Pantheon Report

Generated at 2019-01-21 15:35:48 (UTC).

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

Repeated the test of 21 congestion control schemes 5 times.

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

NTP offsets were measured against `time.google.com` and have been applied to correct the timestamps in logs.
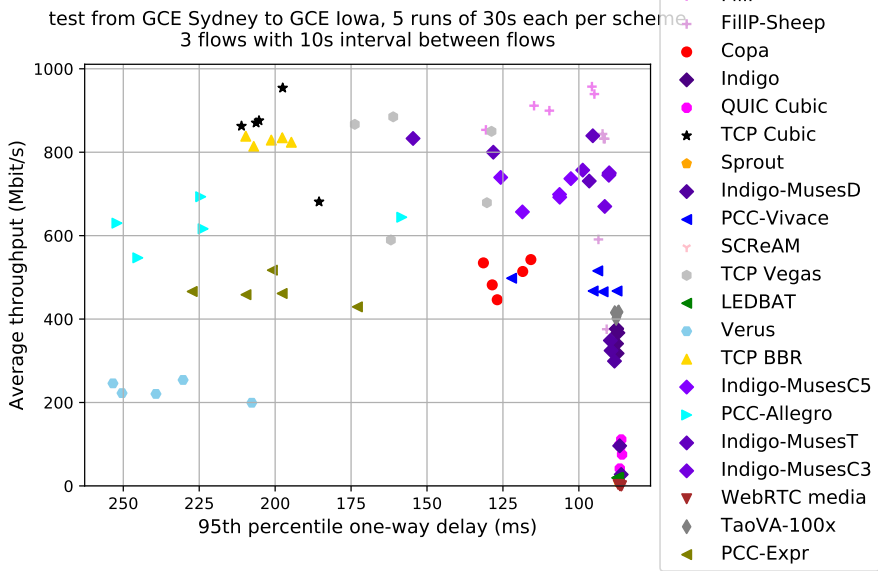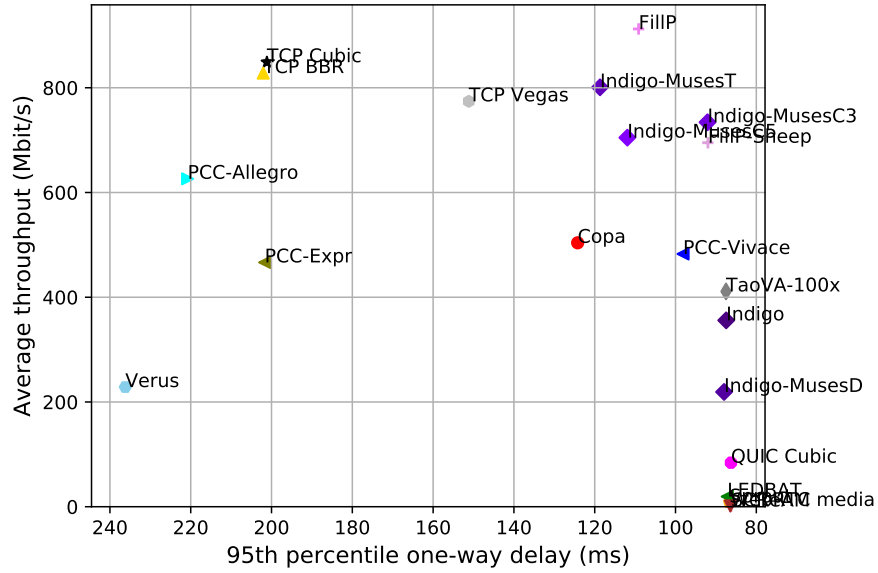
```
System info:
Linux 4.15.0-1026-gcp
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912

Git summary:
branch: muses @ 89d24e57783e7fbfec537a619071de937b639e38
third_party/fillp @ d6da1459332fcee56963885d7eba17e6a32d4519
third_party/fillp-sheep @ 0e5bb722943babcd2b090d2c64fcd45e12e923f9
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdfe58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/muses @ 1ddcff131048c6962f123bcd22b4d166a422adde
third_party/pantheon-tunnel @ f866d3f58d27afd942717625ee3a354cc2e802bd
third_party/pcc @ 1afc958fa0d66d18b623c091a55fec872b4981e1
 M receiver/src/buffer.h
 M receiver/src/core.cpp
 M sender/src/buffer.h
 M sender/src/core.cpp
third_party/pcc-experimental @ cd43e34e3f5f5613e8acd08fab92c4eb24f974ab
third_party/proto-quic @ 77961f1a82733a86b42f1bc8143ebc978f3cff42
third_party/scream-reproduce @ f099118d1421aa3131bf11ff1964974e1da3bdb2
 M src/ScreamClient
 M src/ScreamServer
third_party/sprout @ 366e35c6178b01e31d4a46ad18c74f9415f19a26
 M src/examples/cellsim.cc
 M src/examples/sproutbt2.cc
 M src/network/sproutconn.cc
third_party/verus @ d4b447ea74c6c60a261149af2629562939f9a494
 M src/verus.hpp
 M tools/plot.py
```

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

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

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

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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	433.97	411.58	360.79	208.81	188.39	166.59	1.23	0.94	1.55
Copa	5	271.19	236.64	226.11	127.16	118.52	122.63	0.01	0.06	0.13
TCP Cubic	5	444.79	423.63	366.42	201.12	189.02	159.99	0.11	0.35	0.38
FillP	5	563.32	384.80	280.10	116.45	90.64	90.37	0.52	0.01	0.01
FillP-Sheep	5	391.96	332.23	247.63	96.33	90.22	89.09	0.00	0.00	0.01
Indigo	5	187.69	177.75	156.43	87.34	87.42	87.86	0.00	0.00	0.00
Indigo-MusesC3	5	435.40	359.26	278.79	94.37	89.87	90.49	0.00	0.01	0.02
Indigo-MusesC5	5	447.19	364.53	95.92	112.70	113.22	86.91	0.02	0.14	0.00
Indigo-MusesD	5	189.08	38.11	20.60	88.02	86.44	86.61	0.00	0.00	0.01
Indigo-MusesT	4	487.22	368.62	281.26	121.39	104.03	91.87	0.00	0.00	0.02
LEDBAT	5	12.58	8.36	4.10	87.15	87.19	86.78	0.00	0.00	0.00
PCC-Allegro	5	348.62	297.34	242.39	212.31	189.20	194.67	5.29	2.20	1.81
PCC-Expr	5	257.18	223.66	183.46	206.04	179.56	149.00	4.91	2.30	0.84
QUIC Cubic	5	39.99	50.18	33.15	86.26	86.24	85.96	0.00	0.00	0.00
SCReAM	5	0.22	0.22	0.22	86.13	86.15	86.08	0.00	0.00	0.00
Sprout	5	4.28	4.21	3.33	86.63	86.61	86.66	0.00	0.00	0.00
TaoVA-100x	5	214.41	203.47	184.19	86.71	88.11	88.36	0.00	0.00	0.02
TCP Vegas	5	404.58	408.77	292.30	155.15	131.03	158.32	0.03	0.03	0.40
Verus	5	138.19	113.53	46.24	216.70	221.06	120.96	1.78	2.27	0.85
PCC-Vivace	5	307.63	190.42	146.59	101.73	98.89	89.84	0.00	0.01	0.01
WebRTC media	5	0.81	0.49	0.20	86.12	86.48	86.20	0.00	0.00	0.00

```
Run 1: Statistics of TCP BBR

Start at: 2019-01-21 09:27:40
End at: 2019-01-21 09:28:10
Local clock offset: 0.222 ms
Remote clock offset: -0.11 ms


# Below is generated by plot.py at 2019-01-21 12:38:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 823.90 Mbit/s
95th percentile per-packet one-way delay: 194.664 ms
Loss rate: 0.99%
-- Flow 1:
Average throughput: 430.59 Mbit/s
95th percentile per-packet one-way delay: 212.791 ms
Loss rate: 0.67%
-- Flow 2:
Average throughput: 391.42 Mbit/s
95th percentile per-packet one-way delay: 141.099 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 397.96 Mbit/s
95th percentile per-packet one-way delay: 190.163 ms
Loss rate: 3.84%
```
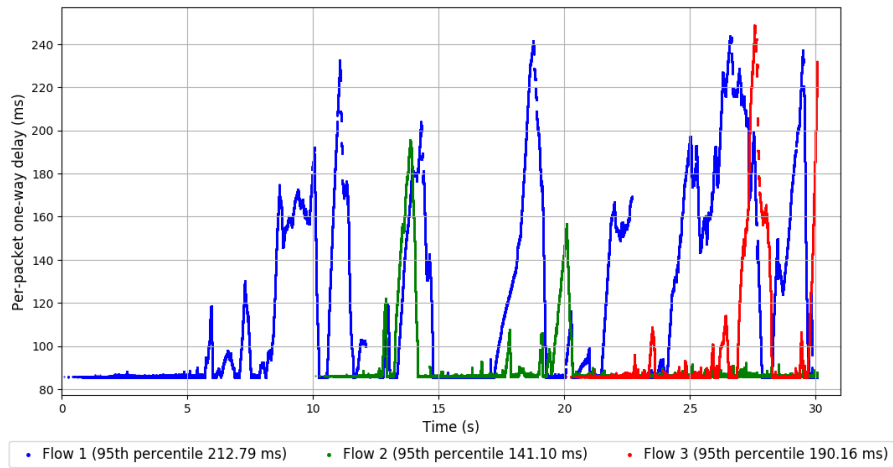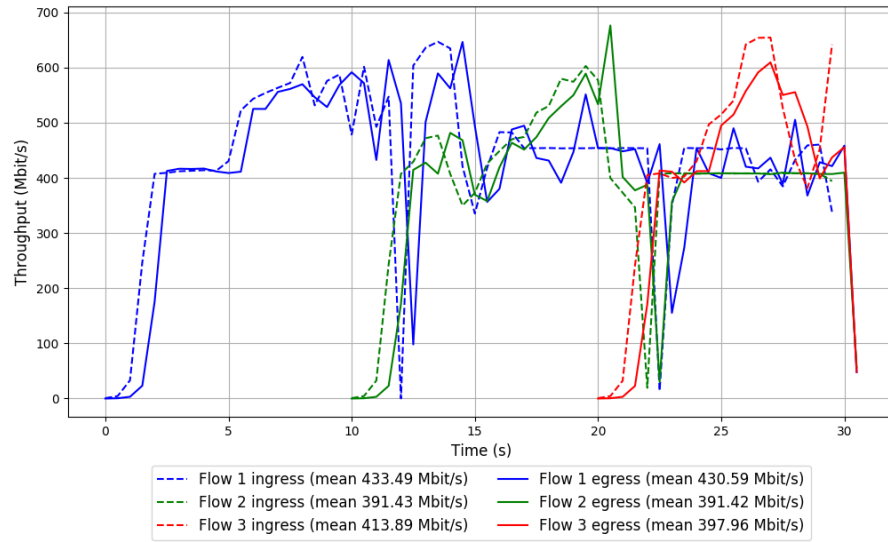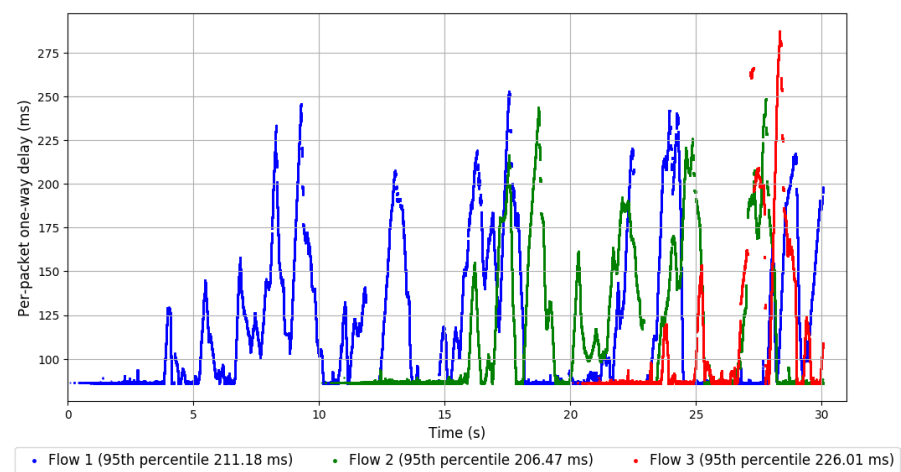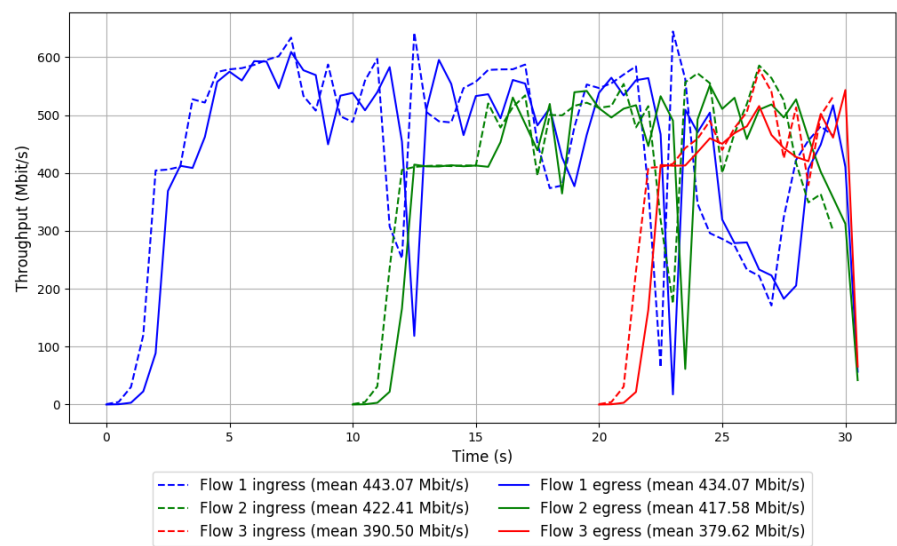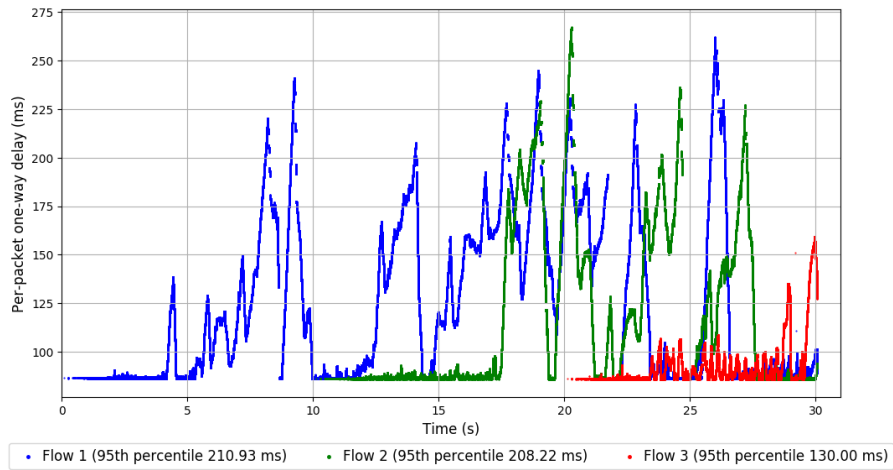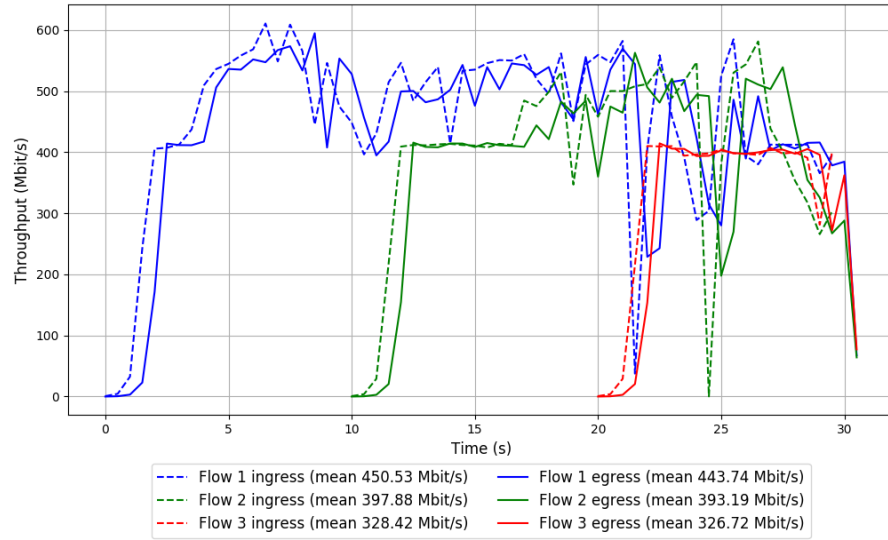
Run 1: Report of TCP BBR — Data Link

Flow 1 ingress (mean 433.49 Mbit/s)   Flow 1 egress (mean 430.59 Mbit/s)
Flow 2 ingress (mean 391.43 Mbit/s)   Flow 2 egress (mean 391.42 Mbit/s)
Flow 3 ingress (mean 413.89 Mbit/s)   Flow 3 egress (mean 397.96 Mbit/s)

Flow 1 (95th percentile 212.79 ms)   Flow 2 (95th percentile 141.10 ms)   Flow 3 (95th percentile 190.16 ms)

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```
Run 2: Statistics of TCP BBR

Start at: 2019-01-21 10:05:40
End at: 2019-01-21 10:06:10
Local clock offset: -0.227 ms
Remote clock offset: -0.09 ms


# Below is generated by plot.py at 2019-01-21 12:39:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 838.40 Mbit/s
95th percentile per-packet one-way delay: 209.674 ms
Loss rate: 1.85%
-- Flow 1:
Average throughput: 434.07 Mbit/s
95th percentile per-packet one-way delay: 211.175 ms
Loss rate: 2.03%
-- Flow 2:
Average throughput: 417.58 Mbit/s
95th percentile per-packet one-way delay: 206.471 ms
Loss rate: 1.13%
-- Flow 3:
Average throughput: 379.62 Mbit/s
95th percentile per-packet one-way delay: 226.007 ms
Loss rate: 2.78%
```
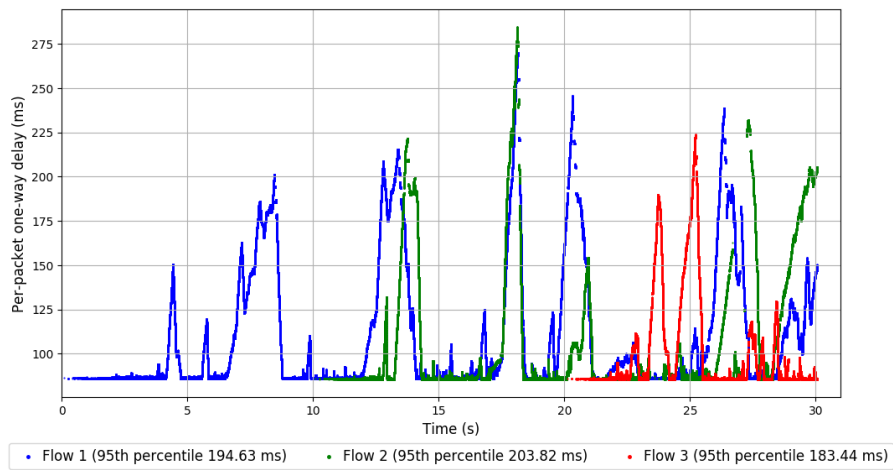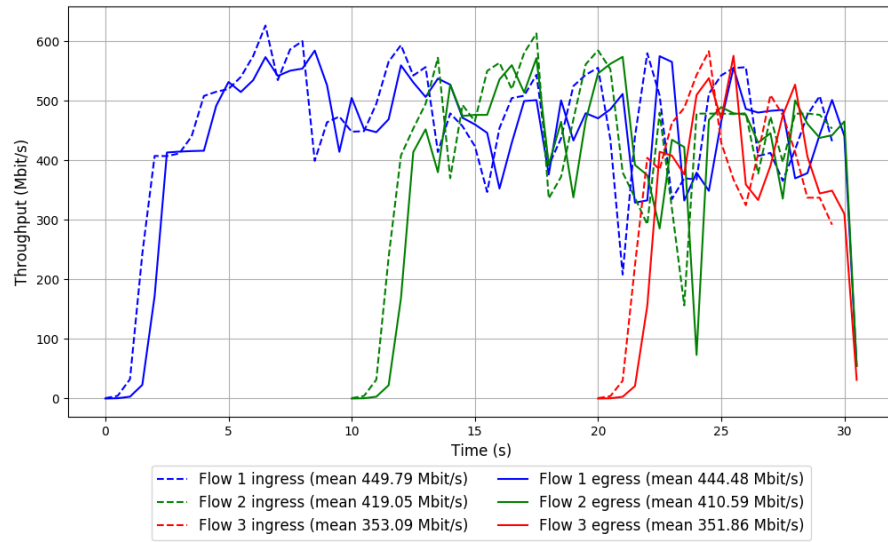
Run 2: Report of TCP BBR — Data Link

```
Run 3: Statistics of TCP BBR

Start at: 2019-01-21 10:43:40
End at: 2019-01-21 10:44:10
Local clock offset: -0.054 ms
Remote clock offset: 0.06 ms


# Below is generated by plot.py at 2019-01-21 12:39:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 813.89 Mbit/s
95th percentile per-packet one-way delay: 207.051 ms
Loss rate: 1.27%
-- Flow 1:
Average throughput: 443.74 Mbit/s
95th percentile per-packet one-way delay: 210.929 ms
Loss rate: 1.51%
-- Flow 2:
Average throughput: 393.19 Mbit/s
95th percentile per-packet one-way delay: 208.215 ms
Loss rate: 1.17%
-- Flow 3:
Average throughput: 326.72 Mbit/s
95th percentile per-packet one-way delay: 130.005 ms
Loss rate: 0.51%
```
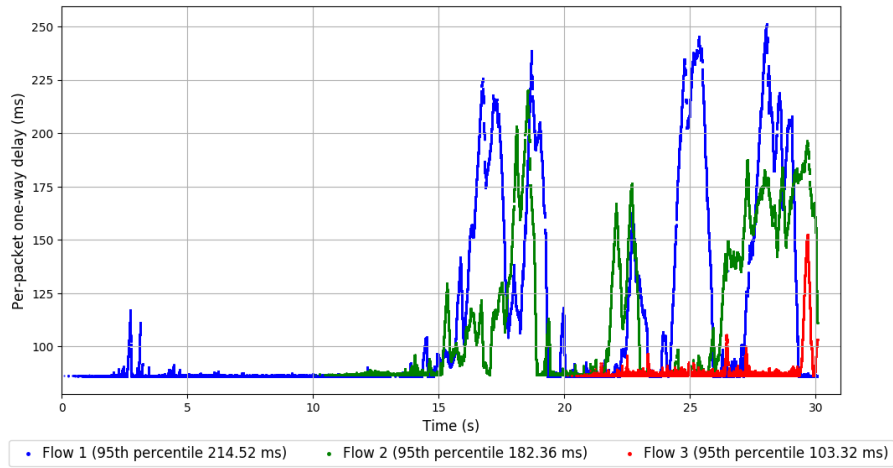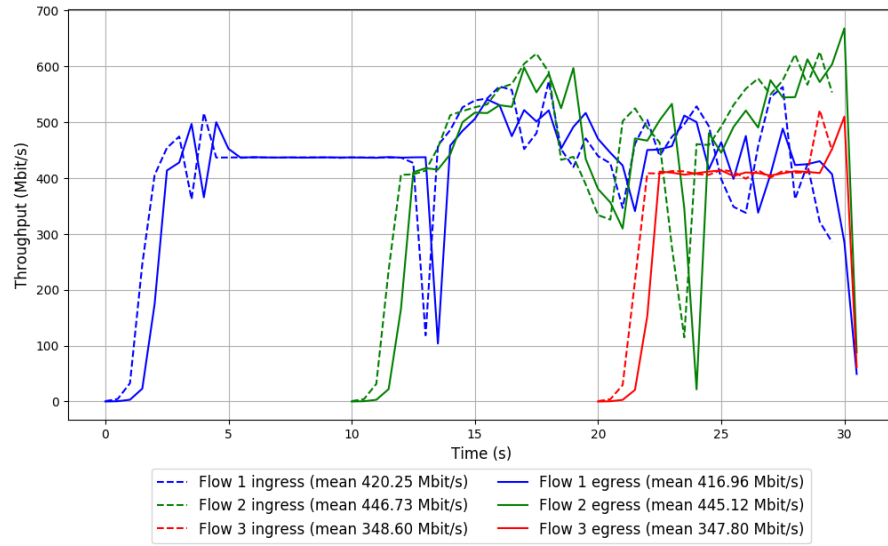
Run 3: Report of TCP BBR — Data Link

```
Run 4: Statistics of TCP BBR

Start at: 2019-01-21 11:21:27
End at: 2019-01-21 11:21:57
Local clock offset: 0.214 ms
Remote clock offset: -0.063 ms

# Below is generated by plot.py at 2019-01-21 12:39:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 834.75 Mbit/s
95th percentile per-packet one-way delay: 197.647 ms
Loss rate: 1.34%
-- Flow 1:
Average throughput: 444.48 Mbit/s
95th percentile per-packet one-way delay: 194.629 ms
Loss rate: 1.18%
-- Flow 2:
Average throughput: 410.59 Mbit/s
95th percentile per-packet one-way delay: 203.817 ms
Loss rate: 2.02%
-- Flow 3:
Average throughput: 351.86 Mbit/s
95th percentile per-packet one-way delay: 183.441 ms
Loss rate: 0.36%
```
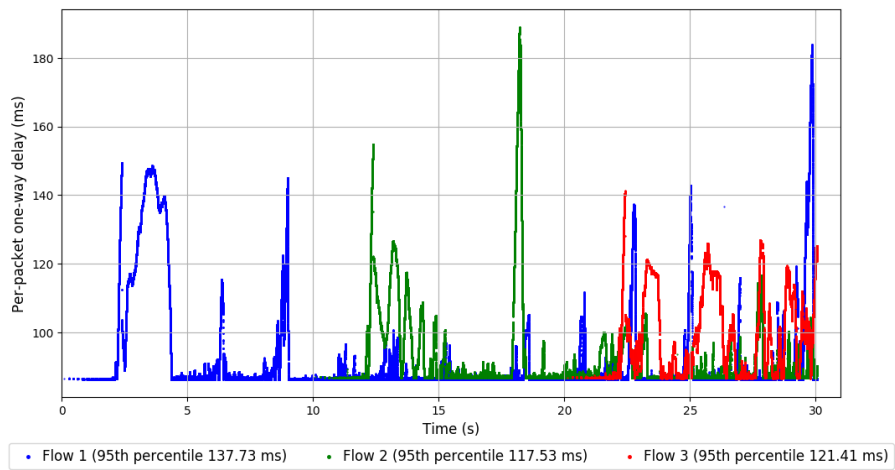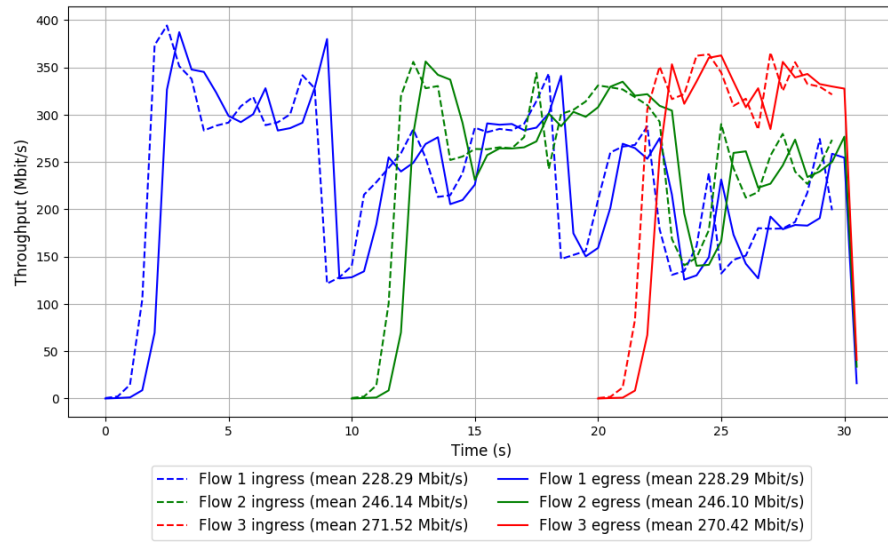
Run 4: Report of TCP BBR — Data Link

```
Run 5: Statistics of TCP BBR

Start at: 2019-01-21 11:58:39
End at: 2019-01-21 11:59:09
Local clock offset: -0.093 ms
Remote clock offset: 0.057 ms


# Below is generated by plot.py at 2019-01-21 12:39:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 829.10 Mbit/s
95th percentile per-packet one-way delay: 201.266 ms
Loss rate: 0.56%
-- Flow 1:
Average throughput: 416.96 Mbit/s
95th percentile per-packet one-way delay: 214.520 ms
Loss rate: 0.78%
-- Flow 2:
Average throughput: 445.12 Mbit/s
95th percentile per-packet one-way delay: 182.359 ms
Loss rate: 0.36%
-- Flow 3:
Average throughput: 347.80 Mbit/s
95th percentile per-packet one-way delay: 103.322 ms
Loss rate: 0.24%
```
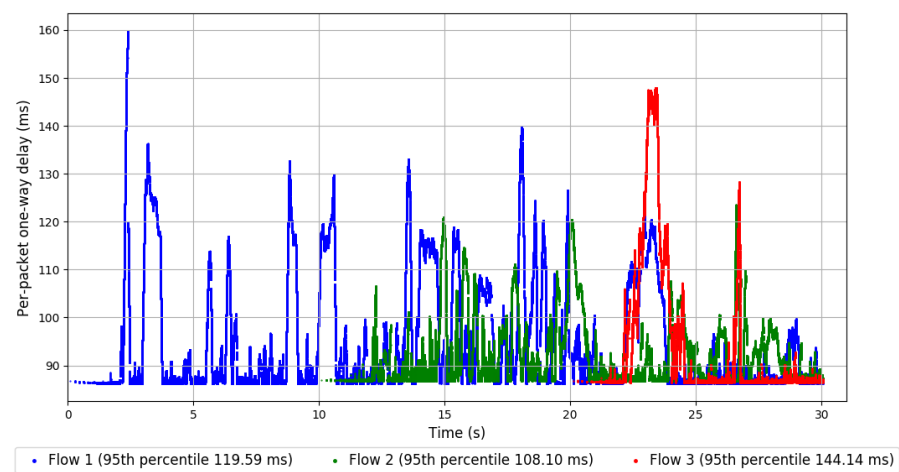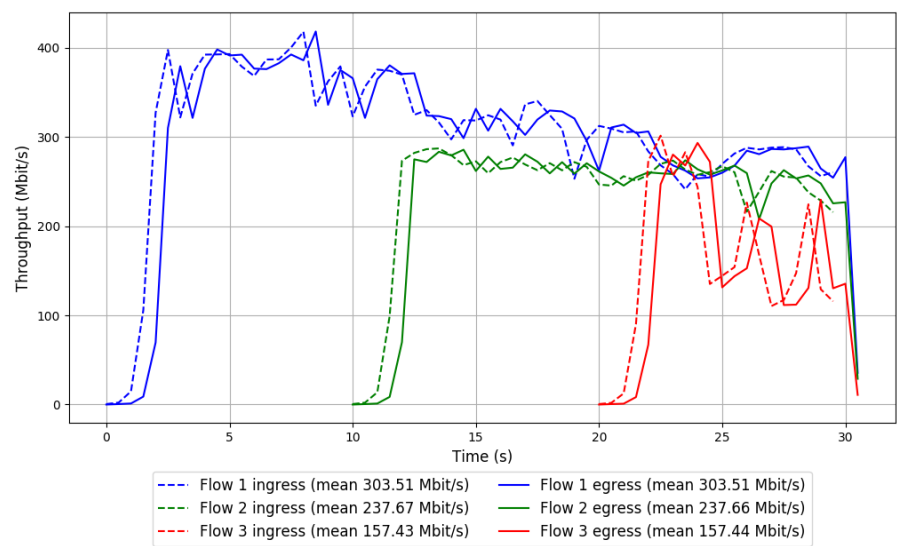
Run 5: Report of TCP BBR — Data Link

- Flow 1 ingress (mean 420.25 Mbit/s)
- Flow 1 egress (mean 416.96 Mbit/s)
- Flow 2 ingress (mean 446.73 Mbit/s)
- Flow 2 egress (mean 445.12 Mbit/s)
- Flow 3 ingress (mean 348.60 Mbit/s)
- Flow 3 egress (mean 347.80 Mbit/s)

- Flow 1 (95th percentile 214.52 ms)
- Flow 2 (95th percentile 182.36 ms)
- Flow 3 (95th percentile 103.32 ms)

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```
Run 1: Statistics of Copa

Start at: 2019-01-21 09:21:39
End at: 2019-01-21 09:22:09
Local clock offset: -0.607 ms
Remote clock offset: -0.115 ms


# Below is generated by plot.py at 2019-01-21 12:40:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 481.97 Mbit/s
95th percentile per-packet one-way delay: 128.523 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 228.29 Mbit/s
95th percentile per-packet one-way delay: 137.730 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 246.10 Mbit/s
95th percentile per-packet one-way delay: 117.534 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 270.42 Mbit/s
95th percentile per-packet one-way delay: 121.407 ms
Loss rate: 0.41%
```
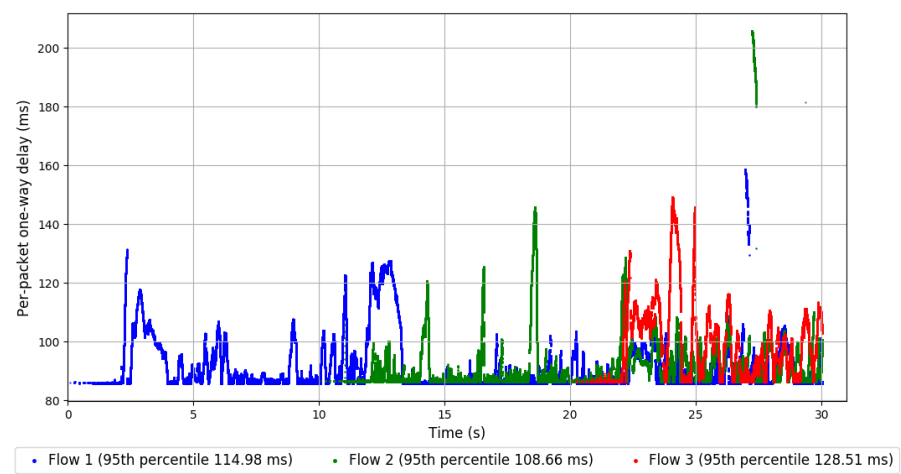
Run 1: Report of Copa — Data Link

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```
Run 2: Statistics of Copa

Start at: 2019-01-21 09:59:43
End at: 2019-01-21 10:00:13
Local clock offset: -0.349 ms
Remote clock offset: -0.046 ms


# Below is generated by plot.py at 2019-01-21 12:41:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 514.06 Mbit/s
95th percentile per-packet one-way delay: 118.487 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 303.51 Mbit/s
95th percentile per-packet one-way delay: 119.592 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 237.66 Mbit/s
95th percentile per-packet one-way delay: 108.099 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 157.44 Mbit/s
95th percentile per-packet one-way delay: 144.136 ms
Loss rate: 0.00%
```
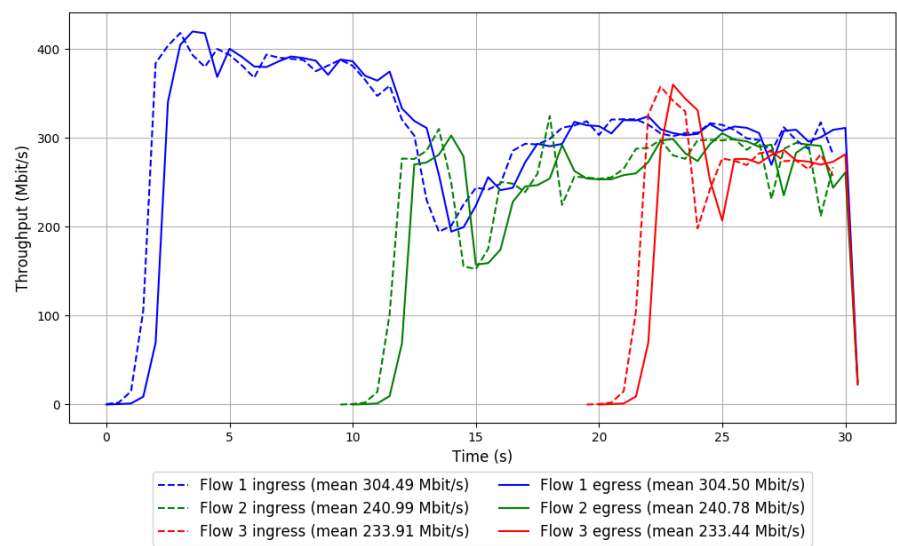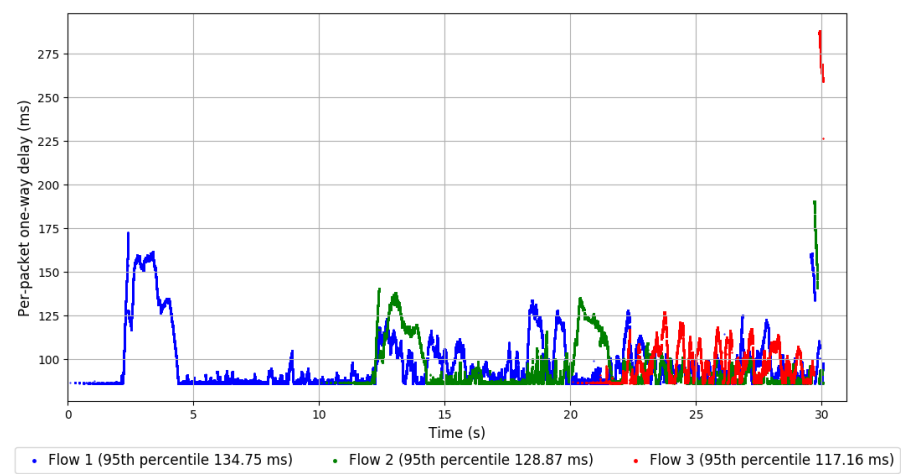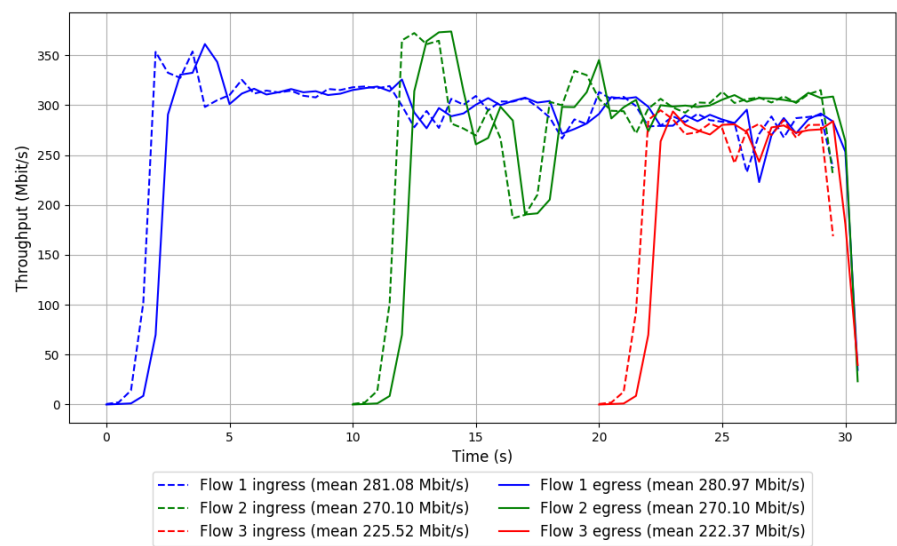
Run 2: Report of Copa — Data Link

```
Run 3: Statistics of Copa

Start at: 2019-01-21 10:37:36
End at: 2019-01-21 10:38:06
Local clock offset: 0.188 ms
Remote clock offset: 0.048 ms


# Below is generated by plot.py at 2019-01-21 12:43:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 542.60 Mbit/s
95th percentile per-packet one-way delay: 115.804 ms
Loss rate: 0.05%
-- Flow 1:
Average throughput: 304.50 Mbit/s
95th percentile per-packet one-way delay: 114.983 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 240.78 Mbit/s
95th percentile per-packet one-way delay: 108.663 ms
Loss rate: 0.09%
-- Flow 3:
Average throughput: 233.44 Mbit/s
95th percentile per-packet one-way delay: 128.513 ms
Loss rate: 0.20%
```

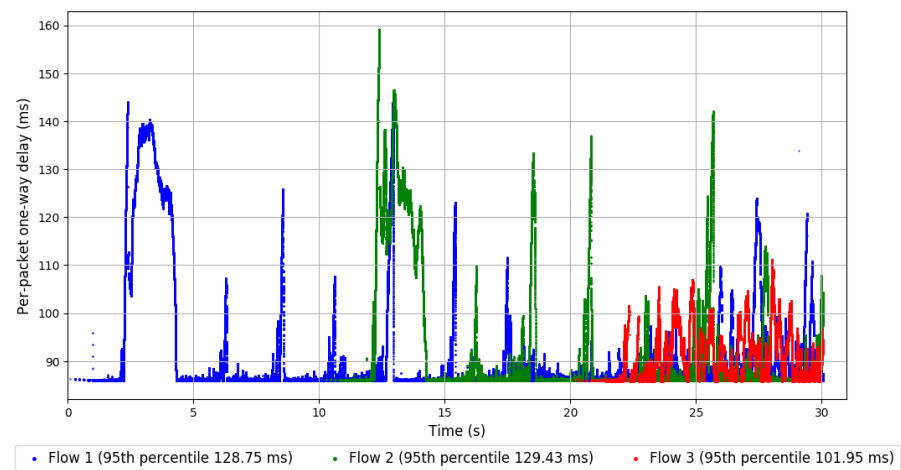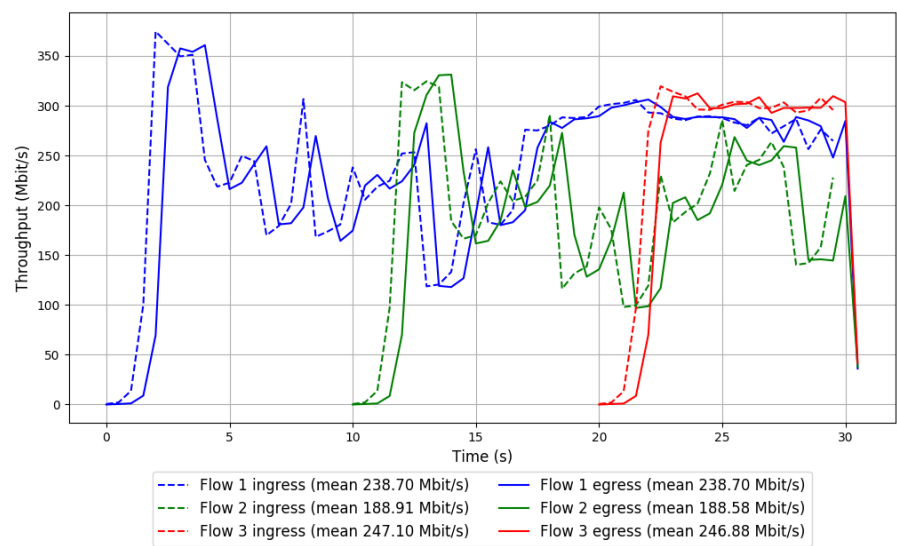Run 3: Report of Copa — Data Link

```
Run 4: Statistics of Copa

Start at: 2019-01-21 11:15:13
End at: 2019-01-21 11:15:43
Local clock offset: -0.307 ms
Remote clock offset: -0.04 ms


# Below is generated by plot.py at 2019-01-21 13:03:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 534.70 Mbit/s
95th percentile per-packet one-way delay: 131.428 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 280.97 Mbit/s
95th percentile per-packet one-way delay: 134.746 ms
Loss rate: 0.04%
-- Flow 2:
Average throughput: 270.10 Mbit/s
95th percentile per-packet one-way delay: 128.874 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 222.37 Mbit/s
95th percentile per-packet one-way delay: 117.158 ms
Loss rate: 0.00%
```
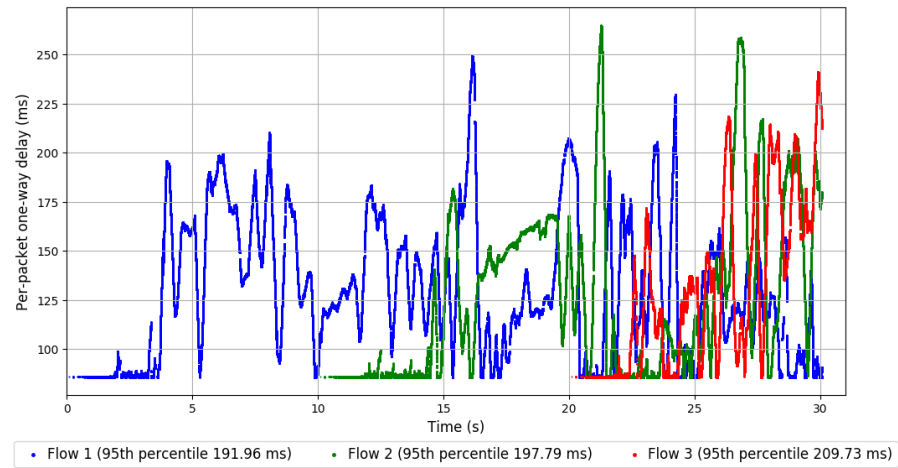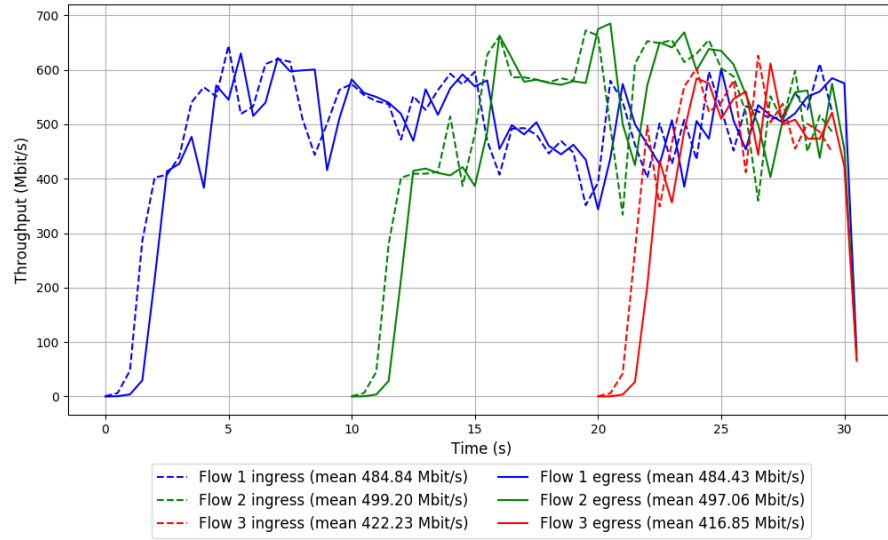
Run 4: Report of Copa — Data Link

Flow 1 ingress (mean 281.08 Mbit/s) — — — Flow 1 egress (mean 280.97 Mbit/s)
Flow 2 ingress (mean 270.10 Mbit/s) — — — Flow 2 egress (mean 270.10 Mbit/s)
Flow 3 ingress (mean 225.52 Mbit/s) — — — Flow 3 egress (mean 222.37 Mbit/s)

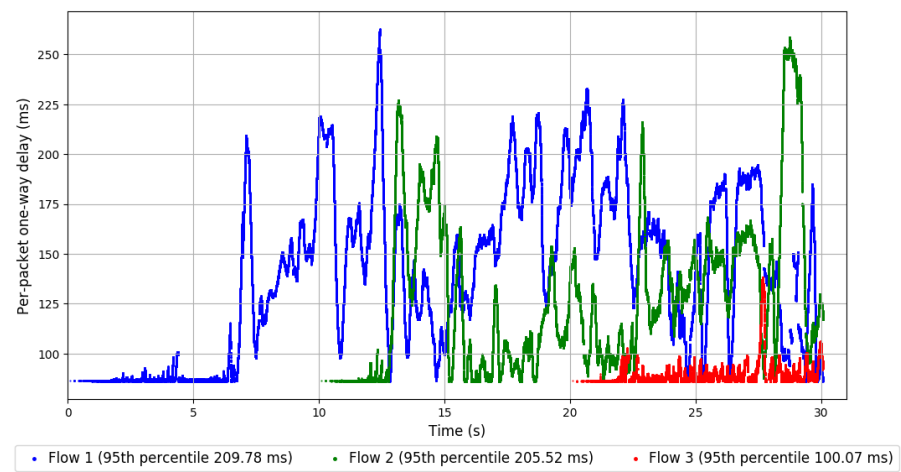Flow 1 (95th percentile 134.75 ms) · Flow 2 (95th percentile 128.87 ms) · Flow 3 (95th percentile 117.16 ms)

```
Run 5: Statistics of Copa

Start at: 2019-01-21 11:52:39
End at: 2019-01-21 11:53:09
Local clock offset: -0.136 ms
Remote clock offset: -0.064 ms

# Below is generated by plot.py at 2019-01-21 13:03:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 446.31 Mbit/s
95th percentile per-packet one-way delay: 126.878 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 238.70 Mbit/s
95th percentile per-packet one-way delay: 128.753 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 188.58 Mbit/s
95th percentile per-packet one-way delay: 129.434 ms
Loss rate: 0.17%
-- Flow 3:
Average throughput: 246.88 Mbit/s
95th percentile per-packet one-way delay: 101.951 ms
Loss rate: 0.06%
```
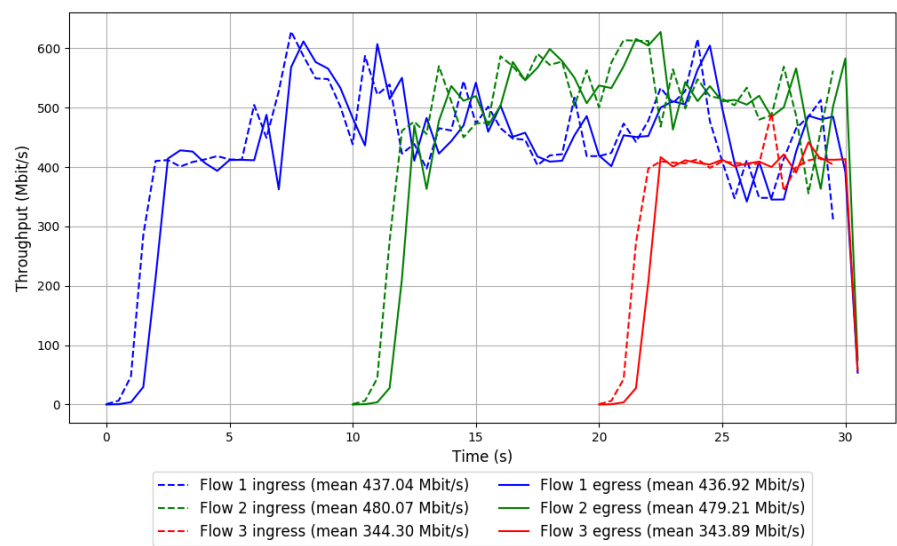
Run 5: Report of Copa — Data Link

```
Run 1: Statistics of TCP Cubic

Start at: 2019-01-21 09:19:31
End at: 2019-01-21 09:20:01
Local clock offset: 0.107 ms
Remote clock offset: -0.136 ms


# Below is generated by plot.py at 2019-01-21 13:03:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 954.07 Mbit/s
95th percentile per-packet one-way delay: 197.518 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 484.43 Mbit/s
95th percentile per-packet one-way delay: 191.957 ms
Loss rate: 0.08%
-- Flow 2:
Average throughput: 497.06 Mbit/s
95th percentile per-packet one-way delay: 197.793 ms
Loss rate: 0.43%
-- Flow 3:
Average throughput: 416.85 Mbit/s
95th percentile per-packet one-way delay: 209.728 ms
Loss rate: 1.26%
```

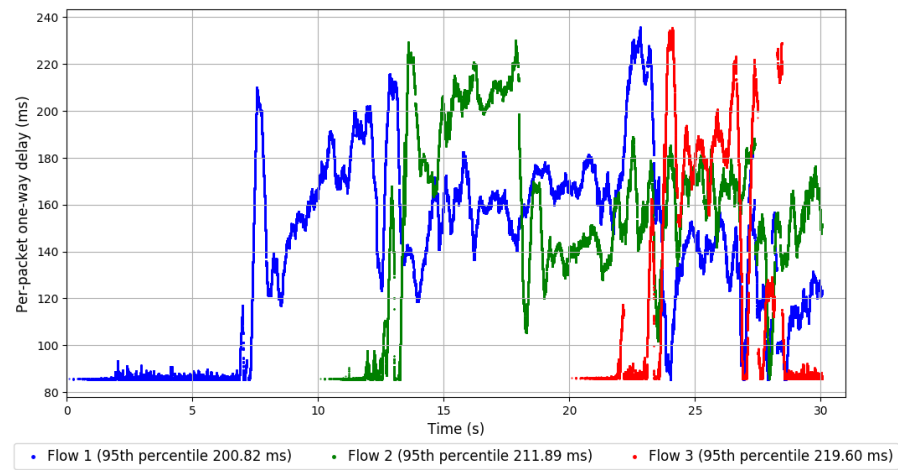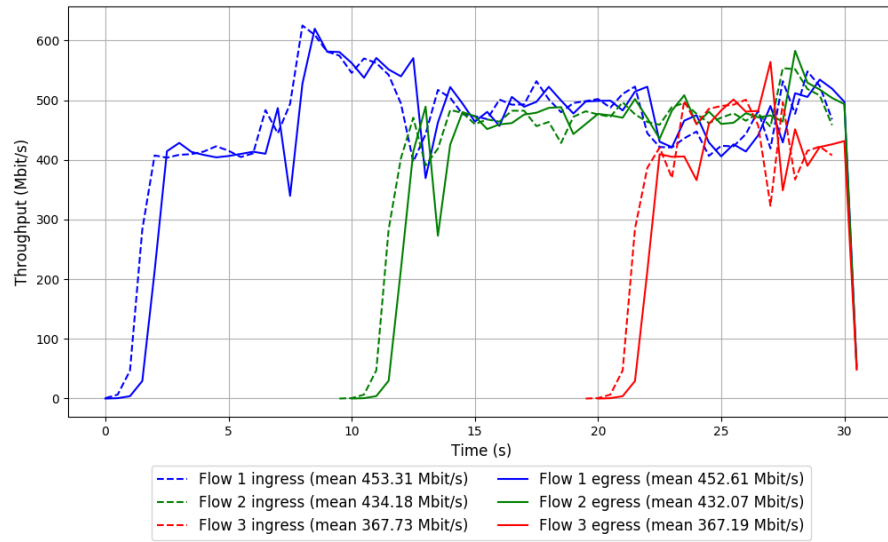Run 1: Report of TCP Cubic — Data Link

```
Run 2: Statistics of TCP Cubic

Start at: 2019-01-21 09:57:37
End at: 2019-01-21 09:58:07
Local clock offset: -0.286 ms
Remote clock offset: -0.054 ms


# Below is generated by plot.py at 2019-01-21 13:03:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 870.45 Mbit/s
95th percentile per-packet one-way delay: 206.273 ms
Loss rate: 0.09%
-- Flow 1:
Average throughput: 436.92 Mbit/s
95th percentile per-packet one-way delay: 209.780 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 479.21 Mbit/s
95th percentile per-packet one-way delay: 205.516 ms
Loss rate: 0.18%
-- Flow 3:
Average throughput: 343.89 Mbit/s
95th percentile per-packet one-way delay: 100.066 ms
Loss rate: 0.09%
```

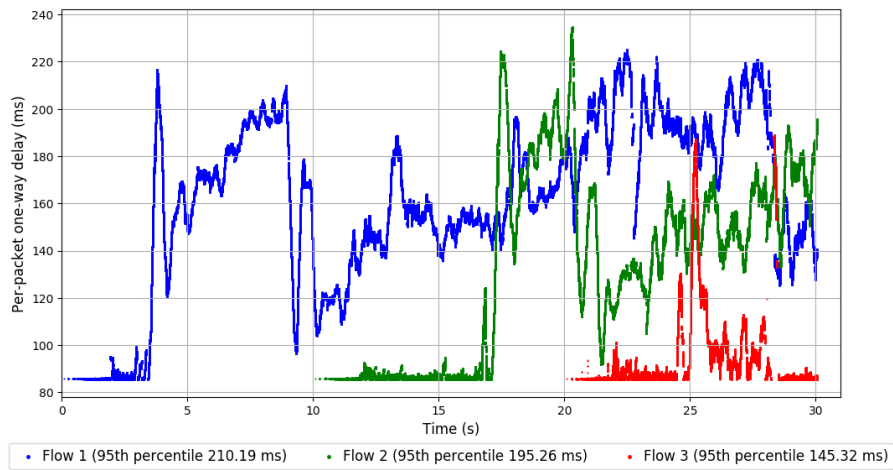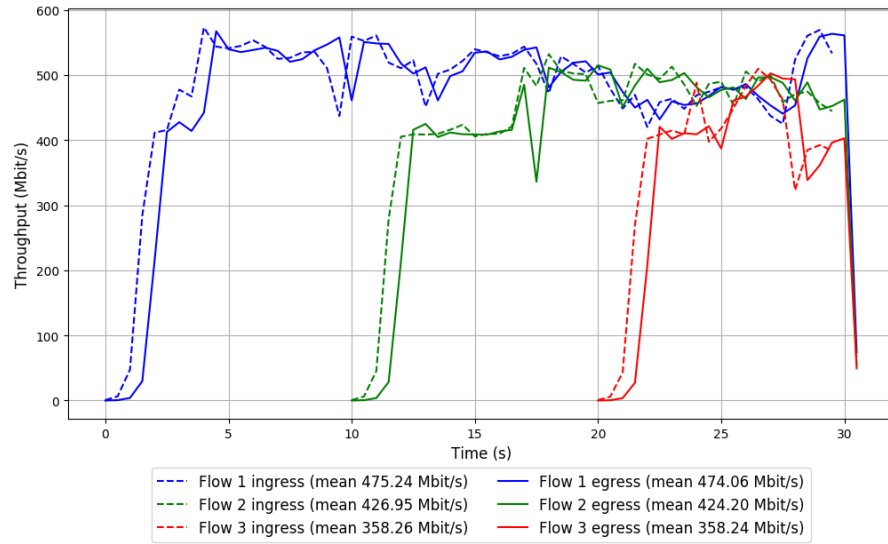Run 2: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 437.04 Mbit/s) --- Flow 1 egress (mean 436.92 Mbit/s)
Flow 2 ingress (mean 480.07 Mbit/s) --- Flow 2 egress (mean 479.21 Mbit/s)
Flow 3 ingress (mean 344.30 Mbit/s) --- Flow 3 egress (mean 343.89 Mbit/s)

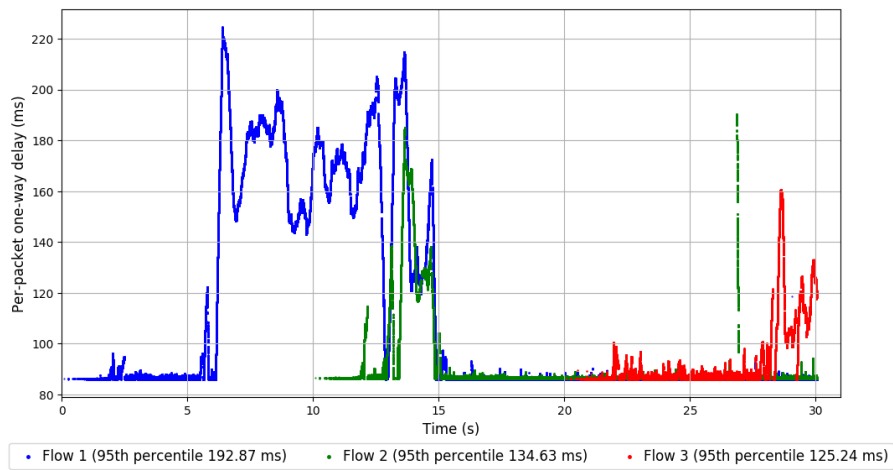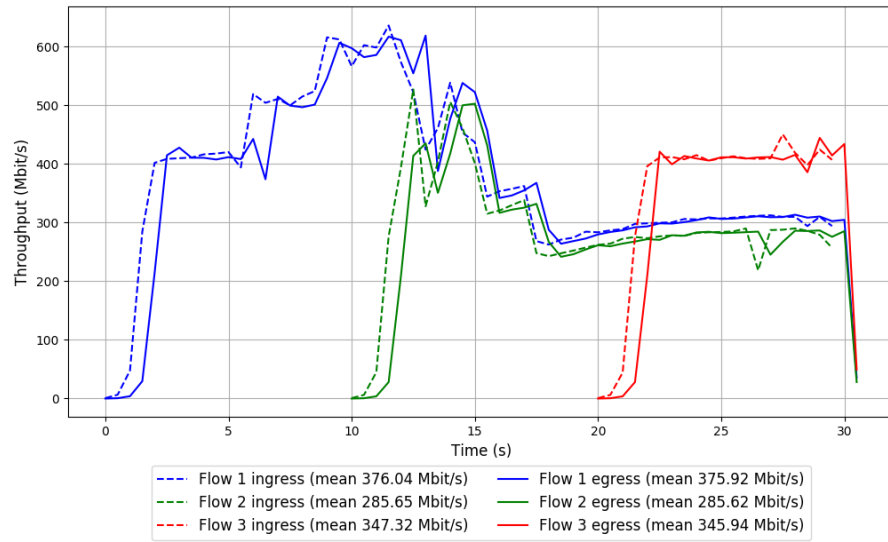Flow 1 (95th percentile 209.78 ms)   Flow 2 (95th percentile 205.52 ms)   Flow 3 (95th percentile 100.07 ms)

```
Run 3: Statistics of TCP Cubic

Start at: 2019-01-21 10:35:34
End at: 2019-01-21 10:36:04
Local clock offset: 0.378 ms
Remote clock offset: -0.015 ms


# Below is generated by plot.py at 2019-01-21 13:03:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 862.69 Mbit/s
95th percentile per-packet one-way delay: 211.077 ms
Loss rate: 0.26%
-- Flow 1:
Average throughput: 452.61 Mbit/s
95th percentile per-packet one-way delay: 200.824 ms
Loss rate: 0.15%
-- Flow 2:
Average throughput: 432.07 Mbit/s
95th percentile per-packet one-way delay: 211.886 ms
Loss rate: 0.48%
-- Flow 3:
Average throughput: 367.19 Mbit/s
95th percentile per-packet one-way delay: 219.597 ms
Loss rate: 0.16%
```

Run 3: Report of TCP Cubic — Data Link

```
Run 4: Statistics of TCP Cubic

Start at: 2019-01-21 11:13:01
End at: 2019-01-21 11:13:31
Local clock offset: 0.271 ms
Remote clock offset: -0.048 ms


# Below is generated by plot.py at 2019-01-21 13:03:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 875.68 Mbit/s
95th percentile per-packet one-way delay: 205.319 ms
Loss rate: 0.34%
-- Flow 1:
Average throughput: 474.06 Mbit/s
95th percentile per-packet one-way delay: 210.190 ms
Loss rate: 0.25%
-- Flow 2:
Average throughput: 424.20 Mbit/s
95th percentile per-packet one-way delay: 195.259 ms
Loss rate: 0.64%
-- Flow 3:
Average throughput: 358.24 Mbit/s
95th percentile per-packet one-way delay: 145.320 ms
Loss rate: 0.00%
```

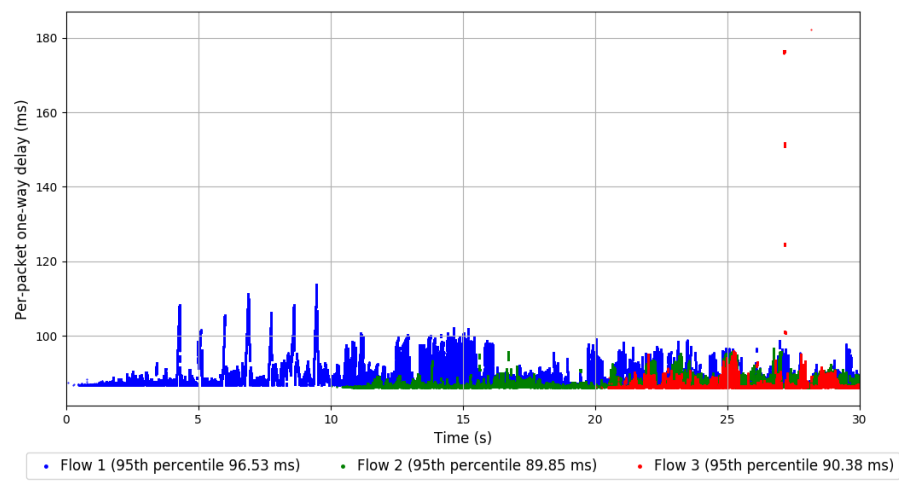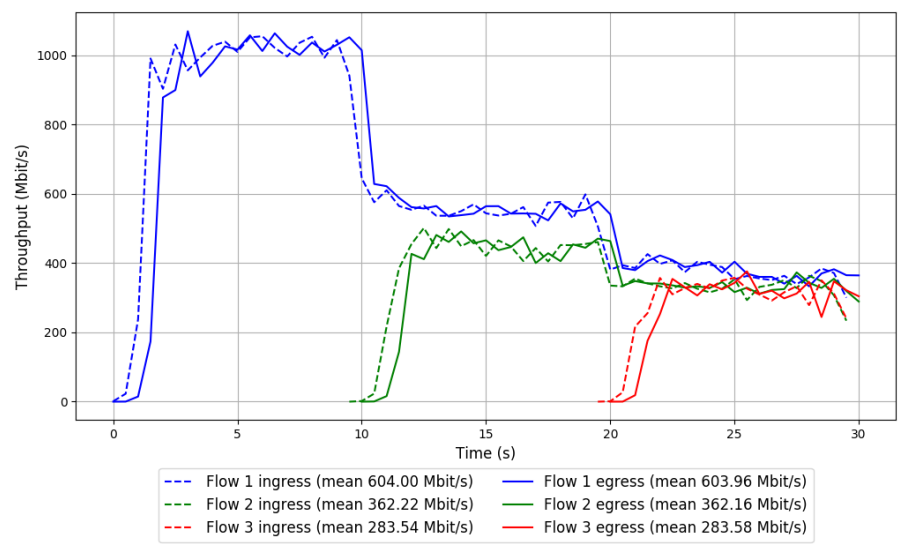# Run 4: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 475.24 Mbit/s)   Flow 1 egress (mean 474.06 Mbit/s)
Flow 2 ingress (mean 426.95 Mbit/s)   Flow 2 egress (mean 424.20 Mbit/s)
Flow 3 ingress (mean 358.26 Mbit/s)   Flow 3 egress (mean 358.24 Mbit/s)

Flow 1 (95th percentile 210.19 ms)   Flow 2 (95th percentile 195.26 ms)   Flow 3 (95th percentile 145.32 ms)

```
Run 5: Statistics of TCP Cubic

Start at: 2019-01-21 11:50:44
End at: 2019-01-21 11:51:14
Local clock offset: -0.257 ms
Remote clock offset: -0.059 ms


# Below is generated by plot.py at 2019-01-21 13:03:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 681.13 Mbit/s
95th percentile per-packet one-way delay: 185.540 ms
Loss rate: 0.09%
-- Flow 1:
Average throughput: 375.92 Mbit/s
95th percentile per-packet one-way delay: 192.870 ms
Loss rate: 0.03%
-- Flow 2:
Average throughput: 285.62 Mbit/s
95th percentile per-packet one-way delay: 134.634 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 345.94 Mbit/s
95th percentile per-packet one-way delay: 125.239 ms
Loss rate: 0.40%
```
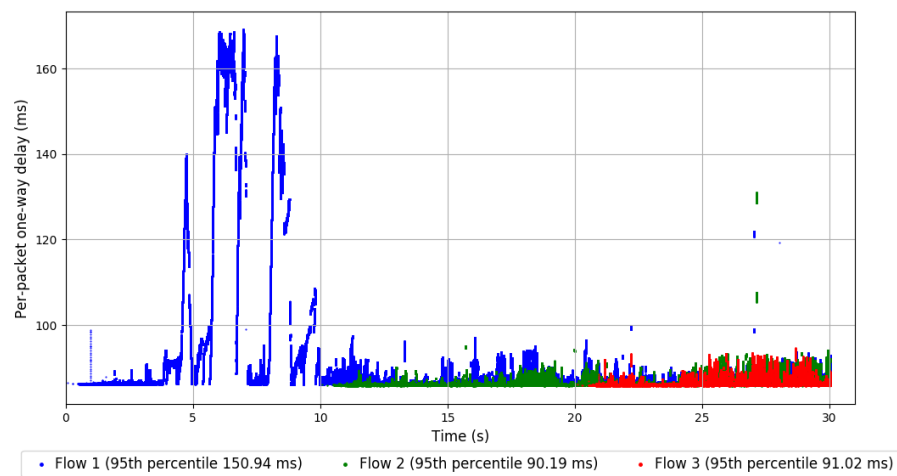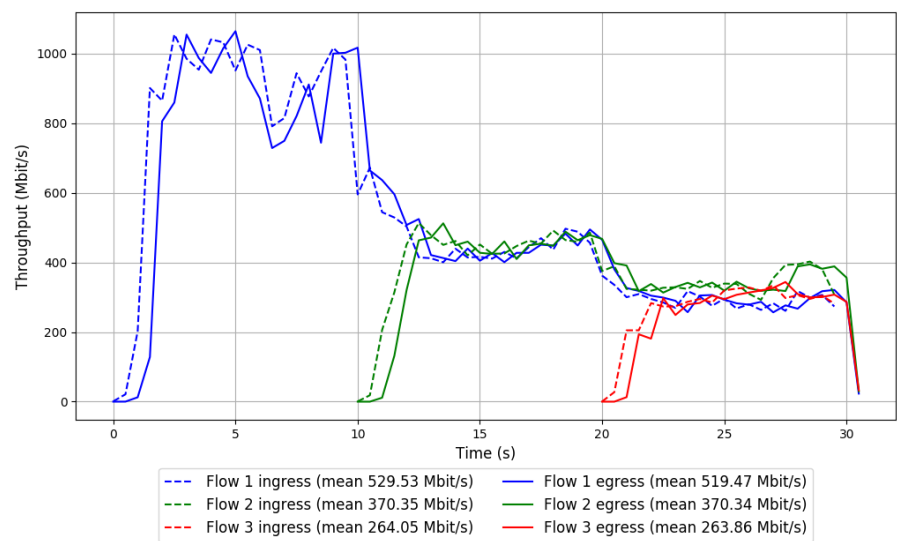
Run 5: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 376.04 Mbit/s) --- Flow 1 egress (mean 375.92 Mbit/s)
Flow 2 ingress (mean 285.65 Mbit/s) --- Flow 2 egress (mean 285.62 Mbit/s)
Flow 3 ingress (mean 347.32 Mbit/s) --- Flow 3 egress (mean 345.94 Mbit/s)

Flow 1 (95th percentile 192.87 ms)   Flow 2 (95th percentile 134.63 ms)   Flow 3 (95th percentile 125.24 ms)
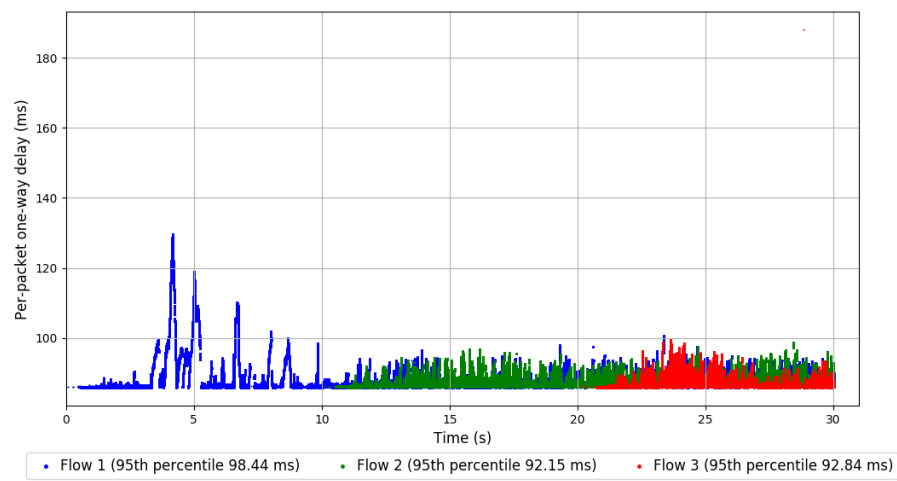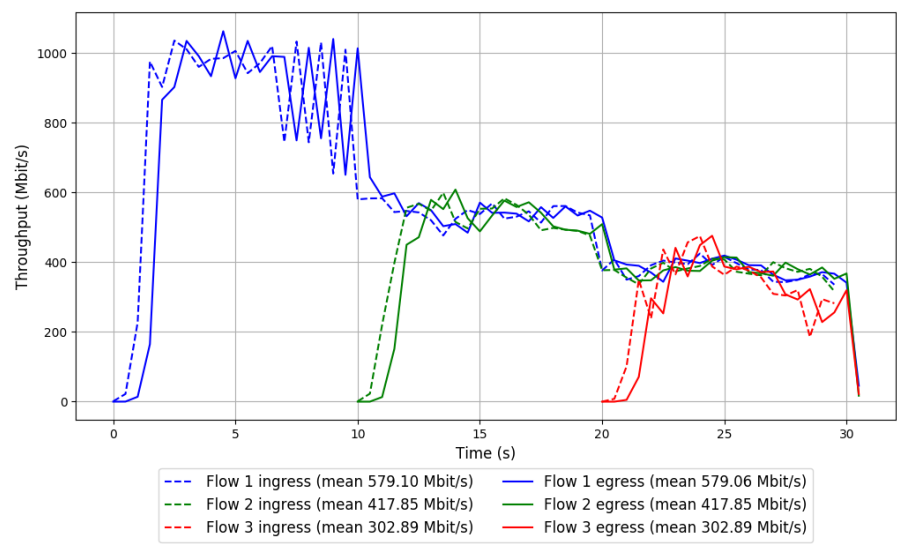
34

```
Run 1: Statistics of FillP

Start at: 2019-01-21 09:08:35
End at: 2019-01-21 09:09:05
Local clock offset: -0.391 ms
Remote clock offset: -0.134 ms


# Below is generated by plot.py at 2019-01-21 13:10:24
# Datalink statistics
-- Total of 3 flows:
Average throughput: 939.45 Mbit/s
95th percentile per-packet one-way delay: 94.892 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 603.96 Mbit/s
95th percentile per-packet one-way delay: 96.528 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 362.16 Mbit/s
95th percentile per-packet one-way delay: 89.854 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 283.58 Mbit/s
95th percentile per-packet one-way delay: 90.379 ms
Loss rate: 0.00%
```
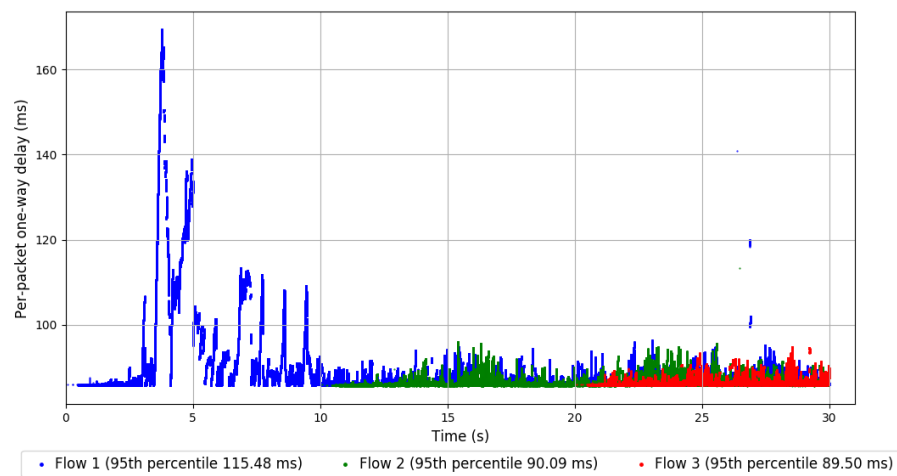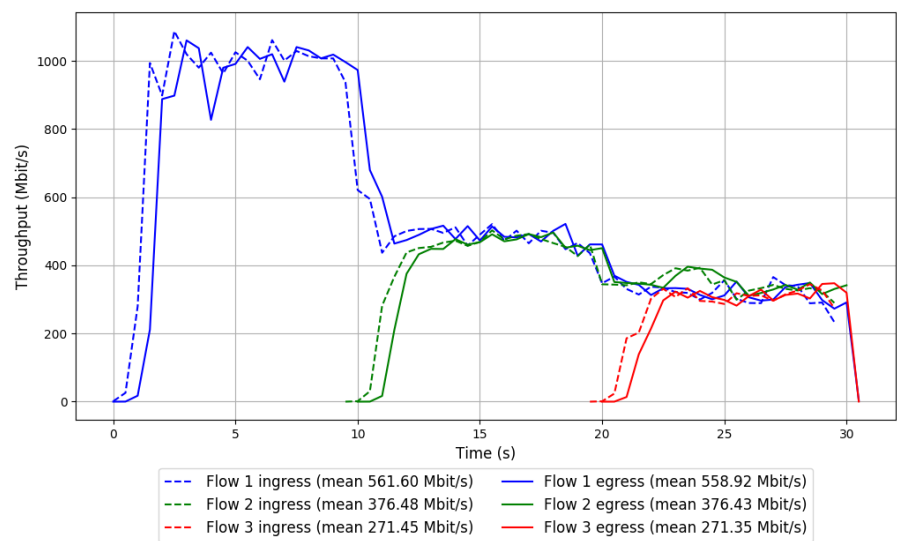
Run 1: Report of FillP — Data Link

Flow 1 ingress (mean 604.00 Mbit/s) --- Flow 1 egress (mean 603.96 Mbit/s)
Flow 2 ingress (mean 362.22 Mbit/s) --- Flow 2 egress (mean 362.16 Mbit/s)
Flow 3 ingress (mean 283.54 Mbit/s) --- Flow 3 egress (mean 283.58 Mbit/s)

Flow 1 (95th percentile 96.53 ms) · Flow 2 (95th percentile 89.85 ms) · Flow 3 (95th percentile 90.38 ms)

```
Run 2: Statistics of FillP

Start at: 2019-01-21 09:46:35
End at: 2019-01-21 09:47:05
Local clock offset: -0.068 ms
Remote clock offset: -0.108 ms


# Below is generated by plot.py at 2019-01-21 13:24:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 853.55 Mbit/s
95th percentile per-packet one-way delay: 130.603 ms
Loss rate: 1.16%
-- Flow 1:
Average throughput: 519.47 Mbit/s
95th percentile per-packet one-way delay: 150.940 ms
Loss rate: 1.88%
-- Flow 2:
Average throughput: 370.34 Mbit/s
95th percentile per-packet one-way delay: 90.187 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 263.86 Mbit/s
95th percentile per-packet one-way delay: 91.017 ms
Loss rate: 0.06%
```
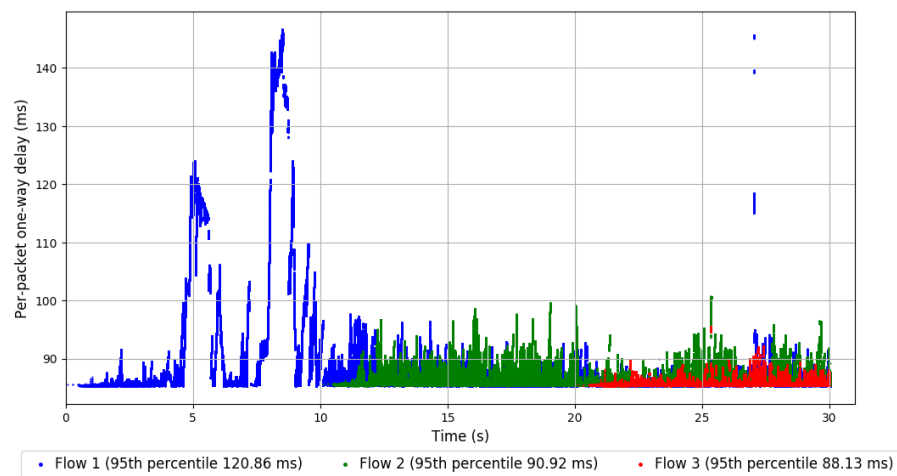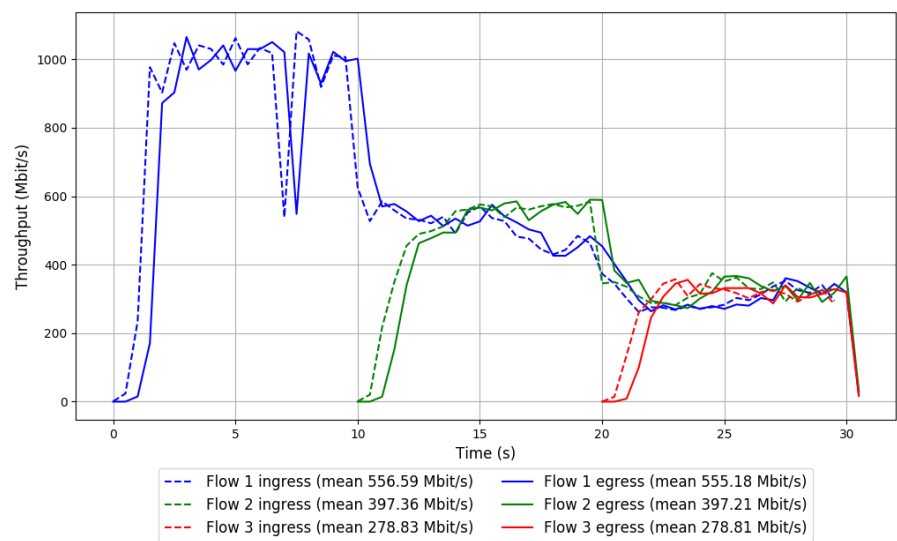
Run 2: Report of FillP — Data Link

- - - Flow 1 ingress (mean 529.53 Mbit/s)   —— Flow 1 egress (mean 519.47 Mbit/s)
- - - Flow 2 ingress (mean 370.35 Mbit/s)   —— Flow 2 egress (mean 370.34 Mbit/s)
- - - Flow 3 ingress (mean 264.05 Mbit/s)   —— Flow 3 egress (mean 263.86 Mbit/s)

- Flow 1 (95th percentile 150.94 ms)   • Flow 2 (95th percentile 90.19 ms)   • Flow 3 (95th percentile 91.02 ms)

```
Run 3: Statistics of FillP

Start at: 2019-01-21 10:24:53
End at: 2019-01-21 10:25:23
Local clock offset: 0.056 ms
Remote clock offset: -0.004 ms


# Below is generated by plot.py at 2019-01-21 13:29:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 957.26 Mbit/s
95th percentile per-packet one-way delay: 95.697 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 579.06 Mbit/s
95th percentile per-packet one-way delay: 98.435 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 417.85 Mbit/s
95th percentile per-packet one-way delay: 92.153 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 302.89 Mbit/s
95th percentile per-packet one-way delay: 92.836 ms
Loss rate: 0.00%
```
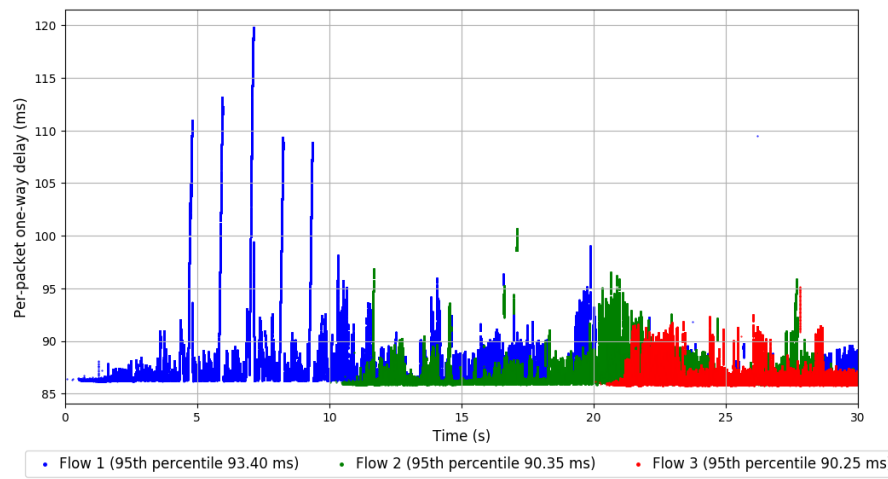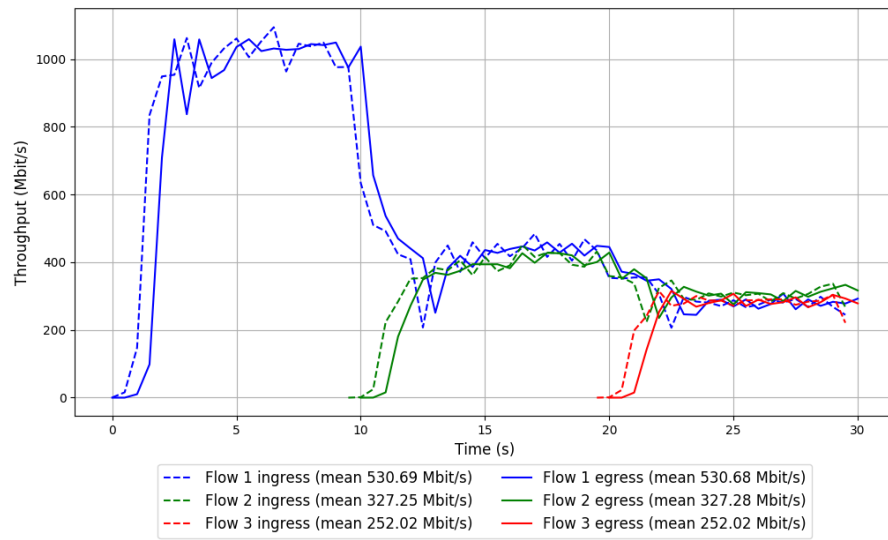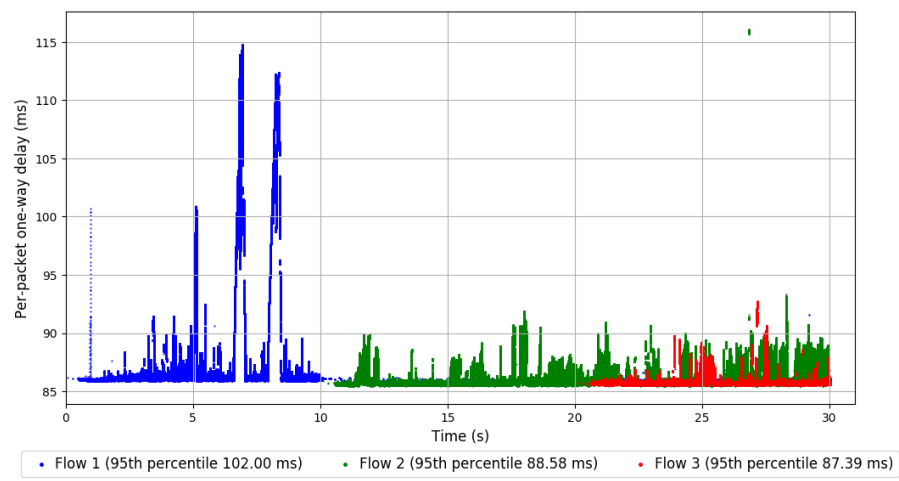
Run 3: Report of FillP — Data Link

```
Run 4: Statistics of FillP

Start at: 2019-01-21 11:02:00
End at: 2019-01-21 11:02:30
Local clock offset: 0.202 ms
Remote clock offset: -0.021 ms

# Below is generated by plot.py at 2019-01-21 13:29:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 899.64 Mbit/s
95th percentile per-packet one-way delay: 109.713 ms
Loss rate: 0.30%
-- Flow 1:
Average throughput: 558.92 Mbit/s
95th percentile per-packet one-way delay: 115.480 ms
Loss rate: 0.48%
-- Flow 2:
Average throughput: 376.43 Mbit/s
95th percentile per-packet one-way delay: 90.095 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 271.35 Mbit/s
95th percentile per-packet one-way delay: 89.500 ms
Loss rate: 0.00%
```
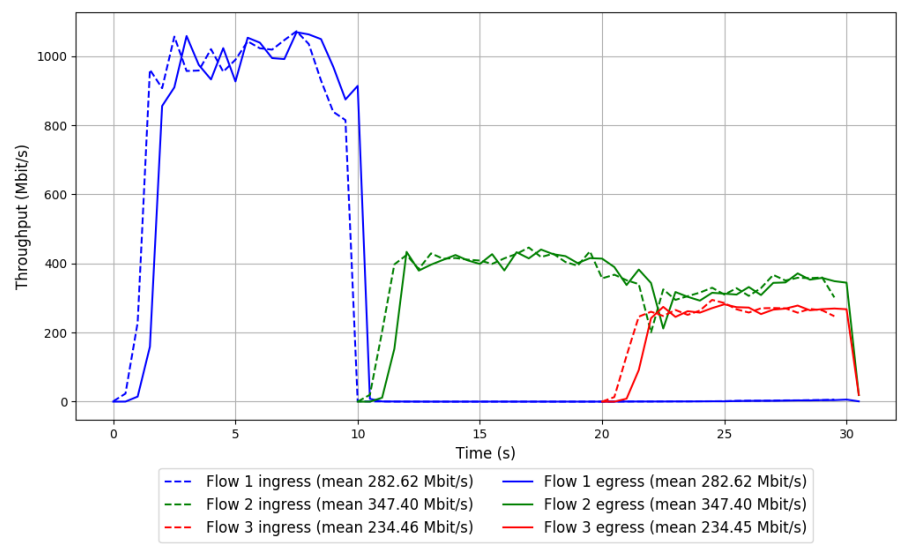
Run 4: Report of FillP — Data Link

```
Run 5: Statistics of FillP

Start at: 2019-01-21 11:40:12
End at: 2019-01-21 11:40:42
Local clock offset: 0.554 ms
Remote clock offset: -0.035 ms


# Below is generated by plot.py at 2019-01-21 13:29:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 911.55 Mbit/s
95th percentile per-packet one-way delay: 114.754 ms
Loss rate: 0.16%
-- Flow 1:
Average throughput: 555.18 Mbit/s
95th percentile per-packet one-way delay: 120.859 ms
Loss rate: 0.25%
-- Flow 2:
Average throughput: 397.21 Mbit/s
95th percentile per-packet one-way delay: 90.922 ms
Loss rate: 0.03%
-- Flow 3:
Average throughput: 278.81 Mbit/s
95th percentile per-packet one-way delay: 88.131 ms
Loss rate: 0.00%
```

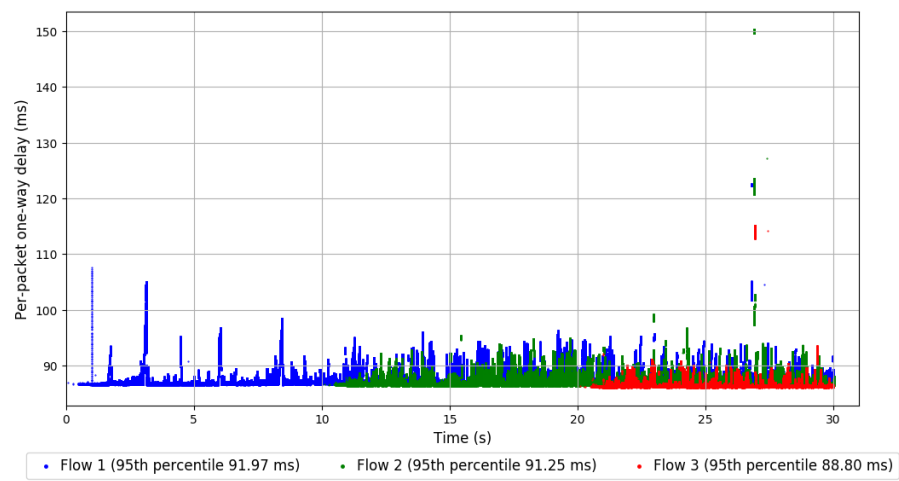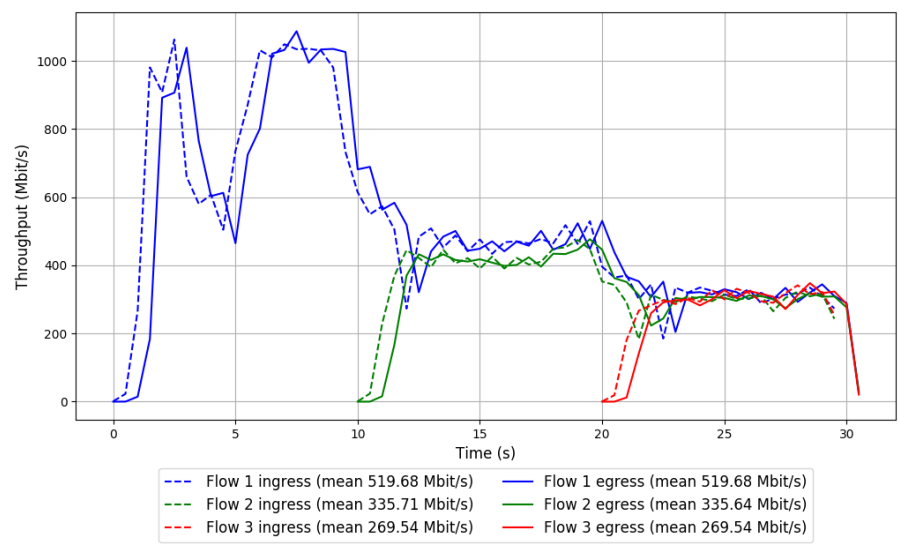Run 5: Report of FillP — Data Link

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```
Run 1: Statistics of FillP-Sheep

Start at: 2019-01-21 09:01:58
End at: 2019-01-21 09:02:28
Local clock offset: -0.165 ms
Remote clock offset: -0.157 ms


# Below is generated by plot.py at 2019-01-21 13:29:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 832.46 Mbit/s
95th percentile per-packet one-way delay: 91.810 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 530.68 Mbit/s
95th percentile per-packet one-way delay: 93.400 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 327.28 Mbit/s
95th percentile per-packet one-way delay: 90.348 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 252.02 Mbit/s
95th percentile per-packet one-way delay: 90.251 ms
Loss rate: 0.00%
```
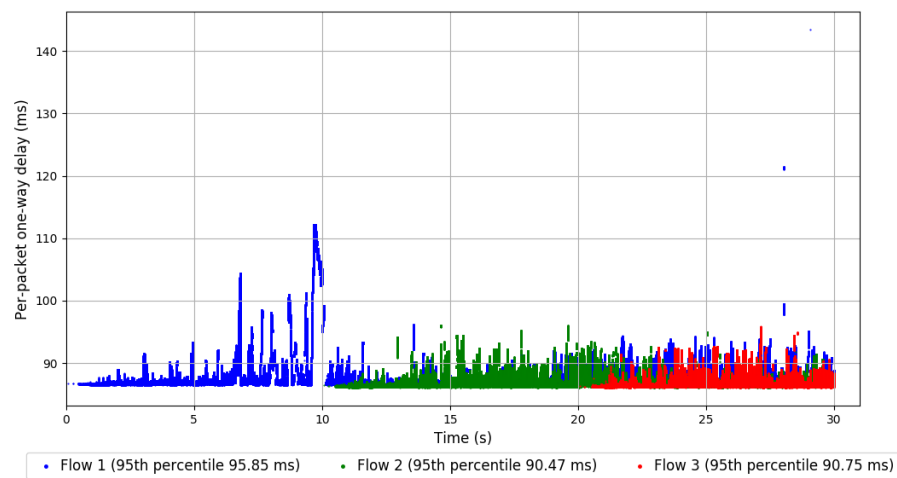
Run 1: Report of FillP-Sheep — Data Link

```
Run 2: Statistics of FillP-Sheep

Start at: 2019-01-21 09:40:06
End at: 2019-01-21 09:40:36
Local clock offset: 0.243 ms
Remote clock offset: -0.094 ms


# Below is generated by plot.py at 2019-01-21 13:29:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 590.91 Mbit/s
95th percentile per-packet one-way delay: 93.558 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 282.62 Mbit/s
95th percentile per-packet one-way delay: 102.004 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 347.40 Mbit/s
95th percentile per-packet one-way delay: 88.579 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 234.45 Mbit/s
95th percentile per-packet one-way delay: 87.387 ms
Loss rate: 0.00%
```
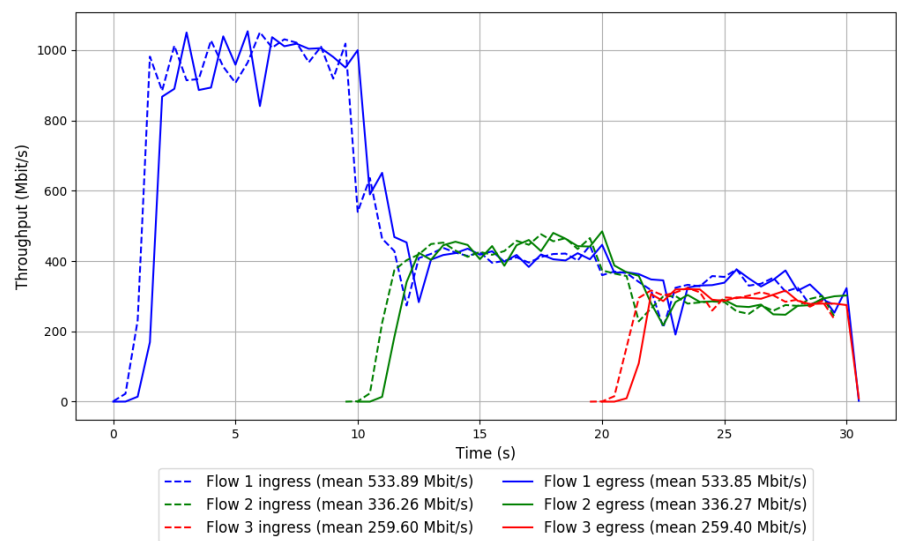
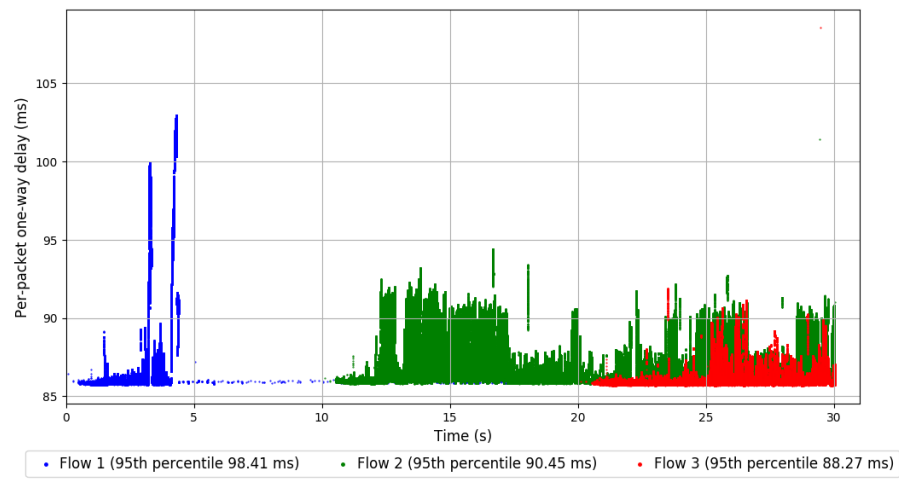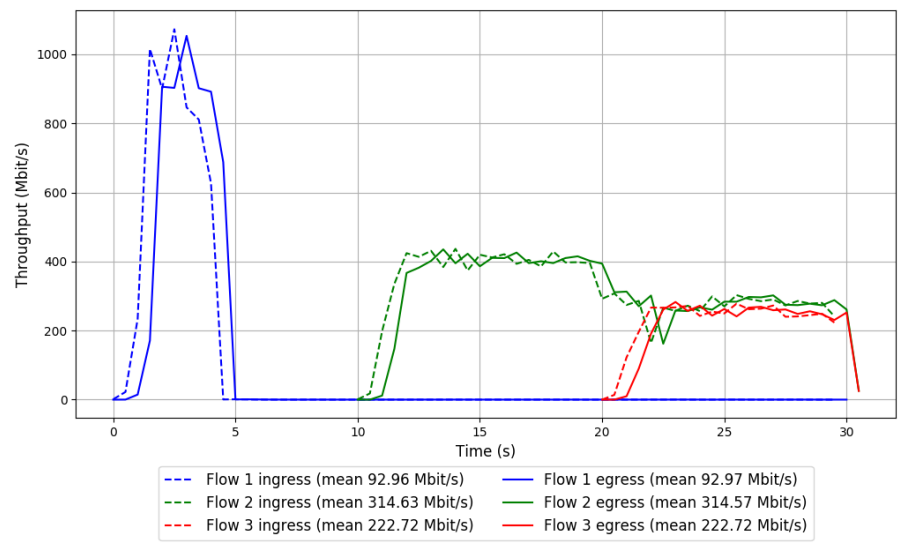Run 2: Report of FillP-Sheep — Data Link

```
Run 3: Statistics of FillP-Sheep

Start at: 2019-01-21 10:18:38
End at: 2019-01-21 10:19:08
Local clock offset: -0.306 ms
Remote clock offset: -0.052 ms


# Below is generated by plot.py at 2019-01-21 13:29:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 832.21 Mbit/s
95th percentile per-packet one-way delay: 91.486 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 519.68 Mbit/s
95th percentile per-packet one-way delay: 91.969 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 335.64 Mbit/s
95th percentile per-packet one-way delay: 91.247 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 269.54 Mbit/s
95th percentile per-packet one-way delay: 88.798 ms
Loss rate: 0.00%
```

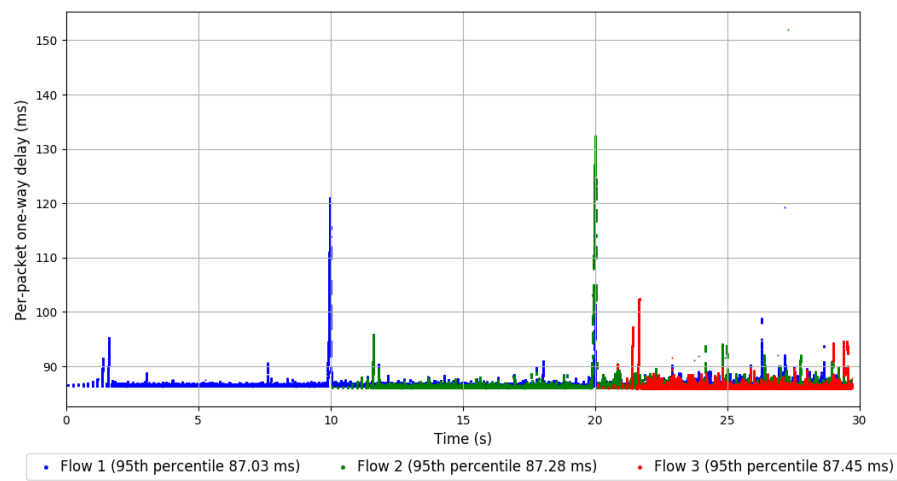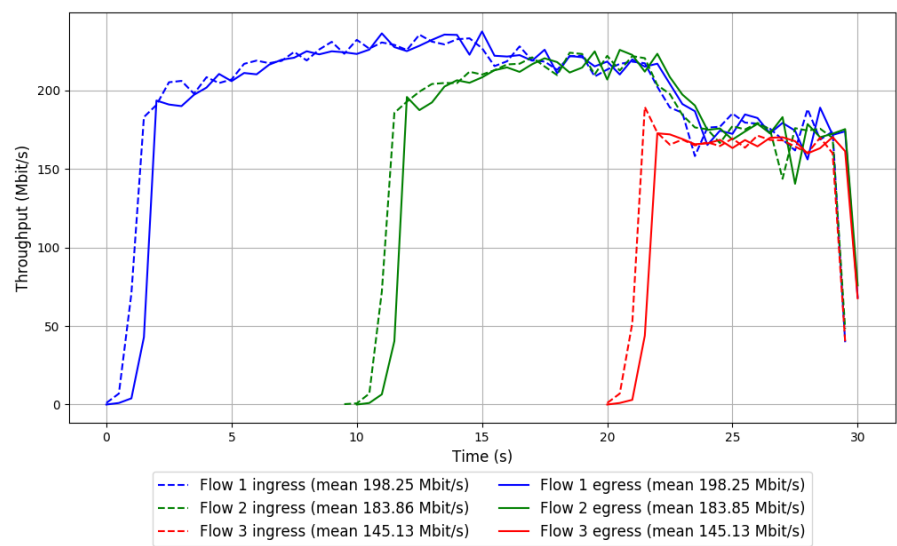Run 3: Report of FillP-Sheep — Data Link

```
Run 4: Statistics of FillP-Sheep

Start at: 2019-01-21 10:55:45
End at: 2019-01-21 10:56:15
Local clock offset: 0.189 ms
Remote clock offset: 0.01 ms


# Below is generated by plot.py at 2019-01-21 13:37:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 843.83 Mbit/s
95th percentile per-packet one-way delay: 92.201 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 533.85 Mbit/s
95th percentile per-packet one-way delay: 95.849 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 336.27 Mbit/s
95th percentile per-packet one-way delay: 90.469 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 259.40 Mbit/s
95th percentile per-packet one-way delay: 90.755 ms
Loss rate: 0.07%
```
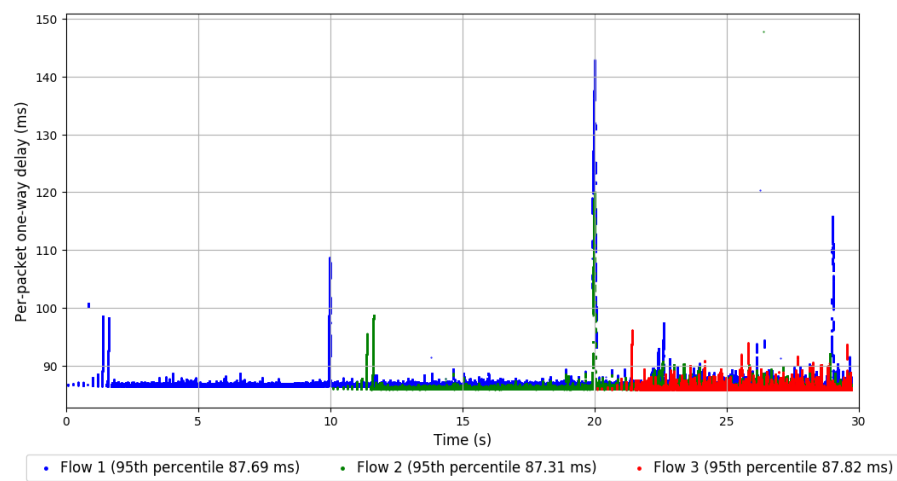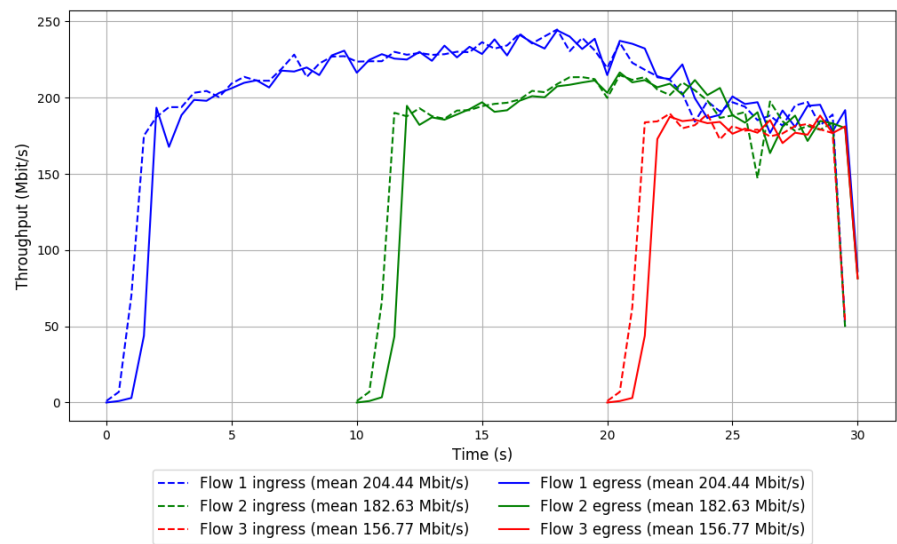
Run 4: Report of FillP-Sheep — Data Link

Flow 1 ingress (mean 533.89 Mbit/s) --- Flow 1 egress (mean 533.85 Mbit/s)
Flow 2 ingress (mean 336.26 Mbit/s) --- Flow 2 egress (mean 336.27 Mbit/s)
Flow 3 ingress (mean 259.60 Mbit/s) --- Flow 3 egress (mean 259.40 Mbit/s)

Flow 1 (95th percentile 95.85 ms) • Flow 2 (95th percentile 90.47 ms) • Flow 3 (95th percentile 90.75 ms)

```
Run 5: Statistics of FillP-Sheep

Start at: 2019-01-21 11:34:16
End at: 2019-01-21 11:34:46
Local clock offset: -0.002 ms
Remote clock offset: -0.081 ms


# Below is generated by plot.py at 2019-01-21 13:37:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 375.67 Mbit/s
95th percentile per-packet one-way delay: 90.842 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 92.97 Mbit/s
95th percentile per-packet one-way delay: 98.405 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 314.57 Mbit/s
95th percentile per-packet one-way delay: 90.454 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 222.72 Mbit/s
95th percentile per-packet one-way delay: 88.273 ms
Loss rate: 0.00%
```

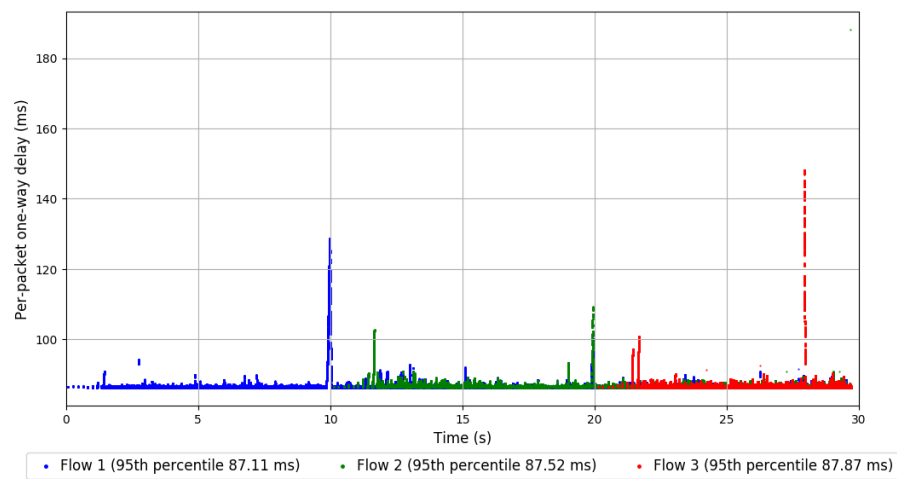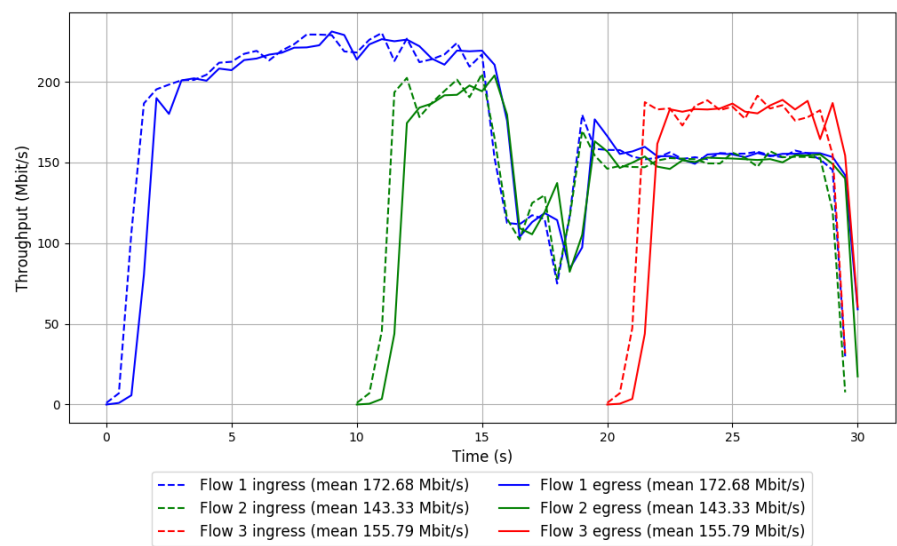Run 5: Report of FillP-Sheep — Data Link

```
Run 1: Statistics of Indigo

Start at: 2019-01-21 09:05:12
End at: 2019-01-21 09:05:43
Local clock offset: -0.203 ms
Remote clock offset: -0.125 ms

# Below is generated by plot.py at 2019-01-21 13:42:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 367.06 Mbit/s
95th percentile per-packet one-way delay: 87.149 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 198.25 Mbit/s
95th percentile per-packet one-way delay: 87.033 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 183.85 Mbit/s
95th percentile per-packet one-way delay: 87.284 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 145.13 Mbit/s
95th percentile per-packet one-way delay: 87.455 ms
Loss rate: 0.00%
```

Run 1: Report of Indigo — Data Link

```
Run 2: Statistics of Indigo

Start at: 2019-01-21 09:43:15
End at: 2019-01-21 09:43:45
Local clock offset: -0.104 ms
Remote clock offset: -0.094 ms

# Below is generated by plot.py at 2019-01-21 13:46:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 376.26 Mbit/s
95th percentile per-packet one-way delay: 87.594 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 204.44 Mbit/s
95th percentile per-packet one-way delay: 87.685 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 182.63 Mbit/s
95th percentile per-packet one-way delay: 87.309 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 156.77 Mbit/s
95th percentile per-packet one-way delay: 87.824 ms
Loss rate: 0.00%
```
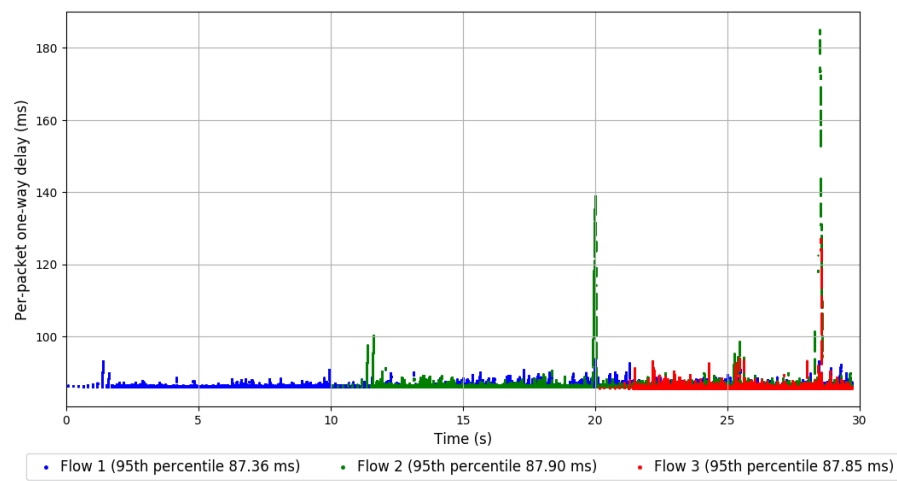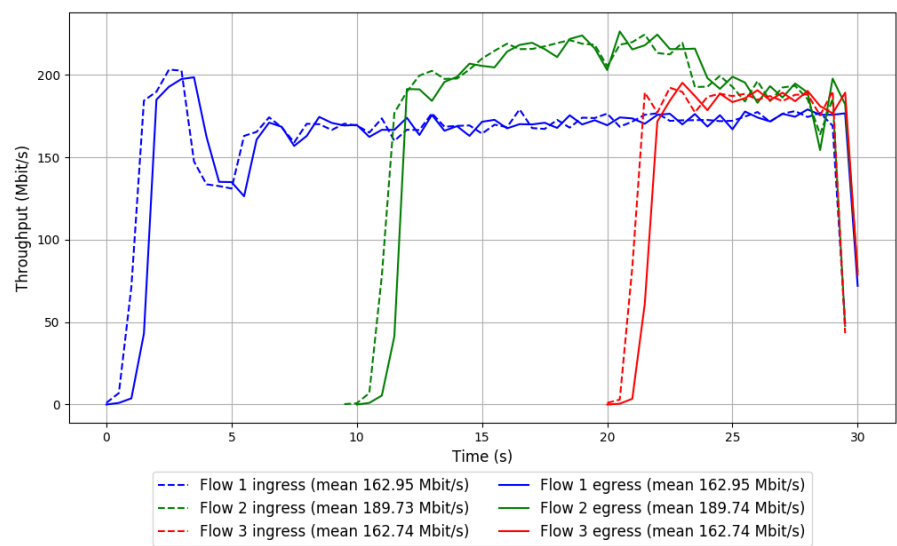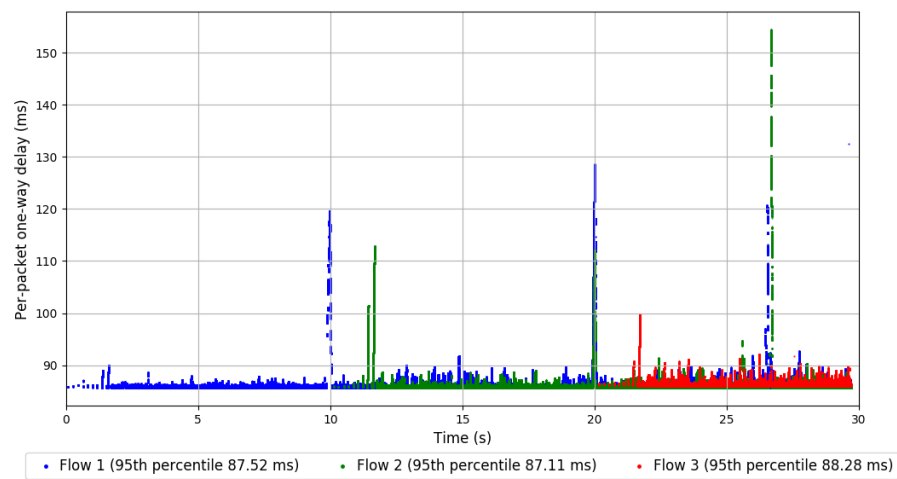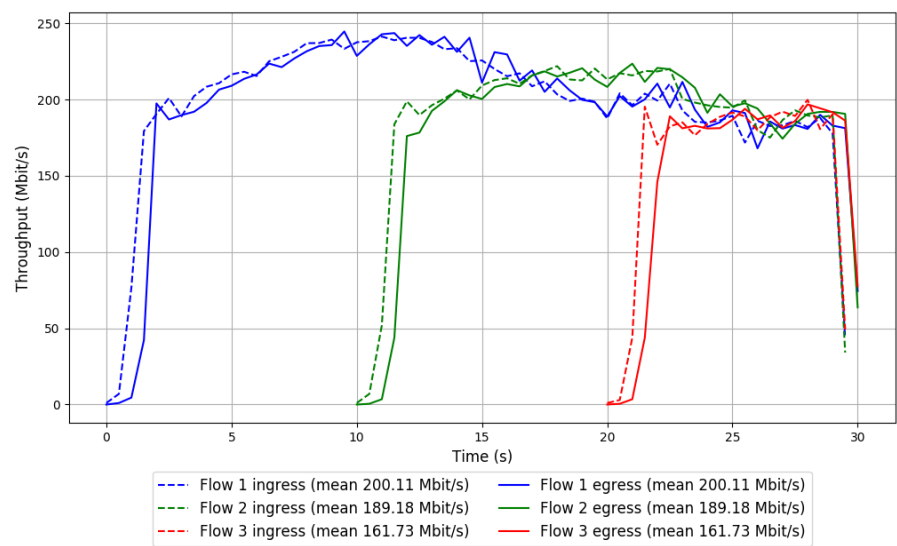
Run 2: Report of Indigo — Data Link

```
Run 3: Statistics of Indigo

Start at: 2019-01-21 10:21:51
End at: 2019-01-21 10:22:21
Local clock offset: -0.41 ms
Remote clock offset: -0.081 ms

# Below is generated by plot.py at 2019-01-21 13:46:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 317.72 Mbit/s
95th percentile per-packet one-way delay: 87.406 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 172.68 Mbit/s
95th percentile per-packet one-way delay: 87.114 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 143.33 Mbit/s
95th percentile per-packet one-way delay: 87.523 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 155.79 Mbit/s
95th percentile per-packet one-way delay: 87.868 ms
Loss rate: 0.00%
```
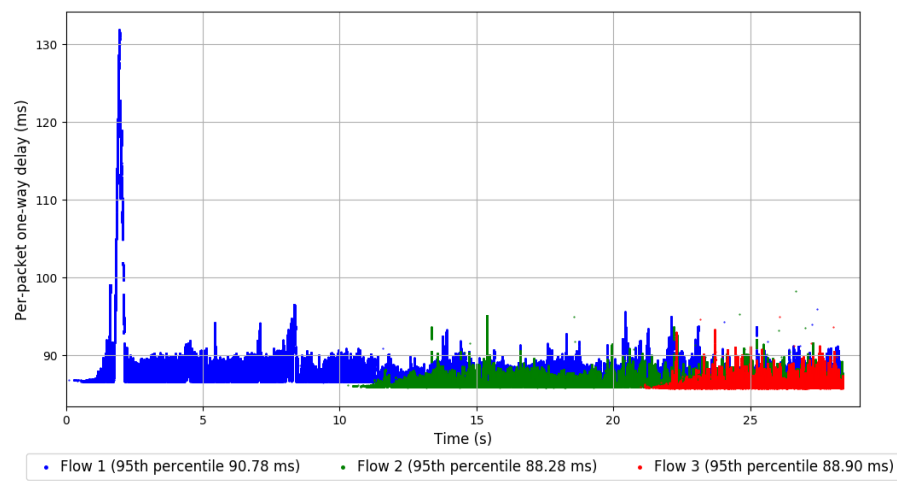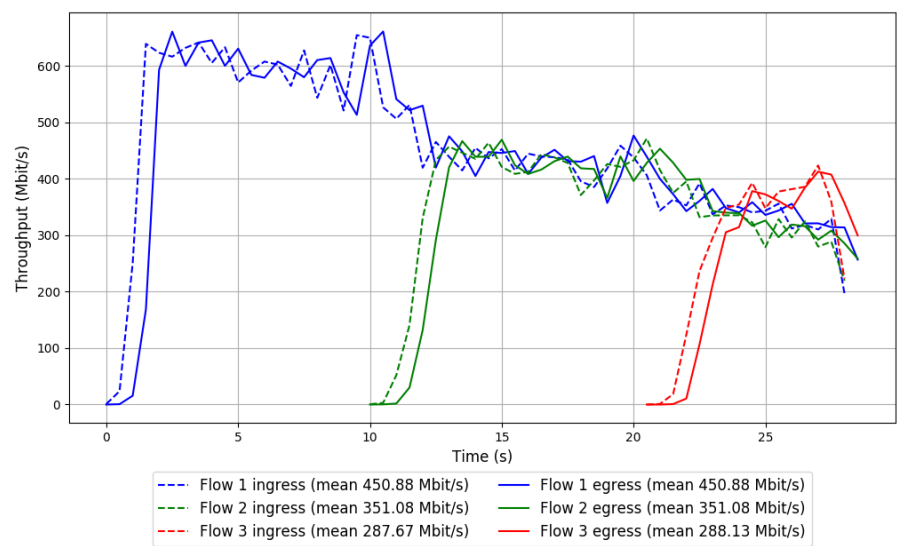
Run 3: Report of Indigo — Data Link

```
Run 4: Statistics of Indigo

Start at: 2019-01-21 10:58:54
End at: 2019-01-21 10:59:24
Local clock offset: 0.345 ms
Remote clock offset: 0.051 ms


# Below is generated by plot.py at 2019-01-21 13:46:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 341.04 Mbit/s
95th percentile per-packet one-way delay: 87.582 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 162.95 Mbit/s
95th percentile per-packet one-way delay: 87.361 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 189.74 Mbit/s
95th percentile per-packet one-way delay: 87.900 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 162.74 Mbit/s
95th percentile per-packet one-way delay: 87.853 ms
Loss rate: 0.00%
```
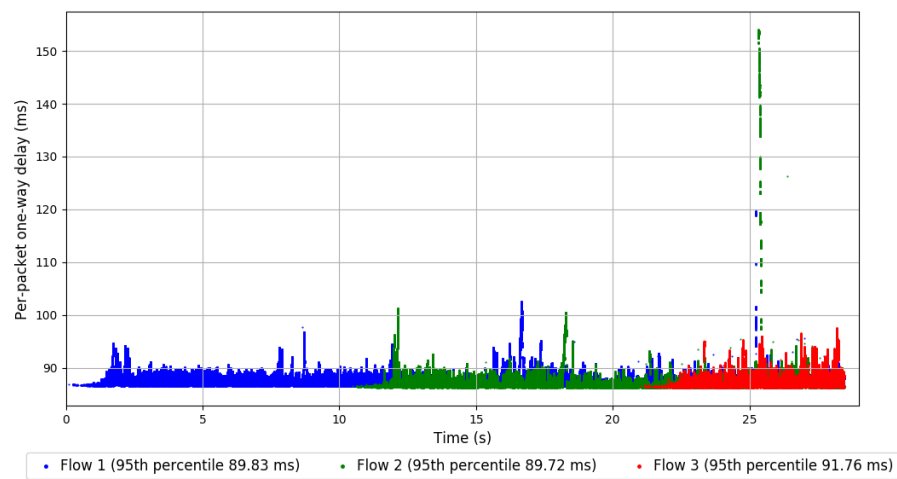
Run 4: Report of Indigo — Data Link

```
Run 5: Statistics of Indigo

Start at: 2019-01-21 11:37:05
End at: 2019-01-21 11:37:35
Local clock offset: 0.052 ms
Remote clock offset: -0.049 ms


# Below is generated by plot.py at 2019-01-21 13:47:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 377.13 Mbit/s
95th percentile per-packet one-way delay: 87.548 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 200.11 Mbit/s
95th percentile per-packet one-way delay: 87.524 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 189.18 Mbit/s
95th percentile per-packet one-way delay: 87.106 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 161.73 Mbit/s
95th percentile per-packet one-way delay: 88.277 ms
Loss rate: 0.00%
```

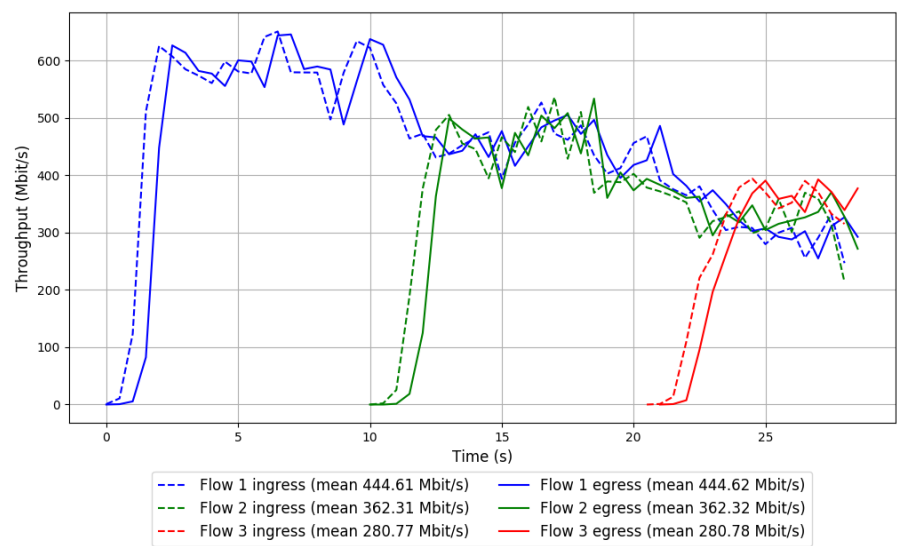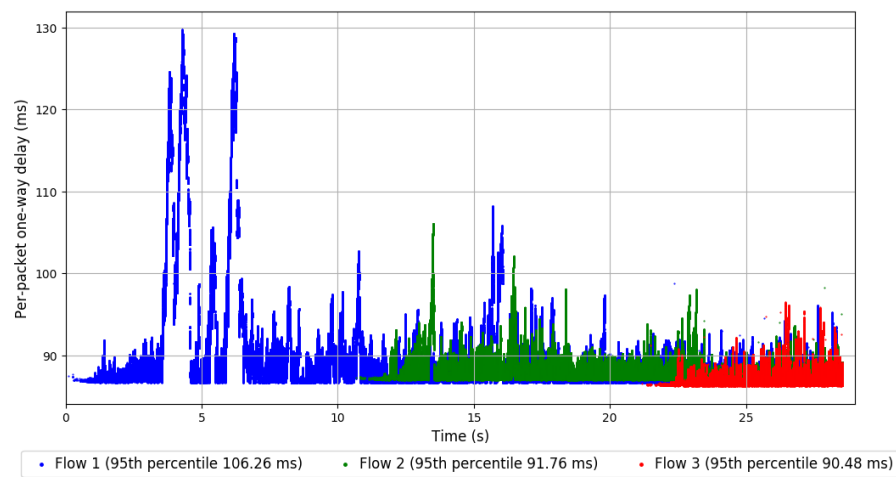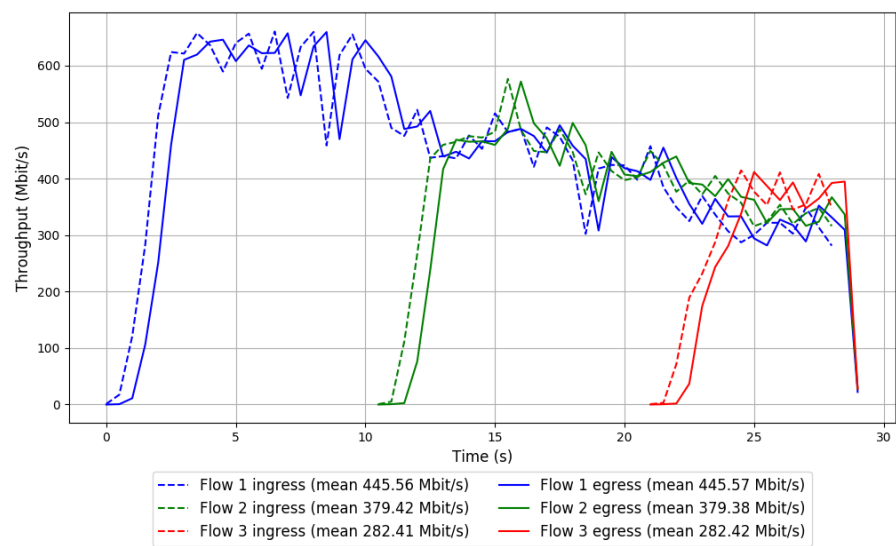# Run 5: Report of Indigo — Data Link

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```
Run 1: Statistics of Indigo-MusesC3

Start at: 2019-01-21 09:25:41
End at: 2019-01-21 09:26:11
Local clock offset: -0.074 ms
Remote clock offset: -0.105 ms


# Below is generated by plot.py at 2019-01-21 13:47:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 750.66 Mbit/s
95th percentile per-packet one-way delay: 90.018 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 450.88 Mbit/s
95th percentile per-packet one-way delay: 90.781 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 351.08 Mbit/s
95th percentile per-packet one-way delay: 88.284 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 288.13 Mbit/s
95th percentile per-packet one-way delay: 88.902 ms
Loss rate: 0.00%
```

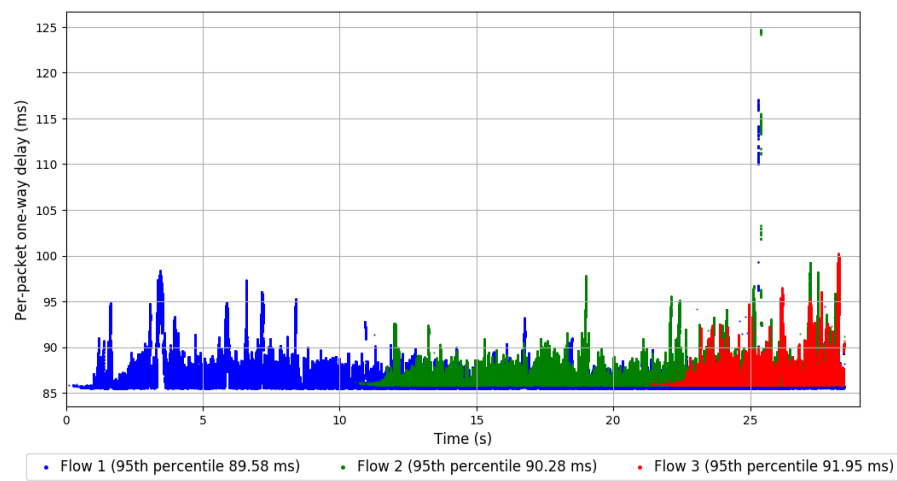Run 1: Report of Indigo-MusesC3 — Data Link

```
Run 2: Statistics of Indigo-MusesC3

Start at: 2019-01-21 10:03:46
End at: 2019-01-21 10:04:16
Local clock offset: -0.108 ms
Remote clock offset: -0.064 ms


# Below is generated by plot.py at 2019-01-21 13:50:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 748.06 Mbit/s
95th percentile per-packet one-way delay: 90.040 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 444.62 Mbit/s
95th percentile per-packet one-way delay: 89.829 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 362.32 Mbit/s
95th percentile per-packet one-way delay: 89.722 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 280.78 Mbit/s
95th percentile per-packet one-way delay: 91.756 ms
Loss rate: 0.00%
```

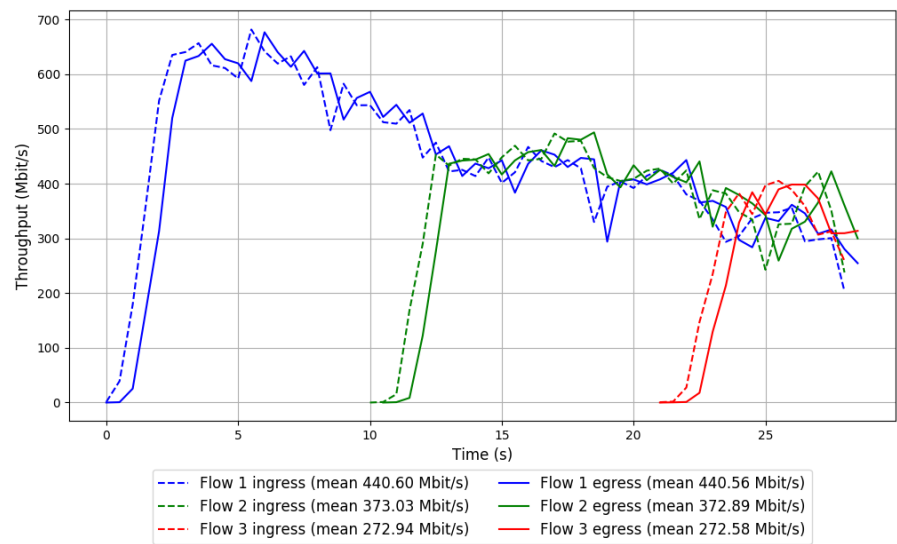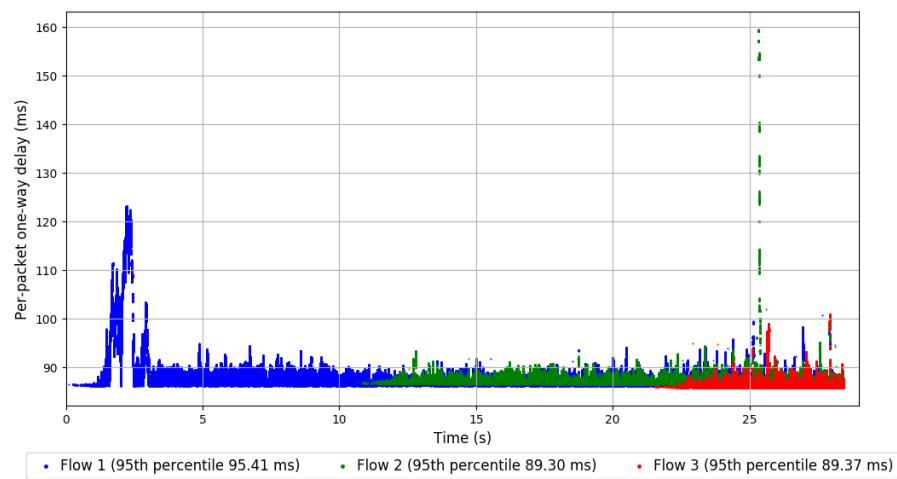Run 2: Report of Indigo-MusesC3 — Data Link

- - - - Flow 1 ingress (mean 444.61 Mbit/s) ——— Flow 1 egress (mean 444.62 Mbit/s)
- - - - Flow 2 ingress (mean 362.31 Mbit/s) ——— Flow 2 egress (mean 362.32 Mbit/s)
- - - - Flow 3 ingress (mean 280.77 Mbit/s) ——— Flow 3 egress (mean 280.78 Mbit/s)

- Flow 1 (95th percentile 89.83 ms)   • Flow 2 (95th percentile 89.72 ms)   • Flow 3 (95th percentile 91.76 ms)
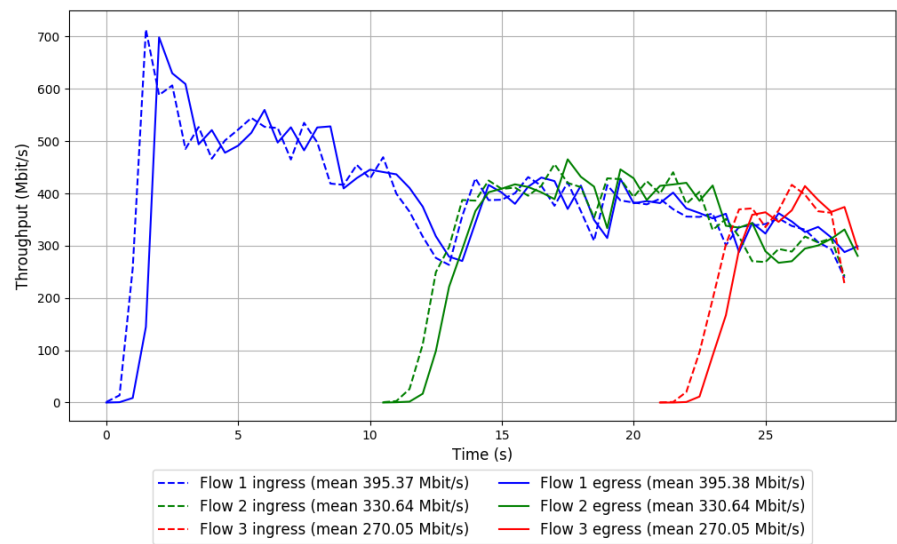
```
Run 3: Statistics of Indigo-MusesC3

Start at: 2019-01-21 10:41:43
End at: 2019-01-21 10:42:13
Local clock offset: -0.392 ms
Remote clock offset: -0.007 ms


# Below is generated by plot.py at 2019-01-21 13:57:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 757.06 Mbit/s
95th percentile per-packet one-way delay: 98.733 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 445.57 Mbit/s
95th percentile per-packet one-way delay: 106.259 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 379.38 Mbit/s
95th percentile per-packet one-way delay: 91.764 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 282.42 Mbit/s
95th percentile per-packet one-way delay: 90.480 ms
Loss rate: 0.00%
```
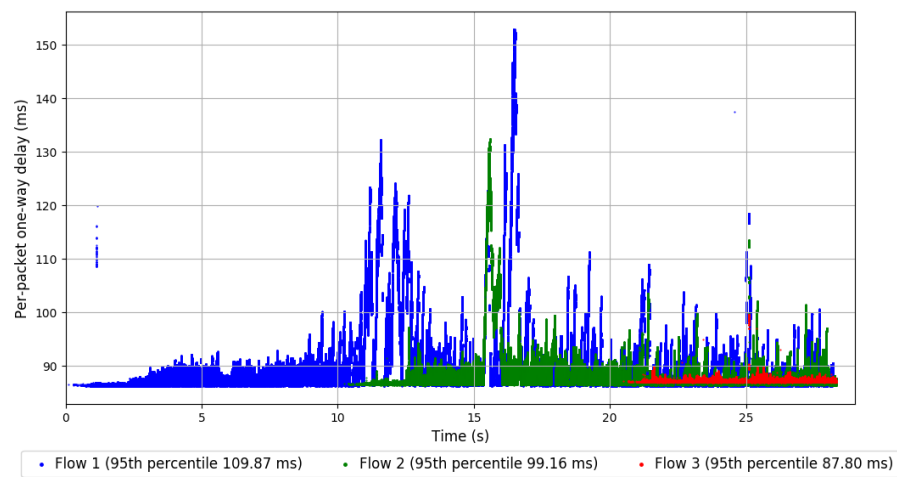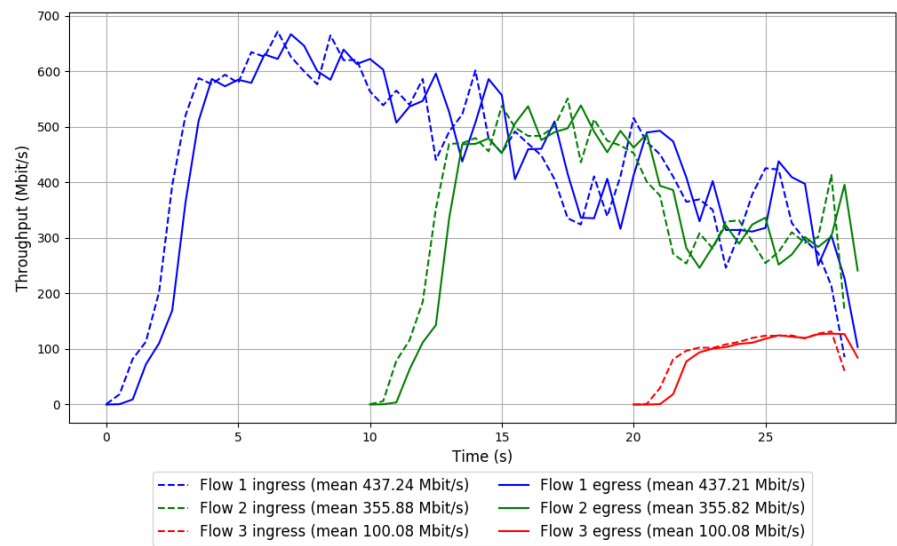
Run 3: Report of Indigo-MusesC3 — Data Link

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```
Run 4: Statistics of Indigo-MusesC3

Start at: 2019-01-21 11:19:29
End at: 2019-01-21 11:19:59
Local clock offset: 0.362 ms
Remote clock offset: -0.039 ms


# Below is generated by plot.py at 2019-01-21 14:01:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 744.73 Mbit/s
95th percentile per-packet one-way delay: 90.137 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 440.56 Mbit/s
95th percentile per-packet one-way delay: 89.584 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 372.89 Mbit/s
95th percentile per-packet one-way delay: 90.277 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 272.58 Mbit/s
95th percentile per-packet one-way delay: 91.950 ms
Loss rate: 0.11%
```

Run 4: Report of Indigo-MusesC3 — Data Link

- - - Flow 1 ingress (mean 440.60 Mbit/s) —— Flow 1 egress (mean 440.56 Mbit/s)
- - - Flow 2 ingress (mean 373.03 Mbit/s) —— Flow 2 egress (mean 372.89 Mbit/s)
- - - Flow 3 ingress (mean 272.94 Mbit/s) —— Flow 3 egress (mean 272.58 Mbit/s)

• Flow 1 (95th percentile 89.58 ms)   • Flow 2 (95th percentile 90.28 ms)   • Flow 3 (95th percentile 91.95 ms)
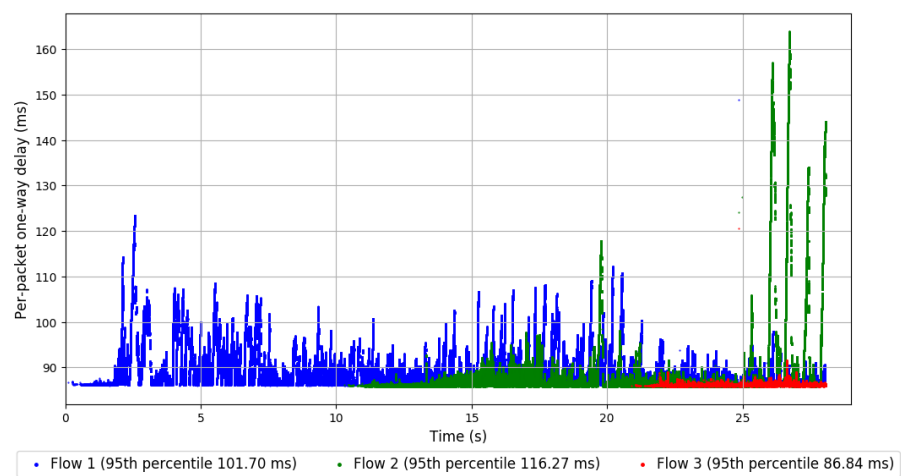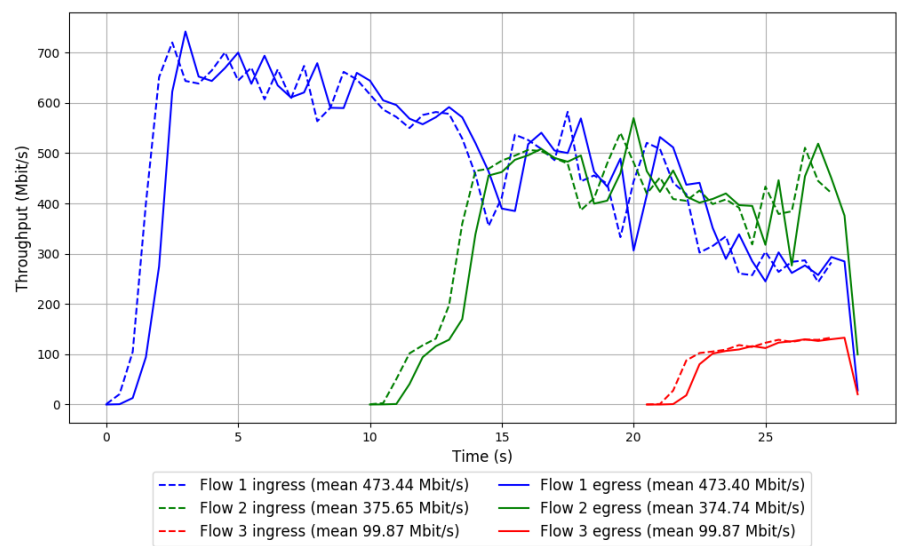
72

```
Run 5: Statistics of Indigo-MusesC3

Start at: 2019-01-21 11:56:35
End at: 2019-01-21 11:57:05
Local clock offset: -0.097 ms
Remote clock offset: -0.051 ms


# Below is generated by plot.py at 2019-01-21 14:01:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 669.99 Mbit/s
95th percentile per-packet one-way delay: 91.476 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 395.38 Mbit/s
95th percentile per-packet one-way delay: 95.406 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 330.64 Mbit/s
95th percentile per-packet one-way delay: 89.299 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 270.05 Mbit/s
95th percentile per-packet one-way delay: 89.371 ms
Loss rate: 0.00%
```
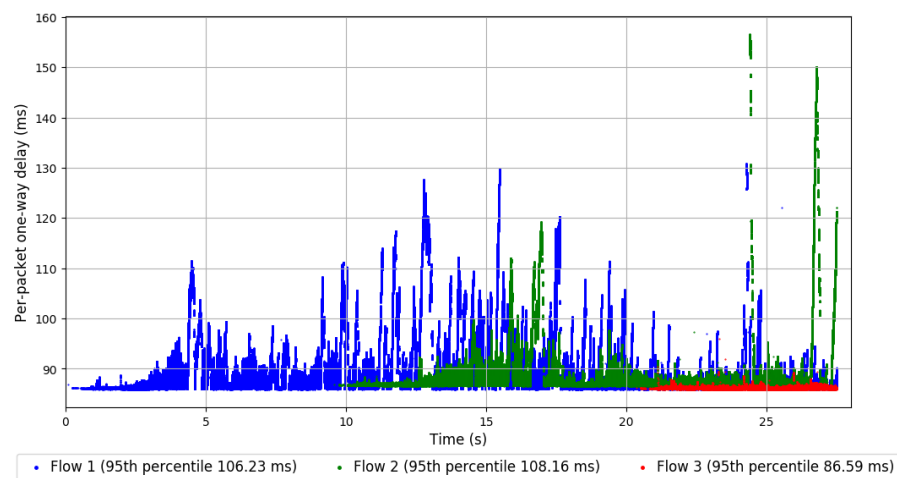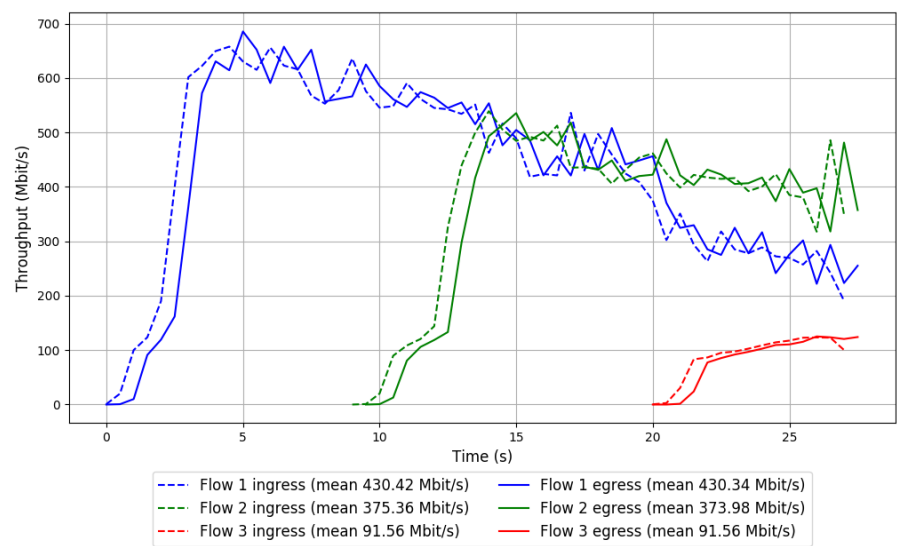
Run 5: Report of Indigo-MusesC3 — Data Link

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```
Run 1: Statistics of Indigo-MusesC5

Start at: 2019-01-21 09:23:43
End at: 2019-01-21 09:24:13
Local clock offset: -0.505 ms
Remote clock offset: -0.152 ms


# Below is generated by plot.py at 2019-01-21 14:02:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 692.08 Mbit/s
95th percentile per-packet one-way delay: 106.299 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 437.21 Mbit/s
95th percentile per-packet one-way delay: 109.871 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 355.82 Mbit/s
95th percentile per-packet one-way delay: 99.157 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 100.08 Mbit/s
95th percentile per-packet one-way delay: 87.799 ms
Loss rate: 0.00%
```
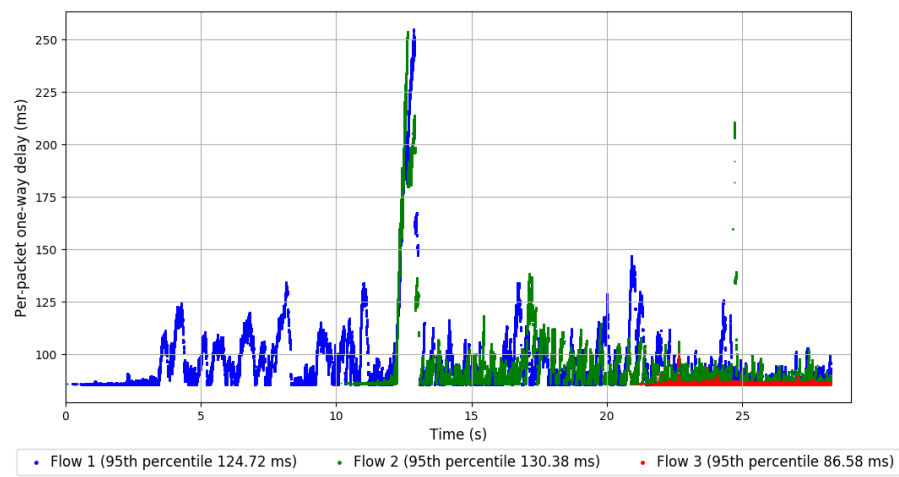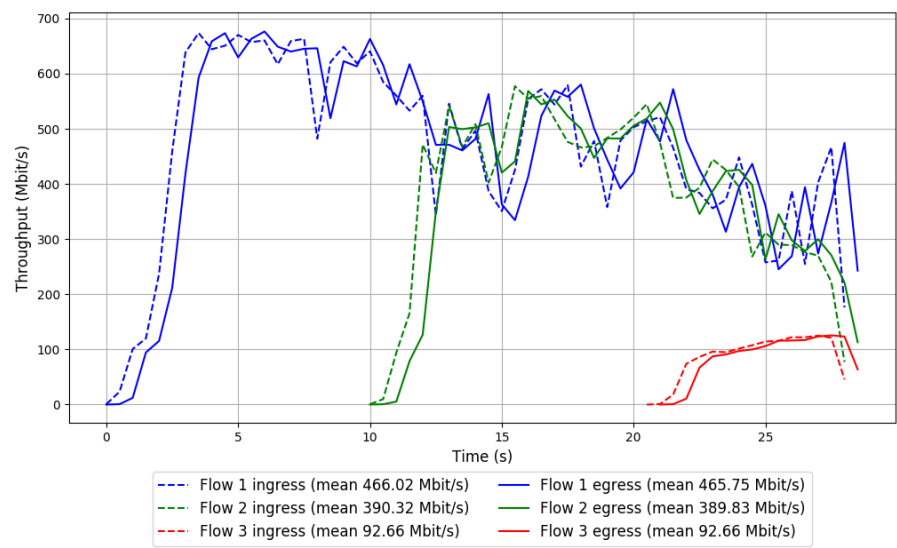
Run 1: Report of Indigo-MusesC5 — Data Link

```
Run 2: Statistics of Indigo-MusesC5

Start at: 2019-01-21 10:01:53
End at: 2019-01-21 10:02:23
Local clock offset: -0.066 ms
Remote clock offset: -0.084 ms

# Below is generated by plot.py at 2019-01-21 14:04:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 736.63 Mbit/s
95th percentile per-packet one-way delay: 102.631 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 473.40 Mbit/s
95th percentile per-packet one-way delay: 101.704 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 374.74 Mbit/s
95th percentile per-packet one-way delay: 116.272 ms
Loss rate: 0.19%
-- Flow 3:
Average throughput: 99.87 Mbit/s
95th percentile per-packet one-way delay: 86.836 ms
Loss rate: 0.00%
```

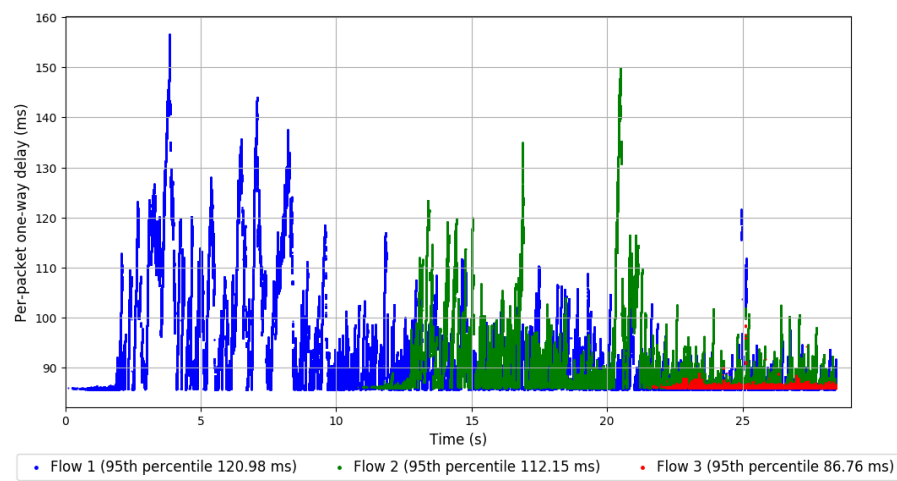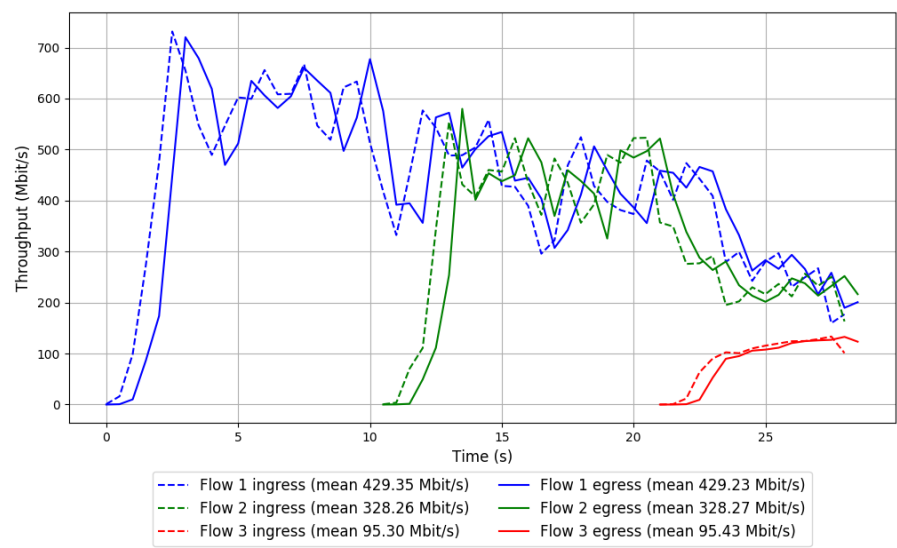Run 2: Report of Indigo-MusesC5 — Data Link

```
Run 3: Statistics of Indigo-MusesC5

Start at: 2019-01-21 10:39:48
End at: 2019-01-21 10:40:18
Local clock offset: -0.006 ms
Remote clock offset: -0.006 ms


# Below is generated by plot.py at 2019-01-21 14:04:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 698.72 Mbit/s
95th percentile per-packet one-way delay: 106.364 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 430.34 Mbit/s
95th percentile per-packet one-way delay: 106.228 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 373.98 Mbit/s
95th percentile per-packet one-way delay: 108.160 ms
Loss rate: 0.36%
-- Flow 3:
Average throughput: 91.56 Mbit/s
95th percentile per-packet one-way delay: 86.595 ms
Loss rate: 0.00%
```

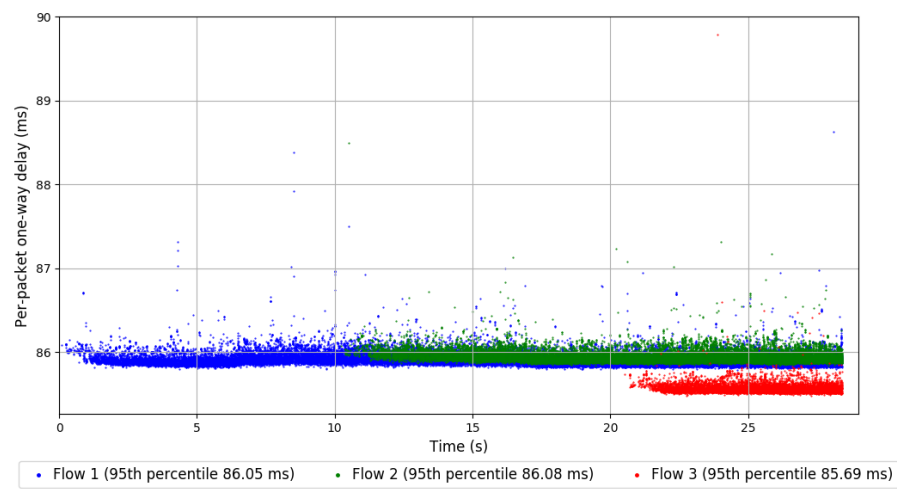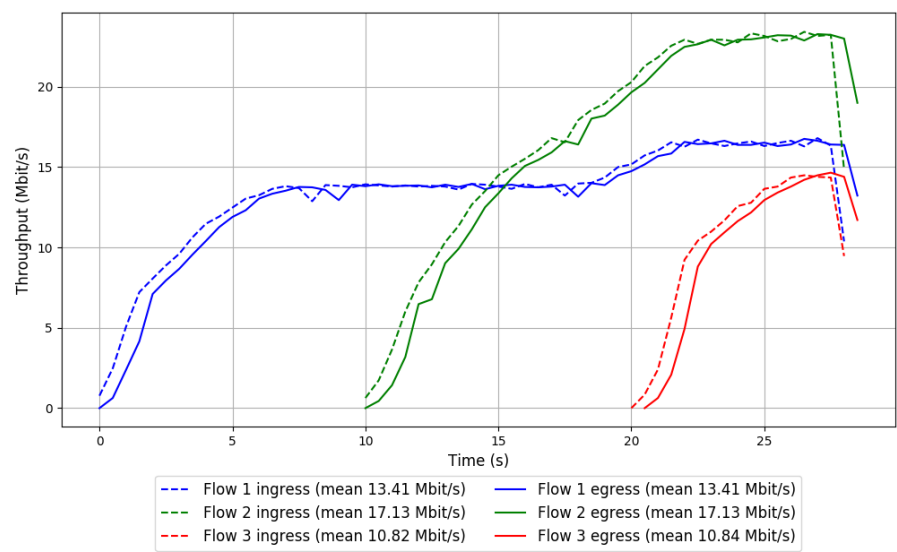Run 3: Report of Indigo-MusesC5 — Data Link

```
Run 4: Statistics of Indigo-MusesC5

Start at: 2019-01-21 11:17:30
End at: 2019-01-21 11:18:00
Local clock offset: 0.167 ms
Remote clock offset: -0.057 ms


# Below is generated by plot.py at 2019-01-21 14:06:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 739.55 Mbit/s
95th percentile per-packet one-way delay: 125.741 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 465.75 Mbit/s
95th percentile per-packet one-way delay: 124.719 ms
Loss rate: 0.04%
-- Flow 2:
Average throughput: 389.83 Mbit/s
95th percentile per-packet one-way delay: 130.382 ms
Loss rate: 0.11%
-- Flow 3:
Average throughput: 92.66 Mbit/s
95th percentile per-packet one-way delay: 86.582 ms
Loss rate: 0.00%
```

Run 4: Report of Indigo-MusesC5 — Data Link

Flow 1 ingress (mean 466.02 Mbit/s) --- Flow 1 egress (mean 465.75 Mbit/s)
Flow 2 ingress (mean 390.32 Mbit/s) --- Flow 2 egress (mean 389.83 Mbit/s)
Flow 3 ingress (mean 92.66 Mbit/s) --- Flow 3 egress (mean 92.66 Mbit/s)

Flow 1 (95th percentile 124.72 ms)   Flow 2 (95th percentile 130.38 ms)   Flow 3 (95th percentile 86.58 ms)
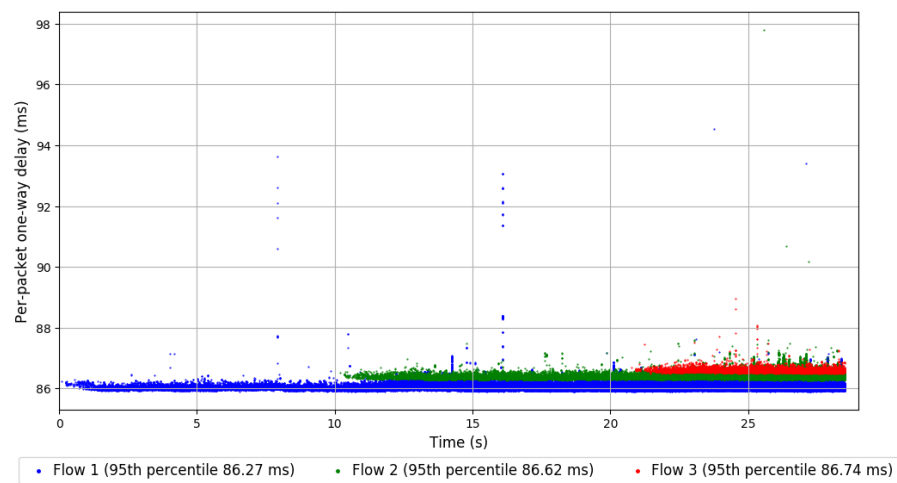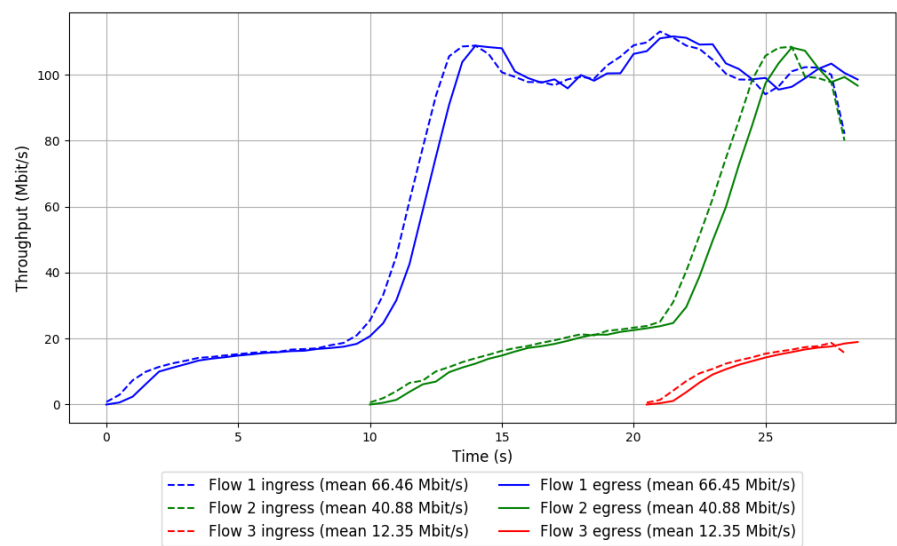
```
Run 5: Statistics of Indigo-MusesC5

Start at: 2019-01-21 11:54:42
End at: 2019-01-21 11:55:12
Local clock offset: 0.095 ms
Remote clock offset: -0.049 ms


# Below is generated by plot.py at 2019-01-21 14:08:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 656.89 Mbit/s
95th percentile per-packet one-way delay: 118.583 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 429.23 Mbit/s
95th percentile per-packet one-way delay: 120.978 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 328.27 Mbit/s
95th percentile per-packet one-way delay: 112.149 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 95.43 Mbit/s
95th percentile per-packet one-way delay: 86.762 ms
Loss rate: 0.00%
```

Run 5: Report of Indigo-MusesC5 — Data Link

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```
Run 1: Statistics of Indigo-MusesD

Start at: 2019-01-21 09:10:38
End at: 2019-01-21 09:11:08
Local clock offset: 0.156 ms
Remote clock offset: -0.161 ms


# Below is generated by plot.py at 2019-01-21 14:08:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 27.42 Mbit/s
95th percentile per-packet one-way delay: 86.058 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 13.41 Mbit/s
95th percentile per-packet one-way delay: 86.054 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 17.13 Mbit/s
95th percentile per-packet one-way delay: 86.077 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 10.84 Mbit/s
95th percentile per-packet one-way delay: 85.688 ms
Loss rate: 0.01%
```
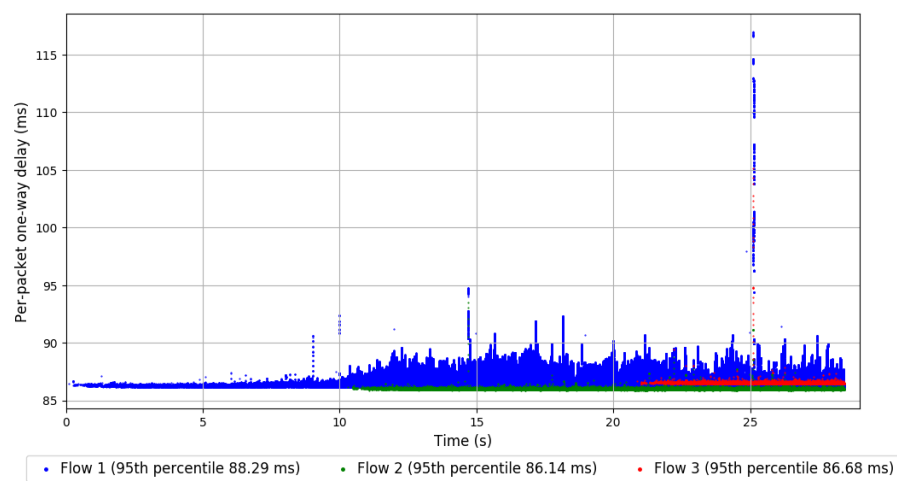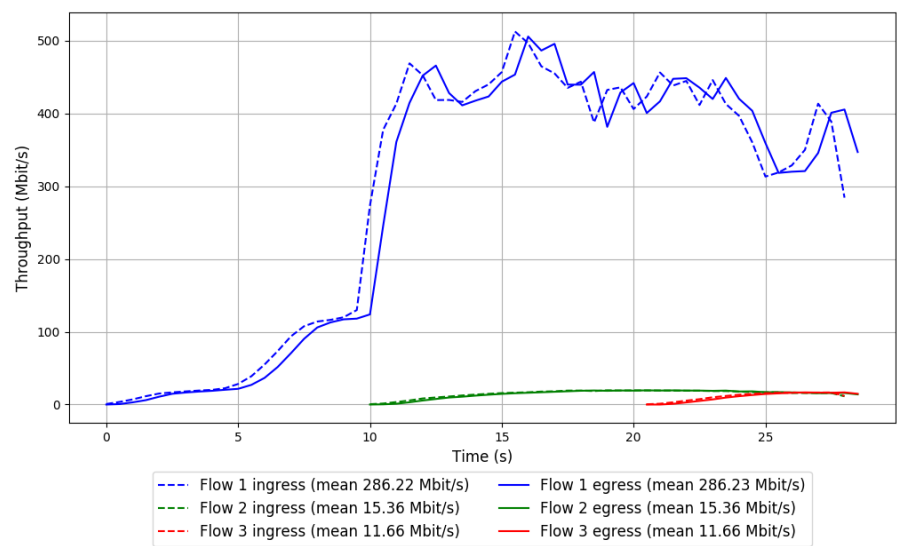
Run 1: Report of Indigo-MusesD — Data Link

```
Run 2: Statistics of Indigo-MusesD

Start at: 2019-01-21 09:48:44
End at: 2019-01-21 09:49:14
Local clock offset: -0.125 ms
Remote clock offset: -0.093 ms


# Below is generated by plot.py at 2019-01-21 14:08:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.15 Mbit/s
95th percentile per-packet one-way delay: 86.567 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 66.45 Mbit/s
95th percentile per-packet one-way delay: 86.274 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 40.88 Mbit/s
95th percentile per-packet one-way delay: 86.623 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 12.35 Mbit/s
95th percentile per-packet one-way delay: 86.736 ms
Loss rate: 0.02%
```
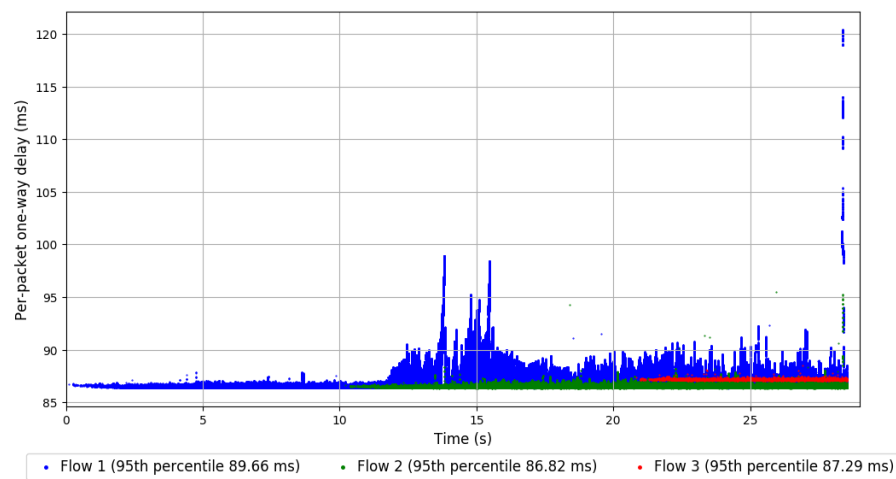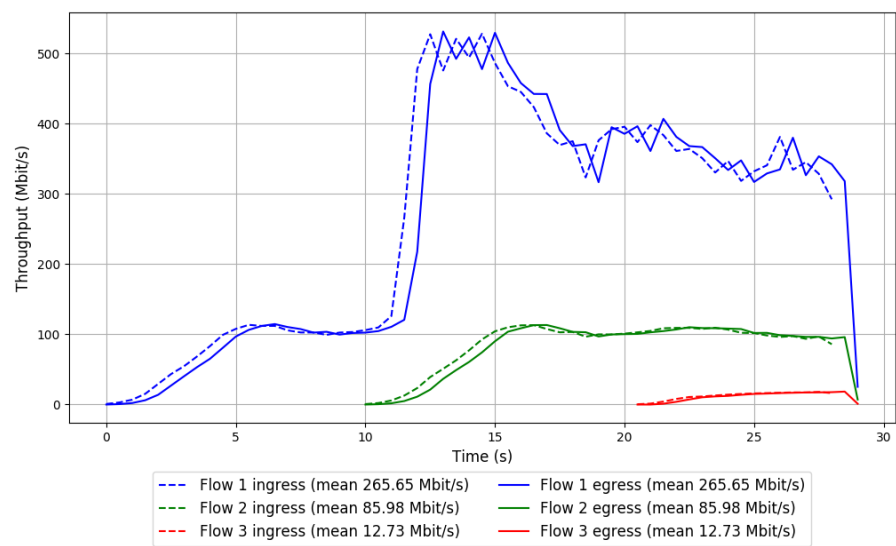
Run 2: Report of Indigo-MusesD — Data Link

```
Run 3: Statistics of Indigo-MusesD

Start at: 2019-01-21 10:26:51
End at: 2019-01-21 10:27:21
Local clock offset: 0.175 ms
Remote clock offset: 0.11 ms


# Below is generated by plot.py at 2019-01-21 14:08:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 299.17 Mbit/s
95th percentile per-packet one-way delay: 88.271 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 286.23 Mbit/s
95th percentile per-packet one-way delay: 88.291 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 15.36 Mbit/s
95th percentile per-packet one-way delay: 86.140 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 11.66 Mbit/s
95th percentile per-packet one-way delay: 86.676 ms
Loss rate: 0.00%
```
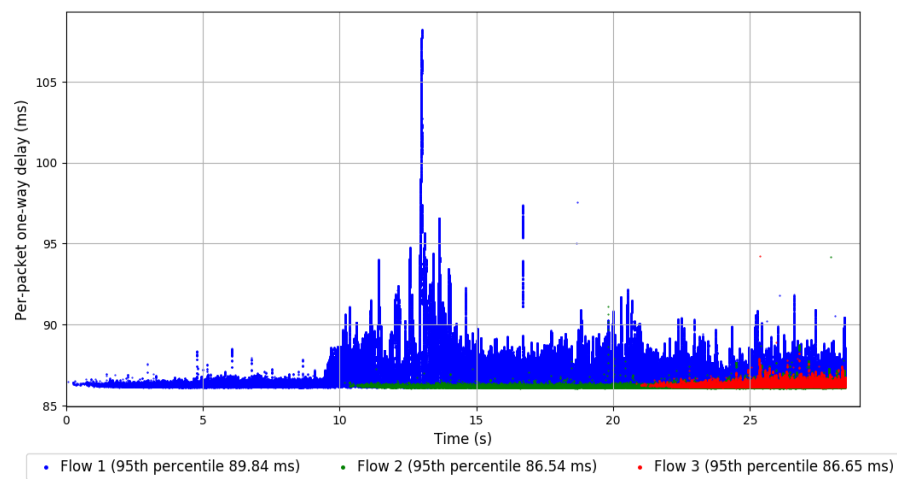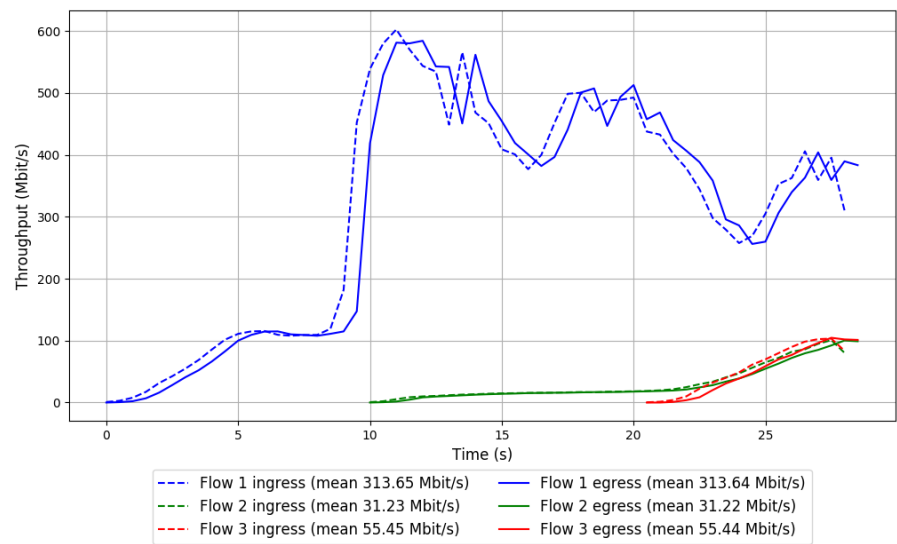
Run 3: Report of Indigo-MusesD — Data Link
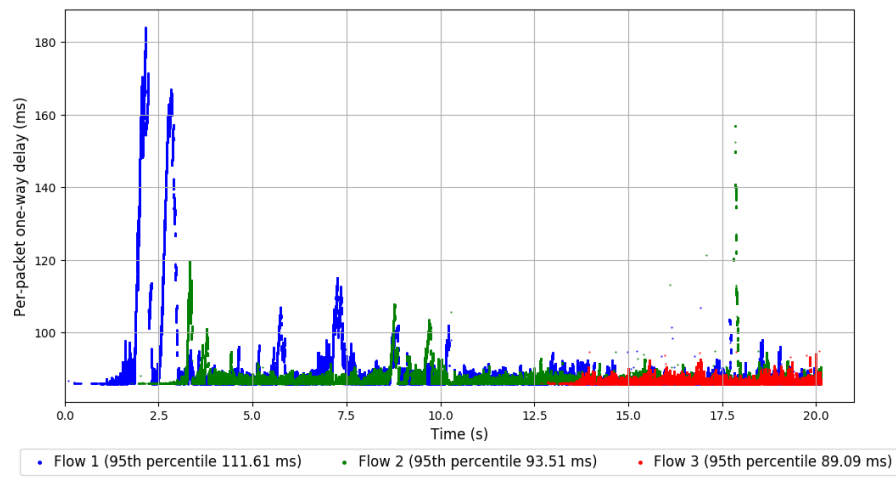
```
Run 4: Statistics of Indigo-MusesD

Start at: 2019-01-21 11:03:55
End at: 2019-01-21 11:04:25
Local clock offset: -0.391 ms
Remote clock offset: 0.088 ms


# Below is generated by plot.py at 2019-01-21 14:09:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 324.46 Mbit/s
95th percentile per-packet one-way delay: 89.388 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 265.65 Mbit/s
95th percentile per-packet one-way delay: 89.664 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 85.98 Mbit/s
95th percentile per-packet one-way delay: 86.824 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 12.73 Mbit/s
95th percentile per-packet one-way delay: 87.287 ms
Loss rate: 0.00%
```

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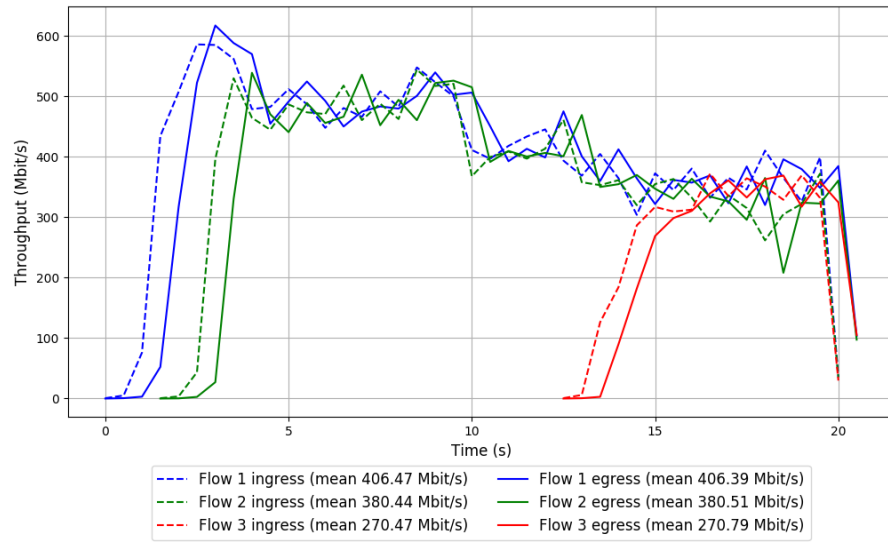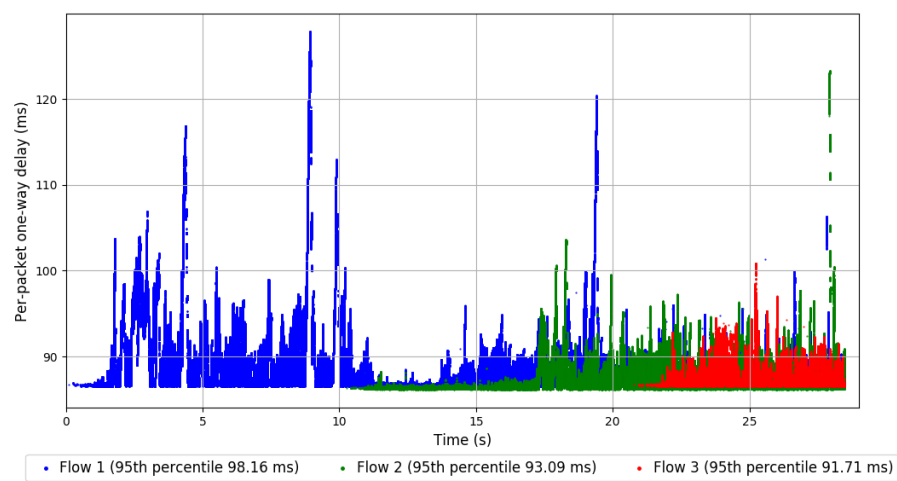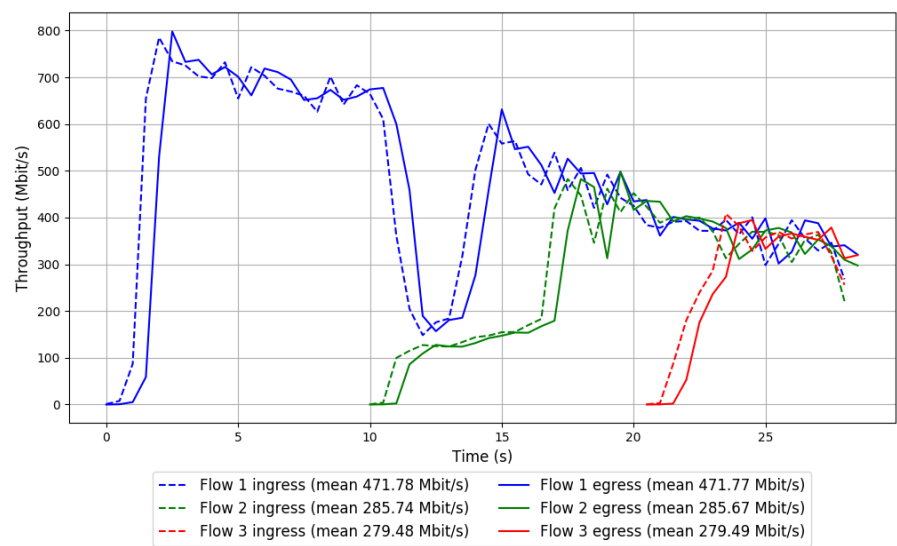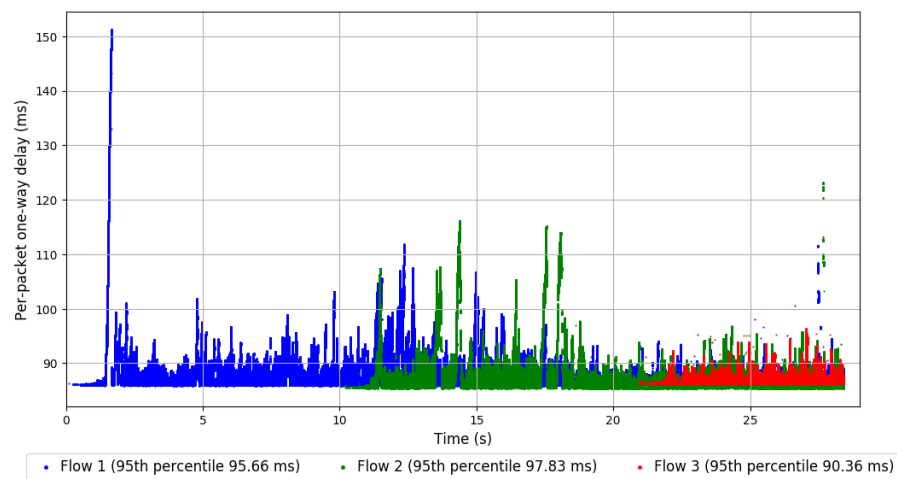
```
Run 5: Statistics of Indigo-MusesD

Start at: 2019-01-21 11:42:10
End at: 2019-01-21 11:42:40
Local clock offset: -0.358 ms
Remote clock offset: -0.05 ms

# Below is generated by plot.py at 2019-01-21 14:10:07
# Datalink statistics
-- Total of 3 flows:
Average throughput: 348.68 Mbit/s
95th percentile per-packet one-way delay: 89.626 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 313.64 Mbit/s
95th percentile per-packet one-way delay: 89.838 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 31.22 Mbit/s
95th percentile per-packet one-way delay: 86.542 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 55.44 Mbit/s
95th percentile per-packet one-way delay: 86.649 ms
Loss rate: 0.01%
```
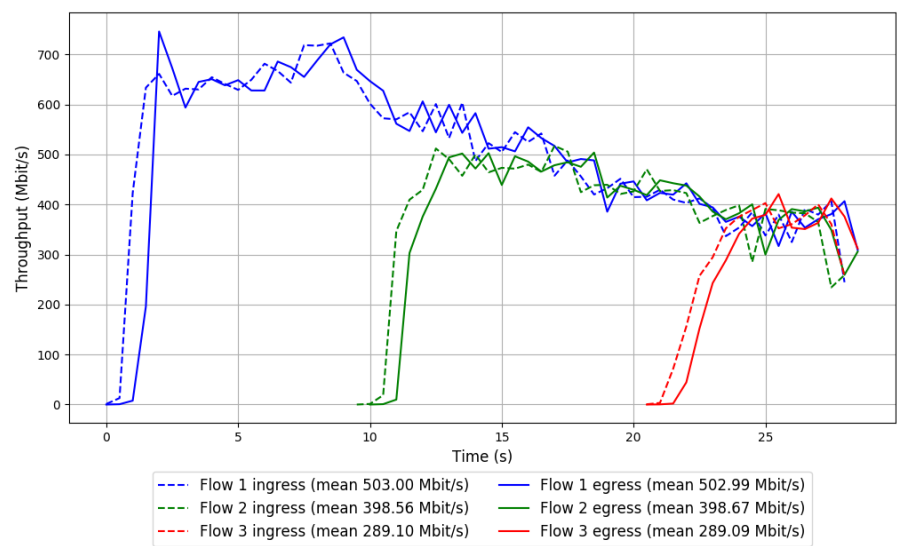
Run 5: Report of Indigo-MusesD — Data Link

Flow 1 ingress (mean 313.65 Mbit/s) --- Flow 1 egress (mean 313.64 Mbit/s)
Flow 2 ingress (mean 31.23 Mbit/s) --- Flow 2 egress (mean 31.22 Mbit/s)
Flow 3 ingress (mean 55.45 Mbit/s) --- Flow 3 egress (mean 55.44 Mbit/s)

Flow 1 (95th percentile 89.84 ms) • Flow 2 (95th percentile 86.54 ms) • Flow 3 (95th percentile 86.65 ms)

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```
Run 1: Statistics of Indigo-MusesT

Start at: 2019-01-21 09:00:04
End at: 2019-01-21 09:00:34
Local clock offset: -0.161 ms
Remote clock offset: -0.165 ms
```

Run 1: Report of Indigo-MusesT — Data Link

```
Run 2: Statistics of Indigo-MusesT

Start at: 2019-01-21 09:38:12
End at: 2019-01-21 09:38:42
Local clock offset: -0.359 ms
Remote clock offset: -0.069 ms


# Below is generated by plot.py at 2019-01-21 14:21:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 730.88 Mbit/s
95th percentile per-packet one-way delay: 96.578 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 471.77 Mbit/s
95th percentile per-packet one-way delay: 98.161 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 285.67 Mbit/s
95th percentile per-packet one-way delay: 93.087 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 279.49 Mbit/s
95th percentile per-packet one-way delay: 91.711 ms
Loss rate: 0.00%
```
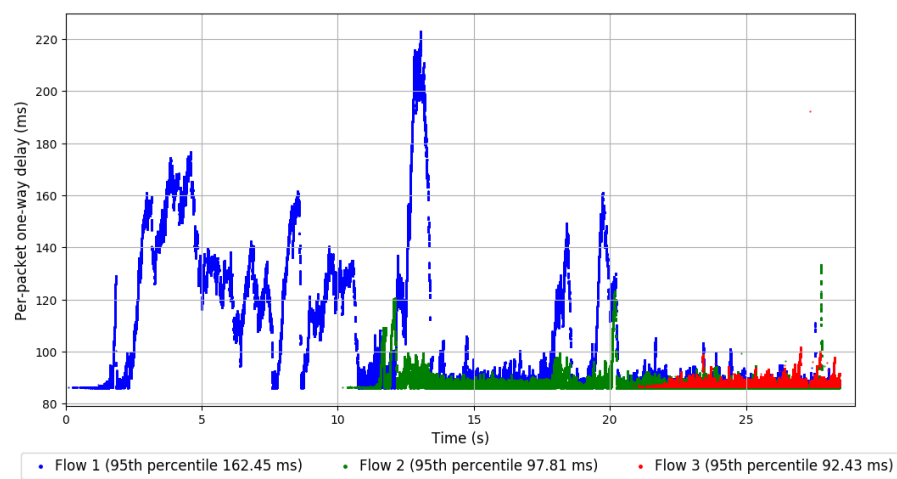
Run 2: Report of Indigo-MusesT — Data Link

```
Run 3: Statistics of Indigo-MusesT

Start at: 2019-01-21 10:16:31
End at: 2019-01-21 10:17:01
Local clock offset: 0.345 ms
Remote clock offset: -0.053 ms


# Below is generated by plot.py at 2019-01-21 14:23:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 839.45 Mbit/s
95th percentile per-packet one-way delay: 95.412 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 502.99 Mbit/s
95th percentile per-packet one-way delay: 95.657 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 398.67 Mbit/s
95th percentile per-packet one-way delay: 97.825 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 289.09 Mbit/s
95th percentile per-packet one-way delay: 90.358 ms
Loss rate: 0.02%
```
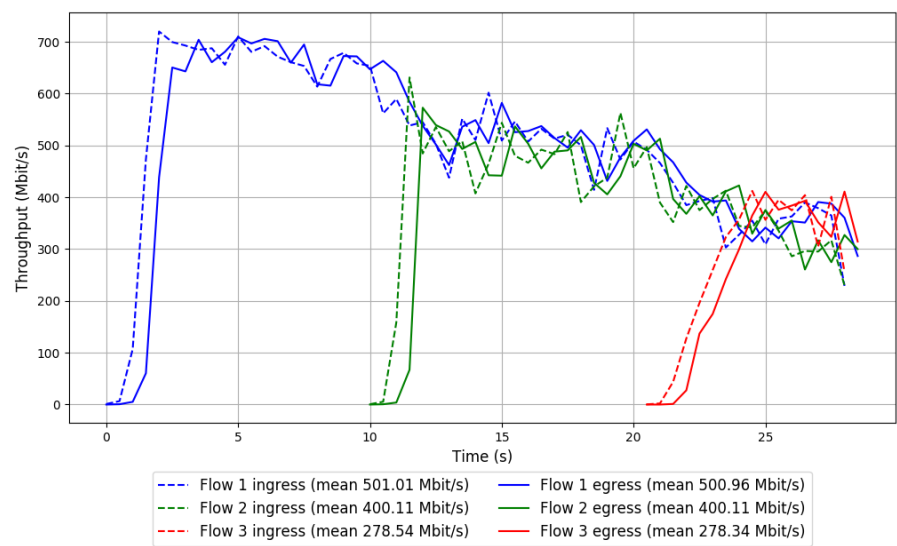
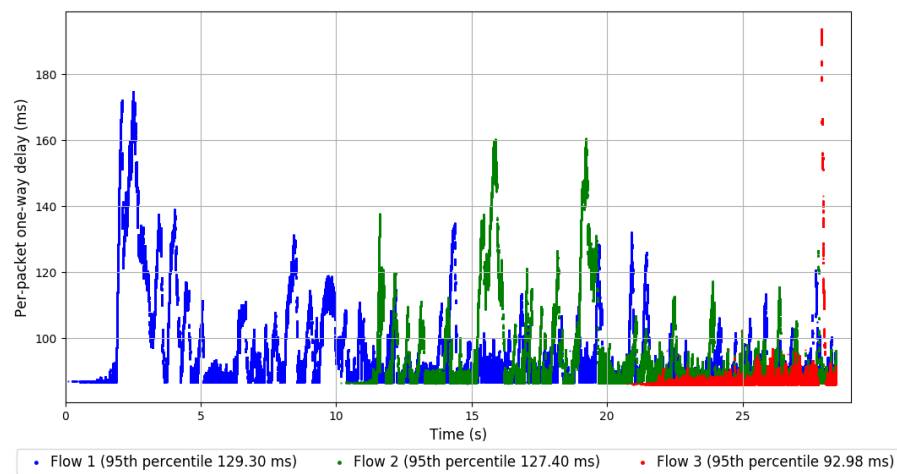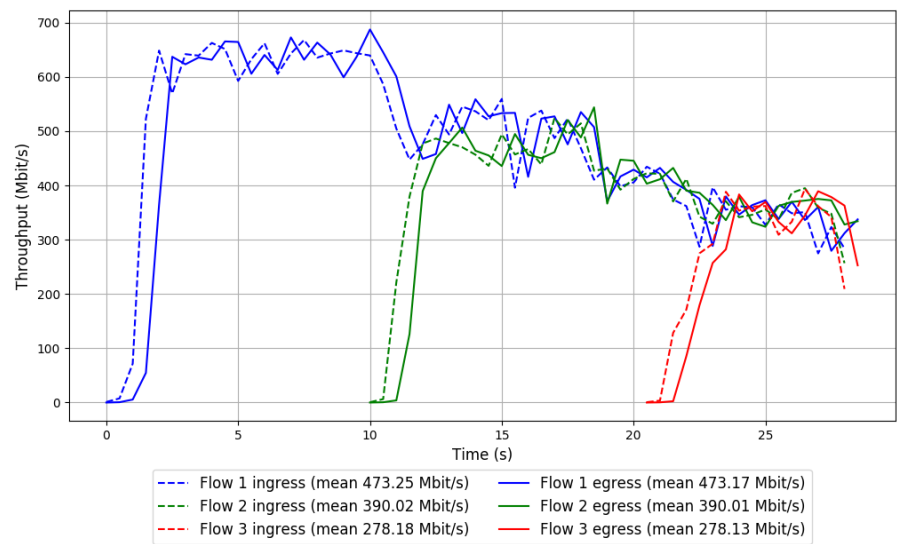Run 3: Report of Indigo-MusesT — Data Link

```
Run 4: Statistics of Indigo-MusesT

Start at: 2019-01-21 10:53:46
End at: 2019-01-21 10:54:16
Local clock offset: -0.208 ms
Remote clock offset: 0.013 ms


# Below is generated by plot.py at 2019-01-21 14:25:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 832.95 Mbit/s
95th percentile per-packet one-way delay: 154.594 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 500.96 Mbit/s
95th percentile per-packet one-way delay: 162.448 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 400.11 Mbit/s
95th percentile per-packet one-way delay: 97.807 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 278.34 Mbit/s
95th percentile per-packet one-way delay: 92.426 ms
Loss rate: 0.07%
```

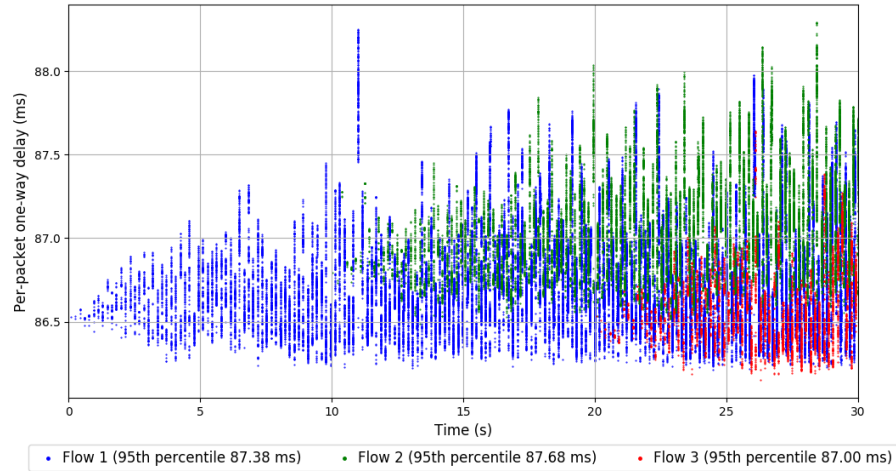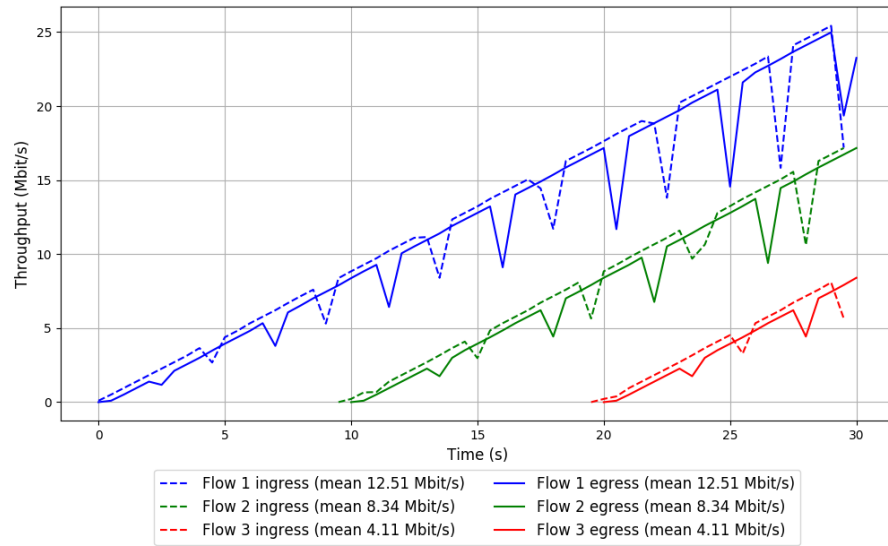Run 4: Report of Indigo-MusesT — Data Link

```
Run 5: Statistics of Indigo-MusesT

Start at: 2019-01-21 11:32:20
End at: 2019-01-21 11:32:50
Local clock offset: -0.171 ms
Remote clock offset: -0.052 ms


# Below is generated by plot.py at 2019-01-21 14:25:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 800.01 Mbit/s
95th percentile per-packet one-way delay: 128.166 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 473.17 Mbit/s
95th percentile per-packet one-way delay: 129.300 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 390.01 Mbit/s
95th percentile per-packet one-way delay: 127.404 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 278.13 Mbit/s
95th percentile per-packet one-way delay: 92.976 ms
Loss rate: 0.00%
```

Run 5: Report of Indigo-MusesT — Data Link
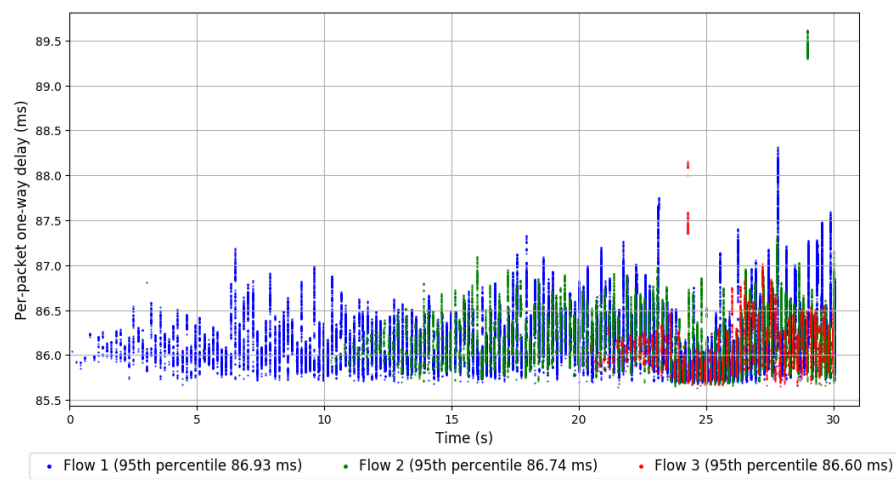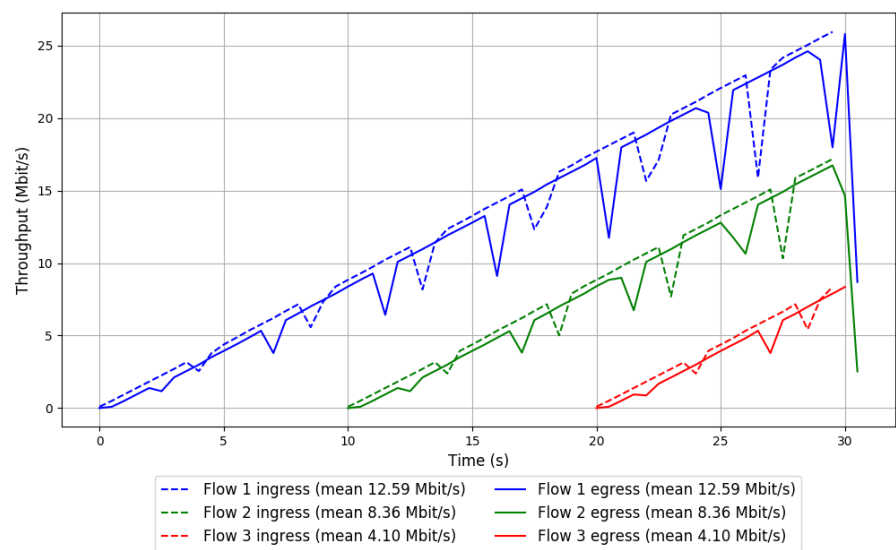
```
Run 1: Statistics of LEDBAT

Start at: 2019-01-21 09:11:55
End at: 2019-01-21 09:12:25
Local clock offset: -0.202 ms
Remote clock offset: -0.14 ms

# Below is generated by plot.py at 2019-01-21 14:25:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 19.37 Mbit/s
95th percentile per-packet one-way delay: 87.526 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 12.51 Mbit/s
95th percentile per-packet one-way delay: 87.382 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 8.34 Mbit/s
95th percentile per-packet one-way delay: 87.676 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 4.11 Mbit/s
95th percentile per-packet one-way delay: 86.995 ms
Loss rate: 0.00%
```
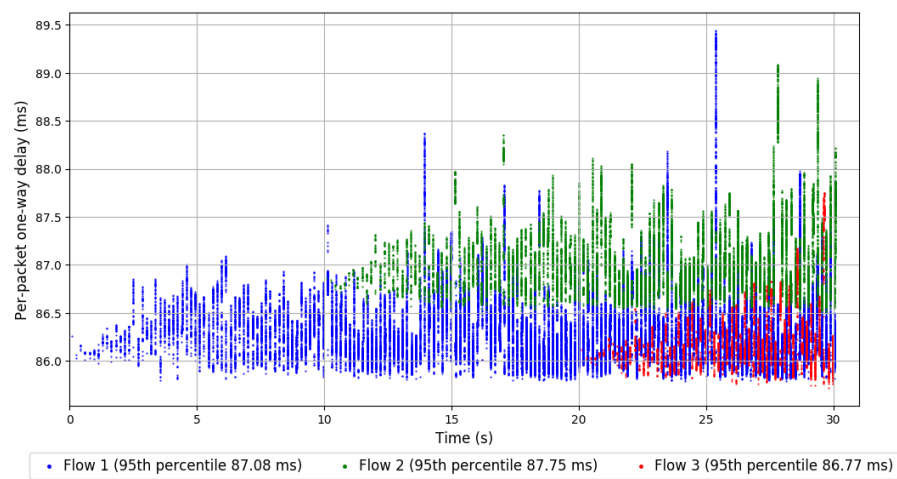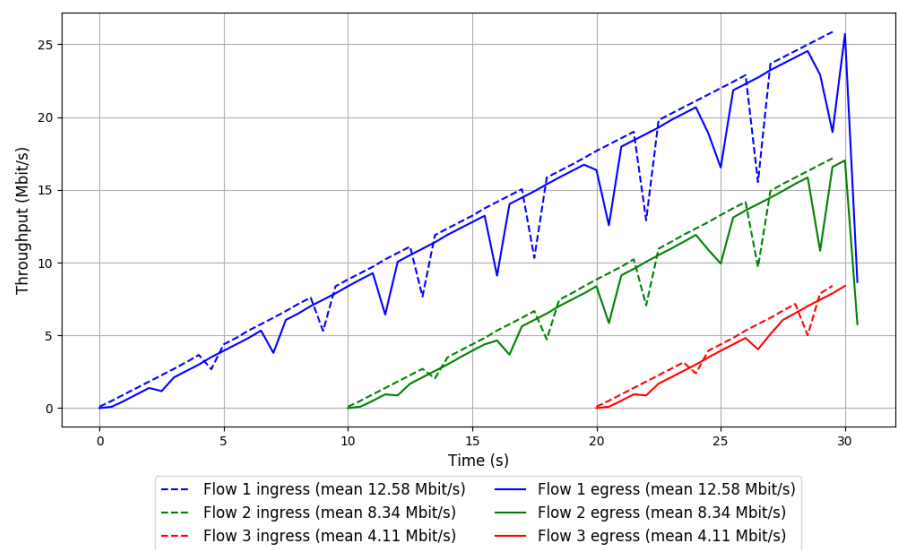
Run 1: Report of LEDBAT — Data Link

```
Run 2: Statistics of LEDBAT

Start at: 2019-01-21 09:50:06
End at: 2019-01-21 09:50:36
Local clock offset: 0.111 ms
Remote clock offset: -0.099 ms


# Below is generated by plot.py at 2019-01-21 14:25:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 19.50 Mbit/s
95th percentile per-packet one-way delay: 86.869 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 12.59 Mbit/s
95th percentile per-packet one-way delay: 86.926 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 8.36 Mbit/s
95th percentile per-packet one-way delay: 86.740 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 4.10 Mbit/s
95th percentile per-packet one-way delay: 86.598 ms
Loss rate: 0.00%
```
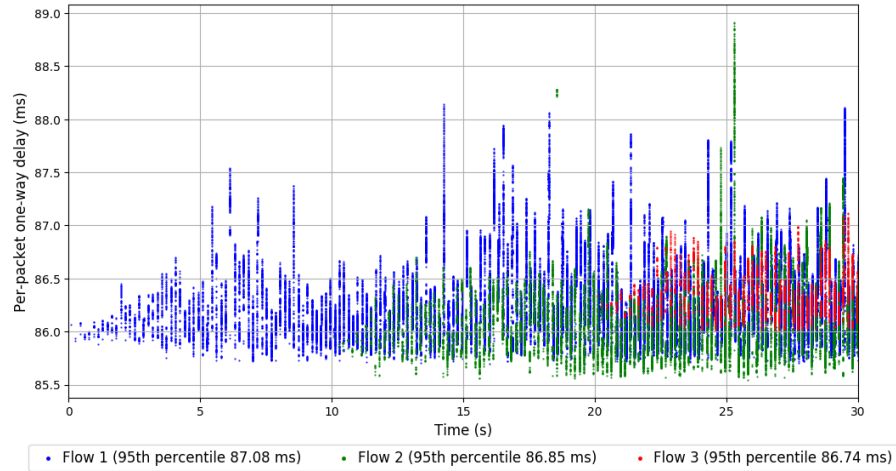
Run 2: Report of LEDBAT — Data Link

```
Run 3: Statistics of LEDBAT

Start at: 2019-01-21 10:28:22
End at: 2019-01-21 10:28:52
Local clock offset: 0.067 ms
Remote clock offset: -0.019 ms


# Below is generated by plot.py at 2019-01-21 14:25:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 19.48 Mbit/s
95th percentile per-packet one-way delay: 87.449 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 12.58 Mbit/s
95th percentile per-packet one-way delay: 87.082 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 8.34 Mbit/s
95th percentile per-packet one-way delay: 87.747 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 4.11 Mbit/s
95th percentile per-packet one-way delay: 86.767 ms
Loss rate: 0.00%
```
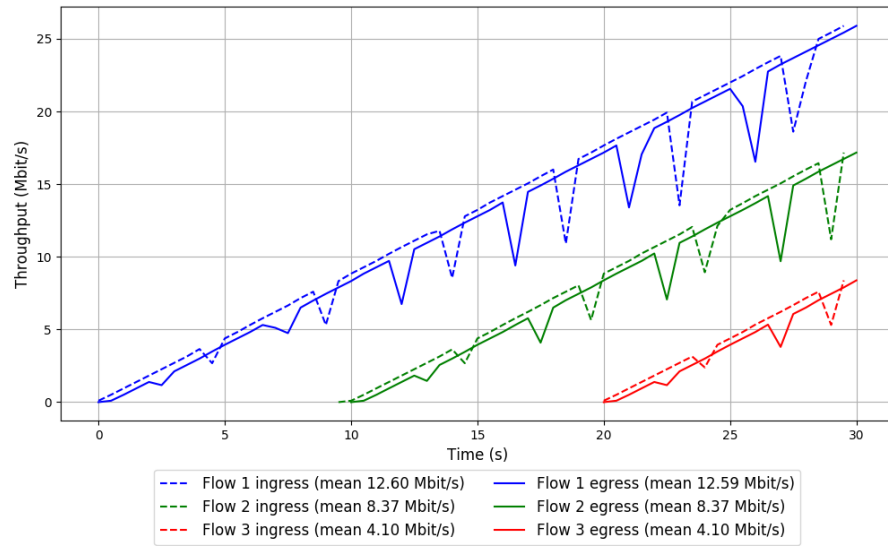
Run 3: Report of LEDBAT — Data Link

```
Run 4: Statistics of LEDBAT

Start at: 2019-01-21 11:05:29
End at: 2019-01-21 11:05:59
Local clock offset: 0.234 ms
Remote clock offset: -0.009 ms


# Below is generated by plot.py at 2019-01-21 14:25:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 19.50 Mbit/s
95th percentile per-packet one-way delay: 86.989 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 12.59 Mbit/s
95th percentile per-packet one-way delay: 87.076 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 8.37 Mbit/s
95th percentile per-packet one-way delay: 86.852 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 4.10 Mbit/s
95th percentile per-packet one-way delay: 86.737 ms
Loss rate: 0.00%
```

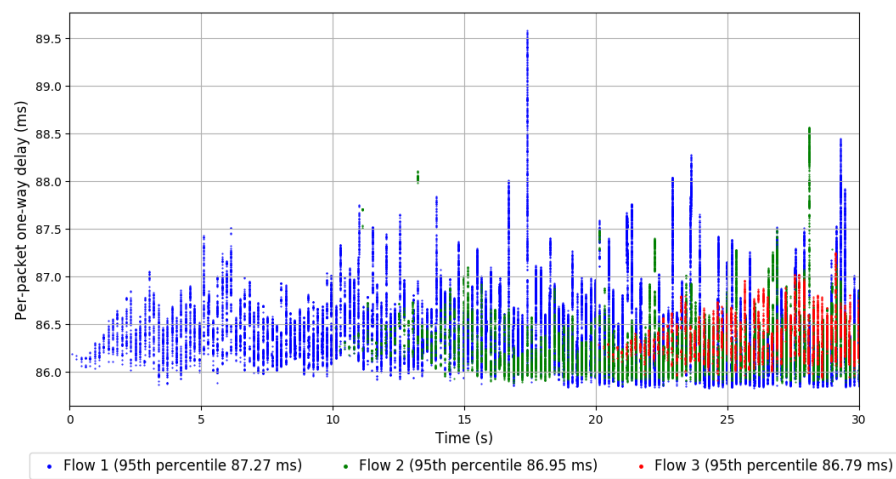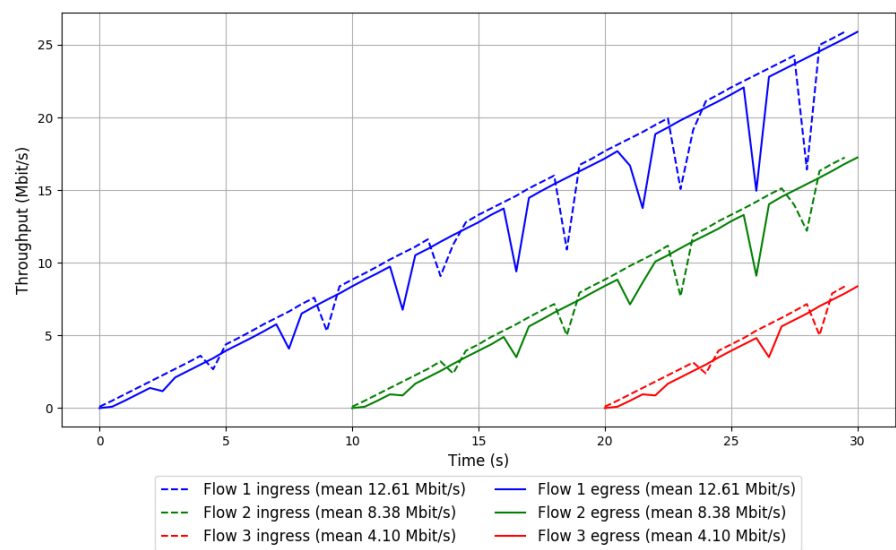# Run 4: Report of LEDBAT — Data Link

```
Run 5: Statistics of LEDBAT

Start at: 2019-01-21 11:43:43
End at: 2019-01-21 11:44:13
Local clock offset: -0.12 ms
Remote clock offset: -0.078 ms


# Below is generated by plot.py at 2019-01-21 14:25:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 19.54 Mbit/s
95th percentile per-packet one-way delay: 87.174 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 12.61 Mbit/s
95th percentile per-packet one-way delay: 87.265 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 8.38 Mbit/s
95th percentile per-packet one-way delay: 86.953 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 4.10 Mbit/s
95th percentile per-packet one-way delay: 86.792 ms
Loss rate: 0.00%
```
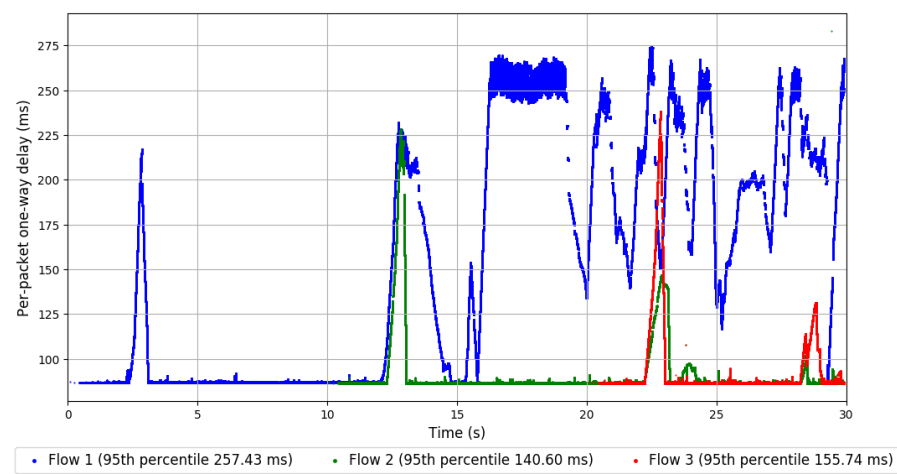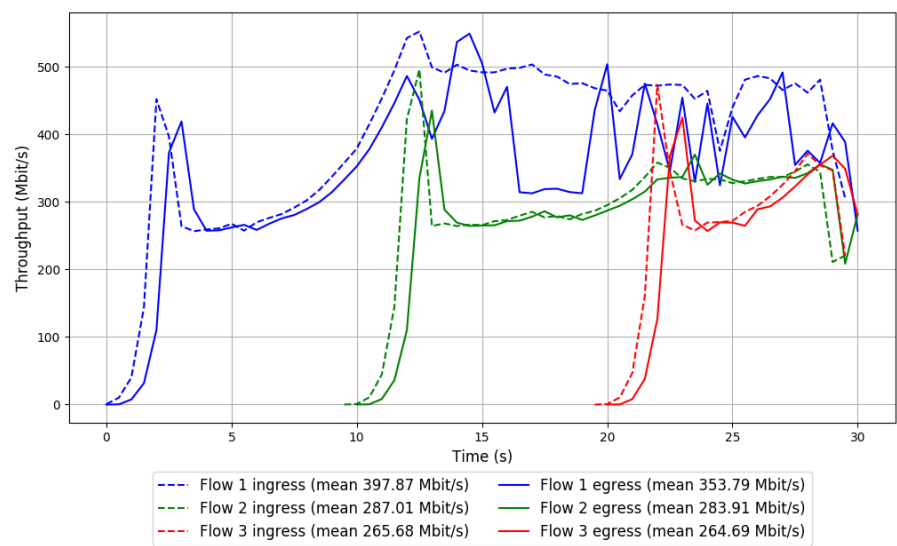
Run 5: Report of LEDBAT — Data Link

```
Run 1: Statistics of PCC-Allegro

Start at: 2019-01-21 08:53:07
End at: 2019-01-21 08:53:37
Local clock offset: -0.578 ms
Remote clock offset: -0.118 ms


# Below is generated by plot.py at 2019-01-21 14:39:24
# Datalink statistics
-- Total of 3 flows:
Average throughput: 629.91 Mbit/s
95th percentile per-packet one-way delay: 252.088 ms
Loss rate: 6.87%
-- Flow 1:
Average throughput: 353.79 Mbit/s
95th percentile per-packet one-way delay: 257.426 ms
Loss rate: 11.08%
-- Flow 2:
Average throughput: 283.91 Mbit/s
95th percentile per-packet one-way delay: 140.603 ms
Loss rate: 1.08%
-- Flow 3:
Average throughput: 264.69 Mbit/s
95th percentile per-packet one-way delay: 155.743 ms
Loss rate: 0.38%
```
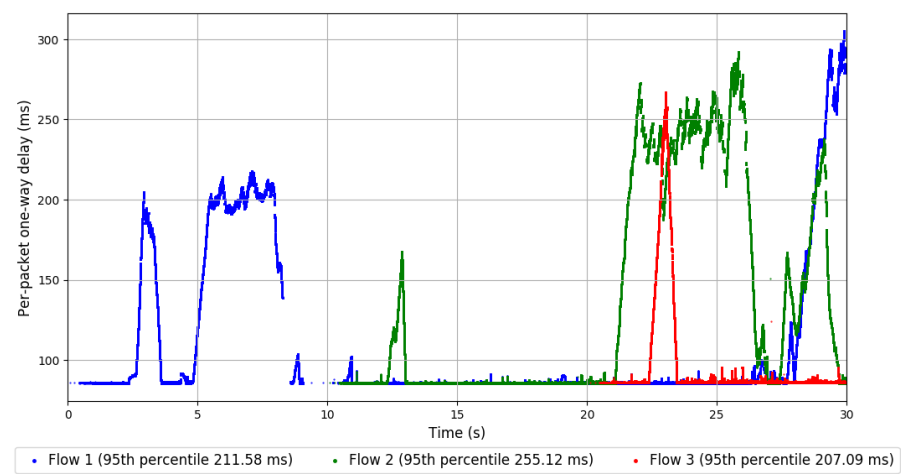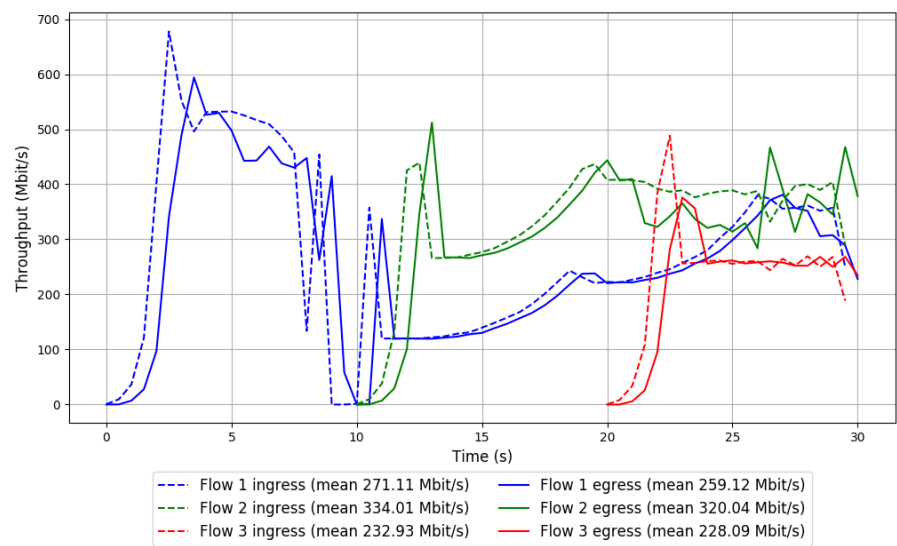
Run 1: Report of PCC-Allegro — Data Link

```
Run 2: Statistics of PCC-Allegro

Start at: 2019-01-21 09:31:07
End at: 2019-01-21 09:31:37
Local clock offset: 0.126 ms
Remote clock offset: -0.101 ms


# Below is generated by plot.py at 2019-01-21 14:39:24
# Datalink statistics
-- Total of 3 flows:
Average throughput: 546.84 Mbit/s
95th percentile per-packet one-way delay: 245.215 ms
Loss rate: 4.01%
-- Flow 1:
Average throughput: 259.12 Mbit/s
95th percentile per-packet one-way delay: 211.584 ms
Loss rate: 4.41%
-- Flow 2:
Average throughput: 320.04 Mbit/s
95th percentile per-packet one-way delay: 255.116 ms
Loss rate: 4.18%
-- Flow 3:
Average throughput: 228.09 Mbit/s
95th percentile per-packet one-way delay: 207.088 ms
Loss rate: 2.08%
```

Run 2: Report of PCC-Allegro — Data Link

```
Run 3: Statistics of PCC-Allegro

Start at: 2019-01-21 10:09:10
End at: 2019-01-21 10:09:40
Local clock offset: 0.095 ms
Remote clock offset: 0.084 ms


# Below is generated by plot.py at 2019-01-21 14:45:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 693.26 Mbit/s
95th percentile per-packet one-way delay: 224.508 ms
Loss rate: 6.02%
-- Flow 1:
Average throughput: 427.58 Mbit/s
95th percentile per-packet one-way delay: 218.915 ms
Loss rate: 7.78%
-- Flow 2:
Average throughput: 281.82 Mbit/s
95th percentile per-packet one-way delay: 267.936 ms
Loss rate: 3.95%
-- Flow 3:
Average throughput: 237.29 Mbit/s
95th percentile per-packet one-way delay: 174.776 ms
Loss rate: 0.85%
```
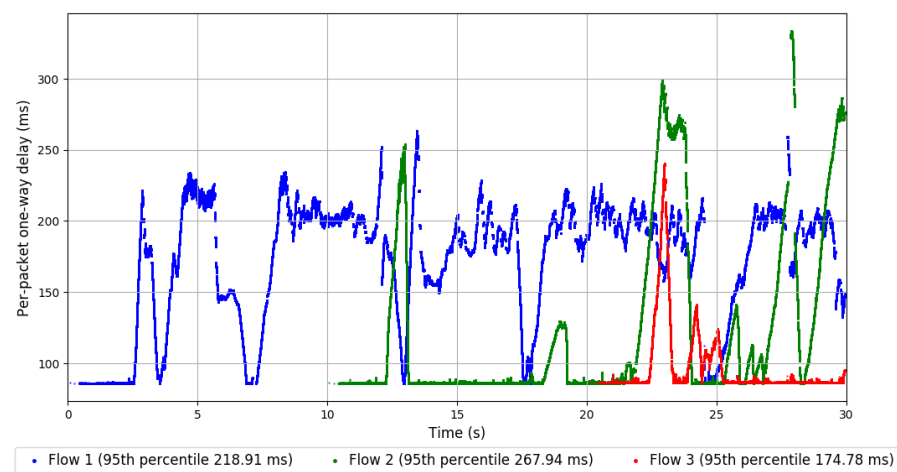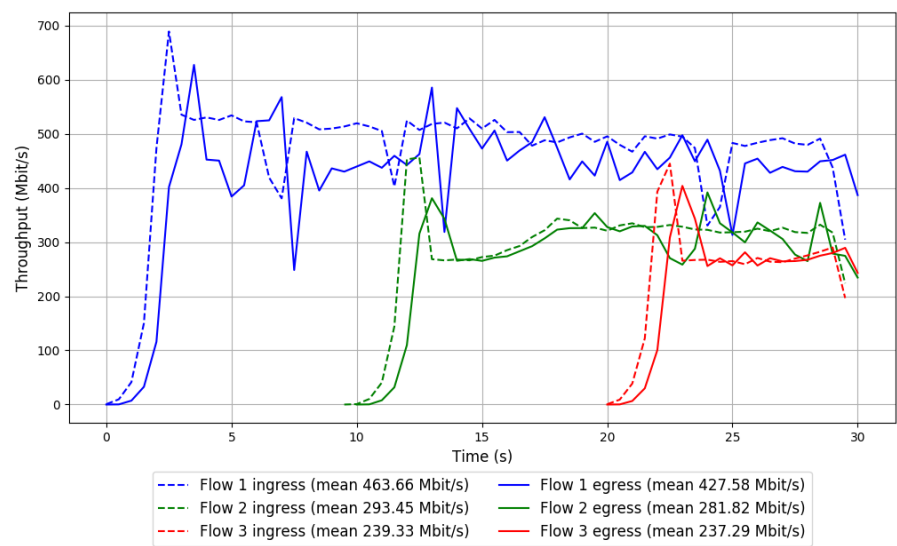
Run 3: Report of PCC-Allegro — Data Link

```
Run 4: Statistics of PCC-Allegro

Start at: 2019-01-21 10:47:04
End at: 2019-01-21 10:47:34
Local clock offset: 0.008 ms
Remote clock offset: 0.022 ms


# Below is generated by plot.py at 2019-01-21 14:47:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 616.41 Mbit/s
95th percentile per-packet one-way delay: 223.714 ms
Loss rate: 2.49%
-- Flow 1:
Average throughput: 355.43 Mbit/s
95th percentile per-packet one-way delay: 227.457 ms
Loss rate: 2.82%
-- Flow 2:
Average throughput: 274.74 Mbit/s
95th percentile per-packet one-way delay: 123.217 ms
Loss rate: 1.22%
-- Flow 3:
Average throughput: 238.19 Mbit/s
95th percentile per-packet one-way delay: 224.474 ms
Loss rate: 3.85%
```
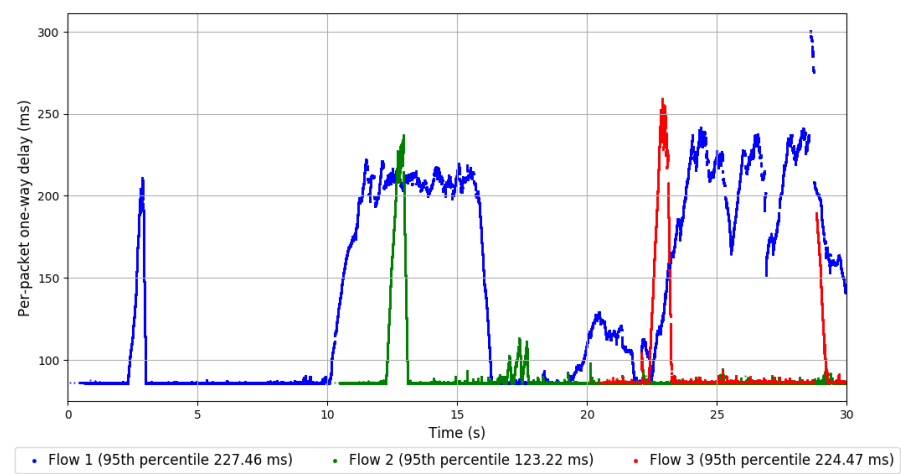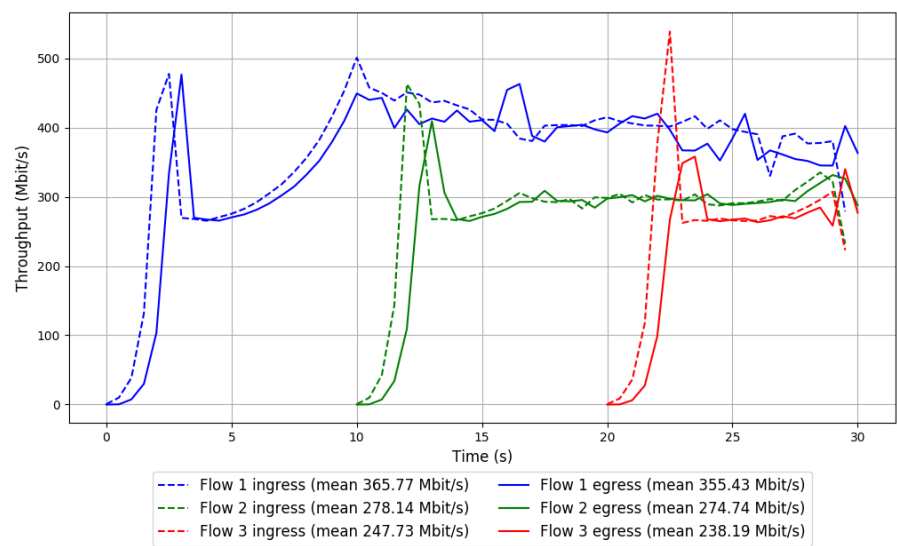
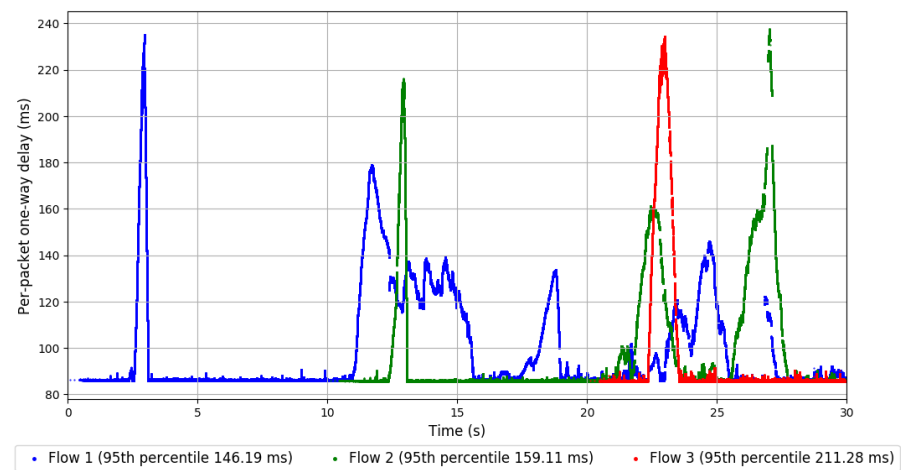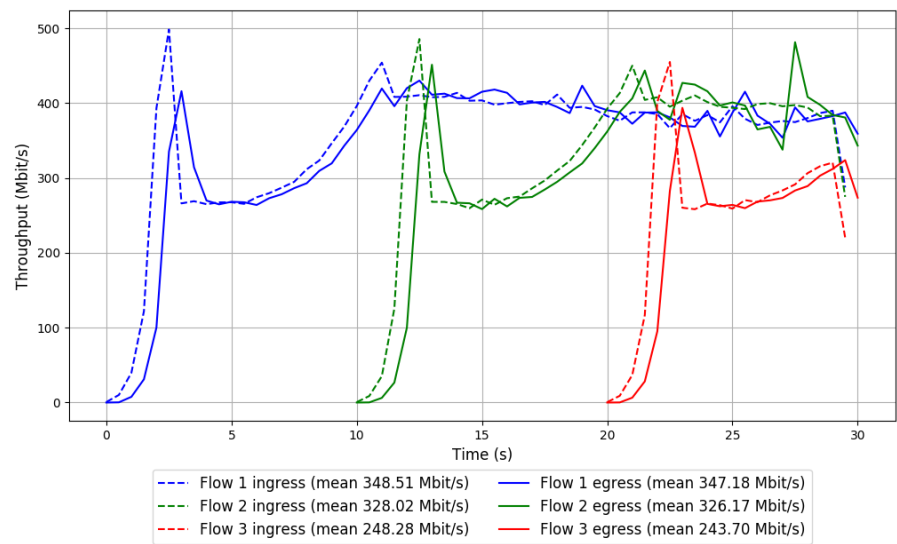# Run 4: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 365.77 Mbit/s)   Flow 1 egress (mean 355.43 Mbit/s)
Flow 2 ingress (mean 278.14 Mbit/s)   Flow 2 egress (mean 274.74 Mbit/s)
Flow 3 ingress (mean 247.73 Mbit/s)   Flow 3 egress (mean 238.19 Mbit/s)

Flow 1 (95th percentile 227.46 ms)   Flow 2 (95th percentile 123.22 ms)   Flow 3 (95th percentile 224.47 ms)

```
Run 5: Statistics of PCC-Allegro

Start at: 2019-01-21 11:25:03
End at: 2019-01-21 11:25:33
Local clock offset: 0.138 ms
Remote clock offset: -0.022 ms


# Below is generated by plot.py at 2019-01-21 14:54:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 644.14 Mbit/s
95th percentile per-packet one-way delay: 158.310 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 347.18 Mbit/s
95th percentile per-packet one-way delay: 146.188 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 326.17 Mbit/s
95th percentile per-packet one-way delay: 159.107 ms
Loss rate: 0.58%
-- Flow 3:
Average throughput: 243.70 Mbit/s
95th percentile per-packet one-way delay: 211.281 ms
Loss rate: 1.87%
```

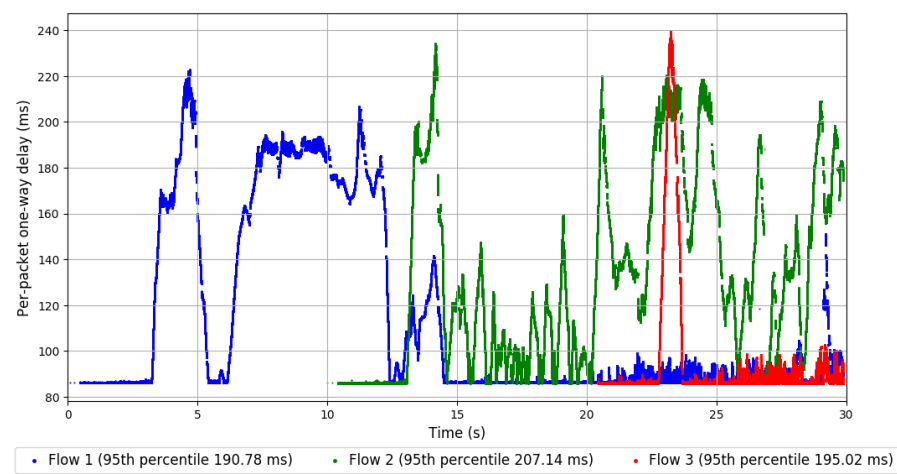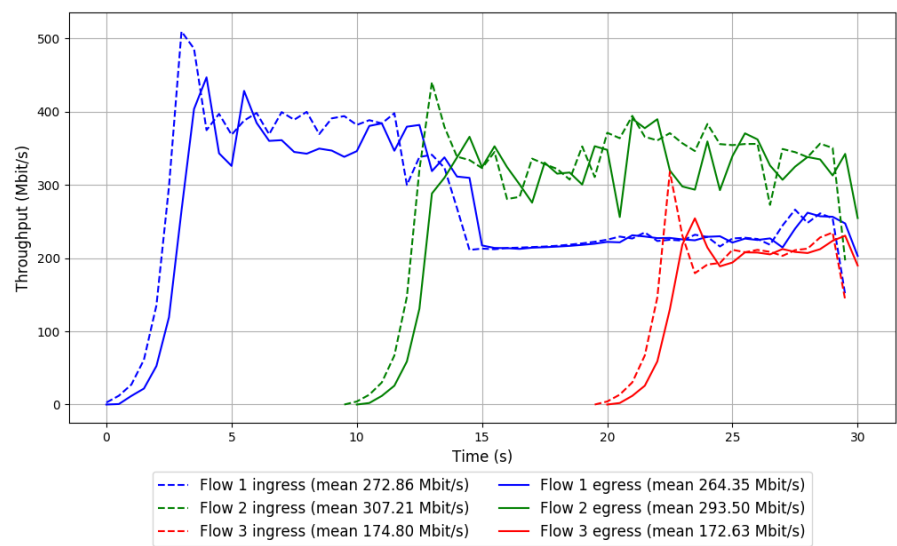Run 5: Report of PCC-Allegro — Data Link

```
Run 1: Statistics of PCC-Expr

Start at: 2019-01-21 09:17:12
End at: 2019-01-21 09:17:42
Local clock offset: -0.204 ms
Remote clock offset: -0.111 ms


# Below is generated by plot.py at 2019-01-21 14:54:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 517.23 Mbit/s
95th percentile per-packet one-way delay: 200.923 ms
Loss rate: 3.43%
-- Flow 1:
Average throughput: 264.35 Mbit/s
95th percentile per-packet one-way delay: 190.775 ms
Loss rate: 3.12%
-- Flow 2:
Average throughput: 293.50 Mbit/s
95th percentile per-packet one-way delay: 207.142 ms
Loss rate: 4.46%
-- Flow 3:
Average throughput: 172.63 Mbit/s
95th percentile per-packet one-way delay: 195.023 ms
Loss rate: 1.24%
```
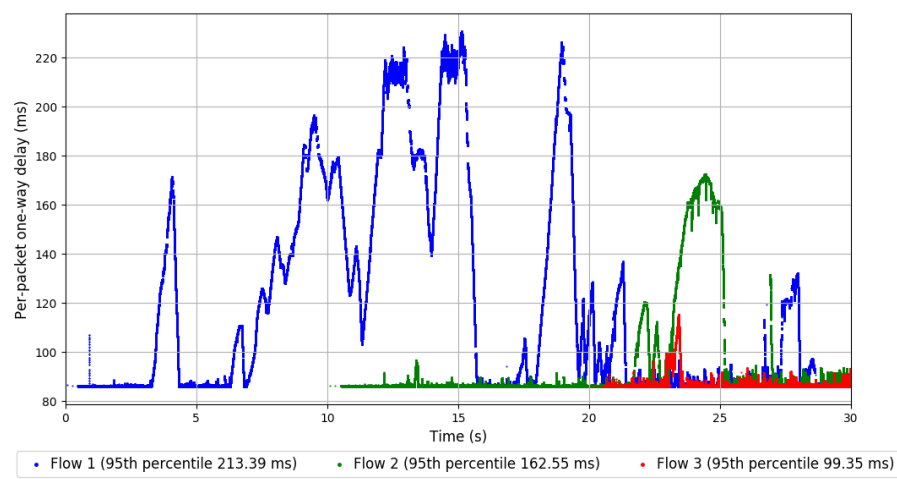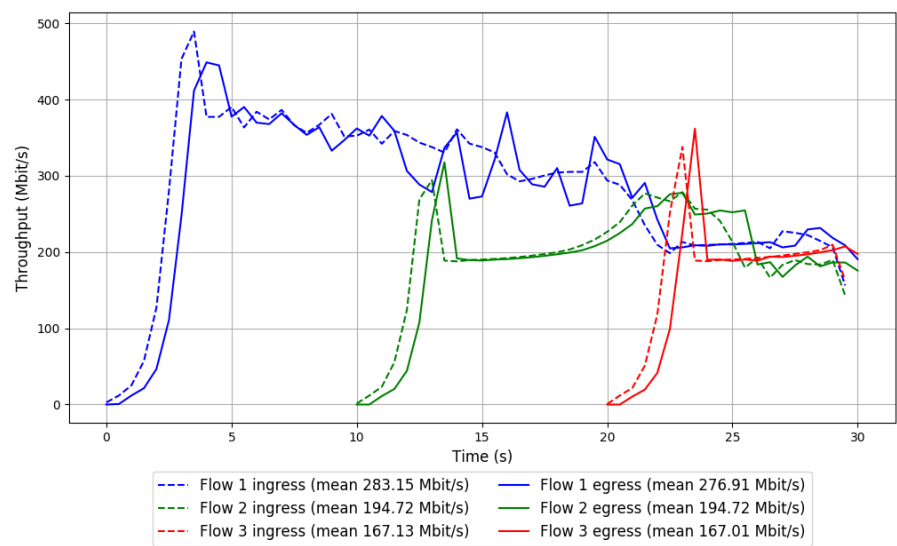
Run 1: Report of PCC-Expr — Data Link

```
Run 2: Statistics of PCC-Expr

Start at: 2019-01-21 09:55:28
End at: 2019-01-21 09:55:58
Local clock offset: 0.117 ms
Remote clock offset: -0.098 ms


# Below is generated by plot.py at 2019-01-21 14:54:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 461.35 Mbit/s
95th percentile per-packet one-way delay: 197.698 ms
Loss rate: 1.35%
-- Flow 1:
Average throughput: 276.91 Mbit/s
95th percentile per-packet one-way delay: 213.391 ms
Loss rate: 2.22%
-- Flow 2:
Average throughput: 194.72 Mbit/s
95th percentile per-packet one-way delay: 162.551 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 167.01 Mbit/s
95th percentile per-packet one-way delay: 99.348 ms
Loss rate: 0.07%
```

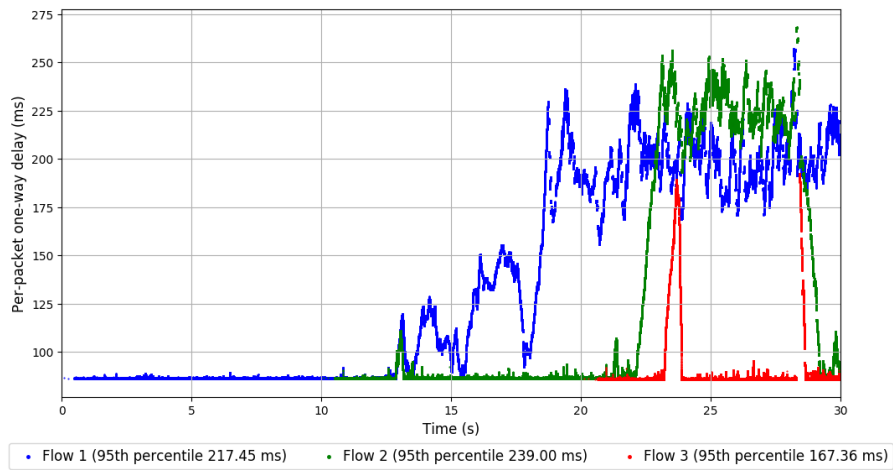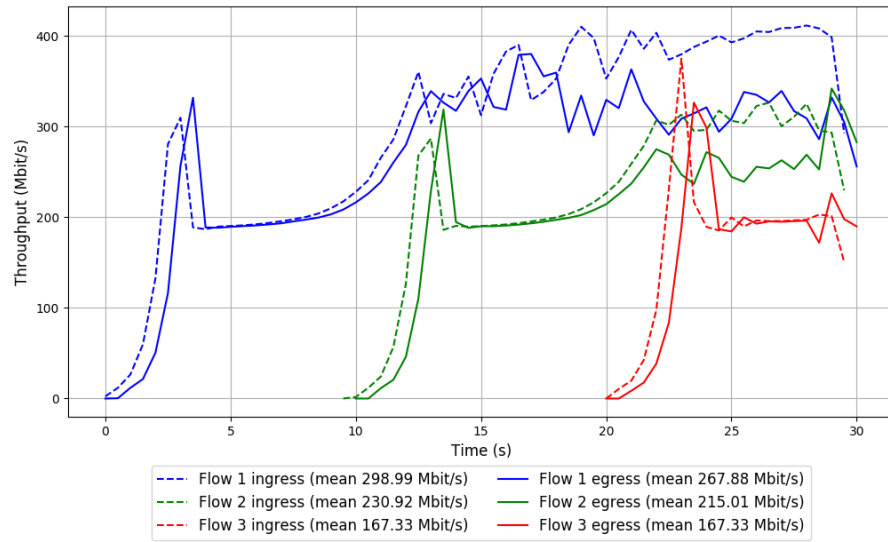# Run 2: Report of PCC-Expr — Data Link

```
Run 3: Statistics of PCC-Expr

Start at: 2019-01-21 10:33:31
End at: 2019-01-21 10:34:01
Local clock offset: -0.055 ms
Remote clock offset: -0.006 ms


# Below is generated by plot.py at 2019-01-21 14:54:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 466.09 Mbit/s
95th percentile per-packet one-way delay: 227.315 ms
Loss rate: 8.21%
-- Flow 1:
Average throughput: 267.88 Mbit/s
95th percentile per-packet one-way delay: 217.451 ms
Loss rate: 10.40%
-- Flow 2:
Average throughput: 215.01 Mbit/s
95th percentile per-packet one-way delay: 238.996 ms
Loss rate: 6.88%
-- Flow 3:
Average throughput: 167.33 Mbit/s
95th percentile per-packet one-way delay: 167.361 ms
Loss rate: 0.00%
```
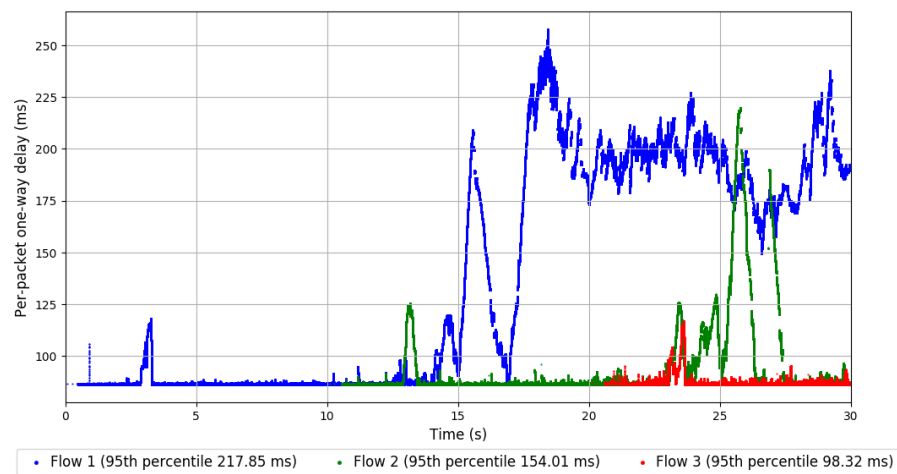
Run 3: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 298.99 Mbit/s) Flow 1 egress (mean 267.88 Mbit/s)
Flow 2 ingress (mean 230.92 Mbit/s) Flow 2 egress (mean 215.01 Mbit/s)
Flow 3 ingress (mean 167.33 Mbit/s) Flow 3 egress (mean 167.33 Mbit/s)

Flow 1 (95th percentile 217.45 ms)   Flow 2 (95th percentile 239.00 ms)   Flow 3 (95th percentile 167.36 ms)

```
Run 4: Statistics of PCC-Expr

Start at: 2019-01-21 11:10:59
End at: 2019-01-21 11:11:29
Local clock offset: -0.068 ms
Remote clock offset: 0.107 ms


# Below is generated by plot.py at 2019-01-21 14:59:24
# Datalink statistics
-- Total of 3 flows:
Average throughput: 458.46 Mbit/s
95th percentile per-packet one-way delay: 209.607 ms
Loss rate: 4.50%
-- Flow 1:
Average throughput: 256.40 Mbit/s
95th percentile per-packet one-way delay: 217.852 ms
Loss rate: 7.69%
-- Flow 2:
Average throughput: 223.44 Mbit/s
95th percentile per-packet one-way delay: 154.011 ms
Loss rate: 0.18%
-- Flow 3:
Average throughput: 162.47 Mbit/s
95th percentile per-packet one-way delay: 98.318 ms
Loss rate: 0.00%
```
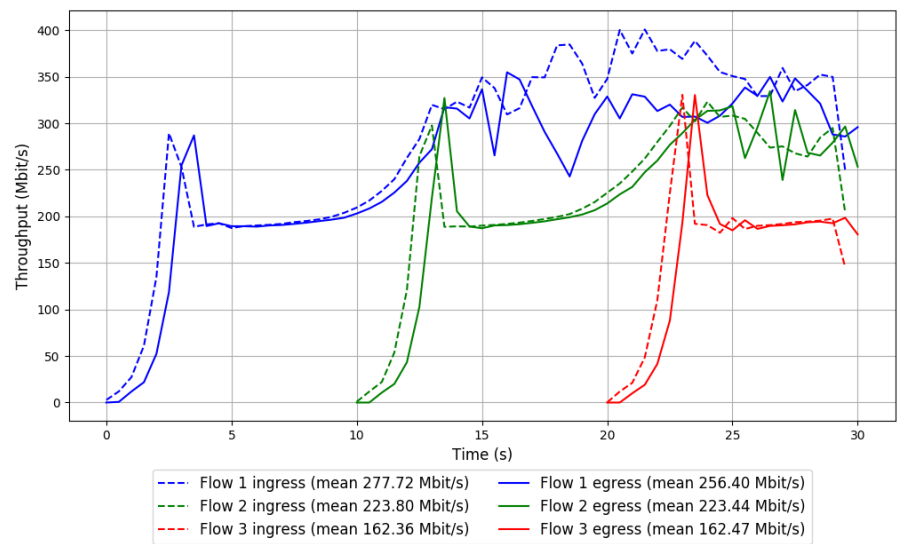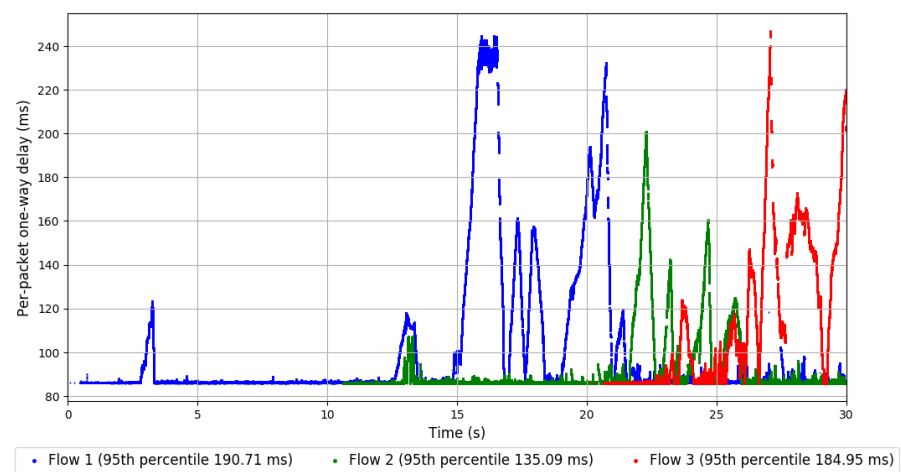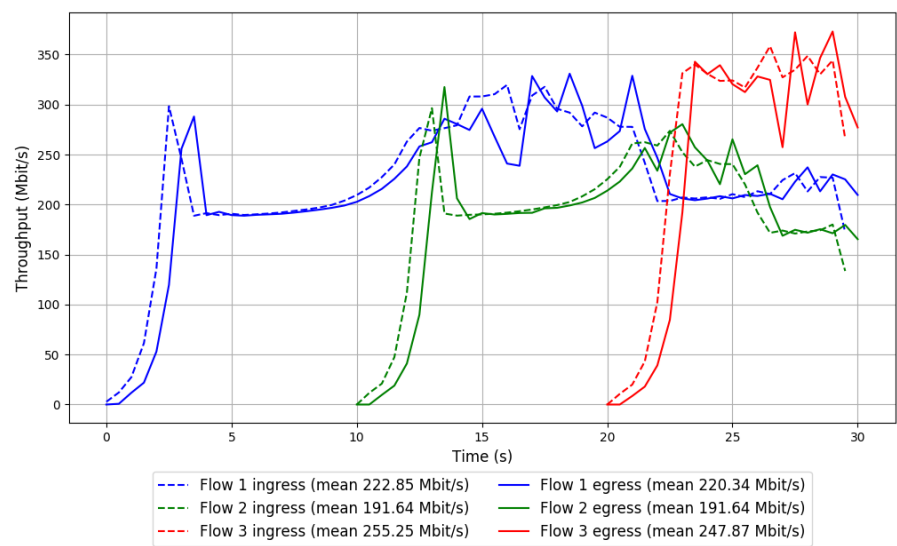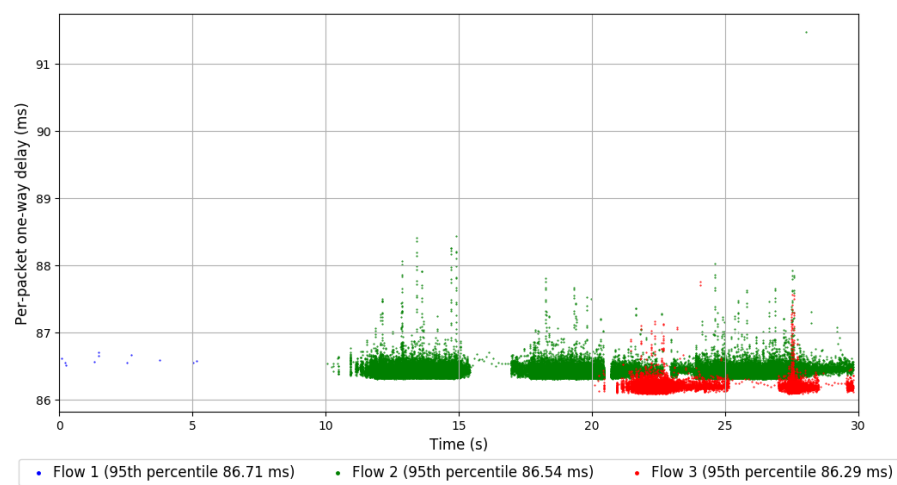
Run 4: Report of PCC-Expr — Data Link

Throughput (Mbit/s) vs Time (s)

- - - Flow 1 ingress (mean 277.72 Mbit/s) —— Flow 1 egress (mean 256.40 Mbit/s)
- - - Flow 2 ingress (mean 223.80 Mbit/s) —— Flow 2 egress (mean 223.44 Mbit/s)
- - - Flow 3 ingress (mean 162.36 Mbit/s) —— Flow 3 egress (mean 162.47 Mbit/s)

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

• Flow 1 (95th percentile 217.85 ms)   • Flow 2 (95th percentile 154.01 ms)   • Flow 3 (95th percentile 98.32 ms)

```
Run 5: Statistics of PCC-Expr

Start at: 2019-01-21 11:48:47
End at: 2019-01-21 11:49:17
Local clock offset: 0.054 ms
Remote clock offset: -0.009 ms


# Below is generated by plot.py at 2019-01-21 15:01:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 429.26 Mbit/s
95th percentile per-packet one-way delay: 172.926 ms
Loss rate: 1.14%
-- Flow 1:
Average throughput: 220.34 Mbit/s
95th percentile per-packet one-way delay: 190.712 ms
Loss rate: 1.13%
-- Flow 2:
Average throughput: 191.64 Mbit/s
95th percentile per-packet one-way delay: 135.086 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 247.87 Mbit/s
95th percentile per-packet one-way delay: 184.952 ms
Loss rate: 2.89%
```

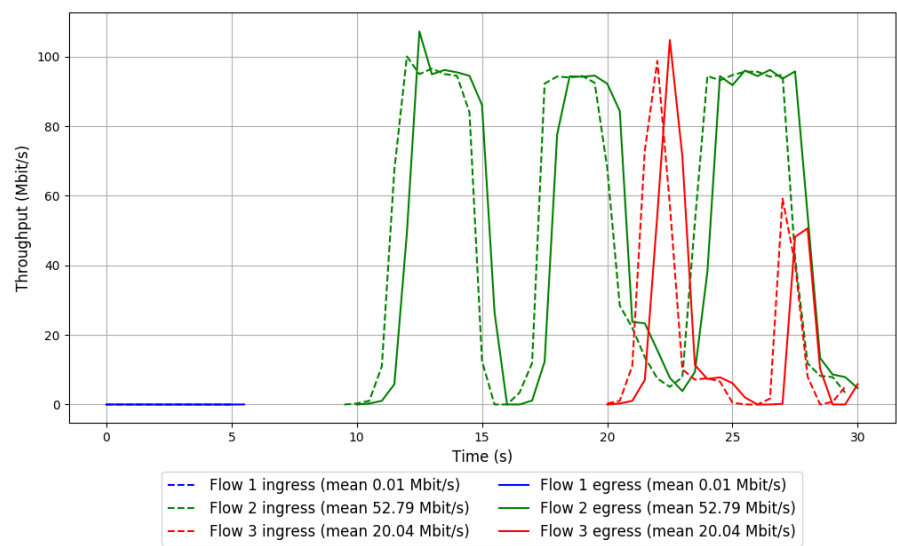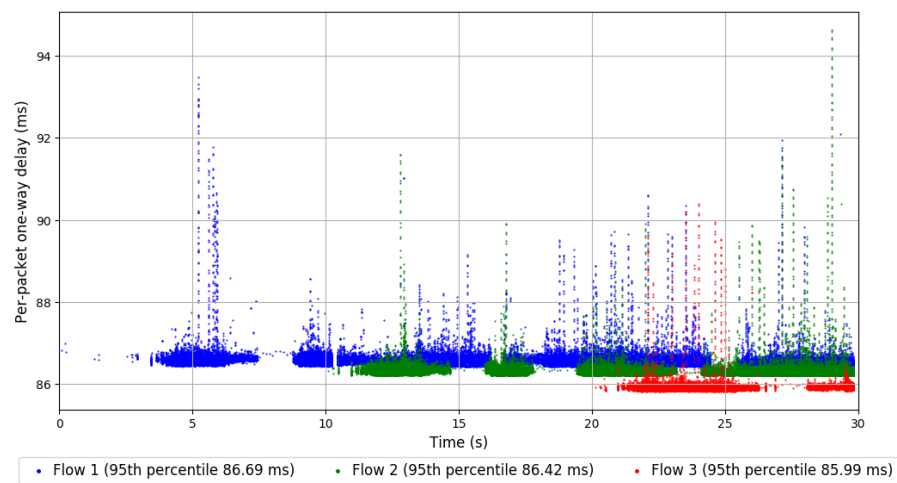Run 5: Report of PCC-Expr — Data Link

```
Run 1: Statistics of QUIC Cubic

Start at: 2019-01-21 09:29:49
End at: 2019-01-21 09:30:19
Local clock offset: -0.348 ms
Remote clock offset: -0.105 ms


# Below is generated by plot.py at 2019-01-21 15:01:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 41.58 Mbit/s
95th percentile per-packet one-way delay: 86.529 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 86.709 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 52.79 Mbit/s
95th percentile per-packet one-way delay: 86.539 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 20.04 Mbit/s
95th percentile per-packet one-way delay: 86.293 ms
Loss rate: 0.00%
```
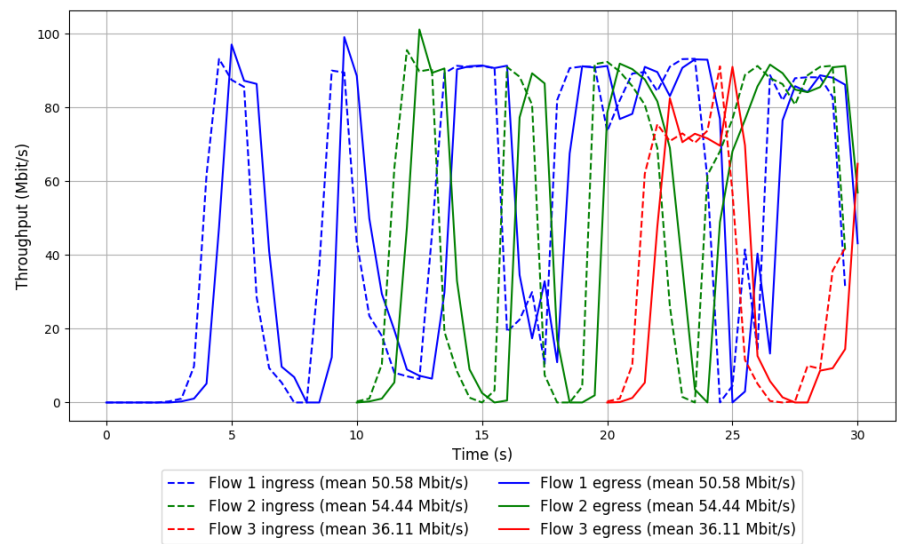
Run 1: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 0.01 Mbit/s)   Flow 1 egress (mean 0.01 Mbit/s)
Flow 2 ingress (mean 52.79 Mbit/s)   Flow 2 egress (mean 52.79 Mbit/s)
Flow 3 ingress (mean 20.04 Mbit/s)   Flow 3 egress (mean 20.04 Mbit/s)

Flow 1 (95th percentile 86.71 ms)   Flow 2 (95th percentile 86.54 ms)   Flow 3 (95th percentile 86.29 ms)
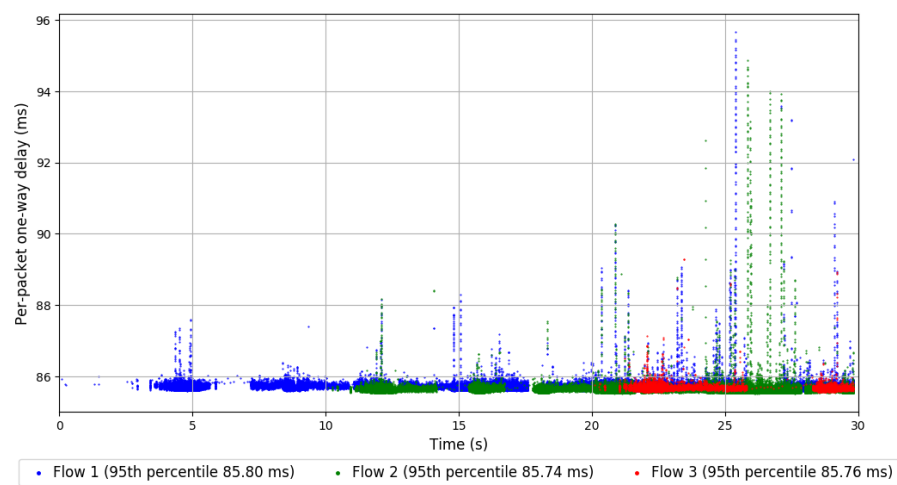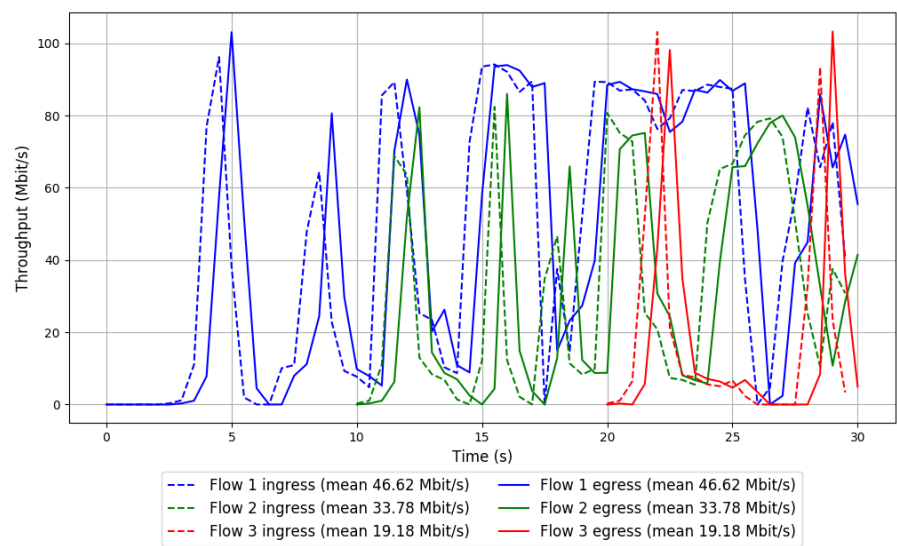
```
Run 2: Statistics of QUIC Cubic

Start at: 2019-01-21 10:07:48
End at: 2019-01-21 10:08:18
Local clock offset: -0.005 ms
Remote clock offset: -0.078 ms


# Below is generated by plot.py at 2019-01-21 15:01:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 98.44 Mbit/s
95th percentile per-packet one-way delay: 86.639 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 50.58 Mbit/s
95th percentile per-packet one-way delay: 86.686 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 54.44 Mbit/s
95th percentile per-packet one-way delay: 86.421 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 36.11 Mbit/s
95th percentile per-packet one-way delay: 85.991 ms
Loss rate: 0.00%
```

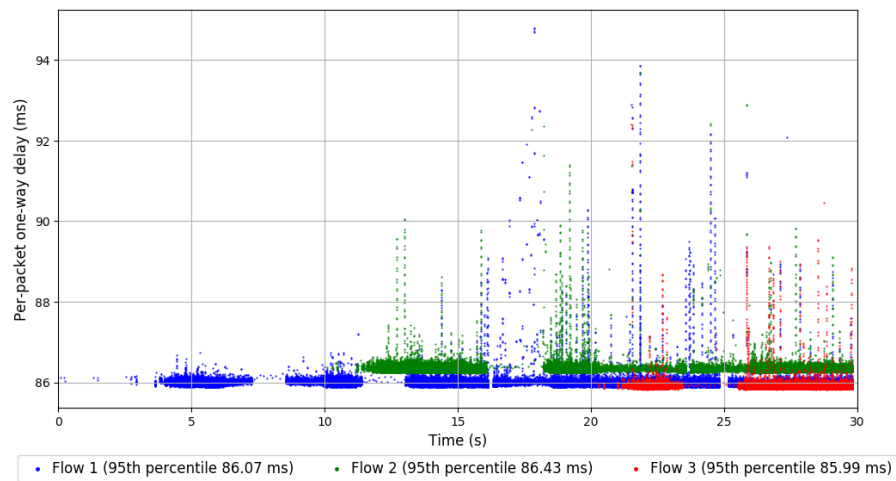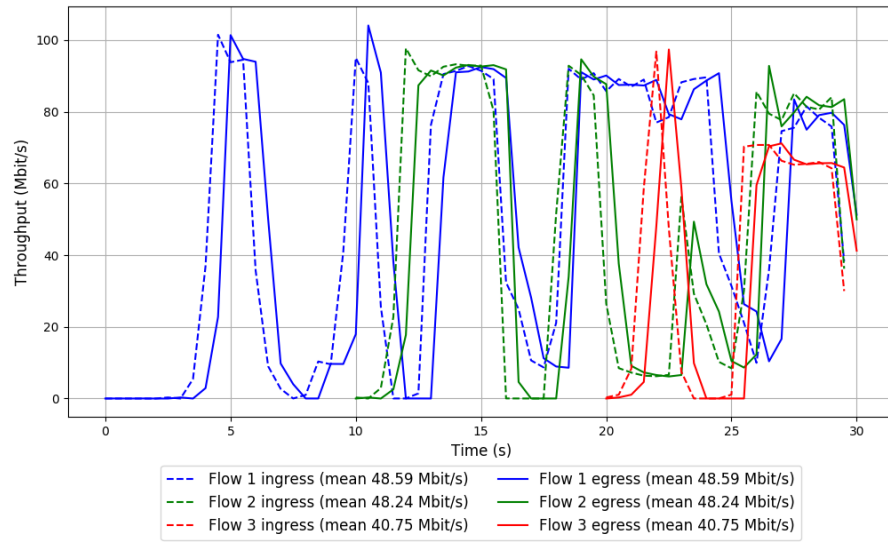# Run 2: Report of QUIC Cubic — Data Link

```
Run 3: Statistics of QUIC Cubic

Start at: 2019-01-21 10:45:44
End at: 2019-01-21 10:46:14
Local clock offset: 0.255 ms
Remote clock offset: -0.007 ms


# Below is generated by plot.py at 2019-01-21 15:01:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 75.29 Mbit/s
95th percentile per-packet one-way delay: 85.787 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 46.62 Mbit/s
95th percentile per-packet one-way delay: 85.800 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 33.78 Mbit/s
95th percentile per-packet one-way delay: 85.743 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 19.18 Mbit/s
95th percentile per-packet one-way delay: 85.760 ms
Loss rate: 0.00%
```
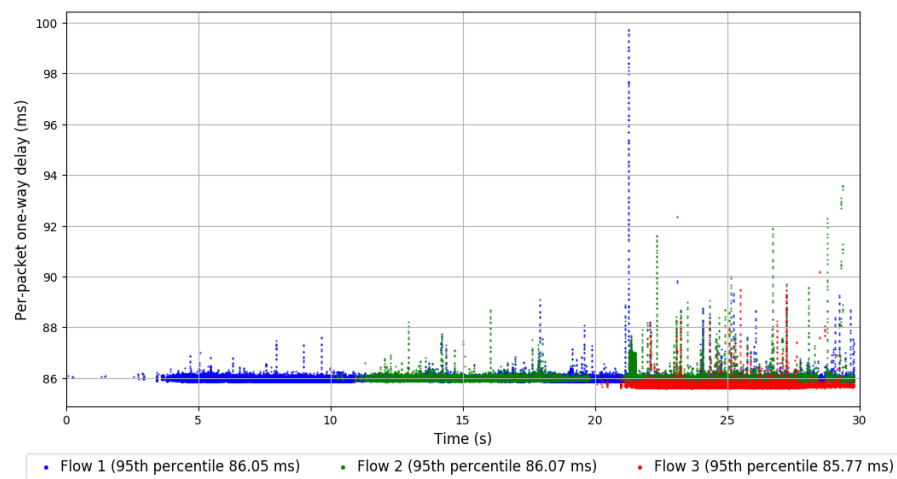
Run 3: Report of QUIC Cubic — Data Link

```
Run 4: Statistics of QUIC Cubic

Start at: 2019-01-21 11:23:41
End at: 2019-01-21 11:24:11
Local clock offset: -0.04 ms
Remote clock offset: -0.062 ms


# Below is generated by plot.py at 2019-01-21 15:01:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.88 Mbit/s
95th percentile per-packet one-way delay: 86.381 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 48.59 Mbit/s
95th percentile per-packet one-way delay: 86.071 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 48.24 Mbit/s
95th percentile per-packet one-way delay: 86.431 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 40.75 Mbit/s
95th percentile per-packet one-way delay: 85.993 ms
Loss rate: 0.00%
```

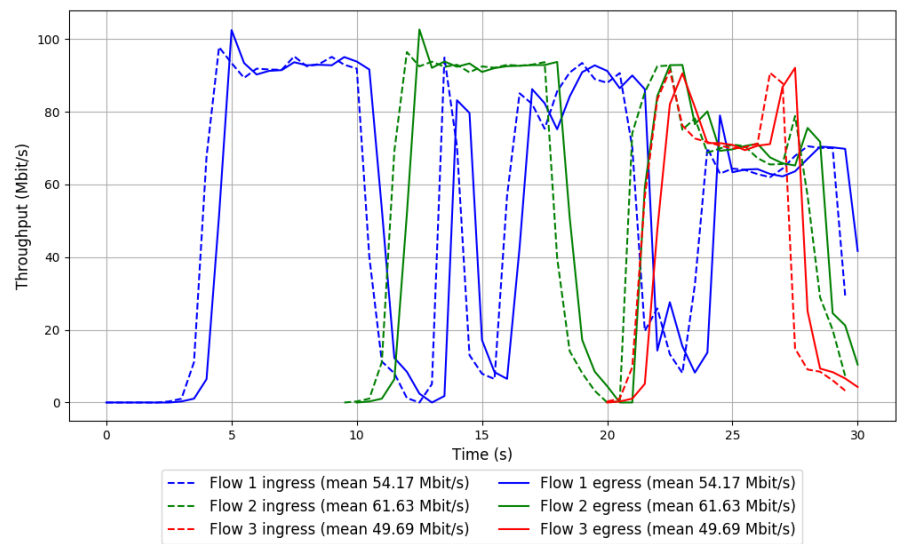Run 4: Report of QUIC Cubic — Data Link

```
Run 5: Statistics of QUIC Cubic

Start at: 2019-01-21 12:01:00
End at: 2019-01-21 12:01:30
Local clock offset: 0.154 ms
Remote clock offset: -0.073 ms


# Below is generated by plot.py at 2019-01-21 15:01:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 111.31 Mbit/s
95th percentile per-packet one-way delay: 86.049 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 54.17 Mbit/s
95th percentile per-packet one-way delay: 86.053 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 61.63 Mbit/s
95th percentile per-packet one-way delay: 86.066 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 49.69 Mbit/s
95th percentile per-packet one-way delay: 85.765 ms
Loss rate: 0.00%
```

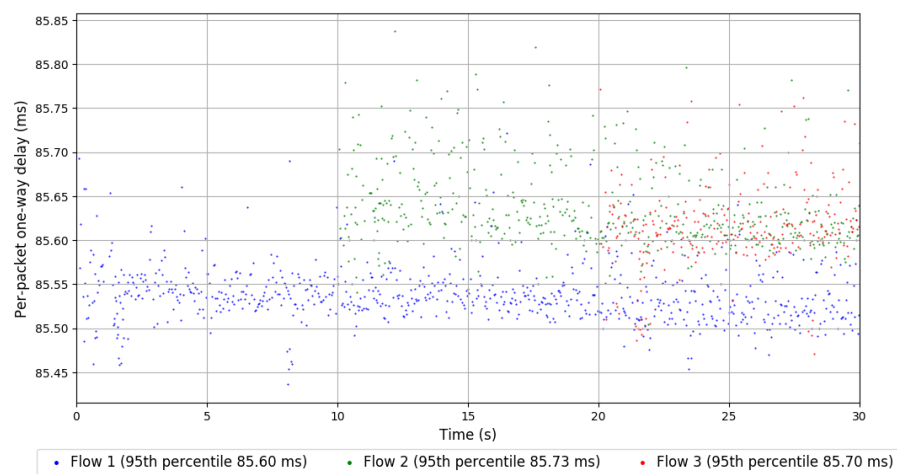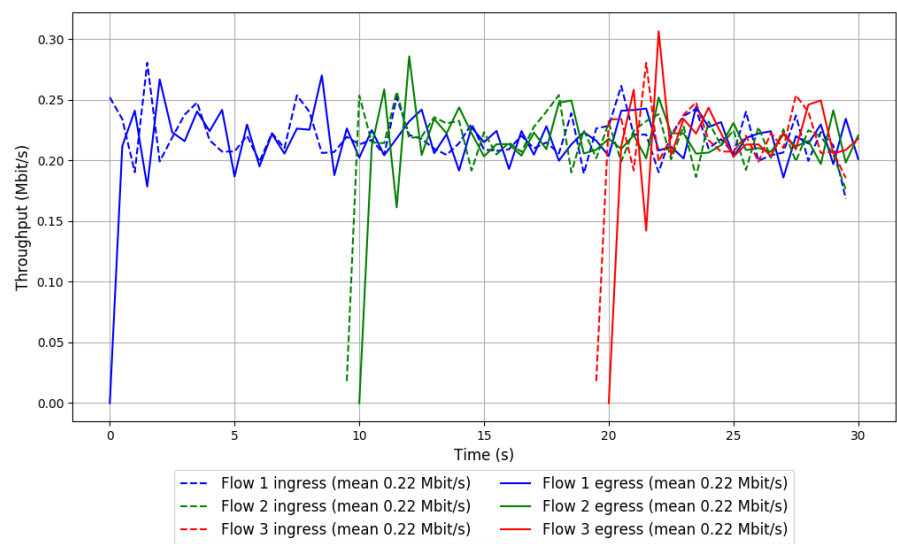Run 5: Report of QUIC Cubic — Data Link

```
Run 1: Statistics of SCReAM

Start at: 2019-01-21 08:58:49
End at: 2019-01-21 08:59:19
Local clock offset: 0.366 ms
Remote clock offset: -0.159 ms


# Below is generated by plot.py at 2019-01-21 15:01:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 85.702 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 85.598 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 85.731 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 85.700 ms
Loss rate: 0.00%
```
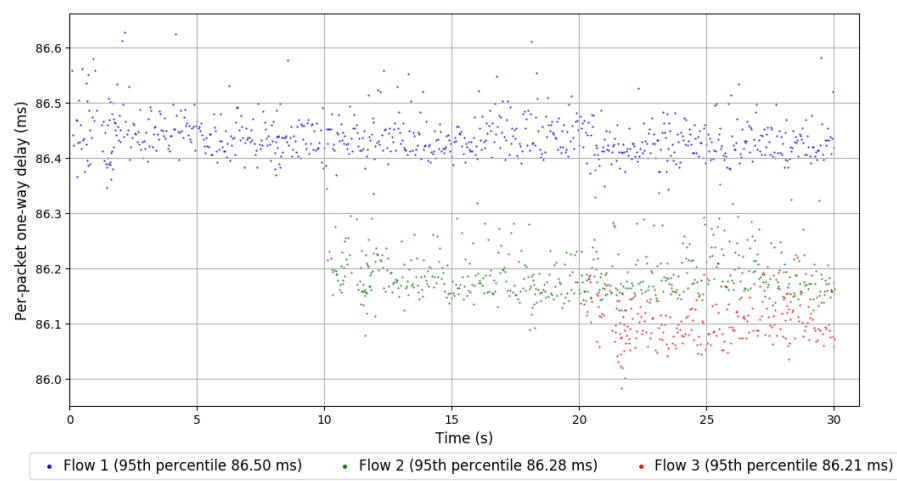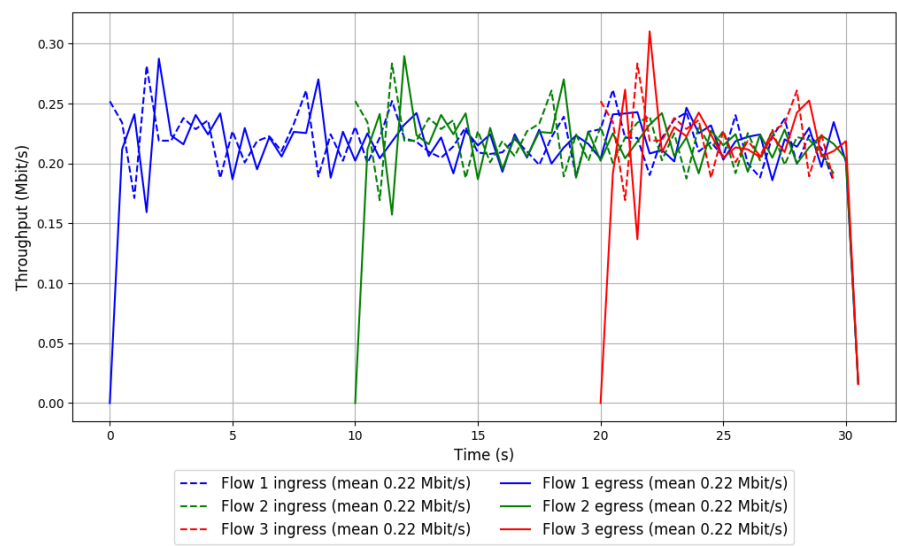
Run 1: Report of SCReAM — Data Link

```
Run 2: Statistics of SCReAM

Start at: 2019-01-21 09:36:57
End at: 2019-01-21 09:37:27
Local clock offset: -0.11 ms
Remote clock offset: -0.092 ms

# Below is generated by plot.py at 2019-01-21 15:01:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 86.481 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.500 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.275 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.209 ms
Loss rate: 0.00%
```
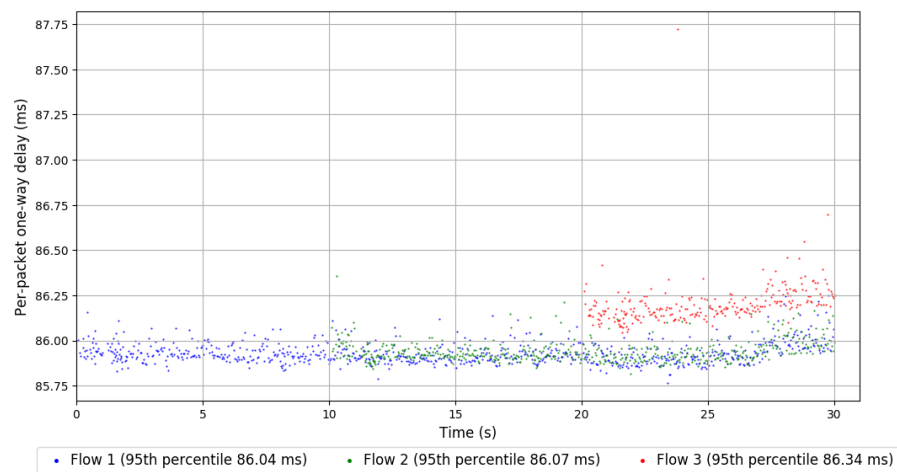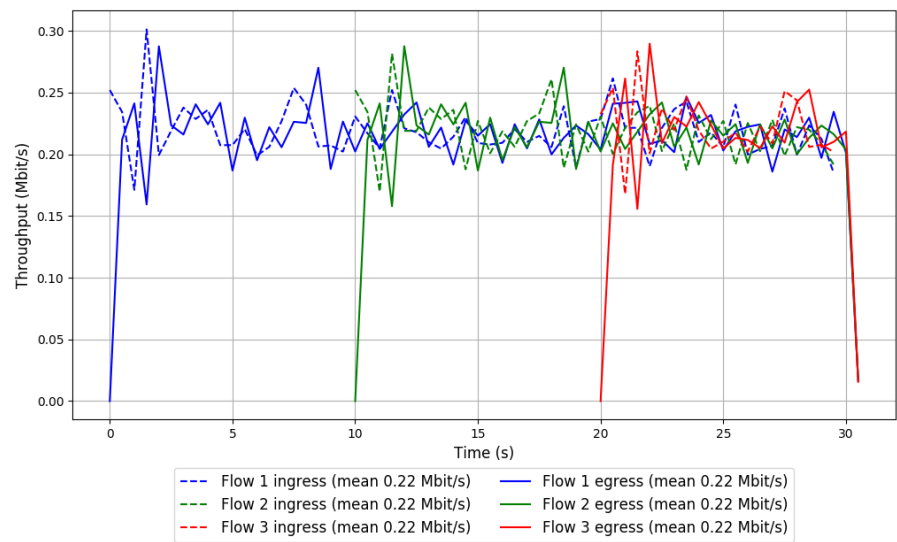
Run 2: Report of SCReAM — Data Link

```
Run 3: Statistics of SCReAM

Start at: 2019-01-21 10:15:16
End at: 2019-01-21 10:15:46
Local clock offset: 0.169 ms
Remote clock offset: -0.079 ms


# Below is generated by plot.py at 2019-01-21 15:01:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 86.228 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.040 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.068 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.339 ms
Loss rate: 0.00%
```

Run 3: Report of SCReAM — Data Link

```
Run 4: Statistics of SCReAM

Start at: 2019-01-21 10:52:31
End at: 2019-01-21 10:53:01
Local clock offset: -0.04 ms
Remote clock offset: 0.033 ms


# Below is generated by plot.py at 2019-01-21 15:01:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 86.561 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.266 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.623 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.287 ms
Loss rate: 0.00%
```
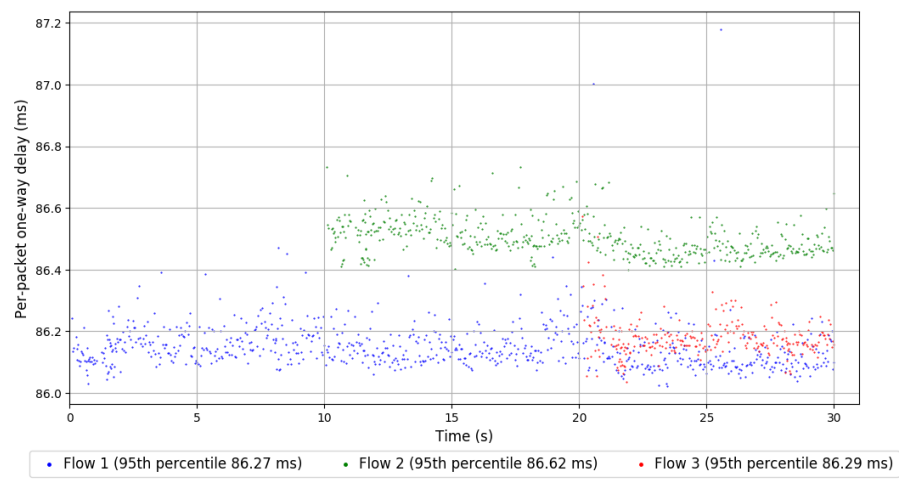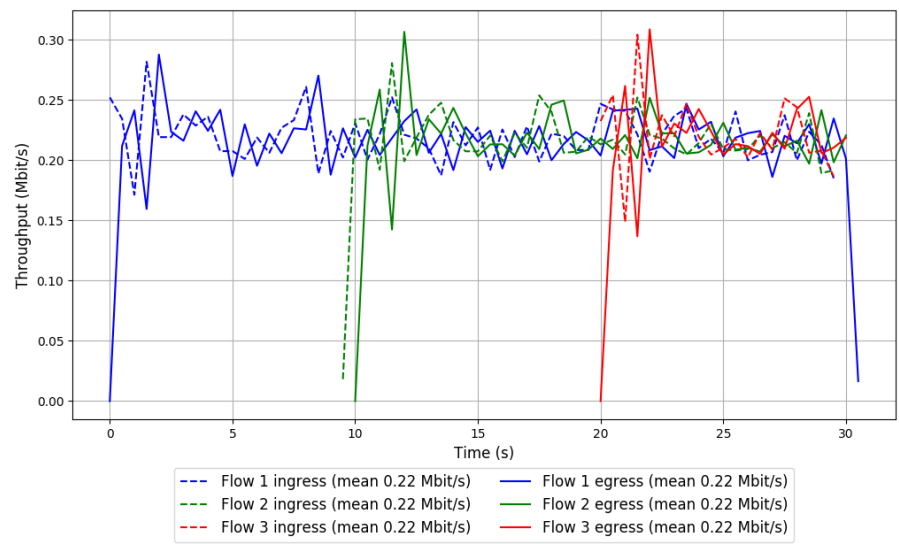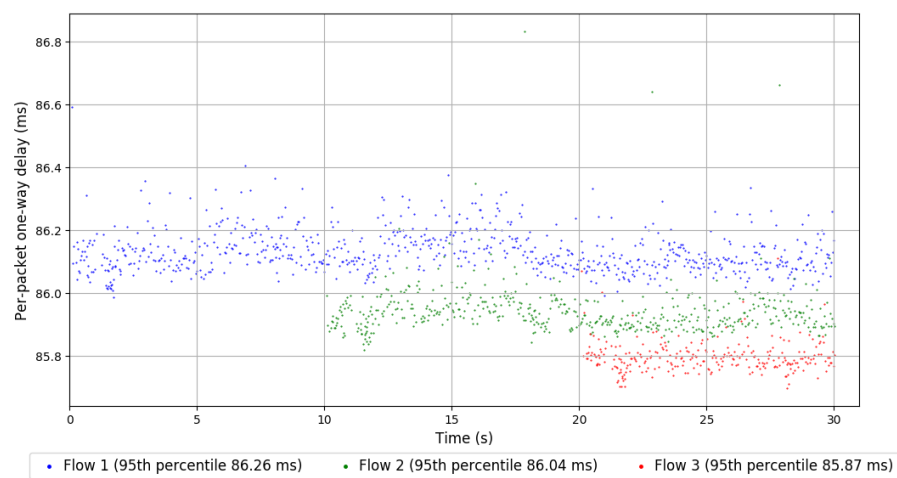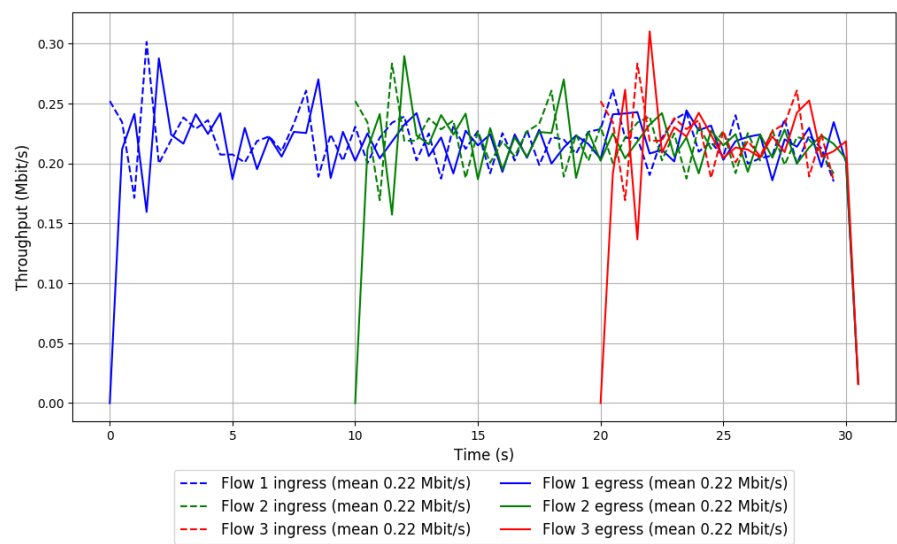
Run 4: Report of SCReAM — Data Link

```
Run 5: Statistics of SCReAM

Start at: 2019-01-21 11:31:06
End at: 2019-01-21 11:31:36
Local clock offset: 0.298 ms
Remote clock offset: -0.082 ms


# Below is generated by plot.py at 2019-01-21 15:01:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 86.226 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.261 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.037 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 85.870 ms
Loss rate: 0.00%
```
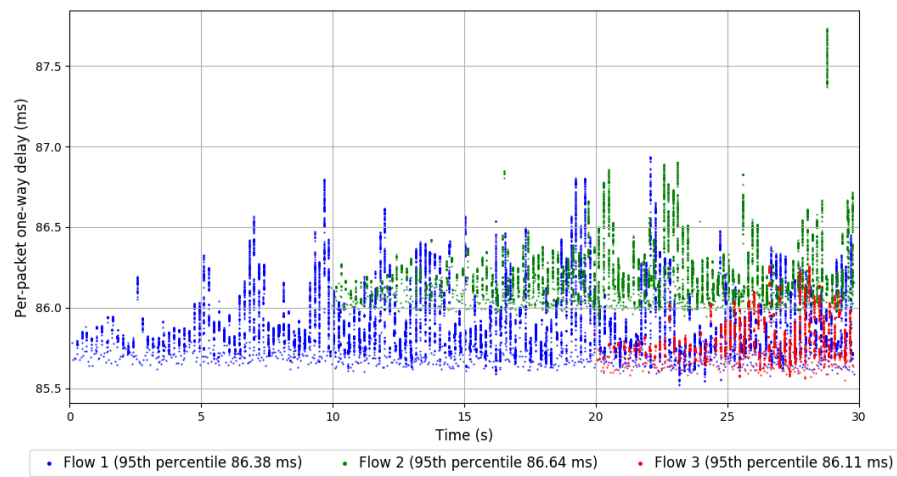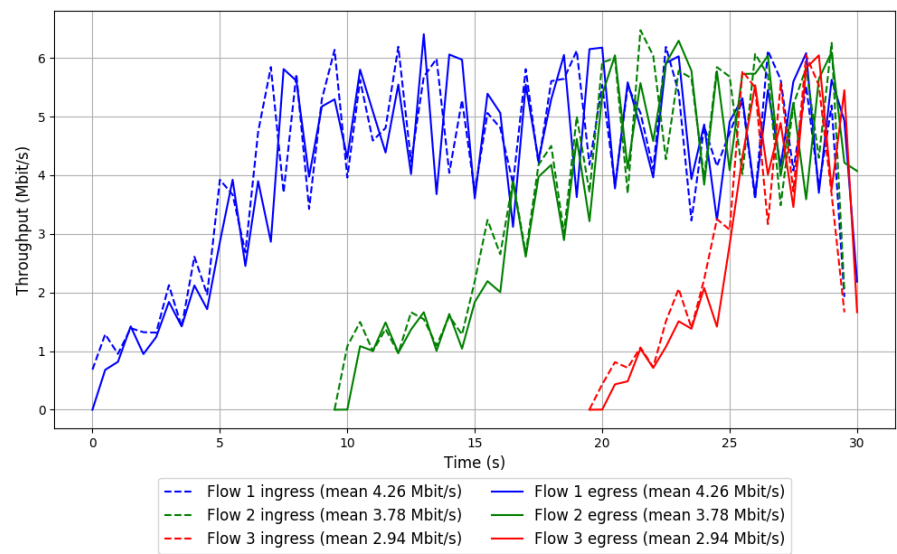
Run 5: Report of SCReAM — Data Link

```
Run 1: Statistics of Sprout

Start at: 2019-01-21 09:03:57
End at: 2019-01-21 09:04:27
Local clock offset: 0.173 ms
Remote clock offset: -0.187 ms


# Below is generated by plot.py at 2019-01-21 15:01:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 7.77 Mbit/s
95th percentile per-packet one-way delay: 86.497 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 4.26 Mbit/s
95th percentile per-packet one-way delay: 86.376 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 3.78 Mbit/s
95th percentile per-packet one-way delay: 86.635 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 2.94 Mbit/s
95th percentile per-packet one-way delay: 86.113 ms
Loss rate: 0.00%
```
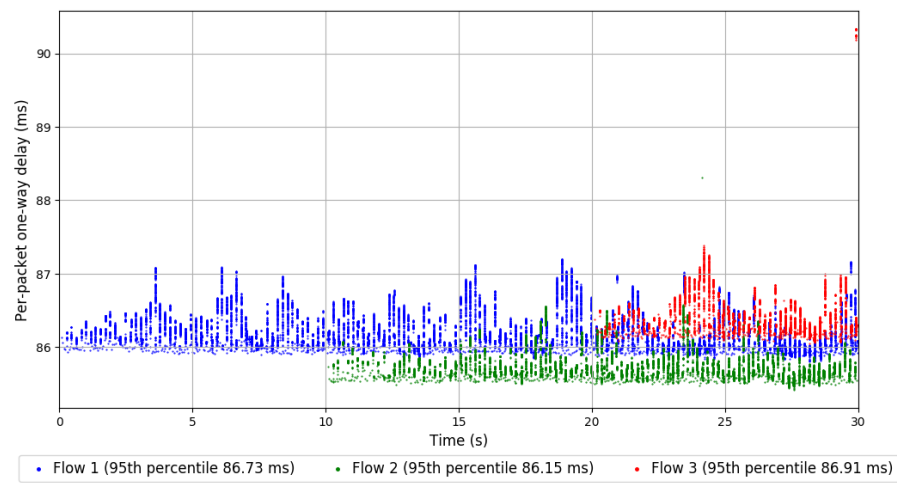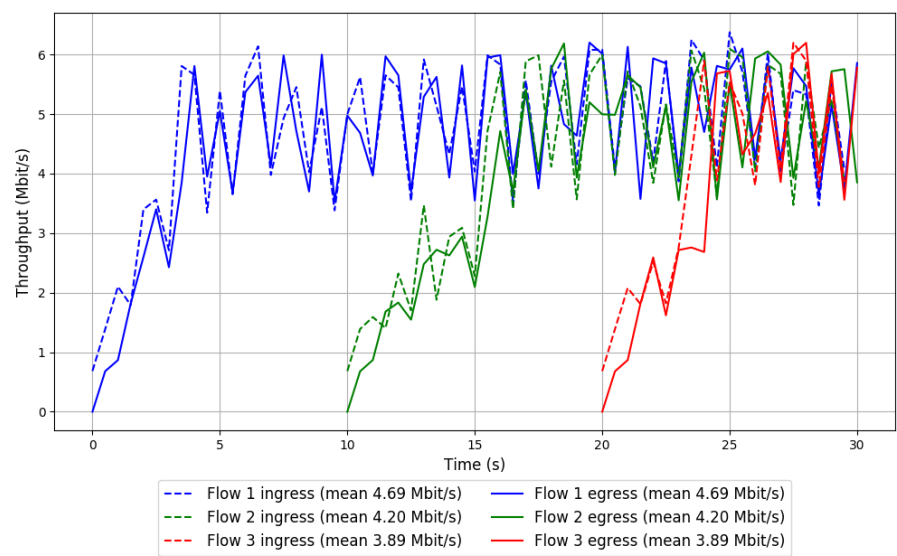
Run 1: Report of Sprout — Data Link

```
Run 2: Statistics of Sprout

Start at: 2019-01-21 09:41:59
End at: 2019-01-21 09:42:29
Local clock offset: 0.321 ms
Remote clock offset: -0.1 ms


# Below is generated by plot.py at 2019-01-21 15:01:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.76 Mbit/s
95th percentile per-packet one-way delay: 86.715 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 4.69 Mbit/s
95th percentile per-packet one-way delay: 86.734 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 4.20 Mbit/s
95th percentile per-packet one-way delay: 86.148 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 3.89 Mbit/s
95th percentile per-packet one-way delay: 86.911 ms
Loss rate: 0.00%
```
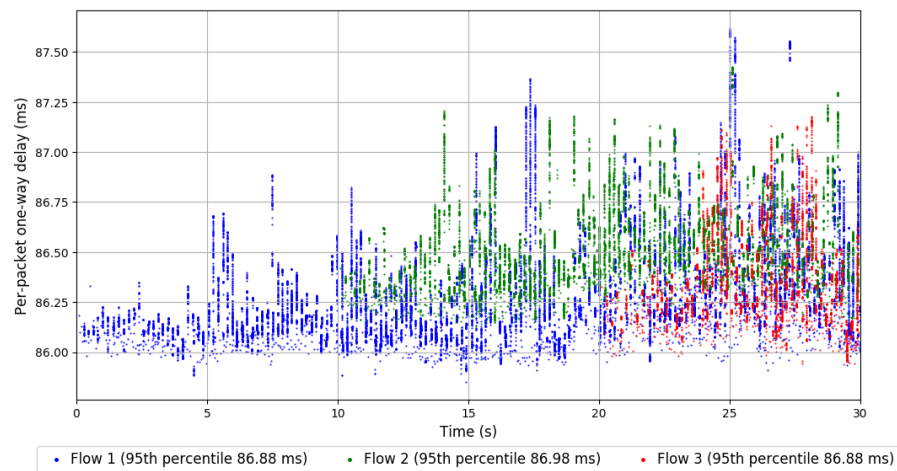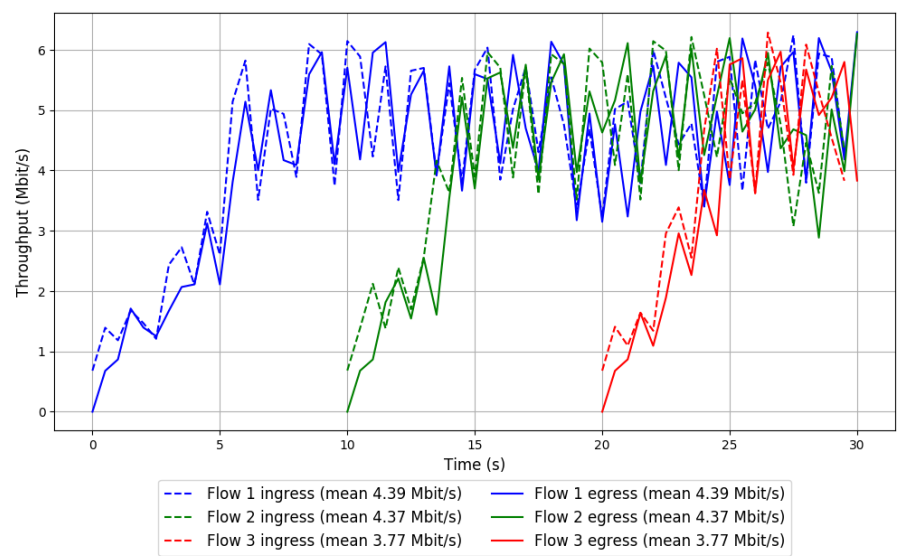
Run 2: Report of Sprout — Data Link

```
Run 3: Statistics of Sprout

Start at: 2019-01-21 10:20:35
End at: 2019-01-21 10:21:05
Local clock offset: 0.02 ms
Remote clock offset: -0.104 ms


# Below is generated by plot.py at 2019-01-21 15:01:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.53 Mbit/s
95th percentile per-packet one-way delay: 86.922 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 4.39 Mbit/s
95th percentile per-packet one-way delay: 86.879 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 4.37 Mbit/s
95th percentile per-packet one-way delay: 86.979 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 3.77 Mbit/s
95th percentile per-packet one-way delay: 86.875 ms
Loss rate: 0.00%
```

Run 3: Report of Sprout — Data Link

```
Run 4: Statistics of Sprout

Start at: 2019-01-21 10:57:38
End at: 2019-01-21 10:58:08
Local clock offset: 0.203 ms
Remote clock offset: 0.188 ms


# Below is generated by plot.py at 2019-01-21 15:01:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 7.83 Mbit/s
95th percentile per-packet one-way delay: 86.744 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 4.03 Mbit/s
95th percentile per-packet one-way delay: 86.705 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 4.06 Mbit/s
95th percentile per-packet one-way delay: 86.636 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 3.34 Mbit/s
95th percentile per-packet one-way delay: 86.924 ms
Loss rate: 0.00%
```
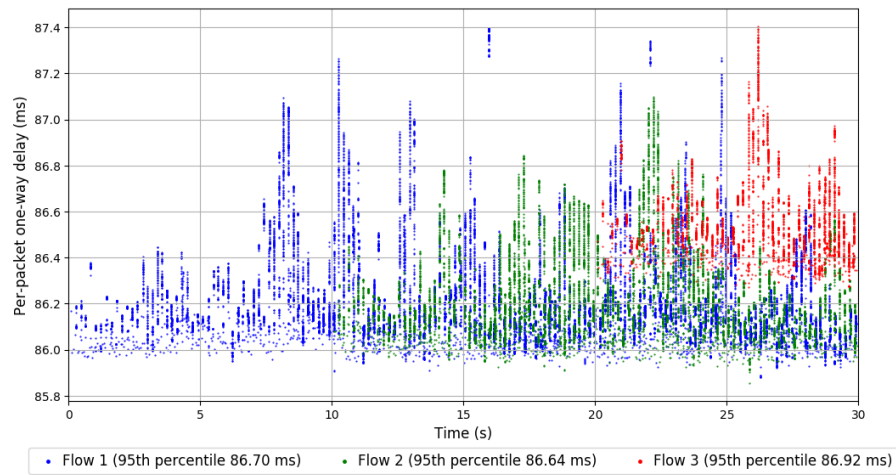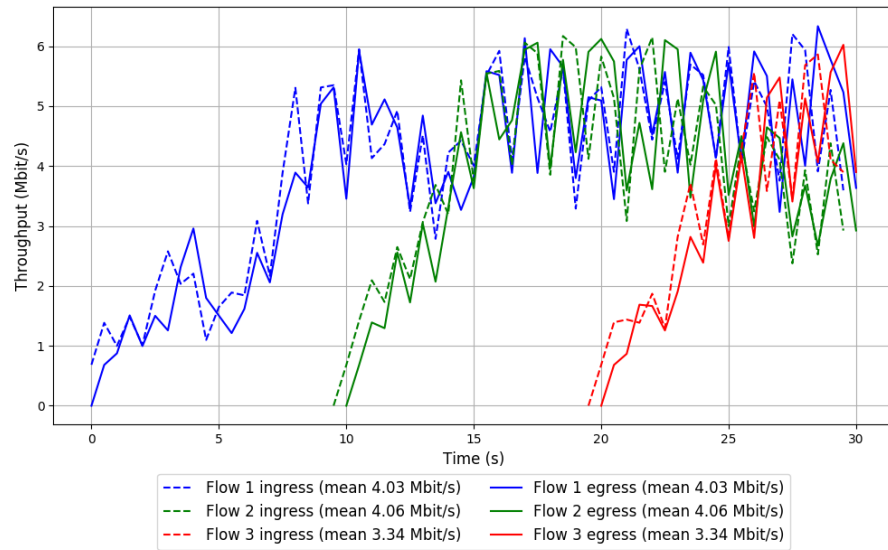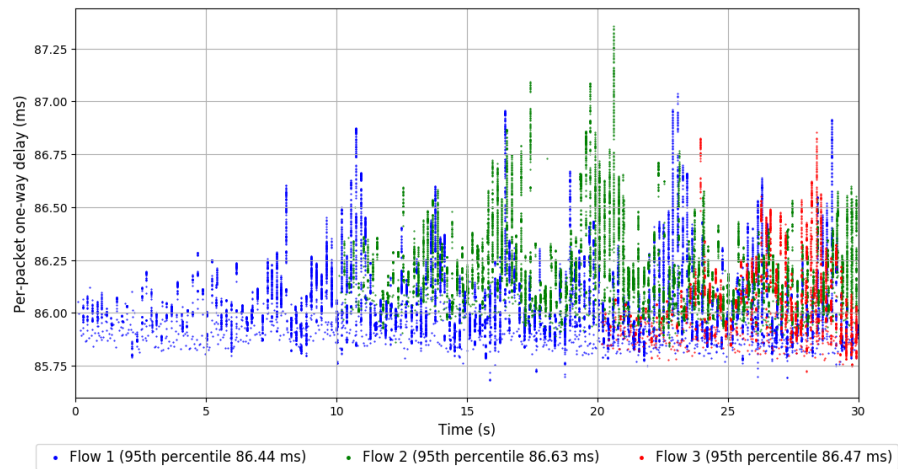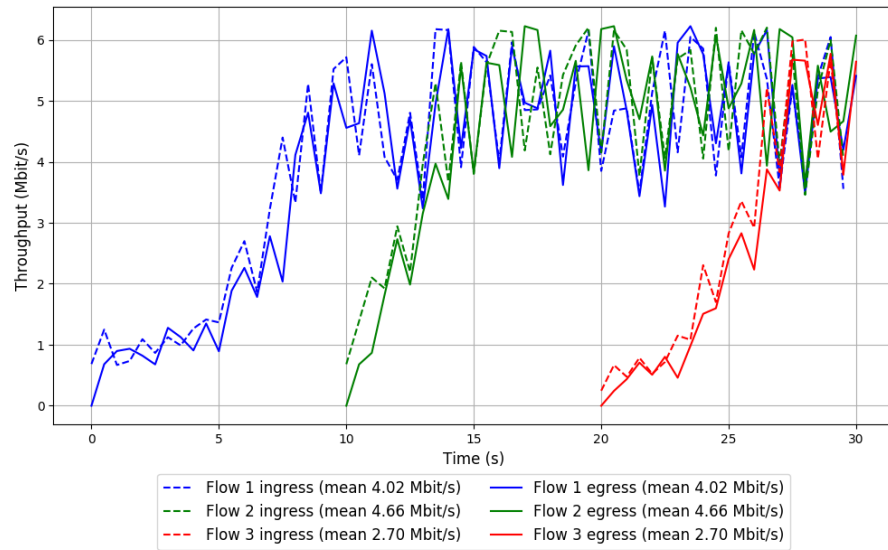
Run 4: Report of Sprout — Data Link

```
Run 5: Statistics of Sprout

Start at: 2019-01-21 11:35:49
End at: 2019-01-21 11:36:19
Local clock offset: 0.16 ms
Remote clock offset: -0.041 ms


# Below is generated by plot.py at 2019-01-21 15:01:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.00 Mbit/s
95th percentile per-packet one-way delay: 86.537 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 4.02 Mbit/s
95th percentile per-packet one-way delay: 86.443 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 4.66 Mbit/s
95th percentile per-packet one-way delay: 86.629 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 2.70 Mbit/s
95th percentile per-packet one-way delay: 86.474 ms
Loss rate: 0.00%
```
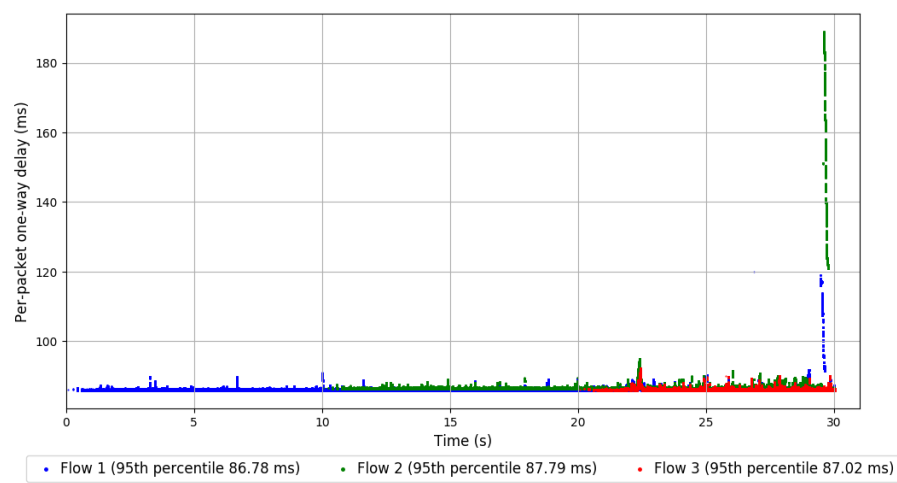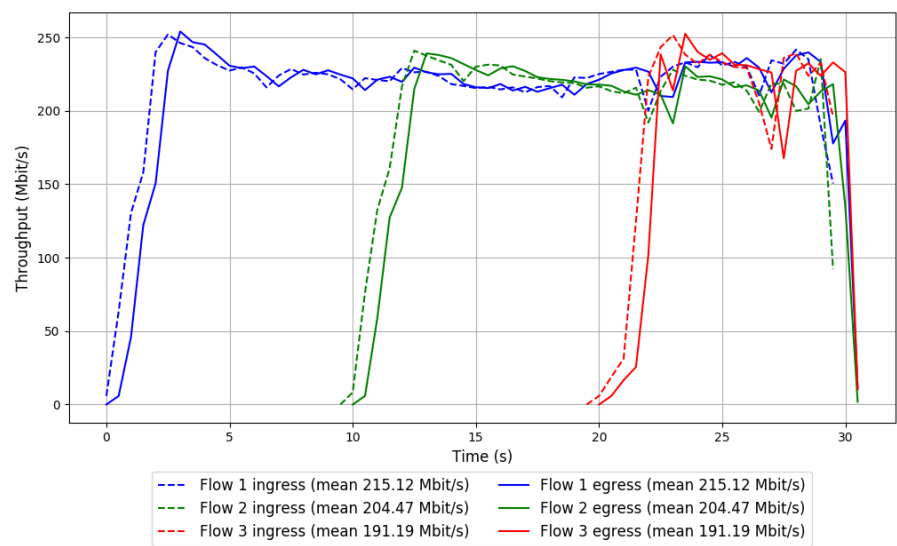
Run 5: Report of Sprout — Data Link

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

Start at: 2019-01-21 09:15:08
End at: 2019-01-21 09:15:38
Local clock offset: -0.247 ms
Remote clock offset: -0.172 ms


# Below is generated by plot.py at 2019-01-21 15:11:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 415.04 Mbit/s
95th percentile per-packet one-way delay: 87.162 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 215.12 Mbit/s
95th percentile per-packet one-way delay: 86.785 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 204.47 Mbit/s
95th percentile per-packet one-way delay: 87.786 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 191.19 Mbit/s
95th percentile per-packet one-way delay: 87.020 ms
Loss rate: 0.00%
```

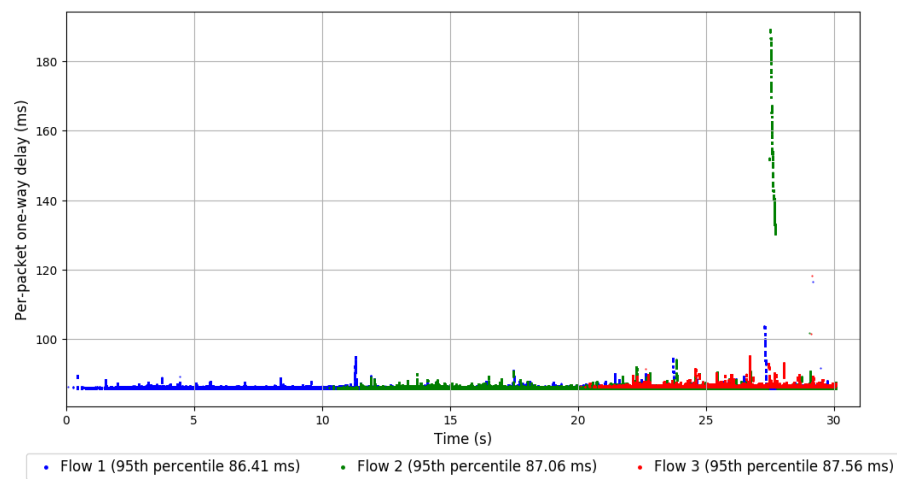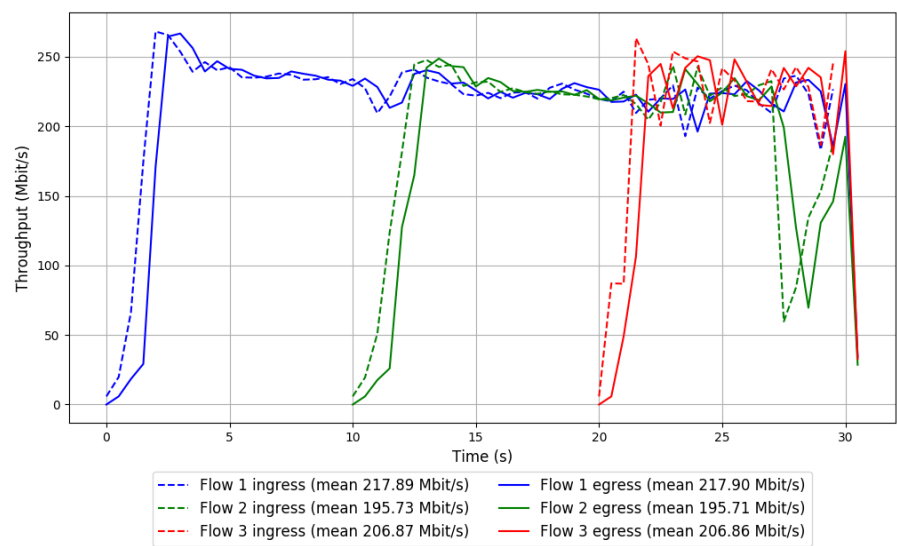Run 1: Report of TaoVA-100x — Data Link

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

Start at: 2019-01-21 09:53:21
End at: 2019-01-21 09:53:51
Local clock offset: -0.037 ms
Remote clock offset: -0.063 ms


# Below is generated by plot.py at 2019-01-21 15:11:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 416.99 Mbit/s
95th percentile per-packet one-way delay: 86.889 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 217.90 Mbit/s
95th percentile per-packet one-way delay: 86.412 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 195.71 Mbit/s
95th percentile per-packet one-way delay: 87.060 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 206.86 Mbit/s
95th percentile per-packet one-way delay: 87.556 ms
Loss rate: 0.00%
```

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

Flow 1 ingress (mean 217.89 Mbit/s)   Flow 1 egress (mean 217.90 Mbit/s)
Flow 2 ingress (mean 195.73 Mbit/s)   Flow 2 egress (mean 195.71 Mbit/s)
Flow 3 ingress (mean 206.87 Mbit/s)   Flow 3 egress (mean 206.86 Mbit/s)

Flow 1 (95th percentile 86.41 ms)   Flow 2 (95th percentile 87.06 ms)   Flow 3 (95th percentile 87.56 ms)
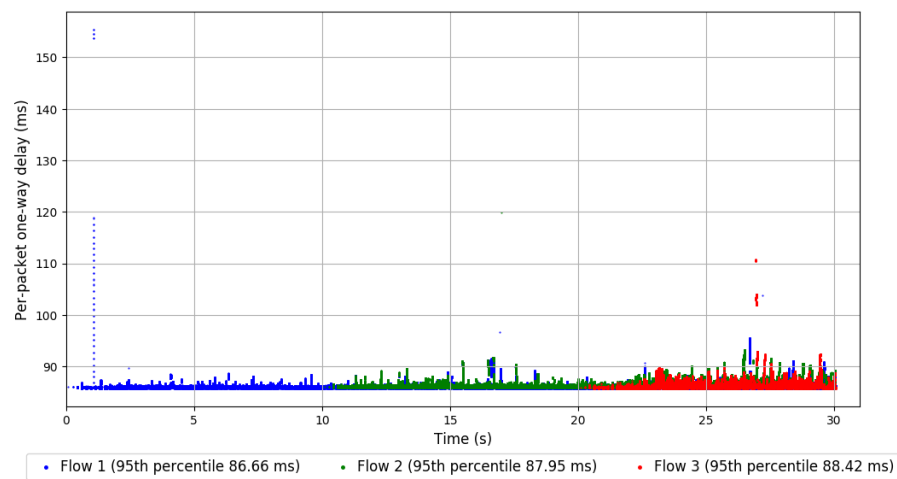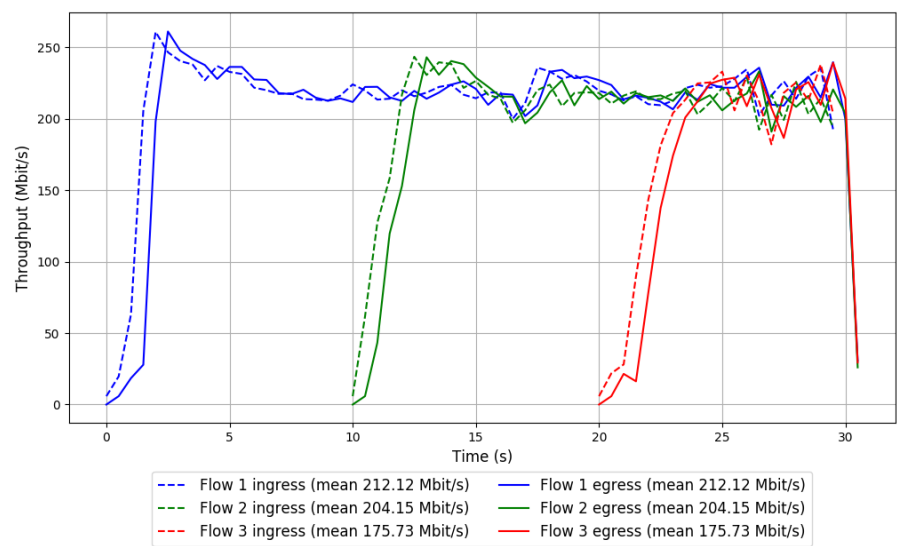
168

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

Start at: 2019-01-21 10:31:34
End at: 2019-01-21 10:32:04
Local clock offset: 0.046 ms
Remote clock offset: -0.001 ms


# Below is generated by plot.py at 2019-01-21 15:11:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 406.43 Mbit/s
95th percentile per-packet one-way delay: 87.528 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 212.12 Mbit/s
95th percentile per-packet one-way delay: 86.658 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 204.15 Mbit/s
95th percentile per-packet one-way delay: 87.953 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 175.73 Mbit/s
95th percentile per-packet one-way delay: 88.424 ms
Loss rate: 0.00%
```

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

Flow 1 ingress (mean 212.12 Mbit/s) — — —   Flow 1 egress (mean 212.12 Mbit/s) ———
Flow 2 ingress (mean 204.15 Mbit/s) — — —   Flow 2 egress (mean 204.15 Mbit/s) ———
Flow 3 ingress (mean 175.73 Mbit/s) — — —   Flow 3 egress (mean 175.73 Mbit/s) ———

Flow 1 (95th percentile 86.66 ms)   Flow 2 (95th percentile 87.95 ms)   Flow 3 (95th percentile 88.42 ms)

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

Start at: 2019-01-21 11:08:46
End at: 2019-01-21 11:09:16
Local clock offset: 0.125 ms
Remote clock offset: -0.02 ms


# Below is generated by plot.py at 2019-01-21 15:11:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 415.38 Mbit/s
95th percentile per-packet one-way delay: 88.198 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 218.08 Mbit/s
95th percentile per-packet one-way delay: 86.624 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 208.95 Mbit/s
95th percentile per-packet one-way delay: 89.021 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 174.99 Mbit/s
95th percentile per-packet one-way delay: 90.745 ms
Loss rate: 0.00%
```
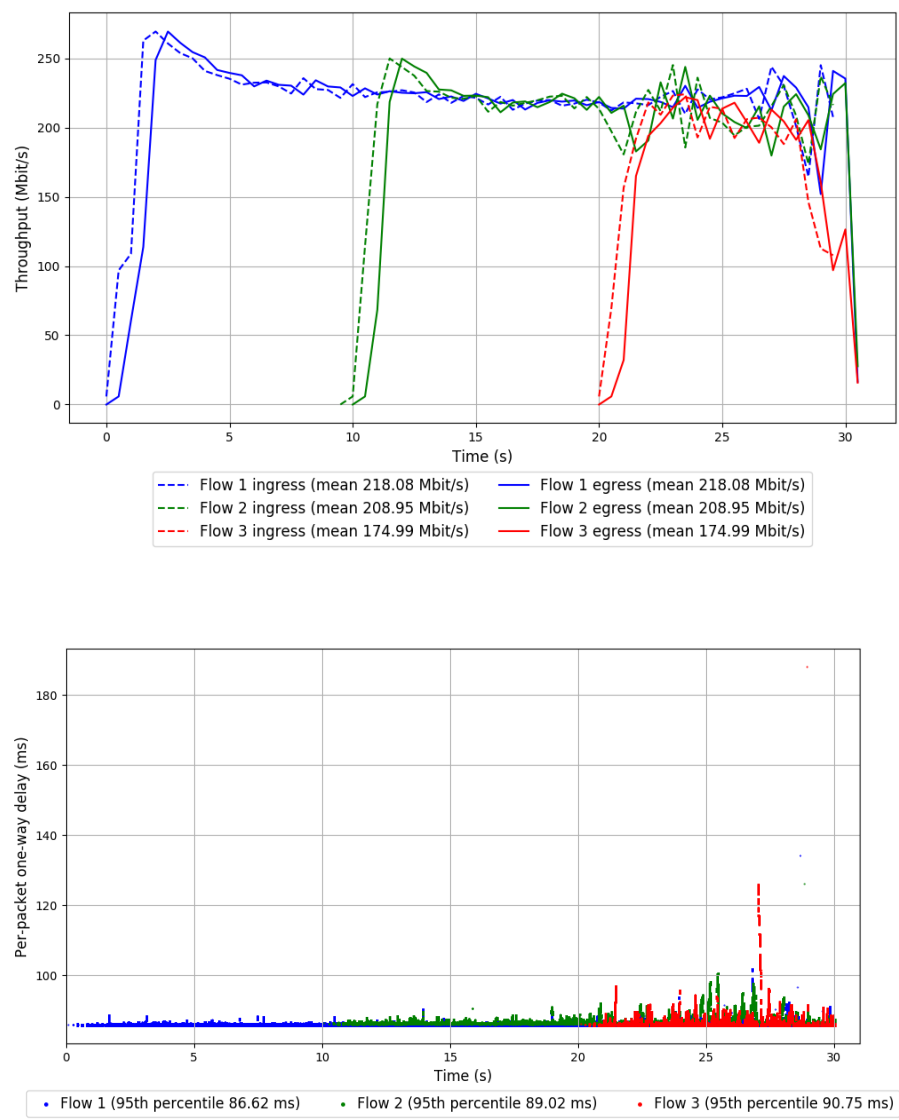
Run 4: Report of TaoVA-100x — Data Link

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

Start at: 2019-01-21 11:46:51
End at: 2019-01-21 11:47:21
Local clock offset: -0.136 ms
Remote clock offset: -0.07 ms

# Below is generated by plot.py at 2019-01-21 15:12:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 401.59 Mbit/s
95th percentile per-packet one-way delay: 87.721 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 208.85 Mbit/s
95th percentile per-packet one-way delay: 87.070 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 204.05 Mbit/s
95th percentile per-packet one-way delay: 88.717 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 172.17 Mbit/s
95th percentile per-packet one-way delay: 88.068 ms
Loss rate: 0.09%
```
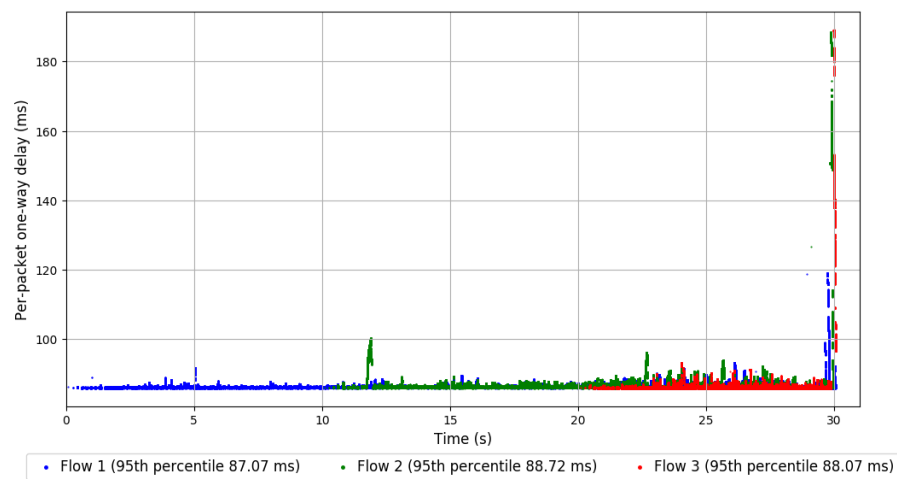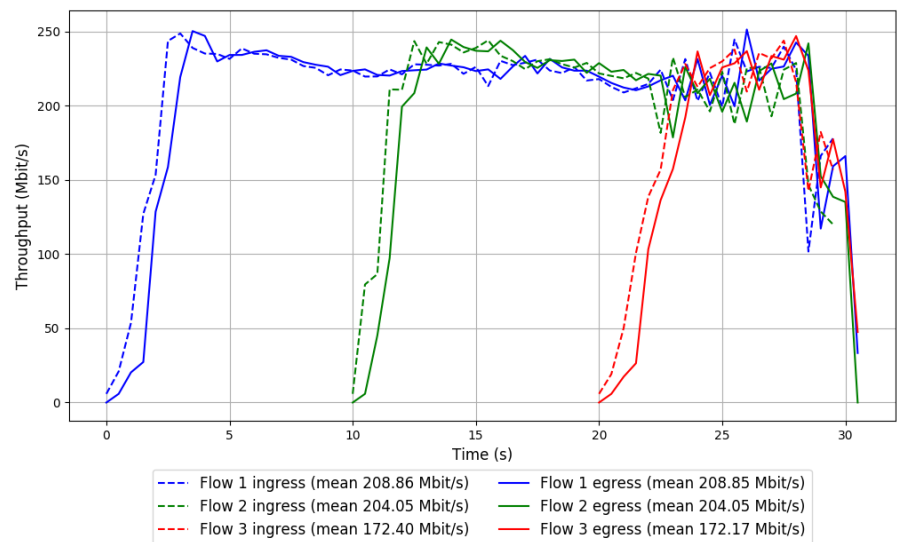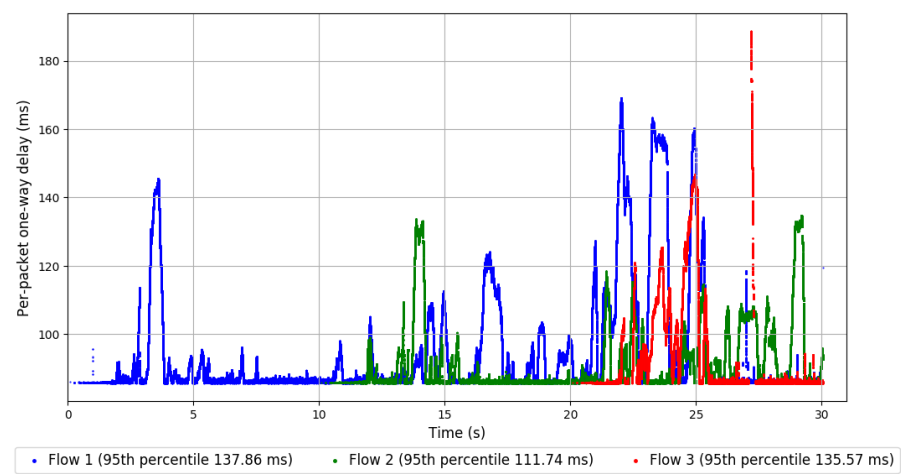
Run 5: Report of TaoVA-100x — Data Link

- Flow 1 ingress (mean 208.86 Mbit/s)
- Flow 1 egress (mean 208.85 Mbit/s)
- Flow 2 ingress (mean 204.05 Mbit/s)
- Flow 2 egress (mean 204.05 Mbit/s)
- Flow 3 ingress (mean 172.40 Mbit/s)
- Flow 3 egress (mean 172.17 Mbit/s)

- Flow 1 (95th percentile 87.07 ms)
- Flow 2 (95th percentile 88.72 ms)
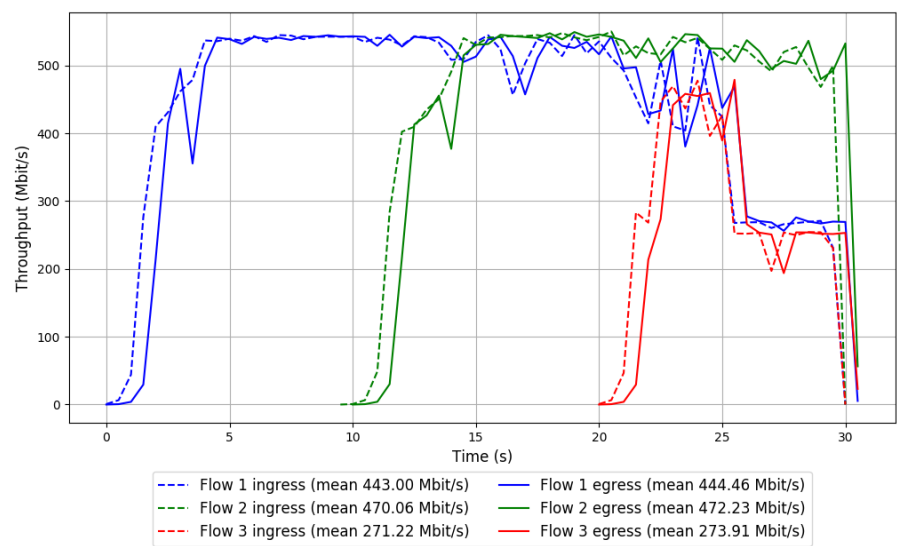- Flow 3 (95th percentile 88.07 ms)

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```
Run 1: Statistics of TCP Vegas

Start at: 2019-01-21 08:56:44
End at: 2019-01-21 08:57:14
Local clock offset: -0.016 ms
Remote clock offset: -0.179 ms


# Below is generated by plot.py at 2019-01-21 15:16:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 850.07 Mbit/s
95th percentile per-packet one-way delay: 128.770 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 444.46 Mbit/s
95th percentile per-packet one-way delay: 137.857 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 472.23 Mbit/s
95th percentile per-packet one-way delay: 111.737 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 273.91 Mbit/s
95th percentile per-packet one-way delay: 135.575 ms
Loss rate: 0.01%
```

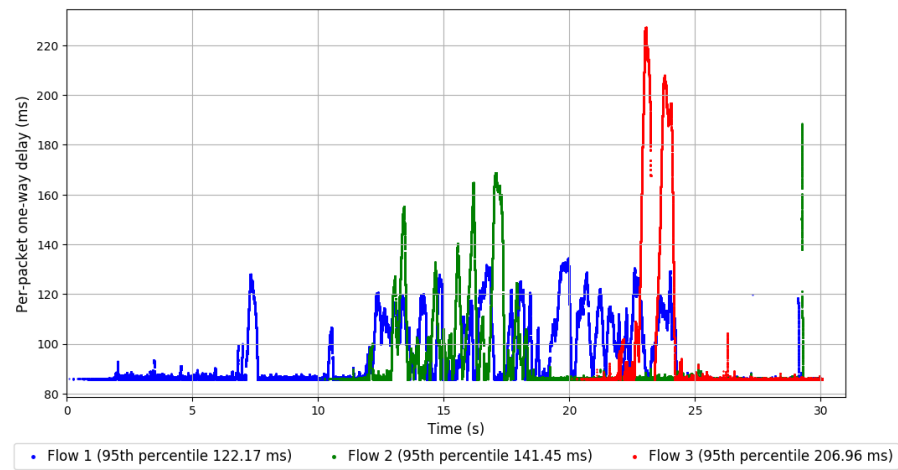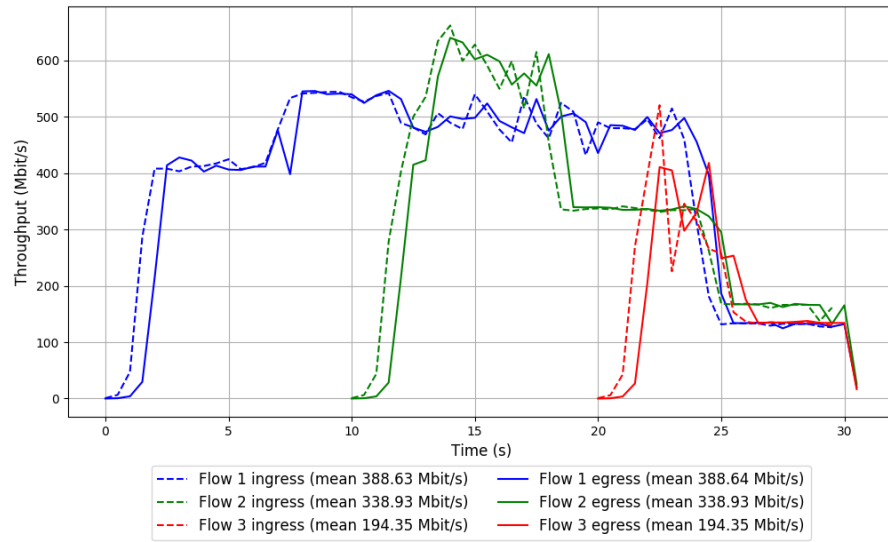# Run 1: Report of TCP Vegas — Data Link

- - - - Flow 1 ingress (mean 443.00 Mbit/s)   —— Flow 1 egress (mean 444.46 Mbit/s)
- - - - Flow 2 ingress (mean 470.06 Mbit/s)   —— Flow 2 egress (mean 472.23 Mbit/s)
- - - - Flow 3 ingress (mean 271.22 Mbit/s)   —— Flow 3 egress (mean 273.91 Mbit/s)

- Flow 1 (95th percentile 137.86 ms)   • Flow 2 (95th percentile 111.74 ms)   • Flow 3 (95th percentile 135.57 ms)

```
Run 2: Statistics of TCP Vegas

Start at: 2019-01-21 09:35:04
End at: 2019-01-21 09:35:34
Local clock offset: 0.022 ms
Remote clock offset: -0.1 ms


# Below is generated by plot.py at 2019-01-21 15:17:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 678.97 Mbit/s
95th percentile per-packet one-way delay: 130.281 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 388.64 Mbit/s
95th percentile per-packet one-way delay: 122.172 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 338.93 Mbit/s
95th percentile per-packet one-way delay: 141.453 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 194.35 Mbit/s
95th percentile per-packet one-way delay: 206.955 ms
Loss rate: 0.00%
```

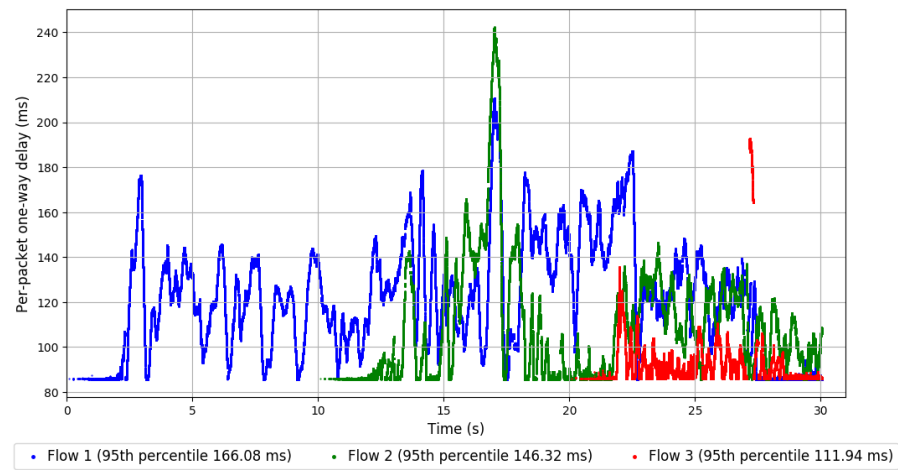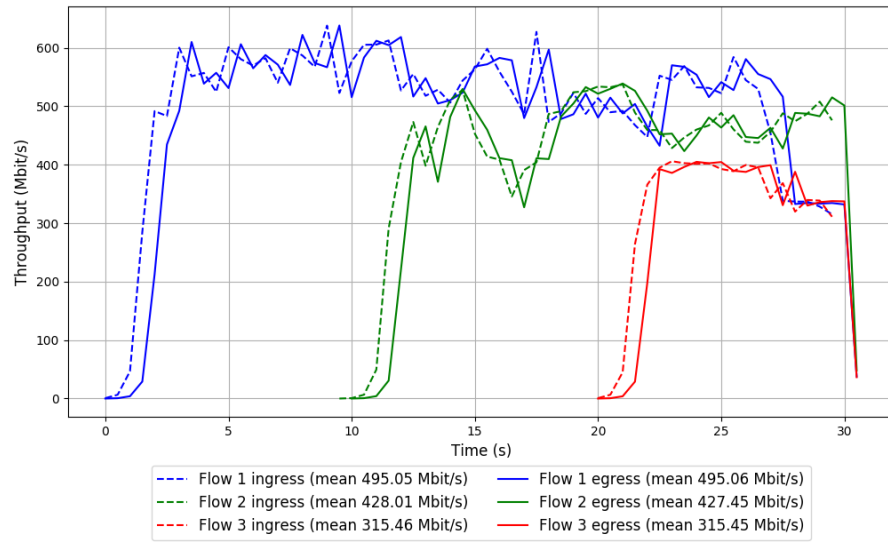Run 2: Report of TCP Vegas — Data Link

```
Run 3: Statistics of TCP Vegas

Start at: 2019-01-21 10:13:06
End at: 2019-01-21 10:13:36
Local clock offset: 0.396 ms
Remote clock offset: -0.056 ms


# Below is generated by plot.py at 2019-01-21 15:25:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 884.84 Mbit/s
95th percentile per-packet one-way delay: 161.127 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 495.06 Mbit/s
95th percentile per-packet one-way delay: 166.078 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 427.45 Mbit/s
95th percentile per-packet one-way delay: 146.318 ms
Loss rate: 0.13%
-- Flow 3:
Average throughput: 315.45 Mbit/s
95th percentile per-packet one-way delay: 111.945 ms
Loss rate: 0.00%
```

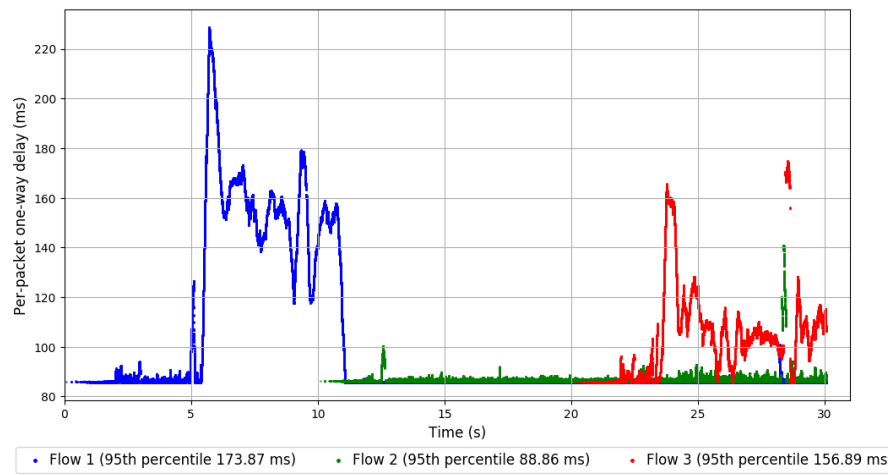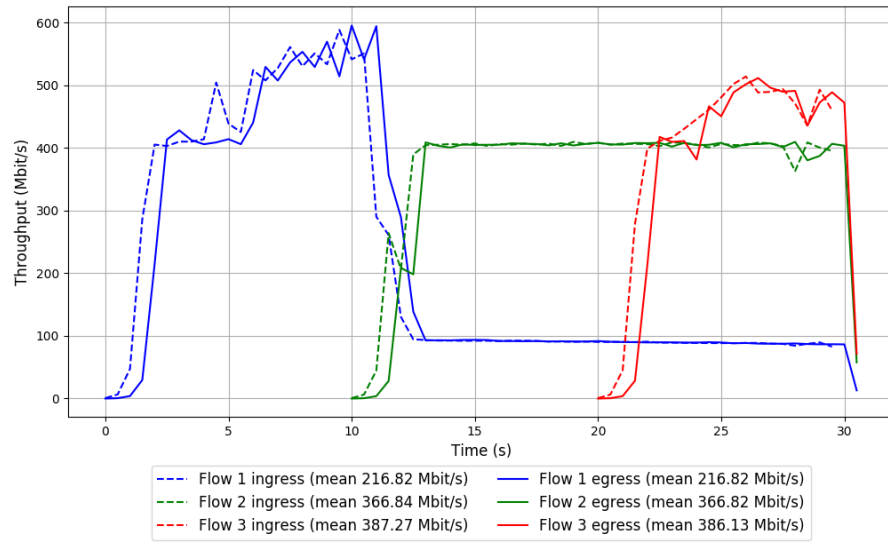Run 3: Report of TCP Vegas — Data Link

```
Run 4: Statistics of TCP Vegas

Start at: 2019-01-21 10:50:44
End at: 2019-01-21 10:51:14
Local clock offset: 0.288 ms
Remote clock offset: 0.05 ms


# Below is generated by plot.py at 2019-01-21 15:26:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 589.61 Mbit/s
95th percentile per-packet one-way delay: 161.899 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 216.82 Mbit/s
95th percentile per-packet one-way delay: 173.873 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 366.82 Mbit/s
95th percentile per-packet one-way delay: 88.860 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 386.13 Mbit/s
95th percentile per-packet one-way delay: 156.894 ms
Loss rate: 0.29%
```

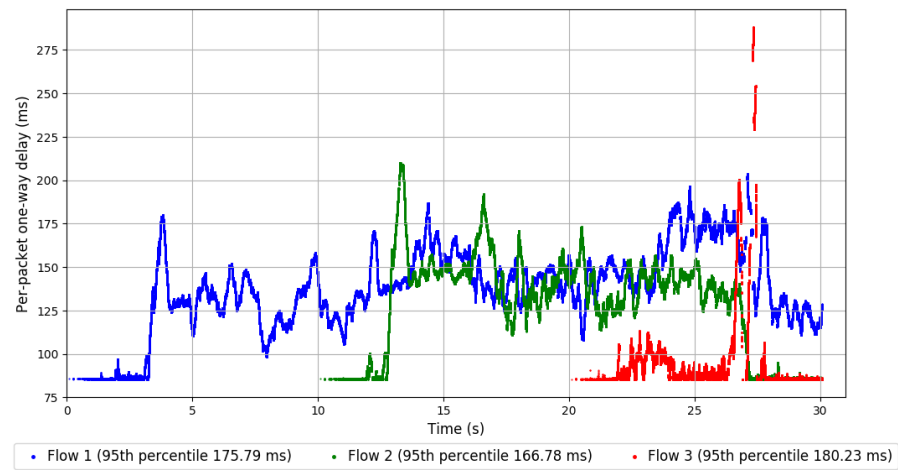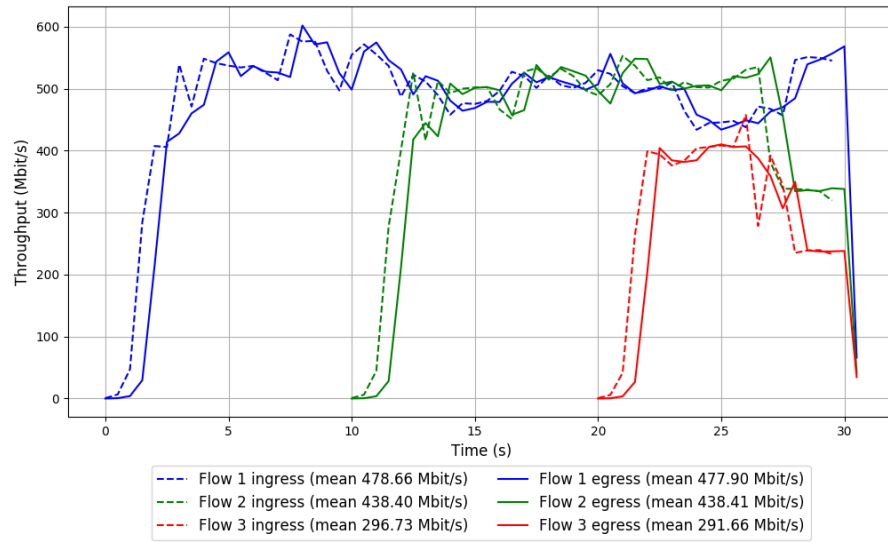Run 4: Report of TCP Vegas — Data Link

```
Run 5: Statistics of TCP Vegas

Start at: 2019-01-21 11:29:04
End at: 2019-01-21 11:29:34
Local clock offset: 0.447 ms
Remote clock offset: -0.075 ms


# Below is generated by plot.py at 2019-01-21 15:33:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 866.79 Mbit/s
95th percentile per-packet one-way delay: 173.779 ms
Loss rate: 0.28%
-- Flow 1:
Average throughput: 477.90 Mbit/s
95th percentile per-packet one-way delay: 175.789 ms
Loss rate: 0.16%
-- Flow 2:
Average throughput: 438.41 Mbit/s
95th percentile per-packet one-way delay: 166.782 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 291.66 Mbit/s
95th percentile per-packet one-way delay: 180.226 ms
Loss rate: 1.71%
```

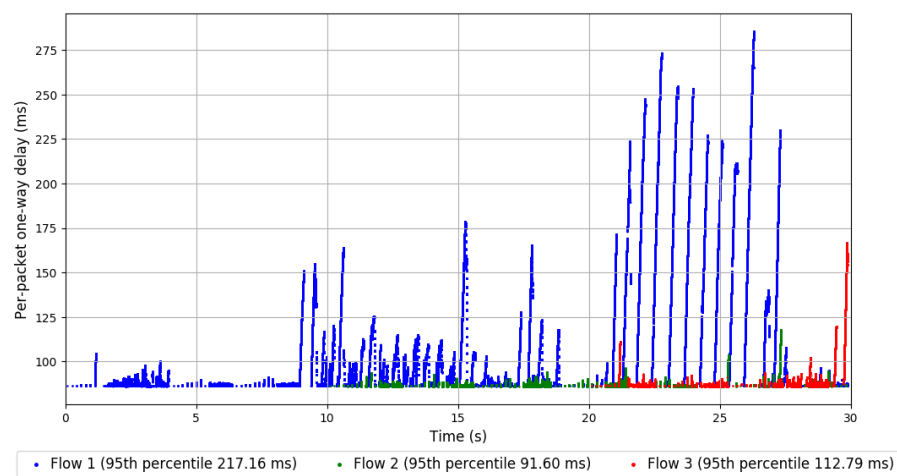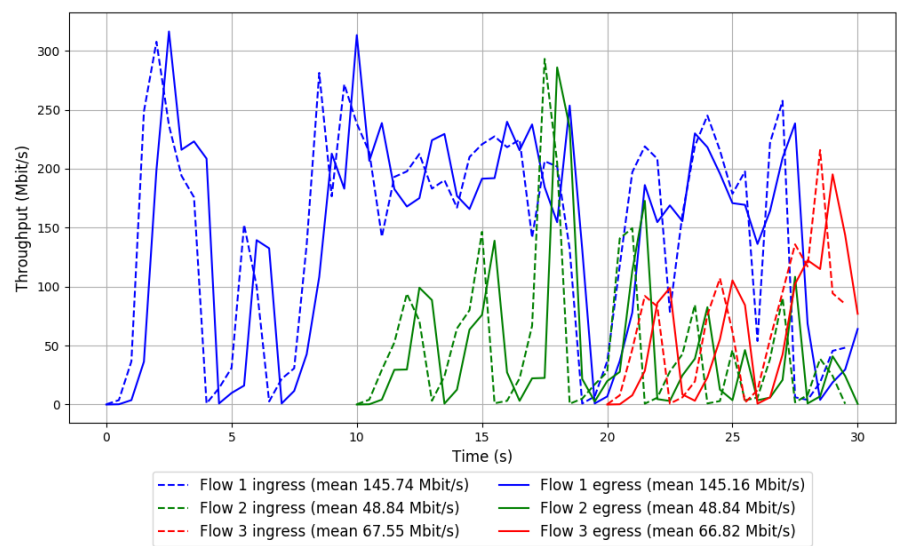Run 5: Report of TCP Vegas — Data Link

```
Run 1: Statistics of Verus

Start at: 2019-01-21 08:55:08
End at: 2019-01-21 08:55:38
Local clock offset: -0.45 ms
Remote clock offset: -0.166 ms


# Below is generated by plot.py at 2019-01-21 15:33:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 199.40 Mbit/s
95th percentile per-packet one-way delay: 207.687 ms
Loss rate: 0.35%
-- Flow 1:
Average throughput: 145.16 Mbit/s
95th percentile per-packet one-way delay: 217.160 ms
Loss rate: 0.39%
-- Flow 2:
Average throughput: 48.84 Mbit/s
95th percentile per-packet one-way delay: 91.601 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 66.82 Mbit/s
95th percentile per-packet one-way delay: 112.791 ms
Loss rate: 0.63%
```

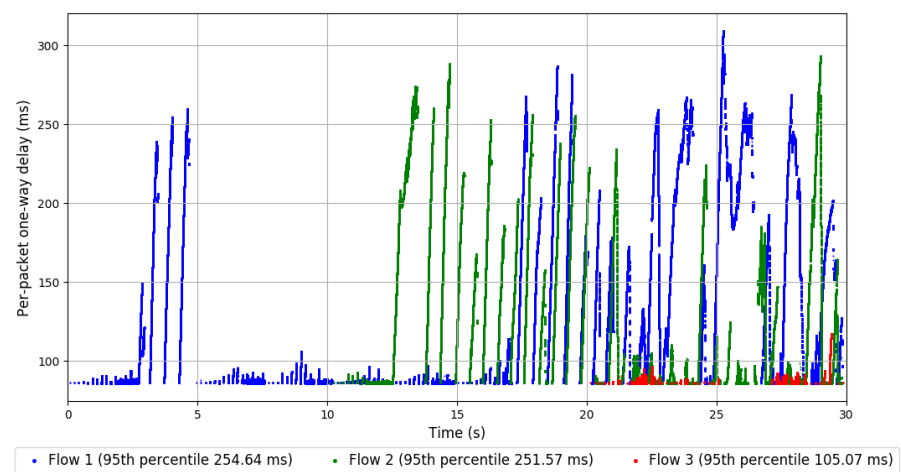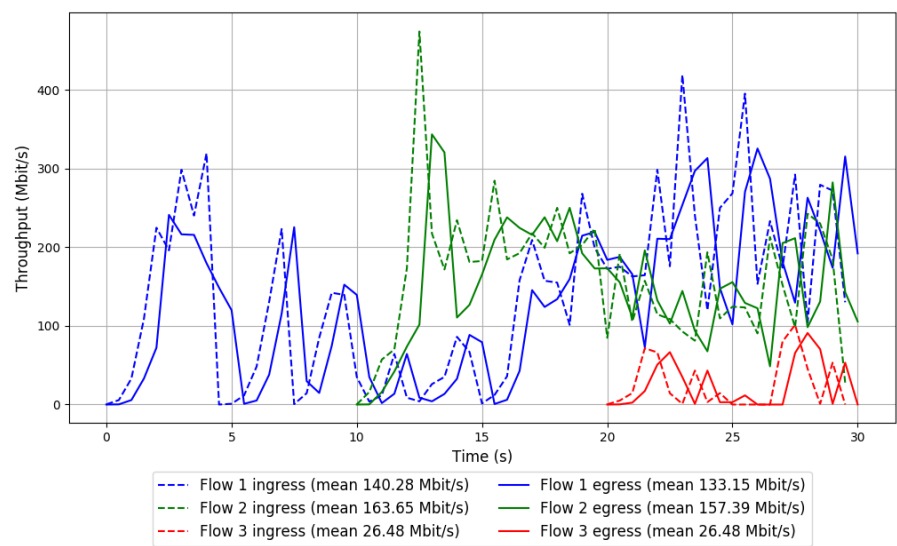Run 1: Report of Verus — Data Link

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```
Run 2: Statistics of Verus

Start at: 2019-01-21 09:33:14
End at: 2019-01-21 09:33:44
Local clock offset: -0.117 ms
Remote clock offset: -0.095 ms


# Below is generated by plot.py at 2019-01-21 15:33:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 245.88 Mbit/s
95th percentile per-packet one-way delay: 253.399 ms
Loss rate: 4.37%
-- Flow 1:
Average throughput: 133.15 Mbit/s
95th percentile per-packet one-way delay: 254.638 ms
Loss rate: 5.06%
-- Flow 2:
Average throughput: 157.39 Mbit/s
95th percentile per-packet one-way delay: 251.568 ms
Loss rate: 3.82%
-- Flow 3:
Average throughput: 26.48 Mbit/s
95th percentile per-packet one-way delay: 105.072 ms
Loss rate: 0.00%
```
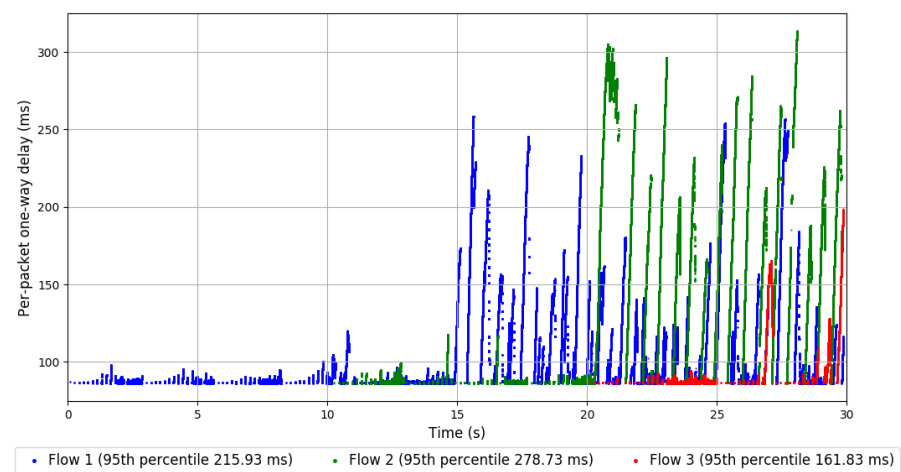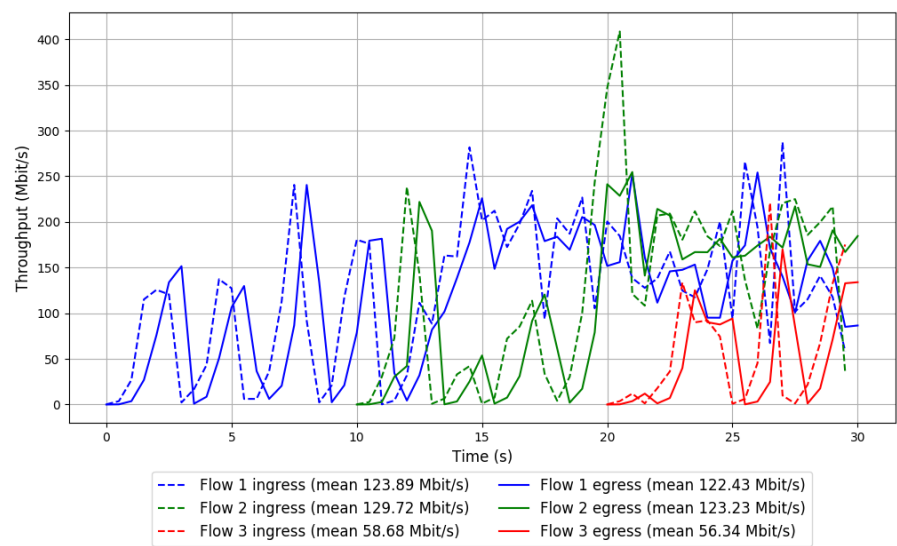
Run 2: Report of Verus — Data Link

Flow 1 ingress (mean 140.28 Mbit/s) --- Flow 1 egress (mean 133.15 Mbit/s)
Flow 2 ingress (mean 163.65 Mbit/s) --- Flow 2 egress (mean 157.39 Mbit/s)
Flow 3 ingress (mean 26.48 Mbit/s) --- Flow 3 egress (mean 26.48 Mbit/s)

Flow 1 (95th percentile 254.64 ms)   Flow 2 (95th percentile 251.57 ms)   Flow 3 (95th percentile 105.07 ms)

```
Run 3: Statistics of Verus

Start at: 2019-01-21 10:11:23
End at: 2019-01-21 10:11:53
Local clock offset: -0.106 ms
Remote clock offset: -0.033 ms


# Below is generated by plot.py at 2019-01-21 15:33:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 222.51 Mbit/s
95th percentile per-packet one-way delay: 250.411 ms
Loss rate: 2.67%
-- Flow 1:
Average throughput: 122.43 Mbit/s
95th percentile per-packet one-way delay: 215.927 ms
Loss rate: 1.18%
-- Flow 2:
Average throughput: 123.23 Mbit/s
95th percentile per-packet one-way delay: 278.728 ms
Loss rate: 4.61%
-- Flow 3:
Average throughput: 56.34 Mbit/s
95th percentile per-packet one-way delay: 161.834 ms
Loss rate: 3.61%
```
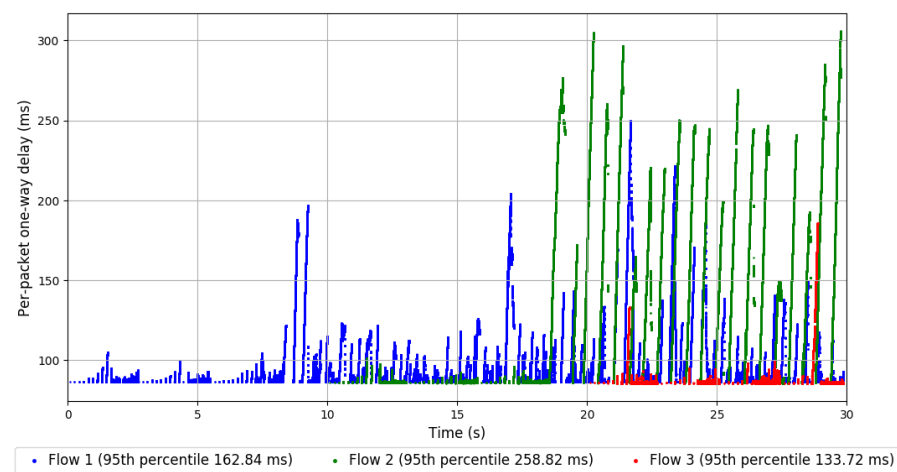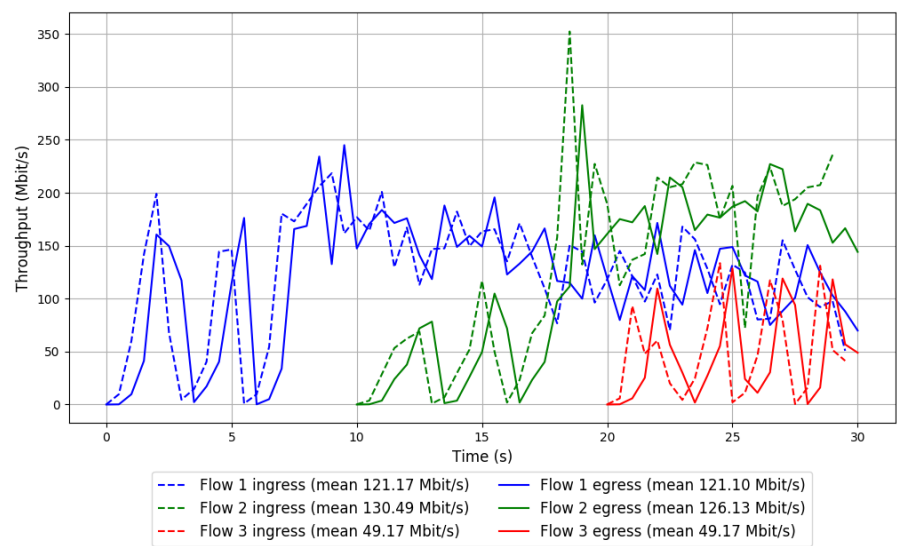
Run 3: Report of Verus — Data Link

Flow 1 ingress (mean 123.89 Mbit/s) — Flow 1 egress (mean 122.43 Mbit/s)
Flow 2 ingress (mean 129.72 Mbit/s) — Flow 2 egress (mean 123.23 Mbit/s)
Flow 3 ingress (mean 58.68 Mbit/s) — Flow 3 egress (mean 56.34 Mbit/s)

Flow 1 (95th percentile 215.93 ms) — Flow 2 (95th percentile 278.73 ms) — Flow 3 (95th percentile 161.83 ms)

```
Run 4: Statistics of Verus

Start at: 2019-01-21 10:49:05
End at: 2019-01-21 10:49:35
Local clock offset: 0.39 ms
Remote clock offset: 0.044 ms


# Below is generated by plot.py at 2019-01-21 15:33:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 220.57 Mbit/s
95th percentile per-packet one-way delay: 239.238 ms
Loss rate: 0.94%
-- Flow 1:
Average throughput: 121.10 Mbit/s
95th percentile per-packet one-way delay: 162.845 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 126.13 Mbit/s
95th percentile per-packet one-way delay: 258.825 ms
Loss rate: 2.38%
-- Flow 3:
Average throughput: 49.17 Mbit/s
95th percentile per-packet one-way delay: 133.721 ms
Loss rate: 0.00%
```

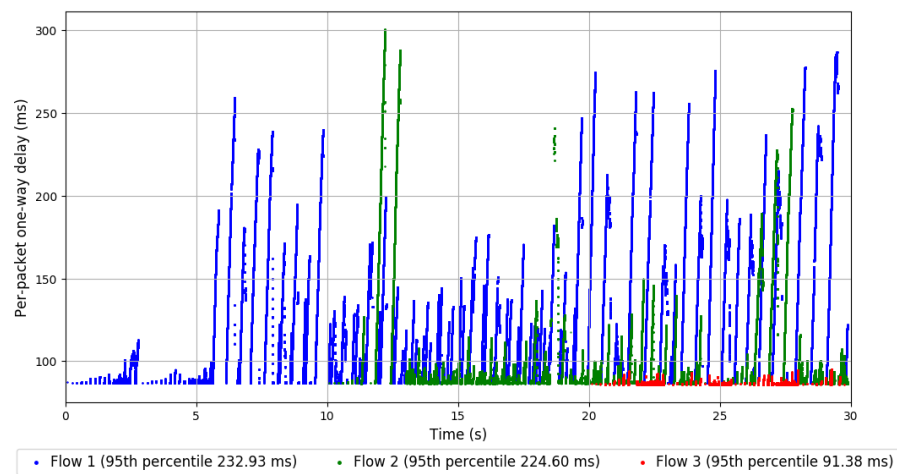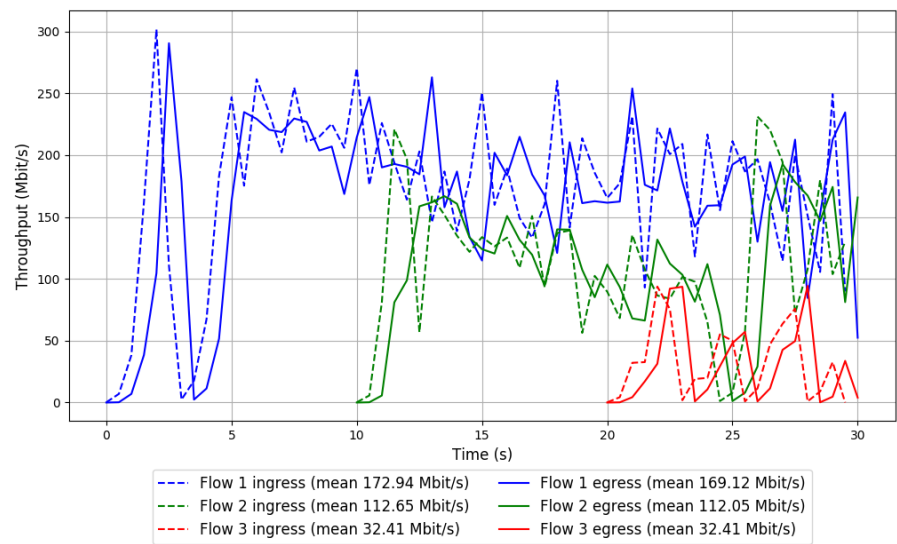# Run 4: Report of Verus — Data Link

```
Run 5: Statistics of Verus

Start at: 2019-01-21 11:27:21
End at: 2019-01-21 11:27:51
Local clock offset: -0.198 ms
Remote clock offset: -0.048 ms


# Below is generated by plot.py at 2019-01-21 15:33:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 254.05 Mbit/s
95th percentile per-packet one-way delay: 230.307 ms
Loss rate: 1.64%
-- Flow 1:
Average throughput: 169.12 Mbit/s
95th percentile per-packet one-way delay: 232.931 ms
Loss rate: 2.22%
-- Flow 2:
Average throughput: 112.05 Mbit/s
95th percentile per-packet one-way delay: 224.597 ms
Loss rate: 0.54%
-- Flow 3:
Average throughput: 32.41 Mbit/s
95th percentile per-packet one-way delay: 91.383 ms
Loss rate: 0.00%
```

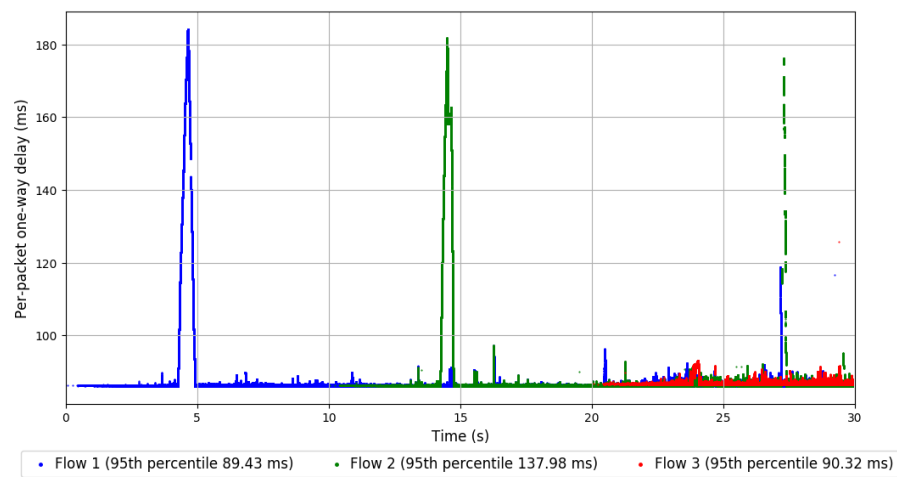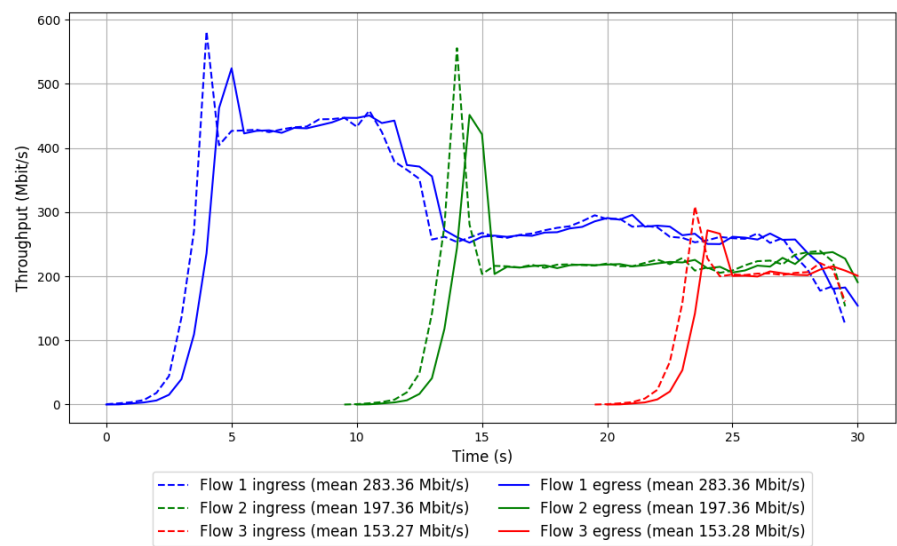Run 5: Report of Verus — Data Link

```
Run 1: Statistics of PCC-Vivace

Start at: 2019-01-21 09:13:12
End at: 2019-01-21 09:13:42
Local clock offset: -0.457 ms
Remote clock offset: -0.191 ms


# Below is generated by plot.py at 2019-01-21 15:33:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 465.39 Mbit/s
95th percentile per-packet one-way delay: 92.026 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 283.36 Mbit/s
95th percentile per-packet one-way delay: 89.427 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 197.36 Mbit/s
95th percentile per-packet one-way delay: 137.980 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 153.28 Mbit/s
95th percentile per-packet one-way delay: 90.318 ms
Loss rate: 0.00%
```

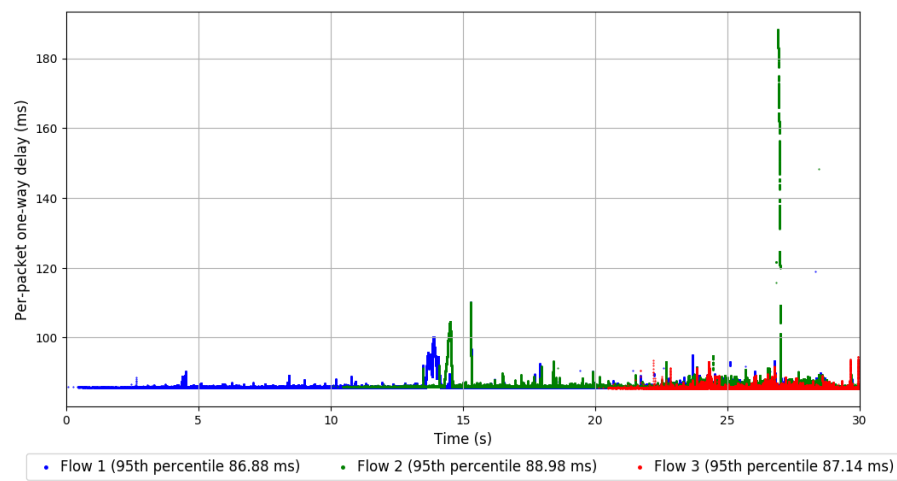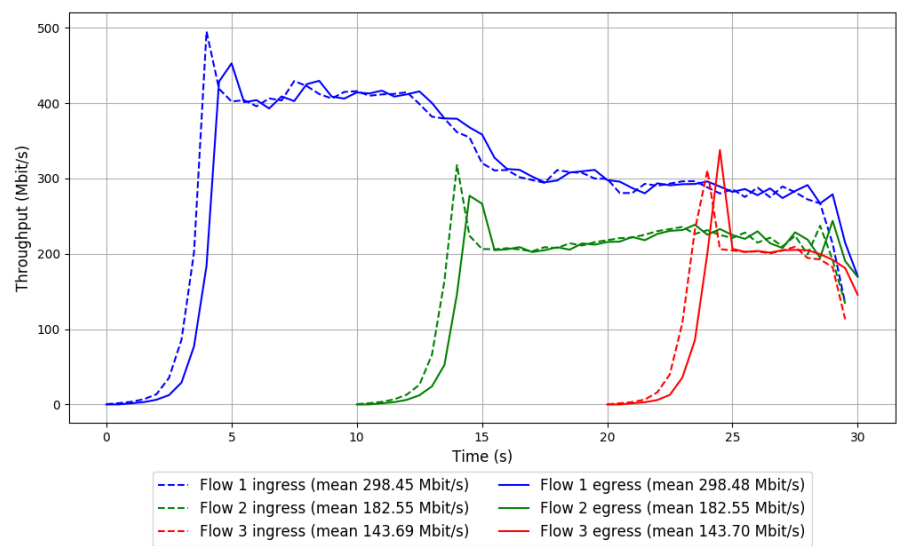# Run 1: Report of PCC-Vivace — Data Link

```
Run 2: Statistics of PCC-Vivace

Start at: 2019-01-21 09:51:23
End at: 2019-01-21 09:51:53
Local clock offset: 0.295 ms
Remote clock offset: -0.082 ms


# Below is generated by plot.py at 2019-01-21 15:34:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 467.23 Mbit/s
95th percentile per-packet one-way delay: 87.440 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 298.48 Mbit/s
95th percentile per-packet one-way delay: 86.882 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 182.55 Mbit/s
95th percentile per-packet one-way delay: 88.980 ms
Loss rate: 0.03%
-- Flow 3:
Average throughput: 143.70 Mbit/s
95th percentile per-packet one-way delay: 87.136 ms
Loss rate: 0.04%
```

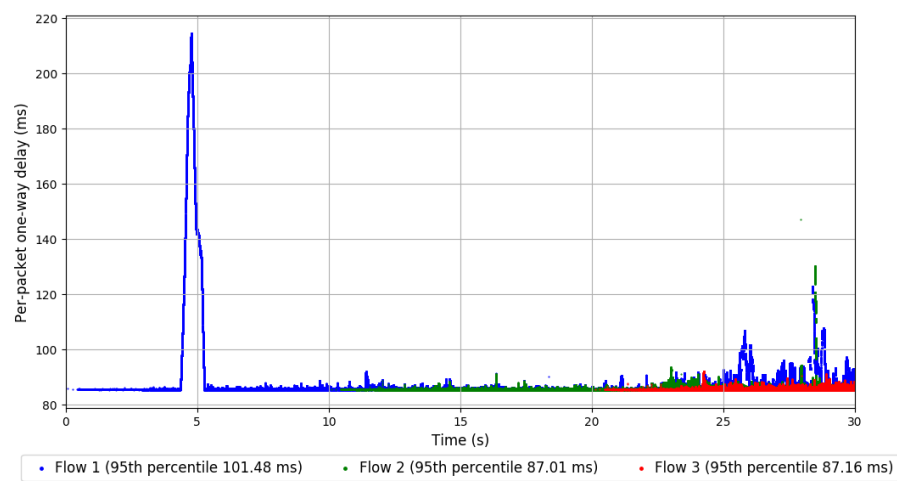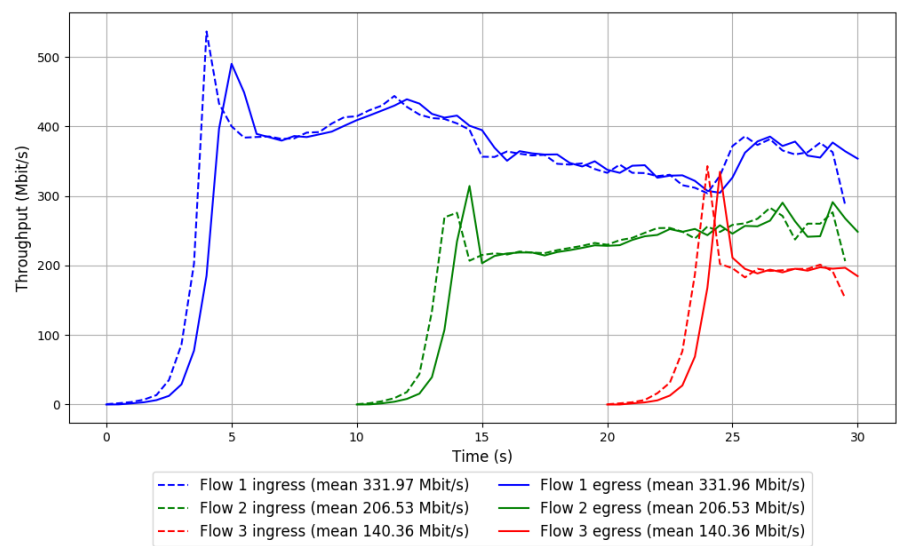## Run 2: Report of PCC-Vivace — Data Link

```
Run 3: Statistics of PCC-Vivace

Start at: 2019-01-21 10:29:39
End at: 2019-01-21 10:30:09
Local clock offset: 0.448 ms
Remote clock offset: -0.017 ms


# Below is generated by plot.py at 2019-01-21 15:35:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 515.55 Mbit/s
95th percentile per-packet one-way delay: 93.782 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 331.96 Mbit/s
95th percentile per-packet one-way delay: 101.481 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 206.53 Mbit/s
95th percentile per-packet one-way delay: 87.007 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 140.36 Mbit/s
95th percentile per-packet one-way delay: 87.161 ms
Loss rate: 0.00%
```

Run 3: Report of PCC-Vivace — Data Link

```
Run 4: Statistics of PCC-Vivace

Start at: 2019-01-21 11:06:46
End at: 2019-01-21 11:07:16
Local clock offset: 0.327 ms
Remote clock offset: 0.081 ms


# Below is generated by plot.py at 2019-01-21 15:35:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 497.89 Mbit/s
95th percentile per-packet one-way delay: 122.153 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 333.81 Mbit/s
95th percentile per-packet one-way delay: 133.285 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 170.38 Mbit/s
95th percentile per-packet one-way delay: 87.017 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 153.65 Mbit/s
95th percentile per-packet one-way delay: 94.526 ms
Loss rate: 0.01%
```
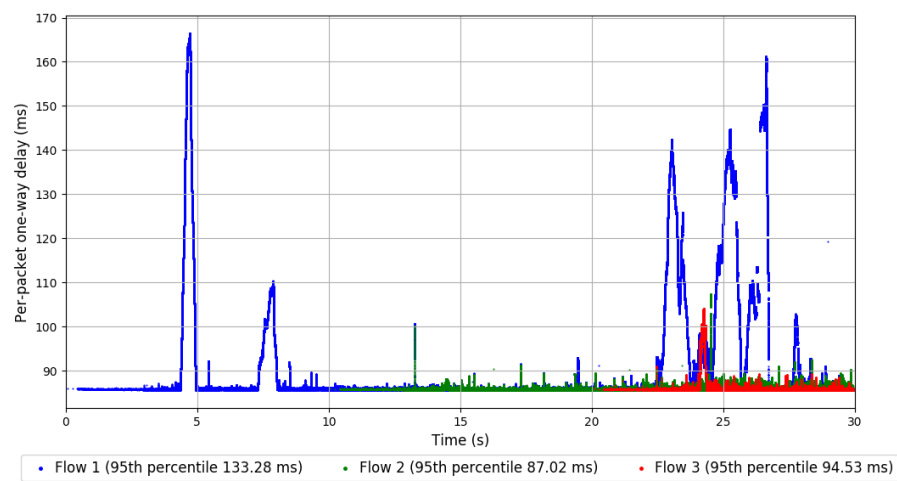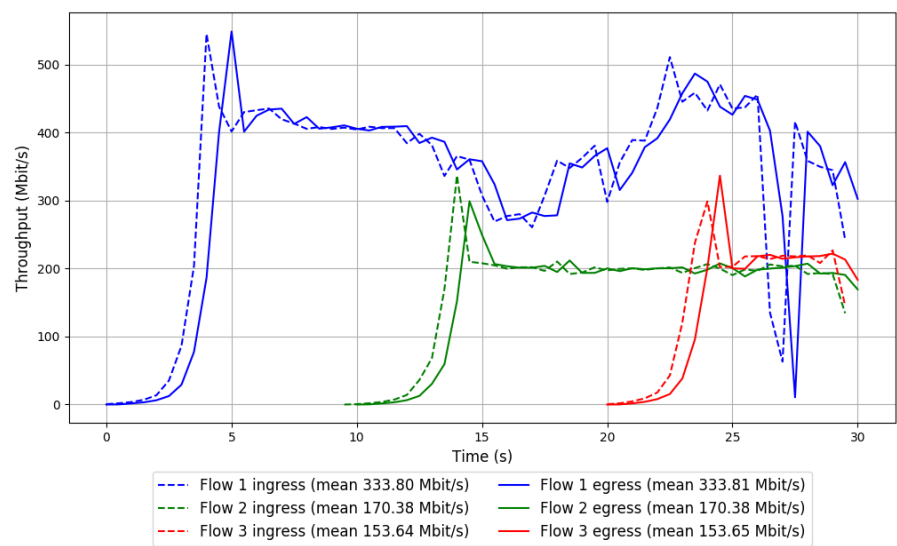
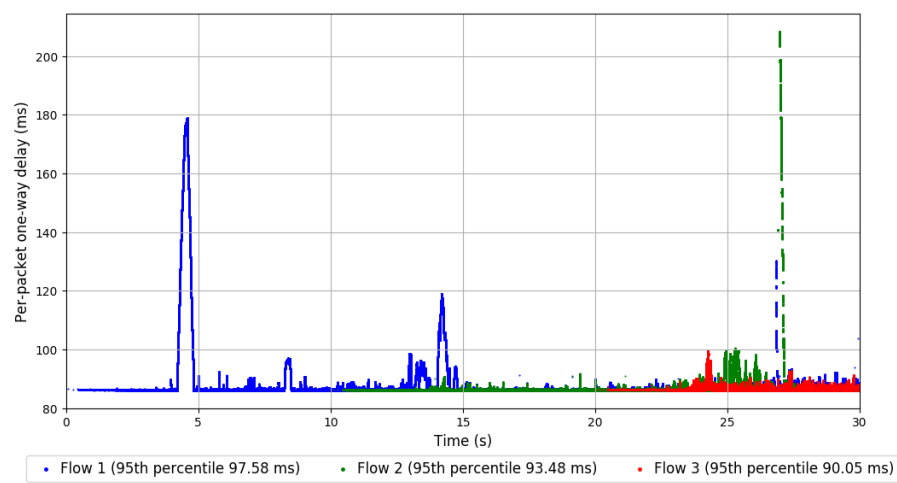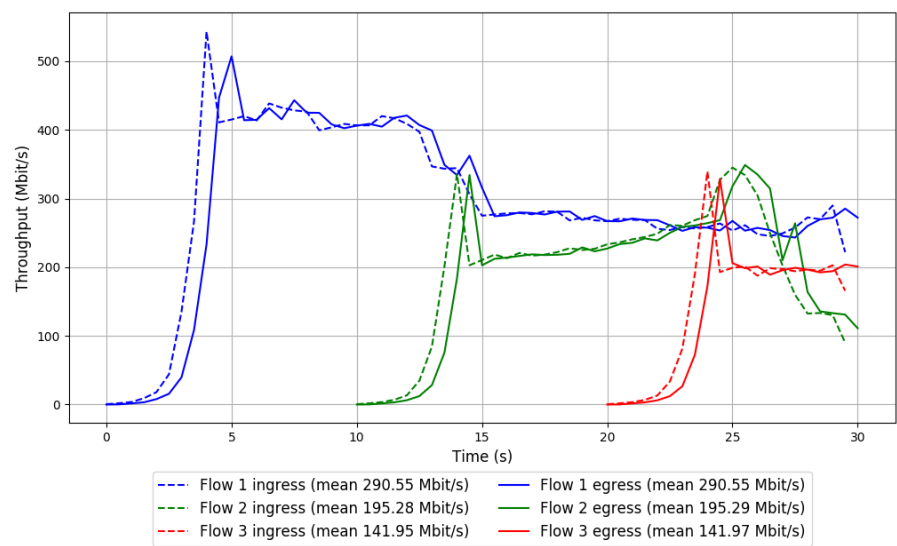Run 4: Report of PCC-Vivace — Data Link

```
Run 5: Statistics of PCC-Vivace

Start at: 2019-01-21 11:45:01
End at: 2019-01-21 11:45:31
Local clock offset: -0.33 ms
Remote clock offset: -0.046 ms


# Below is generated by plot.py at 2019-01-21 15:35:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 467.28 Mbit/s
95th percentile per-packet one-way delay: 95.304 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 290.55 Mbit/s
95th percentile per-packet one-way delay: 97.575 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 195.29 Mbit/s
95th percentile per-packet one-way delay: 93.482 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 141.97 Mbit/s
95th percentile per-packet one-way delay: 90.046 ms
Loss rate: 0.00%
```

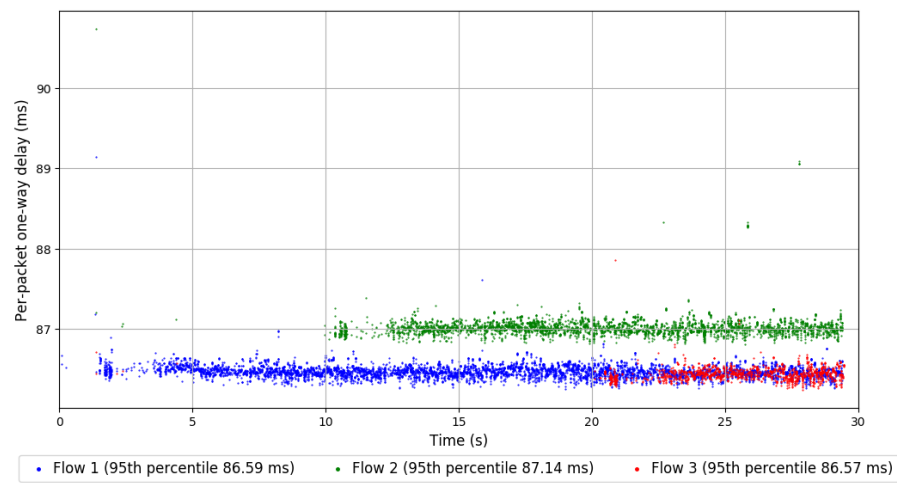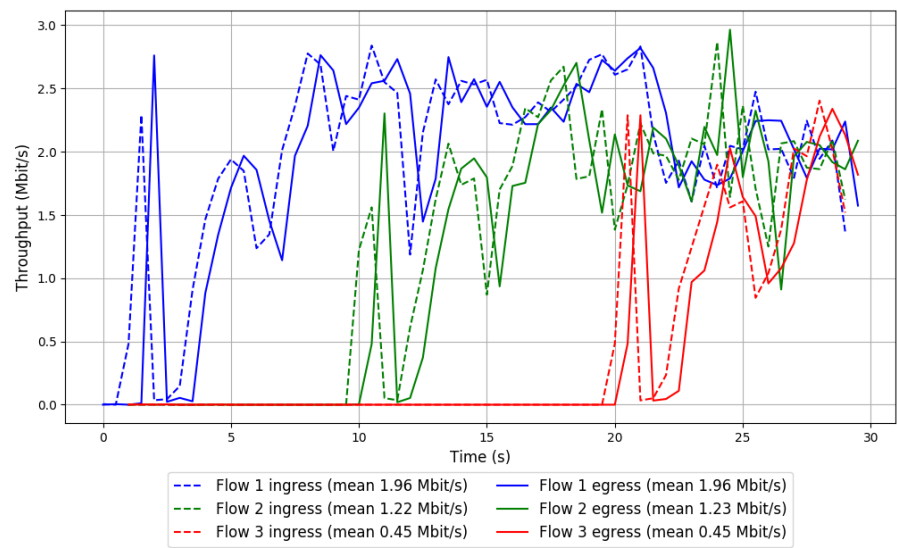Run 5: Report of PCC-Vivace — Data Link

```
Run 1: Statistics of WebRTC media

Start at: 2019-01-21 09:07:19
End at: 2019-01-21 09:07:49
Local clock offset: -0.571 ms
Remote clock offset: -0.186 ms


# Below is generated by plot.py at 2019-01-21 15:35:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.56 Mbit/s
95th percentile per-packet one-way delay: 87.081 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 1.96 Mbit/s
95th percentile per-packet one-way delay: 86.587 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 1.23 Mbit/s
95th percentile per-packet one-way delay: 87.141 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.45 Mbit/s
95th percentile per-packet one-way delay: 86.566 ms
Loss rate: 0.00%
```

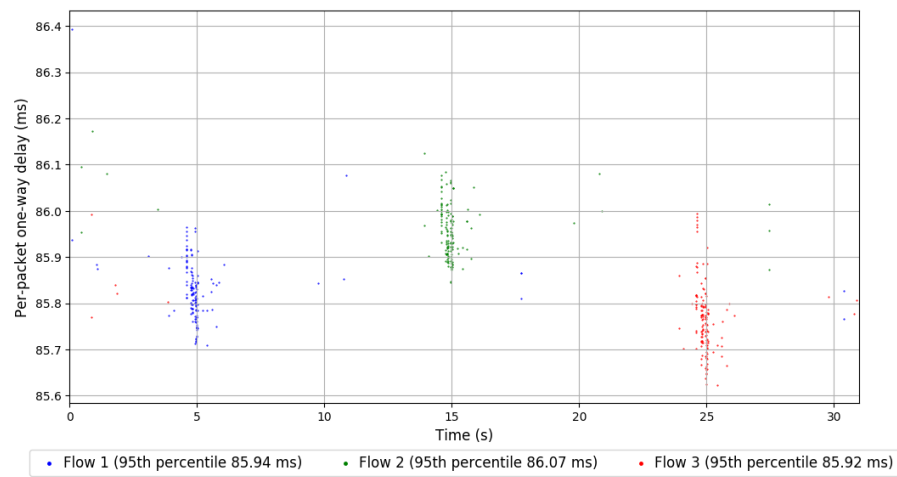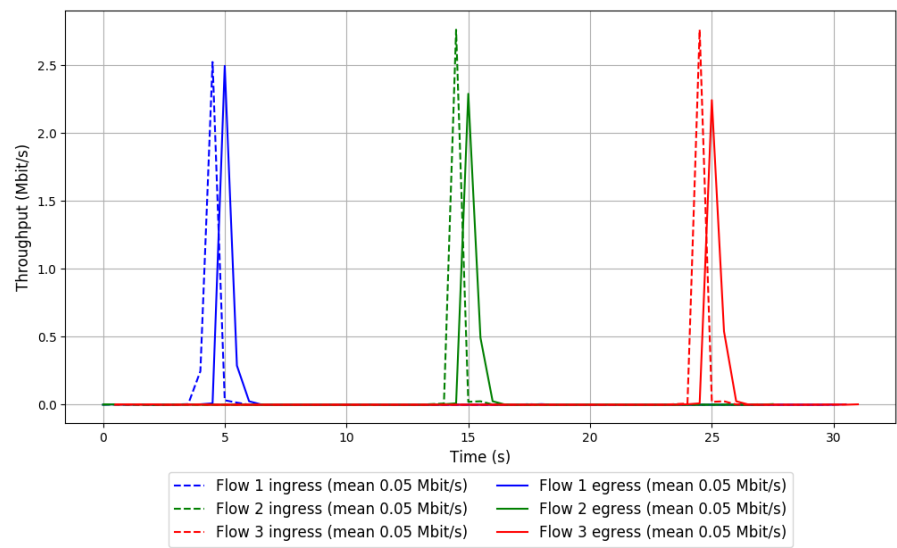Run 1: Report of WebRTC media — Data Link

```
Run 2: Statistics of WebRTC media

Start at: 2019-01-21 09:45:21
End at: 2019-01-21 09:45:51
Local clock offset: 0.215 ms
Remote clock offset: -0.084 ms


# Below is generated by plot.py at 2019-01-21 15:35:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 86.023 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 85.937 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 86.068 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 85.921 ms
Loss rate: 0.00%
```
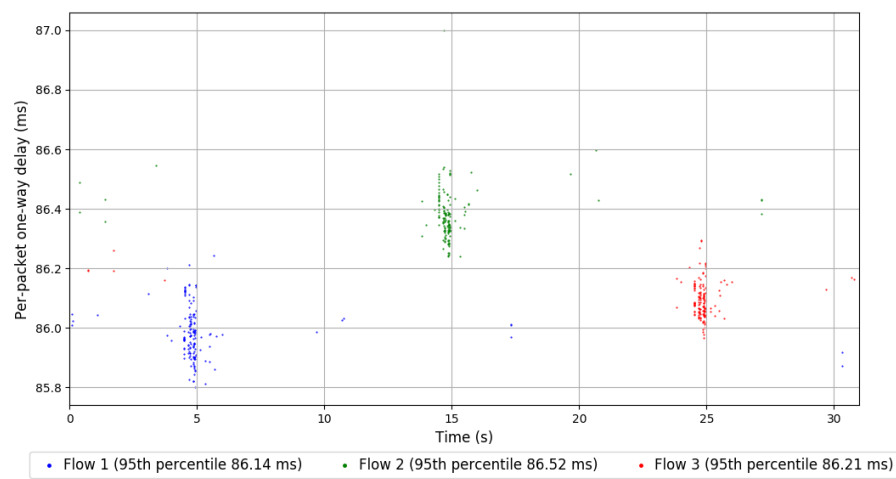
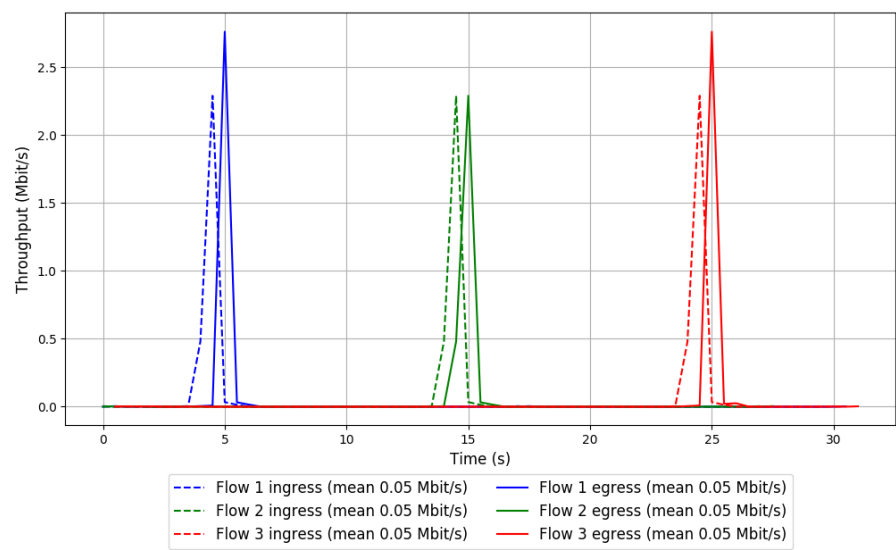Run 2: Report of WebRTC media — Data Link

```
Run 3: Statistics of WebRTC media

Start at: 2019-01-21 10:23:39
End at: 2019-01-21 10:24:09
Local clock offset: -0.013 ms
Remote clock offset: -0.077 ms


# Below is generated by plot.py at 2019-01-21 15:35:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 86.448 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 86.136 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 86.518 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 86.208 ms
Loss rate: 0.00%
```

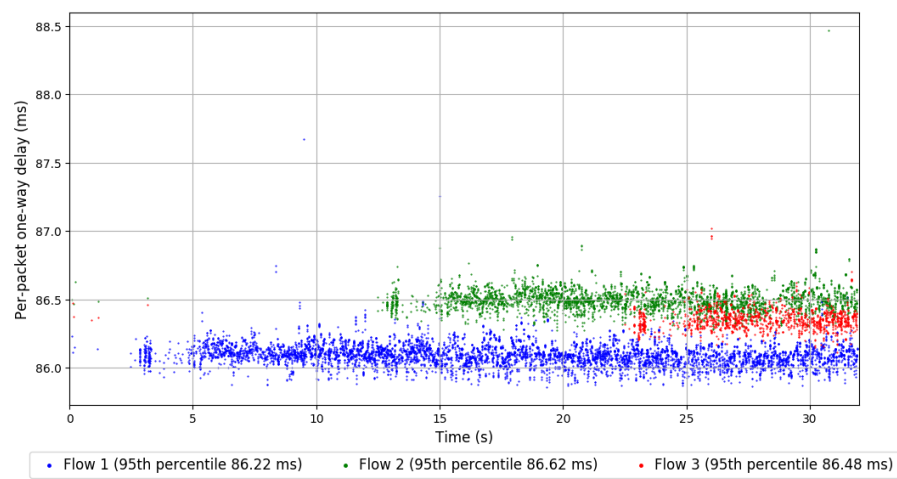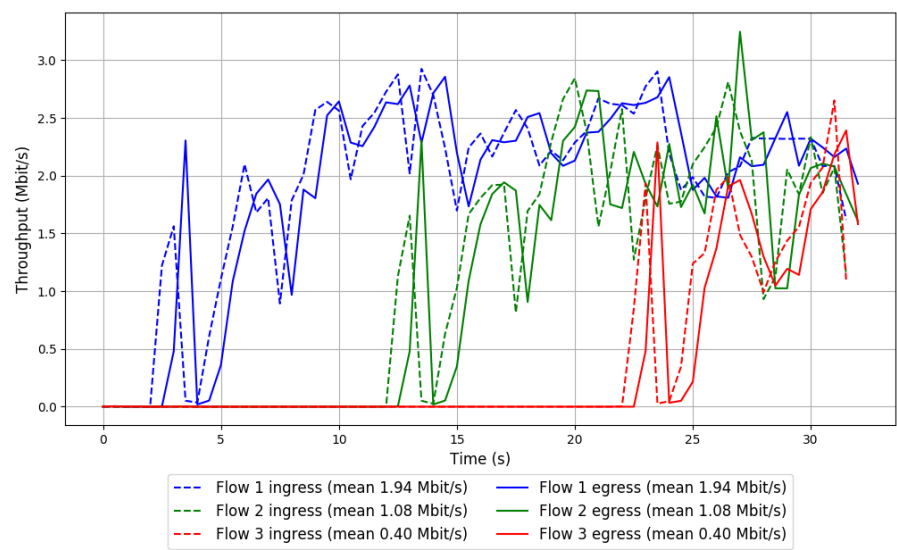Run 3: Report of WebRTC media — Data Link

```
Run 4: Statistics of WebRTC media

Start at: 2019-01-21 11:00:45
End at: 2019-01-21 11:01:15
Local clock offset: -0.007 ms
Remote clock offset: -0.005 ms


# Below is generated by plot.py at 2019-01-21 15:35:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.42 Mbit/s
95th percentile per-packet one-way delay: 86.569 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.94 Mbit/s
95th percentile per-packet one-way delay: 86.219 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.08 Mbit/s
95th percentile per-packet one-way delay: 86.620 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.40 Mbit/s
95th percentile per-packet one-way delay: 86.482 ms
Loss rate: 0.00%
```

Run 4: Report of WebRTC media — Data Link

```
Run 5: Statistics of WebRTC media

Start at: 2019-01-21 11:38:58
End at: 2019-01-21 11:39:28
Local clock offset: 0.31 ms
Remote clock offset: -0.045 ms


# Below is generated by plot.py at 2019-01-21 15:35:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 86.013 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 85.745 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 86.067 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 85.831 ms
Loss rate: 0.00%
```

Run 5: Report of WebRTC media — Data Link