Pantheon Report

Generated at 2019-02-06 12:03:33 (UTC).

Data path: GCE Sydney on `ens4` (*local*) →GCE Tokyo 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.
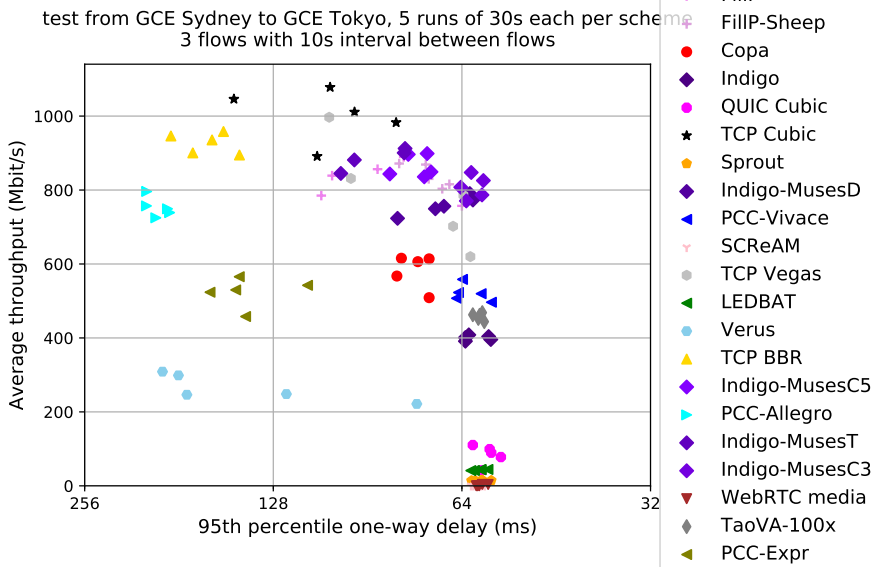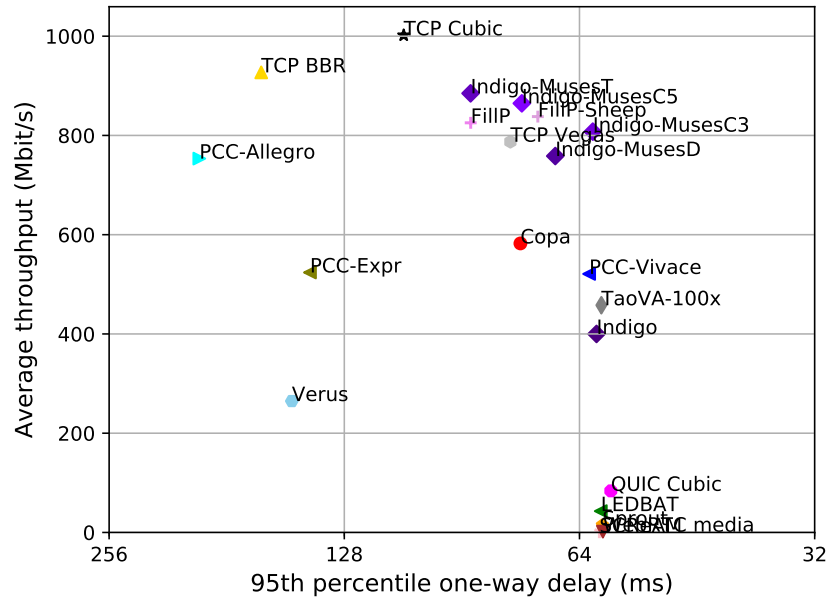
```
System info:
Linux 4.15.0-1026-gcp
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912

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

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

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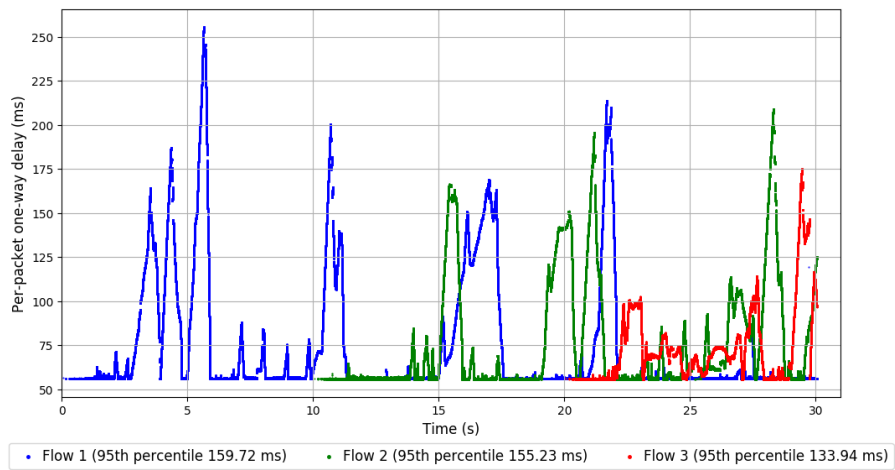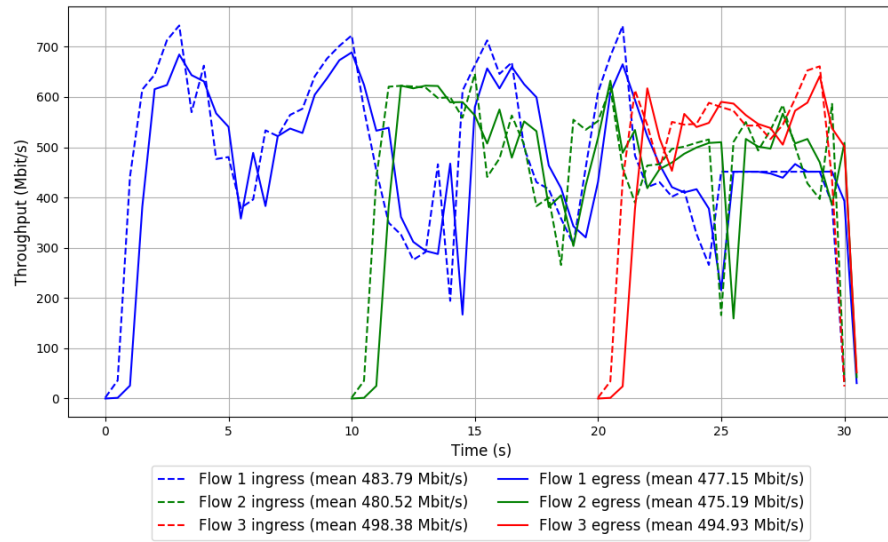3 flows with 10s interval between flows (mean of all runs by scheme)

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

3

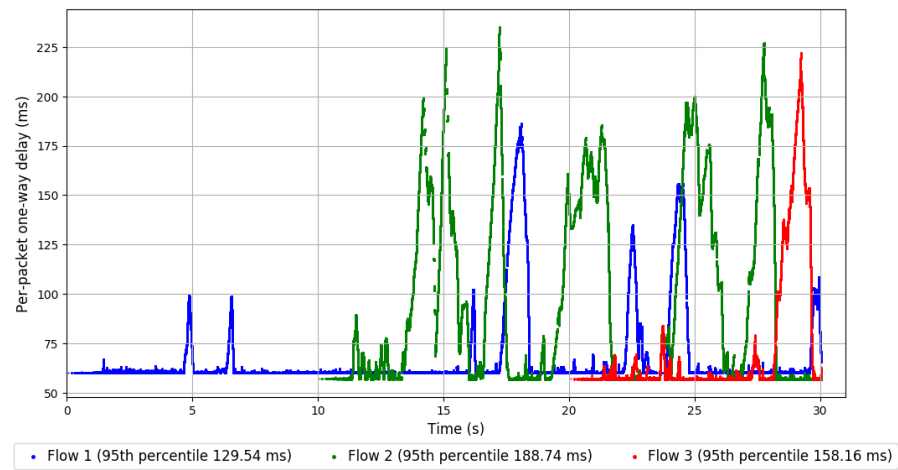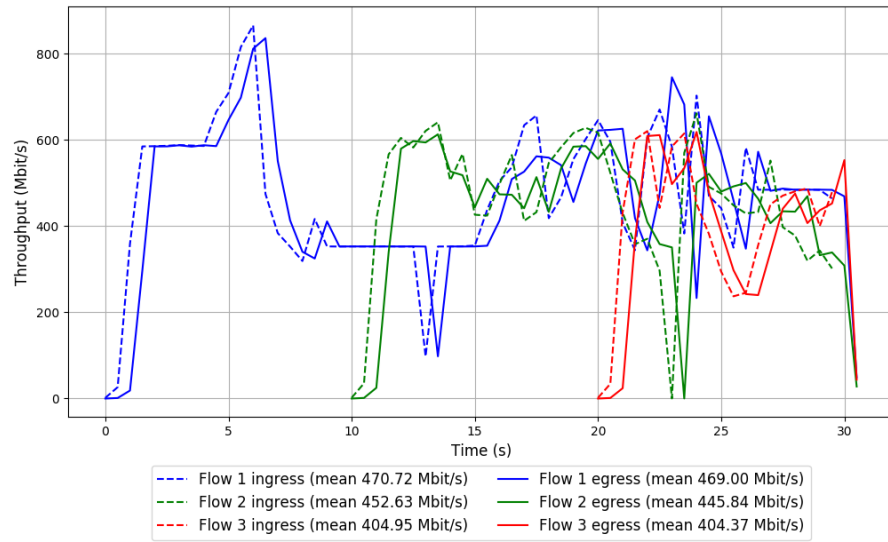| scheme	# runs	mean avg tput (Mbit/s)			mean 95th-%ile delay (ms)			mean loss rate (%)		
		flow 1	flow 2	flow 3	flow 1	flow 2	flow 3	flow 1	flow 2	flow 3
TCP BBR	5	463.16	473.04	447.69	151.15	162.30	153.54	0.78	1.05	0.77
Copa	5	307.13	286.43	254.49	71.00	76.57	100.87	0.00	0.01	0.01
TCP Cubic	5	532.98	476.89	454.70	88.34	95.95	116.20	0.04	0.04	0.36
FillP	5	519.22	344.26	232.58	93.97	61.98	59.51	0.28	0.01	0.00
FillP-Sheep	5	541.71	326.02	239.38	75.84	61.94	59.98	0.10	0.00	0.01
Indigo	5	215.64	198.99	162.71	60.43	61.15	59.30	0.00	0.00	0.18
Indigo-MusesC3	5	484.94	388.41	287.88	62.21	60.97	59.94	0.00	0.01	0.00
Indigo-MusesC5	5	531.61	445.35	178.77	76.60	70.77	62.03	0.00	0.00	0.01
Indigo-MusesD	5	458.50	346.47	298.41	69.95	67.36	60.23	0.00	0.00	0.00
Indigo-MusesT	4	528.03	421.92	314.00	94.11	66.09	61.16	0.05	0.01	0.00
LEDBAT	5	27.90	18.22	9.03	59.37	58.42	59.47	0.02	0.00	0.00
PCC-Allegro	5	415.62	366.99	284.71	196.10	194.81	167.37	3.56	5.01	2.44
PCC-Expr	5	310.59	234.35	173.98	141.35	87.12	86.55	1.29	0.23	0.67
QUIC Cubic	5	39.37	46.28	41.84	58.43	57.07	57.65	0.00	0.00	0.00
SCReAM	5	0.22	0.22	0.22	59.70	58.42	58.36	0.00	0.00	0.00
Sprout	5	7.48	7.52	6.72	58.49	57.22	60.03	0.00	0.00	0.00
TaoVA-100x	5	235.26	228.42	214.56	58.33	59.57	60.17	0.00	0.00	0.01
TCP Vegas	5	444.63	335.13	359.21	78.31	69.89	72.92	0.02	0.08	0.01
Verus	5	149.24	136.33	77.62	145.19	144.30	95.08	0.80	0.69	0.00
PCC-Vivace	5	323.30	253.74	87.47	62.03	66.30	58.83	0.00	0.01	0.00
WebRTC media	5	0.85	0.54	0.23	57.68	59.10	57.81	0.00	0.01	0.00

```
Run 1: Statistics of TCP BBR

Start at: 2019-02-06 05:00:58
End at: 2019-02-06 05:01:28
Local clock offset: -0.194 ms
Remote clock offset: -1.486 ms


# Below is generated by plot.py at 2019-02-06 08:50:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 958.32 Mbit/s
95th percentile per-packet one-way delay: 153.716 ms
Loss rate: 1.38%
-- Flow 1:
Average throughput: 477.15 Mbit/s
95th percentile per-packet one-way delay: 159.724 ms
Loss rate: 1.51%
-- Flow 2:
Average throughput: 475.19 Mbit/s
95th percentile per-packet one-way delay: 155.226 ms
Loss rate: 1.32%
-- Flow 3:
Average throughput: 494.93 Mbit/s
95th percentile per-packet one-way delay: 133.943 ms
Loss rate: 1.11%
```

Run 1: Report of TCP BBR — Data Link

```
Run 2: Statistics of TCP BBR

Start at: 2019-02-06 05:40:07
End at: 2019-02-06 05:40:37
Local clock offset: -0.038 ms
Remote clock offset: -0.114 ms


# Below is generated by plot.py at 2019-02-06 08:50:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 900.49 Mbit/s
95th percentile per-packet one-way delay: 172.062 ms
Loss rate: 0.70%
-- Flow 1:
Average throughput: 469.00 Mbit/s
95th percentile per-packet one-way delay: 129.540 ms
Loss rate: 0.36%
-- Flow 2:
Average throughput: 445.84 Mbit/s
95th percentile per-packet one-way delay: 188.738 ms
Loss rate: 1.50%
-- Flow 3:
Average throughput: 404.37 Mbit/s
95th percentile per-packet one-way delay: 158.157 ms
Loss rate: 0.10%
```
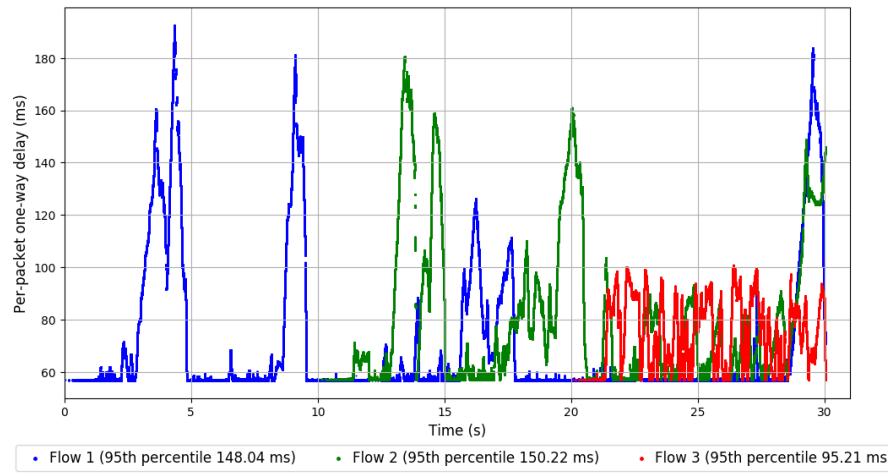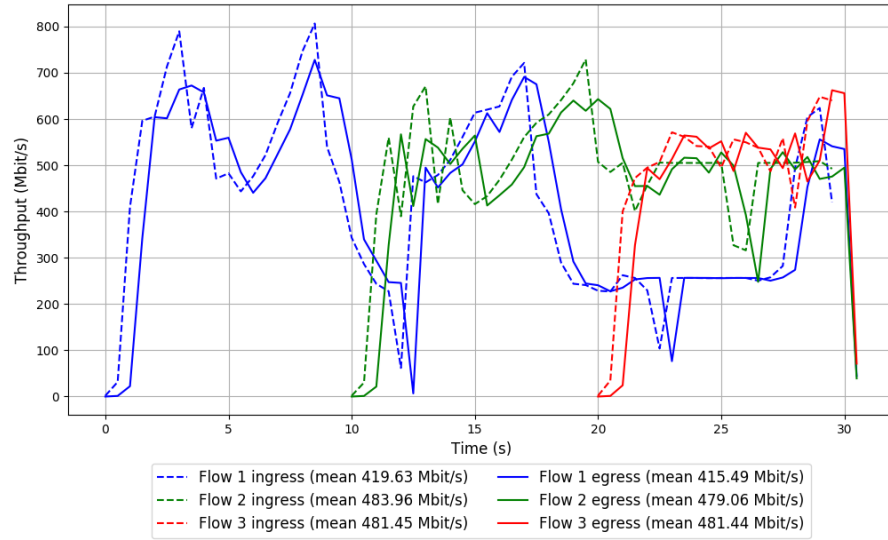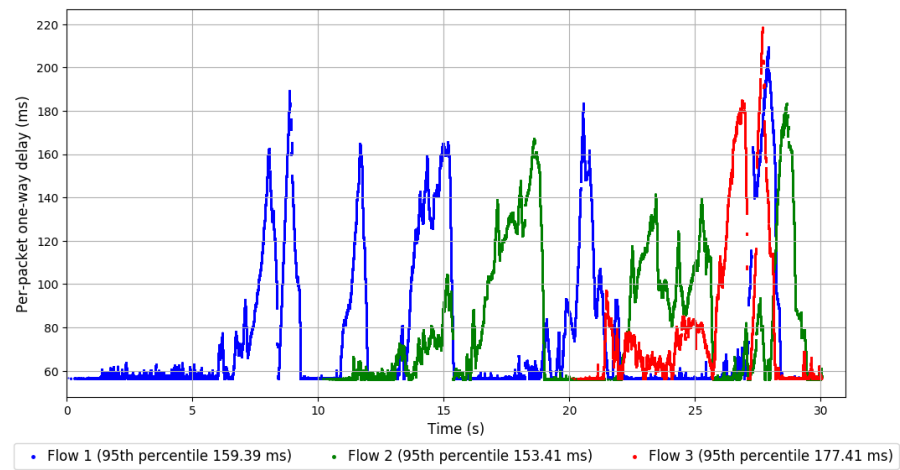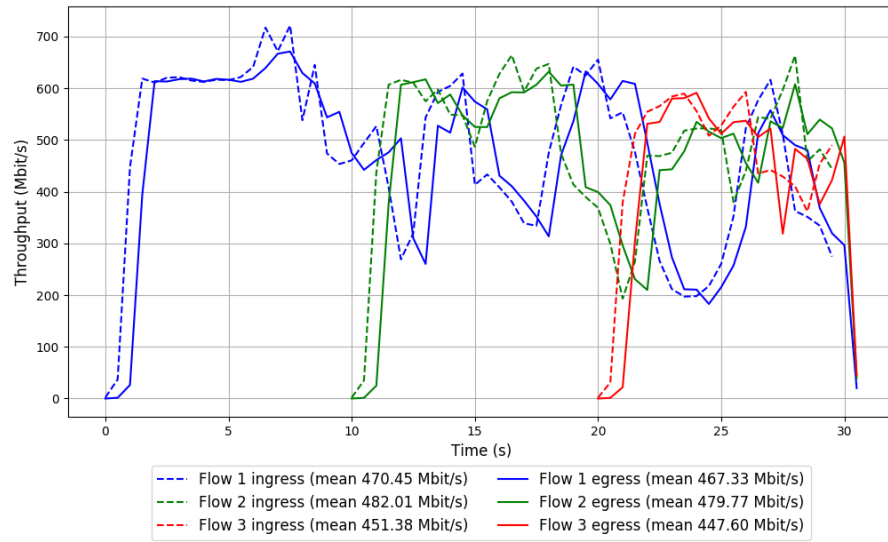
Run 2: Report of TCP BBR — Data Link

Flow 1 ingress (mean 470.72 Mbit/s) --- Flow 1 egress (mean 469.00 Mbit/s)
Flow 2 ingress (mean 452.63 Mbit/s) --- Flow 2 egress (mean 445.84 Mbit/s)
Flow 3 ingress (mean 404.95 Mbit/s) --- Flow 3 egress (mean 404.37 Mbit/s)

Flow 1 (95th percentile 129.54 ms) · Flow 2 (95th percentile 188.74 ms) · Flow 3 (95th percentile 158.16 ms)
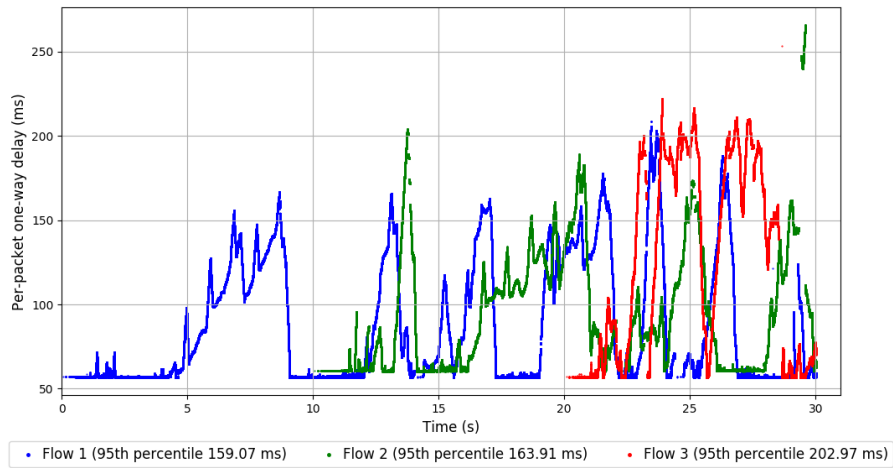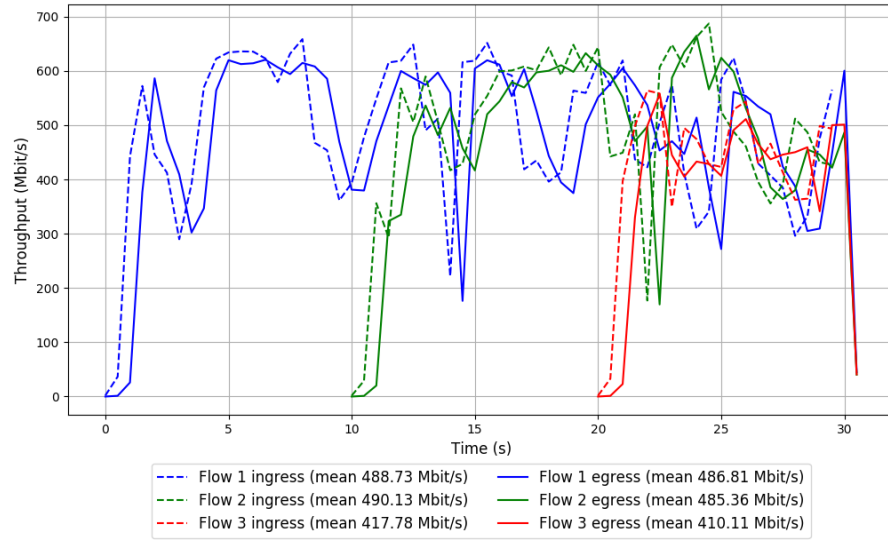
```
Run 3: Statistics of TCP BBR

Start at: 2019-02-06 06:20:11
End at: 2019-02-06 06:20:41
Local clock offset: -0.008 ms
Remote clock offset: 0.012 ms


# Below is generated by plot.py at 2019-02-06 08:50:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 894.79 Mbit/s
95th percentile per-packet one-way delay: 144.953 ms
Loss rate: 0.82%
-- Flow 1:
Average throughput: 415.49 Mbit/s
95th percentile per-packet one-way delay: 148.040 ms
Loss rate: 0.98%
-- Flow 2:
Average throughput: 479.06 Mbit/s
95th percentile per-packet one-way delay: 150.222 ms
Loss rate: 1.01%
-- Flow 3:
Average throughput: 481.44 Mbit/s
95th percentile per-packet one-way delay: 95.212 ms
Loss rate: 0.00%
```

Run 3: Report of TCP BBR — Data Link

Flow 1 ingress (mean 419.63 Mbit/s) --- Flow 1 egress (mean 415.49 Mbit/s)
Flow 2 ingress (mean 483.96 Mbit/s) --- Flow 2 egress (mean 479.06 Mbit/s)
Flow 3 ingress (mean 481.45 Mbit/s) --- Flow 3 egress (mean 481.44 Mbit/s)

Flow 1 (95th percentile 148.04 ms)   Flow 2 (95th percentile 150.22 ms)   Flow 3 (95th percentile 95.21 ms)

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```
Run 4: Statistics of TCP BBR

Start at: 2019-02-06 06:59:01
End at: 2019-02-06 06:59:31
Local clock offset: -0.14 ms
Remote clock offset: -0.717 ms


# Below is generated by plot.py at 2019-02-06 08:50:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 935.56 Mbit/s
95th percentile per-packet one-way delay: 160.318 ms
Loss rate: 0.62%
-- Flow 1:
Average throughput: 467.33 Mbit/s
95th percentile per-packet one-way delay: 159.389 ms
Loss rate: 0.67%
-- Flow 2:
Average throughput: 479.77 Mbit/s
95th percentile per-packet one-way delay: 153.407 ms
Loss rate: 0.46%
-- Flow 3:
Average throughput: 447.60 Mbit/s
95th percentile per-packet one-way delay: 177.410 ms
Loss rate: 0.84%
```
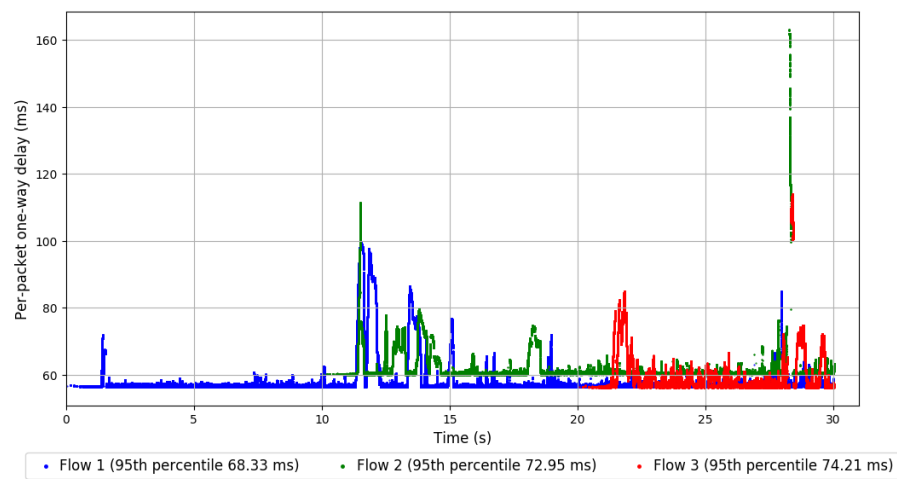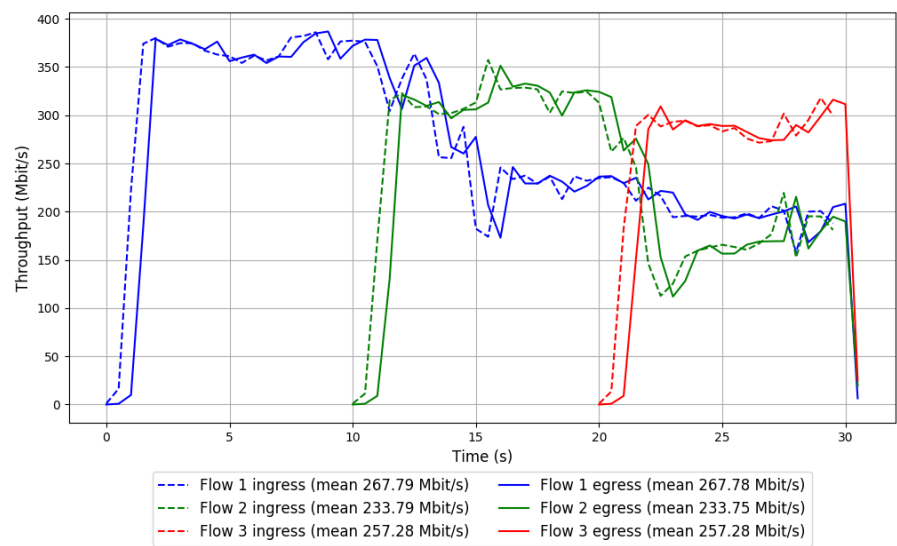
Run 4: Report of TCP BBR — Data Link

- - - Flow 1 ingress (mean 470.45 Mbit/s)   —— Flow 1 egress (mean 467.33 Mbit/s)
- - - Flow 2 ingress (mean 482.01 Mbit/s)   —— Flow 2 egress (mean 479.77 Mbit/s)
- - - Flow 3 ingress (mean 451.38 Mbit/s)   —— Flow 3 egress (mean 447.60 Mbit/s)

• Flow 1 (95th percentile 159.39 ms)   • Flow 2 (95th percentile 153.41 ms)   • Flow 3 (95th percentile 177.41 ms)
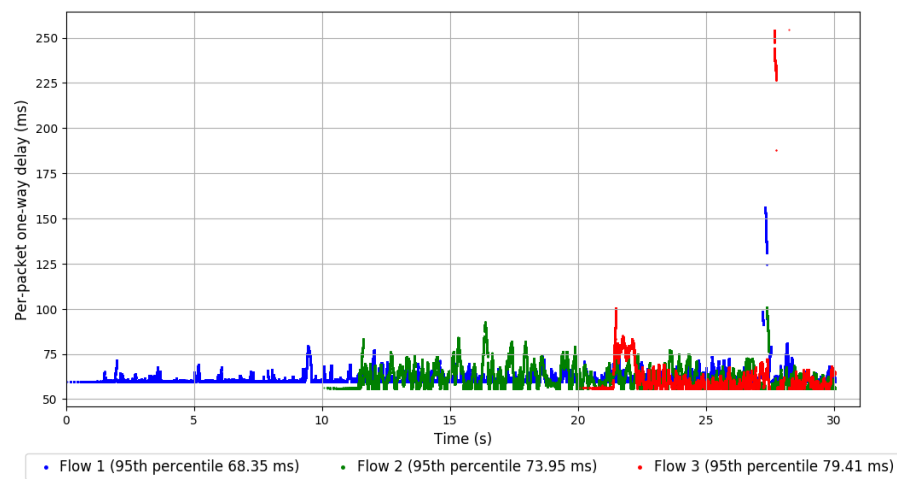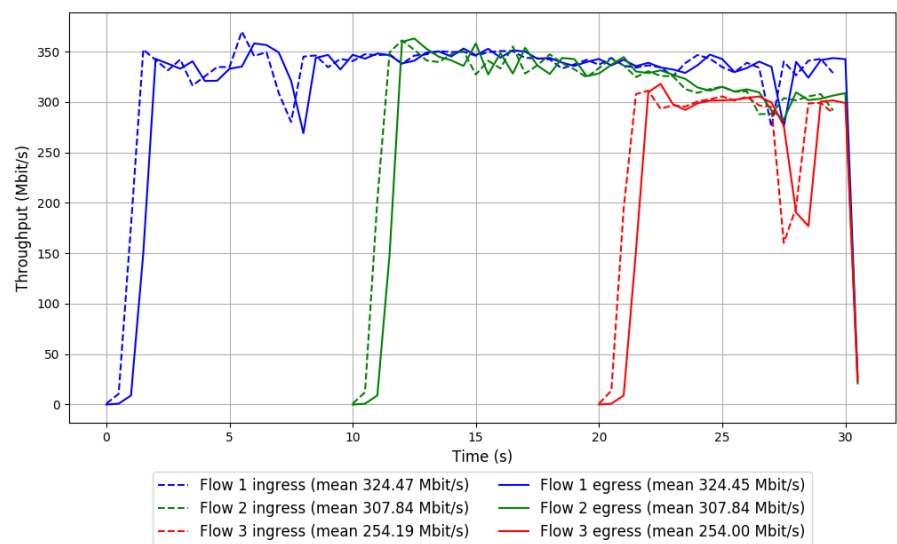
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```
Run 5: Statistics of TCP BBR

Start at: 2019-02-06 07:38:41
End at: 2019-02-06 07:39:11
Local clock offset: -0.534 ms
Remote clock offset: -0.631 ms


# Below is generated by plot.py at 2019-02-06 08:50:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 946.24 Mbit/s
95th percentile per-packet one-way delay: 186.486 ms
Loss rate: 0.79%
-- Flow 1:
Average throughput: 486.81 Mbit/s
95th percentile per-packet one-way delay: 159.067 ms
Loss rate: 0.39%
-- Flow 2:
Average throughput: 485.36 Mbit/s
95th percentile per-packet one-way delay: 163.906 ms
Loss rate: 0.97%
-- Flow 3:
Average throughput: 410.11 Mbit/s
95th percentile per-packet one-way delay: 202.965 ms
Loss rate: 1.81%
```
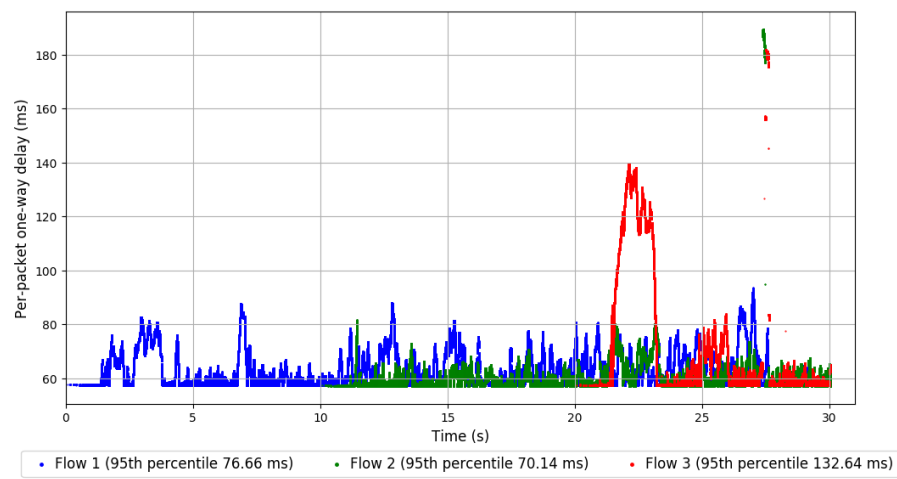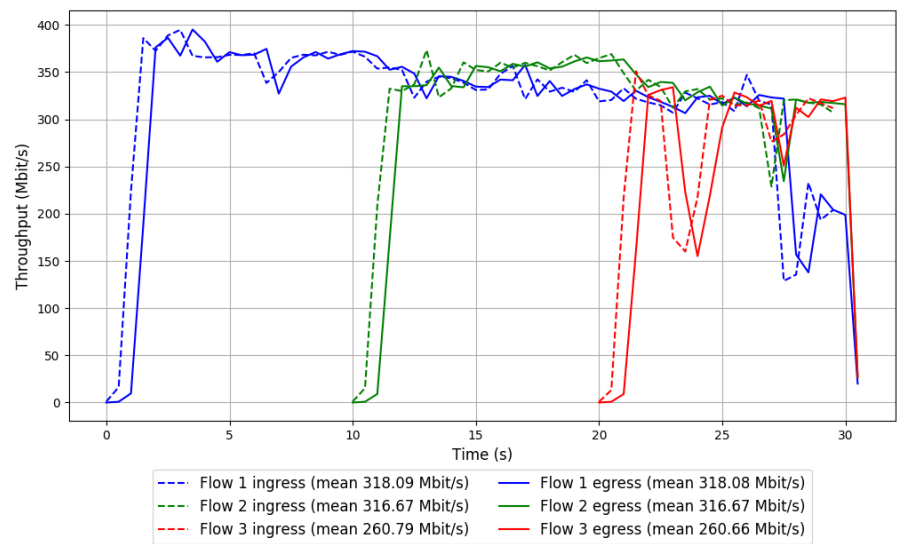
Run 5: Report of TCP BBR — Data Link

Flow 1 ingress (mean 488.73 Mbit/s) --- Flow 1 egress (mean 486.81 Mbit/s) ——
Flow 2 ingress (mean 490.13 Mbit/s) --- Flow 2 egress (mean 485.36 Mbit/s) ——
Flow 3 ingress (mean 417.78 Mbit/s) --- Flow 3 egress (mean 410.11 Mbit/s) ——

Flow 1 (95th percentile 159.07 ms)   •   Flow 2 (95th percentile 163.91 ms)   •   Flow 3 (95th percentile 202.97 ms)

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```
Run 1: Statistics of Copa

Start at: 2019-02-06 05:21:00
End at: 2019-02-06 05:21:30
Local clock offset: -0.378 ms
Remote clock offset: -0.93 ms


# Below is generated by plot.py at 2019-02-06 08:50:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 508.92 Mbit/s
95th percentile per-packet one-way delay: 72.195 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 267.78 Mbit/s
95th percentile per-packet one-way delay: 68.325 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 233.75 Mbit/s
95th percentile per-packet one-way delay: 72.955 ms
Loss rate: 0.03%
-- Flow 3:
Average throughput: 257.28 Mbit/s
95th percentile per-packet one-way delay: 74.206 ms
Loss rate: 0.00%
```
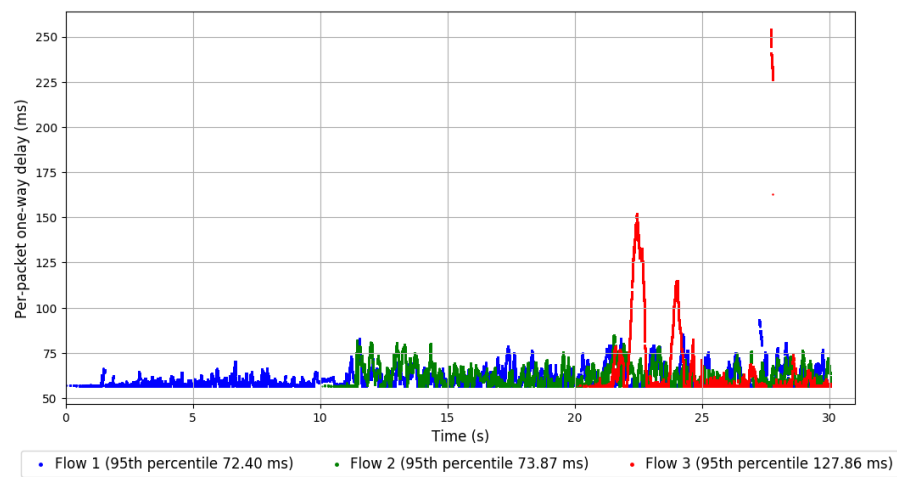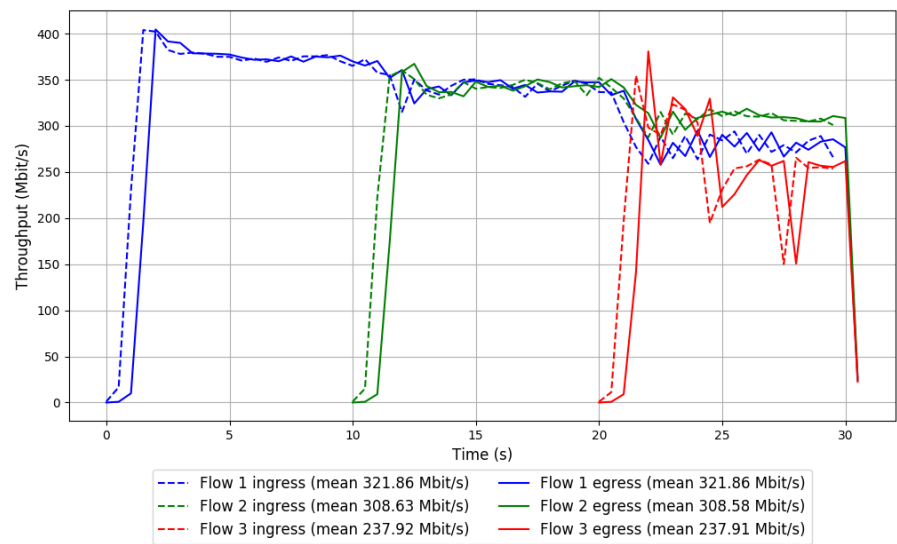
Run 1: Report of Copa — Data Link

```
Run 2: Statistics of Copa

Start at: 2019-02-06 06:00:42
End at: 2019-02-06 06:01:12
Local clock offset: -0.132 ms
Remote clock offset: -0.847 ms


# Below is generated by plot.py at 2019-02-06 08:54:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 613.90 Mbit/s
95th percentile per-packet one-way delay: 72.198 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 324.45 Mbit/s
95th percentile per-packet one-way delay: 68.348 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 307.84 Mbit/s
95th percentile per-packet one-way delay: 73.947 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 254.00 Mbit/s
95th percentile per-packet one-way delay: 79.410 ms
Loss rate: 0.04%
```
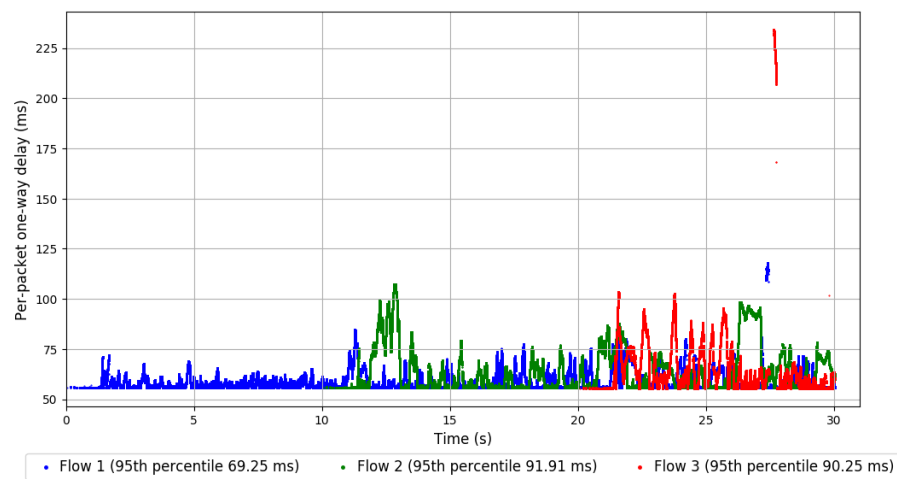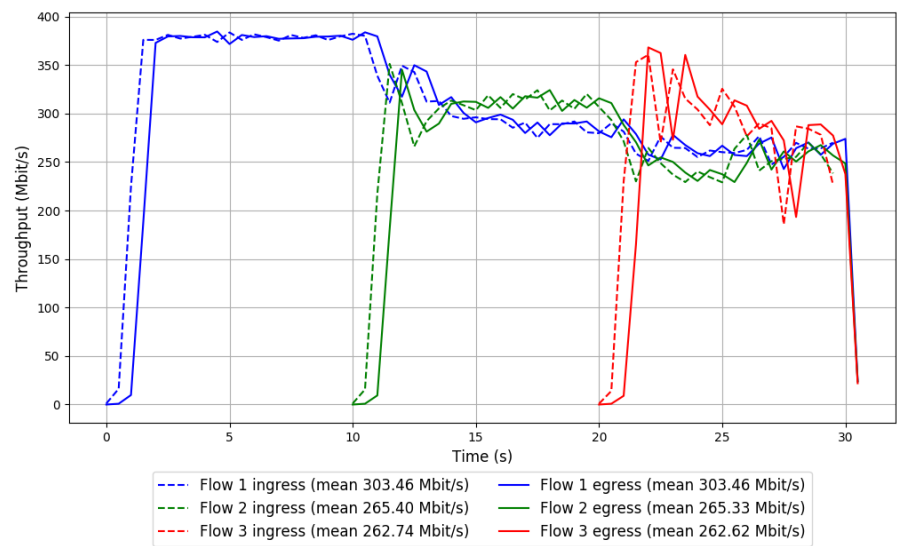
Run 2: Report of Copa — Data Link

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```
Run 3: Statistics of Copa

Start at: 2019-02-06 06:40:08
End at: 2019-02-06 06:40:38
Local clock offset: 0.116 ms
Remote clock offset: 0.572 ms


# Below is generated by plot.py at 2019-02-06 08:54:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 615.51 Mbit/s
95th percentile per-packet one-way delay: 79.941 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 318.08 Mbit/s
95th percentile per-packet one-way delay: 76.661 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 316.67 Mbit/s
95th percentile per-packet one-way delay: 70.143 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 260.66 Mbit/s
95th percentile per-packet one-way delay: 132.639 ms
Loss rate: 0.00%
```
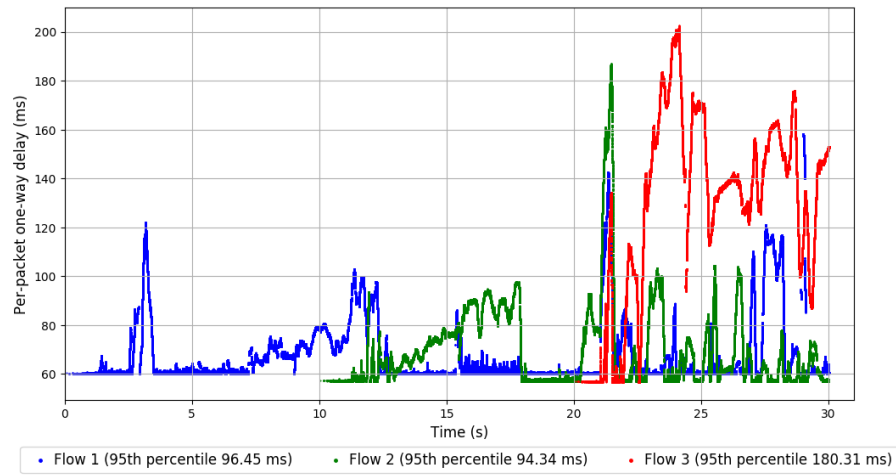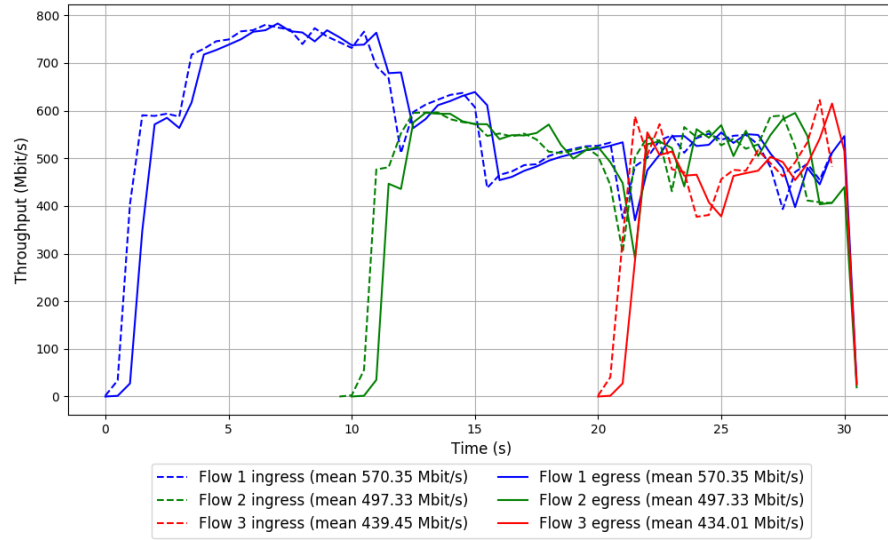
Run 3: Report of Copa — Data Link

- - - Flow 1 ingress (mean 318.09 Mbit/s) —— Flow 1 egress (mean 318.08 Mbit/s)
- - - Flow 2 ingress (mean 316.67 Mbit/s) —— Flow 2 egress (mean 316.67 Mbit/s)
- - - Flow 3 ingress (mean 260.79 Mbit/s) —— Flow 3 egress (mean 260.66 Mbit/s)

• Flow 1 (95th percentile 76.66 ms)   • Flow 2 (95th percentile 70.14 ms)   • Flow 3 (95th percentile 132.64 ms)

```
Run 4: Statistics of Copa

Start at: 2019-02-06 07:19:48
End at: 2019-02-06 07:20:18
Local clock offset: -0.223 ms
Remote clock offset: -0.462 ms


# Below is generated by plot.py at 2019-02-06 09:16:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 606.31 Mbit/s
95th percentile per-packet one-way delay: 75.253 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 321.86 Mbit/s
95th percentile per-packet one-way delay: 72.401 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 308.58 Mbit/s
95th percentile per-packet one-way delay: 73.871 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 237.91 Mbit/s
95th percentile per-packet one-way delay: 127.862 ms
Loss rate: 0.00%
```
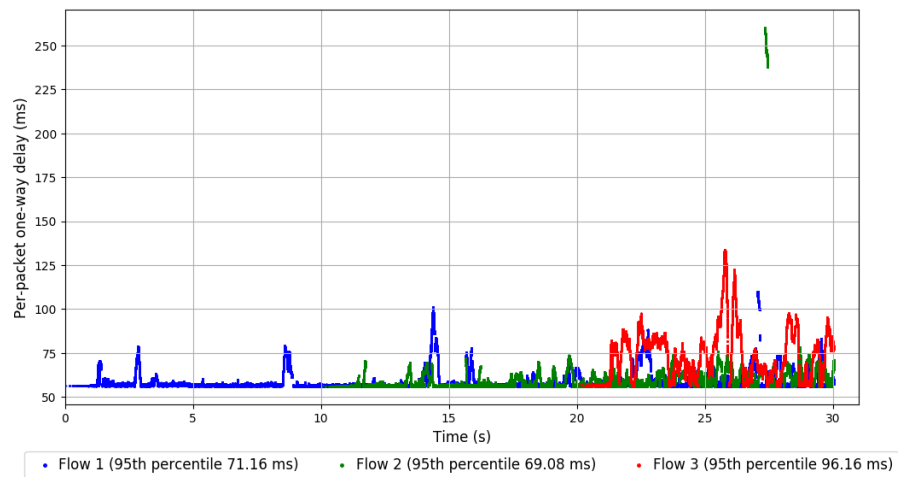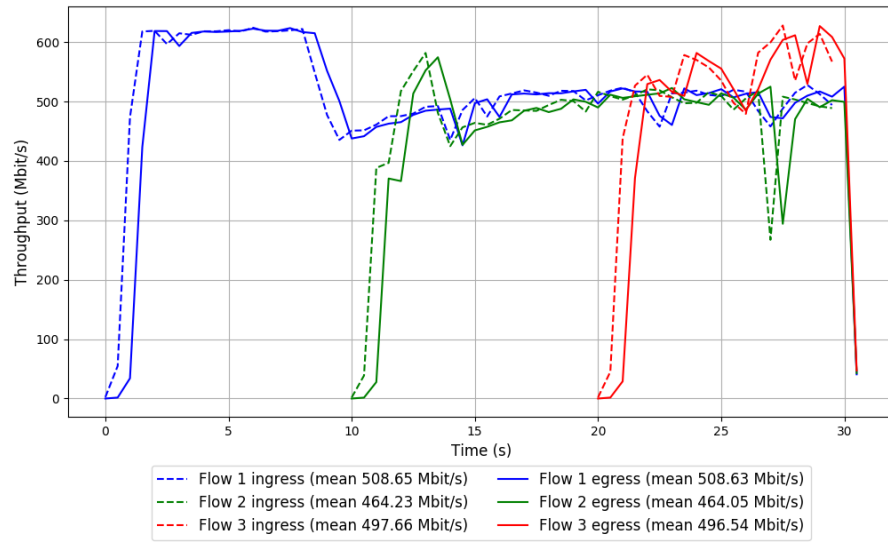
Run 4: Report of Copa — Data Link

Flow 1 ingress (mean 321.86 Mbit/s) --- Flow 1 egress (mean 321.86 Mbit/s)
Flow 2 ingress (mean 308.63 Mbit/s) --- Flow 2 egress (mean 308.58 Mbit/s)
Flow 3 ingress (mean 237.92 Mbit/s) --- Flow 3 egress (mean 237.91 Mbit/s)

Flow 1 (95th percentile 72.40 ms)   Flow 2 (95th percentile 73.87 ms)   Flow 3 (95th percentile 127.86 ms)

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```
Run 5: Statistics of Copa

Start at: 2019-02-06 07:58:54
End at: 2019-02-06 07:59:24
Local clock offset: -0.118 ms
Remote clock offset: -1.427 ms


# Below is generated by plot.py at 2019-02-06 09:16:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 567.37 Mbit/s
95th percentile per-packet one-way delay: 81.278 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 303.46 Mbit/s
95th percentile per-packet one-way delay: 69.246 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 265.33 Mbit/s
95th percentile per-packet one-way delay: 91.914 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 262.62 Mbit/s
95th percentile per-packet one-way delay: 90.254 ms
Loss rate: 0.00%
```
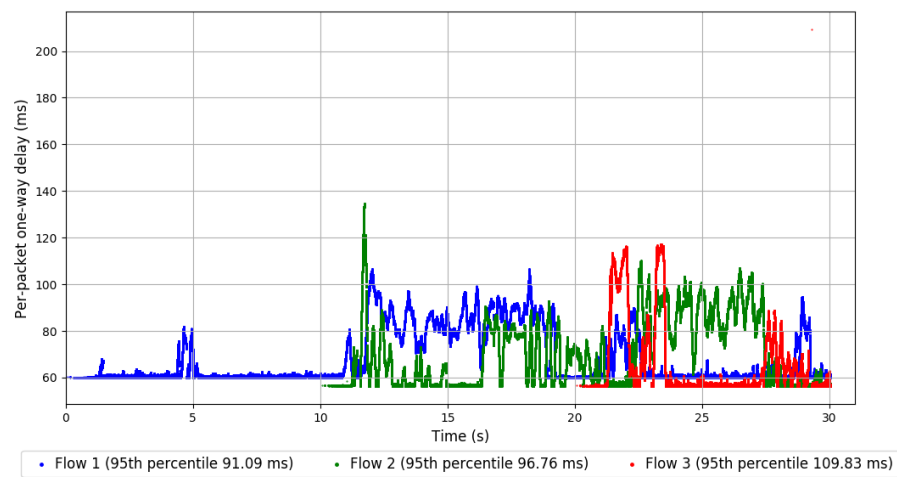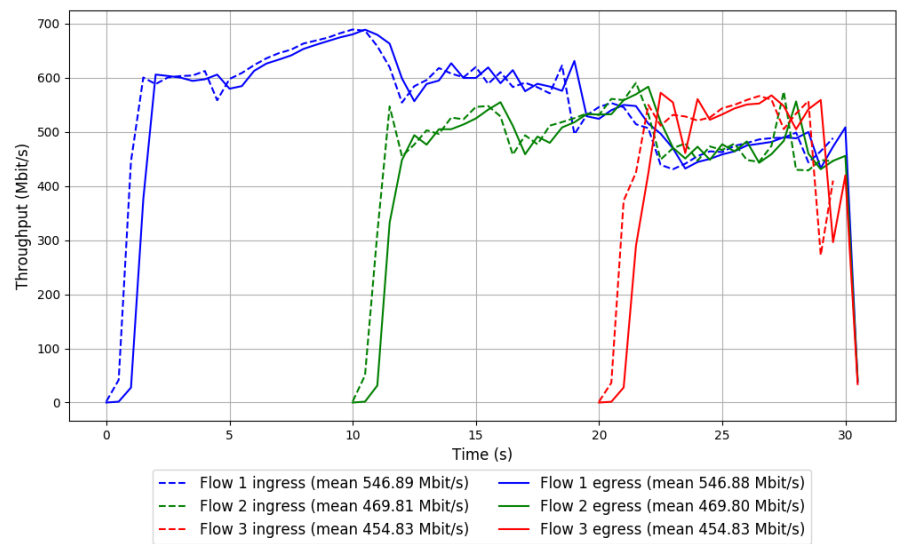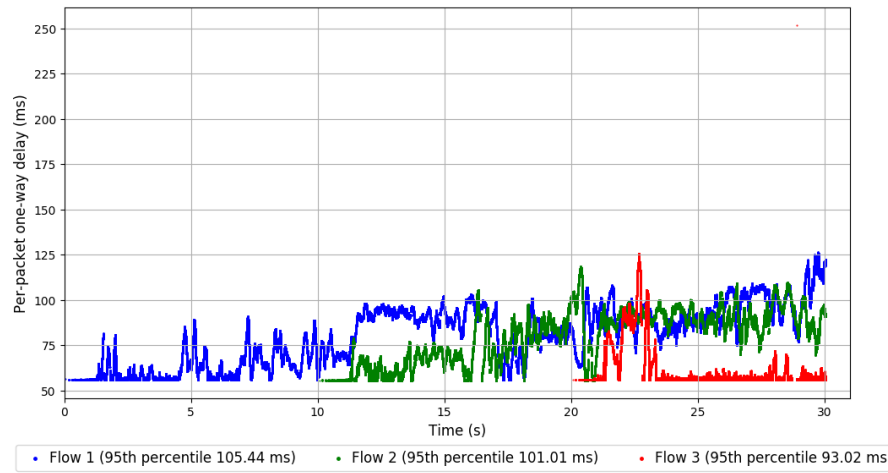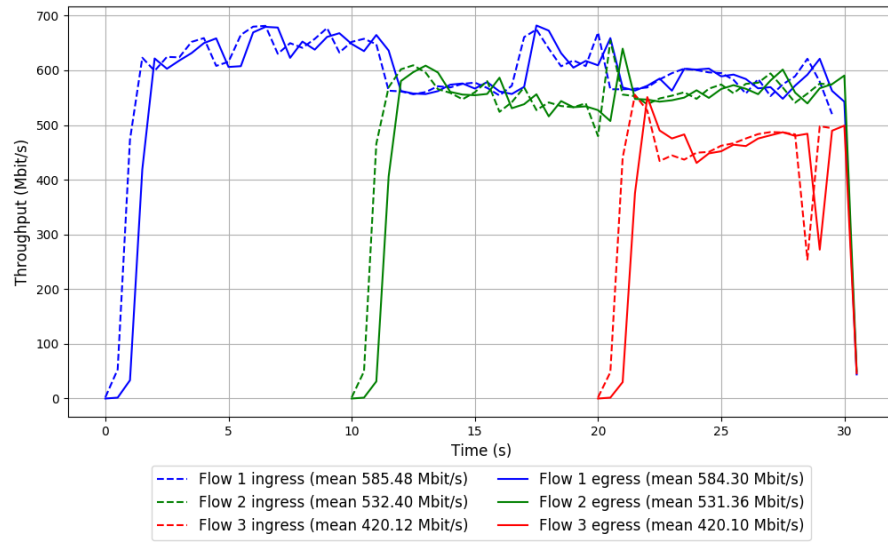
Run 5: Report of Copa — Data Link

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```
Run 1: Statistics of TCP Cubic

Start at: 2019-02-06 04:52:41
End at: 2019-02-06 04:53:11
Local clock offset: 0.053 ms
Remote clock offset: -0.304 ms


# Below is generated by plot.py at 2019-02-06 09:16:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1046.04 Mbit/s
95th percentile per-packet one-way delay: 147.948 ms
Loss rate: 0.17%
-- Flow 1:
Average throughput: 570.35 Mbit/s
95th percentile per-packet one-way delay: 96.450 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 497.33 Mbit/s
95th percentile per-packet one-way delay: 94.344 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 434.01 Mbit/s
95th percentile per-packet one-way delay: 180.309 ms
Loss rate: 1.20%
```

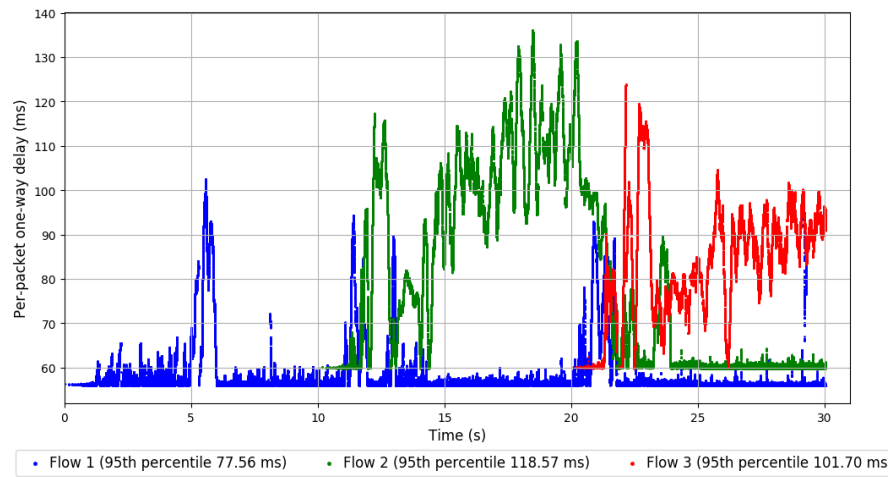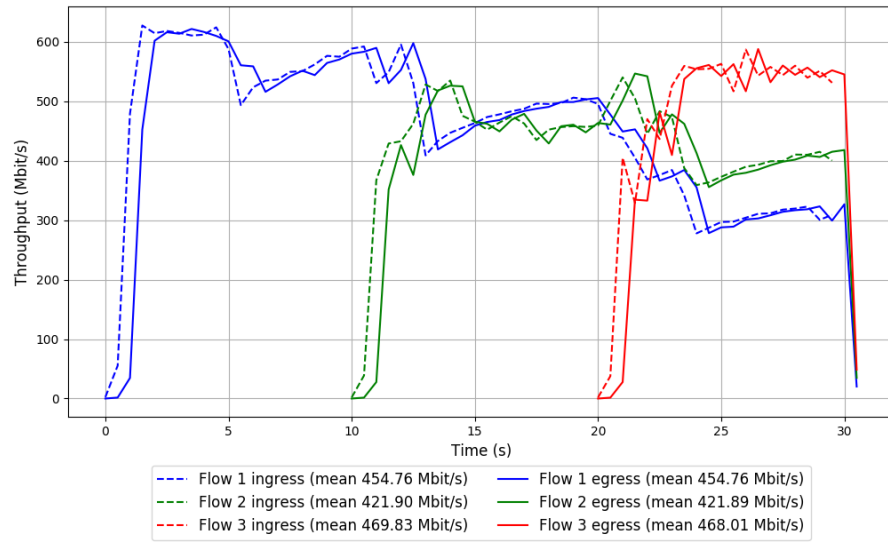Run 1: Report of TCP Cubic — Data Link

```
Run 2: Statistics of TCP Cubic

Start at: 2019-02-06 05:31:36
End at: 2019-02-06 05:32:06
Local clock offset: -0.073 ms
Remote clock offset: -0.868 ms


# Below is generated by plot.py at 2019-02-06 09:16:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 982.65 Mbit/s
95th percentile per-packet one-way delay: 81.505 ms
Loss rate: 0.05%
-- Flow 1:
Average throughput: 508.63 Mbit/s
95th percentile per-packet one-way delay: 71.159 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 464.05 Mbit/s
95th percentile per-packet one-way delay: 69.079 ms
Loss rate: 0.03%
-- Flow 3:
Average throughput: 496.54 Mbit/s
95th percentile per-packet one-way delay: 96.155 ms
Loss rate: 0.21%
```

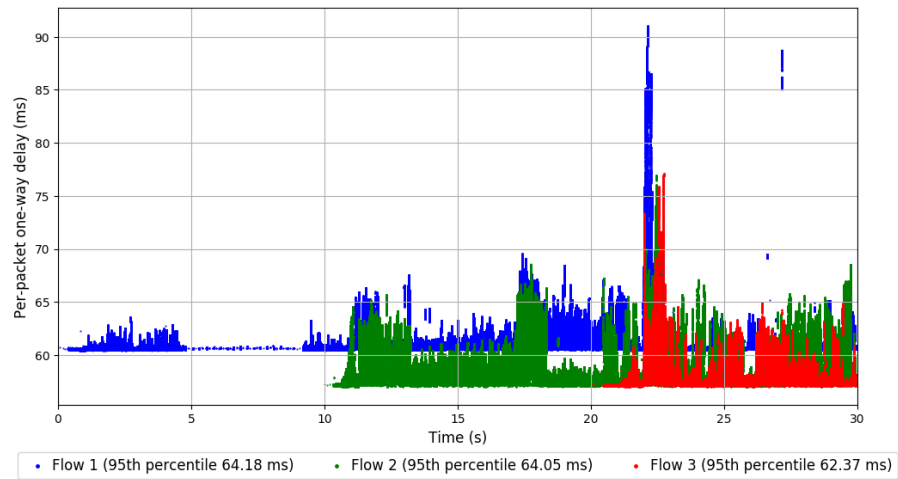Run 2: Report of TCP Cubic — Data Link

```
Run 3: Statistics of TCP Cubic

Start at: 2019-02-06 06:11:32
End at: 2019-02-06 06:12:02
Local clock offset: -0.11 ms
Remote clock offset: -0.73 ms


# Below is generated by plot.py at 2019-02-06 09:16:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1011.03 Mbit/s
95th percentile per-packet one-way delay: 94.965 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 546.88 Mbit/s
95th percentile per-packet one-way delay: 91.086 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 469.80 Mbit/s
95th percentile per-packet one-way delay: 96.757 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 454.83 Mbit/s
95th percentile per-packet one-way delay: 109.825 ms
Loss rate: 0.00%
```
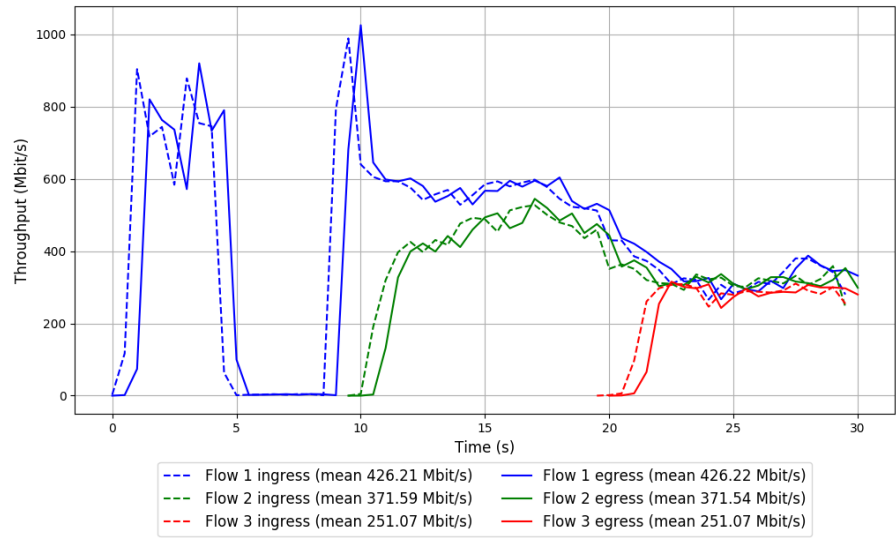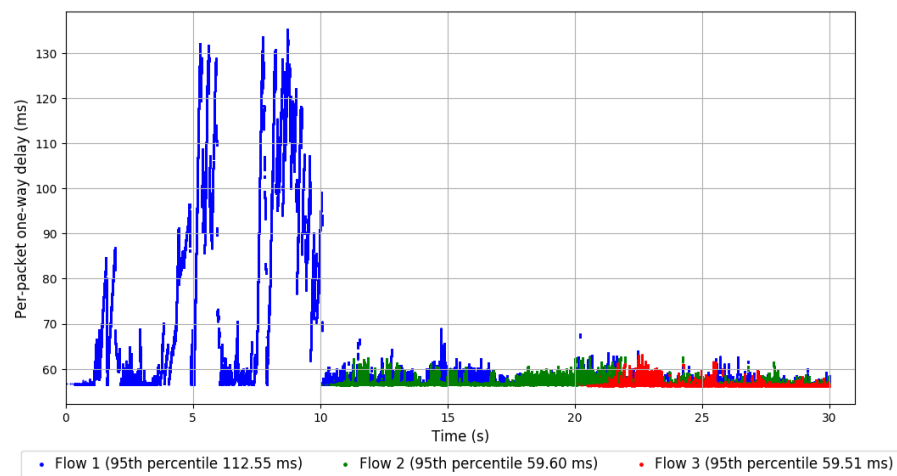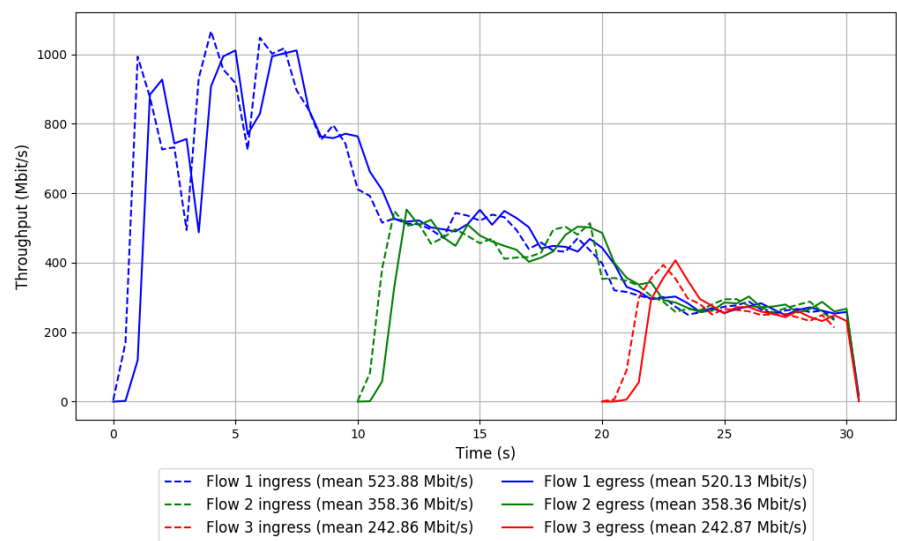
Run 3: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 546.89 Mbit/s)   Flow 1 egress (mean 546.88 Mbit/s)
Flow 2 ingress (mean 469.81 Mbit/s)   Flow 2 egress (mean 469.80 Mbit/s)
Flow 3 ingress (mean 454.83 Mbit/s)   Flow 3 egress (mean 454.83 Mbit/s)

Flow 1 (95th percentile 91.09 ms)   Flow 2 (95th percentile 96.76 ms)   Flow 3 (95th percentile 109.83 ms)

```
Run 4: Statistics of TCP Cubic

Start at: 2019-02-06 06:50:39
End at: 2019-02-06 06:51:09
Local clock offset: -0.146 ms
Remote clock offset: -1.515 ms


# Below is generated by plot.py at 2019-02-06 09:16:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1077.97 Mbit/s
95th percentile per-packet one-way delay: 103.878 ms
Loss rate: 0.16%
-- Flow 1:
Average throughput: 584.30 Mbit/s
95th percentile per-packet one-way delay: 105.442 ms
Loss rate: 0.19%
-- Flow 2:
Average throughput: 531.36 Mbit/s
95th percentile per-packet one-way delay: 101.009 ms
Loss rate: 0.18%
-- Flow 3:
Average throughput: 420.10 Mbit/s
95th percentile per-packet one-way delay: 93.020 ms
Loss rate: 0.00%
```

Run 4: Report of TCP Cubic — Data Link
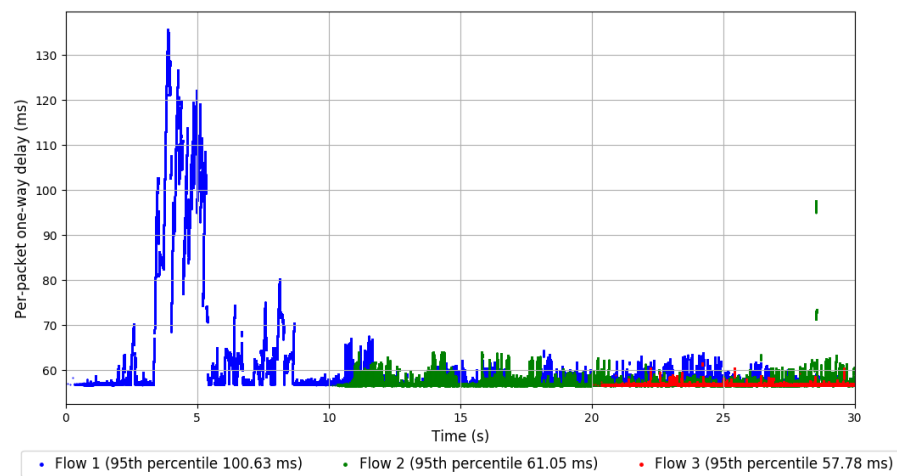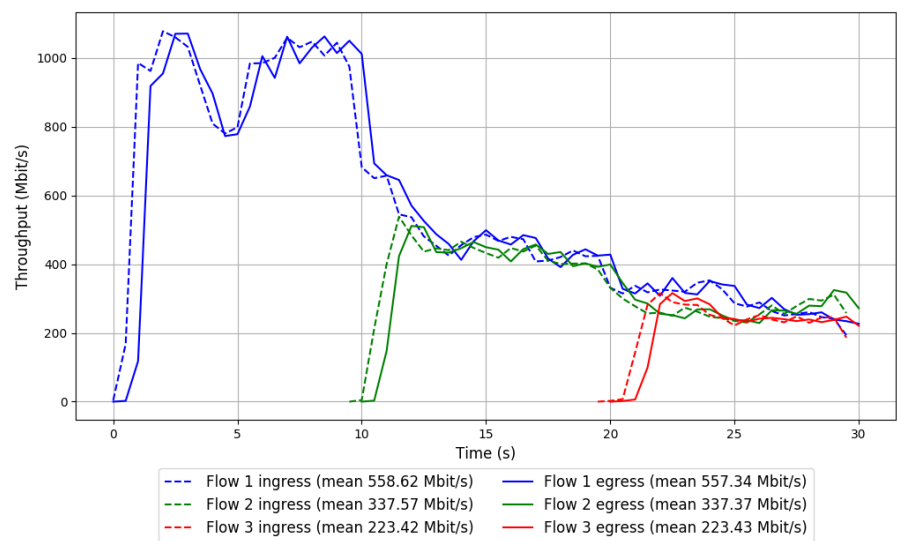
```
Run 5: Statistics of TCP Cubic

Start at: 2019-02-06 07:30:46
End at: 2019-02-06 07:31:16
Local clock offset: 0.098 ms
Remote clock offset: -0.598 ms


# Below is generated by plot.py at 2019-02-06 09:16:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 891.21 Mbit/s
95th percentile per-packet one-way delay: 108.943 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 454.76 Mbit/s
95th percentile per-packet one-way delay: 77.563 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 421.89 Mbit/s
95th percentile per-packet one-way delay: 118.570 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 468.01 Mbit/s
95th percentile per-packet one-way delay: 101.697 ms
Loss rate: 0.39%
```

Run 5: Report of TCP Cubic — Data Link

```
Run 1: Statistics of FillP

Start at: 2019-02-06 04:56:40
End at: 2019-02-06 04:57:10
Local clock offset: 0.04 ms
Remote clock offset: 0.009 ms

# Below is generated by plot.py at 2019-02-06 09:16:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 757.22 Mbit/s
95th percentile per-packet one-way delay: 64.002 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 426.22 Mbit/s
95th percentile per-packet one-way delay: 64.184 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 371.54 Mbit/s
95th percentile per-packet one-way delay: 64.047 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 251.07 Mbit/s
95th percentile per-packet one-way delay: 62.368 ms
Loss rate: 0.00%
```
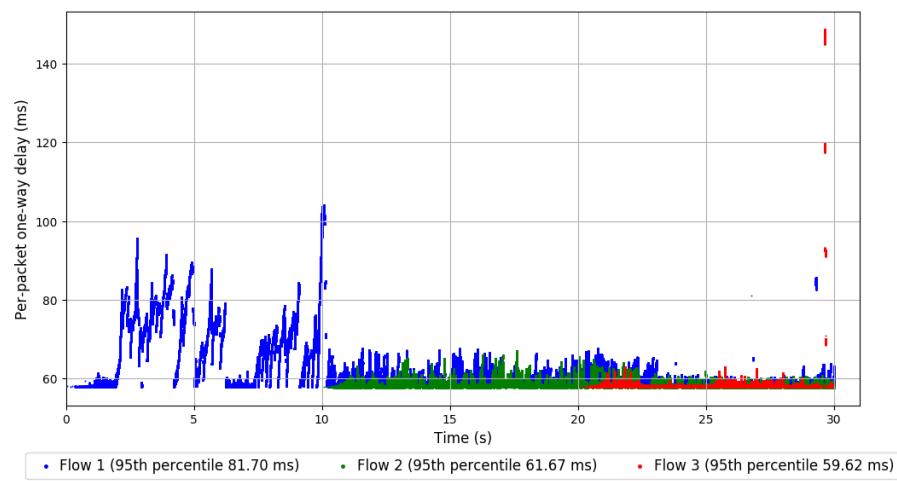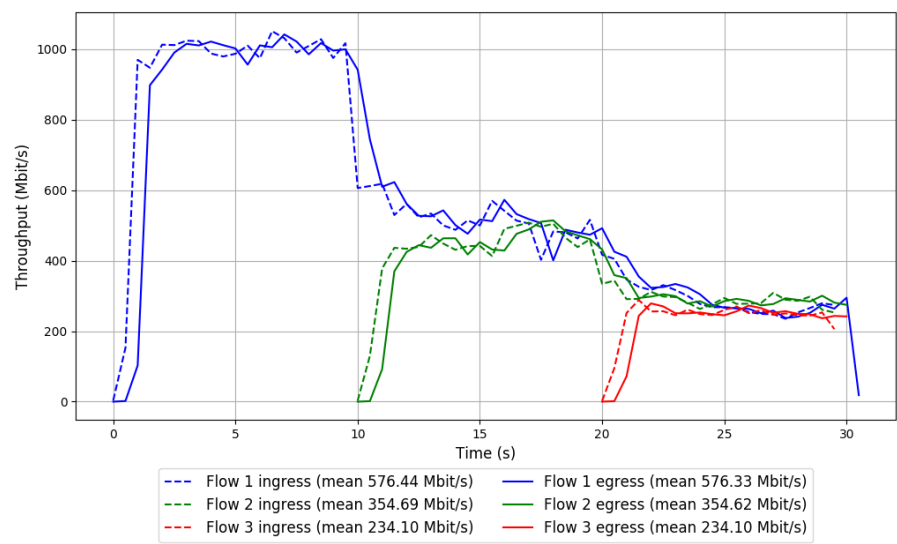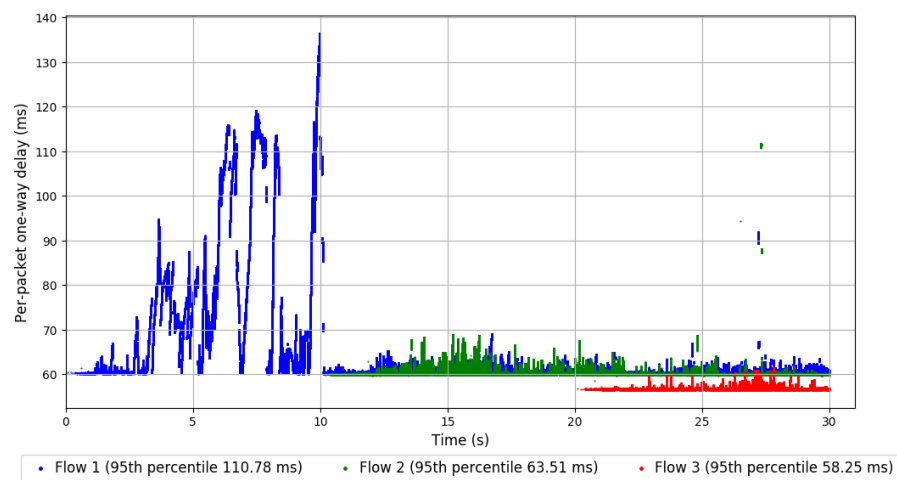
Run 1: Report of FillP — Data Link

```
Run 2: Statistics of FillP

Start at: 2019-02-06 05:35:46
End at: 2019-02-06 05:36:16
Local clock offset: -0.354 ms
Remote clock offset: -0.898 ms


# Below is generated by plot.py at 2019-02-06 09:37:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 838.94 Mbit/s
95th percentile per-packet one-way delay: 103.124 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 520.13 Mbit/s
95th percentile per-packet one-way delay: 112.550 ms
Loss rate: 0.71%
-- Flow 2:
Average throughput: 358.36 Mbit/s
95th percentile per-packet one-way delay: 59.599 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 242.87 Mbit/s
95th percentile per-packet one-way delay: 59.507 ms
Loss rate: 0.00%
```
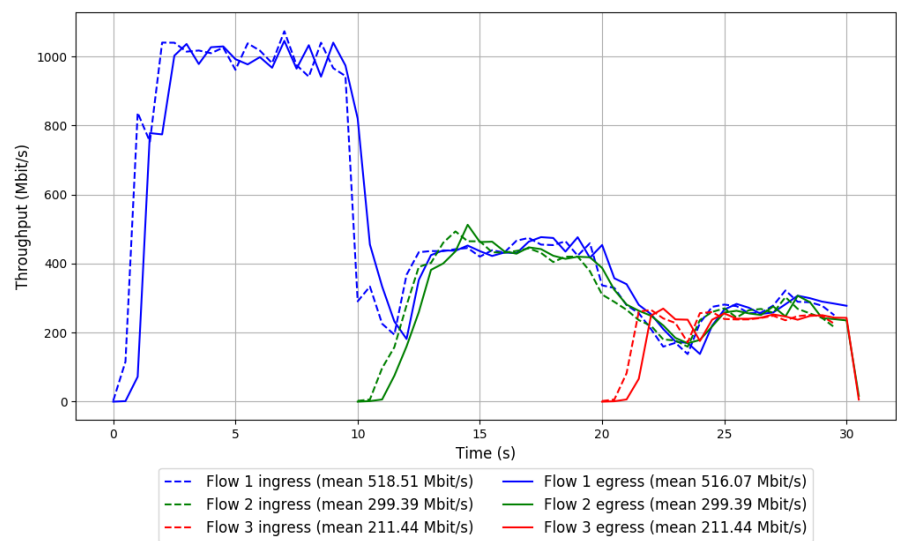
Run 2: Report of FillP — Data Link

```
Run 3: Statistics of FillP

Start at: 2019-02-06 06:15:56
End at: 2019-02-06 06:16:26
Local clock offset: -0.03 ms
Remote clock offset: -0.115 ms

# Below is generated by plot.py at 2019-02-06 09:39:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 856.37 Mbit/s
95th percentile per-packet one-way delay: 87.261 ms
Loss rate: 0.16%
-- Flow 1:
Average throughput: 557.34 Mbit/s
95th percentile per-packet one-way delay: 100.632 ms
Loss rate: 0.23%
-- Flow 2:
Average throughput: 337.37 Mbit/s
95th percentile per-packet one-way delay: 61.055 ms
Loss rate: 0.05%
-- Flow 3:
Average throughput: 223.43 Mbit/s
95th percentile per-packet one-way delay: 57.782 ms
Loss rate: 0.00%
```
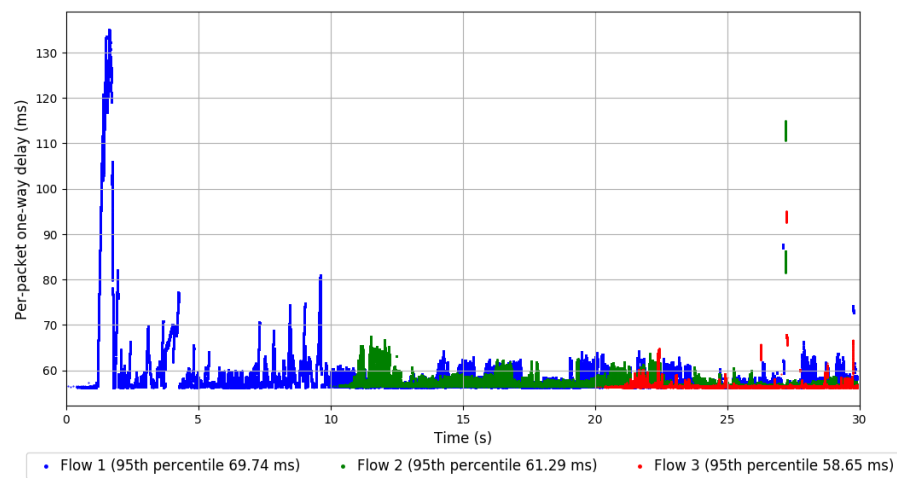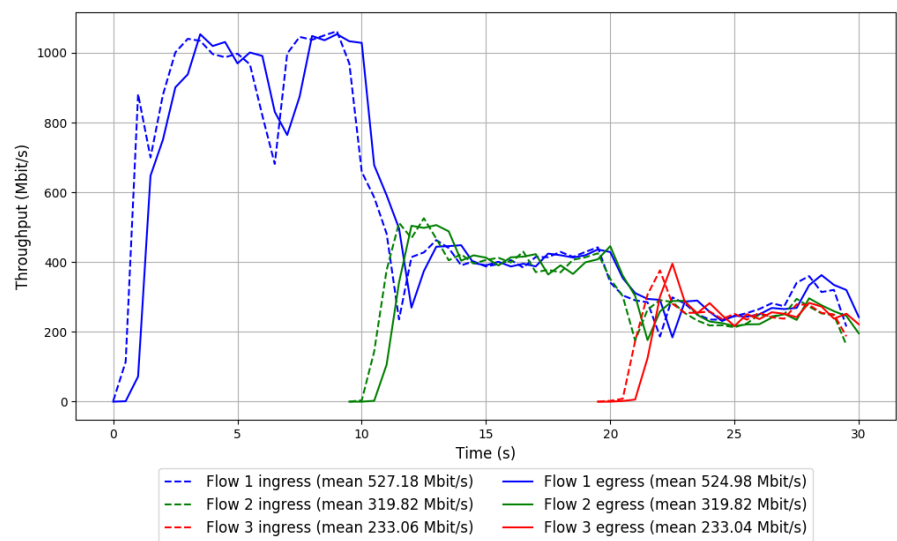
Run 3: Report of FillP — Data Link

```
Run 4: Statistics of FillP

Start at: 2019-02-06 06:54:55
End at: 2019-02-06 06:55:25
Local clock offset: -0.252 ms
Remote clock offset: 0.54 ms


# Below is generated by plot.py at 2019-02-06 09:40:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 889.60 Mbit/s
95th percentile per-packet one-way delay: 79.278 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 576.33 Mbit/s
95th percentile per-packet one-way delay: 81.703 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 354.62 Mbit/s
95th percentile per-packet one-way delay: 61.675 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 234.10 Mbit/s
95th percentile per-packet one-way delay: 59.624 ms
Loss rate: 0.00%
```
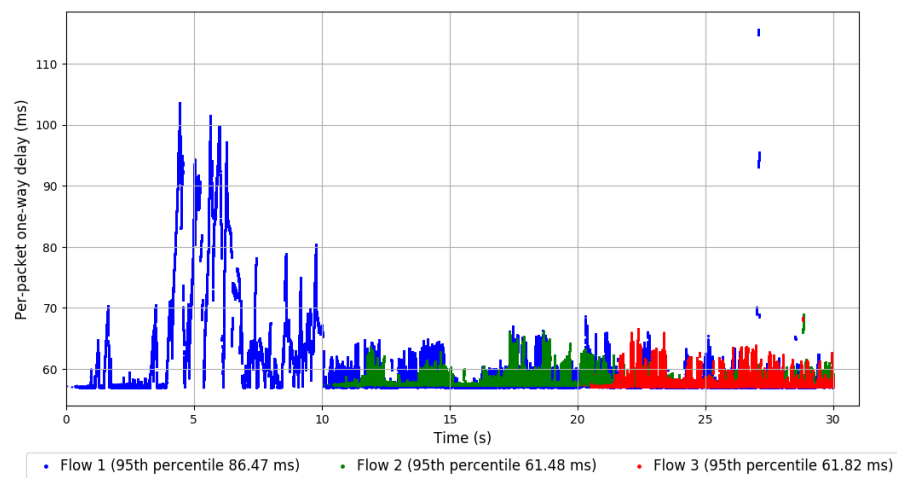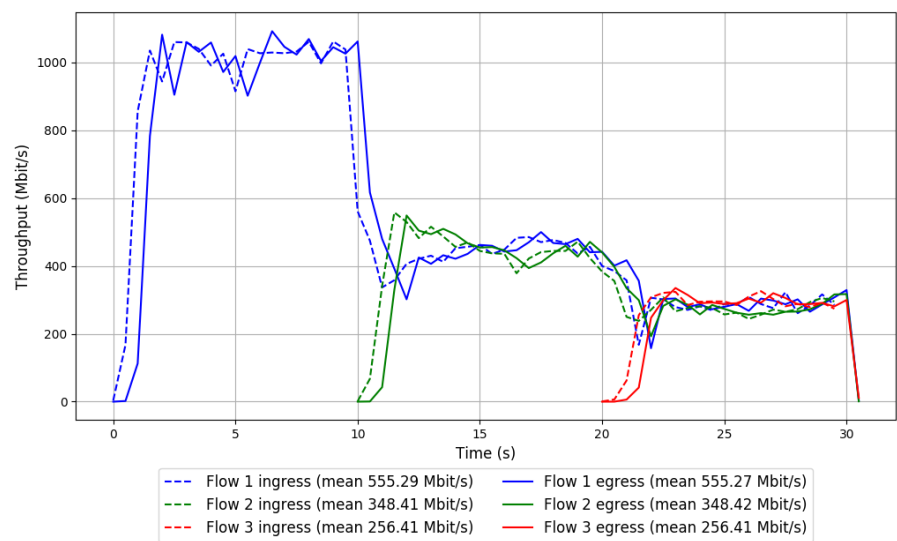
Run 4: Report of FillP — Data Link

- - - - Flow 1 ingress (mean 576.44 Mbit/s)   —— Flow 1 egress (mean 576.33 Mbit/s)
- - - - Flow 2 ingress (mean 354.69 Mbit/s)   —— Flow 2 egress (mean 354.62 Mbit/s)
- - - - Flow 3 ingress (mean 234.10 Mbit/s)   —— Flow 3 egress (mean 234.10 Mbit/s)

- Flow 1 (95th percentile 81.70 ms)   • Flow 2 (95th percentile 61.67 ms)   • Flow 3 (95th percentile 59.62 ms)

```
Run 5: Statistics of FillP

Start at: 2019-02-06 07:34:38
End at: 2019-02-06 07:35:08
Local clock offset: -0.121 ms
Remote clock offset: -0.522 ms


# Below is generated by plot.py at 2019-02-06 09:40:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 784.97 Mbit/s
95th percentile per-packet one-way delay: 107.301 ms
Loss rate: 0.31%
-- Flow 1:
Average throughput: 516.07 Mbit/s
95th percentile per-packet one-way delay: 110.779 ms
Loss rate: 0.47%
-- Flow 2:
Average throughput: 299.39 Mbit/s
95th percentile per-packet one-way delay: 63.513 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 211.44 Mbit/s
95th percentile per-packet one-way delay: 58.248 ms
Loss rate: 0.00%
```
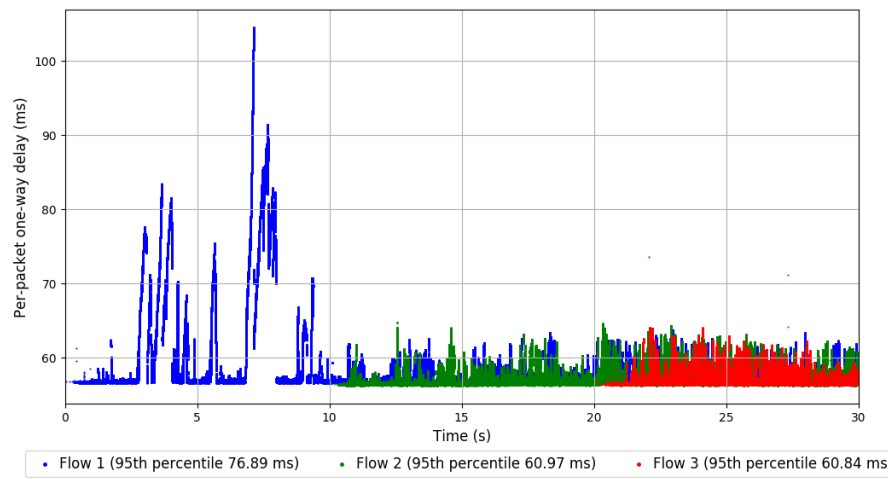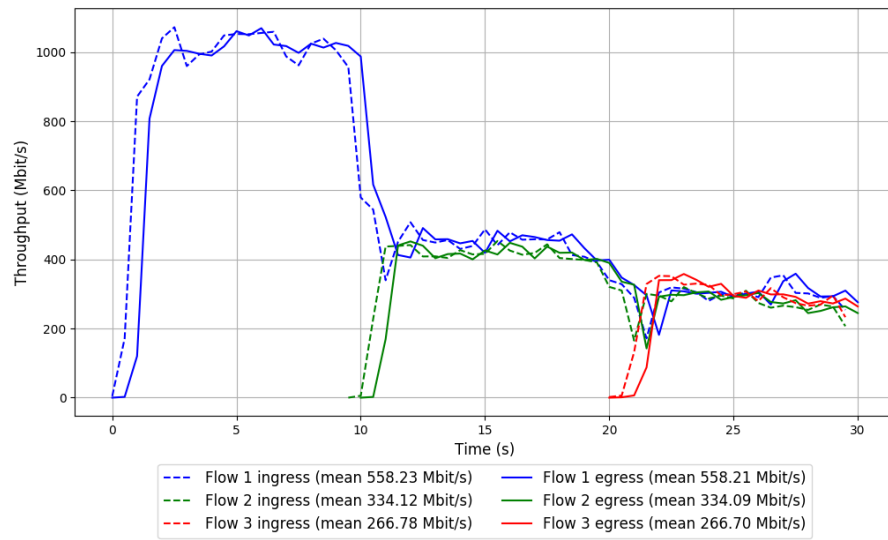
Run 5: Report of FillP — Data Link

- - - - Flow 1 ingress (mean 518.51 Mbit/s)   —— Flow 1 egress (mean 516.07 Mbit/s)
- - - - Flow 2 ingress (mean 299.39 Mbit/s)   —— Flow 2 egress (mean 299.39 Mbit/s)
- - - - Flow 3 ingress (mean 211.44 Mbit/s)   —— Flow 3 egress (mean 211.44 Mbit/s)

• Flow 1 (95th percentile 110.78 ms)   • Flow 2 (95th percentile 63.51 ms)   • Flow 3 (95th percentile 58.25 ms)
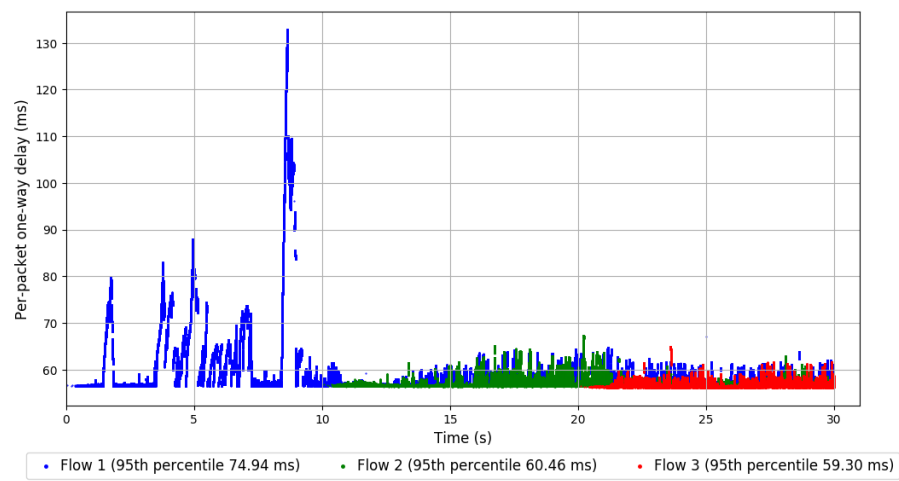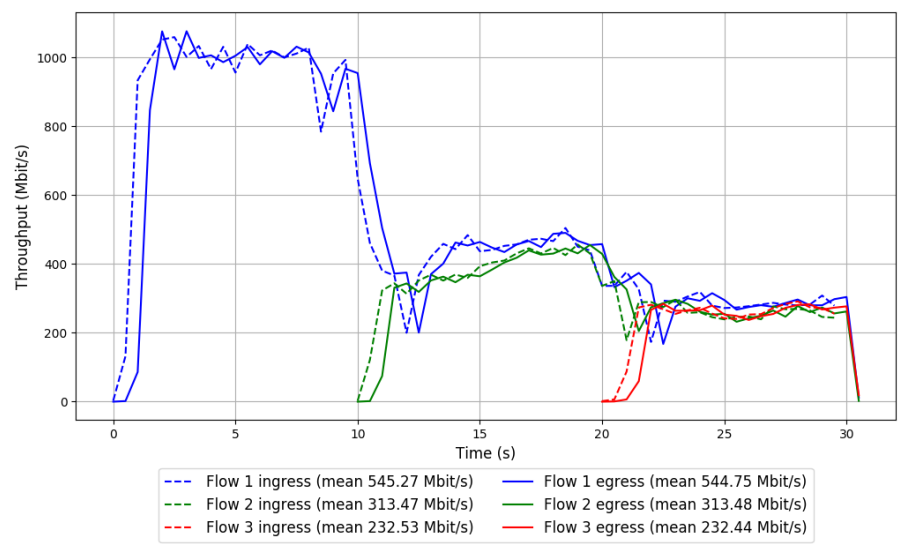
```
Run 1: Statistics of FillP-Sheep

Start at: 2019-02-06 04:54:48
End at: 2019-02-06 04:55:18
Local clock offset: 0.274 ms
Remote clock offset: -0.692 ms


# Below is generated by plot.py at 2019-02-06 09:40:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 815.62 Mbit/s
95th percentile per-packet one-way delay: 67.021 ms
Loss rate: 0.27%
-- Flow 1:
Average throughput: 524.98 Mbit/s
95th percentile per-packet one-way delay: 69.740 ms
Loss rate: 0.41%
-- Flow 2:
Average throughput: 319.82 Mbit/s
95th percentile per-packet one-way delay: 61.292 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 233.04 Mbit/s
95th percentile per-packet one-way delay: 58.648 ms
Loss rate: 0.01%
```

Run 1: Report of FillP-Sheep — Data Link

```
Run 2: Statistics of FillP-Sheep

Start at: 2019-02-06 05:33:52
End at: 2019-02-06 05:34:22
Local clock offset: -0.384 ms
Remote clock offset: -0.101 ms


# Below is generated by plot.py at 2019-02-06 09:41:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 871.70 Mbit/s
95th percentile per-packet one-way delay: 80.599 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 555.27 Mbit/s
95th percentile per-packet one-way delay: 86.470 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 348.42 Mbit/s
95th percentile per-packet one-way delay: 61.484 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 256.41 Mbit/s
95th percentile per-packet one-way delay: 61.820 ms
Loss rate: 0.00%
```
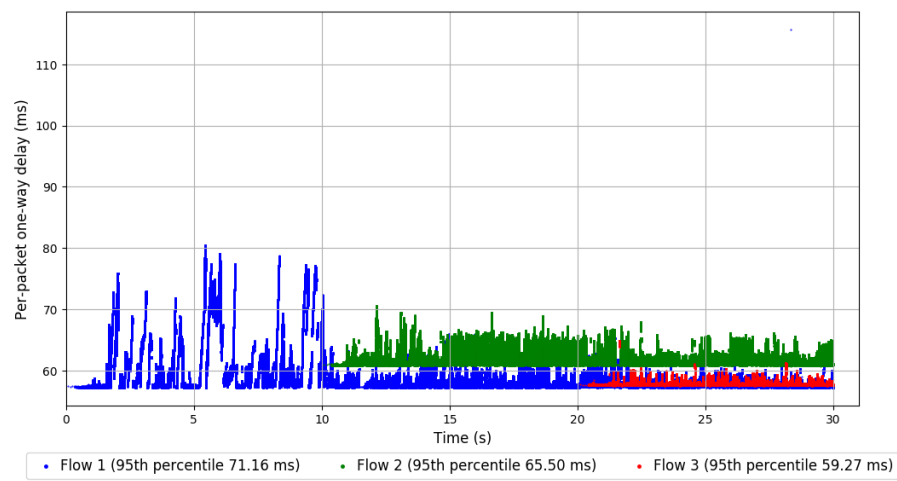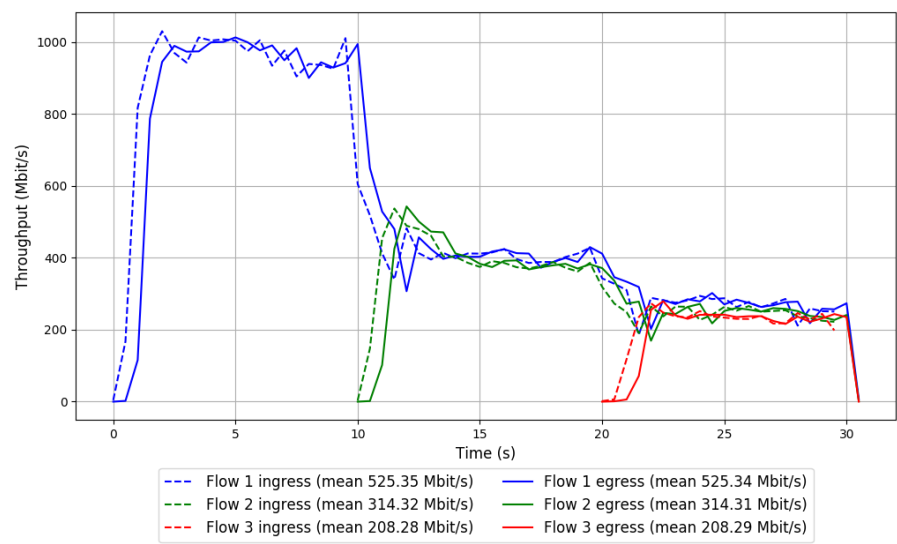
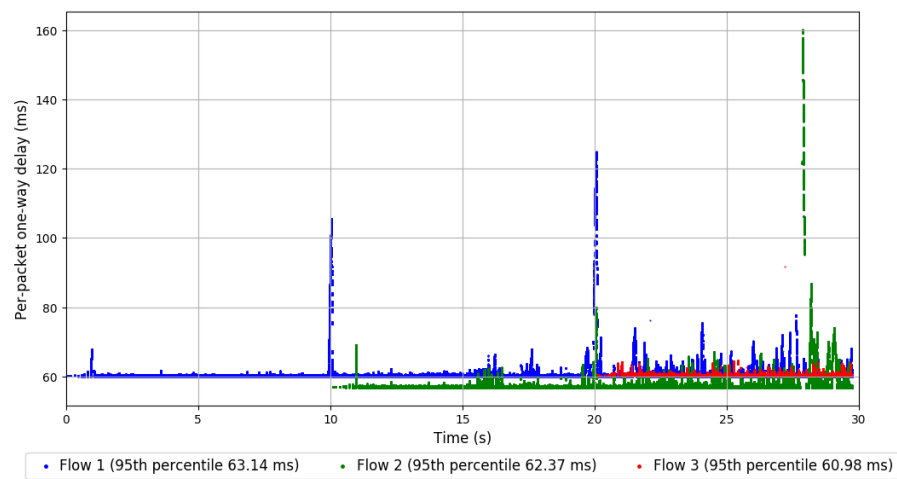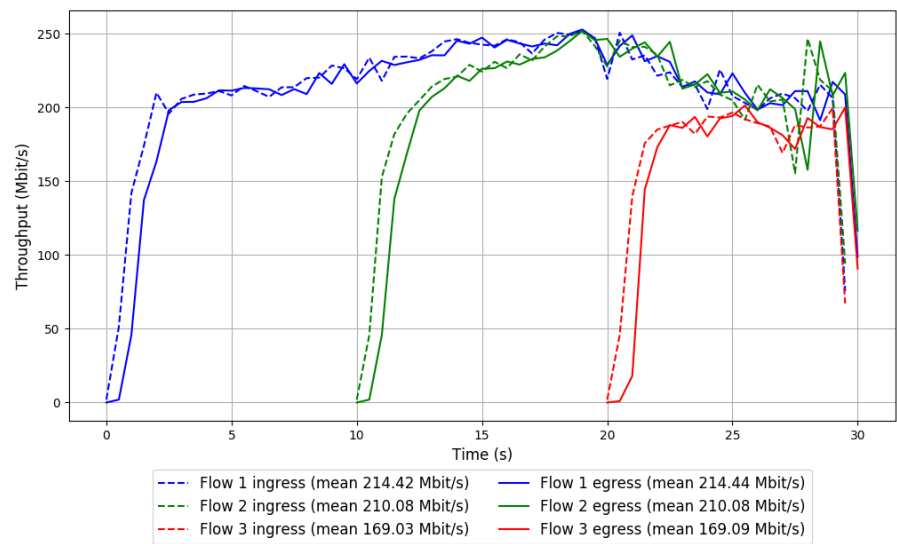Run 2: Report of FillP-Sheep — Data Link

```
Run 3: Statistics of FillP-Sheep

Start at: 2019-02-06 06:13:55
End at: 2019-02-06 06:14:25
Local clock offset: -0.276 ms
Remote clock offset: -0.865 ms


# Below is generated by plot.py at 2019-02-06 09:41:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 868.92 Mbit/s
95th percentile per-packet one-way delay: 73.081 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 558.21 Mbit/s
95th percentile per-packet one-way delay: 76.890 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 334.09 Mbit/s
95th percentile per-packet one-way delay: 60.973 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 266.70 Mbit/s
95th percentile per-packet one-way delay: 60.835 ms
Loss rate: 0.03%
```

Run 3: Report of FillP-Sheep — Data Link

Flow 1 ingress (mean 558.23 Mbit/s)   Flow 1 egress (mean 558.21 Mbit/s)
Flow 2 ingress (mean 334.12 Mbit/s)   Flow 2 egress (mean 334.09 Mbit/s)
Flow 3 ingress (mean 266.78 Mbit/s)   Flow 3 egress (mean 266.70 Mbit/s)

Flow 1 (95th percentile 76.89 ms)   Flow 2 (95th percentile 60.97 ms)   Flow 3 (95th percentile 60.84 ms)

```
Run 4: Statistics of FillP-Sheep

Start at: 2019-02-06 06:53:03
End at: 2019-02-06 06:53:33
Local clock offset: 0.233 ms
Remote clock offset: -0.251 ms


# Below is generated by plot.py at 2019-02-06 09:41:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 830.13 Mbit/s
95th percentile per-packet one-way delay: 72.300 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 544.75 Mbit/s
95th percentile per-packet one-way delay: 74.942 ms
Loss rate: 0.09%
-- Flow 2:
Average throughput: 313.48 Mbit/s
95th percentile per-packet one-way delay: 60.461 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 232.44 Mbit/s
95th percentile per-packet one-way delay: 59.302 ms
Loss rate: 0.02%
```
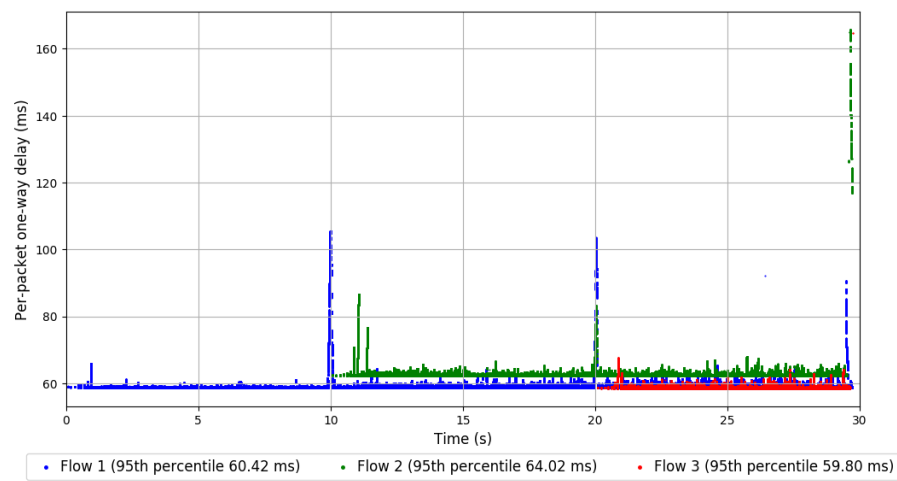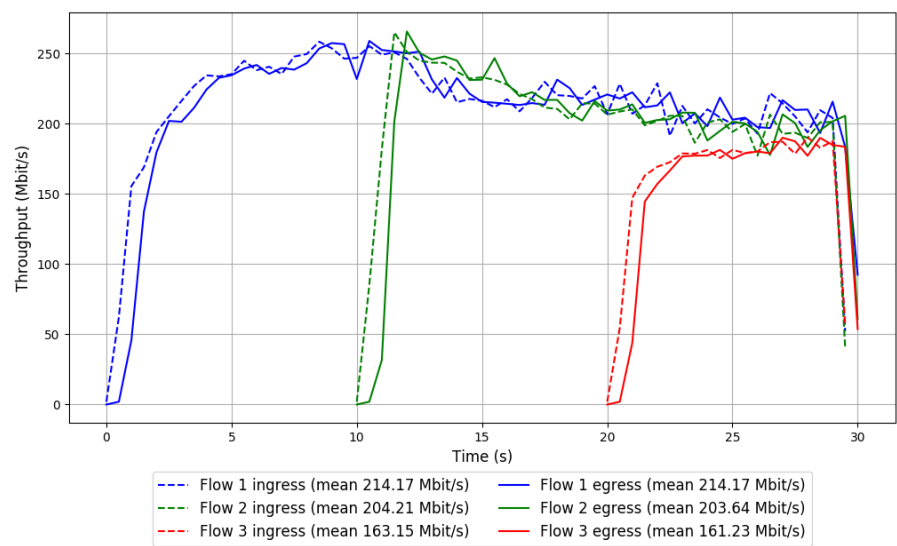
Run 4: Report of FillP-Sheep — Data Link
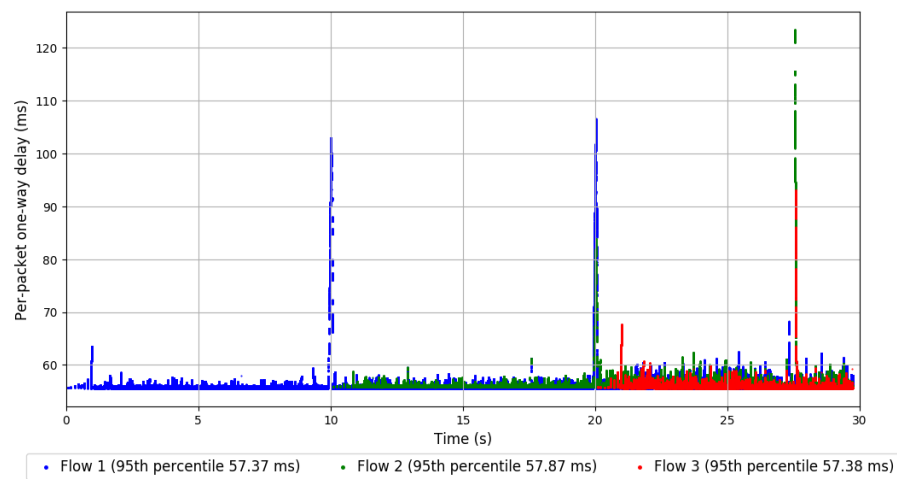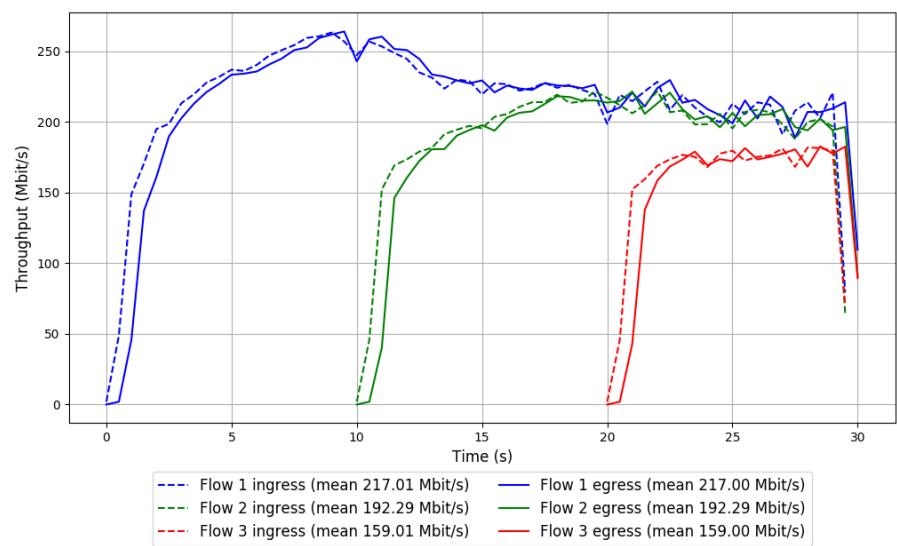
```
Run 5: Statistics of FillP-Sheep

Start at: 2019-02-06 07:32:47
End at: 2019-02-06 07:33:17
Local clock offset: -0.047 ms
Remote clock offset: 0.54 ms


# Below is generated by plot.py at 2019-02-06 10:01:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 803.37 Mbit/s
95th percentile per-packet one-way delay: 68.794 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 525.34 Mbit/s
95th percentile per-packet one-way delay: 71.164 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 314.31 Mbit/s
95th percentile per-packet one-way delay: 65.498 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 208.29 Mbit/s
95th percentile per-packet one-way delay: 59.271 ms
Loss rate: 0.00%
```

Run 5: Report of FillP-Sheep — Data Link
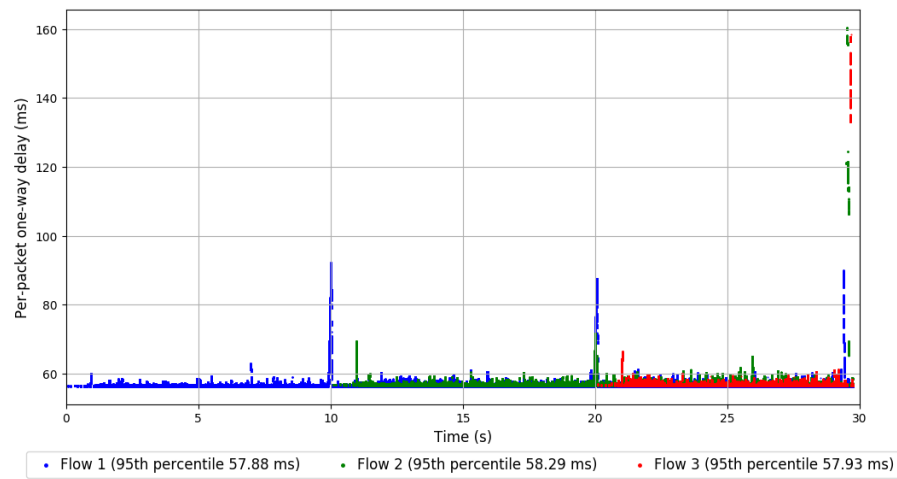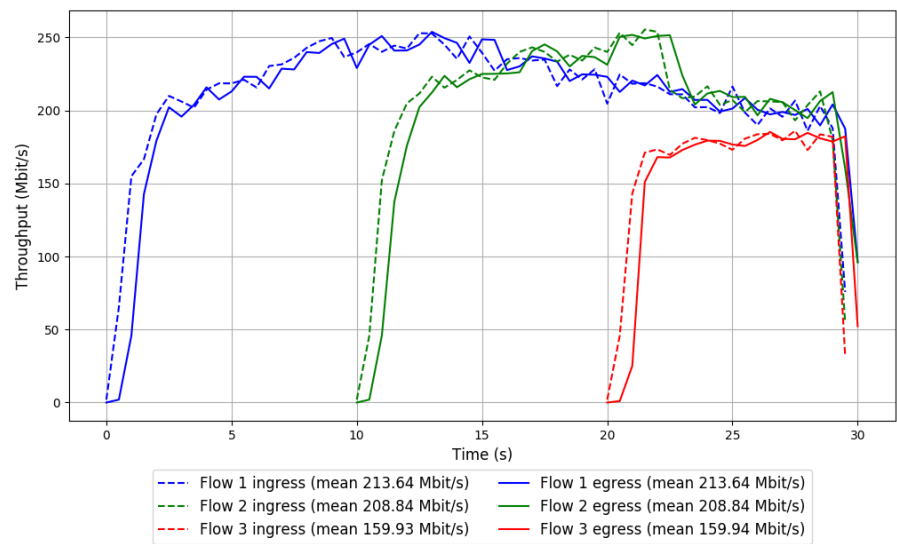

Flow 1 ingress (mean 525.35 Mbit/s) — — — Flow 1 egress (mean 525.34 Mbit/s)
Flow 2 ingress (mean 314.32 Mbit/s) — — — Flow 2 egress (mean 314.31 Mbit/s)
Flow 3 ingress (mean 208.28 Mbit/s) — — — Flow 3 egress (mean 208.29 Mbit/s)

Flow 1 (95th percentile 71.16 ms)   Flow 2 (95th percentile 65.50 ms)   Flow 3 (95th percentile 59.27 ms)

```
Run 1: Statistics of Indigo

Start at: 2019-02-06 05:23:09
End at: 2019-02-06 05:23:39
Local clock offset: -0.424 ms
Remote clock offset: -0.633 ms


# Below is generated by plot.py at 2019-02-06 10:01:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 408.32 Mbit/s
95th percentile per-packet one-way delay: 62.401 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 214.44 Mbit/s
95th percentile per-packet one-way delay: 63.137 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 210.08 Mbit/s
95th percentile per-packet one-way delay: 62.366 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 169.09 Mbit/s
95th percentile per-packet one-way delay: 60.984 ms
Loss rate: 0.00%
```
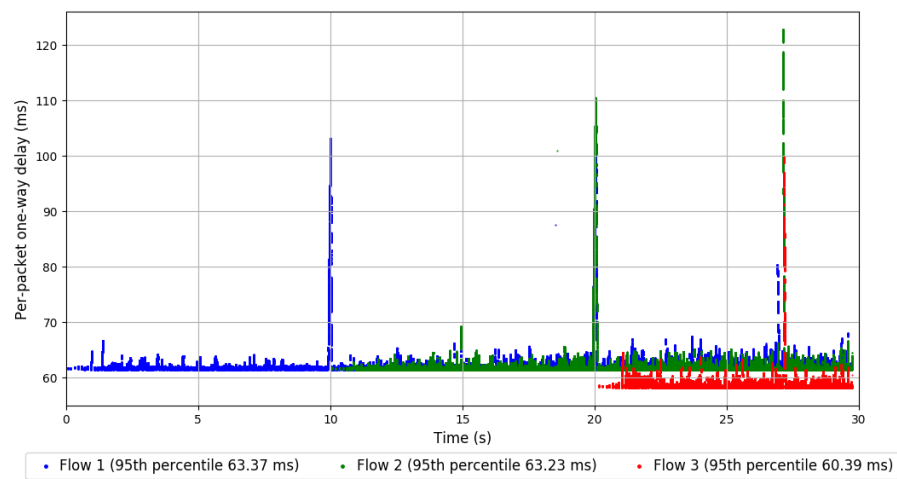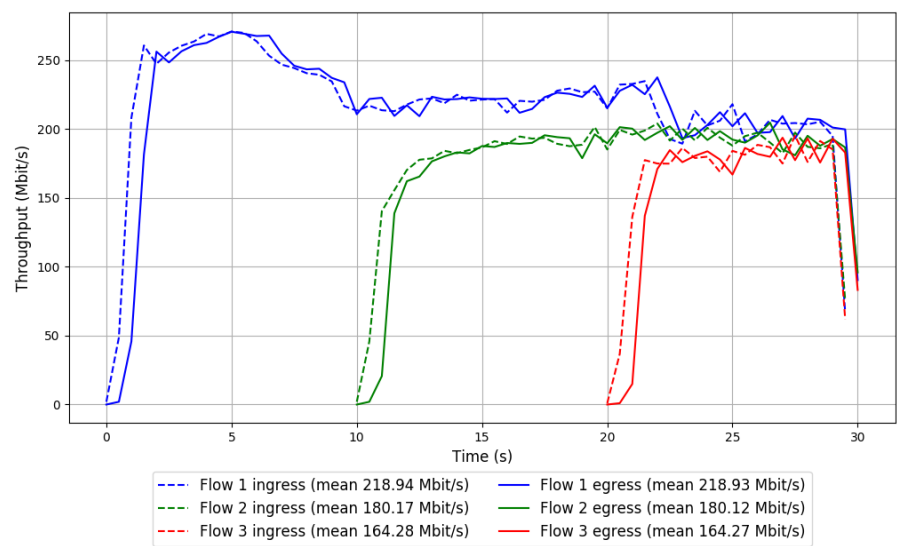
Run 1: Report of Indigo — Data Link

```
Run 2: Statistics of Indigo

Start at: 2019-02-06 06:03:04
End at: 2019-02-06 06:03:34
Local clock offset: -0.524 ms
Remote clock offset: 1.36 ms

# Below is generated by plot.py at 2019-02-06 10:01:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 400.94 Mbit/s
95th percentile per-packet one-way delay: 63.184 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 214.17 Mbit/s
95th percentile per-packet one-way delay: 60.420 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 203.64 Mbit/s
95th percentile per-packet one-way delay: 64.023 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 161.23 Mbit/s
95th percentile per-packet one-way delay: 59.804 ms
Loss rate: 0.90%
```
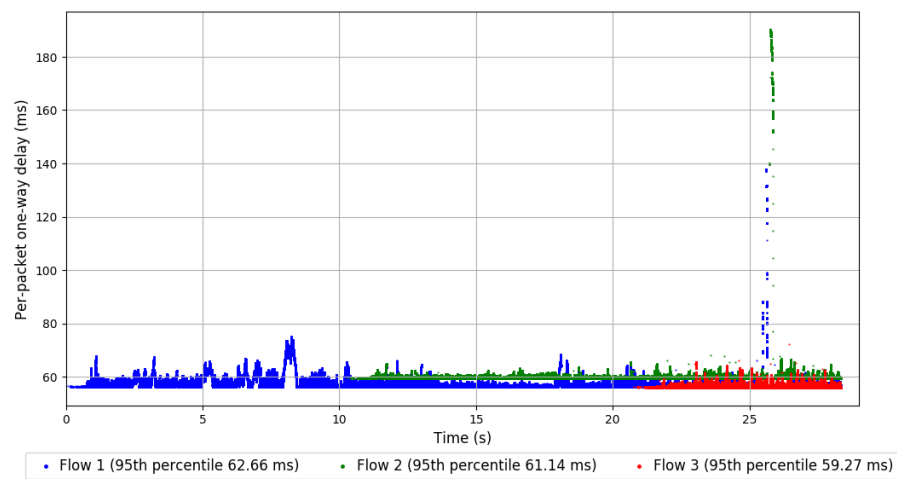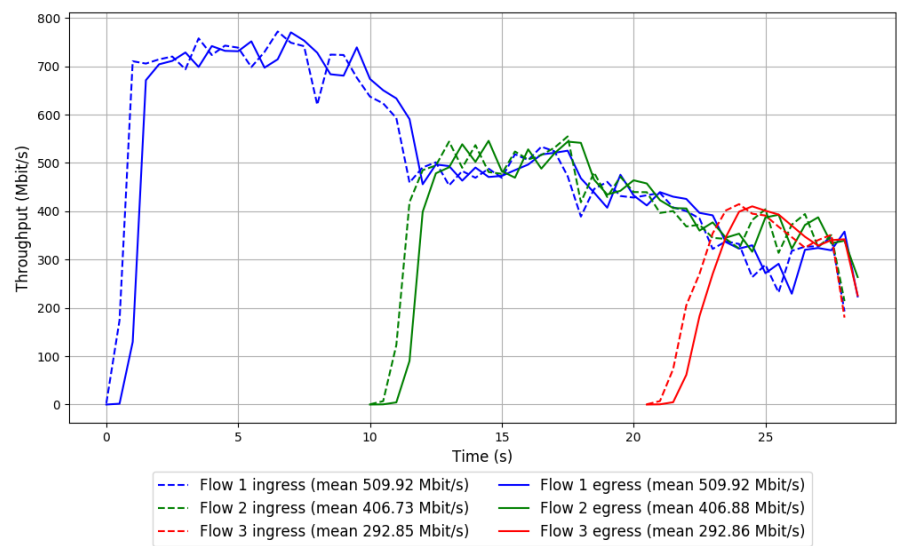
Run 2: Report of Indigo — Data Link

```
Run 3: Statistics of Indigo

Start at: 2019-02-06 06:42:37
End at: 2019-02-06 06:43:07
Local clock offset: -0.022 ms
Remote clock offset: -1.449 ms


# Below is generated by plot.py at 2019-02-06 10:01:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 395.83 Mbit/s
95th percentile per-packet one-way delay: 57.550 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 217.00 Mbit/s
95th percentile per-packet one-way delay: 57.367 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 192.29 Mbit/s
95th percentile per-packet one-way delay: 57.865 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 159.00 Mbit/s
95th percentile per-packet one-way delay: 57.379 ms
Loss rate: 0.00%
```

Run 3: Report of Indigo — Data Link

```
Run 4: Statistics of Indigo

Start at: 2019-02-06 07:22:30
End at: 2019-02-06 07:23:00
Local clock offset: 0.32 ms
Remote clock offset: -0.056 ms


# Below is generated by plot.py at 2019-02-06 10:01:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 403.67 Mbit/s
95th percentile per-packet one-way delay: 58.016 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 213.64 Mbit/s
95th percentile per-packet one-way delay: 57.878 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 208.84 Mbit/s
95th percentile per-packet one-way delay: 58.292 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 159.94 Mbit/s
95th percentile per-packet one-way delay: 57.929 ms
Loss rate: 0.00%
```
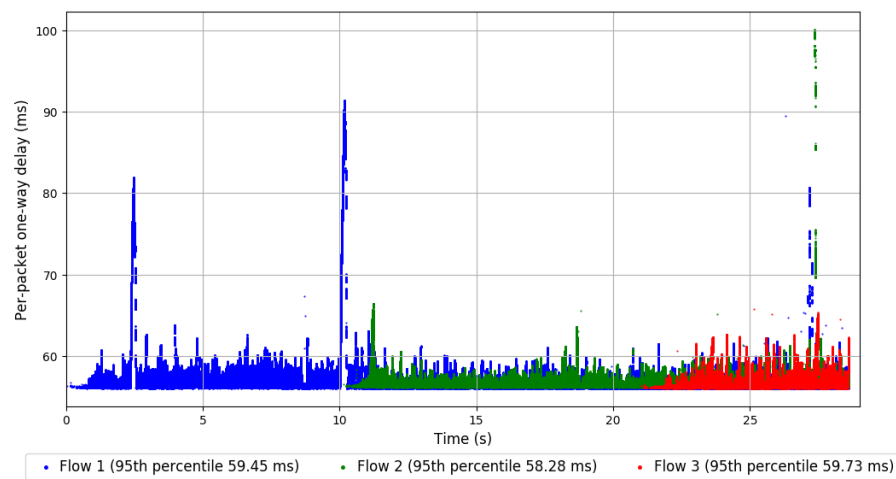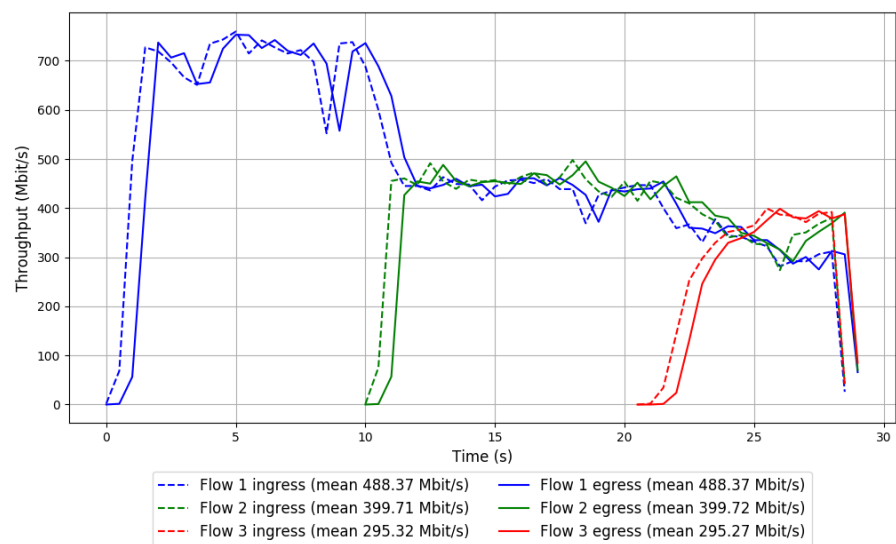
Run 4: Report of Indigo — Data Link

```
Run 5: Statistics of Indigo

Start at: 2019-02-06 08:01:10
End at: 2019-02-06 08:01:40
Local clock offset: 0.101 ms
Remote clock offset: 1.301 ms


# Below is generated by plot.py at 2019-02-06 10:01:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 391.21 Mbit/s
95th percentile per-packet one-way delay: 63.184 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 218.93 Mbit/s
95th percentile per-packet one-way delay: 63.368 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 180.12 Mbit/s
95th percentile per-packet one-way delay: 63.229 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 164.27 Mbit/s
95th percentile per-packet one-way delay: 60.387 ms
Loss rate: 0.01%
```
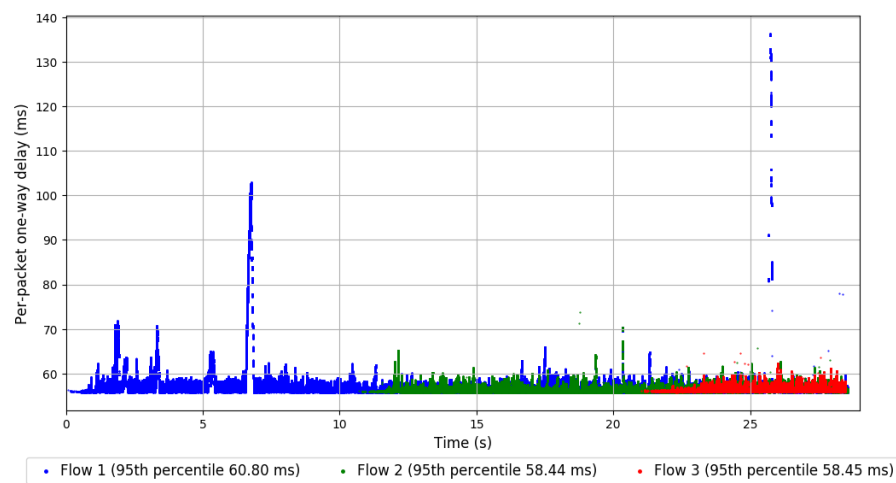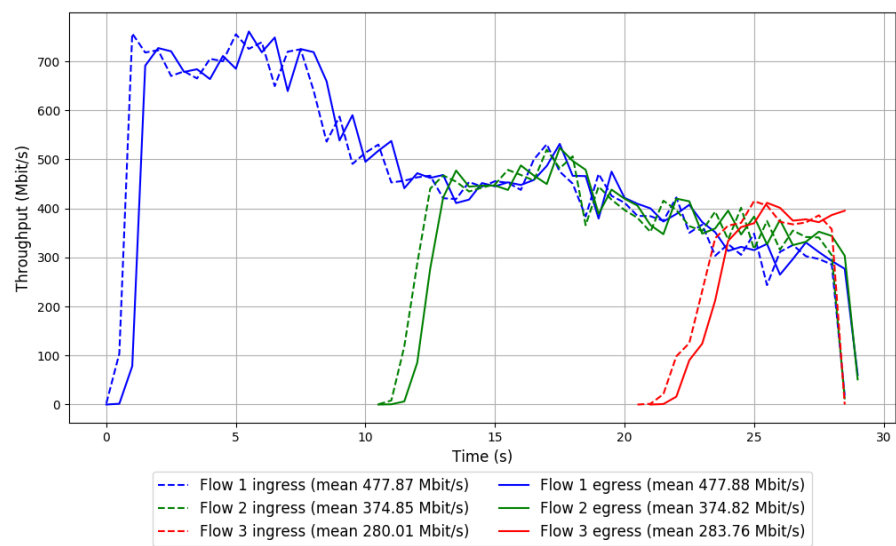
Run 5: Report of Indigo — Data Link

```
Run 1: Statistics of Indigo-MusesC3

Start at: 2019-02-06 05:14:29
End at: 2019-02-06 05:14:59
Local clock offset: -0.139 ms
Remote clock offset: -1.221 ms


# Below is generated by plot.py at 2019-02-06 10:01:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 847.50 Mbit/s
95th percentile per-packet one-way delay: 61.848 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 509.92 Mbit/s
95th percentile per-packet one-way delay: 62.658 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 406.88 Mbit/s
95th percentile per-packet one-way delay: 61.144 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 292.86 Mbit/s
95th percentile per-packet one-way delay: 59.267 ms
Loss rate: 0.00%
```
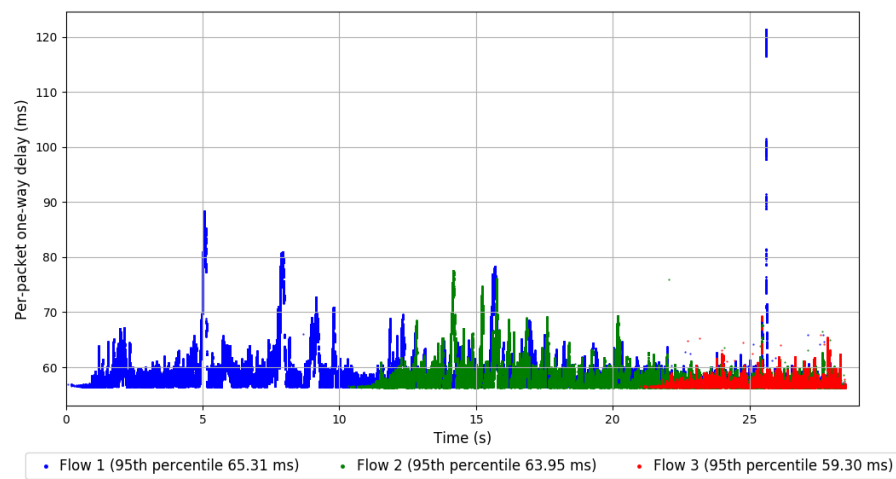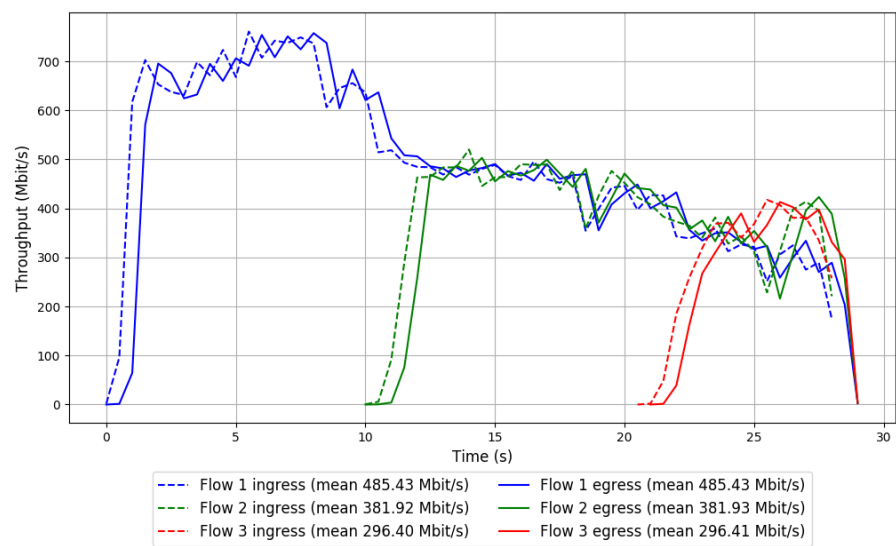
Run 1: Report of Indigo-MusesC3 — Data Link

Flow 1 ingress (mean 509.92 Mbit/s) --- Flow 1 egress (mean 509.92 Mbit/s)
Flow 2 ingress (mean 406.73 Mbit/s) --- Flow 2 egress (mean 406.88 Mbit/s)
Flow 3 ingress (mean 292.85 Mbit/s) --- Flow 3 egress (mean 292.86 Mbit/s)

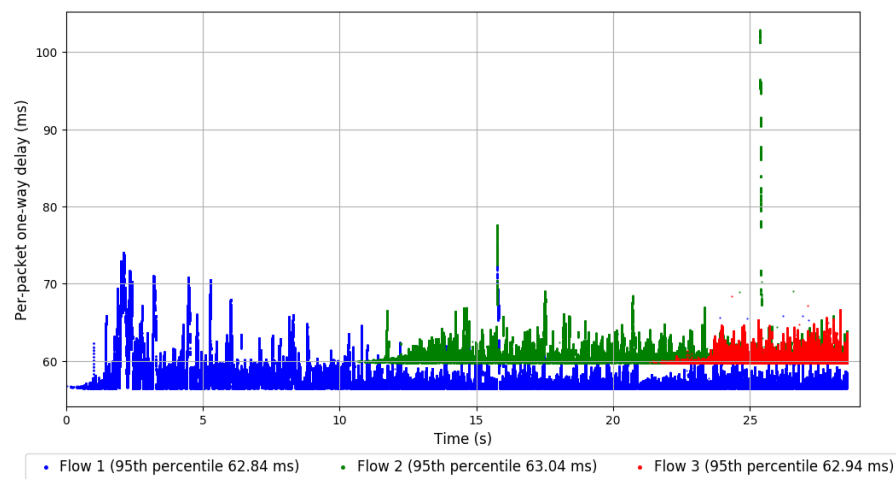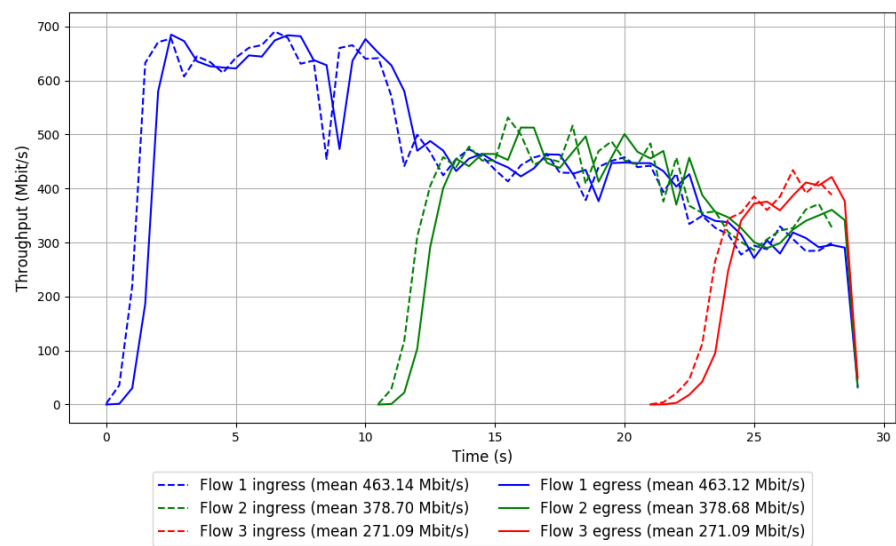Flow 1 (95th percentile 62.66 ms) • Flow 2 (95th percentile 61.14 ms) • Flow 3 (95th percentile 59.27 ms)

```
Run 2: Statistics of Indigo-MusesC3

Start at: 2019-02-06 05:54:05
End at: 2019-02-06 05:54:35
Local clock offset: 0.144 ms
Remote clock offset: -0.581 ms


# Below is generated by plot.py at 2019-02-06 10:01:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 825.67 Mbit/s
95th percentile per-packet one-way delay: 59.146 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 488.37 Mbit/s
95th percentile per-packet one-way delay: 59.446 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 399.72 Mbit/s
95th percentile per-packet one-way delay: 58.277 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 295.27 Mbit/s
95th percentile per-packet one-way delay: 59.725 ms
Loss rate: 0.00%
```

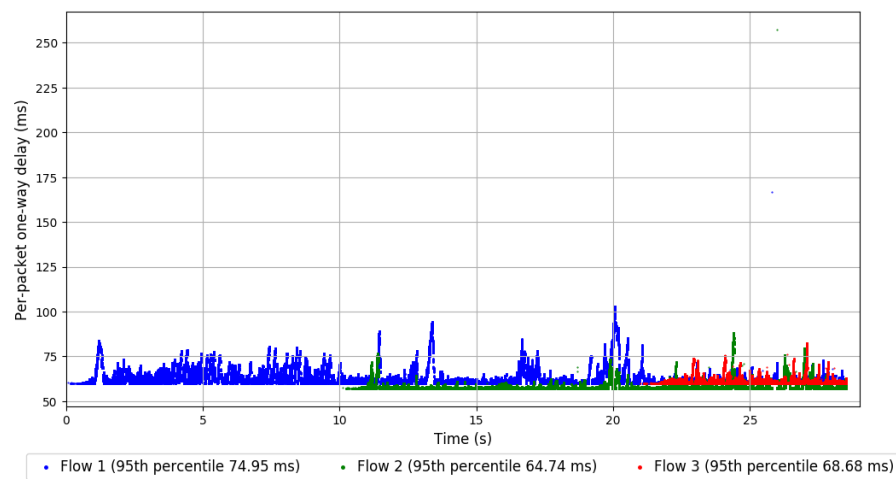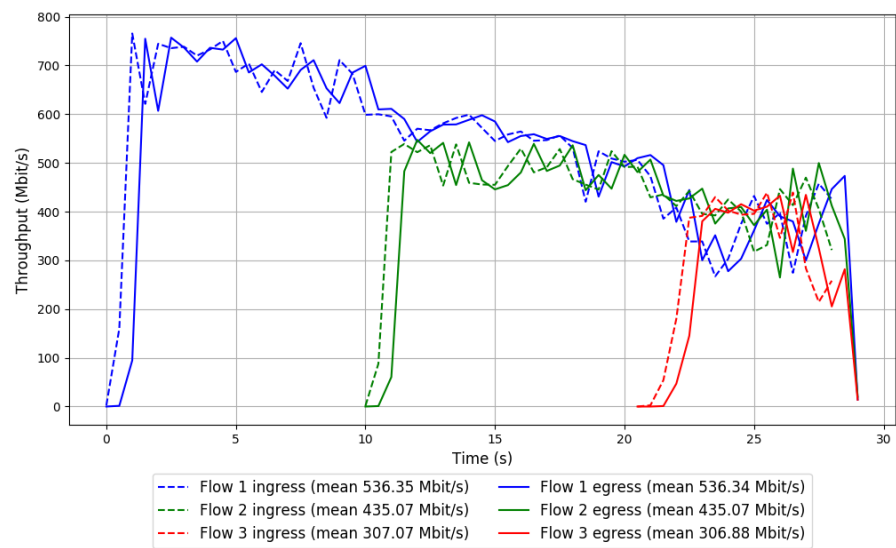Run 2: Report of Indigo-MusesC3 — Data Link

```
Run 3: Statistics of Indigo-MusesC3

Start at: 2019-02-06 06:33:39
End at: 2019-02-06 06:34:09
Local clock offset: 0.284 ms
Remote clock offset: -0.828 ms

# Below is generated by plot.py at 2019-02-06 10:14:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 786.76 Mbit/s
95th percentile per-packet one-way delay: 59.450 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 477.88 Mbit/s
95th percentile per-packet one-way delay: 60.798 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 374.82 Mbit/s
95th percentile per-packet one-way delay: 58.440 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 283.76 Mbit/s
95th percentile per-packet one-way delay: 58.454 ms
Loss rate: 0.00%
```

Run 3: Report of Indigo-MusesC3 — Data Link

```
Run 4: Statistics of Indigo-MusesC3

Start at: 2019-02-06 07:12:53
End at: 2019-02-06 07:13:23
Local clock offset: -0.097 ms
Remote clock offset: -0.627 ms


# Below is generated by plot.py at 2019-02-06 10:16:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 807.63 Mbit/s
95th percentile per-packet one-way delay: 64.270 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 485.43 Mbit/s
95th percentile per-packet one-way delay: 65.307 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 381.93 Mbit/s
95th percentile per-packet one-way delay: 63.951 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 296.41 Mbit/s
95th percentile per-packet one-way delay: 59.295 ms
Loss rate: 0.00%
```
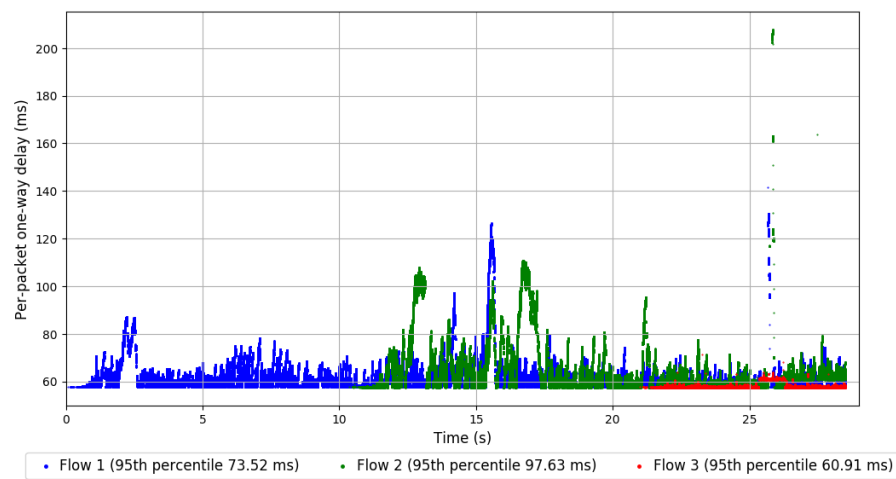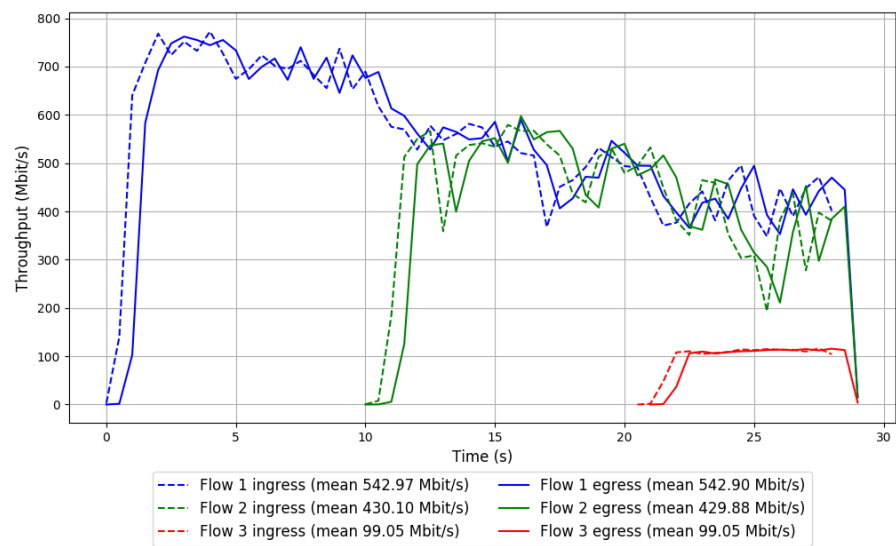
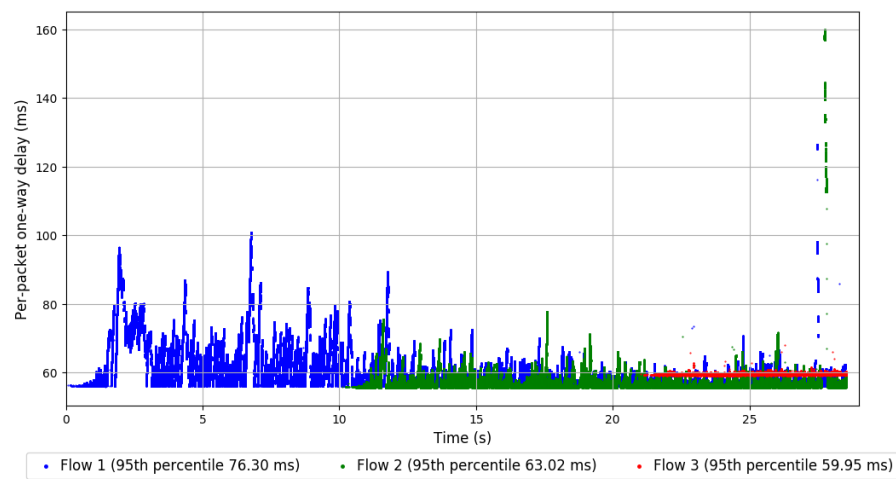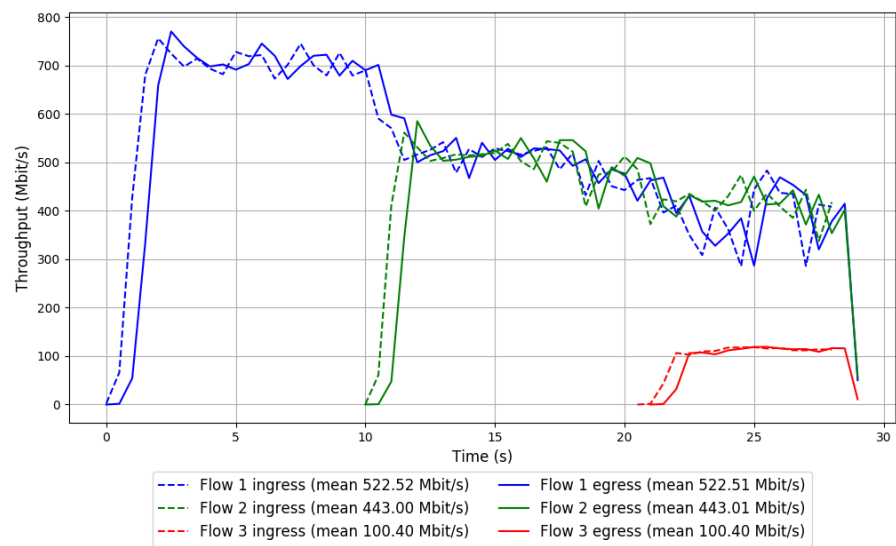Run 4: Report of Indigo-MusesC3 — Data Link

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```
Run 5: Statistics of Indigo-MusesC3

Start at: 2019-02-06 07:52:19
End at: 2019-02-06 07:52:49
Local clock offset: -0.066 ms
Remote clock offset: -0.532 ms

# Below is generated by plot.py at 2019-02-06 10:16:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 770.58 Mbit/s
95th percentile per-packet one-way delay: 62.969 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 463.12 Mbit/s
95th percentile per-packet one-way delay: 62.839 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 378.68 Mbit/s
95th percentile per-packet one-way delay: 63.039 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 271.09 Mbit/s
95th percentile per-packet one-way delay: 62.944 ms
Loss rate: 0.00%
```

Run 5: Report of Indigo-MusesC3 — Data Link

```
Run 1: Statistics of Indigo-MusesC5

Start at: 2019-02-06 05:09:10
End at: 2019-02-06 05:09:40
Local clock offset: 0.083 ms
Remote clock offset: -0.155 ms

# Below is generated by plot.py at 2019-02-06 10:20:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 898.66 Mbit/s
95th percentile per-packet one-way delay: 72.724 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 536.34 Mbit/s
95th percentile per-packet one-way delay: 74.955 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 435.07 Mbit/s
95th percentile per-packet one-way delay: 64.740 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 306.88 Mbit/s
95th percentile per-packet one-way delay: 68.678 ms
Loss rate: 0.06%
```
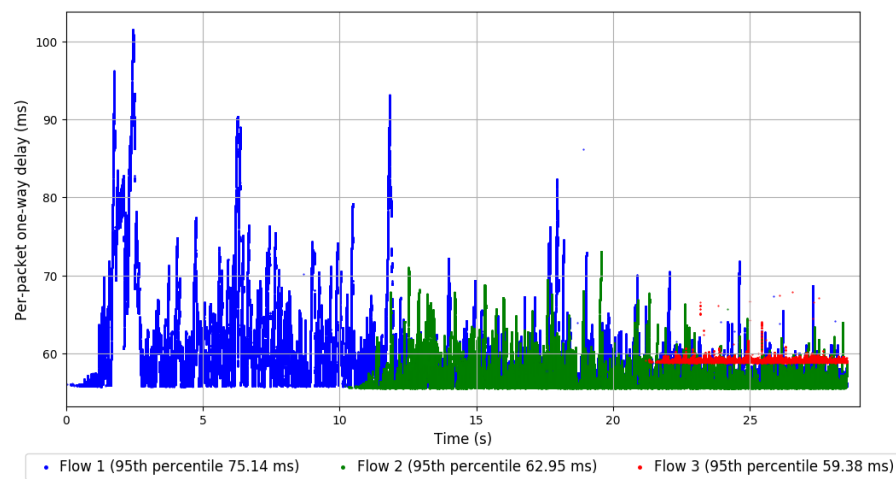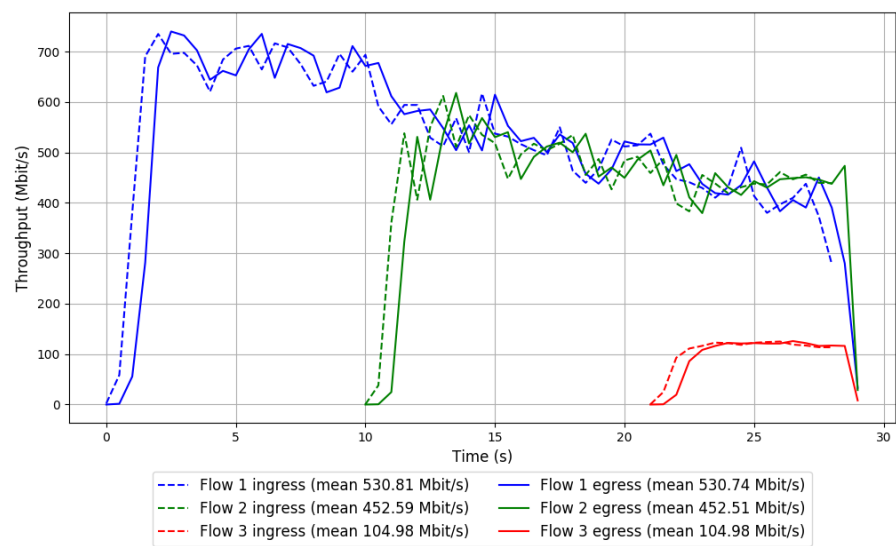
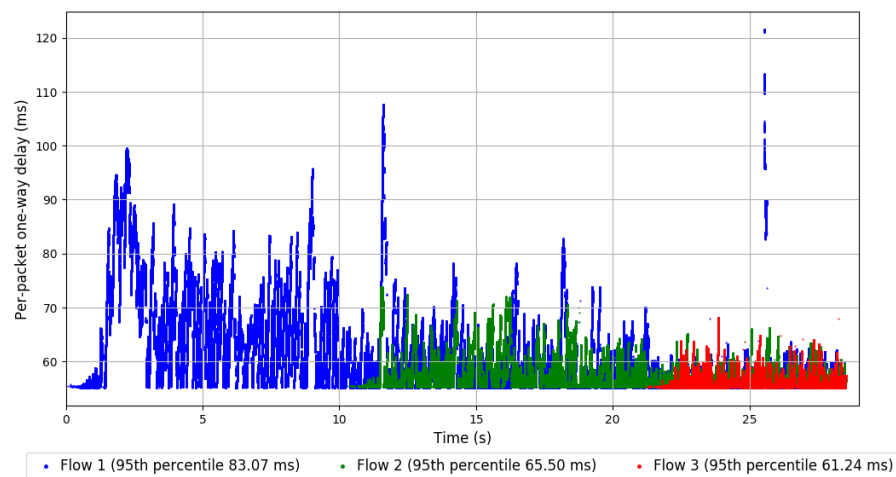Run 1: Report of Indigo-MusesC5 — Data Link

```
Run 2: Statistics of Indigo-MusesC5

Start at: 2019-02-06 05:48:49
End at: 2019-02-06 05:49:19
Local clock offset: -0.348 ms
Remote clock offset: 0.092 ms

# Below is generated by plot.py at 2019-02-06 10:20:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 843.44 Mbit/s
95th percentile per-packet one-way delay: 83.418 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 542.90 Mbit/s
95th percentile per-packet one-way delay: 73.524 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 429.88 Mbit/s
95th percentile per-packet one-way delay: 97.628 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 99.05 Mbit/s
95th percentile per-packet one-way delay: 60.909 ms
Loss rate: 0.00%
```

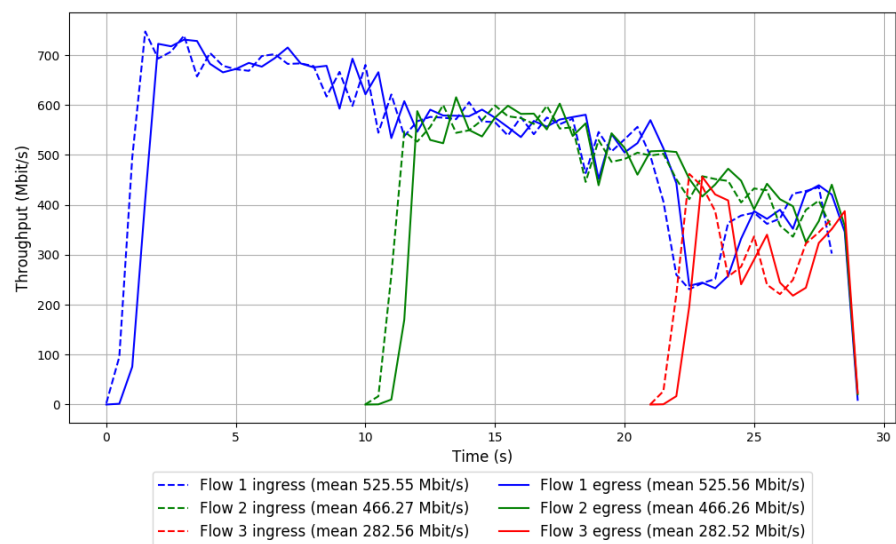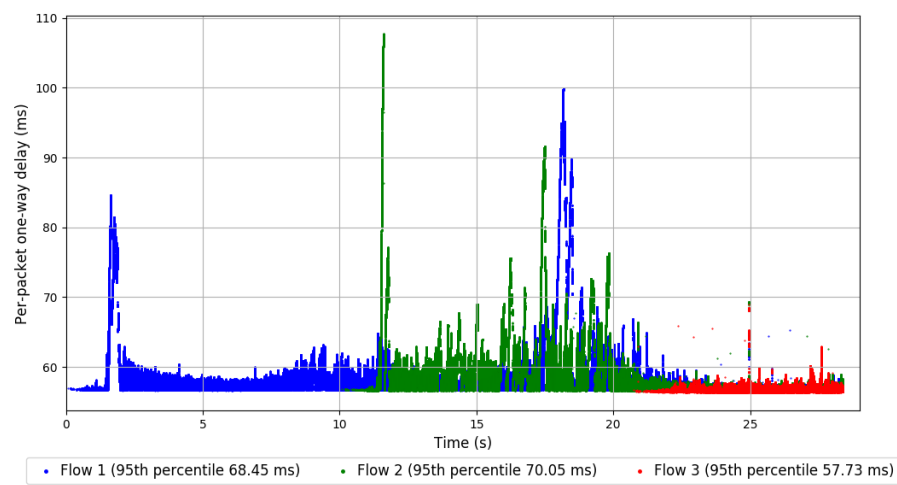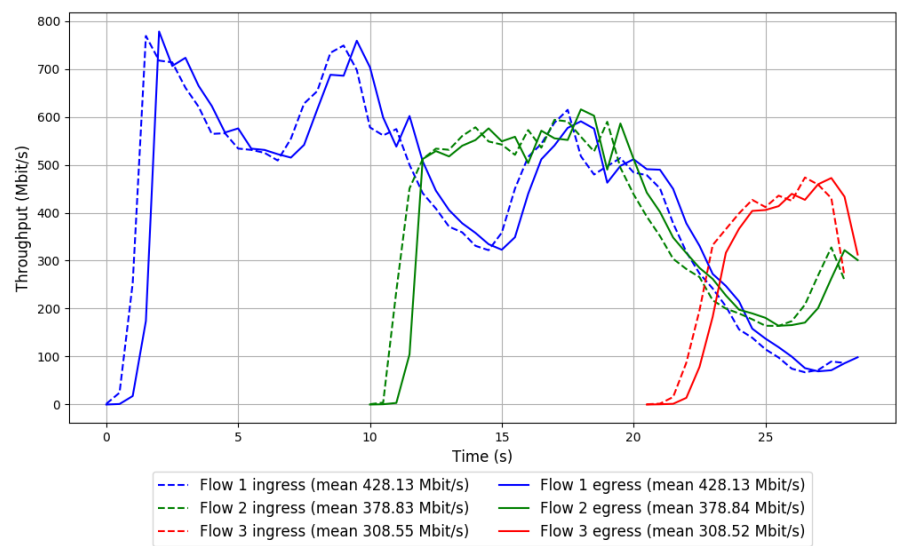Run 2: Report of Indigo-MusesC5 — Data Link

```
Run 3: Statistics of Indigo-MusesC5

Start at: 2019-02-06 06:28:23
End at: 2019-02-06 06:28:53
Local clock offset: 0.227 ms
Remote clock offset: -0.783 ms


# Below is generated by plot.py at 2019-02-06 10:21:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 835.72 Mbit/s
95th percentile per-packet one-way delay: 73.492 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 522.51 Mbit/s
95th percentile per-packet one-way delay: 76.295 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 443.01 Mbit/s
95th percentile per-packet one-way delay: 63.023 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 100.40 Mbit/s
95th percentile per-packet one-way delay: 59.953 ms
Loss rate: 0.00%
```

Run 3: Report of Indigo-MusesC5 — Data Link

```
Run 4: Statistics of Indigo-MusesC5

Start at: 2019-02-06 07:07:28
End at: 2019-02-06 07:07:58
Local clock offset: 0.304 ms
Remote clock offset: -0.811 ms


# Below is generated by plot.py at 2019-02-06 10:21:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 849.13 Mbit/s
95th percentile per-packet one-way delay: 71.703 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 530.74 Mbit/s
95th percentile per-packet one-way delay: 75.141 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 452.51 Mbit/s
95th percentile per-packet one-way delay: 62.953 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 104.98 Mbit/s
95th percentile per-packet one-way delay: 59.383 ms
Loss rate: 0.00%
```

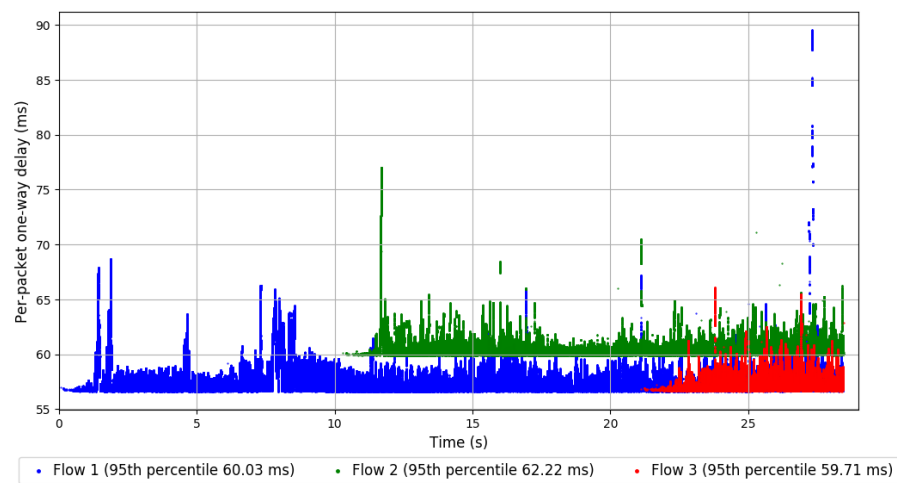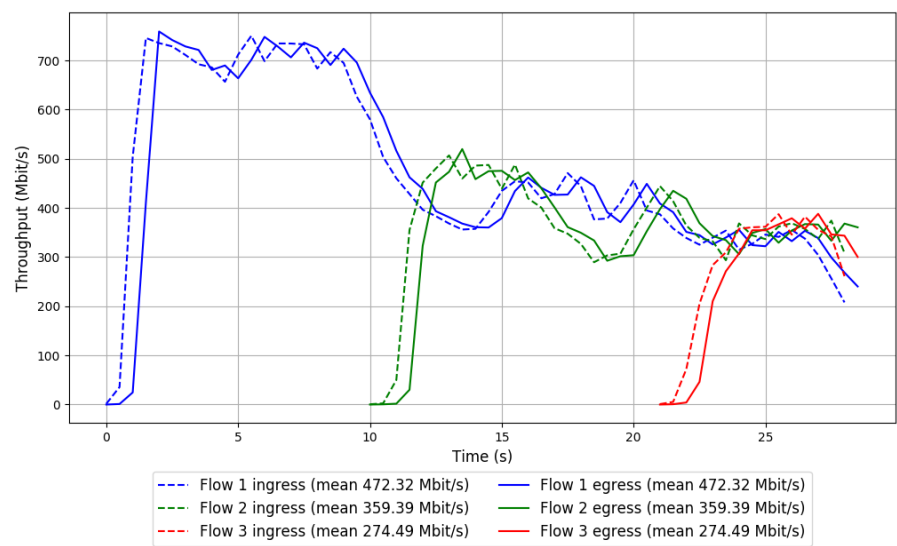Run 4: Report of Indigo-MusesC5 — Data Link

```
Run 5: Statistics of Indigo-MusesC5

Start at: 2019-02-06 07:47:17
End at: 2019-02-06 07:47:47
Local clock offset: 0.176 ms
Remote clock offset: -1.586 ms


# Below is generated by plot.py at 2019-02-06 10:22:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 896.39 Mbit/s
95th percentile per-packet one-way delay: 77.945 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 525.56 Mbit/s
95th percentile per-packet one-way delay: 83.072 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 466.26 Mbit/s
95th percentile per-packet one-way delay: 65.503 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 282.52 Mbit/s
95th percentile per-packet one-way delay: 61.242 ms
Loss rate: 0.00%
```

Run 5: Report of Indigo-MusesC5 — Data Link

```
Run 1: Statistics of Indigo-MusesD

Start at: 2019-02-06 05:12:28
End at: 2019-02-06 05:12:58
Local clock offset: 0.023 ms
Remote clock offset: -0.442 ms

# Below is generated by plot.py at 2019-02-06 10:32:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 756.17 Mbit/s
95th percentile per-packet one-way delay: 68.379 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 428.13 Mbit/s
95th percentile per-packet one-way delay: 68.446 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 378.84 Mbit/s
95th percentile per-packet one-way delay: 70.054 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 308.52 Mbit/s
95th percentile per-packet one-way delay: 57.726 ms
Loss rate: 0.01%
```
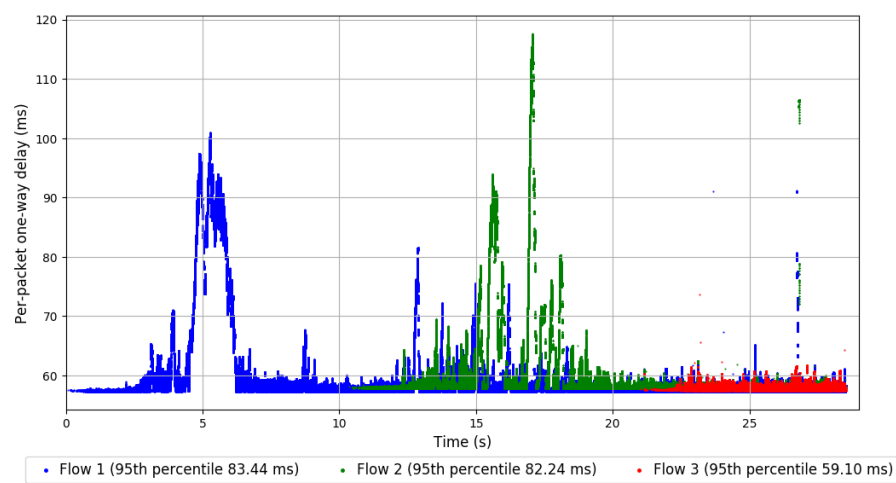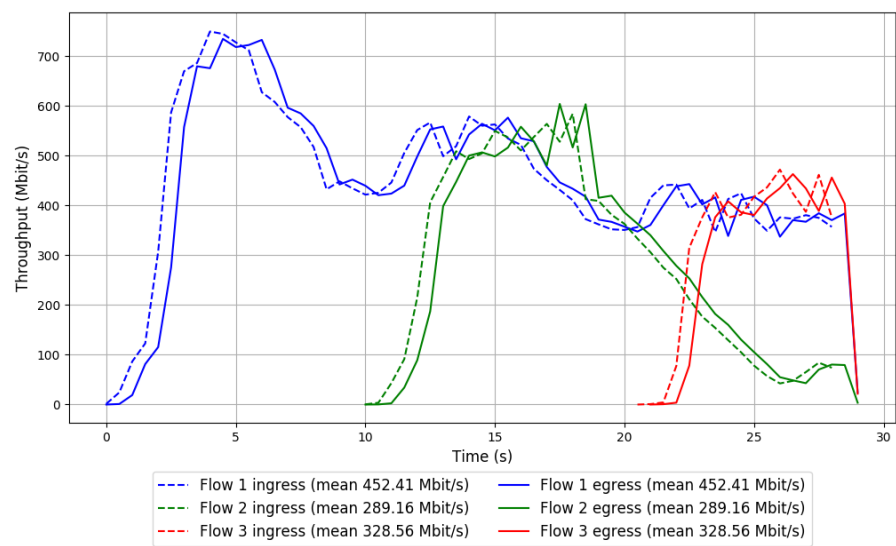
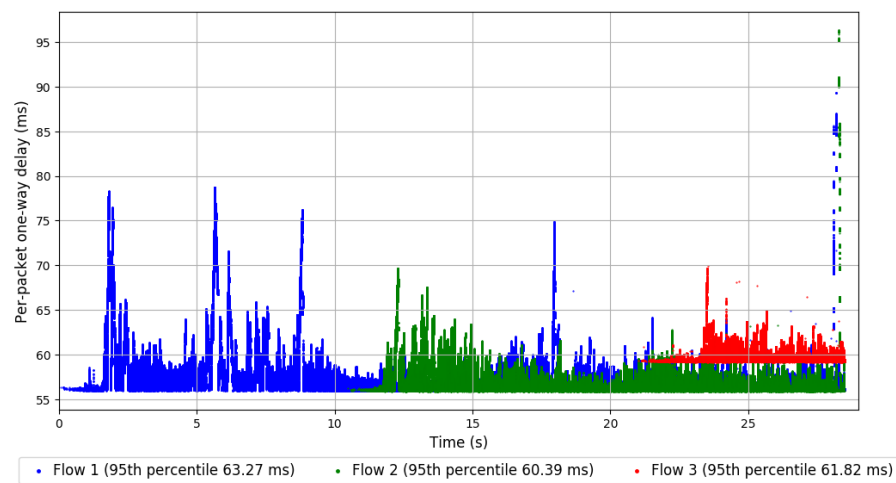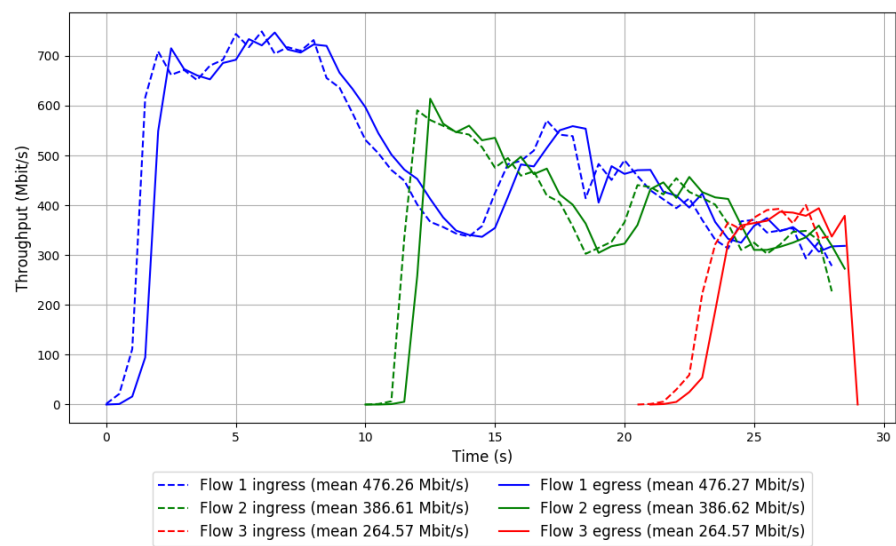Run 1: Report of Indigo-MusesD — Data Link

```
Run 2: Statistics of Indigo-MusesD

Start at: 2019-02-06 05:52:07
End at: 2019-02-06 05:52:37
Local clock offset: -0.568 ms
Remote clock offset: -0.763 ms


# Below is generated by plot.py at 2019-02-06 10:33:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 773.09 Mbit/s
95th percentile per-packet one-way delay: 61.471 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 472.32 Mbit/s
95th percentile per-packet one-way delay: 60.033 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 359.39 Mbit/s
95th percentile per-packet one-way delay: 62.218 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 274.49 Mbit/s
95th percentile per-packet one-way delay: 59.710 ms
Loss rate: 0.00%
```

Run 2: Report of Indigo-MusesD — Data Link

```
Run 3: Statistics of Indigo-MusesD

Start at: 2019-02-06 06:31:39
End at: 2019-02-06 06:32:09
Local clock offset: -0.55 ms
Remote clock offset: 0.026 ms


# Below is generated by plot.py at 2019-02-06 10:33:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 723.45 Mbit/s
95th percentile per-packet one-way delay: 81.081 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 452.41 Mbit/s
95th percentile per-packet one-way delay: 83.438 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 289.16 Mbit/s
95th percentile per-packet one-way delay: 82.243 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 328.56 Mbit/s
95th percentile per-packet one-way delay: 59.097 ms
Loss rate: 0.00%
```
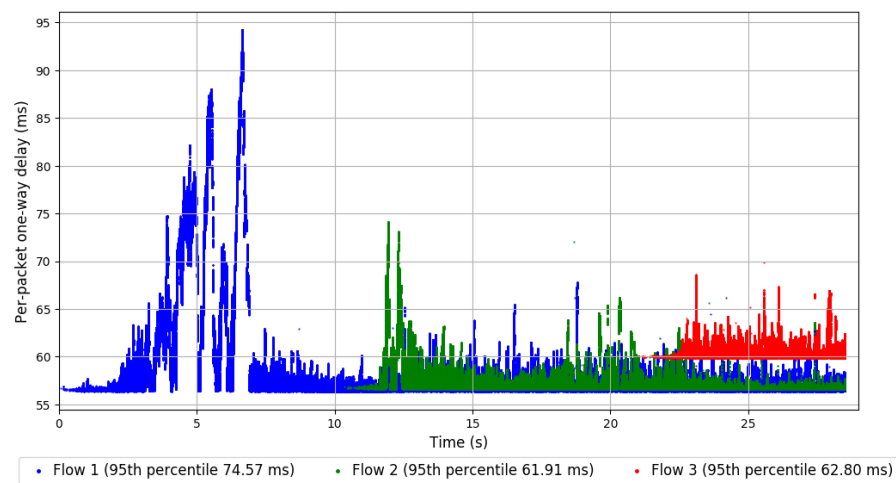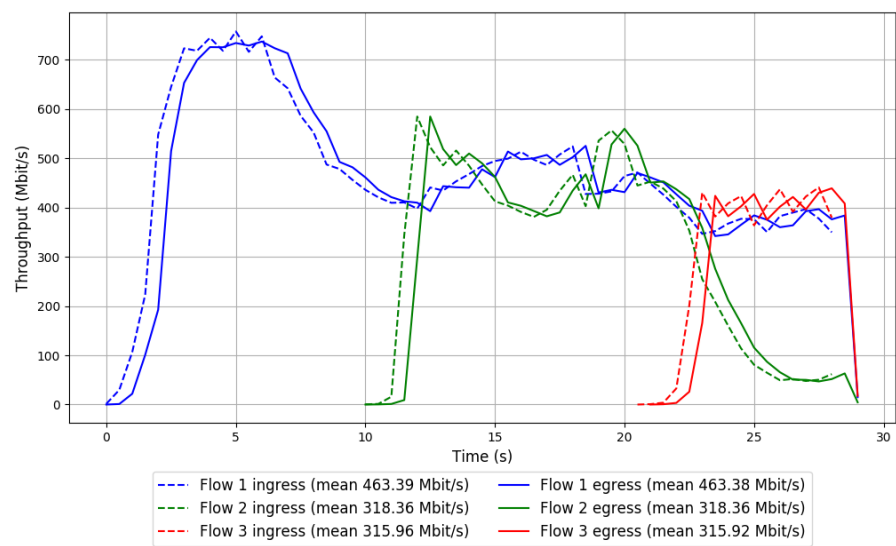
Run 3: Report of Indigo-MusesD — Data Link
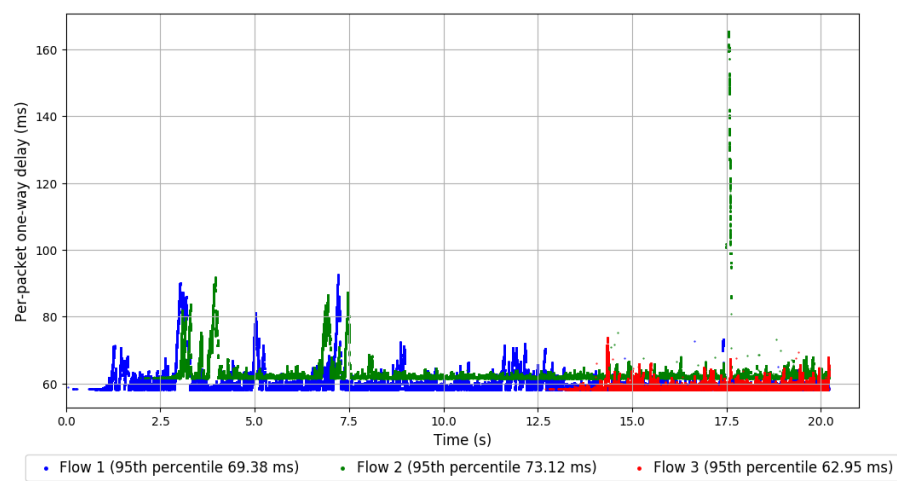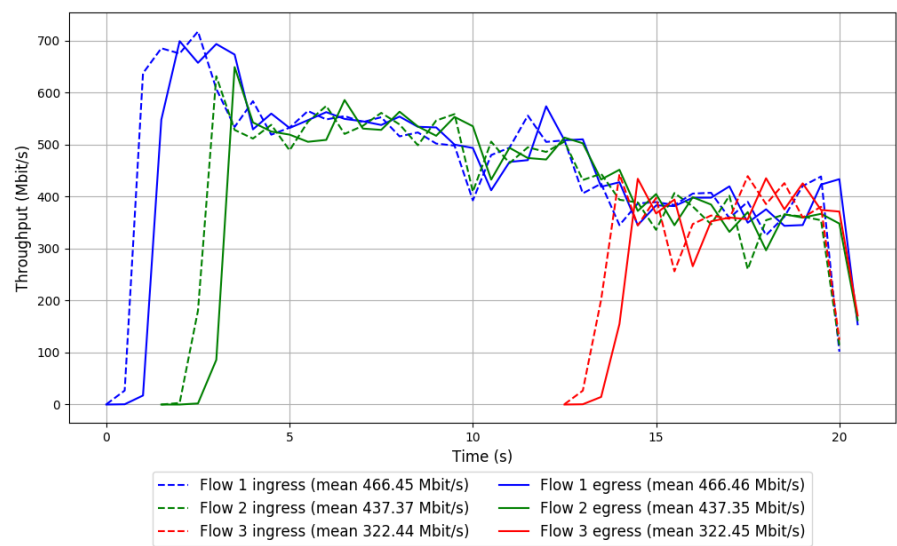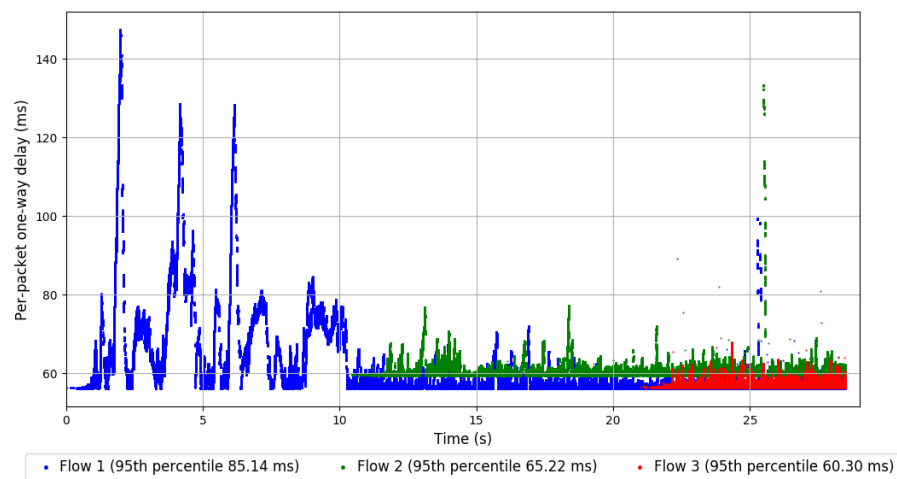

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```
Run 4: Statistics of Indigo-MusesD

Start at: 2019-02-06 07:10:44
End at: 2019-02-06 07:11:14
Local clock offset: -0.476 ms
Remote clock offset: -1.469 ms


# Below is generated by plot.py at 2019-02-06 10:37:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 790.37 Mbit/s
95th percentile per-packet one-way delay: 62.171 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 476.27 Mbit/s
95th percentile per-packet one-way delay: 63.272 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 386.62 Mbit/s
95th percentile per-packet one-way delay: 60.386 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 264.57 Mbit/s
95th percentile per-packet one-way delay: 61.821 ms
Loss rate: 0.00%
```
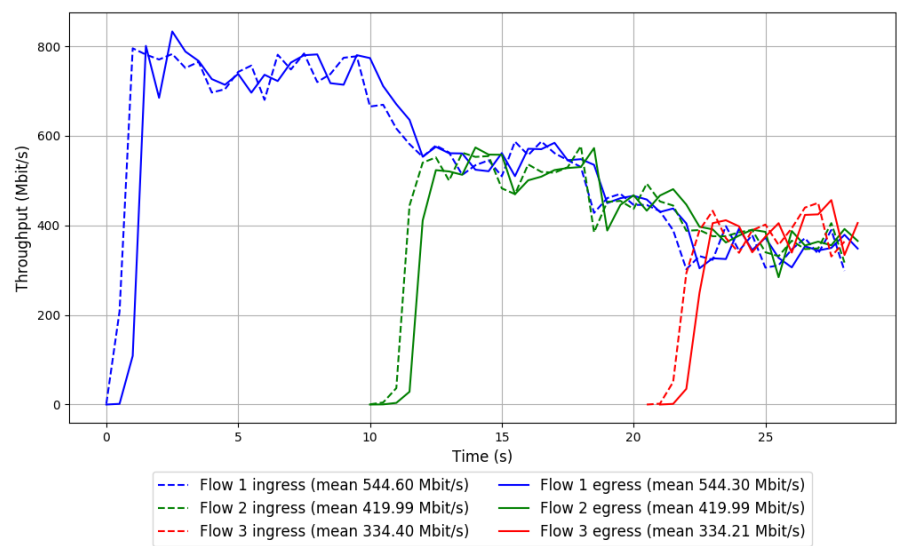
Run 4: Report of Indigo-MusesD — Data Link

```
Run 5: Statistics of Indigo-MusesD

Start at: 2019-02-06 07:50:28
End at: 2019-02-06 07:50:58
Local clock offset: 0.308 ms
Remote clock offset: 0.004 ms


# Below is generated by plot.py at 2019-02-06 10:37:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 749.35 Mbit/s
95th percentile per-packet one-way delay: 70.561 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 463.38 Mbit/s
95th percentile per-packet one-way delay: 74.572 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 318.36 Mbit/s
95th percentile per-packet one-way delay: 61.905 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 315.92 Mbit/s
95th percentile per-packet one-way delay: 62.802 ms
Loss rate: 0.01%
```

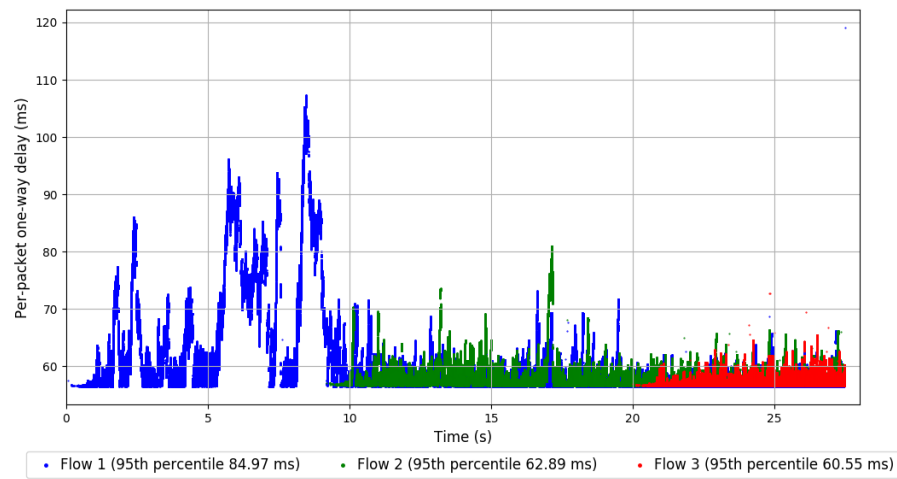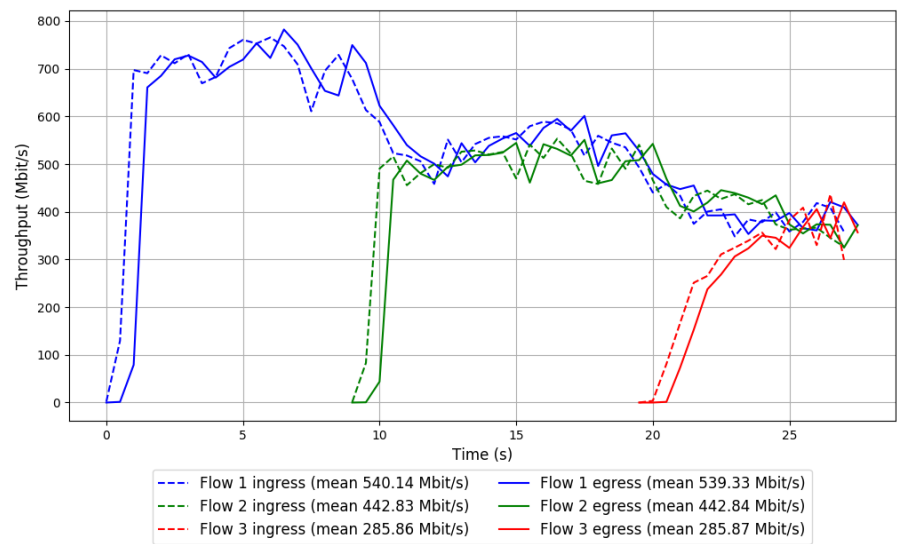Run 5: Report of Indigo-MusesD — Data Link

- - - Flow 1 ingress (mean 463.39 Mbit/s) ——— Flow 1 egress (mean 463.38 Mbit/s)
- - - Flow 2 ingress (mean 318.36 Mbit/s) ——— Flow 2 egress (mean 318.36 Mbit/s)
- - - Flow 3 ingress (mean 315.96 Mbit/s) ——— Flow 3 egress (mean 315.92 Mbit/s)

• Flow 1 (95th percentile 74.57 ms)   • Flow 2 (95th percentile 61.91 ms)   • Flow 3 (95th percentile 62.80 ms)

```
Run 1: Statistics of Indigo-MusesT

Start at: 2019-02-06 05:03:08
End at: 2019-02-06 05:03:38
Local clock offset: -0.15 ms
Remote clock offset: 1.112 ms
```

Run 1: Report of Indigo-MusesT — Data Link

```
Run 2: Statistics of Indigo-MusesT

Start at: 2019-02-06 05:42:24
End at: 2019-02-06 05:42:54
Local clock offset: 0.325 ms
Remote clock offset: -0.675 ms


# Below is generated by plot.py at 2019-02-06 10:42:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 900.54 Mbit/s
95th percentile per-packet one-way delay: 79.130 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 544.30 Mbit/s
95th percentile per-packet one-way delay: 85.141 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 419.99 Mbit/s
95th percentile per-packet one-way delay: 65.223 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 334.21 Mbit/s
95th percentile per-packet one-way delay: 60.300 ms
Loss rate: 0.01%
```
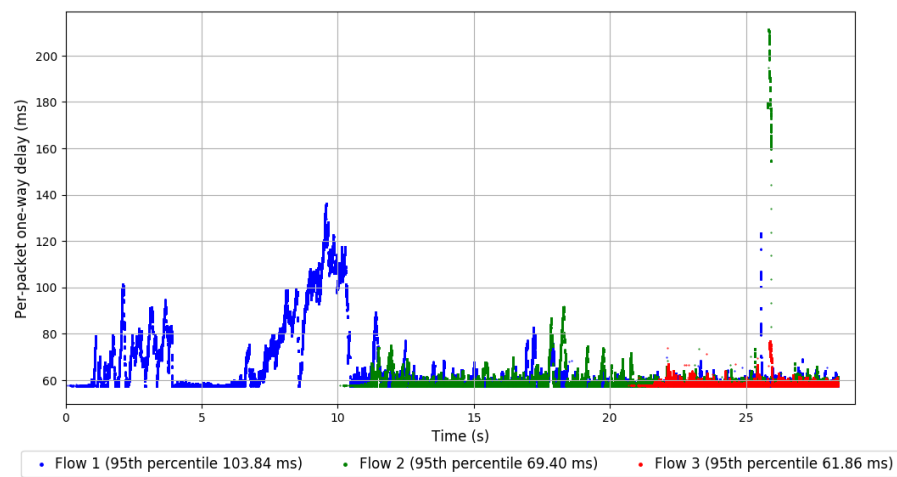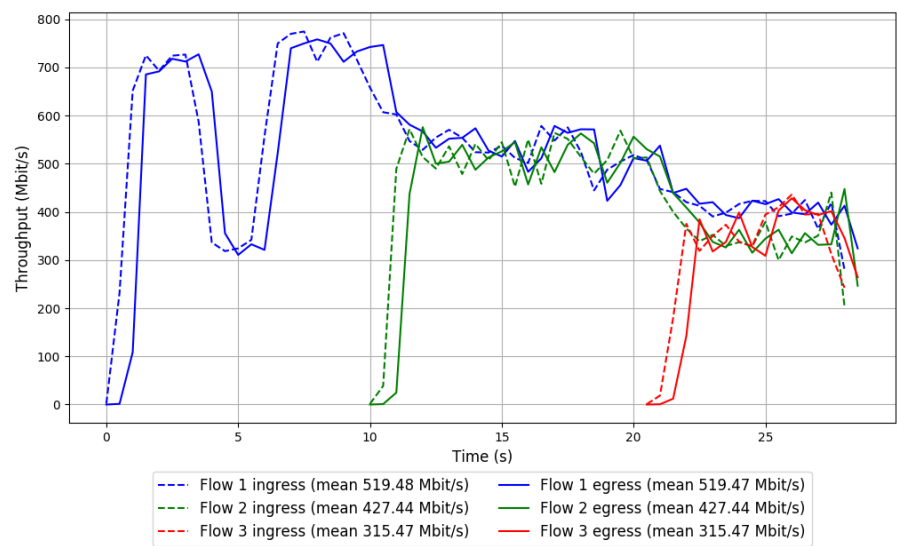
Run 2: Report of Indigo-MusesT — Data Link

```
Run 3: Statistics of Indigo-MusesT

Start at: 2019-02-06 06:22:22
End at: 2019-02-06 06:22:52
Local clock offset: 0.016 ms
Remote clock offset: -0.121 ms


# Below is generated by plot.py at 2019-02-06 10:43:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 912.38 Mbit/s
95th percentile per-packet one-way delay: 78.871 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 539.33 Mbit/s
95th percentile per-packet one-way delay: 84.972 ms
Loss rate: 0.12%
-- Flow 2:
Average throughput: 442.84 Mbit/s
95th percentile per-packet one-way delay: 62.892 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 285.87 Mbit/s
95th percentile per-packet one-way delay: 60.549 ms
Loss rate: 0.00%
```
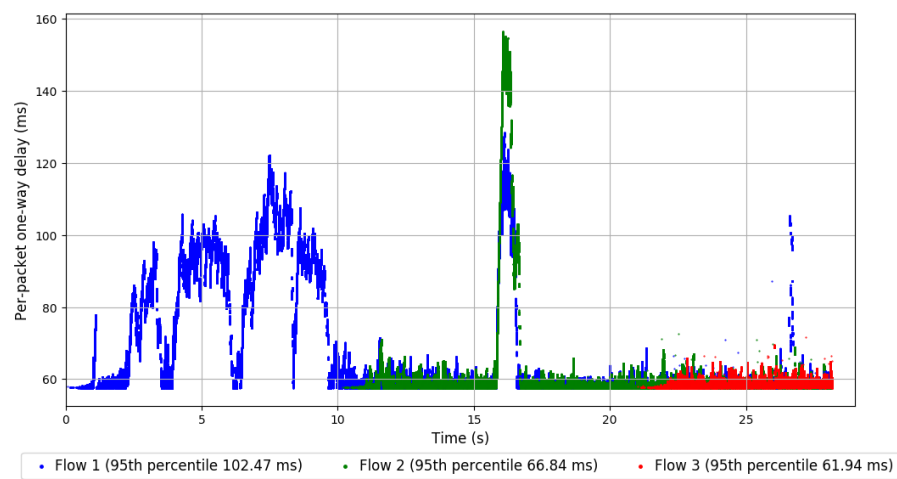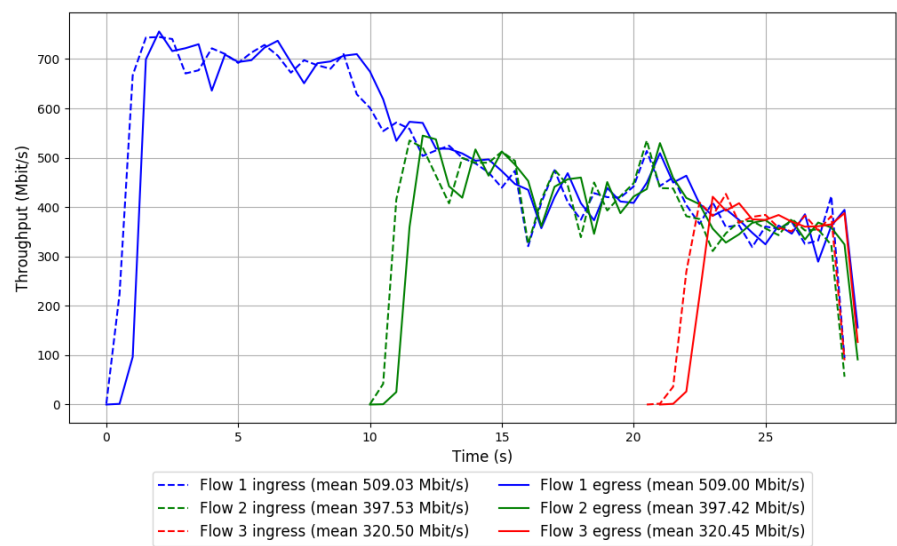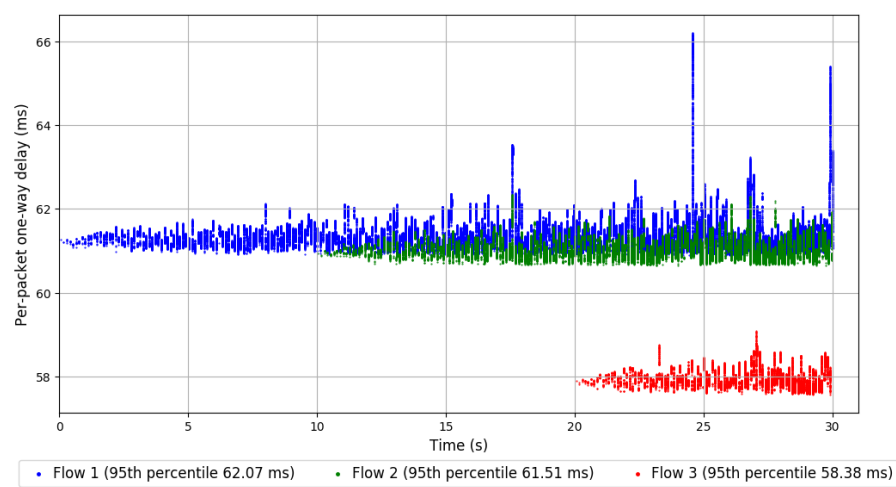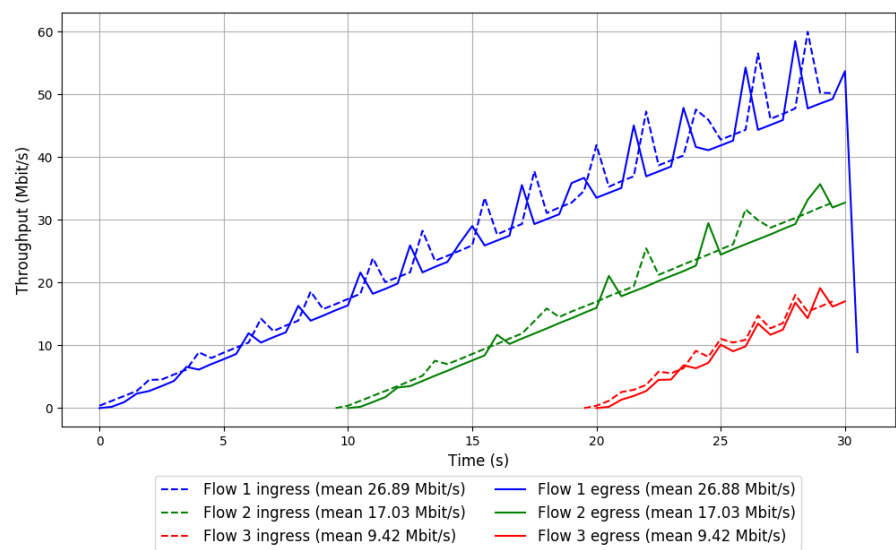
Run 3: Report of Indigo-MusesT — Data Link

Flow 1 ingress (mean 540.14 Mbit/s)   Flow 1 egress (mean 539.33 Mbit/s)
Flow 2 ingress (mean 442.83 Mbit/s)   Flow 2 egress (mean 442.84 Mbit/s)
Flow 3 ingress (mean 285.86 Mbit/s)   Flow 3 egress (mean 285.87 Mbit/s)

Flow 1 (95th percentile 84.97 ms)   Flow 2 (95th percentile 62.89 ms)   Flow 3 (95th percentile 60.55 ms)

```
Run 4: Statistics of Indigo-MusesT

Start at: 2019-02-06 07:01:12
End at: 2019-02-06 07:01:42
Local clock offset: -0.157 ms
Remote clock offset: 0.339 ms


# Below is generated by plot.py at 2019-02-06 10:51:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 881.42 Mbit/s
95th percentile per-packet one-way delay: 95.024 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 519.47 Mbit/s
95th percentile per-packet one-way delay: 103.845 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 427.44 Mbit/s
95th percentile per-packet one-way delay: 69.396 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 315.47 Mbit/s
95th percentile per-packet one-way delay: 61.860 ms
Loss rate: 0.00%
```

Run 4: Report of Indigo-MusesT — Data Link
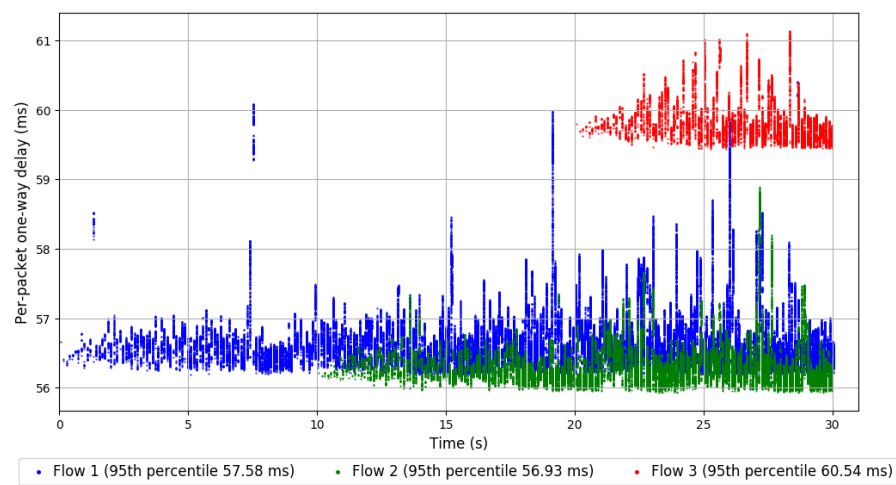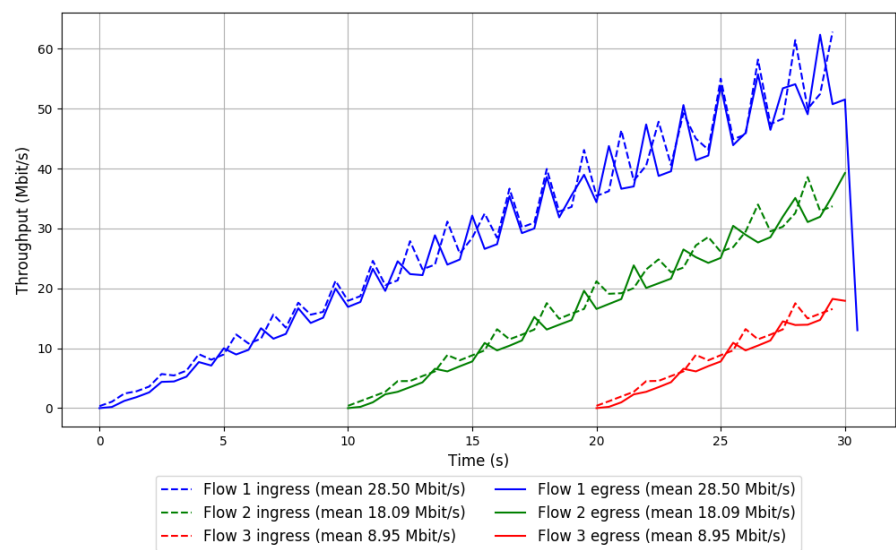
```
Run 5: Statistics of Indigo-MusesT

Start at: 2019-02-06 07:40:58
End at: 2019-02-06 07:41:28
Local clock offset: 0.081 ms
Remote clock offset: 0.736 ms


# Below is generated by plot.py at 2019-02-06 10:51:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 844.90 Mbit/s
95th percentile per-packet one-way delay: 99.866 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 509.00 Mbit/s
95th percentile per-packet one-way delay: 102.470 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 397.42 Mbit/s
95th percentile per-packet one-way delay: 66.845 ms
Loss rate: 0.03%
-- Flow 3:
Average throughput: 320.45 Mbit/s
95th percentile per-packet one-way delay: 61.935 ms
Loss rate: 0.00%
```

Run 5: Report of Indigo-MusesT — Data Link
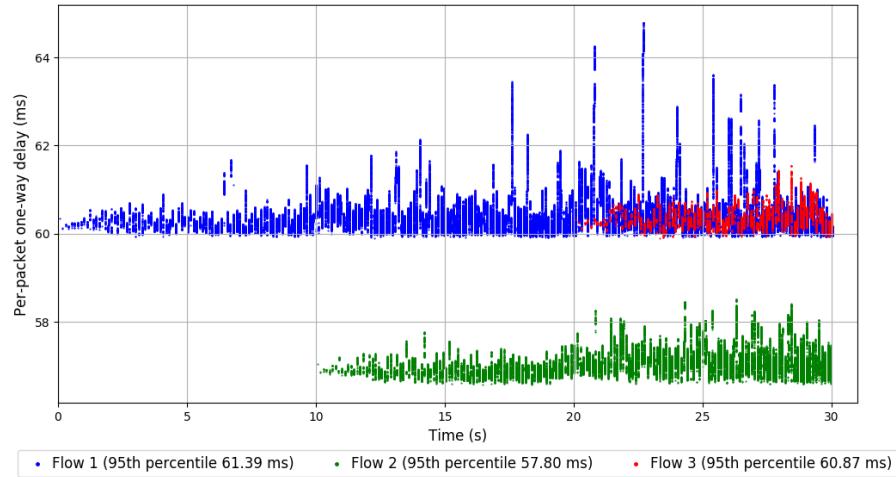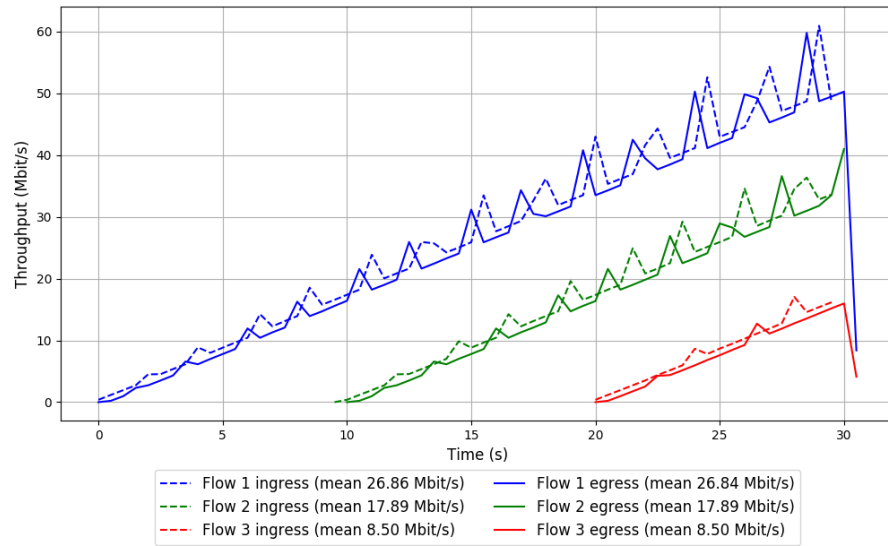

Flow 1 ingress (mean 509.03 Mbit/s)   Flow 1 egress (mean 509.00 Mbit/s)
Flow 2 ingress (mean 397.53 Mbit/s)   Flow 2 egress (mean 397.42 Mbit/s)
Flow 3 ingress (mean 320.50 Mbit/s)   Flow 3 egress (mean 320.45 Mbit/s)

Flow 1 (95th percentile 102.47 ms)   Flow 2 (95th percentile 66.84 ms)   Flow 3 (95th percentile 61.94 ms)

```
Run 1: Statistics of LEDBAT

Start at: 2019-02-06 05:19:43
End at: 2019-02-06 05:20:13
Local clock offset: 0.055 ms
Remote clock offset: 0.638 ms


# Below is generated by plot.py at 2019-02-06 10:51:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 41.31 Mbit/s
95th percentile per-packet one-way delay: 61.943 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 26.88 Mbit/s
95th percentile per-packet one-way delay: 62.068 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 17.03 Mbit/s
95th percentile per-packet one-way delay: 61.514 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 9.42 Mbit/s
95th percentile per-packet one-way delay: 58.382 ms
Loss rate: 0.00%
```
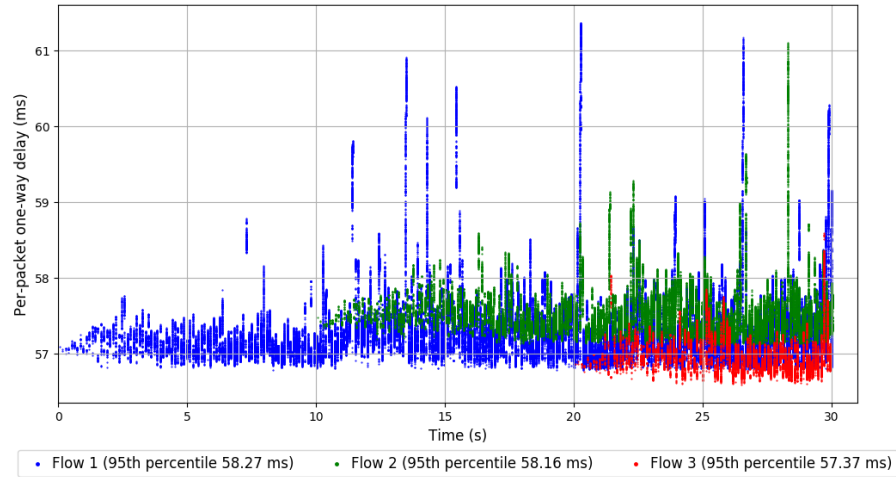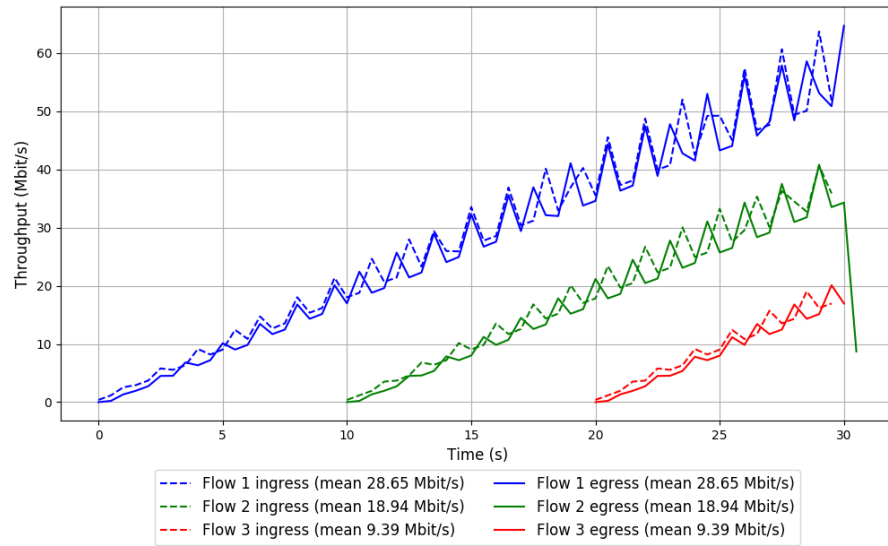
Run 1: Report of LEDBAT — Data Link

```
Run 2: Statistics of LEDBAT

Start at: 2019-02-06 05:59:24
End at: 2019-02-06 05:59:54
Local clock offset: -0.15 ms
Remote clock offset: -0.819 ms


# Below is generated by plot.py at 2019-02-06 10:51:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 43.47 Mbit/s
95th percentile per-packet one-way delay: 59.635 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 28.50 Mbit/s
95th percentile per-packet one-way delay: 57.579 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 18.09 Mbit/s
95th percentile per-packet one-way delay: 56.933 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 8.95 Mbit/s
95th percentile per-packet one-way delay: 60.541 ms
Loss rate: 0.00%
```
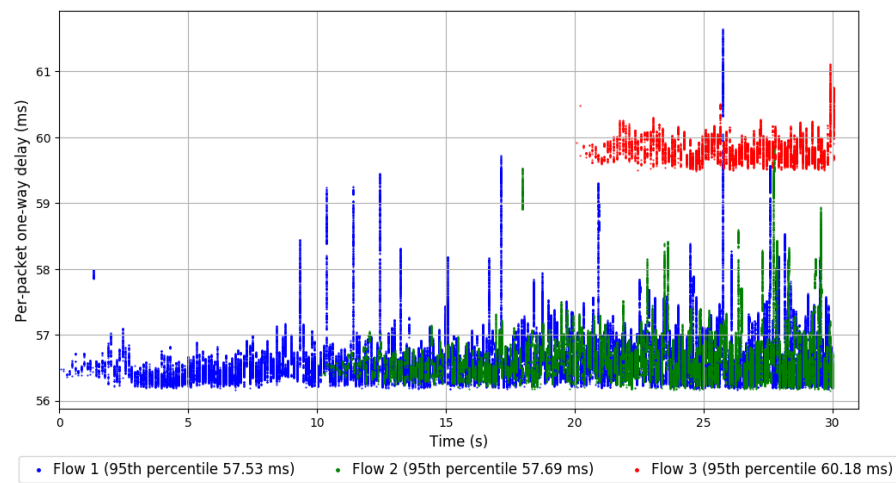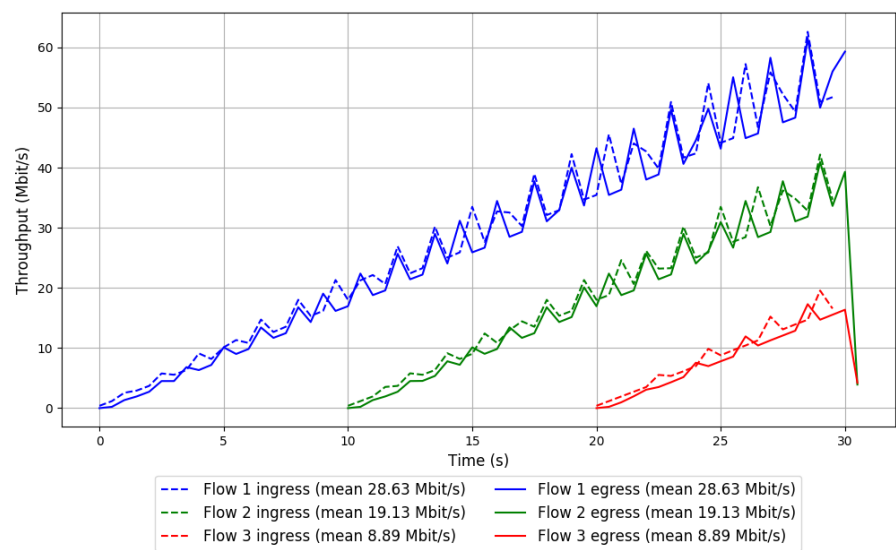
Run 2: Report of LEDBAT — Data Link

```
Run 3: Statistics of LEDBAT

Start at: 2019-02-06 06:38:51
End at: 2019-02-06 06:39:21
Local clock offset: 0.201 ms
Remote clock offset: -0.117 ms


# Below is generated by plot.py at 2019-02-06 10:51:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 41.56 Mbit/s
95th percentile per-packet one-way delay: 61.131 ms
Loss rate: 0.05%
-- Flow 1:
Average throughput: 26.84 Mbit/s
95th percentile per-packet one-way delay: 61.393 ms
Loss rate: 0.08%
-- Flow 2:
Average throughput: 17.89 Mbit/s
95th percentile per-packet one-way delay: 57.801 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 8.50 Mbit/s
95th percentile per-packet one-way delay: 60.871 ms
Loss rate: 0.00%
```
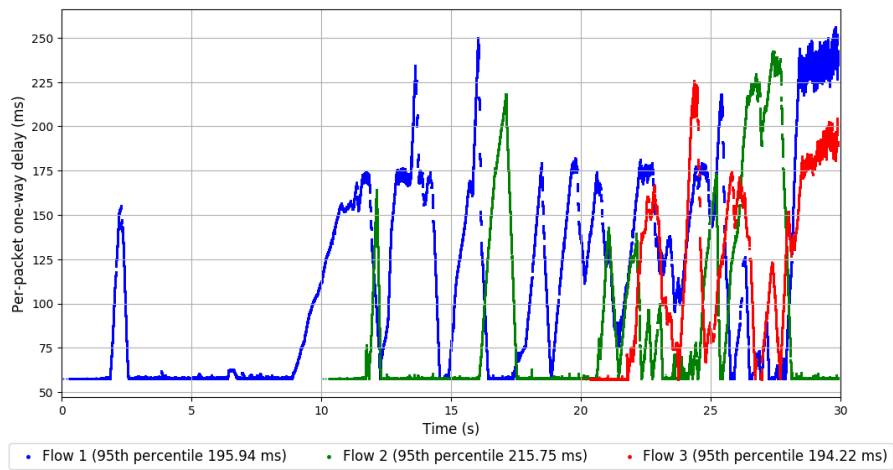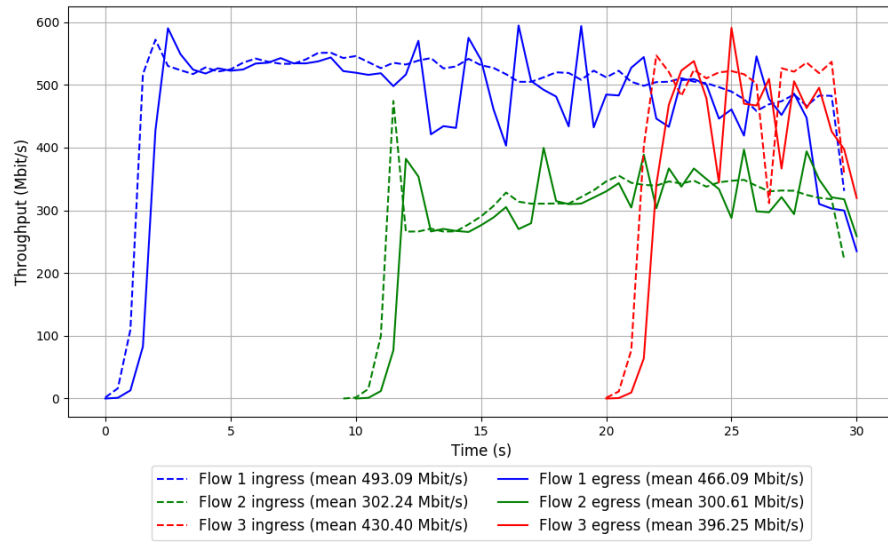
Run 3: Report of LEDBAT — Data Link

```
Run 4: Statistics of LEDBAT

Start at: 2019-02-06 07:18:29
End at: 2019-02-06 07:18:59
Local clock offset: -0.152 ms
Remote clock offset: -0.215 ms


# Below is generated by plot.py at 2019-02-06 10:51:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 44.34 Mbit/s
95th percentile per-packet one-way delay: 58.163 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 28.65 Mbit/s
95th percentile per-packet one-way delay: 58.275 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 18.94 Mbit/s
95th percentile per-packet one-way delay: 58.162 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 9.39 Mbit/s
95th percentile per-packet one-way delay: 57.369 ms
Loss rate: 0.00%
```

Run 4: Report of LEDBAT — Data Link

```
Run 5: Statistics of LEDBAT

Start at: 2019-02-06 07:57:36
End at: 2019-02-06 07:58:06
Local clock offset: -0.128 ms
Remote clock offset: -0.806 ms


# Below is generated by plot.py at 2019-02-06 10:51:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 44.25 Mbit/s
95th percentile per-packet one-way delay: 59.688 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 28.63 Mbit/s
95th percentile per-packet one-way delay: 57.528 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 19.13 Mbit/s
95th percentile per-packet one-way delay: 57.694 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 8.89 Mbit/s
95th percentile per-packet one-way delay: 60.178 ms
Loss rate: 0.00%
```
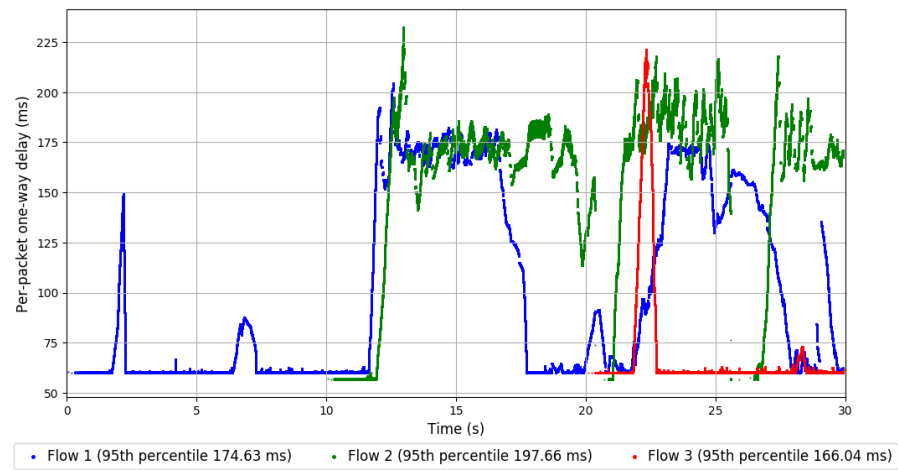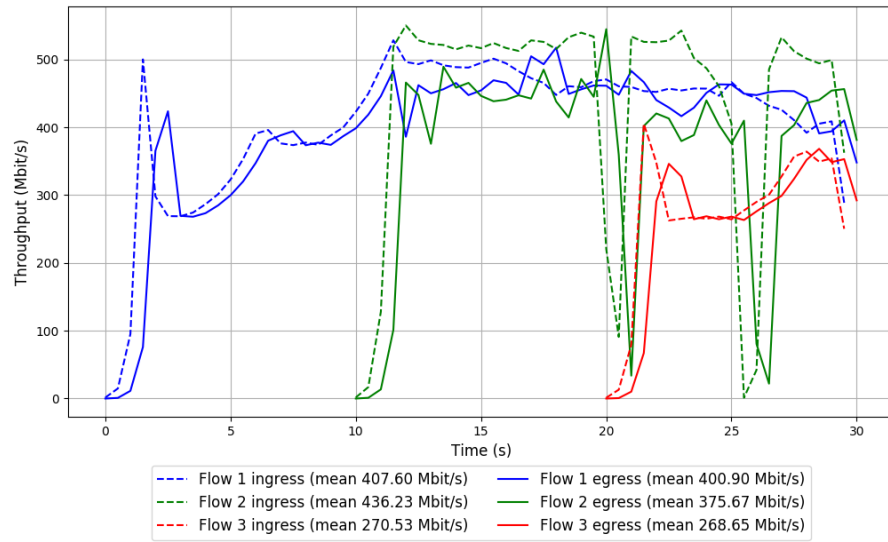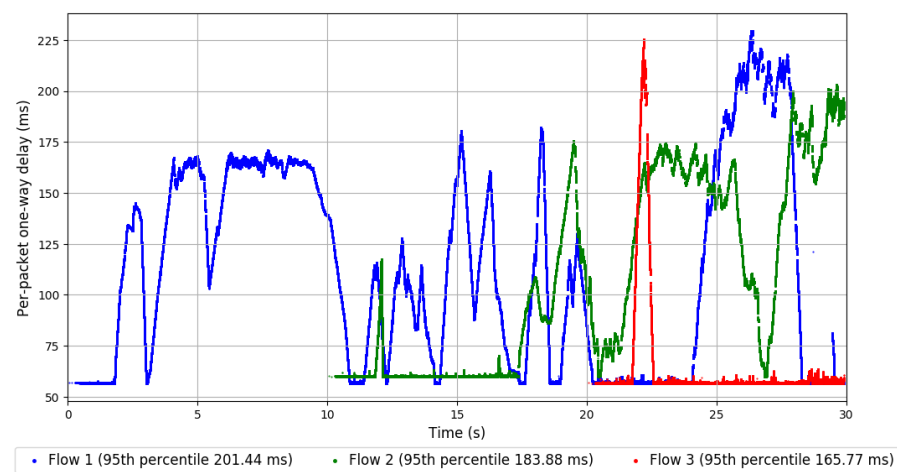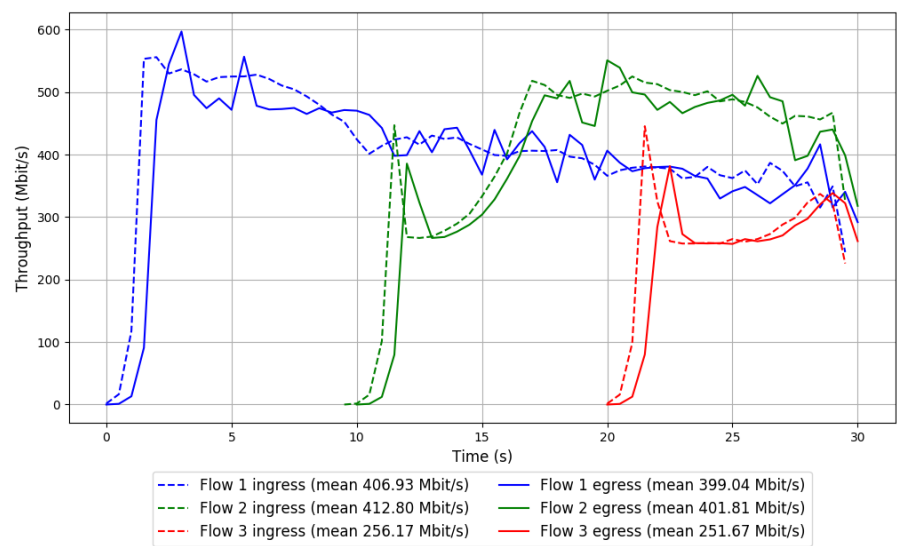
Run 5: Report of LEDBAT — Data Link

```
Run 1: Statistics of PCC-Allegro

Start at: 2019-02-06 04:58:36
End at: 2019-02-06 04:59:06
Local clock offset: -0.352 ms
Remote clock offset: 0.07 ms


# Below is generated by plot.py at 2019-02-06 11:15:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 796.28 Mbit/s
95th percentile per-packet one-way delay: 203.835 ms
Loss rate: 4.69%
-- Flow 1:
Average throughput: 466.09 Mbit/s
95th percentile per-packet one-way delay: 195.936 ms
Loss rate: 5.46%
-- Flow 2:
Average throughput: 300.61 Mbit/s
95th percentile per-packet one-way delay: 215.751 ms
Loss rate: 0.54%
-- Flow 3:
Average throughput: 396.25 Mbit/s
95th percentile per-packet one-way delay: 194.216 ms
Loss rate: 7.89%
```
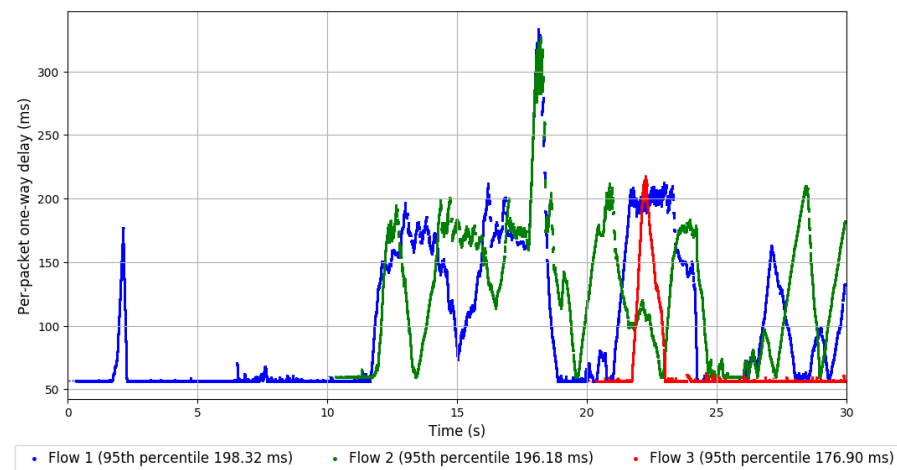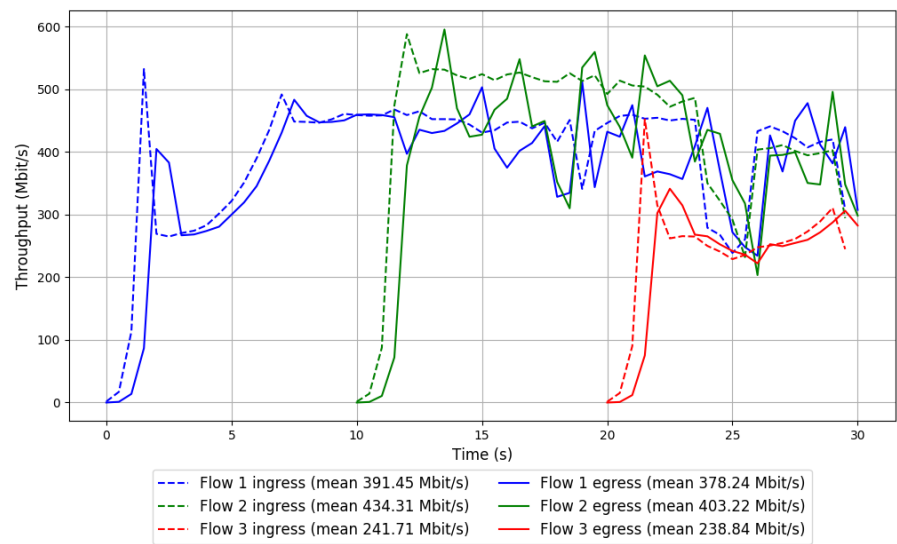
Run 1: Report of PCC-Allegro — Data Link

```
Run 2: Statistics of PCC-Allegro

Start at: 2019-02-06 05:37:46
End at: 2019-02-06 05:38:16
Local clock offset: -0.084 ms
Remote clock offset: -0.307 ms


# Below is generated by plot.py at 2019-02-06 11:15:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 738.98 Mbit/s
95th percentile per-packet one-way delay: 187.378 ms
Loss rate: 6.05%
-- Flow 1:
Average throughput: 400.90 Mbit/s
95th percentile per-packet one-way delay: 174.633 ms
Loss rate: 1.65%
-- Flow 2:
Average throughput: 375.67 Mbit/s
95th percentile per-packet one-way delay: 197.664 ms
Loss rate: 13.88%
-- Flow 3:
Average throughput: 268.65 Mbit/s
95th percentile per-packet one-way delay: 166.044 ms
Loss rate: 0.70%
```

Run 2: Report of PCC-Allegro — Data Link

```
Run 3: Statistics of PCC-Allegro

Start at: 2019-02-06 06:17:53
End at: 2019-02-06 06:18:23
Local clock offset: 0.066 ms
Remote clock offset: -0.169 ms


# Below is generated by plot.py at 2019-02-06 11:15:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 749.24 Mbit/s
95th percentile per-packet one-way delay: 188.821 ms
Loss rate: 2.18%
-- Flow 1:
Average throughput: 399.04 Mbit/s
95th percentile per-packet one-way delay: 201.439 ms
Loss rate: 1.94%
-- Flow 2:
Average throughput: 401.81 Mbit/s
95th percentile per-packet one-way delay: 183.882 ms
Loss rate: 2.67%
-- Flow 3:
Average throughput: 251.67 Mbit/s
95th percentile per-packet one-way delay: 165.769 ms
Loss rate: 1.72%
```
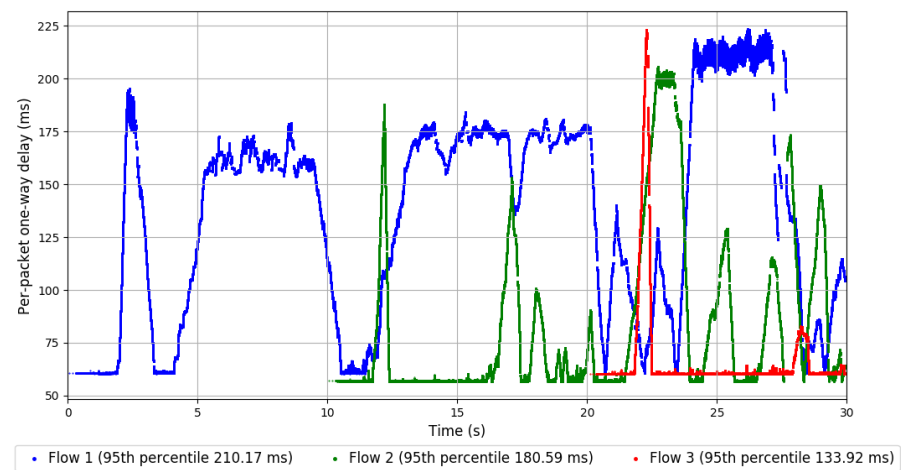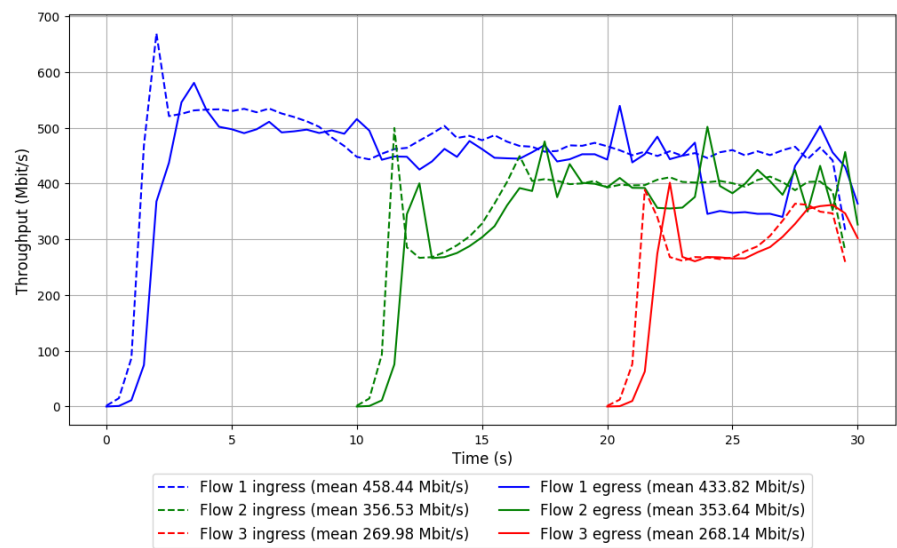
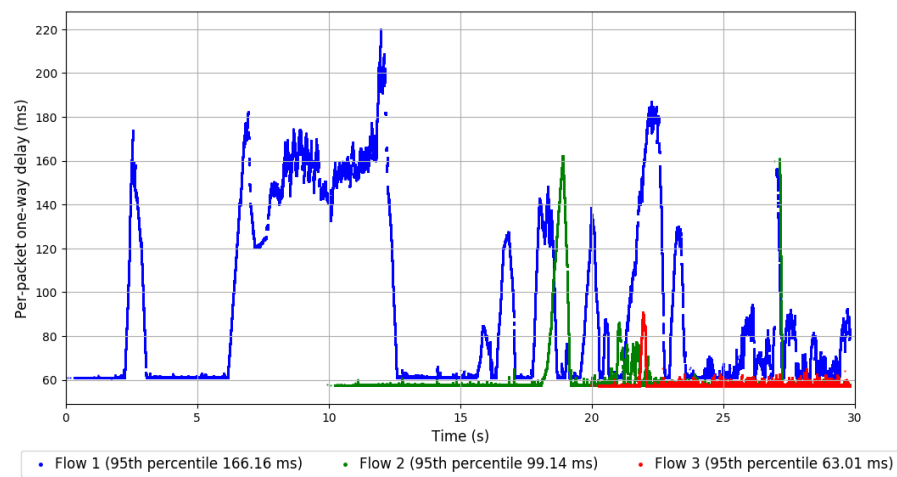Run 3: Report of PCC-Allegro — Data Link

```
Run 4: Statistics of PCC-Allegro

Start at: 2019-02-06 06:56:51
End at: 2019-02-06 06:57:21
Local clock offset: 0.278 ms
Remote clock offset: -0.199 ms


# Below is generated by plot.py at 2019-02-06 11:15:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 724.89 Mbit/s
95th percentile per-packet one-way delay: 197.110 ms
Loss rate: 4.58%
-- Flow 1:
Average throughput: 378.24 Mbit/s
95th percentile per-packet one-way delay: 198.319 ms
Loss rate: 3.37%
-- Flow 2:
Average throughput: 403.22 Mbit/s
95th percentile per-packet one-way delay: 196.180 ms
Loss rate: 7.16%
-- Flow 3:
Average throughput: 238.84 Mbit/s
95th percentile per-packet one-way delay: 176.900 ms
Loss rate: 1.19%
```

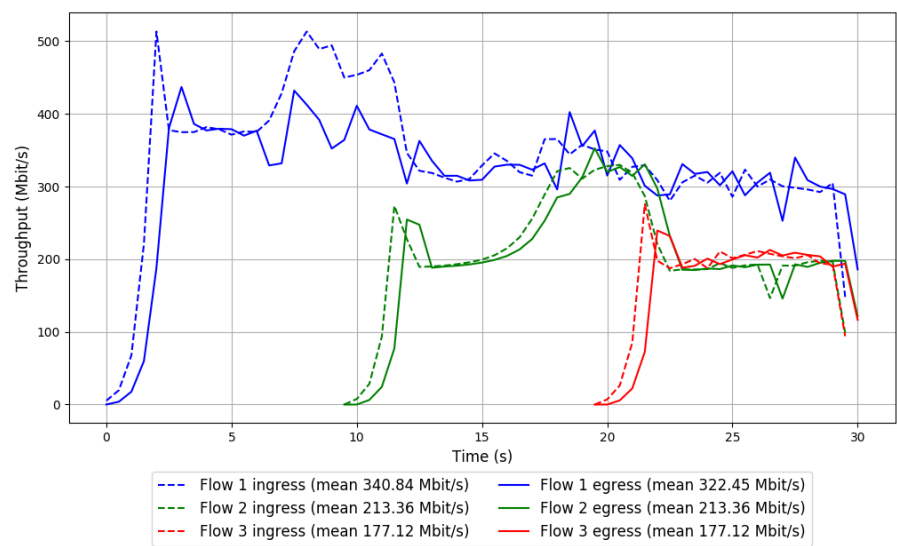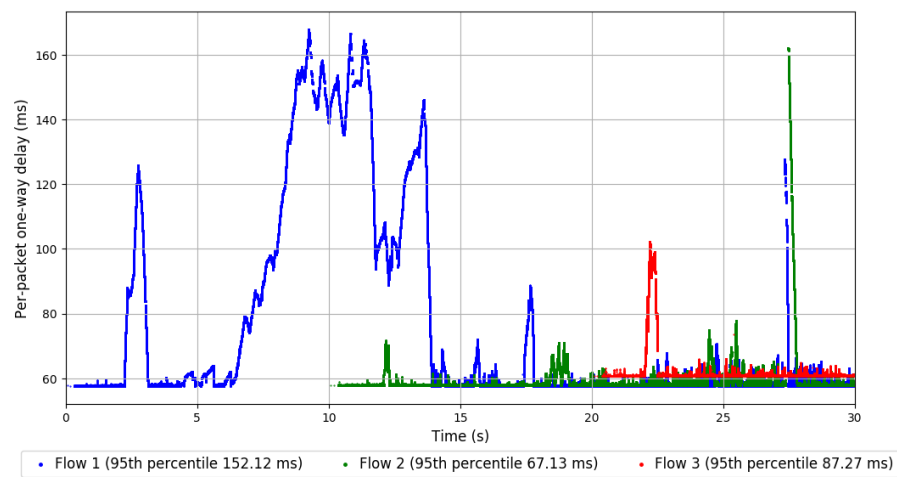# Run 4: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 391.45 Mbit/s) — Flow 1 egress (mean 378.24 Mbit/s)
Flow 2 ingress (mean 434.31 Mbit/s) — Flow 2 egress (mean 403.22 Mbit/s)
Flow 3 ingress (mean 241.71 Mbit/s) — Flow 3 egress (mean 238.84 Mbit/s)

Flow 1 (95th percentile 198.32 ms) — Flow 2 (95th percentile 196.18 ms) — Flow 3 (95th percentile 176.90 ms)

```
Run 5: Statistics of PCC-Allegro

Start at: 2019-02-06 07:36:30
End at: 2019-02-06 07:37:00
Local clock offset: -0.296 ms
Remote clock offset: -0.47 ms

# Below is generated by plot.py at 2019-02-06 11:17:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 757.07 Mbit/s
95th percentile per-packet one-way delay: 203.996 ms
Loss rate: 3.45%
-- Flow 1:
Average throughput: 433.82 Mbit/s
95th percentile per-packet one-way delay: 210.167 ms
Loss rate: 5.37%
-- Flow 2:
Average throughput: 353.64 Mbit/s
95th percentile per-packet one-way delay: 180.588 ms
Loss rate: 0.79%
-- Flow 3:
Average throughput: 268.14 Mbit/s
95th percentile per-packet one-way delay: 133.923 ms
Loss rate: 0.68%
```

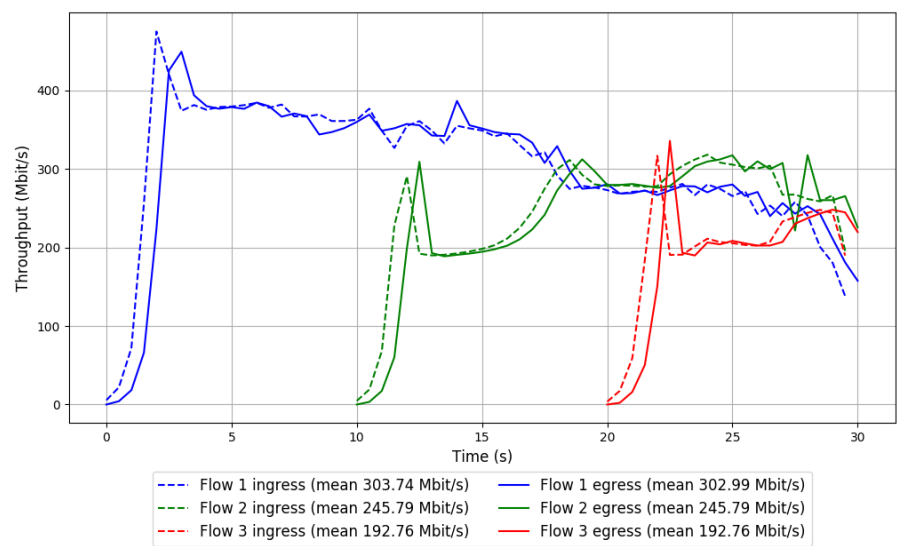# Run 5: Report of PCC-Allegro — Data Link

```
Run 1: Statistics of PCC-Expr

Start at: 2019-02-06 05:05:01
End at: 2019-02-06 05:05:31
Local clock offset: -0.204 ms
Remote clock offset: 0.06 ms


# Below is generated by plot.py at 2019-02-06 11:17:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 523.57 Mbit/s
95th percentile per-packet one-way delay: 161.533 ms
Loss rate: 3.40%
-- Flow 1:
Average throughput: 322.45 Mbit/s
95th percentile per-packet one-way delay: 166.165 ms
Loss rate: 5.40%
-- Flow 2:
Average throughput: 213.36 Mbit/s
95th percentile per-packet one-way delay: 99.142 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 177.12 Mbit/s
95th percentile per-packet one-way delay: 63.009 ms
Loss rate: 0.00%
```
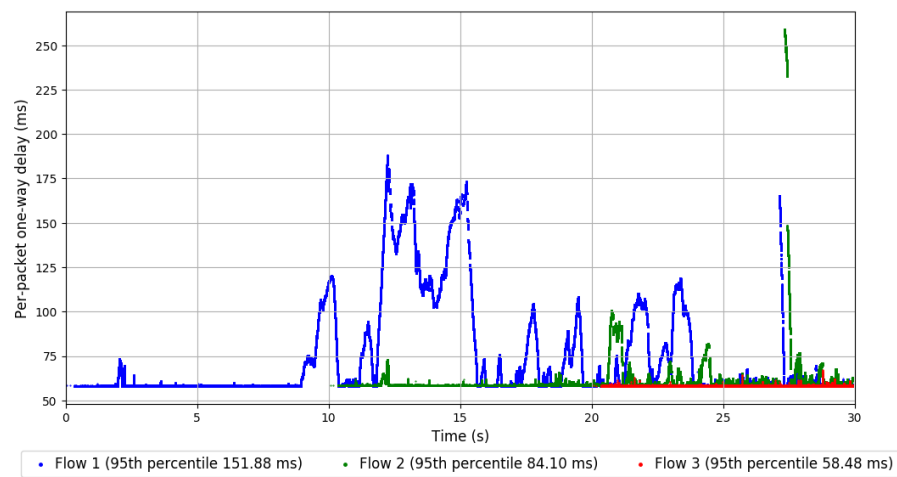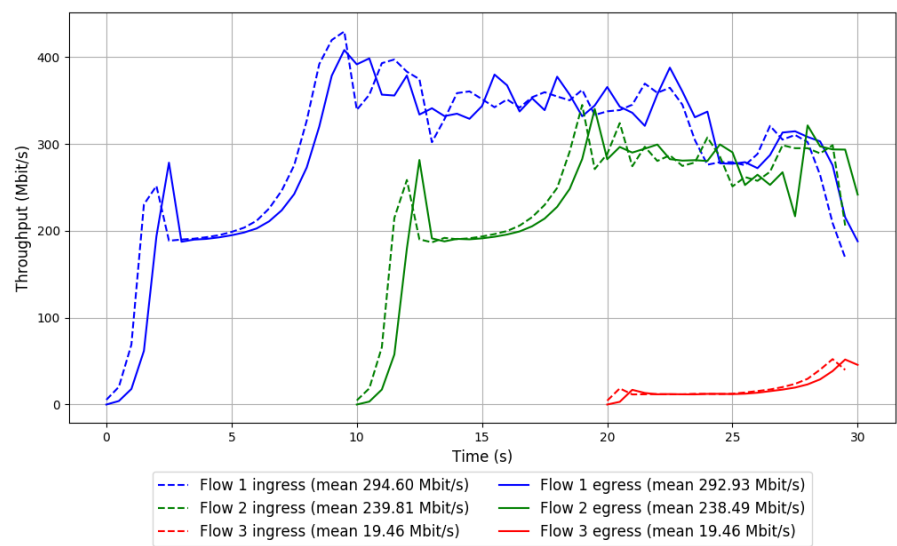
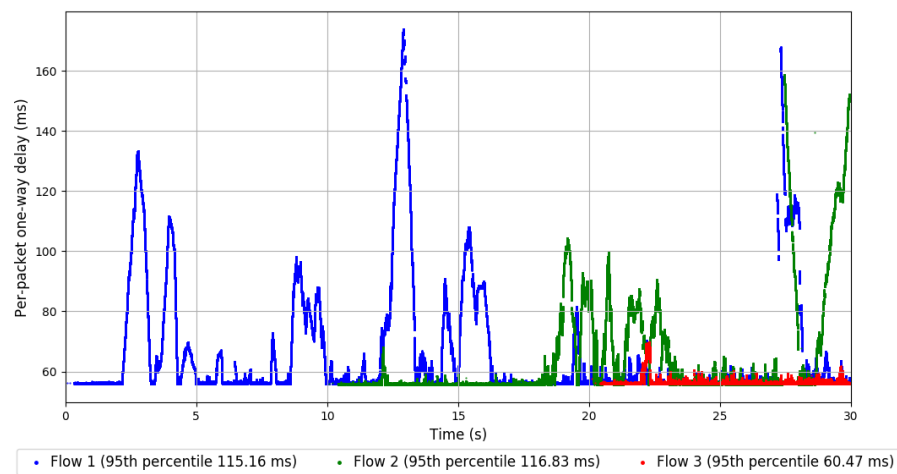Run 1: Report of PCC-Expr — Data Link

```
Run 2: Statistics of PCC-Expr

Start at: 2019-02-06 05:44:27
End at: 2019-02-06 05:44:57
Local clock offset: -0.553 ms
Remote clock offset: -0.041 ms


# Below is generated by plot.py at 2019-02-06 11:17:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 529.85 Mbit/s
95th percentile per-packet one-way delay: 146.985 ms
Loss rate: 0.14%
-- Flow 1:
Average throughput: 302.99 Mbit/s
95th percentile per-packet one-way delay: 152.120 ms
Loss rate: 0.25%
-- Flow 2:
Average throughput: 245.79 Mbit/s
95th percentile per-packet one-way delay: 67.133 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 192.76 Mbit/s
95th percentile per-packet one-way delay: 87.274 ms
Loss rate: 0.00%
```
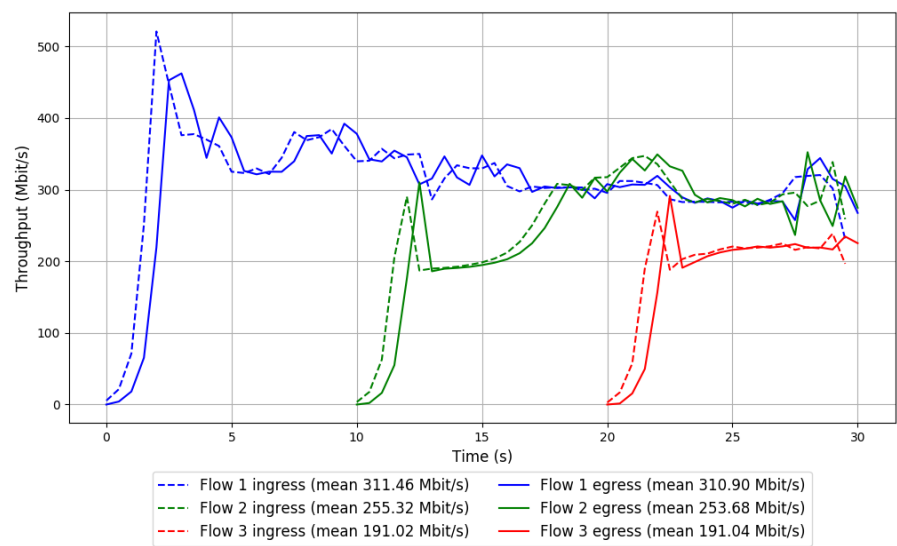
Run 2: Report of PCC-Expr — Data Link

```
Run 3: Statistics of PCC-Expr

Start at: 2019-02-06 06:24:22
End at: 2019-02-06 06:24:52
Local clock offset: -0.412 ms
Remote clock offset: 0.991 ms


# Below is generated by plot.py at 2019-02-06 11:17:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 457.95 Mbit/s
95th percentile per-packet one-way delay: 141.733 ms
Loss rate: 0.55%
-- Flow 1:
Average throughput: 292.93 Mbit/s
95th percentile per-packet one-way delay: 151.878 ms
Loss rate: 0.57%
-- Flow 2:
Average throughput: 238.49 Mbit/s
95th percentile per-packet one-way delay: 84.102 ms
Loss rate: 0.55%
-- Flow 3:
Average throughput: 19.46 Mbit/s
95th percentile per-packet one-way delay: 58.476 ms
Loss rate: 0.00%
```
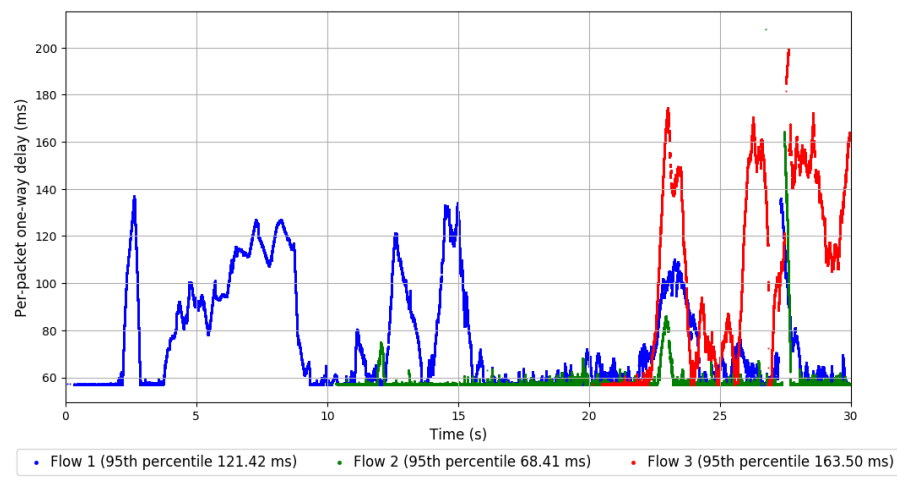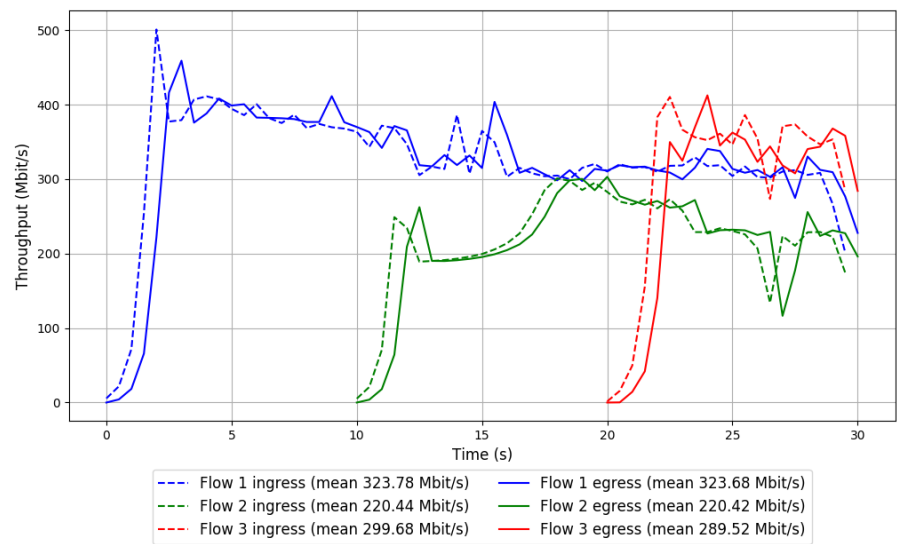
Run 3: Report of PCC-Expr — Data Link

130

```
Run 4: Statistics of PCC-Expr

Start at: 2019-02-06 07:03:25
End at: 2019-02-06 07:03:55
Local clock offset: 0.312 ms
Remote clock offset: -0.717 ms


# Below is generated by plot.py at 2019-02-06 11:29:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 542.32 Mbit/s
95th percentile per-packet one-way delay: 112.881 ms
Loss rate: 0.29%
-- Flow 1:
Average throughput: 310.90 Mbit/s
95th percentile per-packet one-way delay: 115.160 ms
Loss rate: 0.18%
-- Flow 2:
Average throughput: 253.68 Mbit/s
95th percentile per-packet one-way delay: 116.829 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 191.04 Mbit/s
95th percentile per-packet one-way delay: 60.465 ms
Loss rate: 0.01%
```
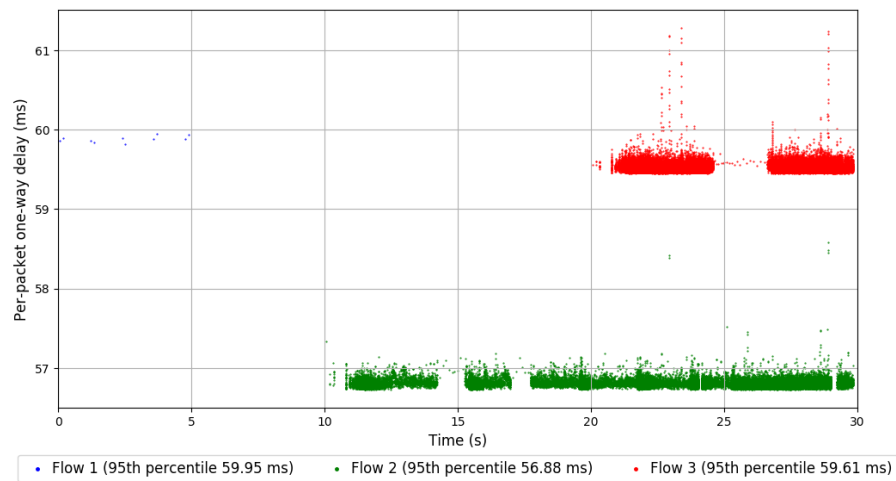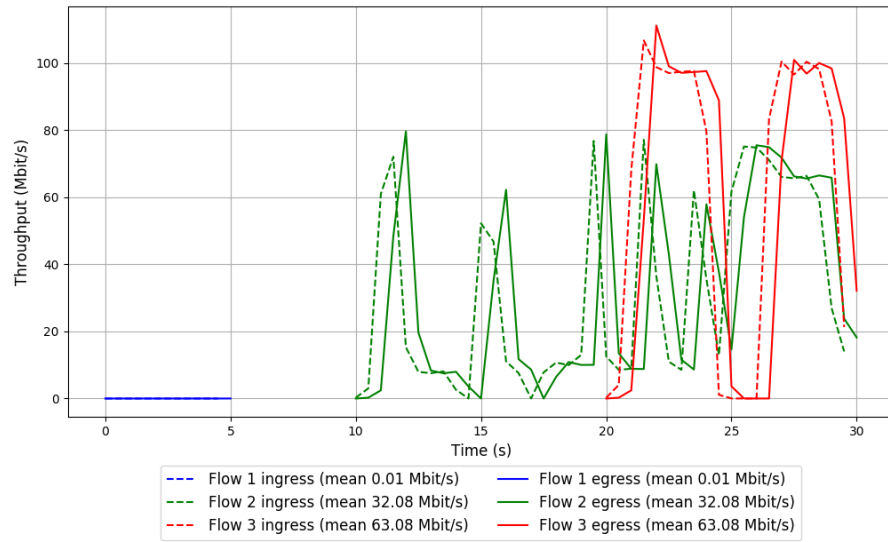
Run 4: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 311.46 Mbit/s)   Flow 1 egress (mean 310.90 Mbit/s)
Flow 2 ingress (mean 255.32 Mbit/s)   Flow 2 egress (mean 253.68 Mbit/s)
Flow 3 ingress (mean 191.02 Mbit/s)   Flow 3 egress (mean 191.04 Mbit/s)

Flow 1 (95th percentile 115.16 ms)   Flow 2 (95th percentile 116.83 ms)   Flow 3 (95th percentile 60.47 ms)

132

```
Run 5: Statistics of PCC-Expr

Start at: 2019-02-06 07:42:59
End at: 2019-02-06 07:43:29
Local clock offset: -0.415 ms
Remote clock offset: -0.335 ms


# Below is generated by plot.py at 2019-02-06 11:39:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 565.57 Mbit/s
95th percentile per-packet one-way delay: 145.080 ms
Loss rate: 0.60%
-- Flow 1:
Average throughput: 323.68 Mbit/s
95th percentile per-packet one-way delay: 121.418 ms
Loss rate: 0.03%
-- Flow 2:
Average throughput: 220.42 Mbit/s
95th percentile per-packet one-way delay: 68.414 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 289.52 Mbit/s
95th percentile per-packet one-way delay: 163.503 ms
Loss rate: 3.35%
```
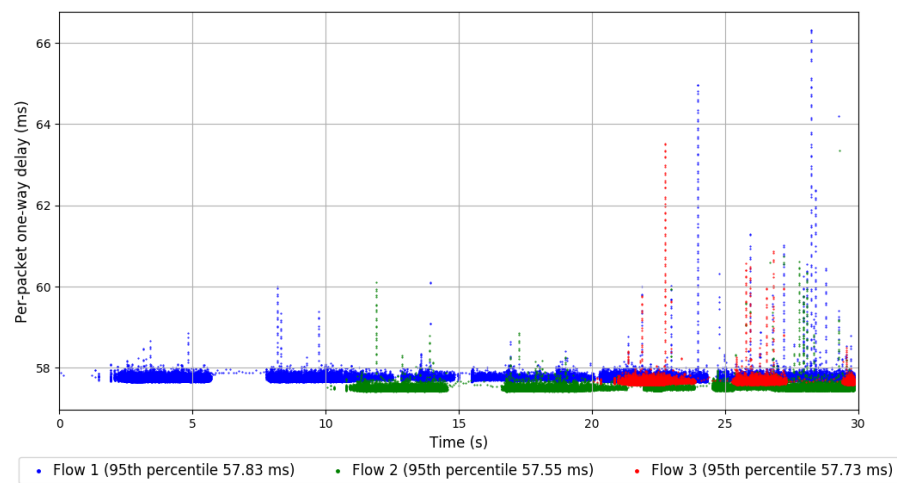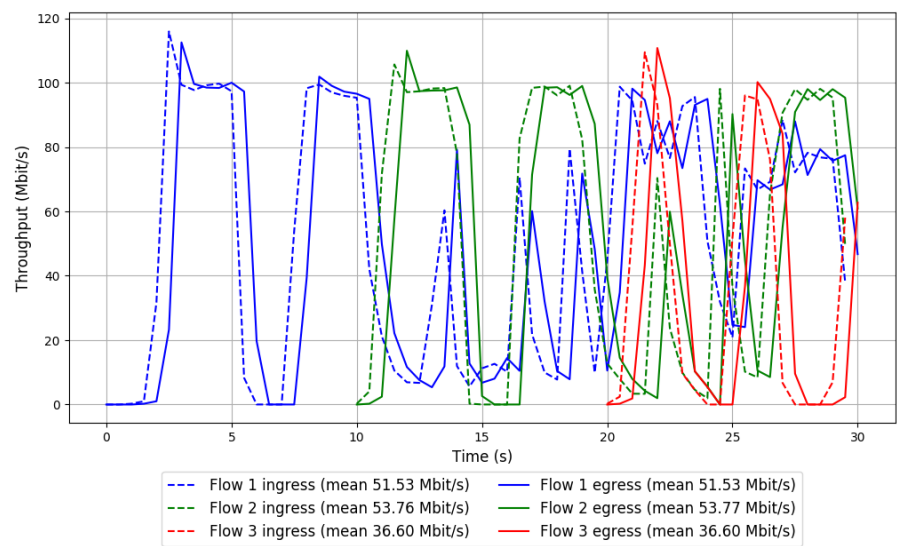
Run 5: Report of PCC-Expr — Data Link

134

```
Run 1: Statistics of QUIC Cubic

Start at: 2019-02-06 05:25:14
End at: 2019-02-06 05:25:44
Local clock offset: 0.235 ms
Remote clock offset: -0.292 ms


# Below is generated by plot.py at 2019-02-06 11:39:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 42.02 Mbit/s
95th percentile per-packet one-way delay: 59.579 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 59.946 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 32.08 Mbit/s
95th percentile per-packet one-way delay: 56.877 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 63.08 Mbit/s
95th percentile per-packet one-way delay: 59.610 ms
Loss rate: 0.01%
```
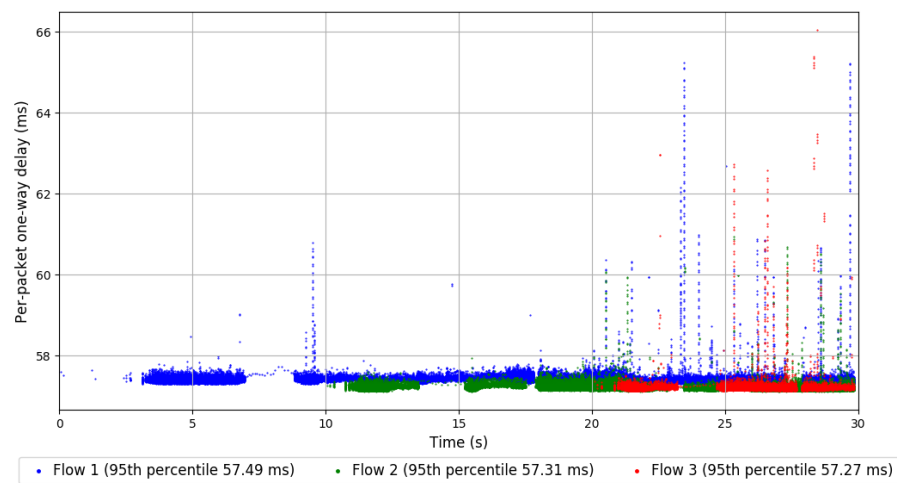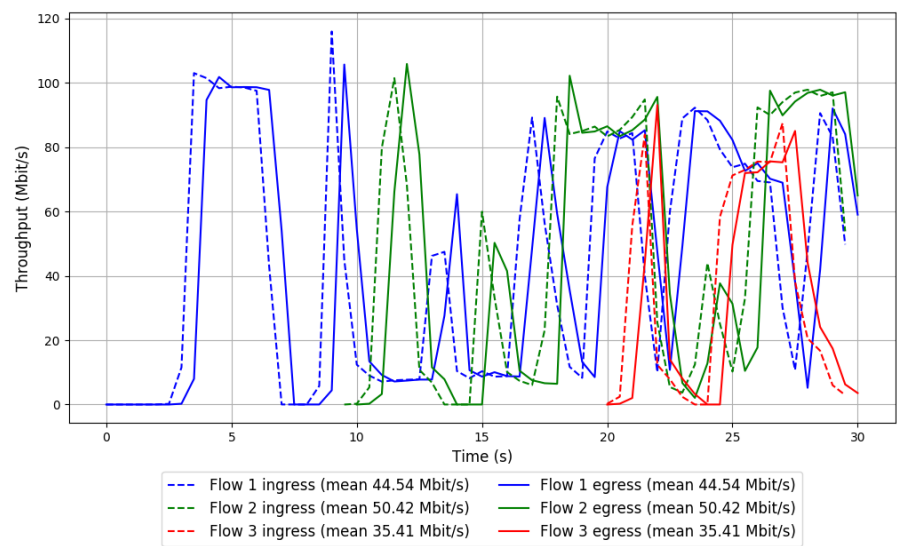
Run 1: Report of QUIC Cubic — Data Link

```
Run 2: Statistics of QUIC Cubic

Start at: 2019-02-06 06:05:10
End at: 2019-02-06 06:05:40
Local clock offset: -0.176 ms
Remote clock offset: 0.531 ms


# Below is generated by plot.py at 2019-02-06 11:39:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 99.23 Mbit/s
95th percentile per-packet one-way delay: 57.797 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 51.53 Mbit/s
95th percentile per-packet one-way delay: 57.825 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 53.77 Mbit/s
95th percentile per-packet one-way delay: 57.554 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 36.60 Mbit/s
95th percentile per-packet one-way delay: 57.731 ms
Loss rate: 0.00%
```
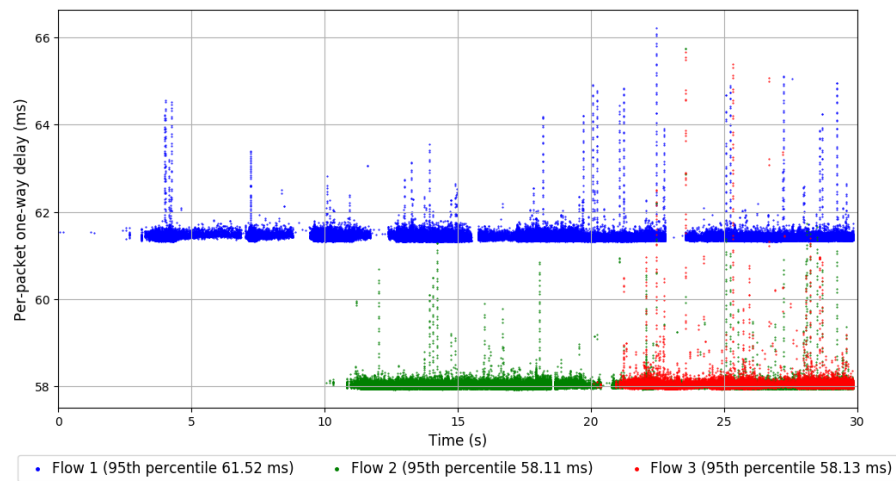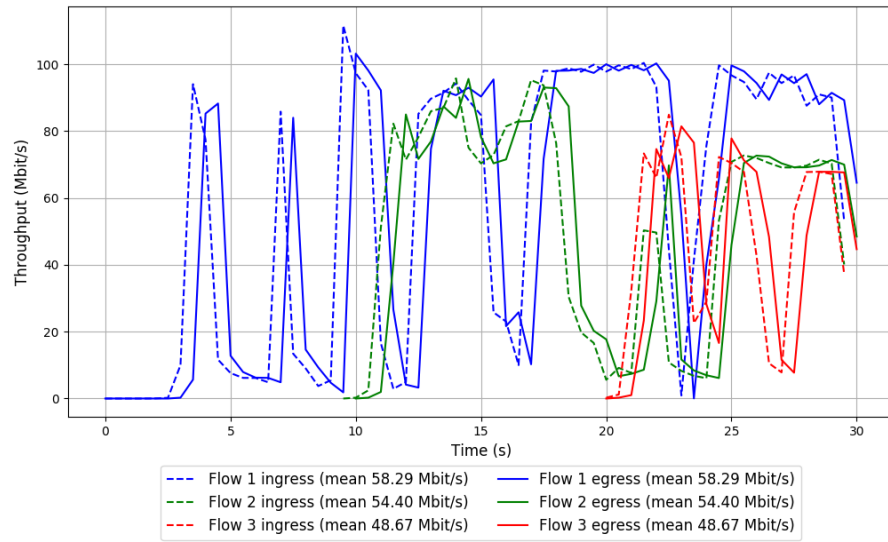
Run 2: Report of QUIC Cubic — Data Link

138

```
Run 3: Statistics of QUIC Cubic

Start at: 2019-02-06 06:44:31
End at: 2019-02-06 06:45:01
Local clock offset: 0.271 ms
Remote clock offset: 0.523 ms


# Below is generated by plot.py at 2019-02-06 11:39:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 89.62 Mbit/s
95th percentile per-packet one-way delay: 57.461 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 44.54 Mbit/s
95th percentile per-packet one-way delay: 57.495 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 50.42 Mbit/s
95th percentile per-packet one-way delay: 57.312 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 35.41 Mbit/s
95th percentile per-packet one-way delay: 57.274 ms
Loss rate: 0.00%
```
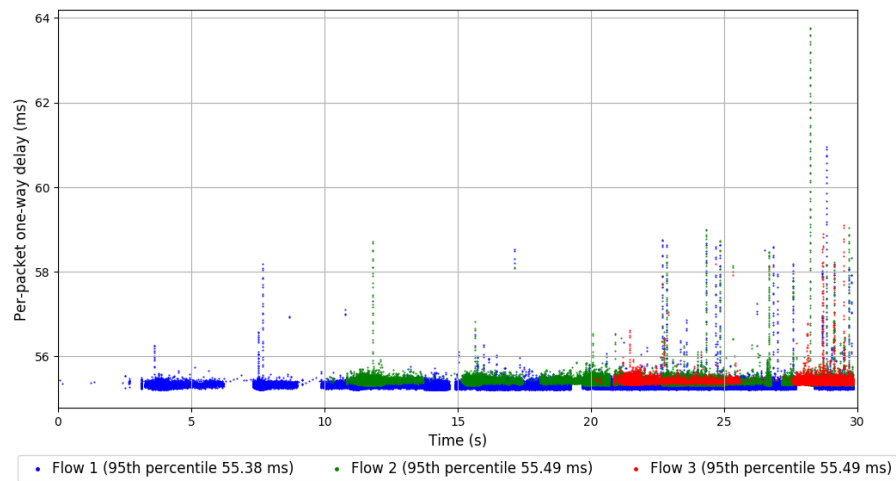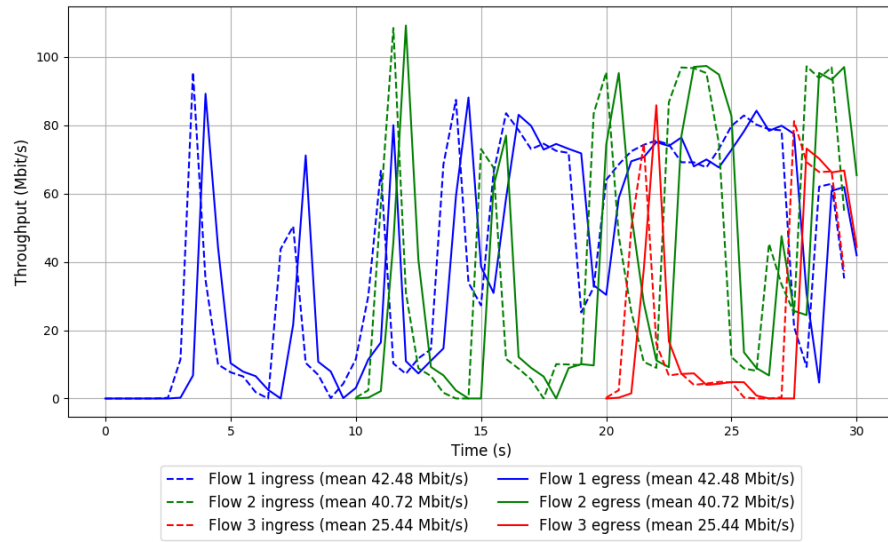
Run 3: Report of QUIC Cubic — Data Link

```
Run 4: Statistics of QUIC Cubic

Start at: 2019-02-06 07:24:33
End at: 2019-02-06 07:25:03
Local clock offset: 0.314 ms
Remote clock offset: 1.388 ms


# Below is generated by plot.py at 2019-02-06 11:39:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 110.36 Mbit/s
95th percentile per-packet one-way delay: 61.488 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 58.29 Mbit/s
95th percentile per-packet one-way delay: 61.525 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 54.40 Mbit/s
95th percentile per-packet one-way delay: 58.107 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 48.67 Mbit/s
95th percentile per-packet one-way delay: 58.133 ms
Loss rate: 0.00%
```
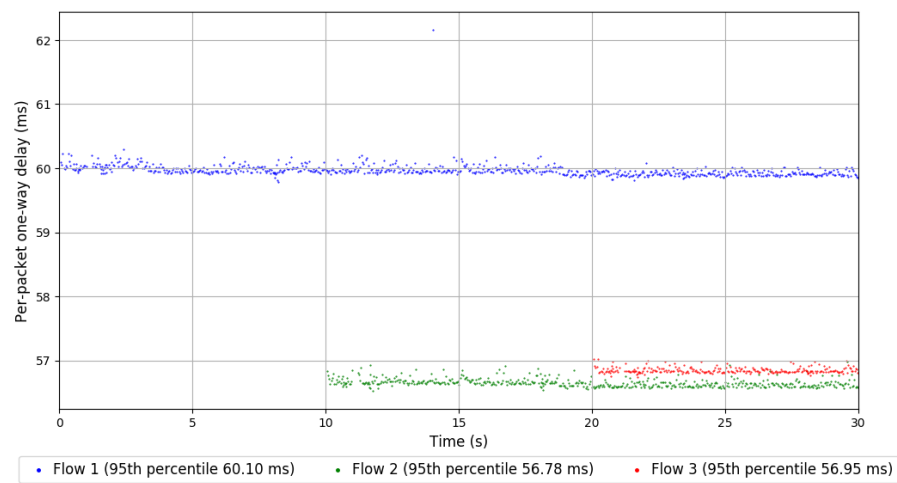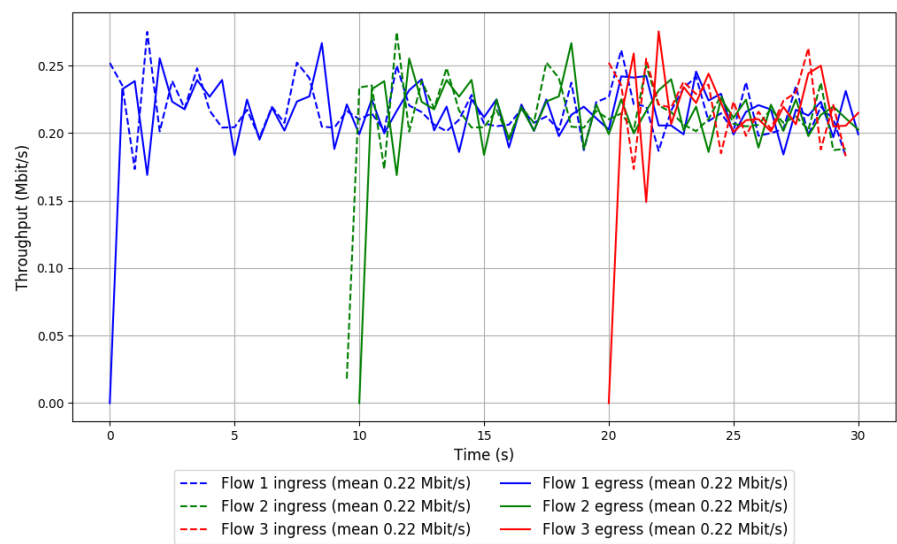
Run 4: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 58.29 Mbit/s) — Flow 1 egress (mean 58.29 Mbit/s)
Flow 2 ingress (mean 54.40 Mbit/s) — Flow 2 egress (mean 54.40 Mbit/s)
Flow 3 ingress (mean 48.67 Mbit/s) — Flow 3 egress (mean 48.67 Mbit/s)

Flow 1 (95th percentile 61.52 ms)   Flow 2 (95th percentile 58.11 ms)   Flow 3 (95th percentile 58.13 ms)

142

```
Run 5: Statistics of QUIC Cubic

Start at: 2019-02-06 08:03:07
End at: 2019-02-06 08:03:37
Local clock offset: 0.315 ms
Remote clock offset: -1.349 ms


# Below is generated by plot.py at 2019-02-06 11:39:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 77.85 Mbit/s
95th percentile per-packet one-way delay: 55.458 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 42.48 Mbit/s
95th percentile per-packet one-way delay: 55.380 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 40.72 Mbit/s
95th percentile per-packet one-way delay: 55.492 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 25.44 Mbit/s
95th percentile per-packet one-way delay: 55.495 ms
Loss rate: 0.00%
```
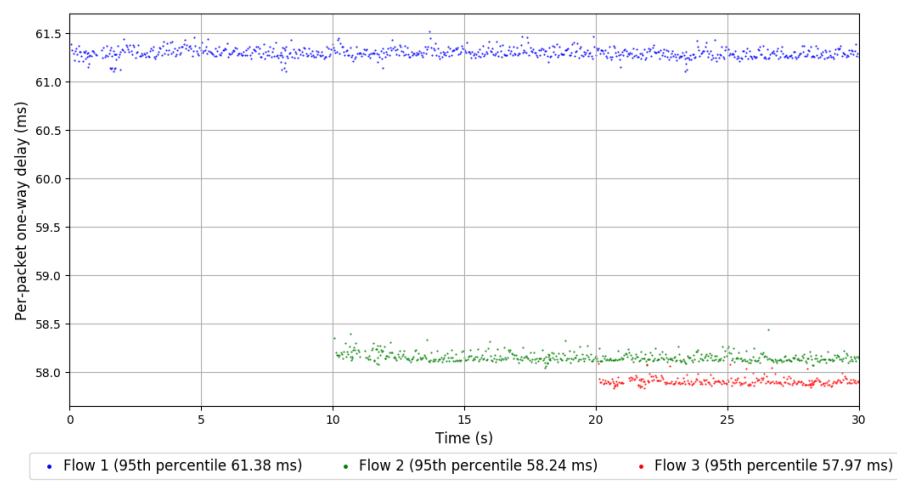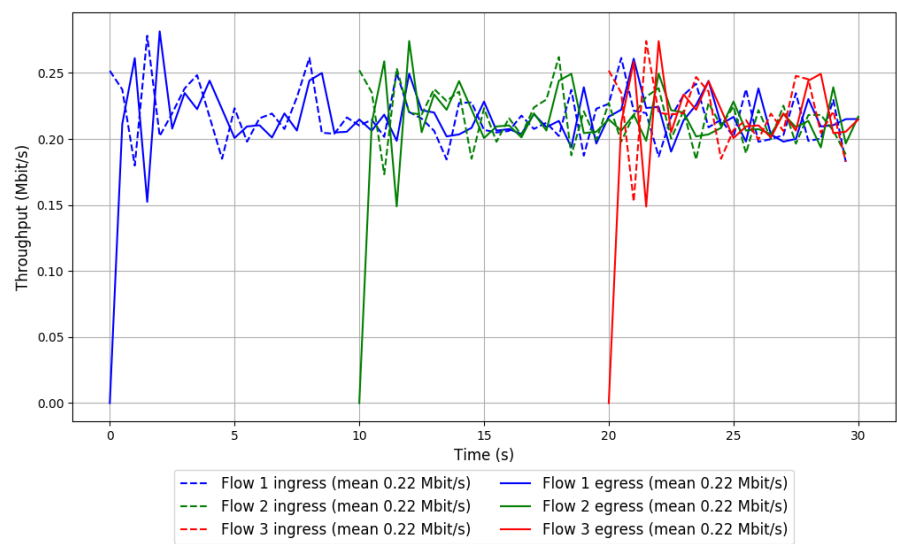
Run 5: Report of QUIC Cubic — Data Link

144

```
Run 1: Statistics of SCReAM

Start at: 2019-02-06 05:26:29
End at: 2019-02-06 05:26:59
Local clock offset: -0.258 ms
Remote clock offset: -0.686 ms


# Below is generated by plot.py at 2019-02-06 11:39:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 60.060 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 60.097 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 56.783 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 56.948 ms
Loss rate: 0.00%
```
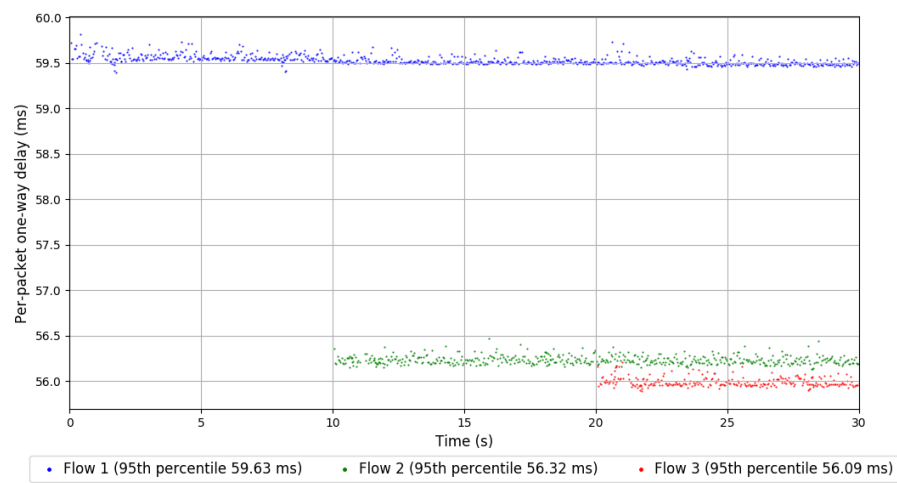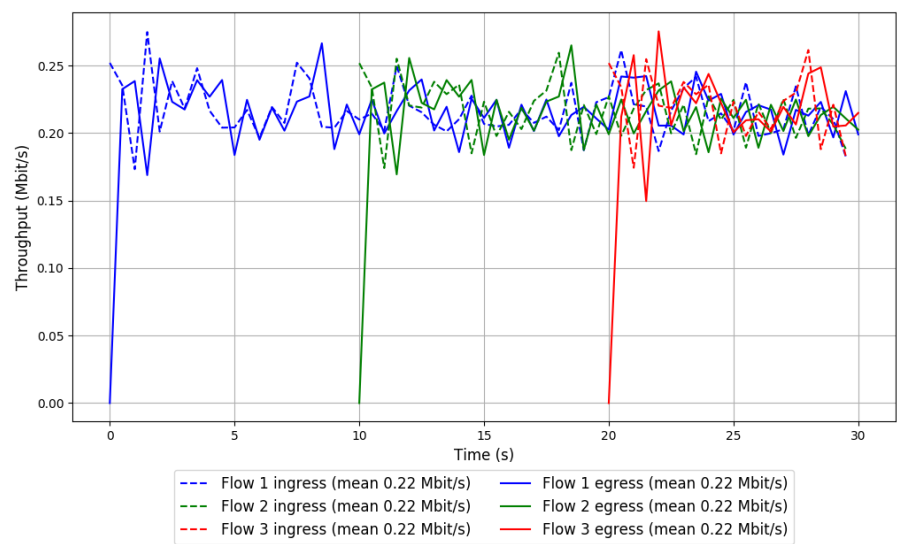
Run 1: Report of SCReAM — Data Link

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```
Run 2: Statistics of SCReAM

Start at: 2019-02-06 06:06:31
End at: 2019-02-06 06:07:01
Local clock offset: -0.336 ms
Remote clock offset: 0.434 ms


# Below is generated by plot.py at 2019-02-06 11:39:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 61.359 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 61.379 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 58.242 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 57.973 ms
Loss rate: 0.00%
```
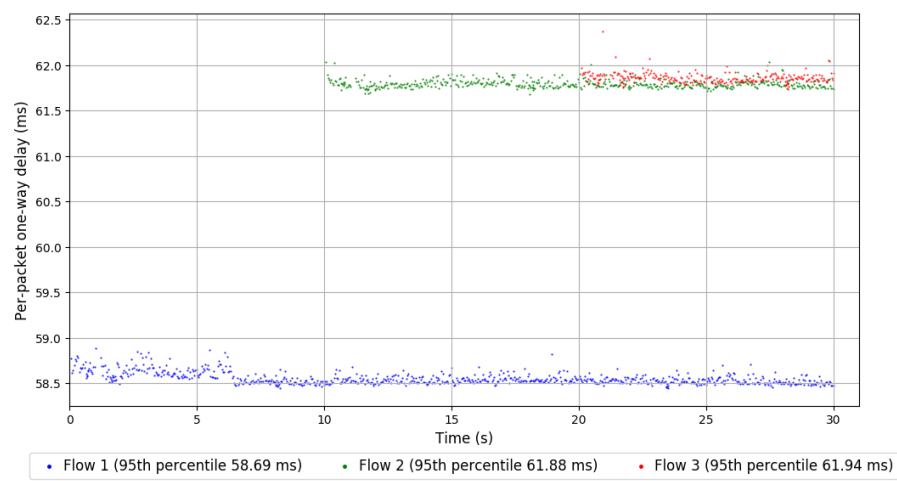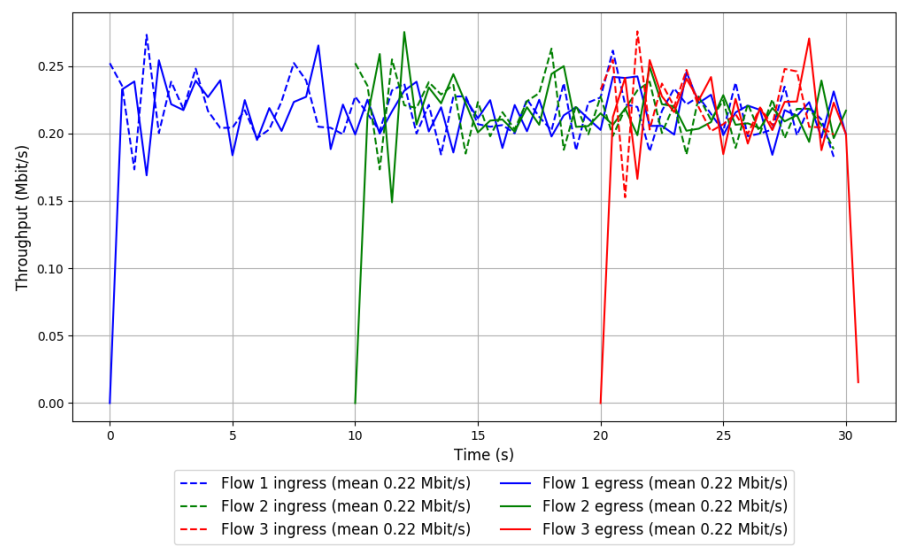
Run 2: Report of SCReAM — Data Link

```
Run 3: Statistics of SCReAM

Start at: 2019-02-06 06:45:50
End at: 2019-02-06 06:46:20
Local clock offset: 0.077 ms
Remote clock offset: -0.783 ms


# Below is generated by plot.py at 2019-02-06 11:39:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 59.599 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 59.626 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 56.322 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 56.088 ms
Loss rate: 0.00%
```

Run 3: Report of SCReAM — Data Link

150

```
Run 4: Statistics of SCReAM

Start at: 2019-02-06 07:25:53
End at: 2019-02-06 07:26:23
Local clock offset: -0.123 ms
Remote clock offset: 1.303 ms


# Below is generated by plot.py at 2019-02-06 11:39:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 61.893 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 58.694 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 61.884 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 61.939 ms
Loss rate: 0.00%
```
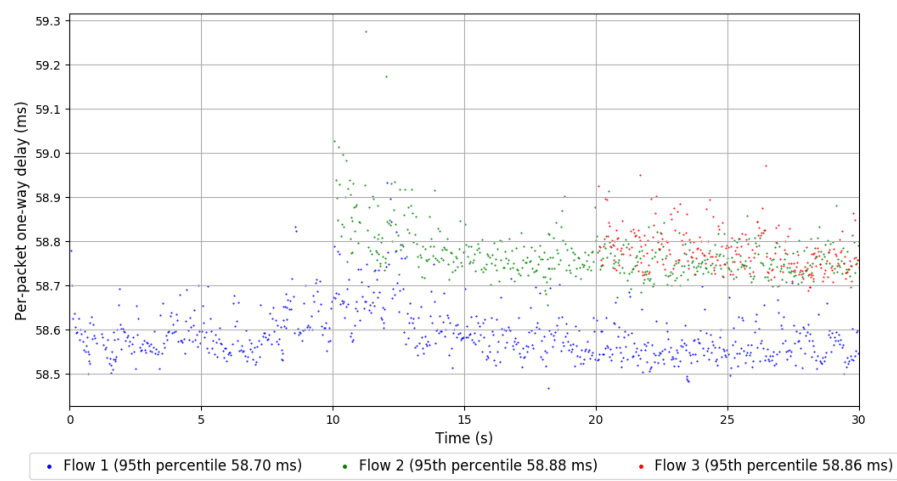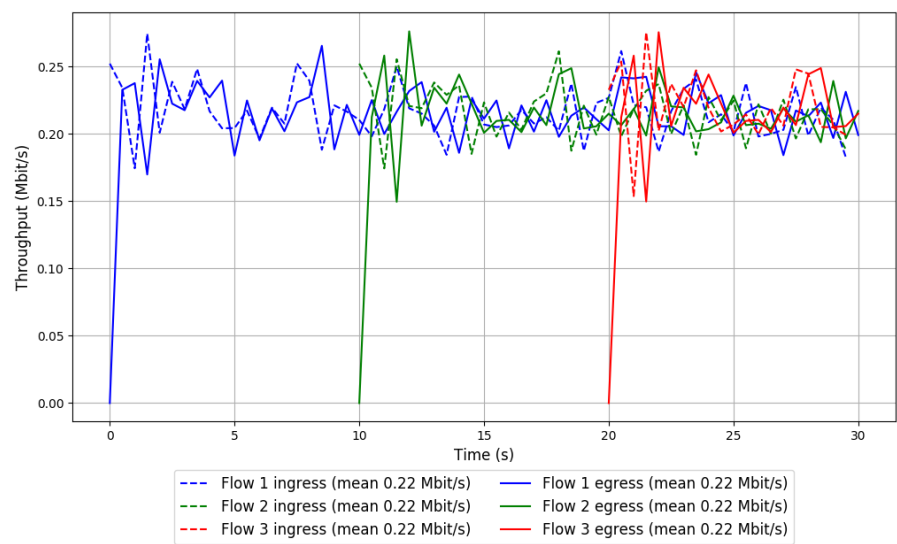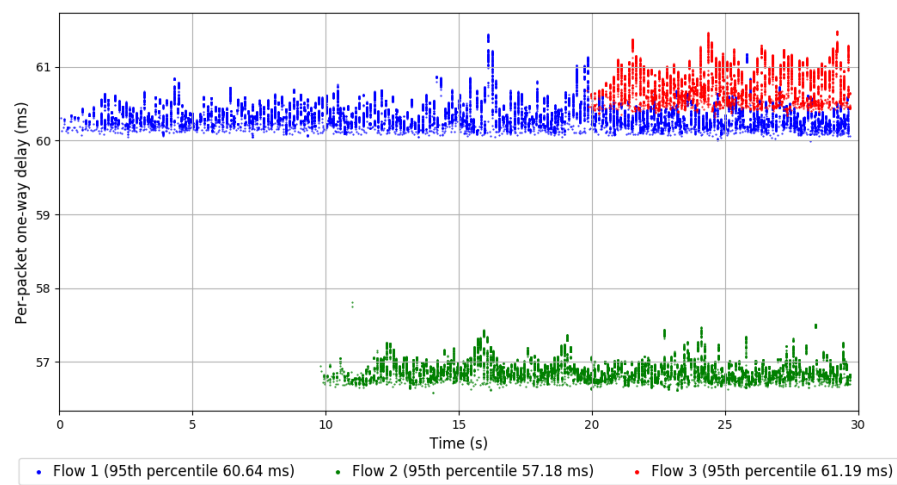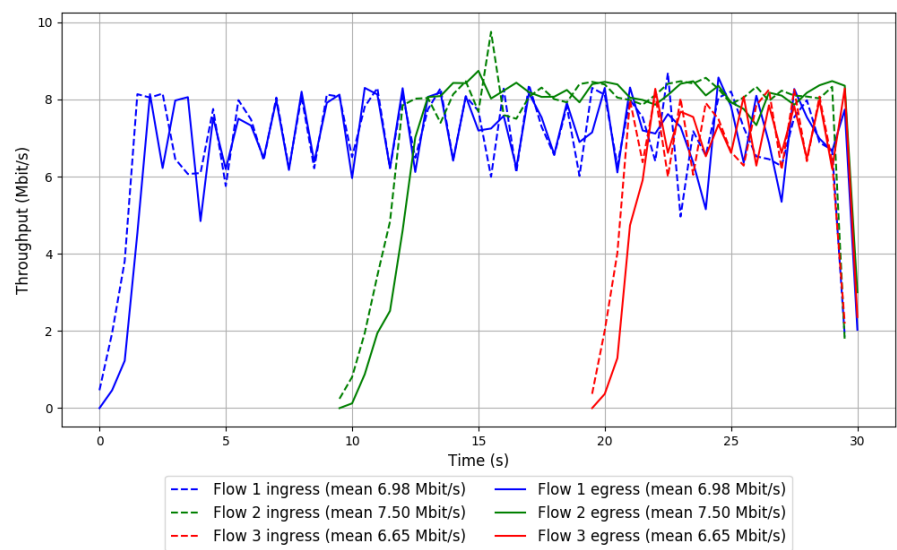
Run 4: Report of SCReAM — Data Link

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```
Run 5: Statistics of SCReAM

Start at: 2019-02-06 08:04:26
End at: 2019-02-06 08:04:56
Local clock offset: -0.348 ms
Remote clock offset: 1.363 ms


# Below is generated by plot.py at 2019-02-06 11:39:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 58.842 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 58.697 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 58.881 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 58.864 ms
Loss rate: 0.00%
```
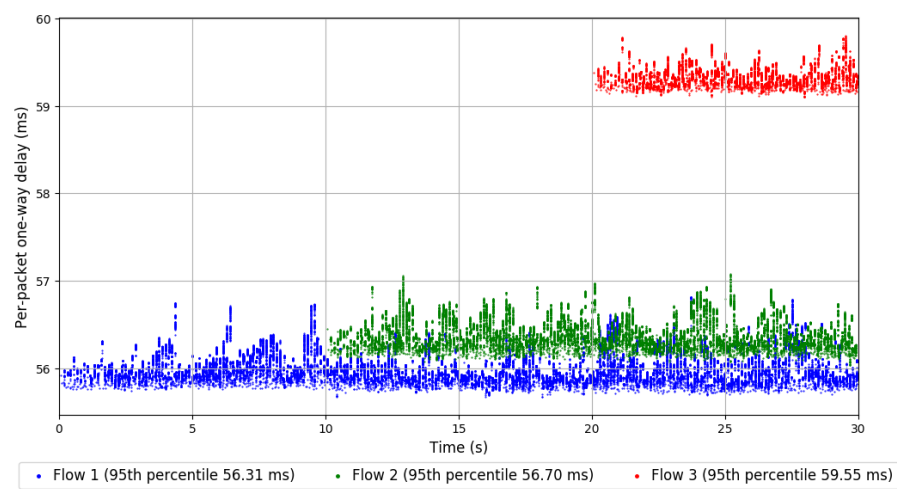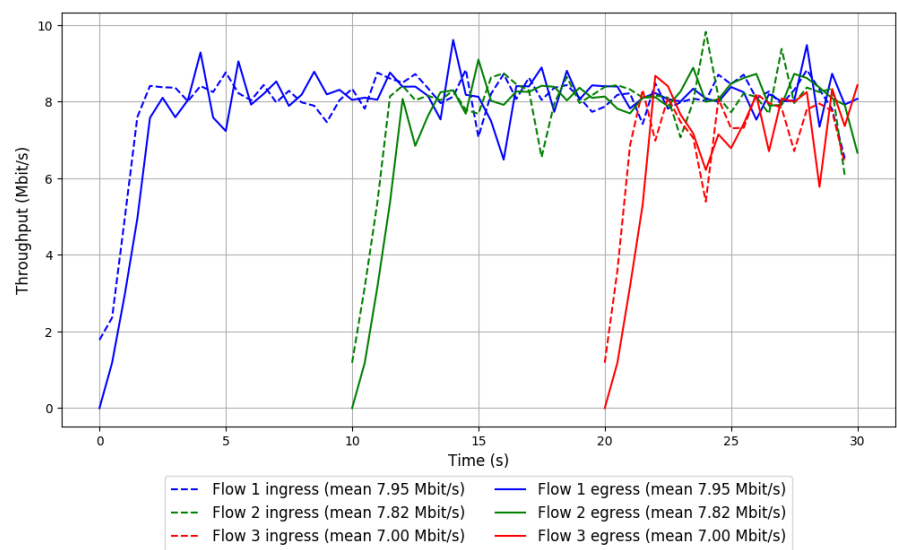
Run 5: Report of SCReAM — Data Link

```
Run 1: Statistics of Sprout

Start at: 2019-02-06 05:11:14
End at: 2019-02-06 05:11:44
Local clock offset: -0.327 ms
Remote clock offset: -0.687 ms


# Below is generated by plot.py at 2019-02-06 11:39:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 14.22 Mbit/s
95th percentile per-packet one-way delay: 60.937 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 6.98 Mbit/s
95th percentile per-packet one-way delay: 60.643 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 7.50 Mbit/s
95th percentile per-packet one-way delay: 57.182 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 6.65 Mbit/s
95th percentile per-packet one-way delay: 61.188 ms
Loss rate: 0.00%
```
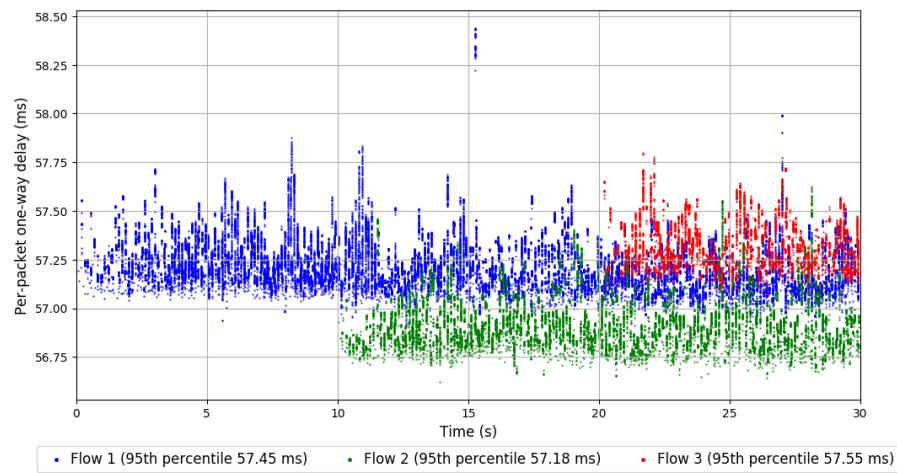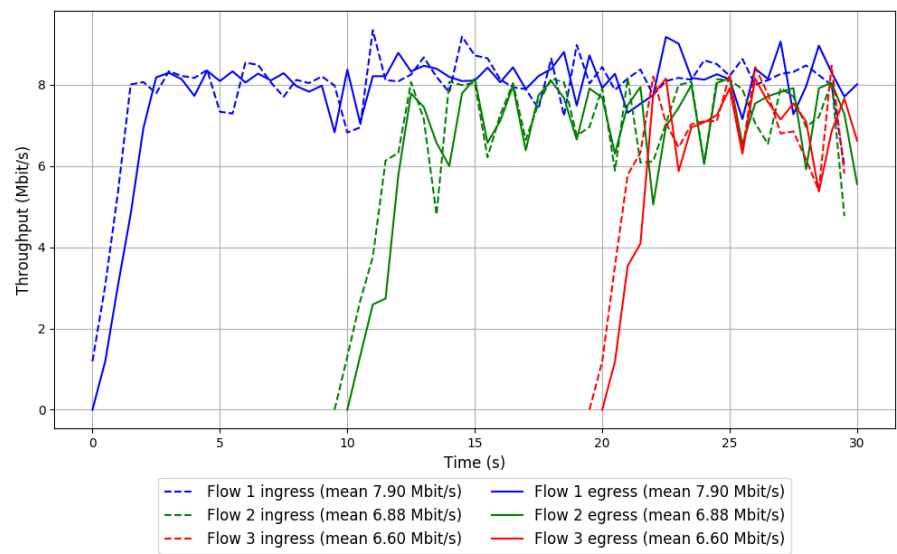
Run 1: Report of Sprout — Data Link

```
Run 2: Statistics of Sprout

Start at: 2019-02-06 05:50:53
End at: 2019-02-06 05:51:23
Local clock offset: -0.506 ms
Remote clock offset: -1.497 ms


# Below is generated by plot.py at 2019-02-06 11:39:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 15.45 Mbit/s
95th percentile per-packet one-way delay: 59.358 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 7.95 Mbit/s
95th percentile per-packet one-way delay: 56.310 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 7.82 Mbit/s
95th percentile per-packet one-way delay: 56.702 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 7.00 Mbit/s
95th percentile per-packet one-way delay: 59.555 ms
Loss rate: 0.00%
```
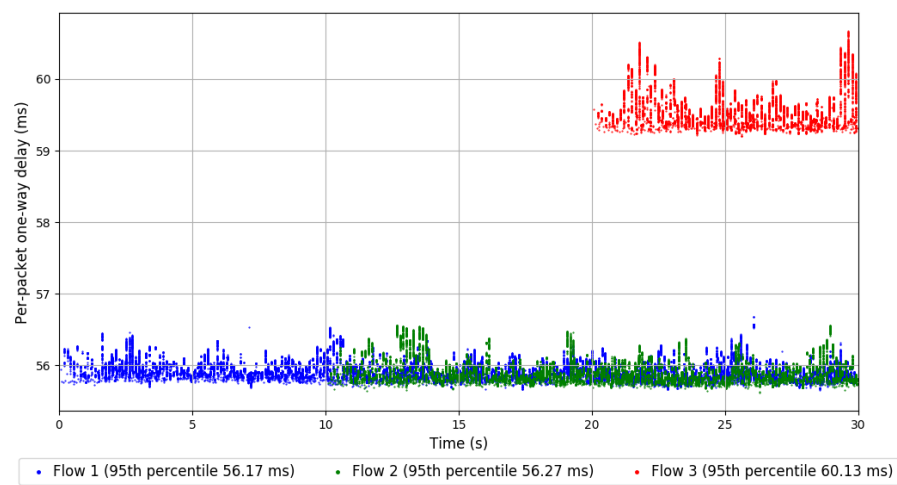
Run 2: Report of Sprout — Data Link

```
Run 3: Statistics of Sprout

Start at: 2019-02-06 06:30:25
End at: 2019-02-06 06:30:55
Local clock offset: 0.038 ms
Remote clock offset: 0.005 ms


# Below is generated by plot.py at 2019-02-06 11:39:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 14.65 Mbit/s
95th percentile per-packet one-way delay: 57.451 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 7.90 Mbit/s
95th percentile per-packet one-way delay: 57.448 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 6.88 Mbit/s
95th percentile per-packet one-way delay: 57.184 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 6.60 Mbit/s
95th percentile per-packet one-way delay: 57.553 ms
Loss rate: 0.00%
```
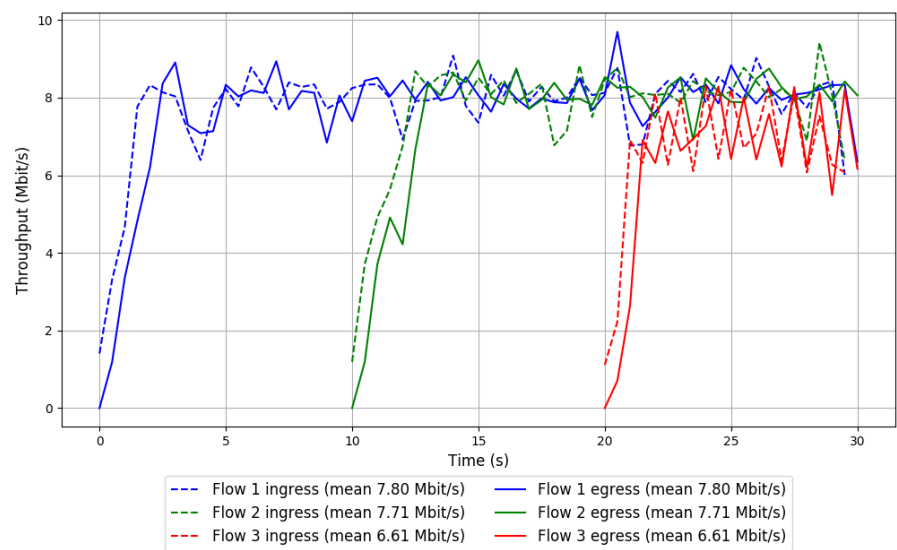
Run 3: Report of Sprout — Data Link

```
Run 4: Statistics of Sprout

Start at: 2019-02-06 07:09:30
End at: 2019-02-06 07:10:00
Local clock offset: -0.269 ms
Remote clock offset: -1.612 ms


# Below is generated by plot.py at 2019-02-06 11:39:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 15.10 Mbit/s
95th percentile per-packet one-way delay: 59.584 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 7.80 Mbit/s
95th percentile per-packet one-way delay: 56.166 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 7.71 Mbit/s
95th percentile per-packet one-way delay: 56.269 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 6.61 Mbit/s
95th percentile per-packet one-way delay: 60.135 ms
Loss rate: 0.00%
```
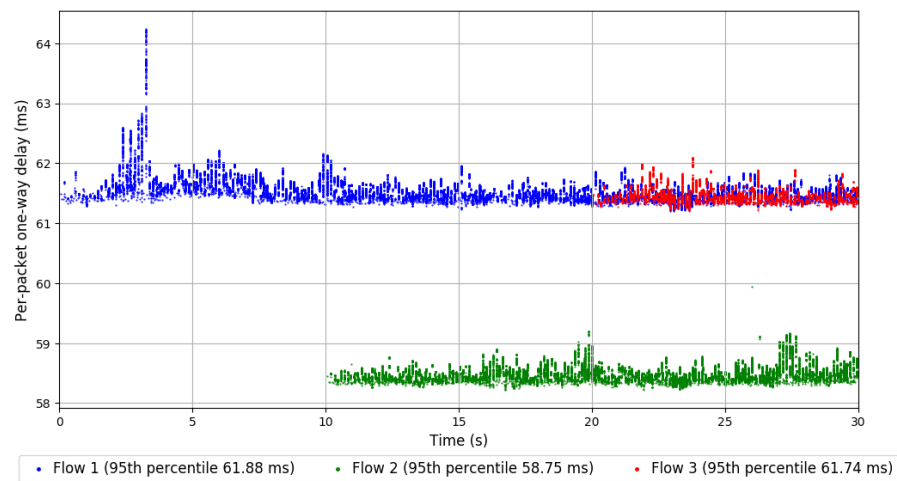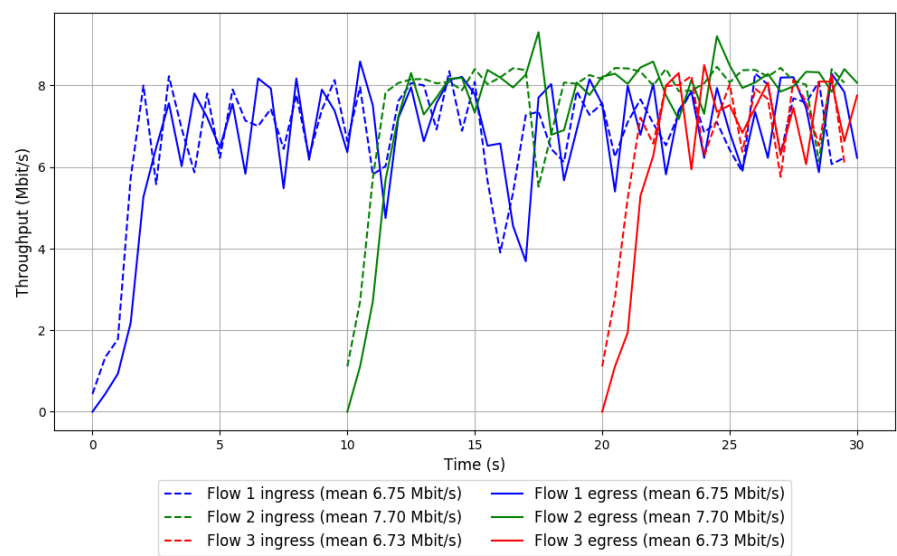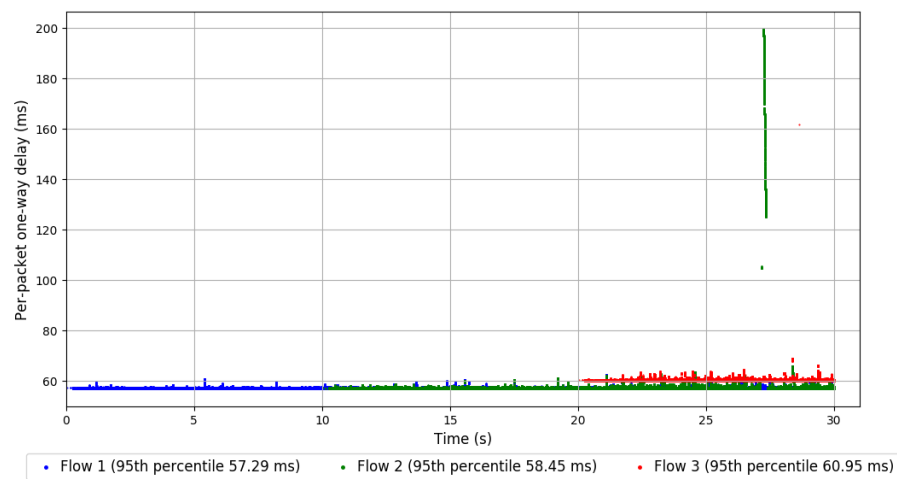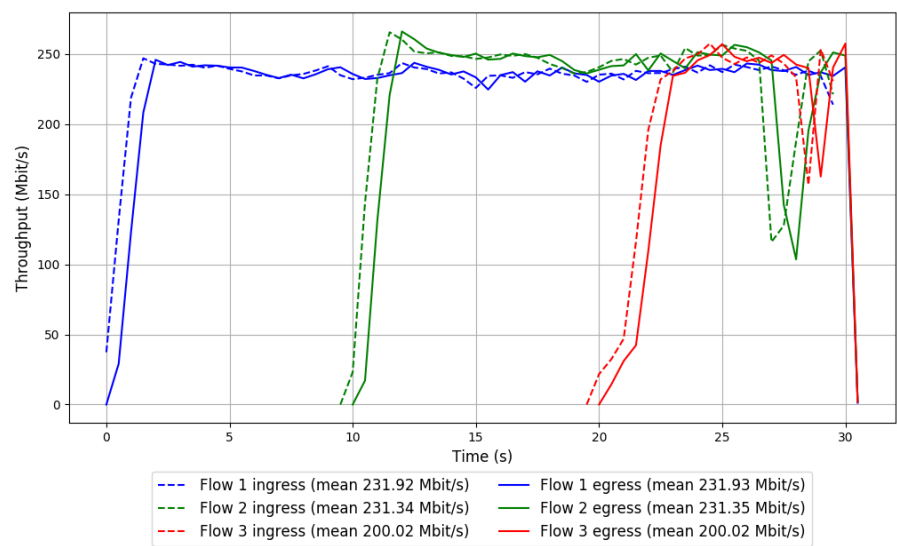
Run 4: Report of Sprout — Data Link

Flow 1 ingress (mean 7.80 Mbit/s) — Flow 1 egress (mean 7.80 Mbit/s)
Flow 2 ingress (mean 7.71 Mbit/s) — Flow 2 egress (mean 7.71 Mbit/s)
Flow 3 ingress (mean 6.61 Mbit/s) — Flow 3 egress (mean 6.61 Mbit/s)

Flow 1 (95th percentile 56.17 ms) • Flow 2 (95th percentile 56.27 ms) • Flow 3 (95th percentile 60.13 ms)

```
Run 5: Statistics of Sprout

Start at: 2019-02-06 07:49:14
End at: 2019-02-06 07:49:44
Local clock offset: 0.331 ms
Remote clock offset: 1.274 ms


# Below is generated by plot.py at 2019-02-06 11:39:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 14.09 Mbit/s
95th percentile per-packet one-way delay: 61.786 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 6.75 Mbit/s
95th percentile per-packet one-way delay: 61.879 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 7.70 Mbit/s
95th percentile per-packet one-way delay: 58.751 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 6.73 Mbit/s
95th percentile per-packet one-way delay: 61.742 ms
Loss rate: 0.00%
```

Run 5: Report of Sprout — Data Link

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

Start at: 2019-02-06 05:17:41
End at: 2019-02-06 05:18:11
Local clock offset: -0.101 ms
Remote clock offset: -0.347 ms


# Below is generated by plot.py at 2019-02-06 11:39:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 452.72 Mbit/s
95th percentile per-packet one-way delay: 60.250 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 231.93 Mbit/s
95th percentile per-packet one-way delay: 57.286 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 231.35 Mbit/s
95th percentile per-packet one-way delay: 58.453 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 200.02 Mbit/s
95th percentile per-packet one-way delay: 60.951 ms
Loss rate: 0.05%
```
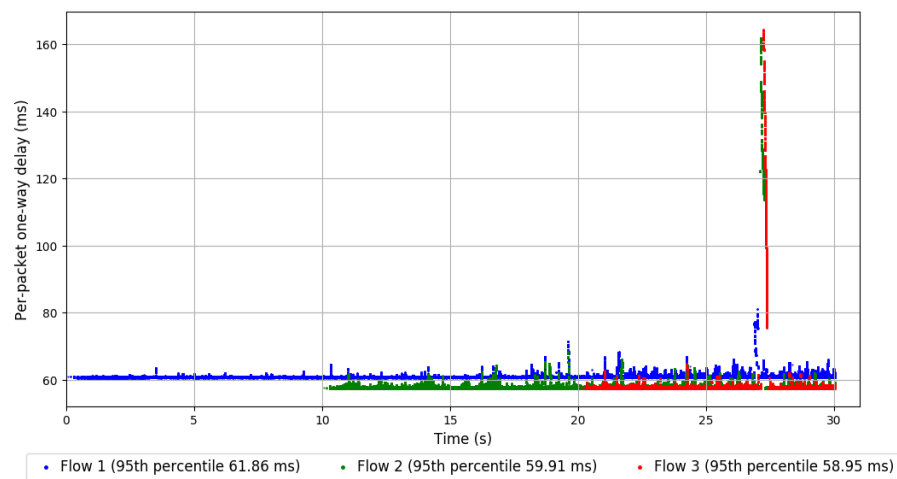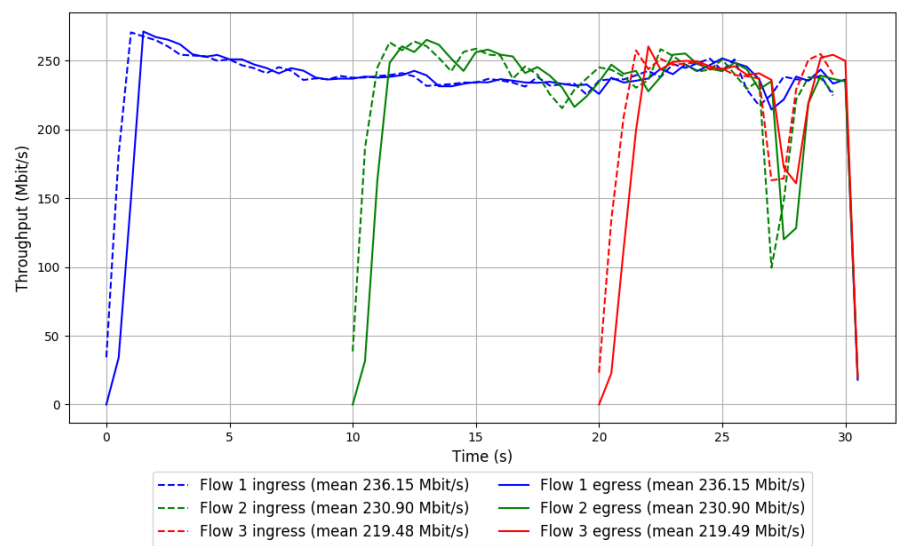
Run 1: Report of TaoVA-100x — Data Link

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

Start at: 2019-02-06 05:57:17
End at: 2019-02-06 05:57:47
Local clock offset: -0.17 ms
Remote clock offset: 0.437 ms


# Below is generated by plot.py at 2019-02-06 11:39:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 462.76 Mbit/s
95th percentile per-packet one-way delay: 61.490 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 236.15 Mbit/s
95th percentile per-packet one-way delay: 61.864 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 230.90 Mbit/s
95th percentile per-packet one-way delay: 59.907 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 219.49 Mbit/s
95th percentile per-packet one-way delay: 58.950 ms
Loss rate: 0.00%
```
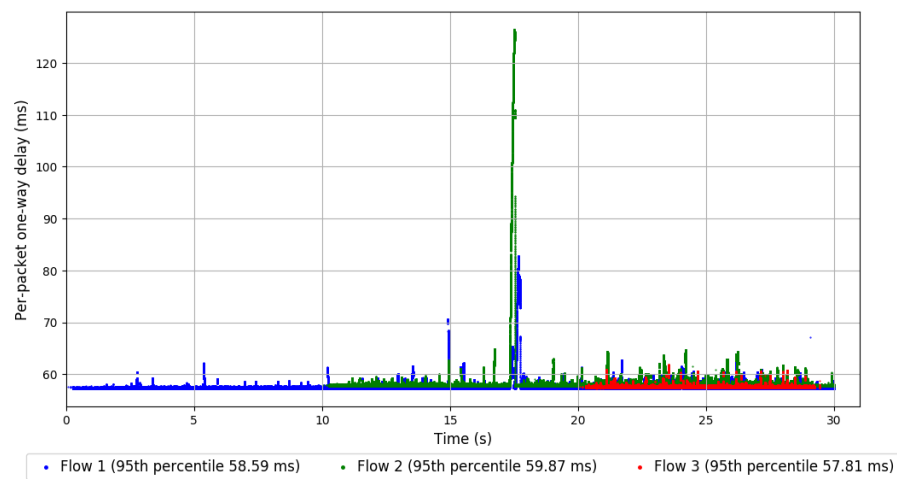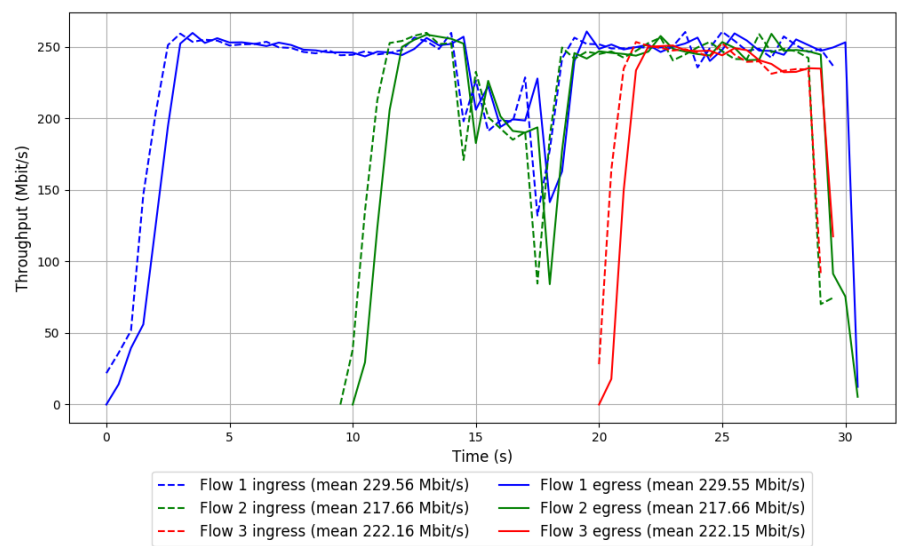
Run 2: Report of TaoVA-100x — Data Link

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

Start at: 2019-02-06 06:36:50
End at: 2019-02-06 06:37:20
Local clock offset: 0.053 ms
Remote clock offset: 0.495 ms


# Below is generated by plot.py at 2019-02-06 11:39:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 444.10 Mbit/s
95th percentile per-packet one-way delay: 58.946 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 229.55 Mbit/s
95th percentile per-packet one-way delay: 58.586 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 217.66 Mbit/s
95th percentile per-packet one-way delay: 59.871 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 222.15 Mbit/s
95th percentile per-packet one-way delay: 57.812 ms
Loss rate: 0.00%
```

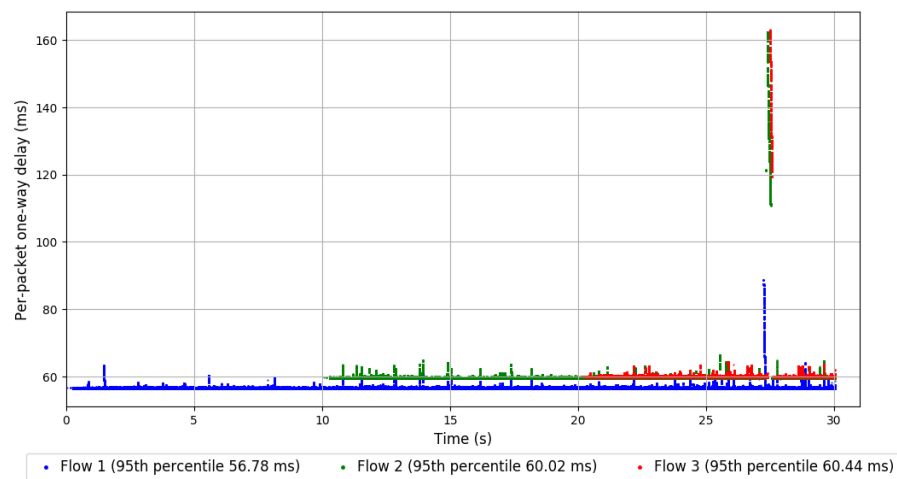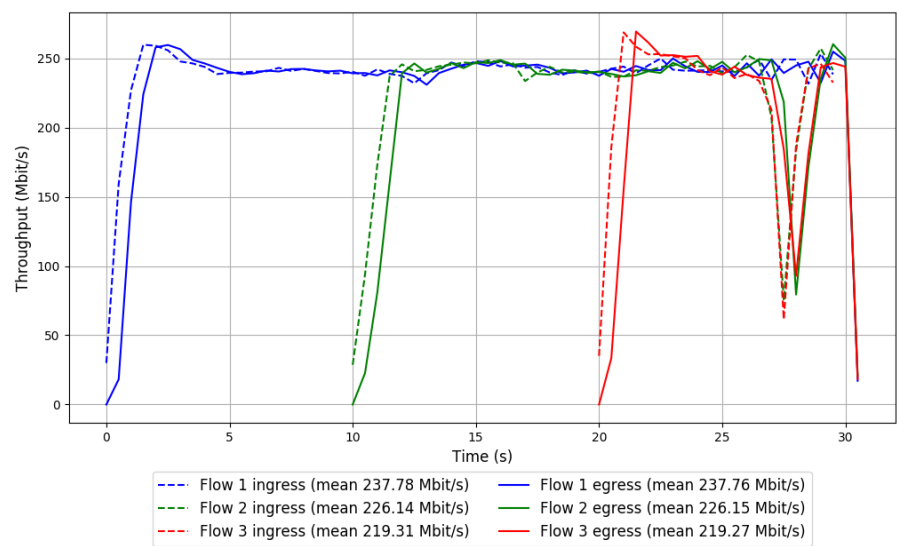Run 3: Report of TaoVA-100x — Data Link

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

Start at: 2019-02-06 07:16:11
End at: 2019-02-06 07:16:41
Local clock offset: -0.182 ms
Remote clock offset: -0.695 ms


# Below is generated by plot.py at 2019-02-06 11:39:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 461.22 Mbit/s
95th percentile per-packet one-way delay: 59.973 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 237.76 Mbit/s
95th percentile per-packet one-way delay: 56.779 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 226.15 Mbit/s
95th percentile per-packet one-way delay: 60.017 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 219.27 Mbit/s
95th percentile per-packet one-way delay: 60.443 ms
Loss rate: 0.00%
```
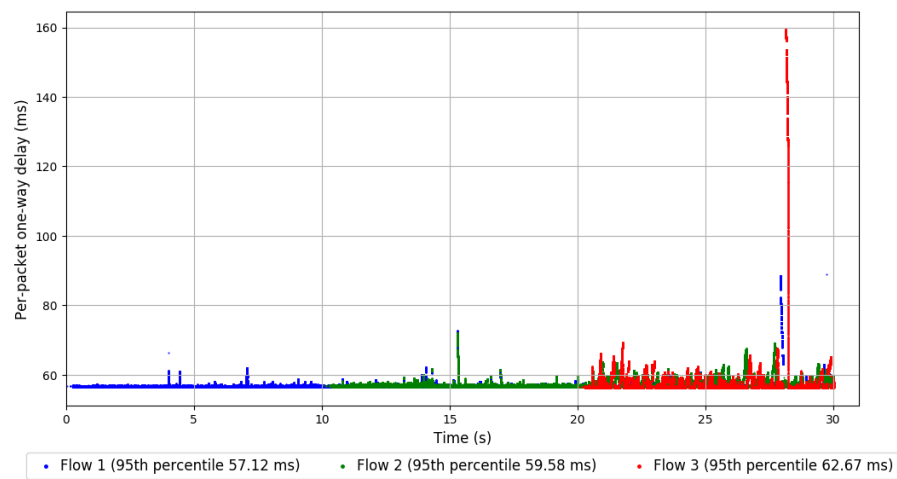
Run 4: Report of TaoVA-100x — Data Link

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

Start at: 2019-02-06 07:55:23
End at: 2019-02-06 07:55:53
Local clock offset: 0.259 ms
Remote clock offset: -0.14 ms

# Below is generated by plot.py at 2019-02-06 11:39:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 468.51 Mbit/s
95th percentile per-packet one-way delay: 59.375 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 240.91 Mbit/s
95th percentile per-packet one-way delay: 57.120 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 236.03 Mbit/s
95th percentile per-packet one-way delay: 59.584 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 211.87 Mbit/s
95th percentile per-packet one-way delay: 62.671 ms
Loss rate: 0.00%
```
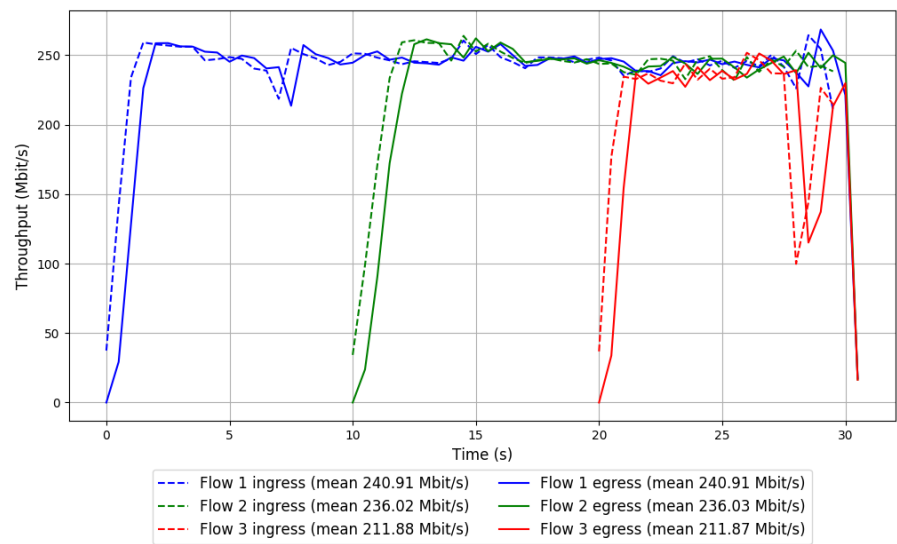
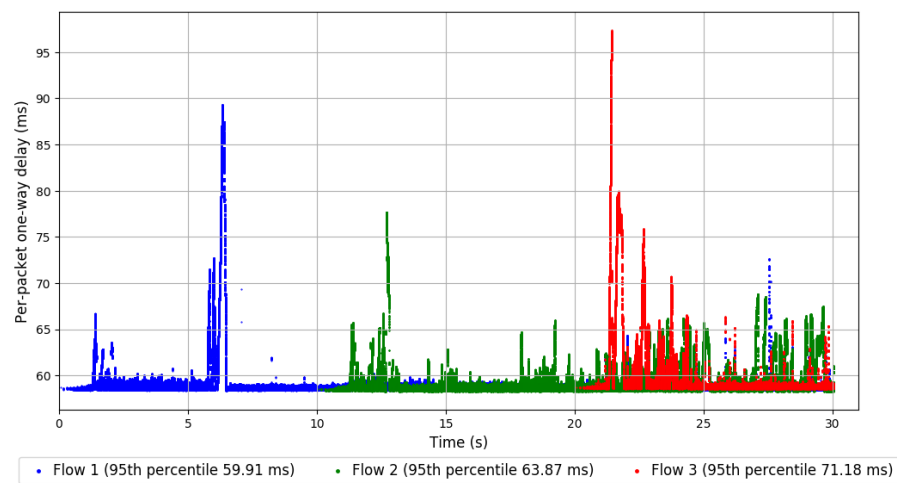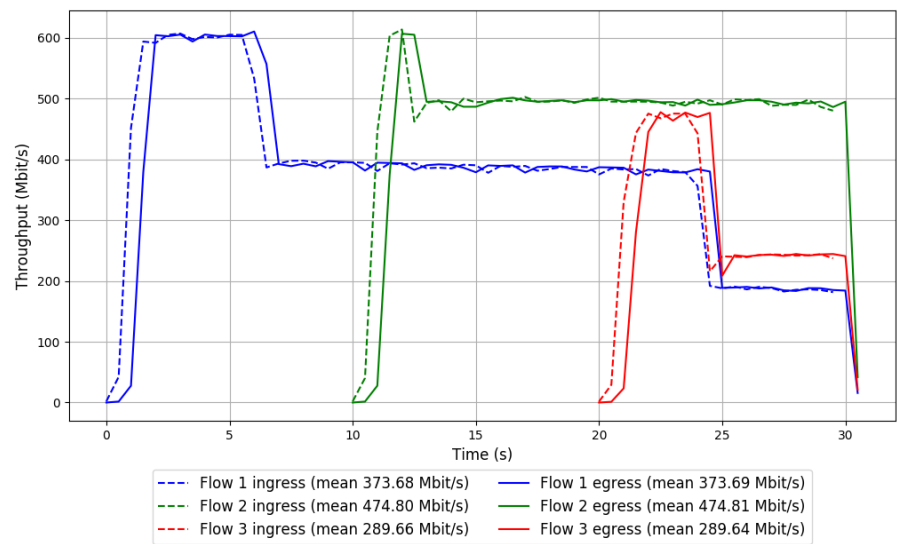# Run 5: Report of TaoVA-100x — Data Link

```
Run 1: Statistics of TCP Vegas

Start at: 2019-02-06 05:27:41
End at: 2019-02-06 05:28:11
Local clock offset: 0.397 ms
Remote clock offset: -1.442 ms


# Below is generated by plot.py at 2019-02-06 11:39:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 786.20 Mbit/s
95th percentile per-packet one-way delay: 63.656 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 373.69 Mbit/s
95th percentile per-packet one-way delay: 59.906 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 474.81 Mbit/s
95th percentile per-packet one-way delay: 63.874 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 289.64 Mbit/s
95th percentile per-packet one-way delay: 71.176 ms
Loss rate: 0.03%
```

Run 1: Report of TCP Vegas — Data Link

```
Run 2: Statistics of TCP Vegas

Start at: 2019-02-06 06:07:44
End at: 2019-02-06 06:08:14
Local clock offset: 0.062 ms
Remote clock offset: 0.038 ms


# Below is generated by plot.py at 2019-02-06 11:52:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 831.28 Mbit/s
95th percentile per-packet one-way delay: 96.244 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 497.20 Mbit/s
95th percentile per-packet one-way delay: 103.067 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 373.92 Mbit/s
95th percentile per-packet one-way delay: 76.628 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 255.75 Mbit/s
95th percentile per-packet one-way delay: 65.345 ms
Loss rate: 0.00%
```
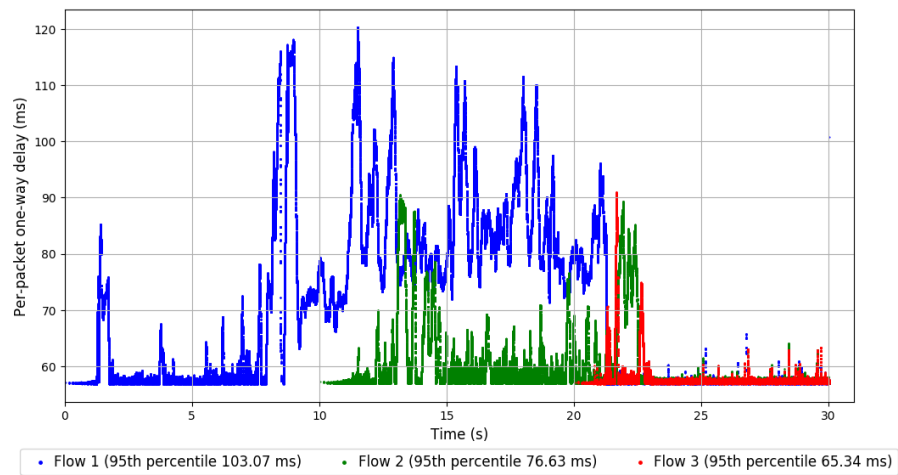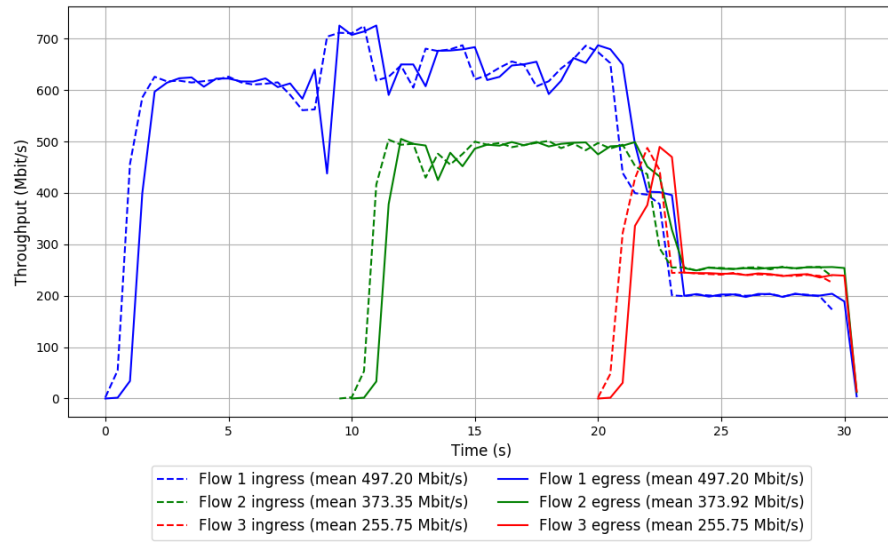
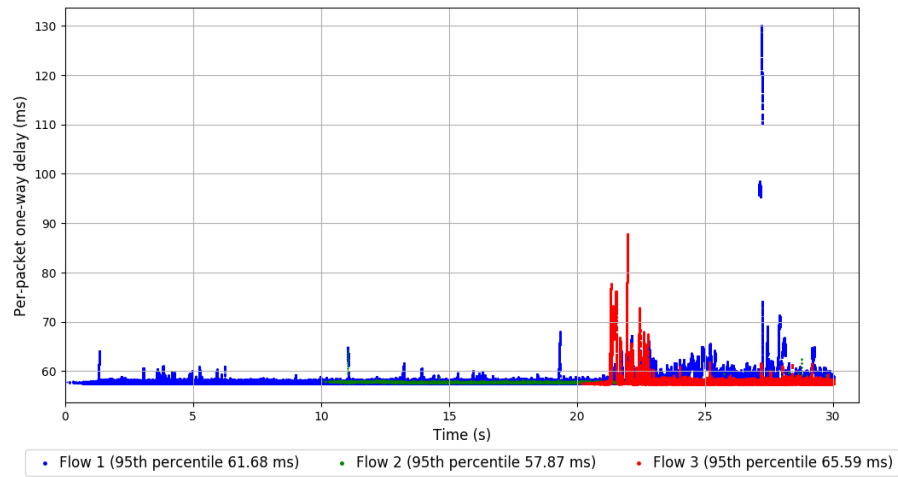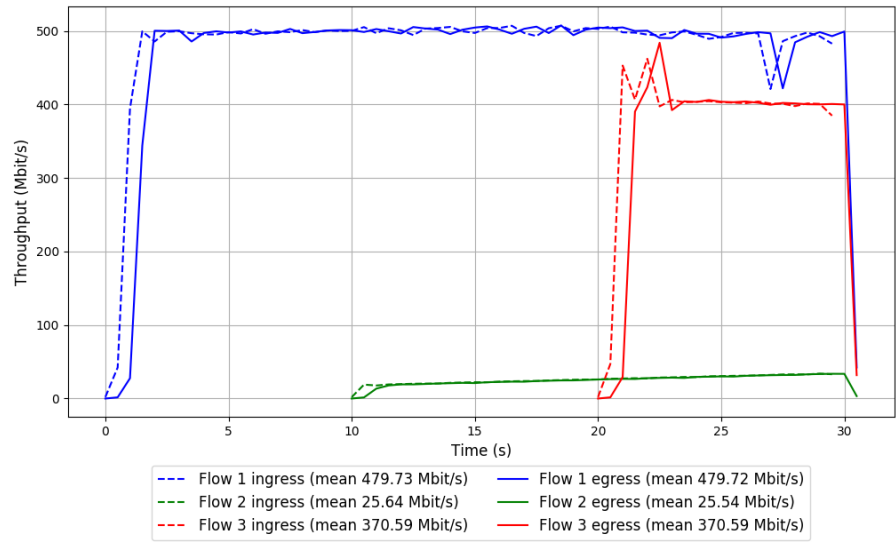Run 2: Report of TCP Vegas — Data Link

```
Run 3: Statistics of TCP Vegas

Start at: 2019-02-06 06:47:02
End at: 2019-02-06 06:47:32
Local clock offset: -0.596 ms
Remote clock offset: -0.184 ms


# Below is generated by plot.py at 2019-02-06 11:52:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 619.88 Mbit/s
95th percentile per-packet one-way delay: 62.040 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 479.72 Mbit/s
95th percentile per-packet one-way delay: 61.678 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 25.54 Mbit/s
95th percentile per-packet one-way delay: 57.871 ms
Loss rate: 0.37%
-- Flow 3:
Average throughput: 370.59 Mbit/s
95th percentile per-packet one-way delay: 65.588 ms
Loss rate: 0.00%
```

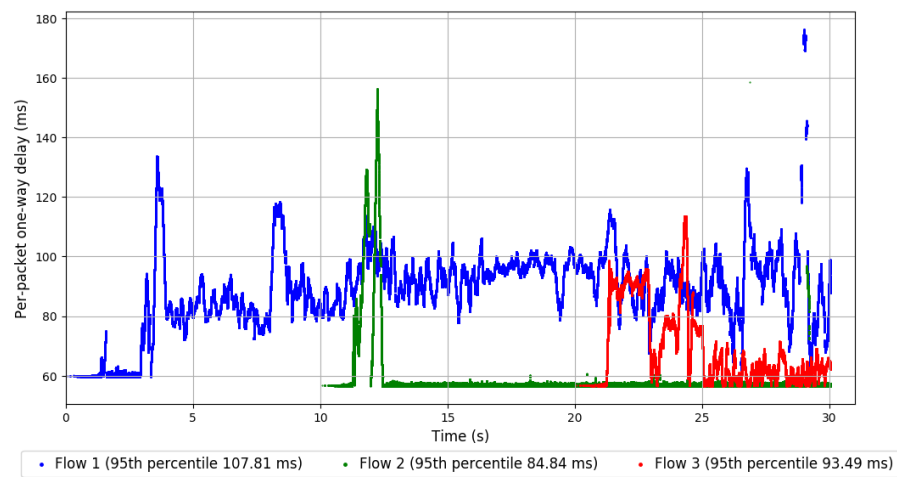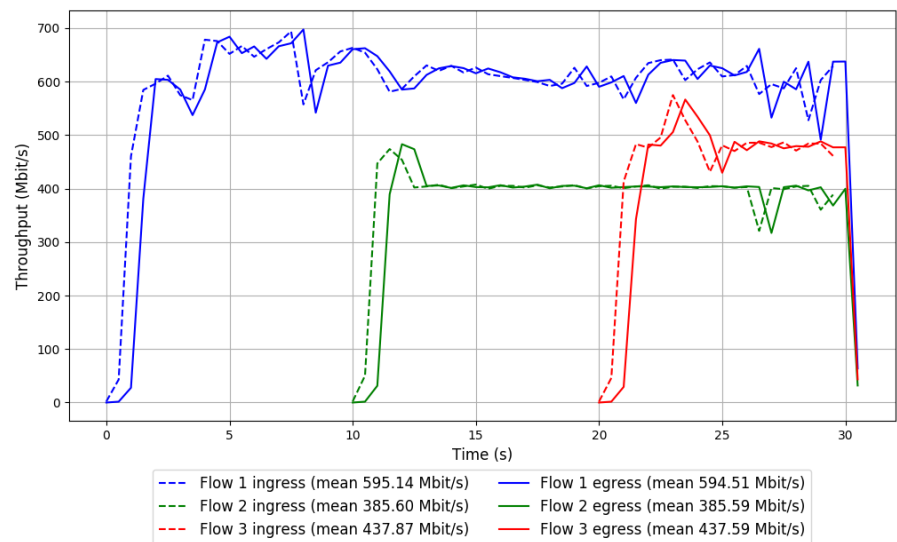Run 3: Report of TCP Vegas — Data Link

```
Run 4: Statistics of TCP Vegas

Start at: 2019-02-06 07:27:06
End at: 2019-02-06 07:27:36
Local clock offset: 0.257 ms
Remote clock offset: -0.028 ms


# Below is generated by plot.py at 2019-02-06 12:01:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 996.83 Mbit/s
95th percentile per-packet one-way delay: 104.225 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 594.51 Mbit/s
95th percentile per-packet one-way delay: 107.806 ms
Loss rate: 0.10%
-- Flow 2:
Average throughput: 385.59 Mbit/s
95th percentile per-packet one-way delay: 84.840 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 437.59 Mbit/s
95th percentile per-packet one-way delay: 93.488 ms
Loss rate: 0.02%
```

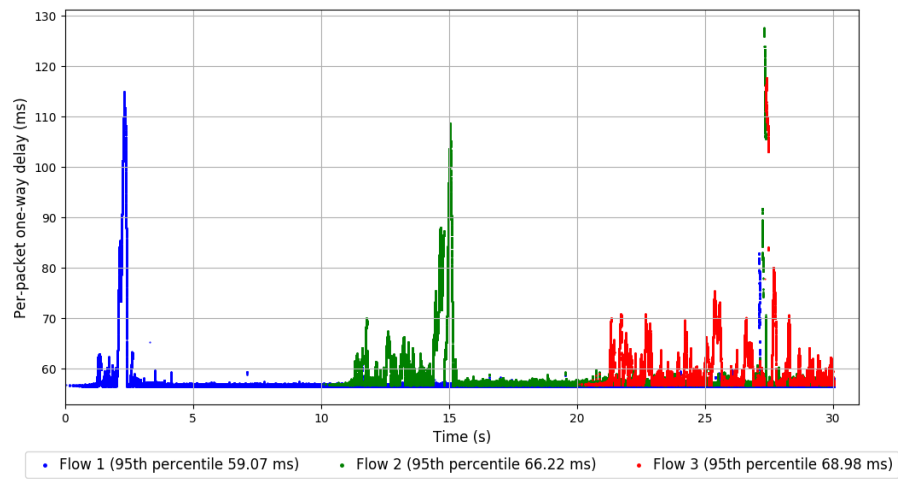Run 4: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 595.14 Mbit/s)   Flow 1 egress (mean 594.51 Mbit/s)
Flow 2 ingress (mean 385.60 Mbit/s)   Flow 2 egress (mean 385.59 Mbit/s)
Flow 3 ingress (mean 437.87 Mbit/s)   Flow 3 egress (mean 437.59 Mbit/s)

Flow 1 (95th percentile 107.81 ms)   Flow 2 (95th percentile 84.84 ms)   Flow 3 (95th percentile 93.49 ms)
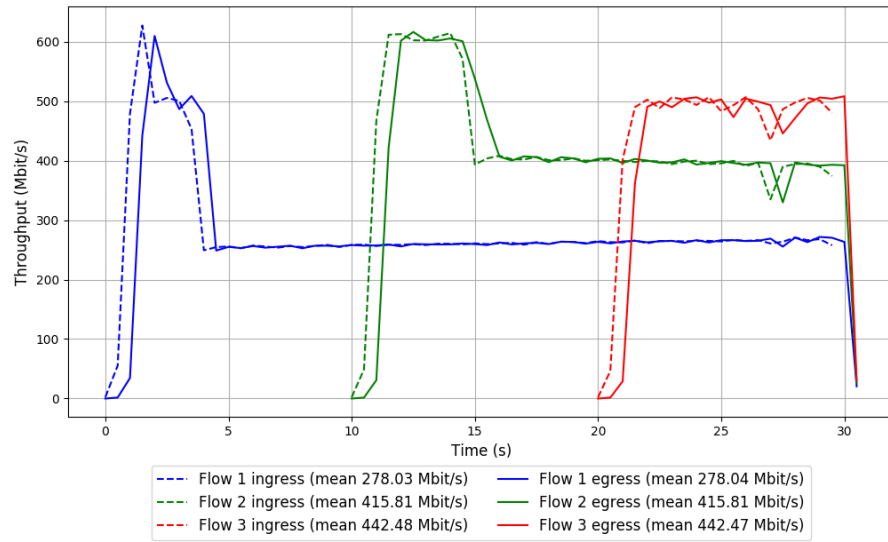
```
Run 5: Statistics of TCP Vegas

Start at: 2019-02-06 08:05:38
End at: 2019-02-06 08:06:08
Local clock offset: 0.071 ms
Remote clock offset: -0.137 ms


# Below is generated by plot.py at 2019-02-06 12:01:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 702.02 Mbit/s
95th percentile per-packet one-way delay: 66.107 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 278.04 Mbit/s
95th percentile per-packet one-way delay: 59.070 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 415.81 Mbit/s
95th percentile per-packet one-way delay: 66.221 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 442.47 Mbit/s
95th percentile per-packet one-way delay: 68.982 ms
Loss rate: 0.00%
```

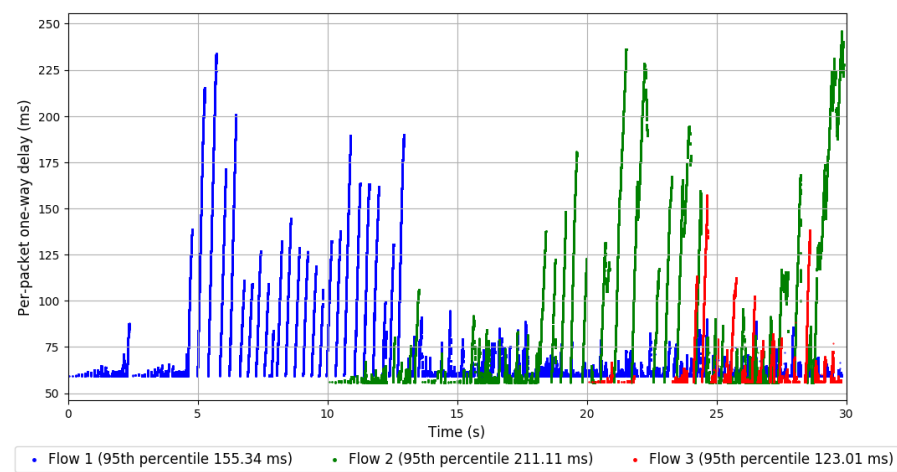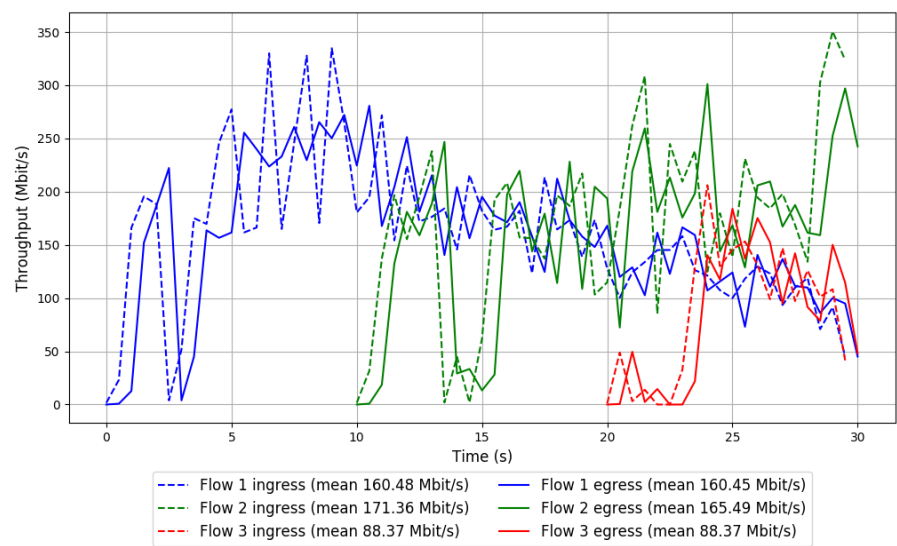Run 5: Report of TCP Vegas — Data Link

```
Run 1: Statistics of Verus

Start at: 2019-02-06 05:29:45
End at: 2019-02-06 05:30:15
Local clock offset: 0.406 ms
Remote clock offset: -0.695 ms


# Below is generated by plot.py at 2019-02-06 12:01:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 298.79 Mbit/s
95th percentile per-packet one-way delay: 181.376 ms
Loss rate: 1.30%
-- Flow 1:
Average throughput: 160.45 Mbit/s
95th percentile per-packet one-way delay: 155.338 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 165.49 Mbit/s
95th percentile per-packet one-way delay: 211.114 ms
Loss rate: 3.44%
-- Flow 3:
Average throughput: 88.37 Mbit/s
95th percentile per-packet one-way delay: 123.008 ms
Loss rate: 0.00%
```
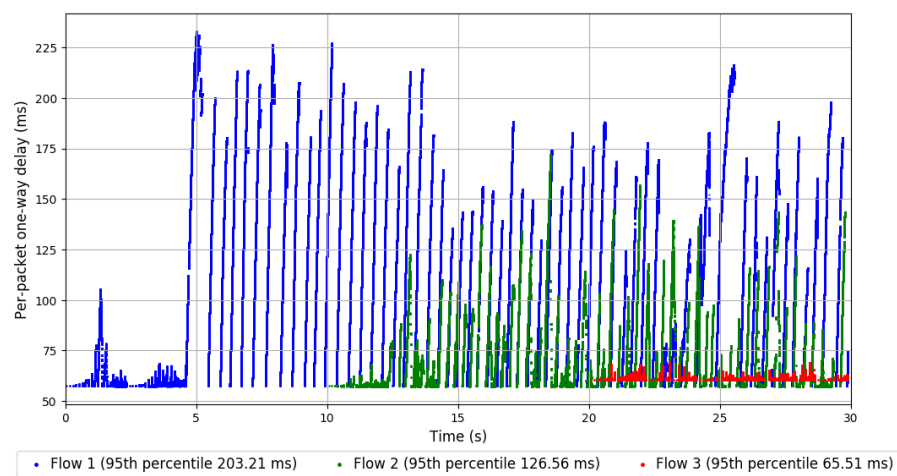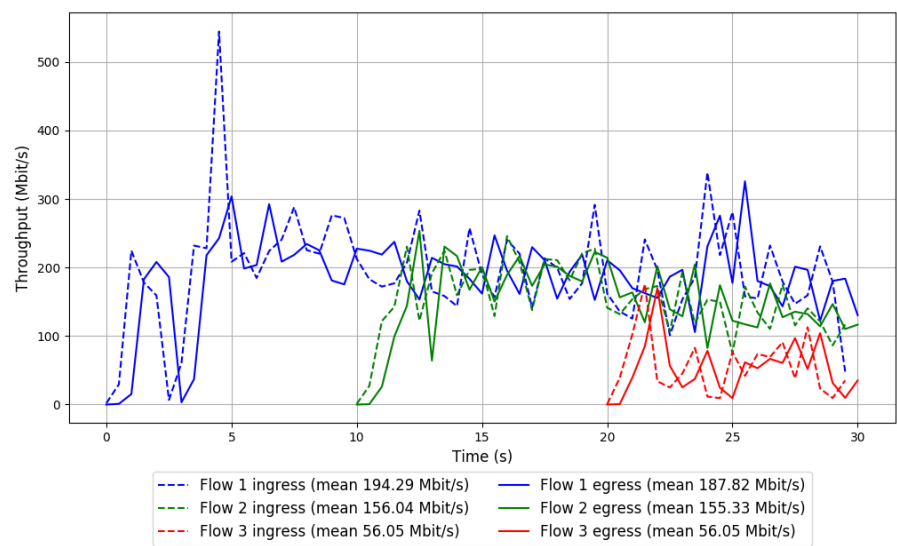
Run 1: Report of Verus — Data Link

Flow 1 ingress (mean 160.48 Mbit/s)   Flow 1 egress (mean 160.45 Mbit/s)
Flow 2 ingress (mean 171.36 Mbit/s)   Flow 2 egress (mean 165.49 Mbit/s)
Flow 3 ingress (mean 88.37 Mbit/s)   Flow 3 egress (mean 88.37 Mbit/s)

Flow 1 (95th percentile 155.34 ms)   Flow 2 (95th percentile 211.11 ms)   Flow 3 (95th percentile 123.01 ms)

```
Run 2: Statistics of Verus

Start at: 2019-02-06 06:09:47
End at: 2019-02-06 06:10:17
Local clock offset: -0.158 ms
Remote clock offset: 0.332 ms


# Below is generated by plot.py at 2019-02-06 12:01:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 308.81 Mbit/s
95th percentile per-packet one-way delay: 192.324 ms
Loss rate: 2.05%
-- Flow 1:
Average throughput: 187.82 Mbit/s
95th percentile per-packet one-way delay: 203.210 ms
Loss rate: 3.33%
-- Flow 2:
Average throughput: 155.33 Mbit/s
95th percentile per-packet one-way delay: 126.555 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 56.05 Mbit/s
95th percentile per-packet one-way delay: 65.514 ms
Loss rate: 0.00%
```

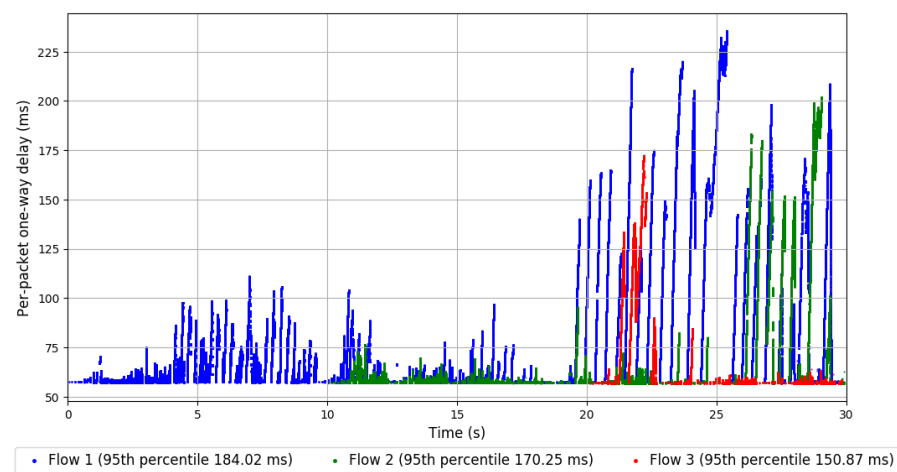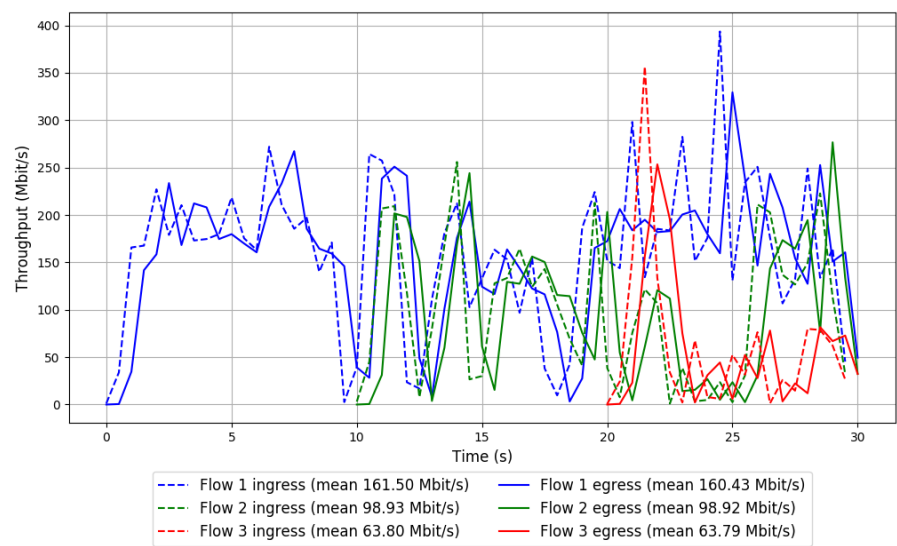Run 2: Report of Verus — Data Link

```
Run 3: Statistics of Verus

Start at: 2019-02-06 06:48:54
End at: 2019-02-06 06:49:24
Local clock offset: -0.215 ms
Remote clock offset: -0.252 ms


# Below is generated by plot.py at 2019-02-06 12:01:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 246.36 Mbit/s
95th percentile per-packet one-way delay: 175.843 ms
Loss rate: 0.43%
-- Flow 1:
Average throughput: 160.43 Mbit/s
95th percentile per-packet one-way delay: 184.024 ms
Loss rate: 0.66%
-- Flow 2:
Average throughput: 98.92 Mbit/s
95th percentile per-packet one-way delay: 170.253 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 63.79 Mbit/s
95th percentile per-packet one-way delay: 150.868 ms
Loss rate: 0.00%
```

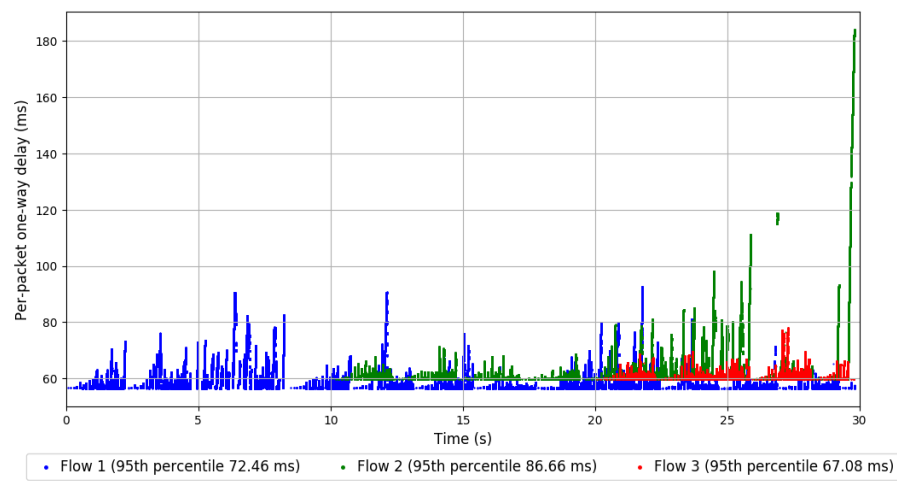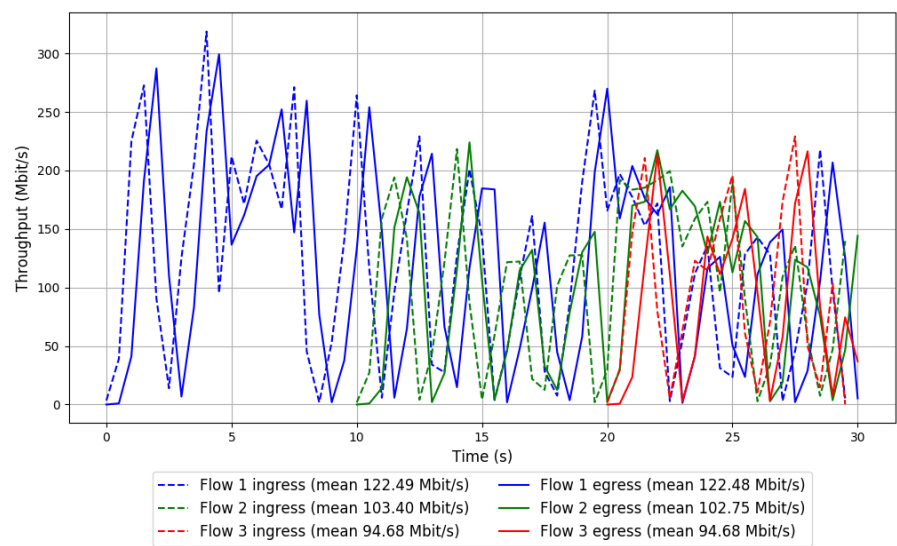## Run 3: Report of Verus — Data Link

```
Run 4: Statistics of Verus

Start at: 2019-02-06 07:29:11
End at: 2019-02-06 07:29:41
Local clock offset: -0.518 ms
Remote clock offset: -1.314 ms


# Below is generated by plot.py at 2019-02-06 12:01:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 221.56 Mbit/s
95th percentile per-packet one-way delay: 75.540 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 122.48 Mbit/s
95th percentile per-packet one-way delay: 72.459 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 102.75 Mbit/s
95th percentile per-packet one-way delay: 86.664 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 94.68 Mbit/s
95th percentile per-packet one-way delay: 67.083 ms
Loss rate: 0.00%
```

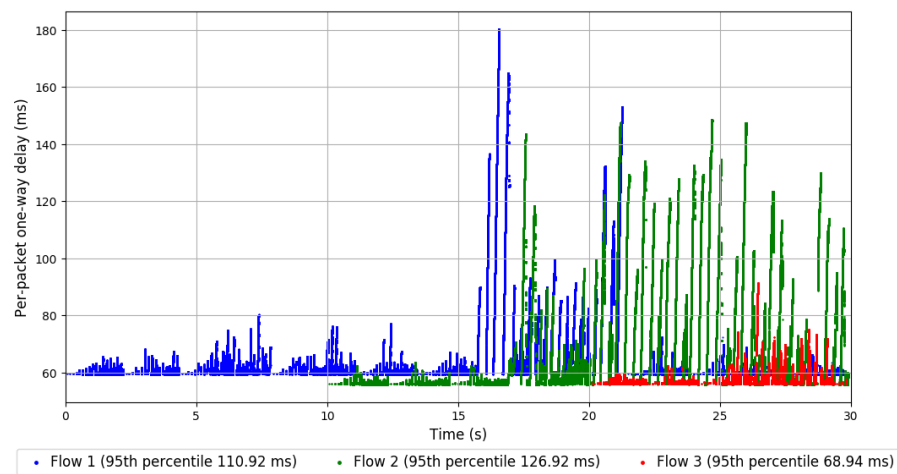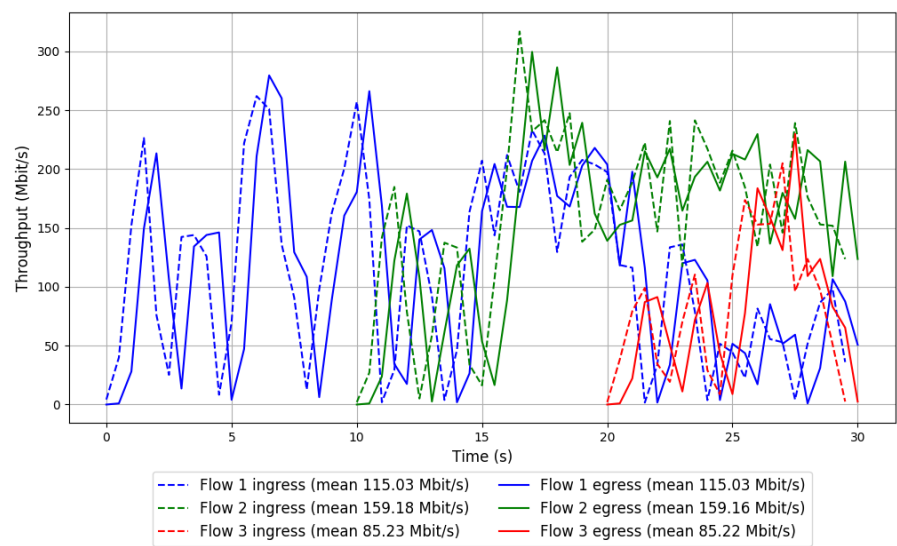# Run 4: Report of Verus — Data Link

```
Run 5: Statistics of Verus

Start at: 2019-02-06 08:07:40
End at: 2019-02-06 08:08:10
Local clock offset: 0.248 ms
Remote clock offset: -0.492 ms


# Below is generated by plot.py at 2019-02-06 12:01:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 248.25 Mbit/s
95th percentile per-packet one-way delay: 121.989 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 115.03 Mbit/s
95th percentile per-packet one-way delay: 110.915 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 159.16 Mbit/s
95th percentile per-packet one-way delay: 126.918 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 85.22 Mbit/s
95th percentile per-packet one-way delay: 68.941 ms
Loss rate: 0.00%
```

Run 5: Report of Verus — Data Link

```
Run 1: Statistics of PCC-Vivace

Start at: 2019-02-06 05:07:15
End at: 2019-02-06 05:07:45
Local clock offset: 0.049 ms
Remote clock offset: -0.75 ms

# Below is generated by plot.py at 2019-02-06 12:01:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 496.55 Mbit/s
95th percentile per-packet one-way delay: 57.431 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 329.86 Mbit/s
95th percentile per-packet one-way delay: 57.670 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 234.64 Mbit/s
95th percentile per-packet one-way delay: 57.307 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 31.54 Mbit/s
95th percentile per-packet one-way delay: 56.506 ms
Loss rate: 0.00%
```
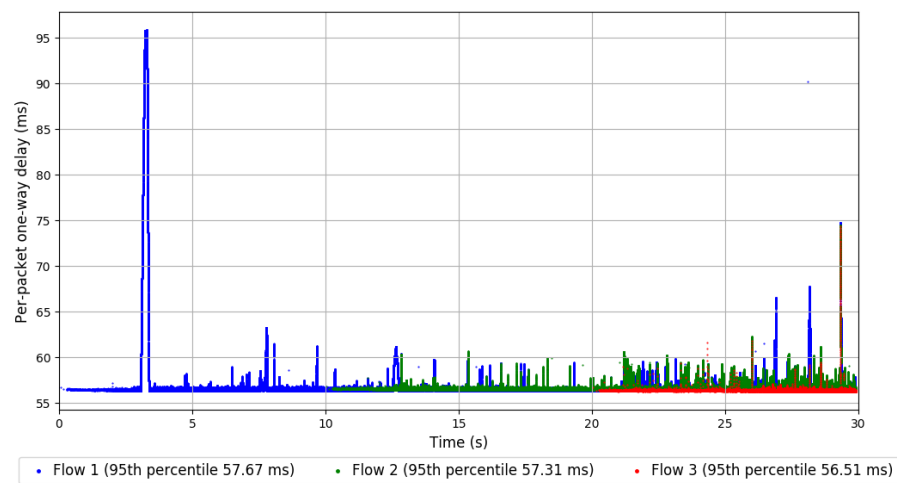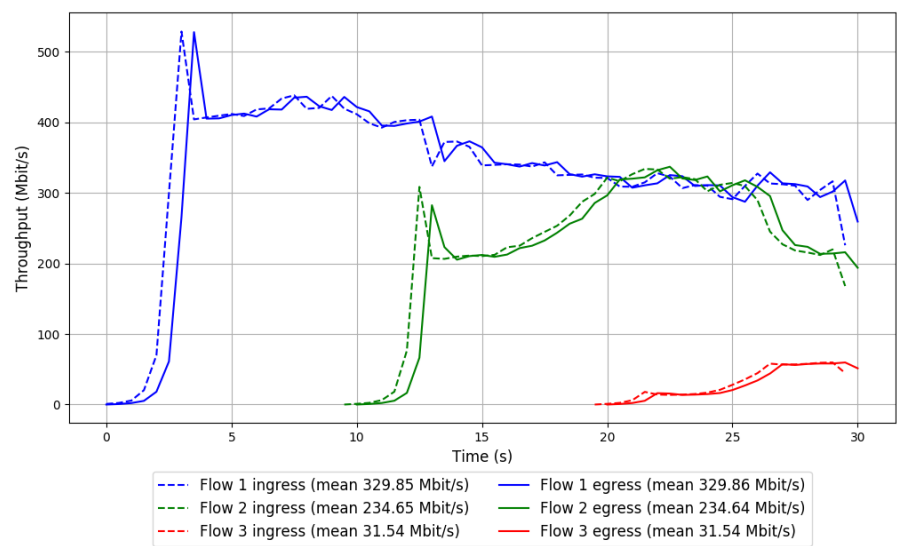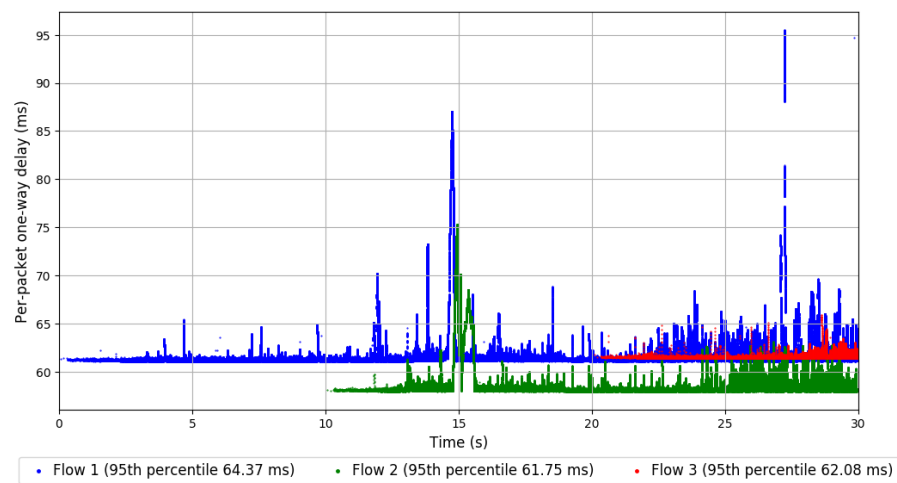
Run 1: Report of PCC-Vivace — Data Link

Flow 1 ingress (mean 329.85 Mbit/s)   Flow 1 egress (mean 329.86 Mbit/s)
Flow 2 ingress (mean 234.65 Mbit/s)   Flow 2 egress (mean 234.64 Mbit/s)
Flow 3 ingress (mean 31.54 Mbit/s)   Flow 3 egress (mean 31.54 Mbit/s)

Flow 1 (95th percentile 57.67 ms)   Flow 2 (95th percentile 57.31 ms)   Flow 3 (95th percentile 56.51 ms)

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```
Run 2: Statistics of PCC-Vivace

Start at: 2019-02-06 05:46:38
End at: 2019-02-06 05:47:08
Local clock offset: -0.339 ms
Remote clock offset: 0.616 ms


# Below is generated by plot.py at 2019-02-06 12:03:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 558.34 Mbit/s
95th percentile per-packet one-way delay: 63.864 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 340.86 Mbit/s
95th percentile per-packet one-way delay: 64.373 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 298.74 Mbit/s
95th percentile per-packet one-way delay: 61.752 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 56.98 Mbit/s
95th percentile per-packet one-way delay: 62.081 ms
Loss rate: 0.00%
```
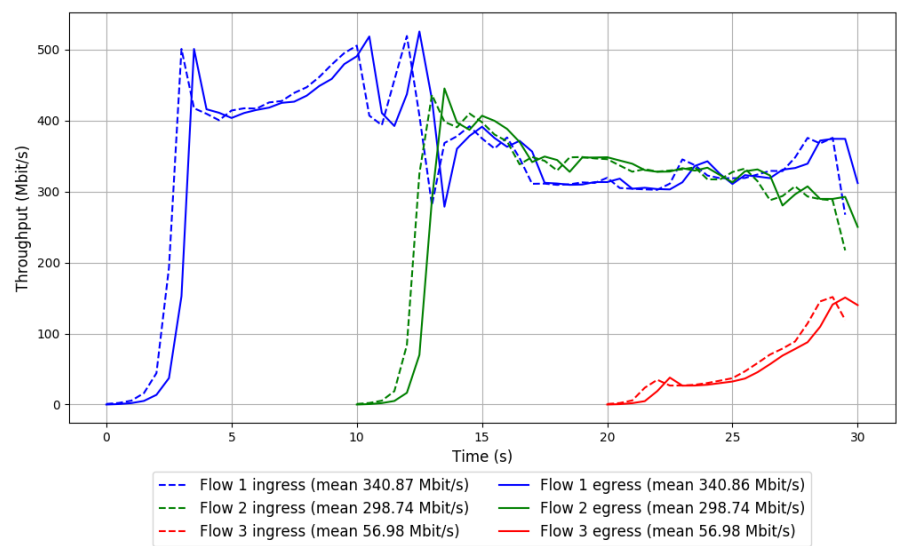
Run 2: Report of PCC-Vivace — Data Link

```
Run 3: Statistics of PCC-Vivace

Start at: 2019-02-06 06:26:27
End at: 2019-02-06 06:26:57
Local clock offset: -0.111 ms
Remote clock offset: 0.176 ms


# Below is generated by plot.py at 2019-02-06 12:03:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 507.29 Mbit/s
95th percentile per-packet one-way delay: 65.300 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 329.95 Mbit/s
95th percentile per-packet one-way delay: 69.522 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 256.54 Mbit/s
95th percentile per-packet one-way delay: 65.051 ms
Loss rate: 0.03%
-- Flow 3:
Average throughput: 19.84 Mbit/s
95th percentile per-packet one-way delay: 57.375 ms
Loss rate: 0.00%
```
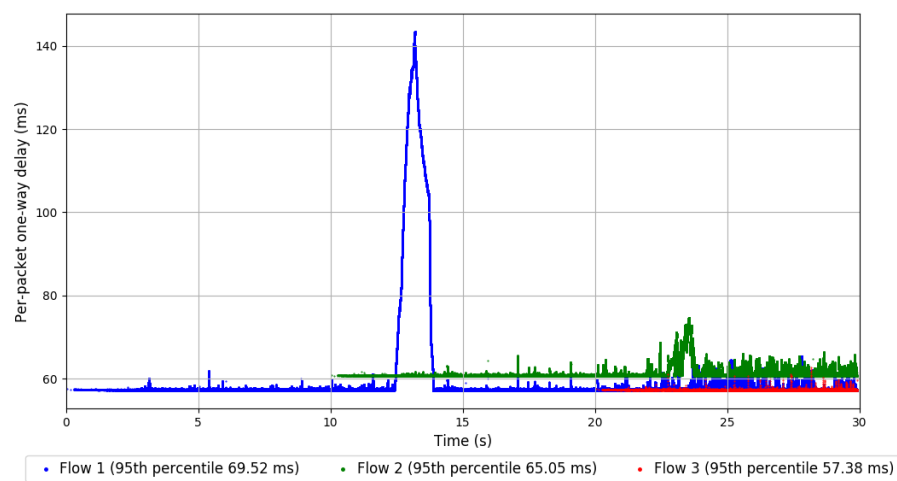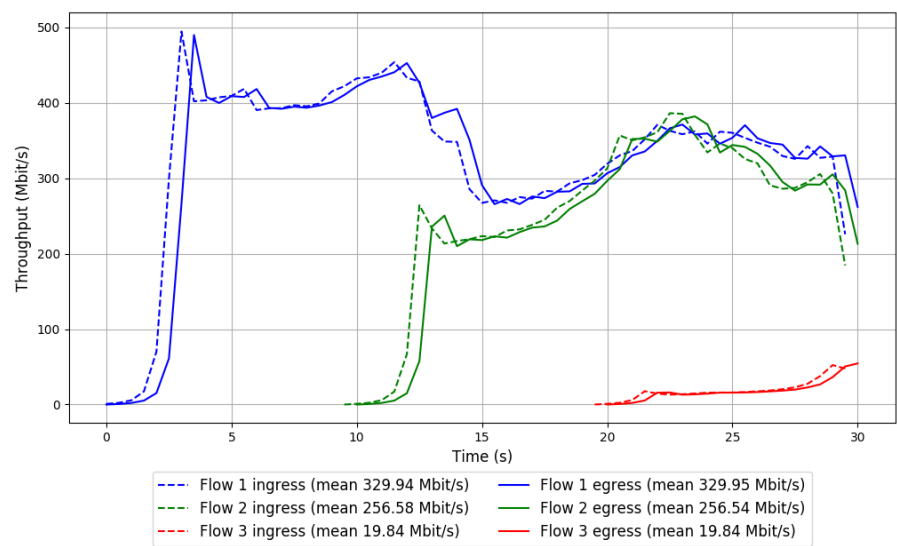
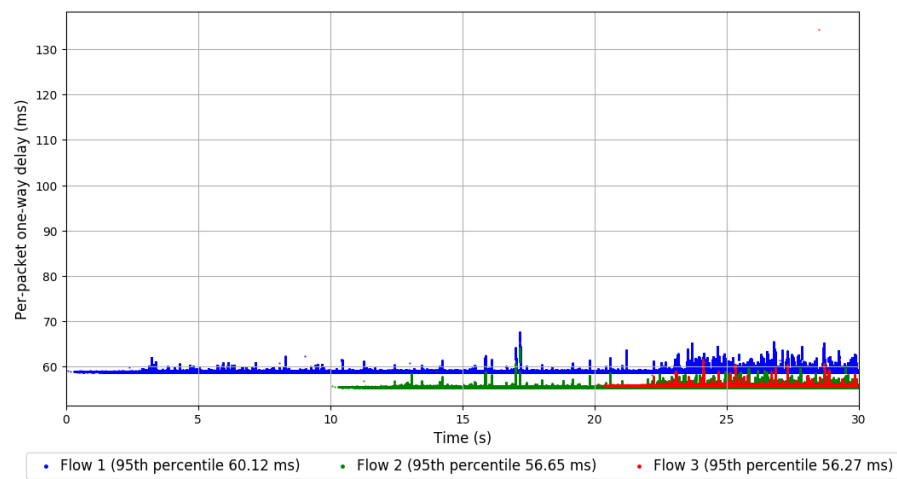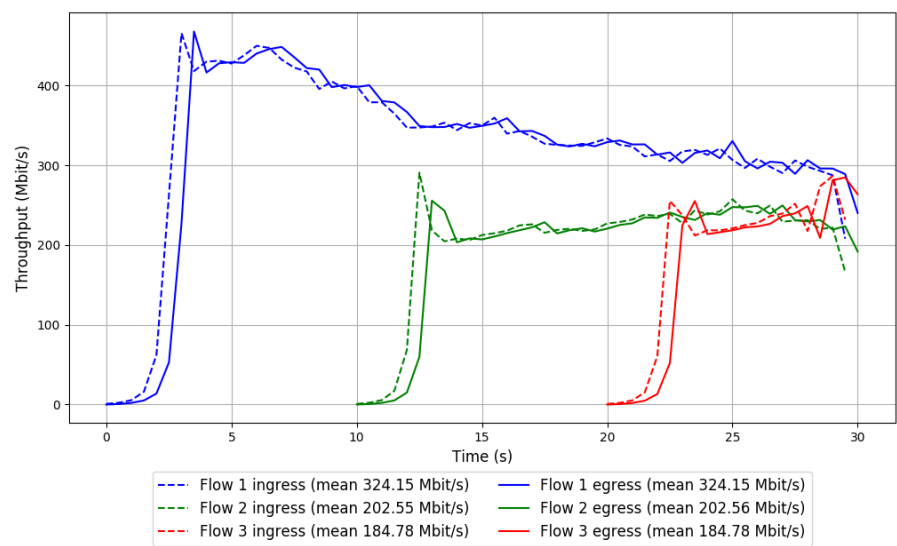# Run 3: Report of PCC-Vivace — Data Link

```
Run 4: Statistics of PCC-Vivace

Start at: 2019-02-06 07:05:35
End at: 2019-02-06 07:06:05
Local clock offset: 0.049 ms
Remote clock offset: -1.439 ms


# Below is generated by plot.py at 2019-02-06 12:03:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 519.68 Mbit/s
95th percentile per-packet one-way delay: 59.639 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 324.15 Mbit/s
95th percentile per-packet one-way delay: 60.116 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 202.56 Mbit/s
95th percentile per-packet one-way delay: 56.654 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 184.78 Mbit/s
95th percentile per-packet one-way delay: 56.270 ms
Loss rate: 0.00%
```

Run 4: Report of PCC-Vivace — Data Link

```
Run 5: Statistics of PCC-Vivace

Start at: 2019-02-06 07:45:23
End at: 2019-02-06 07:45:53
Local clock offset: -0.282 ms
Remote clock offset: -0.11 ms


# Below is generated by plot.py at 2019-02-06 12:03:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 522.89 Mbit/s
95th percentile per-packet one-way delay: 64.815 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 291.69 Mbit/s
95th percentile per-packet one-way delay: 58.492 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 276.22 Mbit/s
95th percentile per-packet one-way delay: 90.719 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 144.23 Mbit/s
95th percentile per-packet one-way delay: 61.911 ms
Loss rate: 0.00%
```
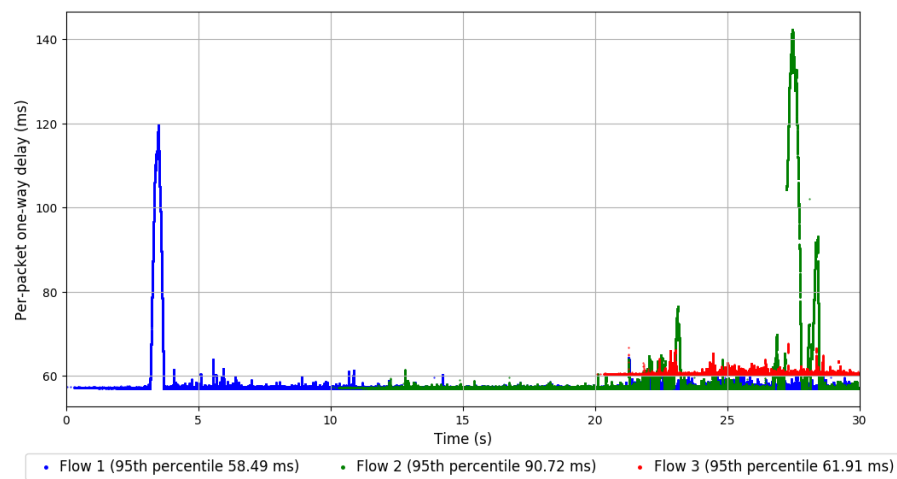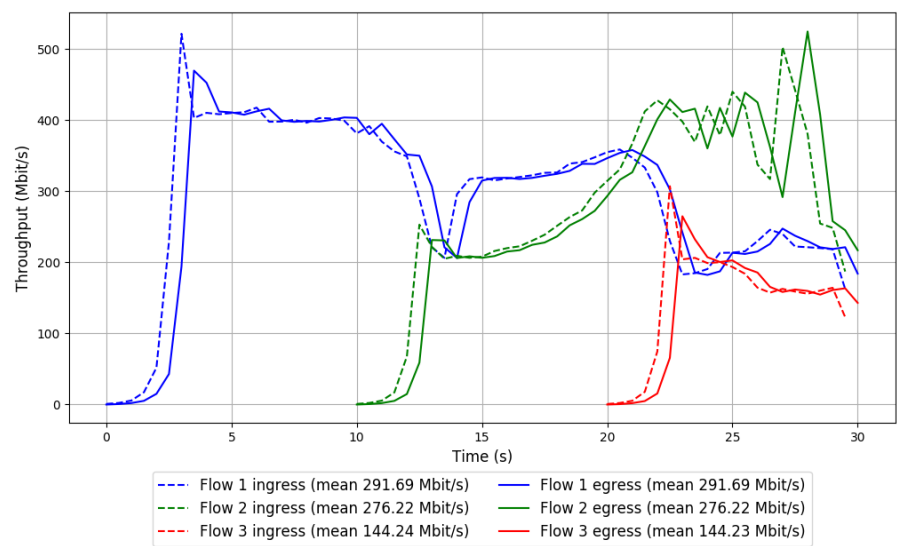
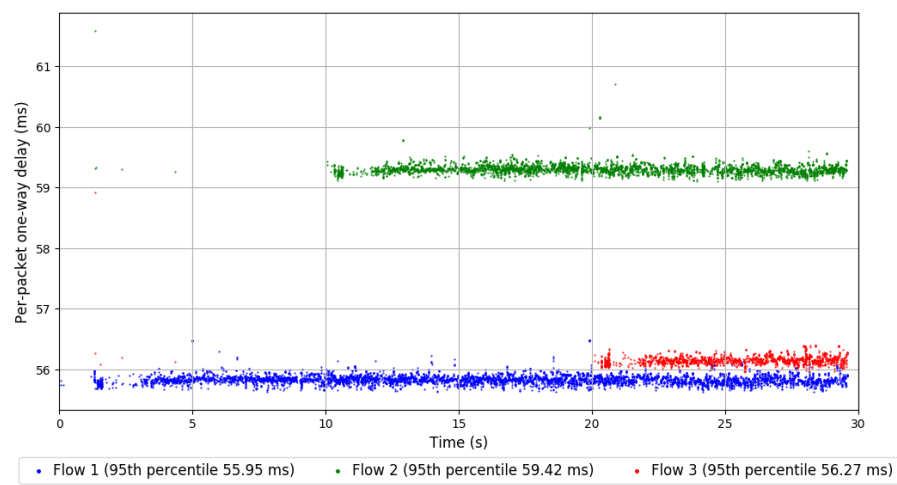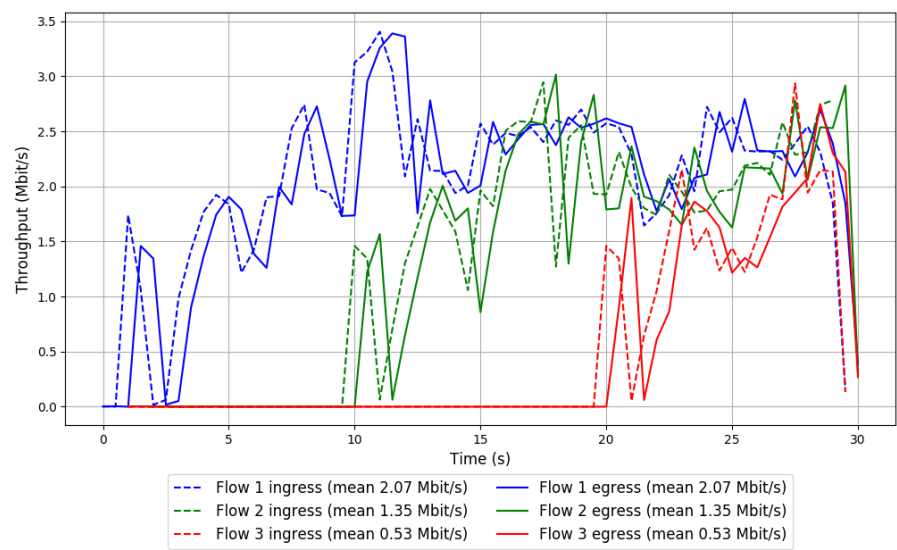Run 5: Report of PCC-Vivace — Data Link

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```
Run 1: Statistics of WebRTC media

Start at: 2019-02-06 05:16:28
End at: 2019-02-06 05:16:58
Local clock offset: 0.487 ms
Remote clock offset: -0.708 ms


# Below is generated by plot.py at 2019-02-06 12:03:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.87 Mbit/s
95th percentile per-packet one-way delay: 59.367 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 2.07 Mbit/s
95th percentile per-packet one-way delay: 55.948 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.35 Mbit/s
95th percentile per-packet one-way delay: 59.421 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.53 Mbit/s
95th percentile per-packet one-way delay: 56.274 ms
Loss rate: 0.00%
```

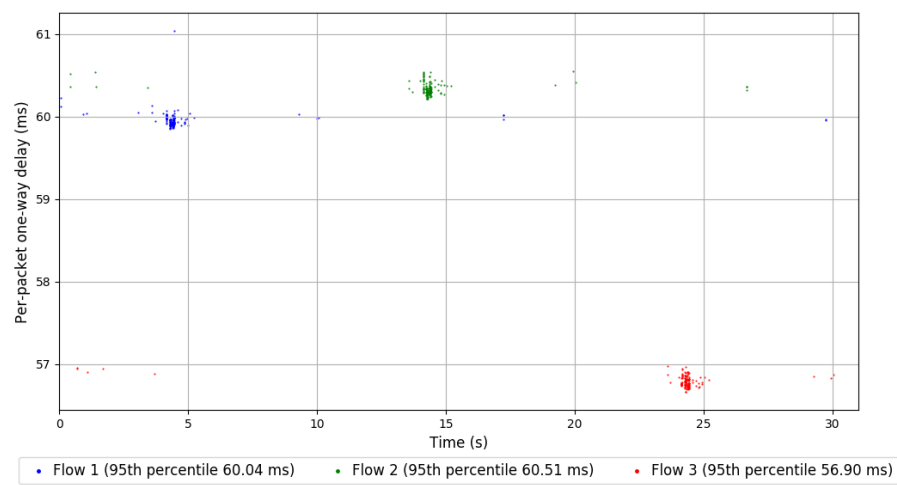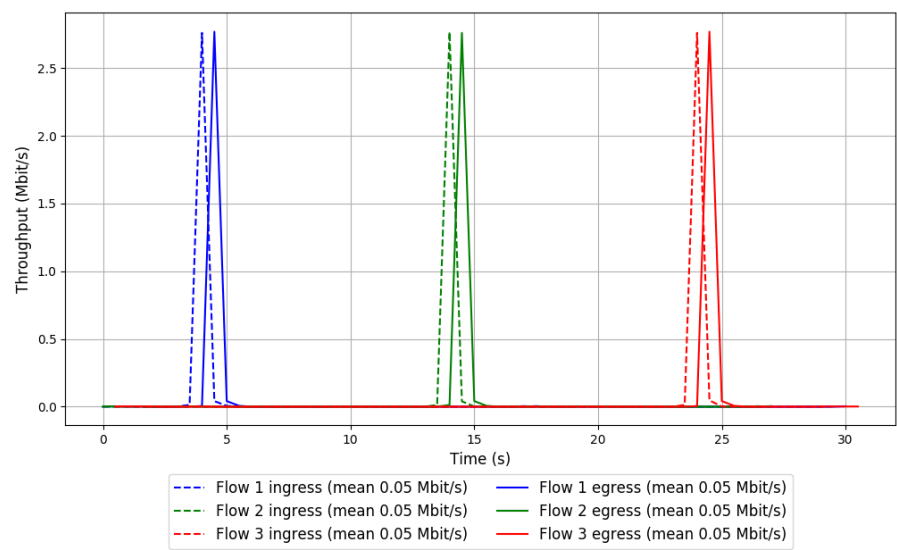Run 1: Report of WebRTC media — Data Link

```
Run 2: Statistics of WebRTC media

Start at: 2019-02-06 05:56:05
End at: 2019-02-06 05:56:35
Local clock offset: 0.037 ms
Remote clock offset: -0.265 ms


# Below is generated by plot.py at 2019-02-06 12:03:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 60.427 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 60.043 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 60.507 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 56.904 ms
Loss rate: 0.00%
```

Run 2: Report of WebRTC media — Data Link

```
Run 3: Statistics of WebRTC media

Start at: 2019-02-06 06:35:37
End at: 2019-02-06 06:36:07
Local clock offset: -0.338 ms
Remote clock offset: 0.611 ms


# Below is generated by plot.py at 2019-02-06 12:03:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.70 Mbit/s
95th percentile per-packet one-way delay: 58.114 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 2.02 Mbit/s
95th percentile per-packet one-way delay: 58.132 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.22 Mbit/s
95th percentile per-packet one-way delay: 58.034 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.46 Mbit/s
95th percentile per-packet one-way delay: 58.139 ms
Loss rate: 0.00%
```
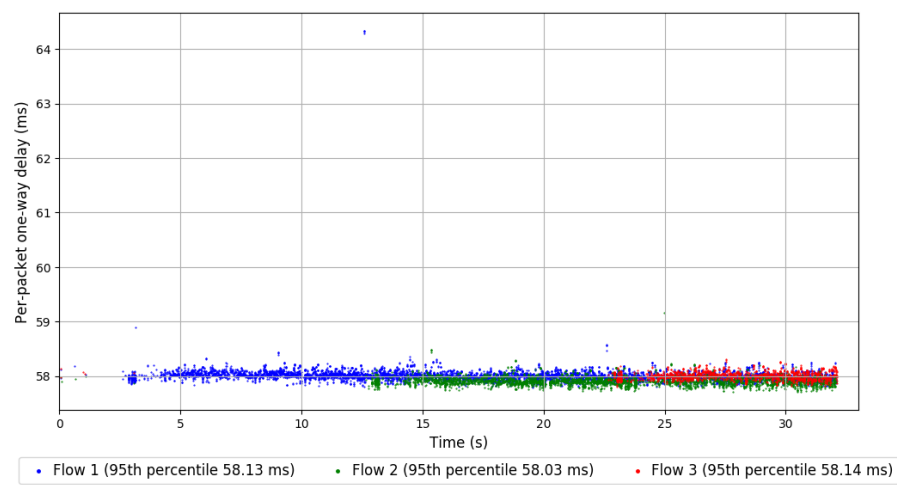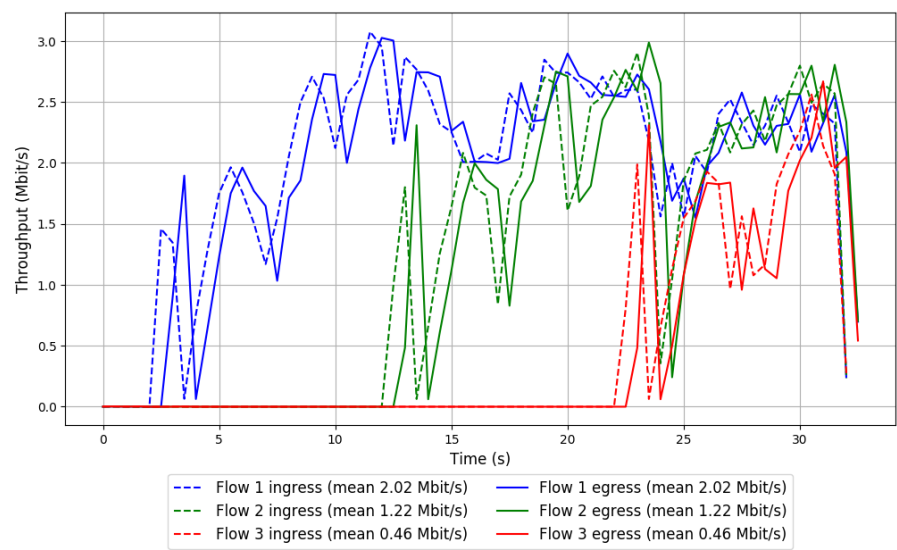
Run 3: Report of WebRTC media — Data Link

```
Run 4: Statistics of WebRTC media

Start at: 2019-02-06 07:14:58
End at: 2019-02-06 07:15:28
Local clock offset: 0.364 ms
Remote clock offset: 0.0 ms


# Below is generated by plot.py at 2019-02-06 12:03:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 60.070 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 56.797 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 60.145 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 56.867 ms
Loss rate: 0.00%
```
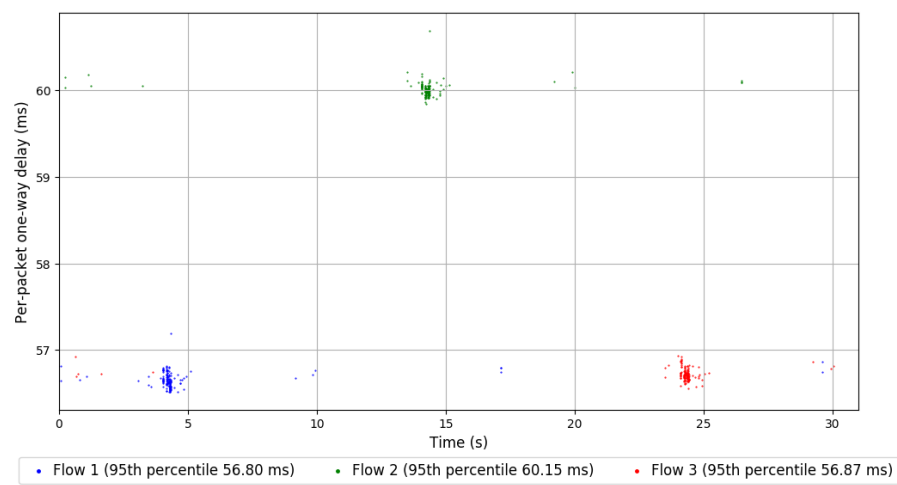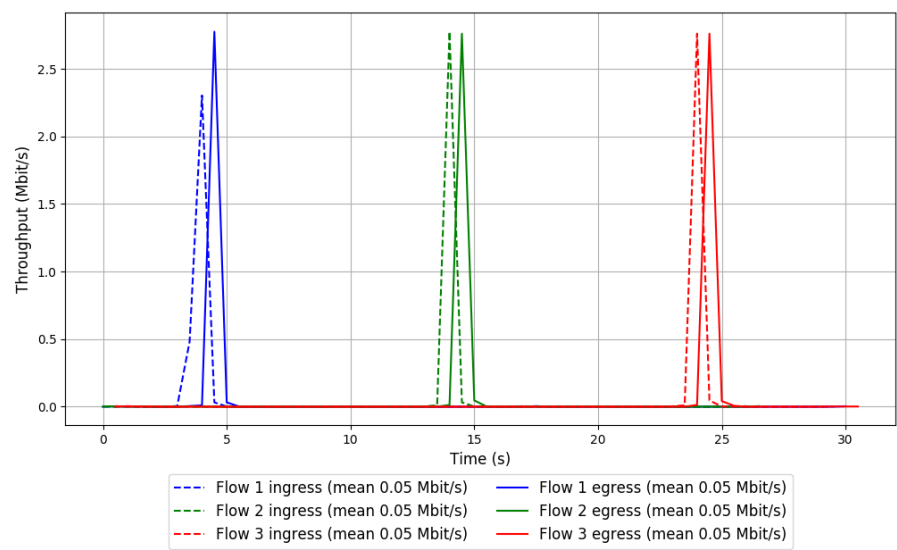
Run 4: Report of WebRTC media — Data Link

```
Run 5: Statistics of WebRTC media

Start at: 2019-02-06 07:54:10
End at: 2019-02-06 07:54:40
Local clock offset: -0.528 ms
Remote clock offset: -0.313 ms


# Below is generated by plot.py at 2019-02-06 12:03:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 60.701 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 57.486 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 57.391 ms
Loss rate: 0.05%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 60.872 ms
Loss rate: 0.00%
```

Run 5: Report of WebRTC media — Data Link