Pantheon Report

Generated at 2019-02-20 12:19:24 (UTC).

Data path: Mexico on `em1` (*remote*) →AWS California 2 on `ens5` (*local*).

Repeated the test of 21 congestion control schemes 5 times.

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

NTP offsets were measured against `time.stanford.edu` and have been applied to correct the timestamps in logs.

```
System info:
Linux 4.15.0-1031-aws
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912

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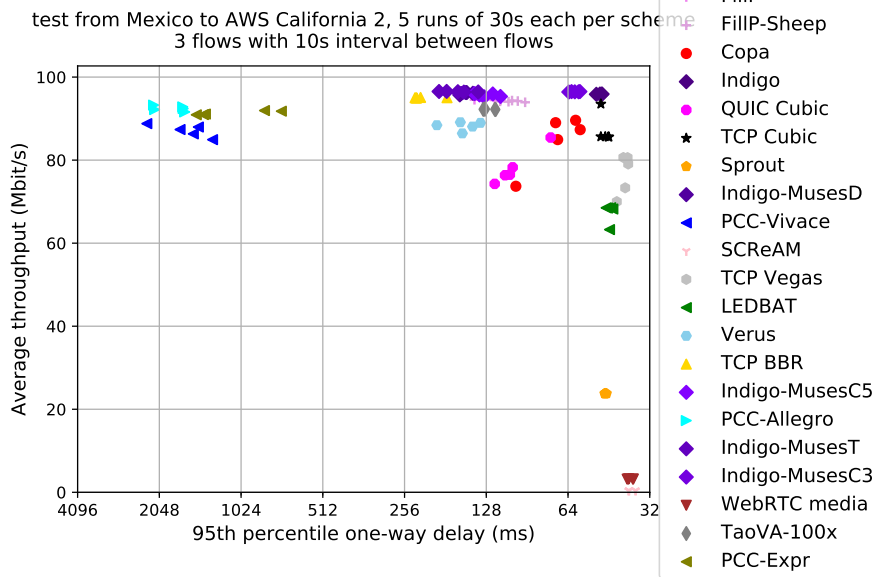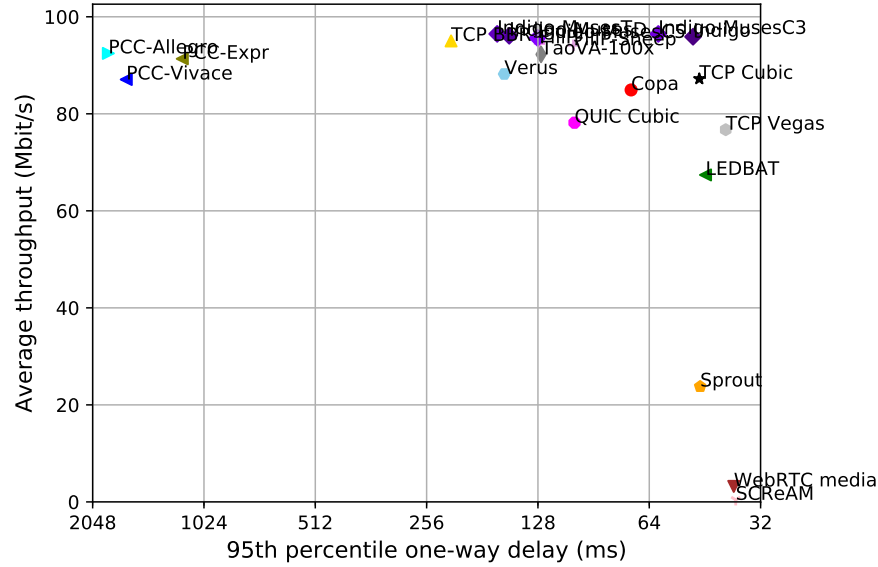
```
third_party/vivace @ 2baf86211435ae071a32f96b7d8c504587f5d7f4
third_party/webrtc @ 3f0cc2a9061a41b6f9dde4735770d143a1fa2851
```

test from Mexico to AWS California 2, 5 runs of 30s each per scheme
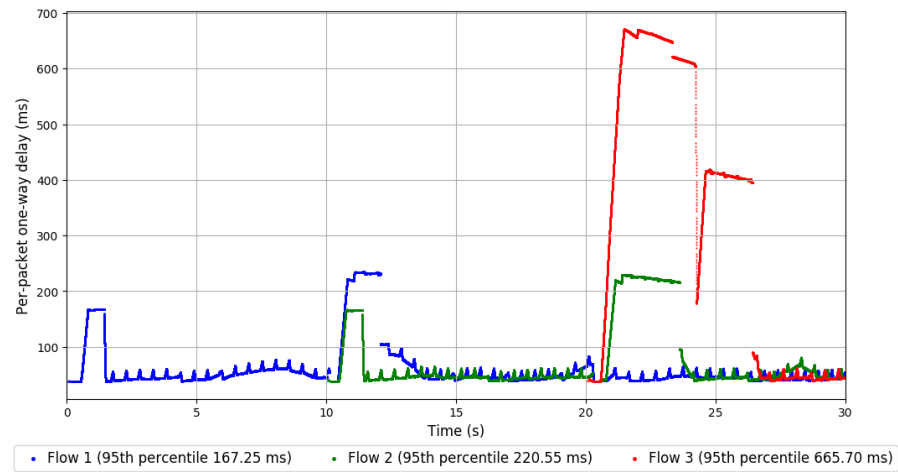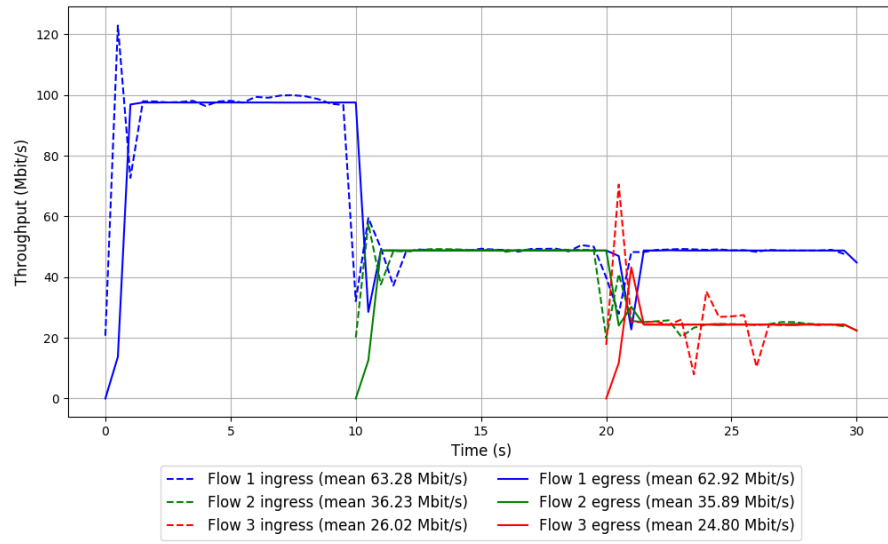3 flows with 10s interval between flows (mean of all runs by scheme)

test from Mexico to AWS California 2, 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	57.98	39.66	32.17	189.30	163.09	460.63	0.86	1.23	3.35
Copa	5	53.58	34.36	25.54	97.21	51.71	48.37	0.18	0.28	0.70
TCP Cubic	5	48.95	37.69	39.81	50.90	44.85	45.90	0.15	0.37	0.80
FillP	5	55.86	41.74	32.87	107.76	138.62	110.19	0.47	4.24	2.50
FillP-Sheep	5	58.71	38.79	29.03	95.45	120.86	105.23	0.24	0.64	1.11
Indigo	5	58.60	39.19	34.31	49.34	48.29	45.11	0.20	0.31	0.71
Indigo-MusesC3	5	60.61	42.97	27.06	57.93	62.92	76.53	0.21	0.44	0.97
Indigo-MusesC5	5	58.03	41.67	35.32	120.99	121.44	129.05	1.26	2.92	4.39
Indigo-MusesD	5	61.31	40.45	28.89	150.97	98.73	102.75	5.61	4.98	4.32
Indigo-MusesT	5	60.70	40.64	31.71	125.85	182.23	217.13	2.17	5.56	7.27
LEDBAT	5	39.97	30.28	22.00	45.17	45.49	44.13	0.16	0.35	1.01
PCC-Allegro	5	57.86	36.02	32.48	1864.99	1947.76	457.76	17.18	16.99	4.35
PCC-Expr	5	56.68	37.98	28.60	857.55	1113.44	147.72	34.87	14.47	1.74
QUIC Cubic	5	44.58	34.60	32.15	92.57	120.99	115.68	0.20	0.39	0.95
SCReAM	5	0.21	0.21	0.22	37.33	37.35	37.34	0.26	0.40	0.71
Sprout	5	12.01	11.95	11.69	46.53	46.70	46.96	0.23	0.35	0.80
TaoVA-100x	5	57.10	37.14	31.47	115.89	134.40	151.80	0.57	1.07	2.52
TCP Vegas	5	38.27	43.27	29.18	50.46	38.41	37.96	0.17	0.36	0.75
Verus	5	53.97	37.43	28.24	146.40	145.62	238.43	0.44	0.66	1.45
PCC-Vivace	5	56.52	32.60	27.00	1561.47	835.31	230.47	4.48	6.66	3.96
WebRTC media	5	1.77	1.01	0.43	37.77	37.80	37.94	0.09	0.21	0.59

```
Run 1: Statistics of TCP BBR

Start at: 2019-02-20 10:14:27
End at: 2019-02-20 10:14:57
Local clock offset: -3.7 ms
Remote clock offset: -8.058 ms


# Below is generated by plot.py at 2019-02-20 12:06:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.03 Mbit/s
95th percentile per-packet one-way delay: 234.163 ms
Loss rate: 1.31%
-- Flow 1:
Average throughput: 62.92 Mbit/s
95th percentile per-packet one-way delay: 167.246 ms
Loss rate: 0.79%
-- Flow 2:
Average throughput: 35.89 Mbit/s
95th percentile per-packet one-way delay: 220.547 ms
Loss rate: 1.24%
-- Flow 3:
Average throughput: 24.80 Mbit/s
95th percentile per-packet one-way delay: 665.702 ms
Loss rate: 5.32%
```
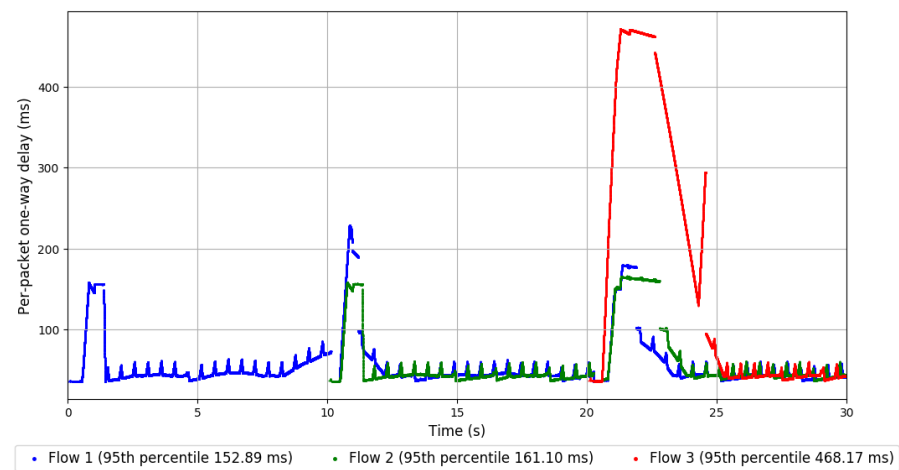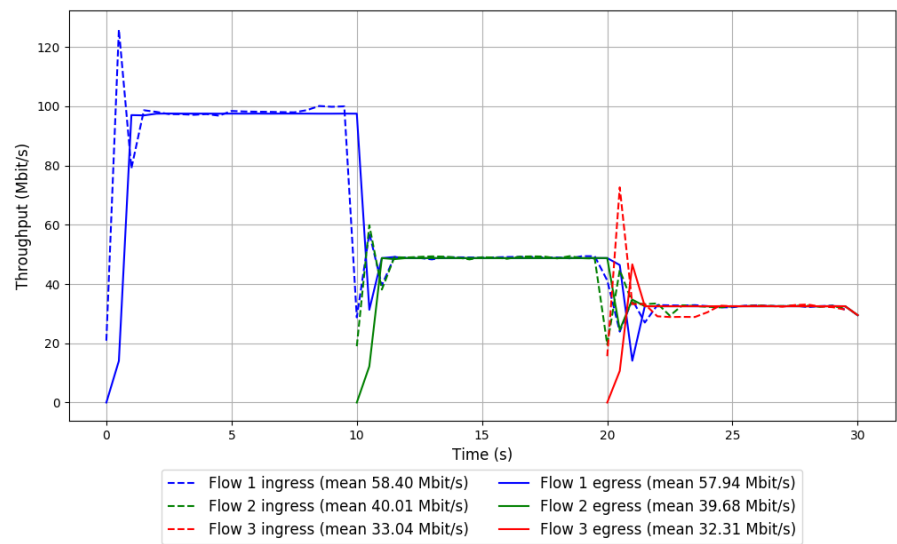
Run 1: Report of TCP BBR — Data Link

- - - Flow 1 ingress (mean 63.28 Mbit/s) —— Flow 1 egress (mean 62.92 Mbit/s)
- - - Flow 2 ingress (mean 36.23 Mbit/s) —— Flow 2 egress (mean 35.89 Mbit/s)
- - - Flow 3 ingress (mean 26.02 Mbit/s) —— Flow 3 egress (mean 24.80 Mbit/s)

• Flow 1 (95th percentile 167.25 ms)   • Flow 2 (95th percentile 220.55 ms)   • Flow 3 (95th percentile 665.70 ms)

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```
Run 2: Statistics of TCP BBR

Start at: 2019-02-20 10:40:13
End at: 2019-02-20 10:40:43
Local clock offset: -0.642 ms
Remote clock offset: -4.756 ms


# Below is generated by plot.py at 2019-02-20 12:06:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.03 Mbit/s
95th percentile per-packet one-way delay: 178.568 ms
Loss rate: 1.26%
-- Flow 1:
Average throughput: 57.94 Mbit/s
95th percentile per-packet one-way delay: 152.889 ms
Loss rate: 1.01%
-- Flow 2:
Average throughput: 39.68 Mbit/s
95th percentile per-packet one-way delay: 161.097 ms
Loss rate: 1.17%
-- Flow 3:
Average throughput: 32.31 Mbit/s
95th percentile per-packet one-way delay: 468.171 ms
Loss rate: 2.85%
```
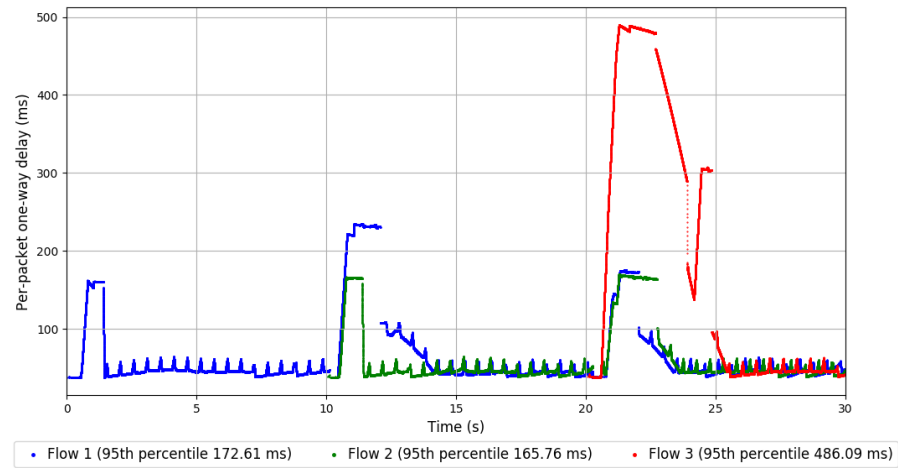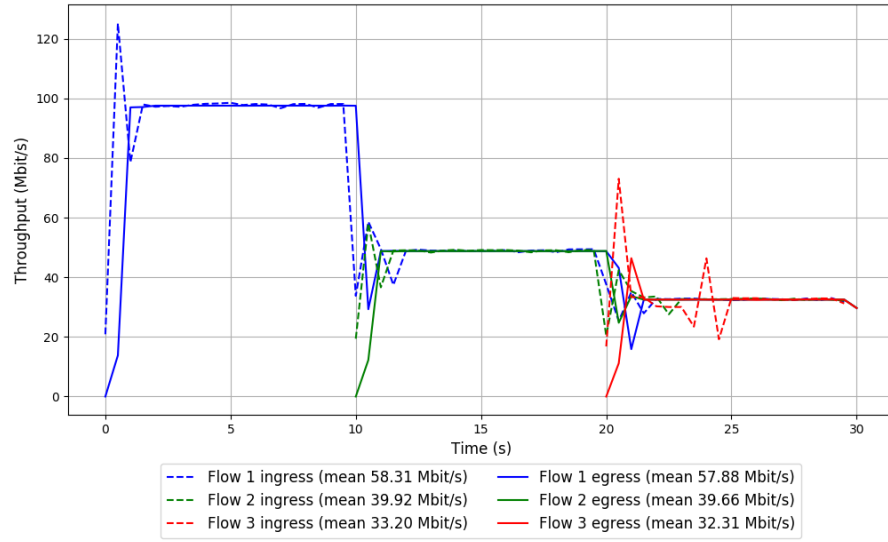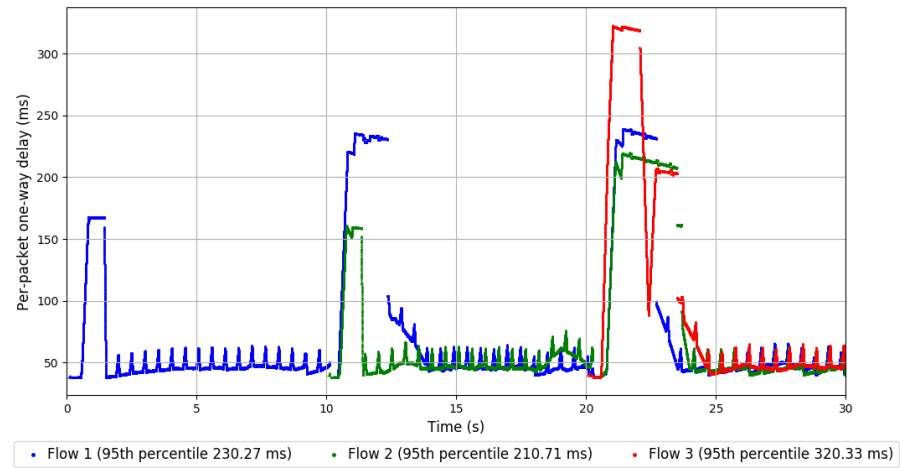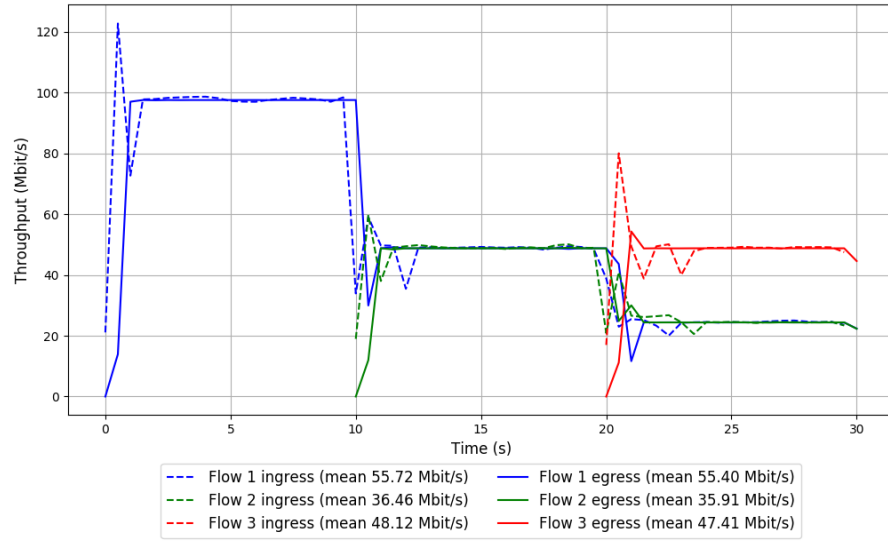
Run 2: Report of TCP BBR — Data Link

Flow 1 ingress (mean 58.40 Mbit/s) — — — Flow 1 egress (mean 57.94 Mbit/s)
Flow 2 ingress (mean 40.01 Mbit/s) — — — Flow 2 egress (mean 39.68 Mbit/s)
Flow 3 ingress (mean 33.04 Mbit/s) — — — Flow 3 egress (mean 32.31 Mbit/s)

Flow 1 (95th percentile 152.89 ms)   Flow 2 (95th percentile 161.10 ms)   Flow 3 (95th percentile 468.17 ms)
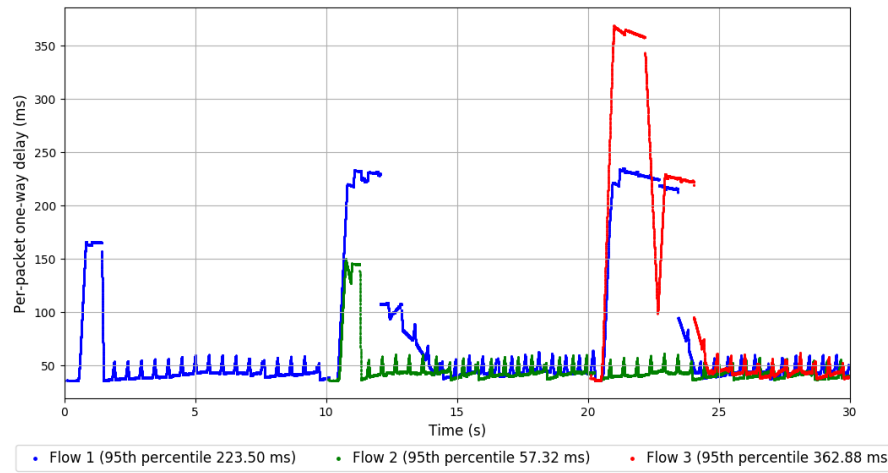
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```
Run 3: Statistics of TCP BBR

Start at: 2019-02-20 11:06:12
End at: 2019-02-20 11:06:42
Local clock offset: 1.025 ms
Remote clock offset: -5.88 ms


# Below is generated by plot.py at 2019-02-20 12:06:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.97 Mbit/s
95th percentile per-packet one-way delay: 231.993 ms
Loss rate: 1.23%
-- Flow 1:
Average throughput: 57.88 Mbit/s
95th percentile per-packet one-way delay: 172.612 ms
Loss rate: 0.95%
-- Flow 2:
Average throughput: 39.66 Mbit/s
95th percentile per-packet one-way delay: 165.763 ms
Loss rate: 0.96%
-- Flow 3:
Average throughput: 32.31 Mbit/s
95th percentile per-packet one-way delay: 486.091 ms
Loss rate: 3.34%
```

Run 3: Report of TCP BBR — Data Link

- Flow 1 ingress (mean 58.31 Mbit/s)
- Flow 1 egress (mean 57.88 Mbit/s)
- Flow 2 ingress (mean 39.92 Mbit/s)
- Flow 2 egress (mean 39.66 Mbit/s)
- Flow 3 ingress (mean 33.20 Mbit/s)
- Flow 3 egress (mean 32.31 Mbit/s)

- Flow 1 (95th percentile 172.61 ms)
- Flow 2 (95th percentile 165.76 ms)
- Flow 3 (95th percentile 486.09 ms)

```
Run 4: Statistics of TCP BBR

Start at: 2019-02-20 11:32:44
End at: 2019-02-20 11:33:14
Local clock offset: 0.036 ms
Remote clock offset: -5.456 ms


# Below is generated by plot.py at 2019-02-20 12:06:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.99 Mbit/s
95th percentile per-packet one-way delay: 230.935 ms
Loss rate: 1.27%
-- Flow 1:
Average throughput: 55.40 Mbit/s
95th percentile per-packet one-way delay: 230.271 ms
Loss rate: 0.78%
-- Flow 2:
Average throughput: 35.91 Mbit/s
95th percentile per-packet one-way delay: 210.705 ms
Loss rate: 1.83%
-- Flow 3:
Average throughput: 47.41 Mbit/s
95th percentile per-packet one-way delay: 320.328 ms
Loss rate: 2.12%
```
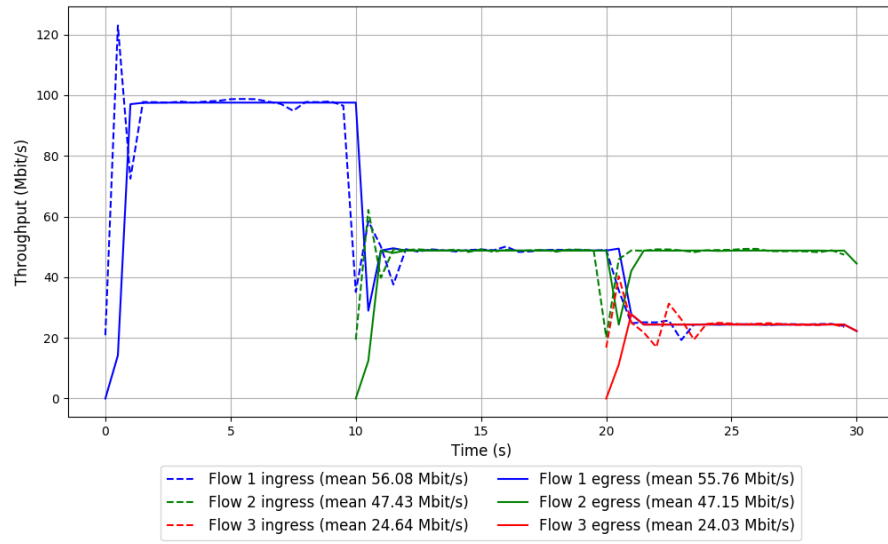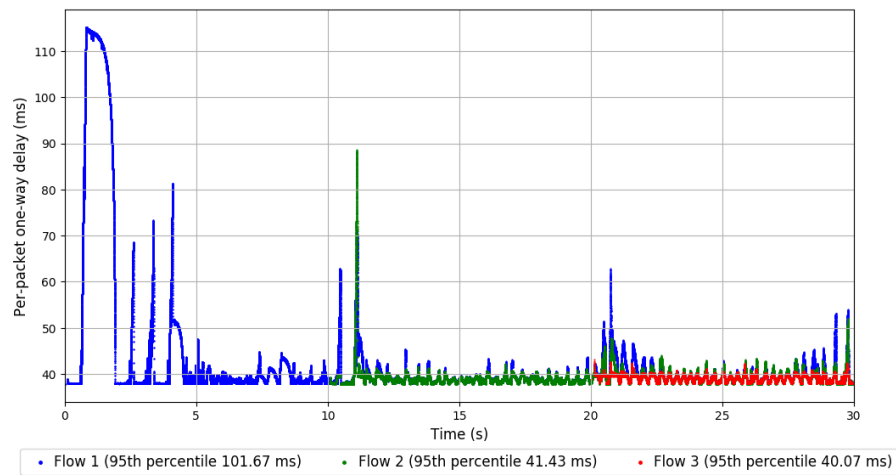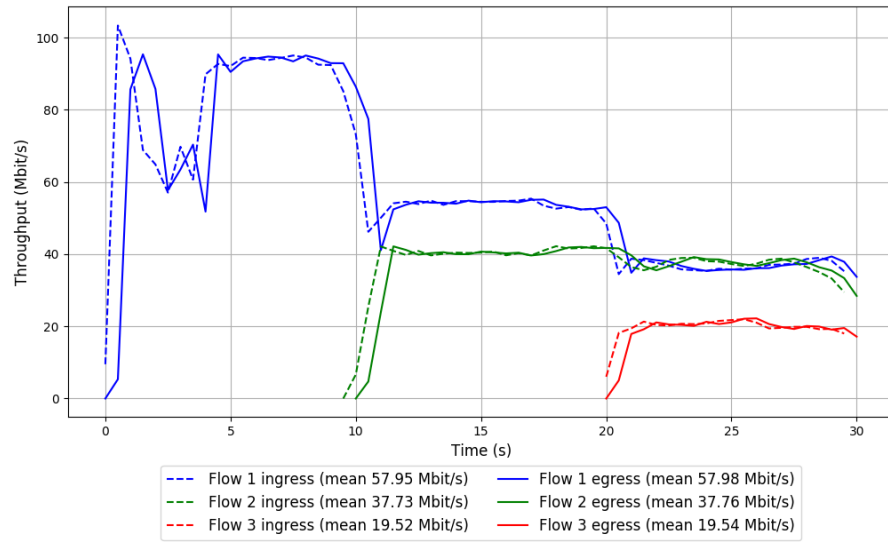
Run 4: Report of TCP BBR — Data Link

Flow 1 ingress (mean 55.72 Mbit/s) --- Flow 1 egress (mean 55.40 Mbit/s)
Flow 2 ingress (mean 36.46 Mbit/s) --- Flow 2 egress (mean 35.91 Mbit/s)
Flow 3 ingress (mean 48.12 Mbit/s) --- Flow 3 egress (mean 47.41 Mbit/s)

Flow 1 (95th percentile 230.27 ms) Flow 2 (95th percentile 210.71 ms) Flow 3 (95th percentile 320.33 ms)

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```
Run 5: Statistics of TCP BBR

Start at: 2019-02-20 11:58:29
End at: 2019-02-20 11:58:59
Local clock offset: -3.483 ms
Remote clock offset: -4.053 ms


# Below is generated by plot.py at 2019-02-20 12:06:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.10 Mbit/s
95th percentile per-packet one-way delay: 223.502 ms
Loss rate: 1.03%
-- Flow 1:
Average throughput: 55.76 Mbit/s
95th percentile per-packet one-way delay: 223.503 ms
Loss rate: 0.77%
-- Flow 2:
Average throughput: 47.15 Mbit/s
95th percentile per-packet one-way delay: 57.324 ms
Loss rate: 0.93%
-- Flow 3:
Average throughput: 24.03 Mbit/s
95th percentile per-packet one-way delay: 362.875 ms
Loss rate: 3.14%
```

Run 5: Report of TCP BBR — Data Link

Flow 1 ingress (mean 56.08 Mbit/s) --- Flow 1 egress (mean 55.76 Mbit/s)
Flow 2 ingress (mean 47.43 Mbit/s) --- Flow 2 egress (mean 47.15 Mbit/s)
Flow 3 ingress (mean 24.64 Mbit/s) --- Flow 3 egress (mean 24.03 Mbit/s)

Flow 1 (95th percentile 223.50 ms) • Flow 2 (95th percentile 57.32 ms) • Flow 3 (95th percentile 362.88 ms)

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```
Run 1: Statistics of Copa

Start at: 2019-02-20 09:54:58
End at: 2019-02-20 09:55:28
Local clock offset: -2.935 ms
Remote clock offset: -8.991 ms


# Below is generated by plot.py at 2019-02-20 12:07:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 89.59 Mbit/s
95th percentile per-packet one-way delay: 60.008 ms
Loss rate: 0.21%
-- Flow 1:
Average throughput: 57.98 Mbit/s
95th percentile per-packet one-way delay: 101.667 ms
Loss rate: 0.16%
-- Flow 2:
Average throughput: 37.76 Mbit/s
95th percentile per-packet one-way delay: 41.434 ms
Loss rate: 0.23%
-- Flow 3:
Average throughput: 19.54 Mbit/s
95th percentile per-packet one-way delay: 40.071 ms
Loss rate: 0.54%
```
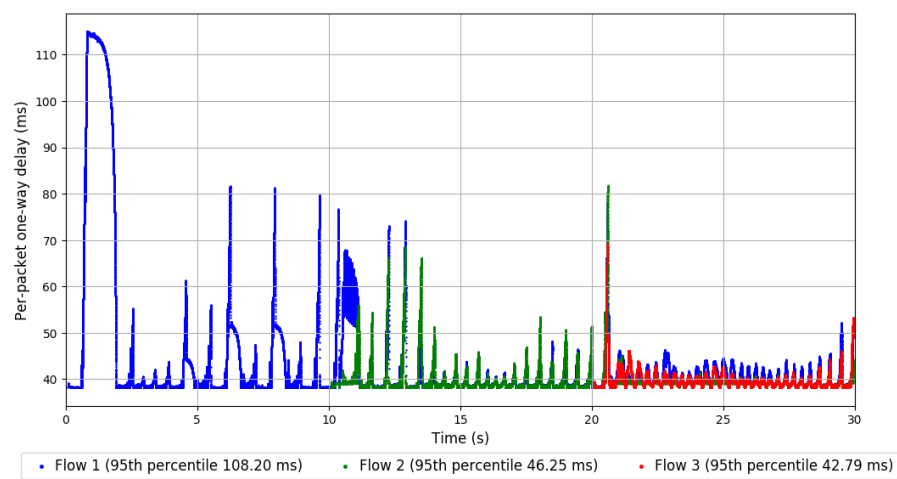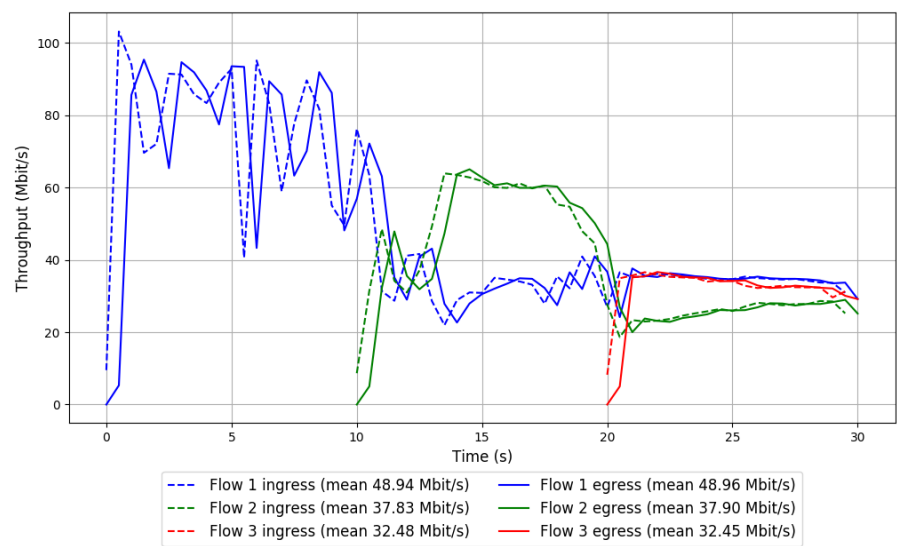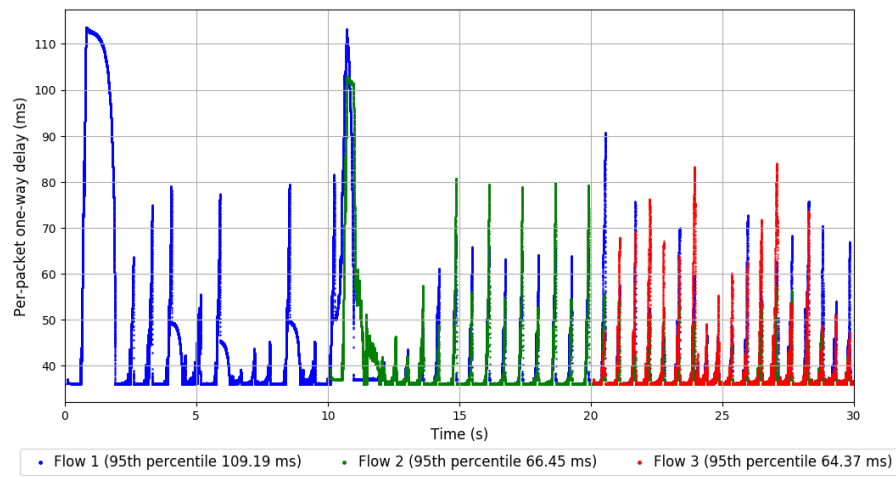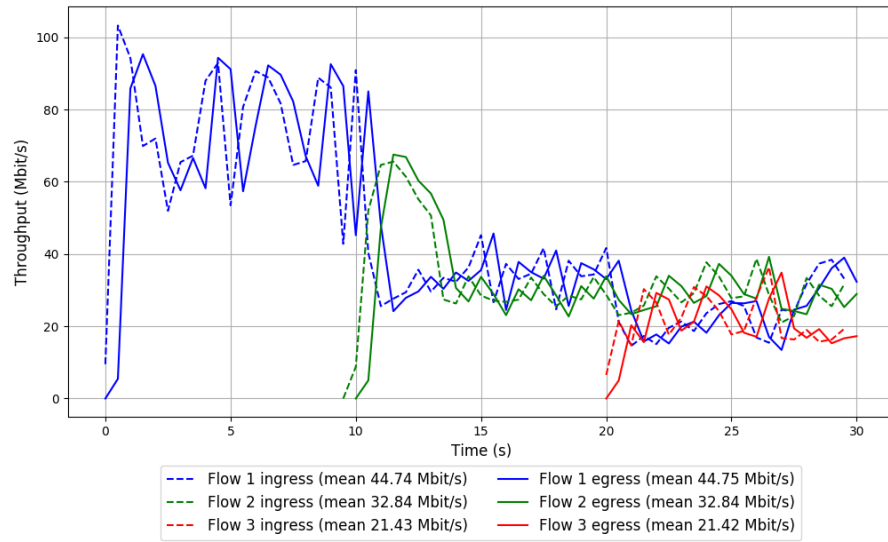
Run 1: Report of Copa — Data Link

```
Run 2: Statistics of Copa

Start at: 2019-02-20 10:20:33
End at: 2019-02-20 10:21:03
Local clock offset: -3.904 ms
Remote clock offset: -8.1 ms


# Below is generated by plot.py at 2019-02-20 12:07:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 84.94 Mbit/s
95th percentile per-packet one-way delay: 69.880 ms
Loss rate: 0.23%
-- Flow 1:
Average throughput: 48.96 Mbit/s
95th percentile per-packet one-way delay: 108.201 ms
Loss rate: 0.17%
-- Flow 2:
Average throughput: 37.90 Mbit/s
95th percentile per-packet one-way delay: 46.253 ms
Loss rate: 0.14%
-- Flow 3:
Average throughput: 32.45 Mbit/s
95th percentile per-packet one-way delay: 42.791 ms
Loss rate: 0.71%
```
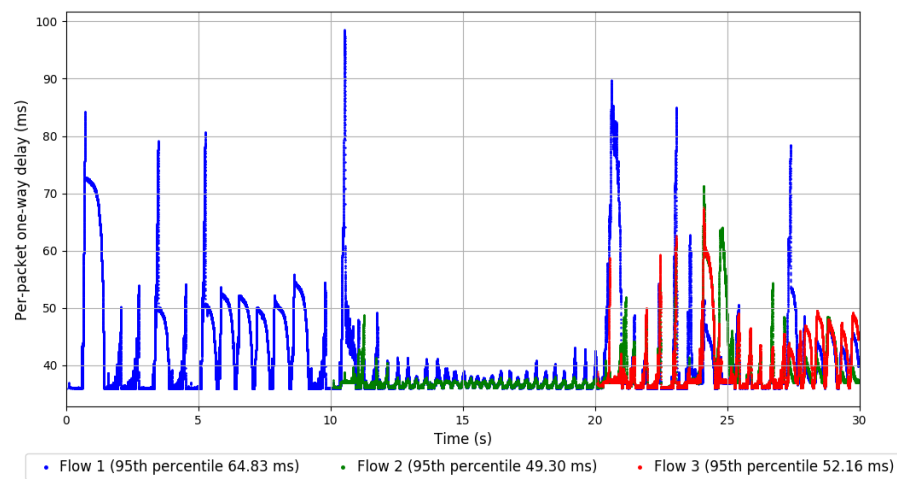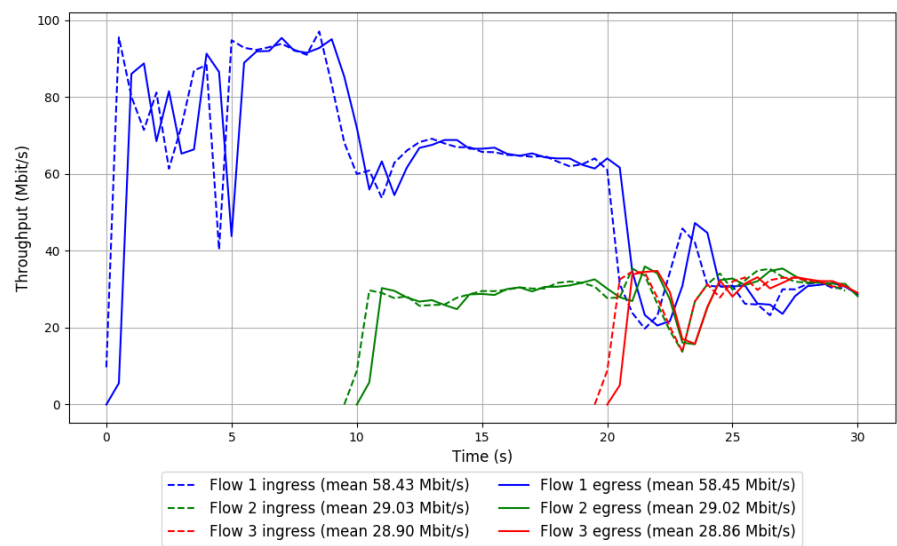
Run 2: Report of Copa — Data Link

Flow 1 ingress (mean 48.94 Mbit/s) — Flow 1 egress (mean 48.96 Mbit/s)
Flow 2 ingress (mean 37.83 Mbit/s) — Flow 2 egress (mean 37.90 Mbit/s)
Flow 3 ingress (mean 32.48 Mbit/s) — Flow 3 egress (mean 32.45 Mbit/s)

Flow 1 (95th percentile 108.20 ms) · Flow 2 (95th percentile 46.25 ms) · Flow 3 (95th percentile 42.79 ms)

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```
Run 3: Statistics of Copa

Start at: 2019-02-20 10:46:31
End at: 2019-02-20 10:47:01
Local clock offset: 0.318 ms
Remote clock offset: -4.578 ms


# Below is generated by plot.py at 2019-02-20 12:07:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 73.71 Mbit/s
95th percentile per-packet one-way delay: 99.612 ms
Loss rate: 0.28%
-- Flow 1:
Average throughput: 44.75 Mbit/s
95th percentile per-packet one-way delay: 109.192 ms
Loss rate: 0.19%
-- Flow 2:
Average throughput: 32.84 Mbit/s
95th percentile per-packet one-way delay: 66.450 ms
Loss rate: 0.34%
-- Flow 3:
Average throughput: 21.42 Mbit/s
95th percentile per-packet one-way delay: 64.368 ms
Loss rate: 0.70%
```
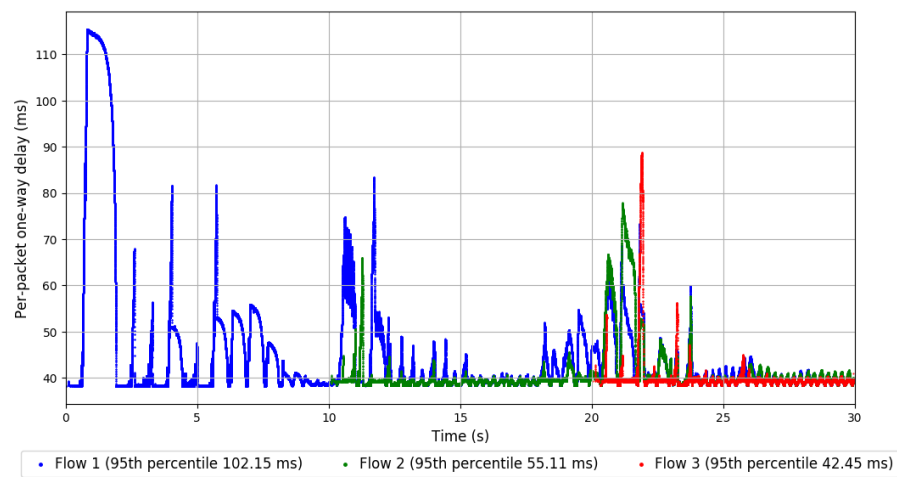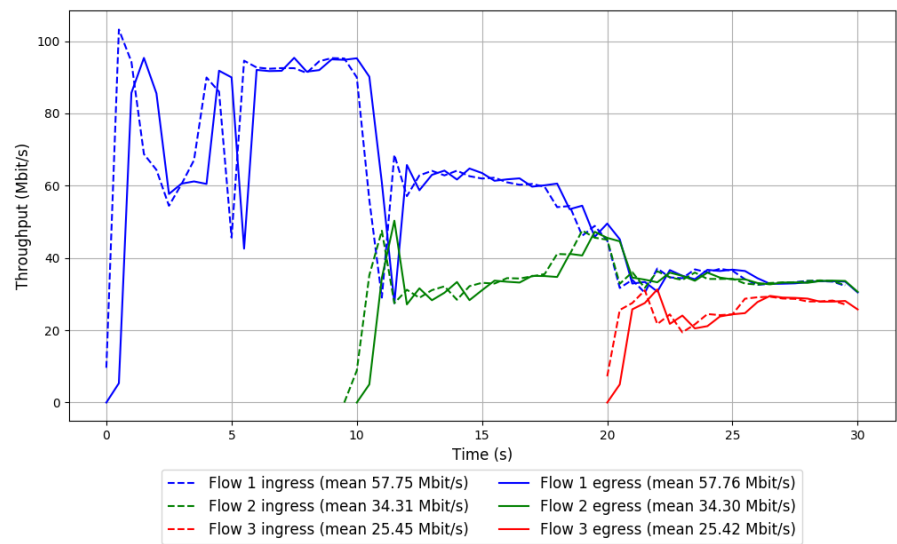
Run 3: Report of Copa — Data Link

Flow 1 ingress (mean 44.74 Mbit/s) — — — Flow 1 egress (mean 44.75 Mbit/s)
Flow 2 ingress (mean 32.84 Mbit/s) — — — Flow 2 egress (mean 32.84 Mbit/s)
Flow 3 ingress (mean 21.43 Mbit/s) — — — Flow 3 egress (mean 21.42 Mbit/s)

Flow 1 (95th percentile 109.19 ms)   Flow 2 (95th percentile 66.45 ms)   Flow 3 (95th percentile 64.37 ms)

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```
Run 4: Statistics of Copa

Start at: 2019-02-20 11:12:24
End at: 2019-02-20 11:12:54
Local clock offset: 0.947 ms
Remote clock offset: -3.882 ms


# Below is generated by plot.py at 2019-02-20 12:08:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 87.34 Mbit/s
95th percentile per-packet one-way delay: 57.725 ms
Loss rate: 0.29%
-- Flow 1:
Average throughput: 58.45 Mbit/s
95th percentile per-packet one-way delay: 64.829 ms
Loss rate: 0.18%
-- Flow 2:
Average throughput: 29.02 Mbit/s
95th percentile per-packet one-way delay: 49.299 ms
Loss rate: 0.34%
-- Flow 3:
Average throughput: 28.86 Mbit/s
95th percentile per-packet one-way delay: 52.159 ms
Loss rate: 0.80%
```
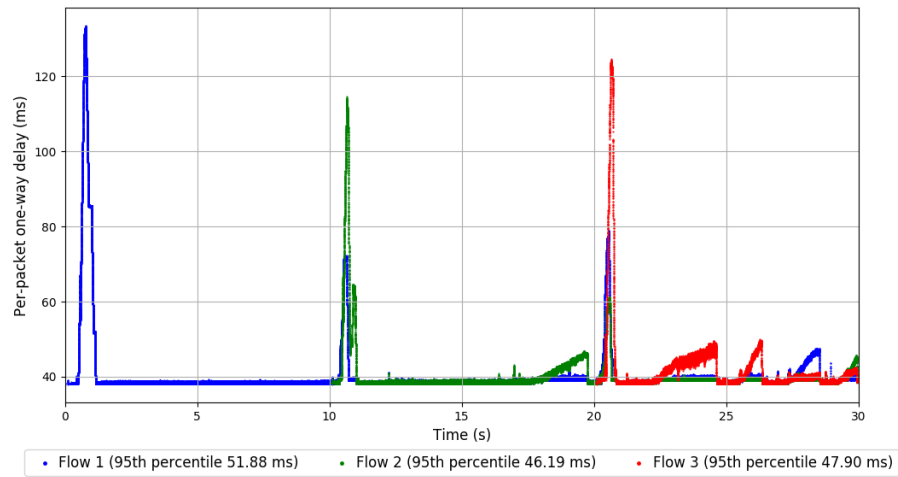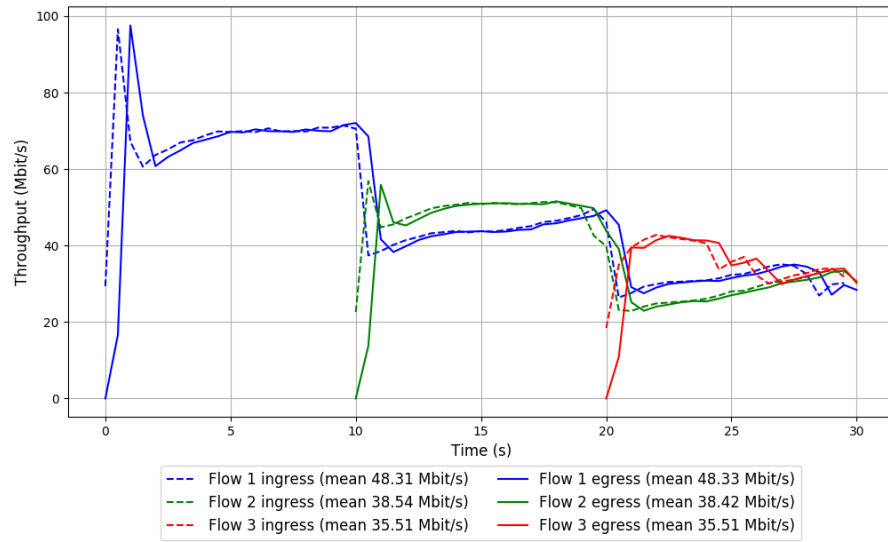
Run 4: Report of Copa — Data Link

Flow 1 ingress (mean 58.43 Mbit/s) — — — Flow 1 egress (mean 58.45 Mbit/s)
Flow 2 ingress (mean 29.03 Mbit/s) — — — Flow 2 egress (mean 29.02 Mbit/s)
Flow 3 ingress (mean 28.90 Mbit/s) — — — Flow 3 egress (mean 28.86 Mbit/s)

Flow 1 (95th percentile 64.83 ms) Flow 2 (95th percentile 49.30 ms) Flow 3 (95th percentile 52.16 ms)

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```
Run 5: Statistics of Copa

Start at: 2019-02-20 11:38:49
End at: 2019-02-20 11:39:19
Local clock offset: -1.656 ms
Remote clock offset: -5.916 ms


# Below is generated by plot.py at 2019-02-20 12:08:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 89.02 Mbit/s
95th percentile per-packet one-way delay: 71.103 ms
Loss rate: 0.28%
-- Flow 1:
Average throughput: 57.76 Mbit/s
95th percentile per-packet one-way delay: 102.148 ms
Loss rate: 0.19%
-- Flow 2:
Average throughput: 34.30 Mbit/s
95th percentile per-packet one-way delay: 55.106 ms
Loss rate: 0.35%
-- Flow 3:
Average throughput: 25.42 Mbit/s
95th percentile per-packet one-way delay: 42.450 ms
Loss rate: 0.73%
```
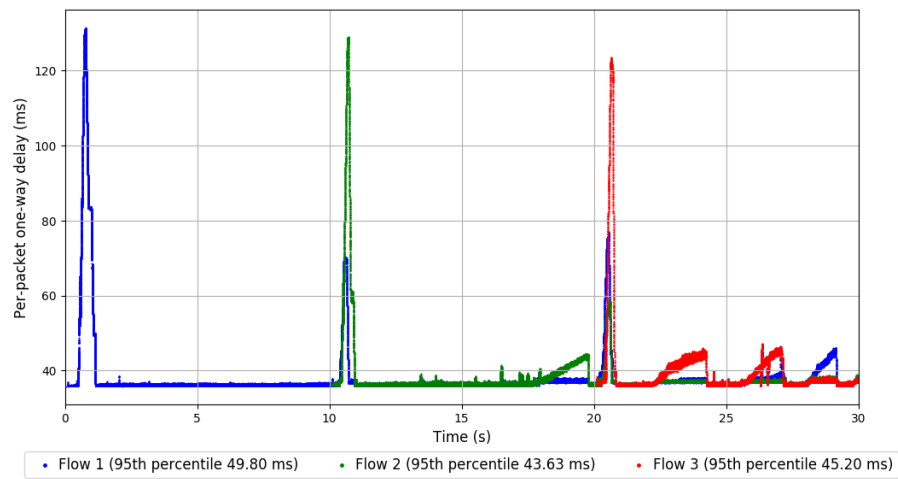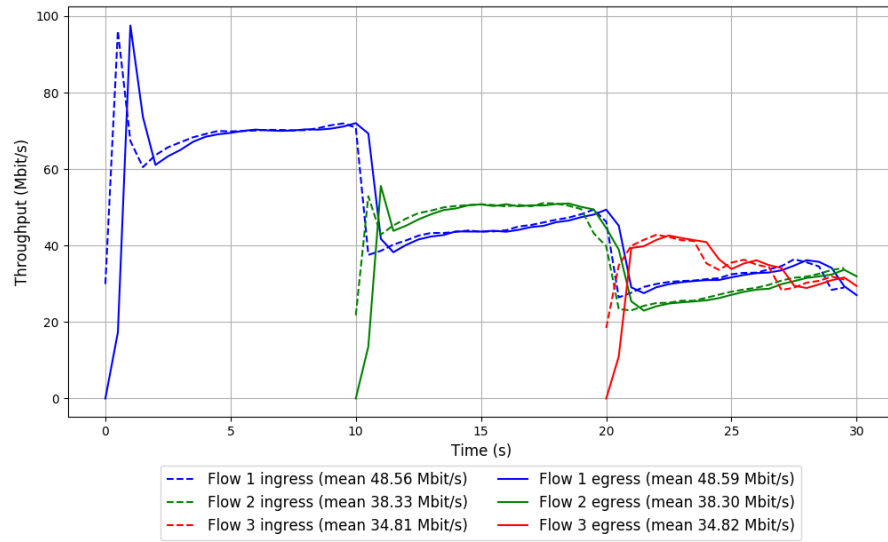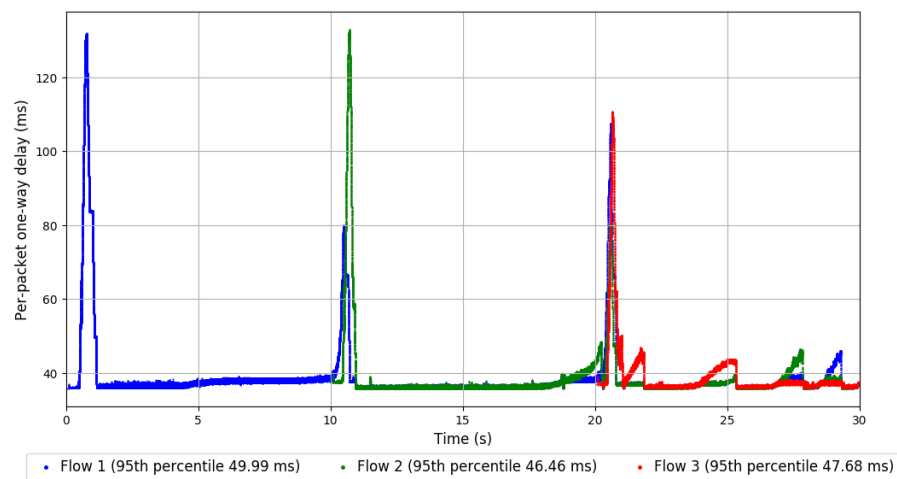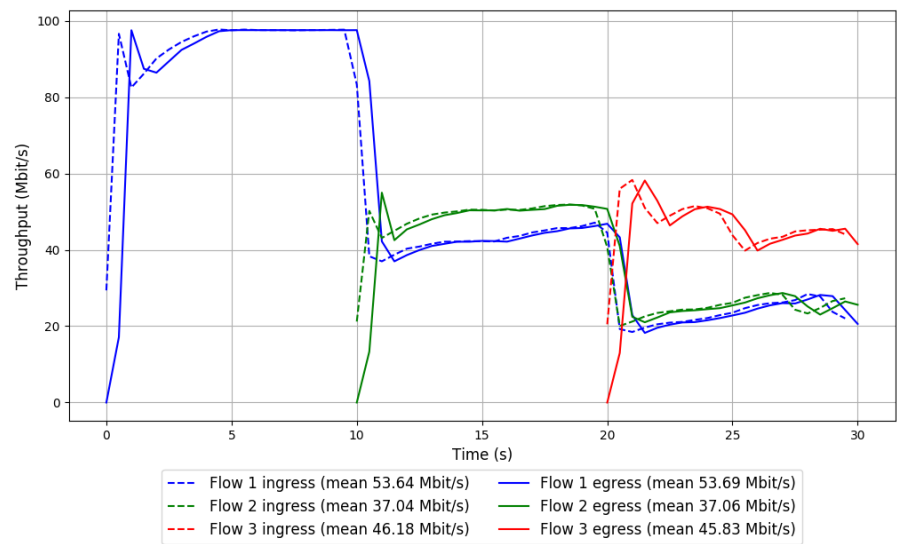
Run 5: Report of Copa — Data Link

Flow 1 ingress (mean 57.75 Mbit/s)   Flow 1 egress (mean 57.76 Mbit/s)
Flow 2 ingress (mean 34.31 Mbit/s)   Flow 2 egress (mean 34.30 Mbit/s)
Flow 3 ingress (mean 25.45 Mbit/s)   Flow 3 egress (mean 25.42 Mbit/s)

Flow 1 (95th percentile 102.15 ms)   Flow 2 (95th percentile 55.11 ms)   Flow 3 (95th percentile 42.45 ms)

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```
Run 1: Statistics of TCP Cubic

Start at: 2019-02-20 09:57:27
End at: 2019-02-20 09:57:57
Local clock offset: -3.044 ms
Remote clock offset: -9.111 ms


# Below is generated by plot.py at 2019-02-20 12:08:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 85.65 Mbit/s
95th percentile per-packet one-way delay: 48.450 ms
Loss rate: 0.37%
-- Flow 1:
Average throughput: 48.33 Mbit/s
95th percentile per-packet one-way delay: 51.875 ms
Loss rate: 0.16%
-- Flow 2:
Average throughput: 38.42 Mbit/s
95th percentile per-packet one-way delay: 46.192 ms
Loss rate: 0.64%
-- Flow 3:
Average throughput: 35.51 Mbit/s
95th percentile per-packet one-way delay: 47.898 ms
Loss rate: 0.64%
```

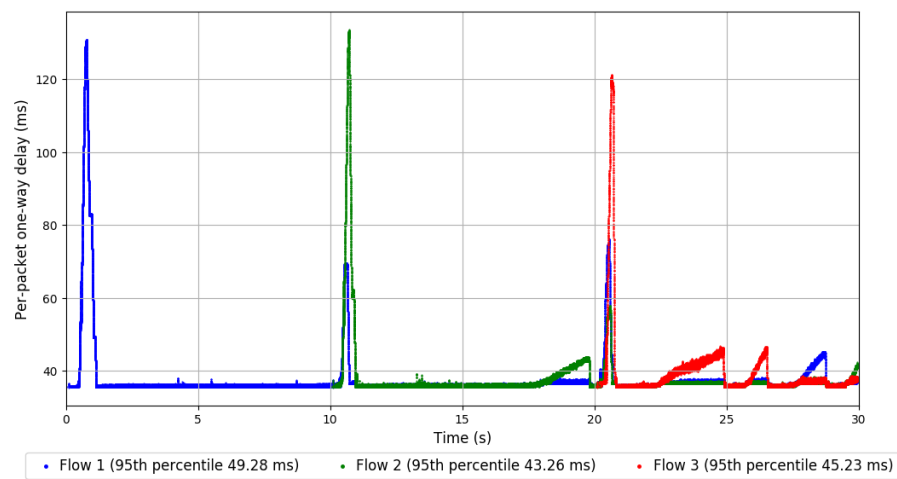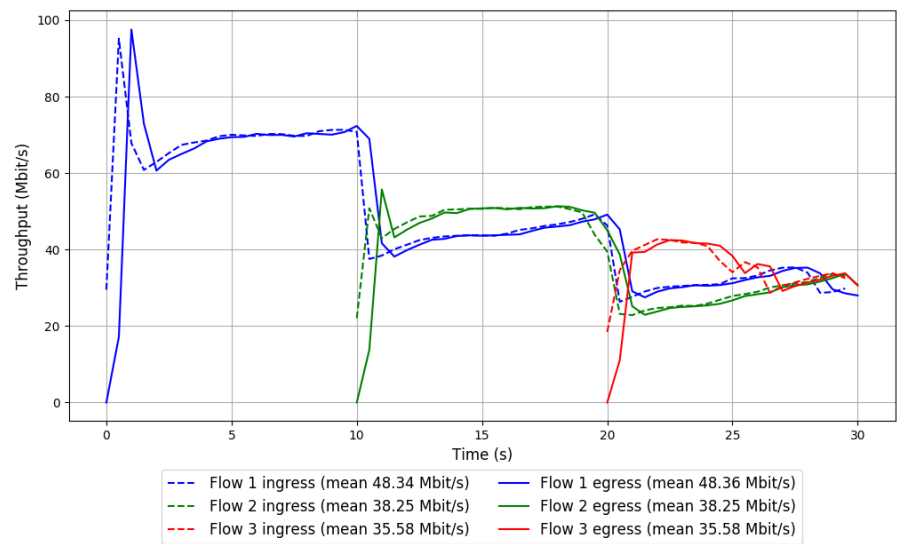Run 1: Report of TCP Cubic — Data Link

```
Run 2: Statistics of TCP Cubic

Start at: 2019-02-20 10:23:02
End at: 2019-02-20 10:23:32
Local clock offset: -3.986 ms
Remote clock offset: -5.73 ms


# Below is generated by plot.py at 2019-02-20 12:08:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 85.59 Mbit/s
95th percentile per-packet one-way delay: 45.516 ms
Loss rate: 0.29%
-- Flow 1:
Average throughput: 48.59 Mbit/s
95th percentile per-packet one-way delay: 49.800 ms
Loss rate: 0.15%
-- Flow 2:
Average throughput: 38.30 Mbit/s
95th percentile per-packet one-way delay: 43.633 ms
Loss rate: 0.40%
-- Flow 3:
Average throughput: 34.82 Mbit/s
95th percentile per-packet one-way delay: 45.197 ms
Loss rate: 0.62%
```
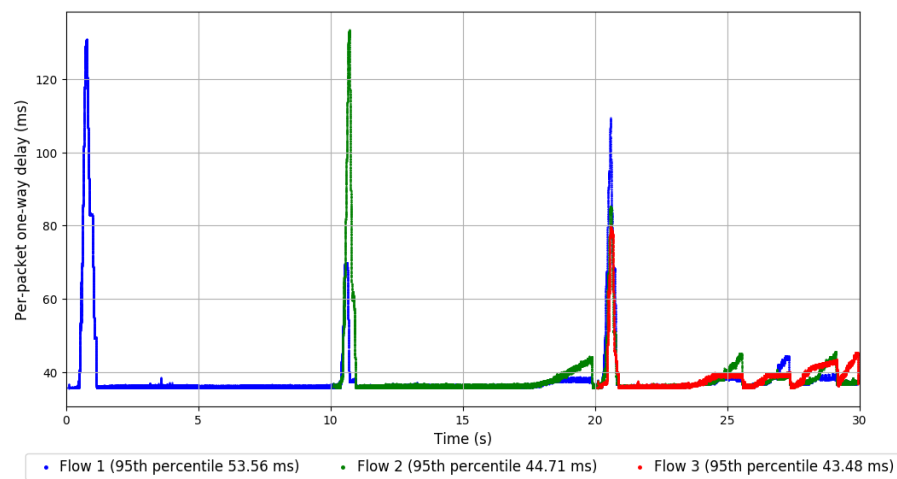
Run 2: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 48.56 Mbit/s) — — — Flow 1 egress (mean 48.59 Mbit/s)
Flow 2 ingress (mean 38.33 Mbit/s) — — — Flow 2 egress (mean 38.30 Mbit/s)
Flow 3 ingress (mean 34.81 Mbit/s) — — — Flow 3 egress (mean 34.82 Mbit/s)

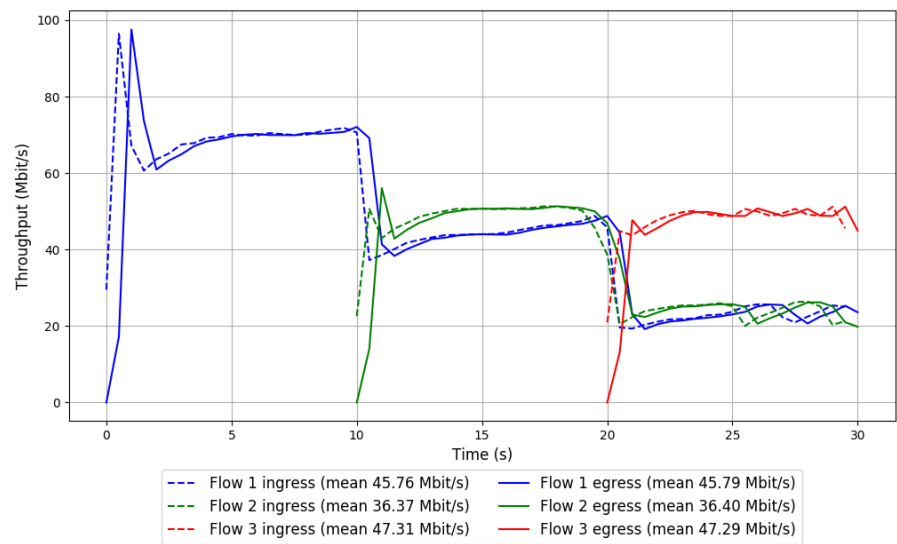Flow 1 (95th percentile 49.80 ms)   Flow 2 (95th percentile 43.63 ms)   Flow 3 (95th percentile 45.20 ms)

```
Run 3: Statistics of TCP Cubic

Start at: 2019-02-20 10:49:00
End at: 2019-02-20 10:49:30
Local clock offset: 0.603 ms
Remote clock offset: -4.327 ms


# Below is generated by plot.py at 2019-02-20 12:08:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.53 Mbit/s
95th percentile per-packet one-way delay: 48.436 ms
Loss rate: 0.37%
-- Flow 1:
Average throughput: 53.69 Mbit/s
95th percentile per-packet one-way delay: 49.994 ms
Loss rate: 0.12%
-- Flow 2:
Average throughput: 37.06 Mbit/s
95th percentile per-packet one-way delay: 46.461 ms
Loss rate: 0.28%
-- Flow 3:
Average throughput: 45.83 Mbit/s
95th percentile per-packet one-way delay: 47.681 ms
Loss rate: 1.39%
```
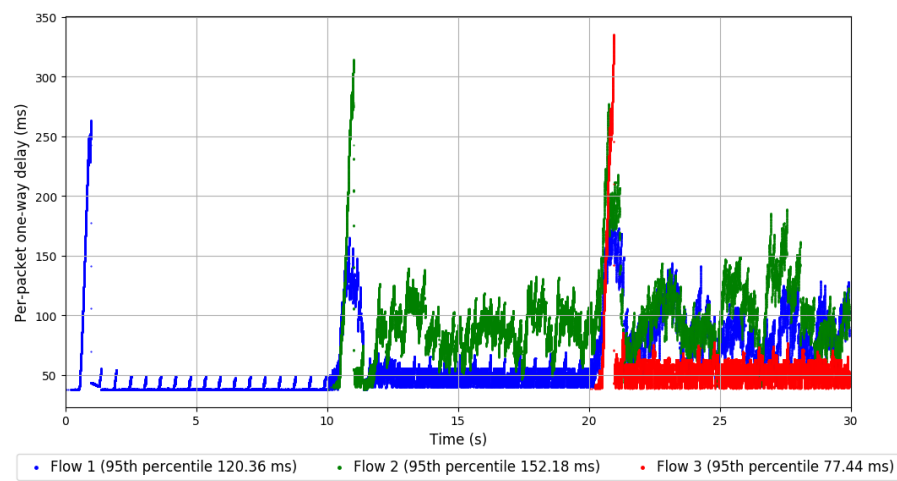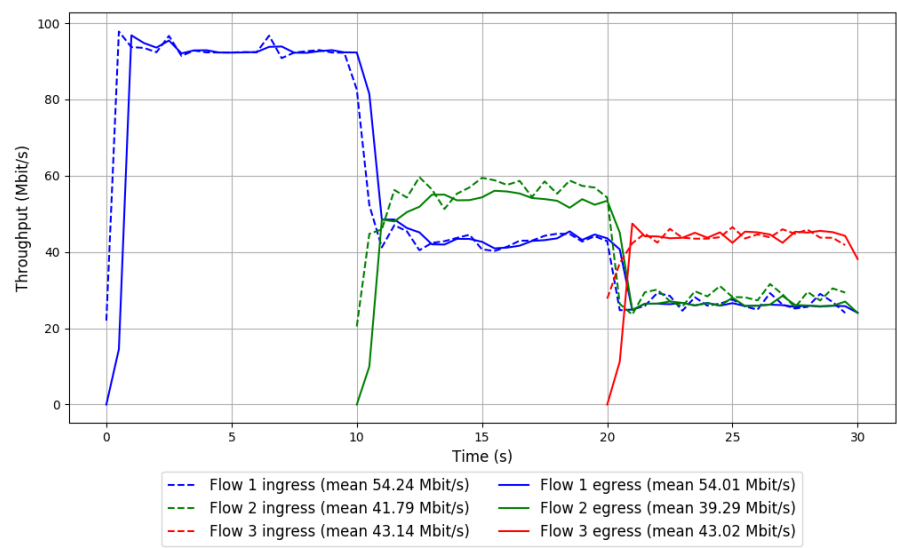
Run 3: Report of TCP Cubic — Data Link

- - - Flow 1 ingress (mean 53.64 Mbit/s) —— Flow 1 egress (mean 53.69 Mbit/s)
- - - Flow 2 ingress (mean 37.04 Mbit/s) —— Flow 2 egress (mean 37.06 Mbit/s)
- - - Flow 3 ingress (mean 46.18 Mbit/s) —— Flow 3 egress (mean 45.83 Mbit/s)

- Flow 1 (95th percentile 49.99 ms)　　• Flow 2 (95th percentile 46.46 ms)　　• Flow 3 (95th percentile 47.68 ms)

30

```
Run 4: Statistics of TCP Cubic

Start at: 2019-02-20 11:15:14
End at: 2019-02-20 11:15:44
Local clock offset: 0.955 ms
Remote clock offset: -3.433 ms


# Below is generated by plot.py at 2019-02-20 12:08:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 85.59 Mbit/s
95th percentile per-packet one-way delay: 45.257 ms
Loss rate: 0.28%
-- Flow 1:
Average throughput: 48.36 Mbit/s
95th percentile per-packet one-way delay: 49.285 ms
Loss rate: 0.16%
-- Flow 2:
Average throughput: 38.25 Mbit/s
95th percentile per-packet one-way delay: 43.260 ms
Loss rate: 0.32%
-- Flow 3:
Average throughput: 35.58 Mbit/s
95th percentile per-packet one-way delay: 45.229 ms
Loss rate: 0.64%
```
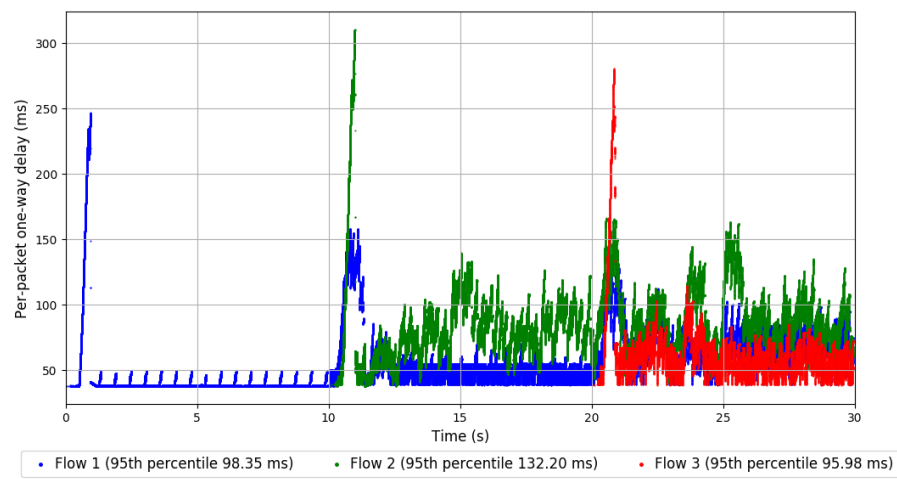
Run 4: Report of TCP Cubic — Data Link
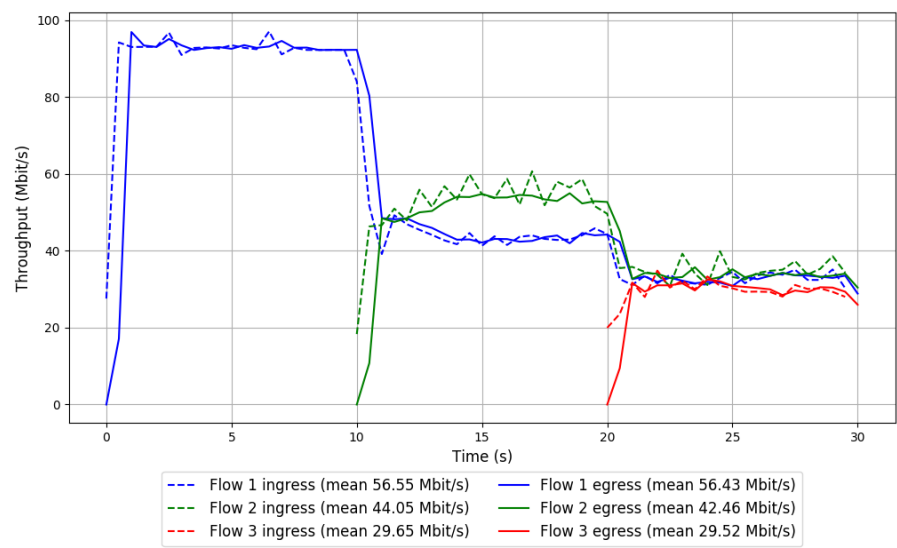
```
Run 5: Statistics of TCP Cubic

Start at: 2019-02-20 11:41:18
End at: 2019-02-20 11:41:48
Local clock offset: -2.066 ms
Remote clock offset: -3.399 ms


# Below is generated by plot.py at 2019-02-20 12:08:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 85.66 Mbit/s
95th percentile per-packet one-way delay: 46.668 ms
Loss rate: 0.27%
-- Flow 1:
Average throughput: 45.79 Mbit/s
95th percentile per-packet one-way delay: 53.556 ms
Loss rate: 0.15%
-- Flow 2:
Average throughput: 36.40 Mbit/s
95th percentile per-packet one-way delay: 44.711 ms
Loss rate: 0.23%
-- Flow 3:
Average throughput: 47.29 Mbit/s
95th percentile per-packet one-way delay: 43.477 ms
Loss rate: 0.69%
```

Run 5: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 45.76 Mbit/s)   Flow 1 egress (mean 45.79 Mbit/s)
Flow 2 ingress (mean 36.37 Mbit/s)   Flow 2 egress (mean 36.40 Mbit/s)
Flow 3 ingress (mean 47.31 Mbit/s)   Flow 3 egress (mean 47.29 Mbit/s)

Flow 1 (95th percentile 53.56 ms)   Flow 2 (95th percentile 44.71 ms)   Flow 3 (95th percentile 43.48 ms)
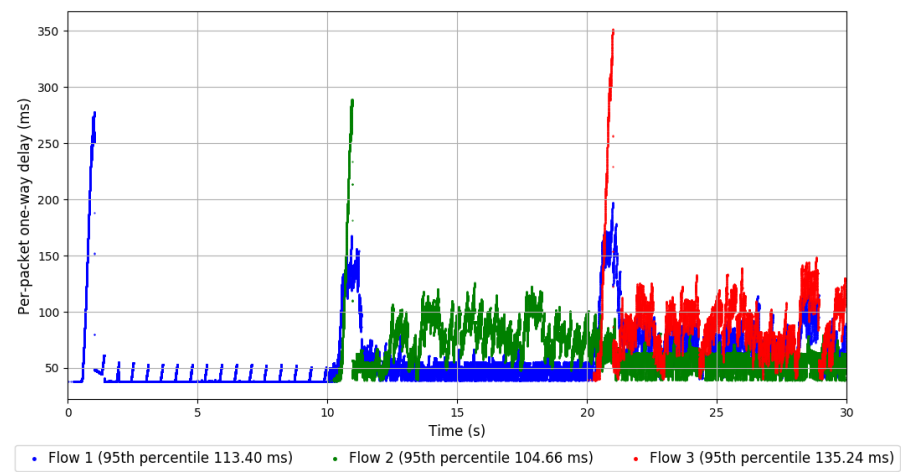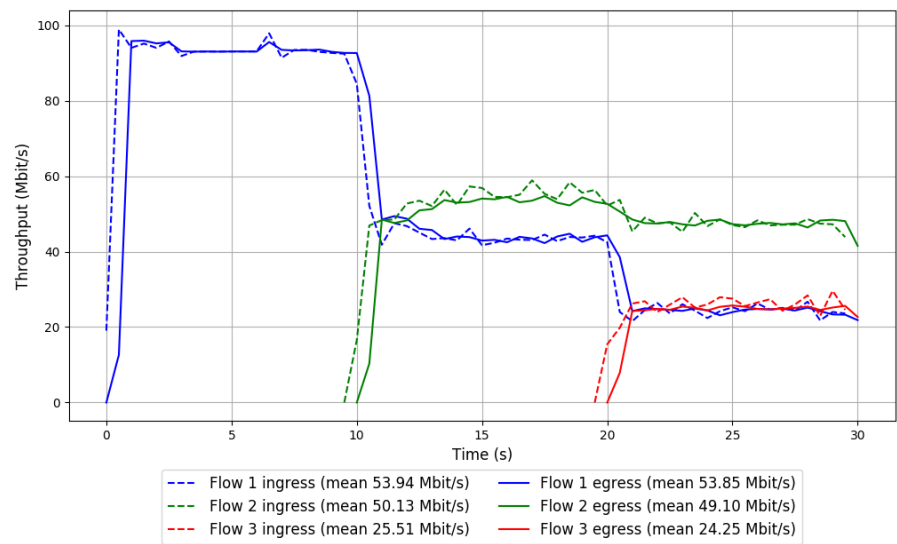
```
Run 1: Statistics of FillP

Start at: 2019-02-20 10:09:35
End at: 2019-02-20 10:10:05
Local clock offset: -3.51 ms
Remote clock offset: -8.713 ms


# Below is generated by plot.py at 2019-02-20 12:08:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.40 Mbit/s
95th percentile per-packet one-way delay: 131.739 ms
Loss rate: 2.24%
-- Flow 1:
Average throughput: 54.01 Mbit/s
95th percentile per-packet one-way delay: 120.356 ms
Loss rate: 0.53%
-- Flow 2:
Average throughput: 39.29 Mbit/s
95th percentile per-packet one-way delay: 152.179 ms
Loss rate: 6.25%
-- Flow 3:
Average throughput: 43.02 Mbit/s
95th percentile per-packet one-way delay: 77.444 ms
Loss rate: 0.92%
```
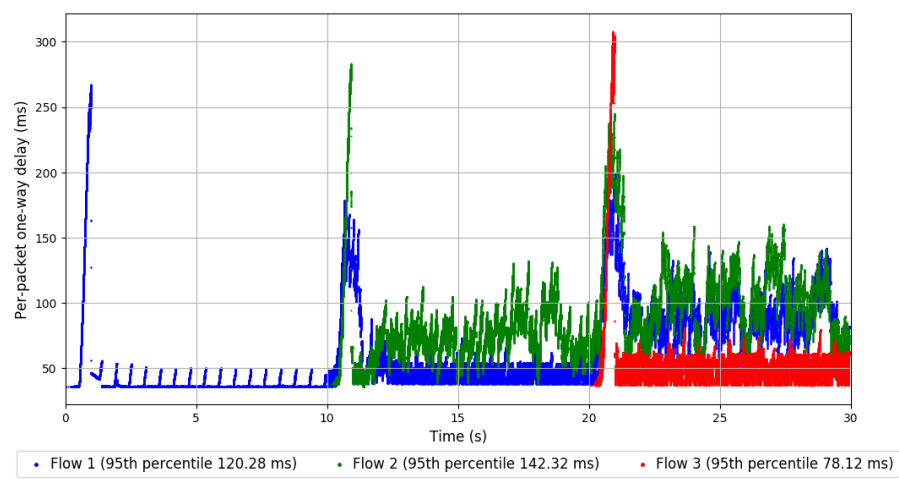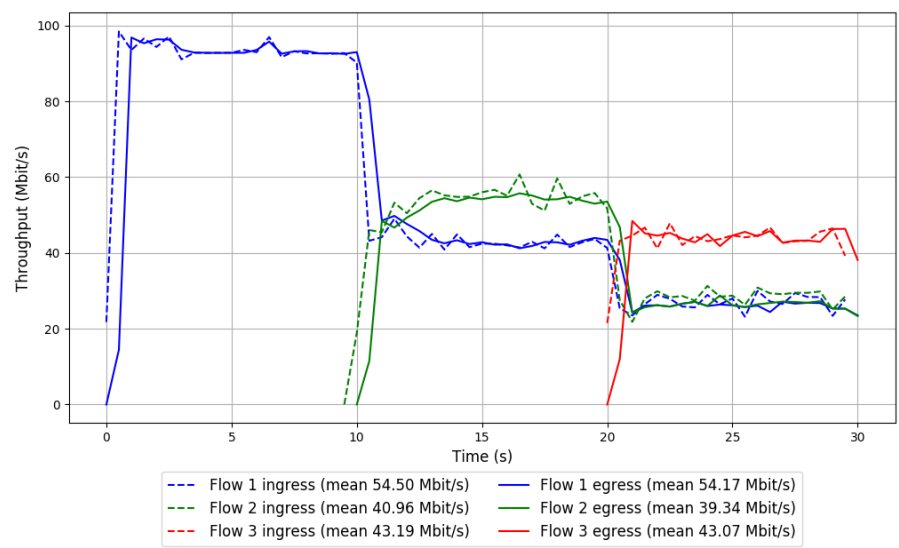
Run 1: Report of FillP — Data Link

```
Run 2: Statistics of FillP

Start at: 2019-02-20 10:35:17
End at: 2019-02-20 10:35:47
Local clock offset: -1.91 ms
Remote clock offset: -6.896 ms


# Below is generated by plot.py at 2019-02-20 12:08:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.46 Mbit/s
95th percentile per-packet one-way delay: 119.176 ms
Loss rate: 1.52%
-- Flow 1:
Average throughput: 56.43 Mbit/s
95th percentile per-packet one-way delay: 98.354 ms
Loss rate: 0.37%
-- Flow 2:
Average throughput: 42.46 Mbit/s
95th percentile per-packet one-way delay: 132.199 ms
Loss rate: 3.88%
-- Flow 3:
Average throughput: 29.52 Mbit/s
95th percentile per-packet one-way delay: 95.980 ms
Loss rate: 1.08%
```
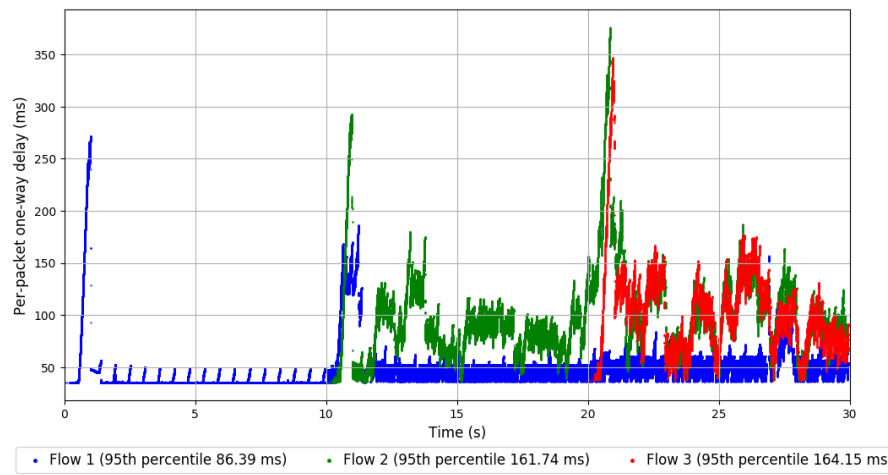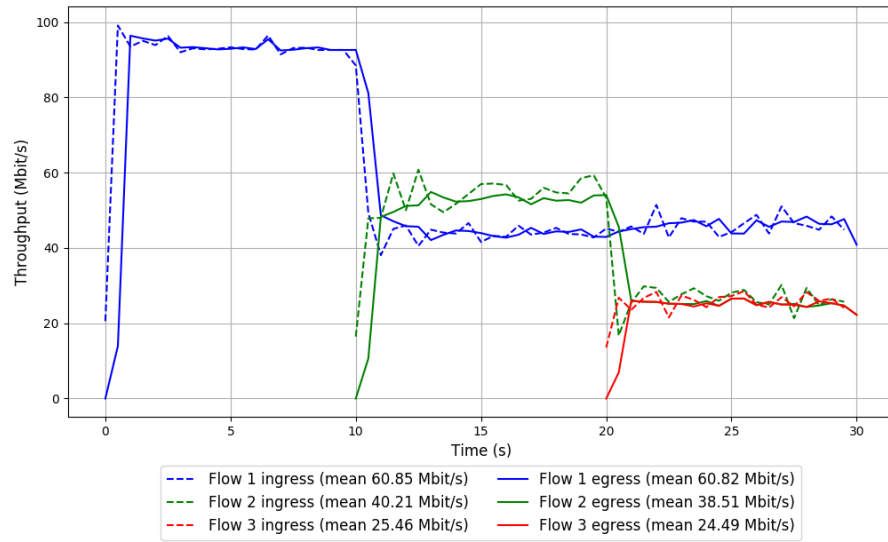
Run 2: Report of FillP — Data Link

```
Run 3: Statistics of FillP

Start at: 2019-02-20 11:01:15
End at: 2019-02-20 11:01:45
Local clock offset: 1.326 ms
Remote clock offset: -5.943 ms


# Below is generated by plot.py at 2019-02-20 12:08:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.57 Mbit/s
95th percentile per-packet one-way delay: 113.173 ms
Loss rate: 1.48%
-- Flow 1:
Average throughput: 53.85 Mbit/s
95th percentile per-packet one-way delay: 113.404 ms
Loss rate: 0.37%
-- Flow 2:
Average throughput: 49.10 Mbit/s
95th percentile per-packet one-way delay: 104.662 ms
Loss rate: 2.26%
-- Flow 3:
Average throughput: 24.25 Mbit/s
95th percentile per-packet one-way delay: 135.243 ms
Loss rate: 5.46%
```

Run 3: Report of FillP — Data Link

```
Run 4: Statistics of FillP

Start at: 2019-02-20 11:27:48
End at: 2019-02-20 11:28:18
Local clock offset: 1.205 ms
Remote clock offset: -3.668 ms


# Below is generated by plot.py at 2019-02-20 12:08:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.60 Mbit/s
95th percentile per-packet one-way delay: 128.702 ms
Loss rate: 1.77%
-- Flow 1:
Average throughput: 54.17 Mbit/s
95th percentile per-packet one-way delay: 120.283 ms
Loss rate: 0.80%
-- Flow 2:
Average throughput: 39.34 Mbit/s
95th percentile per-packet one-way delay: 142.325 ms
Loss rate: 4.25%
-- Flow 3:
Average throughput: 43.07 Mbit/s
95th percentile per-packet one-way delay: 78.119 ms
Loss rate: 0.75%
```
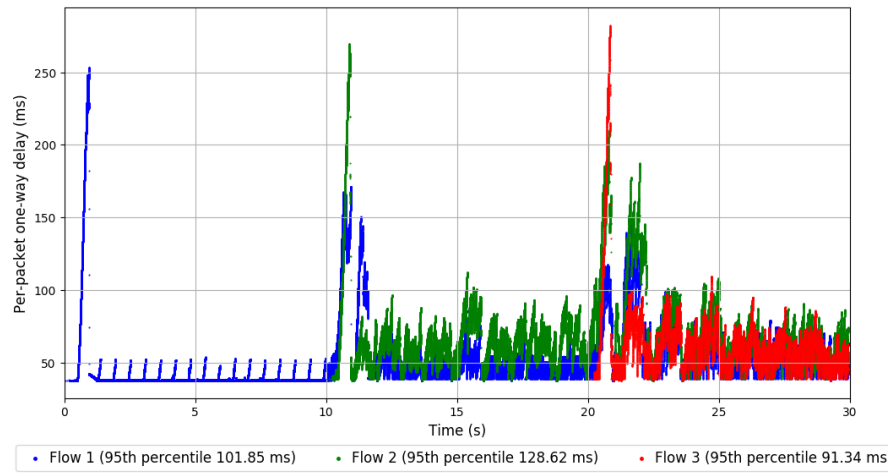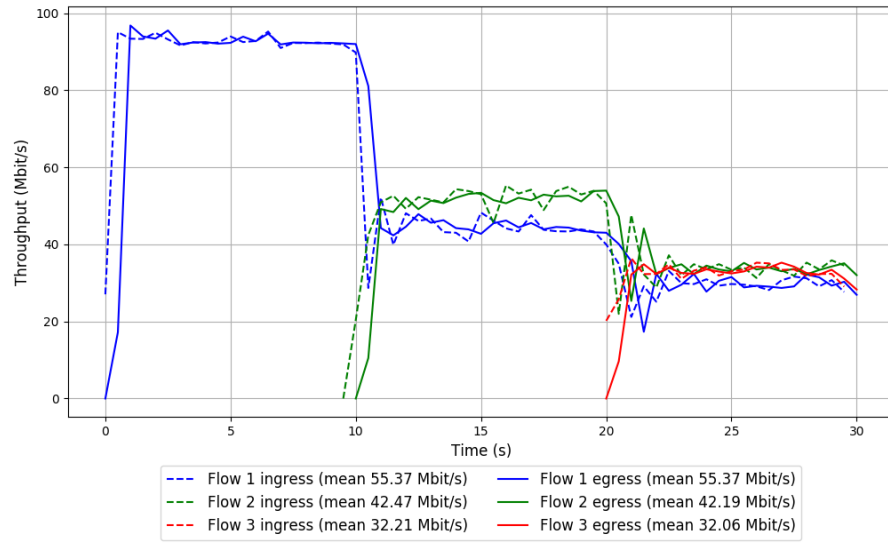
Run 4: Report of FillP — Data Link

```
Run 5: Statistics of FillP

Start at: 2019-02-20 11:53:29
End at: 2019-02-20 11:53:59
Local clock offset: -3.228 ms
Remote clock offset: -3.539 ms


# Below is generated by plot.py at 2019-02-20 12:09:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.55 Mbit/s
95th percentile per-packet one-way delay: 141.470 ms
Loss rate: 1.82%
-- Flow 1:
Average throughput: 60.82 Mbit/s
95th percentile per-packet one-way delay: 86.388 ms
Loss rate: 0.27%
-- Flow 2:
Average throughput: 38.51 Mbit/s
95th percentile per-packet one-way delay: 161.741 ms
Loss rate: 4.55%
-- Flow 3:
Average throughput: 24.49 Mbit/s
95th percentile per-packet one-way delay: 164.151 ms
Loss rate: 4.29%
```
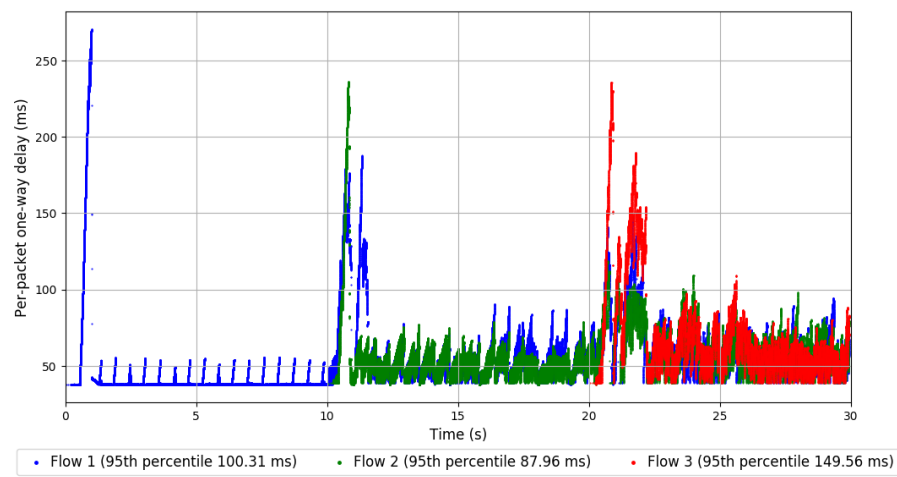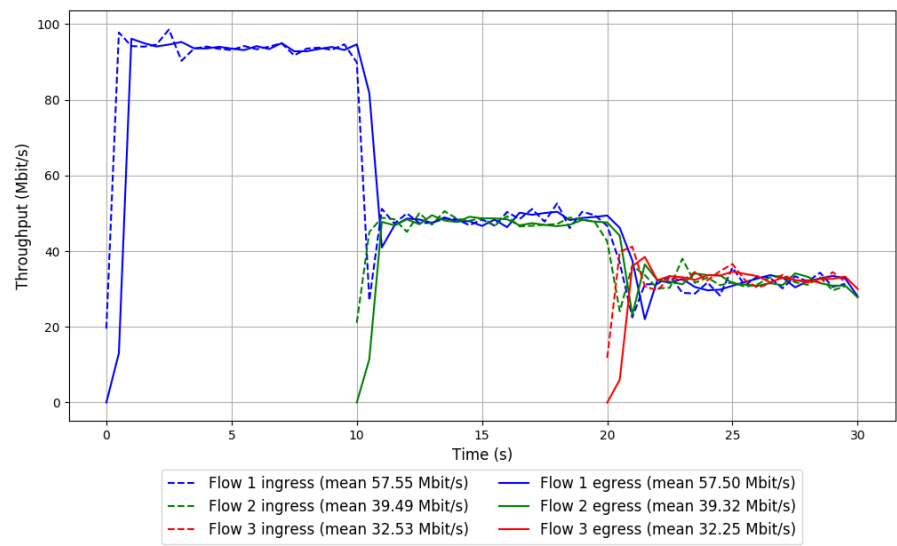
Run 5: Report of FillP — Data Link

Flow 1 ingress (mean 60.85 Mbit/s)   Flow 1 egress (mean 60.82 Mbit/s)
Flow 2 ingress (mean 40.21 Mbit/s)   Flow 2 egress (mean 38.51 Mbit/s)
Flow 3 ingress (mean 25.46 Mbit/s)   Flow 3 egress (mean 24.49 Mbit/s)

• Flow 1 (95th percentile 86.39 ms)   • Flow 2 (95th percentile 161.74 ms)   • Flow 3 (95th percentile 164.15 ms)

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```
Run 1: Statistics of FillP-Sheep

Start at: 2019-02-20 09:53:45
End at: 2019-02-20 09:54:15
Local clock offset: -2.885 ms
Remote clock offset: -9.162 ms


# Below is generated by plot.py at 2019-02-20 12:09:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.07 Mbit/s
95th percentile per-packet one-way delay: 106.022 ms
Loss rate: 0.51%
-- Flow 1:
Average throughput: 55.37 Mbit/s
95th percentile per-packet one-way delay: 101.850 ms
Loss rate: 0.20%
-- Flow 2:
Average throughput: 42.19 Mbit/s
95th percentile per-packet one-way delay: 128.615 ms
Loss rate: 0.94%
-- Flow 3:
Average throughput: 32.06 Mbit/s
95th percentile per-packet one-way delay: 91.341 ms
Loss rate: 0.97%
```

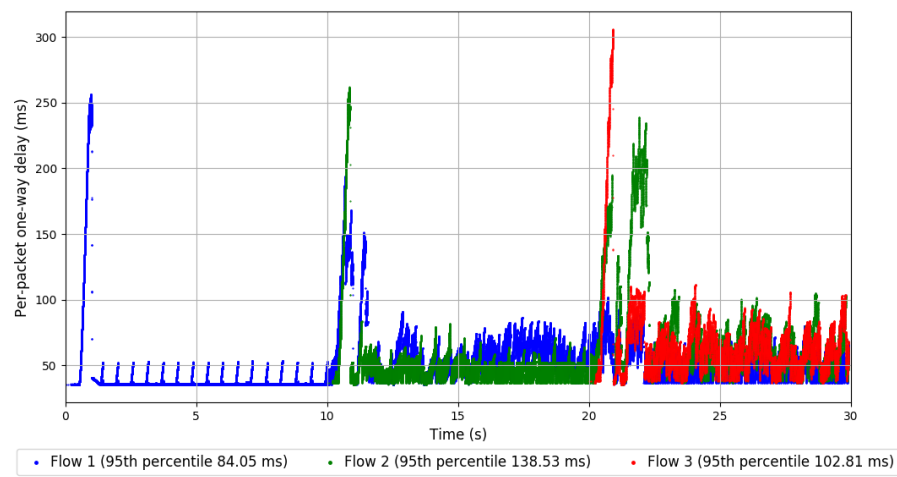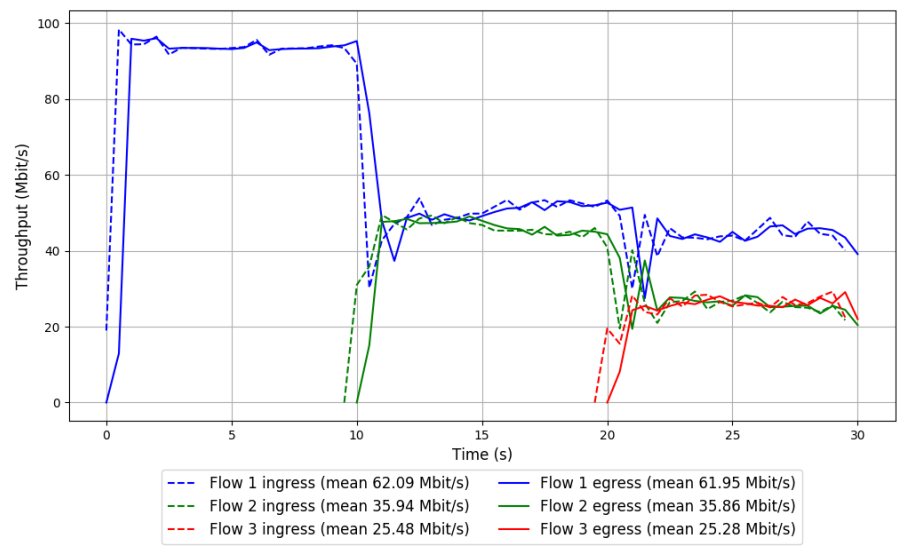Run 1: Report of FillP-Sheep — Data Link

Flow 1 ingress (mean 55.37 Mbit/s)   Flow 1 egress (mean 55.37 Mbit/s)
Flow 2 ingress (mean 42.47 Mbit/s)   Flow 2 egress (mean 42.19 Mbit/s)
Flow 3 ingress (mean 32.21 Mbit/s)   Flow 3 egress (mean 32.06 Mbit/s)

Flow 1 (95th percentile 101.85 ms)   Flow 2 (95th percentile 128.62 ms)   Flow 3 (95th percentile 91.34 ms)

46

```
Run 2: Statistics of FillP-Sheep

Start at: 2019-02-20 10:19:20
End at: 2019-02-20 10:19:50
Local clock offset: -3.85 ms
Remote clock offset: -7.819 ms


# Below is generated by plot.py at 2019-02-20 12:09:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.34 Mbit/s
95th percentile per-packet one-way delay: 102.891 ms
Loss rate: 0.50%
-- Flow 1:
Average throughput: 57.50 Mbit/s
95th percentile per-packet one-way delay: 100.313 ms
Loss rate: 0.22%
-- Flow 2:
Average throughput: 39.32 Mbit/s
95th percentile per-packet one-way delay: 87.957 ms
Loss rate: 0.74%
-- Flow 3:
Average throughput: 32.25 Mbit/s
95th percentile per-packet one-way delay: 149.561 ms
Loss rate: 1.36%
```

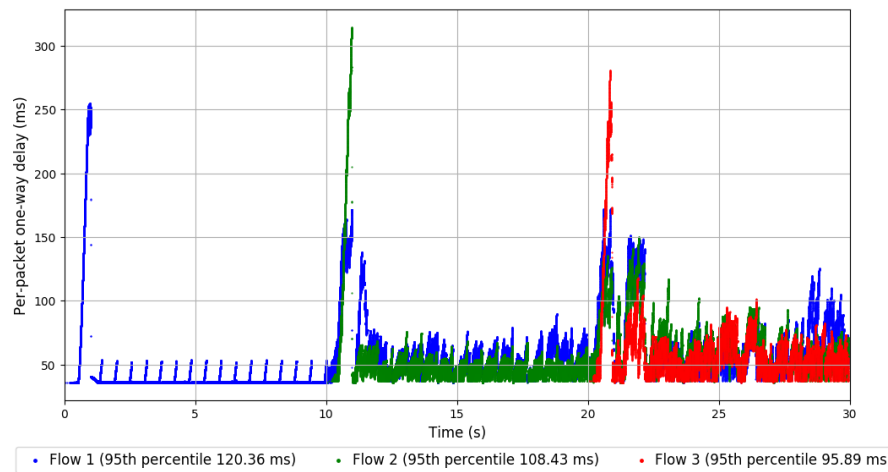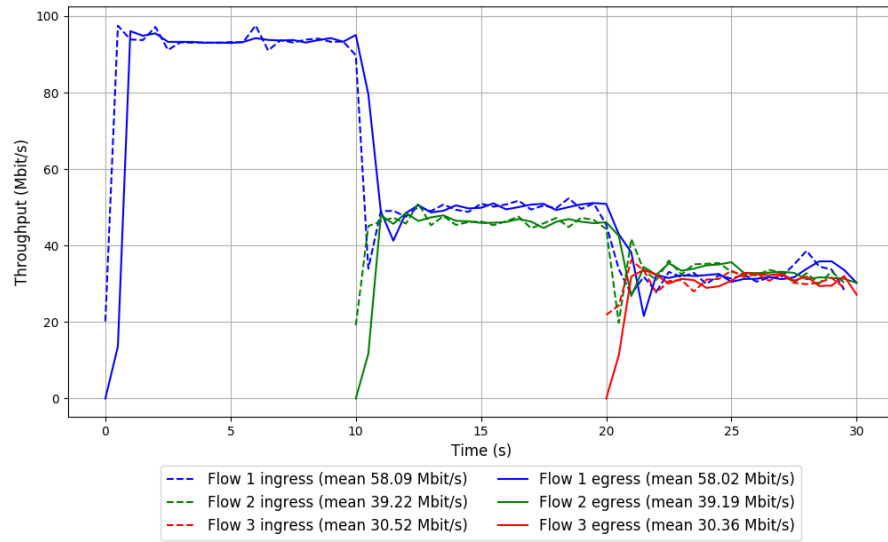Run 2: Report of FillP-Sheep — Data Link

Flow 1 ingress (mean 57.55 Mbit/s) --- Flow 1 egress (mean 57.50 Mbit/s)
Flow 2 ingress (mean 39.49 Mbit/s) --- Flow 2 egress (mean 39.32 Mbit/s)
Flow 3 ingress (mean 32.53 Mbit/s) --- Flow 3 egress (mean 32.25 Mbit/s)

Flow 1 (95th percentile 100.31 ms) • Flow 2 (95th percentile 87.96 ms) • Flow 3 (95th percentile 149.56 ms)

```
Run 3: Statistics of FillP-Sheep

Start at: 2019-02-20 10:45:12
End at: 2019-02-20 10:45:42
Local clock offset: 0.163 ms
Remote clock offset: -4.253 ms


# Below is generated by plot.py at 2019-02-20 12:09:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.23 Mbit/s
95th percentile per-packet one-way delay: 97.994 ms
Loss rate: 0.45%
-- Flow 1:
Average throughput: 61.95 Mbit/s
95th percentile per-packet one-way delay: 84.045 ms
Loss rate: 0.29%
-- Flow 2:
Average throughput: 35.86 Mbit/s
95th percentile per-packet one-way delay: 138.529 ms
Loss rate: 0.55%
-- Flow 3:
Average throughput: 25.28 Mbit/s
95th percentile per-packet one-way delay: 102.807 ms
Loss rate: 1.30%
```
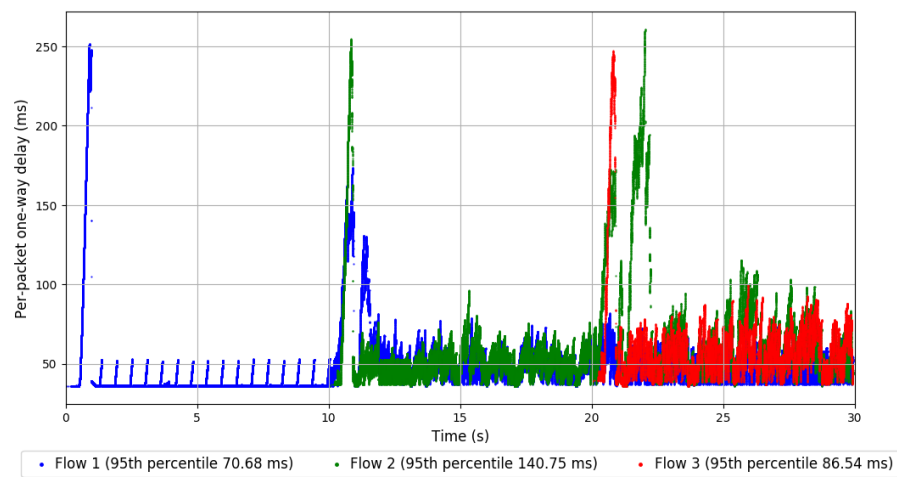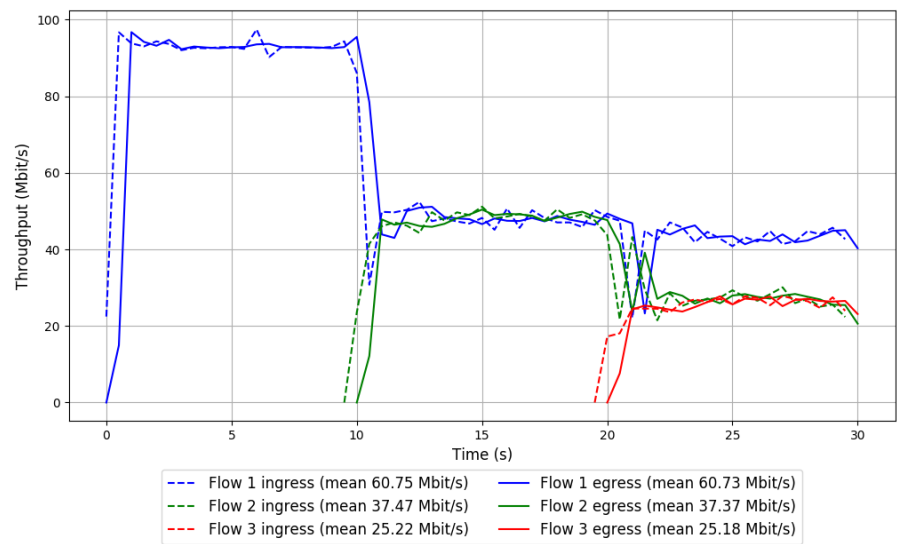
Run 3: Report of FillP-Sheep — Data Link

```
Run 4: Statistics of FillP-Sheep

Start at: 2019-02-20 11:11:11
End at: 2019-02-20 11:11:41
Local clock offset: 0.935 ms
Remote clock offset: -3.916 ms


# Below is generated by plot.py at 2019-02-20 12:09:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.16 Mbit/s
95th percentile per-packet one-way delay: 113.781 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 58.02 Mbit/s
95th percentile per-packet one-way delay: 120.362 ms
Loss rate: 0.26%
-- Flow 2:
Average throughput: 39.19 Mbit/s
95th percentile per-packet one-way delay: 108.433 ms
Loss rate: 0.41%
-- Flow 3:
Average throughput: 30.36 Mbit/s
95th percentile per-packet one-way delay: 95.887 ms
Loss rate: 0.99%
```

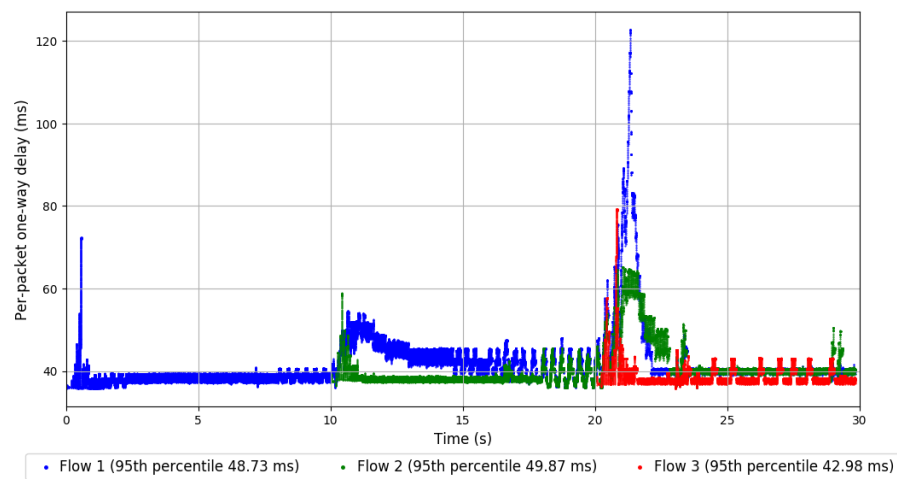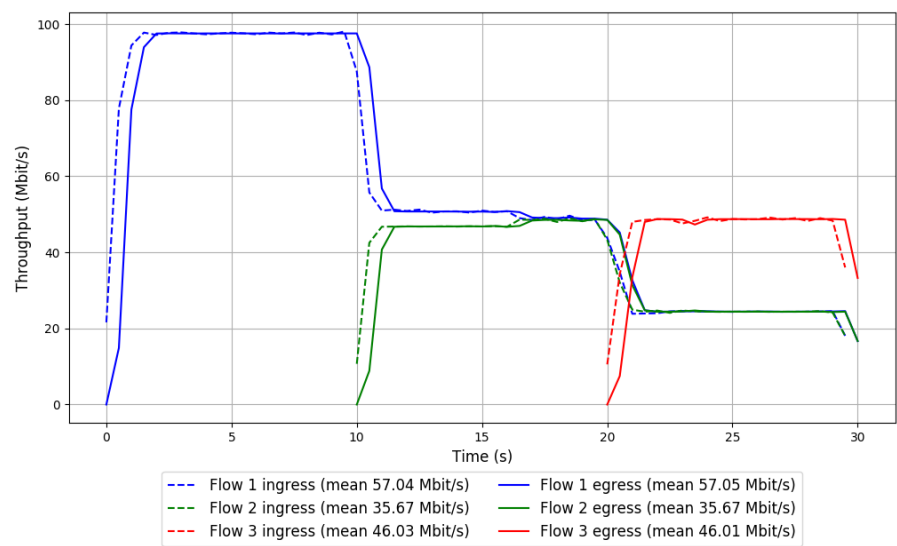Run 4: Report of FillP-Sheep — Data Link

Flow 1 ingress (mean 58.09 Mbit/s)   Flow 1 egress (mean 58.02 Mbit/s)
Flow 2 ingress (mean 39.22 Mbit/s)   Flow 2 egress (mean 39.19 Mbit/s)
Flow 3 ingress (mean 30.52 Mbit/s)   Flow 3 egress (mean 30.36 Mbit/s)

Flow 1 (95th percentile 120.36 ms)   Flow 2 (95th percentile 108.43 ms)   Flow 3 (95th percentile 95.89 ms)

```
Run 5: Statistics of FillP-Sheep

Start at: 2019-02-20 11:37:36
End at: 2019-02-20 11:38:06
Local clock offset: -1.374 ms
Remote clock offset: -3.714 ms


# Below is generated by plot.py at 2019-02-20 12:09:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.93 Mbit/s
95th percentile per-packet one-way delay: 92.073 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 60.73 Mbit/s
95th percentile per-packet one-way delay: 70.680 ms
Loss rate: 0.24%
-- Flow 2:
Average throughput: 37.37 Mbit/s
95th percentile per-packet one-way delay: 140.750 ms
Loss rate: 0.54%
-- Flow 3:
Average throughput: 25.18 Mbit/s
95th percentile per-packet one-way delay: 86.536 ms
Loss rate: 0.91%
```
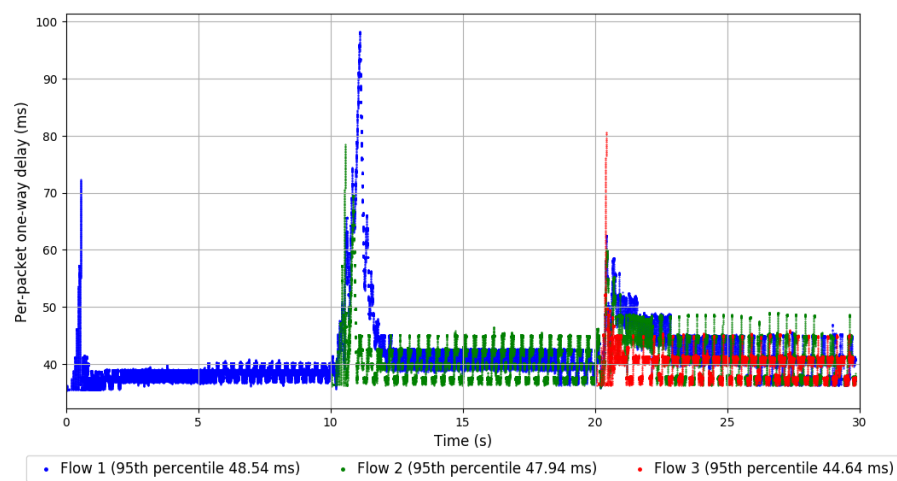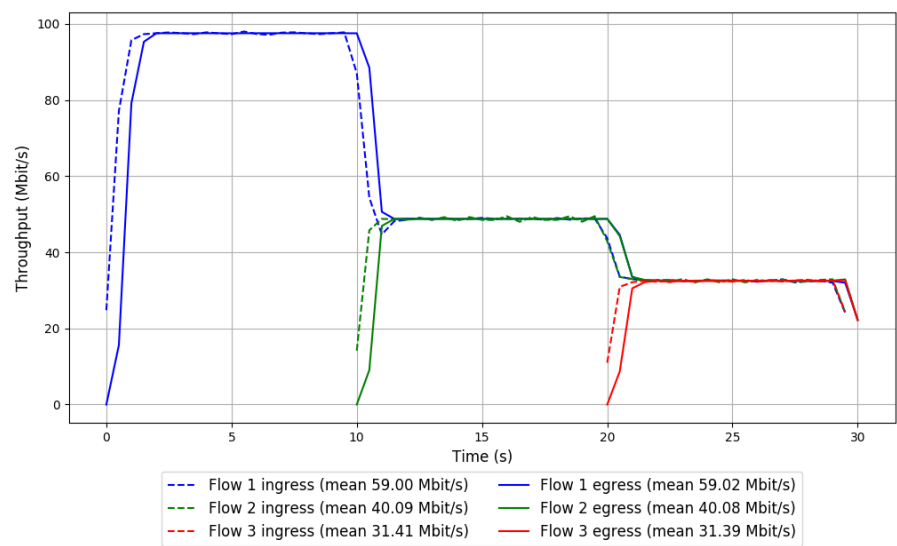
Run 5: Report of FillP-Sheep — Data Link

Flow 1 ingress (mean 60.75 Mbit/s) —— Flow 1 egress (mean 60.73 Mbit/s)
Flow 2 ingress (mean 37.47 Mbit/s) —— Flow 2 egress (mean 37.37 Mbit/s)
Flow 3 ingress (mean 25.22 Mbit/s) —— Flow 3 egress (mean 25.18 Mbit/s)

Flow 1 (95th percentile 70.68 ms)   Flow 2 (95th percentile 140.75 ms)   Flow 3 (95th percentile 86.54 ms)
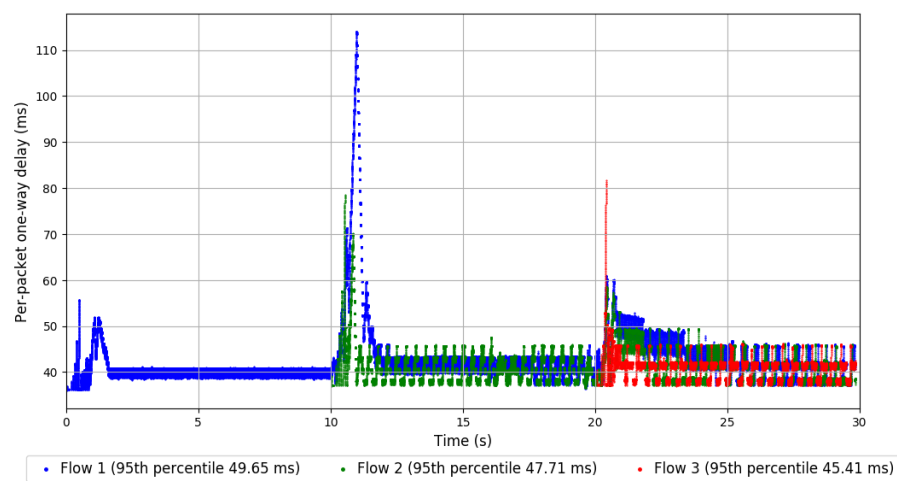
```
Run 1: Statistics of Indigo

Start at: 2019-02-20 10:08:20
End at: 2019-02-20 10:08:50
Local clock offset: -3.466 ms
Remote clock offset: -6.455 ms


# Below is generated by plot.py at 2019-02-20 12:09:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.83 Mbit/s
95th percentile per-packet one-way delay: 48.486 ms
Loss rate: 0.31%
-- Flow 1:
Average throughput: 57.05 Mbit/s
95th percentile per-packet one-way delay: 48.735 ms
Loss rate: 0.20%
-- Flow 2:
Average throughput: 35.67 Mbit/s
95th percentile per-packet one-way delay: 49.868 ms
Loss rate: 0.33%
-- Flow 3:
Average throughput: 46.01 Mbit/s
95th percentile per-packet one-way delay: 42.979 ms
Loss rate: 0.71%
```
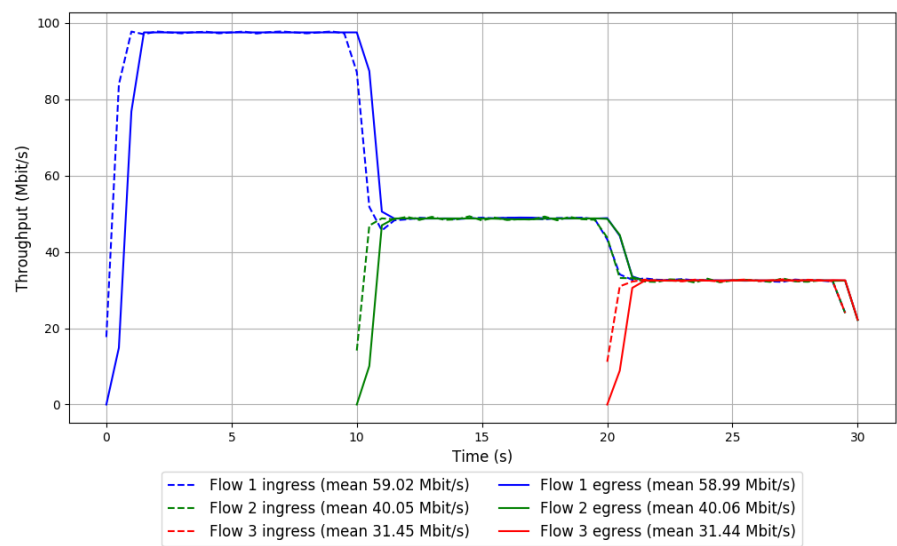
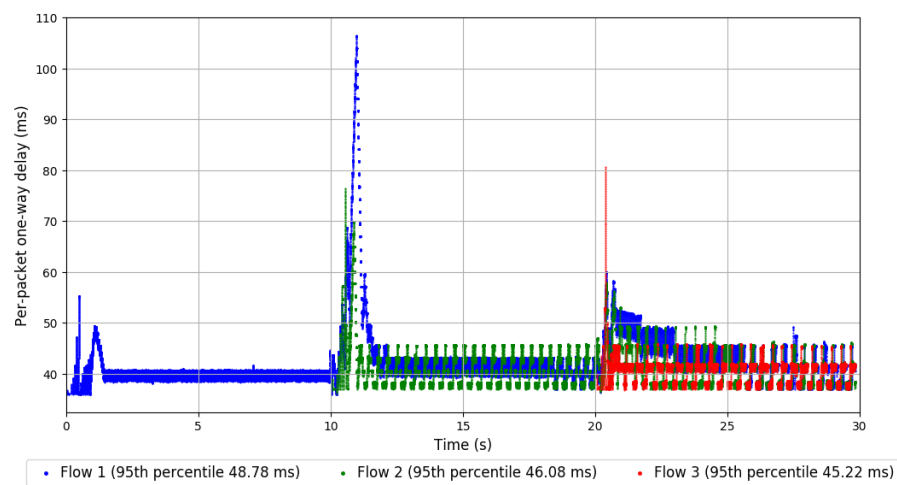# Run 1: Report of Indigo — Data Link

```
Run 2: Statistics of Indigo

Start at: 2019-02-20 10:34:01
End at: 2019-02-20 10:34:31
Local clock offset: -2.381 ms
Remote clock offset: -4.78 ms


# Below is generated by plot.py at 2019-02-20 12:09:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.93 Mbit/s
95th percentile per-packet one-way delay: 47.970 ms
Loss rate: 0.28%
-- Flow 1:
Average throughput: 59.02 Mbit/s
95th percentile per-packet one-way delay: 48.538 ms
Loss rate: 0.18%
-- Flow 2:
Average throughput: 40.08 Mbit/s
95th percentile per-packet one-way delay: 47.944 ms
Loss rate: 0.33%
-- Flow 3:
Average throughput: 31.39 Mbit/s
95th percentile per-packet one-way delay: 44.641 ms
Loss rate: 0.74%
```
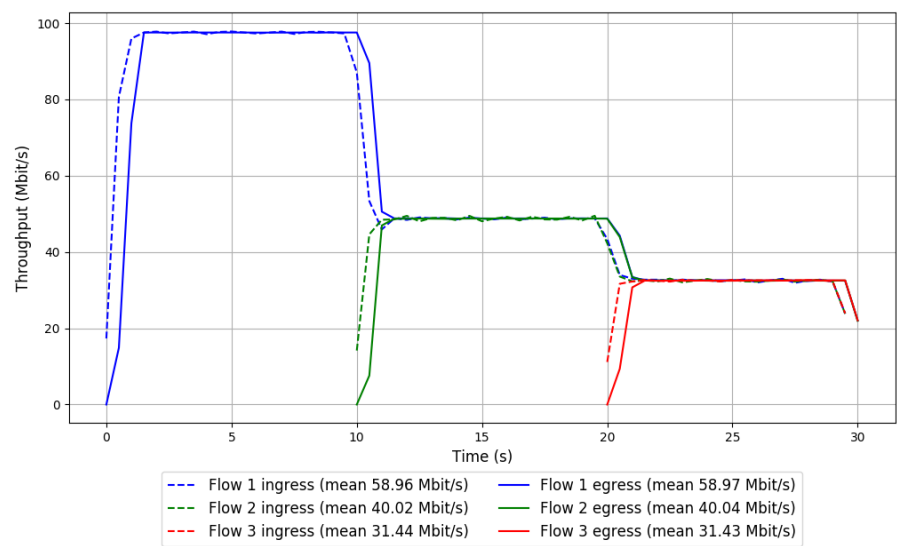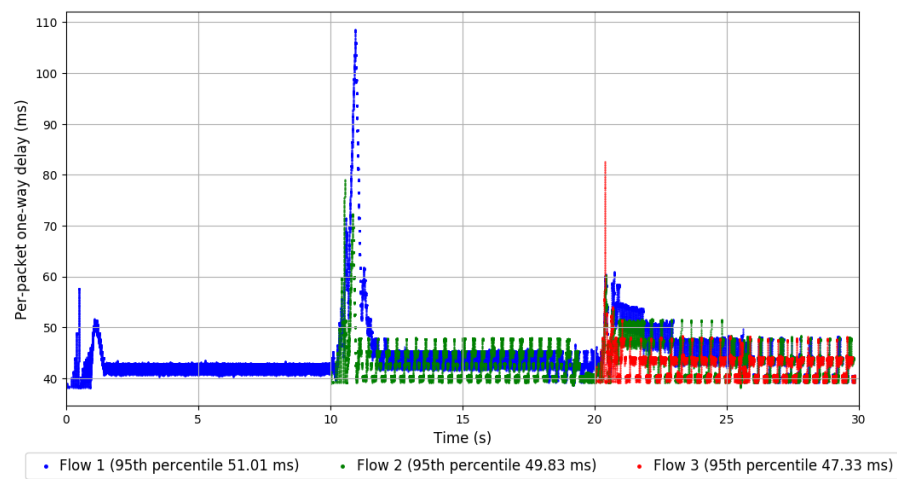
Run 2: Report of Indigo — Data Link

Flow 1 ingress (mean 59.00 Mbit/s) --- Flow 1 egress (mean 59.02 Mbit/s)
Flow 2 ingress (mean 40.09 Mbit/s) --- Flow 2 egress (mean 40.08 Mbit/s)
Flow 3 ingress (mean 31.41 Mbit/s) --- Flow 3 egress (mean 31.39 Mbit/s)

Flow 1 (95th percentile 48.54 ms)   Flow 2 (95th percentile 47.94 ms)   Flow 3 (95th percentile 44.64 ms)

```
Run 3: Statistics of Indigo

Start at: 2019-02-20 10:59:59
End at: 2019-02-20 11:00:29
Local clock offset: 1.481 ms
Remote clock offset: -4.112 ms


# Below is generated by plot.py at 2019-02-20 12:10:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.91 Mbit/s
95th percentile per-packet one-way delay: 48.832 ms
Loss rate: 0.31%
-- Flow 1:
Average throughput: 58.99 Mbit/s
95th percentile per-packet one-way delay: 49.645 ms
Loss rate: 0.26%
-- Flow 2:
Average throughput: 40.06 Mbit/s
95th percentile per-packet one-way delay: 47.712 ms
Loss rate: 0.30%
-- Flow 3:
Average throughput: 31.44 Mbit/s
95th percentile per-packet one-way delay: 45.410 ms
Loss rate: 0.69%
```
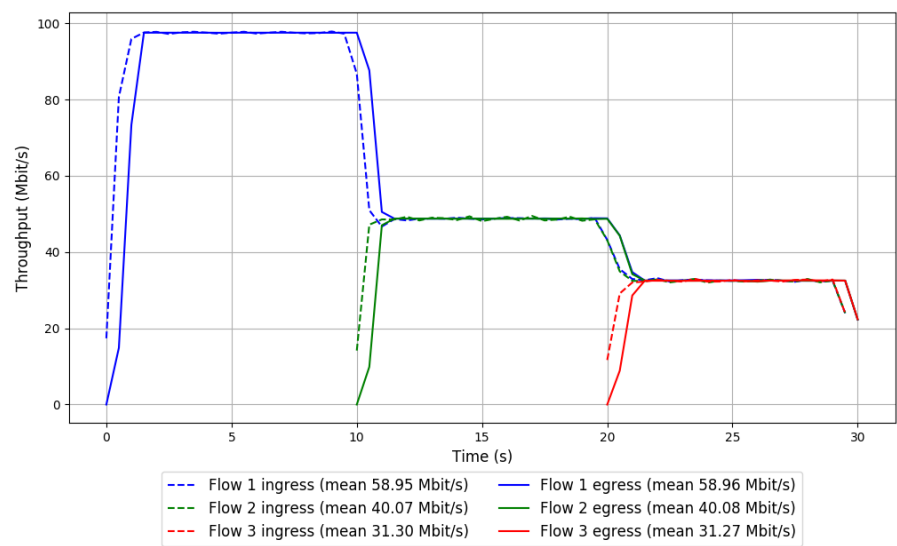
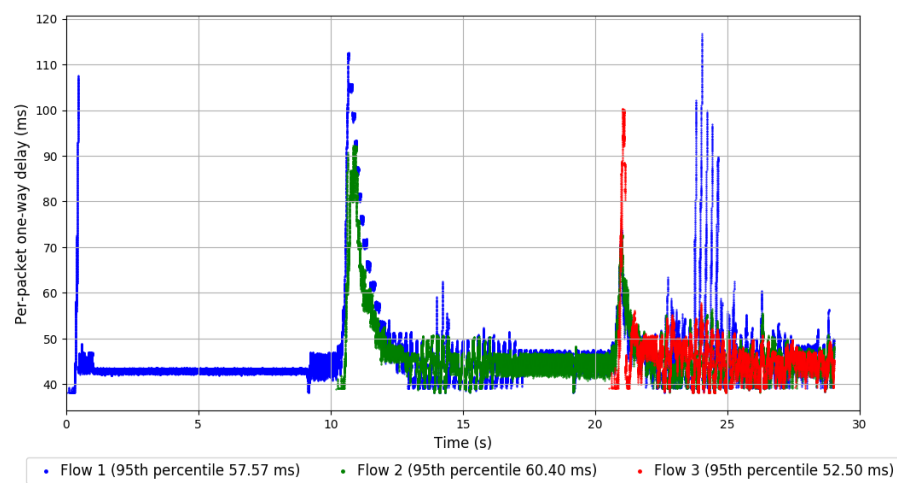## Run 3: Report of Indigo — Data Link

```
Run 4: Statistics of Indigo

Start at: 2019-02-20 11:26:33
End at: 2019-02-20 11:27:03
Local clock offset: 1.175 ms
Remote clock offset: -3.704 ms


# Below is generated by plot.py at 2019-02-20 12:10:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.86 Mbit/s
95th percentile per-packet one-way delay: 48.055 ms
Loss rate: 0.27%
-- Flow 1:
Average throughput: 58.97 Mbit/s
95th percentile per-packet one-way delay: 48.785 ms
Loss rate: 0.19%
-- Flow 2:
Average throughput: 40.04 Mbit/s
95th percentile per-packet one-way delay: 46.082 ms
Loss rate: 0.29%
-- Flow 3:
Average throughput: 31.43 Mbit/s
95th percentile per-packet one-way delay: 45.215 ms
Loss rate: 0.69%
```
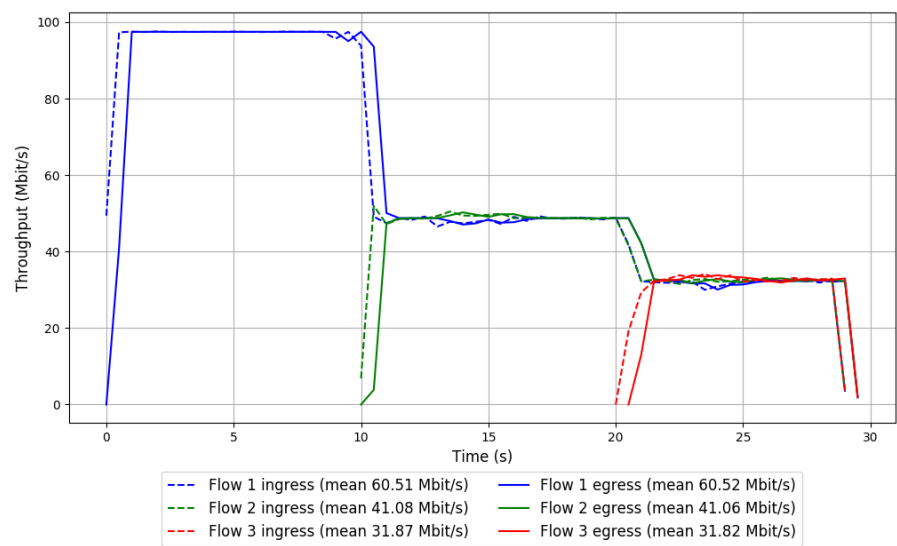
Run 4: Report of Indigo — Data Link

```
Run 5: Statistics of Indigo

Start at: 2019-02-20 11:52:13
End at: 2019-02-20 11:52:43
Local clock offset: -3.166 ms
Remote clock offset: -6.217 ms


# Below is generated by plot.py at 2019-02-20 12:10:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.86 Mbit/s
95th percentile per-packet one-way delay: 50.338 ms
Loss rate: 0.28%
-- Flow 1:
Average throughput: 58.96 Mbit/s
95th percentile per-packet one-way delay: 51.007 ms
Loss rate: 0.19%
-- Flow 2:
Average throughput: 40.08 Mbit/s
95th percentile per-packet one-way delay: 49.826 ms
Loss rate: 0.30%
-- Flow 3:
Average throughput: 31.27 Mbit/s
95th percentile per-packet one-way delay: 47.328 ms
Loss rate: 0.74%
```

Run 5: Report of Indigo — Data Link

```
Run 1: Statistics of Indigo-MusesC3

Start at: 2019-02-20 10:05:51
End at: 2019-02-20 10:06:21
Local clock offset: -3.376 ms
Remote clock offset: -8.979 ms


# Below is generated by plot.py at 2019-02-20 12:10:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.51 Mbit/s
95th percentile per-packet one-way delay: 57.852 ms
Loss rate: 0.32%
-- Flow 1:
Average throughput: 60.52 Mbit/s
95th percentile per-packet one-way delay: 57.567 ms
Loss rate: 0.20%
-- Flow 2:
Average throughput: 41.06 Mbit/s
95th percentile per-packet one-way delay: 60.401 ms
Loss rate: 0.41%
-- Flow 3:
Average throughput: 31.82 Mbit/s
95th percentile per-packet one-way delay: 52.496 ms
Loss rate: 0.90%
```
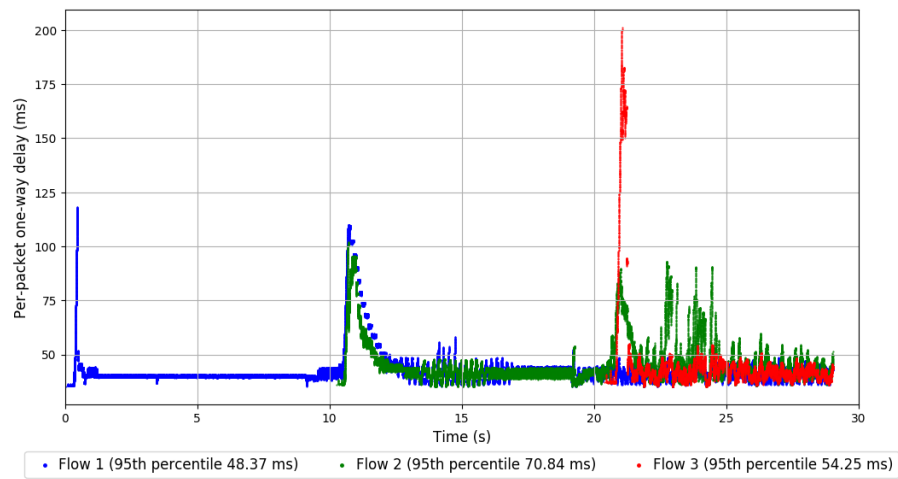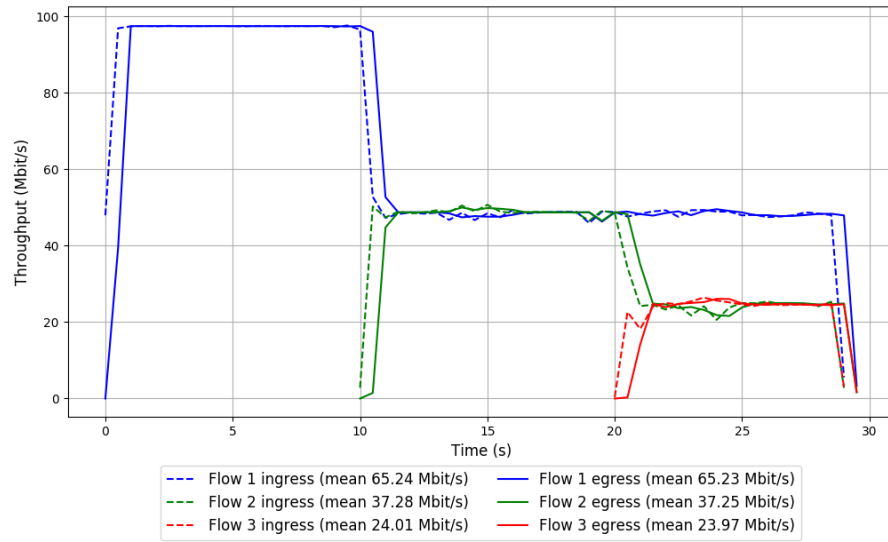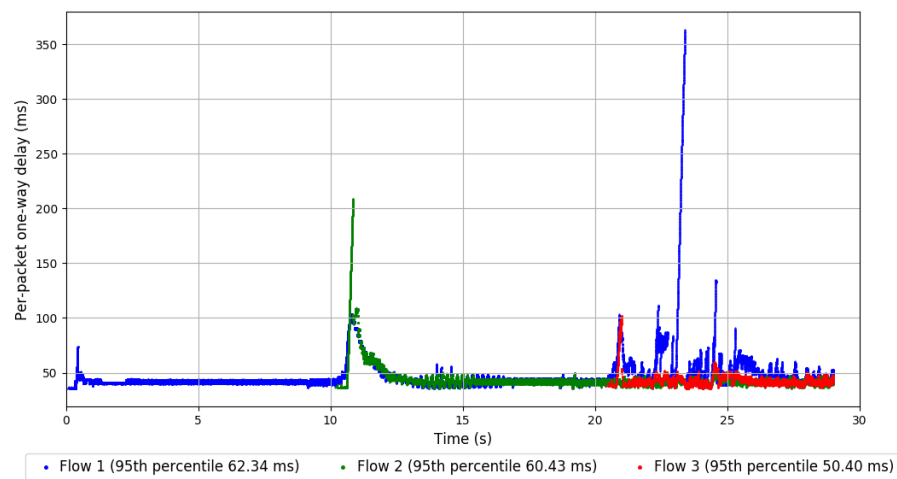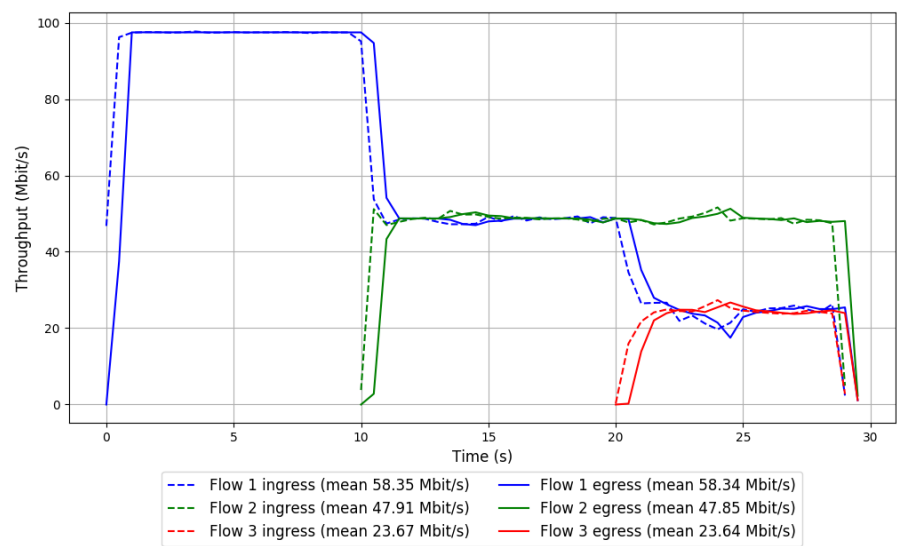
Run 1: Report of Indigo-MusesC3 — Data Link

```
Run 2: Statistics of Indigo-MusesC3

Start at: 2019-02-20 10:31:27
End at: 2019-02-20 10:31:57
Local clock offset: -3.379 ms
Remote clock offset: -4.81 ms


# Below is generated by plot.py at 2019-02-20 12:10:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.46 Mbit/s
95th percentile per-packet one-way delay: 58.523 ms
Loss rate: 0.33%
-- Flow 1:
Average throughput: 65.23 Mbit/s
95th percentile per-packet one-way delay: 48.365 ms
Loss rate: 0.23%
-- Flow 2:
Average throughput: 37.25 Mbit/s
95th percentile per-packet one-way delay: 70.839 ms
Loss rate: 0.40%
-- Flow 3:
Average throughput: 23.97 Mbit/s
95th percentile per-packet one-way delay: 54.247 ms
Loss rate: 0.95%
```

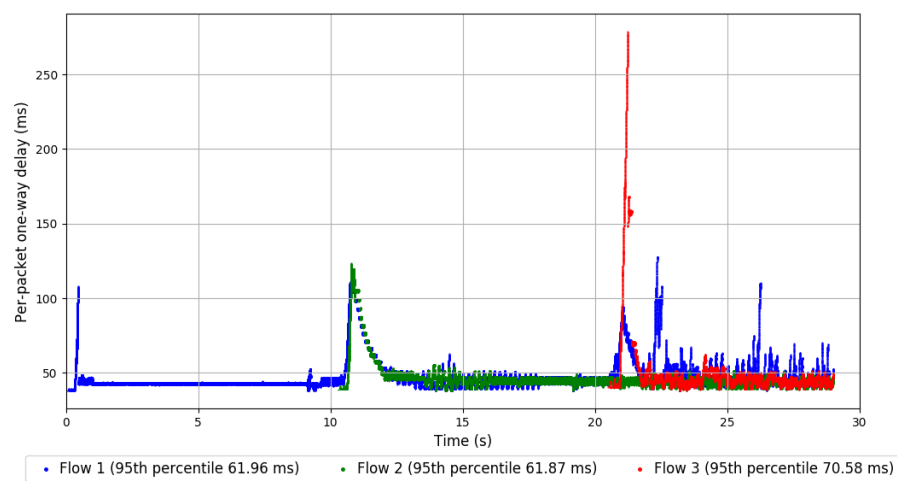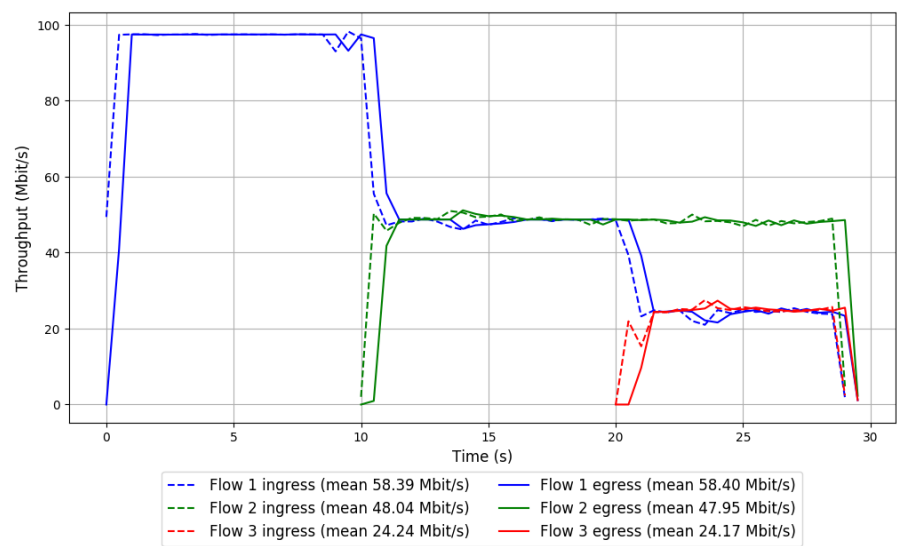Run 2: Report of Indigo-MusesC3 — Data Link

- - - - Flow 1 ingress (mean 65.24 Mbit/s) ——— Flow 1 egress (mean 65.23 Mbit/s)
- - - - Flow 2 ingress (mean 37.28 Mbit/s) ——— Flow 2 egress (mean 37.25 Mbit/s)
- - - - Flow 3 ingress (mean 24.01 Mbit/s) ——— Flow 3 egress (mean 23.97 Mbit/s)

• Flow 1 (95th percentile 48.37 ms)   • Flow 2 (95th percentile 70.84 ms)   • Flow 3 (95th percentile 54.25 ms)

```
Run 3: Statistics of Indigo-MusesC3

Start at: 2019-02-20 10:57:28
End at: 2019-02-20 10:57:58
Local clock offset: 1.312 ms
Remote clock offset: -3.938 ms


# Below is generated by plot.py at 2019-02-20 12:10:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.45 Mbit/s
95th percentile per-packet one-way delay: 60.423 ms
Loss rate: 0.35%
-- Flow 1:
Average throughput: 58.34 Mbit/s
95th percentile per-packet one-way delay: 62.342 ms
Loss rate: 0.23%
-- Flow 2:
Average throughput: 47.85 Mbit/s
95th percentile per-packet one-way delay: 60.433 ms
Loss rate: 0.47%
-- Flow 3:
Average throughput: 23.64 Mbit/s
95th percentile per-packet one-way delay: 50.403 ms
Loss rate: 0.89%
```

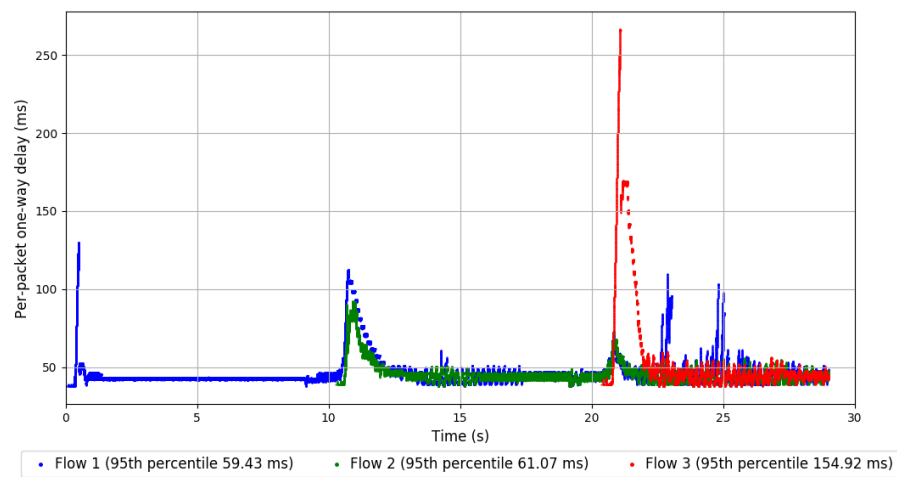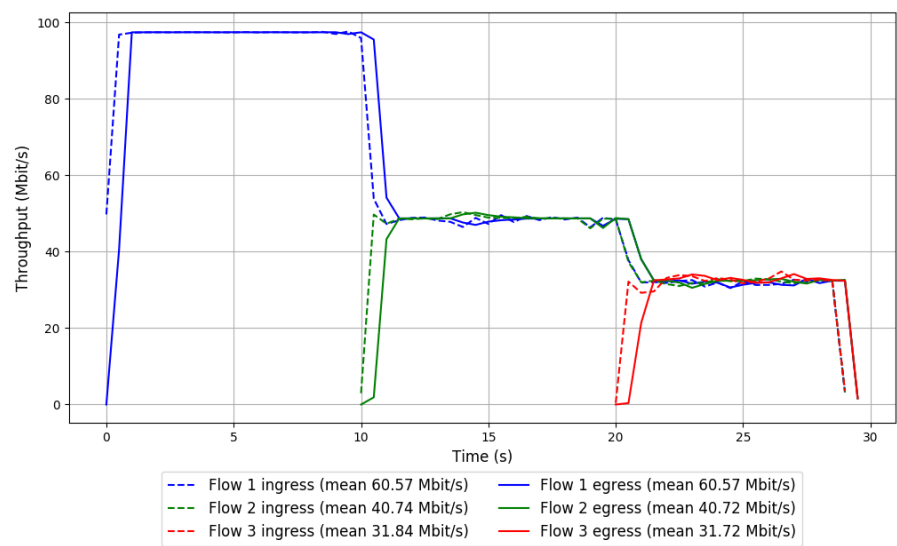Run 3: Report of Indigo-MusesC3 — Data Link

- - - - Flow 1 ingress (mean 58.35 Mbit/s)　　——— Flow 1 egress (mean 58.34 Mbit/s)
- - - - Flow 2 ingress (mean 47.91 Mbit/s)　　——— Flow 2 egress (mean 47.85 Mbit/s)
- - - - Flow 3 ingress (mean 23.67 Mbit/s)　　——— Flow 3 egress (mean 23.64 Mbit/s)

- Flow 1 (95th percentile 62.34 ms)　　• Flow 2 (95th percentile 60.43 ms)　　• Flow 3 (95th percentile 50.40 ms)
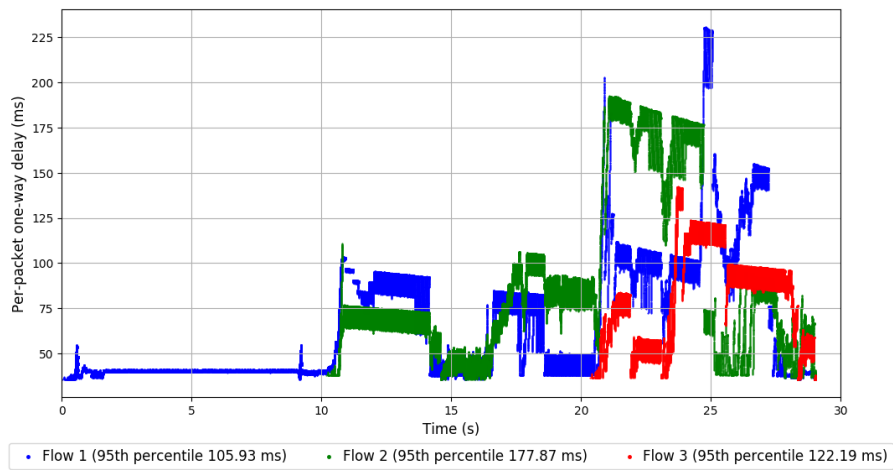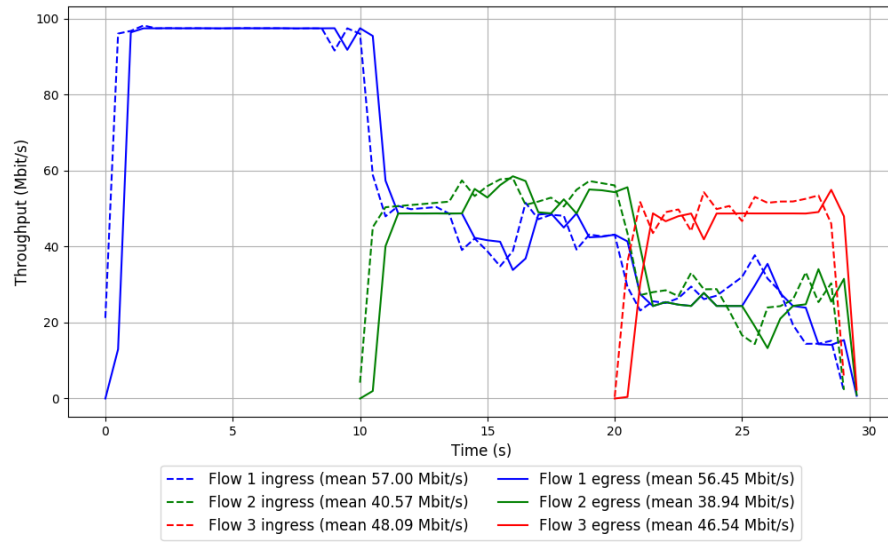
```
Run 4: Statistics of Indigo-MusesC3

Start at: 2019-02-20 11:24:02
End at: 2019-02-20 11:24:32
Local clock offset: 1.105 ms
Remote clock offset: -5.863 ms


# Below is generated by plot.py at 2019-02-20 12:10:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.50 Mbit/s
95th percentile per-packet one-way delay: 62.120 ms
Loss rate: 0.35%
-- Flow 1:
Average throughput: 58.40 Mbit/s
95th percentile per-packet one-way delay: 61.957 ms
Loss rate: 0.18%
-- Flow 2:
Average throughput: 47.95 Mbit/s
95th percentile per-packet one-way delay: 61.866 ms
Loss rate: 0.52%
-- Flow 3:
Average throughput: 24.17 Mbit/s
95th percentile per-packet one-way delay: 70.583 ms
Loss rate: 1.04%
```

Run 4: Report of Indigo-MusesC3 — Data Link

- - - Flow 1 ingress (mean 58.39 Mbit/s) —— Flow 1 egress (mean 58.40 Mbit/s)
- - - Flow 2 ingress (mean 48.04 Mbit/s) —— Flow 2 egress (mean 47.95 Mbit/s)
- - - Flow 3 ingress (mean 24.24 Mbit/s) —— Flow 3 egress (mean 24.17 Mbit/s)

• Flow 1 (95th percentile 61.96 ms) • Flow 2 (95th percentile 61.87 ms) • Flow 3 (95th percentile 70.58 ms)
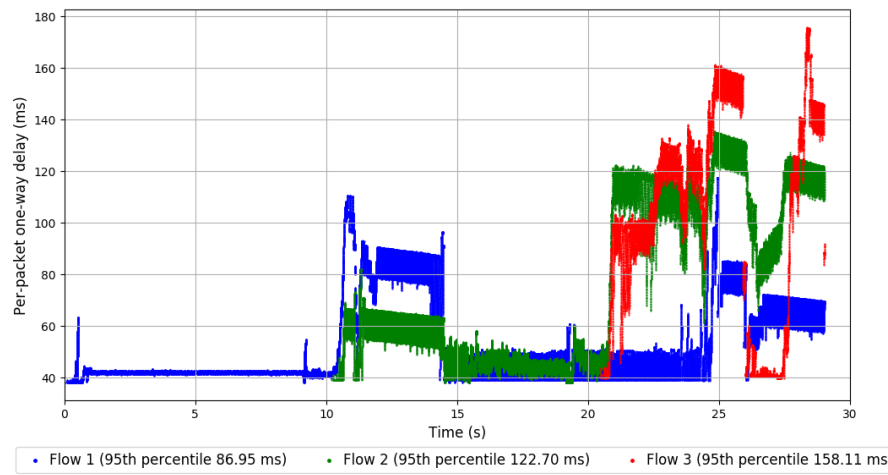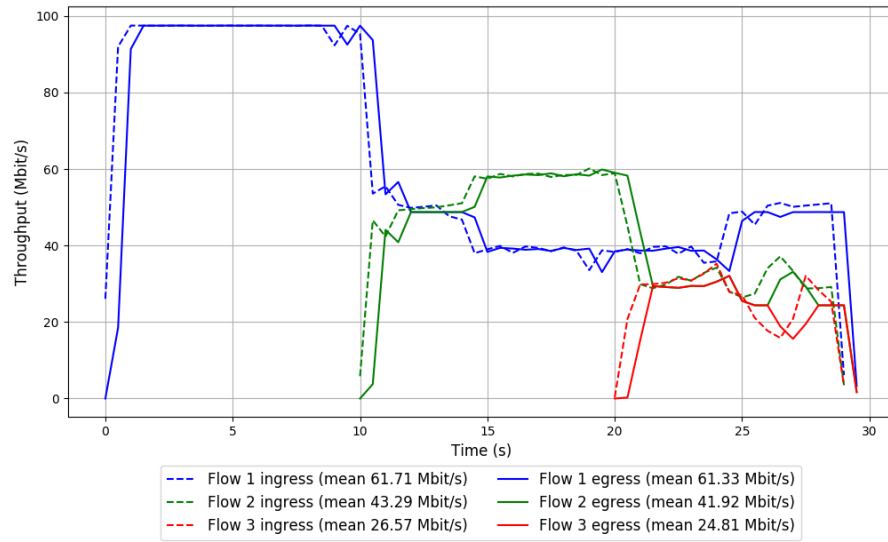
```
Run 5: Statistics of Indigo-MusesC3

Start at: 2019-02-20 11:49:43
End at: 2019-02-20 11:50:13
Local clock offset: -2.996 ms
Remote clock offset: -5.876 ms

# Below is generated by plot.py at 2019-02-20 12:10:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.41 Mbit/s
95th percentile per-packet one-way delay: 63.595 ms
Loss rate: 0.35%
-- Flow 1:
Average throughput: 60.57 Mbit/s
95th percentile per-packet one-way delay: 59.433 ms
Loss rate: 0.22%
-- Flow 2:
Average throughput: 40.72 Mbit/s
95th percentile per-packet one-way delay: 61.073 ms
Loss rate: 0.40%
-- Flow 3:
Average throughput: 31.72 Mbit/s
95th percentile per-packet one-way delay: 154.920 ms
Loss rate: 1.09%
```

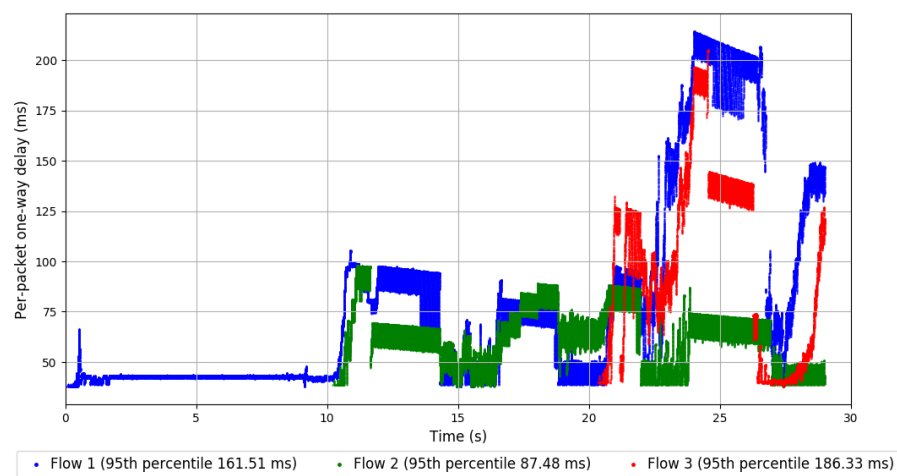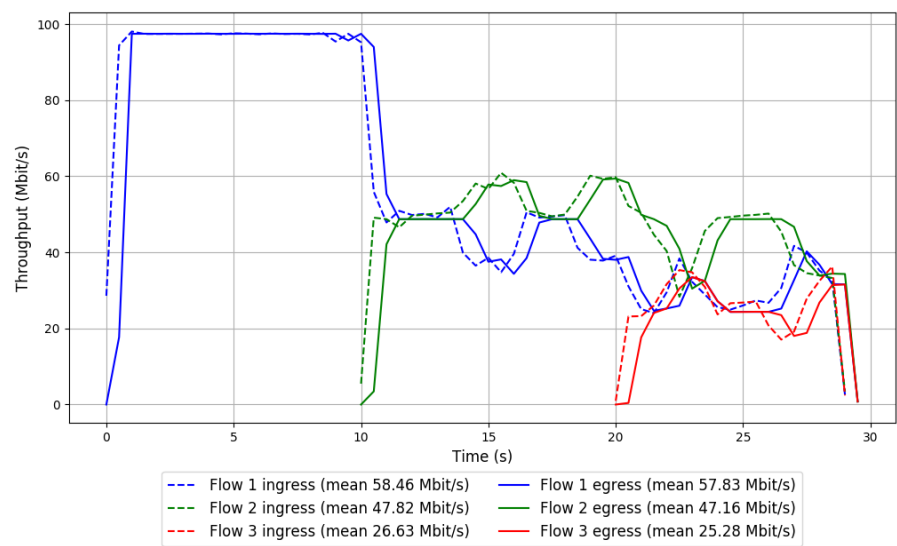Run 5: Report of Indigo-MusesC3 — Data Link

```
Run 1: Statistics of Indigo-MusesC5

Start at: 2019-02-20 10:12:00
End at: 2019-02-20 10:12:30
Local clock offset: -3.611 ms
Remote clock offset: -6.284 ms

# Below is generated by plot.py at 2019-02-20 12:11:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.70 Mbit/s
95th percentile per-packet one-way delay: 135.559 ms
Loss rate: 2.45%
-- Flow 1:
Average throughput: 56.45 Mbit/s
95th percentile per-packet one-way delay: 105.932 ms
Loss rate: 1.19%
-- Flow 2:
Average throughput: 38.94 Mbit/s
95th percentile per-packet one-way delay: 177.867 ms
Loss rate: 4.35%
-- Flow 3:
Average throughput: 46.54 Mbit/s
95th percentile per-packet one-way delay: 122.185 ms
Loss rate: 3.94%
```

Run 1: Report of Indigo-MusesC5 — Data Link

Flow 1 ingress (mean 57.00 Mbit/s)   Flow 1 egress (mean 56.45 Mbit/s)
Flow 2 ingress (mean 40.57 Mbit/s)   Flow 2 egress (mean 38.94 Mbit/s)
Flow 3 ingress (mean 48.09 Mbit/s)   Flow 3 egress (mean 46.54 Mbit/s)

Flow 1 (95th percentile 105.93 ms)   Flow 2 (95th percentile 177.87 ms)   Flow 3 (95th percentile 122.19 ms)
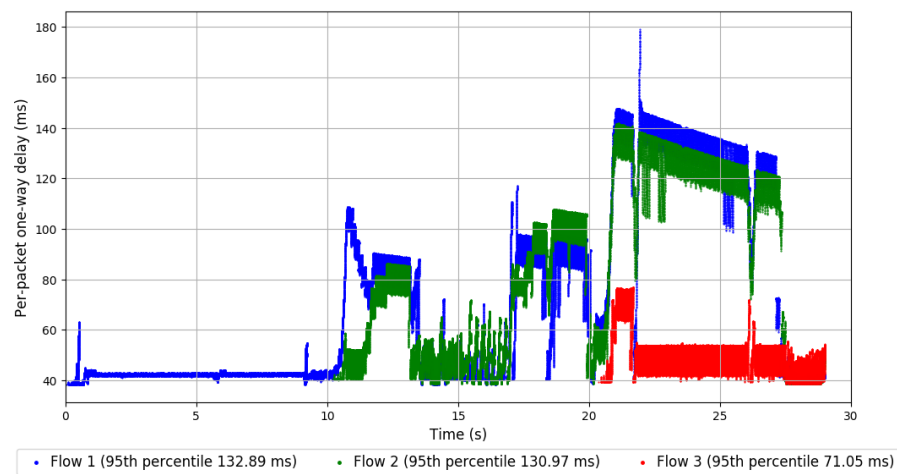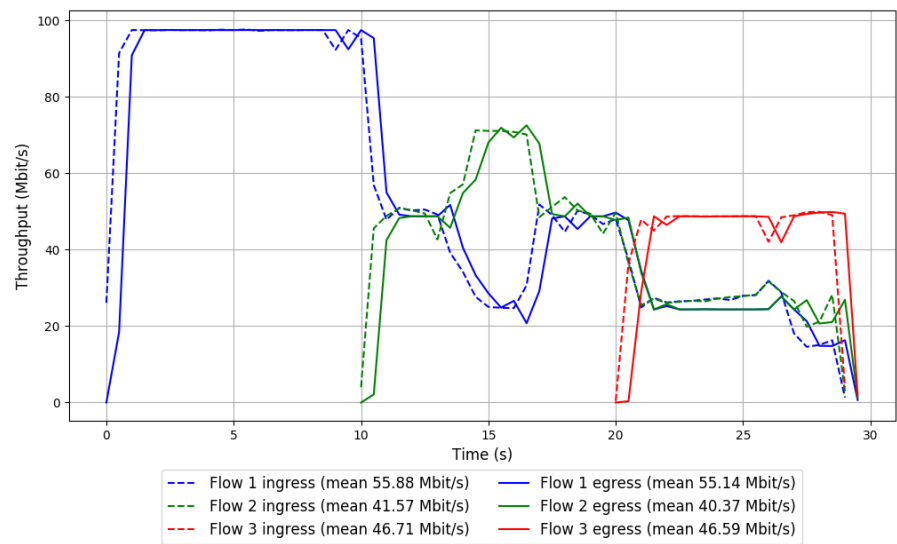
```
Run 2: Statistics of Indigo-MusesC5

Start at: 2019-02-20 10:37:43
End at: 2019-02-20 10:38:13
Local clock offset: -1.214 ms
Remote clock offset: -6.921 ms


# Below is generated by plot.py at 2019-02-20 12:11:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.94 Mbit/s
95th percentile per-packet one-way delay: 121.135 ms
Loss rate: 2.12%
-- Flow 1:
Average throughput: 61.33 Mbit/s
95th percentile per-packet one-way delay: 86.948 ms
Loss rate: 0.83%
-- Flow 2:
Average throughput: 41.92 Mbit/s
95th percentile per-packet one-way delay: 122.702 ms
Loss rate: 3.49%
-- Flow 3:
Average throughput: 24.81 Mbit/s
95th percentile per-packet one-way delay: 158.109 ms
Loss rate: 7.23%
```

Run 2: Report of Indigo-MusesC5 — Data Link

- - - Flow 1 ingress (mean 61.71 Mbit/s) —— Flow 1 egress (mean 61.33 Mbit/s)
- - - Flow 2 ingress (mean 43.29 Mbit/s) —— Flow 2 egress (mean 41.92 Mbit/s)
- - - Flow 3 ingress (mean 26.57 Mbit/s) —— Flow 3 egress (mean 24.81 Mbit/s)

• Flow 1 (95th percentile 86.95 ms)   • Flow 2 (95th percentile 122.70 ms)   • Flow 3 (95th percentile 158.11 ms)

```
Run 3: Statistics of Indigo-MusesC5

Start at: 2019-02-20 11:03:42
End at: 2019-02-20 11:04:12
Local clock offset: 1.155 ms
Remote clock offset: -5.898 ms

# Below is generated by plot.py at 2019-02-20 12:11:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.02 Mbit/s
95th percentile per-packet one-way delay: 141.261 ms
Loss rate: 1.79%
-- Flow 1:
Average throughput: 57.83 Mbit/s
95th percentile per-packet one-way delay: 161.506 ms
Loss rate: 1.28%
-- Flow 2:
Average throughput: 47.16 Mbit/s
95th percentile per-packet one-way delay: 87.485 ms
Loss rate: 1.71%
-- Flow 3:
Average throughput: 25.28 Mbit/s
95th percentile per-packet one-way delay: 186.330 ms
Loss rate: 5.78%
```

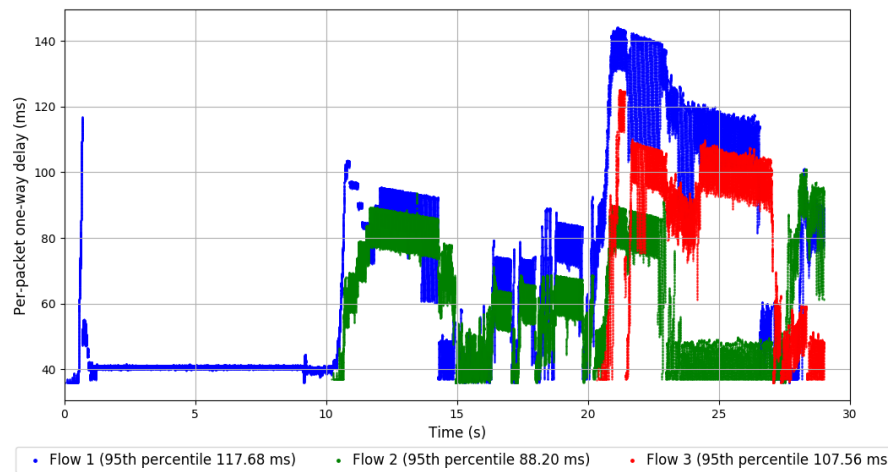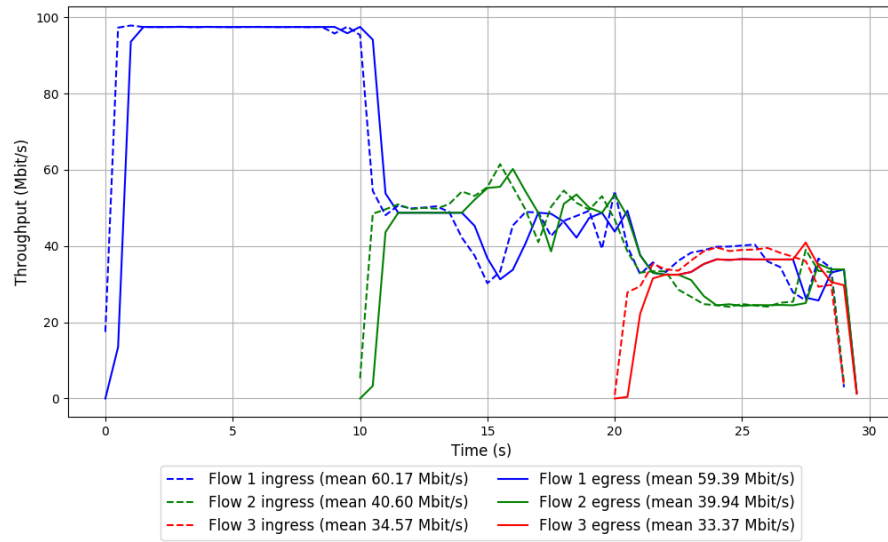Run 3: Report of Indigo-MusesC5 — Data Link

```
Run 4: Statistics of Indigo-MusesC5

Start at: 2019-02-20 11:30:15
End at: 2019-02-20 11:30:45
Local clock offset: 1.104 ms
Remote clock offset: -5.677 ms


# Below is generated by plot.py at 2019-02-20 12:11:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.25 Mbit/s
95th percentile per-packet one-way delay: 130.187 ms
Loss rate: 1.90%
-- Flow 1:
Average throughput: 55.14 Mbit/s
95th percentile per-packet one-way delay: 132.889 ms
Loss rate: 1.54%
-- Flow 2:
Average throughput: 40.37 Mbit/s
95th percentile per-packet one-way delay: 130.967 ms
Loss rate: 3.22%
-- Flow 3:
Average throughput: 46.59 Mbit/s
95th percentile per-packet one-way delay: 71.048 ms
Loss rate: 0.83%
```

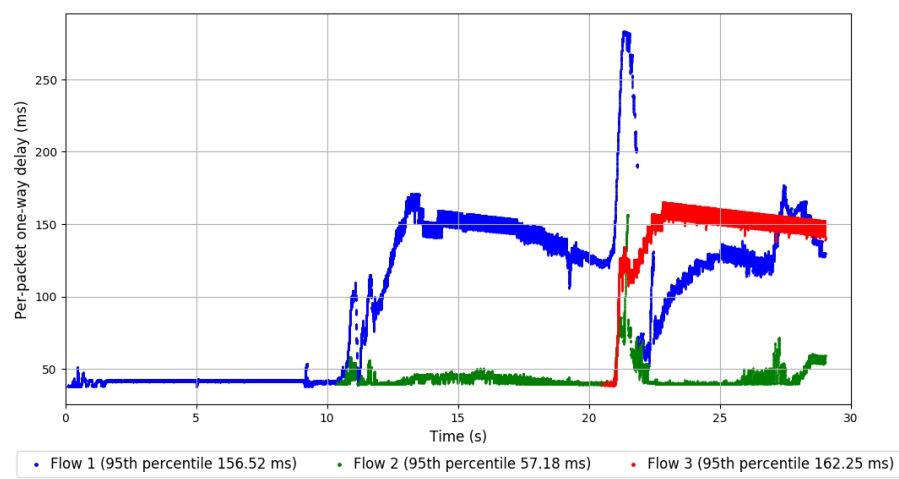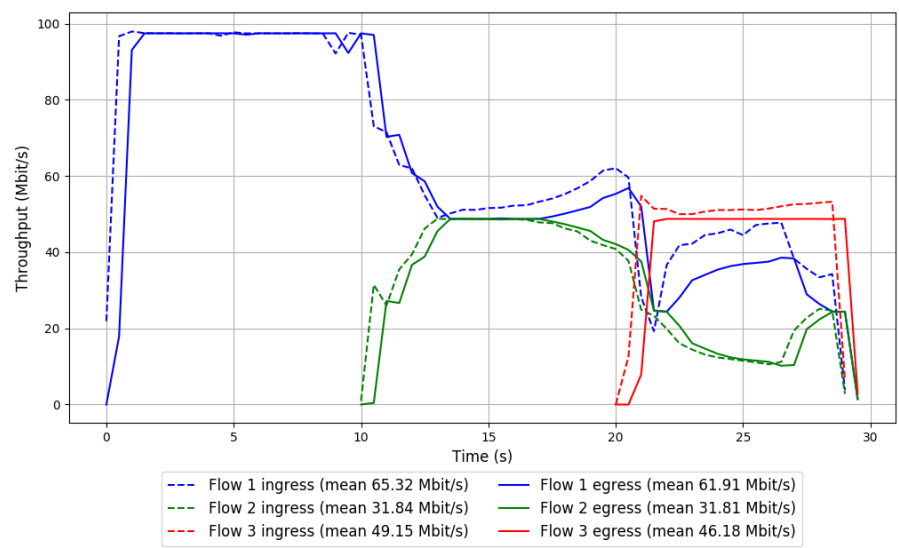Run 4: Report of Indigo-MusesC5 — Data Link

- - - Flow 1 ingress (mean 55.88 Mbit/s)   —— Flow 1 egress (mean 55.14 Mbit/s)
- - - Flow 2 ingress (mean 41.57 Mbit/s)   —— Flow 2 egress (mean 40.37 Mbit/s)
- - - Flow 3 ingress (mean 46.71 Mbit/s)   —— Flow 3 egress (mean 46.59 Mbit/s)

• Flow 1 (95th percentile 132.89 ms)   • Flow 2 (95th percentile 130.97 ms)   • Flow 3 (95th percentile 71.05 ms)
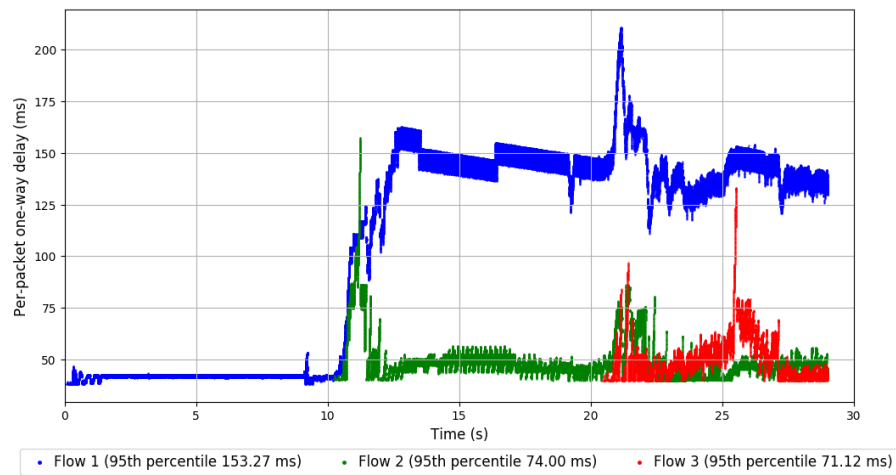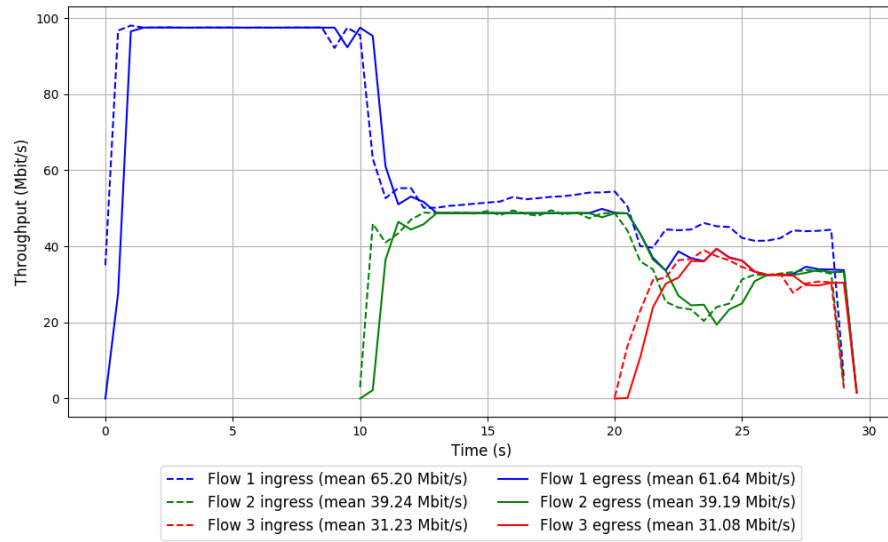
```
Run 5: Statistics of Indigo-MusesC5

Start at: 2019-02-20 11:56:00
End at: 2019-02-20 11:56:30
Local clock offset: -3.369 ms
Remote clock offset: -4.212 ms


# Below is generated by plot.py at 2019-02-20 12:11:47
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.34 Mbit/s
95th percentile per-packet one-way delay: 113.515 ms
Loss rate: 1.87%
-- Flow 1:
Average throughput: 59.39 Mbit/s
95th percentile per-packet one-way delay: 117.676 ms
Loss rate: 1.48%
-- Flow 2:
Average throughput: 39.94 Mbit/s
95th percentile per-packet one-way delay: 88.198 ms
Loss rate: 1.84%
-- Flow 3:
Average throughput: 33.37 Mbit/s
95th percentile per-packet one-way delay: 107.557 ms
Loss rate: 4.18%
```

Run 5: Report of Indigo-MusesC5 — Data Link

Flow 1 ingress (mean 60.17 Mbit/s)   Flow 1 egress (mean 59.39 Mbit/s)
Flow 2 ingress (mean 40.60 Mbit/s)   Flow 2 egress (mean 39.94 Mbit/s)
Flow 3 ingress (mean 34.57 Mbit/s)   Flow 3 egress (mean 33.37 Mbit/s)

Flow 1 (95th percentile 117.68 ms)   Flow 2 (95th percentile 88.20 ms)   Flow 3 (95th percentile 107.56 ms)
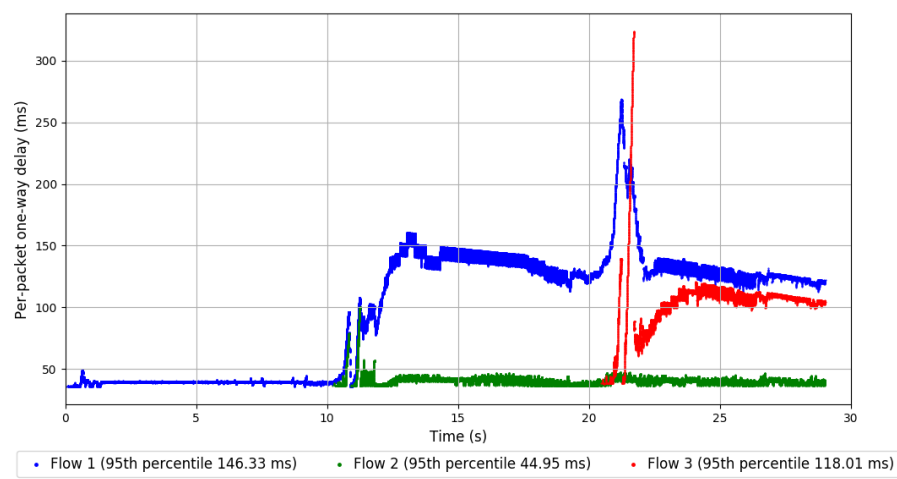
```
Run 1: Statistics of Indigo-MusesD

Start at: 2019-02-20 09:56:14
End at: 2019-02-20 09:56:44
Local clock offset: -3.004 ms
Remote clock offset: -8.977 ms


# Below is generated by plot.py at 2019-02-20 12:11:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.05 Mbit/s
95th percentile per-packet one-way delay: 158.432 ms
Loss rate: 4.59%
-- Flow 1:
Average throughput: 61.91 Mbit/s
95th percentile per-packet one-way delay: 156.520 ms
Loss rate: 5.43%
-- Flow 2:
Average throughput: 31.81 Mbit/s
95th percentile per-packet one-way delay: 57.176 ms
Loss rate: 0.43%
-- Flow 3:
Average throughput: 46.18 Mbit/s
95th percentile per-packet one-way delay: 162.247 ms
Loss rate: 6.71%
```

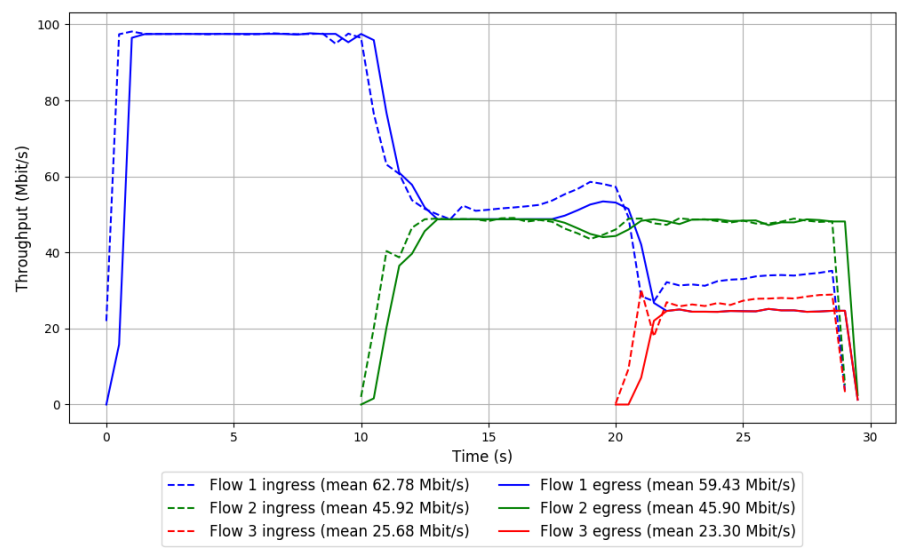Run 1: Report of Indigo-MusesD — Data Link

Flow 1 ingress (mean 65.32 Mbit/s)   Flow 1 egress (mean 61.91 Mbit/s)
Flow 2 ingress (mean 31.84 Mbit/s)   Flow 2 egress (mean 31.81 Mbit/s)
Flow 3 ingress (mean 49.15 Mbit/s)   Flow 3 egress (mean 46.18 Mbit/s)

Flow 1 (95th percentile 156.52 ms)   Flow 2 (95th percentile 57.18 ms)   Flow 3 (95th percentile 162.25 ms)
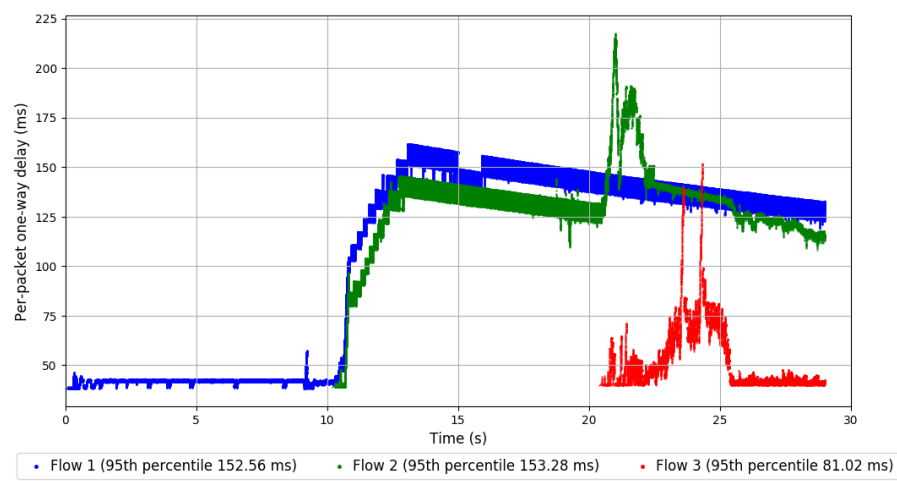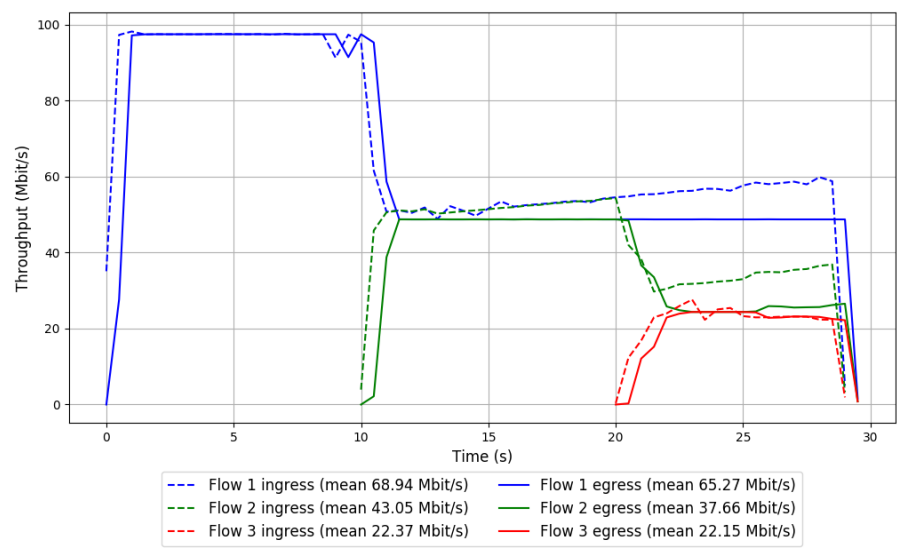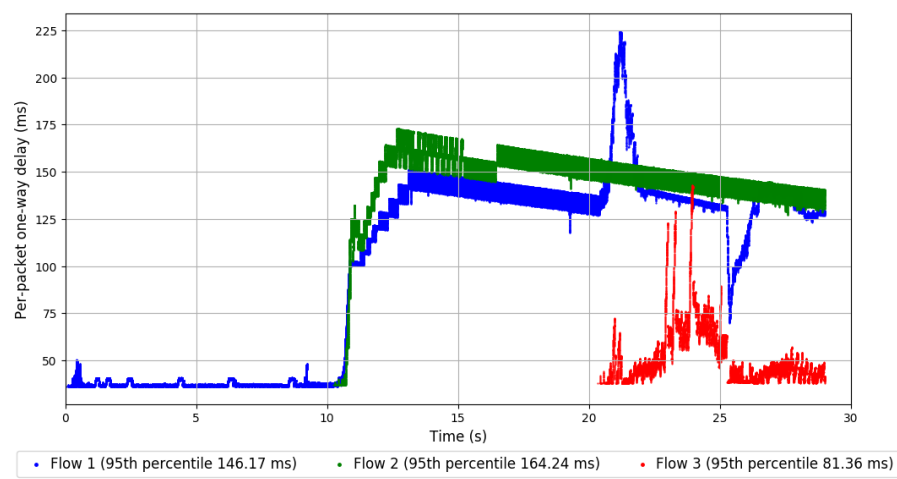
```
Run 2: Statistics of Indigo-MusesD

Start at: 2019-02-20 10:21:49
End at: 2019-02-20 10:22:19
Local clock offset: -3.945 ms
Remote clock offset: -7.916 ms


# Below is generated by plot.py at 2019-02-20 12:11:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.28 Mbit/s
95th percentile per-packet one-way delay: 151.076 ms
Loss rate: 3.93%
-- Flow 1:
Average throughput: 61.64 Mbit/s
95th percentile per-packet one-way delay: 153.270 ms
Loss rate: 5.68%
-- Flow 2:
Average throughput: 39.19 Mbit/s
95th percentile per-packet one-way delay: 73.998 ms
Loss rate: 0.46%
-- Flow 3:
Average throughput: 31.08 Mbit/s
95th percentile per-packet one-way delay: 71.123 ms
Loss rate: 1.24%
```
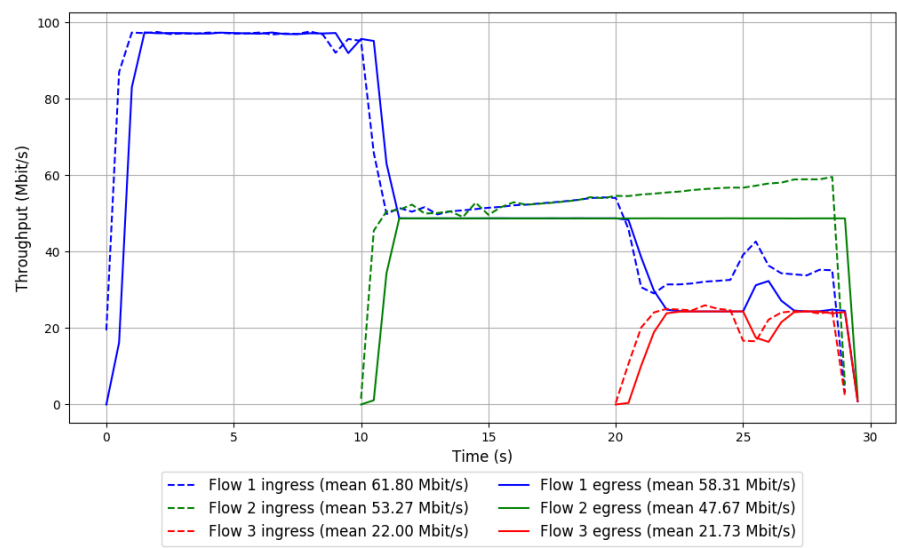
Run 2: Report of Indigo-MusesD — Data Link

Flow 1 ingress (mean 65.20 Mbit/s) --- Flow 1 egress (mean 61.64 Mbit/s)
Flow 2 ingress (mean 39.24 Mbit/s) --- Flow 2 egress (mean 39.19 Mbit/s)
Flow 3 ingress (mean 31.23 Mbit/s) --- Flow 3 egress (mean 31.08 Mbit/s)

Flow 1 (95th percentile 153.27 ms) · Flow 2 (95th percentile 74.00 ms) · Flow 3 (95th percentile 71.12 ms)

```
Run 3: Statistics of Indigo-MusesD

Start at: 2019-02-20 10:47:47
End at: 2019-02-20 10:48:17
Local clock offset: 0.461 ms
Remote clock offset: -4.297 ms


# Below is generated by plot.py at 2019-02-20 12:12:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.11 Mbit/s
95th percentile per-packet one-way delay: 143.405 ms
Loss rate: 4.34%
-- Flow 1:
Average throughput: 59.43 Mbit/s
95th percentile per-packet one-way delay: 146.332 ms
Loss rate: 5.54%
-- Flow 2:
Average throughput: 45.90 Mbit/s
95th percentile per-packet one-way delay: 44.951 ms
Loss rate: 0.37%
-- Flow 3:
Average throughput: 23.30 Mbit/s
95th percentile per-packet one-way delay: 118.007 ms
Loss rate: 9.95%
```

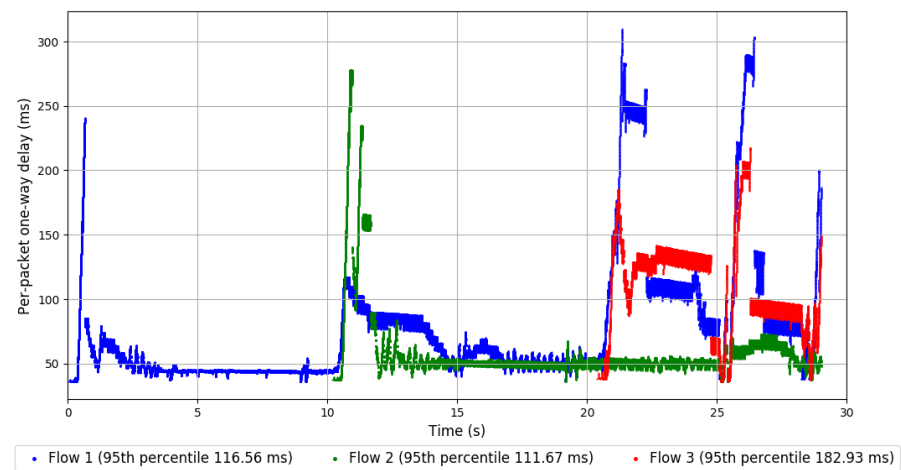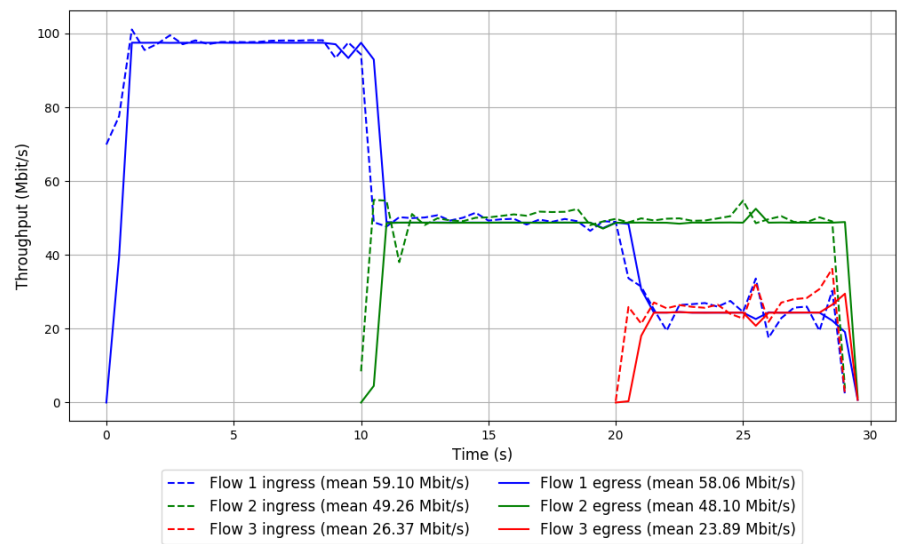Run 3: Report of Indigo-MusesD — Data Link

```
Run 4: Statistics of Indigo-MusesD

Start at: 2019-02-20 11:13:49
End at: 2019-02-20 11:14:19
Local clock offset: 0.952 ms
Remote clock offset: -5.991 ms


# Below is generated by plot.py at 2019-02-20 12:12:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.27 Mbit/s
95th percentile per-packet one-way delay: 152.187 ms
Loss rate: 7.25%
-- Flow 1:
Average throughput: 65.27 Mbit/s
95th percentile per-packet one-way delay: 152.565 ms
Loss rate: 5.53%
-- Flow 2:
Average throughput: 37.66 Mbit/s
95th percentile per-packet one-way delay: 153.280 ms
Loss rate: 12.83%
-- Flow 3:
Average throughput: 22.15 Mbit/s
95th percentile per-packet one-way delay: 81.021 ms
Loss rate: 1.73%
```

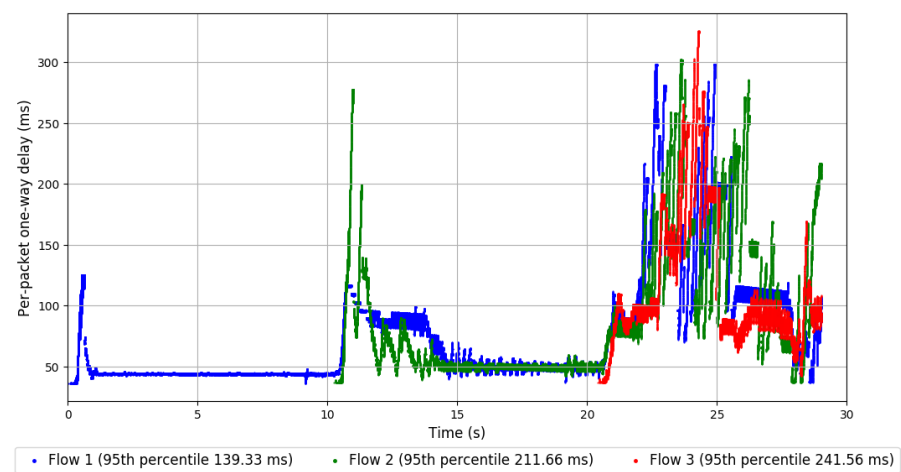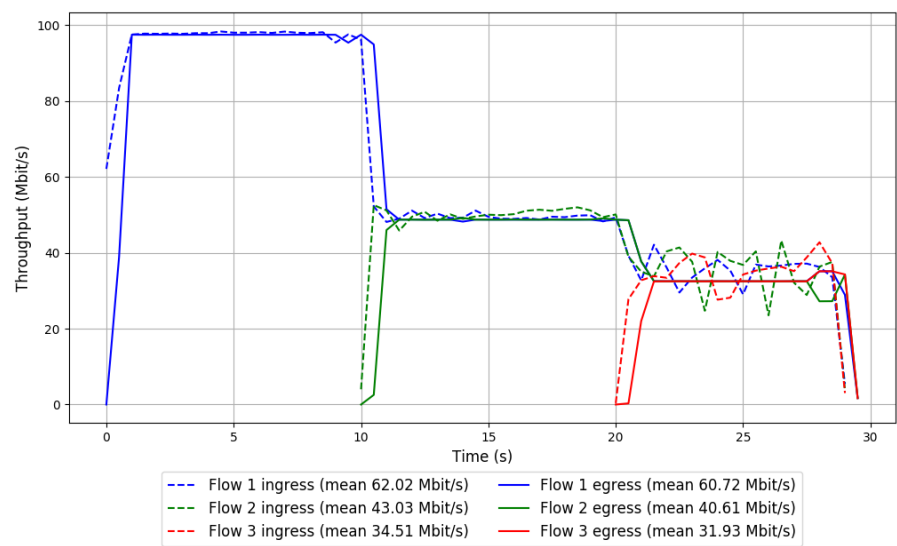Run 4: Report of Indigo-MusesD — Data Link

- - - Flow 1 ingress (mean 68.94 Mbit/s)   —— Flow 1 egress (mean 65.27 Mbit/s)
- - - Flow 2 ingress (mean 43.05 Mbit/s)   —— Flow 2 egress (mean 37.66 Mbit/s)
- - - Flow 3 ingress (mean 22.37 Mbit/s)   —— Flow 3 egress (mean 22.15 Mbit/s)

- Flow 1 (95th percentile 152.56 ms)   • Flow 2 (95th percentile 153.28 ms)   • Flow 3 (95th percentile 81.02 ms)

```
Run 5: Statistics of Indigo-MusesD

Start at: 2019-02-20 11:40:05
End at: 2019-02-20 11:40:35
Local clock offset: -1.877 ms
Remote clock offset: -3.915 ms


# Below is generated by plot.py at 2019-02-20 12:12:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.71 Mbit/s
95th percentile per-packet one-way delay: 160.250 ms
Loss rate: 7.27%
-- Flow 1:
Average throughput: 58.31 Mbit/s
95th percentile per-packet one-way delay: 146.173 ms
Loss rate: 5.86%
-- Flow 2:
Average throughput: 47.67 Mbit/s
95th percentile per-packet one-way delay: 164.242 ms
Loss rate: 10.80%
-- Flow 3:
Average throughput: 21.73 Mbit/s
95th percentile per-packet one-way delay: 81.362 ms
Loss rate: 1.98%
```

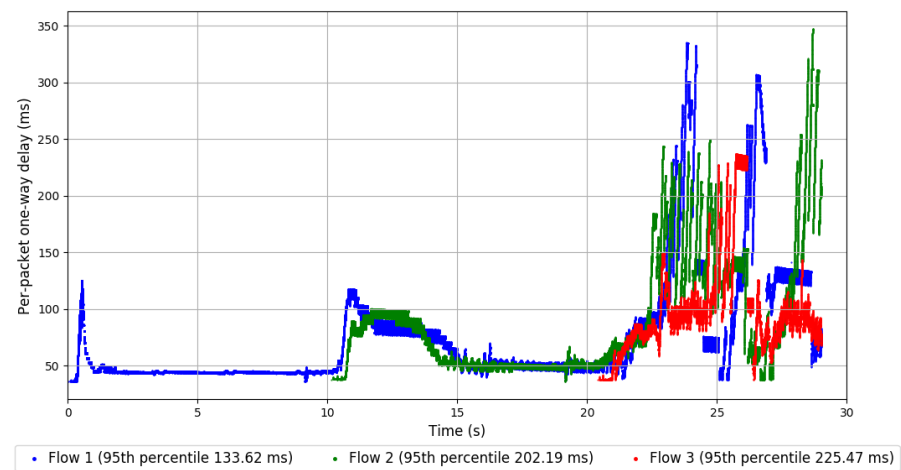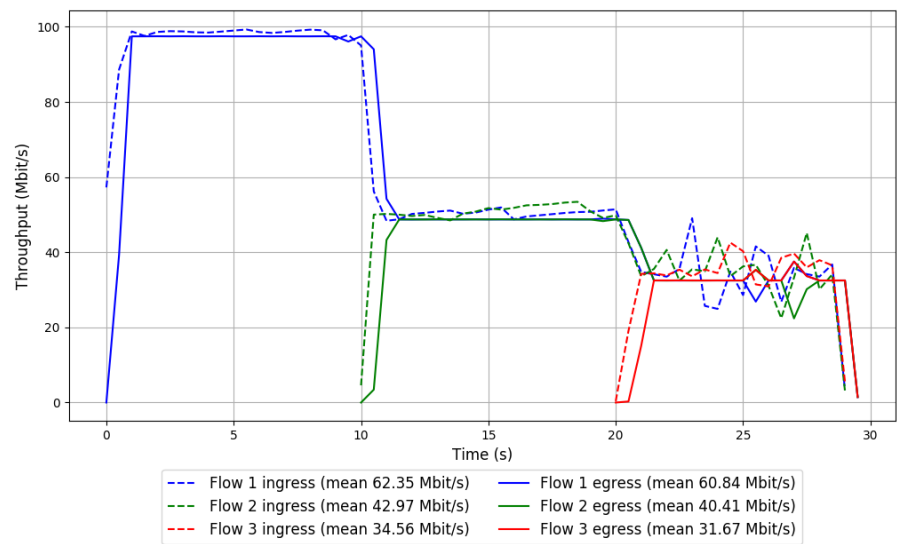Run 5: Report of Indigo-MusesD — Data Link

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```
Run 1: Statistics of Indigo-MusesT

Start at: 2019-02-20 09:59:53
End at: 2019-02-20 10:00:23
Local clock offset: -3.141 ms
Remote clock offset: -7.106 ms


# Below is generated by plot.py at 2019-02-20 12:12:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.42 Mbit/s
95th percentile per-packet one-way delay: 137.012 ms
Loss rate: 2.83%
-- Flow 1:
Average throughput: 58.06 Mbit/s
95th percentile per-packet one-way delay: 116.557 ms
Loss rate: 1.95%
-- Flow 2:
Average throughput: 48.10 Mbit/s
95th percentile per-packet one-way delay: 111.674 ms
Loss rate: 2.71%
-- Flow 3:
Average throughput: 23.89 Mbit/s
95th percentile per-packet one-way delay: 182.929 ms
Loss rate: 9.99%
```

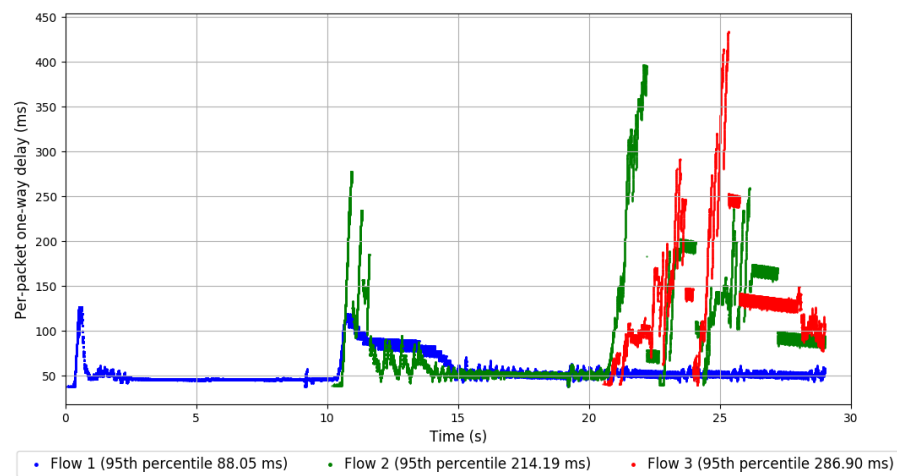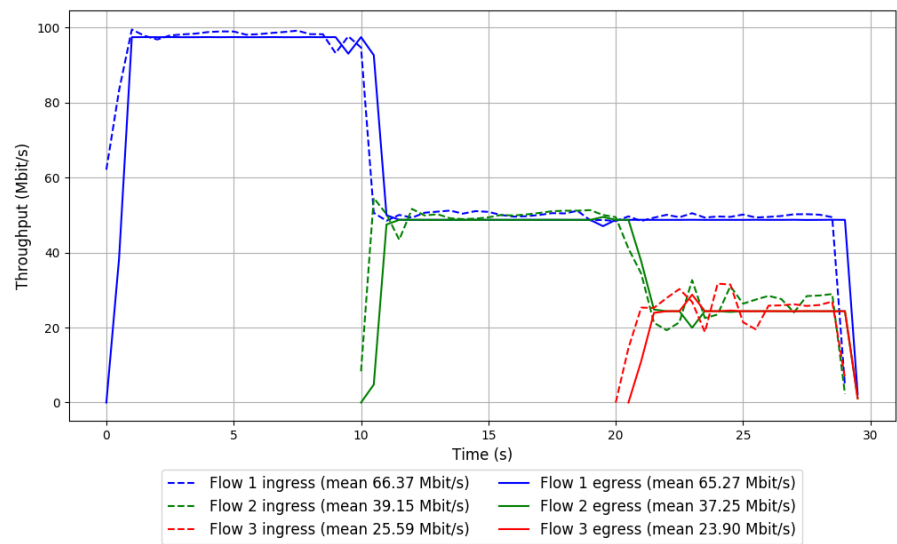Run 1: Report of Indigo-MusesT — Data Link

```
Run 2: Statistics of Indigo-MusesT

Start at: 2019-02-20 10:25:28
End at: 2019-02-20 10:25:58
Local clock offset: -4.063 ms
Remote clock offset: -5.712 ms


# Below is generated by plot.py at 2019-02-20 12:12:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.53 Mbit/s
95th percentile per-packet one-way delay: 191.064 ms
Loss rate: 3.88%
-- Flow 1:
Average throughput: 60.72 Mbit/s
95th percentile per-packet one-way delay: 139.328 ms
Loss rate: 2.29%
-- Flow 2:
Average throughput: 40.61 Mbit/s
95th percentile per-packet one-way delay: 211.659 ms
Loss rate: 5.91%
-- Flow 3:
Average throughput: 31.93 Mbit/s
95th percentile per-packet one-way delay: 241.557 ms
Loss rate: 7.98%
```
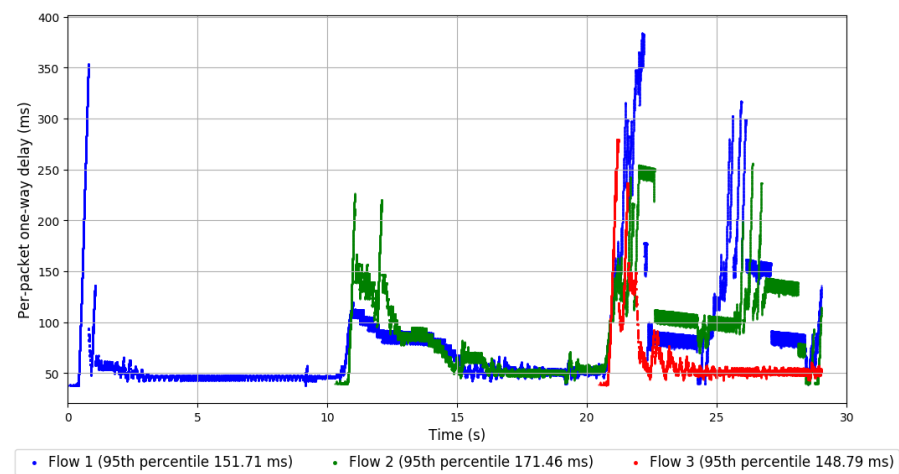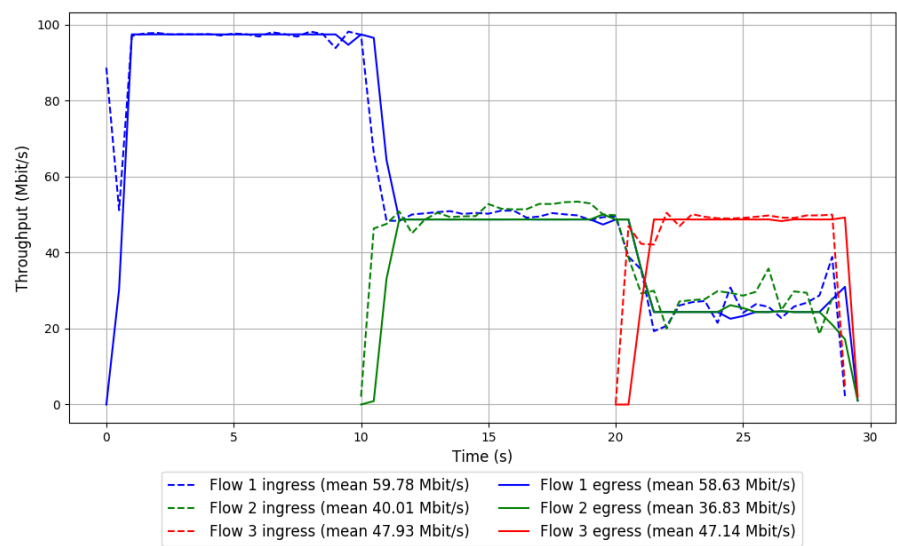
Run 2: Report of Indigo-MusesT — Data Link

Flow 1 ingress (mean 62.02 Mbit/s) --- Flow 1 egress (mean 60.72 Mbit/s)
Flow 2 ingress (mean 43.03 Mbit/s) --- Flow 2 egress (mean 40.61 Mbit/s)
Flow 3 ingress (mean 34.51 Mbit/s) --- Flow 3 egress (mean 31.93 Mbit/s)

Flow 1 (95th percentile 139.33 ms) • Flow 2 (95th percentile 211.66 ms) • Flow 3 (95th percentile 241.56 ms)

```
Run 3: Statistics of Indigo-MusesT

Start at: 2019-02-20 10:51:26
End at: 2019-02-20 10:51:56
Local clock offset: 0.838 ms
Remote clock offset: -4.366 ms


# Below is generated by plot.py at 2019-02-20 12:12:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.55 Mbit/s
95th percentile per-packet one-way delay: 179.112 ms
Loss rate: 4.31%
-- Flow 1:
Average throughput: 60.84 Mbit/s
95th percentile per-packet one-way delay: 133.621 ms
Loss rate: 2.63%
-- Flow 2:
Average throughput: 40.41 Mbit/s
95th percentile per-packet one-way delay: 202.187 ms
Loss rate: 6.28%
-- Flow 3:
Average throughput: 31.67 Mbit/s
95th percentile per-packet one-way delay: 225.465 ms
Loss rate: 9.05%
```

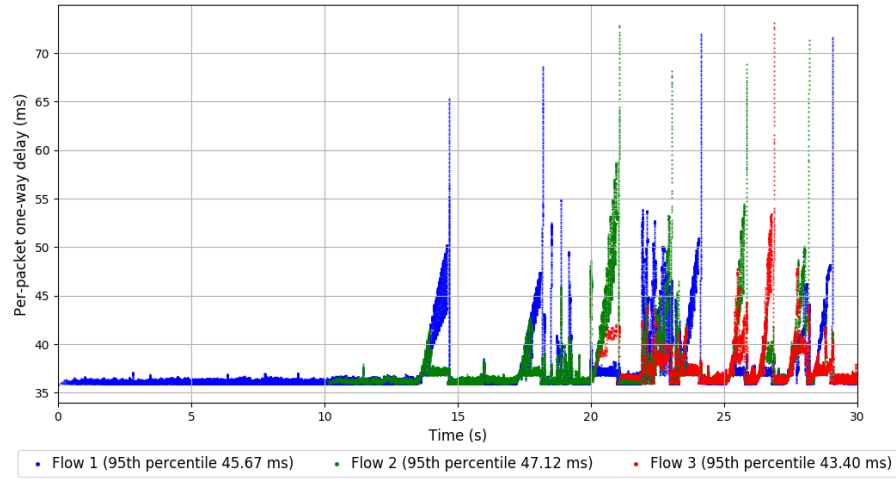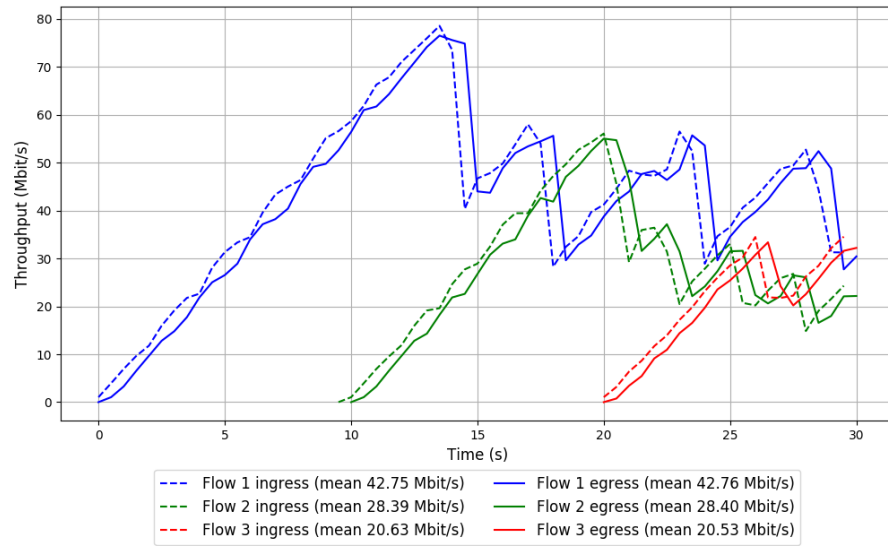Run 3: Report of Indigo-MusesT — Data Link

```
Run 4: Statistics of Indigo-MusesT

Start at: 2019-02-20 11:17:46
End at: 2019-02-20 11:18:16
Local clock offset: 0.985 ms
Remote clock offset: -5.896 ms


# Below is generated by plot.py at 2019-02-20 12:13:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.48 Mbit/s
95th percentile per-packet one-way delay: 162.866 ms
Loss rate: 3.09%
-- Flow 1:
Average throughput: 65.27 Mbit/s
95th percentile per-packet one-way delay: 88.048 ms
Loss rate: 1.88%
-- Flow 2:
Average throughput: 37.25 Mbit/s
95th percentile per-packet one-way delay: 214.190 ms
Loss rate: 5.12%
-- Flow 3:
Average throughput: 23.90 Mbit/s
95th percentile per-packet one-way delay: 286.898 ms
Loss rate: 6.92%
```
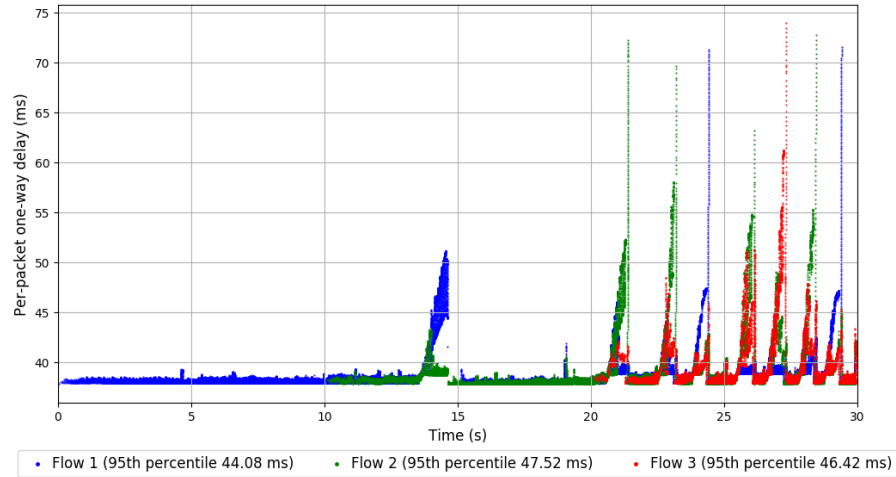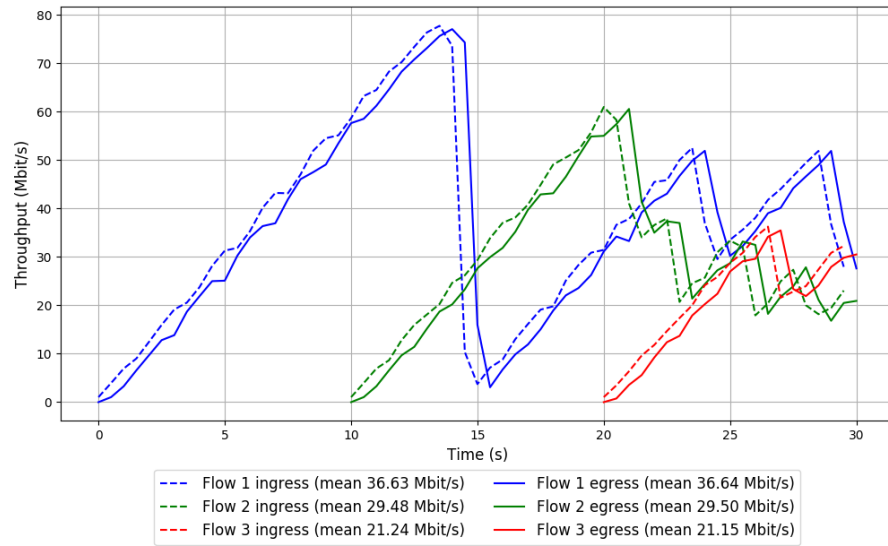
Run 4: Report of Indigo-MusesT — Data Link

Flow 1 ingress (mean 66.37 Mbit/s)   Flow 1 egress (mean 65.27 Mbit/s)
Flow 2 ingress (mean 39.15 Mbit/s)   Flow 2 egress (mean 37.25 Mbit/s)
Flow 3 ingress (mean 25.59 Mbit/s)   Flow 3 egress (mean 23.90 Mbit/s)

Flow 1 (95th percentile 88.05 ms)   Flow 2 (95th percentile 214.19 ms)   Flow 3 (95th percentile 286.90 ms)

```
Run 5: Statistics of Indigo-MusesT

Start at: 2019-02-20 11:43:44
End at: 2019-02-20 11:44:14
Local clock offset: -2.419 ms
Remote clock offset: -5.756 ms


# Below is generated by plot.py at 2019-02-20 12:13:07
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.38 Mbit/s
95th percentile per-packet one-way delay: 154.827 ms
Loss rate: 3.62%
-- Flow 1:
Average throughput: 58.63 Mbit/s
95th percentile per-packet one-way delay: 151.706 ms
Loss rate: 2.12%
-- Flow 2:
Average throughput: 36.83 Mbit/s
95th percentile per-packet one-way delay: 171.457 ms
Loss rate: 7.77%
-- Flow 3:
Average throughput: 47.14 Mbit/s
95th percentile per-packet one-way delay: 148.794 ms
Loss rate: 2.39%
```

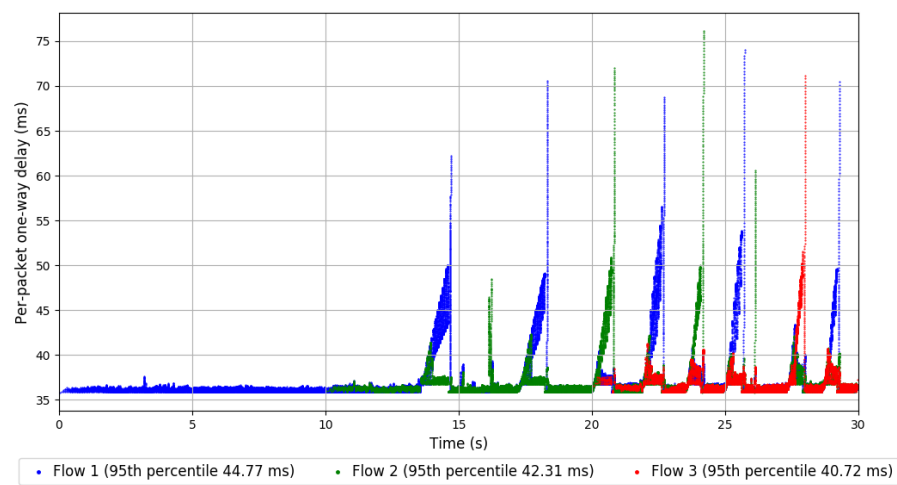Run 5: Report of Indigo-MusesT — Data Link

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```
Run 1: Statistics of LEDBAT

Start at: 2019-02-20 09:58:40
End at: 2019-02-20 09:59:10
Local clock offset: -3.104 ms
Remote clock offset: -6.991 ms


# Below is generated by plot.py at 2019-02-20 12:13:07
# Datalink statistics
-- Total of 3 flows:
Average throughput: 68.46 Mbit/s
95th percentile per-packet one-way delay: 45.766 ms
Loss rate: 0.31%
-- Flow 1:
Average throughput: 42.76 Mbit/s
95th percentile per-packet one-way delay: 45.670 ms
Loss rate: 0.18%
-- Flow 2:
Average throughput: 28.40 Mbit/s
95th percentile per-packet one-way delay: 47.118 ms
Loss rate: 0.30%
-- Flow 3:
Average throughput: 20.53 Mbit/s
95th percentile per-packet one-way delay: 43.395 ms
Loss rate: 1.15%
```
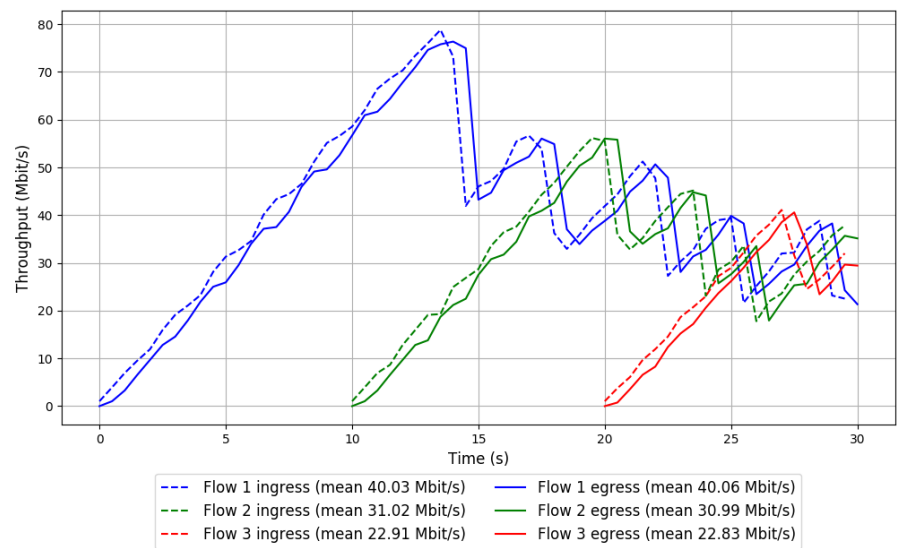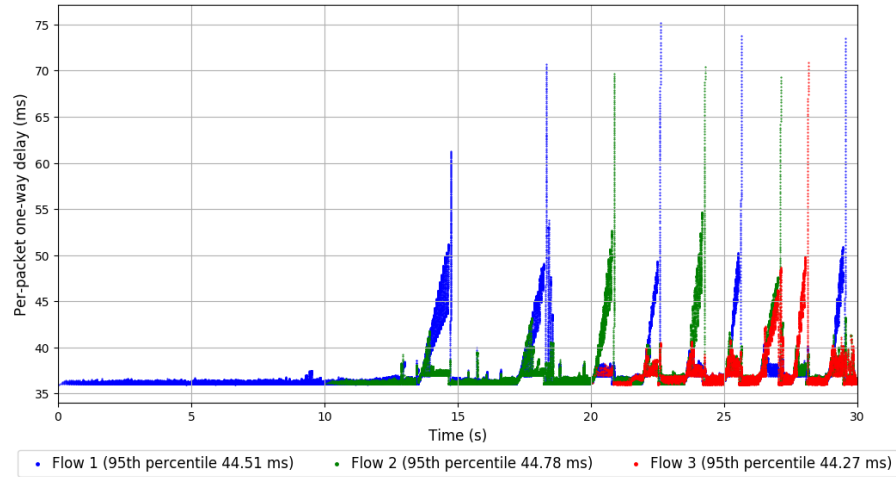
Run 1: Report of LEDBAT — Data Link

```
Run 2: Statistics of LEDBAT

Start at: 2019-02-20 10:24:15
End at: 2019-02-20 10:24:45
Local clock offset: -4.016 ms
Remote clock offset: -7.604 ms


# Below is generated by plot.py at 2019-02-20 12:13:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 63.27 Mbit/s
95th percentile per-packet one-way delay: 45.025 ms
Loss rate: 0.32%
-- Flow 1:
Average throughput: 36.64 Mbit/s
95th percentile per-packet one-way delay: 44.076 ms
Loss rate: 0.20%
-- Flow 2:
Average throughput: 29.50 Mbit/s
95th percentile per-packet one-way delay: 47.516 ms
Loss rate: 0.28%
-- Flow 3:
Average throughput: 21.15 Mbit/s
95th percentile per-packet one-way delay: 46.423 ms
Loss rate: 1.07%
```
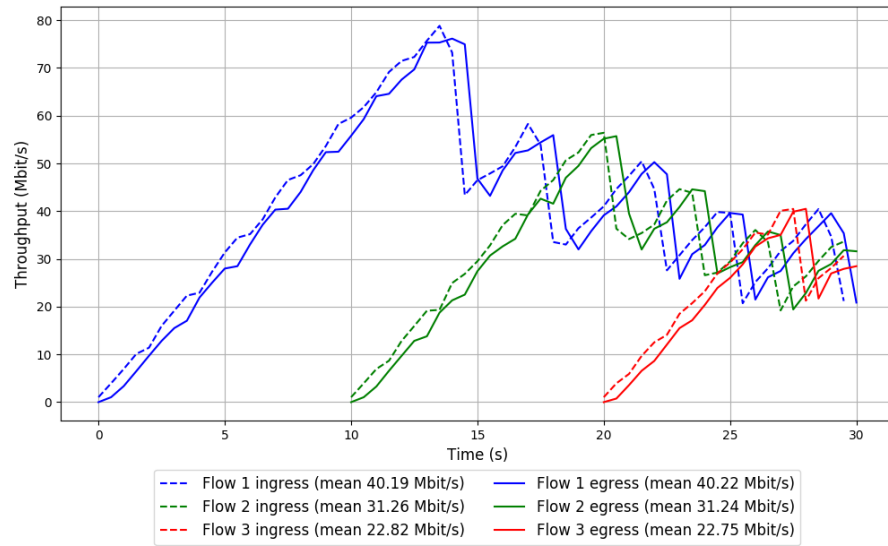
Run 2: Report of LEDBAT — Data Link

```
Run 3: Statistics of LEDBAT

Start at: 2019-02-20 10:50:13
End at: 2019-02-20 10:50:43
Local clock offset: 0.714 ms
Remote clock offset: -4.261 ms


# Below is generated by plot.py at 2019-02-20 12:13:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 68.22 Mbit/s
95th percentile per-packet one-way delay: 43.771 ms
Loss rate: 0.32%
-- Flow 1:
Average throughput: 40.06 Mbit/s
95th percentile per-packet one-way delay: 44.768 ms
Loss rate: 0.14%
-- Flow 2:
Average throughput: 30.99 Mbit/s
95th percentile per-packet one-way delay: 42.309 ms
Loss rate: 0.42%
-- Flow 3:
Average throughput: 22.83 Mbit/s
95th percentile per-packet one-way delay: 40.724 ms
Loss rate: 0.96%
```
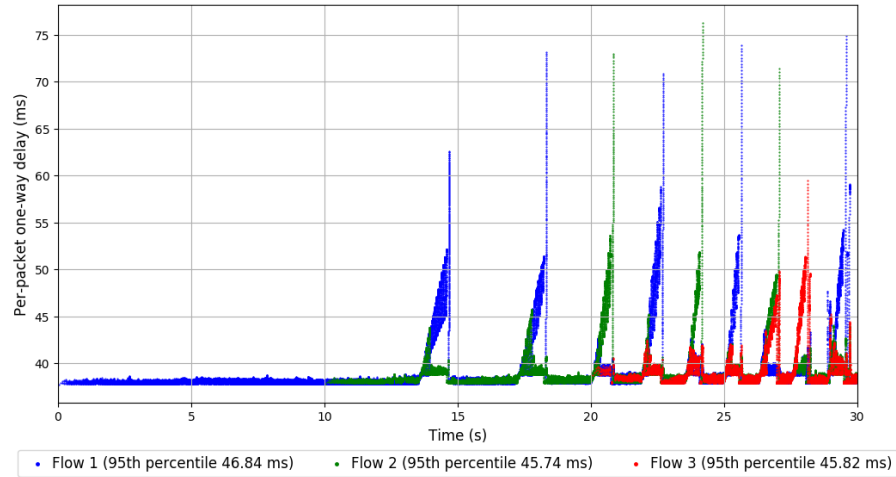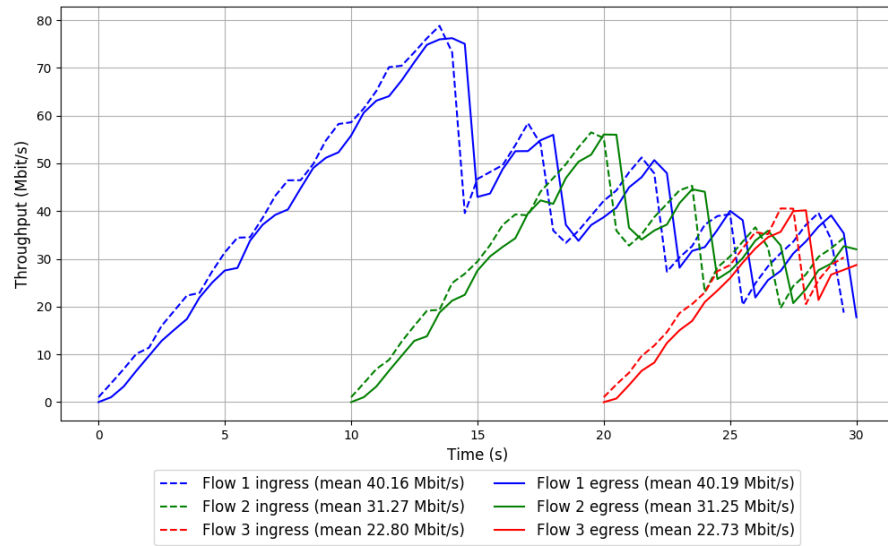
Run 3: Report of LEDBAT — Data Link

Flow 1 ingress (mean 40.03 Mbit/s)   Flow 1 egress (mean 40.06 Mbit/s)
Flow 2 ingress (mean 31.02 Mbit/s)   Flow 2 egress (mean 30.99 Mbit/s)
Flow 3 ingress (mean 22.91 Mbit/s)   Flow 3 egress (mean 22.83 Mbit/s)

Flow 1 (95th percentile 44.77 ms)   Flow 2 (95th percentile 42.31 ms)   Flow 3 (95th percentile 40.72 ms)

```
Run 4: Statistics of LEDBAT

Start at: 2019-02-20 11:16:30
End at: 2019-02-20 11:17:00
Local clock offset: 0.964 ms
Remote clock offset: -3.851 ms


# Below is generated by plot.py at 2019-02-20 12:13:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 68.54 Mbit/s
95th percentile per-packet one-way delay: 44.566 ms
Loss rate: 0.30%
-- Flow 1:
Average throughput: 40.22 Mbit/s
95th percentile per-packet one-way delay: 44.511 ms
Loss rate: 0.14%
-- Flow 2:
Average throughput: 31.24 Mbit/s
95th percentile per-packet one-way delay: 44.778 ms
Loss rate: 0.38%
-- Flow 3:
Average throughput: 22.75 Mbit/s
95th percentile per-packet one-way delay: 44.275 ms
Loss rate: 0.94%
```
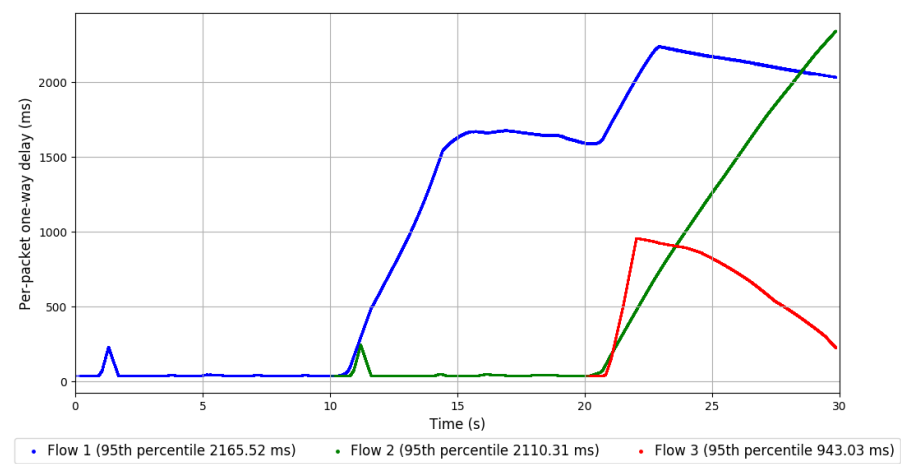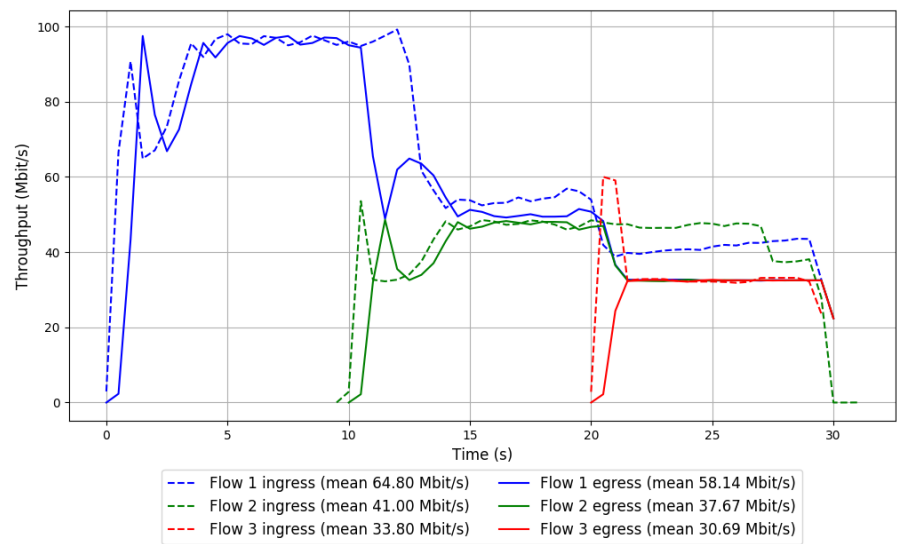
Run 4: Report of LEDBAT — Data Link

```
Run 5: Statistics of LEDBAT

Start at: 2019-02-20 11:42:31
End at: 2019-02-20 11:43:01
Local clock offset: -2.264 ms
Remote clock offset: -5.667 ms


# Below is generated by plot.py at 2019-02-20 12:13:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 68.51 Mbit/s
95th percentile per-packet one-way delay: 46.338 ms
Loss rate: 0.30%
-- Flow 1:
Average throughput: 40.19 Mbit/s
95th percentile per-packet one-way delay: 46.841 ms
Loss rate: 0.13%
-- Flow 2:
Average throughput: 31.25 Mbit/s
95th percentile per-packet one-way delay: 45.744 ms
Loss rate: 0.38%
-- Flow 3:
Average throughput: 22.73 Mbit/s
95th percentile per-packet one-way delay: 45.824 ms
Loss rate: 0.95%
```

Run 5: Report of LEDBAT — Data Link
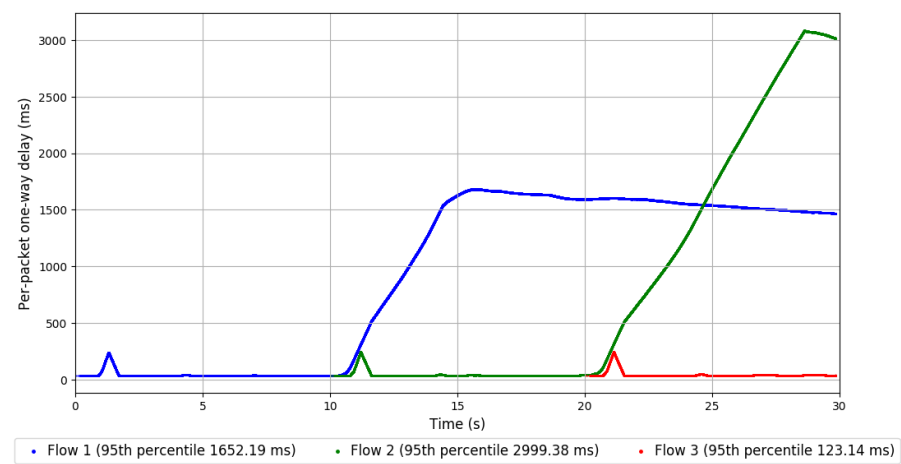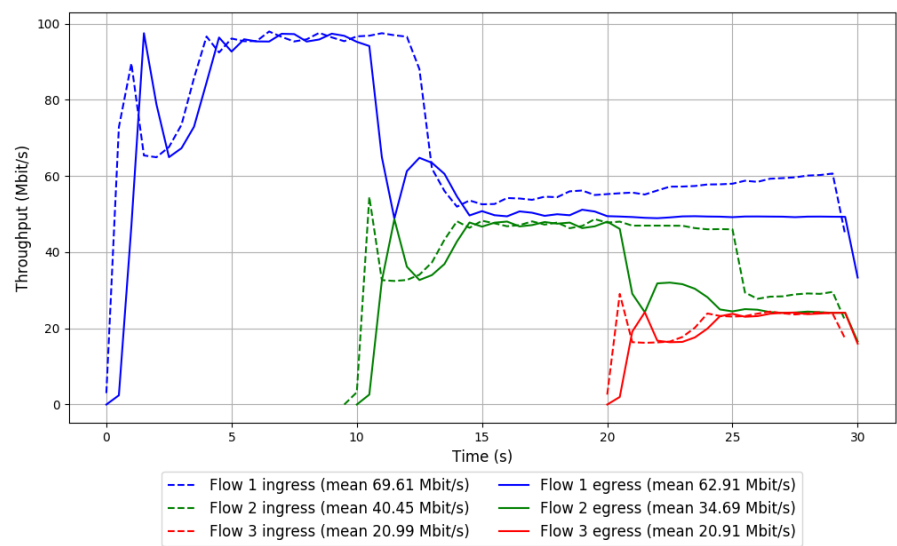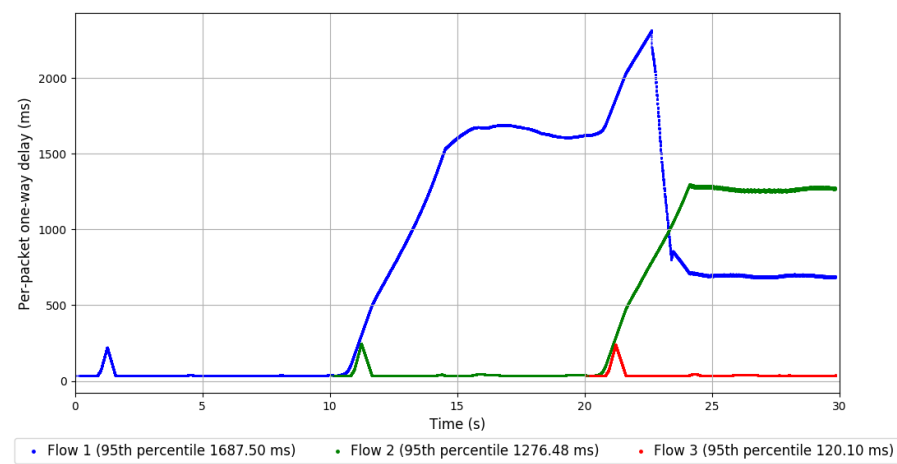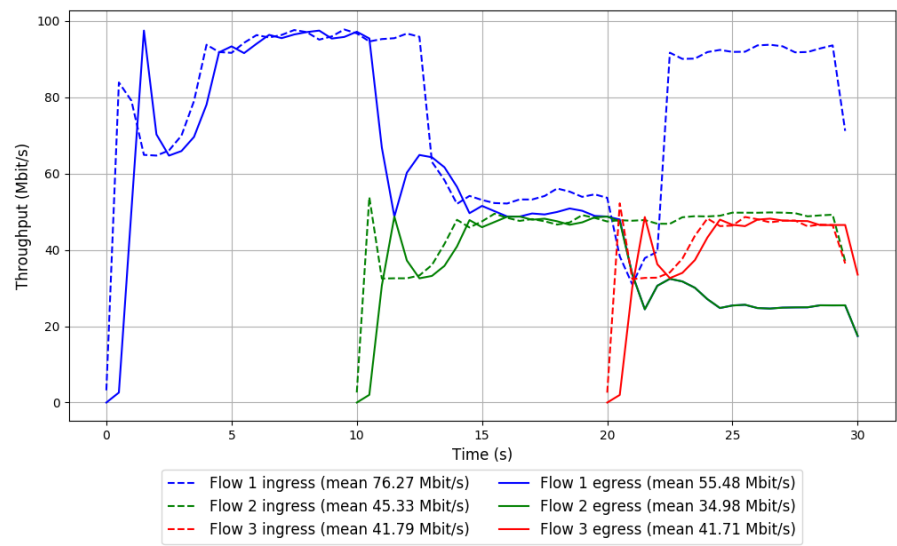
Run 5: Report of LEDBAT — Data Link

```
Run 1: Statistics of PCC-Allegro

Start at: 2019-02-20 10:02:14
End at: 2019-02-20 10:02:45
Local clock offset: -3.24 ms
Remote clock offset: -9.191 ms


# Below is generated by plot.py at 2019-02-20 12:13:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.26 Mbit/s
95th percentile per-packet one-way delay: 2150.202 ms
Loss rate: 11.23%
-- Flow 1:
Average throughput: 58.14 Mbit/s
95th percentile per-packet one-way delay: 2165.523 ms
Loss rate: 10.45%
-- Flow 2:
Average throughput: 37.67 Mbit/s
95th percentile per-packet one-way delay: 2110.309 ms
Loss rate: 13.53%
-- Flow 3:
Average throughput: 30.69 Mbit/s
95th percentile per-packet one-way delay: 943.032 ms
Loss rate: 9.79%
```

Run 1: Report of PCC-Allegro — Data Link

- - - - Flow 1 ingress (mean 64.80 Mbit/s) ——— Flow 1 egress (mean 58.14 Mbit/s)
- - - - Flow 2 ingress (mean 41.00 Mbit/s) ——— Flow 2 egress (mean 37.67 Mbit/s)
- - - - Flow 3 ingress (mean 33.80 Mbit/s) ——— Flow 3 egress (mean 30.69 Mbit/s)

• Flow 1 (95th percentile 2165.52 ms) • Flow 2 (95th percentile 2110.31 ms) • Flow 3 (95th percentile 943.03 ms)

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```
Run 2: Statistics of PCC-Allegro

Start at: 2019-02-20 10:27:50
End at: 2019-02-20 10:28:20
Local clock offset: -4.135 ms
Remote clock offset: -5.312 ms


# Below is generated by plot.py at 2019-02-20 12:14:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.83 Mbit/s
95th percentile per-packet one-way delay: 1678.640 ms
Loss rate: 10.45%
-- Flow 1:
Average throughput: 62.91 Mbit/s
95th percentile per-packet one-way delay: 1652.191 ms
Loss rate: 9.81%
-- Flow 2:
Average throughput: 34.69 Mbit/s
95th percentile per-packet one-way delay: 2999.381 ms
Loss rate: 14.53%
-- Flow 3:
Average throughput: 20.91 Mbit/s
95th percentile per-packet one-way delay: 123.142 ms
Loss rate: 1.01%
```
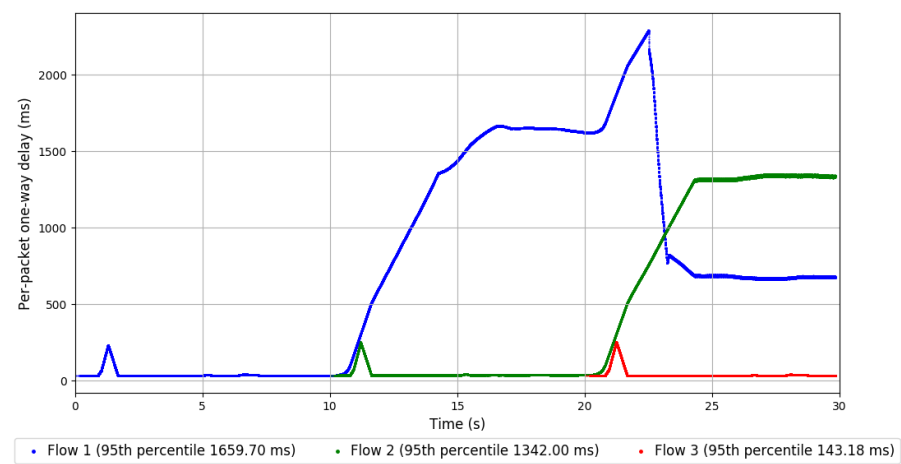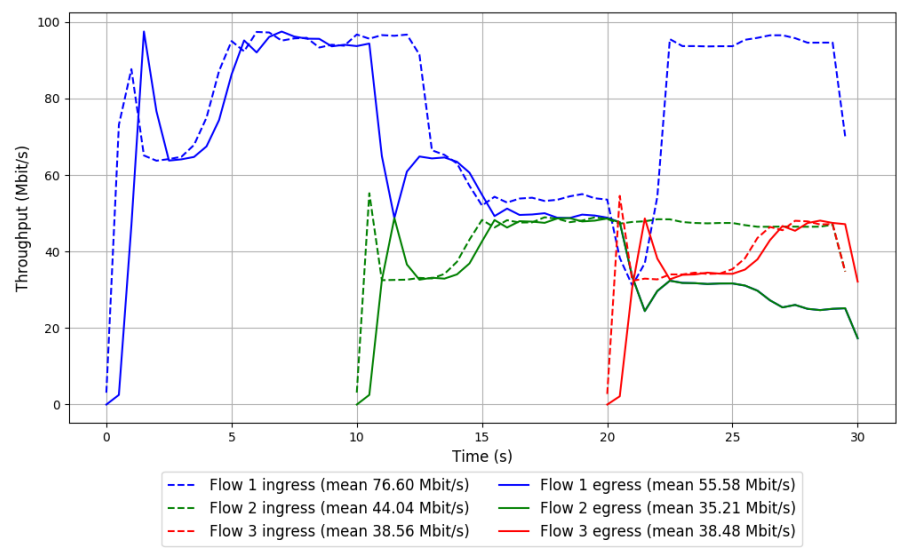
Run 2: Report of PCC-Allegro — Data Link

Legend:
- Flow 1 ingress (mean 69.61 Mbit/s)
- Flow 2 ingress (mean 40.45 Mbit/s)
- Flow 3 ingress (mean 20.99 Mbit/s)
- Flow 1 egress (mean 62.91 Mbit/s)
- Flow 2 egress (mean 34.69 Mbit/s)
- Flow 3 egress (mean 20.91 Mbit/s)

Legend:
- Flow 1 (95th percentile 1652.19 ms)
- Flow 2 (95th percentile 2999.38 ms)
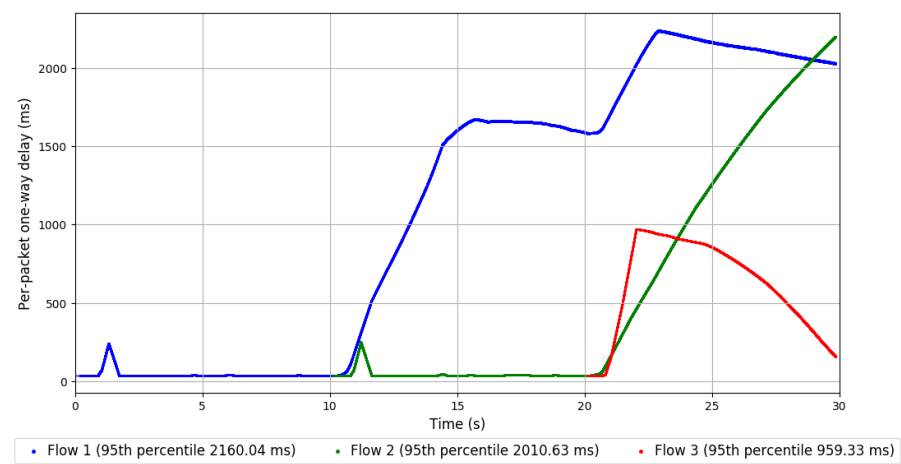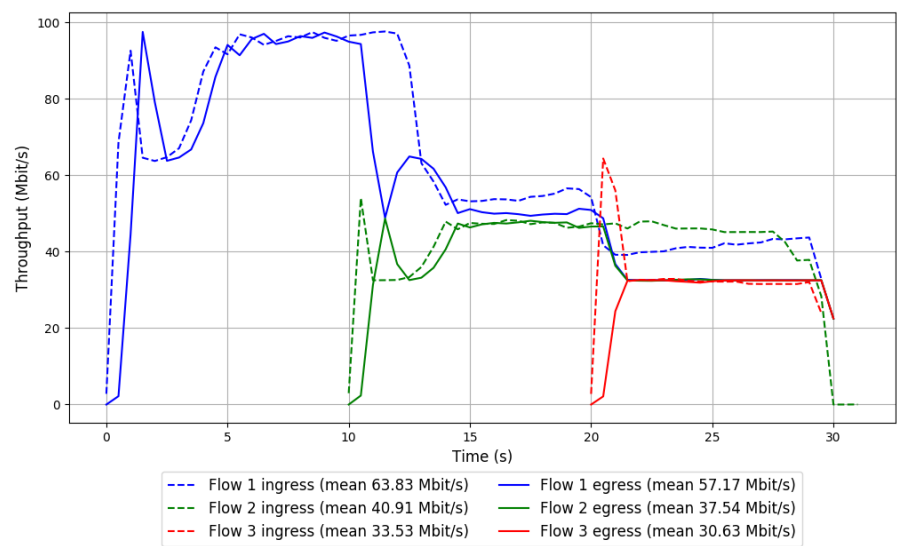- Flow 3 (95th percentile 123.14 ms)

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```
Run 3: Statistics of PCC-Allegro

Start at: 2019-02-20 10:53:49
End at: 2019-02-20 10:54:19
Local clock offset: 1.041 ms
Remote clock offset: -4.012 ms


# Below is generated by plot.py at 2019-02-20 12:14:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.42 Mbit/s
95th percentile per-packet one-way delay: 1672.946 ms
Loss rate: 23.27%
-- Flow 1:
Average throughput: 55.48 Mbit/s
95th percentile per-packet one-way delay: 1687.497 ms
Loss rate: 27.41%
-- Flow 2:
Average throughput: 34.98 Mbit/s
95th percentile per-packet one-way delay: 1276.484 ms
Loss rate: 23.06%
-- Flow 3:
Average throughput: 41.71 Mbit/s
95th percentile per-packet one-way delay: 120.100 ms
Loss rate: 0.84%
```

Run 3: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 76.27 Mbit/s)   Flow 1 egress (mean 55.48 Mbit/s)
Flow 2 ingress (mean 45.33 Mbit/s)   Flow 2 egress (mean 34.98 Mbit/s)
Flow 3 ingress (mean 41.79 Mbit/s)   Flow 3 egress (mean 41.71 Mbit/s)

Flow 1 (95th percentile 1687.50 ms)   Flow 2 (95th percentile 1276.48 ms)   Flow 3 (95th percentile 120.10 ms)

```
Run 4: Statistics of PCC-Allegro

Start at: 2019-02-20 11:20:16
End at: 2019-02-20 11:20:46
Local clock offset: 1.03 ms
Remote clock offset: -3.48 ms


# Below is generated by plot.py at 2019-02-20 12:14:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.60 Mbit/s
95th percentile per-packet one-way delay: 1652.029 ms
Loss rate: 22.93%
-- Flow 1:
Average throughput: 55.58 Mbit/s
95th percentile per-packet one-way delay: 1659.700 ms
Loss rate: 27.60%
-- Flow 2:
Average throughput: 35.21 Mbit/s
95th percentile per-packet one-way delay: 1341.996 ms
Loss rate: 20.30%
-- Flow 3:
Average throughput: 38.48 Mbit/s
95th percentile per-packet one-way delay: 143.184 ms
Loss rate: 0.86%
```

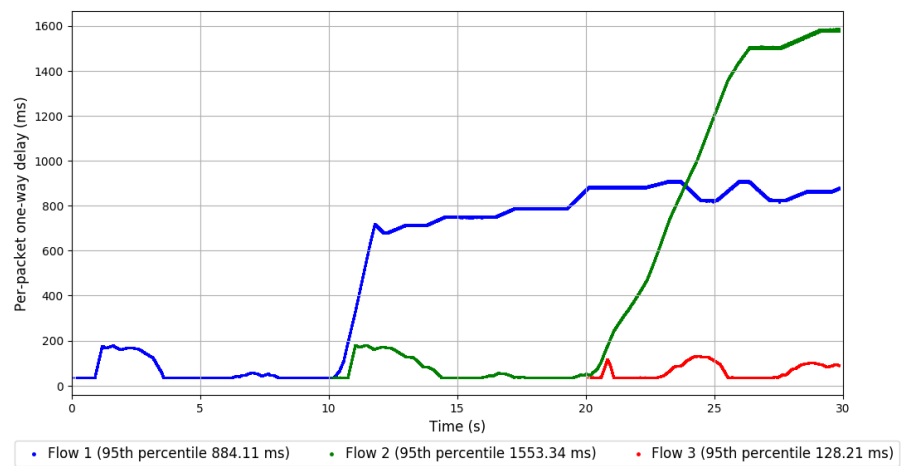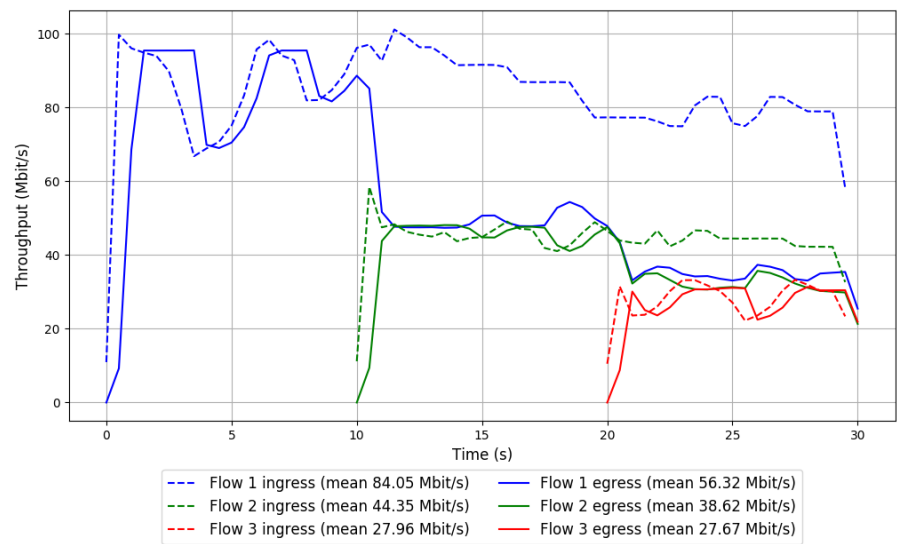Run 4: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 76.60 Mbit/s) --- Flow 1 egress (mean 55.58 Mbit/s) ---
Flow 2 ingress (mean 44.04 Mbit/s) --- Flow 2 egress (mean 35.21 Mbit/s) ---
Flow 3 ingress (mean 38.56 Mbit/s) --- Flow 3 egress (mean 38.48 Mbit/s) ---

• Flow 1 (95th percentile 1659.70 ms)   • Flow 2 (95th percentile 1342.00 ms)   • Flow 3 (95th percentile 143.18 ms)
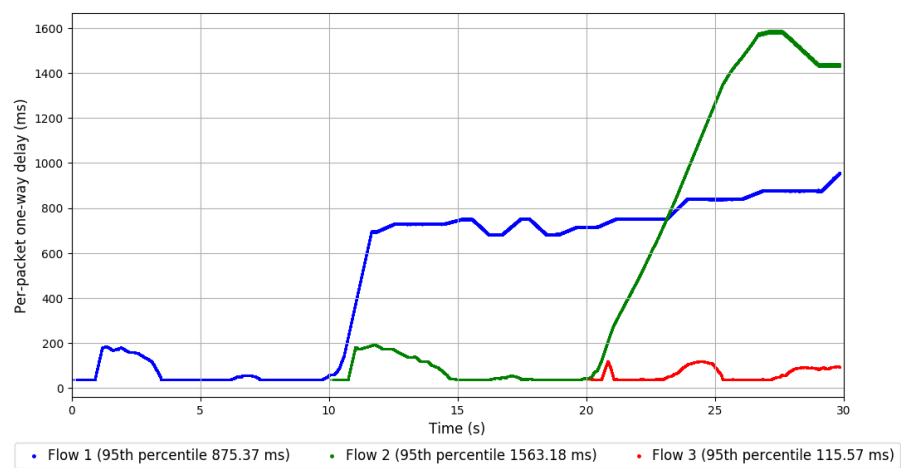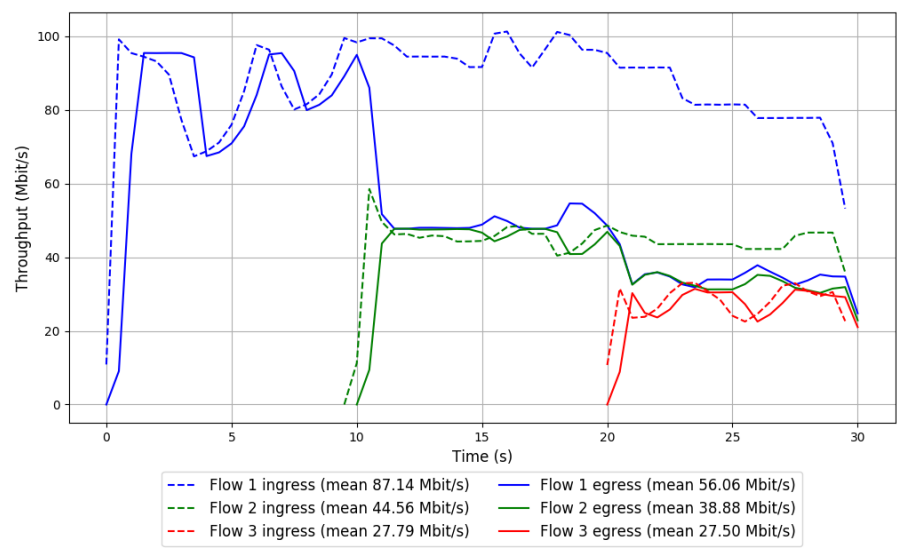
```
Run 5: Statistics of PCC-Allegro

Start at: 2019-02-20 11:46:06
End at: 2019-02-20 11:46:36
Local clock offset: -2.694 ms
Remote clock offset: -5.711 ms


# Below is generated by plot.py at 2019-02-20 12:14:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.17 Mbit/s
95th percentile per-packet one-way delay: 2131.831 ms
Loss rate: 11.29%
-- Flow 1:
Average throughput: 57.17 Mbit/s
95th percentile per-packet one-way delay: 2160.037 ms
Loss rate: 10.63%
-- Flow 2:
Average throughput: 37.54 Mbit/s
95th percentile per-packet one-way delay: 2010.633 ms
Loss rate: 13.53%
-- Flow 3:
Average throughput: 30.63 Mbit/s
95th percentile per-packet one-way delay: 959.328 ms
Loss rate: 9.26%
```

Run 5: Report of PCC-Allegro — Data Link

```
Run 1: Statistics of PCC-Expr

Start at: 2019-02-20 10:15:41
End at: 2019-02-20 10:16:11
Local clock offset: -3.731 ms
Remote clock offset: -6.294 ms


# Below is generated by plot.py at 2019-02-20 12:15:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.09 Mbit/s
95th percentile per-packet one-way delay: 1386.230 ms
Loss rate: 25.98%
-- Flow 1:
Average throughput: 56.32 Mbit/s
95th percentile per-packet one-way delay: 884.108 ms
Loss rate: 33.13%
-- Flow 2:
Average throughput: 38.62 Mbit/s
95th percentile per-packet one-way delay: 1553.335 ms
Loss rate: 13.20%
-- Flow 3:
Average throughput: 27.67 Mbit/s
95th percentile per-packet one-way delay: 128.212 ms
Loss rate: 1.68%
```

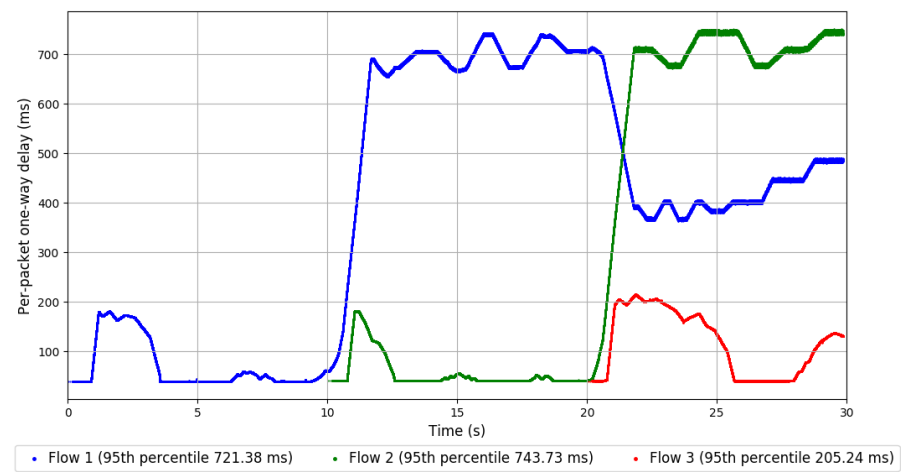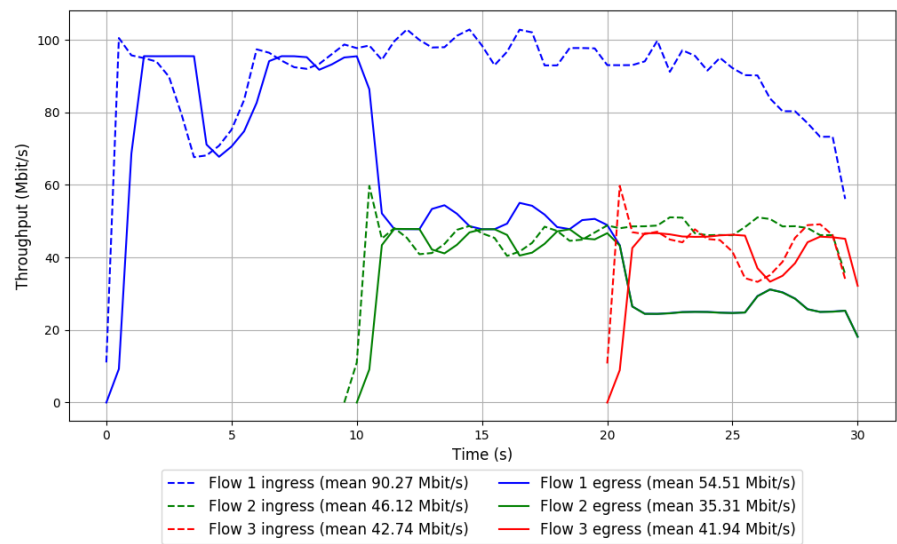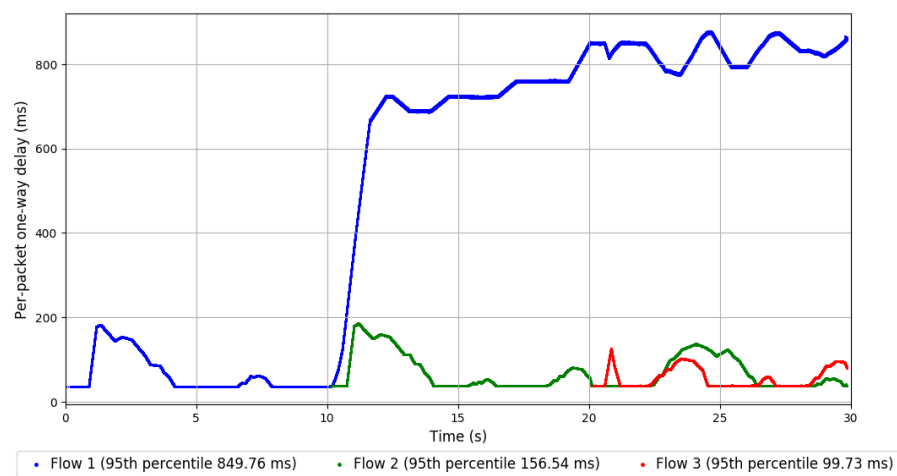# Run 1: Report of PCC-Expr — Data Link

```
Run 2: Statistics of PCC-Expr

Start at: 2019-02-20 10:41:31
End at: 2019-02-20 10:42:01
Local clock offset: -0.425 ms
Remote clock offset: -6.807 ms


# Below is generated by plot.py at 2019-02-20 12:15:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 90.96 Mbit/s
95th percentile per-packet one-way delay: 1409.086 ms
Loss rate: 27.95%
-- Flow 1:
Average throughput: 56.06 Mbit/s
95th percentile per-packet one-way delay: 875.368 ms
Loss rate: 35.80%
-- Flow 2:
Average throughput: 38.88 Mbit/s
95th percentile per-packet one-way delay: 1563.180 ms
Loss rate: 13.03%
-- Flow 3:
Average throughput: 27.50 Mbit/s
95th percentile per-packet one-way delay: 115.573 ms
Loss rate: 1.70%
```
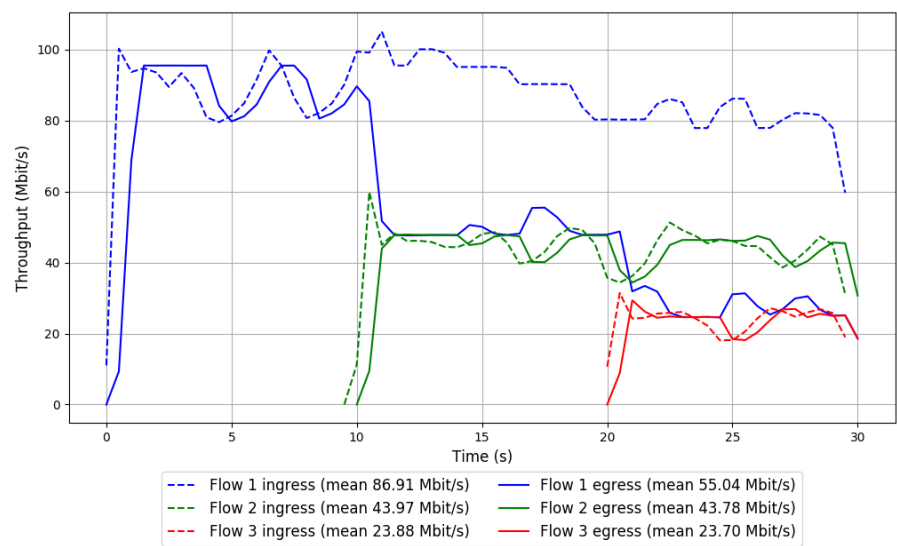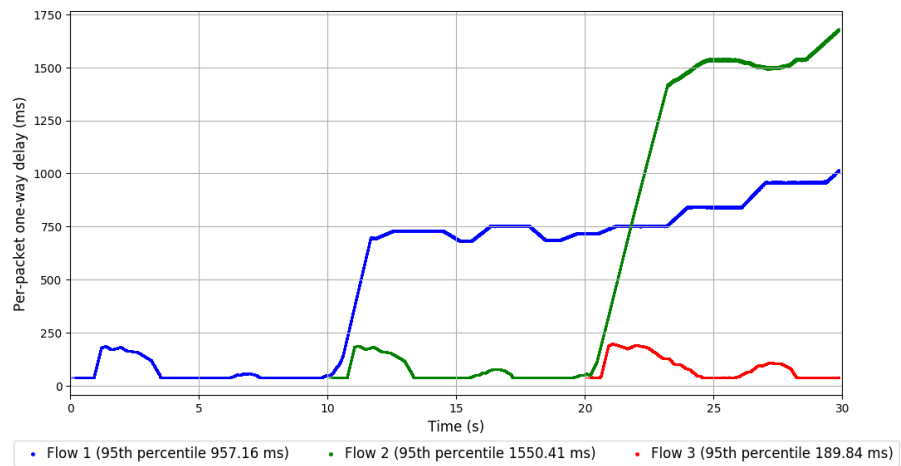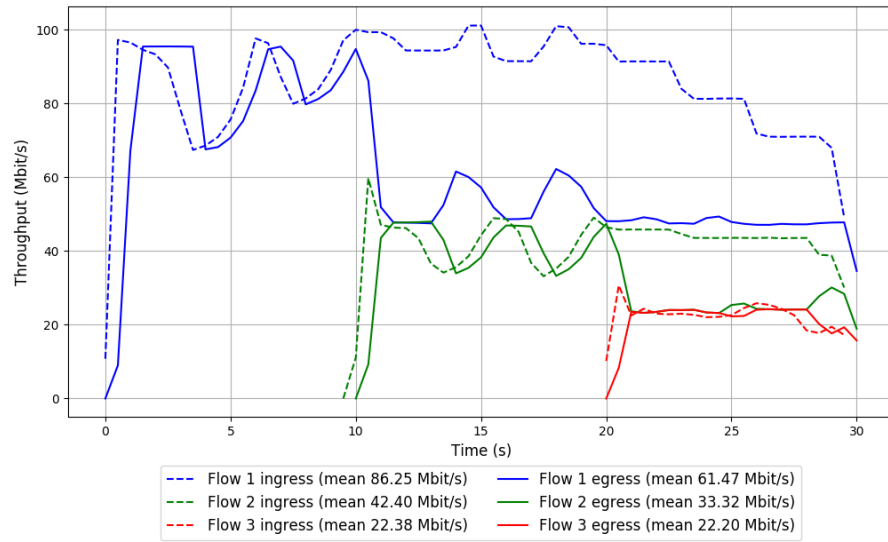
Run 2: Report of PCC-Expr — Data Link

```
Run 3: Statistics of PCC-Expr

Start at: 2019-02-20 11:07:28
End at: 2019-02-20 11:07:58
Local clock offset: 1.009 ms
Remote clock offset: -6.119 ms


# Below is generated by plot.py at 2019-02-20 12:15:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.78 Mbit/s
95th percentile per-packet one-way delay: 727.953 ms
Loss rate: 32.20%
-- Flow 1:
Average throughput: 54.51 Mbit/s
95th percentile per-packet one-way delay: 721.377 ms
Loss rate: 39.74%
-- Flow 2:
Average throughput: 35.31 Mbit/s
95th percentile per-packet one-way delay: 743.734 ms
Loss rate: 23.70%
-- Flow 3:
Average throughput: 41.94 Mbit/s
95th percentile per-packet one-way delay: 205.242 ms
Loss rate: 2.51%
```

Run 3: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 90.27 Mbit/s) Flow 1 egress (mean 54.51 Mbit/s)
Flow 2 ingress (mean 46.12 Mbit/s) Flow 2 egress (mean 35.31 Mbit/s)
Flow 3 ingress (mean 42.74 Mbit/s) Flow 3 egress (mean 41.94 Mbit/s)

Flow 1 (95th percentile 721.38 ms) Flow 2 (95th percentile 743.73 ms) Flow 3 (95th percentile 205.24 ms)

```
Run 4: Statistics of PCC-Expr

Start at: 2019-02-20 11:33:58
End at: 2019-02-20 11:34:28
Local clock offset: -0.396 ms
Remote clock offset: -3.252 ms


# Below is generated by plot.py at 2019-02-20 12:16:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.94 Mbit/s
95th percentile per-packet one-way delay: 839.857 ms
Loss rate: 26.04%
-- Flow 1:
Average throughput: 55.04 Mbit/s
95th percentile per-packet one-way delay: 849.764 ms
Loss rate: 36.80%
-- Flow 2:
Average throughput: 43.78 Mbit/s
95th percentile per-packet one-way delay: 156.538 ms
Loss rate: 0.75%
-- Flow 3:
Average throughput: 23.70 Mbit/s
95th percentile per-packet one-way delay: 99.734 ms
Loss rate: 1.36%
```
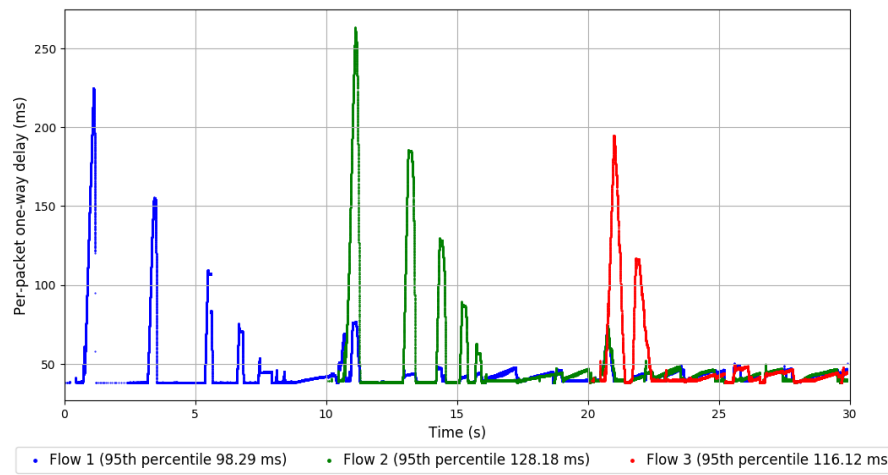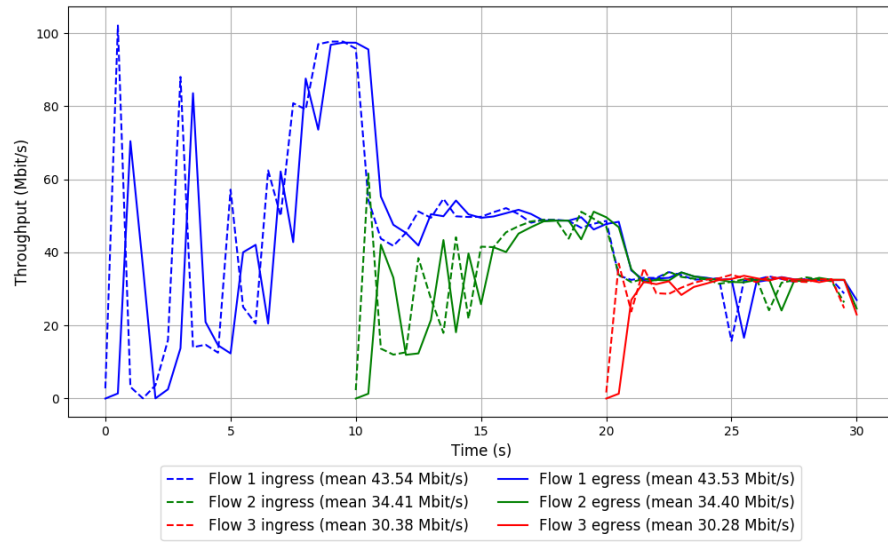
Run 4: Report of PCC-Expr — Data Link

```
Run 5: Statistics of PCC-Expr

Start at: 2019-02-20 11:59:43
End at: 2019-02-20 12:00:13
Local clock offset: -3.524 ms
Remote clock offset: -6.491 ms


# Below is generated by plot.py at 2019-02-20 12:16:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 90.92 Mbit/s
95th percentile per-packet one-way delay: 1497.477 ms
Loss rate: 25.55%
-- Flow 1:
Average throughput: 61.47 Mbit/s
95th percentile per-packet one-way delay: 957.157 ms
Loss rate: 28.88%
-- Flow 2:
Average throughput: 33.32 Mbit/s
95th percentile per-packet one-way delay: 1550.412 ms
Loss rate: 21.67%
-- Flow 3:
Average throughput: 22.20 Mbit/s
95th percentile per-packet one-way delay: 189.842 ms
Loss rate: 1.44%
```

Run 5: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 86.25 Mbit/s) — Flow 1 egress (mean 61.47 Mbit/s)
Flow 2 ingress (mean 42.40 Mbit/s) — Flow 2 egress (mean 33.32 Mbit/s)
Flow 3 ingress (mean 22.38 Mbit/s) — Flow 3 egress (mean 22.20 Mbit/s)

Flow 1 (95th percentile 957.16 ms)   Flow 2 (95th percentile 1550.41 ms)   Flow 3 (95th percentile 189.84 ms)

```
Run 1: Statistics of QUIC Cubic

Start at: 2019-02-20 10:10:47
End at: 2019-02-20 10:11:17
Local clock offset: -3.557 ms
Remote clock offset: -8.656 ms


# Below is generated by plot.py at 2019-02-20 12:16:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 76.36 Mbit/s
95th percentile per-packet one-way delay: 109.211 ms
Loss rate: 0.36%
-- Flow 1:
Average throughput: 43.53 Mbit/s
95th percentile per-packet one-way delay: 98.291 ms
Loss rate: 0.21%
-- Flow 2:
Average throughput: 34.40 Mbit/s
95th percentile per-packet one-way delay: 128.183 ms
Loss rate: 0.38%
-- Flow 3:
Average throughput: 30.28 Mbit/s
95th percentile per-packet one-way delay: 116.125 ms
Loss rate: 0.95%
```

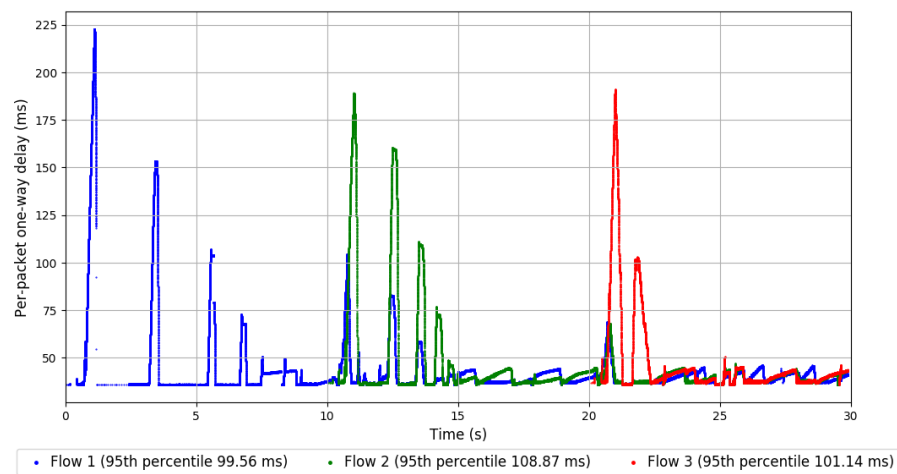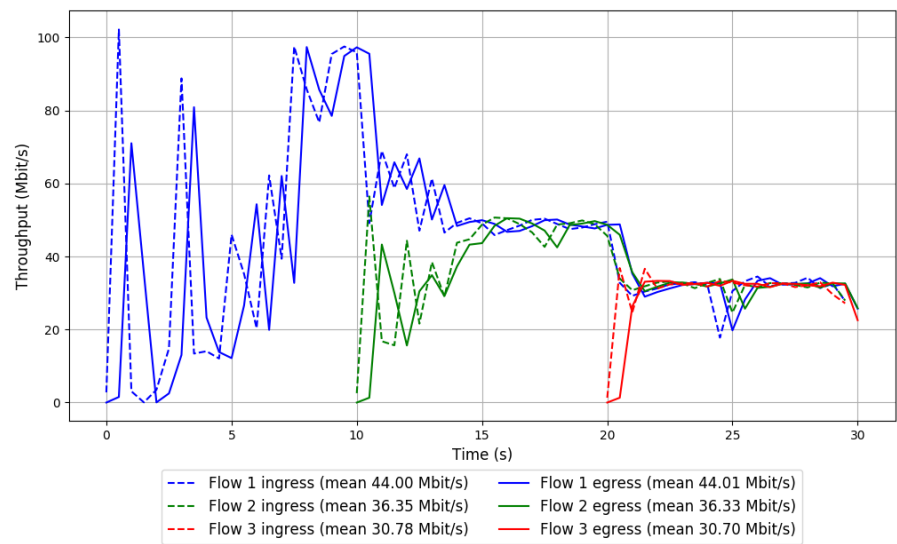Run 1: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 43.54 Mbit/s)   Flow 1 egress (mean 43.53 Mbit/s)
Flow 2 ingress (mean 34.41 Mbit/s)   Flow 2 egress (mean 34.40 Mbit/s)
Flow 3 ingress (mean 30.38 Mbit/s)   Flow 3 egress (mean 30.28 Mbit/s)

Flow 1 (95th percentile 98.29 ms)   Flow 2 (95th percentile 128.18 ms)   Flow 3 (95th percentile 116.12 ms)

```
Run 2: Statistics of QUIC Cubic

Start at: 2019-02-20 10:36:30
End at: 2019-02-20 10:37:00
Local clock offset: -1.569 ms
Remote clock offset: -4.752 ms


# Below is generated by plot.py at 2019-02-20 12:16:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 74.28 Mbit/s
95th percentile per-packet one-way delay: 119.177 ms
Loss rate: 0.37%
-- Flow 1:
Average throughput: 40.77 Mbit/s
95th percentile per-packet one-way delay: 102.547 ms
Loss rate: 0.17%
-- Flow 2:
Average throughput: 31.19 Mbit/s
95th percentile per-packet one-way delay: 127.200 ms
Loss rate: 0.37%
-- Flow 3:
Average throughput: 38.74 Mbit/s
95th percentile per-packet one-way delay: 157.938 ms
Loss rate: 1.01%
```

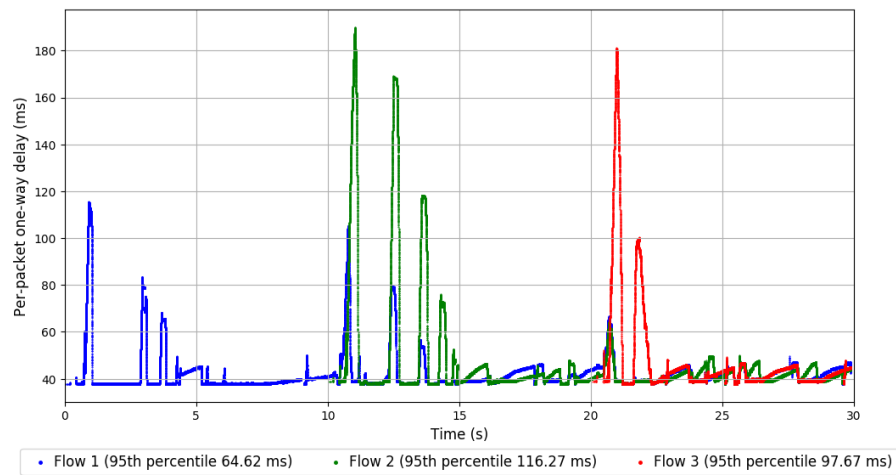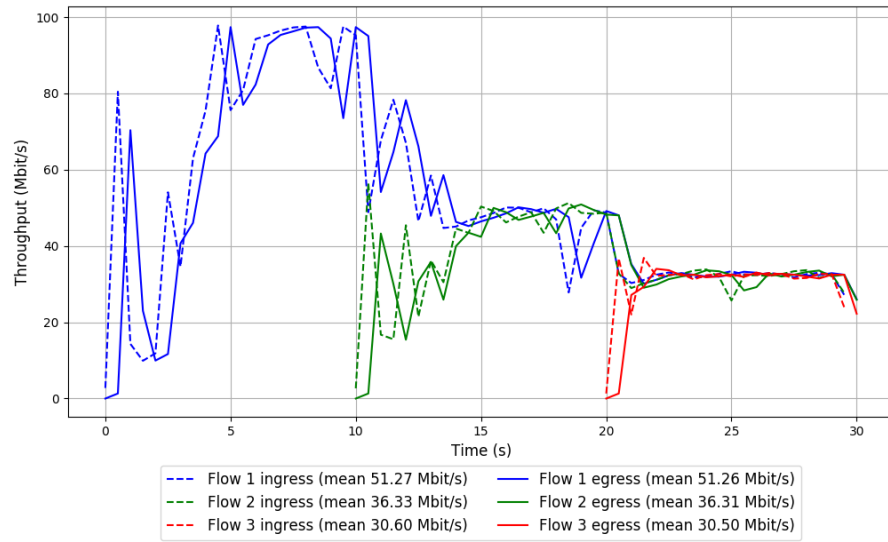## Run 2: Report of QUIC Cubic — Data Link

- Flow 1 ingress (mean 40.76 Mbit/s)
- Flow 1 egress (mean 40.77 Mbit/s)
- Flow 2 ingress (mean 31.20 Mbit/s)
- Flow 2 egress (mean 31.19 Mbit/s)
- Flow 3 ingress (mean 38.88 Mbit/s)
- Flow 3 egress (mean 38.74 Mbit/s)

- Flow 1 (95th percentile 102.55 ms)
- Flow 2 (95th percentile 127.20 ms)
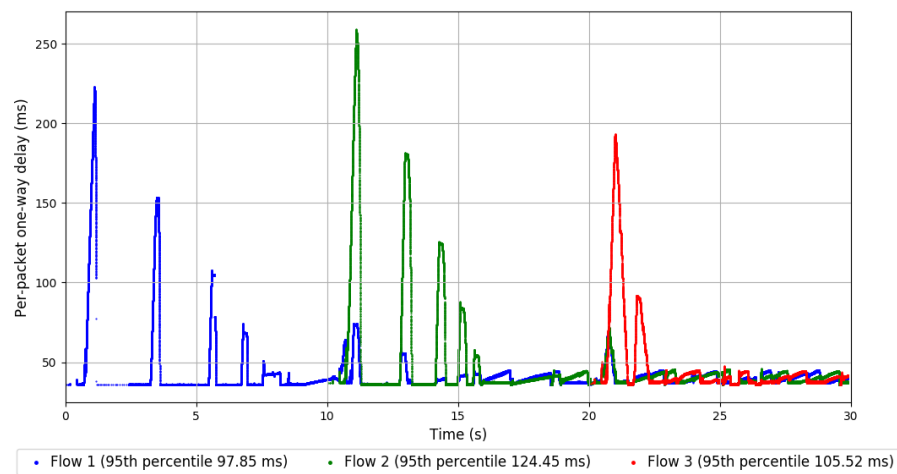- Flow 3 (95th percentile 157.94 ms)

```
Run 3: Statistics of QUIC Cubic

Start at: 2019-02-20 11:02:29
End at: 2019-02-20 11:02:59
Local clock offset: 1.241 ms
Remote clock offset: -4.029 ms


# Below is generated by plot.py at 2019-02-20 12:16:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 78.26 Mbit/s
95th percentile per-packet one-way delay: 102.326 ms
Loss rate: 0.36%
-- Flow 1:
Average throughput: 44.01 Mbit/s
95th percentile per-packet one-way delay: 99.564 ms
Loss rate: 0.21%
-- Flow 2:
Average throughput: 36.33 Mbit/s
95th percentile per-packet one-way delay: 108.874 ms
Loss rate: 0.39%
-- Flow 3:
Average throughput: 30.70 Mbit/s
95th percentile per-packet one-way delay: 101.137 ms
Loss rate: 0.91%
```
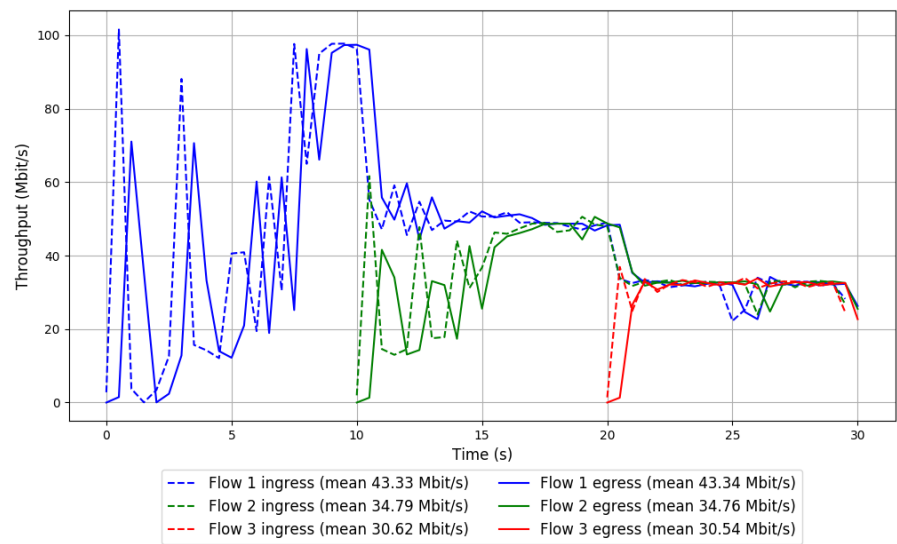
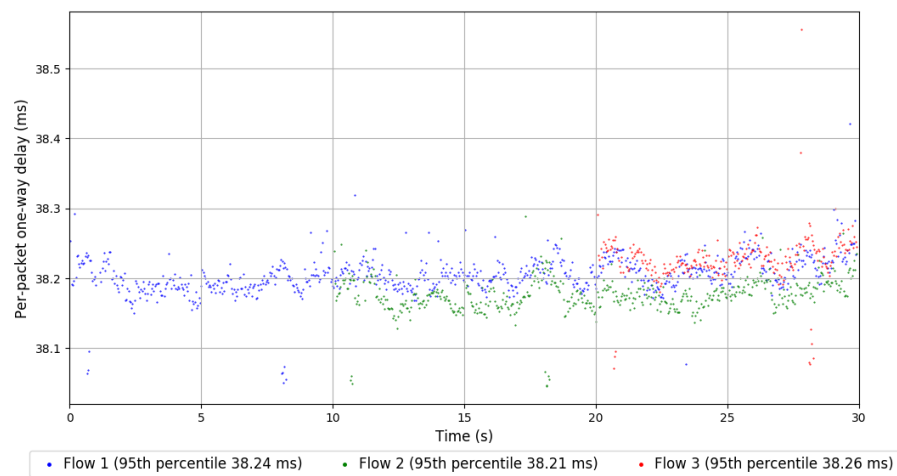Run 3: Report of QUIC Cubic — Data Link

```
Run 4: Statistics of QUIC Cubic

Start at: 2019-02-20 11:29:02
End at: 2019-02-20 11:29:32
Local clock offset: 1.232 ms
Remote clock offset: -5.462 ms


# Below is generated by plot.py at 2019-02-20 12:16:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 85.44 Mbit/s
95th percentile per-packet one-way delay: 74.155 ms
Loss rate: 0.35%
-- Flow 1:
Average throughput: 51.26 Mbit/s
95th percentile per-packet one-way delay: 64.619 ms
Loss rate: 0.22%
-- Flow 2:
Average throughput: 36.31 Mbit/s
95th percentile per-packet one-way delay: 116.265 ms
Loss rate: 0.39%
-- Flow 3:
Average throughput: 30.50 Mbit/s
95th percentile per-packet one-way delay: 97.671 ms
Loss rate: 0.95%
```
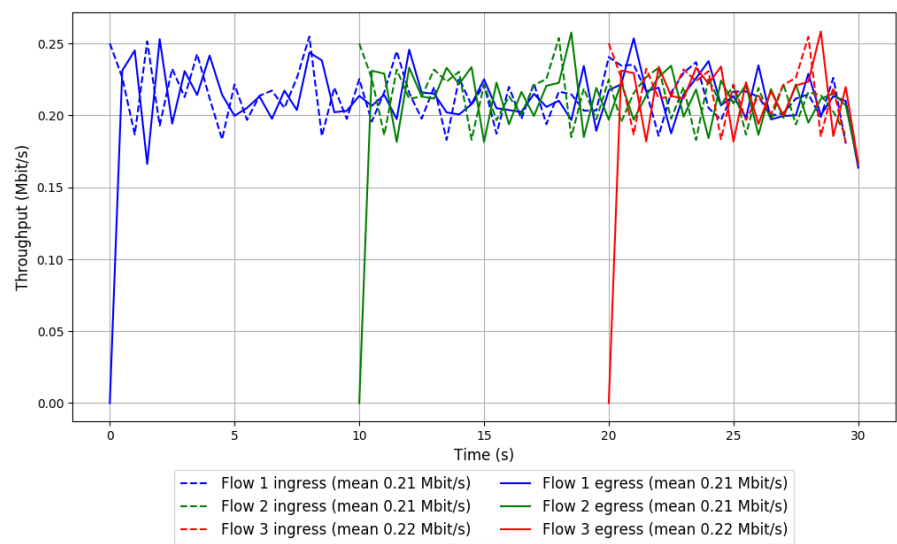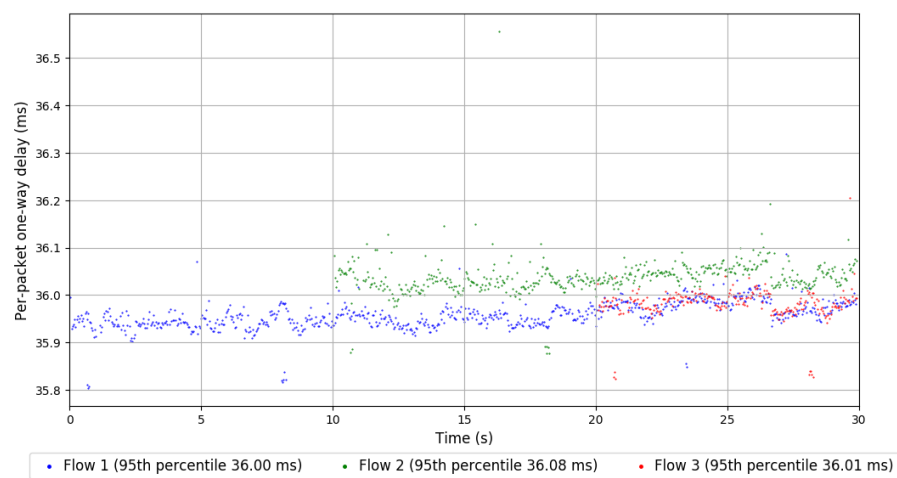
Run 4: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 51.27 Mbit/s) --- Flow 1 egress (mean 51.26 Mbit/s)
Flow 2 ingress (mean 36.33 Mbit/s) --- Flow 2 egress (mean 36.31 Mbit/s)
Flow 3 ingress (mean 30.60 Mbit/s) --- Flow 3 egress (mean 30.50 Mbit/s)

Flow 1 (95th percentile 64.62 ms) Flow 2 (95th percentile 116.27 ms) Flow 3 (95th percentile 97.67 ms)

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```
Run 5: Statistics of QUIC Cubic

Start at: 2019-02-20 11:54:46
End at: 2019-02-20 11:55:16
Local clock offset: -3.297 ms
Remote clock offset: -4.245 ms


# Below is generated by plot.py at 2019-02-20 12:16:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 76.49 Mbit/s
95th percentile per-packet one-way delay: 104.812 ms
Loss rate: 0.36%
-- Flow 1:
Average throughput: 43.34 Mbit/s
95th percentile per-packet one-way delay: 97.846 ms
Loss rate: 0.21%
-- Flow 2:
Average throughput: 34.76 Mbit/s
95th percentile per-packet one-way delay: 124.451 ms
Loss rate: 0.40%
-- Flow 3:
Average throughput: 30.54 Mbit/s
95th percentile per-packet one-way delay: 105.516 ms
Loss rate: 0.92%
```
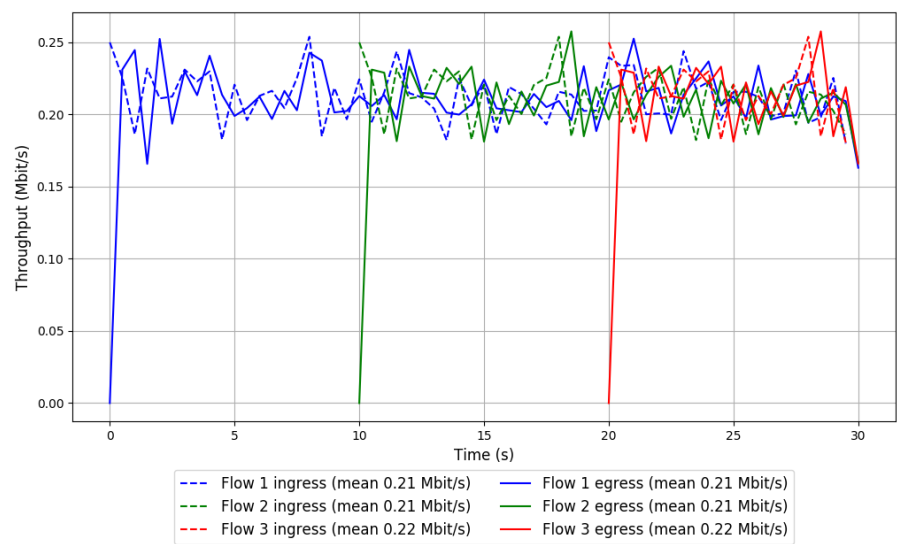
Run 5: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 43.33 Mbit/s) — — — Flow 1 egress (mean 43.34 Mbit/s)
Flow 2 ingress (mean 34.79 Mbit/s) — — — Flow 2 egress (mean 34.76 Mbit/s)
Flow 3 ingress (mean 30.62 Mbit/s) — — — Flow 3 egress (mean 30.54 Mbit/s)

Flow 1 (95th percentile 97.85 ms)   Flow 2 (95th percentile 124.45 ms)   Flow 3 (95th percentile 105.52 ms)
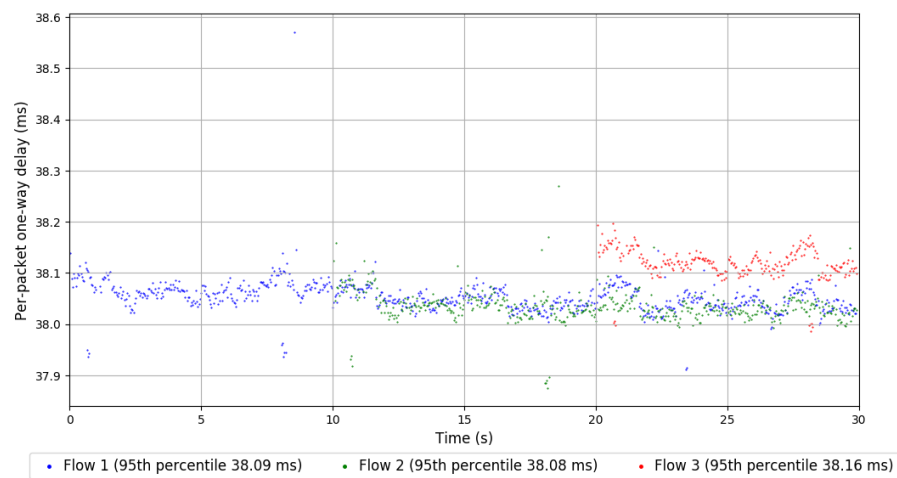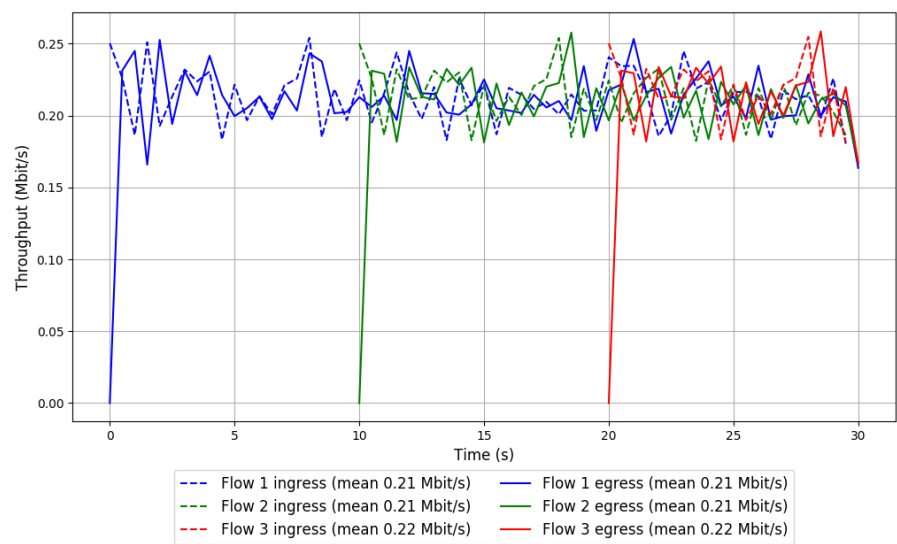
144

```
Run 1: Statistics of SCReAM

Start at: 2019-02-20 10:01:06
End at: 2019-02-20 10:01:36
Local clock offset: -3.194 ms
Remote clock offset: -9.139 ms

# Below is generated by plot.py at 2019-02-20 12:16:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 38.247 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 38.243 ms
Loss rate: 0.26%
-- Flow 2:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 38.213 ms
Loss rate: 0.40%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 38.262 ms
Loss rate: 0.71%
```
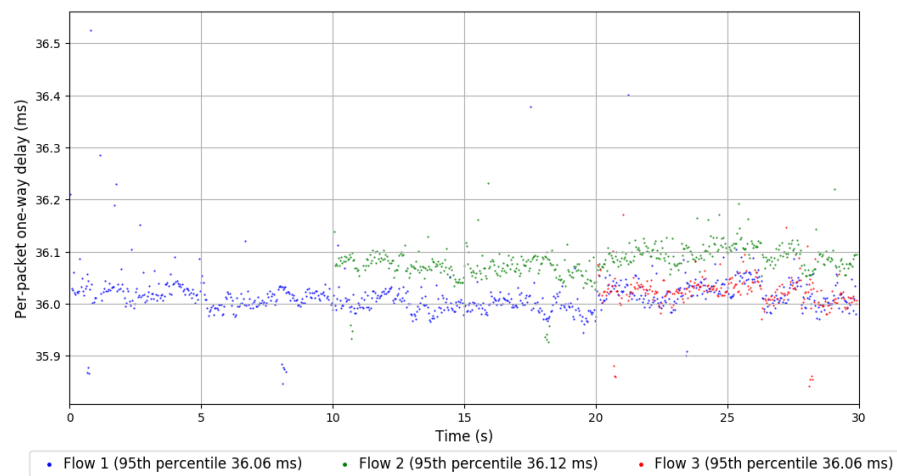
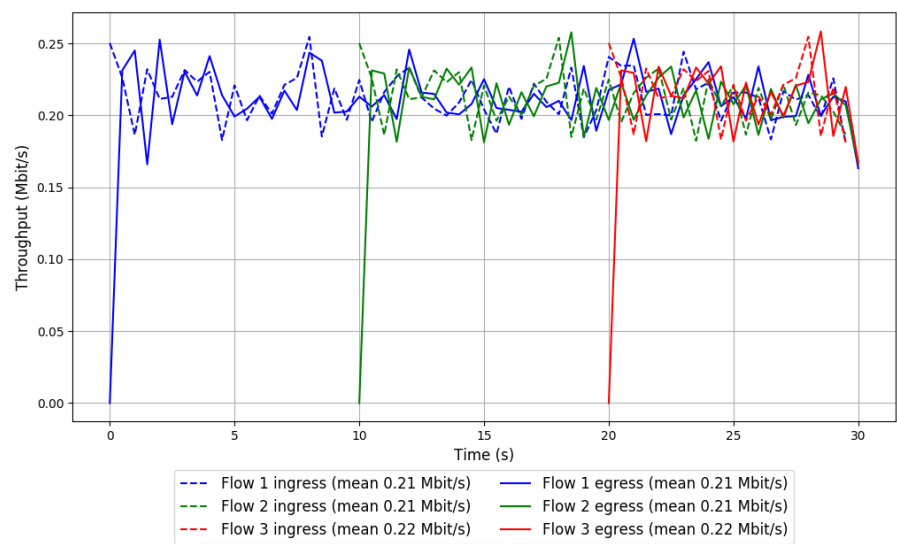# Run 1: Report of SCReAM — Data Link

```
Run 2: Statistics of SCReAM

Start at: 2019-02-20 10:26:41
End at: 2019-02-20 10:27:11
Local clock offset: -4.092 ms
Remote clock offset: -5.495 ms

# Below is generated by plot.py at 2019-02-20 12:16:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 36.062 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 35.999 ms
Loss rate: 0.26%
-- Flow 2:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 36.083 ms
Loss rate: 0.40%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 36.013 ms
Loss rate: 0.71%
```

Run 2: Report of SCReAM — Data Link

```
Run 3: Statistics of SCReAM

Start at: 2019-02-20 10:52:40
End at: 2019-02-20 10:53:10
Local clock offset: 0.941 ms
Remote clock offset: -6.369 ms


# Below is generated by plot.py at 2019-02-20 12:16:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 38.134 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 38.093 ms
Loss rate: 0.26%
-- Flow 2:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 38.082 ms
Loss rate: 0.40%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 38.161 ms
Loss rate: 0.71%
```
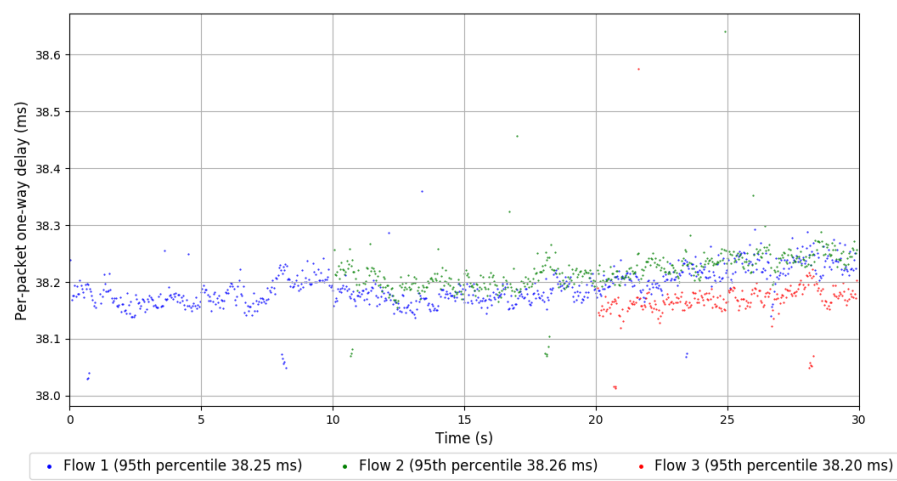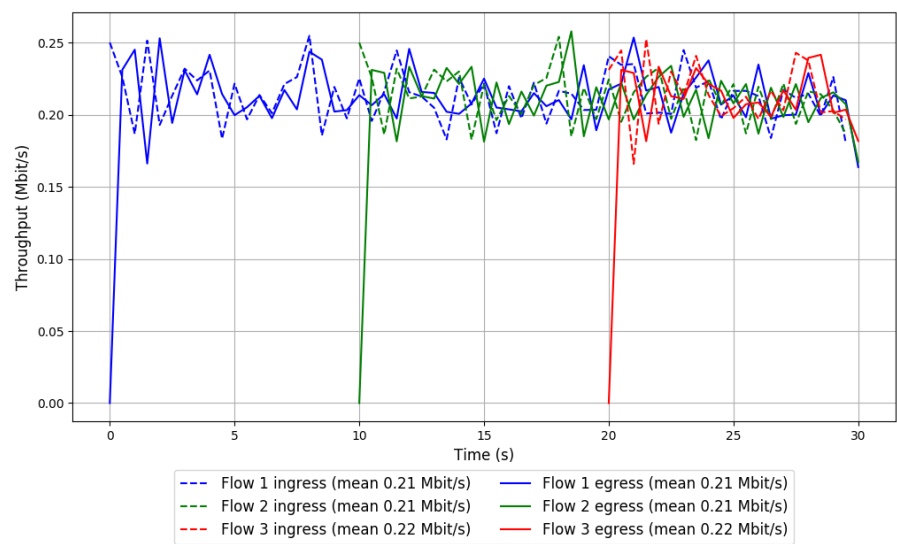
Run 3: Report of SCReAM — Data Link

Flow 1 ingress (mean 0.21 Mbit/s) — — — Flow 1 egress (mean 0.21 Mbit/s)
Flow 2 ingress (mean 0.21 Mbit/s) — — — Flow 2 egress (mean 0.21 Mbit/s)
Flow 3 ingress (mean 0.22 Mbit/s) — — — Flow 3 egress (mean 0.22 Mbit/s)

Flow 1 (95th percentile 38.09 ms)   Flow 2 (95th percentile 38.08 ms)   Flow 3 (95th percentile 38.16 ms)

```
Run 4: Statistics of SCReAM

Start at: 2019-02-20 11:19:07
End at: 2019-02-20 11:19:37
Local clock offset: 1.01 ms
Remote clock offset: -3.761 ms


# Below is generated by plot.py at 2019-02-20 12:16:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 36.110 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 36.057 ms
Loss rate: 0.26%
-- Flow 2:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 36.122 ms
Loss rate: 0.40%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 36.065 ms
Loss rate: 0.71%
```
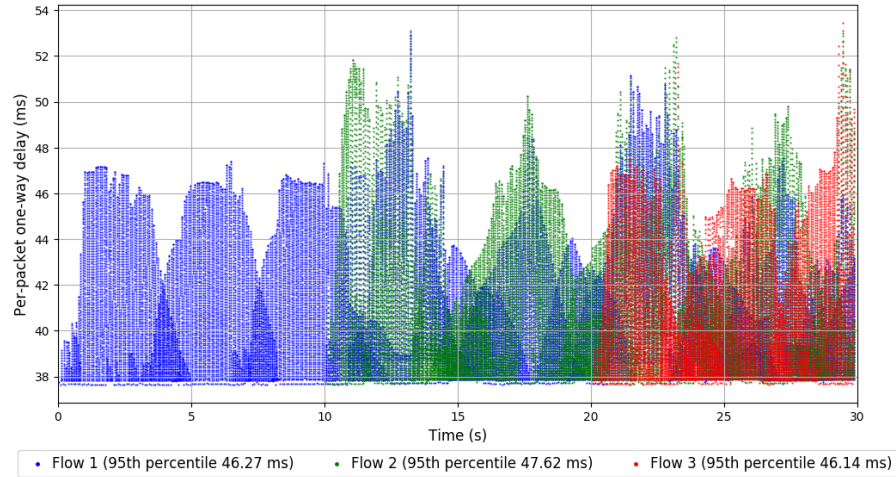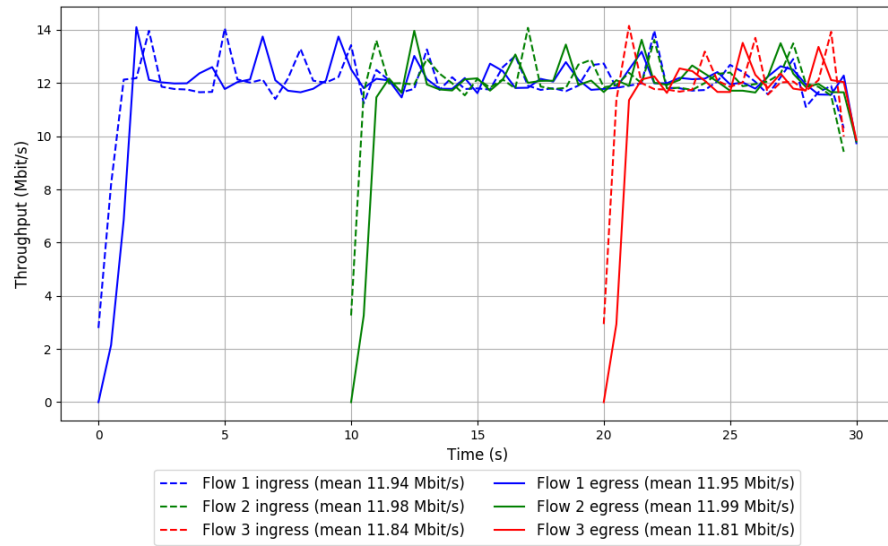
Run 4: Report of SCReAM — Data Link

```
Run 5: Statistics of SCReAM

Start at: 2019-02-20 11:44:57
End at: 2019-02-20 11:45:27
Local clock offset: -2.556 ms
Remote clock offset: -6.012 ms


# Below is generated by plot.py at 2019-02-20 12:16:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 38.252 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 38.246 ms
Loss rate: 0.26%
-- Flow 2:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 38.258 ms
Loss rate: 0.40%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 38.197 ms
Loss rate: 0.71%
```

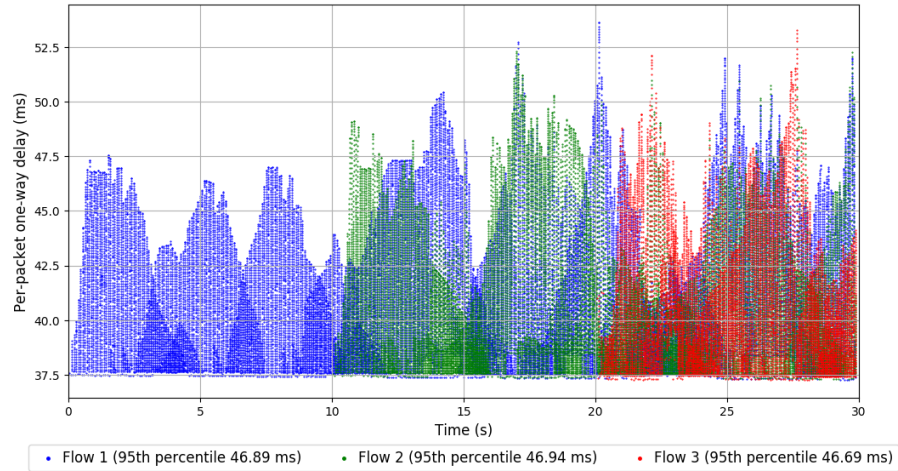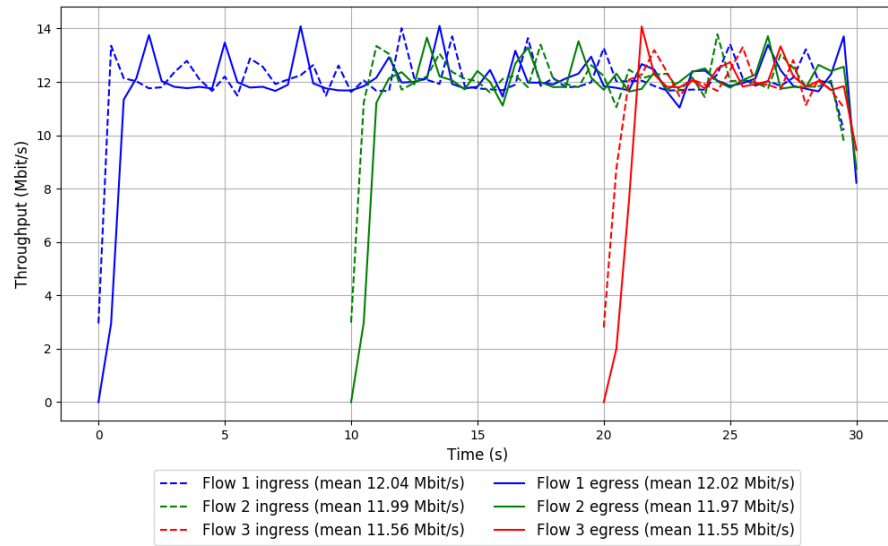Run 5: Report of SCReAM — Data Link

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```
Run 1: Statistics of Sprout

Start at: 2019-02-20 10:04:41
End at: 2019-02-20 10:05:11
Local clock offset: -3.336 ms
Remote clock offset: -8.646 ms


# Below is generated by plot.py at 2019-02-20 12:16:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 23.79 Mbit/s
95th percentile per-packet one-way delay: 46.622 ms
Loss rate: 0.29%
-- Flow 1:
Average throughput: 11.95 Mbit/s
95th percentile per-packet one-way delay: 46.266 ms
Loss rate: 0.11%
-- Flow 2:
Average throughput: 11.99 Mbit/s
95th percentile per-packet one-way delay: 47.622 ms
Loss rate: 0.28%
-- Flow 3:
Average throughput: 11.81 Mbit/s
95th percentile per-packet one-way delay: 46.137 ms
Loss rate: 0.87%
```
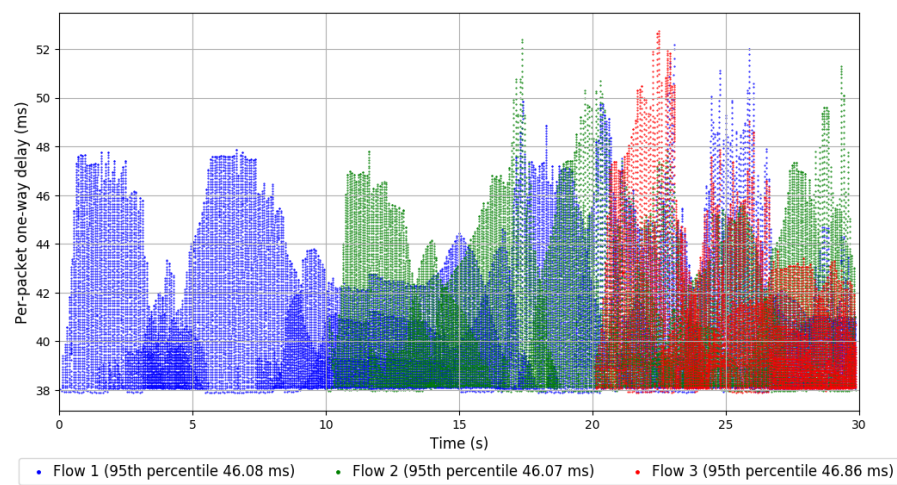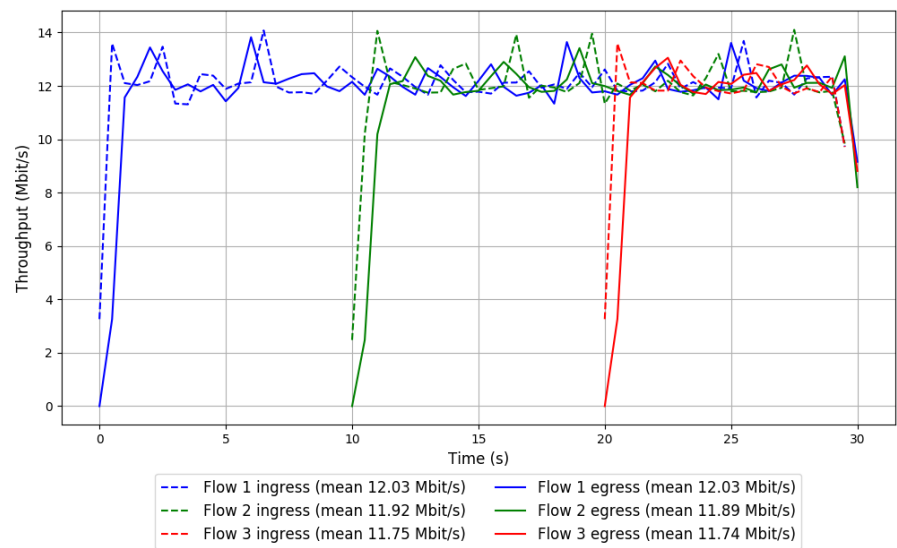
Run 1: Report of Sprout — Data Link

```
Run 2: Statistics of Sprout

Start at: 2019-02-20 10:30:18
End at: 2019-02-20 10:30:48
Local clock offset: -4.024 ms
Remote clock offset: -7.175 ms


# Below is generated by plot.py at 2019-02-20 12:16:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 23.77 Mbit/s
95th percentile per-packet one-way delay: 46.876 ms
Loss rate: 0.36%
-- Flow 1:
Average throughput: 12.02 Mbit/s
95th percentile per-packet one-way delay: 46.894 ms
Loss rate: 0.27%
-- Flow 2:
Average throughput: 11.97 Mbit/s
95th percentile per-packet one-way delay: 46.935 ms
Loss rate: 0.23%
-- Flow 3:
Average throughput: 11.55 Mbit/s
95th percentile per-packet one-way delay: 46.686 ms
Loss rate: 0.87%
```
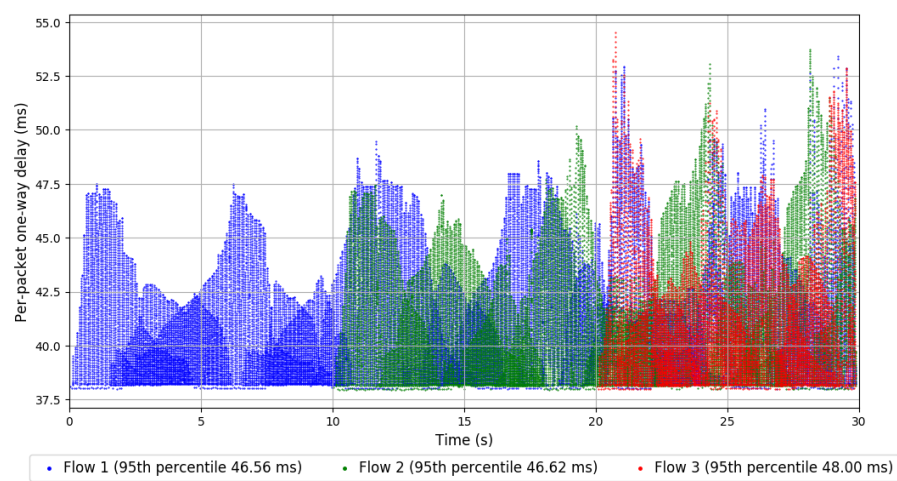
Run 2: Report of Sprout — Data Link

```
Run 3: Statistics of Sprout

Start at: 2019-02-20 10:56:19
End at: 2019-02-20 10:56:49
Local clock offset: 1.227 ms
Remote clock offset: -6.274 ms


# Below is generated by plot.py at 2019-02-20 12:16:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 23.78 Mbit/s
95th percentile per-packet one-way delay: 46.179 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 12.03 Mbit/s
95th percentile per-packet one-way delay: 46.084 ms
Loss rate: 0.27%
-- Flow 2:
Average throughput: 11.89 Mbit/s
95th percentile per-packet one-way delay: 46.071 ms
Loss rate: 0.41%
-- Flow 3:
Average throughput: 11.74 Mbit/s
95th percentile per-packet one-way delay: 46.858 ms
Loss rate: 0.64%
```
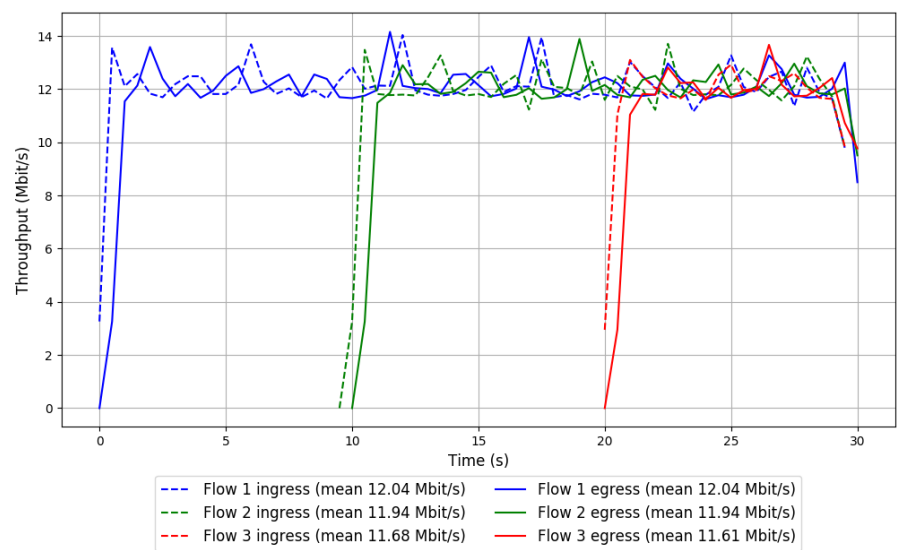
Run 3: Report of Sprout — Data Link

```
Run 4: Statistics of Sprout

Start at: 2019-02-20 11:22:52
End at: 2019-02-20 11:23:22
Local clock offset: 1.077 ms
Remote clock offset: -5.819 ms


# Below is generated by plot.py at 2019-02-20 12:16:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 23.79 Mbit/s
95th percentile per-packet one-way delay: 46.732 ms
Loss rate: 0.40%
-- Flow 1:
Average throughput: 12.04 Mbit/s
95th percentile per-packet one-way delay: 46.562 ms
Loss rate: 0.25%
-- Flow 2:
Average throughput: 11.94 Mbit/s
95th percentile per-packet one-way delay: 46.623 ms
Loss rate: 0.41%
-- Flow 3:
Average throughput: 11.61 Mbit/s
95th percentile per-packet one-way delay: 47.999 ms
Loss rate: 0.85%
```
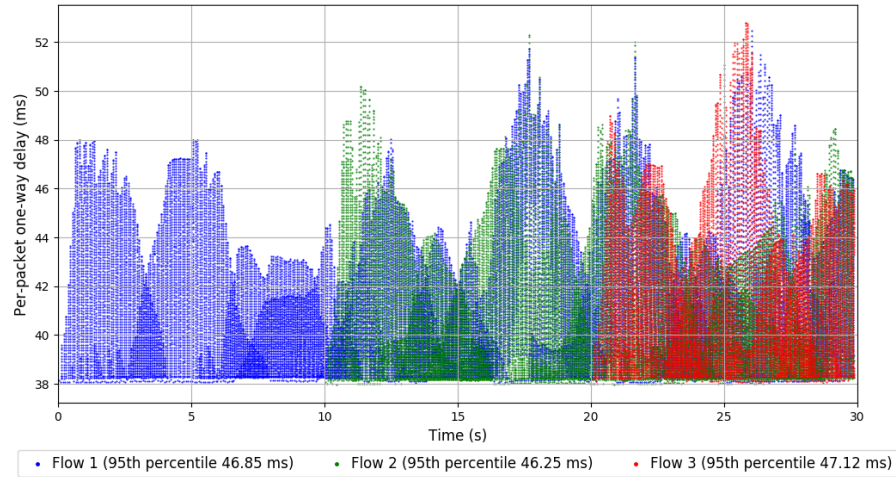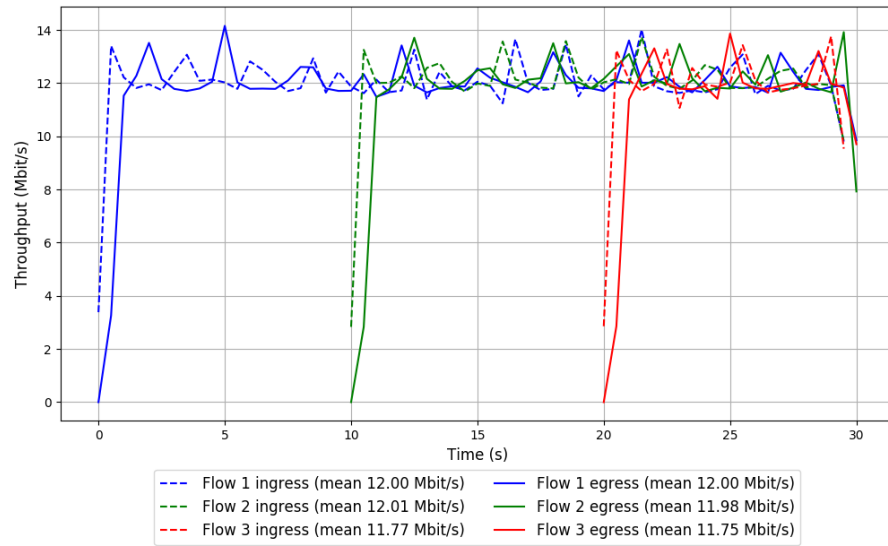
Run 4: Report of Sprout — Data Link

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```
Run 5: Statistics of Sprout

Start at: 2019-02-20 11:48:34
End at: 2019-02-20 11:49:04
Local clock offset: -2.909 ms
Remote clock offset: -6.157 ms


# Below is generated by plot.py at 2019-02-20 12:16:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 23.81 Mbit/s
95th percentile per-packet one-way delay: 46.676 ms
Loss rate: 0.39%
-- Flow 1:
Average throughput: 12.00 Mbit/s
95th percentile per-packet one-way delay: 46.847 ms
Loss rate: 0.27%
-- Flow 2:
Average throughput: 11.98 Mbit/s
95th percentile per-packet one-way delay: 46.247 ms
Loss rate: 0.40%
-- Flow 3:
Average throughput: 11.75 Mbit/s
95th percentile per-packet one-way delay: 47.115 ms
Loss rate: 0.76%
```
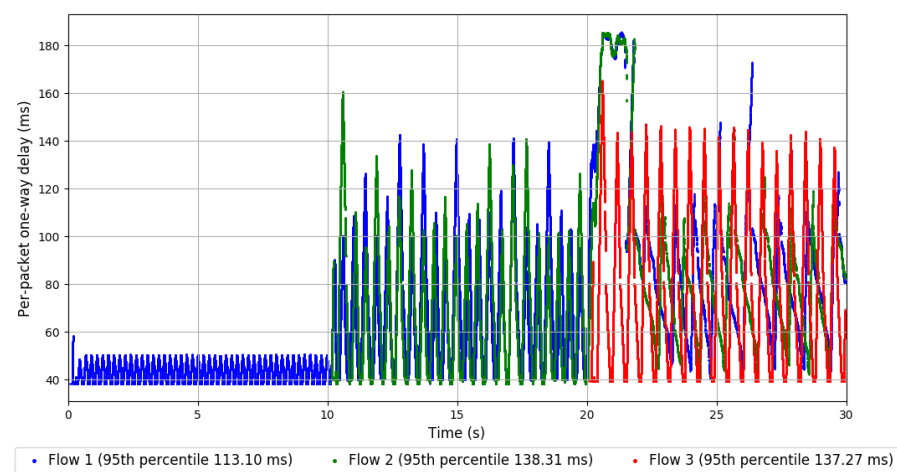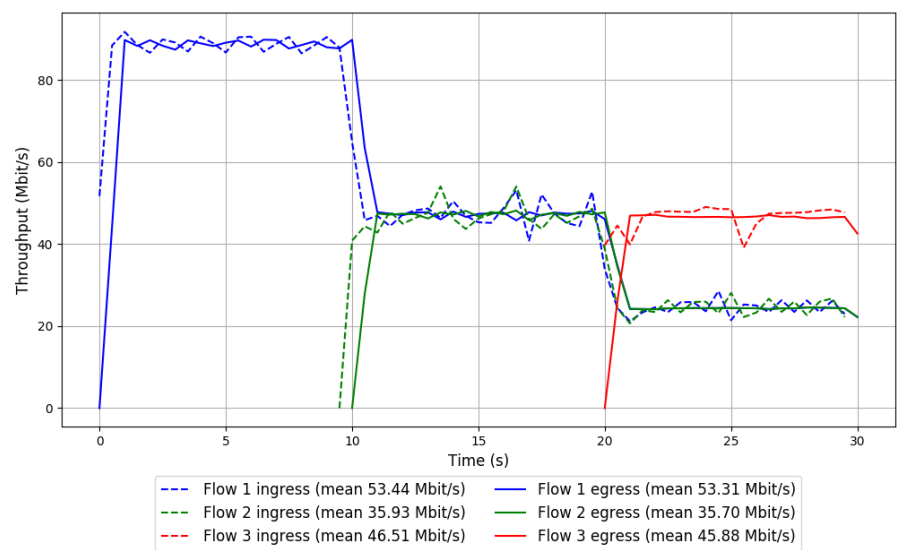
Run 5: Report of Sprout — Data Link

- - - - Flow 1 ingress (mean 12.00 Mbit/s)   —— Flow 1 egress (mean 12.00 Mbit/s)
- - - - Flow 2 ingress (mean 12.01 Mbit/s)   —— Flow 2 egress (mean 11.98 Mbit/s)
- - - - Flow 3 ingress (mean 11.77 Mbit/s)   —— Flow 3 egress (mean 11.75 Mbit/s)

• Flow 1 (95th percentile 46.85 ms)   • Flow 2 (95th percentile 46.25 ms)   • Flow 3 (95th percentile 47.12 ms)

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

Start at: 2019-02-20 10:07:04
End at: 2019-02-20 10:07:34
Local clock offset: -3.415 ms
Remote clock offset: -8.909 ms

# Below is generated by plot.py at 2019-02-20 12:17:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.27 Mbit/s
95th percentile per-packet one-way delay: 130.207 ms
Loss rate: 0.83%
-- Flow 1:
Average throughput: 53.31 Mbit/s
95th percentile per-packet one-way delay: 113.100 ms
Loss rate: 0.44%
-- Flow 2:
Average throughput: 35.70 Mbit/s
95th percentile per-packet one-way delay: 138.305 ms
Loss rate: 0.96%
-- Flow 3:
Average throughput: 45.88 Mbit/s
95th percentile per-packet one-way delay: 137.274 ms
Loss rate: 1.99%
```

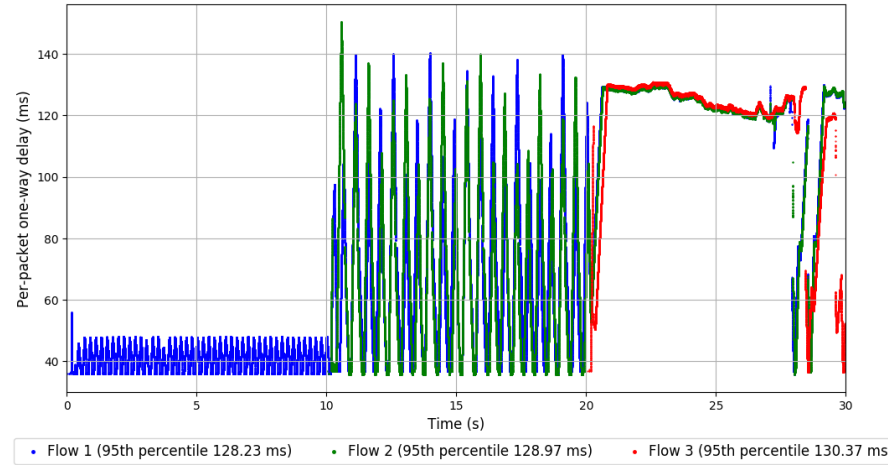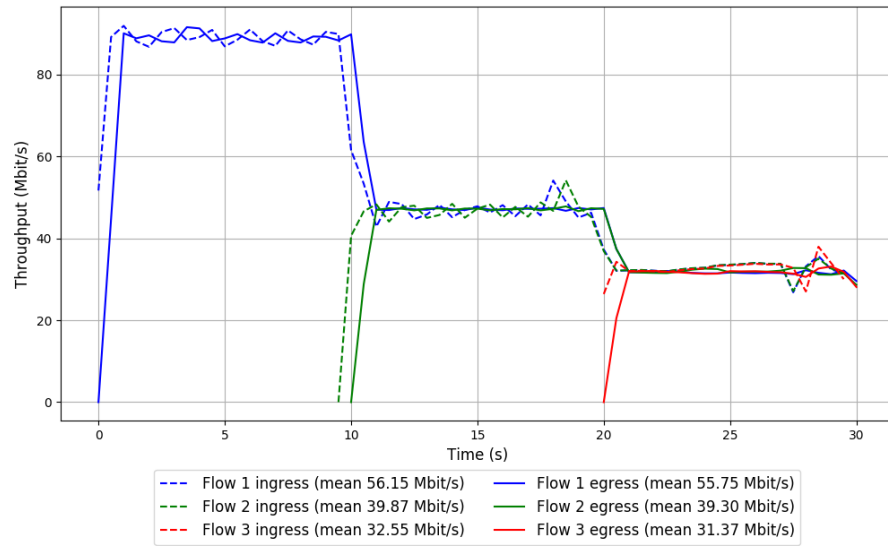# Run 1: Report of TaoVA-100x — Data Link

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

Start at: 2019-02-20 10:32:41
End at: 2019-02-20 10:33:11
Local clock offset: -2.869 ms
Remote clock offset: -5.141 ms


# Below is generated by plot.py at 2019-02-20 12:17:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.30 Mbit/s
95th percentile per-packet one-way delay: 129.060 ms
Loss rate: 1.54%
-- Flow 1:
Average throughput: 55.75 Mbit/s
95th percentile per-packet one-way delay: 128.229 ms
Loss rate: 0.93%
-- Flow 2:
Average throughput: 39.30 Mbit/s
95th percentile per-packet one-way delay: 128.971 ms
Loss rate: 1.74%
-- Flow 3:
Average throughput: 31.37 Mbit/s
95th percentile per-packet one-way delay: 130.372 ms
Loss rate: 4.24%
```

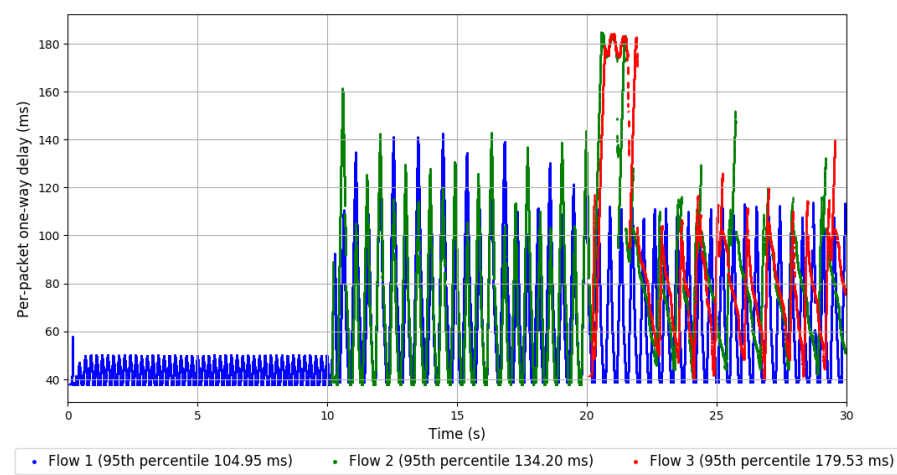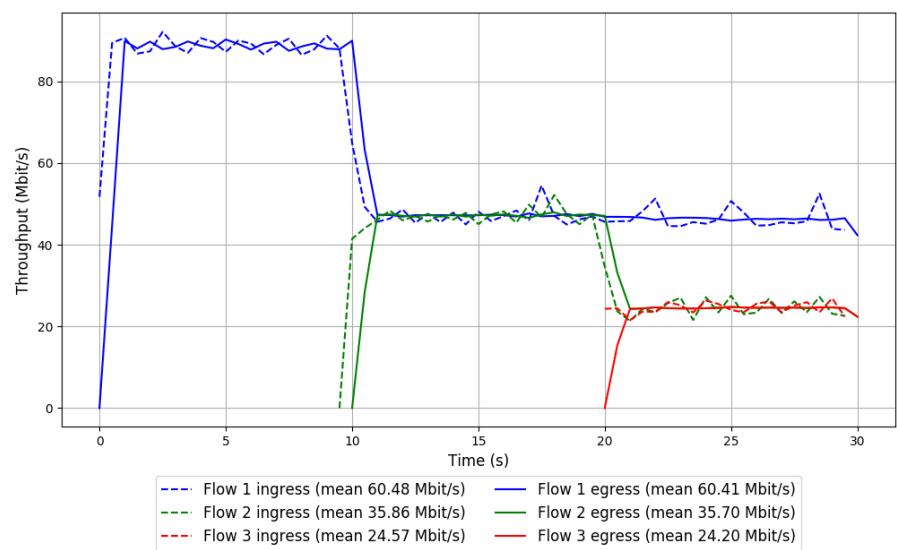# Run 2: Report of TaoVA-100x — Data Link

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

Start at: 2019-02-20 10:58:42
End at: 2019-02-20 10:59:12
Local clock offset: 1.392 ms
Remote clock offset: -5.999 ms

# Below is generated by plot.py at 2019-02-20 12:18:07
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.18 Mbit/s
95th percentile per-packet one-way delay: 118.216 ms
Loss rate: 0.61%
-- Flow 1:
Average throughput: 60.41 Mbit/s
95th percentile per-packet one-way delay: 104.952 ms
Loss rate: 0.33%
-- Flow 2:
Average throughput: 35.70 Mbit/s
95th percentile per-packet one-way delay: 134.196 ms
Loss rate: 0.76%
-- Flow 3:
Average throughput: 24.20 Mbit/s
95th percentile per-packet one-way delay: 179.528 ms
Loss rate: 2.19%
```

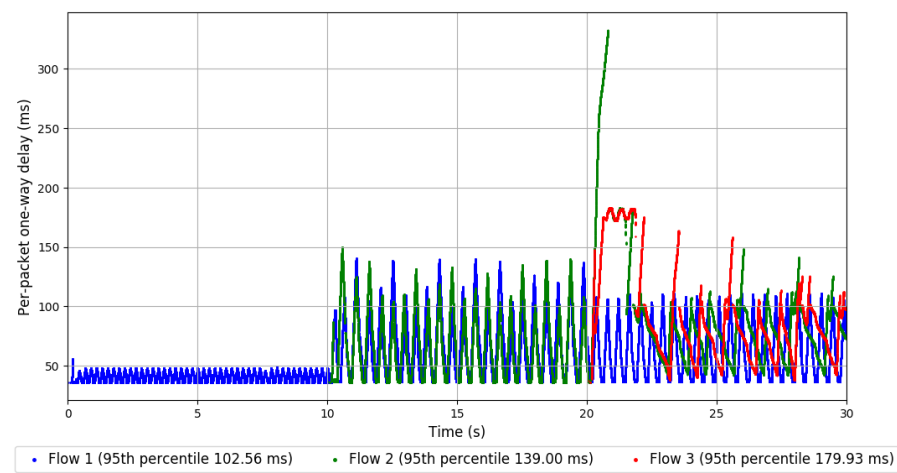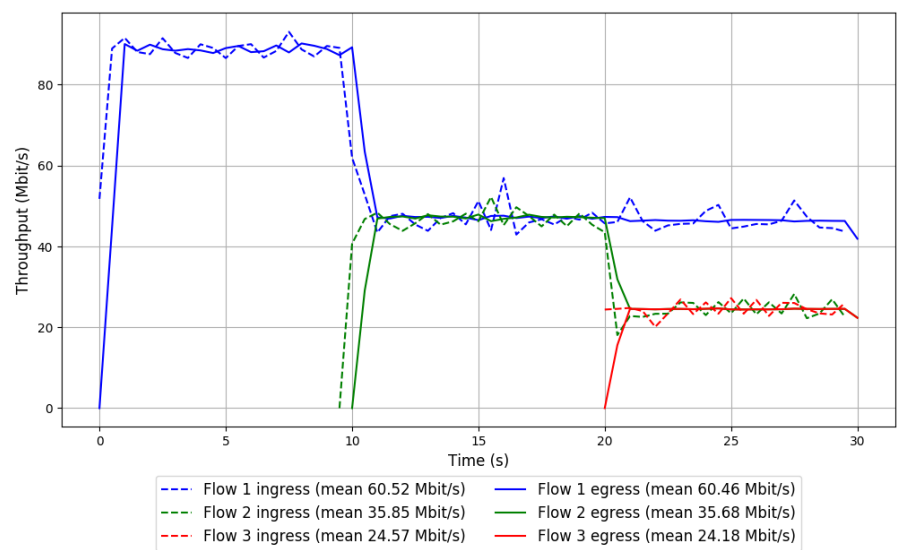Run 3: Report of TaoVA-100x — Data Link

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

Start at: 2019-02-20 11:25:16
End at: 2019-02-20 11:25:46
Local clock offset: 1.129 ms
Remote clock offset: -3.744 ms


# Below is generated by plot.py at 2019-02-20 12:18:07
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.23 Mbit/s
95th percentile per-packet one-way delay: 118.975 ms
Loss rate: 0.60%
-- Flow 1:
Average throughput: 60.46 Mbit/s
95th percentile per-packet one-way delay: 102.560 ms
Loss rate: 0.30%
-- Flow 2:
Average throughput: 35.68 Mbit/s
95th percentile per-packet one-way delay: 139.003 ms
Loss rate: 0.79%
-- Flow 3:
Average throughput: 24.18 Mbit/s
95th percentile per-packet one-way delay: 179.932 ms
Loss rate: 2.25%
```
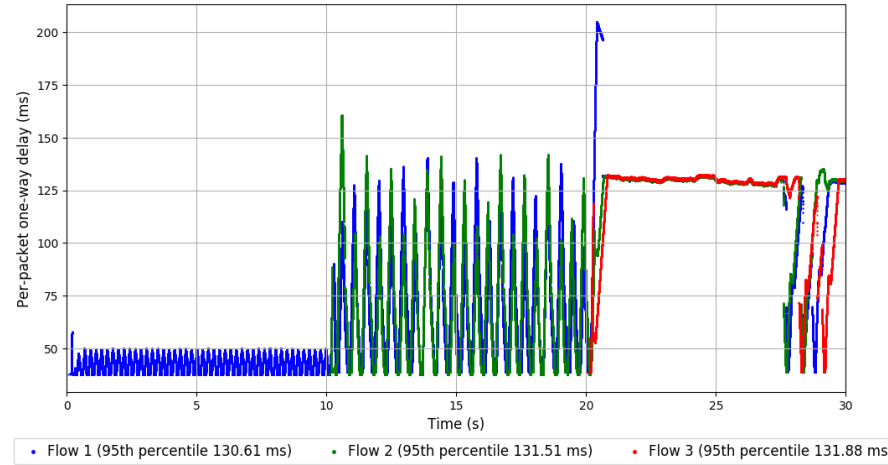
Run 4: Report of TaoVA-100x — Data Link

- - - - Flow 1 ingress (mean 60.52 Mbit/s)   —— Flow 1 egress (mean 60.46 Mbit/s)
- - - - Flow 2 ingress (mean 35.85 Mbit/s)   —— Flow 2 egress (mean 35.68 Mbit/s)
- - - - Flow 3 ingress (mean 24.57 Mbit/s)   —— Flow 3 egress (mean 24.18 Mbit/s)

- Flow 1 (95th percentile 102.56 ms)   • Flow 2 (95th percentile 139.00 ms)   • Flow 3 (95th percentile 179.93 ms)
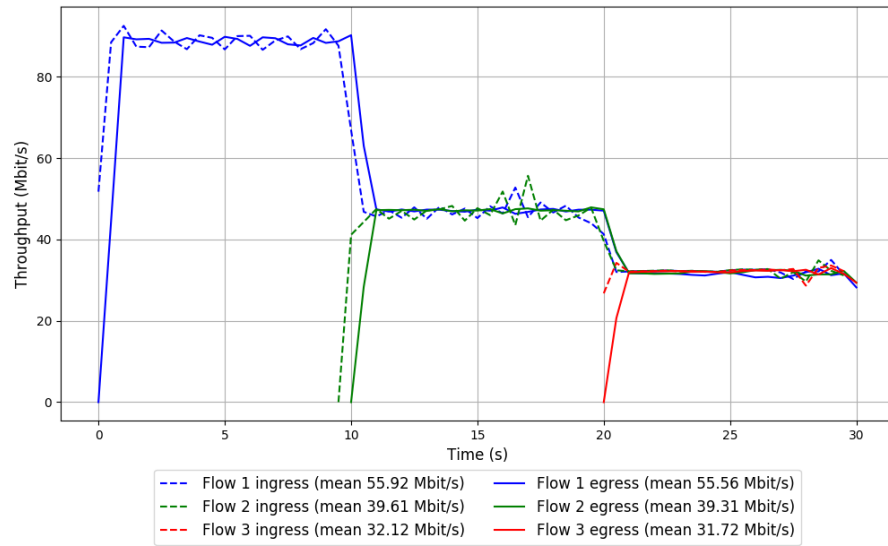
```
Run 5: Statistics of TaoVA-100x

Start at: 2019-02-20 11:50:56
End at: 2019-02-20 11:51:26
Local clock offset: -3.09 ms
Remote clock offset: -5.925 ms


# Below is generated by plot.py at 2019-02-20 12:18:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.24 Mbit/s
95th percentile per-packet one-way delay: 131.313 ms
Loss rate: 1.04%
-- Flow 1:
Average throughput: 55.56 Mbit/s
95th percentile per-packet one-way delay: 130.608 ms
Loss rate: 0.85%
-- Flow 2:
Average throughput: 39.31 Mbit/s
95th percentile per-packet one-way delay: 131.506 ms
Loss rate: 1.08%
-- Flow 3:
Average throughput: 31.72 Mbit/s
95th percentile per-packet one-way delay: 131.878 ms
Loss rate: 1.92%
```
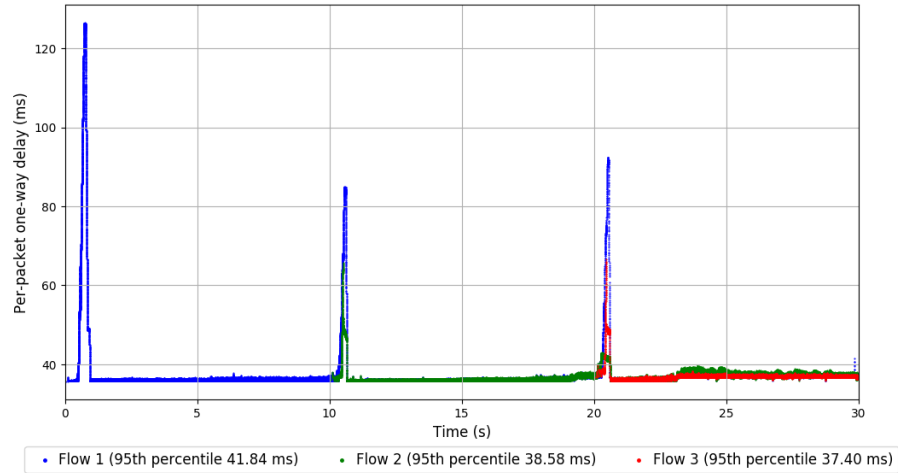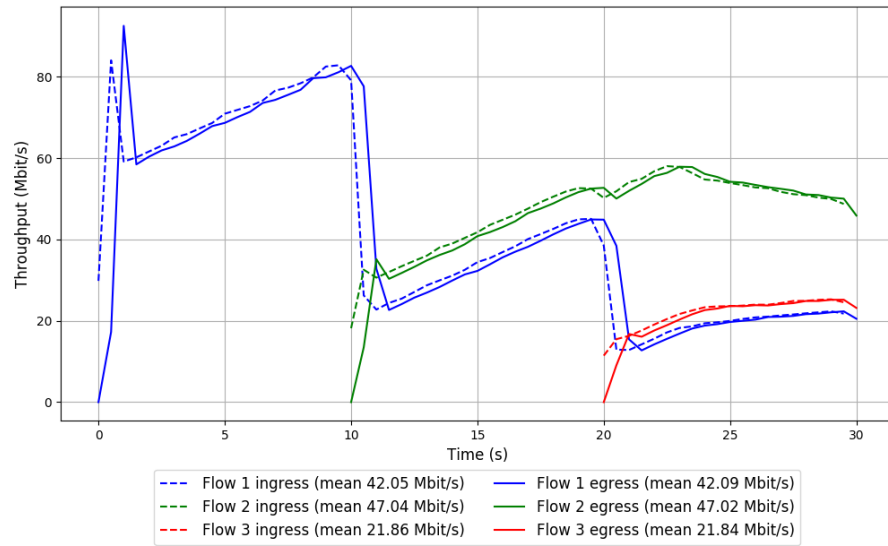
Run 5: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 55.92 Mbit/s) Flow 1 egress (mean 55.56 Mbit/s)
Flow 2 ingress (mean 39.61 Mbit/s) Flow 2 egress (mean 39.31 Mbit/s)
Flow 3 ingress (mean 32.12 Mbit/s) Flow 3 egress (mean 31.72 Mbit/s)

Flow 1 (95th percentile 130.61 ms) Flow 2 (95th percentile 131.51 ms) Flow 3 (95th percentile 131.88 ms)

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```
Run 1: Statistics of TCP Vegas

Start at: 2019-02-20 10:16:59
End at: 2019-02-20 10:17:29
Local clock offset: -3.781 ms
Remote clock offset: -5.881 ms


# Below is generated by plot.py at 2019-02-20 12:18:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 80.61 Mbit/s
95th percentile per-packet one-way delay: 38.625 ms
Loss rate: 0.27%
-- Flow 1:
Average throughput: 42.09 Mbit/s
95th percentile per-packet one-way delay: 41.840 ms
Loss rate: 0.13%
-- Flow 2:
Average throughput: 47.02 Mbit/s
95th percentile per-packet one-way delay: 38.580 ms
Loss rate: 0.36%
-- Flow 3:
Average throughput: 21.84 Mbit/s
95th percentile per-packet one-way delay: 37.404 ms
Loss rate: 0.77%
```

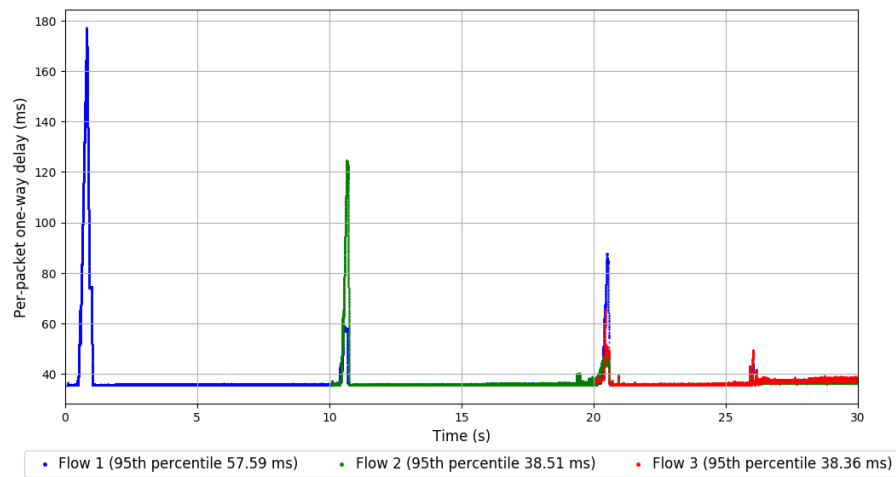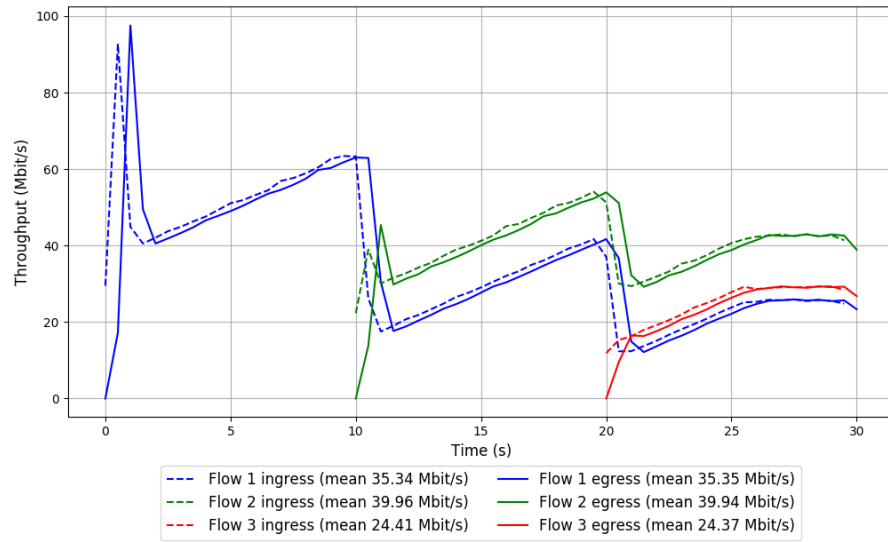Run 1: Report of TCP Vegas — Data Link

```
Run 2: Statistics of TCP Vegas

Start at: 2019-02-20 10:42:50
End at: 2019-02-20 10:43:20
Local clock offset: -0.166 ms
Remote clock offset: -4.235 ms


# Below is generated by plot.py at 2019-02-20 12:18:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 70.00 Mbit/s
95th percentile per-packet one-way delay: 42.322 ms
Loss rate: 0.32%
-- Flow 1:
Average throughput: 35.35 Mbit/s
95th percentile per-packet one-way delay: 57.595 ms
Loss rate: 0.18%
-- Flow 2:
Average throughput: 39.94 Mbit/s
95th percentile per-packet one-way delay: 38.511 ms
Loss rate: 0.36%
-- Flow 3:
Average throughput: 24.37 Mbit/s
95th percentile per-packet one-way delay: 38.359 ms
Loss rate: 0.80%
```
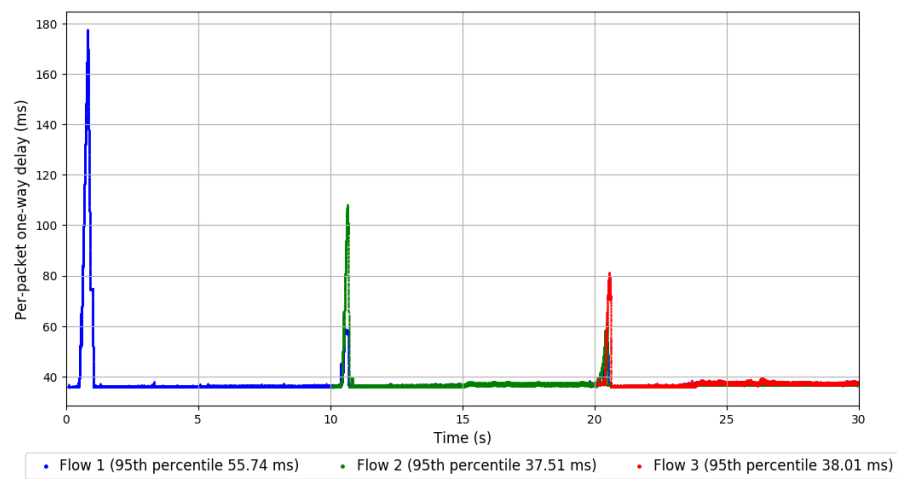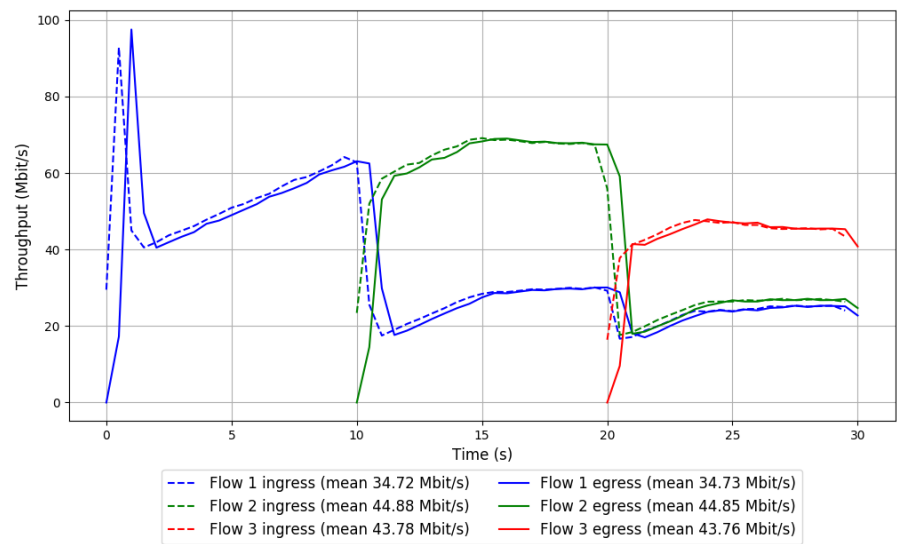
Run 2: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 35.34 Mbit/s) ------ Flow 1 egress (mean 35.35 Mbit/s)
Flow 2 ingress (mean 39.96 Mbit/s) ------ Flow 2 egress (mean 39.94 Mbit/s)
Flow 3 ingress (mean 24.41 Mbit/s) ------ Flow 3 egress (mean 24.37 Mbit/s)

Flow 1 (95th percentile 57.59 ms)   Flow 2 (95th percentile 38.51 ms)   Flow 3 (95th percentile 38.36 ms)

```
Run 3: Statistics of TCP Vegas

Start at: 2019-02-20 11:08:48
End at: 2019-02-20 11:09:18
Local clock offset: 0.962 ms
Remote clock offset: -3.708 ms


# Below is generated by plot.py at 2019-02-20 12:18:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 79.07 Mbit/s
95th percentile per-packet one-way delay: 38.423 ms
Loss rate: 0.35%
-- Flow 1:
Average throughput: 34.73 Mbit/s
95th percentile per-packet one-way delay: 55.736 ms
Loss rate: 0.17%
-- Flow 2:
Average throughput: 44.85 Mbit/s
95th percentile per-packet one-way delay: 37.507 ms
Loss rate: 0.38%
-- Flow 3:
Average throughput: 43.76 Mbit/s
95th percentile per-packet one-way delay: 38.007 ms
Loss rate: 0.69%
```

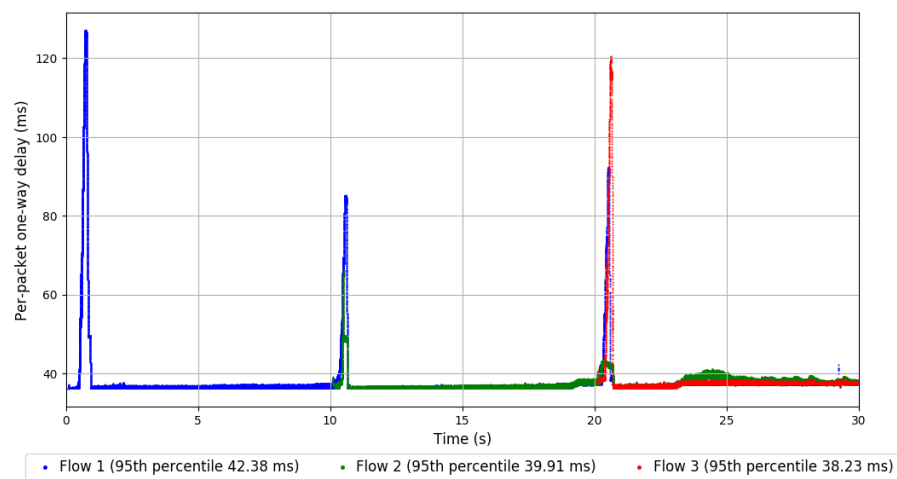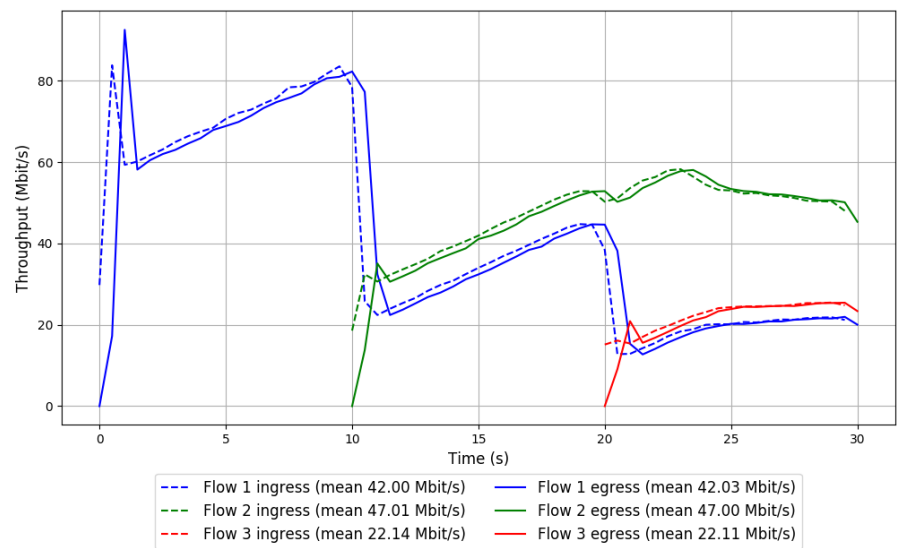# Run 3: Report of TCP Vegas — Data Link

```
Run 4: Statistics of TCP Vegas

Start at: 2019-02-20 11:35:15
End at: 2019-02-20 11:35:45
Local clock offset: -0.749 ms
Remote clock offset: -3.788 ms


# Below is generated by plot.py at 2019-02-20 12:18:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 80.63 Mbit/s
95th percentile per-packet one-way delay: 40.025 ms
Loss rate: 0.27%
-- Flow 1:
Average throughput: 42.03 Mbit/s
95th percentile per-packet one-way delay: 42.378 ms
Loss rate: 0.13%
-- Flow 2:
Average throughput: 47.00 Mbit/s
95th percentile per-packet one-way delay: 39.907 ms
Loss rate: 0.35%
-- Flow 3:
Average throughput: 22.11 Mbit/s
95th percentile per-packet one-way delay: 38.231 ms
Loss rate: 0.78%
```

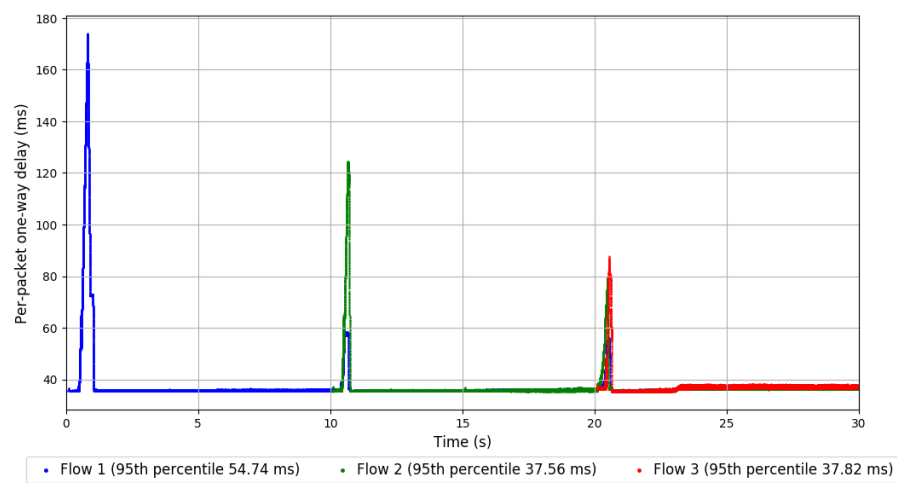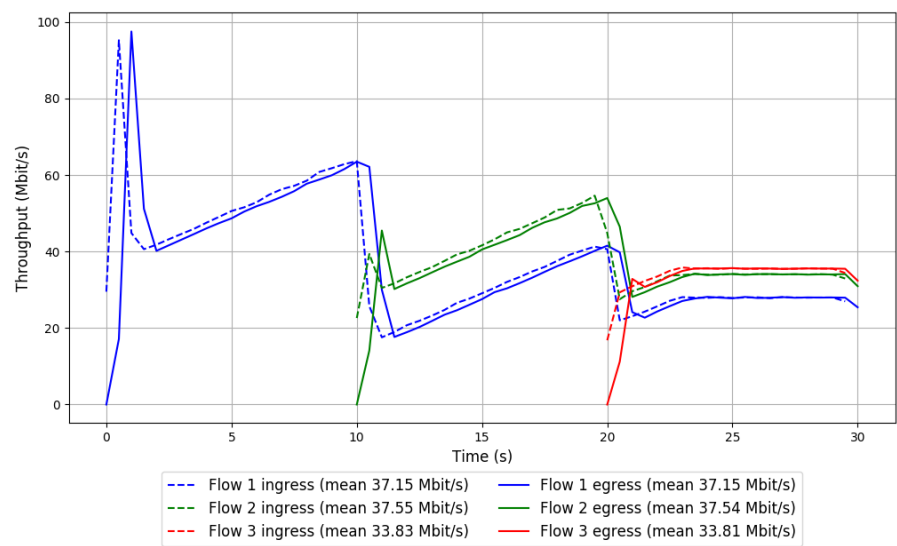Run 4: Report of TCP Vegas — Data Link

```
Run 5: Statistics of TCP Vegas

Start at: 2019-02-20 12:01:03
End at: 2019-02-20 12:01:33
Local clock offset: -3.064 ms
Remote clock offset: -4.042 ms


# Below is generated by plot.py at 2019-02-20 12:18:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 73.33 Mbit/s
95th percentile per-packet one-way delay: 39.413 ms
Loss rate: 0.33%
-- Flow 1:
Average throughput: 37.15 Mbit/s
95th percentile per-packet one-way delay: 54.743 ms
Loss rate: 0.22%
-- Flow 2:
Average throughput: 37.54 Mbit/s
95th percentile per-packet one-way delay: 37.563 ms
Loss rate: 0.33%
-- Flow 3:
Average throughput: 33.81 Mbit/s
95th percentile per-packet one-way delay: 37.823 ms
Loss rate: 0.70%
```

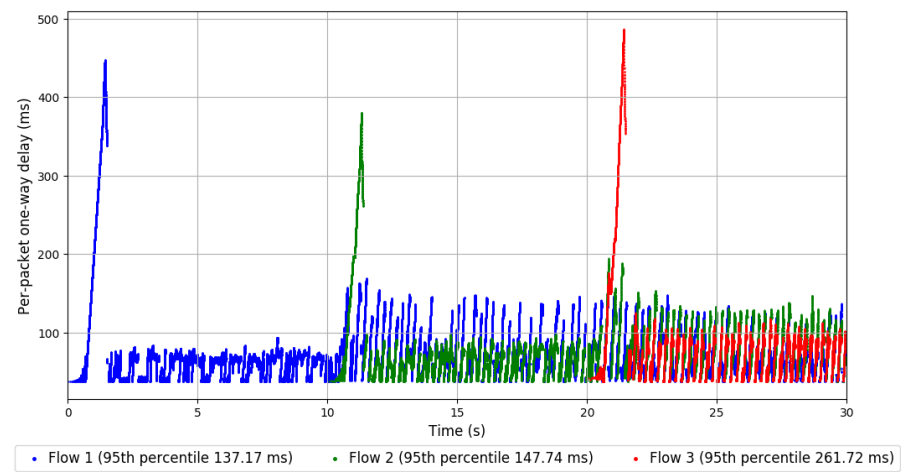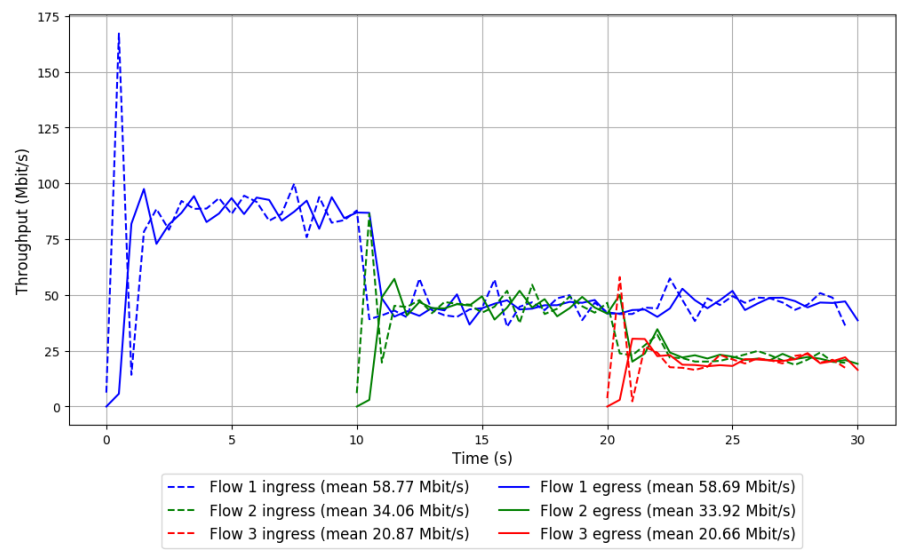# Run 5: Report of TCP Vegas — Data Link

```
Run 1: Statistics of Verus

Start at: 2019-02-20 10:03:27
End at: 2019-02-20 10:03:57
Local clock offset: -3.284 ms
Remote clock offset: -8.724 ms


# Below is generated by plot.py at 2019-02-20 12:18:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 88.08 Mbit/s
95th percentile per-packet one-way delay: 143.785 ms
Loss rate: 0.46%
-- Flow 1:
Average throughput: 58.69 Mbit/s
95th percentile per-packet one-way delay: 137.173 ms
Loss rate: 0.32%
-- Flow 2:
Average throughput: 33.92 Mbit/s
95th percentile per-packet one-way delay: 147.741 ms
Loss rate: 0.56%
-- Flow 3:
Average throughput: 20.66 Mbit/s
95th percentile per-packet one-way delay: 261.719 ms
Loss rate: 1.33%
```
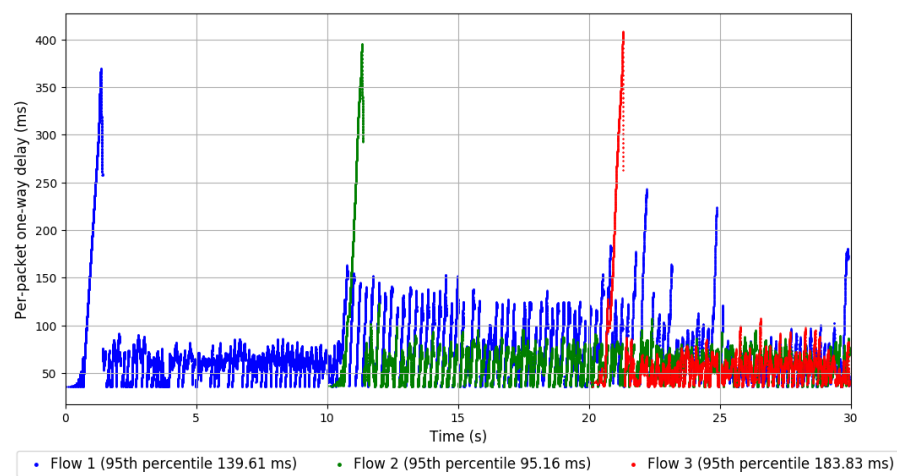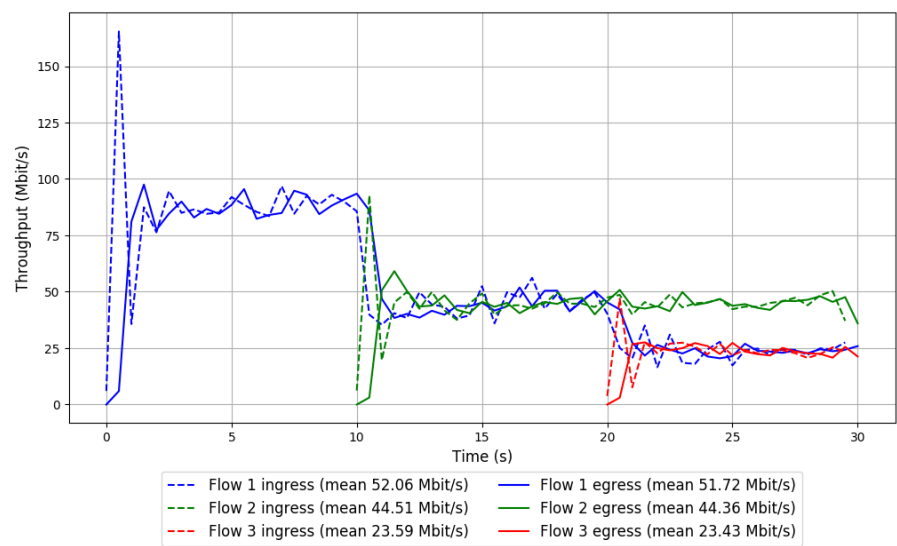
Run 1: Report of Verus — Data Link

```
Run 2: Statistics of Verus

Start at: 2019-02-20 10:29:03
End at: 2019-02-20 10:29:33
Local clock offset: -4.18 ms
Remote clock offset: -5.366 ms

# Below is generated by plot.py at 2019-02-20 12:18:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 88.97 Mbit/s
95th percentile per-packet one-way delay: 134.474 ms
Loss rate: 0.82%
-- Flow 1:
Average throughput: 51.72 Mbit/s
95th percentile per-packet one-way delay: 139.614 ms
Loss rate: 0.85%
-- Flow 2:
Average throughput: 44.36 Mbit/s
95th percentile per-packet one-way delay: 95.156 ms
Loss rate: 0.65%
-- Flow 3:
Average throughput: 23.43 Mbit/s
95th percentile per-packet one-way delay: 183.826 ms
Loss rate: 1.30%
```

Run 2: Report of Verus — Data Link

```
Run 3: Statistics of Verus

Start at: 2019-02-20 10:55:03
End at: 2019-02-20 10:55:33
Local clock offset: 1.143 ms
Remote clock offset: -4.27 ms

# Below is generated by plot.py at 2019-02-20 12:18:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 88.42 Mbit/s
95th percentile per-packet one-way delay: 194.645 ms
Loss rate: 0.49%
-- Flow 1:
Average throughput: 52.07 Mbit/s
95th percentile per-packet one-way delay: 157.397 ms
Loss rate: 0.35%
-- Flow 2:
Average throughput: 34.81 Mbit/s
95th percentile per-packet one-way delay: 141.540 ms
Loss rate: 0.25%
-- Flow 3:
Average throughput: 39.89 Mbit/s
95th percentile per-packet one-way delay: 289.261 ms
Loss rate: 1.47%
```
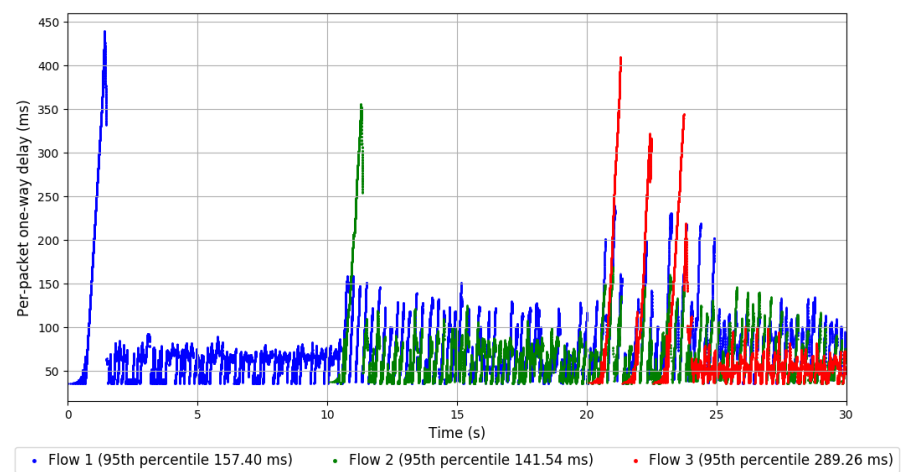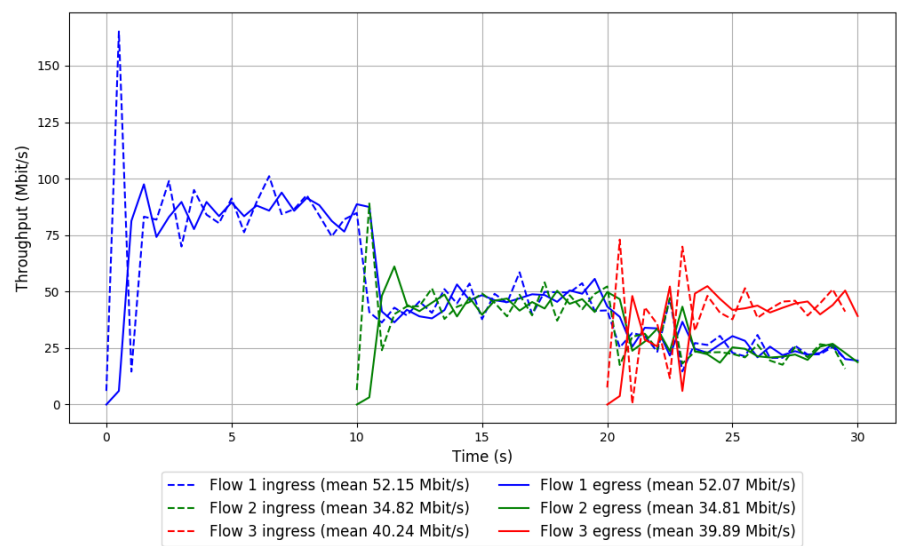
Run 3: Report of Verus — Data Link

Flow 1 ingress (mean 52.15 Mbit/s) --- Flow 1 egress (mean 52.07 Mbit/s)
Flow 2 ingress (mean 34.82 Mbit/s) --- Flow 2 egress (mean 34.81 Mbit/s)
Flow 3 ingress (mean 40.24 Mbit/s) --- Flow 3 egress (mean 39.89 Mbit/s)

Flow 1 (95th percentile 157.40 ms)   Flow 2 (95th percentile 141.54 ms)   Flow 3 (95th percentile 289.26 ms)
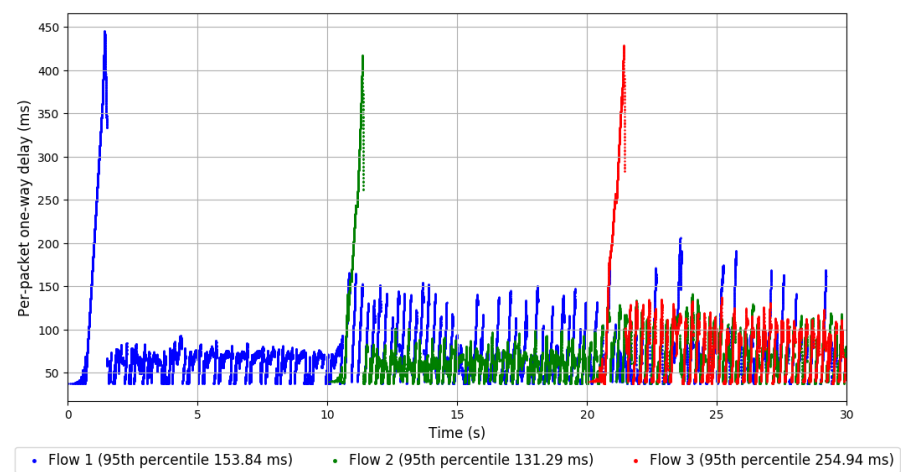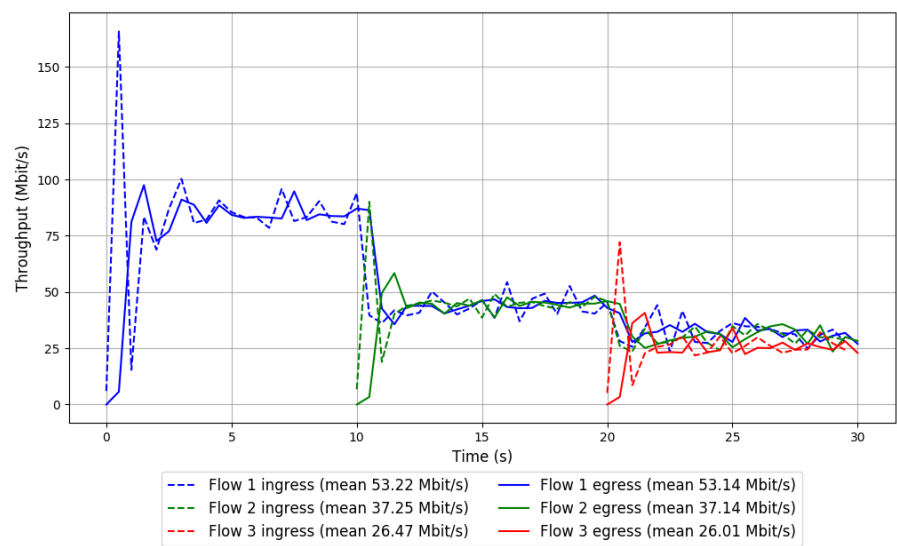
```
Run 4: Statistics of Verus

Start at: 2019-02-20 11:21:34
End at: 2019-02-20 11:22:04
Local clock offset: 1.055 ms
Remote clock offset: -5.539 ms


# Below is generated by plot.py at 2019-02-20 12:18:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 86.44 Mbit/s
95th percentile per-packet one-way delay: 156.788 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 53.14 Mbit/s
95th percentile per-packet one-way delay: 153.842 ms
Loss rate: 0.36%
-- Flow 2:
Average throughput: 37.14 Mbit/s
95th percentile per-packet one-way delay: 131.291 ms
Loss rate: 0.60%
-- Flow 3:
Average throughput: 26.01 Mbit/s
95th percentile per-packet one-way delay: 254.935 ms
Loss rate: 2.38%
```

Run 4: Report of Verus — Data Link

- - - - Flow 1 ingress (mean 53.22 Mbit/s)   —— Flow 1 egress (mean 53.14 Mbit/s)
- - - - Flow 2 ingress (mean 37.25 Mbit/s)   —— Flow 2 egress (mean 37.14 Mbit/s)
- - - - Flow 3 ingress (mean 26.47 Mbit/s)   —— Flow 3 egress (mean 26.01 Mbit/s)

- Flow 1 (95th percentile 153.84 ms)   • Flow 2 (95th percentile 131.29 ms)   • Flow 3 (95th percentile 254.94 ms)
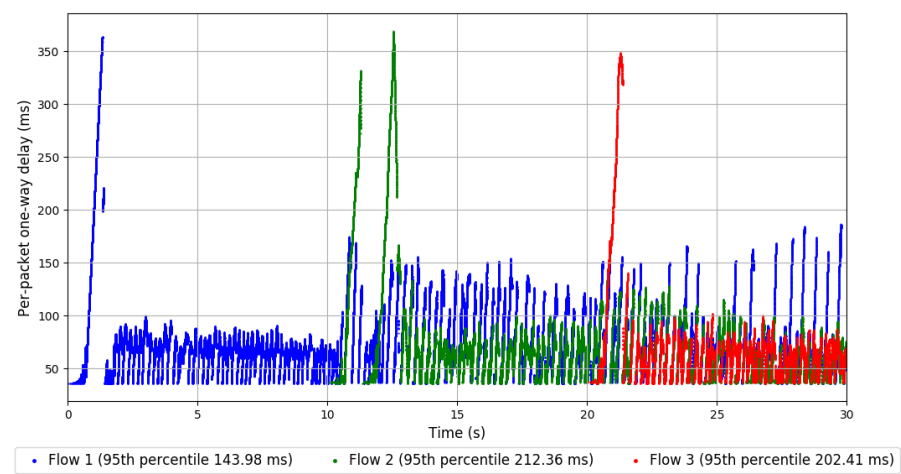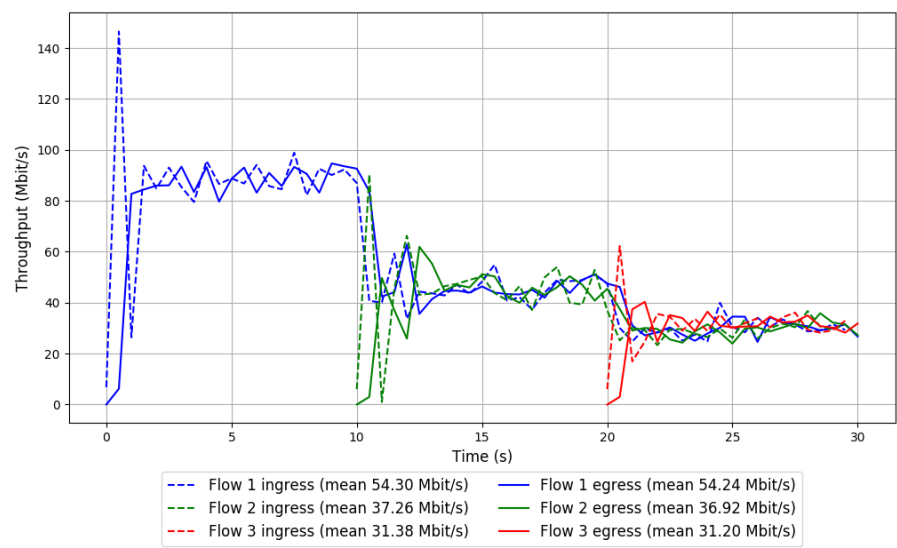
192

```
Run 5: Statistics of Verus

Start at: 2019-02-20 11:47:19
End at: 2019-02-20 11:47:49
Local clock offset: -2.783 ms
Remote clock offset: -3.889 ms


# Below is generated by plot.py at 2019-02-20 12:19:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 89.12 Mbit/s
95th percentile per-packet one-way delay: 159.495 ms
Loss rate: 0.63%
-- Flow 1:
Average throughput: 54.24 Mbit/s
95th percentile per-packet one-way delay: 143.978 ms
Loss rate: 0.33%
-- Flow 2:
Average throughput: 36.92 Mbit/s
95th percentile per-packet one-way delay: 212.364 ms
Loss rate: 1.23%
-- Flow 3:
Average throughput: 31.20 Mbit/s
95th percentile per-packet one-way delay: 202.410 ms
Loss rate: 0.76%
```
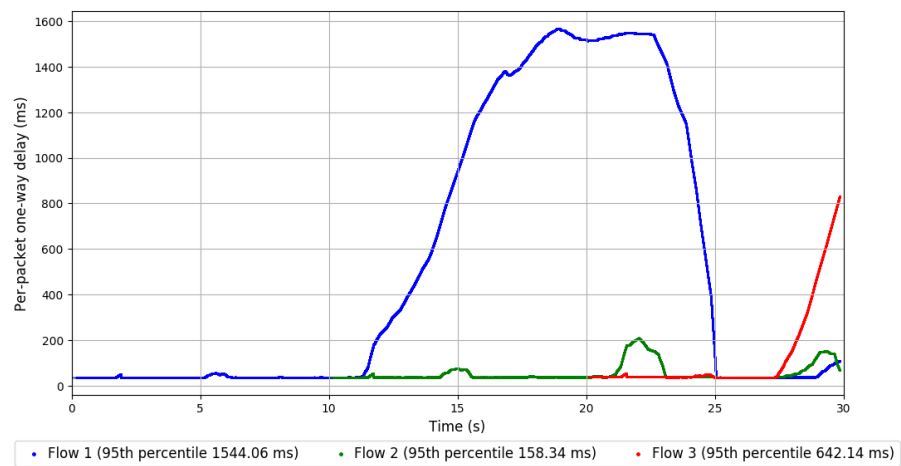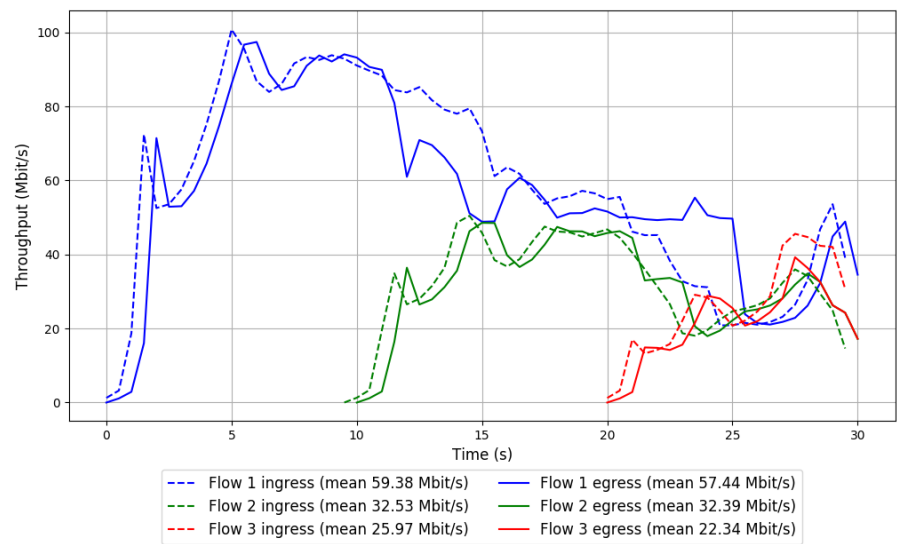
Run 5: Report of Verus — Data Link

```
Run 1: Statistics of PCC-Vivace

Start at: 2019-02-20 10:13:13
End at: 2019-02-20 10:13:43
Local clock offset: -3.653 ms
Remote clock offset: -8.183 ms


# Below is generated by plot.py at 2019-02-20 12:19:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 86.32 Mbit/s
95th percentile per-packet one-way delay: 1535.585 ms
Loss rate: 3.89%
-- Flow 1:
Average throughput: 57.44 Mbit/s
95th percentile per-packet one-way delay: 1544.060 ms
Loss rate: 3.48%
-- Flow 2:
Average throughput: 32.39 Mbit/s
95th percentile per-packet one-way delay: 158.339 ms
Loss rate: 0.77%
-- Flow 3:
Average throughput: 22.34 Mbit/s
95th percentile per-packet one-way delay: 642.140 ms
Loss rate: 14.52%
```

Run 1: Report of PCC-Vivace — Data Link

Flow 1 ingress (mean 59.38 Mbit/s) — — — Flow 1 egress (mean 57.44 Mbit/s)
Flow 2 ingress (mean 32.53 Mbit/s) — — — Flow 2 egress (mean 32.39 Mbit/s)
Flow 3 ingress (mean 25.97 Mbit/s) — — — Flow 3 egress (mean 22.34 Mbit/s)

Flow 1 (95th percentile 1544.06 ms)   Flow 2 (95th percentile 158.34 ms)   Flow 3 (95th percentile 642.14 ms)
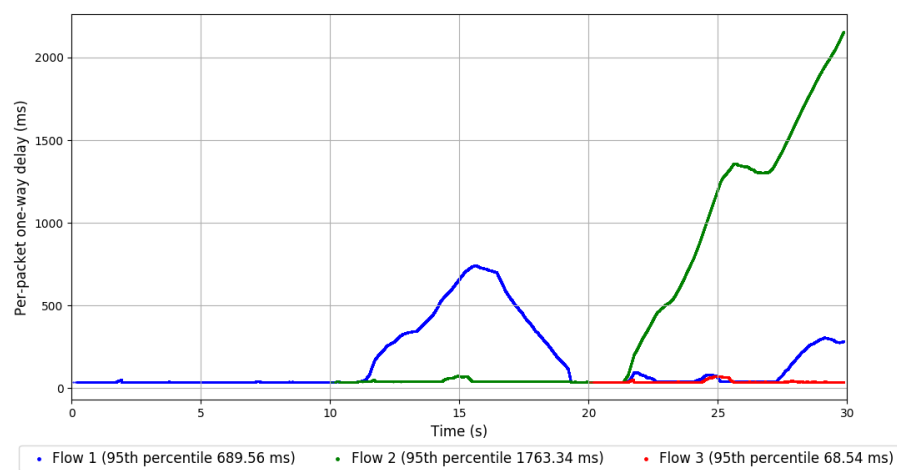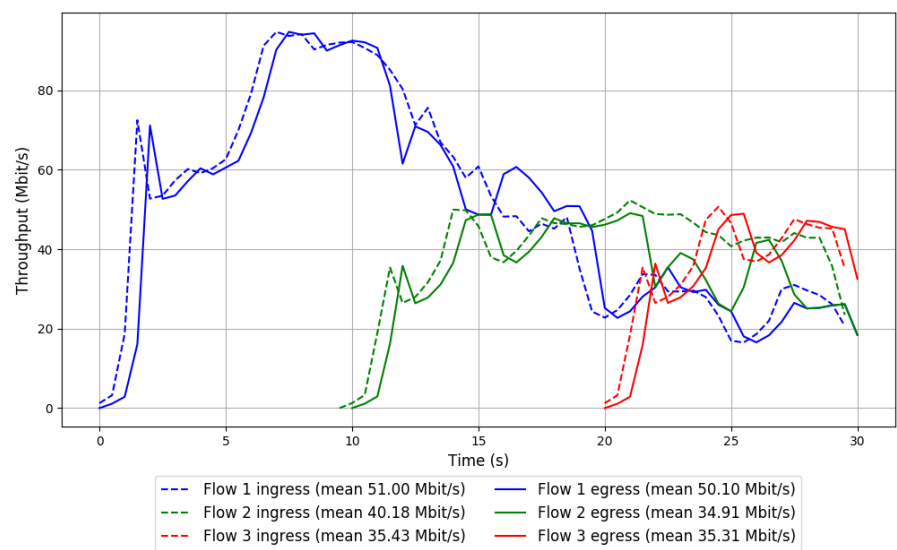
```
Run 2: Statistics of PCC-Vivace

Start at: 2019-02-20 10:38:56
End at: 2019-02-20 10:39:26
Local clock offset: -0.96 ms
Remote clock offset: -6.606 ms


# Below is generated by plot.py at 2019-02-20 12:19:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 84.93 Mbit/s
95th percentile per-packet one-way delay: 1304.495 ms
Loss rate: 5.26%
-- Flow 1:
Average throughput: 50.10 Mbit/s
95th percentile per-packet one-way delay: 689.563 ms
Loss rate: 1.98%
-- Flow 2:
Average throughput: 34.91 Mbit/s
95th percentile per-packet one-way delay: 1763.344 ms
Loss rate: 13.40%
-- Flow 3:
Average throughput: 35.31 Mbit/s
95th percentile per-packet one-way delay: 68.537 ms
Loss rate: 0.99%
```

Run 2: Report of PCC-Vivace — Data Link

Flow 1 ingress (mean 51.00 Mbit/s)   Flow 1 egress (mean 50.10 Mbit/s)
Flow 2 ingress (mean 40.18 Mbit/s)   Flow 2 egress (mean 34.91 Mbit/s)
Flow 3 ingress (mean 35.43 Mbit/s)   Flow 3 egress (mean 35.31 Mbit/s)

Flow 1 (95th percentile 689.56 ms)   Flow 2 (95th percentile 1763.34 ms)   Flow 3 (95th percentile 68.54 ms)
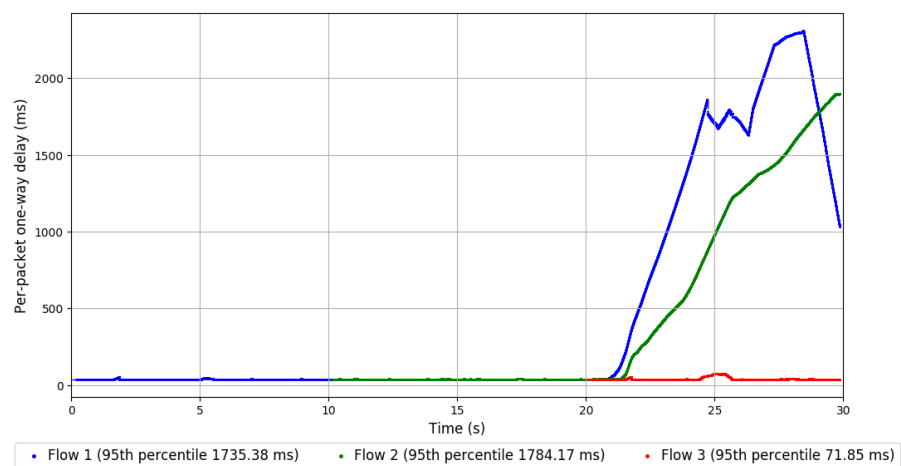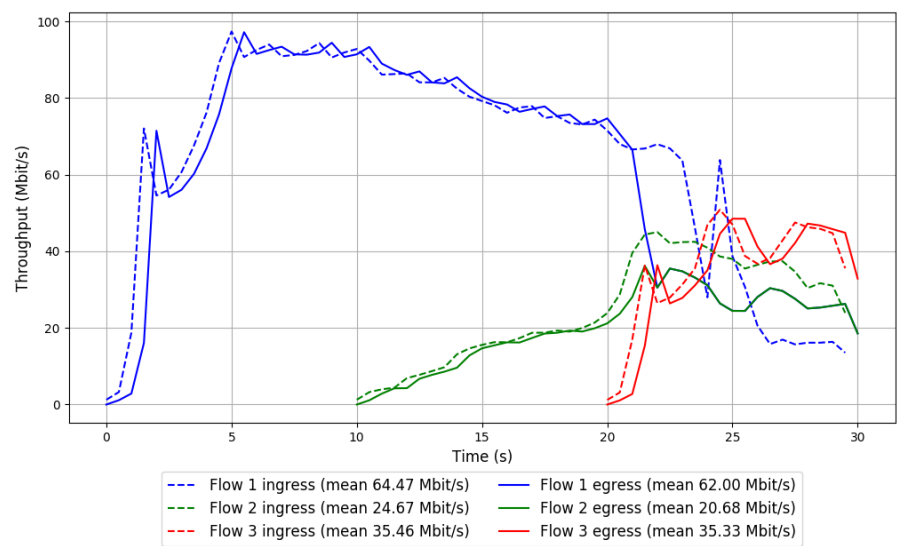
198

```
Run 3: Statistics of PCC-Vivace

Start at: 2019-02-20 11:04:57
End at: 2019-02-20 11:05:27
Local clock offset: 1.086 ms
Remote clock offset: -5.917 ms


# Below is generated by plot.py at 2019-02-20 12:19:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 87.37 Mbit/s
95th percentile per-packet one-way delay: 1718.523 ms
Loss rate: 5.85%
-- Flow 1:
Average throughput: 62.00 Mbit/s
95th percentile per-packet one-way delay: 1735.385 ms
Loss rate: 4.03%
-- Flow 2:
Average throughput: 20.68 Mbit/s
95th percentile per-packet one-way delay: 1784.173 ms
Loss rate: 16.44%
-- Flow 3:
Average throughput: 35.33 Mbit/s
95th percentile per-packet one-way delay: 71.847 ms
Loss rate: 1.02%
```

Run 3: Report of PCC-Vivace — Data Link

Flow 1 ingress (mean 64.47 Mbit/s) --- Flow 1 egress (mean 62.00 Mbit/s)
Flow 2 ingress (mean 24.67 Mbit/s) --- Flow 2 egress (mean 20.68 Mbit/s)
Flow 3 ingress (mean 35.46 Mbit/s) --- Flow 3 egress (mean 35.33 Mbit/s)

Flow 1 (95th percentile 1735.38 ms)   Flow 2 (95th percentile 1784.17 ms)   Flow 3 (95th percentile 71.85 ms)
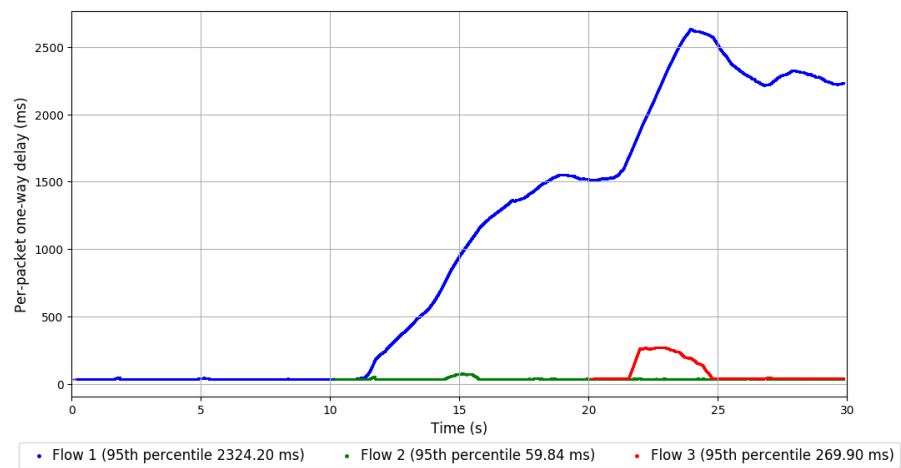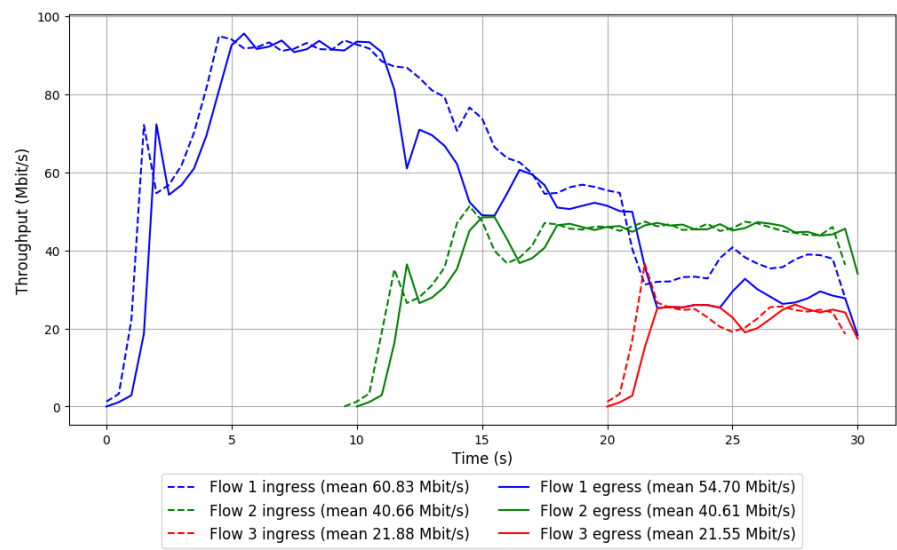
```
Run 4: Statistics of PCC-Vivace

Start at: 2019-02-20 11:31:29
End at: 2019-02-20 11:31:59
Local clock offset: 0.552 ms
Remote clock offset: -5.666 ms


# Below is generated by plot.py at 2019-02-20 12:19:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 88.79 Mbit/s
95th percentile per-packet one-way delay: 2277.671 ms
Loss rate: 6.85%
-- Flow 1:
Average throughput: 54.70 Mbit/s
95th percentile per-packet one-way delay: 2324.195 ms
Loss rate: 10.26%
-- Flow 2:
Average throughput: 40.61 Mbit/s
95th percentile per-packet one-way delay: 59.840 ms
Loss rate: 0.44%
-- Flow 3:
Average throughput: 21.55 Mbit/s
95th percentile per-packet one-way delay: 269.901 ms
Loss rate: 2.18%
```

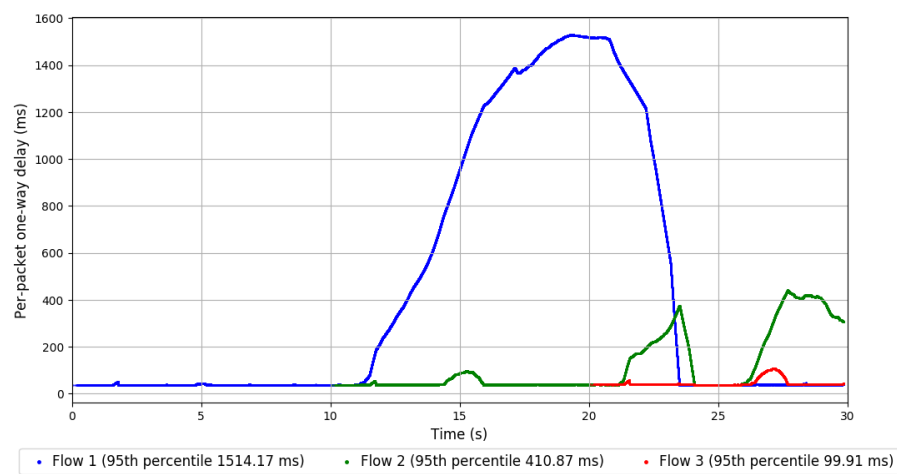# Run 4: Report of PCC-Vivace — Data Link

Flow 1 ingress (mean 60.83 Mbit/s) --- Flow 1 egress (mean 54.70 Mbit/s)
Flow 2 ingress (mean 40.66 Mbit/s) --- Flow 2 egress (mean 40.61 Mbit/s)
Flow 3 ingress (mean 21.88 Mbit/s) --- Flow 3 egress (mean 21.55 Mbit/s)

Flow 1 (95th percentile 2324.20 ms)   Flow 2 (95th percentile 59.84 ms)   Flow 3 (95th percentile 269.90 ms)
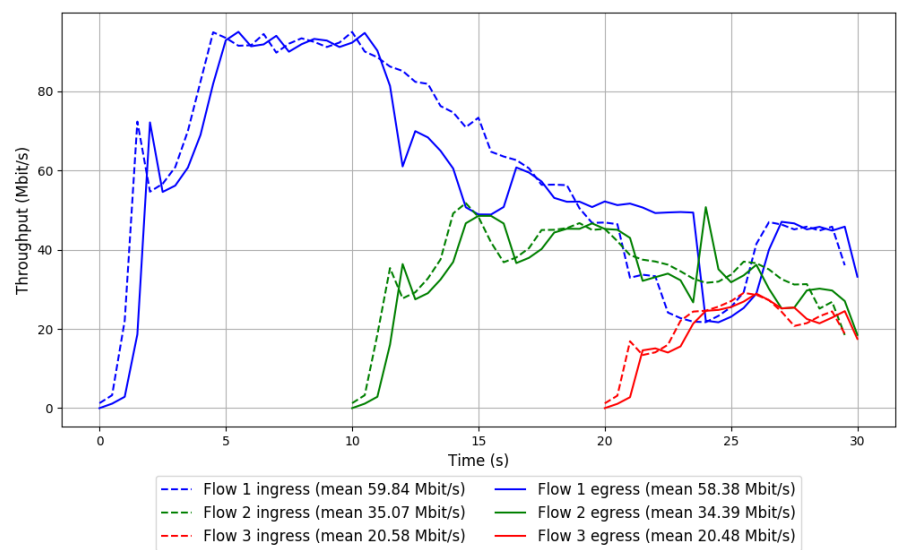
```
Run 5: Statistics of PCC-Vivace

Start at: 2019-02-20 11:57:13
End at: 2019-02-20 11:57:43
Local clock offset: -3.413 ms
Remote clock offset: -6.364 ms


# Below is generated by plot.py at 2019-02-20 12:19:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 87.97 Mbit/s
95th percentile per-packet one-way delay: 1471.442 ms
Loss rate: 2.42%
-- Flow 1:
Average throughput: 58.38 Mbit/s
95th percentile per-packet one-way delay: 1514.170 ms
Loss rate: 2.64%
-- Flow 2:
Average throughput: 34.39 Mbit/s
95th percentile per-packet one-way delay: 410.869 ms
Loss rate: 2.23%
-- Flow 3:
Average throughput: 20.48 Mbit/s
95th percentile per-packet one-way delay: 99.909 ms
Loss rate: 1.11%
```

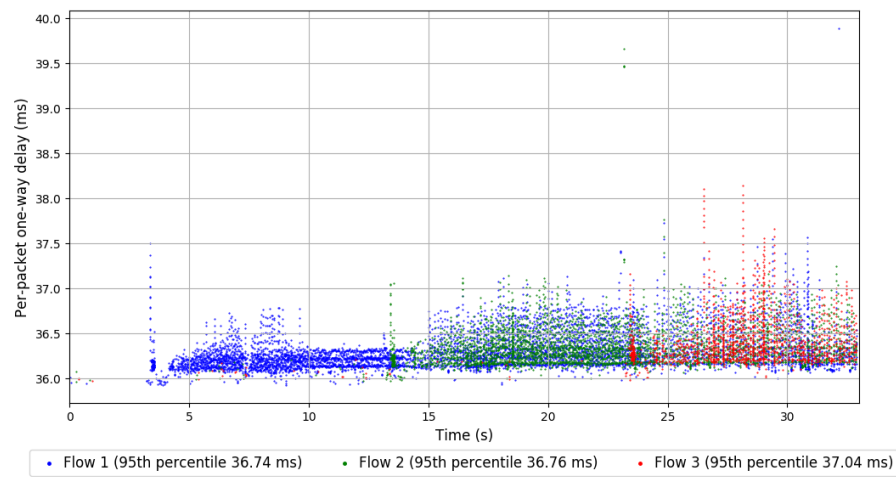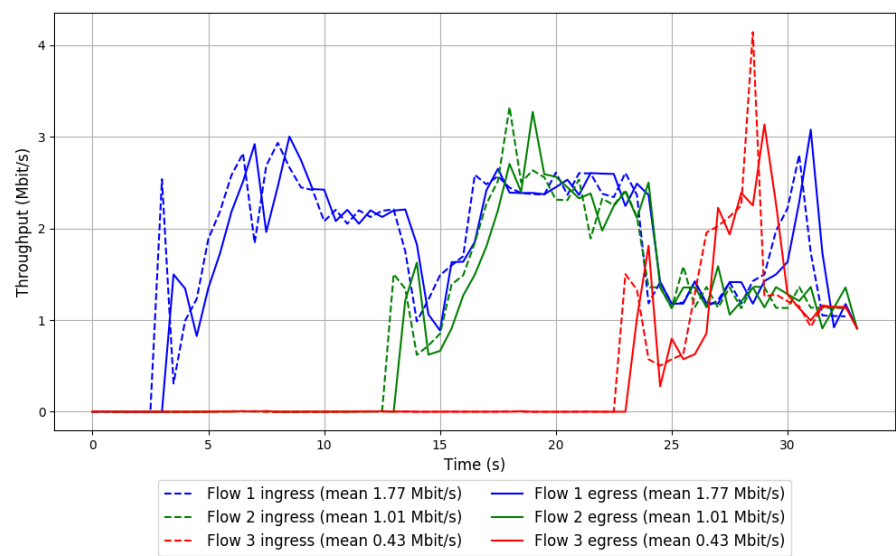Run 5: Report of PCC-Vivace — Data Link

```
Run 1: Statistics of WebRTC media

Start at: 2019-02-20 10:18:11
End at: 2019-02-20 10:18:41
Local clock offset: -3.804 ms
Remote clock offset: -6.109 ms


# Below is generated by plot.py at 2019-02-20 12:19:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.20 Mbit/s
95th percentile per-packet one-way delay: 36.783 ms
Loss rate: 0.28%
-- Flow 1:
Average throughput: 1.77 Mbit/s
95th percentile per-packet one-way delay: 36.737 ms
Loss rate: 0.11%
-- Flow 2:
Average throughput: 1.01 Mbit/s
95th percentile per-packet one-way delay: 36.761 ms
Loss rate: 0.34%
-- Flow 3:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 37.038 ms
Loss rate: 0.80%
```

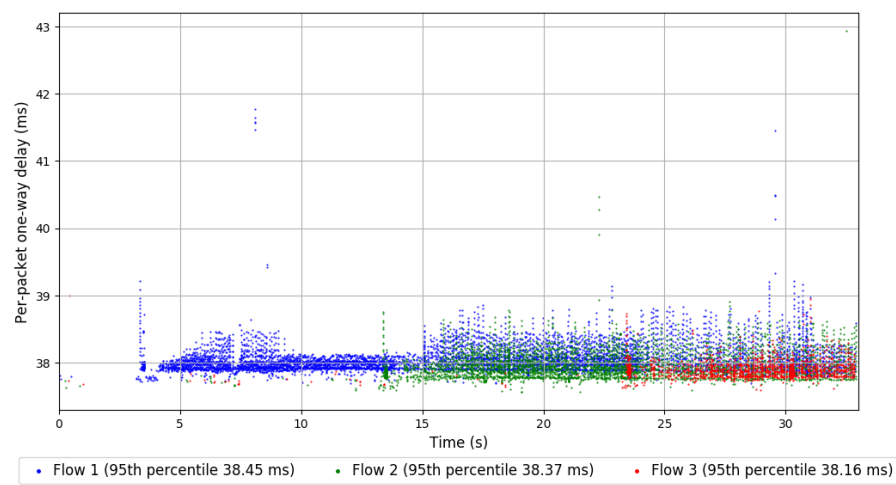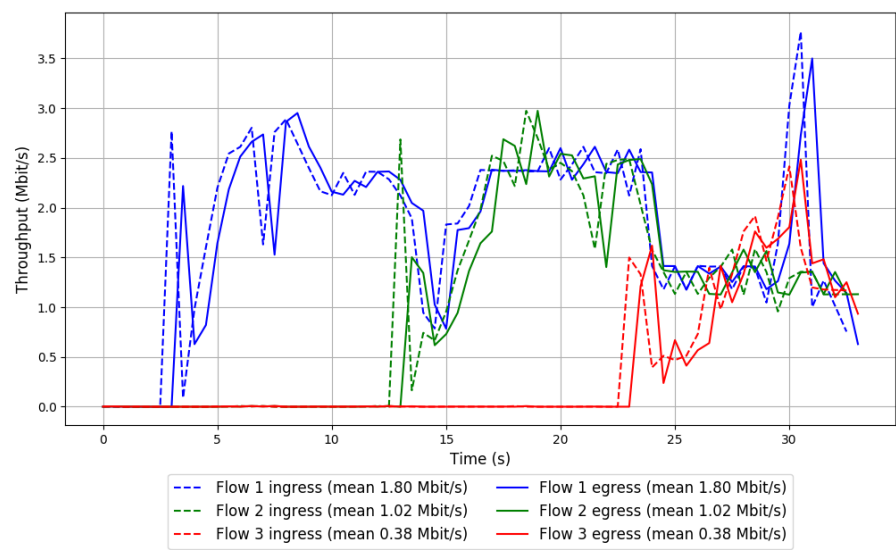Run 1: Report of WebRTC media — Data Link

```
Run 2: Statistics of WebRTC media

Start at: 2019-02-20 10:44:03
End at: 2019-02-20 10:44:33
Local clock offset: 0.028 ms
Remote clock offset: -6.428 ms


# Below is generated by plot.py at 2019-02-20 12:19:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.19 Mbit/s
95th percentile per-packet one-way delay: 38.413 ms
Loss rate: 0.17%
-- Flow 1:
Average throughput: 1.80 Mbit/s
95th percentile per-packet one-way delay: 38.449 ms
Loss rate: 0.11%
-- Flow 2:
Average throughput: 1.02 Mbit/s
95th percentile per-packet one-way delay: 38.366 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.38 Mbit/s
95th percentile per-packet one-way delay: 38.160 ms
Loss rate: 0.94%
```

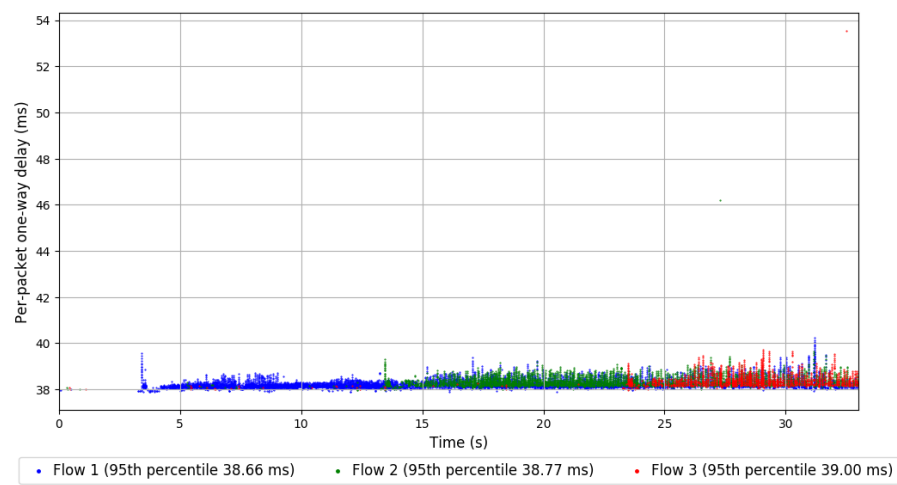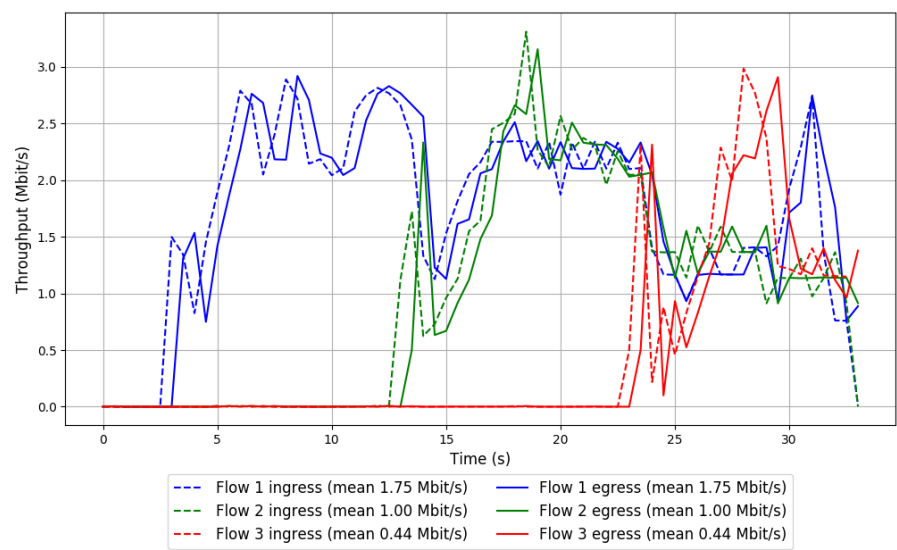Run 2: Report of WebRTC media — Data Link

```
Run 3: Statistics of WebRTC media

Start at: 2019-02-20 11:10:02
End at: 2019-02-20 11:10:32
Local clock offset: 0.947 ms
Remote clock offset: -5.979 ms


# Below is generated by plot.py at 2019-02-20 12:19:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.18 Mbit/s
95th percentile per-packet one-way delay: 38.762 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 1.75 Mbit/s
95th percentile per-packet one-way delay: 38.663 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 1.00 Mbit/s
95th percentile per-packet one-way delay: 38.769 ms
Loss rate: 0.35%
-- Flow 3:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 39.002 ms
Loss rate: 0.00%
```

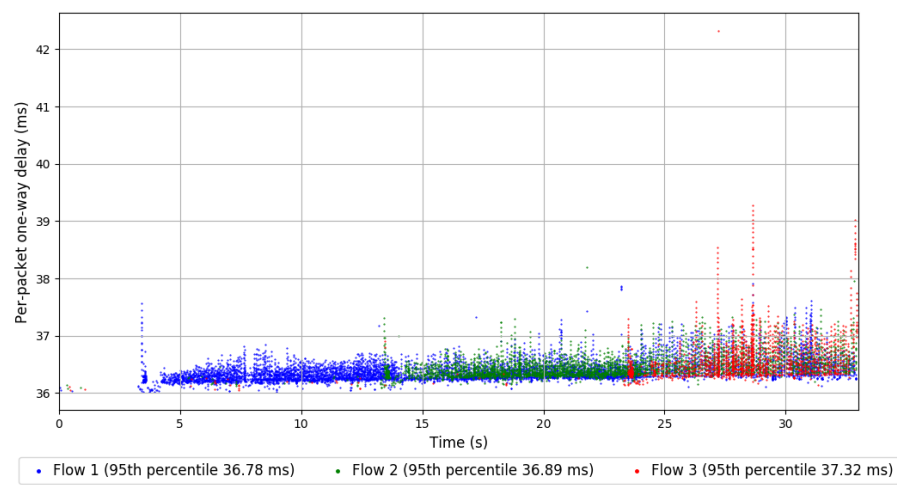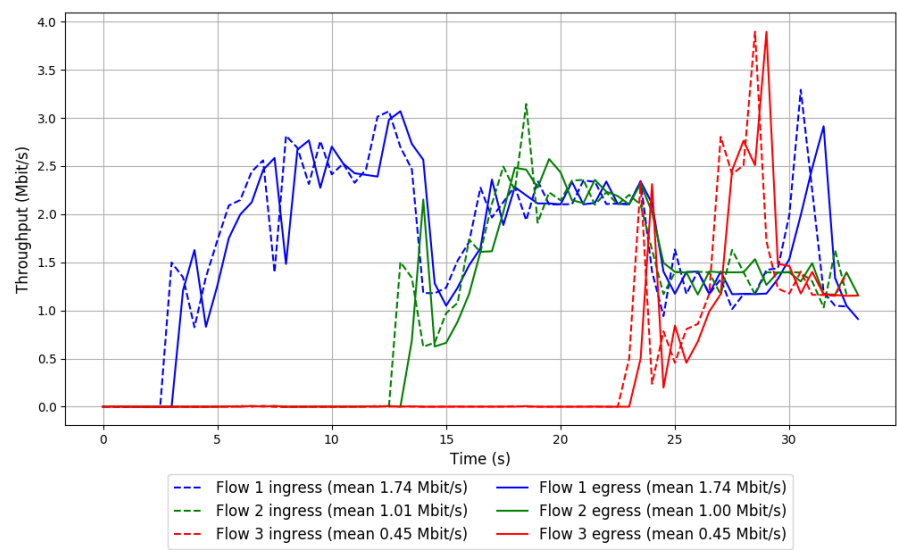Run 3: Report of WebRTC media — Data Link

```
Run 4: Statistics of WebRTC media

Start at: 2019-02-20 11:36:27
End at: 2019-02-20 11:36:58
Local clock offset: -1.103 ms
Remote clock offset: -3.791 ms


# Below is generated by plot.py at 2019-02-20 12:19:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.17 Mbit/s
95th percentile per-packet one-way delay: 36.936 ms
Loss rate: 0.28%
-- Flow 1:
Average throughput: 1.74 Mbit/s
95th percentile per-packet one-way delay: 36.780 ms
Loss rate: 0.11%
-- Flow 2:
Average throughput: 1.00 Mbit/s
95th percentile per-packet one-way delay: 36.889 ms
Loss rate: 0.36%
-- Flow 3:
Average throughput: 0.45 Mbit/s
95th percentile per-packet one-way delay: 37.320 ms
Loss rate: 0.79%
```

Run 4: Report of WebRTC media — Data Link

Flow 1 ingress (mean 1.74 Mbit/s)   Flow 1 egress (mean 1.74 Mbit/s)
Flow 2 ingress (mean 1.01 Mbit/s)   Flow 2 egress (mean 1.00 Mbit/s)
Flow 3 ingress (mean 0.45 Mbit/s)   Flow 3 egress (mean 0.45 Mbit/s)

Flow 1 (95th percentile 36.78 ms)   Flow 2 (95th percentile 36.89 ms)   Flow 3 (95th percentile 37.32 ms)

```
Run 5: Statistics of WebRTC media

Start at: 2019-02-20 12:02:17
End at: 2019-02-20 12:02:47
Local clock offset: -2.575 ms
Remote clock offset: -6.233 ms


# Below is generated by plot.py at 2019-02-20 12:19:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.23 Mbit/s
95th percentile per-packet one-way delay: 38.209 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 1.79 Mbit/s
95th percentile per-packet one-way delay: 38.212 ms
Loss rate: 0.11%
-- Flow 2:
Average throughput: 1.01 Mbit/s
95th percentile per-packet one-way delay: 38.212 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.45 Mbit/s
95th percentile per-packet one-way delay: 38.186 ms
Loss rate: 0.41%
```

Run 5: Report of WebRTC media — Data Link