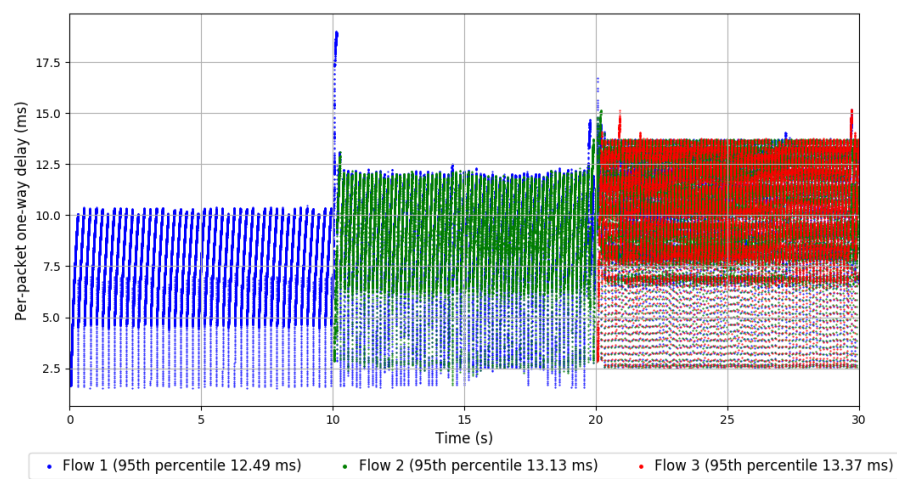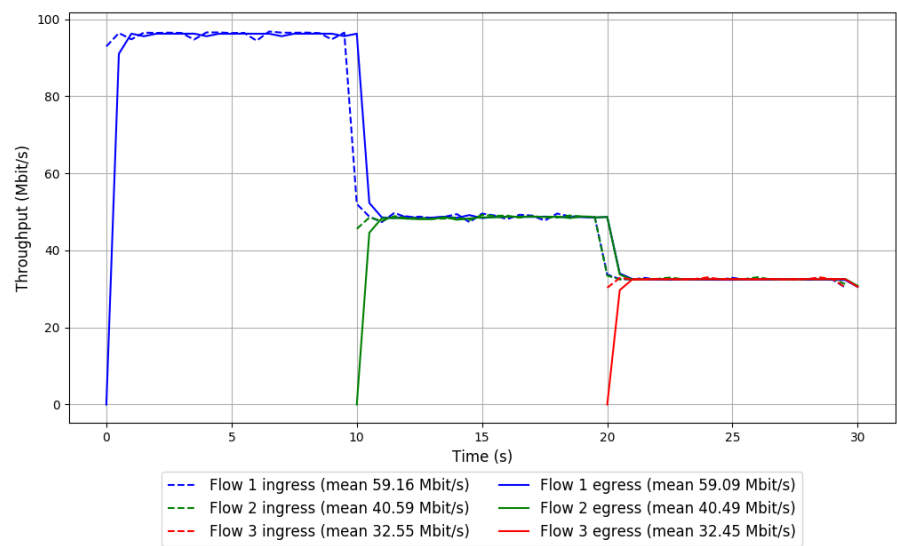
Run 5: Report of LEDBAT — Data Link

Flow 1 ingress (mean 59.16 Mbit/s) --- Flow 1 egress (mean 59.09 Mbit/s)
Flow 2 ingress (mean 40.59 Mbit/s) --- Flow 2 egress (mean 40.49 Mbit/s)
Flow 3 ingress (mean 32.55 Mbit/s) --- Flow 3 egress (mean 32.45 Mbit/s)

Flow 1 (95th percentile 12.49 ms)   Flow 2 (95th percentile 13.13 ms)   Flow 3 (95th percentile 13.37 ms)

```
Run 1: Statistics of PCC-Allegro

Start at: 2019-01-22 02:39:49
End at: 2019-01-22 02:40:19
Local clock offset: -7.51 ms
Remote clock offset: -0.29 ms


# Below is generated by plot.py at 2019-01-22 04:38:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.63 Mbit/s
95th percentile per-packet one-way delay: 1677.776 ms
Loss rate: 4.06%
-- Flow 1:
Average throughput: 69.01 Mbit/s
95th percentile per-packet one-way delay: 2050.373 ms
Loss rate: 5.28%
-- Flow 2:
Average throughput: 22.24 Mbit/s
95th percentile per-packet one-way delay: 8.965 ms
Loss rate: 0.03%
-- Flow 3:
Average throughput: 26.82 Mbit/s
95th percentile per-packet one-way delay: 34.015 ms
Loss rate: 0.80%
```
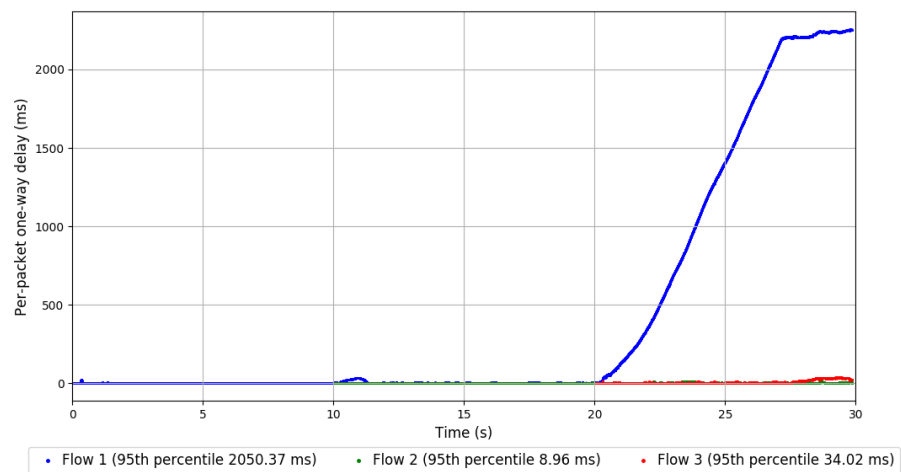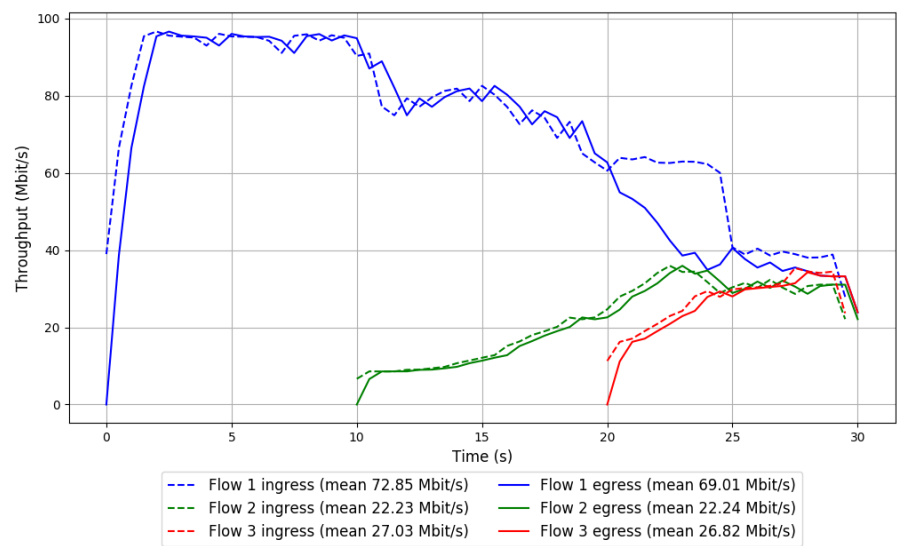
Run 1: Report of PCC-Allegro — Data Link

- - - Flow 1 ingress (mean 72.85 Mbit/s) —— Flow 1 egress (mean 69.01 Mbit/s)
- - - Flow 2 ingress (mean 22.23 Mbit/s) —— Flow 2 egress (mean 22.24 Mbit/s)
- - - Flow 3 ingress (mean 27.03 Mbit/s) —— Flow 3 egress (mean 26.82 Mbit/s)

• Flow 1 (95th percentile 2050.37 ms)   • Flow 2 (95th percentile 8.96 ms)   • Flow 3 (95th percentile 34.02 ms)

```
Run 2: Statistics of PCC-Allegro

Start at: 2019-01-22 03:03:57
End at: 2019-01-22 03:04:27
Local clock offset: -3.52 ms
Remote clock offset: 0.354 ms


# Below is generated by plot.py at 2019-01-22 04:38:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.86 Mbit/s
95th percentile per-packet one-way delay: 1819.546 ms
Loss rate: 4.02%
-- Flow 1:
Average throughput: 71.06 Mbit/s
95th percentile per-packet one-way delay: 2042.454 ms
Loss rate: 5.19%
-- Flow 2:
Average throughput: 21.09 Mbit/s
95th percentile per-packet one-way delay: 12.171 ms
Loss rate: 0.06%
-- Flow 3:
Average throughput: 26.67 Mbit/s
95th percentile per-packet one-way delay: 10.379 ms
Loss rate: 0.34%
```
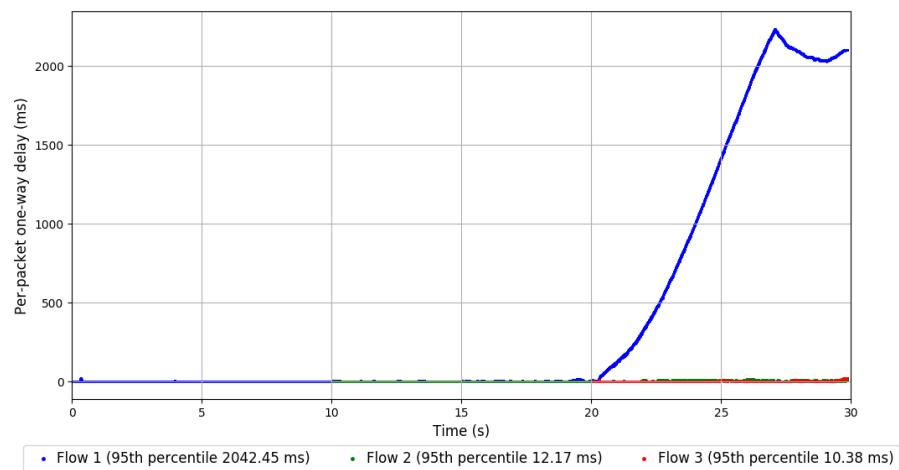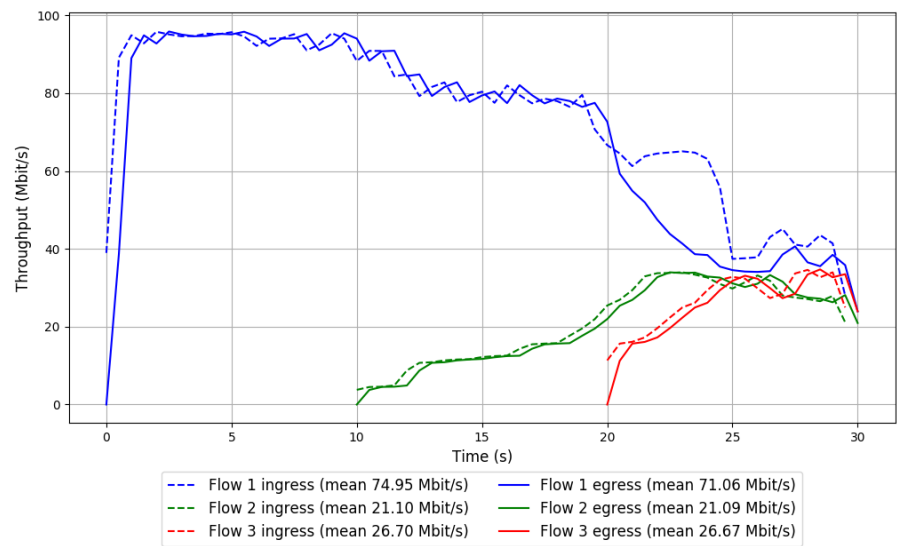
Run 2: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 74.95 Mbit/s) --- Flow 1 egress (mean 71.06 Mbit/s)
Flow 2 ingress (mean 21.10 Mbit/s) --- Flow 2 egress (mean 21.09 Mbit/s)
Flow 3 ingress (mean 26.70 Mbit/s) --- Flow 3 egress (mean 26.67 Mbit/s)

• Flow 1 (95th percentile 2042.45 ms)   • Flow 2 (95th percentile 12.17 ms)   • Flow 3 (95th percentile 10.38 ms)

```
Run 3: Statistics of PCC-Allegro

Start at: 2019-01-22 03:28:07
End at: 2019-01-22 03:28:37
Local clock offset: -5.789 ms
Remote clock offset: 0.633 ms


# Below is generated by plot.py at 2019-01-22 04:39:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.55 Mbit/s
95th percentile per-packet one-way delay: 1620.117 ms
Loss rate: 20.87%
-- Flow 1:
Average throughput: 57.86 Mbit/s
95th percentile per-packet one-way delay: 1627.873 ms
Loss rate: 25.53%
-- Flow 2:
Average throughput: 38.59 Mbit/s
95th percentile per-packet one-way delay: 1268.350 ms
Loss rate: 15.69%
-- Flow 3:
Average throughput: 30.45 Mbit/s
95th percentile per-packet one-way delay: 137.063 ms
Loss rate: 0.53%
```
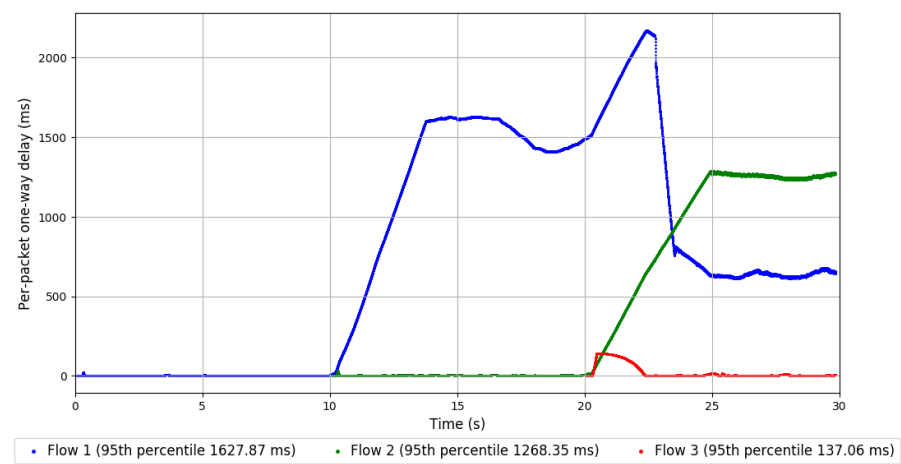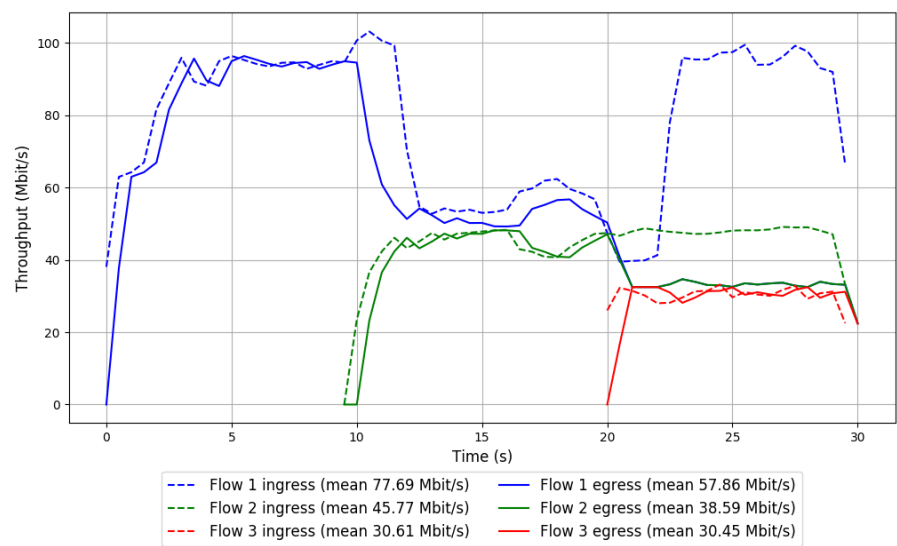
Run 3: Report of PCC-Allegro — Data Link

- - - - Flow 1 ingress (mean 77.69 Mbit/s) —— Flow 1 egress (mean 57.86 Mbit/s)
- - - - Flow 2 ingress (mean 45.77 Mbit/s) —— Flow 2 egress (mean 38.59 Mbit/s)
- - - - Flow 3 ingress (mean 30.61 Mbit/s) —— Flow 3 egress (mean 30.45 Mbit/s)

- Flow 1 (95th percentile 1627.87 ms)   • Flow 2 (95th percentile 1268.35 ms)   • Flow 3 (95th percentile 137.06 ms)

```
Run 4: Statistics of PCC-Allegro

Start at: 2019-01-22 03:52:18
End at: 2019-01-22 03:52:48
Local clock offset: -8.073 ms
Remote clock offset: 0.676 ms


# Below is generated by plot.py at 2019-01-22 04:39:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.71 Mbit/s
95th percentile per-packet one-way delay: 1651.663 ms
Loss rate: 16.93%
-- Flow 1:
Average throughput: 60.18 Mbit/s
95th percentile per-packet one-way delay: 2001.028 ms
Loss rate: 20.58%
-- Flow 2:
Average throughput: 39.28 Mbit/s
95th percentile per-packet one-way delay: 1293.883 ms
Loss rate: 13.02%
-- Flow 3:
Average throughput: 28.60 Mbit/s
95th percentile per-packet one-way delay: 14.074 ms
Loss rate: 0.09%
```
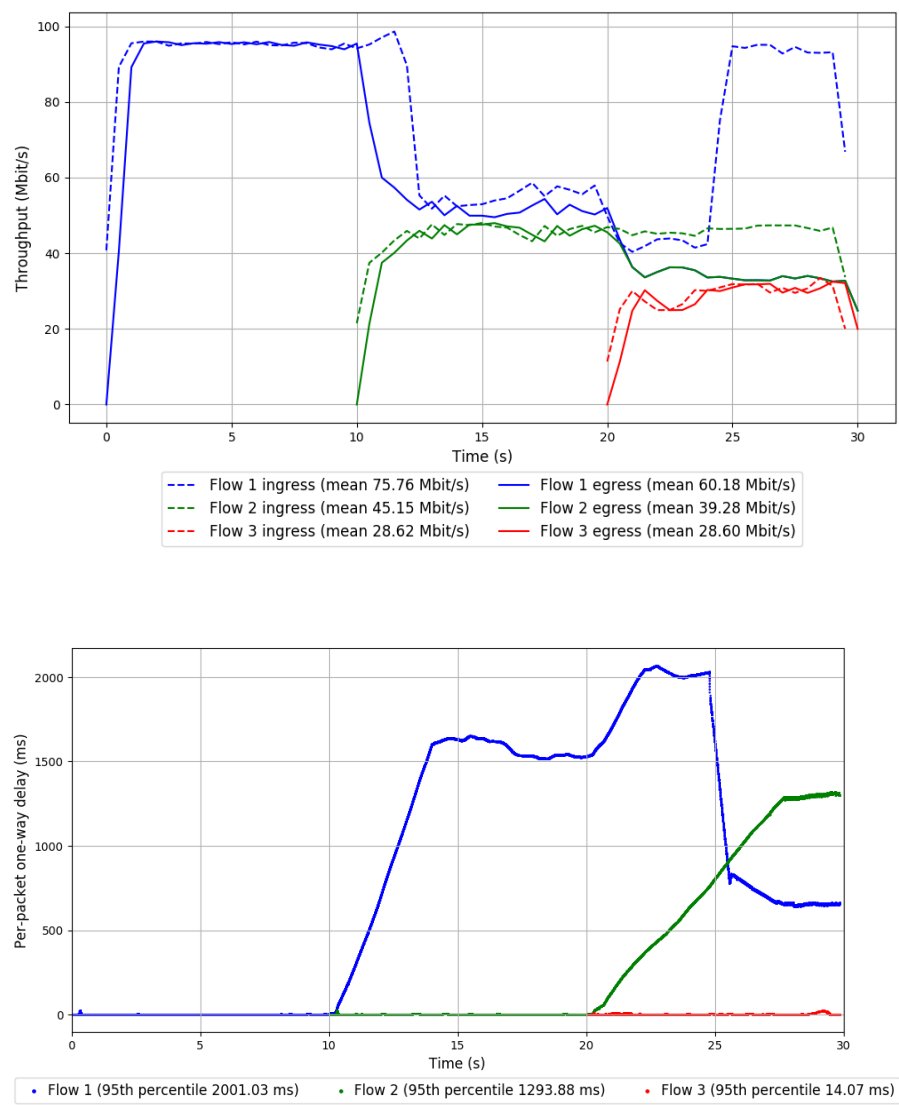
Run 4: Report of PCC-Allegro — Data Link

```
Run 5: Statistics of PCC-Allegro

Start at: 2019-01-22 04:16:28
End at: 2019-01-22 04:16:58
Local clock offset: -8.741 ms
Remote clock offset: 0.812 ms


# Below is generated by plot.py at 2019-01-22 04:39:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.87 Mbit/s
95th percentile per-packet one-way delay: 2040.537 ms
Loss rate: 3.95%
-- Flow 1:
Average throughput: 70.55 Mbit/s
95th percentile per-packet one-way delay: 2145.319 ms
Loss rate: 5.16%
-- Flow 2:
Average throughput: 20.80 Mbit/s
95th percentile per-packet one-way delay: 6.739 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 28.89 Mbit/s
95th percentile per-packet one-way delay: 14.730 ms
Loss rate: 0.15%
```
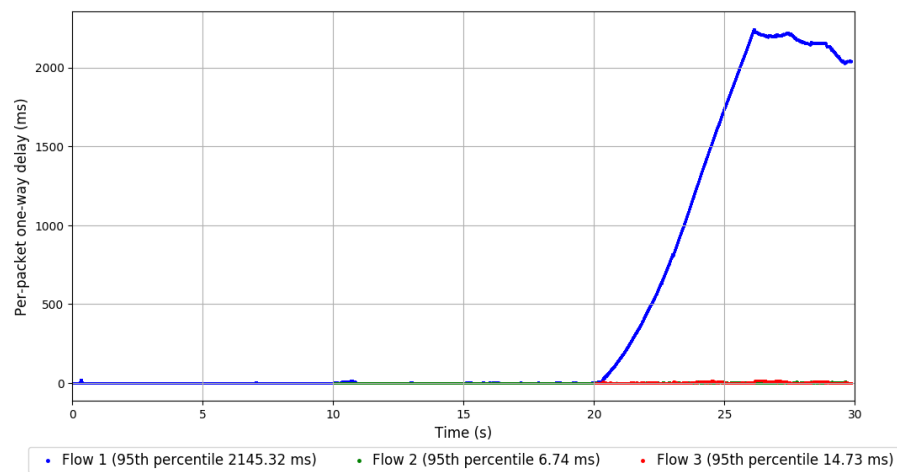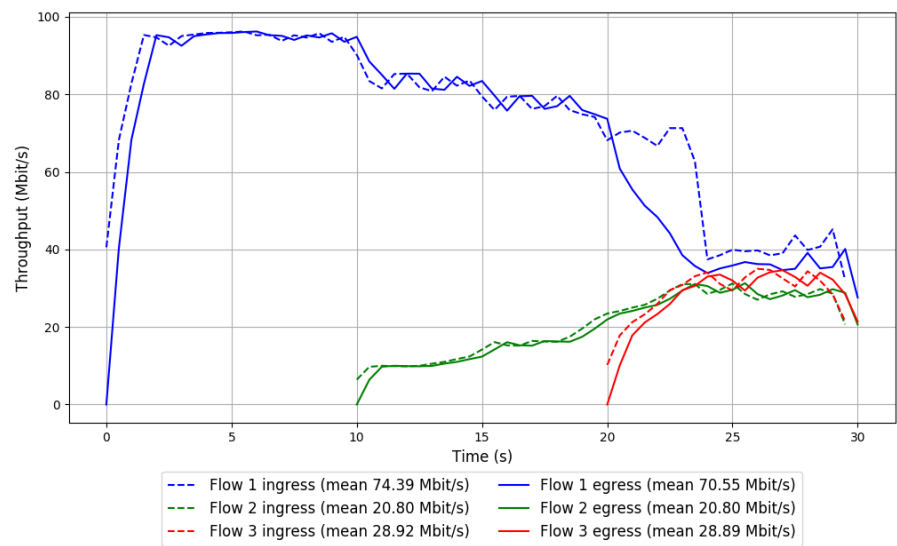
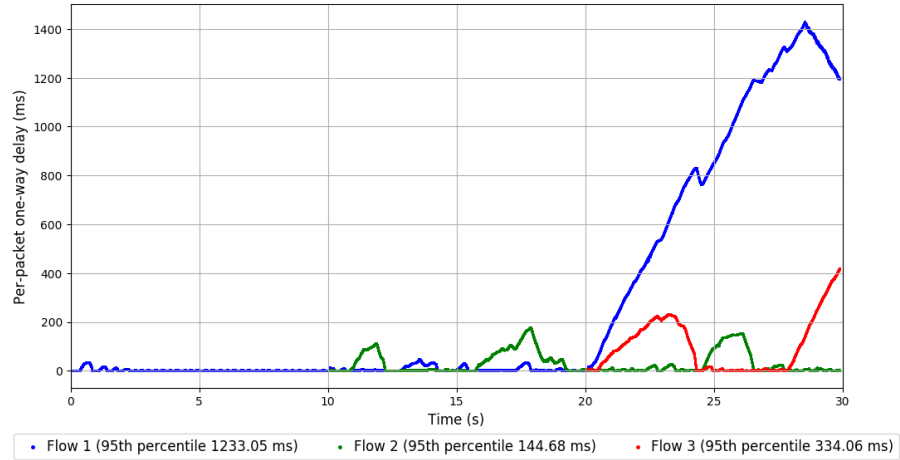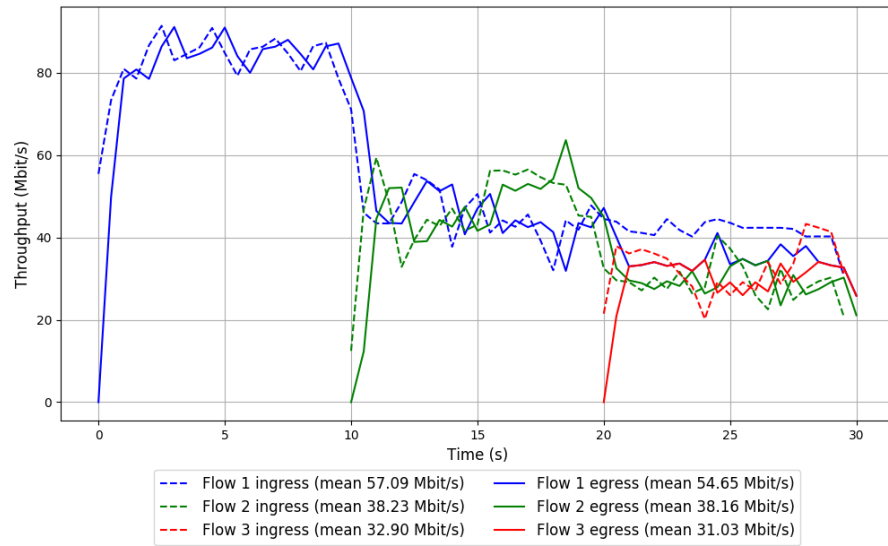## Run 5: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 74.39 Mbit/s) --- Flow 1 egress (mean 70.55 Mbit/s)
Flow 2 ingress (mean 20.80 Mbit/s) --- Flow 2 egress (mean 20.80 Mbit/s)
Flow 3 ingress (mean 28.92 Mbit/s) --- Flow 3 egress (mean 28.89 Mbit/s)

Flow 1 (95th percentile 2145.32 ms)   Flow 2 (95th percentile 6.74 ms)   Flow 3 (95th percentile 14.73 ms)

```
Run 1: Statistics of PCC-Expr

Start at: 2019-01-22 02:46:42
End at: 2019-01-22 02:47:12
Local clock offset: -8.102 ms
Remote clock offset: -0.114 ms


# Below is generated by plot.py at 2019-01-22 04:40:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 90.27 Mbit/s
95th percentile per-packet one-way delay: 1034.387 ms
Loss rate: 3.33%
-- Flow 1:
Average throughput: 54.65 Mbit/s
95th percentile per-packet one-way delay: 1233.049 ms
Loss rate: 4.28%
-- Flow 2:
Average throughput: 38.16 Mbit/s
95th percentile per-packet one-way delay: 144.683 ms
Loss rate: 0.18%
-- Flow 3:
Average throughput: 31.03 Mbit/s
95th percentile per-packet one-way delay: 334.065 ms
Loss rate: 5.70%
```
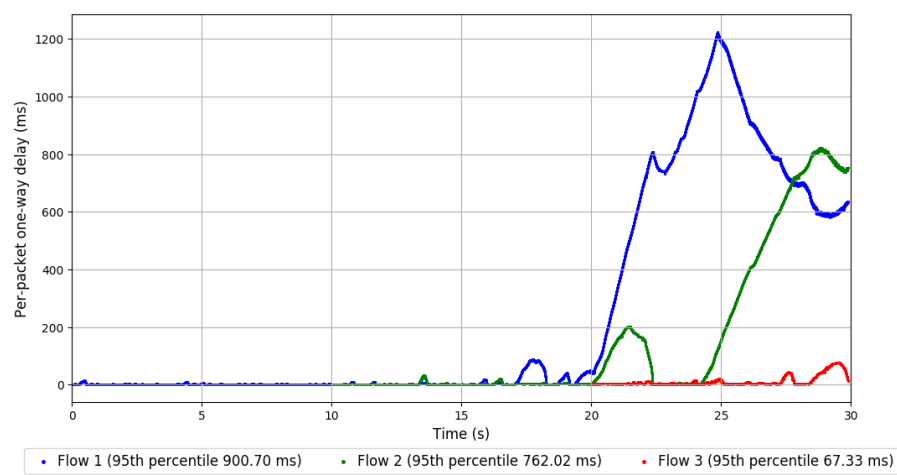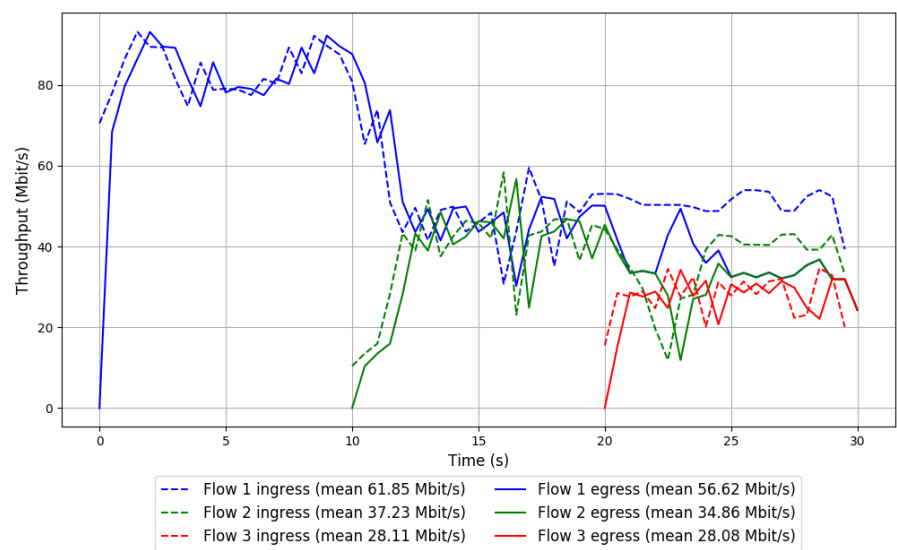
Run 1: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 57.09 Mbit/s) --- Flow 1 egress (mean 54.65 Mbit/s) —
Flow 2 ingress (mean 38.23 Mbit/s) --- Flow 2 egress (mean 38.16 Mbit/s) —
Flow 3 ingress (mean 32.90 Mbit/s) --- Flow 3 egress (mean 31.03 Mbit/s) —

Flow 1 (95th percentile 1233.05 ms) · Flow 2 (95th percentile 144.68 ms) · Flow 3 (95th percentile 334.06 ms)

```
Run 2: Statistics of PCC-Expr

Start at: 2019-01-22 03:10:51
End at: 2019-01-22 03:11:21
Local clock offset: -3.918 ms
Remote clock offset: 0.371 ms


# Below is generated by plot.py at 2019-01-22 04:40:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 89.09 Mbit/s
95th percentile per-packet one-way delay: 807.541 ms
Loss rate: 7.12%
-- Flow 1:
Average throughput: 56.62 Mbit/s
95th percentile per-packet one-way delay: 900.701 ms
Loss rate: 8.46%
-- Flow 2:
Average throughput: 34.86 Mbit/s
95th percentile per-packet one-way delay: 762.021 ms
Loss rate: 6.37%
-- Flow 3:
Average throughput: 28.08 Mbit/s
95th percentile per-packet one-way delay: 67.328 ms
Loss rate: 0.13%
```
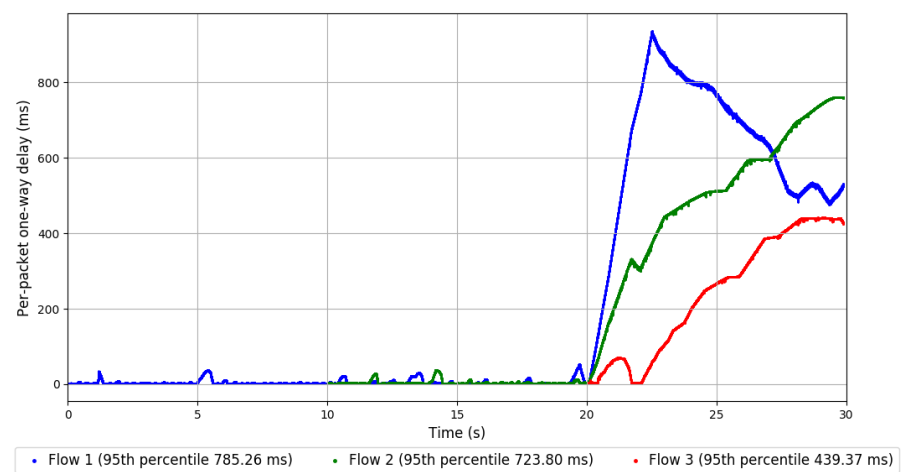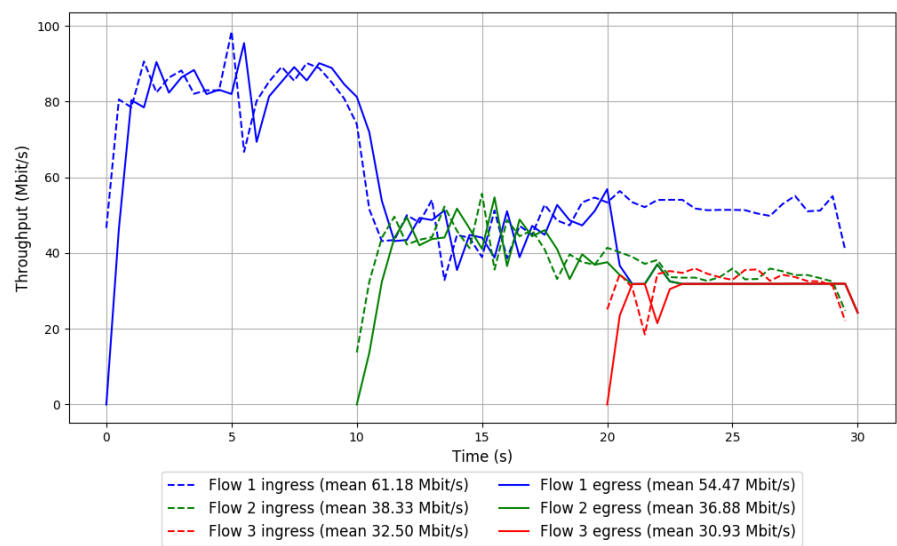
Run 2: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 61.85 Mbit/s) —— Flow 1 egress (mean 56.62 Mbit/s)
Flow 2 ingress (mean 37.23 Mbit/s) —— Flow 2 egress (mean 34.86 Mbit/s)
Flow 3 ingress (mean 28.11 Mbit/s) —— Flow 3 egress (mean 28.08 Mbit/s)

Flow 1 (95th percentile 900.70 ms)　Flow 2 (95th percentile 762.02 ms)　Flow 3 (95th percentile 67.33 ms)

```
Run 3: Statistics of PCC-Expr

Start at: 2019-01-22 03:35:03
End at: 2019-01-22 03:35:33
Local clock offset: -7.297 ms
Remote clock offset: 0.604 ms


# Below is generated by plot.py at 2019-01-22 04:40:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 89.20 Mbit/s
95th percentile per-packet one-way delay: 738.112 ms
Loss rate: 8.42%
-- Flow 1:
Average throughput: 54.47 Mbit/s
95th percentile per-packet one-way delay: 785.265 ms
Loss rate: 10.98%
-- Flow 2:
Average throughput: 36.88 Mbit/s
95th percentile per-packet one-way delay: 723.801 ms
Loss rate: 3.78%
-- Flow 3:
Average throughput: 30.93 Mbit/s
95th percentile per-packet one-way delay: 439.370 ms
Loss rate: 4.86%
```
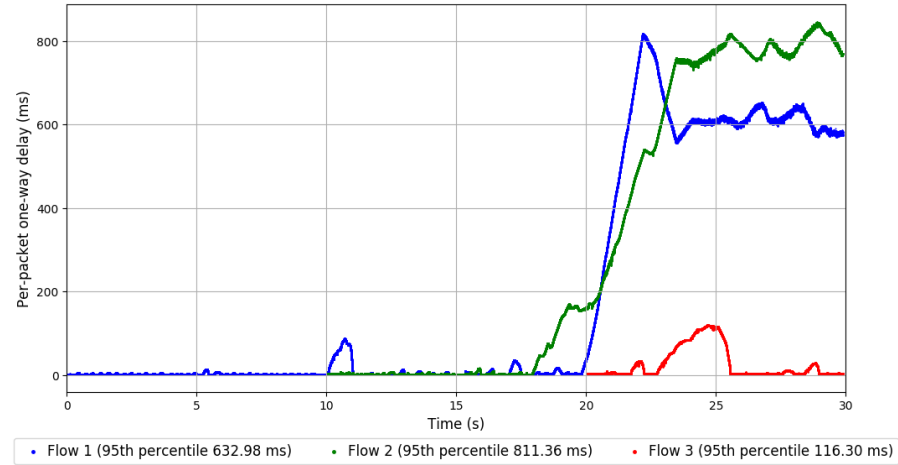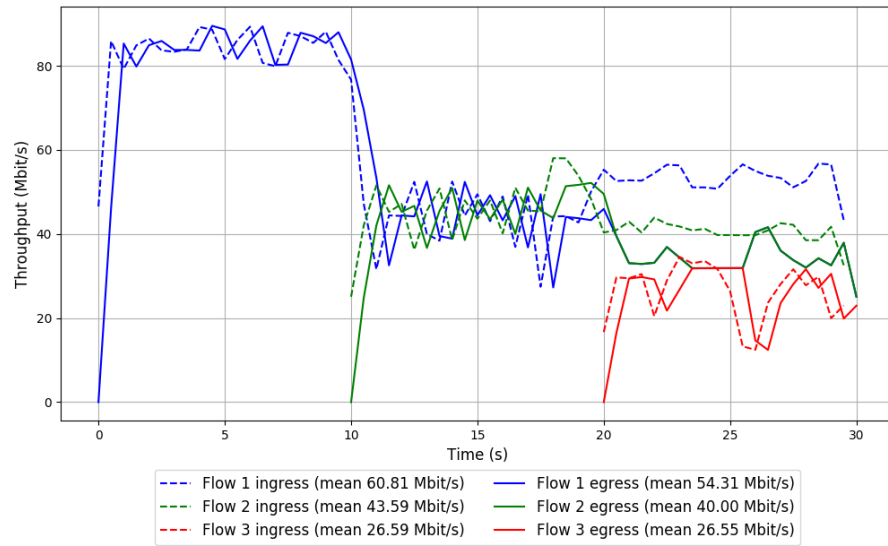
Run 3: Report of PCC-Expr — Data Link

```
Run 4: Statistics of PCC-Expr

Start at: 2019-01-22 03:59:13
End at: 2019-01-22 03:59:43
Local clock offset: -7.446 ms
Remote clock offset: 0.757 ms


# Below is generated by plot.py at 2019-01-22 04:40:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 89.67 Mbit/s
95th percentile per-packet one-way delay: 777.406 ms
Loss rate: 9.03%
-- Flow 1:
Average throughput: 54.31 Mbit/s
95th percentile per-packet one-way delay: 632.984 ms
Loss rate: 10.68%
-- Flow 2:
Average throughput: 40.00 Mbit/s
95th percentile per-packet one-way delay: 811.358 ms
Loss rate: 8.25%
-- Flow 3:
Average throughput: 26.55 Mbit/s
95th percentile per-packet one-way delay: 116.298 ms
Loss rate: 0.19%
```

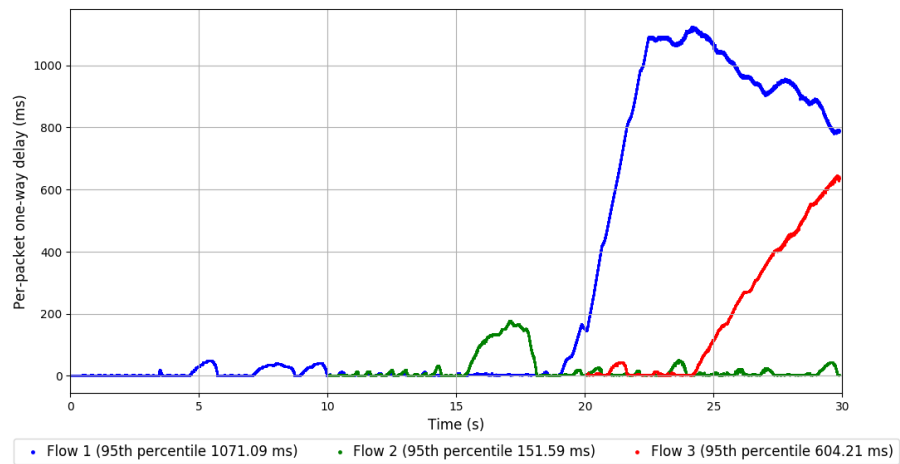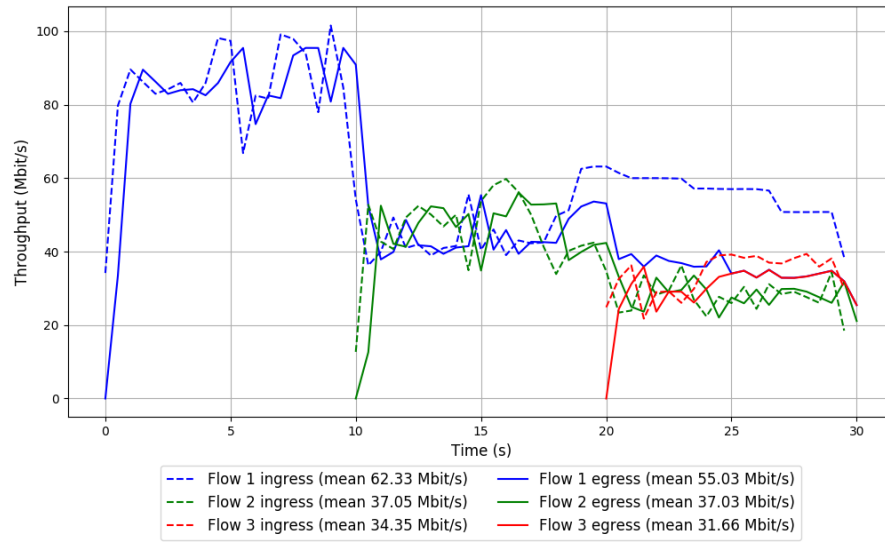# Run 4: Report of PCC-Expr — Data Link

```
Run 5: Statistics of PCC-Expr

Start at: 2019-01-22 04:23:23
End at: 2019-01-22 04:23:53
Local clock offset: -7.676 ms
Remote clock offset: 0.803 ms


# Below is generated by plot.py at 2019-01-22 04:40:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 90.09 Mbit/s
95th percentile per-packet one-way delay: 978.566 ms
Loss rate: 8.38%
-- Flow 1:
Average throughput: 55.03 Mbit/s
95th percentile per-packet one-way delay: 1071.090 ms
Loss rate: 11.76%
-- Flow 2:
Average throughput: 37.03 Mbit/s
95th percentile per-packet one-way delay: 151.593 ms
Loss rate: 0.08%
-- Flow 3:
Average throughput: 31.66 Mbit/s
95th percentile per-packet one-way delay: 604.214 ms
Loss rate: 7.84%
```
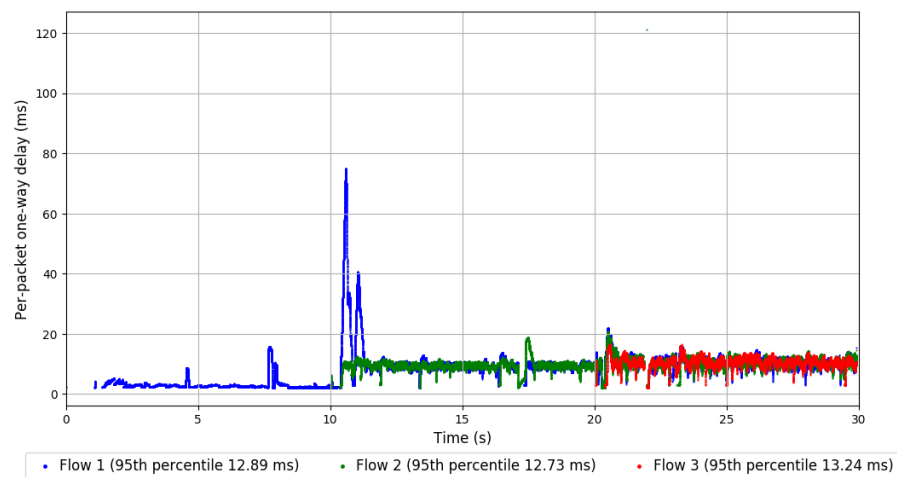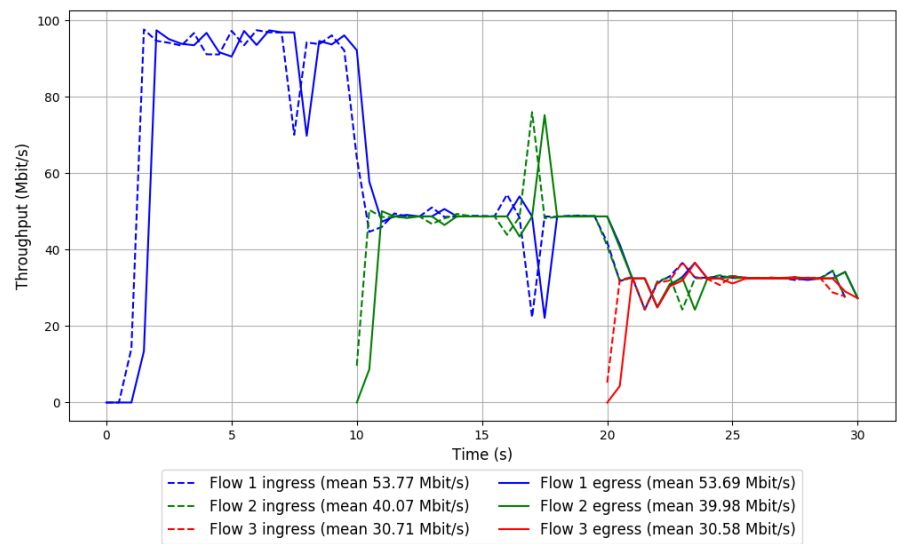
Run 5: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 62.33 Mbit/s)   Flow 1 egress (mean 55.03 Mbit/s)
Flow 2 ingress (mean 37.05 Mbit/s)   Flow 2 egress (mean 37.03 Mbit/s)
Flow 3 ingress (mean 34.35 Mbit/s)   Flow 3 egress (mean 31.66 Mbit/s)

Flow 1 (95th percentile 1071.09 ms)   Flow 2 (95th percentile 151.59 ms)   Flow 3 (95th percentile 604.21 ms)

```
Run 1: Statistics of QUIC Cubic

Start at: 2019-01-22 02:50:17
End at: 2019-01-22 02:50:47
Local clock offset: -6.16 ms
Remote clock offset: -0.069 ms


# Below is generated by plot.py at 2019-01-22 04:40:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 90.40 Mbit/s
95th percentile per-packet one-way delay: 12.921 ms
Loss rate: 0.23%
-- Flow 1:
Average throughput: 53.69 Mbit/s
95th percentile per-packet one-way delay: 12.894 ms
Loss rate: 0.15%
-- Flow 2:
Average throughput: 39.98 Mbit/s
95th percentile per-packet one-way delay: 12.728 ms
Loss rate: 0.30%
-- Flow 3:
Average throughput: 30.58 Mbit/s
95th percentile per-packet one-way delay: 13.238 ms
Loss rate: 0.46%
```
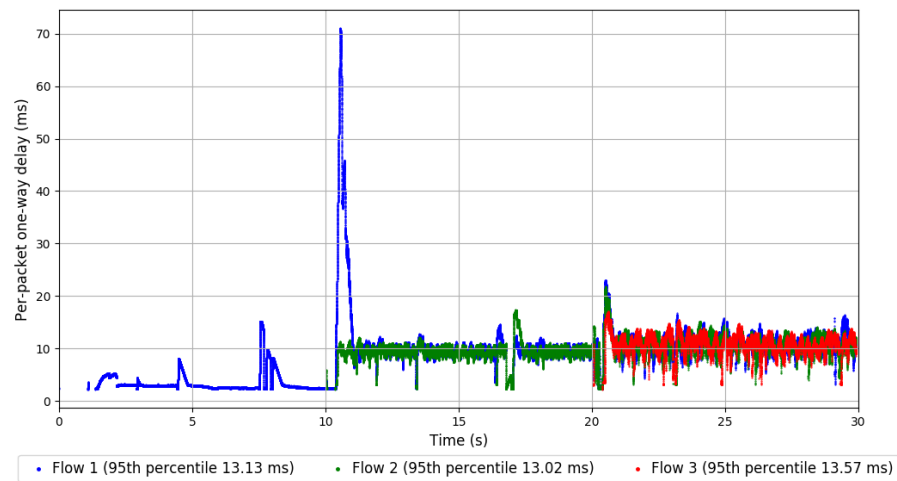
Run 1: Report of QUIC Cubic — Data Link

```
Run 2: Statistics of QUIC Cubic

Start at: 2019-01-22 03:14:26
End at: 2019-01-22 03:14:56
Local clock offset: -3.186 ms
Remote clock offset: 0.52 ms


# Below is generated by plot.py at 2019-01-22 04:40:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.27 Mbit/s
95th percentile per-packet one-way delay: 13.205 ms
Loss rate: 0.24%
-- Flow 1:
Average throughput: 54.36 Mbit/s
95th percentile per-packet one-way delay: 13.135 ms
Loss rate: 0.18%
-- Flow 2:
Average throughput: 40.05 Mbit/s
95th percentile per-packet one-way delay: 13.022 ms
Loss rate: 0.30%
-- Flow 3:
Average throughput: 31.05 Mbit/s
95th percentile per-packet one-way delay: 13.573 ms
Loss rate: 0.46%
```
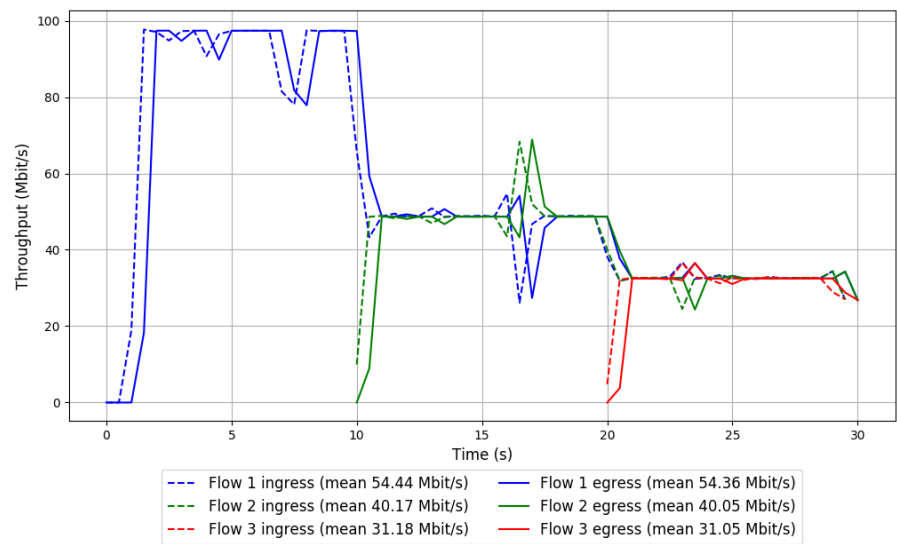
Run 2: Report of QUIC Cubic — Data Link

```
Run 3: Statistics of QUIC Cubic

Start at: 2019-01-22 03:38:38
End at: 2019-01-22 03:39:08
Local clock offset: -6.836 ms
Remote clock offset: 0.597 ms


# Below is generated by plot.py at 2019-01-22 04:40:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 90.30 Mbit/s
95th percentile per-packet one-way delay: 13.350 ms
Loss rate: 0.25%
-- Flow 1:
Average throughput: 53.37 Mbit/s
95th percentile per-packet one-way delay: 12.956 ms
Loss rate: 0.18%
-- Flow 2:
Average throughput: 39.97 Mbit/s
95th percentile per-packet one-way delay: 13.277 ms
Loss rate: 0.30%
-- Flow 3:
Average throughput: 31.24 Mbit/s
95th percentile per-packet one-way delay: 14.409 ms
Loss rate: 0.52%
```
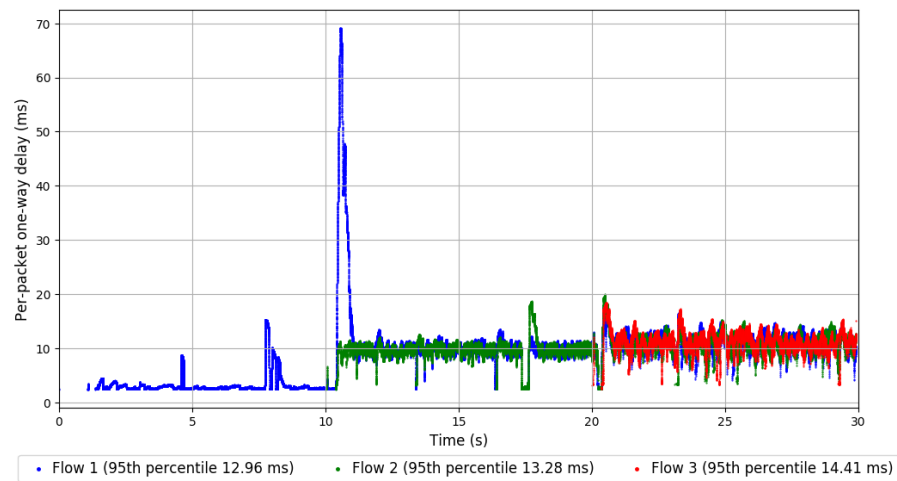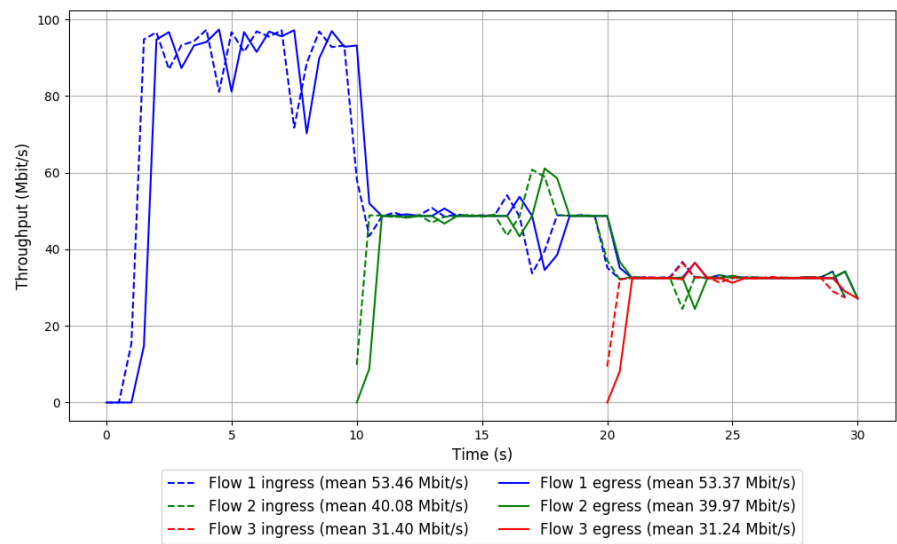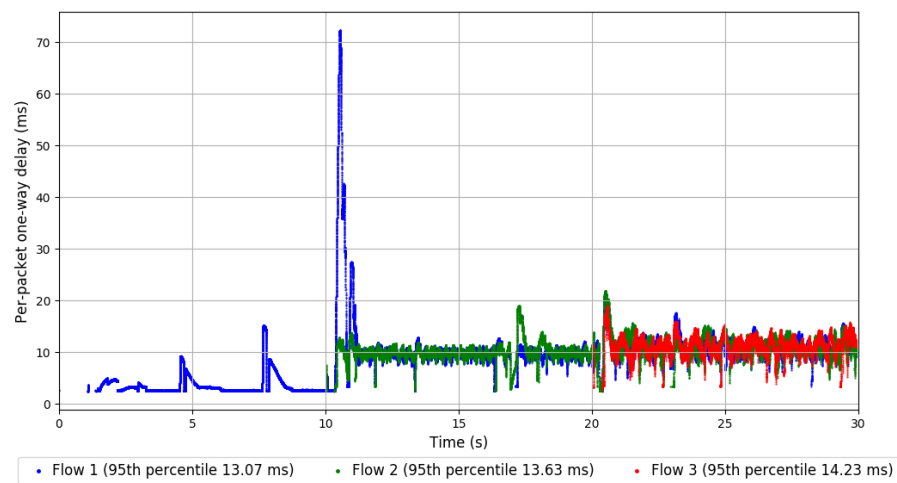
Run 3: Report of QUIC Cubic — Data Link

- - - Flow 1 ingress (mean 53.46 Mbit/s) —— Flow 1 egress (mean 53.37 Mbit/s)
- - - Flow 2 ingress (mean 40.08 Mbit/s) —— Flow 2 egress (mean 39.97 Mbit/s)
- - - Flow 3 ingress (mean 31.40 Mbit/s) —— Flow 3 egress (mean 31.24 Mbit/s)

- Flow 1 (95th percentile 12.96 ms)   • Flow 2 (95th percentile 13.28 ms)   • Flow 3 (95th percentile 14.41 ms)

```
Run 4: Statistics of QUIC Cubic

Start at: 2019-01-22 04:02:48
End at: 2019-01-22 04:03:18
Local clock offset: -7.571 ms
Remote clock offset: 0.658 ms


# Below is generated by plot.py at 2019-01-22 04:41:24
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.21 Mbit/s
95th percentile per-packet one-way delay: 13.641 ms
Loss rate: 0.24%
-- Flow 1:
Average throughput: 54.16 Mbit/s
95th percentile per-packet one-way delay: 13.071 ms
Loss rate: 0.15%
-- Flow 2:
Average throughput: 40.21 Mbit/s
95th percentile per-packet one-way delay: 13.629 ms
Loss rate: 0.35%
-- Flow 3:
Average throughput: 31.13 Mbit/s
95th percentile per-packet one-way delay: 14.230 ms
Loss rate: 0.48%
```
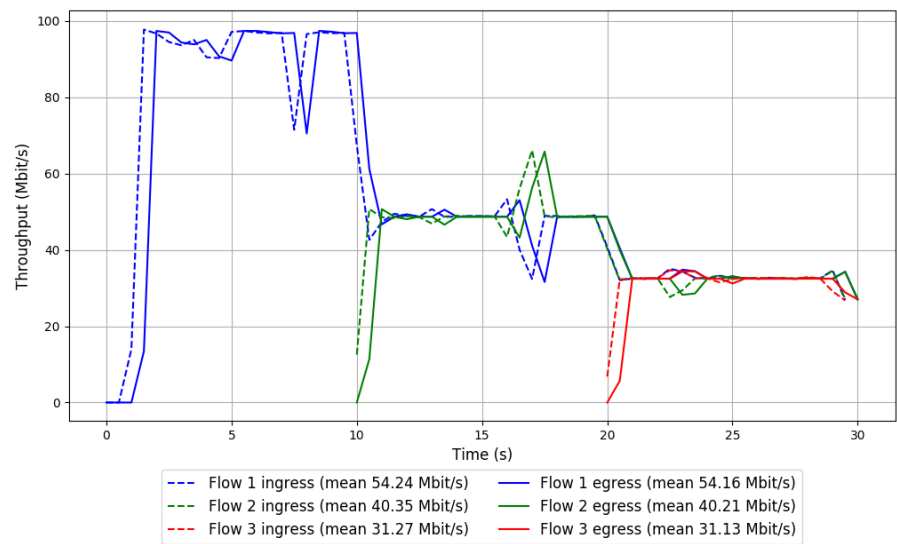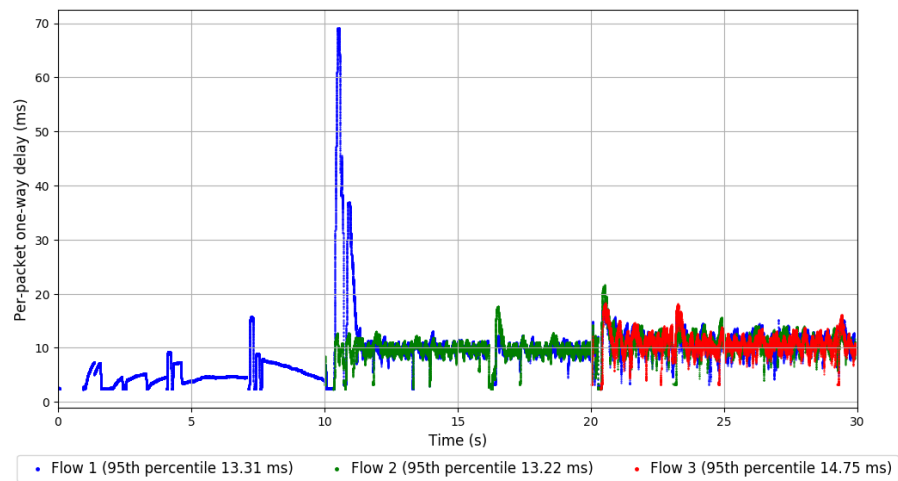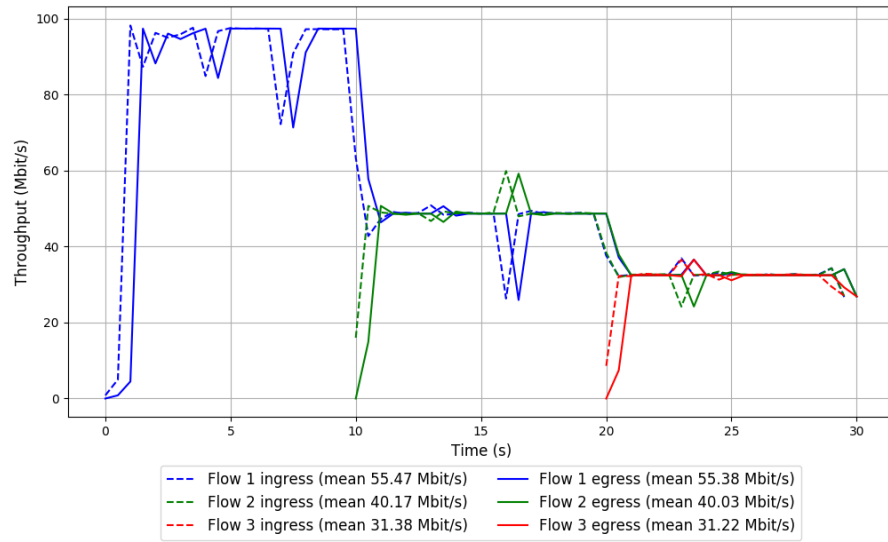
Run 4: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 54.24 Mbit/s) --- Flow 1 egress (mean 54.16 Mbit/s)
Flow 2 ingress (mean 40.35 Mbit/s) --- Flow 2 egress (mean 40.21 Mbit/s)
Flow 3 ingress (mean 31.27 Mbit/s) --- Flow 3 egress (mean 31.13 Mbit/s)

Flow 1 (95th percentile 13.07 ms)   Flow 2 (95th percentile 13.63 ms)   Flow 3 (95th percentile 14.23 ms)

142

```
Run 5: Statistics of QUIC Cubic

Start at: 2019-01-22 04:26:58
End at: 2019-01-22 04:27:28
Local clock offset: -6.575 ms
Remote clock offset: 0.698 ms


# Below is generated by plot.py at 2019-01-22 04:41:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.35 Mbit/s
95th percentile per-packet one-way delay: 13.479 ms
Loss rate: 0.26%
-- Flow 1:
Average throughput: 55.38 Mbit/s
95th percentile per-packet one-way delay: 13.314 ms
Loss rate: 0.16%
-- Flow 2:
Average throughput: 40.03 Mbit/s
95th percentile per-packet one-way delay: 13.220 ms
Loss rate: 0.36%
-- Flow 3:
Average throughput: 31.22 Mbit/s
95th percentile per-packet one-way delay: 14.750 ms
Loss rate: 0.53%
```

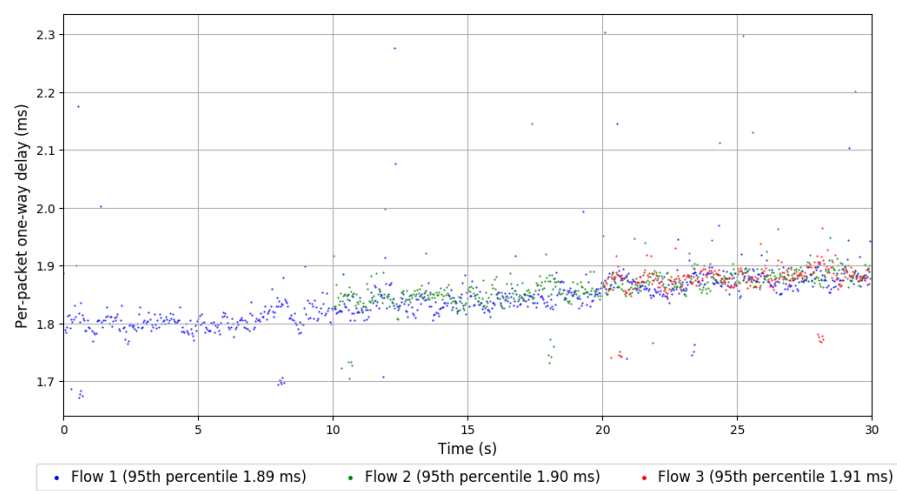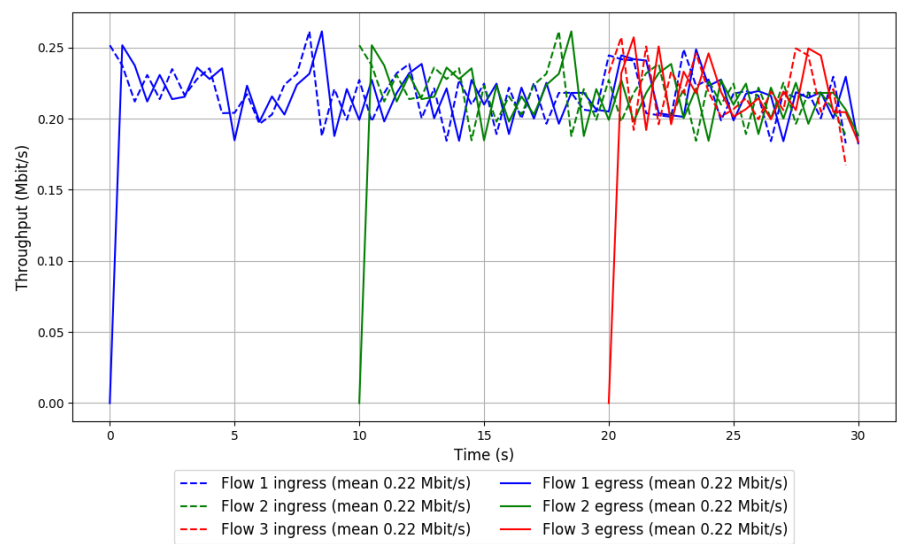Run 5: Report of QUIC Cubic — Data Link

```
Run 1: Statistics of SCReAM

Start at: 2019-01-22 02:38:43
End at: 2019-01-22 02:39:13
Local clock offset: -8.059 ms
Remote clock offset: -0.347 ms

# Below is generated by plot.py at 2019-01-22 04:41:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 1.900 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.893 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.903 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.910 ms
Loss rate: 0.00%
```
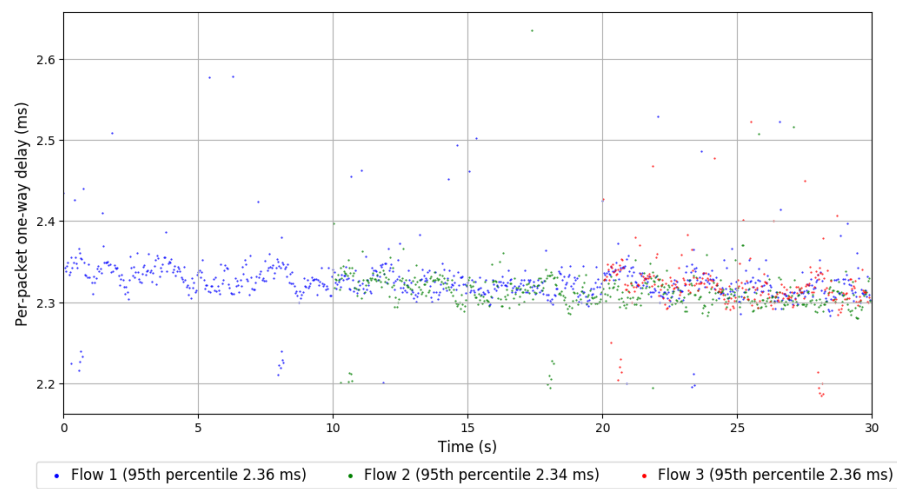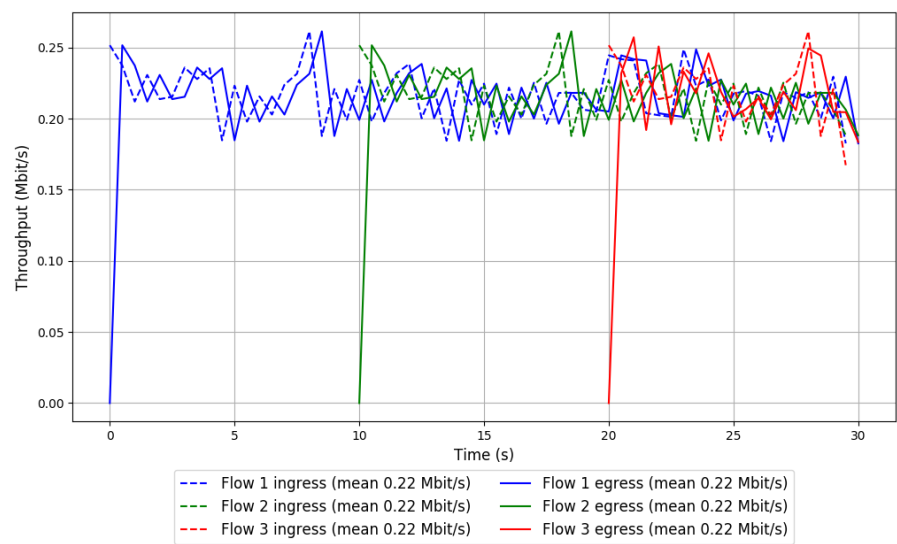
Run 1: Report of SCReAM — Data Link

```
Run 2: Statistics of SCReAM

Start at: 2019-01-22 03:02:52
End at: 2019-01-22 03:03:22
Local clock offset: -3.616 ms
Remote clock offset: 0.246 ms


# Below is generated by plot.py at 2019-01-22 04:41:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 2.353 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 2.358 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 2.339 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 2.360 ms
Loss rate: 0.00%
```
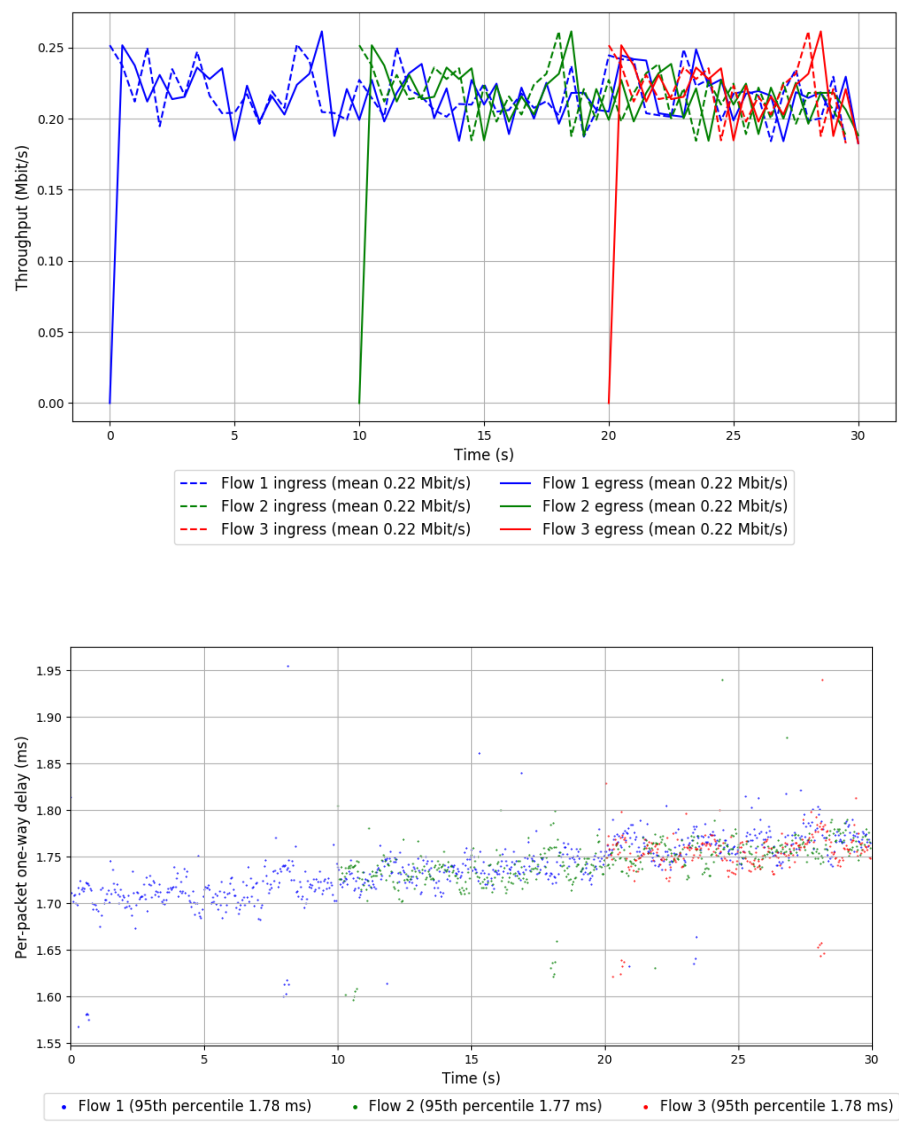
Run 2: Report of SCReAM — Data Link

```
Run 3: Statistics of SCReAM

Start at: 2019-01-22 03:27:02
End at: 2019-01-22 03:27:32
Local clock offset: -6.415 ms
Remote clock offset: 0.578 ms


# Below is generated by plot.py at 2019-01-22 04:41:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 1.780 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.780 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.775 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.782 ms
Loss rate: 0.00%
```
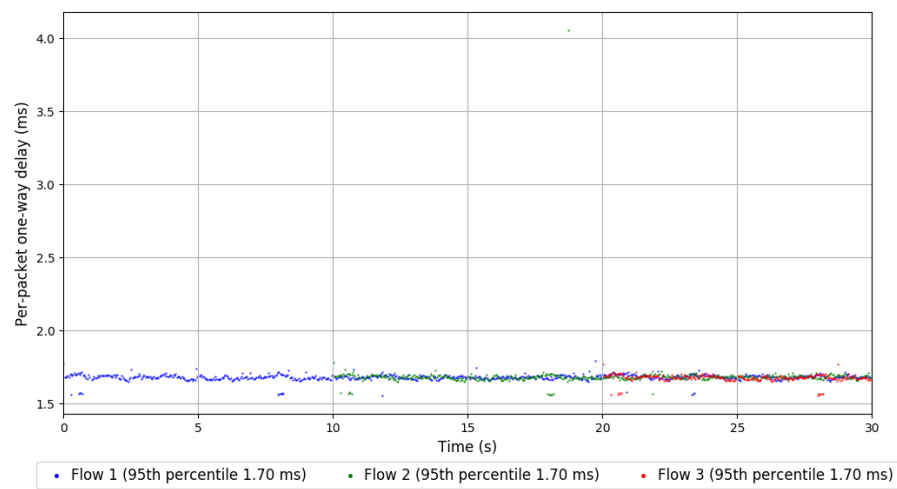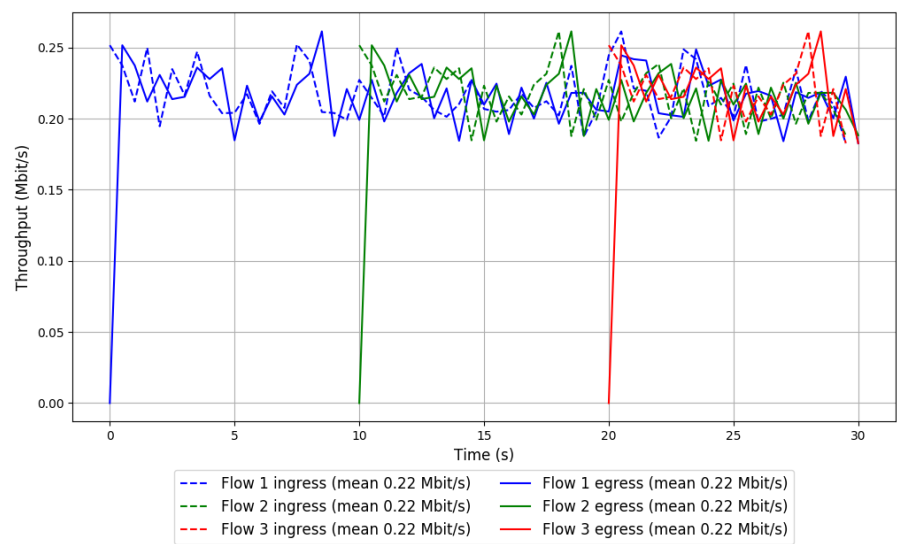
Run 3: Report of SCReAM — Data Link

```
Run 4: Statistics of SCReAM

Start at: 2019-01-22 03:51:13
End at: 2019-01-22 03:51:43
Local clock offset: -8.063 ms
Remote clock offset: 0.64 ms


# Below is generated by plot.py at 2019-01-22 04:41:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 1.701 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.703 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.700 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.701 ms
Loss rate: 0.00%
```

Run 4: Report of SCReAM — Data Link

```
Run 5: Statistics of SCReAM

Start at: 2019-01-22 04:15:22
End at: 2019-01-22 04:15:52
Local clock offset: -8.866 ms
Remote clock offset: 0.81 ms


# Below is generated by plot.py at 2019-01-22 04:41:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 1.611 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.614 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.612 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.563 ms
Loss rate: 0.00%
```
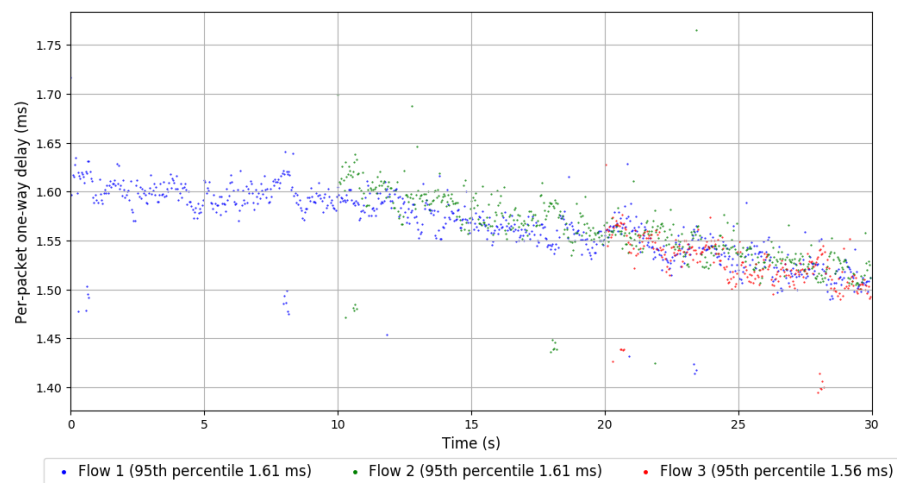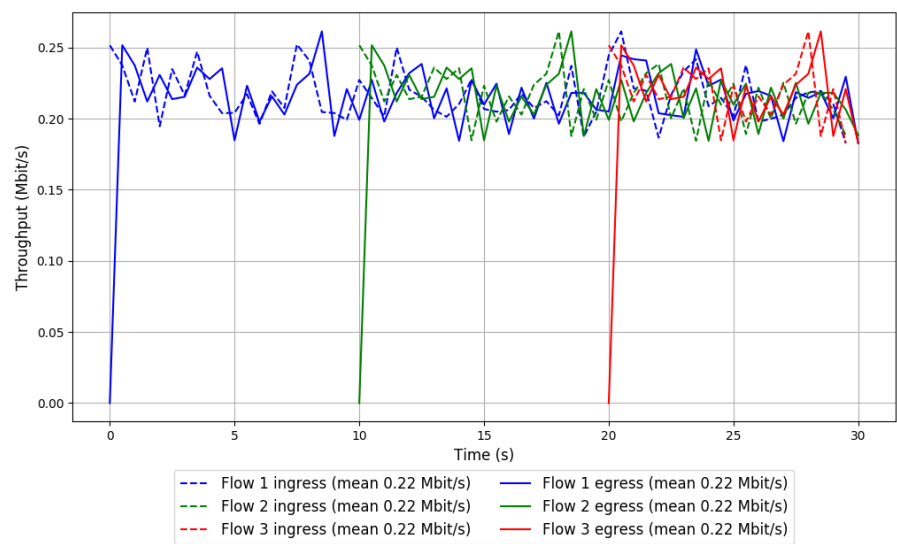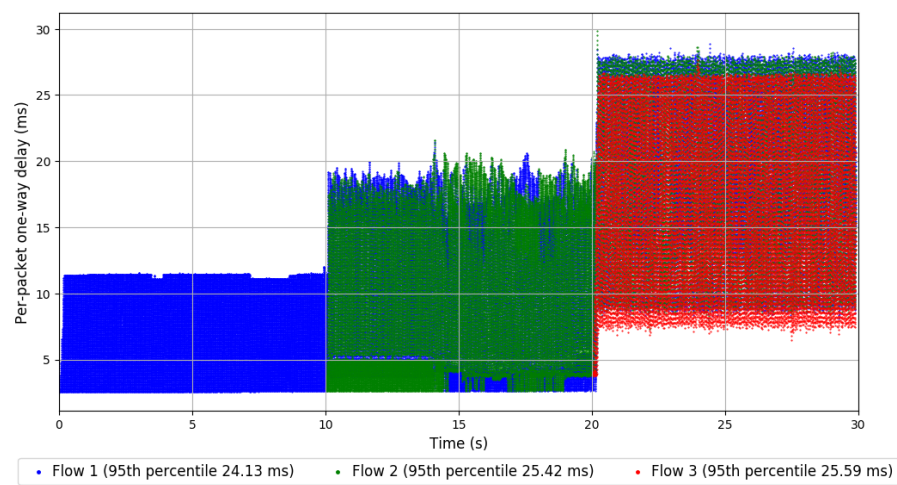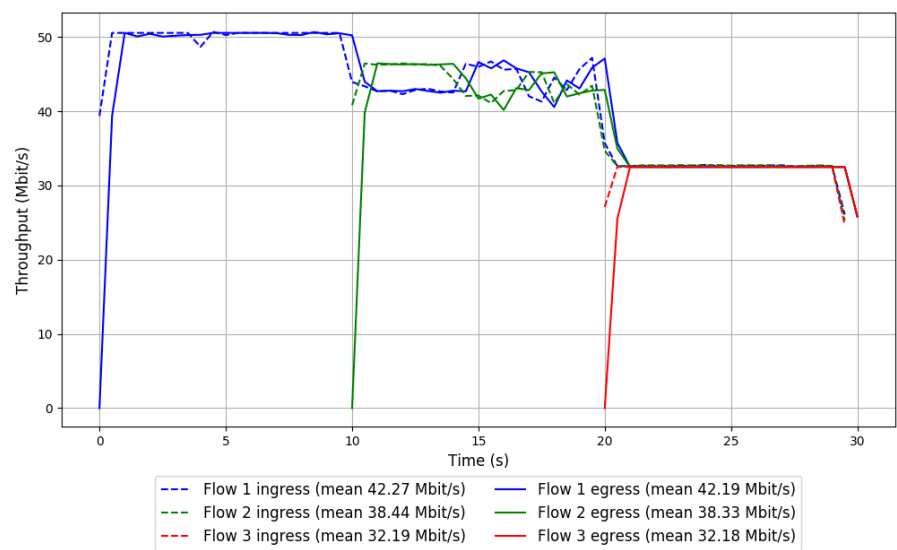
Run 5: Report of SCReAM — Data Link

```
Run 1: Statistics of Sprout

Start at: 2019-01-22 02:28:26
End at: 2019-01-22 02:28:56
Local clock offset: -4.894 ms
Remote clock offset: -0.416 ms


# Below is generated by plot.py at 2019-01-22 04:41:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 78.33 Mbit/s
95th percentile per-packet one-way delay: 25.052 ms
Loss rate: 0.21%
-- Flow 1:
Average throughput: 42.19 Mbit/s
95th percentile per-packet one-way delay: 24.131 ms
Loss rate: 0.18%
-- Flow 2:
Average throughput: 38.33 Mbit/s
95th percentile per-packet one-way delay: 25.418 ms
Loss rate: 0.30%
-- Flow 3:
Average throughput: 32.18 Mbit/s
95th percentile per-packet one-way delay: 25.587 ms
Loss rate: 0.08%
```

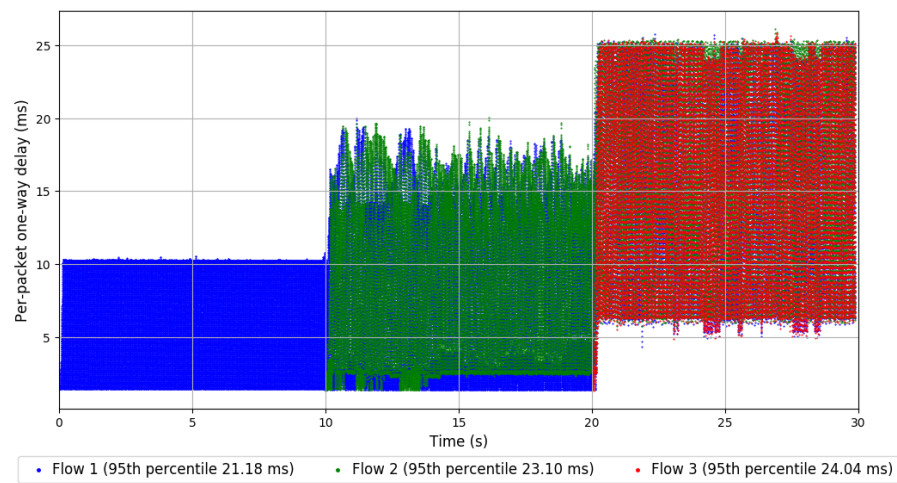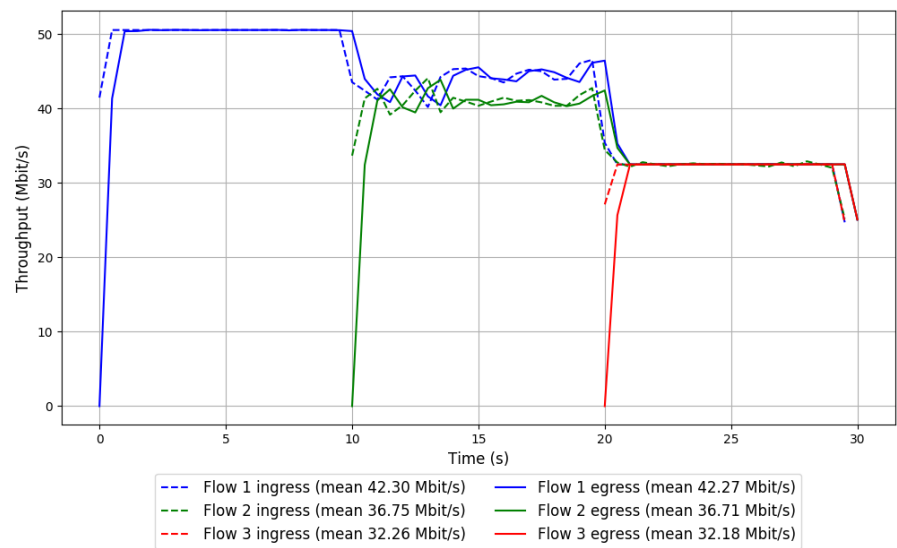# Run 1: Report of Sprout — Data Link

```
Run 2: Statistics of Sprout

Start at: 2019-01-22 02:52:35
End at: 2019-01-22 02:53:05
Local clock offset: -6.14 ms
Remote clock offset: 0.1 ms


# Below is generated by plot.py at 2019-01-22 04:41:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 77.32 Mbit/s
95th percentile per-packet one-way delay: 22.749 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 42.27 Mbit/s
95th percentile per-packet one-way delay: 21.183 ms
Loss rate: 0.04%
-- Flow 2:
Average throughput: 36.71 Mbit/s
95th percentile per-packet one-way delay: 23.098 ms
Loss rate: 0.09%
-- Flow 3:
Average throughput: 32.18 Mbit/s
95th percentile per-packet one-way delay: 24.041 ms
Loss rate: 0.17%
```

Run 2: Report of Sprout — Data Link

Flow 1 ingress (mean 42.30 Mbit/s)   Flow 1 egress (mean 42.27 Mbit/s)
Flow 2 ingress (mean 36.75 Mbit/s)   Flow 2 egress (mean 36.71 Mbit/s)
Flow 3 ingress (mean 32.26 Mbit/s)   Flow 3 egress (mean 32.18 Mbit/s)

Flow 1 (95th percentile 21.18 ms)   Flow 2 (95th percentile 23.10 ms)   Flow 3 (95th percentile 24.04 ms)
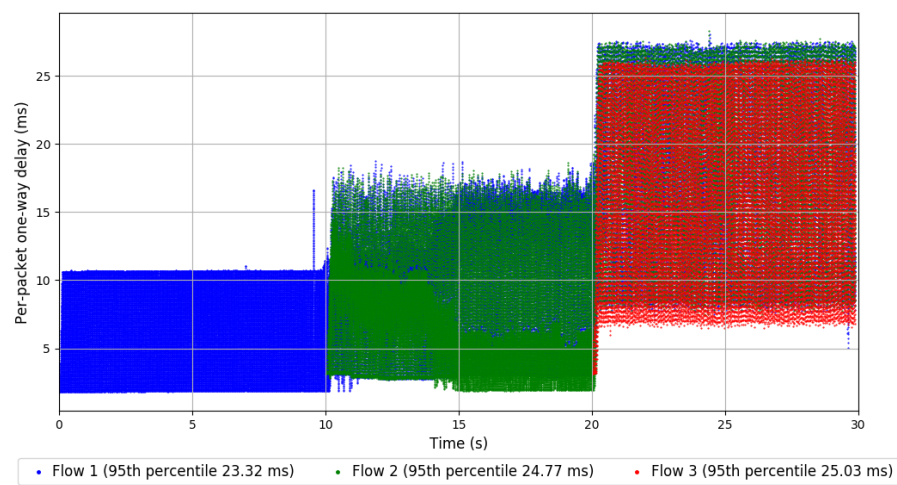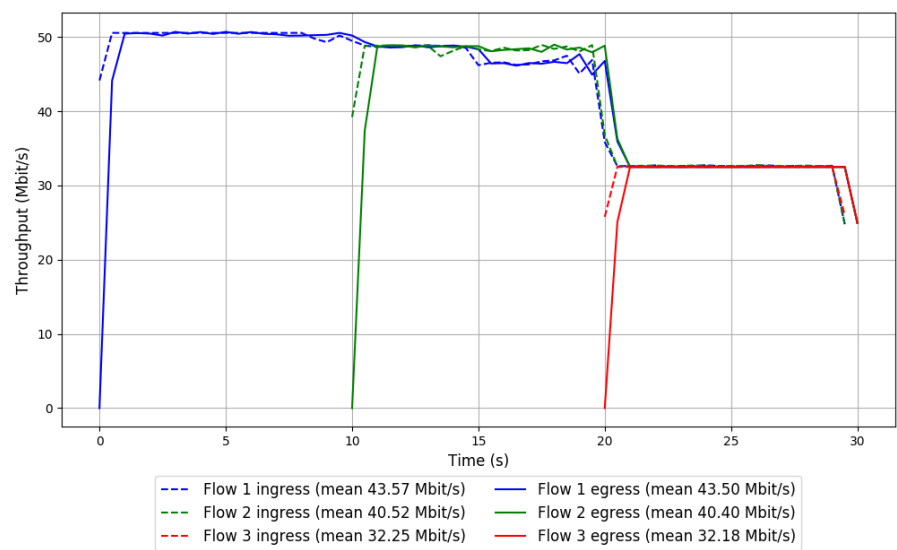
```
Run 3: Statistics of Sprout

Start at: 2019-01-22 03:16:44
End at: 2019-01-22 03:17:14
Local clock offset: -4.226 ms
Remote clock offset: 0.475 ms


# Below is generated by plot.py at 2019-01-22 04:41:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 80.99 Mbit/s
95th percentile per-packet one-way delay: 24.369 ms
Loss rate: 0.18%
-- Flow 1:
Average throughput: 43.50 Mbit/s
95th percentile per-packet one-way delay: 23.317 ms
Loss rate: 0.13%
-- Flow 2:
Average throughput: 40.40 Mbit/s
95th percentile per-packet one-way delay: 24.770 ms
Loss rate: 0.23%
-- Flow 3:
Average throughput: 32.18 Mbit/s
95th percentile per-packet one-way delay: 25.029 ms
Loss rate: 0.27%
```
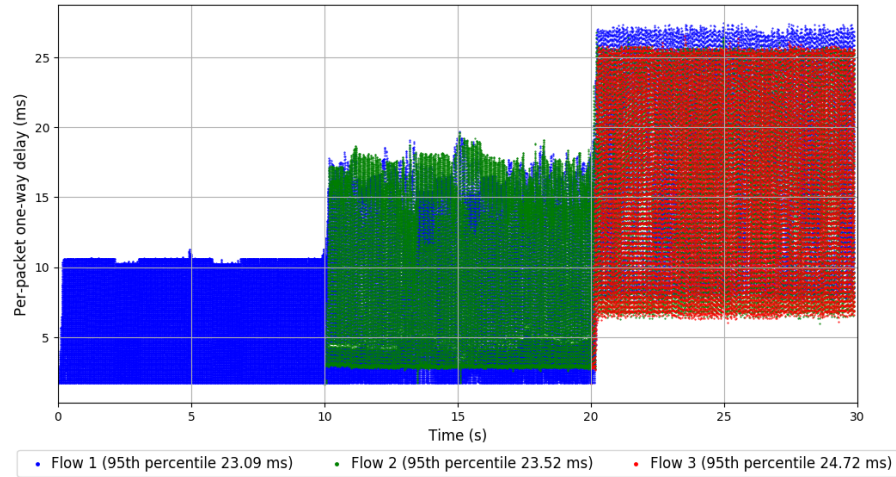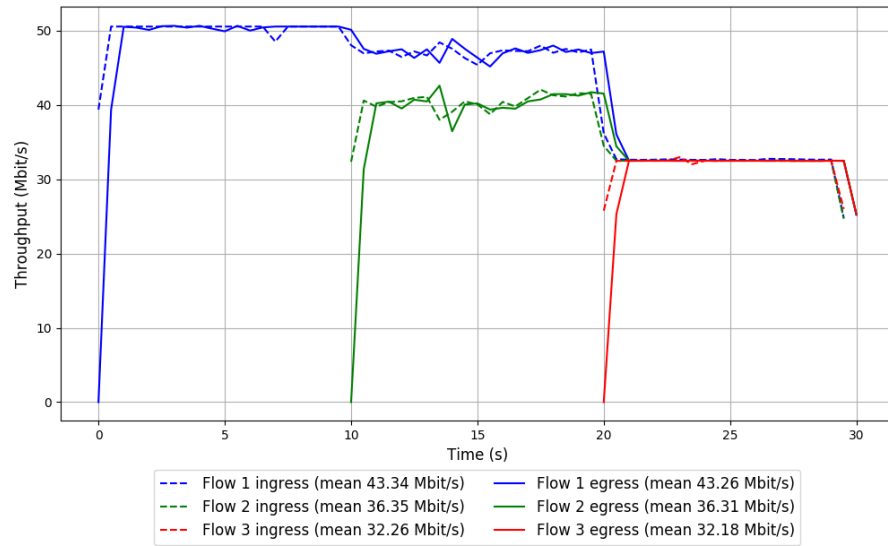
Run 3: Report of Sprout — Data Link

```
Run 4: Statistics of Sprout

Start at: 2019-01-22 03:40:56
End at: 2019-01-22 03:41:26
Local clock offset: -7.801 ms
Remote clock offset: 0.603 ms


# Below is generated by plot.py at 2019-01-22 04:41:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 78.04 Mbit/s
95th percentile per-packet one-way delay: 23.774 ms
Loss rate: 0.14%
-- Flow 1:
Average throughput: 43.26 Mbit/s
95th percentile per-packet one-way delay: 23.094 ms
Loss rate: 0.16%
-- Flow 2:
Average throughput: 36.31 Mbit/s
95th percentile per-packet one-way delay: 23.515 ms
Loss rate: 0.07%
-- Flow 3:
Average throughput: 32.18 Mbit/s
95th percentile per-packet one-way delay: 24.724 ms
Loss rate: 0.19%
```

Run 4: Report of Sprout — Data Link

Flow 1 ingress (mean 43.34 Mbit/s)   Flow 1 egress (mean 43.26 Mbit/s)
Flow 2 ingress (mean 36.35 Mbit/s)   Flow 2 egress (mean 36.31 Mbit/s)
Flow 3 ingress (mean 32.26 Mbit/s)   Flow 3 egress (mean 32.18 Mbit/s)

• Flow 1 (95th percentile 23.09 ms)   • Flow 2 (95th percentile 23.52 ms)   • Flow 3 (95th percentile 24.72 ms)
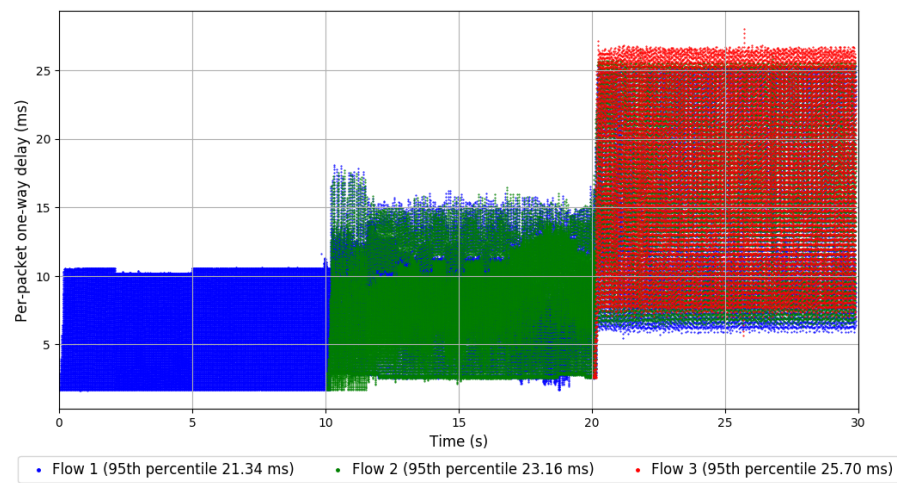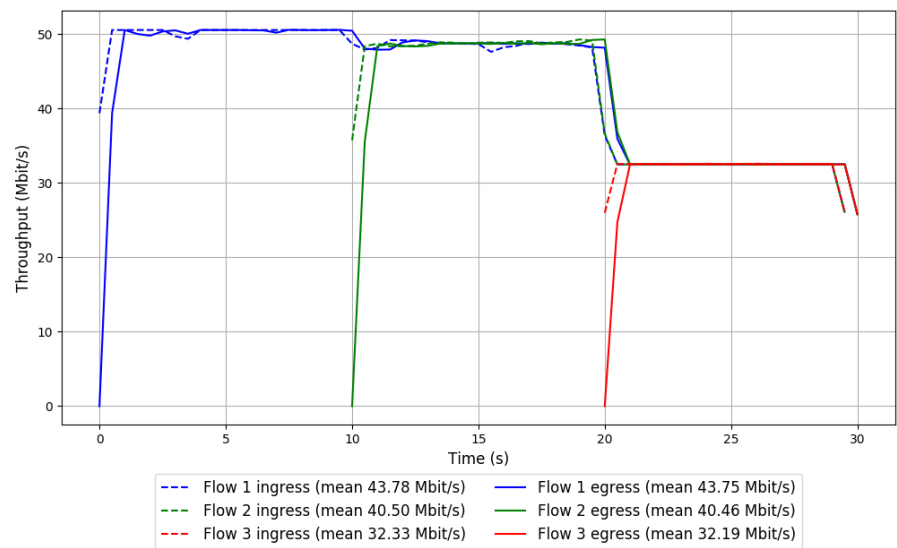
```
Run 5: Statistics of Sprout

Start at: 2019-01-22 04:05:05
End at: 2019-01-22 04:05:35
Local clock offset: -8.413 ms
Remote clock offset: 0.758 ms


# Below is generated by plot.py at 2019-01-22 04:41:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 81.28 Mbit/s
95th percentile per-packet one-way delay: 23.434 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 43.75 Mbit/s
95th percentile per-packet one-way delay: 21.340 ms
Loss rate: 0.04%
-- Flow 2:
Average throughput: 40.46 Mbit/s
95th percentile per-packet one-way delay: 23.165 ms
Loss rate: 0.11%
-- Flow 3:
Average throughput: 32.19 Mbit/s
95th percentile per-packet one-way delay: 25.701 ms
Loss rate: 0.42%
```

Run 5: Report of Sprout — Data Link

Flow 1 ingress (mean 43.78 Mbit/s) --- Flow 1 egress (mean 43.75 Mbit/s)
Flow 2 ingress (mean 40.50 Mbit/s) --- Flow 2 egress (mean 40.46 Mbit/s)
Flow 3 ingress (mean 32.33 Mbit/s) --- Flow 3 egress (mean 32.19 Mbit/s)

Flow 1 (95th percentile 21.34 ms)   Flow 2 (95th percentile 23.16 ms)   Flow 3 (95th percentile 25.70 ms)
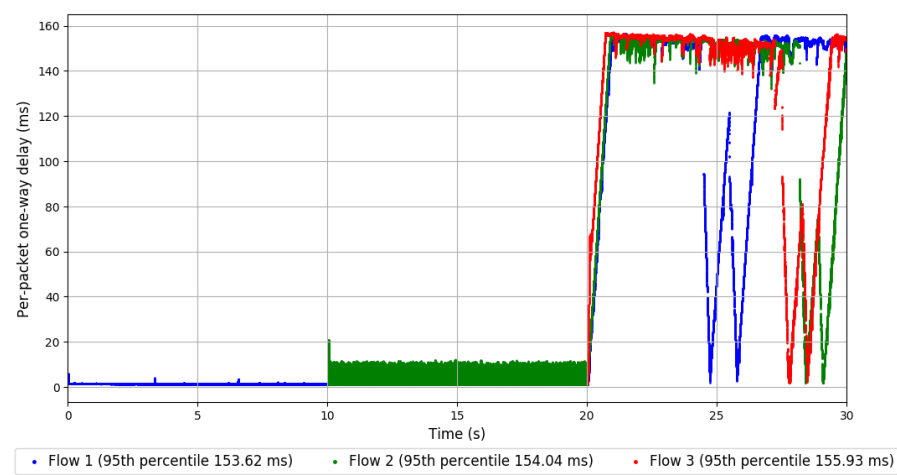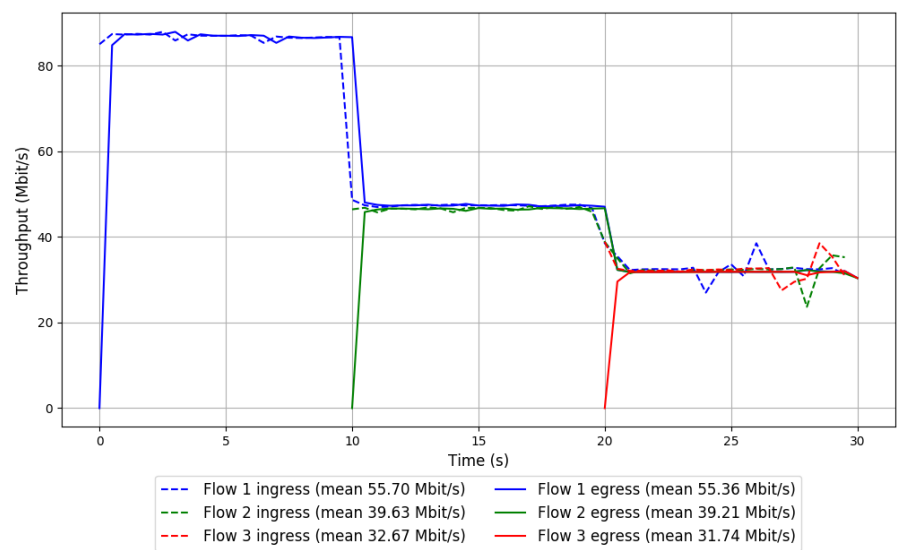
```
Run 1: Statistics of TaoVA-100x

Start at: 2019-01-22 02:49:05
End at: 2019-01-22 02:49:35
Local clock offset: -7.593 ms
Remote clock offset: -0.013 ms


# Below is generated by plot.py at 2019-01-22 04:42:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.02 Mbit/s
95th percentile per-packet one-way delay: 154.592 ms
Loss rate: 1.02%
-- Flow 1:
Average throughput: 55.36 Mbit/s
95th percentile per-packet one-way delay: 153.623 ms
Loss rate: 0.63%
-- Flow 2:
Average throughput: 39.21 Mbit/s
95th percentile per-packet one-way delay: 154.045 ms
Loss rate: 1.09%
-- Flow 3:
Average throughput: 31.74 Mbit/s
95th percentile per-packet one-way delay: 155.929 ms
Loss rate: 2.86%
```

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

Flow 1 ingress (mean 55.70 Mbit/s) --- Flow 1 egress (mean 55.36 Mbit/s)
Flow 2 ingress (mean 39.63 Mbit/s) --- Flow 2 egress (mean 39.21 Mbit/s)
Flow 3 ingress (mean 32.67 Mbit/s) --- Flow 3 egress (mean 31.74 Mbit/s)

Flow 1 (95th percentile 153.62 ms) • Flow 2 (95th percentile 154.04 ms) • Flow 3 (95th percentile 155.93 ms)

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

Start at: 2019-01-22 03:13:14
End at: 2019-01-22 03:13:44
Local clock offset: -3.12 ms
Remote clock offset: 0.501 ms


# Below is generated by plot.py at 2019-01-22 04:43:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.36 Mbit/s
95th percentile per-packet one-way delay: 154.871 ms
Loss rate: 0.98%
-- Flow 1:
Average throughput: 55.54 Mbit/s
95th percentile per-packet one-way delay: 153.696 ms
Loss rate: 0.58%
-- Flow 2:
Average throughput: 39.41 Mbit/s
95th percentile per-packet one-way delay: 154.600 ms
Loss rate: 1.11%
-- Flow 3:
Average throughput: 31.82 Mbit/s
95th percentile per-packet one-way delay: 155.925 ms
Loss rate: 2.69%
```
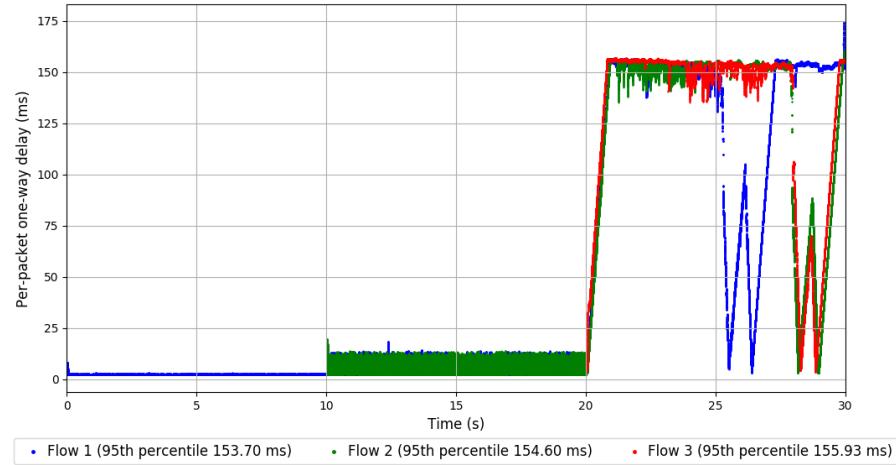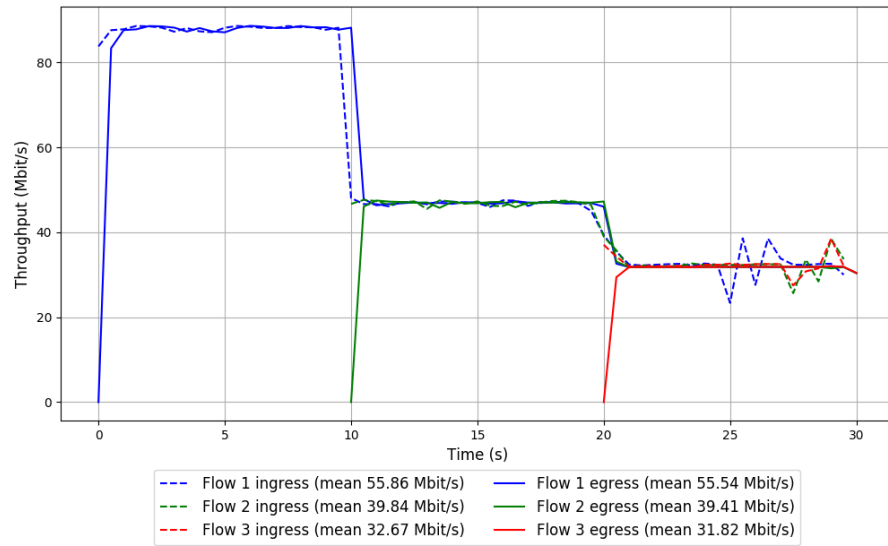
Run 2: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 55.86 Mbit/s) Flow 1 egress (mean 55.54 Mbit/s)
Flow 2 ingress (mean 39.84 Mbit/s) Flow 2 egress (mean 39.41 Mbit/s)
Flow 3 ingress (mean 32.67 Mbit/s) Flow 3 egress (mean 31.82 Mbit/s)

Flow 1 (95th percentile 153.70 ms) Flow 2 (95th percentile 154.60 ms) Flow 3 (95th percentile 155.93 ms)

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

Start at: 2019-01-22 03:37:25
End at: 2019-01-22 03:37:55
Local clock offset: -7.558 ms
Remote clock offset: 0.667 ms


# Below is generated by plot.py at 2019-01-22 04:43:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.47 Mbit/s
95th percentile per-packet one-way delay: 154.862 ms
Loss rate: 0.94%
-- Flow 1:
Average throughput: 55.51 Mbit/s
95th percentile per-packet one-way delay: 154.217 ms
Loss rate: 0.50%
-- Flow 2:
Average throughput: 39.61 Mbit/s
95th percentile per-packet one-way delay: 155.445 ms
Loss rate: 1.17%
-- Flow 3:
Average throughput: 31.79 Mbit/s
95th percentile per-packet one-way delay: 155.281 ms
Loss rate: 2.63%
```
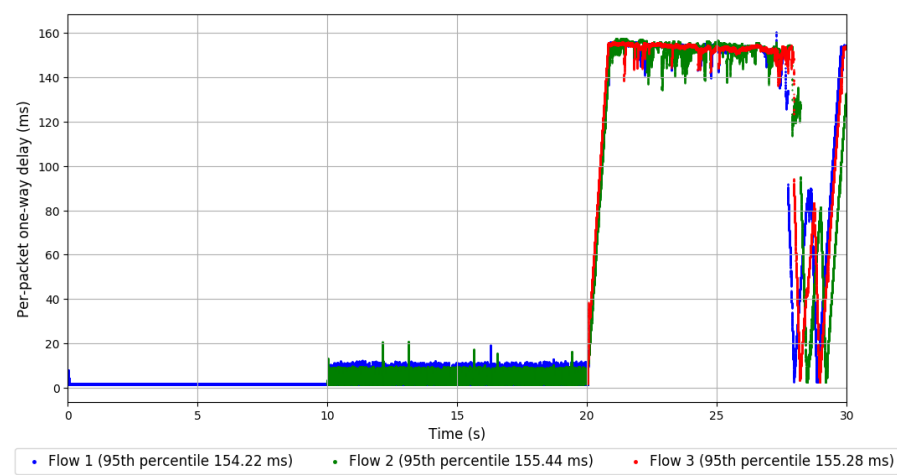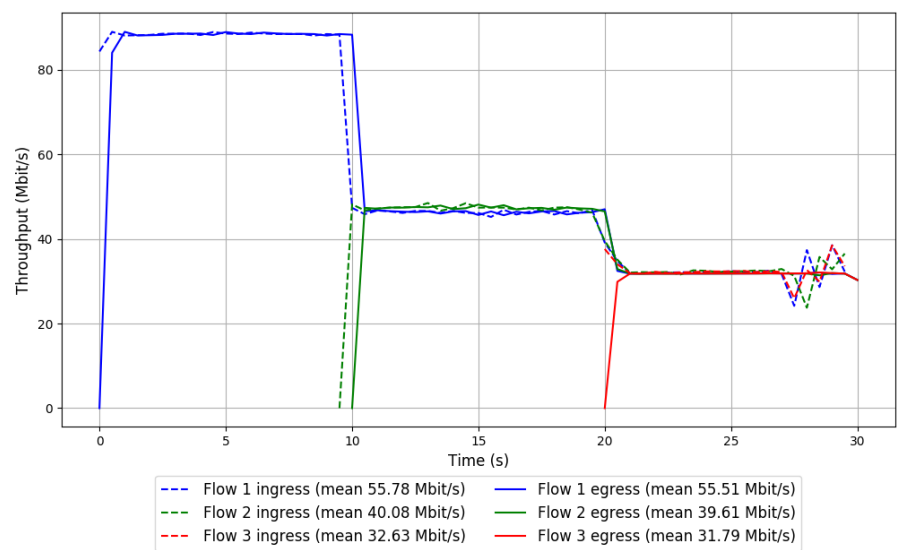
Run 3: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 55.78 Mbit/s) --- Flow 1 egress (mean 55.51 Mbit/s)
Flow 2 ingress (mean 40.08 Mbit/s) --- Flow 2 egress (mean 39.61 Mbit/s)
Flow 3 ingress (mean 32.63 Mbit/s) --- Flow 3 egress (mean 31.79 Mbit/s)

Flow 1 (95th percentile 154.22 ms) Flow 2 (95th percentile 155.44 ms) Flow 3 (95th percentile 155.28 ms)

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

Start at: 2019-01-22 04:01:36
End at: 2019-01-22 04:02:06
Local clock offset: -8.347 ms
Remote clock offset: 0.614 ms


# Below is generated by plot.py at 2019-01-22 04:43:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.38 Mbit/s
95th percentile per-packet one-way delay: 155.386 ms
Loss rate: 0.92%
-- Flow 1:
Average throughput: 55.44 Mbit/s
95th percentile per-packet one-way delay: 153.509 ms
Loss rate: 0.52%
-- Flow 2:
Average throughput: 39.59 Mbit/s
95th percentile per-packet one-way delay: 155.156 ms
Loss rate: 1.09%
-- Flow 3:
Average throughput: 31.87 Mbit/s
95th percentile per-packet one-way delay: 157.009 ms
Loss rate: 2.60%
```
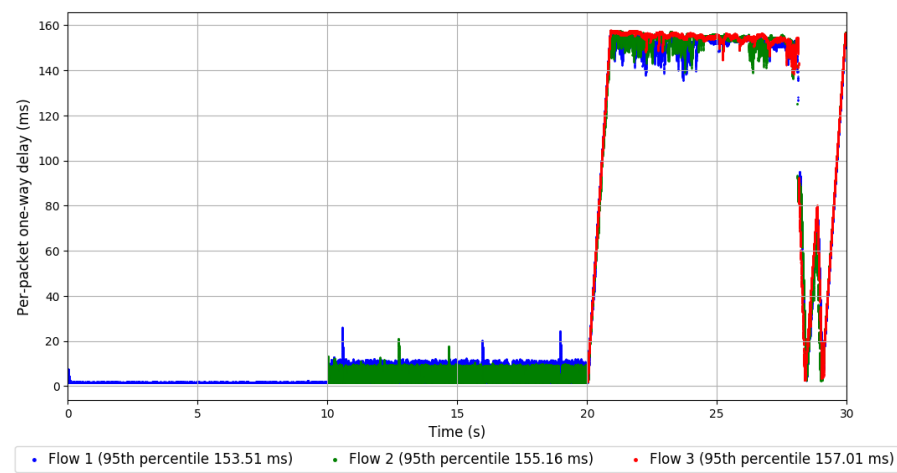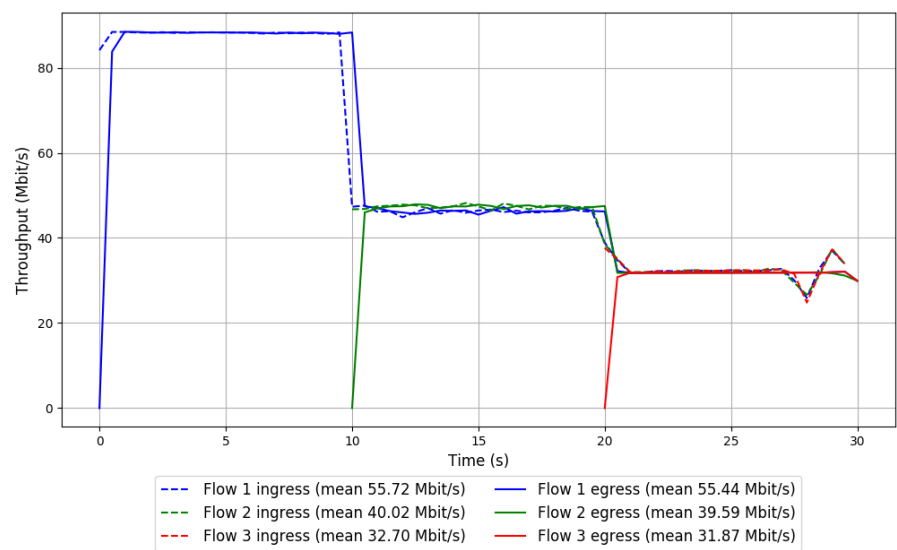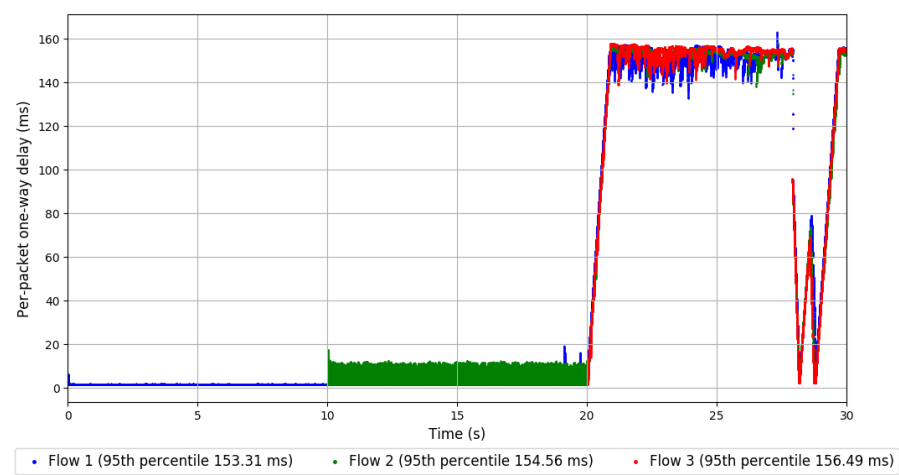
Run 4: Report of TaoVA-100x — Data Link

- - - Flow 1 ingress (mean 55.72 Mbit/s) —— Flow 1 egress (mean 55.44 Mbit/s)
- - - Flow 2 ingress (mean 40.02 Mbit/s) —— Flow 2 egress (mean 39.59 Mbit/s)
- - - Flow 3 ingress (mean 32.70 Mbit/s) —— Flow 3 egress (mean 31.87 Mbit/s)

- Flow 1 (95th percentile 153.51 ms)　　• Flow 2 (95th percentile 155.16 ms)　　• Flow 3 (95th percentile 157.01 ms)

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

Start at: 2019-01-22 04:25:46
End at: 2019-01-22 04:26:16
Local clock offset: -7.484 ms
Remote clock offset: 0.734 ms

# Below is generated by plot.py at 2019-01-22 04:43:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.04 Mbit/s
95th percentile per-packet one-way delay: 154.976 ms
Loss rate: 0.91%
-- Flow 1:
Average throughput: 55.38 Mbit/s
95th percentile per-packet one-way delay: 153.307 ms
Loss rate: 0.52%
-- Flow 2:
Average throughput: 39.19 Mbit/s
95th percentile per-packet one-way delay: 154.561 ms
Loss rate: 1.08%
-- Flow 3:
Average throughput: 31.77 Mbit/s
95th percentile per-packet one-way delay: 156.487 ms
Loss rate: 2.50%
```
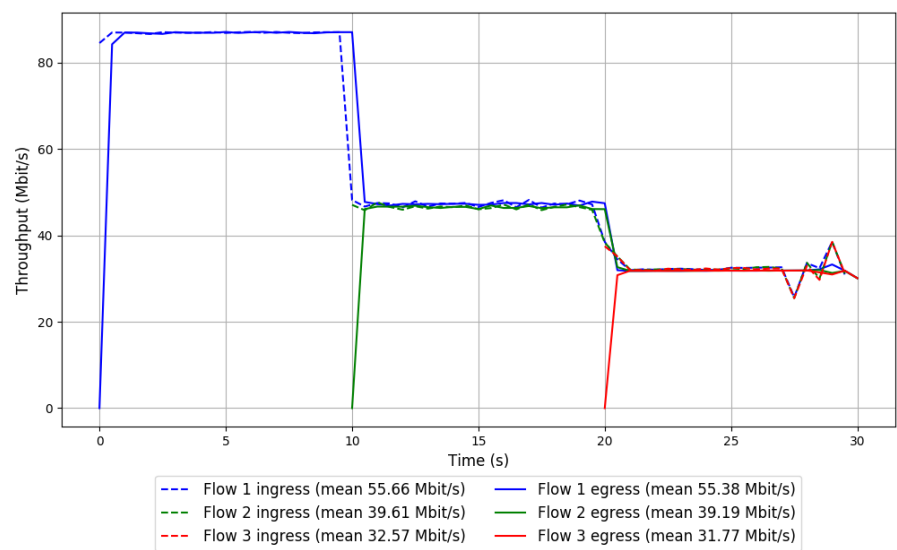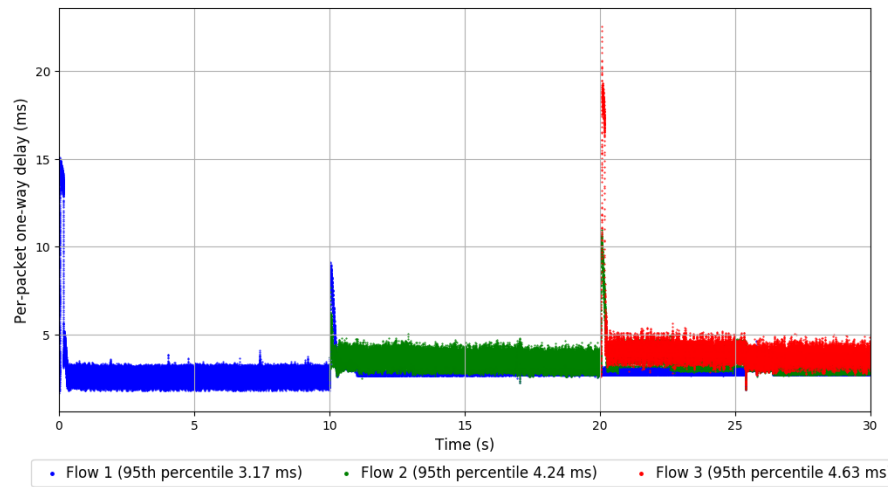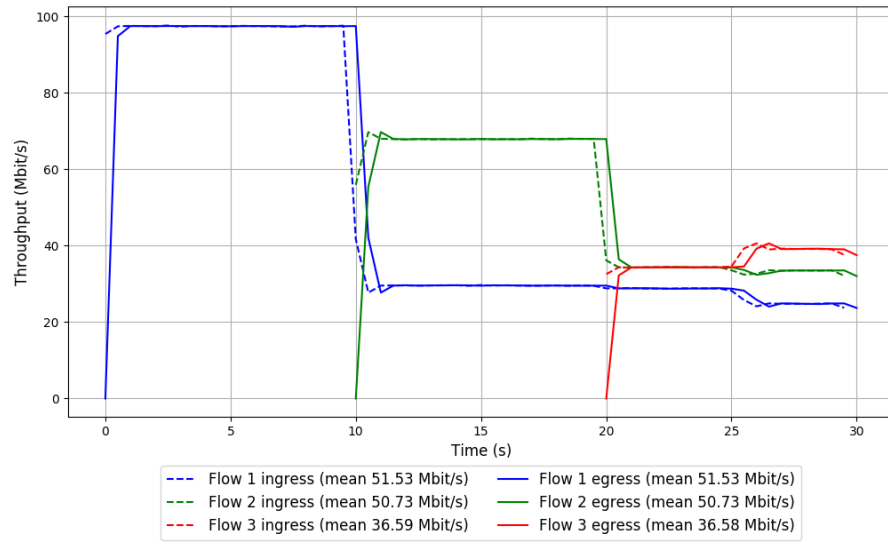
Run 5: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 55.66 Mbit/s)   Flow 1 egress (mean 55.38 Mbit/s)
Flow 2 ingress (mean 39.61 Mbit/s)   Flow 2 egress (mean 39.19 Mbit/s)
Flow 3 ingress (mean 32.57 Mbit/s)   Flow 3 egress (mean 31.77 Mbit/s)

Flow 1 (95th percentile 153.31 ms)   Flow 2 (95th percentile 154.56 ms)   Flow 3 (95th percentile 156.49 ms)

```
Run 1: Statistics of TCP Vegas

Start at: 2019-01-22 02:44:21
End at: 2019-01-22 02:44:51
Local clock offset: -8.931 ms
Remote clock offset: -0.201 ms


# Below is generated by plot.py at 2019-01-22 04:43:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 97.47 Mbit/s
95th percentile per-packet one-way delay: 4.277 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 51.53 Mbit/s
95th percentile per-packet one-way delay: 3.173 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 50.73 Mbit/s
95th percentile per-packet one-way delay: 4.241 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 36.58 Mbit/s
95th percentile per-packet one-way delay: 4.635 ms
Loss rate: 0.06%
```
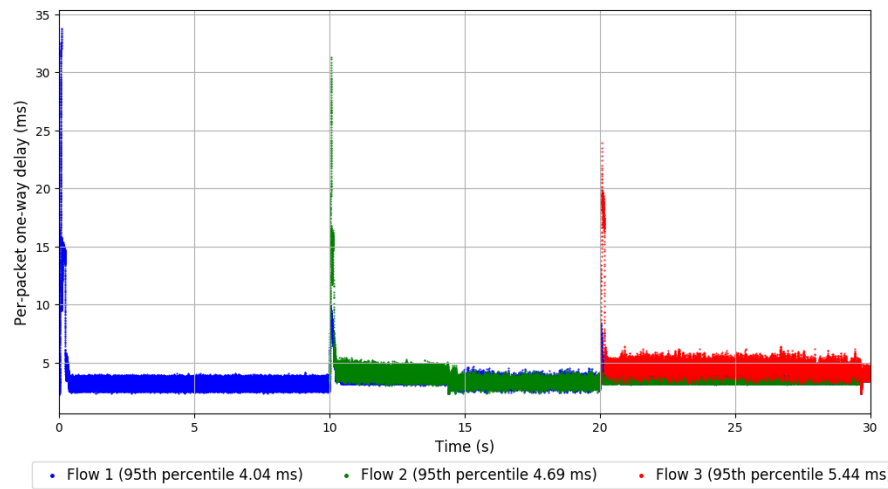
Run 1: Report of TCP Vegas — Data Link

```
Run 2: Statistics of TCP Vegas

Start at: 2019-01-22 03:08:30
End at: 2019-01-22 03:09:00
Local clock offset: -3.225 ms
Remote clock offset: 0.457 ms


# Below is generated by plot.py at 2019-01-22 04:43:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 97.43 Mbit/s
95th percentile per-packet one-way delay: 4.939 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 58.46 Mbit/s
95th percentile per-packet one-way delay: 4.044 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 39.70 Mbit/s
95th percentile per-packet one-way delay: 4.694 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 37.65 Mbit/s
95th percentile per-packet one-way delay: 5.441 ms
Loss rate: 0.06%
```
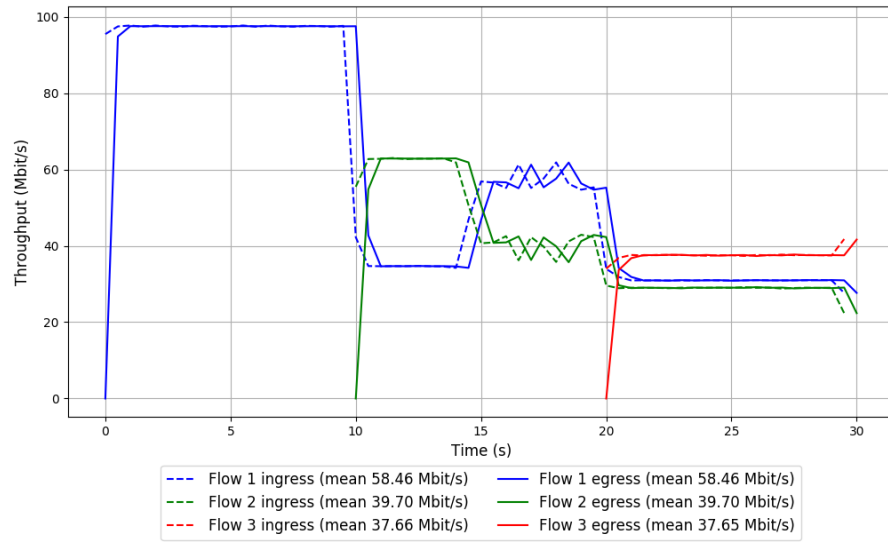
Run 2: Report of TCP Vegas — Data Link

```
Run 3: Statistics of TCP Vegas

Start at: 2019-01-22 03:32:42
End at: 2019-01-22 03:33:12
Local clock offset: -6.37 ms
Remote clock offset: 0.69 ms


# Below is generated by plot.py at 2019-01-22 04:43:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 97.49 Mbit/s
95th percentile per-packet one-way delay: 4.784 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 53.44 Mbit/s
95th percentile per-packet one-way delay: 3.879 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 48.73 Mbit/s
95th percentile per-packet one-way delay: 4.560 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 34.92 Mbit/s
95th percentile per-packet one-way delay: 5.231 ms
Loss rate: 0.06%
```
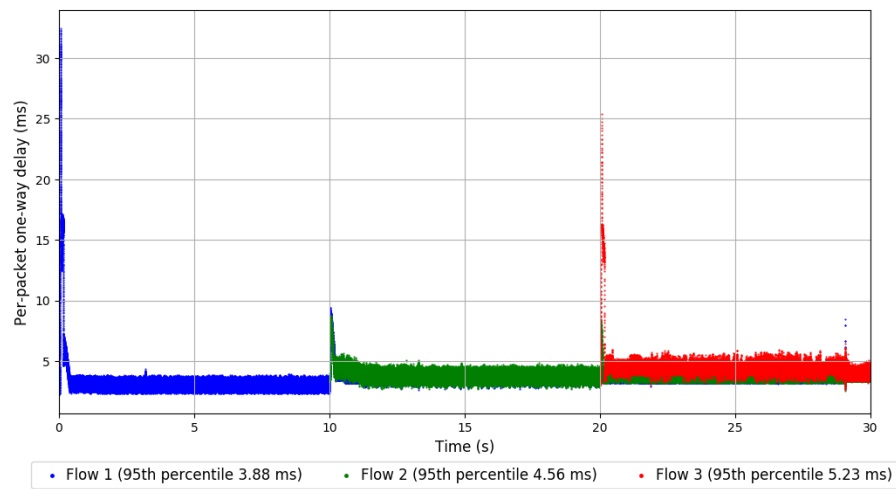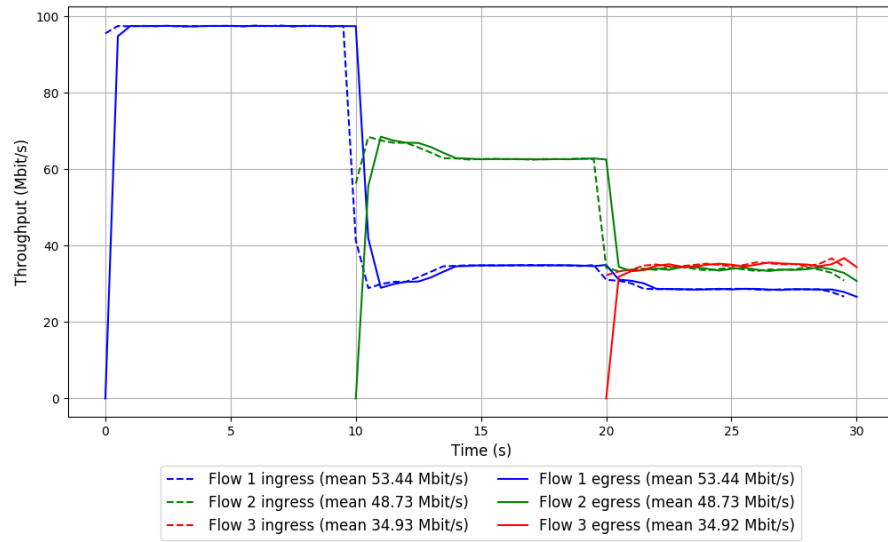
Run 3: Report of TCP Vegas — Data Link

```
Run 4: Statistics of TCP Vegas

Start at: 2019-01-22 03:56:52
End at: 2019-01-22 03:57:22
Local clock offset: -8.135 ms
Remote clock offset: 0.692 ms


# Below is generated by plot.py at 2019-01-22 04:43:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 97.49 Mbit/s
95th percentile per-packet one-way delay: 3.626 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 51.48 Mbit/s
95th percentile per-packet one-way delay: 3.096 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 45.88 Mbit/s
95th percentile per-packet one-way delay: 3.415 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 46.57 Mbit/s
95th percentile per-packet one-way delay: 3.879 ms
Loss rate: 0.04%
```
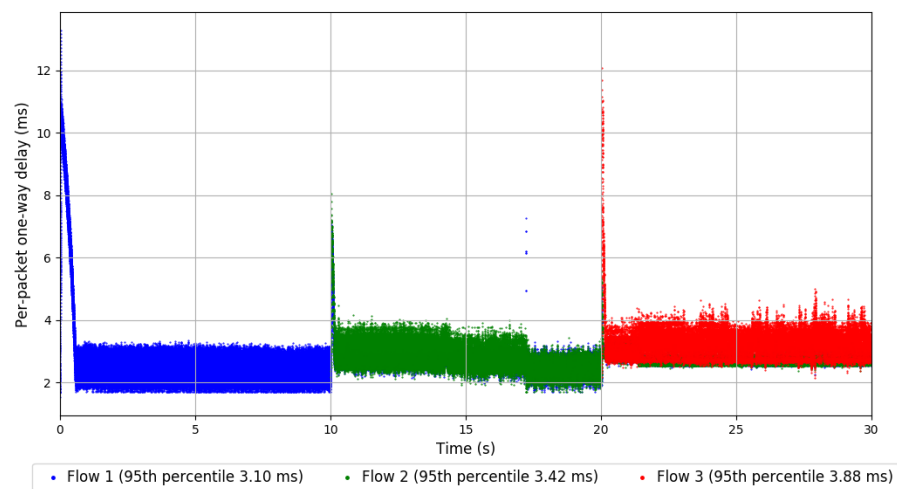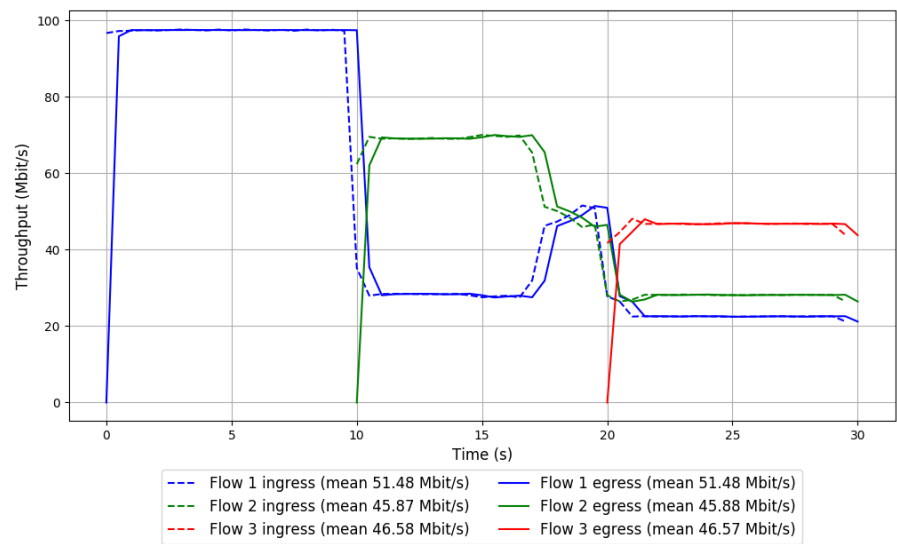
Run 4: Report of TCP Vegas — Data Link

- - - - Flow 1 ingress (mean 51.48 Mbit/s) ——— Flow 1 egress (mean 51.48 Mbit/s)
- - - - Flow 2 ingress (mean 45.87 Mbit/s) ——— Flow 2 egress (mean 45.88 Mbit/s)
- - - - Flow 3 ingress (mean 46.58 Mbit/s) ——— Flow 3 egress (mean 46.57 Mbit/s)

• Flow 1 (95th percentile 3.10 ms)   • Flow 2 (95th percentile 3.42 ms)   • Flow 3 (95th percentile 3.88 ms)

```
Run 5: Statistics of TCP Vegas

Start at: 2019-01-22 04:21:02
End at: 2019-01-22 04:21:32
Local clock offset: -7.898 ms
Remote clock offset: 0.659 ms


# Below is generated by plot.py at 2019-01-22 04:43:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 97.51 Mbit/s
95th percentile per-packet one-way delay: 4.130 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 51.72 Mbit/s
95th percentile per-packet one-way delay: 3.184 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 51.18 Mbit/s
95th percentile per-packet one-way delay: 3.983 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 35.26 Mbit/s
95th percentile per-packet one-way delay: 4.386 ms
Loss rate: 0.06%
```
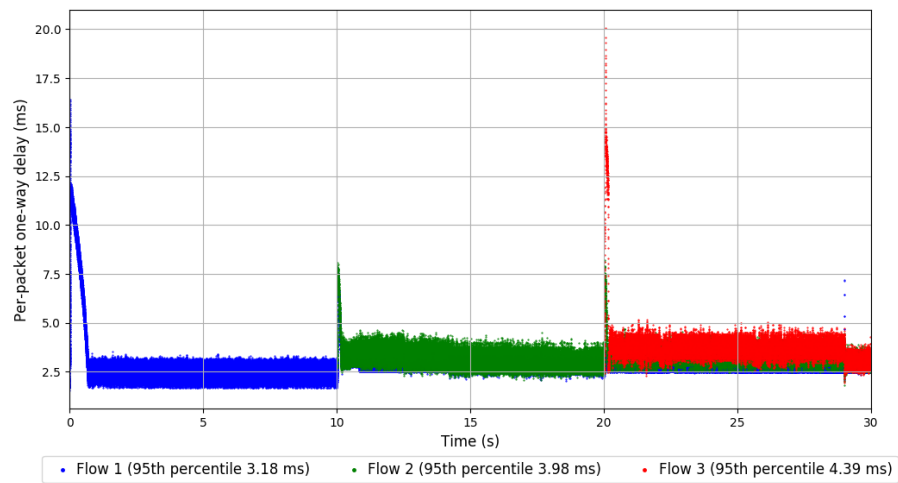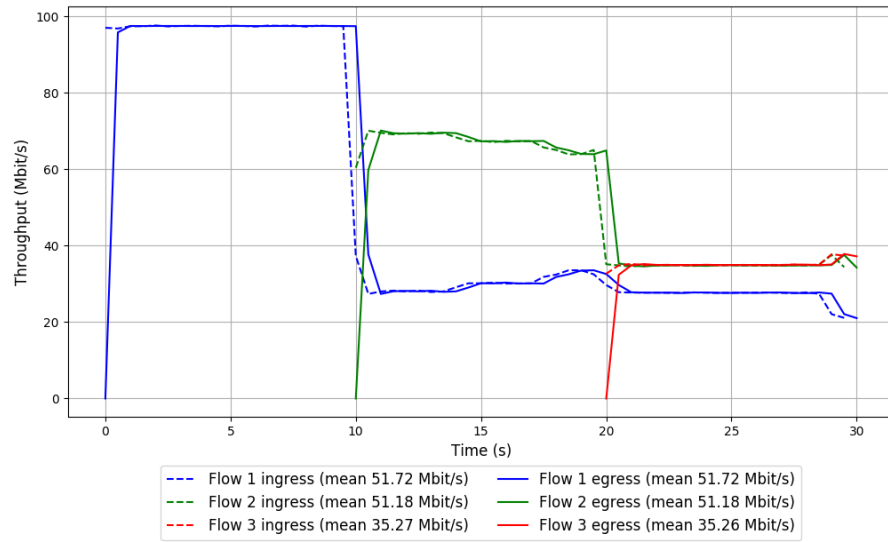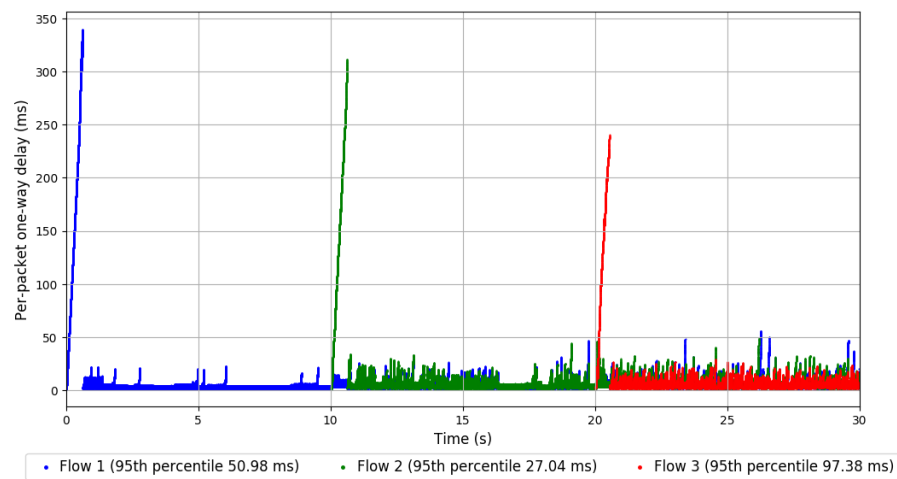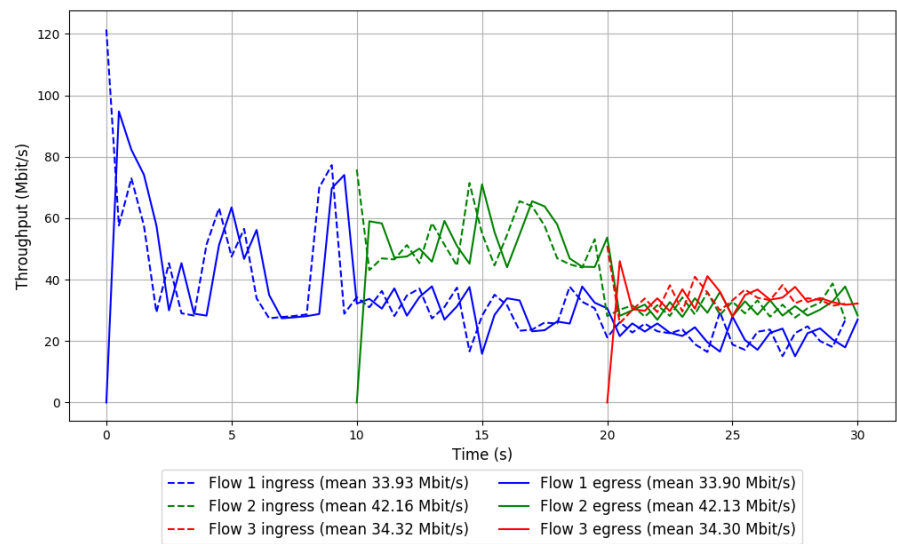
Run 5: Report of TCP Vegas — Data Link

Legend:
- Flow 1 ingress (mean 51.72 Mbit/s) — Flow 1 egress (mean 51.72 Mbit/s)
- Flow 2 ingress (mean 51.18 Mbit/s) — Flow 2 egress (mean 51.18 Mbit/s)
- Flow 3 ingress (mean 35.27 Mbit/s) — Flow 3 egress (mean 35.26 Mbit/s)

Legend:
- Flow 1 (95th percentile 3.18 ms)
- Flow 2 (95th percentile 3.98 ms)
- Flow 3 (95th percentile 4.39 ms)

184

```
Run 1: Statistics of Verus

Start at: 2019-01-22 02:30:41
End at: 2019-01-22 02:31:11
Local clock offset: -6.292 ms
Remote clock offset: -0.438 ms


# Below is generated by plot.py at 2019-01-22 04:43:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 73.35 Mbit/s
95th percentile per-packet one-way delay: 38.863 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 33.90 Mbit/s
95th percentile per-packet one-way delay: 50.980 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 42.13 Mbit/s
95th percentile per-packet one-way delay: 27.042 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 34.30 Mbit/s
95th percentile per-packet one-way delay: 97.382 ms
Loss rate: 0.10%
```
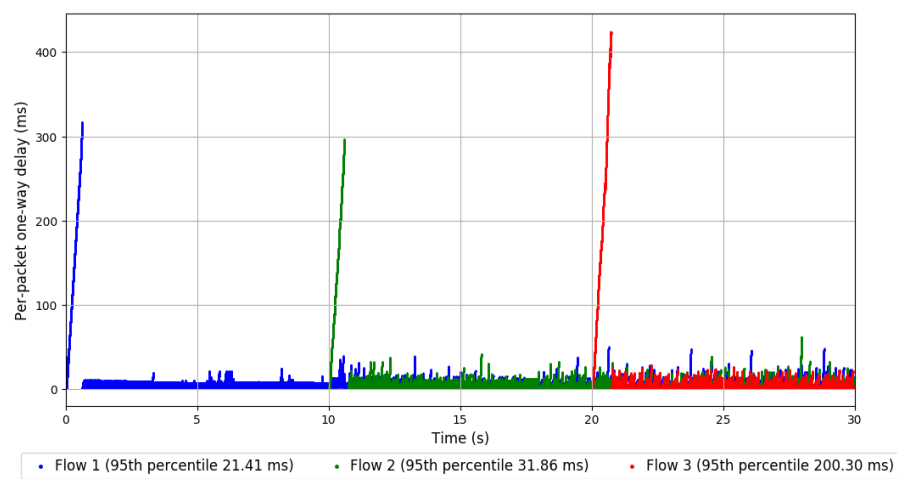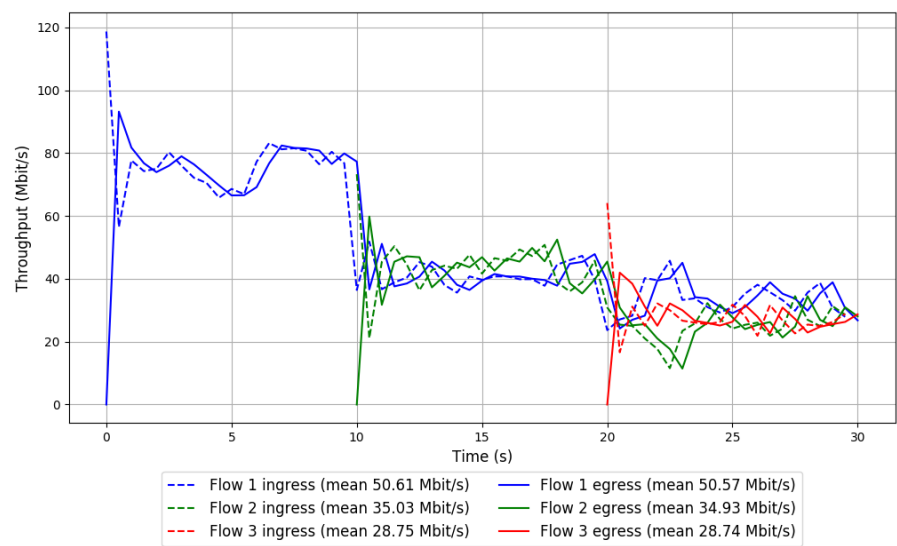
Run 1: Report of Verus — Data Link

Flow 1 ingress (mean 33.93 Mbit/s)   Flow 1 egress (mean 33.90 Mbit/s)
Flow 2 ingress (mean 42.16 Mbit/s)   Flow 2 egress (mean 42.13 Mbit/s)
Flow 3 ingress (mean 34.32 Mbit/s)   Flow 3 egress (mean 34.30 Mbit/s)

Flow 1 (95th percentile 50.98 ms)   Flow 2 (95th percentile 27.04 ms)   Flow 3 (95th percentile 97.38 ms)

186

```
Run 2: Statistics of Verus

Start at: 2019-01-22 02:54:49
End at: 2019-01-22 02:55:19
Local clock offset: -5.466 ms
Remote clock offset: 0.145 ms


# Below is generated by plot.py at 2019-01-22 04:43:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 83.37 Mbit/s
95th percentile per-packet one-way delay: 29.740 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 50.57 Mbit/s
95th percentile per-packet one-way delay: 21.413 ms
Loss rate: 0.05%
-- Flow 2:
Average throughput: 34.93 Mbit/s
95th percentile per-packet one-way delay: 31.862 ms
Loss rate: 0.26%
-- Flow 3:
Average throughput: 28.74 Mbit/s
95th percentile per-packet one-way delay: 200.304 ms
Loss rate: 0.09%
```

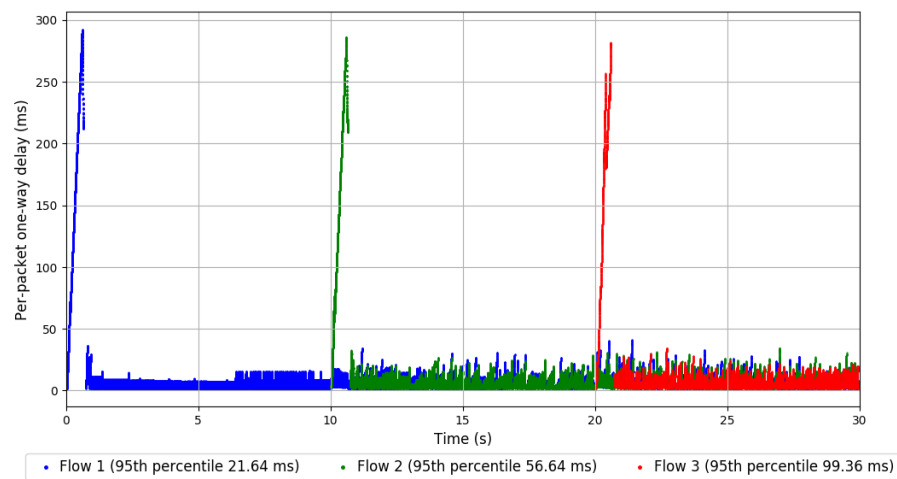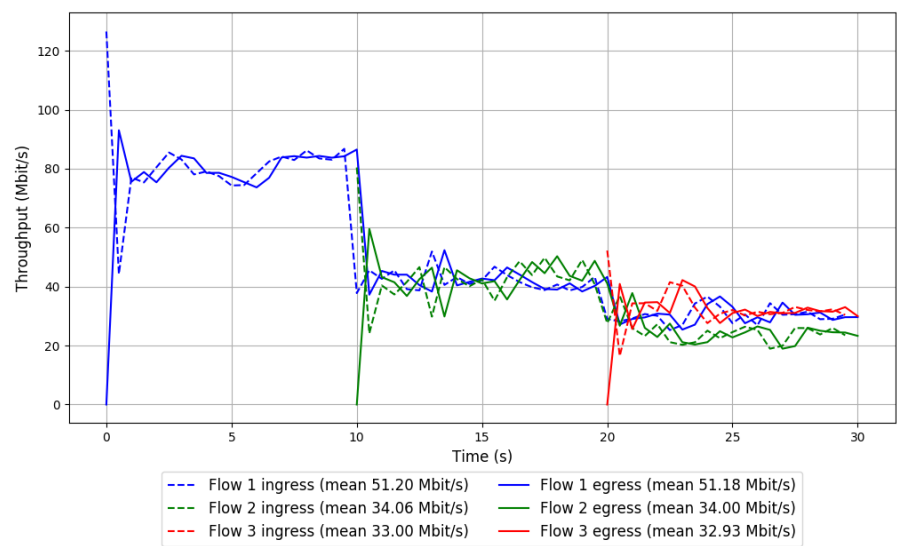## Run 2: Report of Verus — Data Link

```
Run 3: Statistics of Verus

Start at: 2019-01-22 03:18:59
End at: 2019-01-22 03:19:29
Local clock offset: -4.801 ms
Remote clock offset: 0.557 ms


# Below is generated by plot.py at 2019-01-22 04:44:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 84.76 Mbit/s
95th percentile per-packet one-way delay: 26.136 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 51.18 Mbit/s
95th percentile per-packet one-way delay: 21.645 ms
Loss rate: 0.04%
-- Flow 2:
Average throughput: 34.00 Mbit/s
95th percentile per-packet one-way delay: 56.636 ms
Loss rate: 0.16%
-- Flow 3:
Average throughput: 32.93 Mbit/s
95th percentile per-packet one-way delay: 99.361 ms
Loss rate: 0.29%
```
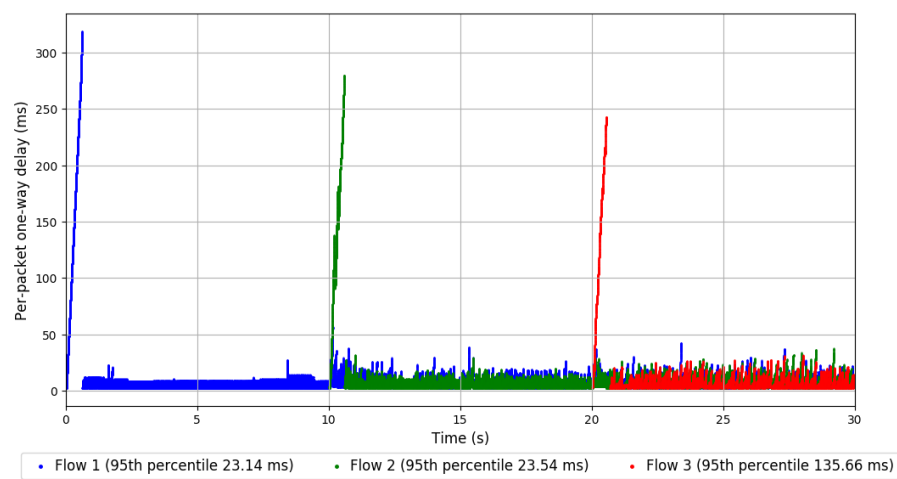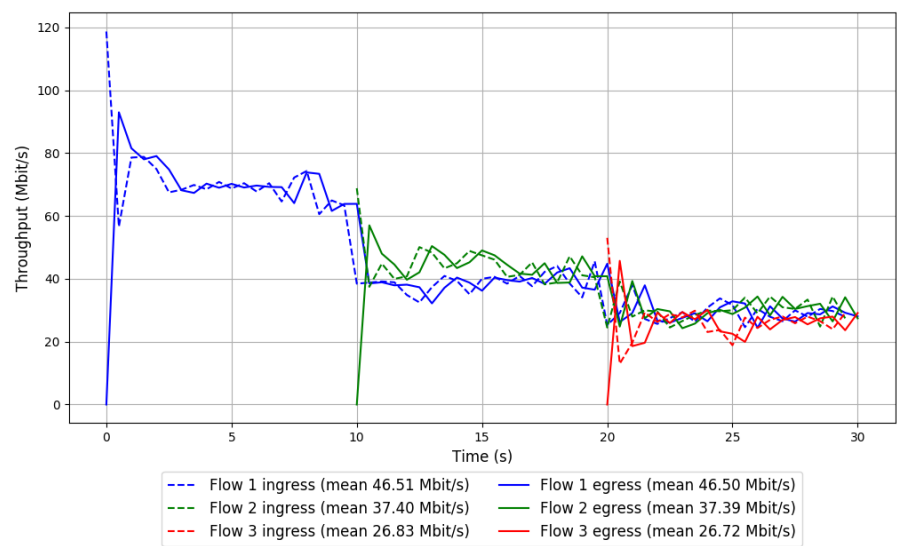
Run 3: Report of Verus — Data Link

Flow 1 ingress (mean 51.20 Mbit/s) — — — Flow 1 egress (mean 51.18 Mbit/s)
Flow 2 ingress (mean 34.06 Mbit/s) — — — Flow 2 egress (mean 34.00 Mbit/s)
Flow 3 ingress (mean 33.00 Mbit/s) — — — Flow 3 egress (mean 32.93 Mbit/s)

Flow 1 (95th percentile 21.64 ms) • Flow 2 (95th percentile 56.64 ms) • Flow 3 (95th percentile 99.36 ms)

```
Run 4: Statistics of Verus

Start at: 2019-01-22 03:43:11
End at: 2019-01-22 03:43:41
Local clock offset: -7.199 ms
Remote clock offset: 0.618 ms

# Below is generated by plot.py at 2019-01-22 04:44:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 80.26 Mbit/s
95th percentile per-packet one-way delay: 25.993 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 46.50 Mbit/s
95th percentile per-packet one-way delay: 23.139 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 37.39 Mbit/s
95th percentile per-packet one-way delay: 23.541 ms
Loss rate: 0.03%
-- Flow 3:
Average throughput: 26.72 Mbit/s
95th percentile per-packet one-way delay: 135.658 ms
Loss rate: 0.37%
```
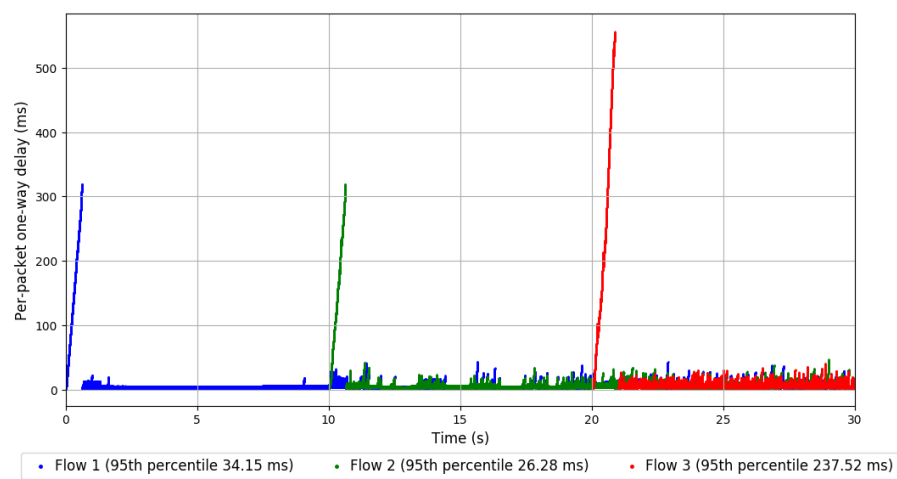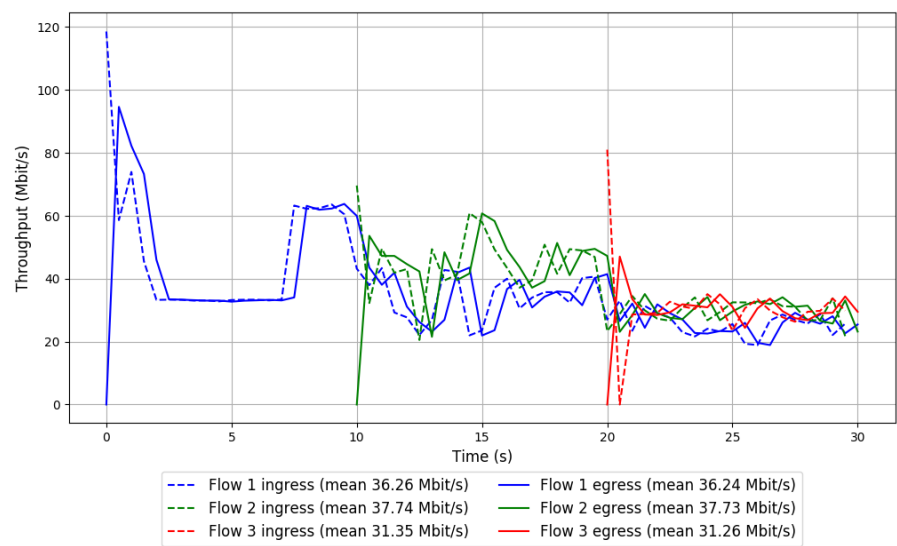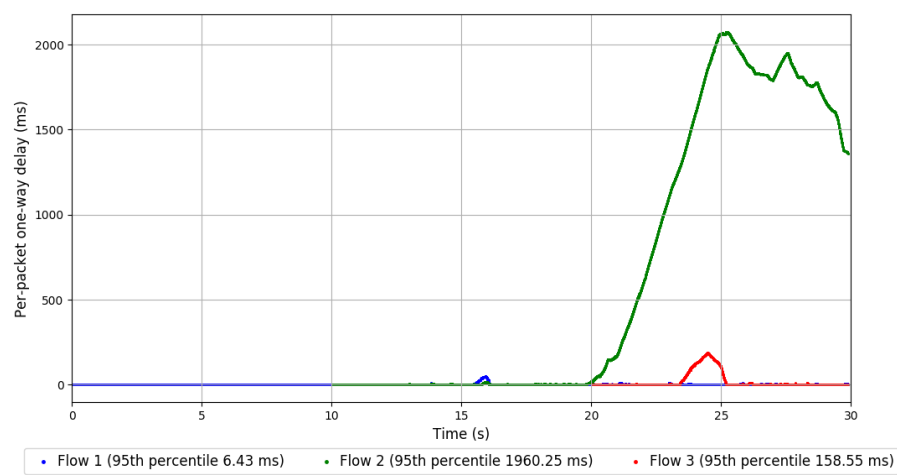
Run 4: Report of Verus — Data Link

Flow 1 ingress (mean 46.51 Mbit/s) ---- Flow 1 egress (mean 46.50 Mbit/s)
Flow 2 ingress (mean 37.40 Mbit/s) ---- Flow 2 egress (mean 37.39 Mbit/s)
Flow 3 ingress (mean 26.83 Mbit/s) ---- Flow 3 egress (mean 26.72 Mbit/s)

Flow 1 (95th percentile 23.14 ms)   Flow 2 (95th percentile 23.54 ms)   Flow 3 (95th percentile 135.66 ms)

```
Run 5: Statistics of Verus

Start at: 2019-01-22 04:07:20
End at: 2019-01-22 04:07:50
Local clock offset: -7.82 ms
Remote clock offset: 0.806 ms


# Below is generated by plot.py at 2019-01-22 04:44:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 71.74 Mbit/s
95th percentile per-packet one-way delay: 64.903 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 36.24 Mbit/s
95th percentile per-packet one-way delay: 34.148 ms
Loss rate: 0.04%
-- Flow 2:
Average throughput: 37.73 Mbit/s
95th percentile per-packet one-way delay: 26.277 ms
Loss rate: 0.05%
-- Flow 3:
Average throughput: 31.26 Mbit/s
95th percentile per-packet one-way delay: 237.522 ms
Loss rate: 0.21%
```
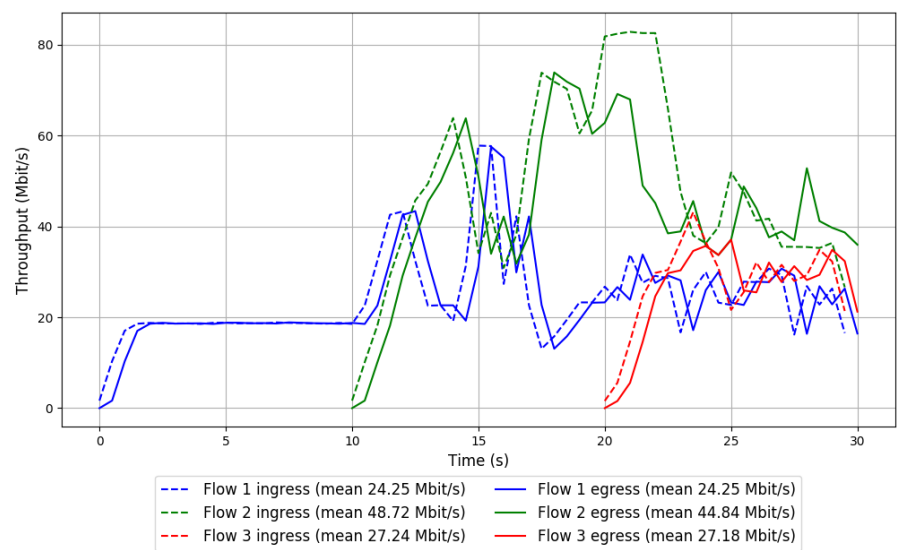
Run 5: Report of Verus — Data Link

```
Run 1: Statistics of PCC-Vivace

Start at: 2019-01-22 02:42:03
End at: 2019-01-22 02:42:33
Local clock offset: -8.687 ms
Remote clock offset: -0.137 ms


# Below is generated by plot.py at 2019-01-22 04:44:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 63.04 Mbit/s
95th percentile per-packet one-way delay: 1864.390 ms
Loss rate: 4.01%
-- Flow 1:
Average throughput: 24.25 Mbit/s
95th percentile per-packet one-way delay: 6.427 ms
Loss rate: 0.03%
-- Flow 2:
Average throughput: 44.84 Mbit/s
95th percentile per-packet one-way delay: 1960.253 ms
Loss rate: 7.99%
-- Flow 3:
Average throughput: 27.18 Mbit/s
95th percentile per-packet one-way delay: 158.546 ms
Loss rate: 0.41%
```
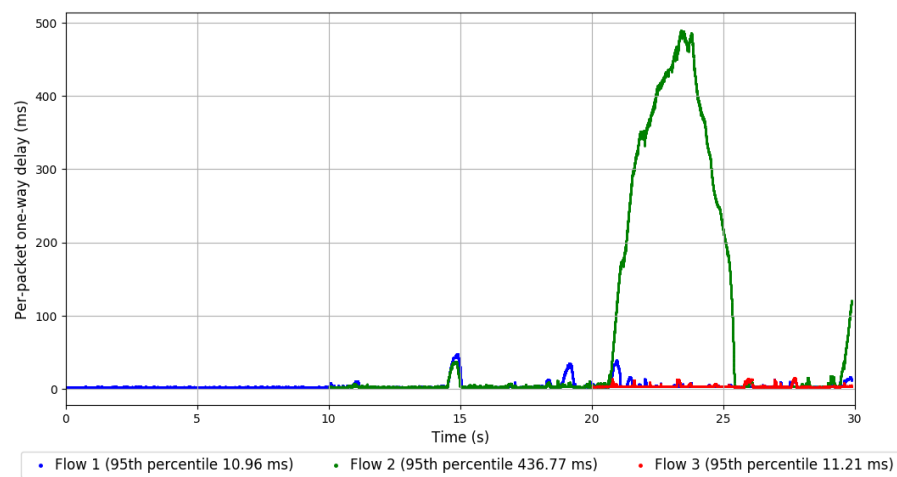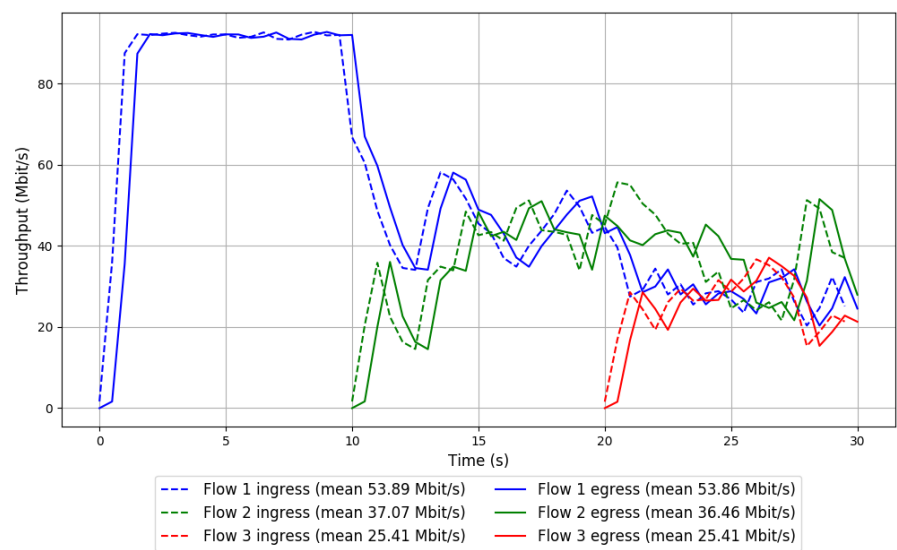
Run 1: Report of PCC-Vivace — Data Link

Flow 1 ingress (mean 24.25 Mbit/s) --- Flow 1 egress (mean 24.25 Mbit/s)
Flow 2 ingress (mean 48.72 Mbit/s) --- Flow 2 egress (mean 44.84 Mbit/s)
Flow 3 ingress (mean 27.24 Mbit/s) --- Flow 3 egress (mean 27.18 Mbit/s)

Flow 1 (95th percentile 6.43 ms)   Flow 2 (95th percentile 1960.25 ms)   Flow 3 (95th percentile 158.55 ms)

```
Run 2: Statistics of PCC-Vivace

Start at: 2019-01-22 03:06:11
End at: 2019-01-22 03:06:41
Local clock offset: -3.317 ms
Remote clock offset: 0.324 ms

# Below is generated by plot.py at 2019-01-22 04:44:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 86.51 Mbit/s
95th percentile per-packet one-way delay: 275.011 ms
Loss rate: 0.52%
-- Flow 1:
Average throughput: 53.86 Mbit/s
95th percentile per-packet one-way delay: 10.957 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 36.46 Mbit/s
95th percentile per-packet one-way delay: 436.771 ms
Loss rate: 1.67%
-- Flow 3:
Average throughput: 25.41 Mbit/s
95th percentile per-packet one-way delay: 11.211 ms
Loss rate: 0.06%
```
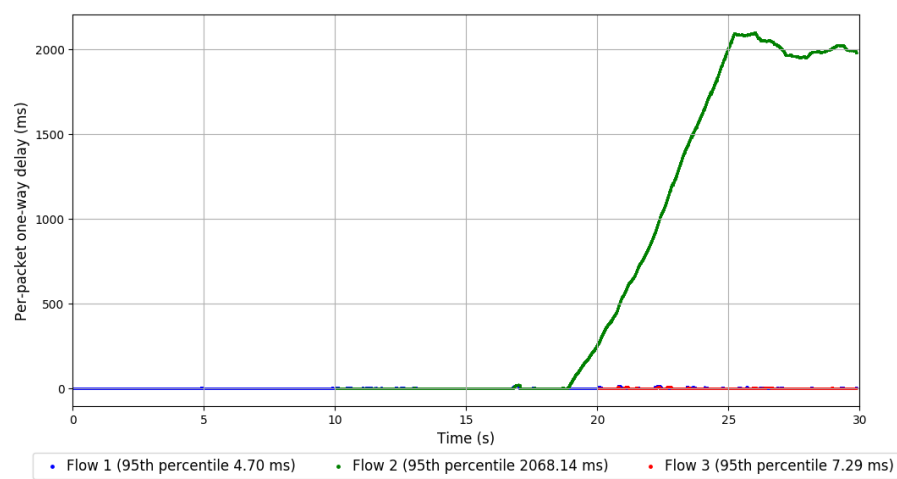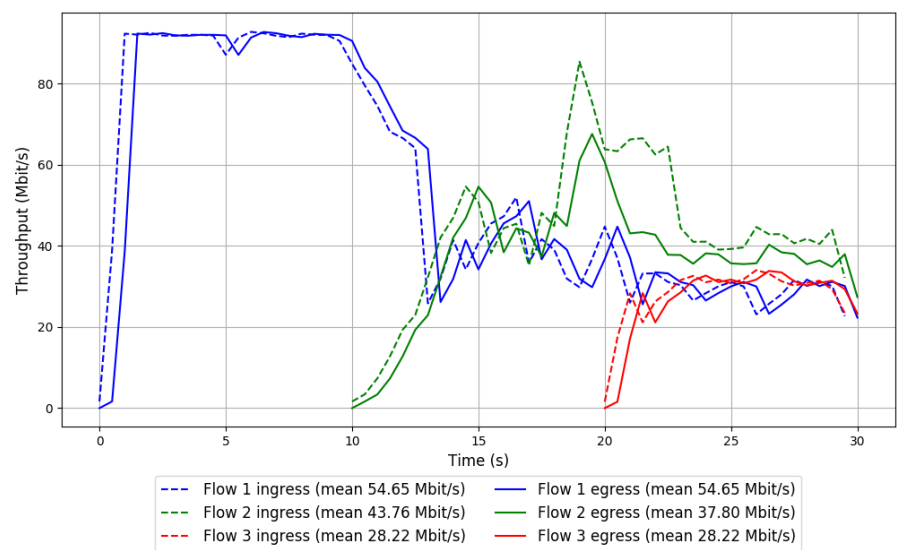
Run 2: Report of PCC-Vivace — Data Link

```
Run 3: Statistics of PCC-Vivace

Start at: 2019-01-22 03:30:22
End at: 2019-01-22 03:30:52
Local clock offset: -6.808 ms
Remote clock offset: 0.661 ms


# Below is generated by plot.py at 2019-01-22 04:44:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 89.10 Mbit/s
95th percentile per-packet one-way delay: 1987.102 ms
Loss rate: 4.28%
-- Flow 1:
Average throughput: 54.65 Mbit/s
95th percentile per-packet one-way delay: 4.700 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 37.80 Mbit/s
95th percentile per-packet one-way delay: 2068.138 ms
Loss rate: 13.64%
-- Flow 3:
Average throughput: 28.22 Mbit/s
95th percentile per-packet one-way delay: 7.295 ms
Loss rate: 0.05%
```
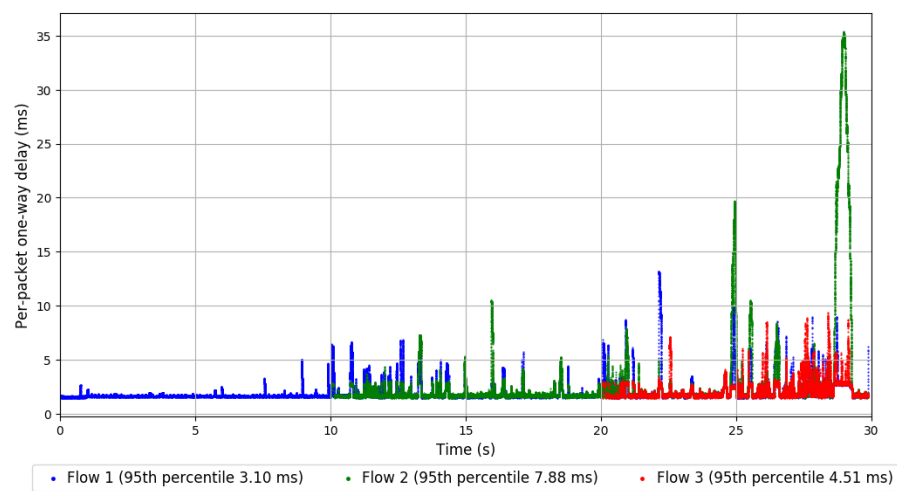
Run 3: Report of PCC-Vivace — Data Link

```
Run 4: Statistics of PCC-Vivace

Start at: 2019-01-22 03:54:33
End at: 2019-01-22 03:55:03
Local clock offset: -8.097 ms
Remote clock offset: 0.723 ms


# Below is generated by plot.py at 2019-01-22 04:44:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 87.54 Mbit/s
95th percentile per-packet one-way delay: 4.156 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 53.69 Mbit/s
95th percentile per-packet one-way delay: 3.104 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 37.28 Mbit/s
95th percentile per-packet one-way delay: 7.879 ms
Loss rate: 0.03%
-- Flow 3:
Average throughput: 27.43 Mbit/s
95th percentile per-packet one-way delay: 4.514 ms
Loss rate: 0.03%
```
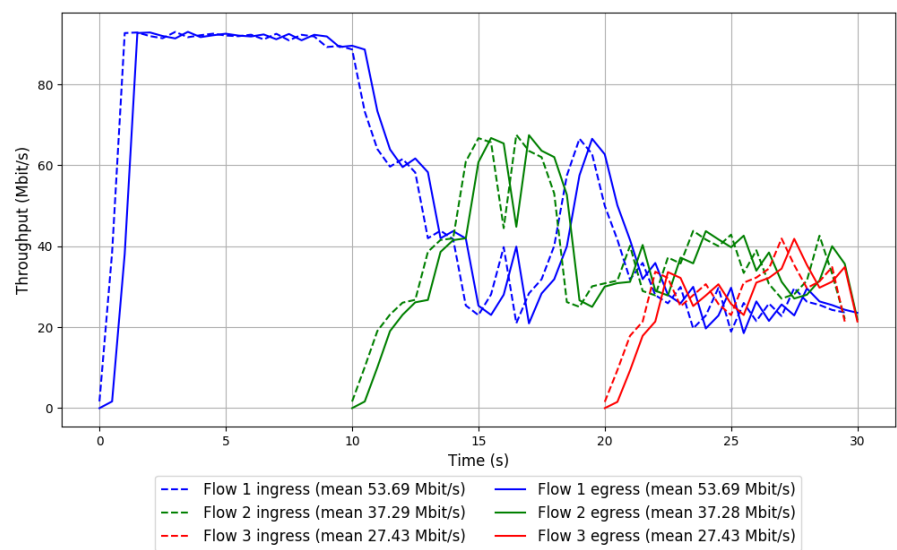
Run 4: Report of PCC-Vivace — Data Link

```
Run 5: Statistics of PCC-Vivace

Start at: 2019-01-22 04:18:42
End at: 2019-01-22 04:19:12
Local clock offset: -8.286 ms
Remote clock offset: 0.739 ms


# Below is generated by plot.py at 2019-01-22 04:44:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.75 Mbit/s
95th percentile per-packet one-way delay: 1833.249 ms
Loss rate: 6.44%
-- Flow 1:
Average throughput: 61.88 Mbit/s
95th percentile per-packet one-way delay: 1846.904 ms
Loss rate: 9.29%
-- Flow 2:
Average throughput: 32.39 Mbit/s
95th percentile per-packet one-way delay: 127.725 ms
Loss rate: 0.18%
-- Flow 3:
Average throughput: 28.29 Mbit/s
95th percentile per-packet one-way delay: 6.165 ms
Loss rate: 0.08%
```
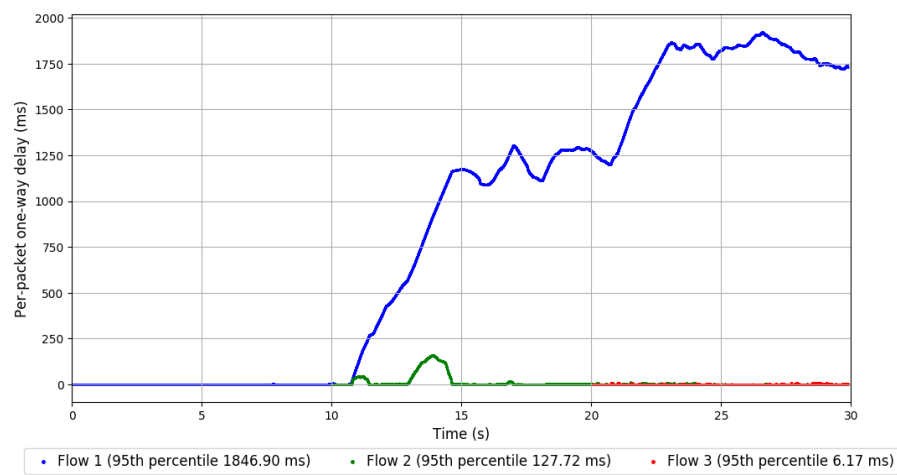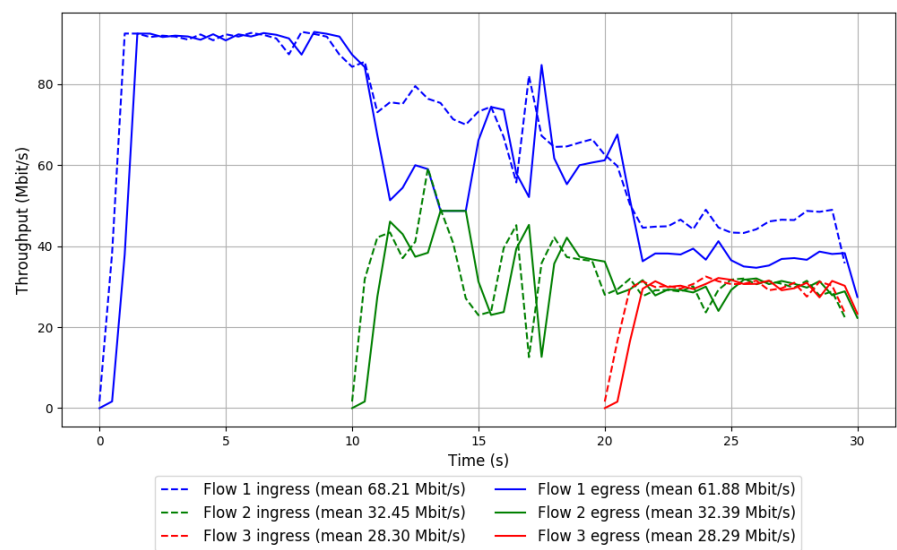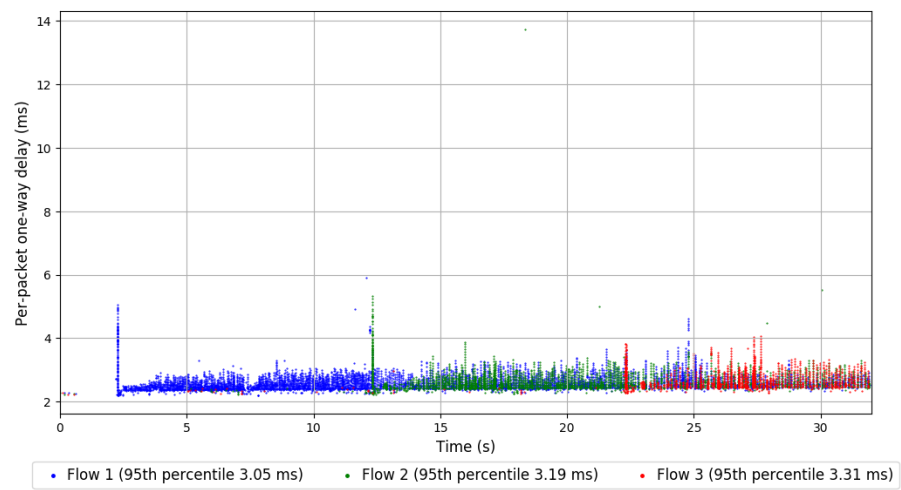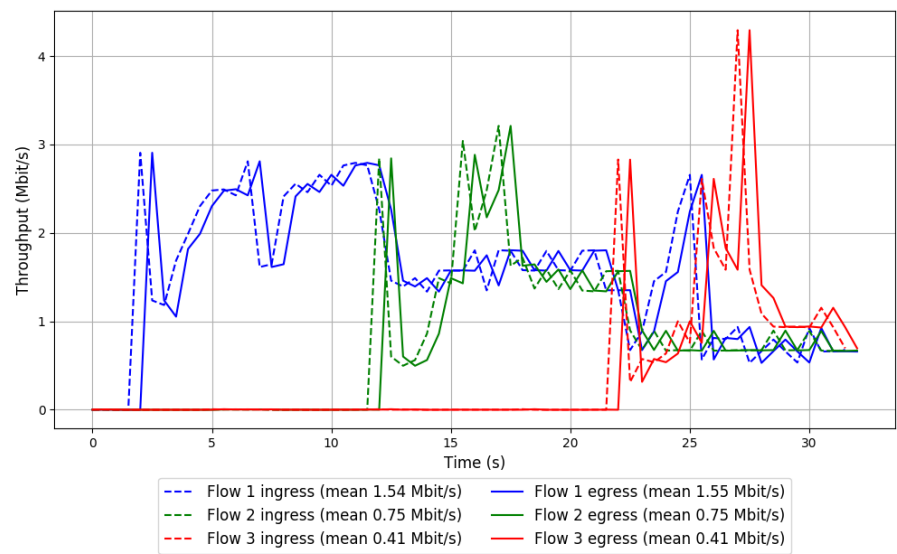
Run 5: Report of PCC-Vivace — Data Link

Flow 1 ingress (mean 68.21 Mbit/s) --- Flow 1 egress (mean 61.88 Mbit/s)
Flow 2 ingress (mean 32.45 Mbit/s) --- Flow 2 egress (mean 32.39 Mbit/s)
Flow 3 ingress (mean 28.30 Mbit/s) --- Flow 3 egress (mean 28.29 Mbit/s)

Flow 1 (95th percentile 1846.90 ms)   Flow 2 (95th percentile 127.72 ms)   Flow 3 (95th percentile 6.17 ms)

```
Run 1: Statistics of WebRTC media

Start at: 2019-01-22 02:40:57
End at: 2019-01-22 02:41:27
Local clock offset: -7.759 ms
Remote clock offset: -0.184 ms


# Below is generated by plot.py at 2019-01-22 04:44:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.70 Mbit/s
95th percentile per-packet one-way delay: 3.157 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 1.55 Mbit/s
95th percentile per-packet one-way delay: 3.050 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 0.75 Mbit/s
95th percentile per-packet one-way delay: 3.185 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.41 Mbit/s
95th percentile per-packet one-way delay: 3.305 ms
Loss rate: 0.00%
```

Run 1: Report of WebRTC media — Data Link

```
Run 2: Statistics of WebRTC media

Start at: 2019-01-22 03:05:06
End at: 2019-01-22 03:05:36
Local clock offset: -3.381 ms
Remote clock offset: 0.31 ms


# Below is generated by plot.py at 2019-01-22 04:44:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.75 Mbit/s
95th percentile per-packet one-way delay: 3.216 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.56 Mbit/s
95th percentile per-packet one-way delay: 3.051 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.78 Mbit/s
95th percentile per-packet one-way delay: 3.162 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.42 Mbit/s
95th percentile per-packet one-way delay: 4.097 ms
Loss rate: 0.00%
```
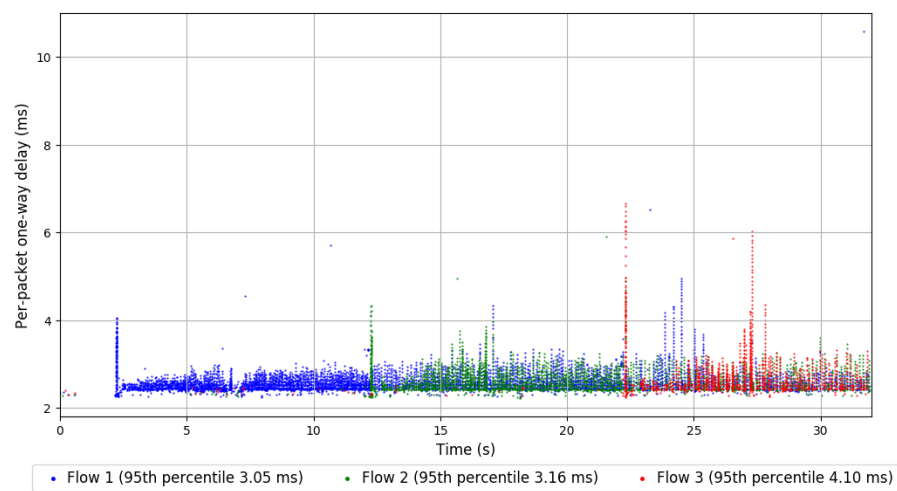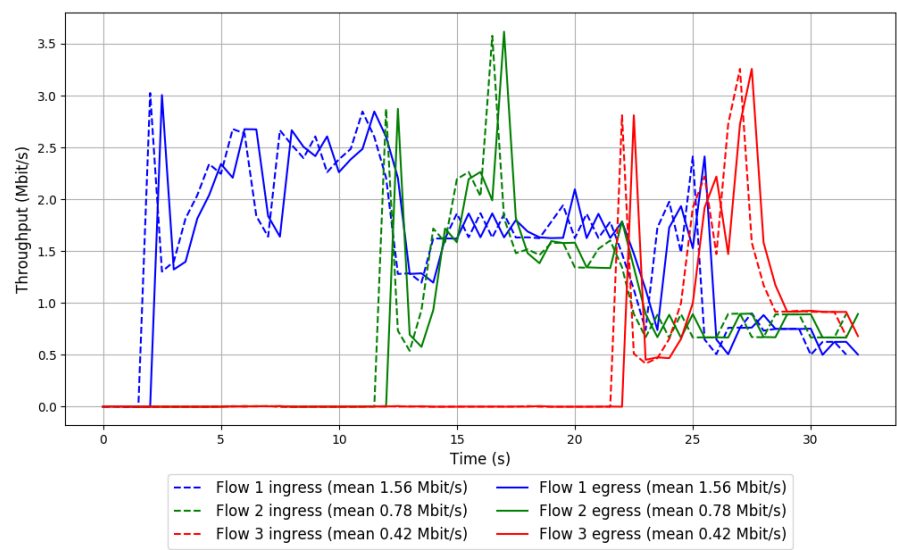
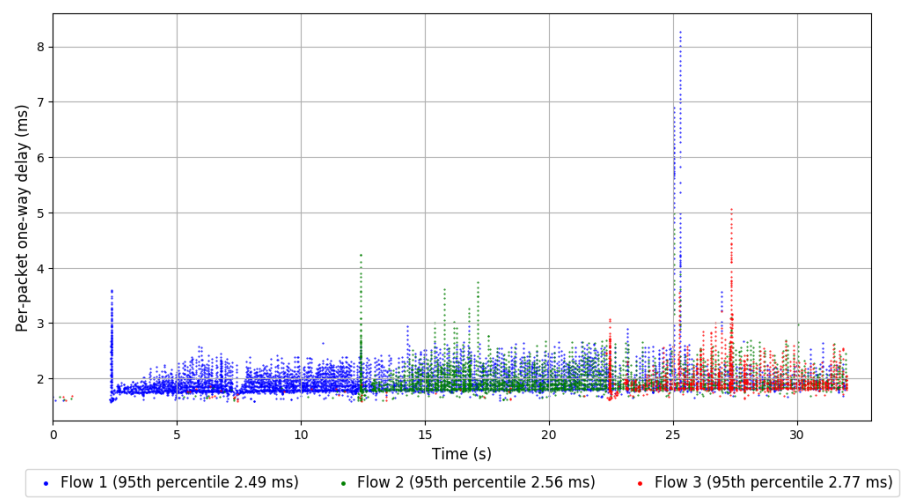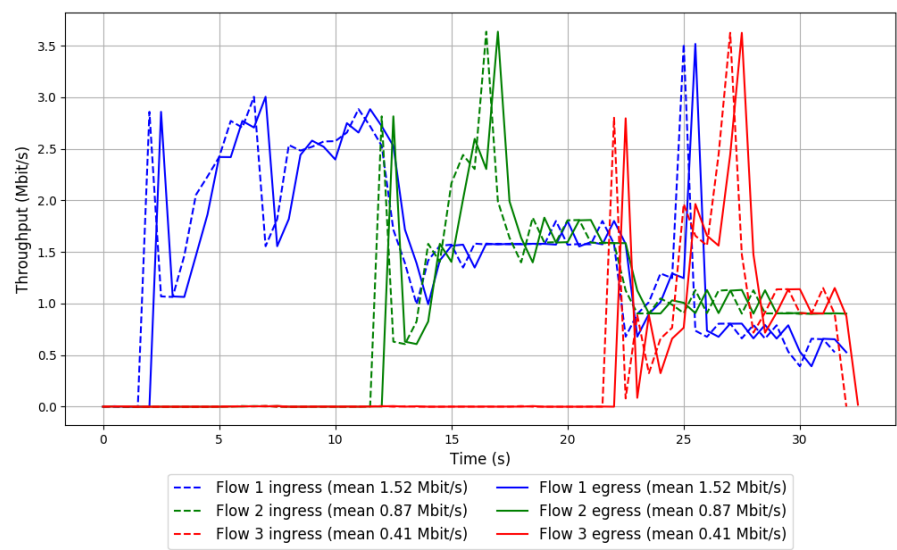Run 2: Report of WebRTC media — Data Link

```
Run 3: Statistics of WebRTC media

Start at: 2019-01-22 03:29:16
End at: 2019-01-22 03:29:46
Local clock offset: -6.702 ms
Remote clock offset: 0.568 ms


# Below is generated by plot.py at 2019-01-22 04:44:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.78 Mbit/s
95th percentile per-packet one-way delay: 2.558 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.52 Mbit/s
95th percentile per-packet one-way delay: 2.494 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.87 Mbit/s
95th percentile per-packet one-way delay: 2.556 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.41 Mbit/s
95th percentile per-packet one-way delay: 2.774 ms
Loss rate: 0.01%
```

Run 3: Report of WebRTC media — Data Link

```
Run 4: Statistics of WebRTC media

Start at: 2019-01-22 03:53:27
End at: 2019-01-22 03:53:57
Local clock offset: -8.072 ms
Remote clock offset: 0.654 ms


# Below is generated by plot.py at 2019-01-22 04:44:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.75 Mbit/s
95th percentile per-packet one-way delay: 2.408 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.55 Mbit/s
95th percentile per-packet one-way delay: 2.359 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.80 Mbit/s
95th percentile per-packet one-way delay: 2.432 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.42 Mbit/s
95th percentile per-packet one-way delay: 2.520 ms
Loss rate: 0.00%
```
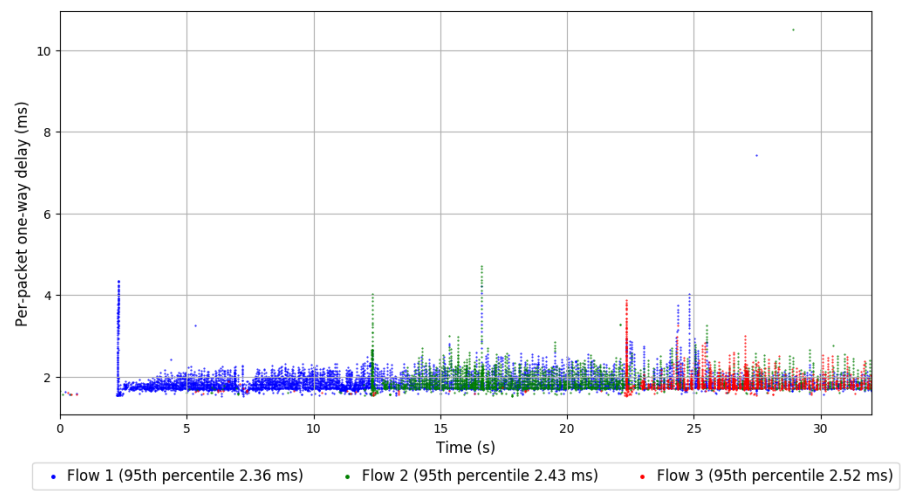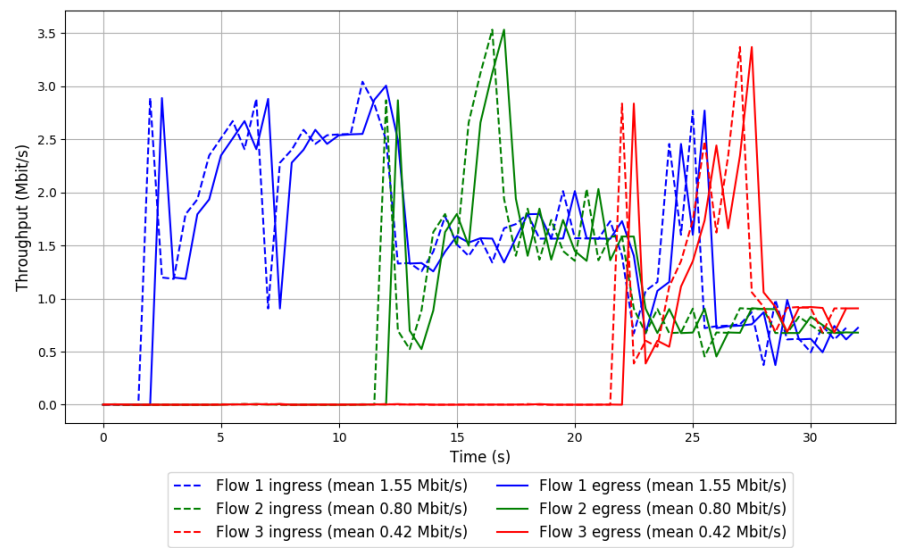
Run 4: Report of WebRTC media — Data Link

```
Run 5: Statistics of WebRTC media

Start at: 2019-01-22 04:17:36
End at: 2019-01-22 04:18:06
Local clock offset: -7.803 ms
Remote clock offset: 0.653 ms


# Below is generated by plot.py at 2019-01-22 04:44:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.67 Mbit/s
95th percentile per-packet one-way delay: 3.010 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.54 Mbit/s
95th percentile per-packet one-way delay: 2.896 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.77 Mbit/s
95th percentile per-packet one-way delay: 3.158 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.38 Mbit/s
95th percentile per-packet one-way delay: 3.016 ms
Loss rate: 0.00%
```

Run 5: Report of WebRTC media — Data Link