Pantheon Report

Generated at 2018-12-01 10:21:05 (UTC).

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

Repeated the test of 19 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.
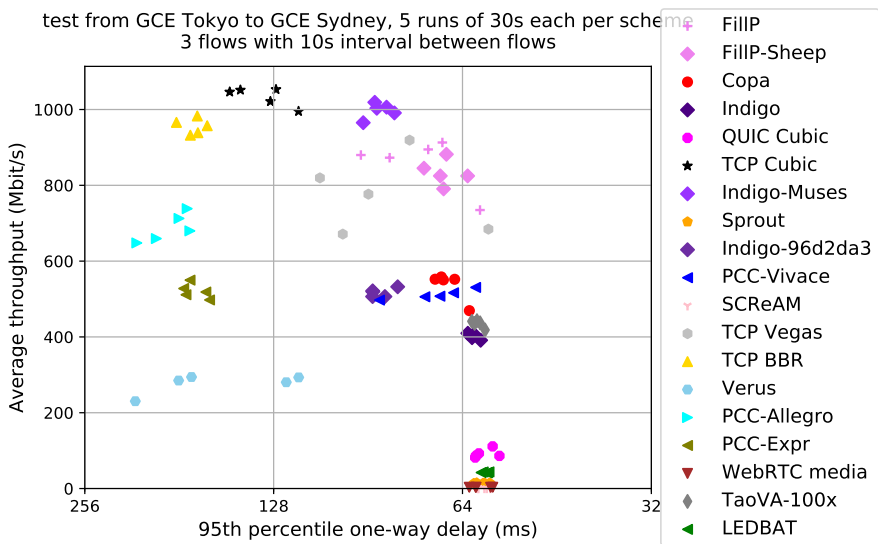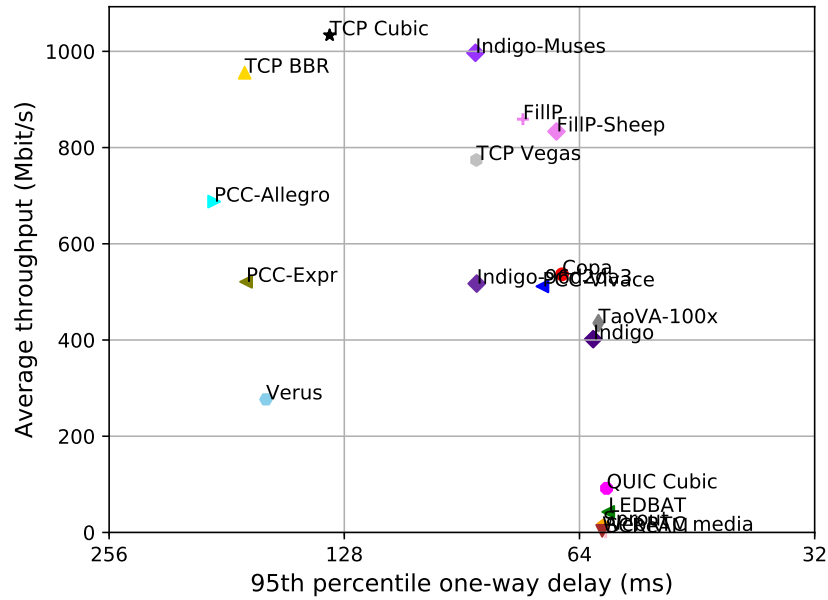
```
System info:
Linux 4.15.0-1024-gcp
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912

Git summary:
branch: muses @ 7b6dad87cde3ab65f7c4052140eb54098aa58e9d
third_party/fillp @ d6da1459332fcee56963885d7eba17e6a32d4519
third_party/fillp-sheep @ 0e5bb722943babcd2b090d2c64fcd45e12e923f9
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdfe58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d
third_party/indigo-96d2da3 @ 8413272d46f8aa0bcb967ed7048b6a8f994abb95
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/muses @ 65ac1b19bbefed0c6349ae986009b4fa8643c40a
third_party/pantheon-tunnel @ f866d3f58d27afd942717625ee3a354cc2e802bd
third_party/pcc @ 1afc958fa0d66d18b623c091a55fec872b4981e1
 M receiver/src/buffer.h
 M receiver/src/core.cpp
 M sender/src/buffer.h
 M sender/src/core.cpp
third_party/pcc-experimental @ cd43e34e3f5f5613e8acd08fab92c4eb24f974ab
third_party/proto-quic @ 77961f1a82733a86b42f1bc8143ebc978f3cff42
third_party/scream-reproduce @ f099118d1421aa3131bf11ff1964974e1da3bdb2
 M src/ScreamClient
 M src/ScreamServer
third_party/sprout @ 366e35c6178b01e31d4a46ad18c74f9415f19a26
 M src/examples/cellsim.cc
 M src/examples/sproutbt2.cc
 M src/network/sproutconn.cc
third_party/verus @ d4b447ea74c6c60a261149af2629562939f9a494
 M src/verus.hpp
```

```
 M tools/plot.py
third_party/vivace @ 2baf86211435ae071a32f96b7d8c504587f5d7f4
third_party/webrtc @ 3f0cc2a9061a41b6f9dde4735770d143a1fa2851
```

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

test from GCE Tokyo to GCE Sydney, 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	490.57	478.69	444.89	170.16	170.17	171.24	1.45	1.52	2.61
Copa	5	275.79	269.51	247.42	64.04	68.61	76.28	0.38	0.55	1.32
TCP Cubic	5	545.16	513.09	446.26	119.30	122.02	136.51	0.40	0.76	1.52
FillP	5	516.99	383.52	266.00	82.37	63.64	61.19	0.31	0.47	1.20
FillP-Sheep	5	531.91	330.58	249.99	72.01	62.71	61.17	0.21	0.50	1.27
Indigo	5	214.04	199.25	167.35	60.15	61.46	63.70	0.38	0.58	1.23
Indigo-96d2da3	5	278.79	253.38	216.74	89.99	82.60	80.40	0.41	0.61	1.57
LEDBAT	5	27.39	18.64	8.99	58.29	58.09	58.55	0.77	1.16	2.36
Indigo-Muses	5	547.35	489.91	381.20	90.94	82.81	80.93	0.38	0.64	1.69
PCC-Allegro	5	390.72	321.82	255.86	191.76	120.33	161.65	4.37	1.78	2.30
PCC-Expr	5	307.25	249.69	146.54	173.68	164.81	81.32	4.77	2.61	1.67
QUIC Cubic	5	55.66	41.03	25.75	58.40	59.09	56.96	0.58	0.83	1.41
SCReAM	5	0.22	0.22	0.22	58.60	57.88	57.25	0.38	0.61	1.01
Sprout	5	7.45	7.21	6.49	58.31	58.62	59.36	0.43	0.69	1.57
TaoVA-100x	5	221.44	215.71	213.17	59.40	60.38	59.86	0.39	0.62	1.26
TCP Vegas	5	415.79	339.69	402.16	76.68	89.83	94.63	0.28	0.49	1.24
Verus	5	157.74	119.13	122.96	134.20	112.38	154.63	0.77	1.08	3.22
PCC-Vivace	5	325.56	240.54	80.39	84.93	71.89	58.26	0.56	0.59	1.56
WebRTC media	5	1.78	1.14	0.44	58.48	59.16	59.18	0.54	0.61	1.27

```
Run 1: Statistics of TCP BBR

Start at: 2018-12-01 04:52:26
End at: 2018-12-01 04:52:56
Local clock offset: 0.127 ms
Remote clock offset: -0.15 ms


# Below is generated by plot.py at 2018-12-01 07:55:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 957.25 Mbit/s
95th percentile per-packet one-way delay: 163.342 ms
Loss rate: 1.48%
-- Flow 1:
Average throughput: 461.22 Mbit/s
95th percentile per-packet one-way delay: 167.717 ms
Loss rate: 0.98%
-- Flow 2:
Average throughput: 520.94 Mbit/s
95th percentile per-packet one-way delay: 149.960 ms
Loss rate: 1.31%
-- Flow 3:
Average throughput: 454.38 Mbit/s
95th percentile per-packet one-way delay: 178.622 ms
Loss rate: 3.34%
```
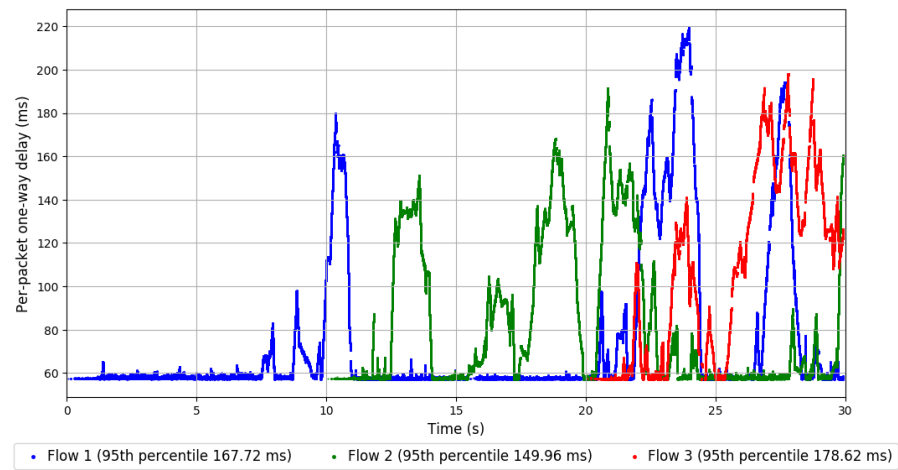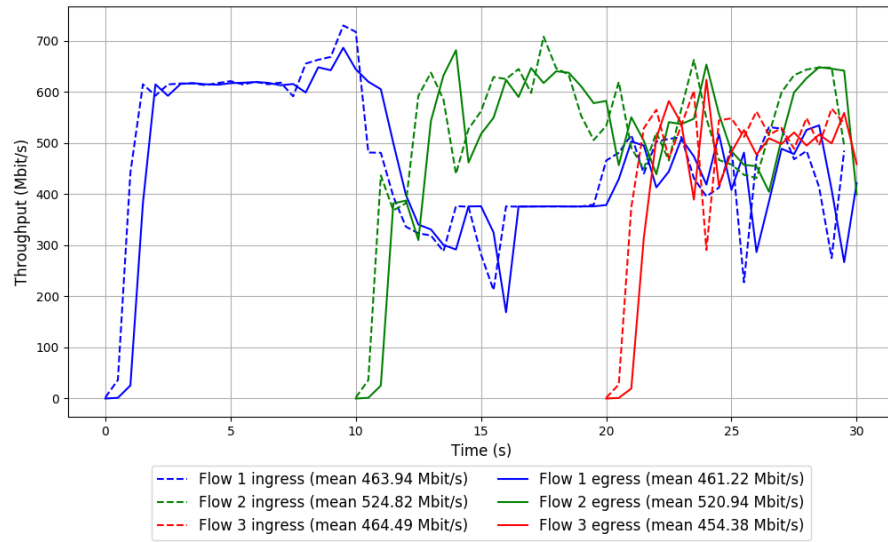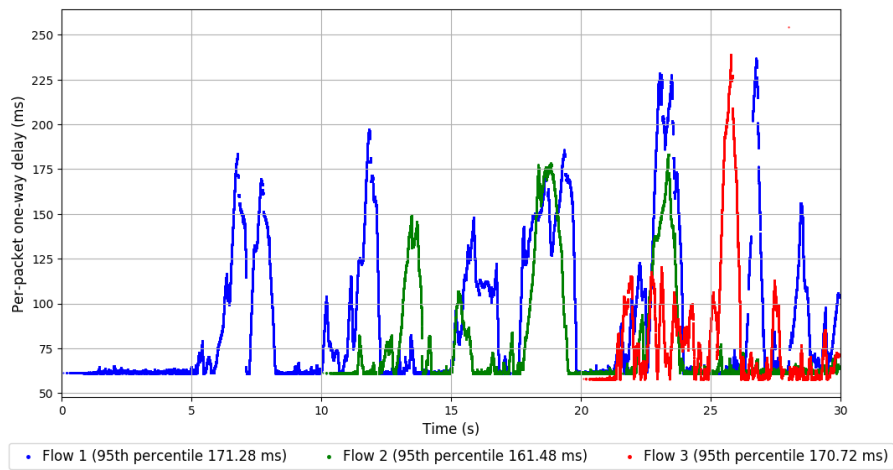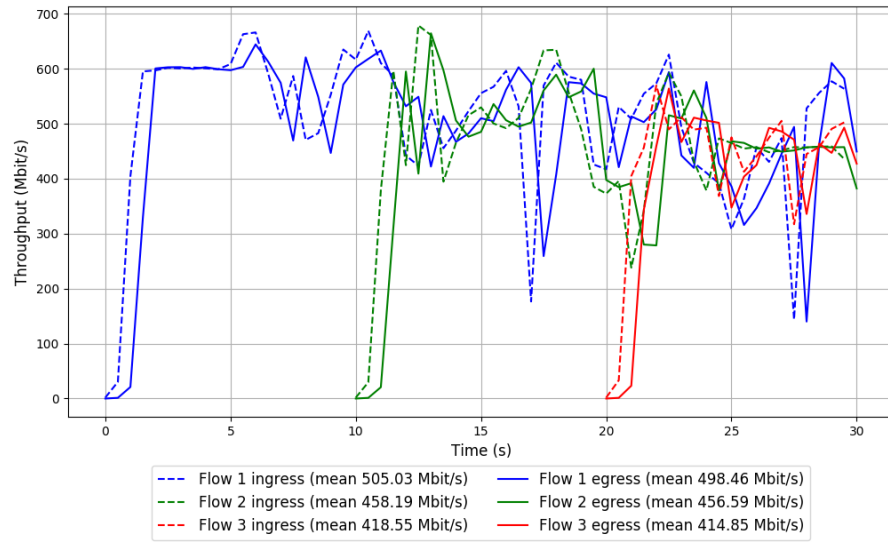
Run 1: Report of TCP BBR — Data Link

```
Run 2: Statistics of TCP BBR

Start at: 2018-12-01 05:28:17
End at: 2018-12-01 05:28:47
Local clock offset: -0.037 ms
Remote clock offset: -0.86 ms


# Below is generated by plot.py at 2018-12-01 07:55:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 938.79 Mbit/s
95th percentile per-packet one-way delay: 169.033 ms
Loss rate: 1.50%
-- Flow 1:
Average throughput: 498.46 Mbit/s
95th percentile per-packet one-way delay: 171.284 ms
Loss rate: 1.69%
-- Flow 2:
Average throughput: 456.59 Mbit/s
95th percentile per-packet one-way delay: 161.482 ms
Loss rate: 0.94%
-- Flow 3:
Average throughput: 414.85 Mbit/s
95th percentile per-packet one-way delay: 170.723 ms
Loss rate: 2.04%
```
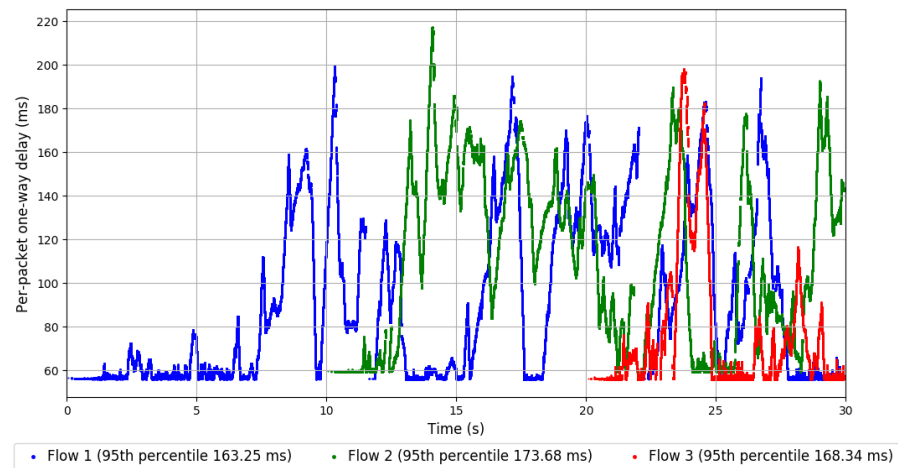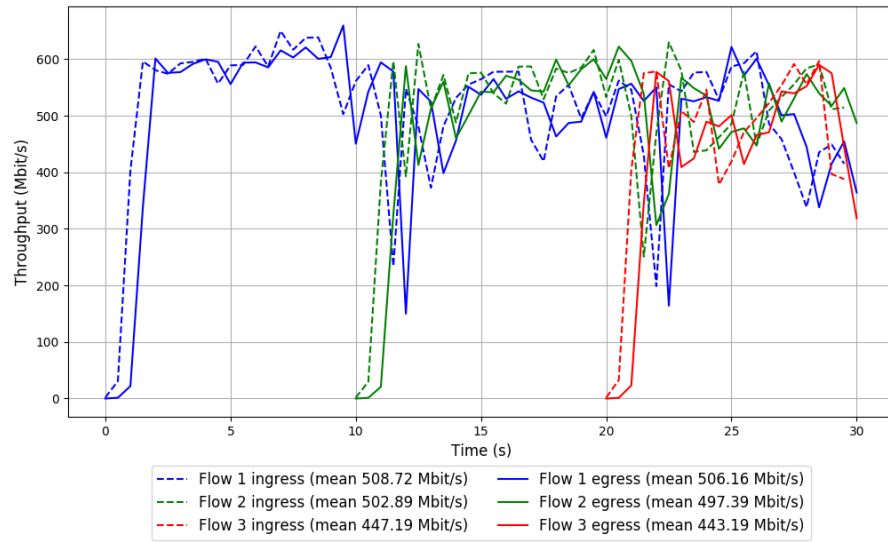
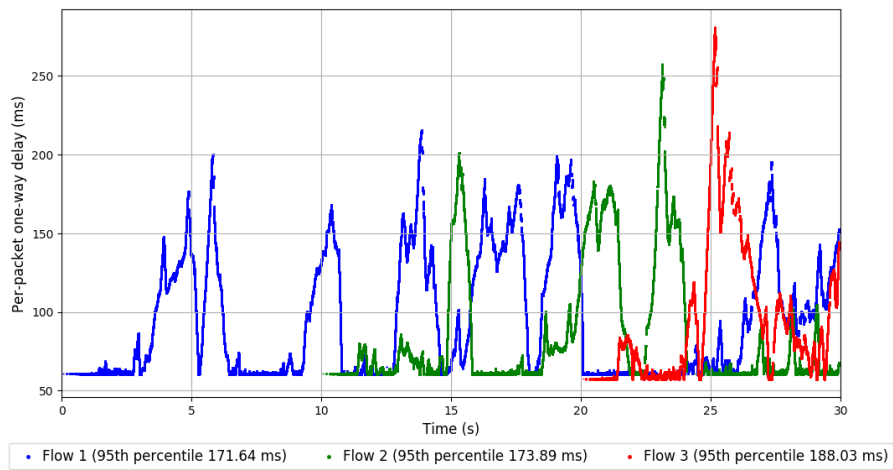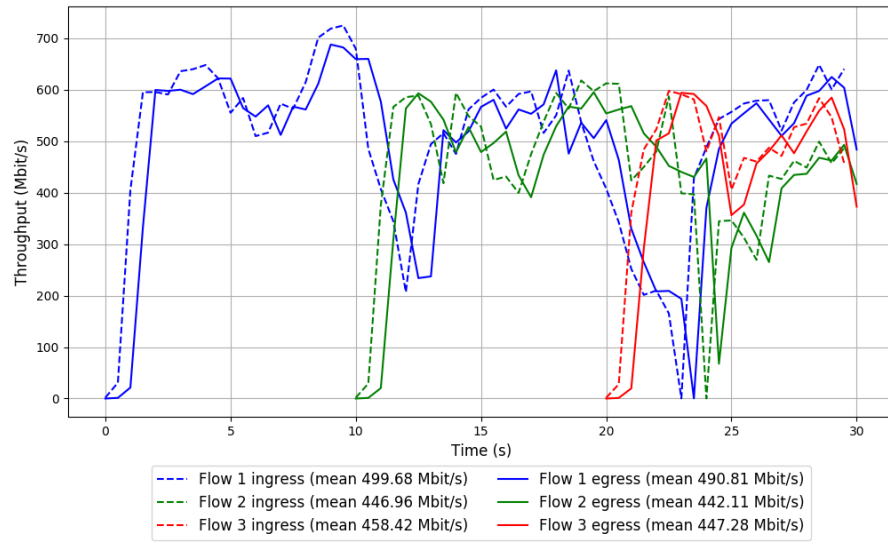Run 2: Report of TCP BBR — Data Link

Flow 1 ingress (mean 505.03 Mbit/s) --- Flow 1 egress (mean 498.46 Mbit/s)
Flow 2 ingress (mean 458.19 Mbit/s) --- Flow 2 egress (mean 456.59 Mbit/s)
Flow 3 ingress (mean 418.55 Mbit/s) --- Flow 3 egress (mean 414.85 Mbit/s)

Flow 1 (95th percentile 171.28 ms)   Flow 2 (95th percentile 161.48 ms)   Flow 3 (95th percentile 170.72 ms)

8

```
Run 3: Statistics of TCP BBR

Start at: 2018-12-01 06:04:18
End at: 2018-12-01 06:04:48
Local clock offset: -0.535 ms
Remote clock offset: 0.454 ms


# Below is generated by plot.py at 2018-12-01 07:56:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 982.96 Mbit/s
95th percentile per-packet one-way delay: 169.394 ms
Loss rate: 1.33%
-- Flow 1:
Average throughput: 506.16 Mbit/s
95th percentile per-packet one-way delay: 163.251 ms
Loss rate: 0.89%
-- Flow 2:
Average throughput: 497.39 Mbit/s
95th percentile per-packet one-way delay: 173.679 ms
Loss rate: 1.68%
-- Flow 3:
Average throughput: 443.19 Mbit/s
95th percentile per-packet one-way delay: 168.338 ms
Loss rate: 2.05%
```

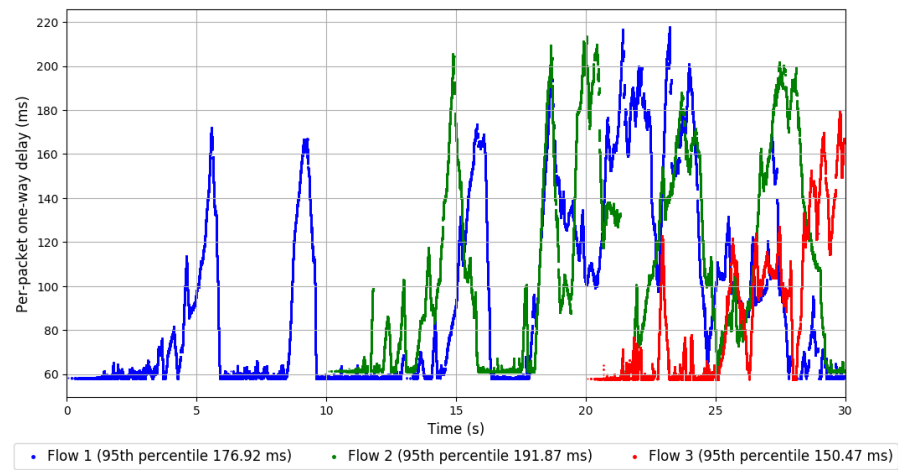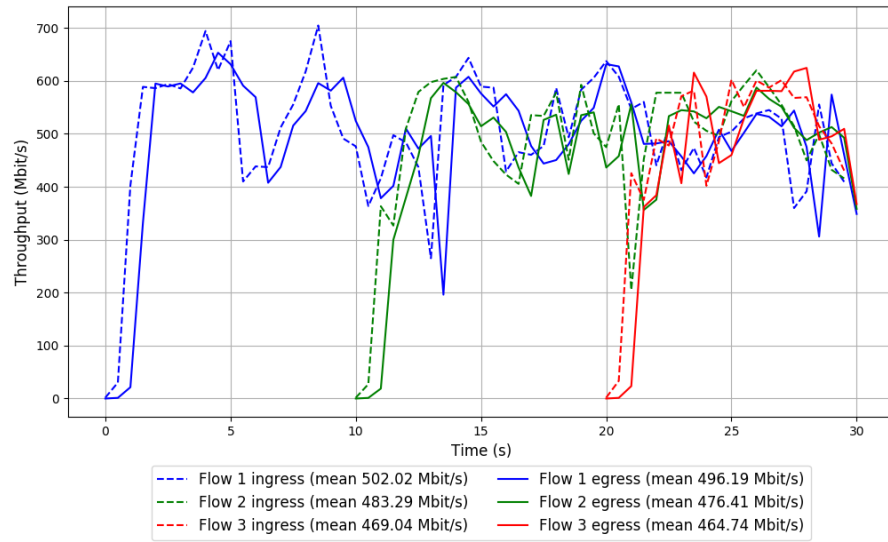# Run 3: Report of TCP BBR — Data Link

- - - - Flow 1 ingress (mean 508.72 Mbit/s) ——— Flow 1 egress (mean 506.16 Mbit/s)
- - - - Flow 2 ingress (mean 502.89 Mbit/s) ——— Flow 2 egress (mean 497.39 Mbit/s)
- - - - Flow 3 ingress (mean 447.19 Mbit/s) ——— Flow 3 egress (mean 443.19 Mbit/s)

- Flow 1 (95th percentile 163.25 ms)   • Flow 2 (95th percentile 173.68 ms)   • Flow 3 (95th percentile 168.34 ms)

```
Run 4: Statistics of TCP BBR

Start at: 2018-12-01 06:40:52
End at: 2018-12-01 06:41:22
Local clock offset: -0.389 ms
Remote clock offset: -0.709 ms


# Below is generated by plot.py at 2018-12-01 07:56:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 932.25 Mbit/s
95th percentile per-packet one-way delay: 173.775 ms
Loss rate: 2.23%
-- Flow 1:
Average throughput: 490.81 Mbit/s
95th percentile per-packet one-way delay: 171.640 ms
Loss rate: 2.16%
-- Flow 2:
Average throughput: 442.11 Mbit/s
95th percentile per-packet one-way delay: 173.886 ms
Loss rate: 1.67%
-- Flow 3:
Average throughput: 447.28 Mbit/s
95th percentile per-packet one-way delay: 188.032 ms
Loss rate: 3.56%
```

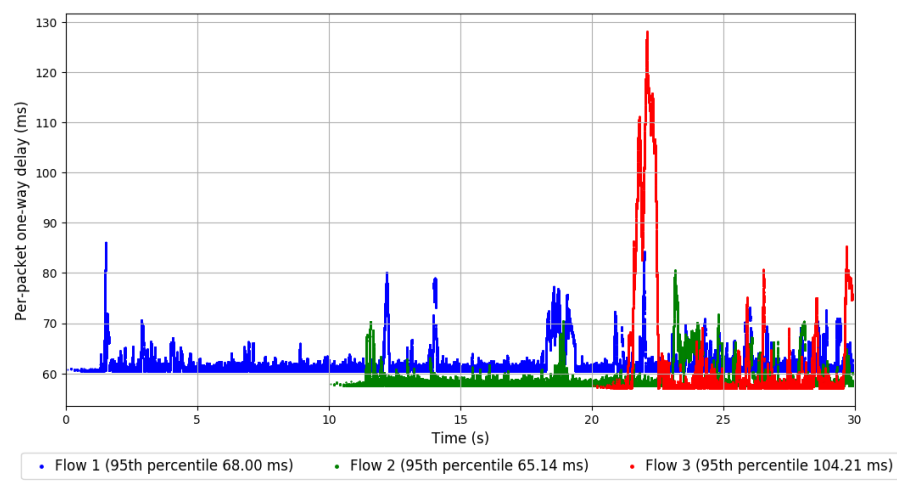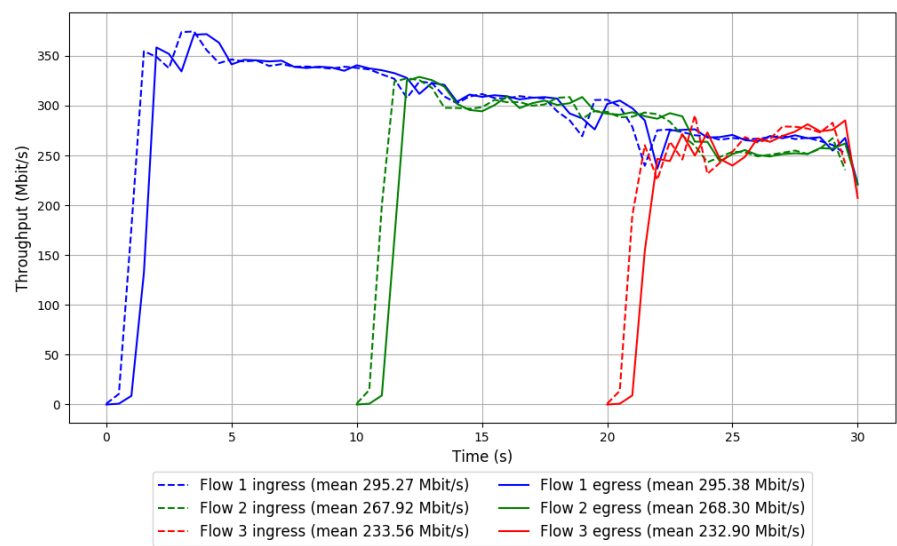Run 4: Report of TCP BBR — Data Link

Flow 1 ingress (mean 499.68 Mbit/s)   Flow 1 egress (mean 490.81 Mbit/s)
Flow 2 ingress (mean 446.96 Mbit/s)   Flow 2 egress (mean 442.11 Mbit/s)
Flow 3 ingress (mean 458.42 Mbit/s)   Flow 3 egress (mean 447.28 Mbit/s)

Flow 1 (95th percentile 171.64 ms)   Flow 2 (95th percentile 173.89 ms)   Flow 3 (95th percentile 188.03 ms)
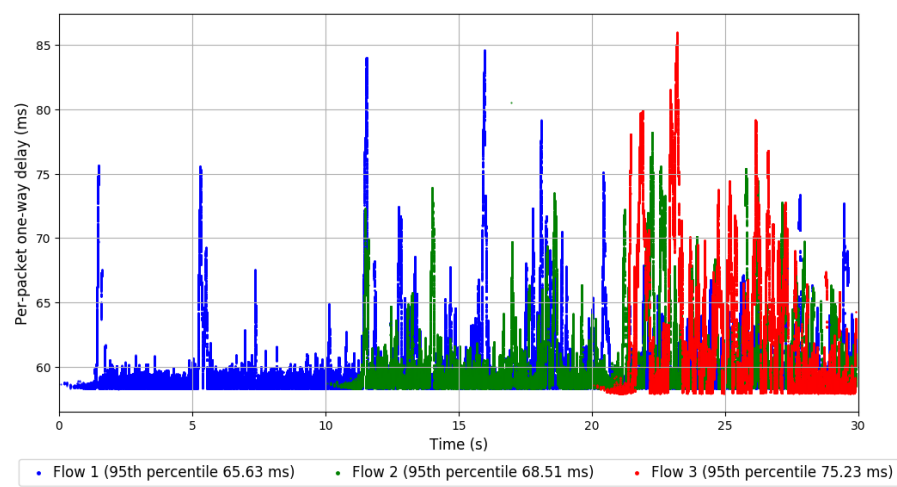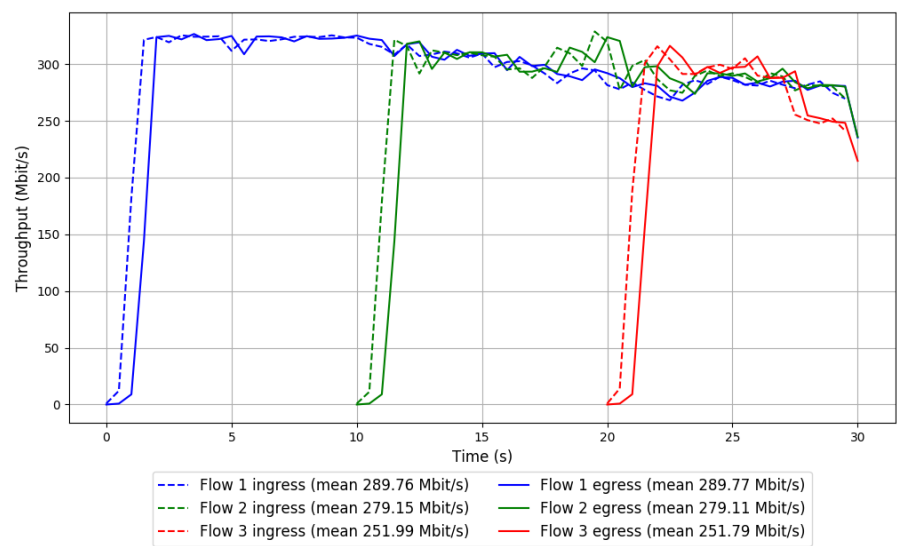
12

```
Run 5: Statistics of TCP BBR

Start at: 2018-12-01 07:17:24
End at: 2018-12-01 07:17:54
Local clock offset: -0.109 ms
Remote clock offset: -0.807 ms


# Below is generated by plot.py at 2018-12-01 07:56:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 966.06 Mbit/s
95th percentile per-packet one-way delay: 182.877 ms
Loss rate: 1.78%
-- Flow 1:
Average throughput: 496.19 Mbit/s
95th percentile per-packet one-way delay: 176.923 ms
Loss rate: 1.54%
-- Flow 2:
Average throughput: 476.41 Mbit/s
95th percentile per-packet one-way delay: 191.866 ms
Loss rate: 2.01%
-- Flow 3:
Average throughput: 464.74 Mbit/s
95th percentile per-packet one-way delay: 150.470 ms
Loss rate: 2.07%
```
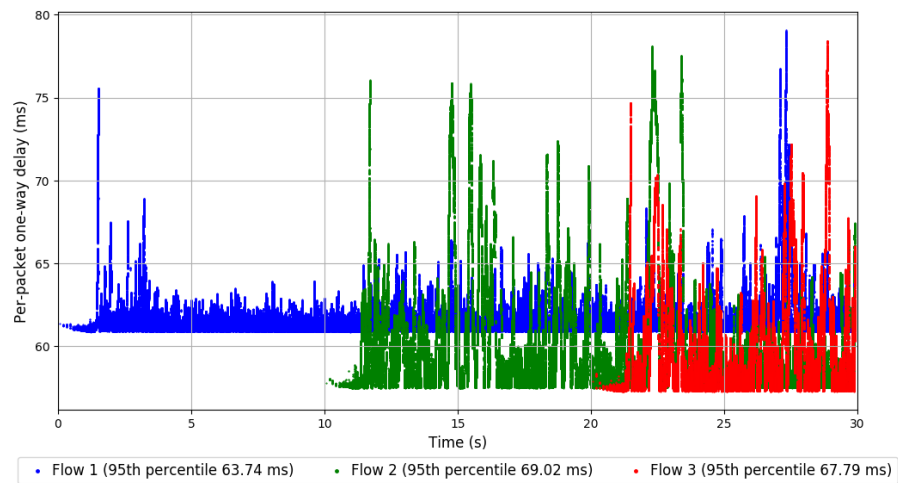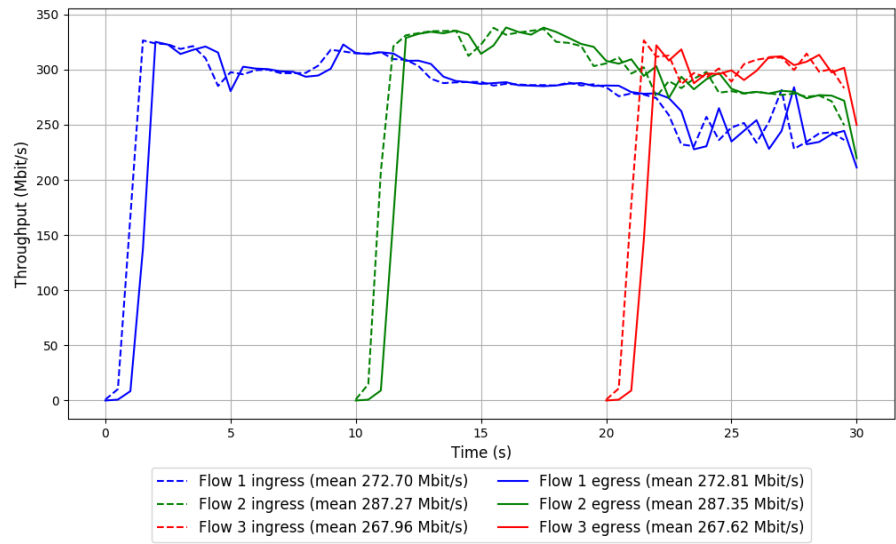
Run 5: Report of TCP BBR — Data Link

```
Run 1: Statistics of Copa

Start at: 2018-12-01 04:35:47
End at: 2018-12-01 04:36:17
Local clock offset: 0.191 ms
Remote clock offset: -0.008 ms


# Below is generated by plot.py at 2018-12-01 07:56:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 550.48 Mbit/s
95th percentile per-packet one-way delay: 68.646 ms
Loss rate: 0.54%
-- Flow 1:
Average throughput: 295.38 Mbit/s
95th percentile per-packet one-way delay: 68.002 ms
Loss rate: 0.37%
-- Flow 2:
Average throughput: 268.30 Mbit/s
95th percentile per-packet one-way delay: 65.141 ms
Loss rate: 0.45%
-- Flow 3:
Average throughput: 232.90 Mbit/s
95th percentile per-packet one-way delay: 104.207 ms
Loss rate: 1.43%
```
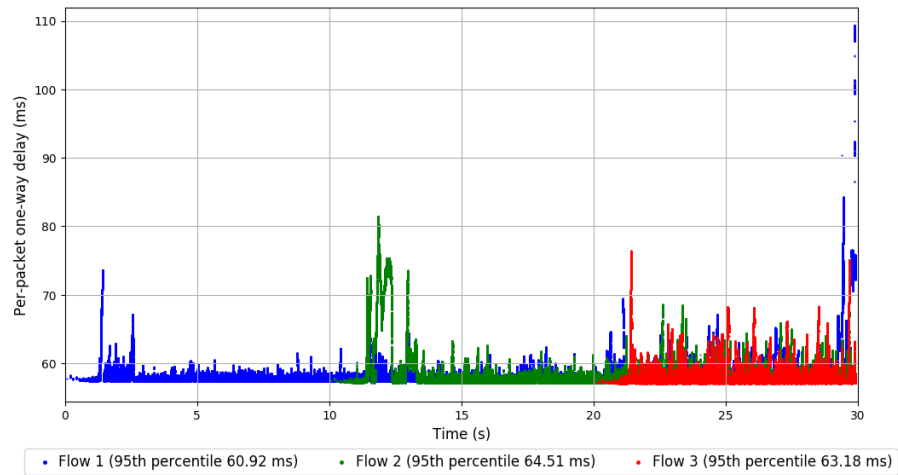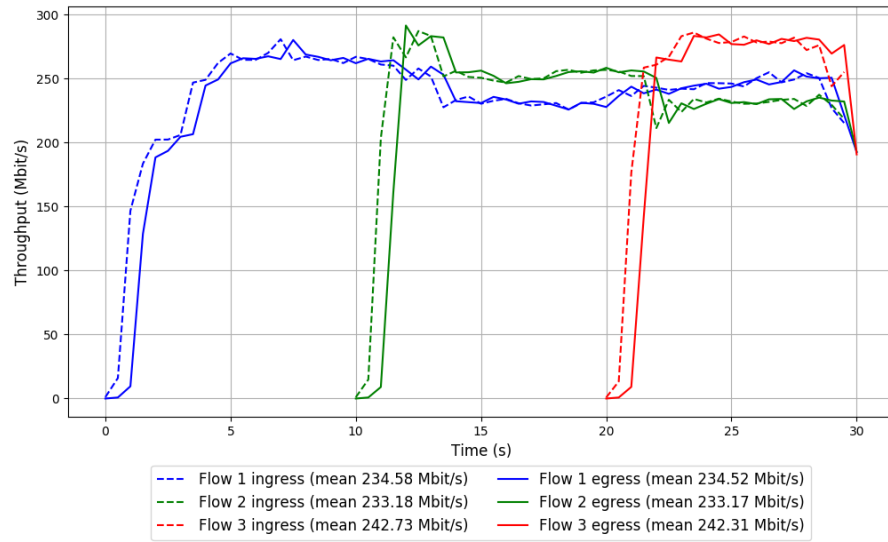
Run 1: Report of Copa — Data Link

Flow 1 ingress (mean 295.27 Mbit/s)   Flow 1 egress (mean 295.38 Mbit/s)
Flow 2 ingress (mean 267.92 Mbit/s)   Flow 2 egress (mean 268.30 Mbit/s)
Flow 3 ingress (mean 233.56 Mbit/s)   Flow 3 egress (mean 232.90 Mbit/s)

Flow 1 (95th percentile 68.00 ms)   Flow 2 (95th percentile 65.14 ms)   Flow 3 (95th percentile 104.21 ms)

```
Run 2: Statistics of Copa

Start at: 2018-12-01 05:11:41
End at: 2018-12-01 05:12:11
Local clock offset: 0.231 ms
Remote clock offset: -0.952 ms


# Below is generated by plot.py at 2018-12-01 07:57:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 558.30 Mbit/s
95th percentile per-packet one-way delay: 69.164 ms
Loss rate: 0.58%
-- Flow 1:
Average throughput: 289.77 Mbit/s
95th percentile per-packet one-way delay: 65.634 ms
Loss rate: 0.39%
-- Flow 2:
Average throughput: 279.11 Mbit/s
95th percentile per-packet one-way delay: 68.514 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 251.79 Mbit/s
95th percentile per-packet one-way delay: 75.235 ms
Loss rate: 1.21%
```

Run 2: Report of Copa — Data Link

```
Run 3: Statistics of Copa

Start at: 2018-12-01 05:47:42
End at: 2018-12-01 05:48:12
Local clock offset: 0.116 ms
Remote clock offset: -0.203 ms


# Below is generated by plot.py at 2018-12-01 07:57:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 552.09 Mbit/s
95th percentile per-packet one-way delay: 65.866 ms
Loss rate: 0.57%
-- Flow 1:
Average throughput: 272.81 Mbit/s
95th percentile per-packet one-way delay: 63.743 ms
Loss rate: 0.36%
-- Flow 2:
Average throughput: 287.35 Mbit/s
95th percentile per-packet one-way delay: 69.017 ms
Loss rate: 0.54%
-- Flow 3:
Average throughput: 267.62 Mbit/s
95th percentile per-packet one-way delay: 67.793 ms
Loss rate: 1.28%
```
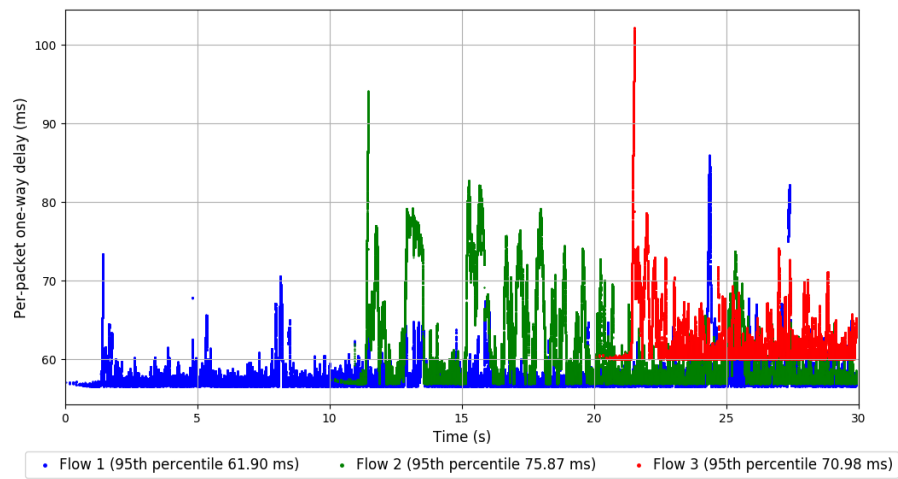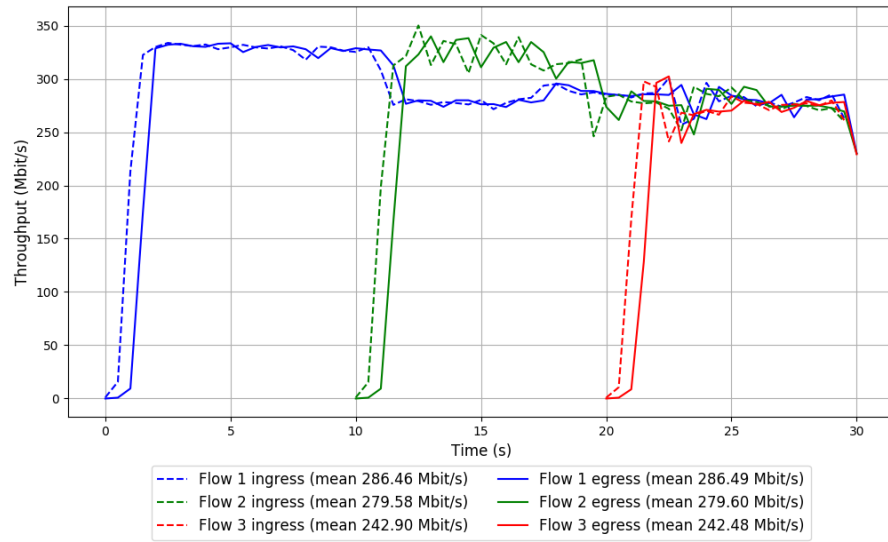
Run 3: Report of Copa — Data Link

```
Run 4: Statistics of Copa

Start at: 2018-12-01 06:23:56
End at: 2018-12-01 06:24:26
Local clock offset: -0.034 ms
Remote clock offset: -0.366 ms


# Below is generated by plot.py at 2018-12-01 08:12:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 469.36 Mbit/s
95th percentile per-packet one-way delay: 62.407 ms
Loss rate: 0.62%
-- Flow 1:
Average throughput: 234.52 Mbit/s
95th percentile per-packet one-way delay: 60.916 ms
Loss rate: 0.41%
-- Flow 2:
Average throughput: 233.17 Mbit/s
95th percentile per-packet one-way delay: 64.511 ms
Loss rate: 0.57%
-- Flow 3:
Average throughput: 242.31 Mbit/s
95th percentile per-packet one-way delay: 63.178 ms
Loss rate: 1.33%
```
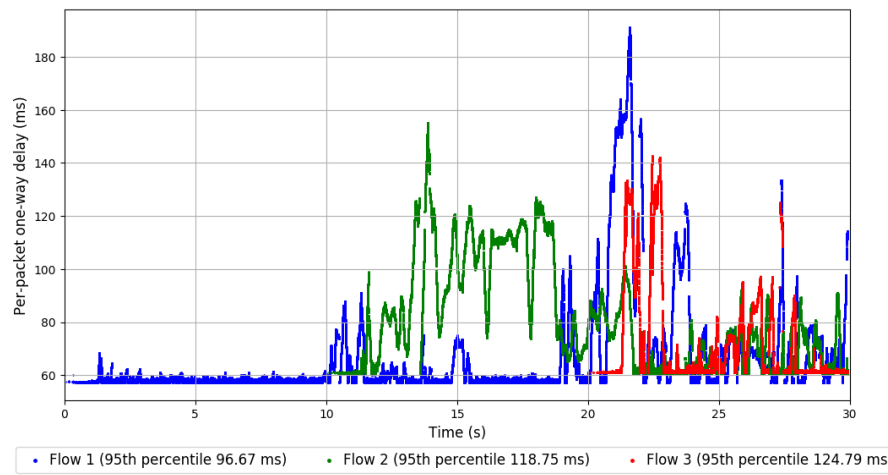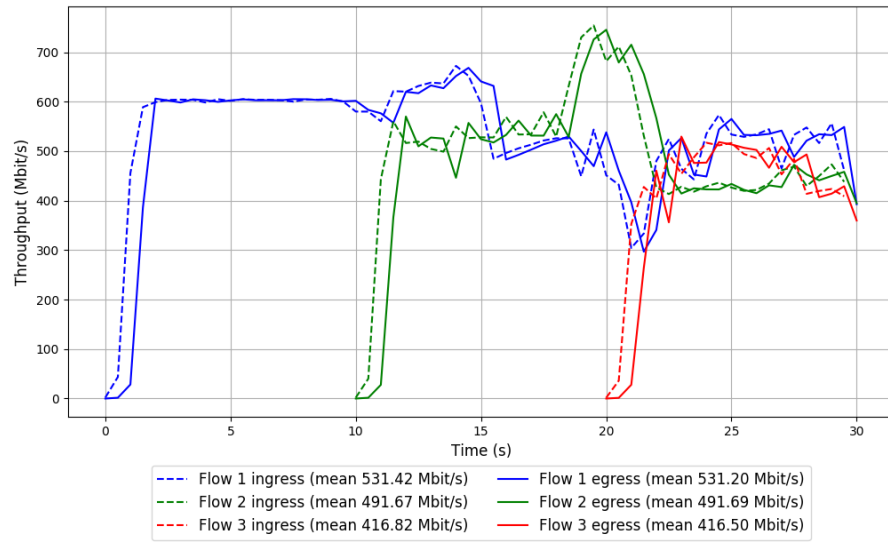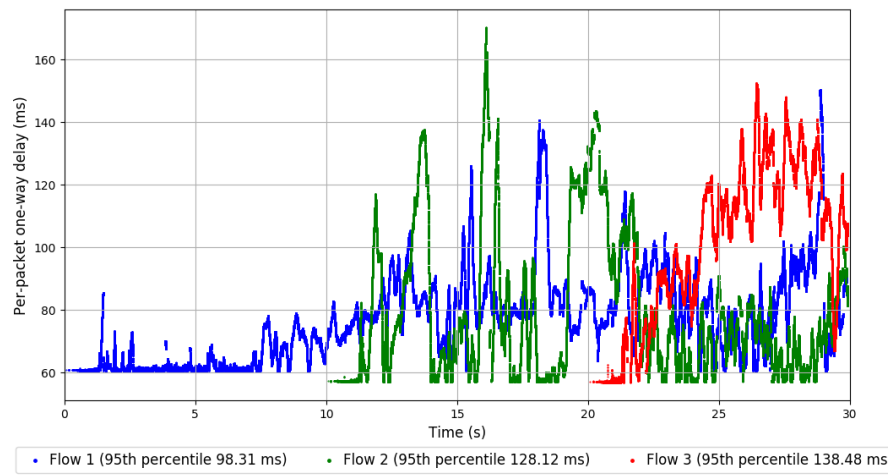
Run 4: Report of Copa — Data Link

Flow 1 ingress (mean 234.58 Mbit/s)   Flow 1 egress (mean 234.52 Mbit/s)
Flow 2 ingress (mean 233.18 Mbit/s)   Flow 2 egress (mean 233.17 Mbit/s)
Flow 3 ingress (mean 242.73 Mbit/s)   Flow 3 egress (mean 242.31 Mbit/s)

Flow 1 (95th percentile 60.92 ms)   Flow 2 (95th percentile 64.51 ms)   Flow 3 (95th percentile 63.18 ms)

22

```
Run 5: Statistics of Copa

Start at: 2018-12-01 07:00:41
End at: 2018-12-01 07:01:11
Local clock offset: 0.241 ms
Remote clock offset: 0.619 ms


# Below is generated by plot.py at 2018-12-01 08:16:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 552.25 Mbit/s
95th percentile per-packet one-way delay: 70.768 ms
Loss rate: 0.58%
-- Flow 1:
Average throughput: 286.49 Mbit/s
95th percentile per-packet one-way delay: 61.897 ms
Loss rate: 0.37%
-- Flow 2:
Average throughput: 279.60 Mbit/s
95th percentile per-packet one-way delay: 75.868 ms
Loss rate: 0.57%
-- Flow 3:
Average throughput: 242.48 Mbit/s
95th percentile per-packet one-way delay: 70.978 ms
Loss rate: 1.36%
```
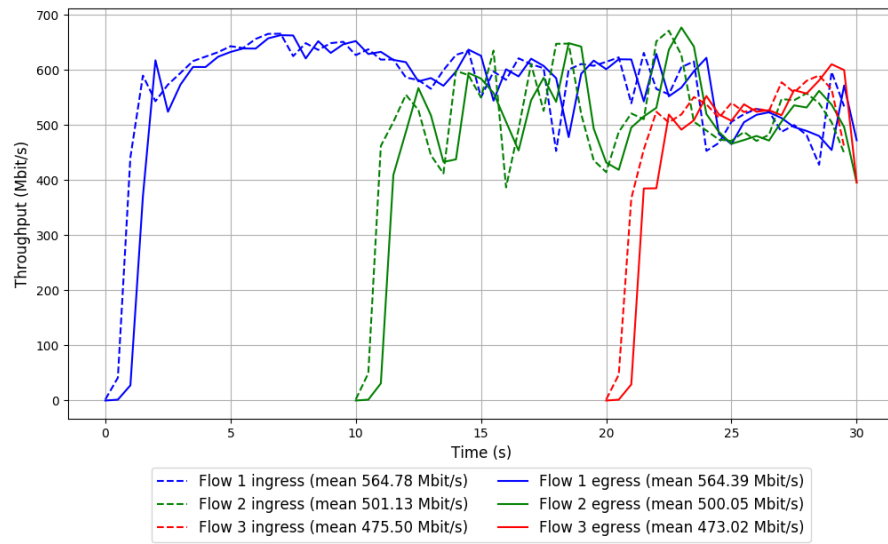
Run 5: Report of Copa — Data Link

Flow 1 ingress (mean 286.46 Mbit/s)   Flow 1 egress (mean 286.49 Mbit/s)
Flow 2 ingress (mean 279.58 Mbit/s)   Flow 2 egress (mean 279.60 Mbit/s)
Flow 3 ingress (mean 242.90 Mbit/s)   Flow 3 egress (mean 242.48 Mbit/s)

Flow 1 (95th percentile 61.90 ms)   Flow 2 (95th percentile 75.87 ms)   Flow 3 (95th percentile 70.98 ms)
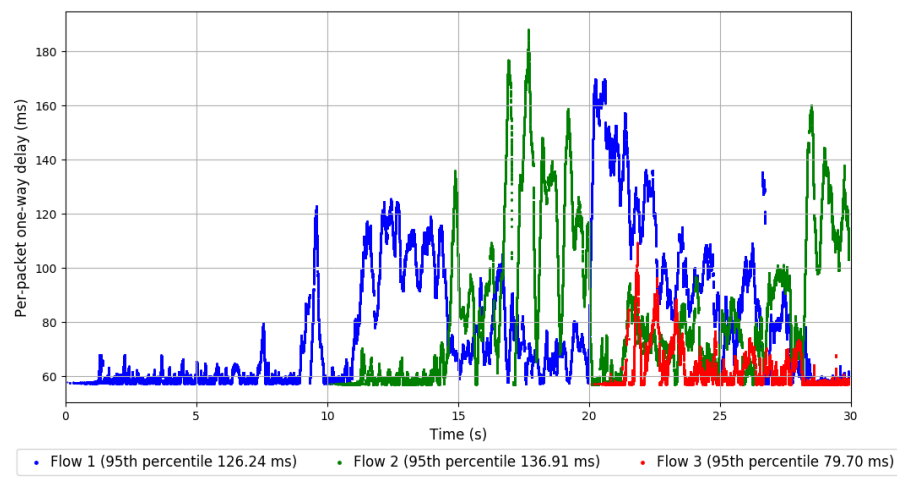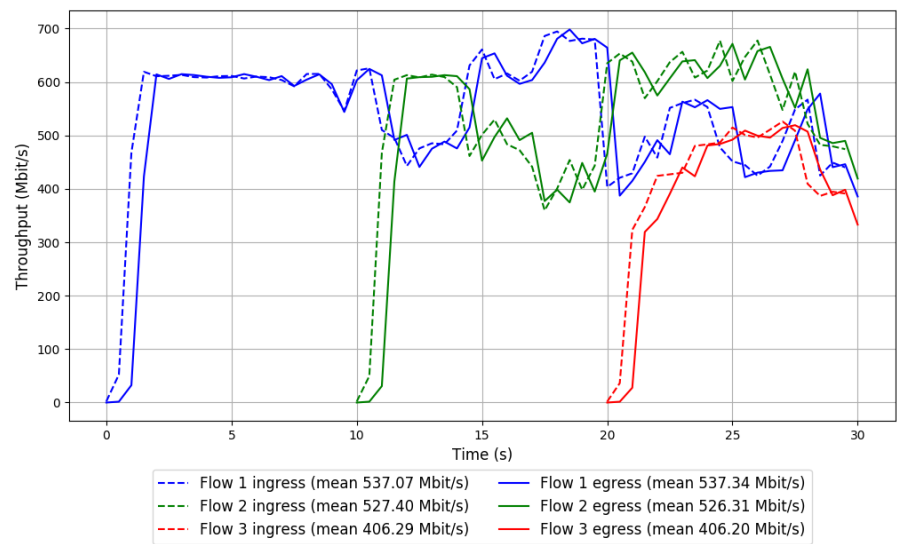
24

```
Run 1: Statistics of TCP Cubic

Start at: 2018-12-01 04:40:15
End at: 2018-12-01 04:40:45
Local clock offset: -0.217 ms
Remote clock offset: -0.66 ms


# Below is generated by plot.py at 2018-12-01 08:16:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 995.19 Mbit/s
95th percentile per-packet one-way delay: 116.829 ms
Loss rate: 0.60%
-- Flow 1:
Average throughput: 531.20 Mbit/s
95th percentile per-packet one-way delay: 96.668 ms
Loss rate: 0.43%
-- Flow 2:
Average throughput: 491.69 Mbit/s
95th percentile per-packet one-way delay: 118.748 ms
Loss rate: 0.59%
-- Flow 3:
Average throughput: 416.50 Mbit/s
95th percentile per-packet one-way delay: 124.788 ms
Loss rate: 1.25%
```

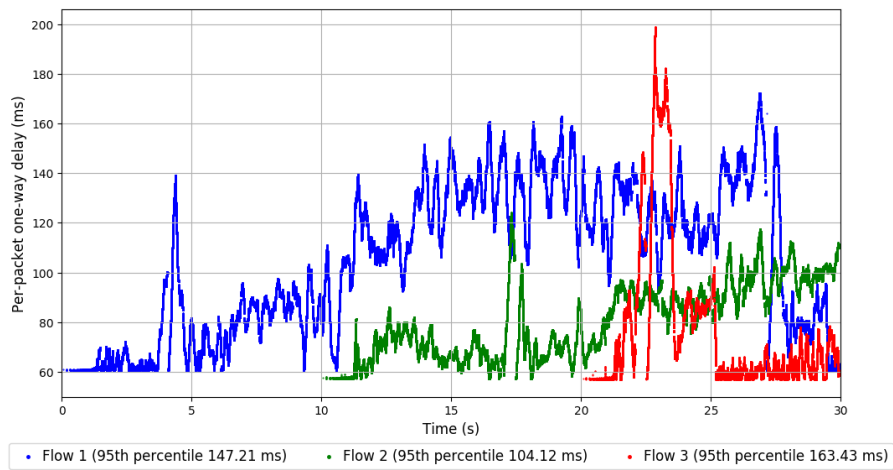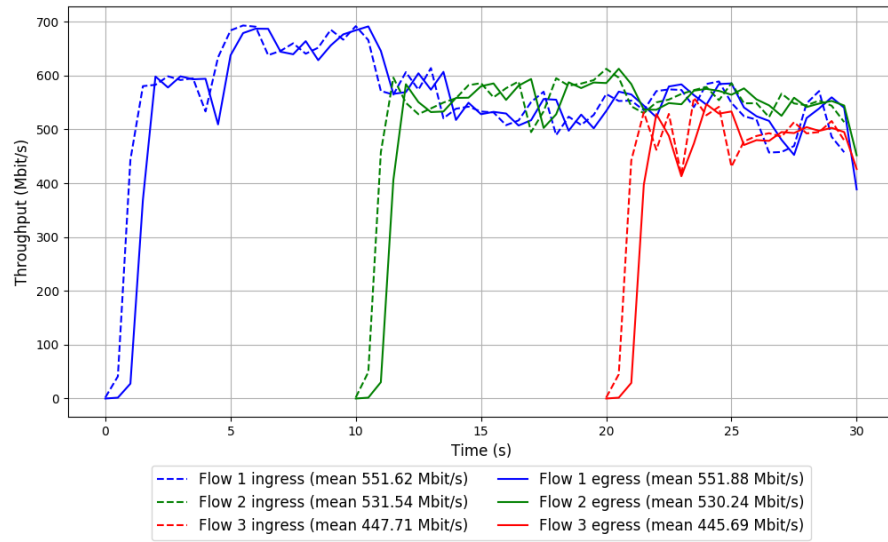Run 1: Report of TCP Cubic — Data Link

```
Run 2: Statistics of TCP Cubic

Start at: 2018-12-01 05:16:18
End at: 2018-12-01 05:16:48
Local clock offset: -0.007 ms
Remote clock offset: -0.235 ms


# Below is generated by plot.py at 2018-12-01 08:16:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1052.90 Mbit/s
95th percentile per-packet one-way delay: 126.902 ms
Loss rate: 0.74%
-- Flow 1:
Average throughput: 564.39 Mbit/s
95th percentile per-packet one-way delay: 98.314 ms
Loss rate: 0.46%
-- Flow 2:
Average throughput: 500.05 Mbit/s
95th percentile per-packet one-way delay: 128.118 ms
Loss rate: 0.79%
-- Flow 3:
Average throughput: 473.02 Mbit/s
95th percentile per-packet one-way delay: 138.481 ms
Loss rate: 1.68%
```

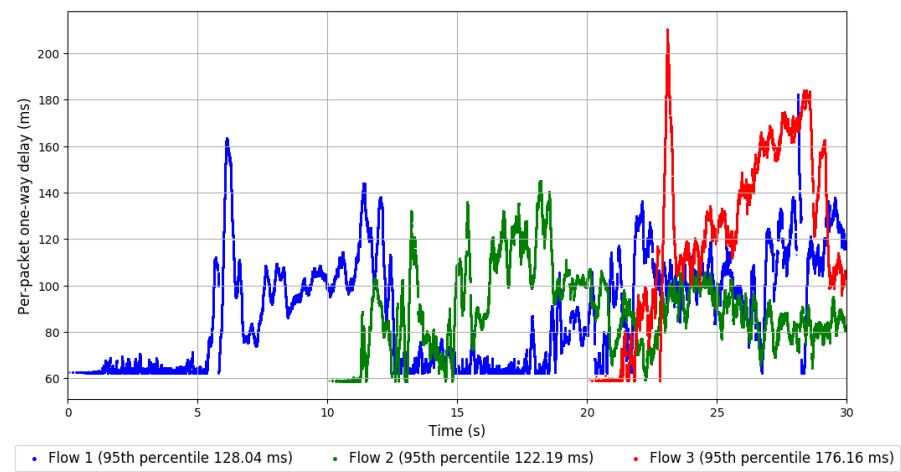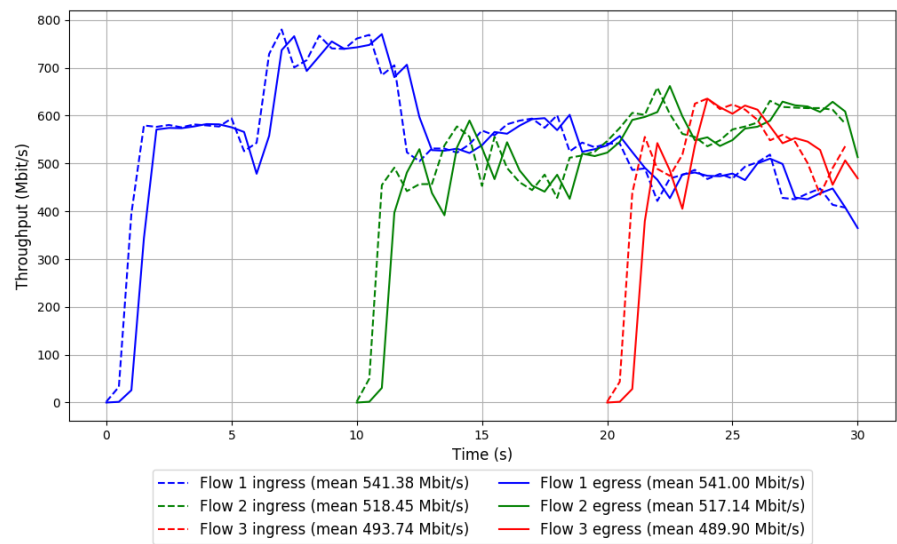Run 2: Report of TCP Cubic — Data Link

```
Run 3: Statistics of TCP Cubic

Start at: 2018-12-01 05:52:30
End at: 2018-12-01 05:53:01
Local clock offset: -0.13 ms
Remote clock offset: -0.108 ms


# Below is generated by plot.py at 2018-12-01 08:16:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1021.28 Mbit/s
95th percentile per-packet one-way delay: 129.528 ms
Loss rate: 0.60%
-- Flow 1:
Average throughput: 537.34 Mbit/s
95th percentile per-packet one-way delay: 126.244 ms
Loss rate: 0.33%
-- Flow 2:
Average throughput: 526.31 Mbit/s
95th percentile per-packet one-way delay: 136.915 ms
Loss rate: 0.78%
-- Flow 3:
Average throughput: 406.20 Mbit/s
95th percentile per-packet one-way delay: 79.696 ms
Loss rate: 1.17%
```

Run 3: Report of TCP Cubic — Data Link

- - - - Flow 1 ingress (mean 537.07 Mbit/s) —— Flow 1 egress (mean 537.34 Mbit/s)
- - - - Flow 2 ingress (mean 527.40 Mbit/s) —— Flow 2 egress (mean 526.31 Mbit/s)
- - - - Flow 3 ingress (mean 406.29 Mbit/s) —— Flow 3 egress (mean 406.20 Mbit/s)

• Flow 1 (95th percentile 126.24 ms)   • Flow 2 (95th percentile 136.91 ms)   • Flow 3 (95th percentile 79.70 ms)

```
Run 4: Statistics of TCP Cubic

Start at: 2018-12-01 06:28:22
End at: 2018-12-01 06:28:52
Local clock offset: -0.072 ms
Remote clock offset: -0.294 ms


# Below is generated by plot.py at 2018-12-01 08:18:07
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1051.50 Mbit/s
95th percentile per-packet one-way delay: 144.605 ms
Loss rate: 0.68%
-- Flow 1:
Average throughput: 551.88 Mbit/s
95th percentile per-packet one-way delay: 147.211 ms
Loss rate: 0.34%
-- Flow 2:
Average throughput: 530.24 Mbit/s
95th percentile per-packet one-way delay: 104.125 ms
Loss rate: 0.81%
-- Flow 3:
Average throughput: 445.69 Mbit/s
95th percentile per-packet one-way delay: 163.433 ms
Loss rate: 1.59%
```
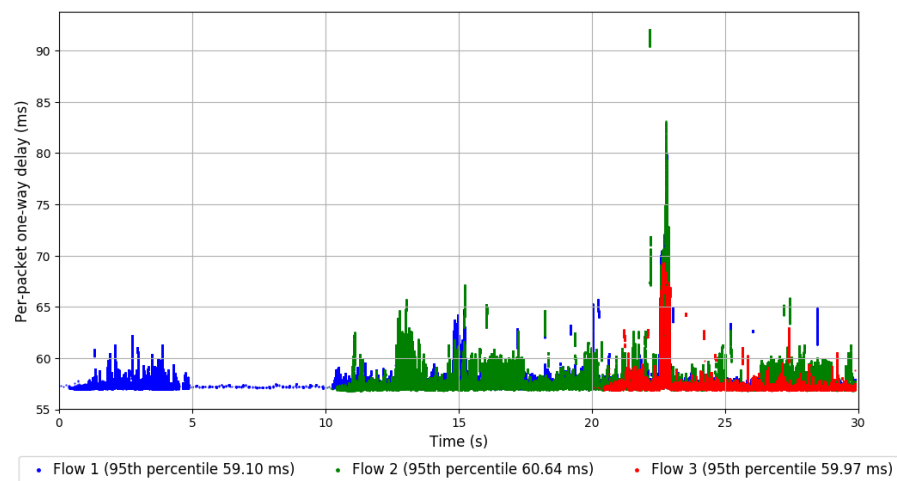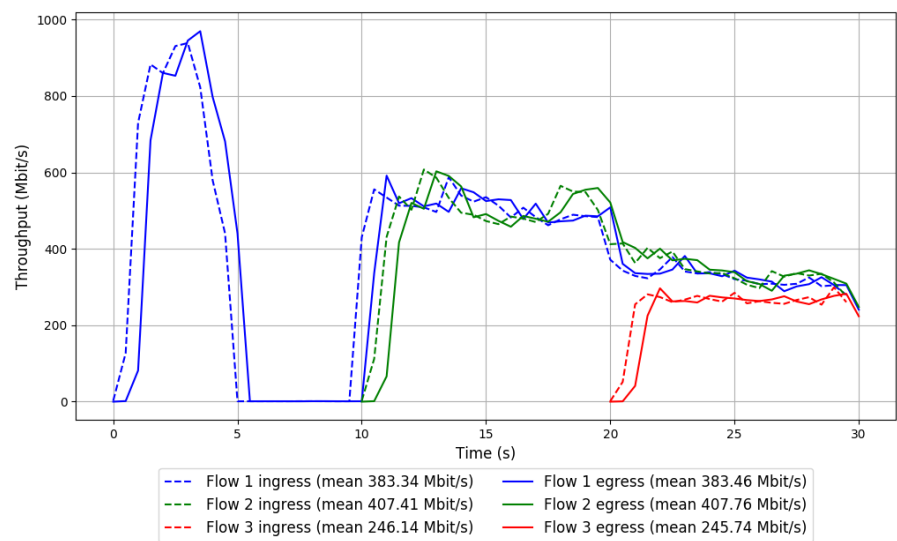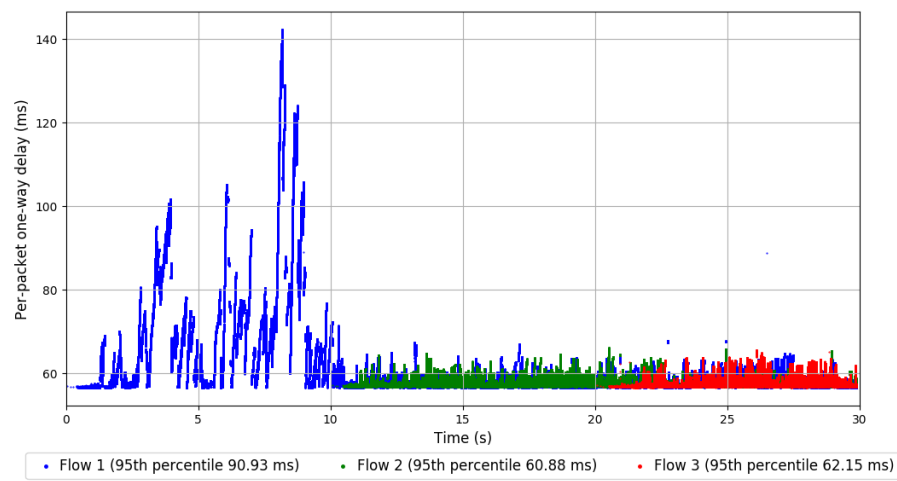
Run 4: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 551.62 Mbit/s) --- Flow 1 egress (mean 551.88 Mbit/s)
Flow 2 ingress (mean 531.54 Mbit/s) --- Flow 2 egress (mean 530.24 Mbit/s)
Flow 3 ingress (mean 447.71 Mbit/s) --- Flow 3 egress (mean 445.69 Mbit/s)

Flow 1 (95th percentile 147.21 ms) • Flow 2 (95th percentile 104.12 ms) • Flow 3 (95th percentile 163.43 ms)

```
Run 5: Statistics of TCP Cubic

Start at: 2018-12-01 07:05:06
End at: 2018-12-01 07:05:36
Local clock offset: 0.43 ms
Remote clock offset: -1.368 ms


# Below is generated by plot.py at 2018-12-01 08:18:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1046.42 Mbit/s
95th percentile per-packet one-way delay: 150.415 ms
Loss rate: 0.81%
-- Flow 1:
Average throughput: 541.00 Mbit/s
95th percentile per-packet one-way delay: 128.041 ms
Loss rate: 0.46%
-- Flow 2:
Average throughput: 517.14 Mbit/s
95th percentile per-packet one-way delay: 122.194 ms
Loss rate: 0.82%
-- Flow 3:
Average throughput: 489.90 Mbit/s
95th percentile per-packet one-way delay: 176.157 ms
Loss rate: 1.92%
```
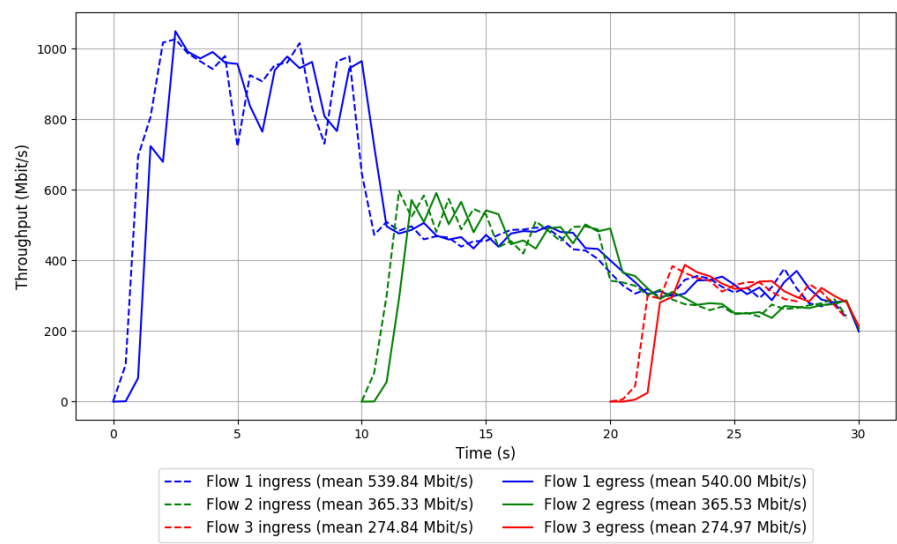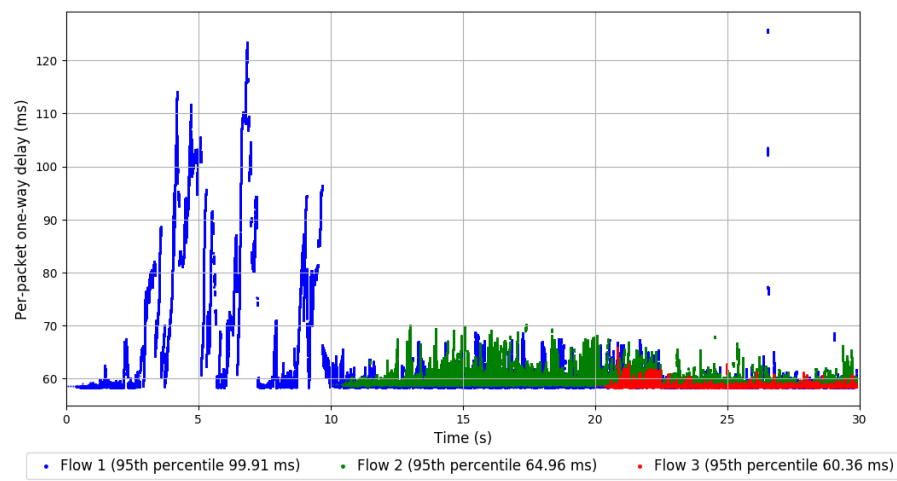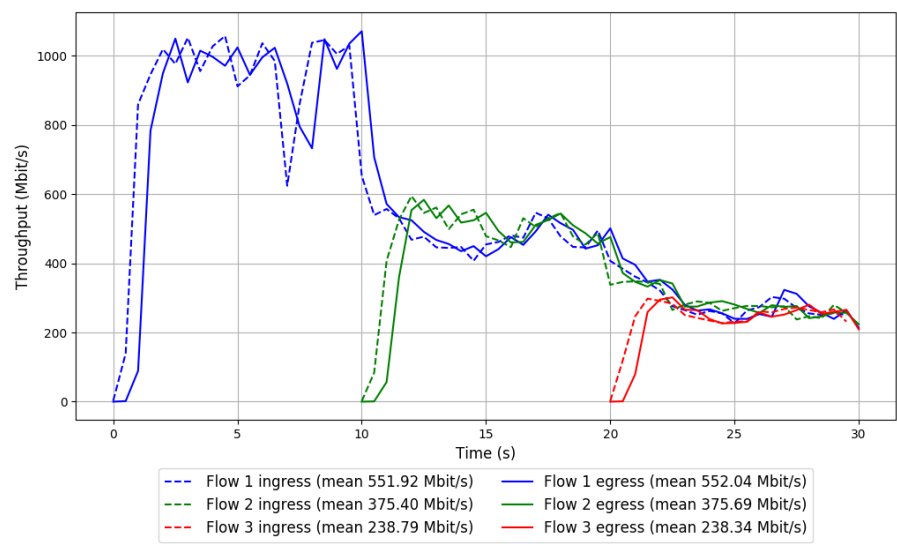
Run 5: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 541.38 Mbit/s) --- Flow 1 egress (mean 541.00 Mbit/s)
Flow 2 ingress (mean 518.45 Mbit/s) --- Flow 2 egress (mean 517.14 Mbit/s)
Flow 3 ingress (mean 493.74 Mbit/s) --- Flow 3 egress (mean 489.90 Mbit/s)

Flow 1 (95th percentile 128.04 ms)   Flow 2 (95th percentile 122.19 ms)   Flow 3 (95th percentile 176.16 ms)

```
Run 1: Statistics of FillP

Start at: 2018-12-01 04:46:55
End at: 2018-12-01 04:47:25
Local clock offset: 0.421 ms
Remote clock offset: 0.601 ms

# Below is generated by plot.py at 2018-12-01 08:18:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 734.77 Mbit/s
95th percentile per-packet one-way delay: 60.015 ms
Loss rate: 0.50%
-- Flow 1:
Average throughput: 383.46 Mbit/s
95th percentile per-packet one-way delay: 59.104 ms
Loss rate: 0.36%
-- Flow 2:
Average throughput: 407.76 Mbit/s
95th percentile per-packet one-way delay: 60.637 ms
Loss rate: 0.46%
-- Flow 3:
Average throughput: 245.74 Mbit/s
95th percentile per-packet one-way delay: 59.971 ms
Loss rate: 1.25%
```
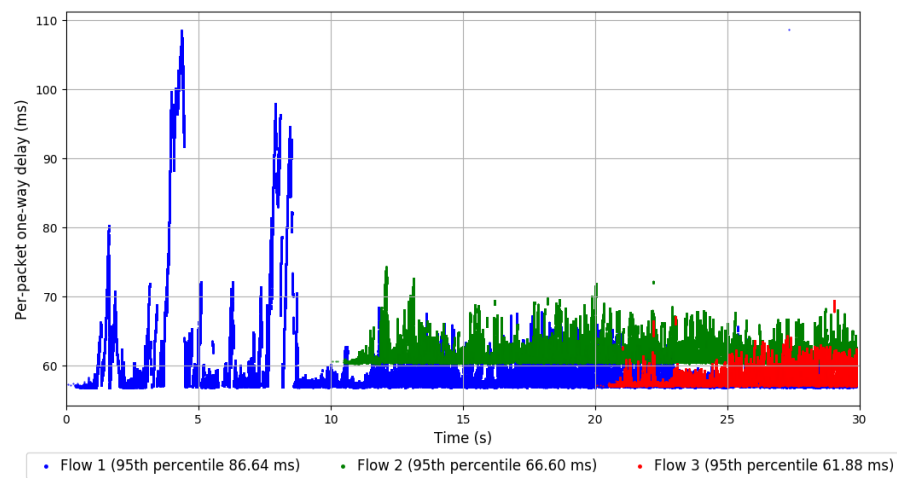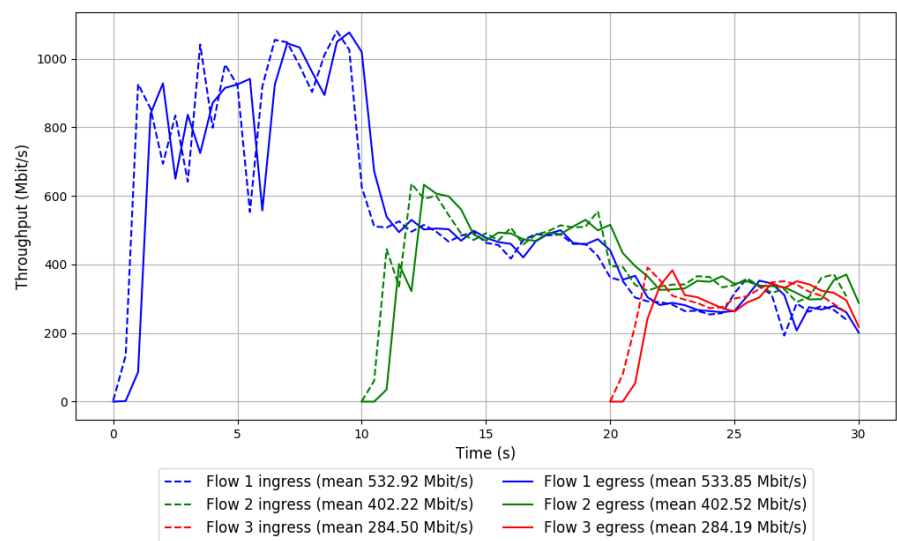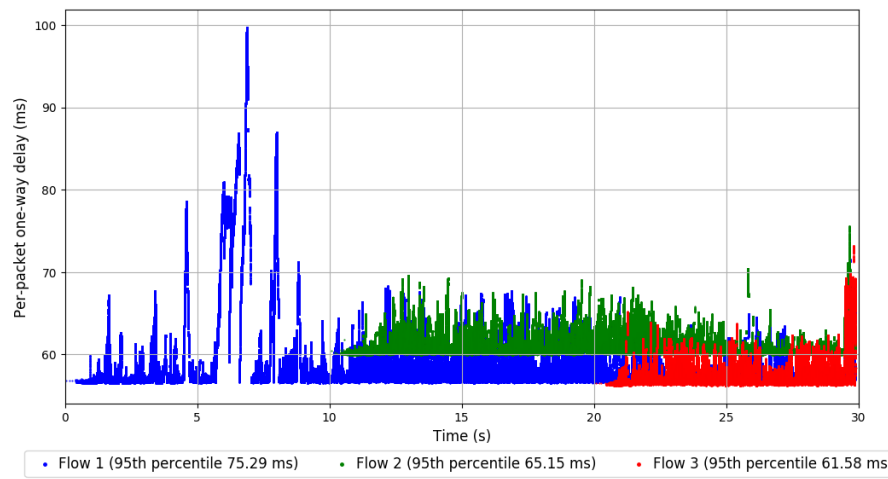
Run 1: Report of FillP — Data Link

```
Run 2: Statistics of FillP

Start at: 2018-12-01 05:22:51
End at: 2018-12-01 05:23:21
Local clock offset: 0.145 ms
Remote clock offset: 0.282 ms

# Below is generated by plot.py at 2018-12-01 08:34:24
# Datalink statistics
-- Total of 3 flows:
Average throughput: 872.87 Mbit/s
95th percentile per-packet one-way delay: 83.618 ms
Loss rate: 0.51%
-- Flow 1:
Average throughput: 540.00 Mbit/s
95th percentile per-packet one-way delay: 90.928 ms
Loss rate: 0.42%
-- Flow 2:
Average throughput: 365.53 Mbit/s
95th percentile per-packet one-way delay: 60.880 ms
Loss rate: 0.52%
-- Flow 3:
Average throughput: 274.97 Mbit/s
95th percentile per-packet one-way delay: 62.154 ms
Loss rate: 1.04%
```
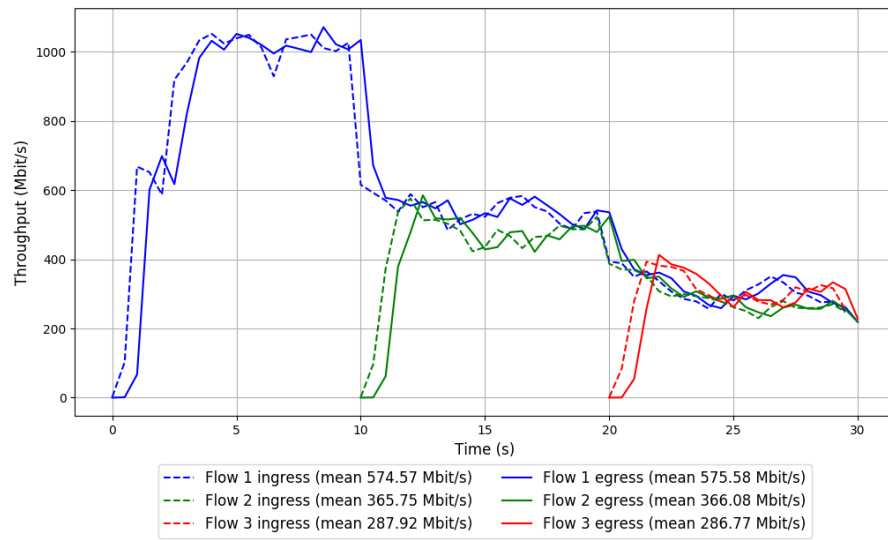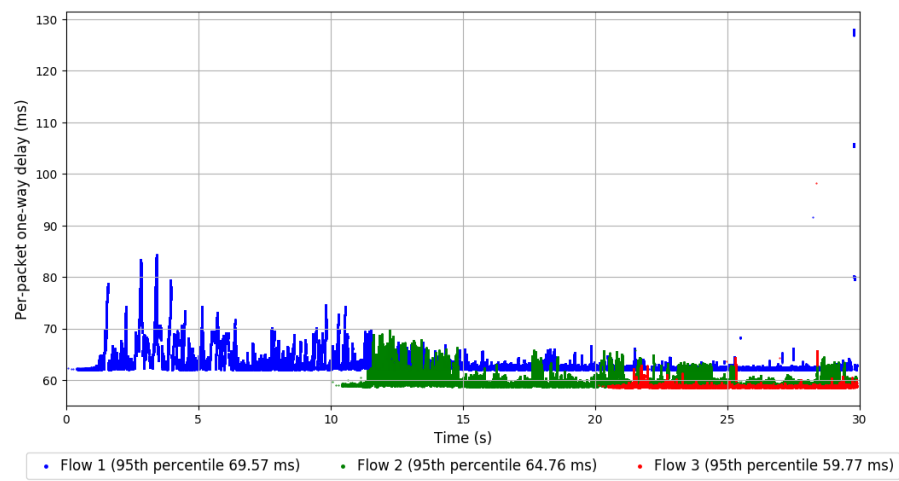
Run 2: Report of FillP — Data Link

Flow 1 ingress (mean 539.84 Mbit/s)   Flow 1 egress (mean 540.00 Mbit/s)
Flow 2 ingress (mean 365.33 Mbit/s)   Flow 2 egress (mean 365.53 Mbit/s)
Flow 3 ingress (mean 274.84 Mbit/s)   Flow 3 egress (mean 274.97 Mbit/s)

Flow 1 (95th percentile 90.93 ms)   Flow 2 (95th percentile 60.88 ms)   Flow 3 (95th percentile 62.15 ms)

```
Run 3: Statistics of FillP

Start at: 2018-12-01 05:58:51
End at: 2018-12-01 05:59:21
Local clock offset: -0.095 ms
Remote clock offset: -1.496 ms


# Below is generated by plot.py at 2018-12-01 08:36:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 879.92 Mbit/s
95th percentile per-packet one-way delay: 92.930 ms
Loss rate: 0.47%
-- Flow 1:
Average throughput: 552.04 Mbit/s
95th percentile per-packet one-way delay: 99.908 ms
Loss rate: 0.35%
-- Flow 2:
Average throughput: 375.69 Mbit/s
95th percentile per-packet one-way delay: 64.957 ms
Loss rate: 0.50%
-- Flow 3:
Average throughput: 238.34 Mbit/s
95th percentile per-packet one-way delay: 60.363 ms
Loss rate: 1.28%
```
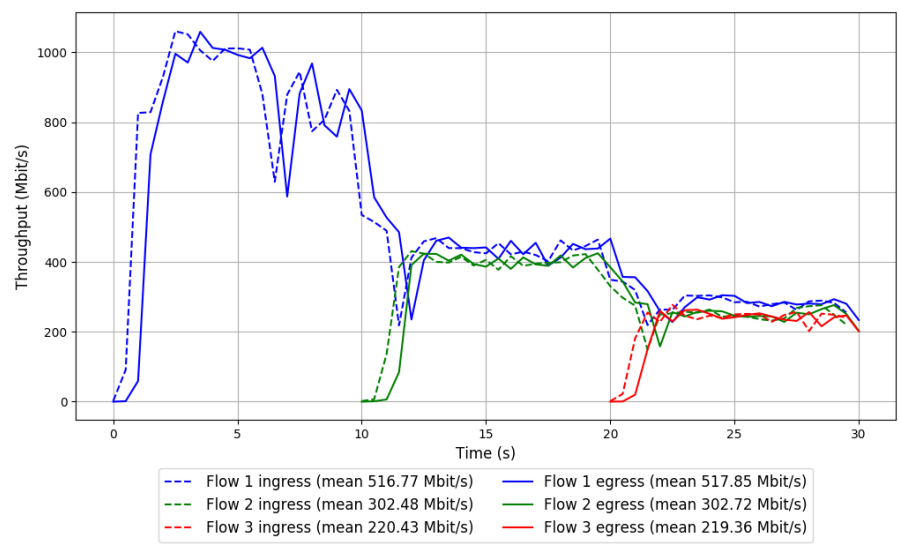
Run 3: Report of FillP — Data Link

Flow 1 ingress (mean 551.92 Mbit/s) --- Flow 1 egress (mean 552.04 Mbit/s)
Flow 2 ingress (mean 375.40 Mbit/s) --- Flow 2 egress (mean 375.69 Mbit/s)
Flow 3 ingress (mean 238.79 Mbit/s) --- Flow 3 egress (mean 238.34 Mbit/s)

Flow 1 (95th percentile 99.91 ms) • Flow 2 (95th percentile 64.96 ms) • Flow 3 (95th percentile 60.36 ms)

```
Run 4: Statistics of FillP

Start at: 2018-12-01 06:35:10
End at: 2018-12-01 06:35:40
Local clock offset: -0.045 ms
Remote clock offset: -0.255 ms


# Below is generated by plot.py at 2018-12-01 08:38:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 894.63 Mbit/s
95th percentile per-packet one-way delay: 72.590 ms
Loss rate: 0.39%
-- Flow 1:
Average throughput: 533.85 Mbit/s
95th percentile per-packet one-way delay: 86.641 ms
Loss rate: 0.21%
-- Flow 2:
Average throughput: 402.52 Mbit/s
95th percentile per-packet one-way delay: 66.603 ms
Loss rate: 0.45%
-- Flow 3:
Average throughput: 284.19 Mbit/s
95th percentile per-packet one-way delay: 61.878 ms
Loss rate: 1.21%
```
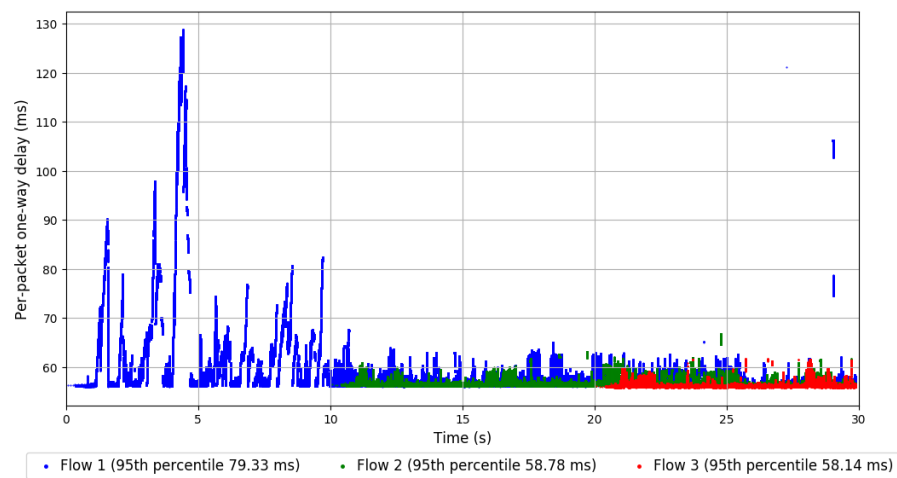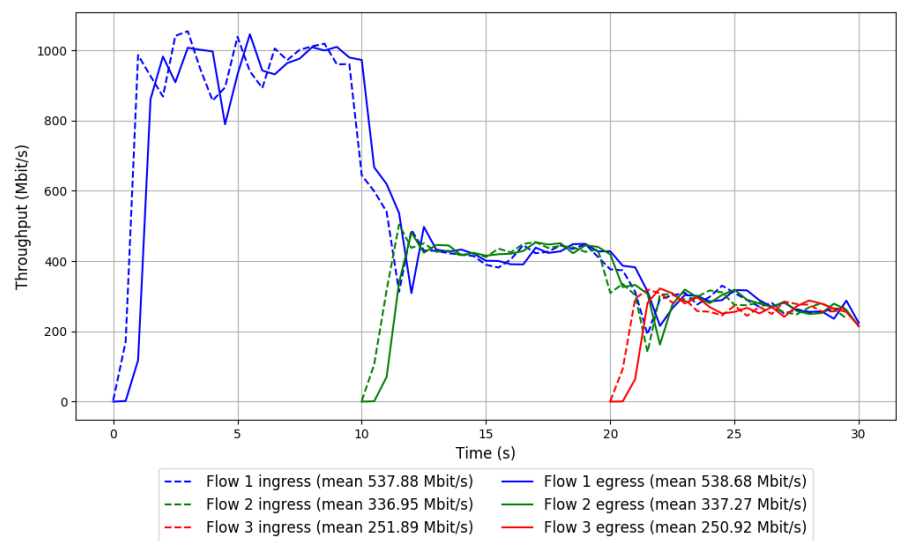
Run 4: Report of FillP — Data Link

```
Run 5: Statistics of FillP

Start at: 2018-12-01 07:11:49
End at: 2018-12-01 07:12:19
Local clock offset: -0.452 ms
Remote clock offset: -0.055 ms


# Below is generated by plot.py at 2018-12-01 08:38:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 912.99 Mbit/s
95th percentile per-packet one-way delay: 68.906 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 575.58 Mbit/s
95th percentile per-packet one-way delay: 75.290 ms
Loss rate: 0.21%
-- Flow 2:
Average throughput: 366.08 Mbit/s
95th percentile per-packet one-way delay: 65.146 ms
Loss rate: 0.44%
-- Flow 3:
Average throughput: 286.77 Mbit/s
95th percentile per-packet one-way delay: 61.584 ms
Loss rate: 1.22%
```
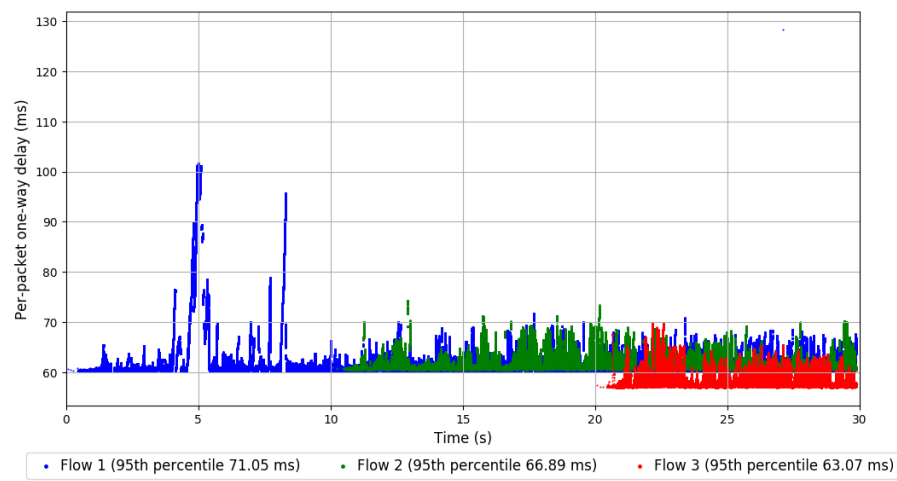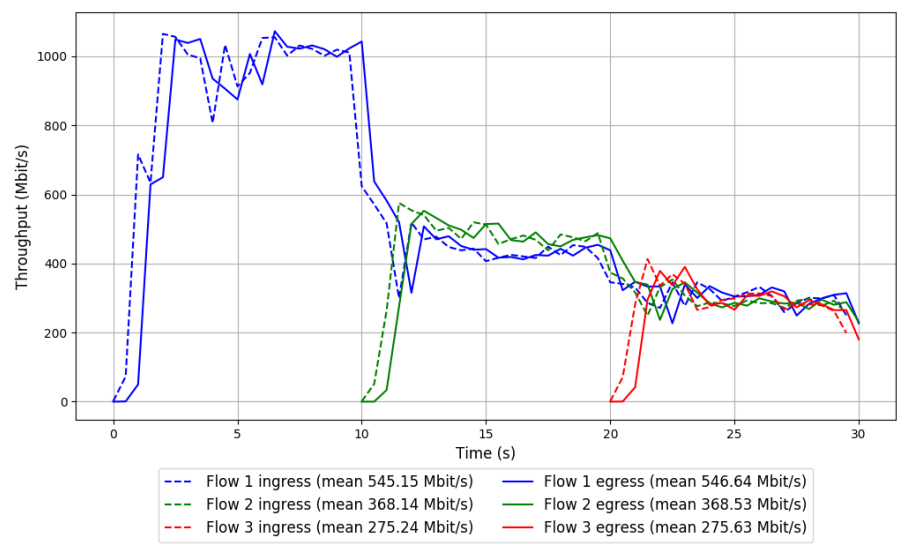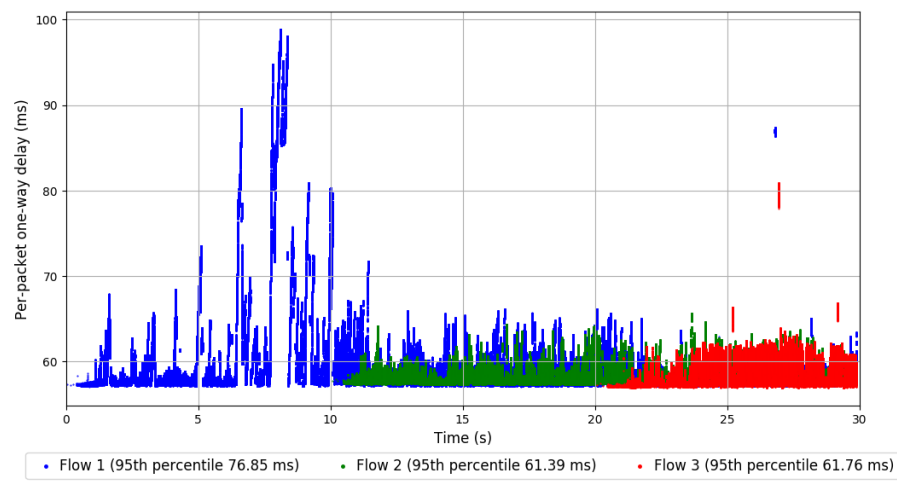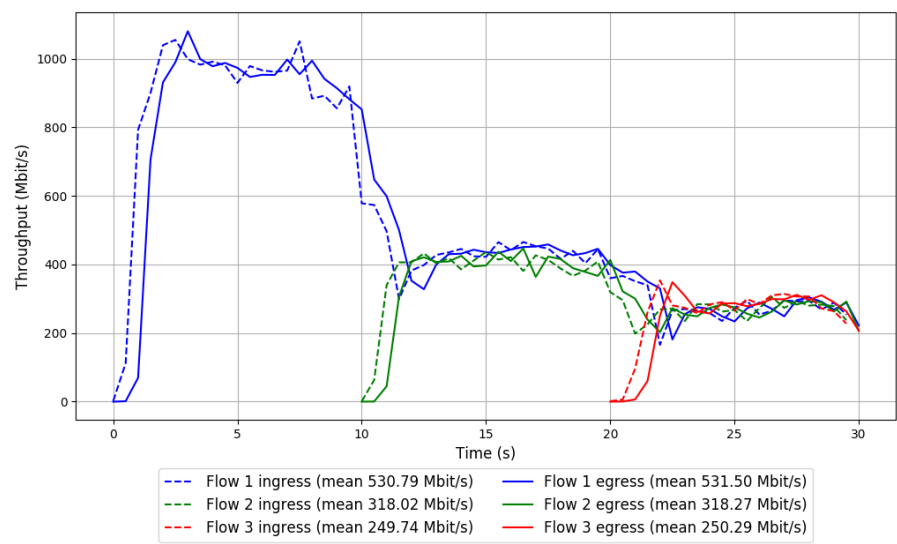
Run 5: Report of FillP — Data Link

Flow 1 ingress (mean 574.57 Mbit/s)   Flow 1 egress (mean 575.58 Mbit/s)
Flow 2 ingress (mean 365.75 Mbit/s)   Flow 2 egress (mean 366.08 Mbit/s)
Flow 3 ingress (mean 287.92 Mbit/s)   Flow 3 egress (mean 286.77 Mbit/s)

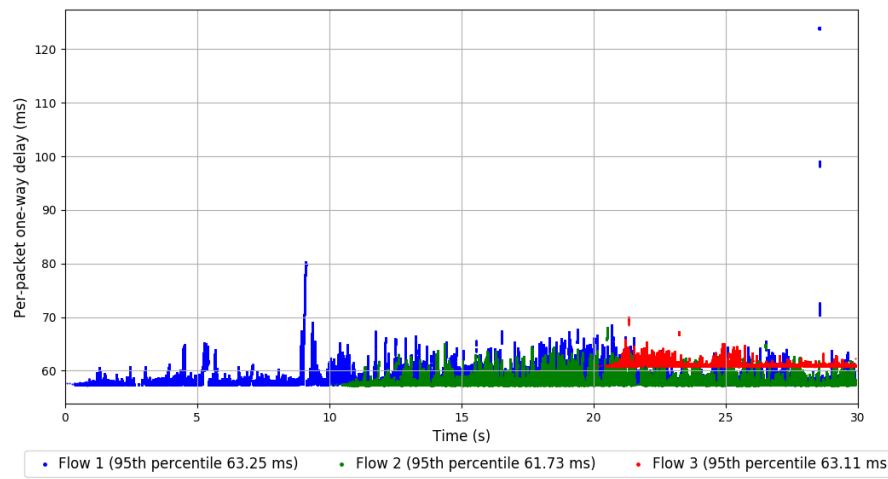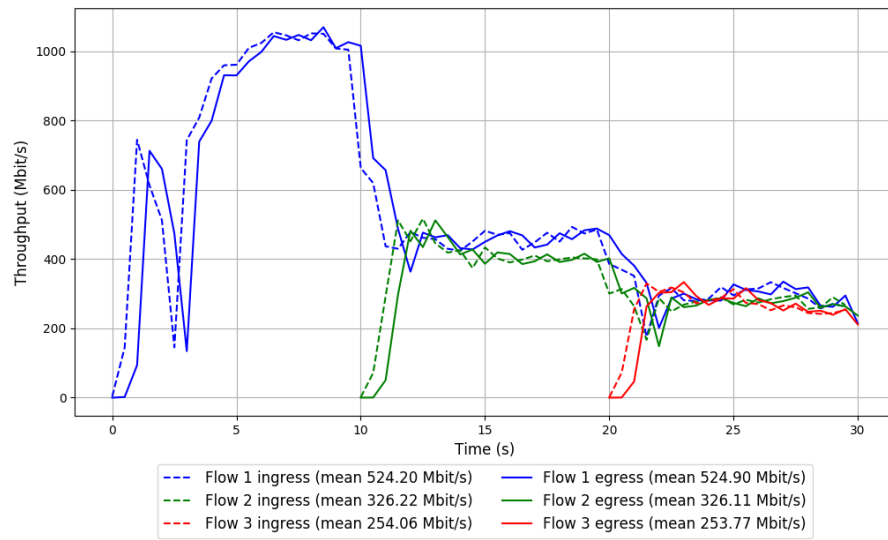Flow 1 (95th percentile 75.29 ms)   Flow 2 (95th percentile 65.15 ms)   Flow 3 (95th percentile 61.58 ms)

44

```
Run 1: Statistics of FillP-Sheep

Start at: 2018-12-01 04:19:27
End at: 2018-12-01 04:19:57
Local clock offset: 0.227 ms
Remote clock offset: -1.519 ms

# Below is generated by plot.py at 2018-12-01 08:38:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 790.62 Mbit/s
95th percentile per-packet one-way delay: 68.599 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 517.85 Mbit/s
95th percentile per-packet one-way delay: 69.566 ms
Loss rate: 0.16%
-- Flow 2:
Average throughput: 302.72 Mbit/s
95th percentile per-packet one-way delay: 64.762 ms
Loss rate: 0.46%
-- Flow 3:
Average throughput: 219.36 Mbit/s
95th percentile per-packet one-way delay: 59.772 ms
Loss rate: 1.67%
```

Run 1: Report of FillP-Sheep — Data Link

Flow 1 ingress (mean 516.77 Mbit/s) --- Flow 1 egress (mean 517.85 Mbit/s)
Flow 2 ingress (mean 302.48 Mbit/s) --- Flow 2 egress (mean 302.72 Mbit/s)
Flow 3 ingress (mean 220.43 Mbit/s) --- Flow 3 egress (mean 219.36 Mbit/s)

Flow 1 (95th percentile 69.57 ms)   Flow 2 (95th percentile 64.76 ms)   Flow 3 (95th percentile 59.77 ms)

```
Run 2: Statistics of FillP-Sheep

Start at: 2018-12-01 04:54:40
End at: 2018-12-01 04:55:10
Local clock offset: -0.421 ms
Remote clock offset: 0.535 ms


# Below is generated by plot.py at 2018-12-01 08:38:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 845.15 Mbit/s
95th percentile per-packet one-way delay: 73.727 ms
Loss rate: 0.45%
-- Flow 1:
Average throughput: 538.68 Mbit/s
95th percentile per-packet one-way delay: 79.334 ms
Loss rate: 0.29%
-- Flow 2:
Average throughput: 337.27 Mbit/s
95th percentile per-packet one-way delay: 58.783 ms
Loss rate: 0.45%
-- Flow 3:
Average throughput: 250.92 Mbit/s
95th percentile per-packet one-way delay: 58.136 ms
Loss rate: 1.54%
```

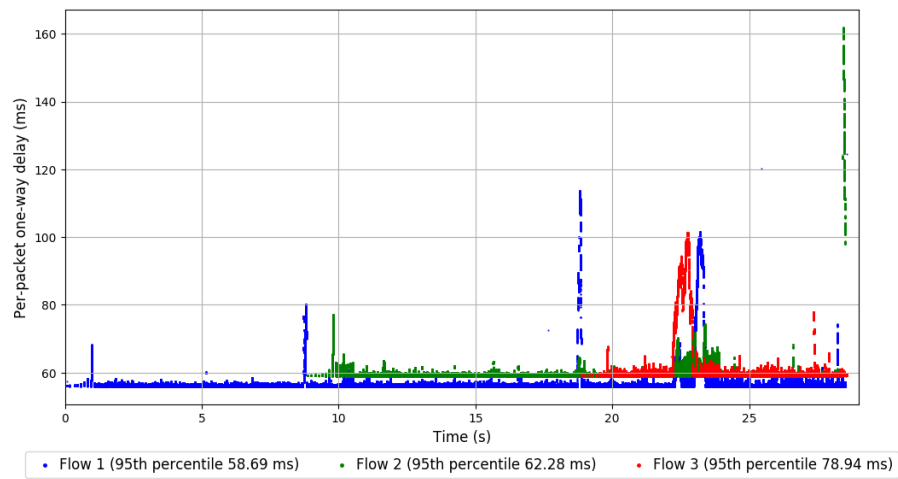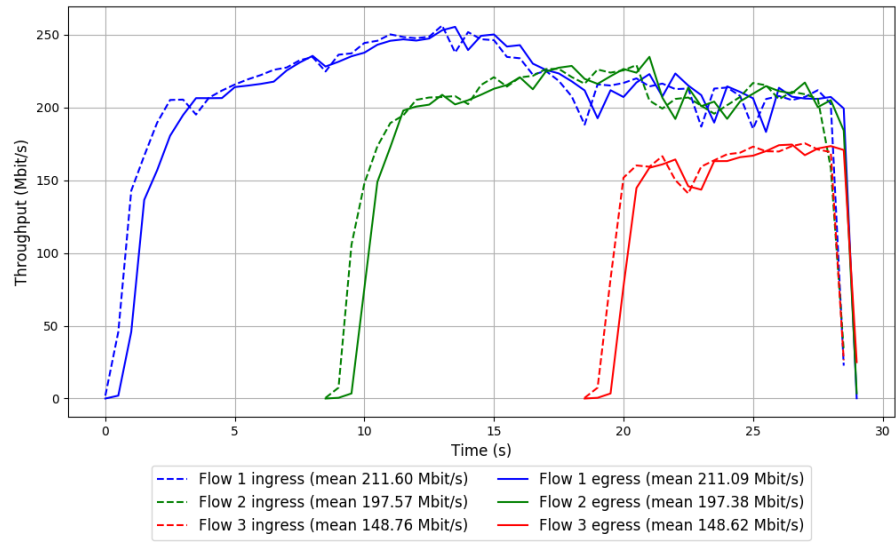Run 2: Report of FillP-Sheep — Data Link

Flow 1 ingress (mean 537.88 Mbit/s) --- Flow 1 egress (mean 538.68 Mbit/s)
Flow 2 ingress (mean 336.95 Mbit/s) --- Flow 2 egress (mean 337.27 Mbit/s)
Flow 3 ingress (mean 251.89 Mbit/s) --- Flow 3 egress (mean 250.92 Mbit/s)

Flow 1 (95th percentile 79.33 ms) · Flow 2 (95th percentile 58.78 ms) · Flow 3 (95th percentile 58.14 ms)

48

```
Run 3: Statistics of FillP-Sheep

Start at: 2018-12-01 05:30:34
End at: 2018-12-01 05:31:04
Local clock offset: -0.024 ms
Remote clock offset: 0.02 ms


# Below is generated by plot.py at 2018-12-01 08:39:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 881.83 Mbit/s
95th percentile per-packet one-way delay: 67.900 ms
Loss rate: 0.33%
-- Flow 1:
Average throughput: 546.64 Mbit/s
95th percentile per-packet one-way delay: 71.045 ms
Loss rate: 0.16%
-- Flow 2:
Average throughput: 368.53 Mbit/s
95th percentile per-packet one-way delay: 66.887 ms
Loss rate: 0.47%
-- Flow 3:
Average throughput: 275.63 Mbit/s
95th percentile per-packet one-way delay: 63.071 ms
Loss rate: 0.99%
```

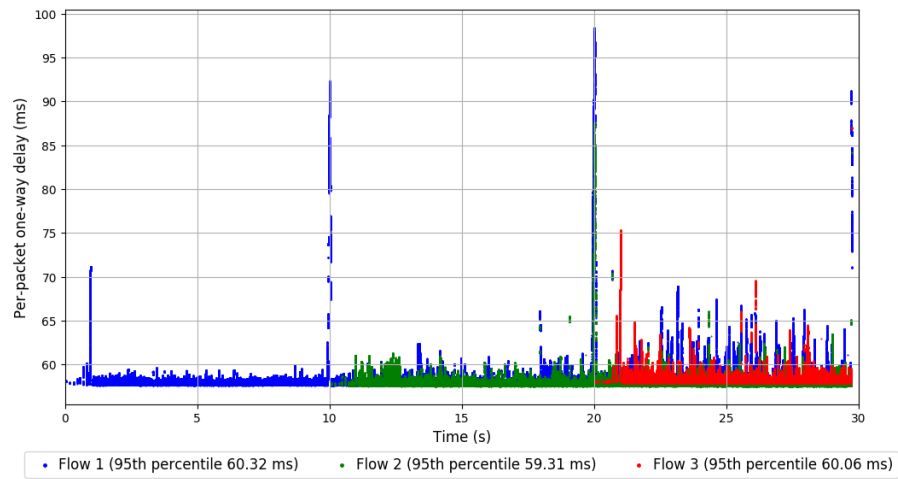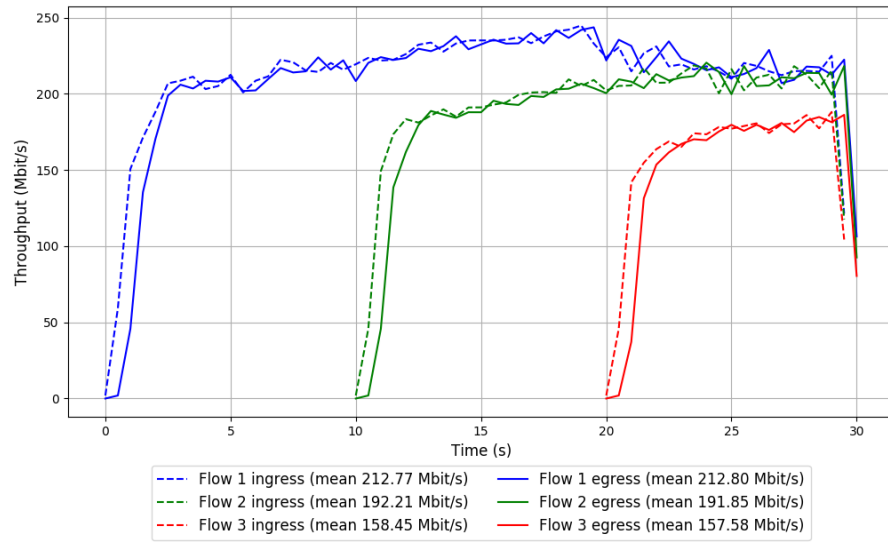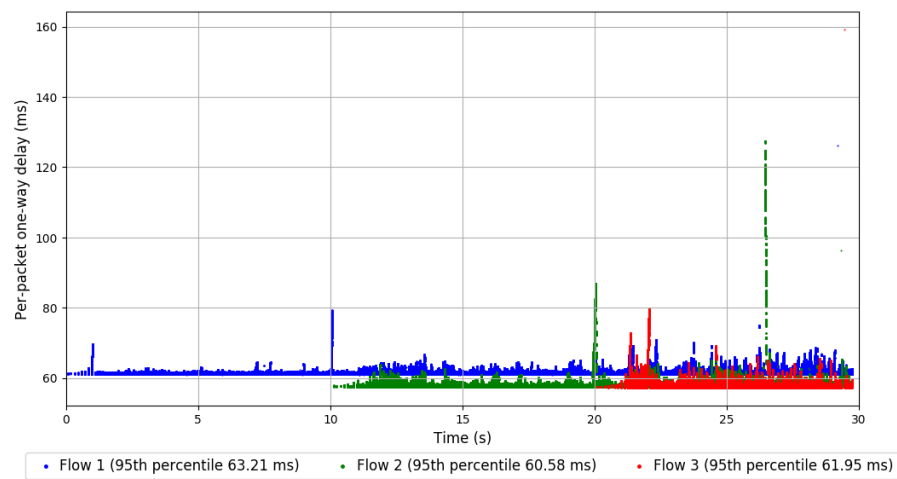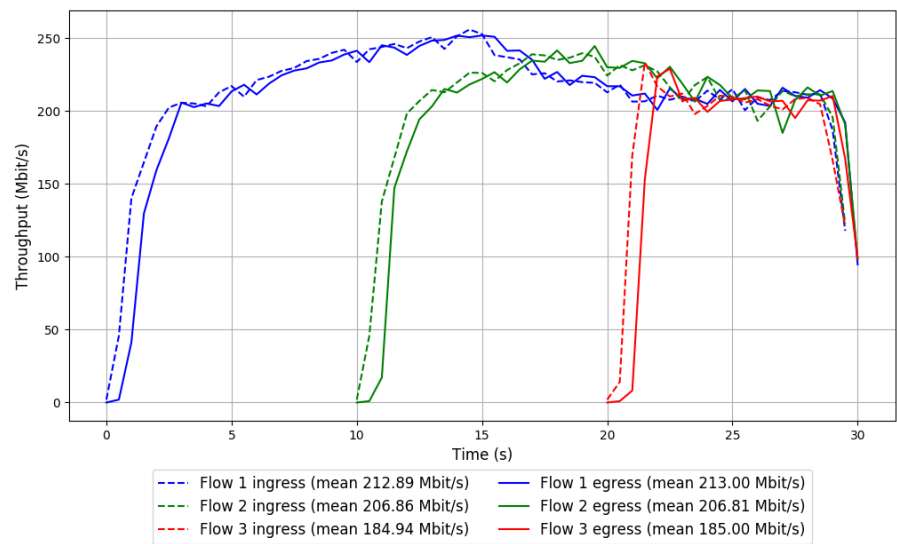Run 3: Report of FillP-Sheep — Data Link

Flow 1 ingress (mean 545.15 Mbit/s) --- Flow 1 egress (mean 546.64 Mbit/s)
Flow 2 ingress (mean 368.14 Mbit/s) --- Flow 2 egress (mean 368.53 Mbit/s)
Flow 3 ingress (mean 275.24 Mbit/s) --- Flow 3 egress (mean 275.63 Mbit/s)

Flow 1 (95th percentile 71.05 ms) • Flow 2 (95th percentile 66.89 ms) • Flow 3 (95th percentile 63.07 ms)

```
Run 4: Statistics of FillP-Sheep

Start at: 2018-12-01 06:06:39
End at: 2018-12-01 06:07:09
Local clock offset: -0.103 ms
Remote clock offset: -0.317 ms


# Below is generated by plot.py at 2018-12-01 08:39:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 824.90 Mbit/s
95th percentile per-packet one-way delay: 69.424 ms
Loss rate: 0.35%
-- Flow 1:
Average throughput: 531.50 Mbit/s
95th percentile per-packet one-way delay: 76.851 ms
Loss rate: 0.21%
-- Flow 2:
Average throughput: 318.27 Mbit/s
95th percentile per-packet one-way delay: 61.390 ms
Loss rate: 0.49%
-- Flow 3:
Average throughput: 250.29 Mbit/s
95th percentile per-packet one-way delay: 61.757 ms
Loss rate: 0.93%
```

Run 4: Report of FillP-Sheep — Data Link

```
Run 5: Statistics of FillP-Sheep

Start at: 2018-12-01 06:43:17
End at: 2018-12-01 06:43:47
Local clock offset: 0.04 ms
Remote clock offset: -0.224 ms


# Below is generated by plot.py at 2018-12-01 08:55:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 824.81 Mbit/s
95th percentile per-packet one-way delay: 62.804 ms
Loss rate: 0.43%
-- Flow 1:
Average throughput: 524.90 Mbit/s
95th percentile per-packet one-way delay: 63.249 ms
Loss rate: 0.23%
-- Flow 2:
Average throughput: 326.11 Mbit/s
95th percentile per-packet one-way delay: 61.727 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 253.77 Mbit/s
95th percentile per-packet one-way delay: 63.114 ms
Loss rate: 1.20%
```
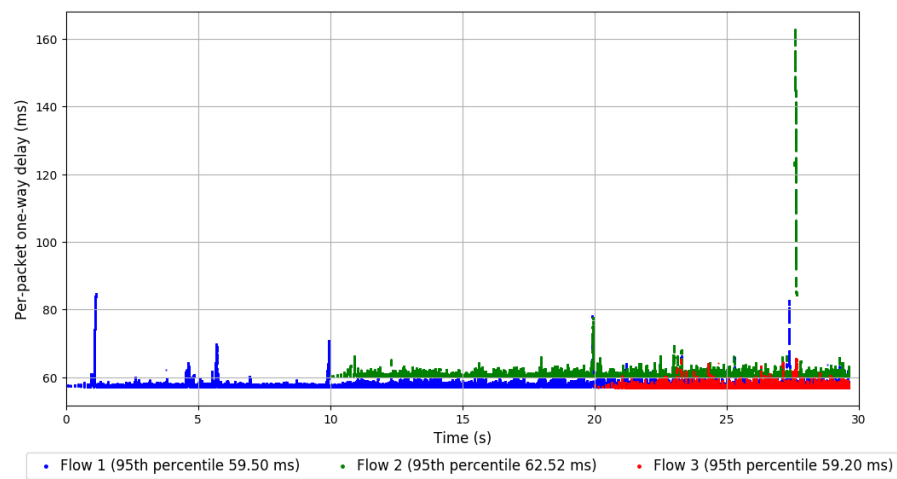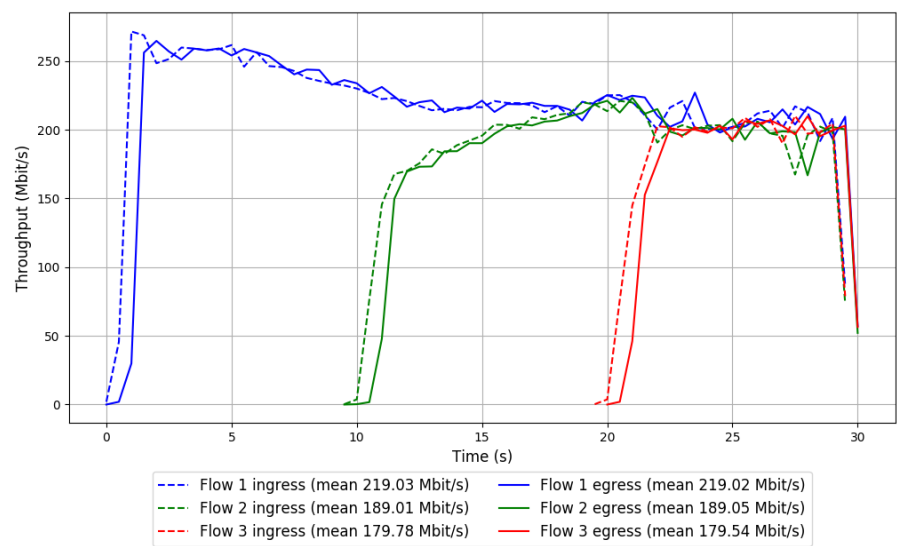
Run 5: Report of FillP-Sheep — Data Link

- - - - Flow 1 ingress (mean 524.20 Mbit/s)   —— Flow 1 egress (mean 524.90 Mbit/s)
- - - - Flow 2 ingress (mean 326.22 Mbit/s)   —— Flow 2 egress (mean 326.11 Mbit/s)
- - - - Flow 3 ingress (mean 254.06 Mbit/s)   —— Flow 3 egress (mean 253.77 Mbit/s)

- Flow 1 (95th percentile 63.25 ms)   • Flow 2 (95th percentile 61.73 ms)   • Flow 3 (95th percentile 63.11 ms)

```
Run 1: Statistics of Indigo

Start at: 2018-12-01 04:22:49
End at: 2018-12-01 04:23:19
Local clock offset: -0.059 ms
Remote clock offset: 1.296 ms


# Below is generated by plot.py at 2018-12-01 08:55:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 398.01 Mbit/s
95th percentile per-packet one-way delay: 61.799 ms
Loss rate: 0.47%
-- Flow 1:
Average throughput: 211.09 Mbit/s
95th percentile per-packet one-way delay: 58.693 ms
Loss rate: 0.43%
-- Flow 2:
Average throughput: 197.38 Mbit/s
95th percentile per-packet one-way delay: 62.282 ms
Loss rate: 0.43%
-- Flow 3:
Average throughput: 148.62 Mbit/s
95th percentile per-packet one-way delay: 78.943 ms
Loss rate: 0.76%
```
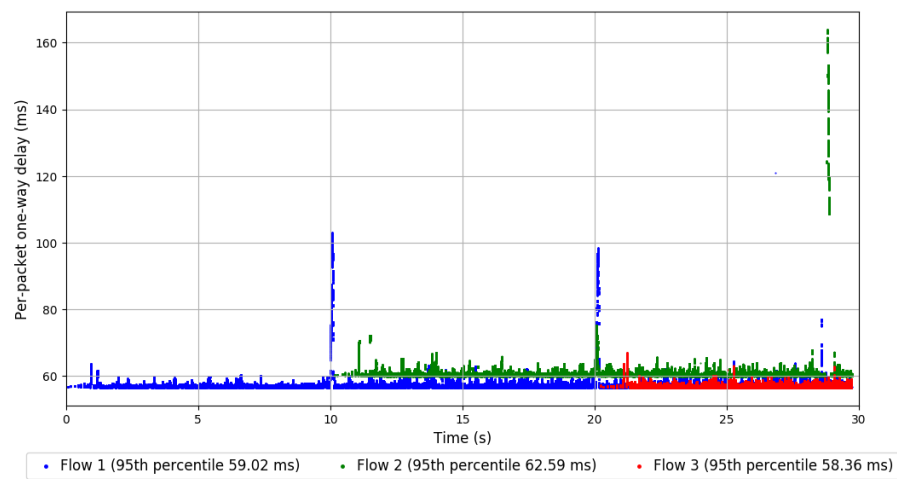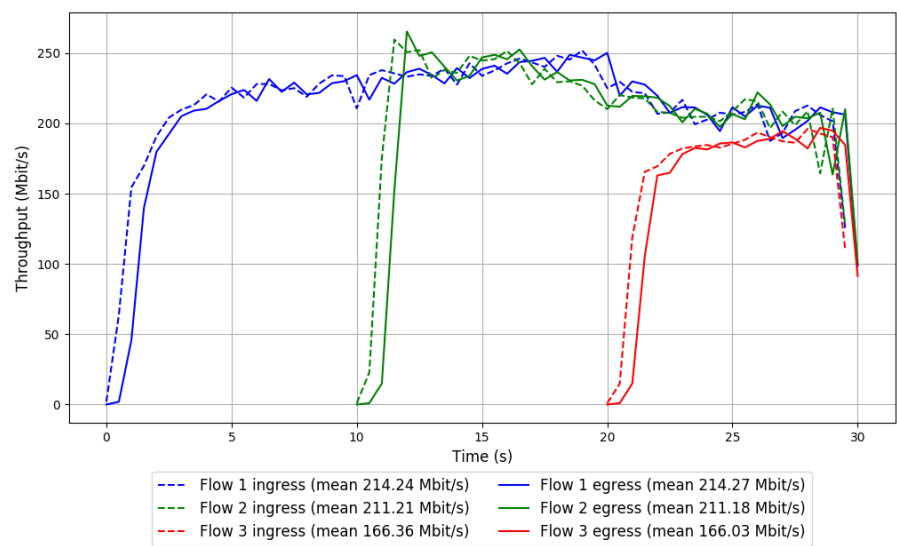
Run 1: Report of Indigo — Data Link

```
Run 2: Statistics of Indigo

Start at: 2018-12-01 04:58:17
End at: 2018-12-01 04:58:47
Local clock offset: -0.062 ms
Remote clock offset: -0.839 ms

# Below is generated by plot.py at 2018-12-01 08:55:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 391.23 Mbit/s
95th percentile per-packet one-way delay: 59.878 ms
Loss rate: 0.59%
-- Flow 1:
Average throughput: 212.80 Mbit/s
95th percentile per-packet one-way delay: 60.317 ms
Loss rate: 0.33%
-- Flow 2:
Average throughput: 191.85 Mbit/s
95th percentile per-packet one-way delay: 59.314 ms
Loss rate: 0.68%
-- Flow 3:
Average throughput: 157.58 Mbit/s
95th percentile per-packet one-way delay: 60.061 ms
Loss rate: 1.45%
```
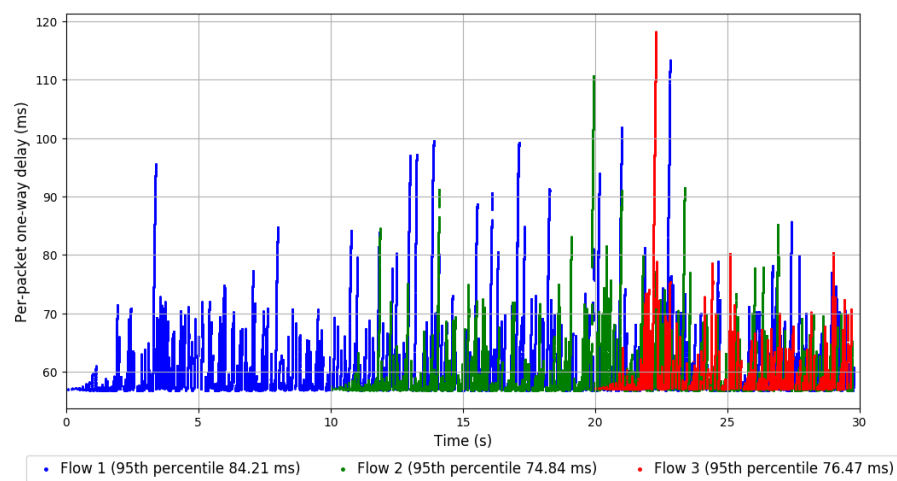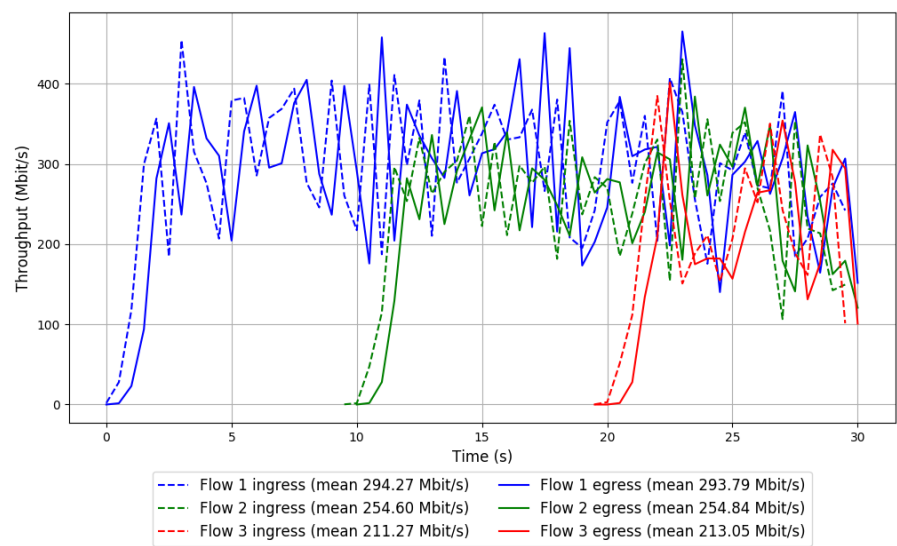
Run 2: Report of Indigo — Data Link

```
Run 3: Statistics of Indigo

Start at: 2018-12-01 05:34:31
End at: 2018-12-01 05:35:01
Local clock offset: 0.304 ms
Remote clock offset: -0.184 ms

# Below is generated by plot.py at 2018-12-01 08:55:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 409.67 Mbit/s
95th percentile per-packet one-way delay: 62.762 ms
Loss rate: 0.57%
-- Flow 1:
Average throughput: 213.00 Mbit/s
95th percentile per-packet one-way delay: 63.206 ms
Loss rate: 0.36%
-- Flow 2:
Average throughput: 206.81 Mbit/s
95th percentile per-packet one-way delay: 60.575 ms
Loss rate: 0.62%
-- Flow 3:
Average throughput: 185.00 Mbit/s
95th percentile per-packet one-way delay: 61.954 ms
Loss rate: 1.21%
```
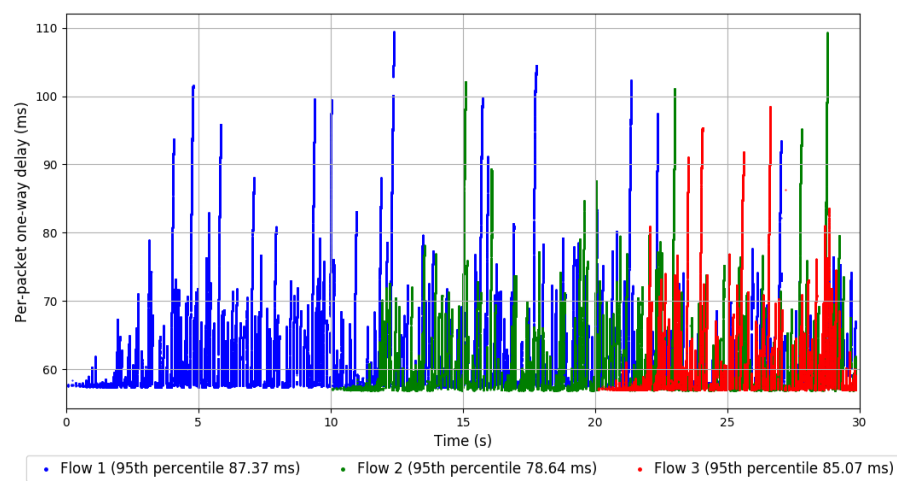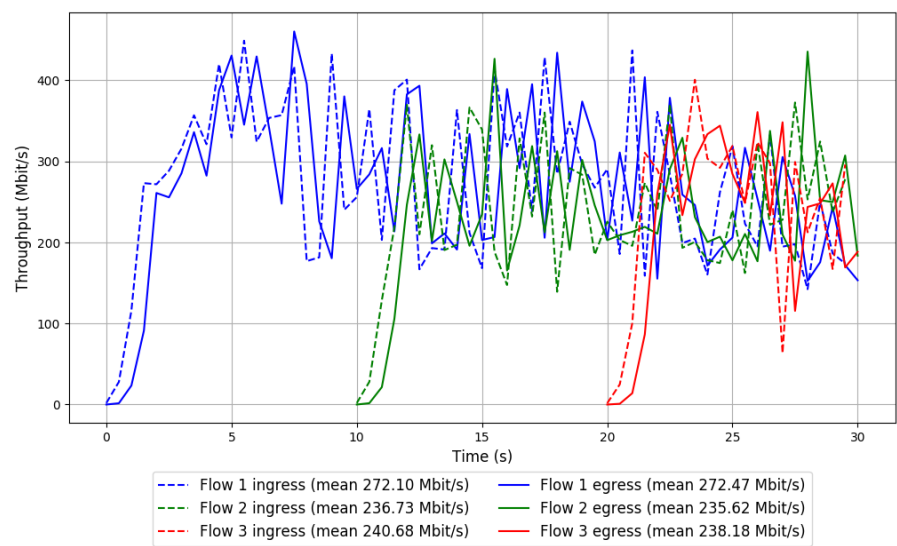
Run 3: Report of Indigo — Data Link

```
Run 4: Statistics of Indigo

Start at: 2018-12-01 06:10:20
End at: 2018-12-01 06:10:51
Local clock offset: -0.086 ms
Remote clock offset: -0.19 ms


# Below is generated by plot.py at 2018-12-01 08:55:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 402.93 Mbit/s
95th percentile per-packet one-way delay: 61.603 ms
Loss rate: 0.59%
-- Flow 1:
Average throughput: 219.02 Mbit/s
95th percentile per-packet one-way delay: 59.502 ms
Loss rate: 0.39%
-- Flow 2:
Average throughput: 189.05 Mbit/s
95th percentile per-packet one-way delay: 62.524 ms
Loss rate: 0.58%
-- Flow 3:
Average throughput: 179.54 Mbit/s
95th percentile per-packet one-way delay: 59.201 ms
Loss rate: 1.32%
```
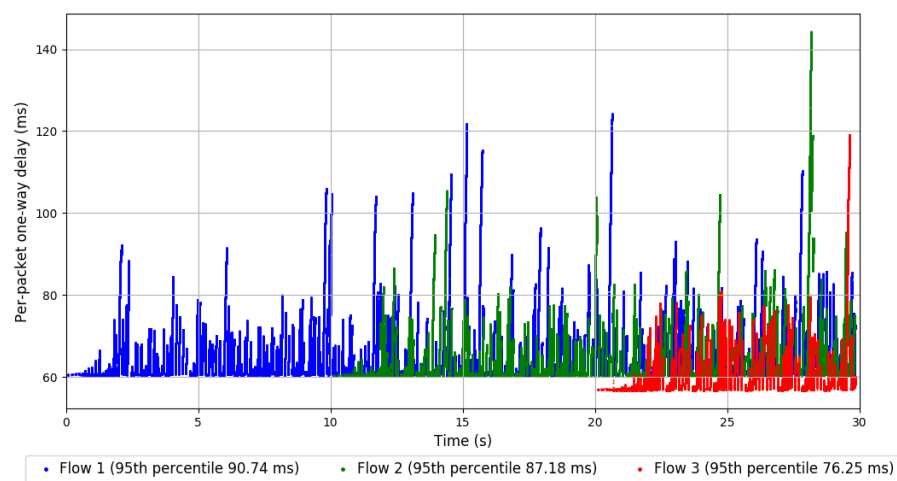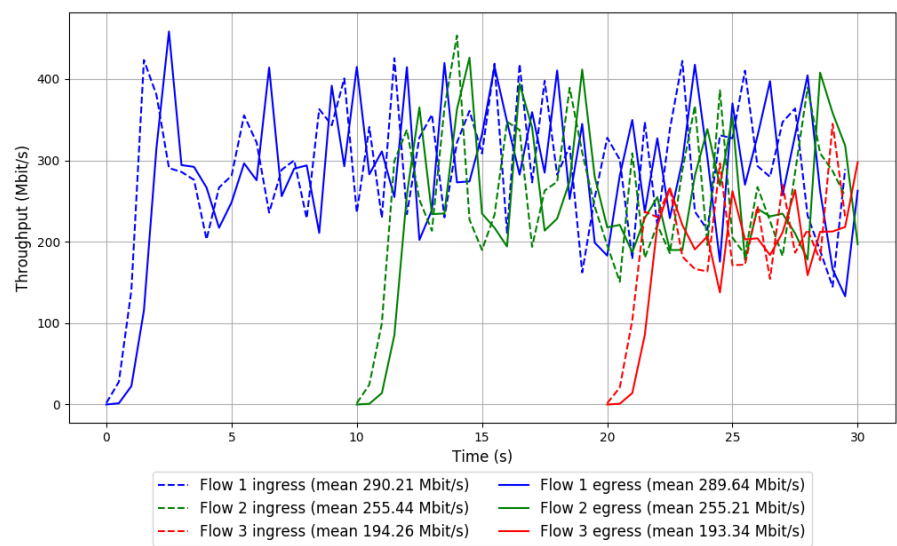
Run 4: Report of Indigo — Data Link

```
Run 5: Statistics of Indigo

Start at: 2018-12-01 06:47:09
End at: 2018-12-01 06:47:39
Local clock offset: 0.25 ms
Remote clock offset: 0.598 ms


# Below is generated by plot.py at 2018-12-01 08:55:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 406.72 Mbit/s
95th percentile per-packet one-way delay: 61.310 ms
Loss rate: 0.59%
-- Flow 1:
Average throughput: 214.27 Mbit/s
95th percentile per-packet one-way delay: 59.020 ms
Loss rate: 0.37%
-- Flow 2:
Average throughput: 211.18 Mbit/s
95th percentile per-packet one-way delay: 62.587 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 166.03 Mbit/s
95th percentile per-packet one-way delay: 58.359 ms
Loss rate: 1.41%
```

Run 5: Report of Indigo — Data Link

```
Run 1: Statistics of Indigo-96d2da3

Start at: 2018-12-01 04:34:00
End at: 2018-12-01 04:34:30
Local clock offset: -0.043 ms
Remote clock offset: 0.152 ms


# Below is generated by plot.py at 2018-12-01 08:55:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 532.29 Mbit/s
95th percentile per-packet one-way delay: 81.189 ms
Loss rate: 0.59%
-- Flow 1:
Average throughput: 293.79 Mbit/s
95th percentile per-packet one-way delay: 84.206 ms
Loss rate: 0.52%
-- Flow 2:
Average throughput: 254.84 Mbit/s
95th percentile per-packet one-way delay: 74.837 ms
Loss rate: 0.43%
-- Flow 3:
Average throughput: 213.05 Mbit/s
95th percentile per-packet one-way delay: 76.468 ms
Loss rate: 1.23%
```
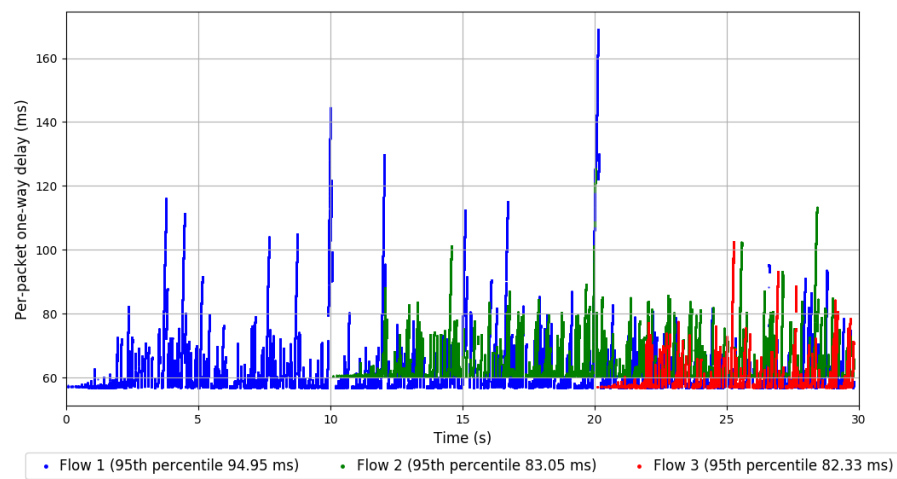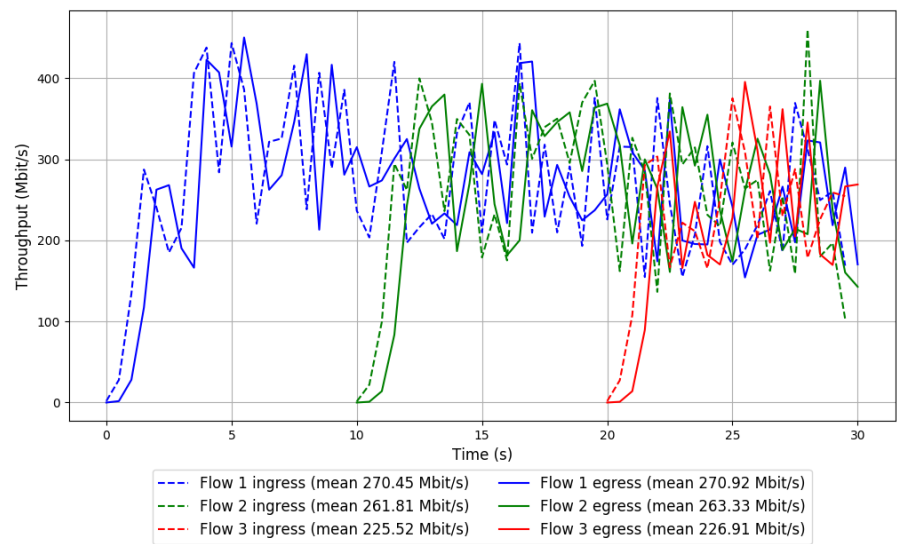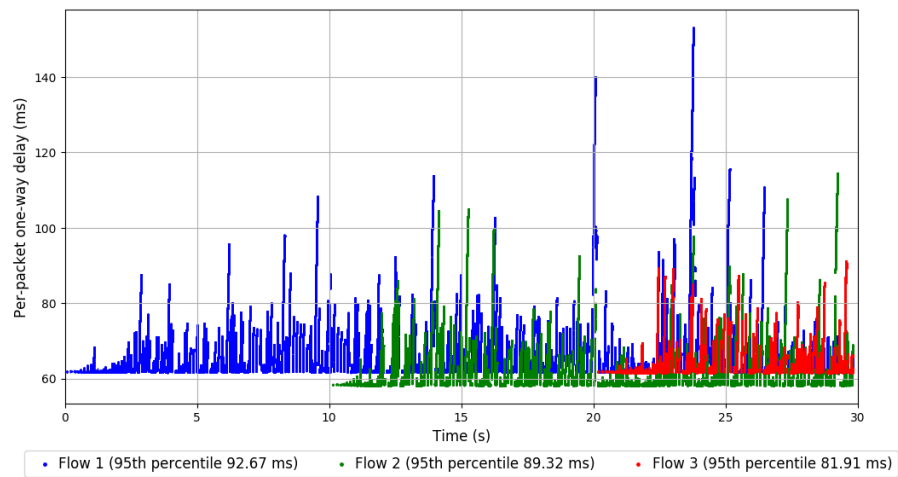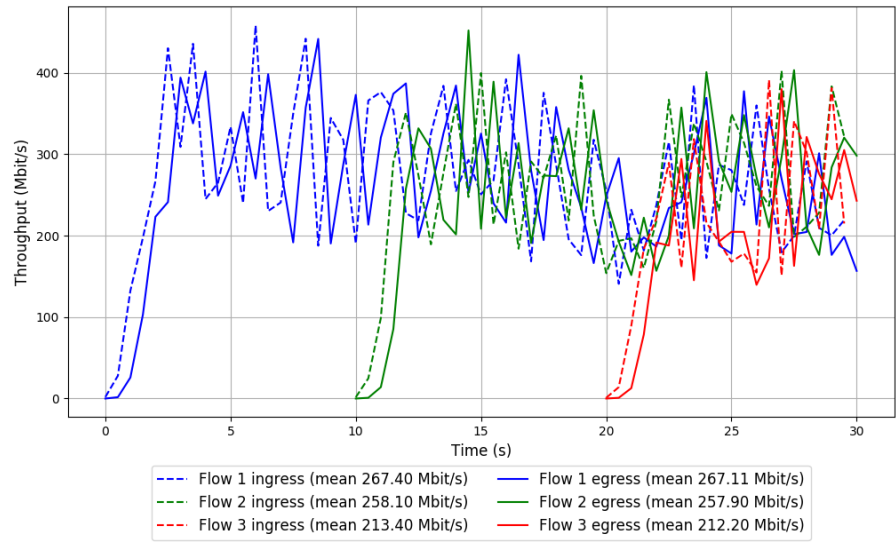
Run 1: Report of Indigo-96d2da3 — Data Link

```
Run 2: Statistics of Indigo-96d2da3

Start at: 2018-12-01 05:09:52
End at: 2018-12-01 05:10:22
Local clock offset: -0.023 ms
Remote clock offset: -0.288 ms


# Below is generated by plot.py at 2018-12-01 08:55:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 506.57 Mbit/s
95th percentile per-packet one-way delay: 85.085 ms
Loss rate: 0.86%
-- Flow 1:
Average throughput: 272.47 Mbit/s
95th percentile per-packet one-way delay: 87.372 ms
Loss rate: 0.33%
-- Flow 2:
Average throughput: 235.62 Mbit/s
95th percentile per-packet one-way delay: 78.640 ms
Loss rate: 1.06%
-- Flow 3:
Average throughput: 238.18 Mbit/s
95th percentile per-packet one-way delay: 85.071 ms
Loss rate: 2.27%
```

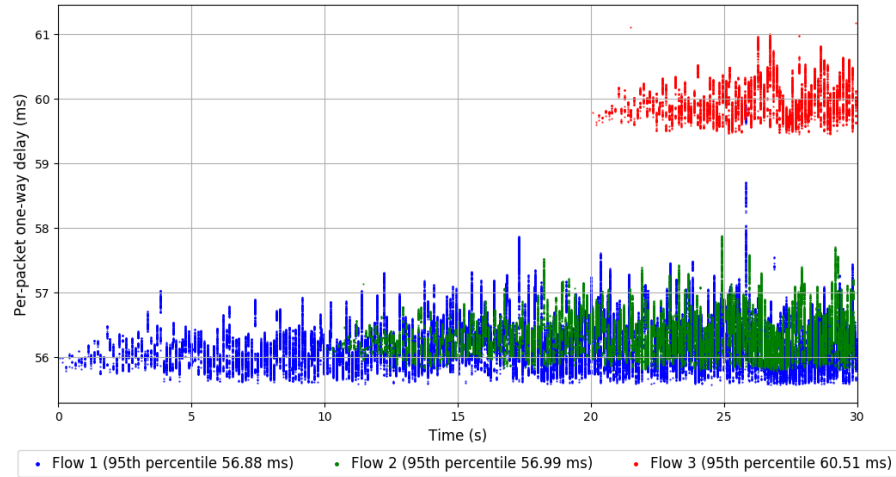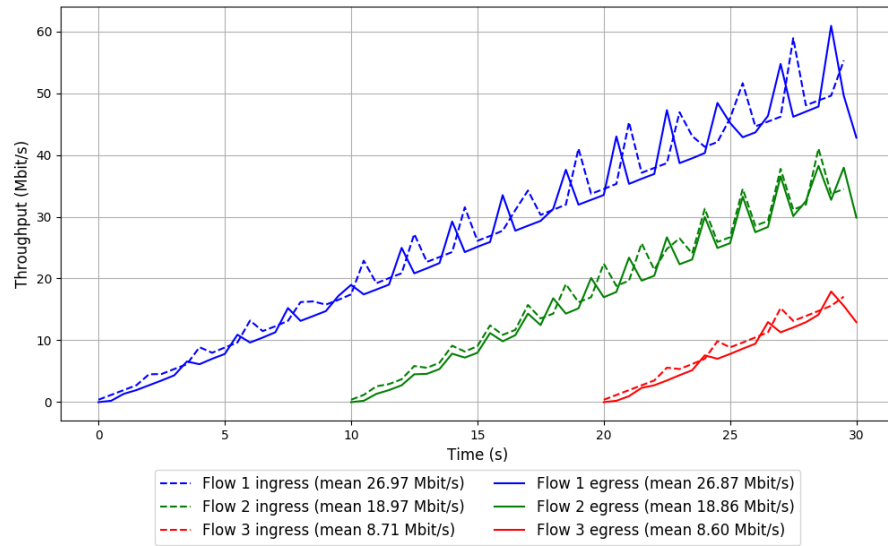Run 2: Report of Indigo-96d2da3 — Data Link

```
Run 3: Statistics of Indigo-96d2da3

Start at: 2018-12-01 05:45:56
End at: 2018-12-01 05:46:26
Local clock offset: -0.095 ms
Remote clock offset: 0.07 ms


# Below is generated by plot.py at 2018-12-01 09:01:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 521.52 Mbit/s
95th percentile per-packet one-way delay: 89.000 ms
Loss rate: 0.62%
-- Flow 1:
Average throughput: 289.64 Mbit/s
95th percentile per-packet one-way delay: 90.736 ms
Loss rate: 0.36%
-- Flow 2:
Average throughput: 255.21 Mbit/s
95th percentile per-packet one-way delay: 87.180 ms
Loss rate: 0.69%
-- Flow 3:
Average throughput: 193.34 Mbit/s
95th percentile per-packet one-way delay: 76.247 ms
Loss rate: 1.66%
```

Run 3: Report of Indigo-96d2da3 — Data Link

```
Run 4: Statistics of Indigo-96d2da3

Start at: 2018-12-01 06:22:05
End at: 2018-12-01 06:22:35
Local clock offset: -0.073 ms
Remote clock offset: -0.022 ms


# Below is generated by plot.py at 2018-12-01 09:01:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 519.39 Mbit/s
95th percentile per-packet one-way delay: 88.931 ms
Loss rate: 0.24%
-- Flow 1:
Average throughput: 270.92 Mbit/s
95th percentile per-packet one-way delay: 94.953 ms
Loss rate: 0.23%
-- Flow 2:
Average throughput: 263.33 Mbit/s
95th percentile per-packet one-way delay: 83.046 ms
Loss rate: 0.03%
-- Flow 3:
Average throughput: 226.91 Mbit/s
95th percentile per-packet one-way delay: 82.326 ms
Loss rate: 0.78%
```
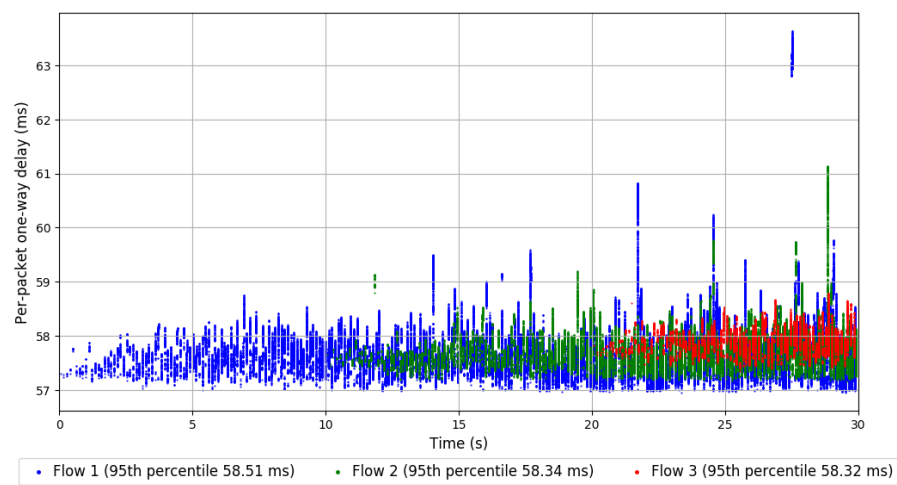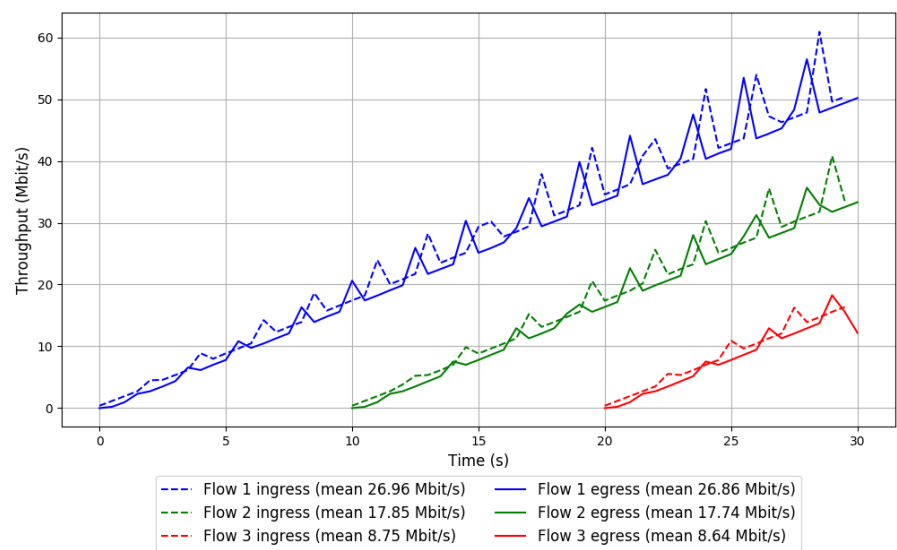
Run 4: Report of Indigo-96d2da3 — Data Link
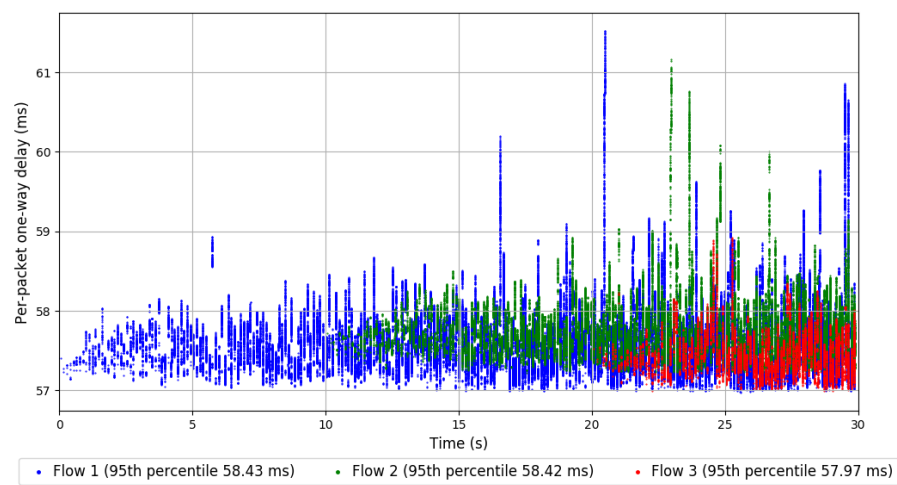
```
Run 5: Statistics of Indigo-96d2da3

Start at: 2018-12-01 06:58:59
End at: 2018-12-01 06:59:29
Local clock offset: -0.023 ms
Remote clock offset: -1.349 ms

# Below is generated by plot.py at 2018-12-01 09:01:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 506.52 Mbit/s
95th percentile per-packet one-way delay: 89.024 ms
Loss rate: 0.87%
-- Flow 1:
Average throughput: 267.11 Mbit/s
95th percentile per-packet one-way delay: 92.674 ms
Loss rate: 0.61%
-- Flow 2:
Average throughput: 257.90 Mbit/s
95th percentile per-packet one-way delay: 89.319 ms
Loss rate: 0.85%
-- Flow 3:
Average throughput: 212.20 Mbit/s
95th percentile per-packet one-way delay: 81.907 ms
Loss rate: 1.91%
```
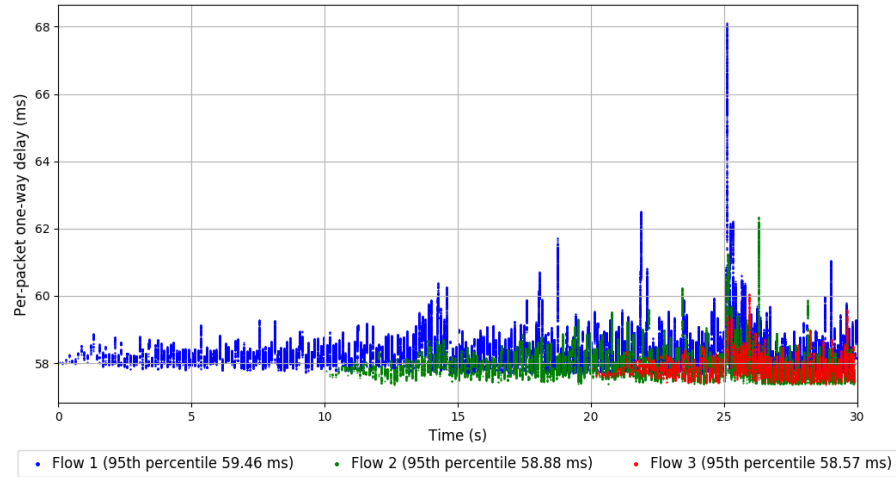
Run 5: Report of Indigo-96d2da3 — Data Link

```
Run 1: Statistics of LEDBAT

Start at: 2018-12-01 04:30:28
End at: 2018-12-01 04:30:58
Local clock offset: -0.43 ms
Remote clock offset: 0.751 ms

# Below is generated by plot.py at 2018-12-01 09:01:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 42.20 Mbit/s
95th percentile per-packet one-way delay: 59.775 ms
Loss rate: 0.99%
-- Flow 1:
Average throughput: 26.87 Mbit/s
95th percentile per-packet one-way delay: 56.877 ms
Loss rate: 0.77%
-- Flow 2:
Average throughput: 18.86 Mbit/s
95th percentile per-packet one-way delay: 56.989 ms
Loss rate: 1.15%
-- Flow 3:
Average throughput: 8.60 Mbit/s
95th percentile per-packet one-way delay: 60.506 ms
Loss rate: 2.38%
```
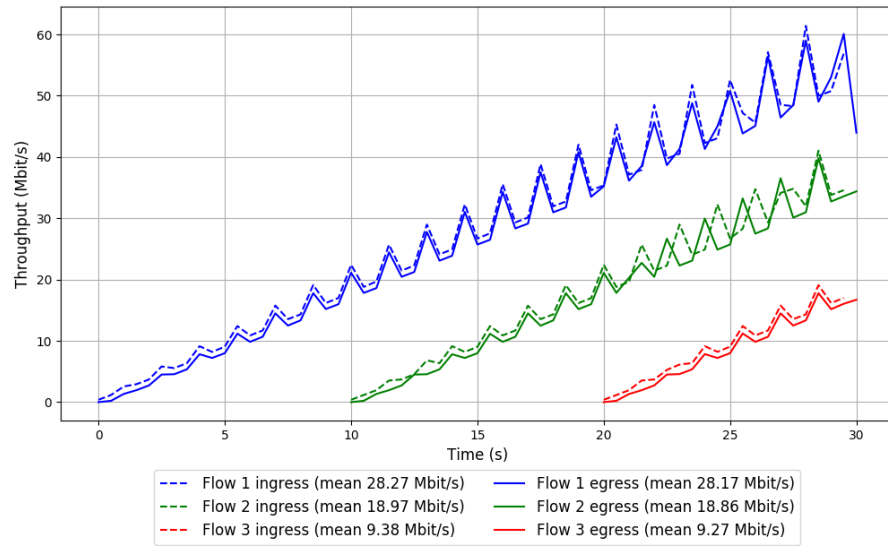
Run 1: Report of LEDBAT — Data Link

```
Run 2: Statistics of LEDBAT

Start at: 2018-12-01 05:06:19
End at: 2018-12-01 05:06:49
Local clock offset: 0.422 ms
Remote clock offset: 0.213 ms

# Below is generated by plot.py at 2018-12-01 09:01:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 41.46 Mbit/s
95th percentile per-packet one-way delay: 58.438 ms
Loss rate: 1.01%
-- Flow 1:
Average throughput: 26.86 Mbit/s
95th percentile per-packet one-way delay: 58.507 ms
Loss rate: 0.78%
-- Flow 2:
Average throughput: 17.74 Mbit/s
95th percentile per-packet one-way delay: 58.343 ms
Loss rate: 1.19%
-- Flow 3:
Average throughput: 8.64 Mbit/s
95th percentile per-packet one-way delay: 58.318 ms
Loss rate: 2.41%
```
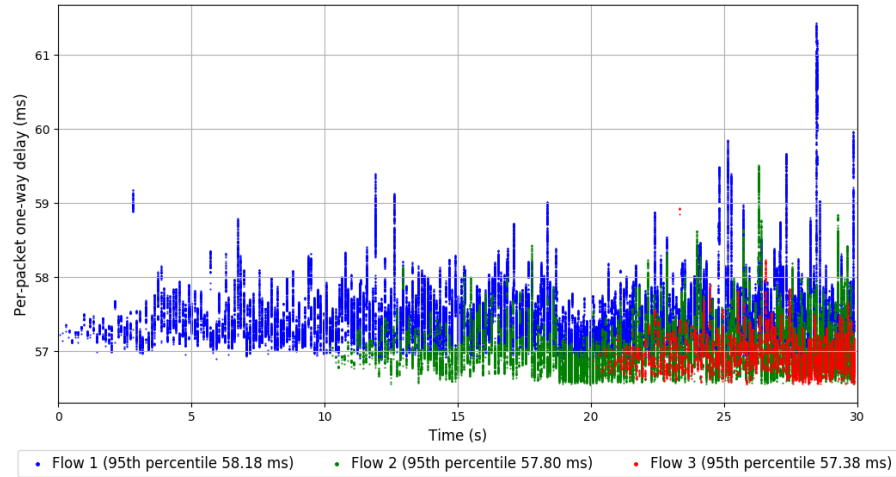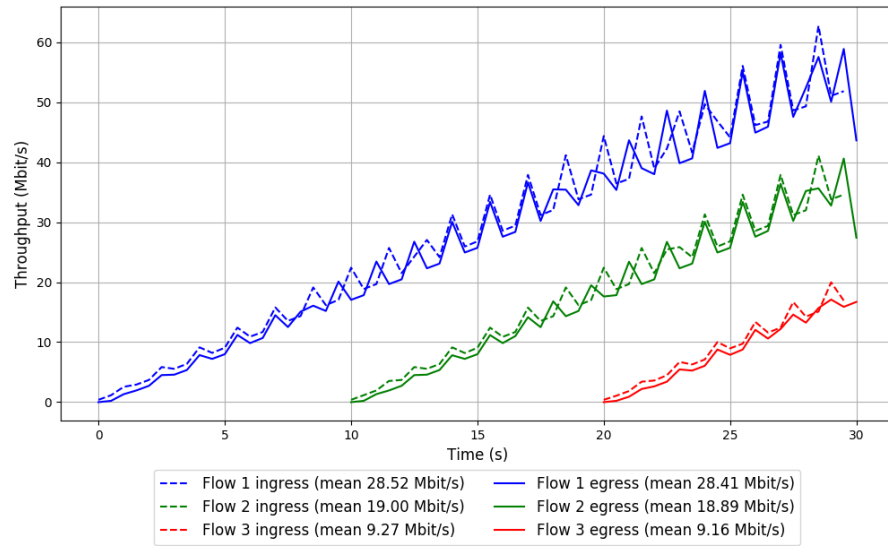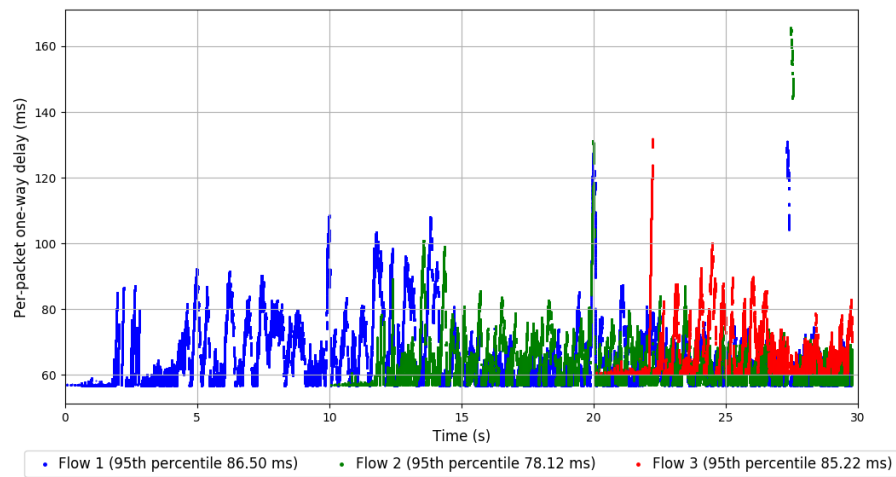
Run 2: Report of LEDBAT — Data Link

```
Run 3: Statistics of LEDBAT

Start at: 2018-12-01 05:42:22
End at: 2018-12-01 05:42:52
Local clock offset: -0.062 ms
Remote clock offset: -0.128 ms

# Below is generated by plot.py at 2018-12-01 09:01:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 42.22 Mbit/s
95th percentile per-packet one-way delay: 58.404 ms
Loss rate: 1.01%
-- Flow 1:
Average throughput: 26.65 Mbit/s
95th percentile per-packet one-way delay: 58.433 ms
Loss rate: 0.79%
-- Flow 2:
Average throughput: 18.87 Mbit/s
95th percentile per-packet one-way delay: 58.419 ms
Loss rate: 1.15%
-- Flow 3:
Average throughput: 9.27 Mbit/s
95th percentile per-packet one-way delay: 57.965 ms
Loss rate: 2.34%
```
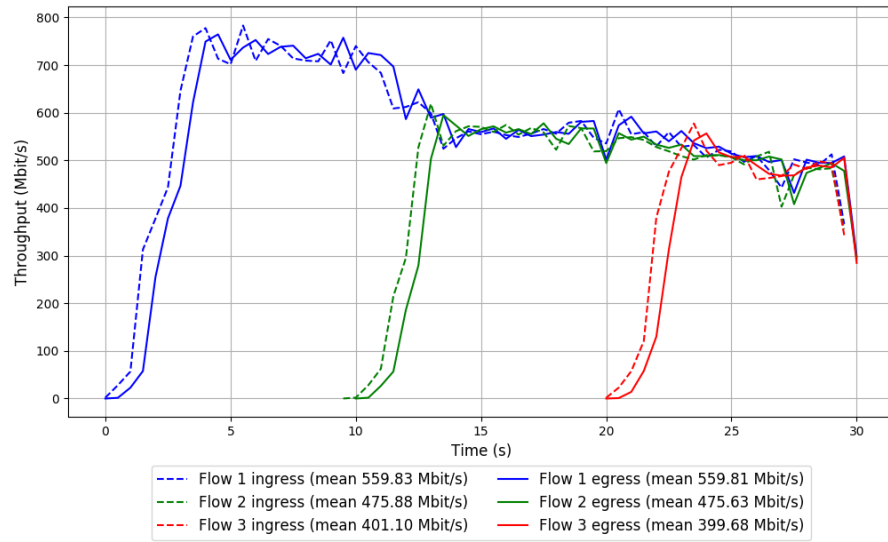
Run 3: Report of LEDBAT — Data Link

```
Run 4: Statistics of LEDBAT

Start at: 2018-12-01 06:18:30
End at: 2018-12-01 06:19:00
Local clock offset: 0.289 ms
Remote clock offset: -0.238 ms

# Below is generated by plot.py at 2018-12-01 09:01:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 43.70 Mbit/s
95th percentile per-packet one-way delay: 59.322 ms
Loss rate: 0.99%
-- Flow 1:
Average throughput: 28.17 Mbit/s
95th percentile per-packet one-way delay: 59.464 ms
Loss rate: 0.76%
-- Flow 2:
Average throughput: 18.86 Mbit/s
95th percentile per-packet one-way delay: 58.875 ms
Loss rate: 1.15%
-- Flow 3:
Average throughput: 9.27 Mbit/s
95th percentile per-packet one-way delay: 58.566 ms
Loss rate: 2.33%
```
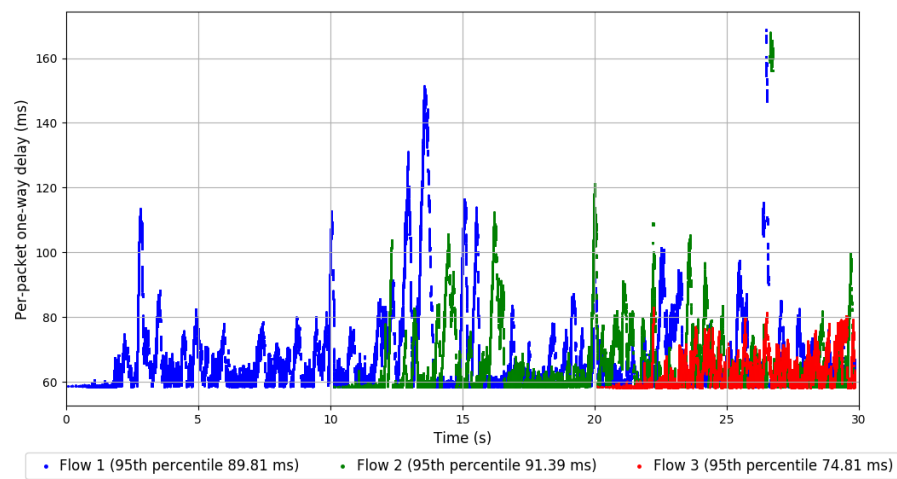
Run 4: Report of LEDBAT — Data Link

```
Run 5: Statistics of LEDBAT

Start at: 2018-12-01 06:55:24
End at: 2018-12-01 06:55:54
Local clock offset: 0.211 ms
Remote clock offset: 0.471 ms

# Below is generated by plot.py at 2018-12-01 09:01:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 43.92 Mbit/s
95th percentile per-packet one-way delay: 58.076 ms
Loss rate: 0.98%
-- Flow 1:
Average throughput: 28.41 Mbit/s
95th percentile per-packet one-way delay: 58.177 ms
Loss rate: 0.76%
-- Flow 2:
Average throughput: 18.89 Mbit/s
95th percentile per-packet one-way delay: 57.804 ms
Loss rate: 1.15%
-- Flow 3:
Average throughput: 9.16 Mbit/s
95th percentile per-packet one-way delay: 57.382 ms
Loss rate: 2.34%
```
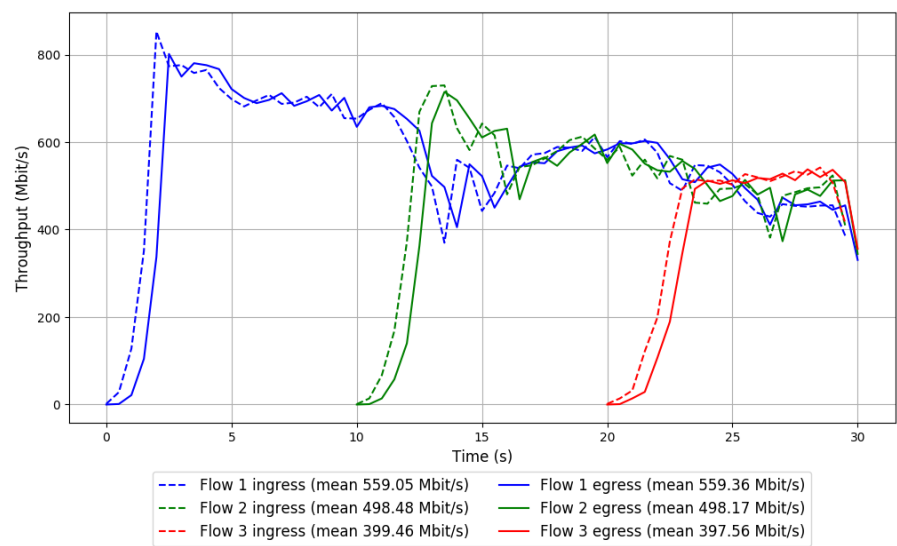
Run 5: Report of LEDBAT — Data Link

```
Run 1: Statistics of Indigo-Muses

Start at: 2018-12-01 04:31:47
End at: 2018-12-01 04:32:17
Local clock offset: 0.136 ms
Remote clock offset: 0.237 ms

# Below is generated by plot.py at 2018-12-01 09:16:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1006.19 Mbit/s
95th percentile per-packet one-way delay: 84.581 ms
Loss rate: 0.62%
-- Flow 1:
Average throughput: 559.81 Mbit/s
95th percentile per-packet one-way delay: 86.498 ms
Loss rate: 0.39%
-- Flow 2:
Average throughput: 475.63 Mbit/s
95th percentile per-packet one-way delay: 78.120 ms
Loss rate: 0.64%
-- Flow 3:
Average throughput: 399.68 Mbit/s
95th percentile per-packet one-way delay: 85.219 ms
Loss rate: 1.52%
```
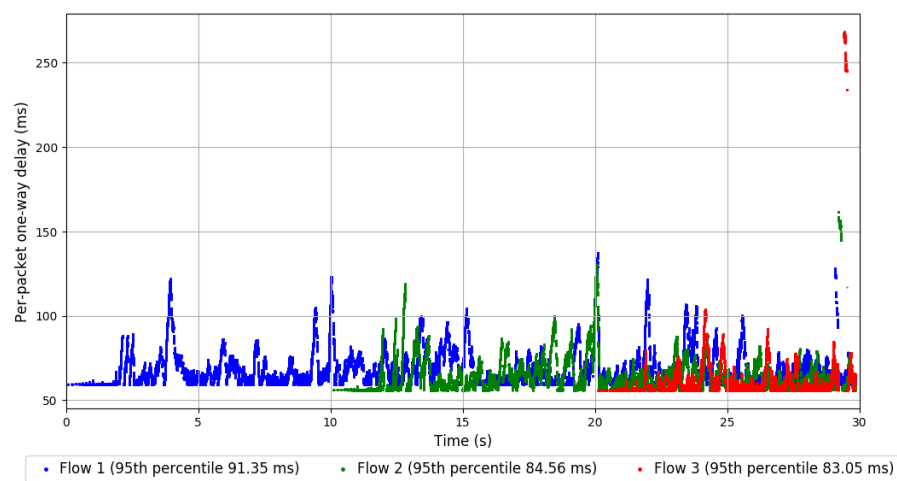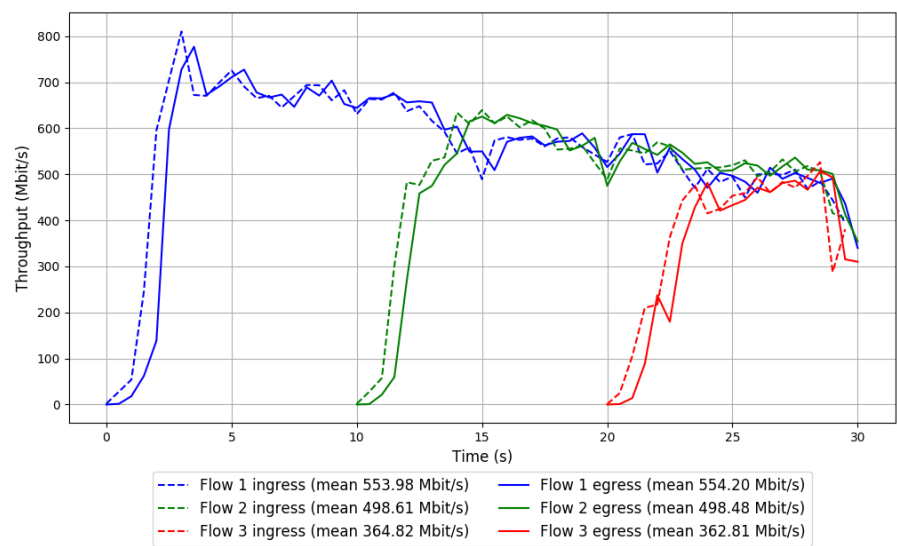
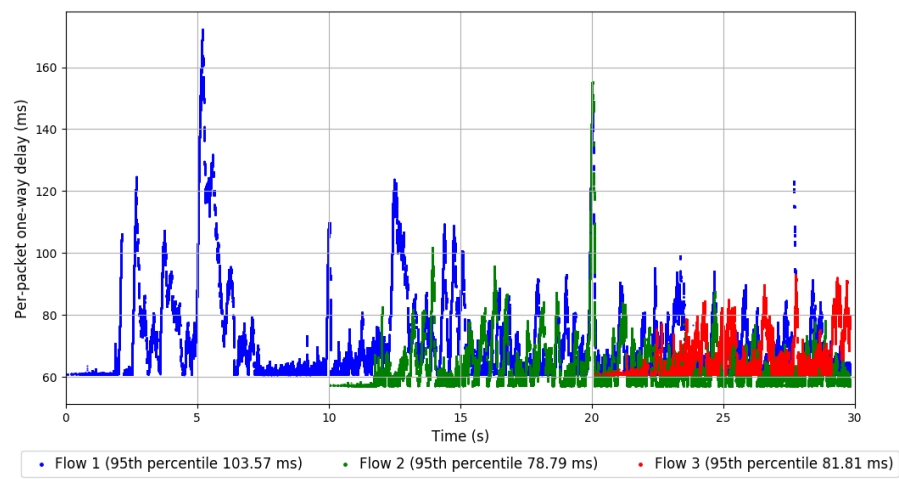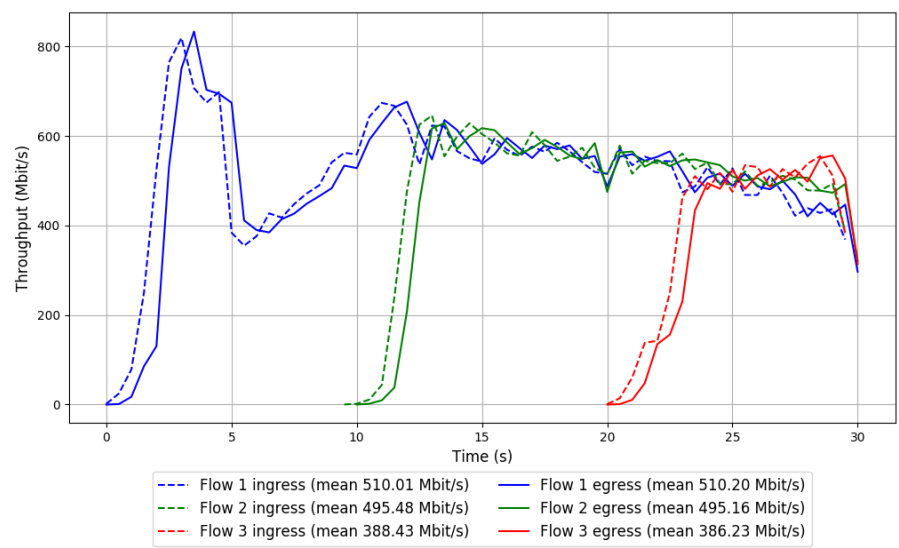Run 1: Report of Indigo-Muses — Data Link

```
Run 2: Statistics of Indigo-Muses

Start at: 2018-12-01 05:07:37
End at: 2018-12-01 05:08:07
Local clock offset: -0.1 ms
Remote clock offset: -1.65 ms

# Below is generated by plot.py at 2018-12-01 09:16:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1018.99 Mbit/s
95th percentile per-packet one-way delay: 88.313 ms
Loss rate: 0.61%
-- Flow 1:
Average throughput: 559.36 Mbit/s
95th percentile per-packet one-way delay: 89.813 ms
Loss rate: 0.33%
-- Flow 2:
Average throughput: 498.17 Mbit/s
95th percentile per-packet one-way delay: 91.390 ms
Loss rate: 0.67%
-- Flow 3:
Average throughput: 397.56 Mbit/s
95th percentile per-packet one-way delay: 74.808 ms
Loss rate: 1.65%
```

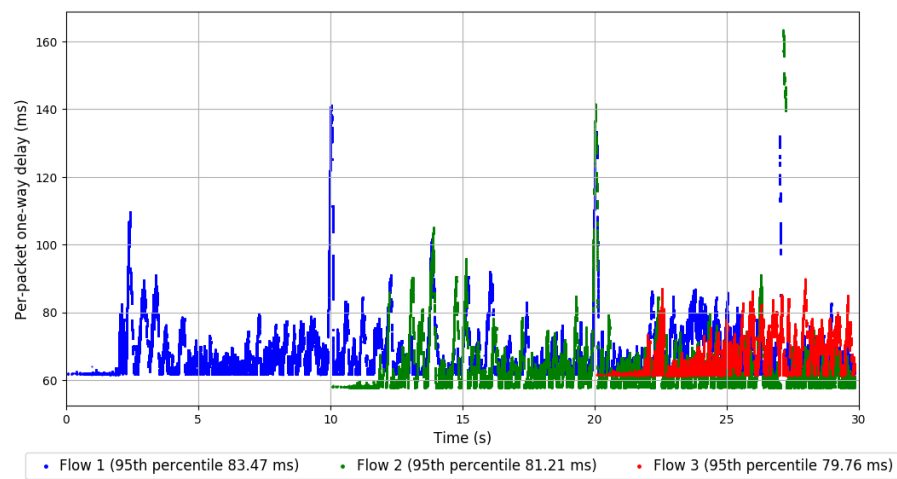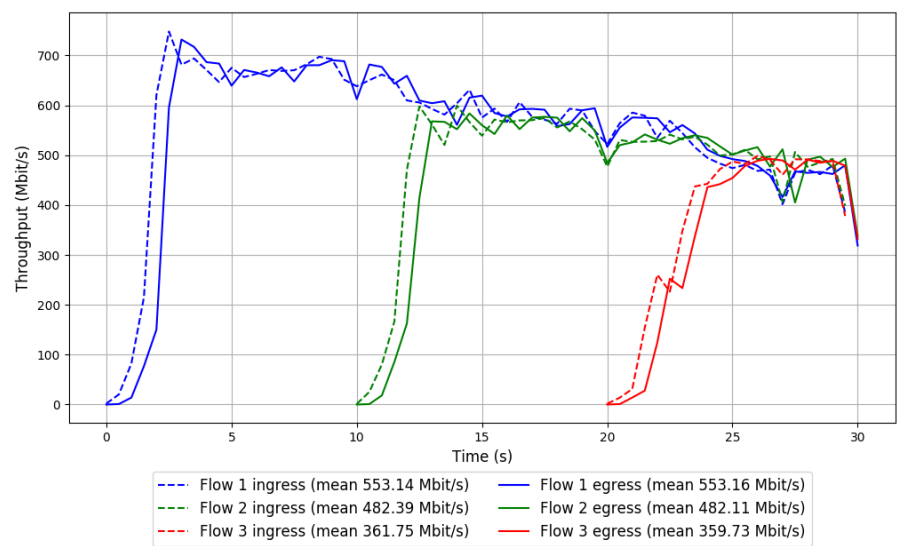Run 2: Report of Indigo-Muses — Data Link

```
Run 3: Statistics of Indigo-Muses

Start at: 2018-12-01 05:43:39
End at: 2018-12-01 05:44:09
Local clock offset: 0.245 ms
Remote clock offset: 1.169 ms


# Below is generated by plot.py at 2018-12-01 09:16:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1003.28 Mbit/s
95th percentile per-packet one-way delay: 87.661 ms
Loss rate: 0.60%
-- Flow 1:
Average throughput: 554.20 Mbit/s
95th percentile per-packet one-way delay: 91.349 ms
Loss rate: 0.36%
-- Flow 2:
Average throughput: 498.48 Mbit/s
95th percentile per-packet one-way delay: 84.557 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 362.81 Mbit/s
95th percentile per-packet one-way delay: 83.054 ms
Loss rate: 1.71%
```
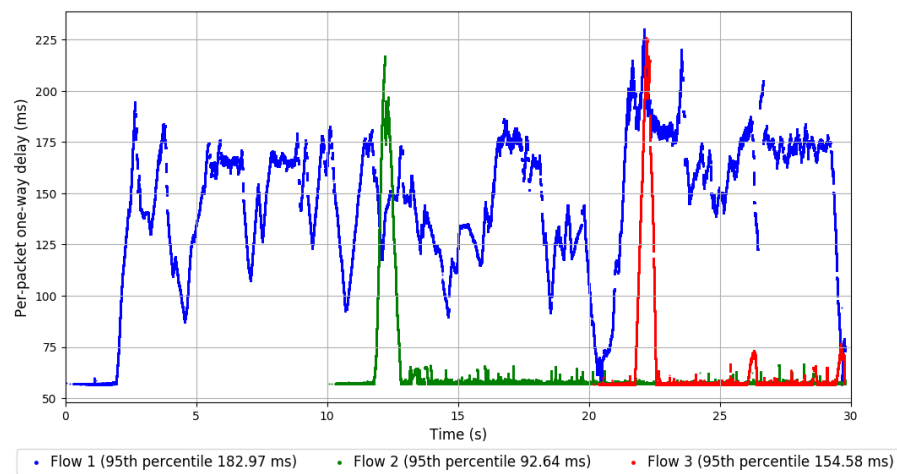
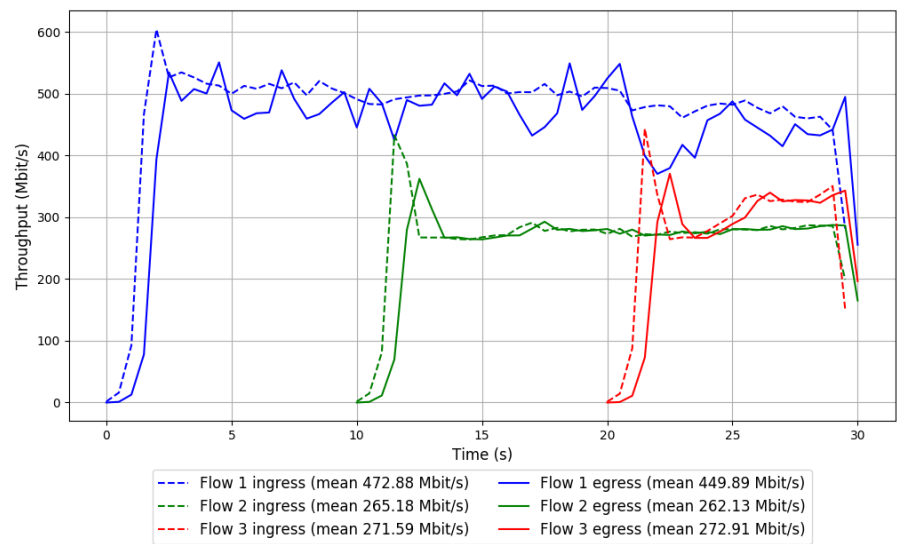Run 3: Report of Indigo-Muses — Data Link

```
Run 4: Statistics of Indigo-Muses

Start at: 2018-12-01 06:19:48
End at: 2018-12-01 06:20:18
Local clock offset: -0.043 ms
Remote clock offset: -0.335 ms


# Below is generated by plot.py at 2018-12-01 09:16:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 965.23 Mbit/s
95th percentile per-packet one-way delay: 92.130 ms
Loss rate: 0.68%
-- Flow 1:
Average throughput: 510.20 Mbit/s
95th percentile per-packet one-way delay: 103.566 ms
Loss rate: 0.40%
-- Flow 2:
Average throughput: 495.16 Mbit/s
95th percentile per-packet one-way delay: 78.791 ms
Loss rate: 0.66%
-- Flow 3:
Average throughput: 386.23 Mbit/s
95th percentile per-packet one-way delay: 81.813 ms
Loss rate: 1.83%
```

Run 4: Report of Indigo-Muses — Data Link

```
Run 5: Statistics of Indigo-Muses

Start at: 2018-12-01 06:56:43
End at: 2018-12-01 06:57:13
Local clock offset: 0.302 ms
Remote clock offset: -0.748 ms


# Below is generated by plot.py at 2018-12-01 09:16:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 990.98 Mbit/s
95th percentile per-packet one-way delay: 82.172 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 553.16 Mbit/s
95th percentile per-packet one-way delay: 83.466 ms
Loss rate: 0.40%
-- Flow 2:
Average throughput: 482.11 Mbit/s
95th percentile per-packet one-way delay: 81.213 ms
Loss rate: 0.64%
-- Flow 3:
Average throughput: 359.73 Mbit/s
95th percentile per-packet one-way delay: 79.764 ms
Loss rate: 1.76%
```
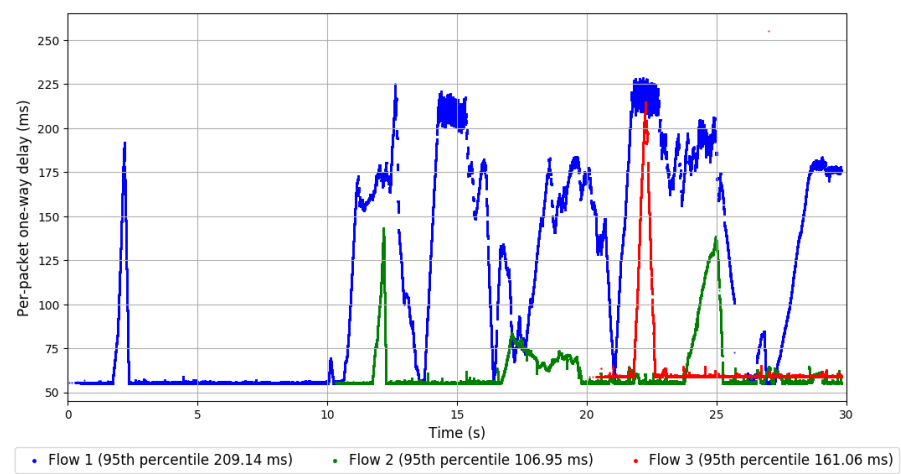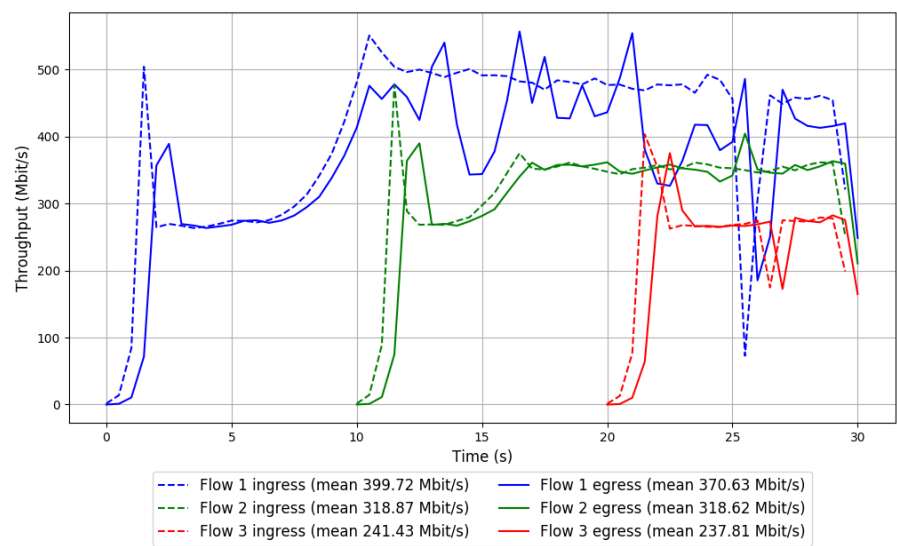
Run 5: Report of Indigo-Muses — Data Link

```
Run 1: Statistics of PCC-Allegro

Start at: 2018-12-01 04:50:01
End at: 2018-12-01 04:50:31
Local clock offset: -0.262 ms
Remote clock offset: -0.097 ms


# Below is generated by plot.py at 2018-12-01 09:29:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 712.60 Mbit/s
95th percentile per-packet one-way delay: 181.148 ms
Loss rate: 3.95%
-- Flow 1:
Average throughput: 449.89 Mbit/s
95th percentile per-packet one-way delay: 182.968 ms
Loss rate: 5.24%
-- Flow 2:
Average throughput: 262.13 Mbit/s
95th percentile per-packet one-way delay: 92.638 ms
Loss rate: 1.74%
-- Flow 3:
Average throughput: 272.91 Mbit/s
95th percentile per-packet one-way delay: 154.583 ms
Loss rate: 1.54%
```
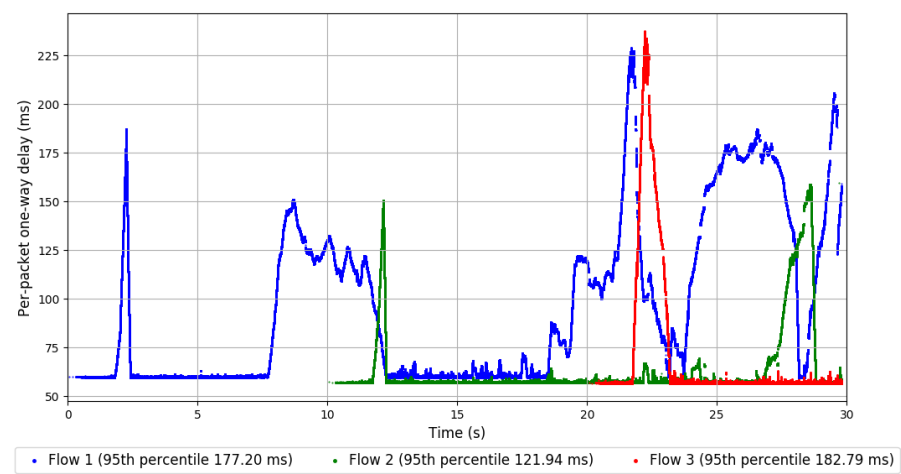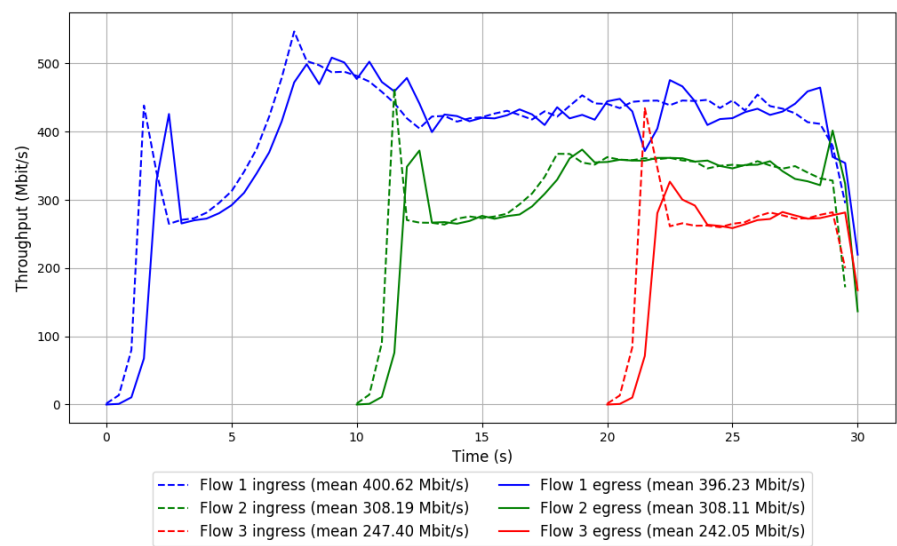
Run 1: Report of PCC-Allegro — Data Link

```
Run 2: Statistics of PCC-Allegro

Start at: 2018-12-01 05:26:09
End at: 2018-12-01 05:26:39
Local clock offset: -0.468 ms
Remote clock offset: 1.201 ms


# Below is generated by plot.py at 2018-12-01 09:29:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 659.52 Mbit/s
95th percentile per-packet one-way delay: 196.886 ms
Loss rate: 4.92%
-- Flow 1:
Average throughput: 370.63 Mbit/s
95th percentile per-packet one-way delay: 209.137 ms
Loss rate: 7.63%
-- Flow 2:
Average throughput: 318.62 Mbit/s
95th percentile per-packet one-way delay: 106.949 ms
Loss rate: 0.65%
-- Flow 3:
Average throughput: 237.81 Mbit/s
95th percentile per-packet one-way delay: 161.061 ms
Loss rate: 2.68%
```
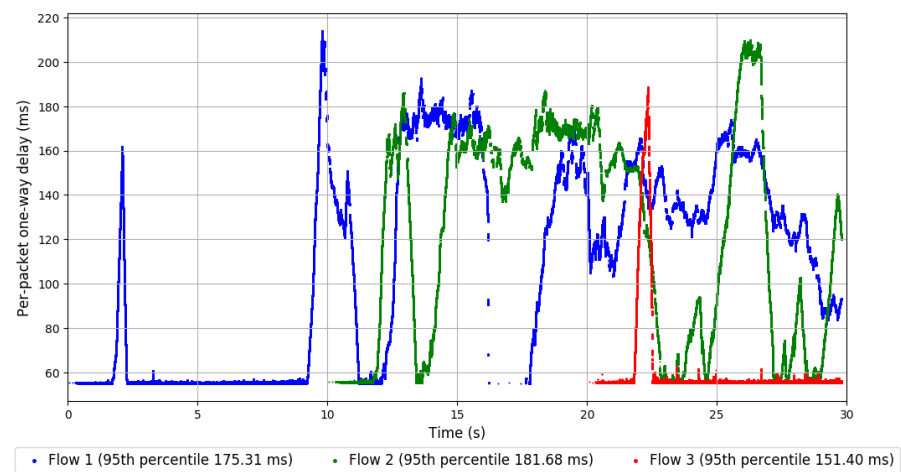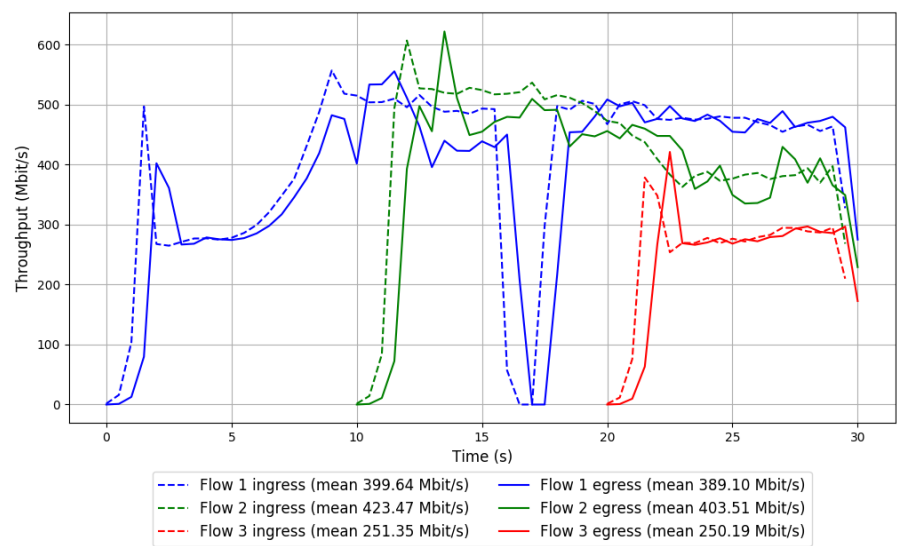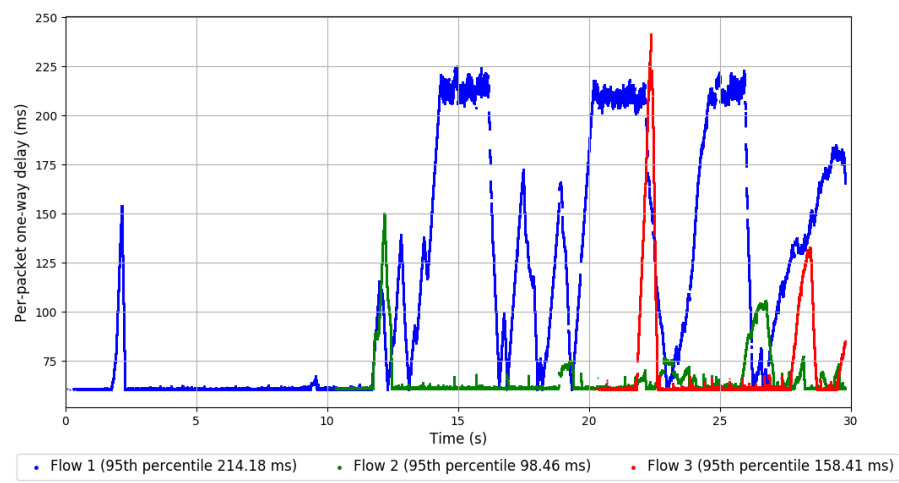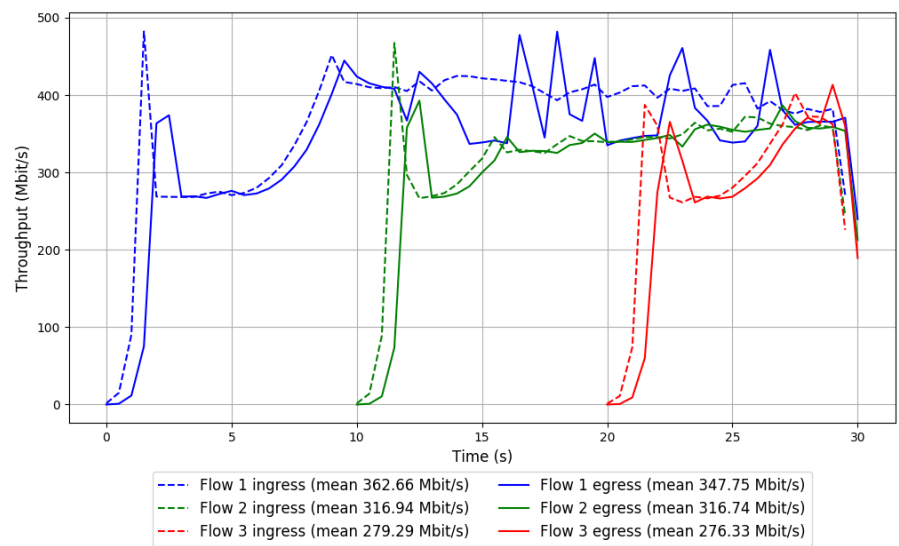
Run 2: Report of PCC-Allegro — Data Link

```
Run 3: Statistics of PCC-Allegro

Start at: 2018-12-01 06:02:08
End at: 2018-12-01 06:02:38
Local clock offset: 0.114 ms
Remote clock offset: 0.495 ms


# Below is generated by plot.py at 2018-12-01 09:29:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 679.80 Mbit/s
95th percentile per-packet one-way delay: 174.066 ms
Loss rate: 1.43%
-- Flow 1:
Average throughput: 396.23 Mbit/s
95th percentile per-packet one-way delay: 177.203 ms
Loss rate: 1.48%
-- Flow 2:
Average throughput: 308.11 Mbit/s
95th percentile per-packet one-way delay: 121.937 ms
Loss rate: 0.60%
-- Flow 3:
Average throughput: 242.05 Mbit/s
95th percentile per-packet one-way delay: 182.793 ms
Loss rate: 3.30%
```

Run 3: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 400.62 Mbit/s) — Flow 1 egress (mean 396.23 Mbit/s)
Flow 2 ingress (mean 308.19 Mbit/s) — Flow 2 egress (mean 308.11 Mbit/s)
Flow 3 ingress (mean 247.40 Mbit/s) — Flow 3 egress (mean 242.05 Mbit/s)

Flow 1 (95th percentile 177.20 ms) — Flow 2 (95th percentile 121.94 ms) — Flow 3 (95th percentile 182.79 ms)

```
Run 4: Statistics of PCC-Allegro

Start at: 2018-12-01 06:38:29
End at: 2018-12-01 06:38:59
Local clock offset: -0.392 ms
Remote clock offset: 1.282 ms


# Below is generated by plot.py at 2018-12-01 09:47:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 738.48 Mbit/s
95th percentile per-packet one-way delay: 175.790 ms
Loss rate: 3.69%
-- Flow 1:
Average throughput: 389.10 Mbit/s
95th percentile per-packet one-way delay: 175.312 ms
Loss rate: 3.01%
-- Flow 2:
Average throughput: 403.51 Mbit/s
95th percentile per-packet one-way delay: 181.680 ms
Loss rate: 5.26%
-- Flow 3:
Average throughput: 250.19 Mbit/s
95th percentile per-packet one-way delay: 151.402 ms
Loss rate: 1.63%
```

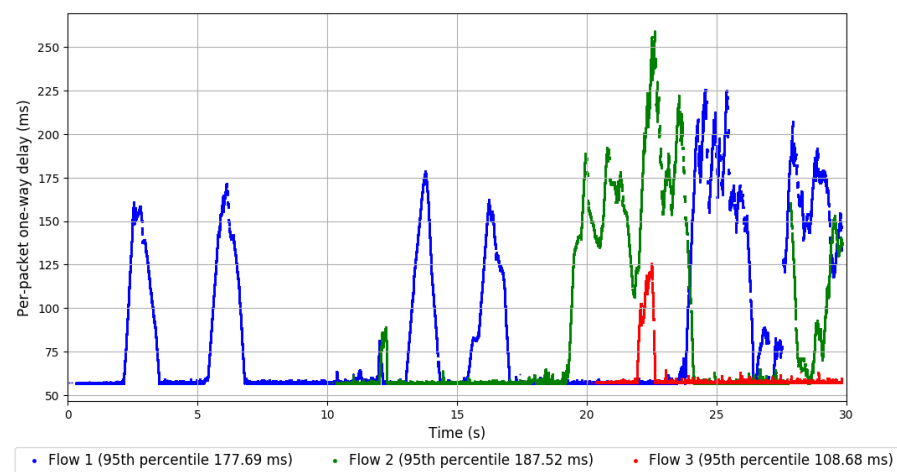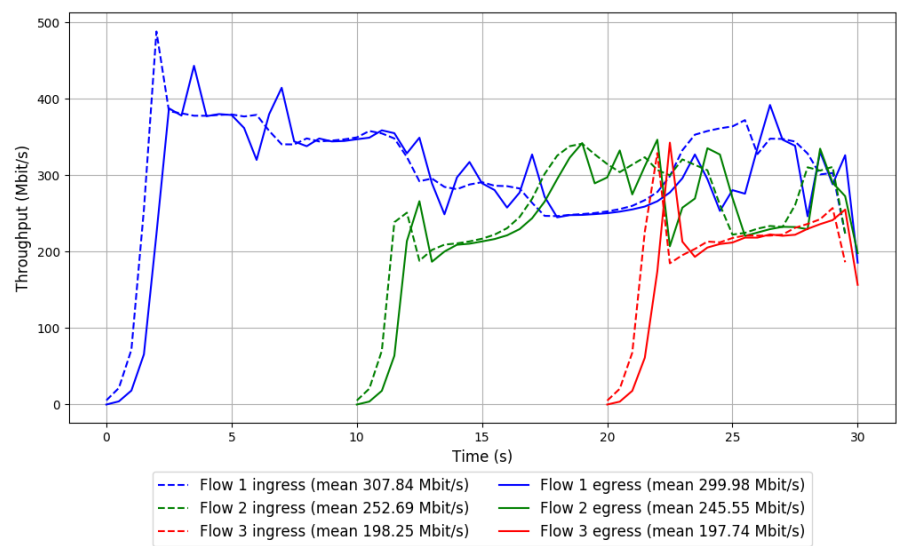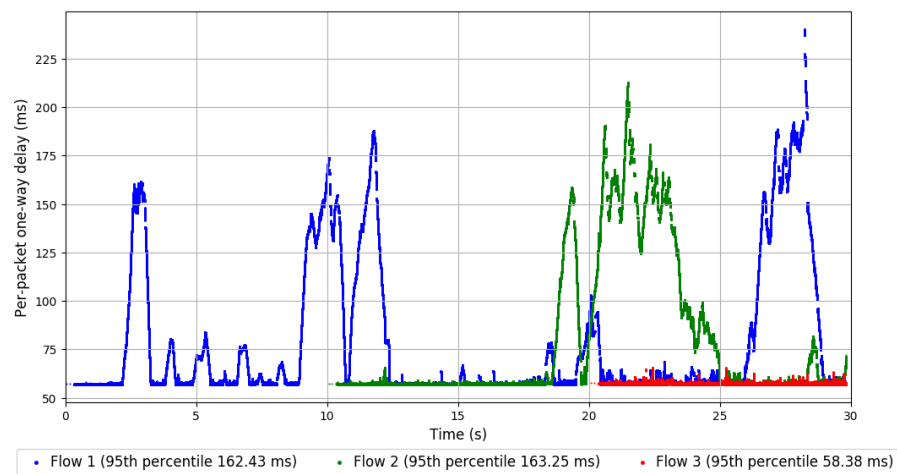Run 4: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 399.64 Mbit/s) --- Flow 1 egress (mean 389.10 Mbit/s)
Flow 2 ingress (mean 423.47 Mbit/s) --- Flow 2 egress (mean 403.51 Mbit/s)
Flow 3 ingress (mean 251.35 Mbit/s) --- Flow 3 egress (mean 250.19 Mbit/s)

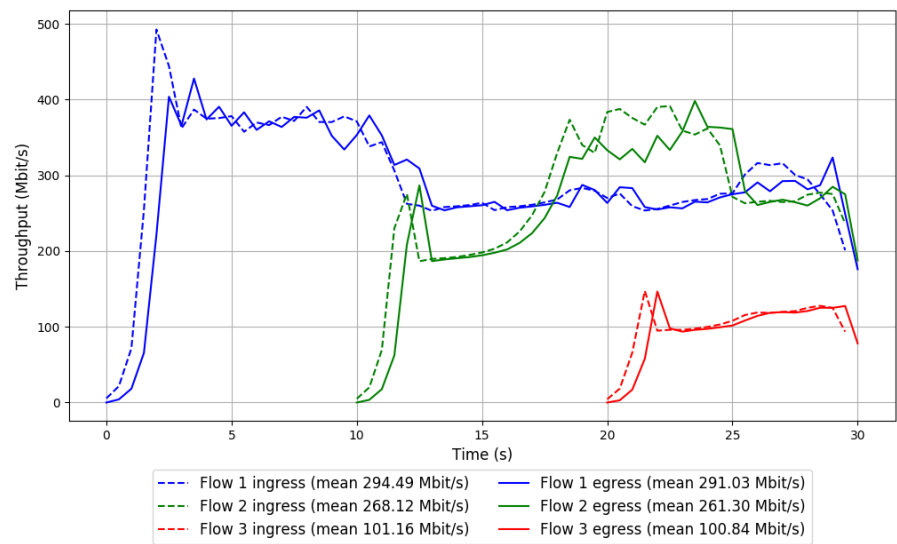Flow 1 (95th percentile 175.31 ms) · Flow 2 (95th percentile 181.68 ms) · Flow 3 (95th percentile 151.40 ms)

```
Run 5: Statistics of PCC-Allegro

Start at: 2018-12-01 07:15:10
End at: 2018-12-01 07:15:40
Local clock offset: 0.209 ms
Remote clock offset: -0.144 ms


# Below is generated by plot.py at 2018-12-01 09:47:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 647.99 Mbit/s
95th percentile per-packet one-way delay: 211.490 ms
Loss rate: 2.98%
-- Flow 1:
Average throughput: 347.75 Mbit/s
95th percentile per-packet one-way delay: 214.180 ms
Loss rate: 4.49%
-- Flow 2:
Average throughput: 316.74 Mbit/s
95th percentile per-packet one-way delay: 98.463 ms
Loss rate: 0.66%
-- Flow 3:
Average throughput: 276.33 Mbit/s
95th percentile per-packet one-way delay: 158.412 ms
Loss rate: 2.37%
```
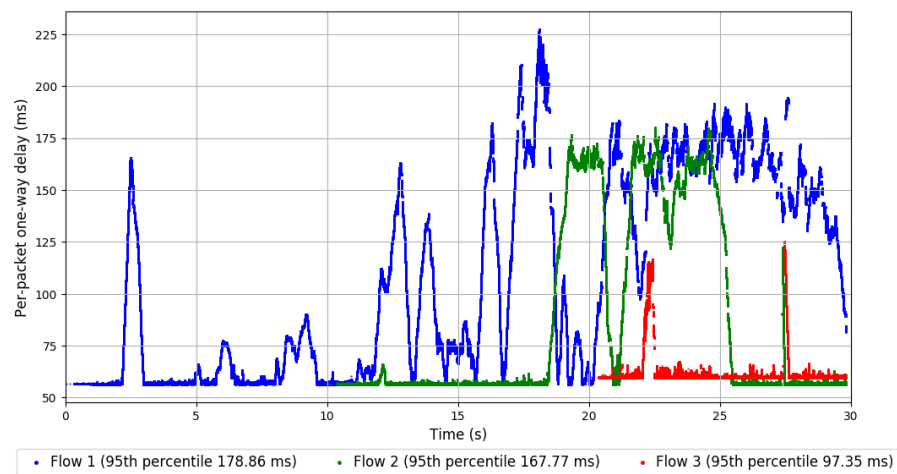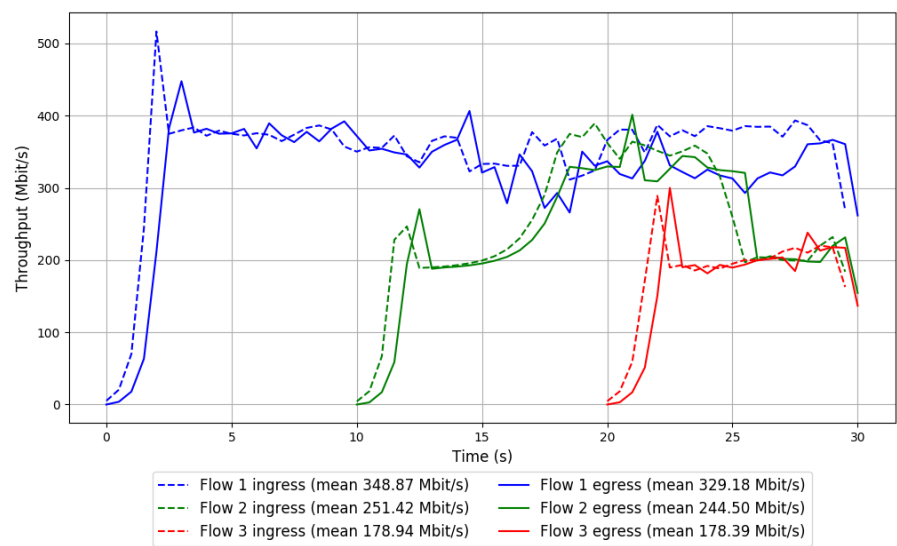
Run 5: Report of PCC-Allegro — Data Link

```
Run 1: Statistics of PCC-Expr

Start at: 2018-12-01 04:44:29
End at: 2018-12-01 04:44:59
Local clock offset: 0.04 ms
Remote clock offset: 0.074 ms

# Below is generated by plot.py at 2018-12-01 09:47:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 527.71 Mbit/s
95th percentile per-packet one-way delay: 178.111 ms
Loss rate: 2.91%
-- Flow 1:
Average throughput: 299.98 Mbit/s
95th percentile per-packet one-way delay: 177.693 ms
Loss rate: 2.94%
-- Flow 2:
Average throughput: 245.55 Mbit/s
95th percentile per-packet one-way delay: 187.524 ms
Loss rate: 3.40%
-- Flow 3:
Average throughput: 197.74 Mbit/s
95th percentile per-packet one-way delay: 108.676 ms
Loss rate: 1.53%
```

Run 1: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 307.84 Mbit/s)   Flow 1 egress (mean 299.98 Mbit/s)
Flow 2 ingress (mean 252.69 Mbit/s)   Flow 2 egress (mean 245.55 Mbit/s)
Flow 3 ingress (mean 198.25 Mbit/s)   Flow 3 egress (mean 197.74 Mbit/s)

Flow 1 (95th percentile 177.69 ms)   Flow 2 (95th percentile 187.52 ms)   Flow 3 (95th percentile 108.68 ms)
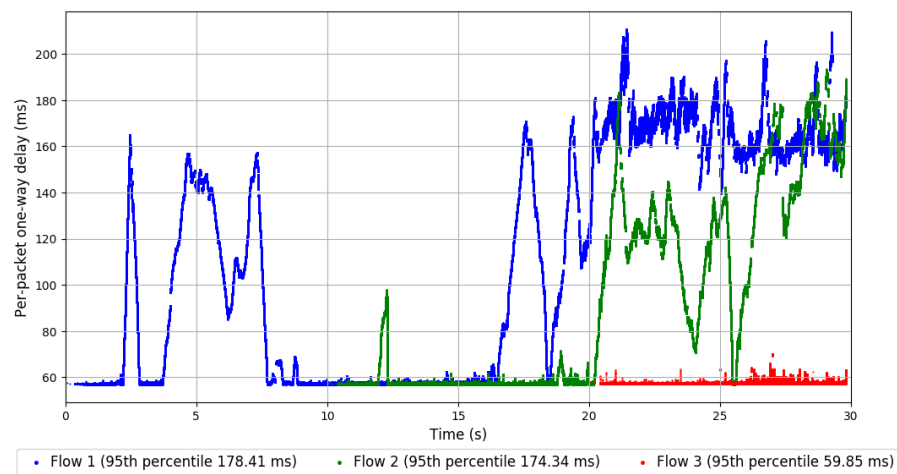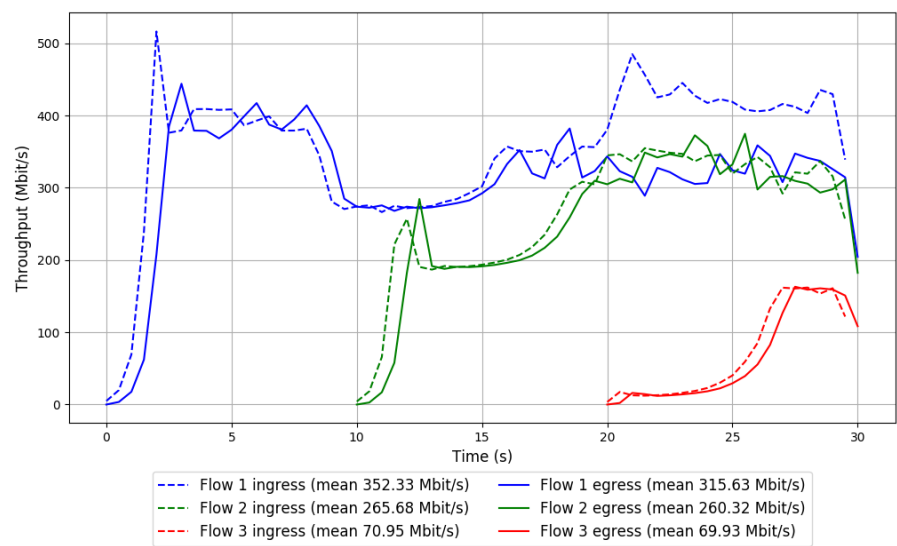
```
Run 2: Statistics of PCC-Expr

Start at: 2018-12-01 05:20:34
End at: 2018-12-01 05:21:04
Local clock offset: 0.009 ms
Remote clock offset: -0.202 ms

# Below is generated by plot.py at 2018-12-01 09:47:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 497.52 Mbit/s
95th percentile per-packet one-way delay: 161.972 ms
Loss rate: 2.09%
-- Flow 1:
Average throughput: 291.03 Mbit/s
95th percentile per-packet one-way delay: 162.433 ms
Loss rate: 1.55%
-- Flow 2:
Average throughput: 261.30 Mbit/s
95th percentile per-packet one-way delay: 163.248 ms
Loss rate: 3.10%
-- Flow 3:
Average throughput: 100.84 Mbit/s
95th percentile per-packet one-way delay: 58.383 ms
Loss rate: 1.48%
```
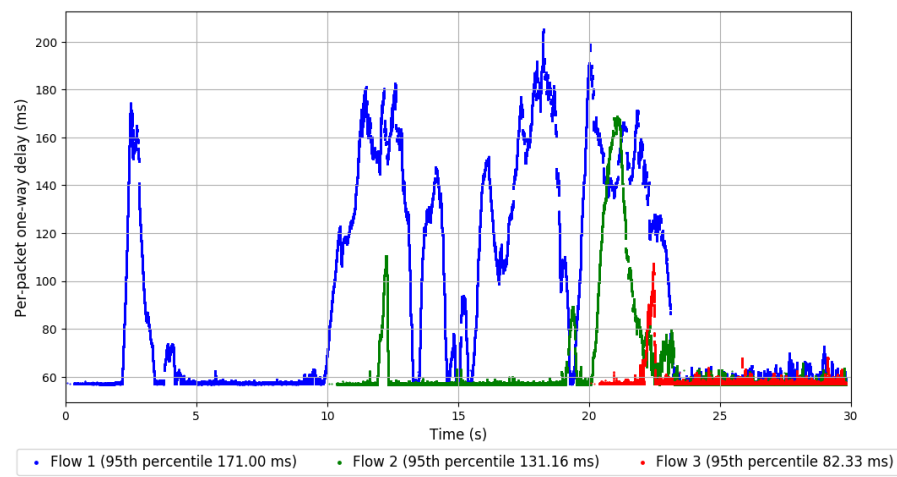
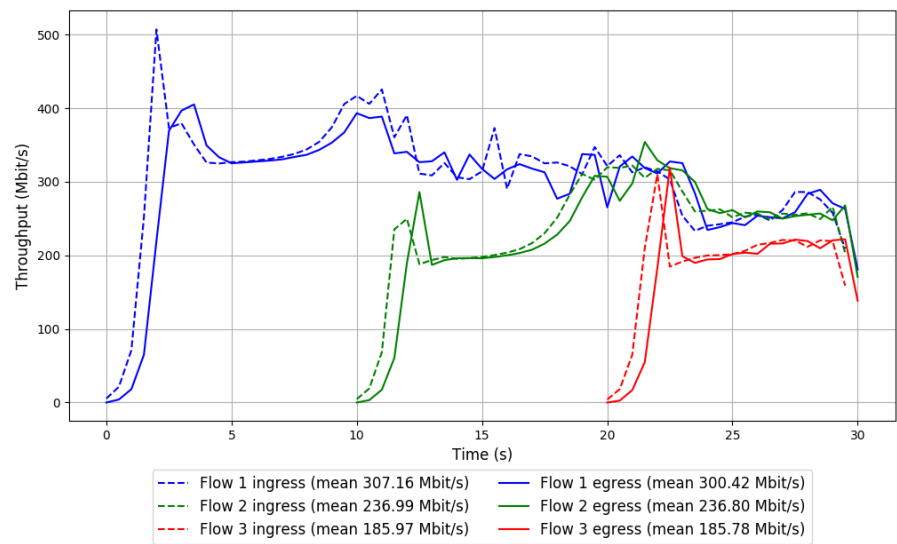Run 2: Report of PCC-Expr — Data Link

```
Run 3: Statistics of PCC-Expr

Start at: 2018-12-01 05:56:40
End at: 2018-12-01 05:57:10
Local clock offset: -0.527 ms
Remote clock offset: -0.107 ms


# Below is generated by plot.py at 2018-12-01 09:47:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 549.83 Mbit/s
95th percentile per-packet one-way delay: 174.004 ms
Loss rate: 4.76%
-- Flow 1:
Average throughput: 329.18 Mbit/s
95th percentile per-packet one-way delay: 178.859 ms
Loss rate: 6.01%
-- Flow 2:
Average throughput: 244.50 Mbit/s
95th percentile per-packet one-way delay: 167.769 ms
Loss rate: 3.32%
-- Flow 3:
Average throughput: 178.39 Mbit/s
95th percentile per-packet one-way delay: 97.350 ms
Loss rate: 1.49%
```
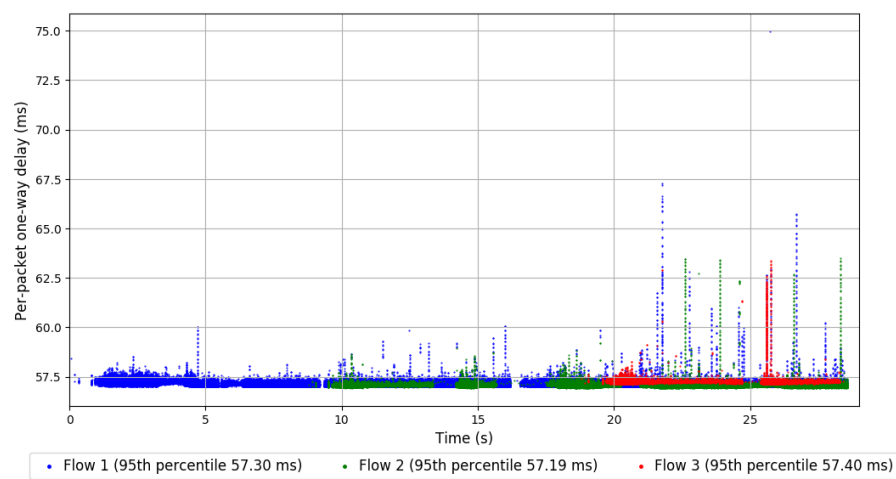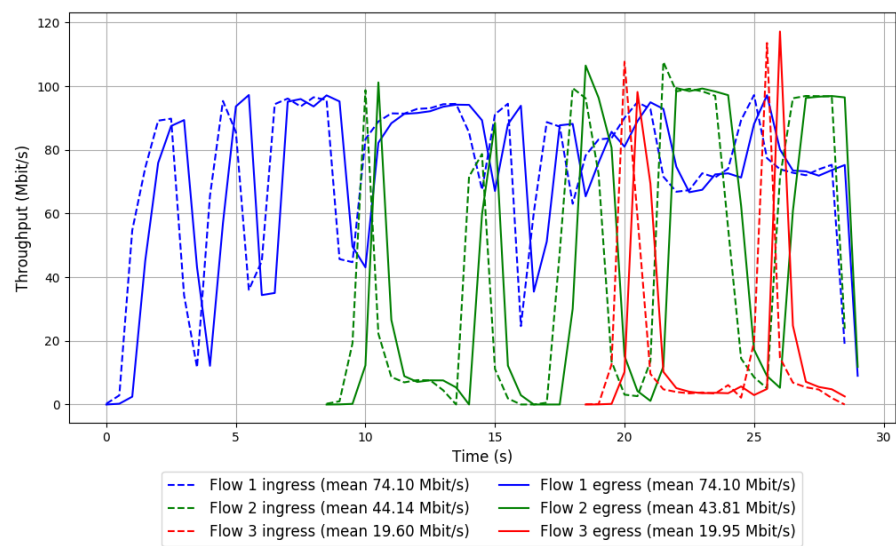
Run 3: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 348.87 Mbit/s) Flow 1 egress (mean 329.18 Mbit/s)
Flow 2 ingress (mean 251.42 Mbit/s) Flow 2 egress (mean 244.50 Mbit/s)
Flow 3 ingress (mean 178.94 Mbit/s) Flow 3 egress (mean 178.39 Mbit/s)

Flow 1 (95th percentile 178.86 ms) Flow 2 (95th percentile 167.77 ms) Flow 3 (95th percentile 97.35 ms)

```
Run 4: Statistics of PCC-Expr

Start at: 2018-12-01 06:32:57
End at: 2018-12-01 06:33:27
Local clock offset: -0.043 ms
Remote clock offset: -0.094 ms


# Below is generated by plot.py at 2018-12-01 09:49:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 511.32 Mbit/s
95th percentile per-packet one-way delay: 176.614 ms
Loss rate: 7.80%
-- Flow 1:
Average throughput: 315.63 Mbit/s
95th percentile per-packet one-way delay: 178.413 ms
Loss rate: 10.76%
-- Flow 2:
Average throughput: 260.32 Mbit/s
95th percentile per-packet one-way delay: 174.339 ms
Loss rate: 2.58%
-- Flow 3:
Average throughput: 69.93 Mbit/s
95th percentile per-packet one-way delay: 59.851 ms
Loss rate: 2.60%
```

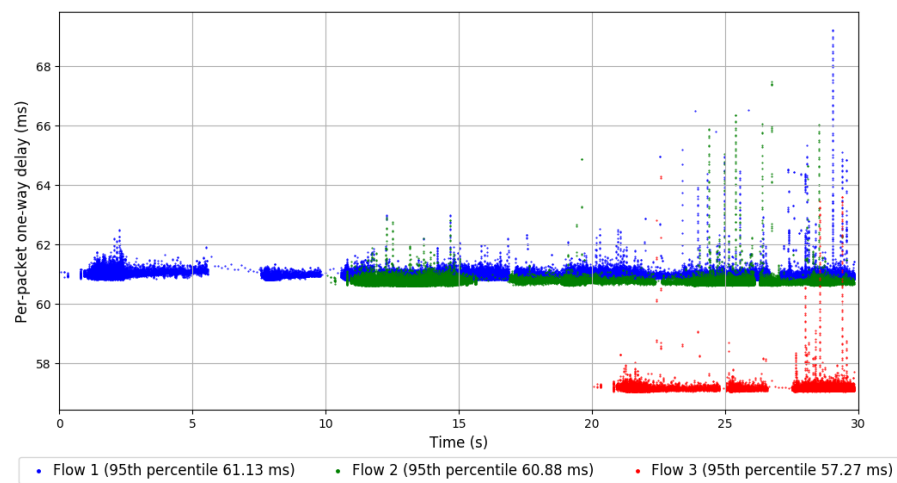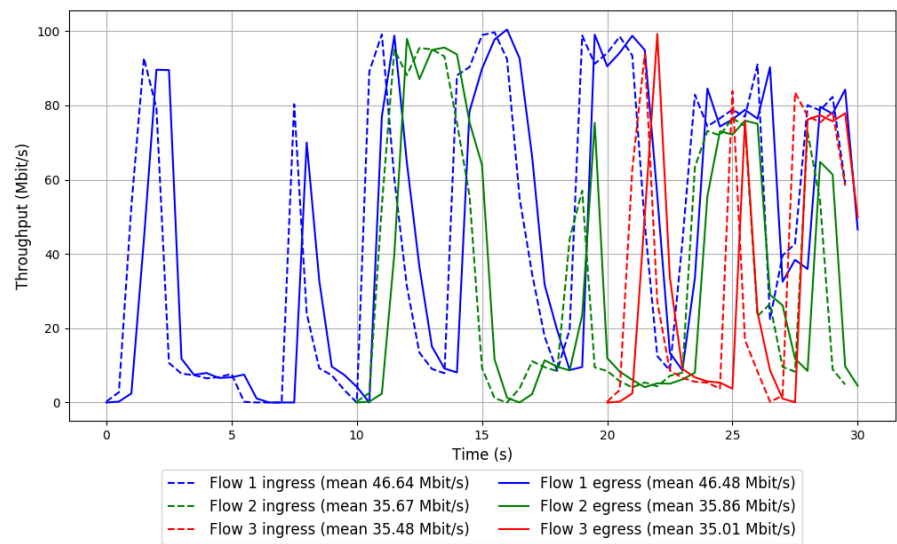# Run 4: Report of PCC-Expr — Data Link

```
Run 5: Statistics of PCC-Expr

Start at: 2018-12-01 07:09:28
End at: 2018-12-01 07:09:58
Local clock offset: -0.241 ms
Remote clock offset: -0.108 ms

# Below is generated by plot.py at 2018-12-01 09:50:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 518.48 Mbit/s
95th percentile per-packet one-way delay: 164.189 ms
Loss rate: 1.84%
-- Flow 1:
Average throughput: 300.42 Mbit/s
95th percentile per-packet one-way delay: 171.004 ms
Loss rate: 2.57%
-- Flow 2:
Average throughput: 236.80 Mbit/s
95th percentile per-packet one-way delay: 131.165 ms
Loss rate: 0.65%
-- Flow 3:
Average throughput: 185.78 Mbit/s
95th percentile per-packet one-way delay: 82.328 ms
Loss rate: 1.27%
```

Run 5: Report of PCC-Expr — Data Link

```
Run 1: Statistics of QUIC Cubic

Start at: 2018-12-01 04:24:42
End at: 2018-12-01 04:25:12
Local clock offset: -0.038 ms
Remote clock offset: 0.06 ms


# Below is generated by plot.py at 2018-12-01 09:50:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 111.22 Mbit/s
95th percentile per-packet one-way delay: 57.298 ms
Loss rate: 0.65%
-- Flow 1:
Average throughput: 74.10 Mbit/s
95th percentile per-packet one-way delay: 57.304 ms
Loss rate: 0.43%
-- Flow 2:
Average throughput: 43.81 Mbit/s
95th percentile per-packet one-way delay: 57.185 ms
Loss rate: 1.33%
-- Flow 3:
Average throughput: 19.95 Mbit/s
95th percentile per-packet one-way delay: 57.399 ms
Loss rate: 0.00%
```
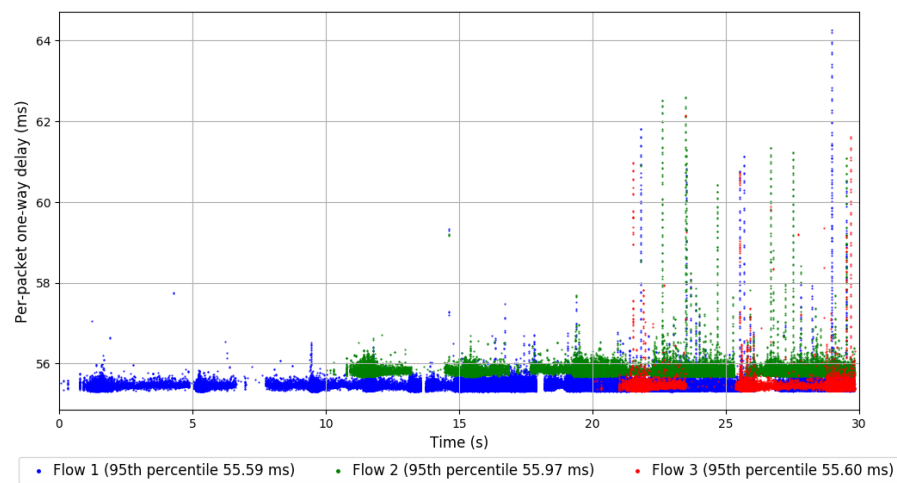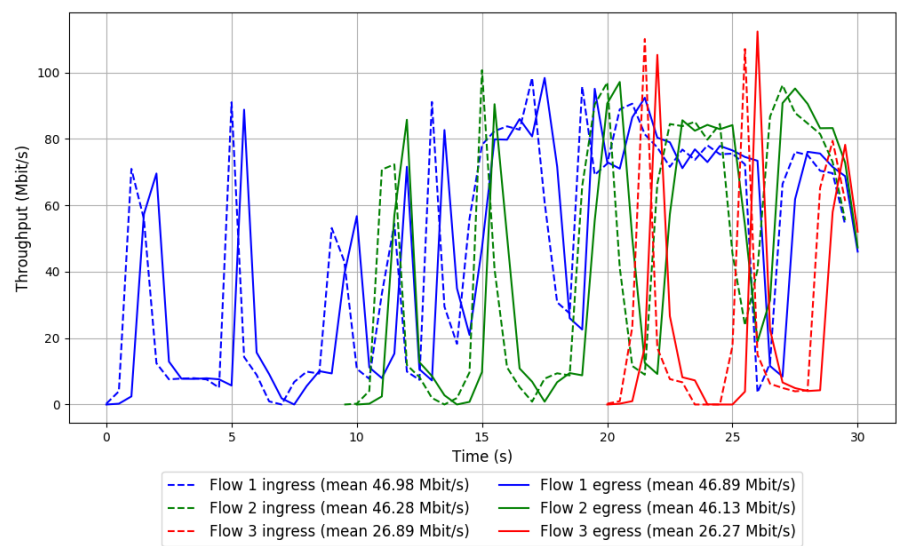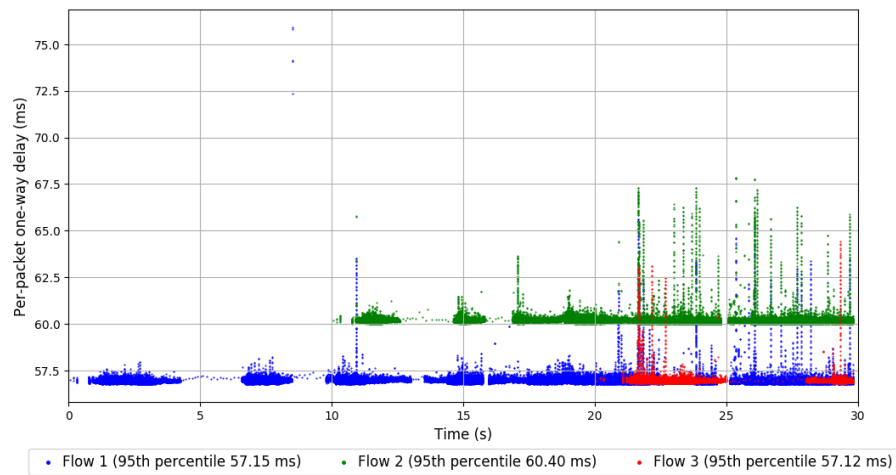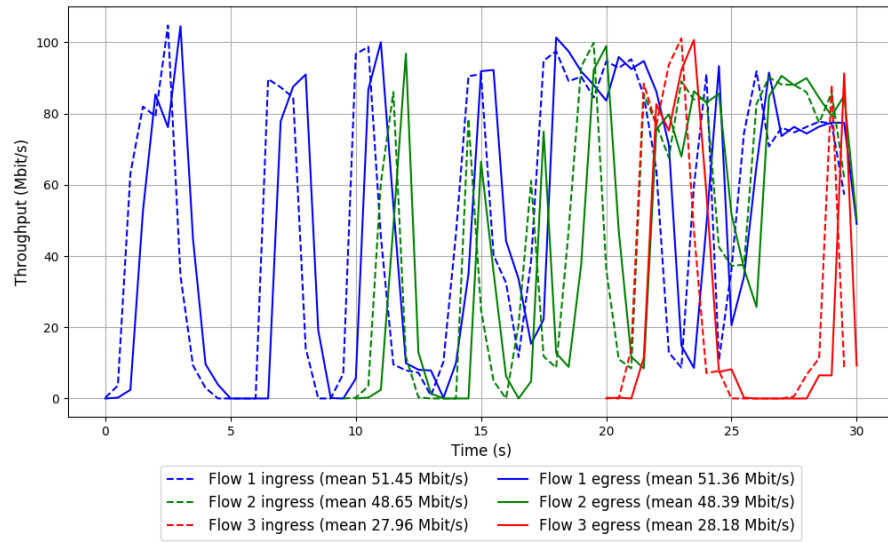
Run 1: Report of QUIC Cubic — Data Link

```
Run 2: Statistics of QUIC Cubic

Start at: 2018-12-01 05:00:25
End at: 2018-12-01 05:00:55
Local clock offset: 0.401 ms
Remote clock offset: -0.041 ms


# Below is generated by plot.py at 2018-12-01 09:50:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 81.77 Mbit/s
95th percentile per-packet one-way delay: 61.085 ms
Loss rate: 0.80%
-- Flow 1:
Average throughput: 46.48 Mbit/s
95th percentile per-packet one-way delay: 61.131 ms
Loss rate: 0.74%
-- Flow 2:
Average throughput: 35.86 Mbit/s
95th percentile per-packet one-way delay: 60.884 ms
Loss rate: 0.09%
-- Flow 3:
Average throughput: 35.01 Mbit/s
95th percentile per-packet one-way delay: 57.273 ms
Loss rate: 2.47%
```

Run 2: Report of QUIC Cubic — Data Link

```
Run 3: Statistics of QUIC Cubic

Start at: 2018-12-01 05:36:50
End at: 2018-12-01 05:37:20
Local clock offset: -0.514 ms
Remote clock offset: 1.043 ms


# Below is generated by plot.py at 2018-12-01 09:50:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 86.15 Mbit/s
95th percentile per-packet one-way delay: 55.888 ms
Loss rate: 0.98%
-- Flow 1:
Average throughput: 46.89 Mbit/s
95th percentile per-packet one-way delay: 55.594 ms
Loss rate: 0.57%
-- Flow 2:
Average throughput: 46.13 Mbit/s
95th percentile per-packet one-way delay: 55.966 ms
Loss rate: 0.89%
-- Flow 3:
Average throughput: 26.27 Mbit/s
95th percentile per-packet one-way delay: 55.597 ms
Loss rate: 3.42%
```
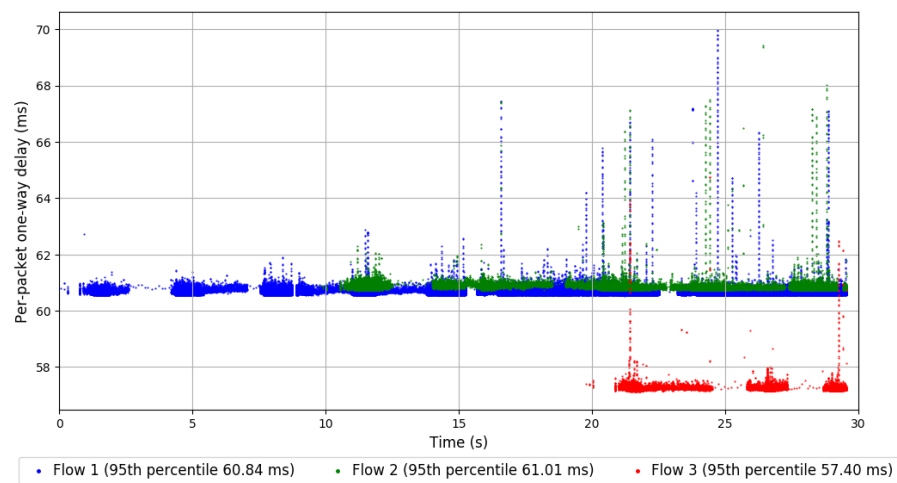
Run 3: Report of QUIC Cubic — Data Link

```
Run 4: Statistics of QUIC Cubic

Start at: 2018-12-01 06:12:21
End at: 2018-12-01 06:12:51
Local clock offset: -0.065 ms
Remote clock offset: -0.044 ms

# Below is generated by plot.py at 2018-12-01 09:50:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.74 Mbit/s
95th percentile per-packet one-way delay: 60.264 ms
Loss rate: 0.73%
-- Flow 1:
Average throughput: 51.36 Mbit/s
95th percentile per-packet one-way delay: 57.150 ms
Loss rate: 0.55%
-- Flow 2:
Average throughput: 48.39 Mbit/s
95th percentile per-packet one-way delay: 60.395 ms
Loss rate: 1.12%
-- Flow 3:
Average throughput: 28.18 Mbit/s
95th percentile per-packet one-way delay: 57.115 ms
Loss rate: 0.36%
```
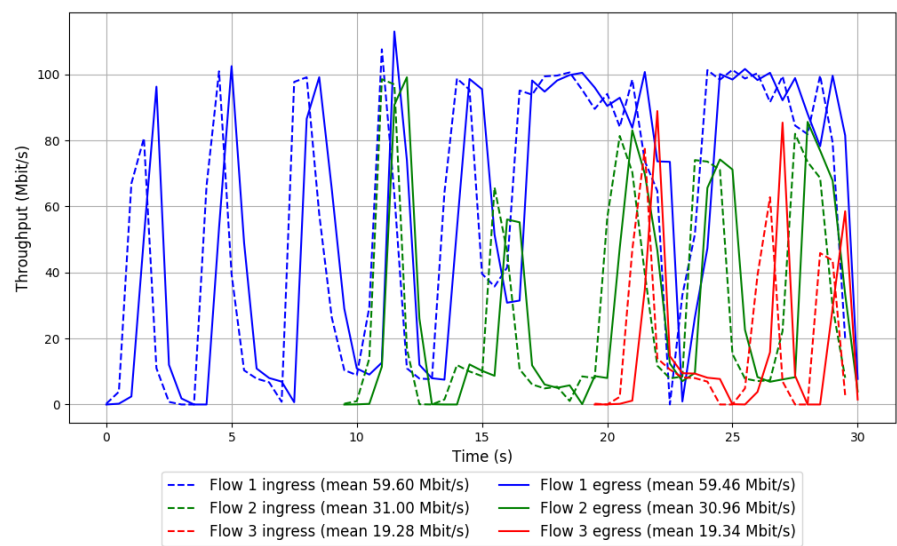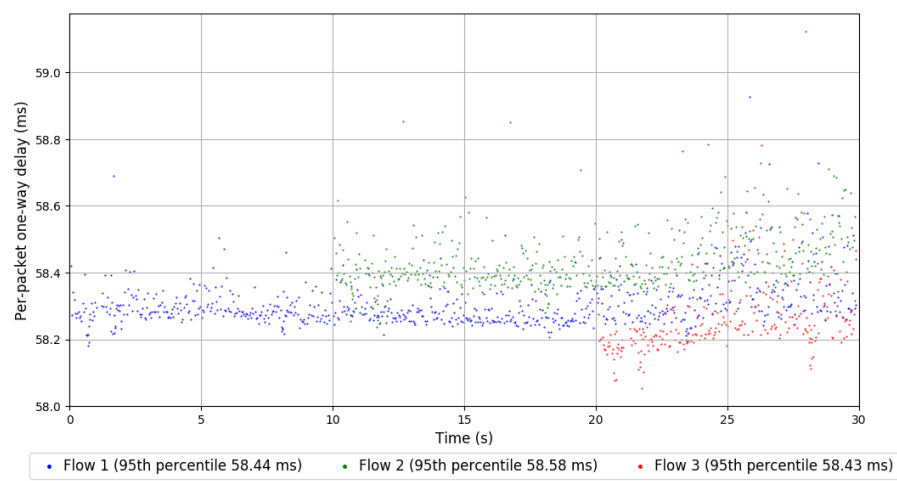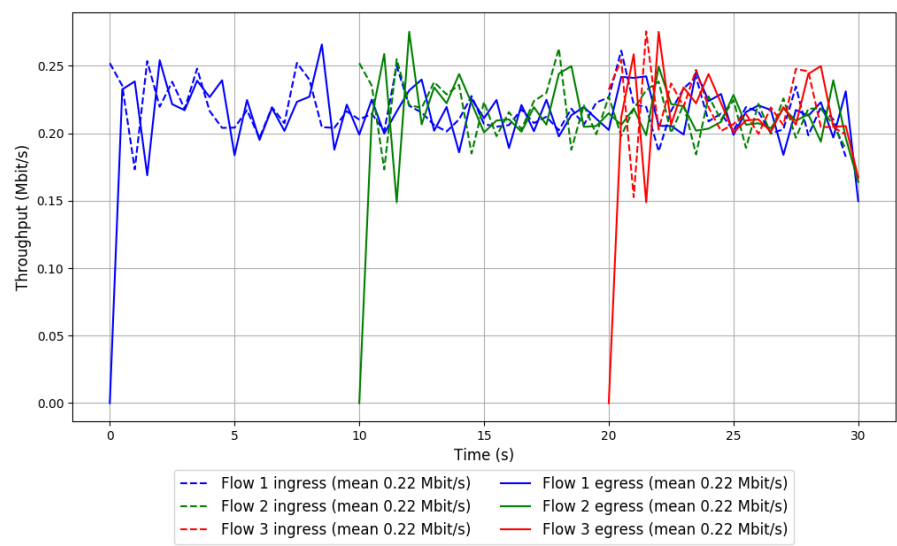
Run 4: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 51.45 Mbit/s)   Flow 1 egress (mean 51.36 Mbit/s)
Flow 2 ingress (mean 48.65 Mbit/s)   Flow 2 egress (mean 48.39 Mbit/s)
Flow 3 ingress (mean 27.96 Mbit/s)   Flow 3 egress (mean 28.18 Mbit/s)

Flow 1 (95th percentile 57.15 ms)   Flow 2 (95th percentile 60.40 ms)   Flow 3 (95th percentile 57.12 ms)

```
Run 5: Statistics of QUIC Cubic

Start at: 2018-12-01 06:49:23
End at: 2018-12-01 06:49:53
Local clock offset: 0.36 ms
Remote clock offset: 0.015 ms


# Below is generated by plot.py at 2018-12-01 09:50:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 86.62 Mbit/s
95th percentile per-packet one-way delay: 60.919 ms
Loss rate: 0.67%
-- Flow 1:
Average throughput: 59.46 Mbit/s
95th percentile per-packet one-way delay: 60.841 ms
Loss rate: 0.63%
-- Flow 2:
Average throughput: 30.96 Mbit/s
95th percentile per-packet one-way delay: 61.012 ms
Loss rate: 0.71%
-- Flow 3:
Average throughput: 19.34 Mbit/s
95th percentile per-packet one-way delay: 57.400 ms
Loss rate: 0.81%
```
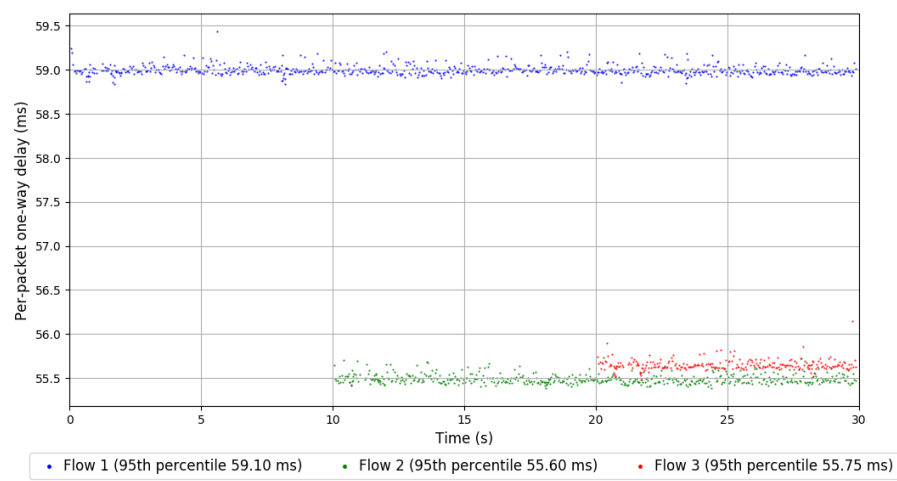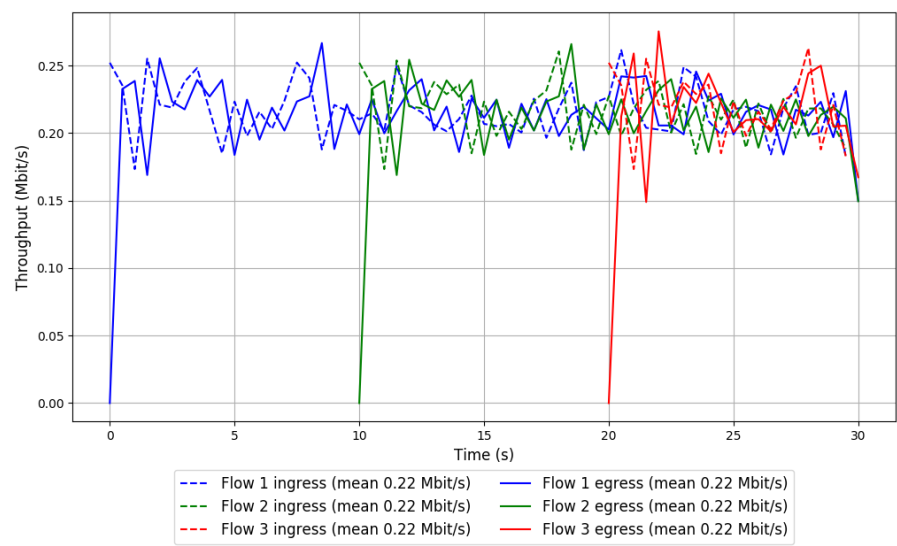
Run 5: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 59.60 Mbit/s) Flow 1 egress (mean 59.46 Mbit/s)
Flow 2 ingress (mean 31.00 Mbit/s) Flow 2 egress (mean 30.96 Mbit/s)
Flow 3 ingress (mean 19.28 Mbit/s) Flow 3 egress (mean 19.34 Mbit/s)

Flow 1 (95th percentile 60.84 ms)   Flow 2 (95th percentile 61.01 ms)   Flow 3 (95th percentile 57.40 ms)

```
Run 1: Statistics of SCReAM

Start at: 2018-12-01 04:26:02
End at: 2018-12-01 04:26:32
Local clock offset: 0.14 ms
Remote clock offset: -0.822 ms


# Below is generated by plot.py at 2018-12-01 09:50:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 58.534 ms
Loss rate: 0.58%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 58.443 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 58.581 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 58.433 ms
Loss rate: 1.08%
```
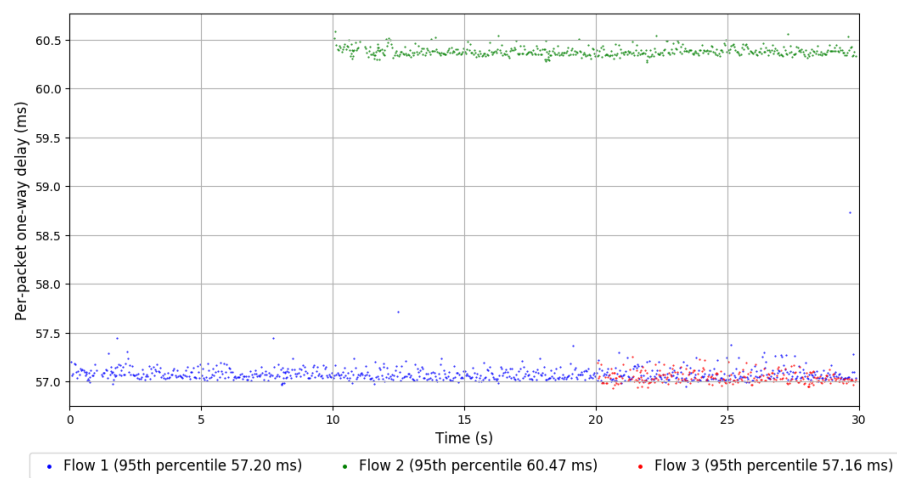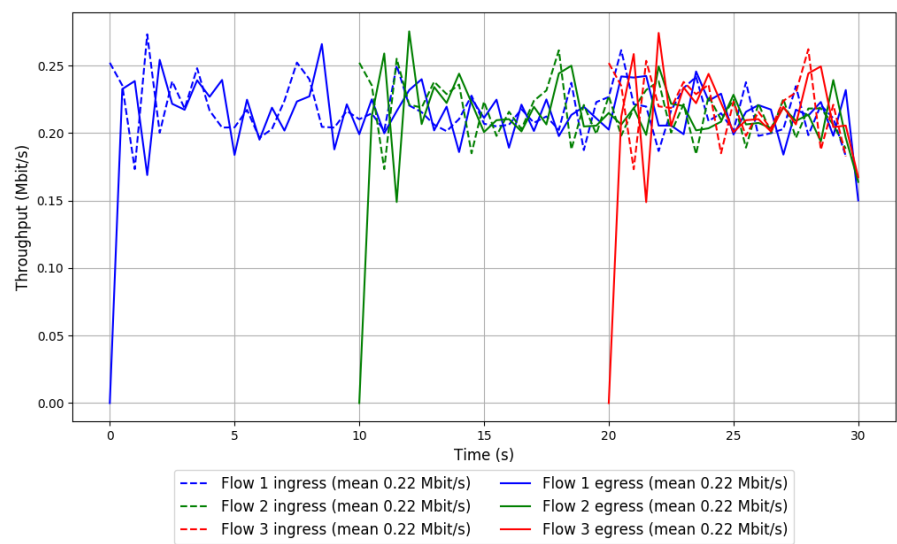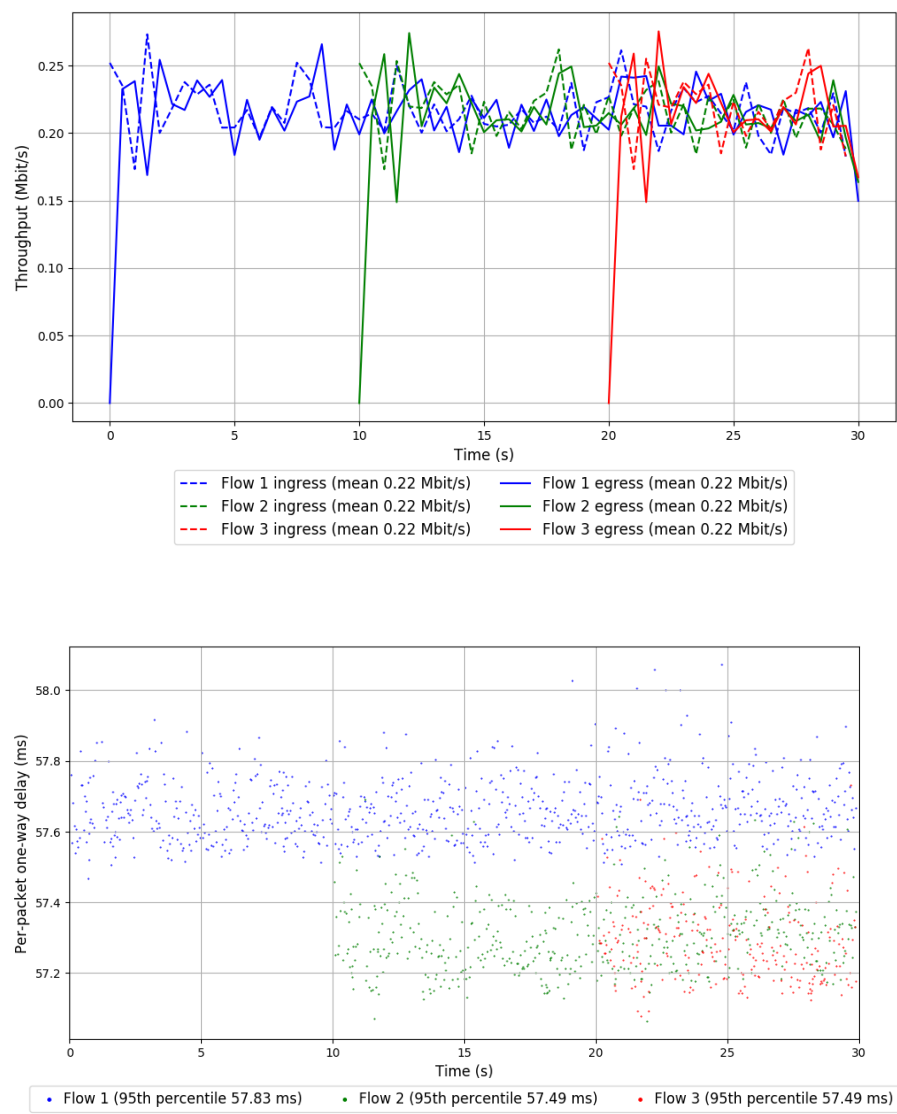
Run 1: Report of SCReAM — Data Link

```
Run 2: Statistics of SCReAM

Start at: 2018-12-01 05:01:44
End at: 2018-12-01 05:02:14
Local clock offset: 0.0 ms
Remote clock offset: 1.376 ms


# Below is generated by plot.py at 2018-12-01 09:50:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 59.059 ms
Loss rate: 0.58%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 59.096 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 55.604 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 55.751 ms
Loss rate: 1.08%
```

Run 2: Report of SCReAM — Data Link

```
Run 3: Statistics of SCReAM

Start at: 2018-12-01 05:38:09
End at: 2018-12-01 05:38:39
Local clock offset: -0.352 ms
Remote clock offset: -0.27 ms


# Below is generated by plot.py at 2018-12-01 09:50:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 60.426 ms
Loss rate: 0.58%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 57.195 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 60.471 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 57.159 ms
Loss rate: 1.09%
```
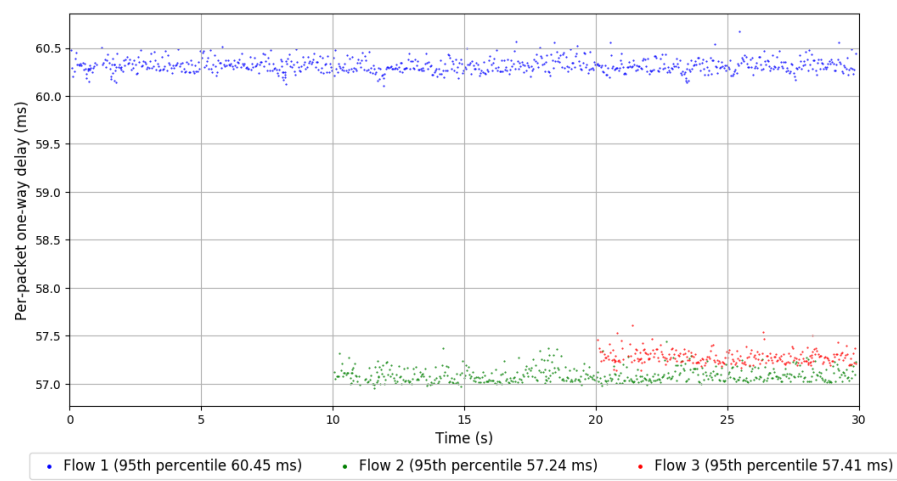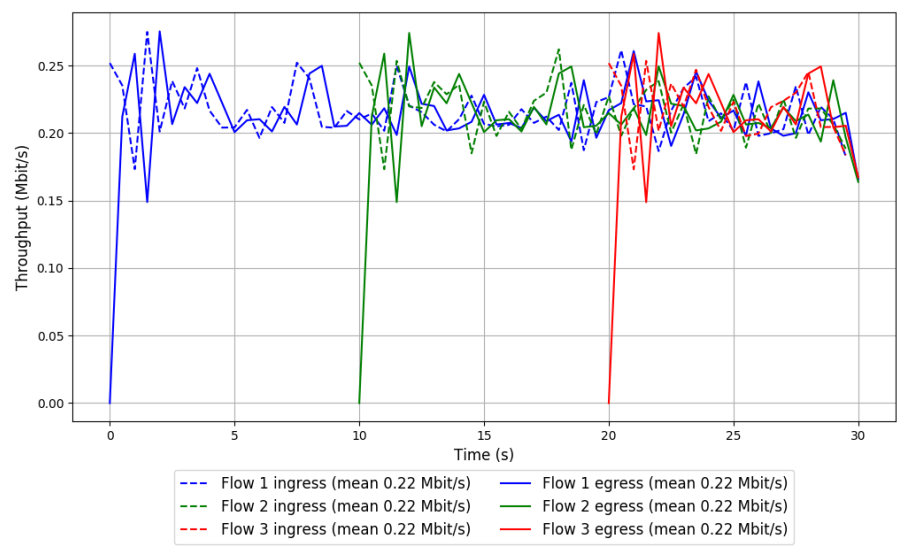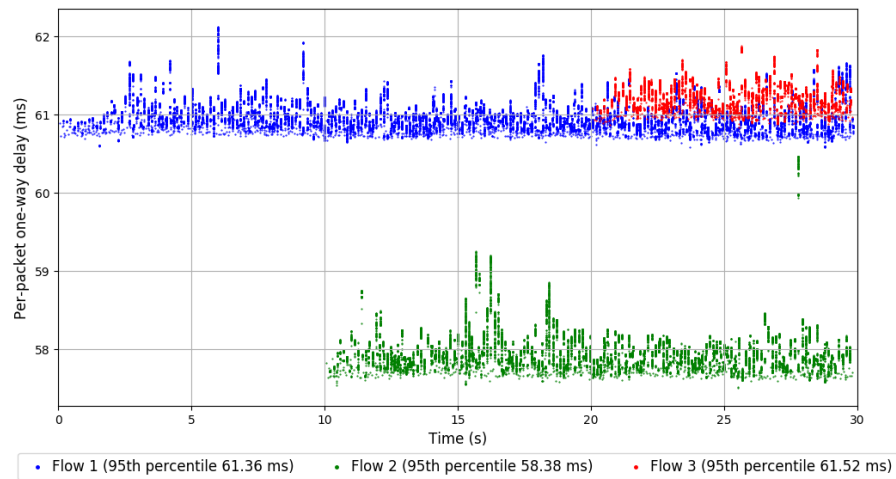
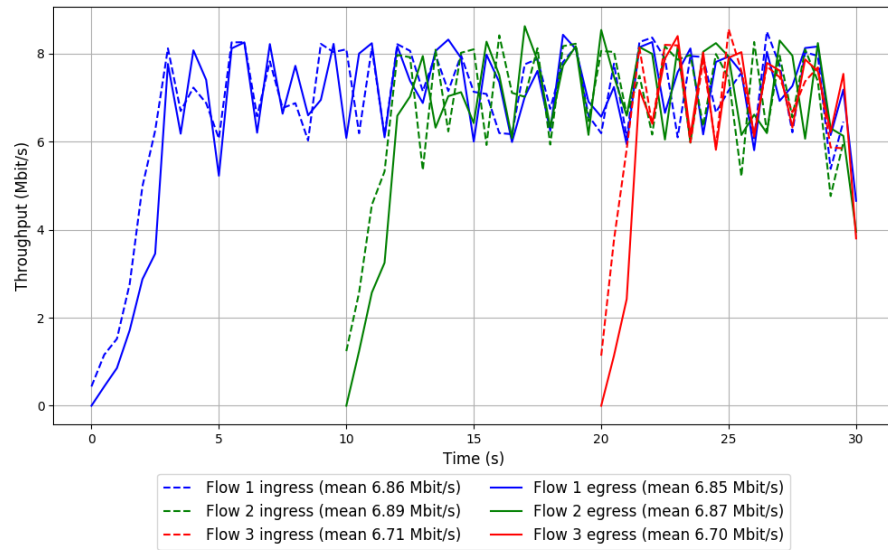## Run 3: Report of SCReAM — Data Link

```
Run 4: Statistics of SCReAM

Start at: 2018-12-01 06:13:42
End at: 2018-12-01 06:14:12
Local clock offset: -0.019 ms
Remote clock offset: -0.127 ms


# Below is generated by plot.py at 2018-12-01 09:50:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 57.776 ms
Loss rate: 0.58%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 57.827 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 57.493 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 57.494 ms
Loss rate: 1.08%
```

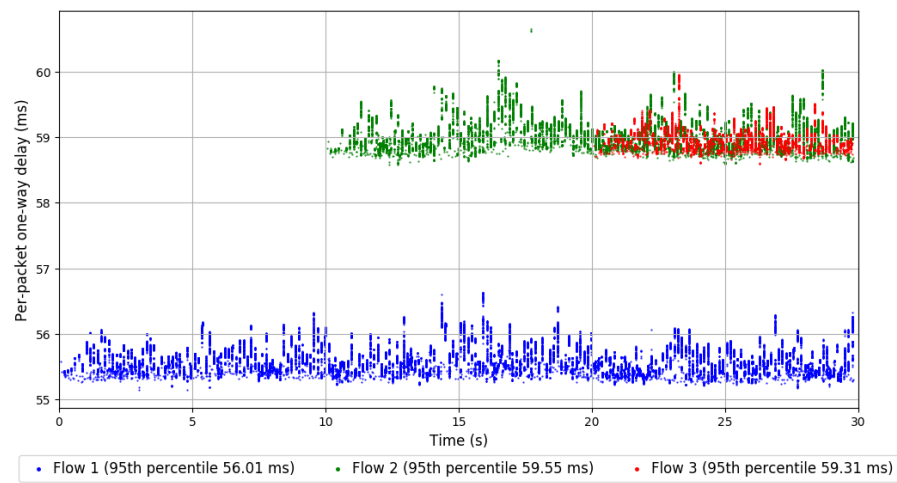# Run 4: Report of SCReAM — Data Link

```
Run 5: Statistics of SCReAM

Start at: 2018-12-01 06:50:43
End at: 2018-12-01 06:51:13
Local clock offset: 0.5 ms
Remote clock offset: 0.654 ms


# Below is generated by plot.py at 2018-12-01 09:50:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 60.415 ms
Loss rate: 0.52%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 60.447 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 57.241 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 57.406 ms
Loss rate: 0.74%
```
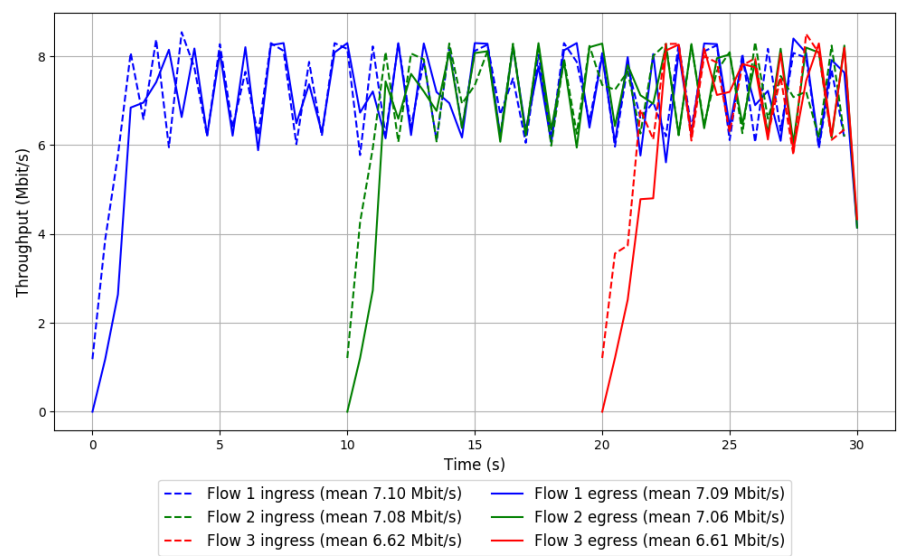
Run 5: Report of SCReAM — Data Link

```
Run 1: Statistics of Sprout

Start at: 2018-12-01 04:48:47
End at: 2018-12-01 04:49:17
Local clock offset: -0.036 ms
Remote clock offset: -0.541 ms


# Below is generated by plot.py at 2018-12-01 09:50:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 13.60 Mbit/s
95th percentile per-packet one-way delay: 61.392 ms
Loss rate: 0.73%
-- Flow 1:
Average throughput: 6.85 Mbit/s
95th percentile per-packet one-way delay: 61.356 ms
Loss rate: 0.44%
-- Flow 2:
Average throughput: 6.87 Mbit/s
95th percentile per-packet one-way delay: 58.383 ms
Loss rate: 0.76%
-- Flow 3:
Average throughput: 6.70 Mbit/s
95th percentile per-packet one-way delay: 61.524 ms
Loss rate: 1.55%
```
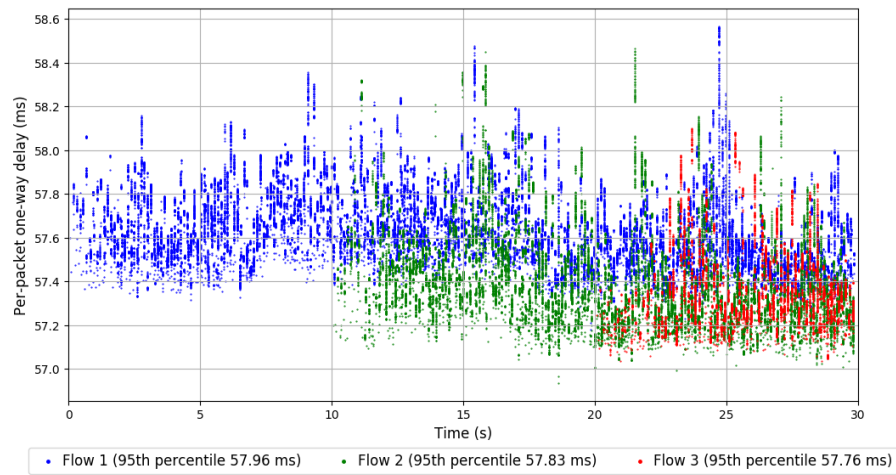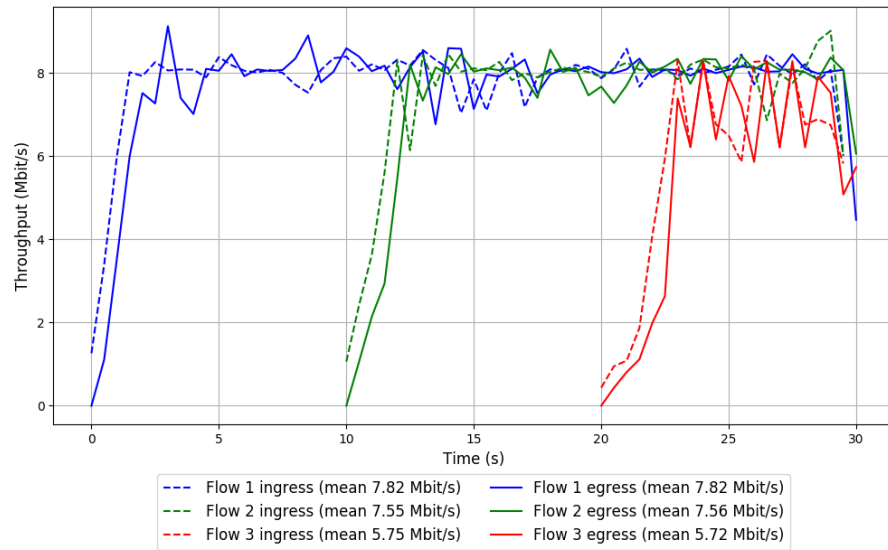
Run 1: Report of Sprout — Data Link

```
Run 2: Statistics of Sprout

Start at: 2018-12-01 05:24:55
End at: 2018-12-01 05:25:25
Local clock offset: -0.448 ms
Remote clock offset: 1.139 ms


# Below is generated by plot.py at 2018-12-01 09:50:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 13.93 Mbit/s
95th percentile per-packet one-way delay: 59.341 ms
Loss rate: 0.73%
-- Flow 1:
Average throughput: 7.09 Mbit/s
95th percentile per-packet one-way delay: 56.009 ms
Loss rate: 0.49%
-- Flow 2:
Average throughput: 7.06 Mbit/s
95th percentile per-packet one-way delay: 59.545 ms
Loss rate: 0.73%
-- Flow 3:
Average throughput: 6.61 Mbit/s
95th percentile per-packet one-way delay: 59.309 ms
Loss rate: 1.54%
```
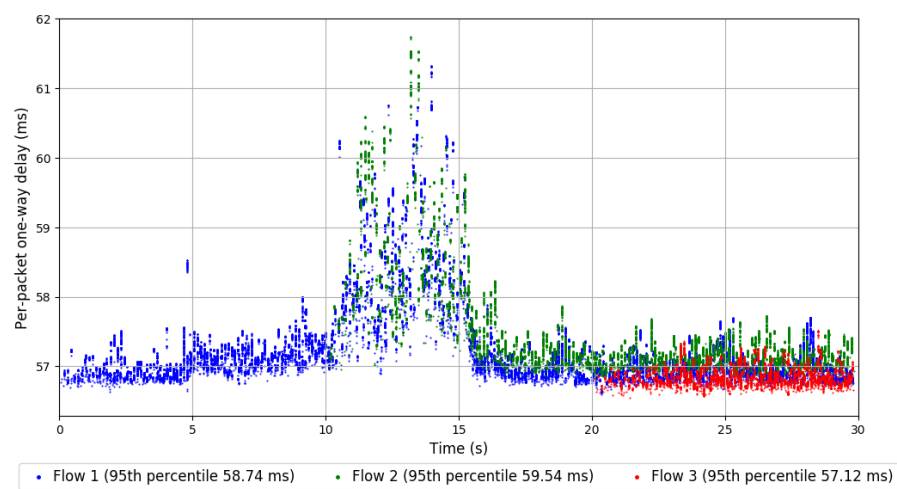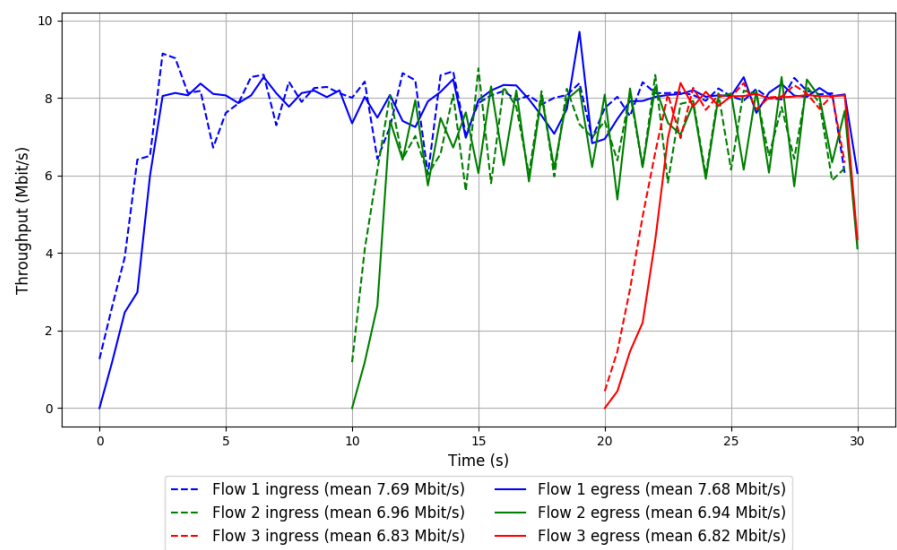
Run 2: Report of Sprout — Data Link

```
Run 3: Statistics of Sprout

Start at: 2018-12-01 06:00:55
End at: 2018-12-01 06:01:25
Local clock offset: -0.159 ms
Remote clock offset: -0.166 ms


# Below is generated by plot.py at 2018-12-01 09:50:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 14.71 Mbit/s
95th percentile per-packet one-way delay: 57.916 ms
Loss rate: 0.59%
-- Flow 1:
Average throughput: 7.82 Mbit/s
95th percentile per-packet one-way delay: 57.956 ms
Loss rate: 0.33%
-- Flow 2:
Average throughput: 7.56 Mbit/s
95th percentile per-packet one-way delay: 57.833 ms
Loss rate: 0.56%
-- Flow 3:
Average throughput: 5.72 Mbit/s
95th percentile per-packet one-way delay: 57.757 ms
Loss rate: 1.71%
```

Run 3: Report of Sprout — Data Link

```
Run 4: Statistics of Sprout

Start at: 2018-12-01 06:37:14
End at: 2018-12-01 06:37:44
Local clock offset: -0.416 ms
Remote clock offset: -0.097 ms

# Below is generated by plot.py at 2018-12-01 09:50:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 14.51 Mbit/s
95th percentile per-packet one-way delay: 58.997 ms
Loss rate: 0.71%
-- Flow 1:
Average throughput: 7.68 Mbit/s
95th percentile per-packet one-way delay: 58.740 ms
Loss rate: 0.46%
-- Flow 2:
Average throughput: 6.94 Mbit/s
95th percentile per-packet one-way delay: 59.543 ms
Loss rate: 0.75%
-- Flow 3:
Average throughput: 6.82 Mbit/s
95th percentile per-packet one-way delay: 57.123 ms
Loss rate: 1.47%
```
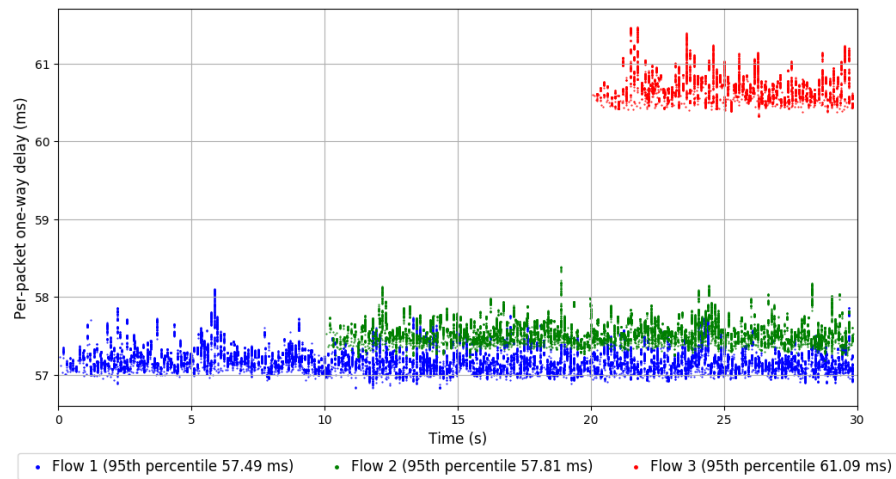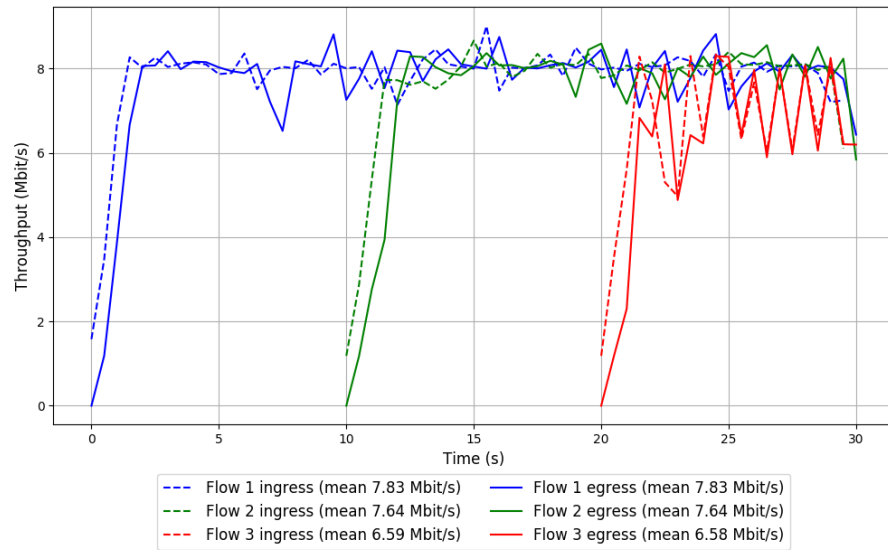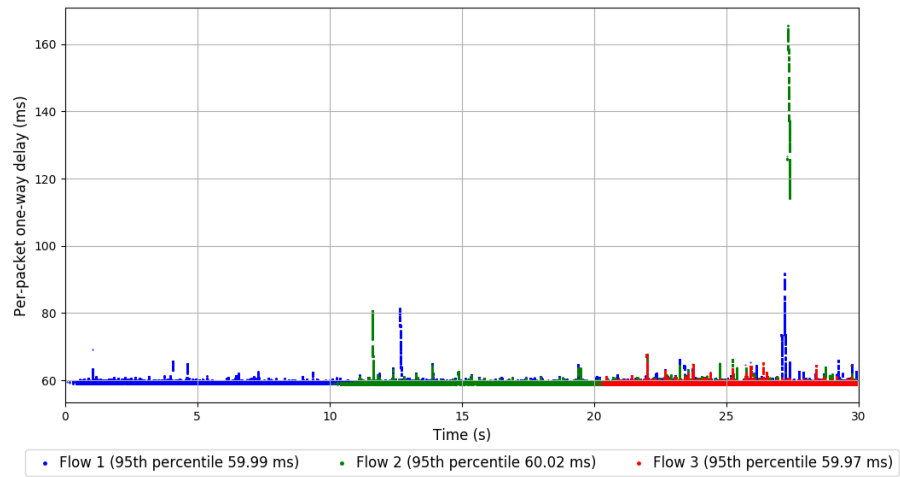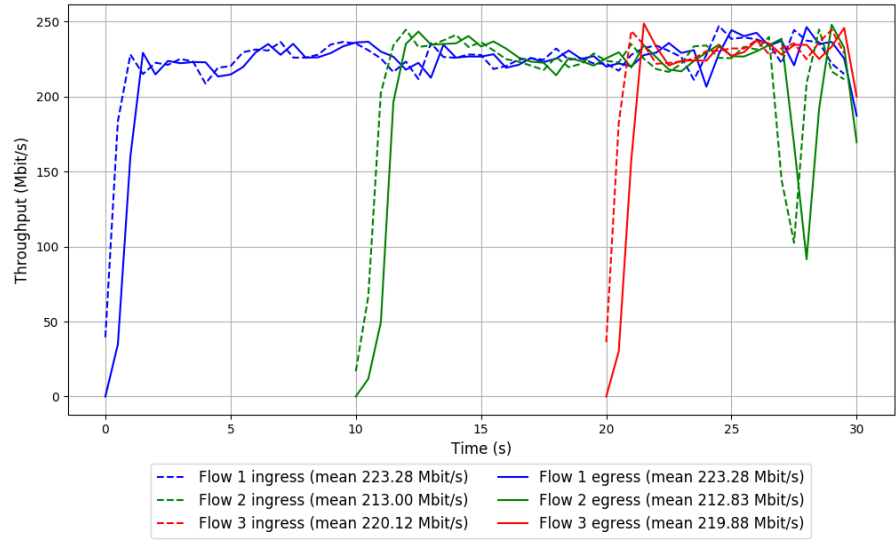
Run 4: Report of Sprout — Data Link

```
Run 5: Statistics of Sprout

Start at: 2018-12-01 07:13:56
End at: 2018-12-01 07:14:26
Local clock offset: 0.395 ms
Remote clock offset: 0.488 ms


# Below is generated by plot.py at 2018-12-01 09:50:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 15.05 Mbit/s
95th percentile per-packet one-way delay: 60.756 ms
Loss rate: 0.67%
-- Flow 1:
Average throughput: 7.83 Mbit/s
95th percentile per-packet one-way delay: 57.494 ms
Loss rate: 0.43%
-- Flow 2:
Average throughput: 7.64 Mbit/s
95th percentile per-packet one-way delay: 57.815 ms
Loss rate: 0.63%
-- Flow 3:
Average throughput: 6.58 Mbit/s
95th percentile per-packet one-way delay: 61.085 ms
Loss rate: 1.60%
```

Run 5: Report of Sprout — Data Link

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

Start at: 2018-12-01 04:38:11
End at: 2018-12-01 04:38:41
Local clock offset: 0.375 ms
Remote clock offset: -1.445 ms


# Below is generated by plot.py at 2018-12-01 09:57:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 437.18 Mbit/s
95th percentile per-packet one-way delay: 59.994 ms
Loss rate: 0.63%
-- Flow 1:
Average throughput: 223.28 Mbit/s
95th percentile per-packet one-way delay: 59.989 ms
Loss rate: 0.40%
-- Flow 2:
Average throughput: 212.83 Mbit/s
95th percentile per-packet one-way delay: 60.021 ms
Loss rate: 0.64%
-- Flow 3:
Average throughput: 219.88 Mbit/s
95th percentile per-packet one-way delay: 59.972 ms
Loss rate: 1.30%
```
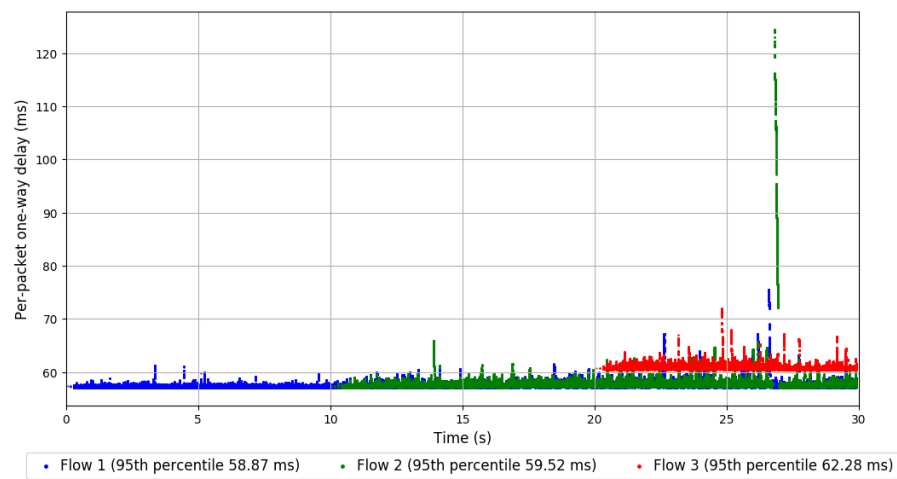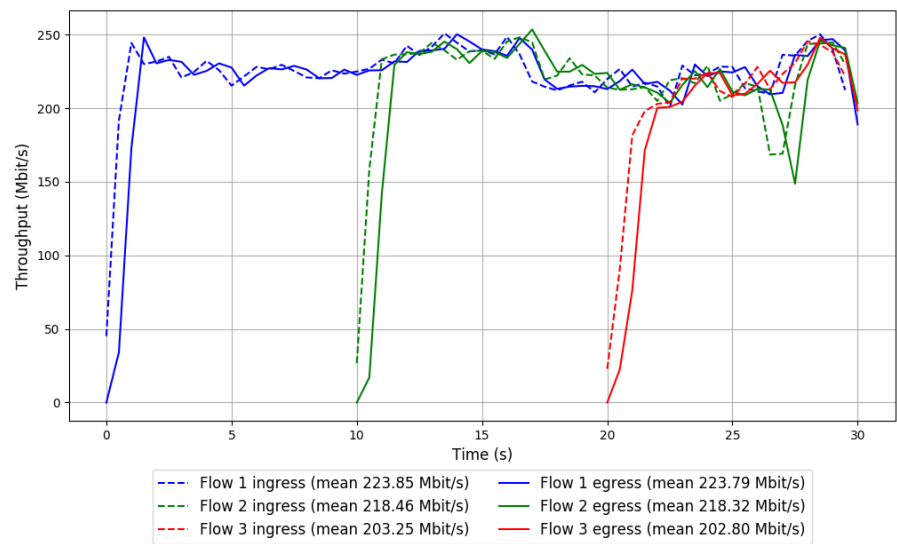
Run 1: Report of TaoVA-100x — Data Link

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

Start at: 2018-12-01 05:14:06
End at: 2018-12-01 05:14:36
Local clock offset: 0.319 ms
Remote clock offset: 0.005 ms

# Below is generated by plot.py at 2018-12-01 09:57:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 435.69 Mbit/s
95th percentile per-packet one-way delay: 61.223 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 223.79 Mbit/s
95th percentile per-packet one-way delay: 58.868 ms
Loss rate: 0.41%
-- Flow 2:
Average throughput: 218.32 Mbit/s
95th percentile per-packet one-way delay: 59.521 ms
Loss rate: 0.64%
-- Flow 3:
Average throughput: 202.80 Mbit/s
95th percentile per-packet one-way delay: 62.280 ms
Loss rate: 1.38%
```

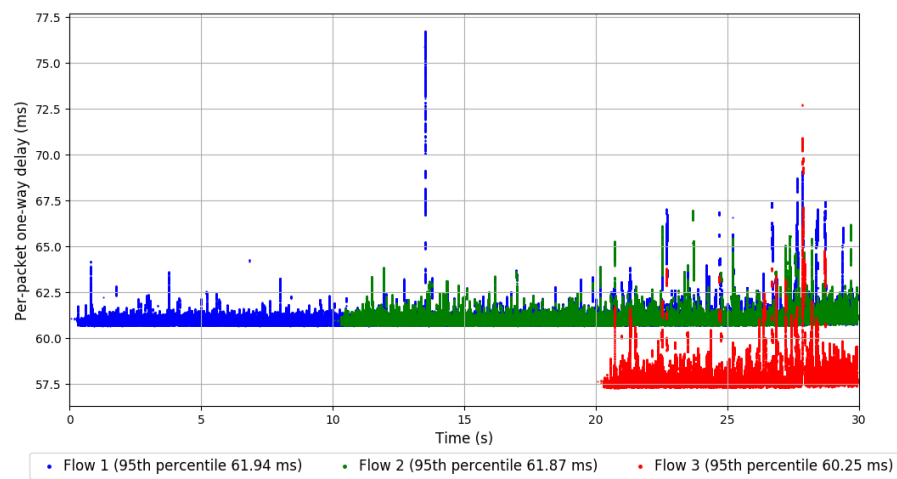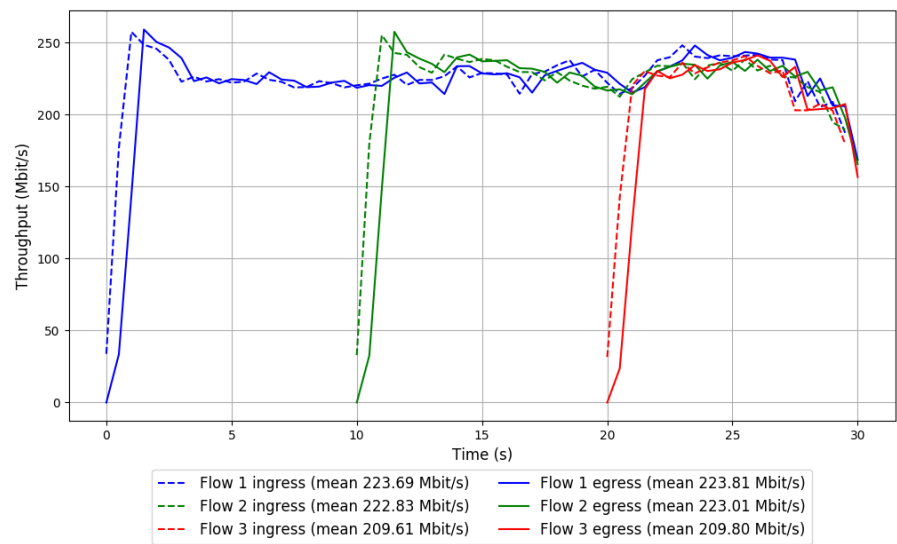Run 2: Report of TaoVA-100x — Data Link

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

Start at: 2018-12-01 05:50:12
End at: 2018-12-01 05:50:42
Local clock offset: 0.291 ms
Remote clock offset: -0.169 ms


# Below is generated by plot.py at 2018-12-01 09:58:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 441.24 Mbit/s
95th percentile per-packet one-way delay: 61.845 ms
Loss rate: 0.51%
-- Flow 1:
Average throughput: 223.81 Mbit/s
95th percentile per-packet one-way delay: 61.938 ms
Loss rate: 0.33%
-- Flow 2:
Average throughput: 223.01 Mbit/s
95th percentile per-packet one-way delay: 61.867 ms
Loss rate: 0.51%
-- Flow 3:
Average throughput: 209.80 Mbit/s
95th percentile per-packet one-way delay: 60.250 ms
Loss rate: 1.07%
```
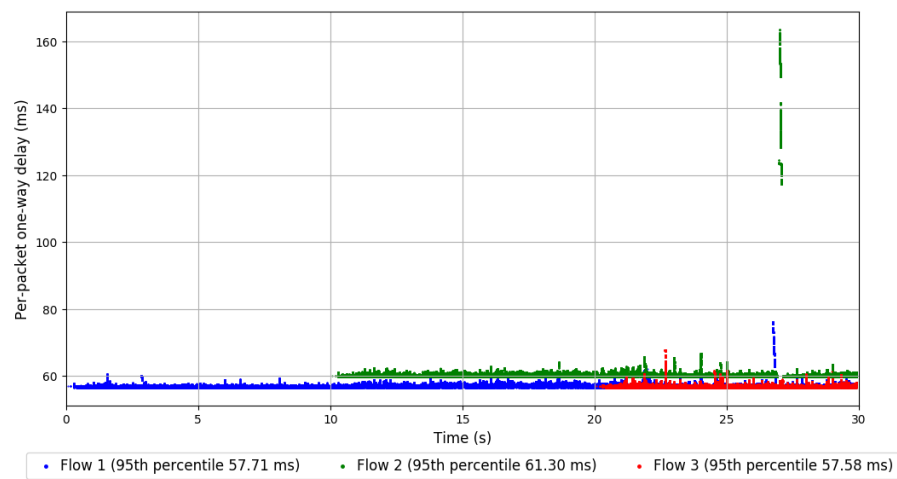
Run 3: Report of TaoVA-100x — Data Link

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

Start at: 2018-12-01 06:26:09
End at: 2018-12-01 06:26:39
Local clock offset: -0.28 ms
Remote clock offset: 0.028 ms

# Below is generated by plot.py at 2018-12-01 09:58:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 442.82 Mbit/s
95th percentile per-packet one-way delay: 60.694 ms
Loss rate: 0.62%
-- Flow 1:
Average throughput: 224.91 Mbit/s
95th percentile per-packet one-way delay: 57.712 ms
Loss rate: 0.39%
-- Flow 2:
Average throughput: 218.25 Mbit/s
95th percentile per-packet one-way delay: 61.300 ms
Loss rate: 0.66%
-- Flow 3:
Average throughput: 221.07 Mbit/s
95th percentile per-packet one-way delay: 57.580 ms
Loss rate: 1.24%
```
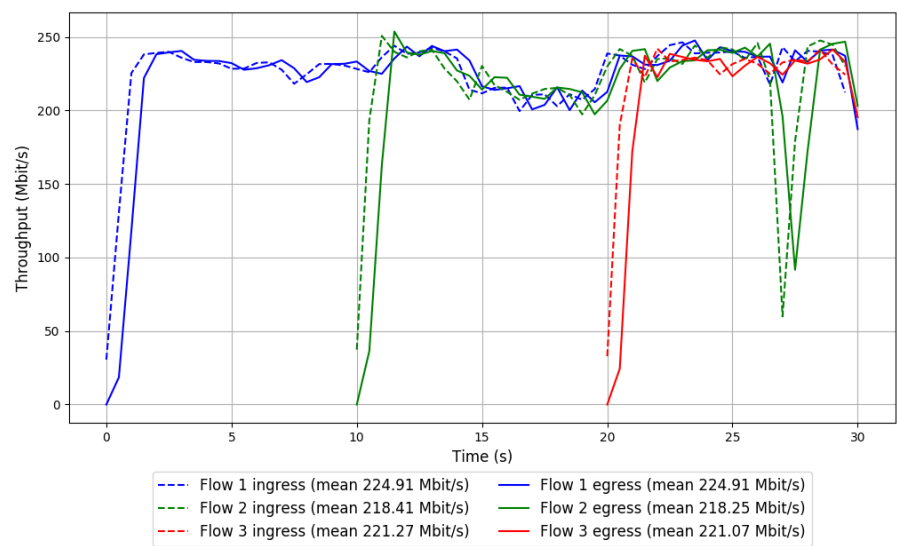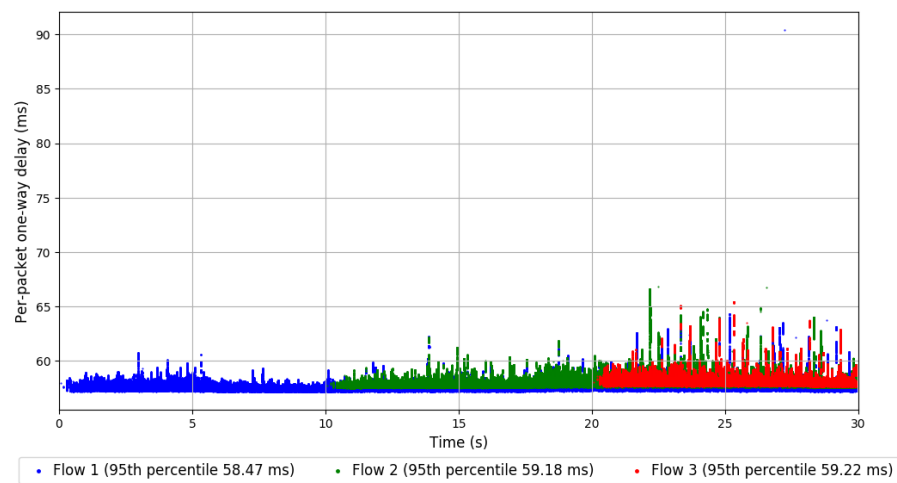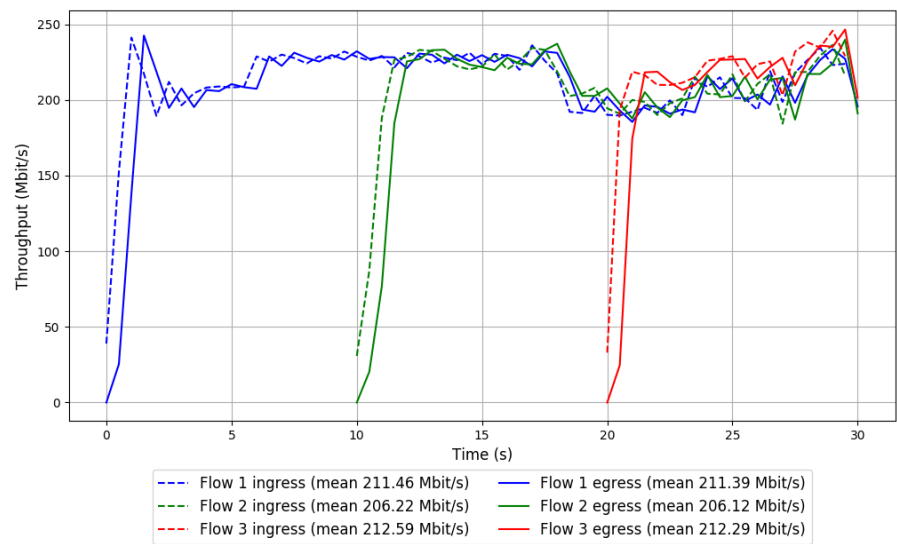
Run 4: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 224.91 Mbit/s)   Flow 1 egress (mean 224.91 Mbit/s)
Flow 2 ingress (mean 218.41 Mbit/s)   Flow 2 egress (mean 218.25 Mbit/s)
Flow 3 ingress (mean 221.27 Mbit/s)   Flow 3 egress (mean 221.07 Mbit/s)

Flow 1 (95th percentile 57.71 ms)   Flow 2 (95th percentile 61.30 ms)   Flow 3 (95th percentile 57.58 ms)

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

Start at: 2018-12-01 07:02:58
End at: 2018-12-01 07:03:28
Local clock offset: 0.48 ms
Remote clock offset: 0.015 ms


# Below is generated by plot.py at 2018-12-01 10:00:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 418.42 Mbit/s
95th percentile per-packet one-way delay: 58.908 ms
Loss rate: 0.63%
-- Flow 1:
Average throughput: 211.39 Mbit/s
95th percentile per-packet one-way delay: 58.473 ms
Loss rate: 0.42%
-- Flow 2:
Average throughput: 206.12 Mbit/s
95th percentile per-packet one-way delay: 59.180 ms
Loss rate: 0.63%
-- Flow 3:
Average throughput: 212.29 Mbit/s
95th percentile per-packet one-way delay: 59.219 ms
Loss rate: 1.29%
```
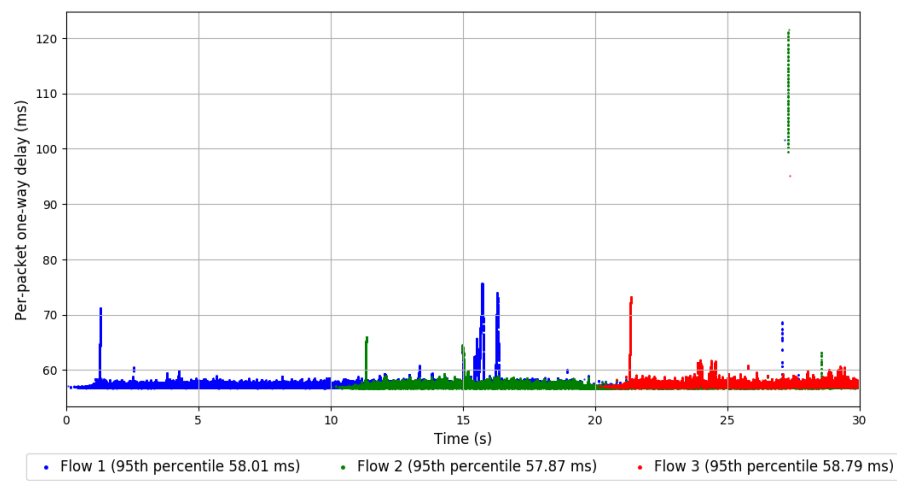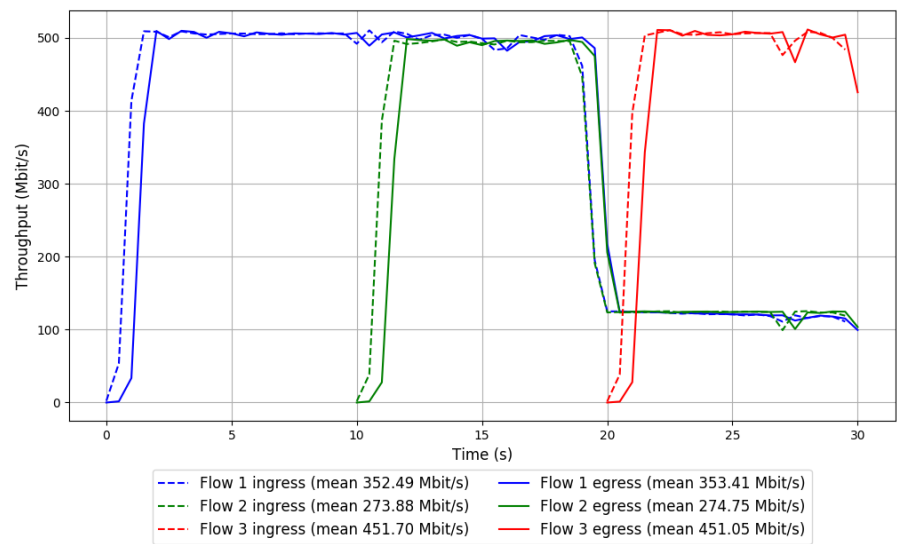
Run 5: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 211.46 Mbit/s)   Flow 1 egress (mean 211.39 Mbit/s)
Flow 2 ingress (mean 206.22 Mbit/s)   Flow 2 egress (mean 206.12 Mbit/s)
Flow 3 ingress (mean 212.59 Mbit/s)   Flow 3 egress (mean 212.29 Mbit/s)

Flow 1 (95th percentile 58.47 ms)   Flow 2 (95th percentile 59.18 ms)   Flow 3 (95th percentile 59.22 ms)
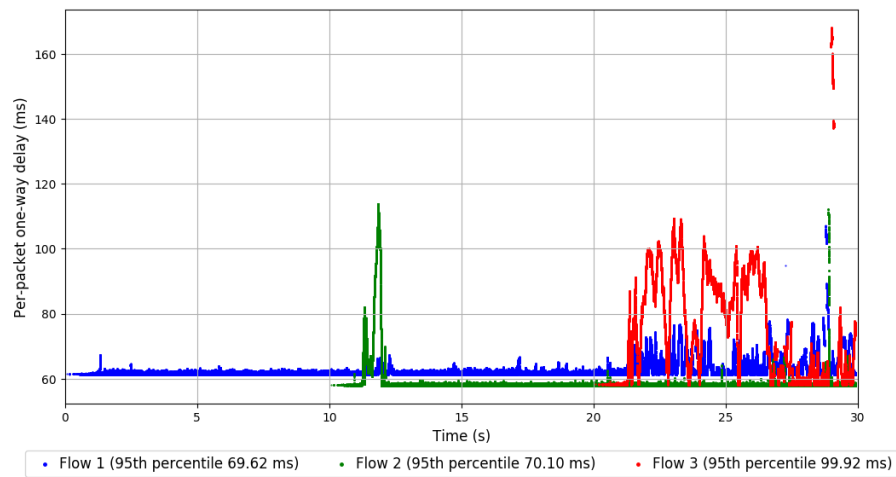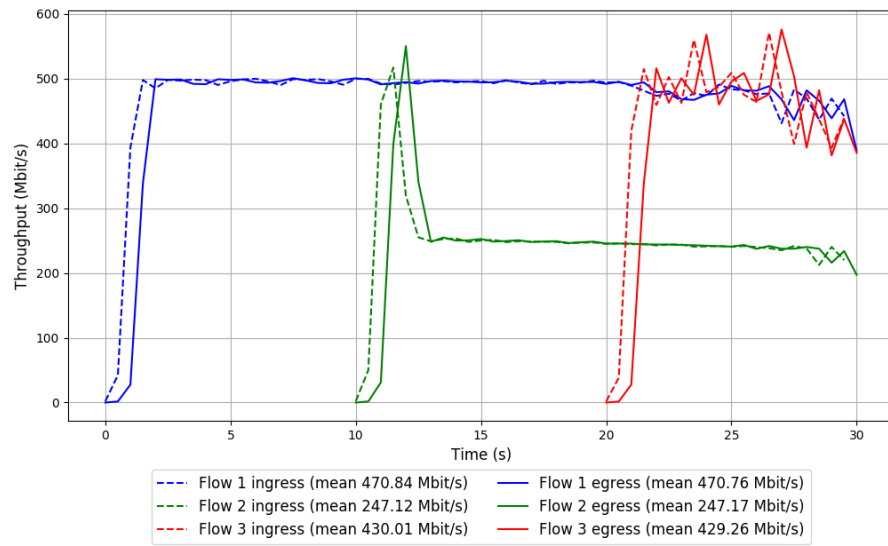
154

```
Run 1: Statistics of TCP Vegas

Start at: 2018-12-01 04:27:14
End at: 2018-12-01 04:27:44
Local clock offset: -0.099 ms
Remote clock offset: 0.111 ms


# Below is generated by plot.py at 2018-12-01 10:03:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 684.36 Mbit/s
95th percentile per-packet one-way delay: 58.196 ms
Loss rate: 0.42%
-- Flow 1:
Average throughput: 353.41 Mbit/s
95th percentile per-packet one-way delay: 58.014 ms
Loss rate: 0.13%
-- Flow 2:
Average throughput: 274.75 Mbit/s
95th percentile per-packet one-way delay: 57.874 ms
Loss rate: 0.27%
-- Flow 3:
Average throughput: 451.05 Mbit/s
95th percentile per-packet one-way delay: 58.787 ms
Loss rate: 1.30%
```
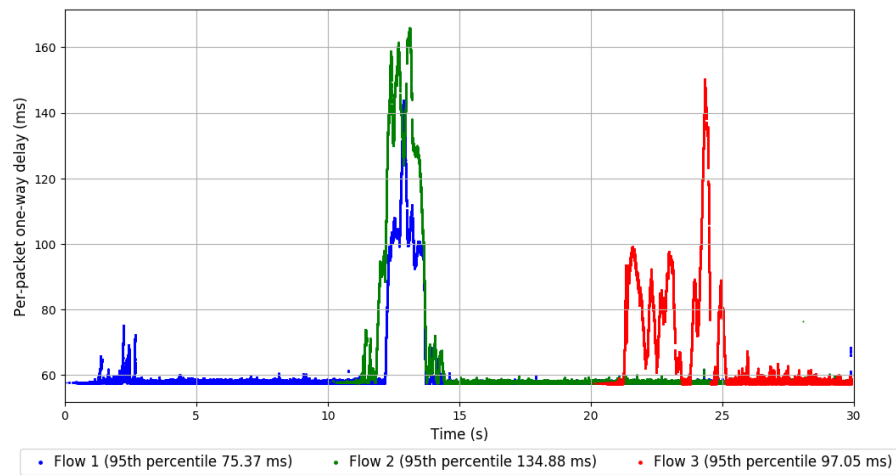
Run 1: Report of TCP Vegas — Data Link

```
Run 2: Statistics of TCP Vegas

Start at: 2018-12-01 05:02:56
End at: 2018-12-01 05:03:26
Local clock offset: -0.237 ms
Remote clock offset: -1.377 ms


# Below is generated by plot.py at 2018-12-01 10:07:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 776.64 Mbit/s
95th percentile per-packet one-way delay: 90.399 ms
Loss rate: 0.61%
-- Flow 1:
Average throughput: 470.76 Mbit/s
95th percentile per-packet one-way delay: 69.616 ms
Loss rate: 0.41%
-- Flow 2:
Average throughput: 247.17 Mbit/s
95th percentile per-packet one-way delay: 70.100 ms
Loss rate: 0.55%
-- Flow 3:
Average throughput: 429.26 Mbit/s
95th percentile per-packet one-way delay: 99.917 ms
Loss rate: 1.35%
```

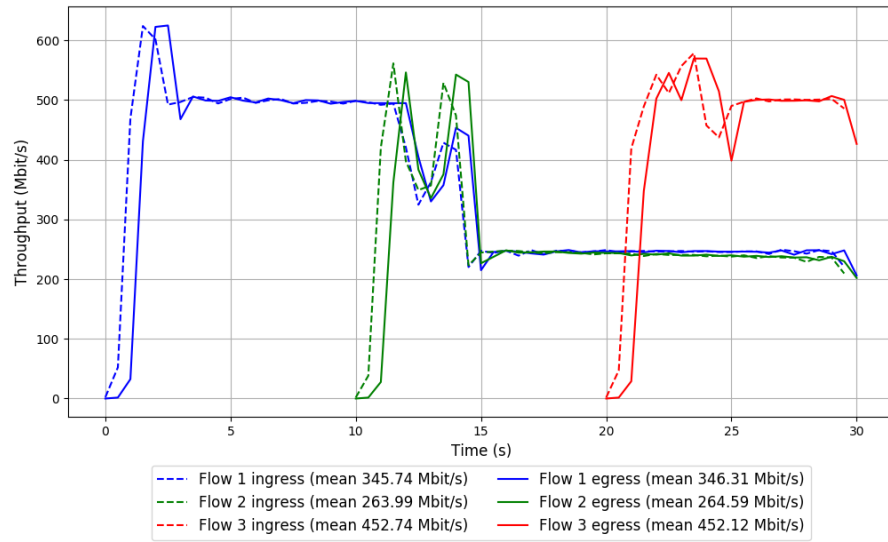Run 2: Report of TCP Vegas — Data Link

```
Run 3: Statistics of TCP Vegas

Start at: 2018-12-01 05:39:21
End at: 2018-12-01 05:39:51
Local clock offset: 0.296 ms
Remote clock offset: -0.273 ms


# Below is generated by plot.py at 2018-12-01 10:07:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 671.27 Mbit/s
95th percentile per-packet one-way delay: 99.317 ms
Loss rate: 0.49%
-- Flow 1:
Average throughput: 346.31 Mbit/s
95th percentile per-packet one-way delay: 75.370 ms
Loss rate: 0.22%
-- Flow 2:
Average throughput: 264.59 Mbit/s
95th percentile per-packet one-way delay: 134.885 ms
Loss rate: 0.36%
-- Flow 3:
Average throughput: 452.12 Mbit/s
95th percentile per-packet one-way delay: 97.047 ms
Loss rate: 1.28%
```

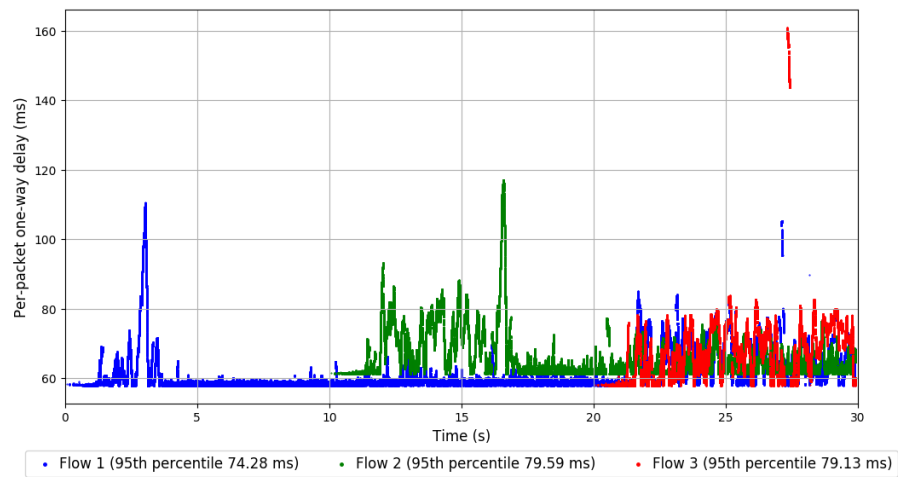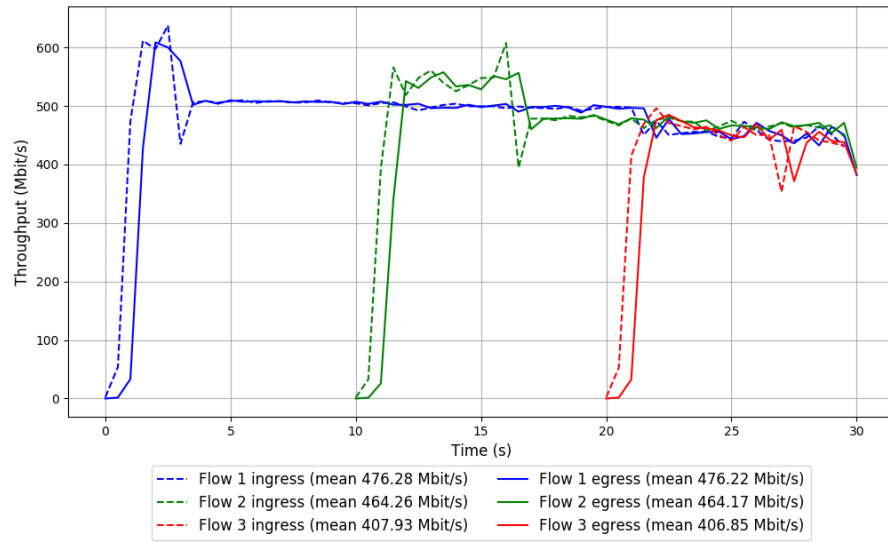Run 3: Report of TCP Vegas — Data Link

```
Run 4: Statistics of TCP Vegas

Start at: 2018-12-01 06:14:54
End at: 2018-12-01 06:15:24
Local clock offset: -0.095 ms
Remote clock offset: -1.274 ms


# Below is generated by plot.py at 2018-12-01 10:18:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 919.18 Mbit/s
95th percentile per-packet one-way delay: 77.722 ms
Loss rate: 0.62%
-- Flow 1:
Average throughput: 476.22 Mbit/s
95th percentile per-packet one-way delay: 74.276 ms
Loss rate: 0.39%
-- Flow 2:
Average throughput: 464.17 Mbit/s
95th percentile per-packet one-way delay: 79.590 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 406.85 Mbit/s
95th percentile per-packet one-way delay: 79.134 ms
Loss rate: 1.40%
```

Run 4: Report of TCP Vegas — Data Link

```
Run 5: Statistics of TCP Vegas

Start at: 2018-12-01 06:51:55
End at: 2018-12-01 06:52:25
Local clock offset: -0.24 ms
Remote clock offset: 0.103 ms


# Below is generated by plot.py at 2018-12-01 10:18:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 819.58 Mbit/s
95th percentile per-packet one-way delay: 108.013 ms
Loss rate: 0.45%
-- Flow 1:
Average throughput: 432.26 Mbit/s
95th percentile per-packet one-way delay: 106.101 ms
Loss rate: 0.23%
-- Flow 2:
Average throughput: 447.75 Mbit/s
95th percentile per-packet one-way delay: 106.701 ms
Loss rate: 0.64%
-- Flow 3:
Average throughput: 271.54 Mbit/s
95th percentile per-packet one-way delay: 138.249 ms
Loss rate: 0.88%
```
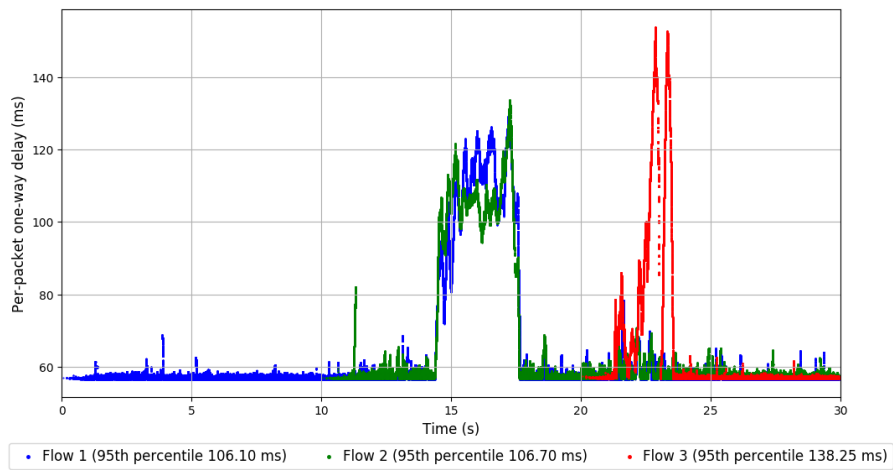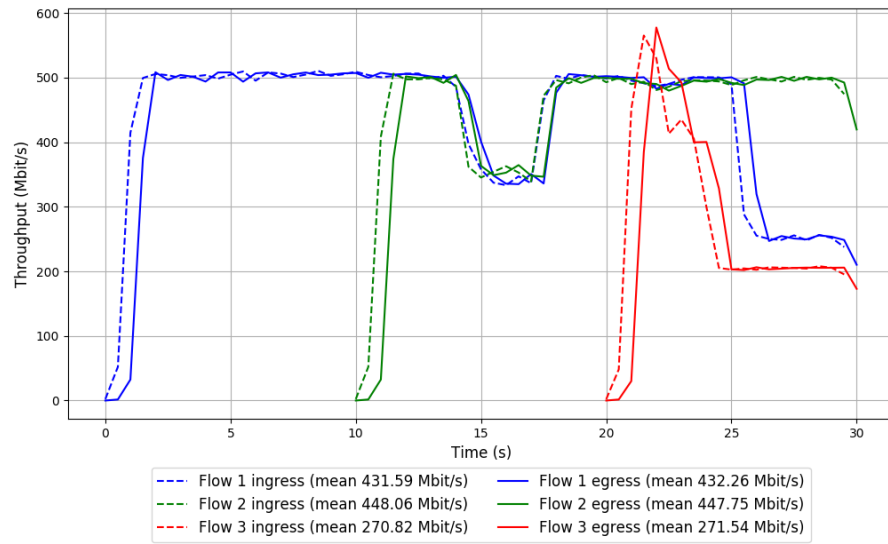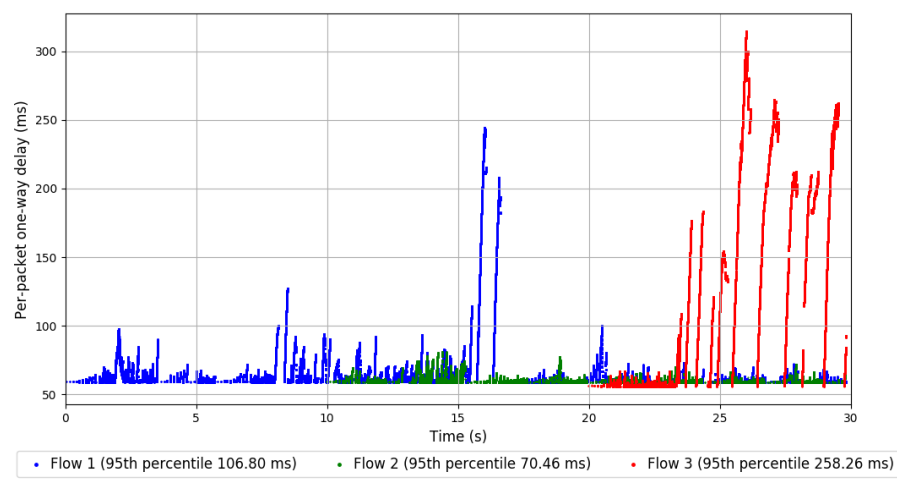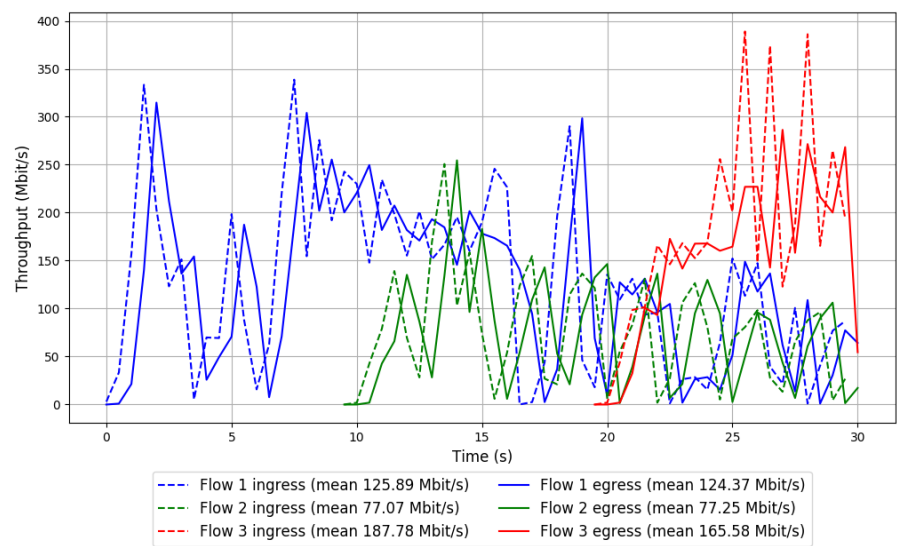
Run 5: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 431.59 Mbit/s) ---- Flow 1 egress (mean 432.26 Mbit/s)
Flow 2 ingress (mean 448.06 Mbit/s) ---- Flow 2 egress (mean 447.75 Mbit/s)
Flow 3 ingress (mean 270.82 Mbit/s) ---- Flow 3 egress (mean 271.54 Mbit/s)

Flow 1 (95th percentile 106.10 ms)   Flow 2 (95th percentile 106.70 ms)   Flow 3 (95th percentile 138.25 ms)

```
Run 1: Statistics of Verus

Start at: 2018-12-01 04:21:12
End at: 2018-12-01 04:21:42
Local clock offset: -0.325 ms
Remote clock offset: 1.319 ms


# Below is generated by plot.py at 2018-12-01 10:18:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 230.43 Mbit/s
95th percentile per-packet one-way delay: 212.683 ms
Loss rate: 4.29%
-- Flow 1:
Average throughput: 124.37 Mbit/s
95th percentile per-packet one-way delay: 106.801 ms
Loss rate: 1.61%
-- Flow 2:
Average throughput: 77.25 Mbit/s
95th percentile per-packet one-way delay: 70.458 ms
Loss rate: 0.41%
-- Flow 3:
Average throughput: 165.58 Mbit/s
95th percentile per-packet one-way delay: 258.256 ms
Loss rate: 12.87%
```
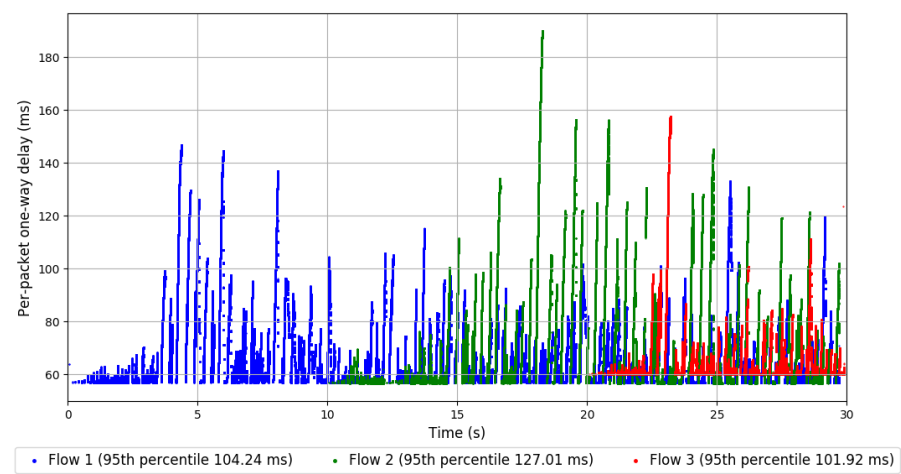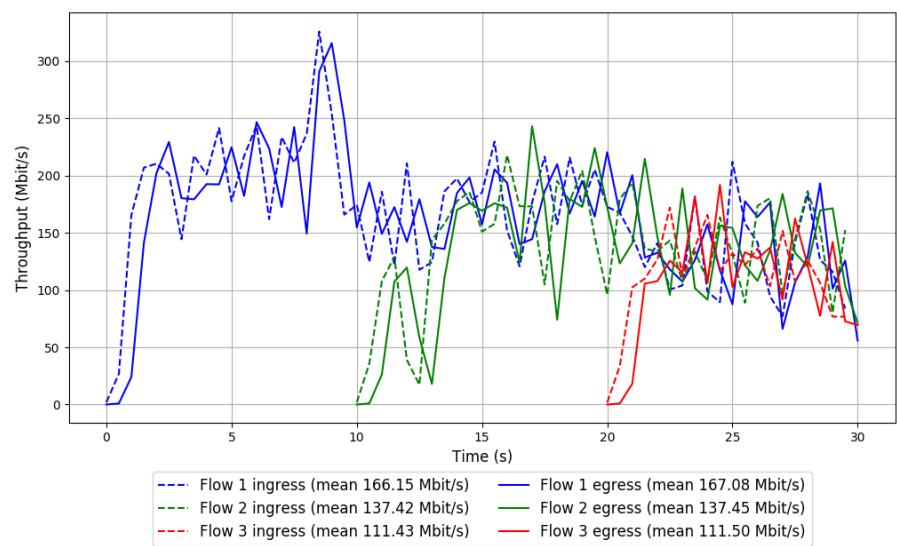
Run 1: Report of Verus — Data Link

```
Run 2: Statistics of Verus

Start at: 2018-12-01 04:56:31
End at: 2018-12-01 04:57:01
Local clock offset: 0.233 ms
Remote clock offset: 0.679 ms


# Below is generated by plot.py at 2018-12-01 10:18:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 293.20 Mbit/s
95th percentile per-packet one-way delay: 116.760 ms
Loss rate: 0.87%
-- Flow 1:
Average throughput: 167.08 Mbit/s
95th percentile per-packet one-way delay: 104.244 ms
Loss rate: 0.47%
-- Flow 2:
Average throughput: 137.45 Mbit/s
95th percentile per-packet one-way delay: 127.011 ms
Loss rate: 1.49%
-- Flow 3:
Average throughput: 111.50 Mbit/s
95th percentile per-packet one-way delay: 101.918 ms
Loss rate: 1.17%
```

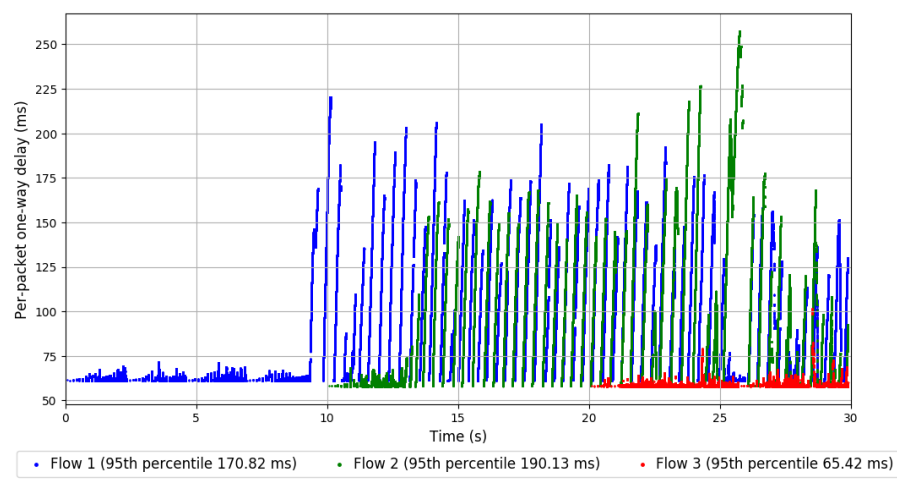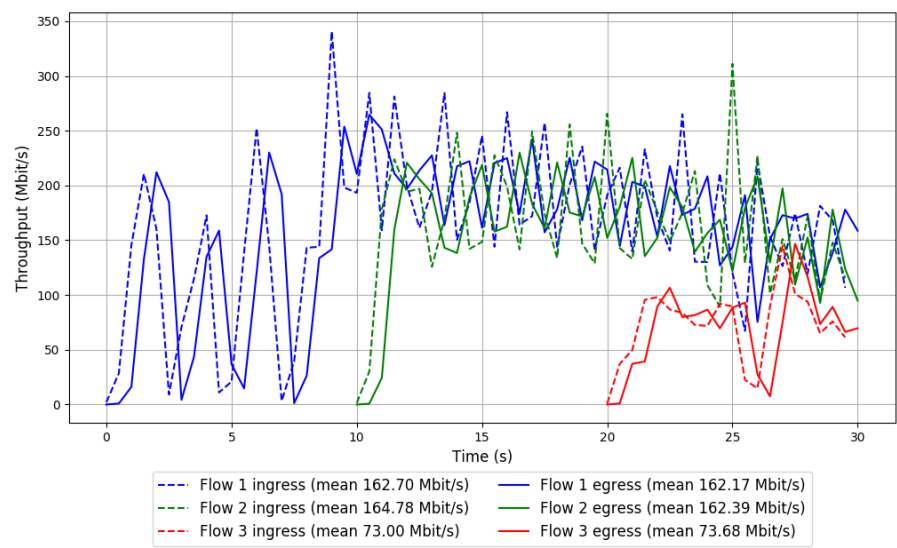Run 2: Report of Verus — Data Link

```
Run 3: Statistics of Verus

Start at: 2018-12-01 05:32:41
End at: 2018-12-01 05:33:11
Local clock offset: -0.513 ms
Remote clock offset: -1.522 ms


# Below is generated by plot.py at 2018-12-01 10:18:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 294.21 Mbit/s
95th percentile per-packet one-way delay: 173.027 ms
Loss rate: 0.62%
-- Flow 1:
Average throughput: 162.17 Mbit/s
95th percentile per-packet one-way delay: 170.819 ms
Loss rate: 0.10%
-- Flow 2:
Average throughput: 162.39 Mbit/s
95th percentile per-packet one-way delay: 190.130 ms
Loss rate: 1.49%
-- Flow 3:
Average throughput: 73.68 Mbit/s
95th percentile per-packet one-way delay: 65.423 ms
Loss rate: 0.19%
```
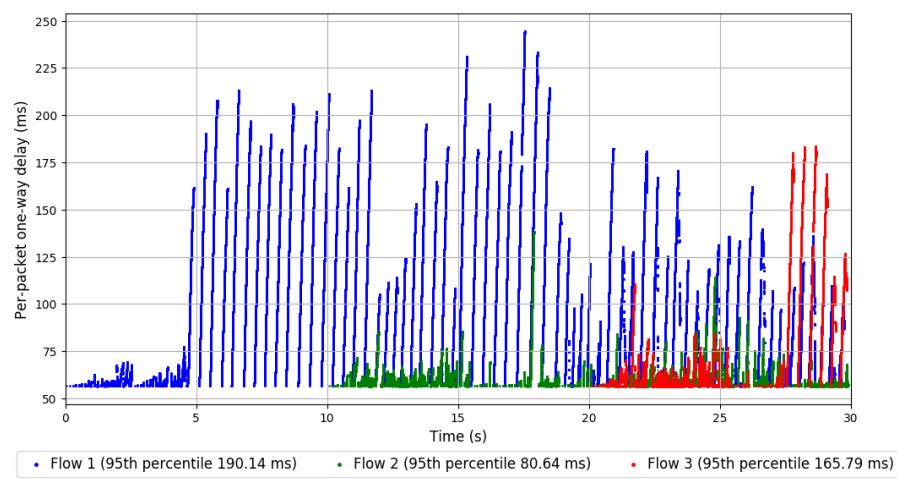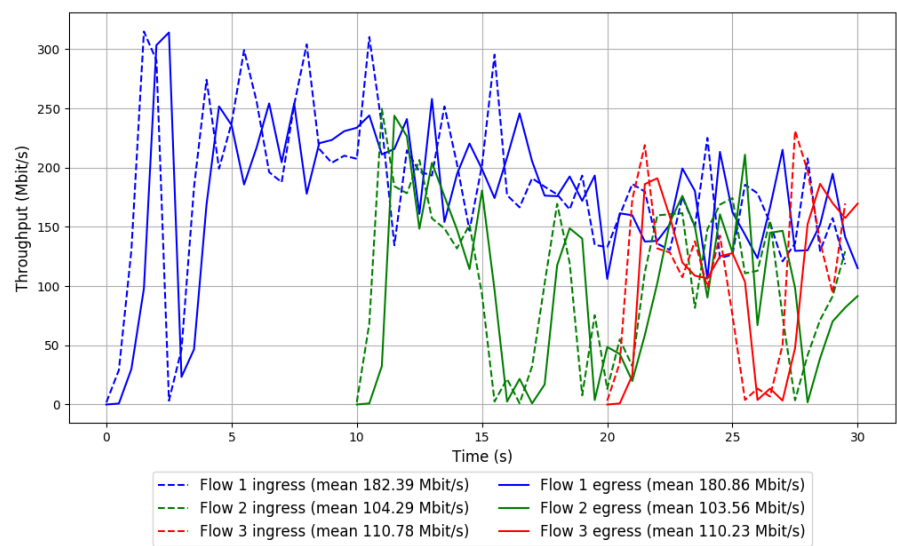
Run 3: Report of Verus — Data Link

Flow 1 ingress (mean 162.70 Mbit/s)   Flow 1 egress (mean 162.17 Mbit/s)
Flow 2 ingress (mean 164.78 Mbit/s)   Flow 2 egress (mean 162.39 Mbit/s)
Flow 3 ingress (mean 73.00 Mbit/s)   Flow 3 egress (mean 73.68 Mbit/s)

Flow 1 (95th percentile 170.82 ms)   Flow 2 (95th percentile 190.13 ms)   Flow 3 (95th percentile 65.42 ms)

```
Run 4: Statistics of Verus

Start at: 2018-12-01 06:08:34
End at: 2018-12-01 06:09:04
Local clock offset: -0.474 ms
Remote clock offset: -0.08 ms

# Below is generated by plot.py at 2018-12-01 10:18:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 284.97 Mbit/s
95th percentile per-packet one-way delay: 181.406 ms
Loss rate: 1.37%
-- Flow 1:
Average throughput: 180.86 Mbit/s
95th percentile per-packet one-way delay: 190.142 ms
Loss rate: 1.68%
-- Flow 2:
Average throughput: 103.56 Mbit/s
95th percentile per-packet one-way delay: 80.640 ms
Loss rate: 1.28%
-- Flow 3:
Average throughput: 110.23 Mbit/s
95th percentile per-packet one-way delay: 165.790 ms
Loss rate: 0.00%
```

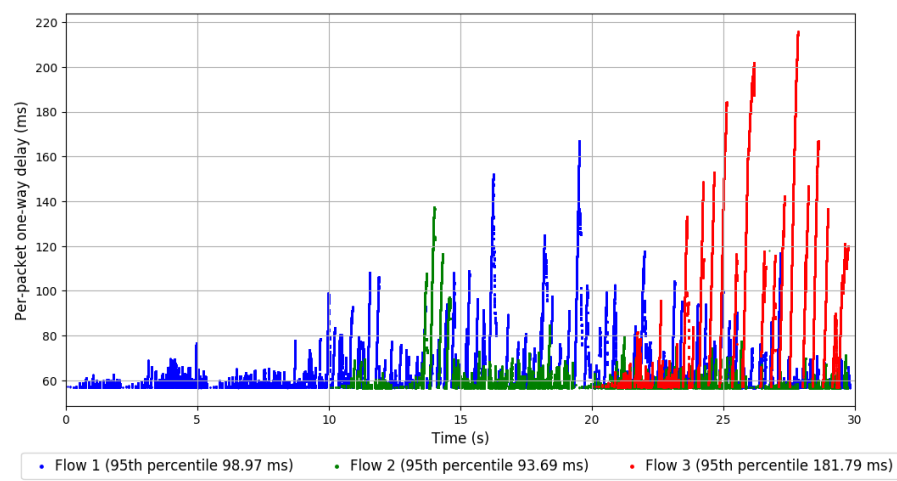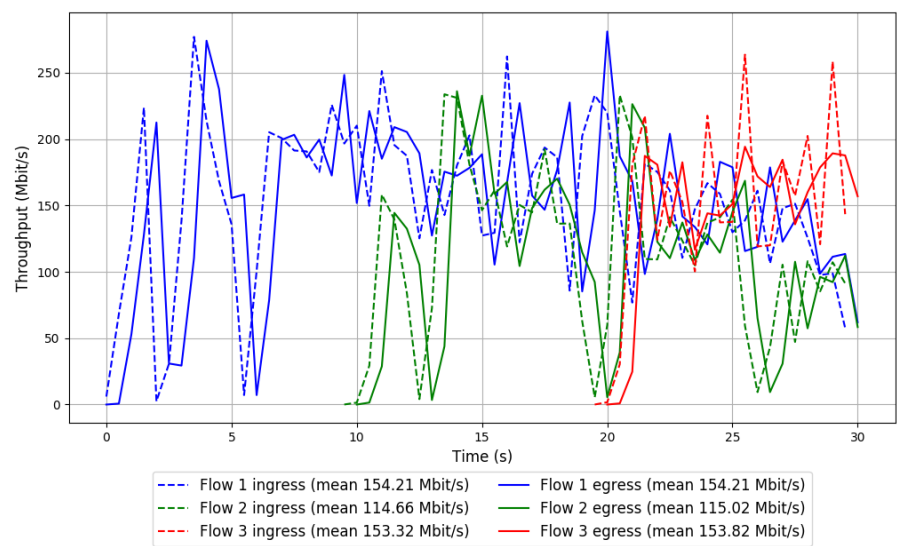Run 4: Report of Verus — Data Link

```
Run 5: Statistics of Verus

Start at: 2018-12-01 06:45:19
End at: 2018-12-01 06:45:49
Local clock offset: -0.259 ms
Remote clock offset: -0.136 ms

# Below is generated by plot.py at 2018-12-01 10:18:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 280.44 Mbit/s
95th percentile per-packet one-way delay: 122.205 ms
Loss rate: 0.54%
-- Flow 1:
Average throughput: 154.21 Mbit/s
95th percentile per-packet one-way delay: 98.969 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 115.02 Mbit/s
95th percentile per-packet one-way delay: 93.686 ms
Loss rate: 0.72%
-- Flow 3:
Average throughput: 153.82 Mbit/s
95th percentile per-packet one-way delay: 181.787 ms
Loss rate: 1.88%
```
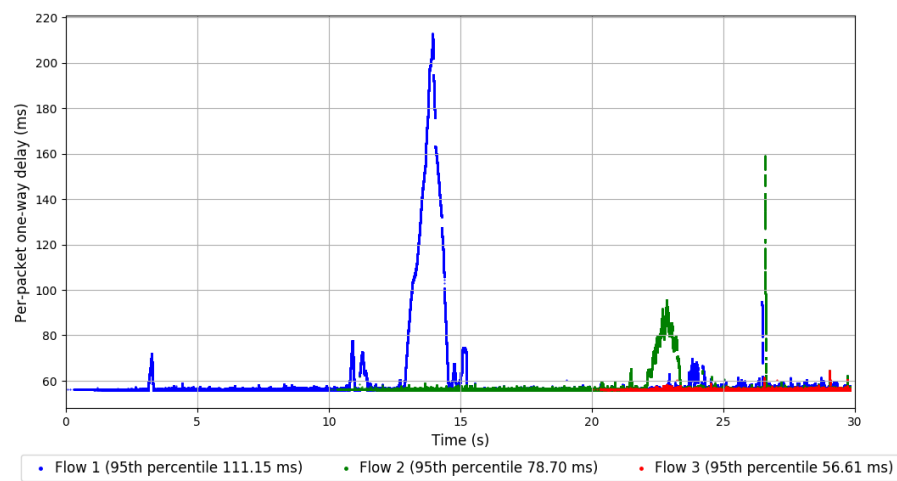
Run 5: Report of Verus — Data Link

```
Run 1: Statistics of PCC-Vivace

Start at: 2018-12-01 04:42:36
End at: 2018-12-01 04:43:06
Local clock offset: 0.243 ms
Remote clock offset: 1.249 ms

# Below is generated by plot.py at 2018-12-01 10:18:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 497.19 Mbit/s
95th percentile per-packet one-way delay: 86.792 ms
Loss rate: 0.50%
-- Flow 1:
Average throughput: 333.73 Mbit/s
95th percentile per-packet one-way delay: 111.149 ms
Loss rate: 0.45%
-- Flow 2:
Average throughput: 204.69 Mbit/s
95th percentile per-packet one-way delay: 78.704 ms
Loss rate: 0.42%
-- Flow 3:
Average throughput: 84.38 Mbit/s
95th percentile per-packet one-way delay: 56.612 ms
Loss rate: 1.55%
```
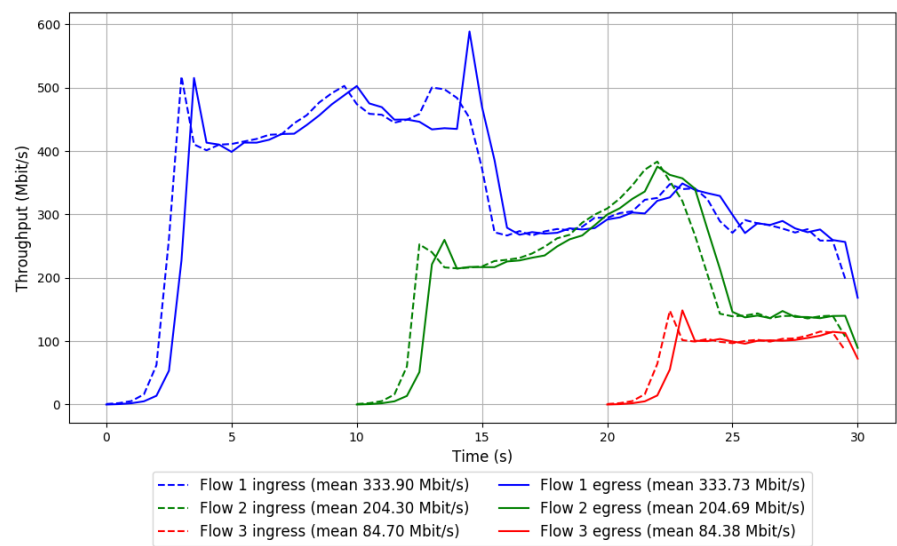
Run 1: Report of PCC-Vivace — Data Link

```
Run 2: Statistics of PCC-Vivace

Start at: 2018-12-01 05:18:38
End at: 2018-12-01 05:19:08
Local clock offset: -0.2 ms
Remote clock offset: -0.17 ms

# Below is generated by plot.py at 2018-12-01 10:19:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 507.43 Mbit/s
95th percentile per-packet one-way delay: 69.534 ms
Loss rate: 0.40%
-- Flow 1:
Average throughput: 313.18 Mbit/s
95th percentile per-packet one-way delay: 60.152 ms
Loss rate: 0.33%
-- Flow 2:
Average throughput: 268.67 Mbit/s
95th percentile per-packet one-way delay: 92.243 ms
Loss rate: 0.41%
-- Flow 3:
Average throughput: 48.55 Mbit/s
95th percentile per-packet one-way delay: 57.535 ms
Loss rate: 1.67%
```
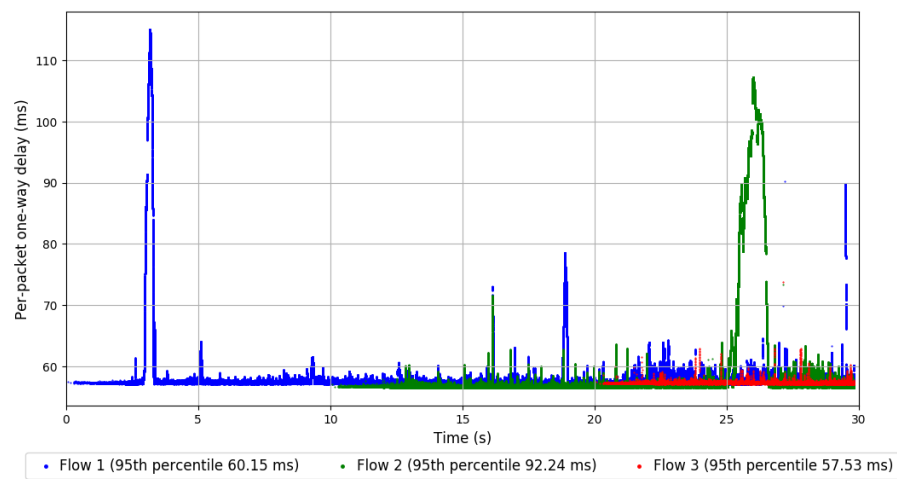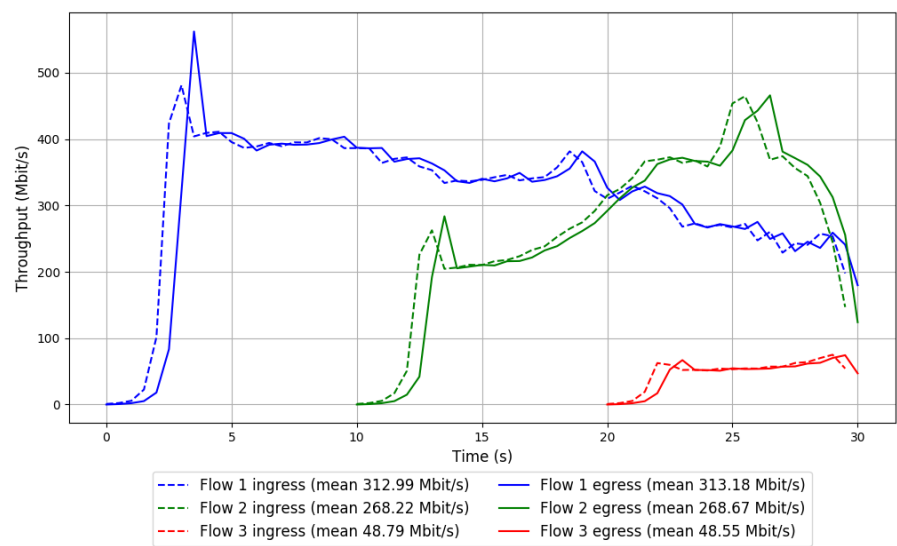
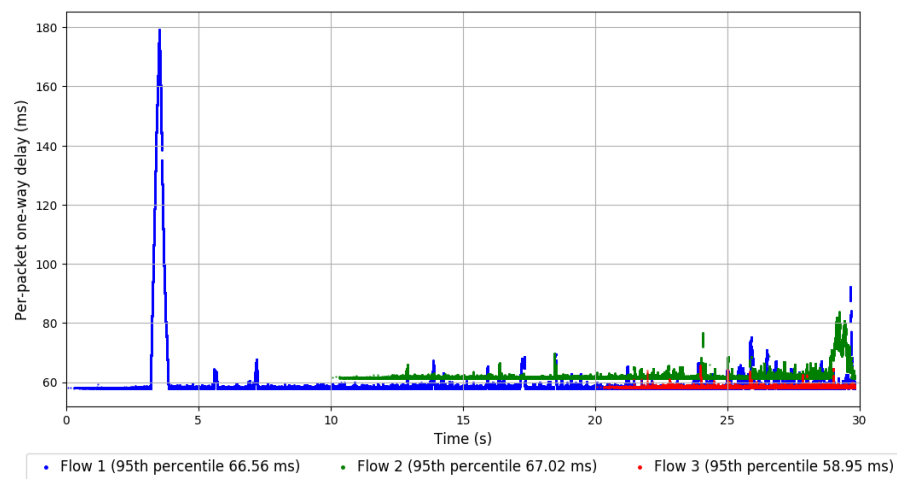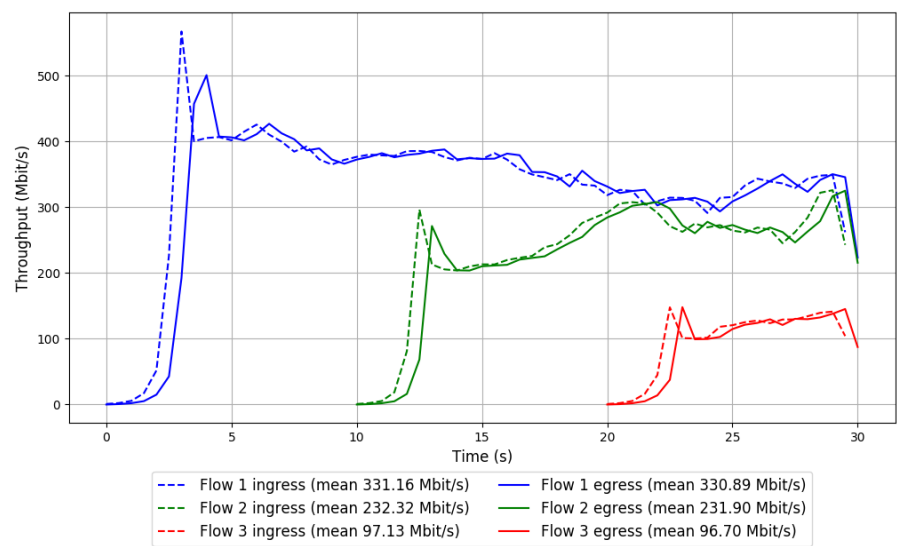Run 2: Report of PCC-Vivace — Data Link

```
Run 3: Statistics of PCC-Vivace

Start at: 2018-12-01 05:54:48
End at: 2018-12-01 05:55:18
Local clock offset: -0.511 ms
Remote clock offset: -1.375 ms


# Below is generated by plot.py at 2018-12-01 10:20:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 516.45 Mbit/s
95th percentile per-packet one-way delay: 66.138 ms
Loss rate: 0.63%
-- Flow 1:
Average throughput: 330.89 Mbit/s
95th percentile per-packet one-way delay: 66.560 ms
Loss rate: 0.46%
-- Flow 2:
Average throughput: 231.90 Mbit/s
95th percentile per-packet one-way delay: 67.020 ms
Loss rate: 0.77%
-- Flow 3:
Average throughput: 96.70 Mbit/s
95th percentile per-packet one-way delay: 58.951 ms
Loss rate: 1.61%
```

Run 3: Report of PCC-Vivace — Data Link

```
Run 4: Statistics of PCC-Vivace

Start at: 2018-12-01 06:30:51
End at: 2018-12-01 06:31:21
Local clock offset: 0.305 ms
Remote clock offset: 0.553 ms


# Below is generated by plot.py at 2018-12-01 10:20:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 530.60 Mbit/s
95th percentile per-packet one-way delay: 60.993 ms
Loss rate: 0.58%
-- Flow 1:
Average throughput: 321.98 Mbit/s
95th percentile per-packet one-way delay: 58.664 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 240.89 Mbit/s
95th percentile per-packet one-way delay: 59.992 ms
Loss rate: 0.75%
-- Flow 3:
Average throughput: 148.88 Mbit/s
95th percentile per-packet one-way delay: 62.173 ms
Loss rate: 1.30%
```
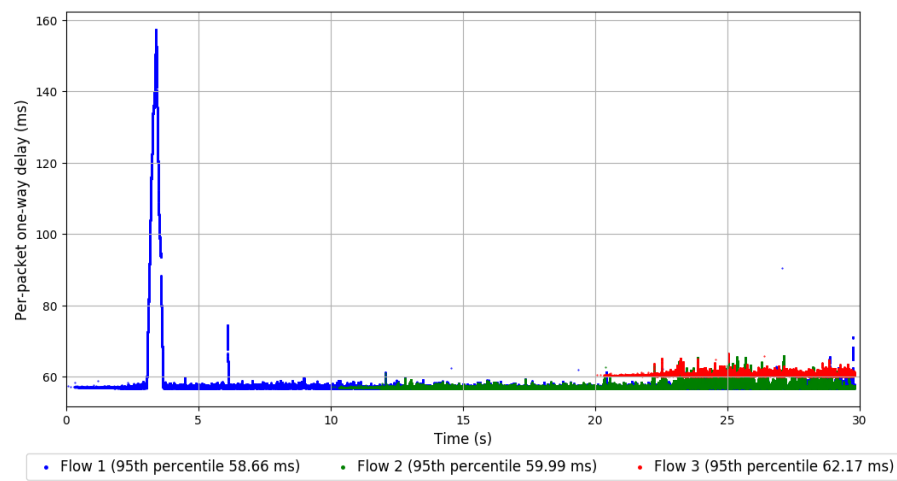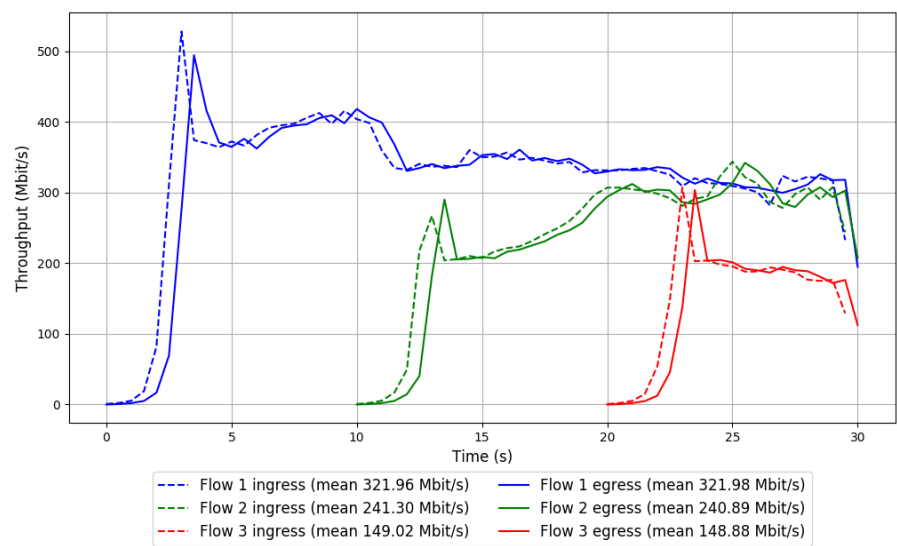
Run 4: Report of PCC-Vivace — Data Link

```
Run 5: Statistics of PCC-Vivace

Start at: 2018-12-01 07:07:27
End at: 2018-12-01 07:07:57
Local clock offset: -0.397 ms
Remote clock offset: 0.569 ms


# Below is generated by plot.py at 2018-12-01 10:21:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 505.92 Mbit/s
95th percentile per-packet one-way delay: 73.477 ms
Loss rate: 0.99%
-- Flow 1:
Average throughput: 328.01 Mbit/s
95th percentile per-packet one-way delay: 128.102 ms
Loss rate: 1.16%
-- Flow 2:
Average throughput: 256.56 Mbit/s
95th percentile per-packet one-way delay: 61.477 ms
Loss rate: 0.62%
-- Flow 3:
Average throughput: 23.44 Mbit/s
95th percentile per-packet one-way delay: 56.043 ms
Loss rate: 1.66%
```
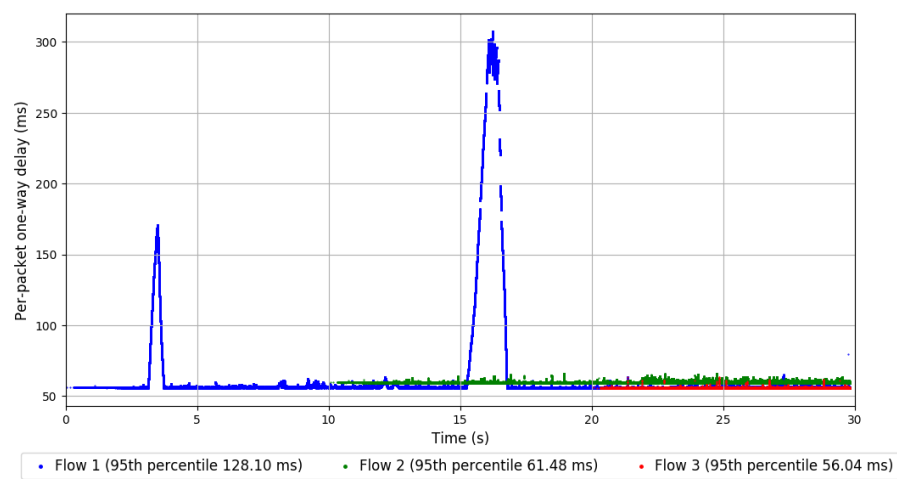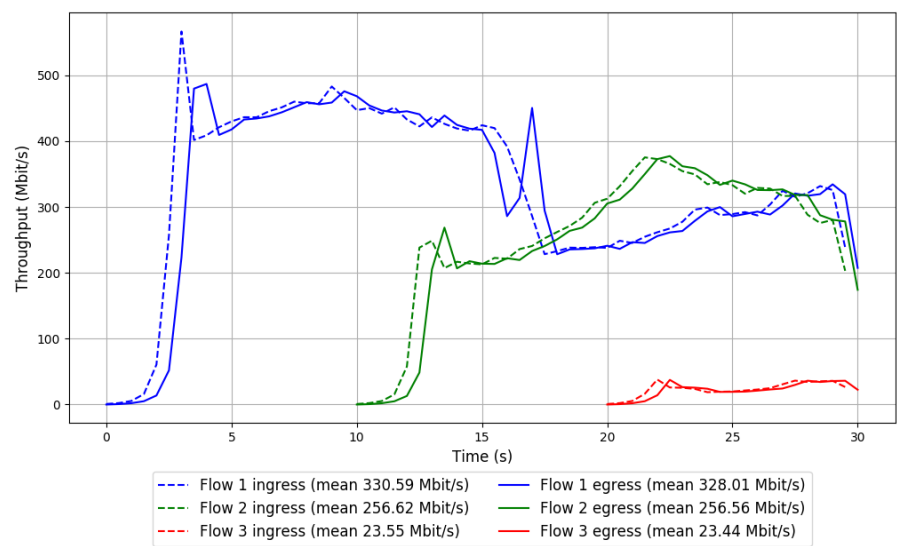
Run 5: Report of PCC-Vivace — Data Link

Flow 1 ingress (mean 330.59 Mbit/s)   Flow 1 egress (mean 328.01 Mbit/s)
Flow 2 ingress (mean 256.62 Mbit/s)   Flow 2 egress (mean 256.56 Mbit/s)
Flow 3 ingress (mean 23.55 Mbit/s)   Flow 3 egress (mean 23.44 Mbit/s)

Flow 1 (95th percentile 128.10 ms)   Flow 2 (95th percentile 61.48 ms)   Flow 3 (95th percentile 56.04 ms)

```
Run 1: Statistics of WebRTC media

Start at: 2018-12-01 04:29:15
End at: 2018-12-01 04:29:45
Local clock offset: 0.141 ms
Remote clock offset: 0.108 ms

# Below is generated by plot.py at 2018-12-01 10:21:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.01 Mbit/s
95th percentile per-packet one-way delay: 60.964 ms
Loss rate: 0.66%
-- Flow 1:
Average throughput: 1.45 Mbit/s
95th percentile per-packet one-way delay: 60.913 ms
Loss rate: 0.72%
-- Flow 2:
Average throughput: 1.14 Mbit/s
95th percentile per-packet one-way delay: 57.255 ms
Loss rate: 0.32%
-- Flow 3:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 61.093 ms
Loss rate: 1.37%
```
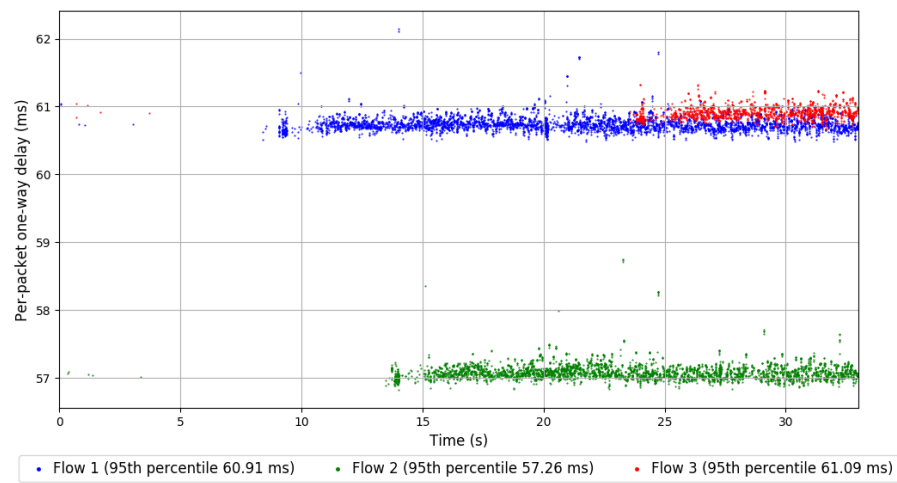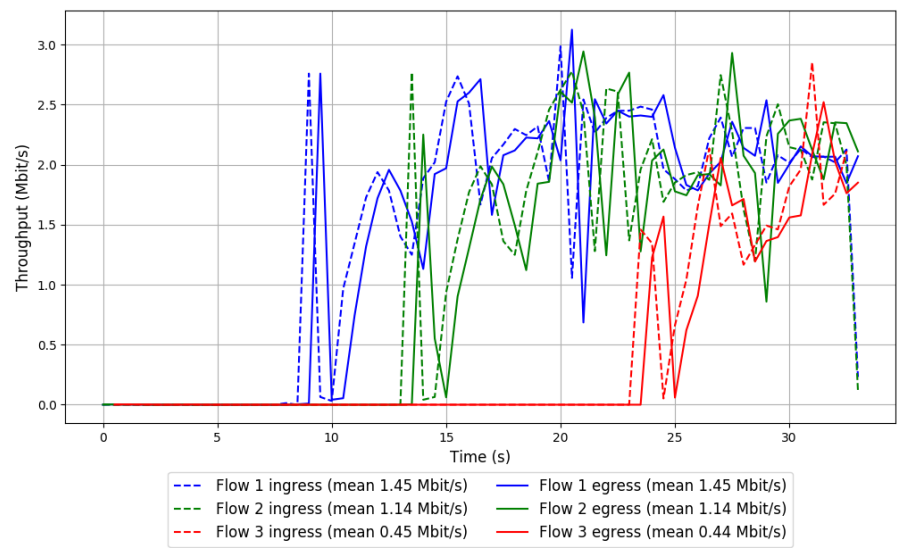
Run 1: Report of WebRTC media — Data Link

```
Run 2: Statistics of WebRTC media

Start at: 2018-12-01 05:05:06
End at: 2018-12-01 05:05:36
Local clock offset: -0.045 ms
Remote clock offset: -0.29 ms


# Below is generated by plot.py at 2018-12-01 10:21:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.44 Mbit/s
95th percentile per-packet one-way delay: 57.725 ms
Loss rate: 0.59%
-- Flow 1:
Average throughput: 1.87 Mbit/s
95th percentile per-packet one-way delay: 57.601 ms
Loss rate: 0.49%
-- Flow 2:
Average throughput: 1.14 Mbit/s
95th percentile per-packet one-way delay: 57.816 ms
Loss rate: 0.62%
-- Flow 3:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 57.562 ms
Loss rate: 0.92%
```
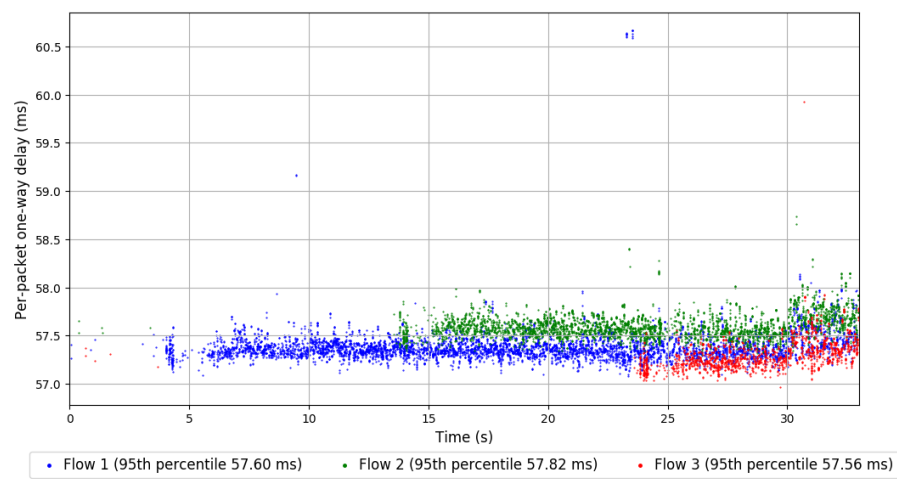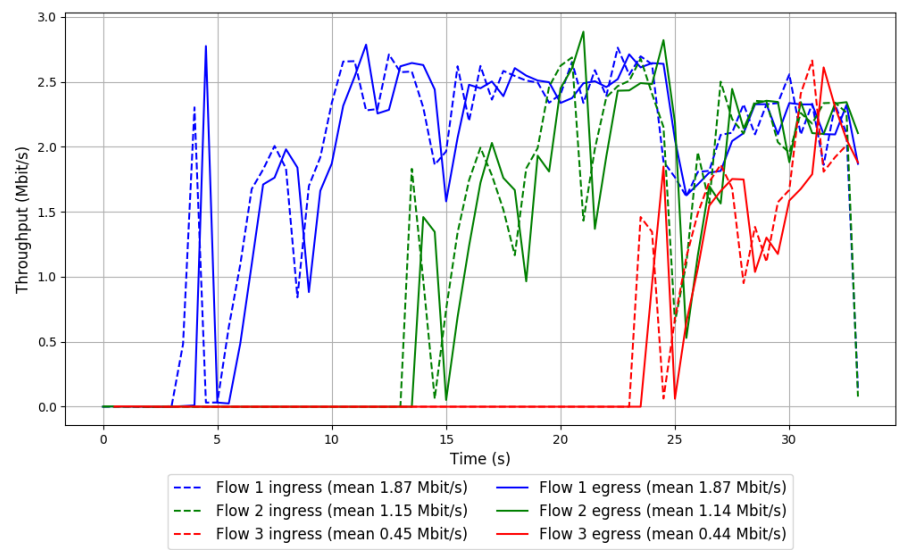
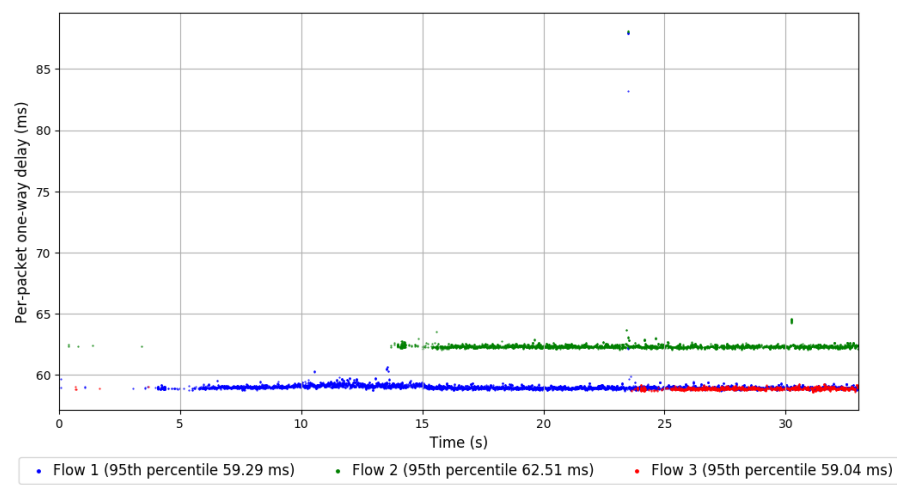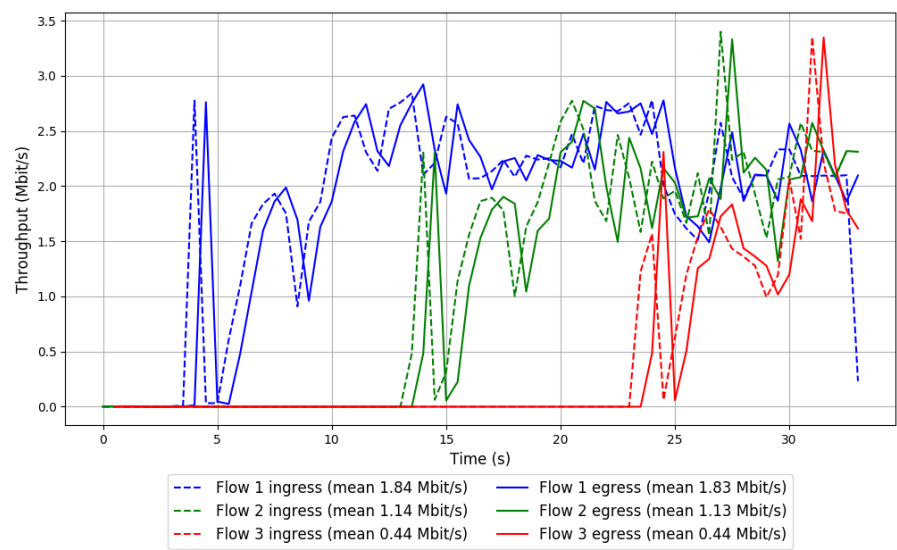Run 2: Report of WebRTC media — Data Link

```
Run 3: Statistics of WebRTC media

Start at: 2018-12-01 05:41:09
End at: 2018-12-01 05:41:39
Local clock offset: 0.264 ms
Remote clock offset: -1.517 ms


# Below is generated by plot.py at 2018-12-01 10:21:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.39 Mbit/s
95th percentile per-packet one-way delay: 62.423 ms
Loss rate: 0.53%
-- Flow 1:
Average throughput: 1.83 Mbit/s
95th percentile per-packet one-way delay: 59.286 ms
Loss rate: 0.57%
-- Flow 2:
Average throughput: 1.13 Mbit/s
95th percentile per-packet one-way delay: 62.510 ms
Loss rate: 0.31%
-- Flow 3:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 59.044 ms
Loss rate: 0.95%
```

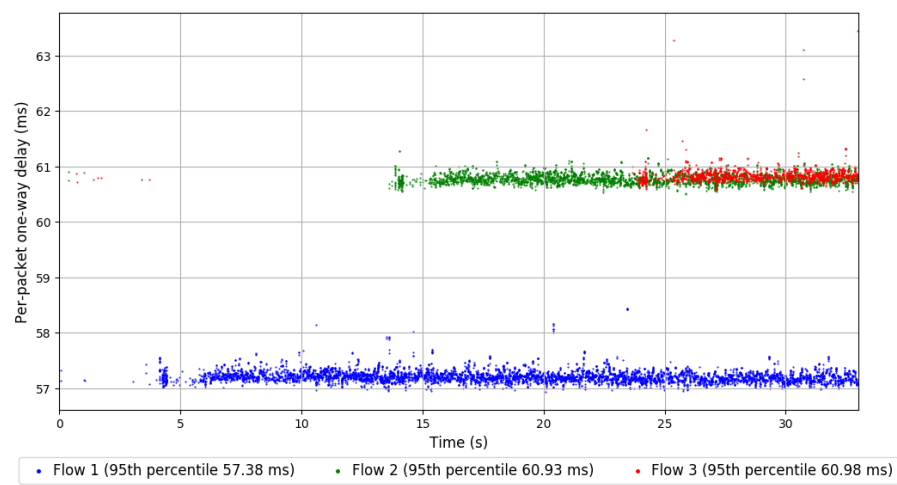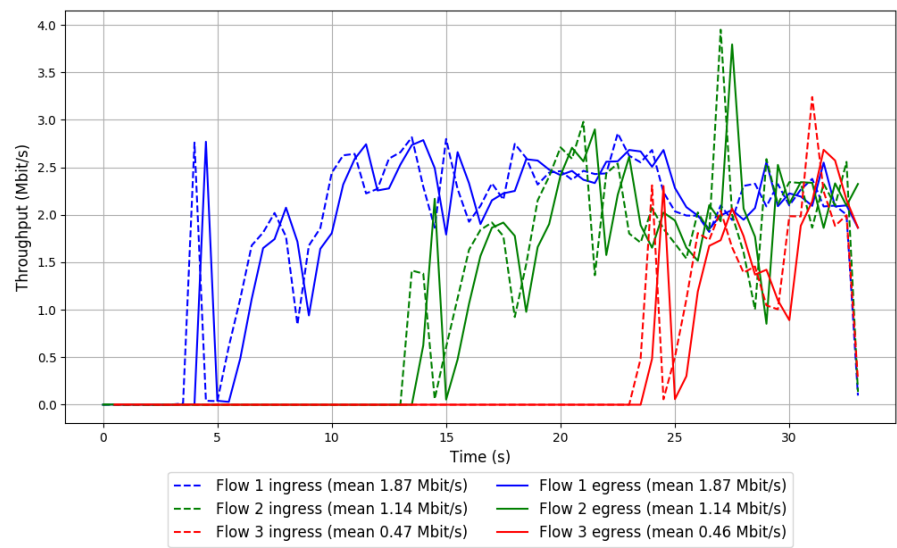Run 3: Report of WebRTC media — Data Link

```
Run 4: Statistics of WebRTC media

Start at: 2018-12-01 06:17:17
End at: 2018-12-01 06:17:47
Local clock offset: -0.126 ms
Remote clock offset: -0.328 ms

# Below is generated by plot.py at 2018-12-01 10:21:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.44 Mbit/s
95th percentile per-packet one-way delay: 60.904 ms
Loss rate: 0.70%
-- Flow 1:
Average throughput: 1.87 Mbit/s
95th percentile per-packet one-way delay: 57.376 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 1.14 Mbit/s
95th percentile per-packet one-way delay: 60.926 ms
Loss rate: 0.80%
-- Flow 3:
Average throughput: 0.46 Mbit/s
95th percentile per-packet one-way delay: 60.980 ms
Loss rate: 1.76%
```

Run 4: Report of WebRTC media — Data Link

```
Run 5: Statistics of WebRTC media

Start at: 2018-12-01 06:54:11
End at: 2018-12-01 06:54:41
Local clock offset: 0.046 ms
Remote clock offset: 0.191 ms

# Below is generated by plot.py at 2018-12-01 10:21:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.44 Mbit/s
95th percentile per-packet one-way delay: 57.279 ms
Loss rate: 0.79%
-- Flow 1:
Average throughput: 1.89 Mbit/s
95th percentile per-packet one-way delay: 57.215 ms
Loss rate: 0.54%
-- Flow 2:
Average throughput: 1.13 Mbit/s
95th percentile per-packet one-way delay: 57.318 ms
Loss rate: 1.02%
-- Flow 3:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 57.225 ms
Loss rate: 1.33%
```

Run 5: Report of WebRTC media — Data Link