Pantheon Report

Generated at 2018-09-08 03:32:19 (UTC).

Data path: GCE Tokyo on `ens4` (*remote*) →GCE Iowa 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.
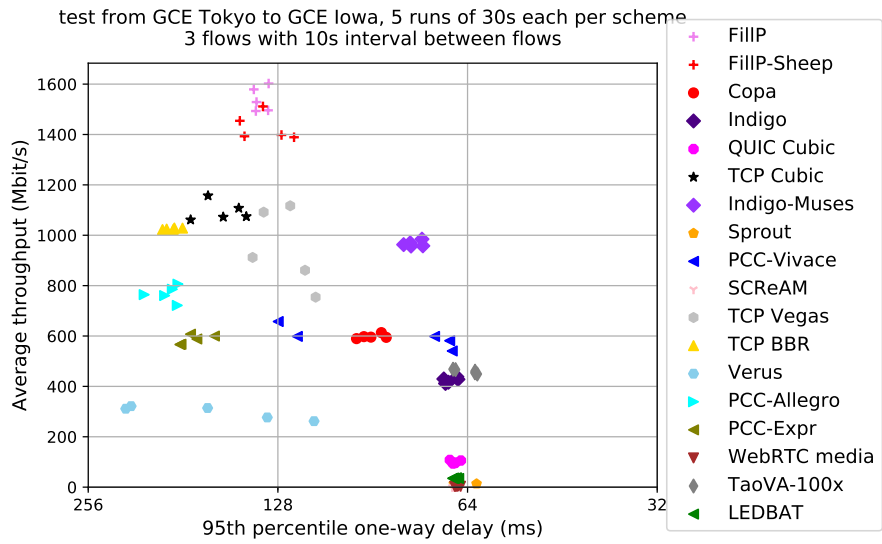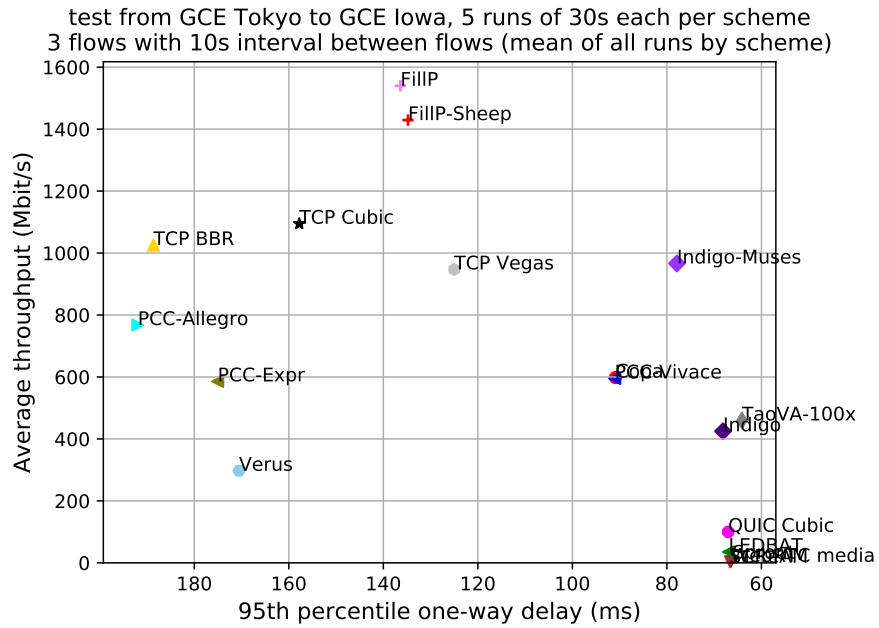
```
System info:
Linux 4.15.0-1018-gcp
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912
net.ipv4.tcp_mem = 190986 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
```
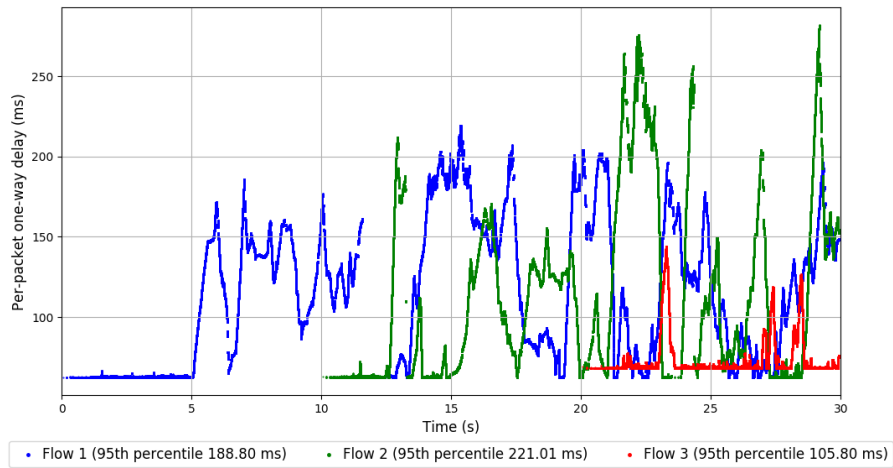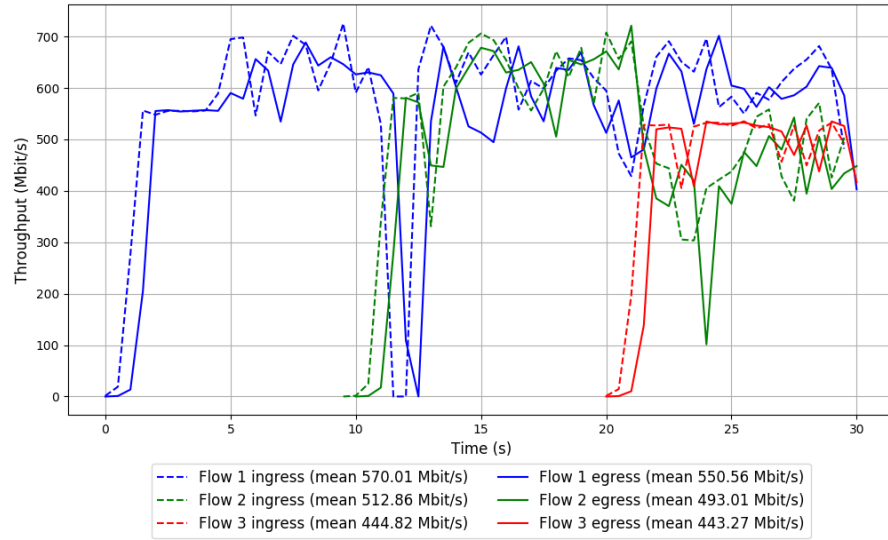
test from GCE Tokyo to GCE Iowa, 5 runs of 30s each per scheme
3 flows with 10s interval between flows (mean of all runs by scheme)

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

3

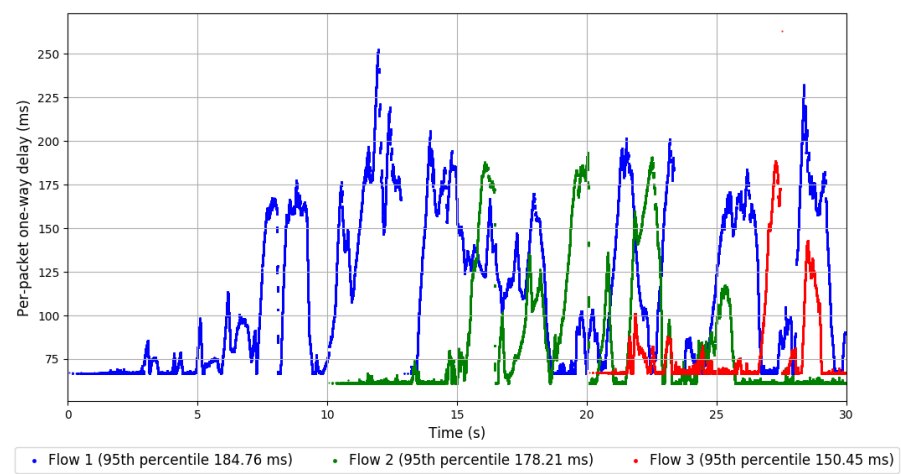| scheme	# runs	mean avg tput (Mbit/s)			mean 95th-%ile delay (ms)			mean loss rate (%)		
		flow 1	flow 2	flow 3	flow 1	flow 2	flow 3	flow 1	flow 2	flow 3
TCP BBR	5	539.25	509.95	446.85	189.26	191.48	149.49	3.69	2.98	2.33
Copa	5	322.70	279.08	272.97	83.10	94.04	99.84	0.41	0.62	1.51
TCP Cubic	5	591.28	528.57	460.81	152.97	157.80	163.66	0.66	0.99	2.31
FillP	5	801.69	782.10	664.68	137.68	130.83	140.28	4.39	3.27	4.86
FillP-Sheep	5	769.22	715.65	561.90	131.53	129.97	147.14	1.92	1.96	3.88
Indigo	5	216.61	222.86	180.18	67.21	66.46	66.04	0.46	0.67	1.71
LEDBAT	5	23.15	14.90	7.44	63.39	64.14	64.95	0.84	1.30	2.60
Indigo-Muses	5	541.68	468.83	350.14	74.96	81.42	78.26	0.39	0.63	1.82
PCC-Allegro	5	425.15	375.80	285.33	193.88	161.25	142.71	6.32	3.30	5.00
PCC-Expr	5	323.41	282.60	228.64	173.34	164.48	115.50	3.48	2.06	3.36
QUIC Cubic	5	59.46	47.47	24.97	65.86	64.68	62.43	0.61	1.25	1.29
SCReAM	5	0.22	0.22	0.22	64.57	64.55	64.50	0.38	0.65	1.30
Sprout	5	6.76	6.70	6.32	64.01	63.00	63.92	0.49	0.70	1.01
TaoVA-100x	5	236.09	230.62	213.26	62.78	62.90	65.57	0.45	0.70	1.44
TCP Vegas	5	548.70	382.58	437.61	125.93	96.34	108.24	0.48	0.52	1.48
Verus	5	167.89	143.12	104.76	159.71	161.26	138.04	2.06	1.17	2.34
PCC-Vivace	5	342.46	300.65	163.02	87.33	102.21	105.59	0.52	1.22	2.28
WebRTC media	5	1.75	1.21	0.47	64.30	63.32	65.40	0.67	0.86	1.56

```
Run 1: Statistics of TCP BBR

Start at: 2018-09-07 22:14:50
End at: 2018-09-07 22:15:20
Local clock offset: -0.024 ms
Remote clock offset: -1.885 ms


# Below is generated by plot.py at 2018-09-08 01:11:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1024.63 Mbit/s
95th percentile per-packet one-way delay: 192.226 ms
Loss rate: 3.74%
-- Flow 1:
Average throughput: 550.56 Mbit/s
95th percentile per-packet one-way delay: 188.803 ms
Loss rate: 3.83%
-- Flow 2:
Average throughput: 493.01 Mbit/s
95th percentile per-packet one-way delay: 221.015 ms
Loss rate: 4.49%
-- Flow 3:
Average throughput: 443.27 Mbit/s
95th percentile per-packet one-way delay: 105.796 ms
Loss rate: 1.70%
```

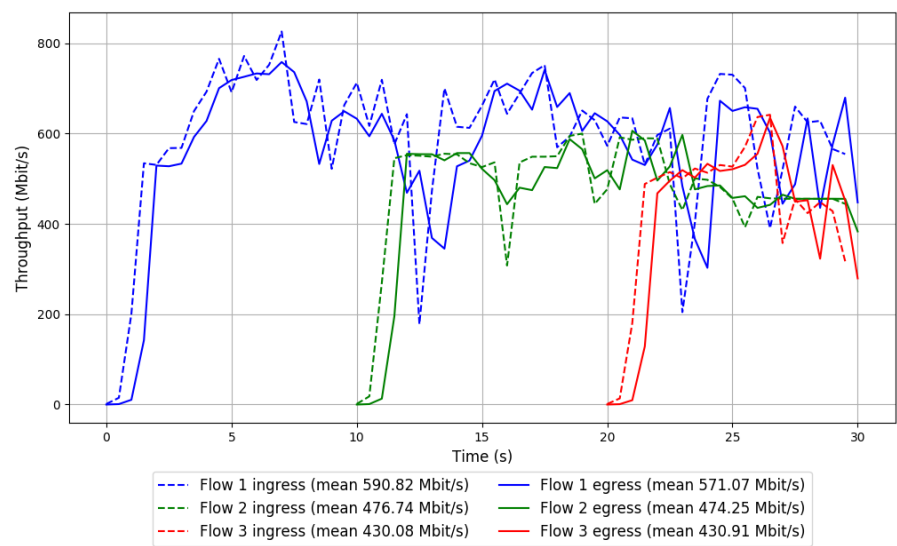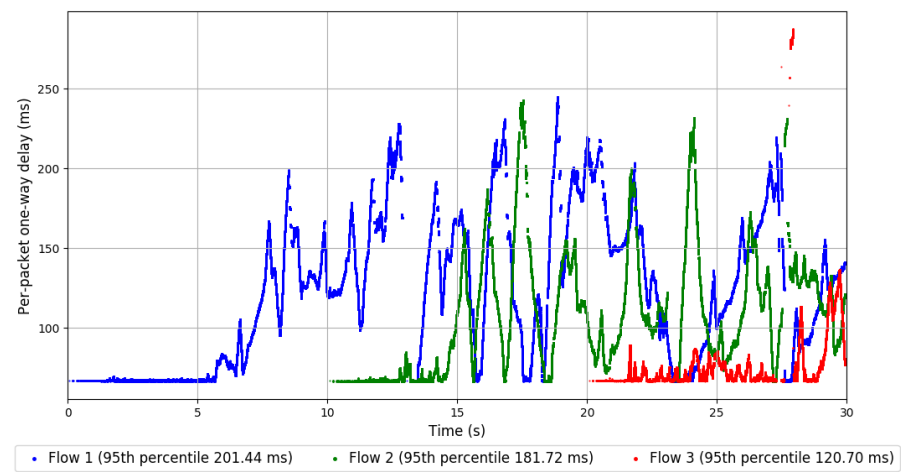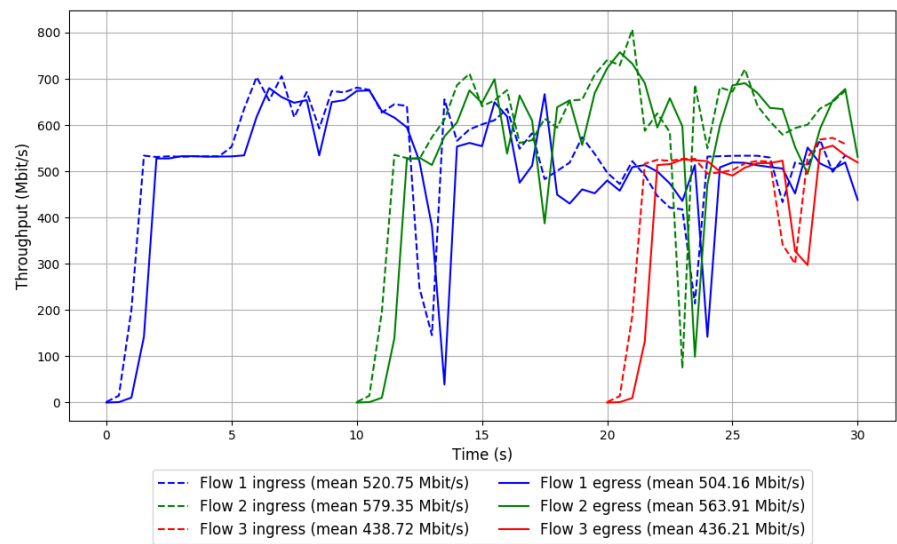Run 1: Report of TCP BBR — Data Link

Flow 1 ingress (mean 570.01 Mbit/s) --- Flow 1 egress (mean 550.56 Mbit/s)
Flow 2 ingress (mean 512.86 Mbit/s) --- Flow 2 egress (mean 493.01 Mbit/s)
Flow 3 ingress (mean 444.82 Mbit/s) --- Flow 3 egress (mean 443.27 Mbit/s)

Flow 1 (95th percentile 188.80 ms)   Flow 2 (95th percentile 221.01 ms)   Flow 3 (95th percentile 105.80 ms)

```
Run 2: Statistics of TCP BBR

Start at: 2018-09-07 22:47:33
End at: 2018-09-07 22:48:03
Local clock offset: -0.009 ms
Remote clock offset: -0.399 ms


# Below is generated by plot.py at 2018-09-08 01:11:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1028.40 Mbit/s
95th percentile per-packet one-way delay: 181.379 ms
Loss rate: 2.63%
-- Flow 1:
Average throughput: 571.07 Mbit/s
95th percentile per-packet one-way delay: 184.758 ms
Loss rate: 3.78%
-- Flow 2:
Average throughput: 474.25 Mbit/s
95th percentile per-packet one-way delay: 178.205 ms
Loss rate: 1.16%
-- Flow 3:
Average throughput: 430.91 Mbit/s
95th percentile per-packet one-way delay: 150.447 ms
Loss rate: 1.16%
```

Run 2: Report of TCP BBR — Data Link

```
Run 3: Statistics of TCP BBR

Start at: 2018-09-07 23:20:29
End at: 2018-09-07 23:20:59
Local clock offset: -0.008 ms
Remote clock offset: -0.665 ms


# Below is generated by plot.py at 2018-09-08 01:11:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1022.74 Mbit/s
95th percentile per-packet one-way delay: 195.134 ms
Loss rate: 3.27%
-- Flow 1:
Average throughput: 504.16 Mbit/s
95th percentile per-packet one-way delay: 201.438 ms
Loss rate: 3.62%
-- Flow 2:
Average throughput: 563.91 Mbit/s
95th percentile per-packet one-way delay: 181.716 ms
Loss rate: 3.32%
-- Flow 3:
Average throughput: 436.21 Mbit/s
95th percentile per-packet one-way delay: 120.697 ms
Loss rate: 1.90%
```
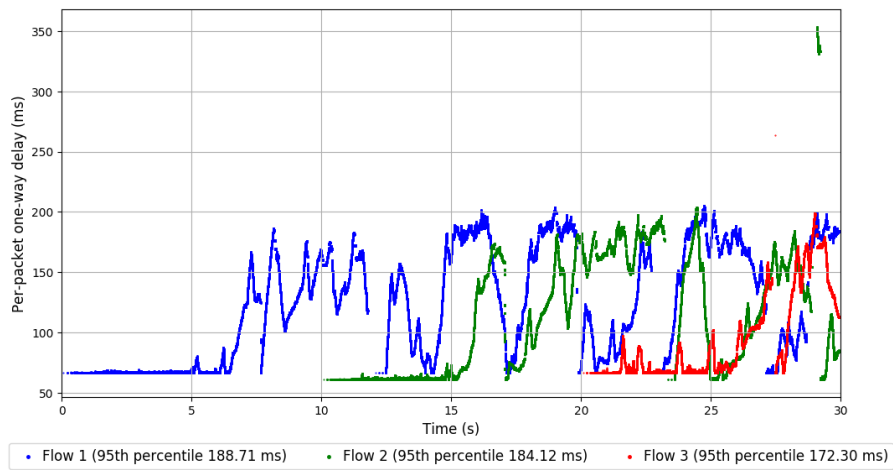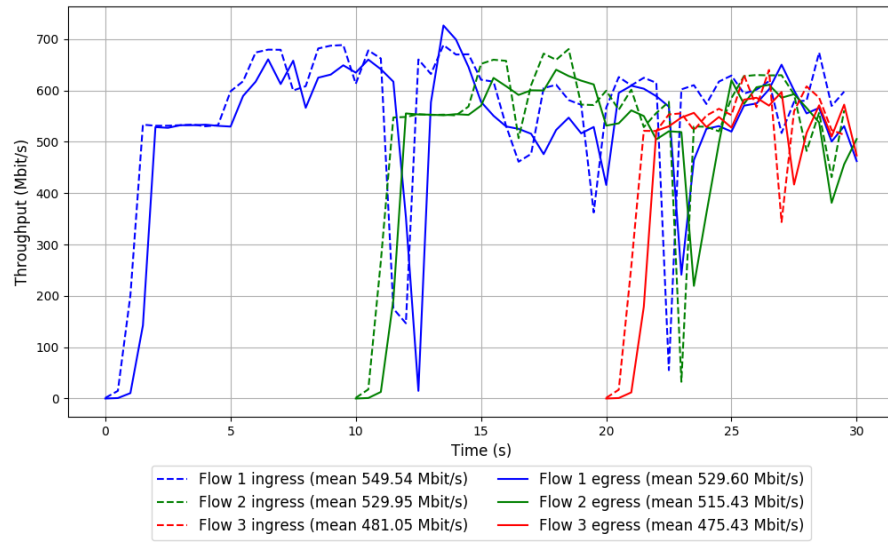
Run 3: Report of TCP BBR — Data Link

Flow 1 ingress (mean 520.75 Mbit/s)   Flow 1 egress (mean 504.16 Mbit/s)
Flow 2 ingress (mean 579.35 Mbit/s)   Flow 2 egress (mean 563.91 Mbit/s)
Flow 3 ingress (mean 438.72 Mbit/s)   Flow 3 egress (mean 436.21 Mbit/s)

Flow 1 (95th percentile 201.44 ms)   Flow 2 (95th percentile 181.72 ms)   Flow 3 (95th percentile 120.70 ms)

```
Run 4: Statistics of TCP BBR

Start at: 2018-09-07 23:53:06
End at: 2018-09-07 23:53:36
Local clock offset: -0.003 ms
Remote clock offset: -0.88 ms


# Below is generated by plot.py at 2018-09-08 01:11:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1028.89 Mbit/s
95th percentile per-packet one-way delay: 186.864 ms
Loss rate: 3.59%
-- Flow 1:
Average throughput: 529.60 Mbit/s
95th percentile per-packet one-way delay: 188.714 ms
Loss rate: 4.06%
-- Flow 2:
Average throughput: 515.43 Mbit/s
95th percentile per-packet one-way delay: 184.115 ms
Loss rate: 3.36%
-- Flow 3:
Average throughput: 475.43 Mbit/s
95th percentile per-packet one-way delay: 172.298 ms
Loss rate: 2.50%
```
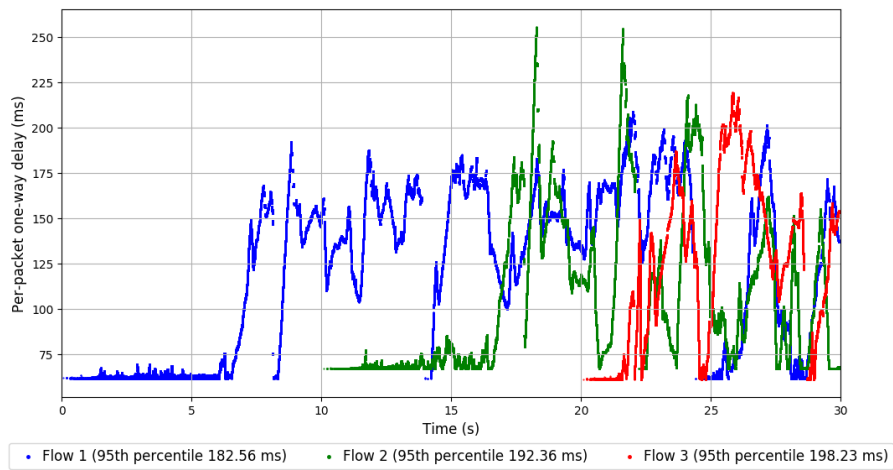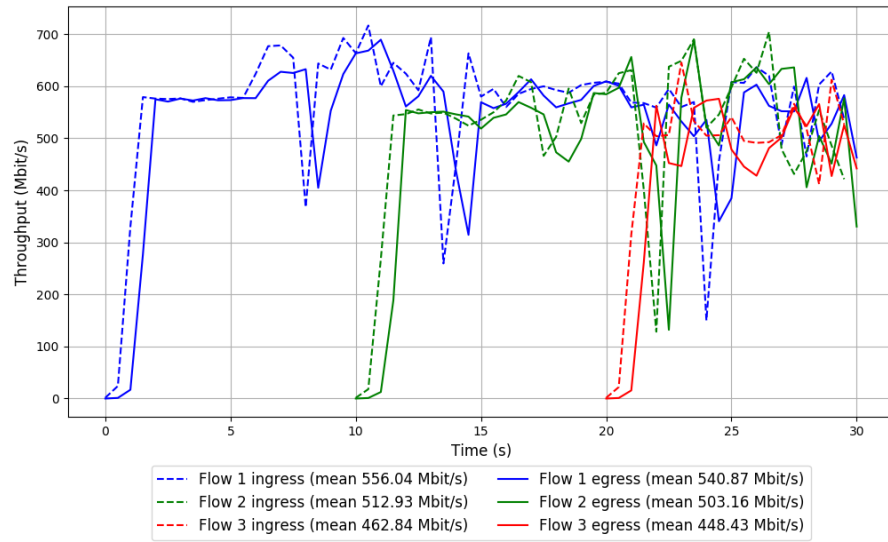
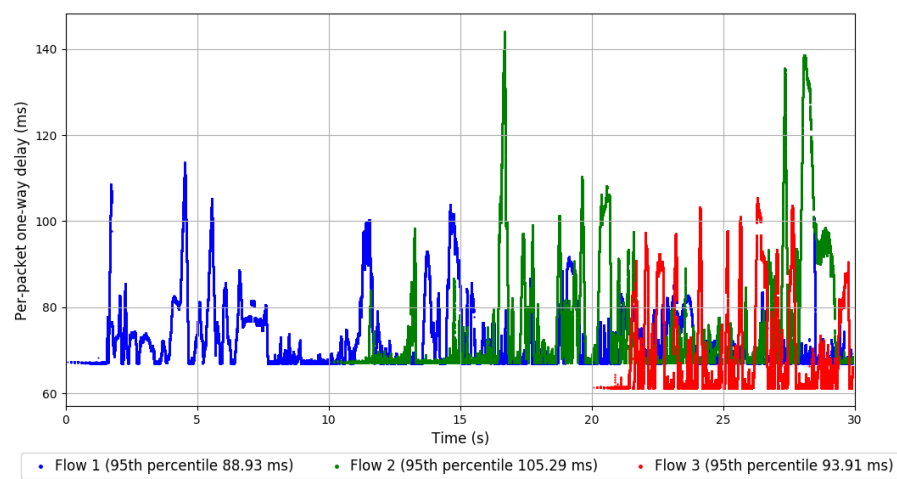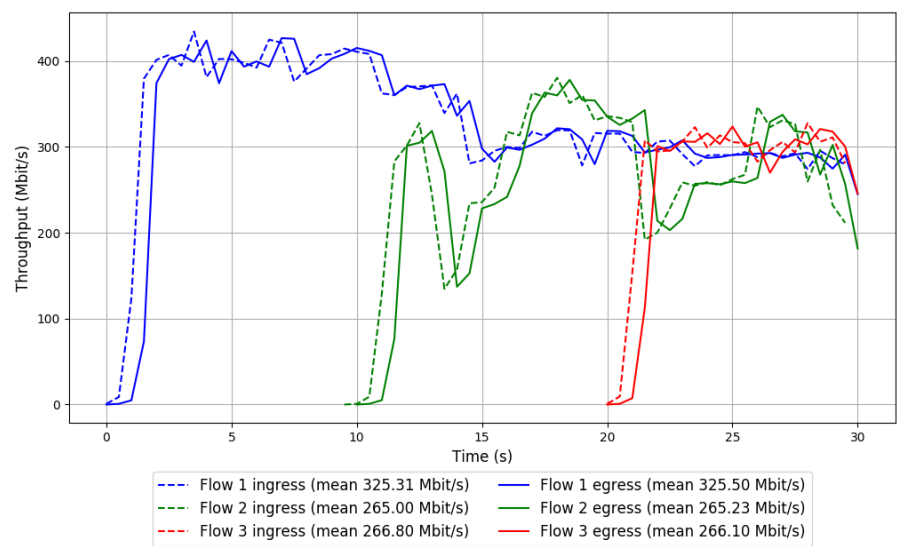Run 4: Report of TCP BBR — Data Link

- - - Flow 1 ingress (mean 549.54 Mbit/s) —— Flow 1 egress (mean 529.60 Mbit/s)
- - - Flow 2 ingress (mean 529.95 Mbit/s) —— Flow 2 egress (mean 515.43 Mbit/s)
- - - Flow 3 ingress (mean 481.05 Mbit/s) —— Flow 3 egress (mean 475.43 Mbit/s)

• Flow 1 (95th percentile 188.71 ms)   • Flow 2 (95th percentile 184.12 ms)   • Flow 3 (95th percentile 172.30 ms)
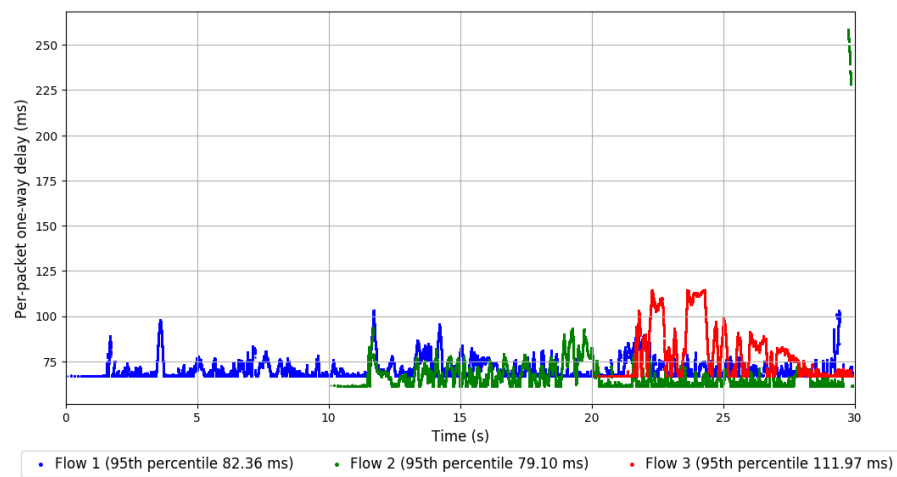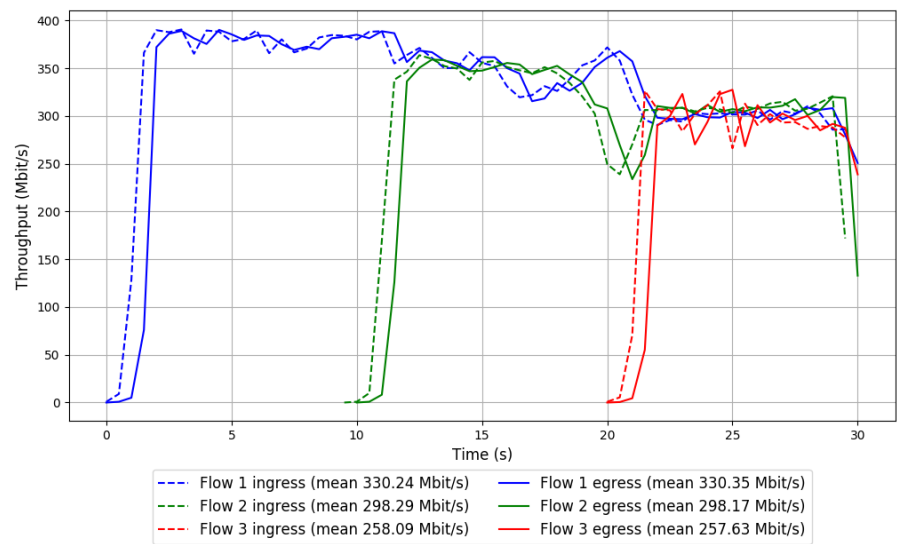
```
Run 5: Statistics of TCP BBR

Start at: 2018-09-08 00:25:43
End at: 2018-09-08 00:26:13
Local clock offset: 0.025 ms
Remote clock offset: -0.73 ms


# Below is generated by plot.py at 2018-09-08 01:11:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1023.06 Mbit/s
95th percentile per-packet one-way delay: 187.641 ms
Loss rate: 3.14%
-- Flow 1:
Average throughput: 540.87 Mbit/s
95th percentile per-packet one-way delay: 182.563 ms
Loss rate: 3.15%
-- Flow 2:
Average throughput: 503.16 Mbit/s
95th percentile per-packet one-way delay: 192.361 ms
Loss rate: 2.57%
-- Flow 3:
Average throughput: 448.43 Mbit/s
95th percentile per-packet one-way delay: 198.229 ms
Loss rate: 4.37%
```

Run 5: Report of TCP BBR — Data Link

Flow 1 ingress (mean 556.04 Mbit/s) --- Flow 1 egress (mean 540.87 Mbit/s)
Flow 2 ingress (mean 512.93 Mbit/s) --- Flow 2 egress (mean 503.16 Mbit/s)
Flow 3 ingress (mean 462.84 Mbit/s) --- Flow 3 egress (mean 448.43 Mbit/s)

Flow 1 (95th percentile 182.56 ms)   Flow 2 (95th percentile 192.36 ms)   Flow 3 (95th percentile 198.23 ms)

14

```
Run 1: Statistics of Copa

Start at: 2018-09-07 22:20:29
End at: 2018-09-07 22:20:59
Local clock offset: -0.04 ms
Remote clock offset: -0.759 ms


# Below is generated by plot.py at 2018-09-08 01:12:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 589.60 Mbit/s
95th percentile per-packet one-way delay: 96.030 ms
Loss rate: 0.60%
-- Flow 1:
Average throughput: 325.50 Mbit/s
95th percentile per-packet one-way delay: 88.930 ms
Loss rate: 0.39%
-- Flow 2:
Average throughput: 265.23 Mbit/s
95th percentile per-packet one-way delay: 105.289 ms
Loss rate: 0.55%
-- Flow 3:
Average throughput: 266.10 Mbit/s
95th percentile per-packet one-way delay: 93.906 ms
Loss rate: 1.48%
```
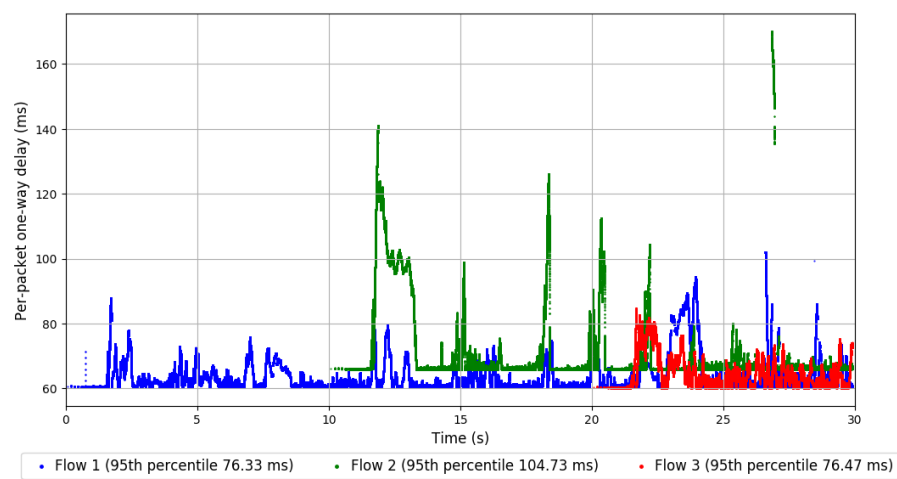
Run 1: Report of Copa — Data Link

```
Run 2: Statistics of Copa

Start at: 2018-09-07 22:53:16
End at: 2018-09-07 22:53:46
Local clock offset: -0.003 ms
Remote clock offset: -0.727 ms


# Below is generated by plot.py at 2018-09-08 01:12:47
# Datalink statistics
-- Total of 3 flows:
Average throughput: 613.47 Mbit/s
95th percentile per-packet one-way delay: 87.691 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 330.35 Mbit/s
95th percentile per-packet one-way delay: 82.359 ms
Loss rate: 0.40%
-- Flow 2:
Average throughput: 298.17 Mbit/s
95th percentile per-packet one-way delay: 79.103 ms
Loss rate: 0.66%
-- Flow 3:
Average throughput: 257.63 Mbit/s
95th percentile per-packet one-way delay: 111.966 ms
Loss rate: 1.51%
```
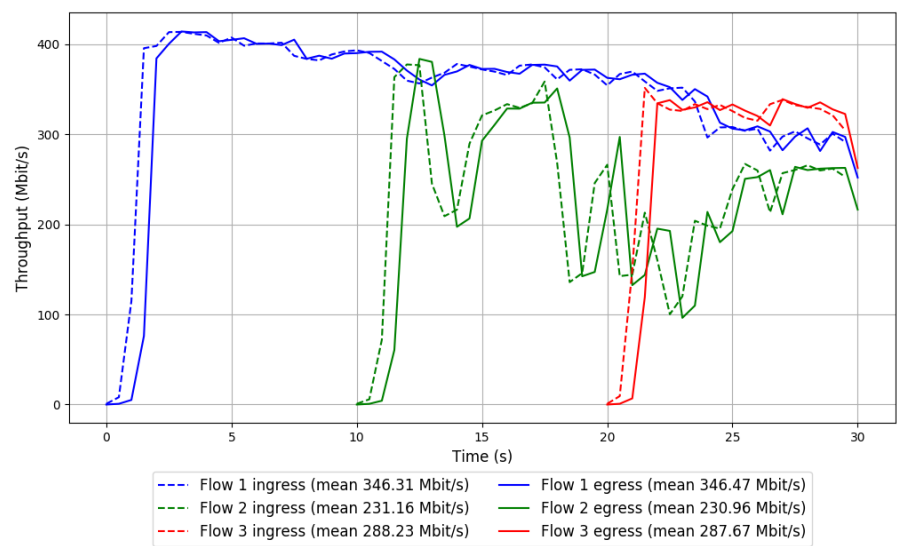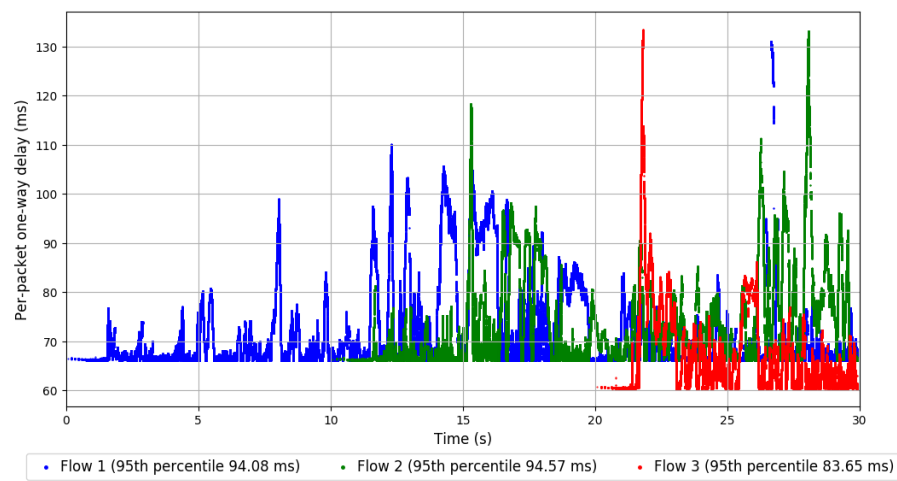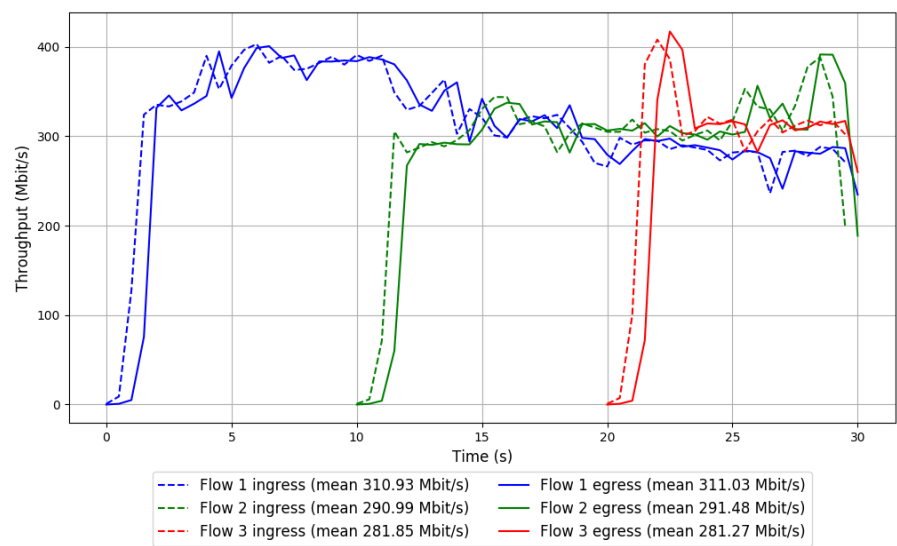
Run 2: Report of Copa — Data Link

Flow 1 ingress (mean 330.24 Mbit/s) — Flow 1 egress (mean 330.35 Mbit/s)
Flow 2 ingress (mean 298.29 Mbit/s) — Flow 2 egress (mean 298.17 Mbit/s)
Flow 3 ingress (mean 258.09 Mbit/s) — Flow 3 egress (mean 257.63 Mbit/s)

Flow 1 (95th percentile 82.36 ms) • Flow 2 (95th percentile 79.10 ms) • Flow 3 (95th percentile 111.97 ms)

```
Run 3: Statistics of Copa

Start at: 2018-09-07 23:26:13
End at: 2018-09-07 23:26:43
Local clock offset: 0.022 ms
Remote clock offset: 0.303 ms

# Below is generated by plot.py at 2018-09-08 01:12:47
# Datalink statistics
-- Total of 3 flows:
Average throughput: 594.69 Mbit/s
95th percentile per-packet one-way delay: 86.140 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 346.47 Mbit/s
95th percentile per-packet one-way delay: 76.330 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 230.96 Mbit/s
95th percentile per-packet one-way delay: 104.731 ms
Loss rate: 0.76%
-- Flow 3:
Average throughput: 287.67 Mbit/s
95th percentile per-packet one-way delay: 76.471 ms
Loss rate: 1.42%
```
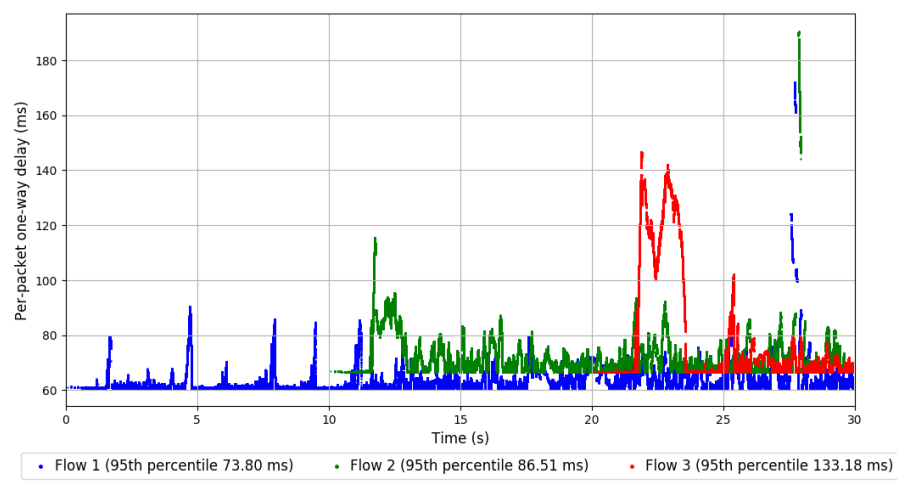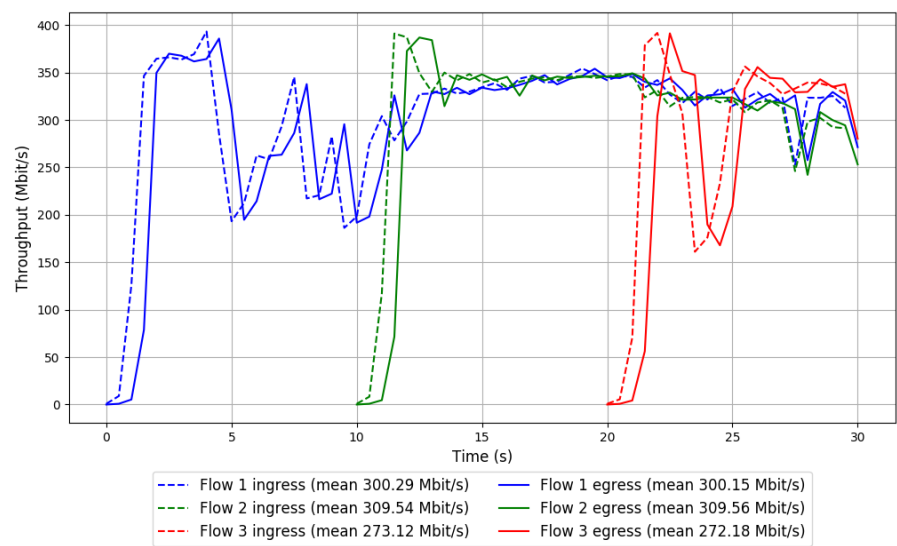
Run 3: Report of Copa — Data Link

Flow 1 ingress (mean 346.31 Mbit/s) --- Flow 1 egress (mean 346.47 Mbit/s)
Flow 2 ingress (mean 231.16 Mbit/s) --- Flow 2 egress (mean 230.96 Mbit/s)
Flow 3 ingress (mean 288.23 Mbit/s) --- Flow 3 egress (mean 287.67 Mbit/s)

Flow 1 (95th percentile 76.33 ms)   Flow 2 (95th percentile 104.73 ms)   Flow 3 (95th percentile 76.47 ms)

```
Run 4: Statistics of Copa

Start at: 2018-09-07 23:58:54
End at: 2018-09-07 23:59:24
Local clock offset: 0.012 ms
Remote clock offset: -0.065 ms


# Below is generated by plot.py at 2018-09-08 01:29:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 597.43 Mbit/s
95th percentile per-packet one-way delay: 93.476 ms
Loss rate: 0.60%
-- Flow 1:
Average throughput: 311.03 Mbit/s
95th percentile per-packet one-way delay: 94.083 ms
Loss rate: 0.39%
-- Flow 2:
Average throughput: 291.48 Mbit/s
95th percentile per-packet one-way delay: 94.569 ms
Loss rate: 0.50%
-- Flow 3:
Average throughput: 281.27 Mbit/s
95th percentile per-packet one-way delay: 83.652 ms
Loss rate: 1.47%
```
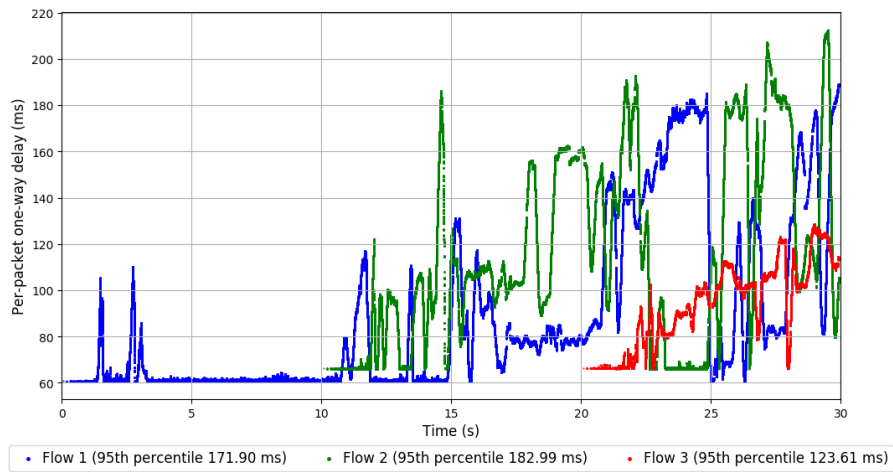
Run 4: Report of Copa — Data Link

```
Run 5: Statistics of Copa

Start at: 2018-09-08 00:31:27
End at: 2018-09-08 00:31:57
Local clock offset: -0.038 ms
Remote clock offset: -0.241 ms


# Below is generated by plot.py at 2018-09-08 01:29:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 595.50 Mbit/s
95th percentile per-packet one-way delay: 91.109 ms
Loss rate: 0.71%
-- Flow 1:
Average throughput: 300.15 Mbit/s
95th percentile per-packet one-way delay: 73.795 ms
Loss rate: 0.47%
-- Flow 2:
Average throughput: 309.56 Mbit/s
95th percentile per-packet one-way delay: 86.512 ms
Loss rate: 0.64%
-- Flow 3:
Average throughput: 272.18 Mbit/s
95th percentile per-packet one-way delay: 133.184 ms
Loss rate: 1.69%
```
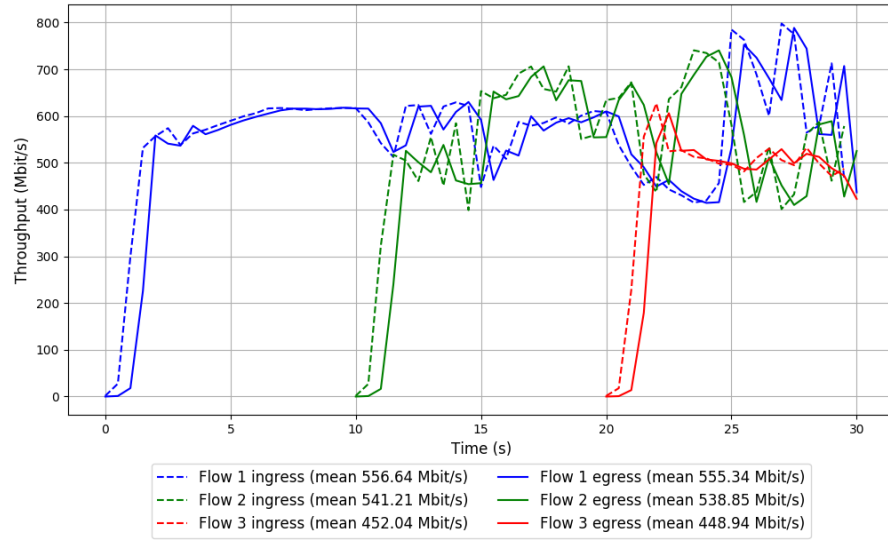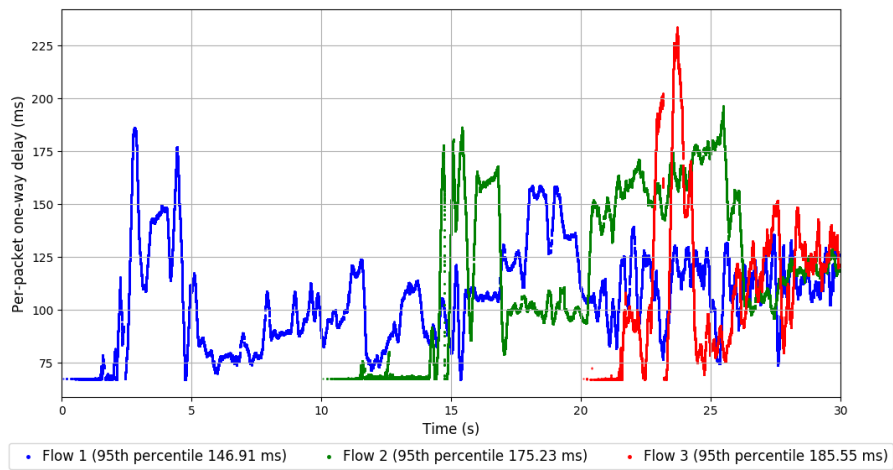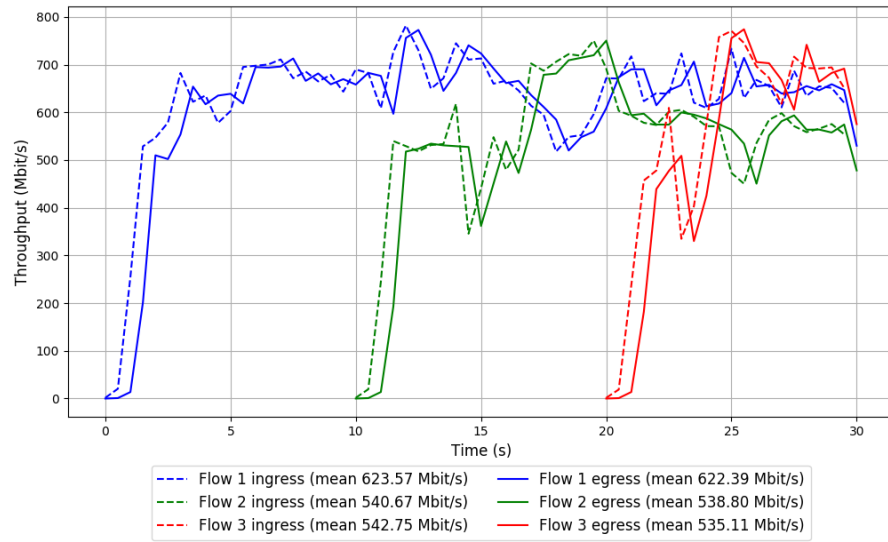
Run 5: Report of Copa — Data Link

Flow 1 ingress (mean 300.29 Mbit/s)   Flow 1 egress (mean 300.15 Mbit/s)
Flow 2 ingress (mean 309.54 Mbit/s)   Flow 2 egress (mean 309.56 Mbit/s)
Flow 3 ingress (mean 273.12 Mbit/s)   Flow 3 egress (mean 272.18 Mbit/s)

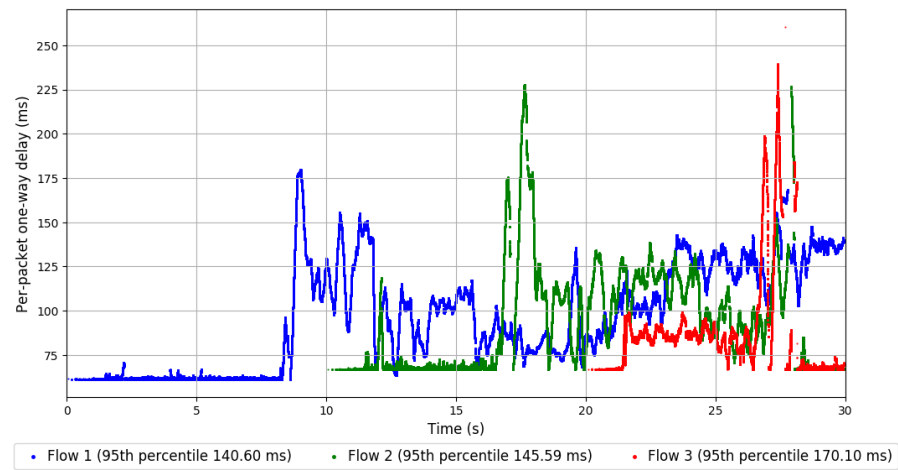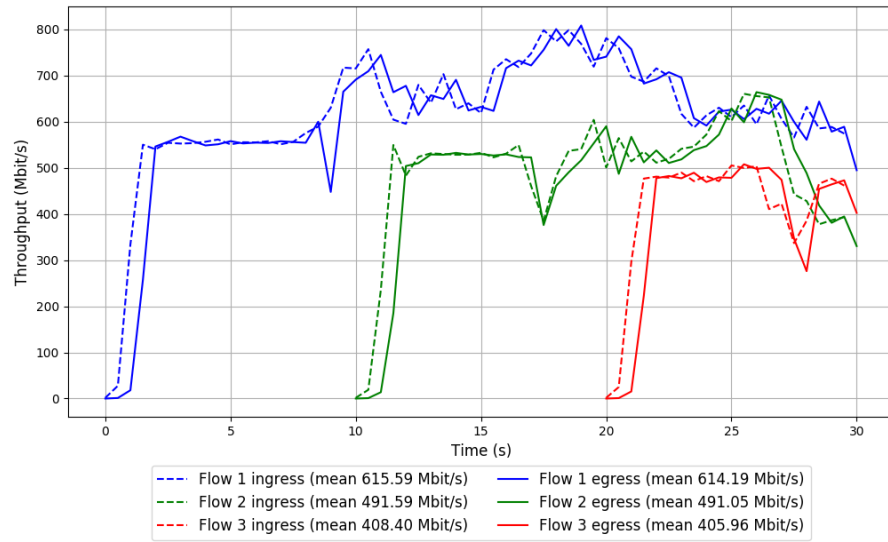Flow 1 (95th percentile 73.80 ms)   Flow 2 (95th percentile 86.51 ms)   Flow 3 (95th percentile 133.18 ms)

```
Run 1: Statistics of TCP Cubic

Start at: 2018-09-07 22:05:33
End at: 2018-09-07 22:06:03
Local clock offset: -0.043 ms
Remote clock offset: 0.082 ms


# Below is generated by plot.py at 2018-09-08 01:29:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1061.28 Mbit/s
95th percentile per-packet one-way delay: 176.093 ms
Loss rate: 1.00%
-- Flow 1:
Average throughput: 555.34 Mbit/s
95th percentile per-packet one-way delay: 171.903 ms
Loss rate: 0.66%
-- Flow 2:
Average throughput: 538.85 Mbit/s
95th percentile per-packet one-way delay: 182.988 ms
Loss rate: 1.10%
-- Flow 3:
Average throughput: 448.94 Mbit/s
95th percentile per-packet one-way delay: 123.611 ms
Loss rate: 2.01%
```

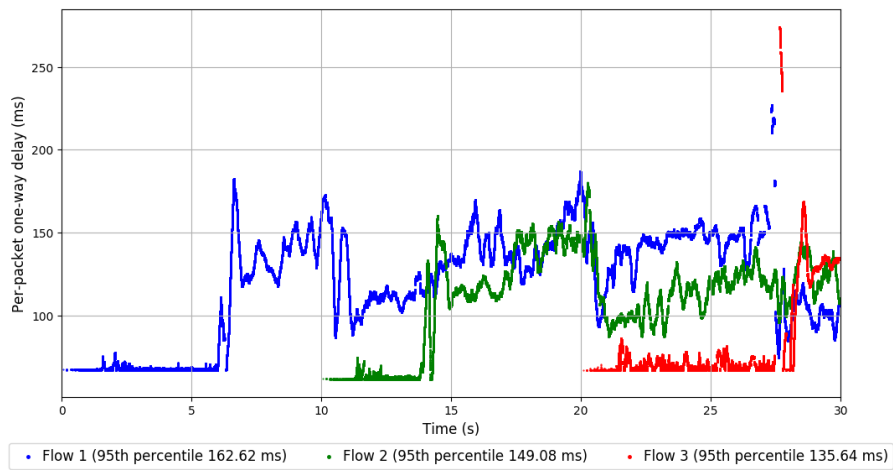Run 1: Report of TCP Cubic — Data Link

```
Run 2: Statistics of TCP Cubic

Start at: 2018-09-07 22:37:49
End at: 2018-09-07 22:38:19
Local clock offset: -0.027 ms
Remote clock offset: -1.036 ms


# Below is generated by plot.py at 2018-09-08 01:30:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1156.96 Mbit/s
95th percentile per-packet one-way delay: 165.232 ms
Loss rate: 1.07%
-- Flow 1:
Average throughput: 622.39 Mbit/s
95th percentile per-packet one-way delay: 146.910 ms
Loss rate: 0.63%
-- Flow 2:
Average throughput: 538.80 Mbit/s
95th percentile per-packet one-way delay: 175.226 ms
Loss rate: 1.01%
-- Flow 3:
Average throughput: 535.11 Mbit/s
95th percentile per-packet one-way delay: 185.547 ms
Loss rate: 2.71%
```

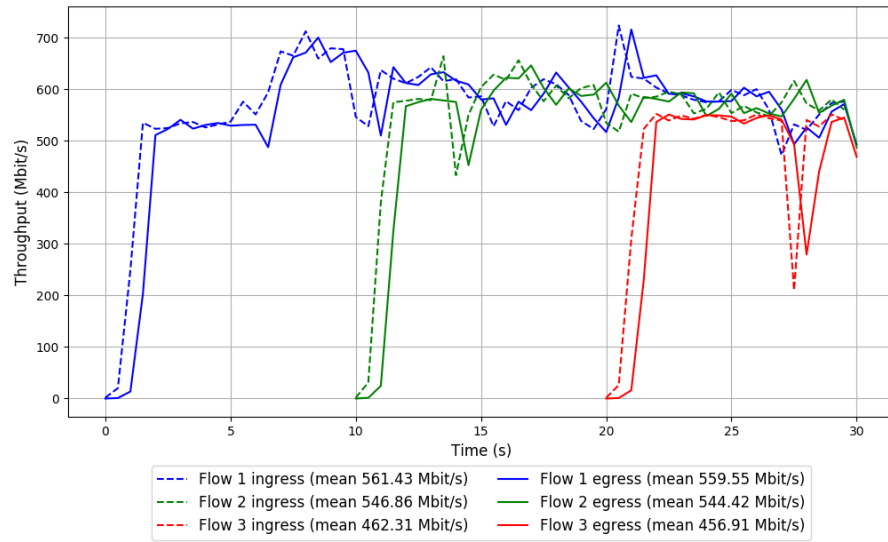Run 2: Report of TCP Cubic — Data Link

```
Run 3: Statistics of TCP Cubic

Start at: 2018-09-07 23:10:43
End at: 2018-09-07 23:11:13
Local clock offset: -0.027 ms
Remote clock offset: -0.566 ms


# Below is generated by plot.py at 2018-09-08 01:30:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1074.26 Mbit/s
95th percentile per-packet one-way delay: 143.648 ms
Loss rate: 0.84%
-- Flow 1:
Average throughput: 614.19 Mbit/s
95th percentile per-packet one-way delay: 140.597 ms
Loss rate: 0.65%
-- Flow 2:
Average throughput: 491.05 Mbit/s
95th percentile per-packet one-way delay: 145.593 ms
Loss rate: 0.78%
-- Flow 3:
Average throughput: 405.96 Mbit/s
95th percentile per-packet one-way delay: 170.105 ms
Loss rate: 1.87%
```

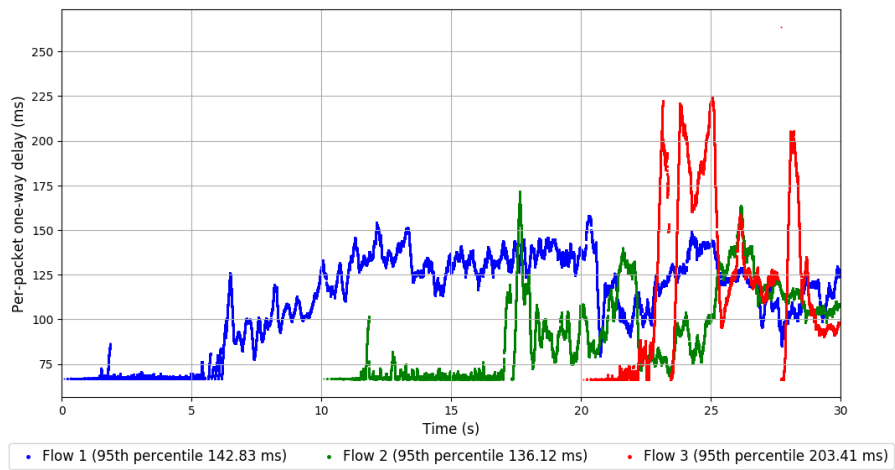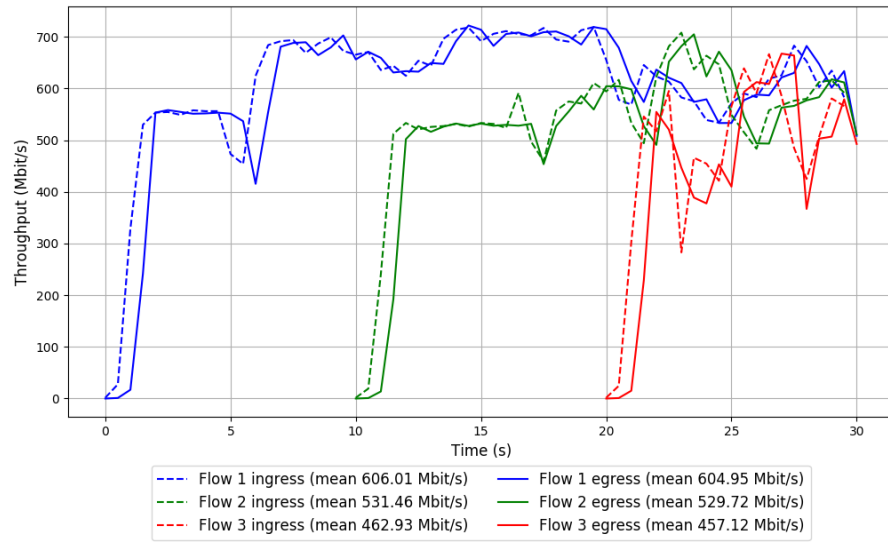## Run 3: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 615.59 Mbit/s) — — — Flow 1 egress (mean 614.19 Mbit/s)
Flow 2 ingress (mean 491.59 Mbit/s) — — — Flow 2 egress (mean 491.05 Mbit/s)
Flow 3 ingress (mean 408.40 Mbit/s) — — — Flow 3 egress (mean 405.96 Mbit/s)

Flow 1 (95th percentile 140.60 ms)   Flow 2 (95th percentile 145.59 ms)   Flow 3 (95th percentile 170.10 ms)

```
Run 4: Statistics of TCP Cubic

Start at: 2018-09-07 23:43:32
End at: 2018-09-07 23:44:02
Local clock offset: -0.003 ms
Remote clock offset: -1.076 ms


# Below is generated by plot.py at 2018-09-08 01:30:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1072.29 Mbit/s
95th percentile per-packet one-way delay: 156.291 ms
Loss rate: 1.11%
-- Flow 1:
Average throughput: 559.55 Mbit/s
95th percentile per-packet one-way delay: 162.619 ms
Loss rate: 0.78%
-- Flow 2:
Average throughput: 544.42 Mbit/s
95th percentile per-packet one-way delay: 149.081 ms
Loss rate: 1.05%
-- Flow 3:
Average throughput: 456.91 Mbit/s
95th percentile per-packet one-way delay: 135.636 ms
Loss rate: 2.43%
```

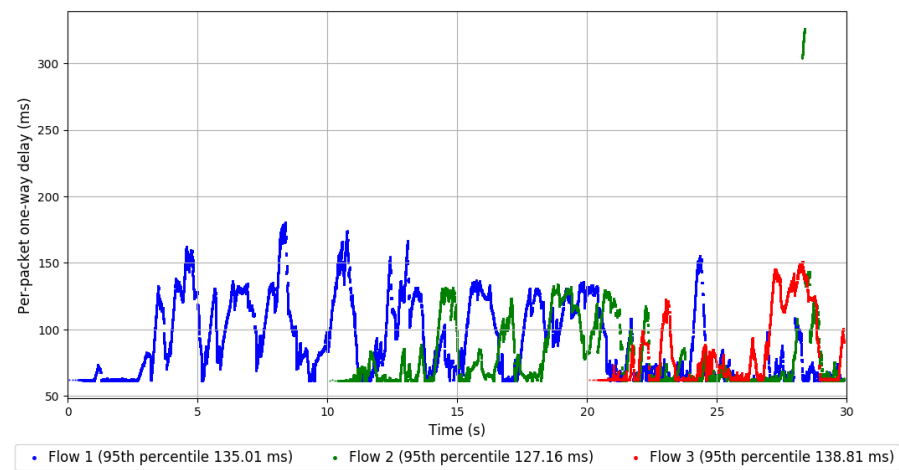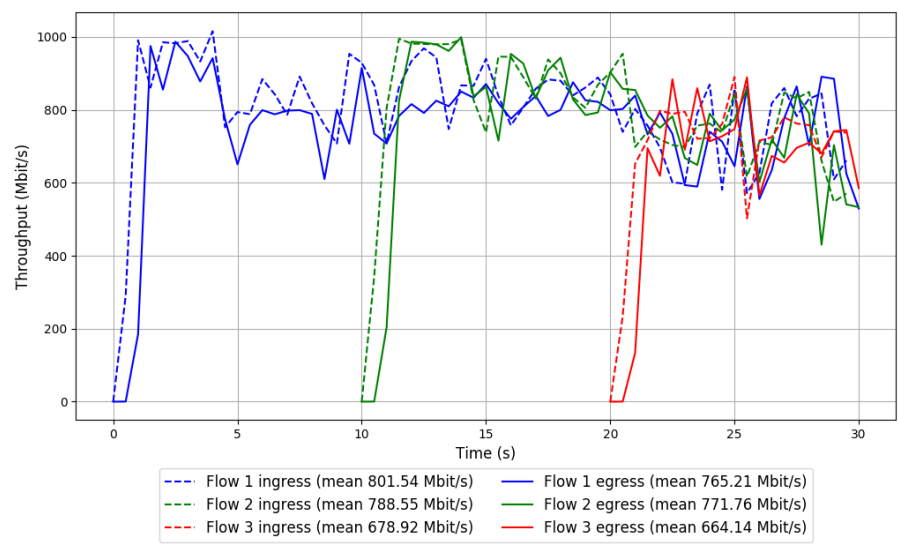## Run 4: Report of TCP Cubic — Data Link

- - - - Flow 1 ingress (mean 561.43 Mbit/s)   —— Flow 1 egress (mean 559.55 Mbit/s)
- - - - Flow 2 ingress (mean 546.86 Mbit/s)   —— Flow 2 egress (mean 544.42 Mbit/s)
- - - - Flow 3 ingress (mean 462.31 Mbit/s)   —— Flow 3 egress (mean 456.91 Mbit/s)

- Flow 1 (95th percentile 162.62 ms)   • Flow 2 (95th percentile 149.08 ms)   • Flow 3 (95th percentile 135.64 ms)

```
Run 5: Statistics of TCP Cubic

Start at: 2018-09-08 00:16:13
End at: 2018-09-08 00:16:43
Local clock offset: 0.003 ms
Remote clock offset: -0.519 ms


# Below is generated by plot.py at 2018-09-08 01:30:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1107.64 Mbit/s
95th percentile per-packet one-way delay: 147.682 ms
Loss rate: 0.99%
-- Flow 1:
Average throughput: 604.95 Mbit/s
95th percentile per-packet one-way delay: 142.826 ms
Loss rate: 0.60%
-- Flow 2:
Average throughput: 529.72 Mbit/s
95th percentile per-packet one-way delay: 136.119 ms
Loss rate: 0.99%
-- Flow 3:
Average throughput: 457.12 Mbit/s
95th percentile per-packet one-way delay: 203.415 ms
Loss rate: 2.52%
```
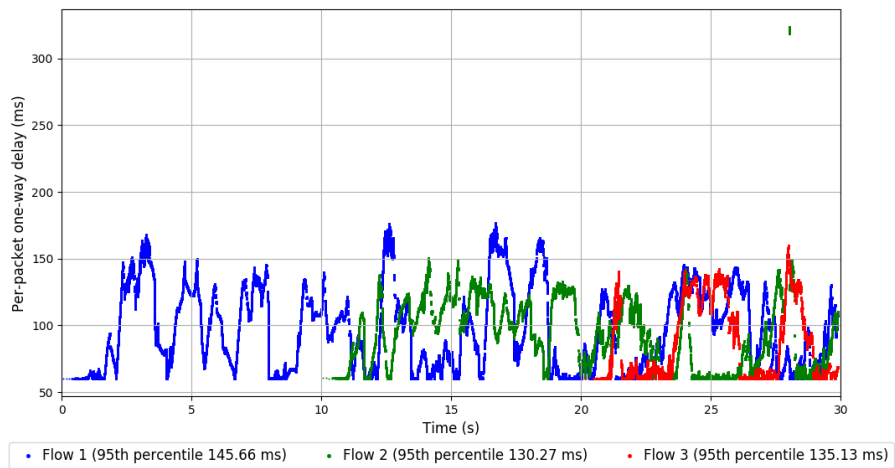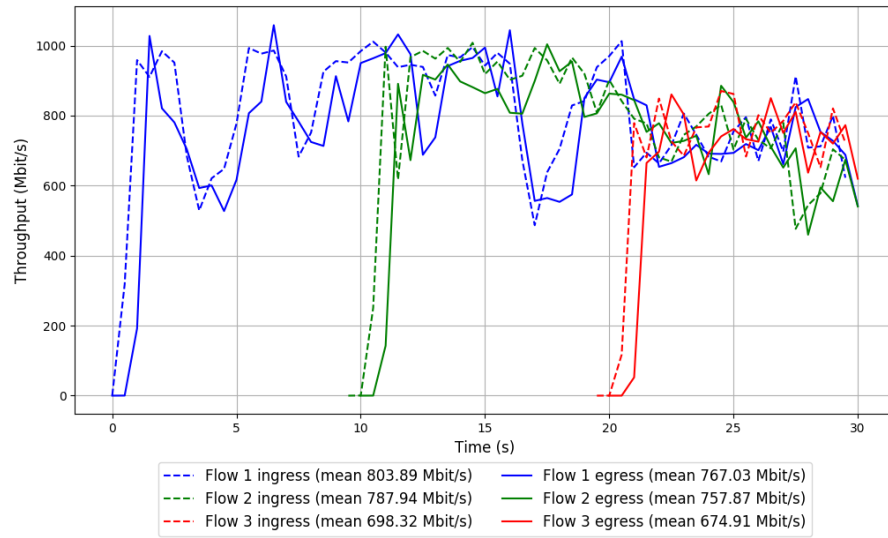
Run 5: Report of TCP Cubic — Data Link

- - - Flow 1 ingress (mean 606.01 Mbit/s) —— Flow 1 egress (mean 604.95 Mbit/s)
- - - Flow 2 ingress (mean 531.46 Mbit/s) —— Flow 2 egress (mean 529.72 Mbit/s)
- - - Flow 3 ingress (mean 462.93 Mbit/s) —— Flow 3 egress (mean 457.12 Mbit/s)

• Flow 1 (95th percentile 142.83 ms)   • Flow 2 (95th percentile 136.12 ms)   • Flow 3 (95th percentile 203.41 ms)
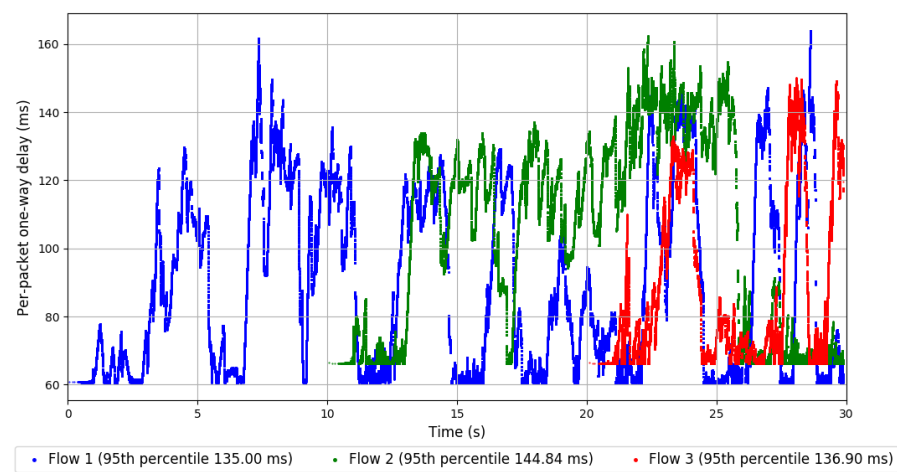
```
Run 1: Statistics of FillP

Start at: 2018-09-07 22:17:01
End at: 2018-09-07 22:17:31
Local clock offset: -0.023 ms
Remote clock offset: -1.152 ms


# Below is generated by plot.py at 2018-09-08 01:41:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1495.94 Mbit/s
95th percentile per-packet one-way delay: 132.663 ms
Loss rate: 3.98%
-- Flow 1:
Average throughput: 765.21 Mbit/s
95th percentile per-packet one-way delay: 135.014 ms
Loss rate: 4.94%
-- Flow 2:
Average throughput: 771.76 Mbit/s
95th percentile per-packet one-way delay: 127.159 ms
Loss rate: 2.76%
-- Flow 3:
Average throughput: 664.14 Mbit/s
95th percentile per-packet one-way delay: 138.809 ms
Loss rate: 3.41%
```
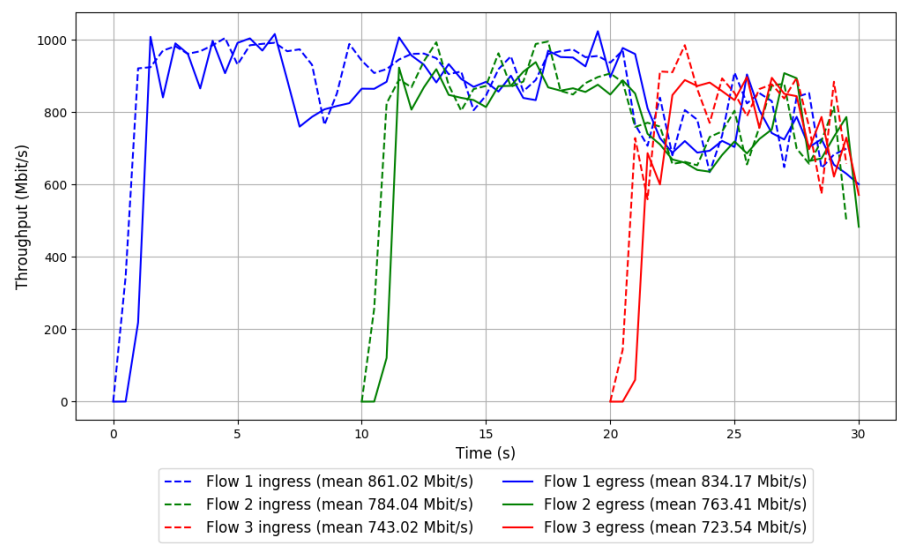
Run 1: Report of FillP — Data Link

Flow 1 ingress (mean 801.54 Mbit/s)   Flow 1 egress (mean 765.21 Mbit/s)
Flow 2 ingress (mean 788.55 Mbit/s)   Flow 2 egress (mean 771.76 Mbit/s)
Flow 3 ingress (mean 678.92 Mbit/s)   Flow 3 egress (mean 664.14 Mbit/s)

Flow 1 (95th percentile 135.01 ms)   Flow 2 (95th percentile 127.16 ms)   Flow 3 (95th percentile 138.81 ms)
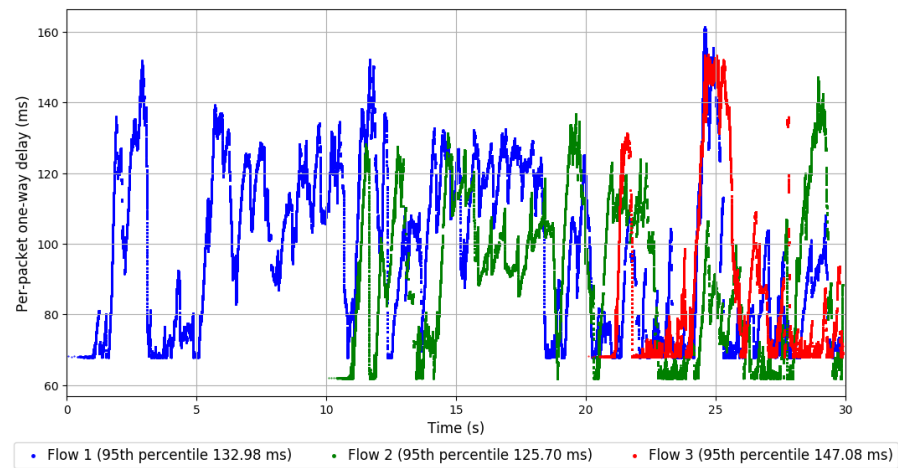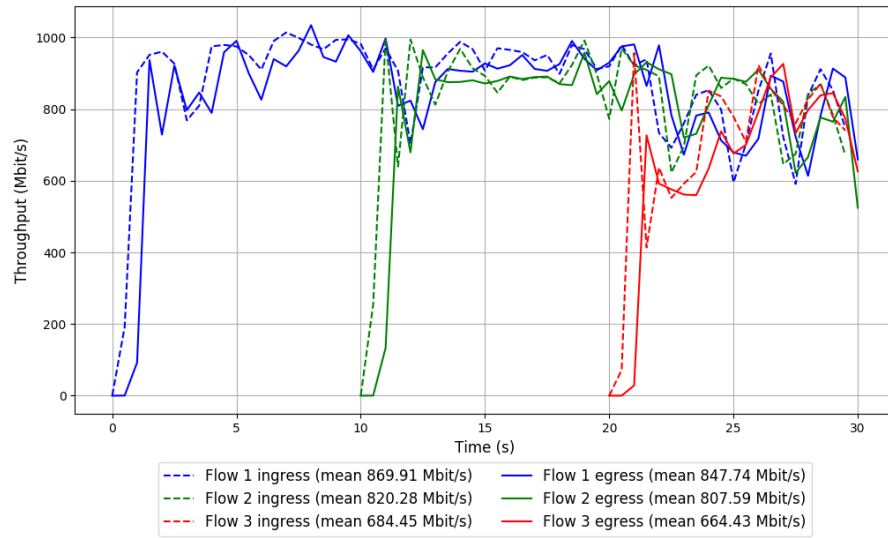
```
Run 2: Statistics of FillP

Start at: 2018-09-07 22:49:44
End at: 2018-09-07 22:50:14
Local clock offset: -0.03 ms
Remote clock offset: 0.223 ms

# Below is generated by plot.py at 2018-09-08 01:59:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1493.19 Mbit/s
95th percentile per-packet one-way delay: 138.728 ms
Loss rate: 4.78%
-- Flow 1:
Average throughput: 767.03 Mbit/s
95th percentile per-packet one-way delay: 145.659 ms
Loss rate: 5.01%
-- Flow 2:
Average throughput: 757.87 Mbit/s
95th percentile per-packet one-way delay: 130.271 ms
Loss rate: 4.47%
-- Flow 3:
Average throughput: 674.91 Mbit/s
95th percentile per-packet one-way delay: 135.130 ms
Loss rate: 4.66%
```

Run 2: Report of FillP — Data Link

- - - - Flow 1 ingress (mean 803.89 Mbit/s)   —— Flow 1 egress (mean 767.03 Mbit/s)
- - - - Flow 2 ingress (mean 787.94 Mbit/s)   —— Flow 2 egress (mean 757.87 Mbit/s)
- - - - Flow 3 ingress (mean 698.32 Mbit/s)   —— Flow 3 egress (mean 674.91 Mbit/s)

- Flow 1 (95th percentile 145.66 ms)   • Flow 2 (95th percentile 130.27 ms)   • Flow 3 (95th percentile 135.13 ms)

```
Run 3: Statistics of FillP

Start at: 2018-09-07 23:22:39
End at: 2018-09-07 23:23:09
Local clock offset: -0.009 ms
Remote clock offset: -0.13 ms


# Below is generated by plot.py at 2018-09-08 02:01:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1579.01 Mbit/s
95th percentile per-packet one-way delay: 139.771 ms
Loss rate: 3.51%
-- Flow 1:
Average throughput: 834.17 Mbit/s
95th percentile per-packet one-way delay: 135.003 ms
Loss rate: 3.53%
-- Flow 2:
Average throughput: 763.41 Mbit/s
95th percentile per-packet one-way delay: 144.839 ms
Loss rate: 3.29%
-- Flow 3:
Average throughput: 723.54 Mbit/s
95th percentile per-packet one-way delay: 136.898 ms
Loss rate: 3.93%
```
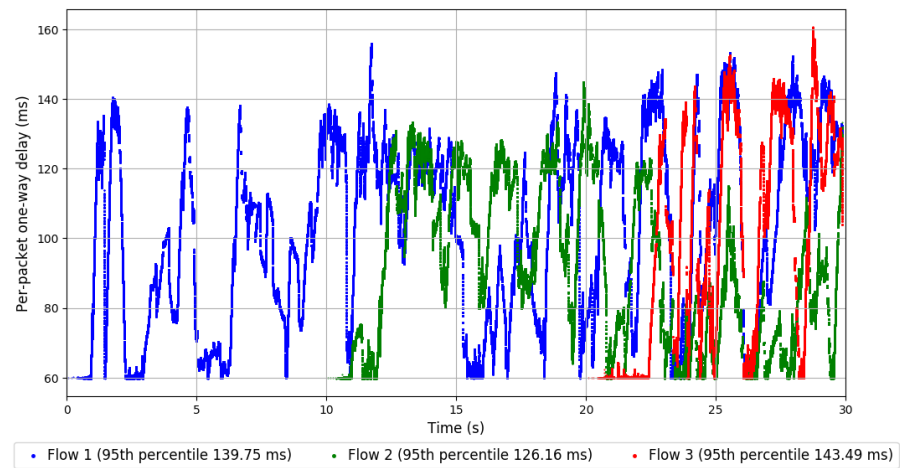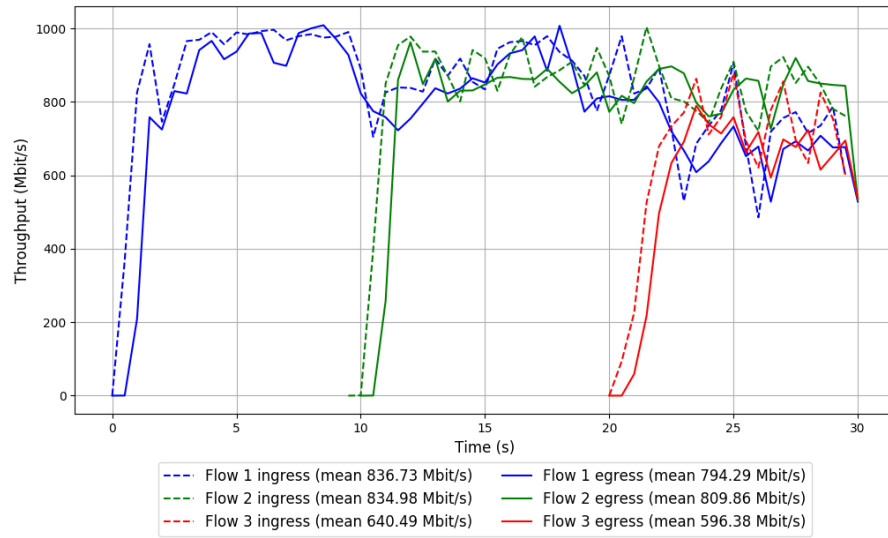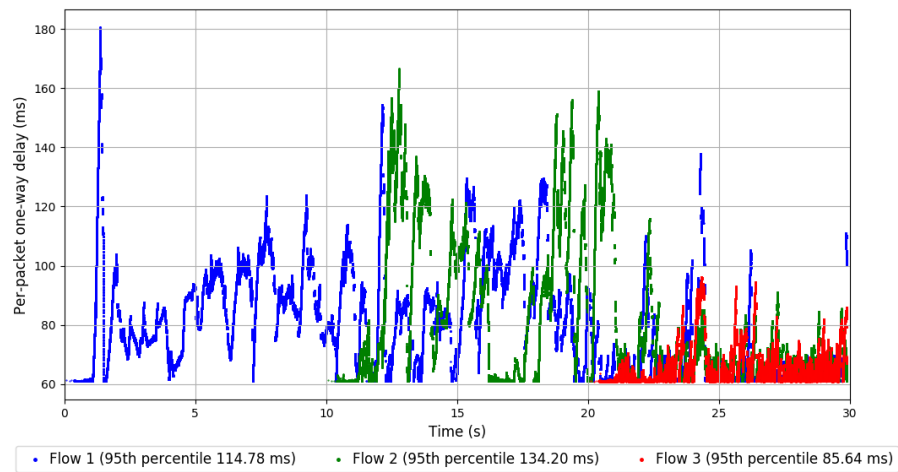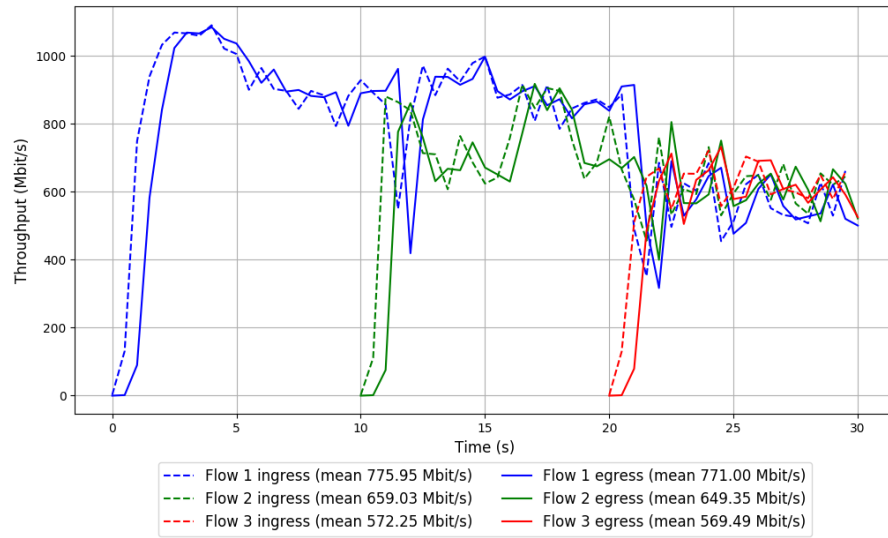
Run 3: Report of FillP — Data Link

- - - - Flow 1 ingress (mean 861.02 Mbit/s)   —— Flow 1 egress (mean 834.17 Mbit/s)
- - - - Flow 2 ingress (mean 784.04 Mbit/s)   —— Flow 2 egress (mean 763.41 Mbit/s)
- - - - Flow 3 ingress (mean 743.02 Mbit/s)   —— Flow 3 egress (mean 723.54 Mbit/s)

• Flow 1 (95th percentile 135.00 ms)   • Flow 2 (95th percentile 144.84 ms)   • Flow 3 (95th percentile 136.90 ms)
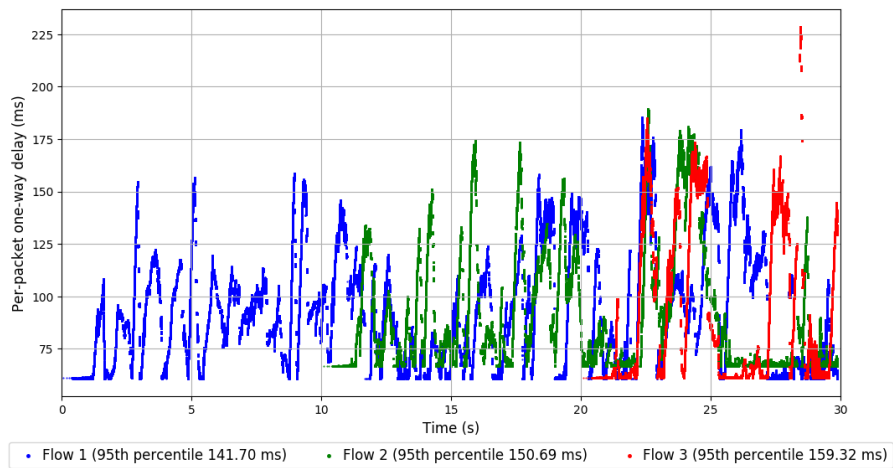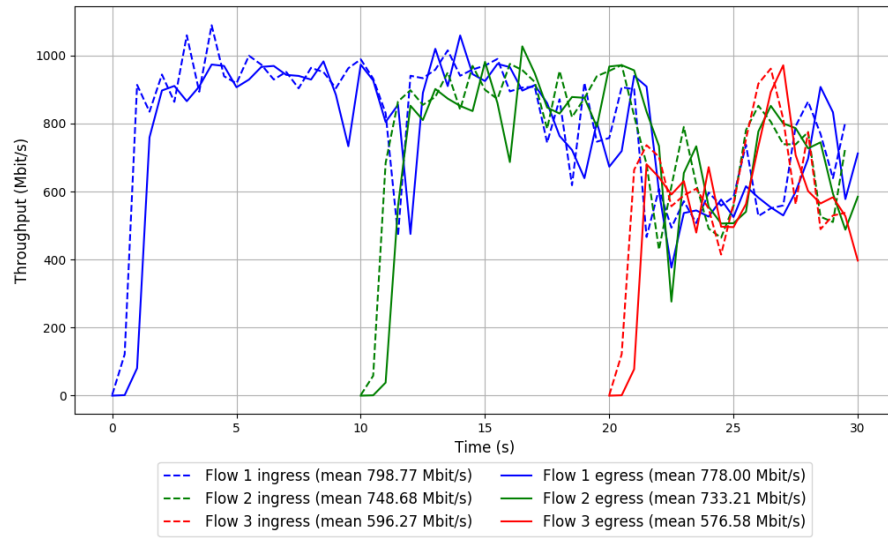
```
Run 4: Statistics of FillP

Start at: 2018-09-07 23:55:18
End at: 2018-09-07 23:55:48
Local clock offset: -0.015 ms
Remote clock offset: -1.788 ms


# Below is generated by plot.py at 2018-09-08 02:02:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1602.34 Mbit/s
95th percentile per-packet one-way delay: 132.401 ms
Loss rate: 2.89%
-- Flow 1:
Average throughput: 847.74 Mbit/s
95th percentile per-packet one-way delay: 132.977 ms
Loss rate: 2.99%
-- Flow 2:
Average throughput: 807.59 Mbit/s
95th percentile per-packet one-way delay: 125.701 ms
Loss rate: 2.18%
-- Flow 3:
Average throughput: 664.43 Mbit/s
95th percentile per-packet one-way delay: 147.078 ms
Loss rate: 4.22%
```

Run 4: Report of FillP — Data Link

Flow 1 ingress (mean 869.91 Mbit/s)   Flow 1 egress (mean 847.74 Mbit/s)
Flow 2 ingress (mean 820.28 Mbit/s)   Flow 2 egress (mean 807.59 Mbit/s)
Flow 3 ingress (mean 684.45 Mbit/s)   Flow 3 egress (mean 664.43 Mbit/s)

Flow 1 (95th percentile 132.98 ms)   Flow 2 (95th percentile 125.70 ms)   Flow 3 (95th percentile 147.08 ms)

42

```
Run 5: Statistics of FillP

Start at: 2018-09-08 00:27:55
End at: 2018-09-08 00:28:25
Local clock offset: -0.027 ms
Remote clock offset: 0.696 ms


# Below is generated by plot.py at 2018-09-08 02:02:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1528.72 Mbit/s
95th percentile per-packet one-way delay: 138.399 ms
Loss rate: 5.18%
-- Flow 1:
Average throughput: 794.29 Mbit/s
95th percentile per-packet one-way delay: 139.752 ms
Loss rate: 5.48%
-- Flow 2:
Average throughput: 809.86 Mbit/s
95th percentile per-packet one-way delay: 126.162 ms
Loss rate: 3.63%
-- Flow 3:
Average throughput: 596.38 Mbit/s
95th percentile per-packet one-way delay: 143.493 ms
Loss rate: 8.09%
```
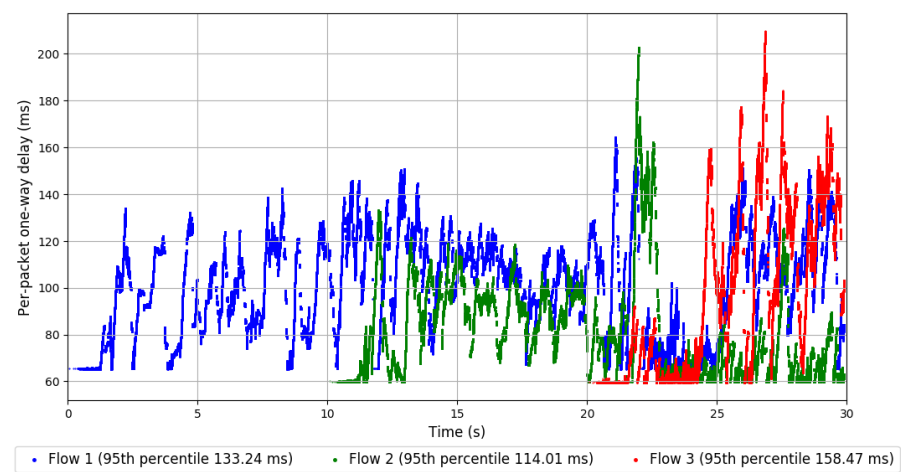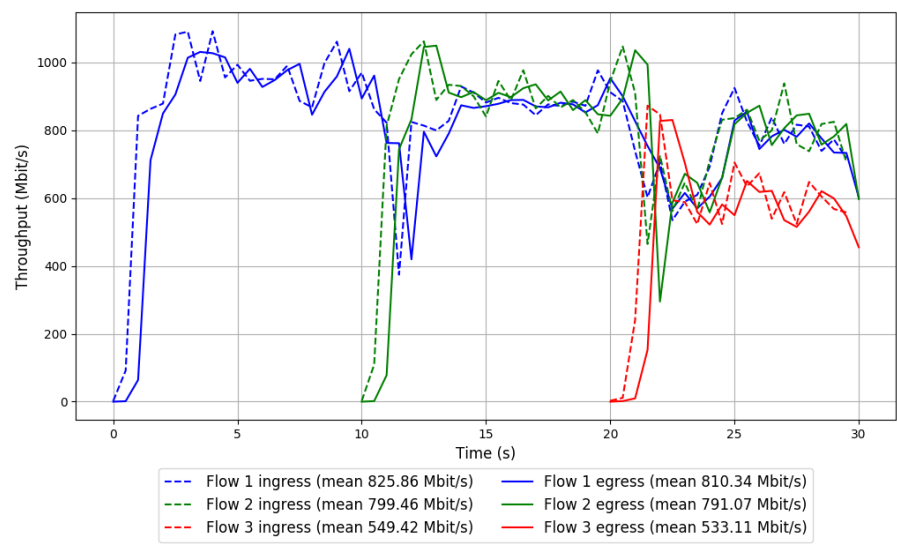
Run 5: Report of FillP — Data Link

Flow 1 ingress (mean 836.73 Mbit/s)   Flow 1 egress (mean 794.29 Mbit/s)
Flow 2 ingress (mean 834.98 Mbit/s)   Flow 2 egress (mean 809.86 Mbit/s)
Flow 3 ingress (mean 640.49 Mbit/s)   Flow 3 egress (mean 596.38 Mbit/s)

Flow 1 (95th percentile 139.75 ms)   Flow 2 (95th percentile 126.16 ms)   Flow 3 (95th percentile 143.49 ms)

44

```
Run 1: Statistics of FillP-Sheep

Start at: 2018-09-07 22:12:41
End at: 2018-09-07 22:13:11
Local clock offset: -0.003 ms
Remote clock offset: -0.299 ms

# Below is generated by plot.py at 2018-09-08 02:02:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1389.06 Mbit/s
95th percentile per-packet one-way delay: 120.657 ms
Loss rate: 1.50%
-- Flow 1:
Average throughput: 771.00 Mbit/s
95th percentile per-packet one-way delay: 114.777 ms
Loss rate: 1.07%
-- Flow 2:
Average throughput: 649.35 Mbit/s
95th percentile per-packet one-way delay: 134.202 ms
Loss rate: 2.14%
-- Flow 3:
Average throughput: 569.49 Mbit/s
95th percentile per-packet one-way delay: 85.644 ms
Loss rate: 1.78%
```
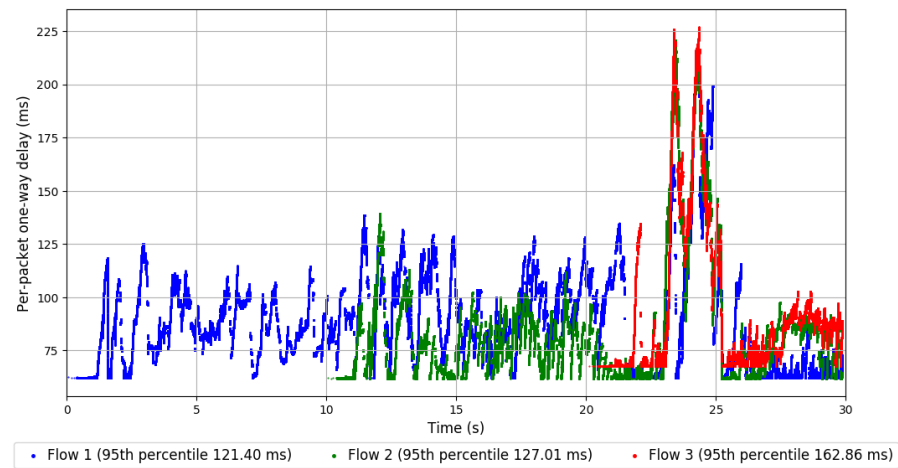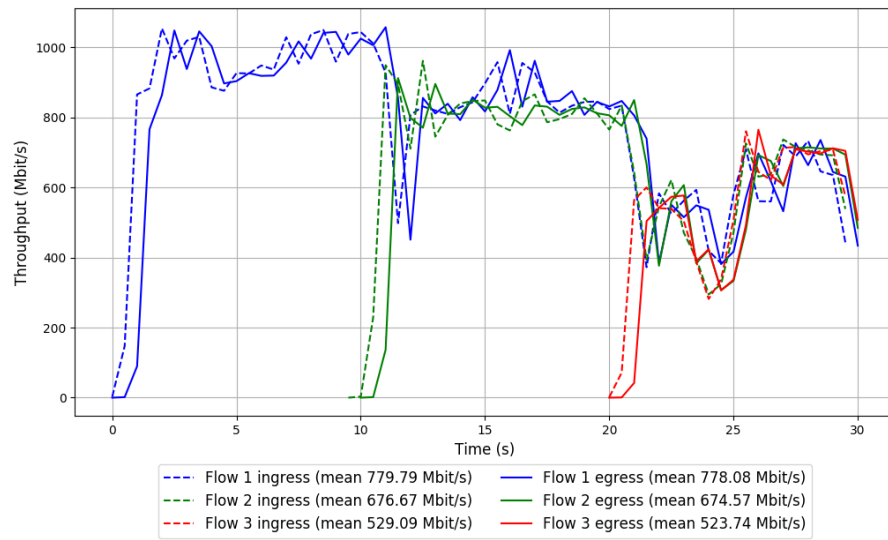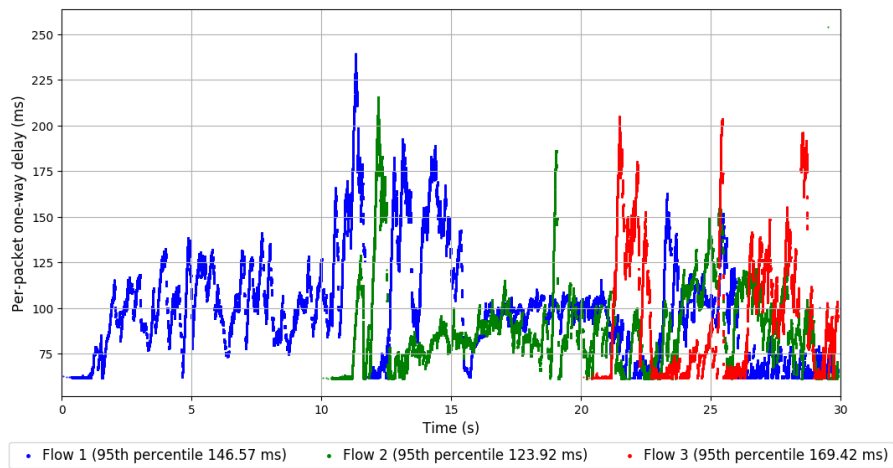
Run 1: Report of FillP-Sheep — Data Link

```
Run 2: Statistics of FillP-Sheep

Start at: 2018-09-07 22:45:21
End at: 2018-09-07 22:45:51
Local clock offset: 0.021 ms
Remote clock offset: -0.529 ms


# Below is generated by plot.py at 2018-09-08 02:02:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1454.37 Mbit/s
95th percentile per-packet one-way delay: 147.097 ms
Loss rate: 3.12%
-- Flow 1:
Average throughput: 778.00 Mbit/s
95th percentile per-packet one-way delay: 141.697 ms
Loss rate: 3.02%
-- Flow 2:
Average throughput: 733.21 Mbit/s
95th percentile per-packet one-way delay: 150.686 ms
Loss rate: 2.73%
-- Flow 3:
Average throughput: 576.58 Mbit/s
95th percentile per-packet one-way delay: 159.320 ms
Loss rate: 4.56%
```

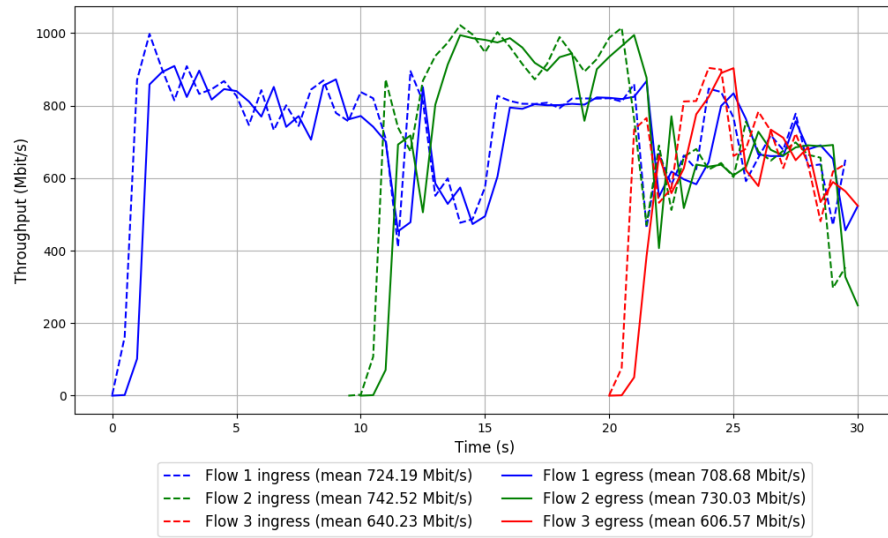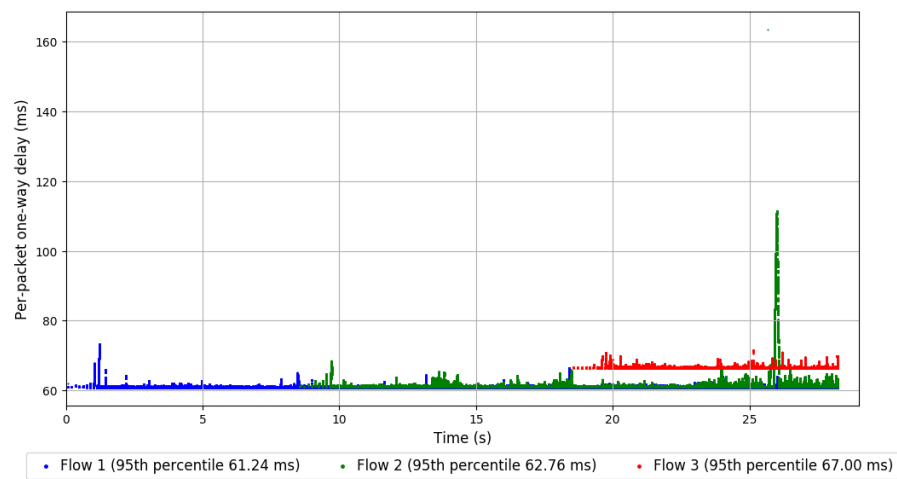## Run 2: Report of FillP-Sheep — Data Link

- - - - Flow 1 ingress (mean 798.77 Mbit/s) —— Flow 1 egress (mean 778.00 Mbit/s)
- - - - Flow 2 ingress (mean 748.68 Mbit/s) —— Flow 2 egress (mean 733.21 Mbit/s)
- - - - Flow 3 ingress (mean 596.27 Mbit/s) —— Flow 3 egress (mean 576.58 Mbit/s)

• Flow 1 (95th percentile 141.70 ms)   • Flow 2 (95th percentile 150.69 ms)   • Flow 3 (95th percentile 159.32 ms)

48

```
Run 3: Statistics of FillP-Sheep

Start at: 2018-09-07 23:18:14
End at: 2018-09-07 23:18:44
Local clock offset: -0.012 ms
Remote clock offset: 0.904 ms


# Below is generated by plot.py at 2018-09-08 02:02:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1511.35 Mbit/s
95th percentile per-packet one-way delay: 135.179 ms
Loss rate: 2.30%
-- Flow 1:
Average throughput: 810.34 Mbit/s
95th percentile per-packet one-way delay: 133.235 ms
Loss rate: 2.30%
-- Flow 2:
Average throughput: 791.07 Mbit/s
95th percentile per-packet one-way delay: 114.014 ms
Loss rate: 1.66%
-- Flow 3:
Average throughput: 533.11 Mbit/s
95th percentile per-packet one-way delay: 158.465 ms
Loss rate: 4.22%
```

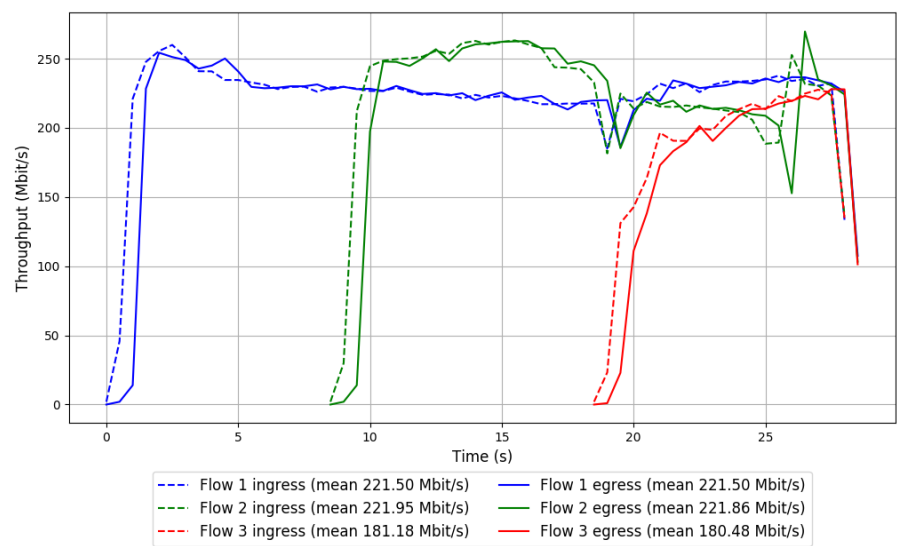# Run 3: Report of FillP-Sheep — Data Link

Flow 1 ingress (mean 825.86 Mbit/s) --- Flow 1 egress (mean 810.34 Mbit/s)
Flow 2 ingress (mean 799.46 Mbit/s) --- Flow 2 egress (mean 791.07 Mbit/s)
Flow 3 ingress (mean 549.42 Mbit/s) --- Flow 3 egress (mean 533.11 Mbit/s)

Flow 1 (95th percentile 133.24 ms)   Flow 2 (95th percentile 114.01 ms)   Flow 3 (95th percentile 158.47 ms)

```
Run 4: Statistics of FillP-Sheep

Start at: 2018-09-07 23:50:56
End at: 2018-09-07 23:51:26
Local clock offset: 0.007 ms
Remote clock offset: -1.57 ms


# Below is generated by plot.py at 2018-09-08 02:15:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1398.00 Mbit/s
95th percentile per-packet one-way delay: 126.330 ms
Loss rate: 0.96%
-- Flow 1:
Average throughput: 778.08 Mbit/s
95th percentile per-packet one-way delay: 121.399 ms
Loss rate: 0.65%
-- Flow 2:
Average throughput: 674.57 Mbit/s
95th percentile per-packet one-way delay: 127.011 ms
Loss rate: 0.95%
-- Flow 3:
Average throughput: 523.74 Mbit/s
95th percentile per-packet one-way delay: 162.857 ms
Loss rate: 2.35%
```
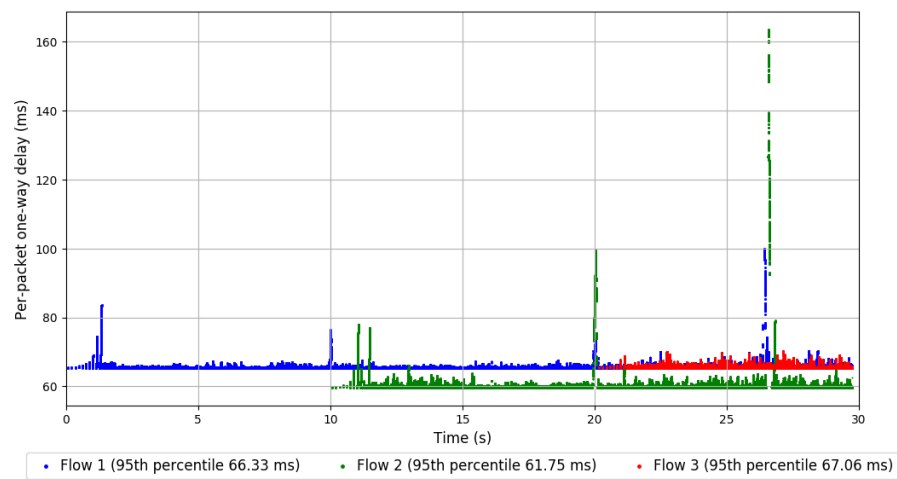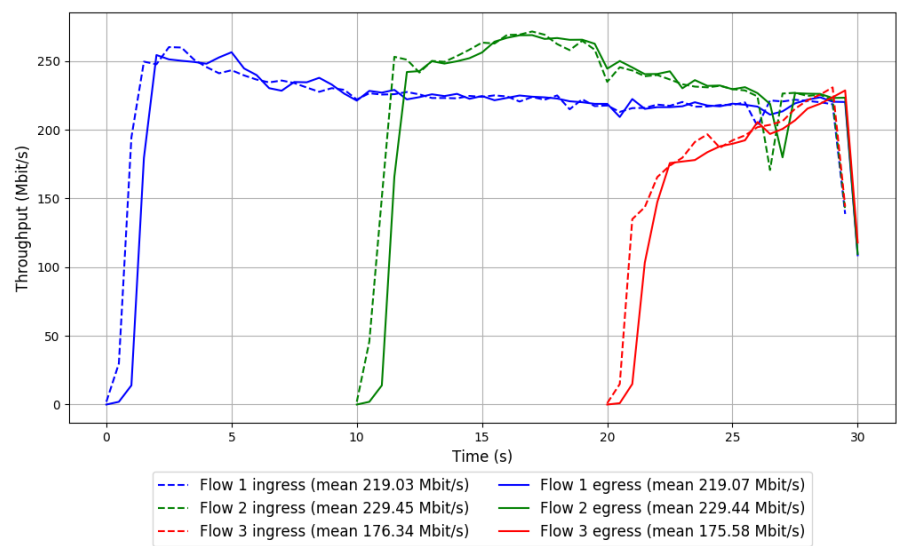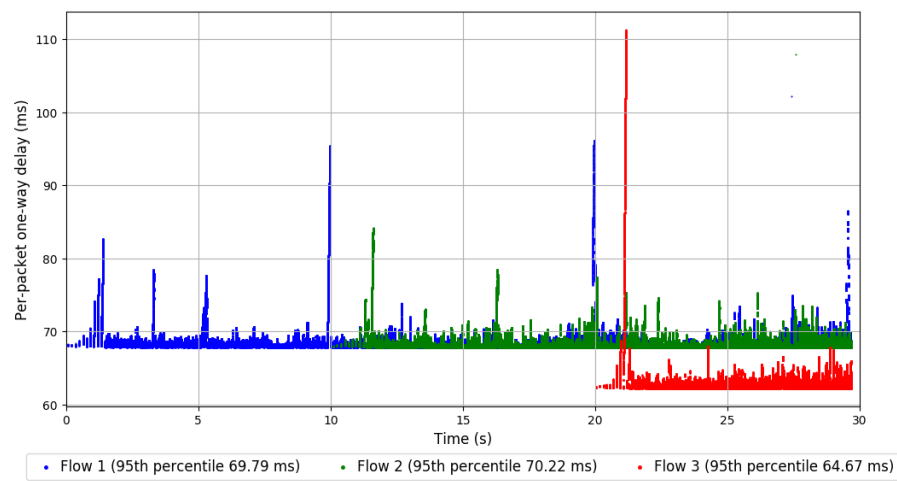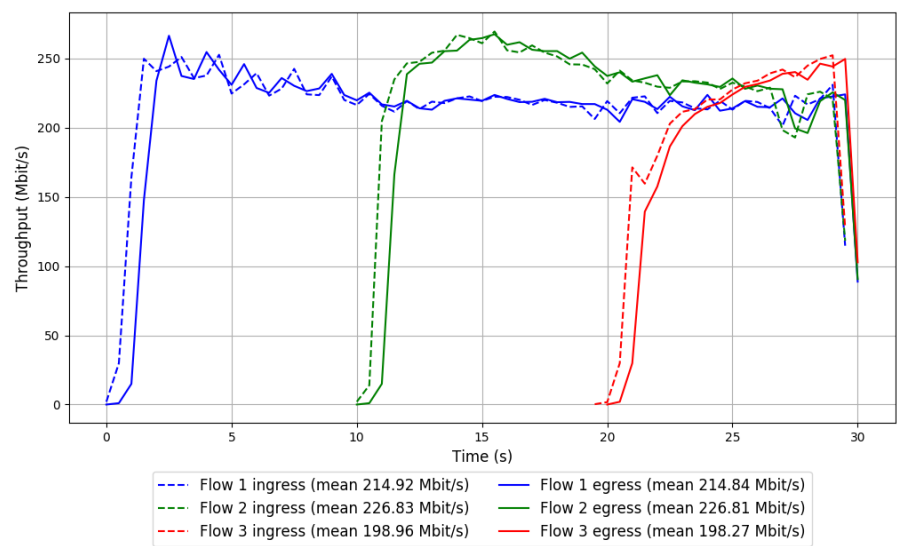
Run 4: Report of FillP-Sheep — Data Link

Flow 1 ingress (mean 779.79 Mbit/s) --- Flow 1 egress (mean 778.08 Mbit/s)
Flow 2 ingress (mean 676.67 Mbit/s) --- Flow 2 egress (mean 674.57 Mbit/s)
Flow 3 ingress (mean 529.09 Mbit/s) --- Flow 3 egress (mean 523.74 Mbit/s)

Flow 1 (95th percentile 121.40 ms)   Flow 2 (95th percentile 127.01 ms)   Flow 3 (95th percentile 162.86 ms)

```
Run 5: Statistics of FillP-Sheep

Start at: 2018-09-08 00:23:34
End at: 2018-09-08 00:24:04
Local clock offset: 0.006 ms
Remote clock offset: -1.356 ms

# Below is generated by plot.py at 2018-09-08 02:29:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1392.94 Mbit/s
95th percentile per-packet one-way delay: 144.611 ms
Loss rate: 3.06%
-- Flow 1:
Average throughput: 708.68 Mbit/s
95th percentile per-packet one-way delay: 146.567 ms
Loss rate: 2.57%
-- Flow 2:
Average throughput: 730.03 Mbit/s
95th percentile per-packet one-way delay: 123.924 ms
Loss rate: 2.31%
-- Flow 3:
Average throughput: 606.57 Mbit/s
95th percentile per-packet one-way delay: 169.419 ms
Loss rate: 6.49%
```

Run 5: Report of FillP-Sheep — Data Link

Flow 1 ingress (mean 724.19 Mbit/s) --- Flow 1 egress (mean 708.68 Mbit/s)
Flow 2 ingress (mean 742.52 Mbit/s) --- Flow 2 egress (mean 730.03 Mbit/s)
Flow 3 ingress (mean 640.23 Mbit/s) --- Flow 3 egress (mean 606.57 Mbit/s)

Flow 1 (95th percentile 146.57 ms) • Flow 2 (95th percentile 123.92 ms) • Flow 3 (95th percentile 169.42 ms)

```
Run 1: Statistics of Indigo

Start at: 2018-09-07 21:55:35
End at: 2018-09-07 21:56:05
Local clock offset: -0.073 ms
Remote clock offset: -0.184 ms


# Below is generated by plot.py at 2018-09-08 02:29:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 438.20 Mbit/s
95th percentile per-packet one-way delay: 66.543 ms
Loss rate: 0.72%
-- Flow 1:
Average throughput: 221.50 Mbit/s
95th percentile per-packet one-way delay: 61.240 ms
Loss rate: 0.46%
-- Flow 2:
Average throughput: 221.86 Mbit/s
95th percentile per-packet one-way delay: 62.761 ms
Loss rate: 0.69%
-- Flow 3:
Average throughput: 180.48 Mbit/s
95th percentile per-packet one-way delay: 67.005 ms
Loss rate: 1.73%
```
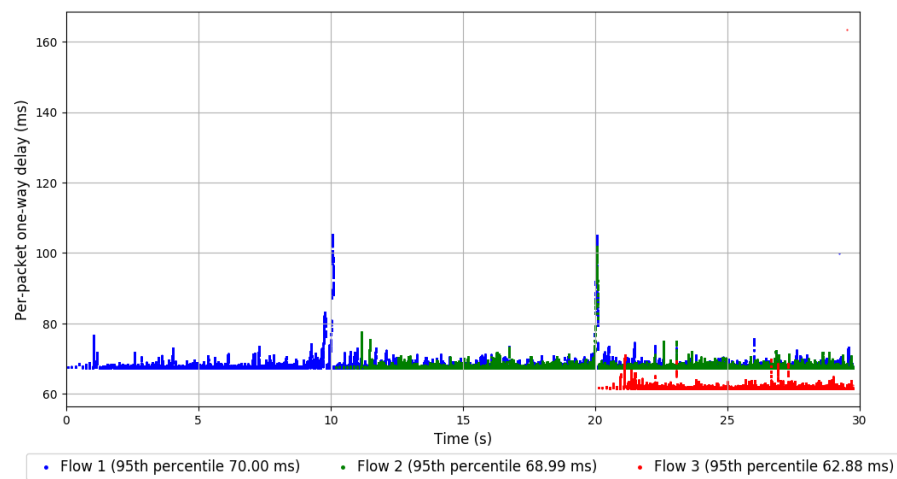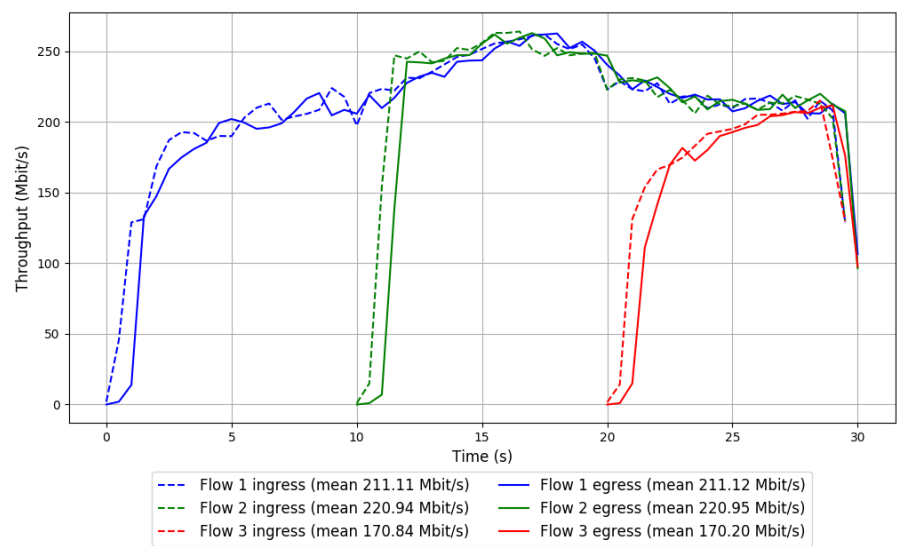
Run 1: Report of Indigo — Data Link

```
Run 2: Statistics of Indigo

Start at: 2018-09-07 22:27:54
End at: 2018-09-07 22:28:24
Local clock offset: -0.033 ms
Remote clock offset: 0.912 ms

# Below is generated by plot.py at 2018-09-08 02:29:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 427.86 Mbit/s
95th percentile per-packet one-way delay: 66.284 ms
Loss rate: 0.68%
-- Flow 1:
Average throughput: 219.07 Mbit/s
95th percentile per-packet one-way delay: 66.329 ms
Loss rate: 0.43%
-- Flow 2:
Average throughput: 229.44 Mbit/s
95th percentile per-packet one-way delay: 61.753 ms
Loss rate: 0.63%
-- Flow 3:
Average throughput: 175.58 Mbit/s
95th percentile per-packet one-way delay: 67.055 ms
Loss rate: 1.75%
```
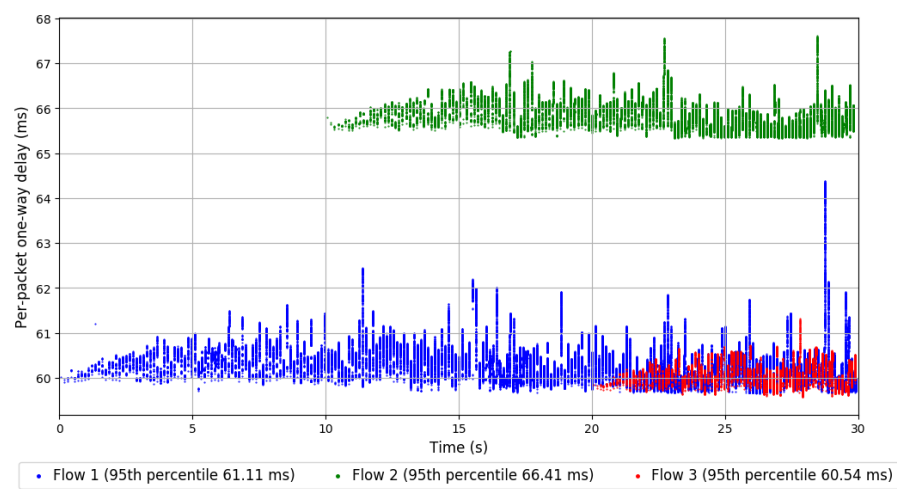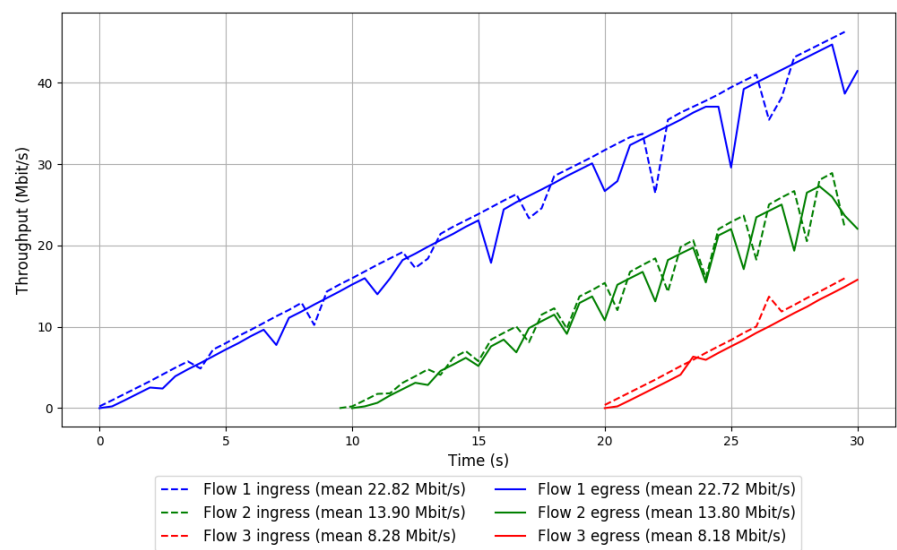
Run 2: Report of Indigo — Data Link

```
Run 3: Statistics of Indigo

Start at: 2018-09-07 23:00:44
End at: 2018-09-07 23:01:14
Local clock offset: -0.064 ms
Remote clock offset: -1.765 ms


# Below is generated by plot.py at 2018-09-08 02:29:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 429.52 Mbit/s
95th percentile per-packet one-way delay: 69.800 ms
Loss rate: 0.72%
-- Flow 1:
Average throughput: 214.84 Mbit/s
95th percentile per-packet one-way delay: 69.794 ms
Loss rate: 0.48%
-- Flow 2:
Average throughput: 226.81 Mbit/s
95th percentile per-packet one-way delay: 70.225 ms
Loss rate: 0.68%
-- Flow 3:
Average throughput: 198.27 Mbit/s
95th percentile per-packet one-way delay: 64.674 ms
Loss rate: 1.60%
```
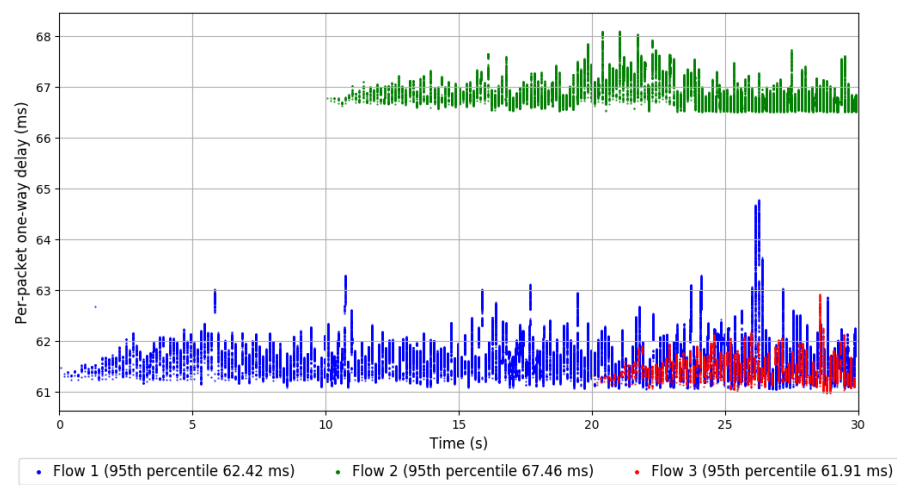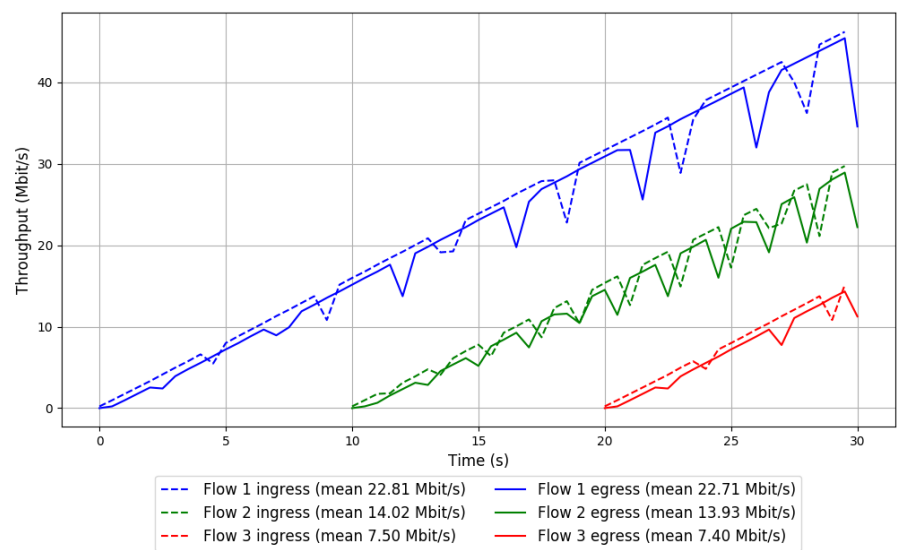
Run 3: Report of Indigo — Data Link

```
Run 4: Statistics of Indigo

Start at: 2018-09-07 23:33:36
End at: 2018-09-07 23:34:06
Local clock offset: -0.015 ms
Remote clock offset: -1.104 ms


# Below is generated by plot.py at 2018-09-08 02:29:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 416.51 Mbit/s
95th percentile per-packet one-way delay: 68.632 ms
Loss rate: 0.74%
-- Flow 1:
Average throughput: 216.52 Mbit/s
95th percentile per-packet one-way delay: 68.705 ms
Loss rate: 0.48%
-- Flow 2:
Average throughput: 215.22 Mbit/s
95th percentile per-packet one-way delay: 68.569 ms
Loss rate: 0.69%
-- Flow 3:
Average throughput: 176.35 Mbit/s
95th percentile per-packet one-way delay: 68.603 ms
Loss rate: 1.80%
```

Run 4: Report of Indigo — Data Link

```
Run 5: Statistics of Indigo

Start at: 2018-09-08 00:06:22
End at: 2018-09-08 00:06:52
Local clock offset: -0.01 ms
Remote clock offset: -1.333 ms

# Below is generated by plot.py at 2018-09-08 02:29:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 411.68 Mbit/s
95th percentile per-packet one-way delay: 69.374 ms
Loss rate: 0.69%
-- Flow 1:
Average throughput: 211.12 Mbit/s
95th percentile per-packet one-way delay: 69.995 ms
Loss rate: 0.45%
-- Flow 2:
Average throughput: 220.95 Mbit/s
95th percentile per-packet one-way delay: 68.988 ms
Loss rate: 0.65%
-- Flow 3:
Average throughput: 170.20 Mbit/s
95th percentile per-packet one-way delay: 62.882 ms
Loss rate: 1.68%
```
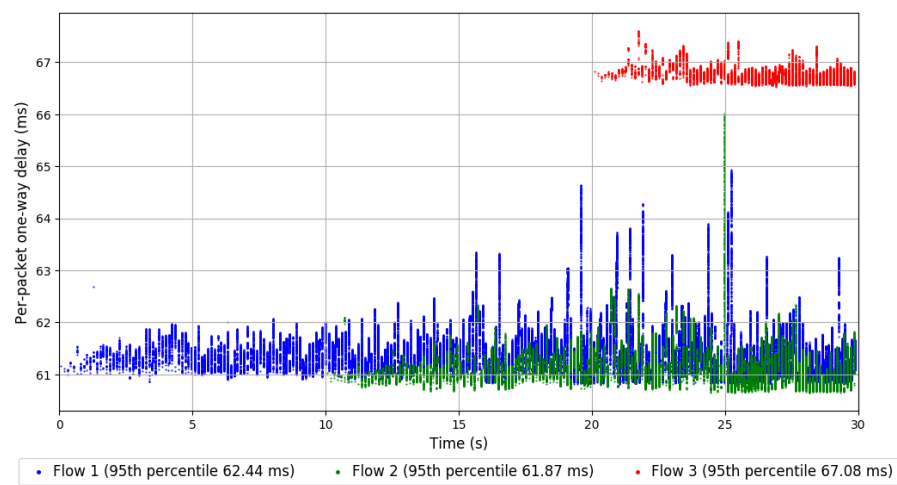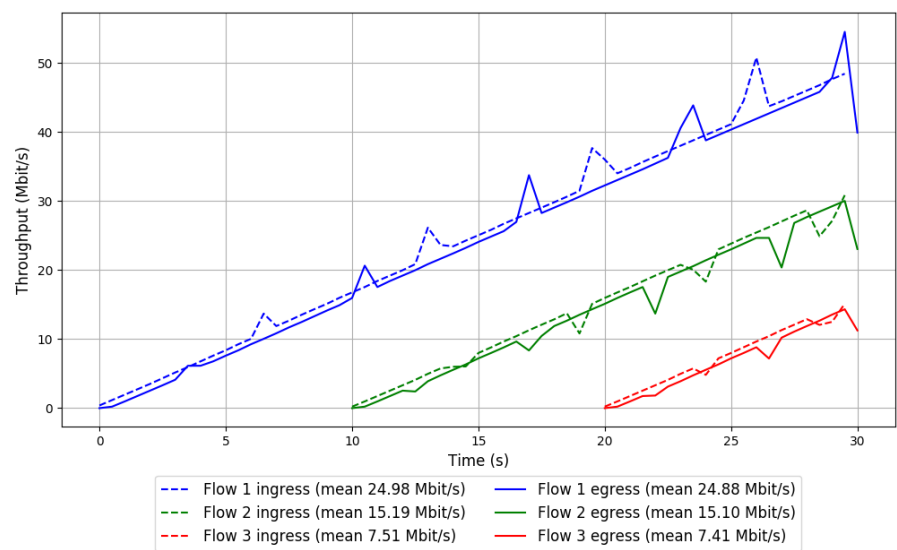
Run 5: Report of Indigo — Data Link

```
Run 1: Statistics of LEDBAT

Start at: 2018-09-07 22:19:14
End at: 2018-09-07 22:19:44
Local clock offset: -0.036 ms
Remote clock offset: 0.906 ms


# Below is generated by plot.py at 2018-09-08 02:29:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 34.54 Mbit/s
95th percentile per-packet one-way delay: 66.104 ms
Loss rate: 1.11%
-- Flow 1:
Average throughput: 22.72 Mbit/s
95th percentile per-packet one-way delay: 61.111 ms
Loss rate: 0.85%
-- Flow 2:
Average throughput: 13.80 Mbit/s
95th percentile per-packet one-way delay: 66.411 ms
Loss rate: 1.35%
-- Flow 3:
Average throughput: 8.18 Mbit/s
95th percentile per-packet one-way delay: 60.537 ms
Loss rate: 2.47%
```
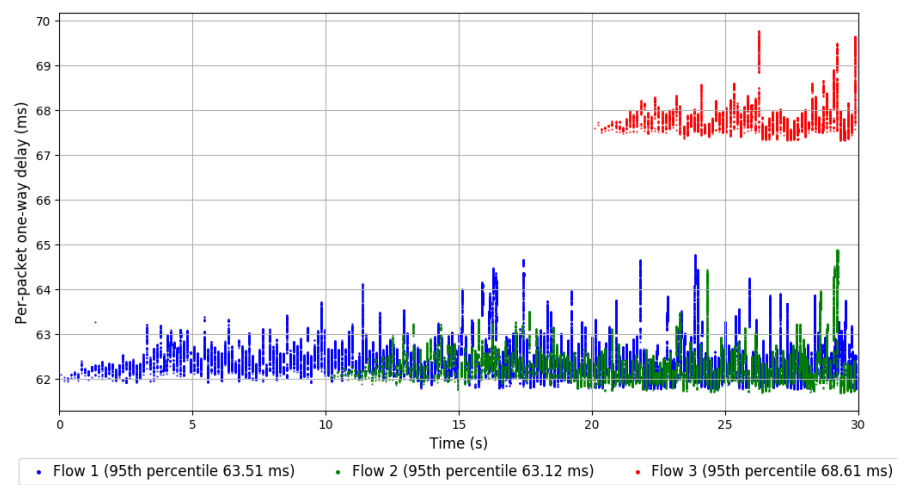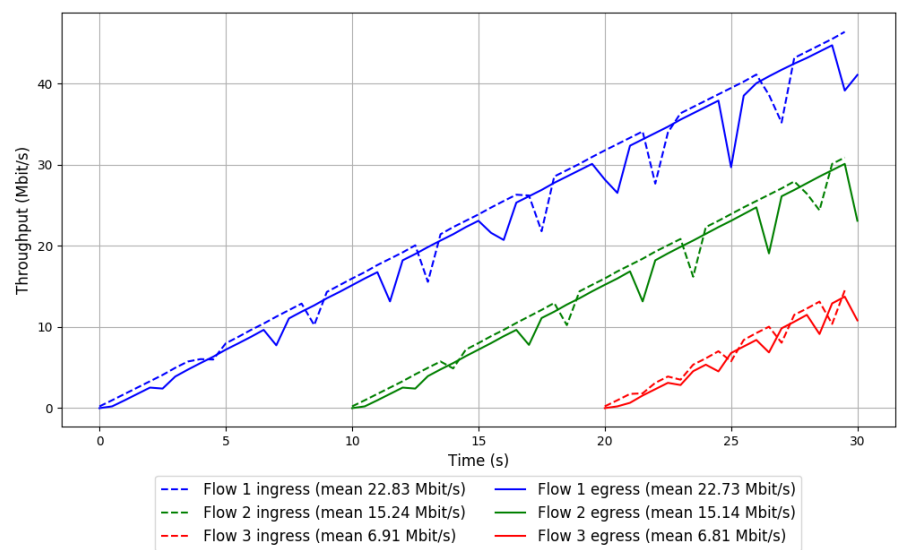
Run 1: Report of LEDBAT — Data Link

```
Run 2: Statistics of LEDBAT

Start at: 2018-09-07 22:52:01
End at: 2018-09-07 22:52:31
Local clock offset: -0.023 ms
Remote clock offset: -0.533 ms

# Below is generated by plot.py at 2018-09-08 02:29:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 34.36 Mbit/s
95th percentile per-packet one-way delay: 67.146 ms
Loss rate: 1.11%
-- Flow 1:
Average throughput: 22.71 Mbit/s
95th percentile per-packet one-way delay: 62.424 ms
Loss rate: 0.85%
-- Flow 2:
Average throughput: 13.93 Mbit/s
95th percentile per-packet one-way delay: 67.458 ms
Loss rate: 1.34%
-- Flow 3:
Average throughput: 7.40 Mbit/s
95th percentile per-packet one-way delay: 61.909 ms
Loss rate: 2.61%
```

Run 2: Report of LEDBAT — Data Link

```
Run 3: Statistics of LEDBAT

Start at: 2018-09-07 23:24:57
End at: 2018-09-07 23:25:27
Local clock offset: -0.018 ms
Remote clock offset: -0.529 ms


# Below is generated by plot.py at 2018-09-08 02:29:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 37.31 Mbit/s
95th percentile per-packet one-way delay: 66.657 ms
Loss rate: 1.06%
-- Flow 1:
Average throughput: 24.88 Mbit/s
95th percentile per-packet one-way delay: 62.437 ms
Loss rate: 0.81%
-- Flow 2:
Average throughput: 15.10 Mbit/s
95th percentile per-packet one-way delay: 61.870 ms
Loss rate: 1.29%
-- Flow 3:
Average throughput: 7.41 Mbit/s
95th percentile per-packet one-way delay: 67.077 ms
Loss rate: 2.61%
```
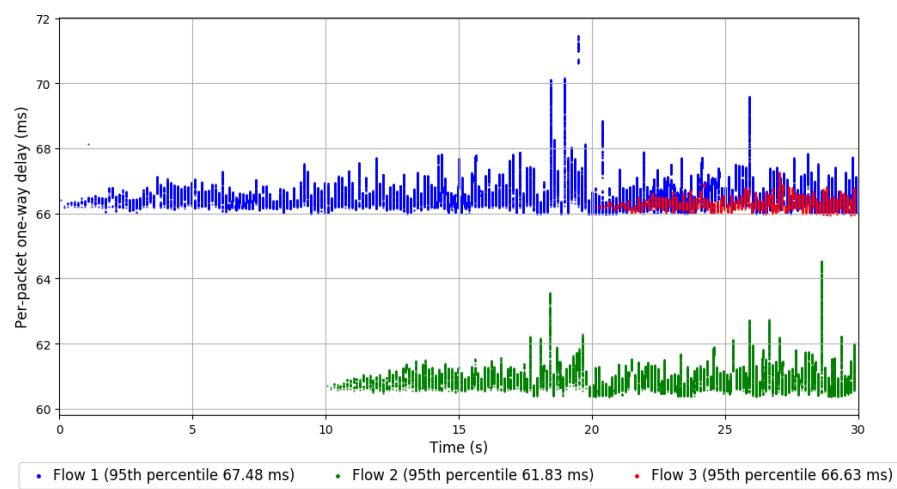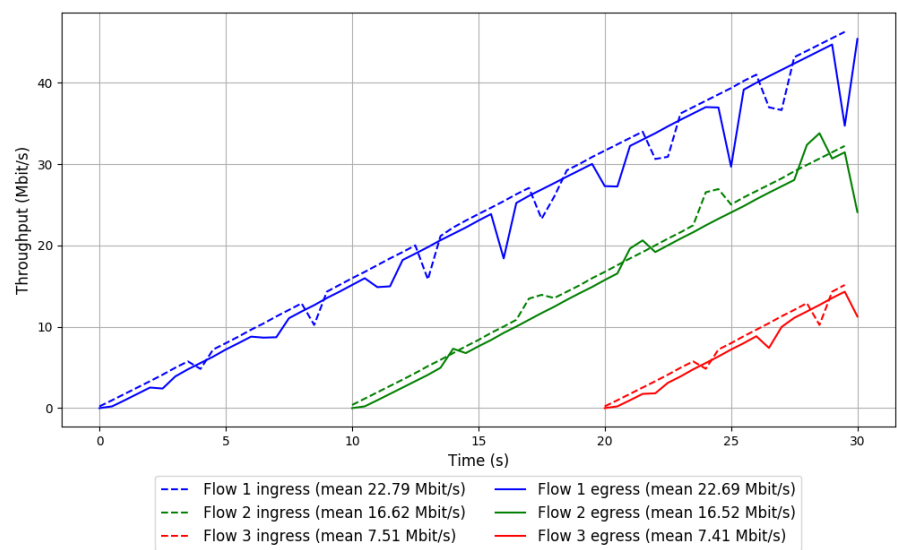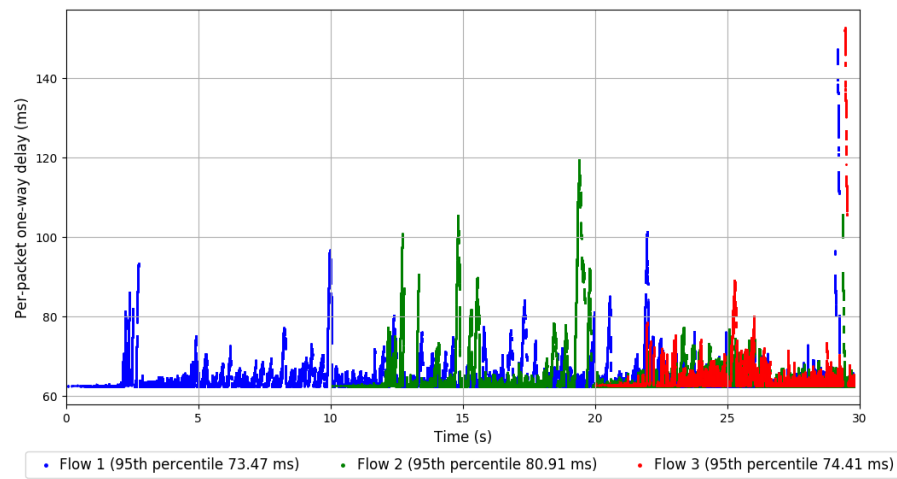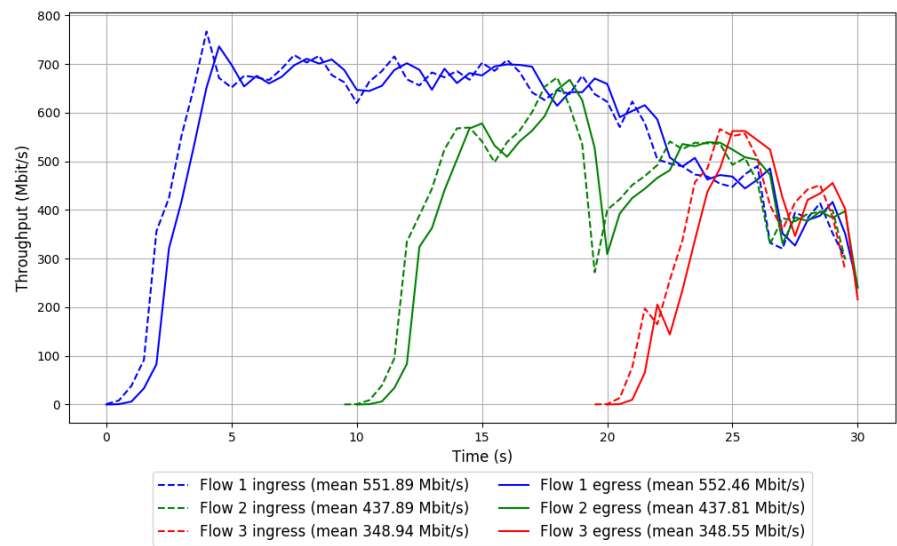
Run 3: Report of LEDBAT — Data Link

- - - - Flow 1 ingress (mean 24.98 Mbit/s) ——— Flow 1 egress (mean 24.88 Mbit/s)
- - - - Flow 2 ingress (mean 15.19 Mbit/s) ——— Flow 2 egress (mean 15.10 Mbit/s)
- - - - Flow 3 ingress (mean 7.51 Mbit/s) ——— Flow 3 egress (mean 7.41 Mbit/s)

• Flow 1 (95th percentile 62.44 ms)   • Flow 2 (95th percentile 61.87 ms)   • Flow 3 (95th percentile 67.08 ms)
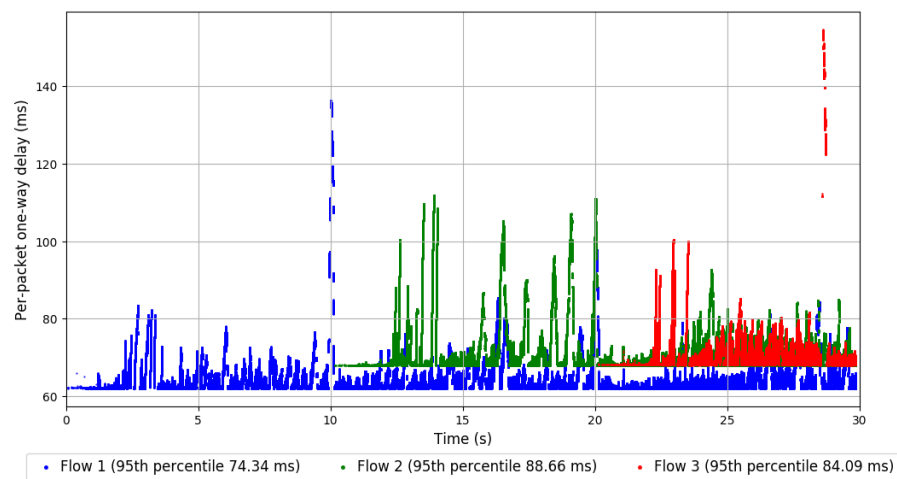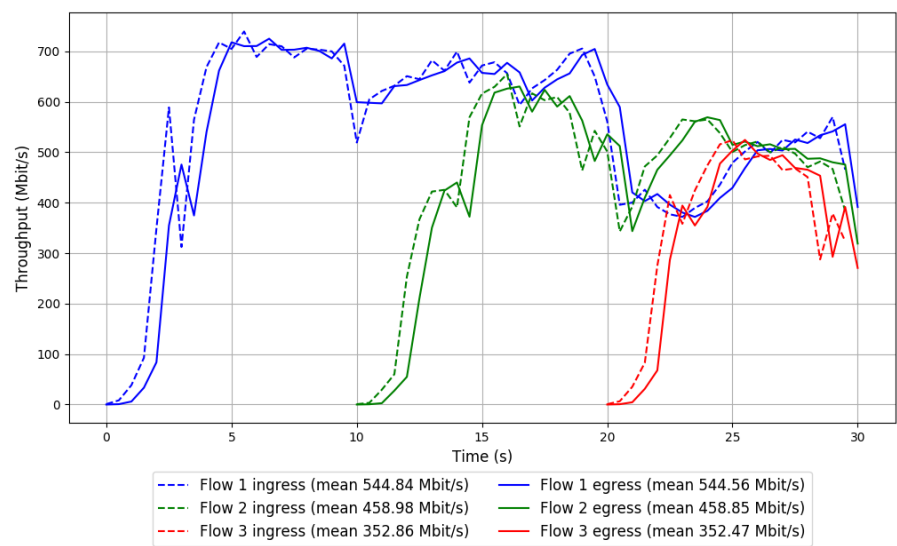
70

```
Run 4: Statistics of LEDBAT

Start at: 2018-09-07 23:57:38
End at: 2018-09-07 23:58:08
Local clock offset: -0.012 ms
Remote clock offset: -1.393 ms

# Below is generated by plot.py at 2018-09-08 02:29:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 35.01 Mbit/s
95th percentile per-packet one-way delay: 67.596 ms
Loss rate: 1.10%
-- Flow 1:
Average throughput: 22.73 Mbit/s
95th percentile per-packet one-way delay: 63.505 ms
Loss rate: 0.85%
-- Flow 2:
Average throughput: 15.14 Mbit/s
95th percentile per-packet one-way delay: 63.119 ms
Loss rate: 1.28%
-- Flow 3:
Average throughput: 6.81 Mbit/s
95th percentile per-packet one-way delay: 68.609 ms
Loss rate: 2.70%
```

Run 4: Report of LEDBAT — Data Link

Flow 1 ingress (mean 22.83 Mbit/s) --- Flow 1 egress (mean 22.73 Mbit/s)
Flow 2 ingress (mean 15.24 Mbit/s) --- Flow 2 egress (mean 15.14 Mbit/s)
Flow 3 ingress (mean 6.91 Mbit/s) --- Flow 3 egress (mean 6.81 Mbit/s)

Flow 1 (95th percentile 63.51 ms)   Flow 2 (95th percentile 63.12 ms)   Flow 3 (95th percentile 68.61 ms)

```
Run 5: Statistics of LEDBAT

Start at: 2018-09-08 00:30:11
End at: 2018-09-08 00:30:41
Local clock offset: -0.067 ms
Remote clock offset: 0.177 ms

# Below is generated by plot.py at 2018-09-08 02:29:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 36.07 Mbit/s
95th percentile per-packet one-way delay: 67.302 ms
Loss rate: 1.09%
-- Flow 1:
Average throughput: 22.69 Mbit/s
95th percentile per-packet one-way delay: 67.480 ms
Loss rate: 0.85%
-- Flow 2:
Average throughput: 16.52 Mbit/s
95th percentile per-packet one-way delay: 61.830 ms
Loss rate: 1.23%
-- Flow 3:
Average throughput: 7.41 Mbit/s
95th percentile per-packet one-way delay: 66.632 ms
Loss rate: 2.61%
```
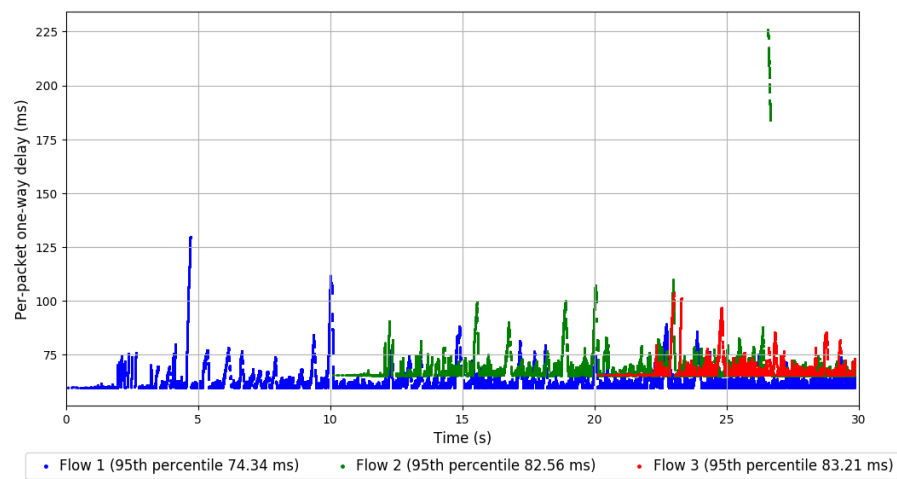
Run 5: Report of LEDBAT — Data Link

```
Run 1: Statistics of Indigo-Muses

Start at: 2018-09-07 22:10:42
End at: 2018-09-07 22:11:12
Local clock offset: -0.041 ms
Remote clock offset: -1.861 ms

# Below is generated by plot.py at 2018-09-08 02:29:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 957.88 Mbit/s
95th percentile per-packet one-way delay: 75.356 ms
Loss rate: 0.56%
-- Flow 1:
Average throughput: 552.46 Mbit/s
95th percentile per-packet one-way delay: 73.470 ms
Loss rate: 0.33%
-- Flow 2:
Average throughput: 437.81 Mbit/s
95th percentile per-packet one-way delay: 80.907 ms
Loss rate: 0.66%
-- Flow 3:
Average throughput: 348.55 Mbit/s
95th percentile per-packet one-way delay: 74.409 ms
Loss rate: 1.40%
```
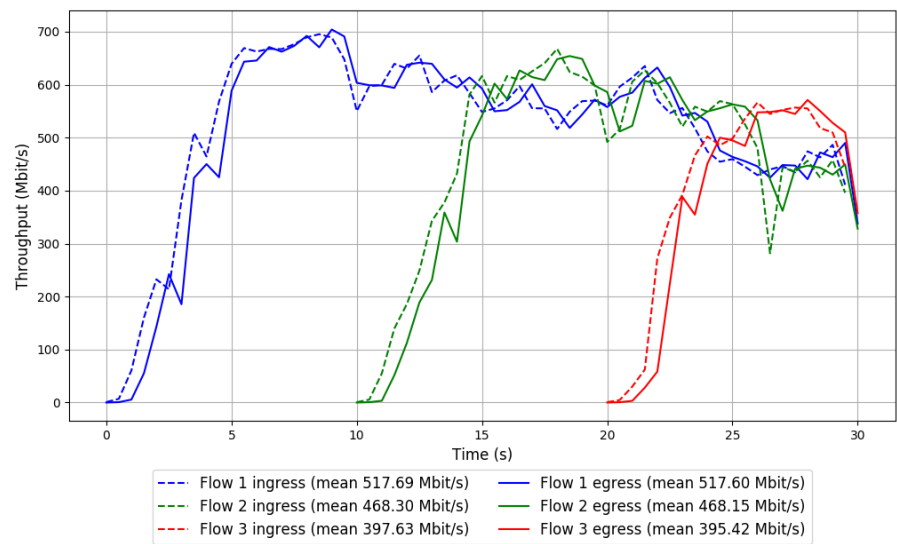
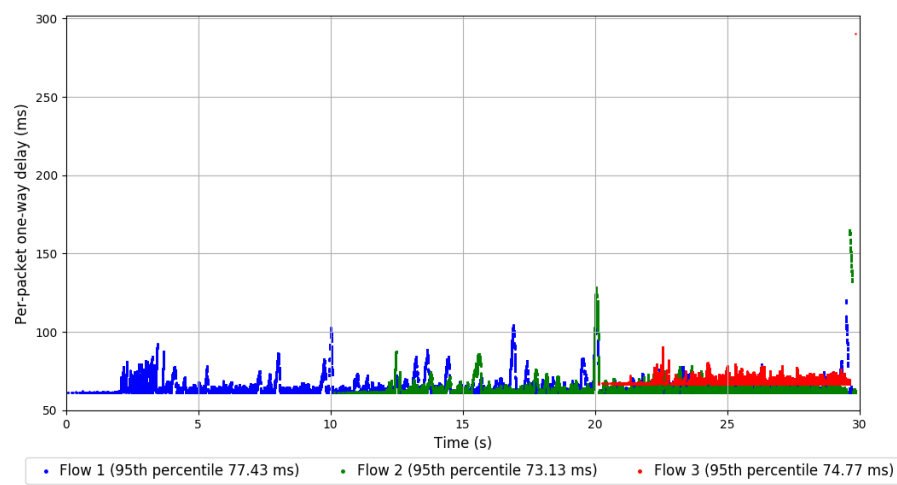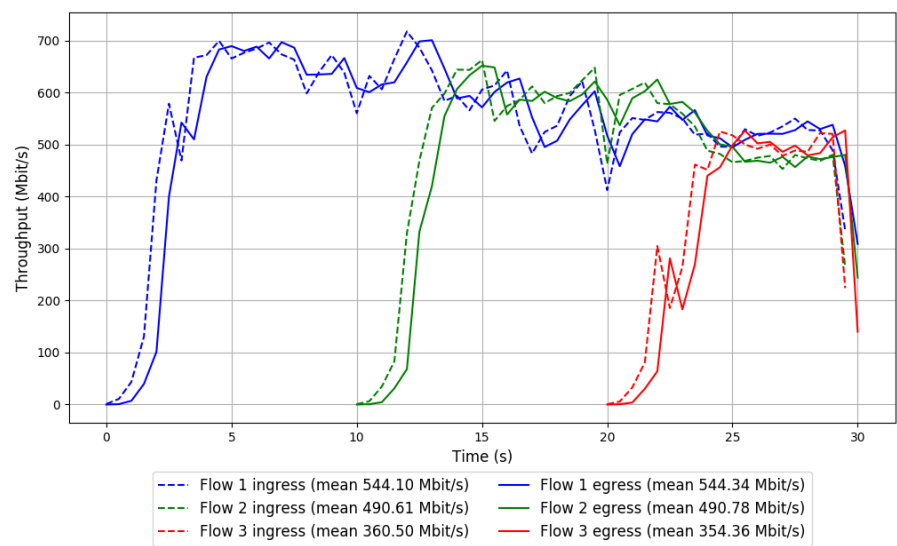Run 1: Report of Indigo-Muses — Data Link

```
Run 2: Statistics of Indigo-Muses

Start at: 2018-09-07 22:43:20
End at: 2018-09-07 22:43:50
Local clock offset: -0.025 ms
Remote clock offset: -1.794 ms


# Below is generated by plot.py at 2018-09-08 02:31:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 962.80 Mbit/s
95th percentile per-packet one-way delay: 80.841 ms
Loss rate: 0.66%
-- Flow 1:
Average throughput: 544.56 Mbit/s
95th percentile per-packet one-way delay: 74.344 ms
Loss rate: 0.48%
-- Flow 2:
Average throughput: 458.85 Mbit/s
95th percentile per-packet one-way delay: 88.663 ms
Loss rate: 0.70%
-- Flow 3:
Average throughput: 352.47 Mbit/s
95th percentile per-packet one-way delay: 84.089 ms
Loss rate: 1.44%
```

Run 2: Report of Indigo-Muses — Data Link

```
Run 3: Statistics of Indigo-Muses

Start at: 2018-09-07 23:16:13
End at: 2018-09-07 23:16:43
Local clock offset: 0.008 ms
Remote clock offset: 0.751 ms


# Below is generated by plot.py at 2018-09-08 02:31:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 957.05 Mbit/s
95th percentile per-packet one-way delay: 78.690 ms
Loss rate: 0.72%
-- Flow 1:
Average throughput: 517.60 Mbit/s
95th percentile per-packet one-way delay: 74.337 ms
Loss rate: 0.43%
-- Flow 2:
Average throughput: 468.15 Mbit/s
95th percentile per-packet one-way delay: 82.564 ms
Loss rate: 0.72%
-- Flow 3:
Average throughput: 395.42 Mbit/s
95th percentile per-packet one-way delay: 83.214 ms
Loss rate: 1.91%
```
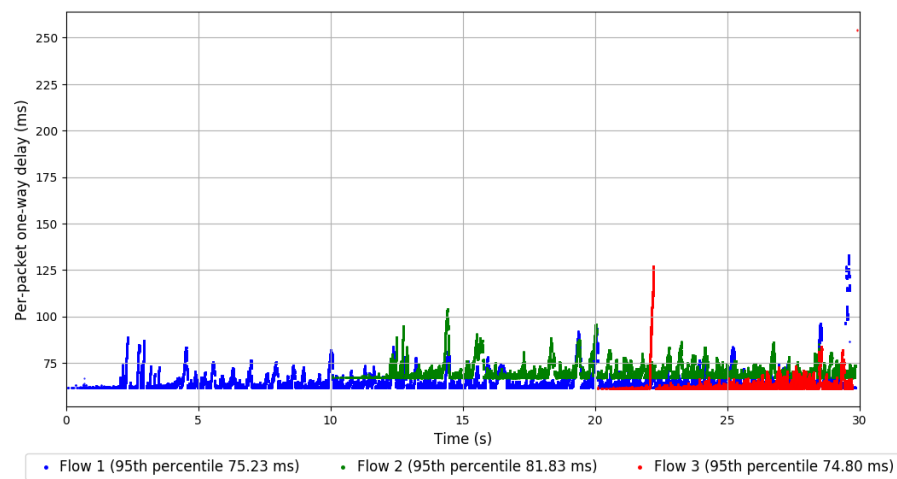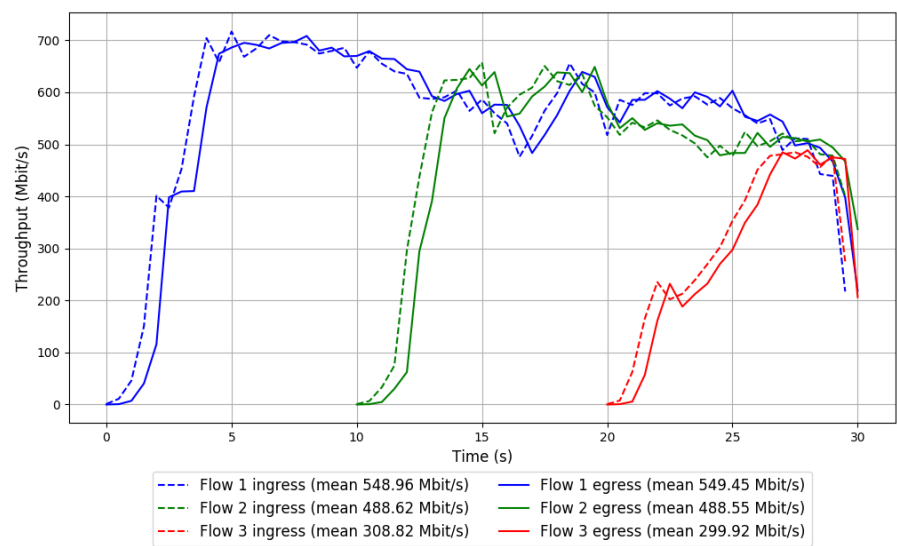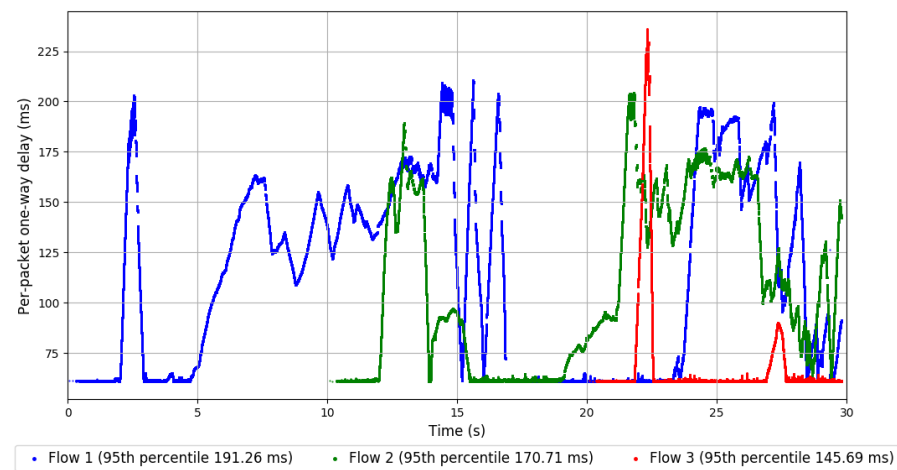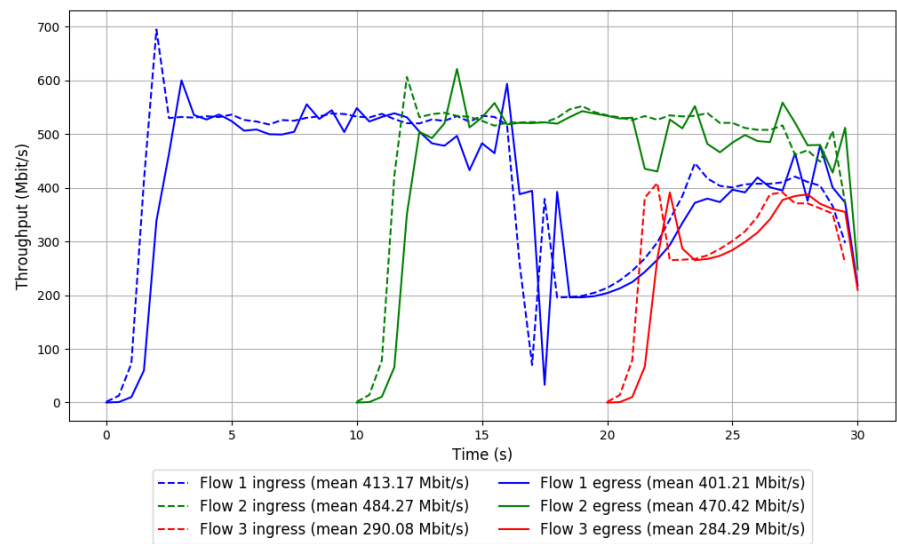
Run 3: Report of Indigo-Muses — Data Link

- - - Flow 1 ingress (mean 517.69 Mbit/s) — Flow 1 egress (mean 517.60 Mbit/s)
- - - Flow 2 ingress (mean 468.30 Mbit/s) — Flow 2 egress (mean 468.15 Mbit/s)
- - - Flow 3 ingress (mean 397.63 Mbit/s) — Flow 3 egress (mean 395.42 Mbit/s)

• Flow 1 (95th percentile 74.34 ms) • Flow 2 (95th percentile 82.56 ms) • Flow 3 (95th percentile 83.21 ms)

```
Run 4: Statistics of Indigo-Muses

Start at: 2018-09-07 23:48:52
End at: 2018-09-07 23:49:22
Local clock offset: -0.014 ms
Remote clock offset: -0.747 ms


# Below is generated by plot.py at 2018-09-08 02:32:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 984.57 Mbit/s
95th percentile per-packet one-way delay: 75.596 ms
Loss rate: 0.60%
-- Flow 1:
Average throughput: 544.34 Mbit/s
95th percentile per-packet one-way delay: 77.429 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 490.78 Mbit/s
95th percentile per-packet one-way delay: 73.131 ms
Loss rate: 0.40%
-- Flow 3:
Average throughput: 354.36 Mbit/s
95th percentile per-packet one-way delay: 74.768 ms
Loss rate: 2.17%
```

Run 4: Report of Indigo-Muses — Data Link

Run 4: Report of Indigo-Muses — Data Link

```
Run 5: Statistics of Indigo-Muses

Start at: 2018-09-08 00:21:32
End at: 2018-09-08 00:22:02
Local clock offset: -0.017 ms
Remote clock offset: -0.93 ms


# Below is generated by plot.py at 2018-09-08 02:32:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 969.86 Mbit/s
95th percentile per-packet one-way delay: 78.923 ms
Loss rate: 0.63%
-- Flow 1:
Average throughput: 549.45 Mbit/s
95th percentile per-packet one-way delay: 75.231 ms
Loss rate: 0.32%
-- Flow 2:
Average throughput: 488.55 Mbit/s
95th percentile per-packet one-way delay: 81.826 ms
Loss rate: 0.69%
-- Flow 3:
Average throughput: 299.92 Mbit/s
95th percentile per-packet one-way delay: 74.801 ms
Loss rate: 2.18%
```
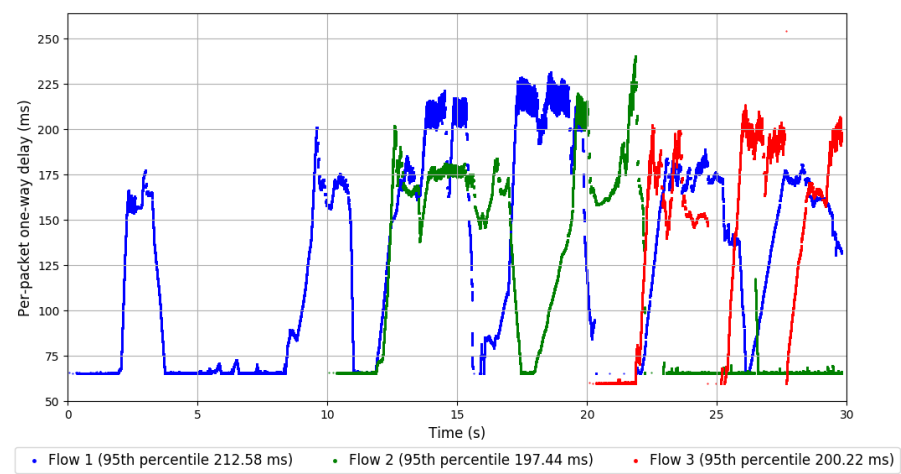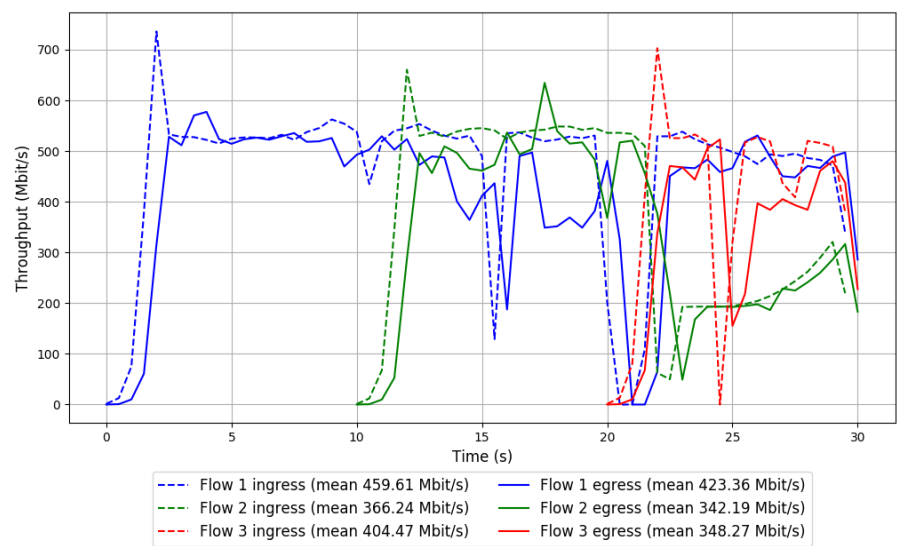
Run 5: Report of Indigo-Muses — Data Link

Flow 1 ingress (mean 548.96 Mbit/s) — — — — Flow 1 egress (mean 549.45 Mbit/s)
Flow 2 ingress (mean 488.62 Mbit/s) — — — — Flow 2 egress (mean 488.55 Mbit/s)
Flow 3 ingress (mean 308.82 Mbit/s) — — — — Flow 3 egress (mean 299.92 Mbit/s)

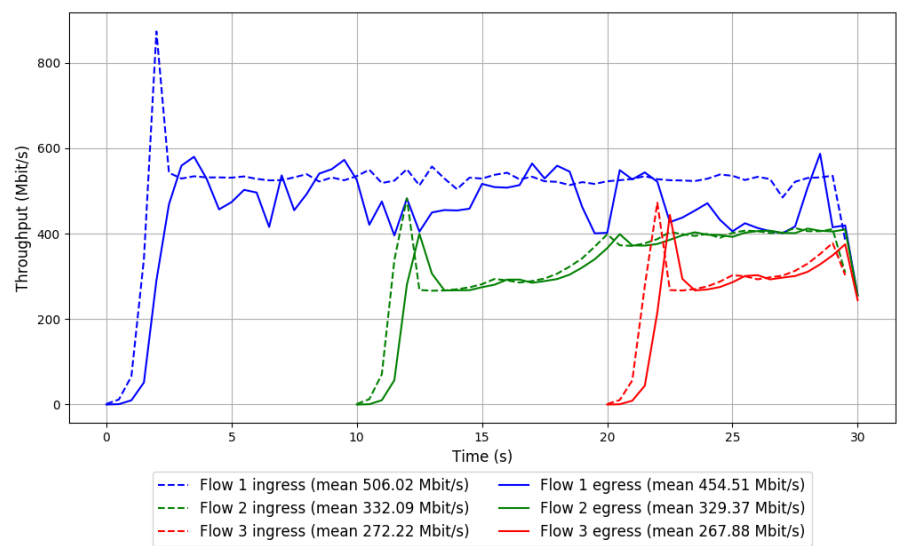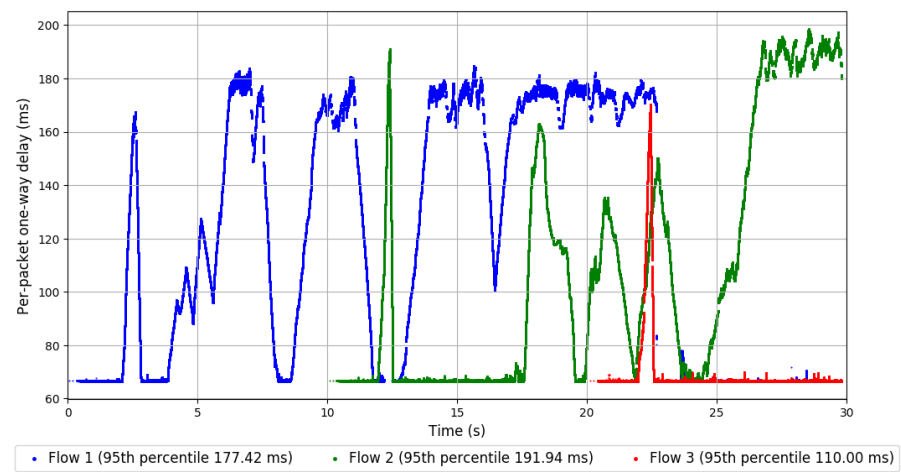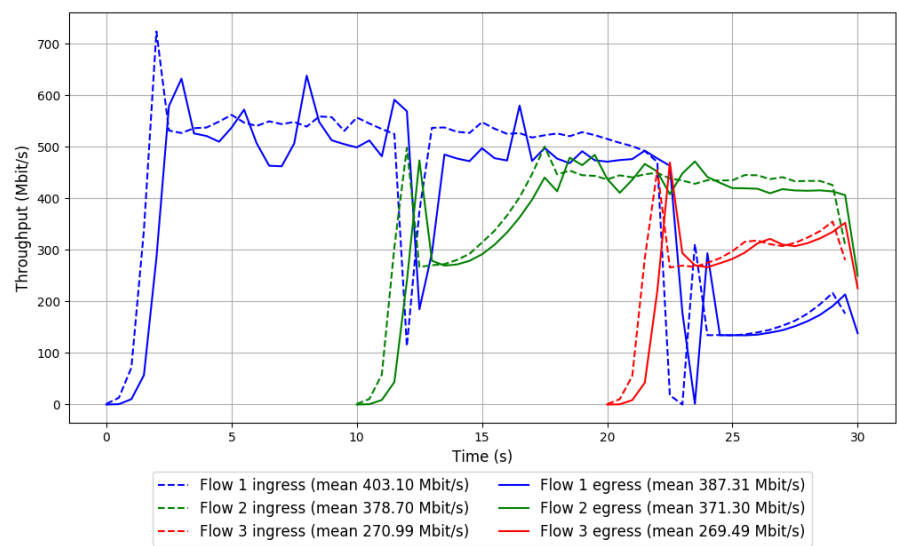Flow 1 (95th percentile 75.23 ms)   Flow 2 (95th percentile 81.83 ms)   Flow 3 (95th percentile 74.80 ms)

```
Run 1: Statistics of PCC-Allegro

Start at: 2018-09-07 21:50:16
End at: 2018-09-07 21:50:46
Local clock offset: -0.089 ms
Remote clock offset: -0.332 ms


# Below is generated by plot.py at 2018-09-08 02:42:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 805.88 Mbit/s
95th percentile per-packet one-way delay: 184.420 ms
Loss rate: 3.38%
-- Flow 1:
Average throughput: 401.21 Mbit/s
95th percentile per-packet one-way delay: 191.261 ms
Loss rate: 3.31%
-- Flow 2:
Average throughput: 470.42 Mbit/s
95th percentile per-packet one-way delay: 170.705 ms
Loss rate: 3.49%
-- Flow 3:
Average throughput: 284.29 Mbit/s
95th percentile per-packet one-way delay: 145.688 ms
Loss rate: 3.28%
```

Run 1: Report of PCC-Allegro — Data Link

- - - Flow 1 ingress (mean 413.17 Mbit/s)   —— Flow 1 egress (mean 401.21 Mbit/s)
- - - Flow 2 ingress (mean 484.27 Mbit/s)   —— Flow 2 egress (mean 470.42 Mbit/s)
- - - Flow 3 ingress (mean 290.08 Mbit/s)   —— Flow 3 egress (mean 284.29 Mbit/s)

• Flow 1 (95th percentile 191.26 ms)   • Flow 2 (95th percentile 170.71 ms)   • Flow 3 (95th percentile 145.69 ms)

```
Run 2: Statistics of PCC-Allegro

Start at: 2018-09-07 22:22:37
End at: 2018-09-07 22:23:07
Local clock offset: -0.048 ms
Remote clock offset: 0.748 ms

# Below is generated by plot.py at 2018-09-08 02:42:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 764.25 Mbit/s
95th percentile per-packet one-way delay: 208.637 ms
Loss rate: 9.05%
-- Flow 1:
Average throughput: 423.36 Mbit/s
95th percentile per-packet one-way delay: 212.583 ms
Loss rate: 8.30%
-- Flow 2:
Average throughput: 342.19 Mbit/s
95th percentile per-packet one-way delay: 197.438 ms
Loss rate: 7.19%
-- Flow 3:
Average throughput: 348.27 Mbit/s
95th percentile per-packet one-way delay: 200.216 ms
Loss rate: 15.02%
```

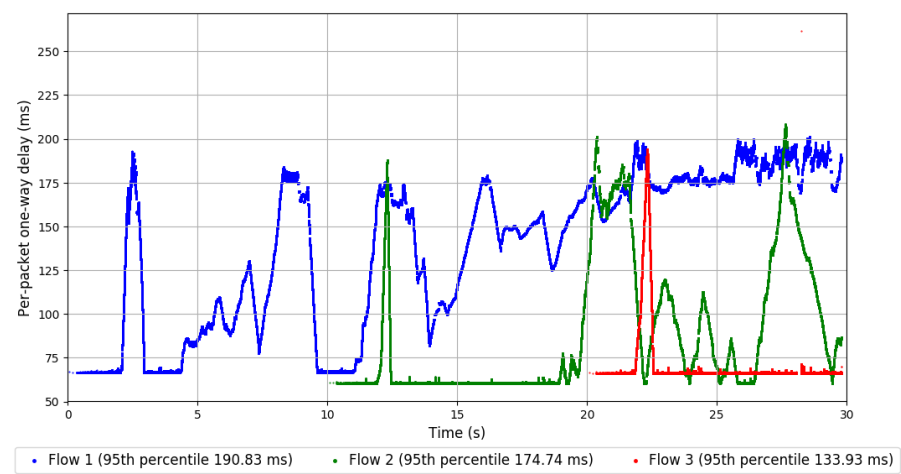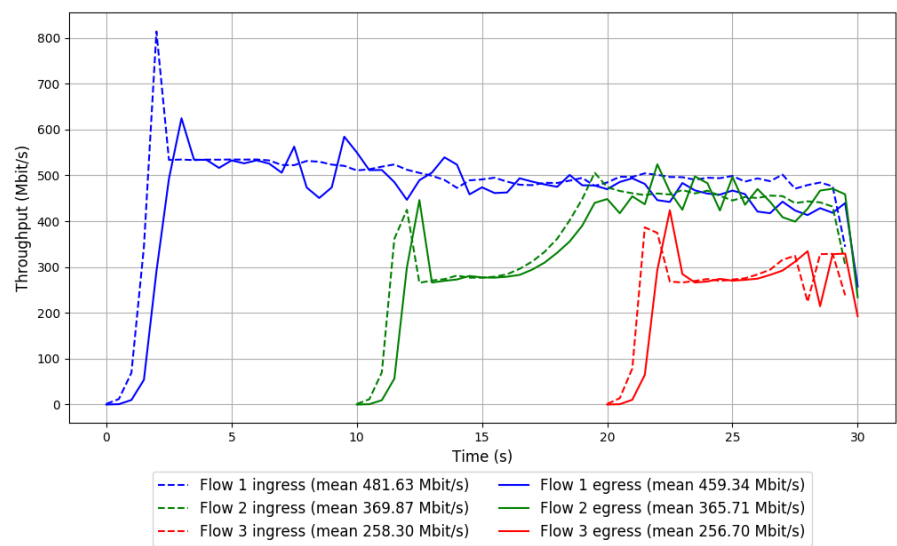# Run 2: Report of PCC-Allegro — Data Link

```
Run 3: Statistics of PCC-Allegro

Start at: 2018-09-07 22:55:26
End at: 2018-09-07 22:55:56
Local clock offset: -0.069 ms
Remote clock offset: -1.966 ms


# Below is generated by plot.py at 2018-09-08 02:53:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 760.56 Mbit/s
95th percentile per-packet one-way delay: 193.606 ms
Loss rate: 7.25%
-- Flow 1:
Average throughput: 454.51 Mbit/s
95th percentile per-packet one-way delay: 197.325 ms
Loss rate: 10.56%
-- Flow 2:
Average throughput: 329.37 Mbit/s
95th percentile per-packet one-way delay: 71.415 ms
Loss rate: 1.45%
-- Flow 3:
Average throughput: 267.88 Mbit/s
95th percentile per-packet one-way delay: 123.707 ms
Loss rate: 2.85%
```

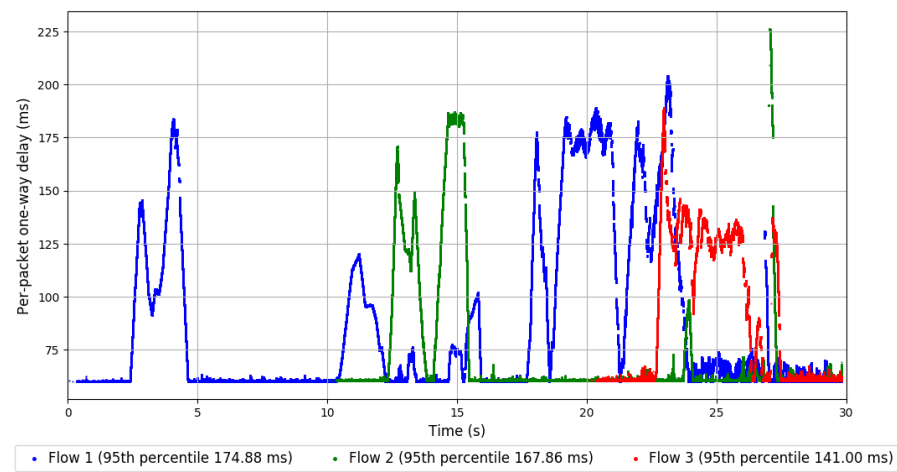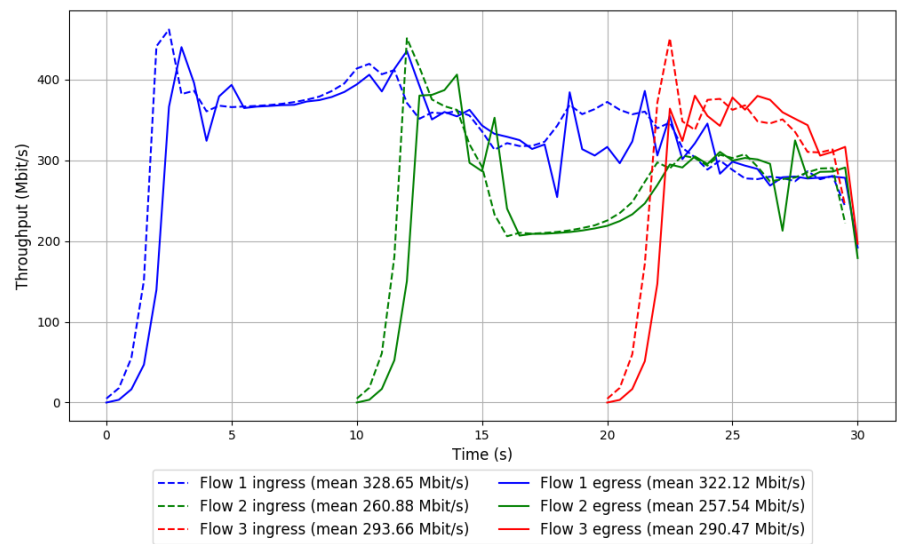## Run 3: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 506.02 Mbit/s) --- Flow 1 egress (mean 454.51 Mbit/s)
Flow 2 ingress (mean 332.09 Mbit/s) --- Flow 2 egress (mean 329.37 Mbit/s)
Flow 3 ingress (mean 272.22 Mbit/s) --- Flow 3 egress (mean 267.88 Mbit/s)

Flow 1 (95th percentile 197.32 ms) • Flow 2 (95th percentile 71.42 ms) • Flow 3 (95th percentile 123.71 ms)

```
Run 4: Statistics of PCC-Allegro

Start at: 2018-09-07 23:28:21
End at: 2018-09-07 23:28:51
Local clock offset: -0.007 ms
Remote clock offset: -0.404 ms


# Below is generated by plot.py at 2018-09-08 02:54:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 721.48 Mbit/s
95th percentile per-packet one-way delay: 184.864 ms
Loss rate: 3.48%
-- Flow 1:
Average throughput: 387.31 Mbit/s
95th percentile per-packet one-way delay: 177.419 ms
Loss rate: 4.35%
-- Flow 2:
Average throughput: 371.30 Mbit/s
95th percentile per-packet one-way delay: 191.943 ms
Loss rate: 2.62%
-- Flow 3:
Average throughput: 269.49 Mbit/s
95th percentile per-packet one-way delay: 110.001 ms
Loss rate: 1.92%
```

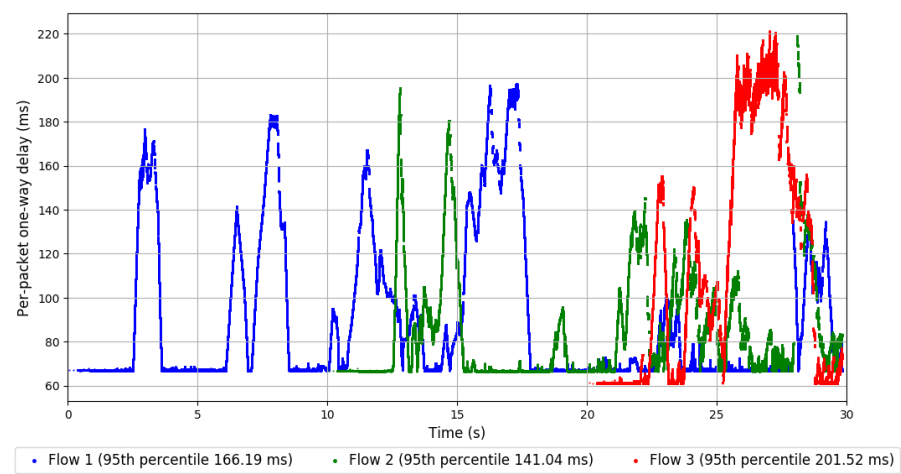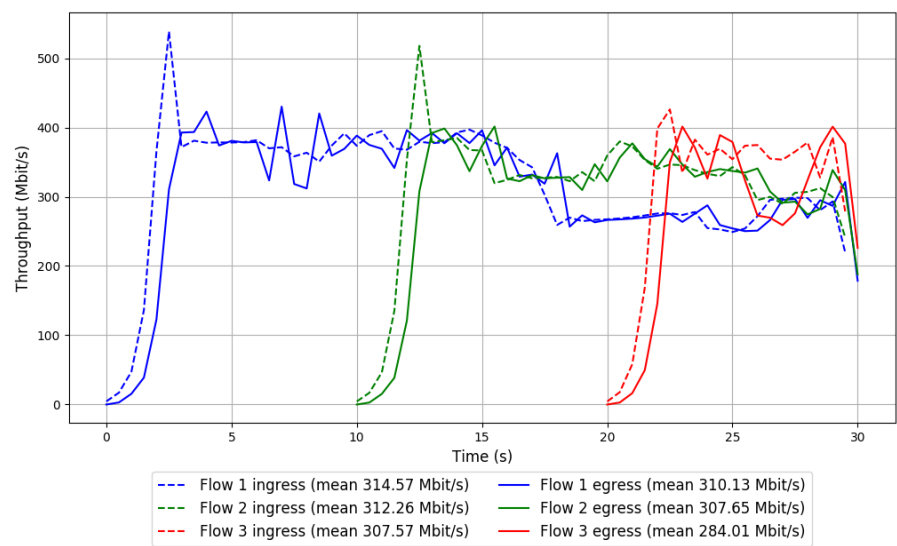# Run 4: Report of PCC-Allegro — Data Link

Legend:
- Flow 1 ingress (mean 403.10 Mbit/s) — Flow 1 egress (mean 387.31 Mbit/s)
- Flow 2 ingress (mean 378.70 Mbit/s) — Flow 2 egress (mean 371.30 Mbit/s)
- Flow 3 ingress (mean 270.99 Mbit/s) — Flow 3 egress (mean 269.49 Mbit/s)

Legend:
- Flow 1 (95th percentile 177.42 ms)
- Flow 2 (95th percentile 191.94 ms)
- Flow 3 (95th percentile 110.00 ms)

```
Run 5: Statistics of PCC-Allegro

Start at: 2018-09-08 00:01:03
End at: 2018-09-08 00:01:33
Local clock offset: -0.017 ms
Remote clock offset: -0.142 ms


# Below is generated by plot.py at 2018-09-08 02:58:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 785.73 Mbit/s
95th percentile per-packet one-way delay: 188.243 ms
Loss rate: 3.74%
-- Flow 1:
Average throughput: 459.34 Mbit/s
95th percentile per-packet one-way delay: 190.833 ms
Loss rate: 5.06%
-- Flow 2:
Average throughput: 365.71 Mbit/s
95th percentile per-packet one-way delay: 174.738 ms
Loss rate: 1.77%
-- Flow 3:
Average throughput: 256.70 Mbit/s
95th percentile per-packet one-way delay: 133.927 ms
Loss rate: 1.94%
```
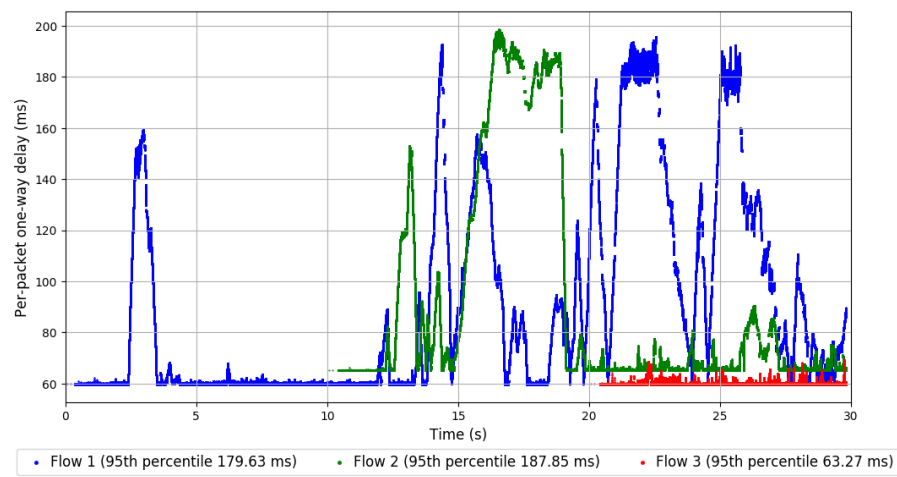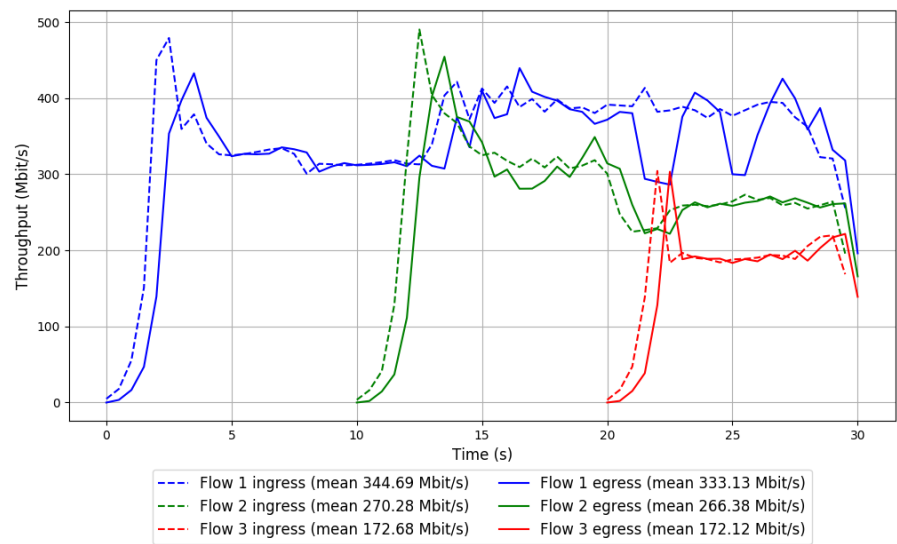
Run 5: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 481.63 Mbit/s)   Flow 1 egress (mean 459.34 Mbit/s)
Flow 2 ingress (mean 369.87 Mbit/s)   Flow 2 egress (mean 365.71 Mbit/s)
Flow 3 ingress (mean 258.30 Mbit/s)   Flow 3 egress (mean 256.70 Mbit/s)

Flow 1 (95th percentile 190.83 ms)   Flow 2 (95th percentile 174.74 ms)   Flow 3 (95th percentile 133.93 ms)

```
Run 1: Statistics of PCC-Expr

Start at: 2018-09-07 22:01:30
End at: 2018-09-07 22:02:00
Local clock offset: -0.051 ms
Remote clock offset: 0.28 ms


# Below is generated by plot.py at 2018-09-08 02:58:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 588.15 Mbit/s
95th percentile per-packet one-way delay: 172.142 ms
Loss rate: 2.26%
-- Flow 1:
Average throughput: 322.12 Mbit/s
95th percentile per-packet one-way delay: 174.884 ms
Loss rate: 2.41%
-- Flow 2:
Average throughput: 257.54 Mbit/s
95th percentile per-packet one-way delay: 167.859 ms
Loss rate: 1.92%
-- Flow 3:
Average throughput: 290.47 Mbit/s
95th percentile per-packet one-way delay: 140.997 ms
Loss rate: 2.38%
```
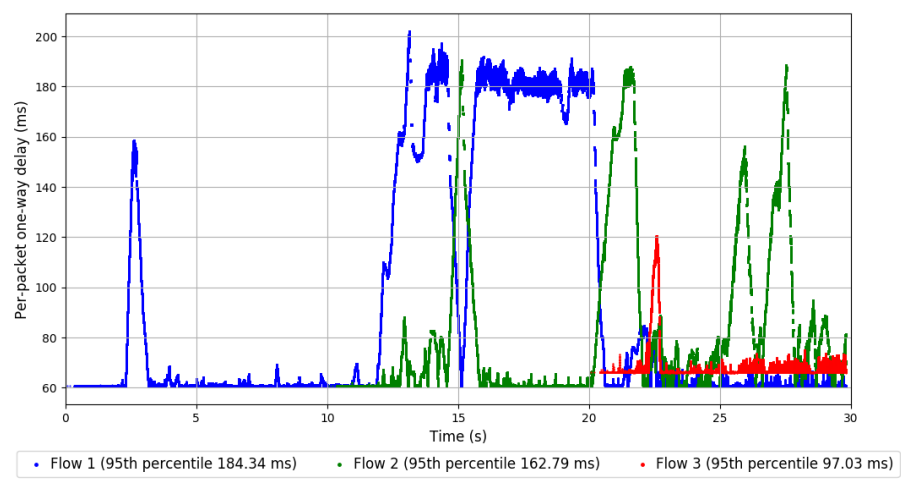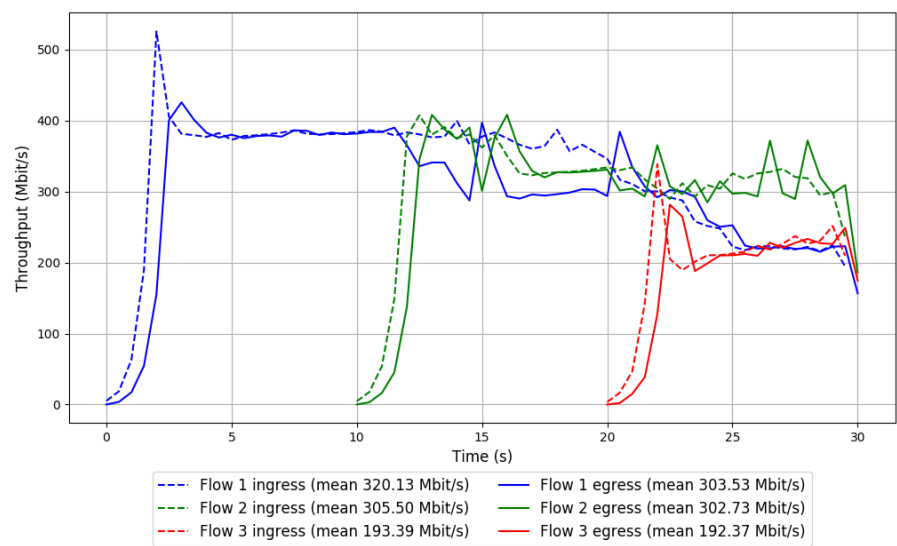
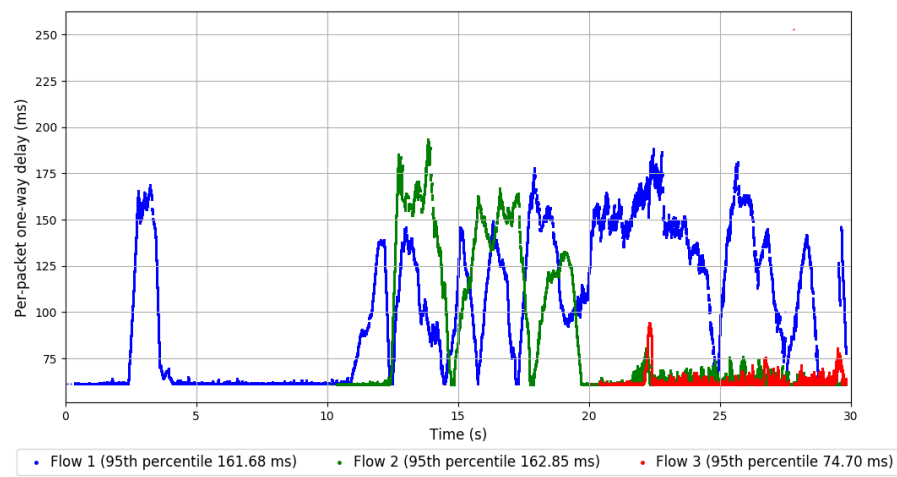# Run 1: Report of PCC-Expr — Data Link

```
Run 2: Statistics of PCC-Expr

Start at: 2018-09-07 22:33:46
End at: 2018-09-07 22:34:16
Local clock offset: -0.036 ms
Remote clock offset: -0.509 ms


# Below is generated by plot.py at 2018-09-08 02:58:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 607.30 Mbit/s
95th percentile per-packet one-way delay: 176.188 ms
Loss rate: 3.08%
-- Flow 1:
Average throughput: 310.13 Mbit/s
95th percentile per-packet one-way delay: 166.189 ms
Loss rate: 1.85%
-- Flow 2:
Average throughput: 307.65 Mbit/s
95th percentile per-packet one-way delay: 141.038 ms
Loss rate: 2.13%
-- Flow 3:
Average throughput: 284.01 Mbit/s
95th percentile per-packet one-way delay: 201.523 ms
Loss rate: 8.85%
```
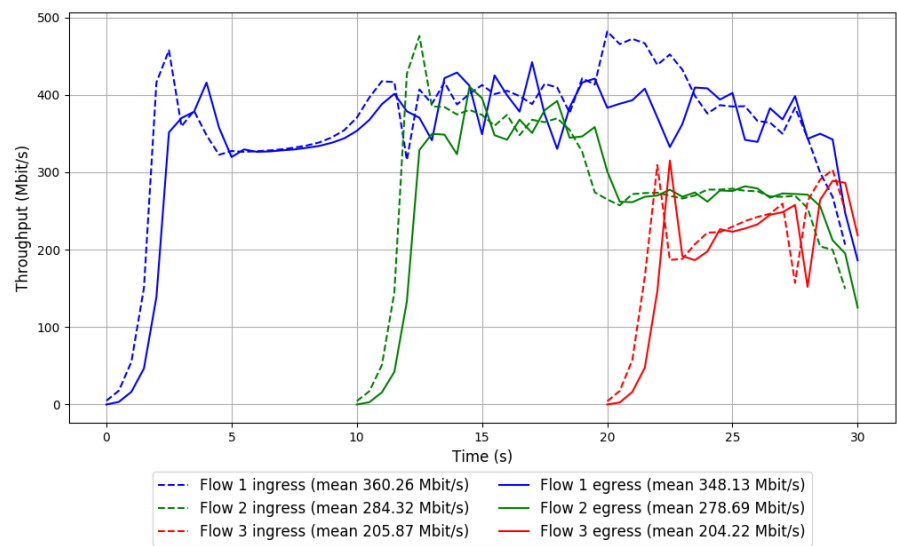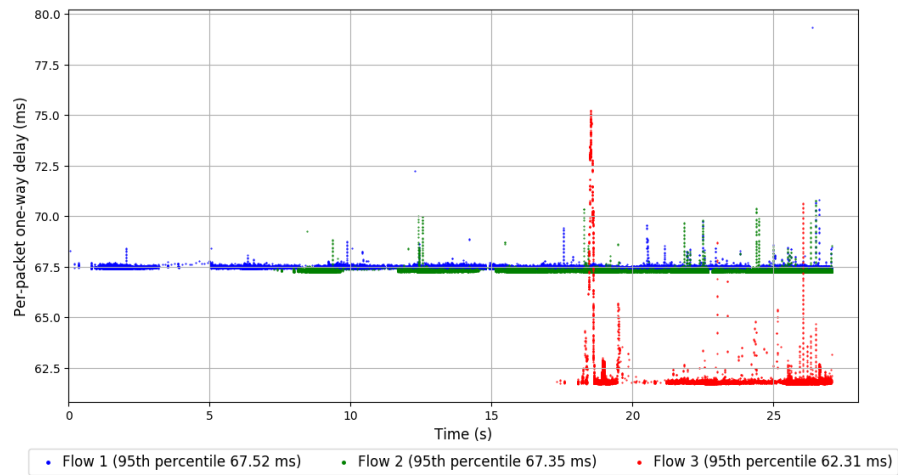
Run 2: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 314.57 Mbit/s)   Flow 1 egress (mean 310.13 Mbit/s)
Flow 2 ingress (mean 312.26 Mbit/s)   Flow 2 egress (mean 307.65 Mbit/s)
Flow 3 ingress (mean 307.57 Mbit/s)   Flow 3 egress (mean 284.01 Mbit/s)

Flow 1 (95th percentile 166.19 ms)   Flow 2 (95th percentile 141.04 ms)   Flow 3 (95th percentile 201.52 ms)

```
Run 3: Statistics of PCC-Expr

Start at: 2018-09-07 23:06:45
End at: 2018-09-07 23:07:15
Local clock offset: -0.027 ms
Remote clock offset: 0.902 ms


# Below is generated by plot.py at 2018-09-08 02:58:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 566.19 Mbit/s
95th percentile per-packet one-way delay: 183.147 ms
Loss rate: 3.05%
-- Flow 1:
Average throughput: 333.13 Mbit/s
95th percentile per-packet one-way delay: 179.631 ms
Loss rate: 3.77%
-- Flow 2:
Average throughput: 266.38 Mbit/s
95th percentile per-packet one-way delay: 187.852 ms
Loss rate: 2.11%
-- Flow 3:
Average throughput: 172.12 Mbit/s
95th percentile per-packet one-way delay: 63.271 ms
Loss rate: 1.62%
```
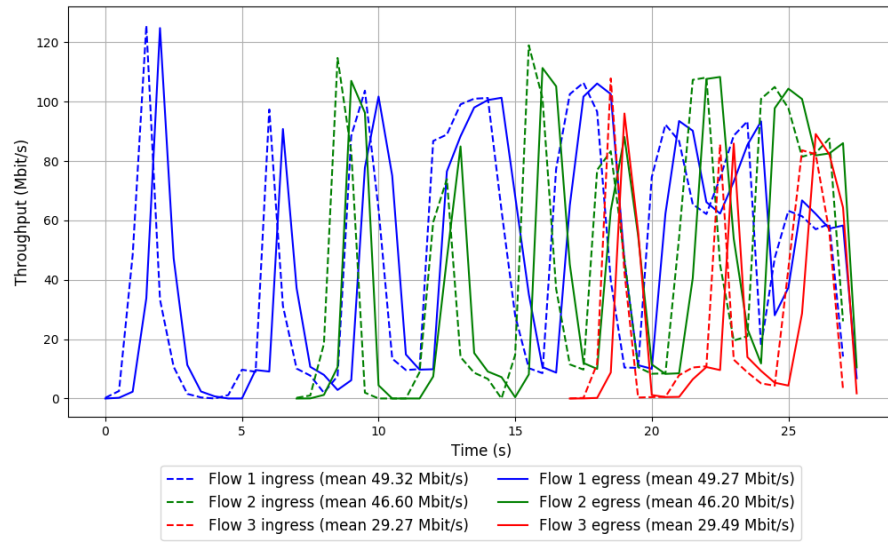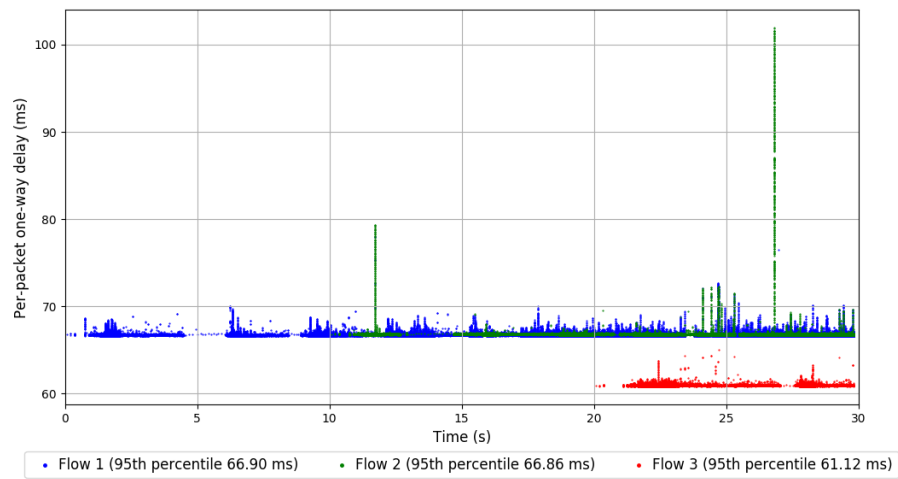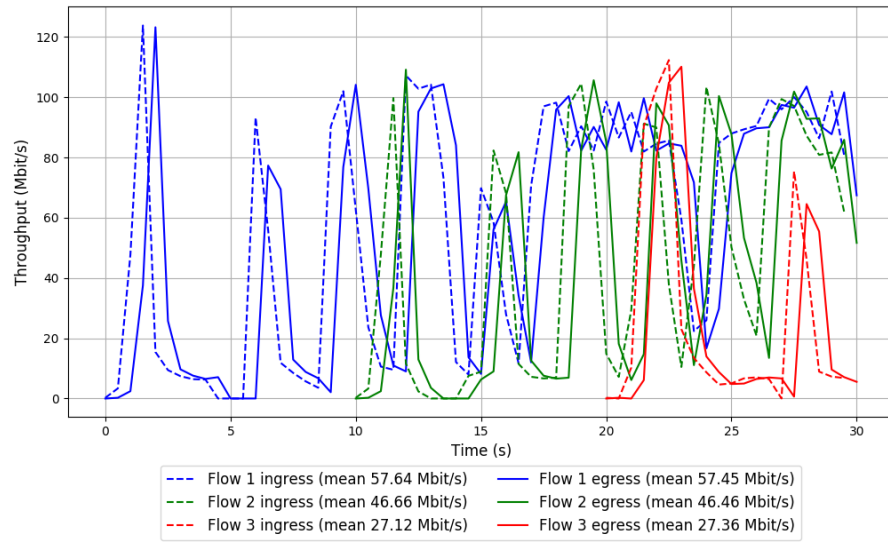
Run 3: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 344.69 Mbit/s) --- Flow 1 egress (mean 333.13 Mbit/s)
Flow 2 ingress (mean 270.28 Mbit/s) --- Flow 2 egress (mean 266.38 Mbit/s)
Flow 3 ingress (mean 172.68 Mbit/s) --- Flow 3 egress (mean 172.12 Mbit/s)

Flow 1 (95th percentile 179.63 ms)   Flow 2 (95th percentile 187.85 ms)   Flow 3 (95th percentile 63.27 ms)

```
Run 4: Statistics of PCC-Expr

Start at: 2018-09-07 23:39:34
End at: 2018-09-07 23:40:04
Local clock offset: -0.014 ms
Remote clock offset: 0.069 ms


# Below is generated by plot.py at 2018-09-08 03:02:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 567.32 Mbit/s
95th percentile per-packet one-way delay: 182.409 ms
Loss rate: 3.79%
-- Flow 1:
Average throughput: 303.53 Mbit/s
95th percentile per-packet one-way delay: 184.338 ms
Loss rate: 5.59%
-- Flow 2:
Average throughput: 302.73 Mbit/s
95th percentile per-packet one-way delay: 162.789 ms
Loss rate: 1.55%
-- Flow 3:
Average throughput: 192.37 Mbit/s
95th percentile per-packet one-way delay: 97.026 ms
Loss rate: 1.88%
```

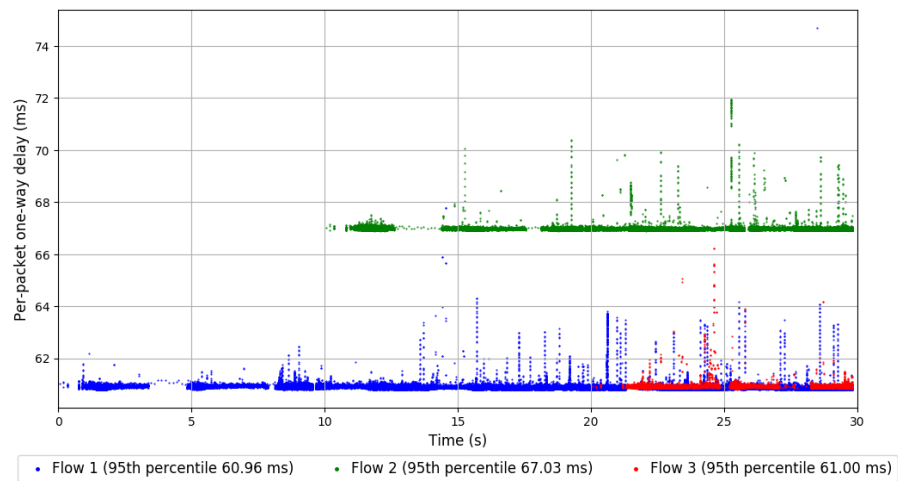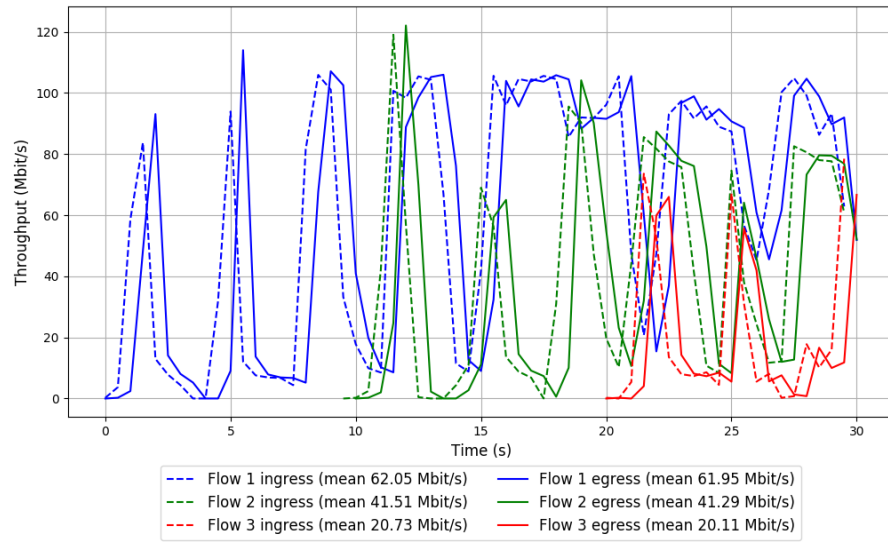Run 4: Report of PCC-Expr — Data Link

```
Run 5: Statistics of PCC-Expr

Start at: 2018-09-08 00:12:15
End at: 2018-09-08 00:12:45
Local clock offset: 0.005 ms
Remote clock offset: -0.622 ms


# Below is generated by plot.py at 2018-09-08 03:03:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 599.85 Mbit/s
95th percentile per-packet one-way delay: 161.425 ms
Loss rate: 3.24%
-- Flow 1:
Average throughput: 348.13 Mbit/s
95th percentile per-packet one-way delay: 161.683 ms
Loss rate: 3.78%
-- Flow 2:
Average throughput: 278.69 Mbit/s
95th percentile per-packet one-way delay: 162.850 ms
Loss rate: 2.61%
-- Flow 3:
Average throughput: 204.22 Mbit/s
95th percentile per-packet one-way delay: 74.698 ms
Loss rate: 2.09%
```

Run 5: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 360.26 Mbit/s)   Flow 1 egress (mean 348.13 Mbit/s)
Flow 2 ingress (mean 284.32 Mbit/s)   Flow 2 egress (mean 278.69 Mbit/s)
Flow 3 ingress (mean 205.87 Mbit/s)   Flow 3 egress (mean 204.22 Mbit/s)

Flow 1 (95th percentile 161.68 ms)   Flow 2 (95th percentile 162.85 ms)   Flow 3 (95th percentile 74.70 ms)

```
Run 1: Statistics of QUIC Cubic

Start at: 2018-09-07 21:54:18
End at: 2018-09-07 21:54:48
Local clock offset: -0.047 ms
Remote clock offset: -1.089 ms


# Below is generated by plot.py at 2018-09-08 03:03:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.78 Mbit/s
95th percentile per-packet one-way delay: 67.502 ms
Loss rate: 0.92%
-- Flow 1:
Average throughput: 49.27 Mbit/s
95th percentile per-packet one-way delay: 67.520 ms
Loss rate: 0.58%
-- Flow 2:
Average throughput: 46.20 Mbit/s
95th percentile per-packet one-way delay: 67.352 ms
Loss rate: 1.53%
-- Flow 3:
Average throughput: 29.49 Mbit/s
95th percentile per-packet one-way delay: 62.314 ms
Loss rate: 0.56%
```
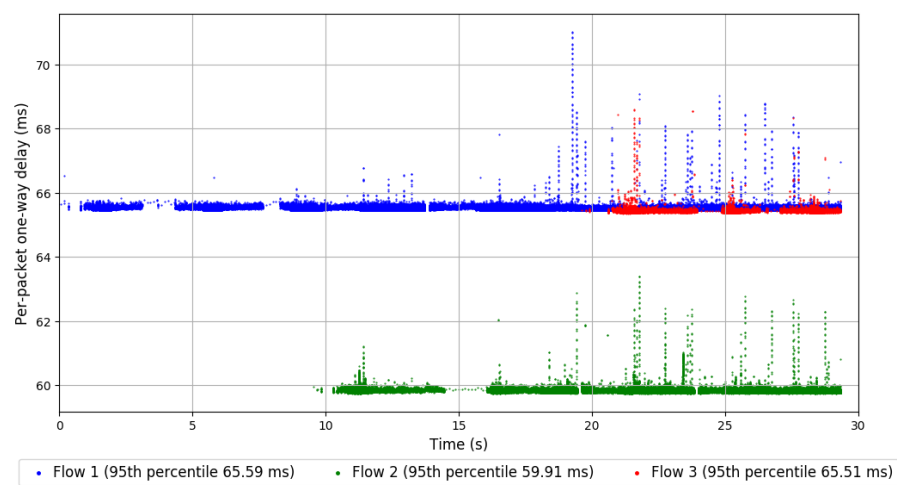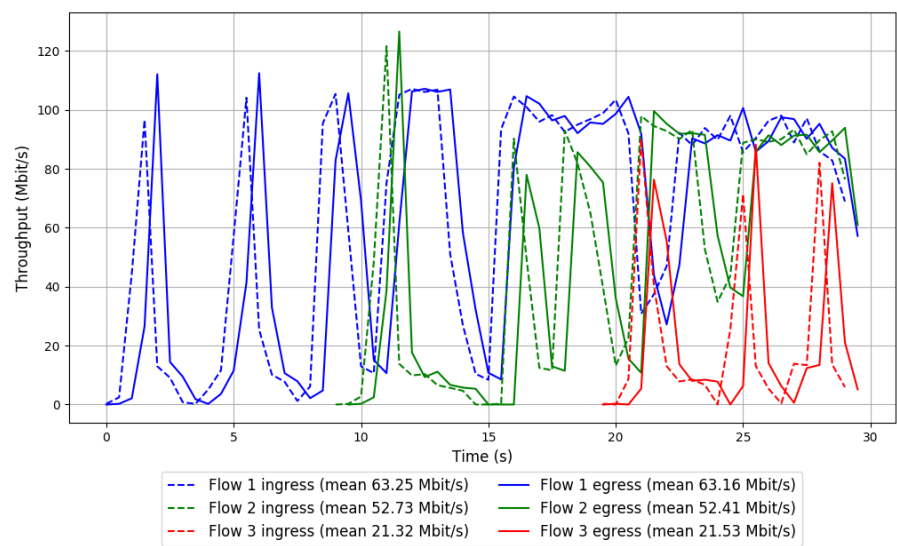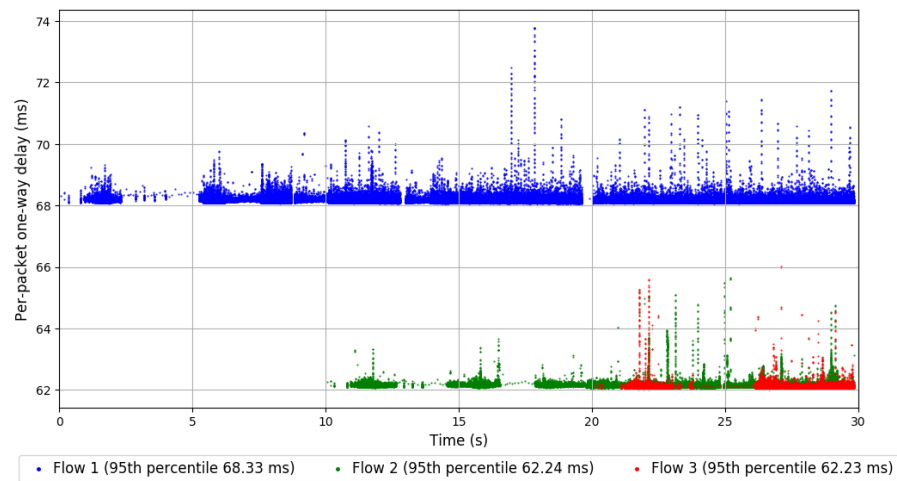
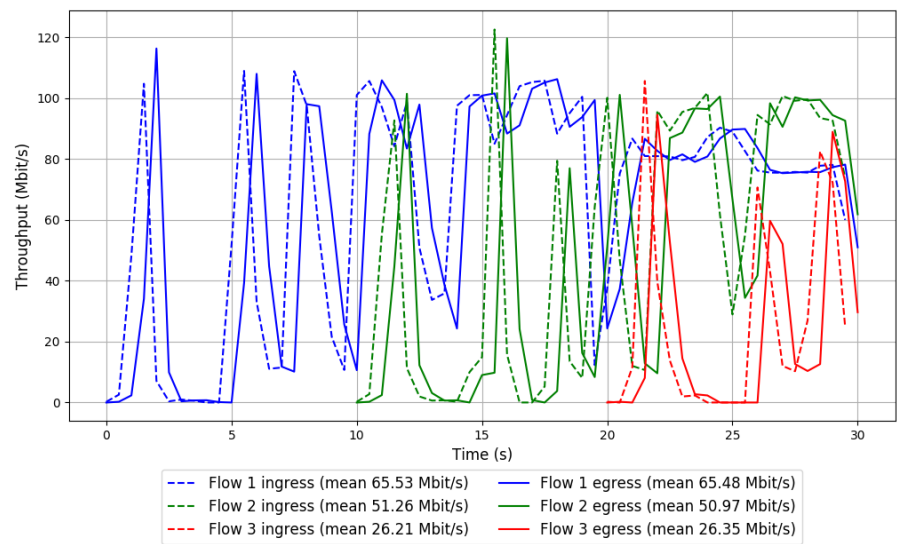Run 1: Report of QUIC Cubic — Data Link

```
Run 2: Statistics of QUIC Cubic

Start at: 2018-09-07 22:26:37
End at: 2018-09-07 22:27:07
Local clock offset: -0.032 ms
Remote clock offset: -0.393 ms


# Below is generated by plot.py at 2018-09-08 03:03:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 97.26 Mbit/s
95th percentile per-packet one-way delay: 66.863 ms
Loss rate: 0.84%
-- Flow 1:
Average throughput: 57.45 Mbit/s
95th percentile per-packet one-way delay: 66.902 ms
Loss rate: 0.77%
-- Flow 2:
Average throughput: 46.46 Mbit/s
95th percentile per-packet one-way delay: 66.862 ms
Loss rate: 1.10%
-- Flow 3:
Average throughput: 27.36 Mbit/s
95th percentile per-packet one-way delay: 61.115 ms
Loss rate: 0.43%
```

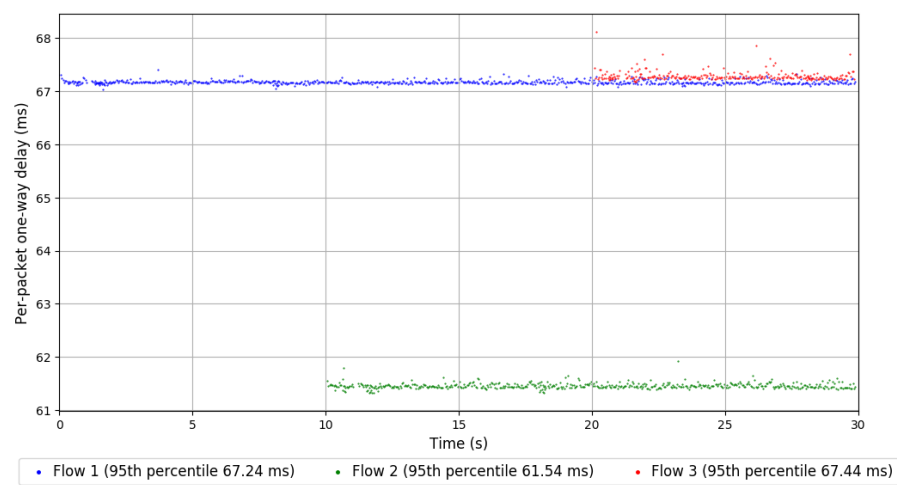Run 2: Report of QUIC Cubic — Data Link

```
Run 3: Statistics of QUIC Cubic

Start at: 2018-09-07 22:59:26
End at: 2018-09-07 22:59:56
Local clock offset: -0.001 ms
Remote clock offset: -0.615 ms


# Below is generated by plot.py at 2018-09-08 03:03:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.95 Mbit/s
95th percentile per-packet one-way delay: 66.991 ms
Loss rate: 1.02%
-- Flow 1:
Average throughput: 61.95 Mbit/s
95th percentile per-packet one-way delay: 60.956 ms
Loss rate: 0.58%
-- Flow 2:
Average throughput: 41.29 Mbit/s
95th percentile per-packet one-way delay: 67.027 ms
Loss rate: 1.21%
-- Flow 3:
Average throughput: 20.11 Mbit/s
95th percentile per-packet one-way delay: 61.004 ms
Loss rate: 4.24%
```
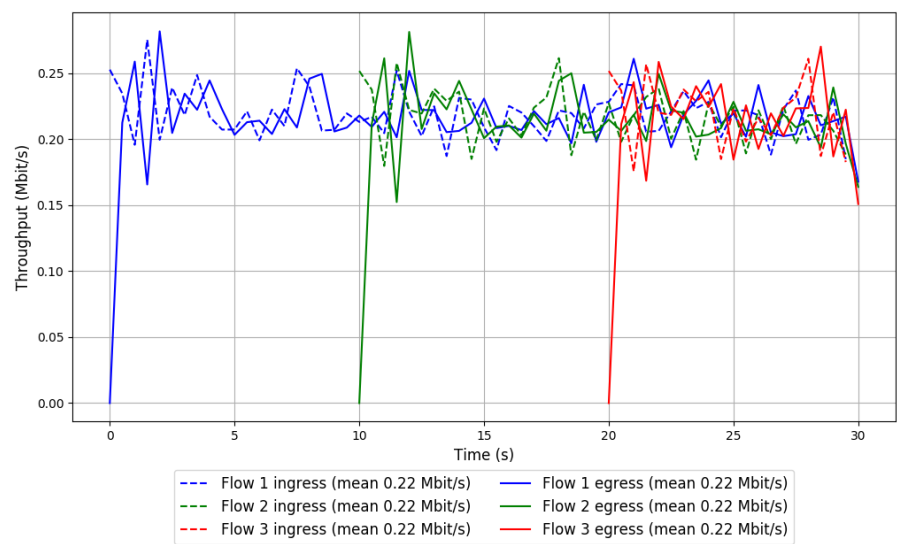
Run 3: Report of QUIC Cubic — Data Link

```
Run 4: Statistics of QUIC Cubic

Start at: 2018-09-07 23:32:18
End at: 2018-09-07 23:32:48
Local clock offset: -0.034 ms
Remote clock offset: 0.666 ms


# Below is generated by plot.py at 2018-09-08 03:03:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 105.71 Mbit/s
95th percentile per-packet one-way delay: 65.574 ms
Loss rate: 0.81%
-- Flow 1:
Average throughput: 63.16 Mbit/s
95th percentile per-packet one-way delay: 65.591 ms
Loss rate: 0.61%
-- Flow 2:
Average throughput: 52.41 Mbit/s
95th percentile per-packet one-way delay: 59.906 ms
Loss rate: 1.23%
-- Flow 3:
Average throughput: 21.53 Mbit/s
95th percentile per-packet one-way delay: 65.506 ms
Loss rate: 0.45%
```
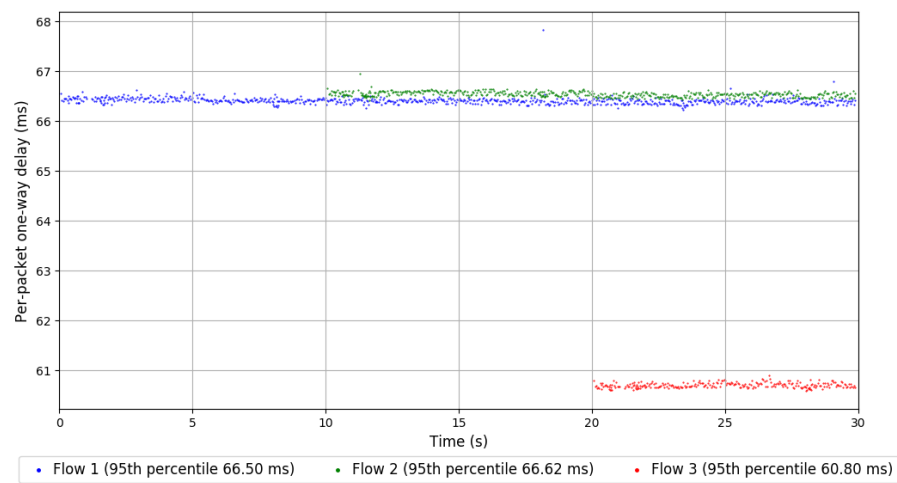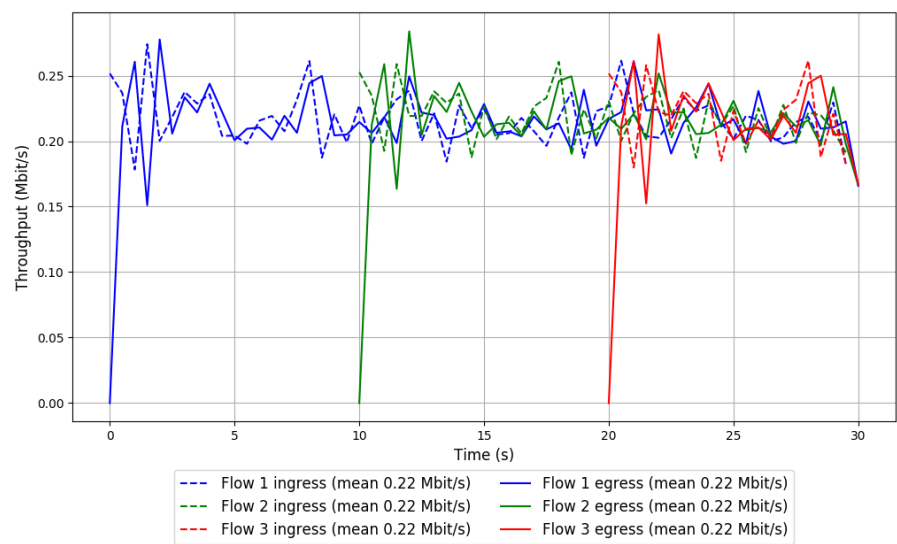
Run 4: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 63.25 Mbit/s) -- Flow 1 egress (mean 63.16 Mbit/s)
Flow 2 ingress (mean 52.73 Mbit/s) -- Flow 2 egress (mean 52.41 Mbit/s)
Flow 3 ingress (mean 21.32 Mbit/s) -- Flow 3 egress (mean 21.53 Mbit/s)

Flow 1 (95th percentile 65.59 ms) · Flow 2 (95th percentile 59.91 ms) · Flow 3 (95th percentile 65.51 ms)

```
Run 5: Statistics of QUIC Cubic

Start at: 2018-09-08 00:05:04
End at: 2018-09-08 00:05:34
Local clock offset: 0.023 ms
Remote clock offset: -1.764 ms


# Below is generated by plot.py at 2018-09-08 03:03:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 107.97 Mbit/s
95th percentile per-packet one-way delay: 68.272 ms
Loss rate: 0.73%
-- Flow 1:
Average throughput: 65.48 Mbit/s
95th percentile per-packet one-way delay: 68.332 ms
Loss rate: 0.50%
-- Flow 2:
Average throughput: 50.97 Mbit/s
95th percentile per-packet one-way delay: 62.240 ms
Loss rate: 1.16%
-- Flow 3:
Average throughput: 26.35 Mbit/s
95th percentile per-packet one-way delay: 62.227 ms
Loss rate: 0.76%
```

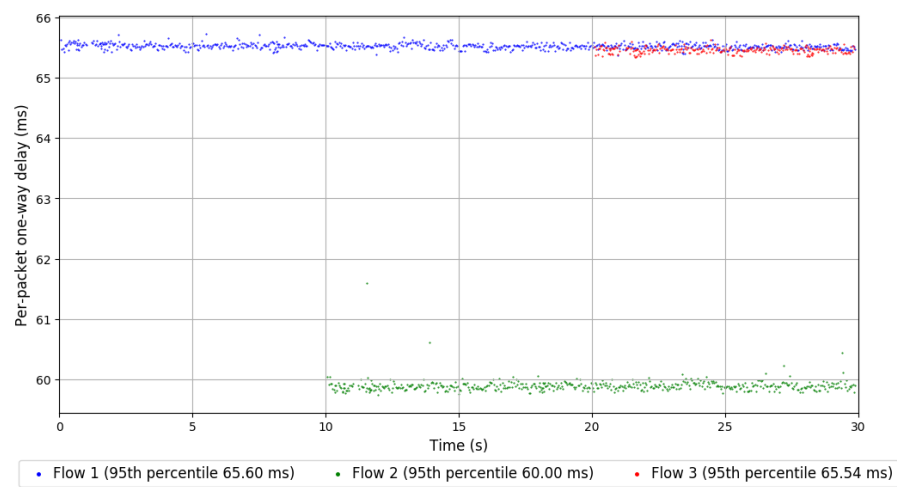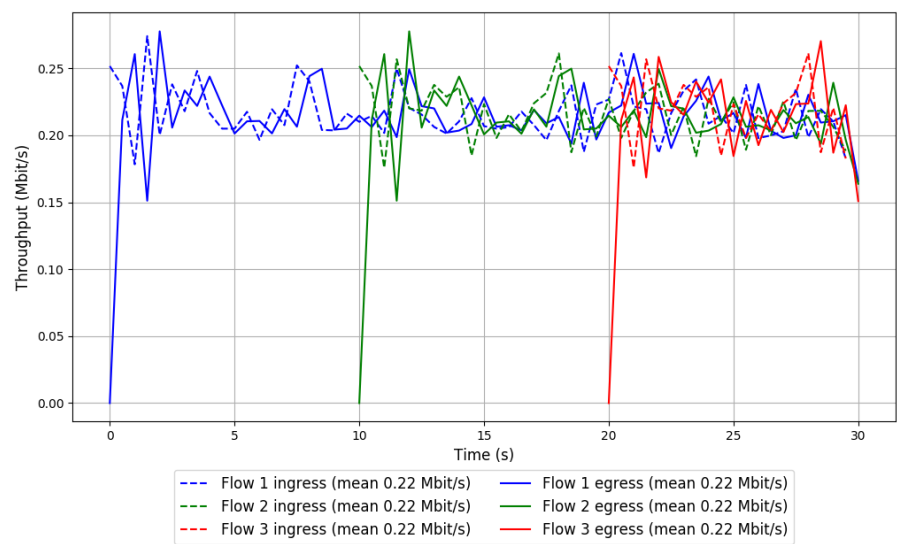Run 5: Report of QUIC Cubic — Data Link

```
Run 1: Statistics of SCReAM

Start at: 2018-09-07 21:57:25
End at: 2018-09-07 21:57:55
Local clock offset: -0.048 ms
Remote clock offset: -0.651 ms


# Below is generated by plot.py at 2018-09-08 03:03:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 67.295 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 67.237 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 61.542 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 67.435 ms
Loss rate: 1.45%
```
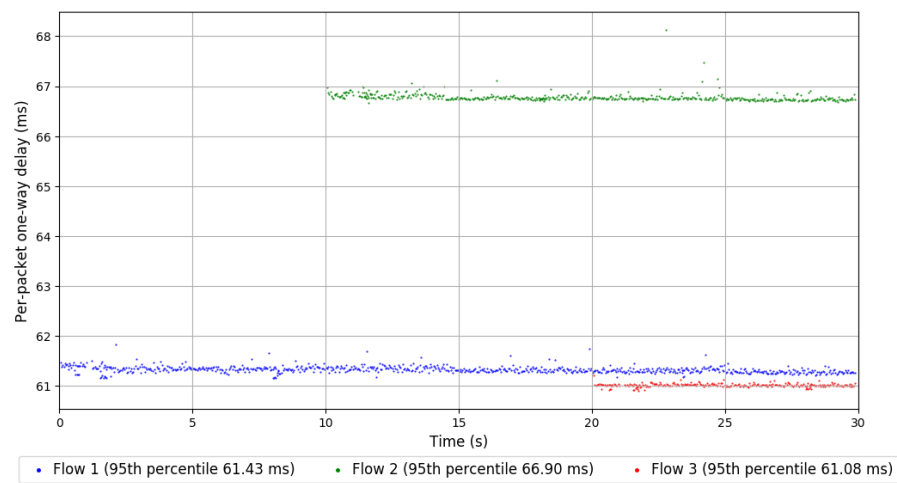
Run 1: Report of SCReAM — Data Link

```
Run 2: Statistics of SCReAM

Start at: 2018-09-07 22:29:47
End at: 2018-09-07 22:30:17
Local clock offset: -0.017 ms
Remote clock offset: 0.026 ms

# Below is generated by plot.py at 2018-09-08 03:03:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 66.599 ms
Loss rate: 0.58%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 66.498 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 66.620 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 60.799 ms
Loss rate: 1.08%
```
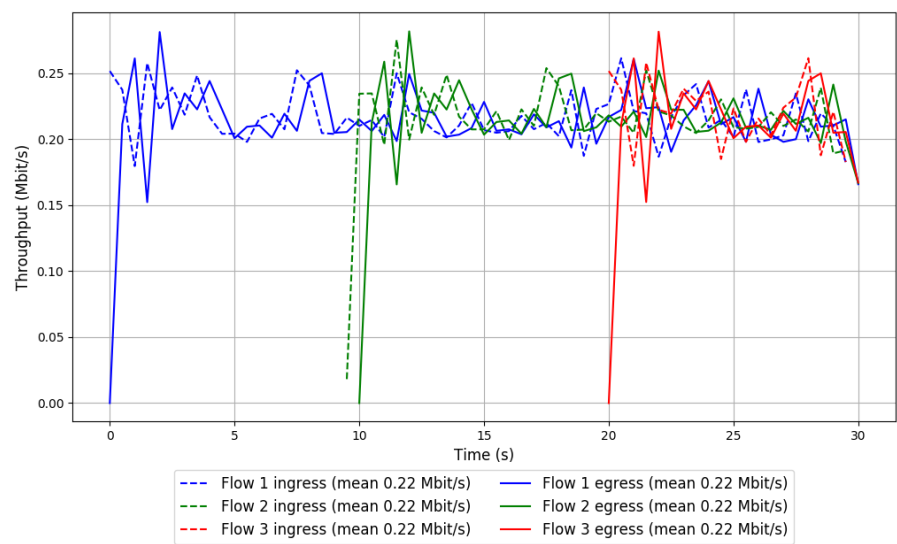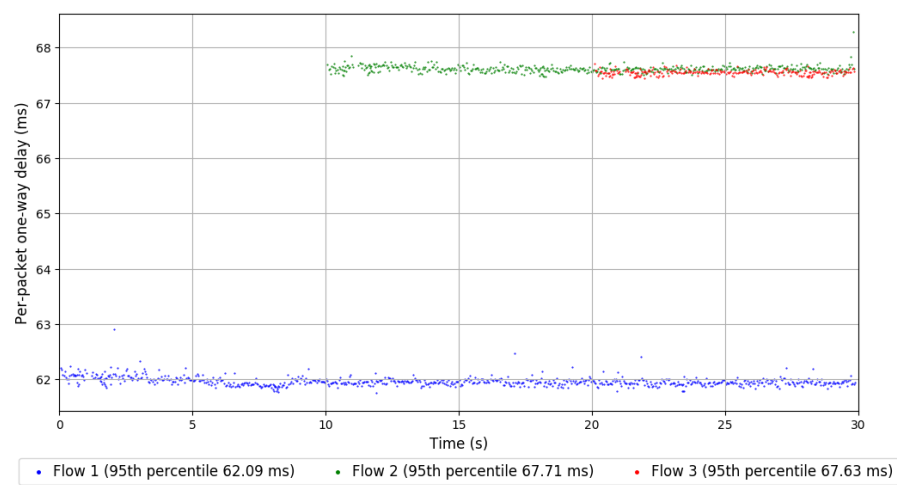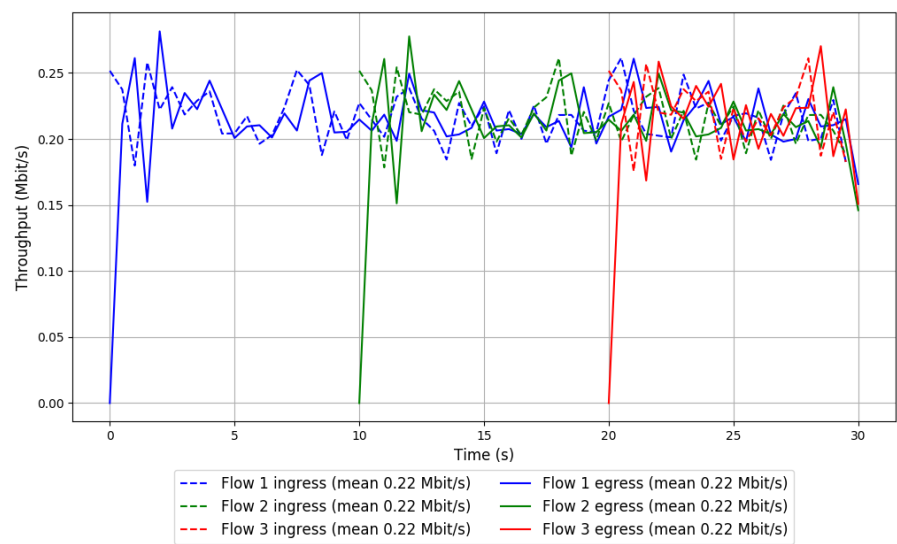
Run 2: Report of SCReAM — Data Link

```
Run 3: Statistics of SCReAM

Start at: 2018-09-07 23:02:37
End at: 2018-09-07 23:03:07
Local clock offset: -0.044 ms
Remote clock offset: 0.824 ms

# Below is generated by plot.py at 2018-09-08 03:03:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 65.581 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 65.599 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 59.996 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 65.537 ms
Loss rate: 1.45%
```

Run 3: Report of SCReAM — Data Link

```
Run 4: Statistics of SCReAM

Start at: 2018-09-07 23:35:28
End at: 2018-09-07 23:35:58
Local clock offset: -0.006 ms
Remote clock offset: -0.74 ms


# Below is generated by plot.py at 2018-09-08 03:03:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 66.832 ms
Loss rate: 0.58%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 61.431 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 66.896 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 61.077 ms
Loss rate: 1.08%
```
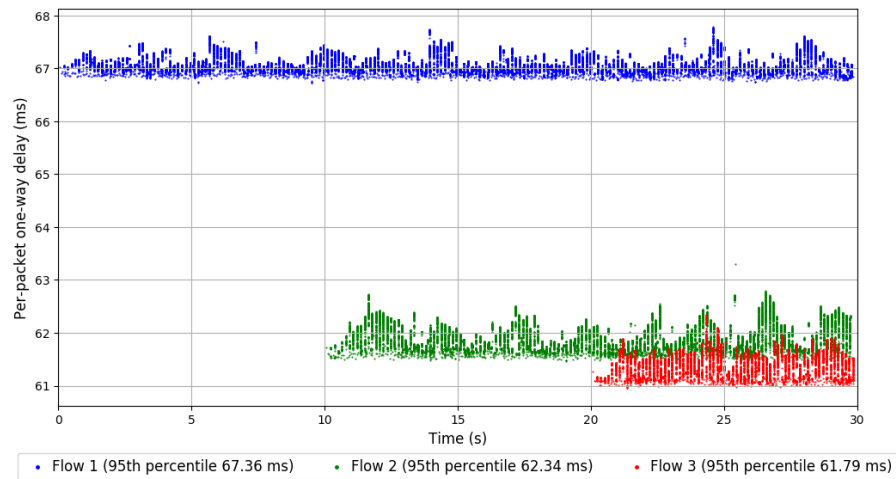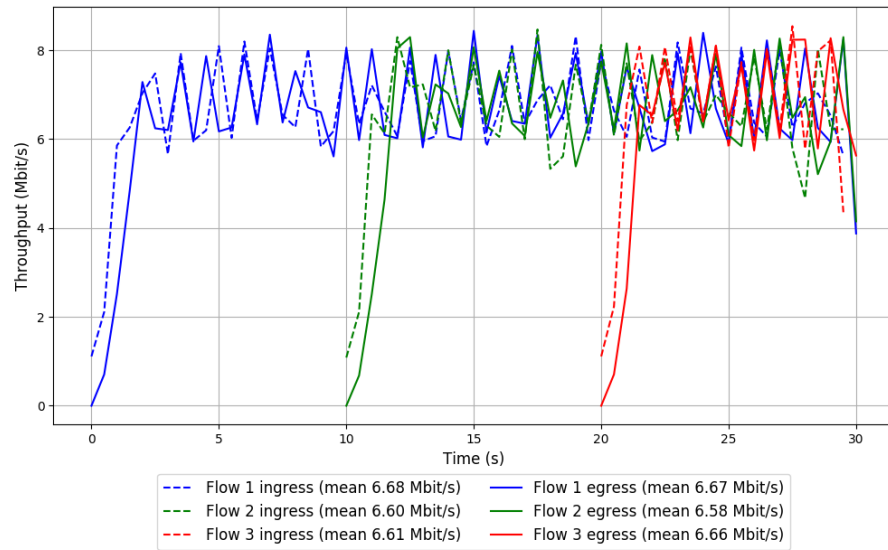
Run 4: Report of SCReAM — Data Link

```
Run 5: Statistics of SCReAM

Start at: 2018-09-08 00:08:13
End at: 2018-09-08 00:08:43
Local clock offset: -0.031 ms
Remote clock offset: -1.367 ms


# Below is generated by plot.py at 2018-09-08 03:03:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 67.670 ms
Loss rate: 0.71%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 62.095 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 67.708 ms
Loss rate: 0.82%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 67.629 ms
Loss rate: 1.45%
```
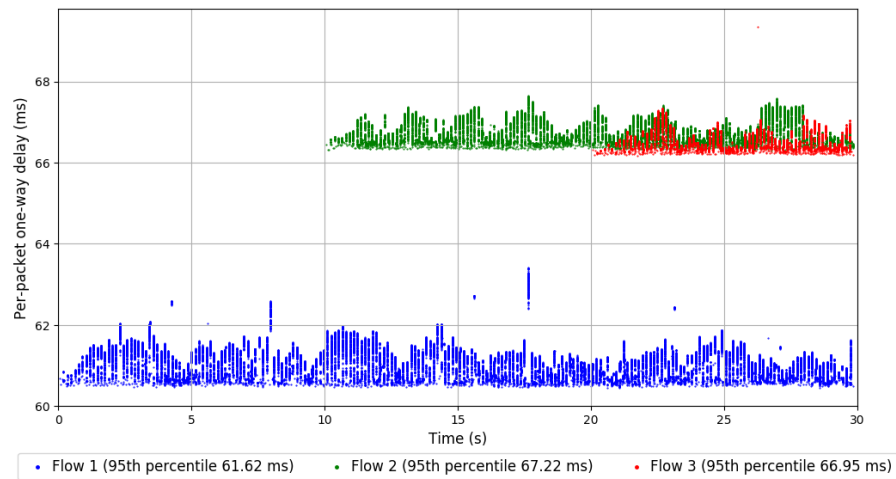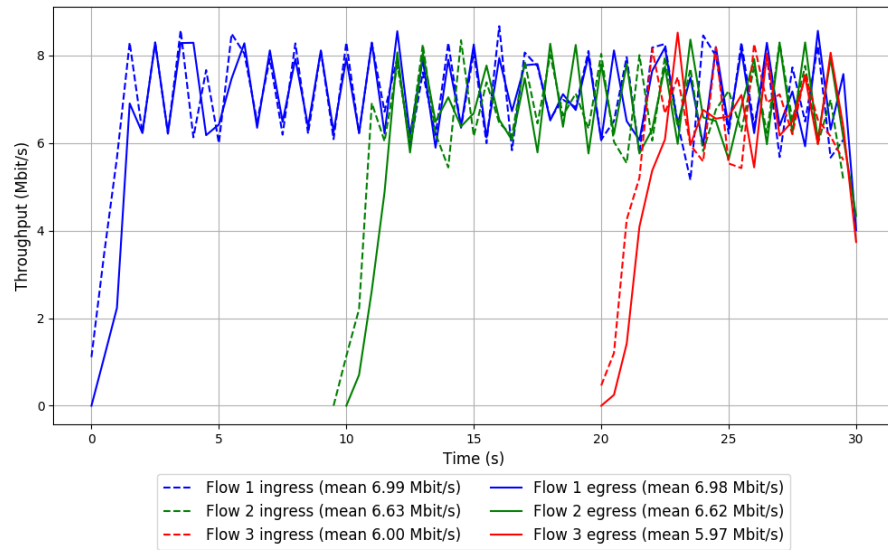
Run 5: Report of SCReAM — Data Link

```
Run 1: Statistics of Sprout

Start at: 2018-09-07 22:09:29
End at: 2018-09-07 22:09:59
Local clock offset: -0.021 ms
Remote clock offset: -0.65 ms


# Below is generated by plot.py at 2018-09-08 03:03:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 13.22 Mbit/s
95th percentile per-packet one-way delay: 67.287 ms
Loss rate: 0.55%
-- Flow 1:
Average throughput: 6.67 Mbit/s
95th percentile per-packet one-way delay: 67.364 ms
Loss rate: 0.49%
-- Flow 2:
Average throughput: 6.58 Mbit/s
95th percentile per-packet one-way delay: 62.337 ms
Loss rate: 0.79%
-- Flow 3:
Average throughput: 6.66 Mbit/s
95th percentile per-packet one-way delay: 61.786 ms
Loss rate: 0.21%
```
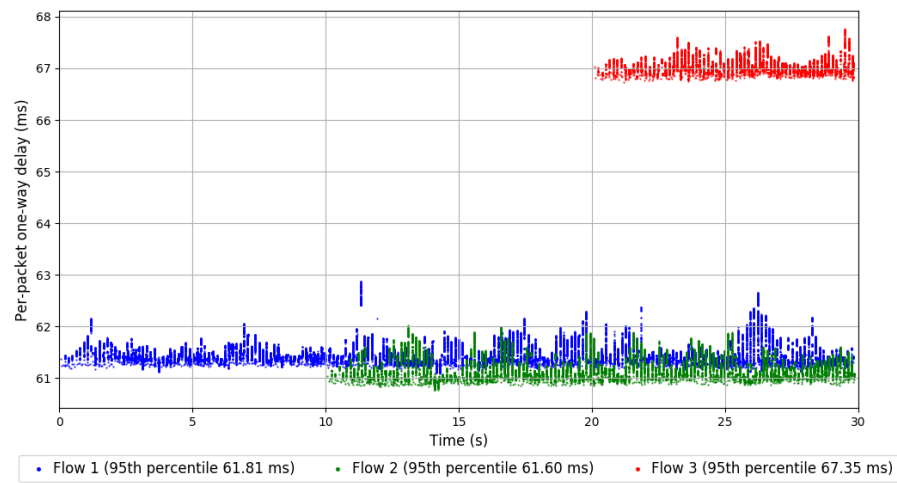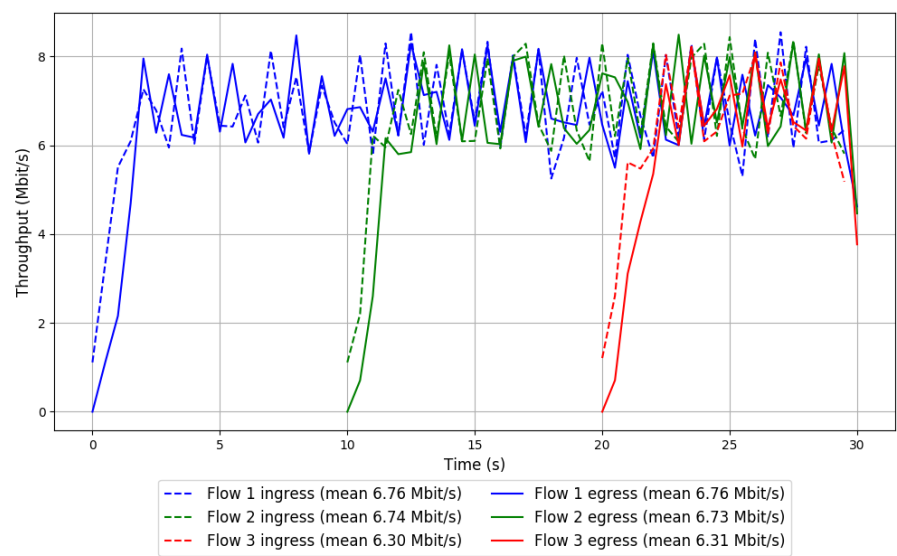
Run 1: Report of Sprout — Data Link

```
Run 2: Statistics of Sprout

Start at: 2018-09-07 22:42:08
End at: 2018-09-07 22:42:38
Local clock offset: -0.034 ms
Remote clock offset: 0.053 ms


# Below is generated by plot.py at 2018-09-08 03:03:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 13.33 Mbit/s
95th percentile per-packet one-way delay: 67.051 ms
Loss rate: 0.73%
-- Flow 1:
Average throughput: 6.98 Mbit/s
95th percentile per-packet one-way delay: 61.615 ms
Loss rate: 0.50%
-- Flow 2:
Average throughput: 6.62 Mbit/s
95th percentile per-packet one-way delay: 67.215 ms
Loss rate: 0.66%
-- Flow 3:
Average throughput: 5.97 Mbit/s
95th percentile per-packet one-way delay: 66.953 ms
Loss rate: 1.71%
```
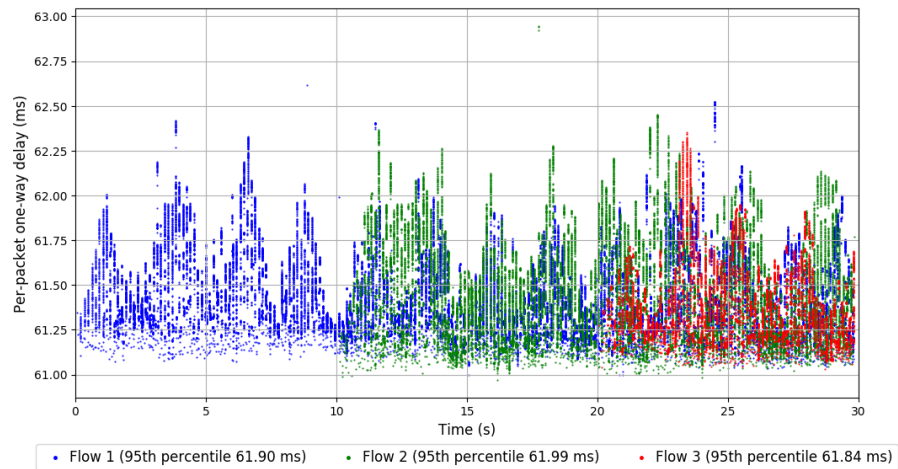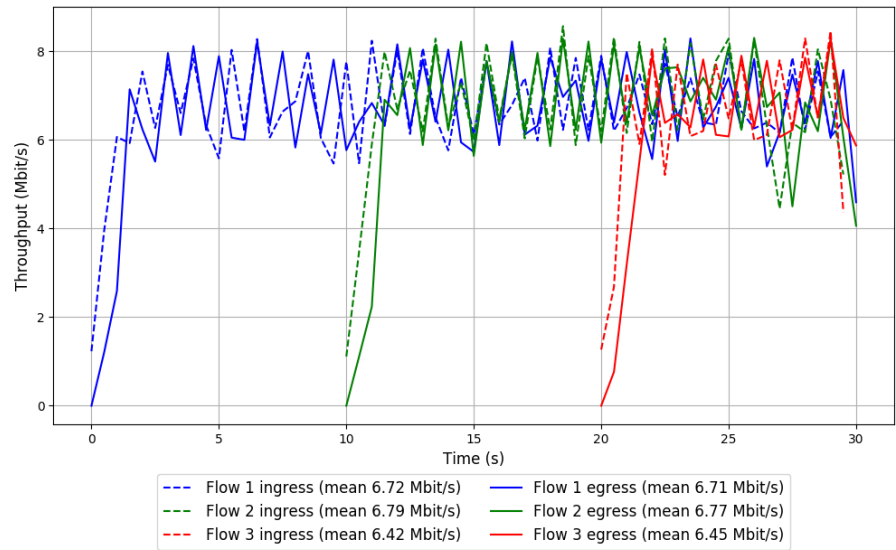
Run 2: Report of Sprout — Data Link

```
Run 3: Statistics of Sprout

Start at: 2018-09-07 23:15:00
End at: 2018-09-07 23:15:30
Local clock offset: -0.008 ms
Remote clock offset: -0.58 ms

# Below is generated by plot.py at 2018-09-08 03:03:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 13.28 Mbit/s
95th percentile per-packet one-way delay: 67.081 ms
Loss rate: 0.65%
-- Flow 1:
Average throughput: 6.76 Mbit/s
95th percentile per-packet one-way delay: 61.815 ms
Loss rate: 0.45%
-- Flow 2:
Average throughput: 6.73 Mbit/s
95th percentile per-packet one-way delay: 61.600 ms
Loss rate: 0.62%
-- Flow 3:
Average throughput: 6.31 Mbit/s
95th percentile per-packet one-way delay: 67.347 ms
Loss rate: 1.41%
```
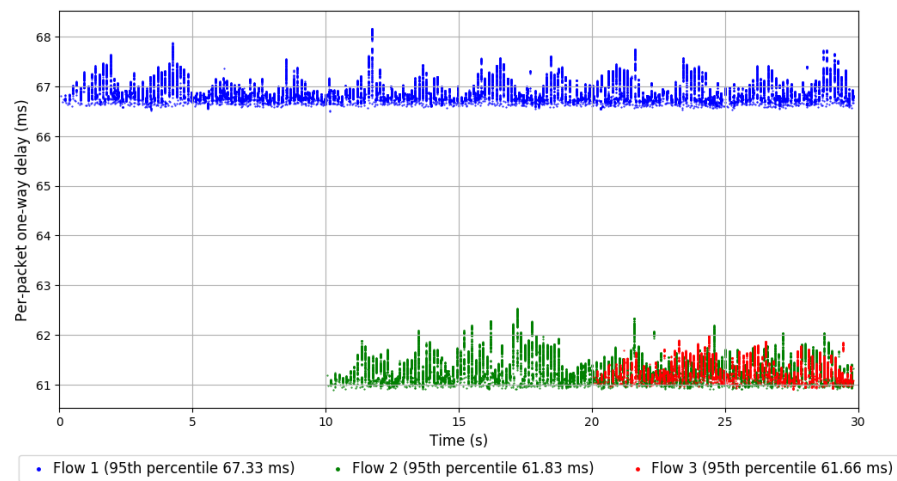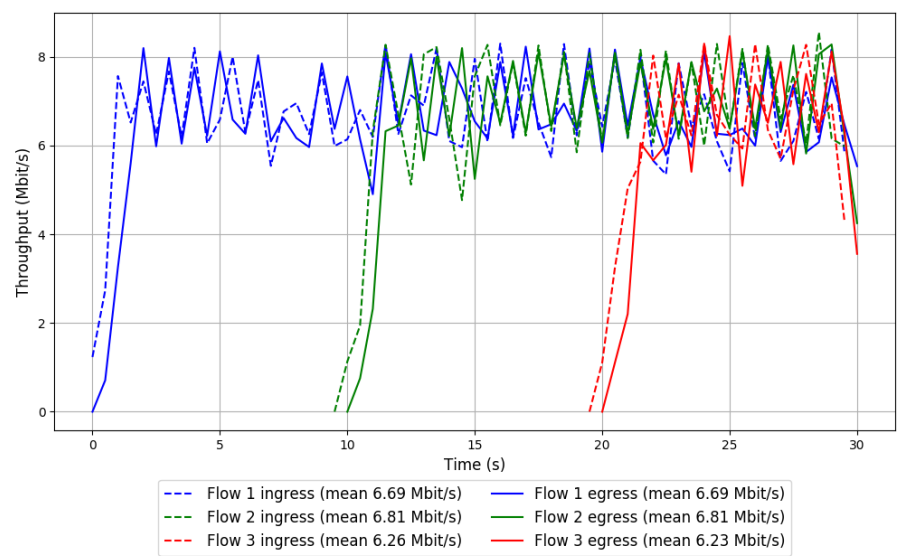
Run 3: Report of Sprout — Data Link

```
Run 4: Statistics of Sprout

Start at: 2018-09-07 23:47:39
End at: 2018-09-07 23:48:09
Local clock offset: -0.021 ms
Remote clock offset: -0.567 ms


# Below is generated by plot.py at 2018-09-08 03:03:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 13.32 Mbit/s
95th percentile per-packet one-way delay: 61.925 ms
Loss rate: 0.56%
-- Flow 1:
Average throughput: 6.71 Mbit/s
95th percentile per-packet one-way delay: 61.898 ms
Loss rate: 0.50%
-- Flow 2:
Average throughput: 6.77 Mbit/s
95th percentile per-packet one-way delay: 61.995 ms
Loss rate: 0.74%
-- Flow 3:
Average throughput: 6.45 Mbit/s
95th percentile per-packet one-way delay: 61.836 ms
Loss rate: 0.36%
```
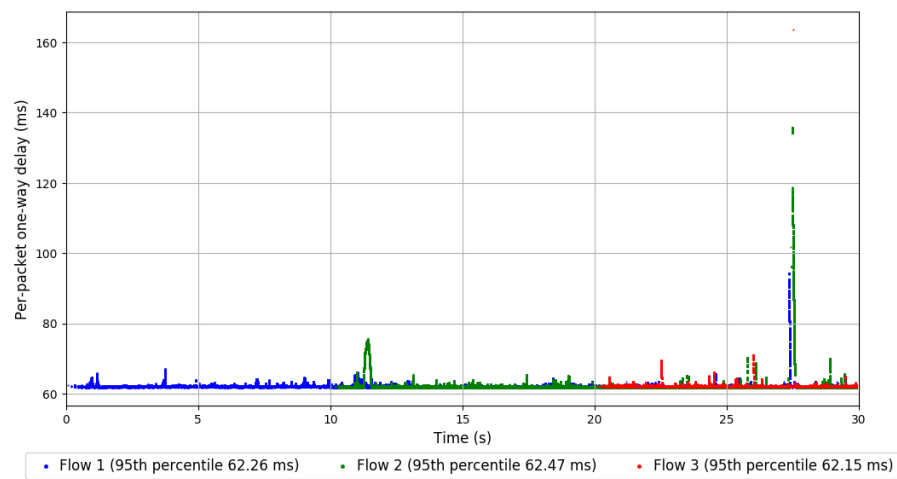
Run 4: Report of Sprout — Data Link

```
Run 5: Statistics of Sprout

Start at: 2018-09-08 00:20:19
End at: 2018-09-08 00:20:49
Local clock offset: 0.001 ms
Remote clock offset: -0.569 ms


# Below is generated by plot.py at 2018-09-08 03:03:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 13.25 Mbit/s
95th percentile per-packet one-way delay: 67.228 ms
Loss rate: 0.71%
-- Flow 1:
Average throughput: 6.69 Mbit/s
95th percentile per-packet one-way delay: 67.334 ms
Loss rate: 0.51%
-- Flow 2:
Average throughput: 6.81 Mbit/s
95th percentile per-packet one-way delay: 61.834 ms
Loss rate: 0.71%
-- Flow 3:
Average throughput: 6.23 Mbit/s
95th percentile per-packet one-way delay: 61.660 ms
Loss rate: 1.36%
```
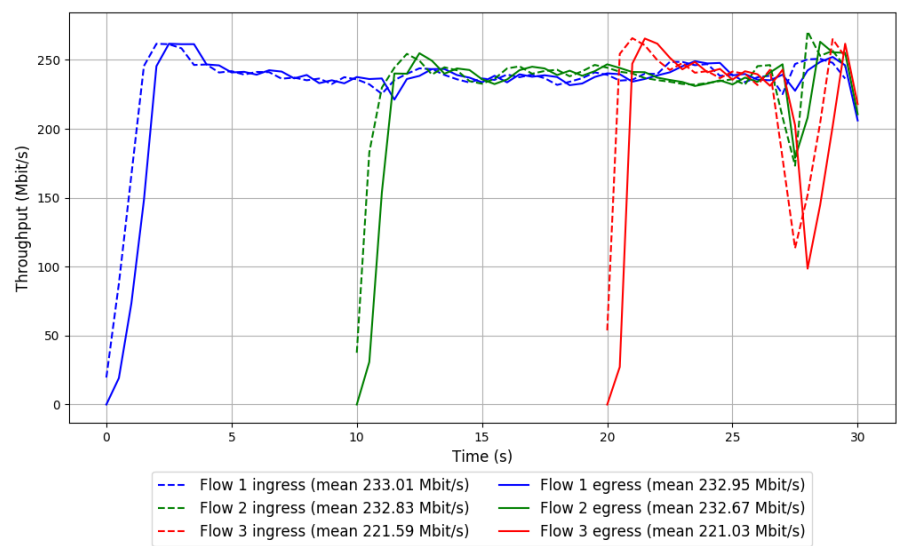
Run 5: Report of Sprout — Data Link

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

Start at: 2018-09-07 21:52:22
End at: 2018-09-07 21:52:52
Local clock offset: -0.033 ms
Remote clock offset: -1.22 ms


# Below is generated by plot.py at 2018-09-08 03:10:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 460.43 Mbit/s
95th percentile per-packet one-way delay: 62.266 ms
Loss rate: 0.71%
-- Flow 1:
Average throughput: 232.95 Mbit/s
95th percentile per-packet one-way delay: 62.255 ms
Loss rate: 0.45%
-- Flow 2:
Average throughput: 232.67 Mbit/s
95th percentile per-packet one-way delay: 62.466 ms
Loss rate: 0.71%
-- Flow 3:
Average throughput: 221.03 Mbit/s
95th percentile per-packet one-way delay: 62.150 ms
Loss rate: 1.54%
```

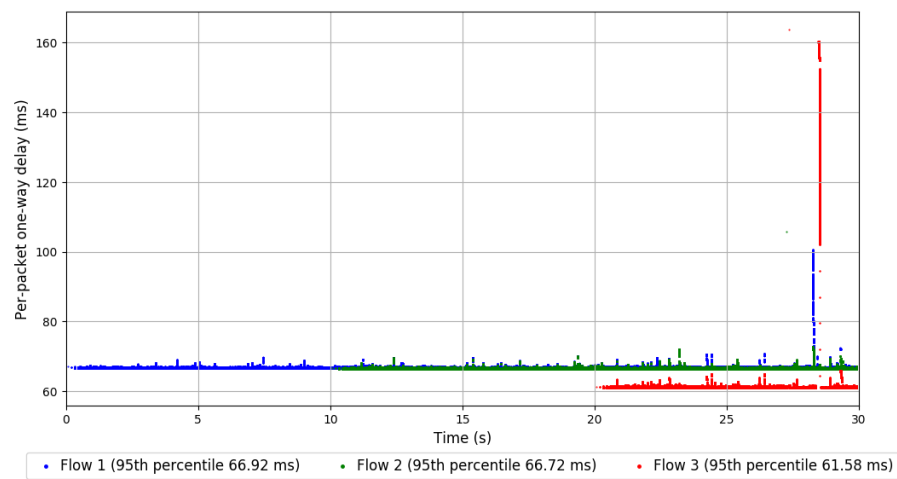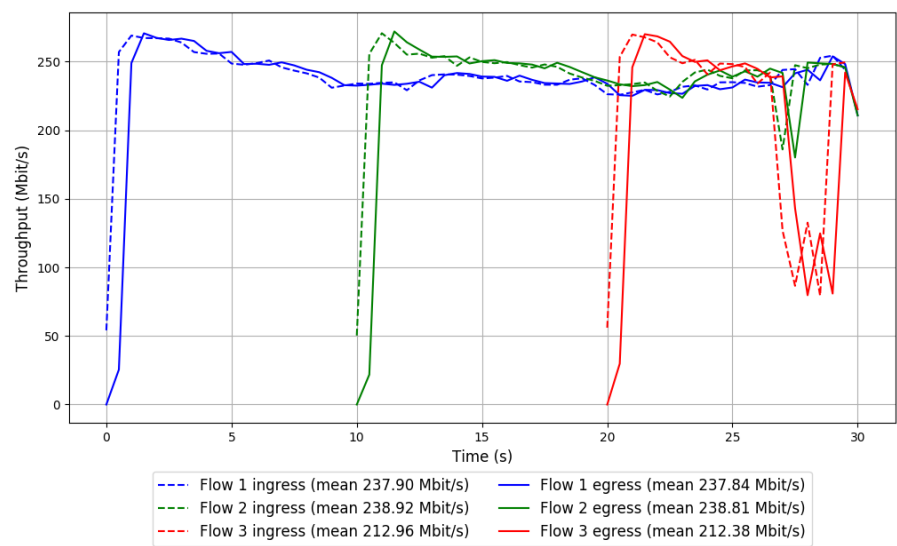# Run 1: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 233.01 Mbit/s)   Flow 1 egress (mean 232.95 Mbit/s)
Flow 2 ingress (mean 232.83 Mbit/s)   Flow 2 egress (mean 232.67 Mbit/s)
Flow 3 ingress (mean 221.59 Mbit/s)   Flow 3 egress (mean 221.03 Mbit/s)

Flow 1 (95th percentile 62.26 ms)   Flow 2 (95th percentile 62.47 ms)   Flow 3 (95th percentile 62.15 ms)

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

Start at: 2018-09-07 22:24:41
End at: 2018-09-07 22:25:11
Local clock offset: -0.044 ms
Remote clock offset: -0.447 ms


# Below is generated by plot.py at 2018-09-08 03:11:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 466.61 Mbit/s
95th percentile per-packet one-way delay: 66.869 ms
Loss rate: 0.72%
-- Flow 1:
Average throughput: 237.84 Mbit/s
95th percentile per-packet one-way delay: 66.920 ms
Loss rate: 0.47%
-- Flow 2:
Average throughput: 238.81 Mbit/s
95th percentile per-packet one-way delay: 66.721 ms
Loss rate: 0.72%
-- Flow 3:
Average throughput: 212.38 Mbit/s
95th percentile per-packet one-way delay: 61.583 ms
Loss rate: 1.56%
```
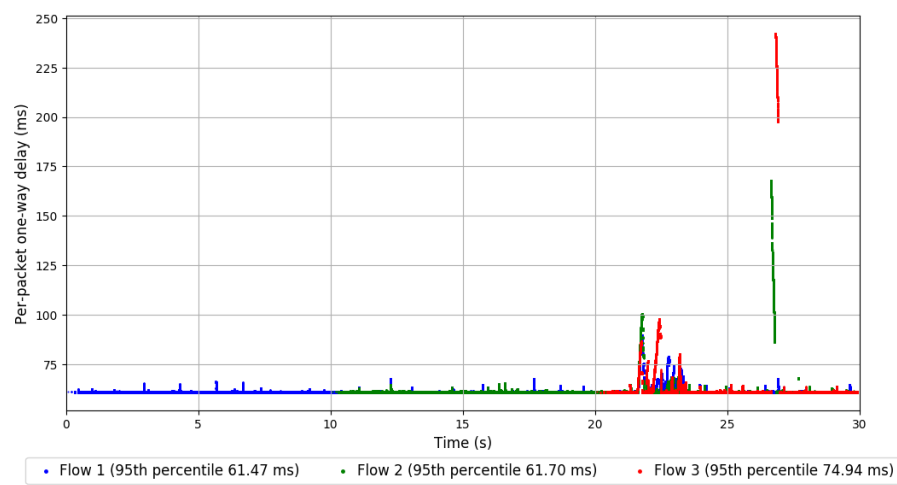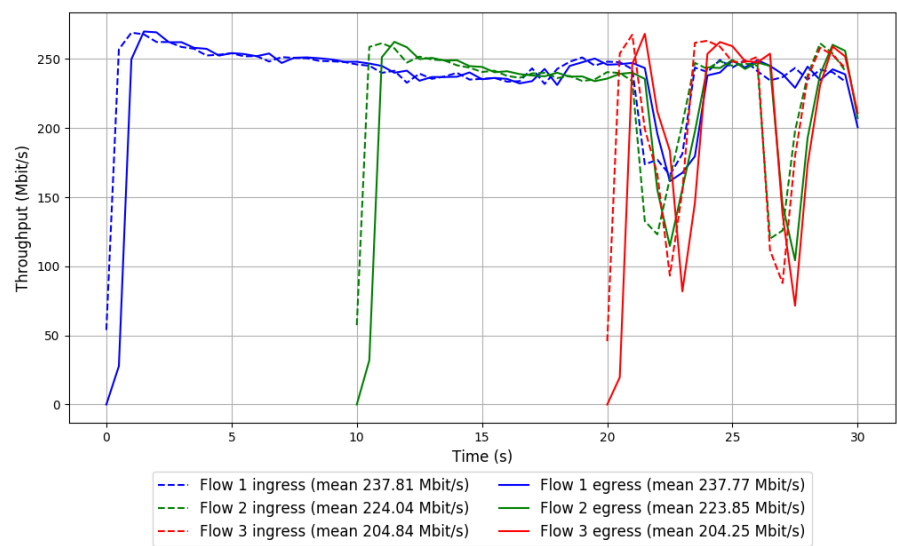
Run 2: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 237.90 Mbit/s) --- Flow 1 egress (mean 237.84 Mbit/s)
Flow 2 ingress (mean 238.92 Mbit/s) --- Flow 2 egress (mean 238.81 Mbit/s)
Flow 3 ingress (mean 212.96 Mbit/s) --- Flow 3 egress (mean 212.38 Mbit/s)

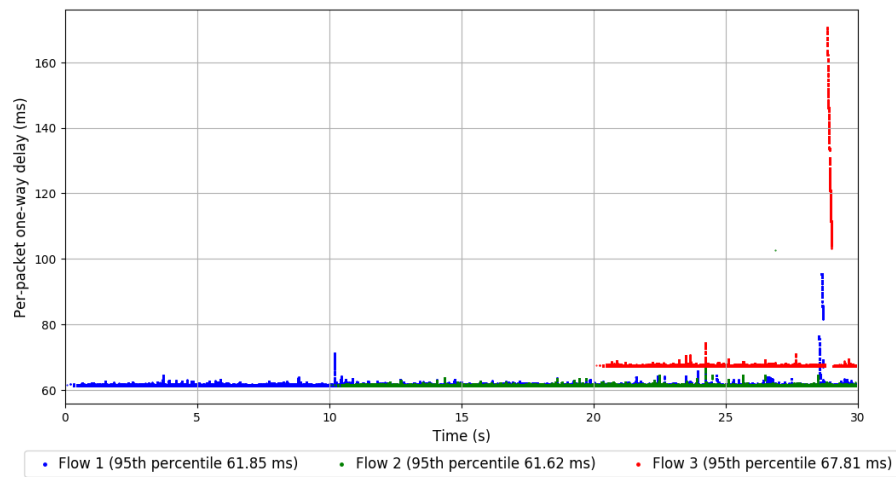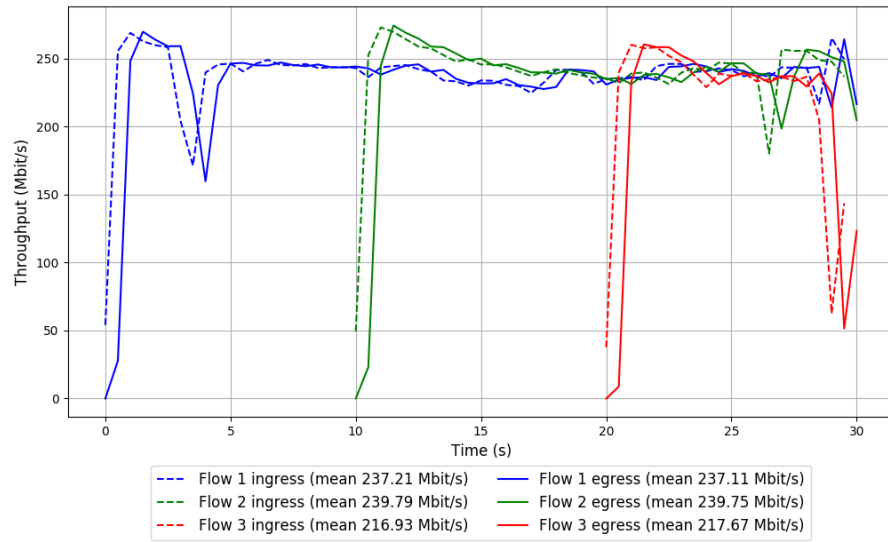Flow 1 (95th percentile 66.92 ms)   Flow 2 (95th percentile 66.72 ms)   Flow 3 (95th percentile 61.58 ms)

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

Start at: 2018-09-07 22:57:30
End at: 2018-09-07 22:58:01
Local clock offset: -0.043 ms
Remote clock offset: -0.38 ms


# Below is generated by plot.py at 2018-09-08 03:11:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 453.86 Mbit/s
95th percentile per-packet one-way delay: 62.296 ms
Loss rate: 0.71%
-- Flow 1:
Average throughput: 237.77 Mbit/s
95th percentile per-packet one-way delay: 61.472 ms
Loss rate: 0.45%
-- Flow 2:
Average throughput: 223.85 Mbit/s
95th percentile per-packet one-way delay: 61.703 ms
Loss rate: 0.73%
-- Flow 3:
Average throughput: 204.25 Mbit/s
95th percentile per-packet one-way delay: 74.943 ms
Loss rate: 1.58%
```
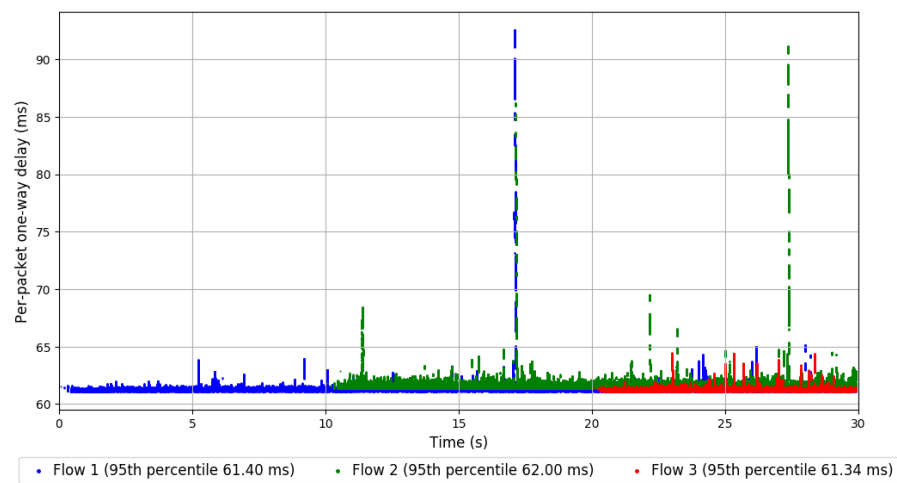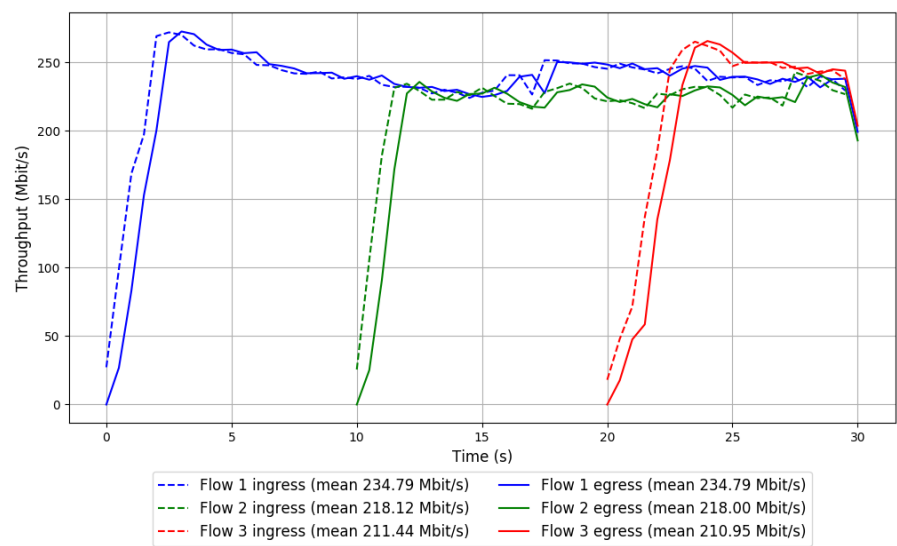
Run 3: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 237.81 Mbit/s) --- Flow 1 egress (mean 237.77 Mbit/s)
Flow 2 ingress (mean 224.04 Mbit/s) --- Flow 2 egress (mean 223.85 Mbit/s)
Flow 3 ingress (mean 204.84 Mbit/s) --- Flow 3 egress (mean 204.25 Mbit/s)

Flow 1 (95th percentile 61.47 ms)   Flow 2 (95th percentile 61.70 ms)   Flow 3 (95th percentile 74.94 ms)

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

Start at: 2018-09-07 23:30:22
End at: 2018-09-07 23:30:52
Local clock offset: -0.033 ms
Remote clock offset: -1.273 ms


# Below is generated by plot.py at 2018-09-08 03:11:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 468.12 Mbit/s
95th percentile per-packet one-way delay: 67.486 ms
Loss rate: 0.62%
-- Flow 1:
Average throughput: 237.11 Mbit/s
95th percentile per-packet one-way delay: 61.848 ms
Loss rate: 0.47%
-- Flow 2:
Average throughput: 239.75 Mbit/s
95th percentile per-packet one-way delay: 61.623 ms
Loss rate: 0.65%
-- Flow 3:
Average throughput: 217.67 Mbit/s
95th percentile per-packet one-way delay: 67.814 ms
Loss rate: 1.01%
```

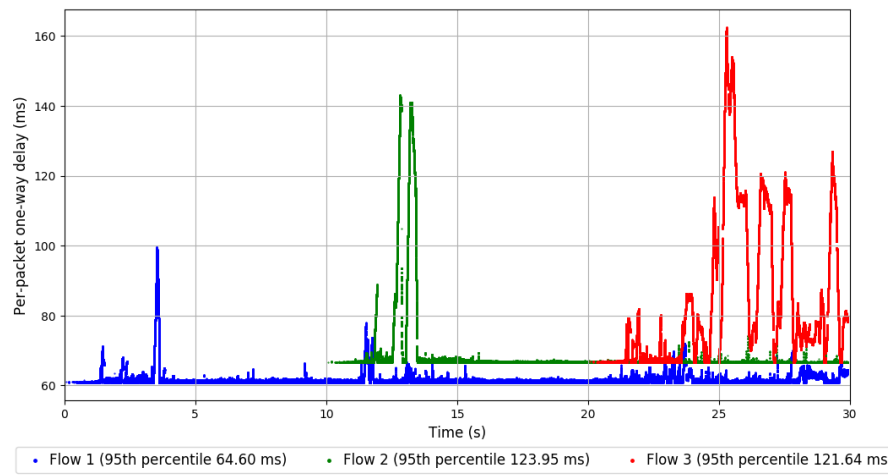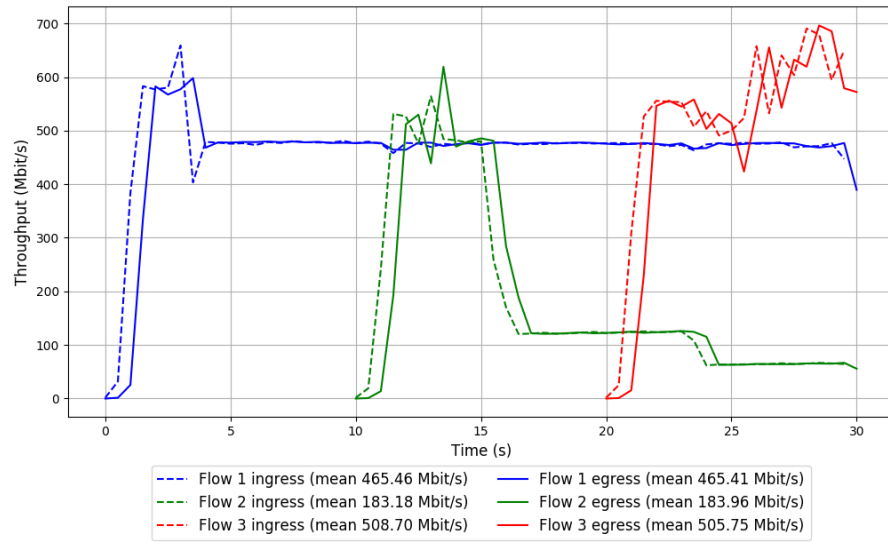Run 4: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 237.21 Mbit/s) — Flow 1 egress (mean 237.11 Mbit/s)
Flow 2 ingress (mean 239.79 Mbit/s) — Flow 2 egress (mean 239.75 Mbit/s)
Flow 3 ingress (mean 216.93 Mbit/s) — Flow 3 egress (mean 217.67 Mbit/s)

Flow 1 (95th percentile 61.85 ms)   Flow 2 (95th percentile 61.62 ms)   Flow 3 (95th percentile 67.81 ms)

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

Start at: 2018-09-08 00:03:09
End at: 2018-09-08 00:03:39
Local clock offset: -0.001 ms
Remote clock offset: -0.736 ms

# Below is generated by plot.py at 2018-09-08 03:11:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 449.08 Mbit/s
95th percentile per-packet one-way delay: 61.751 ms
Loss rate: 0.69%
-- Flow 1:
Average throughput: 234.79 Mbit/s
95th percentile per-packet one-way delay: 61.404 ms
Loss rate: 0.43%
-- Flow 2:
Average throughput: 218.00 Mbit/s
95th percentile per-packet one-way delay: 62.003 ms
Loss rate: 0.70%
-- Flow 3:
Average throughput: 210.95 Mbit/s
95th percentile per-packet one-way delay: 61.340 ms
Loss rate: 1.52%
```

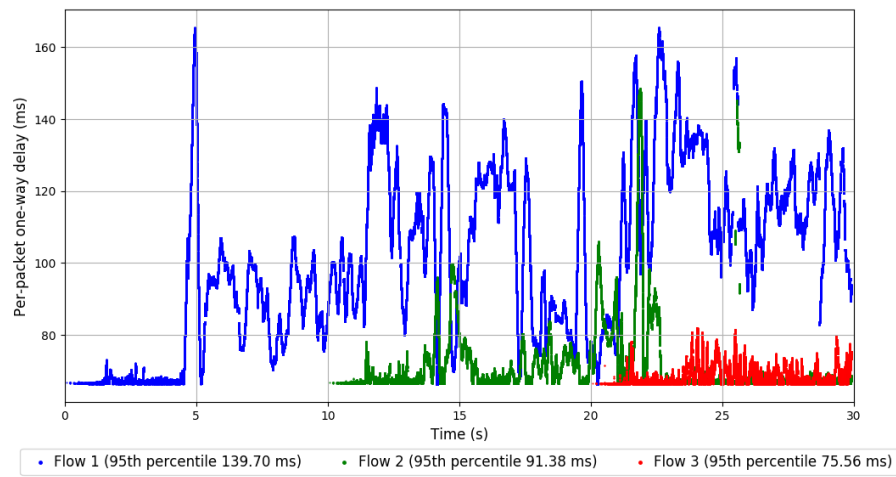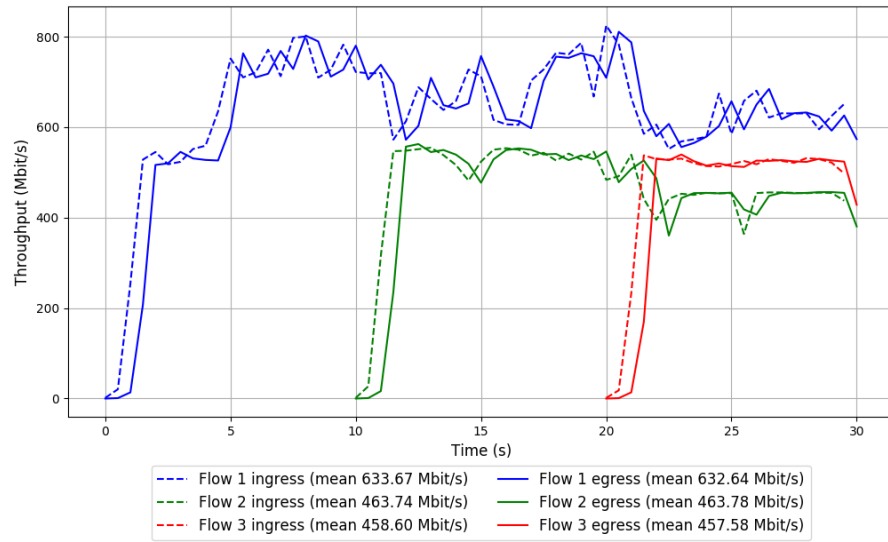Run 5: Report of TaoVA-100x — Data Link

```
Run 1: Statistics of TCP Vegas

Start at: 2018-09-07 22:07:38
End at: 2018-09-07 22:08:08
Local clock offset: -0.041 ms
Remote clock offset: -0.556 ms


# Below is generated by plot.py at 2018-09-08 03:12:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 754.18 Mbit/s
95th percentile per-packet one-way delay: 111.510 ms
Loss rate: 0.71%
-- Flow 1:
Average throughput: 465.41 Mbit/s
95th percentile per-packet one-way delay: 64.598 ms
Loss rate: 0.42%
-- Flow 2:
Average throughput: 183.96 Mbit/s
95th percentile per-packet one-way delay: 123.950 ms
Loss rate: 0.24%
-- Flow 3:
Average throughput: 505.75 Mbit/s
95th percentile per-packet one-way delay: 121.644 ms
Loss rate: 1.85%
```

Run 1: Report of TCP Vegas — Data Link

```
Run 2: Statistics of TCP Vegas

Start at: 2018-09-07 22:40:00
End at: 2018-09-07 22:40:30
Local clock offset: -0.001 ms
Remote clock offset: -0.316 ms


# Below is generated by plot.py at 2018-09-08 03:23:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1091.67 Mbit/s
95th percentile per-packet one-way delay: 134.832 ms
Loss rate: 0.75%
-- Flow 1:
Average throughput: 632.64 Mbit/s
95th percentile per-packet one-way delay: 139.701 ms
Loss rate: 0.61%
-- Flow 2:
Average throughput: 463.78 Mbit/s
95th percentile per-packet one-way delay: 91.381 ms
Loss rate: 0.63%
-- Flow 3:
Average throughput: 457.58 Mbit/s
95th percentile per-packet one-way delay: 75.564 ms
Loss rate: 1.55%
```
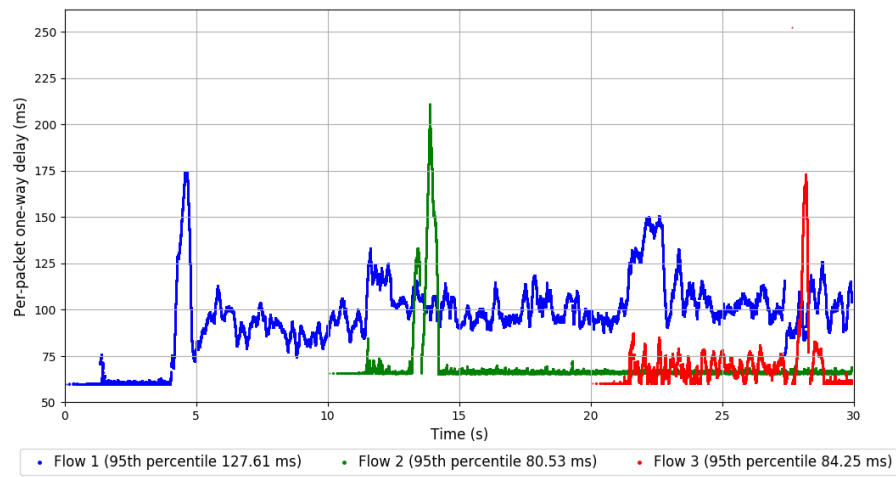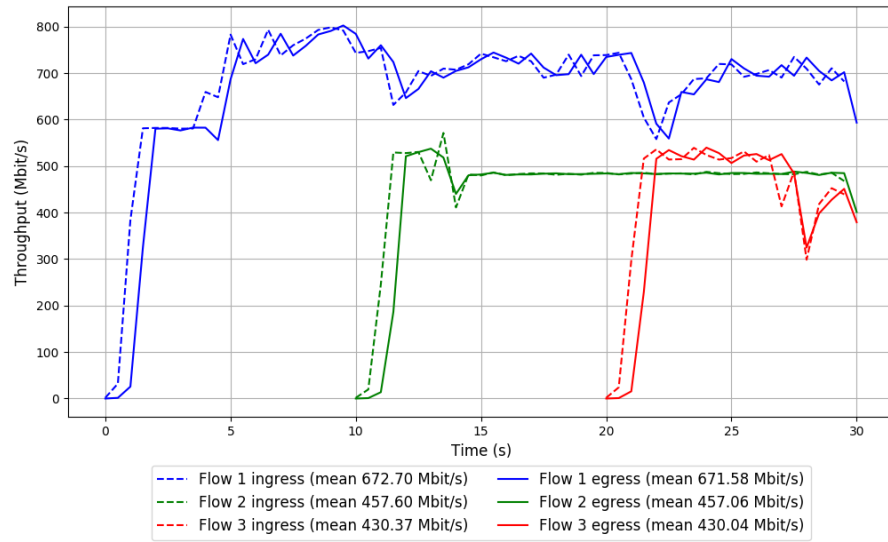
Run 2: Report of TCP Vegas — Data Link

- - - Flow 1 ingress (mean 633.67 Mbit/s) —— Flow 1 egress (mean 632.64 Mbit/s)
- - - Flow 2 ingress (mean 463.74 Mbit/s) —— Flow 2 egress (mean 463.78 Mbit/s)
- - - Flow 3 ingress (mean 458.60 Mbit/s) —— Flow 3 egress (mean 457.58 Mbit/s)

• Flow 1 (95th percentile 139.70 ms)　　• Flow 2 (95th percentile 91.38 ms)　　• Flow 3 (95th percentile 75.56 ms)
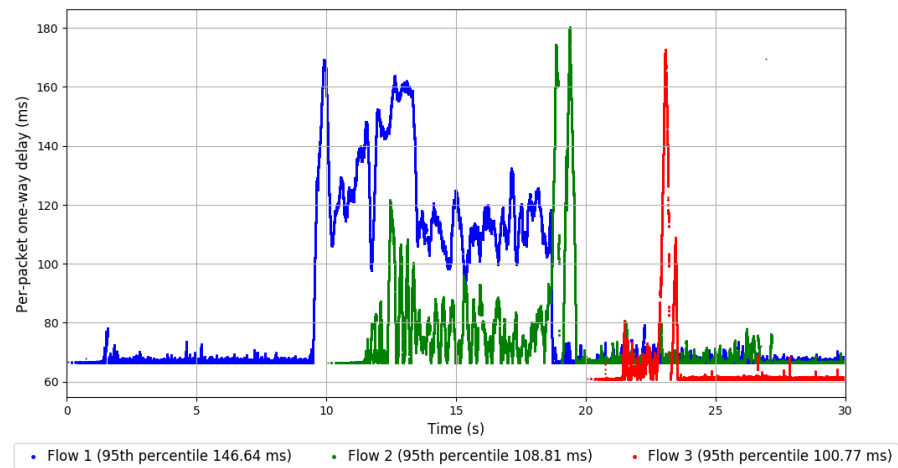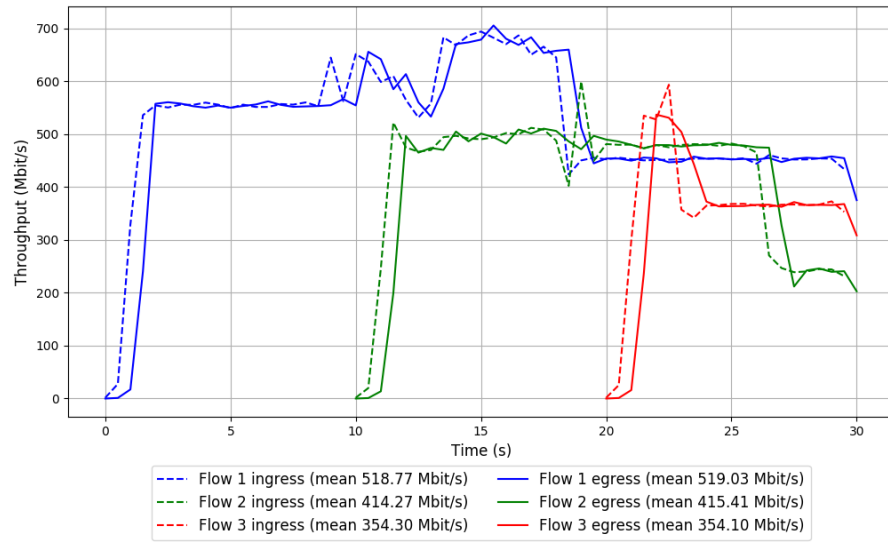
```
Run 3: Statistics of TCP Vegas

Start at: 2018-09-07 23:12:50
End at: 2018-09-07 23:13:20
Local clock offset: 0.006 ms
Remote clock offset: 0.533 ms


# Below is generated by plot.py at 2018-09-08 03:25:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1116.94 Mbit/s
95th percentile per-packet one-way delay: 122.357 ms
Loss rate: 0.73%
-- Flow 1:
Average throughput: 671.58 Mbit/s
95th percentile per-packet one-way delay: 127.615 ms
Loss rate: 0.57%
-- Flow 2:
Average throughput: 457.06 Mbit/s
95th percentile per-packet one-way delay: 80.529 ms
Loss rate: 0.78%
-- Flow 3:
Average throughput: 430.04 Mbit/s
95th percentile per-packet one-way delay: 84.250 ms
Loss rate: 1.36%
```

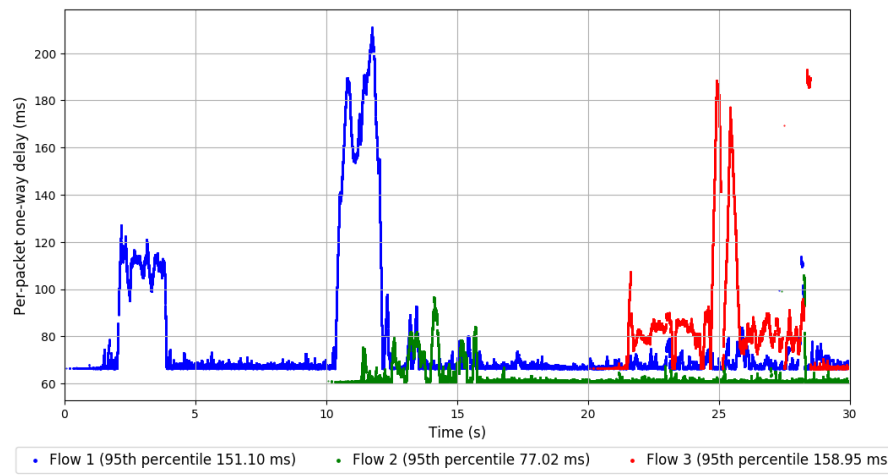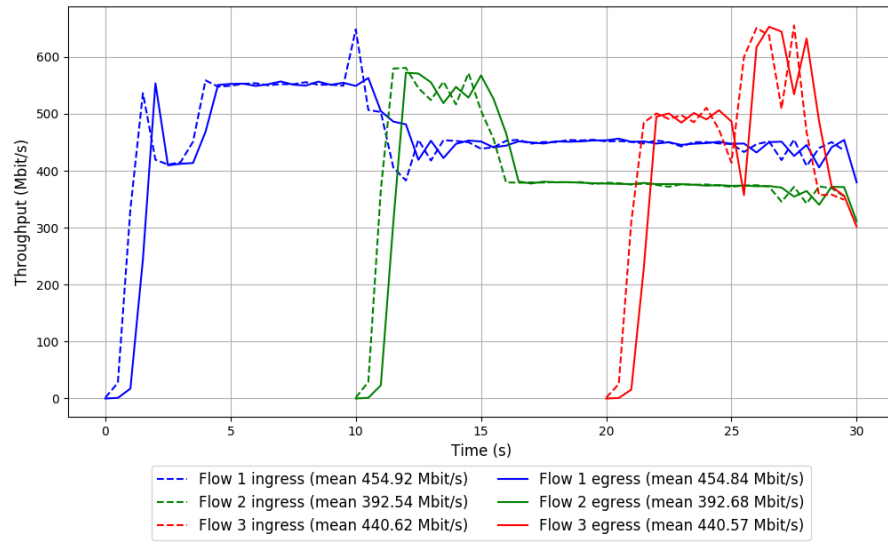## Run 3: Report of TCP Vegas — Data Link

```
Run 4: Statistics of TCP Vegas

Start at: 2018-09-07 23:45:40
End at: 2018-09-07 23:46:10
Local clock offset: -0.02 ms
Remote clock offset: -0.257 ms


# Below is generated by plot.py at 2018-09-08 03:27:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 911.93 Mbit/s
95th percentile per-packet one-way delay: 140.385 ms
Loss rate: 0.50%
-- Flow 1:
Average throughput: 519.03 Mbit/s
95th percentile per-packet one-way delay: 146.644 ms
Loss rate: 0.37%
-- Flow 2:
Average throughput: 415.41 Mbit/s
95th percentile per-packet one-way delay: 108.809 ms
Loss rate: 0.39%
-- Flow 3:
Average throughput: 354.10 Mbit/s
95th percentile per-packet one-way delay: 100.769 ms
Loss rate: 1.34%
```
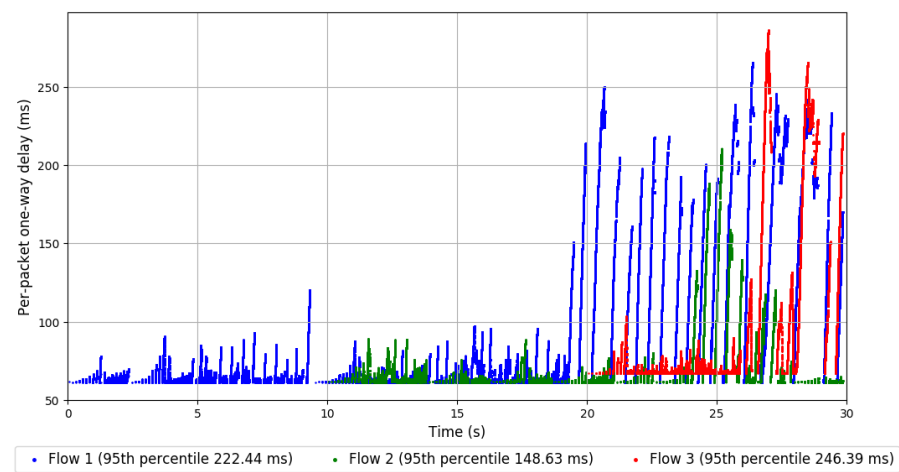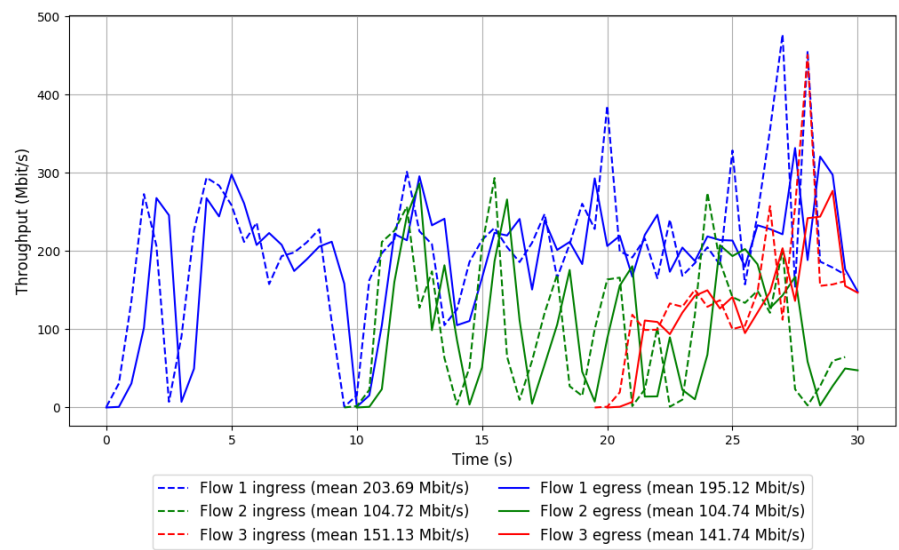
Run 4: Report of TCP Vegas — Data Link

- - - Flow 1 ingress (mean 518.77 Mbit/s) —— Flow 1 egress (mean 519.03 Mbit/s)
- - - Flow 2 ingress (mean 414.27 Mbit/s) —— Flow 2 egress (mean 415.41 Mbit/s)
- - - Flow 3 ingress (mean 354.30 Mbit/s) —— Flow 3 egress (mean 354.10 Mbit/s)

• Flow 1 (95th percentile 146.64 ms)   • Flow 2 (95th percentile 108.81 ms)   • Flow 3 (95th percentile 100.77 ms)

```
Run 5: Statistics of TCP Vegas

Start at: 2018-09-08 00:18:22
End at: 2018-09-08 00:18:52
Local clock offset: 0.017 ms
Remote clock offset: -0.316 ms


# Below is generated by plot.py at 2018-09-08 03:27:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 861.06 Mbit/s
95th percentile per-packet one-way delay: 115.911 ms
Loss rate: 0.63%
-- Flow 1:
Average throughput: 454.84 Mbit/s
95th percentile per-packet one-way delay: 151.103 ms
Loss rate: 0.44%
-- Flow 2:
Average throughput: 392.68 Mbit/s
95th percentile per-packet one-way delay: 77.022 ms
Loss rate: 0.58%
-- Flow 3:
Average throughput: 440.57 Mbit/s
95th percentile per-packet one-way delay: 158.950 ms
Loss rate: 1.29%
```

Run 5: Report of TCP Vegas — Data Link

```
Run 1: Statistics of Verus

Start at: 2018-09-07 21:59:48
End at: 2018-09-07 22:00:18
Local clock offset: 0.005 ms
Remote clock offset: -0.603 ms


# Below is generated by plot.py at 2018-09-08 03:27:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 311.36 Mbit/s
95th percentile per-packet one-way delay: 223.199 ms
Loss rate: 3.40%
-- Flow 1:
Average throughput: 195.12 Mbit/s
95th percentile per-packet one-way delay: 222.439 ms
Loss rate: 3.96%
-- Flow 2:
Average throughput: 104.74 Mbit/s
95th percentile per-packet one-way delay: 148.627 ms
Loss rate: 0.64%
-- Flow 3:
Average throughput: 141.74 Mbit/s
95th percentile per-packet one-way delay: 246.389 ms
Loss rate: 4.99%
```
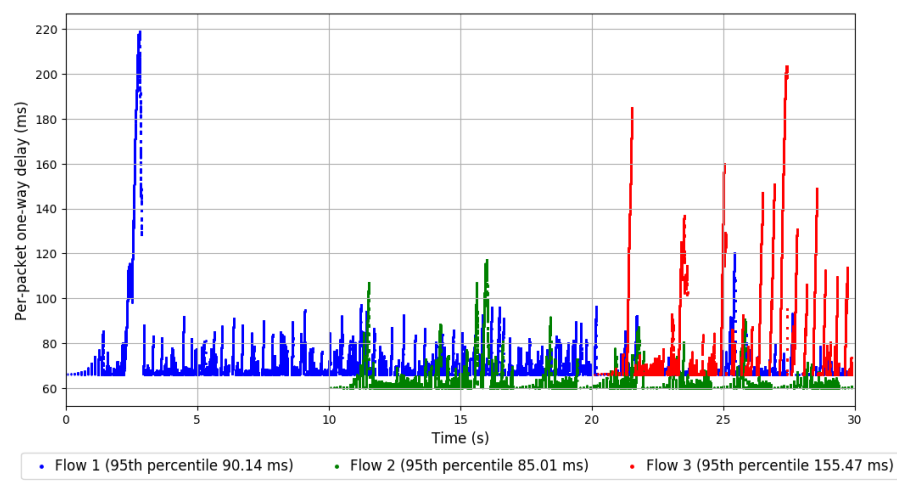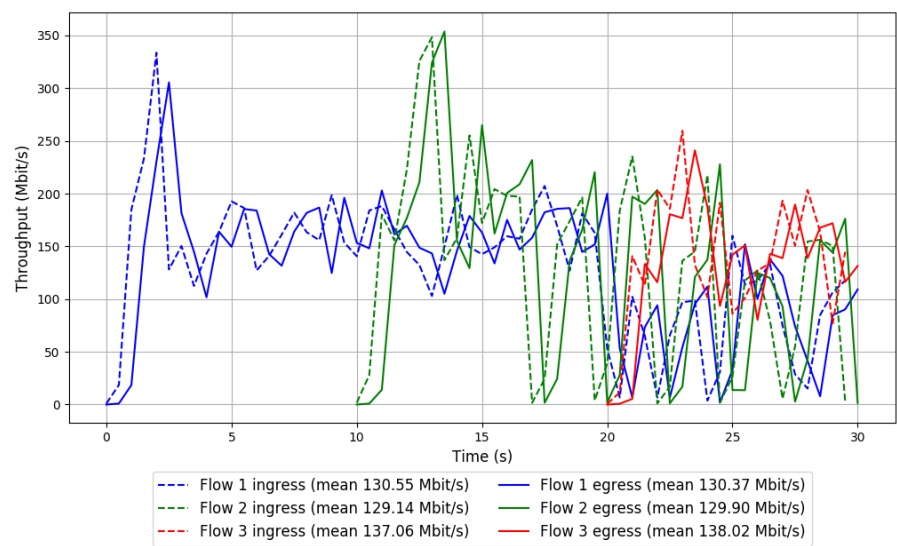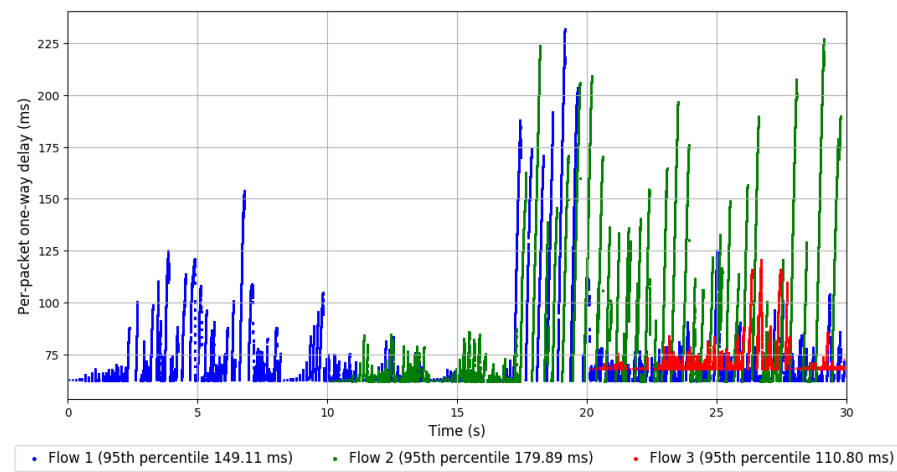
Run 1: Report of Verus — Data Link

```
Run 2: Statistics of Verus

Start at: 2018-09-07 22:32:09
End at: 2018-09-07 22:32:39
Local clock offset: -0.063 ms
Remote clock offset: 0.17 ms


# Below is generated by plot.py at 2018-09-08 03:27:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 261.97 Mbit/s
95th percentile per-packet one-way delay: 112.150 ms
Loss rate: 0.33%
-- Flow 1:
Average throughput: 130.37 Mbit/s
95th percentile per-packet one-way delay: 90.135 ms
Loss rate: 0.42%
-- Flow 2:
Average throughput: 129.90 Mbit/s
95th percentile per-packet one-way delay: 85.014 ms
Loss rate: 0.03%
-- Flow 3:
Average throughput: 138.02 Mbit/s
95th percentile per-packet one-way delay: 155.472 ms
Loss rate: 0.62%
```
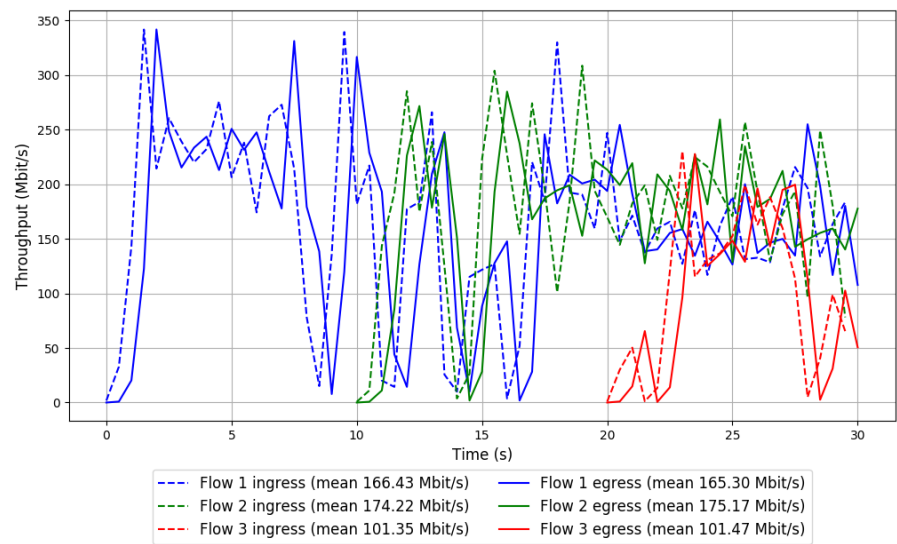
Run 2: Report of Verus — Data Link

Flow 1 ingress (mean 130.55 Mbit/s)   Flow 1 egress (mean 130.37 Mbit/s)
Flow 2 ingress (mean 129.14 Mbit/s)   Flow 2 egress (mean 129.90 Mbit/s)
Flow 3 ingress (mean 137.06 Mbit/s)   Flow 3 egress (mean 138.02 Mbit/s)

Flow 1 (95th percentile 90.14 ms)   Flow 2 (95th percentile 85.01 ms)   Flow 3 (95th percentile 155.47 ms)
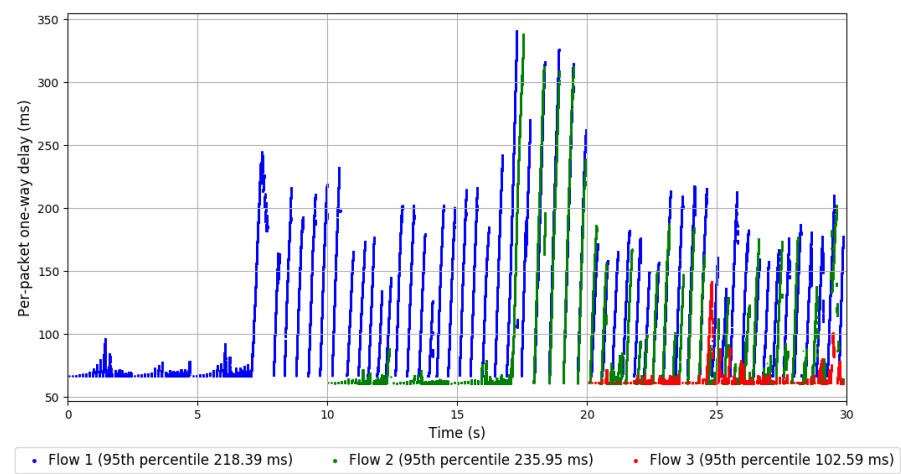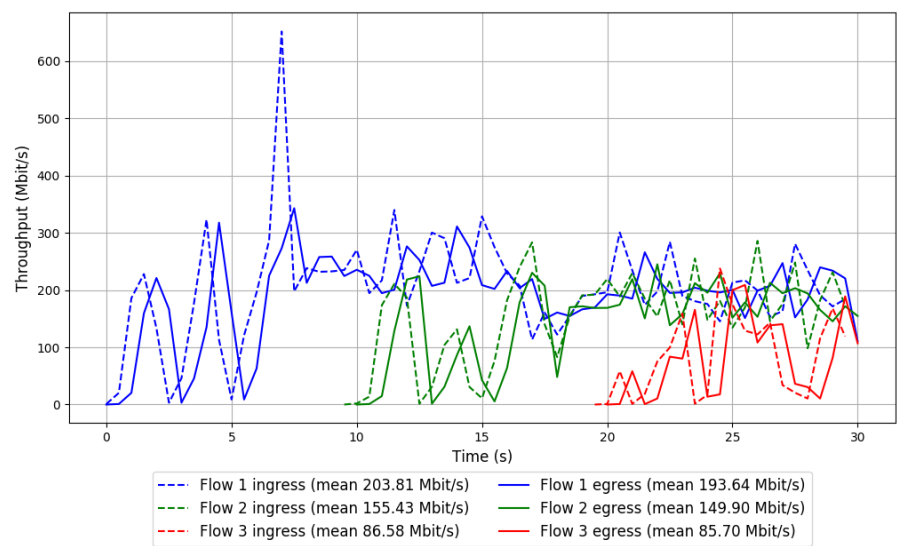
```
Run 3: Statistics of Verus

Start at: 2018-09-07 23:05:01
End at: 2018-09-07 23:05:31
Local clock offset: -0.035 ms
Remote clock offset: -1.873 ms


# Below is generated by plot.py at 2018-09-08 03:27:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 314.16 Mbit/s
95th percentile per-packet one-way delay: 165.479 ms
Loss rate: 0.91%
-- Flow 1:
Average throughput: 165.30 Mbit/s
95th percentile per-packet one-way delay: 149.108 ms
Loss rate: 0.93%
-- Flow 2:
Average throughput: 175.17 Mbit/s
95th percentile per-packet one-way delay: 179.892 ms
Loss rate: 0.83%
-- Flow 3:
Average throughput: 101.47 Mbit/s
95th percentile per-packet one-way delay: 110.804 ms
Loss rate: 1.14%
```
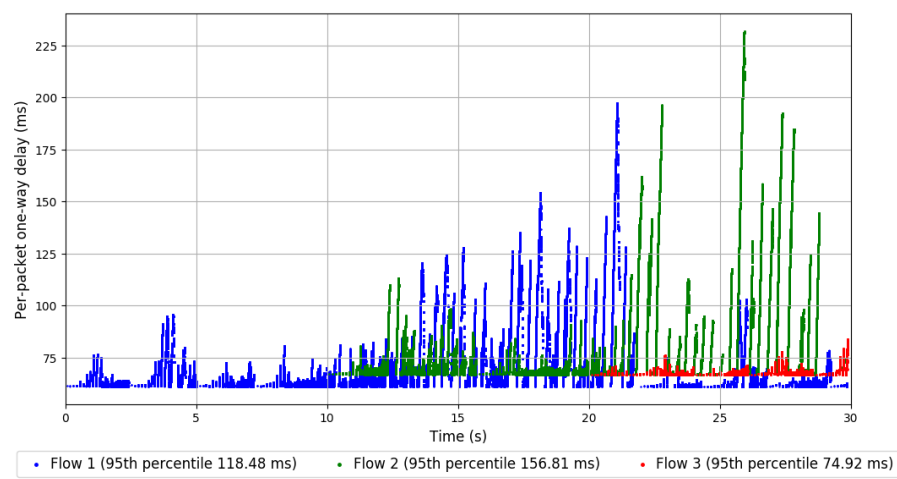
Run 3: Report of Verus — Data Link

```
Run 4: Statistics of Verus

Start at: 2018-09-07 23:37:51
End at: 2018-09-07 23:38:21
Local clock offset: -0.02 ms
Remote clock offset: -0.855 ms


# Below is generated by plot.py at 2018-09-08 03:27:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 321.58 Mbit/s
95th percentile per-packet one-way delay: 218.860 ms
Loss rate: 4.39%
-- Flow 1:
Average throughput: 193.64 Mbit/s
95th percentile per-packet one-way delay: 218.386 ms
Loss rate: 4.94%
-- Flow 2:
Average throughput: 149.90 Mbit/s
95th percentile per-packet one-way delay: 235.948 ms
Loss rate: 4.10%
-- Flow 3:
Average throughput: 85.70 Mbit/s
95th percentile per-packet one-way delay: 102.594 ms
Loss rate: 1.49%
```

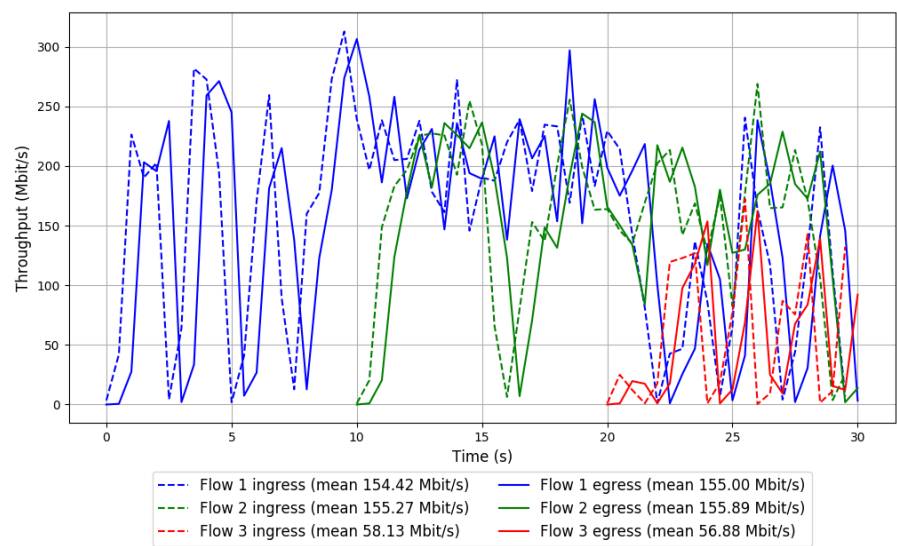Run 4: Report of Verus — Data Link

```
Run 5: Statistics of Verus

Start at: 2018-09-08 00:10:36
End at: 2018-09-08 00:11:06
Local clock offset: -0.019 ms
Remote clock offset: -0.862 ms


# Below is generated by plot.py at 2018-09-08 03:28:43
# Datalink statistics
-- Total of 3 flows:
Average throughput: 276.73 Mbit/s
95th percentile per-packet one-way delay: 133.062 ms
Loss rate: 0.36%
-- Flow 1:
Average throughput: 155.00 Mbit/s
95th percentile per-packet one-way delay: 118.476 ms
Loss rate: 0.04%
-- Flow 2:
Average throughput: 155.89 Mbit/s
95th percentile per-packet one-way delay: 156.809 ms
Loss rate: 0.26%
-- Flow 3:
Average throughput: 56.88 Mbit/s
95th percentile per-packet one-way delay: 74.920 ms
Loss rate: 3.47%
```
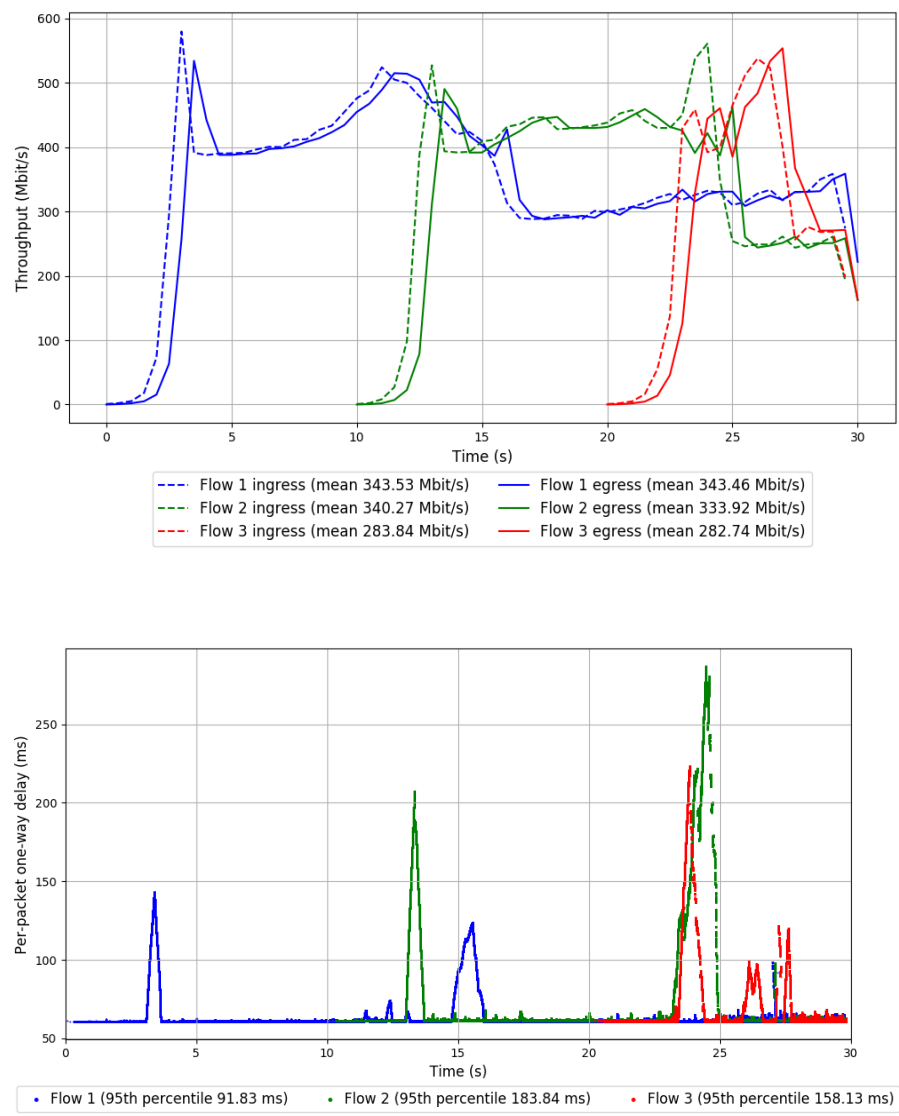
Run 5: Report of Verus — Data Link

```
Run 1: Statistics of PCC-Vivace

Start at: 2018-09-07 22:03:36
End at: 2018-09-07 22:04:06
Local clock offset: 0.428 ms
Remote clock offset: 0.367 ms


# Below is generated by plot.py at 2018-09-08 03:31:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 657.49 Mbit/s
95th percentile per-packet one-way delay: 127.858 ms
Loss rate: 1.33%
-- Flow 1:
Average throughput: 343.46 Mbit/s
95th percentile per-packet one-way delay: 91.835 ms
Loss rate: 0.45%
-- Flow 2:
Average throughput: 333.92 Mbit/s
95th percentile per-packet one-way delay: 183.840 ms
Loss rate: 2.53%
-- Flow 3:
Average throughput: 282.74 Mbit/s
95th percentile per-packet one-way delay: 158.130 ms
Loss rate: 1.68%
```
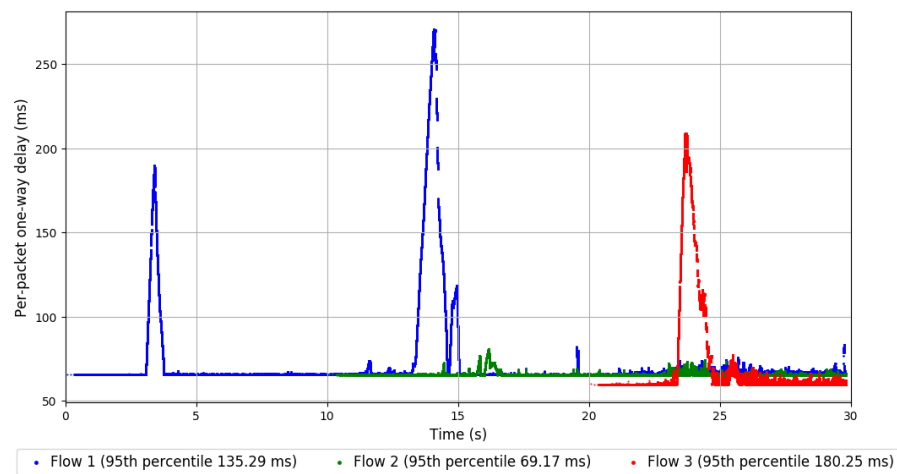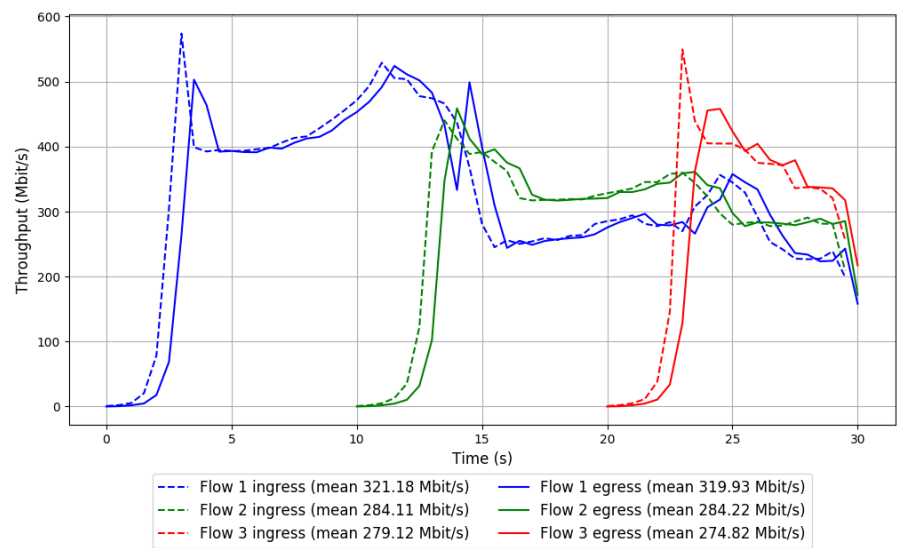
Run 1: Report of PCC-Vivace — Data Link

Flow 1 ingress (mean 343.53 Mbit/s) --- Flow 1 egress (mean 343.46 Mbit/s)
Flow 2 ingress (mean 340.27 Mbit/s) --- Flow 2 egress (mean 333.92 Mbit/s)
Flow 3 ingress (mean 283.84 Mbit/s) --- Flow 3 egress (mean 282.74 Mbit/s)

Flow 1 (95th percentile 91.83 ms) · Flow 2 (95th percentile 183.84 ms) · Flow 3 (95th percentile 158.13 ms)

```
Run 2: Statistics of PCC-Vivace

Start at: 2018-09-07 22:35:55
End at: 2018-09-07 22:36:25
Local clock offset: -0.031 ms
Remote clock offset: 0.729 ms


# Below is generated by plot.py at 2018-09-08 03:31:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 598.46 Mbit/s
95th percentile per-packet one-way delay: 119.227 ms
Loss rate: 1.08%
-- Flow 1:
Average throughput: 319.93 Mbit/s
95th percentile per-packet one-way delay: 135.294 ms
Loss rate: 0.86%
-- Flow 2:
Average throughput: 284.22 Mbit/s
95th percentile per-packet one-way delay: 69.165 ms
Loss rate: 0.63%
-- Flow 3:
Average throughput: 274.82 Mbit/s
95th percentile per-packet one-way delay: 180.249 ms
Loss rate: 2.83%
```
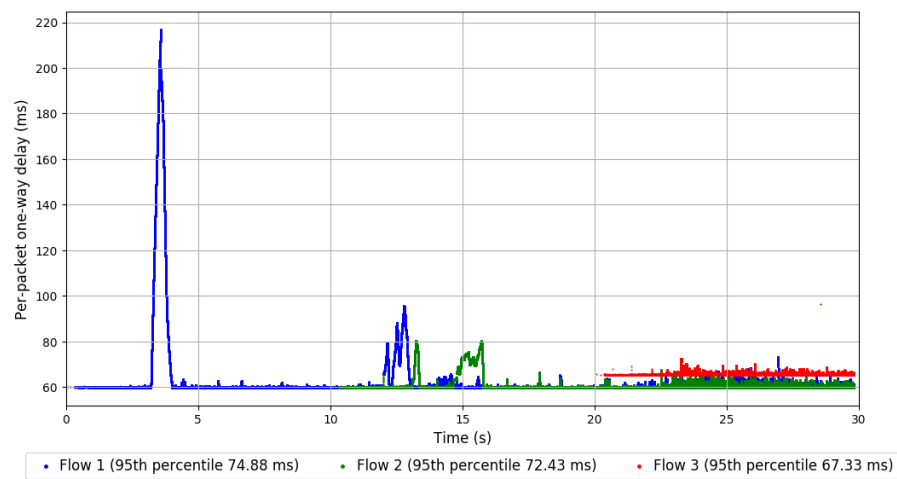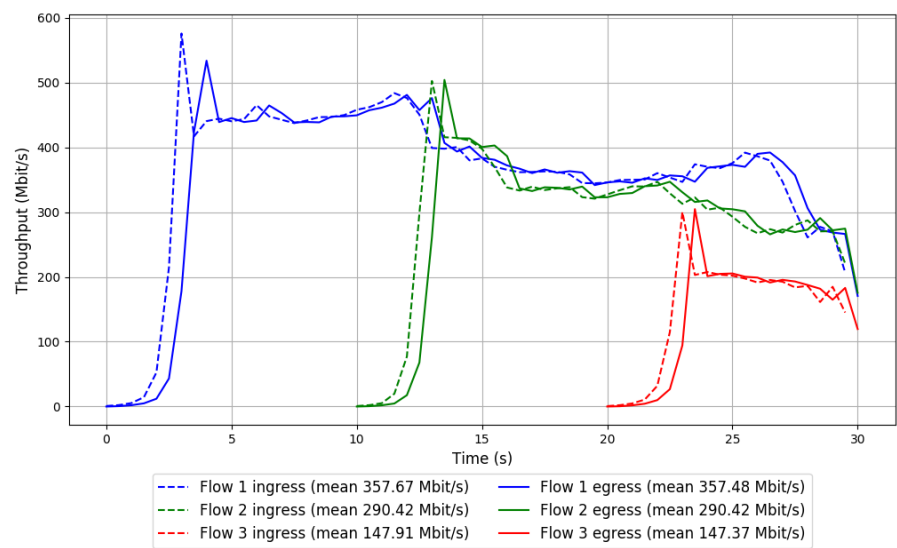
Run 2: Report of PCC-Vivace — Data Link

Flow 1 ingress (mean 321.18 Mbit/s) --- Flow 1 egress (mean 319.93 Mbit/s)
Flow 2 ingress (mean 284.11 Mbit/s) --- Flow 2 egress (mean 284.22 Mbit/s)
Flow 3 ingress (mean 279.12 Mbit/s) --- Flow 3 egress (mean 274.82 Mbit/s)

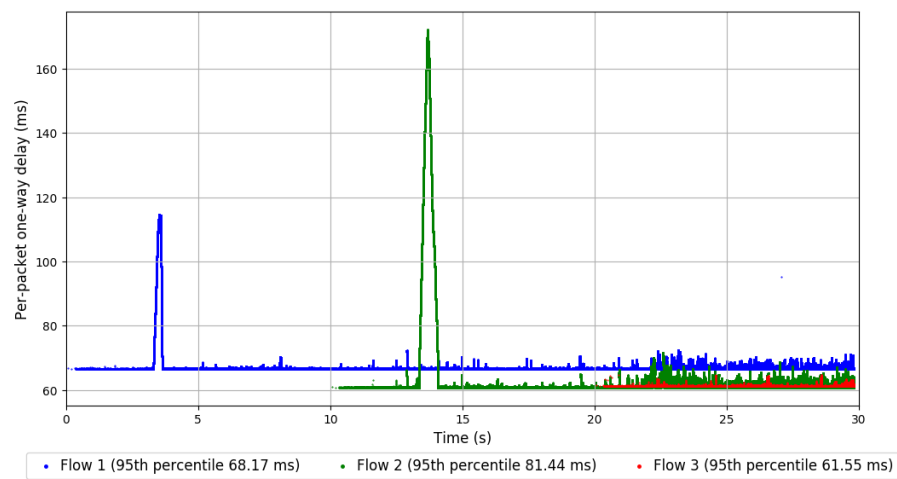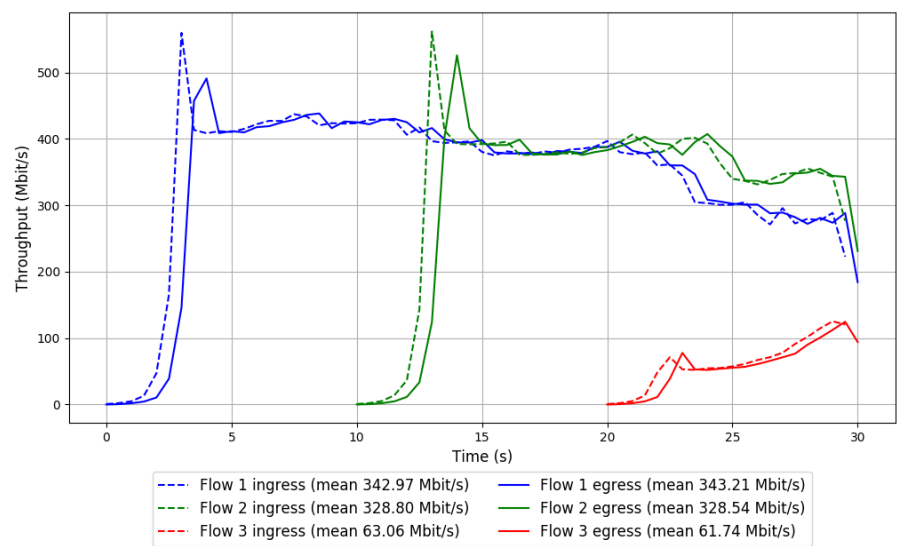Flow 1 (95th percentile 135.29 ms) • Flow 2 (95th percentile 69.17 ms) • Flow 3 (95th percentile 180.25 ms)

```
Run 3: Statistics of PCC-Vivace

Start at: 2018-09-07 23:08:49
End at: 2018-09-07 23:09:19
Local clock offset: 0.01 ms
Remote clock offset: 0.753 ms


# Below is generated by plot.py at 2018-09-08 03:32:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 598.43 Mbit/s
95th percentile per-packet one-way delay: 72.199 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 357.48 Mbit/s
95th percentile per-packet one-way delay: 74.879 ms
Loss rate: 0.48%
-- Flow 2:
Average throughput: 290.42 Mbit/s
95th percentile per-packet one-way delay: 72.429 ms
Loss rate: 0.65%
-- Flow 3:
Average throughput: 147.37 Mbit/s
95th percentile per-packet one-way delay: 67.326 ms
Loss rate: 1.71%
```
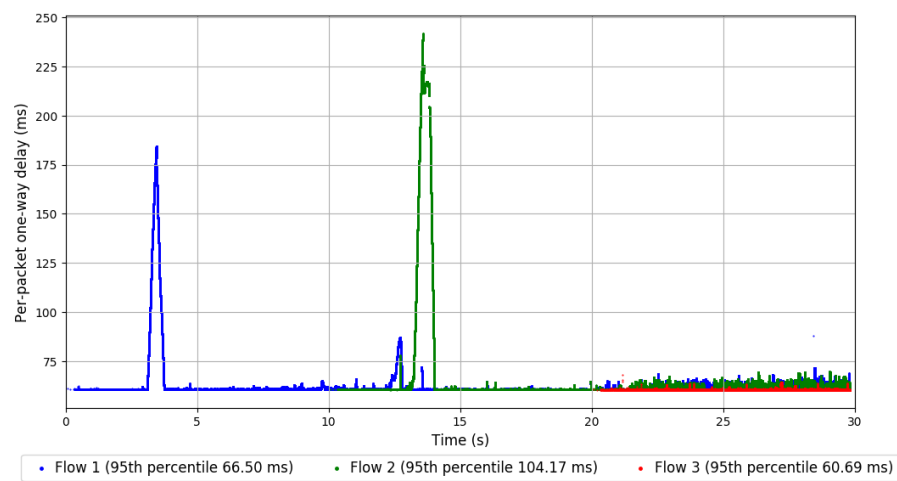
Run 3: Report of PCC-Vivace — Data Link

```
Run 4: Statistics of PCC-Vivace

Start at: 2018-09-07 23:41:39
End at: 2018-09-07 23:42:09
Local clock offset: -0.013 ms
Remote clock offset: -0.641 ms


# Below is generated by plot.py at 2018-09-08 03:32:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 581.39 Mbit/s
95th percentile per-packet one-way delay: 68.327 ms
Loss rate: 0.61%
-- Flow 1:
Average throughput: 343.21 Mbit/s
95th percentile per-packet one-way delay: 68.165 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 328.54 Mbit/s
95th percentile per-packet one-way delay: 81.438 ms
Loss rate: 0.72%
-- Flow 3:
Average throughput: 61.74 Mbit/s
95th percentile per-packet one-way delay: 61.552 ms
Loss rate: 3.37%
```

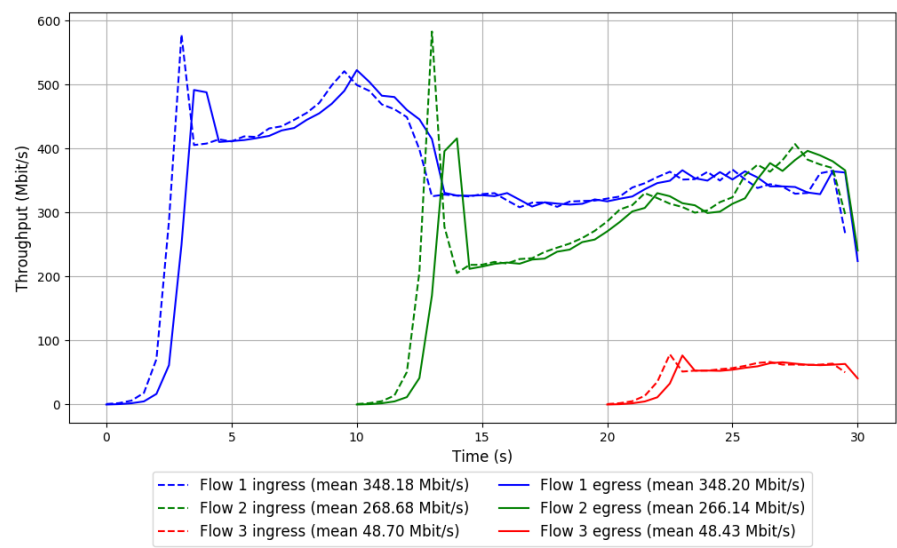Run 4: Report of PCC-Vivace — Data Link

```
Run 5: Statistics of PCC-Vivace

Start at: 2018-09-08 00:14:24
End at: 2018-09-08 00:14:54
Local clock offset: -0.018 ms
Remote clock offset: -0.276 ms

# Below is generated by plot.py at 2018-09-08 03:32:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 540.58 Mbit/s
95th percentile per-packet one-way delay: 67.688 ms
Loss rate: 0.86%
-- Flow 1:
Average throughput: 348.20 Mbit/s
95th percentile per-packet one-way delay: 66.501 ms
Loss rate: 0.44%
-- Flow 2:
Average throughput: 266.14 Mbit/s
95th percentile per-packet one-way delay: 104.171 ms
Loss rate: 1.59%
-- Flow 3:
Average throughput: 48.43 Mbit/s
95th percentile per-packet one-way delay: 60.692 ms
Loss rate: 1.83%
```

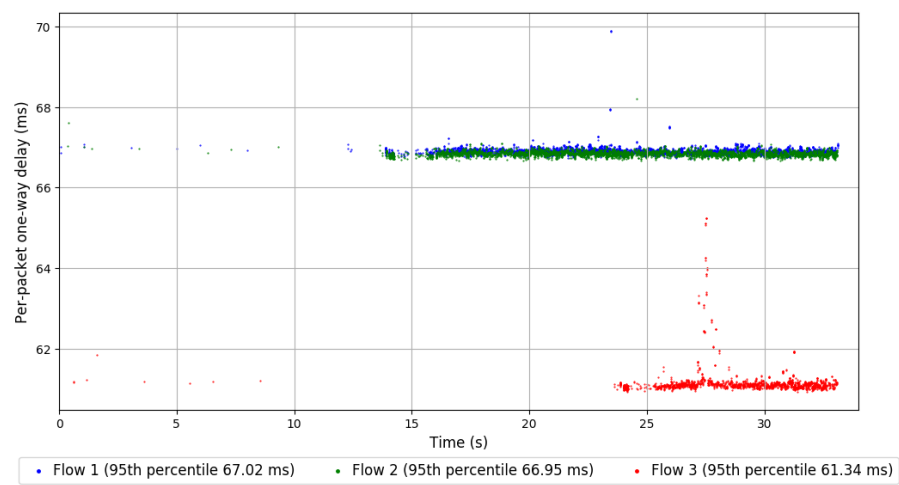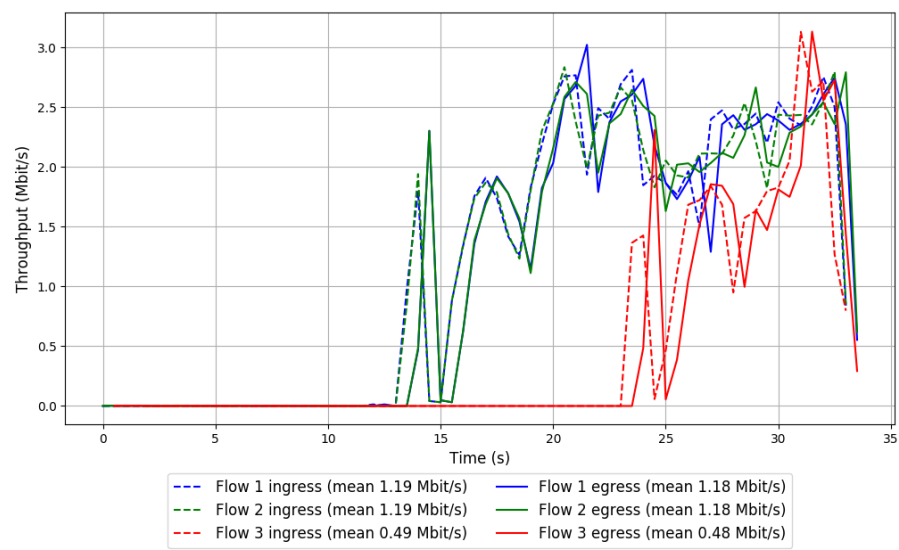Run 5: Report of PCC-Vivace — Data Link

```
Run 1: Statistics of WebRTC media

Start at: 2018-09-07 21:58:36
End at: 2018-09-07 21:59:07
Local clock offset: -0.03 ms
Remote clock offset: -0.412 ms


# Below is generated by plot.py at 2018-09-08 03:32:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.82 Mbit/s
95th percentile per-packet one-way delay: 66.983 ms
Loss rate: 1.11%
-- Flow 1:
Average throughput: 1.18 Mbit/s
95th percentile per-packet one-way delay: 67.015 ms
Loss rate: 0.90%
-- Flow 2:
Average throughput: 1.18 Mbit/s
95th percentile per-packet one-way delay: 66.950 ms
Loss rate: 0.84%
-- Flow 3:
Average throughput: 0.48 Mbit/s
95th percentile per-packet one-way delay: 61.338 ms
Loss rate: 2.28%
```

Run 1: Report of WebRTC media — Data Link

```
Run 2: Statistics of WebRTC media

Start at: 2018-09-07 22:30:58
End at: 2018-09-07 22:31:28
Local clock offset: -0.023 ms
Remote clock offset: 0.374 ms


# Below is generated by plot.py at 2018-09-08 03:32:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.58 Mbit/s
95th percentile per-packet one-way delay: 66.303 ms
Loss rate: 0.74%
-- Flow 1:
Average throughput: 1.90 Mbit/s
95th percentile per-packet one-way delay: 60.586 ms
Loss rate: 0.51%
-- Flow 2:
Average throughput: 1.22 Mbit/s
95th percentile per-packet one-way delay: 66.352 ms
Loss rate: 0.75%
-- Flow 3:
Average throughput: 0.47 Mbit/s
95th percentile per-packet one-way delay: 66.227 ms
Loss rate: 1.63%
```
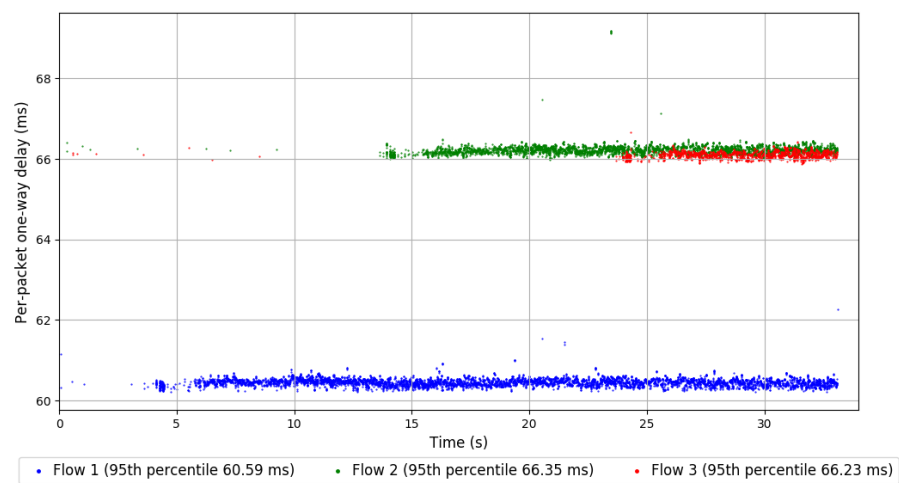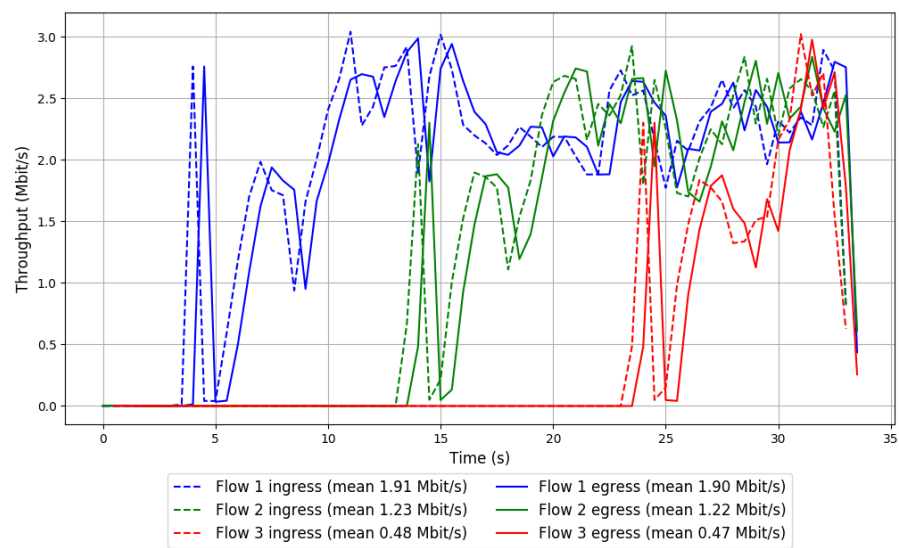
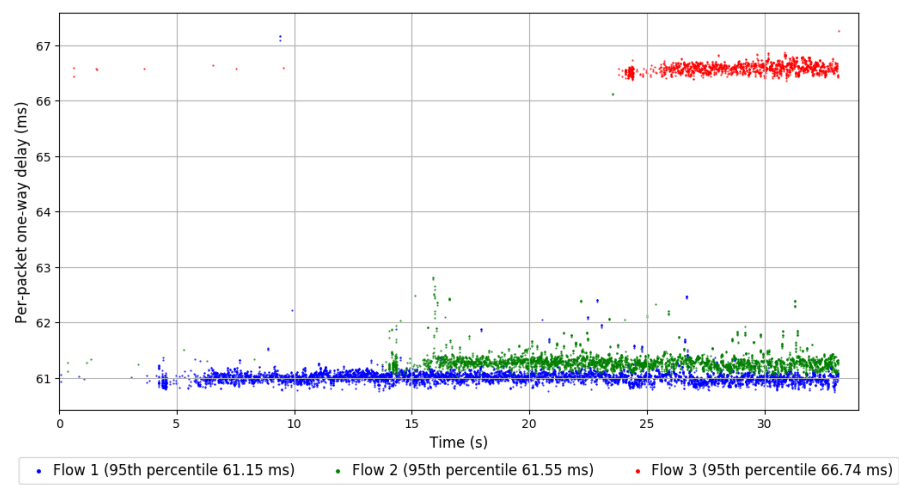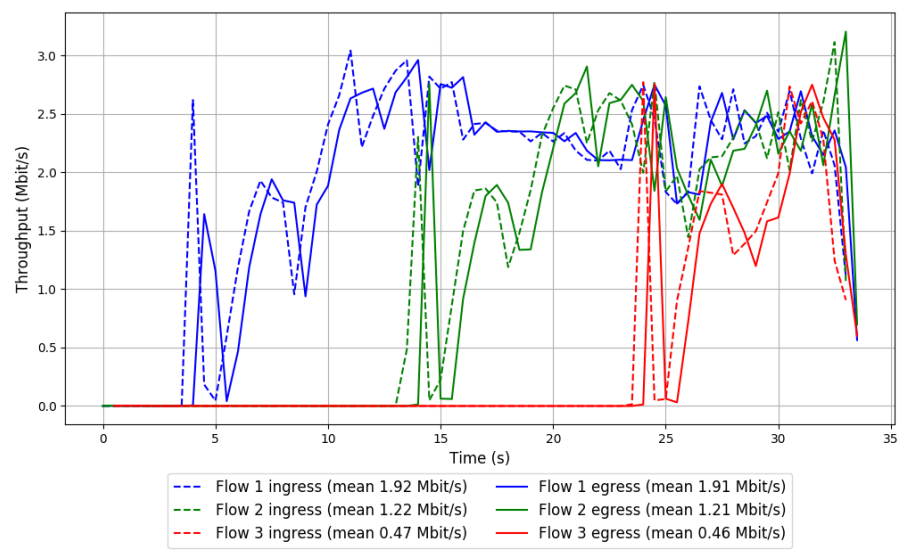Run 2: Report of WebRTC media — Data Link

```
Run 3: Statistics of WebRTC media

Start at: 2018-09-07 23:03:48
End at: 2018-09-07 23:04:18
Local clock offset: -0.026 ms
Remote clock offset: -0.256 ms


# Below is generated by plot.py at 2018-09-08 03:32:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.57 Mbit/s
95th percentile per-packet one-way delay: 66.617 ms
Loss rate: 0.83%
-- Flow 1:
Average throughput: 1.91 Mbit/s
95th percentile per-packet one-way delay: 61.151 ms
Loss rate: 0.59%
-- Flow 2:
Average throughput: 1.21 Mbit/s
95th percentile per-packet one-way delay: 61.546 ms
Loss rate: 0.82%
-- Flow 3:
Average throughput: 0.46 Mbit/s
95th percentile per-packet one-way delay: 66.736 ms
Loss rate: 1.86%
```

Run 3: Report of WebRTC media — Data Link

```
Run 4: Statistics of WebRTC media

Start at: 2018-09-07 23:36:39
End at: 2018-09-07 23:37:09
Local clock offset: 0.013 ms
Remote clock offset: 0.786 ms


# Below is generated by plot.py at 2018-09-08 03:32:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.52 Mbit/s
95th percentile per-packet one-way delay: 65.669 ms
Loss rate: 0.70%
-- Flow 1:
Average throughput: 1.83 Mbit/s
95th percentile per-packet one-way delay: 65.702 ms
Loss rate: 0.50%
-- Flow 2:
Average throughput: 1.23 Mbit/s
95th percentile per-packet one-way delay: 59.789 ms
Loss rate: 0.80%
-- Flow 3:
Average throughput: 0.47 Mbit/s
95th percentile per-packet one-way delay: 65.650 ms
Loss rate: 1.21%
```
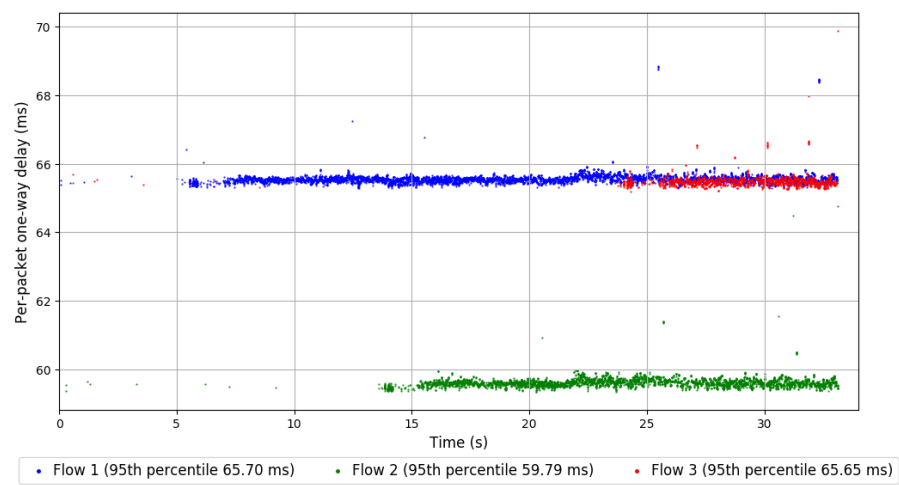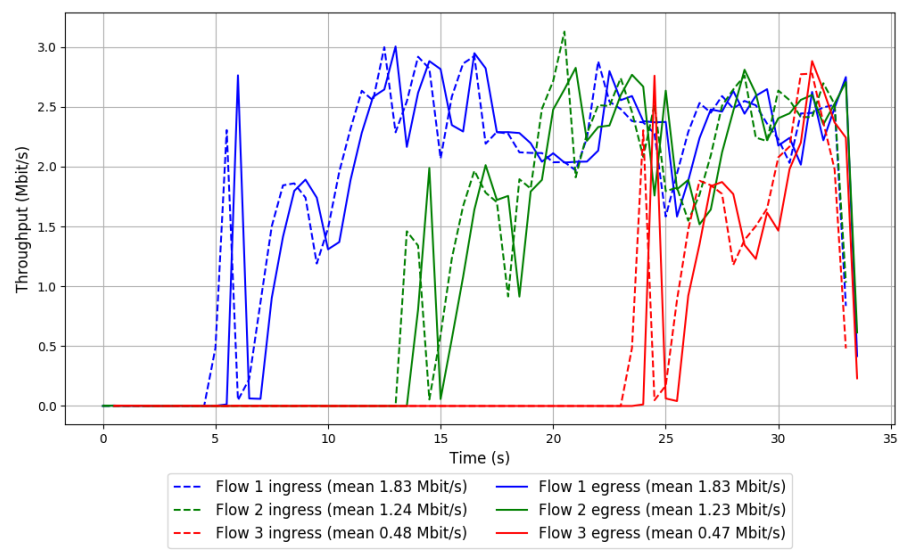
Run 4: Report of WebRTC media — Data Link

```
Run 5: Statistics of WebRTC media

Start at: 2018-09-08 00:09:25
End at: 2018-09-08 00:09:55
Local clock offset: -0.007 ms
Remote clock offset: -0.692 ms


# Below is generated by plot.py at 2018-09-08 03:32:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.57 Mbit/s
95th percentile per-packet one-way delay: 67.042 ms
Loss rate: 0.93%
-- Flow 1:
Average throughput: 1.92 Mbit/s
95th percentile per-packet one-way delay: 67.058 ms
Loss rate: 0.83%
-- Flow 2:
Average throughput: 1.21 Mbit/s
95th percentile per-packet one-way delay: 61.967 ms
Loss rate: 1.11%
-- Flow 3:
Average throughput: 0.46 Mbit/s
95th percentile per-packet one-way delay: 67.073 ms
Loss rate: 0.84%
```

Run 5: Report of WebRTC media — Data Link