Pantheon Report

Generated at 2019-01-25 22:49:34 (UTC).

Data path: GCE London on **ens4** (*local*) →GCE Iowa on **ens4** (*remote*).

Repeated the test of 21 congestion control schemes 5 times.

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

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

```
System info:
Linux 4.15.0-1026-gcp
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 @ 0b8e9a949603c3842368430acf469eec3b941f9f
third_party/fillp @ d6da1459332fcee56963885d7eba17e6a32d4519
third_party/fillp-sheep @ 0e5bb722943babcd2b090d2c64fcd45e12e923f9
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdfe58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/muses @ d9c5ea33091330aca25ecd105ab2db6d34d5c40d
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
```
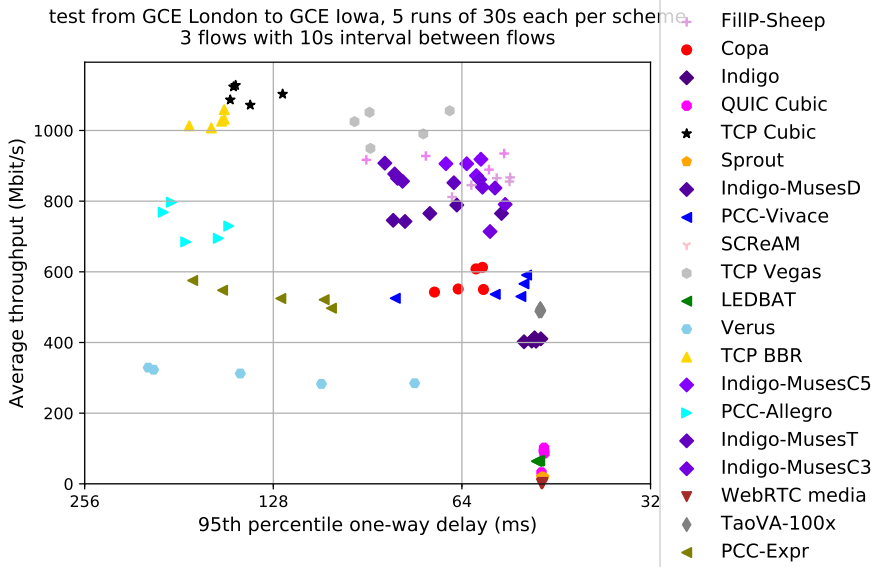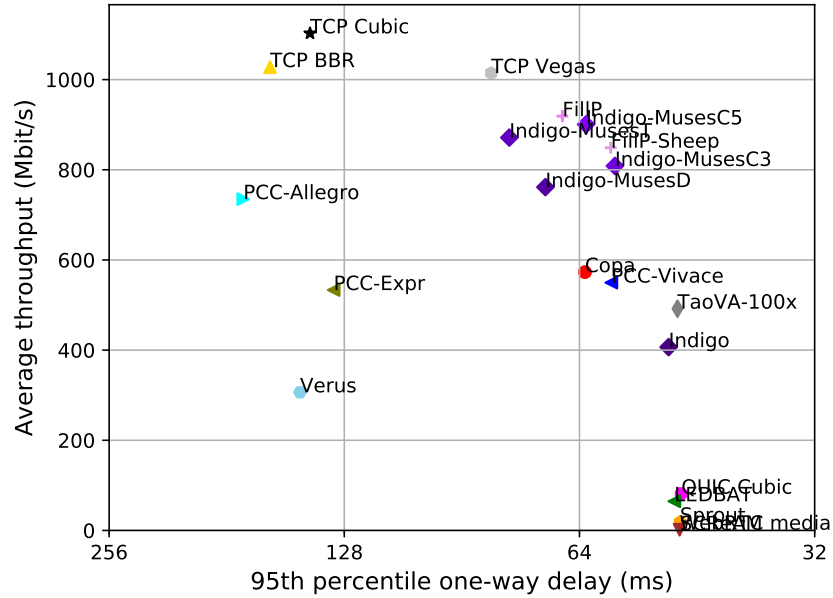
```
third_party/vivace @ 2baf86211435ae071a32f96b7d8c504587f5d7f4
third_party/webrtc @ 3f0cc2a9061a41b6f9dde4735770d143a1fa2851
```

test from GCE London to GCE Iowa, 5 runs of 30s each per scheme
3 flows with 10s interval between flows (mean of all runs by scheme)

test from GCE London to GCE Iowa, 5 runs of 30s each per scheme
3 flows with 10s interval between flows

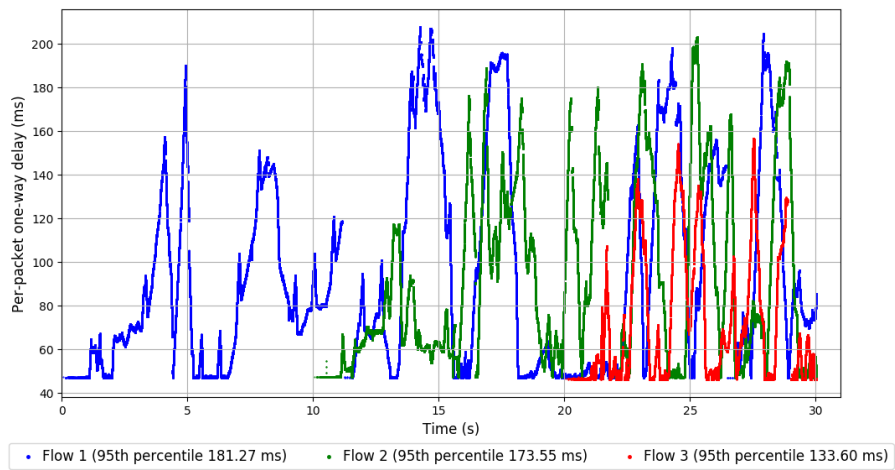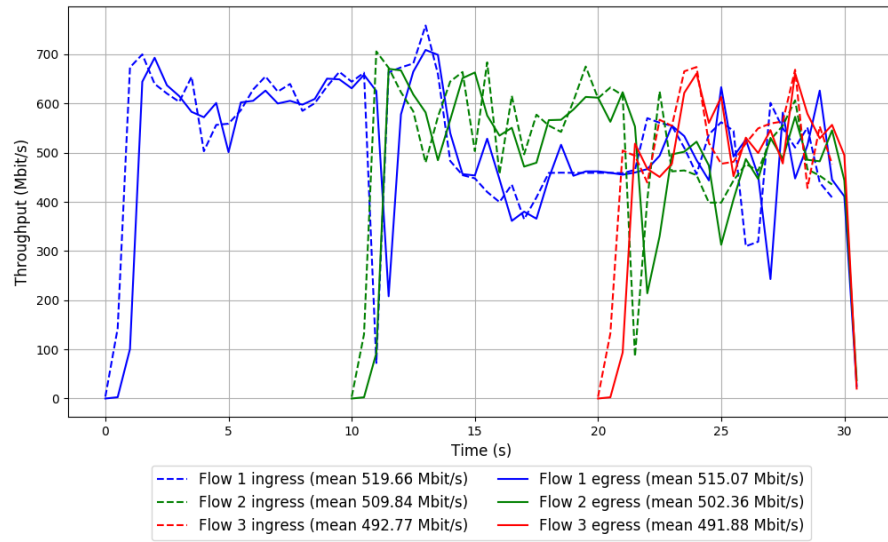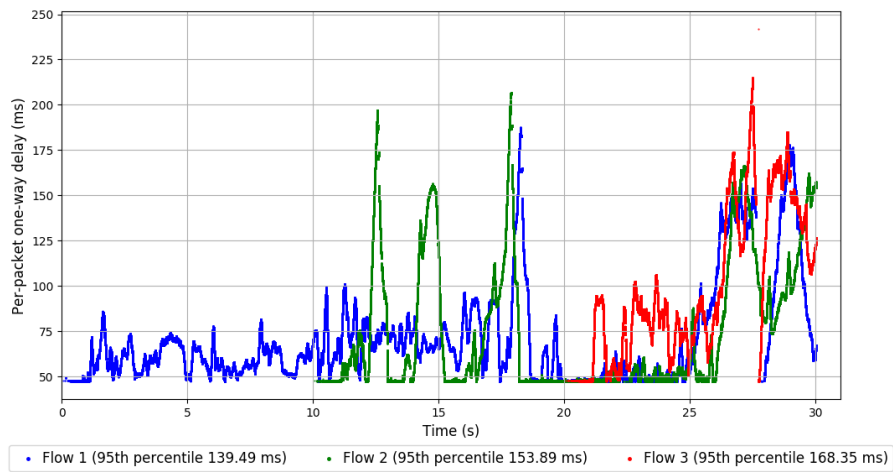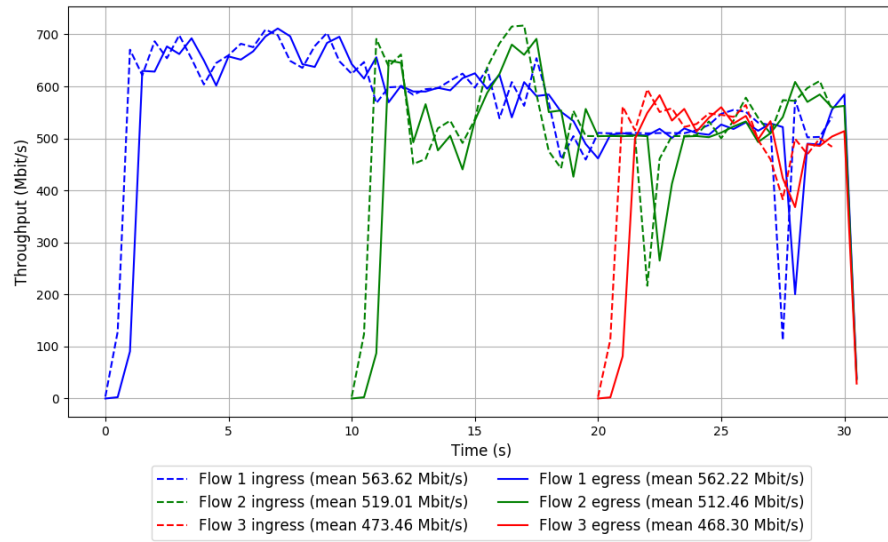| scheme	# runs	mean avg tput (Mbit/s)			mean 95th-%ile delay (ms)			mean loss rate (%)		
		flow 1	flow 2	flow 3	flow 1	flow 2	flow 3	flow 1	flow 2	flow 3
TCP BBR	5	526.86	513.94	476.69	149.43	160.70	159.27	0.51	0.92	1.27
Copa	5	285.58	293.26	276.69	59.76	63.72	72.94	0.00	0.00	0.05
TCP Cubic	5	575.23	555.95	472.64	129.16	128.86	128.76	0.20	0.16	0.50
FillP	5	583.53	370.78	267.19	72.11	51.99	50.02	0.27	0.00	0.00
FillP-Sheep	5	558.54	316.19	242.42	61.77	50.56	50.30	0.06	0.00	0.03
Indigo	5	217.17	198.36	178.91	48.56	49.27	49.34	0.00	0.00	0.10
Indigo-MusesC3	5	483.45	392.06	277.90	58.58	56.84	50.59	0.00	0.00	0.00
Indigo-MusesC5	4	530.03	435.25	328.73	64.12	60.82	56.00	0.01	0.01	0.01
Indigo-MusesD	5	482.68	398.37	68.25	66.47	78.81	47.48	0.01	0.01	0.02
Indigo-MusesT	5	524.58	430.63	255.79	82.91	67.08	50.19	0.00	0.00	0.00
LEDBAT	5	41.60	27.77	13.88	48.29	48.41	47.96	0.00	0.00	0.00
PCC-Allegro	5	403.73	365.36	268.05	178.58	134.27	99.87	3.22	2.37	0.36
PCC-Expr	5	302.46	252.89	188.39	143.87	121.57	70.36	2.49	0.37	0.00
QUIC Cubic	5	45.97	36.16	35.45	47.08	47.44	47.00	0.00	0.00	0.00
SCReAM	5	0.22	0.22	0.22	47.59	47.45	47.27	0.00	0.00	0.00
Sprout	5	9.66	9.63	9.31	47.43	47.40	47.44	0.00	0.00	0.00
TaoVA-100x	5	249.28	249.58	229.81	47.74	47.90	48.60	0.00	0.00	0.00
TCP Vegas	5	552.62	475.62	436.77	76.81	76.44	82.96	0.03	0.03	0.11
Verus	5	178.75	141.55	102.20	147.80	115.22	82.60	1.53	0.93	0.10
PCC-Vivace	5	329.25	265.67	132.70	72.78	60.26	49.54	0.09	0.00	0.00
WebRTC media	5	0.46	0.87	0.36	47.48	47.32	47.62	0.00	0.00	0.00

```
Run 1: Statistics of TCP BBR

Start at: 2019-01-25 16:59:33
End at: 2019-01-25 17:00:03
Local clock offset: -0.048 ms
Remote clock offset: -0.124 ms


# Below is generated by plot.py at 2019-01-25 20:12:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1013.34 Mbit/s
95th percentile per-packet one-way delay: 174.343 ms
Loss rate: 0.96%
-- Flow 1:
Average throughput: 515.07 Mbit/s
95th percentile per-packet one-way delay: 181.268 ms
Loss rate: 0.88%
-- Flow 2:
Average throughput: 502.36 Mbit/s
95th percentile per-packet one-way delay: 173.552 ms
Loss rate: 1.46%
-- Flow 3:
Average throughput: 491.88 Mbit/s
95th percentile per-packet one-way delay: 133.597 ms
Loss rate: 0.18%
```

Run 1: Report of TCP BBR — Data Link

```
Run 2: Statistics of TCP BBR

Start at: 2019-01-25 17:36:23
End at: 2019-01-25 17:36:53
Local clock offset: -0.064 ms
Remote clock offset: -0.052 ms


# Below is generated by plot.py at 2019-01-25 20:13:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1059.25 Mbit/s
95th percentile per-packet one-way delay: 153.297 ms
Loss rate: 0.70%
-- Flow 1:
Average throughput: 562.22 Mbit/s
95th percentile per-packet one-way delay: 139.493 ms
Loss rate: 0.25%
-- Flow 2:
Average throughput: 512.46 Mbit/s
95th percentile per-packet one-way delay: 153.893 ms
Loss rate: 1.26%
-- Flow 3:
Average throughput: 468.30 Mbit/s
95th percentile per-packet one-way delay: 168.352 ms
Loss rate: 1.09%
```
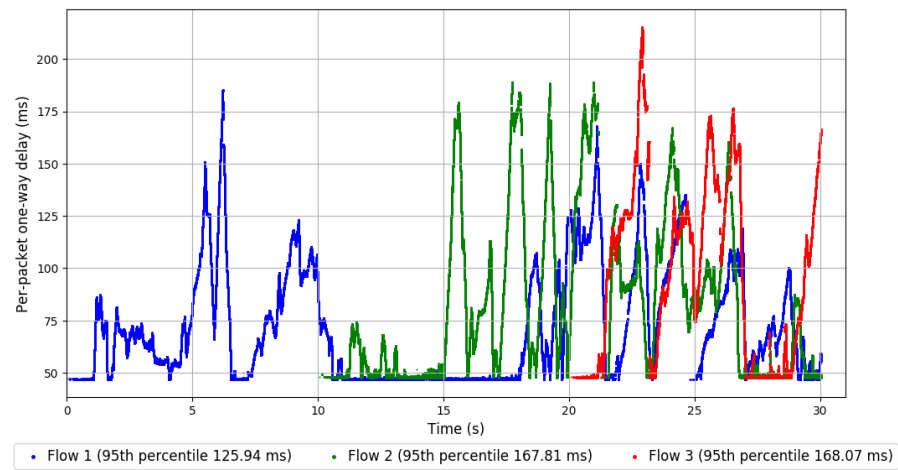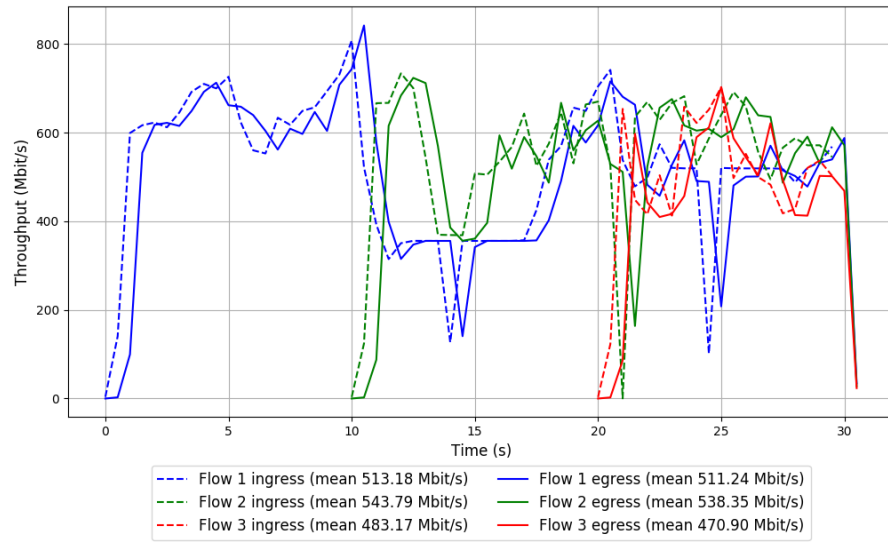
Run 2: Report of TCP BBR — Data Link

- - - Flow 1 ingress (mean 563.62 Mbit/s) —— Flow 1 egress (mean 562.22 Mbit/s)
- - - Flow 2 ingress (mean 519.01 Mbit/s) —— Flow 2 egress (mean 512.46 Mbit/s)
- - - Flow 3 ingress (mean 473.46 Mbit/s) —— Flow 3 egress (mean 468.30 Mbit/s)

• Flow 1 (95th percentile 139.49 ms)   • Flow 2 (95th percentile 153.89 ms)   • Flow 3 (95th percentile 168.35 ms)

```
Run 3: Statistics of TCP BBR

Start at: 2019-01-25 18:13:25
End at: 2019-01-25 18:13:55
Local clock offset: -0.47 ms
Remote clock offset: 0.174 ms


# Below is generated by plot.py at 2019-01-25 20:13:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1026.48 Mbit/s
95th percentile per-packet one-way delay: 154.796 ms
Loss rate: 0.93%
-- Flow 1:
Average throughput: 511.24 Mbit/s
95th percentile per-packet one-way delay: 125.945 ms
Loss rate: 0.37%
-- Flow 2:
Average throughput: 538.35 Mbit/s
95th percentile per-packet one-way delay: 167.812 ms
Loss rate: 1.00%
-- Flow 3:
Average throughput: 470.90 Mbit/s
95th percentile per-packet one-way delay: 168.067 ms
Loss rate: 2.53%
```
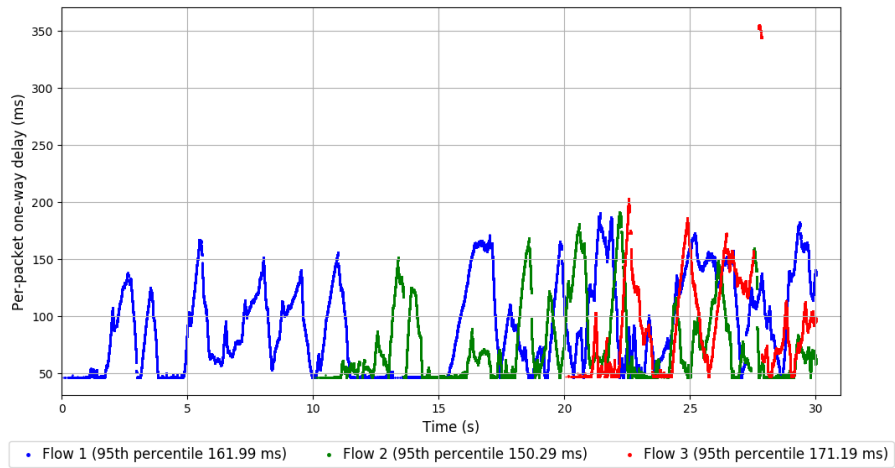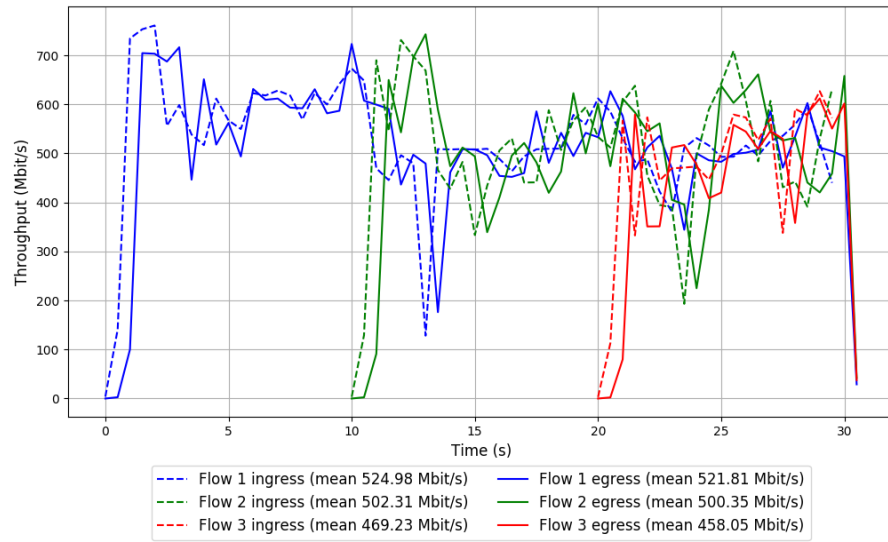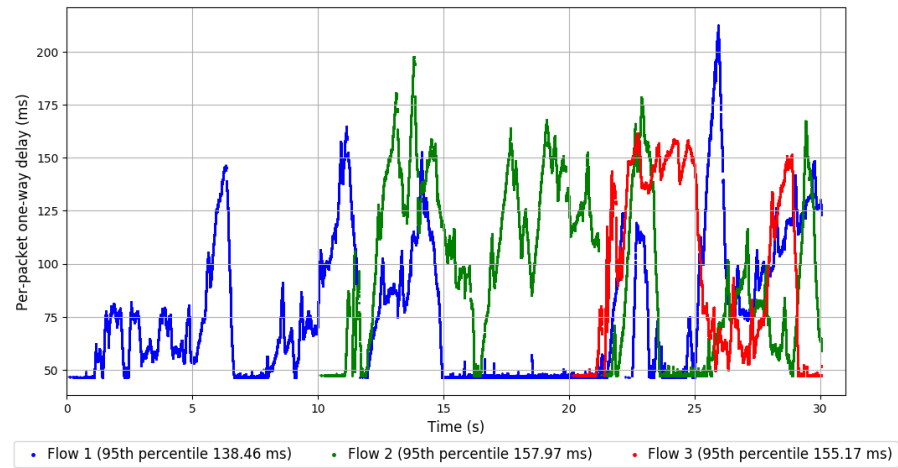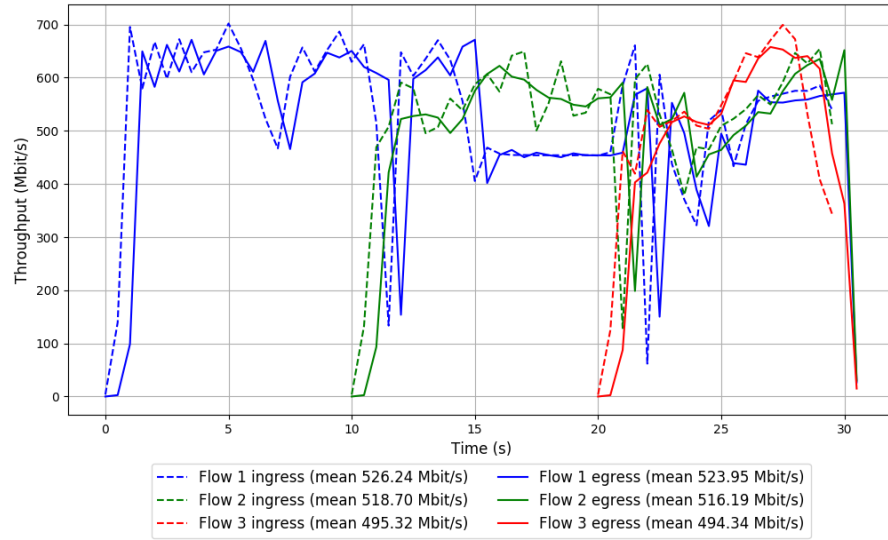
Run 3: Report of TCP BBR — Data Link

- - - - Flow 1 ingress (mean 513.18 Mbit/s) ——— Flow 1 egress (mean 511.24 Mbit/s)
- - - - Flow 2 ingress (mean 543.79 Mbit/s) ——— Flow 2 egress (mean 538.35 Mbit/s)
- - - - Flow 3 ingress (mean 483.17 Mbit/s) ——— Flow 3 egress (mean 470.90 Mbit/s)

• Flow 1 (95th percentile 125.94 ms)   • Flow 2 (95th percentile 167.81 ms)   • Flow 3 (95th percentile 168.07 ms)

```
Run 4: Statistics of TCP BBR

Start at: 2019-01-25 18:49:59
End at: 2019-01-25 18:50:29
Local clock offset: -0.059 ms
Remote clock offset: 0.257 ms


# Below is generated by plot.py at 2019-01-25 20:13:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1007.27 Mbit/s
95th percentile per-packet one-way delay: 160.745 ms
Loss rate: 0.81%
-- Flow 1:
Average throughput: 521.81 Mbit/s
95th percentile per-packet one-way delay: 161.990 ms
Loss rate: 0.60%
-- Flow 2:
Average throughput: 500.35 Mbit/s
95th percentile per-packet one-way delay: 150.286 ms
Loss rate: 0.39%
-- Flow 3:
Average throughput: 458.05 Mbit/s
95th percentile per-packet one-way delay: 171.186 ms
Loss rate: 2.38%
```

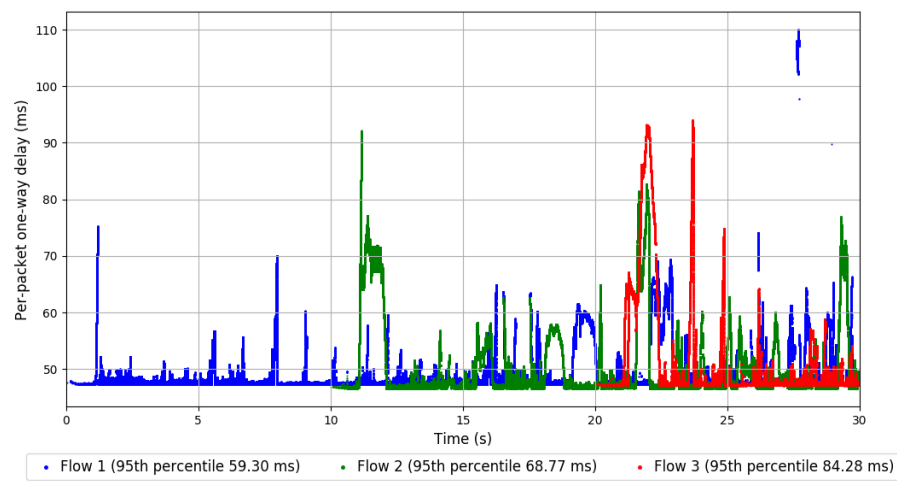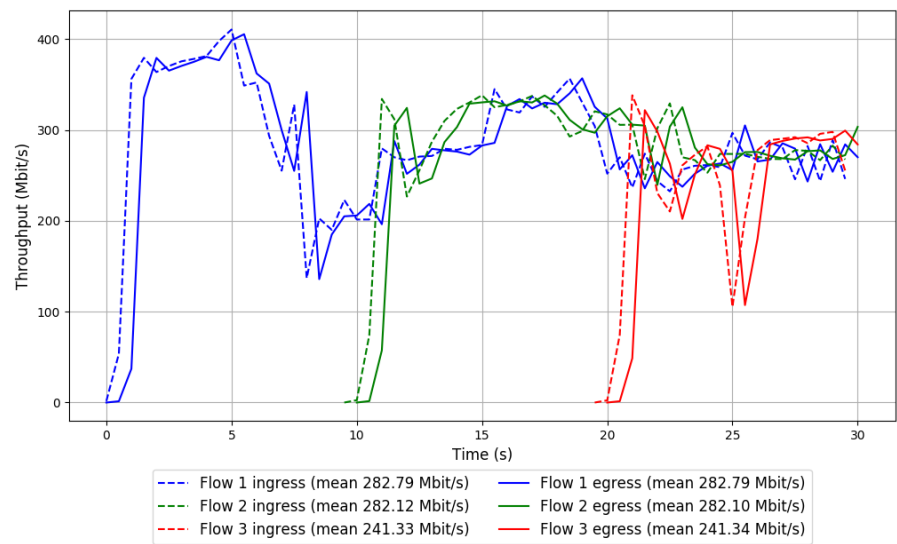Run 4: Report of TCP BBR — Data Link

Flow 1 ingress (mean 524.98 Mbit/s) --- Flow 1 egress (mean 521.81 Mbit/s)
Flow 2 ingress (mean 502.31 Mbit/s) --- Flow 2 egress (mean 500.35 Mbit/s)
Flow 3 ingress (mean 469.23 Mbit/s) --- Flow 3 egress (mean 458.05 Mbit/s)

Flow 1 (95th percentile 161.99 ms)   Flow 2 (95th percentile 150.29 ms)   Flow 3 (95th percentile 171.19 ms)
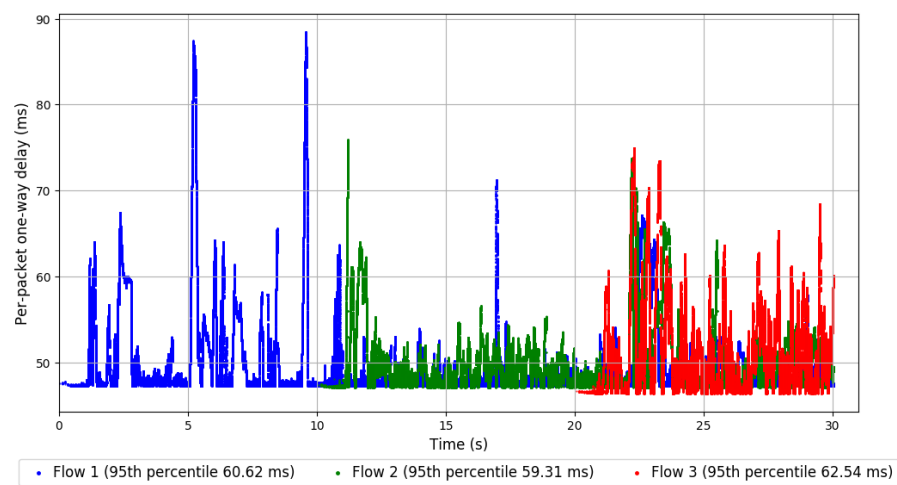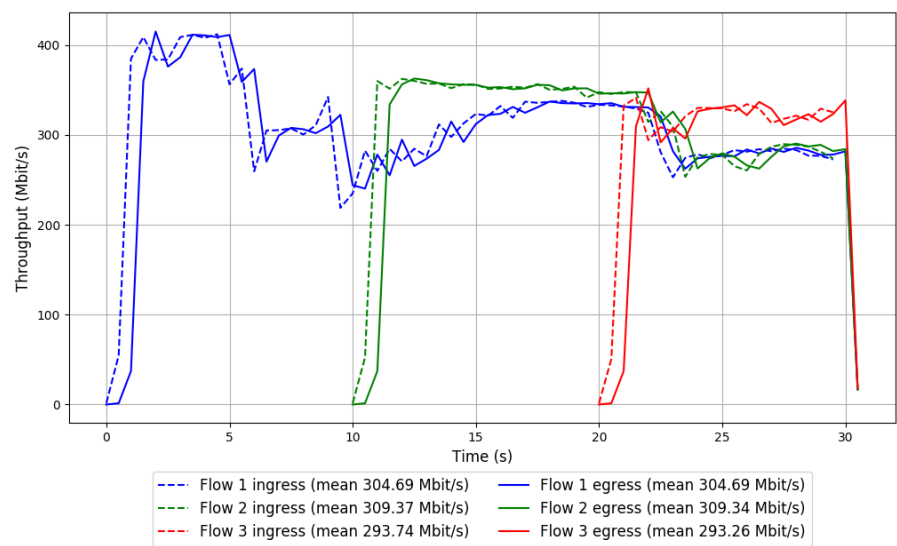
12

```
Run 5: Statistics of TCP BBR

Start at: 2019-01-25 19:26:32
End at: 2019-01-25 19:27:02
Local clock offset: -0.028 ms
Remote clock offset: 0.396 ms


# Below is generated by plot.py at 2019-01-25 20:13:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1032.35 Mbit/s
95th percentile per-packet one-way delay: 153.265 ms
Loss rate: 0.41%
-- Flow 1:
Average throughput: 523.95 Mbit/s
95th percentile per-packet one-way delay: 138.455 ms
Loss rate: 0.43%
-- Flow 2:
Average throughput: 516.19 Mbit/s
95th percentile per-packet one-way delay: 157.968 ms
Loss rate: 0.48%
-- Flow 3:
Average throughput: 494.34 Mbit/s
95th percentile per-packet one-way delay: 155.171 ms
Loss rate: 0.19%
```

Run 5: Report of TCP BBR — Data Link

```
Run 1: Statistics of Copa

Start at: 2019-01-25 16:52:25
End at: 2019-01-25 16:52:55
Local clock offset: 0.09 ms
Remote clock offset: -0.048 ms


# Below is generated by plot.py at 2019-01-25 20:13:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 551.38 Mbit/s
95th percentile per-packet one-way delay: 64.884 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 282.79 Mbit/s
95th percentile per-packet one-way delay: 59.304 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 282.10 Mbit/s
95th percentile per-packet one-way delay: 68.773 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 241.34 Mbit/s
95th percentile per-packet one-way delay: 84.275 ms
Loss rate: 0.00%
```
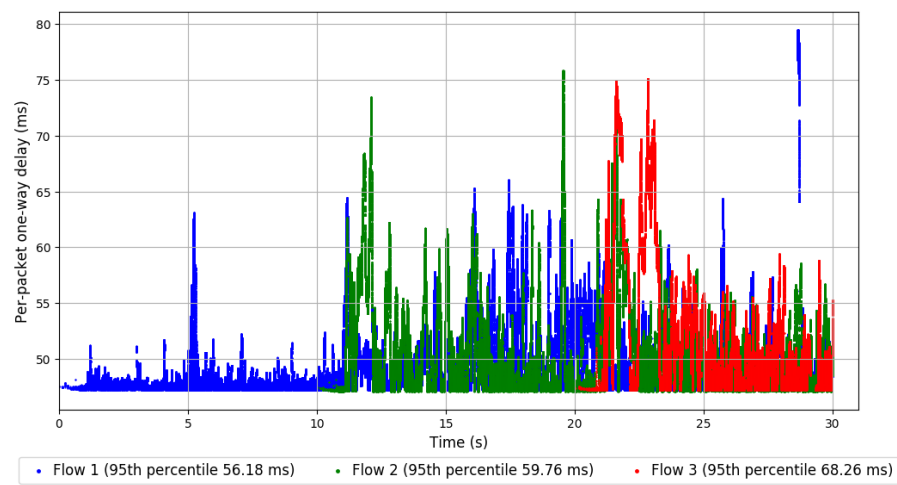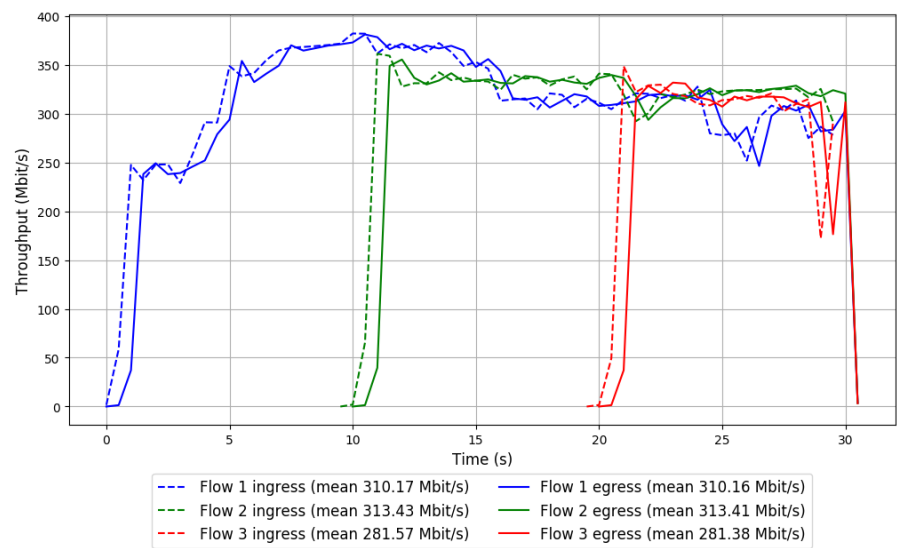
Run 1: Report of Copa — Data Link

Flow 1 ingress (mean 282.79 Mbit/s)   Flow 1 egress (mean 282.79 Mbit/s)
Flow 2 ingress (mean 282.12 Mbit/s)   Flow 2 egress (mean 282.10 Mbit/s)
Flow 3 ingress (mean 241.33 Mbit/s)   Flow 3 egress (mean 241.34 Mbit/s)

Flow 1 (95th percentile 59.30 ms)   Flow 2 (95th percentile 68.77 ms)   Flow 3 (95th percentile 84.28 ms)

```
Run 2: Statistics of Copa

Start at: 2019-01-25 17:29:02
End at: 2019-01-25 17:29:32
Local clock offset: -0.056 ms
Remote clock offset: -0.095 ms


# Below is generated by plot.py at 2019-01-25 20:14:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 608.24 Mbit/s
95th percentile per-packet one-way delay: 60.769 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 304.69 Mbit/s
95th percentile per-packet one-way delay: 60.619 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 309.34 Mbit/s
95th percentile per-packet one-way delay: 59.306 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 293.26 Mbit/s
95th percentile per-packet one-way delay: 62.544 ms
Loss rate: 0.16%
```
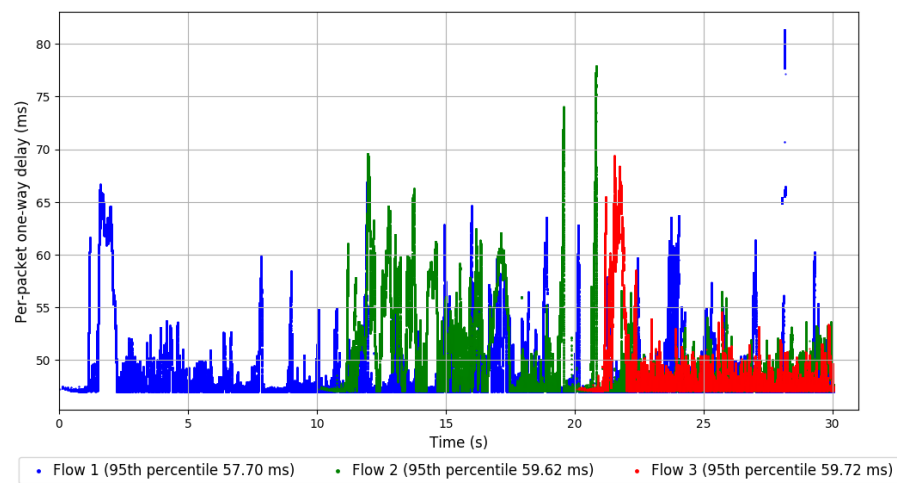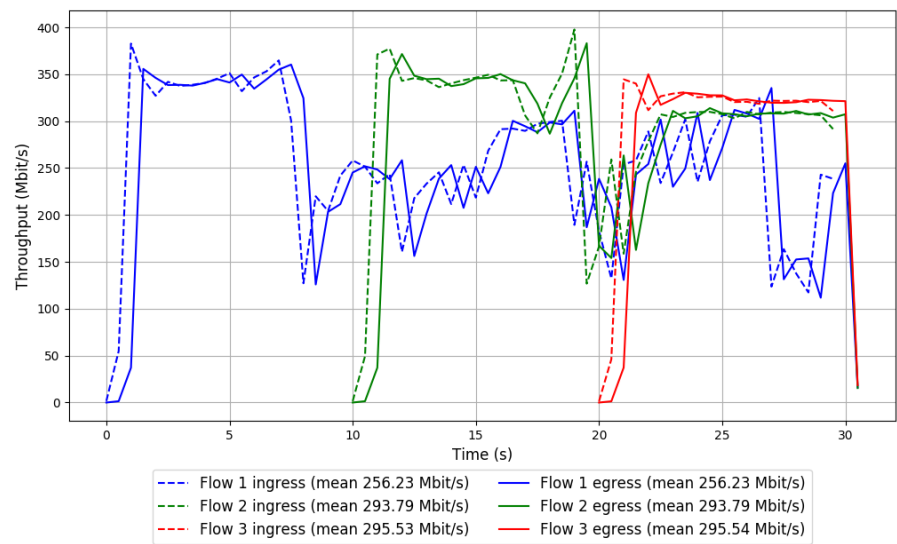
Run 2: Report of Copa — Data Link

Throughput (Mbit/s) vs Time (s)

- - - - Flow 1 ingress (mean 304.69 Mbit/s) ——— Flow 1 egress (mean 304.69 Mbit/s)
- - - - Flow 2 ingress (mean 309.37 Mbit/s) ——— Flow 2 egress (mean 309.34 Mbit/s)
- - - - Flow 3 ingress (mean 293.74 Mbit/s) ——— Flow 3 egress (mean 293.26 Mbit/s)

Per-packet one-way delay (ms) vs Time (s)

• Flow 1 (95th percentile 60.62 ms)   • Flow 2 (95th percentile 59.31 ms)   • Flow 3 (95th percentile 62.54 ms)

```
Run 3: Statistics of Copa

Start at: 2019-01-25 18:06:05
End at: 2019-01-25 18:06:35
Local clock offset: -0.101 ms
Remote clock offset: 0.124 ms


# Below is generated by plot.py at 2019-01-25 20:14:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 612.66 Mbit/s
95th percentile per-packet one-way delay: 59.346 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 310.16 Mbit/s
95th percentile per-packet one-way delay: 56.183 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 313.41 Mbit/s
95th percentile per-packet one-way delay: 59.762 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 281.38 Mbit/s
95th percentile per-packet one-way delay: 68.259 ms
Loss rate: 0.07%
```
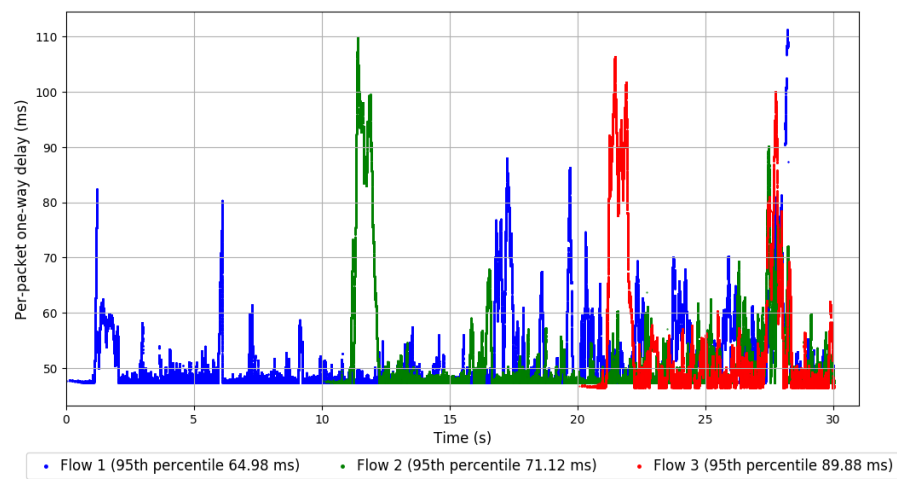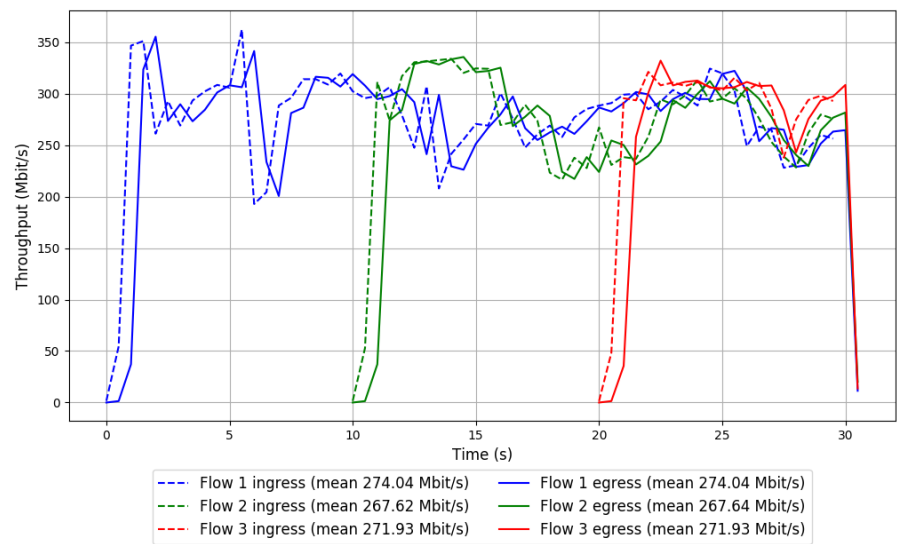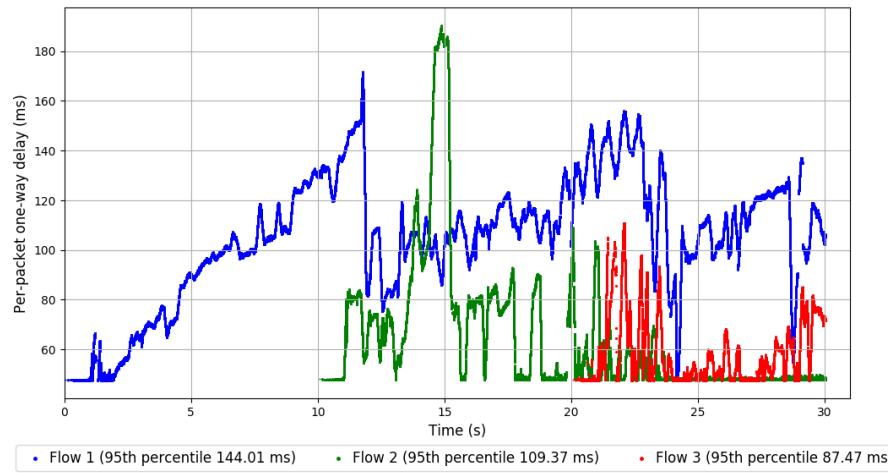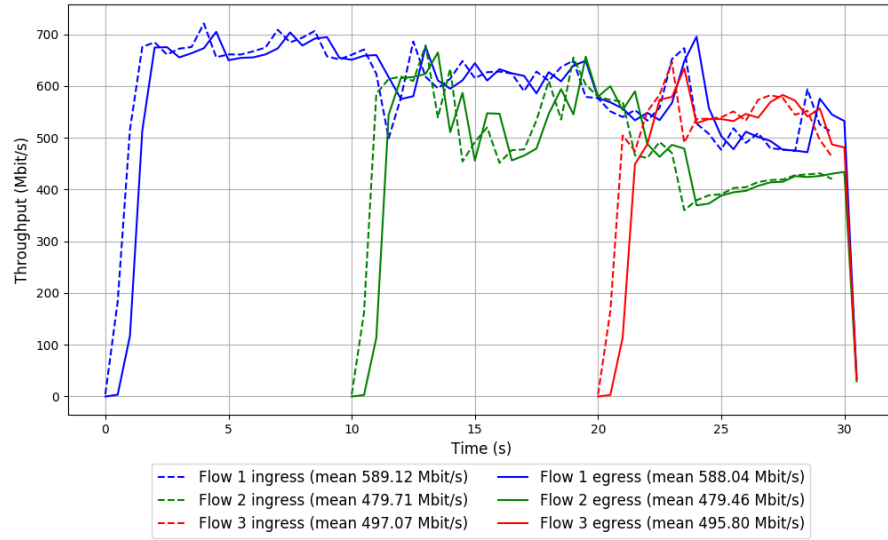
Run 3: Report of Copa — Data Link

Flow 1 ingress (mean 310.17 Mbit/s) --- Flow 1 egress (mean 310.16 Mbit/s)
Flow 2 ingress (mean 313.43 Mbit/s) --- Flow 2 egress (mean 313.41 Mbit/s)
Flow 3 ingress (mean 281.57 Mbit/s) --- Flow 3 egress (mean 281.38 Mbit/s)

Flow 1 (95th percentile 56.18 ms)   Flow 2 (95th percentile 59.76 ms)   Flow 3 (95th percentile 68.26 ms)

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```
Run 4: Statistics of Copa

Start at: 2019-01-25 18:42:39
End at: 2019-01-25 18:43:09
Local clock offset: 0.047 ms
Remote clock offset: 0.242 ms


# Below is generated by plot.py at 2019-01-25 20:30:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 550.05 Mbit/s
95th percentile per-packet one-way delay: 59.128 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 256.23 Mbit/s
95th percentile per-packet one-way delay: 57.700 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 293.79 Mbit/s
95th percentile per-packet one-way delay: 59.615 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 295.54 Mbit/s
95th percentile per-packet one-way delay: 59.720 ms
Loss rate: 0.00%
```
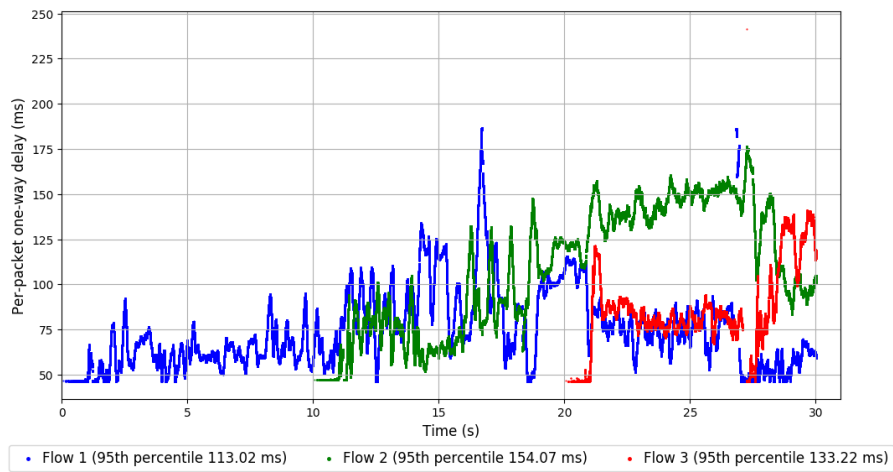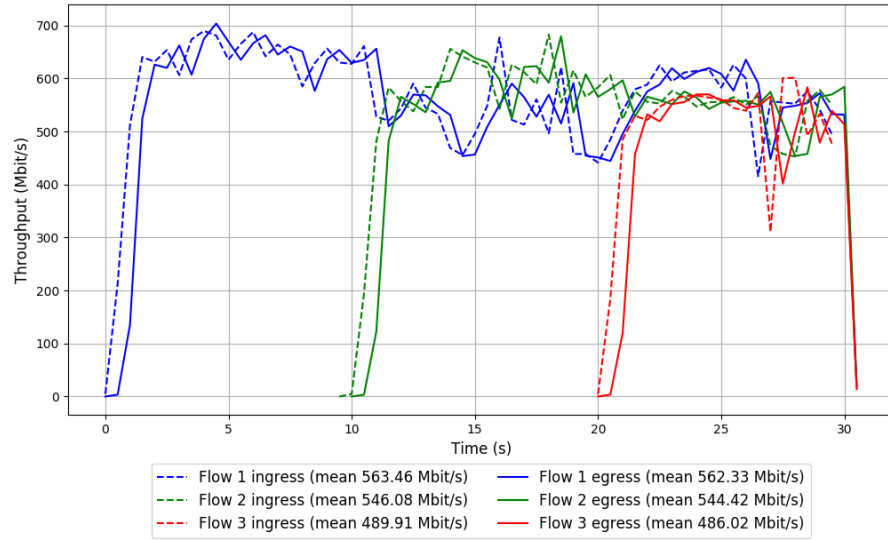
Run 4: Report of Copa — Data Link

- - - - Flow 1 ingress (mean 256.23 Mbit/s)   —— Flow 1 egress (mean 256.23 Mbit/s)
- - - - Flow 2 ingress (mean 293.79 Mbit/s)   —— Flow 2 egress (mean 293.79 Mbit/s)
- - - - Flow 3 ingress (mean 295.53 Mbit/s)   —— Flow 3 egress (mean 295.54 Mbit/s)

- Flow 1 (95th percentile 57.70 ms)   - Flow 2 (95th percentile 59.62 ms)   - Flow 3 (95th percentile 59.72 ms)

```
Run 5: Statistics of Copa

Start at: 2019-01-25 19:19:20
End at: 2019-01-25 19:19:50
Local clock offset: -0.062 ms
Remote clock offset: 0.379 ms


# Below is generated by plot.py at 2019-01-25 20:30:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 542.66 Mbit/s
95th percentile per-packet one-way delay: 70.784 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 274.04 Mbit/s
95th percentile per-packet one-way delay: 64.977 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 267.64 Mbit/s
95th percentile per-packet one-way delay: 71.122 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 271.93 Mbit/s
95th percentile per-packet one-way delay: 89.881 ms
Loss rate: 0.00%
```
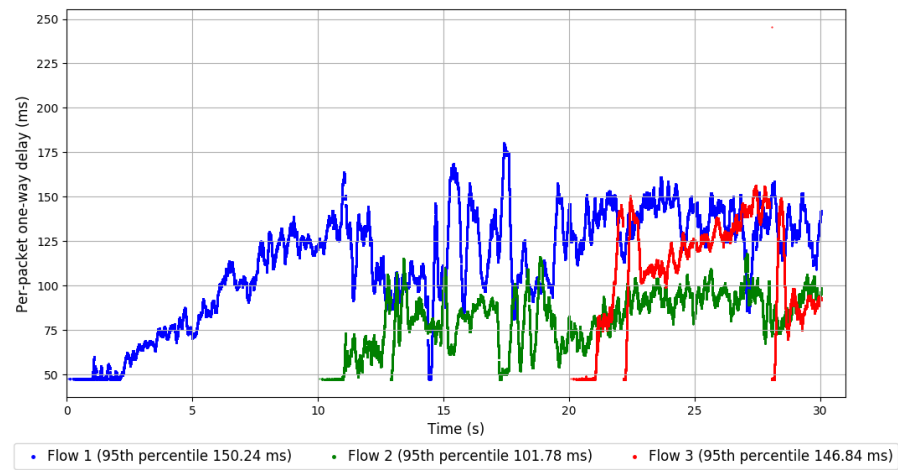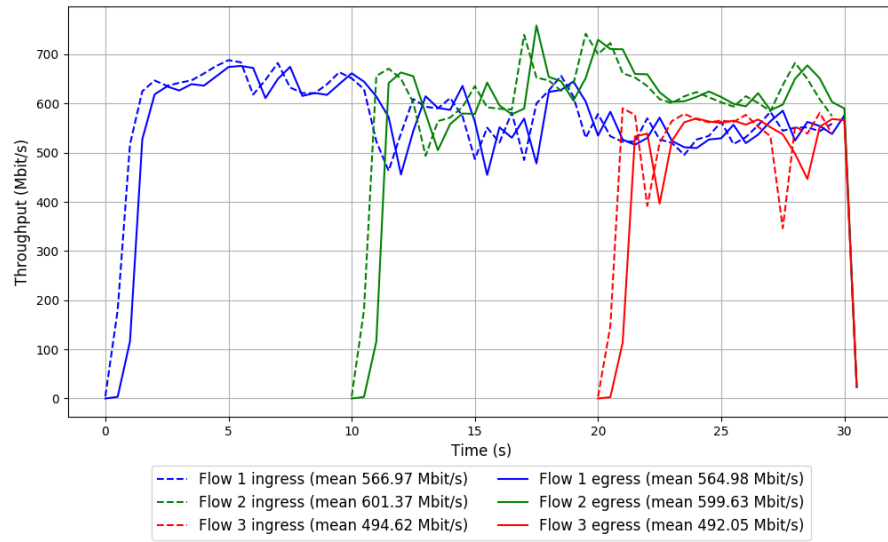
Run 5: Report of Copa — Data Link

```
Run 1: Statistics of TCP Cubic

Start at: 2019-01-25 16:57:29
End at: 2019-01-25 16:57:59
Local clock offset: -0.399 ms
Remote clock offset: -0.083 ms


# Below is generated by plot.py at 2019-01-25 20:31:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1072.04 Mbit/s
95th percentile per-packet one-way delay: 139.304 ms
Loss rate: 0.15%
-- Flow 1:
Average throughput: 588.04 Mbit/s
95th percentile per-packet one-way delay: 144.011 ms
Loss rate: 0.18%
-- Flow 2:
Average throughput: 479.46 Mbit/s
95th percentile per-packet one-way delay: 109.367 ms
Loss rate: 0.05%
-- Flow 3:
Average throughput: 495.80 Mbit/s
95th percentile per-packet one-way delay: 87.467 ms
Loss rate: 0.24%
```

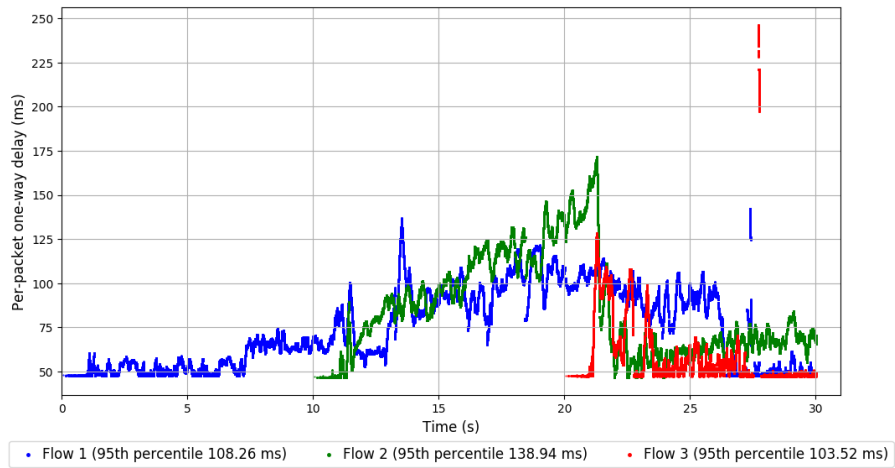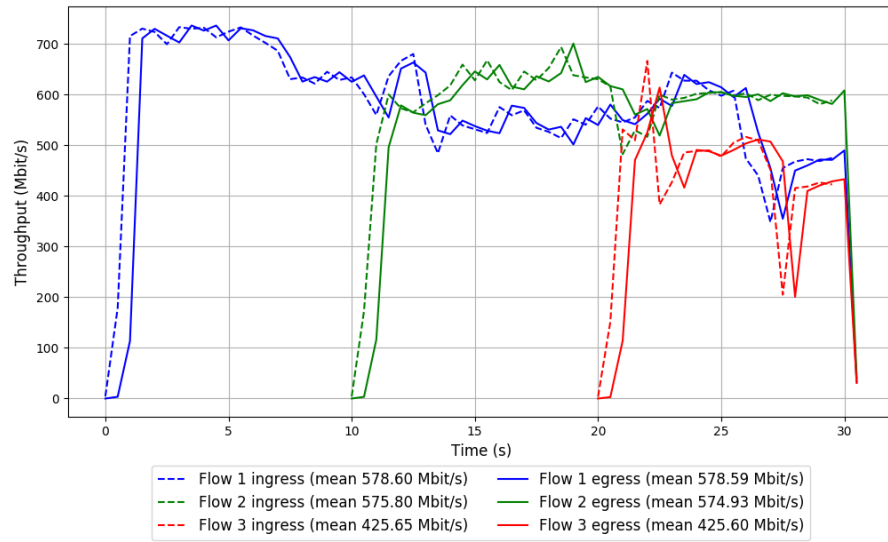## Run 1: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 589.12 Mbit/s)   Flow 1 egress (mean 588.04 Mbit/s)
Flow 2 ingress (mean 479.71 Mbit/s)   Flow 2 egress (mean 479.46 Mbit/s)
Flow 3 ingress (mean 497.07 Mbit/s)   Flow 3 egress (mean 495.80 Mbit/s)

Flow 1 (95th percentile 144.01 ms)   Flow 2 (95th percentile 109.37 ms)   Flow 3 (95th percentile 87.47 ms)

```
Run 2: Statistics of TCP Cubic

Start at: 2019-01-25 17:34:18
End at: 2019-01-25 17:34:48
Local clock offset: -0.066 ms
Remote clock offset: -0.081 ms


# Below is generated by plot.py at 2019-01-25 20:32:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1086.79 Mbit/s
95th percentile per-packet one-way delay: 149.924 ms
Loss rate: 0.32%
-- Flow 1:
Average throughput: 562.33 Mbit/s
95th percentile per-packet one-way delay: 113.020 ms
Loss rate: 0.19%
-- Flow 2:
Average throughput: 544.42 Mbit/s
95th percentile per-packet one-way delay: 154.072 ms
Loss rate: 0.30%
-- Flow 3:
Average throughput: 486.02 Mbit/s
95th percentile per-packet one-way delay: 133.223 ms
Loss rate: 0.77%
```
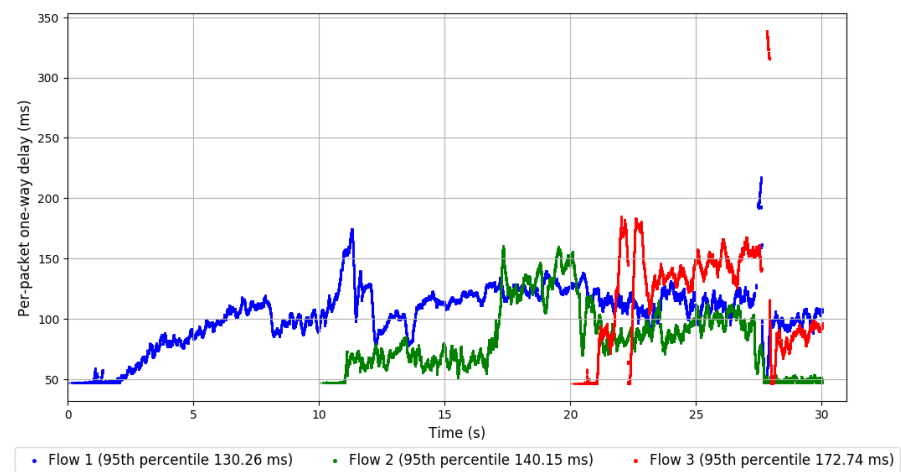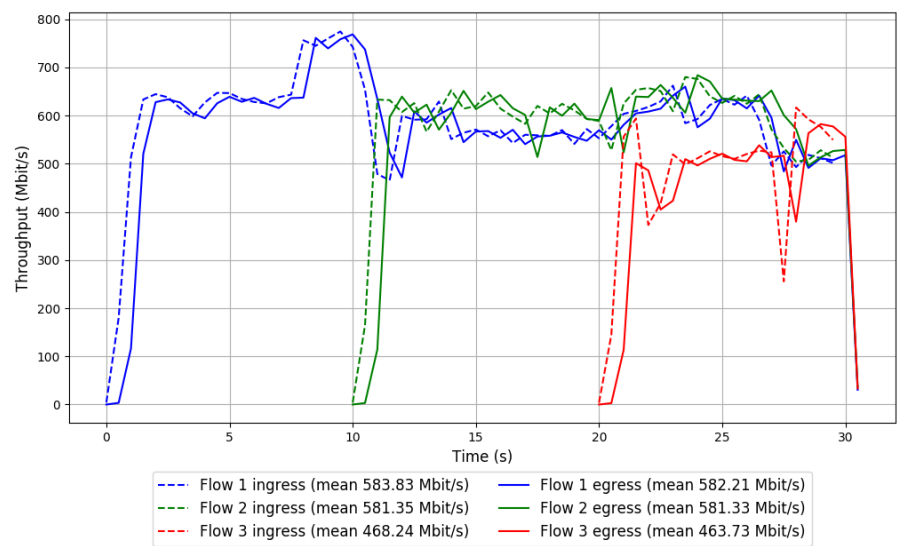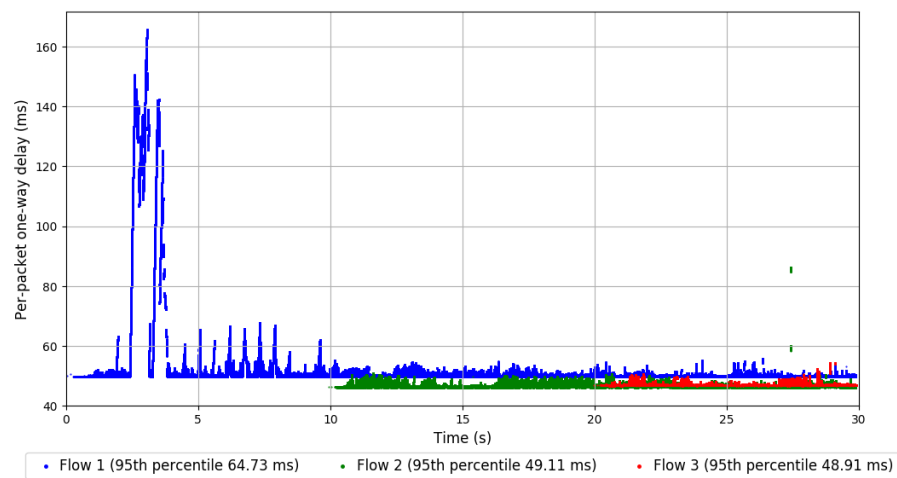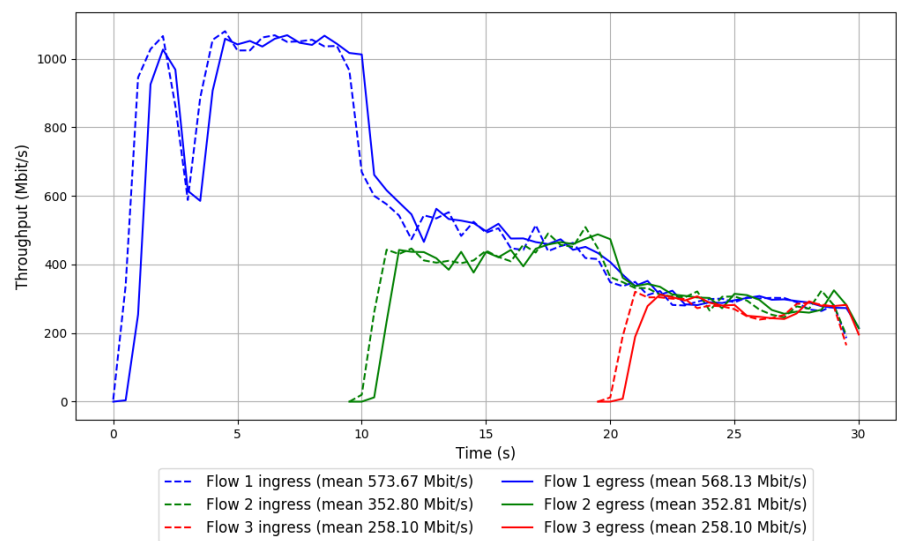
Run 2: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 563.46 Mbit/s) --- Flow 1 egress (mean 562.33 Mbit/s)
Flow 2 ingress (mean 546.08 Mbit/s) --- Flow 2 egress (mean 544.42 Mbit/s)
Flow 3 ingress (mean 489.91 Mbit/s) --- Flow 3 egress (mean 486.02 Mbit/s)

Flow 1 (95th percentile 113.02 ms)   Flow 2 (95th percentile 154.07 ms)   Flow 3 (95th percentile 133.22 ms)

28

```
Run 3: Statistics of TCP Cubic

Start at: 2019-01-25 18:11:18
End at: 2019-01-25 18:11:48
Local clock offset: 0.095 ms
Remote clock offset: 0.166 ms


# Below is generated by plot.py at 2019-01-25 20:33:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1127.83 Mbit/s
95th percentile per-packet one-way delay: 147.027 ms
Loss rate: 0.35%
-- Flow 1:
Average throughput: 564.98 Mbit/s
95th percentile per-packet one-way delay: 150.238 ms
Loss rate: 0.35%
-- Flow 2:
Average throughput: 599.63 Mbit/s
95th percentile per-packet one-way delay: 101.780 ms
Loss rate: 0.29%
-- Flow 3:
Average throughput: 492.05 Mbit/s
95th percentile per-packet one-way delay: 146.839 ms
Loss rate: 0.52%
```
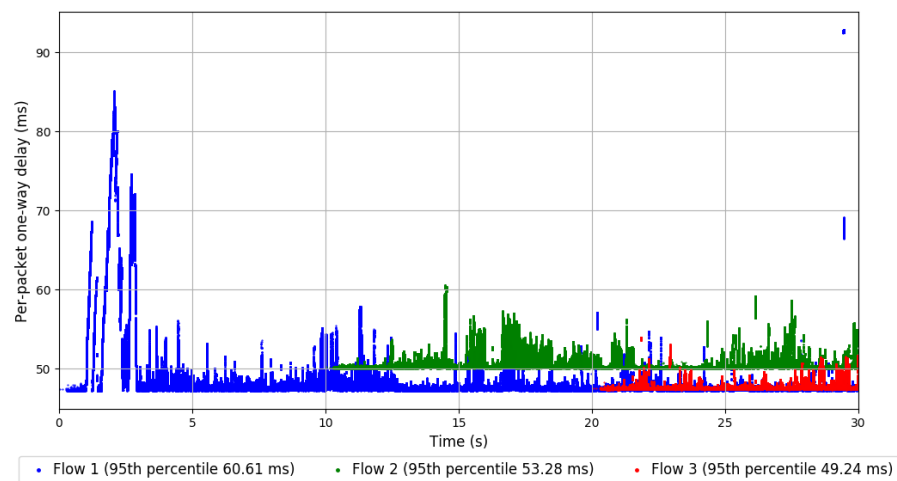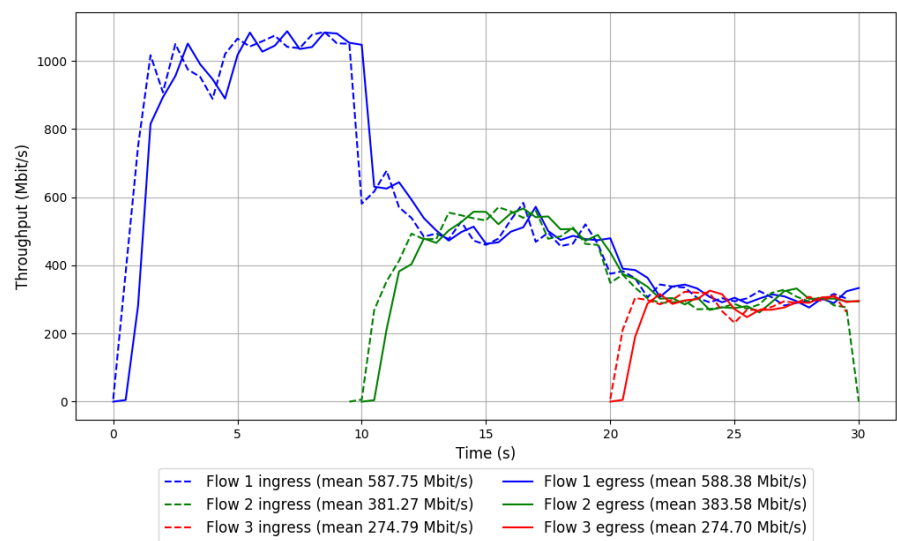
Run 3: Report of TCP Cubic — Data Link

- - - Flow 1 ingress (mean 566.97 Mbit/s) —— Flow 1 egress (mean 564.98 Mbit/s)
- - - Flow 2 ingress (mean 601.37 Mbit/s) —— Flow 2 egress (mean 599.63 Mbit/s)
- - - Flow 3 ingress (mean 494.62 Mbit/s) —— Flow 3 egress (mean 492.05 Mbit/s)

• Flow 1 (95th percentile 150.24 ms)   • Flow 2 (95th percentile 101.78 ms)   • Flow 3 (95th percentile 146.84 ms)

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```
Run 4: Statistics of TCP Cubic

Start at: 2019-01-25 18:47:51
End at: 2019-01-25 18:48:21
Local clock offset: -0.304 ms
Remote clock offset: 0.325 ms


# Below is generated by plot.py at 2019-01-25 20:33:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1103.04 Mbit/s
95th percentile per-packet one-way delay: 123.684 ms
Loss rate: 0.05%
-- Flow 1:
Average throughput: 578.59 Mbit/s
95th percentile per-packet one-way delay: 108.258 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 574.93 Mbit/s
95th percentile per-packet one-way delay: 138.938 ms
Loss rate: 0.15%
-- Flow 3:
Average throughput: 425.60 Mbit/s
95th percentile per-packet one-way delay: 103.516 ms
Loss rate: 0.01%
```

Run 4: Report of TCP Cubic — Data Link

```
Run 5: Statistics of TCP Cubic

Start at: 2019-01-25 19:24:24
End at: 2019-01-25 19:24:54
Local clock offset: -0.035 ms
Remote clock offset: 0.363 ms


# Below is generated by plot.py at 2019-01-25 20:35:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1123.60 Mbit/s
95th percentile per-packet one-way delay: 148.154 ms
Loss rate: 0.28%
-- Flow 1:
Average throughput: 582.21 Mbit/s
95th percentile per-packet one-way delay: 130.256 ms
Loss rate: 0.28%
-- Flow 2:
Average throughput: 581.33 Mbit/s
95th percentile per-packet one-way delay: 140.152 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 463.73 Mbit/s
95th percentile per-packet one-way delay: 172.737 ms
Loss rate: 0.95%
```
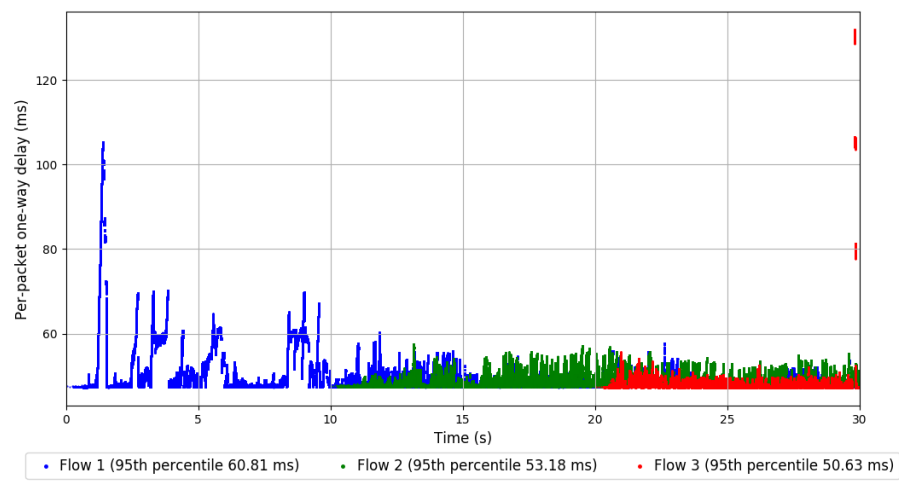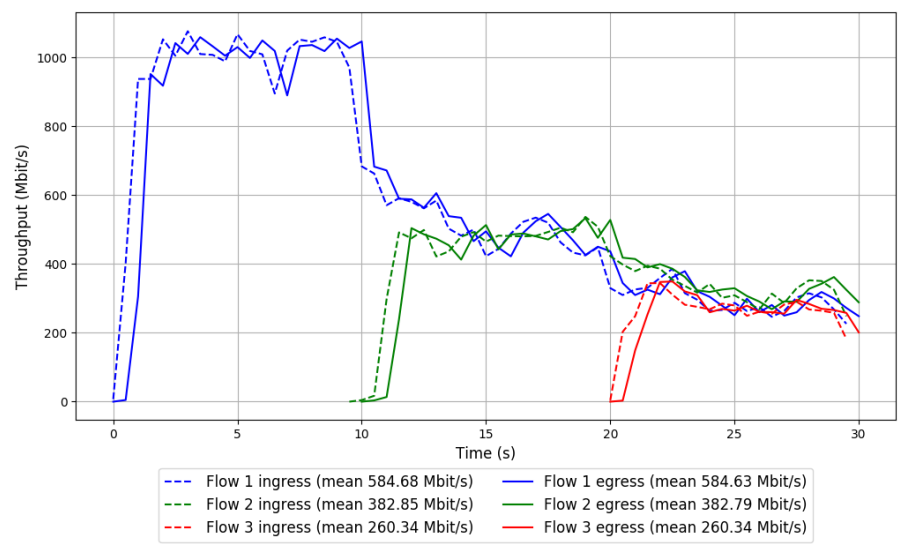
Run 5: Report of TCP Cubic — Data Link

```
Run 1: Statistics of FillP

Start at: 2019-01-25 16:38:57
End at: 2019-01-25 16:39:27
Local clock offset: 0.437 ms
Remote clock offset: -0.083 ms


# Below is generated by plot.py at 2019-01-25 20:35:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 889.16 Mbit/s
95th percentile per-packet one-way delay: 57.946 ms
Loss rate: 0.62%
-- Flow 1:
Average throughput: 568.13 Mbit/s
95th percentile per-packet one-way delay: 64.727 ms
Loss rate: 0.97%
-- Flow 2:
Average throughput: 352.81 Mbit/s
95th percentile per-packet one-way delay: 49.108 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 258.10 Mbit/s
95th percentile per-packet one-way delay: 48.909 ms
Loss rate: 0.00%
```
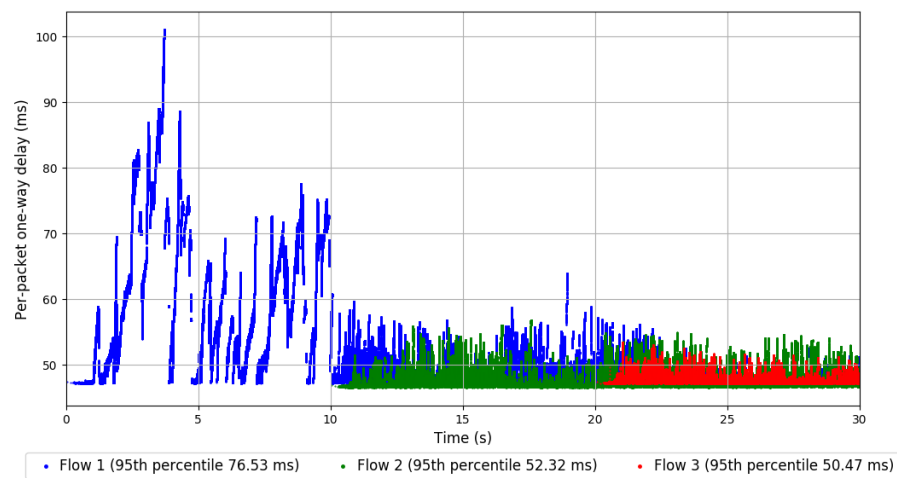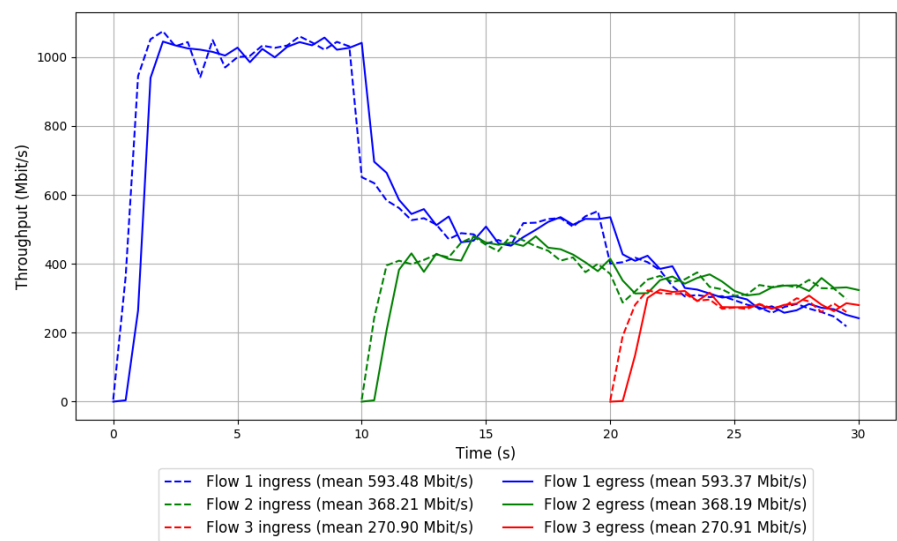
Run 1: Report of FillP — Data Link

```
Run 2: Statistics of FillP

Start at: 2019-01-25 17:15:29
End at: 2019-01-25 17:15:59
Local clock offset: 0.092 ms
Remote clock offset: -0.083 ms

# Below is generated by plot.py at 2019-01-25 20:51:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 934.71 Mbit/s
95th percentile per-packet one-way delay: 54.809 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 588.38 Mbit/s
95th percentile per-packet one-way delay: 60.613 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 383.58 Mbit/s
95th percentile per-packet one-way delay: 53.277 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 274.70 Mbit/s
95th percentile per-packet one-way delay: 49.238 ms
Loss rate: 0.00%
```
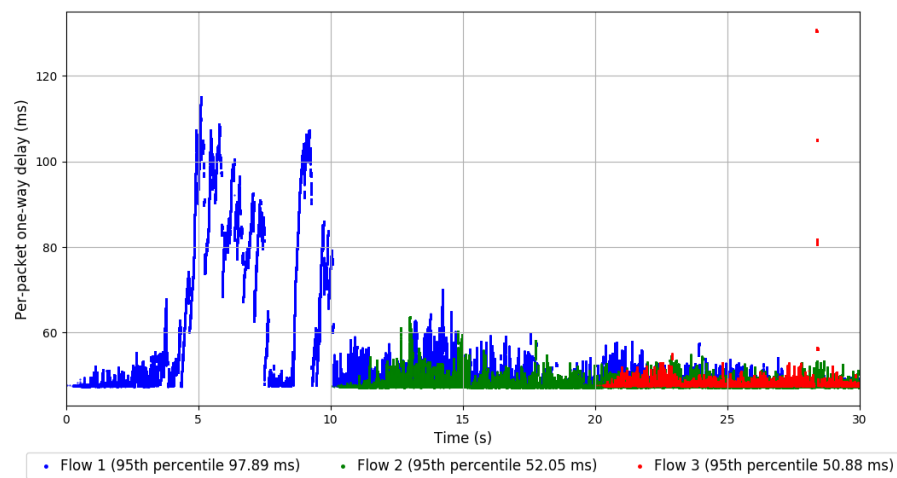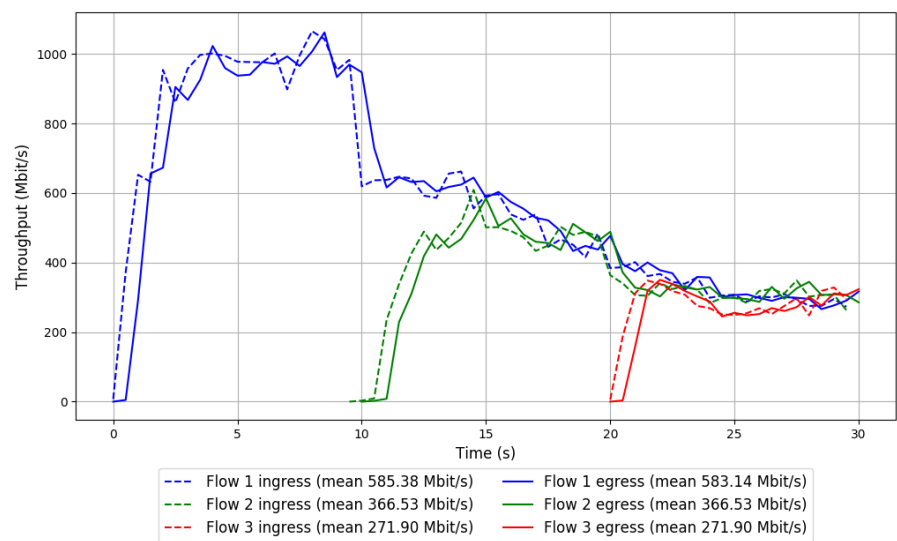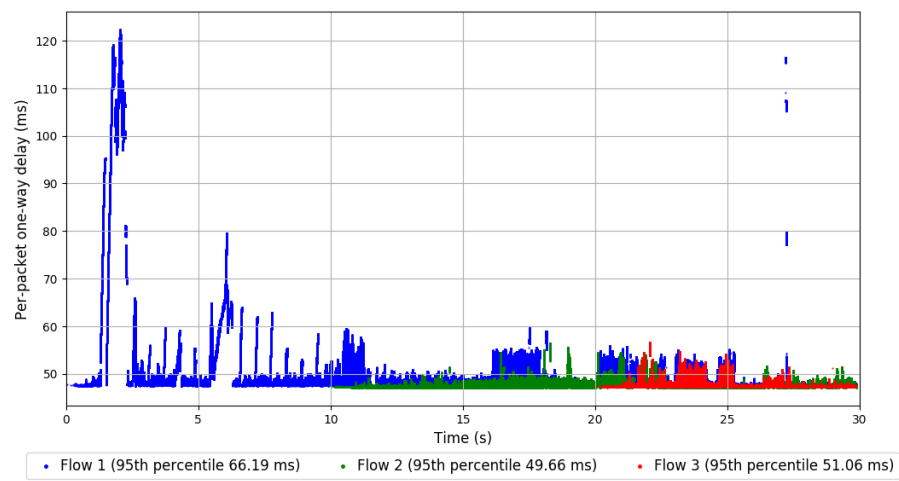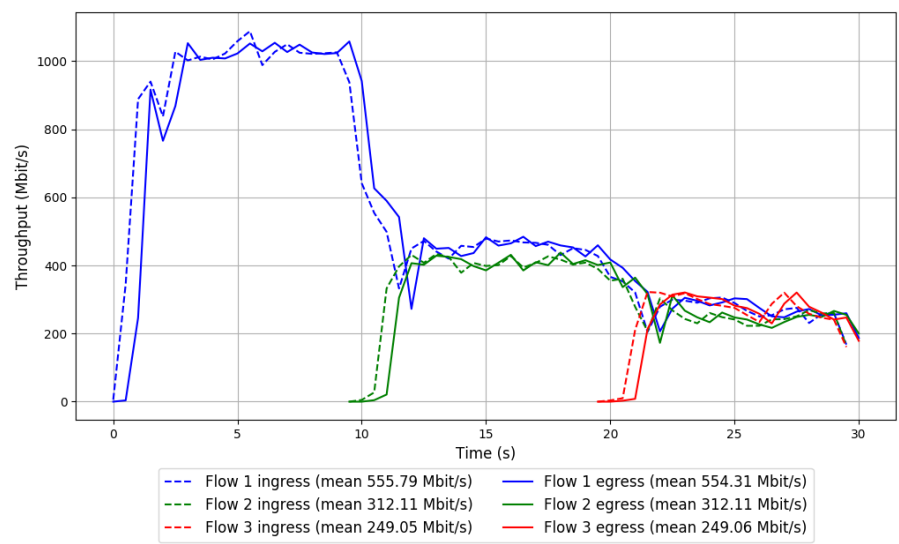
Run 2: Report of FillP — Data Link

Flow 1 ingress (mean 587.75 Mbit/s) --- Flow 1 egress (mean 588.38 Mbit/s)
Flow 2 ingress (mean 381.27 Mbit/s) --- Flow 2 egress (mean 383.58 Mbit/s)
Flow 3 ingress (mean 274.79 Mbit/s) --- Flow 3 egress (mean 274.70 Mbit/s)

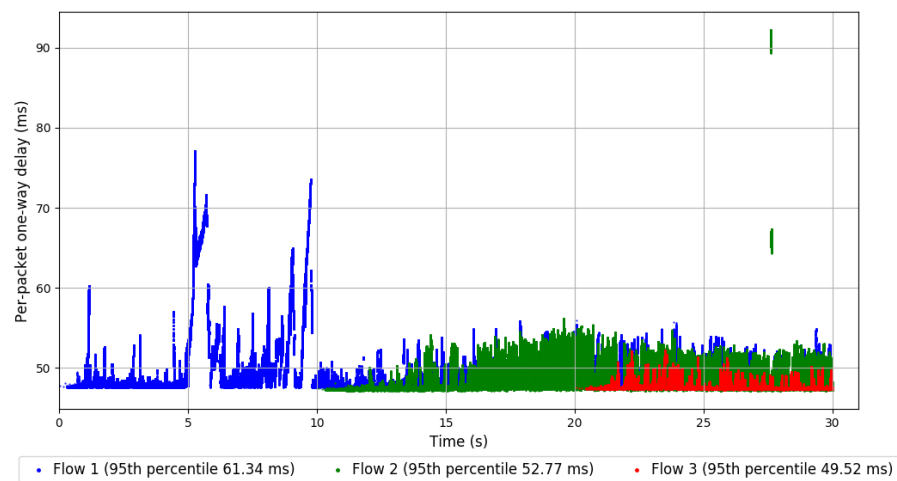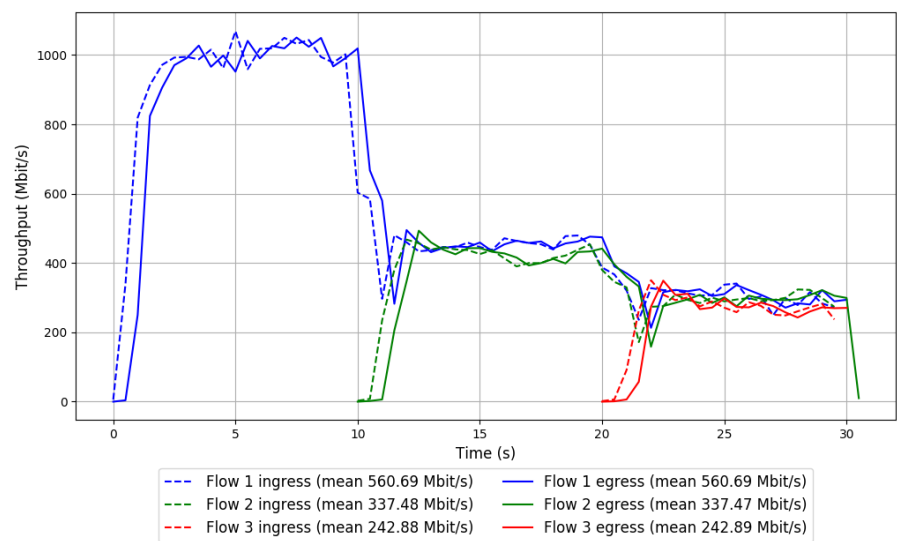Flow 1 (95th percentile 60.61 ms) • Flow 2 (95th percentile 53.28 ms) • Flow 3 (95th percentile 49.24 ms)

```
Run 3: Statistics of FillP

Start at: 2019-01-25 17:52:25
End at: 2019-01-25 17:52:55
Local clock offset: -0.094 ms
Remote clock offset: 0.085 ms

# Below is generated by plot.py at 2019-01-25 20:51:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 925.83 Mbit/s
95th percentile per-packet one-way delay: 59.745 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 584.63 Mbit/s
95th percentile per-packet one-way delay: 60.808 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 382.79 Mbit/s
95th percentile per-packet one-way delay: 53.179 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 260.34 Mbit/s
95th percentile per-packet one-way delay: 50.629 ms
Loss rate: 0.00%
```

Run 3: Report of FillP — Data Link

Flow 1 ingress (mean 584.68 Mbit/s) Flow 1 egress (mean 584.63 Mbit/s)
Flow 2 ingress (mean 382.85 Mbit/s) Flow 2 egress (mean 382.79 Mbit/s)
Flow 3 ingress (mean 260.34 Mbit/s) Flow 3 egress (mean 260.34 Mbit/s)

Flow 1 (95th percentile 60.81 ms) Flow 2 (95th percentile 53.18 ms) Flow 3 (95th percentile 50.63 ms)

```
Run 4: Statistics of FillP

Start at: 2019-01-25 18:29:17
End at: 2019-01-25 18:29:47
Local clock offset: 0.015 ms
Remote clock offset: 0.228 ms


# Below is generated by plot.py at 2019-01-25 20:53:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 927.76 Mbit/s
95th percentile per-packet one-way delay: 73.083 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 593.37 Mbit/s
95th percentile per-packet one-way delay: 76.525 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 368.19 Mbit/s
95th percentile per-packet one-way delay: 52.319 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 270.91 Mbit/s
95th percentile per-packet one-way delay: 50.469 ms
Loss rate: 0.00%
```
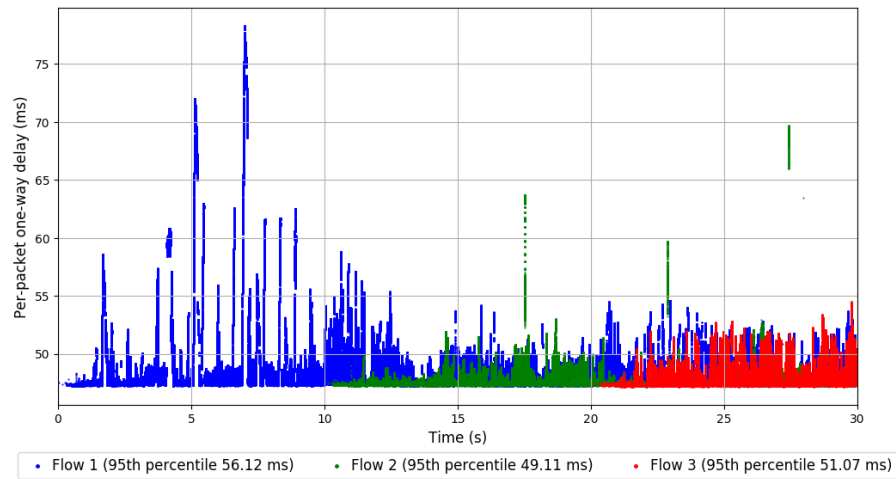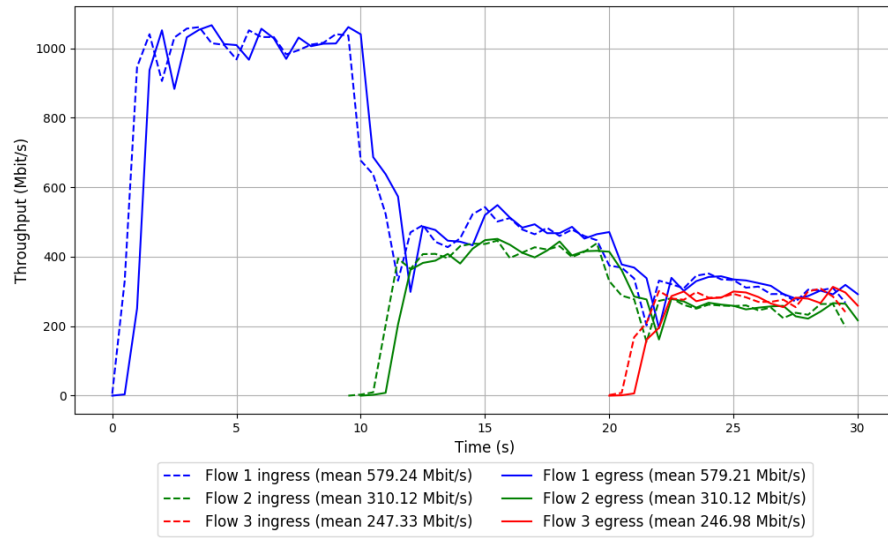
Run 4: Report of FillP — Data Link

```
Run 5: Statistics of FillP

Start at: 2019-01-25 19:06:02
End at: 2019-01-25 19:06:32
Local clock offset: -0.022 ms
Remote clock offset: 0.343 ms


# Below is generated by plot.py at 2019-01-25 20:53:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 916.90 Mbit/s
95th percentile per-packet one-way delay: 90.933 ms
Loss rate: 0.24%
-- Flow 1:
Average throughput: 583.14 Mbit/s
95th percentile per-packet one-way delay: 97.890 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 366.53 Mbit/s
95th percentile per-packet one-way delay: 52.055 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 271.90 Mbit/s
95th percentile per-packet one-way delay: 50.878 ms
Loss rate: 0.00%
```
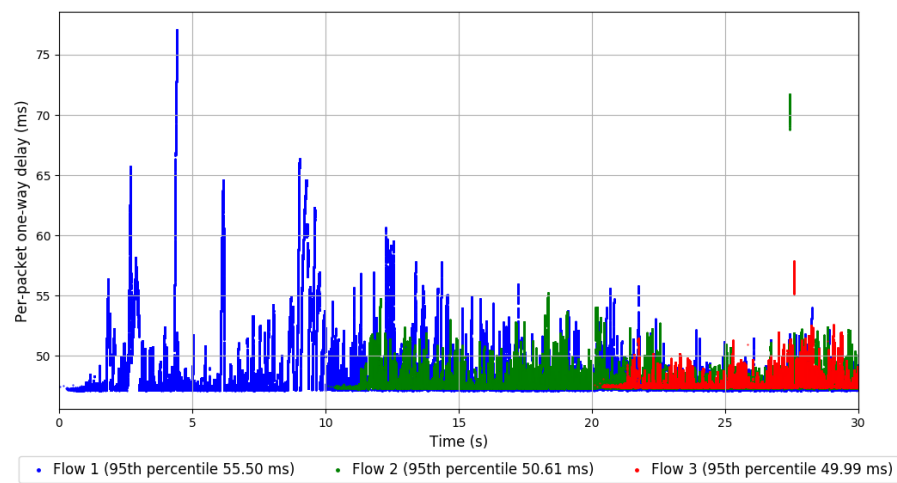
Run 5: Report of FillP — Data Link

```
Run 1: Statistics of FillP-Sheep

Start at: 2019-01-25 16:45:38
End at: 2019-01-25 16:46:08
Local clock offset: 0.076 ms
Remote clock offset: -0.056 ms


# Below is generated by plot.py at 2019-01-25 20:53:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 845.35 Mbit/s
95th percentile per-packet one-way delay: 61.818 ms
Loss rate: 0.17%
-- Flow 1:
Average throughput: 554.31 Mbit/s
95th percentile per-packet one-way delay: 66.191 ms
Loss rate: 0.27%
-- Flow 2:
Average throughput: 312.11 Mbit/s
95th percentile per-packet one-way delay: 49.656 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 249.06 Mbit/s
95th percentile per-packet one-way delay: 51.060 ms
Loss rate: 0.00%
```
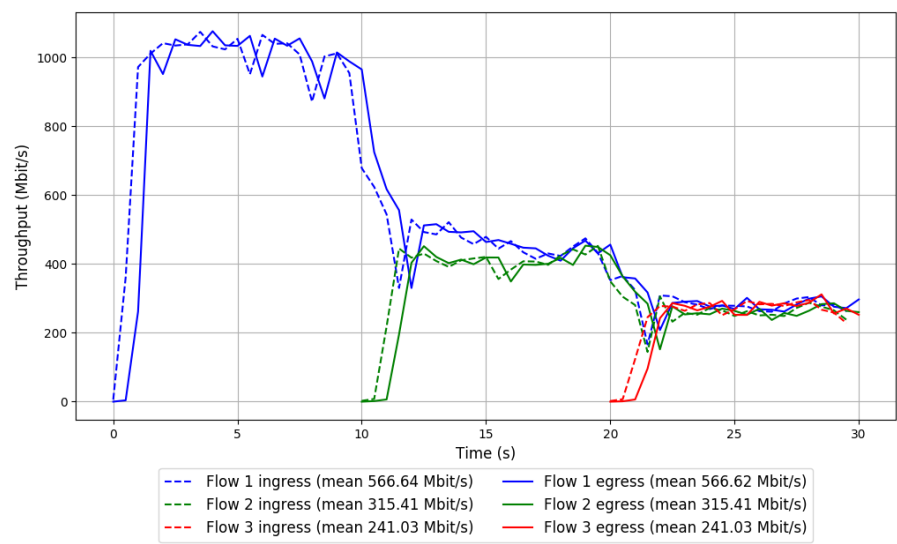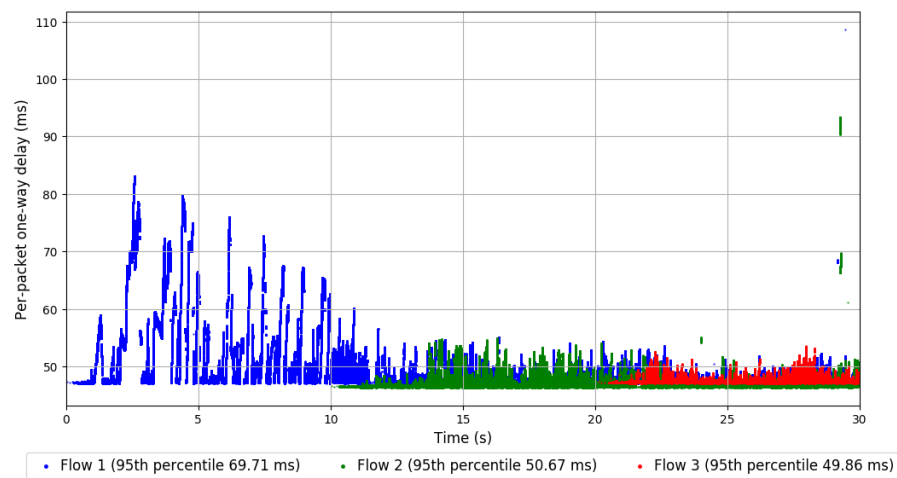
Run 1: Report of FillP-Sheep — Data Link

Flow 1 ingress (mean 555.79 Mbit/s)   Flow 1 egress (mean 554.31 Mbit/s)
Flow 2 ingress (mean 312.11 Mbit/s)   Flow 2 egress (mean 312.11 Mbit/s)
Flow 3 ingress (mean 249.05 Mbit/s)   Flow 3 egress (mean 249.06 Mbit/s)

Flow 1 (95th percentile 66.19 ms)   Flow 2 (95th percentile 49.66 ms)   Flow 3 (95th percentile 51.06 ms)

```
Run 2: Statistics of FillP-Sheep

Start at: 2019-01-25 17:22:15
End at: 2019-01-25 17:22:45
Local clock offset: -0.051 ms
Remote clock offset: -0.086 ms


# Below is generated by plot.py at 2019-01-25 20:53:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 865.14 Mbit/s
95th percentile per-packet one-way delay: 56.314 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 560.69 Mbit/s
95th percentile per-packet one-way delay: 61.344 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 337.47 Mbit/s
95th percentile per-packet one-way delay: 52.768 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 242.89 Mbit/s
95th percentile per-packet one-way delay: 49.522 ms
Loss rate: 0.00%
```
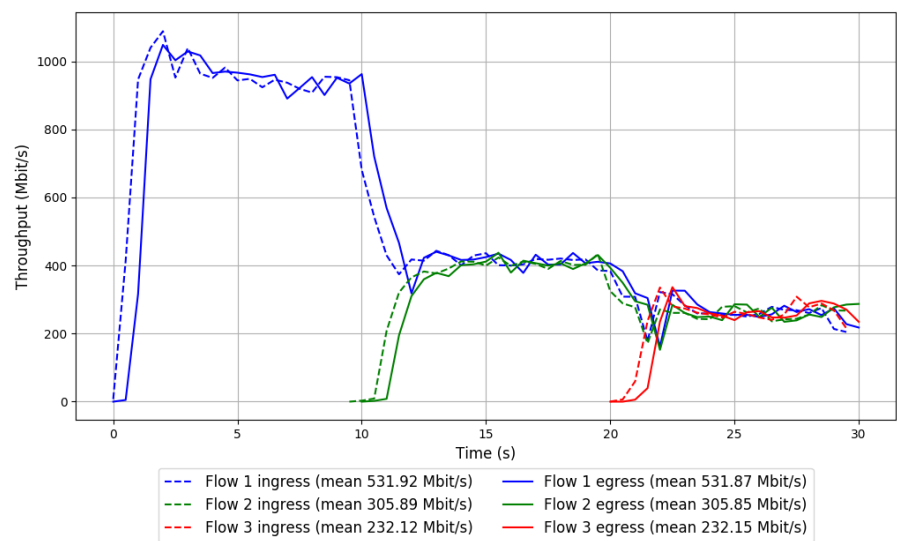
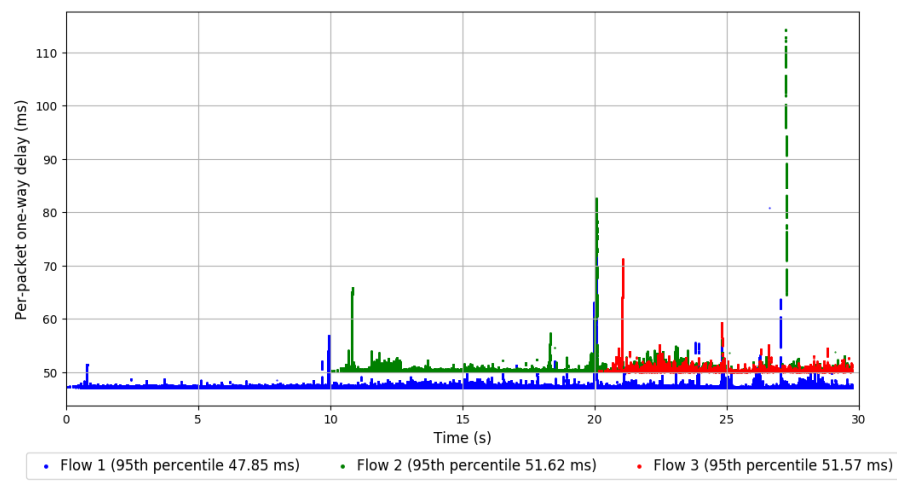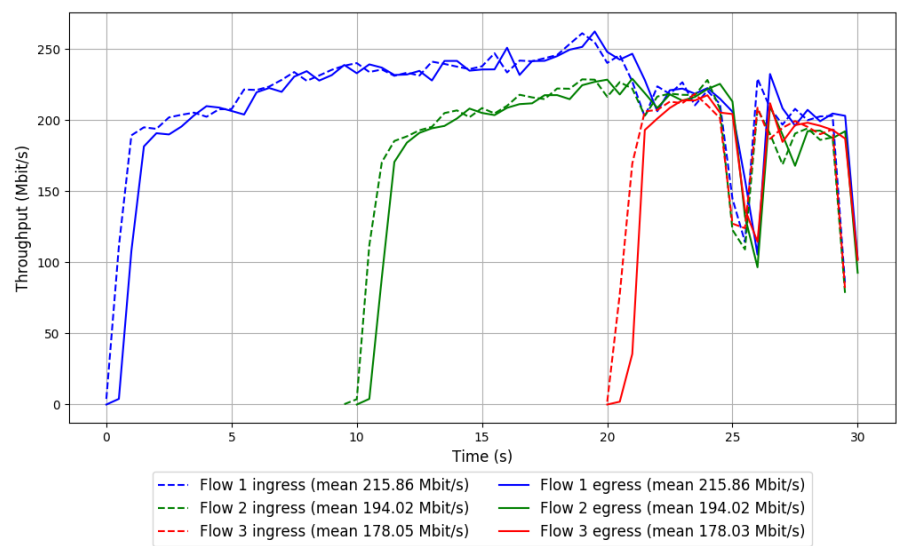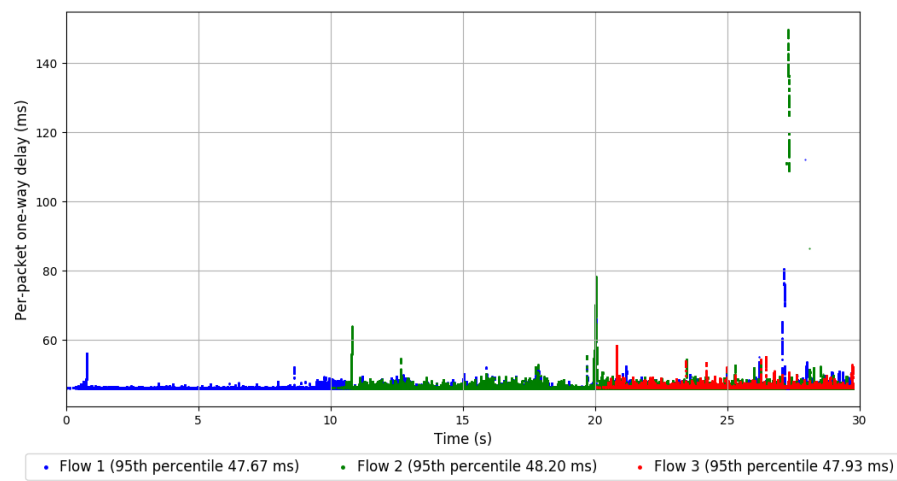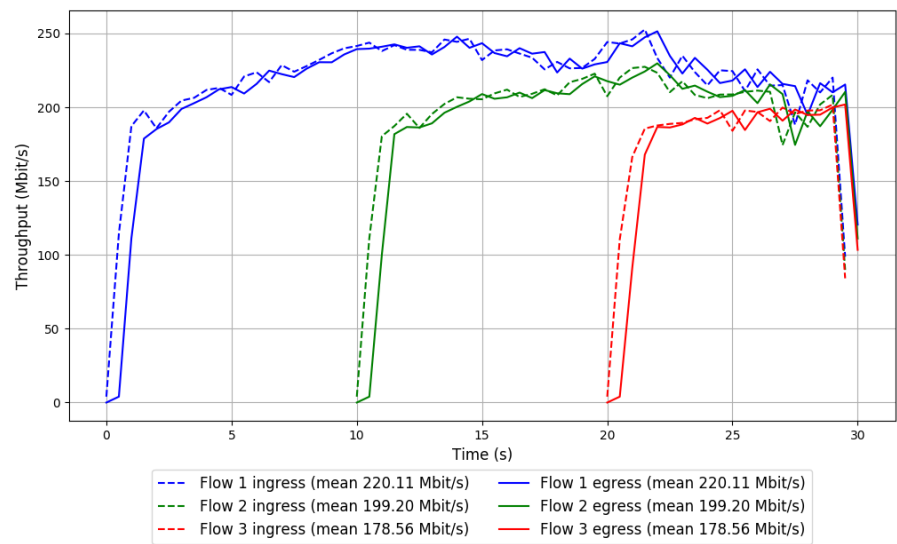Run 2: Report of FillP-Sheep — Data Link

```
Run 3: Statistics of FillP-Sheep

Start at: 2019-01-25 17:59:10
End at: 2019-01-25 17:59:40
Local clock offset: -0.03 ms
Remote clock offset: 0.113 ms


# Below is generated by plot.py at 2019-01-25 20:53:43
# Datalink statistics
-- Total of 3 flows:
Average throughput: 867.15 Mbit/s
95th percentile per-packet one-way delay: 53.602 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 579.21 Mbit/s
95th percentile per-packet one-way delay: 56.116 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 310.12 Mbit/s
95th percentile per-packet one-way delay: 49.106 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 246.98 Mbit/s
95th percentile per-packet one-way delay: 51.072 ms
Loss rate: 0.14%
```

Run 3: Report of FillP-Sheep — Data Link

- - - Flow 1 ingress (mean 579.24 Mbit/s) —— Flow 1 egress (mean 579.21 Mbit/s)
- - - Flow 2 ingress (mean 310.12 Mbit/s) —— Flow 2 egress (mean 310.12 Mbit/s)
- - - Flow 3 ingress (mean 247.33 Mbit/s) —— Flow 3 egress (mean 246.98 Mbit/s)

• Flow 1 (95th percentile 56.12 ms)   • Flow 2 (95th percentile 49.11 ms)   • Flow 3 (95th percentile 51.07 ms)

```
Run 4: Statistics of FillP-Sheep

Start at: 2019-01-25 18:35:56
End at: 2019-01-25 18:36:26
Local clock offset: -0.136 ms
Remote clock offset: 0.245 ms


# Below is generated by plot.py at 2019-01-25 20:54:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 855.56 Mbit/s
95th percentile per-packet one-way delay: 53.731 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 566.62 Mbit/s
95th percentile per-packet one-way delay: 55.503 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 315.41 Mbit/s
95th percentile per-packet one-way delay: 50.608 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 241.03 Mbit/s
95th percentile per-packet one-way delay: 49.989 ms
Loss rate: 0.00%
```
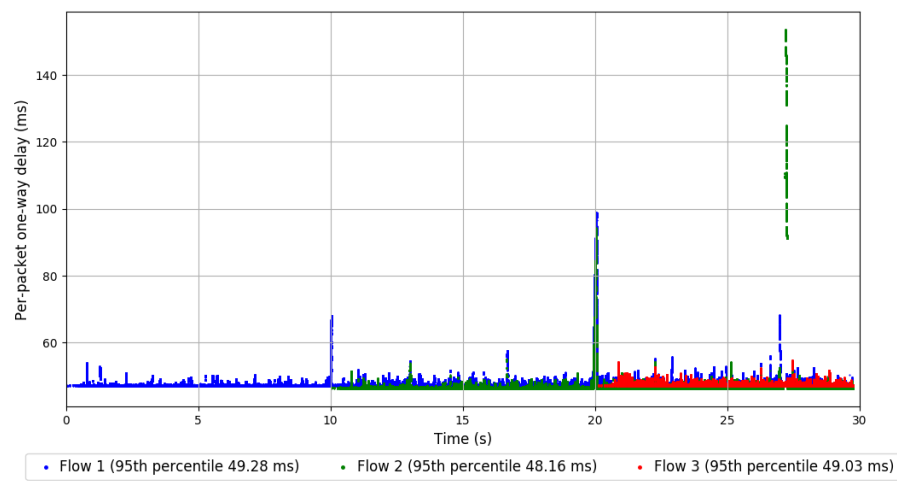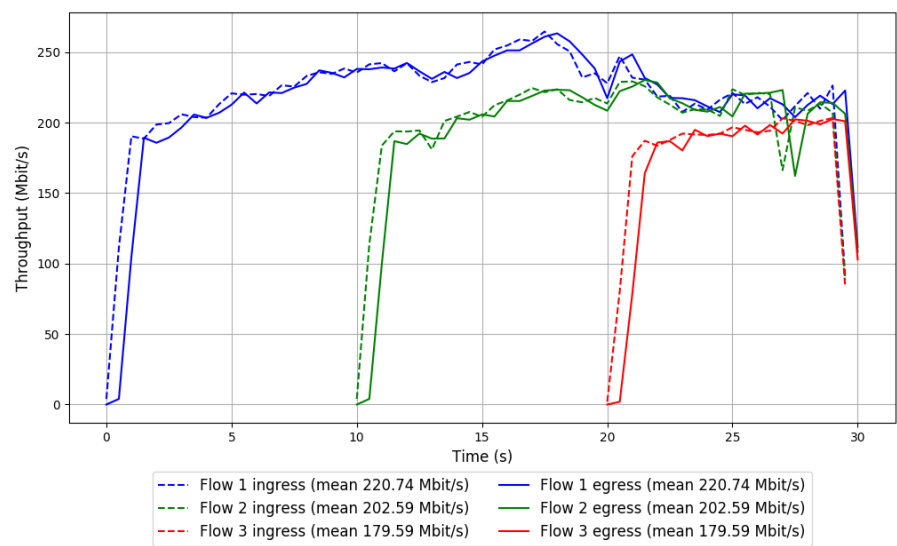
Run 4: Report of FillP-Sheep — Data Link

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```
Run 5: Statistics of FillP-Sheep

Start at: 2019-01-25 19:12:40
End at: 2019-01-25 19:13:10
Local clock offset: -0.004 ms
Remote clock offset: 0.329 ms


# Below is generated by plot.py at 2019-01-25 21:10:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 811.80 Mbit/s
95th percentile per-packet one-way delay: 66.365 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 531.87 Mbit/s
95th percentile per-packet one-way delay: 69.709 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 305.85 Mbit/s
95th percentile per-packet one-way delay: 50.672 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 232.15 Mbit/s
95th percentile per-packet one-way delay: 49.861 ms
Loss rate: 0.00%
```

Run 5: Report of FillP-Sheep — Data Link
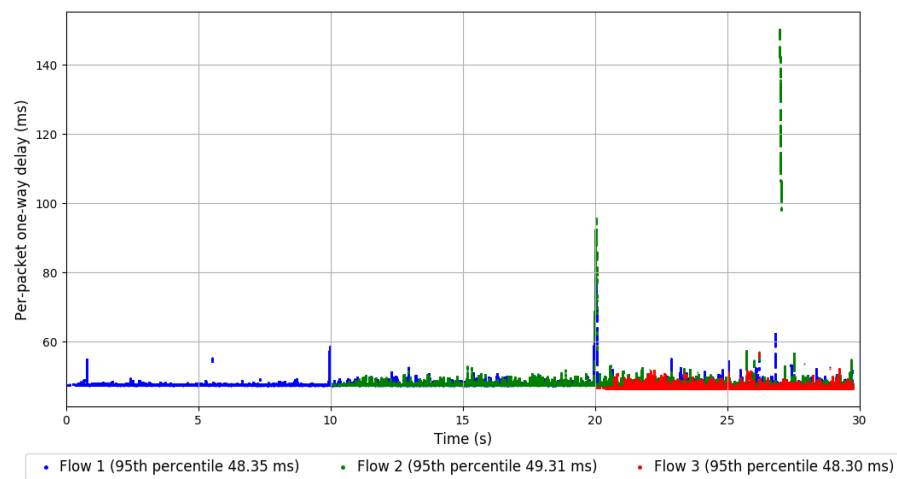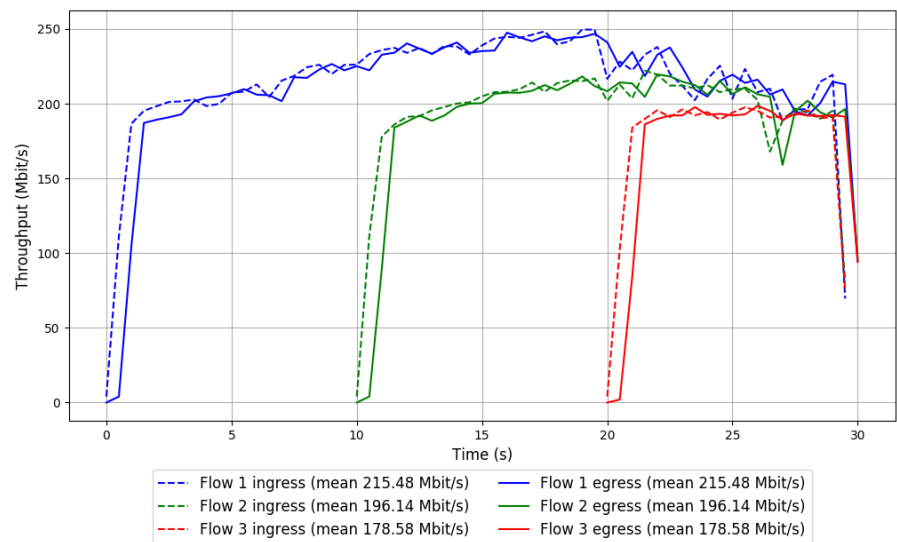

Flow 1 ingress (mean 531.92 Mbit/s) ——— Flow 1 egress (mean 531.87 Mbit/s)
Flow 2 ingress (mean 305.89 Mbit/s) ——— Flow 2 egress (mean 305.85 Mbit/s)
Flow 3 ingress (mean 232.12 Mbit/s) ——— Flow 3 egress (mean 232.15 Mbit/s)

• Flow 1 (95th percentile 69.71 ms)   • Flow 2 (95th percentile 50.67 ms)   • Flow 3 (95th percentile 49.86 ms)

```
Run 1: Statistics of Indigo

Start at: 2019-01-25 16:49:26
End at: 2019-01-25 16:49:56
Local clock offset: -0.077 ms
Remote clock offset: -0.109 ms


# Below is generated by plot.py at 2019-01-25 21:10:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 402.07 Mbit/s
95th percentile per-packet one-way delay: 50.937 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 215.86 Mbit/s
95th percentile per-packet one-way delay: 47.847 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 194.02 Mbit/s
95th percentile per-packet one-way delay: 51.619 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 178.03 Mbit/s
95th percentile per-packet one-way delay: 51.571 ms
Loss rate: 0.03%
```
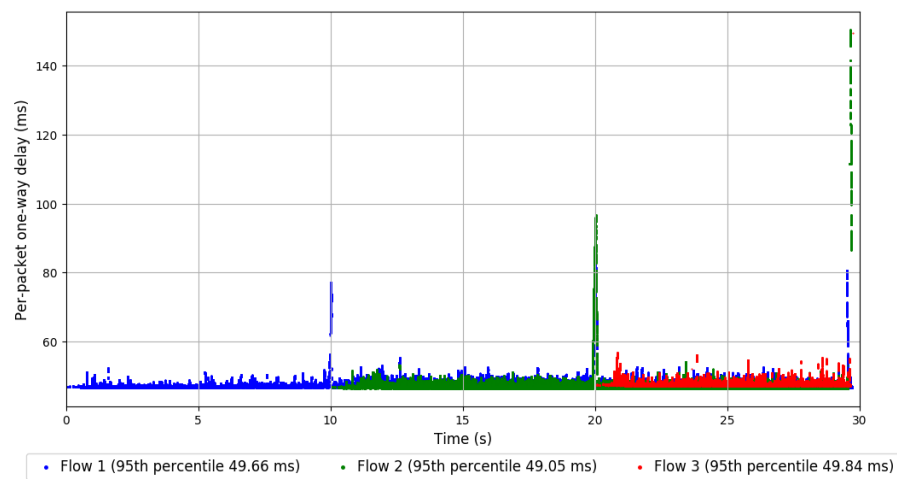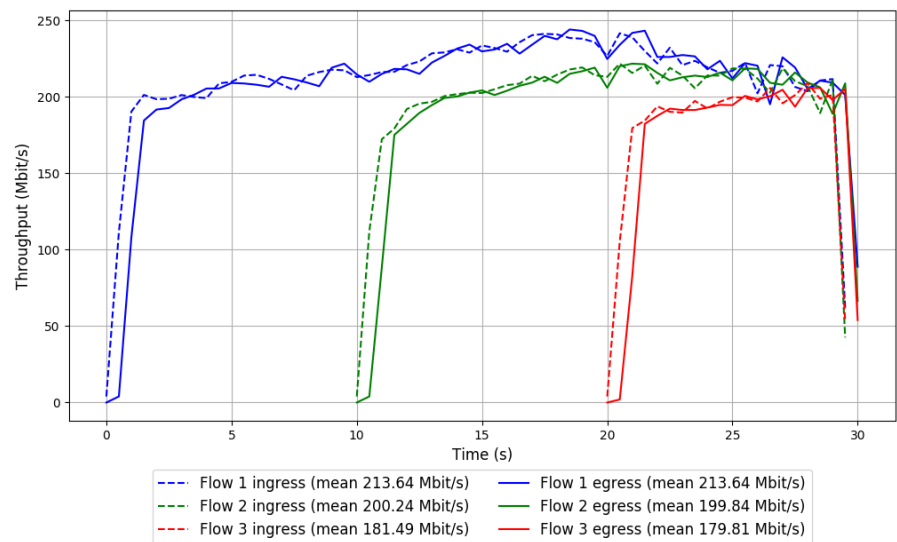
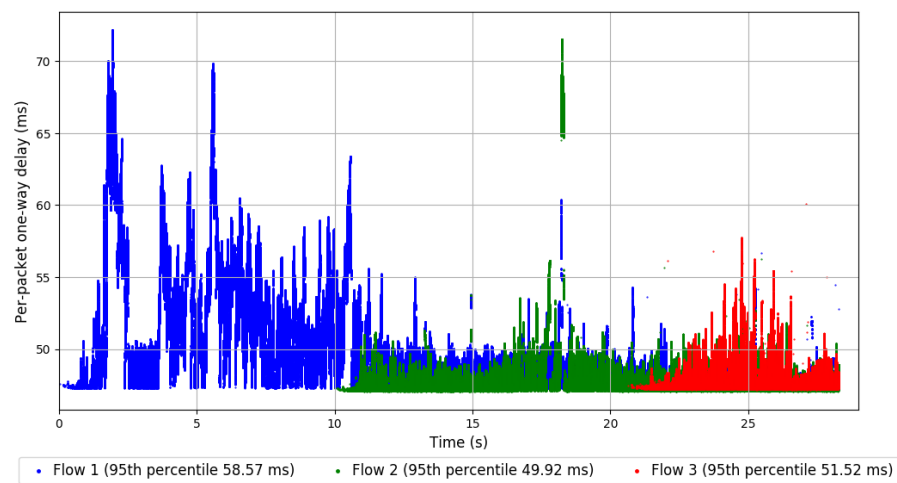# Run 1: Report of Indigo — Data Link

```
Run 2: Statistics of Indigo

Start at: 2019-01-25 17:26:02
End at: 2019-01-25 17:26:32
Local clock offset: 0.305 ms
Remote clock offset: -0.113 ms


# Below is generated by plot.py at 2019-01-25 21:10:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 410.41 Mbit/s
95th percentile per-packet one-way delay: 47.881 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 220.11 Mbit/s
95th percentile per-packet one-way delay: 47.667 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 199.20 Mbit/s
95th percentile per-packet one-way delay: 48.196 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 178.56 Mbit/s
95th percentile per-packet one-way delay: 47.928 ms
Loss rate: 0.00%
```
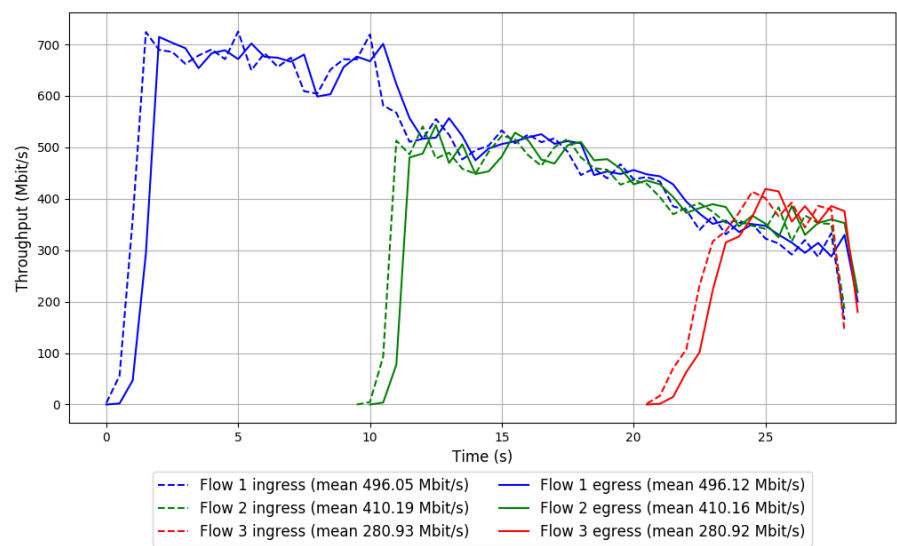
Run 2: Report of Indigo — Data Link

```
Run 3: Statistics of Indigo

Start at: 2019-01-25 18:03:02
End at: 2019-01-25 18:03:32
Local clock offset: -0.071 ms
Remote clock offset: 0.165 ms


# Below is generated by plot.py at 2019-01-25 21:10:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 413.23 Mbit/s
95th percentile per-packet one-way delay: 49.001 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 220.74 Mbit/s
95th percentile per-packet one-way delay: 49.282 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 202.59 Mbit/s
95th percentile per-packet one-way delay: 48.162 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 179.59 Mbit/s
95th percentile per-packet one-way delay: 49.031 ms
Loss rate: 0.00%
```

Run 3: Report of Indigo — Data Link

```
Run 4: Statistics of Indigo

Start at: 2019-01-25 18:39:40
End at: 2019-01-25 18:40:10
Local clock offset: -0.162 ms
Remote clock offset: 0.257 ms


# Below is generated by plot.py at 2019-01-25 21:10:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 403.58 Mbit/s
95th percentile per-packet one-way delay: 48.741 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 215.48 Mbit/s
95th percentile per-packet one-way delay: 48.351 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 196.14 Mbit/s
95th percentile per-packet one-way delay: 49.307 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 178.58 Mbit/s
95th percentile per-packet one-way delay: 48.302 ms
Loss rate: 0.00%
```
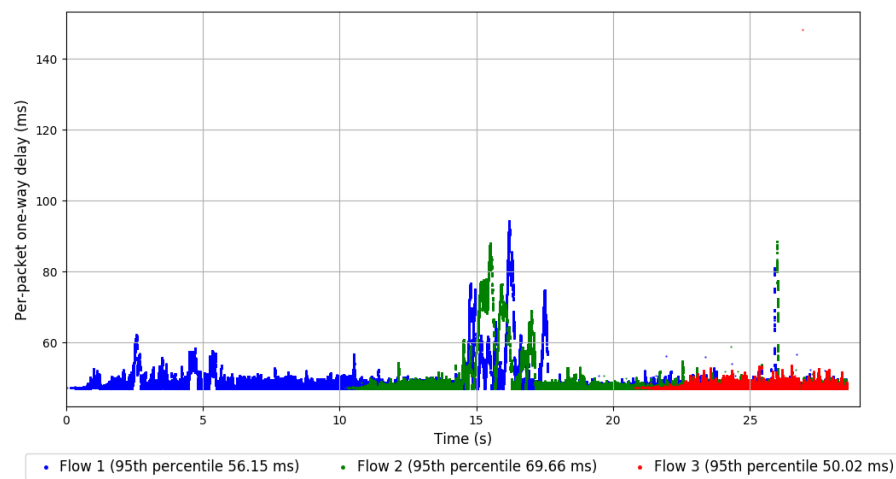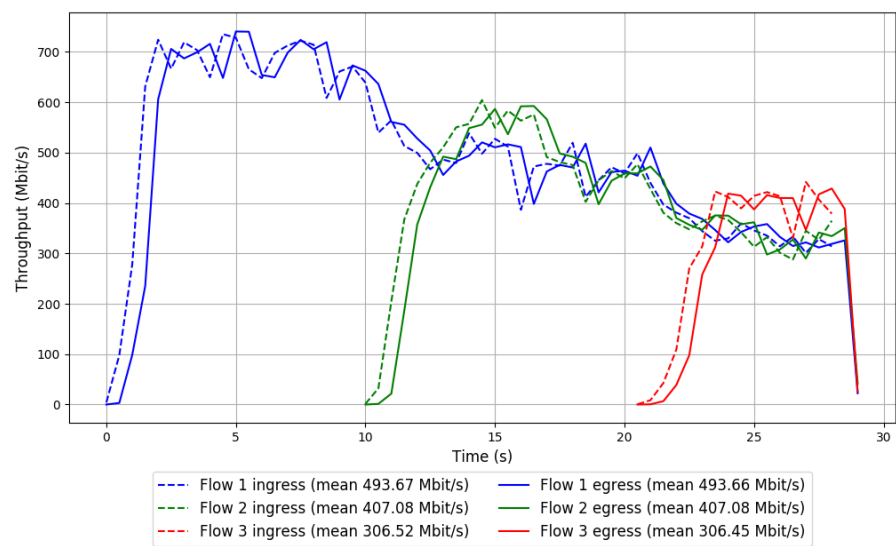
Run 4: Report of Indigo — Data Link

```
Run 5: Statistics of Indigo

Start at: 2019-01-25 19:16:21
End at: 2019-01-25 19:16:51
Local clock offset: -0.029 ms
Remote clock offset: 0.341 ms


# Below is generated by plot.py at 2019-01-25 21:10:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 403.92 Mbit/s
95th percentile per-packet one-way delay: 49.522 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 213.64 Mbit/s
95th percentile per-packet one-way delay: 49.664 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 199.84 Mbit/s
95th percentile per-packet one-way delay: 49.051 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 179.81 Mbit/s
95th percentile per-packet one-way delay: 49.845 ms
Loss rate: 0.48%
```
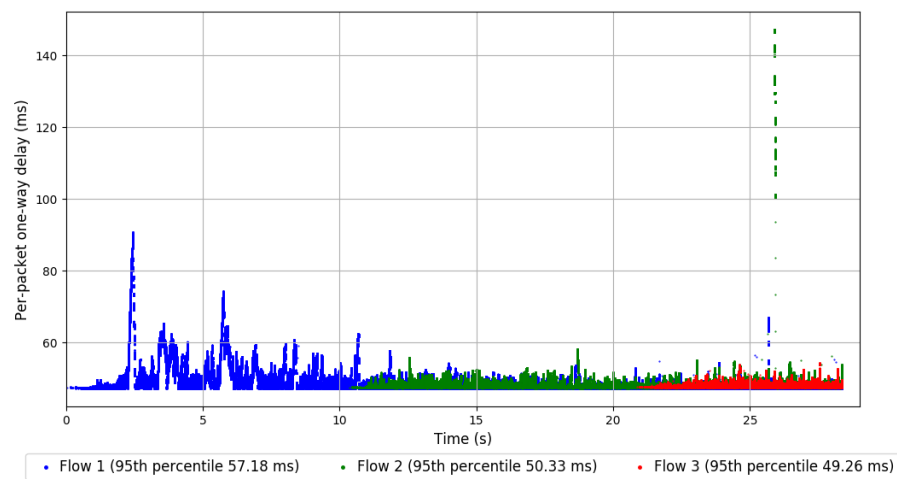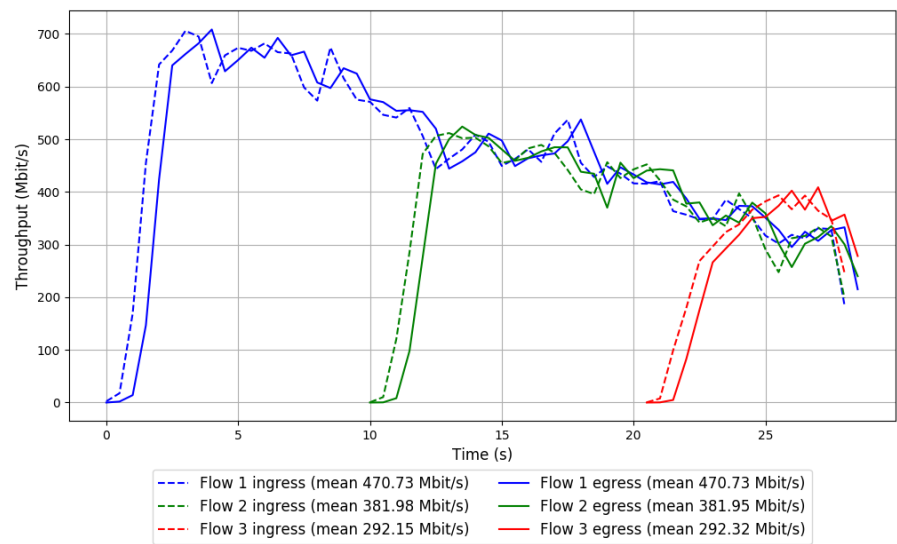
Run 5: Report of Indigo — Data Link

```
Run 1: Statistics of Indigo-MusesC3

Start at: 2019-01-25 16:54:27
End at: 2019-01-25 16:54:57
Local clock offset: -0.027 ms
Remote clock offset: -0.095 ms


# Below is generated by plot.py at 2019-01-25 21:10:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 837.15 Mbit/s
95th percentile per-packet one-way delay: 56.680 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 496.12 Mbit/s
95th percentile per-packet one-way delay: 58.566 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 410.16 Mbit/s
95th percentile per-packet one-way delay: 49.916 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 280.92 Mbit/s
95th percentile per-packet one-way delay: 51.516 ms
Loss rate: 0.00%
```
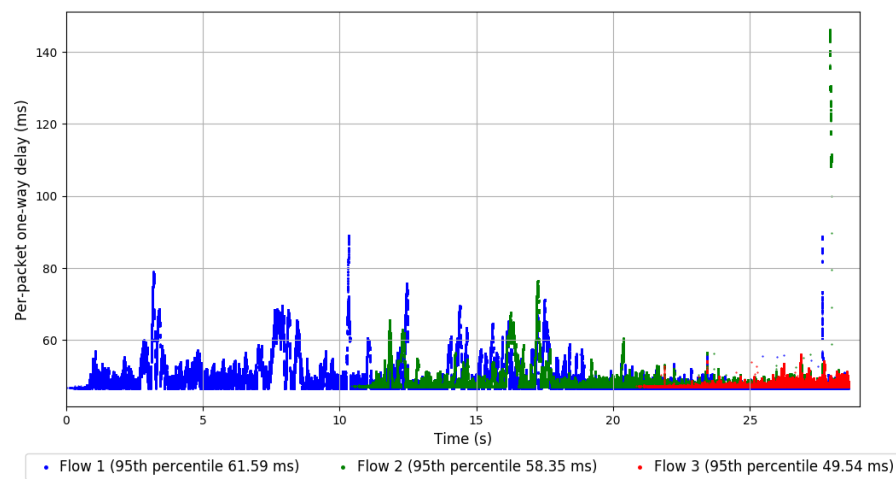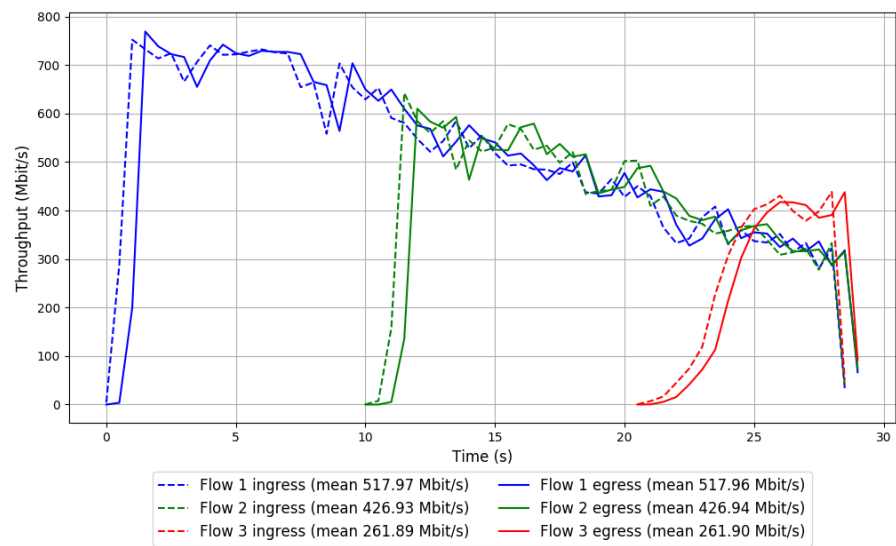
Run 1: Report of Indigo-MusesC3 — Data Link

```
Run 2: Statistics of Indigo-MusesC3

Start at: 2019-01-25 17:31:10
End at: 2019-01-25 17:31:40
Local clock offset: 0.067 ms
Remote clock offset: -0.137 ms


# Below is generated by plot.py at 2019-01-25 21:10:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 839.44 Mbit/s
95th percentile per-packet one-way delay: 59.345 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 493.66 Mbit/s
95th percentile per-packet one-way delay: 56.153 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 407.08 Mbit/s
95th percentile per-packet one-way delay: 69.659 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 306.45 Mbit/s
95th percentile per-packet one-way delay: 50.022 ms
Loss rate: 0.02%
```
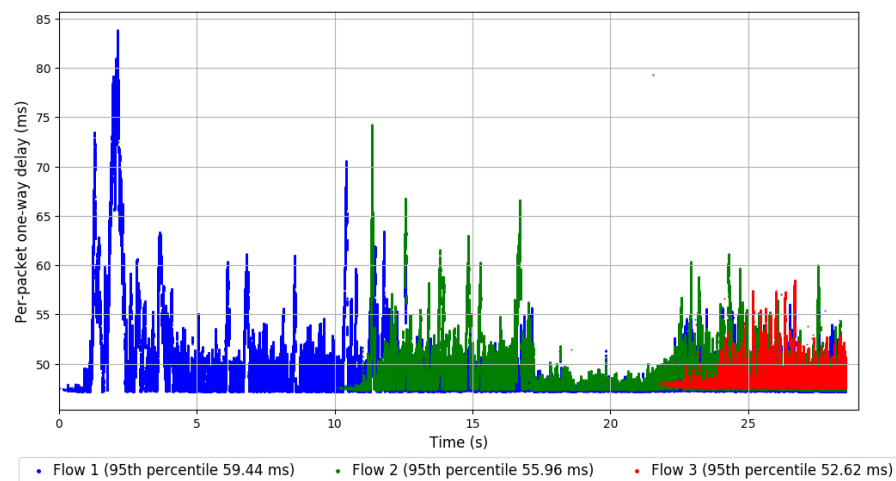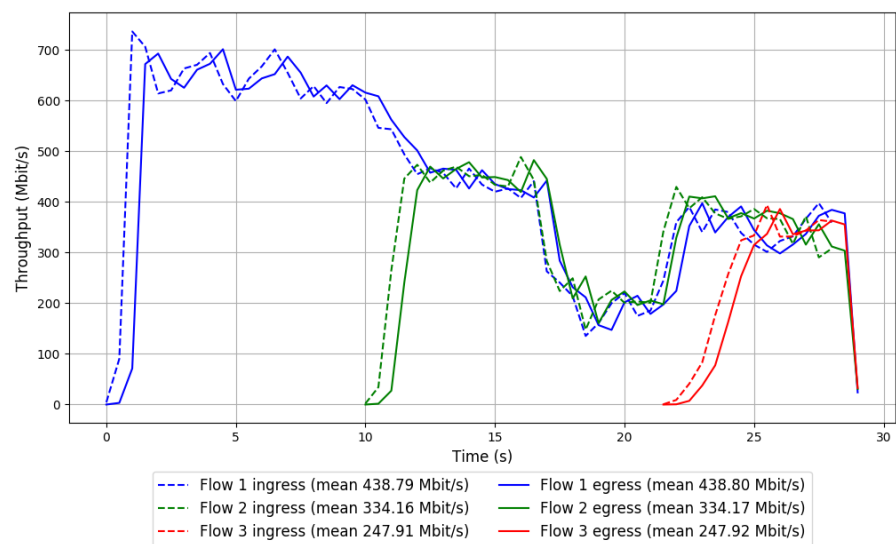
Run 2: Report of Indigo-MusesC3 — Data Link
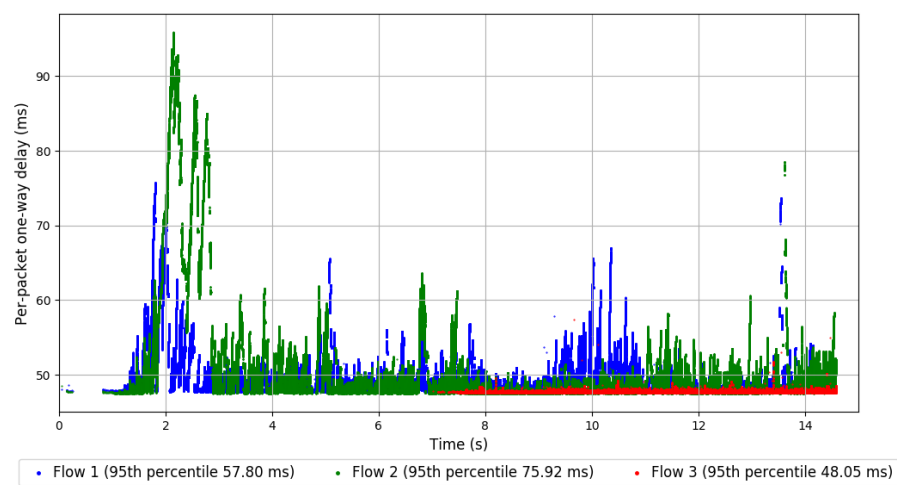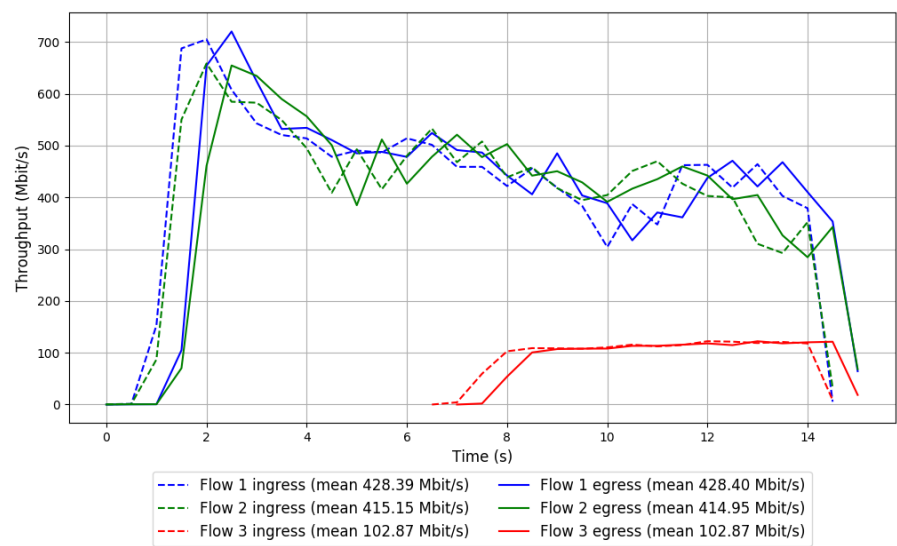
```
Run 3: Statistics of Indigo-MusesC3

Start at: 2019-01-25 18:08:13
End at: 2019-01-25 18:08:43
Local clock offset: -0.06 ms
Remote clock offset: 0.13 ms


# Below is generated by plot.py at 2019-01-25 21:19:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 790.83 Mbit/s
95th percentile per-packet one-way delay: 54.590 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 470.73 Mbit/s
95th percentile per-packet one-way delay: 57.176 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 381.95 Mbit/s
95th percentile per-packet one-way delay: 50.331 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 292.32 Mbit/s
95th percentile per-packet one-way delay: 49.258 ms
Loss rate: 0.00%
```
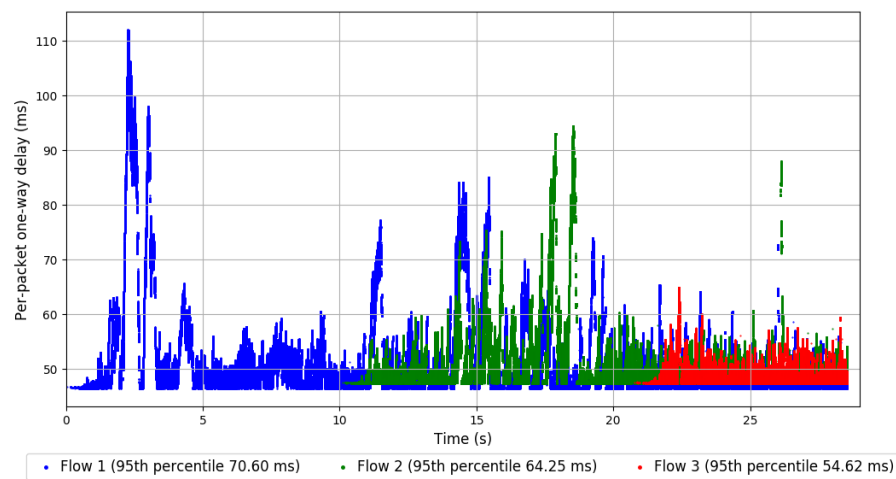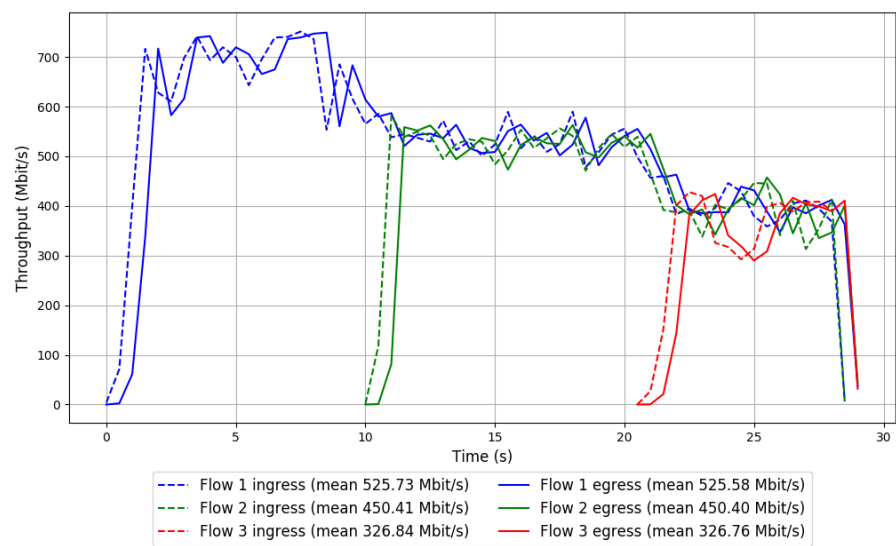
Run 3: Report of Indigo-MusesC3 — Data Link

```
Run 4: Statistics of Indigo-MusesC3

Start at: 2019-01-25 18:44:42
End at: 2019-01-25 18:45:12
Local clock offset: -0.114 ms
Remote clock offset: 0.216 ms


# Below is generated by plot.py at 2019-01-25 21:22:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 861.03 Mbit/s
95th percentile per-packet one-way delay: 59.955 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 517.96 Mbit/s
95th percentile per-packet one-way delay: 61.588 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 426.94 Mbit/s
95th percentile per-packet one-way delay: 58.351 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 261.90 Mbit/s
95th percentile per-packet one-way delay: 49.541 ms
Loss rate: 0.00%
```

Run 4: Report of Indigo-MusesC3 — Data Link

```
Run 5: Statistics of Indigo-MusesC3

Start at: 2019-01-25 19:21:21
End at: 2019-01-25 19:21:51
Local clock offset: -0.027 ms
Remote clock offset: 0.442 ms


# Below is generated by plot.py at 2019-01-25 21:22:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 714.02 Mbit/s
95th percentile per-packet one-way delay: 57.714 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 438.80 Mbit/s
95th percentile per-packet one-way delay: 59.440 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 334.17 Mbit/s
95th percentile per-packet one-way delay: 55.959 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 247.92 Mbit/s
95th percentile per-packet one-way delay: 52.623 ms
Loss rate: 0.00%
```
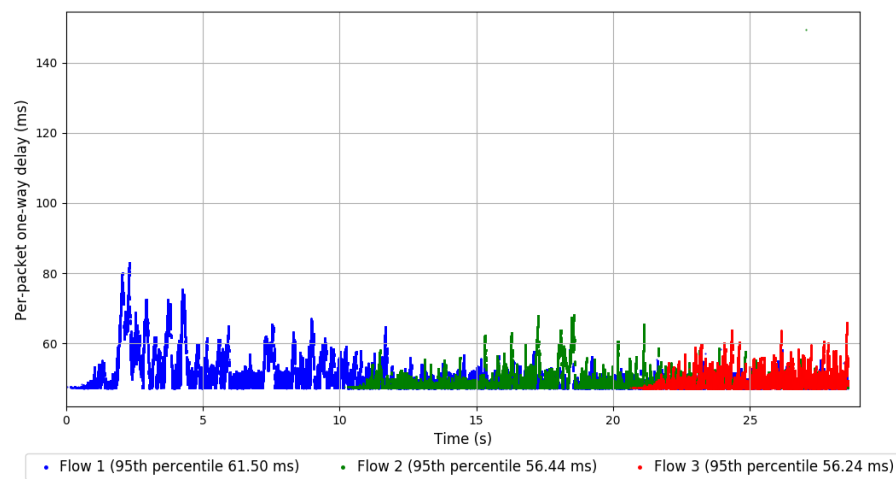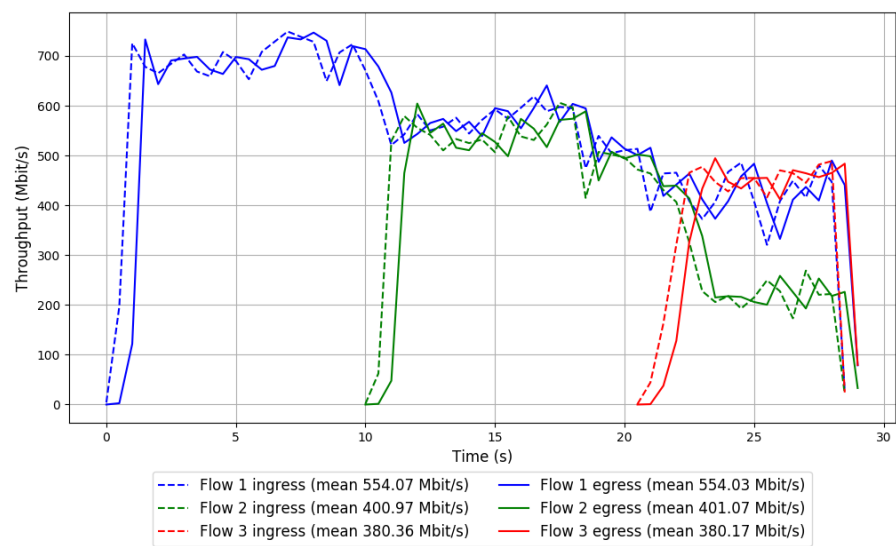
Run 5: Report of Indigo-MusesC3 — Data Link

Flow 1 ingress (mean 438.79 Mbit/s) --- Flow 1 egress (mean 438.80 Mbit/s)
Flow 2 ingress (mean 334.16 Mbit/s) --- Flow 2 egress (mean 334.17 Mbit/s)
Flow 3 ingress (mean 247.91 Mbit/s) --- Flow 3 egress (mean 247.92 Mbit/s)

Flow 1 (95th percentile 59.44 ms) Flow 2 (95th percentile 55.96 ms) Flow 3 (95th percentile 52.62 ms)

Run 1: Statistics of Indigo-MusesC5

Start at: 2019-01-25 16:29:10
End at: 2019-01-25 16:29:40
Local clock offset: -0.368 ms
Remote clock offset: -0.01 ms

Run 1: Report of Indigo-MusesC5 — Data Link

```
Run 2: Statistics of Indigo-MusesC5

Start at: 2019-01-25 17:05:23
End at: 2019-01-25 17:05:53
Local clock offset: -0.062 ms
Remote clock offset: -0.113 ms


# Below is generated by plot.py at 2019-01-25 21:23:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 905.94 Mbit/s
95th percentile per-packet one-way delay: 67.869 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 525.58 Mbit/s
95th percentile per-packet one-way delay: 70.604 ms
Loss rate: 0.03%
-- Flow 2:
Average throughput: 450.40 Mbit/s
95th percentile per-packet one-way delay: 64.248 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 326.76 Mbit/s
95th percentile per-packet one-way delay: 54.616 ms
Loss rate: 0.00%
```
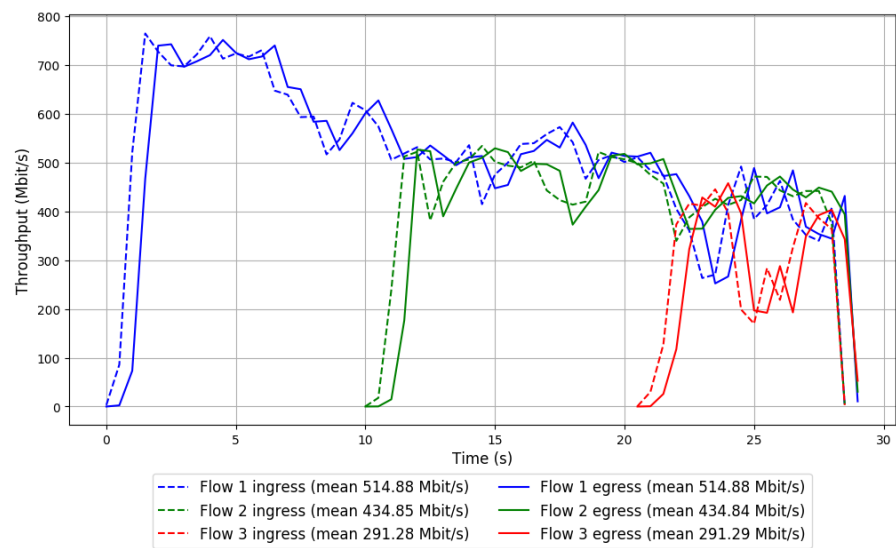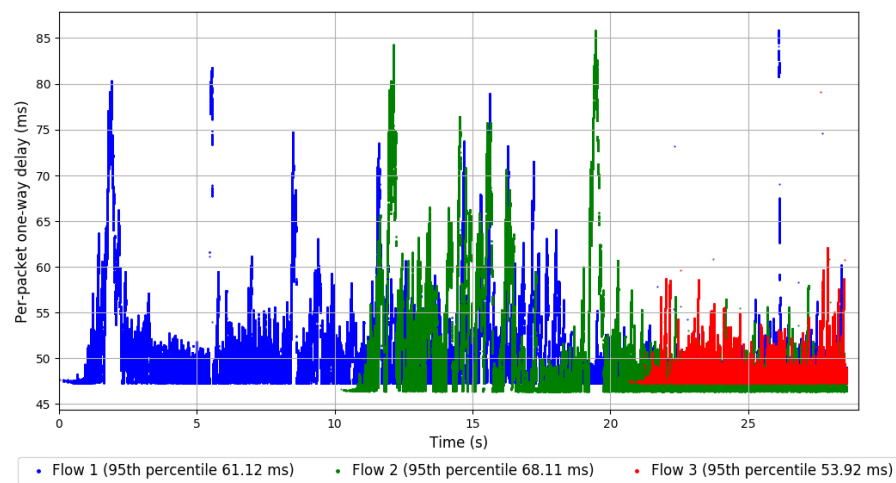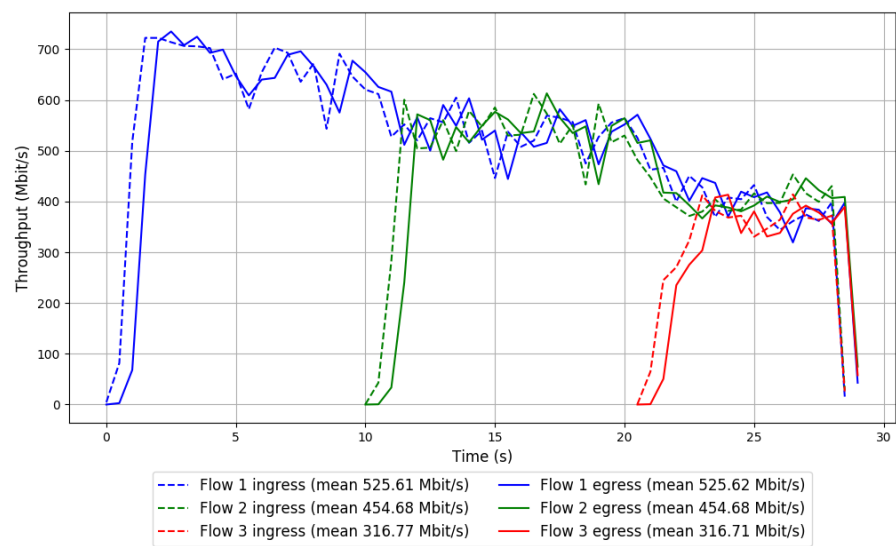
Run 2: Report of Indigo-MusesC5 — Data Link

```
Run 3: Statistics of Indigo-MusesC5

Start at: 2019-01-25 17:42:22
End at: 2019-01-25 17:42:52
Local clock offset: -0.077 ms
Remote clock offset: 0.005 ms

# Below is generated by plot.py at 2019-01-25 21:25:07
# Datalink statistics
-- Total of 3 flows:
Average throughput: 918.41 Mbit/s
95th percentile per-packet one-way delay: 59.680 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 554.03 Mbit/s
95th percentile per-packet one-way delay: 61.504 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 401.07 Mbit/s
95th percentile per-packet one-way delay: 56.435 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 380.17 Mbit/s
95th percentile per-packet one-way delay: 56.236 ms
Loss rate: 0.06%
```

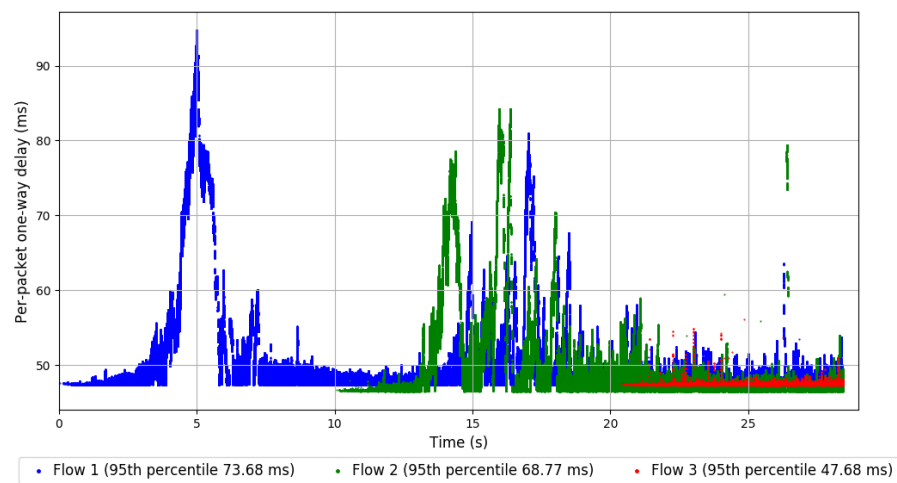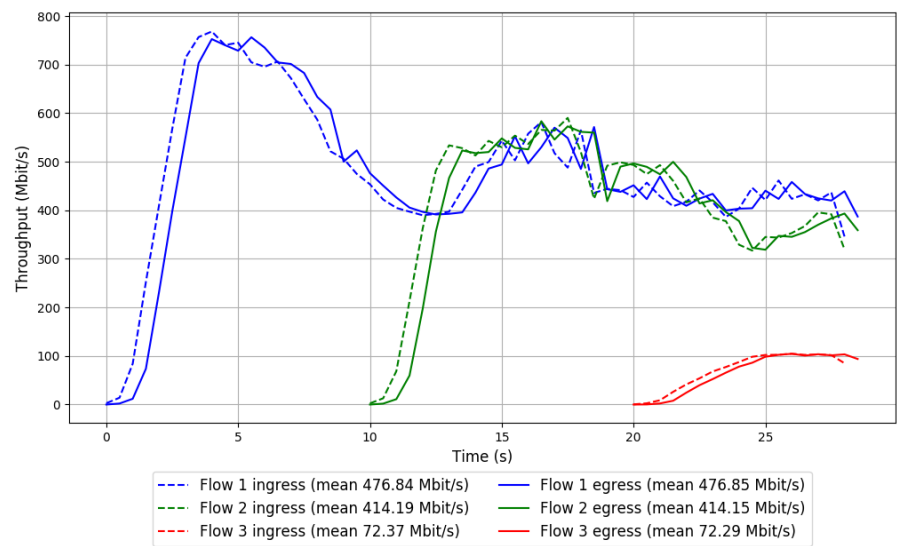Run 3: Report of Indigo-MusesC5 — Data Link

```
Run 4: Statistics of Indigo-MusesC5

Start at: 2019-01-25 18:19:15
End at: 2019-01-25 18:19:45
Local clock offset: -0.018 ms
Remote clock offset: 0.198 ms


# Below is generated by plot.py at 2019-01-25 21:25:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 872.28 Mbit/s
95th percentile per-packet one-way delay: 60.686 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 514.88 Mbit/s
95th percentile per-packet one-way delay: 63.229 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 434.84 Mbit/s
95th percentile per-packet one-way delay: 54.499 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 291.29 Mbit/s
95th percentile per-packet one-way delay: 59.231 ms
Loss rate: 0.00%
```

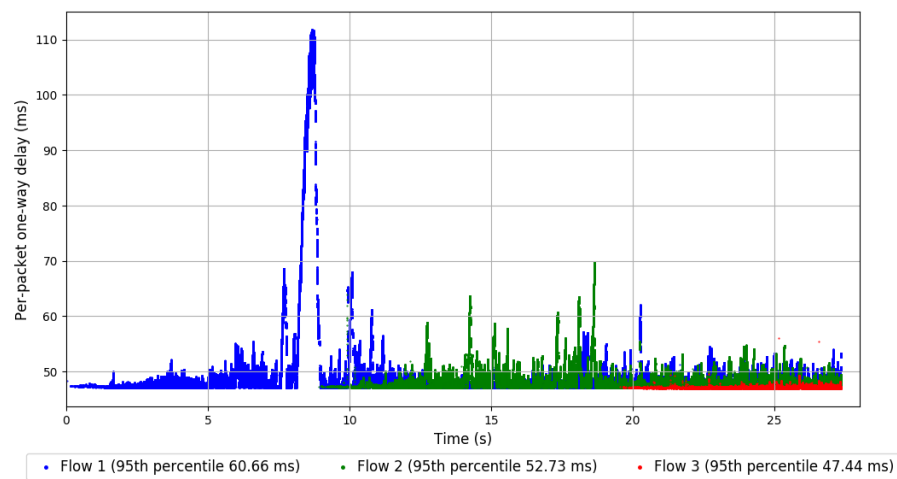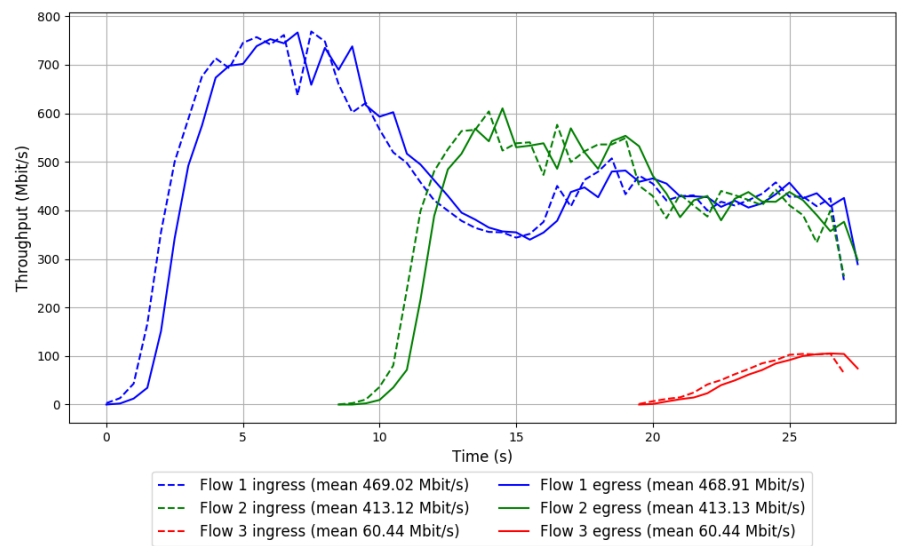Run 4: Report of Indigo-MusesC5 — Data Link

```
Run 5: Statistics of Indigo-MusesC5

Start at: 2019-01-25 18:55:56
End at: 2019-01-25 18:56:26
Local clock offset: -0.059 ms
Remote clock offset: 0.263 ms


# Below is generated by plot.py at 2019-01-25 21:26:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 905.83 Mbit/s
95th percentile per-packet one-way delay: 62.879 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 525.62 Mbit/s
95th percentile per-packet one-way delay: 61.125 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 454.68 Mbit/s
95th percentile per-packet one-way delay: 68.113 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 316.71 Mbit/s
95th percentile per-packet one-way delay: 53.916 ms
Loss rate: 0.00%
```

Run 5: Report of Indigo-MusesC5 — Data Link

```
Run 1: Statistics of Indigo-MusesD

Start at: 2019-01-25 17:03:37
End at: 2019-01-25 17:04:07
Local clock offset: -0.102 ms
Remote clock offset: -0.093 ms

# Below is generated by plot.py at 2019-01-25 21:28:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 765.18 Mbit/s
95th percentile per-packet one-way delay: 72.008 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 476.85 Mbit/s
95th percentile per-packet one-way delay: 73.681 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 414.15 Mbit/s
95th percentile per-packet one-way delay: 68.768 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 72.29 Mbit/s
95th percentile per-packet one-way delay: 47.677 ms
Loss rate: 0.10%
```
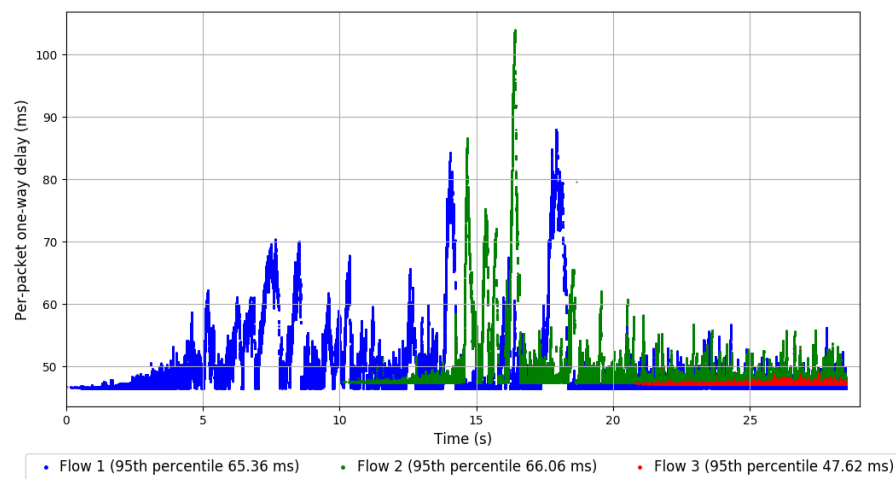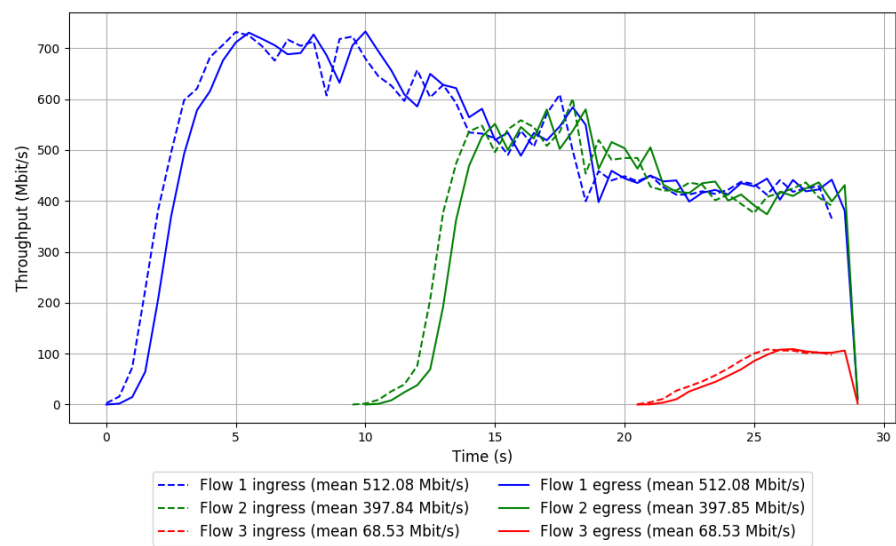
Run 1: Report of Indigo-MusesD — Data Link

```
Run 2: Statistics of Indigo-MusesD

Start at: 2019-01-25 17:40:37
End at: 2019-01-25 17:41:07
Local clock offset: 0.02 ms
Remote clock offset: -0.037 ms


# Below is generated by plot.py at 2019-01-25 21:32:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 765.16 Mbit/s
95th percentile per-packet one-way delay: 55.337 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 468.91 Mbit/s
95th percentile per-packet one-way delay: 60.658 ms
Loss rate: 0.03%
-- Flow 2:
Average throughput: 413.13 Mbit/s
95th percentile per-packet one-way delay: 52.735 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 60.44 Mbit/s
95th percentile per-packet one-way delay: 47.435 ms
Loss rate: 0.00%
```
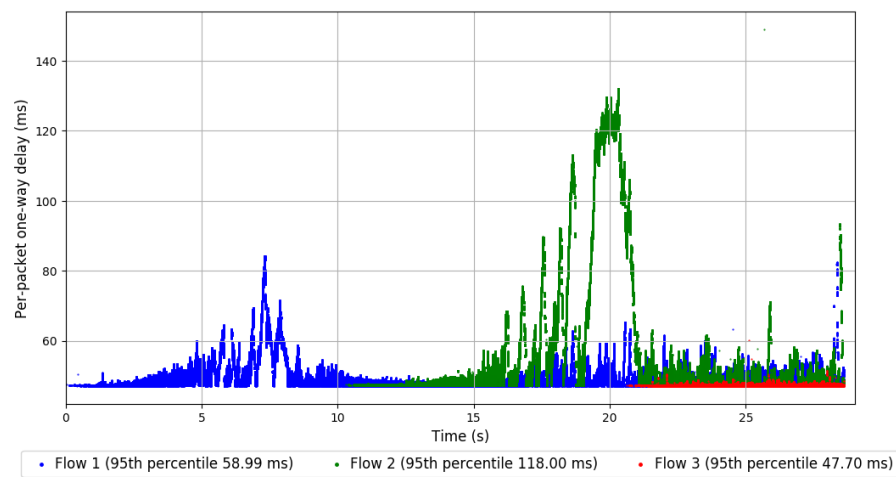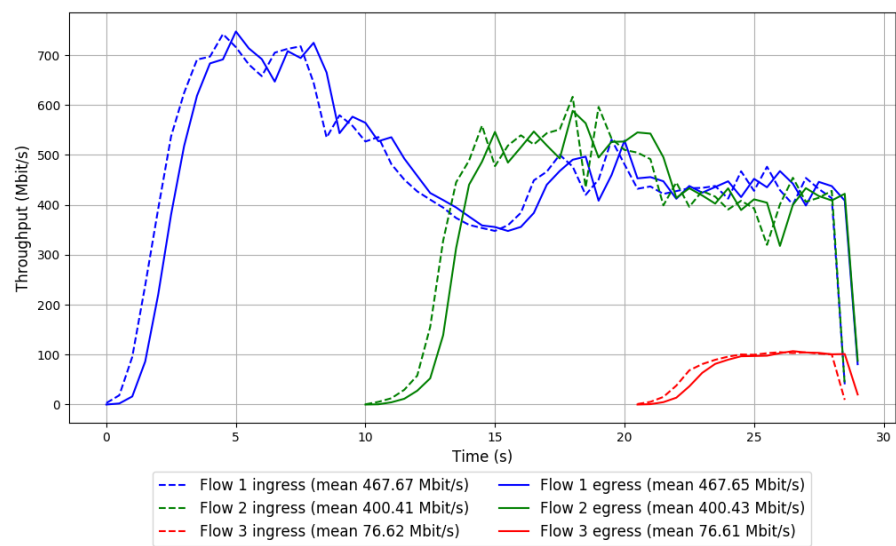
Run 2: Report of Indigo-MusesD — Data Link

```
Run 3: Statistics of Indigo-MusesD

Start at: 2019-01-25 18:17:27
End at: 2019-01-25 18:17:57
Local clock offset: -0.149 ms
Remote clock offset: 0.202 ms


# Below is generated by plot.py at 2019-01-25 21:34:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 788.98 Mbit/s
95th percentile per-packet one-way delay: 65.215 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 512.08 Mbit/s
95th percentile per-packet one-way delay: 65.364 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 397.85 Mbit/s
95th percentile per-packet one-way delay: 66.065 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 68.53 Mbit/s
95th percentile per-packet one-way delay: 47.619 ms
Loss rate: 0.00%
```
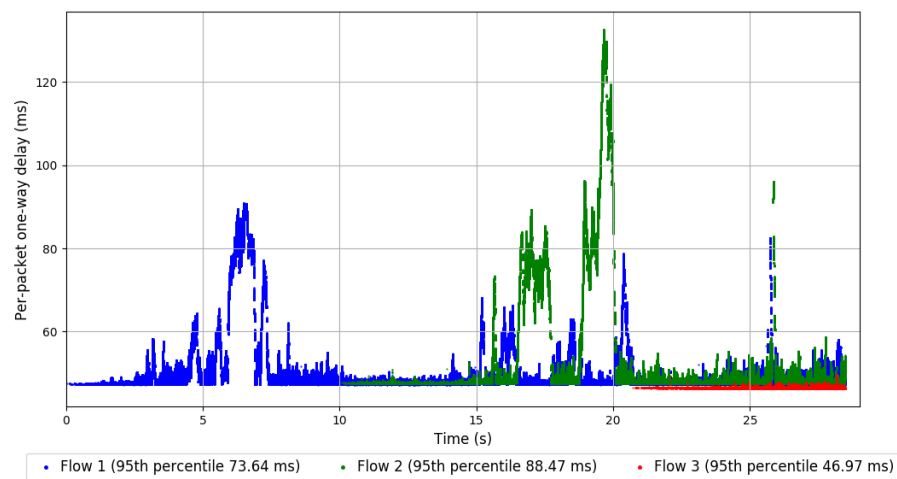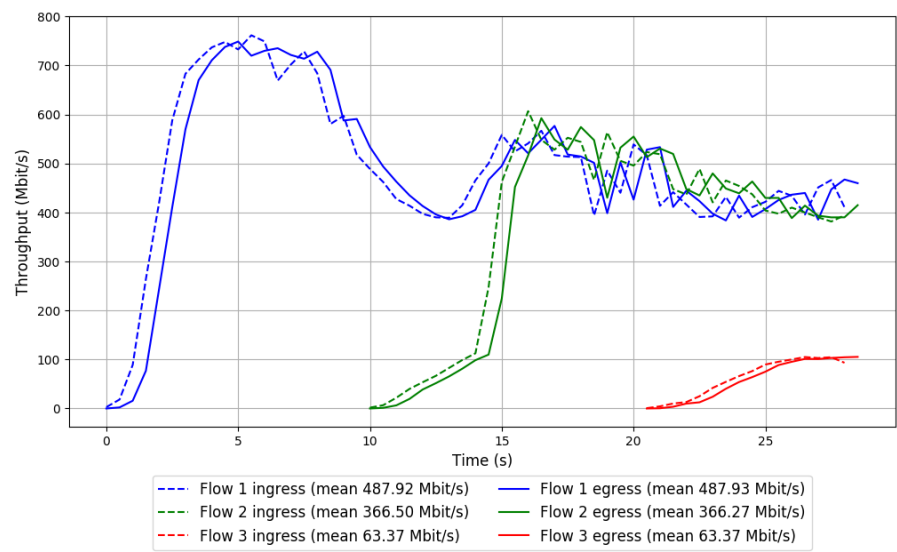
Run 3: Report of Indigo-MusesD — Data Link

Flow 1 ingress (mean 512.08 Mbit/s) --- Flow 1 egress (mean 512.08 Mbit/s)
Flow 2 ingress (mean 397.84 Mbit/s) --- Flow 2 egress (mean 397.85 Mbit/s)
Flow 3 ingress (mean 68.53 Mbit/s) --- Flow 3 egress (mean 68.53 Mbit/s)

Flow 1 (95th percentile 65.36 ms) • Flow 2 (95th percentile 66.06 ms) • Flow 3 (95th percentile 47.62 ms)

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```
Run 4: Statistics of Indigo-MusesD

Start at: 2019-01-25 18:54:09
End at: 2019-01-25 18:54:39
Local clock offset: -0.048 ms
Remote clock offset: 0.299 ms


# Below is generated by plot.py at 2019-01-25 21:35:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 745.76 Mbit/s
95th percentile per-packet one-way delay: 82.374 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 467.65 Mbit/s
95th percentile per-packet one-way delay: 58.986 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 400.43 Mbit/s
95th percentile per-packet one-way delay: 117.996 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 76.61 Mbit/s
95th percentile per-packet one-way delay: 47.701 ms
Loss rate: 0.01%
```
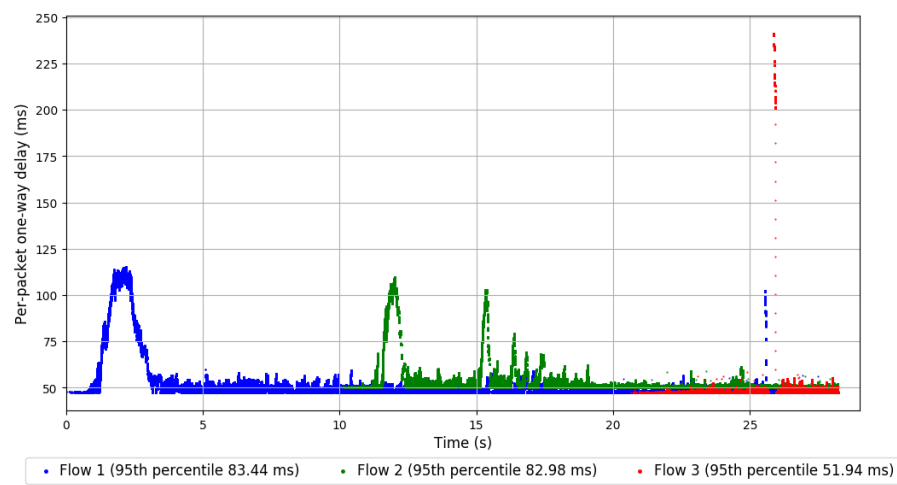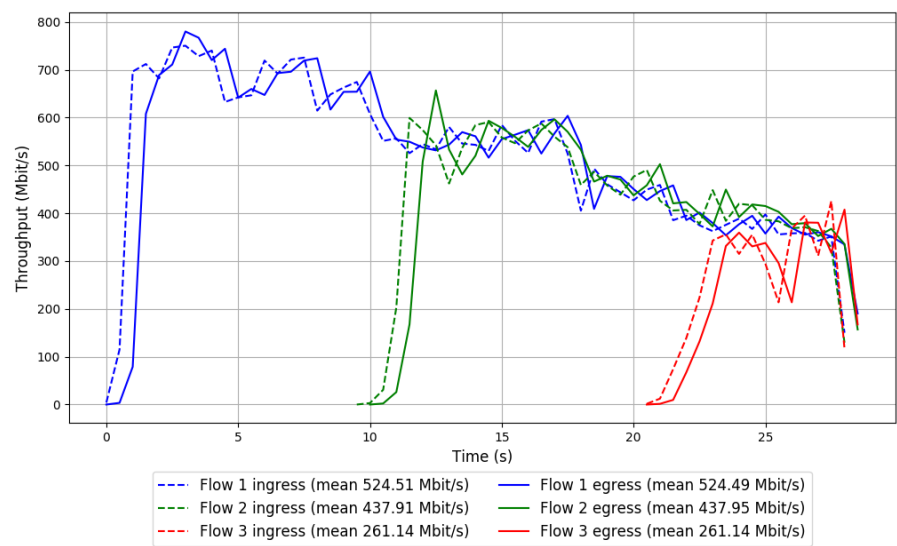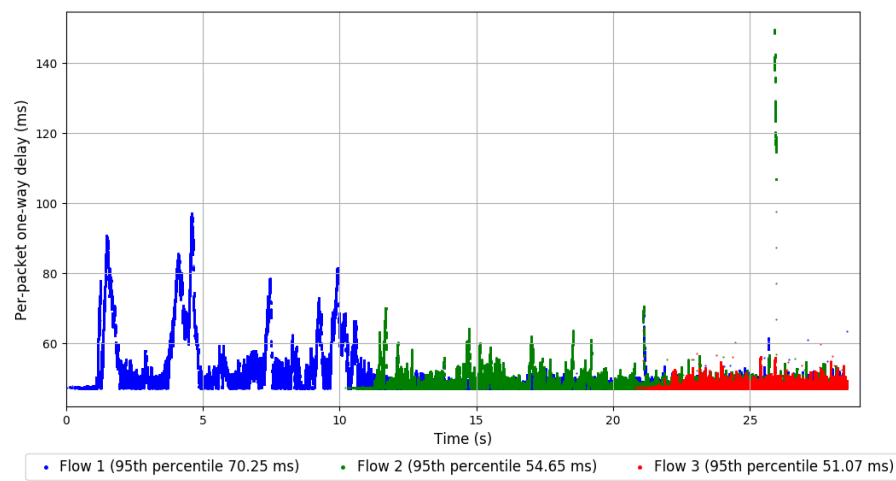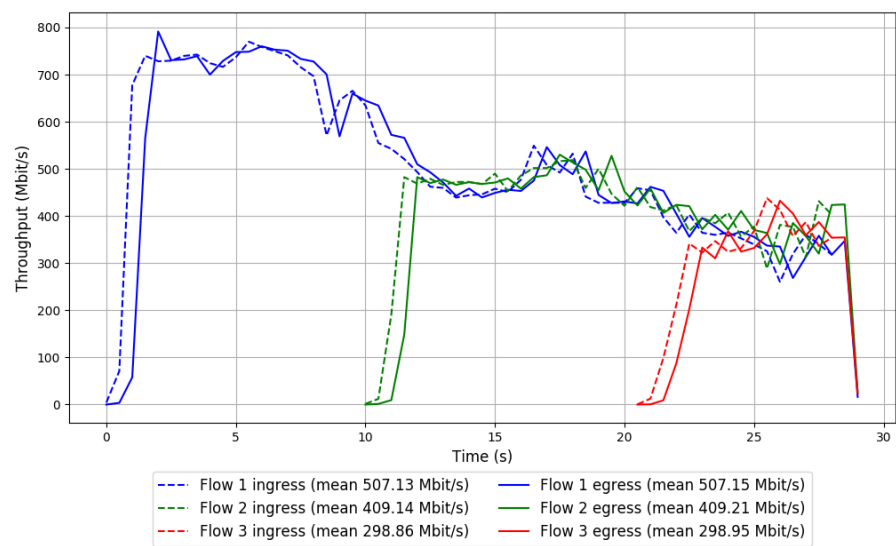
Run 4: Report of Indigo-MusesD — Data Link

```
Run 5: Statistics of Indigo-MusesD

Start at: 2019-01-25 19:30:34
End at: 2019-01-25 19:31:04
Local clock offset: -0.042 ms
Remote clock offset: 0.349 ms


# Below is generated by plot.py at 2019-01-25 21:37:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 742.55 Mbit/s
95th percentile per-packet one-way delay: 78.892 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 487.93 Mbit/s
95th percentile per-packet one-way delay: 73.644 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 366.27 Mbit/s
95th percentile per-packet one-way delay: 88.469 ms
Loss rate: 0.06%
-- Flow 3:
Average throughput: 63.37 Mbit/s
95th percentile per-packet one-way delay: 46.967 ms
Loss rate: 0.00%
```

Run 5: Report of Indigo-MusesD — Data Link

```
Run 1: Statistics of Indigo-MusesT

Start at: 2019-01-25 16:32:02
End at: 2019-01-25 16:32:32
Local clock offset: -0.019 ms
Remote clock offset: 0.084 ms


# Below is generated by plot.py at 2019-01-25 21:41:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 876.93 Mbit/s
95th percentile per-packet one-way delay: 81.944 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 524.49 Mbit/s
95th percentile per-packet one-way delay: 83.440 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 437.95 Mbit/s
95th percentile per-packet one-way delay: 82.985 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 261.14 Mbit/s
95th percentile per-packet one-way delay: 51.942 ms
Loss rate: 0.00%
```
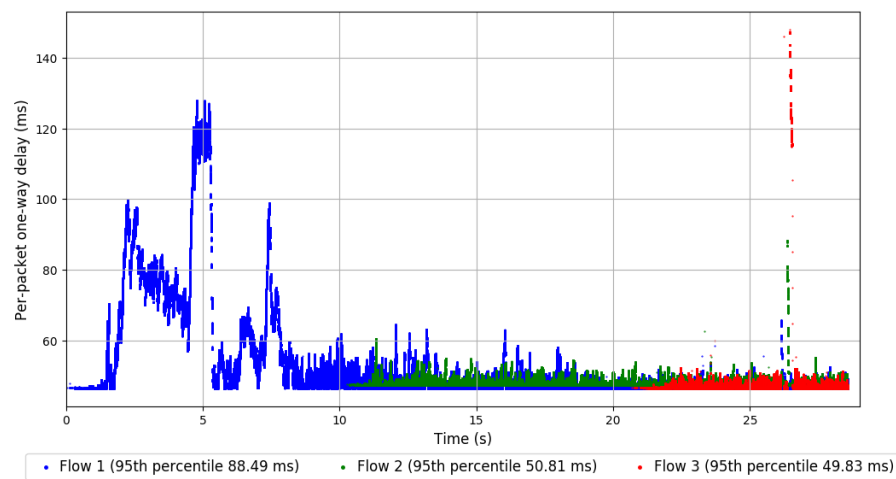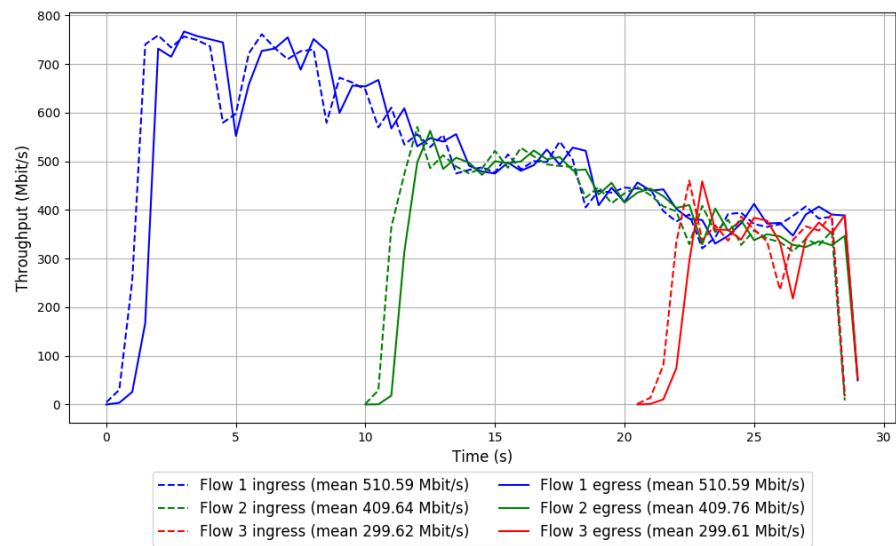
Run 1: Report of Indigo-MusesT — Data Link

```
Run 2: Statistics of Indigo-MusesT

Start at: 2019-01-25 17:08:34
End at: 2019-01-25 17:09:04
Local clock offset: 0.045 ms
Remote clock offset: -0.097 ms


# Below is generated by plot.py at 2019-01-25 21:41:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 852.03 Mbit/s
95th percentile per-packet one-way delay: 65.918 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 507.15 Mbit/s
95th percentile per-packet one-way delay: 70.248 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 409.21 Mbit/s
95th percentile per-packet one-way delay: 54.645 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 298.95 Mbit/s
95th percentile per-packet one-way delay: 51.071 ms
Loss rate: 0.00%
```
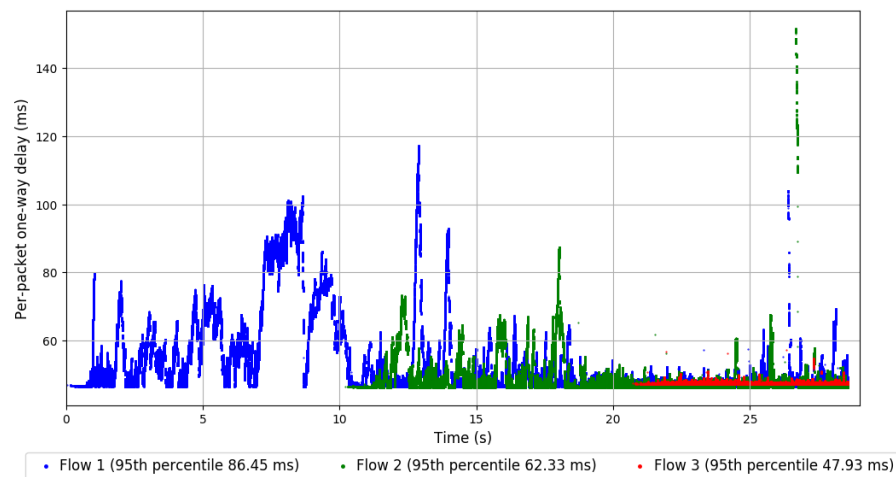
Run 2: Report of Indigo-MusesT — Data Link

```
Run 3: Statistics of Indigo-MusesT

Start at: 2019-01-25 17:45:34
End at: 2019-01-25 17:46:04
Local clock offset: -0.077 ms
Remote clock offset: 0.057 ms


# Below is generated by plot.py at 2019-01-25 21:42:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 856.20 Mbit/s
95th percentile per-packet one-way delay: 79.605 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 510.59 Mbit/s
95th percentile per-packet one-way delay: 88.486 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 409.76 Mbit/s
95th percentile per-packet one-way delay: 50.806 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 299.61 Mbit/s
95th percentile per-packet one-way delay: 49.832 ms
Loss rate: 0.00%
```
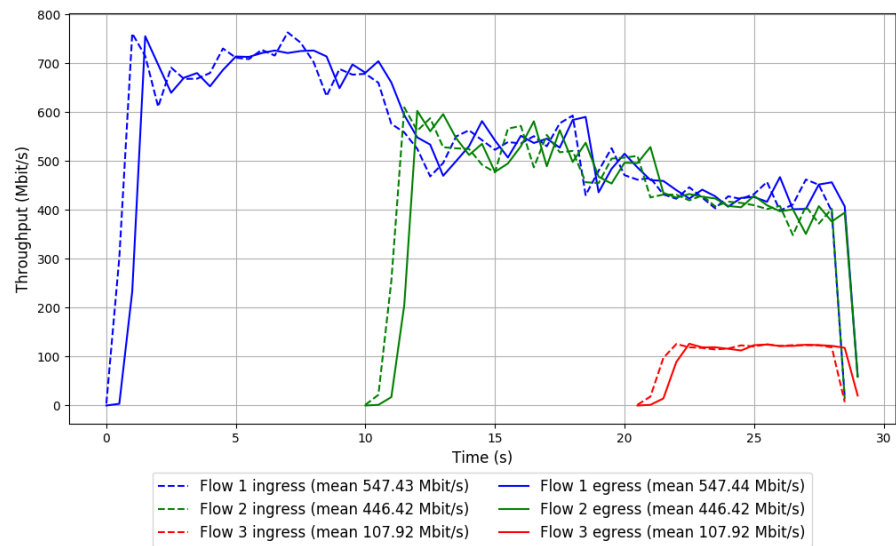
Run 3: Report of Indigo-MusesT — Data Link

100

```
Run 4: Statistics of Indigo-MusesT

Start at: 2019-01-25 18:22:25
End at: 2019-01-25 18:22:55
Local clock offset: -0.003 ms
Remote clock offset: 0.189 ms


# Below is generated by plot.py at 2019-01-25 21:44:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 864.46 Mbit/s
95th percentile per-packet one-way delay: 81.081 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 547.44 Mbit/s
95th percentile per-packet one-way delay: 86.448 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 446.42 Mbit/s
95th percentile per-packet one-way delay: 62.326 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 107.92 Mbit/s
95th percentile per-packet one-way delay: 47.932 ms
Loss rate: 0.00%
```
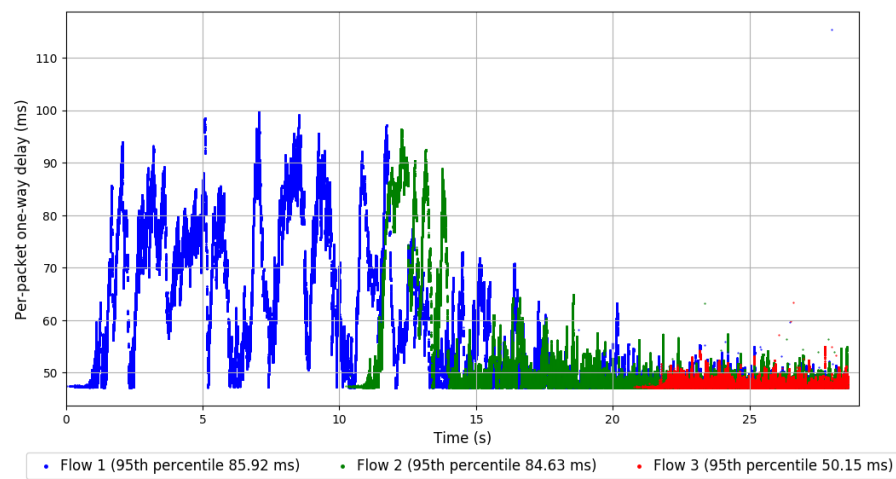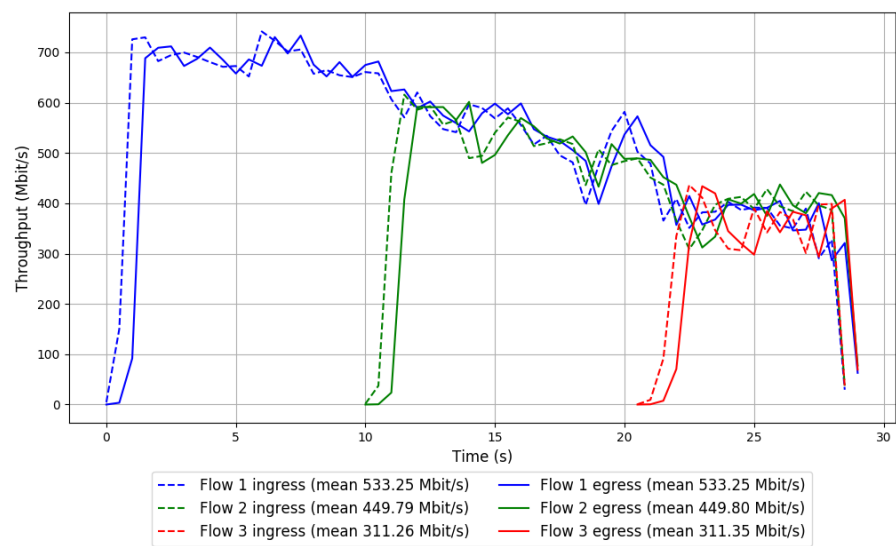
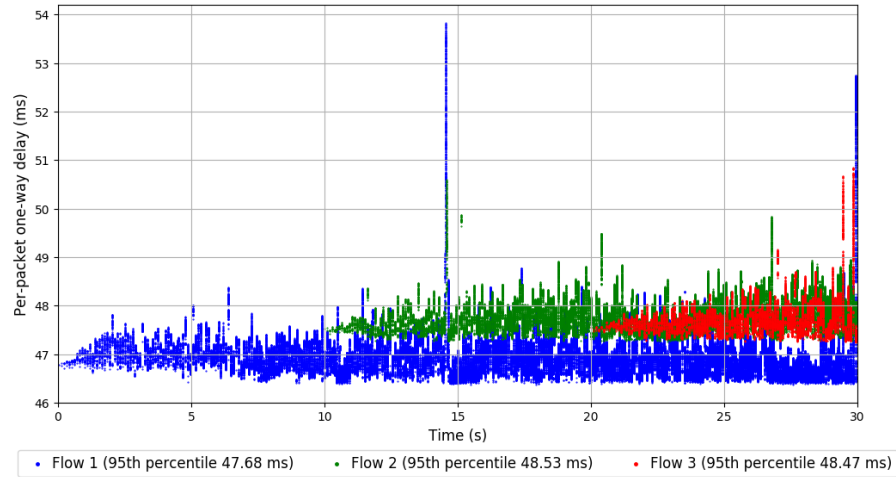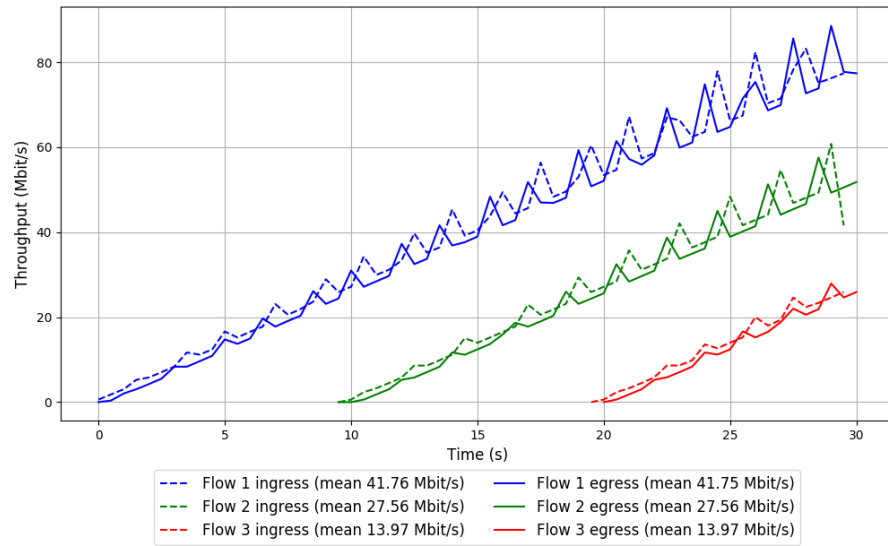Run 4: Report of Indigo-MusesT — Data Link

```
Run 5: Statistics of Indigo-MusesT

Start at: 2019-01-25 18:59:07
End at: 2019-01-25 18:59:37
Local clock offset: -0.026 ms
Remote clock offset: 0.275 ms


# Below is generated by plot.py at 2019-01-25 21:48:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 907.57 Mbit/s
95th percentile per-packet one-way delay: 84.957 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 533.25 Mbit/s
95th percentile per-packet one-way delay: 85.923 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 449.80 Mbit/s
95th percentile per-packet one-way delay: 84.628 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 311.35 Mbit/s
95th percentile per-packet one-way delay: 50.149 ms
Loss rate: 0.00%
```
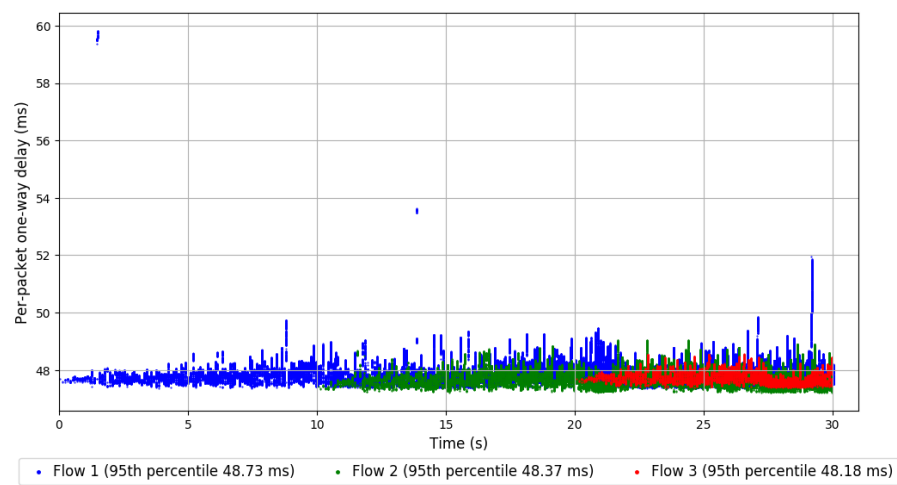
Run 5: Report of Indigo-MusesT — Data Link

Flow 1 ingress (mean 533.25 Mbit/s) --- Flow 1 egress (mean 533.25 Mbit/s) ---
Flow 2 ingress (mean 449.79 Mbit/s) --- Flow 2 egress (mean 449.80 Mbit/s) ---
Flow 3 ingress (mean 311.26 Mbit/s) --- Flow 3 egress (mean 311.35 Mbit/s) ---

Flow 1 (95th percentile 85.92 ms) • Flow 2 (95th percentile 84.63 ms) • Flow 3 (95th percentile 50.15 ms)

```
Run 1: Statistics of LEDBAT

Start at: 2019-01-25 16:30:44
End at: 2019-01-25 16:31:14
Local clock offset: -0.028 ms
Remote clock offset: -0.027 ms

# Below is generated by plot.py at 2019-01-25 21:48:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 64.77 Mbit/s
95th percentile per-packet one-way delay: 48.280 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 41.75 Mbit/s
95th percentile per-packet one-way delay: 47.681 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 27.56 Mbit/s
95th percentile per-packet one-way delay: 48.527 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 13.97 Mbit/s
95th percentile per-packet one-way delay: 48.471 ms
Loss rate: 0.00%
```
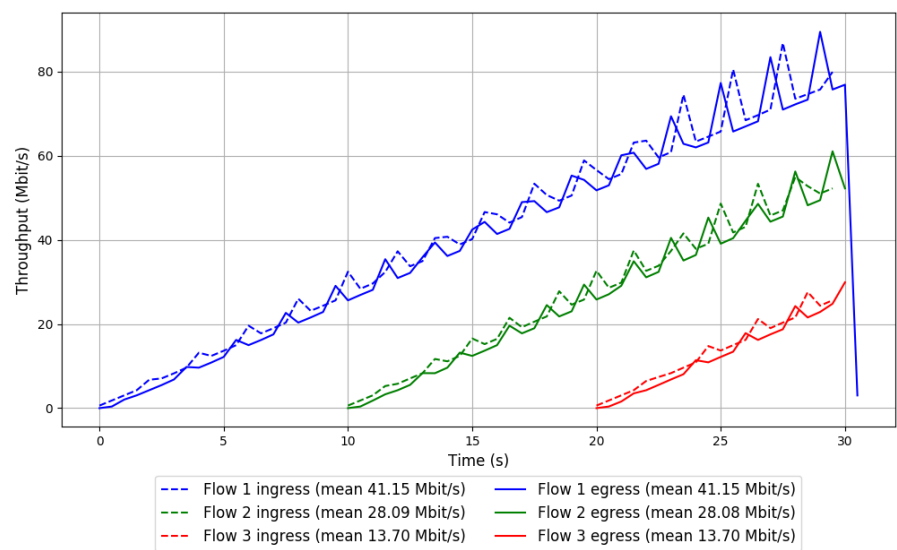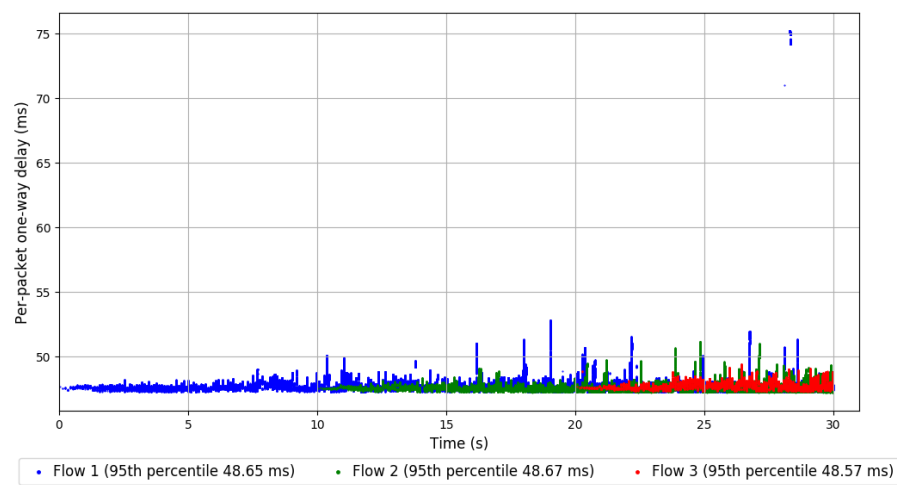
Run 1: Report of LEDBAT — Data Link

Flow 1 ingress (mean 41.76 Mbit/s)   Flow 1 egress (mean 41.75 Mbit/s)
Flow 2 ingress (mean 27.56 Mbit/s)   Flow 2 egress (mean 27.56 Mbit/s)
Flow 3 ingress (mean 13.97 Mbit/s)   Flow 3 egress (mean 13.97 Mbit/s)

Flow 1 (95th percentile 47.68 ms)   Flow 2 (95th percentile 48.53 ms)   Flow 3 (95th percentile 48.47 ms)

```
Run 2: Statistics of LEDBAT

Start at: 2019-01-25 17:07:17
End at: 2019-01-25 17:07:47
Local clock offset: -0.047 ms
Remote clock offset: 0.079 ms


# Below is generated by plot.py at 2019-01-25 21:48:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 64.32 Mbit/s
95th percentile per-packet one-way delay: 48.627 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 41.15 Mbit/s
95th percentile per-packet one-way delay: 48.728 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 28.08 Mbit/s
95th percentile per-packet one-way delay: 48.365 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 13.70 Mbit/s
95th percentile per-packet one-way delay: 48.180 ms
Loss rate: 0.00%
```
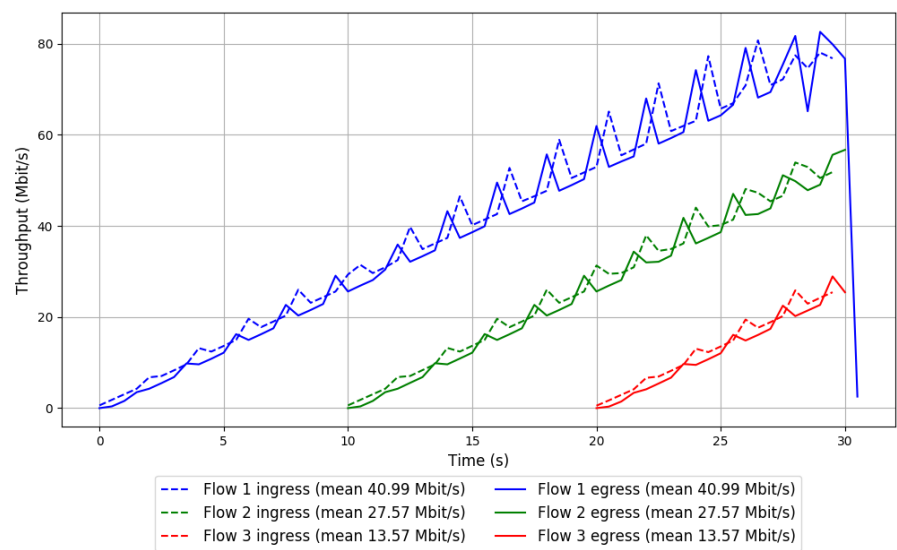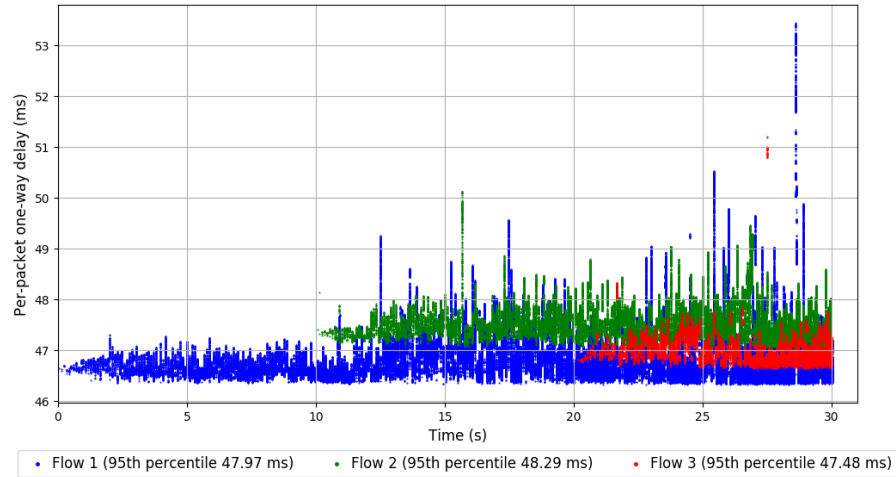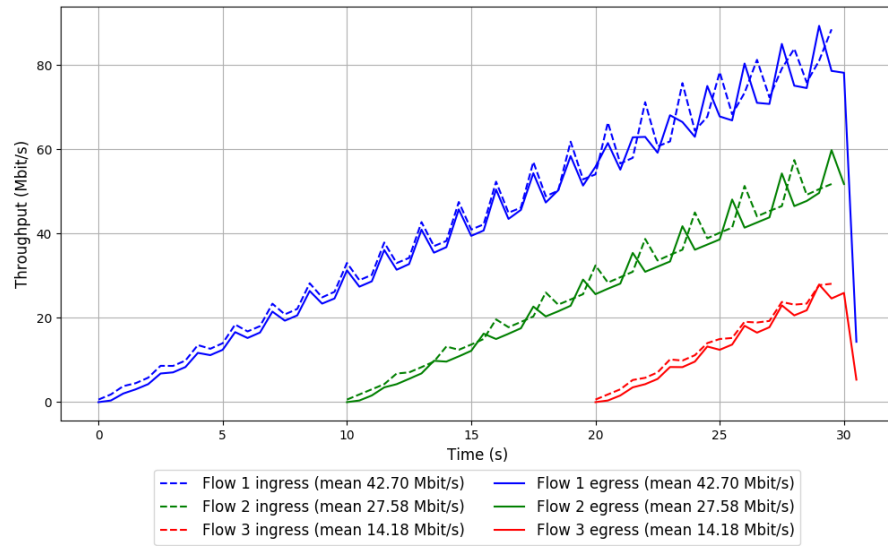
Run 2: Report of LEDBAT — Data Link

```
Run 3: Statistics of LEDBAT

Start at: 2019-01-25 17:44:17
End at: 2019-01-25 17:44:47
Local clock offset: -0.118 ms
Remote clock offset: 0.007 ms


# Below is generated by plot.py at 2019-01-25 21:48:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 63.82 Mbit/s
95th percentile per-packet one-way delay: 48.642 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 40.99 Mbit/s
95th percentile per-packet one-way delay: 48.647 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 27.57 Mbit/s
95th percentile per-packet one-way delay: 48.668 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 13.57 Mbit/s
95th percentile per-packet one-way delay: 48.567 ms
Loss rate: 0.00%
```
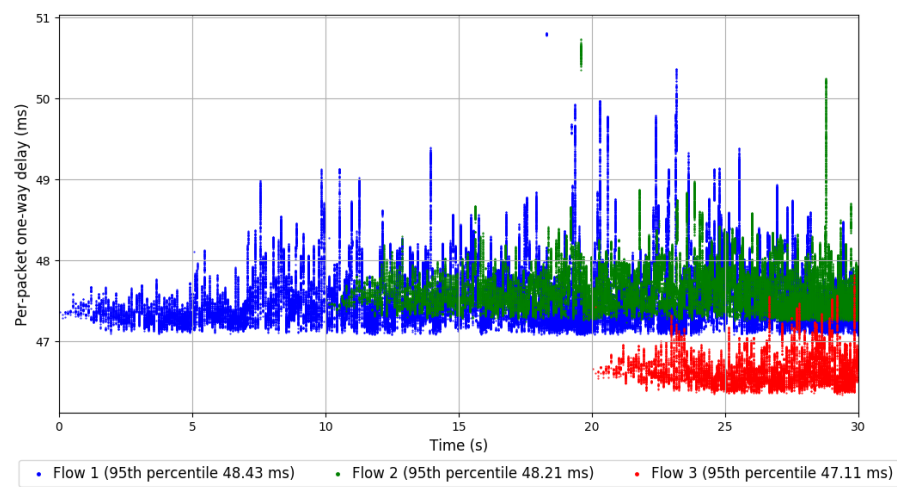
Run 3: Report of LEDBAT — Data Link

```
Run 4: Statistics of LEDBAT

Start at: 2019-01-25 18:21:07
End at: 2019-01-25 18:21:37
Local clock offset: -0.091 ms
Remote clock offset: 0.178 ms


# Below is generated by plot.py at 2019-01-25 21:48:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 65.72 Mbit/s
95th percentile per-packet one-way delay: 48.096 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 42.70 Mbit/s
95th percentile per-packet one-way delay: 47.973 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 27.58 Mbit/s
95th percentile per-packet one-way delay: 48.290 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 14.18 Mbit/s
95th percentile per-packet one-way delay: 47.485 ms
Loss rate: 0.00%
```
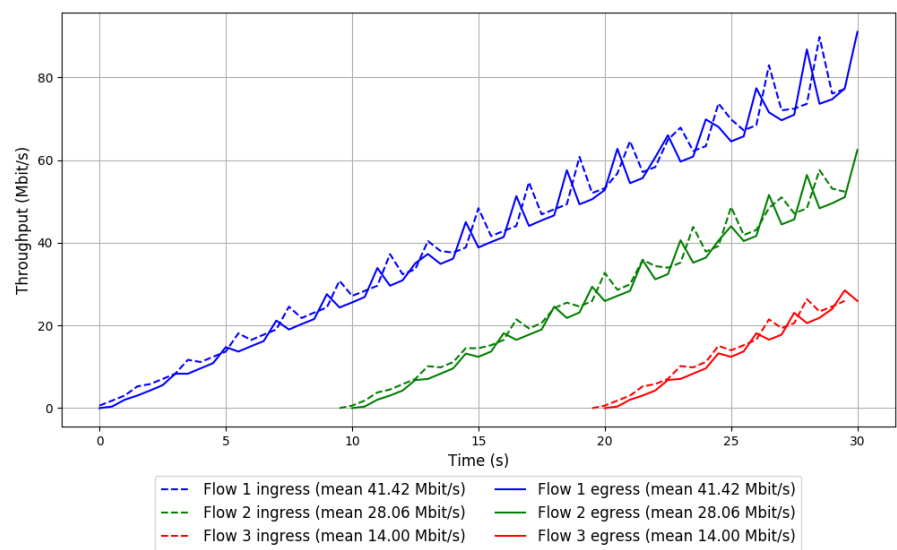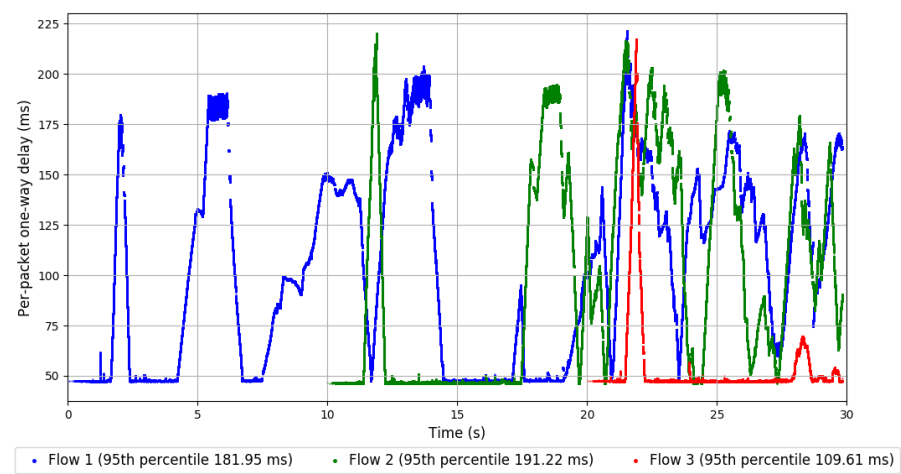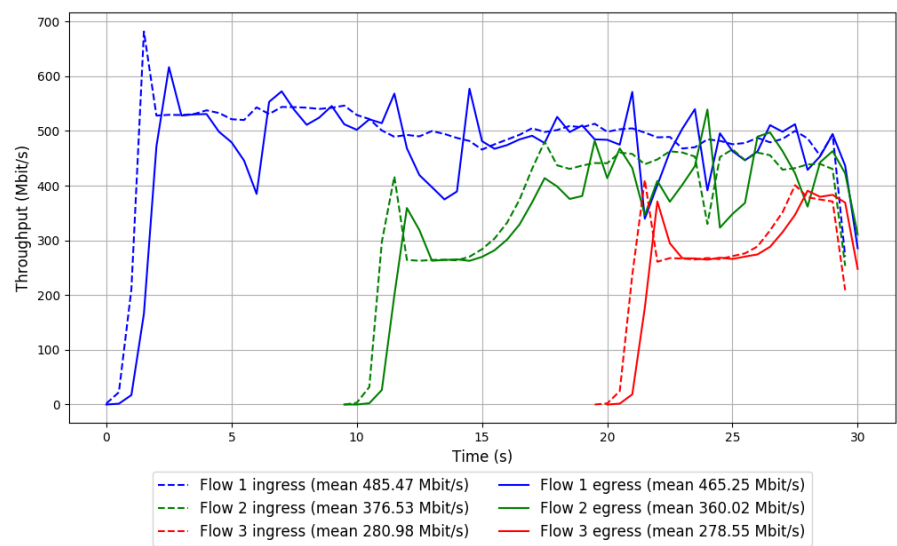
Run 4: Report of LEDBAT — Data Link

Flow 1 ingress (mean 42.70 Mbit/s) — Flow 1 egress (mean 42.70 Mbit/s)
Flow 2 ingress (mean 27.58 Mbit/s) — Flow 2 egress (mean 27.58 Mbit/s)
Flow 3 ingress (mean 14.18 Mbit/s) — Flow 3 egress (mean 14.18 Mbit/s)

Flow 1 (95th percentile 47.97 ms)　　Flow 2 (95th percentile 48.29 ms)　　Flow 3 (95th percentile 47.48 ms)

```
Run 5: Statistics of LEDBAT

Start at: 2019-01-25 18:57:49
End at: 2019-01-25 18:58:19
Local clock offset: -0.047 ms
Remote clock offset: 0.263 ms


# Below is generated by plot.py at 2019-01-25 21:48:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 64.75 Mbit/s
95th percentile per-packet one-way delay: 48.332 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 41.42 Mbit/s
95th percentile per-packet one-way delay: 48.430 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 28.06 Mbit/s
95th percentile per-packet one-way delay: 48.211 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 14.00 Mbit/s
95th percentile per-packet one-way delay: 47.110 ms
Loss rate: 0.00%
```
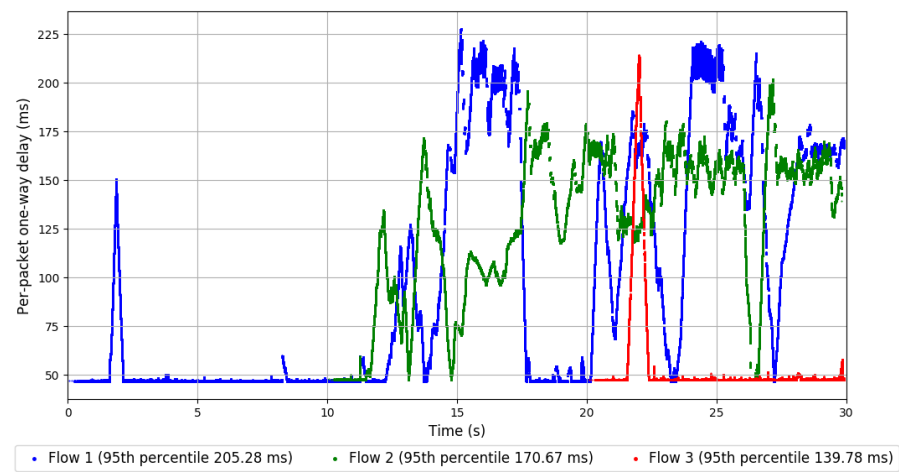
Run 5: Report of LEDBAT — Data Link

```
Run 1: Statistics of PCC-Allegro

Start at: 2019-01-25 16:40:44
End at: 2019-01-25 16:41:14
Local clock offset: 0.144 ms
Remote clock offset: -0.081 ms


# Below is generated by plot.py at 2019-01-25 22:08:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 796.87 Mbit/s
95th percentile per-packet one-way delay: 186.093 ms
Loss rate: 3.86%
-- Flow 1:
Average throughput: 465.25 Mbit/s
95th percentile per-packet one-way delay: 181.950 ms
Loss rate: 4.16%
-- Flow 2:
Average throughput: 360.02 Mbit/s
95th percentile per-packet one-way delay: 191.223 ms
Loss rate: 4.38%
-- Flow 3:
Average throughput: 278.55 Mbit/s
95th percentile per-packet one-way delay: 109.610 ms
Loss rate: 0.85%
```
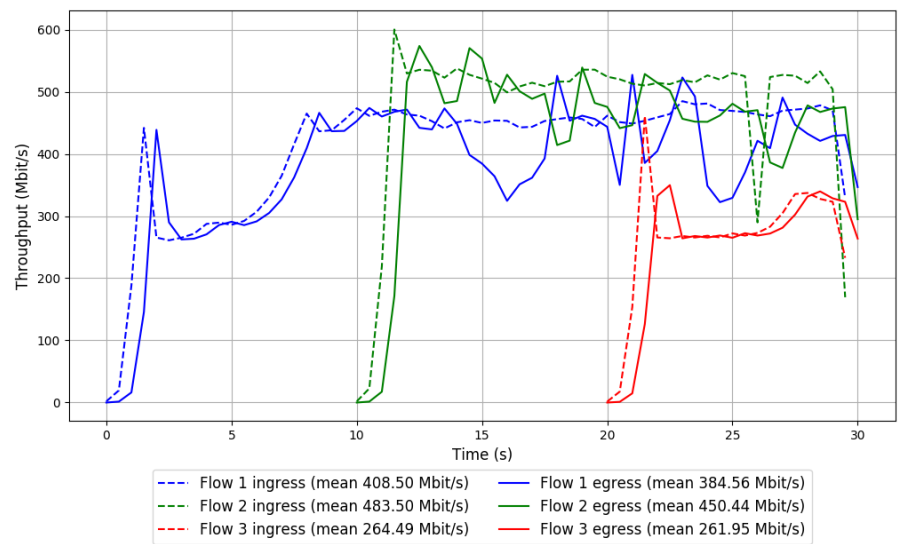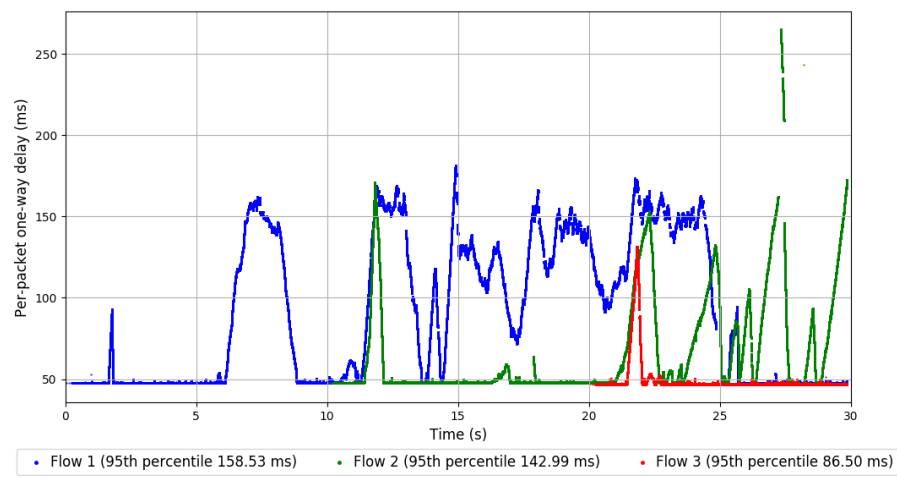
Run 1: Report of PCC-Allegro — Data Link

```
Run 2: Statistics of PCC-Allegro

Start at: 2019-01-25 17:17:18
End at: 2019-01-25 17:17:48
Local clock offset: 0.03 ms
Remote clock offset: 0.085 ms


# Below is generated by plot.py at 2019-01-25 22:08:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 768.62 Mbit/s
95th percentile per-packet one-way delay: 191.811 ms
Loss rate: 5.55%
-- Flow 1:
Average throughput: 384.56 Mbit/s
95th percentile per-packet one-way delay: 205.280 ms
Loss rate: 5.86%
-- Flow 2:
Average throughput: 450.44 Mbit/s
95th percentile per-packet one-way delay: 170.672 ms
Loss rate: 6.40%
-- Flow 3:
Average throughput: 261.95 Mbit/s
95th percentile per-packet one-way delay: 139.779 ms
Loss rate: 0.96%
```
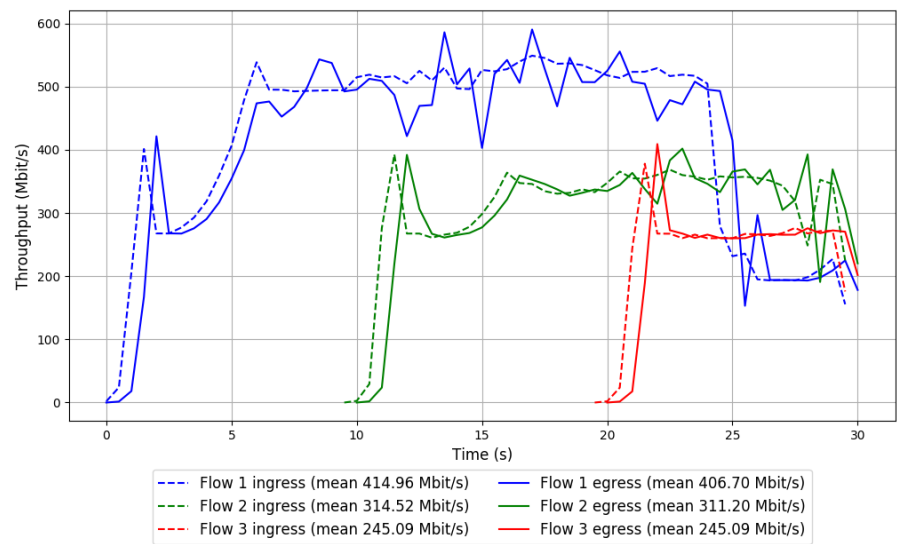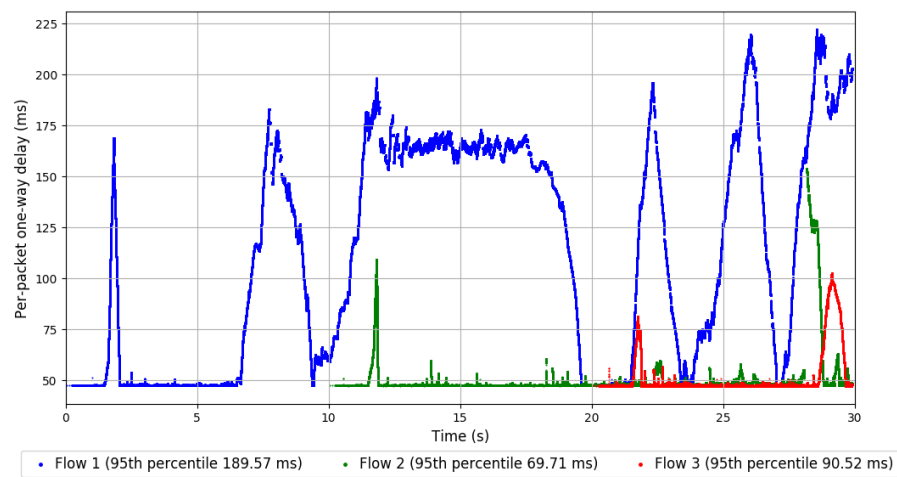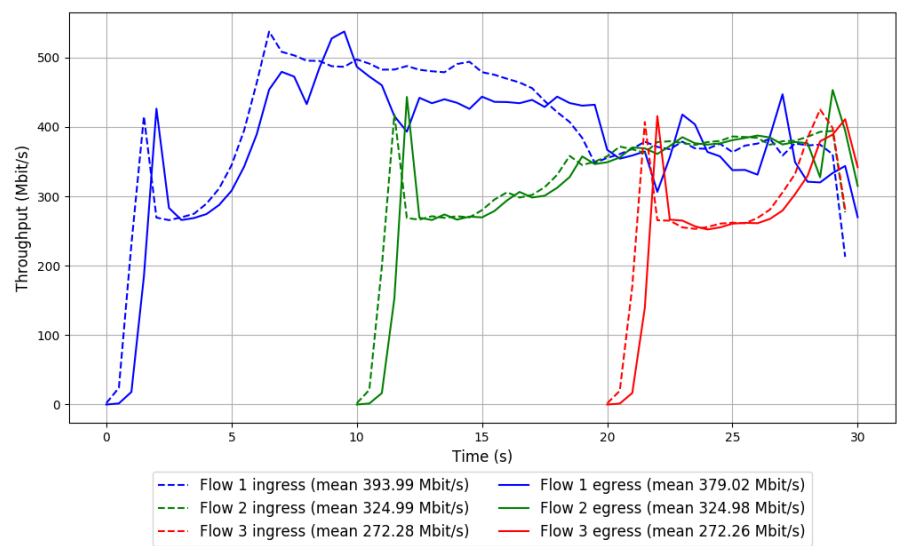
Run 2: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 408.50 Mbit/s)   Flow 1 egress (mean 384.56 Mbit/s)
Flow 2 ingress (mean 483.50 Mbit/s)   Flow 2 egress (mean 450.44 Mbit/s)
Flow 3 ingress (mean 264.49 Mbit/s)   Flow 3 egress (mean 261.95 Mbit/s)

Flow 1 (95th percentile 205.28 ms)   Flow 2 (95th percentile 170.67 ms)   Flow 3 (95th percentile 139.78 ms)

```
Run 3: Statistics of PCC-Allegro

Start at: 2019-01-25 17:54:14
End at: 2019-01-25 17:54:44
Local clock offset: -0.475 ms
Remote clock offset: 0.105 ms

# Below is generated by plot.py at 2019-01-25 22:08:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 694.63 Mbit/s
95th percentile per-packet one-way delay: 156.651 ms
Loss rate: 1.49%
-- Flow 1:
Average throughput: 406.70 Mbit/s
95th percentile per-packet one-way delay: 158.534 ms
Loss rate: 1.99%
-- Flow 2:
Average throughput: 311.20 Mbit/s
95th percentile per-packet one-way delay: 142.994 ms
Loss rate: 1.06%
-- Flow 3:
Average throughput: 245.09 Mbit/s
95th percentile per-packet one-way delay: 86.497 ms
Loss rate: 0.00%
```
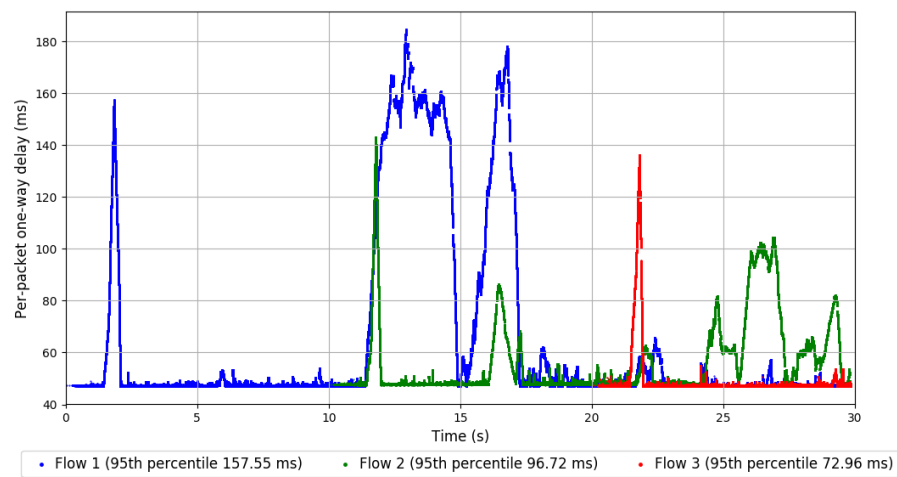
Run 3: Report of PCC-Allegro — Data Link

```
Run 4: Statistics of PCC-Allegro

Start at: 2019-01-25 18:31:06
End at: 2019-01-25 18:31:36
Local clock offset: -0.158 ms
Remote clock offset: 0.256 ms

# Below is generated by plot.py at 2019-01-25 22:08:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 684.69 Mbit/s
95th percentile per-packet one-way delay: 176.574 ms
Loss rate: 2.14%
-- Flow 1:
Average throughput: 379.02 Mbit/s
95th percentile per-packet one-way delay: 189.570 ms
Loss rate: 3.80%
-- Flow 2:
Average throughput: 324.98 Mbit/s
95th percentile per-packet one-way delay: 69.711 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 272.26 Mbit/s
95th percentile per-packet one-way delay: 90.522 ms
Loss rate: 0.00%
```
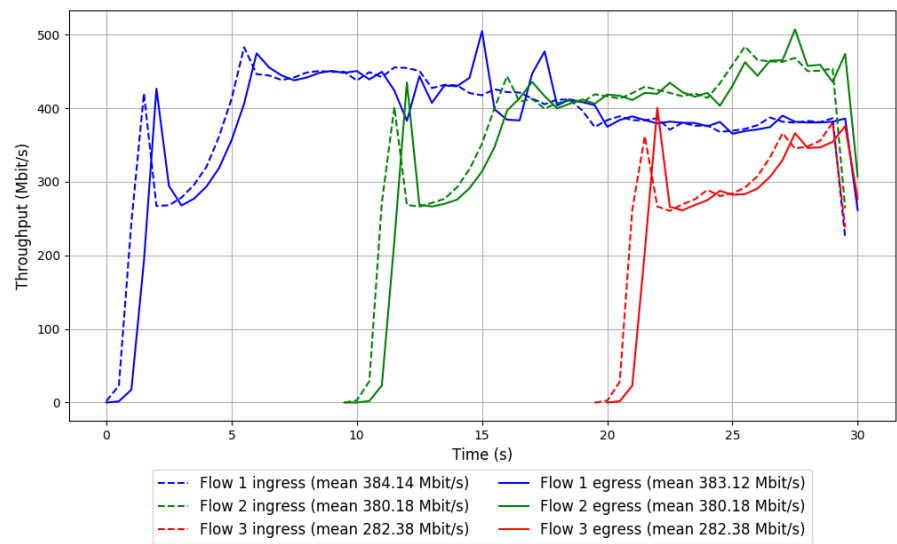
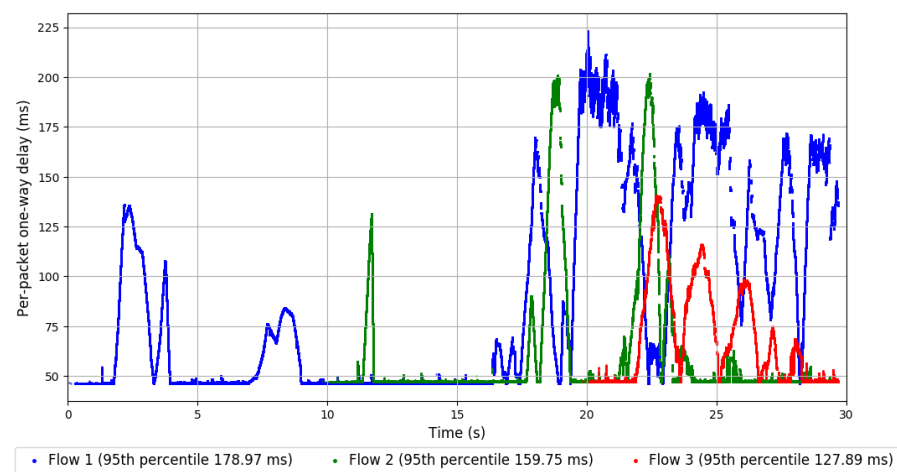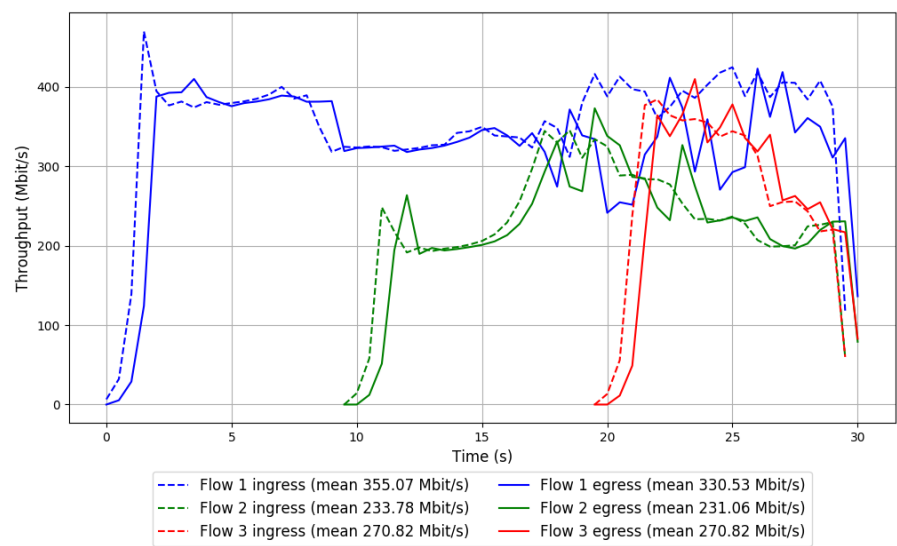## Run 4: Report of PCC-Allegro — Data Link

- - - - Flow 1 ingress (mean 393.99 Mbit/s) —— Flow 1 egress (mean 379.02 Mbit/s)
- - - - Flow 2 ingress (mean 324.99 Mbit/s) —— Flow 2 egress (mean 324.98 Mbit/s)
- - - - Flow 3 ingress (mean 272.28 Mbit/s) —— Flow 3 egress (mean 272.26 Mbit/s)

• Flow 1 (95th percentile 189.57 ms)　• Flow 2 (95th percentile 69.71 ms)　• Flow 3 (95th percentile 90.52 ms)

```
Run 5: Statistics of PCC-Allegro

Start at: 2019-01-25 19:07:51
End at: 2019-01-25 19:08:21
Local clock offset: -0.012 ms
Remote clock offset: 0.338 ms


# Below is generated by plot.py at 2019-01-25 22:08:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 729.48 Mbit/s
95th percentile per-packet one-way delay: 150.736 ms
Loss rate: 0.14%
-- Flow 1:
Average throughput: 383.12 Mbit/s
95th percentile per-packet one-way delay: 157.549 ms
Loss rate: 0.27%
-- Flow 2:
Average throughput: 380.18 Mbit/s
95th percentile per-packet one-way delay: 96.725 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 282.38 Mbit/s
95th percentile per-packet one-way delay: 72.963 ms
Loss rate: 0.00%
```

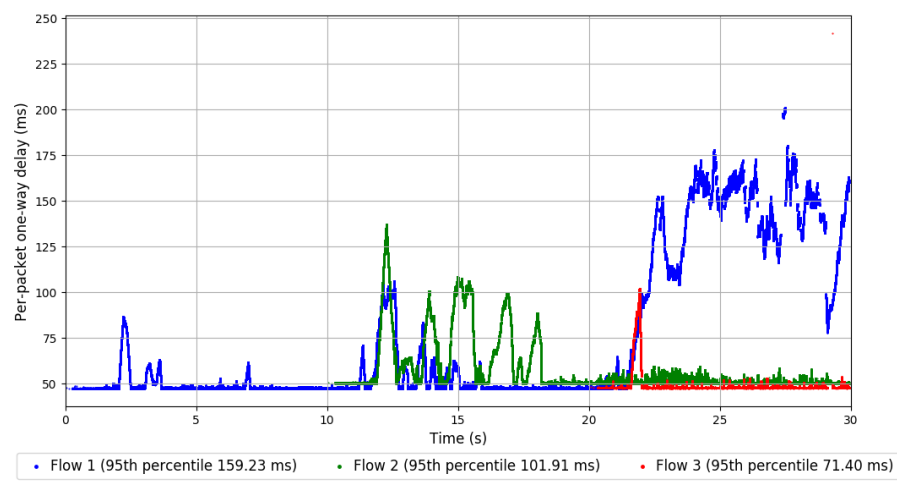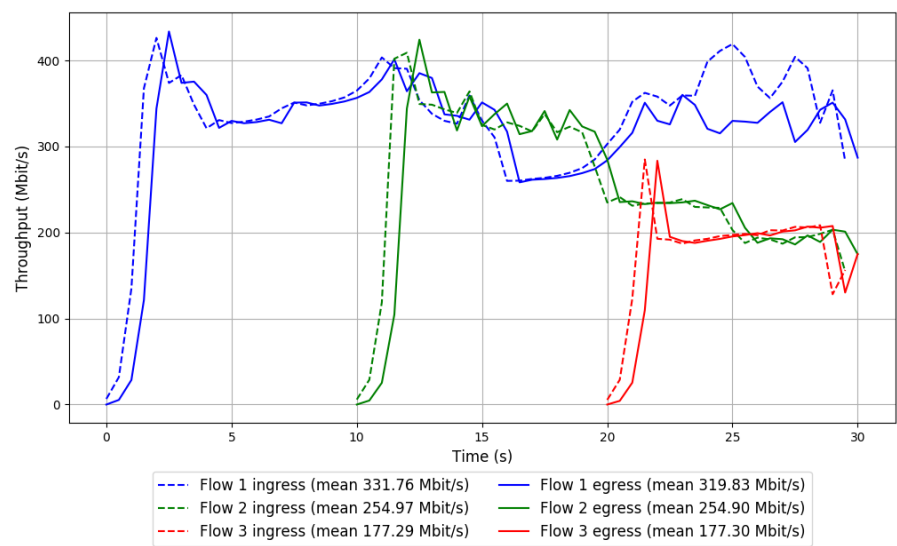Run 5: Report of PCC-Allegro — Data Link

```
Run 1: Statistics of PCC-Expr

Start at: 2019-01-25 16:47:23
End at: 2019-01-25 16:47:53
Local clock offset: 0.085 ms
Remote clock offset: -0.147 ms


# Below is generated by plot.py at 2019-01-25 22:08:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 575.47 Mbit/s
95th percentile per-packet one-way delay: 172.144 ms
Loss rate: 4.38%
-- Flow 1:
Average throughput: 330.53 Mbit/s
95th percentile per-packet one-way delay: 178.967 ms
Loss rate: 6.91%
-- Flow 2:
Average throughput: 231.06 Mbit/s
95th percentile per-packet one-way delay: 159.753 ms
Loss rate: 1.16%
-- Flow 3:
Average throughput: 270.82 Mbit/s
95th percentile per-packet one-way delay: 127.888 ms
Loss rate: 0.00%
```
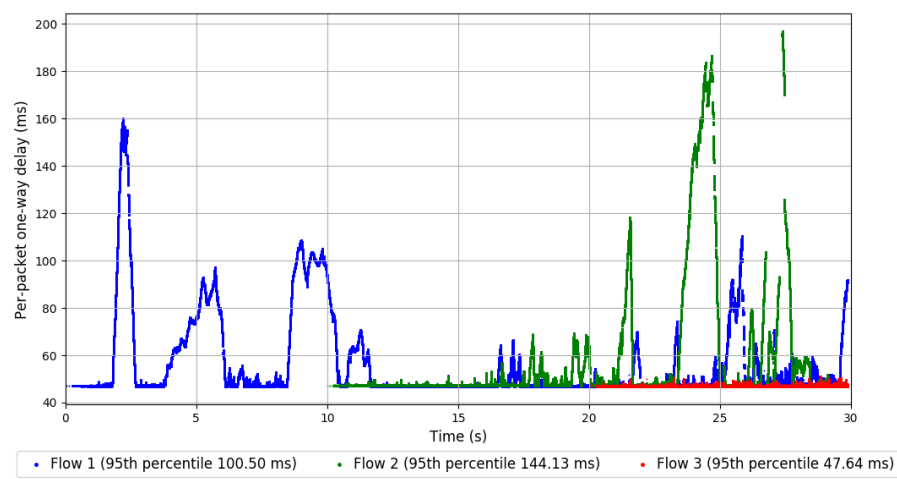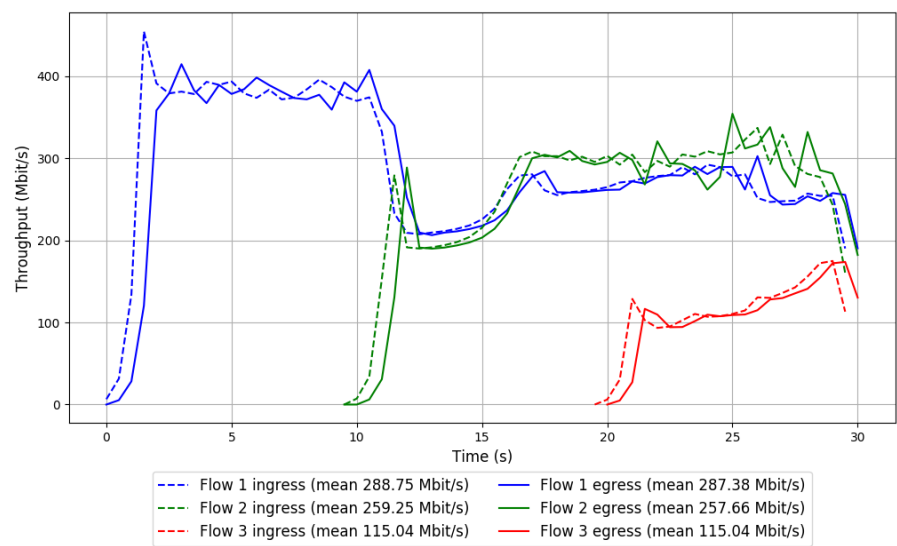
Run 1: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 355.07 Mbit/s) --- Flow 1 egress (mean 330.53 Mbit/s)
Flow 2 ingress (mean 233.78 Mbit/s) --- Flow 2 egress (mean 231.06 Mbit/s)
Flow 3 ingress (mean 270.82 Mbit/s) --- Flow 3 egress (mean 270.82 Mbit/s)

Flow 1 (95th percentile 178.97 ms)   Flow 2 (95th percentile 159.75 ms)   Flow 3 (95th percentile 127.89 ms)

```
Run 2: Statistics of PCC-Expr

Start at: 2019-01-25 17:24:01
End at: 2019-01-25 17:24:31
Local clock offset: 0.084 ms
Remote clock offset: -0.099 ms

# Below is generated by plot.py at 2019-01-25 22:08:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 547.81 Mbit/s
95th percentile per-packet one-way delay: 154.234 ms
Loss rate: 2.14%
-- Flow 1:
Average throughput: 319.83 Mbit/s
95th percentile per-packet one-way delay: 159.231 ms
Loss rate: 3.60%
-- Flow 2:
Average throughput: 254.90 Mbit/s
95th percentile per-packet one-way delay: 101.913 ms
Loss rate: 0.04%
-- Flow 3:
Average throughput: 177.30 Mbit/s
95th percentile per-packet one-way delay: 71.402 ms
Loss rate: 0.00%
```
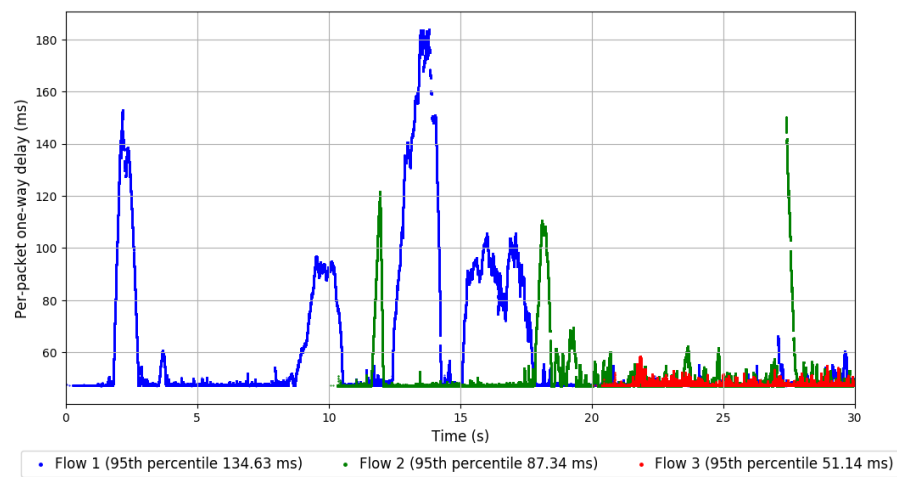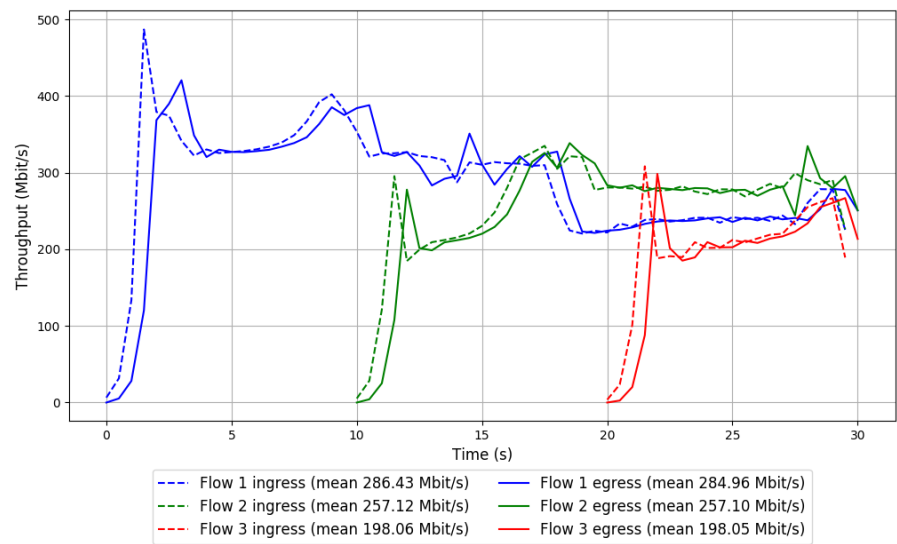
Run 2: Report of PCC-Expr — Data Link

```
Run 3: Statistics of PCC-Expr

Start at: 2019-01-25 18:01:01
End at: 2019-01-25 18:01:31
Local clock offset: 0.301 ms
Remote clock offset: 0.131 ms


# Below is generated by plot.py at 2019-01-25 22:08:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 497.05 Mbit/s
95th percentile per-packet one-way delay: 103.391 ms
Loss rate: 0.48%
-- Flow 1:
Average throughput: 287.38 Mbit/s
95th percentile per-packet one-way delay: 100.497 ms
Loss rate: 0.47%
-- Flow 2:
Average throughput: 257.66 Mbit/s
95th percentile per-packet one-way delay: 144.130 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 115.04 Mbit/s
95th percentile per-packet one-way delay: 47.636 ms
Loss rate: 0.00%
```
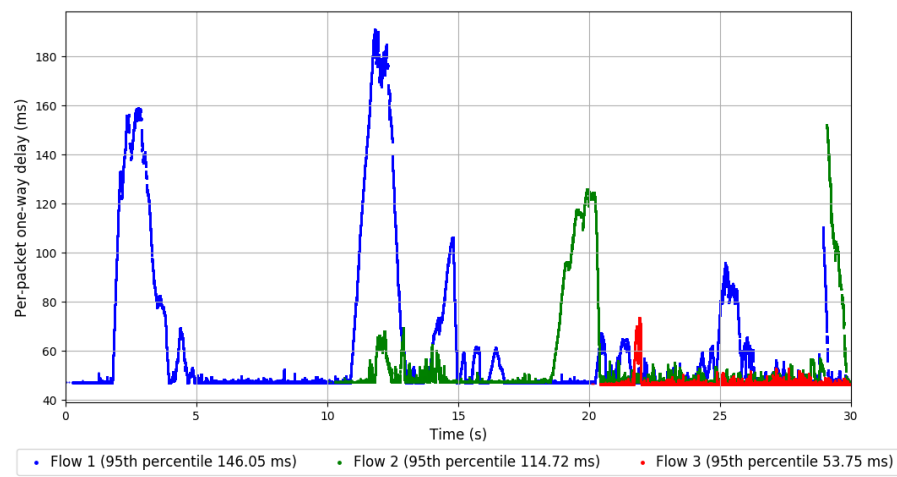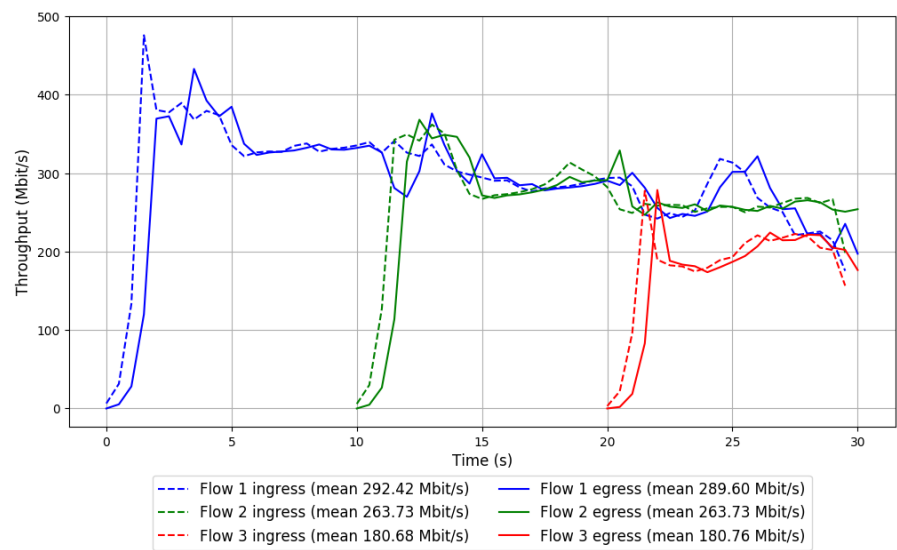
Run 3: Report of PCC-Expr — Data Link

```
Run 4: Statistics of PCC-Expr

Start at: 2019-01-25 18:37:42
End at: 2019-01-25 18:38:12
Local clock offset: -0.131 ms
Remote clock offset: 0.256 ms


# Below is generated by plot.py at 2019-01-25 22:18:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 521.18 Mbit/s
95th percentile per-packet one-way delay: 106.191 ms
Loss rate: 0.29%
-- Flow 1:
Average throughput: 284.96 Mbit/s
95th percentile per-packet one-way delay: 134.626 ms
Loss rate: 0.51%
-- Flow 2:
Average throughput: 257.10 Mbit/s
95th percentile per-packet one-way delay: 87.341 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 198.05 Mbit/s
95th percentile per-packet one-way delay: 51.142 ms
Loss rate: 0.01%
```
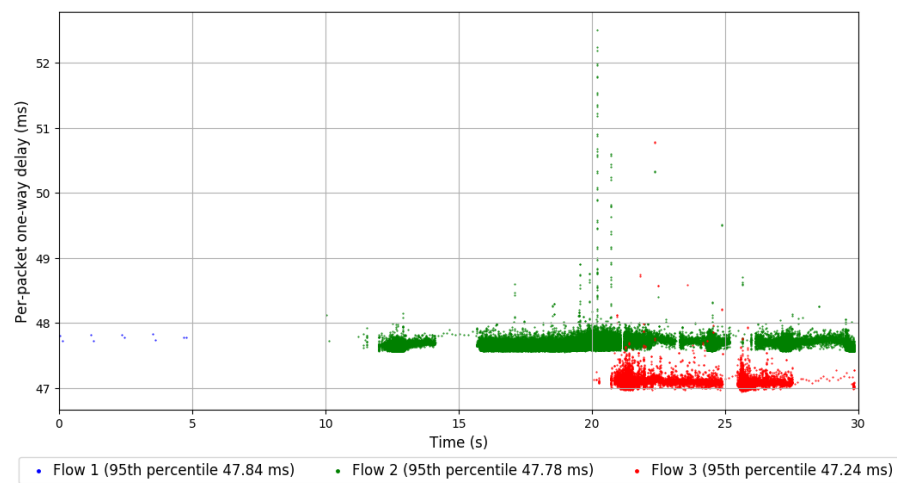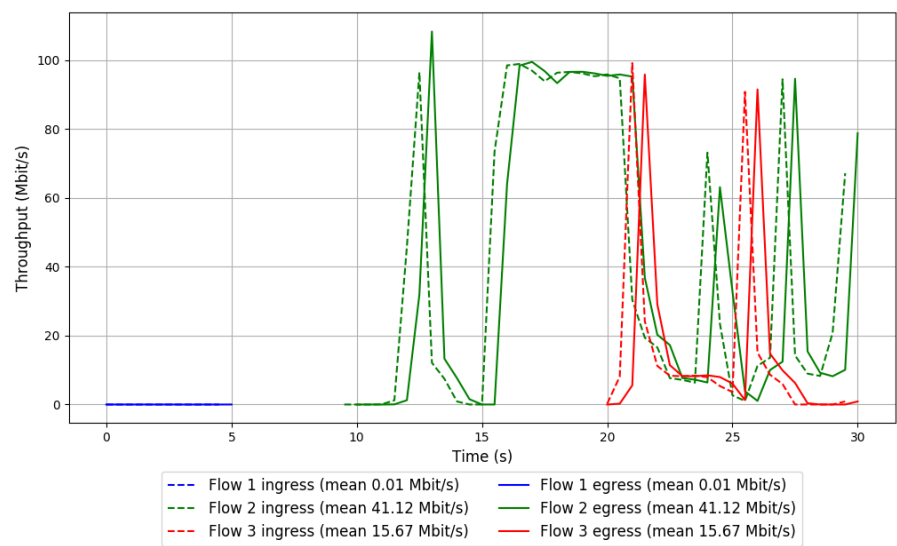
Run 4: Report of PCC-Expr — Data Link

```
Run 5: Statistics of PCC-Expr

Start at: 2019-01-25 19:14:24
End at: 2019-01-25 19:14:54
Local clock offset: 0.034 ms
Remote clock offset: 0.326 ms


# Below is generated by plot.py at 2019-01-25 22:21:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 524.52 Mbit/s
95th percentile per-packet one-way delay: 124.528 ms
Loss rate: 0.53%
-- Flow 1:
Average throughput: 289.60 Mbit/s
95th percentile per-packet one-way delay: 146.046 ms
Loss rate: 0.96%
-- Flow 2:
Average throughput: 263.73 Mbit/s
95th percentile per-packet one-way delay: 114.715 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 180.76 Mbit/s
95th percentile per-packet one-way delay: 53.751 ms
Loss rate: 0.00%
```

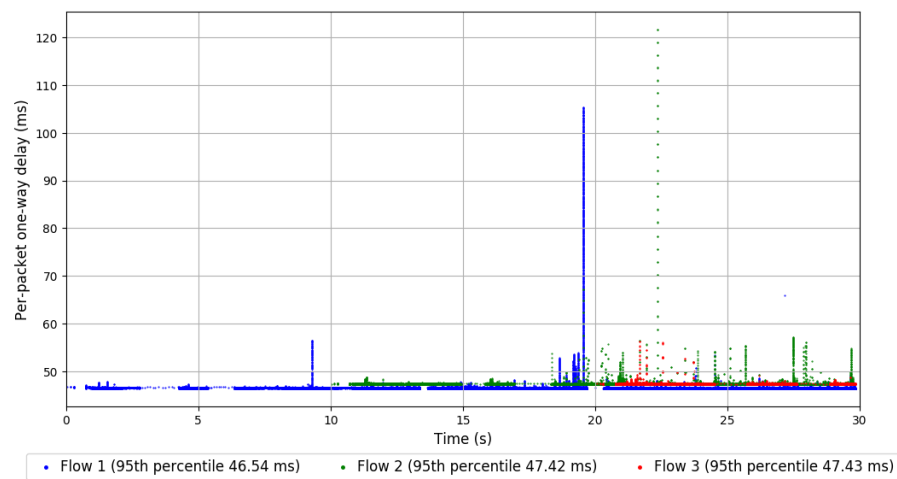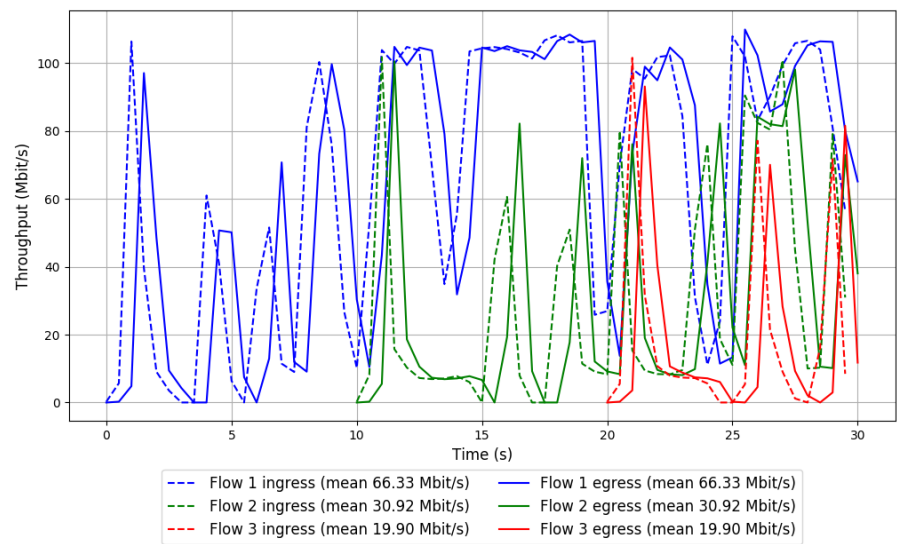Run 5: Report of PCC-Expr — Data Link

```
Run 1: Statistics of QUIC Cubic

Start at: 2019-01-25 16:56:16
End at: 2019-01-25 16:56:46
Local clock offset: -0.415 ms
Remote clock offset: -0.087 ms


# Below is generated by plot.py at 2019-01-25 22:21:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 32.47 Mbit/s
95th percentile per-packet one-way delay: 47.774 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 47.838 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 41.12 Mbit/s
95th percentile per-packet one-way delay: 47.782 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 15.67 Mbit/s
95th percentile per-packet one-way delay: 47.239 ms
Loss rate: 0.00%
```

Run 1: Report of QUIC Cubic — Data Link

```
Run 2: Statistics of QUIC Cubic

Start at: 2019-01-25 17:33:00
End at: 2019-01-25 17:33:30
Local clock offset: -0.059 ms
Remote clock offset: -0.097 ms


# Below is generated by plot.py at 2019-01-25 22:21:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.30 Mbit/s
95th percentile per-packet one-way delay: 47.369 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 66.33 Mbit/s
95th percentile per-packet one-way delay: 46.541 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 30.92 Mbit/s
95th percentile per-packet one-way delay: 47.418 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 19.90 Mbit/s
95th percentile per-packet one-way delay: 47.426 ms
Loss rate: 0.00%
```
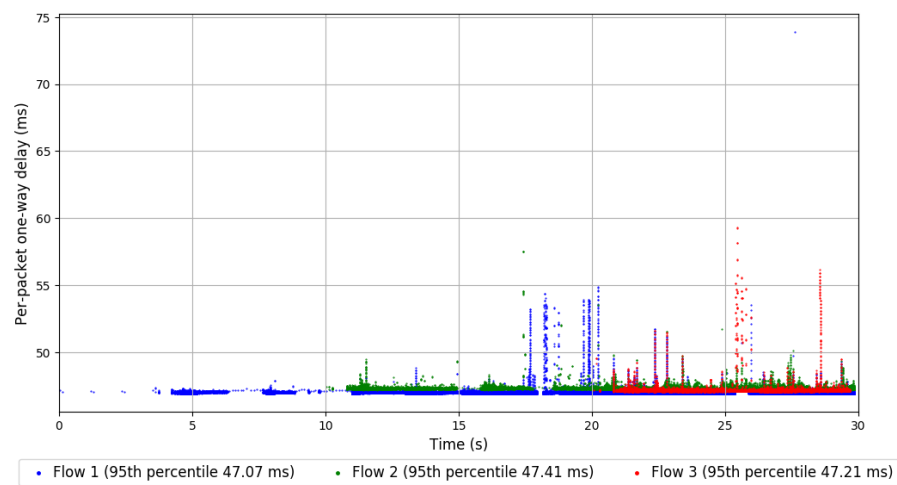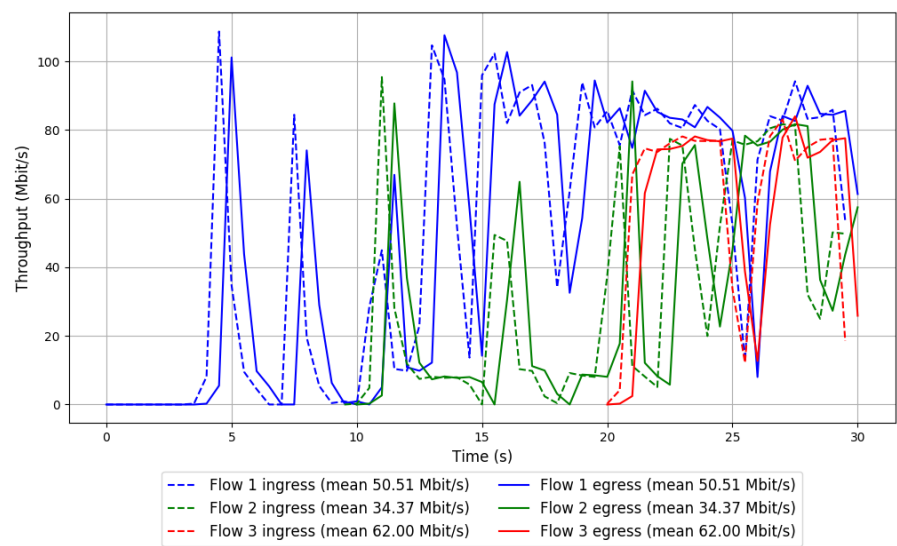
Run 2: Report of QUIC Cubic — Data Link

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```
Run 3: Statistics of QUIC Cubic

Start at: 2019-01-25 18:10:01
End at: 2019-01-25 18:10:31
Local clock offset: 0.043 ms
Remote clock offset: 0.16 ms


# Below is generated by plot.py at 2019-01-25 22:21:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.31 Mbit/s
95th percentile per-packet one-way delay: 47.330 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 50.51 Mbit/s
95th percentile per-packet one-way delay: 47.072 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 34.37 Mbit/s
95th percentile per-packet one-way delay: 47.414 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 62.00 Mbit/s
95th percentile per-packet one-way delay: 47.213 ms
Loss rate: 0.00%
```
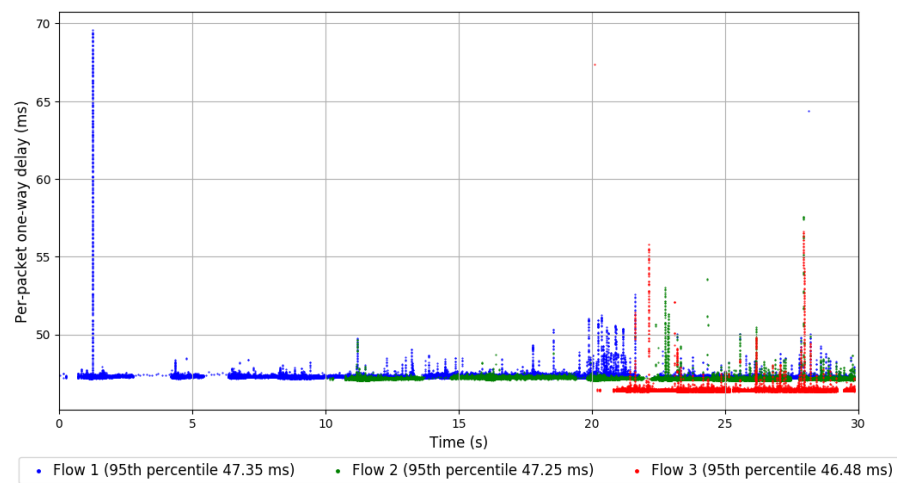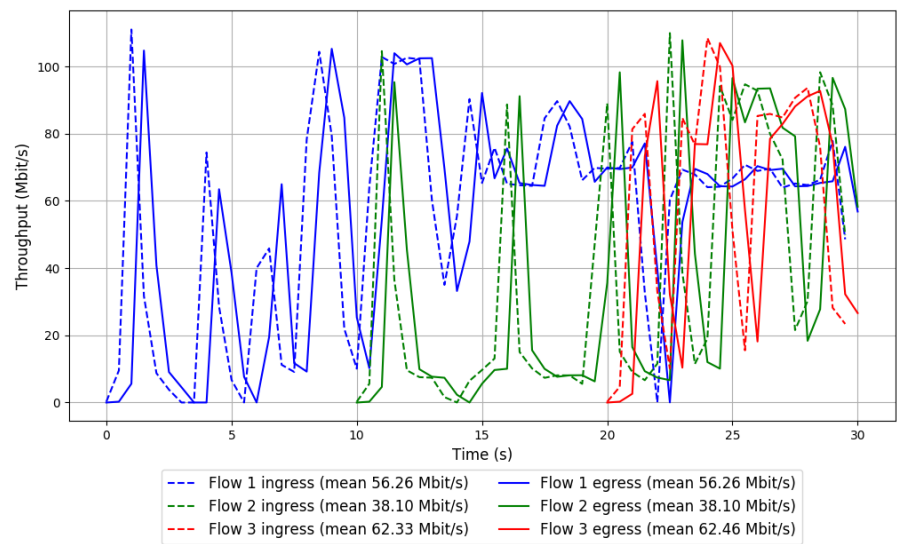
Run 3: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 50.51 Mbit/s)   Flow 1 egress (mean 50.51 Mbit/s)
Flow 2 ingress (mean 34.37 Mbit/s)   Flow 2 egress (mean 34.37 Mbit/s)
Flow 3 ingress (mean 62.00 Mbit/s)   Flow 3 egress (mean 62.00 Mbit/s)

Flow 1 (95th percentile 47.07 ms)   Flow 2 (95th percentile 47.41 ms)   Flow 3 (95th percentile 47.21 ms)

140

```
Run 4: Statistics of QUIC Cubic

Start at: 2019-01-25 18:46:34
End at: 2019-01-25 18:47:04
Local clock offset: -0.044 ms
Remote clock offset: 0.286 ms


# Below is generated by plot.py at 2019-01-25 22:21:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 102.04 Mbit/s
95th percentile per-packet one-way delay: 47.326 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 56.26 Mbit/s
95th percentile per-packet one-way delay: 47.351 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 38.10 Mbit/s
95th percentile per-packet one-way delay: 47.252 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 62.46 Mbit/s
95th percentile per-packet one-way delay: 46.475 ms
Loss rate: 0.00%
```
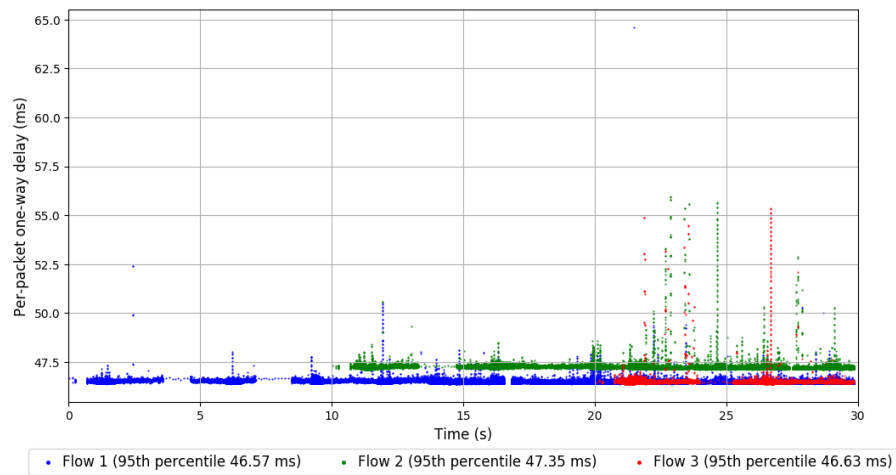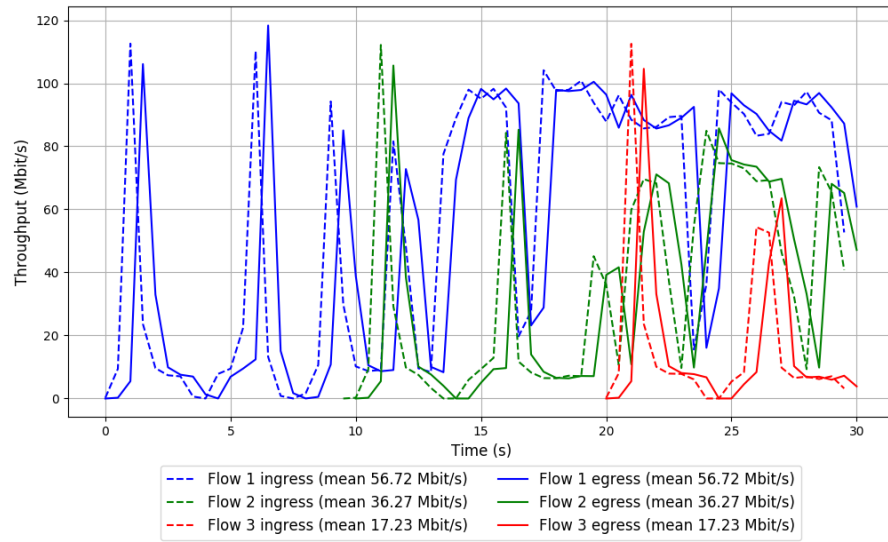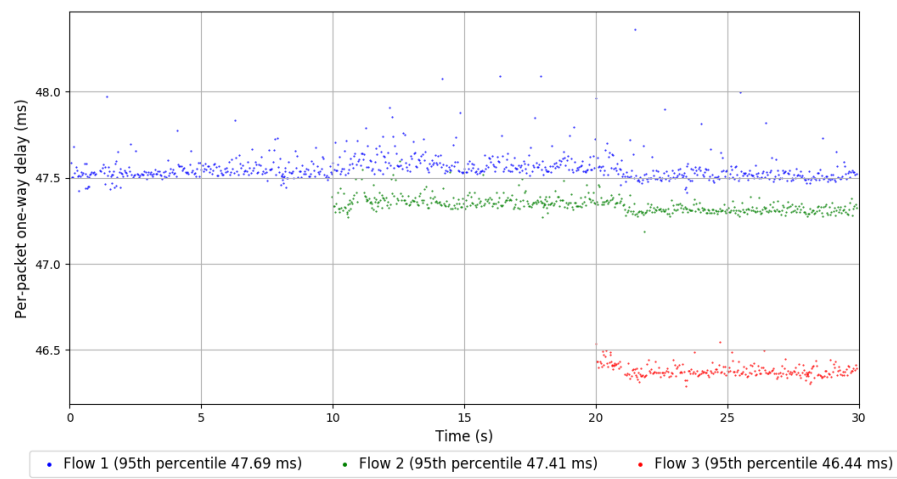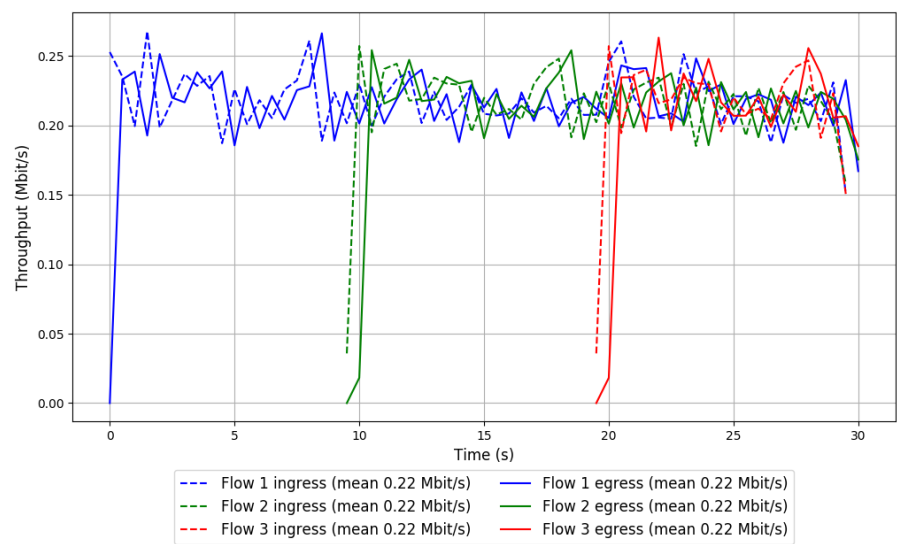
Run 4: Report of QUIC Cubic — Data Link

```
Run 5: Statistics of QUIC Cubic

Start at: 2019-01-25 19:23:07
End at: 2019-01-25 19:23:37
Local clock offset: -0.038 ms
Remote clock offset: 0.369 ms


# Below is generated by plot.py at 2019-01-25 22:21:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 86.47 Mbit/s
95th percentile per-packet one-way delay: 47.257 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 56.72 Mbit/s
95th percentile per-packet one-way delay: 46.573 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 36.27 Mbit/s
95th percentile per-packet one-way delay: 47.348 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 17.23 Mbit/s
95th percentile per-packet one-way delay: 46.628 ms
Loss rate: 0.00%
```

Run 5: Report of QUIC Cubic — Data Link

```
Run 1: Statistics of SCReAM

Start at: 2019-01-25 16:51:14
End at: 2019-01-25 16:51:44
Local clock offset: 0.124 ms
Remote clock offset: -0.097 ms

# Below is generated by plot.py at 2019-01-25 22:21:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 47.632 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 47.686 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 47.414 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 46.444 ms
Loss rate: 0.00%
```
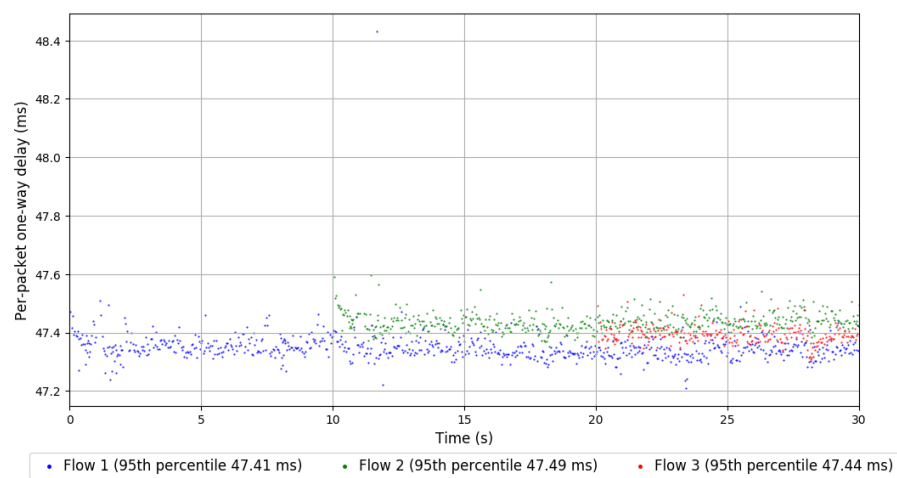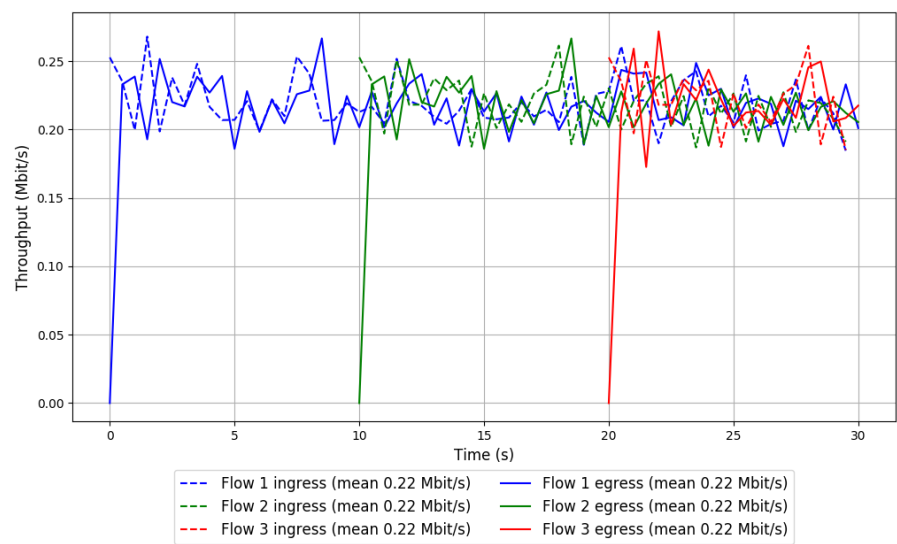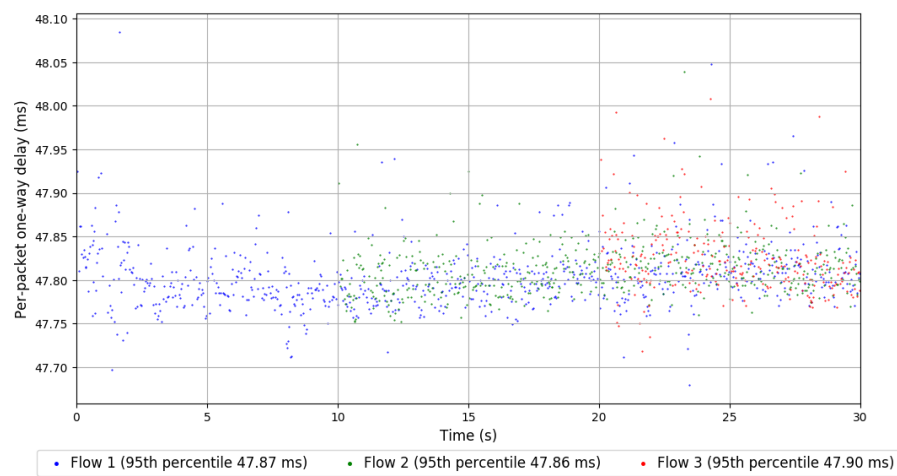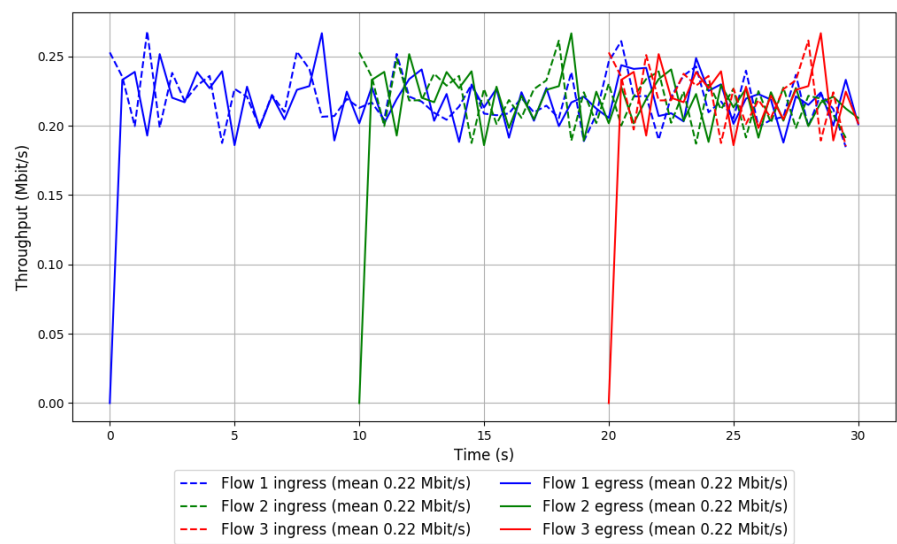
Run 1: Report of SCReAM — Data Link

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

Flow 1 (95th percentile 47.69 ms)   Flow 2 (95th percentile 47.41 ms)   Flow 3 (95th percentile 46.44 ms)

```
Run 2: Statistics of SCReAM

Start at: 2019-01-25 17:27:51
End at: 2019-01-25 17:28:21
Local clock offset: -0.047 ms
Remote clock offset: -0.1 ms

# Below is generated by plot.py at 2019-01-25 22:21:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 47.474 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 47.410 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 47.492 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 47.442 ms
Loss rate: 0.00%
```

Run 2: Report of SCReAM — Data Link

```
Run 3: Statistics of SCReAM

Start at: 2019-01-25 18:04:54
End at: 2019-01-25 18:05:24
Local clock offset: -0.468 ms
Remote clock offset: 0.13 ms


# Below is generated by plot.py at 2019-01-25 22:21:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 47.873 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 47.869 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 47.860 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 47.898 ms
Loss rate: 0.00%
```
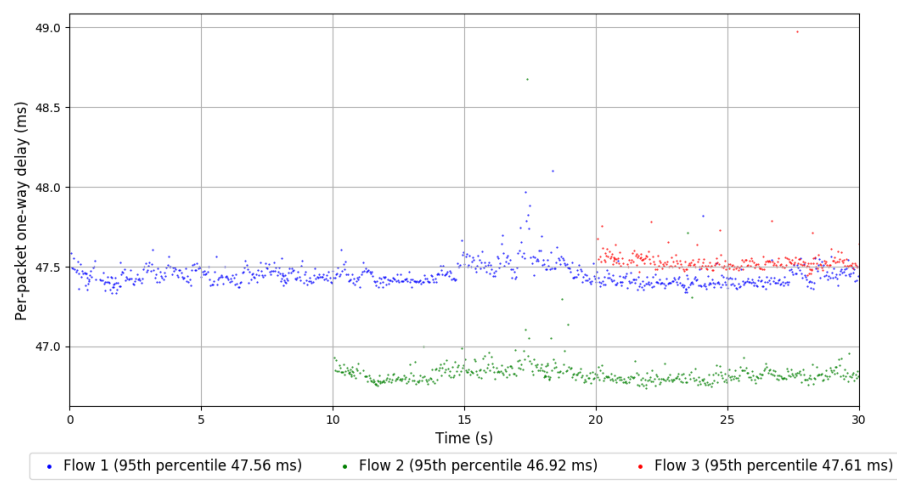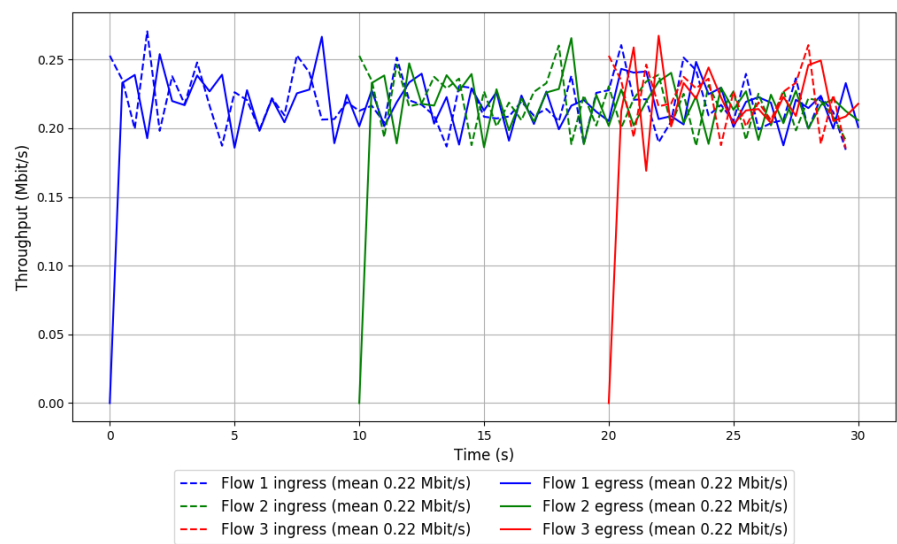
Run 3: Report of SCReAM — Data Link

```
Run 4: Statistics of SCReAM

Start at: 2019-01-25 18:41:28
End at: 2019-01-25 18:41:58
Local clock offset: -0.134 ms
Remote clock offset: 0.25 ms


# Below is generated by plot.py at 2019-01-25 22:21:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 47.560 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 47.560 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 46.917 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 47.610 ms
Loss rate: 0.00%
```
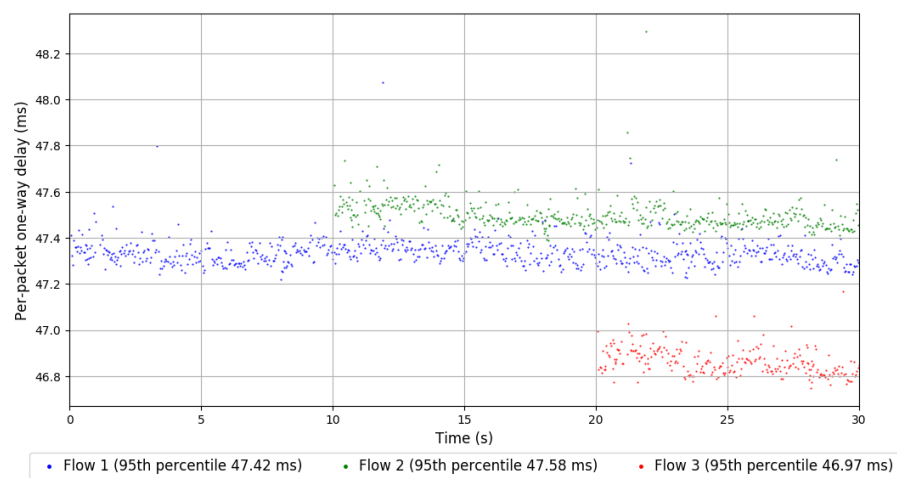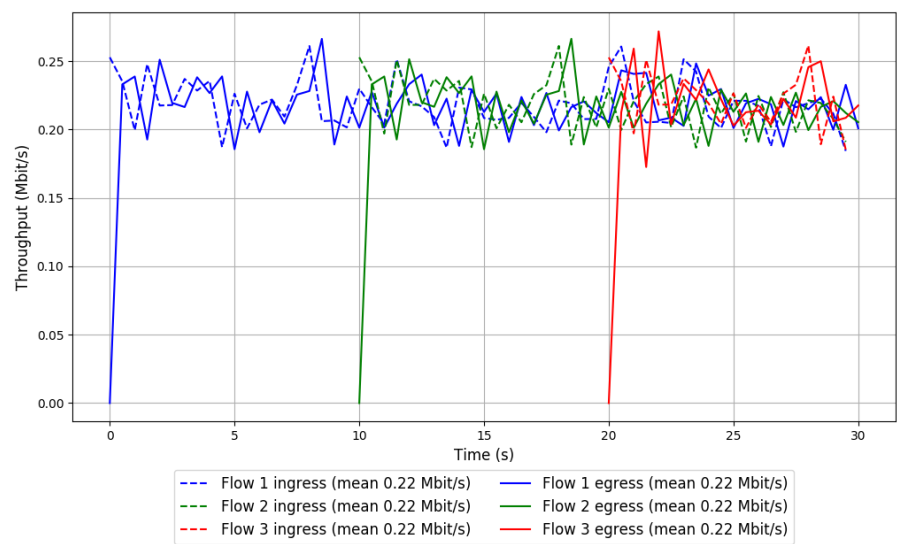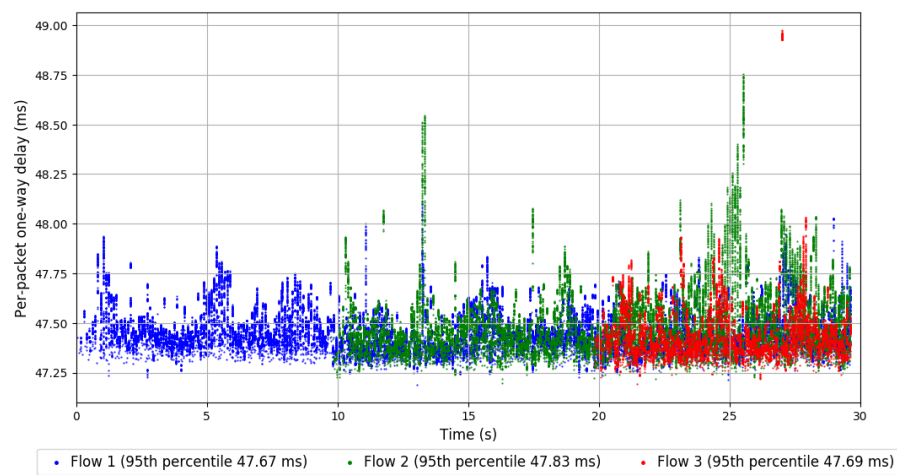
Run 4: Report of SCReAM — Data Link

```
Run 5: Statistics of SCReAM

Start at: 2019-01-25 19:18:09
End at: 2019-01-25 19:18:39
Local clock offset: -0.033 ms
Remote clock offset: 0.32 ms


# Below is generated by plot.py at 2019-01-25 22:21:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 47.549 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 47.419 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 47.584 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 46.971 ms
Loss rate: 0.00%
```
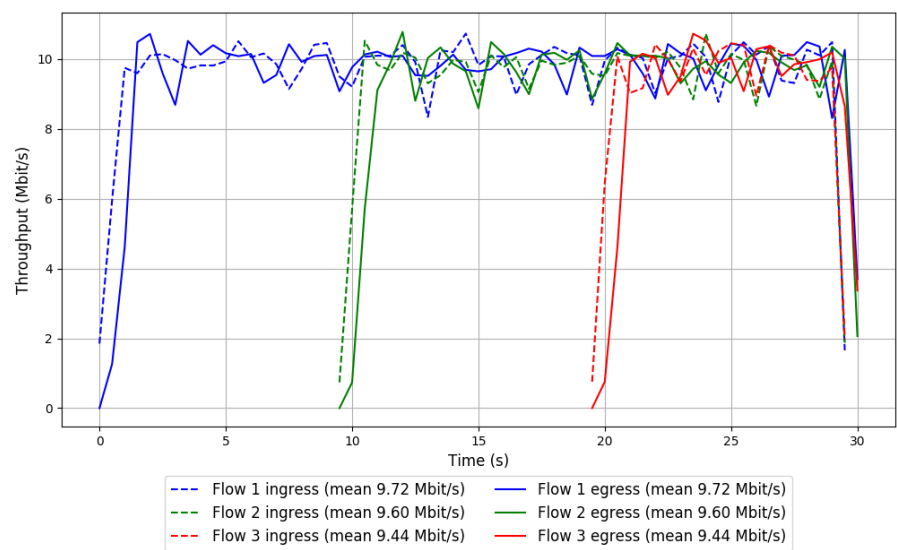
Run 5: Report of SCReAM — Data Link

```
Run 1: Statistics of Sprout

Start at: 2019-01-25 16:42:47
End at: 2019-01-25 16:43:17
Local clock offset: -0.013 ms
Remote clock offset: -0.096 ms


# Below is generated by plot.py at 2019-01-25 22:21:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 19.32 Mbit/s
95th percentile per-packet one-way delay: 47.720 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 9.72 Mbit/s
95th percentile per-packet one-way delay: 47.667 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 9.60 Mbit/s
95th percentile per-packet one-way delay: 47.831 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 9.44 Mbit/s
95th percentile per-packet one-way delay: 47.693 ms
Loss rate: 0.00%
```
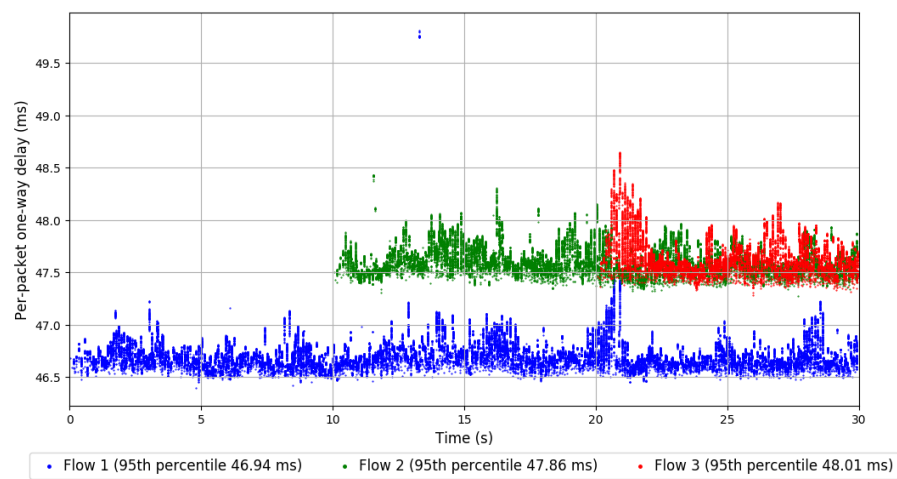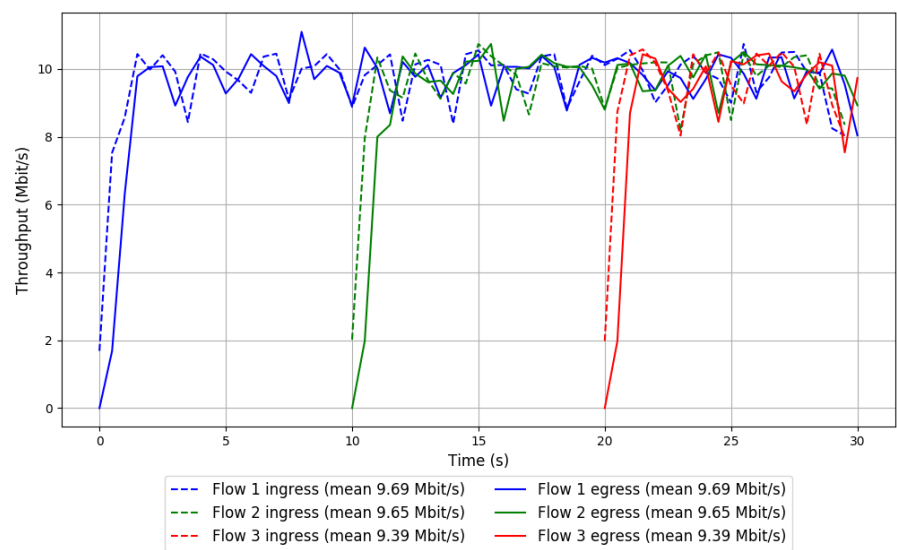
Run 1: Report of Sprout — Data Link

```
Run 2: Statistics of Sprout

Start at: 2019-01-25 17:19:20
End at: 2019-01-25 17:19:50
Local clock offset: -0.022 ms
Remote clock offset: -0.077 ms


# Below is generated by plot.py at 2019-01-25 22:21:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 19.19 Mbit/s
95th percentile per-packet one-way delay: 47.822 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 9.69 Mbit/s
95th percentile per-packet one-way delay: 46.939 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 9.65 Mbit/s
95th percentile per-packet one-way delay: 47.864 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 9.39 Mbit/s
95th percentile per-packet one-way delay: 48.007 ms
Loss rate: 0.00%
```
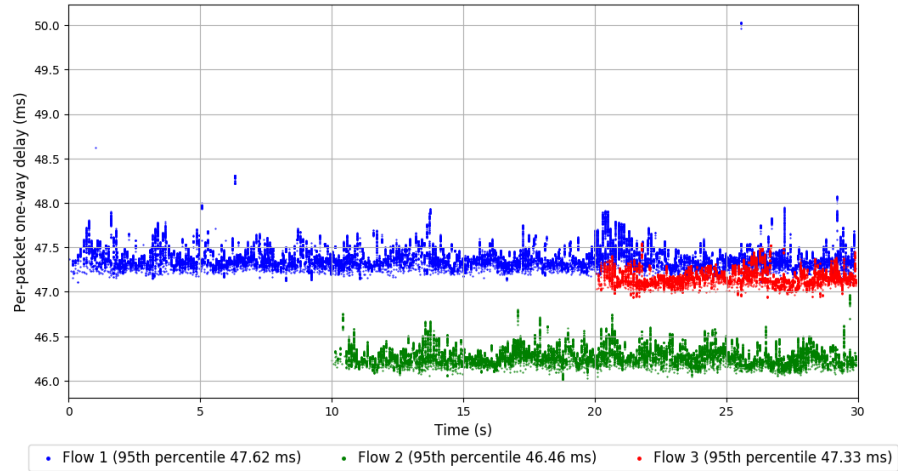
Run 2: Report of Sprout — Data Link

```
Run 3: Statistics of Sprout

Start at: 2019-01-25 17:56:14
End at: 2019-01-25 17:56:44
Local clock offset: 0.299 ms
Remote clock offset: 0.082 ms


# Below is generated by plot.py at 2019-01-25 22:21:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 19.19 Mbit/s
95th percentile per-packet one-way delay: 47.543 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 9.66 Mbit/s
95th percentile per-packet one-way delay: 47.615 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 9.62 Mbit/s
95th percentile per-packet one-way delay: 46.463 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 9.45 Mbit/s
95th percentile per-packet one-way delay: 47.326 ms
Loss rate: 0.01%
```
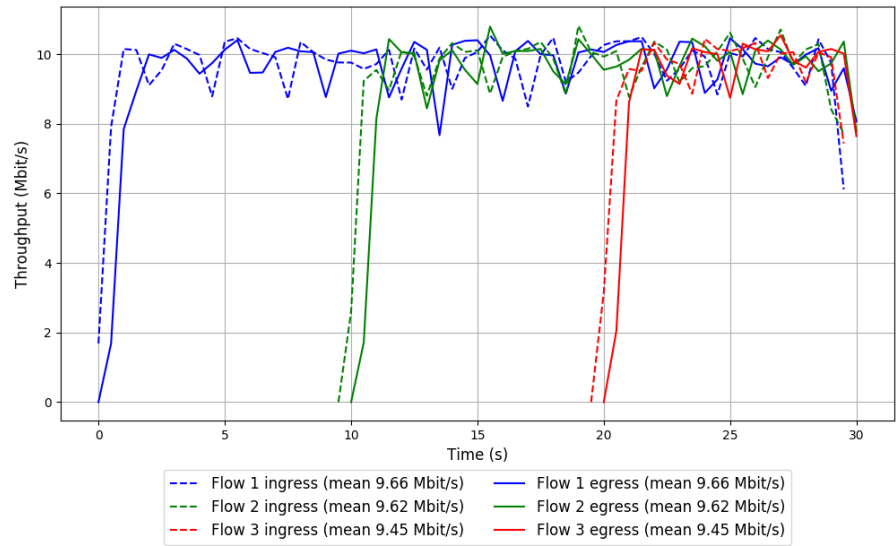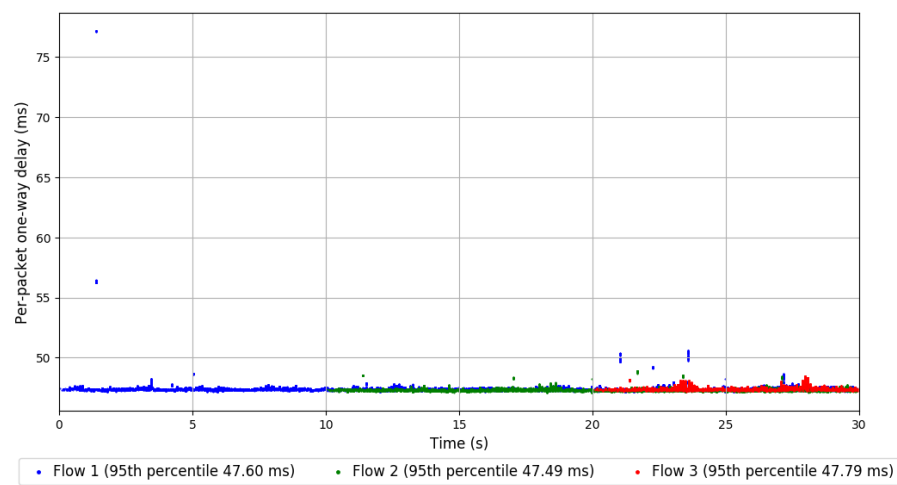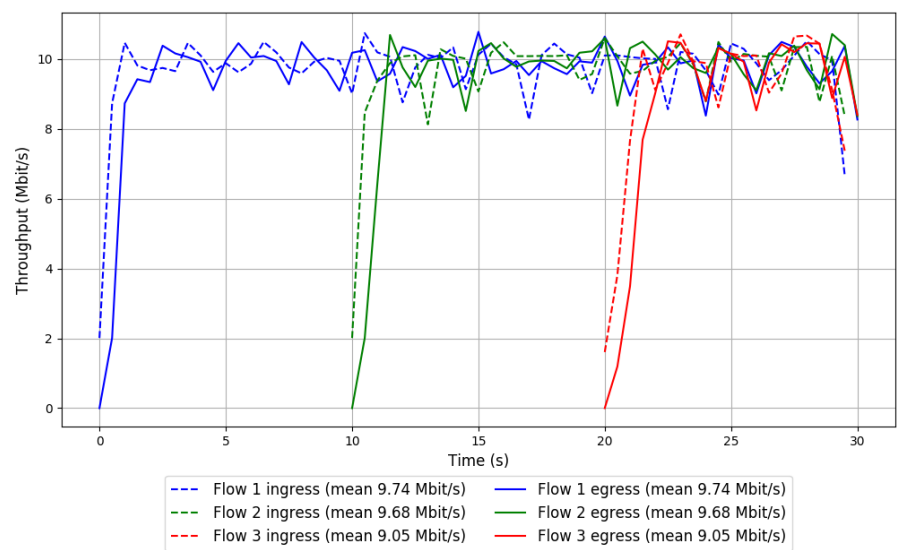
Run 3: Report of Sprout — Data Link

```
Run 4: Statistics of Sprout

Start at: 2019-01-25 18:33:01
End at: 2019-01-25 18:33:31
Local clock offset: -0.132 ms
Remote clock offset: 0.216 ms


# Below is generated by plot.py at 2019-01-25 22:21:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 19.15 Mbit/s
95th percentile per-packet one-way delay: 47.588 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 9.74 Mbit/s
95th percentile per-packet one-way delay: 47.597 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 9.68 Mbit/s
95th percentile per-packet one-way delay: 47.487 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 9.05 Mbit/s
95th percentile per-packet one-way delay: 47.790 ms
Loss rate: 0.00%
```

Run 4: Report of Sprout — Data Link

```
Run 5: Statistics of Sprout

Start at: 2019-01-25 19:09:49
End at: 2019-01-25 19:10:19
Local clock offset: 0.467 ms
Remote clock offset: 0.298 ms


# Below is generated by plot.py at 2019-01-25 22:21:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 18.93 Mbit/s
95th percentile per-packet one-way delay: 47.312 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 9.49 Mbit/s
95th percentile per-packet one-way delay: 47.322 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 9.61 Mbit/s
95th percentile per-packet one-way delay: 47.346 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 9.24 Mbit/s
95th percentile per-packet one-way delay: 46.389 ms
Loss rate: 0.00%
```
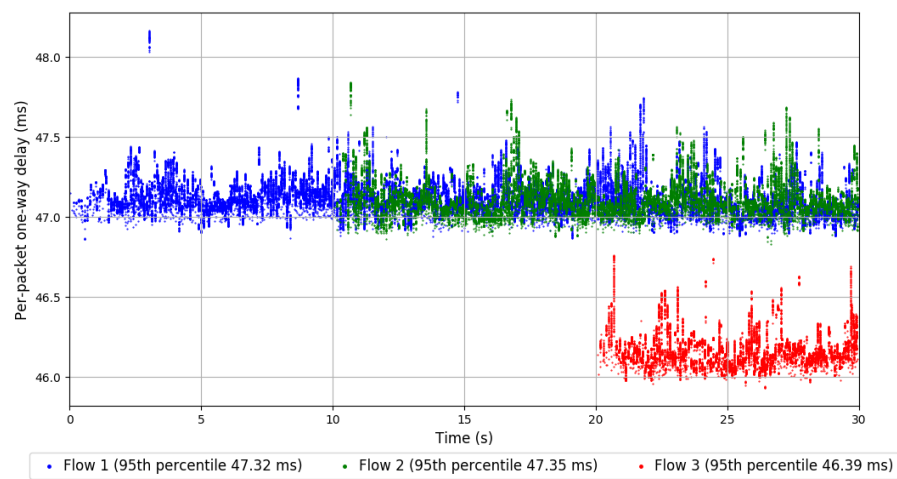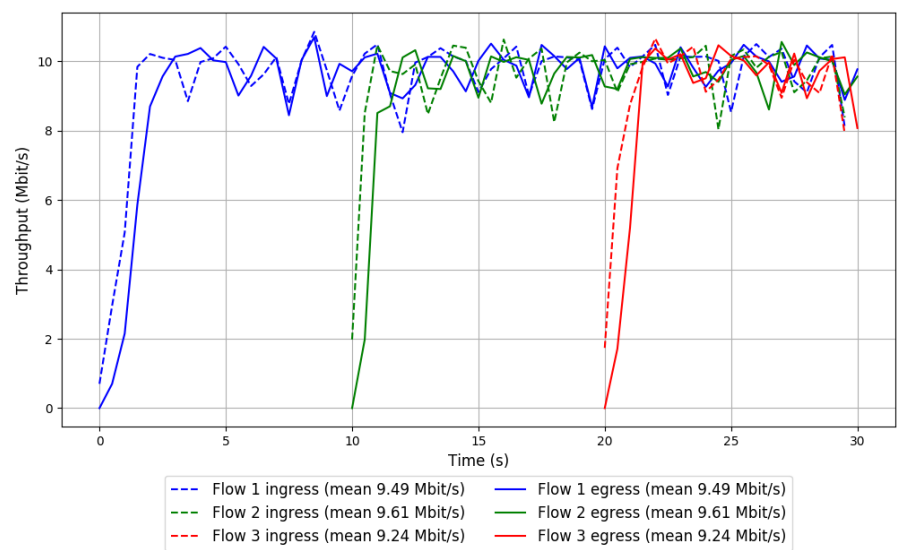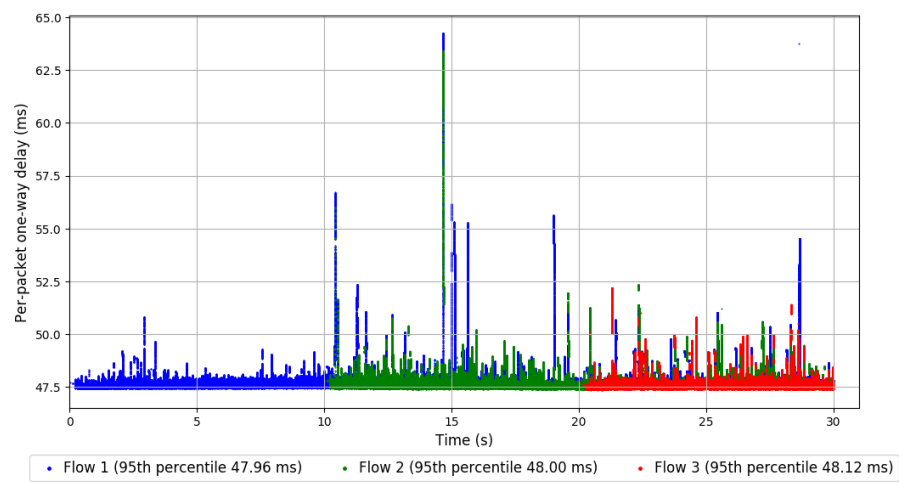
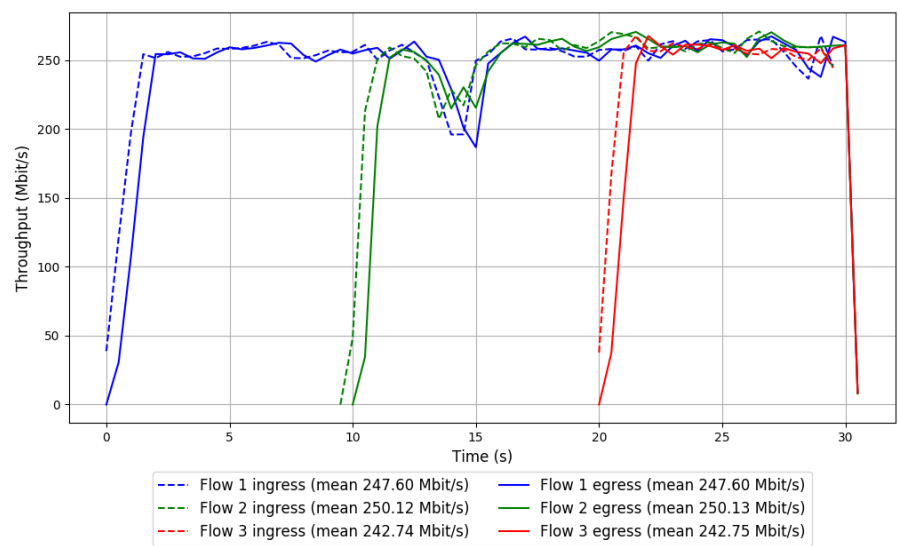# Run 5: Report of Sprout — Data Link

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

Start at: 2019-01-25 17:01:39
End at: 2019-01-25 17:02:09
Local clock offset: -0.047 ms
Remote clock offset: 0.062 ms


# Below is generated by plot.py at 2019-01-25 22:26:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 494.85 Mbit/s
95th percentile per-packet one-way delay: 47.996 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 247.60 Mbit/s
95th percentile per-packet one-way delay: 47.957 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 250.13 Mbit/s
95th percentile per-packet one-way delay: 48.001 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 242.75 Mbit/s
95th percentile per-packet one-way delay: 48.119 ms
Loss rate: 0.00%
```

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

- - - - Flow 1 ingress (mean 247.60 Mbit/s)   —— Flow 1 egress (mean 247.60 Mbit/s)
- - - - Flow 2 ingress (mean 250.12 Mbit/s)   —— Flow 2 egress (mean 250.13 Mbit/s)
- - - - Flow 3 ingress (mean 242.74 Mbit/s)   —— Flow 3 egress (mean 242.75 Mbit/s)

- Flow 1 (95th percentile 47.96 ms)   • Flow 2 (95th percentile 48.00 ms)   • Flow 3 (95th percentile 48.12 ms)

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

Start at: 2019-01-25 17:38:36
End at: 2019-01-25 17:39:06
Local clock offset: -0.046 ms
Remote clock offset: 0.007 ms


# Below is generated by plot.py at 2019-01-25 22:26:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 489.36 Mbit/s
95th percentile per-packet one-way delay: 47.806 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 246.31 Mbit/s
95th percentile per-packet one-way delay: 47.719 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 252.67 Mbit/s
95th percentile per-packet one-way delay: 47.862 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 224.97 Mbit/s
95th percentile per-packet one-way delay: 48.167 ms
Loss rate: 0.00%
```
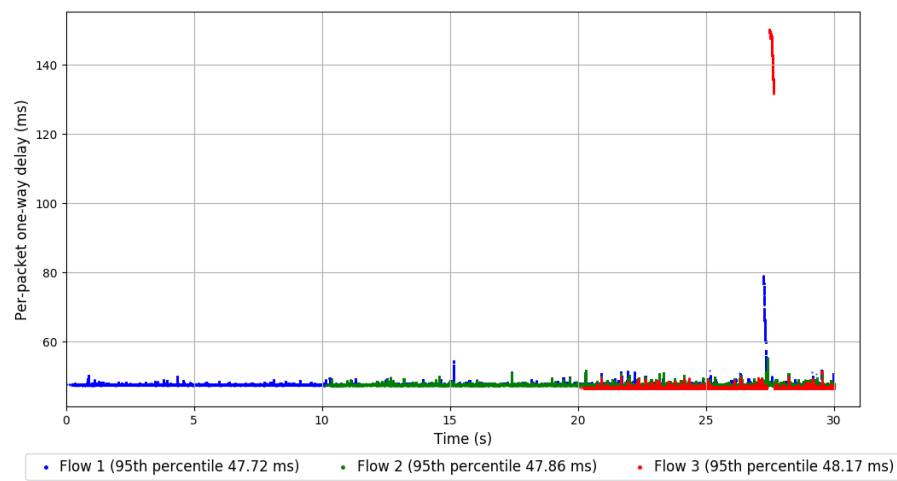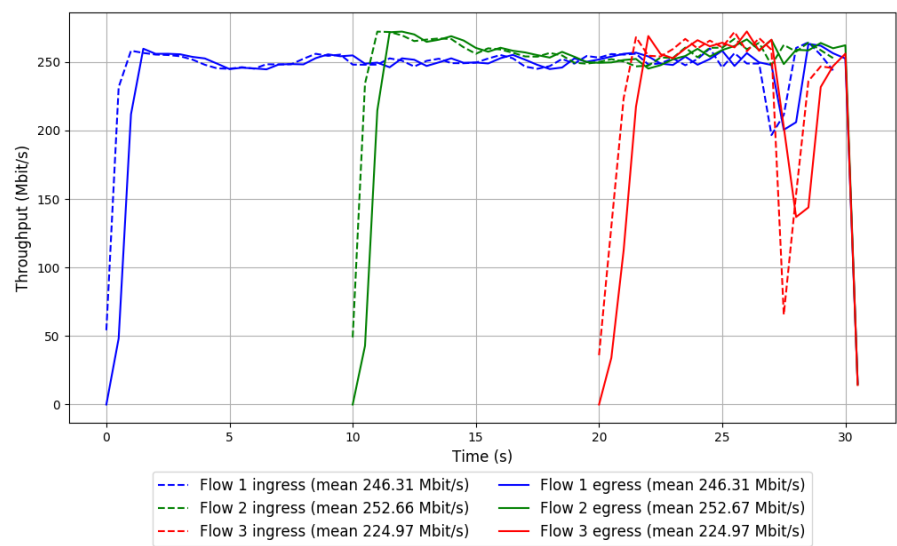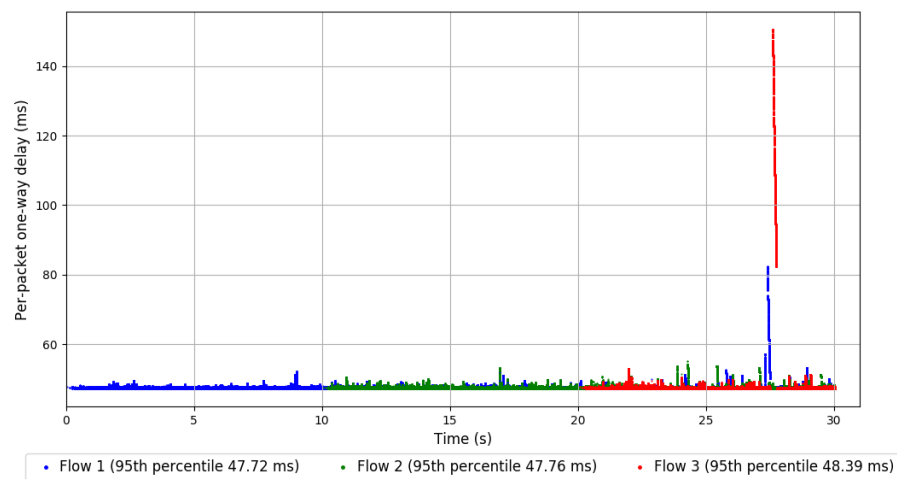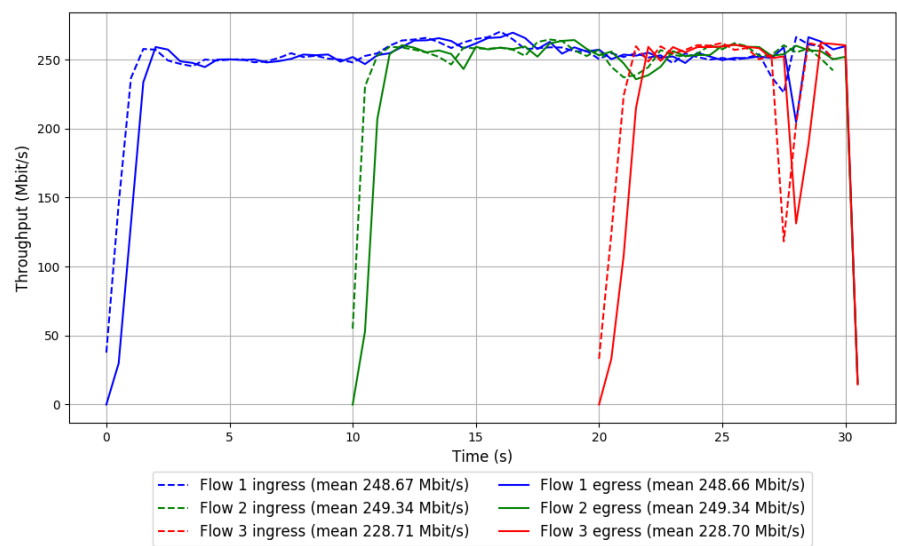
Run 2: Report of TaoVA-100x — Data Link

- - - - Flow 1 ingress (mean 246.31 Mbit/s)   —— Flow 1 egress (mean 246.31 Mbit/s)
- - - - Flow 2 ingress (mean 252.66 Mbit/s)   —— Flow 2 egress (mean 252.67 Mbit/s)
- - - - Flow 3 ingress (mean 224.97 Mbit/s)   —— Flow 3 egress (mean 224.97 Mbit/s)

• Flow 1 (95th percentile 47.72 ms)   • Flow 2 (95th percentile 47.86 ms)   • Flow 3 (95th percentile 48.17 ms)

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

Start at: 2019-01-25 18:15:31
End at: 2019-01-25 18:16:01
Local clock offset: -0.088 ms
Remote clock offset: 0.193 ms


# Below is generated by plot.py at 2019-01-25 22:26:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 490.68 Mbit/s
95th percentile per-packet one-way delay: 47.775 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 248.66 Mbit/s
95th percentile per-packet one-way delay: 47.720 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 249.34 Mbit/s
95th percentile per-packet one-way delay: 47.756 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 228.70 Mbit/s
95th percentile per-packet one-way delay: 48.389 ms
Loss rate: 0.00%
```
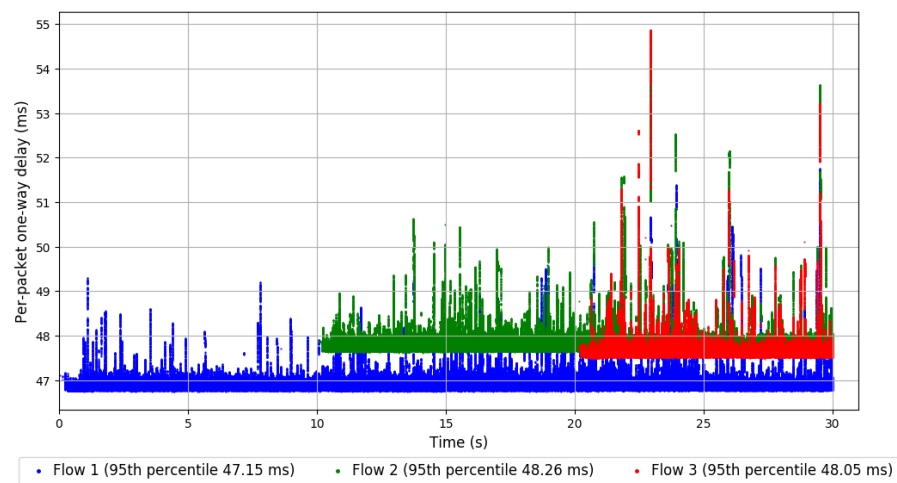
Run 3: Report of TaoVA-100x — Data Link

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

Start at: 2019-01-25 18:52:09
End at: 2019-01-25 18:52:39
Local clock offset: -0.434 ms
Remote clock offset: 0.297 ms


# Below is generated by plot.py at 2019-01-25 22:26:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 495.97 Mbit/s
95th percentile per-packet one-way delay: 47.975 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 250.52 Mbit/s
95th percentile per-packet one-way delay: 47.150 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 250.49 Mbit/s
95th percentile per-packet one-way delay: 48.260 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 236.10 Mbit/s
95th percentile per-packet one-way delay: 48.048 ms
Loss rate: 0.00%
```
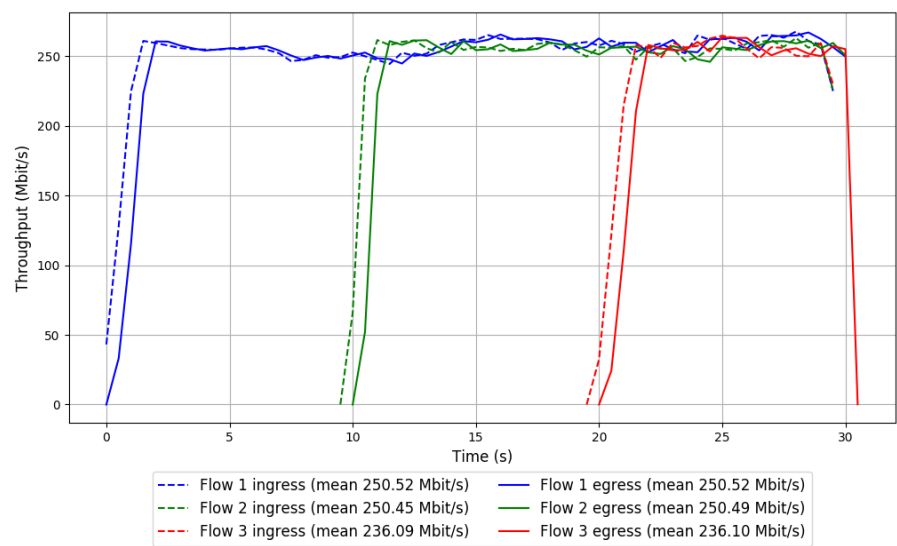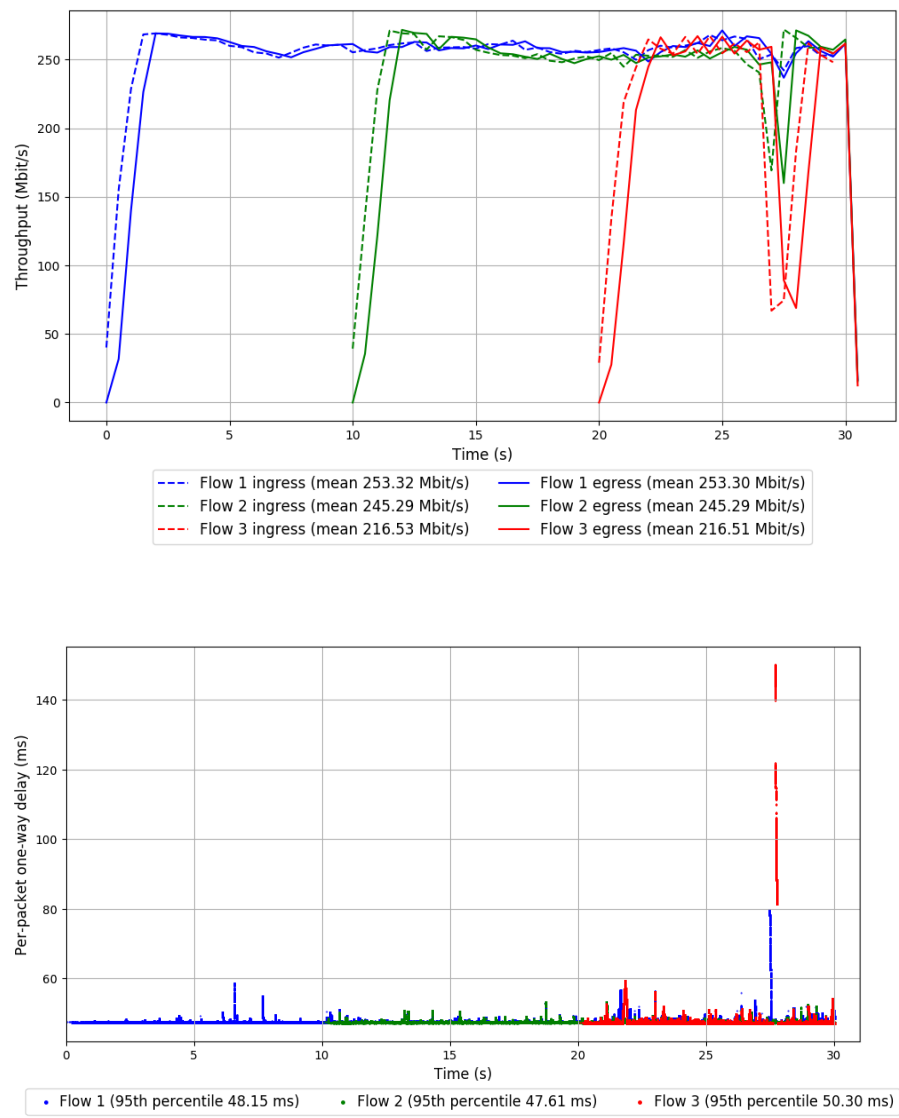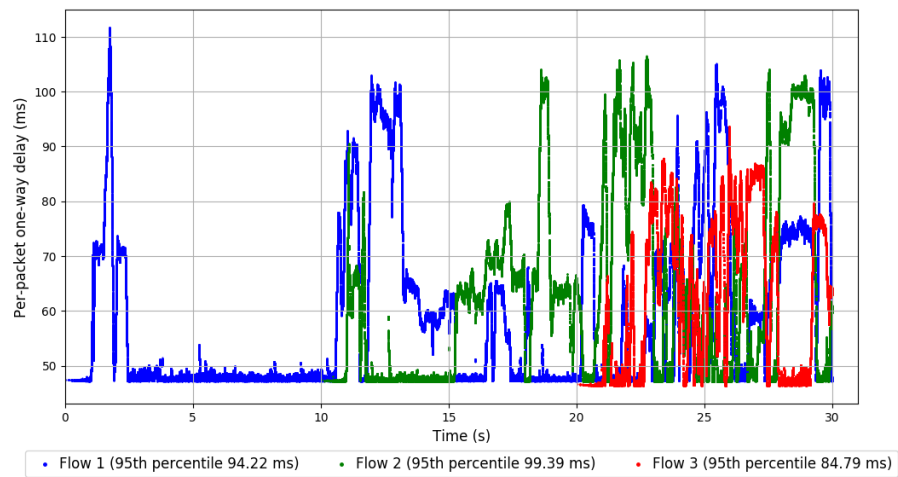
Run 4: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 250.52 Mbit/s) --- Flow 1 egress (mean 250.52 Mbit/s)
Flow 2 ingress (mean 250.45 Mbit/s) --- Flow 2 egress (mean 250.49 Mbit/s)
Flow 3 ingress (mean 236.09 Mbit/s) --- Flow 3 egress (mean 236.10 Mbit/s)

Flow 1 (95th percentile 47.15 ms) • Flow 2 (95th percentile 48.26 ms) • Flow 3 (95th percentile 48.05 ms)

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

Start at: 2019-01-25 19:28:37
End at: 2019-01-25 19:29:07
Local clock offset: -0.037 ms
Remote clock offset: 0.38 ms


# Below is generated by plot.py at 2019-01-25 22:26:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 488.62 Mbit/s
95th percentile per-packet one-way delay: 48.176 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 253.30 Mbit/s
95th percentile per-packet one-way delay: 48.154 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 245.29 Mbit/s
95th percentile per-packet one-way delay: 47.611 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 216.51 Mbit/s
95th percentile per-packet one-way delay: 50.300 ms
Loss rate: 0.01%
```
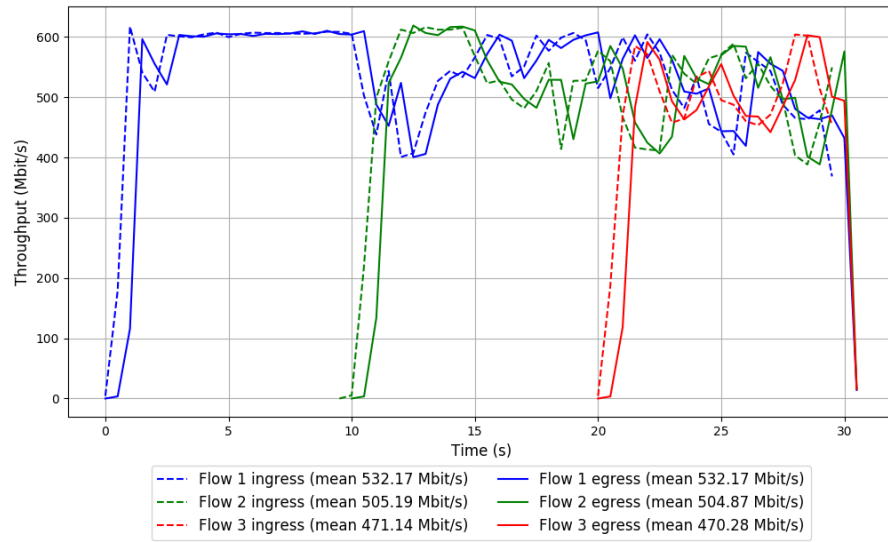
Run 5: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 253.32 Mbit/s) --- Flow 1 egress (mean 253.30 Mbit/s)
Flow 2 ingress (mean 245.29 Mbit/s) --- Flow 2 egress (mean 245.29 Mbit/s)
Flow 3 ingress (mean 216.53 Mbit/s) --- Flow 3 egress (mean 216.51 Mbit/s)

Flow 1 (95th percentile 48.15 ms)   Flow 2 (95th percentile 47.61 ms)   Flow 3 (95th percentile 50.30 ms)

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```
Run 1: Statistics of TCP Vegas

Start at: 2019-01-25 16:33:54
End at: 2019-01-25 16:34:24
Local clock offset: -0.043 ms
Remote clock offset: -0.095 ms


# Below is generated by plot.py at 2019-01-25 22:28:24
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1025.12 Mbit/s
95th percentile per-packet one-way delay: 94.974 ms
Loss rate: 0.05%
-- Flow 1:
Average throughput: 532.17 Mbit/s
95th percentile per-packet one-way delay: 94.215 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 504.87 Mbit/s
95th percentile per-packet one-way delay: 99.395 ms
Loss rate: 0.06%
-- Flow 3:
Average throughput: 470.28 Mbit/s
95th percentile per-packet one-way delay: 84.786 ms
Loss rate: 0.17%
```
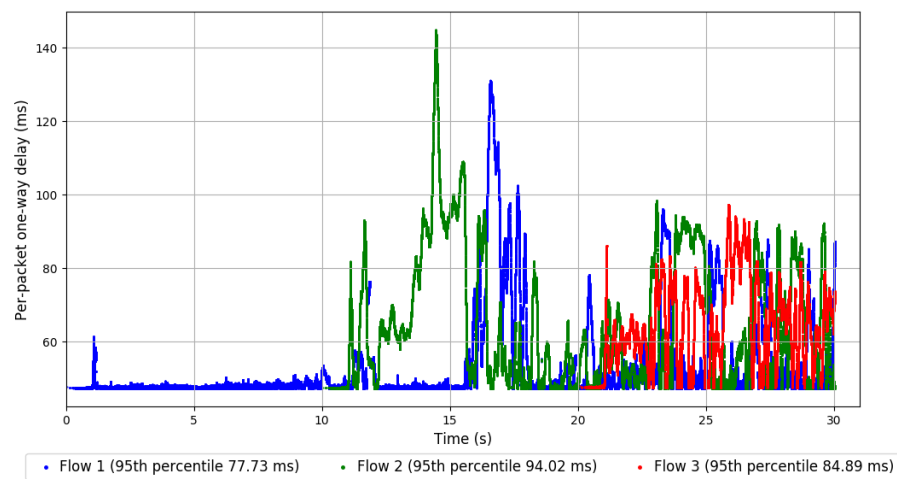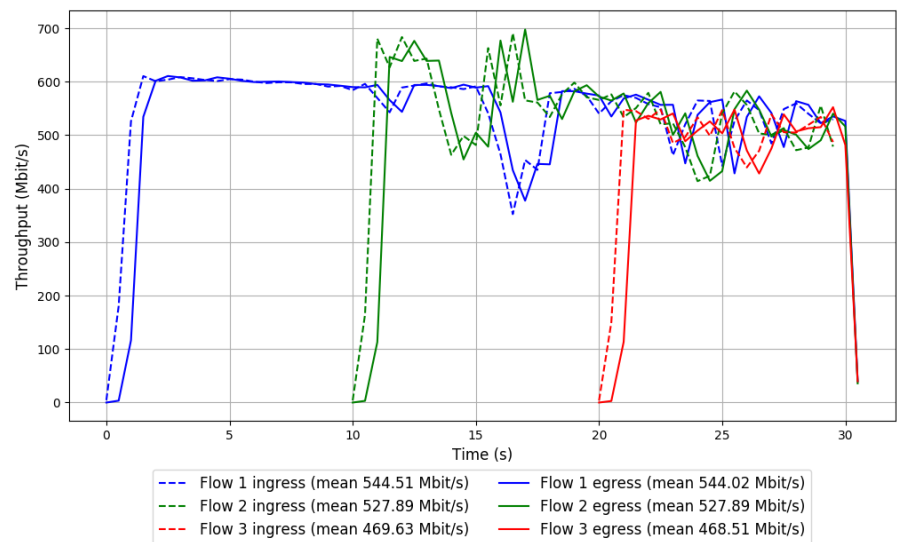
Run 1: Report of TCP Vegas — Data Link

```
Run 2: Statistics of TCP Vegas

Start at: 2019-01-25 17:10:25
End at: 2019-01-25 17:10:55
Local clock offset: 0.049 ms
Remote clock offset: -0.1 ms


# Below is generated by plot.py at 2019-01-25 22:40:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1051.41 Mbit/s
95th percentile per-packet one-way delay: 89.886 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 544.02 Mbit/s
95th percentile per-packet one-way delay: 77.731 ms
Loss rate: 0.07%
-- Flow 2:
Average throughput: 527.89 Mbit/s
95th percentile per-packet one-way delay: 94.016 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 468.51 Mbit/s
95th percentile per-packet one-way delay: 84.895 ms
Loss rate: 0.17%
```
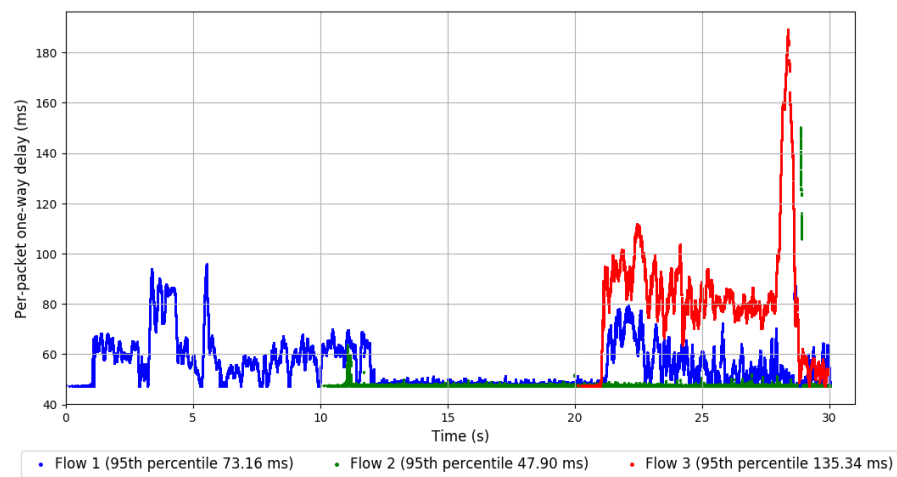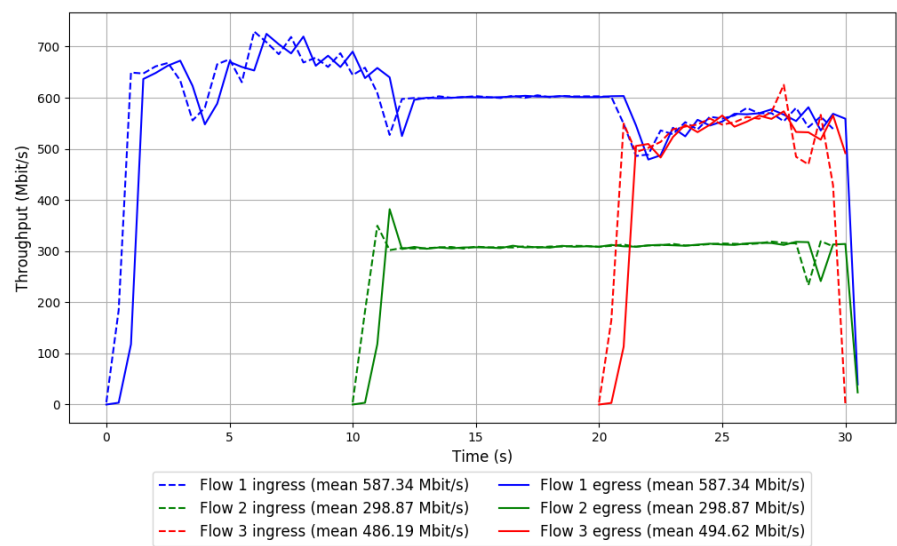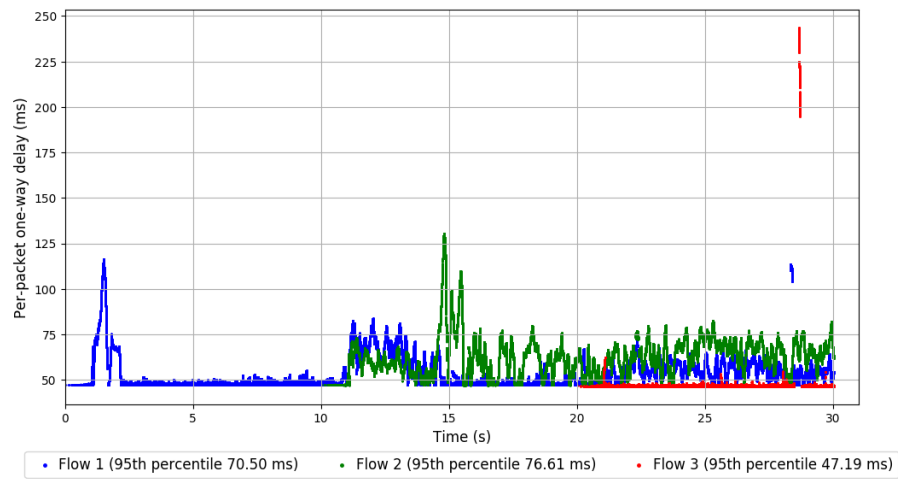
Run 2: Report of TCP Vegas — Data Link

```
Run 3: Statistics of TCP Vegas

Start at: 2019-01-25 17:47:26
End at: 2019-01-25 17:47:56
Local clock offset: -0.104 ms
Remote clock offset: 0.068 ms


# Below is generated by plot.py at 2019-01-25 22:40:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 949.34 Mbit/s
95th percentile per-packet one-way delay: 89.587 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 587.34 Mbit/s
95th percentile per-packet one-way delay: 73.159 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 298.87 Mbit/s
95th percentile per-packet one-way delay: 47.901 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 494.62 Mbit/s
95th percentile per-packet one-way delay: 135.344 ms
Loss rate: 0.21%
```

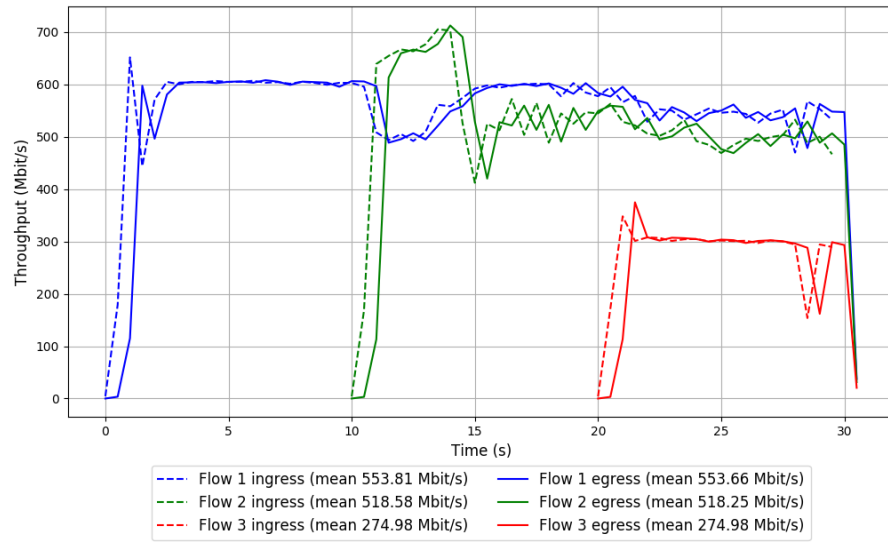# Run 3: Report of TCP Vegas — Data Link

```
Run 4: Statistics of TCP Vegas

Start at: 2019-01-25 18:24:18
End at: 2019-01-25 18:24:48
Local clock offset: -0.067 ms
Remote clock offset: 0.199 ms


# Below is generated by plot.py at 2019-01-25 22:44:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 990.33 Mbit/s
95th percentile per-packet one-way delay: 73.753 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 553.66 Mbit/s
95th percentile per-packet one-way delay: 70.500 ms
Loss rate: 0.03%
-- Flow 2:
Average throughput: 518.25 Mbit/s
95th percentile per-packet one-way delay: 76.615 ms
Loss rate: 0.06%
-- Flow 3:
Average throughput: 274.98 Mbit/s
95th percentile per-packet one-way delay: 47.194 ms
Loss rate: 0.00%
```
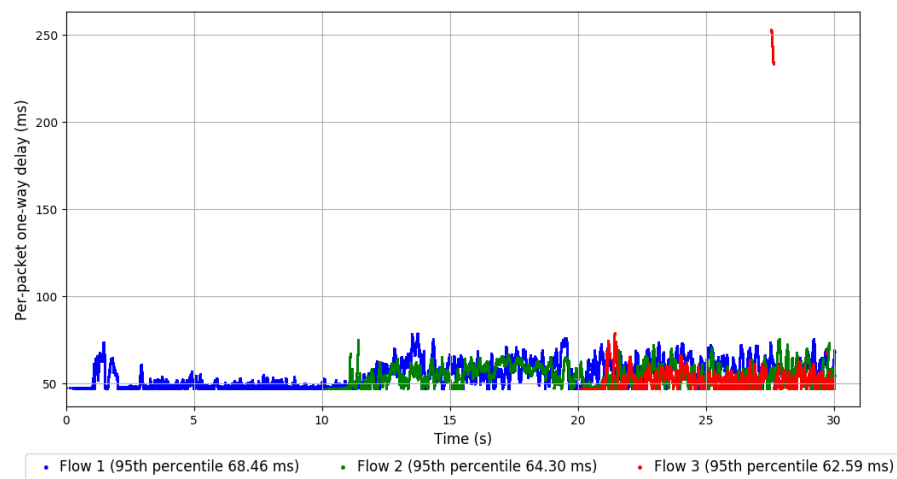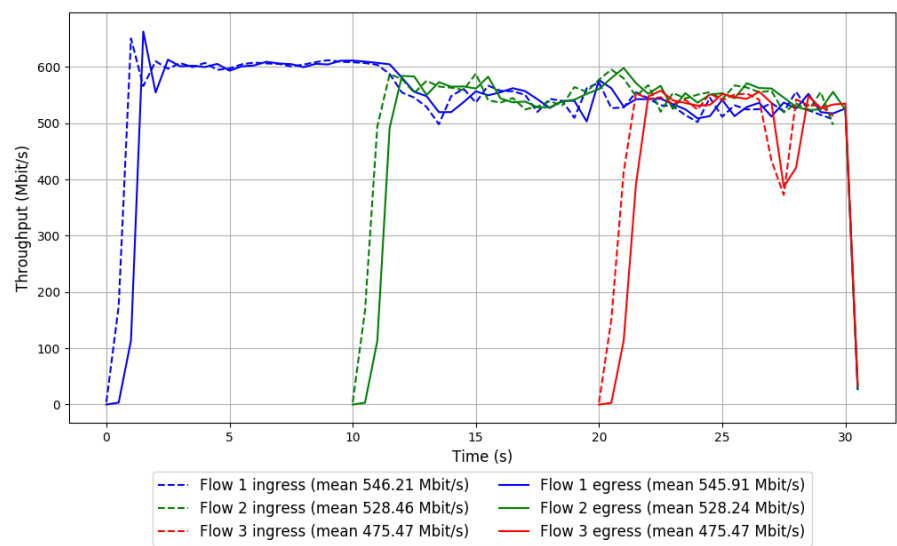
Run 4: Report of TCP Vegas — Data Link

```
Run 5: Statistics of TCP Vegas

Start at: 2019-01-25 19:01:00
End at: 2019-01-25 19:01:30
Local clock offset: 0.093 ms
Remote clock offset: 0.324 ms


# Below is generated by plot.py at 2019-01-25 22:46:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1055.77 Mbit/s
95th percentile per-packet one-way delay: 66.935 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 545.91 Mbit/s
95th percentile per-packet one-way delay: 68.457 ms
Loss rate: 0.05%
-- Flow 2:
Average throughput: 528.24 Mbit/s
95th percentile per-packet one-way delay: 64.295 ms
Loss rate: 0.04%
-- Flow 3:
Average throughput: 475.47 Mbit/s
95th percentile per-packet one-way delay: 62.585 ms
Loss rate: 0.00%
```

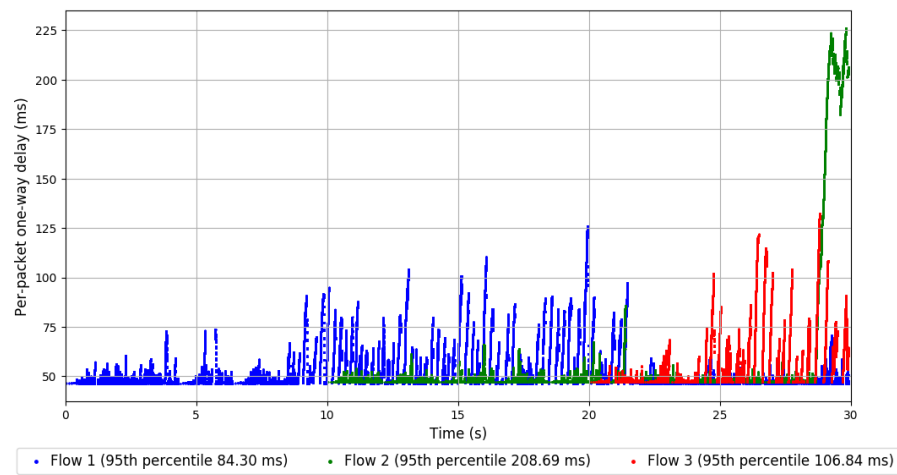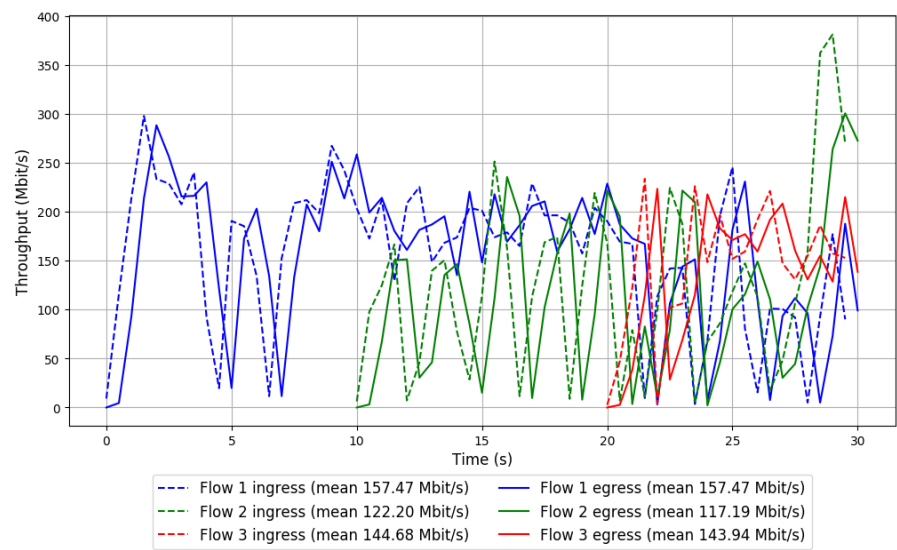Run 5: Report of TCP Vegas — Data Link

```
Run 1: Statistics of Verus

Start at: 2019-01-25 16:44:00
End at: 2019-01-25 16:44:30
Local clock offset: 0.044 ms
Remote clock offset: -0.091 ms


# Below is generated by plot.py at 2019-01-25 22:46:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 282.73 Mbit/s
95th percentile per-packet one-way delay: 107.240 ms
Loss rate: 1.25%
-- Flow 1:
Average throughput: 157.47 Mbit/s
95th percentile per-packet one-way delay: 84.298 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 117.19 Mbit/s
95th percentile per-packet one-way delay: 208.690 ms
Loss rate: 4.10%
-- Flow 3:
Average throughput: 143.94 Mbit/s
95th percentile per-packet one-way delay: 106.843 ms
Loss rate: 0.50%
```

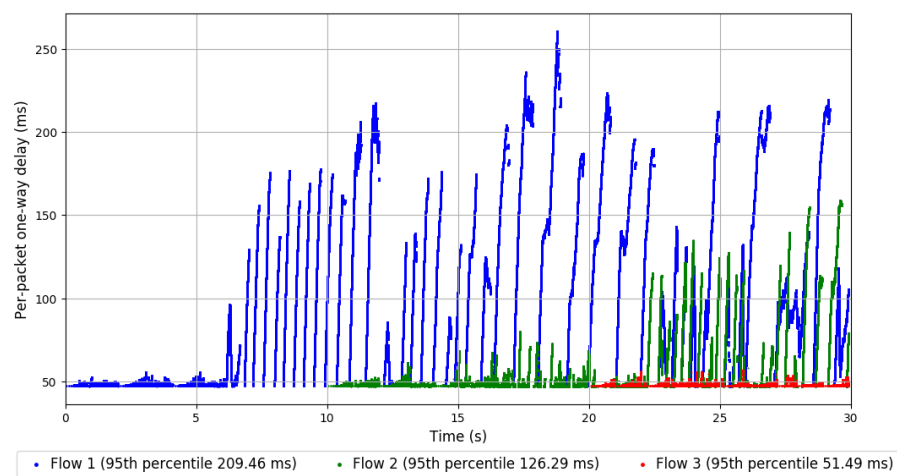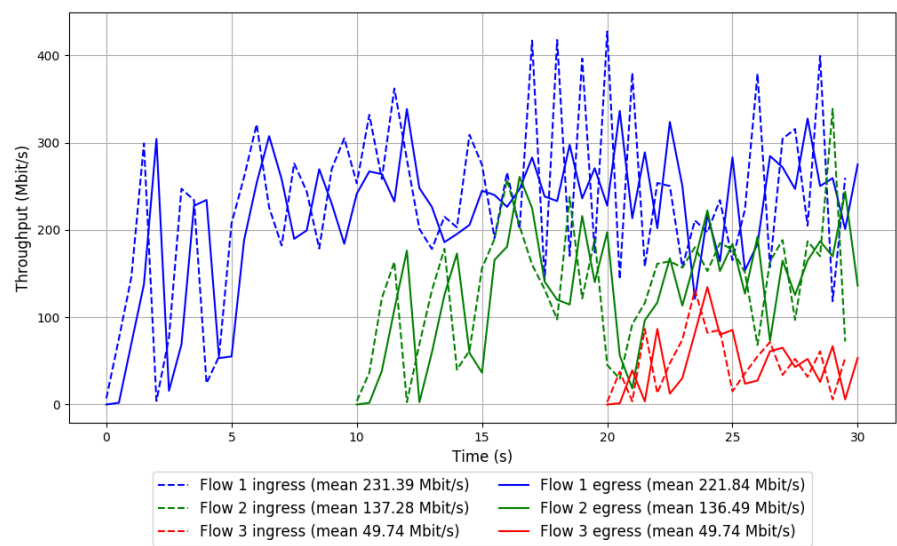Run 1: Report of Verus — Data Link

```
Run 2: Statistics of Verus

Start at: 2019-01-25 17:20:33
End at: 2019-01-25 17:21:03
Local clock offset: 0.07 ms
Remote clock offset: -0.026 ms


# Below is generated by plot.py at 2019-01-25 22:46:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 328.99 Mbit/s
95th percentile per-packet one-way delay: 202.712 ms
Loss rate: 2.97%
-- Flow 1:
Average throughput: 221.84 Mbit/s
95th percentile per-packet one-way delay: 209.459 ms
Loss rate: 4.13%
-- Flow 2:
Average throughput: 136.49 Mbit/s
95th percentile per-packet one-way delay: 126.293 ms
Loss rate: 0.57%
-- Flow 3:
Average throughput: 49.74 Mbit/s
95th percentile per-packet one-way delay: 51.488 ms
Loss rate: 0.00%
```

Run 2: Report of Verus — Data Link

```
Run 3: Statistics of Verus

Start at: 2019-01-25 17:57:28
End at: 2019-01-25 17:57:58
Local clock offset: -0.067 ms
Remote clock offset: 0.083 ms


# Below is generated by plot.py at 2019-01-25 22:46:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 312.26 Mbit/s
95th percentile per-packet one-way delay: 144.525 ms
Loss rate: 0.24%
-- Flow 1:
Average throughput: 172.62 Mbit/s
95th percentile per-packet one-way delay: 155.262 ms
Loss rate: 0.43%
-- Flow 2:
Average throughput: 146.35 Mbit/s
95th percentile per-packet one-way delay: 93.161 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 129.88 Mbit/s
95th percentile per-packet one-way delay: 138.498 ms
Loss rate: 0.00%
```
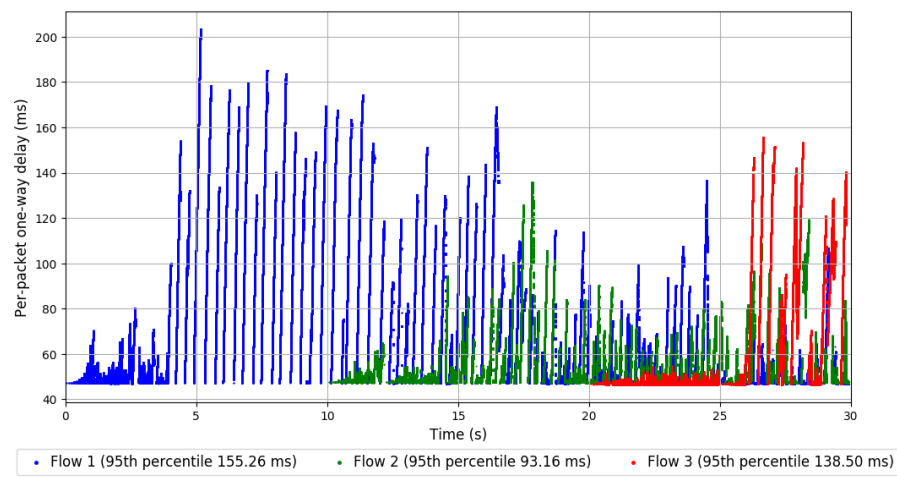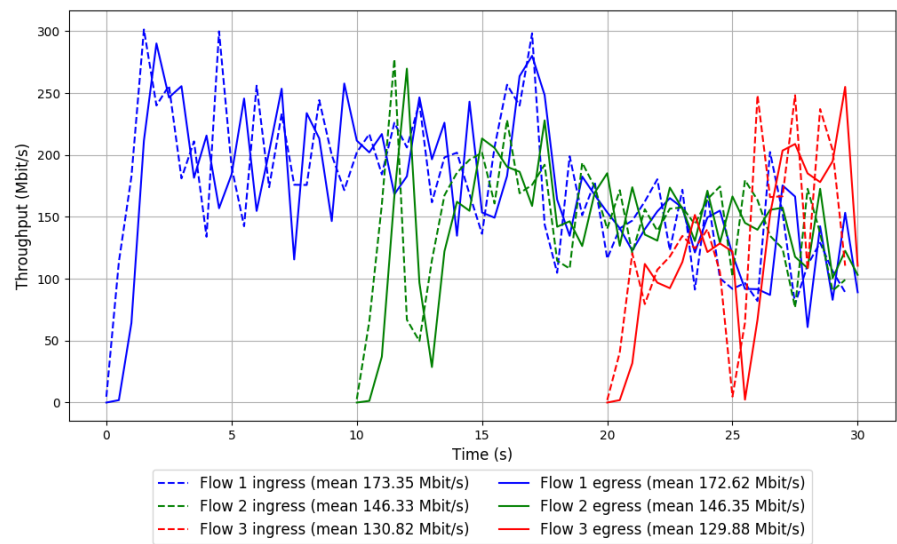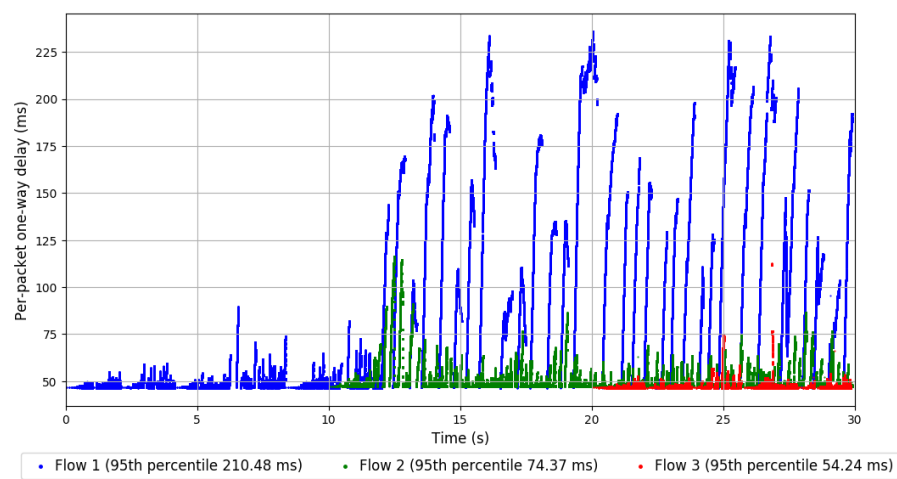
Run 3: Report of Verus — Data Link

Flow 1 ingress (mean 173.35 Mbit/s)   Flow 1 egress (mean 172.62 Mbit/s)
Flow 2 ingress (mean 146.33 Mbit/s)   Flow 2 egress (mean 146.35 Mbit/s)
Flow 3 ingress (mean 130.82 Mbit/s)   Flow 3 egress (mean 129.88 Mbit/s)

Flow 1 (95th percentile 155.26 ms)   Flow 2 (95th percentile 93.16 ms)   Flow 3 (95th percentile 138.50 ms)
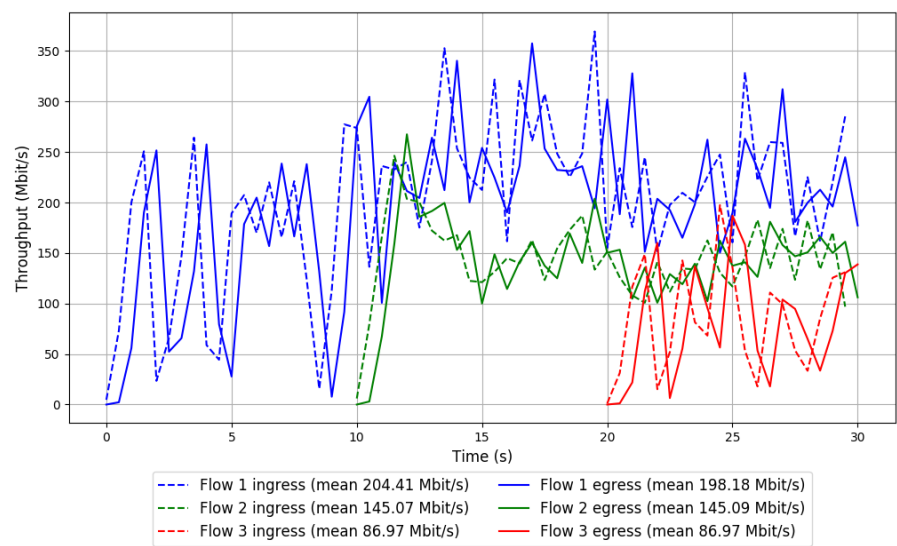
```
Run 4: Statistics of Verus

Start at: 2019-01-25 18:34:14
End at: 2019-01-25 18:34:44
Local clock offset: -0.133 ms
Remote clock offset: 0.263 ms

# Below is generated by plot.py at 2019-01-25 22:46:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 323.10 Mbit/s
95th percentile per-packet one-way delay: 198.700 ms
Loss rate: 1.89%
-- Flow 1:
Average throughput: 198.18 Mbit/s
95th percentile per-packet one-way delay: 210.477 ms
Loss rate: 3.04%
-- Flow 2:
Average throughput: 145.09 Mbit/s
95th percentile per-packet one-way delay: 74.368 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 86.97 Mbit/s
95th percentile per-packet one-way delay: 54.244 ms
Loss rate: 0.00%
```

Run 4: Report of Verus — Data Link

```
Run 5: Statistics of Verus

Start at: 2019-01-25 19:11:02
End at: 2019-01-25 19:11:32
Local clock offset: 0.084 ms
Remote clock offset: 0.307 ms


# Below is generated by plot.py at 2019-01-25 22:46:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 284.70 Mbit/s
95th percentile per-packet one-way delay: 76.129 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 143.63 Mbit/s
95th percentile per-packet one-way delay: 79.505 ms
Loss rate: 0.04%
-- Flow 2:
Average throughput: 162.65 Mbit/s
95th percentile per-packet one-way delay: 73.567 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 100.46 Mbit/s
95th percentile per-packet one-way delay: 61.938 ms
Loss rate: 0.00%
```
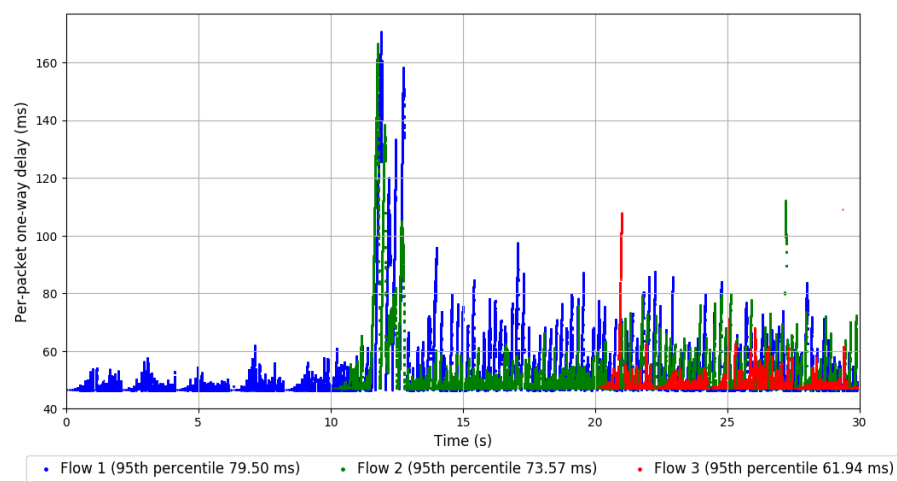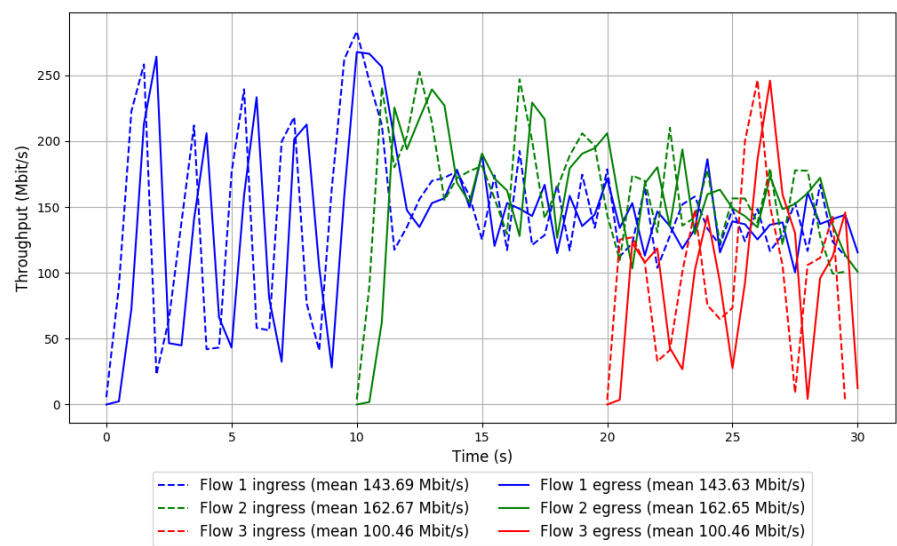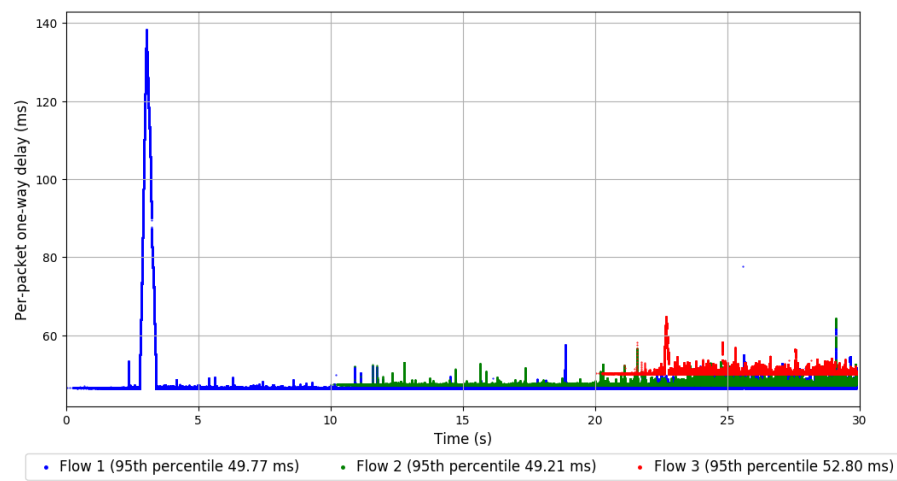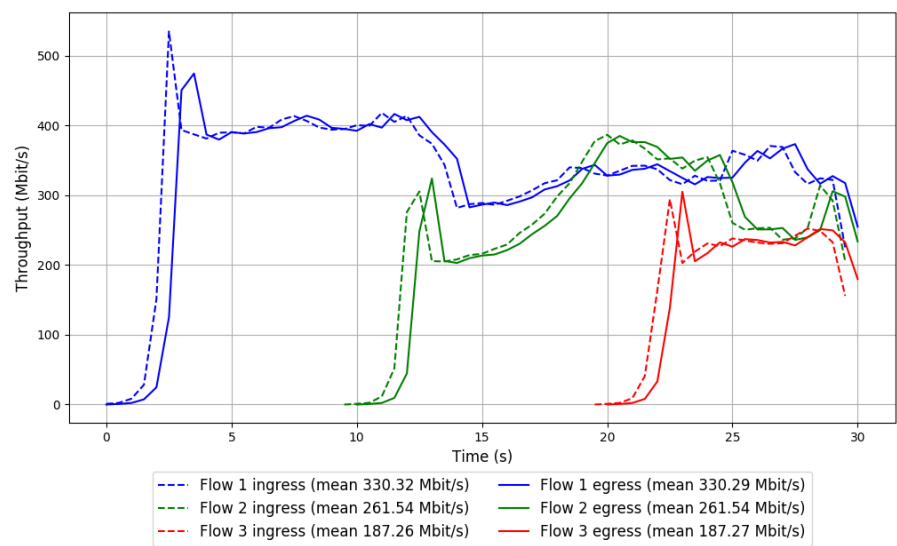
Run 5: Report of Verus — Data Link

Flow 1 ingress (mean 143.69 Mbit/s) --- Flow 1 egress (mean 143.63 Mbit/s)
Flow 2 ingress (mean 162.67 Mbit/s) --- Flow 2 egress (mean 162.65 Mbit/s)
Flow 3 ingress (mean 100.46 Mbit/s) --- Flow 3 egress (mean 100.46 Mbit/s)

Flow 1 (95th percentile 79.50 ms) Flow 2 (95th percentile 73.57 ms) Flow 3 (95th percentile 61.94 ms)

```
Run 1: Statistics of PCC-Vivace

Start at: 2019-01-25 16:35:56
End at: 2019-01-25 16:36:26
Local clock offset: -0.03 ms
Remote clock offset: -0.059 ms


# Below is generated by plot.py at 2019-01-25 22:48:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 566.15 Mbit/s
95th percentile per-packet one-way delay: 50.954 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 330.29 Mbit/s
95th percentile per-packet one-way delay: 49.769 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 261.54 Mbit/s
95th percentile per-packet one-way delay: 49.207 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 187.27 Mbit/s
95th percentile per-packet one-way delay: 52.797 ms
Loss rate: 0.02%
```

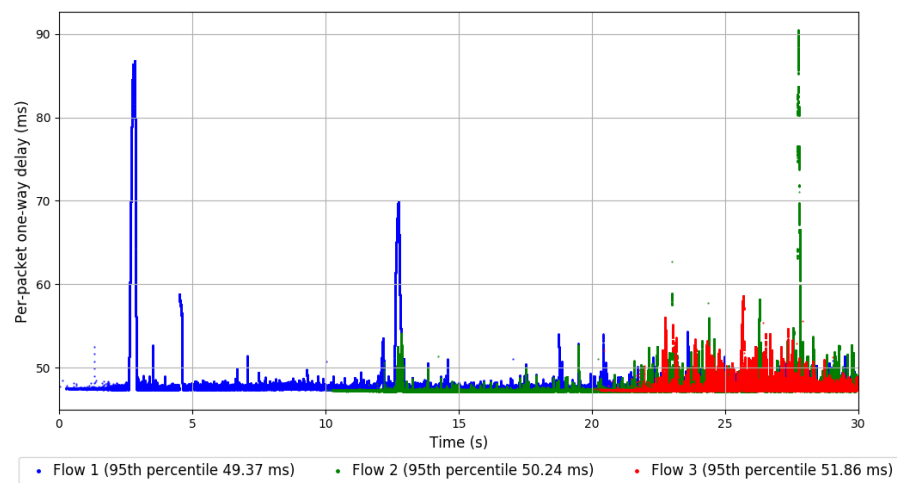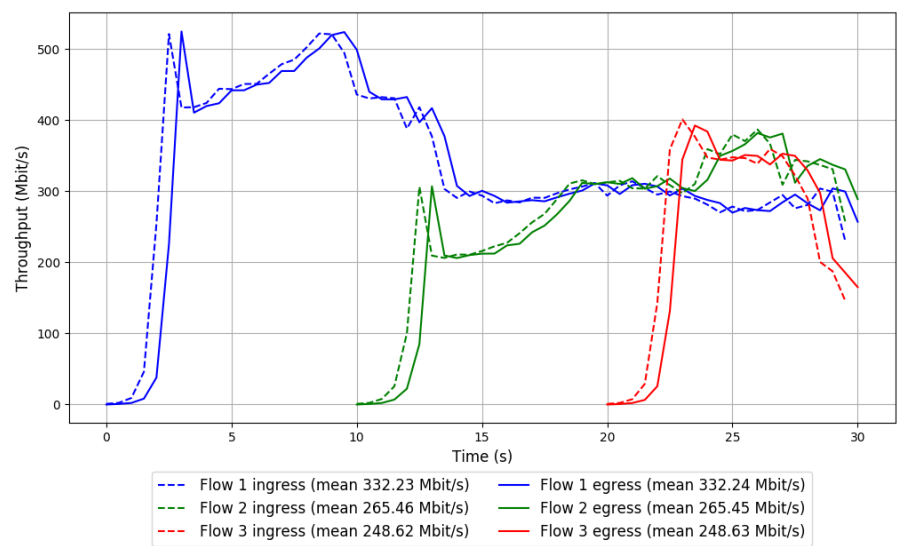Run 1: Report of PCC-Vivace — Data Link

```
Run 2: Statistics of PCC-Vivace

Start at: 2019-01-25 17:12:28
End at: 2019-01-25 17:12:58
Local clock offset: -0.037 ms
Remote clock offset: -0.107 ms


# Below is generated by plot.py at 2019-01-25 22:49:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 590.73 Mbit/s
95th percentile per-packet one-way delay: 50.466 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 332.24 Mbit/s
95th percentile per-packet one-way delay: 49.374 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 265.45 Mbit/s
95th percentile per-packet one-way delay: 50.241 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 248.63 Mbit/s
95th percentile per-packet one-way delay: 51.857 ms
Loss rate: 0.00%
```

Run 2: Report of PCC-Vivace — Data Link

```
Run 3: Statistics of PCC-Vivace

Start at: 2019-01-25 17:49:25
End at: 2019-01-25 17:49:55
Local clock offset: -0.105 ms
Remote clock offset: 0.039 ms


# Below is generated by plot.py at 2019-01-25 22:49:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 530.14 Mbit/s
95th percentile per-packet one-way delay: 51.537 ms
Loss rate: 0.14%
-- Flow 1:
Average throughput: 323.71 Mbit/s
95th percentile per-packet one-way delay: 75.987 ms
Loss rate: 0.23%
-- Flow 2:
Average throughput: 264.80 Mbit/s
95th percentile per-packet one-way delay: 49.812 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 91.54 Mbit/s
95th percentile per-packet one-way delay: 47.568 ms
Loss rate: 0.00%
```
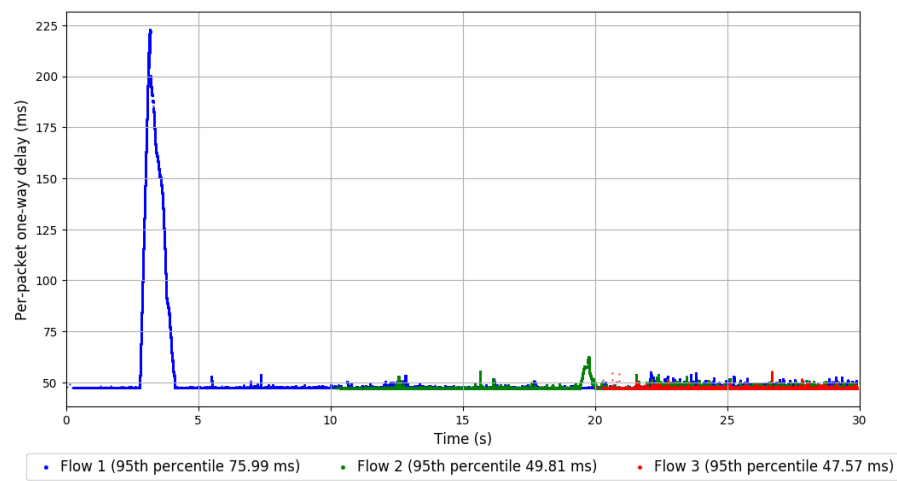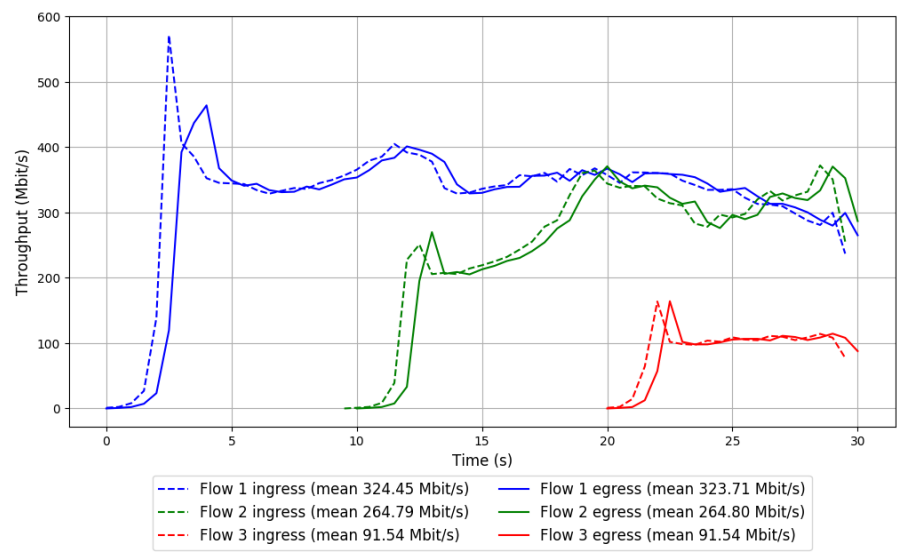
Run 3: Report of PCC-Vivace — Data Link

```
Run 4: Statistics of PCC-Vivace

Start at: 2019-01-25 18:26:18
End at: 2019-01-25 18:26:48
Local clock offset: 0.003 ms
Remote clock offset: 0.166 ms


# Below is generated by plot.py at 2019-01-25 22:49:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 536.38 Mbit/s
95th percentile per-packet one-way delay: 56.631 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 346.25 Mbit/s
95th percentile per-packet one-way delay: 52.315 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 258.55 Mbit/s
95th percentile per-packet one-way delay: 102.884 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 55.54 Mbit/s
95th percentile per-packet one-way delay: 47.588 ms
Loss rate: 0.00%
```
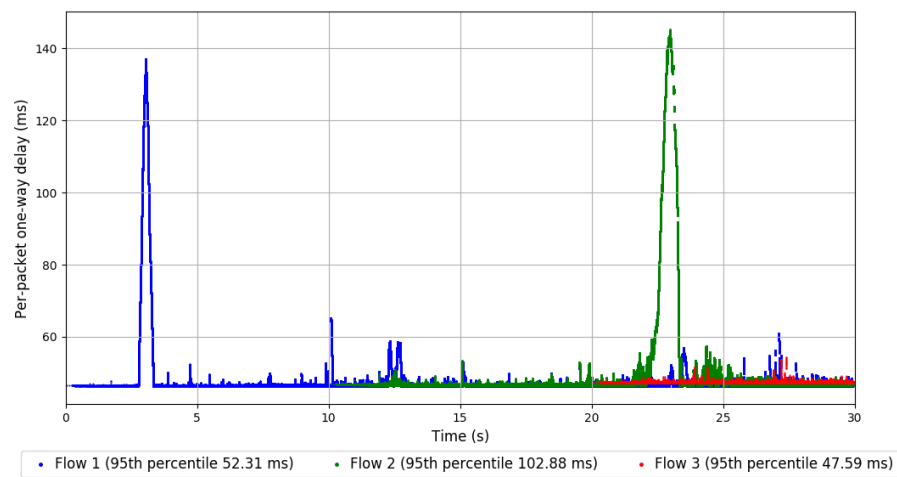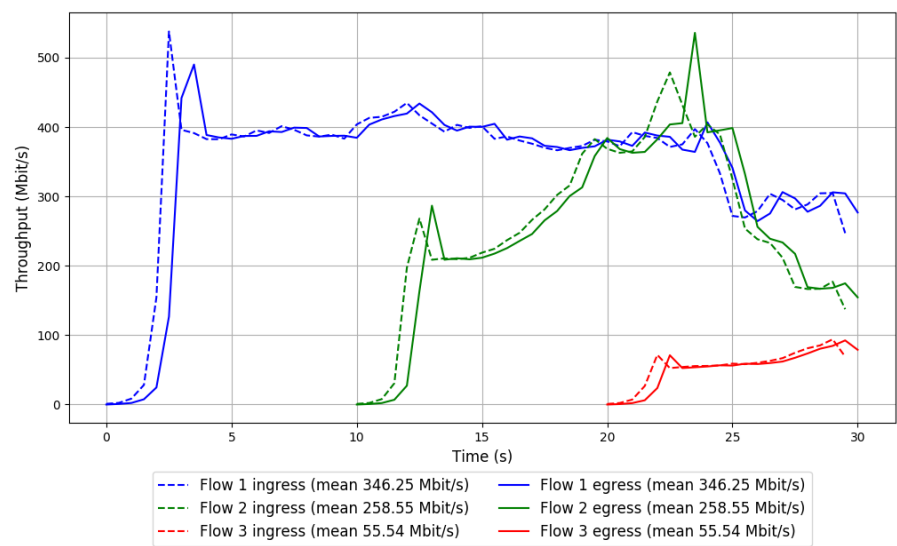
Run 4: Report of PCC-Vivace — Data Link

- - - Flow 1 ingress (mean 346.25 Mbit/s) —— Flow 1 egress (mean 346.25 Mbit/s)
- - - Flow 2 ingress (mean 258.55 Mbit/s) —— Flow 2 egress (mean 258.55 Mbit/s)
- - - Flow 3 ingress (mean 55.54 Mbit/s) —— Flow 3 egress (mean 55.54 Mbit/s)

- Flow 1 (95th percentile 52.31 ms)   • Flow 2 (95th percentile 102.88 ms)   • Flow 3 (95th percentile 47.59 ms)

```
Run 5: Statistics of PCC-Vivace

Start at: 2019-01-25 19:03:04
End at: 2019-01-25 19:03:34
Local clock offset: 0.001 ms
Remote clock offset: 0.293 ms


# Below is generated by plot.py at 2019-01-25 22:49:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 525.13 Mbit/s
95th percentile per-packet one-way delay: 81.767 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 313.74 Mbit/s
95th percentile per-packet one-way delay: 136.466 ms
Loss rate: 0.22%
-- Flow 2:
Average throughput: 278.01 Mbit/s
95th percentile per-packet one-way delay: 49.168 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 80.53 Mbit/s
95th percentile per-packet one-way delay: 47.898 ms
Loss rate: 0.00%
```
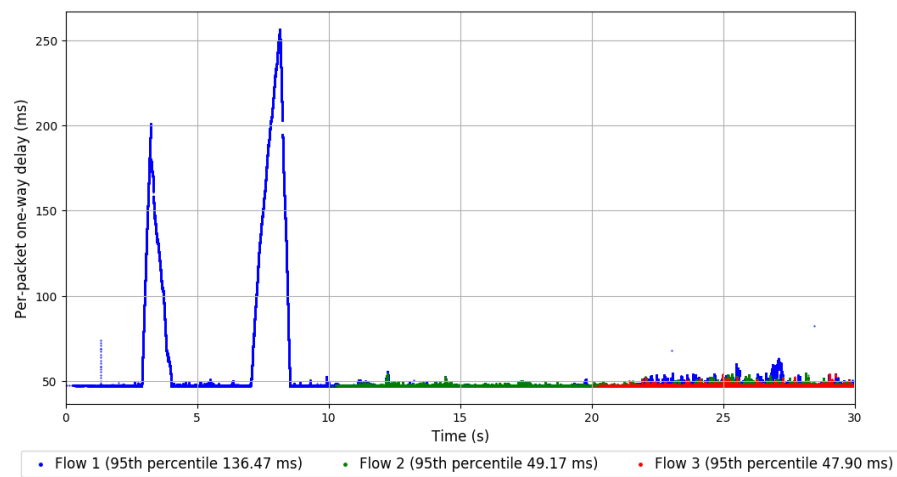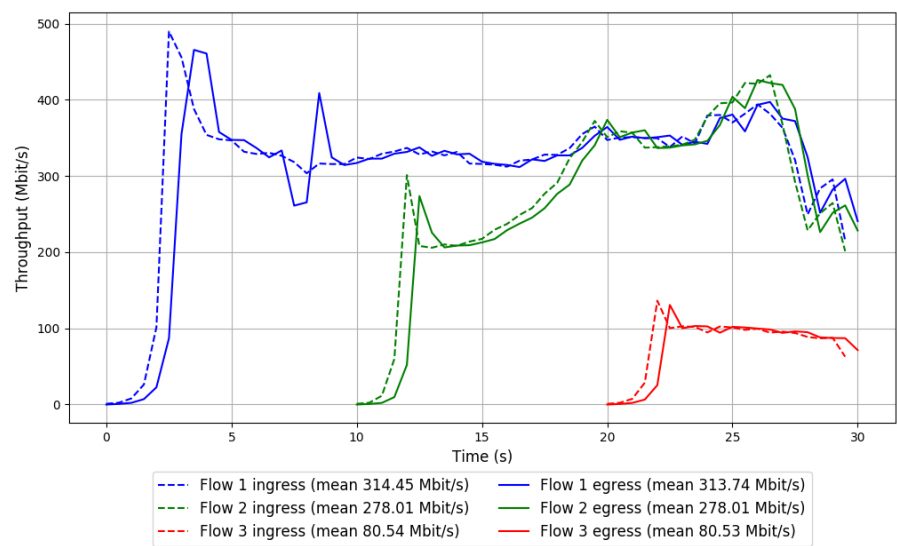
Run 5: Report of PCC-Vivace — Data Link

```
Run 1: Statistics of WebRTC media

Start at: 2019-01-25 16:37:45
End at: 2019-01-25 16:38:15
Local clock offset: -0.023 ms
Remote clock offset: 0.042 ms

# Below is generated by plot.py at 2019-01-25 22:49:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.04 Mbit/s
95th percentile per-packet one-way delay: 47.658 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 47.427 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.68 Mbit/s
95th percentile per-packet one-way delay: 47.505 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.67 Mbit/s
95th percentile per-packet one-way delay: 47.711 ms
Loss rate: 0.00%
```
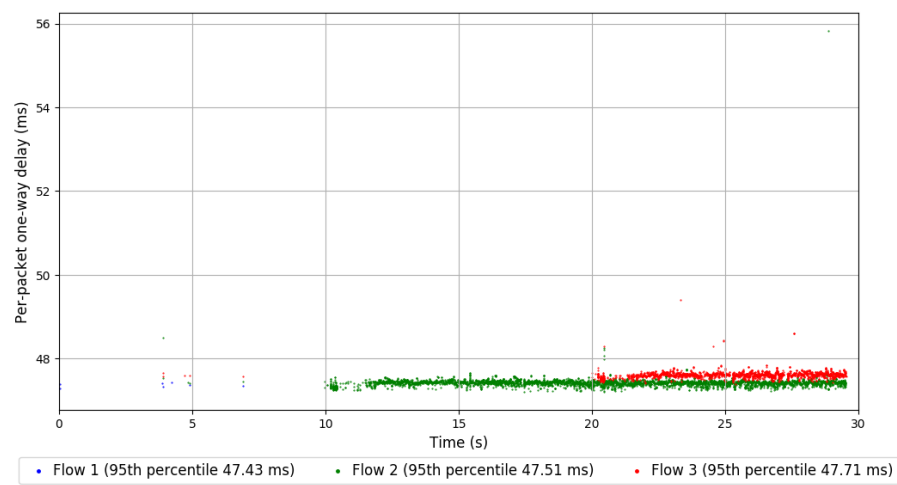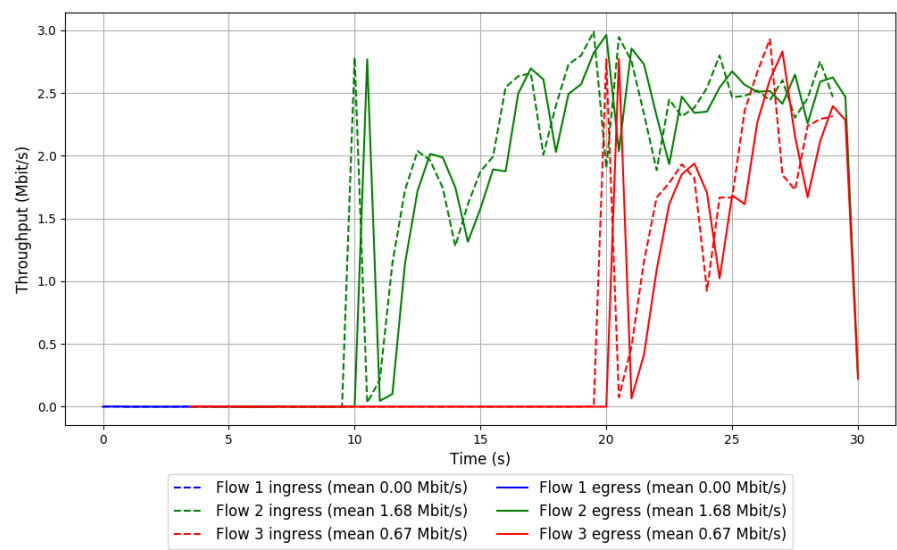
Run 1: Report of WebRTC media — Data Link

```
Run 2: Statistics of WebRTC media

Start at: 2019-01-25 17:14:19
End at: 2019-01-25 17:14:49
Local clock offset: -0.038 ms
Remote clock offset: 0.083 ms


# Below is generated by plot.py at 2019-01-25 22:49:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 47.661 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 47.674 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 46.812 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 47.667 ms
Loss rate: 0.00%
```
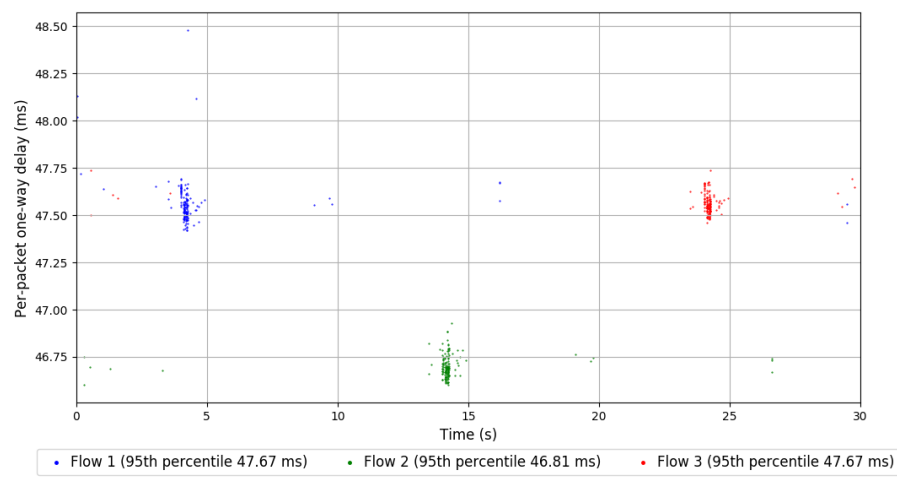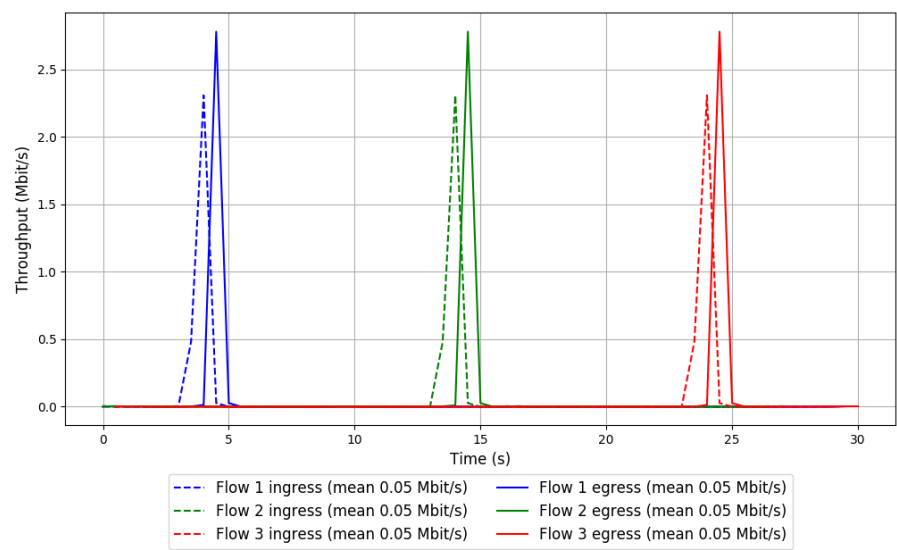
Run 2: Report of WebRTC media — Data Link

```
Run 3: Statistics of WebRTC media

Start at: 2019-01-25 17:51:13
End at: 2019-01-25 17:51:43
Local clock offset: -0.08 ms
Remote clock offset: 0.043 ms


# Below is generated by plot.py at 2019-01-25 22:49:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.92 Mbit/s
95th percentile per-packet one-way delay: 47.525 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 2.13 Mbit/s
95th percentile per-packet one-way delay: 47.492 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.28 Mbit/s
95th percentile per-packet one-way delay: 47.546 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.51 Mbit/s
95th percentile per-packet one-way delay: 47.504 ms
Loss rate: 0.00%
```
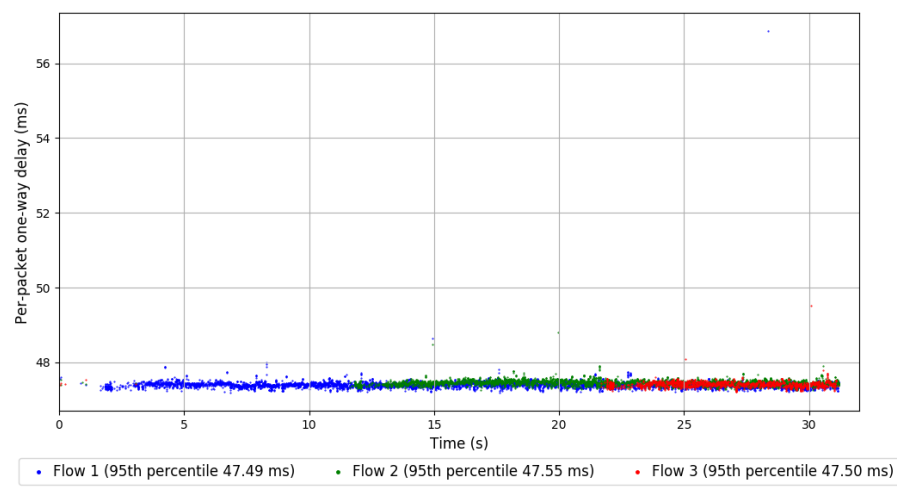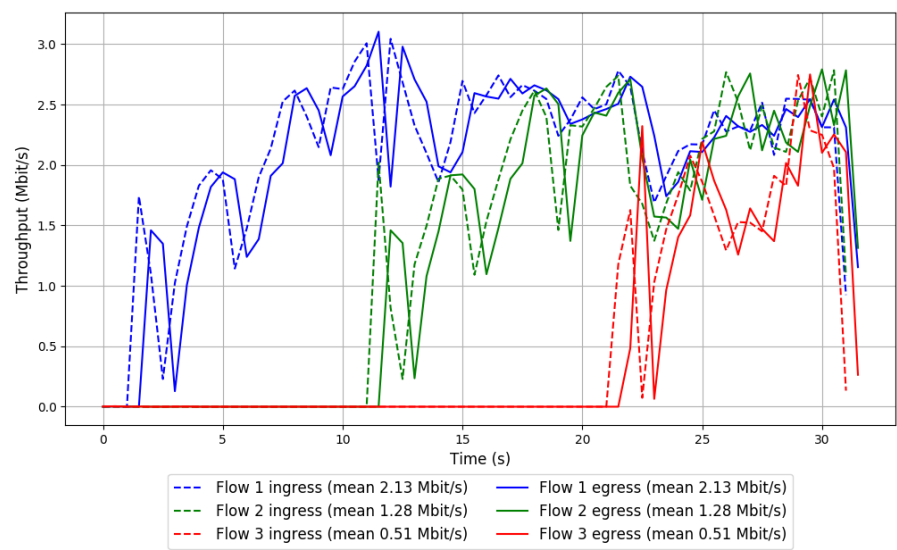
Run 3: Report of WebRTC media — Data Link

```
Run 4: Statistics of WebRTC media

Start at: 2019-01-25 18:28:05
End at: 2019-01-25 18:28:35
Local clock offset: -0.141 ms
Remote clock offset: 0.239 ms


# Below is generated by plot.py at 2019-01-25 22:49:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.87 Mbit/s
95th percentile per-packet one-way delay: 47.629 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 47.549 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.31 Mbit/s
95th percentile per-packet one-way delay: 47.641 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.54 Mbit/s
95th percentile per-packet one-way delay: 47.437 ms
Loss rate: 0.00%
```
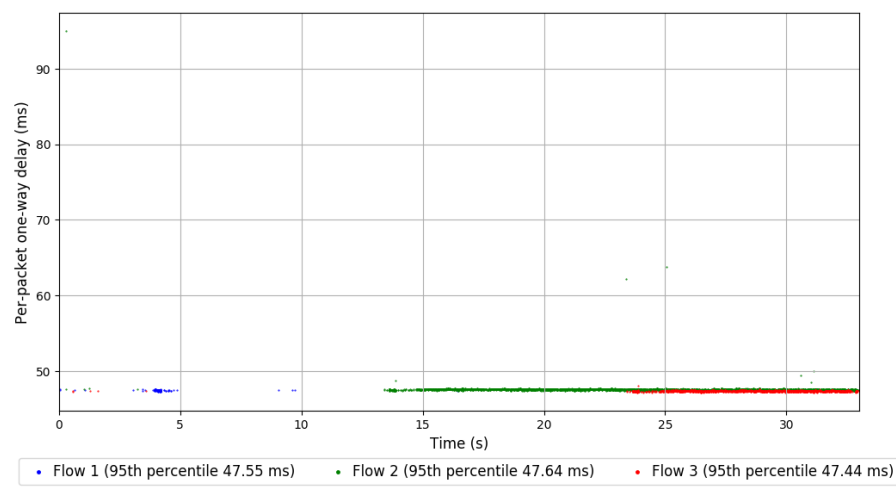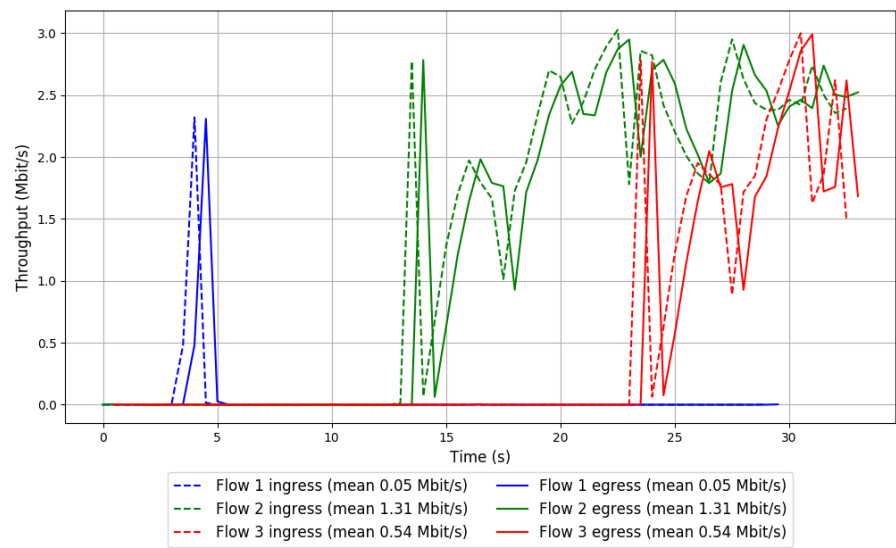
Run 4: Report of WebRTC media — Data Link

```
Run 5: Statistics of WebRTC media

Start at: 2019-01-25 19:04:51
End at: 2019-01-25 19:05:21
Local clock offset: -0.423 ms
Remote clock offset: 0.284 ms


# Below is generated by plot.py at 2019-01-25 22:49:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 47.770 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 47.283 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 47.094 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 47.798 ms
Loss rate: 0.00%
```

Run 5: Report of WebRTC media — Data Link