Pantheon Report

Generated at 2018-09-08 12:58:47 (UTC).

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

Repeated the test of 18 congestion control schemes 5 times.

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

NTP offsets were measured against time.google.com and have been applied to correct the timestamps in logs.
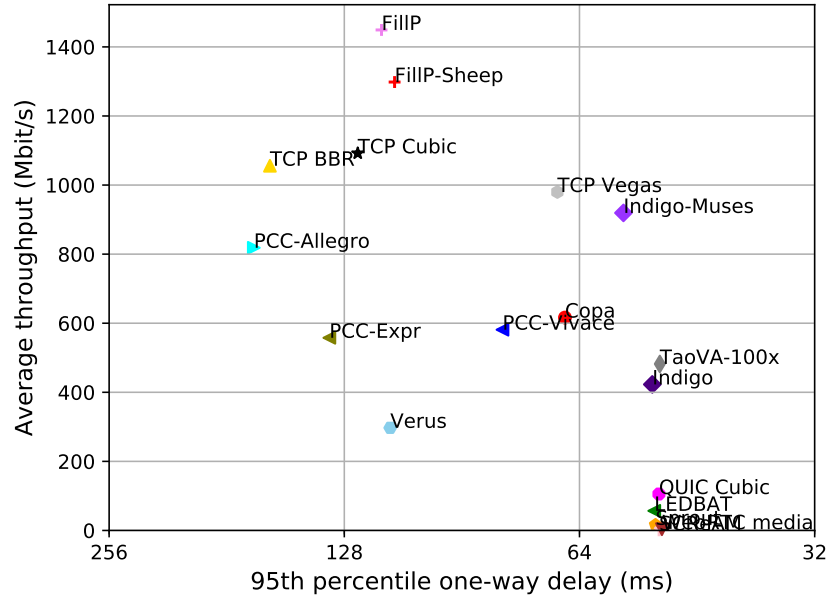
```
System info:
Linux 4.15.0-1018-gcp
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912
net.ipv4.tcp_mem = 190986 254651 381972

Git summary:
branch: muses @ e0a9b05ad97d268013b7cc9a9c95637b593a1b4c
third_party/fillp @ d47f4fa1b454a5e3c0537115c5a28436dbd4b834
third_party/fillp-sheep @ daed0c84f98531712514b2231f43ec6901114ffe
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdfe58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/muses @ 7631aea3923a3598767c87765ae5103aca0678d3
third_party/pantheon-tunnel @ cbfce6db5ff5740dafe1771f813cd646339e1952
third_party/pcc @ 1afc958fa0d66d18b623c091a55fec872b4981e1
 M receiver/src/buffer.h
 M receiver/src/core.cpp
 M sender/src/buffer.h
 M sender/src/core.cpp
third_party/pcc-experimental @ cd43e34e3f5f5613e8acd08fab92c4eb24f974ab
third_party/proto-quic @ 77961f1a82733a86b42f1bc8143ebc978f3cff42
third_party/scream-reproduce @ f099118d1421aa3131bf11ff1964974e1da3bdb2
 M src/ScreamClient
 M src/ScreamServer
third_party/sprout @ 366e35c6178b01e31d4a46ad18c74f9415f19a26
 M src/examples/cellsim.cc
 M src/examples/sproutbt2.cc
 M src/network/sproutconn.cc
third_party/verus @ d4b447ea74c6c60a261149af2629562939f9a494
 M src/verus.hpp
```
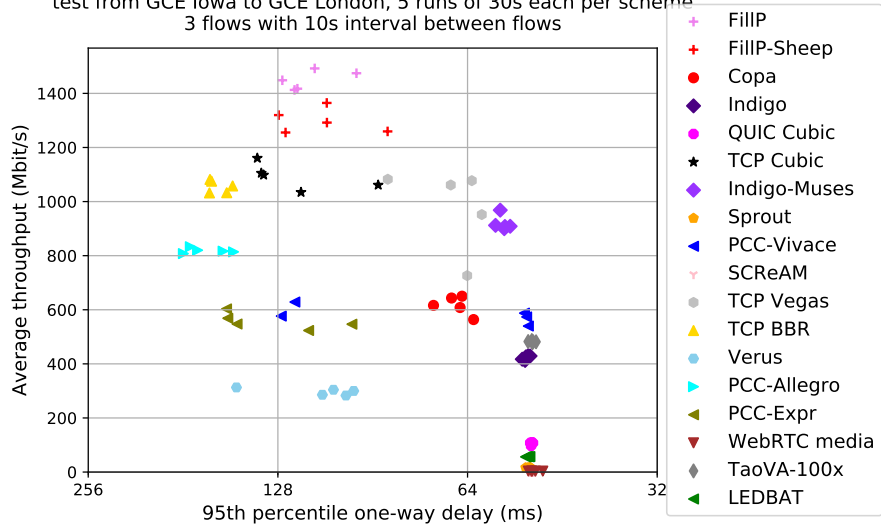
```
 M tools/plot.py
third_party/vivace @ 2baf86211435ae071a32f96b7d8c504587f5d7f4
third_party/webrtc @ 3f0cc2a9061a41b6f9dde4735770d143a1fa2851
```

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

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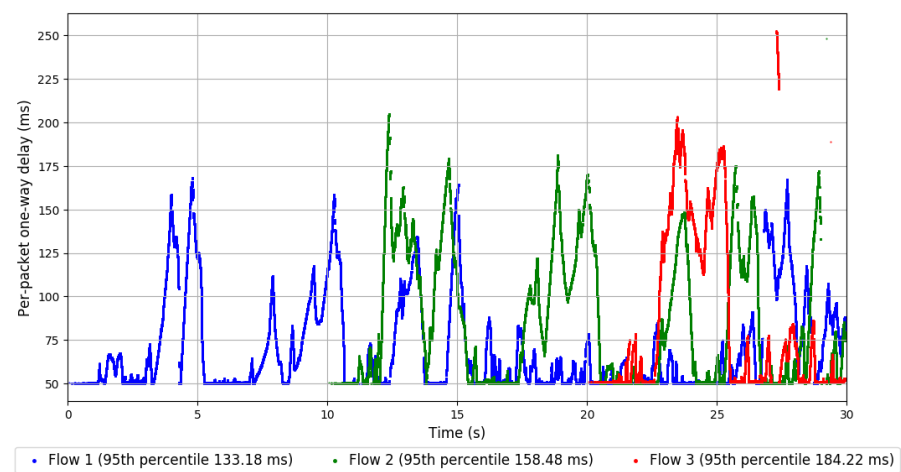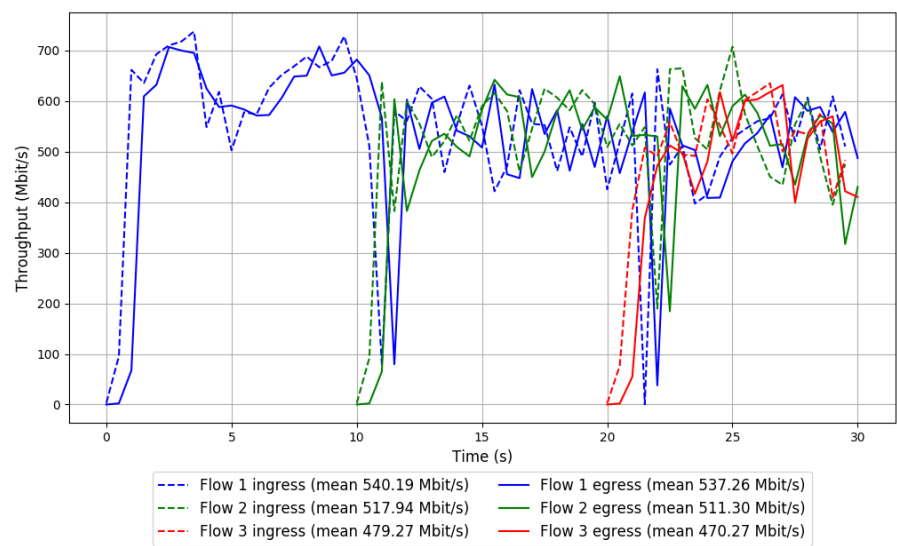3 flows with 10s interval between flows

scheme	# runs	mean avg tput (Mbit/s)			mean 95th-%ile delay (ms)			mean loss rate (%)		
		flow 1	flow 2	flow 3	flow 1	flow 2	flow 3	flow 1	flow 2	flow 3
TCP BBR	5	543.64	526.84	491.92	167.48	154.33	158.73	1.42	1.44	2.19
Copa	5	331.80	308.32	240.78	62.98	67.86	78.08	0.29	0.55	1.11
TCP Cubic	5	563.56	541.01	510.73	93.86	121.12	99.54	0.38	0.57	1.45
FillP	5	778.74	732.56	557.45	118.51	109.10	80.94	2.19	2.26	1.32
FillP-Sheep	5	703.71	634.05	525.89	113.20	107.55	86.69	1.15	1.10	1.25
Indigo	5	222.90	210.90	180.83	51.35	51.46	51.17	0.34	0.55	1.19
LEDBAT	5	36.64	24.33	12.08	51.13	51.10	50.62	0.66	1.00	2.04
Indigo-Muses	5	503.74	441.20	374.49	56.56	56.01	54.89	0.29	0.53	1.23
PCC-Allegro	5	453.14	406.20	292.66	169.34	140.65	105.98	2.49	4.10	1.72
PCC-Expr	5	332.29	279.40	122.42	131.16	118.22	55.90	1.67	1.47	1.70
QUIC Cubic	5	65.70	42.79	33.82	49.81	50.61	50.01	0.45	0.95	0.76
SCReAM	5	0.22	0.22	0.22	50.63	49.74	49.50	0.31	0.61	1.09
Sprout	5	8.29	8.20	7.81	50.08	50.63	51.29	0.33	0.47	1.38
TaoVA-100x	5	245.52	238.68	235.61	50.16	49.72	50.53	0.35	0.51	1.09
TCP Vegas	5	471.54	521.88	488.00	67.30	63.02	69.86	0.29	0.48	1.03
Verus	5	166.82	142.67	108.86	107.60	83.21	79.10	0.42	0.62	1.55
PCC-Vivace	5	335.69	295.89	149.84	93.91	64.18	69.42	0.51	0.68	0.83
WebRTC media	5	1.79	1.21	0.50	49.97	50.02	50.02	0.40	0.64	0.55

```
Run 1: Statistics of TCP BBR

Start at: 2018-09-08 07:45:35
End at: 2018-09-08 07:46:05
Local clock offset: -0.106 ms
Remote clock offset: -0.282 ms


# Below is generated by plot.py at 2018-09-08 10:38:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1032.70 Mbit/s
95th percentile per-packet one-way delay: 154.323 ms
Loss rate: 1.48%
-- Flow 1:
Average throughput: 537.26 Mbit/s
95th percentile per-packet one-way delay: 133.176 ms
Loss rate: 0.87%
-- Flow 2:
Average throughput: 511.30 Mbit/s
95th percentile per-packet one-way delay: 158.483 ms
Loss rate: 1.78%
-- Flow 3:
Average throughput: 470.27 Mbit/s
95th percentile per-packet one-way delay: 184.219 ms
Loss rate: 2.87%
```
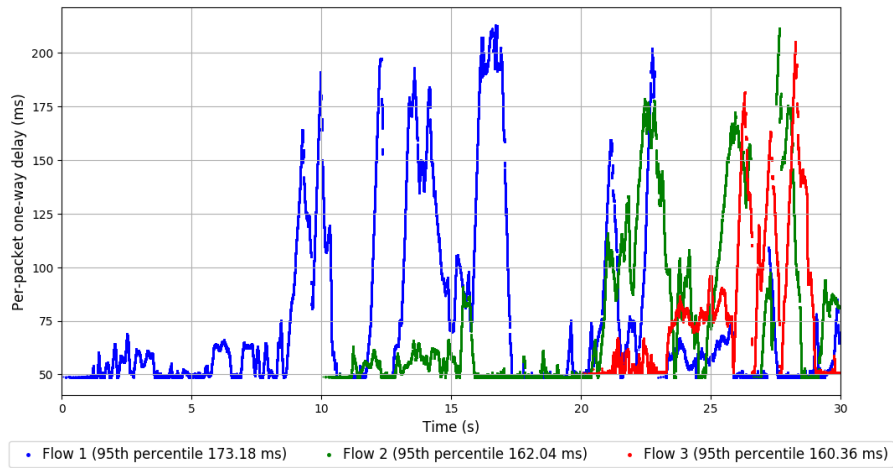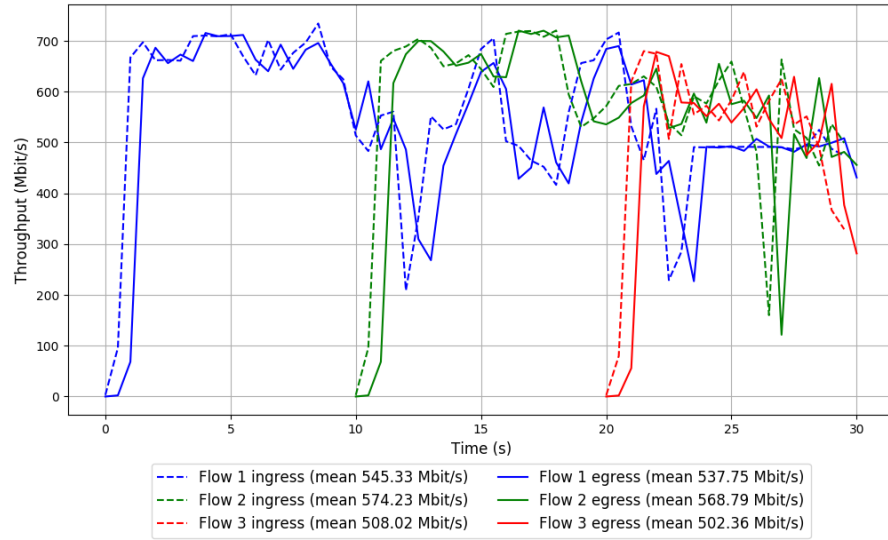
Run 1: Report of TCP BBR — Data Link

```
Run 2: Statistics of TCP BBR

Start at: 2018-09-08 08:17:22
End at: 2018-09-08 08:17:52
Local clock offset: 0.03 ms
Remote clock offset: 0.023 ms


# Below is generated by plot.py at 2018-09-08 10:40:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1081.89 Mbit/s
95th percentile per-packet one-way delay: 164.055 ms
Loss rate: 1.68%
-- Flow 1:
Average throughput: 537.75 Mbit/s
95th percentile per-packet one-way delay: 173.175 ms
Loss rate: 1.72%
-- Flow 2:
Average throughput: 568.79 Mbit/s
95th percentile per-packet one-way delay: 162.044 ms
Loss rate: 1.44%
-- Flow 3:
Average throughput: 502.36 Mbit/s
95th percentile per-packet one-way delay: 160.361 ms
Loss rate: 2.12%
```
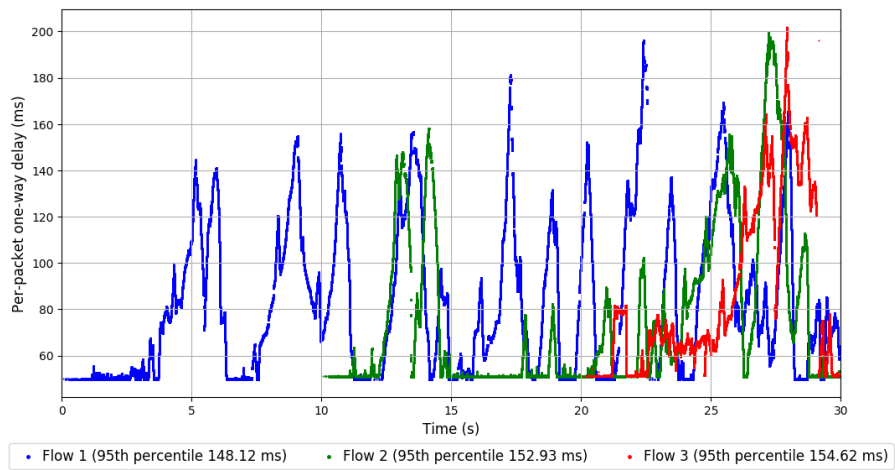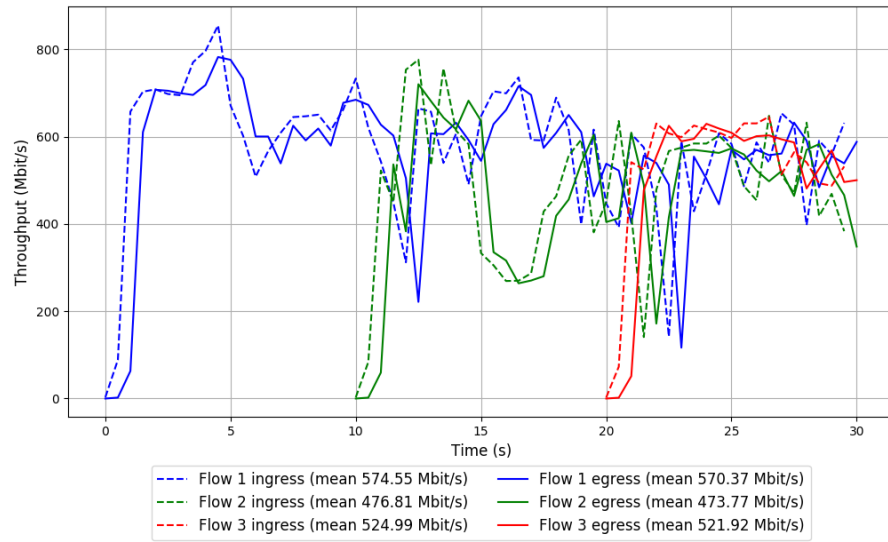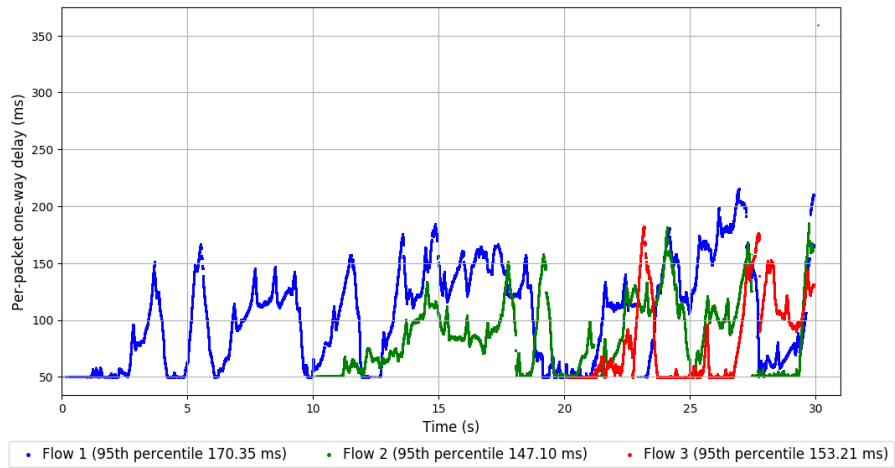
Run 2: Report of TCP BBR — Data Link

Legend (top plot):
- Flow 1 ingress (mean 545.33 Mbit/s) — Flow 1 egress (mean 537.75 Mbit/s)
- Flow 2 ingress (mean 574.23 Mbit/s) — Flow 2 egress (mean 568.79 Mbit/s)
- Flow 3 ingress (mean 508.02 Mbit/s) — Flow 3 egress (mean 502.36 Mbit/s)

Legend (bottom plot):
- Flow 1 (95th percentile 173.18 ms)
- Flow 2 (95th percentile 162.04 ms)
- Flow 3 (95th percentile 160.36 ms)

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```
Run 3: Statistics of TCP BBR

Start at: 2018-09-08 08:49:08
End at: 2018-09-08 08:49:38
Local clock offset: 0.339 ms
Remote clock offset: -0.015 ms


# Below is generated by plot.py at 2018-09-08 10:40:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1057.77 Mbit/s
95th percentile per-packet one-way delay: 151.028 ms
Loss rate: 1.17%
-- Flow 1:
Average throughput: 570.37 Mbit/s
95th percentile per-packet one-way delay: 148.124 ms
Loss rate: 1.06%
-- Flow 2:
Average throughput: 473.77 Mbit/s
95th percentile per-packet one-way delay: 152.934 ms
Loss rate: 1.14%
-- Flow 3:
Average throughput: 521.92 Mbit/s
95th percentile per-packet one-way delay: 154.615 ms
Loss rate: 1.59%
```
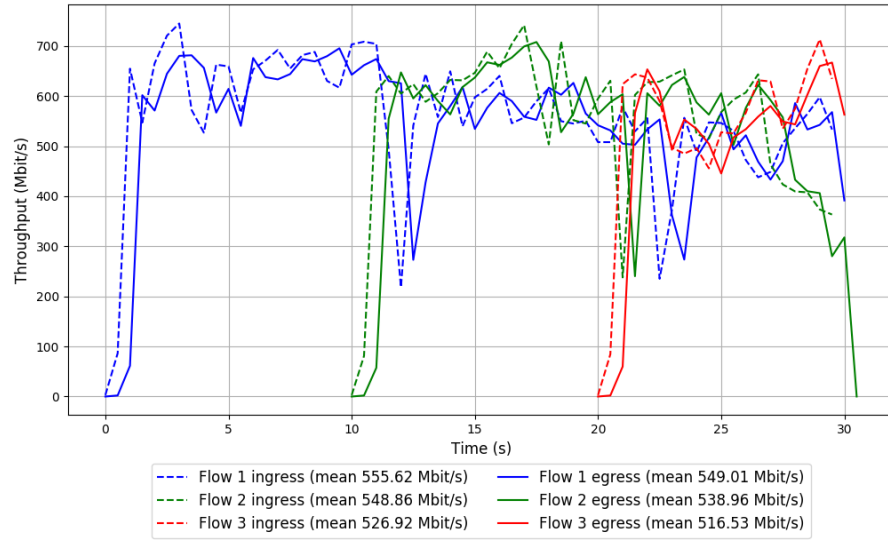
Run 3: Report of TCP BBR — Data Link

Flow 1 ingress (mean 574.55 Mbit/s) --- Flow 1 egress (mean 570.37 Mbit/s)
Flow 2 ingress (mean 476.81 Mbit/s) --- Flow 2 egress (mean 473.77 Mbit/s)
Flow 3 ingress (mean 524.99 Mbit/s) --- Flow 3 egress (mean 521.92 Mbit/s)

Flow 1 (95th percentile 148.12 ms)　　Flow 2 (95th percentile 152.93 ms)　　Flow 3 (95th percentile 154.62 ms)
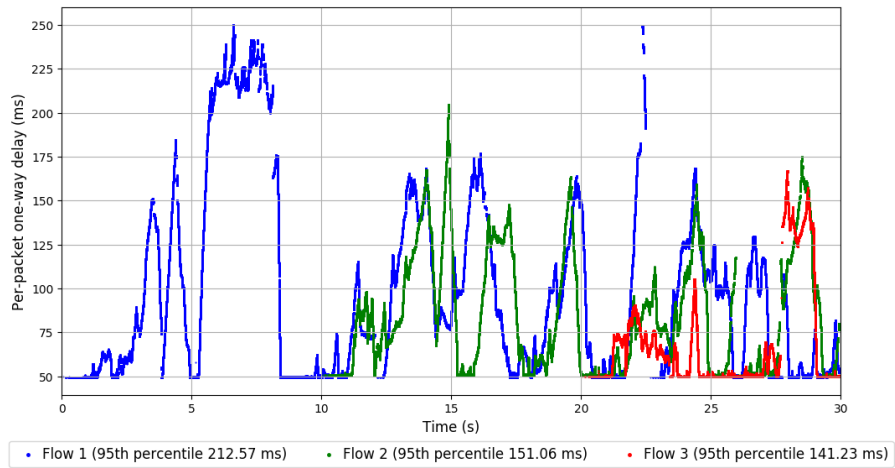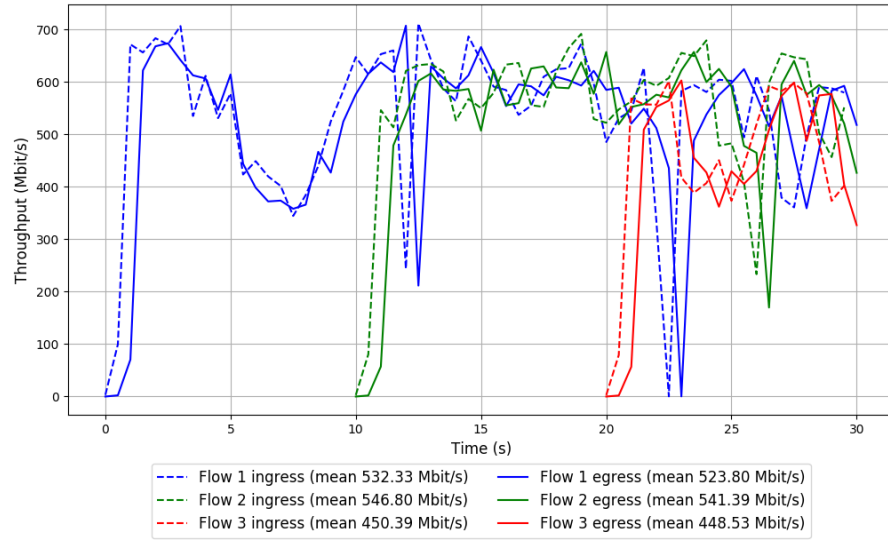
```
Run 4: Statistics of TCP BBR

Start at: 2018-09-08 09:20:57
End at: 2018-09-08 09:21:27
Local clock offset: 0.27 ms
Remote clock offset: -0.081 ms


# Below is generated by plot.py at 2018-09-08 10:40:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1075.37 Mbit/s
95th percentile per-packet one-way delay: 163.091 ms
Loss rate: 1.70%
-- Flow 1:
Average throughput: 549.01 Mbit/s
95th percentile per-packet one-way delay: 170.348 ms
Loss rate: 1.52%
-- Flow 2:
Average throughput: 538.96 Mbit/s
95th percentile per-packet one-way delay: 147.101 ms
Loss rate: 1.36%
-- Flow 3:
Average throughput: 516.53 Mbit/s
95th percentile per-packet one-way delay: 153.207 ms
Loss rate: 2.96%
```
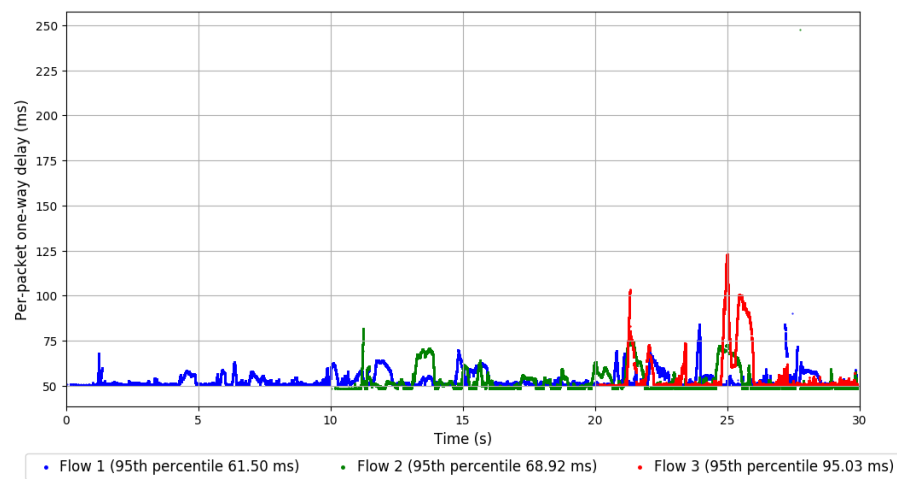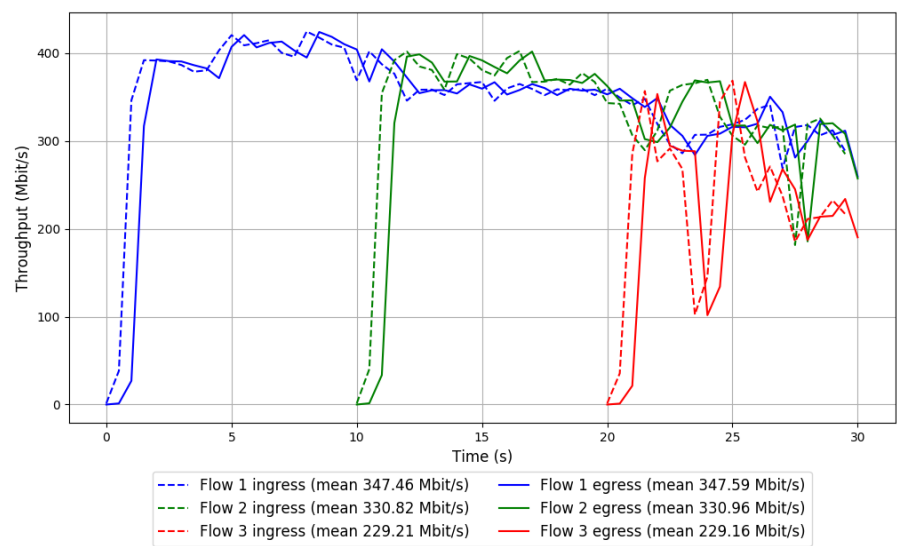
Run 4: Report of TCP BBR — Data Link

```
Run 5: Statistics of TCP BBR

Start at: 2018-09-08 09:52:31
End at: 2018-09-08 09:53:01
Local clock offset: -0.012 ms
Remote clock offset: -0.085 ms


# Below is generated by plot.py at 2018-09-08 10:40:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1032.02 Mbit/s
95th percentile per-packet one-way delay: 164.360 ms
Loss rate: 1.71%
-- Flow 1:
Average throughput: 523.80 Mbit/s
95th percentile per-packet one-way delay: 212.570 ms
Loss rate: 1.93%
-- Flow 2:
Average throughput: 541.39 Mbit/s
95th percentile per-packet one-way delay: 151.064 ms
Loss rate: 1.49%
-- Flow 3:
Average throughput: 448.53 Mbit/s
95th percentile per-packet one-way delay: 141.229 ms
Loss rate: 1.42%
```

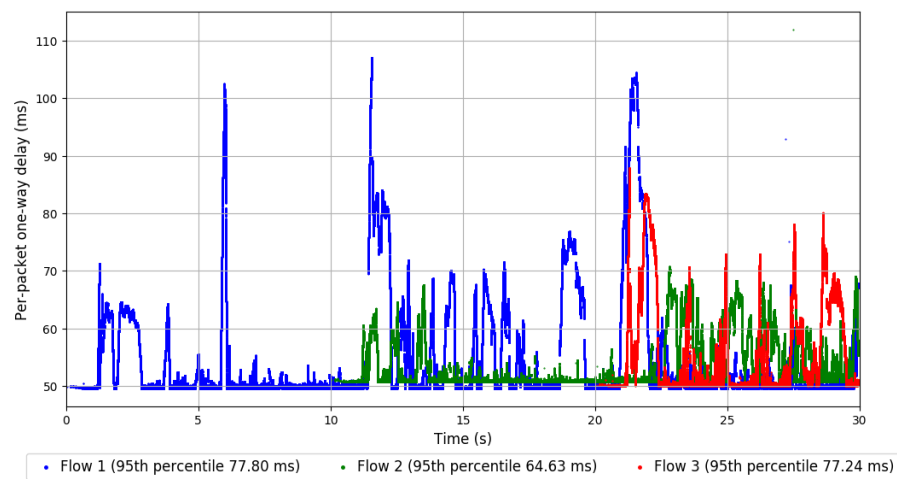Run 5: Report of TCP BBR — Data Link

```
Run 1: Statistics of Copa

Start at: 2018-09-08 07:27:57
End at: 2018-09-08 07:28:27
Local clock offset: -0.104 ms
Remote clock offset: -0.202 ms


# Below is generated by plot.py at 2018-09-08 10:41:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 643.40 Mbit/s
95th percentile per-packet one-way delay: 67.852 ms
Loss rate: 0.43%
-- Flow 1:
Average throughput: 347.59 Mbit/s
95th percentile per-packet one-way delay: 61.500 ms
Loss rate: 0.30%
-- Flow 2:
Average throughput: 330.96 Mbit/s
95th percentile per-packet one-way delay: 68.925 ms
Loss rate: 0.45%
-- Flow 3:
Average throughput: 229.16 Mbit/s
95th percentile per-packet one-way delay: 95.026 ms
Loss rate: 1.01%
```

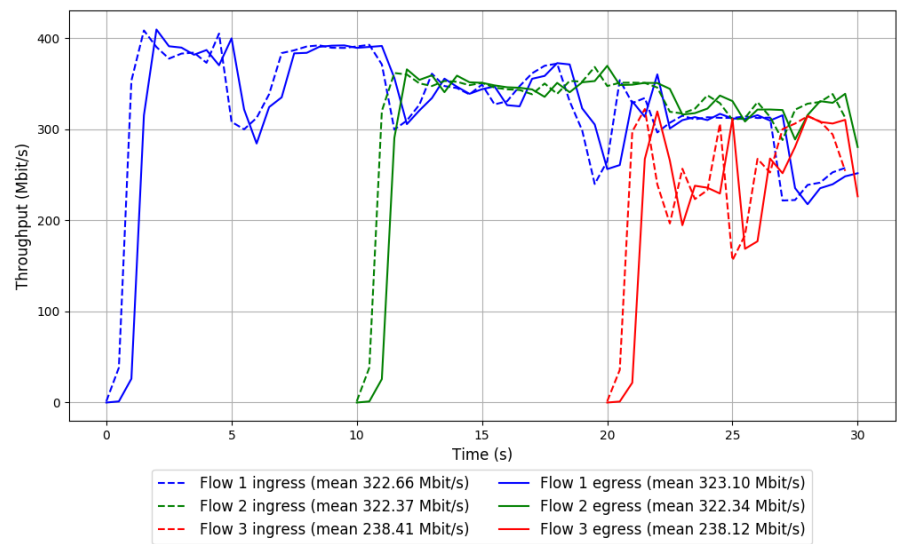Run 1: Report of Copa — Data Link

```
Run 2: Statistics of Copa

Start at: 2018-09-08 07:59:44
End at: 2018-09-08 08:00:14
Local clock offset: -0.021 ms
Remote clock offset: -0.128 ms


# Below is generated by plot.py at 2018-09-08 10:41:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 616.14 Mbit/s
95th percentile per-packet one-way delay: 72.479 ms
Loss rate: 0.43%
-- Flow 1:
Average throughput: 323.10 Mbit/s
95th percentile per-packet one-way delay: 77.799 ms
Loss rate: 0.20%
-- Flow 2:
Average throughput: 322.34 Mbit/s
95th percentile per-packet one-way delay: 64.632 ms
Loss rate: 0.51%
-- Flow 3:
Average throughput: 238.12 Mbit/s
95th percentile per-packet one-way delay: 77.244 ms
Loss rate: 1.13%
```
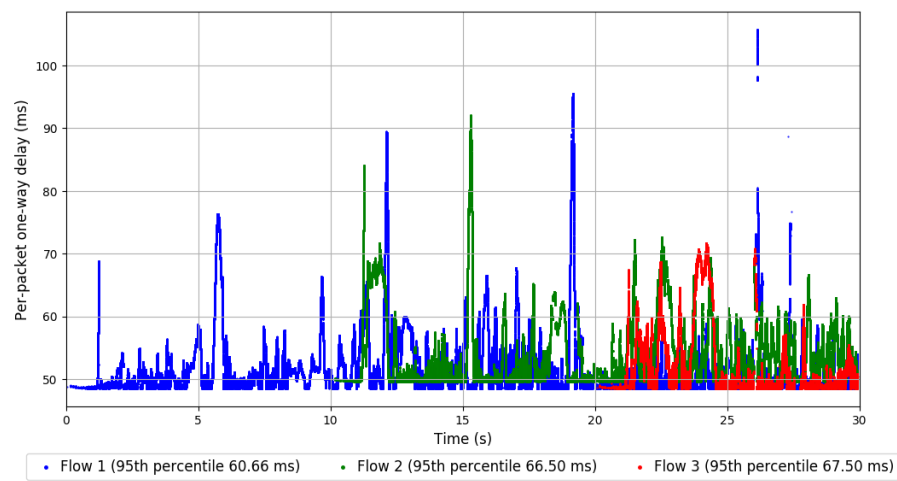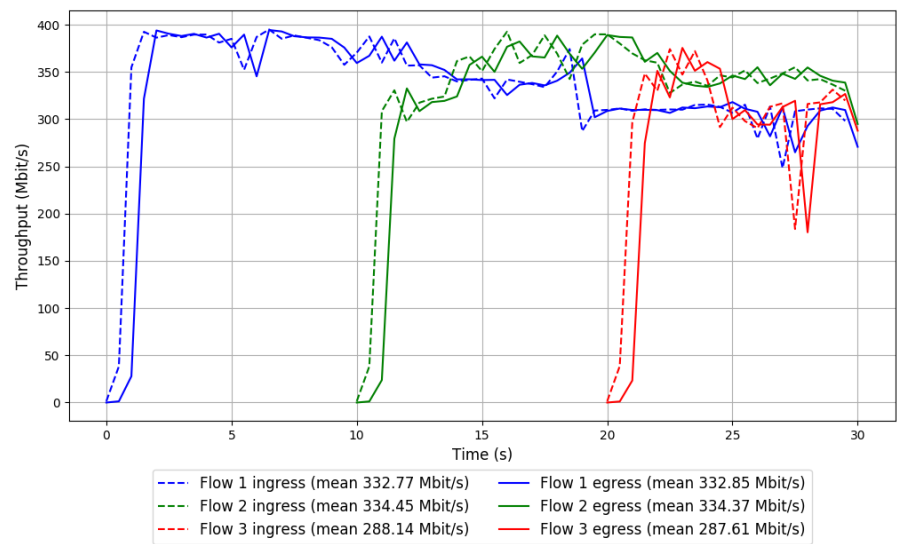
Run 2: Report of Copa — Data Link

```
Run 3: Statistics of Copa

Start at: 2018-09-08 08:31:29
End at: 2018-09-08 08:31:59
Local clock offset: -0.013 ms
Remote clock offset: 0.016 ms


# Below is generated by plot.py at 2018-09-08 10:42:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 650.15 Mbit/s
95th percentile per-packet one-way delay: 65.302 ms
Loss rate: 0.51%
-- Flow 1:
Average throughput: 332.85 Mbit/s
95th percentile per-packet one-way delay: 60.660 ms
Loss rate: 0.30%
-- Flow 2:
Average throughput: 334.37 Mbit/s
95th percentile per-packet one-way delay: 66.497 ms
Loss rate: 0.53%
-- Flow 3:
Average throughput: 287.61 Mbit/s
95th percentile per-packet one-way delay: 67.498 ms
Loss rate: 1.18%
```
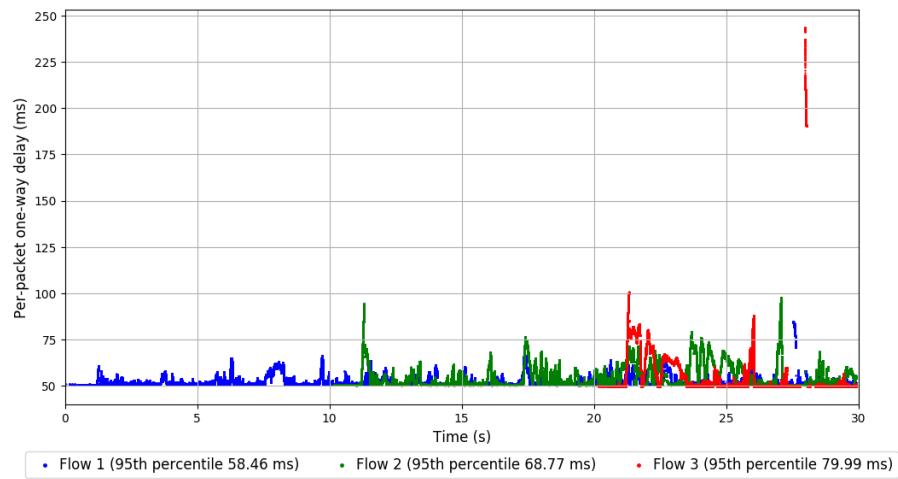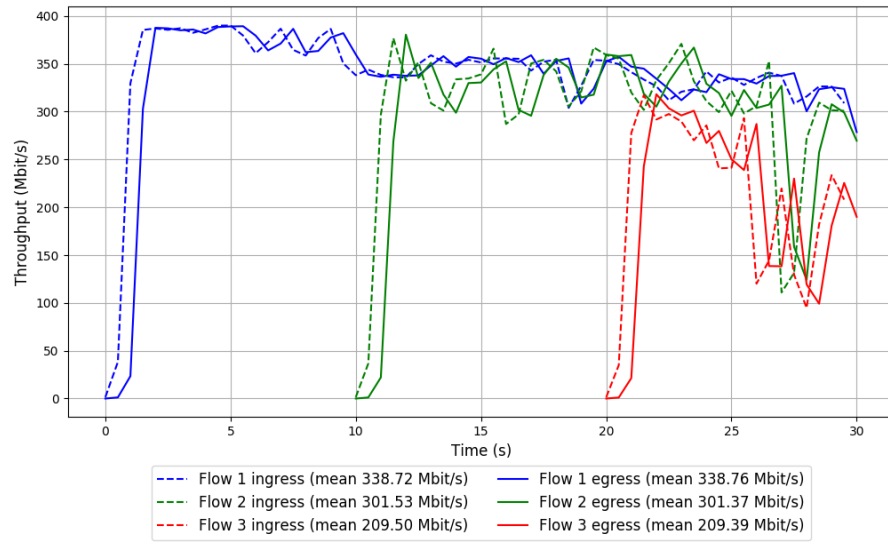
Run 3: Report of Copa — Data Link

Flow 1 ingress (mean 332.77 Mbit/s)   Flow 1 egress (mean 332.85 Mbit/s)
Flow 2 ingress (mean 334.45 Mbit/s)   Flow 2 egress (mean 334.37 Mbit/s)
Flow 3 ingress (mean 288.14 Mbit/s)   Flow 3 egress (mean 287.61 Mbit/s)

Flow 1 (95th percentile 60.66 ms)   Flow 2 (95th percentile 66.50 ms)   Flow 3 (95th percentile 67.50 ms)
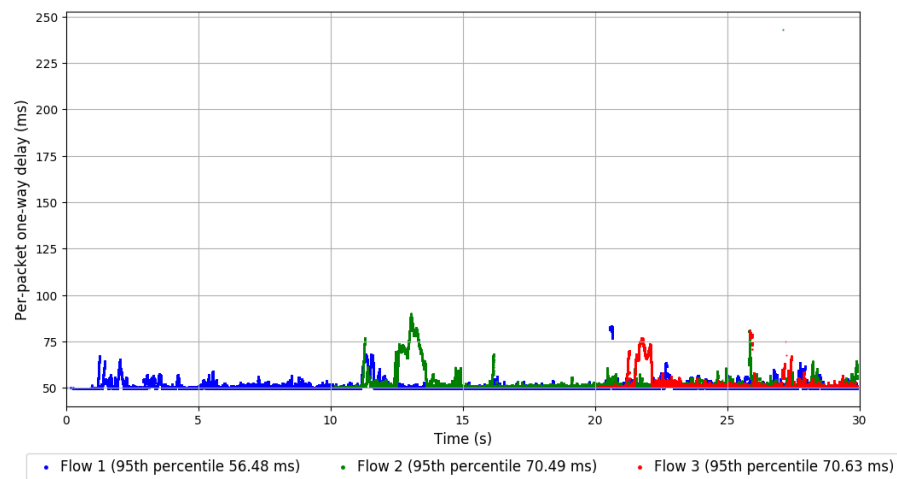
20

```
Run 4: Statistics of Copa

Start at: 2018-09-08 09:03:21
End at: 2018-09-08 09:03:51
Local clock offset: -0.055 ms
Remote clock offset: -0.025 ms


# Below is generated by plot.py at 2018-09-08 10:57:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 608.28 Mbit/s
95th percentile per-packet one-way delay: 65.767 ms
Loss rate: 0.49%
-- Flow 1:
Average throughput: 338.76 Mbit/s
95th percentile per-packet one-way delay: 58.463 ms
Loss rate: 0.33%
-- Flow 2:
Average throughput: 301.37 Mbit/s
95th percentile per-packet one-way delay: 68.766 ms
Loss rate: 0.56%
-- Flow 3:
Average throughput: 209.39 Mbit/s
95th percentile per-packet one-way delay: 79.992 ms
Loss rate: 1.06%
```
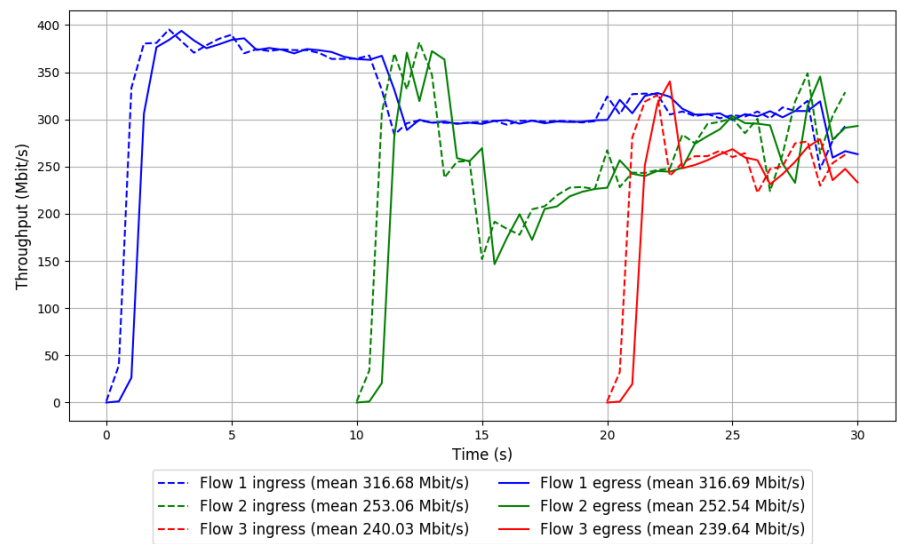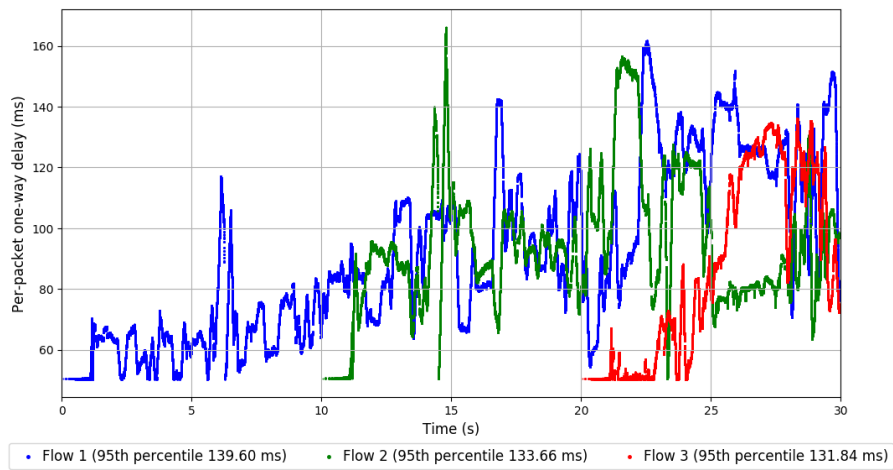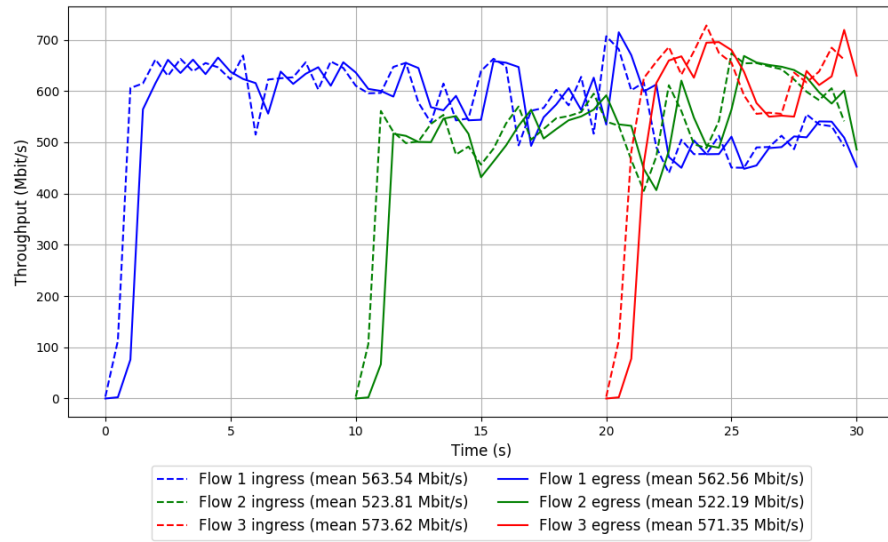
Run 4: Report of Copa — Data Link

Flow 1 ingress (mean 338.72 Mbit/s) — Flow 1 egress (mean 338.76 Mbit/s)
Flow 2 ingress (mean 301.53 Mbit/s) — Flow 2 egress (mean 301.37 Mbit/s)
Flow 3 ingress (mean 209.50 Mbit/s) — Flow 3 egress (mean 209.39 Mbit/s)

Flow 1 (95th percentile 58.46 ms)   Flow 2 (95th percentile 68.77 ms)   Flow 3 (95th percentile 79.99 ms)

```
Run 5: Statistics of Copa

Start at: 2018-09-08 09:35:16
End at: 2018-09-08 09:35:46
Local clock offset: -0.085 ms
Remote clock offset: -0.133 ms


# Below is generated by plot.py at 2018-09-08 10:57:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 563.74 Mbit/s
95th percentile per-packet one-way delay: 62.608 ms
Loss rate: 0.56%
-- Flow 1:
Average throughput: 316.69 Mbit/s
95th percentile per-packet one-way delay: 56.481 ms
Loss rate: 0.33%
-- Flow 2:
Average throughput: 252.54 Mbit/s
95th percentile per-packet one-way delay: 70.487 ms
Loss rate: 0.71%
-- Flow 3:
Average throughput: 239.64 Mbit/s
95th percentile per-packet one-way delay: 70.630 ms
Loss rate: 1.18%
```

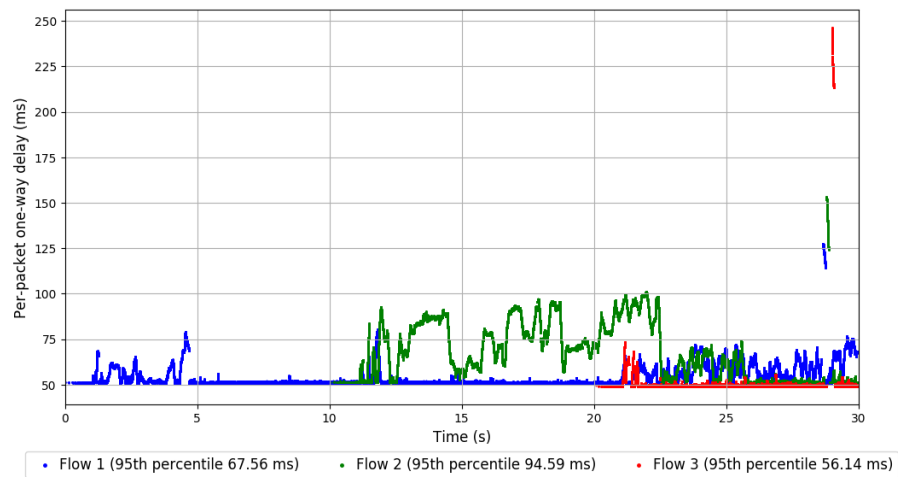Run 5: Report of Copa — Data Link

```
Run 1: Statistics of TCP Cubic

Start at: 2018-09-08 07:25:53
End at: 2018-09-08 07:26:23
Local clock offset: -0.105 ms
Remote clock offset: -0.203 ms


# Below is generated by plot.py at 2018-09-08 10:57:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1098.36 Mbit/s
95th percentile per-packet one-way delay: 134.841 ms
Loss rate: 0.75%
-- Flow 1:
Average throughput: 562.56 Mbit/s
95th percentile per-packet one-way delay: 139.603 ms
Loss rate: 0.51%
-- Flow 2:
Average throughput: 522.19 Mbit/s
95th percentile per-packet one-way delay: 133.658 ms
Loss rate: 0.81%
-- Flow 3:
Average throughput: 571.35 Mbit/s
95th percentile per-packet one-way delay: 131.843 ms
Loss rate: 1.38%
```

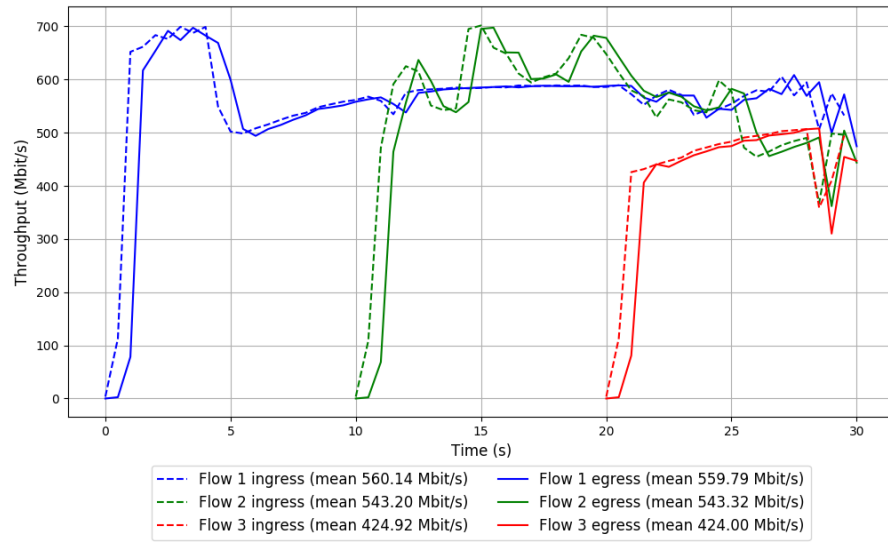Run 1: Report of TCP Cubic — Data Link

```
Run 2: Statistics of TCP Cubic

Start at: 2018-09-08 07:57:42
End at: 2018-09-08 07:58:12
Local clock offset: 0.309 ms
Remote clock offset: -0.134 ms


# Below is generated by plot.py at 2018-09-08 10:57:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1061.20 Mbit/s
95th percentile per-packet one-way delay: 88.716 ms
Loss rate: 0.53%
-- Flow 1:
Average throughput: 559.79 Mbit/s
95th percentile per-packet one-way delay: 67.564 ms
Loss rate: 0.40%
-- Flow 2:
Average throughput: 543.32 Mbit/s
95th percentile per-packet one-way delay: 94.586 ms
Loss rate: 0.48%
-- Flow 3:
Average throughput: 424.00 Mbit/s
95th percentile per-packet one-way delay: 56.143 ms
Loss rate: 1.21%
```
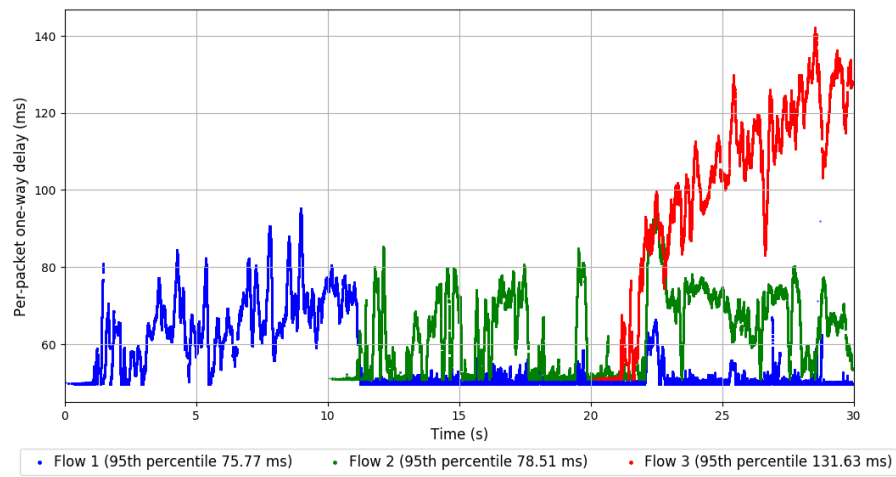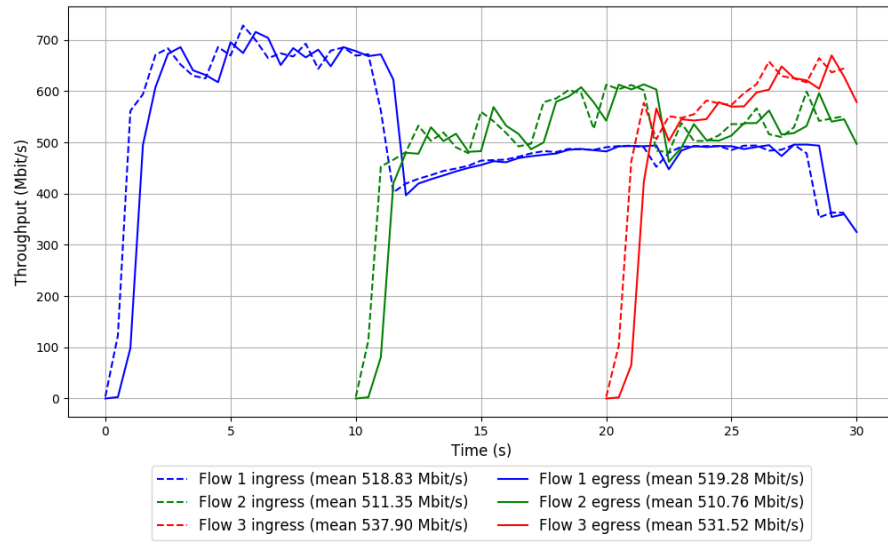
Run 2: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 560.14 Mbit/s) --- Flow 1 egress (mean 559.79 Mbit/s) ---
Flow 2 ingress (mean 543.20 Mbit/s) --- Flow 2 egress (mean 543.32 Mbit/s) ---
Flow 3 ingress (mean 424.92 Mbit/s) --- Flow 3 egress (mean 424.00 Mbit/s) ---

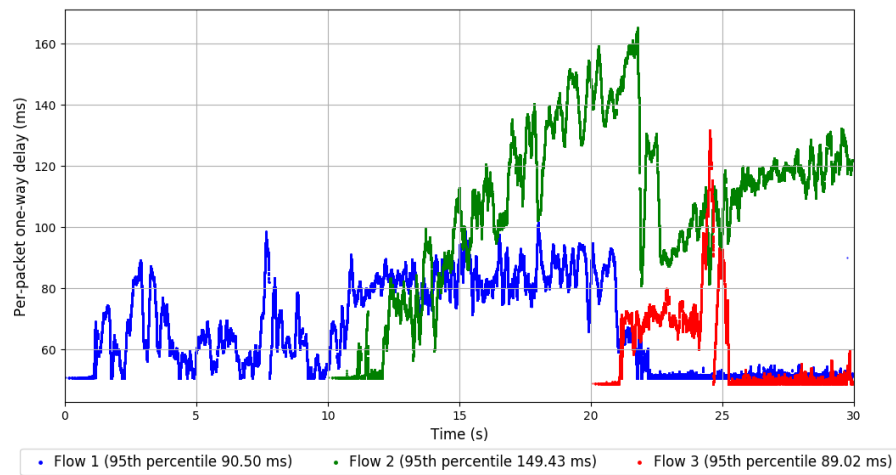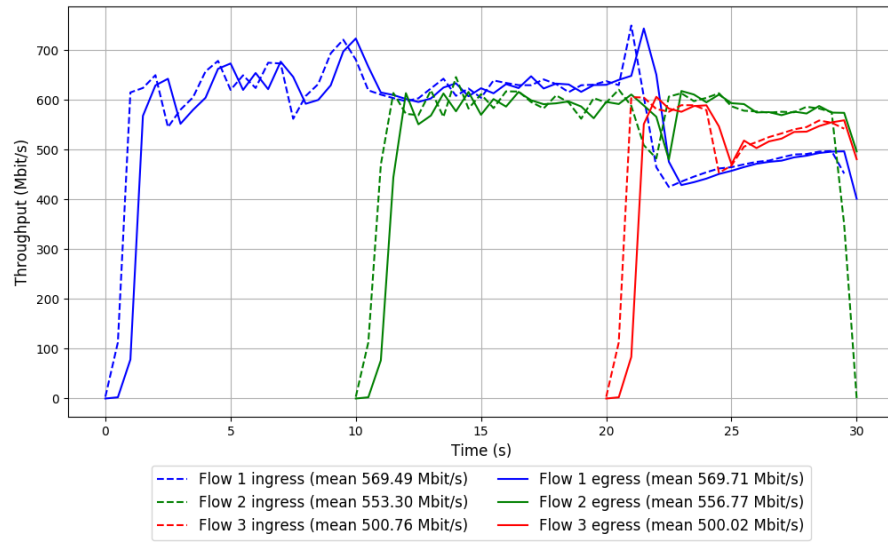Flow 1 (95th percentile 67.56 ms)   Flow 2 (95th percentile 94.59 ms)   Flow 3 (95th percentile 56.14 ms)

```
Run 3: Statistics of TCP Cubic

Start at: 2018-09-08 08:29:27
End at: 2018-09-08 08:29:57
Local clock offset: 0.365 ms
Remote clock offset: 0.02 ms


# Below is generated by plot.py at 2018-09-08 10:57:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1034.43 Mbit/s
95th percentile per-packet one-way delay: 117.625 ms
Loss rate: 0.70%
-- Flow 1:
Average throughput: 519.28 Mbit/s
95th percentile per-packet one-way delay: 75.769 ms
Loss rate: 0.24%
-- Flow 2:
Average throughput: 510.76 Mbit/s
95th percentile per-packet one-way delay: 78.508 ms
Loss rate: 0.62%
-- Flow 3:
Average throughput: 531.52 Mbit/s
95th percentile per-packet one-way delay: 131.630 ms
Loss rate: 2.19%
```

Run 3: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 518.83 Mbit/s) — Flow 1 egress (mean 519.28 Mbit/s)
Flow 2 ingress (mean 511.35 Mbit/s) — Flow 2 egress (mean 510.76 Mbit/s)
Flow 3 ingress (mean 537.90 Mbit/s) — Flow 3 egress (mean 531.52 Mbit/s)

Flow 1 (95th percentile 75.77 ms)   Flow 2 (95th percentile 78.51 ms)   Flow 3 (95th percentile 131.63 ms)
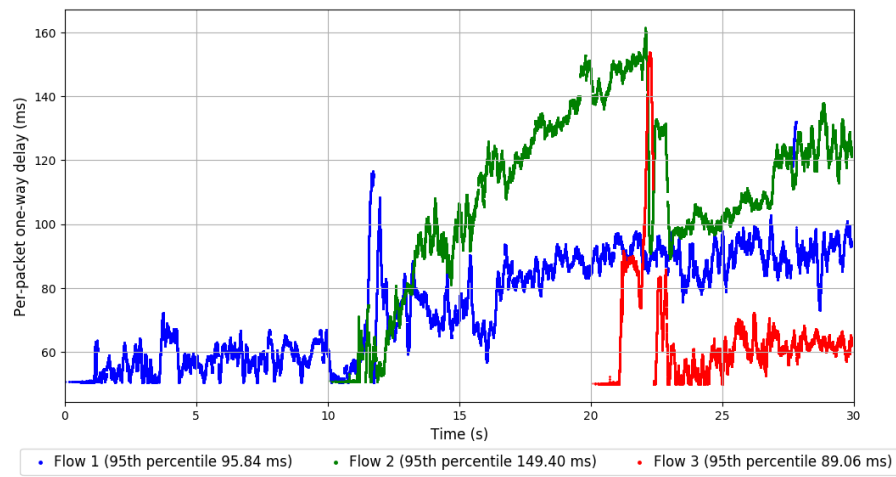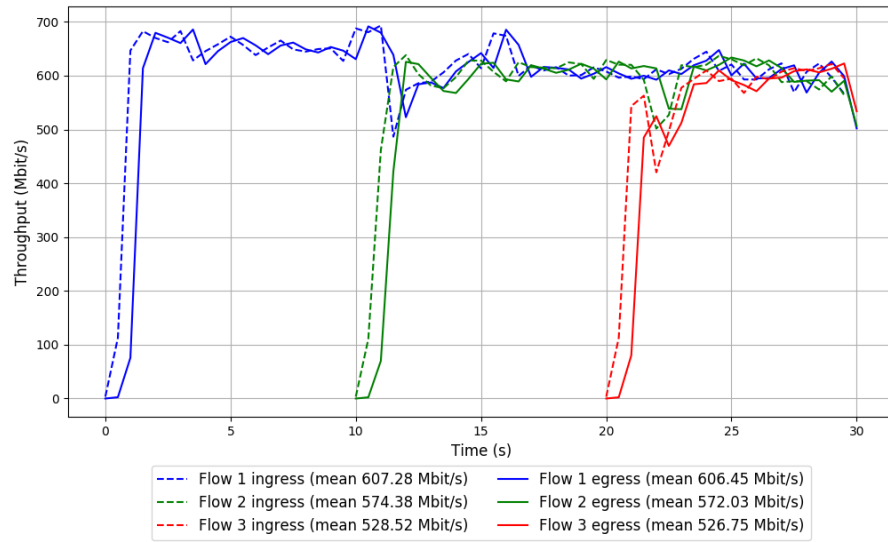
```
Run 4: Statistics of TCP Cubic

Start at: 2018-09-08 09:01:16
End at: 2018-09-08 09:01:46
Local clock offset: -0.038 ms
Remote clock offset: -0.026 ms


# Below is generated by plot.py at 2018-09-08 10:59:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1105.20 Mbit/s
95th percentile per-packet one-way delay: 135.993 ms
Loss rate: 0.33%
-- Flow 1:
Average throughput: 569.71 Mbit/s
95th percentile per-packet one-way delay: 90.500 ms
Loss rate: 0.30%
-- Flow 2:
Average throughput: 556.77 Mbit/s
95th percentile per-packet one-way delay: 149.427 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 500.02 Mbit/s
95th percentile per-packet one-way delay: 89.023 ms
Loss rate: 1.14%
```
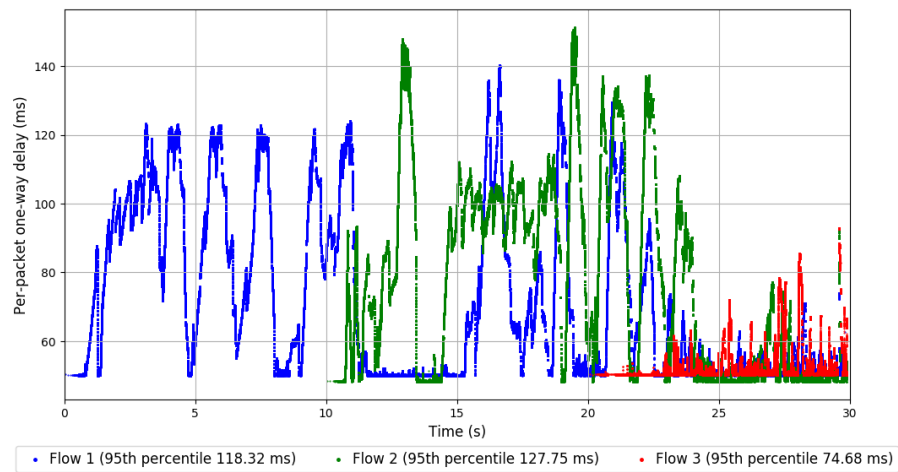
Run 4: Report of TCP Cubic — Data Link

- - - Flow 1 ingress (mean 569.49 Mbit/s) —— Flow 1 egress (mean 569.71 Mbit/s)
- - - Flow 2 ingress (mean 553.30 Mbit/s) —— Flow 2 egress (mean 556.77 Mbit/s)
- - - Flow 3 ingress (mean 500.76 Mbit/s) —— Flow 3 egress (mean 500.02 Mbit/s)

• Flow 1 (95th percentile 90.50 ms)   • Flow 2 (95th percentile 149.43 ms)   • Flow 3 (95th percentile 89.02 ms)

```
Run 5: Statistics of TCP Cubic

Start at: 2018-09-08 09:33:08
End at: 2018-09-08 09:33:38
Local clock offset: -0.11 ms
Remote clock offset: -0.098 ms


# Below is generated by plot.py at 2018-09-08 11:01:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1160.65 Mbit/s
95th percentile per-packet one-way delay: 137.988 ms
Loss rate: 0.75%
-- Flow 1:
Average throughput: 606.45 Mbit/s
95th percentile per-packet one-way delay: 95.840 ms
Loss rate: 0.47%
-- Flow 2:
Average throughput: 572.03 Mbit/s
95th percentile per-packet one-way delay: 149.401 ms
Loss rate: 0.91%
-- Flow 3:
Average throughput: 526.75 Mbit/s
95th percentile per-packet one-way delay: 89.059 ms
Loss rate: 1.32%
```
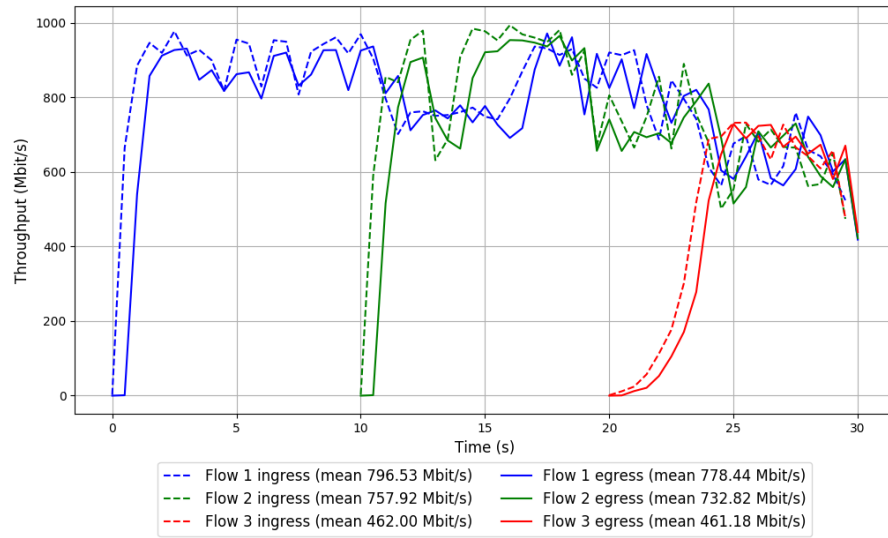
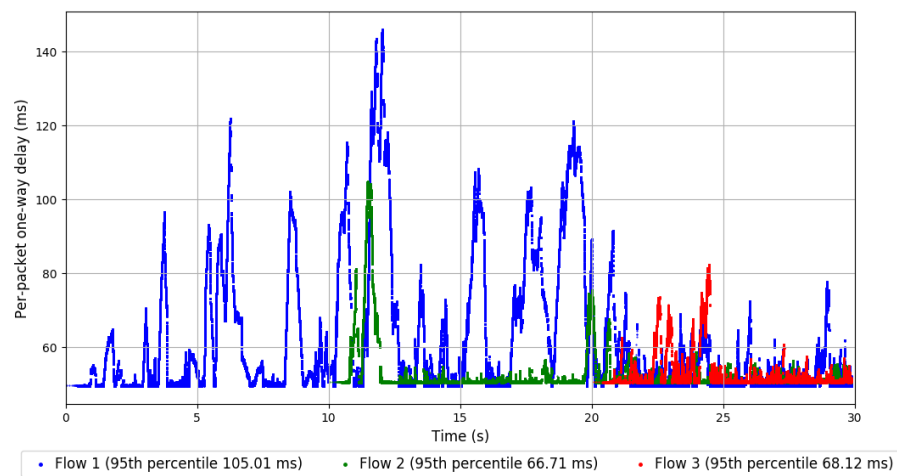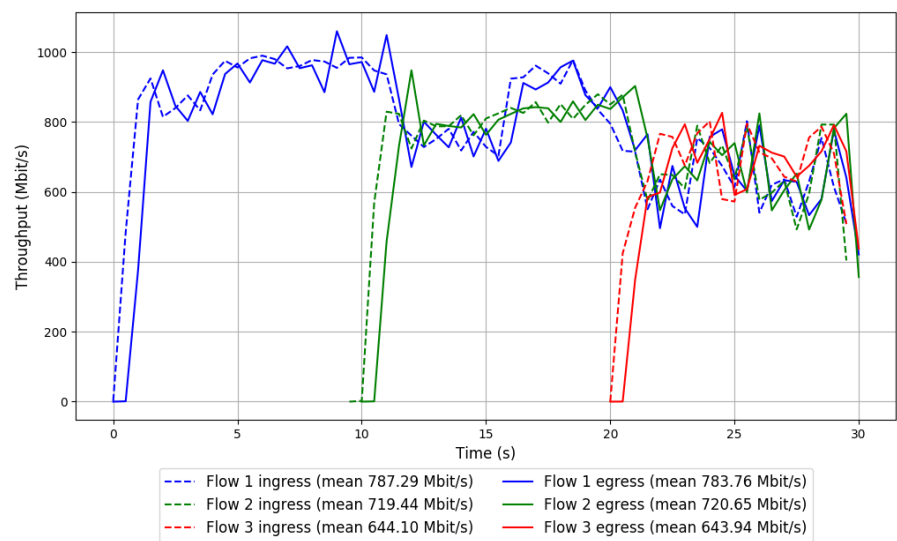Run 5: Report of TCP Cubic — Data Link

```
Run 1: Statistics of FillP

Start at: 2018-09-08 07:32:12
End at: 2018-09-08 07:32:42
Local clock offset: -0.449 ms
Remote clock offset: -0.23 ms

# Below is generated by plot.py at 2018-09-08 11:09:47
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1417.34 Mbit/s
95th percentile per-packet one-way delay: 119.194 ms
Loss rate: 2.86%
-- Flow 1:
Average throughput: 778.44 Mbit/s
95th percentile per-packet one-way delay: 118.324 ms
Loss rate: 2.60%
-- Flow 2:
Average throughput: 732.82 Mbit/s
95th percentile per-packet one-way delay: 127.752 ms
Loss rate: 3.79%
-- Flow 3:
Average throughput: 461.18 Mbit/s
95th percentile per-packet one-way delay: 74.678 ms
Loss rate: 1.15%
```

Run 1: Report of FillP — Data Link

```
Run 2: Statistics of FillP

Start at: 2018-09-08 08:03:54
End at: 2018-09-08 08:04:24
Local clock offset: -0.019 ms
Remote clock offset: -0.024 ms


# Below is generated by plot.py at 2018-09-08 11:26:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1474.54 Mbit/s
95th percentile per-packet one-way delay: 96.051 ms
Loss rate: 0.68%
-- Flow 1:
Average throughput: 783.76 Mbit/s
95th percentile per-packet one-way delay: 105.006 ms
Loss rate: 0.78%
-- Flow 2:
Average throughput: 720.65 Mbit/s
95th percentile per-packet one-way delay: 66.708 ms
Loss rate: 0.35%
-- Flow 3:
Average throughput: 643.94 Mbit/s
95th percentile per-packet one-way delay: 68.122 ms
Loss rate: 1.04%
```
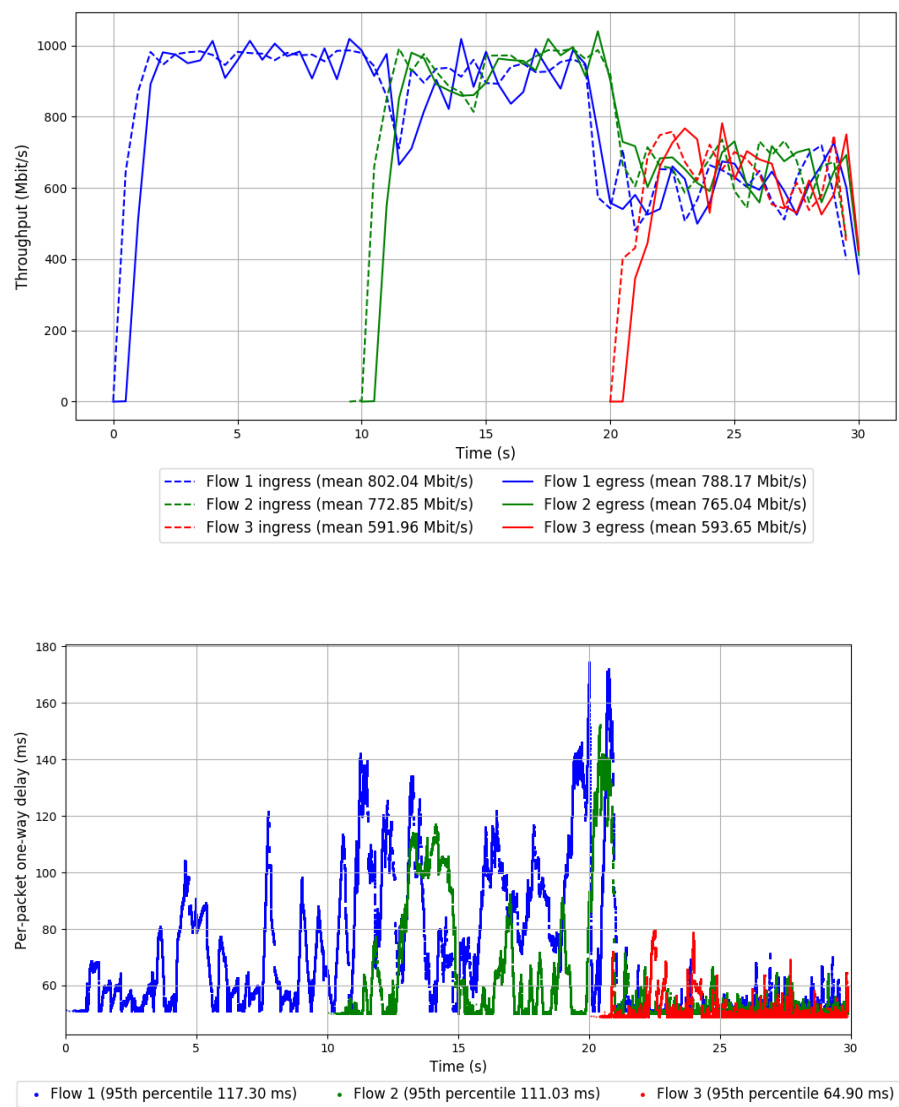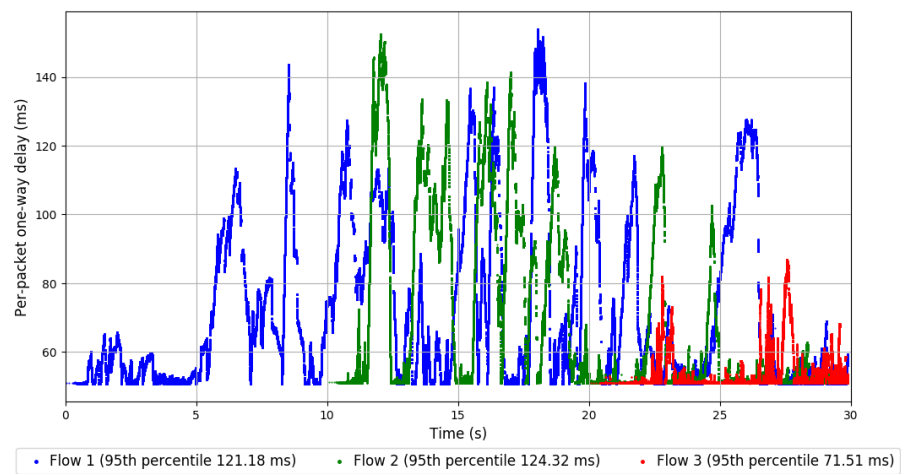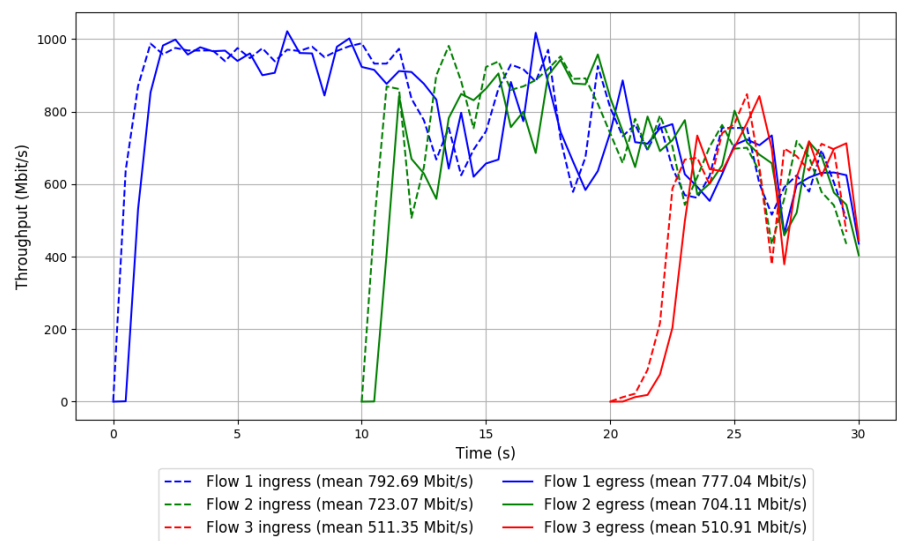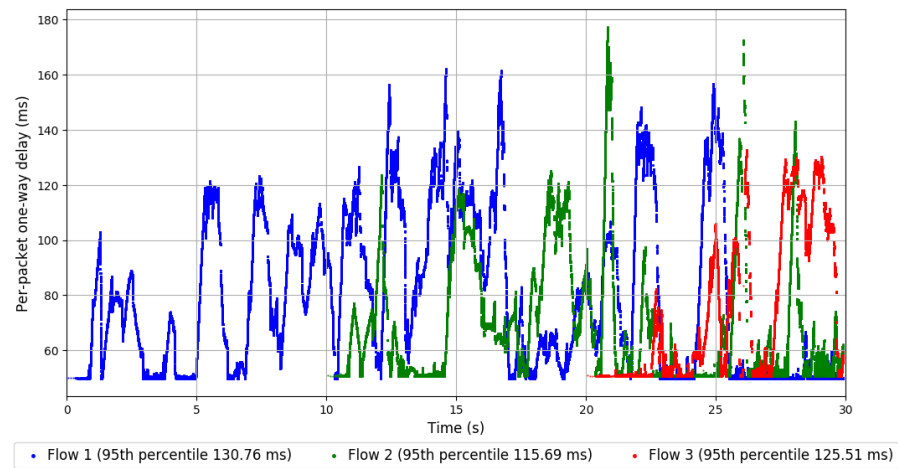
Run 2: Report of FillP — Data Link

```
Run 3: Statistics of FillP

Start at: 2018-09-08 08:35:44
End at: 2018-09-08 08:36:14
Local clock offset: 0.298 ms
Remote clock offset: 0.007 ms


# Below is generated by plot.py at 2018-09-08 11:28:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1492.27 Mbit/s
95th percentile per-packet one-way delay: 111.884 ms
Loss rate: 1.69%
-- Flow 1:
Average throughput: 788.17 Mbit/s
95th percentile per-packet one-way delay: 117.300 ms
Loss rate: 2.06%
-- Flow 2:
Average throughput: 765.04 Mbit/s
95th percentile per-packet one-way delay: 111.026 ms
Loss rate: 1.50%
-- Flow 3:
Average throughput: 593.65 Mbit/s
95th percentile per-packet one-way delay: 64.902 ms
Loss rate: 0.70%
```

Run 3: Report of FillP — Data Link

- - - - Flow 1 ingress (mean 802.04 Mbit/s) ——— Flow 1 egress (mean 788.17 Mbit/s)
- - - - Flow 2 ingress (mean 772.85 Mbit/s) ——— Flow 2 egress (mean 765.04 Mbit/s)
- - - - Flow 3 ingress (mean 591.96 Mbit/s) ——— Flow 3 egress (mean 593.65 Mbit/s)

- Flow 1 (95th percentile 117.30 ms)   - Flow 2 (95th percentile 111.03 ms)   - Flow 3 (95th percentile 64.90 ms)
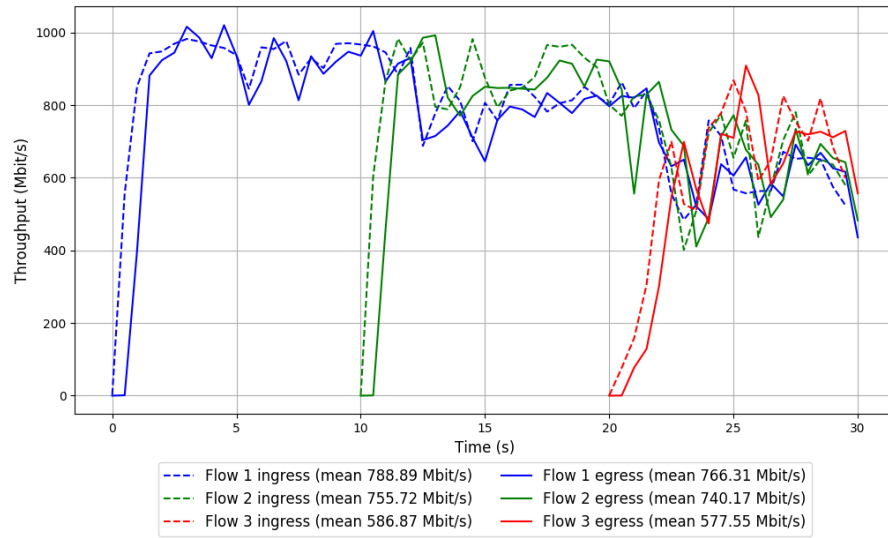
```
Run 4: Statistics of FillP

Start at: 2018-09-08 09:07:33
End at: 2018-09-08 09:08:03
Local clock offset: 0.273 ms
Remote clock offset: -0.052 ms

# Below is generated by plot.py at 2018-09-08 11:28:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1412.78 Mbit/s
95th percentile per-packet one-way delay: 120.450 ms
Loss rate: 2.43%
-- Flow 1:
Average throughput: 777.04 Mbit/s
95th percentile per-packet one-way delay: 121.184 ms
Loss rate: 2.31%
-- Flow 2:
Average throughput: 704.11 Mbit/s
95th percentile per-packet one-way delay: 124.319 ms
Loss rate: 3.11%
-- Flow 3:
Average throughput: 510.91 Mbit/s
95th percentile per-packet one-way delay: 71.508 ms
Loss rate: 1.10%
```
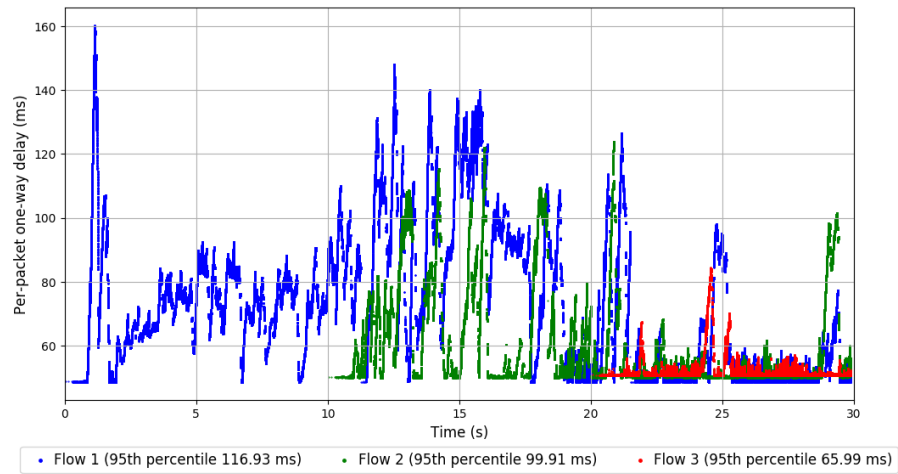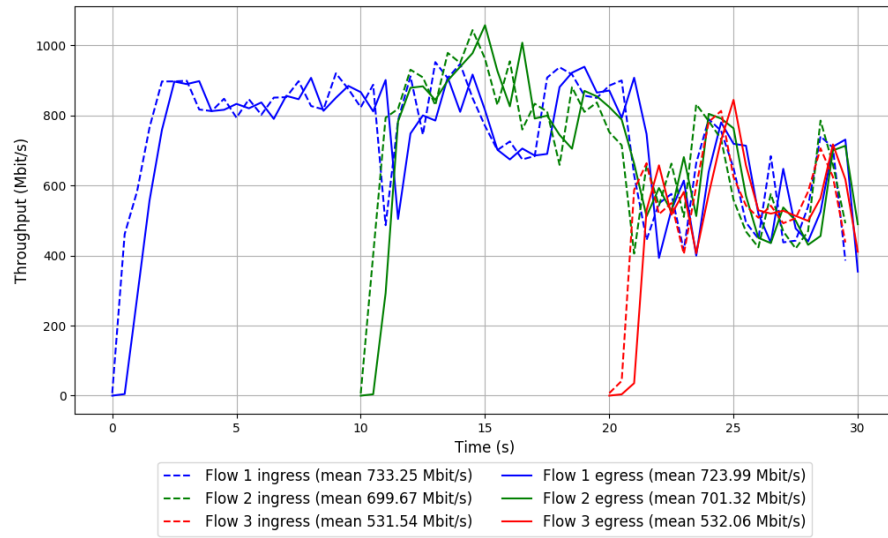
Run 4: Report of FillP — Data Link

Flow 1 ingress (mean 792.69 Mbit/s) ---- Flow 1 egress (mean 777.04 Mbit/s)
Flow 2 ingress (mean 723.07 Mbit/s) ---- Flow 2 egress (mean 704.11 Mbit/s)
Flow 3 ingress (mean 511.35 Mbit/s) ---- Flow 3 egress (mean 510.91 Mbit/s)

Flow 1 (95th percentile 121.18 ms)   Flow 2 (95th percentile 124.32 ms)   Flow 3 (95th percentile 71.51 ms)

42

```
Run 5: Statistics of FillP

Start at: 2018-09-08 09:39:22
End at: 2018-09-08 09:39:52
Local clock offset: -0.118 ms
Remote clock offset: -0.073 ms


# Below is generated by plot.py at 2018-09-08 11:28:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1448.51 Mbit/s
95th percentile per-packet one-way delay: 125.936 ms
Loss rate: 2.89%
-- Flow 1:
Average throughput: 766.31 Mbit/s
95th percentile per-packet one-way delay: 130.756 ms
Loss rate: 3.19%
-- Flow 2:
Average throughput: 740.17 Mbit/s
95th percentile per-packet one-way delay: 115.693 ms
Loss rate: 2.53%
-- Flow 3:
Average throughput: 577.55 Mbit/s
95th percentile per-packet one-way delay: 125.510 ms
Loss rate: 2.60%
```
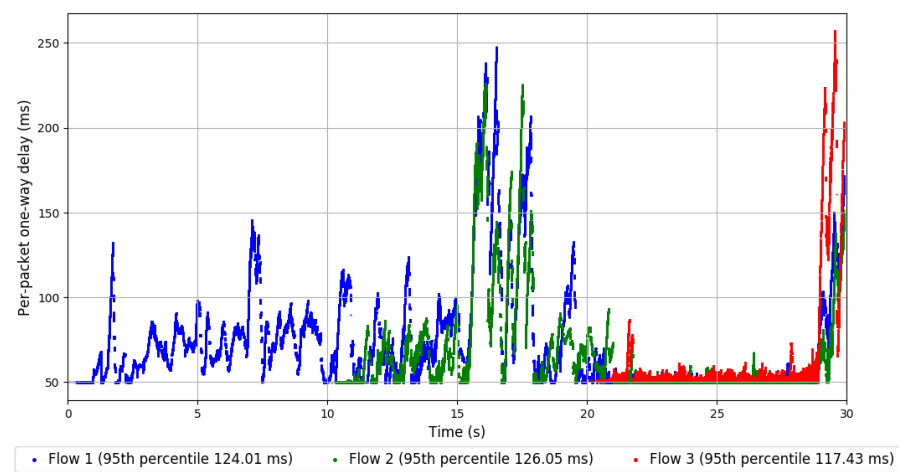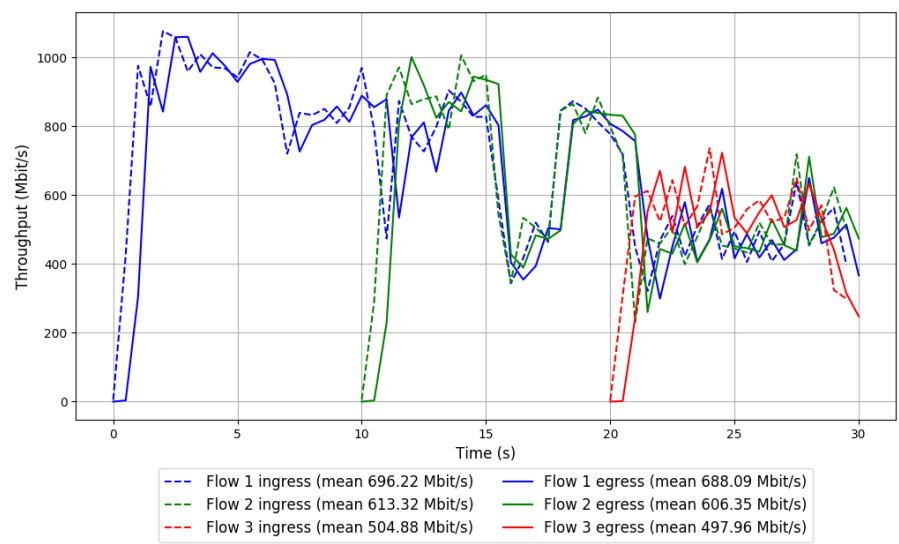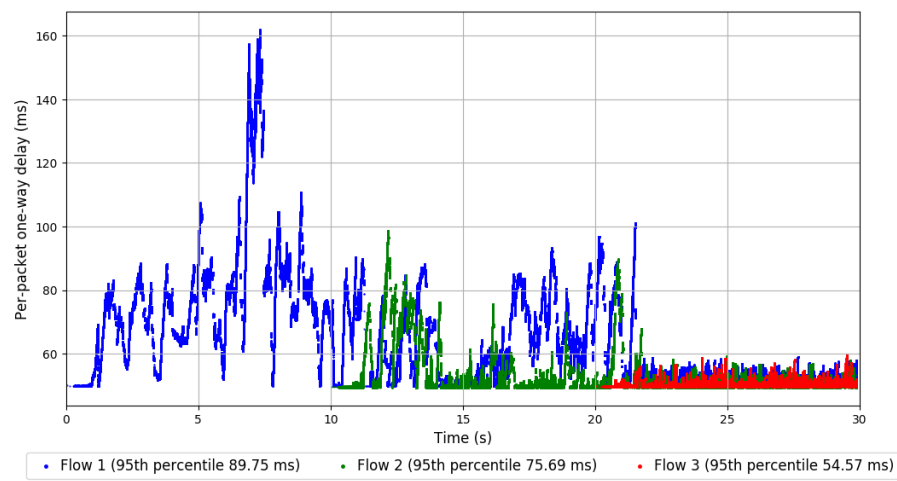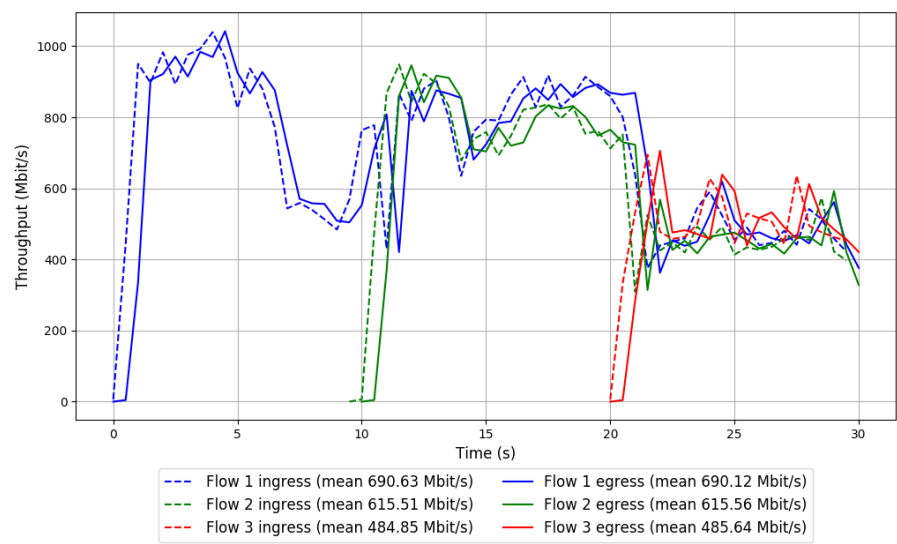
Run 5: Report of FillP — Data Link

```
Run 1: Statistics of FillP-Sheep

Start at: 2018-09-08 07:52:33
End at: 2018-09-08 07:53:03
Local clock offset: -0.117 ms
Remote clock offset: -0.238 ms


# Below is generated by plot.py at 2018-09-08 11:28:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1364.69 Mbit/s
95th percentile per-packet one-way delay: 107.058 ms
Loss rate: 1.07%
-- Flow 1:
Average throughput: 723.99 Mbit/s
95th percentile per-packet one-way delay: 116.933 ms
Loss rate: 1.58%
-- Flow 2:
Average throughput: 701.32 Mbit/s
95th percentile per-packet one-way delay: 99.910 ms
Loss rate: 0.33%
-- Flow 3:
Average throughput: 532.06 Mbit/s
95th percentile per-packet one-way delay: 65.992 ms
Loss rate: 0.92%
```

Run 1: Report of FillP-Sheep — Data Link

- - - - Flow 1 ingress (mean 733.25 Mbit/s) ——— Flow 1 egress (mean 723.99 Mbit/s)
- - - - Flow 2 ingress (mean 699.67 Mbit/s) ——— Flow 2 egress (mean 701.32 Mbit/s)
- - - - Flow 3 ingress (mean 531.54 Mbit/s) ——— Flow 3 egress (mean 532.06 Mbit/s)

• Flow 1 (95th percentile 116.93 ms)　　• Flow 2 (95th percentile 99.91 ms)　　• Flow 3 (95th percentile 65.99 ms)
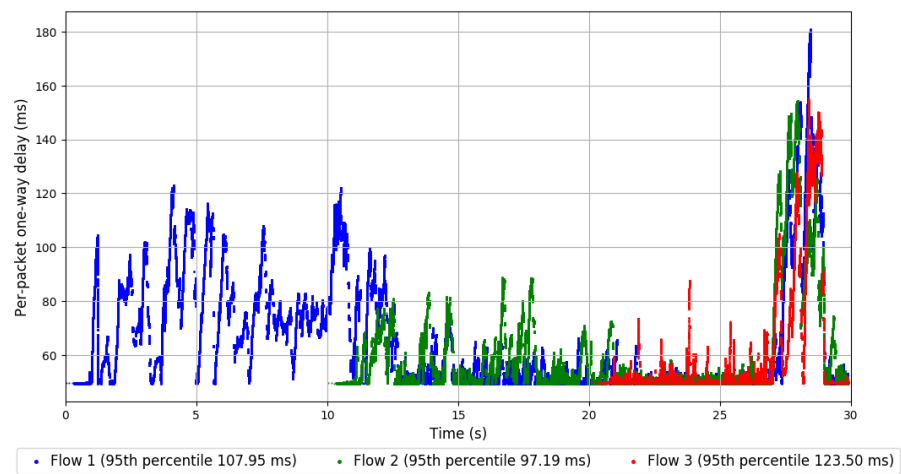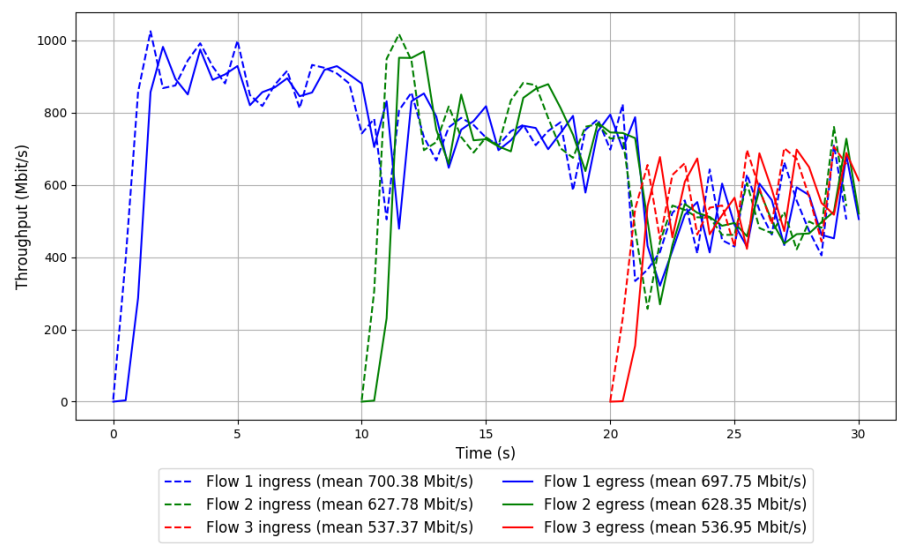
46

```
Run 2: Statistics of FillP-Sheep

Start at: 2018-09-08 08:24:21
End at: 2018-09-08 08:24:51
Local clock offset: 0.397 ms
Remote clock offset: 0.035 ms


# Below is generated by plot.py at 2018-09-08 11:28:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1255.38 Mbit/s
95th percentile per-packet one-way delay: 124.459 ms
Loss rate: 1.63%
-- Flow 1:
Average throughput: 688.09 Mbit/s
95th percentile per-packet one-way delay: 124.011 ms
Loss rate: 1.46%
-- Flow 2:
Average throughput: 606.35 Mbit/s
95th percentile per-packet one-way delay: 126.051 ms
Loss rate: 1.62%
-- Flow 3:
Average throughput: 497.96 Mbit/s
95th percentile per-packet one-way delay: 117.427 ms
Loss rate: 2.33%
```

Run 2: Report of FillP-Sheep — Data Link

Flow 1 ingress (mean 696.22 Mbit/s) --- Flow 1 egress (mean 688.09 Mbit/s)
Flow 2 ingress (mean 613.32 Mbit/s) --- Flow 2 egress (mean 606.35 Mbit/s)
Flow 3 ingress (mean 504.88 Mbit/s) --- Flow 3 egress (mean 497.96 Mbit/s)

Flow 1 (95th percentile 124.01 ms)   Flow 2 (95th percentile 126.05 ms)   Flow 3 (95th percentile 117.43 ms)
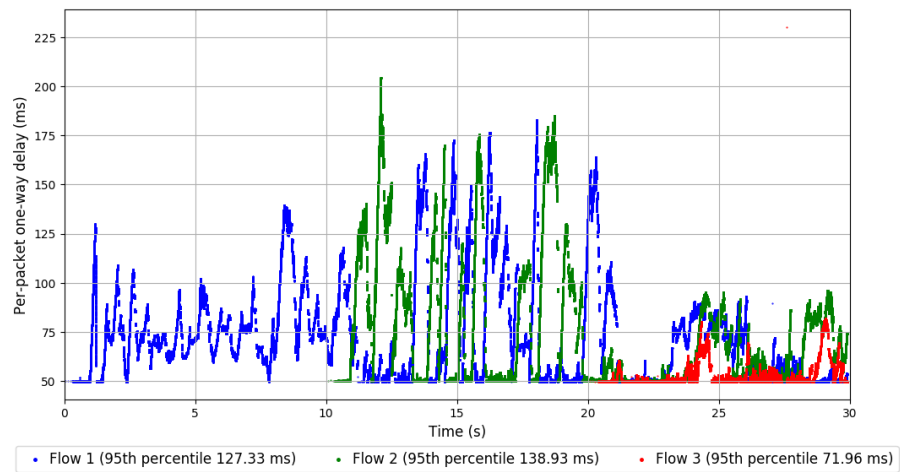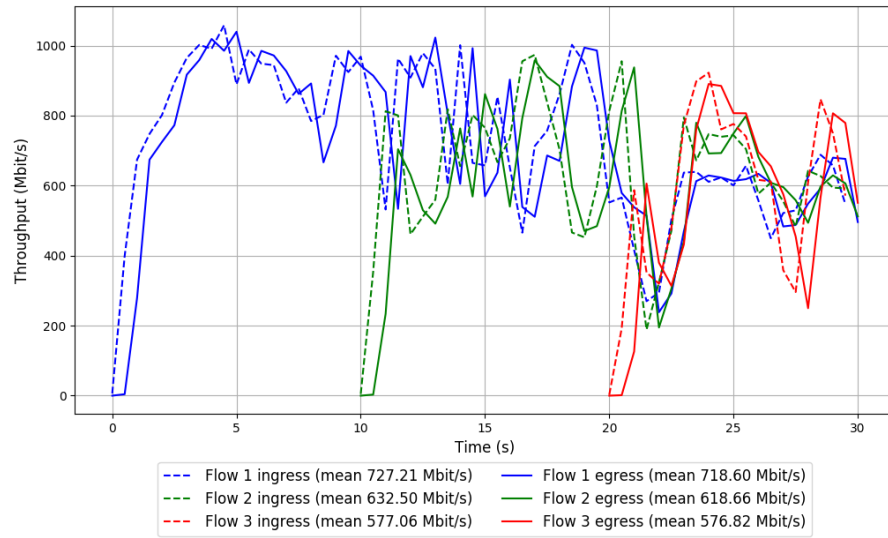
```
Run 3: Statistics of FillP-Sheep

Start at: 2018-09-08 08:56:05
End at: 2018-09-08 08:56:35
Local clock offset: -0.027 ms
Remote clock offset: -0.031 ms


# Below is generated by plot.py at 2018-09-08 11:28:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1259.41 Mbit/s
95th percentile per-packet one-way delay: 85.714 ms
Loss rate: 0.48%
-- Flow 1:
Average throughput: 690.12 Mbit/s
95th percentile per-packet one-way delay: 89.748 ms
Loss rate: 0.41%
-- Flow 2:
Average throughput: 615.56 Mbit/s
95th percentile per-packet one-way delay: 75.689 ms
Loss rate: 0.46%
-- Flow 3:
Average throughput: 485.64 Mbit/s
95th percentile per-packet one-way delay: 54.574 ms
Loss rate: 0.86%
```
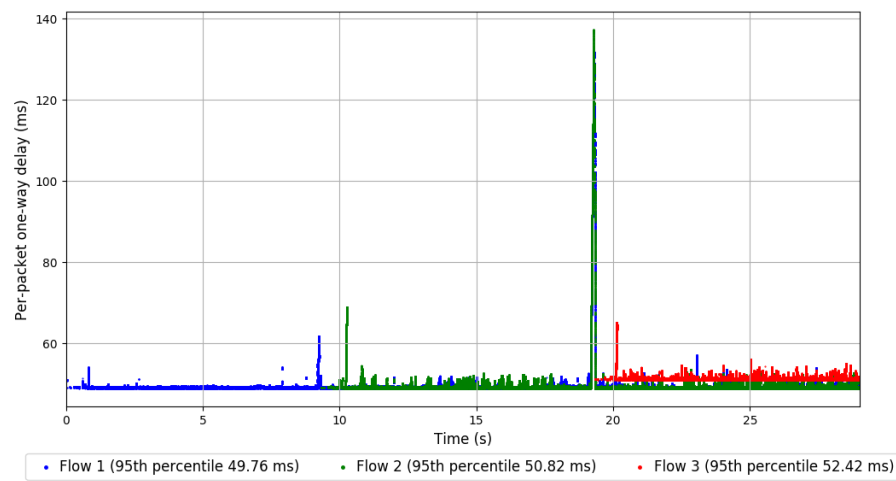
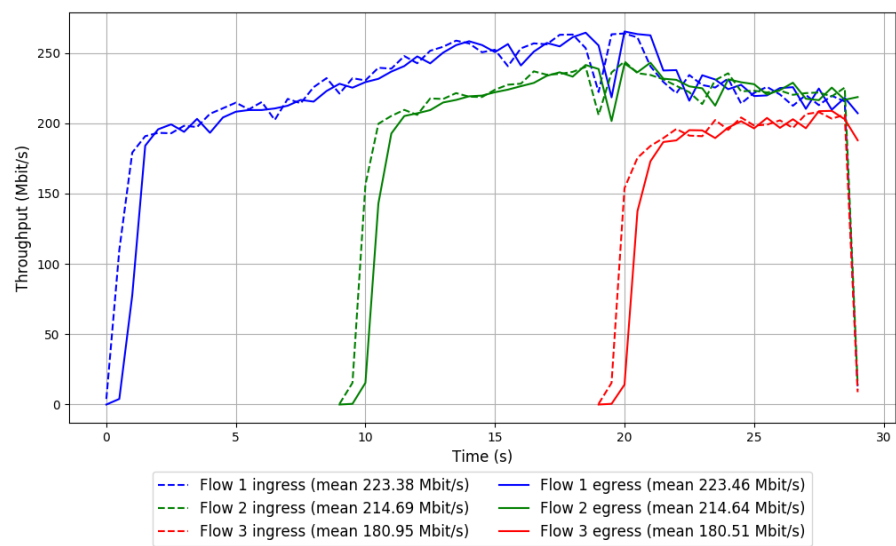# Run 3: Report of FillP-Sheep — Data Link

```
Run 4: Statistics of FillP-Sheep

Start at: 2018-09-08 09:27:59
End at: 2018-09-08 09:28:29
Local clock offset: -0.058 ms
Remote clock offset: -0.069 ms


# Below is generated by plot.py at 2018-09-08 11:41:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1291.99 Mbit/s
95th percentile per-packet one-way delay: 106.998 ms
Loss rate: 0.69%
-- Flow 1:
Average throughput: 697.75 Mbit/s
95th percentile per-packet one-way delay: 107.953 ms
Loss rate: 0.77%
-- Flow 2:
Average throughput: 628.35 Mbit/s
95th percentile per-packet one-way delay: 97.186 ms
Loss rate: 0.40%
-- Flow 3:
Average throughput: 536.95 Mbit/s
95th percentile per-packet one-way delay: 123.502 ms
Loss rate: 1.09%
```

Run 4: Report of FillP-Sheep — Data Link

- - - - Flow 1 ingress (mean 700.38 Mbit/s) ——— Flow 1 egress (mean 697.75 Mbit/s)
- - - - Flow 2 ingress (mean 627.78 Mbit/s) ——— Flow 2 egress (mean 628.35 Mbit/s)
- - - - Flow 3 ingress (mean 537.37 Mbit/s) ——— Flow 3 egress (mean 536.95 Mbit/s)

- Flow 1 (95th percentile 107.95 ms)　　- Flow 2 (95th percentile 97.19 ms)　　- Flow 3 (95th percentile 123.50 ms)

```
Run 5: Statistics of FillP-Sheep

Start at: 2018-09-08 09:59:28
End at: 2018-09-08 09:59:58
Local clock offset: 0.232 ms
Remote clock offset: -0.097 ms


# Below is generated by plot.py at 2018-09-08 11:54:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1319.72 Mbit/s
95th percentile per-packet one-way delay: 127.604 ms
Loss rate: 1.82%
-- Flow 1:
Average throughput: 718.60 Mbit/s
95th percentile per-packet one-way delay: 127.332 ms
Loss rate: 1.52%
-- Flow 2:
Average throughput: 618.66 Mbit/s
95th percentile per-packet one-way delay: 138.927 ms
Loss rate: 2.68%
-- Flow 3:
Average throughput: 576.82 Mbit/s
95th percentile per-packet one-way delay: 71.959 ms
Loss rate: 1.06%
```
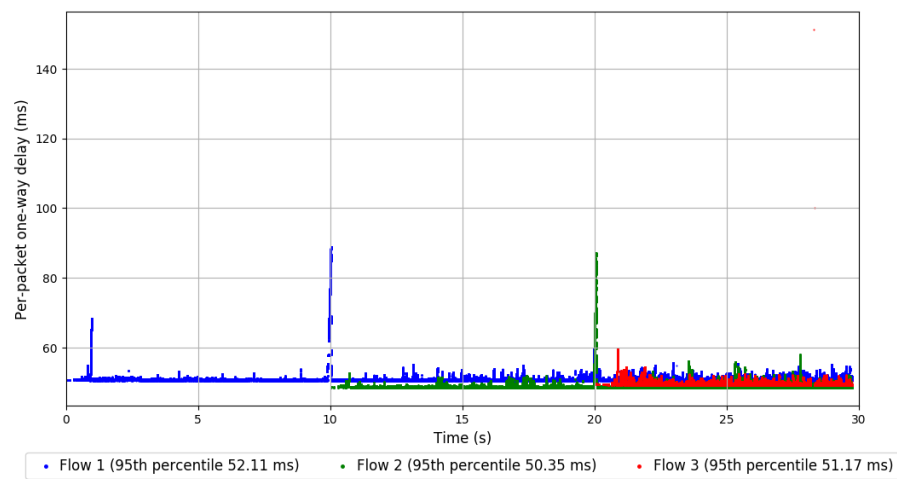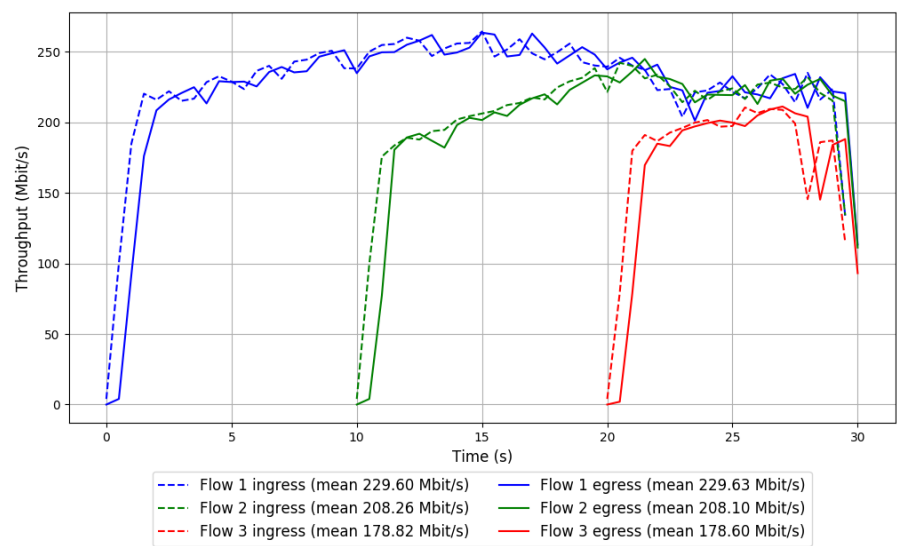
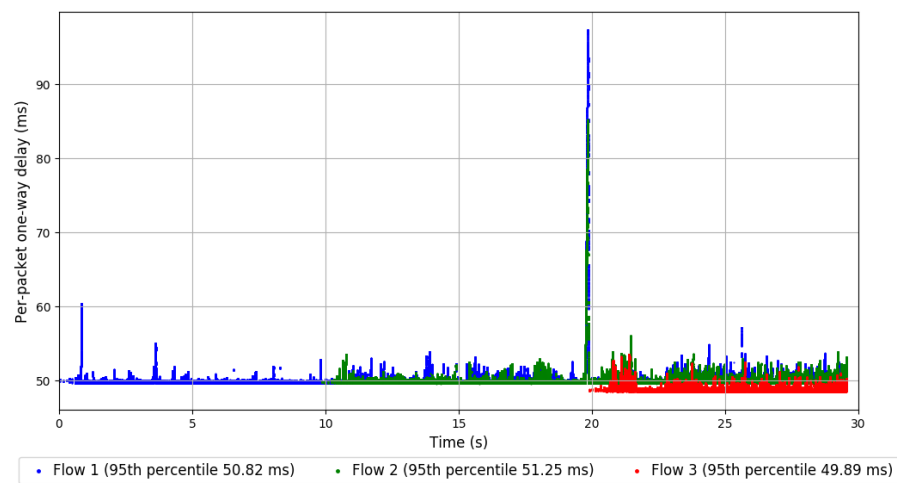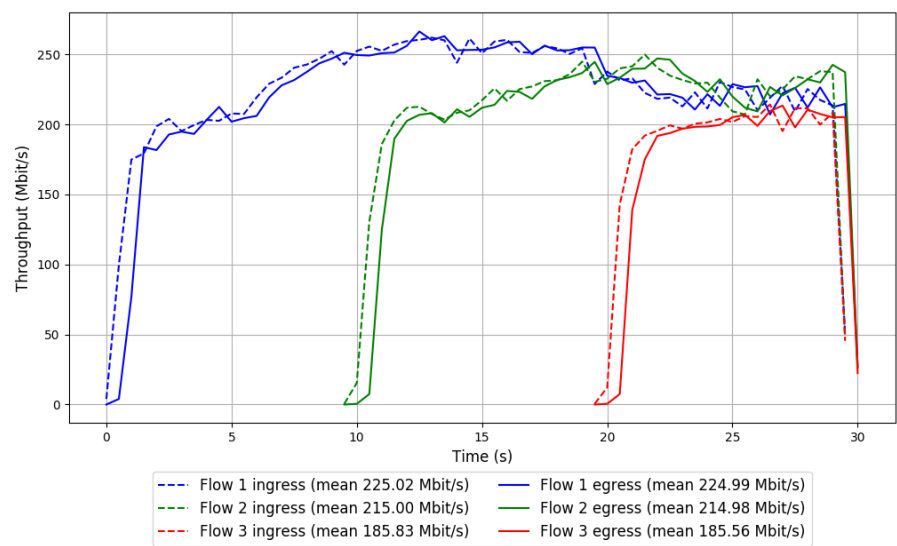Run 5: Report of FillP-Sheep — Data Link

```
Run 1: Statistics of Indigo

Start at: 2018-09-08 07:50:44
End at: 2018-09-08 07:51:14
Local clock offset: 0.266 ms
Remote clock offset: -0.272 ms

# Below is generated by plot.py at 2018-09-08 11:54:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 429.37 Mbit/s
95th percentile per-packet one-way delay: 51.312 ms
Loss rate: 0.52%
-- Flow 1:
Average throughput: 223.46 Mbit/s
95th percentile per-packet one-way delay: 49.757 ms
Loss rate: 0.31%
-- Flow 2:
Average throughput: 214.64 Mbit/s
95th percentile per-packet one-way delay: 50.824 ms
Loss rate: 0.53%
-- Flow 3:
Average throughput: 180.51 Mbit/s
95th percentile per-packet one-way delay: 52.423 ms
Loss rate: 1.28%
```
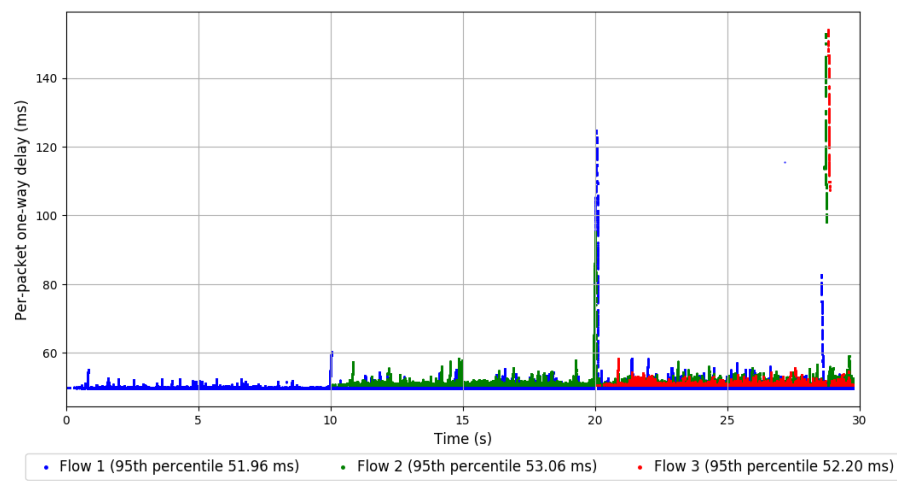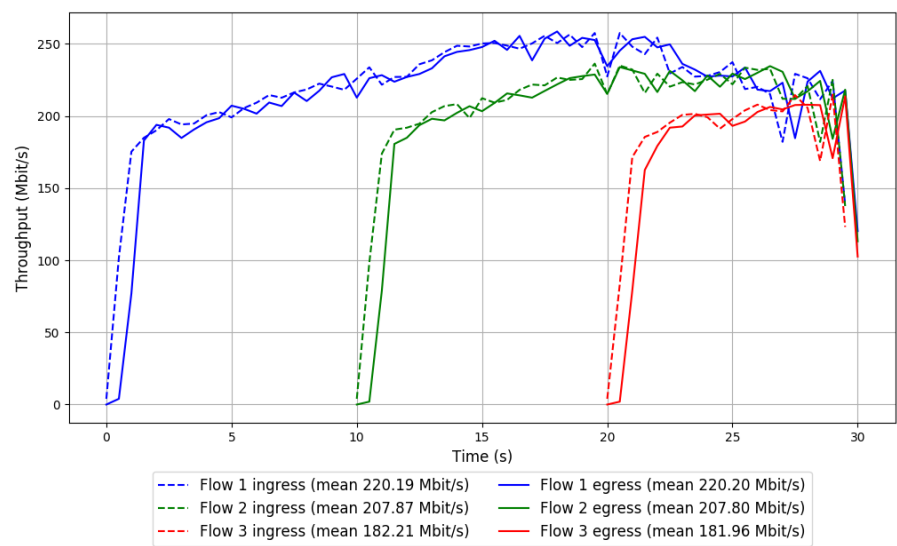
Run 1: Report of Indigo — Data Link

```
Run 2: Statistics of Indigo

Start at: 2018-09-08 08:22:31
End at: 2018-09-08 08:23:01
Local clock offset: 0.023 ms
Remote clock offset: 0.032 ms


# Below is generated by plot.py at 2018-09-08 11:54:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 425.75 Mbit/s
95th percentile per-packet one-way delay: 51.707 ms
Loss rate: 0.52%
-- Flow 1:
Average throughput: 229.63 Mbit/s
95th percentile per-packet one-way delay: 52.106 ms
Loss rate: 0.33%
-- Flow 2:
Average throughput: 208.10 Mbit/s
95th percentile per-packet one-way delay: 50.348 ms
Loss rate: 0.58%
-- Flow 3:
Average throughput: 178.60 Mbit/s
95th percentile per-packet one-way delay: 51.174 ms
Loss rate: 1.14%
```

Run 2: Report of Indigo — Data Link

```
Run 3: Statistics of Indigo

Start at: 2018-09-08 08:54:15
End at: 2018-09-08 08:54:45
Local clock offset: -0.041 ms
Remote clock offset: -0.011 ms


# Below is generated by plot.py at 2018-09-08 11:54:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 429.08 Mbit/s
95th percentile per-packet one-way delay: 50.924 ms
Loss rate: 0.52%
-- Flow 1:
Average throughput: 224.99 Mbit/s
95th percentile per-packet one-way delay: 50.824 ms
Loss rate: 0.35%
-- Flow 2:
Average throughput: 214.98 Mbit/s
95th percentile per-packet one-way delay: 51.254 ms
Loss rate: 0.51%
-- Flow 3:
Average throughput: 185.56 Mbit/s
95th percentile per-packet one-way delay: 49.894 ms
Loss rate: 1.19%
```
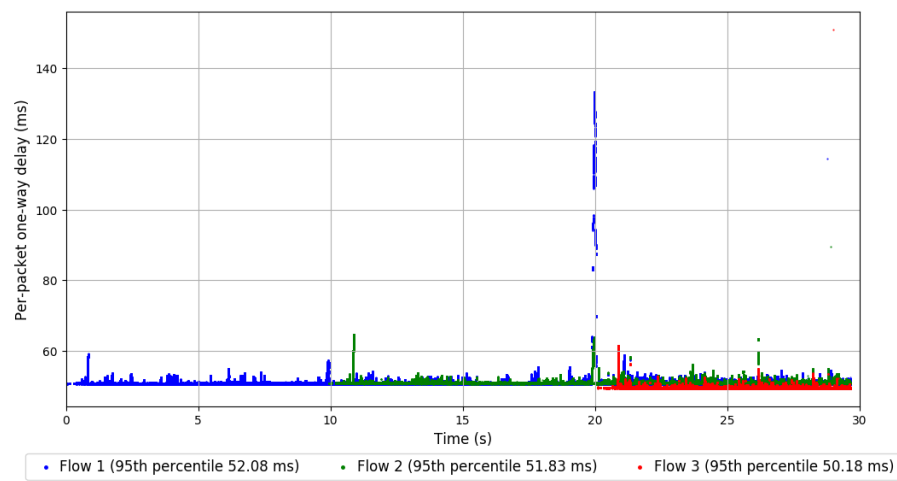
Run 3: Report of Indigo — Data Link

```
Run 4: Statistics of Indigo

Start at: 2018-09-08 09:26:10
End at: 2018-09-08 09:26:40
Local clock offset: -0.096 ms
Remote clock offset: -0.08 ms

# Below is generated by plot.py at 2018-09-08 11:54:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 417.26 Mbit/s
95th percentile per-packet one-way delay: 52.398 ms
Loss rate: 0.53%
-- Flow 1:
Average throughput: 220.20 Mbit/s
95th percentile per-packet one-way delay: 51.959 ms
Loss rate: 0.34%
-- Flow 2:
Average throughput: 207.80 Mbit/s
95th percentile per-packet one-way delay: 53.056 ms
Loss rate: 0.55%
-- Flow 3:
Average throughput: 181.96 Mbit/s
95th percentile per-packet one-way delay: 52.202 ms
Loss rate: 1.17%
```
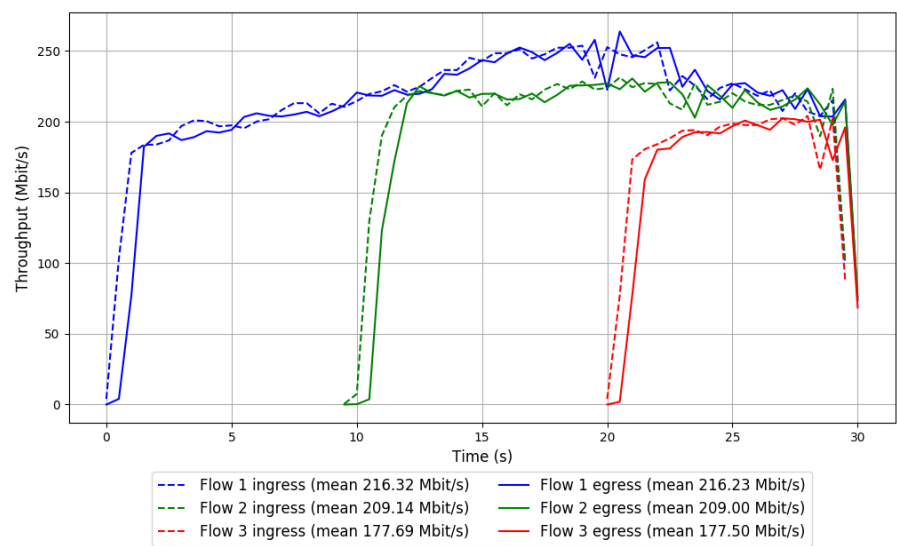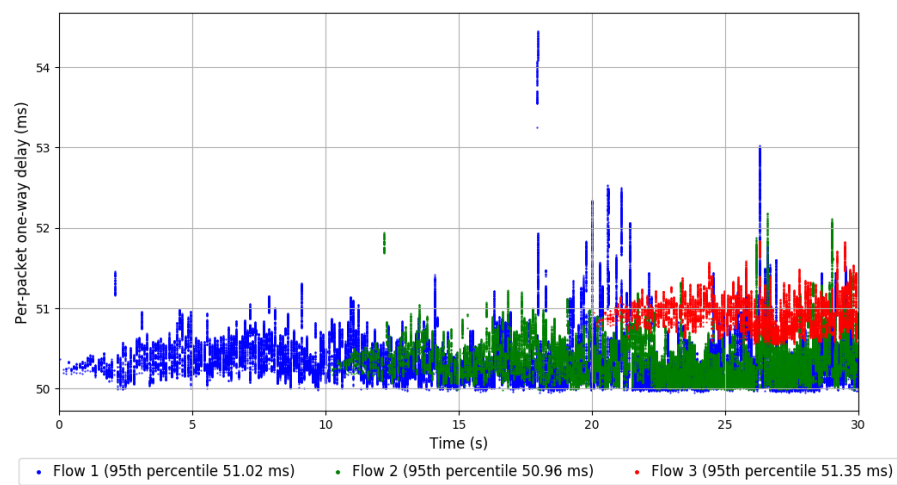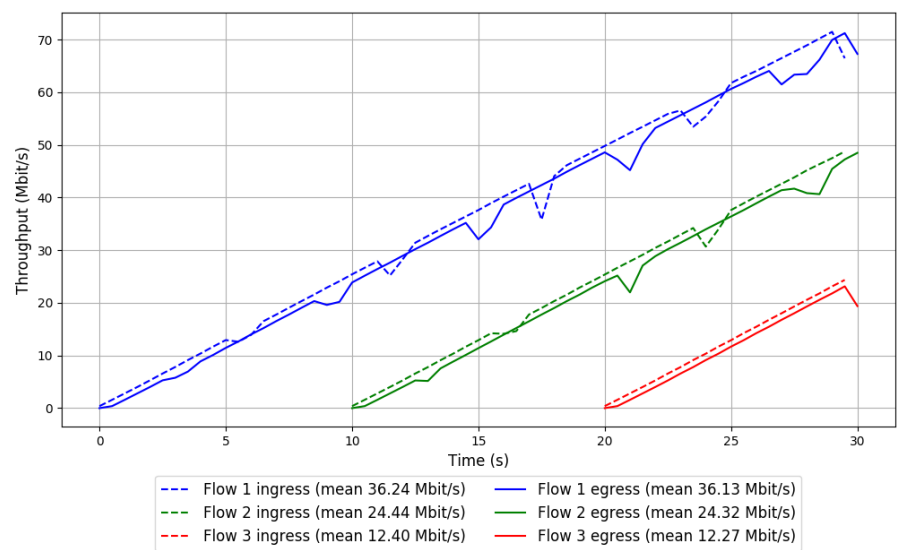
Run 4: Report of Indigo — Data Link

```
Run 5: Statistics of Indigo

Start at: 2018-09-08 09:57:39
End at: 2018-09-08 09:58:09
Local clock offset: -0.072 ms
Remote clock offset: -0.08 ms


# Below is generated by plot.py at 2018-09-08 11:54:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 412.74 Mbit/s
95th percentile per-packet one-way delay: 51.861 ms
Loss rate: 0.55%
-- Flow 1:
Average throughput: 216.23 Mbit/s
95th percentile per-packet one-way delay: 52.081 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 209.00 Mbit/s
95th percentile per-packet one-way delay: 51.828 ms
Loss rate: 0.57%
-- Flow 3:
Average throughput: 177.50 Mbit/s
95th percentile per-packet one-way delay: 50.178 ms
Loss rate: 1.15%
```

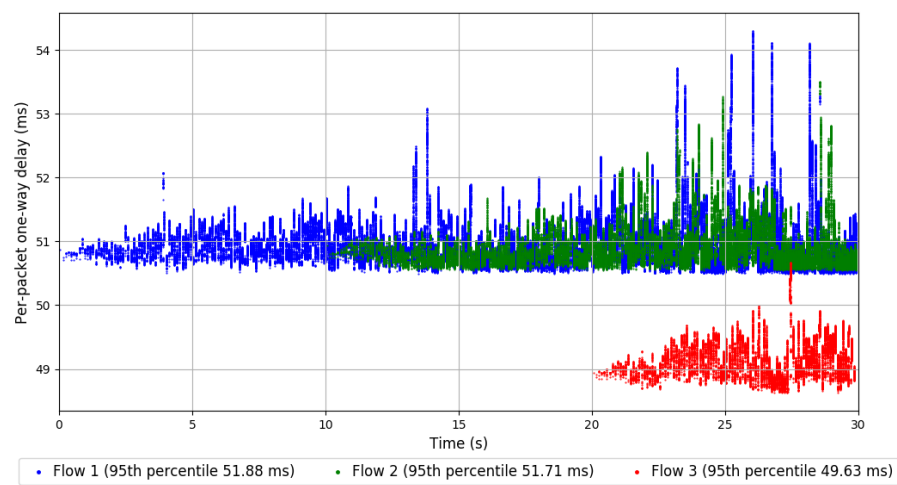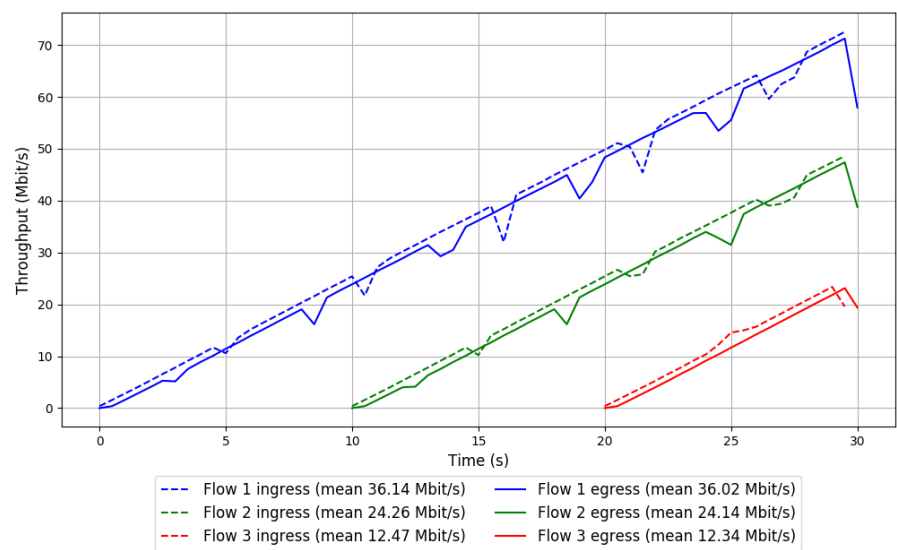Run 5: Report of Indigo — Data Link

```
Run 1: Statistics of LEDBAT

Start at: 2018-09-08 07:42:17
End at: 2018-09-08 07:42:47
Local clock offset: -0.07 ms
Remote clock offset: -0.24 ms

# Below is generated by plot.py at 2018-09-08 11:54:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 56.34 Mbit/s
95th percentile per-packet one-way delay: 51.101 ms
Loss rate: 0.84%
-- Flow 1:
Average throughput: 36.13 Mbit/s
95th percentile per-packet one-way delay: 51.023 ms
Loss rate: 0.62%
-- Flow 2:
Average throughput: 24.32 Mbit/s
95th percentile per-packet one-way delay: 50.964 ms
Loss rate: 1.01%
-- Flow 3:
Average throughput: 12.27 Mbit/s
95th percentile per-packet one-way delay: 51.350 ms
Loss rate: 2.02%
```
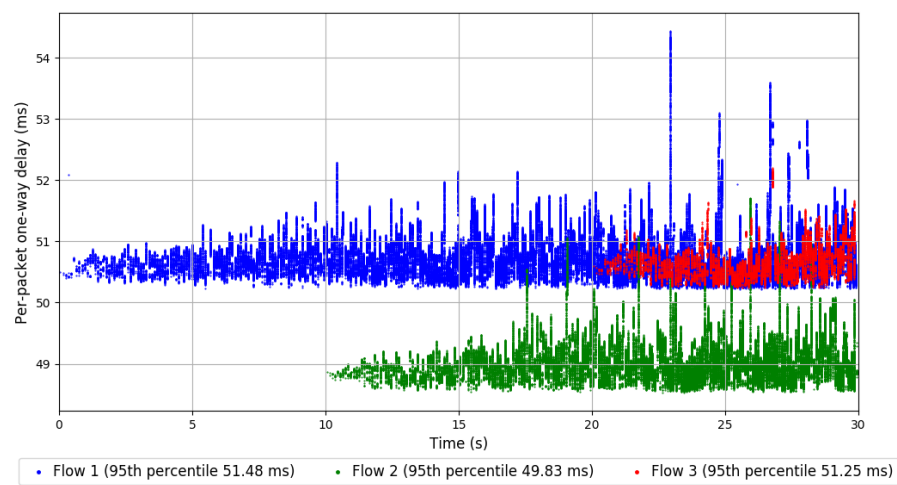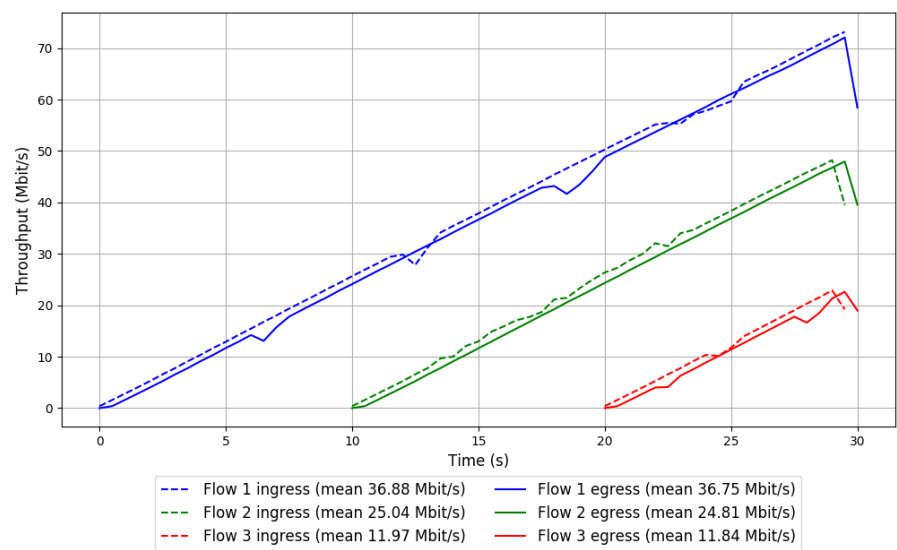
Run 1: Report of LEDBAT — Data Link

```
Run 2: Statistics of LEDBAT

Start at: 2018-09-08 08:14:04
End at: 2018-09-08 08:14:34
Local clock offset: 0.01 ms
Remote clock offset: -0.003 ms


# Below is generated by plot.py at 2018-09-08 11:54:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 56.10 Mbit/s
95th percentile per-packet one-way delay: 51.781 ms
Loss rate: 0.87%
-- Flow 1:
Average throughput: 36.02 Mbit/s
95th percentile per-packet one-way delay: 51.879 ms
Loss rate: 0.67%
-- Flow 2:
Average throughput: 24.14 Mbit/s
95th percentile per-packet one-way delay: 51.708 ms
Loss rate: 1.01%
-- Flow 3:
Average throughput: 12.34 Mbit/s
95th percentile per-packet one-way delay: 49.626 ms
Loss rate: 2.02%
```
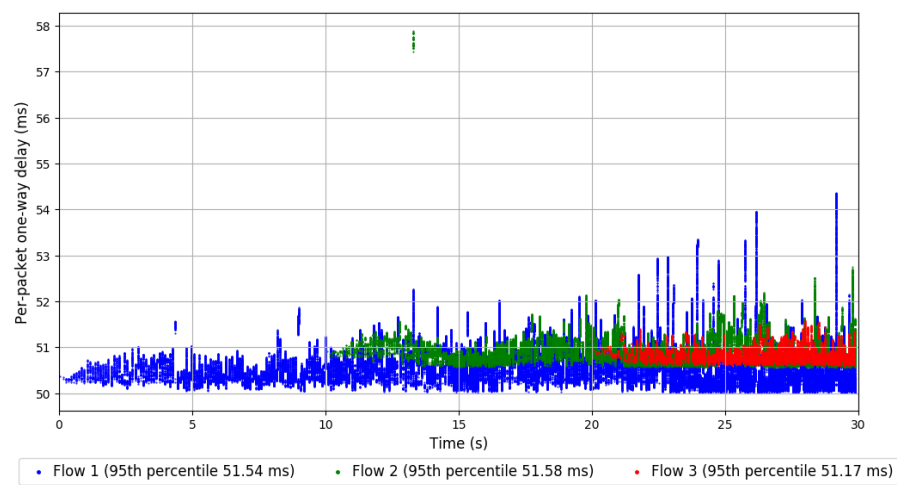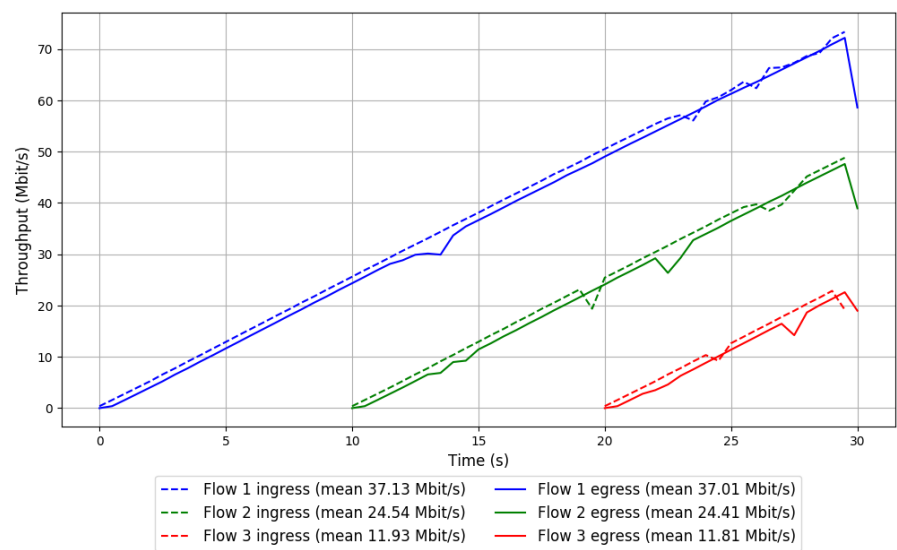
Run 2: Report of LEDBAT — Data Link

Flow 1 ingress (mean 36.14 Mbit/s) — — — Flow 1 egress (mean 36.02 Mbit/s)
Flow 2 ingress (mean 24.26 Mbit/s) — — — Flow 2 egress (mean 24.14 Mbit/s)
Flow 3 ingress (mean 12.47 Mbit/s) — — — Flow 3 egress (mean 12.34 Mbit/s)

Flow 1 (95th percentile 51.88 ms) • Flow 2 (95th percentile 51.71 ms) • Flow 3 (95th percentile 49.63 ms)

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```
Run 3: Statistics of LEDBAT

Start at: 2018-09-08 08:45:55
End at: 2018-09-08 08:46:25
Local clock offset: -0.037 ms
Remote clock offset: -0.006 ms


# Below is generated by plot.py at 2018-09-08 11:54:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 57.09 Mbit/s
95th percentile per-packet one-way delay: 51.366 ms
Loss rate: 0.85%
-- Flow 1:
Average throughput: 36.75 Mbit/s
95th percentile per-packet one-way delay: 51.478 ms
Loss rate: 0.67%
-- Flow 2:
Average throughput: 24.81 Mbit/s
95th percentile per-packet one-way delay: 49.832 ms
Loss rate: 0.97%
-- Flow 3:
Average throughput: 11.84 Mbit/s
95th percentile per-packet one-way delay: 51.252 ms
Loss rate: 2.06%
```
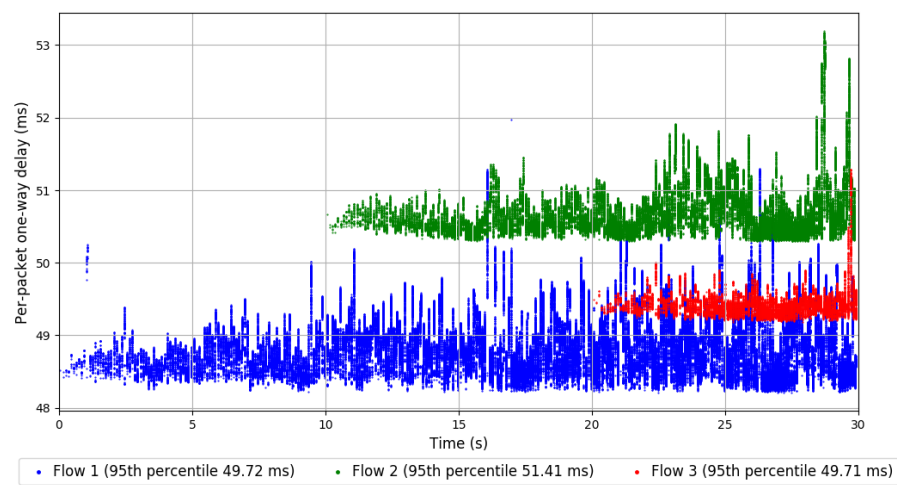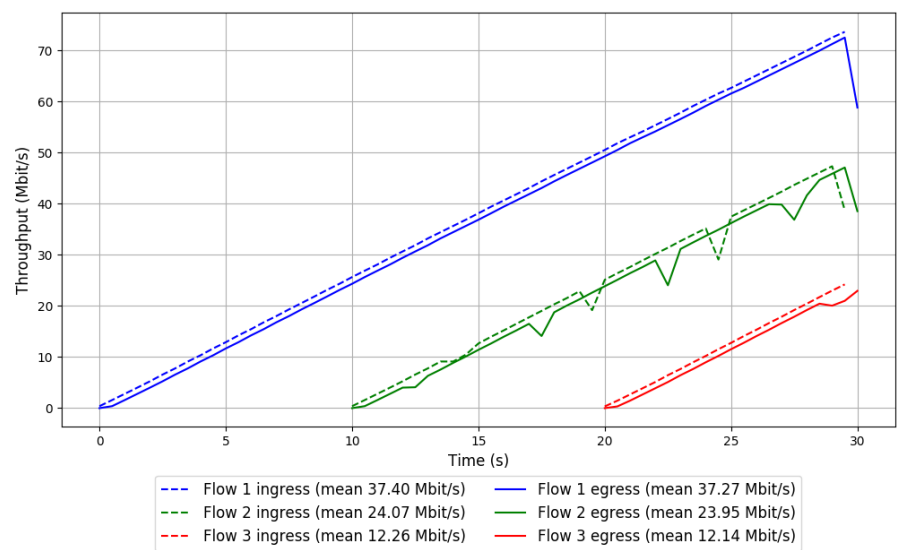
Run 3: Report of LEDBAT — Data Link

Flow 1 ingress (mean 36.88 Mbit/s)   Flow 1 egress (mean 36.75 Mbit/s)
Flow 2 ingress (mean 25.04 Mbit/s)   Flow 2 egress (mean 24.81 Mbit/s)
Flow 3 ingress (mean 11.97 Mbit/s)   Flow 3 egress (mean 11.84 Mbit/s)

Flow 1 (95th percentile 51.48 ms)   Flow 2 (95th percentile 49.83 ms)   Flow 3 (95th percentile 51.25 ms)

```
Run 4: Statistics of LEDBAT

Start at: 2018-09-08 09:17:38
End at: 2018-09-08 09:18:08
Local clock offset: -0.072 ms
Remote clock offset: -0.114 ms

# Below is generated by plot.py at 2018-09-08 11:54:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 57.10 Mbit/s
95th percentile per-packet one-way delay: 51.525 ms
Loss rate: 0.86%
-- Flow 1:
Average throughput: 37.01 Mbit/s
95th percentile per-packet one-way delay: 51.537 ms
Loss rate: 0.66%
-- Flow 2:
Average throughput: 24.41 Mbit/s
95th percentile per-packet one-way delay: 51.575 ms
Loss rate: 1.01%
-- Flow 3:
Average throughput: 11.81 Mbit/s
95th percentile per-packet one-way delay: 51.174 ms
Loss rate: 2.06%
```
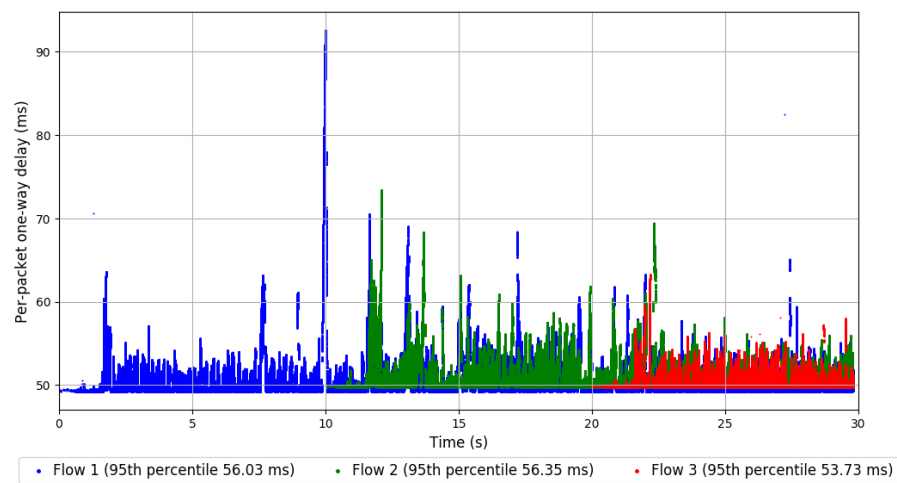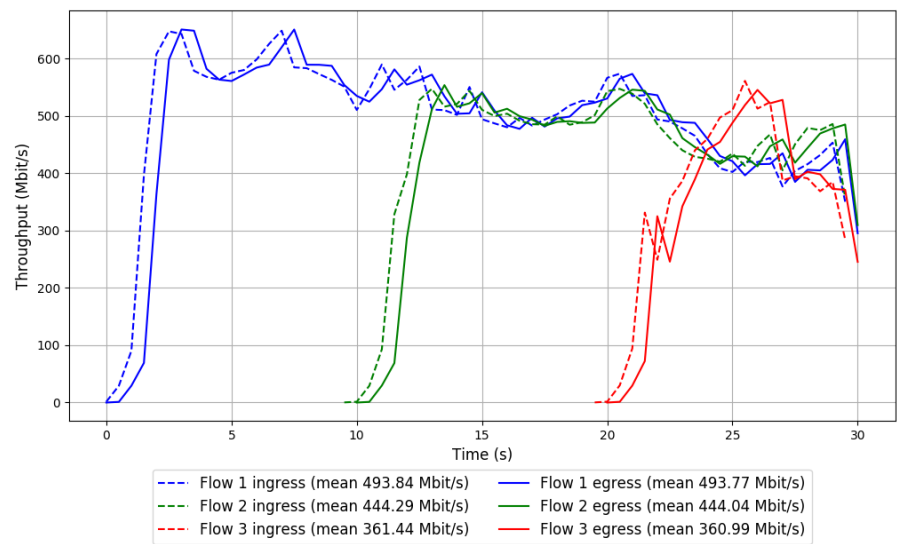
Run 4: Report of LEDBAT — Data Link

```
Run 5: Statistics of LEDBAT

Start at: 2018-09-08 09:49:28
End at: 2018-09-08 09:49:58
Local clock offset: -0.454 ms
Remote clock offset: -0.097 ms


# Below is generated by plot.py at 2018-09-08 11:54:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 57.13 Mbit/s
95th percentile per-packet one-way delay: 50.961 ms
Loss rate: 0.86%
-- Flow 1:
Average throughput: 37.27 Mbit/s
95th percentile per-packet one-way delay: 49.720 ms
Loss rate: 0.66%
-- Flow 2:
Average throughput: 23.95 Mbit/s
95th percentile per-packet one-way delay: 51.408 ms
Loss rate: 1.02%
-- Flow 3:
Average throughput: 12.14 Mbit/s
95th percentile per-packet one-way delay: 49.710 ms
Loss rate: 2.03%
```
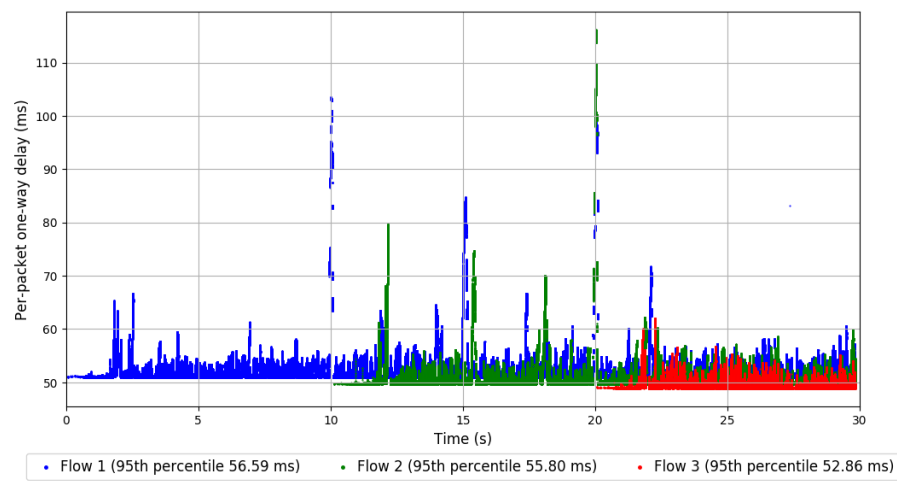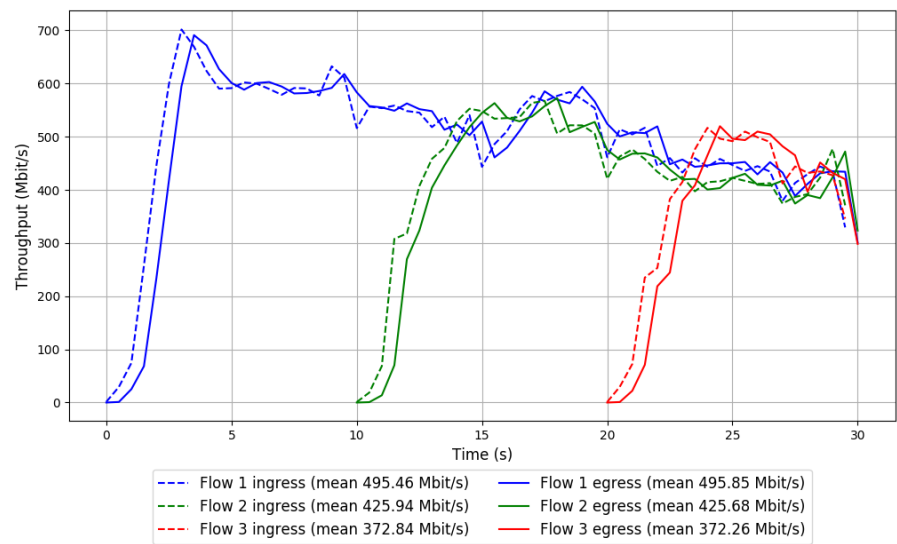
Run 5: Report of LEDBAT — Data Link

Flow 1 ingress (mean 37.40 Mbit/s) --- Flow 1 egress (mean 37.27 Mbit/s)
Flow 2 ingress (mean 24.07 Mbit/s) --- Flow 2 egress (mean 23.95 Mbit/s)
Flow 3 ingress (mean 12.26 Mbit/s) --- Flow 3 egress (mean 12.14 Mbit/s)

• Flow 1 (95th percentile 49.72 ms)   • Flow 2 (95th percentile 51.41 ms)   • Flow 3 (95th percentile 49.71 ms)
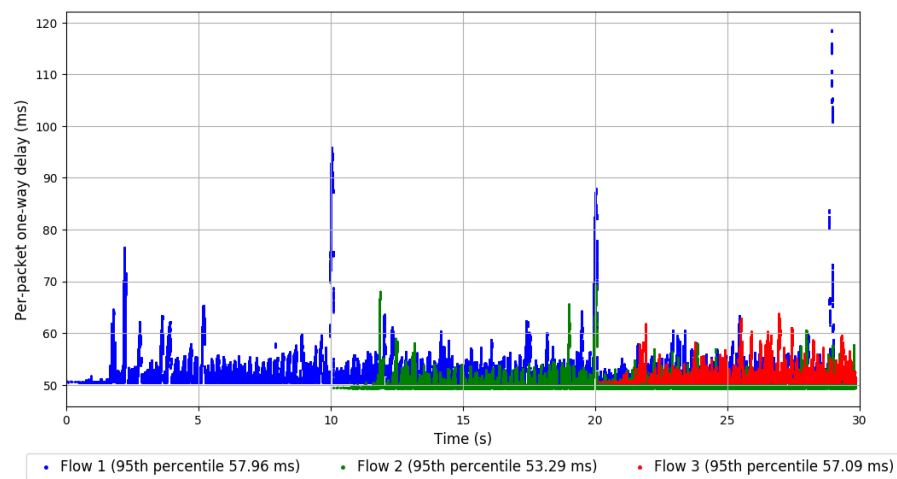
```
Run 1: Statistics of Indigo-Muses

Start at: 2018-09-08 07:54:37
End at: 2018-09-08 07:55:07
Local clock offset: -0.43 ms
Remote clock offset: -0.207 ms


# Below is generated by plot.py at 2018-09-08 11:54:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 907.91 Mbit/s
95th percentile per-packet one-way delay: 55.826 ms
Loss rate: 0.52%
-- Flow 1:
Average throughput: 493.77 Mbit/s
95th percentile per-packet one-way delay: 56.029 ms
Loss rate: 0.35%
-- Flow 2:
Average throughput: 444.04 Mbit/s
95th percentile per-packet one-way delay: 56.348 ms
Loss rate: 0.56%
-- Flow 3:
Average throughput: 360.99 Mbit/s
95th percentile per-packet one-way delay: 53.725 ms
Loss rate: 1.13%
```

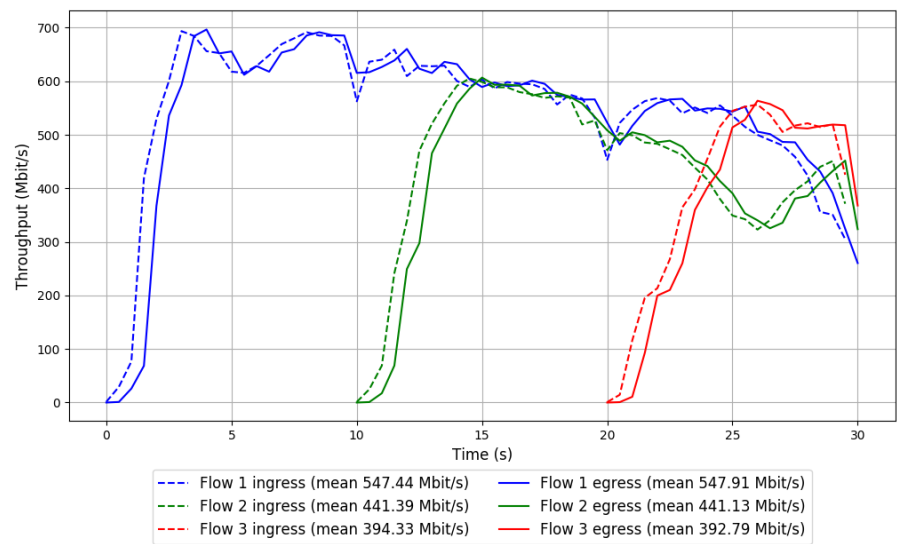Run 1: Report of Indigo-Muses — Data Link

```
Run 2: Statistics of Indigo-Muses

Start at: 2018-09-08 08:26:22
End at: 2018-09-08 08:26:52
Local clock offset: 0.346 ms
Remote clock offset: 0.073 ms


# Below is generated by plot.py at 2018-09-08 11:55:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 899.78 Mbit/s
95th percentile per-packet one-way delay: 55.959 ms
Loss rate: 0.48%
-- Flow 1:
Average throughput: 495.85 Mbit/s
95th percentile per-packet one-way delay: 56.590 ms
Loss rate: 0.26%
-- Flow 2:
Average throughput: 425.68 Mbit/s
95th percentile per-packet one-way delay: 55.801 ms
Loss rate: 0.57%
-- Flow 3:
Average throughput: 372.26 Mbit/s
95th percentile per-packet one-way delay: 52.859 ms
Loss rate: 1.16%
```

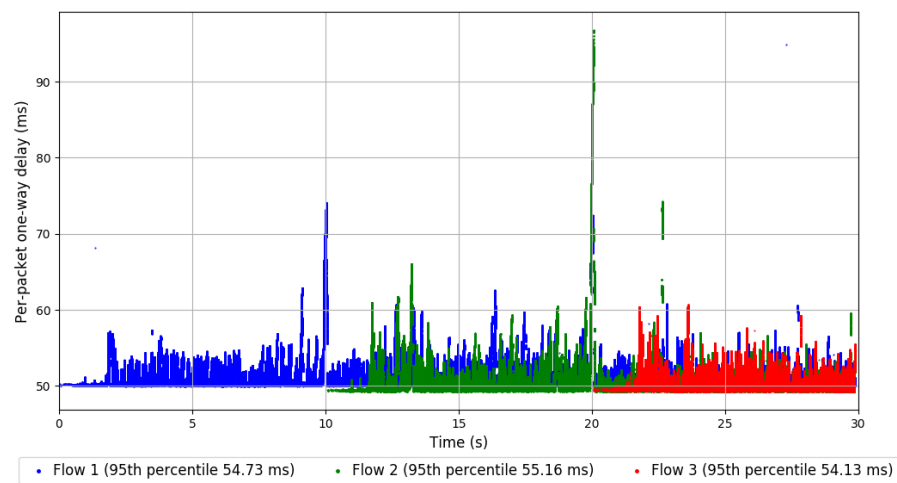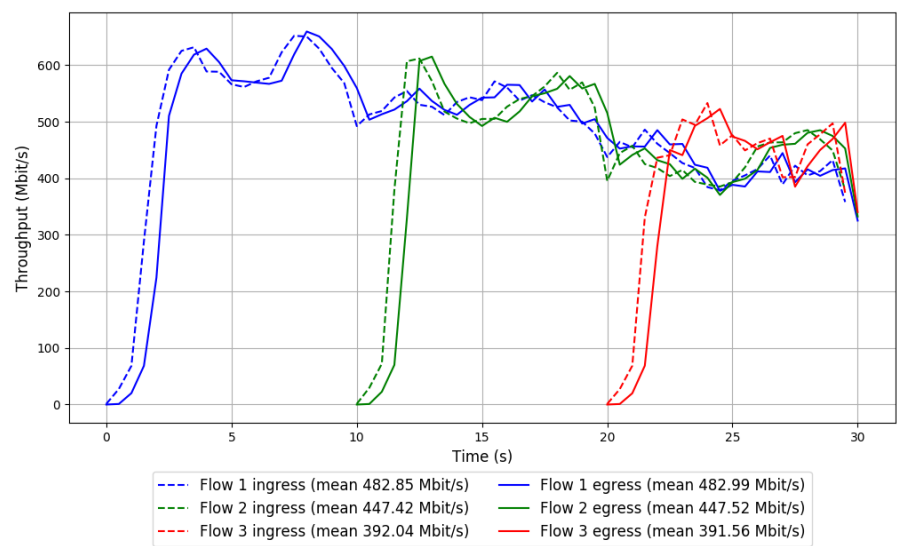Run 2: Report of Indigo-Muses — Data Link

```
Run 3: Statistics of Indigo-Muses

Start at: 2018-09-08 08:58:06
End at: 2018-09-08 08:58:36
Local clock offset: -0.065 ms
Remote clock offset: -0.052 ms

# Below is generated by plot.py at 2018-09-08 11:57:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 968.32 Mbit/s
95th percentile per-packet one-way delay: 56.788 ms
Loss rate: 0.50%
-- Flow 1:
Average throughput: 547.91 Mbit/s
95th percentile per-packet one-way delay: 57.956 ms
Loss rate: 0.25%
-- Flow 2:
Average throughput: 441.13 Mbit/s
95th percentile per-packet one-way delay: 53.289 ms
Loss rate: 0.56%
-- Flow 3:
Average throughput: 392.79 Mbit/s
95th percentile per-packet one-way delay: 57.092 ms
Loss rate: 1.43%
```

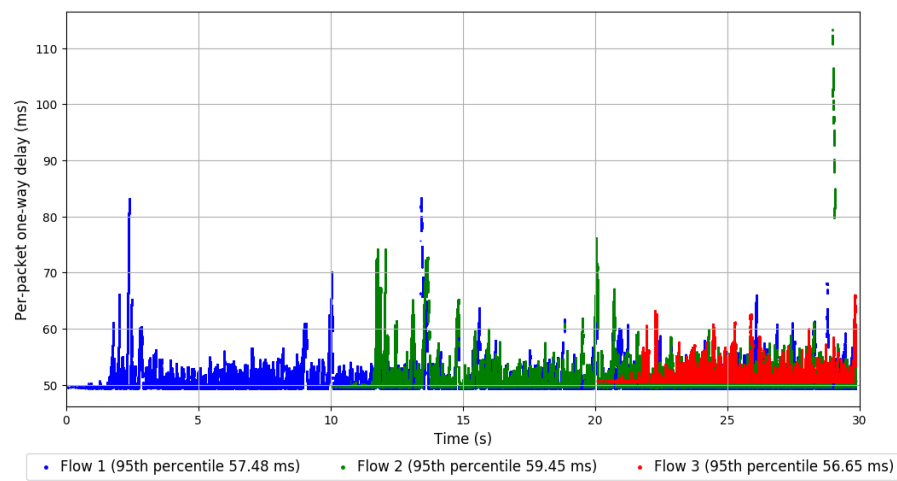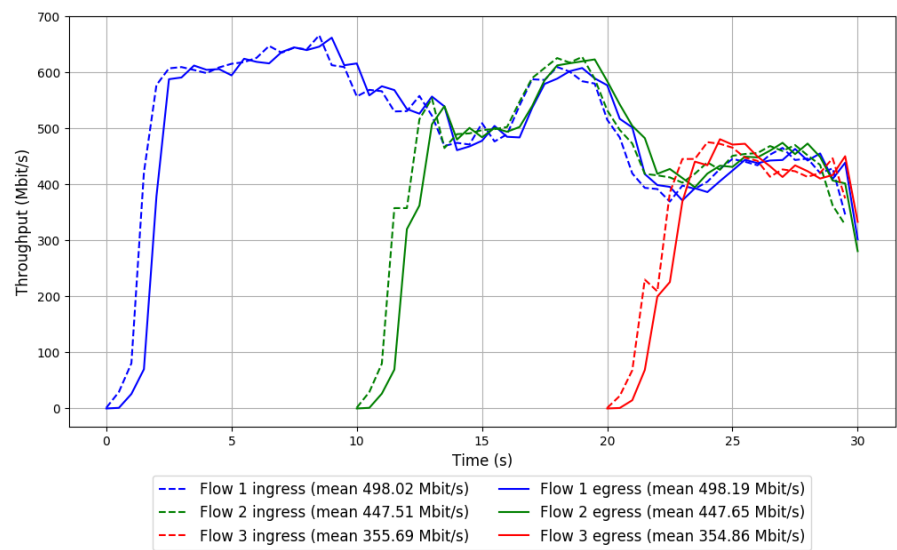Run 3: Report of Indigo-Muses — Data Link

Flow 1 ingress (mean 547.44 Mbit/s)   Flow 1 egress (mean 547.91 Mbit/s)
Flow 2 ingress (mean 441.39 Mbit/s)   Flow 2 egress (mean 441.13 Mbit/s)
Flow 3 ingress (mean 394.33 Mbit/s)   Flow 3 egress (mean 392.79 Mbit/s)

Flow 1 (95th percentile 57.96 ms)   Flow 2 (95th percentile 53.29 ms)   Flow 3 (95th percentile 57.09 ms)

```
Run 4: Statistics of Indigo-Muses

Start at: 2018-09-08 09:30:02
End at: 2018-09-08 09:30:32
Local clock offset: -0.43 ms
Remote clock offset: -0.087 ms


# Below is generated by plot.py at 2018-09-08 11:57:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 908.71 Mbit/s
95th percentile per-packet one-way delay: 54.766 ms
Loss rate: 0.49%
-- Flow 1:
Average throughput: 482.99 Mbit/s
95th percentile per-packet one-way delay: 54.727 ms
Loss rate: 0.31%
-- Flow 2:
Average throughput: 447.52 Mbit/s
95th percentile per-packet one-way delay: 55.163 ms
Loss rate: 0.49%
-- Flow 3:
Average throughput: 391.56 Mbit/s
95th percentile per-packet one-way delay: 54.133 ms
Loss rate: 1.15%
```

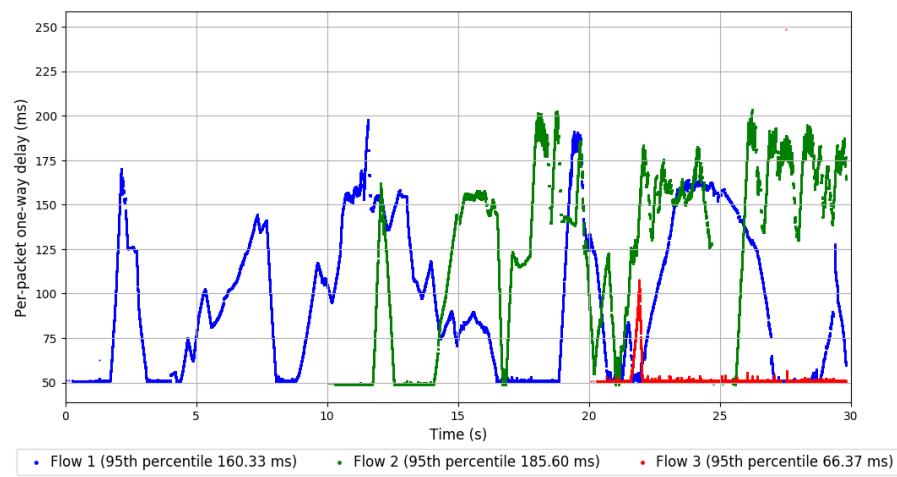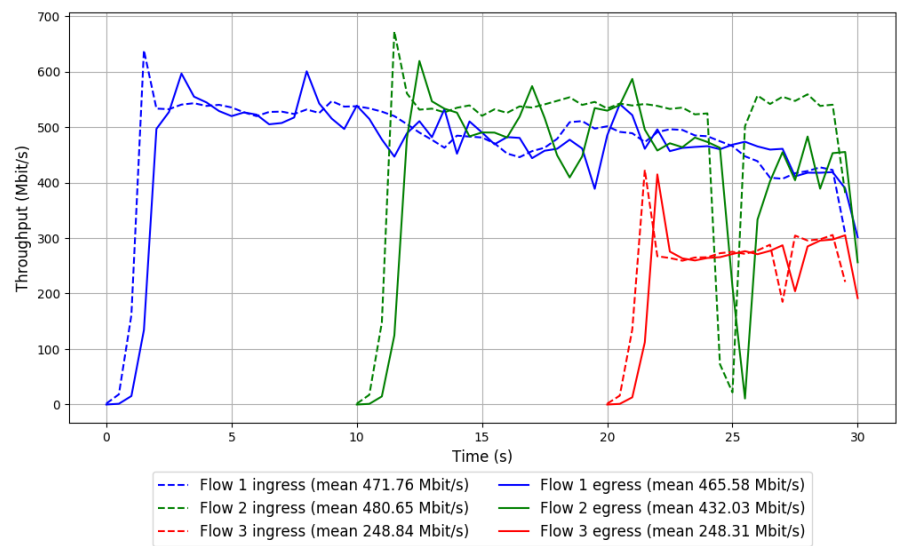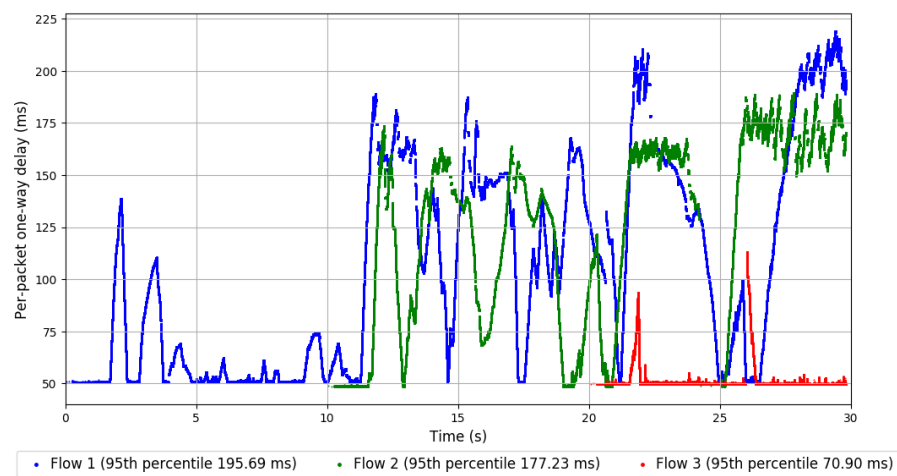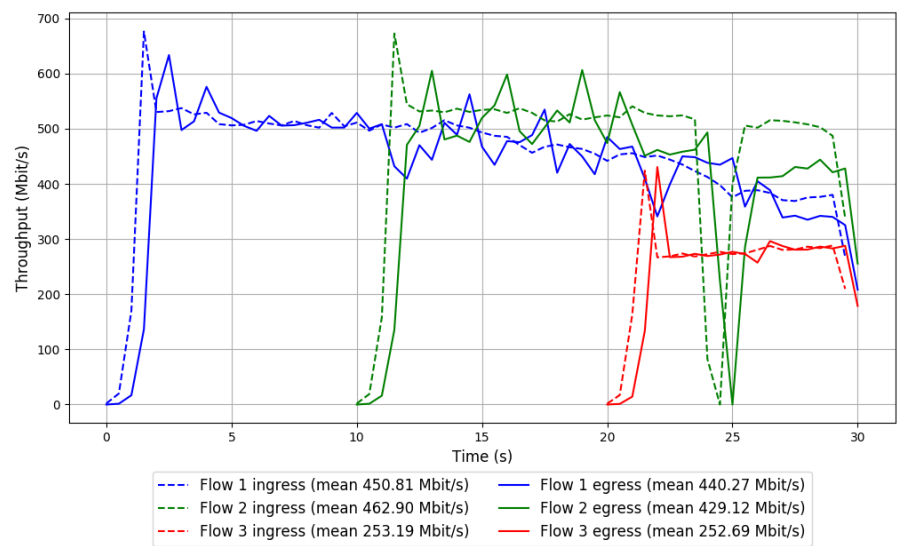Run 4: Report of Indigo-Muses — Data Link

```
Run 5: Statistics of Indigo-Muses

Start at: 2018-09-08 10:01:32
End at: 2018-09-08 10:02:02
Local clock offset: -0.063 ms
Remote clock offset: -0.083 ms

# Below is generated by plot.py at 2018-09-08 11:57:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 912.08 Mbit/s
95th percentile per-packet one-way delay: 57.778 ms
Loss rate: 0.47%
-- Flow 1:
Average throughput: 498.19 Mbit/s
95th percentile per-packet one-way delay: 57.476 ms
Loss rate: 0.29%
-- Flow 2:
Average throughput: 447.65 Mbit/s
95th percentile per-packet one-way delay: 59.445 ms
Loss rate: 0.47%
-- Flow 3:
Average throughput: 354.86 Mbit/s
95th percentile per-packet one-way delay: 56.646 ms
Loss rate: 1.26%
```

Run 5: Report of Indigo-Muses — Data Link

Flow 1 ingress (mean 498.02 Mbit/s)   Flow 1 egress (mean 498.19 Mbit/s)
Flow 2 ingress (mean 447.51 Mbit/s)   Flow 2 egress (mean 447.65 Mbit/s)
Flow 3 ingress (mean 355.69 Mbit/s)   Flow 3 egress (mean 354.86 Mbit/s)

Flow 1 (95th percentile 57.48 ms)   Flow 2 (95th percentile 59.45 ms)   Flow 3 (95th percentile 56.65 ms)
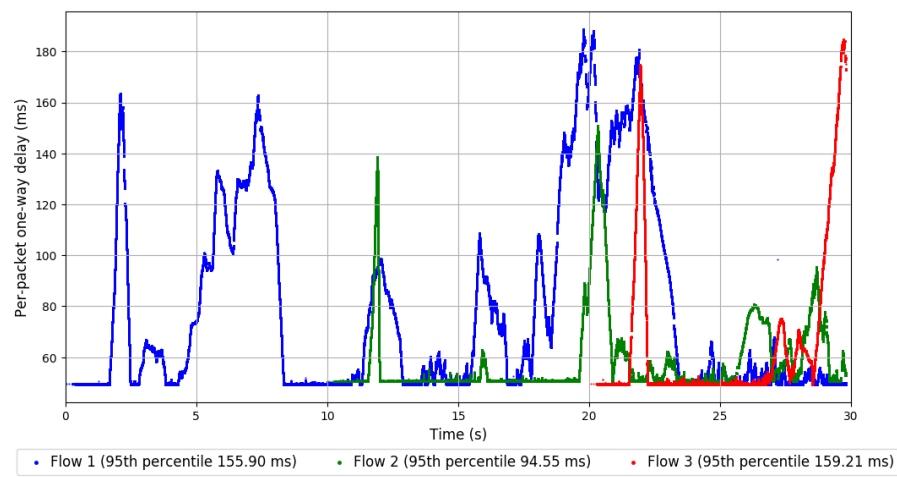
```
Run 1: Statistics of PCC-Allegro

Start at: 2018-09-08 07:30:06
End at: 2018-09-08 07:30:36
Local clock offset: 0.278 ms
Remote clock offset: -0.213 ms


# Below is generated by plot.py at 2018-09-08 12:08:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 833.18 Mbit/s
95th percentile per-packet one-way delay: 176.250 ms
Loss rate: 4.87%
-- Flow 1:
Average throughput: 465.58 Mbit/s
95th percentile per-packet one-way delay: 160.332 ms
Loss rate: 1.64%
-- Flow 2:
Average throughput: 432.03 Mbit/s
95th percentile per-packet one-way delay: 185.598 ms
Loss rate: 10.56%
-- Flow 3:
Average throughput: 248.31 Mbit/s
95th percentile per-packet one-way delay: 66.370 ms
Loss rate: 1.23%
```

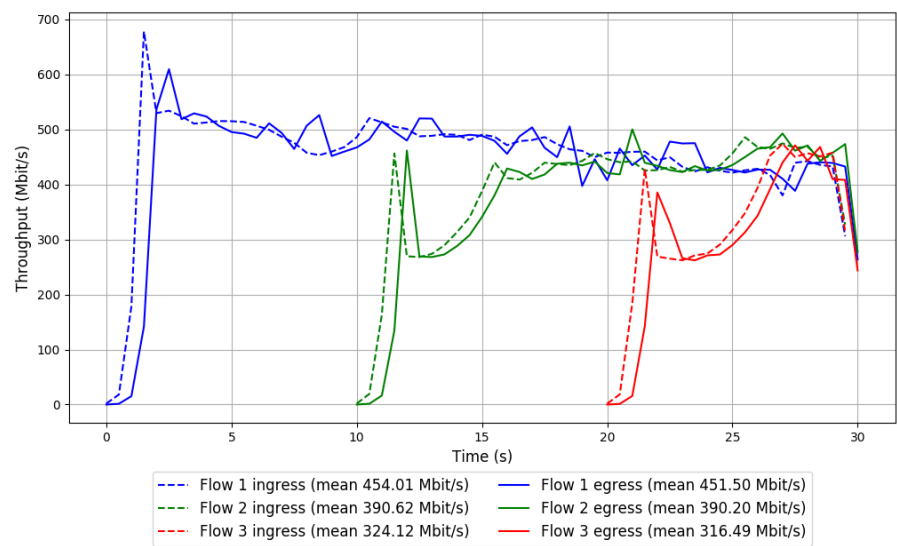Run 1: Report of PCC-Allegro — Data Link

```
Run 2: Statistics of PCC-Allegro

Start at: 2018-09-08 08:01:51
End at: 2018-09-08 08:02:21
Local clock offset: -0.022 ms
Remote clock offset: -0.064 ms


# Below is generated by plot.py at 2018-09-08 12:08:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 807.70 Mbit/s
95th percentile per-packet one-way delay: 180.794 ms
Loss rate: 4.38%
-- Flow 1:
Average throughput: 440.27 Mbit/s
95th percentile per-packet one-way delay: 195.695 ms
Loss rate: 2.67%
-- Flow 2:
Average throughput: 429.12 Mbit/s
95th percentile per-packet one-way delay: 177.227 ms
Loss rate: 7.76%
-- Flow 3:
Average throughput: 252.69 Mbit/s
95th percentile per-packet one-way delay: 70.903 ms
Loss rate: 1.20%
```

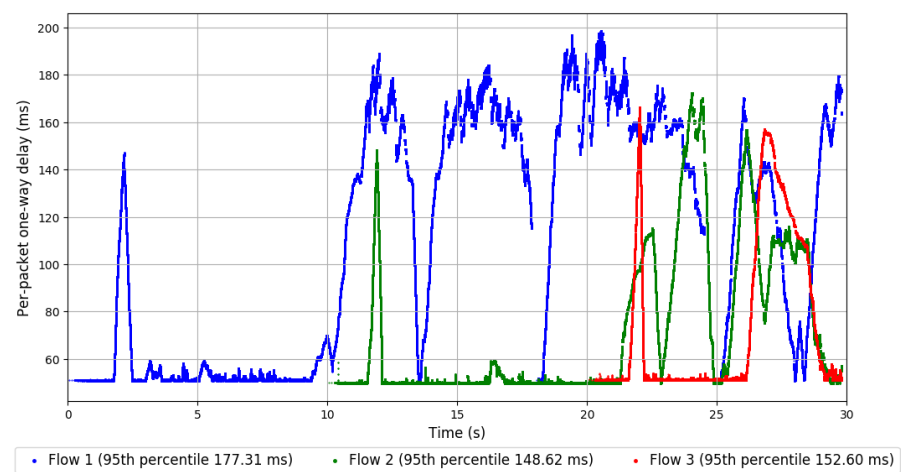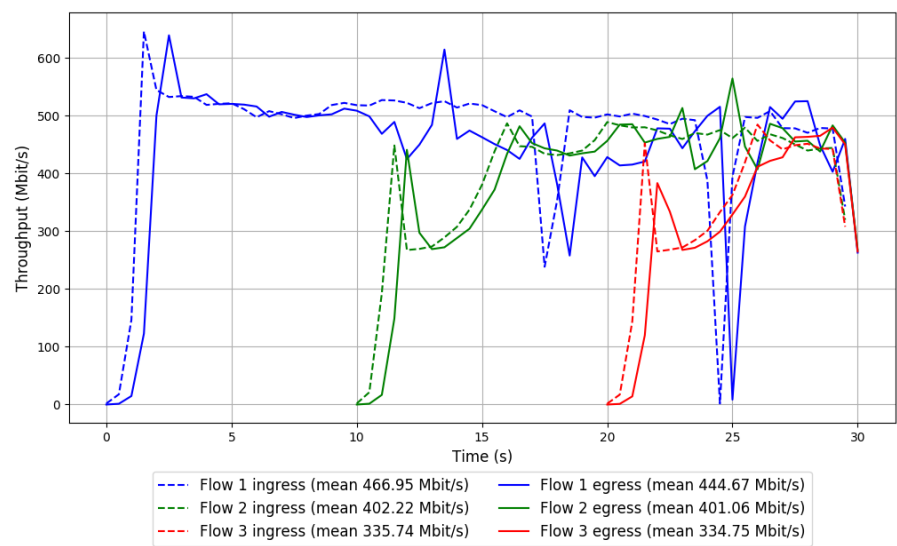Run 2: Report of PCC-Allegro — Data Link

```
Run 3: Statistics of PCC-Allegro

Start at: 2018-09-08 08:33:39
End at: 2018-09-08 08:34:09
Local clock offset: -0.029 ms
Remote clock offset: -0.032 ms


# Below is generated by plot.py at 2018-09-08 12:22:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 814.04 Mbit/s
95th percentile per-packet one-way delay: 150.512 ms
Loss rate: 1.12%
-- Flow 1:
Average throughput: 451.50 Mbit/s
95th percentile per-packet one-way delay: 155.898 ms
Loss rate: 0.89%
-- Flow 2:
Average throughput: 390.20 Mbit/s
95th percentile per-packet one-way delay: 94.548 ms
Loss rate: 0.62%
-- Flow 3:
Average throughput: 316.49 Mbit/s
95th percentile per-packet one-way delay: 159.212 ms
Loss rate: 3.34%
```
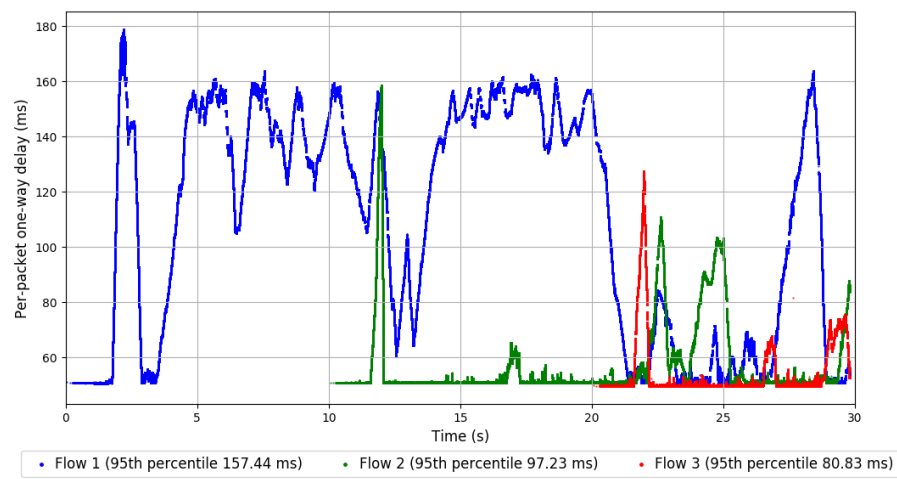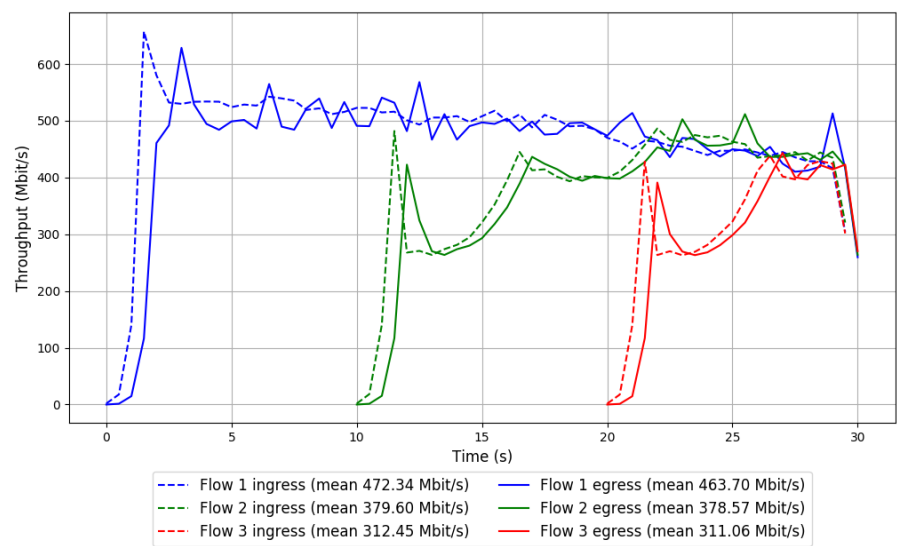
Run 3: Report of PCC-Allegro — Data Link

```
Run 4: Statistics of PCC-Allegro

Start at: 2018-09-08 09:05:29
End at: 2018-09-08 09:05:59
Local clock offset: 0.33 ms
Remote clock offset: -0.083 ms

# Below is generated by plot.py at 2018-09-08 12:23:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 820.22 Mbit/s
95th percentile per-packet one-way delay: 171.628 ms
Loss rate: 3.24%
-- Flow 1:
Average throughput: 444.67 Mbit/s
95th percentile per-packet one-way delay: 177.315 ms
Loss rate: 5.10%
-- Flow 2:
Average throughput: 401.06 Mbit/s
95th percentile per-packet one-way delay: 148.624 ms
Loss rate: 0.80%
-- Flow 3:
Average throughput: 334.75 Mbit/s
95th percentile per-packet one-way delay: 152.604 ms
Loss rate: 1.34%
```

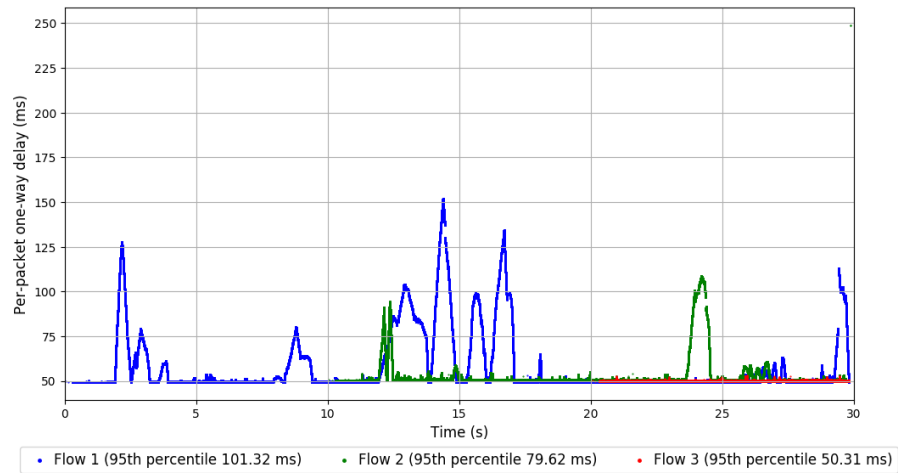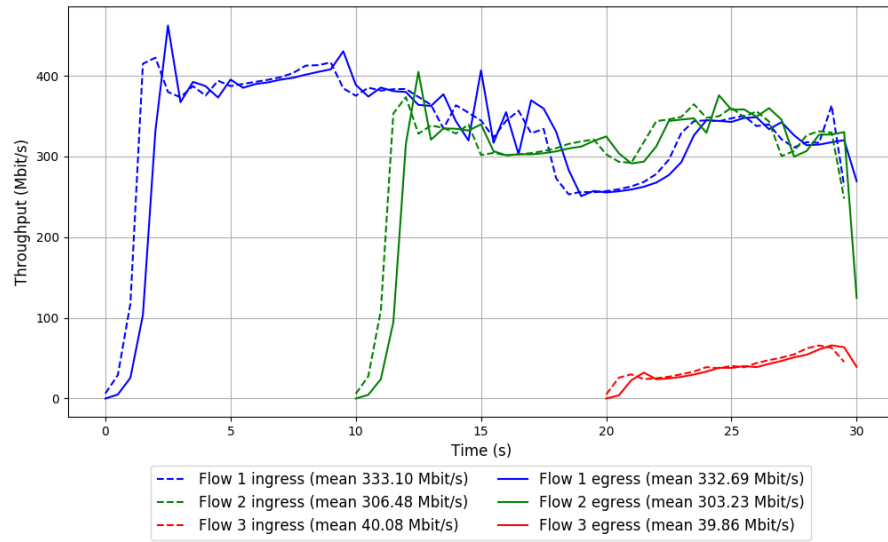# Run 4: Report of PCC-Allegro — Data Link

```
Run 5: Statistics of PCC-Allegro

Start at: 2018-09-08 09:37:18
End at: 2018-09-08 09:37:48
Local clock offset: -0.081 ms
Remote clock offset: -0.093 ms


# Below is generated by plot.py at 2018-09-08 12:24:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 816.68 Mbit/s
95th percentile per-packet one-way delay: 156.367 ms
Loss rate: 1.65%
-- Flow 1:
Average throughput: 463.70 Mbit/s
95th percentile per-packet one-way delay: 157.437 ms
Loss rate: 2.16%
-- Flow 2:
Average throughput: 378.57 Mbit/s
95th percentile per-packet one-way delay: 97.235 ms
Loss rate: 0.78%
-- Flow 3:
Average throughput: 311.06 Mbit/s
95th percentile per-packet one-way delay: 80.826 ms
Loss rate: 1.47%
```
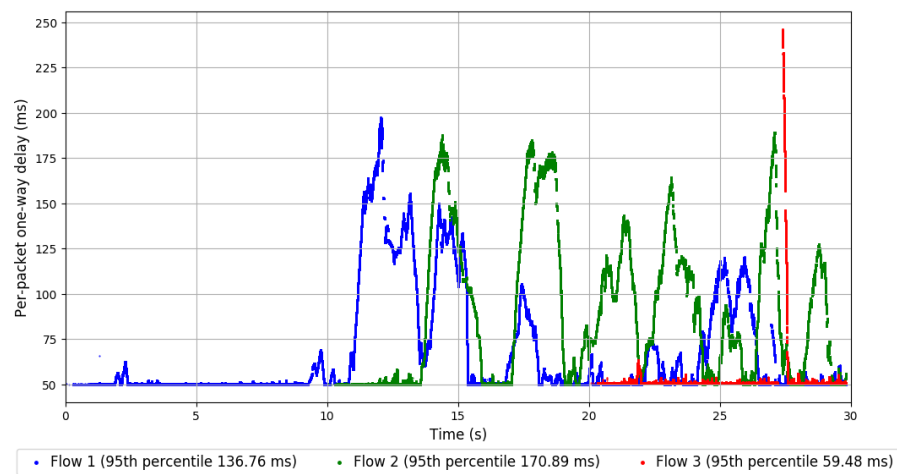
Run 5: Report of PCC-Allegro — Data Link

```
Run 1: Statistics of PCC-Expr

Start at: 2018-09-08 07:34:18
End at: 2018-09-08 07:34:48
Local clock offset: -0.456 ms
Remote clock offset: -0.253 ms

# Below is generated by plot.py at 2018-09-08 12:24:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 546.61 Mbit/s
95th percentile per-packet one-way delay: 97.669 ms
Loss rate: 0.80%
-- Flow 1:
Average throughput: 332.69 Mbit/s
95th percentile per-packet one-way delay: 101.321 ms
Loss rate: 0.47%
-- Flow 2:
Average throughput: 303.23 Mbit/s
95th percentile per-packet one-way delay: 79.624 ms
Loss rate: 1.30%
-- Flow 3:
Average throughput: 39.86 Mbit/s
95th percentile per-packet one-way delay: 50.308 ms
Loss rate: 1.55%
```

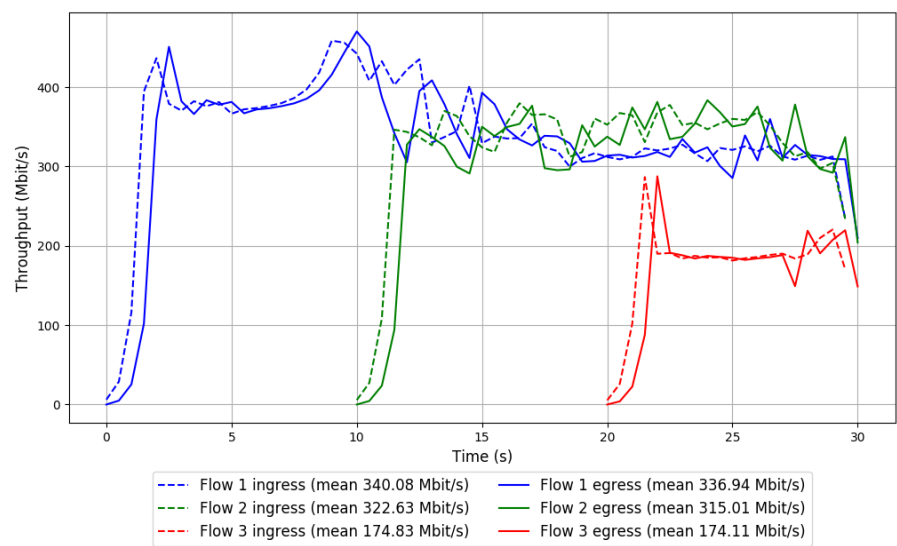# Run 1: Report of PCC-Expr — Data Link

```
Run 2: Statistics of PCC-Expr

Start at: 2018-09-08 08:06:02
End at: 2018-09-08 08:06:32
Local clock offset: -0.021 ms
Remote clock offset: -0.065 ms


# Below is generated by plot.py at 2018-09-08 12:24:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 603.14 Mbit/s
95th percentile per-packet one-way delay: 154.443 ms
Loss rate: 1.83%
-- Flow 1:
Average throughput: 336.94 Mbit/s
95th percentile per-packet one-way delay: 136.756 ms
Loss rate: 1.25%
-- Flow 2:
Average throughput: 315.01 Mbit/s
95th percentile per-packet one-way delay: 170.886 ms
Loss rate: 2.86%
-- Flow 3:
Average throughput: 174.11 Mbit/s
95th percentile per-packet one-way delay: 59.480 ms
Loss rate: 1.43%
```

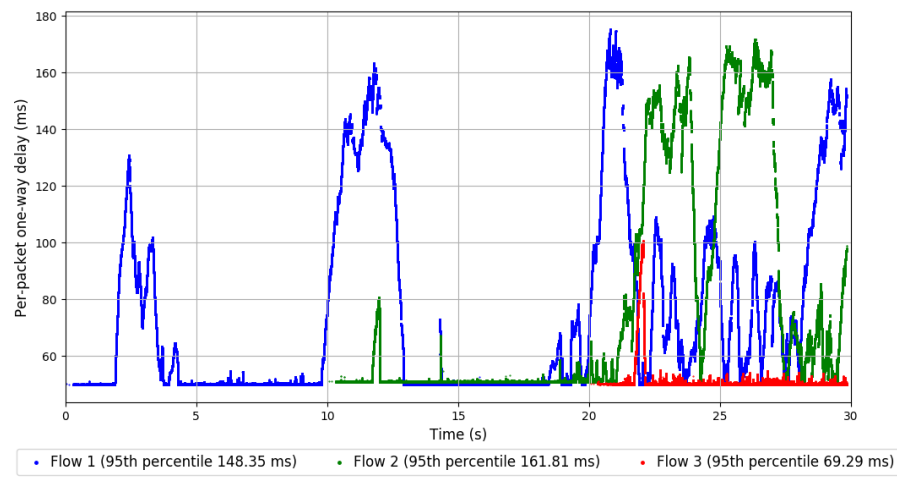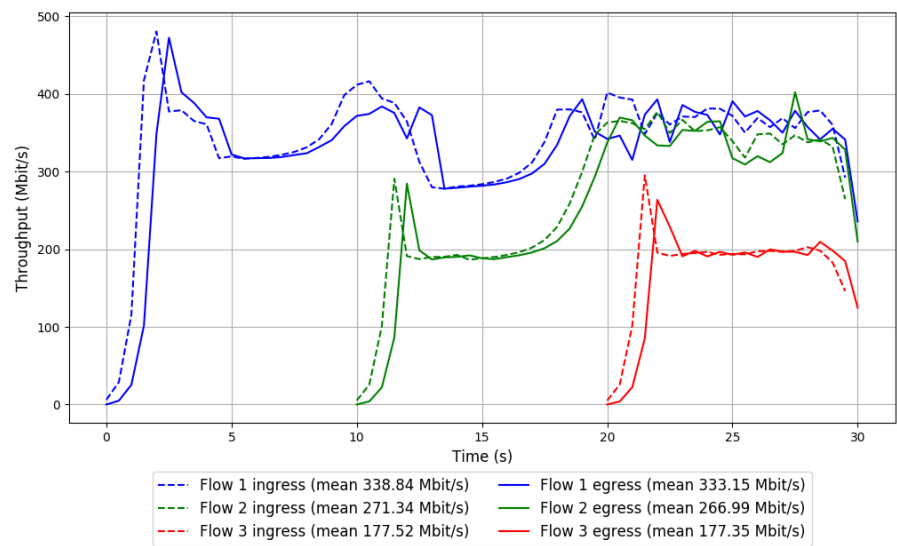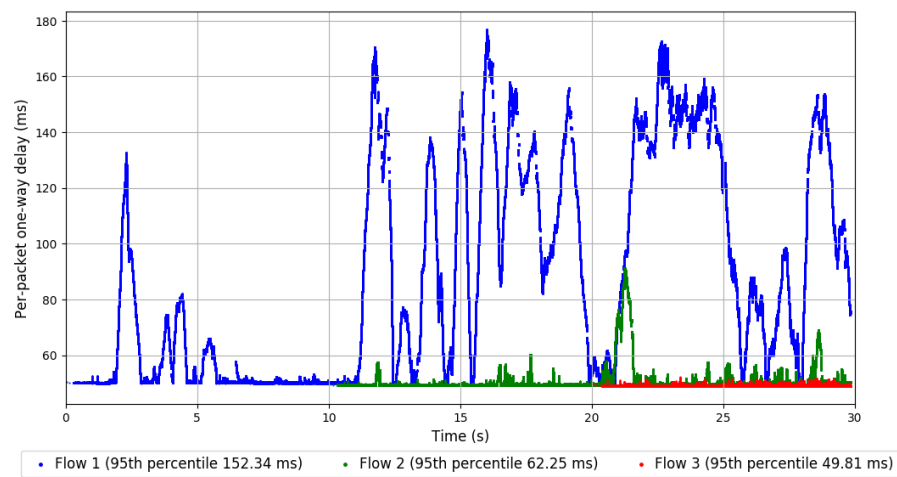Run 2: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 340.08 Mbit/s) ---- Flow 1 egress (mean 336.94 Mbit/s)
Flow 2 ingress (mean 322.63 Mbit/s) ---- Flow 2 egress (mean 315.01 Mbit/s)
Flow 3 ingress (mean 174.83 Mbit/s) ---- Flow 3 egress (mean 174.11 Mbit/s)

Flow 1 (95th percentile 136.76 ms)   Flow 2 (95th percentile 170.89 ms)   Flow 3 (95th percentile 59.48 ms)

```
Run 3: Statistics of PCC-Expr

Start at: 2018-09-08 08:37:54
End at: 2018-09-08 08:38:24
Local clock offset: 0.35 ms
Remote clock offset: -0.007 ms


# Below is generated by plot.py at 2018-09-08 12:24:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 568.53 Mbit/s
95th percentile per-packet one-way delay: 153.733 ms
Loss rate: 1.95%
-- Flow 1:
Average throughput: 333.15 Mbit/s
95th percentile per-packet one-way delay: 148.354 ms
Loss rate: 2.01%
-- Flow 2:
Average throughput: 266.99 Mbit/s
95th percentile per-packet one-way delay: 161.809 ms
Loss rate: 2.11%
-- Flow 3:
Average throughput: 177.35 Mbit/s
95th percentile per-packet one-way delay: 69.294 ms
Loss rate: 1.10%
```

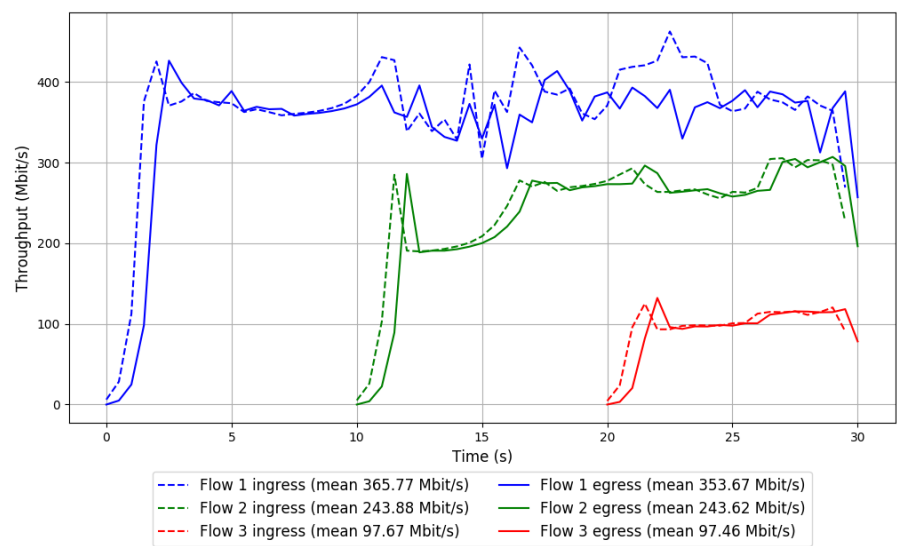Run 3: Report of PCC-Expr — Data Link

```
Run 4: Statistics of PCC-Expr

Start at: 2018-09-08 09:09:41
End at: 2018-09-08 09:10:11
Local clock offset: -0.413 ms
Remote clock offset: -0.062 ms


# Below is generated by plot.py at 2018-09-08 12:27:24
# Datalink statistics
-- Total of 3 flows:
Average throughput: 547.33 Mbit/s
95th percentile per-packet one-way delay: 148.613 ms
Loss rate: 2.63%
-- Flow 1:
Average throughput: 353.67 Mbit/s
95th percentile per-packet one-way delay: 152.343 ms
Loss rate: 3.64%
-- Flow 2:
Average throughput: 243.62 Mbit/s
95th percentile per-packet one-way delay: 62.246 ms
Loss rate: 0.65%
-- Flow 3:
Average throughput: 97.46 Mbit/s
95th percentile per-packet one-way delay: 49.812 ms
Loss rate: 1.24%
```

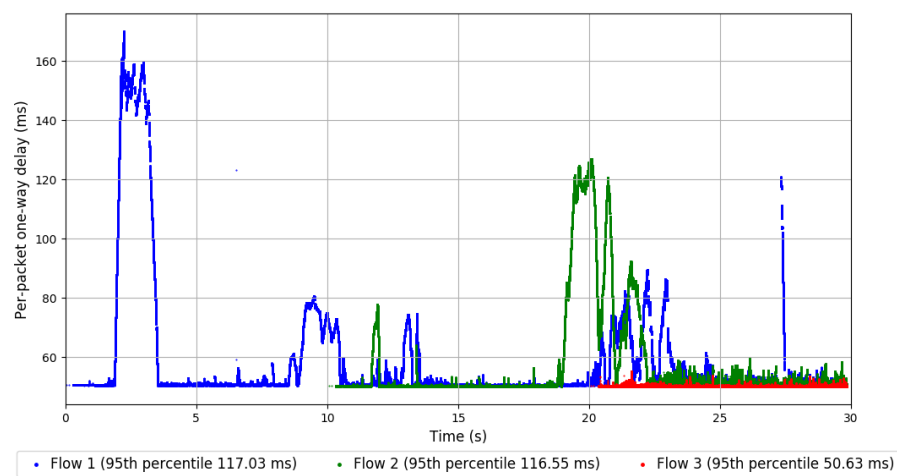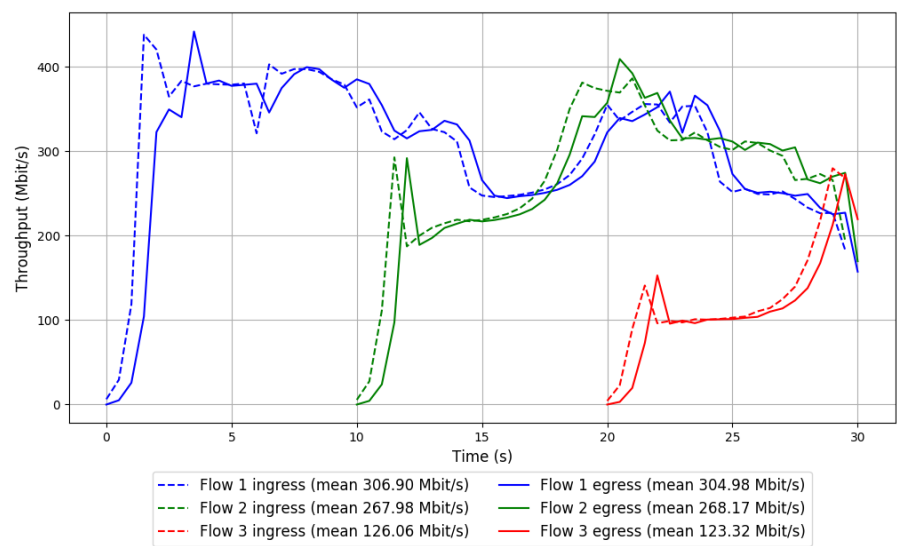Run 4: Report of PCC-Expr — Data Link

```
Run 5: Statistics of PCC-Expr

Start at: 2018-09-08 09:41:32
End at: 2018-09-08 09:42:02
Local clock offset: -0.073 ms
Remote clock offset: -0.066 ms


# Below is generated by plot.py at 2018-09-08 12:27:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 523.41 Mbit/s
95th percentile per-packet one-way delay: 114.416 ms
Loss rate: 0.96%
-- Flow 1:
Average throughput: 304.98 Mbit/s
95th percentile per-packet one-way delay: 117.025 ms
Loss rate: 0.96%
-- Flow 2:
Average throughput: 268.17 Mbit/s
95th percentile per-packet one-way delay: 116.546 ms
Loss rate: 0.44%
-- Flow 3:
Average throughput: 123.32 Mbit/s
95th percentile per-packet one-way delay: 50.626 ms
Loss rate: 3.18%
```

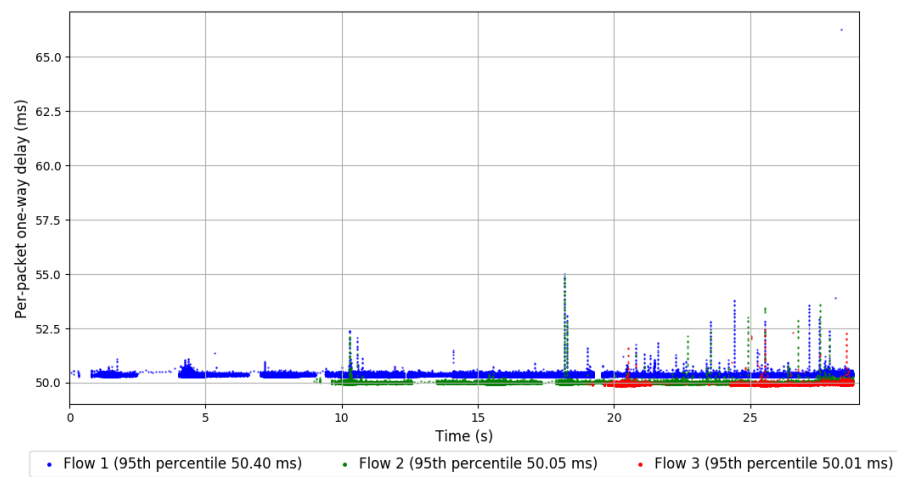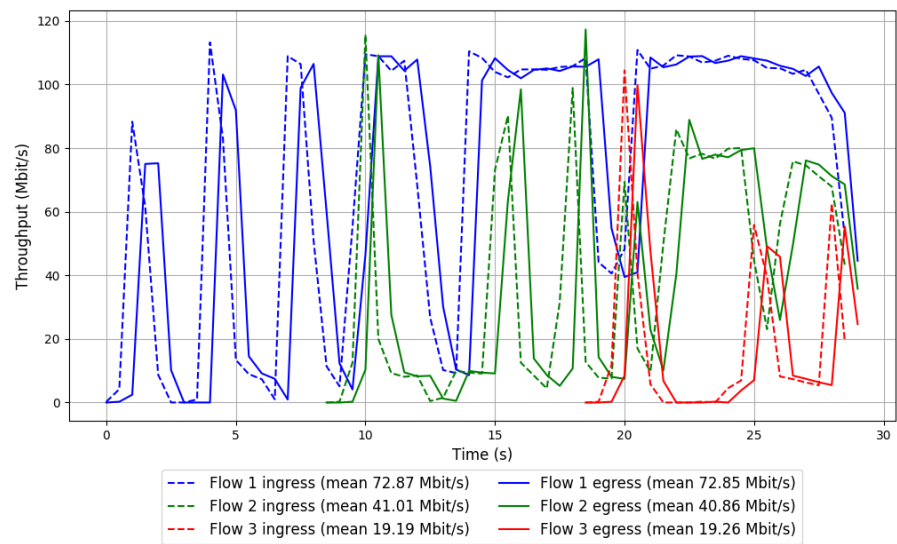# Run 5: Report of PCC-Expr — Data Link

```
Run 1: Statistics of QUIC Cubic

Start at: 2018-09-08 07:41:00
End at: 2018-09-08 07:41:30
Local clock offset: -0.481 ms
Remote clock offset: -0.252 ms


# Below is generated by plot.py at 2018-09-08 12:27:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 107.58 Mbit/s
95th percentile per-packet one-way delay: 50.381 ms
Loss rate: 0.53%
-- Flow 1:
Average throughput: 72.85 Mbit/s
95th percentile per-packet one-way delay: 50.396 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 40.86 Mbit/s
95th percentile per-packet one-way delay: 50.049 ms
Loss rate: 0.87%
-- Flow 3:
Average throughput: 19.26 Mbit/s
95th percentile per-packet one-way delay: 50.010 ms
Loss rate: 0.66%
```

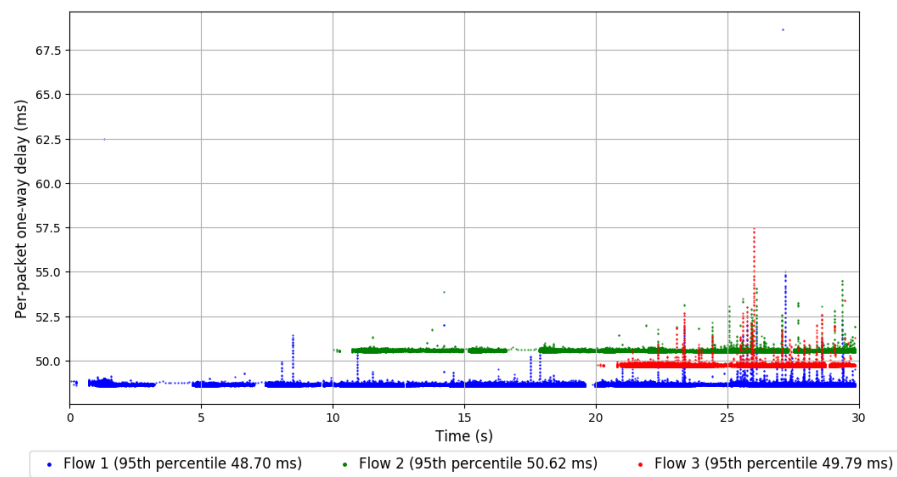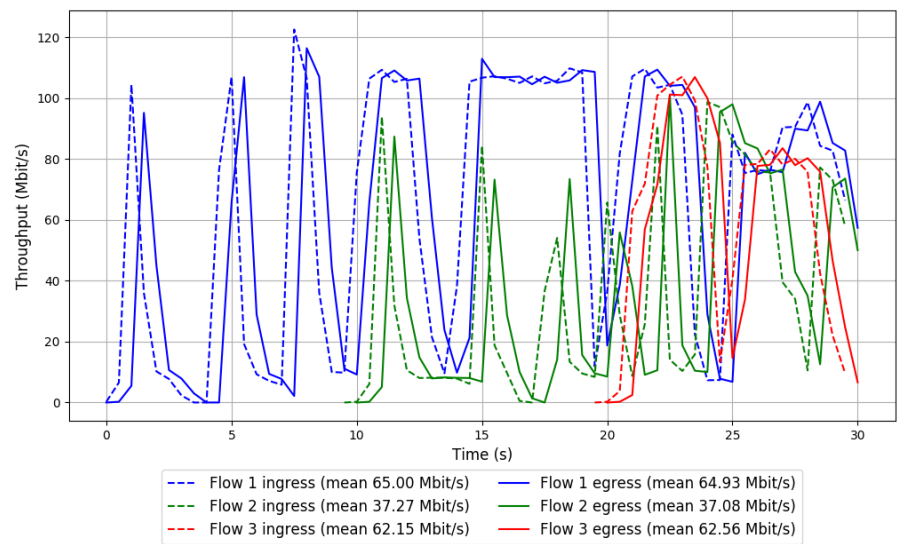Run 1: Report of QUIC Cubic — Data Link

```
Run 2: Statistics of QUIC Cubic

Start at: 2018-09-08 08:12:48
End at: 2018-09-08 08:13:18
Local clock offset: -0.015 ms
Remote clock offset: -0.027 ms


# Below is generated by plot.py at 2018-09-08 12:27:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 110.13 Mbit/s
95th percentile per-packet one-way delay: 50.568 ms
Loss rate: 0.55%
-- Flow 1:
Average throughput: 64.93 Mbit/s
95th percentile per-packet one-way delay: 48.695 ms
Loss rate: 0.44%
-- Flow 2:
Average throughput: 37.08 Mbit/s
95th percentile per-packet one-way delay: 50.618 ms
Loss rate: 1.00%
-- Flow 3:
Average throughput: 62.56 Mbit/s
95th percentile per-packet one-way delay: 49.792 ms
Loss rate: 0.34%
```

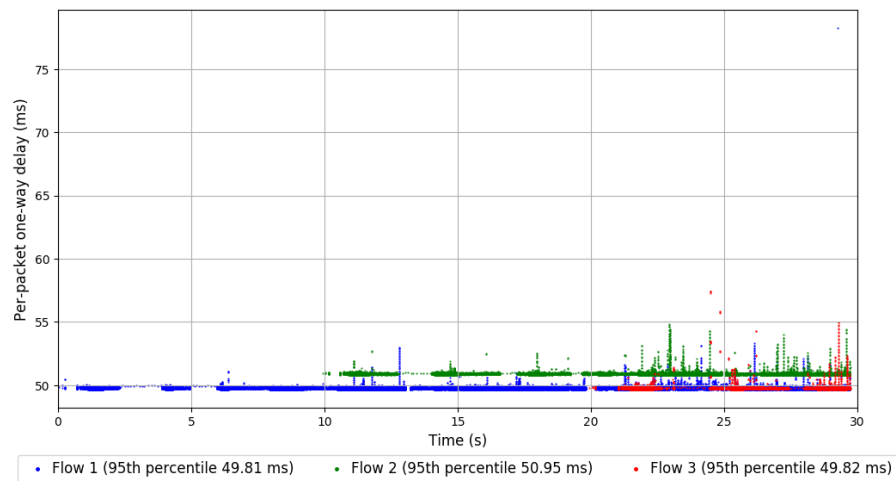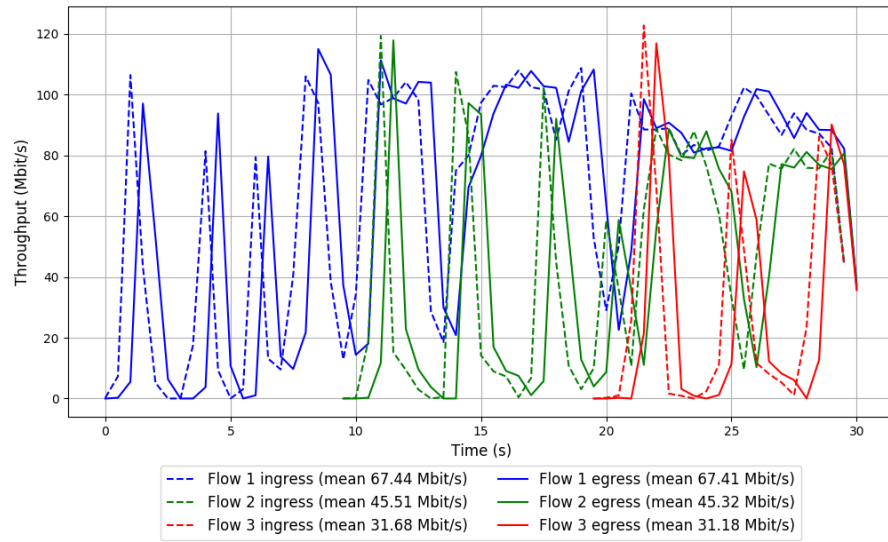Run 2: Report of QUIC Cubic — Data Link

```
Run 3: Statistics of QUIC Cubic

Start at: 2018-09-08 08:44:39
End at: 2018-09-08 08:45:09
Local clock offset: 0.335 ms
Remote clock offset: -0.014 ms


# Below is generated by plot.py at 2018-09-08 12:27:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 107.91 Mbit/s
95th percentile per-packet one-way delay: 50.905 ms
Loss rate: 0.74%
-- Flow 1:
Average throughput: 67.41 Mbit/s
95th percentile per-packet one-way delay: 49.815 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 45.32 Mbit/s
95th percentile per-packet one-way delay: 50.947 ms
Loss rate: 0.92%
-- Flow 3:
Average throughput: 31.18 Mbit/s
95th percentile per-packet one-way delay: 49.823 ms
Loss rate: 2.55%
```
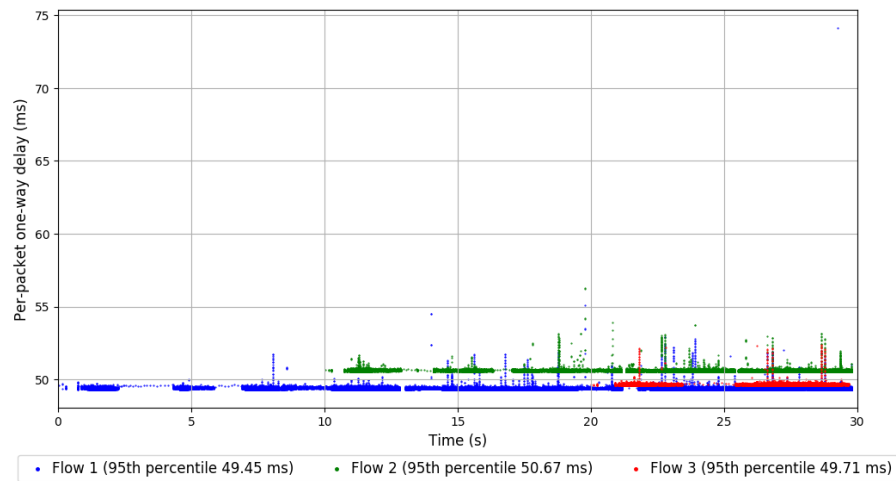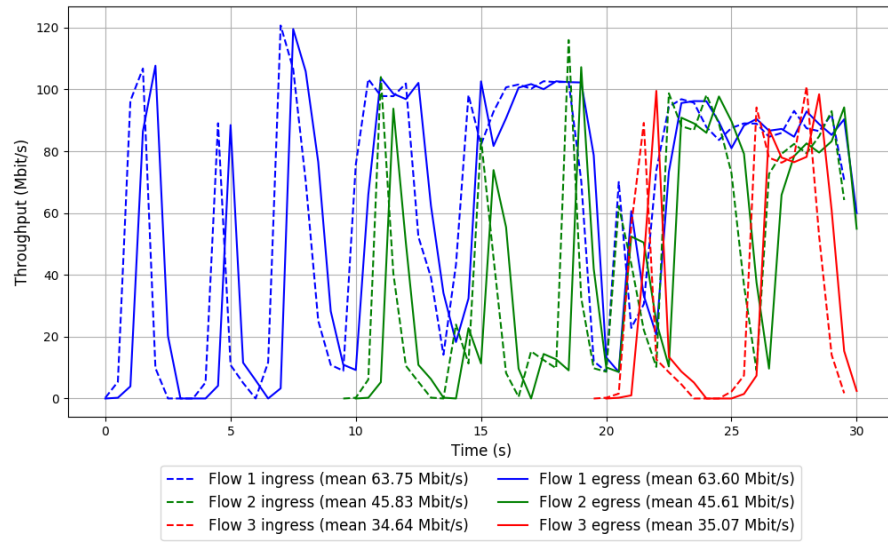
Run 3: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 67.44 Mbit/s) --- Flow 1 egress (mean 67.41 Mbit/s)
Flow 2 ingress (mean 45.51 Mbit/s) --- Flow 2 egress (mean 45.32 Mbit/s)
Flow 3 ingress (mean 31.68 Mbit/s) --- Flow 3 egress (mean 31.18 Mbit/s)

Flow 1 (95th percentile 49.81 ms)   Flow 2 (95th percentile 50.95 ms)   Flow 3 (95th percentile 49.82 ms)

110

```
Run 4: Statistics of QUIC Cubic

Start at: 2018-09-08 09:16:22
End at: 2018-09-08 09:16:52
Local clock offset: -0.099 ms
Remote clock offset: -0.063 ms


# Below is generated by plot.py at 2018-09-08 12:27:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 105.29 Mbit/s
95th percentile per-packet one-way delay: 50.625 ms
Loss rate: 0.62%
-- Flow 1:
Average throughput: 63.60 Mbit/s
95th percentile per-packet one-way delay: 49.445 ms
Loss rate: 0.56%
-- Flow 2:
Average throughput: 45.61 Mbit/s
95th percentile per-packet one-way delay: 50.666 ms
Loss rate: 0.97%
-- Flow 3:
Average throughput: 35.07 Mbit/s
95th percentile per-packet one-way delay: 49.714 ms
Loss rate: 0.00%
```

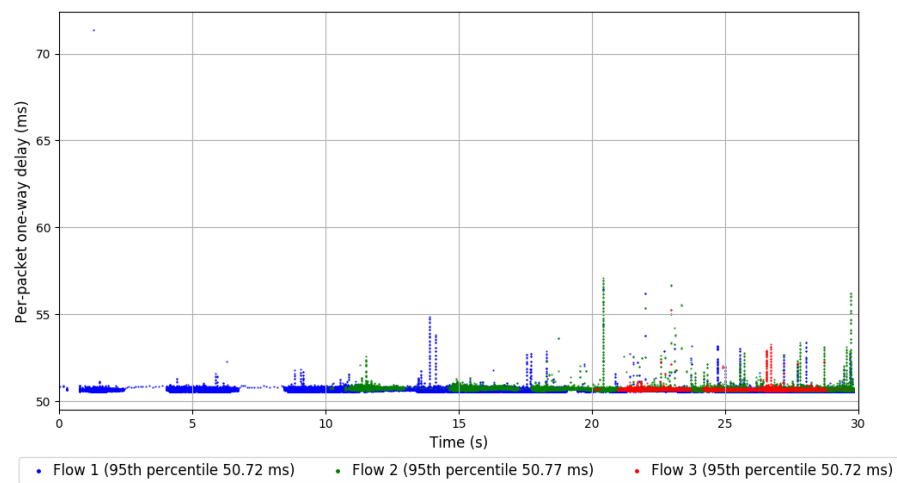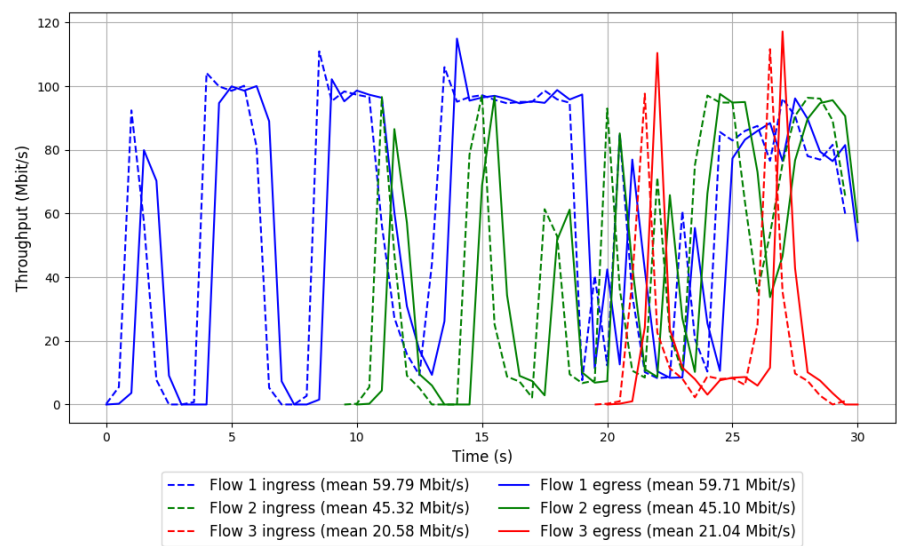Run 4: Report of QUIC Cubic — Data Link

```
Run 5: Statistics of QUIC Cubic

Start at: 2018-09-08 09:48:12
End at: 2018-09-08 09:48:42
Local clock offset: -0.058 ms
Remote clock offset: -0.069 ms


# Below is generated by plot.py at 2018-09-08 12:27:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.48 Mbit/s
95th percentile per-packet one-way delay: 50.737 ms
Loss rate: 0.61%
-- Flow 1:
Average throughput: 59.71 Mbit/s
95th percentile per-packet one-way delay: 50.715 ms
Loss rate: 0.47%
-- Flow 2:
Average throughput: 45.10 Mbit/s
95th percentile per-packet one-way delay: 50.765 ms
Loss rate: 0.98%
-- Flow 3:
Average throughput: 21.04 Mbit/s
95th percentile per-packet one-way delay: 50.724 ms
Loss rate: 0.27%
```
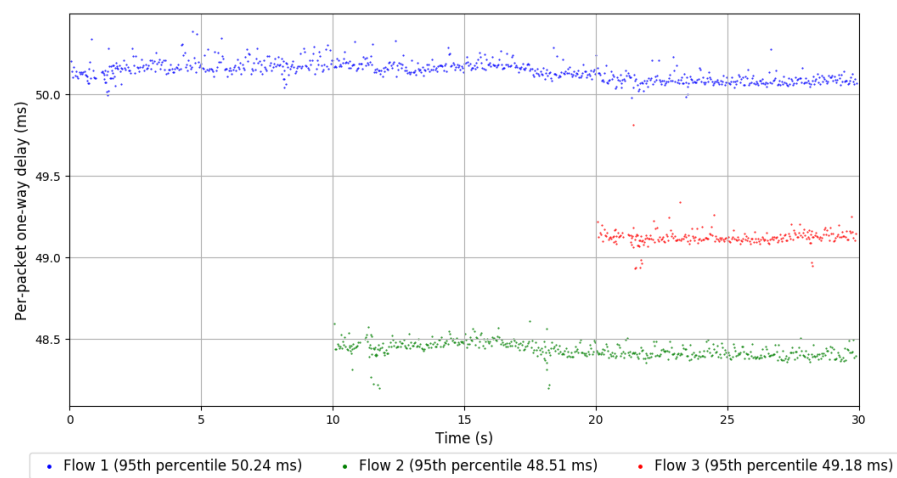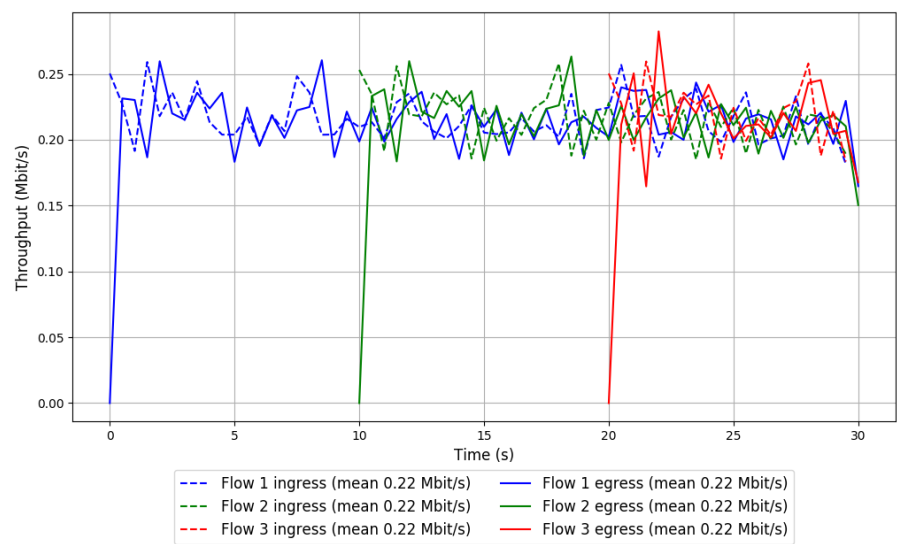
Run 5: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 59.79 Mbit/s) Flow 1 egress (mean 59.71 Mbit/s)
Flow 2 ingress (mean 45.32 Mbit/s) Flow 2 egress (mean 45.10 Mbit/s)
Flow 3 ingress (mean 20.58 Mbit/s) Flow 3 egress (mean 21.04 Mbit/s)

Flow 1 (95th percentile 50.72 ms) Flow 2 (95th percentile 50.77 ms) Flow 3 (95th percentile 50.72 ms)

```
Run 1: Statistics of SCReAM

Start at: 2018-09-08 07:36:17
End at: 2018-09-08 07:36:47
Local clock offset: -0.452 ms
Remote clock offset: -0.226 ms

# Below is generated by plot.py at 2018-09-08 12:27:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 50.209 ms
Loss rate: 0.52%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 50.241 ms
Loss rate: 0.26%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 48.508 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 49.183 ms
Loss rate: 1.09%
```
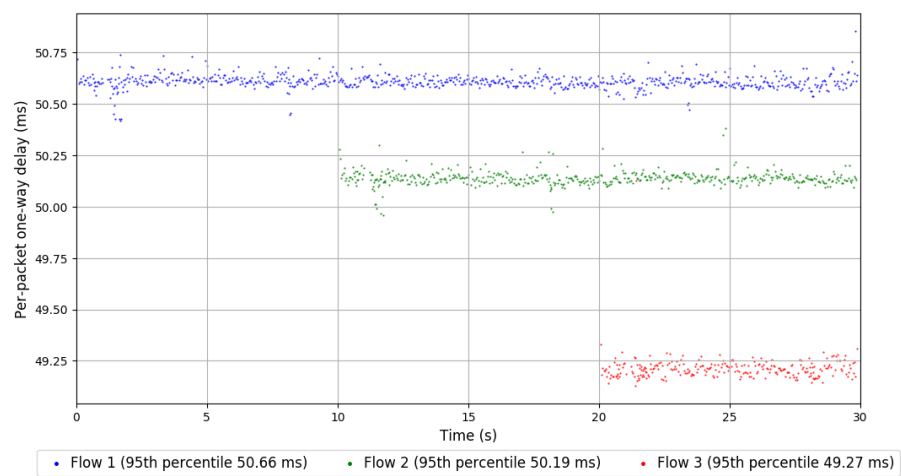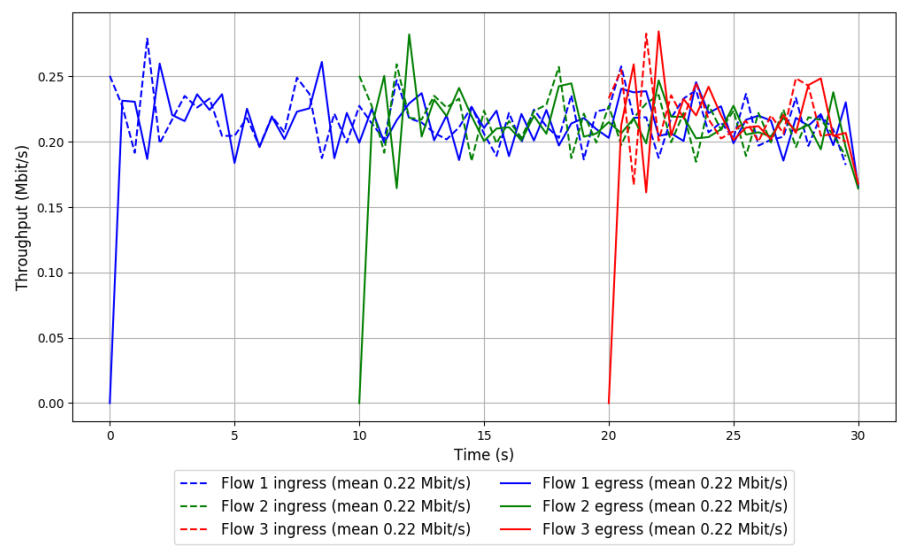
Run 1: Report of SCReAM — Data Link

```
Run 2: Statistics of SCReAM

Start at: 2018-09-08 08:08:06
End at: 2018-09-08 08:08:36
Local clock offset: 0.365 ms
Remote clock offset: -0.034 ms


# Below is generated by plot.py at 2018-09-08 12:27:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 50.643 ms
Loss rate: 0.52%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 50.660 ms
Loss rate: 0.26%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 50.192 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 49.274 ms
Loss rate: 1.08%
```
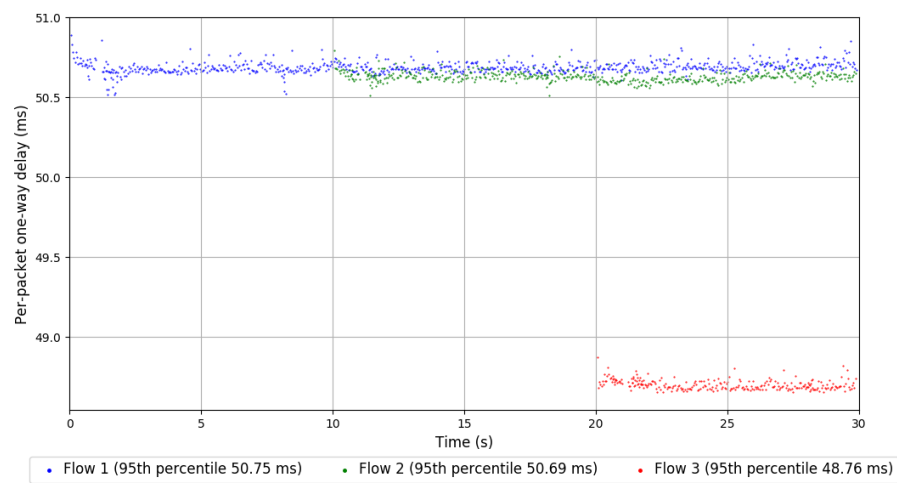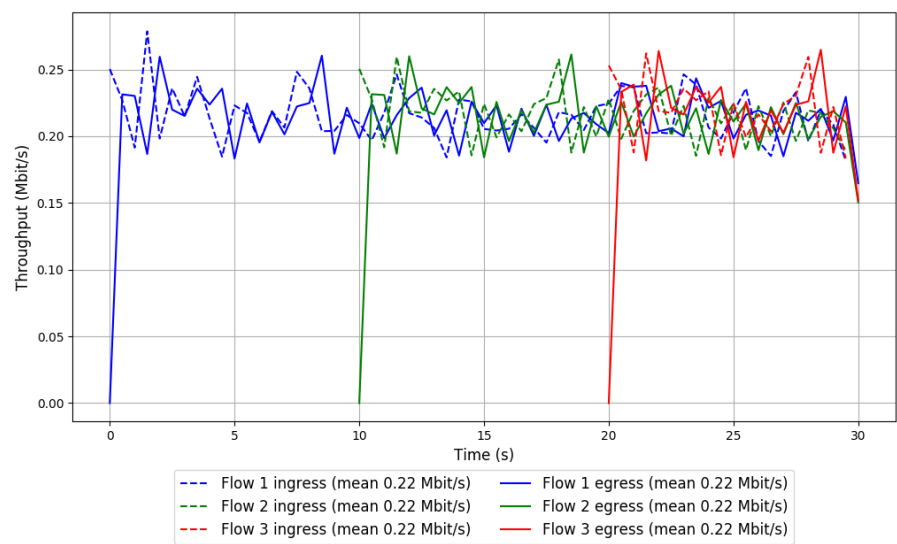
Run 2: Report of SCReAM — Data Link

```
Run 3: Statistics of SCReAM

Start at: 2018-09-08 08:39:55
End at: 2018-09-08 08:40:25
Local clock offset: -0.012 ms
Remote clock offset: 0.015 ms


# Below is generated by plot.py at 2018-09-08 12:27:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 50.735 ms
Loss rate: 0.52%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 50.752 ms
Loss rate: 0.26%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 50.685 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 48.756 ms
Loss rate: 1.08%
```
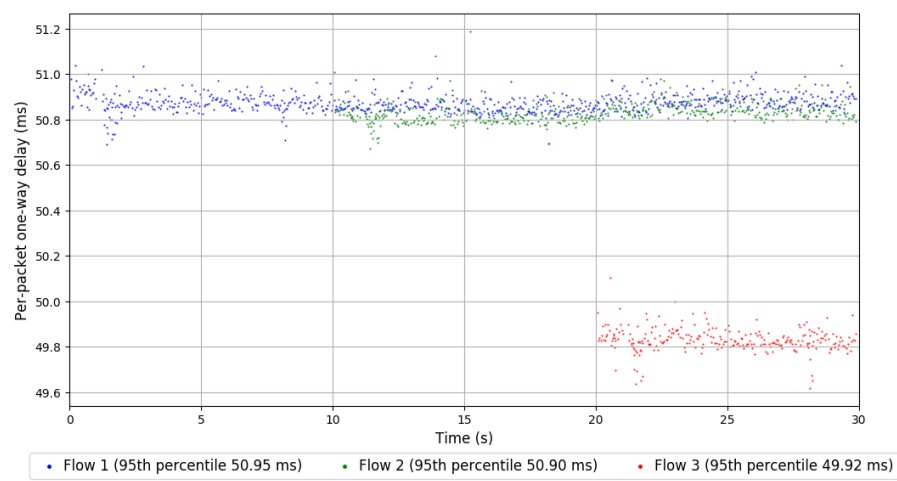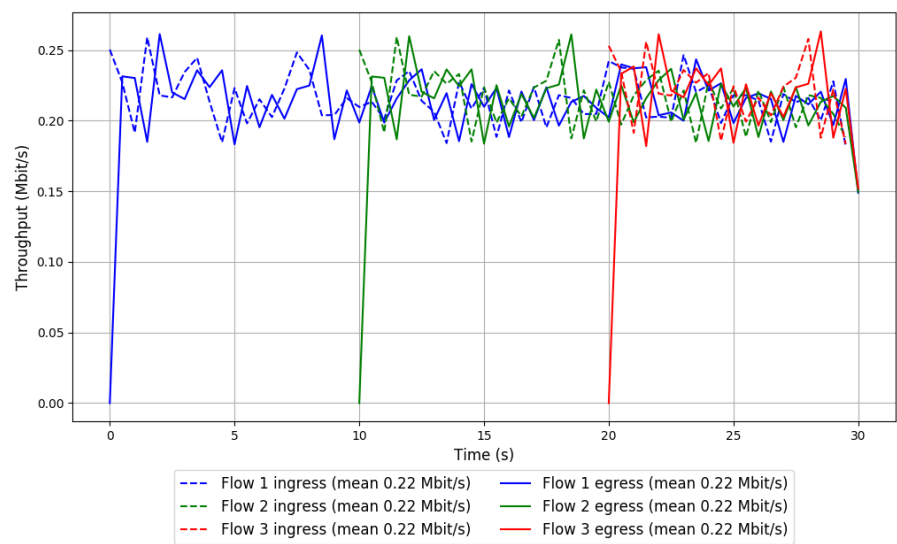
Run 3: Report of SCReAM — Data Link

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

Flow 1 (95th percentile 50.75 ms)   Flow 2 (95th percentile 50.69 ms)   Flow 3 (95th percentile 48.76 ms)

```
Run 4: Statistics of SCReAM

Start at: 2018-09-08 09:11:40
End at: 2018-09-08 09:12:10
Local clock offset: -0.079 ms
Remote clock offset: -0.061 ms

# Below is generated by plot.py at 2018-09-08 12:27:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 50.931 ms
Loss rate: 0.58%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 50.948 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 50.899 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 49.917 ms
Loss rate: 1.09%
```
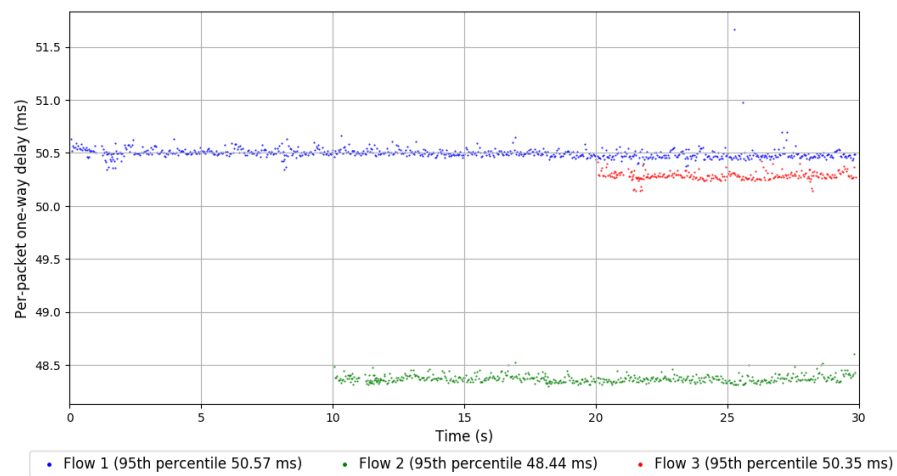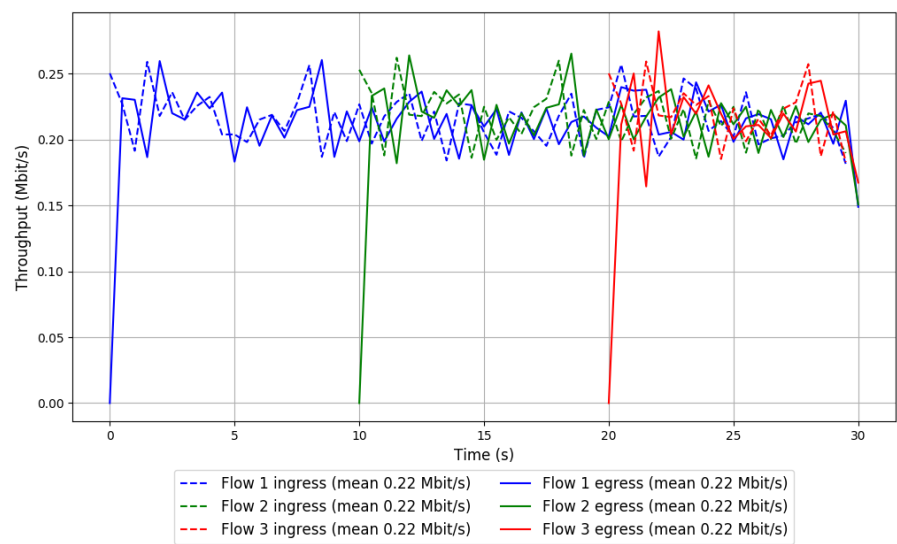
Run 4: Report of SCReAM — Data Link

```
Run 5: Statistics of SCReAM

Start at: 2018-09-08 09:43:29
End at: 2018-09-08 09:43:59
Local clock offset: -0.451 ms
Remote clock offset: -0.085 ms


# Below is generated by plot.py at 2018-09-08 12:27:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 50.544 ms
Loss rate: 0.58%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 50.568 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 48.439 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 50.352 ms
Loss rate: 1.09%
```

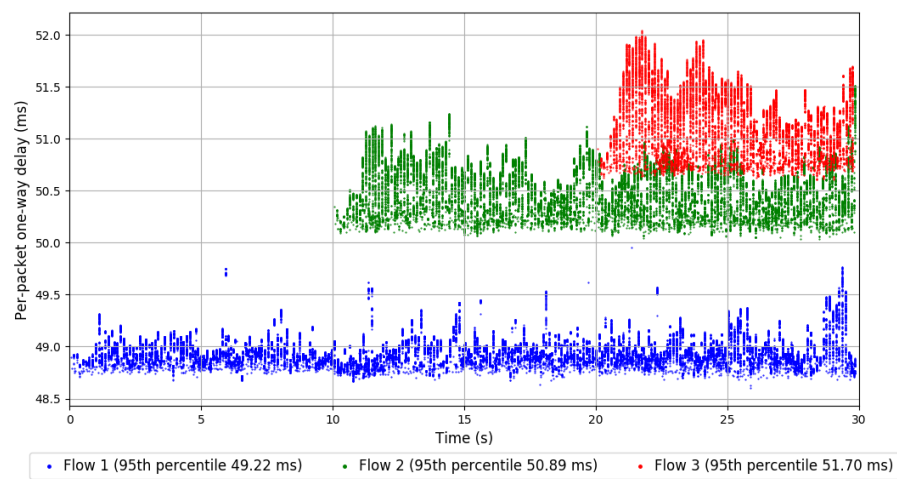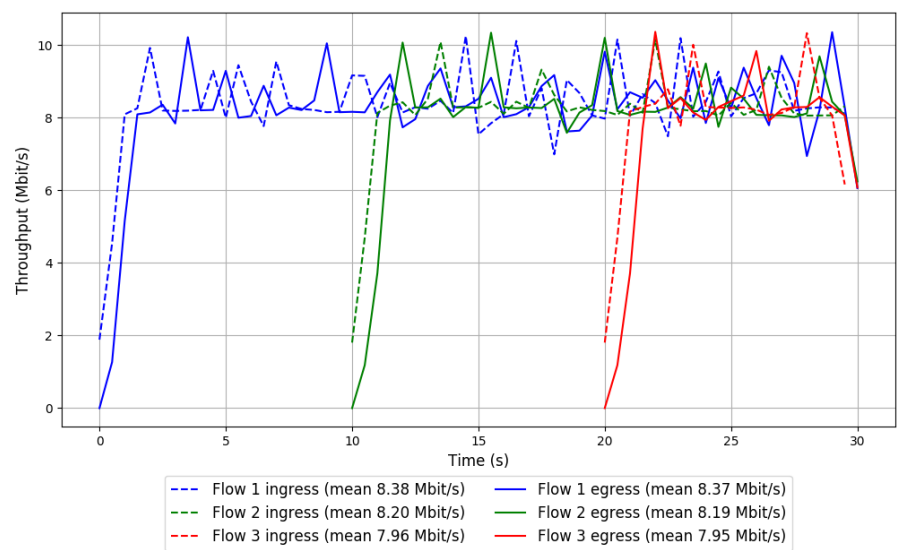## Run 5: Report of SCReAM — Data Link

```
Run 1: Statistics of Sprout

Start at: 2018-09-08 07:47:44
End at: 2018-09-08 07:48:14
Local clock offset: -0.08 ms
Remote clock offset: -0.295 ms


# Below is generated by plot.py at 2018-09-08 12:27:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 16.41 Mbit/s
95th percentile per-packet one-way delay: 51.318 ms
Loss rate: 0.63%
-- Flow 1:
Average throughput: 8.37 Mbit/s
95th percentile per-packet one-way delay: 49.217 ms
Loss rate: 0.41%
-- Flow 2:
Average throughput: 8.19 Mbit/s
95th percentile per-packet one-way delay: 50.893 ms
Loss rate: 0.64%
-- Flow 3:
Average throughput: 7.95 Mbit/s
95th percentile per-packet one-way delay: 51.700 ms
Loss rate: 1.34%
```
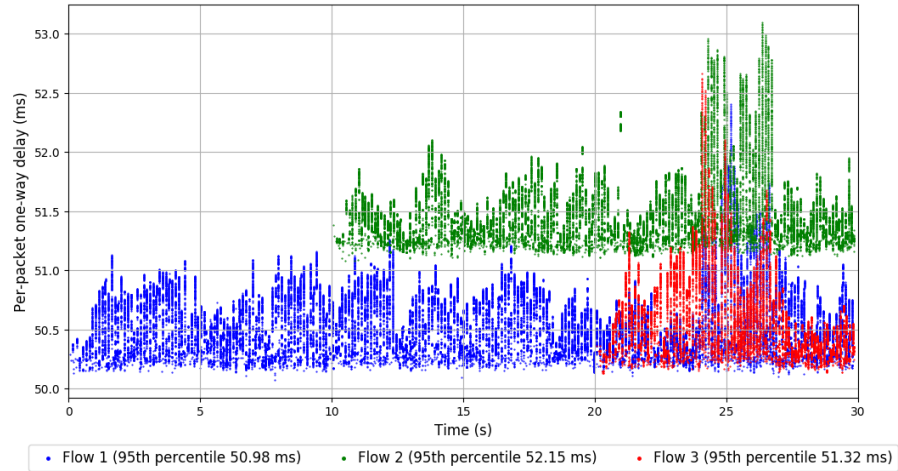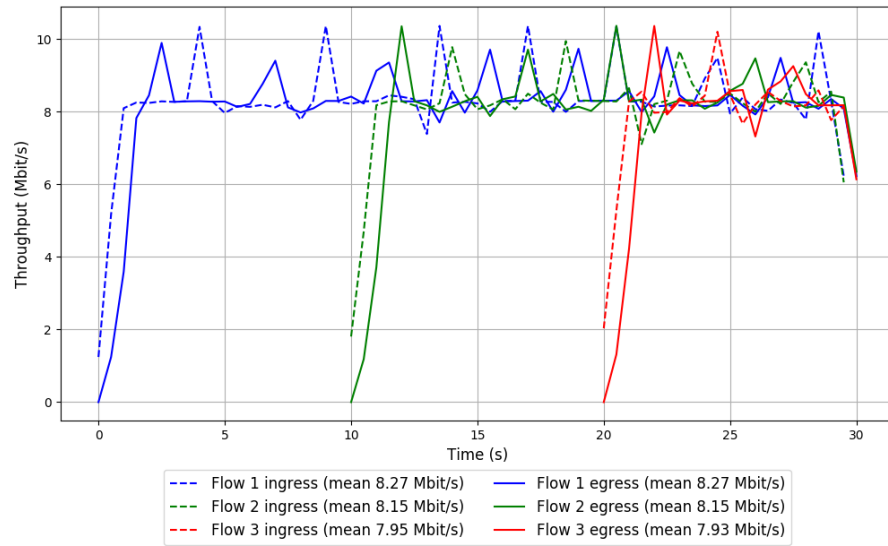
Run 1: Report of Sprout — Data Link

```
Run 2: Statistics of Sprout

Start at: 2018-09-08 08:19:30
End at: 2018-09-08 08:20:00
Local clock offset: 0.384 ms
Remote clock offset: 0.004 ms


# Below is generated by plot.py at 2018-09-08 12:27:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 16.27 Mbit/s
95th percentile per-packet one-way delay: 51.760 ms
Loss rate: 0.59%
-- Flow 1:
Average throughput: 8.27 Mbit/s
95th percentile per-packet one-way delay: 50.983 ms
Loss rate: 0.42%
-- Flow 2:
Average throughput: 8.15 Mbit/s
95th percentile per-packet one-way delay: 52.147 ms
Loss rate: 0.53%
-- Flow 3:
Average throughput: 7.93 Mbit/s
95th percentile per-packet one-way delay: 51.316 ms
Loss rate: 1.28%
```

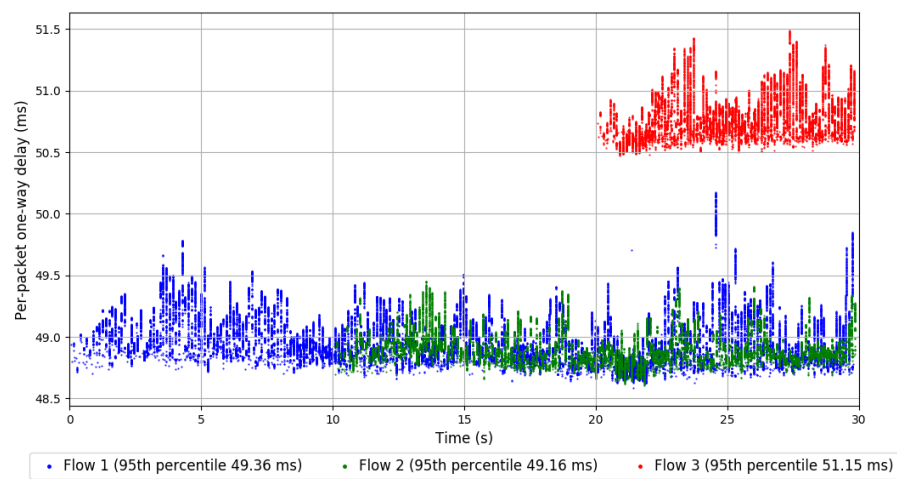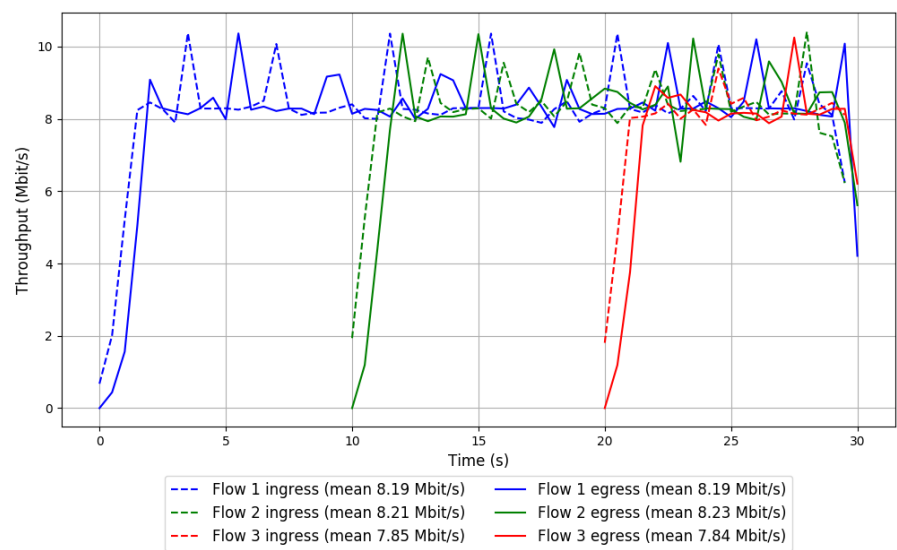## Run 2: Report of Sprout — Data Link

```
Run 3: Statistics of Sprout

Start at: 2018-09-08 08:51:17
End at: 2018-09-08 08:51:47
Local clock offset: -0.022 ms
Remote clock offset: -0.021 ms


# Below is generated by plot.py at 2018-09-08 12:27:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 16.20 Mbit/s
95th percentile per-packet one-way delay: 50.842 ms
Loss rate: 0.51%
-- Flow 1:
Average throughput: 8.19 Mbit/s
95th percentile per-packet one-way delay: 49.360 ms
Loss rate: 0.42%
-- Flow 2:
Average throughput: 8.23 Mbit/s
95th percentile per-packet one-way delay: 49.161 ms
Loss rate: 0.24%
-- Flow 3:
Average throughput: 7.84 Mbit/s
95th percentile per-packet one-way delay: 51.150 ms
Loss rate: 1.33%
```
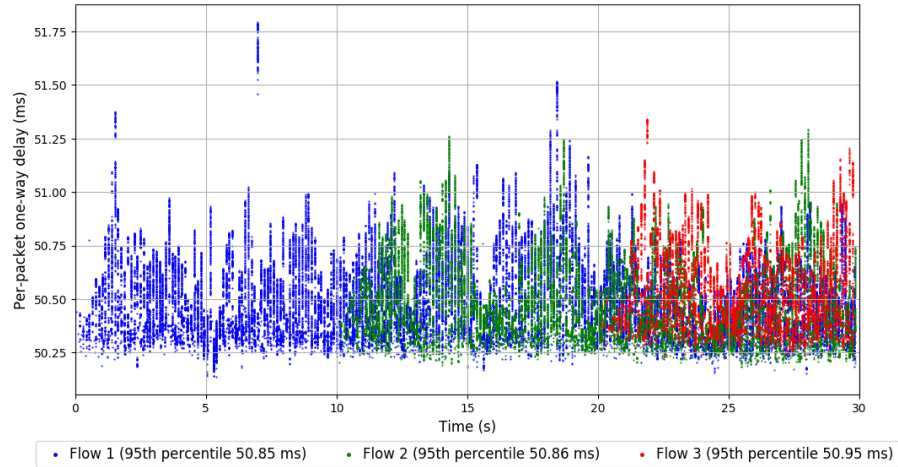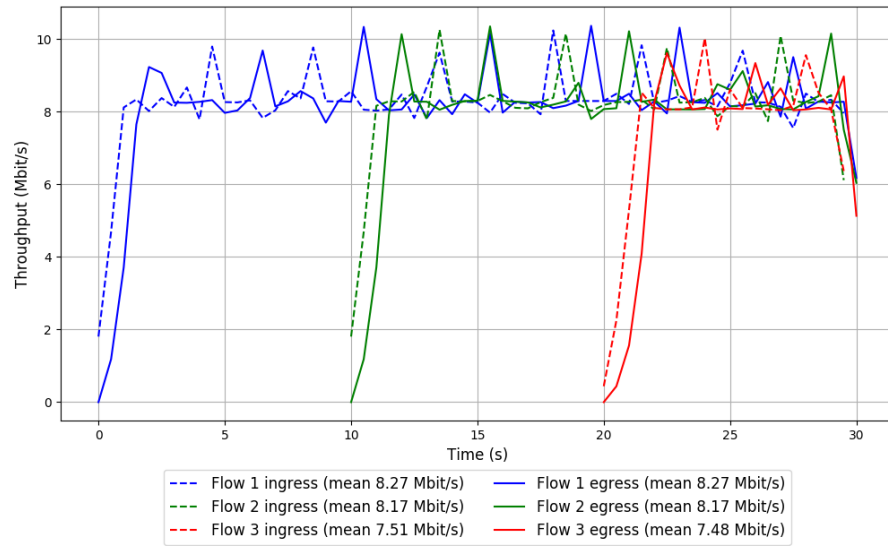
Run 3: Report of Sprout — Data Link

```
Run 4: Statistics of Sprout

Start at: 2018-09-08 09:23:06
End at: 2018-09-08 09:23:36
Local clock offset: -0.452 ms
Remote clock offset: -0.094 ms


# Below is generated by plot.py at 2018-09-08 12:27:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 16.13 Mbit/s
95th percentile per-packet one-way delay: 50.879 ms
Loss rate: 0.56%
-- Flow 1:
Average throughput: 8.27 Mbit/s
95th percentile per-packet one-way delay: 50.849 ms
Loss rate: 0.42%
-- Flow 2:
Average throughput: 8.17 Mbit/s
95th percentile per-packet one-way delay: 50.863 ms
Loss rate: 0.32%
-- Flow 3:
Average throughput: 7.48 Mbit/s
95th percentile per-packet one-way delay: 50.954 ms
Loss rate: 1.58%
```
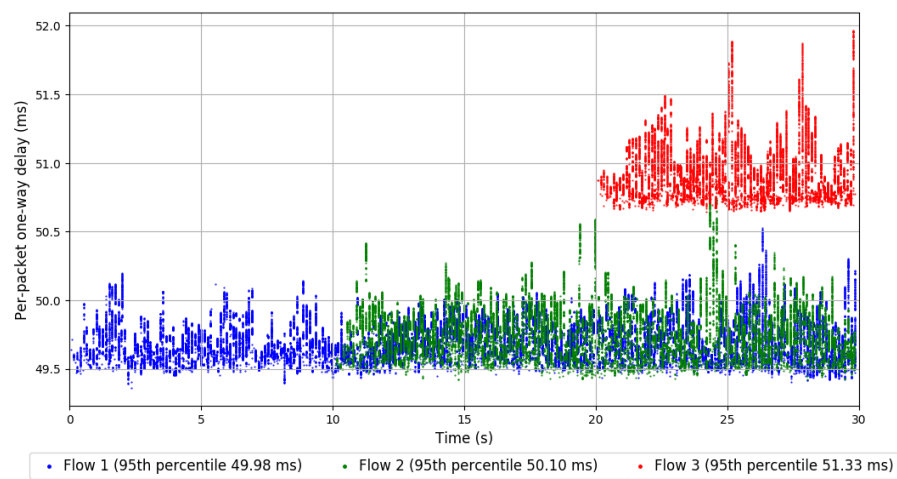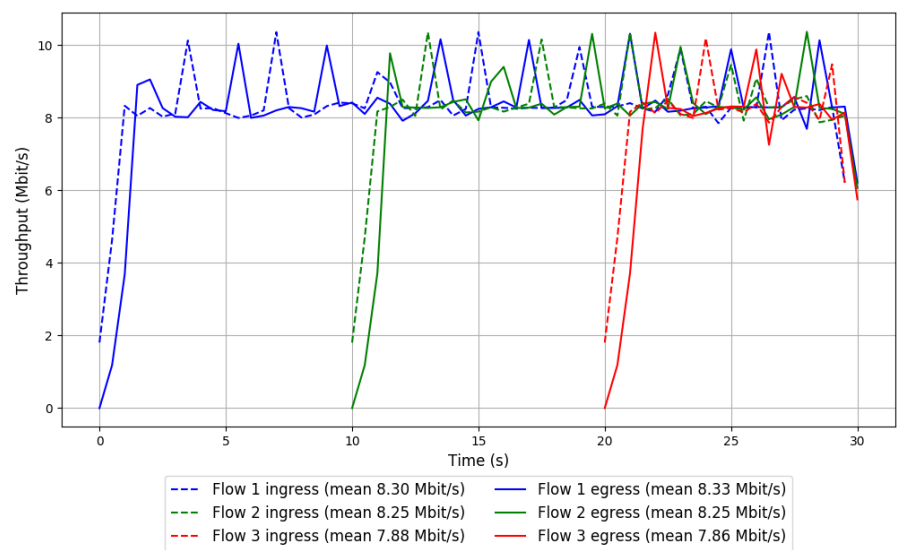
Run 4: Report of Sprout — Data Link

```
Run 5: Statistics of Sprout

Start at: 2018-09-08 09:54:38
End at: 2018-09-08 09:55:08
Local clock offset: -0.083 ms
Remote clock offset: -0.107 ms


# Below is generated by plot.py at 2018-09-08 12:27:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 16.38 Mbit/s
95th percentile per-packet one-way delay: 50.994 ms
Loss rate: 0.42%
-- Flow 1:
Average throughput: 8.33 Mbit/s
95th percentile per-packet one-way delay: 49.978 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 8.25 Mbit/s
95th percentile per-packet one-way delay: 50.102 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 7.86 Mbit/s
95th percentile per-packet one-way delay: 51.326 ms
Loss rate: 1.35%
```

Run 5: Report of Sprout — Data Link

- - - Flow 1 ingress (mean 8.30 Mbit/s) —— Flow 1 egress (mean 8.33 Mbit/s)
- - - Flow 2 ingress (mean 8.25 Mbit/s) —— Flow 2 egress (mean 8.25 Mbit/s)
- - - Flow 3 ingress (mean 7.88 Mbit/s) —— Flow 3 egress (mean 7.86 Mbit/s)

• Flow 1 (95th percentile 49.98 ms)   • Flow 2 (95th percentile 50.10 ms)   • Flow 3 (95th percentile 51.33 ms)
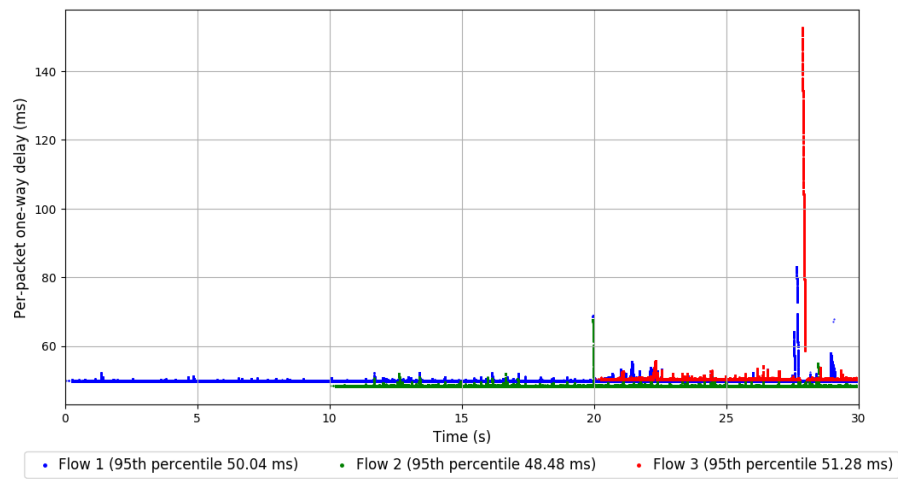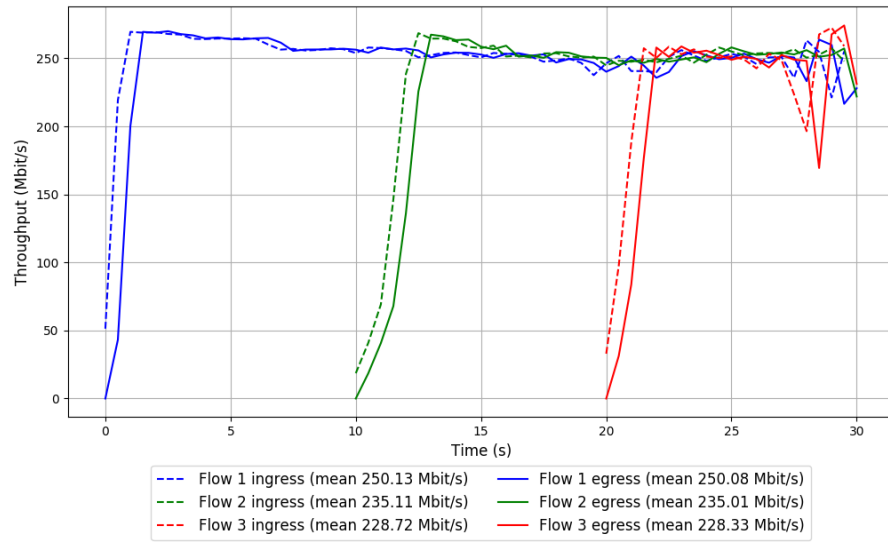
```
Run 1: Statistics of TaoVA-100x

Start at: 2018-09-08 07:37:27
End at: 2018-09-08 07:37:57
Local clock offset: -0.451 ms
Remote clock offset: -0.258 ms


# Below is generated by plot.py at 2018-09-08 12:36:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 481.83 Mbit/s
95th percentile per-packet one-way delay: 50.347 ms
Loss rate: 0.55%
-- Flow 1:
Average throughput: 250.08 Mbit/s
95th percentile per-packet one-way delay: 50.036 ms
Loss rate: 0.36%
-- Flow 2:
Average throughput: 235.01 Mbit/s
95th percentile per-packet one-way delay: 48.483 ms
Loss rate: 0.54%
-- Flow 3:
Average throughput: 228.33 Mbit/s
95th percentile per-packet one-way delay: 51.282 ms
Loss rate: 1.18%
```

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

- - - Flow 1 ingress (mean 250.13 Mbit/s) ——— Flow 1 egress (mean 250.08 Mbit/s)
- - - Flow 2 ingress (mean 235.11 Mbit/s) ——— Flow 2 egress (mean 235.01 Mbit/s)
- - - Flow 3 ingress (mean 228.72 Mbit/s) ——— Flow 3 egress (mean 228.33 Mbit/s)

• Flow 1 (95th percentile 50.04 ms)   • Flow 2 (95th percentile 48.48 ms)   • Flow 3 (95th percentile 51.28 ms)

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

Start at: 2018-09-08 08:09:16
End at: 2018-09-08 08:09:46
Local clock offset: 0.385 ms
Remote clock offset: 0.008 ms


# Below is generated by plot.py at 2018-09-08 12:37:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 482.51 Mbit/s
95th percentile per-packet one-way delay: 51.280 ms
Loss rate: 0.51%
-- Flow 1:
Average throughput: 241.52 Mbit/s
95th percentile per-packet one-way delay: 50.780 ms
Loss rate: 0.37%
-- Flow 2:
Average throughput: 241.33 Mbit/s
95th percentile per-packet one-way delay: 51.355 ms
Loss rate: 0.44%
-- Flow 3:
Average throughput: 243.90 Mbit/s
95th percentile per-packet one-way delay: 51.303 ms
Loss rate: 1.08%
```
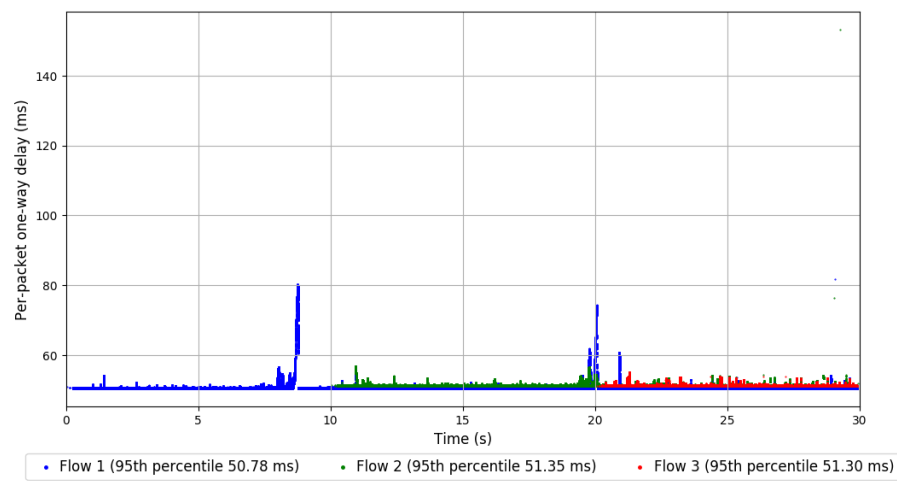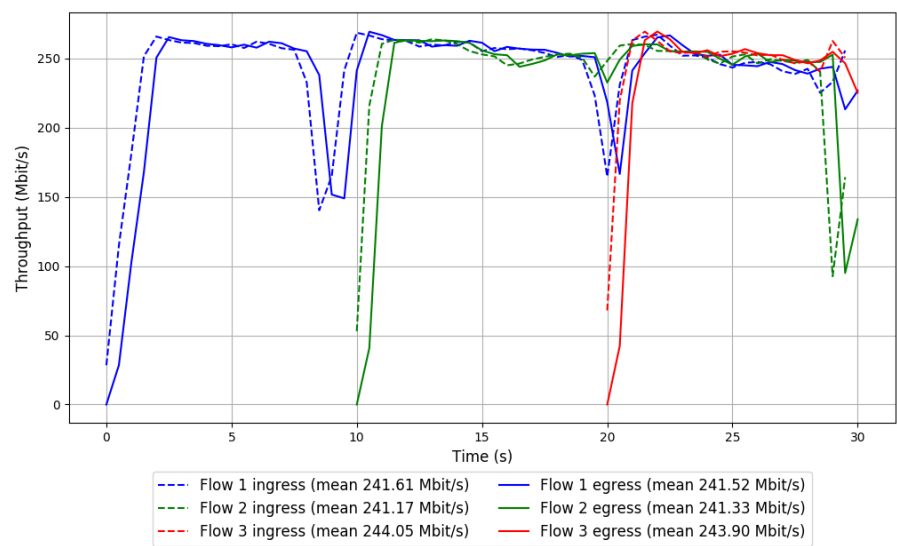
Run 2: Report of TaoVA-100x — Data Link
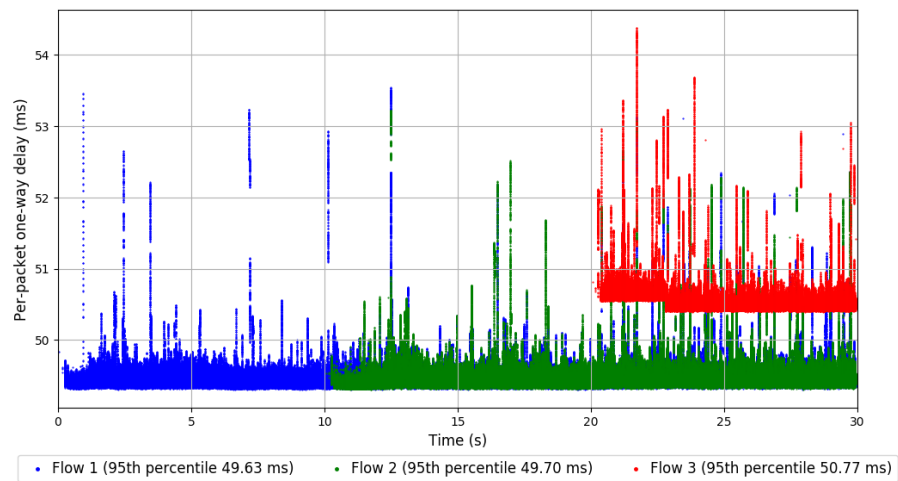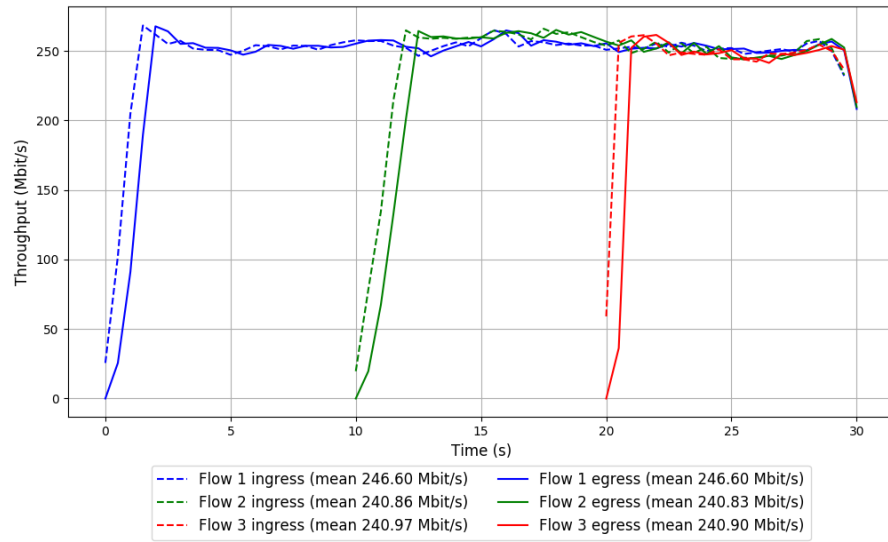

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```
Run 3: Statistics of TaoVA-100x

Start at: 2018-09-08 08:41:05
End at: 2018-09-08 08:41:35
Local clock offset: -0.012 ms
Remote clock offset: -0.017 ms


# Below is generated by plot.py at 2018-09-08 12:37:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 486.28 Mbit/s
95th percentile per-packet one-way delay: 50.600 ms
Loss rate: 0.51%
-- Flow 1:
Average throughput: 246.60 Mbit/s
95th percentile per-packet one-way delay: 49.631 ms
Loss rate: 0.33%
-- Flow 2:
Average throughput: 240.83 Mbit/s
95th percentile per-packet one-way delay: 49.704 ms
Loss rate: 0.51%
-- Flow 3:
Average throughput: 240.90 Mbit/s
95th percentile per-packet one-way delay: 50.770 ms
Loss rate: 1.03%
```

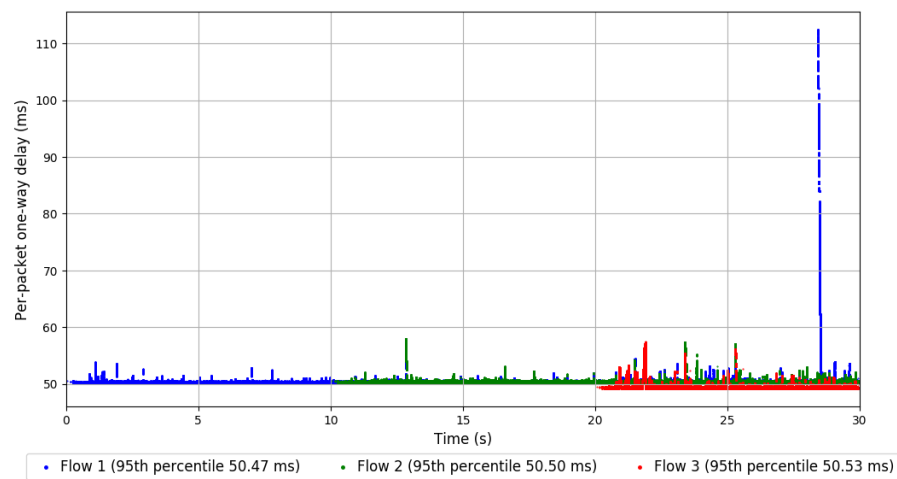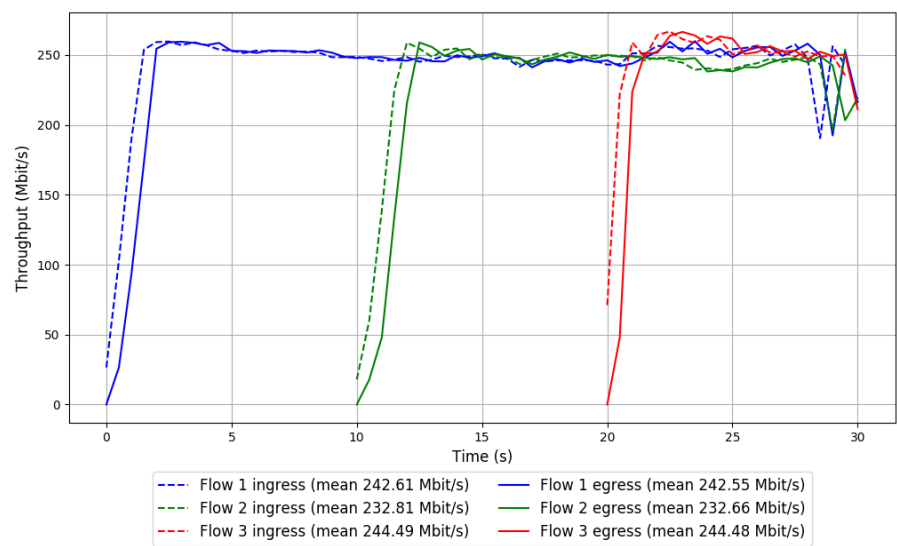# Run 3: Report of TaoVA-100x — Data Link

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

Start at: 2018-09-08 09:12:50
End at: 2018-09-08 09:13:20
Local clock offset: -0.462 ms
Remote clock offset: -0.061 ms

# Below is generated by plot.py at 2018-09-08 12:38:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 478.07 Mbit/s
95th percentile per-packet one-way delay: 50.489 ms
Loss rate: 0.53%
-- Flow 1:
Average throughput: 242.55 Mbit/s
95th percentile per-packet one-way delay: 50.469 ms
Loss rate: 0.36%
-- Flow 2:
Average throughput: 232.66 Mbit/s
95th percentile per-packet one-way delay: 50.502 ms
Loss rate: 0.57%
-- Flow 3:
Average throughput: 244.48 Mbit/s
95th percentile per-packet one-way delay: 50.527 ms
Loss rate: 0.99%
```

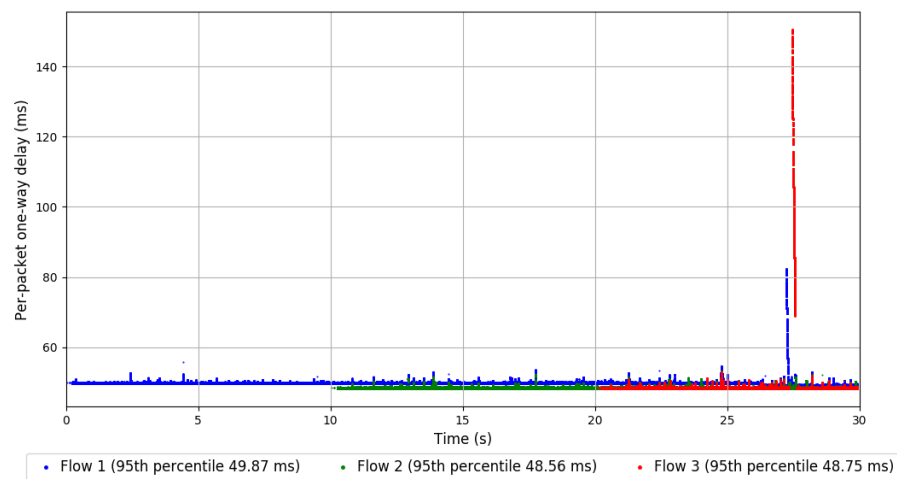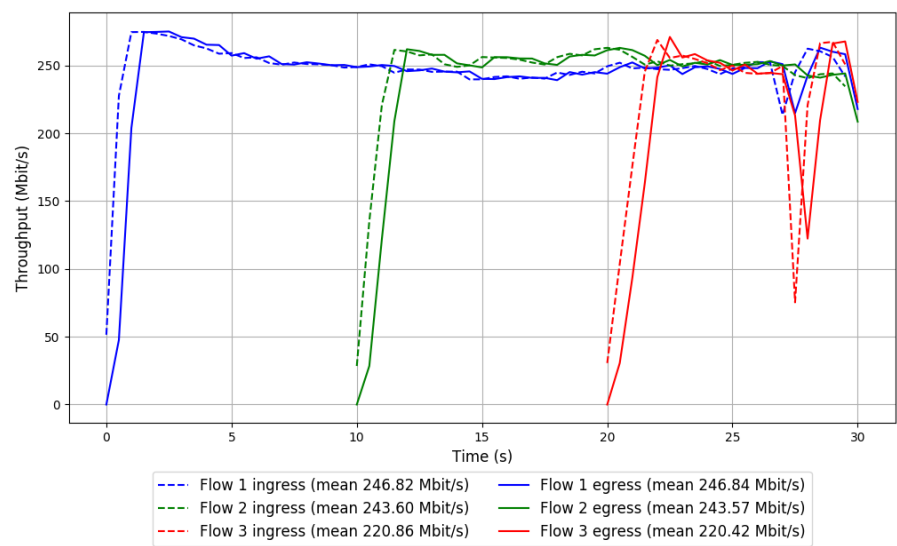Run 4: Report of TaoVA-100x — Data Link

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

Start at: 2018-09-08 09:44:39
End at: 2018-09-08 09:45:09
Local clock offset: -0.443 ms
Remote clock offset: -0.097 ms


# Below is generated by plot.py at 2018-09-08 12:39:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 481.63 Mbit/s
95th percentile per-packet one-way delay: 49.824 ms
Loss rate: 0.52%
-- Flow 1:
Average throughput: 246.84 Mbit/s
95th percentile per-packet one-way delay: 49.870 ms
Loss rate: 0.33%
-- Flow 2:
Average throughput: 243.57 Mbit/s
95th percentile per-packet one-way delay: 48.556 ms
Loss rate: 0.51%
-- Flow 3:
Average throughput: 220.42 Mbit/s
95th percentile per-packet one-way delay: 48.753 ms
Loss rate: 1.19%
```

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

Flow 1 ingress (mean 246.82 Mbit/s) --- Flow 1 egress (mean 246.84 Mbit/s)
Flow 2 ingress (mean 243.60 Mbit/s) --- Flow 2 egress (mean 243.57 Mbit/s)
Flow 3 ingress (mean 220.86 Mbit/s) --- Flow 3 egress (mean 220.42 Mbit/s)

Flow 1 (95th percentile 49.87 ms) Flow 2 (95th percentile 48.56 ms) Flow 3 (95th percentile 48.75 ms)
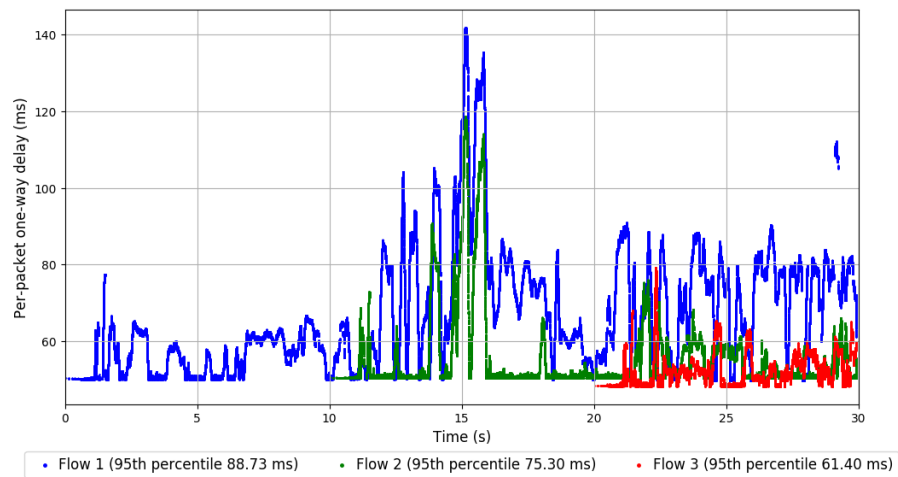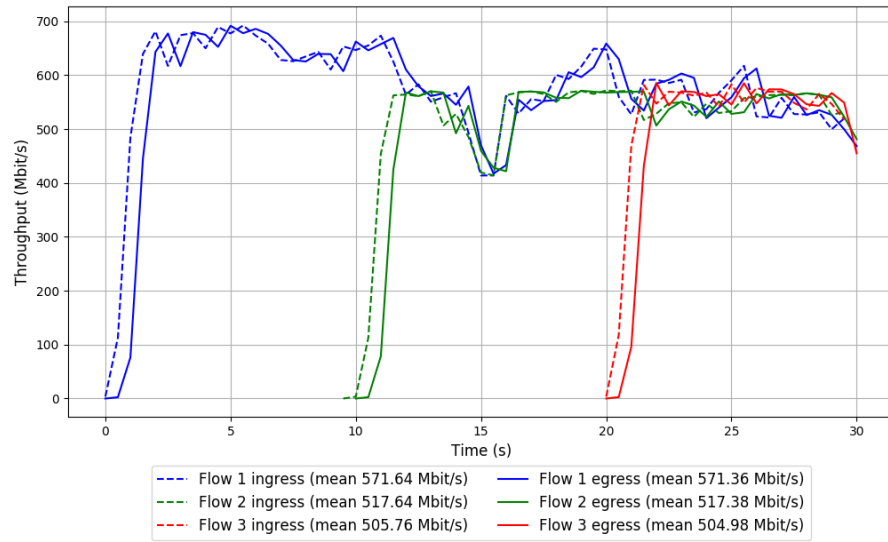
```
Run 1: Statistics of TCP Vegas

Start at: 2018-09-08 07:43:32
End at: 2018-09-08 07:44:02
Local clock offset: -0.452 ms
Remote clock offset: -0.266 ms


# Below is generated by plot.py at 2018-09-08 12:43:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1082.49 Mbit/s
95th percentile per-packet one-way delay: 85.660 ms
Loss rate: 0.56%
-- Flow 1:
Average throughput: 571.36 Mbit/s
95th percentile per-packet one-way delay: 88.728 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 517.38 Mbit/s
95th percentile per-packet one-way delay: 75.295 ms
Loss rate: 0.56%
-- Flow 3:
Average throughput: 504.98 Mbit/s
95th percentile per-packet one-way delay: 61.399 ms
Loss rate: 1.14%
```

Run 1: Report of TCP Vegas — Data Link

- - - Flow 1 ingress (mean 571.64 Mbit/s)   —— Flow 1 egress (mean 571.36 Mbit/s)
- - - Flow 2 ingress (mean 517.64 Mbit/s)   —— Flow 2 egress (mean 517.38 Mbit/s)
- - - Flow 3 ingress (mean 505.76 Mbit/s)   —— Flow 3 egress (mean 504.98 Mbit/s)

• Flow 1 (95th percentile 88.73 ms)   • Flow 2 (95th percentile 75.30 ms)   • Flow 3 (95th percentile 61.40 ms)
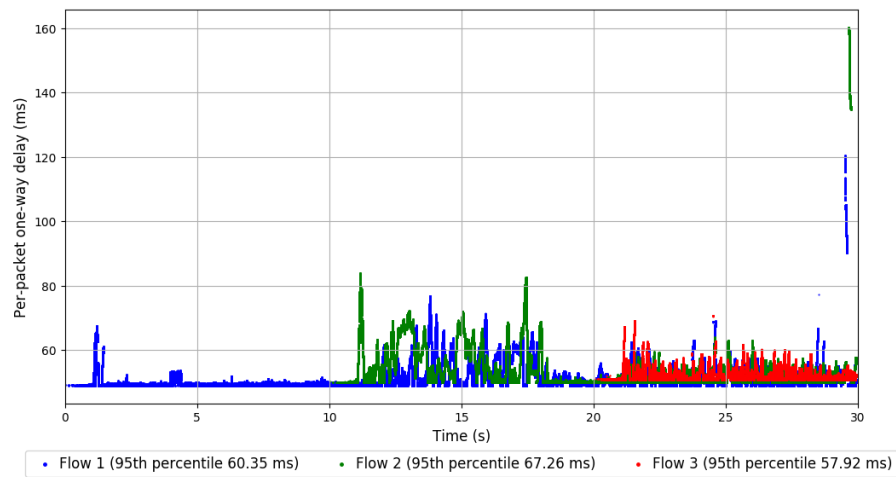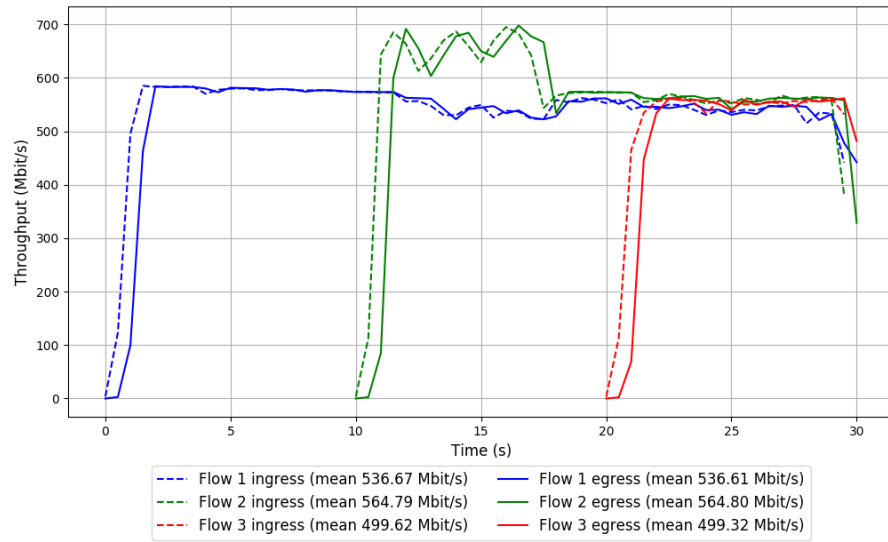
```
Run 2: Statistics of TCP Vegas

Start at: 2018-09-08 08:15:20
End at: 2018-09-08 08:15:50
Local clock offset: 0.391 ms
Remote clock offset: -0.004 ms


# Below is generated by plot.py at 2018-09-08 12:47:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1077.33 Mbit/s
95th percentile per-packet one-way delay: 63.014 ms
Loss rate: 0.51%
-- Flow 1:
Average throughput: 536.61 Mbit/s
95th percentile per-packet one-way delay: 60.350 ms
Loss rate: 0.34%
-- Flow 2:
Average throughput: 564.80 Mbit/s
95th percentile per-packet one-way delay: 67.262 ms
Loss rate: 0.50%
-- Flow 3:
Average throughput: 499.32 Mbit/s
95th percentile per-packet one-way delay: 57.922 ms
Loss rate: 1.07%
```

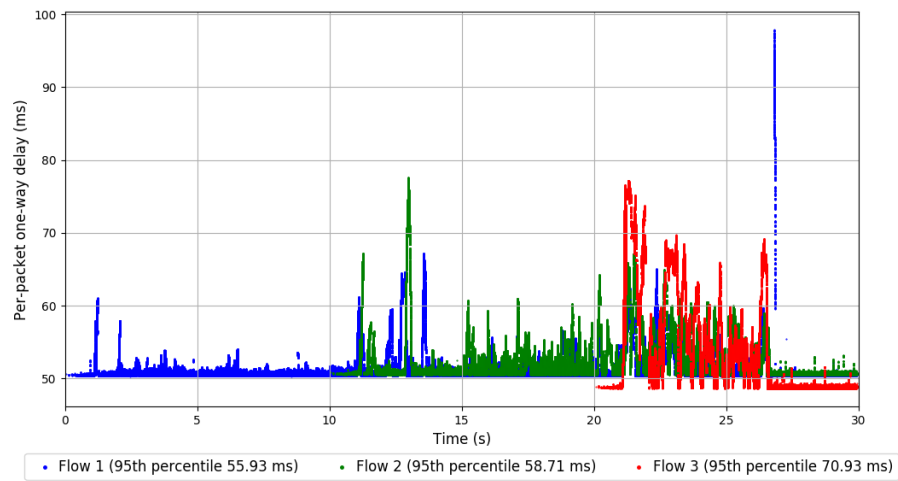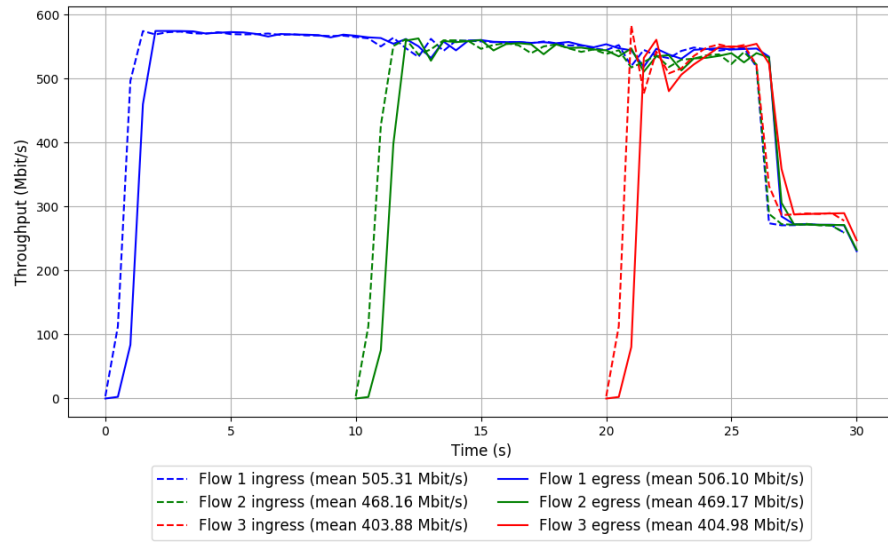Run 2: Report of TCP Vegas — Data Link

```
Run 3: Statistics of TCP Vegas

Start at: 2018-09-08 08:47:11
End at: 2018-09-08 08:47:41
Local clock offset: -0.02 ms
Remote clock offset: -0.028 ms


# Below is generated by plot.py at 2018-09-08 12:47:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 951.95 Mbit/s
95th percentile per-packet one-way delay: 60.756 ms
Loss rate: 0.29%
-- Flow 1:
Average throughput: 506.10 Mbit/s
95th percentile per-packet one-way delay: 55.928 ms
Loss rate: 0.18%
-- Flow 2:
Average throughput: 469.17 Mbit/s
95th percentile per-packet one-way delay: 58.714 ms
Loss rate: 0.29%
-- Flow 3:
Average throughput: 404.98 Mbit/s
95th percentile per-packet one-way delay: 70.931 ms
Loss rate: 0.71%
```

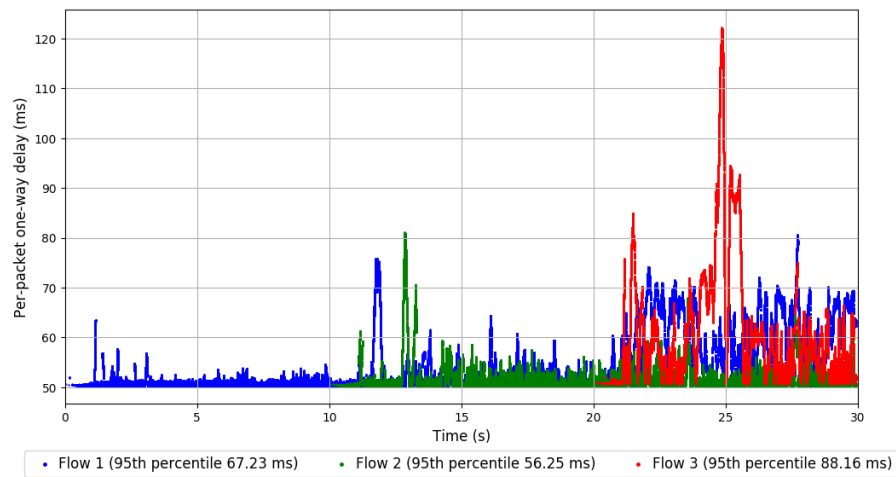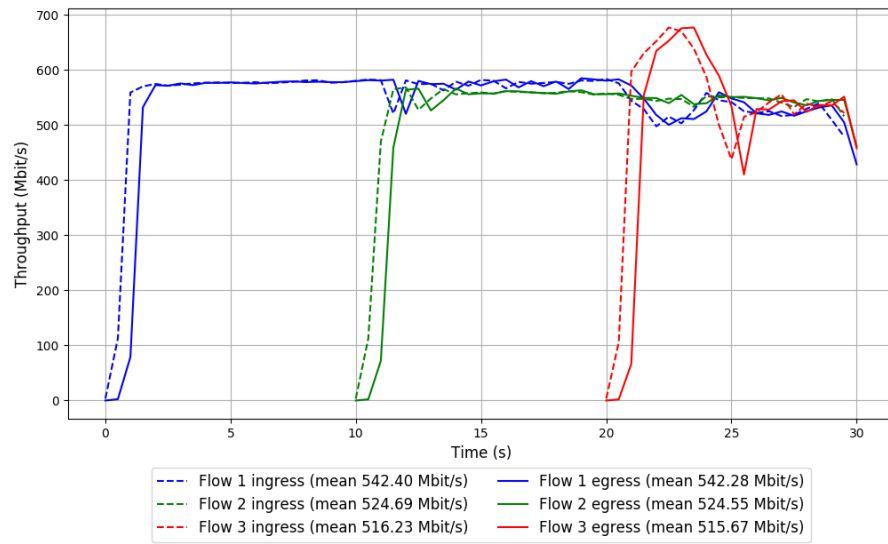Run 3: Report of TCP Vegas — Data Link

```
Run 4: Statistics of TCP Vegas

Start at: 2018-09-08 09:18:54
End at: 2018-09-08 09:19:24
Local clock offset: -0.085 ms
Remote clock offset: -0.095 ms


# Below is generated by plot.py at 2018-09-08 12:56:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1061.30 Mbit/s
95th percentile per-packet one-way delay: 68.042 ms
Loss rate: 0.54%
-- Flow 1:
Average throughput: 542.28 Mbit/s
95th percentile per-packet one-way delay: 67.230 ms
Loss rate: 0.36%
-- Flow 2:
Average throughput: 524.55 Mbit/s
95th percentile per-packet one-way delay: 56.248 ms
Loss rate: 0.53%
-- Flow 3:
Average throughput: 515.67 Mbit/s
95th percentile per-packet one-way delay: 88.159 ms
Loss rate: 1.12%
```

Run 4: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 542.40 Mbit/s) --- Flow 1 egress (mean 542.28 Mbit/s)
Flow 2 ingress (mean 524.69 Mbit/s) --- Flow 2 egress (mean 524.55 Mbit/s)
Flow 3 ingress (mean 516.23 Mbit/s) --- Flow 3 egress (mean 515.67 Mbit/s)

Flow 1 (95th percentile 67.23 ms)   Flow 2 (95th percentile 56.25 ms)   Flow 3 (95th percentile 88.16 ms)
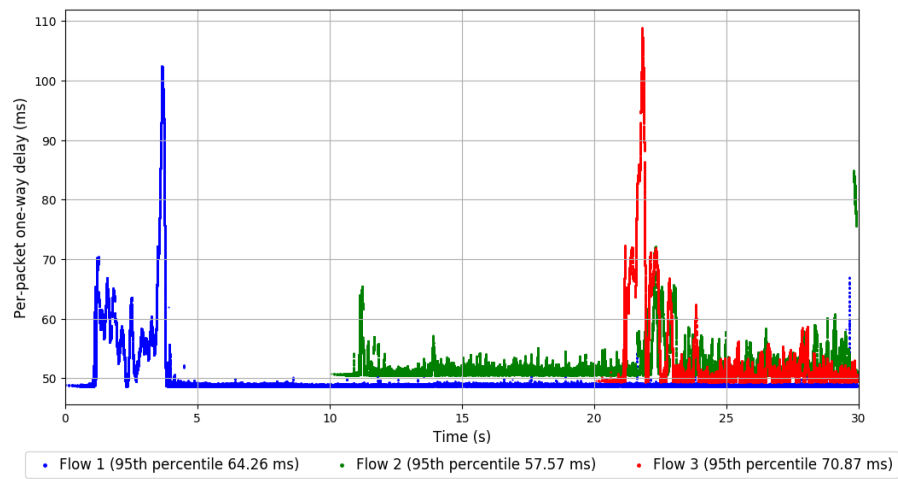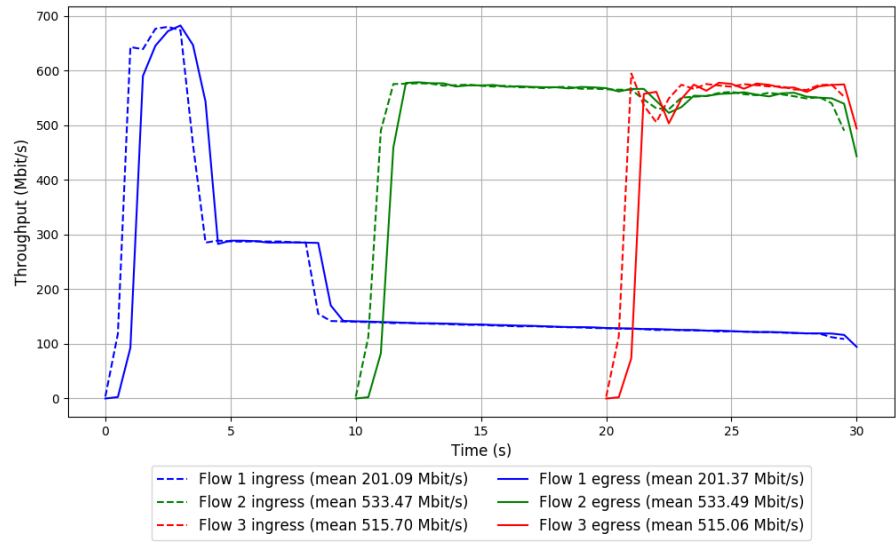
```
Run 5: Statistics of TCP Vegas

Start at: 2018-09-08 09:50:44
End at: 2018-09-08 09:51:14
Local clock offset: -0.081 ms
Remote clock offset: -0.114 ms


# Below is generated by plot.py at 2018-09-08 12:56:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 726.21 Mbit/s
95th percentile per-packet one-way delay: 64.083 ms
Loss rate: 0.57%
-- Flow 1:
Average throughput: 201.37 Mbit/s
95th percentile per-packet one-way delay: 64.256 ms
Loss rate: 0.19%
-- Flow 2:
Average throughput: 533.49 Mbit/s
95th percentile per-packet one-way delay: 57.571 ms
Loss rate: 0.50%
-- Flow 3:
Average throughput: 515.06 Mbit/s
95th percentile per-packet one-way delay: 70.872 ms
Loss rate: 1.13%
```

Run 5: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 201.09 Mbit/s)   Flow 1 egress (mean 201.37 Mbit/s)
Flow 2 ingress (mean 533.47 Mbit/s)   Flow 2 egress (mean 533.49 Mbit/s)
Flow 3 ingress (mean 515.70 Mbit/s)   Flow 3 egress (mean 515.06 Mbit/s)

Flow 1 (95th percentile 64.26 ms)   Flow 2 (95th percentile 57.57 ms)   Flow 3 (95th percentile 70.87 ms)

```
Run 1: Statistics of Verus

Start at: 2018-09-08 07:39:21
End at: 2018-09-08 07:39:51
Local clock offset: -0.09 ms
Remote clock offset: -0.24 ms

# Below is generated by plot.py at 2018-09-08 12:56:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 312.86 Mbit/s
95th percentile per-packet one-way delay: 148.921 ms
Loss rate: 0.97%
-- Flow 1:
Average throughput: 187.72 Mbit/s
95th percentile per-packet one-way delay: 159.099 ms
Loss rate: 1.14%
-- Flow 2:
Average throughput: 151.18 Mbit/s
95th percentile per-packet one-way delay: 86.694 ms
Loss rate: 0.49%
-- Flow 3:
Average throughput: 77.98 Mbit/s
95th percentile per-packet one-way delay: 67.124 ms
Loss rate: 1.61%
```
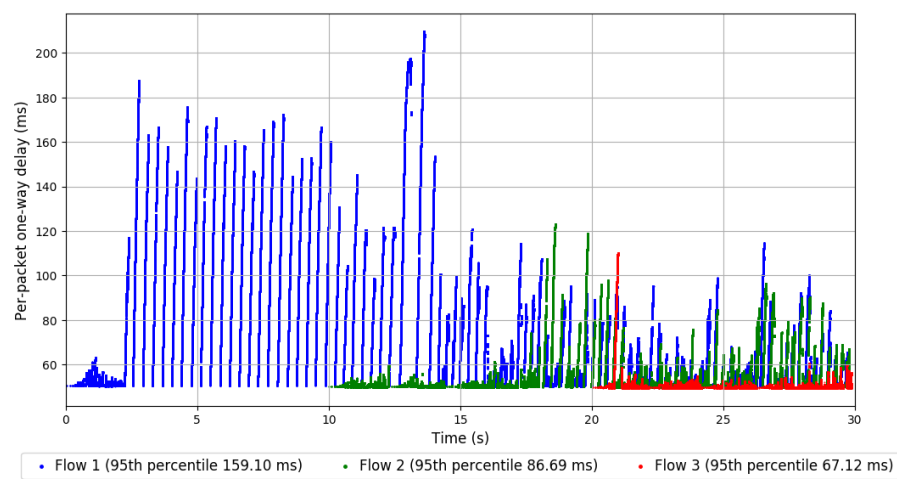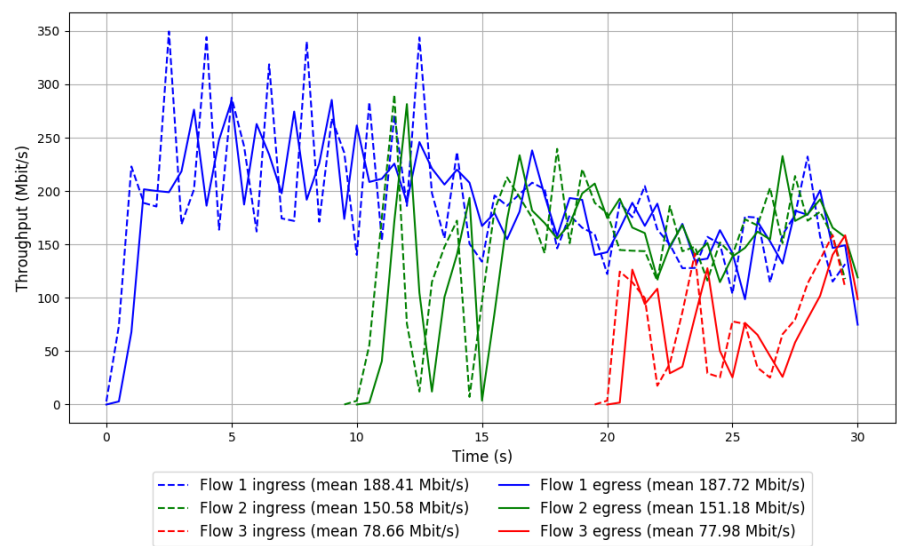
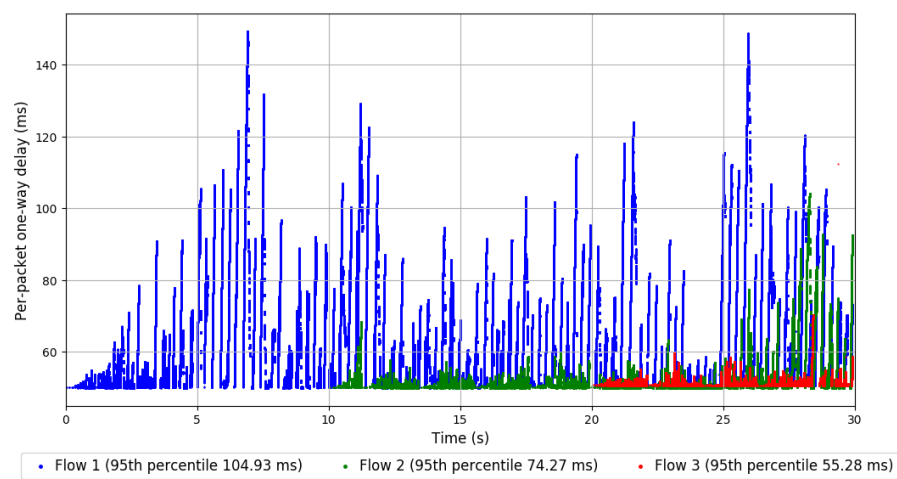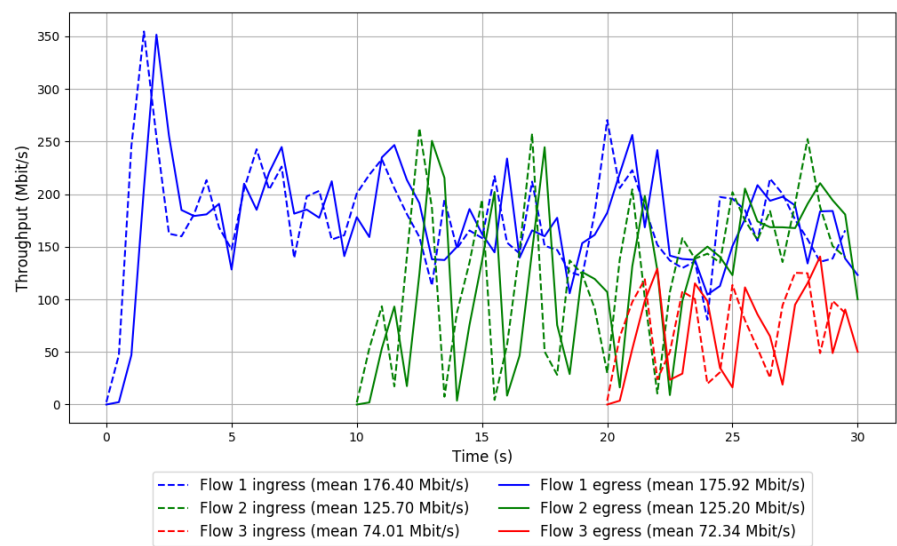# Run 1: Report of Verus — Data Link

```
Run 2: Statistics of Verus

Start at: 2018-09-08 08:11:11
End at: 2018-09-08 08:11:41
Local clock offset: 0.014 ms
Remote clock offset: 0.013 ms


# Below is generated by plot.py at 2018-09-08 12:56:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 283.00 Mbit/s
95th percentile per-packet one-way delay: 99.803 ms
Loss rate: 0.78%
-- Flow 1:
Average throughput: 175.92 Mbit/s
95th percentile per-packet one-way delay: 104.929 ms
Loss rate: 0.40%
-- Flow 2:
Average throughput: 125.20 Mbit/s
95th percentile per-packet one-way delay: 74.267 ms
Loss rate: 0.91%
-- Flow 3:
Average throughput: 72.34 Mbit/s
95th percentile per-packet one-way delay: 55.284 ms
Loss rate: 3.07%
```
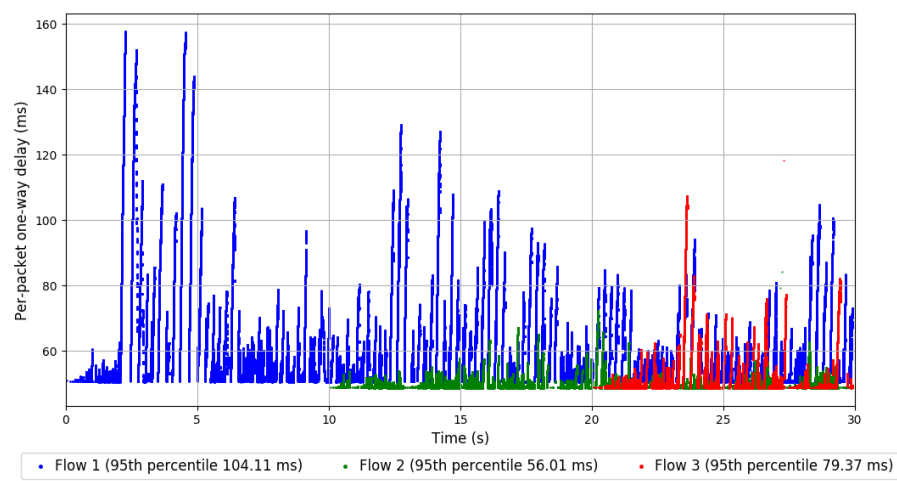
Run 2: Report of Verus — Data Link

- - - - Flow 1 ingress (mean 176.40 Mbit/s) ——— Flow 1 egress (mean 175.92 Mbit/s)
- - - - Flow 2 ingress (mean 125.70 Mbit/s) ——— Flow 2 egress (mean 125.20 Mbit/s)
- - - - Flow 3 ingress (mean 74.01 Mbit/s) ——— Flow 3 egress (mean 72.34 Mbit/s)

• Flow 1 (95th percentile 104.93 ms)   • Flow 2 (95th percentile 74.27 ms)   • Flow 3 (95th percentile 55.28 ms)
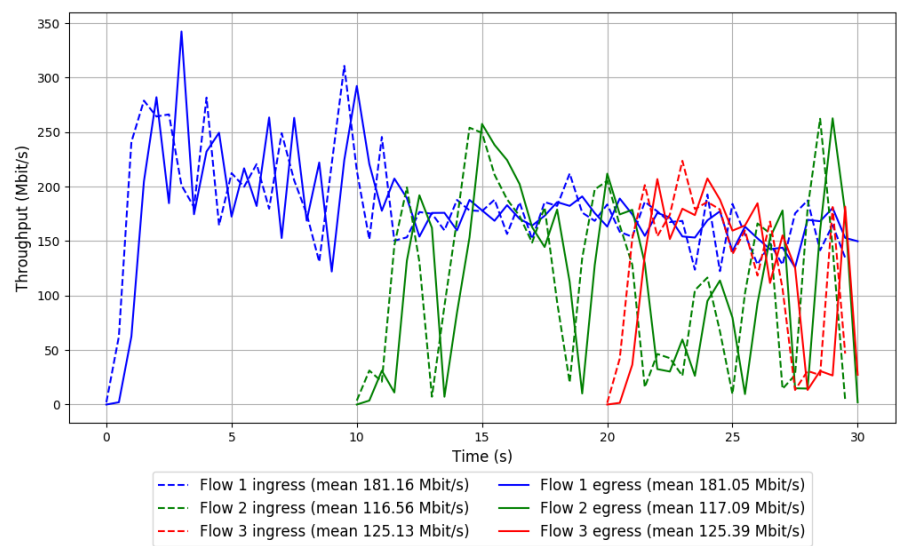
```
Run 3: Statistics of Verus

Start at: 2018-09-08 08:43:00
End at: 2018-09-08 08:43:30
Local clock offset: -0.037 ms
Remote clock offset: -0.034 ms


# Below is generated by plot.py at 2018-09-08 12:56:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 299.91 Mbit/s
95th percentile per-packet one-way delay: 97.025 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 181.05 Mbit/s
95th percentile per-packet one-way delay: 104.115 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 117.09 Mbit/s
95th percentile per-packet one-way delay: 56.007 ms
Loss rate: 0.05%
-- Flow 3:
Average throughput: 125.39 Mbit/s
95th percentile per-packet one-way delay: 79.372 ms
Loss rate: 0.78%
```

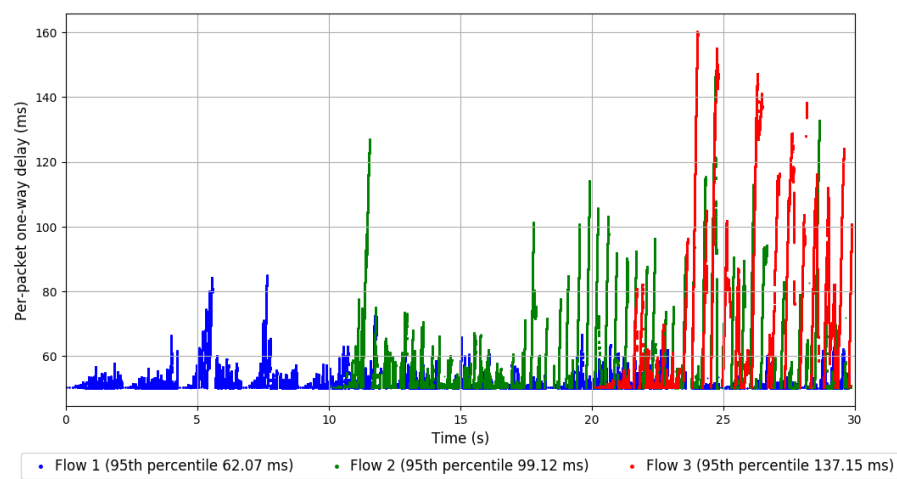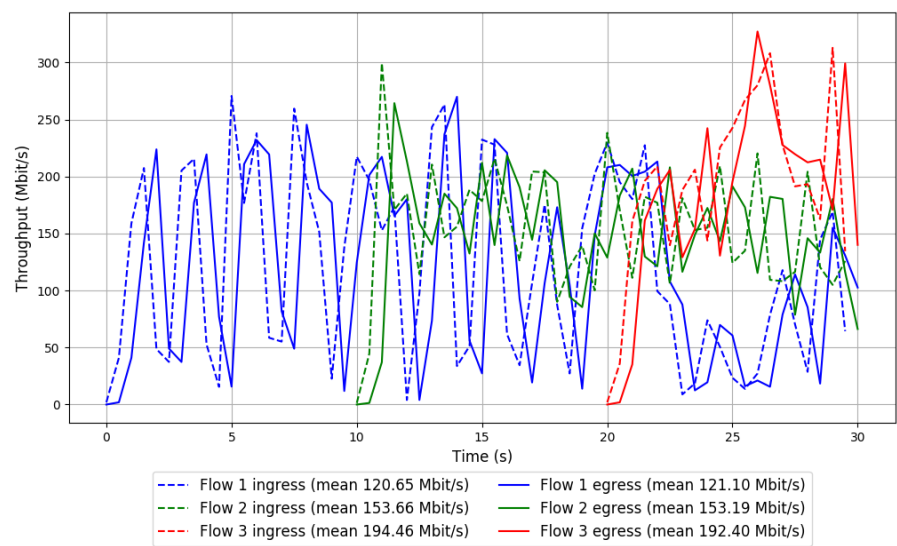Run 3: Report of Verus — Data Link

```
Run 4: Statistics of Verus

Start at: 2018-09-08 09:14:45
End at: 2018-09-08 09:15:15
Local clock offset: -0.45 ms
Remote clock offset: -0.097 ms

# Below is generated by plot.py at 2018-09-08 12:56:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 285.68 Mbit/s
95th percentile per-packet one-way delay: 108.789 ms
Loss rate: 0.62%
-- Flow 1:
Average throughput: 121.10 Mbit/s
95th percentile per-packet one-way delay: 62.069 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 153.19 Mbit/s
95th percentile per-packet one-way delay: 99.120 ms
Loss rate: 0.97%
-- Flow 3:
Average throughput: 192.40 Mbit/s
95th percentile per-packet one-way delay: 137.154 ms
Loss rate: 1.20%
```

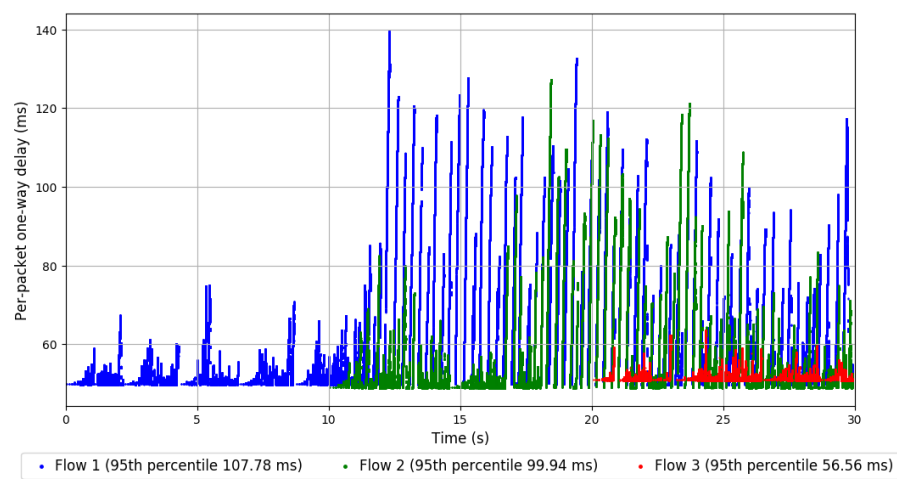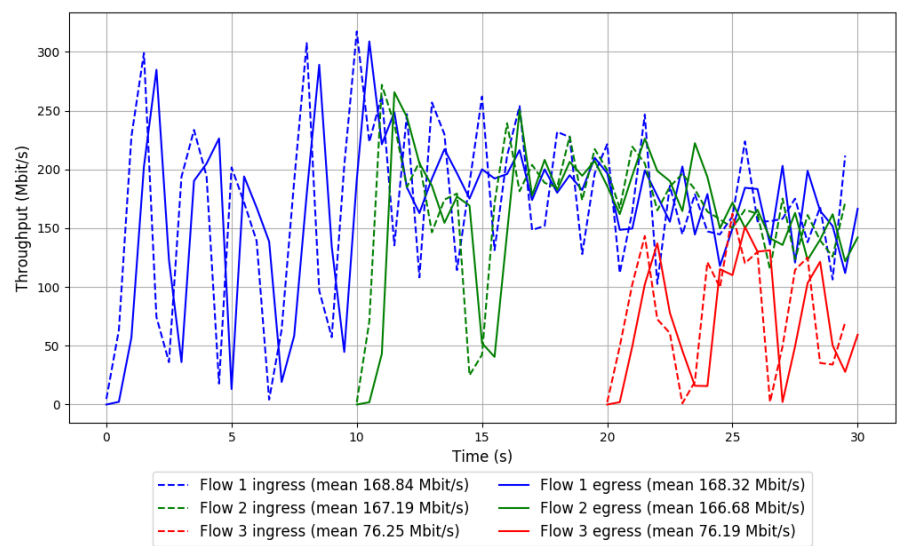Run 4: Report of Verus — Data Link

```
Run 5: Statistics of Verus

Start at: 2018-09-08 09:46:34
End at: 2018-09-08 09:47:04
Local clock offset: 0.287 ms
Remote clock offset: -0.087 ms


# Below is generated by plot.py at 2018-09-08 12:56:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 304.21 Mbit/s
95th percentile per-packet one-way delay: 104.472 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 168.32 Mbit/s
95th percentile per-packet one-way delay: 107.783 ms
Loss rate: 0.55%
-- Flow 2:
Average throughput: 166.68 Mbit/s
95th percentile per-packet one-way delay: 99.944 ms
Loss rate: 0.68%
-- Flow 3:
Average throughput: 76.19 Mbit/s
95th percentile per-packet one-way delay: 56.562 ms
Loss rate: 1.10%
```
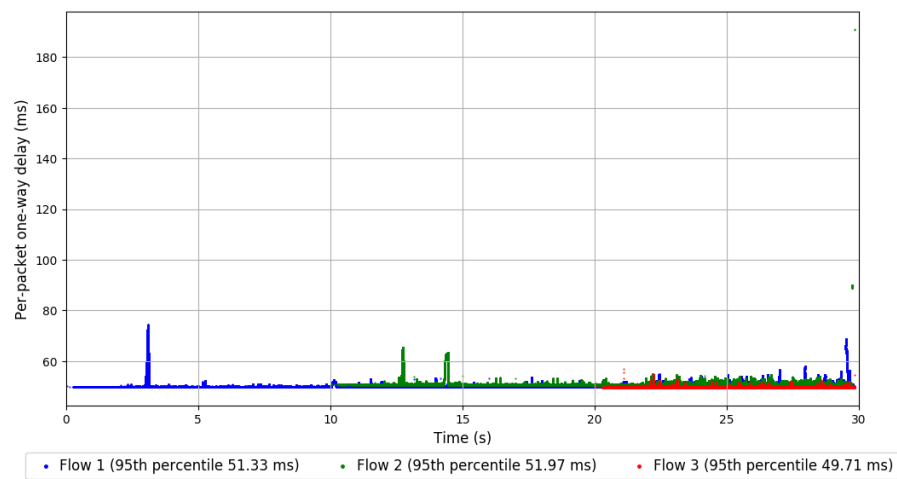
Run 5: Report of Verus — Data Link

Flow 1 ingress (mean 168.84 Mbit/s) --- Flow 1 egress (mean 168.32 Mbit/s)
Flow 2 ingress (mean 167.19 Mbit/s) --- Flow 2 egress (mean 166.68 Mbit/s)
Flow 3 ingress (mean 76.25 Mbit/s) --- Flow 3 egress (mean 76.19 Mbit/s)

Flow 1 (95th percentile 107.78 ms)   Flow 2 (95th percentile 99.94 ms)   Flow 3 (95th percentile 56.56 ms)
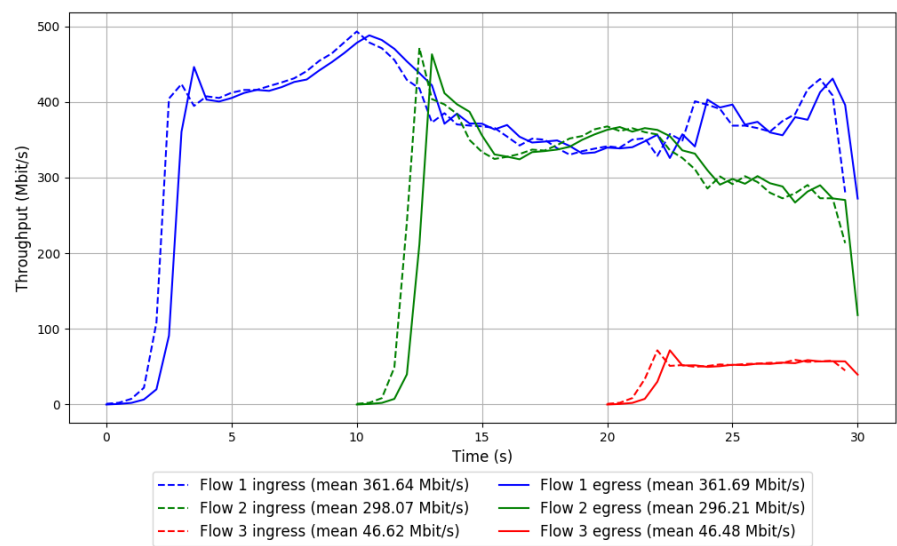
```
Run 1: Statistics of PCC-Vivace

Start at: 2018-09-08 07:48:55
End at: 2018-09-08 07:49:25
Local clock offset: -0.091 ms
Remote clock offset: -0.281 ms


# Below is generated by plot.py at 2018-09-08 12:57:24
# Datalink statistics
-- Total of 3 flows:
Average throughput: 573.47 Mbit/s
95th percentile per-packet one-way delay: 51.574 ms
Loss rate: 0.60%
-- Flow 1:
Average throughput: 361.69 Mbit/s
95th percentile per-packet one-way delay: 51.333 ms
Loss rate: 0.32%
-- Flow 2:
Average throughput: 296.21 Mbit/s
95th percentile per-packet one-way delay: 51.970 ms
Loss rate: 1.05%
-- Flow 3:
Average throughput: 46.48 Mbit/s
95th percentile per-packet one-way delay: 49.708 ms
Loss rate: 1.26%
```
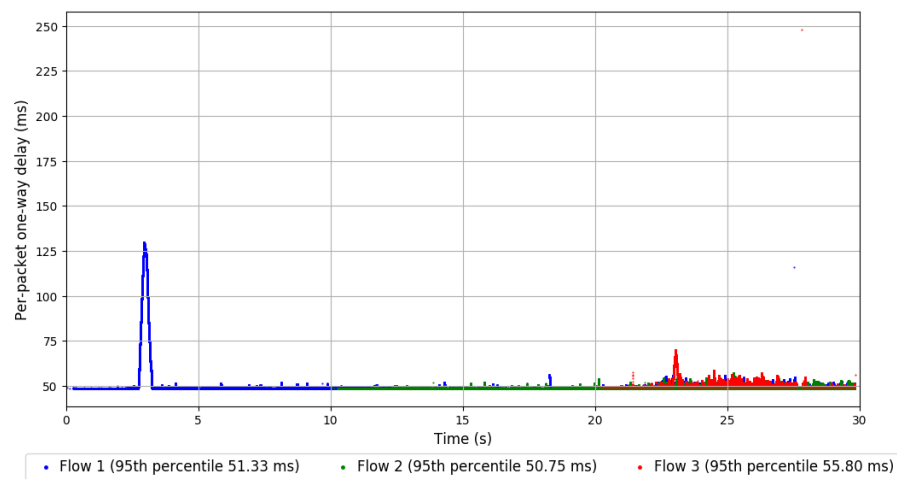
Run 1: Report of PCC-Vivace — Data Link

Flow 1 ingress (mean 361.64 Mbit/s) — Flow 1 egress (mean 361.69 Mbit/s)
Flow 2 ingress (mean 298.07 Mbit/s) — Flow 2 egress (mean 296.21 Mbit/s)
Flow 3 ingress (mean 46.62 Mbit/s) — Flow 3 egress (mean 46.48 Mbit/s)

Flow 1 (95th percentile 51.33 ms)　Flow 2 (95th percentile 51.97 ms)　Flow 3 (95th percentile 49.71 ms)

```
Run 2: Statistics of PCC-Vivace

Start at: 2018-09-08 08:20:42
End at: 2018-09-08 08:21:12
Local clock offset: 0.01 ms
Remote clock offset: 0.027 ms


# Below is generated by plot.py at 2018-09-08 12:58:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 587.60 Mbit/s
95th percentile per-packet one-way delay: 51.986 ms
Loss rate: 0.42%
-- Flow 1:
Average throughput: 329.40 Mbit/s
95th percentile per-packet one-way delay: 51.334 ms
Loss rate: 0.30%
-- Flow 2:
Average throughput: 277.07 Mbit/s
95th percentile per-packet one-way delay: 50.749 ms
Loss rate: 0.64%
-- Flow 3:
Average throughput: 226.73 Mbit/s
95th percentile per-packet one-way delay: 55.797 ms
Loss rate: 0.45%
```
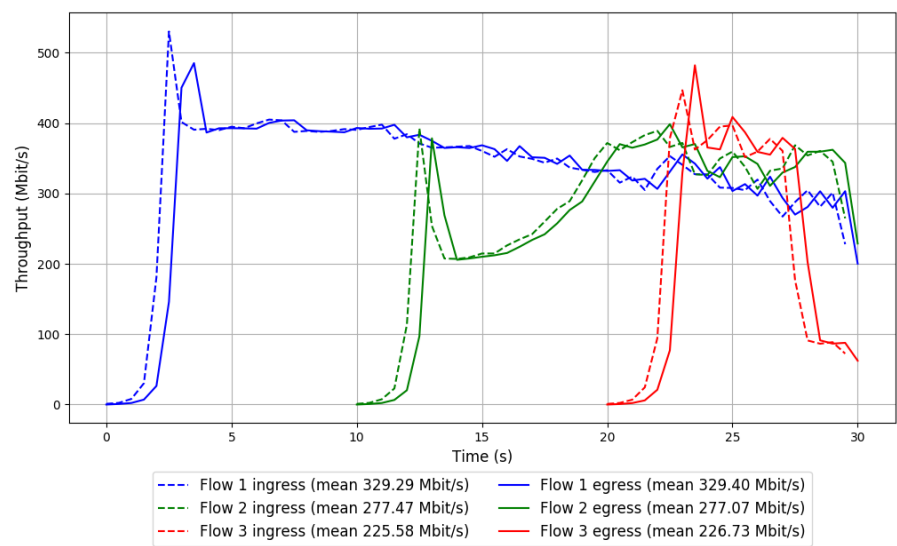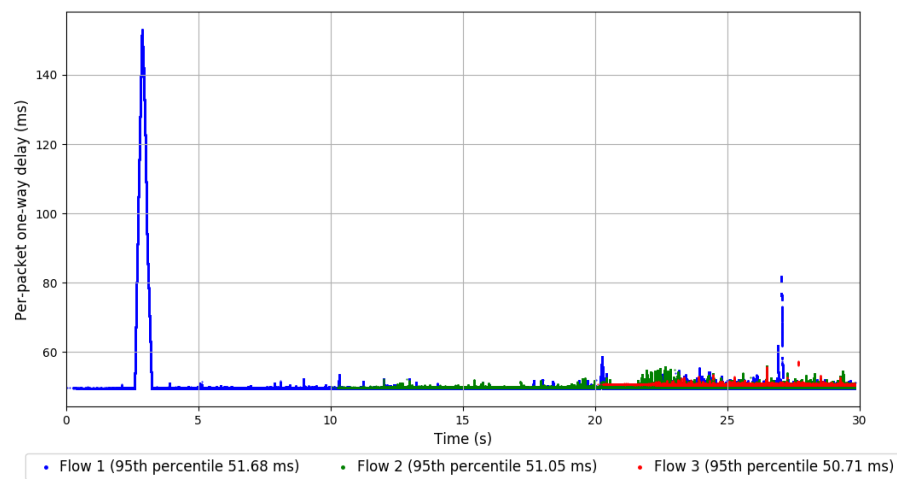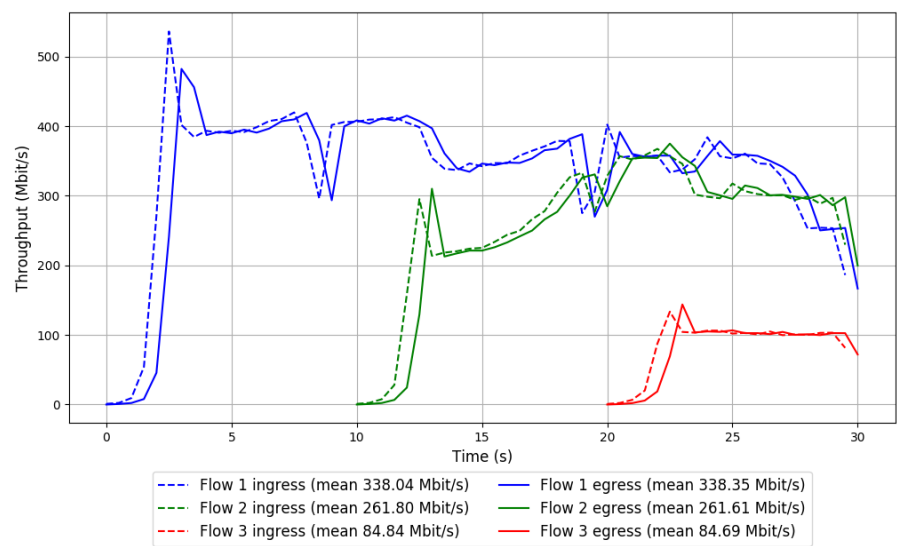
Run 2: Report of PCC-Vivace — Data Link

Flow 1 ingress (mean 329.29 Mbit/s) --- Flow 1 egress (mean 329.40 Mbit/s)
Flow 2 ingress (mean 277.47 Mbit/s) --- Flow 2 egress (mean 277.07 Mbit/s)
Flow 3 ingress (mean 225.58 Mbit/s) --- Flow 3 egress (mean 226.73 Mbit/s)

Flow 1 (95th percentile 51.33 ms)   Flow 2 (95th percentile 50.75 ms)   Flow 3 (95th percentile 55.80 ms)

```
Run 3: Statistics of PCC-Vivace

Start at: 2018-09-08 08:52:29
End at: 2018-09-08 08:52:59
Local clock offset: -0.013 ms
Remote clock offset: -0.022 ms

# Below is generated by plot.py at 2018-09-08 12:58:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 539.78 Mbit/s
95th percentile per-packet one-way delay: 51.253 ms
Loss rate: 0.39%
-- Flow 1:
Average throughput: 338.35 Mbit/s
95th percentile per-packet one-way delay: 51.676 ms
Loss rate: 0.23%
-- Flow 2:
Average throughput: 261.61 Mbit/s
95th percentile per-packet one-way delay: 51.052 ms
Loss rate: 0.57%
-- Flow 3:
Average throughput: 84.69 Mbit/s
95th percentile per-packet one-way delay: 50.712 ms
Loss rate: 1.24%
```
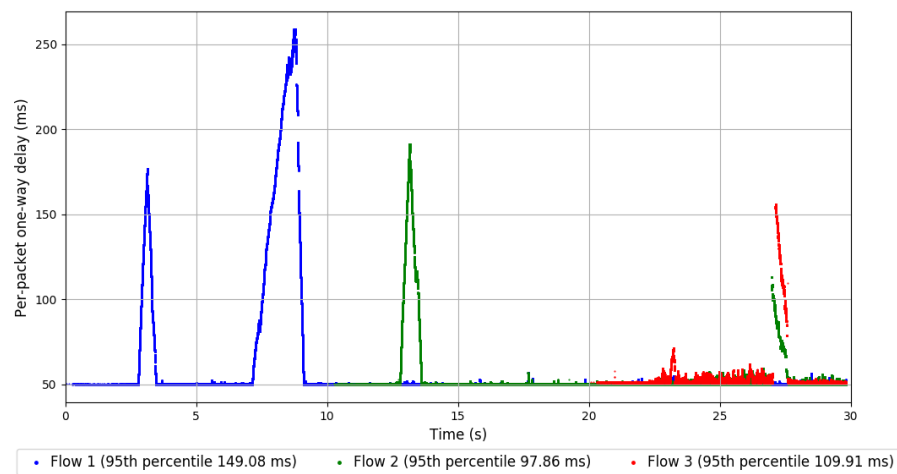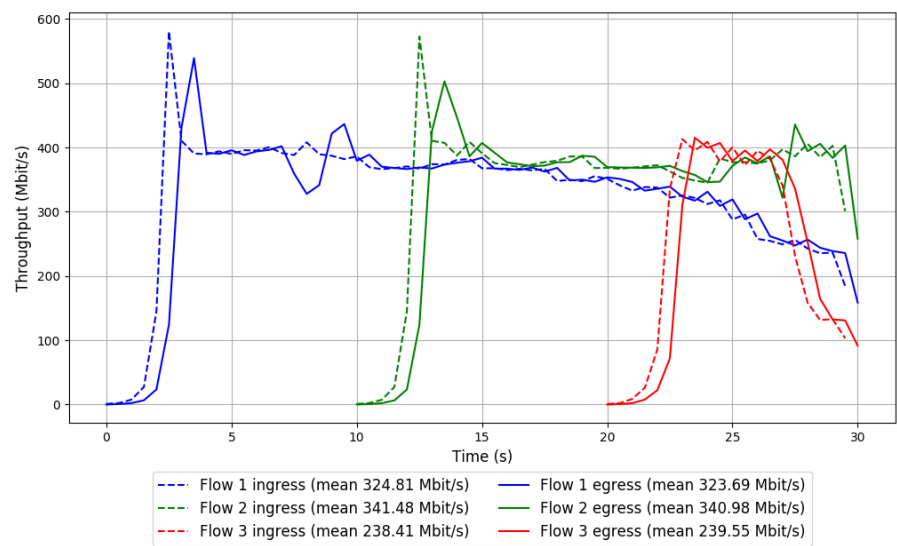
Run 3: Report of PCC-Vivace — Data Link

```
Run 4: Statistics of PCC-Vivace

Start at: 2018-09-08 09:24:17
End at: 2018-09-08 09:24:47
Local clock offset: 0.244 ms
Remote clock offset: -0.1 ms

# Below is generated by plot.py at 2018-09-08 12:58:43
# Datalink statistics
-- Total of 3 flows:
Average throughput: 628.62 Mbit/s
95th percentile per-packet one-way delay: 120.301 ms
Loss rate: 0.65%
-- Flow 1:
Average throughput: 323.69 Mbit/s
95th percentile per-packet one-way delay: 149.079 ms
Loss rate: 0.68%
-- Flow 2:
Average throughput: 340.98 Mbit/s
95th percentile per-packet one-way delay: 97.860 ms
Loss rate: 0.65%
-- Flow 3:
Average throughput: 239.55 Mbit/s
95th percentile per-packet one-way delay: 109.912 ms
Loss rate: 0.56%
```

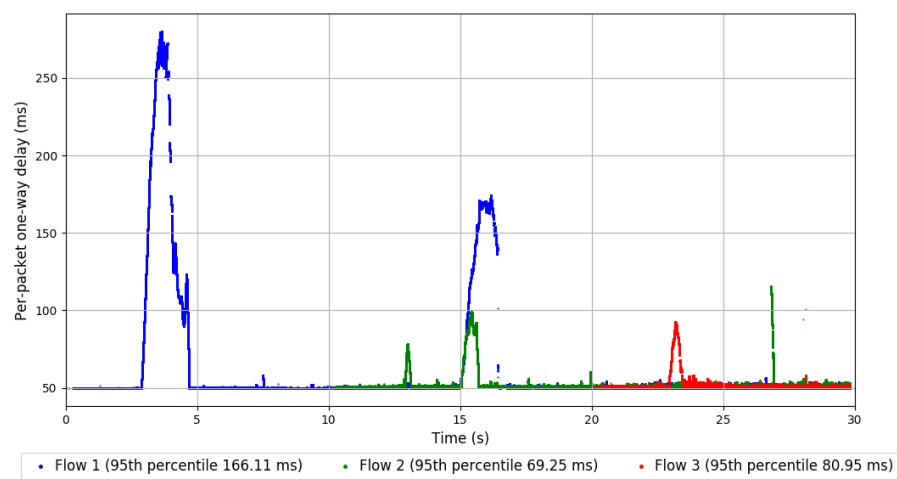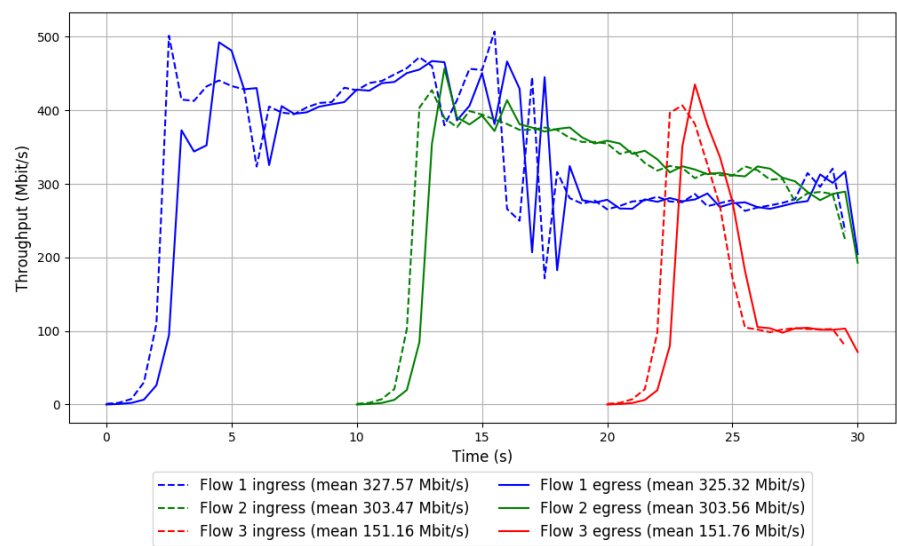Run 4: Report of PCC-Vivace — Data Link

```
Run 5: Statistics of PCC-Vivace

Start at: 2018-09-08 09:55:49
End at: 2018-09-08 09:56:19
Local clock offset: 0.296 ms
Remote clock offset: -0.057 ms


# Below is generated by plot.py at 2018-09-08 12:58:43
# Datalink statistics
-- Total of 3 flows:
Average throughput: 576.59 Mbit/s
95th percentile per-packet one-way delay: 126.441 ms
Loss rate: 0.80%
-- Flow 1:
Average throughput: 325.32 Mbit/s
95th percentile per-packet one-way delay: 166.112 ms
Loss rate: 1.03%
-- Flow 2:
Average throughput: 303.56 Mbit/s
95th percentile per-packet one-way delay: 69.248 ms
Loss rate: 0.48%
-- Flow 3:
Average throughput: 151.76 Mbit/s
95th percentile per-packet one-way delay: 80.947 ms
Loss rate: 0.64%
```

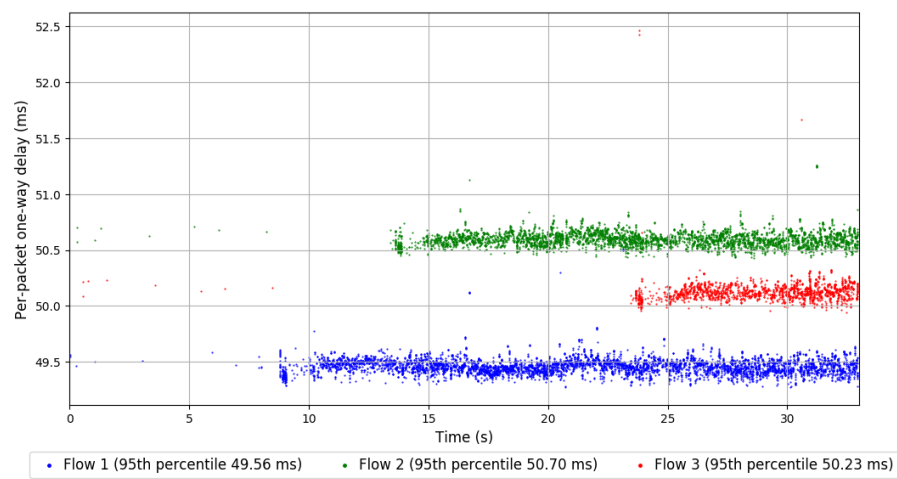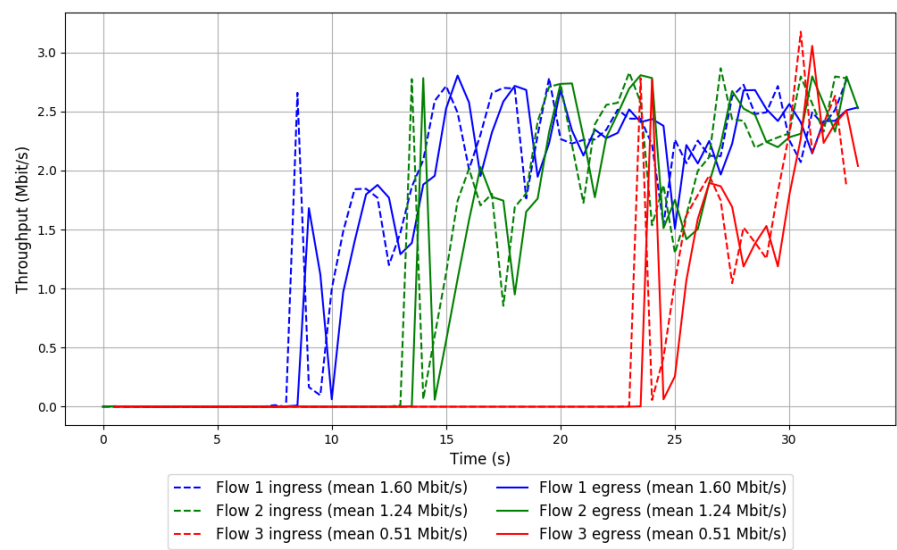## Run 5: Report of PCC-Vivace — Data Link

```
Run 1: Statistics of WebRTC media

Start at: 2018-09-08 07:24:43
End at: 2018-09-08 07:25:13
Local clock offset: -0.112 ms
Remote clock offset: -0.231 ms


# Below is generated by plot.py at 2018-09-08 12:58:43
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.32 Mbit/s
95th percentile per-packet one-way delay: 50.659 ms
Loss rate: 0.53%
-- Flow 1:
Average throughput: 1.60 Mbit/s
95th percentile per-packet one-way delay: 49.560 ms
Loss rate: 0.44%
-- Flow 2:
Average throughput: 1.24 Mbit/s
95th percentile per-packet one-way delay: 50.695 ms
Loss rate: 0.60%
-- Flow 3:
Average throughput: 0.51 Mbit/s
95th percentile per-packet one-way delay: 50.226 ms
Loss rate: 0.64%
```

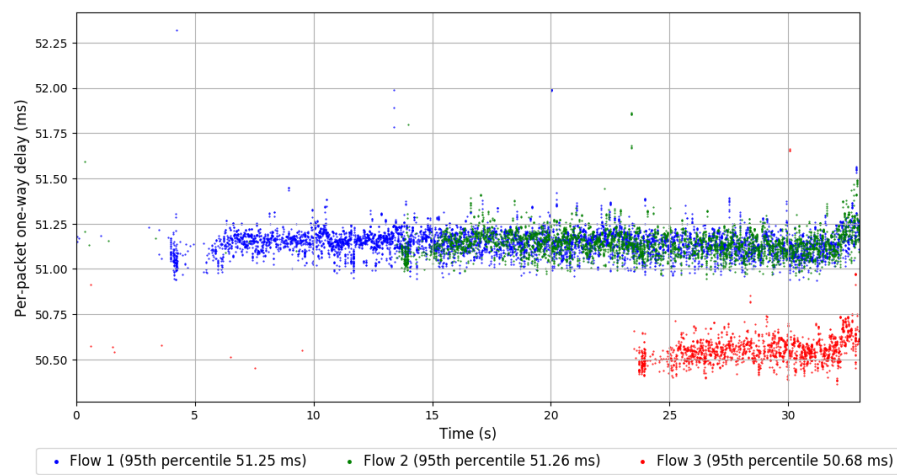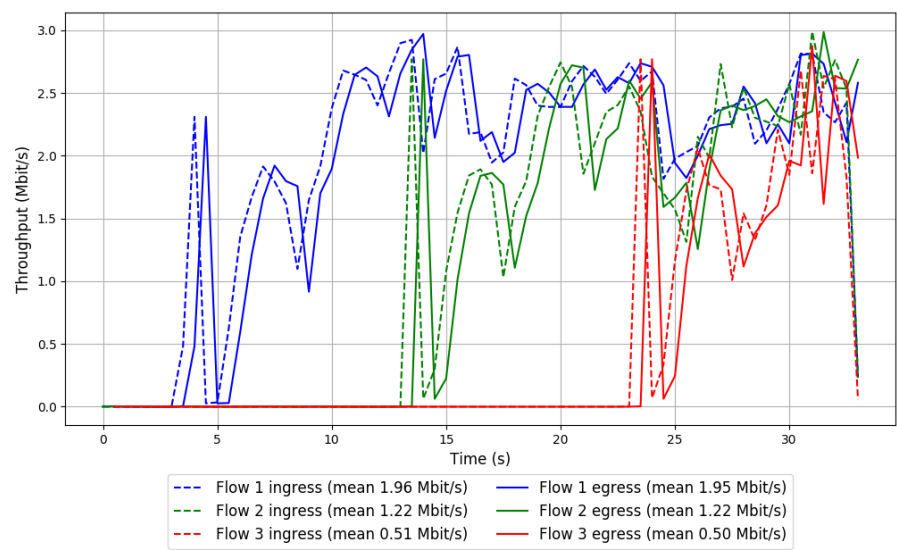Run 1: Report of WebRTC media — Data Link

```
Run 2: Statistics of WebRTC media

Start at: 2018-09-08 07:56:32
End at: 2018-09-08 07:57:02
Local clock offset: 0.322 ms
Remote clock offset: -0.147 ms


# Below is generated by plot.py at 2018-09-08 12:58:43
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.66 Mbit/s
95th percentile per-packet one-way delay: 51.243 ms
Loss rate: 0.46%
-- Flow 1:
Average throughput: 1.95 Mbit/s
95th percentile per-packet one-way delay: 51.247 ms
Loss rate: 0.36%
-- Flow 2:
Average throughput: 1.22 Mbit/s
95th percentile per-packet one-way delay: 51.259 ms
Loss rate: 0.57%
-- Flow 3:
Average throughput: 0.50 Mbit/s
95th percentile per-packet one-way delay: 50.679 ms
Loss rate: 0.54%
```

Run 2: Report of WebRTC media — Data Link

```
Run 3: Statistics of WebRTC media

Start at: 2018-09-08 08:28:17
End at: 2018-09-08 08:28:47
Local clock offset: -0.317 ms
Remote clock offset: 0.003 ms


# Below is generated by plot.py at 2018-09-08 12:58:43
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.60 Mbit/s
95th percentile per-packet one-way delay: 48.610 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 1.95 Mbit/s
95th percentile per-packet one-way delay: 48.610 ms
Loss rate: 0.30%
-- Flow 2:
Average throughput: 1.18 Mbit/s
95th percentile per-packet one-way delay: 48.586 ms
Loss rate: 0.58%
-- Flow 3:
Average throughput: 0.49 Mbit/s
95th percentile per-packet one-way delay: 48.642 ms
Loss rate: 0.62%
```
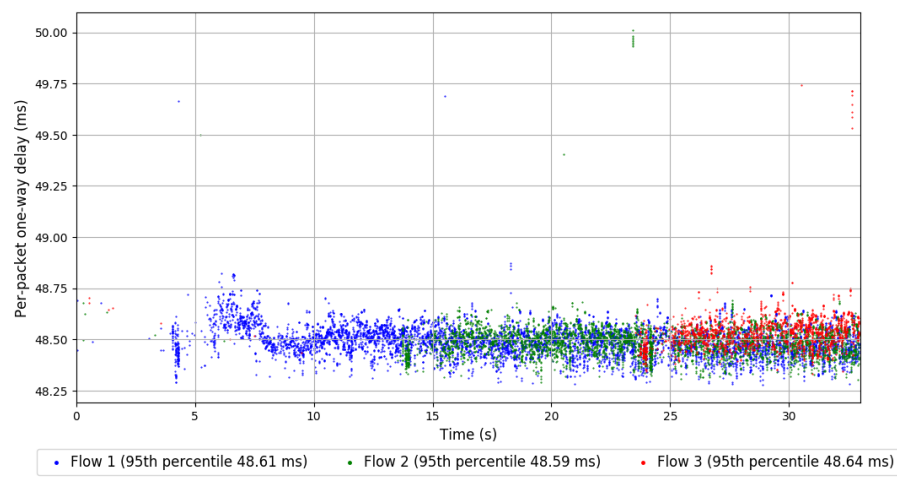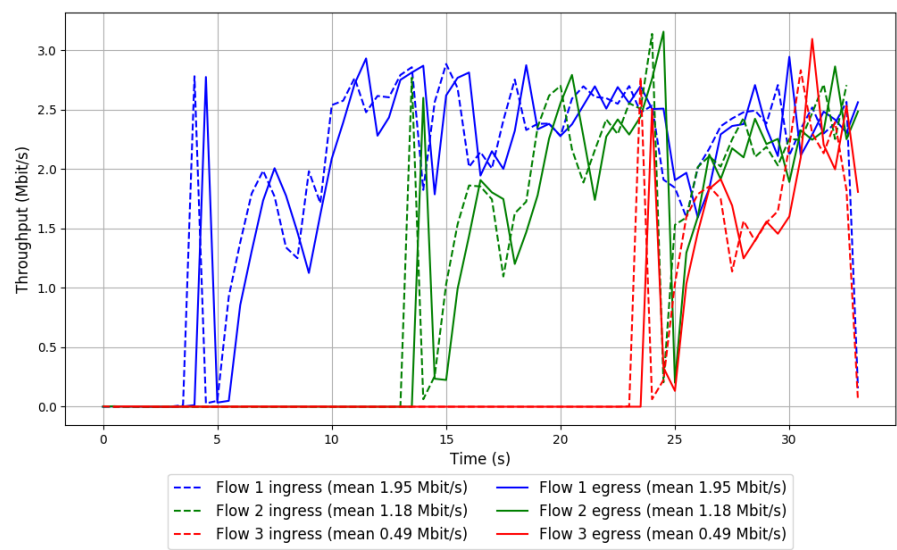
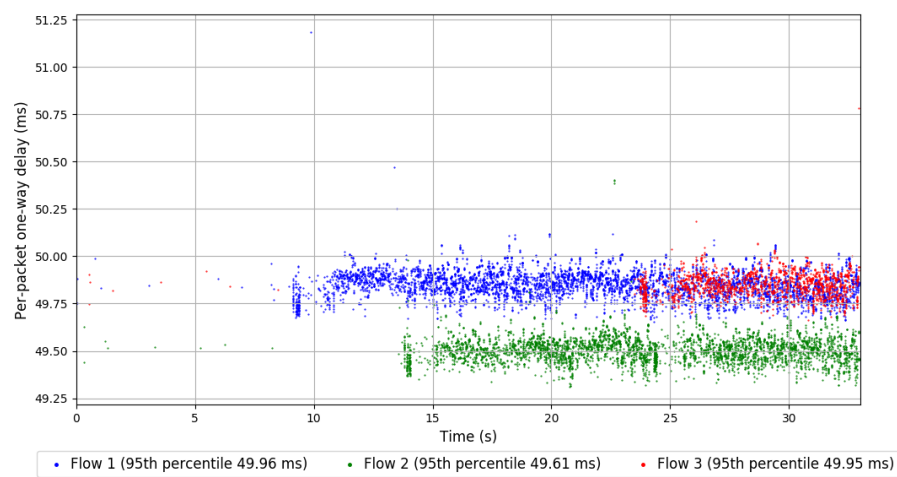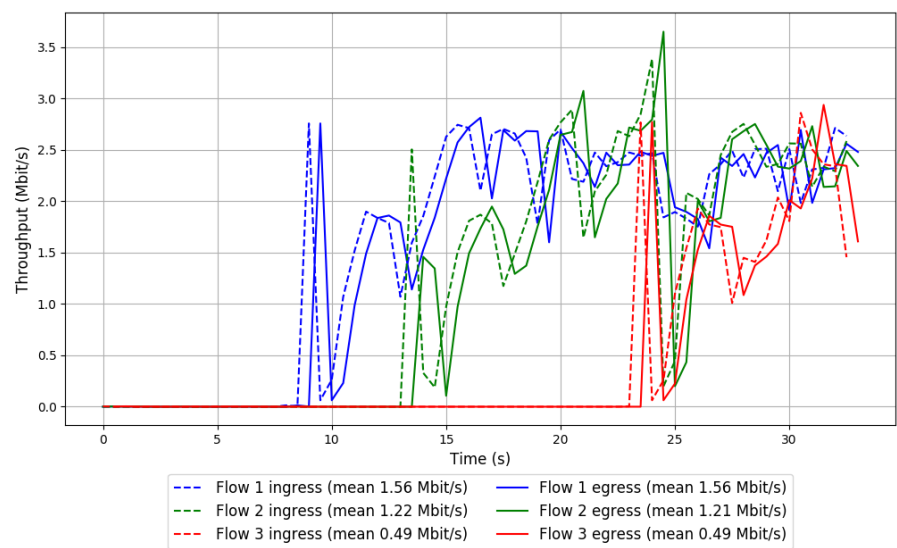Run 3: Report of WebRTC media — Data Link

```
Run 4: Statistics of WebRTC media

Start at: 2018-09-08 09:00:05
End at: 2018-09-08 09:00:35
Local clock offset: -0.062 ms
Remote clock offset: -0.019 ms


# Below is generated by plot.py at 2018-09-08 12:58:43
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.25 Mbit/s
95th percentile per-packet one-way delay: 49.940 ms
Loss rate: 0.52%
-- Flow 1:
Average throughput: 1.56 Mbit/s
95th percentile per-packet one-way delay: 49.962 ms
Loss rate: 0.53%
-- Flow 2:
Average throughput: 1.21 Mbit/s
95th percentile per-packet one-way delay: 49.609 ms
Loss rate: 0.60%
-- Flow 3:
Average throughput: 0.49 Mbit/s
95th percentile per-packet one-way delay: 49.948 ms
Loss rate: 0.33%
```

Run 4: Report of WebRTC media — Data Link

```
Run 5: Statistics of WebRTC media

Start at: 2018-09-08 09:31:57
End at: 2018-09-08 09:32:27
Local clock offset: -0.436 ms
Remote clock offset: -0.118 ms


# Below is generated by plot.py at 2018-09-08 12:58:43
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.61 Mbit/s
95th percentile per-packet one-way delay: 50.534 ms
Loss rate: 0.57%
-- Flow 1:
Average throughput: 1.90 Mbit/s
95th percentile per-packet one-way delay: 50.472 ms
Loss rate: 0.37%
-- Flow 2:
Average throughput: 1.22 Mbit/s
95th percentile per-packet one-way delay: 49.946 ms
Loss rate: 0.87%
-- Flow 3:
Average throughput: 0.50 Mbit/s
95th percentile per-packet one-way delay: 50.609 ms
Loss rate: 0.61%
```

Run 5: Report of WebRTC media — Data Link