Pantheon Report

Generated at 2018-09-07 17:50:57 (UTC).

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

Repeated the test of 18 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.
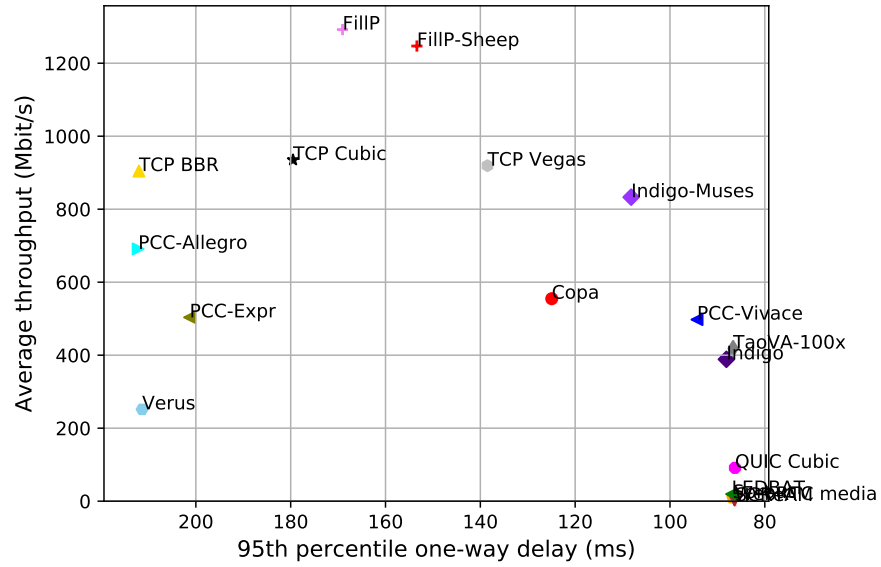
```
System info:
Linux 4.15.0-1018-gcp
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912
net.ipv4.tcp_mem = 190986 254651 381972
```
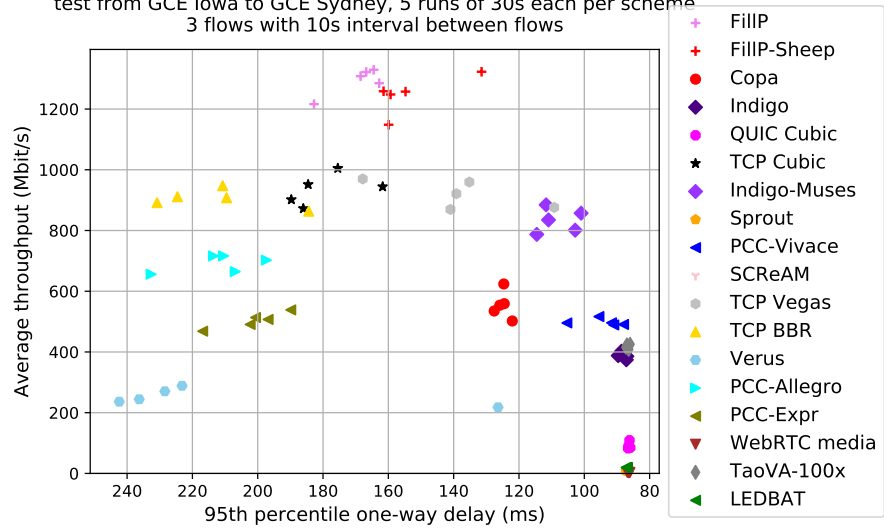
```
Git summary:
branch: muses @ e0a9b05ad97d268013b7cc9a9c95637b593a1b4c
third_party/fillp @ d47f4fa1b454a5e3c0537115c5a28436dbd4b834
third_party/fillp-sheep @ daed0c84f98531712514b2231f43ec6901114ffe
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdfe58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/muses @ 7631aea3923a3598767c87765ae5103aca0678d3
third_party/pantheon-tunnel @ cbfce6db5ff5740dafe1771f813cd646339e1952
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 Iowa to GCE Sydney, 5 runs of 30s each per scheme
3 flows with 10s interval between flows (mean of all runs by scheme)

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

3

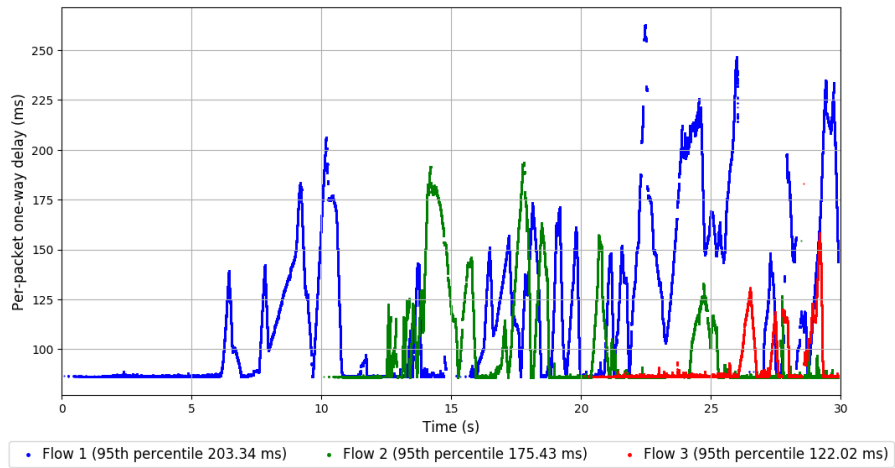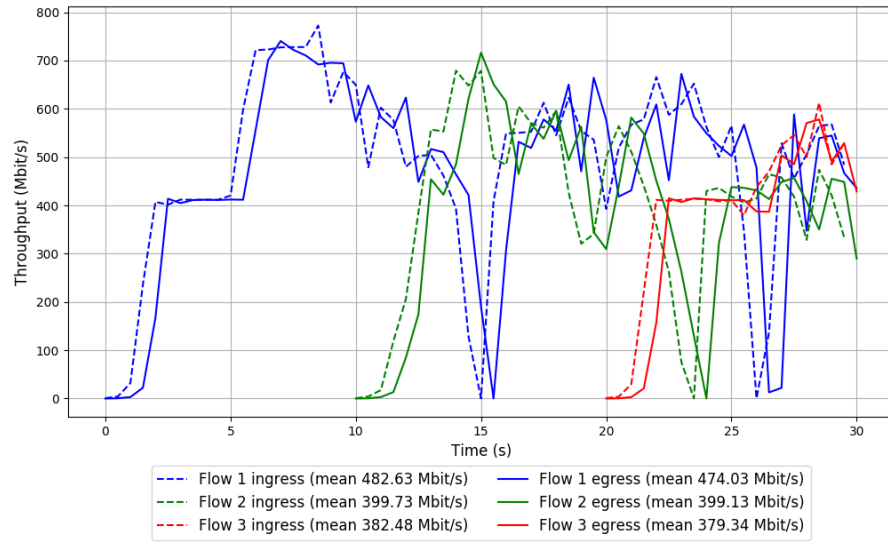| scheme	# runs	mean avg tput (Mbit/s)			mean 95th-%ile delay (ms)			mean loss rate (%)		
		flow 1	flow 2	flow 3	flow 1	flow 2	flow 3	flow 1	flow 2	flow 3
TCP BBR	5	477.91	442.31	403.90	215.00	211.02	189.09	3.50	4.55	3.88
Copa	5	303.07	266.11	228.44	112.28	127.32	143.82	0.52	0.72	2.31
TCP Cubic	5	502.15	466.79	373.85	160.45	183.73	165.48	0.70	1.19	2.49
FillP	5	714.60	607.76	531.73	162.72	175.43	147.08	4.16	5.95	2.93
FillP-Sheep	5	689.43	596.65	493.69	153.17	160.25	112.54	2.35	2.65	2.34
Indigo	5	204.57	194.48	168.05	87.48	89.49	88.78	0.61	0.94	2.14
LEDBAT	5	12.52	8.29	4.02	87.06	86.85	86.88	1.15	1.74	3.52
Indigo-Muses	5	483.13	403.12	255.77	105.73	116.80	99.13	0.50	1.04	3.82
PCC-Allegro	5	388.27	342.63	232.89	217.59	188.04	177.85	5.59	4.53	3.53
PCC-Expr	5	293.74	226.25	183.40	201.44	174.33	144.58	3.07	2.12	2.51
QUIC Cubic	5	50.82	44.63	30.71	86.16	86.10	86.31	0.90	1.39	3.71
SCReAM	5	0.22	0.22	0.22	86.23	86.24	86.09	0.51	0.91	1.77
Sprout	5	4.50	4.22	3.81	86.72	86.69	86.87	0.56	1.10	2.36
TaoVA-100x	5	213.50	210.94	196.47	86.50	86.54	87.61	0.67	0.78	1.32
TCP Vegas	5	496.22	461.06	355.10	118.37	133.44	140.32	0.61	1.16	2.24
Verus	5	141.96	124.86	82.14	184.79	194.38	161.83	3.03	3.05	5.27
PCC-Vivace	5	315.81	210.09	130.12	96.53	91.32	97.11	0.58	0.99	2.60
WebRTC media	5	1.74	1.13	0.43	86.31	86.15	86.22	0.77	1.07	3.00

```
Run 1: Statistics of TCP BBR

Start at: 2018-09-07 12:46:55
End at: 2018-09-07 12:47:25
Local clock offset: 0.031 ms
Remote clock offset: -0.001 ms


# Below is generated by plot.py at 2018-09-07 15:50:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 863.67 Mbit/s
95th percentile per-packet one-way delay: 184.388 ms
Loss rate: 1.97%
-- Flow 1:
Average throughput: 474.03 Mbit/s
95th percentile per-packet one-way delay: 203.344 ms
Loss rate: 2.35%
-- Flow 2:
Average throughput: 399.13 Mbit/s
95th percentile per-packet one-way delay: 175.429 ms
Loss rate: 1.02%
-- Flow 3:
Average throughput: 379.34 Mbit/s
95th percentile per-packet one-way delay: 122.015 ms
Loss rate: 2.55%
```
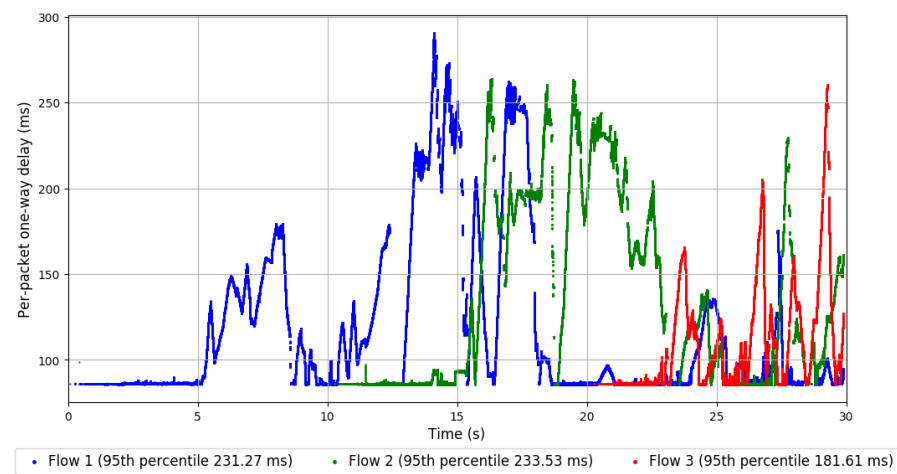
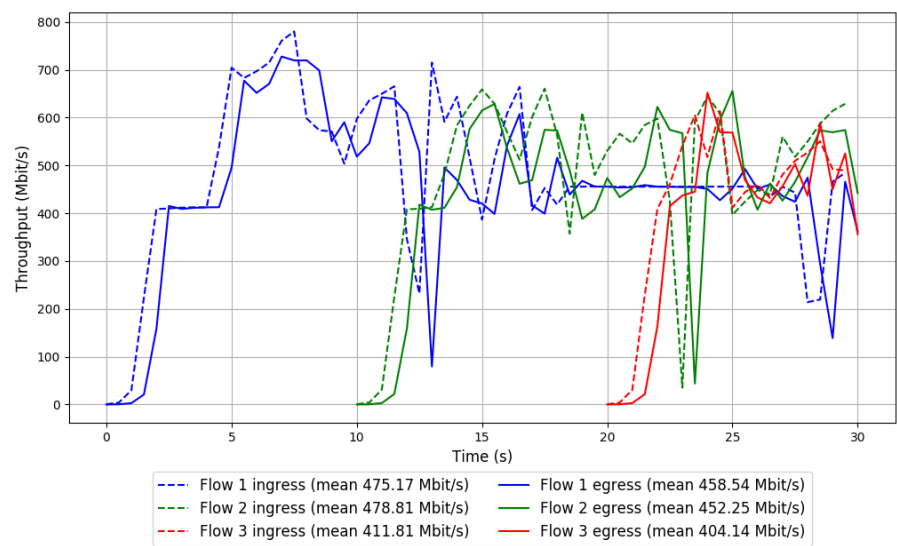Run 1: Report of TCP BBR — Data Link

```
Run 2: Statistics of TCP BBR

Start at: 2018-09-07 13:19:26
End at: 2018-09-07 13:19:56
Local clock offset: -0.178 ms
Remote clock offset: -0.054 ms


# Below is generated by plot.py at 2018-09-07 15:51:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 891.71 Mbit/s
95th percentile per-packet one-way delay: 230.816 ms
Loss rate: 4.78%
-- Flow 1:
Average throughput: 458.54 Mbit/s
95th percentile per-packet one-way delay: 231.273 ms
Loss rate: 4.06%
-- Flow 2:
Average throughput: 452.25 Mbit/s
95th percentile per-packet one-way delay: 233.528 ms
Loss rate: 6.37%
-- Flow 3:
Average throughput: 404.14 Mbit/s
95th percentile per-packet one-way delay: 181.612 ms
Loss rate: 3.57%
```

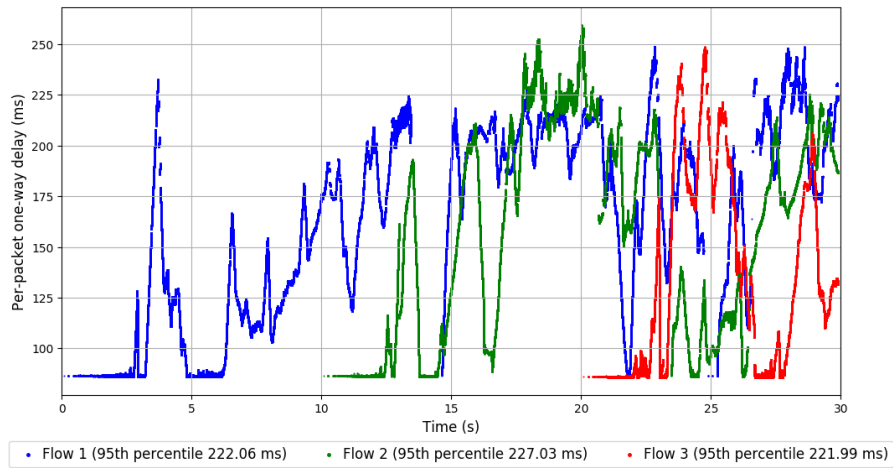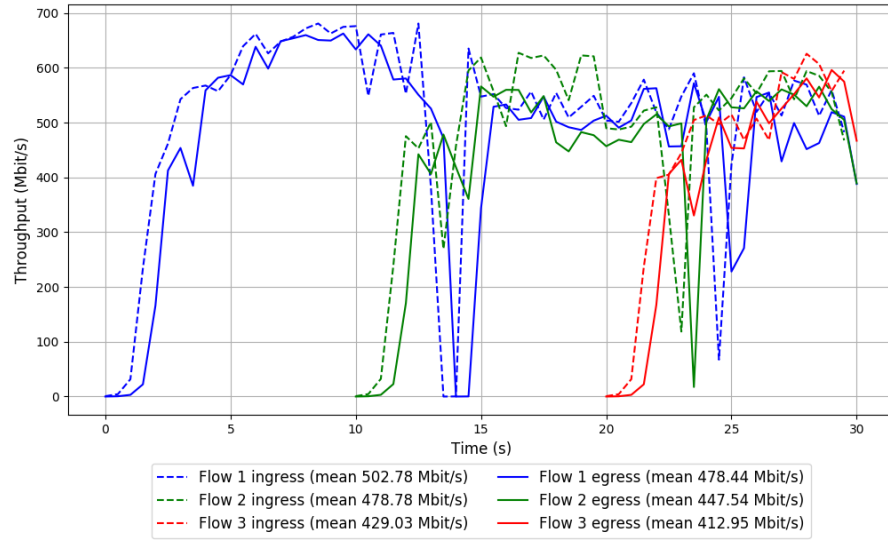Run 2: Report of TCP BBR — Data Link

```
Run 3: Statistics of TCP BBR

Start at: 2018-09-07 13:51:44
End at: 2018-09-07 13:52:14
Local clock offset: -0.034 ms
Remote clock offset: -0.138 ms


# Below is generated by plot.py at 2018-09-07 15:51:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 911.49 Mbit/s
95th percentile per-packet one-way delay: 224.570 ms
Loss rate: 6.04%
-- Flow 1:
Average throughput: 478.44 Mbit/s
95th percentile per-packet one-way delay: 222.059 ms
Loss rate: 5.39%
-- Flow 2:
Average throughput: 447.54 Mbit/s
95th percentile per-packet one-way delay: 227.028 ms
Loss rate: 7.33%
-- Flow 3:
Average throughput: 412.95 Mbit/s
95th percentile per-packet one-way delay: 221.985 ms
Loss rate: 5.42%
```

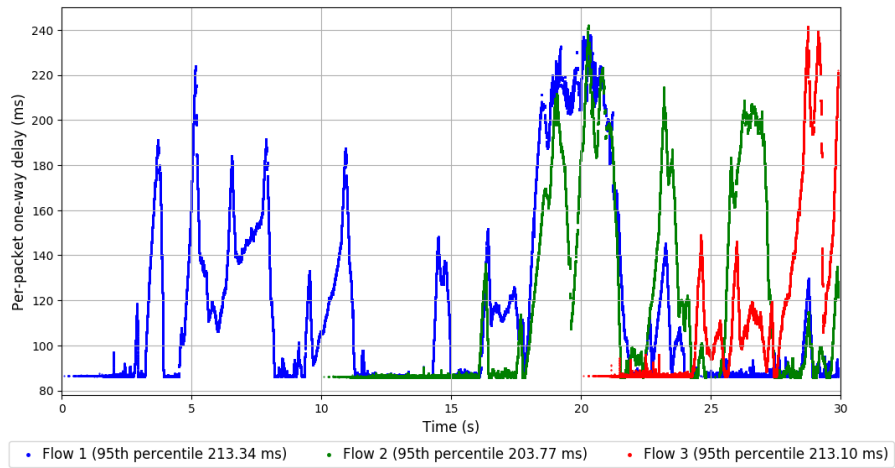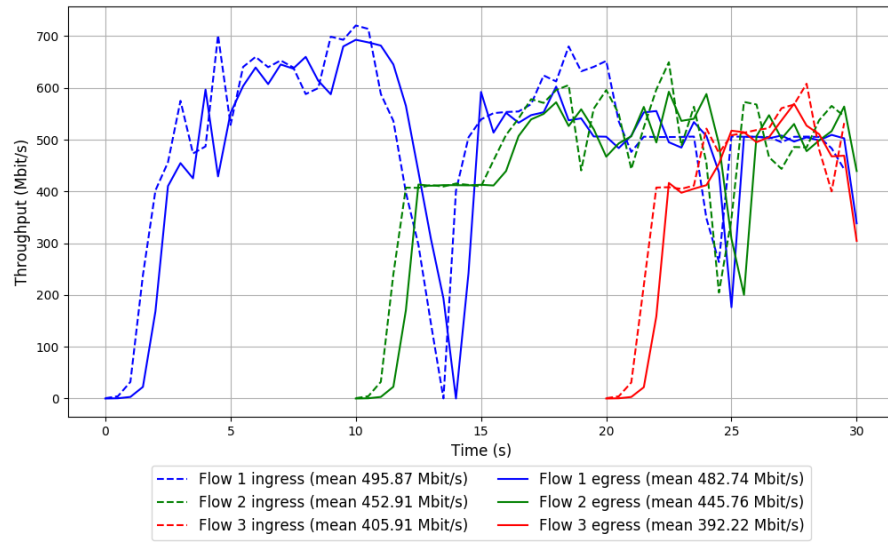Run 3: Report of TCP BBR — Data Link

```
Run 4: Statistics of TCP BBR

Start at: 2018-09-07 14:24:28
End at: 2018-09-07 14:24:58
Local clock offset: 0.028 ms
Remote clock offset: -0.124 ms


# Below is generated by plot.py at 2018-09-07 15:51:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 907.83 Mbit/s
95th percentile per-packet one-way delay: 209.539 ms
Loss rate: 3.22%
-- Flow 1:
Average throughput: 482.74 Mbit/s
95th percentile per-packet one-way delay: 213.344 ms
Loss rate: 3.21%
-- Flow 2:
Average throughput: 445.76 Mbit/s
95th percentile per-packet one-way delay: 203.772 ms
Loss rate: 2.43%
-- Flow 3:
Average throughput: 392.22 Mbit/s
95th percentile per-packet one-way delay: 213.098 ms
Loss rate: 5.05%
```
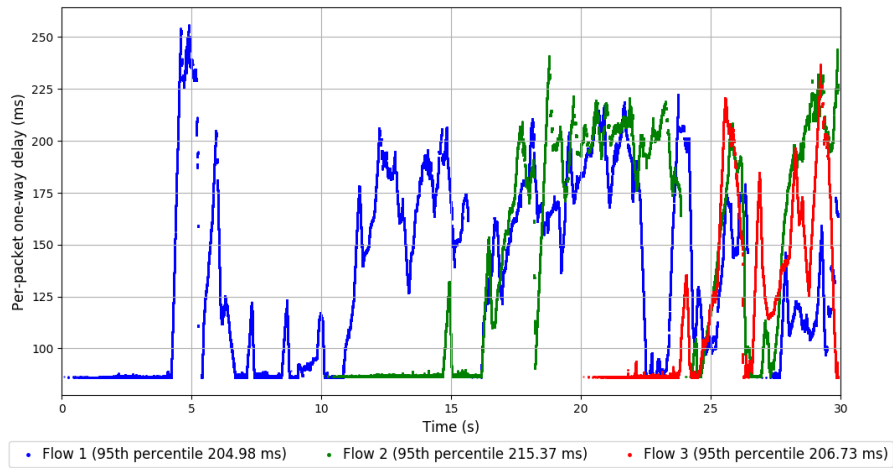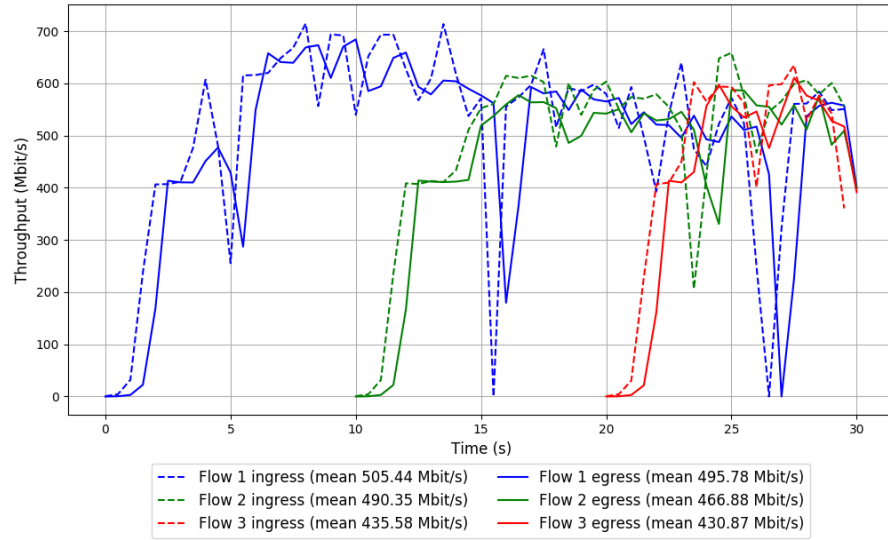
Run 4: Report of TCP BBR — Data Link

Flow 1 ingress (mean 495.87 Mbit/s) --- Flow 1 egress (mean 482.74 Mbit/s)
Flow 2 ingress (mean 452.91 Mbit/s) --- Flow 2 egress (mean 445.76 Mbit/s)
Flow 3 ingress (mean 405.91 Mbit/s) --- Flow 3 egress (mean 392.22 Mbit/s)

Flow 1 (95th percentile 213.34 ms)   Flow 2 (95th percentile 203.77 ms)   Flow 3 (95th percentile 213.10 ms)

```
Run 5: Statistics of TCP BBR

Start at: 2018-09-07 14:57:08
End at: 2018-09-07 14:57:38
Local clock offset: 0.186 ms
Remote clock offset: -0.129 ms


# Below is generated by plot.py at 2018-09-07 15:52:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 947.48 Mbit/s
95th percentile per-packet one-way delay: 210.725 ms
Loss rate: 3.57%
-- Flow 1:
Average throughput: 495.78 Mbit/s
95th percentile per-packet one-way delay: 204.977 ms
Loss rate: 2.48%
-- Flow 2:
Average throughput: 466.88 Mbit/s
95th percentile per-packet one-way delay: 215.366 ms
Loss rate: 5.61%
-- Flow 3:
Average throughput: 430.87 Mbit/s
95th percentile per-packet one-way delay: 206.728 ms
Loss rate: 2.80%
```
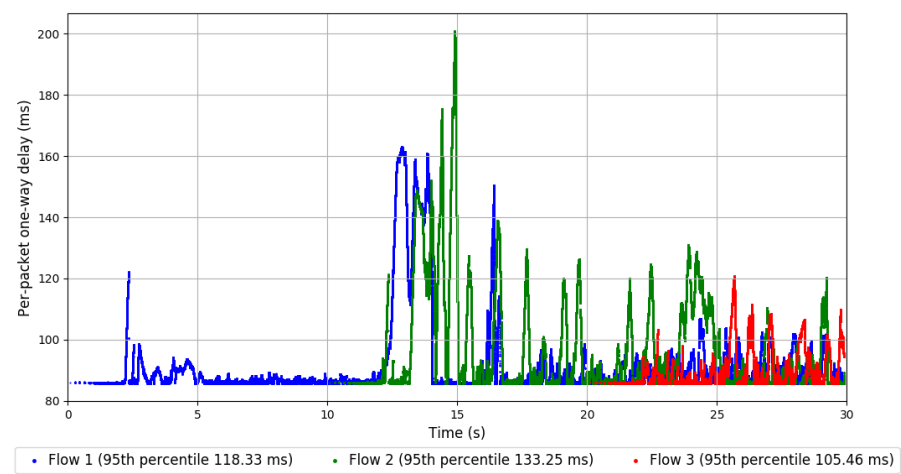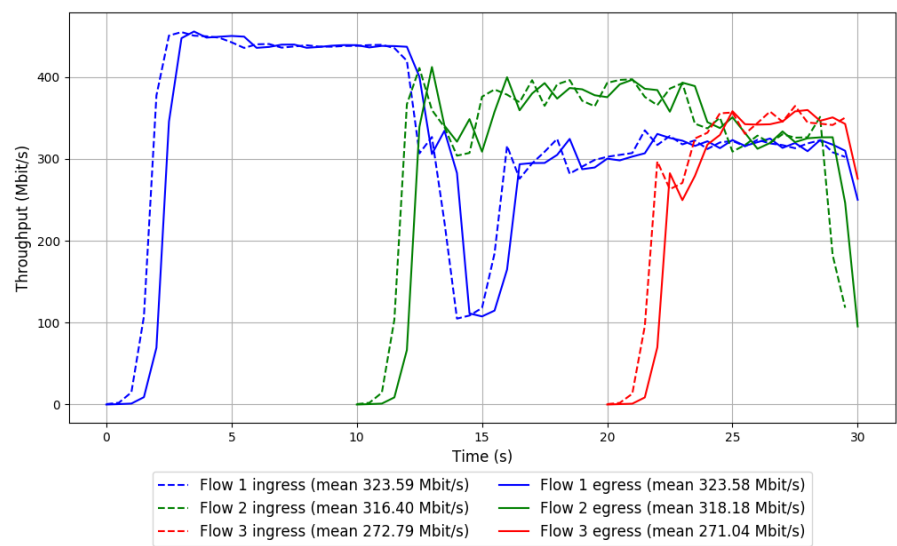
Run 5: Report of TCP BBR — Data Link

Flow 1 ingress (mean 505.44 Mbit/s) --- Flow 1 egress (mean 495.78 Mbit/s)
Flow 2 ingress (mean 490.35 Mbit/s) --- Flow 2 egress (mean 466.88 Mbit/s)
Flow 3 ingress (mean 435.58 Mbit/s) --- Flow 3 egress (mean 430.87 Mbit/s)

Flow 1 (95th percentile 204.98 ms)   Flow 2 (95th percentile 215.37 ms)   Flow 3 (95th percentile 206.73 ms)
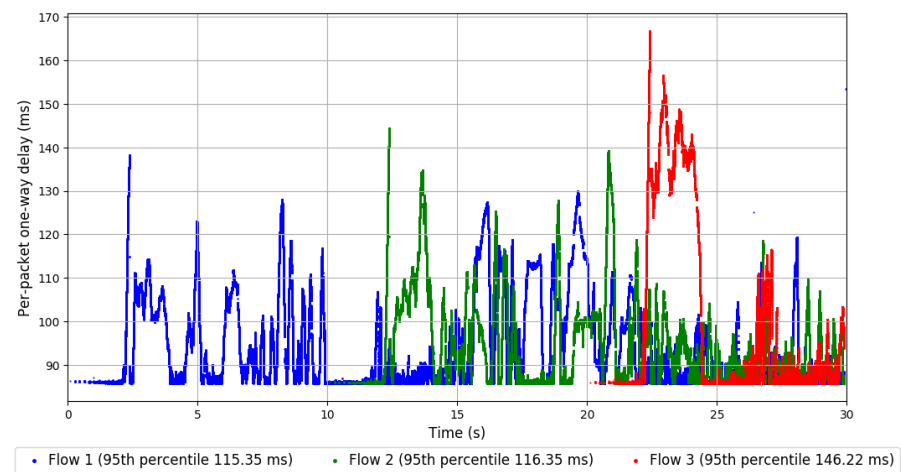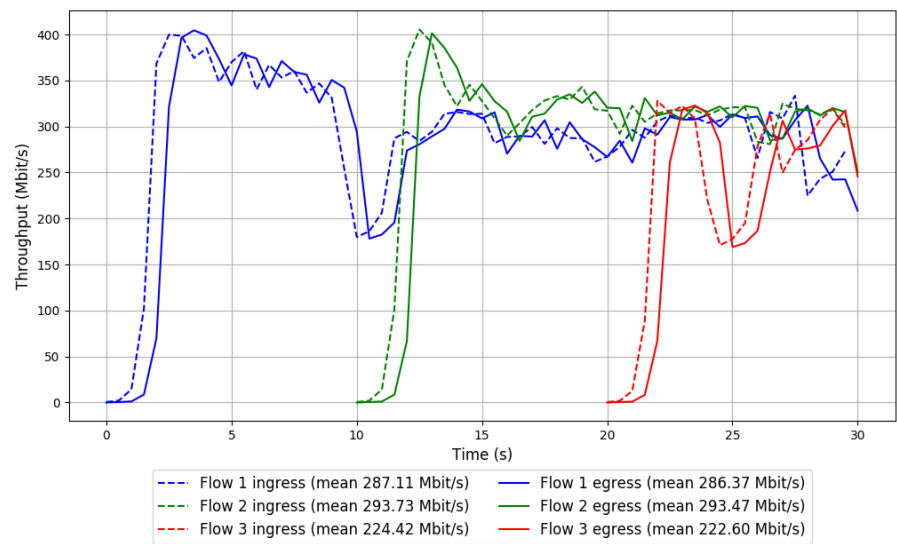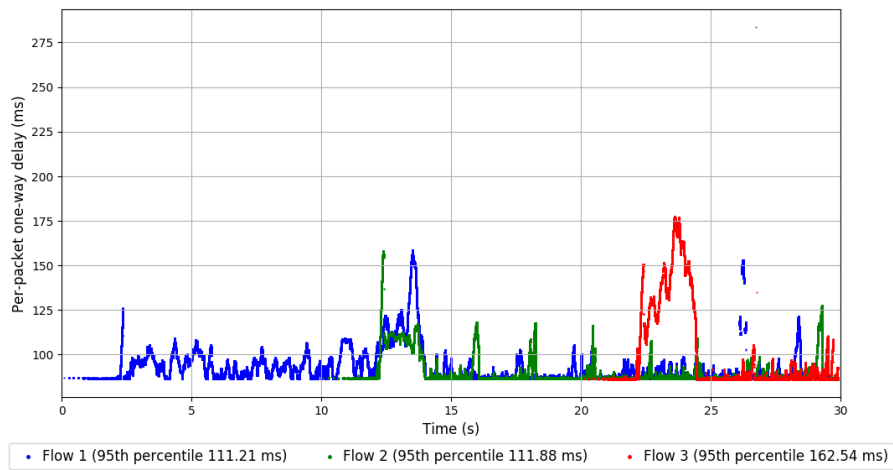
14

```
Run 1: Statistics of Copa

Start at: 2018-09-07 12:52:15
End at: 2018-09-07 12:52:45
Local clock offset: -0.198 ms
Remote clock offset: 0.025 ms


# Below is generated by plot.py at 2018-09-07 15:56:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 623.92 Mbit/s
95th percentile per-packet one-way delay: 124.657 ms
Loss rate: 0.76%
-- Flow 1:
Average throughput: 323.58 Mbit/s
95th percentile per-packet one-way delay: 118.328 ms
Loss rate: 0.58%
-- Flow 2:
Average throughput: 318.18 Mbit/s
95th percentile per-packet one-way delay: 133.254 ms
Loss rate: 0.34%
-- Flow 3:
Average throughput: 271.04 Mbit/s
95th percentile per-packet one-way delay: 105.458 ms
Loss rate: 2.40%
```

Run 1: Report of Copa — Data Link

Flow 1 ingress (mean 323.59 Mbit/s) — — — Flow 1 egress (mean 323.58 Mbit/s)
Flow 2 ingress (mean 316.40 Mbit/s) — — — Flow 2 egress (mean 318.18 Mbit/s)
Flow 3 ingress (mean 272.79 Mbit/s) — — — Flow 3 egress (mean 271.04 Mbit/s)

Flow 1 (95th percentile 118.33 ms) • Flow 2 (95th percentile 133.25 ms) • Flow 3 (95th percentile 105.46 ms)
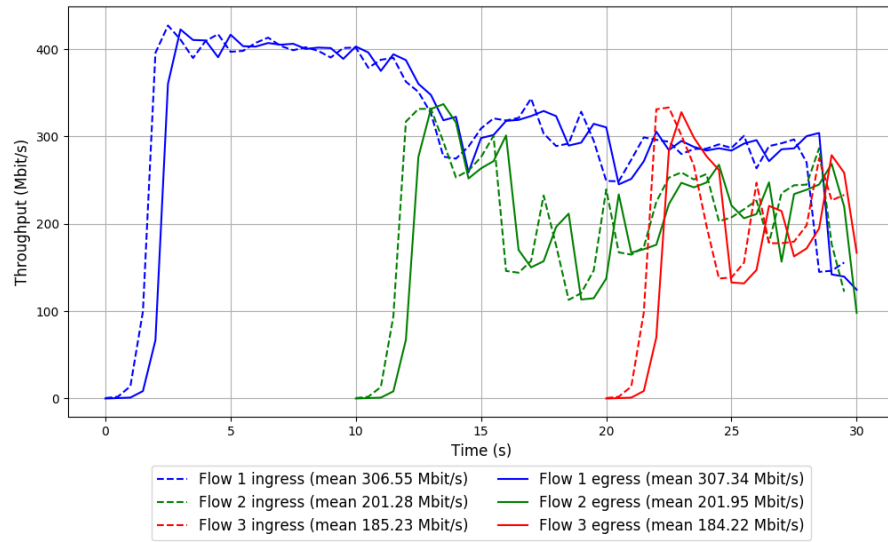
16

```
Run 2: Statistics of Copa

Start at: 2018-09-07 13:24:46
End at: 2018-09-07 13:25:16
Local clock offset: -0.006 ms
Remote clock offset: -0.054 ms


# Below is generated by plot.py at 2018-09-07 15:56:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 553.86 Mbit/s
95th percentile per-packet one-way delay: 125.887 ms
Loss rate: 0.99%
-- Flow 1:
Average throughput: 286.37 Mbit/s
95th percentile per-packet one-way delay: 115.349 ms
Loss rate: 0.61%
-- Flow 2:
Average throughput: 293.47 Mbit/s
95th percentile per-packet one-way delay: 116.348 ms
Loss rate: 0.95%
-- Flow 3:
Average throughput: 222.60 Mbit/s
95th percentile per-packet one-way delay: 146.220 ms
Loss rate: 2.52%
```

Run 2: Report of Copa — Data Link

```
Run 3: Statistics of Copa

Start at: 2018-09-07 13:57:13
End at: 2018-09-07 13:57:43
Local clock offset: 0.113 ms
Remote clock offset: -0.198 ms


# Below is generated by plot.py at 2018-09-07 15:56:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 502.01 Mbit/s
95th percentile per-packet one-way delay: 122.049 ms
Loss rate: 0.62%
-- Flow 1:
Average throughput: 307.34 Mbit/s
95th percentile per-packet one-way delay: 111.210 ms
Loss rate: 0.32%
-- Flow 2:
Average throughput: 201.95 Mbit/s
95th percentile per-packet one-way delay: 111.882 ms
Loss rate: 0.53%
-- Flow 3:
Average throughput: 184.22 Mbit/s
95th percentile per-packet one-way delay: 162.537 ms
Loss rate: 2.25%
```
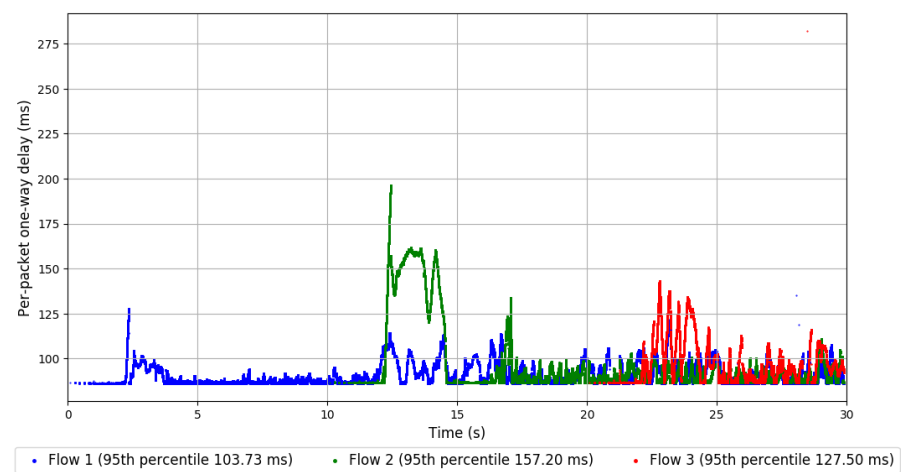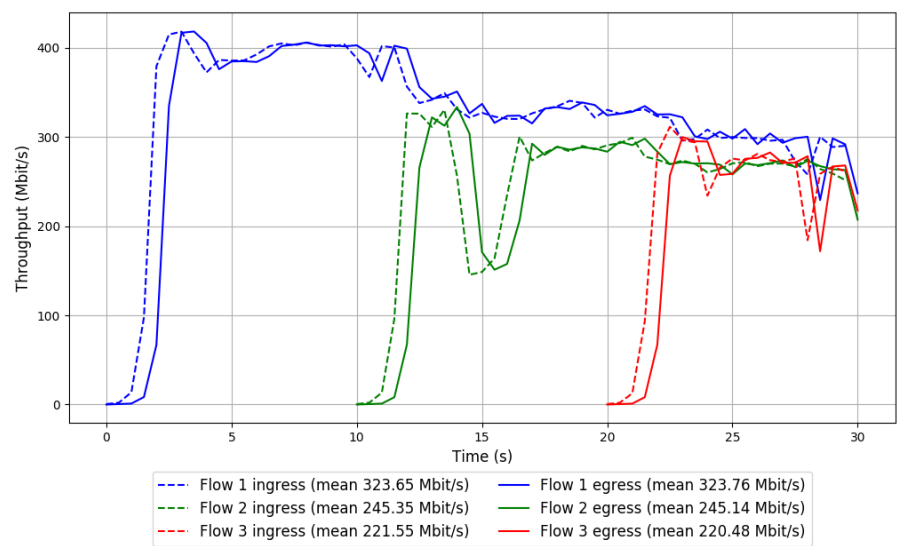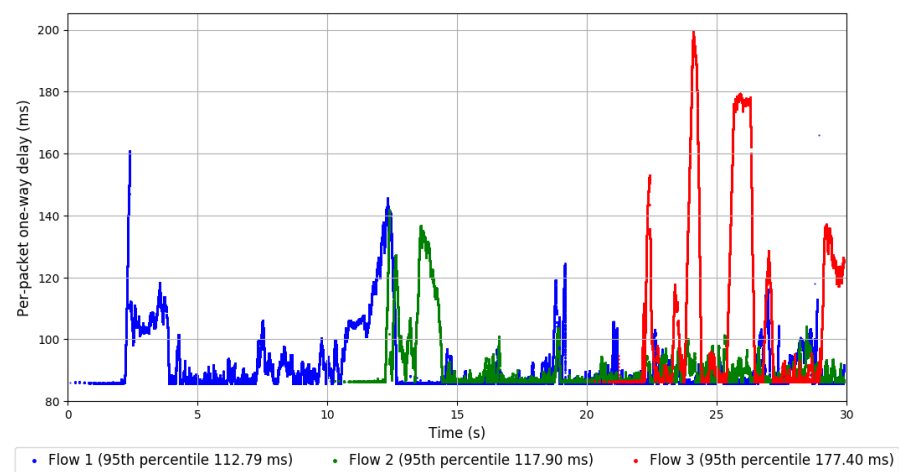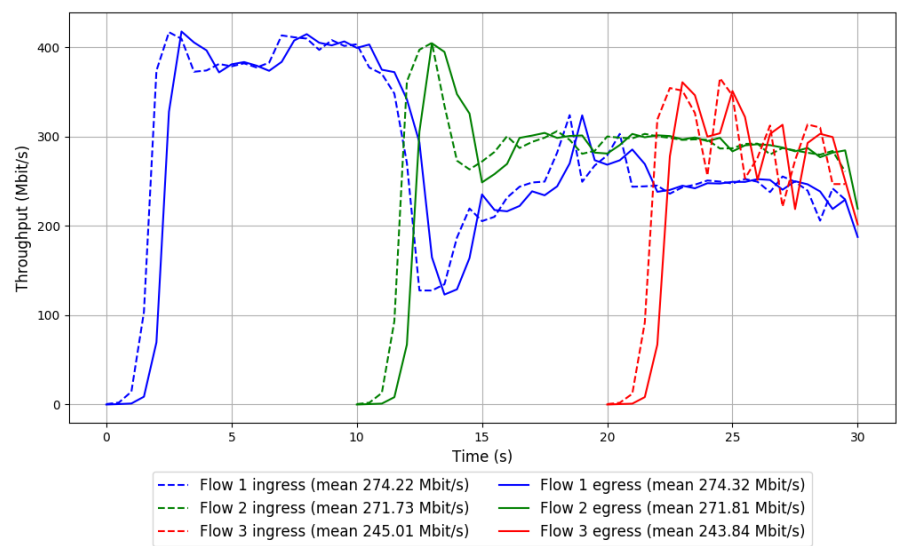
Run 3: Report of Copa — Data Link

```
Run 4: Statistics of Copa

Start at: 2018-09-07 14:29:50
End at: 2018-09-07 14:30:20
Local clock offset: 0.139 ms
Remote clock offset: -0.16 ms


# Below is generated by plot.py at 2018-09-07 16:10:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 559.01 Mbit/s
95th percentile per-packet one-way delay: 124.506 ms
Loss rate: 0.88%
-- Flow 1:
Average throughput: 323.76 Mbit/s
95th percentile per-packet one-way delay: 103.728 ms
Loss rate: 0.54%
-- Flow 2:
Average throughput: 245.14 Mbit/s
95th percentile per-packet one-way delay: 157.199 ms
Loss rate: 0.95%
-- Flow 3:
Average throughput: 220.48 Mbit/s
95th percentile per-packet one-way delay: 127.495 ms
Loss rate: 2.20%
```

Run 4: Report of Copa — Data Link

Flow 1 ingress (mean 323.65 Mbit/s)   Flow 1 egress (mean 323.76 Mbit/s)
Flow 2 ingress (mean 245.35 Mbit/s)   Flow 2 egress (mean 245.14 Mbit/s)
Flow 3 ingress (mean 221.55 Mbit/s)   Flow 3 egress (mean 220.48 Mbit/s)

Flow 1 (95th percentile 103.73 ms)   Flow 2 (95th percentile 157.20 ms)   Flow 3 (95th percentile 127.50 ms)

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```
Run 5: Statistics of Copa

Start at: 2018-09-07 15:02:38
End at: 2018-09-07 15:03:08
Local clock offset: 0.025 ms
Remote clock offset: -0.123 ms


# Below is generated by plot.py at 2018-09-07 16:10:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 534.91 Mbit/s
95th percentile per-packet one-way delay: 127.594 ms
Loss rate: 0.89%
-- Flow 1:
Average throughput: 274.32 Mbit/s
95th percentile per-packet one-way delay: 112.792 ms
Loss rate: 0.54%
-- Flow 2:
Average throughput: 271.81 Mbit/s
95th percentile per-packet one-way delay: 117.899 ms
Loss rate: 0.84%
-- Flow 3:
Average throughput: 243.84 Mbit/s
95th percentile per-packet one-way delay: 177.402 ms
Loss rate: 2.20%
```
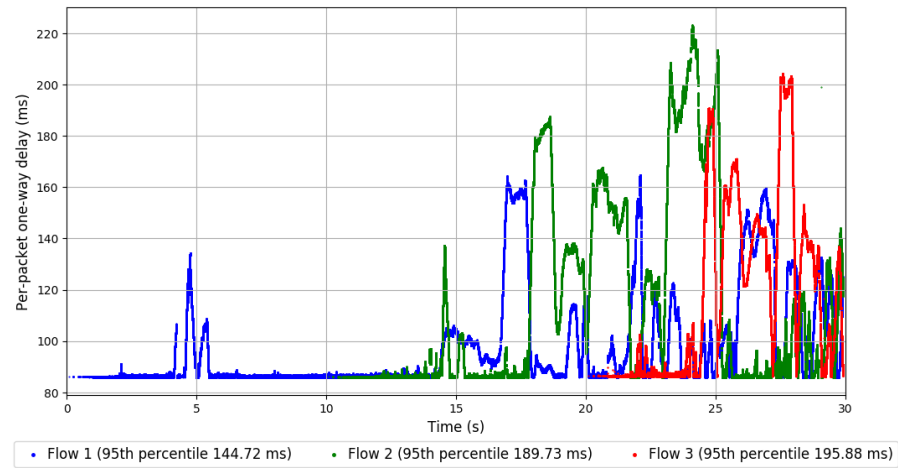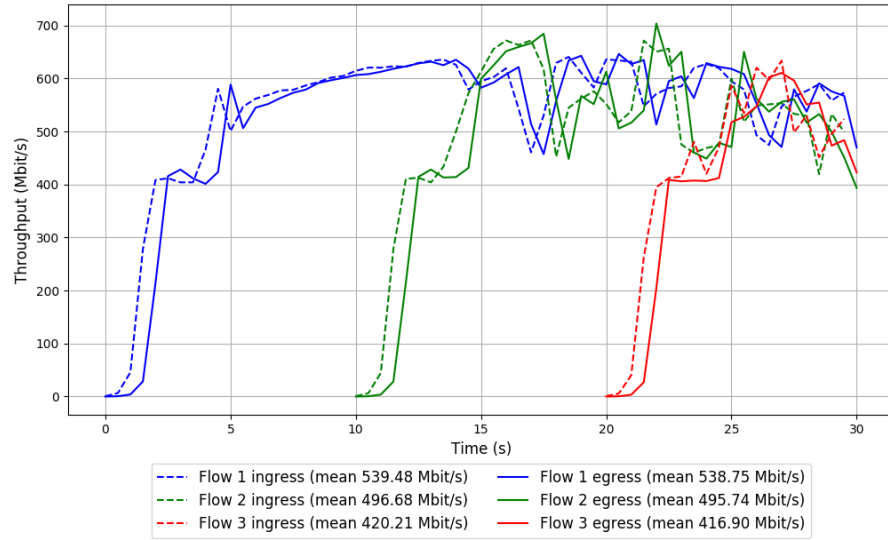
Run 5: Report of Copa — Data Link

```
Run 1: Statistics of TCP Cubic

Start at: 2018-09-07 12:41:23
End at: 2018-09-07 12:41:53
Local clock offset: -0.092 ms
Remote clock offset: 0.004 ms

# Below is generated by plot.py at 2018-09-07 16:10:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1004.92 Mbit/s
95th percentile per-packet one-way delay: 175.478 ms
Loss rate: 1.07%
-- Flow 1:
Average throughput: 538.75 Mbit/s
95th percentile per-packet one-way delay: 144.720 ms
Loss rate: 0.71%
-- Flow 2:
Average throughput: 495.74 Mbit/s
95th percentile per-packet one-way delay: 189.729 ms
Loss rate: 1.05%
-- Flow 3:
Average throughput: 416.90 Mbit/s
95th percentile per-packet one-way delay: 195.880 ms
Loss rate: 2.52%
```
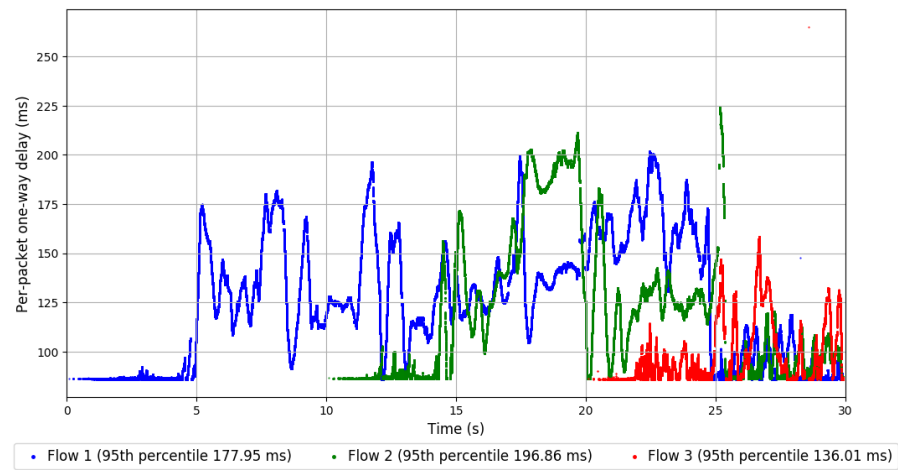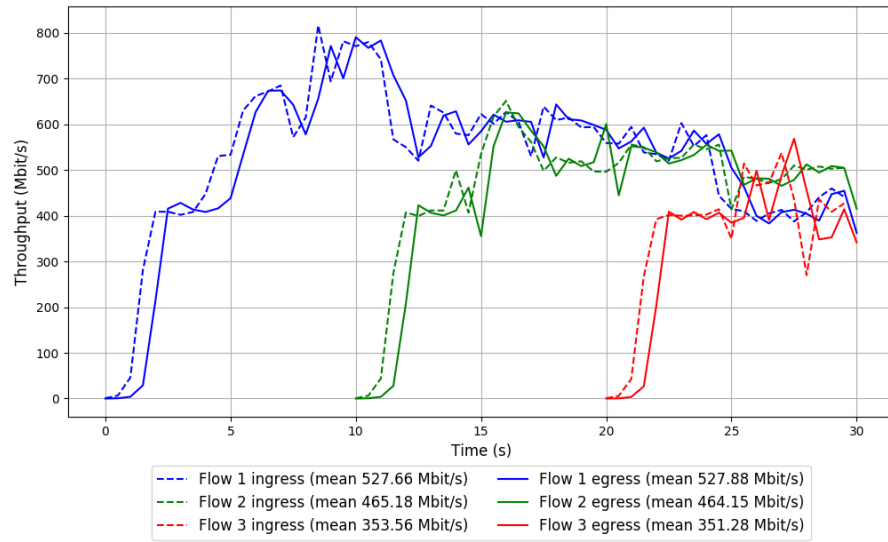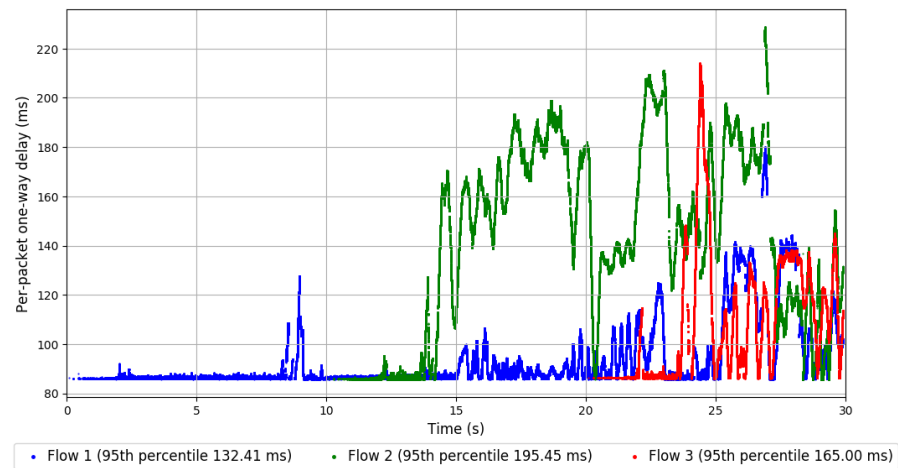
Run 1: Report of TCP Cubic — Data Link

```
Run 2: Statistics of TCP Cubic

Start at: 2018-09-07 13:13:55
End at: 2018-09-07 13:14:25
Local clock offset: -0.095 ms
Remote clock offset: -0.04 ms

# Below is generated by plot.py at 2018-09-07 16:10:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 951.53 Mbit/s
95th percentile per-packet one-way delay: 184.553 ms
Loss rate: 0.94%
-- Flow 1:
Average throughput: 527.88 Mbit/s
95th percentile per-packet one-way delay: 177.951 ms
Loss rate: 0.53%
-- Flow 2:
Average throughput: 464.15 Mbit/s
95th percentile per-packet one-way delay: 196.858 ms
Loss rate: 1.08%
-- Flow 3:
Average throughput: 351.28 Mbit/s
95th percentile per-packet one-way delay: 136.010 ms
Loss rate: 2.36%
```

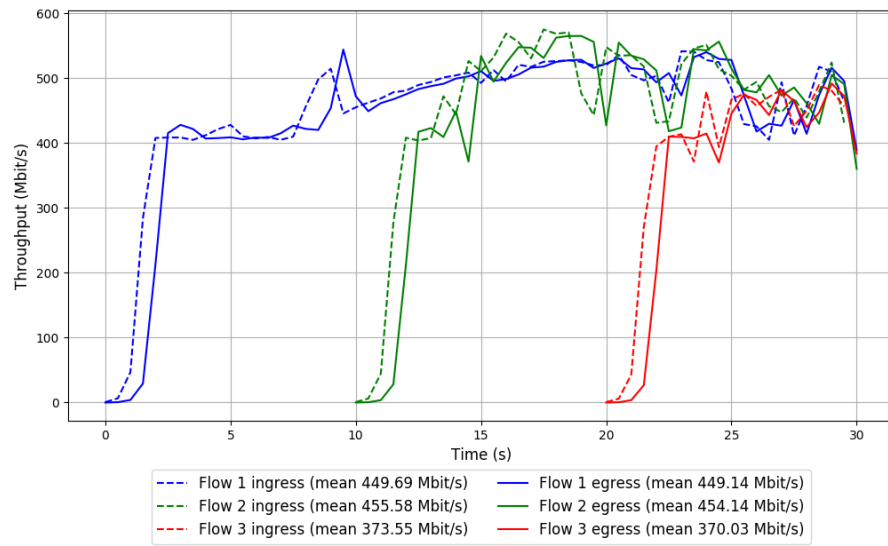Run 2: Report of TCP Cubic — Data Link

```
Run 3: Statistics of TCP Cubic

Start at: 2018-09-07 13:46:22
End at: 2018-09-07 13:46:52
Local clock offset: -0.129 ms
Remote clock offset: -0.109 ms


# Below is generated by plot.py at 2018-09-07 16:10:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 872.28 Mbit/s
95th percentile per-packet one-way delay: 186.031 ms
Loss rate: 1.14%
-- Flow 1:
Average throughput: 449.14 Mbit/s
95th percentile per-packet one-way delay: 132.415 ms
Loss rate: 0.69%
-- Flow 2:
Average throughput: 454.14 Mbit/s
95th percentile per-packet one-way delay: 195.447 ms
Loss rate: 1.17%
-- Flow 3:
Average throughput: 370.03 Mbit/s
95th percentile per-packet one-way delay: 164.998 ms
Loss rate: 2.66%
```

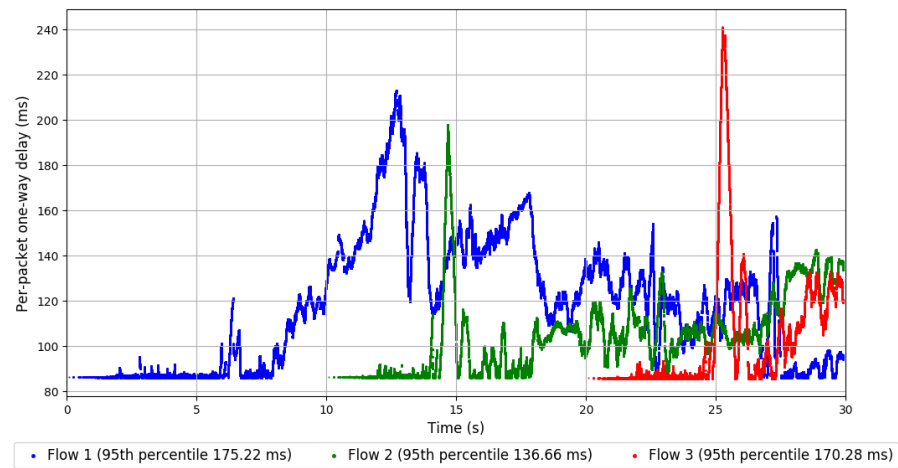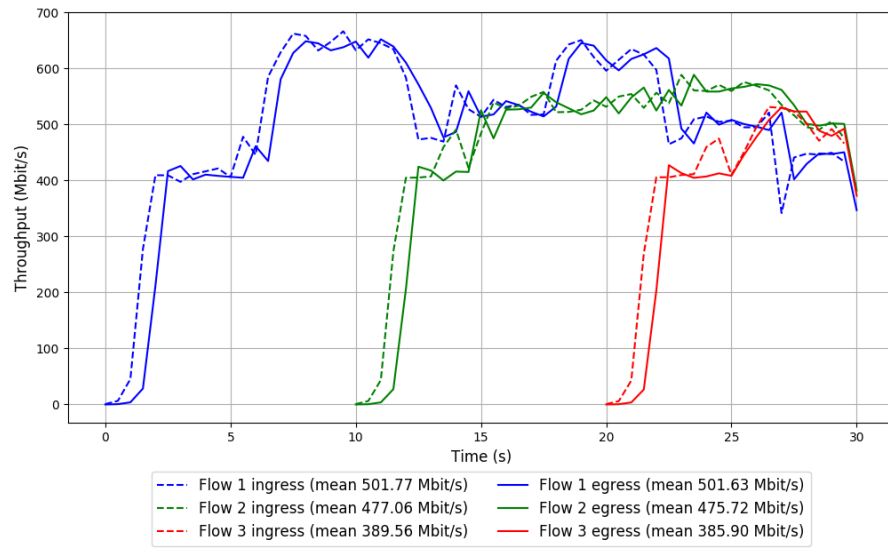# Run 3: Report of TCP Cubic — Data Link

- - - - Flow 1 ingress (mean 449.69 Mbit/s) —— Flow 1 egress (mean 449.14 Mbit/s)
- - - - Flow 2 ingress (mean 455.58 Mbit/s) —— Flow 2 egress (mean 454.14 Mbit/s)
- - - - Flow 3 ingress (mean 373.55 Mbit/s) —— Flow 3 egress (mean 370.03 Mbit/s)

- Flow 1 (95th percentile 132.41 ms) • Flow 2 (95th percentile 195.45 ms) • Flow 3 (95th percentile 165.00 ms)
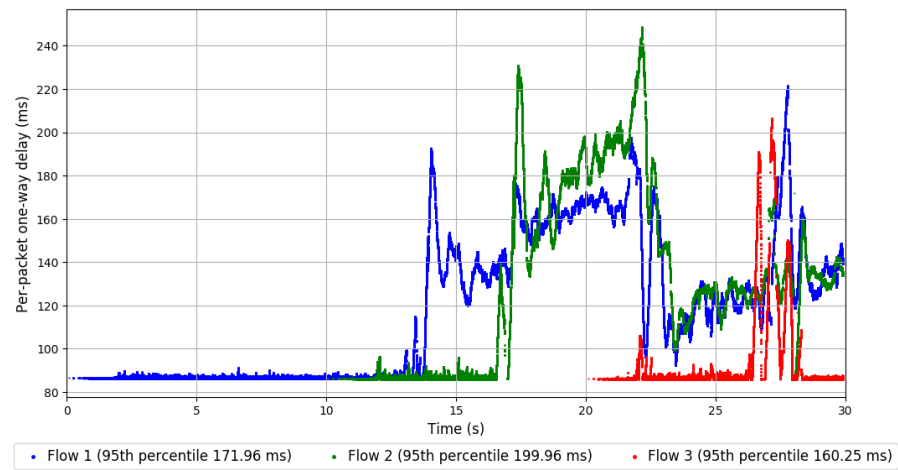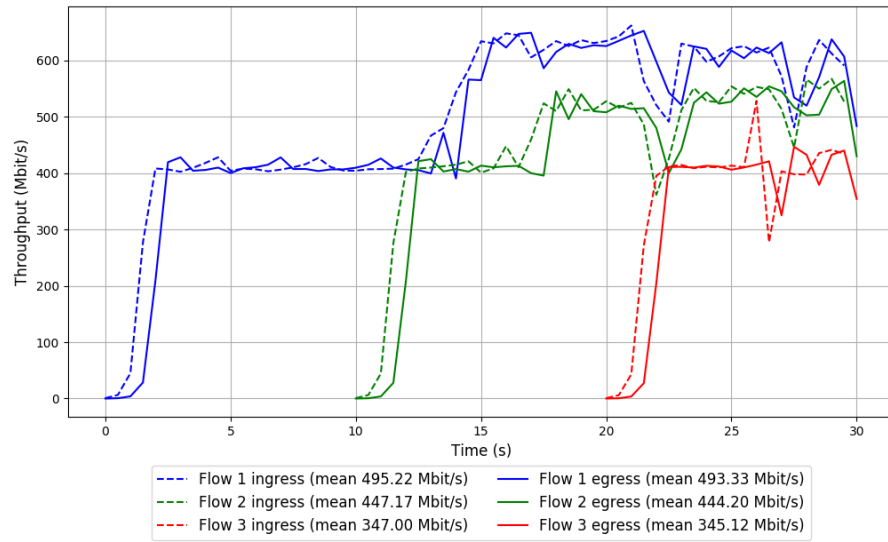
```
Run 4: Statistics of TCP Cubic

Start at: 2018-09-07 14:18:53
End at: 2018-09-07 14:19:23
Local clock offset: -0.109 ms
Remote clock offset: -0.172 ms


# Below is generated by plot.py at 2018-09-07 16:10:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 944.29 Mbit/s
95th percentile per-packet one-way delay: 161.747 ms
Loss rate: 1.07%
-- Flow 1:
Average throughput: 501.63 Mbit/s
95th percentile per-packet one-way delay: 175.219 ms
Loss rate: 0.61%
-- Flow 2:
Average throughput: 475.72 Mbit/s
95th percentile per-packet one-way delay: 136.662 ms
Loss rate: 1.15%
-- Flow 3:
Average throughput: 385.90 Mbit/s
95th percentile per-packet one-way delay: 170.279 ms
Loss rate: 2.67%
```

Run 4: Report of TCP Cubic — Data Link

```
Run 5: Statistics of TCP Cubic

Start at: 2018-09-07 14:51:37
End at: 2018-09-07 14:52:07
Local clock offset: -0.103 ms
Remote clock offset: -0.154 ms


# Below is generated by plot.py at 2018-09-07 16:10:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 901.71 Mbit/s
95th percentile per-packet one-way delay: 189.712 ms
Loss rate: 1.31%
-- Flow 1:
Average throughput: 493.33 Mbit/s
95th percentile per-packet one-way delay: 171.960 ms
Loss rate: 0.96%
-- Flow 2:
Average throughput: 444.20 Mbit/s
95th percentile per-packet one-way delay: 199.963 ms
Loss rate: 1.52%
-- Flow 3:
Average throughput: 345.12 Mbit/s
95th percentile per-packet one-way delay: 160.247 ms
Loss rate: 2.26%
```
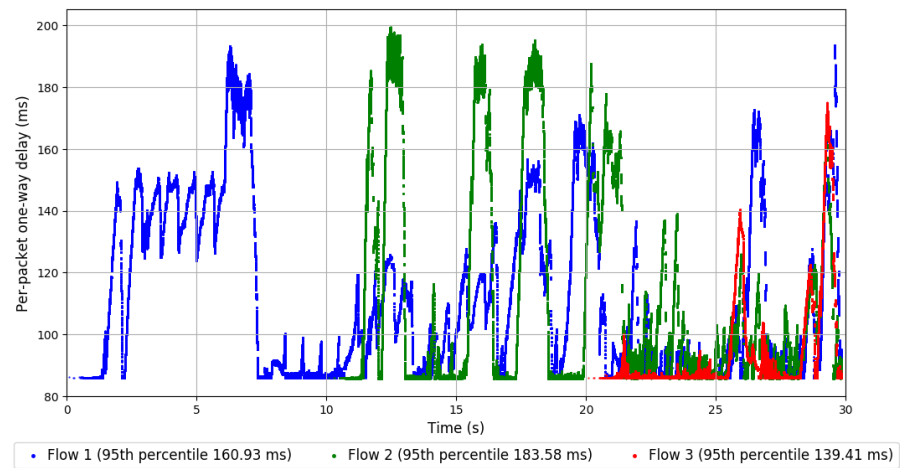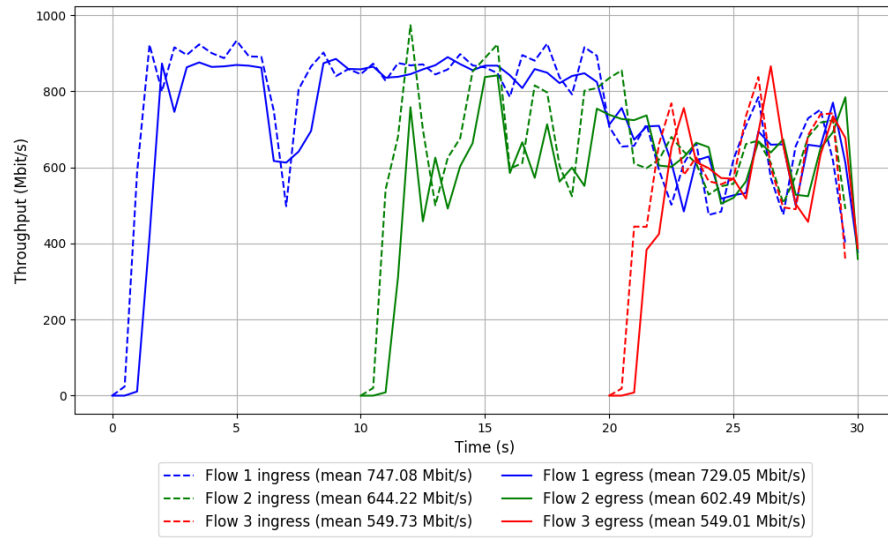
Run 5: Report of TCP Cubic — Data Link

```
Run 1: Statistics of FillP

Start at: 2018-09-07 12:55:43
End at: 2018-09-07 12:56:13
Local clock offset: -0.14 ms
Remote clock offset: 0.02 ms


# Below is generated by plot.py at 2018-09-07 16:24:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1308.32 Mbit/s
95th percentile per-packet one-way delay: 168.498 ms
Loss rate: 4.21%
-- Flow 1:
Average throughput: 729.05 Mbit/s
95th percentile per-packet one-way delay: 160.927 ms
Loss rate: 3.01%
-- Flow 2:
Average throughput: 602.49 Mbit/s
95th percentile per-packet one-way delay: 183.578 ms
Loss rate: 7.30%
-- Flow 3:
Average throughput: 549.01 Mbit/s
95th percentile per-packet one-way delay: 139.414 ms
Loss rate: 1.87%
```

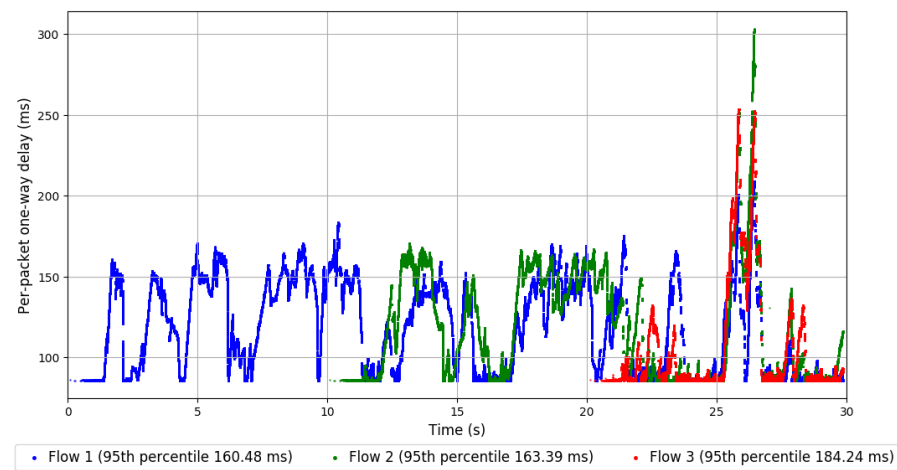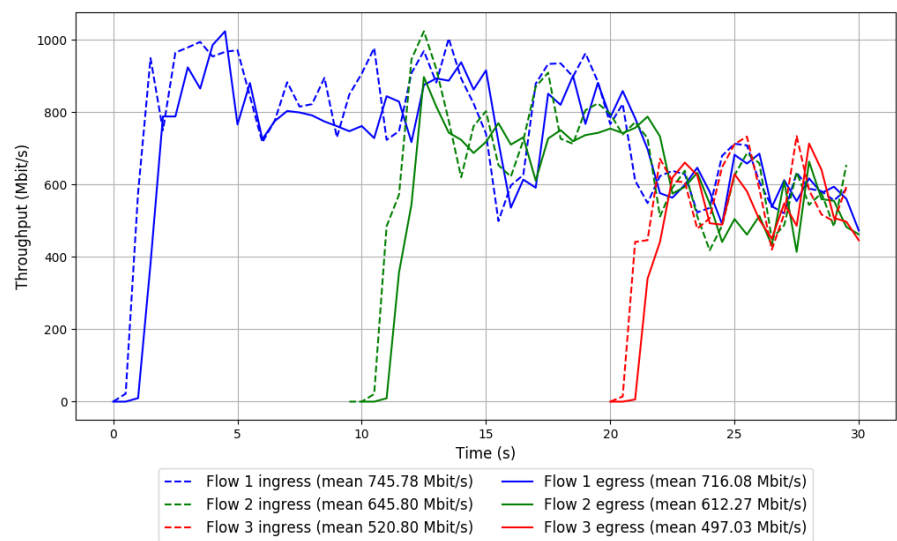# Run 1: Report of FillP — Data Link

```
Run 2: Statistics of FillP

Start at: 2018-09-07 13:28:08
End at: 2018-09-07 13:28:38
Local clock offset: -0.354 ms
Remote clock offset: -0.075 ms


# Below is generated by plot.py at 2018-09-07 16:37:07
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1285.10 Mbit/s
95th percentile per-packet one-way delay: 162.801 ms
Loss rate: 5.20%
-- Flow 1:
Average throughput: 716.08 Mbit/s
95th percentile per-packet one-way delay: 160.480 ms
Loss rate: 4.50%
-- Flow 2:
Average throughput: 612.27 Mbit/s
95th percentile per-packet one-way delay: 163.389 ms
Loss rate: 6.01%
-- Flow 3:
Average throughput: 497.03 Mbit/s
95th percentile per-packet one-way delay: 184.243 ms
Loss rate: 6.24%
```

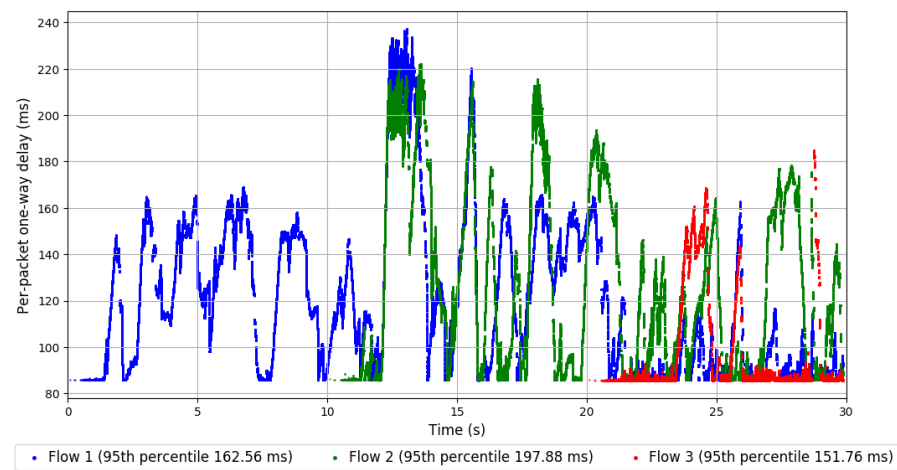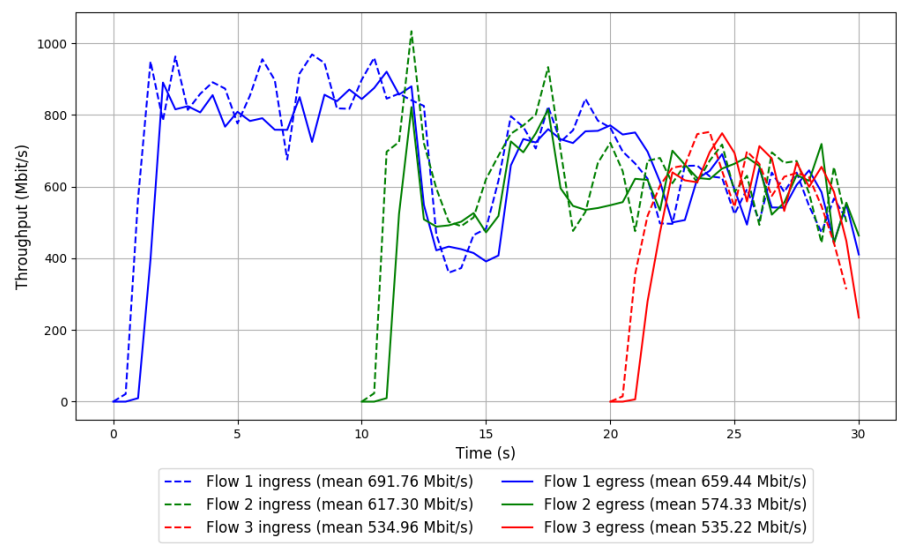# Run 2: Report of FillP — Data Link

```
Run 3: Statistics of FillP

Start at: 2018-09-07 14:00:32
End at: 2018-09-07 14:01:02
Local clock offset: -0.349 ms
Remote clock offset: -0.227 ms


# Below is generated by plot.py at 2018-09-07 16:37:07
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1216.07 Mbit/s
95th percentile per-packet one-way delay: 182.765 ms
Loss rate: 5.55%
-- Flow 1:
Average throughput: 659.44 Mbit/s
95th percentile per-packet one-way delay: 162.558 ms
Loss rate: 5.22%
-- Flow 2:
Average throughput: 574.33 Mbit/s
95th percentile per-packet one-way delay: 197.882 ms
Loss rate: 7.77%
-- Flow 3:
Average throughput: 535.22 Mbit/s
95th percentile per-packet one-way delay: 151.759 ms
Loss rate: 1.70%
```
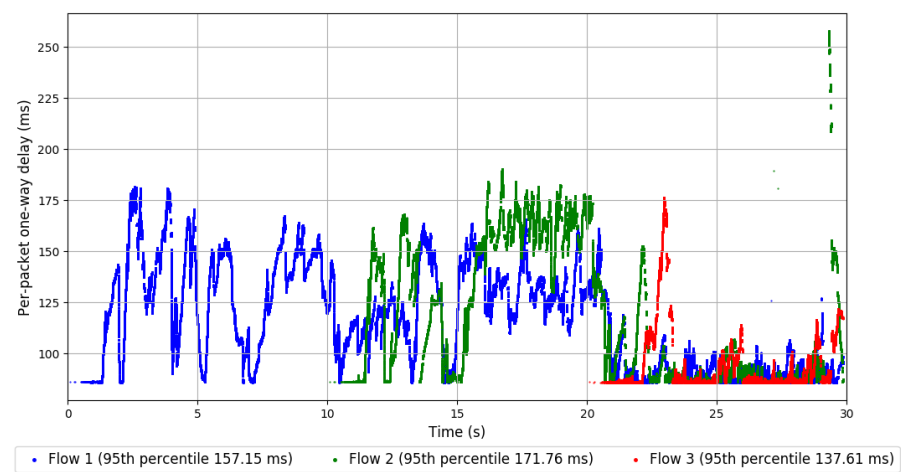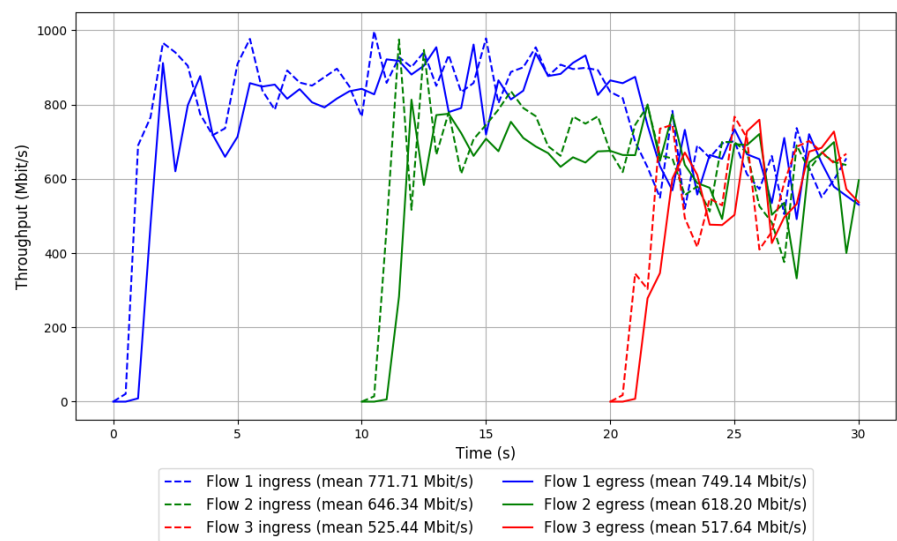
Run 3: Report of FillP — Data Link

Flow 1 ingress (mean 691.76 Mbit/s) ---- Flow 1 egress (mean 659.44 Mbit/s)
Flow 2 ingress (mean 617.30 Mbit/s) ---- Flow 2 egress (mean 574.33 Mbit/s)
Flow 3 ingress (mean 534.96 Mbit/s) ---- Flow 3 egress (mean 535.22 Mbit/s)

Flow 1 (95th percentile 162.56 ms) • Flow 2 (95th percentile 197.88 ms) • Flow 3 (95th percentile 151.76 ms)

40

```
Run 4: Statistics of FillP

Start at: 2018-09-07 14:33:13
End at: 2018-09-07 14:33:43
Local clock offset: -0.252 ms
Remote clock offset: -0.196 ms

# Below is generated by plot.py at 2018-09-07 16:39:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1329.22 Mbit/s
95th percentile per-packet one-way delay: 164.486 ms
Loss rate: 3.97%
-- Flow 1:
Average throughput: 749.14 Mbit/s
95th percentile per-packet one-way delay: 157.151 ms
Loss rate: 3.47%
-- Flow 2:
Average throughput: 618.20 Mbit/s
95th percentile per-packet one-way delay: 171.757 ms
Loss rate: 5.18%
-- Flow 3:
Average throughput: 517.64 Mbit/s
95th percentile per-packet one-way delay: 137.611 ms
Loss rate: 3.19%
```
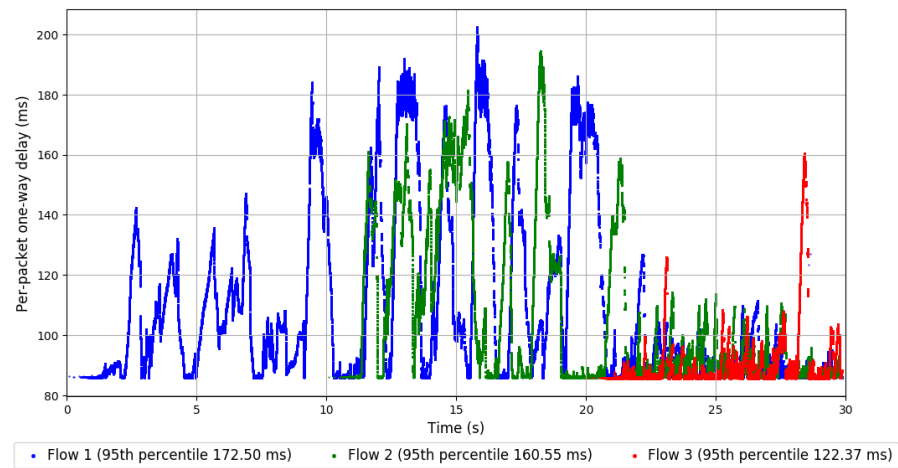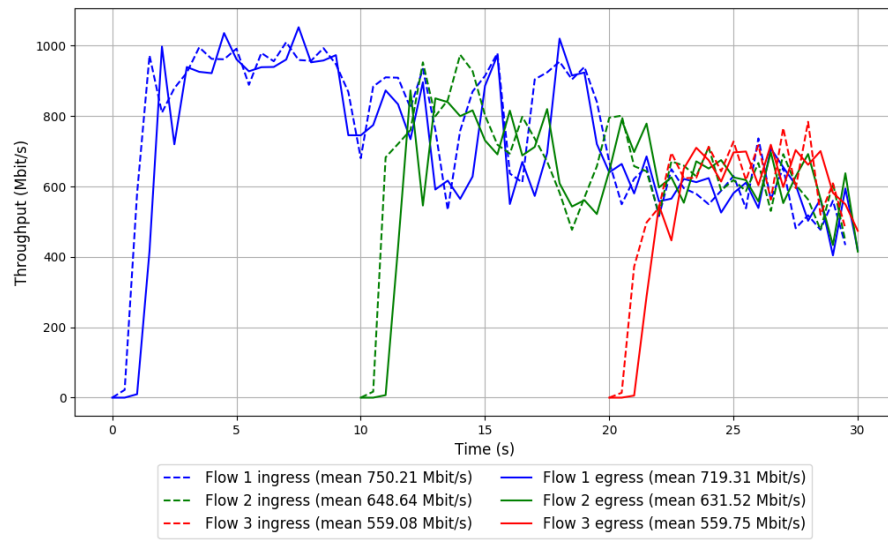
Run 4: Report of FillP — Data Link

Flow 1 ingress (mean 771.71 Mbit/s)   Flow 1 egress (mean 749.14 Mbit/s)
Flow 2 ingress (mean 646.34 Mbit/s)   Flow 2 egress (mean 618.20 Mbit/s)
Flow 3 ingress (mean 525.44 Mbit/s)   Flow 3 egress (mean 517.64 Mbit/s)

Flow 1 (95th percentile 157.15 ms)   Flow 2 (95th percentile 171.76 ms)   Flow 3 (95th percentile 137.61 ms)

```
Run 5: Statistics of FillP

Start at: 2018-09-07 15:05:59
End at: 2018-09-07 15:06:29
Local clock offset: -0.287 ms
Remote clock offset: -0.104 ms


# Below is generated by plot.py at 2018-09-07 16:39:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1321.93 Mbit/s
95th percentile per-packet one-way delay: 166.771 ms
Loss rate: 3.85%
-- Flow 1:
Average throughput: 719.31 Mbit/s
95th percentile per-packet one-way delay: 172.502 ms
Loss rate: 4.62%
-- Flow 2:
Average throughput: 631.52 Mbit/s
95th percentile per-packet one-way delay: 160.550 ms
Loss rate: 3.47%
-- Flow 3:
Average throughput: 559.75 Mbit/s
95th percentile per-packet one-way delay: 122.368 ms
Loss rate: 1.63%
```
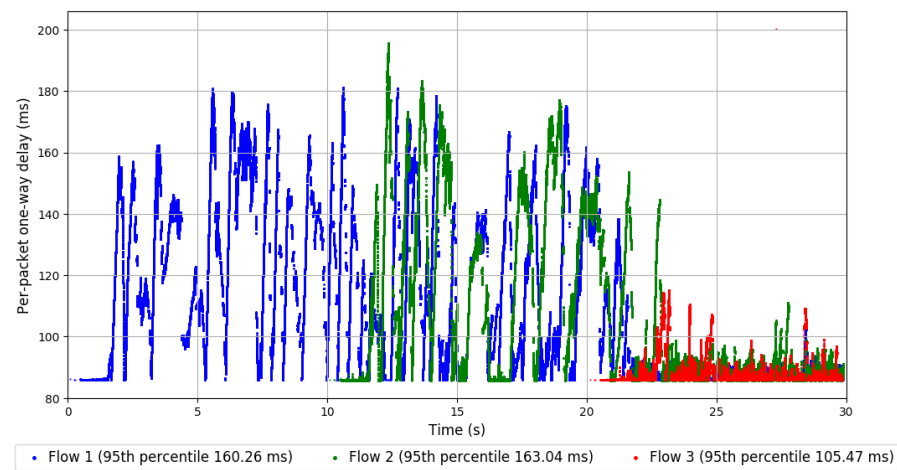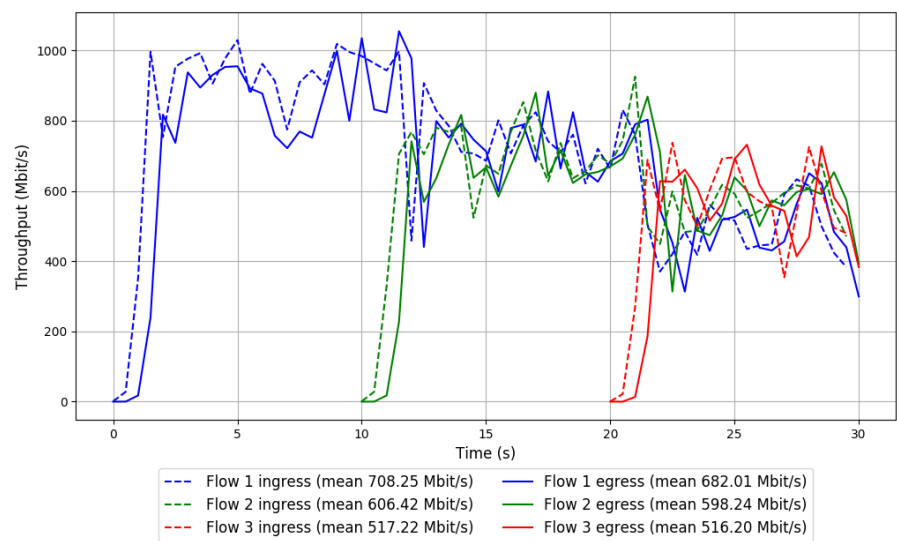
Run 5: Report of FillP — Data Link

Legend:
- ---- Flow 1 ingress (mean 750.21 Mbit/s)
- ---- Flow 2 ingress (mean 648.64 Mbit/s)
- ---- Flow 3 ingress (mean 559.08 Mbit/s)
- —— Flow 1 egress (mean 719.31 Mbit/s)
- —— Flow 2 egress (mean 631.52 Mbit/s)
- —— Flow 3 egress (mean 559.75 Mbit/s)

Legend:
- Flow 1 (95th percentile 172.50 ms)
- Flow 2 (95th percentile 160.55 ms)
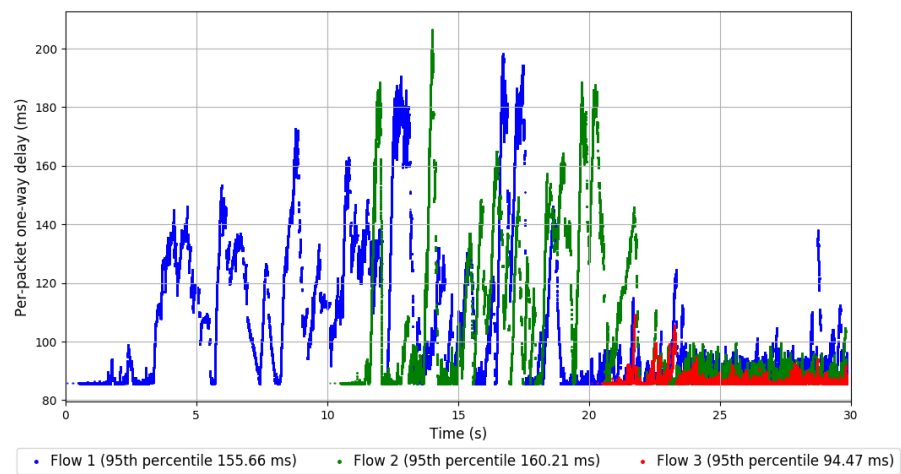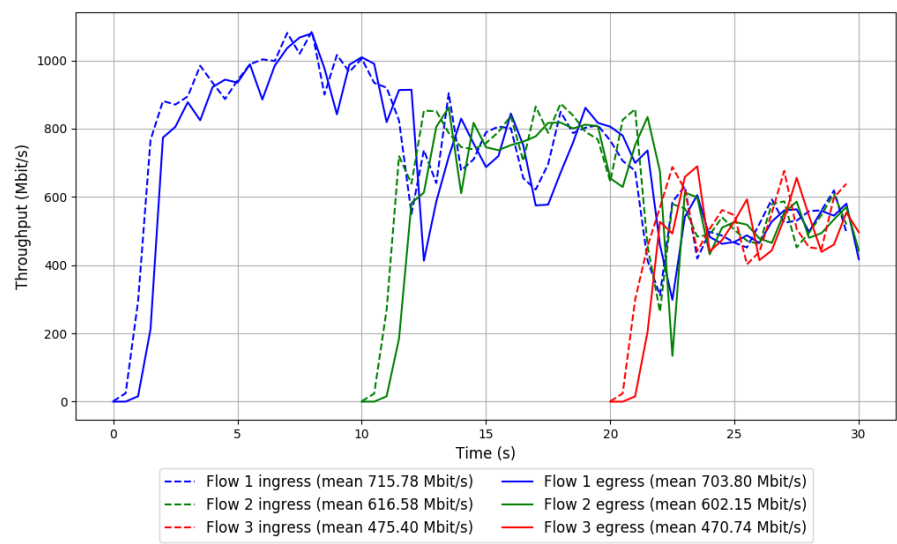- Flow 3 (95th percentile 122.37 ms)

```
Run 1: Statistics of FillP-Sheep

Start at: 2018-09-07 12:43:31
End at: 2018-09-07 12:44:01
Local clock offset: -0.199 ms
Remote clock offset: 0.018 ms


# Below is generated by plot.py at 2018-09-07 16:39:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1247.95 Mbit/s
95th percentile per-packet one-way delay: 159.316 ms
Loss rate: 3.28%
-- Flow 1:
Average throughput: 682.01 Mbit/s
95th percentile per-packet one-way delay: 160.259 ms
Loss rate: 4.27%
-- Flow 2:
Average throughput: 598.24 Mbit/s
95th percentile per-packet one-way delay: 163.037 ms
Loss rate: 2.13%
-- Flow 3:
Average throughput: 516.20 Mbit/s
95th percentile per-packet one-way delay: 105.466 ms
Loss rate: 1.90%
```
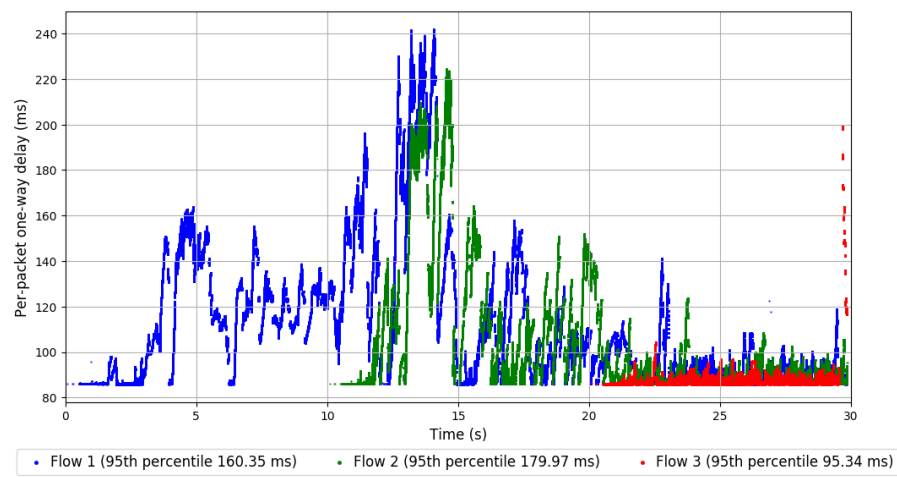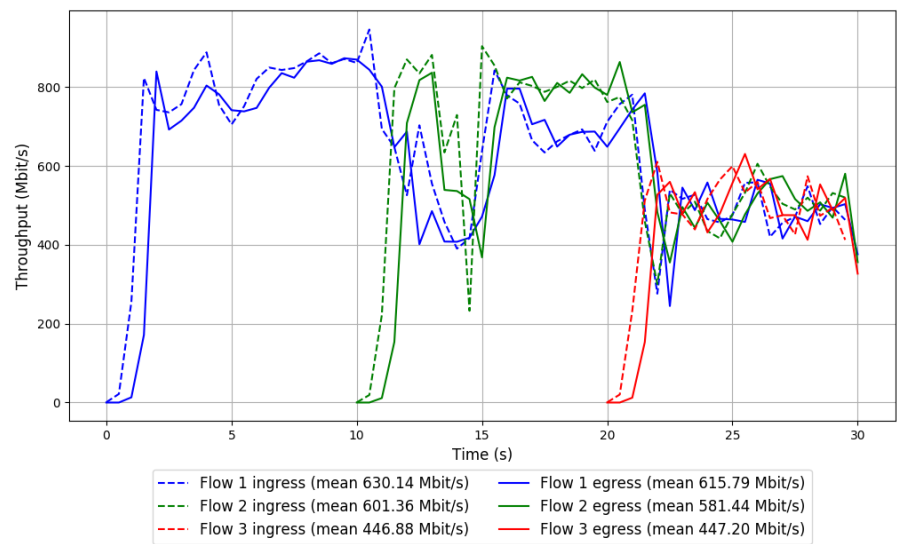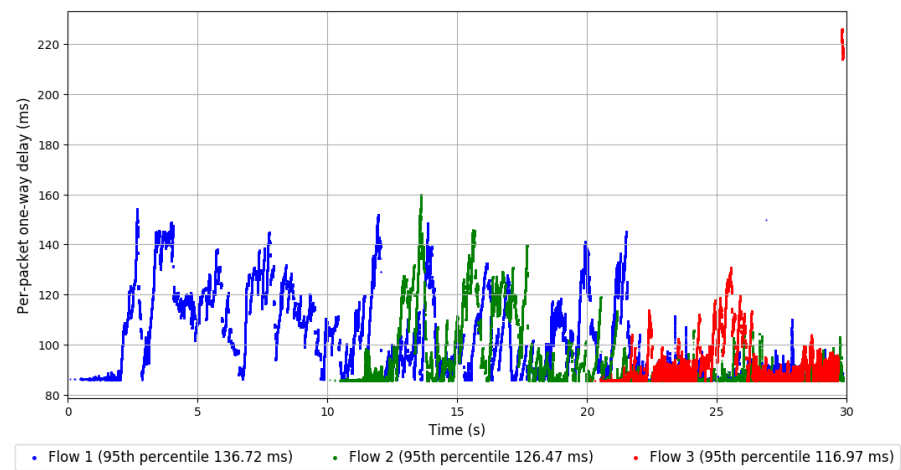
Run 1: Report of FillP-Sheep — Data Link

```
Run 2: Statistics of FillP-Sheep

Start at: 2018-09-07 13:16:01
End at: 2018-09-07 13:16:31
Local clock offset: -0.209 ms
Remote clock offset: -0.038 ms


# Below is generated by plot.py at 2018-09-07 16:39:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1257.43 Mbit/s
95th percentile per-packet one-way delay: 154.740 ms
Loss rate: 2.59%
-- Flow 1:
Average throughput: 703.80 Mbit/s
95th percentile per-packet one-way delay: 155.655 ms
Loss rate: 2.24%
-- Flow 2:
Average throughput: 602.15 Mbit/s
95th percentile per-packet one-way delay: 160.214 ms
Loss rate: 3.15%
-- Flow 3:
Average throughput: 470.74 Mbit/s
95th percentile per-packet one-way delay: 94.469 ms
Loss rate: 2.75%
```

Run 2: Report of FillP-Sheep — Data Link

Flow 1 ingress (mean 715.78 Mbit/s) --- Flow 1 egress (mean 703.80 Mbit/s)
Flow 2 ingress (mean 616.58 Mbit/s) --- Flow 2 egress (mean 602.15 Mbit/s)
Flow 3 ingress (mean 475.40 Mbit/s) --- Flow 3 egress (mean 470.74 Mbit/s)

Flow 1 (95th percentile 155.66 ms)   Flow 2 (95th percentile 160.21 ms)   Flow 3 (95th percentile 94.47 ms)
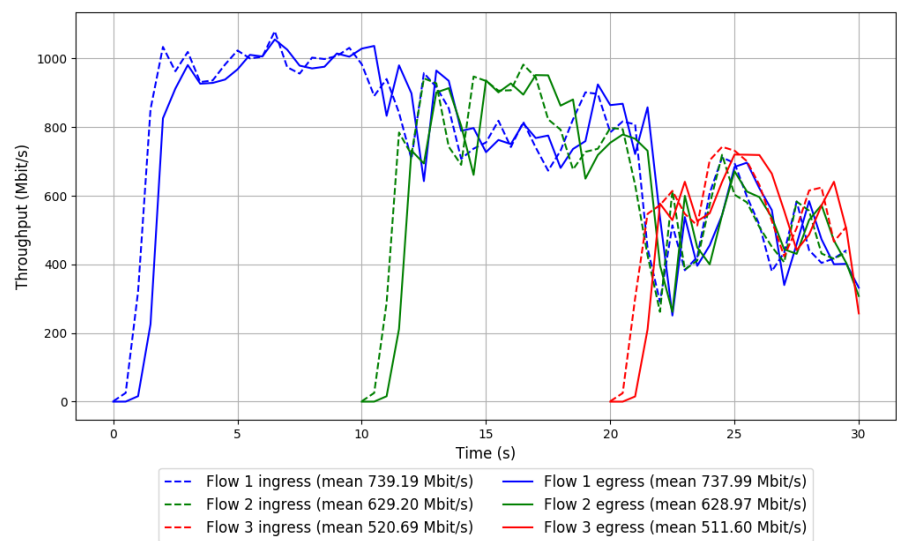
```
Run 3: Statistics of FillP-Sheep

Start at: 2018-09-07 13:48:24
End at: 2018-09-07 13:48:54
Local clock offset: -0.078 ms
Remote clock offset: -0.169 ms


# Below is generated by plot.py at 2018-09-07 16:39:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1148.33 Mbit/s
95th percentile per-packet one-way delay: 159.915 ms
Loss rate: 3.11%
-- Flow 1:
Average throughput: 615.79 Mbit/s
95th percentile per-packet one-way delay: 160.348 ms
Loss rate: 2.81%
-- Flow 2:
Average throughput: 581.44 Mbit/s
95th percentile per-packet one-way delay: 179.967 ms
Loss rate: 4.13%
-- Flow 3:
Average throughput: 447.20 Mbit/s
95th percentile per-packet one-way delay: 95.342 ms
Loss rate: 1.68%
```

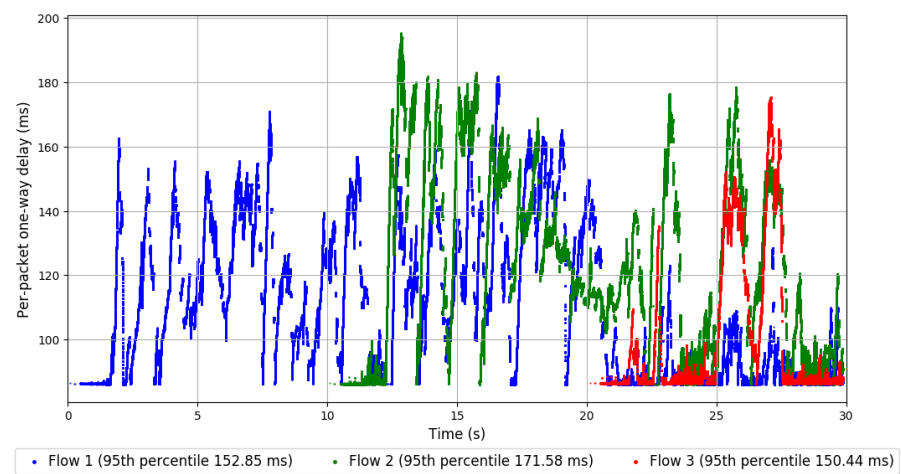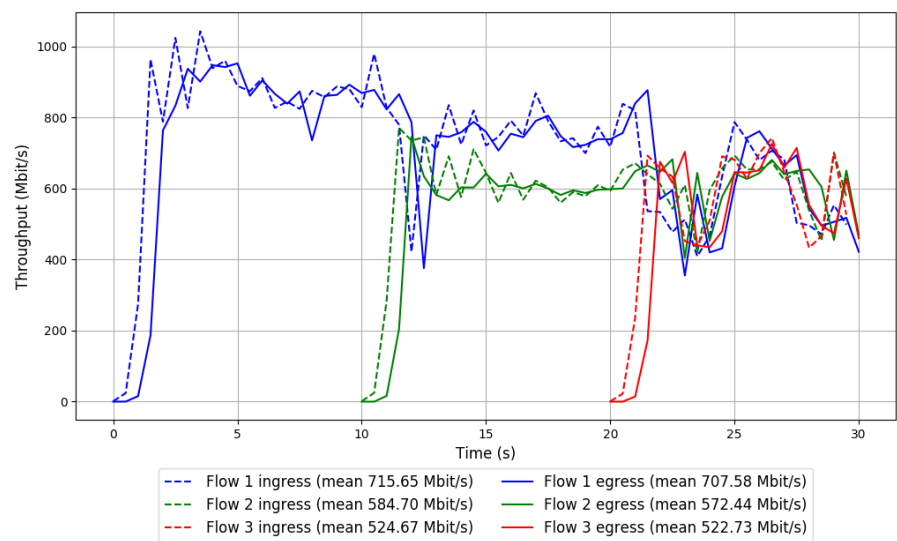# Run 3: Report of FillP-Sheep — Data Link

```
Run 4: Statistics of FillP-Sheep

Start at: 2018-09-07 14:20:59
End at: 2018-09-07 14:21:29
Local clock offset: -0.284 ms
Remote clock offset: -0.166 ms


# Below is generated by plot.py at 2018-09-07 16:56:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1322.83 Mbit/s
95th percentile per-packet one-way delay: 131.459 ms
Loss rate: 1.11%
-- Flow 1:
Average throughput: 737.99 Mbit/s
95th percentile per-packet one-way delay: 136.725 ms
Loss rate: 0.73%
-- Flow 2:
Average throughput: 628.97 Mbit/s
95th percentile per-packet one-way delay: 126.469 ms
Loss rate: 0.90%
-- Flow 3:
Average throughput: 511.60 Mbit/s
95th percentile per-packet one-way delay: 116.967 ms
Loss rate: 3.26%
```
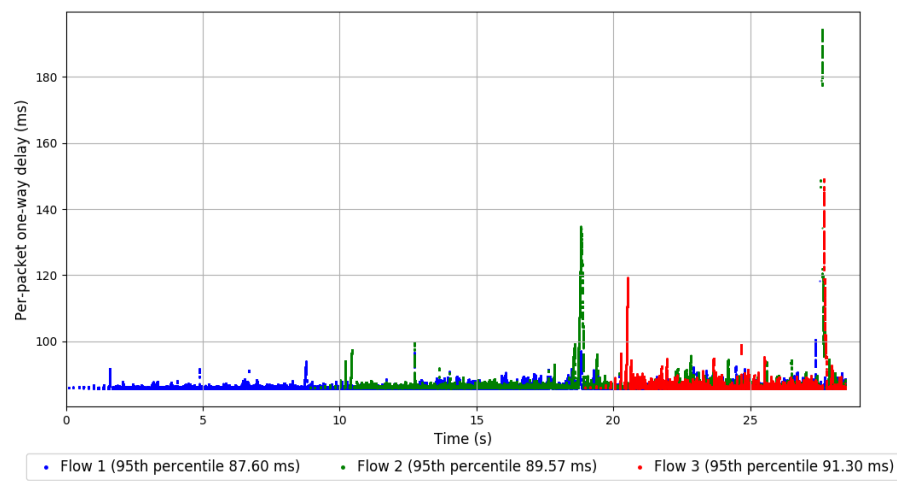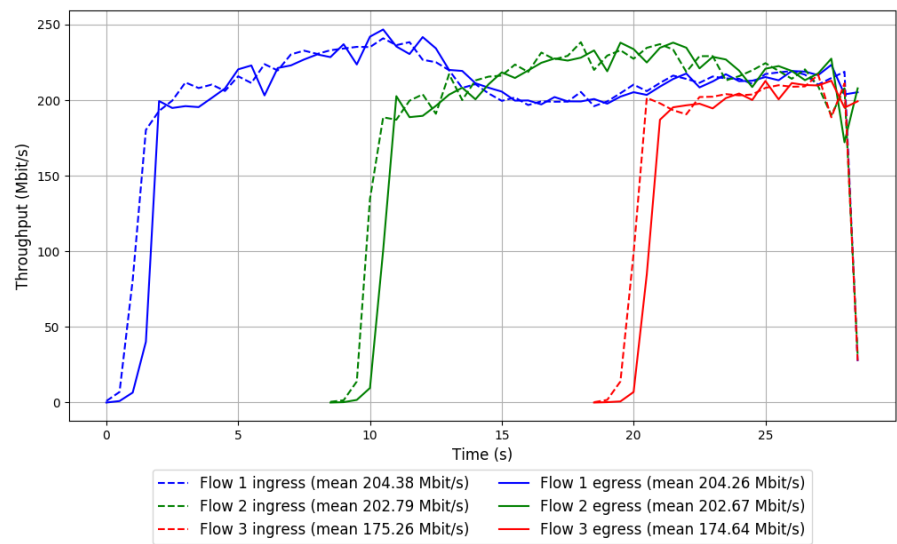
Run 4: Report of FillP-Sheep — Data Link

```
Run 5: Statistics of FillP-Sheep

Start at: 2018-09-07 14:53:42
End at: 2018-09-07 14:54:12
Local clock offset: 0.045 ms
Remote clock offset: -0.126 ms

# Below is generated by plot.py at 2018-09-07 17:01:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1258.60 Mbit/s
95th percentile per-packet one-way delay: 161.465 ms
Loss rate: 2.14%
-- Flow 1:
Average throughput: 707.58 Mbit/s
95th percentile per-packet one-way delay: 152.851 ms
Loss rate: 1.70%
-- Flow 2:
Average throughput: 572.44 Mbit/s
95th percentile per-packet one-way delay: 171.584 ms
Loss rate: 2.95%
-- Flow 3:
Average throughput: 522.73 Mbit/s
95th percentile per-packet one-way delay: 150.436 ms
Loss rate: 2.11%
```
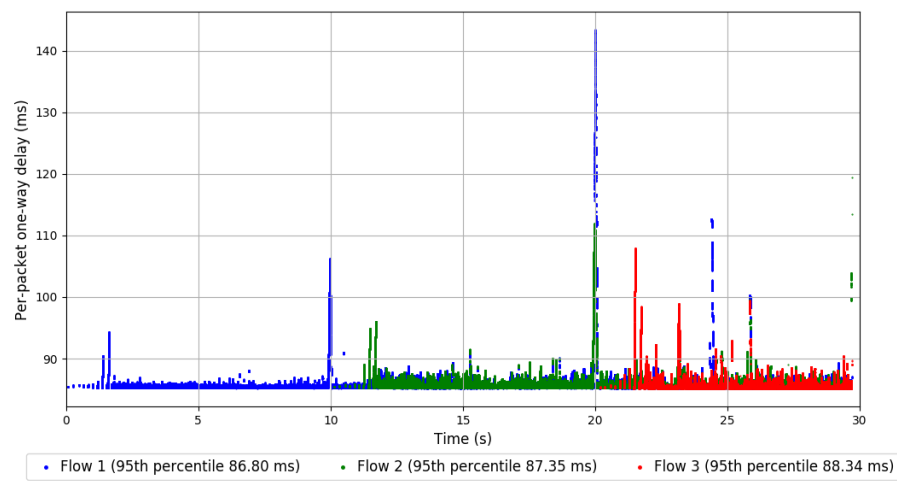
Run 5: Report of FillP-Sheep — Data Link

Flow 1 ingress (mean 715.65 Mbit/s)   Flow 1 egress (mean 707.58 Mbit/s)
Flow 2 ingress (mean 584.70 Mbit/s)   Flow 2 egress (mean 572.44 Mbit/s)
Flow 3 ingress (mean 524.67 Mbit/s)   Flow 3 egress (mean 522.73 Mbit/s)

Flow 1 (95th percentile 152.85 ms)   Flow 2 (95th percentile 171.58 ms)   Flow 3 (95th percentile 150.44 ms)

```
Run 1: Statistics of Indigo

Start at: 2018-09-07 13:03:39
End at: 2018-09-07 13:04:09
Local clock offset: -0.158 ms
Remote clock offset: 0.019 ms


# Below is generated by plot.py at 2018-09-07 17:01:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 402.42 Mbit/s
95th percentile per-packet one-way delay: 88.584 ms
Loss rate: 0.97%
-- Flow 1:
Average throughput: 204.26 Mbit/s
95th percentile per-packet one-way delay: 87.600 ms
Loss rate: 0.66%
-- Flow 2:
Average throughput: 202.67 Mbit/s
95th percentile per-packet one-way delay: 89.567 ms
Loss rate: 0.93%
-- Flow 3:
Average throughput: 174.64 Mbit/s
95th percentile per-packet one-way delay: 91.301 ms
Loss rate: 2.13%
```
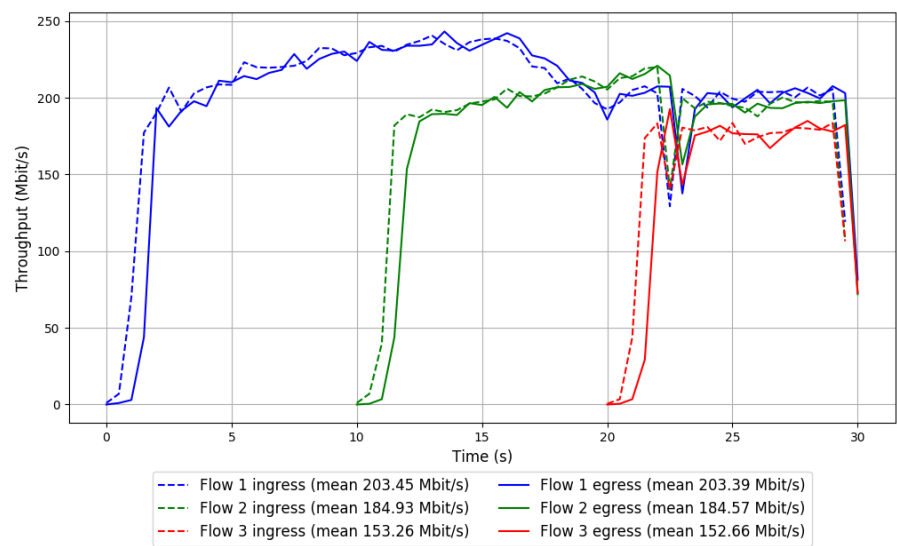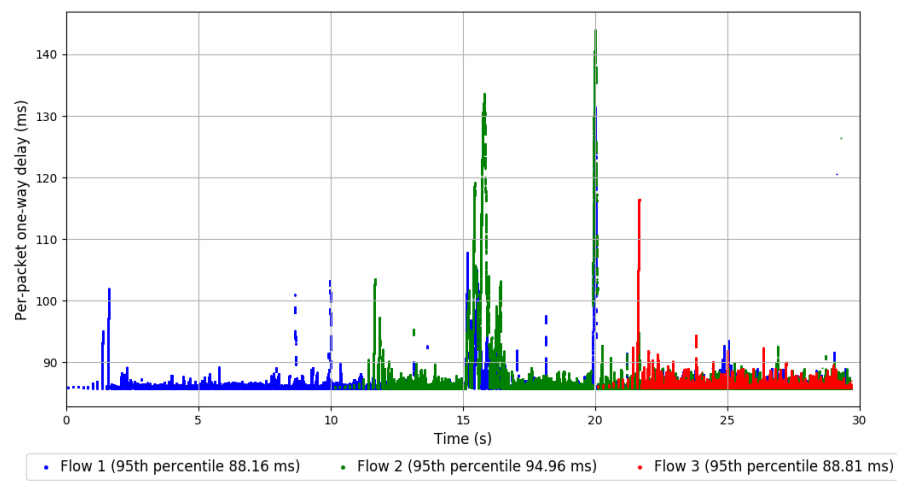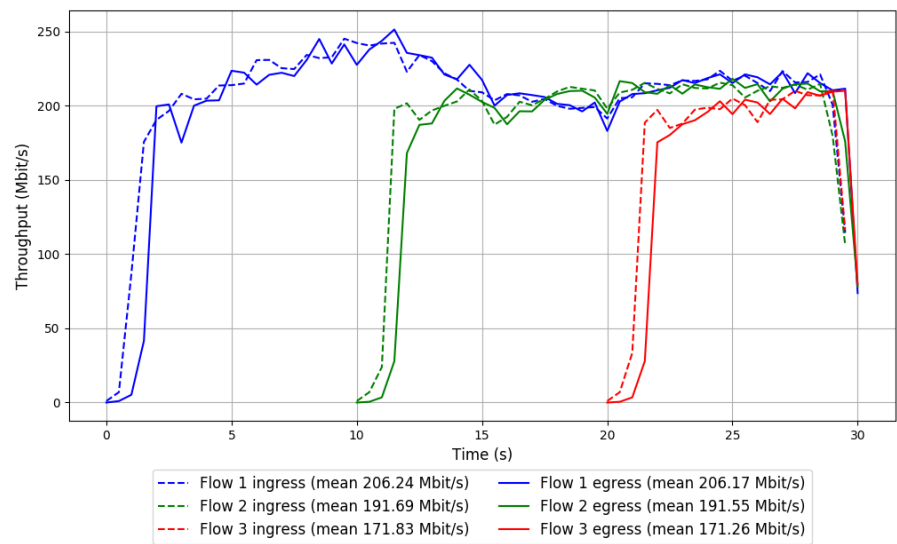
Run 1: Report of Indigo — Data Link

```
Run 2: Statistics of Indigo

Start at: 2018-09-07 13:36:02
End at: 2018-09-07 13:36:32
Local clock offset: -0.103 ms
Remote clock offset: 0.528 ms

# Below is generated by plot.py at 2018-09-07 17:01:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 374.24 Mbit/s
95th percentile per-packet one-way delay: 87.126 ms
Loss rate: 0.92%
-- Flow 1:
Average throughput: 203.39 Mbit/s
95th percentile per-packet one-way delay: 86.797 ms
Loss rate: 0.60%
-- Flow 2:
Average throughput: 184.57 Mbit/s
95th percentile per-packet one-way delay: 87.351 ms
Loss rate: 0.96%
-- Flow 3:
Average throughput: 152.66 Mbit/s
95th percentile per-packet one-way delay: 88.343 ms
Loss rate: 2.15%
```
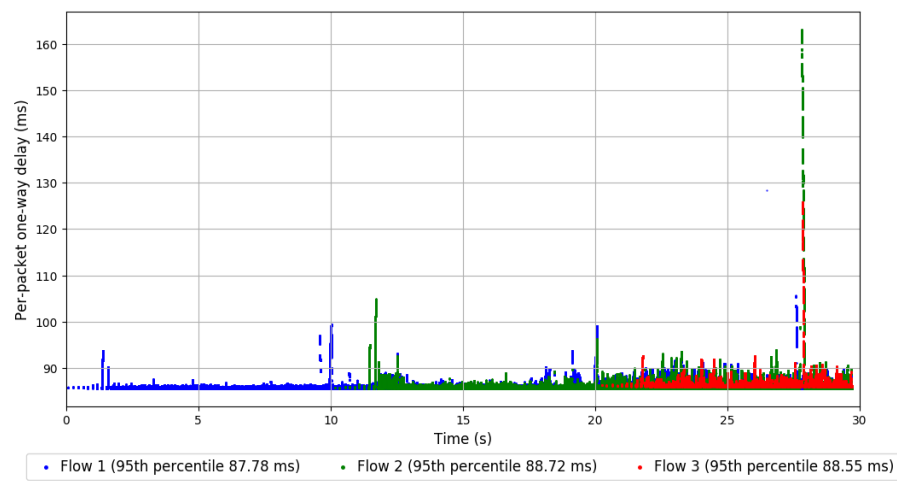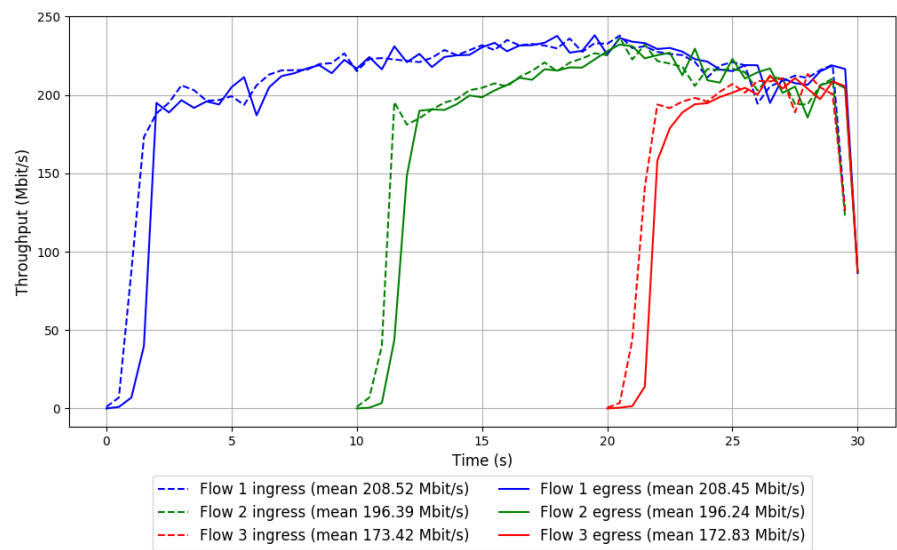
Run 2: Report of Indigo — Data Link

```
Run 3: Statistics of Indigo

Start at: 2018-09-07 14:08:35
End at: 2018-09-07 14:09:05
Local clock offset: -0.126 ms
Remote clock offset: -0.214 ms


# Below is generated by plot.py at 2018-09-07 17:01:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 387.91 Mbit/s
95th percentile per-packet one-way delay: 89.620 ms
Loss rate: 0.94%
-- Flow 1:
Average throughput: 206.17 Mbit/s
95th percentile per-packet one-way delay: 88.159 ms
Loss rate: 0.62%
-- Flow 2:
Average throughput: 191.55 Mbit/s
95th percentile per-packet one-way delay: 94.957 ms
Loss rate: 0.95%
-- Flow 3:
Average throughput: 171.26 Mbit/s
95th percentile per-packet one-way delay: 88.814 ms
Loss rate: 2.11%
```
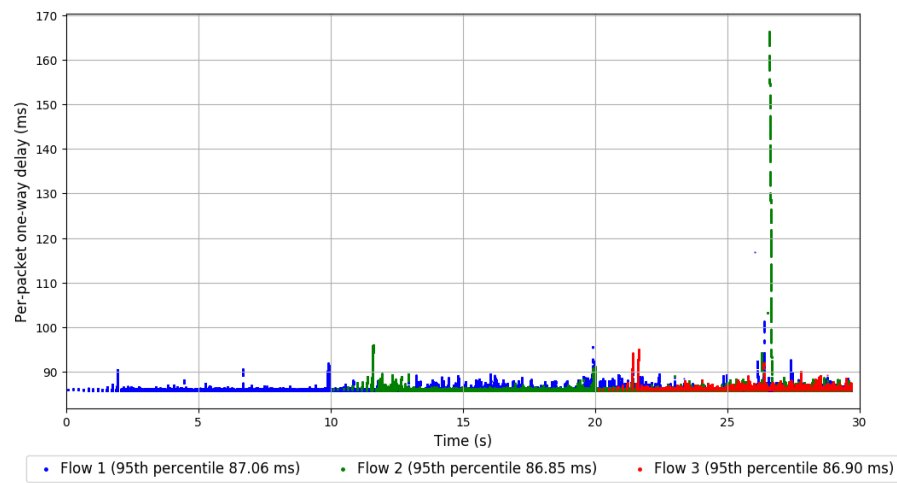
Run 3: Report of Indigo — Data Link

```
Run 4: Statistics of Indigo

Start at: 2018-09-07 14:41:19
End at: 2018-09-07 14:41:49
Local clock offset: -0.306 ms
Remote clock offset: -0.151 ms


# Below is generated by plot.py at 2018-09-07 17:01:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 393.02 Mbit/s
95th percentile per-packet one-way delay: 88.201 ms
Loss rate: 0.94%
-- Flow 1:
Average throughput: 208.45 Mbit/s
95th percentile per-packet one-way delay: 87.778 ms
Loss rate: 0.61%
-- Flow 2:
Average throughput: 196.24 Mbit/s
95th percentile per-packet one-way delay: 88.718 ms
Loss rate: 0.95%
-- Flow 3:
Average throughput: 172.83 Mbit/s
95th percentile per-packet one-way delay: 88.554 ms
Loss rate: 2.13%
```

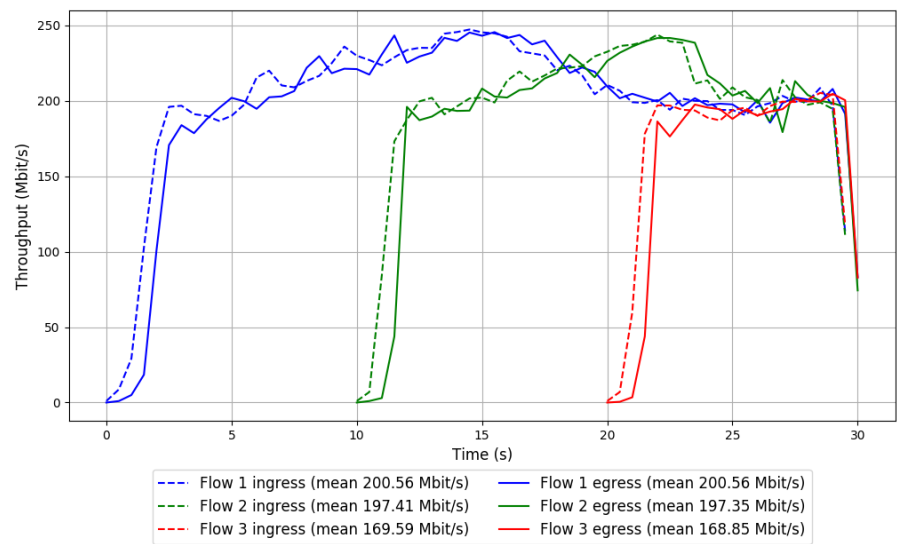Run 4: Report of Indigo — Data Link

```
Run 5: Statistics of Indigo

Start at: 2018-09-07 15:14:01
End at: 2018-09-07 15:14:31
Local clock offset: 0.092 ms
Remote clock offset: -0.094 ms


# Below is generated by plot.py at 2018-09-07 17:01:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 385.77 Mbit/s
95th percentile per-packet one-way delay: 86.969 ms
Loss rate: 0.92%
-- Flow 1:
Average throughput: 200.56 Mbit/s
95th percentile per-packet one-way delay: 87.058 ms
Loss rate: 0.58%
-- Flow 2:
Average throughput: 197.35 Mbit/s
95th percentile per-packet one-way delay: 86.850 ms
Loss rate: 0.90%
-- Flow 3:
Average throughput: 168.85 Mbit/s
95th percentile per-packet one-way delay: 86.903 ms
Loss rate: 2.20%
```
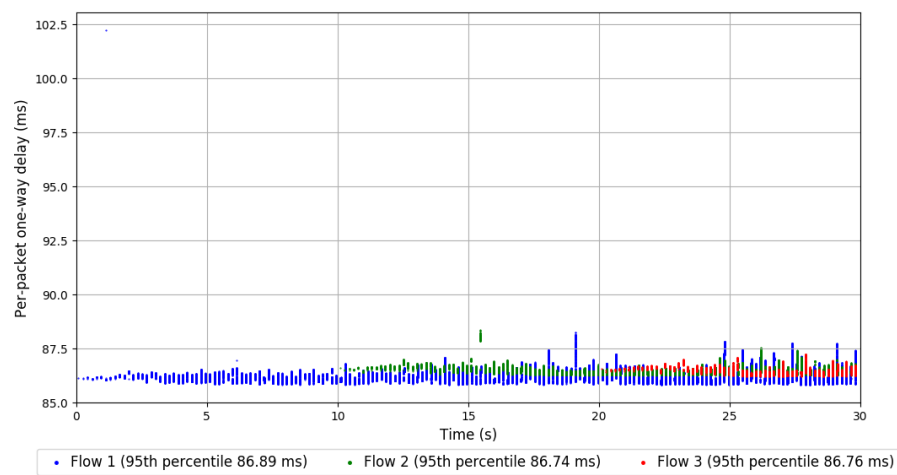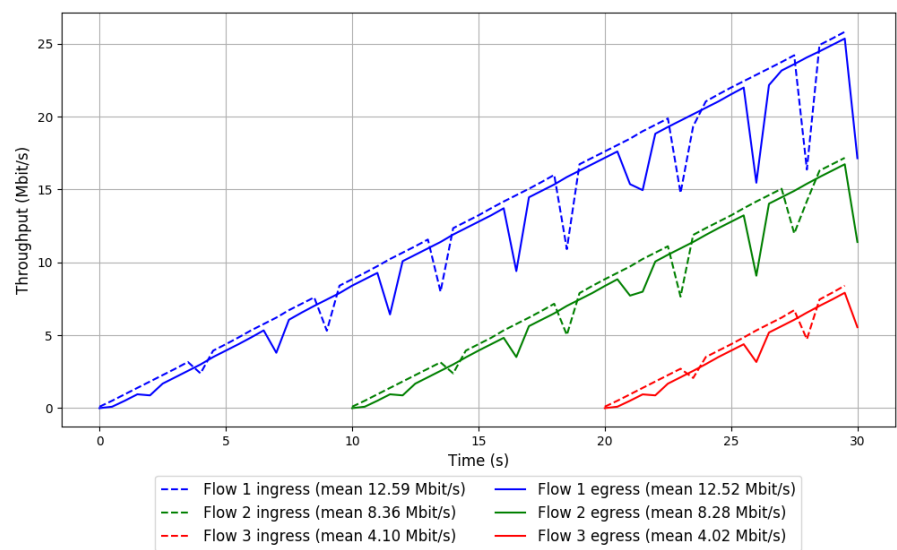
Run 5: Report of Indigo — Data Link

```
Run 1: Statistics of LEDBAT

Start at: 2018-09-07 12:45:39
End at: 2018-09-07 12:46:09
Local clock offset: -0.052 ms
Remote clock offset: 0.046 ms

# Below is generated by plot.py at 2018-09-07 17:01:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 19.32 Mbit/s
95th percentile per-packet one-way delay: 86.813 ms
Loss rate: 1.48%
-- Flow 1:
Average throughput: 12.52 Mbit/s
95th percentile per-packet one-way delay: 86.885 ms
Loss rate: 1.15%
-- Flow 2:
Average throughput: 8.28 Mbit/s
95th percentile per-packet one-way delay: 86.741 ms
Loss rate: 1.74%
-- Flow 3:
Average throughput: 4.02 Mbit/s
95th percentile per-packet one-way delay: 86.756 ms
Loss rate: 3.52%
```

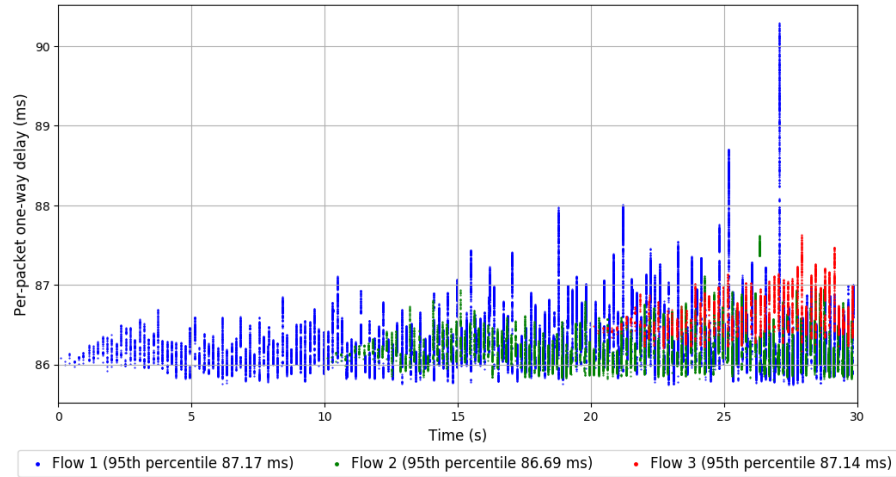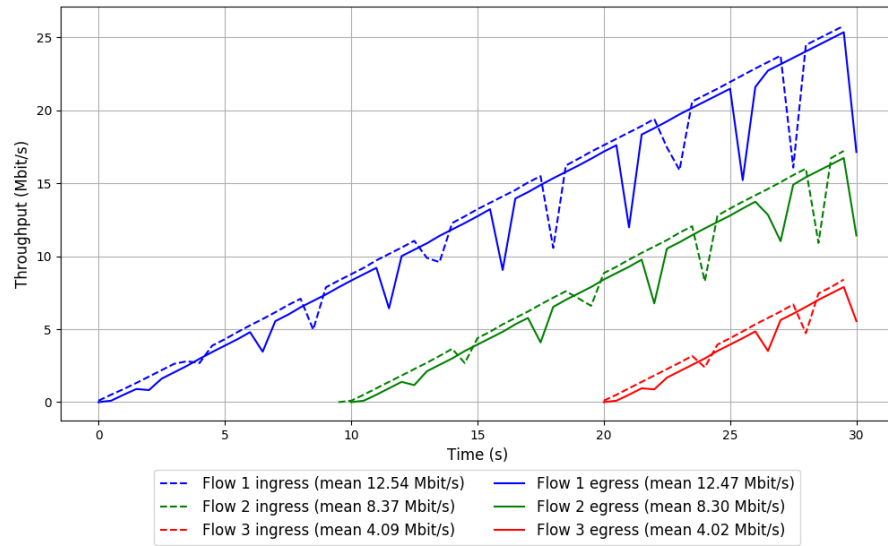## Run 1: Report of LEDBAT — Data Link

```
Run 2: Statistics of LEDBAT

Start at: 2018-09-07 13:18:10
End at: 2018-09-07 13:18:40
Local clock offset: -0.144 ms
Remote clock offset: -0.051 ms


# Below is generated by plot.py at 2018-09-07 17:01:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 19.28 Mbit/s
95th percentile per-packet one-way delay: 87.074 ms
Loss rate: 1.49%
-- Flow 1:
Average throughput: 12.47 Mbit/s
95th percentile per-packet one-way delay: 87.167 ms
Loss rate: 1.15%
-- Flow 2:
Average throughput: 8.30 Mbit/s
95th percentile per-packet one-way delay: 86.685 ms
Loss rate: 1.74%
-- Flow 3:
Average throughput: 4.02 Mbit/s
95th percentile per-packet one-way delay: 87.136 ms
Loss rate: 3.52%
```
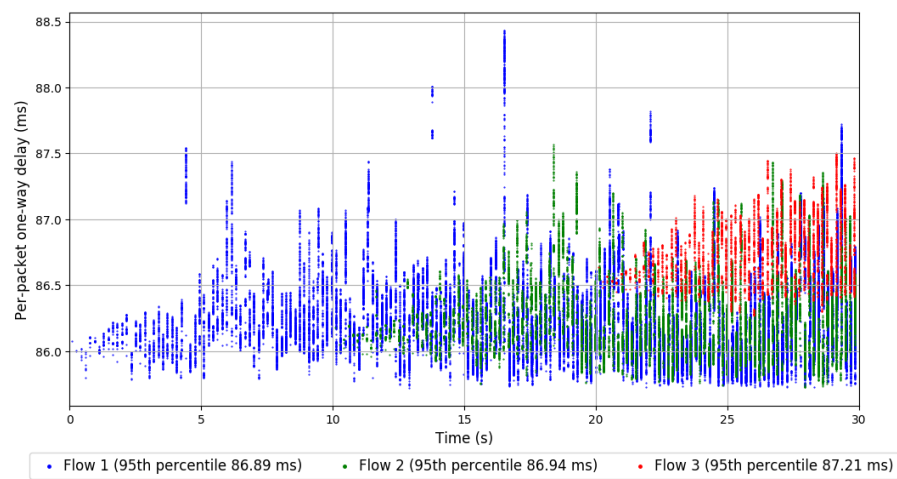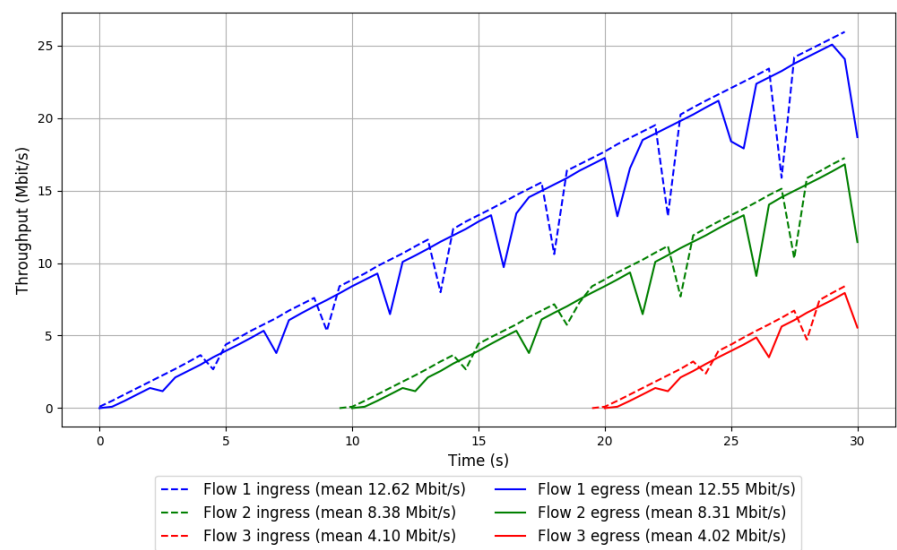
Run 2: Report of LEDBAT — Data Link

```
Run 3: Statistics of LEDBAT

Start at: 2018-09-07 13:50:29
End at: 2018-09-07 13:50:59
Local clock offset: -0.143 ms
Remote clock offset: -0.178 ms

# Below is generated by plot.py at 2018-09-07 17:01:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 19.37 Mbit/s
95th percentile per-packet one-way delay: 86.983 ms
Loss rate: 1.48%
-- Flow 1:
Average throughput: 12.55 Mbit/s
95th percentile per-packet one-way delay: 86.892 ms
Loss rate: 1.15%
-- Flow 2:
Average throughput: 8.31 Mbit/s
95th percentile per-packet one-way delay: 86.941 ms
Loss rate: 1.74%
-- Flow 3:
Average throughput: 4.02 Mbit/s
95th percentile per-packet one-way delay: 87.211 ms
Loss rate: 3.51%
```
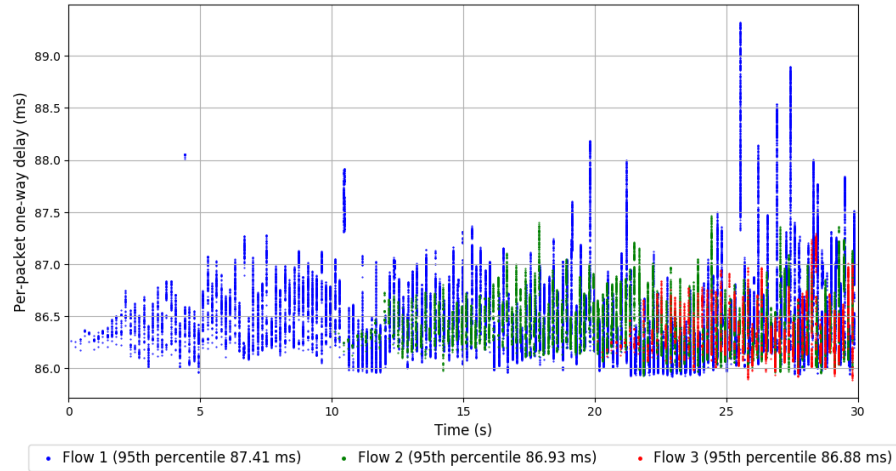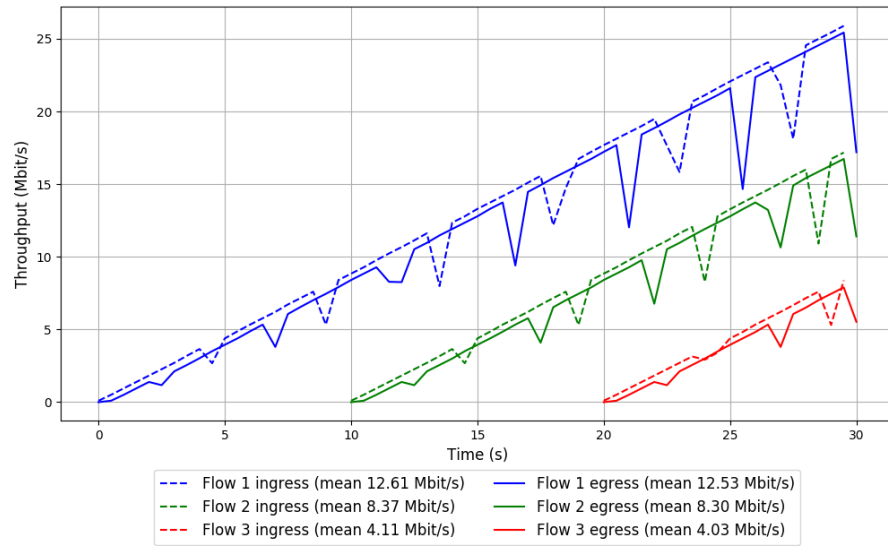
Run 3: Report of LEDBAT — Data Link

```
Run 4: Statistics of LEDBAT

Start at: 2018-09-07 14:23:12
End at: 2018-09-07 14:23:42
Local clock offset: -0.005 ms
Remote clock offset: -0.178 ms

# Below is generated by plot.py at 2018-09-07 17:01:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 19.34 Mbit/s
95th percentile per-packet one-way delay: 87.193 ms
Loss rate: 1.48%
-- Flow 1:
Average throughput: 12.53 Mbit/s
95th percentile per-packet one-way delay: 87.410 ms
Loss rate: 1.15%
-- Flow 2:
Average throughput: 8.30 Mbit/s
95th percentile per-packet one-way delay: 86.931 ms
Loss rate: 1.73%
-- Flow 3:
Average throughput: 4.03 Mbit/s
95th percentile per-packet one-way delay: 86.884 ms
Loss rate: 3.52%
```
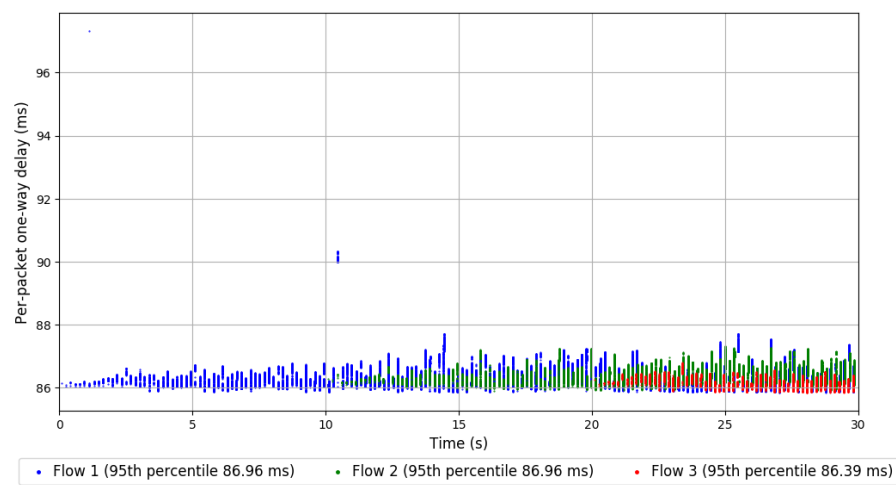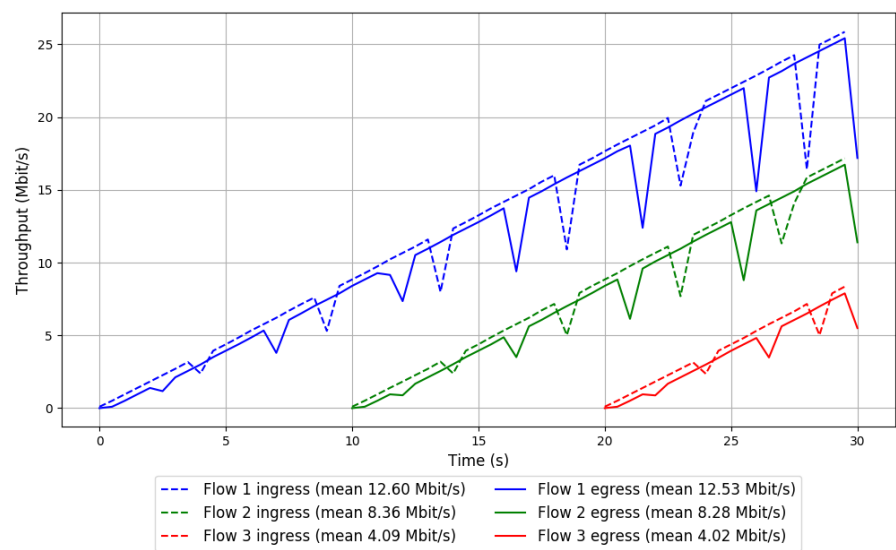
Run 4: Report of LEDBAT — Data Link

```
Run 5: Statistics of LEDBAT

Start at: 2018-09-07 14:55:52
End at: 2018-09-07 14:56:22
Local clock offset: -0.051 ms
Remote clock offset: -0.158 ms

# Below is generated by plot.py at 2018-09-07 17:01:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 19.32 Mbit/s
95th percentile per-packet one-way delay: 86.943 ms
Loss rate: 1.48%
-- Flow 1:
Average throughput: 12.53 Mbit/s
95th percentile per-packet one-way delay: 86.963 ms
Loss rate: 1.15%
-- Flow 2:
Average throughput: 8.28 Mbit/s
95th percentile per-packet one-way delay: 86.958 ms
Loss rate: 1.73%
-- Flow 3:
Average throughput: 4.02 Mbit/s
95th percentile per-packet one-way delay: 86.392 ms
Loss rate: 3.53%
```

Run 5: Report of LEDBAT — Data Link

```
Run 1: Statistics of Indigo-Muses

Start at: 2018-09-07 12:49:04
End at: 2018-09-07 12:49:34
Local clock offset: 0.026 ms
Remote clock offset: 0.009 ms

# Below is generated by plot.py at 2018-09-07 17:01:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 801.08 Mbit/s
95th percentile per-packet one-way delay: 102.787 ms
Loss rate: 1.01%
-- Flow 1:
Average throughput: 462.29 Mbit/s
95th percentile per-packet one-way delay: 99.942 ms
Loss rate: 0.24%
-- Flow 2:
Average throughput: 412.55 Mbit/s
95th percentile per-packet one-way delay: 107.024 ms
Loss rate: 1.29%
-- Flow 3:
Average throughput: 198.29 Mbit/s
95th percentile per-packet one-way delay: 88.455 ms
Loss rate: 5.11%
```
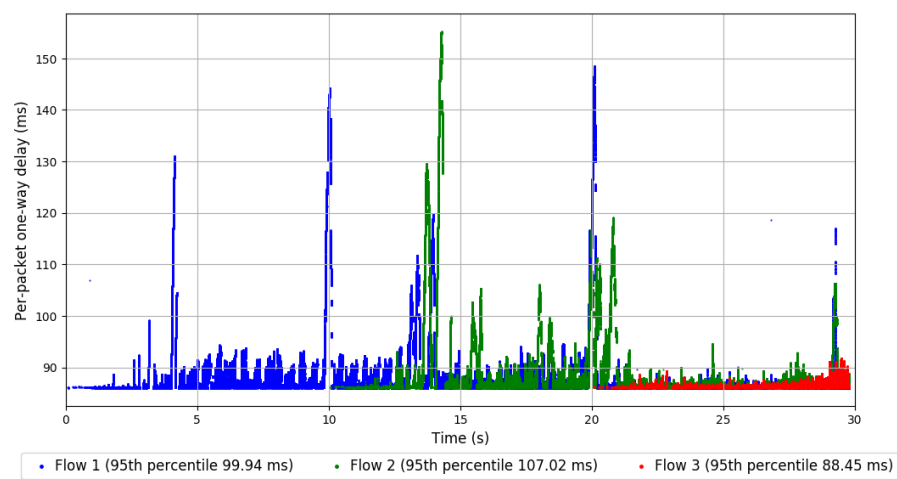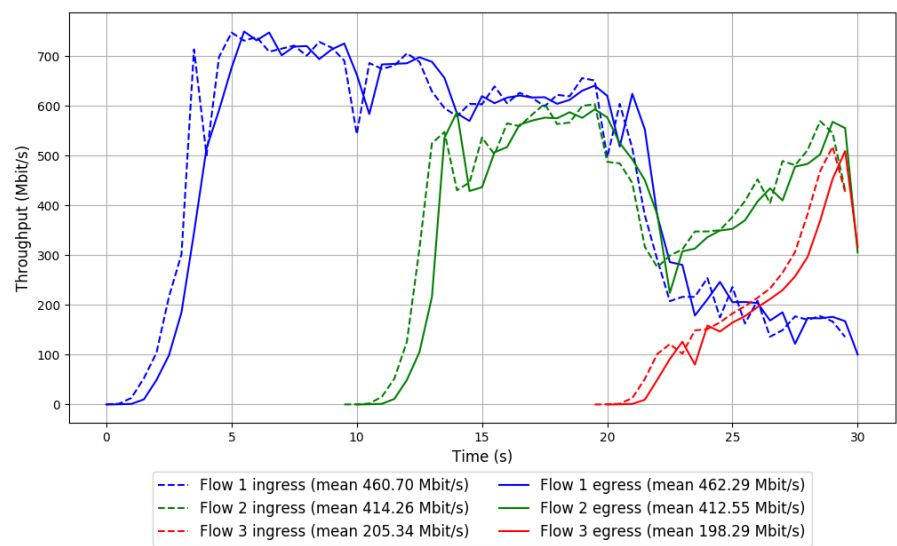
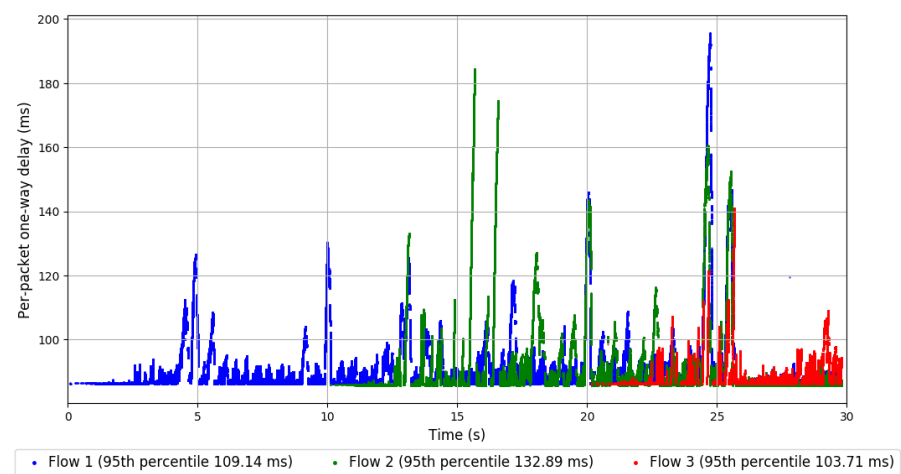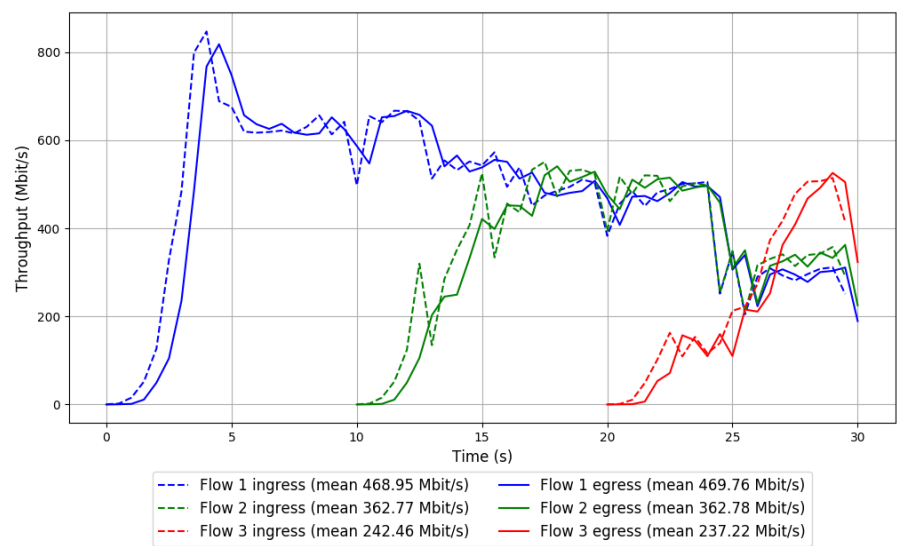Run 1: Report of Indigo-Muses — Data Link

```
Run 2: Statistics of Indigo-Muses

Start at: 2018-09-07 13:21:34
End at: 2018-09-07 13:22:04
Local clock offset: -0.044 ms
Remote clock offset: -0.002 ms

# Below is generated by plot.py at 2018-09-07 17:01:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 787.23 Mbit/s
95th percentile per-packet one-way delay: 114.553 ms
Loss rate: 0.90%
-- Flow 1:
Average throughput: 469.76 Mbit/s
95th percentile per-packet one-way delay: 109.141 ms
Loss rate: 0.42%
-- Flow 2:
Average throughput: 362.78 Mbit/s
95th percentile per-packet one-way delay: 132.892 ms
Loss rate: 0.88%
-- Flow 3:
Average throughput: 237.22 Mbit/s
95th percentile per-packet one-way delay: 103.711 ms
Loss rate: 3.86%
```

Run 2: Report of Indigo-Muses — Data Link

Flow 1 ingress (mean 468.95 Mbit/s) — — — Flow 1 egress (mean 469.76 Mbit/s)
Flow 2 ingress (mean 362.77 Mbit/s) — — — Flow 2 egress (mean 362.78 Mbit/s)
Flow 3 ingress (mean 242.46 Mbit/s) — — — Flow 3 egress (mean 237.22 Mbit/s)

Flow 1 (95th percentile 109.14 ms) • Flow 2 (95th percentile 132.89 ms) • Flow 3 (95th percentile 103.71 ms)

```
Run 3: Statistics of Indigo-Muses

Start at: 2018-09-07 13:53:57
End at: 2018-09-07 13:54:27
Local clock offset: -0.105 ms
Remote clock offset: -0.16 ms

# Below is generated by plot.py at 2018-09-07 17:02:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 857.01 Mbit/s
95th percentile per-packet one-way delay: 100.961 ms
Loss rate: 1.13%
-- Flow 1:
Average throughput: 503.24 Mbit/s
95th percentile per-packet one-way delay: 101.432 ms
Loss rate: 0.64%
-- Flow 2:
Average throughput: 406.56 Mbit/s
95th percentile per-packet one-way delay: 102.042 ms
Loss rate: 1.14%
-- Flow 3:
Average throughput: 264.66 Mbit/s
95th percentile per-packet one-way delay: 95.801 ms
Loss rate: 3.88%
```
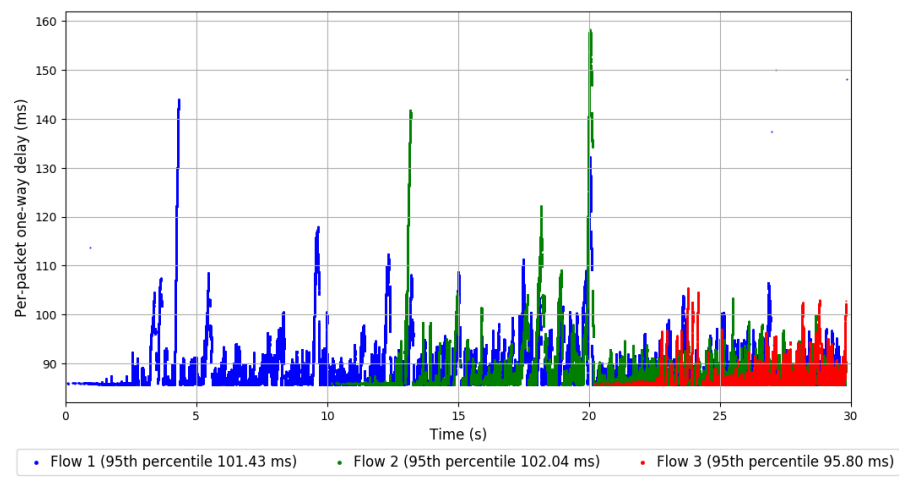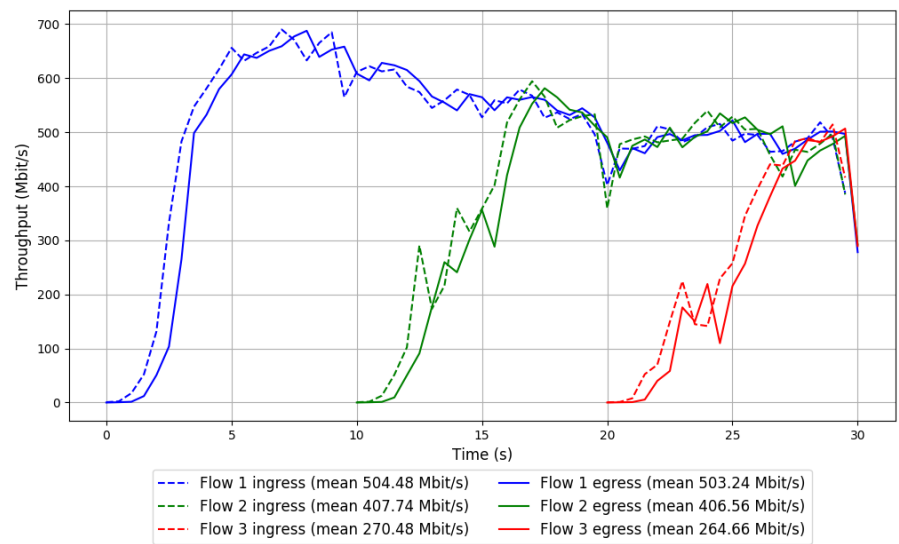
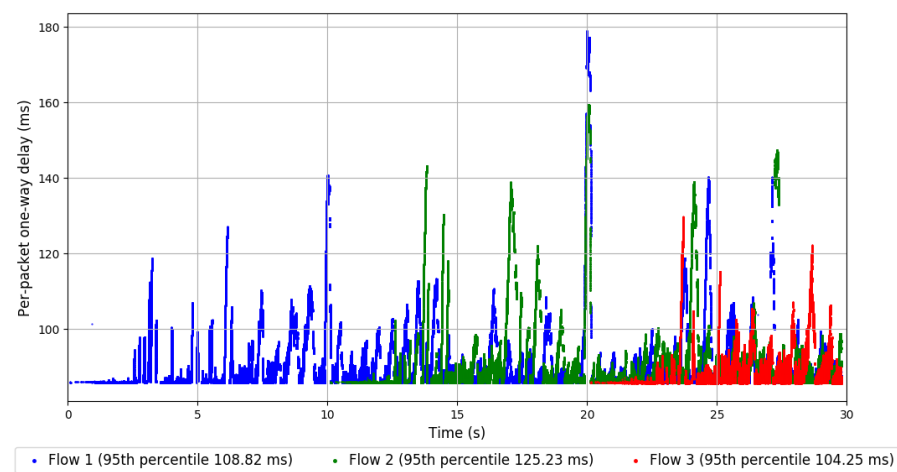Run 3: Report of Indigo-Muses — Data Link

Flow 1 ingress (mean 504.48 Mbit/s)   Flow 1 egress (mean 503.24 Mbit/s)
Flow 2 ingress (mean 407.74 Mbit/s)   Flow 2 egress (mean 406.56 Mbit/s)
Flow 3 ingress (mean 270.48 Mbit/s)   Flow 3 egress (mean 264.66 Mbit/s)

Flow 1 (95th percentile 101.43 ms)   Flow 2 (95th percentile 102.04 ms)   Flow 3 (95th percentile 95.80 ms)
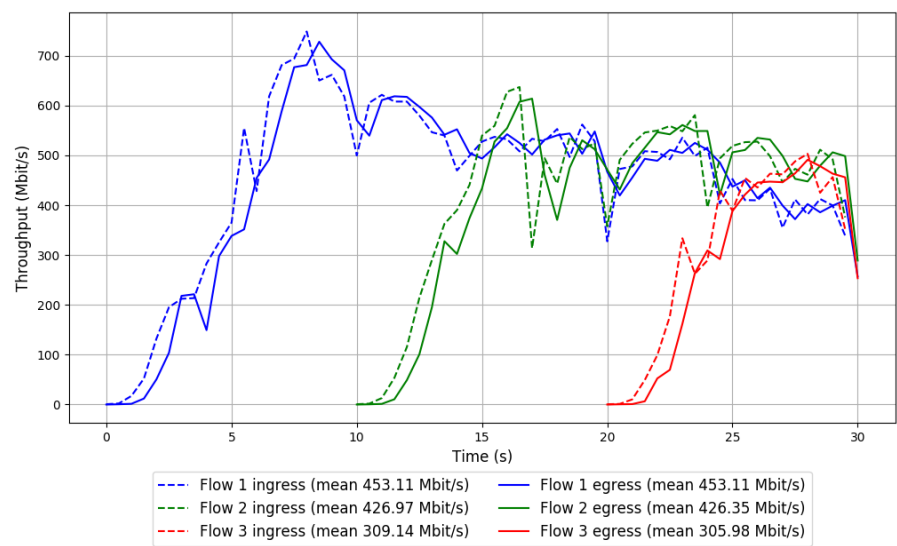
```
Run 4: Statistics of Indigo-Muses

Start at: 2018-09-07 14:26:37
End at: 2018-09-07 14:27:07
Local clock offset: -0.369 ms
Remote clock offset: -0.174 ms


# Below is generated by plot.py at 2018-09-07 17:03:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 834.85 Mbit/s
95th percentile per-packet one-way delay: 110.960 ms
Loss rate: 0.99%
-- Flow 1:
Average throughput: 453.11 Mbit/s
95th percentile per-packet one-way delay: 108.820 ms
Loss rate: 0.57%
-- Flow 2:
Average throughput: 426.35 Mbit/s
95th percentile per-packet one-way delay: 125.227 ms
Loss rate: 1.01%
-- Flow 3:
Average throughput: 305.98 Mbit/s
95th percentile per-packet one-way delay: 104.255 ms
Loss rate: 2.78%
```
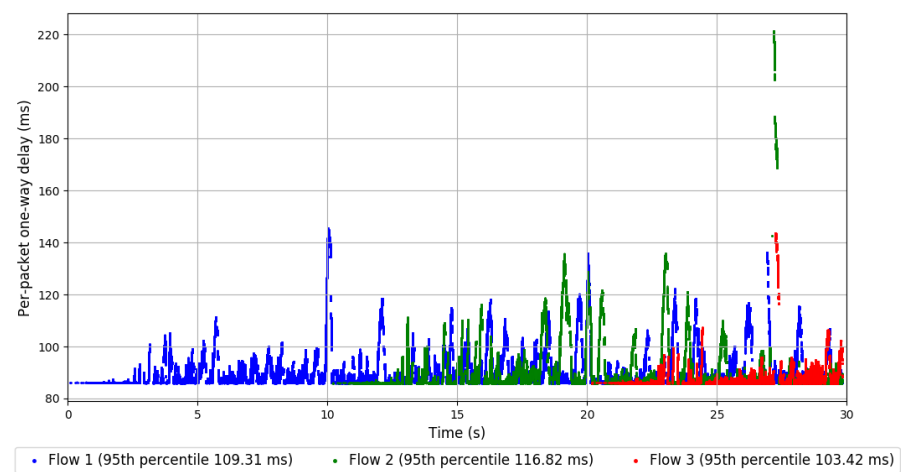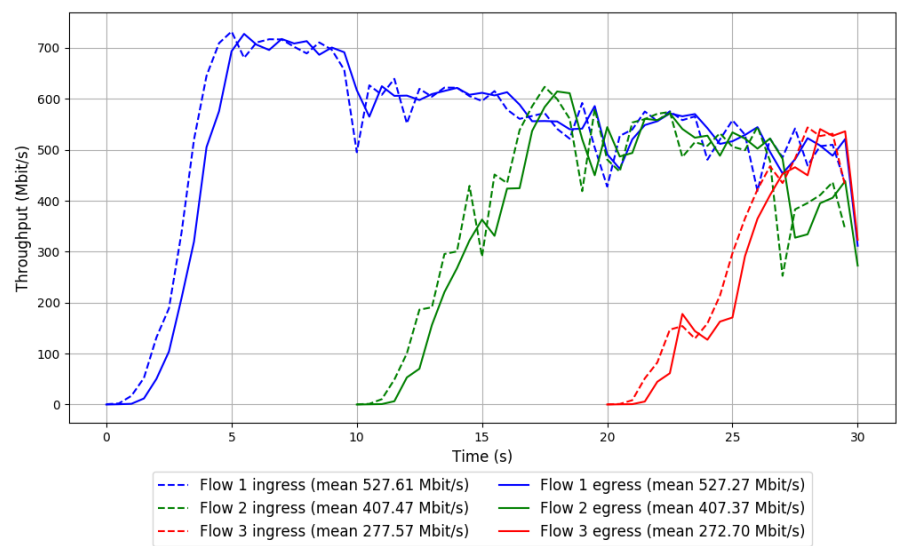
Run 4: Report of Indigo-Muses — Data Link

```
Run 5: Statistics of Indigo-Muses

Start at: 2018-09-07 14:59:21
End at: 2018-09-07 14:59:51
Local clock offset: -0.17 ms
Remote clock offset: -0.174 ms


# Below is generated by plot.py at 2018-09-07 17:04:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 884.56 Mbit/s
95th percentile per-packet one-way delay: 111.693 ms
Loss rate: 1.01%
-- Flow 1:
Average throughput: 527.27 Mbit/s
95th percentile per-packet one-way delay: 109.313 ms
Loss rate: 0.64%
-- Flow 2:
Average throughput: 407.37 Mbit/s
95th percentile per-packet one-way delay: 116.820 ms
Loss rate: 0.90%
-- Flow 3:
Average throughput: 272.70 Mbit/s
95th percentile per-packet one-way delay: 103.420 ms
Loss rate: 3.47%
```

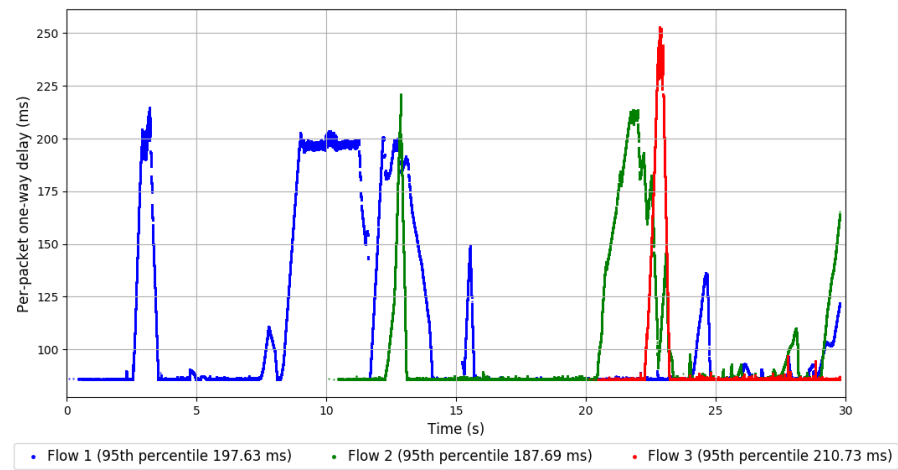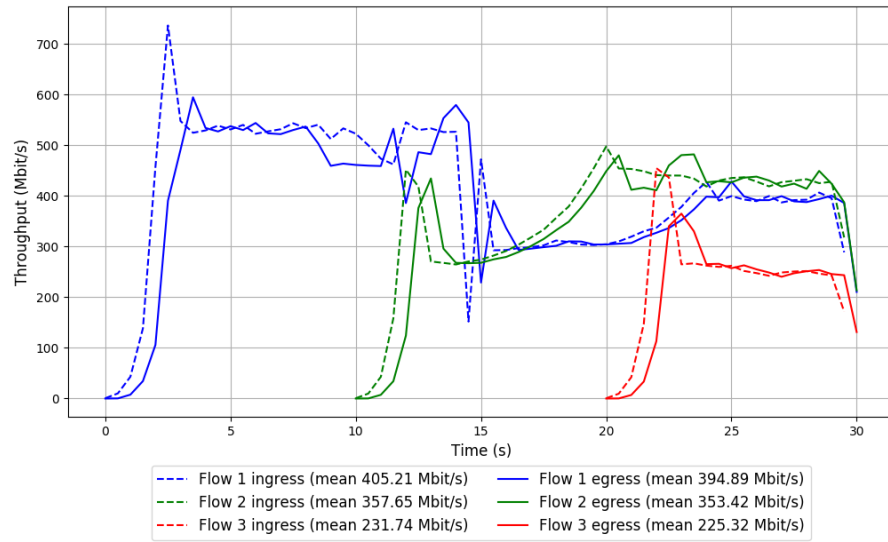Run 5: Report of Indigo-Muses — Data Link

```
Run 1: Statistics of PCC-Allegro

Start at: 2018-09-07 12:39:21
End at: 2018-09-07 12:39:51
Local clock offset: 0.018 ms
Remote clock offset: 0.023 ms


# Below is generated by plot.py at 2018-09-07 17:12:47
# Datalink statistics
-- Total of 3 flows:
Average throughput: 702.49 Mbit/s
95th percentile per-packet one-way delay: 197.349 ms
Loss rate: 2.90%
-- Flow 1:
Average throughput: 394.89 Mbit/s
95th percentile per-packet one-way delay: 197.632 ms
Loss rate: 3.11%
-- Flow 2:
Average throughput: 353.42 Mbit/s
95th percentile per-packet one-way delay: 187.692 ms
Loss rate: 2.04%
-- Flow 3:
Average throughput: 225.32 Mbit/s
95th percentile per-packet one-way delay: 210.731 ms
Loss rate: 4.47%
```

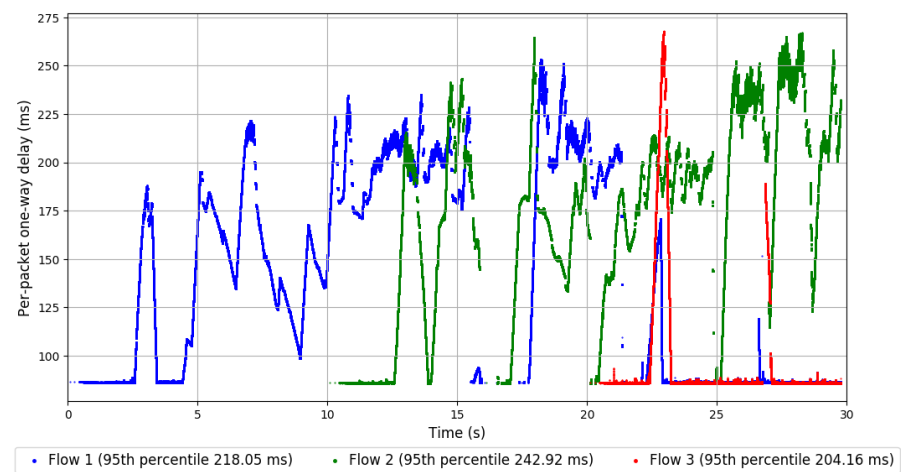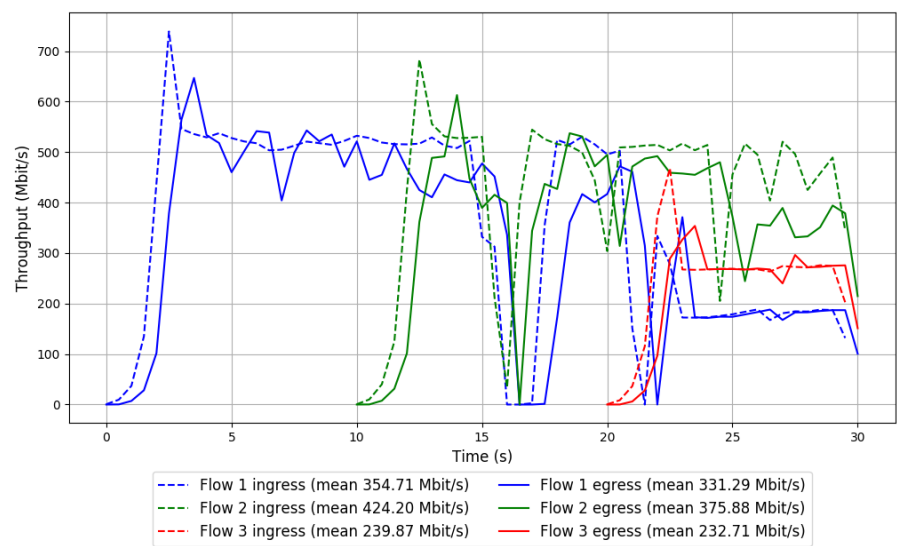# Run 1: Report of PCC-Allegro — Data Link

```
Run 2: Statistics of PCC-Allegro

Start at: 2018-09-07 13:11:53
End at: 2018-09-07 13:12:23
Local clock offset: -0.15 ms
Remote clock offset: -0.055 ms


# Below is generated by plot.py at 2018-09-07 17:16:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 656.03 Mbit/s
95th percentile per-packet one-way delay: 232.631 ms
Loss rate: 8.85%
-- Flow 1:
Average throughput: 331.29 Mbit/s
95th percentile per-packet one-way delay: 218.052 ms
Loss rate: 7.15%
-- Flow 2:
Average throughput: 375.88 Mbit/s
95th percentile per-packet one-way delay: 242.918 ms
Loss rate: 12.16%
-- Flow 3:
Average throughput: 232.71 Mbit/s
95th percentile per-packet one-way delay: 204.158 ms
Loss rate: 4.68%
```

Run 2: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 354.71 Mbit/s) --- Flow 1 egress (mean 331.29 Mbit/s)
Flow 2 ingress (mean 424.20 Mbit/s) --- Flow 2 egress (mean 375.88 Mbit/s)
Flow 3 ingress (mean 239.87 Mbit/s) --- Flow 3 egress (mean 232.71 Mbit/s)

Flow 1 (95th percentile 218.05 ms) • Flow 2 (95th percentile 242.92 ms) • Flow 3 (95th percentile 204.16 ms)

```
Run 3: Statistics of PCC-Allegro

Start at: 2018-09-07 13:44:15
End at: 2018-09-07 13:44:45
Local clock offset: 0.023 ms
Remote clock offset: -0.15 ms


# Below is generated by plot.py at 2018-09-07 17:19:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 716.17 Mbit/s
95th percentile per-packet one-way delay: 213.514 ms
Loss rate: 5.01%
-- Flow 1:
Average throughput: 415.77 Mbit/s
95th percentile per-packet one-way delay: 212.608 ms
Loss rate: 5.84%
-- Flow 2:
Average throughput: 336.63 Mbit/s
95th percentile per-packet one-way delay: 222.196 ms
Loss rate: 4.46%
-- Flow 3:
Average throughput: 237.34 Mbit/s
95th percentile per-packet one-way delay: 120.474 ms
Loss rate: 2.04%
```
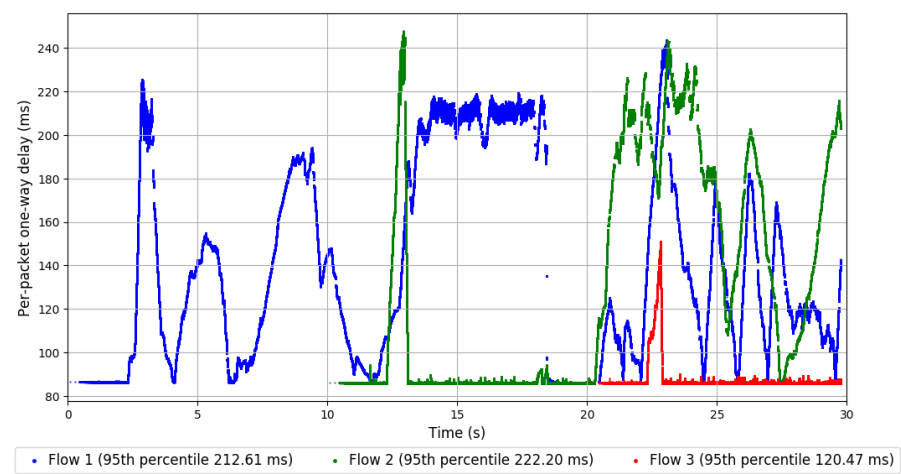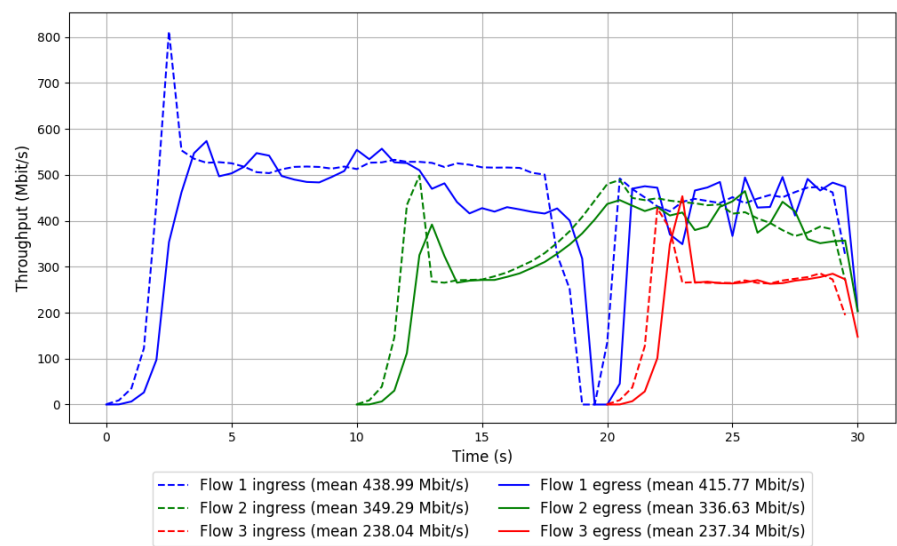
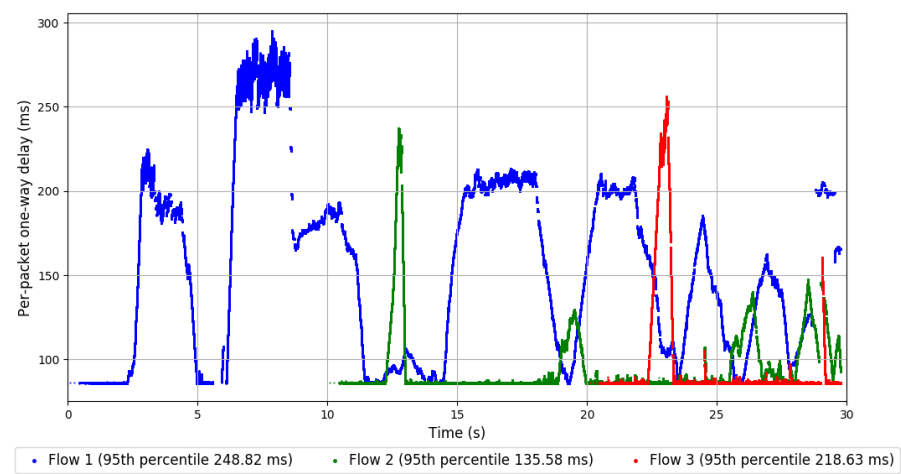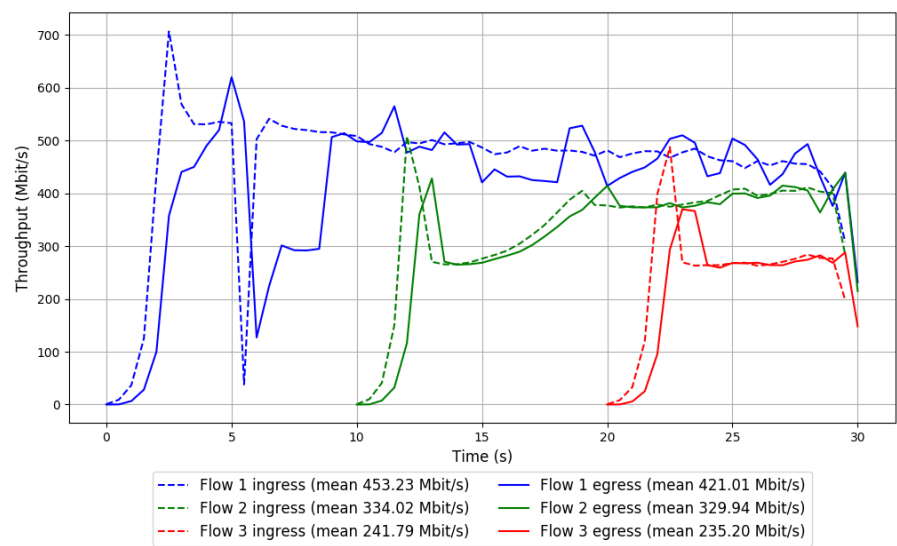Run 3: Report of PCC-Allegro — Data Link

```
Run 4: Statistics of PCC-Allegro

Start at: 2018-09-07 14:16:49
End at: 2018-09-07 14:17:19
Local clock offset: -0.254 ms
Remote clock offset: -0.176 ms


# Below is generated by plot.py at 2018-09-07 17:23:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 716.28 Mbit/s
95th percentile per-packet one-way delay: 210.432 ms
Loss rate: 5.67%
-- Flow 1:
Average throughput: 421.01 Mbit/s
95th percentile per-packet one-way delay: 248.824 ms
Loss rate: 7.65%
-- Flow 2:
Average throughput: 329.94 Mbit/s
95th percentile per-packet one-way delay: 135.583 ms
Loss rate: 2.09%
-- Flow 3:
Average throughput: 235.20 Mbit/s
95th percentile per-packet one-way delay: 218.635 ms
Loss rate: 4.44%
```
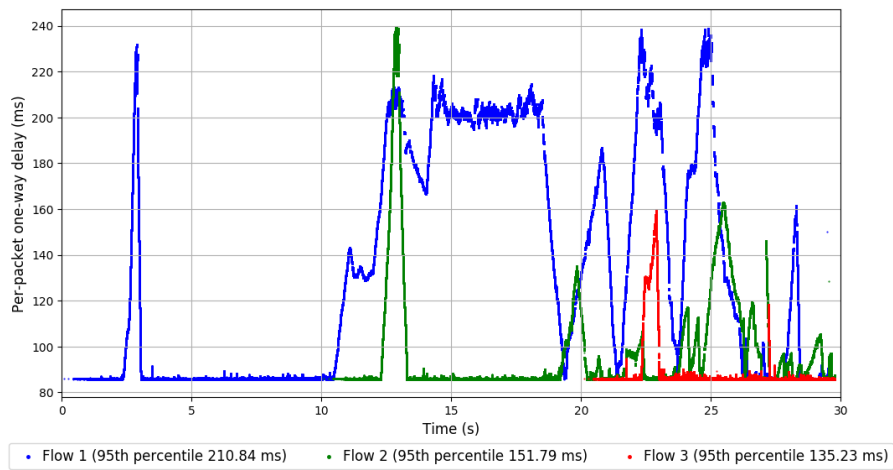
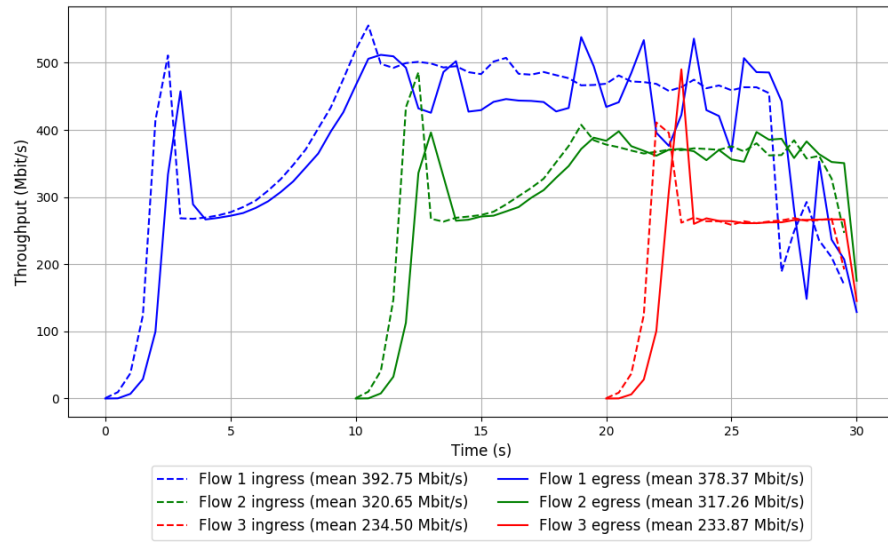Run 4: Report of PCC-Allegro — Data Link

```
Run 5: Statistics of PCC-Allegro

Start at: 2018-09-07 14:49:36
End at: 2018-09-07 14:50:06
Local clock offset: -0.135 ms
Remote clock offset: -0.151 ms


# Below is generated by plot.py at 2018-09-07 17:23:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 664.74 Mbit/s
95th percentile per-packet one-way delay: 206.873 ms
Loss rate: 3.25%
-- Flow 1:
Average throughput: 378.37 Mbit/s
95th percentile per-packet one-way delay: 210.836 ms
Loss rate: 4.22%
-- Flow 2:
Average throughput: 317.26 Mbit/s
95th percentile per-packet one-way delay: 151.788 ms
Loss rate: 1.92%
-- Flow 3:
Average throughput: 233.87 Mbit/s
95th percentile per-packet one-way delay: 135.234 ms
Loss rate: 2.03%
```

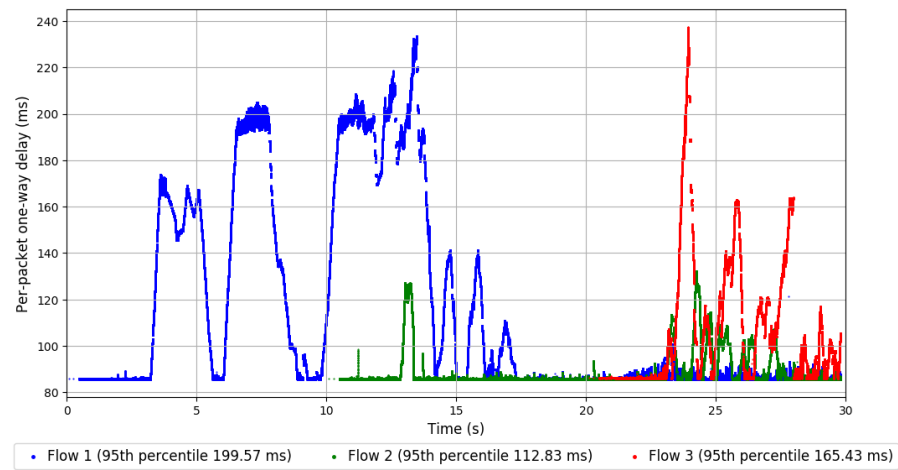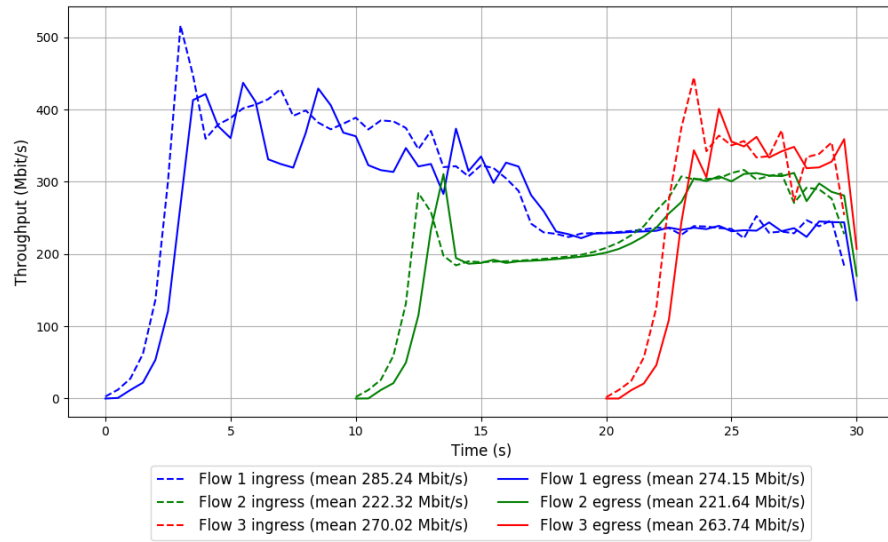Run 5: Report of PCC-Allegro — Data Link

```
Run 1: Statistics of PCC-Expr

Start at: 2018-09-07 12:57:55
End at: 2018-09-07 12:58:25
Local clock offset: -0.313 ms
Remote clock offset: 0.021 ms


# Below is generated by plot.py at 2018-09-07 17:23:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 507.07 Mbit/s
95th percentile per-packet one-way delay: 196.831 ms
Loss rate: 3.46%
-- Flow 1:
Average throughput: 274.15 Mbit/s
95th percentile per-packet one-way delay: 199.569 ms
Loss rate: 4.45%
-- Flow 2:
Average throughput: 221.64 Mbit/s
95th percentile per-packet one-way delay: 112.834 ms
Loss rate: 1.19%
-- Flow 3:
Average throughput: 263.74 Mbit/s
95th percentile per-packet one-way delay: 165.427 ms
Loss rate: 4.06%
```

Run 1: Report of PCC-Expr — Data Link

- Flow 1 ingress (mean 285.24 Mbit/s)
- Flow 1 egress (mean 274.15 Mbit/s)
- Flow 2 ingress (mean 222.32 Mbit/s)
- Flow 2 egress (mean 221.64 Mbit/s)
- Flow 3 ingress (mean 270.02 Mbit/s)
- Flow 3 egress (mean 263.74 Mbit/s)

- Flow 1 (95th percentile 199.57 ms)
- Flow 2 (95th percentile 112.83 ms)
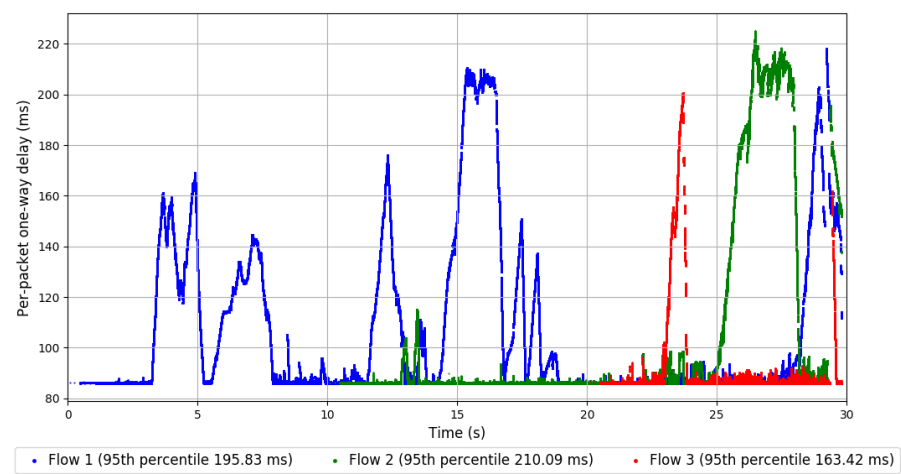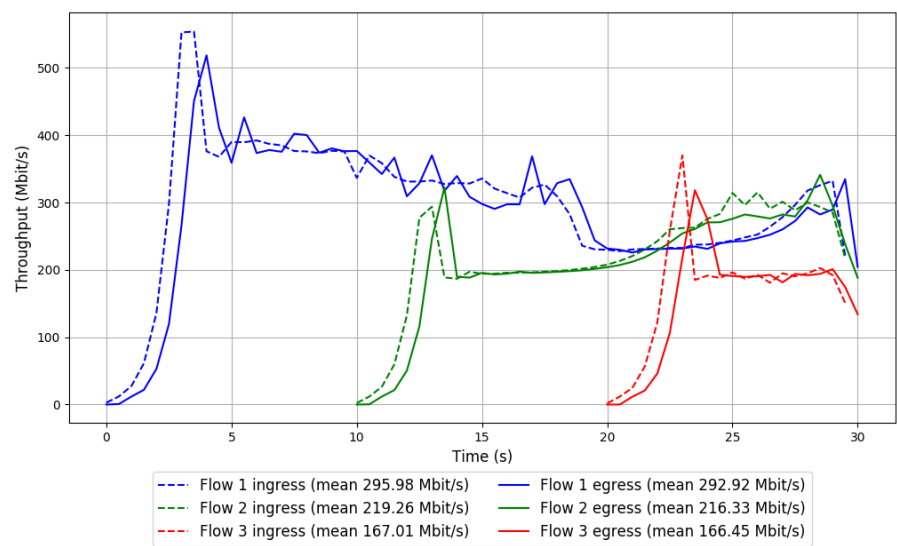- Flow 3 (95th percentile 165.43 ms)

```
Run 2: Statistics of PCC-Expr

Start at: 2018-09-07 13:30:20
End at: 2018-09-07 13:30:50
Local clock offset: 0.053 ms
Remote clock offset: -0.067 ms


# Below is generated by plot.py at 2018-09-07 17:23:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 490.62 Mbit/s
95th percentile per-packet one-way delay: 202.332 ms
Loss rate: 1.83%
-- Flow 1:
Average throughput: 292.92 Mbit/s
95th percentile per-packet one-way delay: 195.834 ms
Loss rate: 1.61%
-- Flow 2:
Average throughput: 216.33 Mbit/s
95th percentile per-packet one-way delay: 210.091 ms
Loss rate: 2.20%
-- Flow 3:
Average throughput: 166.45 Mbit/s
95th percentile per-packet one-way delay: 163.424 ms
Loss rate: 2.08%
```

Run 2: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 295.98 Mbit/s)   Flow 1 egress (mean 292.92 Mbit/s)
Flow 2 ingress (mean 219.26 Mbit/s)   Flow 2 egress (mean 216.33 Mbit/s)
Flow 3 ingress (mean 167.01 Mbit/s)   Flow 3 egress (mean 166.45 Mbit/s)

Flow 1 (95th percentile 195.83 ms)   Flow 2 (95th percentile 210.09 ms)   Flow 3 (95th percentile 163.42 ms)
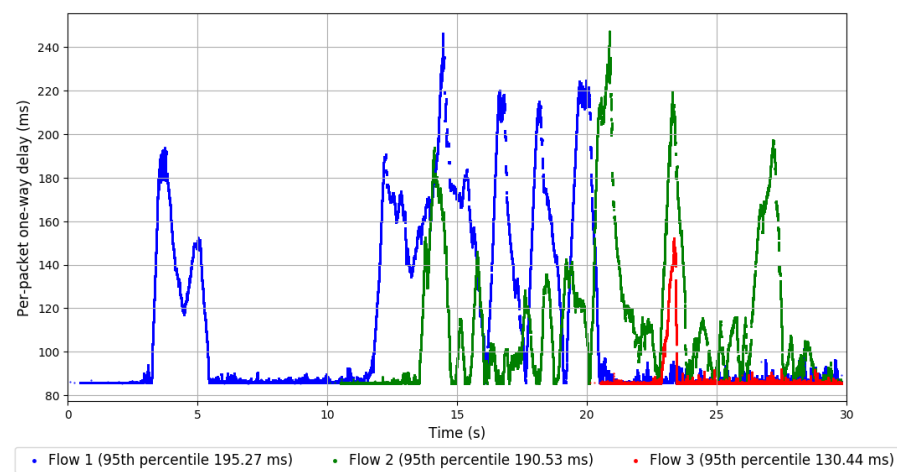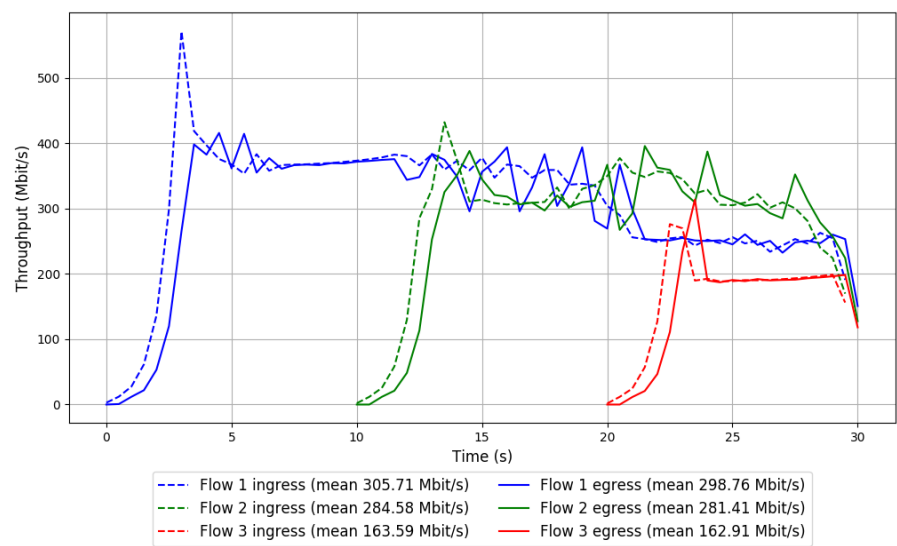
```
Run 3: Statistics of PCC-Expr

Start at: 2018-09-07 14:02:41
End at: 2018-09-07 14:03:11
Local clock offset: -0.27 ms
Remote clock offset: -0.191 ms

# Below is generated by plot.py at 2018-09-07 17:23:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 538.49 Mbit/s
95th percentile per-packet one-way delay: 189.893 ms
Loss rate: 2.49%
-- Flow 1:
Average throughput: 298.76 Mbit/s
95th percentile per-packet one-way delay: 195.269 ms
Loss rate: 2.85%
-- Flow 2:
Average throughput: 281.41 Mbit/s
95th percentile per-packet one-way delay: 190.531 ms
Loss rate: 1.98%
-- Flow 3:
Average throughput: 162.91 Mbit/s
95th percentile per-packet one-way delay: 130.443 ms
Loss rate: 2.23%
```

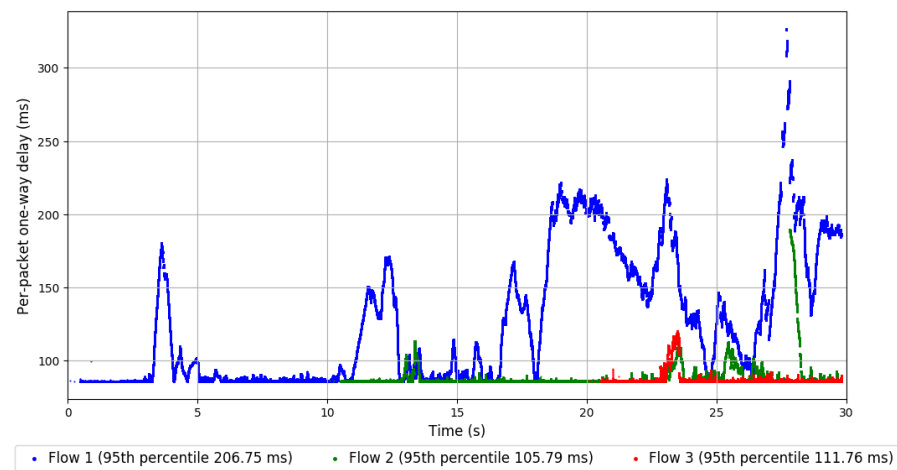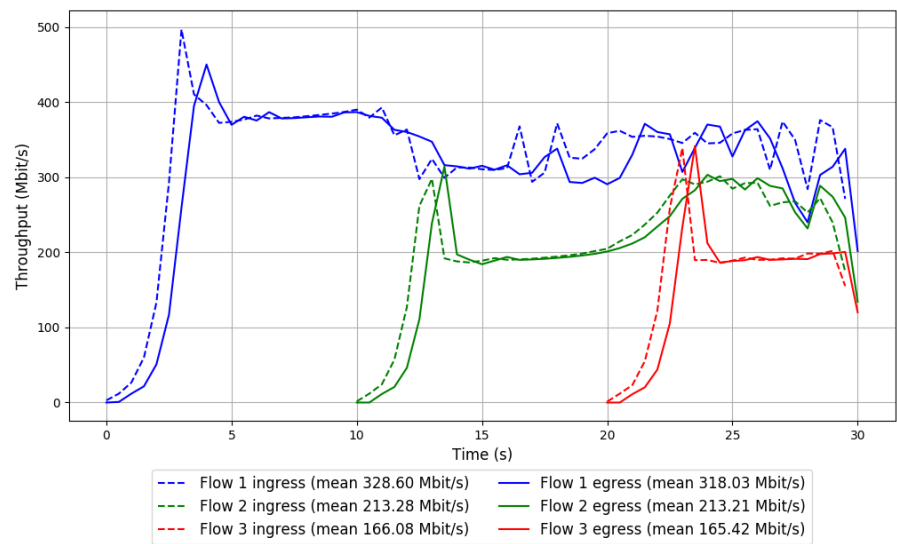# Run 3: Report of PCC-Expr — Data Link

```
Run 4: Statistics of PCC-Expr

Start at: 2018-09-07 14:35:26
End at: 2018-09-07 14:35:56
Local clock offset: -0.021 ms
Remote clock offset: -0.193 ms


# Below is generated by plot.py at 2018-09-07 17:28:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 513.35 Mbit/s
95th percentile per-packet one-way delay: 200.674 ms
Loss rate: 2.83%
-- Flow 1:
Average throughput: 318.03 Mbit/s
95th percentile per-packet one-way delay: 206.746 ms
Loss rate: 3.78%
-- Flow 2:
Average throughput: 213.21 Mbit/s
95th percentile per-packet one-way delay: 105.794 ms
Loss rate: 0.91%
-- Flow 3:
Average throughput: 165.42 Mbit/s
95th percentile per-packet one-way delay: 111.760 ms
Loss rate: 2.15%
```

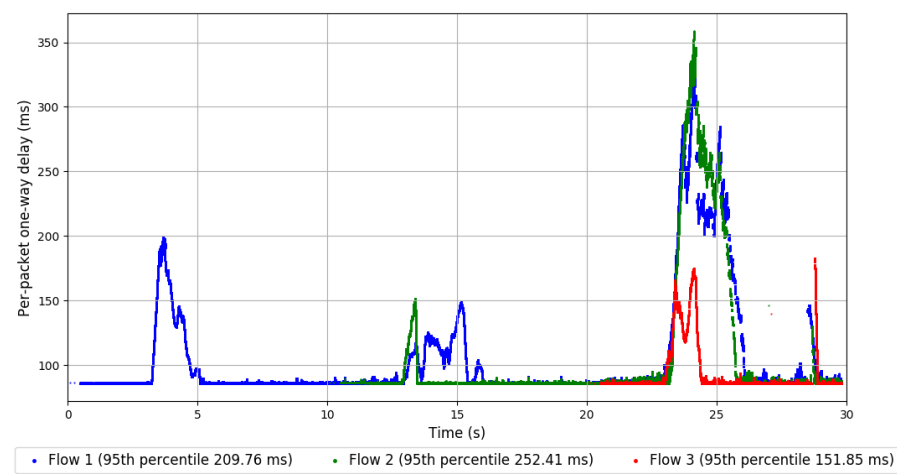## Run 4: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 328.60 Mbit/s) --- Flow 1 egress (mean 318.03 Mbit/s)
Flow 2 ingress (mean 213.28 Mbit/s) --- Flow 2 egress (mean 213.21 Mbit/s)
Flow 3 ingress (mean 166.08 Mbit/s) --- Flow 3 egress (mean 165.42 Mbit/s)

Flow 1 (95th percentile 206.75 ms)   Flow 2 (95th percentile 105.79 ms)   Flow 3 (95th percentile 111.76 ms)
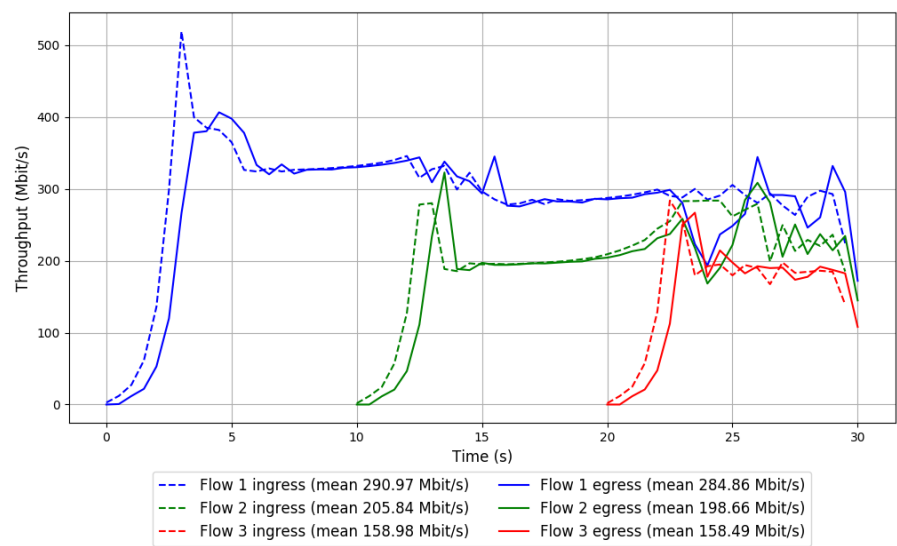
```
Run 5: Statistics of PCC-Expr

Start at: 2018-09-07 15:08:10
End at: 2018-09-07 15:08:40
Local clock offset: 0.062 ms
Remote clock offset: -0.133 ms


# Below is generated by plot.py at 2018-09-07 17:30:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 468.36 Mbit/s
95th percentile per-packet one-way delay: 216.867 ms
Loss rate: 3.07%
-- Flow 1:
Average throughput: 284.86 Mbit/s
95th percentile per-packet one-way delay: 209.762 ms
Loss rate: 2.66%
-- Flow 2:
Average throughput: 198.66 Mbit/s
95th percentile per-packet one-way delay: 252.410 ms
Loss rate: 4.33%
-- Flow 3:
Average throughput: 158.49 Mbit/s
95th percentile per-packet one-way delay: 151.855 ms
Loss rate: 2.05%
```

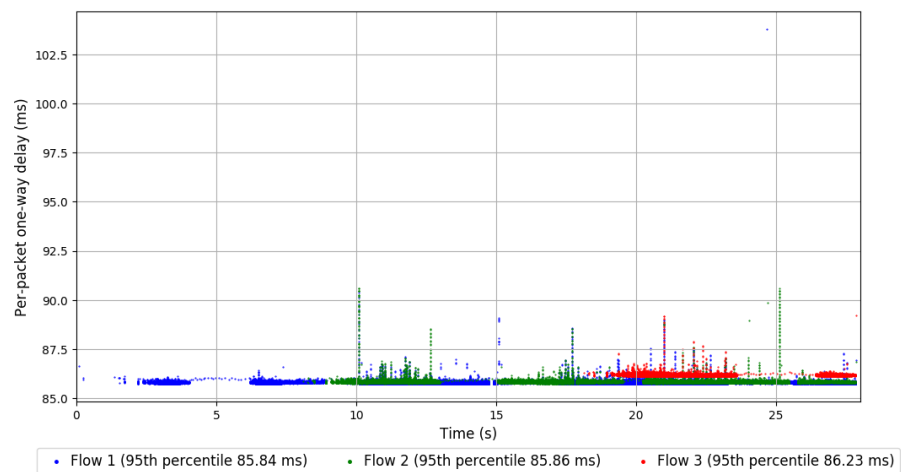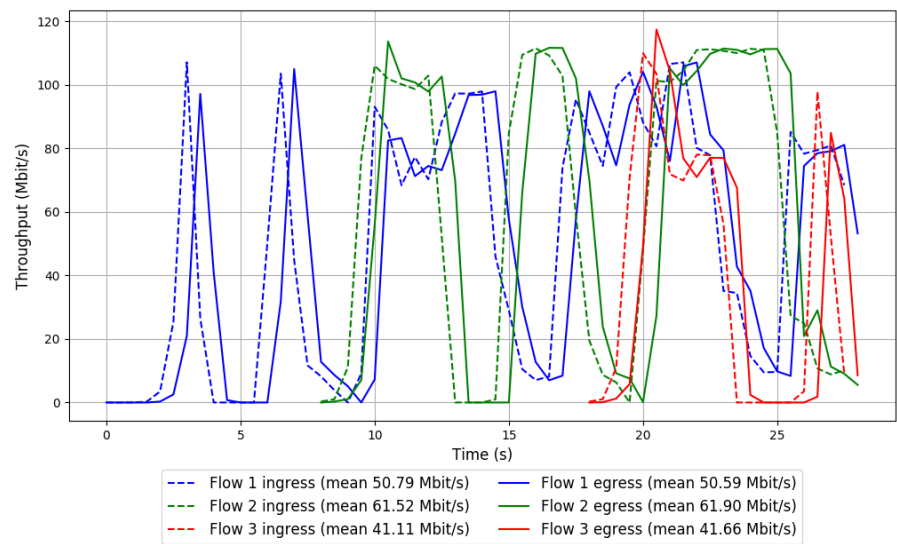# Run 5: Report of PCC-Expr — Data Link

```
Run 1: Statistics of QUIC Cubic

Start at: 2018-09-07 12:36:48
End at: 2018-09-07 12:37:18
Local clock offset: -0.144 ms
Remote clock offset: -0.022 ms


# Below is generated by plot.py at 2018-09-07 17:30:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 109.16 Mbit/s
95th percentile per-packet one-way delay: 86.162 ms
Loss rate: 0.62%
-- Flow 1:
Average throughput: 50.59 Mbit/s
95th percentile per-packet one-way delay: 85.845 ms
Loss rate: 1.01%
-- Flow 2:
Average throughput: 61.90 Mbit/s
95th percentile per-packet one-way delay: 85.861 ms
Loss rate: 0.25%
-- Flow 3:
Average throughput: 41.66 Mbit/s
95th percentile per-packet one-way delay: 86.226 ms
Loss rate: 0.38%
```
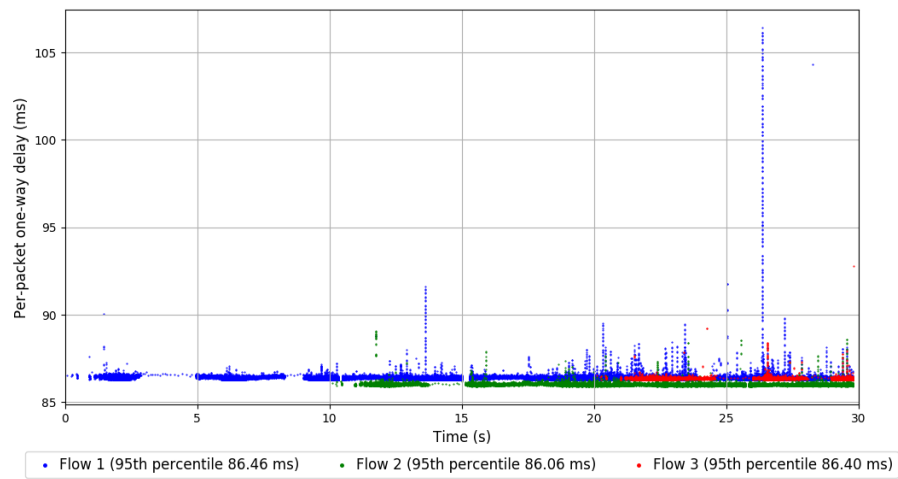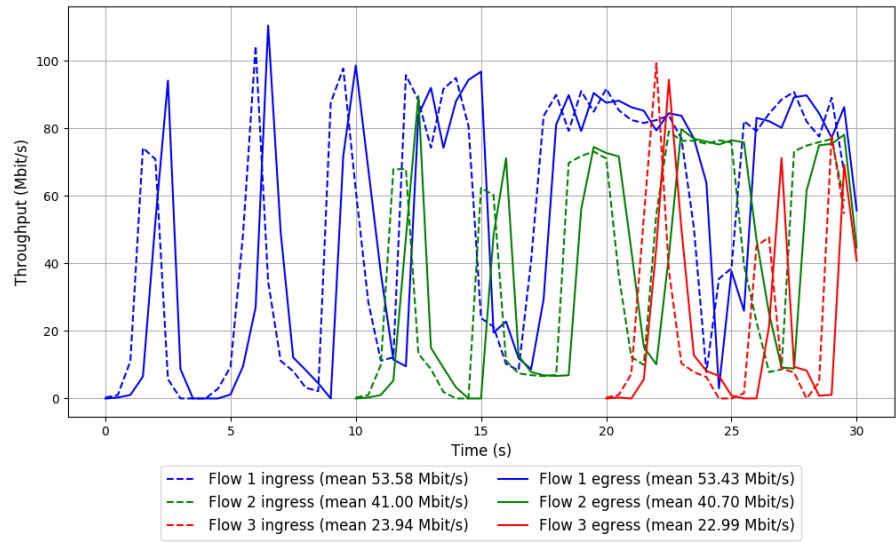
Run 1: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 50.79 Mbit/s)   Flow 1 egress (mean 50.59 Mbit/s)
Flow 2 ingress (mean 61.52 Mbit/s)   Flow 2 egress (mean 61.90 Mbit/s)
Flow 3 ingress (mean 41.11 Mbit/s)   Flow 3 egress (mean 41.66 Mbit/s)

Flow 1 (95th percentile 85.84 ms)   Flow 2 (95th percentile 85.86 ms)   Flow 3 (95th percentile 86.23 ms)

```
Run 2: Statistics of QUIC Cubic

Start at: 2018-09-07 13:09:20
End at: 2018-09-07 13:09:50
Local clock offset: 0.009 ms
Remote clock offset: -0.063 ms


# Below is generated by plot.py at 2018-09-07 17:30:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 87.91 Mbit/s
95th percentile per-packet one-way delay: 86.432 ms
Loss rate: 1.50%
-- Flow 1:
Average throughput: 53.43 Mbit/s
95th percentile per-packet one-way delay: 86.457 ms
Loss rate: 0.86%
-- Flow 2:
Average throughput: 40.70 Mbit/s
95th percentile per-packet one-way delay: 86.062 ms
Loss rate: 1.59%
-- Flow 3:
Average throughput: 22.99 Mbit/s
95th percentile per-packet one-way delay: 86.397 ms
Loss rate: 5.58%
```

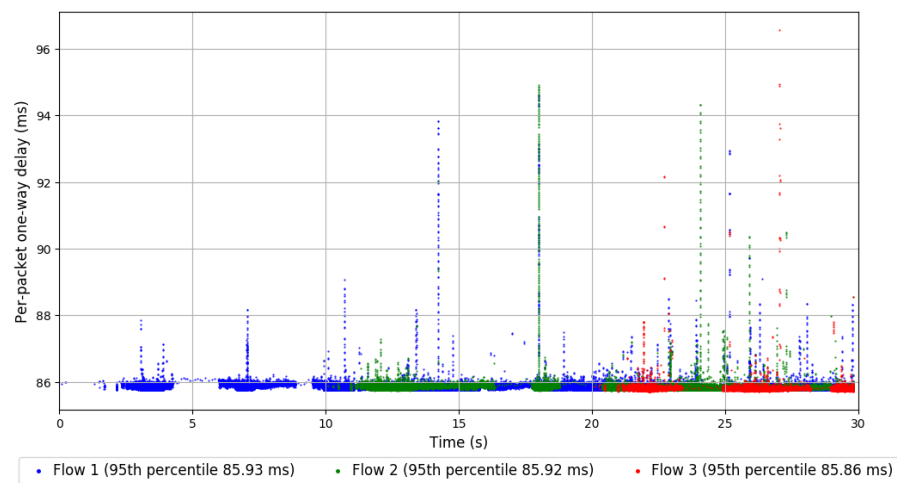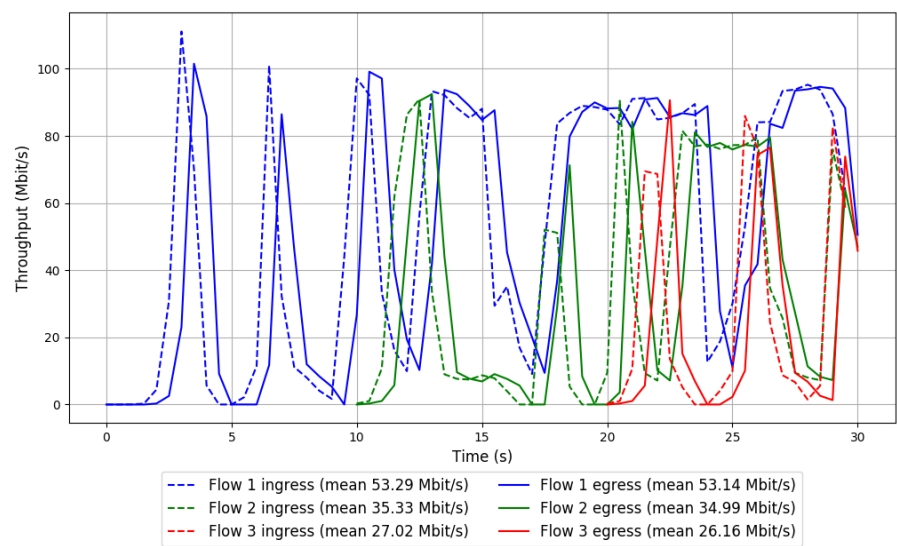Run 2: Report of QUIC Cubic — Data Link

```
Run 3: Statistics of QUIC Cubic

Start at: 2018-09-07 13:41:42
End at: 2018-09-07 13:42:12
Local clock offset: -0.083 ms
Remote clock offset: -0.138 ms


# Below is generated by plot.py at 2018-09-07 17:30:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 84.86 Mbit/s
95th percentile per-packet one-way delay: 85.921 ms
Loss rate: 1.54%
-- Flow 1:
Average throughput: 53.14 Mbit/s
95th percentile per-packet one-way delay: 85.926 ms
Loss rate: 0.86%
-- Flow 2:
Average throughput: 34.99 Mbit/s
95th percentile per-packet one-way delay: 85.921 ms
Loss rate: 1.82%
-- Flow 3:
Average throughput: 26.16 Mbit/s
95th percentile per-packet one-way delay: 85.865 ms
Loss rate: 4.85%
```

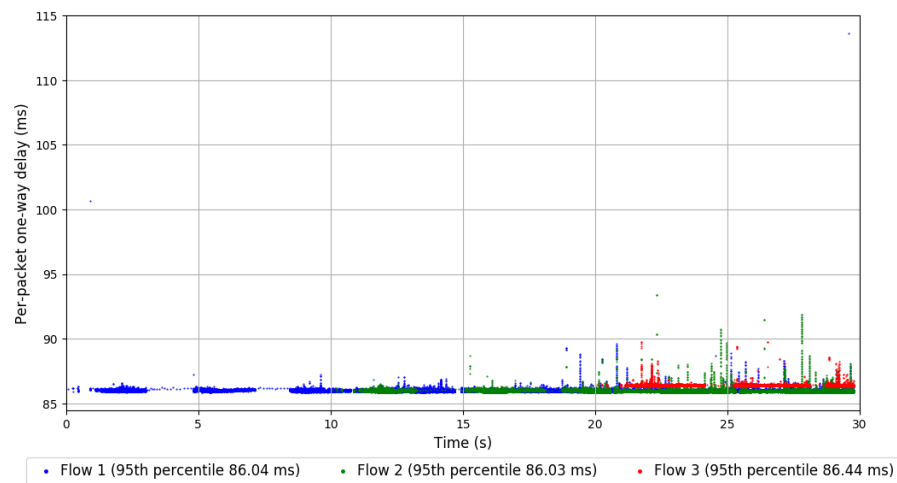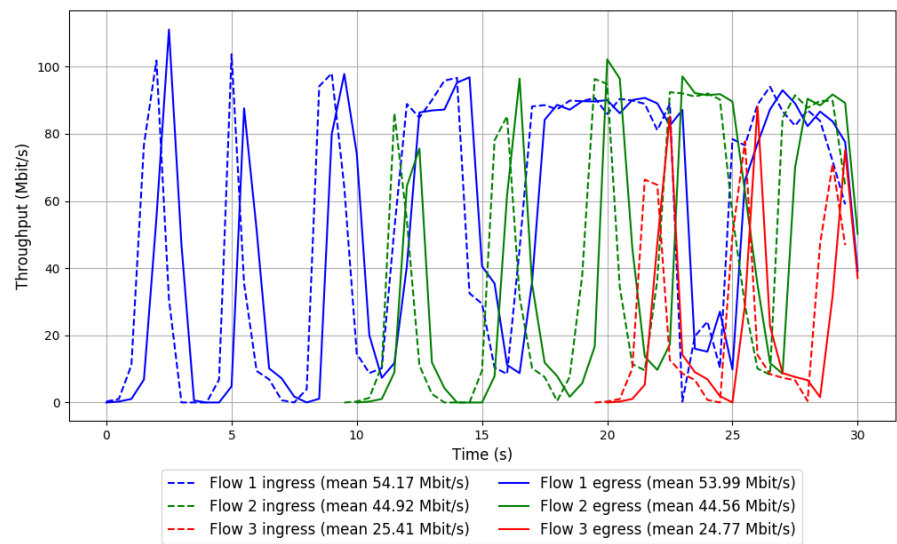Run 3: Report of QUIC Cubic — Data Link

```
Run 4: Statistics of QUIC Cubic

Start at: 2018-09-07 14:14:15
End at: 2018-09-07 14:14:45
Local clock offset: -0.042 ms
Remote clock offset: -0.208 ms


# Below is generated by plot.py at 2018-09-07 17:30:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.66 Mbit/s
95th percentile per-packet one-way delay: 86.365 ms
Loss rate: 1.44%
-- Flow 1:
Average throughput: 53.99 Mbit/s
95th percentile per-packet one-way delay: 86.041 ms
Loss rate: 0.90%
-- Flow 2:
Average throughput: 44.56 Mbit/s
95th percentile per-packet one-way delay: 86.031 ms
Loss rate: 1.65%
-- Flow 3:
Average throughput: 24.77 Mbit/s
95th percentile per-packet one-way delay: 86.443 ms
Loss rate: 4.23%
```

Run 4: Report of QUIC Cubic — Data Link

```
Run 5: Statistics of QUIC Cubic

Start at: 2018-09-07 14:47:02
End at: 2018-09-07 14:47:32
Local clock offset: 0.518 ms
Remote clock offset: -0.14 ms


# Below is generated by plot.py at 2018-09-07 17:30:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 82.98 Mbit/s
95th percentile per-packet one-way delay: 86.590 ms
Loss rate: 1.54%
-- Flow 1:
Average throughput: 42.96 Mbit/s
95th percentile per-packet one-way delay: 86.546 ms
Loss rate: 0.89%
-- Flow 2:
Average throughput: 40.99 Mbit/s
95th percentile per-packet one-way delay: 86.615 ms
Loss rate: 1.64%
-- Flow 3:
Average throughput: 37.98 Mbit/s
95th percentile per-packet one-way delay: 86.604 ms
Loss rate: 3.50%
```
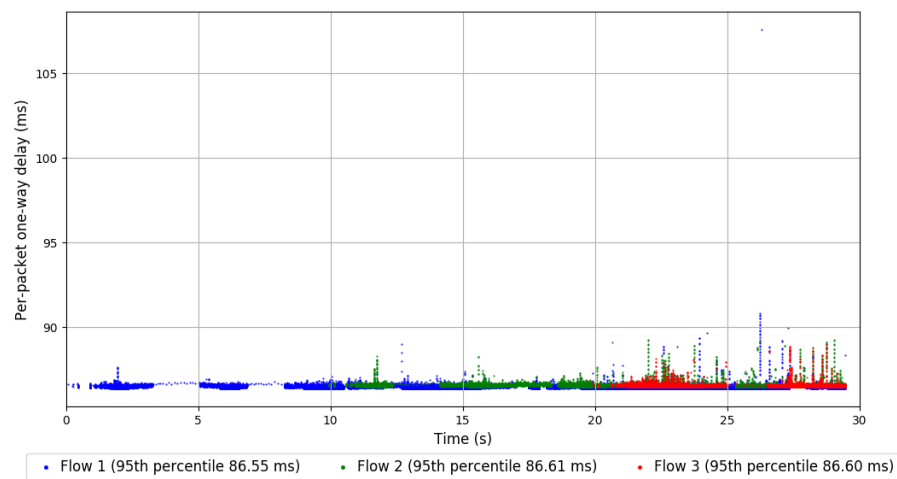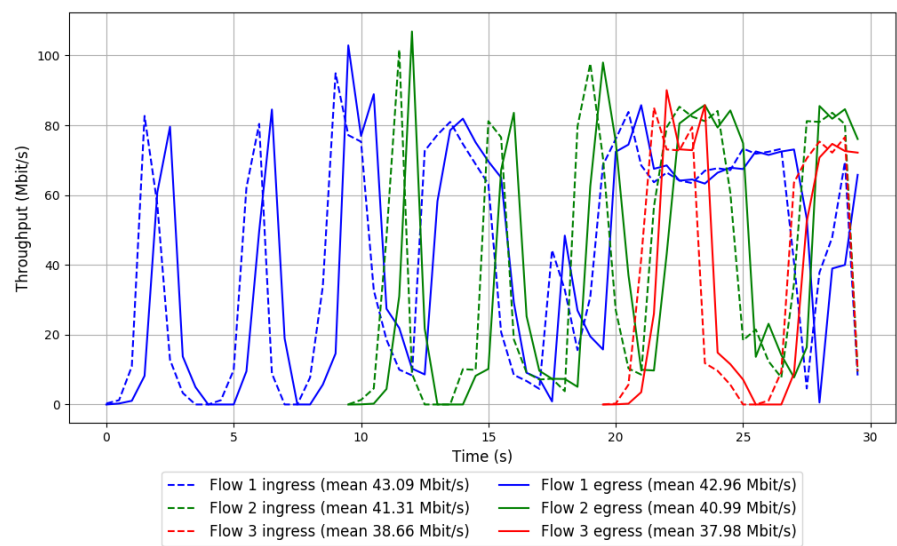
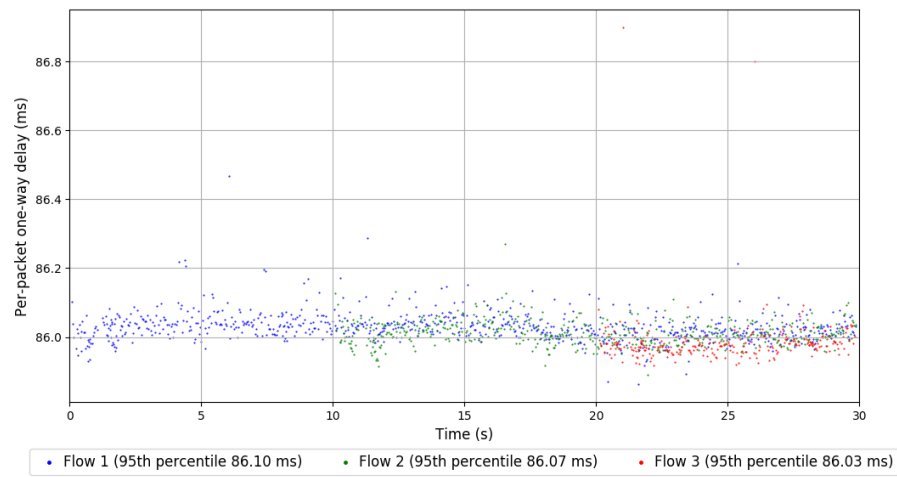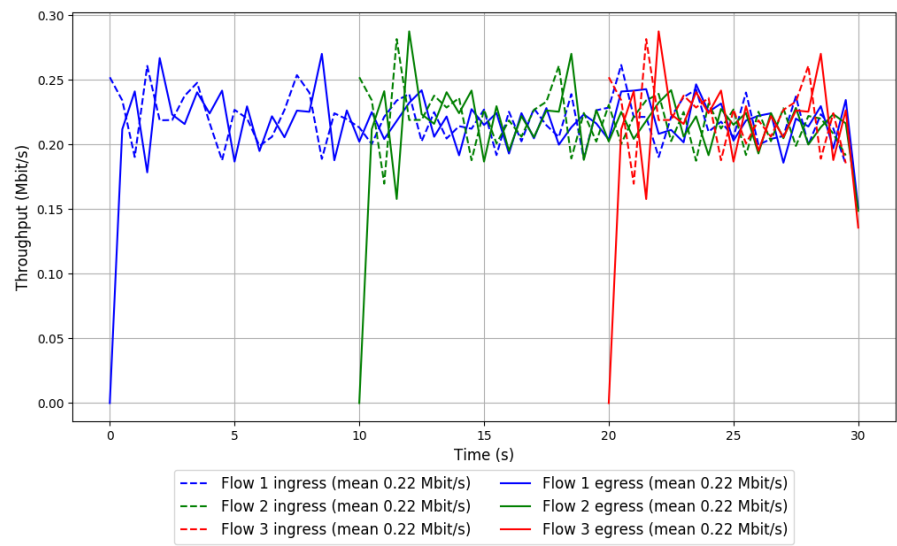Run 5: Report of QUIC Cubic — Data Link

```
Run 1: Statistics of SCReAM

Start at: 2018-09-07 12:54:30
End at: 2018-09-07 12:55:00
Local clock offset: -0.136 ms
Remote clock offset: 0.045 ms


# Below is generated by plot.py at 2018-09-07 17:30:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 86.083 ms
Loss rate: 0.84%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.099 ms
Loss rate: 0.51%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.068 ms
Loss rate: 0.82%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.034 ms
Loss rate: 1.85%
```

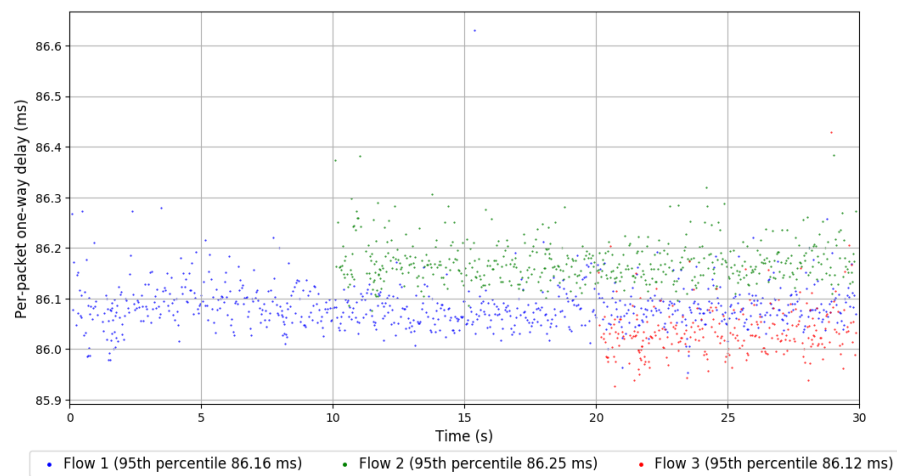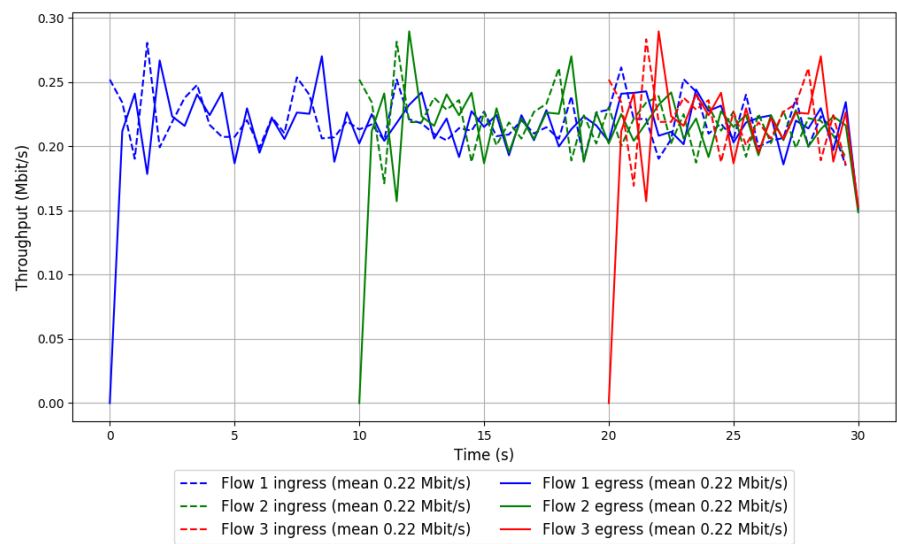# Run 1: Report of SCReAM — Data Link

```
Run 2: Statistics of SCReAM

Start at: 2018-09-07 13:26:55
End at: 2018-09-07 13:27:25
Local clock offset: 0.006 ms
Remote clock offset: -0.017 ms


# Below is generated by plot.py at 2018-09-07 17:30:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 86.214 ms
Loss rate: 0.77%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.163 ms
Loss rate: 0.51%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.252 ms
Loss rate: 0.82%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.118 ms
Loss rate: 1.46%
```
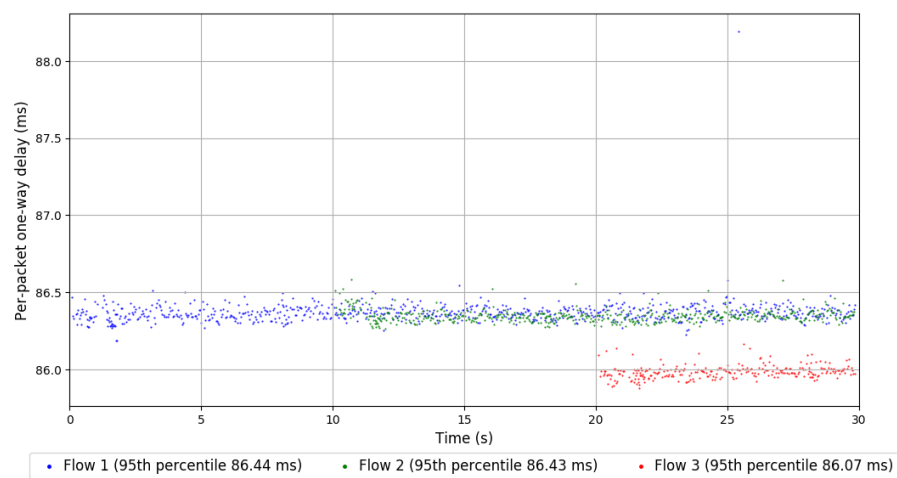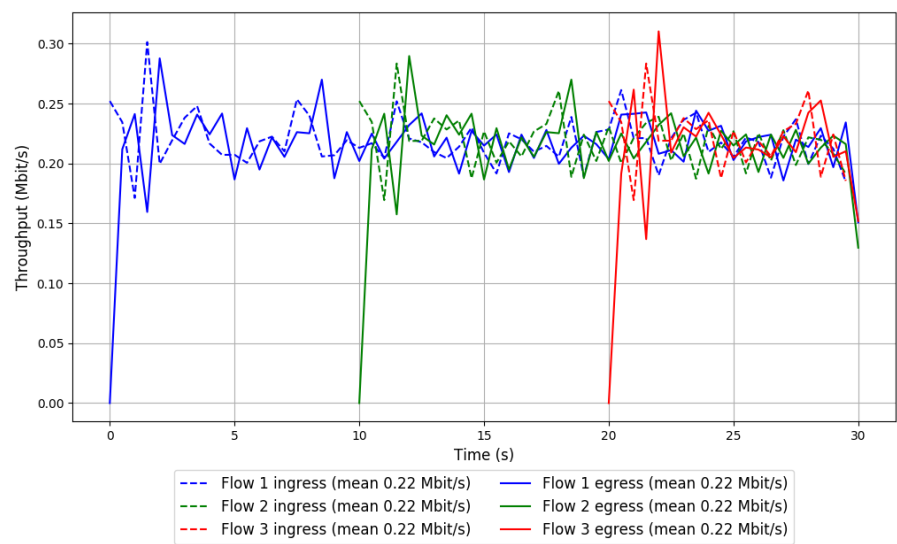
Run 2: Report of SCReAM — Data Link

```
Run 3: Statistics of SCReAM

Start at: 2018-09-07 13:59:19
End at: 2018-09-07 13:59:49
Local clock offset: -0.206 ms
Remote clock offset: -0.202 ms

# Below is generated by plot.py at 2018-09-07 17:30:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 86.432 ms
Loss rate: 0.91%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.444 ms
Loss rate: 0.51%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.429 ms
Loss rate: 1.04%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.067 ms
Loss rate: 1.85%
```

Run 3: Report of SCReAM — Data Link

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

Flow 1 (95th percentile 86.44 ms)   Flow 2 (95th percentile 86.43 ms)   Flow 3 (95th percentile 86.07 ms)
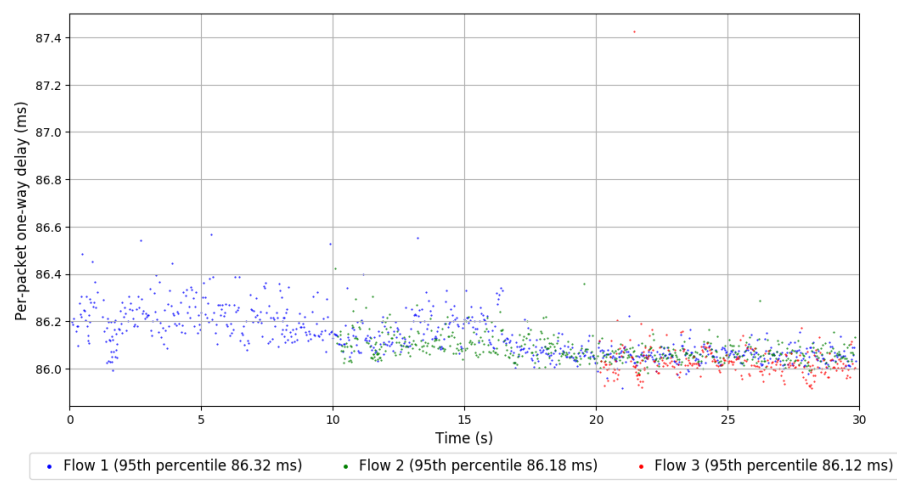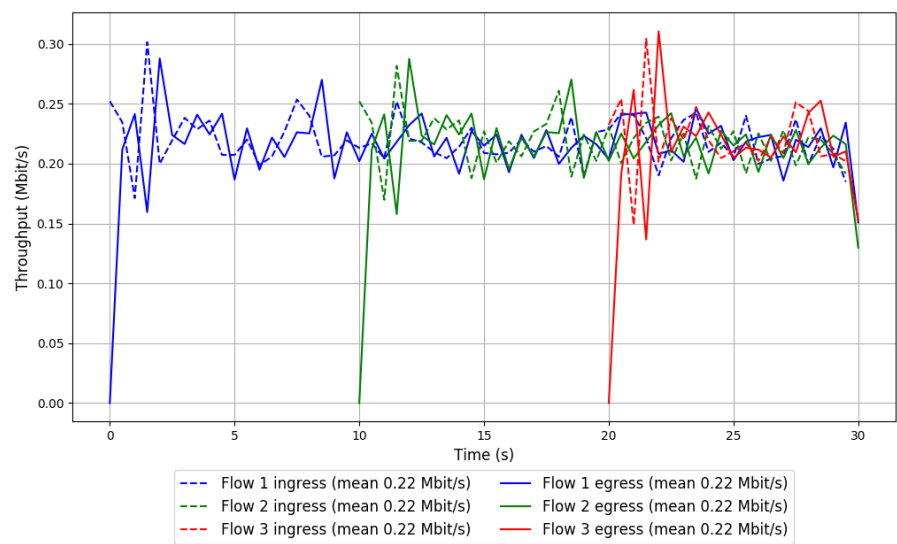
```
Run 4: Statistics of SCReAM

Start at: 2018-09-07 14:32:00
End at: 2018-09-07 14:32:30
Local clock offset: -0.094 ms
Remote clock offset: -0.136 ms


# Below is generated by plot.py at 2018-09-07 17:30:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 86.270 ms
Loss rate: 0.91%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.318 ms
Loss rate: 0.51%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.177 ms
Loss rate: 1.04%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.120 ms
Loss rate: 1.85%
```

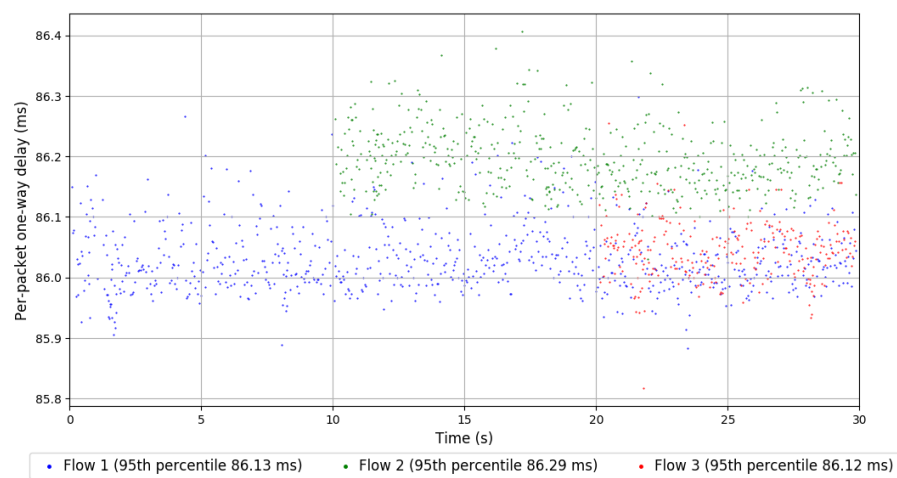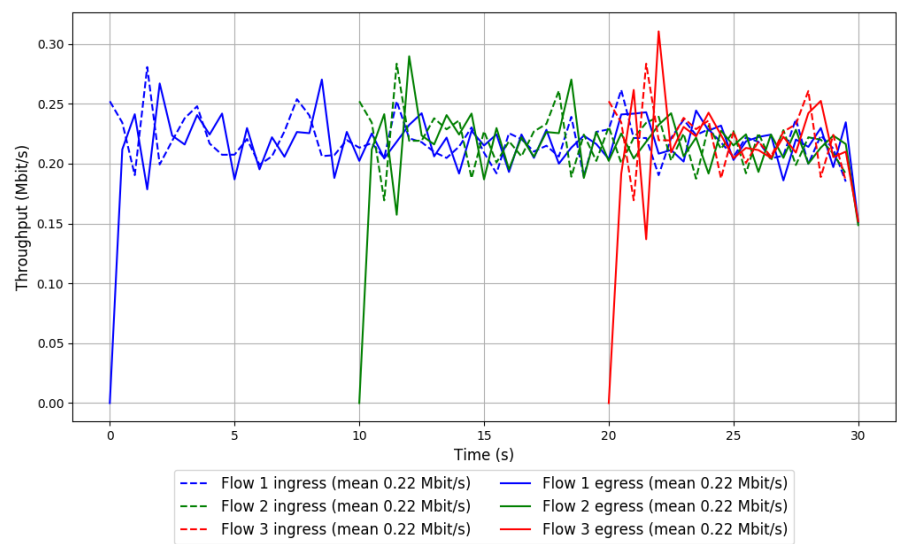# Run 4: Report of SCReAM — Data Link

```
Run 5: Statistics of SCReAM

Start at: 2018-09-07 15:04:45
End at: 2018-09-07 15:05:15
Local clock offset: -0.035 ms
Remote clock offset: -0.144 ms


# Below is generated by plot.py at 2018-09-07 17:30:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 86.252 ms
Loss rate: 0.84%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.133 ms
Loss rate: 0.51%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.292 ms
Loss rate: 0.82%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.123 ms
Loss rate: 1.85%
```

Run 5: Report of SCReAM — Data Link

```
Run 1: Statistics of Sprout

Start at: 2018-09-07 12:51:00
End at: 2018-09-07 12:51:30
Local clock offset: 0.001 ms
Remote clock offset: 0.019 ms


# Below is generated by plot.py at 2018-09-07 17:30:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.92 Mbit/s
95th percentile per-packet one-way delay: 86.816 ms
Loss rate: 0.98%
-- Flow 1:
Average throughput: 4.59 Mbit/s
95th percentile per-packet one-way delay: 86.632 ms
Loss rate: 0.57%
-- Flow 2:
Average throughput: 4.54 Mbit/s
95th percentile per-packet one-way delay: 86.813 ms
Loss rate: 0.91%
-- Flow 3:
Average throughput: 4.05 Mbit/s
95th percentile per-packet one-way delay: 86.939 ms
Loss rate: 2.55%
```
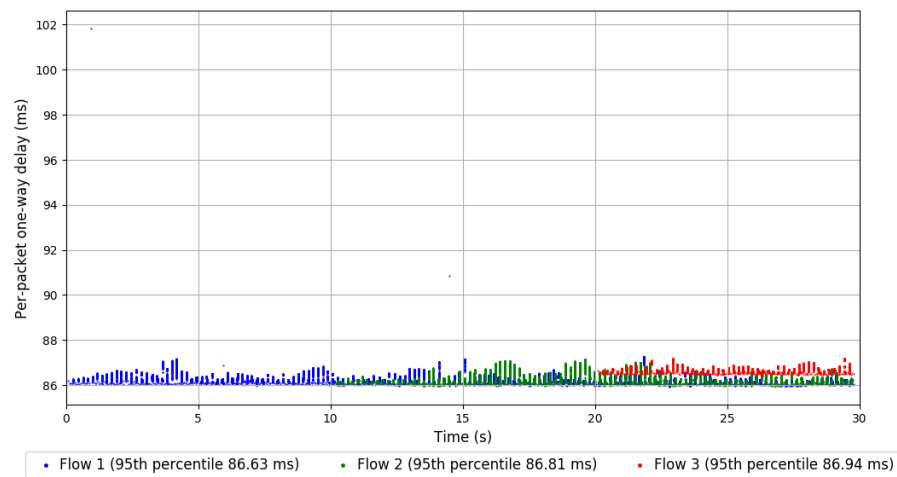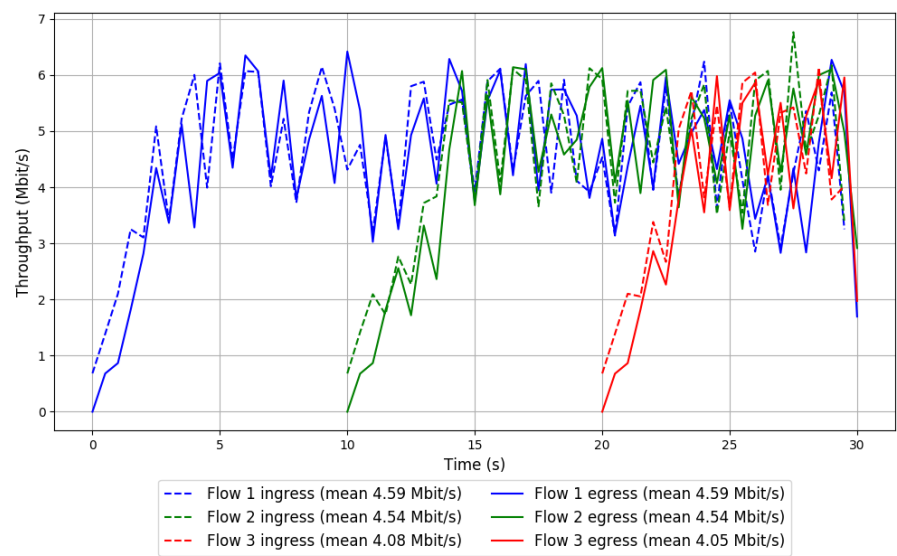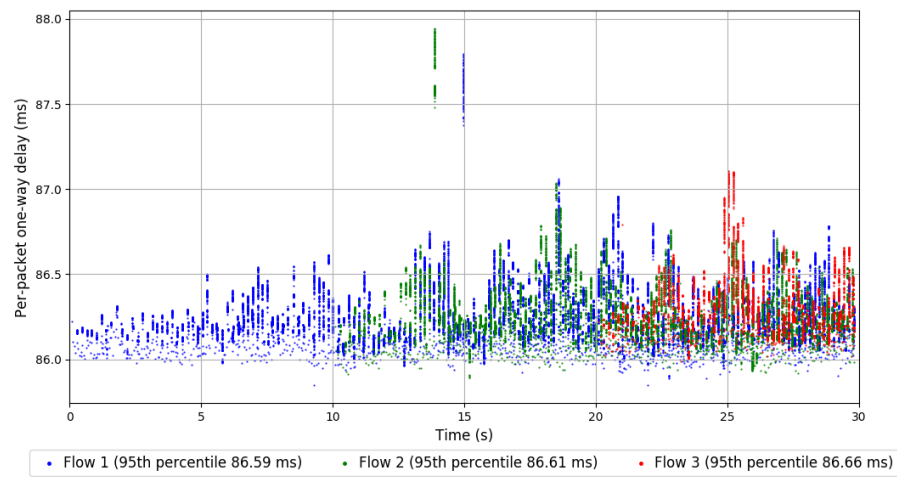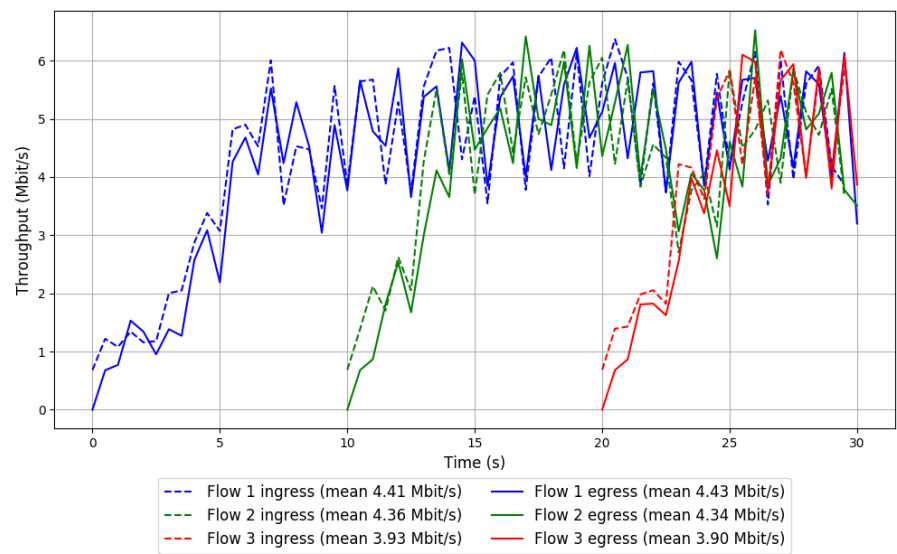
Run 1: Report of Sprout — Data Link

```
Run 2: Statistics of Sprout

Start at: 2018-09-07 13:23:31
End at: 2018-09-07 13:24:01
Local clock offset: -0.093 ms
Remote clock offset: -0.089 ms


# Below is generated by plot.py at 2018-09-07 17:30:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.58 Mbit/s
95th percentile per-packet one-way delay: 86.611 ms
Loss rate: 0.88%
-- Flow 1:
Average throughput: 4.43 Mbit/s
95th percentile per-packet one-way delay: 86.590 ms
Loss rate: 0.25%
-- Flow 2:
Average throughput: 4.34 Mbit/s
95th percentile per-packet one-way delay: 86.610 ms
Loss rate: 1.10%
-- Flow 3:
Average throughput: 3.90 Mbit/s
95th percentile per-packet one-way delay: 86.656 ms
Loss rate: 2.53%
```
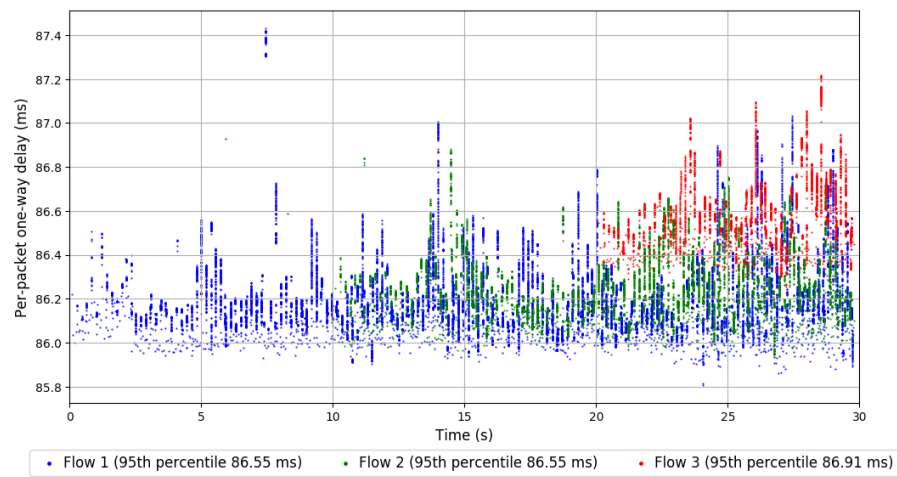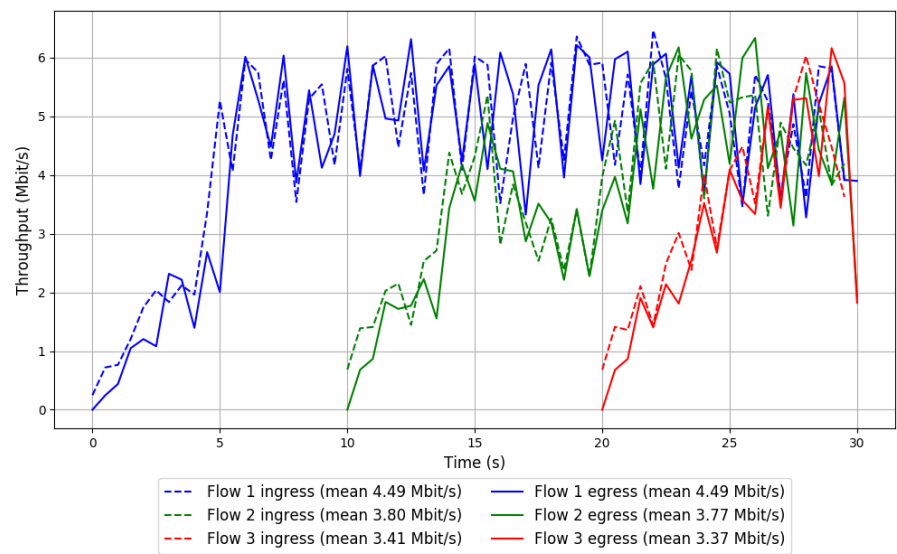
Run 2: Report of Sprout — Data Link

```
Run 3: Statistics of Sprout

Start at: 2018-09-07 13:55:58
End at: 2018-09-07 13:56:28
Local clock offset: -0.121 ms
Remote clock offset: -0.195 ms


# Below is generated by plot.py at 2018-09-07 17:30:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.08 Mbit/s
95th percentile per-packet one-way delay: 86.702 ms
Loss rate: 1.23%
-- Flow 1:
Average throughput: 4.49 Mbit/s
95th percentile per-packet one-way delay: 86.546 ms
Loss rate: 0.71%
-- Flow 2:
Average throughput: 3.77 Mbit/s
95th percentile per-packet one-way delay: 86.551 ms
Loss rate: 1.51%
-- Flow 3:
Average throughput: 3.37 Mbit/s
95th percentile per-packet one-way delay: 86.909 ms
Loss rate: 2.69%
```
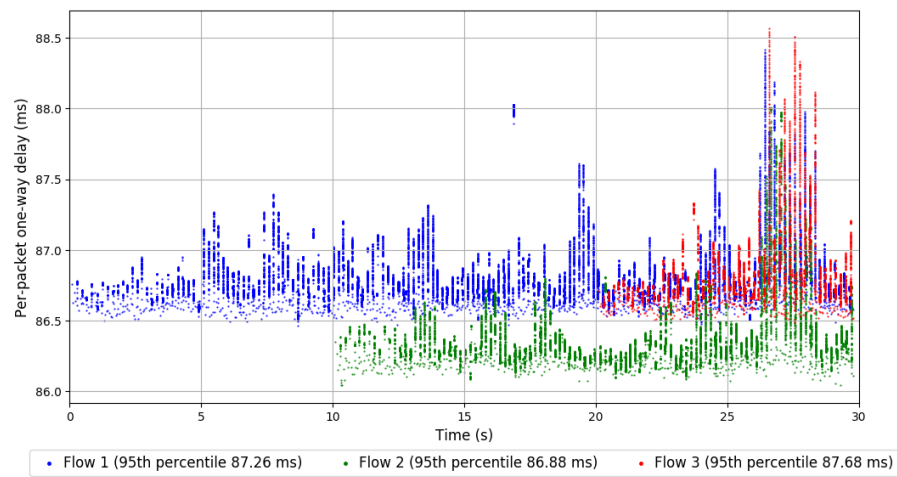
Run 3: Report of Sprout — Data Link

```
Run 4: Statistics of Sprout

Start at: 2018-09-07 14:28:36
End at: 2018-09-07 14:29:06
Local clock offset: -0.028 ms
Remote clock offset: -0.212 ms


# Below is generated by plot.py at 2018-09-07 17:30:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.70 Mbit/s
95th percentile per-packet one-way delay: 87.270 ms
Loss rate: 1.01%
-- Flow 1:
Average throughput: 4.49 Mbit/s
95th percentile per-packet one-way delay: 87.259 ms
Loss rate: 0.54%
-- Flow 2:
Average throughput: 4.38 Mbit/s
95th percentile per-packet one-way delay: 86.877 ms
Loss rate: 1.04%
-- Flow 3:
Average throughput: 4.02 Mbit/s
95th percentile per-packet one-way delay: 87.677 ms
Loss rate: 2.57%
```

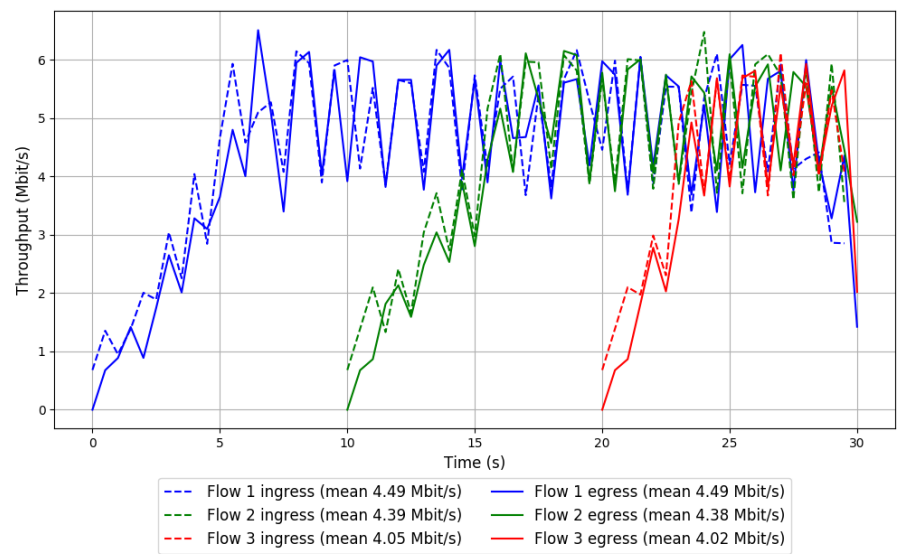# Run 4: Report of Sprout — Data Link

```
Run 5: Statistics of Sprout

Start at: 2018-09-07 15:01:23
End at: 2018-09-07 15:01:53
Local clock offset: -0.3 ms
Remote clock offset: -0.14 ms


# Below is generated by plot.py at 2018-09-07 17:30:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.41 Mbit/s
95th percentile per-packet one-way delay: 86.558 ms
Loss rate: 0.90%
-- Flow 1:
Average throughput: 4.50 Mbit/s
95th percentile per-packet one-way delay: 86.565 ms
Loss rate: 0.71%
-- Flow 2:
Average throughput: 4.06 Mbit/s
95th percentile per-packet one-way delay: 86.593 ms
Loss rate: 0.94%
-- Flow 3:
Average throughput: 3.73 Mbit/s
95th percentile per-packet one-way delay: 86.151 ms
Loss rate: 1.48%
```
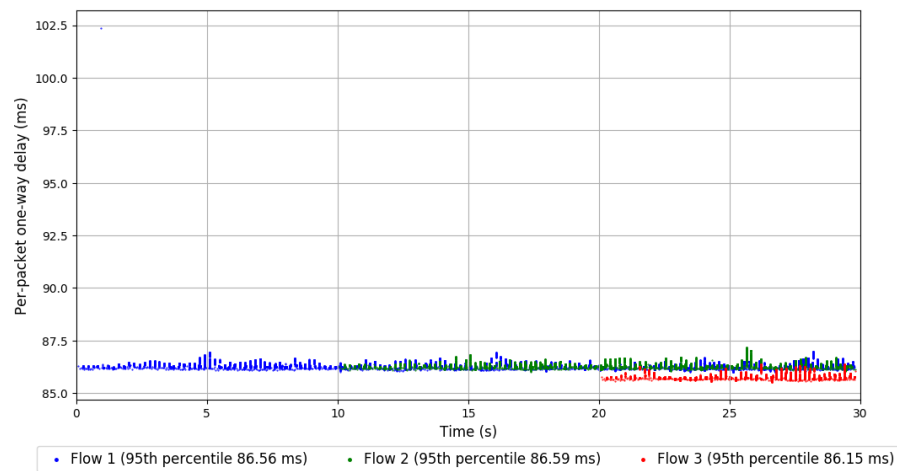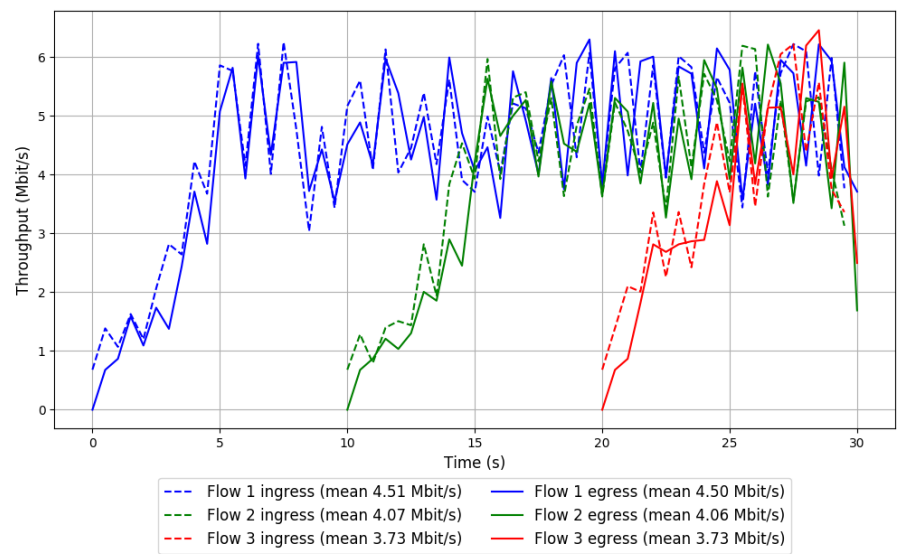
Run 5: Report of Sprout — Data Link

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

Start at: 2018-09-07 12:34:52
End at: 2018-09-07 12:35:22
Local clock offset: -0.191 ms
Remote clock offset: 0.051 ms


# Below is generated by plot.py at 2018-09-07 17:33:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 425.22 Mbit/s
95th percentile per-packet one-way delay: 85.984 ms
Loss rate: 0.98%
-- Flow 1:
Average throughput: 215.75 Mbit/s
95th percentile per-packet one-way delay: 85.944 ms
Loss rate: 0.61%
-- Flow 2:
Average throughput: 215.07 Mbit/s
95th percentile per-packet one-way delay: 86.036 ms
Loss rate: 0.97%
-- Flow 3:
Average throughput: 203.05 Mbit/s
95th percentile per-packet one-way delay: 85.949 ms
Loss rate: 2.18%
```

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

- - - - Flow 1 ingress (mean 215.83 Mbit/s)   —— Flow 1 egress (mean 215.75 Mbit/s)
- - - - Flow 2 ingress (mean 215.32 Mbit/s)   —— Flow 2 egress (mean 215.07 Mbit/s)
- - - - Flow 3 ingress (mean 203.99 Mbit/s)   —— Flow 3 egress (mean 203.05 Mbit/s)

- Flow 1 (95th percentile 85.94 ms)   • Flow 2 (95th percentile 86.04 ms)   • Flow 3 (95th percentile 85.95 ms)
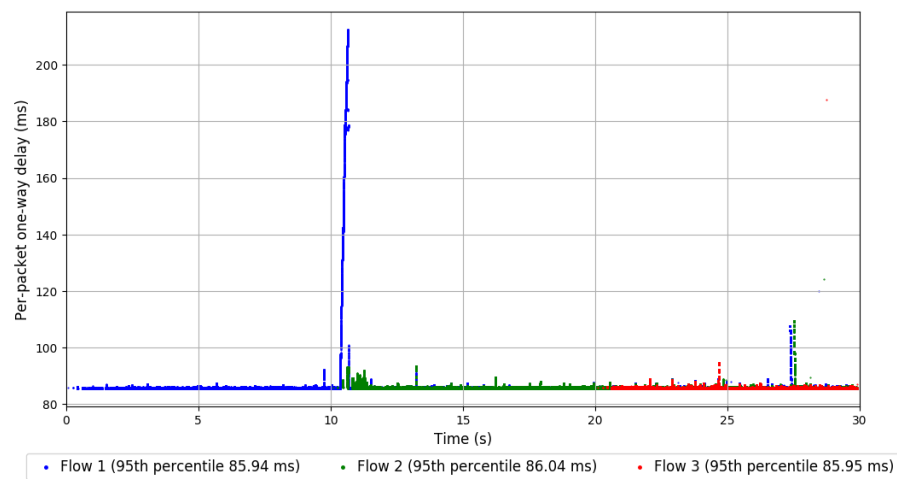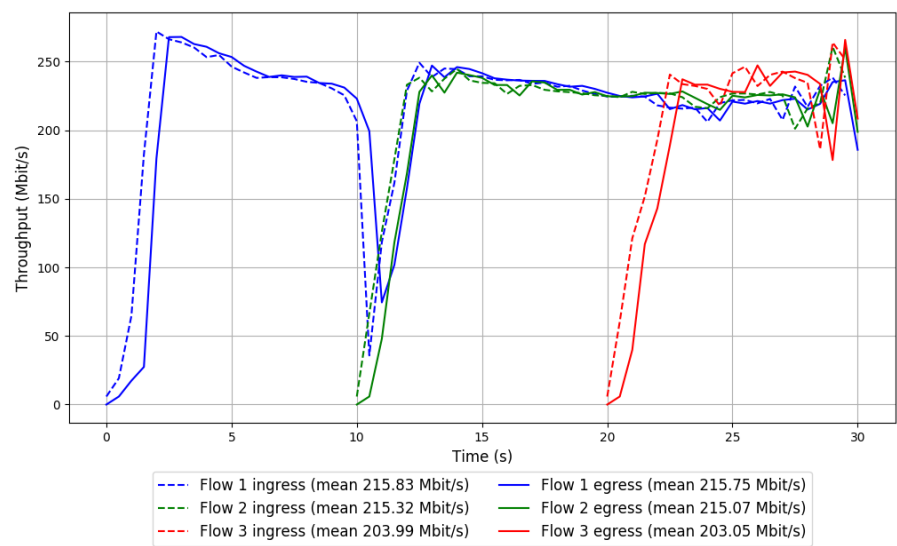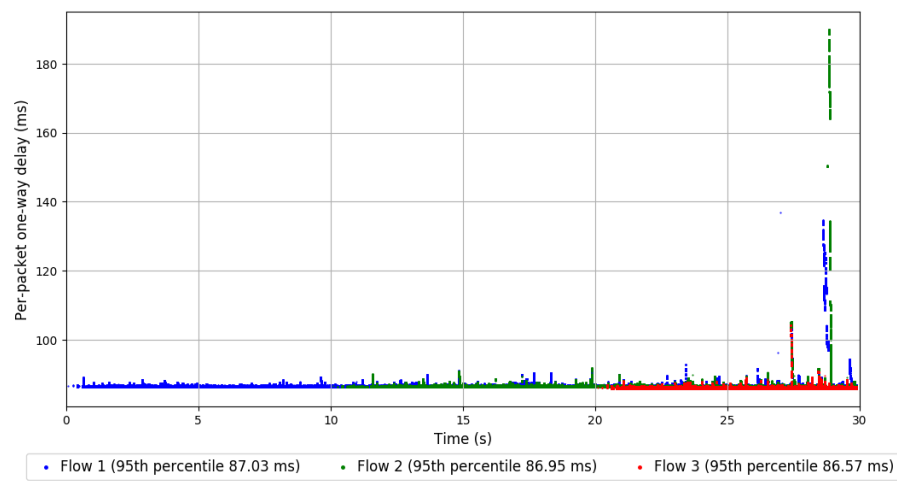
136

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

Start at: 2018-09-07 13:07:23
End at: 2018-09-07 13:07:53
Local clock offset: 0.112 ms
Remote clock offset: -0.006 ms


# Below is generated by plot.py at 2018-09-07 17:33:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 423.29 Mbit/s
95th percentile per-packet one-way delay: 86.949 ms
Loss rate: 1.04%
-- Flow 1:
Average throughput: 217.60 Mbit/s
95th percentile per-packet one-way delay: 87.025 ms
Loss rate: 0.68%
-- Flow 2:
Average throughput: 203.75 Mbit/s
95th percentile per-packet one-way delay: 86.954 ms
Loss rate: 1.12%
-- Flow 3:
Average throughput: 214.12 Mbit/s
95th percentile per-packet one-way delay: 86.567 ms
Loss rate: 2.01%
```
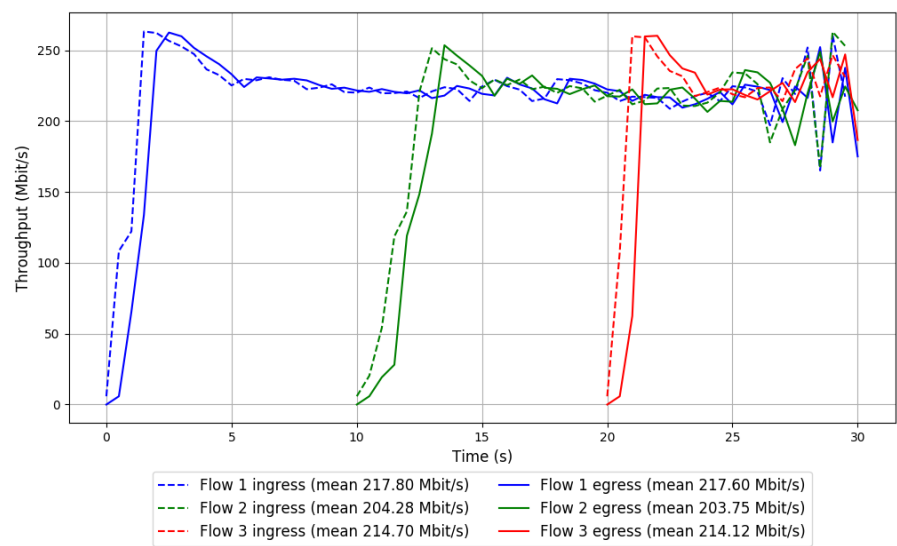
```
Run 3: Statistics of TaoVA-100x

Start at: 2018-09-07 13:39:45
End at: 2018-09-07 13:40:15
Local clock offset: -0.09 ms
Remote clock offset: -0.107 ms

# Below is generated by plot.py at 2018-09-07 17:33:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 417.82 Mbit/s
95th percentile per-packet one-way delay: 86.875 ms
Loss rate: 0.90%
-- Flow 1:
Average throughput: 210.81 Mbit/s
95th percentile per-packet one-way delay: 86.781 ms
Loss rate: 0.74%
-- Flow 2:
Average throughput: 214.24 Mbit/s
95th percentile per-packet one-way delay: 86.366 ms
Loss rate: 0.89%
-- Flow 3:
Average throughput: 197.25 Mbit/s
95th percentile per-packet one-way delay: 88.726 ms
Loss rate: 1.46%
```

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

Legend:
- Flow 1 ingress (mean 211.32 Mbit/s)
- Flow 1 egress (mean 210.81 Mbit/s)
- Flow 2 ingress (mean 214.30 Mbit/s)
- Flow 2 egress (mean 214.24 Mbit/s)
- Flow 3 ingress (mean 196.71 Mbit/s)
- Flow 3 egress (mean 197.25 Mbit/s)

Legend:
- Flow 1 (95th percentile 86.78 ms)
- Flow 2 (95th percentile 86.37 ms)
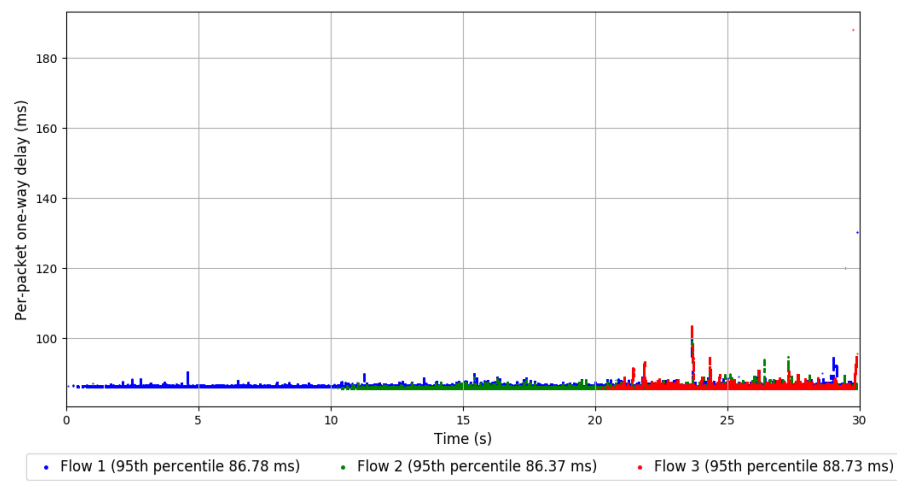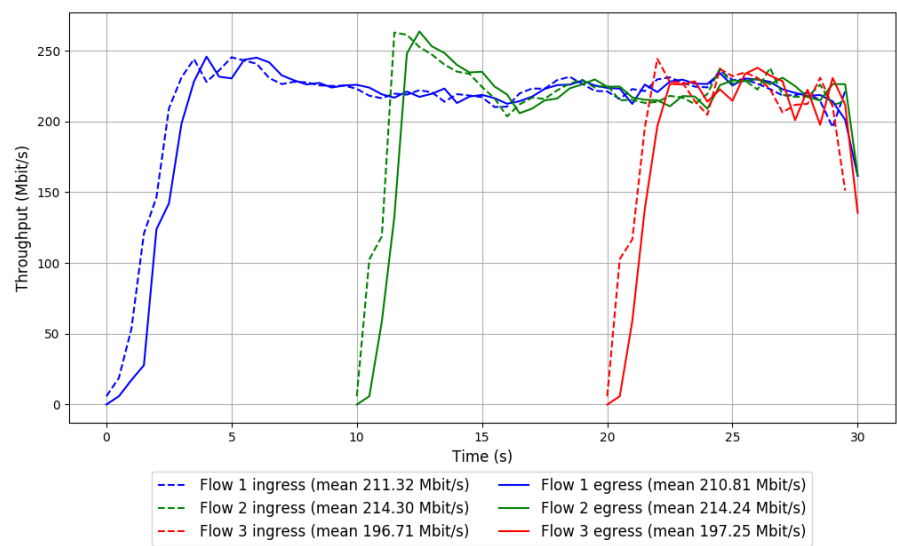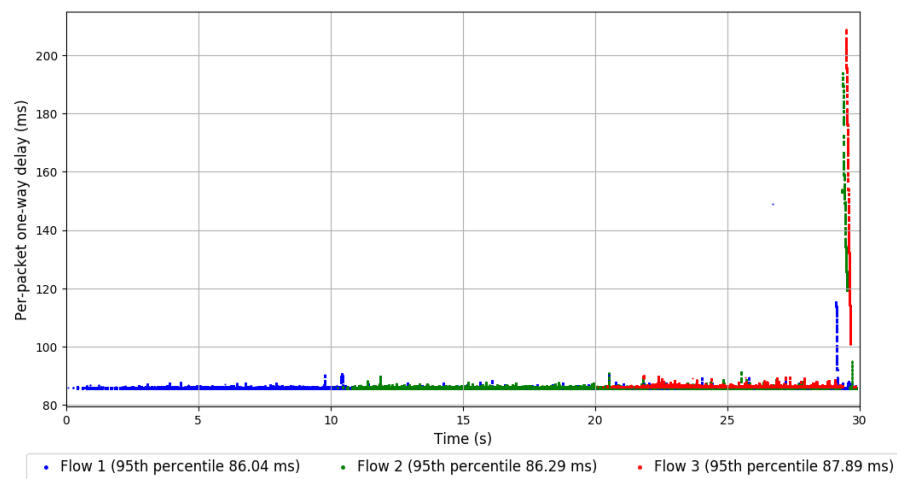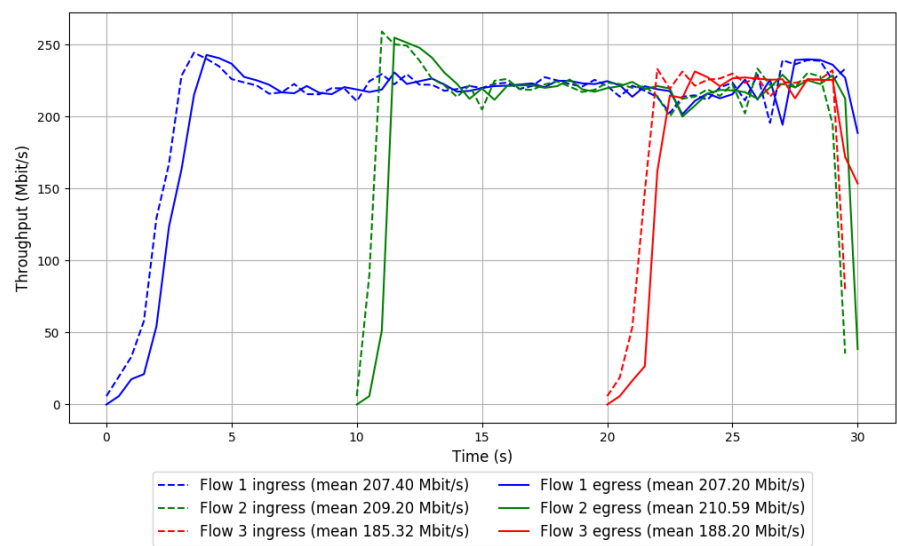- Flow 3 (95th percentile 88.73 ms)

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

Start at: 2018-09-07 14:12:20
End at: 2018-09-07 14:12:50
Local clock offset: -0.217 ms
Remote clock offset: -0.179 ms

# Below is generated by plot.py at 2018-09-07 17:33:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 408.50 Mbit/s
95th percentile per-packet one-way delay: 86.397 ms
Loss rate: 0.50%
-- Flow 1:
Average throughput: 207.20 Mbit/s
95th percentile per-packet one-way delay: 86.039 ms
Loss rate: 0.67%
-- Flow 2:
Average throughput: 210.59 Mbit/s
95th percentile per-packet one-way delay: 86.286 ms
Loss rate: 0.21%
-- Flow 3:
Average throughput: 188.20 Mbit/s
95th percentile per-packet one-way delay: 87.890 ms
Loss rate: 0.60%
```

Run 4: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 207.40 Mbit/s) — Flow 1 egress (mean 207.20 Mbit/s)
Flow 2 ingress (mean 209.20 Mbit/s) — Flow 2 egress (mean 210.59 Mbit/s)
Flow 3 ingress (mean 185.32 Mbit/s) — Flow 3 egress (mean 188.20 Mbit/s)

Flow 1 (95th percentile 86.04 ms) · Flow 2 (95th percentile 86.29 ms) · Flow 3 (95th percentile 87.89 ms)
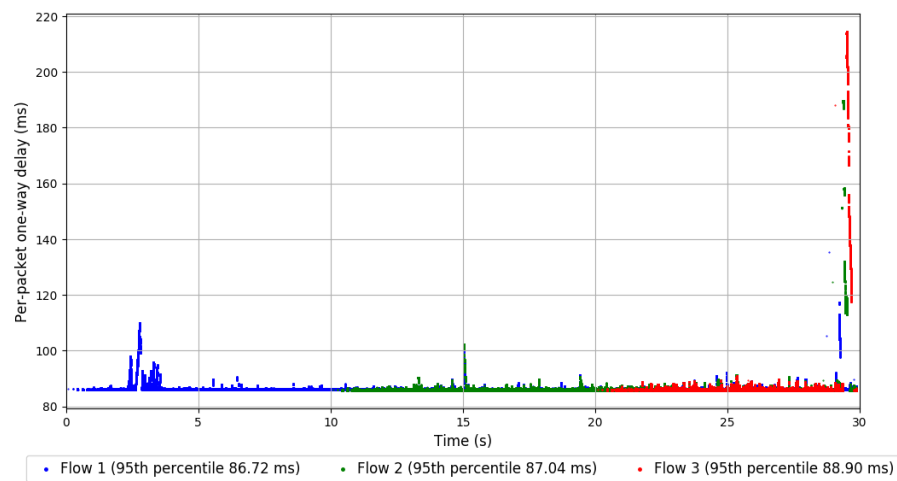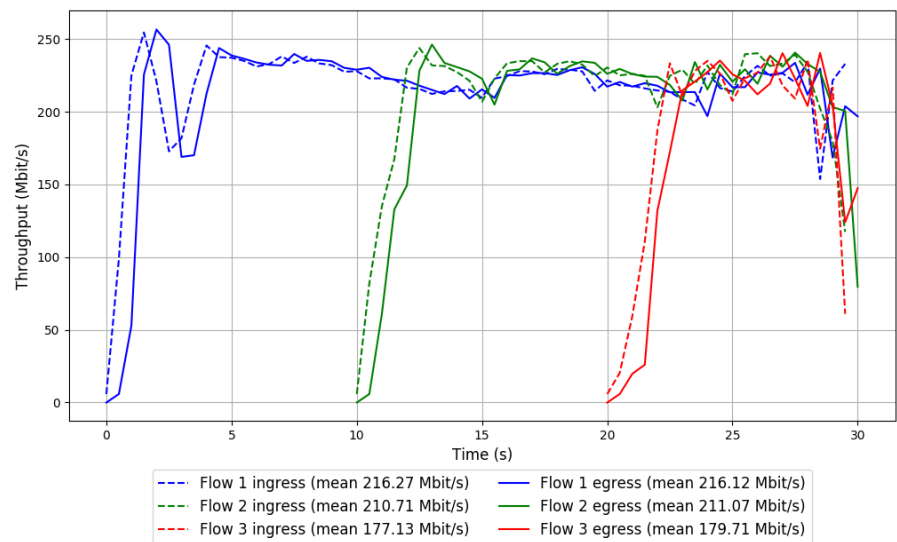
```
Run 5: Statistics of TaoVA-100x

Start at: 2018-09-07 14:45:06
End at: 2018-09-07 14:45:36
Local clock offset: -0.107 ms
Remote clock offset: -0.149 ms


# Below is generated by plot.py at 2018-09-07 17:34:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 415.30 Mbit/s
95th percentile per-packet one-way delay: 87.251 ms
Loss rate: 0.62%
-- Flow 1:
Average throughput: 216.12 Mbit/s
95th percentile per-packet one-way delay: 86.723 ms
Loss rate: 0.64%
-- Flow 2:
Average throughput: 211.07 Mbit/s
95th percentile per-packet one-way delay: 87.037 ms
Loss rate: 0.69%
-- Flow 3:
Average throughput: 179.71 Mbit/s
95th percentile per-packet one-way delay: 88.902 ms
Loss rate: 0.35%
```

Run 5: Report of TaoVA-100x — Data Link

```
Run 1: Statistics of TCP Vegas

Start at: 2018-09-07 12:59:58
End at: 2018-09-07 13:00:28
Local clock offset: -0.144 ms
Remote clock offset: 0.005 ms


# Below is generated by plot.py at 2018-09-07 17:38:07
# Datalink statistics
-- Total of 3 flows:
Average throughput: 876.07 Mbit/s
95th percentile per-packet one-way delay: 109.218 ms
Loss rate: 0.97%
-- Flow 1:
Average throughput: 488.49 Mbit/s
95th percentile per-packet one-way delay: 99.050 ms
Loss rate: 0.63%
-- Flow 2:
Average throughput: 415.52 Mbit/s
95th percentile per-packet one-way delay: 119.887 ms
Loss rate: 1.12%
-- Flow 3:
Average throughput: 339.46 Mbit/s
95th percentile per-packet one-way delay: 94.750 ms
Loss rate: 2.10%
```
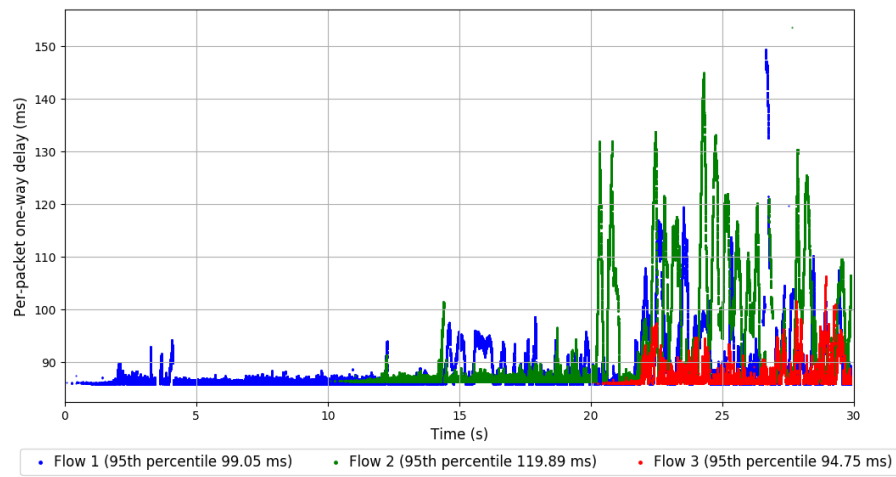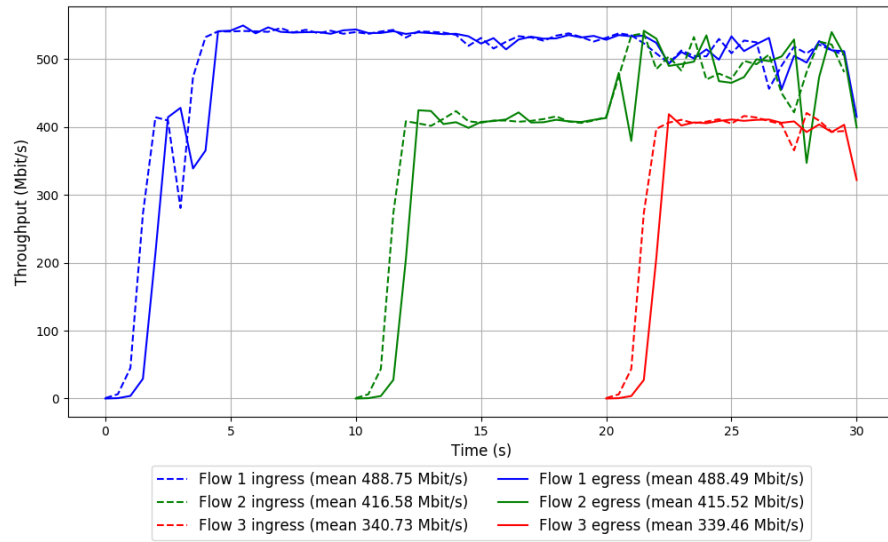
Run 1: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 488.75 Mbit/s)   Flow 1 egress (mean 488.49 Mbit/s)
Flow 2 ingress (mean 416.58 Mbit/s)   Flow 2 egress (mean 415.52 Mbit/s)
Flow 3 ingress (mean 340.73 Mbit/s)   Flow 3 egress (mean 339.46 Mbit/s)

Flow 1 (95th percentile 99.05 ms)   Flow 2 (95th percentile 119.89 ms)   Flow 3 (95th percentile 94.75 ms)
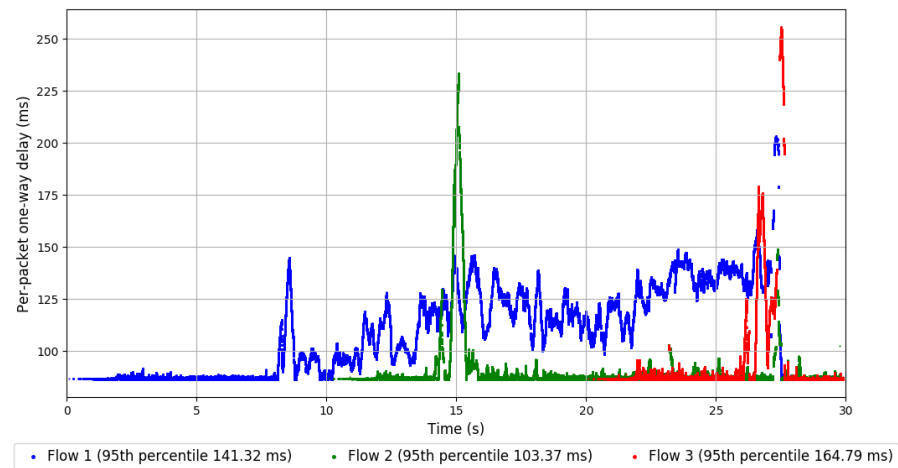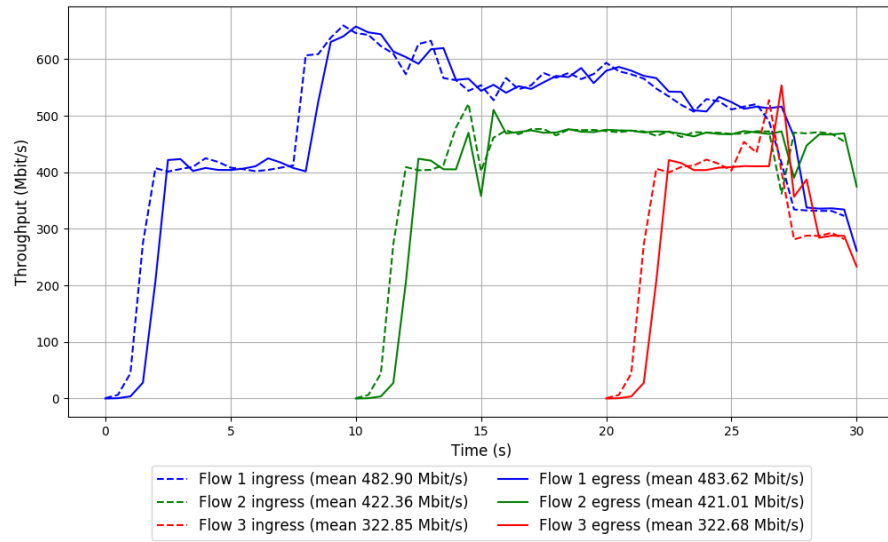
```
Run 2: Statistics of TCP Vegas

Start at: 2018-09-07 13:32:22
End at: 2018-09-07 13:32:52
Local clock offset: 0.046 ms
Remote clock offset: -0.077 ms


# Below is generated by plot.py at 2018-09-07 17:42:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 869.38 Mbit/s
95th percentile per-packet one-way delay: 140.997 ms
Loss rate: 0.84%
-- Flow 1:
Average throughput: 483.62 Mbit/s
95th percentile per-packet one-way delay: 141.319 ms
Loss rate: 0.43%
-- Flow 2:
Average throughput: 421.01 Mbit/s
95th percentile per-packet one-way delay: 103.366 ms
Loss rate: 1.19%
-- Flow 3:
Average throughput: 322.68 Mbit/s
95th percentile per-packet one-way delay: 164.793 ms
Loss rate: 1.78%
```

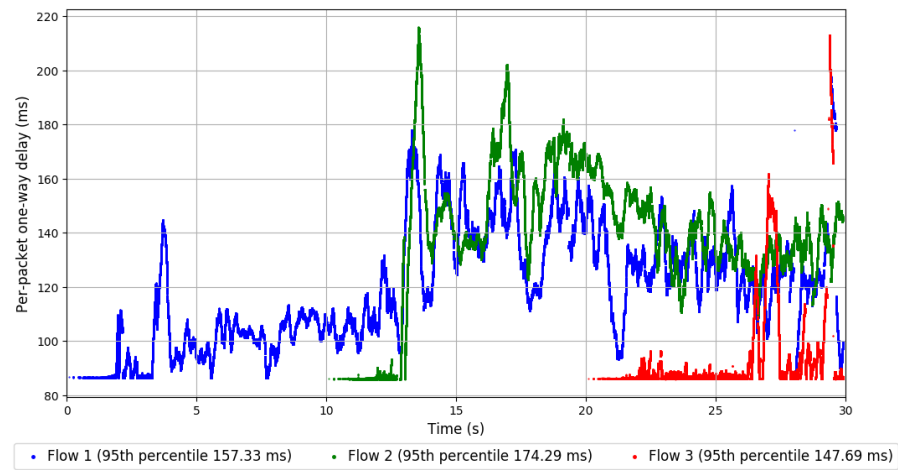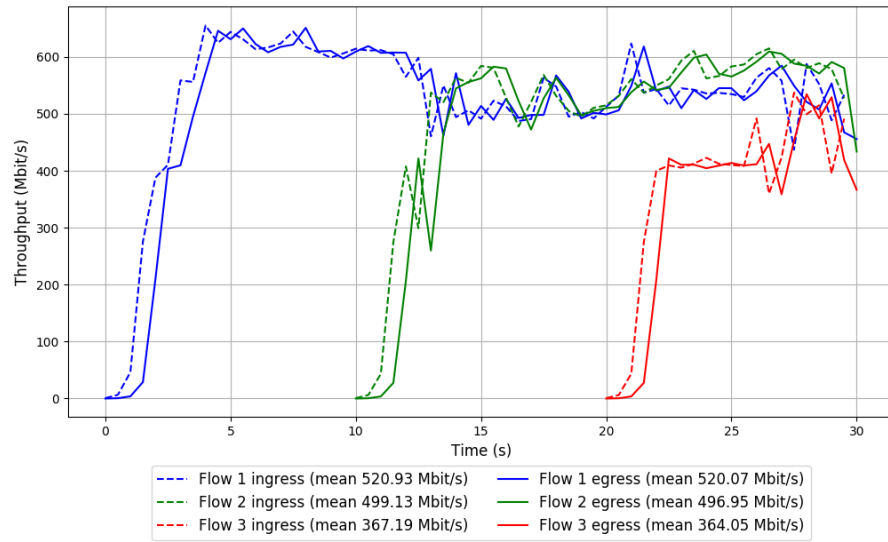Run 2: Report of TCP Vegas — Data Link

```
Run 3: Statistics of TCP Vegas

Start at: 2018-09-07 14:04:48
End at: 2018-09-07 14:05:18
Local clock offset: 0.01 ms
Remote clock offset: -0.234 ms


# Below is generated by plot.py at 2018-09-07 17:46:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 969.72 Mbit/s
95th percentile per-packet one-way delay: 167.849 ms
Loss rate: 1.16%
-- Flow 1:
Average throughput: 520.07 Mbit/s
95th percentile per-packet one-way delay: 157.330 ms
Loss rate: 0.74%
-- Flow 2:
Average throughput: 496.95 Mbit/s
95th percentile per-packet one-way delay: 174.287 ms
Loss rate: 1.29%
-- Flow 3:
Average throughput: 364.05 Mbit/s
95th percentile per-packet one-way delay: 147.688 ms
Loss rate: 2.57%
```

Run 3: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 520.93 Mbit/s) — Flow 1 egress (mean 520.07 Mbit/s)
Flow 2 ingress (mean 499.13 Mbit/s) — Flow 2 egress (mean 496.95 Mbit/s)
Flow 3 ingress (mean 367.19 Mbit/s) — Flow 3 egress (mean 364.05 Mbit/s)

Flow 1 (95th percentile 157.33 ms) • Flow 2 (95th percentile 174.29 ms) • Flow 3 (95th percentile 147.69 ms)
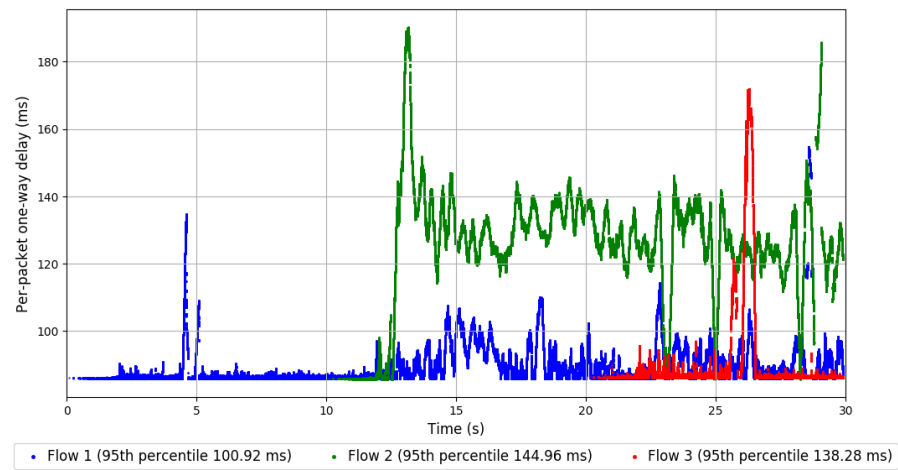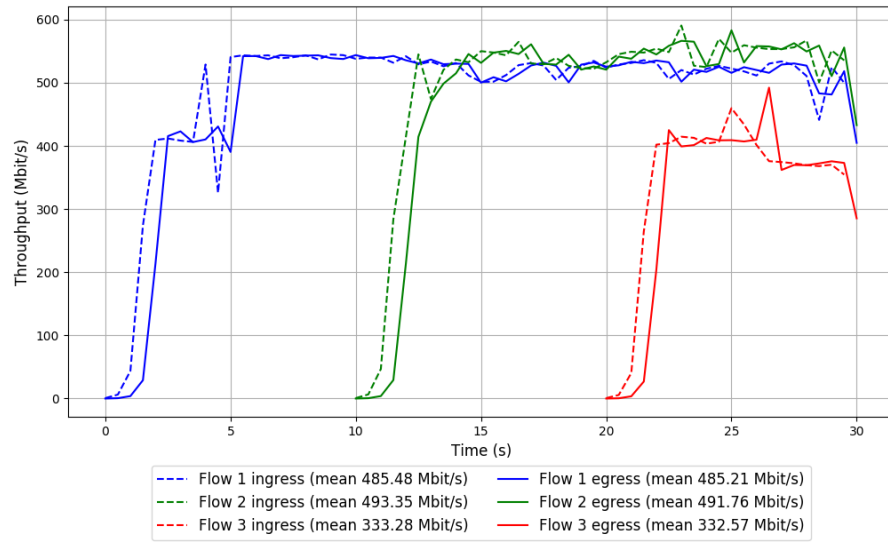
```
Run 4: Statistics of TCP Vegas

Start at: 2018-09-07 14:37:31
End at: 2018-09-07 14:38:01
Local clock offset: -0.333 ms
Remote clock offset: -0.151 ms


# Below is generated by plot.py at 2018-09-07 17:48:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 921.05 Mbit/s
95th percentile per-packet one-way delay: 139.173 ms
Loss rate: 0.98%
-- Flow 1:
Average throughput: 485.21 Mbit/s
95th percentile per-packet one-way delay: 100.924 ms
Loss rate: 0.63%
-- Flow 2:
Average throughput: 491.76 Mbit/s
95th percentile per-packet one-way delay: 144.955 ms
Loss rate: 1.18%
-- Flow 3:
Average throughput: 332.57 Mbit/s
95th percentile per-packet one-way delay: 138.280 ms
Loss rate: 1.94%
```

Run 4: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 485.48 Mbit/s) — Flow 1 egress (mean 485.21 Mbit/s)
Flow 2 ingress (mean 493.35 Mbit/s) — Flow 2 egress (mean 491.76 Mbit/s)
Flow 3 ingress (mean 333.28 Mbit/s) — Flow 3 egress (mean 332.57 Mbit/s)

Flow 1 (95th percentile 100.92 ms)   Flow 2 (95th percentile 144.96 ms)   Flow 3 (95th percentile 138.28 ms)
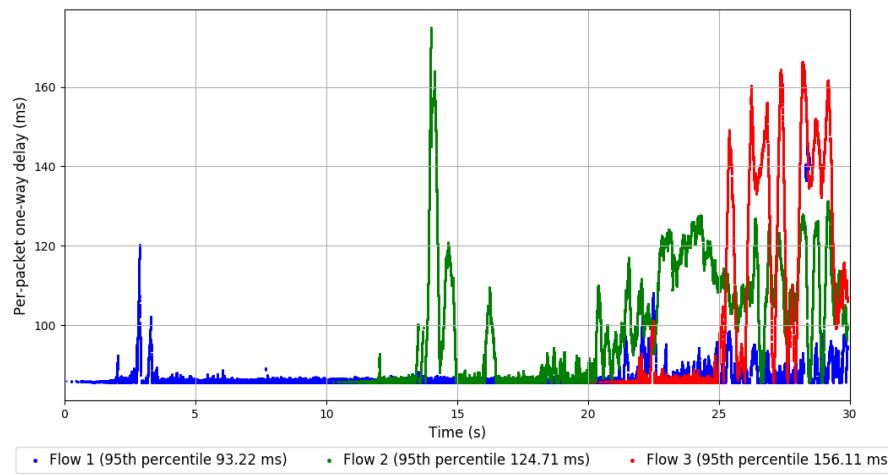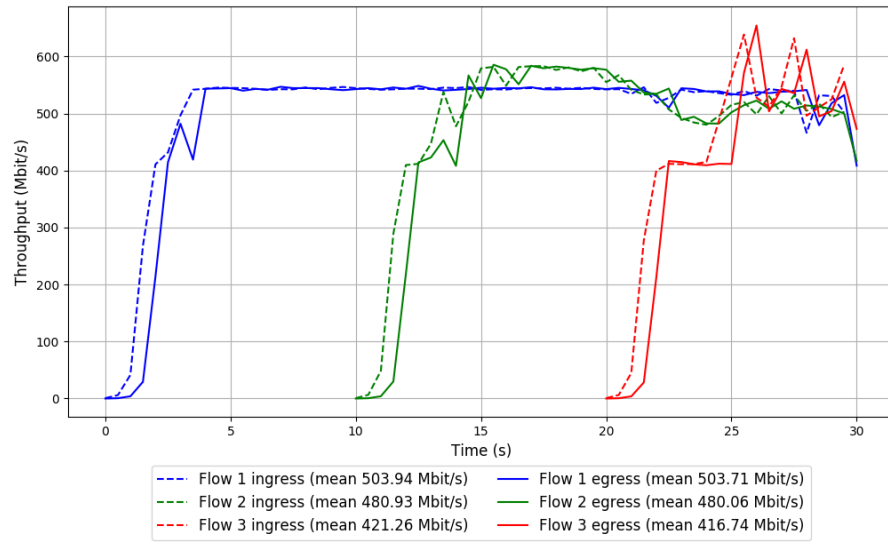
```
Run 5: Statistics of TCP Vegas

Start at: 2018-09-07 15:10:10
End at: 2018-09-07 15:10:40
Local clock offset: -0.2 ms
Remote clock offset: -0.138 ms


# Below is generated by plot.py at 2018-09-07 17:48:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 959.71 Mbit/s
95th percentile per-packet one-way delay: 135.204 ms
Loss rate: 1.08%
-- Flow 1:
Average throughput: 503.71 Mbit/s
95th percentile per-packet one-way delay: 93.223 ms
Loss rate: 0.62%
-- Flow 2:
Average throughput: 480.06 Mbit/s
95th percentile per-packet one-way delay: 124.707 ms
Loss rate: 1.04%
-- Flow 3:
Average throughput: 416.74 Mbit/s
95th percentile per-packet one-way delay: 156.109 ms
Loss rate: 2.79%
```

Run 5: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 503.94 Mbit/s)   Flow 1 egress (mean 503.71 Mbit/s)
Flow 2 ingress (mean 480.93 Mbit/s)   Flow 2 egress (mean 480.06 Mbit/s)
Flow 3 ingress (mean 421.26 Mbit/s)   Flow 3 egress (mean 416.74 Mbit/s)

Flow 1 (95th percentile 93.22 ms)   Flow 2 (95th percentile 124.71 ms)   Flow 3 (95th percentile 156.11 ms)
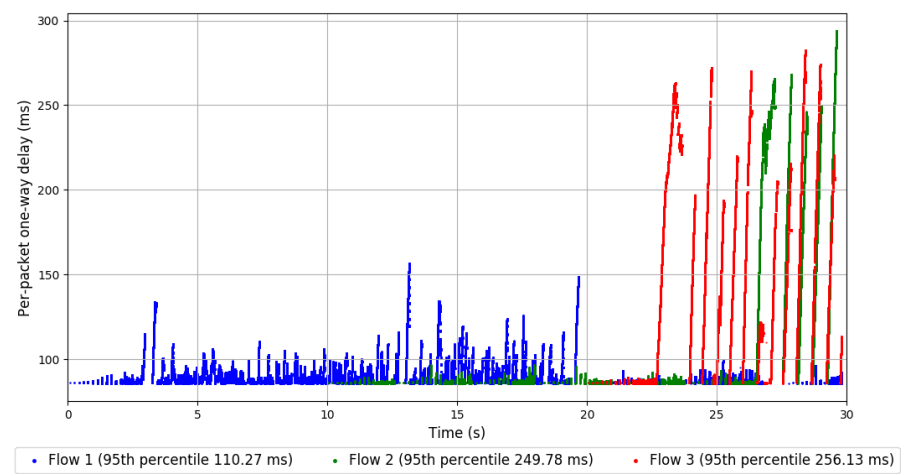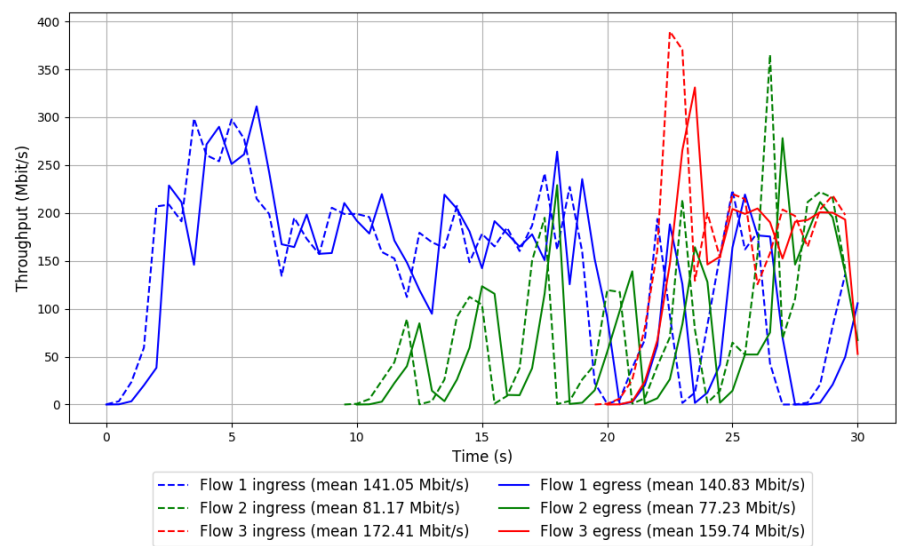
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```
Run 1: Statistics of Verus

Start at: 2018-09-07 13:01:59
End at: 2018-09-07 13:02:29
Local clock offset: -0.193 ms
Remote clock offset: -0.006 ms

# Below is generated by plot.py at 2018-09-07 17:48:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 244.23 Mbit/s
95th percentile per-packet one-way delay: 236.285 ms
Loss rate: 3.81%
-- Flow 1:
Average throughput: 140.83 Mbit/s
95th percentile per-packet one-way delay: 110.272 ms
Loss rate: 0.74%
-- Flow 2:
Average throughput: 77.23 Mbit/s
95th percentile per-packet one-way delay: 249.783 ms
Loss rate: 6.57%
-- Flow 3:
Average throughput: 159.74 Mbit/s
95th percentile per-packet one-way delay: 256.127 ms
Loss rate: 8.78%
```

Run 1: Report of Verus — Data Link

```
Run 2: Statistics of Verus

Start at: 2018-09-07 13:34:24
End at: 2018-09-07 13:34:54
Local clock offset: -0.38 ms
Remote clock offset: -0.11 ms

# Below is generated by plot.py at 2018-09-07 17:48:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 217.83 Mbit/s
95th percentile per-packet one-way delay: 126.407 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 92.70 Mbit/s
95th percentile per-packet one-way delay: 127.412 ms
Loss rate: 0.20%
-- Flow 2:
Average throughput: 132.64 Mbit/s
95th percentile per-packet one-way delay: 112.798 ms
Loss rate: 0.60%
-- Flow 3:
Average throughput: 113.42 Mbit/s
95th percentile per-packet one-way delay: 138.268 ms
Loss rate: 1.82%
```
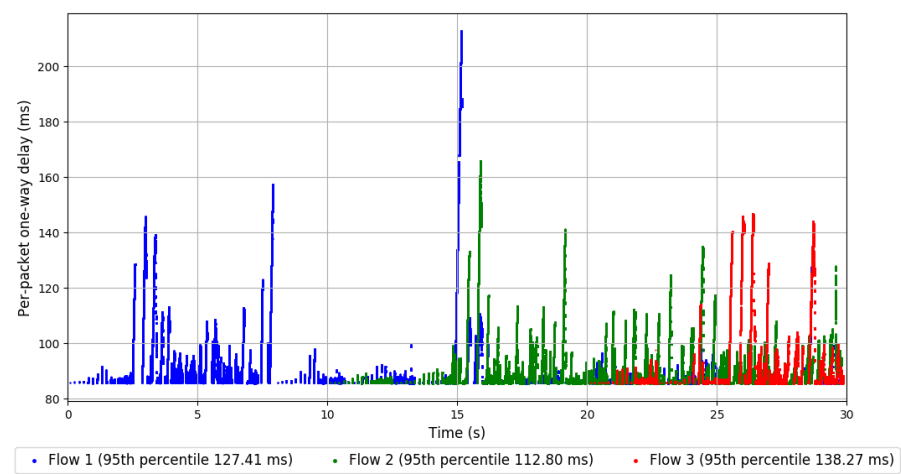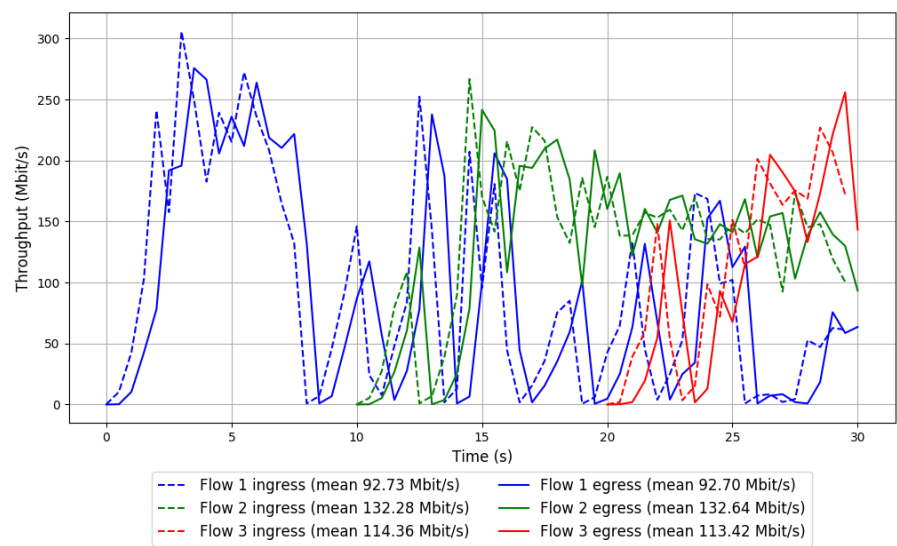
Run 2: Report of Verus — Data Link

Flow 1 ingress (mean 92.73 Mbit/s) — Flow 1 egress (mean 92.70 Mbit/s)
Flow 2 ingress (mean 132.28 Mbit/s) — Flow 2 egress (mean 132.64 Mbit/s)
Flow 3 ingress (mean 114.36 Mbit/s) — Flow 3 egress (mean 113.42 Mbit/s)

Flow 1 (95th percentile 127.41 ms)   Flow 2 (95th percentile 112.80 ms)   Flow 3 (95th percentile 138.27 ms)
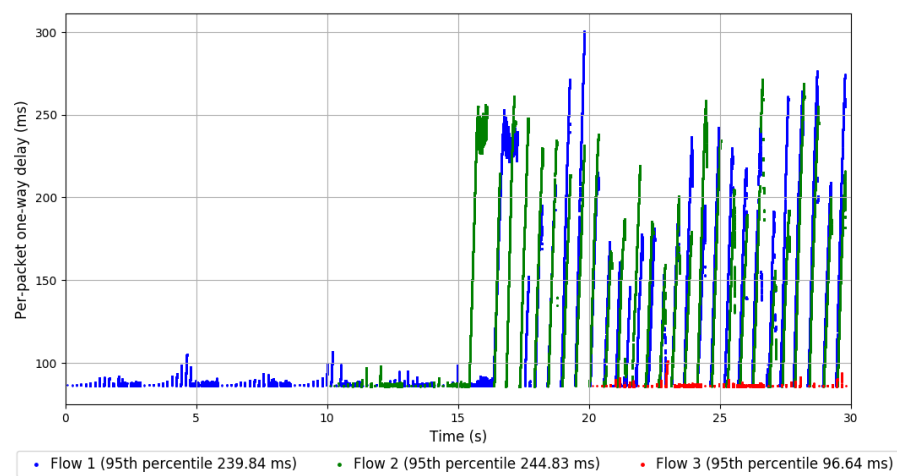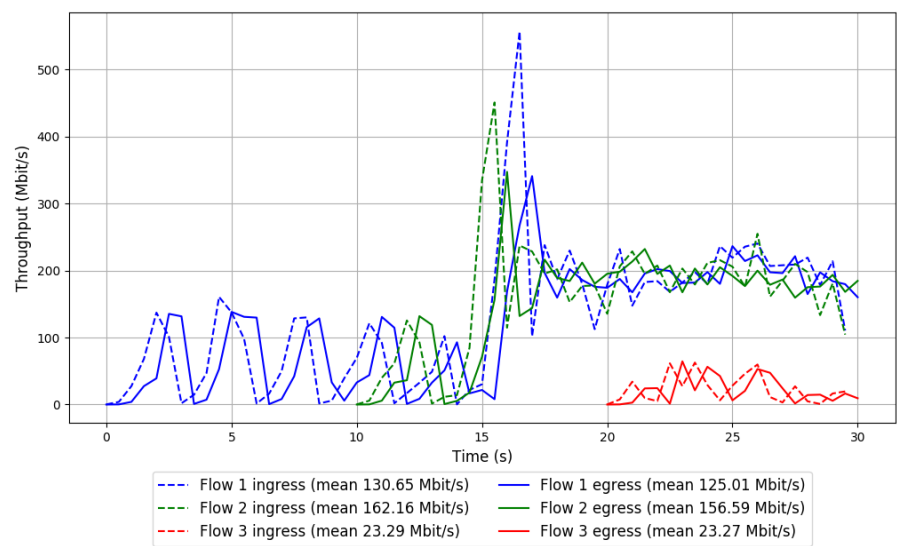
```
Run 3: Statistics of Verus

Start at: 2018-09-07 14:06:56
End at: 2018-09-07 14:07:26
Local clock offset: -0.067 ms
Remote clock offset: -0.253 ms


# Below is generated by plot.py at 2018-09-07 17:48:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 236.24 Mbit/s
95th percentile per-packet one-way delay: 242.394 ms
Loss rate: 4.78%
-- Flow 1:
Average throughput: 125.01 Mbit/s
95th percentile per-packet one-way delay: 239.840 ms
Loss rate: 5.09%
-- Flow 2:
Average throughput: 156.59 Mbit/s
95th percentile per-packet one-way delay: 244.829 ms
Loss rate: 4.58%
-- Flow 3:
Average throughput: 23.27 Mbit/s
95th percentile per-packet one-way delay: 96.645 ms
Loss rate: 2.21%
```

Run 3: Report of Verus — Data Link

```
Run 4: Statistics of Verus

Start at: 2018-09-07 14:39:36
End at: 2018-09-07 14:40:06
Local clock offset: -0.26 ms
Remote clock offset: -0.2 ms


# Below is generated by plot.py at 2018-09-07 17:48:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 270.49 Mbit/s
95th percentile per-packet one-way delay: 228.435 ms
Loss rate: 3.34%
-- Flow 1:
Average throughput: 145.56 Mbit/s
95th percentile per-packet one-way delay: 218.674 ms
Loss rate: 3.04%
-- Flow 2:
Average throughput: 172.90 Mbit/s
95th percentile per-packet one-way delay: 251.555 ms
Loss rate: 3.08%
-- Flow 3:
Average throughput: 33.22 Mbit/s
95th percentile per-packet one-way delay: 114.743 ms
Loss rate: 9.60%
```
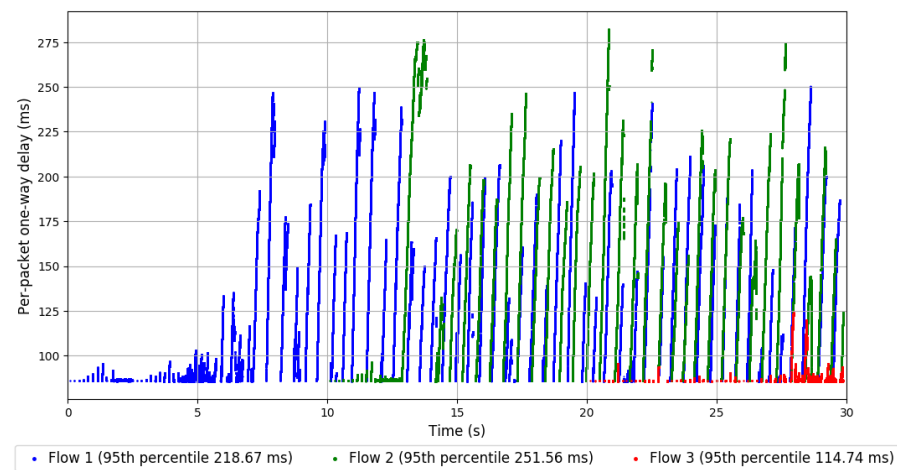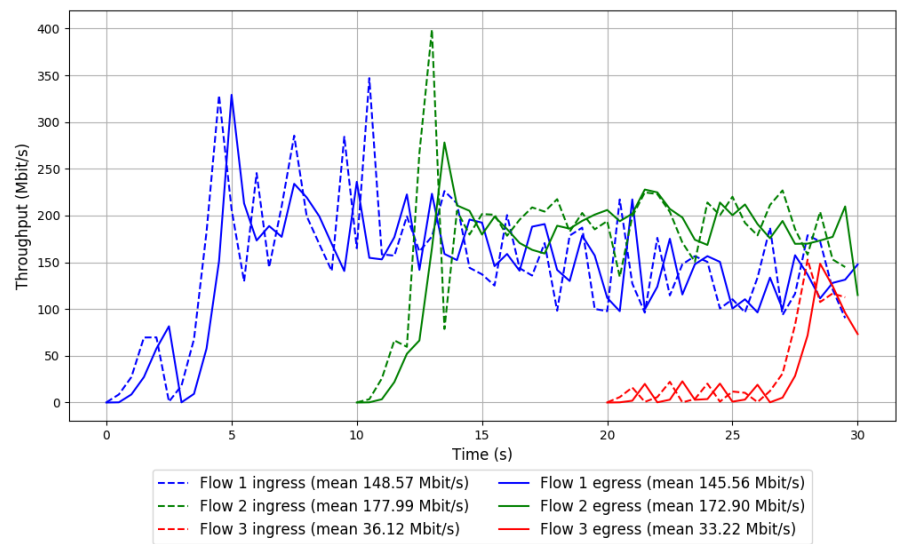
Run 4: Report of Verus — Data Link

```
Run 5: Statistics of Verus

Start at: 2018-09-07 15:12:16
End at: 2018-09-07 15:12:46
Local clock offset: 0.185 ms
Remote clock offset: -0.11 ms


# Below is generated by plot.py at 2018-09-07 17:49:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 288.56 Mbit/s
95th percentile per-packet one-way delay: 223.173 ms
Loss rate: 4.83%
-- Flow 1:
Average throughput: 205.68 Mbit/s
95th percentile per-packet one-way delay: 227.761 ms
Loss rate: 6.08%
-- Flow 2:
Average throughput: 84.94 Mbit/s
95th percentile per-packet one-way delay: 112.958 ms
Loss rate: 0.44%
-- Flow 3:
Average throughput: 81.03 Mbit/s
95th percentile per-packet one-way delay: 203.350 ms
Loss rate: 3.95%
```
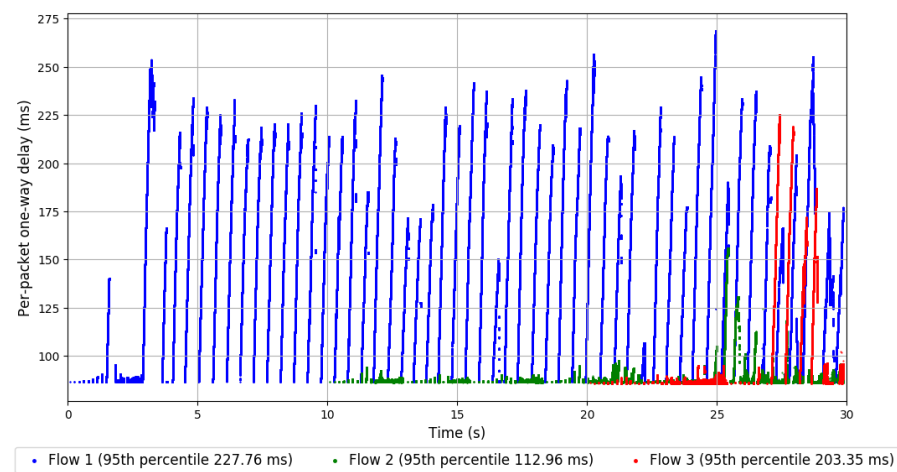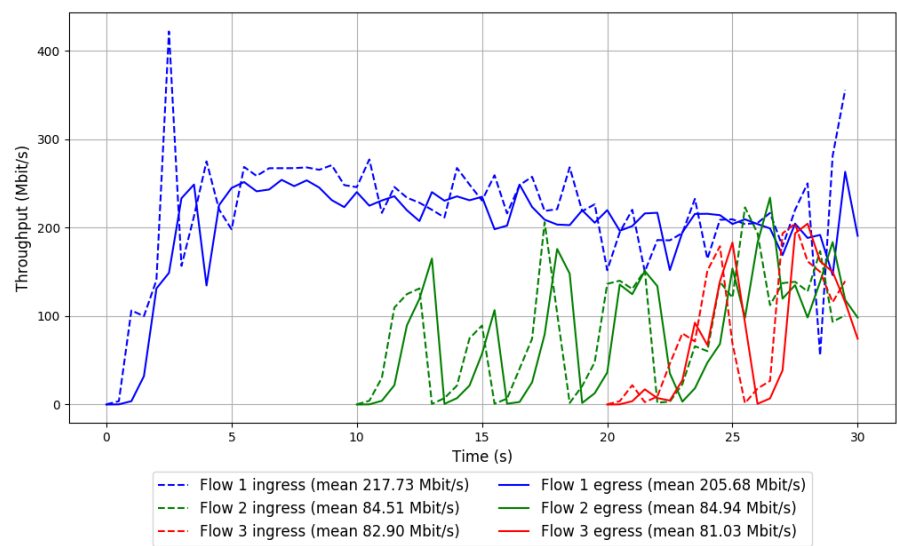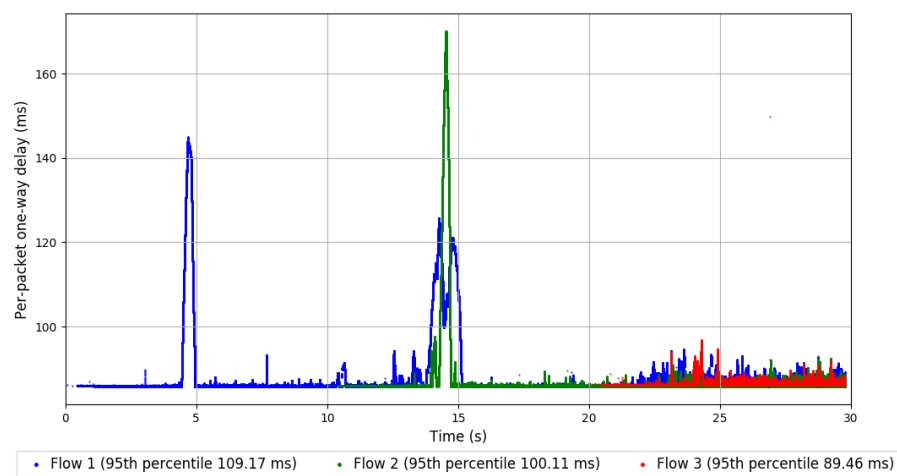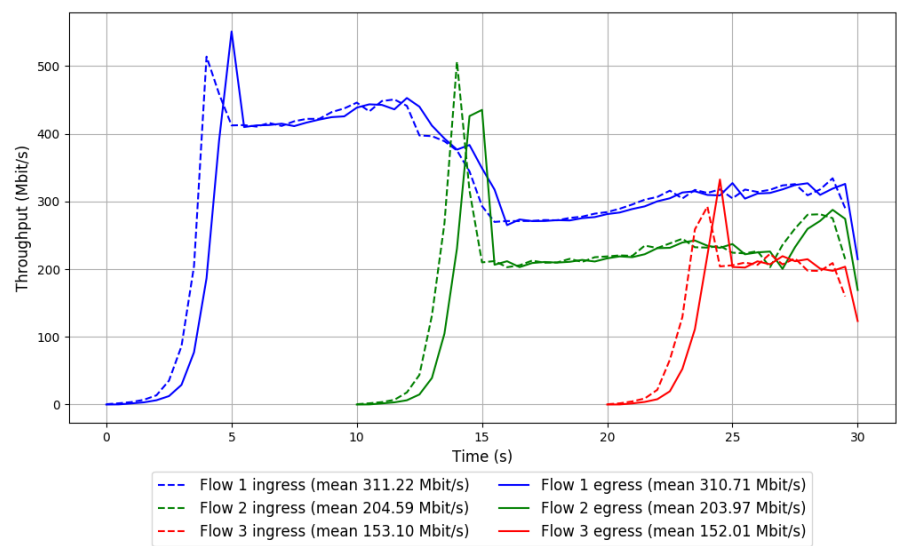
Run 5: Report of Verus — Data Link

```
Run 1: Statistics of PCC-Vivace

Start at: 2018-09-07 13:05:32
End at: 2018-09-07 13:06:02
Local clock offset: -0.135 ms
Remote clock offset: -0.032 ms


# Below is generated by plot.py at 2018-09-07 17:49:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 495.55 Mbit/s
95th percentile per-packet one-way delay: 105.349 ms
Loss rate: 1.03%
-- Flow 1:
Average throughput: 310.71 Mbit/s
95th percentile per-packet one-way delay: 109.168 ms
Loss rate: 0.74%
-- Flow 2:
Average throughput: 203.97 Mbit/s
95th percentile per-packet one-way delay: 100.111 ms
Loss rate: 1.17%
-- Flow 3:
Average throughput: 152.01 Mbit/s
95th percentile per-packet one-way delay: 89.457 ms
Loss rate: 2.46%
```

Run 1: Report of PCC-Vivace — Data Link

Flow 1 ingress (mean 311.22 Mbit/s) --- Flow 1 egress (mean 310.71 Mbit/s)
Flow 2 ingress (mean 204.59 Mbit/s) --- Flow 2 egress (mean 203.97 Mbit/s)
Flow 3 ingress (mean 153.10 Mbit/s) --- Flow 3 egress (mean 152.01 Mbit/s)

Flow 1 (95th percentile 109.17 ms) • Flow 2 (95th percentile 100.11 ms) • Flow 3 (95th percentile 89.46 ms)
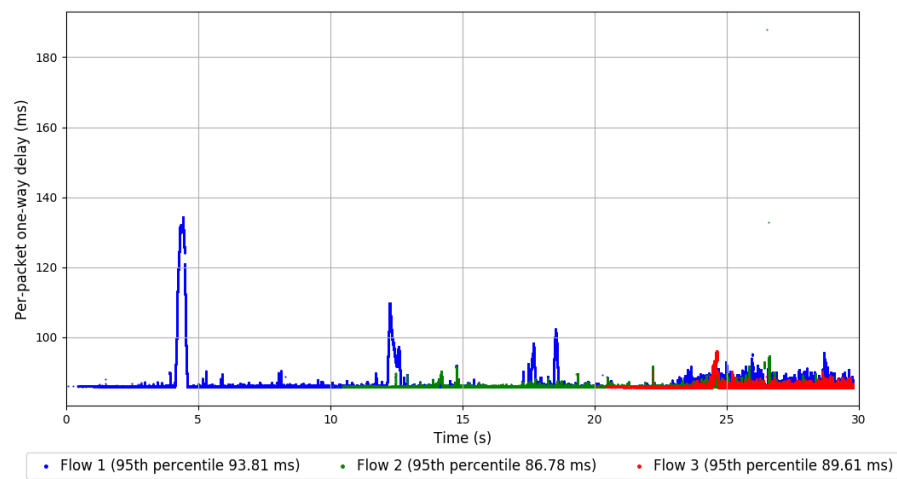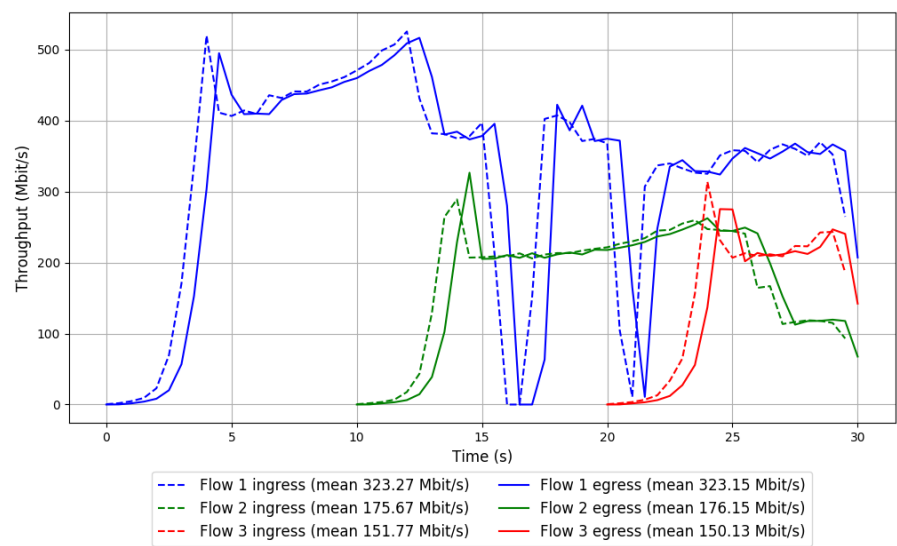
```
Run 2: Statistics of PCC-Vivace

Start at: 2018-09-07 13:37:55
End at: 2018-09-07 13:38:25
Local clock offset: -0.252 ms
Remote clock offset: -0.099 ms


# Below is generated by plot.py at 2018-09-07 17:49:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 488.91 Mbit/s
95th percentile per-packet one-way delay: 90.977 ms
Loss rate: 0.84%
-- Flow 1:
Average throughput: 323.15 Mbit/s
95th percentile per-packet one-way delay: 93.815 ms
Loss rate: 0.61%
-- Flow 2:
Average throughput: 176.15 Mbit/s
95th percentile per-packet one-way delay: 86.785 ms
Loss rate: 0.60%
-- Flow 3:
Average throughput: 150.13 Mbit/s
95th percentile per-packet one-way delay: 89.615 ms
Loss rate: 2.82%
```

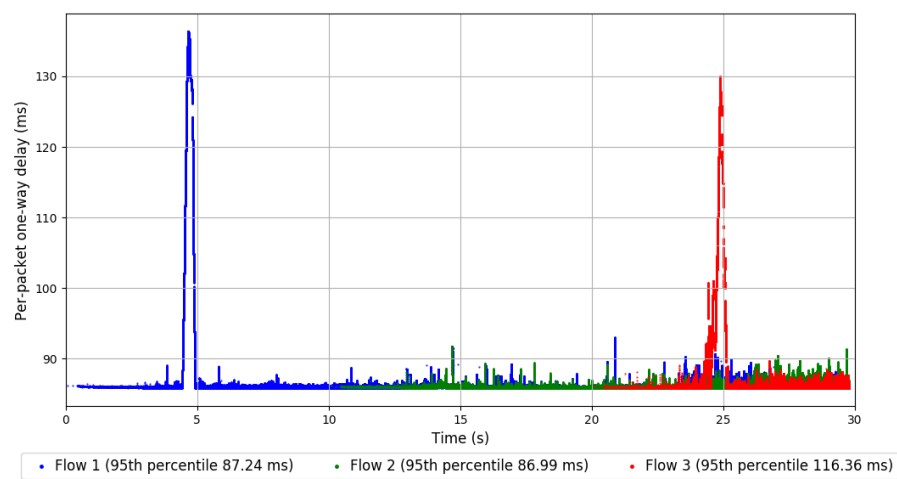## Run 2: Report of PCC-Vivace — Data Link

Flow 1 ingress (mean 323.27 Mbit/s)   Flow 1 egress (mean 323.15 Mbit/s)
Flow 2 ingress (mean 175.67 Mbit/s)   Flow 2 egress (mean 176.15 Mbit/s)
Flow 3 ingress (mean 151.77 Mbit/s)   Flow 3 egress (mean 150.13 Mbit/s)

Flow 1 (95th percentile 93.81 ms)   Flow 2 (95th percentile 86.78 ms)   Flow 3 (95th percentile 89.61 ms)
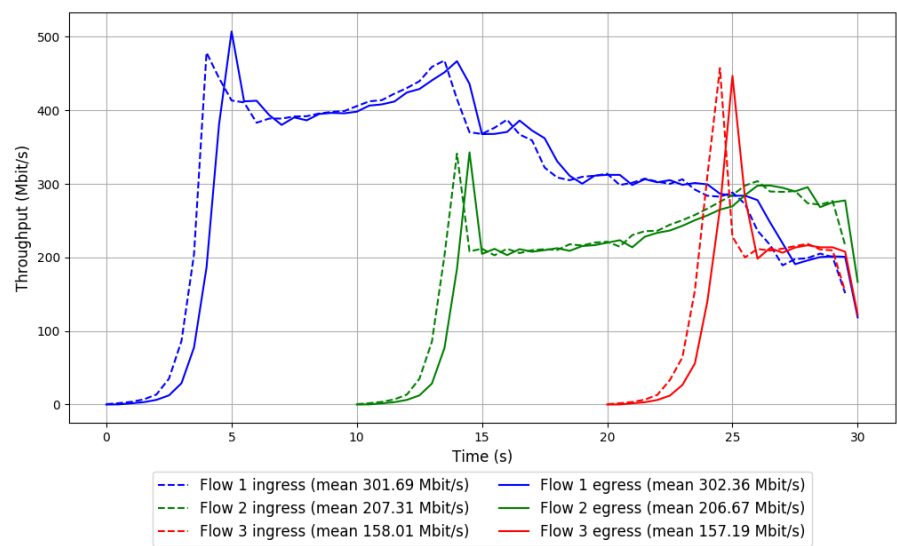
```
Run 3: Statistics of PCC-Vivace

Start at: 2018-09-07 14:10:29
End at: 2018-09-07 14:10:59
Local clock offset: -0.087 ms
Remote clock offset: -0.164 ms


# Below is generated by plot.py at 2018-09-07 17:50:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 490.61 Mbit/s
95th percentile per-packet one-way delay: 87.985 ms
Loss rate: 0.80%
-- Flow 1:
Average throughput: 302.36 Mbit/s
95th percentile per-packet one-way delay: 87.241 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 206.67 Mbit/s
95th percentile per-packet one-way delay: 86.992 ms
Loss rate: 1.18%
-- Flow 3:
Average throughput: 157.19 Mbit/s
95th percentile per-packet one-way delay: 116.365 ms
Loss rate: 2.26%
```

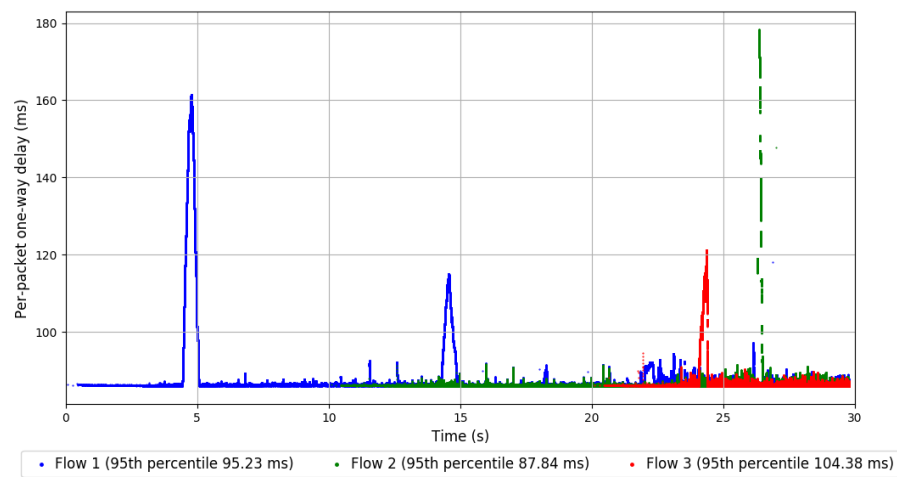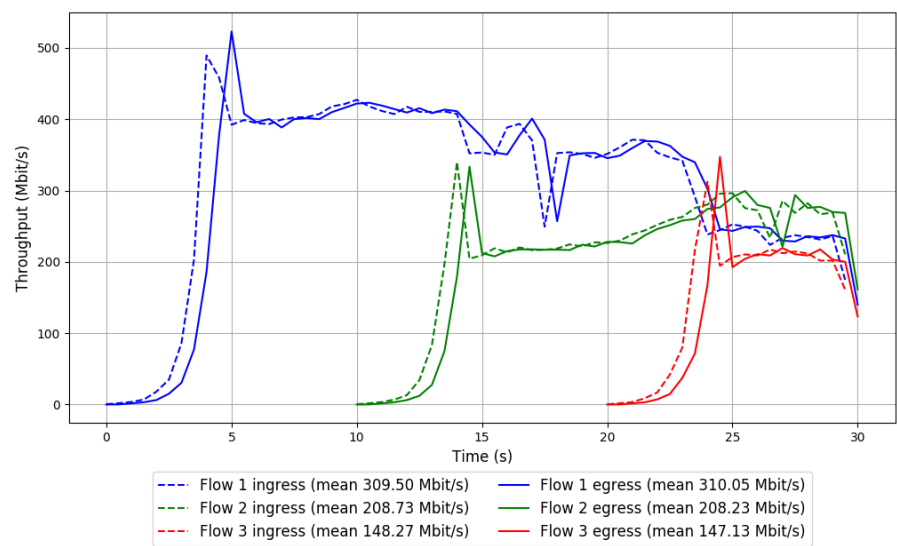Run 3: Report of PCC-Vivace — Data Link

```
Run 4: Statistics of PCC-Vivace

Start at: 2018-09-07 14:43:15
End at: 2018-09-07 14:43:45
Local clock offset: -0.028 ms
Remote clock offset: -0.172 ms


# Below is generated by plot.py at 2018-09-07 17:50:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 496.03 Mbit/s
95th percentile per-packet one-way delay: 91.667 ms
Loss rate: 0.81%
-- Flow 1:
Average throughput: 310.05 Mbit/s
95th percentile per-packet one-way delay: 95.228 ms
Loss rate: 0.40%
-- Flow 2:
Average throughput: 208.23 Mbit/s
95th percentile per-packet one-way delay: 87.837 ms
Loss rate: 1.14%
-- Flow 3:
Average throughput: 147.13 Mbit/s
95th percentile per-packet one-way delay: 104.379 ms
Loss rate: 2.50%
```

Run 4: Report of PCC-Vivace — Data Link

```
Run 5: Statistics of PCC-Vivace

Start at: 2018-09-07 15:15:53
End at: 2018-09-07 15:16:23
Local clock offset: -0.127 ms
Remote clock offset: -0.07 ms


# Below is generated by plot.py at 2018-09-07 17:50:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 516.58 Mbit/s
95th percentile per-packet one-way delay: 95.537 ms
Loss rate: 0.85%
-- Flow 1:
Average throughput: 332.80 Mbit/s
95th percentile per-packet one-way delay: 97.223 ms
Loss rate: 0.75%
-- Flow 2:
Average throughput: 255.44 Mbit/s
95th percentile per-packet one-way delay: 94.896 ms
Loss rate: 0.87%
-- Flow 3:
Average throughput: 44.14 Mbit/s
95th percentile per-packet one-way delay: 85.743 ms
Loss rate: 2.97%
```
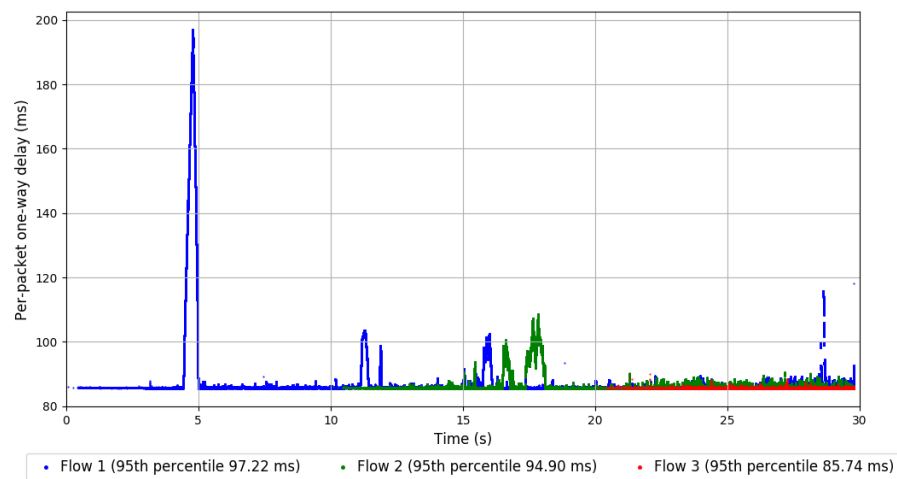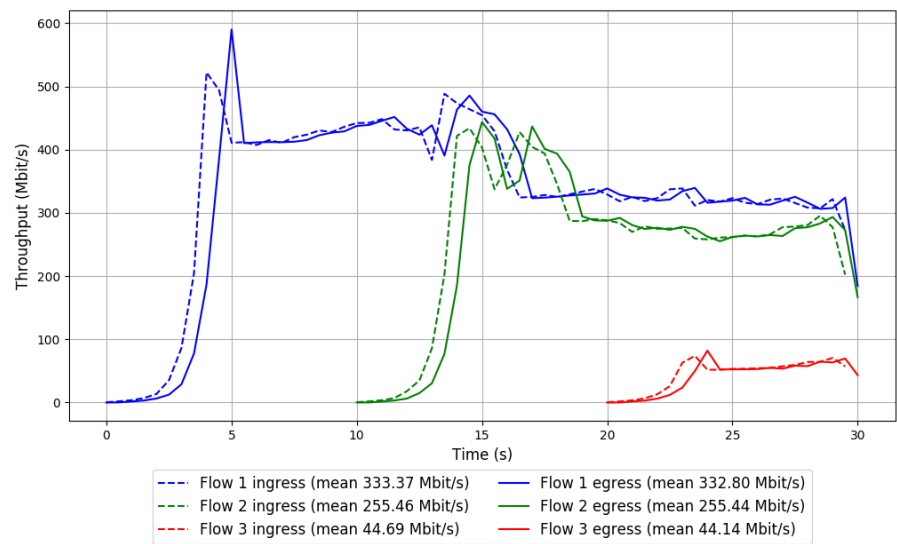
Run 5: Report of PCC-Vivace — Data Link

- - - - Flow 1 ingress (mean 333.37 Mbit/s) ——— Flow 1 egress (mean 332.80 Mbit/s)
- - - - Flow 2 ingress (mean 255.46 Mbit/s) ——— Flow 2 egress (mean 255.44 Mbit/s)
- - - - Flow 3 ingress (mean 44.69 Mbit/s) ——— Flow 3 egress (mean 44.14 Mbit/s)

• Flow 1 (95th percentile 97.22 ms)   • Flow 2 (95th percentile 94.90 ms)   • Flow 3 (95th percentile 85.74 ms)

```
Run 1: Statistics of WebRTC media

Start at: 2018-09-07 12:38:07
End at: 2018-09-07 12:38:37
Local clock offset: -0.143 ms
Remote clock offset: 0.02 ms


# Below is generated by plot.py at 2018-09-07 17:50:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.73 Mbit/s
95th percentile per-packet one-way delay: 86.407 ms
Loss rate: 1.48%
-- Flow 1:
Average throughput: 1.19 Mbit/s
95th percentile per-packet one-way delay: 86.018 ms
Loss rate: 1.18%
-- Flow 2:
Average throughput: 1.12 Mbit/s
95th percentile per-packet one-way delay: 86.015 ms
Loss rate: 0.98%
-- Flow 3:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 86.478 ms
Loss rate: 3.53%
```
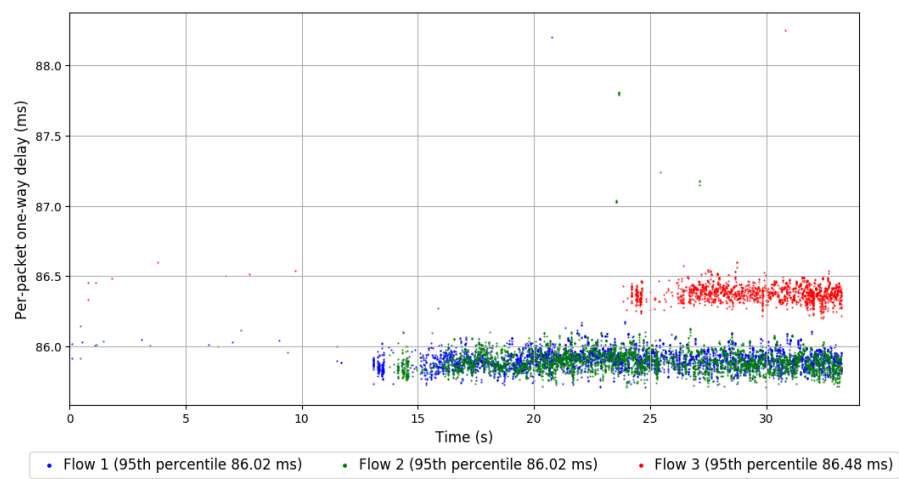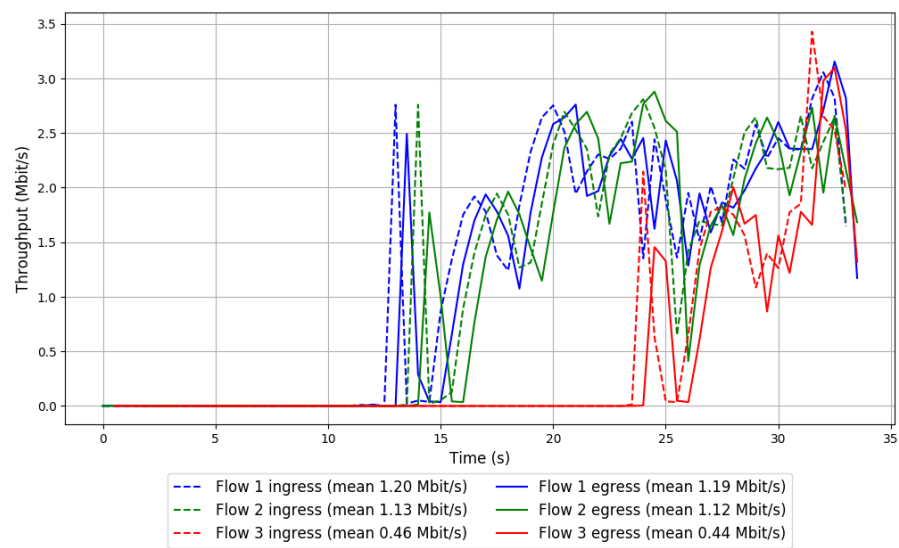
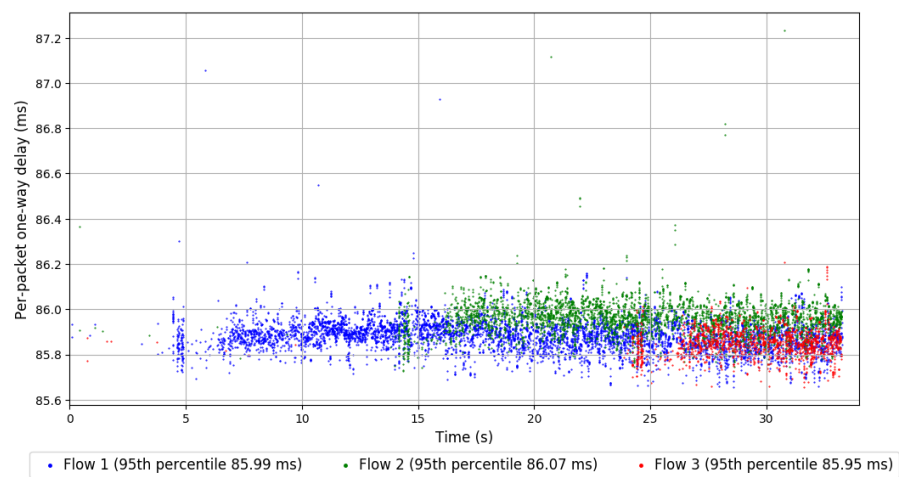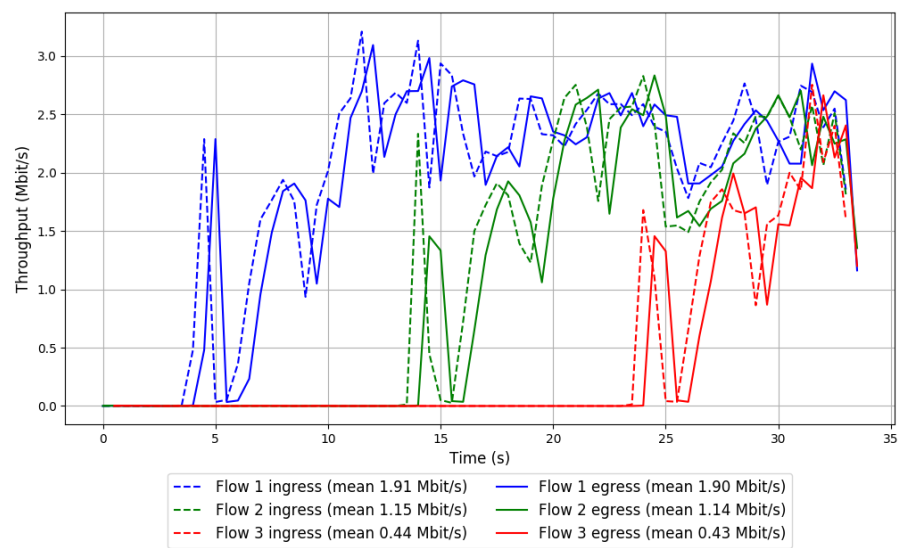Run 1: Report of WebRTC media — Data Link

```
Run 2: Statistics of WebRTC media

Start at: 2018-09-07 13:10:39
End at: 2018-09-07 13:11:09
Local clock offset: -0.264 ms
Remote clock offset: -0.057 ms


# Below is generated by plot.py at 2018-09-07 17:50:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.45 Mbit/s
95th percentile per-packet one-way delay: 86.036 ms
Loss rate: 1.14%
-- Flow 1:
Average throughput: 1.90 Mbit/s
95th percentile per-packet one-way delay: 85.989 ms
Loss rate: 0.73%
-- Flow 2:
Average throughput: 1.14 Mbit/s
95th percentile per-packet one-way delay: 86.069 ms
Loss rate: 1.20%
-- Flow 3:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 85.955 ms
Loss rate: 2.80%
```

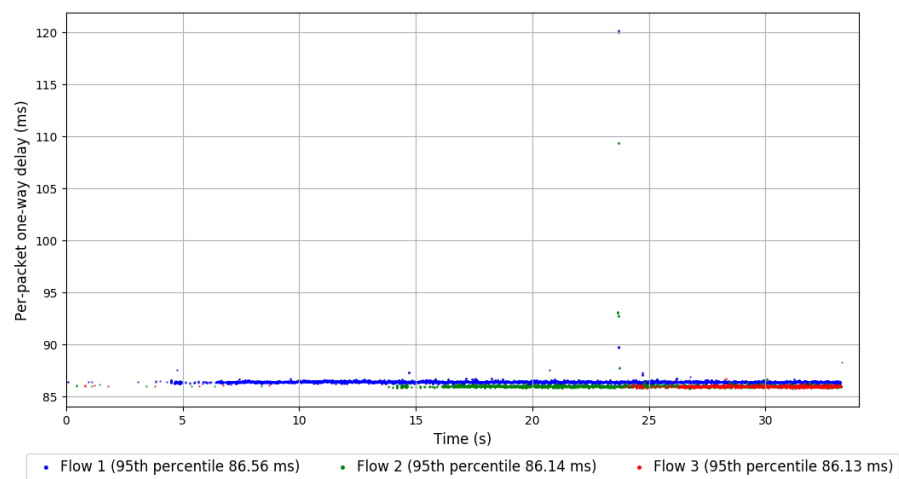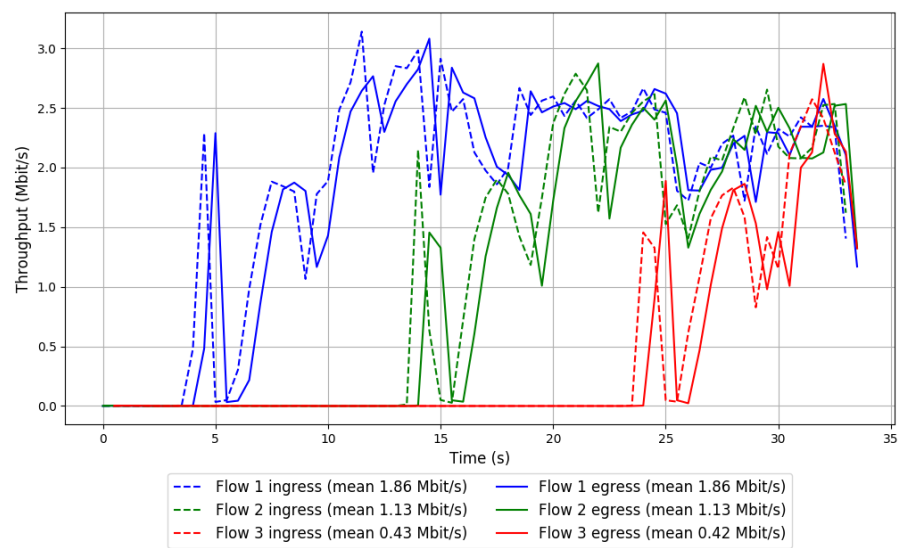Run 2: Report of WebRTC media — Data Link

```
Run 3: Statistics of WebRTC media

Start at: 2018-09-07 13:43:01
End at: 2018-09-07 13:43:31
Local clock offset: -0.093 ms
Remote clock offset: -0.156 ms


# Below is generated by plot.py at 2018-09-07 17:50:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.38 Mbit/s
95th percentile per-packet one-way delay: 86.529 ms
Loss rate: 1.05%
-- Flow 1:
Average throughput: 1.86 Mbit/s
95th percentile per-packet one-way delay: 86.556 ms
Loss rate: 0.57%
-- Flow 2:
Average throughput: 1.13 Mbit/s
95th percentile per-packet one-way delay: 86.144 ms
Loss rate: 1.01%
-- Flow 3:
Average throughput: 0.42 Mbit/s
95th percentile per-packet one-way delay: 86.132 ms
Loss rate: 3.29%
```

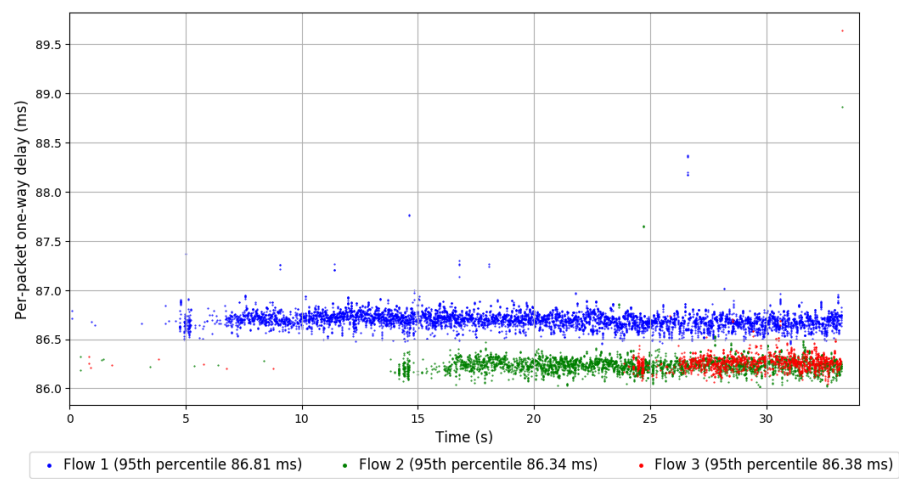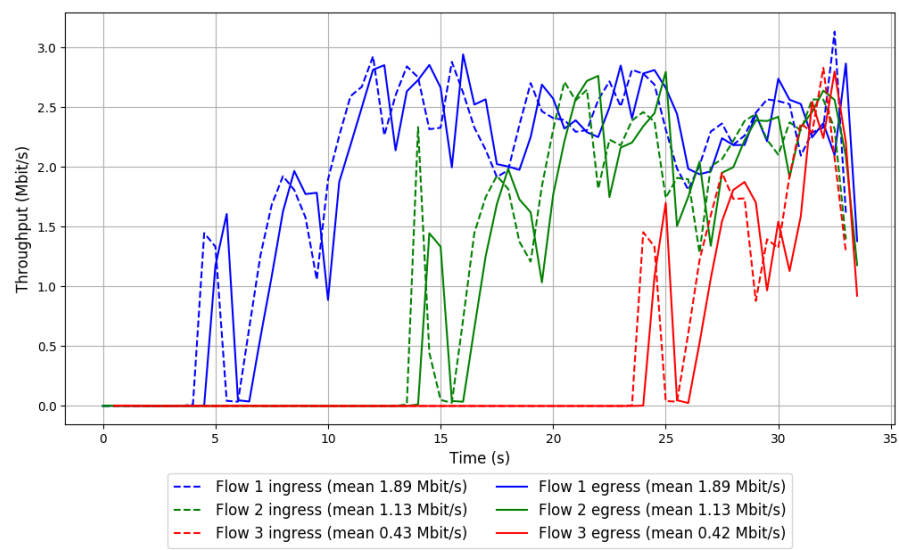Run 3: Report of WebRTC media — Data Link

```
Run 4: Statistics of WebRTC media

Start at: 2018-09-07 14:15:35
End at: 2018-09-07 14:16:05
Local clock offset: 0.11 ms
Remote clock offset: -0.174 ms


# Below is generated by plot.py at 2018-09-07 17:50:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.41 Mbit/s
95th percentile per-packet one-way delay: 86.787 ms
Loss rate: 1.03%
-- Flow 1:
Average throughput: 1.89 Mbit/s
95th percentile per-packet one-way delay: 86.815 ms
Loss rate: 0.73%
-- Flow 2:
Average throughput: 1.13 Mbit/s
95th percentile per-packet one-way delay: 86.341 ms
Loss rate: 0.91%
-- Flow 3:
Average throughput: 0.42 Mbit/s
95th percentile per-packet one-way delay: 86.381 ms
Loss rate: 2.69%
```

Run 4: Report of WebRTC media — Data Link

```
Run 5: Statistics of WebRTC media

Start at: 2018-09-07 14:48:22
End at: 2018-09-07 14:48:52
Local clock offset: -0.084 ms
Remote clock offset: -0.141 ms


# Below is generated by plot.py at 2018-09-07 17:50:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.41 Mbit/s
95th percentile per-packet one-way delay: 86.168 ms
Loss rate: 1.09%
-- Flow 1:
Average throughput: 1.87 Mbit/s
95th percentile per-packet one-way delay: 86.165 ms
Loss rate: 0.62%
-- Flow 2:
Average throughput: 1.11 Mbit/s
95th percentile per-packet one-way delay: 86.185 ms
Loss rate: 1.25%
-- Flow 3:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 86.136 ms
Loss rate: 2.71%
```

Run 5: Report of WebRTC media — Data Link