Pantheon Report

Generated at 2018-12-20 18:00:00 (UTC).

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

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 4.15.0-1025-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 @ c654af0b7d59d4ef4b914cfac404e1fc2e96dc68
third_party/fillp @ d6da1459332fcee56963885d7eba17e6a32d4519
third_party/fillp-sheep @ 0e5bb722943babcd2b090d2c64fcd45e12e923f9
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdfe58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/muses @ 65ac1b19bbefed0c6349ae986009b4fa8643c40a
third_party/muses-refactored @ 31f8f0ba8ef8b1da76c2bc0cd0a7850c33ff64fb
third_party/pantheon-tunnel @ f866d3f58d27afd942717625ee3a354cc2e802bd
third_party/pcc @ 1afc958fa0d66d18b623c091a55fec872b4981e1
 M receiver/src/buffer.h
 M receiver/src/core.cpp
 M sender/src/buffer.h
 M sender/src/core.cpp
third_party/pcc-experimental @ cd43e34e3f5f5613e8acd08fab92c4eb24f974ab
third_party/proto-quic @ 77961f1a82733a86b42f1bc8143ebc978f3cff42
third_party/scream-reproduce @ f099118d1421aa3131bf11ff1964974e1da3bdb2
 M src/ScreamClient
 M src/ScreamServer
third_party/sprout @ 366e35c6178b01e31d4a46ad18c74f9415f19a26
 M src/examples/cellsim.cc
 M src/examples/sproutbt2.cc
 M src/network/sproutconn.cc
third_party/verus @ d4b447ea74c6c60a261149af2629562939f9a494
 M src/verus.hpp
```
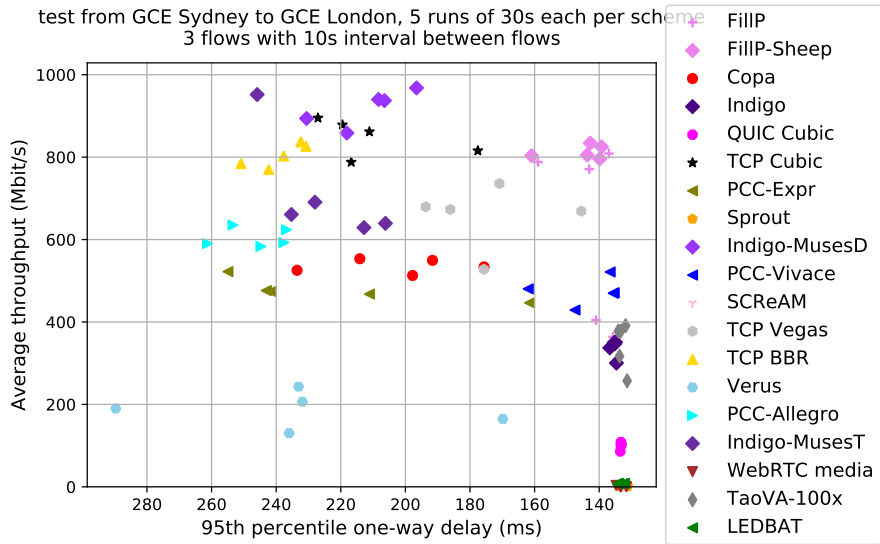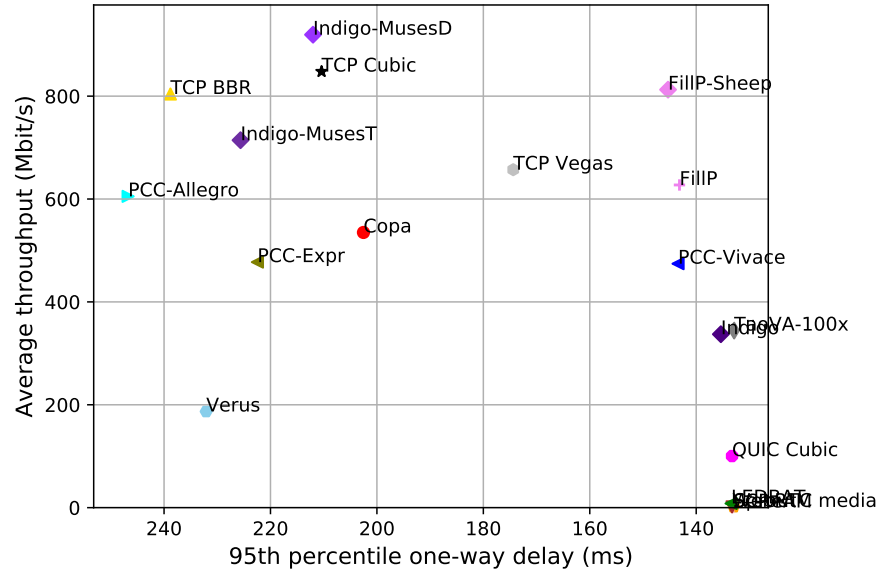
```
 M tools/plot.py
third_party/vivace @ 2baf86211435ae071a32f96b7d8c504587f5d7f4
third_party/webrtc @ 3f0cc2a9061a41b6f9dde4735770d143a1fa2851
```

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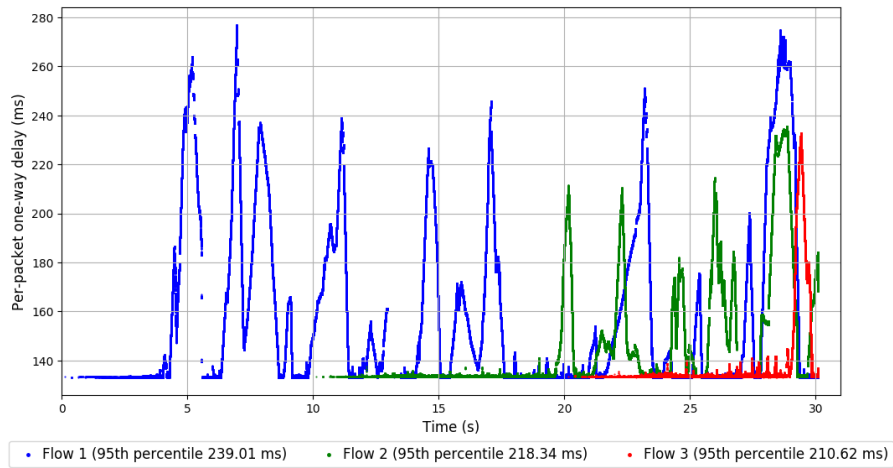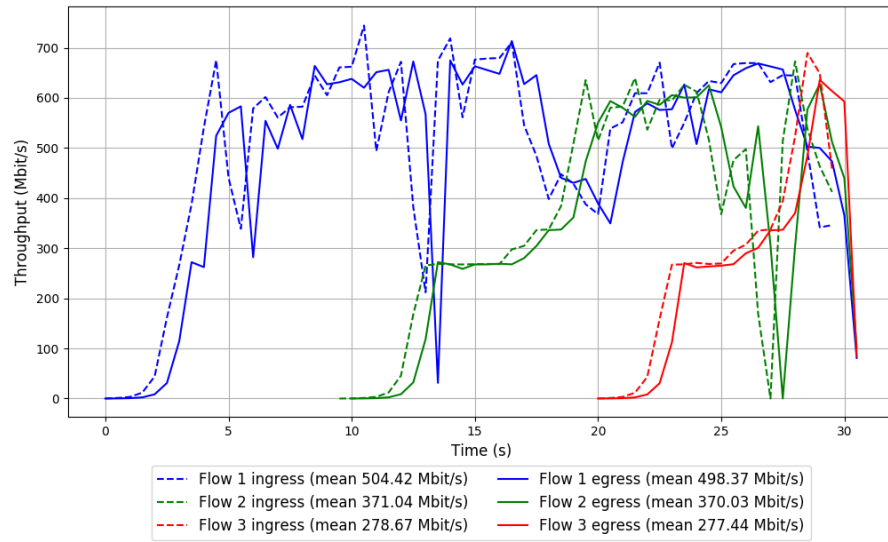3 flows with 10s interval between flows (mean of all runs by scheme)

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

3

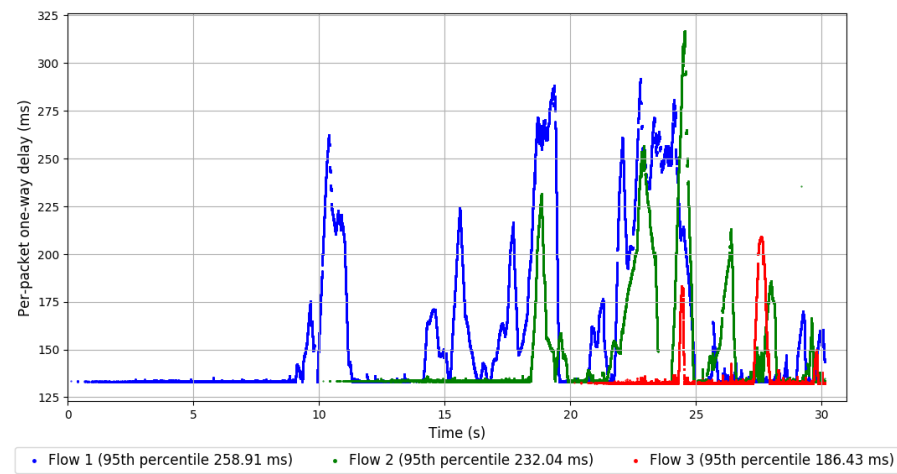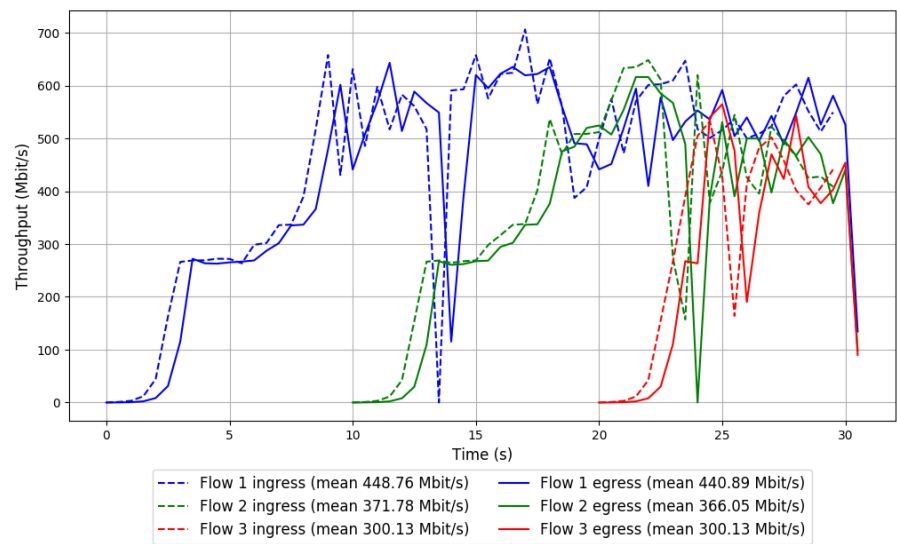| scheme	# runs	mean avg tput (Mbit/s)			mean 95th-%ile delay (ms)			mean loss rate (%)		
		flow 1	flow 2	flow 3	flow 1	flow 2	flow 3	flow 1	flow 2	flow 3
TCP BBR	5	463.67	379.30	264.30	240.11	228.70	189.80	1.25	0.87	0.64
Copa	5	296.29	252.28	212.76	192.75	190.85	205.23	0.07	0.03	0.05
TCP Cubic	5	468.63	422.40	294.09	210.77	185.74	216.22	0.20	0.28	0.87
FillP	5	319.40	352.02	224.03	153.54	136.76	136.09	0.09	0.01	0.00
FillP-Sheep	5	508.29	335.44	245.46	150.37	138.53	137.21	0.14	0.00	0.00
Indigo	5	173.08	172.73	154.94	134.45	136.64	136.97	0.00	0.00	0.00
Indigo-MusesD	5	525.85	452.92	289.77	205.49	221.07	201.84	0.08	1.03	0.91
Indigo-MusesT	5	419.33	332.24	270.03	231.03	206.04	193.79	1.79	0.36	0.45
LEDBAT	5	5.28	3.49	1.71	133.41	133.19	133.15	0.00	0.00	0.00
PCC-Allegro	5	324.42	309.05	229.50	245.83	208.39	247.43	2.83	1.51	2.27
PCC-Expr	5	293.79	201.45	150.34	220.67	187.85	192.15	2.83	1.68	0.18
QUIC Cubic	5	53.92	51.11	38.65	133.30	132.78	132.67	0.00	0.00	0.00
SCReAM	5	0.16	0.15	0.16	132.94	132.82	132.76	0.00	0.00	0.00
Sprout	5	0.75	0.68	0.65	132.74	132.95	132.72	0.00	0.00	0.00
TaoVA-100x	5	195.88	152.67	140.43	132.71	132.54	132.84	0.00	0.00	0.00
TCP Vegas	5	314.30	368.61	292.57	154.71	165.99	198.10	0.04	0.04	0.37
Verus	5	128.17	64.64	50.21	241.38	167.17	163.35	3.36	0.03	0.14
PCC-Vivace	5	293.98	209.24	124.75	146.95	138.09	137.58	0.10	0.01	0.00
WebRTC media	5	0.78	0.48	0.17	133.27	133.00	132.85	0.00	0.00	0.00

```
Run 1: Statistics of TCP BBR

Start at: 2018-12-20 12:41:35
End at: 2018-12-20 12:42:05
Local clock offset: -0.066 ms
Remote clock offset: -0.042 ms


# Below is generated by plot.py at 2018-12-20 16:08:07
# Datalink statistics
-- Total of 3 flows:
Average throughput: 837.18 Mbit/s
95th percentile per-packet one-way delay: 232.375 ms
Loss rate: 0.85%
-- Flow 1:
Average throughput: 498.37 Mbit/s
95th percentile per-packet one-way delay: 239.009 ms
Loss rate: 1.20%
-- Flow 2:
Average throughput: 370.03 Mbit/s
95th percentile per-packet one-way delay: 218.343 ms
Loss rate: 0.27%
-- Flow 3:
Average throughput: 277.44 Mbit/s
95th percentile per-packet one-way delay: 210.617 ms
Loss rate: 0.44%
```

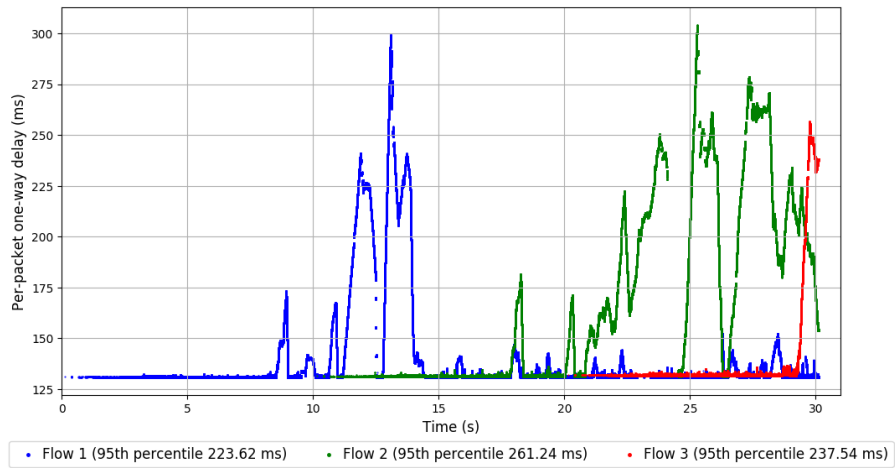Run 1: Report of TCP BBR — Data Link

```
Run 2: Statistics of TCP BBR

Start at: 2018-12-20 13:16:50
End at: 2018-12-20 13:17:20
Local clock offset: -0.13 ms
Remote clock offset: -0.054 ms


# Below is generated by plot.py at 2018-12-20 16:08:07
# Datalink statistics
-- Total of 3 flows:
Average throughput: 784.46 Mbit/s
95th percentile per-packet one-way delay: 250.906 ms
Loss rate: 1.47%
-- Flow 1:
Average throughput: 440.89 Mbit/s
95th percentile per-packet one-way delay: 258.914 ms
Loss rate: 1.75%
-- Flow 2:
Average throughput: 366.05 Mbit/s
95th percentile per-packet one-way delay: 232.038 ms
Loss rate: 1.54%
-- Flow 3:
Average throughput: 300.13 Mbit/s
95th percentile per-packet one-way delay: 186.425 ms
Loss rate: 0.00%
```

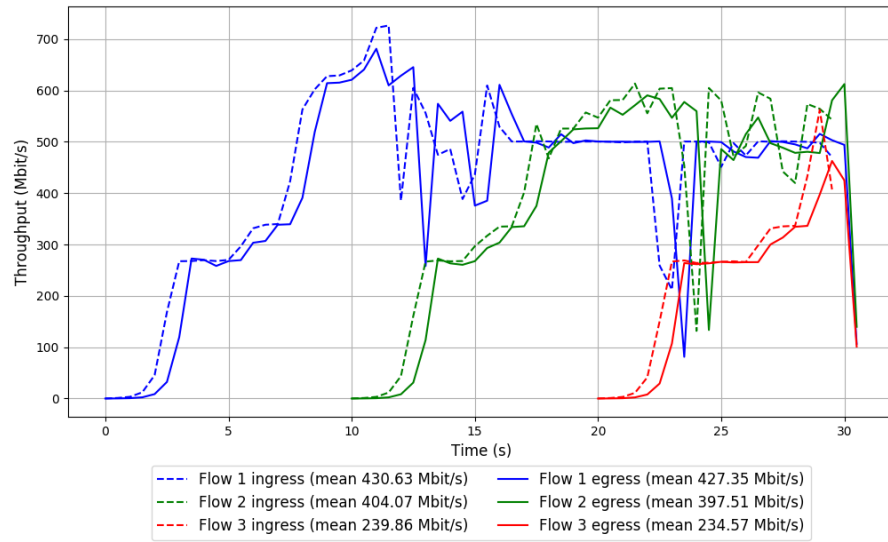Run 2: Report of TCP BBR — Data Link

```
Run 3: Statistics of TCP BBR

Start at: 2018-12-20 13:53:03
End at: 2018-12-20 13:53:33
Local clock offset: 1.501 ms
Remote clock offset: -0.102 ms


# Below is generated by plot.py at 2018-12-20 16:08:07
# Datalink statistics
-- Total of 3 flows:
Average throughput: 770.00 Mbit/s
95th percentile per-packet one-way delay: 242.306 ms
Loss rate: 1.21%
-- Flow 1:
Average throughput: 427.35 Mbit/s
95th percentile per-packet one-way delay: 223.623 ms
Loss rate: 0.76%
-- Flow 2:
Average throughput: 397.51 Mbit/s
95th percentile per-packet one-way delay: 261.235 ms
Loss rate: 1.62%
-- Flow 3:
Average throughput: 234.57 Mbit/s
95th percentile per-packet one-way delay: 237.543 ms
Loss rate: 2.21%
```
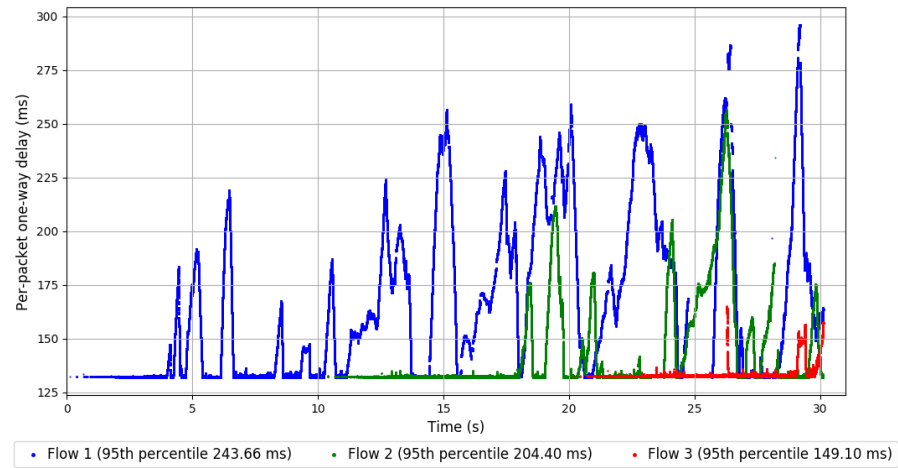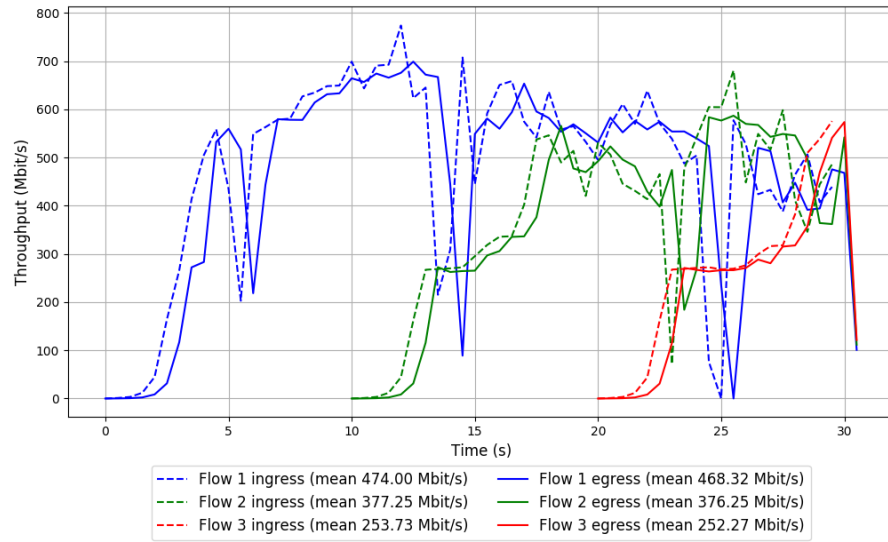
Run 3: Report of TCP BBR — Data Link

Flow 1 ingress (mean 430.63 Mbit/s)   Flow 1 egress (mean 427.35 Mbit/s)
Flow 2 ingress (mean 404.07 Mbit/s)   Flow 2 egress (mean 397.51 Mbit/s)
Flow 3 ingress (mean 239.86 Mbit/s)   Flow 3 egress (mean 234.57 Mbit/s)

Flow 1 (95th percentile 223.62 ms)   Flow 2 (95th percentile 261.24 ms)   Flow 3 (95th percentile 237.54 ms)

```
Run 4: Statistics of TCP BBR

Start at: 2018-12-20 14:28:38
End at: 2018-12-20 14:29:08
Local clock offset: 0.018 ms
Remote clock offset: -0.428 ms


# Below is generated by plot.py at 2018-12-20 16:08:07
# Datalink statistics
-- Total of 3 flows:
Average throughput: 802.81 Mbit/s
95th percentile per-packet one-way delay: 237.670 ms
Loss rate: 0.84%
-- Flow 1:
Average throughput: 468.32 Mbit/s
95th percentile per-packet one-way delay: 243.657 ms
Loss rate: 1.20%
-- Flow 2:
Average throughput: 376.25 Mbit/s
95th percentile per-packet one-way delay: 204.396 ms
Loss rate: 0.27%
-- Flow 3:
Average throughput: 252.27 Mbit/s
95th percentile per-packet one-way delay: 149.101 ms
Loss rate: 0.56%
```
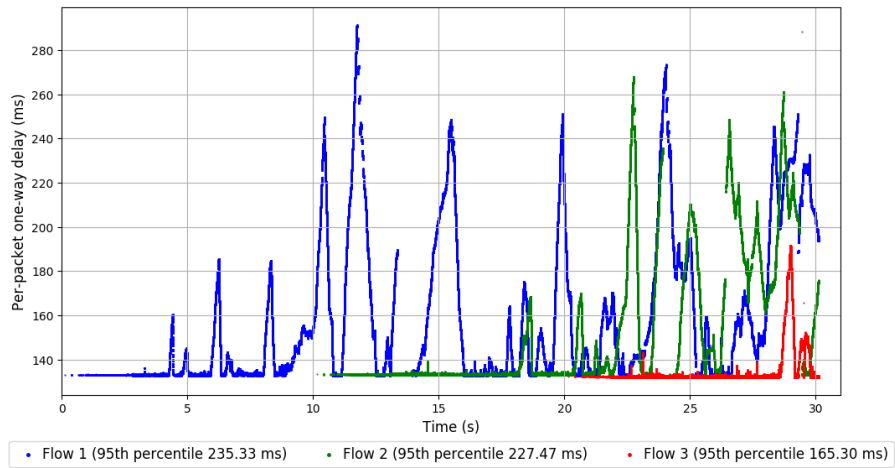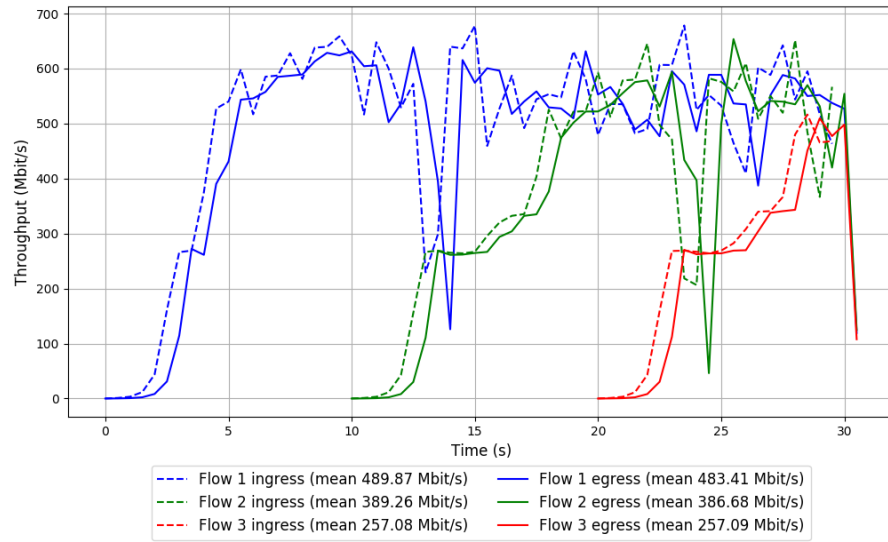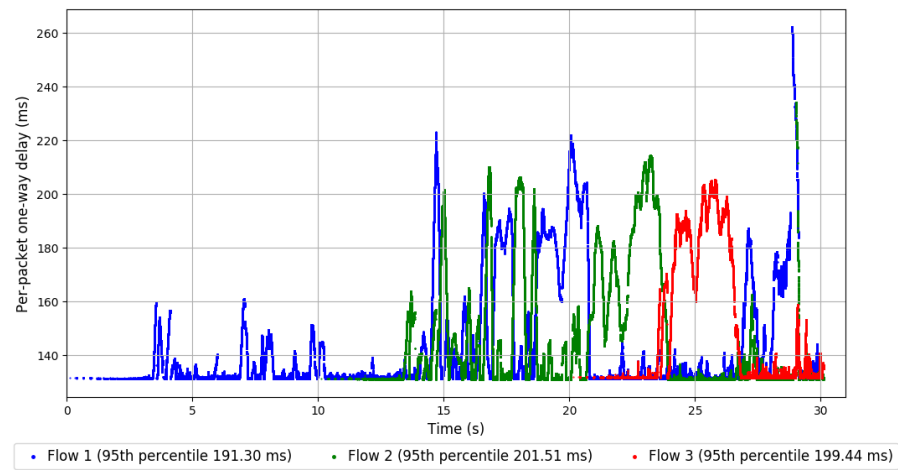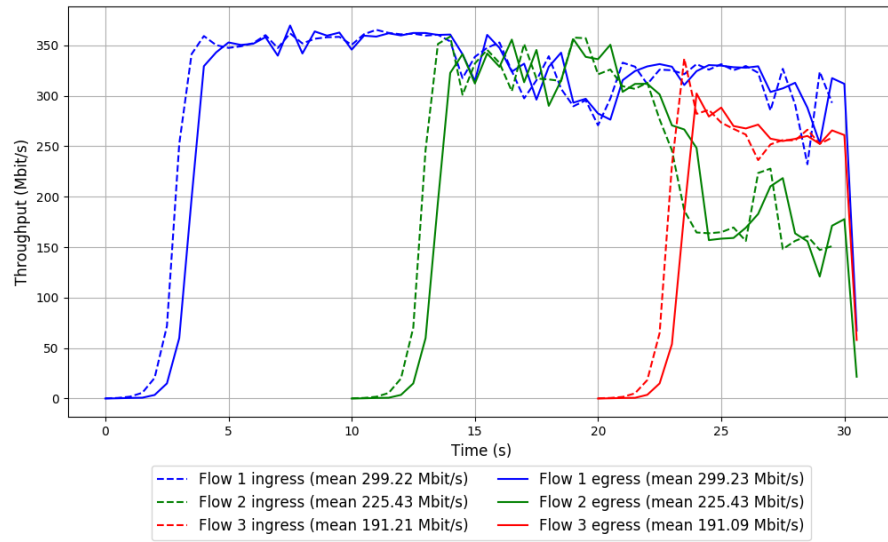
Run 4: Report of TCP BBR — Data Link

Flow 1 ingress (mean 474.00 Mbit/s) --- Flow 1 egress (mean 468.32 Mbit/s)
Flow 2 ingress (mean 377.25 Mbit/s) --- Flow 2 egress (mean 376.25 Mbit/s)
Flow 3 ingress (mean 253.73 Mbit/s) --- Flow 3 egress (mean 252.27 Mbit/s)

Flow 1 (95th percentile 243.66 ms)   Flow 2 (95th percentile 204.40 ms)   Flow 3 (95th percentile 149.10 ms)

```
Run 5: Statistics of TCP BBR

Start at: 2018-12-20 15:04:41
End at: 2018-12-20 15:05:11
Local clock offset: -0.165 ms
Remote clock offset: 0.012 ms


# Below is generated by plot.py at 2018-12-20 16:08:07
# Datalink statistics
-- Total of 3 flows:
Average throughput: 826.42 Mbit/s
95th percentile per-packet one-way delay: 230.758 ms
Loss rate: 0.98%
-- Flow 1:
Average throughput: 483.41 Mbit/s
95th percentile per-packet one-way delay: 235.334 ms
Loss rate: 1.32%
-- Flow 2:
Average throughput: 386.68 Mbit/s
95th percentile per-packet one-way delay: 227.470 ms
Loss rate: 0.66%
-- Flow 3:
Average throughput: 257.09 Mbit/s
95th percentile per-packet one-way delay: 165.296 ms
Loss rate: 0.00%
```
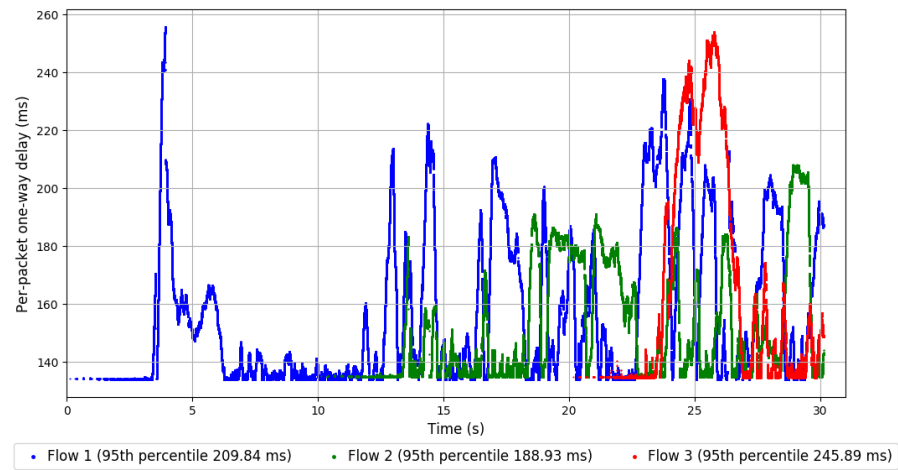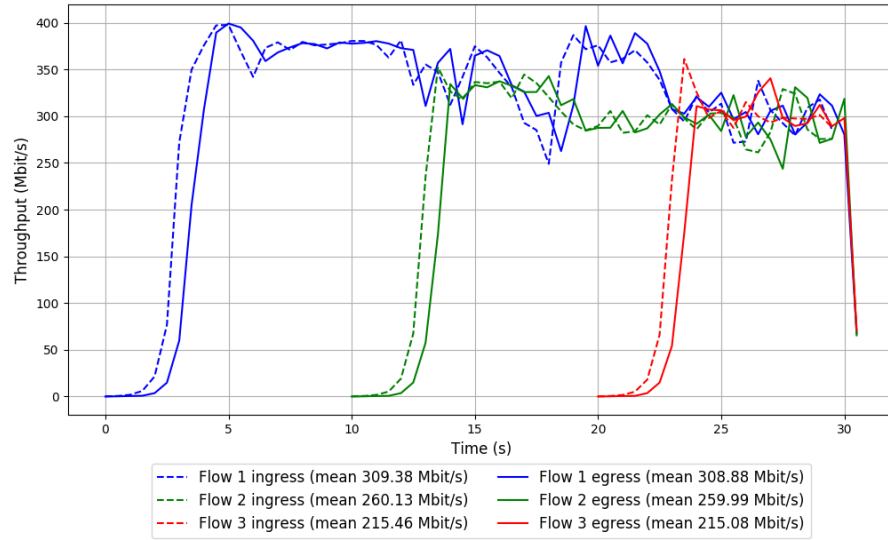
Run 5: Report of TCP BBR — Data Link

Flow 1 ingress (mean 489.87 Mbit/s)   Flow 1 egress (mean 483.41 Mbit/s)
Flow 2 ingress (mean 389.26 Mbit/s)   Flow 2 egress (mean 386.68 Mbit/s)
Flow 3 ingress (mean 257.08 Mbit/s)   Flow 3 egress (mean 257.09 Mbit/s)

Flow 1 (95th percentile 235.33 ms)   Flow 2 (95th percentile 227.47 ms)   Flow 3 (95th percentile 165.30 ms)
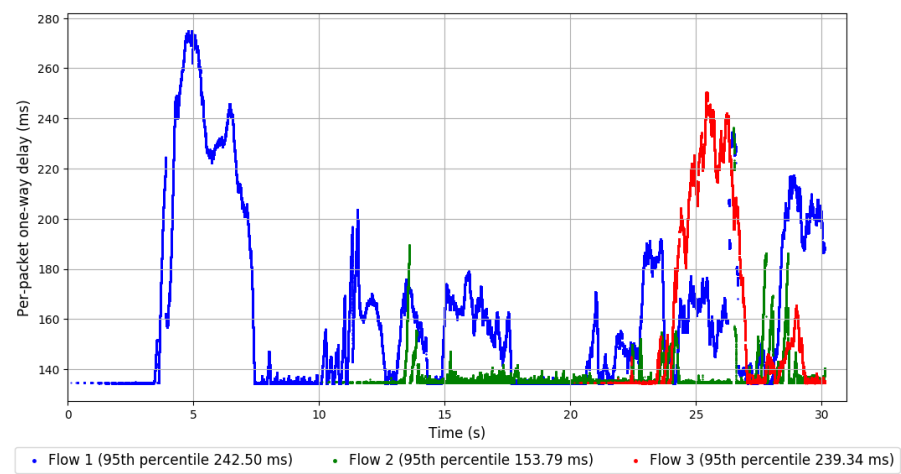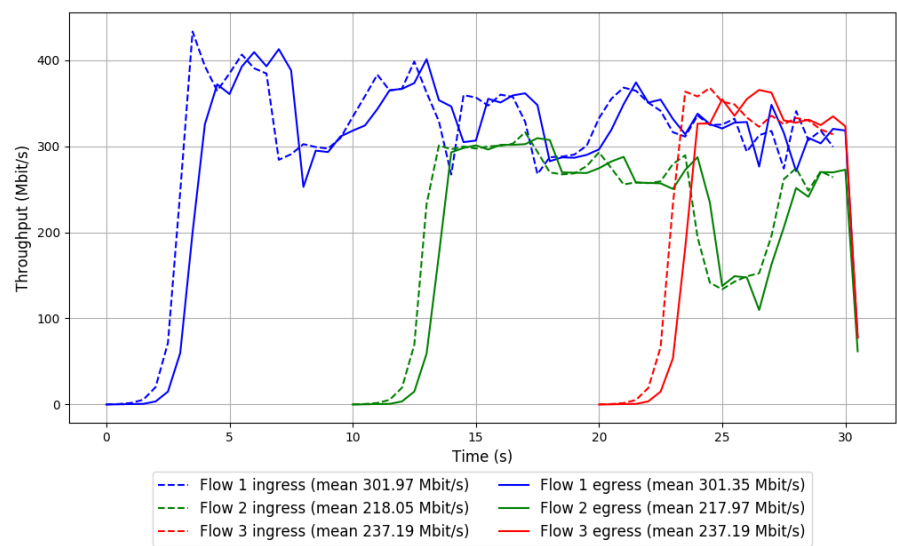
```
Run 1: Statistics of Copa

Start at: 2018-12-20 13:09:23
End at: 2018-12-20 13:09:53
Local clock offset: 1.547 ms
Remote clock offset: -0.039 ms


# Below is generated by plot.py at 2018-12-20 16:10:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 512.83 Mbit/s
95th percentile per-packet one-way delay: 197.766 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 299.23 Mbit/s
95th percentile per-packet one-way delay: 191.297 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 225.43 Mbit/s
95th percentile per-packet one-way delay: 201.514 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 191.09 Mbit/s
95th percentile per-packet one-way delay: 199.437 ms
Loss rate: 0.06%
```

Run 1: Report of Copa — Data Link

Flow 1 ingress (mean 299.22 Mbit/s) Flow 1 egress (mean 299.23 Mbit/s)
Flow 2 ingress (mean 225.43 Mbit/s) Flow 2 egress (mean 225.43 Mbit/s)
Flow 3 ingress (mean 191.21 Mbit/s) Flow 3 egress (mean 191.09 Mbit/s)

Flow 1 (95th percentile 191.30 ms)   Flow 2 (95th percentile 201.51 ms)   Flow 3 (95th percentile 199.44 ms)

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```
Run 2: Statistics of Copa

Start at: 2018-12-20 13:45:20
End at: 2018-12-20 13:45:50
Local clock offset: -1.252 ms
Remote clock offset: 0.289 ms


# Below is generated by plot.py at 2018-12-20 16:11:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 553.52 Mbit/s
95th percentile per-packet one-way delay: 214.107 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 308.88 Mbit/s
95th percentile per-packet one-way delay: 209.835 ms
Loss rate: 0.16%
-- Flow 2:
Average throughput: 259.99 Mbit/s
95th percentile per-packet one-way delay: 188.931 ms
Loss rate: 0.04%
-- Flow 3:
Average throughput: 215.08 Mbit/s
95th percentile per-packet one-way delay: 245.891 ms
Loss rate: 0.17%
```
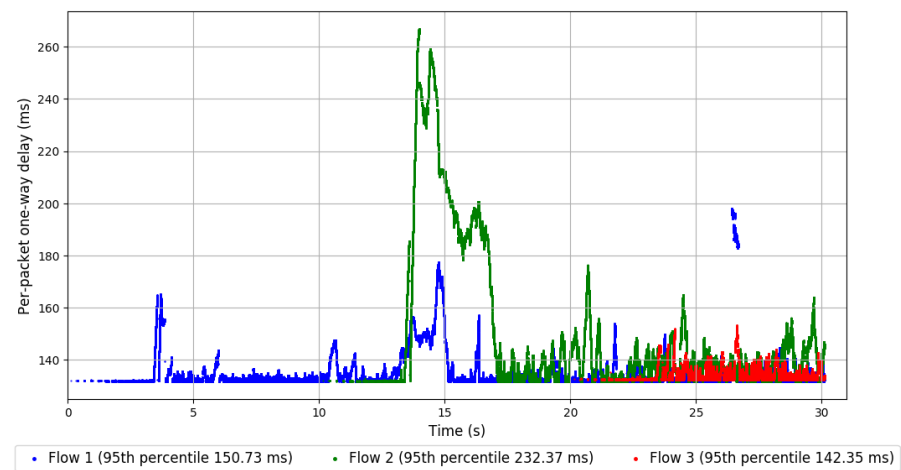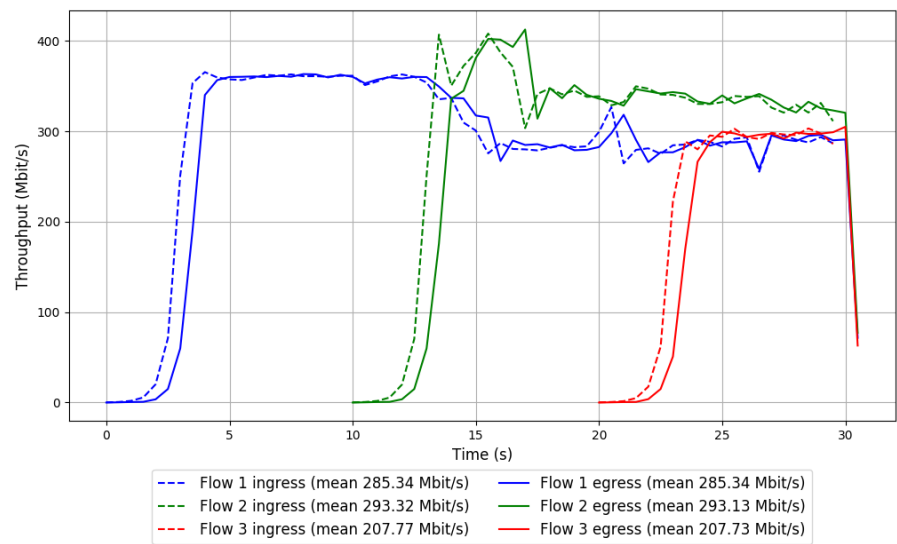
Run 2: Report of Copa — Data Link

Flow 1 ingress (mean 309.38 Mbit/s) --- Flow 1 egress (mean 308.88 Mbit/s)
Flow 2 ingress (mean 260.13 Mbit/s) --- Flow 2 egress (mean 259.99 Mbit/s)
Flow 3 ingress (mean 215.46 Mbit/s) --- Flow 3 egress (mean 215.08 Mbit/s)

Flow 1 (95th percentile 209.84 ms)   Flow 2 (95th percentile 188.93 ms)   Flow 3 (95th percentile 245.89 ms)
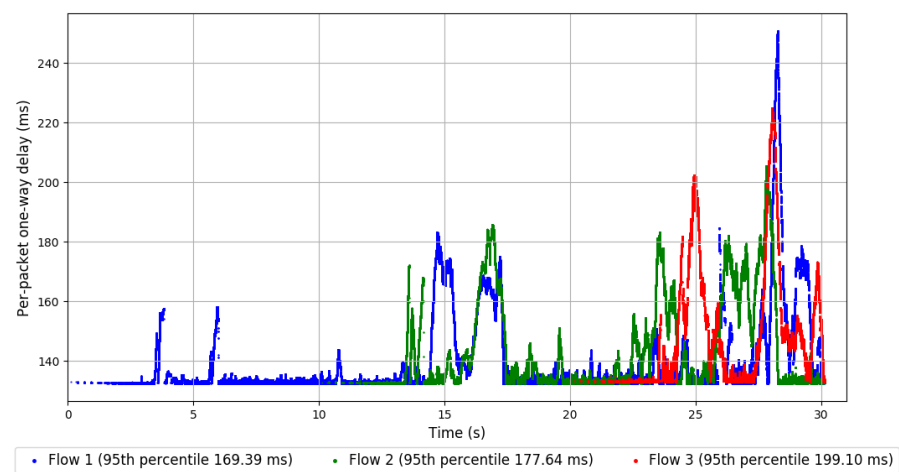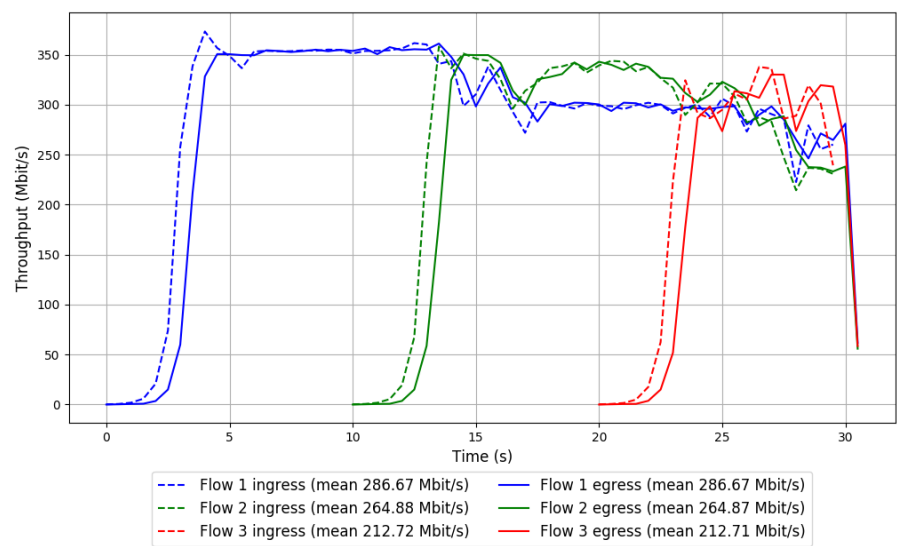
18

```
Run 3: Statistics of Copa

Start at: 2018-12-20 14:20:48
End at: 2018-12-20 14:21:18
Local clock offset: -1.305 ms
Remote clock offset: -0.076 ms


# Below is generated by plot.py at 2018-12-20 16:11:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 525.41 Mbit/s
95th percentile per-packet one-way delay: 233.535 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 301.35 Mbit/s
95th percentile per-packet one-way delay: 242.498 ms
Loss rate: 0.20%
-- Flow 2:
Average throughput: 217.97 Mbit/s
95th percentile per-packet one-way delay: 153.787 ms
Loss rate: 0.03%
-- Flow 3:
Average throughput: 237.19 Mbit/s
95th percentile per-packet one-way delay: 239.341 ms
Loss rate: 0.00%
```
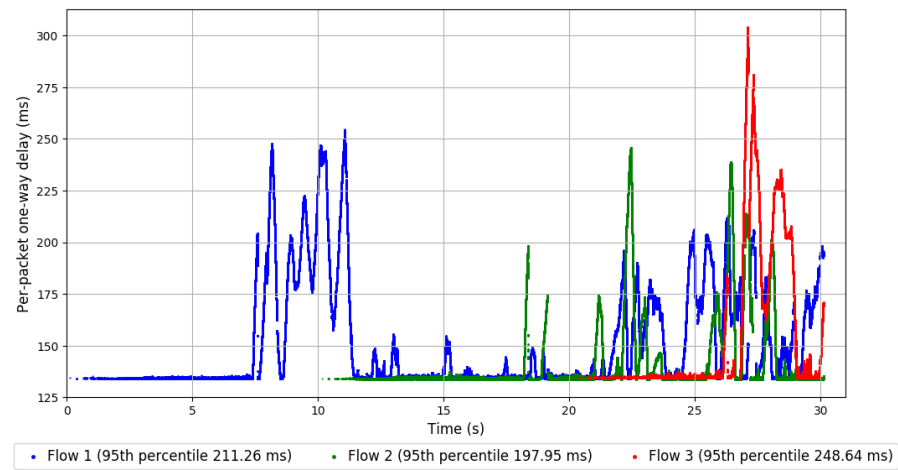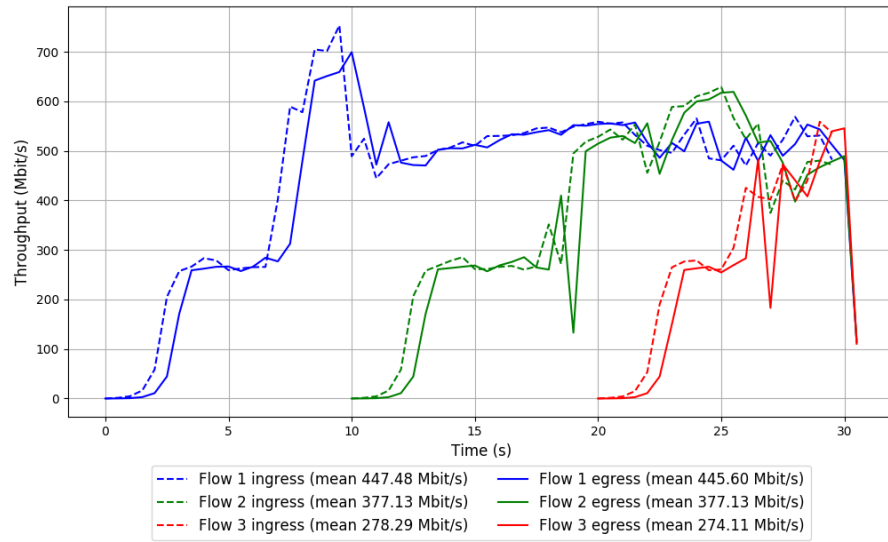
Run 3: Report of Copa — Data Link

Flow 1 ingress (mean 301.97 Mbit/s) — Flow 1 egress (mean 301.35 Mbit/s)
Flow 2 ingress (mean 218.05 Mbit/s) — Flow 2 egress (mean 217.97 Mbit/s)
Flow 3 ingress (mean 237.19 Mbit/s) — Flow 3 egress (mean 237.19 Mbit/s)

Flow 1 (95th percentile 242.50 ms) · Flow 2 (95th percentile 153.79 ms) · Flow 3 (95th percentile 239.34 ms)

20

```
Run 4: Statistics of Copa

Start at: 2018-12-20 14:56:47
End at: 2018-12-20 14:57:17
Local clock offset: 1.282 ms
Remote clock offset: 0.362 ms


# Below is generated by plot.py at 2018-12-20 16:26:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 549.53 Mbit/s
95th percentile per-packet one-way delay: 191.594 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 285.34 Mbit/s
95th percentile per-packet one-way delay: 150.732 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 293.13 Mbit/s
95th percentile per-packet one-way delay: 232.365 ms
Loss rate: 0.06%
-- Flow 3:
Average throughput: 207.73 Mbit/s
95th percentile per-packet one-way delay: 142.355 ms
Loss rate: 0.02%
```
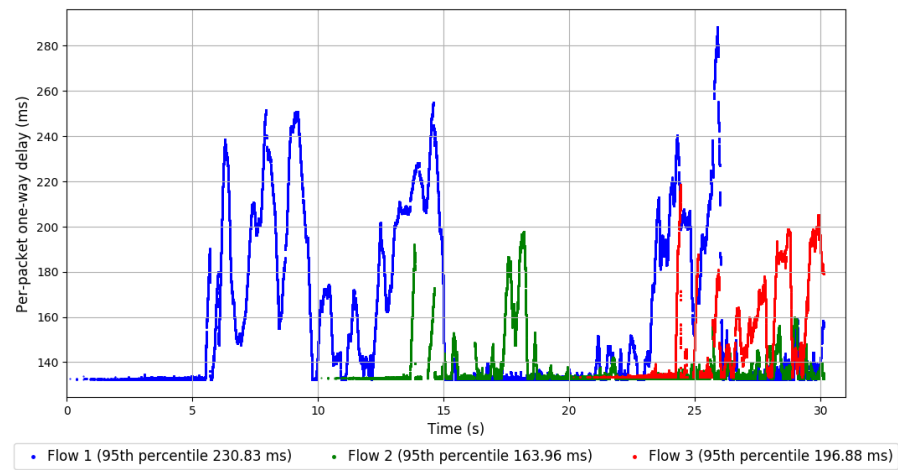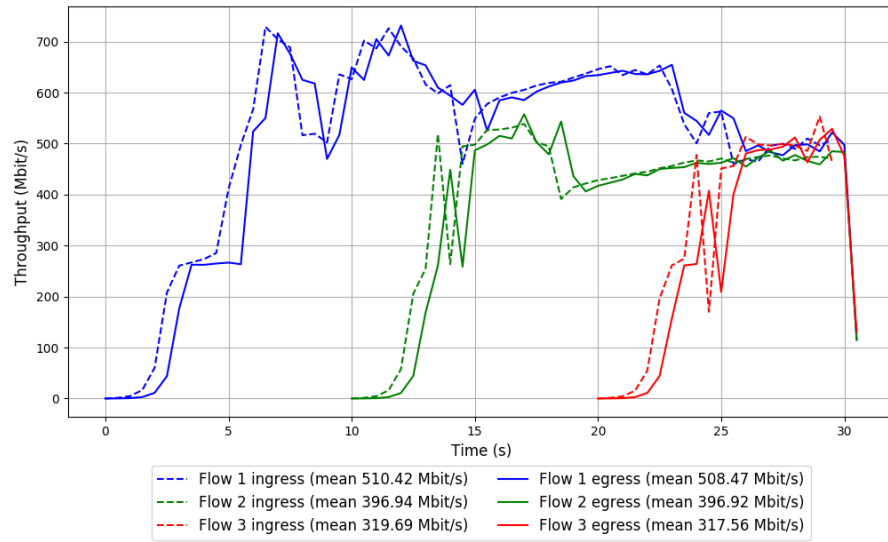
Run 4: Report of Copa — Data Link

```
Run 5: Statistics of Copa

Start at: 2018-12-20 15:32:40
End at: 2018-12-20 15:33:10
Local clock offset: -0.289 ms
Remote clock offset: -0.356 ms


# Below is generated by plot.py at 2018-12-20 16:26:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 533.69 Mbit/s
95th percentile per-packet one-way delay: 175.650 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 286.67 Mbit/s
95th percentile per-packet one-way delay: 169.391 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 264.87 Mbit/s
95th percentile per-packet one-way delay: 177.640 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 212.71 Mbit/s
95th percentile per-packet one-way delay: 199.105 ms
Loss rate: 0.00%
```

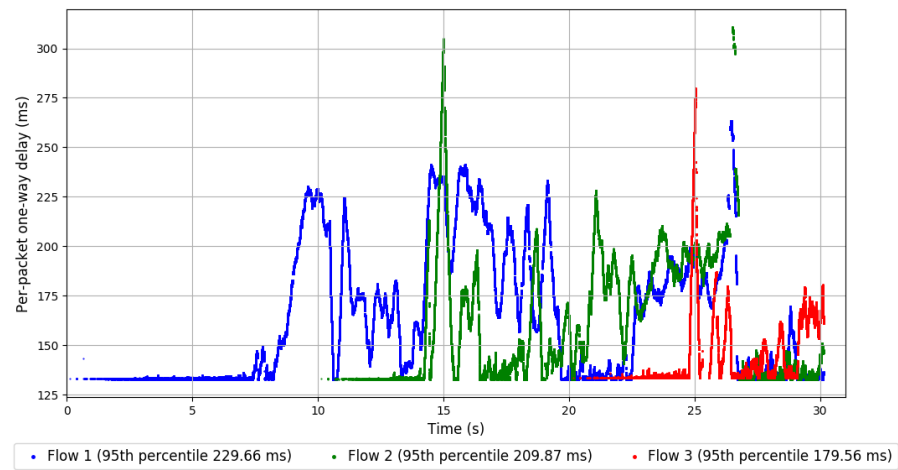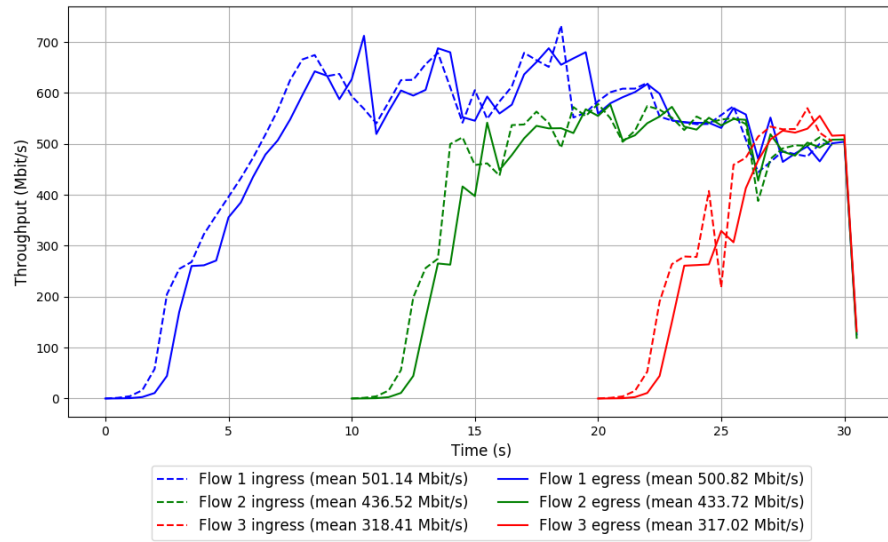Run 5: Report of Copa — Data Link

```
Run 1: Statistics of TCP Cubic

Start at: 2018-12-20 12:50:30
End at: 2018-12-20 12:51:00
Local clock offset: -1.365 ms
Remote clock offset: -0.377 ms


# Below is generated by plot.py at 2018-12-20 16:26:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 787.94 Mbit/s
95th percentile per-packet one-way delay: 216.760 ms
Loss rate: 0.41%
-- Flow 1:
Average throughput: 445.60 Mbit/s
95th percentile per-packet one-way delay: 211.265 ms
Loss rate: 0.42%
-- Flow 2:
Average throughput: 377.13 Mbit/s
95th percentile per-packet one-way delay: 197.950 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 274.11 Mbit/s
95th percentile per-packet one-way delay: 248.643 ms
Loss rate: 1.50%
```

Run 1: Report of TCP Cubic — Data Link

```
Run 2: Statistics of TCP Cubic

Start at: 2018-12-20 13:25:46
End at: 2018-12-20 13:26:16
Local clock offset: -0.154 ms
Remote clock offset: -0.056 ms

# Below is generated by plot.py at 2018-12-20 16:26:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 878.43 Mbit/s
95th percentile per-packet one-way delay: 219.487 ms
Loss rate: 0.30%
-- Flow 1:
Average throughput: 508.47 Mbit/s
95th percentile per-packet one-way delay: 230.827 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 396.92 Mbit/s
95th percentile per-packet one-way delay: 163.964 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 317.56 Mbit/s
95th percentile per-packet one-way delay: 196.883 ms
Loss rate: 0.67%
```
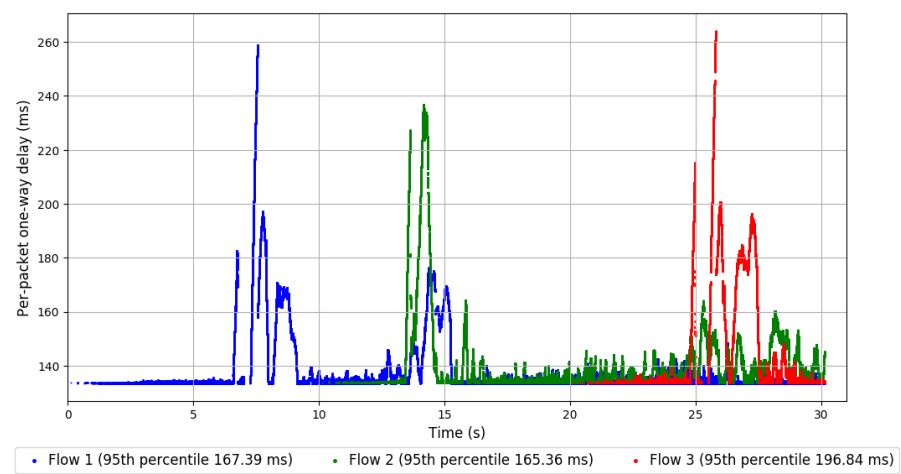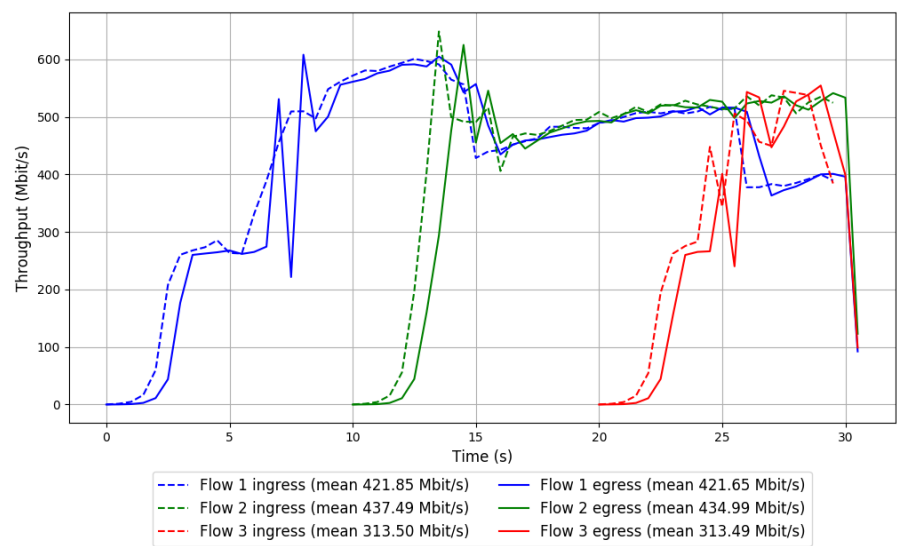
Run 2: Report of TCP Cubic — Data Link

```
Run 3: Statistics of TCP Cubic

Start at: 2018-12-20 14:01:44
End at: 2018-12-20 14:02:14
Local clock offset: -0.056 ms
Remote clock offset: -0.09 ms


# Below is generated by plot.py at 2018-12-20 16:26:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 895.10 Mbit/s
95th percentile per-packet one-way delay: 227.064 ms
Loss rate: 0.28%
-- Flow 1:
Average throughput: 500.82 Mbit/s
95th percentile per-packet one-way delay: 229.665 ms
Loss rate: 0.05%
-- Flow 2:
Average throughput: 433.72 Mbit/s
95th percentile per-packet one-way delay: 209.866 ms
Loss rate: 0.63%
-- Flow 3:
Average throughput: 317.02 Mbit/s
95th percentile per-packet one-way delay: 179.565 ms
Loss rate: 0.41%
```
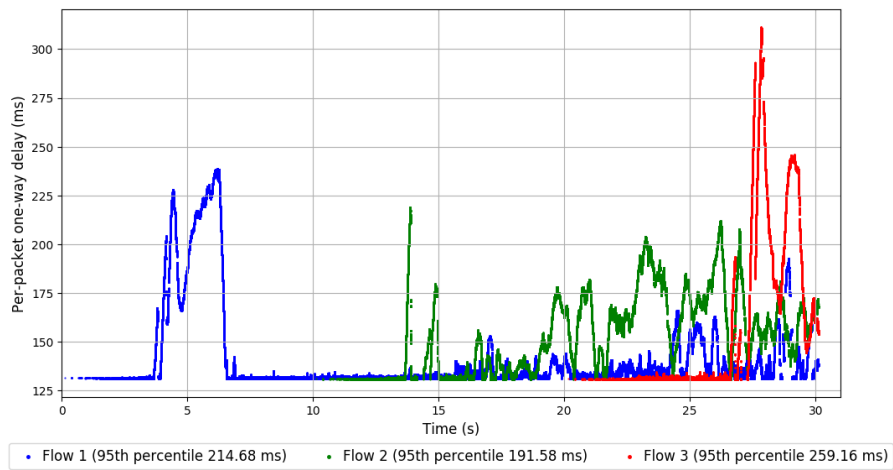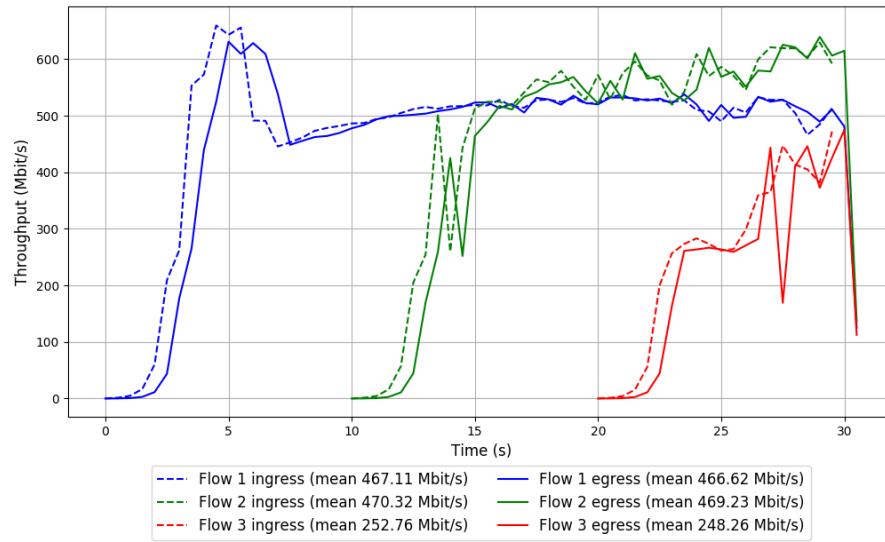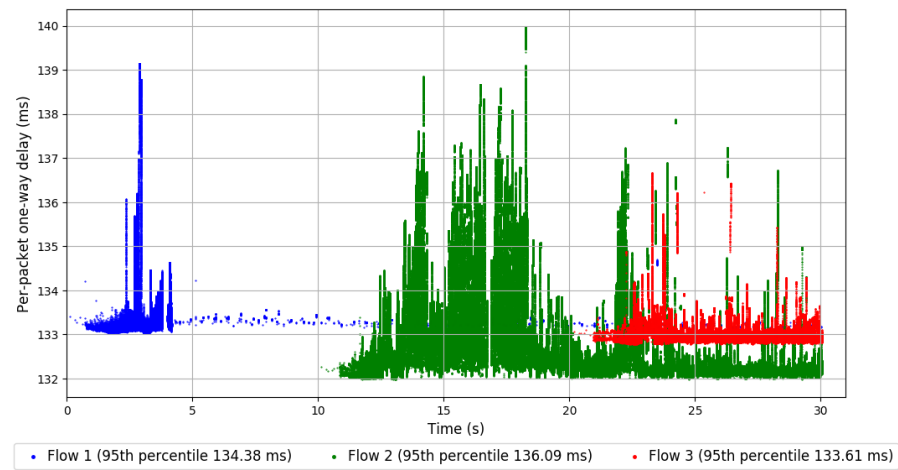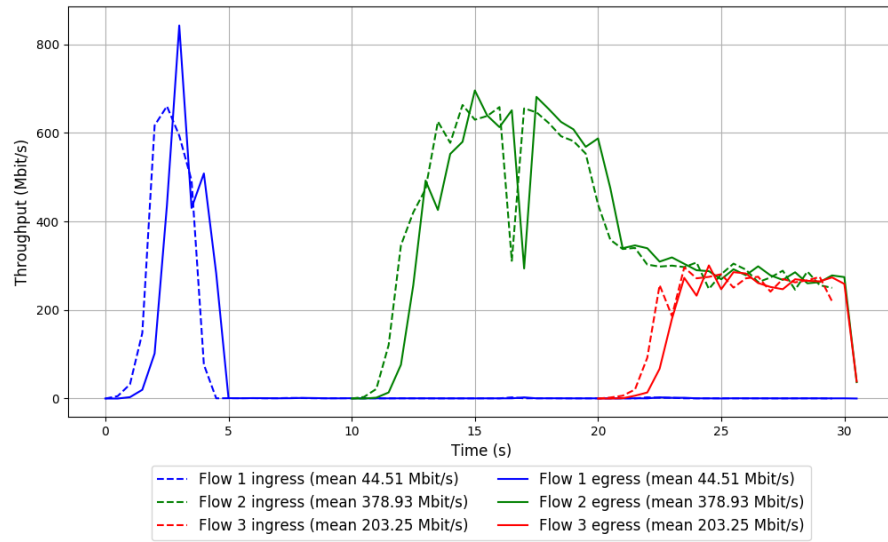
Run 3: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 501.14 Mbit/s) --- Flow 1 egress (mean 500.82 Mbit/s) ---
Flow 2 ingress (mean 436.52 Mbit/s) --- Flow 2 egress (mean 433.72 Mbit/s) ---
Flow 3 ingress (mean 318.41 Mbit/s) --- Flow 3 egress (mean 317.02 Mbit/s) ---

Flow 1 (95th percentile 229.66 ms) • Flow 2 (95th percentile 209.87 ms) • Flow 3 (95th percentile 179.56 ms)

```
Run 4: Statistics of TCP Cubic

Start at: 2018-12-20 14:37:27
End at: 2018-12-20 14:37:57
Local clock offset: -0.292 ms
Remote clock offset: 0.284 ms


# Below is generated by plot.py at 2018-12-20 16:26:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 815.61 Mbit/s
95th percentile per-packet one-way delay: 177.564 ms
Loss rate: 0.23%
-- Flow 1:
Average throughput: 421.65 Mbit/s
95th percentile per-packet one-way delay: 167.388 ms
Loss rate: 0.05%
-- Flow 2:
Average throughput: 434.99 Mbit/s
95th percentile per-packet one-way delay: 165.361 ms
Loss rate: 0.57%
-- Flow 3:
Average throughput: 313.49 Mbit/s
95th percentile per-packet one-way delay: 196.845 ms
Loss rate: 0.00%
```
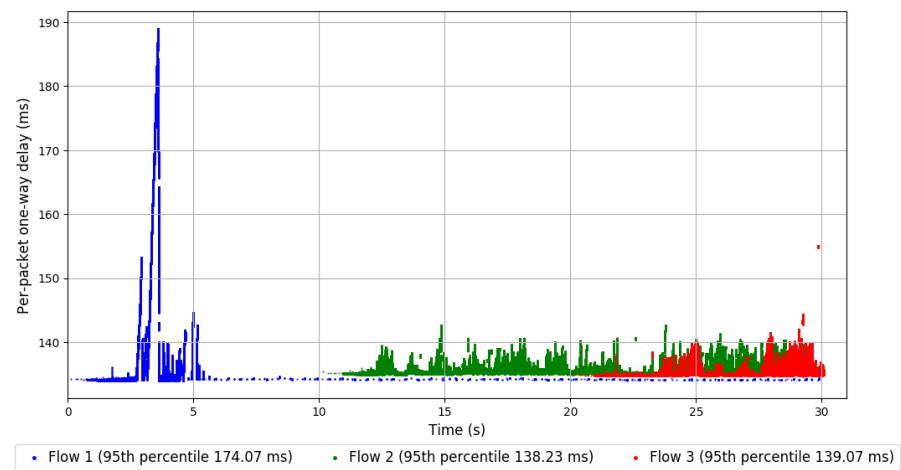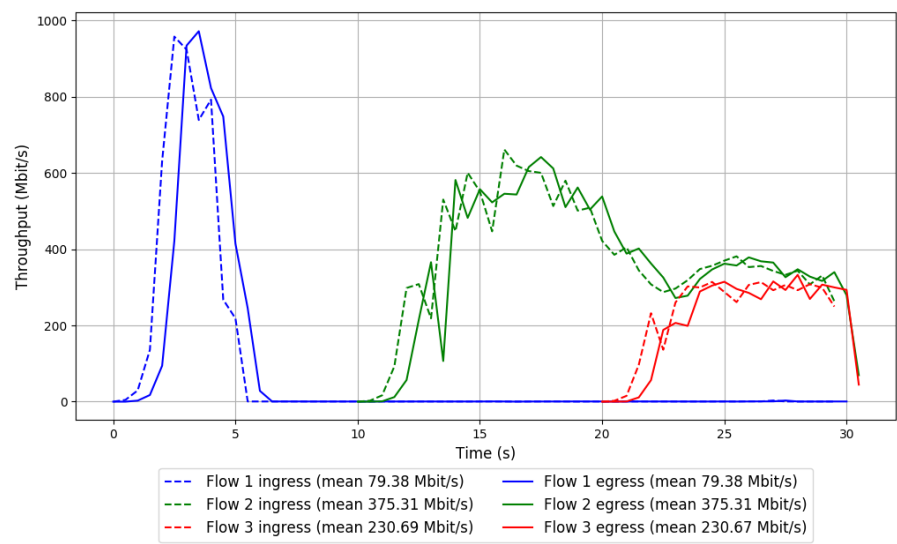
Run 4: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 421.85 Mbit/s) Flow 1 egress (mean 421.65 Mbit/s)
Flow 2 ingress (mean 437.49 Mbit/s) Flow 2 egress (mean 434.99 Mbit/s)
Flow 3 ingress (mean 313.50 Mbit/s) Flow 3 egress (mean 313.49 Mbit/s)

Flow 1 (95th percentile 167.39 ms)   Flow 2 (95th percentile 165.36 ms)   Flow 3 (95th percentile 196.84 ms)

```
Run 5: Statistics of TCP Cubic

Start at: 2018-12-20 15:13:48
End at: 2018-12-20 15:14:18
Local clock offset: 1.558 ms
Remote clock offset: 0.028 ms


# Below is generated by plot.py at 2018-12-20 16:26:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 861.66 Mbit/s
95th percentile per-packet one-way delay: 211.131 ms
Loss rate: 0.31%
-- Flow 1:
Average throughput: 466.62 Mbit/s
95th percentile per-packet one-way delay: 214.683 ms
Loss rate: 0.10%
-- Flow 2:
Average throughput: 469.23 Mbit/s
95th percentile per-packet one-way delay: 191.582 ms
Loss rate: 0.22%
-- Flow 3:
Average throughput: 248.26 Mbit/s
95th percentile per-packet one-way delay: 259.164 ms
Loss rate: 1.76%
```

Run 5: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 467.11 Mbit/s) --- Flow 1 egress (mean 466.62 Mbit/s)
Flow 2 ingress (mean 470.32 Mbit/s) --- Flow 2 egress (mean 469.23 Mbit/s)
Flow 3 ingress (mean 252.76 Mbit/s) --- Flow 3 egress (mean 248.26 Mbit/s)

Flow 1 (95th percentile 214.68 ms)   Flow 2 (95th percentile 191.58 ms)   Flow 3 (95th percentile 259.16 ms)

```
Run 1: Statistics of FillP

Start at: 2018-12-20 13:13:54
End at: 2018-12-20 13:14:24
Local clock offset: -0.102 ms
Remote clock offset: -0.028 ms


# Below is generated by plot.py at 2018-12-20 16:26:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 363.88 Mbit/s
95th percentile per-packet one-way delay: 135.720 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 44.51 Mbit/s
95th percentile per-packet one-way delay: 134.384 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 378.93 Mbit/s
95th percentile per-packet one-way delay: 136.089 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 203.25 Mbit/s
95th percentile per-packet one-way delay: 133.609 ms
Loss rate: 0.00%
```
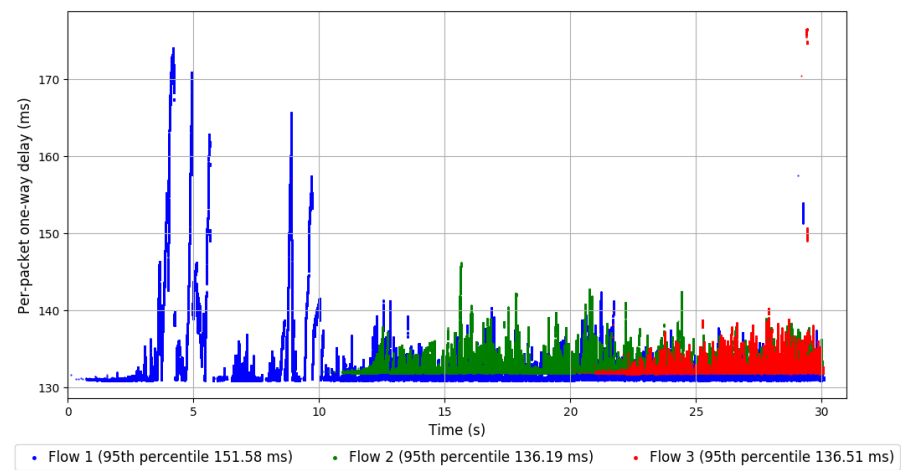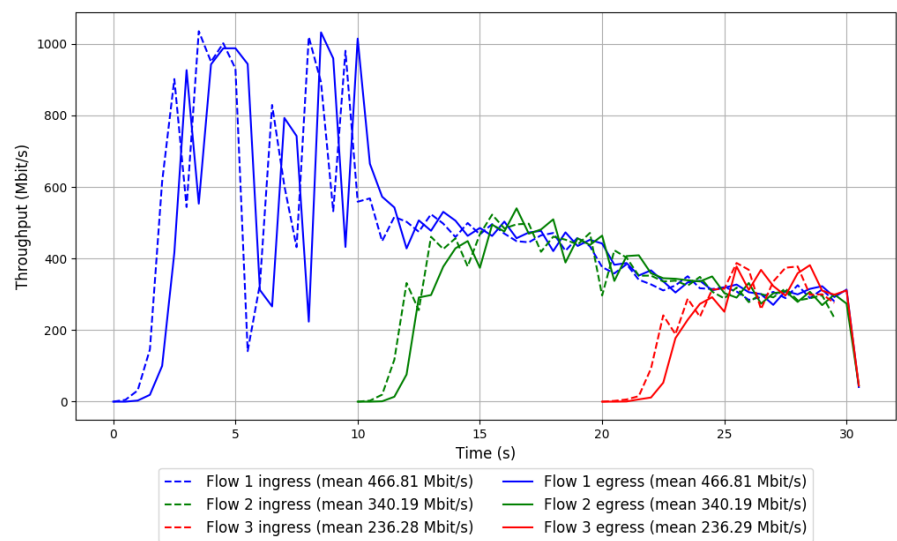
Run 1: Report of FillP — Data Link

```
Run 2: Statistics of FillP

Start at: 2018-12-20 13:50:03
End at: 2018-12-20 13:50:33
Local clock offset: -1.746 ms
Remote clock offset: -0.092 ms

# Below is generated by plot.py at 2018-12-20 16:28:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 404.76 Mbit/s
95th percentile per-packet one-way delay: 140.965 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 79.38 Mbit/s
95th percentile per-packet one-way delay: 174.072 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 375.31 Mbit/s
95th percentile per-packet one-way delay: 138.227 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 230.67 Mbit/s
95th percentile per-packet one-way delay: 139.070 ms
Loss rate: 0.01%
```
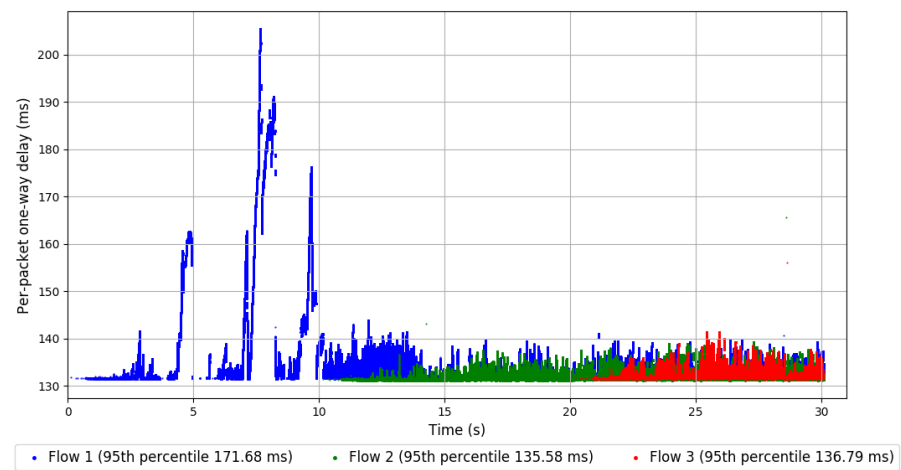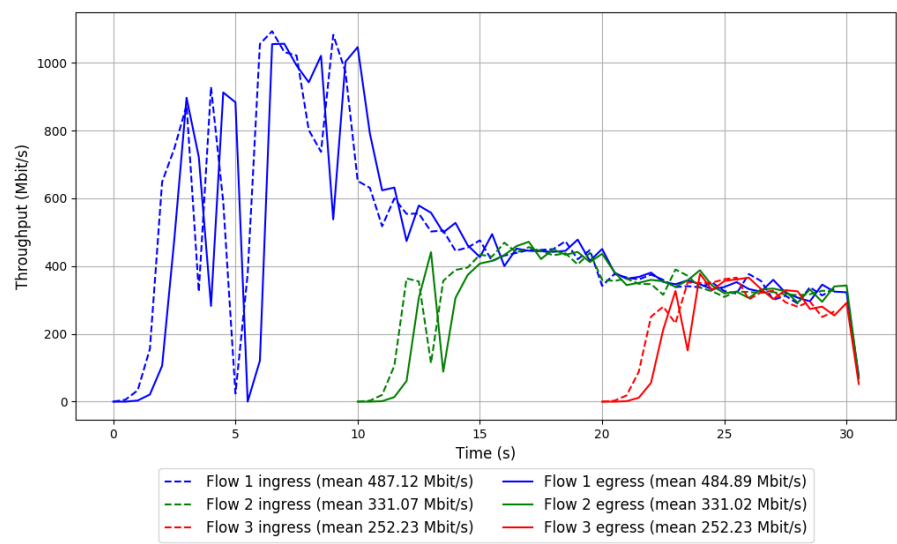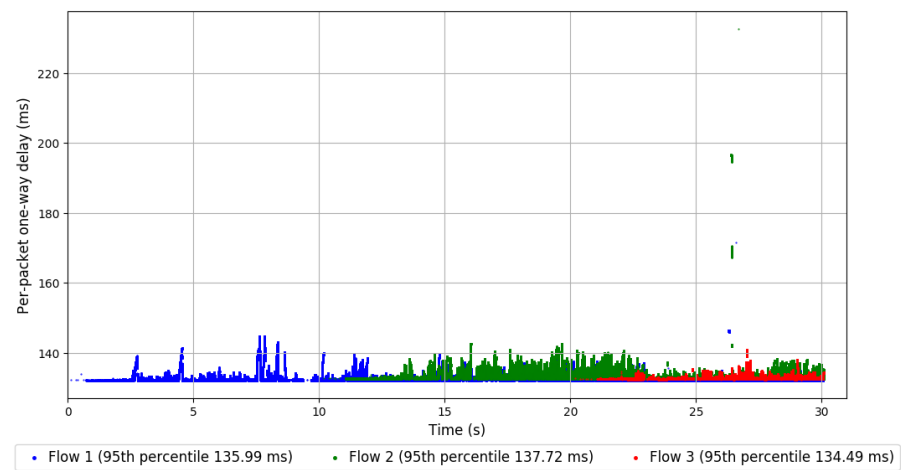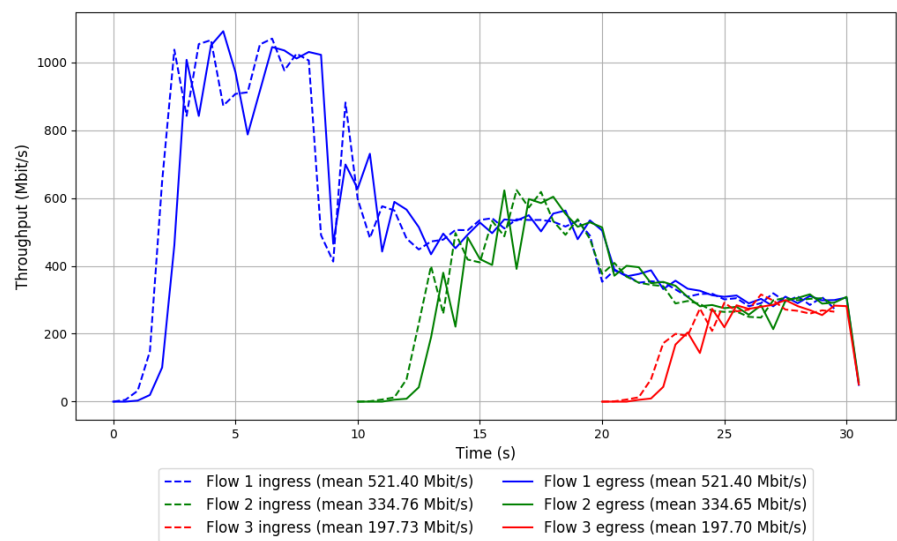
Run 2: Report of FillP — Data Link

```
Run 3: Statistics of FillP

Start at: 2018-12-20 14:25:20
End at: 2018-12-20 14:25:50
Local clock offset: 1.757 ms
Remote clock offset: 0.256 ms


# Below is generated by plot.py at 2018-12-20 16:37:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 770.92 Mbit/s
95th percentile per-packet one-way delay: 143.077 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 466.81 Mbit/s
95th percentile per-packet one-way delay: 151.577 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 340.19 Mbit/s
95th percentile per-packet one-way delay: 136.189 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 236.29 Mbit/s
95th percentile per-packet one-way delay: 136.514 ms
Loss rate: 0.00%
```
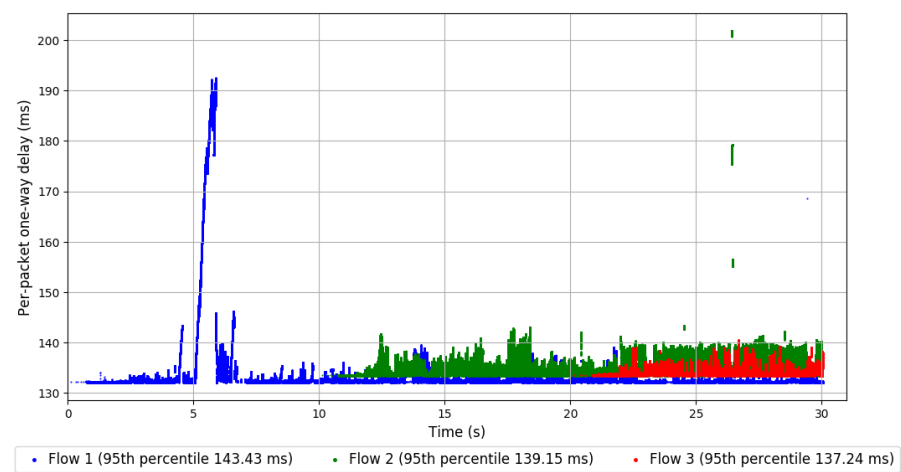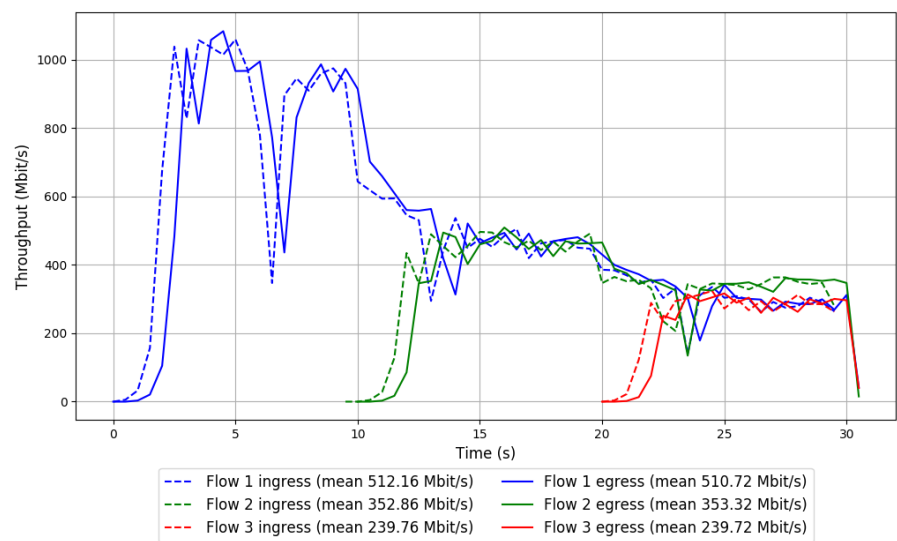
Run 3: Report of FillP — Data Link

```
Run 4: Statistics of FillP

Start at: 2018-12-20 15:01:21
End at: 2018-12-20 15:01:51
Local clock offset: 1.512 ms
Remote clock offset: 0.003 ms


# Below is generated by plot.py at 2018-12-20 16:41:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 788.35 Mbit/s
95th percentile per-packet one-way delay: 158.955 ms
Loss rate: 0.28%
-- Flow 1:
Average throughput: 484.89 Mbit/s
95th percentile per-packet one-way delay: 171.679 ms
Loss rate: 0.45%
-- Flow 2:
Average throughput: 331.02 Mbit/s
95th percentile per-packet one-way delay: 135.583 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 252.23 Mbit/s
95th percentile per-packet one-way delay: 136.795 ms
Loss rate: 0.00%
```
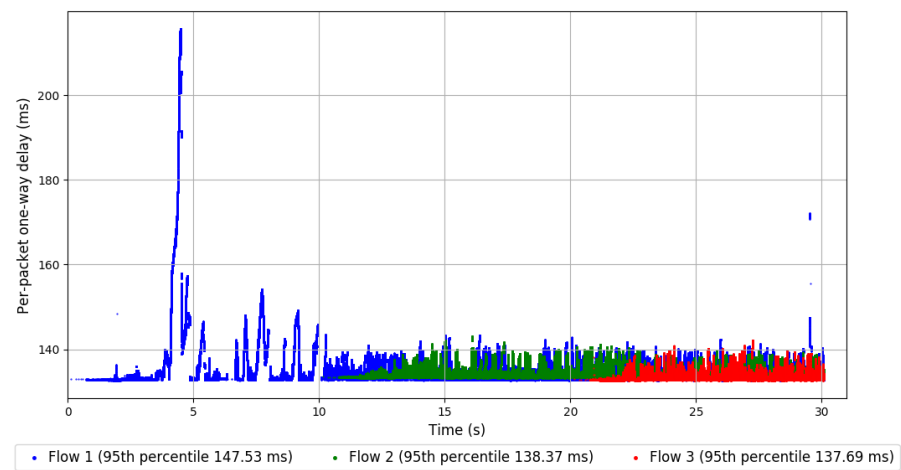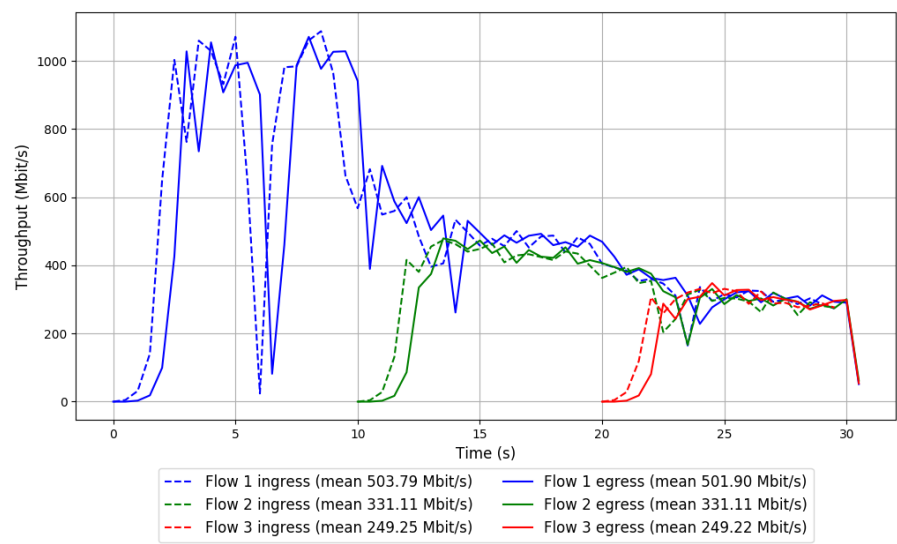
Run 4: Report of FillP — Data Link

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```
Run 5: Statistics of FillP

Start at: 2018-12-20 15:37:12
End at: 2018-12-20 15:37:42
Local clock offset: -0.155 ms
Remote clock offset: -0.318 ms


# Below is generated by plot.py at 2018-12-20 16:42:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 808.73 Mbit/s
95th percentile per-packet one-way delay: 136.998 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 521.40 Mbit/s
95th percentile per-packet one-way delay: 135.988 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 334.65 Mbit/s
95th percentile per-packet one-way delay: 137.720 ms
Loss rate: 0.03%
-- Flow 3:
Average throughput: 197.70 Mbit/s
95th percentile per-packet one-way delay: 134.487 ms
Loss rate: 0.00%
```

Run 5: Report of FillP — Data Link

- - - Flow 1 ingress (mean 521.40 Mbit/s) ——— Flow 1 egress (mean 521.40 Mbit/s)
- - - Flow 2 ingress (mean 334.76 Mbit/s) ——— Flow 2 egress (mean 334.65 Mbit/s)
- - - Flow 3 ingress (mean 197.73 Mbit/s) ——— Flow 3 egress (mean 197.70 Mbit/s)

· Flow 1 (95th percentile 135.99 ms)   · Flow 2 (95th percentile 137.72 ms)   · Flow 3 (95th percentile 134.49 ms)

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```
Run 1: Statistics of FillP-Sheep

Start at: 2018-12-20 13:07:20
End at: 2018-12-20 13:07:50
Local clock offset: -0.138 ms
Remote clock offset: -0.049 ms


# Below is generated by plot.py at 2018-12-20 16:43:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 824.99 Mbit/s
95th percentile per-packet one-way delay: 139.273 ms
Loss rate: 0.17%
-- Flow 1:
Average throughput: 510.72 Mbit/s
95th percentile per-packet one-way delay: 143.432 ms
Loss rate: 0.28%
-- Flow 2:
Average throughput: 353.32 Mbit/s
95th percentile per-packet one-way delay: 139.149 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 239.72 Mbit/s
95th percentile per-packet one-way delay: 137.244 ms
Loss rate: 0.00%
```
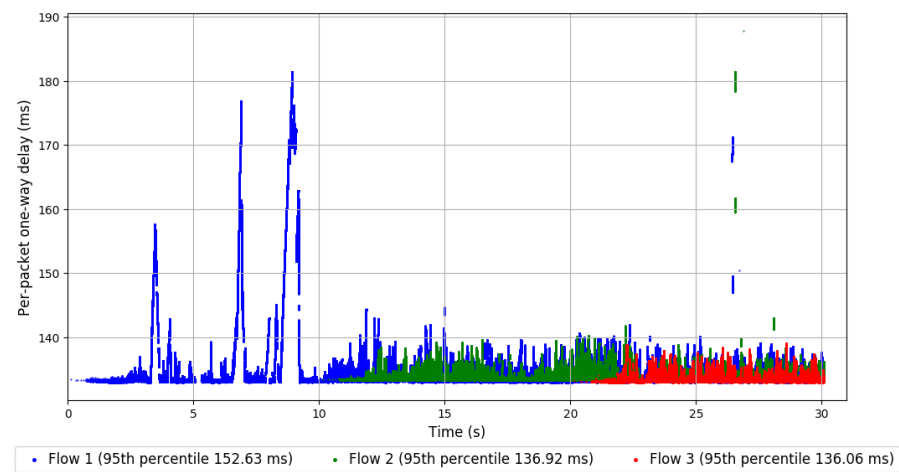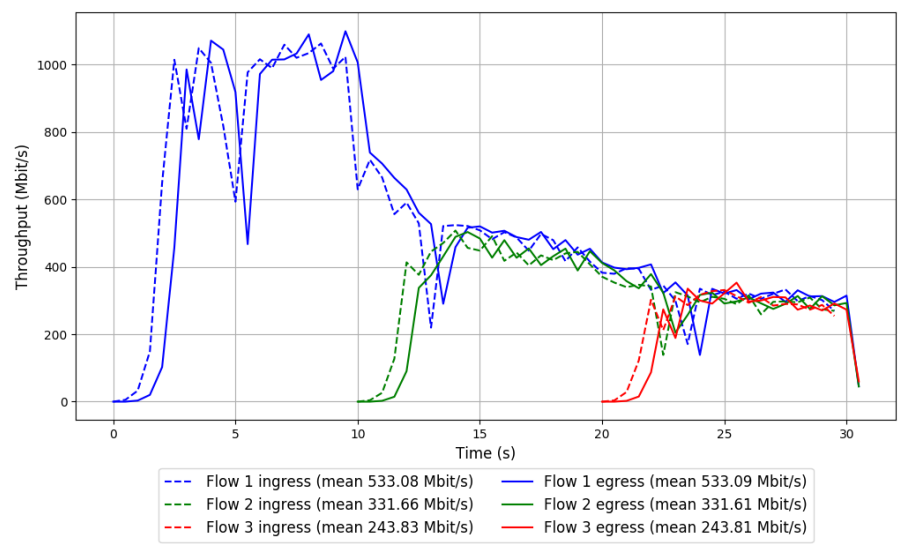
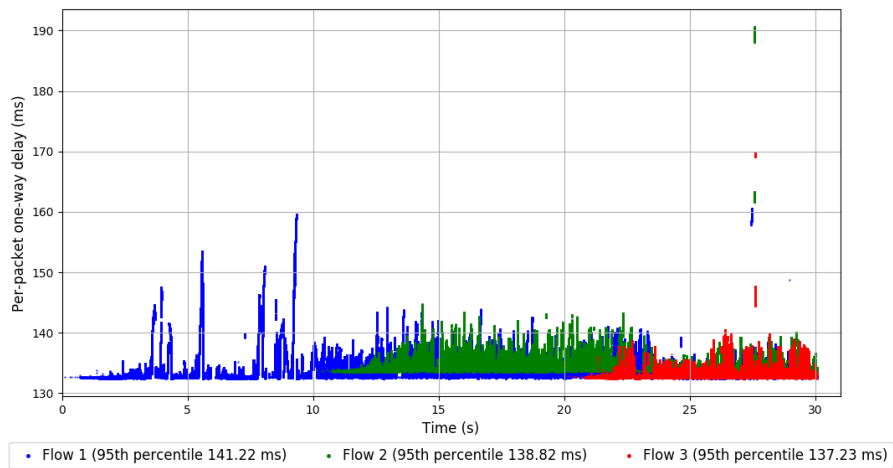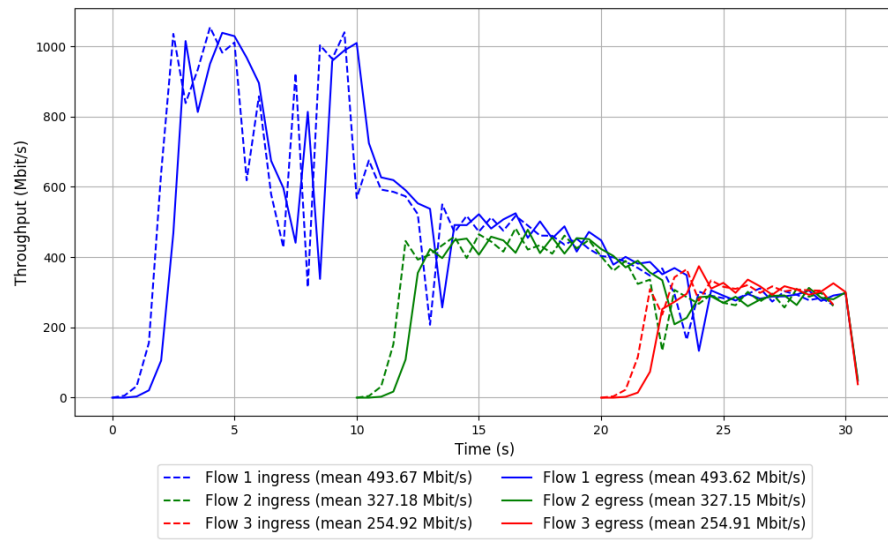Run 1: Report of FillP-Sheep — Data Link

Flow 1 ingress (mean 512.16 Mbit/s) --- Flow 1 egress (mean 510.72 Mbit/s)
Flow 2 ingress (mean 352.86 Mbit/s) --- Flow 2 egress (mean 353.32 Mbit/s)
Flow 3 ingress (mean 239.76 Mbit/s) --- Flow 3 egress (mean 239.72 Mbit/s)

Flow 1 (95th percentile 143.43 ms)   Flow 2 (95th percentile 139.15 ms)   Flow 3 (95th percentile 137.24 ms)

```
Run 2: Statistics of FillP-Sheep

Start at: 2018-12-20 13:43:18
End at: 2018-12-20 13:43:48
Local clock offset: -0.12 ms
Remote clock offset: -0.075 ms

# Below is generated by plot.py at 2018-12-20 16:43:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 804.93 Mbit/s
95th percentile per-packet one-way delay: 143.699 ms
Loss rate: 0.23%
-- Flow 1:
Average throughput: 501.90 Mbit/s
95th percentile per-packet one-way delay: 147.528 ms
Loss rate: 0.37%
-- Flow 2:
Average throughput: 331.11 Mbit/s
95th percentile per-packet one-way delay: 138.365 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 249.22 Mbit/s
95th percentile per-packet one-way delay: 137.693 ms
Loss rate: 0.00%
```
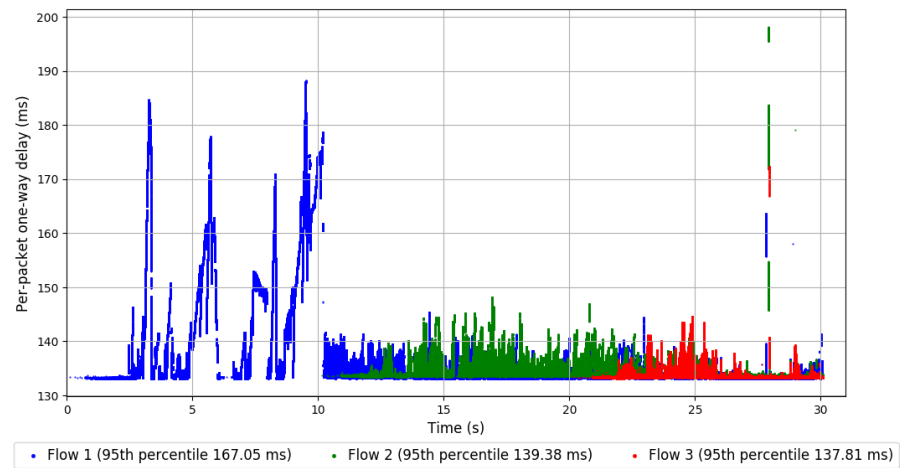
Run 2: Report of FillP-Sheep — Data Link

```
Run 3: Statistics of FillP-Sheep

Start at: 2018-12-20 14:18:48
End at: 2018-12-20 14:19:18
Local clock offset: 0.097 ms
Remote clock offset: 0.273 ms


# Below is generated by plot.py at 2018-12-20 16:44:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 834.16 Mbit/s
95th percentile per-packet one-way delay: 142.733 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 533.09 Mbit/s
95th percentile per-packet one-way delay: 152.628 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 331.61 Mbit/s
95th percentile per-packet one-way delay: 136.924 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 243.81 Mbit/s
95th percentile per-packet one-way delay: 136.058 ms
Loss rate: 0.00%
```
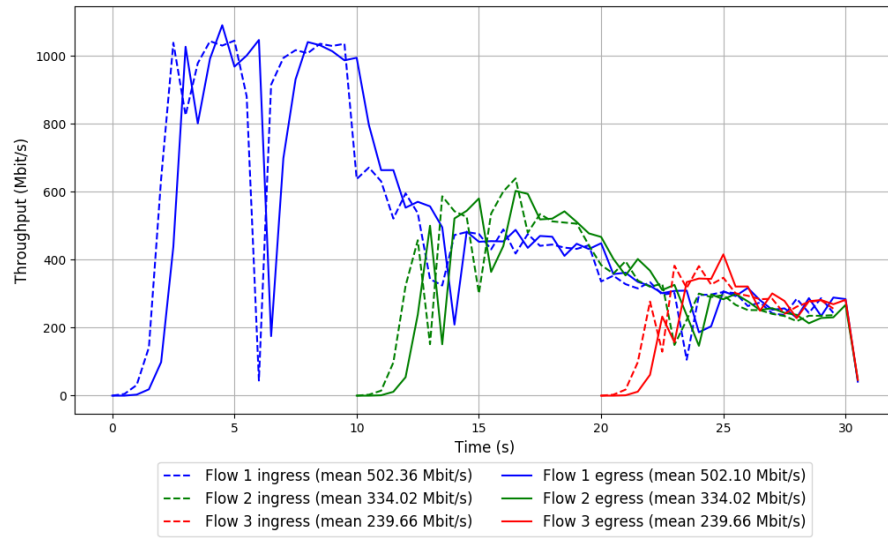
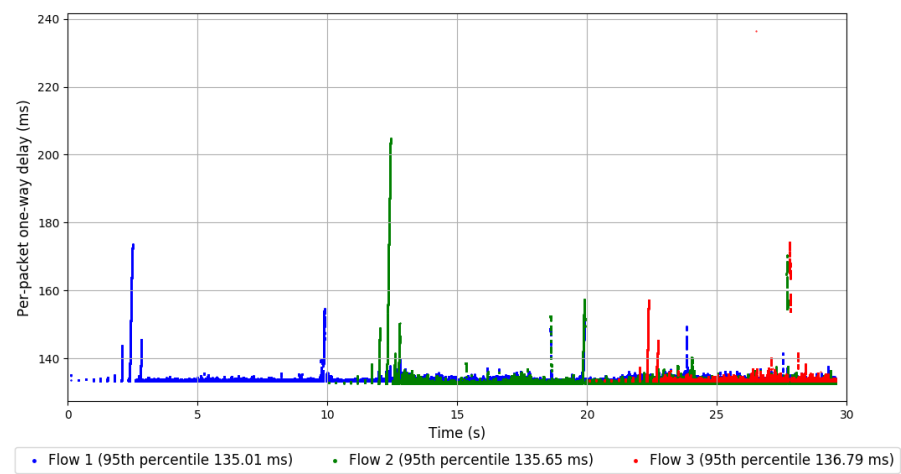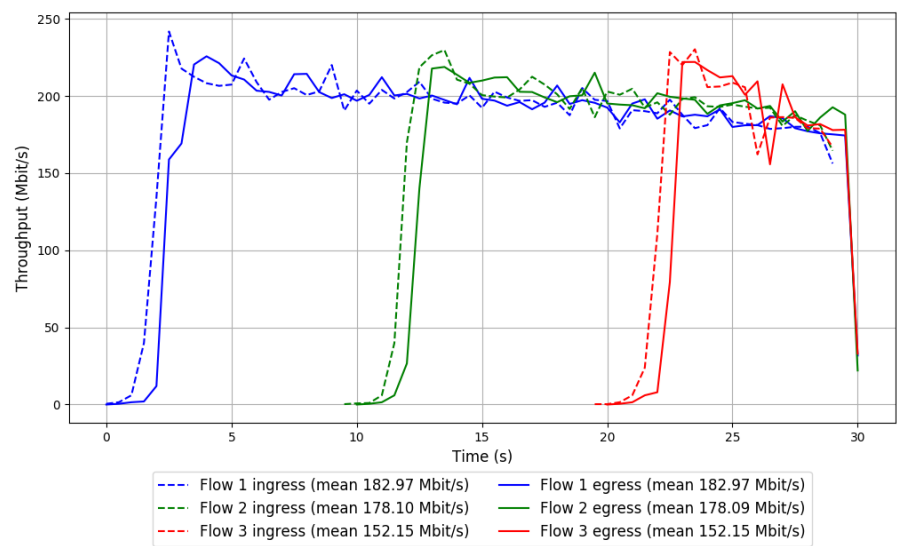Run 3: Report of FillP-Sheep — Data Link

- - - Flow 1 ingress (mean 533.08 Mbit/s)   —— Flow 1 egress (mean 533.09 Mbit/s)
- - - Flow 2 ingress (mean 331.66 Mbit/s)   —— Flow 2 egress (mean 331.61 Mbit/s)
- - - Flow 3 ingress (mean 243.83 Mbit/s)   —— Flow 3 egress (mean 243.81 Mbit/s)

• Flow 1 (95th percentile 152.63 ms)   • Flow 2 (95th percentile 136.92 ms)   • Flow 3 (95th percentile 136.06 ms)

```
Run 4: Statistics of FillP-Sheep

Start at: 2018-12-20 14:54:45
End at: 2018-12-20 14:55:15
Local clock offset: -0.119 ms
Remote clock offset: -0.006 ms

# Below is generated by plot.py at 2018-12-20 16:44:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 795.57 Mbit/s
95th percentile per-packet one-way delay: 139.826 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 493.62 Mbit/s
95th percentile per-packet one-way delay: 141.218 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 327.15 Mbit/s
95th percentile per-packet one-way delay: 138.818 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 254.91 Mbit/s
95th percentile per-packet one-way delay: 137.234 ms
Loss rate: 0.00%
```
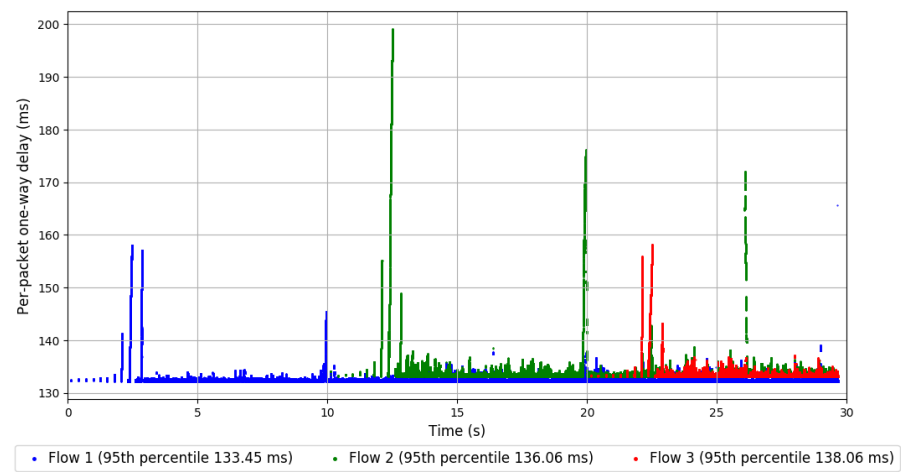
Run 4: Report of FillP-Sheep — Data Link

```
Run 5: Statistics of FillP-Sheep

Start at: 2018-12-20 15:30:39
End at: 2018-12-20 15:31:09
Local clock offset: -0.139 ms
Remote clock offset: 0.397 ms


# Below is generated by plot.py at 2018-12-20 16:46:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 803.55 Mbit/s
95th percentile per-packet one-way delay: 160.924 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 502.10 Mbit/s
95th percentile per-packet one-way delay: 167.050 ms
Loss rate: 0.05%
-- Flow 2:
Average throughput: 334.02 Mbit/s
95th percentile per-packet one-way delay: 139.385 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 239.66 Mbit/s
95th percentile per-packet one-way delay: 137.810 ms
Loss rate: 0.00%
```
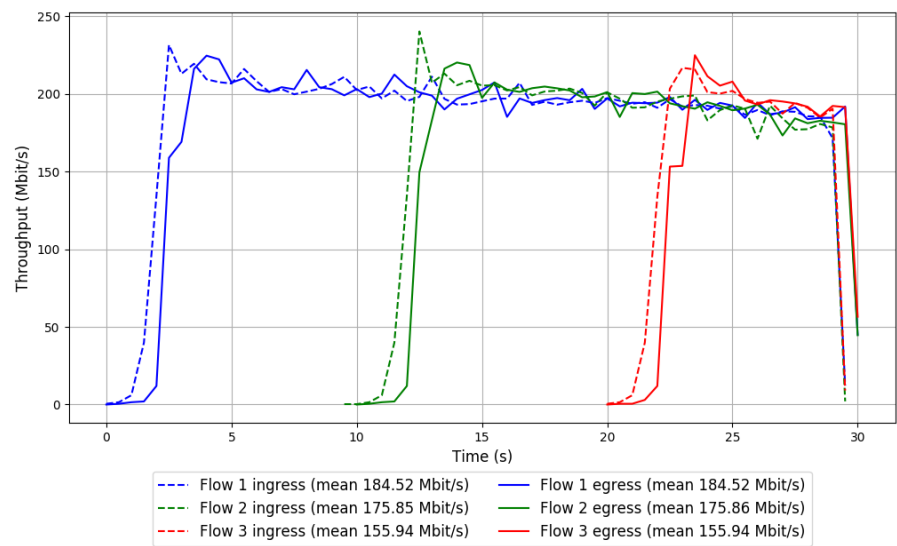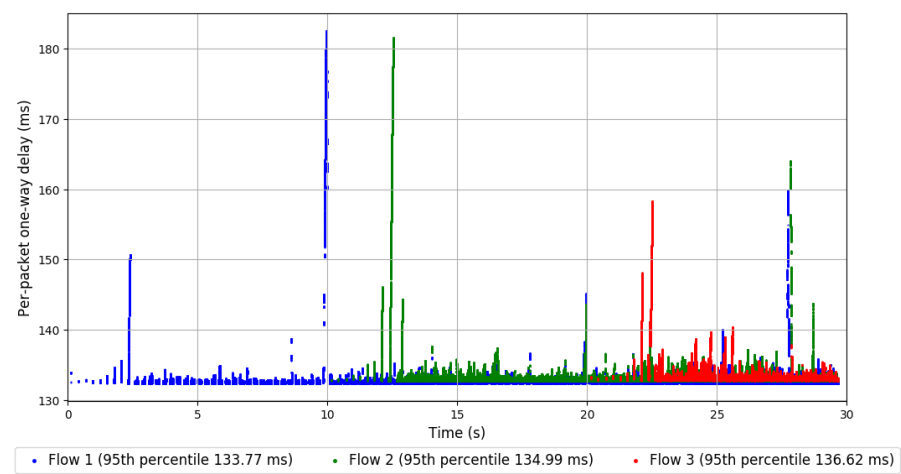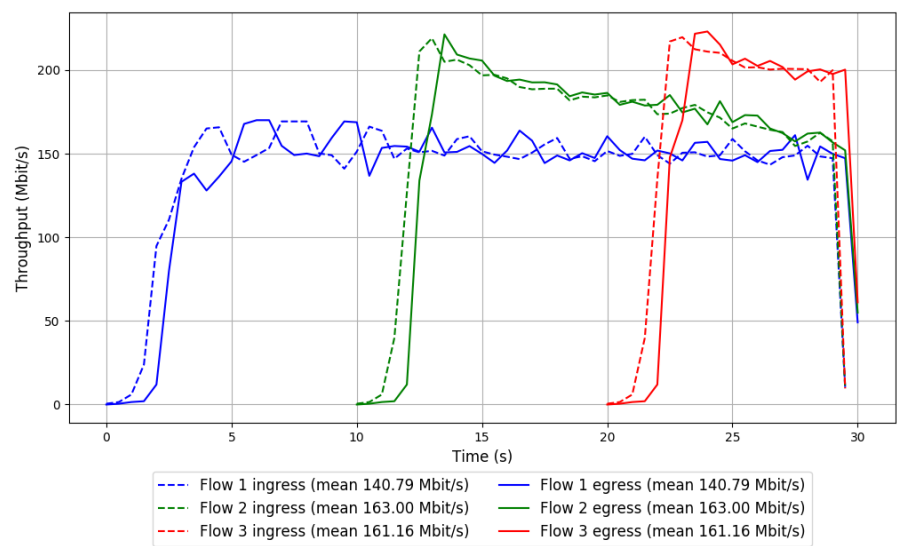
Run 5: Report of FillP-Sheep — Data Link

- - - - Flow 1 ingress (mean 502.36 Mbit/s) ——— Flow 1 egress (mean 502.10 Mbit/s)
- - - - Flow 2 ingress (mean 334.02 Mbit/s) ——— Flow 2 egress (mean 334.02 Mbit/s)
- - - - Flow 3 ingress (mean 239.66 Mbit/s) ——— Flow 3 egress (mean 239.66 Mbit/s)

- Flow 1 (95th percentile 167.05 ms)   • Flow 2 (95th percentile 139.38 ms)   • Flow 3 (95th percentile 137.81 ms)

```
Run 1: Statistics of Indigo

Start at: 2018-12-20 12:48:31
End at: 2018-12-20 12:49:01
Local clock offset: -0.099 ms
Remote clock offset: -0.035 ms


# Below is generated by plot.py at 2018-12-20 16:50:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 350.16 Mbit/s
95th percentile per-packet one-way delay: 135.319 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 182.97 Mbit/s
95th percentile per-packet one-way delay: 135.012 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 178.09 Mbit/s
95th percentile per-packet one-way delay: 135.652 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 152.15 Mbit/s
95th percentile per-packet one-way delay: 136.790 ms
Loss rate: 0.00%
```
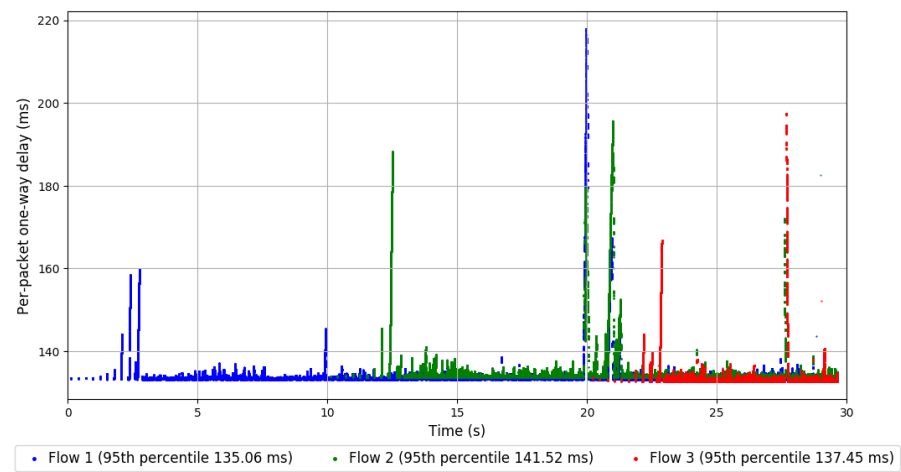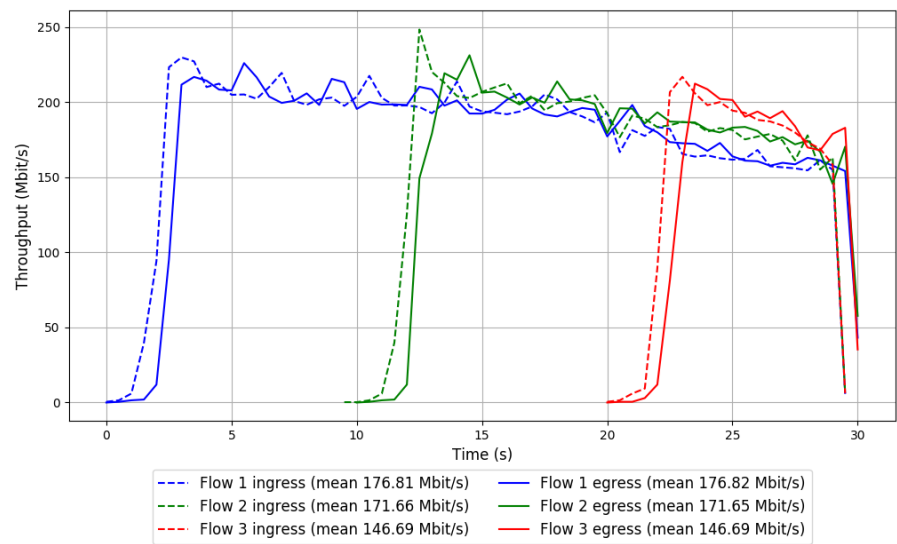
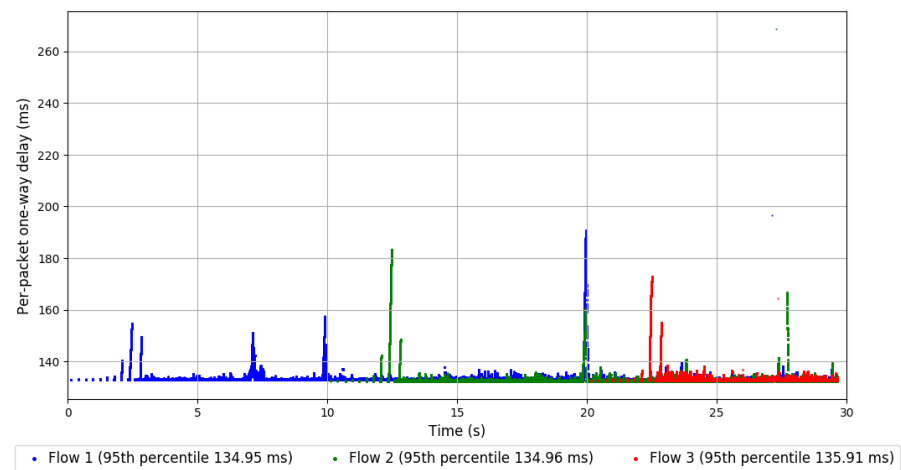# Run 1: Report of Indigo — Data Link

```
Run 2: Statistics of Indigo

Start at: 2018-12-20 13:23:47
End at: 2018-12-20 13:24:17
Local clock offset: 0.033 ms
Remote clock offset: -0.03 ms


# Below is generated by plot.py at 2018-12-20 16:53:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 350.86 Mbit/s
95th percentile per-packet one-way delay: 134.946 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 184.52 Mbit/s
95th percentile per-packet one-way delay: 133.449 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 175.86 Mbit/s
95th percentile per-packet one-way delay: 136.065 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 155.94 Mbit/s
95th percentile per-packet one-way delay: 138.063 ms
Loss rate: 0.00%
```
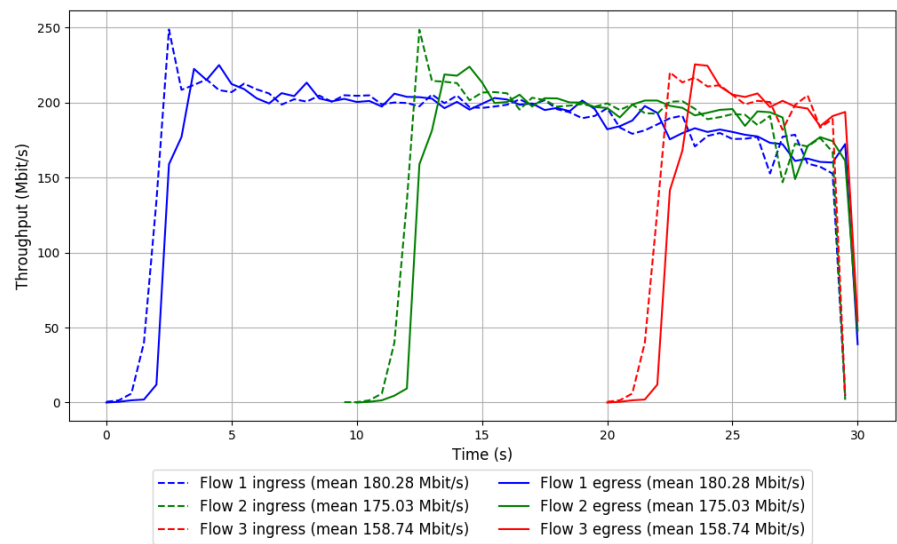
Run 2: Report of Indigo — Data Link

```
Run 3: Statistics of Indigo

Start at: 2018-12-20 13:59:50
End at: 2018-12-20 14:00:20
Local clock offset: -0.148 ms
Remote clock offset: -0.07 ms


# Below is generated by plot.py at 2018-12-20 16:53:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 300.43 Mbit/s
95th percentile per-packet one-way delay: 134.662 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 140.79 Mbit/s
95th percentile per-packet one-way delay: 133.770 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 163.00 Mbit/s
95th percentile per-packet one-way delay: 134.986 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 161.16 Mbit/s
95th percentile per-packet one-way delay: 136.619 ms
Loss rate: 0.00%
```
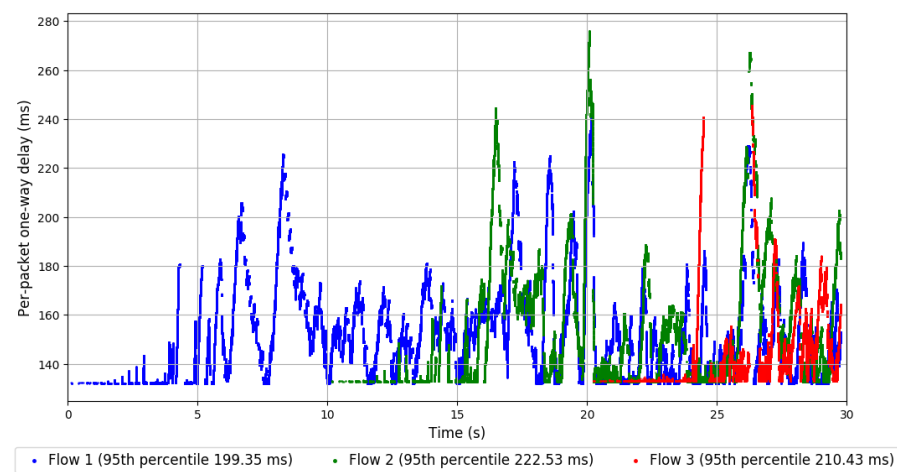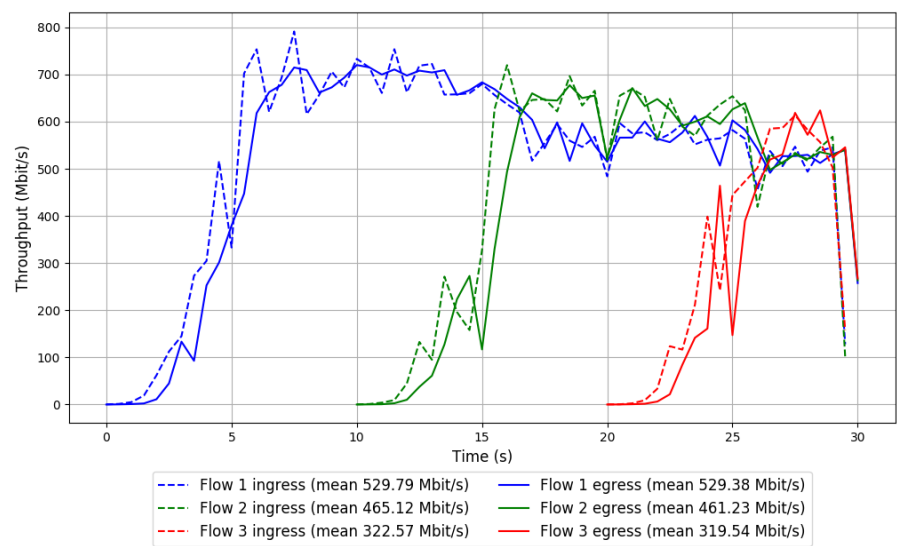
Run 3: Report of Indigo — Data Link

```
Run 4: Statistics of Indigo

Start at: 2018-12-20 14:35:29
End at: 2018-12-20 14:35:59
Local clock offset: -0.108 ms
Remote clock offset: 0.256 ms


# Below is generated by plot.py at 2018-12-20 16:54:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 337.25 Mbit/s
95th percentile per-packet one-way delay: 136.710 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 176.82 Mbit/s
95th percentile per-packet one-way delay: 135.062 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 171.65 Mbit/s
95th percentile per-packet one-way delay: 141.522 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 146.69 Mbit/s
95th percentile per-packet one-way delay: 137.453 ms
Loss rate: 0.00%
```

Run 4: Report of Indigo — Data Link

```
Run 5: Statistics of Indigo

Start at: 2018-12-20 15:11:46
End at: 2018-12-20 15:12:16
Local clock offset: 0.051 ms
Remote clock offset: -0.345 ms


# Below is generated by plot.py at 2018-12-20 16:54:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 347.17 Mbit/s
95th percentile per-packet one-way delay: 135.186 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 180.28 Mbit/s
95th percentile per-packet one-way delay: 134.953 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 175.03 Mbit/s
95th percentile per-packet one-way delay: 134.962 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 158.74 Mbit/s
95th percentile per-packet one-way delay: 135.912 ms
Loss rate: 0.00%
```
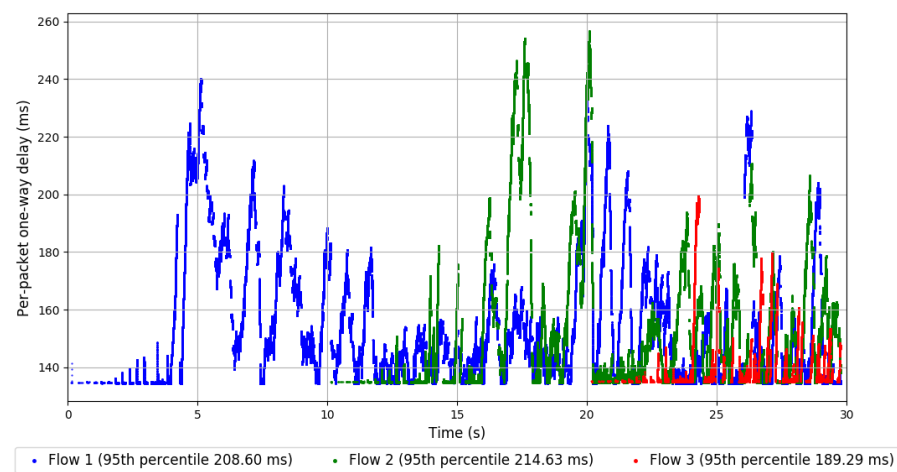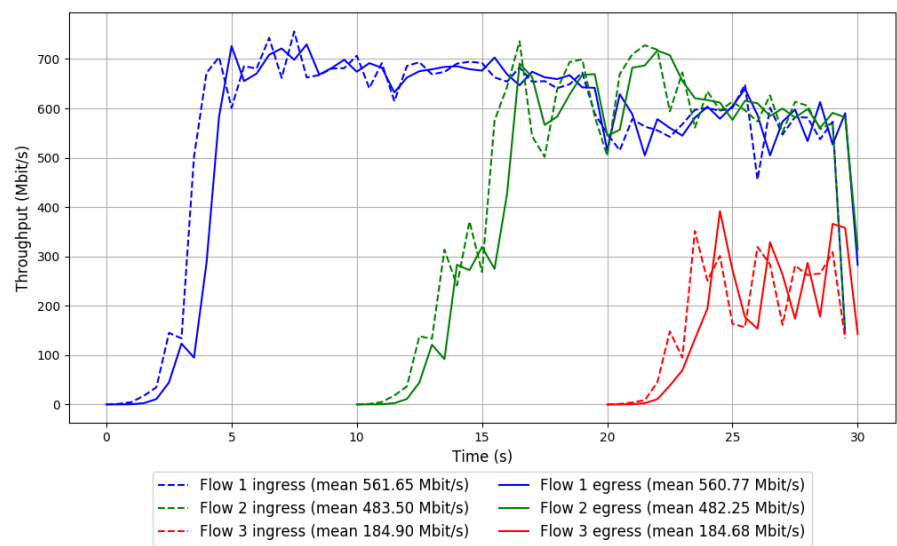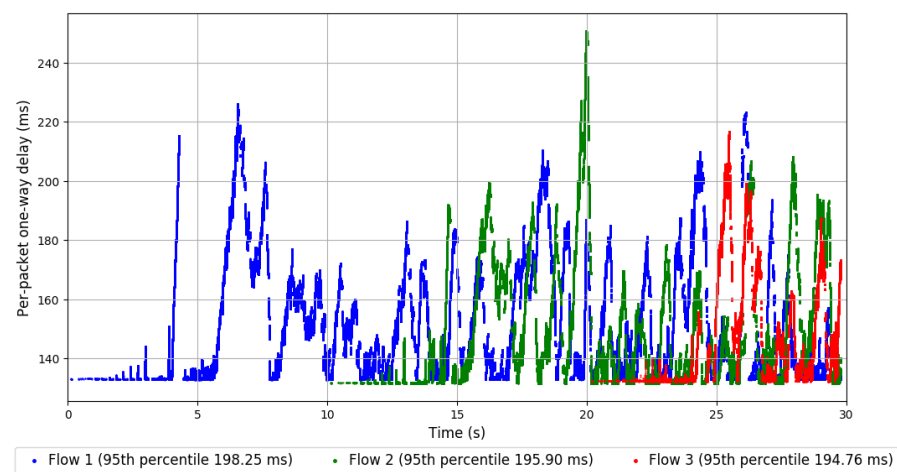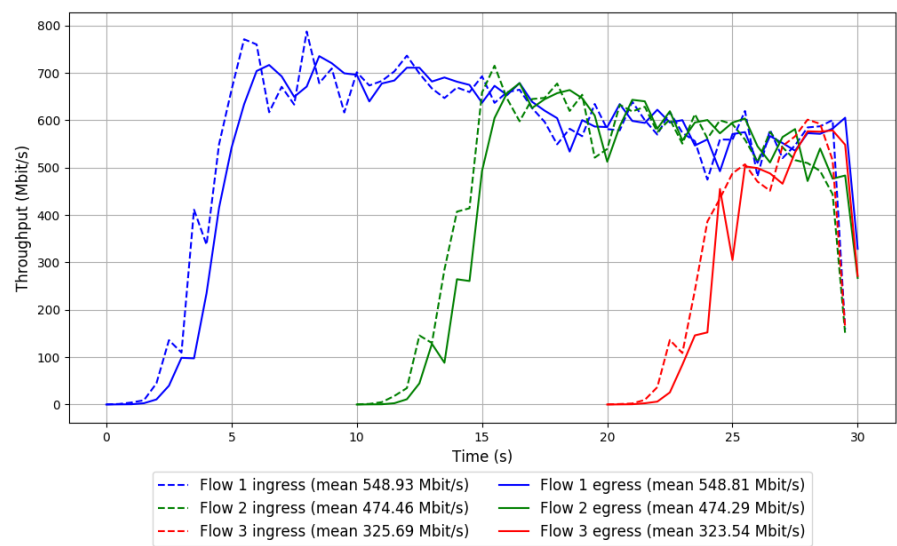
Run 5: Report of Indigo — Data Link

```
Run 1: Statistics of Indigo-MusesD

Start at: 2018-12-20 13:11:41
End at: 2018-12-20 13:12:11
Local clock offset: 0.264 ms
Remote clock offset: -0.021 ms


# Below is generated by plot.py at 2018-12-20 17:00:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 937.17 Mbit/s
95th percentile per-packet one-way delay: 206.482 ms
Loss rate: 0.41%
-- Flow 1:
Average throughput: 529.38 Mbit/s
95th percentile per-packet one-way delay: 199.353 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 461.23 Mbit/s
95th percentile per-packet one-way delay: 222.529 ms
Loss rate: 0.84%
-- Flow 3:
Average throughput: 319.54 Mbit/s
95th percentile per-packet one-way delay: 210.426 ms
Loss rate: 0.94%
```
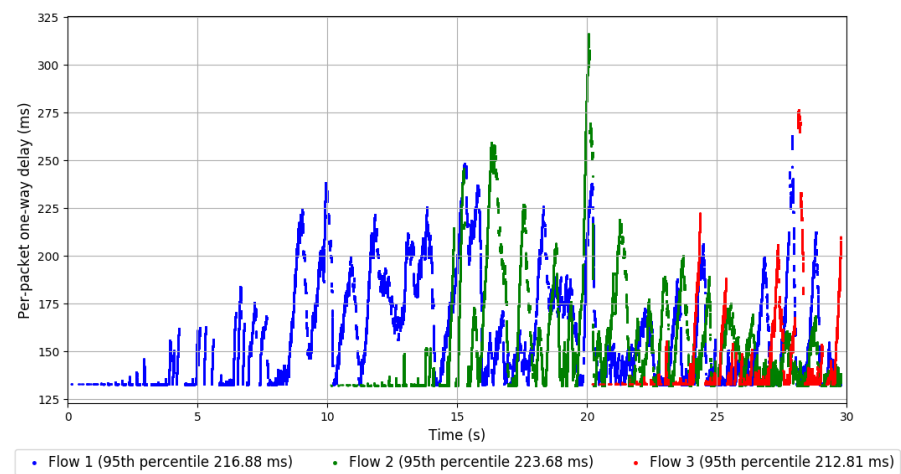
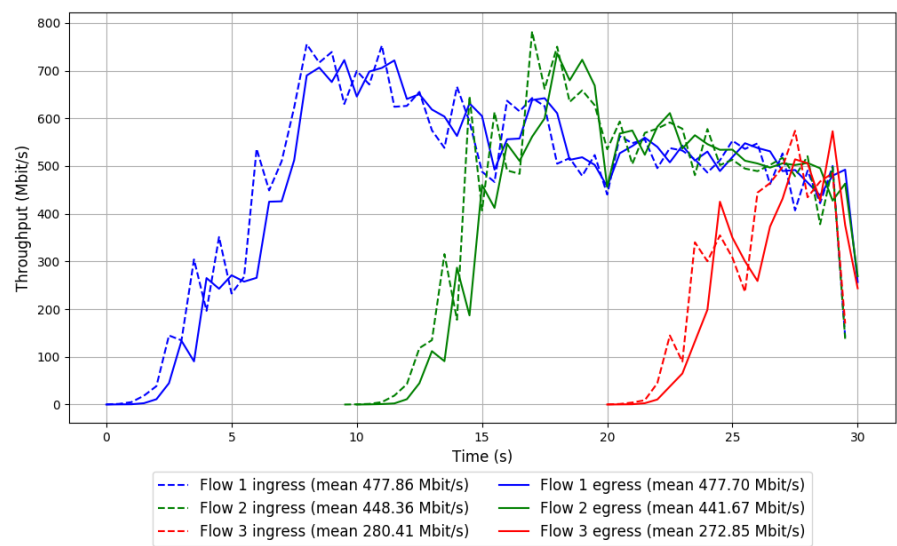Run 1: Report of Indigo-MusesD — Data Link

```
Run 2: Statistics of Indigo-MusesD

Start at: 2018-12-20 13:47:41
End at: 2018-12-20 13:48:11
Local clock offset: -1.415 ms
Remote clock offset: 0.277 ms


# Below is generated by plot.py at 2018-12-20 17:00:47
# Datalink statistics
-- Total of 3 flows:
Average throughput: 940.00 Mbit/s
95th percentile per-packet one-way delay: 208.306 ms
Loss rate: 0.18%
-- Flow 1:
Average throughput: 560.77 Mbit/s
95th percentile per-packet one-way delay: 208.596 ms
Loss rate: 0.16%
-- Flow 2:
Average throughput: 482.25 Mbit/s
95th percentile per-packet one-way delay: 214.633 ms
Loss rate: 0.26%
-- Flow 3:
Average throughput: 184.68 Mbit/s
95th percentile per-packet one-way delay: 189.291 ms
Loss rate: 0.00%
```

Run 2: Report of Indigo-MusesD — Data Link

- --- Flow 1 ingress (mean 561.65 Mbit/s) —— Flow 1 egress (mean 560.77 Mbit/s)
- --- Flow 2 ingress (mean 483.50 Mbit/s) —— Flow 2 egress (mean 482.25 Mbit/s)
- --- Flow 3 ingress (mean 184.90 Mbit/s) —— Flow 3 egress (mean 184.68 Mbit/s)

- Flow 1 (95th percentile 208.60 ms) • Flow 2 (95th percentile 214.63 ms) • Flow 3 (95th percentile 189.29 ms)

```
Run 3: Statistics of Indigo-MusesD

Start at: 2018-12-20 14:23:05
End at: 2018-12-20 14:23:35
Local clock offset: -0.017 ms
Remote clock offset: -0.438 ms

# Below is generated by plot.py at 2018-12-20 17:03:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 967.92 Mbit/s
95th percentile per-packet one-way delay: 196.538 ms
Loss rate: 0.09%
-- Flow 1:
Average throughput: 548.81 Mbit/s
95th percentile per-packet one-way delay: 198.255 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 474.29 Mbit/s
95th percentile per-packet one-way delay: 195.899 ms
Loss rate: 0.03%
-- Flow 3:
Average throughput: 323.54 Mbit/s
95th percentile per-packet one-way delay: 194.761 ms
Loss rate: 0.64%
```
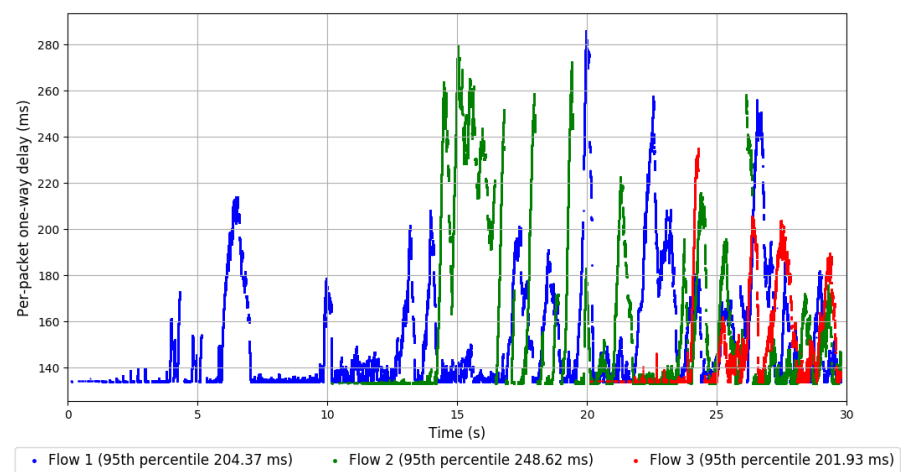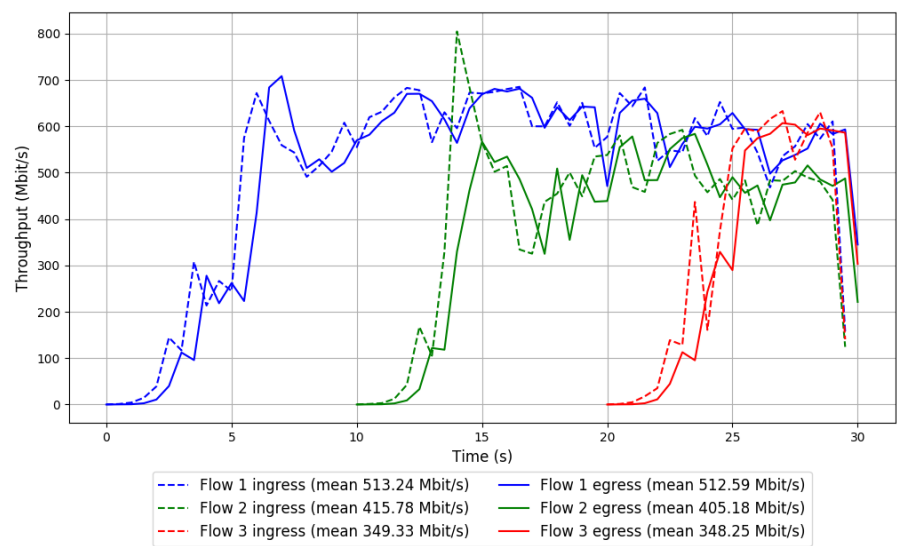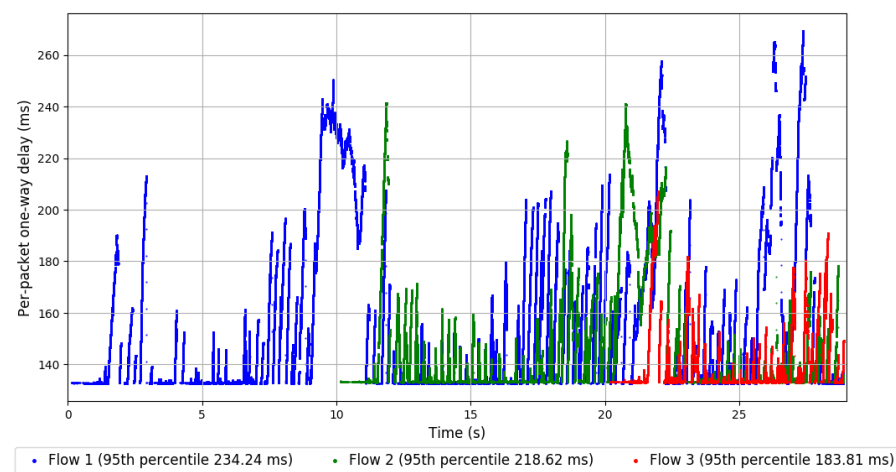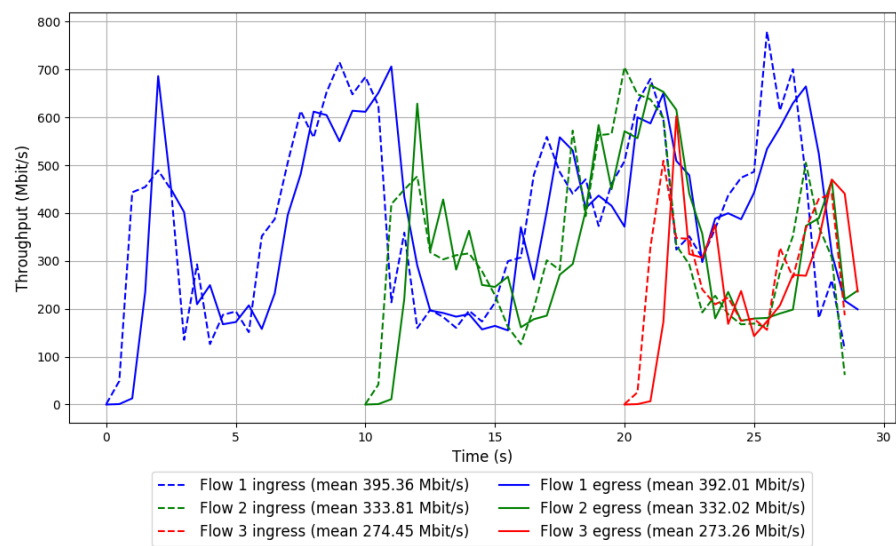
Run 3: Report of Indigo-MusesD — Data Link

Flow 1 ingress (mean 548.93 Mbit/s) --- Flow 1 egress (mean 548.81 Mbit/s)
Flow 2 ingress (mean 474.46 Mbit/s) --- Flow 2 egress (mean 474.29 Mbit/s)
Flow 3 ingress (mean 325.69 Mbit/s) --- Flow 3 egress (mean 323.54 Mbit/s)

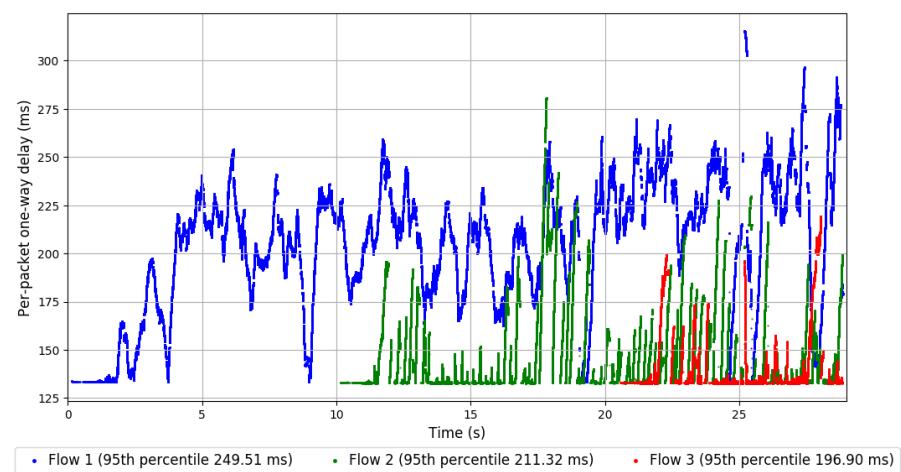Flow 1 (95th percentile 198.25 ms)   Flow 2 (95th percentile 195.90 ms)   Flow 3 (95th percentile 194.76 ms)

```
Run 4: Statistics of Indigo-MusesD

Start at: 2018-12-20 14:59:10
End at: 2018-12-20 14:59:40
Local clock offset: 0.06 ms
Remote clock offset: -0.413 ms


# Below is generated by plot.py at 2018-12-20 17:07:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 858.52 Mbit/s
95th percentile per-packet one-way delay: 218.115 ms
Loss rate: 0.81%
-- Flow 1:
Average throughput: 477.70 Mbit/s
95th percentile per-packet one-way delay: 216.882 ms
Loss rate: 0.03%
-- Flow 2:
Average throughput: 441.67 Mbit/s
95th percentile per-packet one-way delay: 223.679 ms
Loss rate: 1.49%
-- Flow 3:
Average throughput: 272.85 Mbit/s
95th percentile per-packet one-way delay: 212.814 ms
Loss rate: 2.68%
```
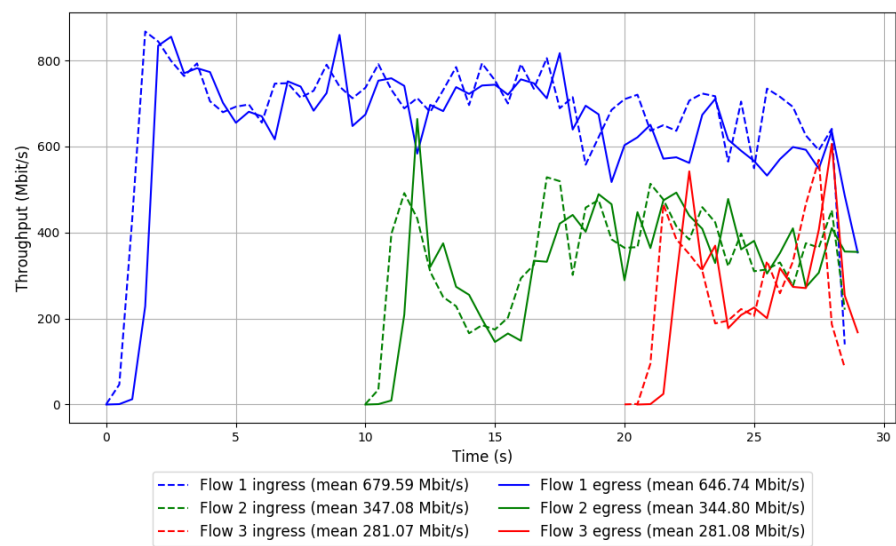
Run 4: Report of Indigo-MusesD — Data Link

```
Run 5: Statistics of Indigo-MusesD

Start at: 2018-12-20 15:35:01
End at: 2018-12-20 15:35:31
Local clock offset: -0.322 ms
Remote clock offset: 0.371 ms


# Below is generated by plot.py at 2018-12-20 17:09:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 893.80 Mbit/s
95th percentile per-packet one-way delay: 230.592 ms
Loss rate: 0.88%
-- Flow 1:
Average throughput: 512.59 Mbit/s
95th percentile per-packet one-way delay: 204.367 ms
Loss rate: 0.13%
-- Flow 2:
Average throughput: 405.18 Mbit/s
95th percentile per-packet one-way delay: 248.615 ms
Loss rate: 2.54%
-- Flow 3:
Average throughput: 348.25 Mbit/s
95th percentile per-packet one-way delay: 201.930 ms
Loss rate: 0.28%
```

Run 5: Report of Indigo-MusesD — Data Link

```
Run 1: Statistics of Indigo-MusesT

Start at: 2018-12-20 13:01:25
End at: 2018-12-20 13:01:55
Local clock offset: 0.081 ms
Remote clock offset: -0.025 ms


# Below is generated by plot.py at 2018-12-20 17:09:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 690.71 Mbit/s
95th percentile per-packet one-way delay: 227.992 ms
Loss rate: 0.71%
-- Flow 1:
Average throughput: 392.01 Mbit/s
95th percentile per-packet one-way delay: 234.238 ms
Loss rate: 0.88%
-- Flow 2:
Average throughput: 332.02 Mbit/s
95th percentile per-packet one-way delay: 218.624 ms
Loss rate: 0.54%
-- Flow 3:
Average throughput: 273.26 Mbit/s
95th percentile per-packet one-way delay: 183.807 ms
Loss rate: 0.39%
```
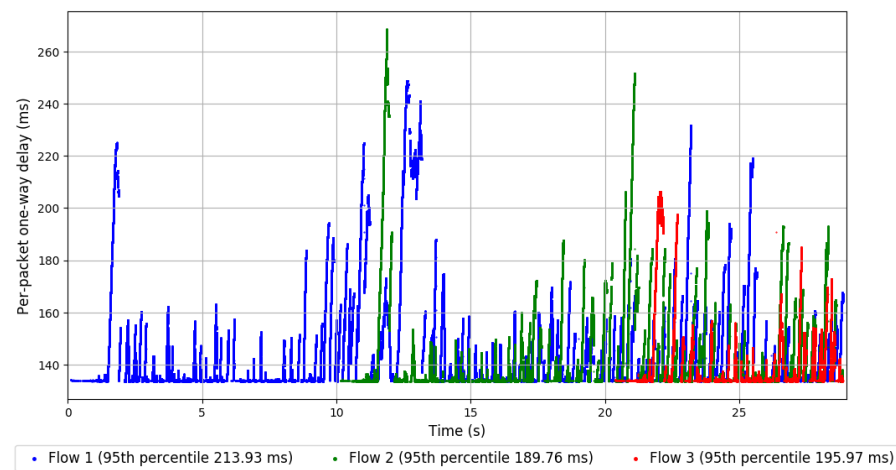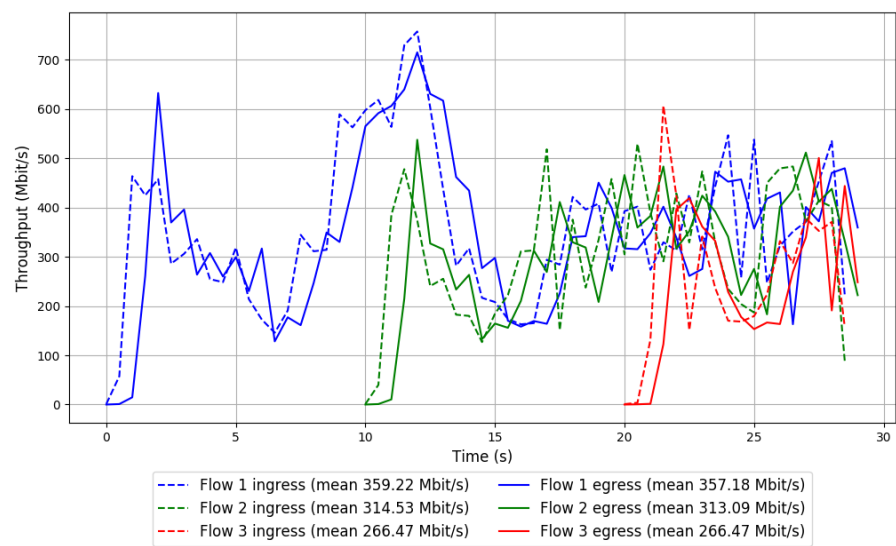
Run 1: Report of Indigo-MusesT — Data Link

```
Run 2: Statistics of Indigo-MusesT

Start at: 2018-12-20 13:36:53
End at: 2018-12-20 13:37:23
Local clock offset: -0.096 ms
Remote clock offset: -0.081 ms


# Below is generated by plot.py at 2018-12-20 17:12:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 951.89 Mbit/s
95th percentile per-packet one-way delay: 245.881 ms
Loss rate: 3.35%
-- Flow 1:
Average throughput: 646.74 Mbit/s
95th percentile per-packet one-way delay: 249.511 ms
Loss rate: 4.76%
-- Flow 2:
Average throughput: 344.80 Mbit/s
95th percentile per-packet one-way delay: 211.319 ms
Loss rate: 0.30%
-- Flow 3:
Average throughput: 281.08 Mbit/s
95th percentile per-packet one-way delay: 196.904 ms
Loss rate: 0.00%
```
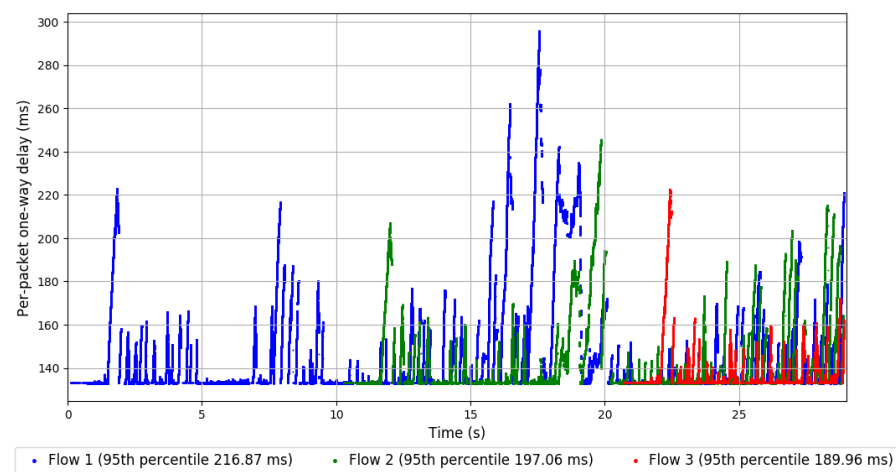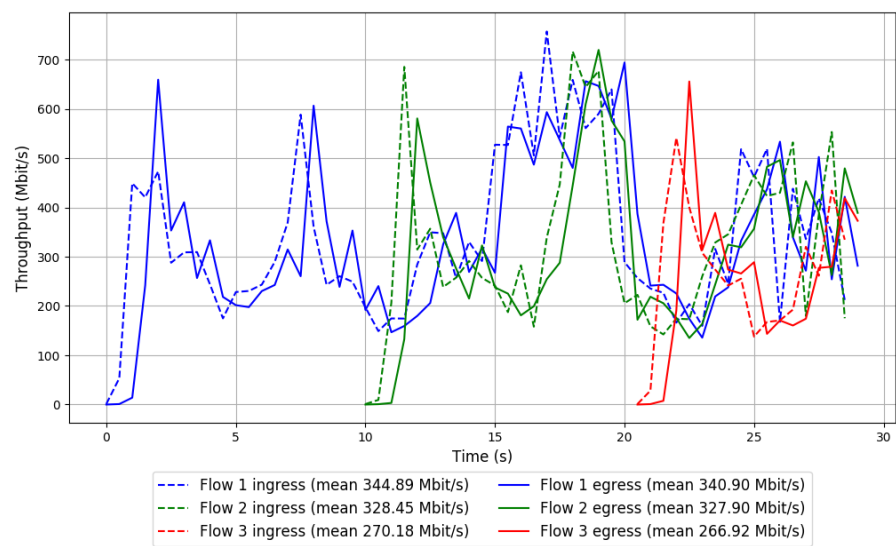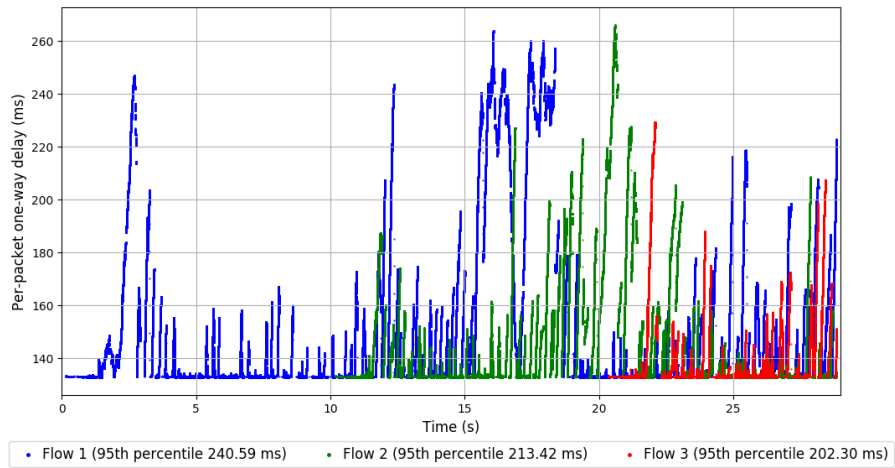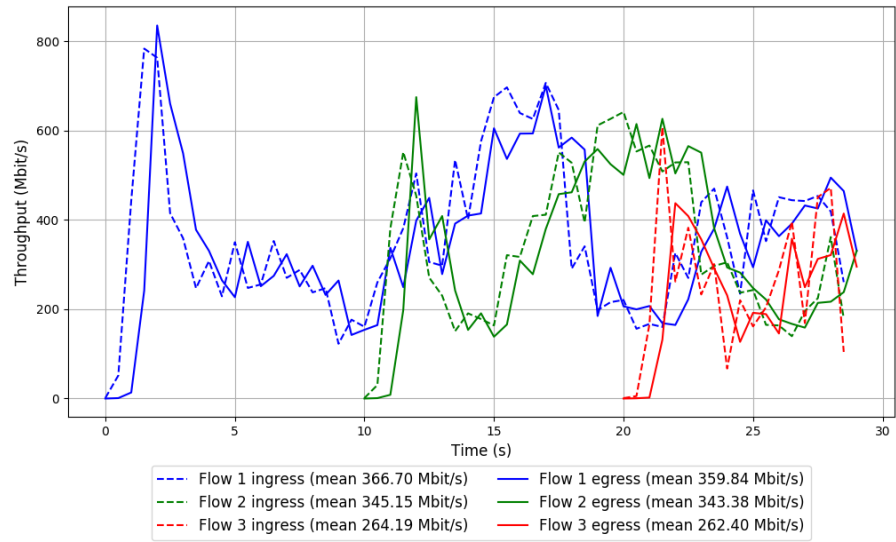
Run 2: Report of Indigo-MusesT — Data Link

```
Run 3: Statistics of Indigo-MusesT

Start at: 2018-12-20 14:12:44
End at: 2018-12-20 14:13:14
Local clock offset: -0.046 ms
Remote clock offset: 0.299 ms

# Below is generated by plot.py at 2018-12-20 17:12:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 639.32 Mbit/s
95th percentile per-packet one-way delay: 206.180 ms
Loss rate: 0.45%
-- Flow 1:
Average throughput: 357.18 Mbit/s
95th percentile per-packet one-way delay: 213.925 ms
Loss rate: 0.54%
-- Flow 2:
Average throughput: 313.09 Mbit/s
95th percentile per-packet one-way delay: 189.761 ms
Loss rate: 0.45%
-- Flow 3:
Average throughput: 266.47 Mbit/s
95th percentile per-packet one-way delay: 195.972 ms
Loss rate: 0.00%
```

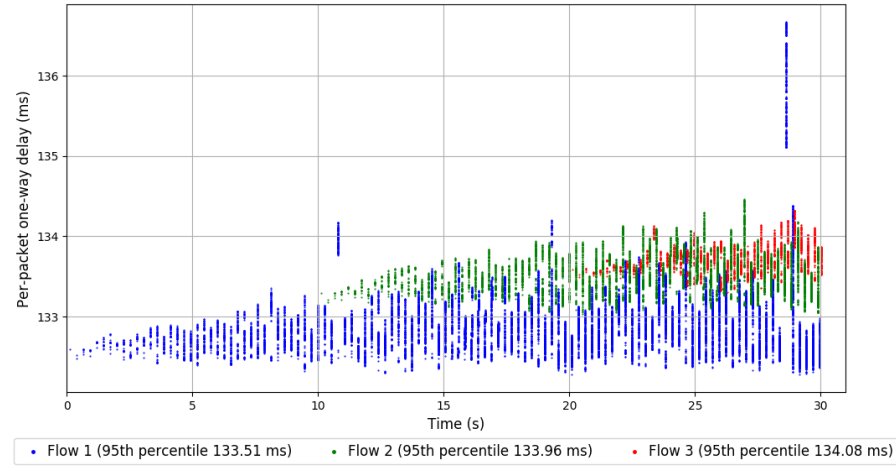Run 3: Report of Indigo-MusesT — Data Link

```
Run 4: Statistics of Indigo-MusesT

Start at: 2018-12-20 14:48:41
End at: 2018-12-20 14:49:11
Local clock offset: 0.048 ms
Remote clock offset: 0.001 ms


# Below is generated by plot.py at 2018-12-20 17:12:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 629.04 Mbit/s
95th percentile per-packet one-way delay: 212.820 ms
Loss rate: 0.75%
-- Flow 1:
Average throughput: 340.90 Mbit/s
95th percentile per-packet one-way delay: 216.866 ms
Loss rate: 1.12%
-- Flow 2:
Average throughput: 327.90 Mbit/s
95th percentile per-packet one-way delay: 197.064 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 266.92 Mbit/s
95th percentile per-packet one-way delay: 189.960 ms
Loss rate: 1.21%
```

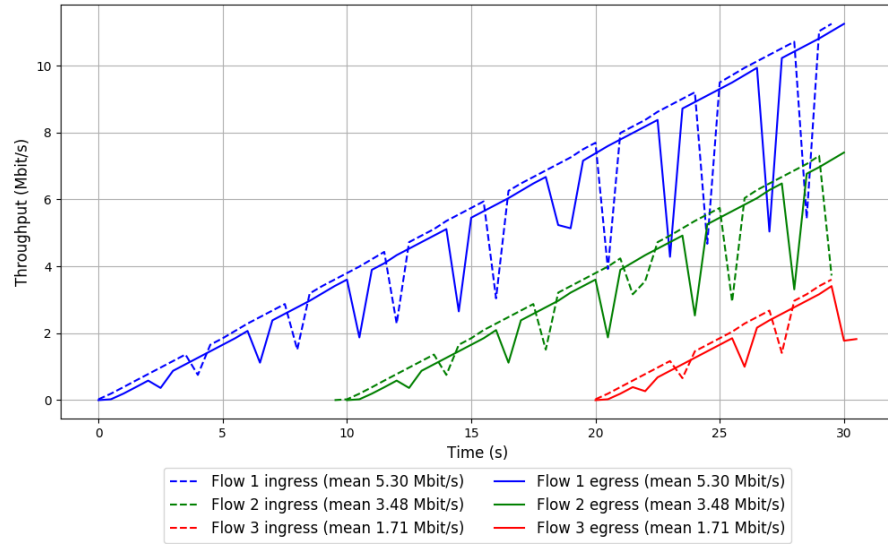Run 4: Report of Indigo-MusesT — Data Link

```
Run 5: Statistics of Indigo-MusesT

Start at: 2018-12-20 15:24:51
End at: 2018-12-20 15:25:21
Local clock offset: -0.134 ms
Remote clock offset: -0.013 ms


# Below is generated by plot.py at 2018-12-20 17:13:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 660.84 Mbit/s
95th percentile per-packet one-way delay: 235.284 ms
Loss rate: 1.16%
-- Flow 1:
Average throughput: 359.84 Mbit/s
95th percentile per-packet one-way delay: 240.593 ms
Loss rate: 1.67%
-- Flow 2:
Average throughput: 343.38 Mbit/s
95th percentile per-packet one-way delay: 213.416 ms
Loss rate: 0.51%
-- Flow 3:
Average throughput: 262.40 Mbit/s
95th percentile per-packet one-way delay: 202.303 ms
Loss rate: 0.63%
```
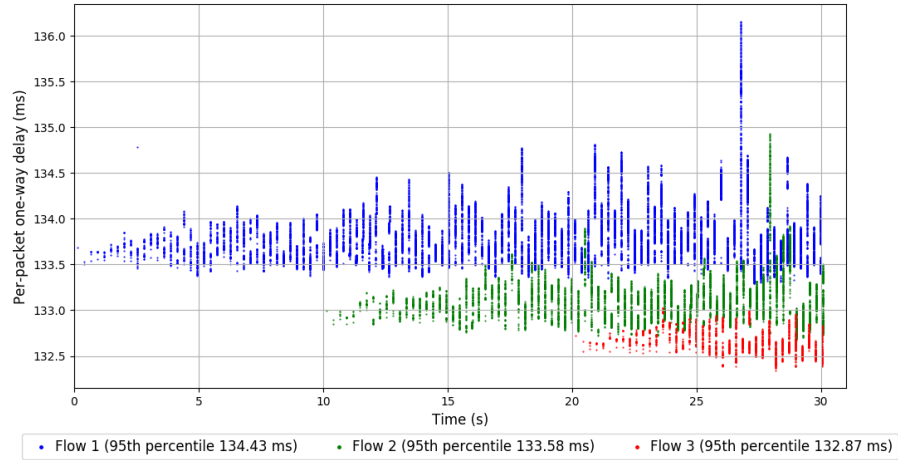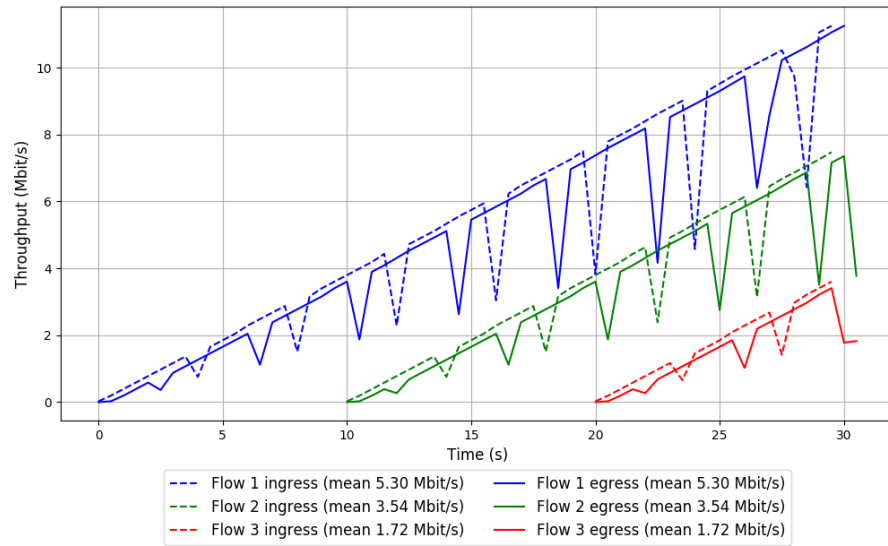
Run 5: Report of Indigo-MusesT — Data Link

```
Run 1: Statistics of LEDBAT

Start at: 2018-12-20 12:47:11
End at: 2018-12-20 12:47:41
Local clock offset: -0.022 ms
Remote clock offset: -0.032 ms

# Below is generated by plot.py at 2018-12-20 17:13:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.15 Mbit/s
95th percentile per-packet one-way delay: 133.909 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 5.30 Mbit/s
95th percentile per-packet one-way delay: 133.508 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 3.48 Mbit/s
95th percentile per-packet one-way delay: 133.957 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 1.71 Mbit/s
95th percentile per-packet one-way delay: 134.081 ms
Loss rate: 0.00%
```
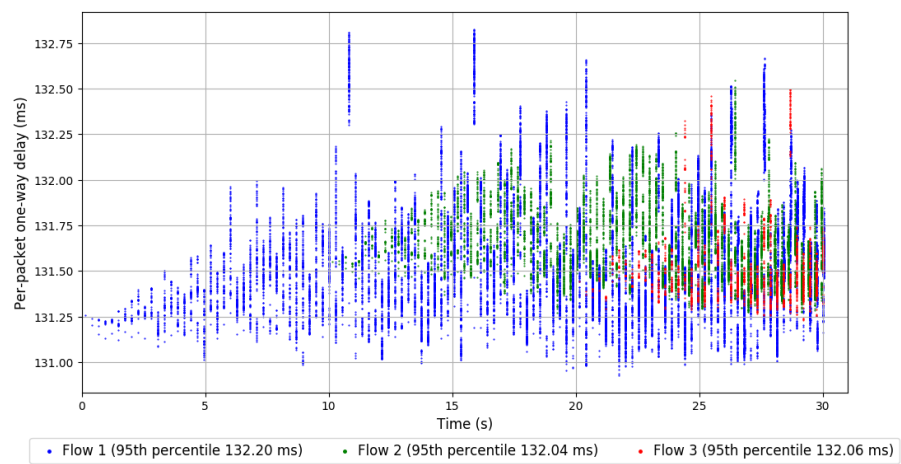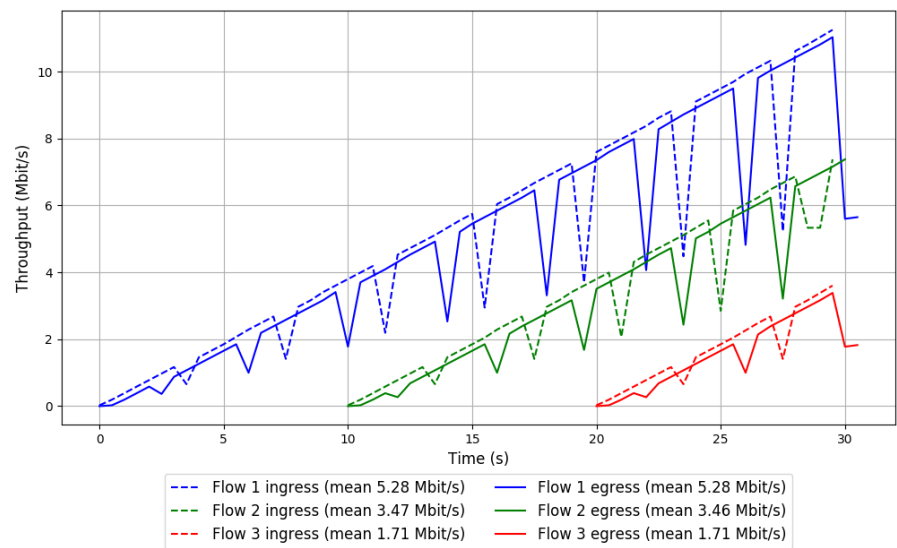
Run 1: Report of LEDBAT — Data Link

```
Run 2: Statistics of LEDBAT

Start at: 2018-12-20 13:22:27
End at: 2018-12-20 13:22:57
Local clock offset: -0.14 ms
Remote clock offset: -0.045 ms

# Below is generated by plot.py at 2018-12-20 17:13:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.20 Mbit/s
95th percentile per-packet one-way delay: 134.316 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 5.30 Mbit/s
95th percentile per-packet one-way delay: 134.430 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 3.54 Mbit/s
95th percentile per-packet one-way delay: 133.583 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 1.72 Mbit/s
95th percentile per-packet one-way delay: 132.874 ms
Loss rate: 0.00%
```
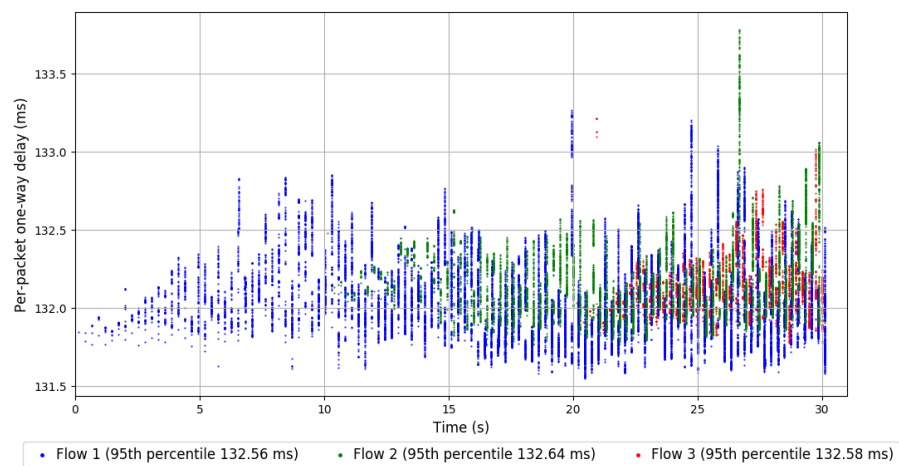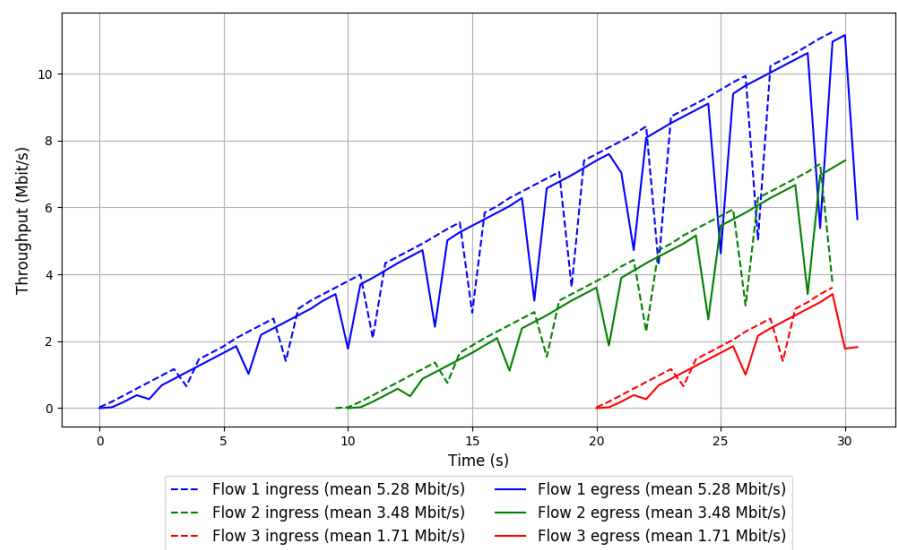
Run 2: Report of LEDBAT — Data Link

```
Run 3: Statistics of LEDBAT

Start at: 2018-12-20 13:58:30
End at: 2018-12-20 13:59:00
Local clock offset: 1.554 ms
Remote clock offset: -0.502 ms


# Below is generated by plot.py at 2018-12-20 17:13:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.14 Mbit/s
95th percentile per-packet one-way delay: 132.149 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 5.28 Mbit/s
95th percentile per-packet one-way delay: 132.202 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 3.46 Mbit/s
95th percentile per-packet one-way delay: 132.043 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 1.71 Mbit/s
95th percentile per-packet one-way delay: 132.060 ms
Loss rate: 0.00%
```

Run 3: Report of LEDBAT — Data Link

```
Run 4: Statistics of LEDBAT

Start at: 2018-12-20 14:34:09
End at: 2018-12-20 14:34:39
Local clock offset: 1.507 ms
Remote clock offset: -0.096 ms


# Below is generated by plot.py at 2018-12-20 17:13:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.14 Mbit/s
95th percentile per-packet one-way delay: 132.578 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 5.28 Mbit/s
95th percentile per-packet one-way delay: 132.557 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 3.48 Mbit/s
95th percentile per-packet one-way delay: 132.641 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 1.71 Mbit/s
95th percentile per-packet one-way delay: 132.576 ms
Loss rate: 0.00%
```
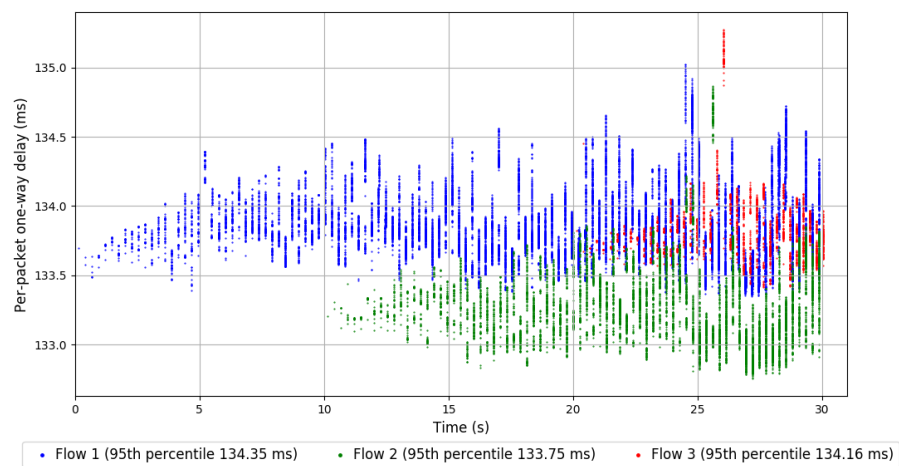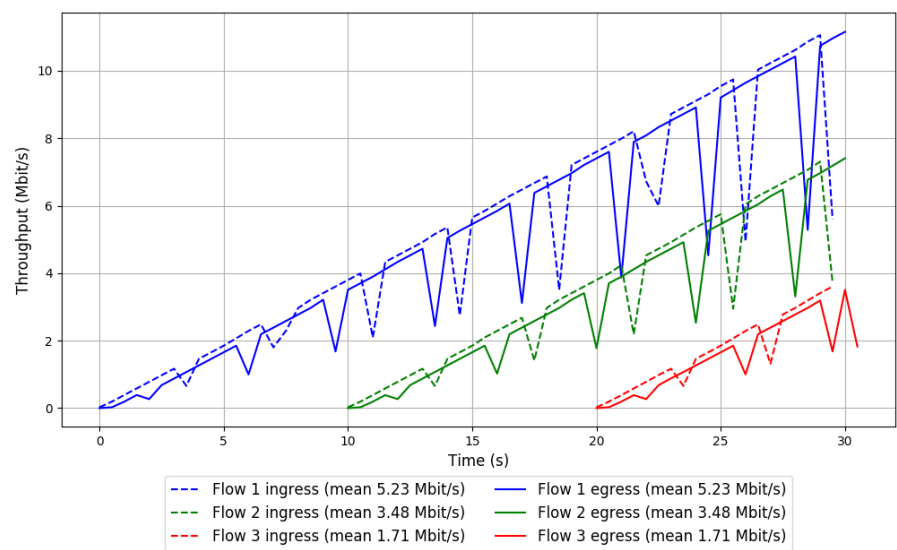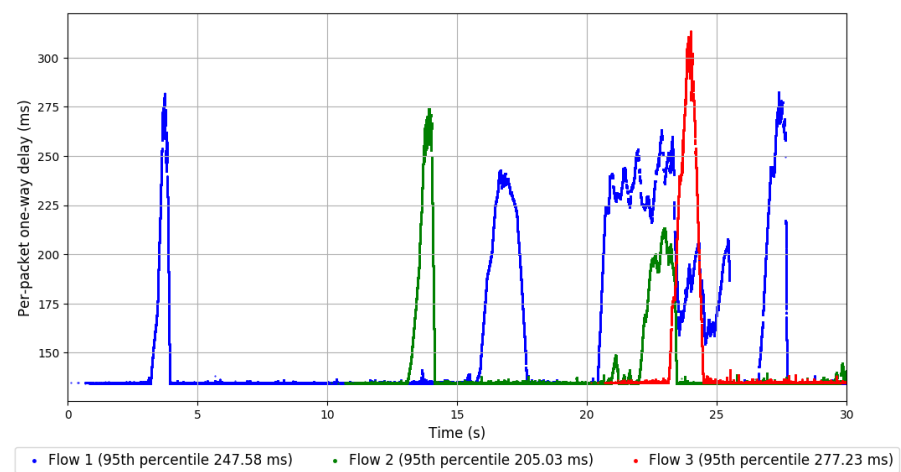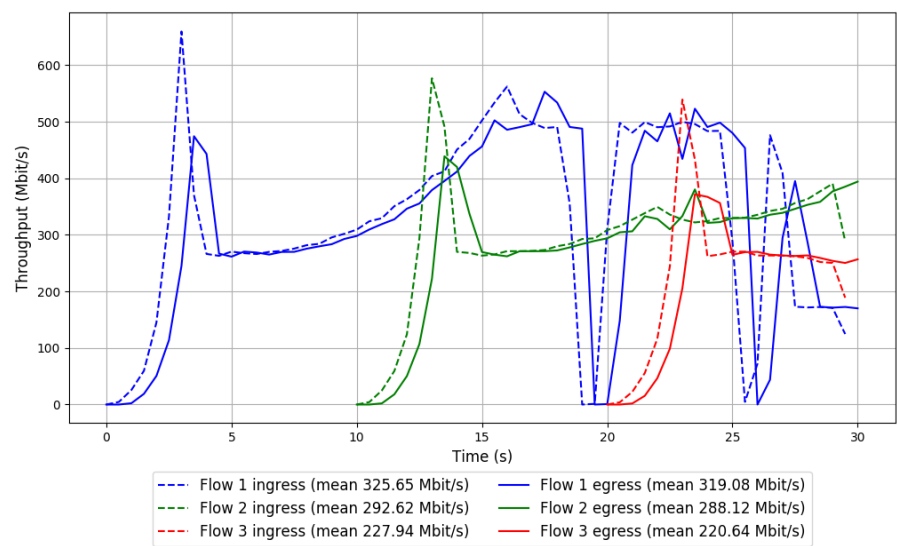
Run 4: Report of LEDBAT — Data Link

Legend:
- Flow 1 ingress (mean 5.28 Mbit/s)
- Flow 1 egress (mean 5.28 Mbit/s)
- Flow 2 ingress (mean 3.48 Mbit/s)
- Flow 2 egress (mean 3.48 Mbit/s)
- Flow 3 ingress (mean 1.71 Mbit/s)
- Flow 3 egress (mean 1.71 Mbit/s)

Legend:
- Flow 1 (95th percentile 132.56 ms)
- Flow 2 (95th percentile 132.64 ms)
- Flow 3 (95th percentile 132.58 ms)

```
Run 5: Statistics of LEDBAT

Start at: 2018-12-20 15:10:26
End at: 2018-12-20 15:10:56
Local clock offset: -0.147 ms
Remote clock offset: 0.002 ms


# Below is generated by plot.py at 2018-12-20 17:13:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.06 Mbit/s
95th percentile per-packet one-way delay: 134.308 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 5.23 Mbit/s
95th percentile per-packet one-way delay: 134.355 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 3.48 Mbit/s
95th percentile per-packet one-way delay: 133.748 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 1.71 Mbit/s
95th percentile per-packet one-way delay: 134.155 ms
Loss rate: 0.00%
```

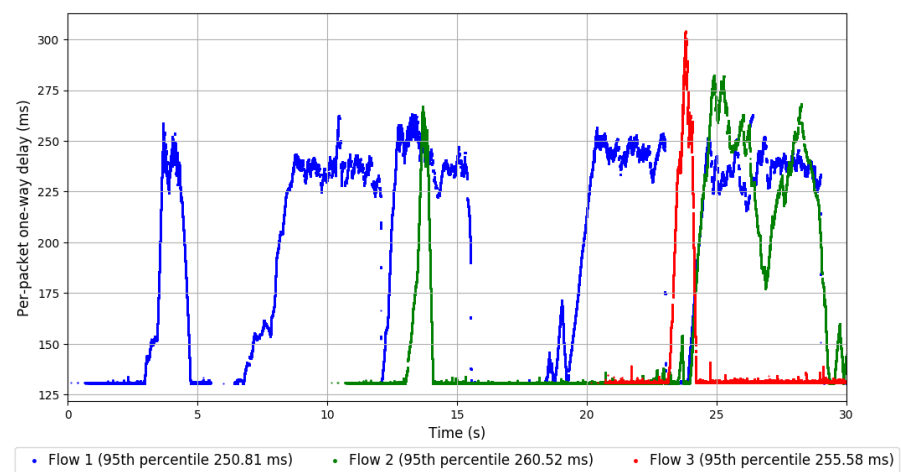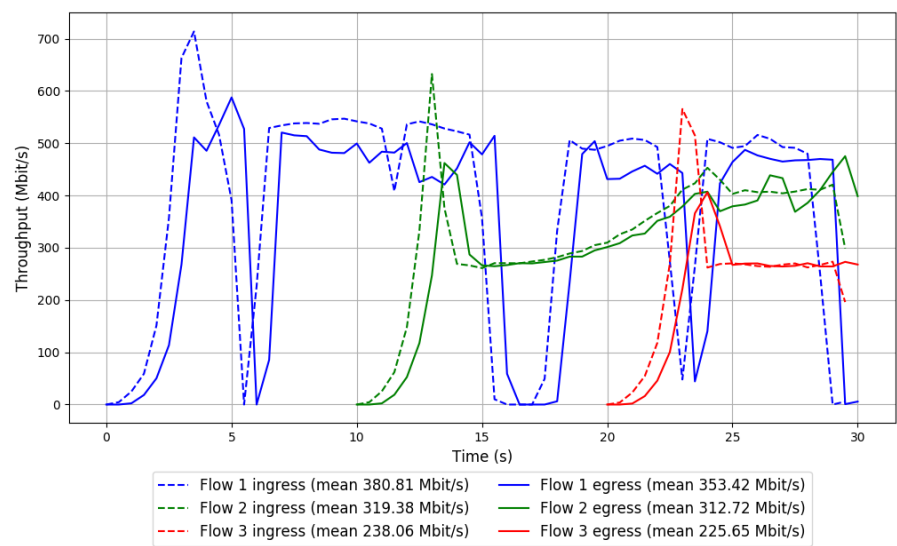# Run 5: Report of LEDBAT — Data Link

```
Run 1: Statistics of PCC-Allegro

Start at: 2018-12-20 12:56:26
End at: 2018-12-20 12:56:56
Local clock offset: -1.417 ms
Remote clock offset: -0.023 ms


# Below is generated by plot.py at 2018-12-20 17:26:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 583.32 Mbit/s
95th percentile per-packet one-way delay: 244.718 ms
Loss rate: 2.01%
-- Flow 1:
Average throughput: 319.08 Mbit/s
95th percentile per-packet one-way delay: 247.577 ms
Loss rate: 2.02%
-- Flow 2:
Average throughput: 288.12 Mbit/s
95th percentile per-packet one-way delay: 205.031 ms
Loss rate: 1.53%
-- Flow 3:
Average throughput: 220.64 Mbit/s
95th percentile per-packet one-way delay: 277.225 ms
Loss rate: 3.20%
```
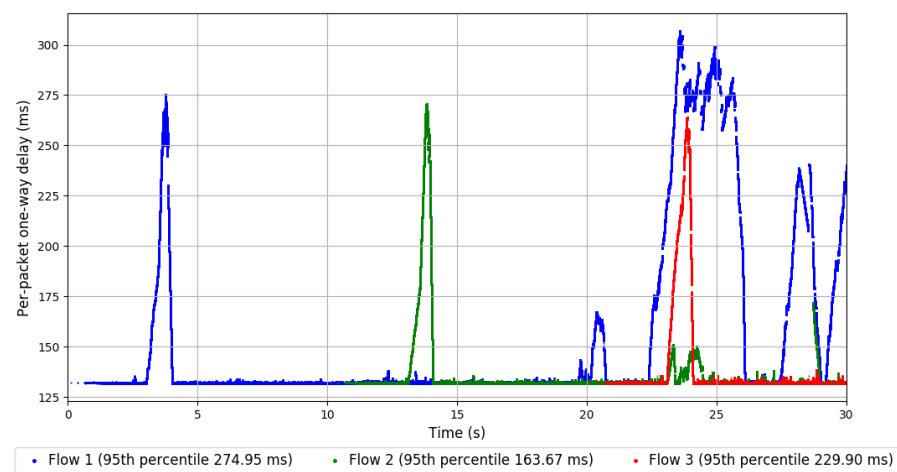
Run 1: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 325.65 Mbit/s)   Flow 1 egress (mean 319.08 Mbit/s)
Flow 2 ingress (mean 292.62 Mbit/s)   Flow 2 egress (mean 288.12 Mbit/s)
Flow 3 ingress (mean 227.94 Mbit/s)   Flow 3 egress (mean 220.64 Mbit/s)

Flow 1 (95th percentile 247.58 ms)   Flow 2 (95th percentile 205.03 ms)   Flow 3 (95th percentile 277.23 ms)

```
Run 2: Statistics of PCC-Allegro

Start at: 2018-12-20 13:31:38
End at: 2018-12-20 13:32:08
Local clock offset: 1.375 ms
Remote clock offset: -0.408 ms


# Below is generated by plot.py at 2018-12-20 17:29:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 635.29 Mbit/s
95th percentile per-packet one-way delay: 253.364 ms
Loss rate: 5.34%
-- Flow 1:
Average throughput: 353.42 Mbit/s
95th percentile per-packet one-way delay: 250.809 ms
Loss rate: 7.19%
-- Flow 2:
Average throughput: 312.72 Mbit/s
95th percentile per-packet one-way delay: 260.519 ms
Loss rate: 2.08%
-- Flow 3:
Average throughput: 225.65 Mbit/s
95th percentile per-packet one-way delay: 255.579 ms
Loss rate: 5.21%
```
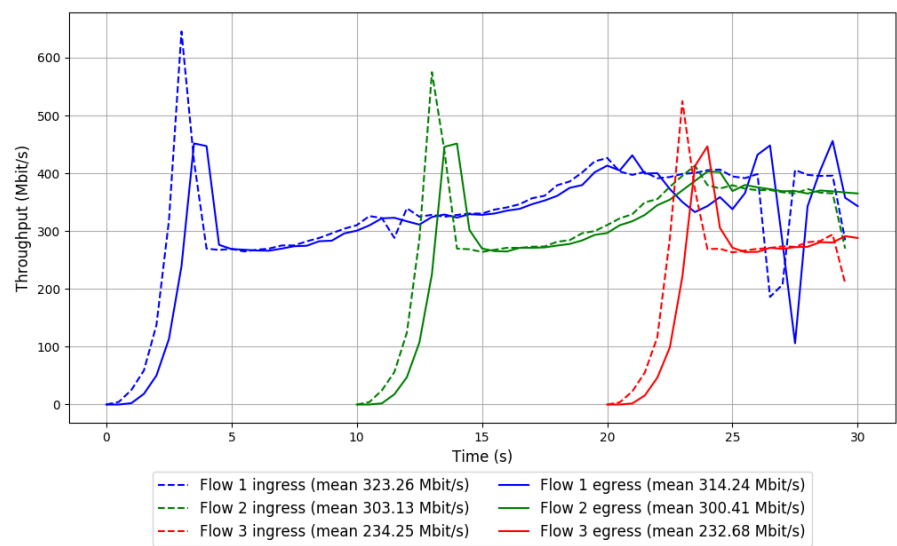
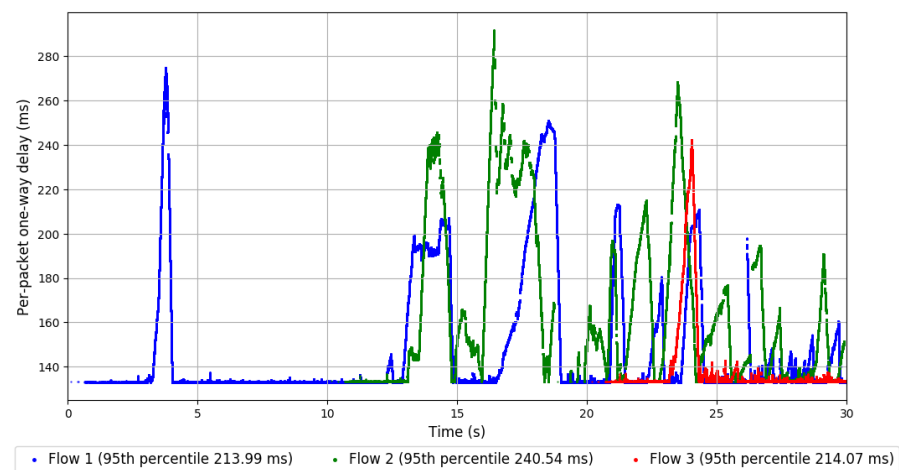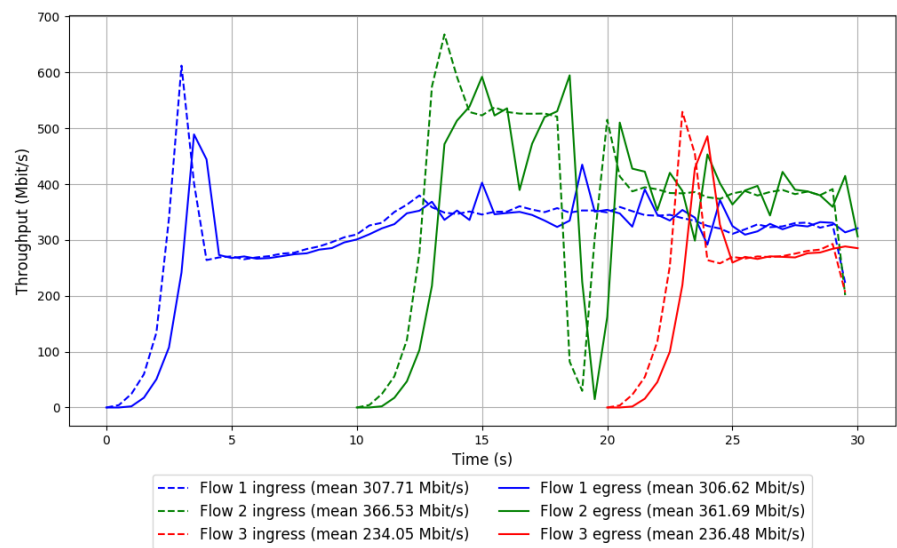Run 2: Report of PCC-Allegro — Data Link

```
Run 3: Statistics of PCC-Allegro

Start at: 2018-12-20 14:07:41
End at: 2018-12-20 14:08:11
Local clock offset: 1.59 ms
Remote clock offset: 0.27 ms


# Below is generated by plot.py at 2018-12-20 17:29:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 590.53 Mbit/s
95th percentile per-packet one-way delay: 261.226 ms
Loss rate: 1.88%
-- Flow 1:
Average throughput: 314.24 Mbit/s
95th percentile per-packet one-way delay: 274.947 ms
Loss rate: 2.79%
-- Flow 2:
Average throughput: 300.41 Mbit/s
95th percentile per-packet one-way delay: 163.669 ms
Loss rate: 0.90%
-- Flow 3:
Average throughput: 232.68 Mbit/s
95th percentile per-packet one-way delay: 229.895 ms
Loss rate: 0.67%
```

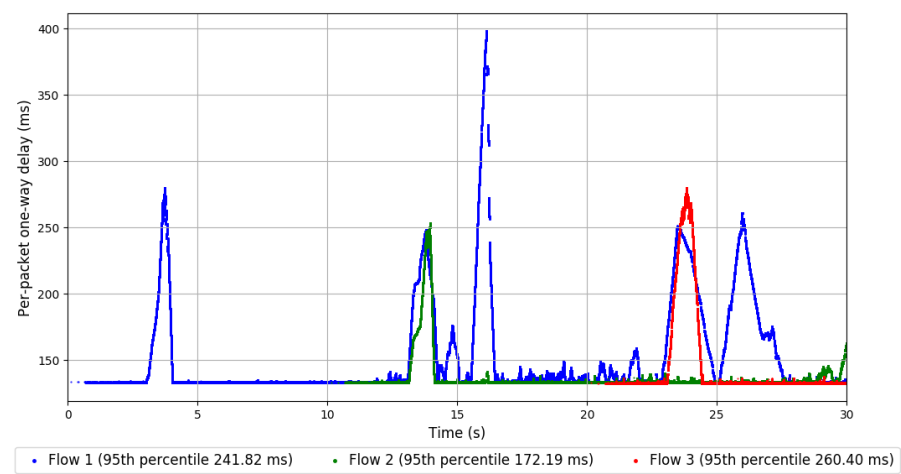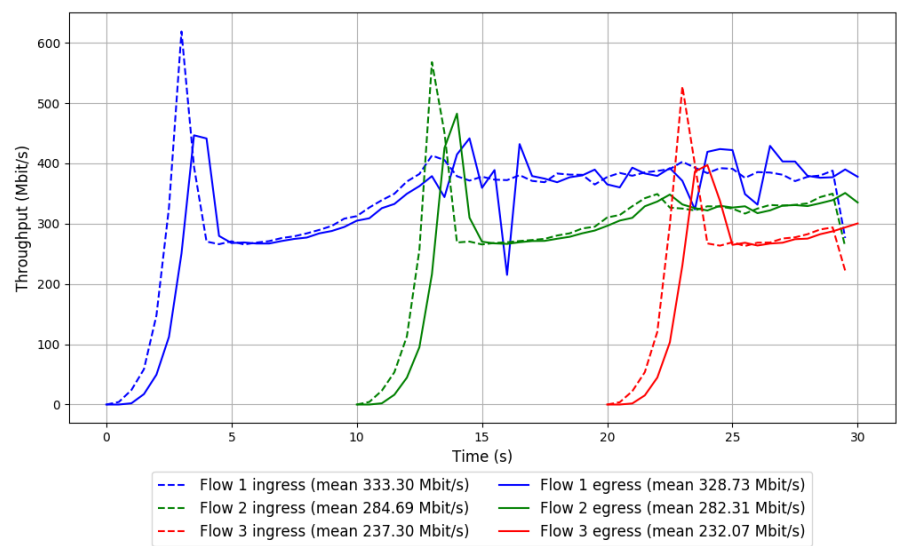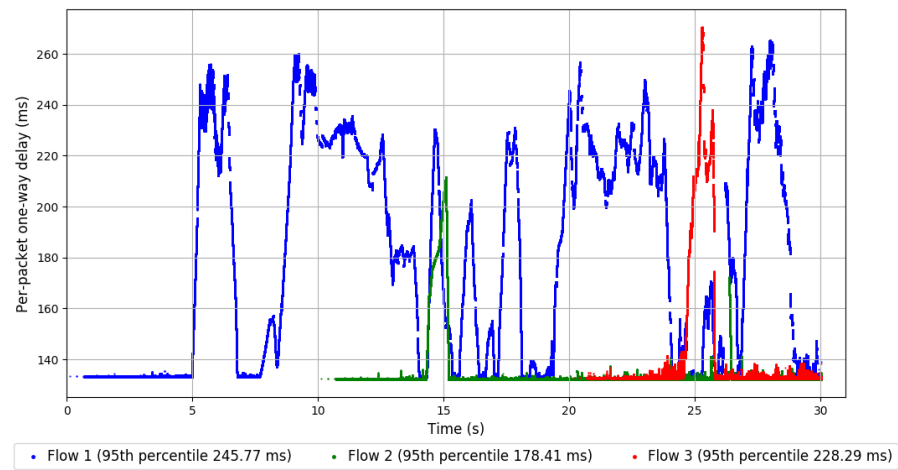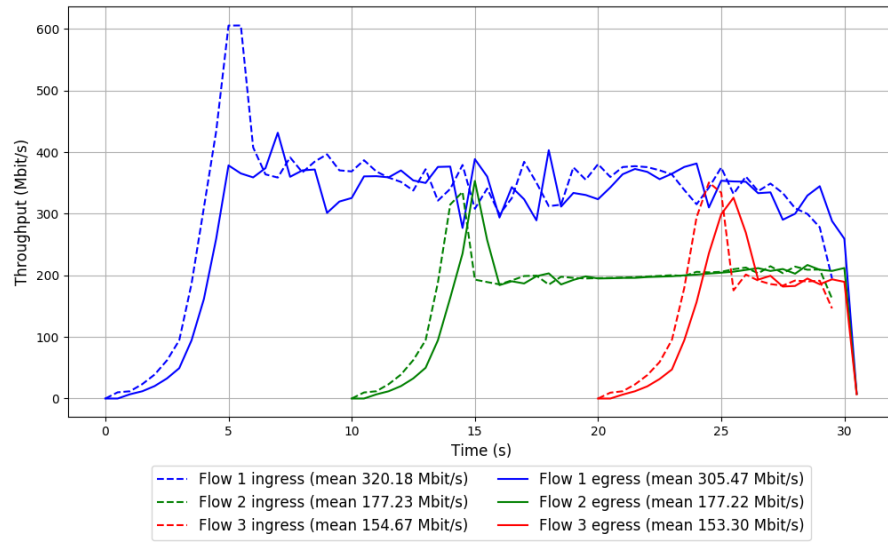Run 3: Report of PCC-Allegro — Data Link

```
Run 4: Statistics of PCC-Allegro

Start at: 2018-12-20 14:43:30
End at: 2018-12-20 14:44:00
Local clock offset: -0.3 ms
Remote clock offset: -0.044 ms


# Below is generated by plot.py at 2018-12-20 17:29:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 623.83 Mbit/s
95th percentile per-packet one-way delay: 236.813 ms
Loss rate: 1.25%
-- Flow 1:
Average throughput: 306.62 Mbit/s
95th percentile per-packet one-way delay: 213.987 ms
Loss rate: 0.77%
-- Flow 2:
Average throughput: 361.69 Mbit/s
95th percentile per-packet one-way delay: 240.543 ms
Loss rate: 2.21%
-- Flow 3:
Average throughput: 236.48 Mbit/s
95th percentile per-packet one-way delay: 214.072 ms
Loss rate: 0.07%
```

Run 4: Report of PCC-Allegro — Data Link

Legend:
- Flow 1 ingress (mean 307.71 Mbit/s)
- Flow 1 egress (mean 306.62 Mbit/s)
- Flow 2 ingress (mean 366.53 Mbit/s)
- Flow 2 egress (mean 361.69 Mbit/s)
- Flow 3 ingress (mean 234.05 Mbit/s)
- Flow 3 egress (mean 236.48 Mbit/s)

Legend:
- Flow 1 (95th percentile 213.99 ms)
- Flow 2 (95th percentile 240.54 ms)
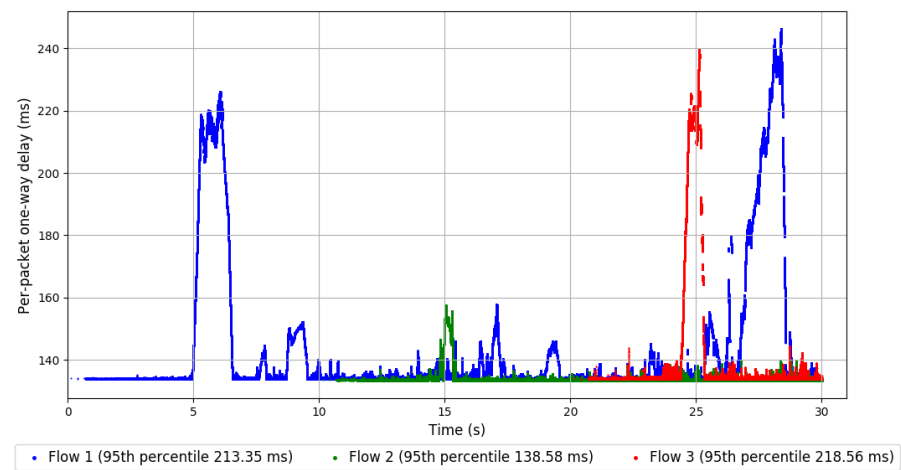- Flow 3 (95th percentile 214.07 ms)

```
Run 5: Statistics of PCC-Allegro

Start at: 2018-12-20 15:19:39
End at: 2018-12-20 15:20:09
Local clock offset: 0.076 ms
Remote clock offset: -0.001 ms


# Below is generated by plot.py at 2018-12-20 17:31:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 592.79 Mbit/s
95th percentile per-packet one-way delay: 237.623 ms
Loss rate: 1.31%
-- Flow 1:
Average throughput: 328.73 Mbit/s
95th percentile per-packet one-way delay: 241.818 ms
Loss rate: 1.37%
-- Flow 2:
Average throughput: 282.31 Mbit/s
95th percentile per-packet one-way delay: 172.191 ms
Loss rate: 0.83%
-- Flow 3:
Average throughput: 232.07 Mbit/s
95th percentile per-packet one-way delay: 260.396 ms
Loss rate: 2.20%
```
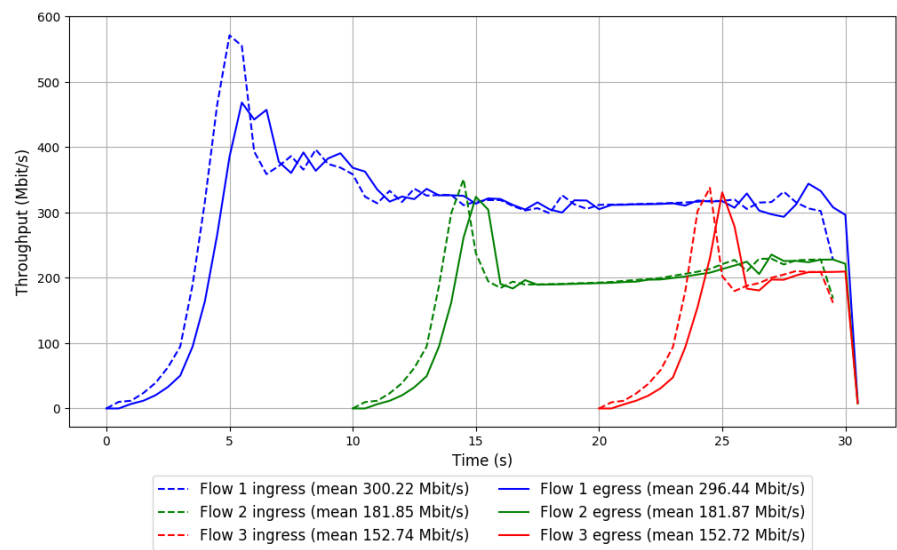
Run 5: Report of PCC-Allegro — Data Link

```
Run 1: Statistics of PCC-Expr

Start at: 2018-12-20 12:54:08
End at: 2018-12-20 12:54:38
Local clock offset: 0.087 ms
Remote clock offset: -0.039 ms


# Below is generated by plot.py at 2018-12-20 17:31:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 473.93 Mbit/s
95th percentile per-packet one-way delay: 241.611 ms
Loss rate: 3.10%
-- Flow 1:
Average throughput: 305.47 Mbit/s
95th percentile per-packet one-way delay: 245.769 ms
Loss rate: 4.60%
-- Flow 2:
Average throughput: 177.22 Mbit/s
95th percentile per-packet one-way delay: 178.406 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 153.30 Mbit/s
95th percentile per-packet one-way delay: 228.289 ms
Loss rate: 0.88%
```

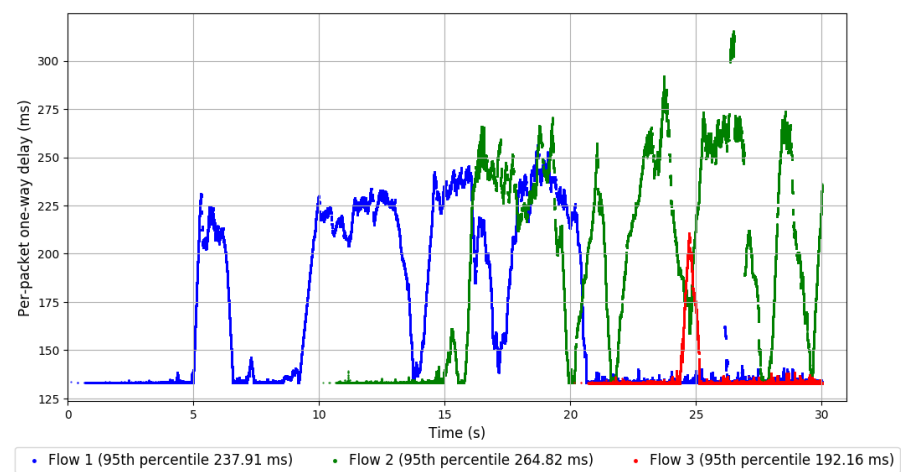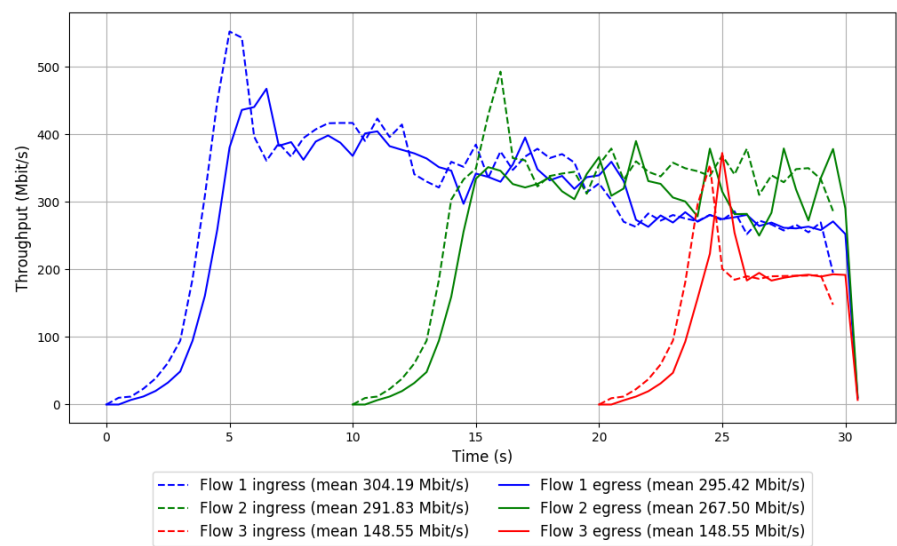## Run 1: Report of PCC-Expr — Data Link

```
Run 2: Statistics of PCC-Expr

Start at: 2018-12-20 13:29:27
End at: 2018-12-20 13:29:57
Local clock offset: -1.463 ms
Remote clock offset: -0.406 ms


# Below is generated by plot.py at 2018-12-20 17:31:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 467.76 Mbit/s
95th percentile per-packet one-way delay: 211.123 ms
Loss rate: 0.80%
-- Flow 1:
Average throughput: 296.44 Mbit/s
95th percentile per-packet one-way delay: 213.349 ms
Loss rate: 1.26%
-- Flow 2:
Average throughput: 181.87 Mbit/s
95th percentile per-packet one-way delay: 138.582 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 152.72 Mbit/s
95th percentile per-packet one-way delay: 218.562 ms
Loss rate: 0.01%
```

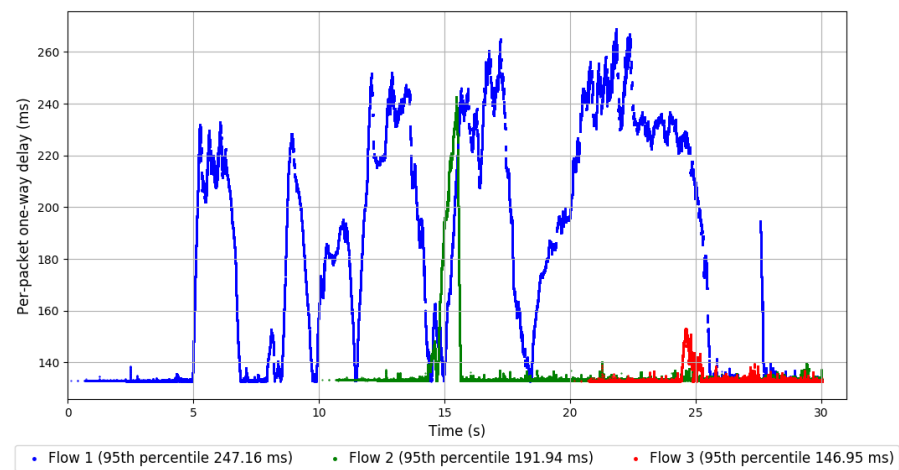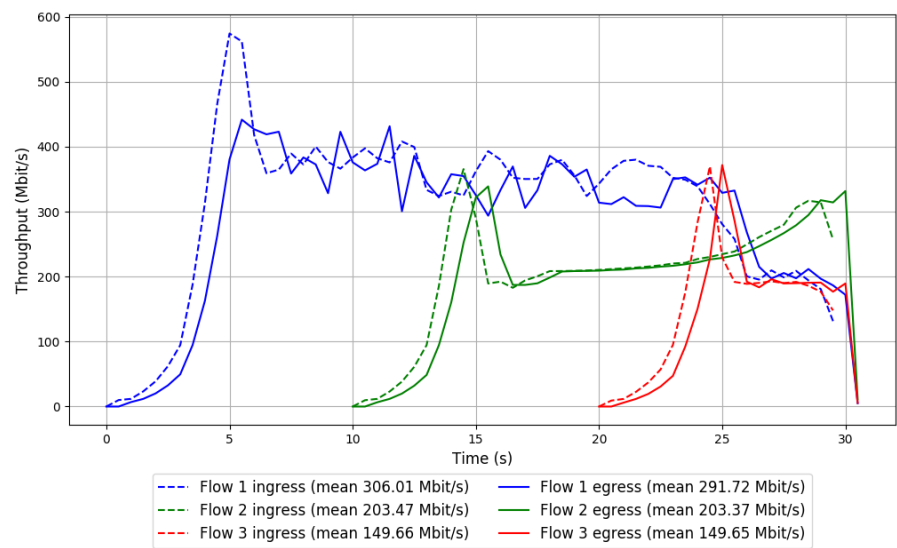## Run 2: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 300.22 Mbit/s) --- Flow 1 egress (mean 296.44 Mbit/s)
Flow 2 ingress (mean 181.85 Mbit/s) --- Flow 2 egress (mean 181.87 Mbit/s)
Flow 3 ingress (mean 152.74 Mbit/s) --- Flow 3 egress (mean 152.72 Mbit/s)

Flow 1 (95th percentile 213.35 ms) • Flow 2 (95th percentile 138.58 ms) • Flow 3 (95th percentile 218.56 ms)

```
Run 3: Statistics of PCC-Expr

Start at: 2018-12-20 14:05:25
End at: 2018-12-20 14:05:55
Local clock offset: 0.039 ms
Remote clock offset: -0.092 ms


# Below is generated by plot.py at 2018-12-20 17:32:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 522.30 Mbit/s
95th percentile per-packet one-way delay: 254.936 ms
Loss rate: 4.56%
-- Flow 1:
Average throughput: 295.42 Mbit/s
95th percentile per-packet one-way delay: 237.911 ms
Loss rate: 2.88%
-- Flow 2:
Average throughput: 267.50 Mbit/s
95th percentile per-packet one-way delay: 264.825 ms
Loss rate: 8.33%
-- Flow 3:
Average throughput: 148.55 Mbit/s
95th percentile per-packet one-way delay: 192.161 ms
Loss rate: 0.00%
```
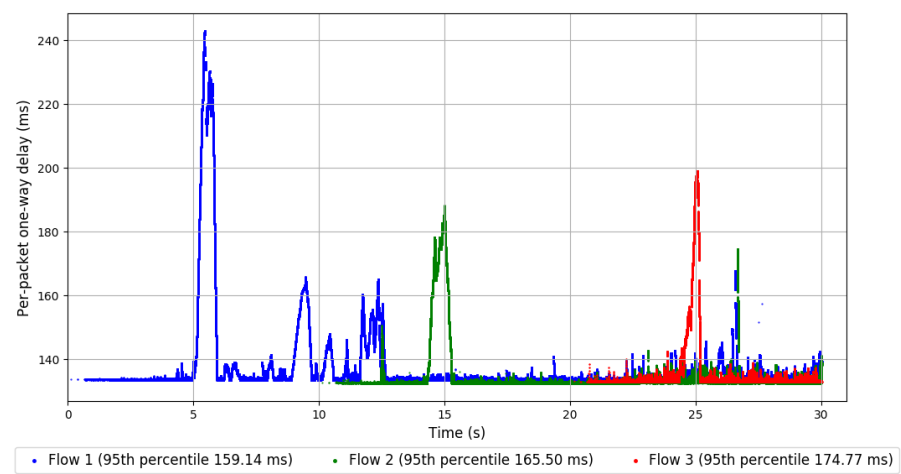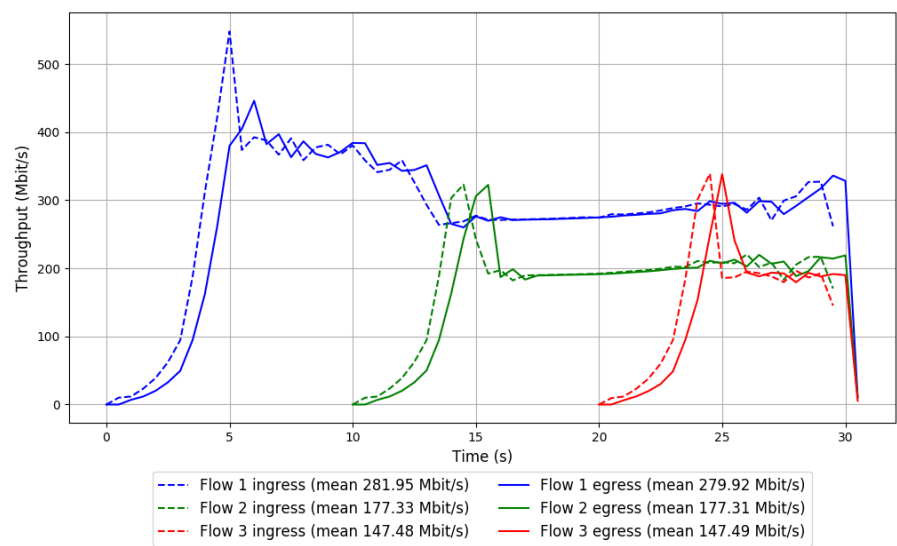
Run 3: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 304.19 Mbit/s) — — —   Flow 1 egress (mean 295.42 Mbit/s)
Flow 2 ingress (mean 291.83 Mbit/s) — — —   Flow 2 egress (mean 267.50 Mbit/s)
Flow 3 ingress (mean 148.55 Mbit/s) — — —   Flow 3 egress (mean 148.55 Mbit/s)

Flow 1 (95th percentile 237.91 ms)   Flow 2 (95th percentile 264.82 ms)   Flow 3 (95th percentile 192.16 ms)

```
Run 4: Statistics of PCC-Expr

Start at: 2018-12-20 14:41:09
End at: 2018-12-20 14:41:39
Local clock offset: -0.117 ms
Remote clock offset: -0.035 ms


# Below is generated by plot.py at 2018-12-20 17:43:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 476.27 Mbit/s
95th percentile per-packet one-way delay: 243.067 ms
Loss rate: 2.93%
-- Flow 1:
Average throughput: 291.72 Mbit/s
95th percentile per-packet one-way delay: 247.160 ms
Loss rate: 4.67%
-- Flow 2:
Average throughput: 203.37 Mbit/s
95th percentile per-packet one-way delay: 191.944 ms
Loss rate: 0.05%
-- Flow 3:
Average throughput: 149.65 Mbit/s
95th percentile per-packet one-way delay: 146.949 ms
Loss rate: 0.00%
```

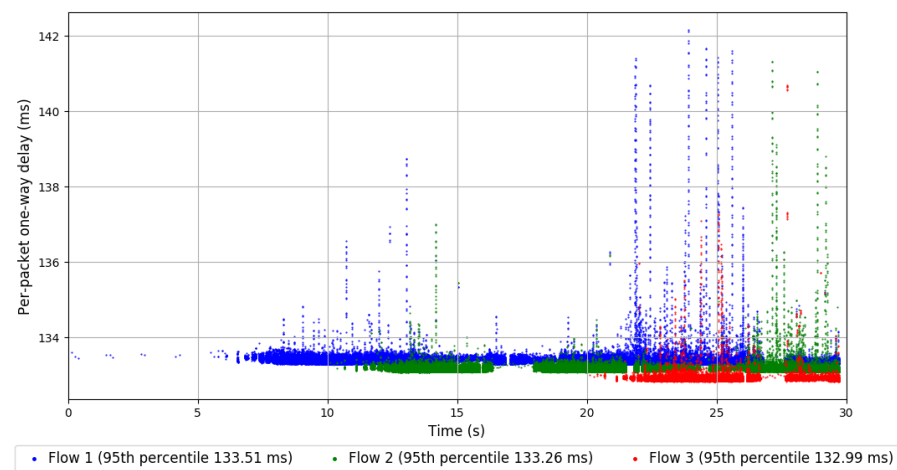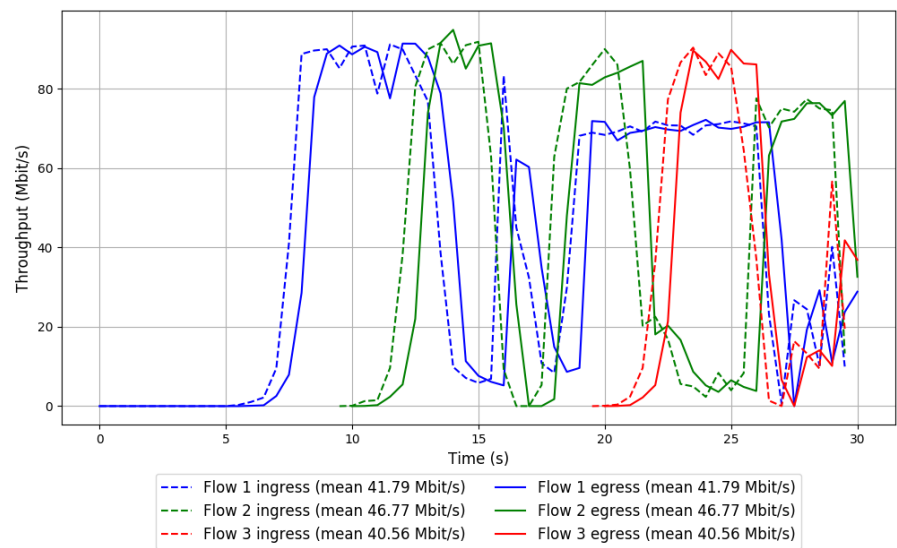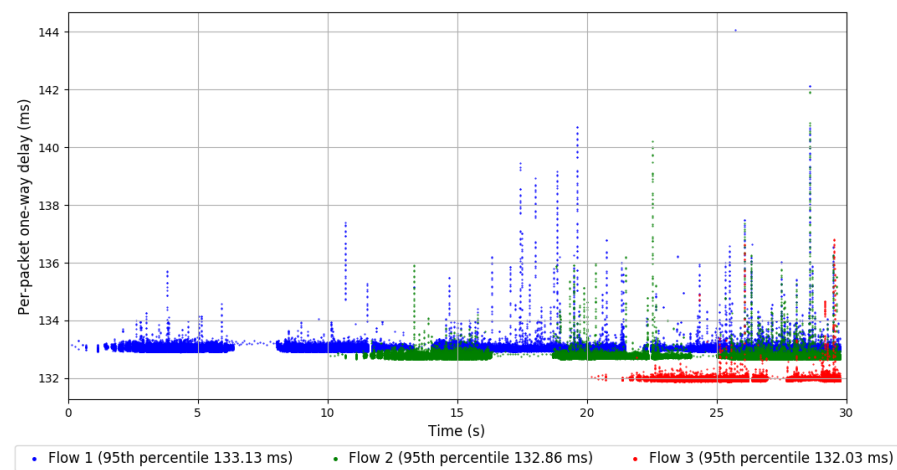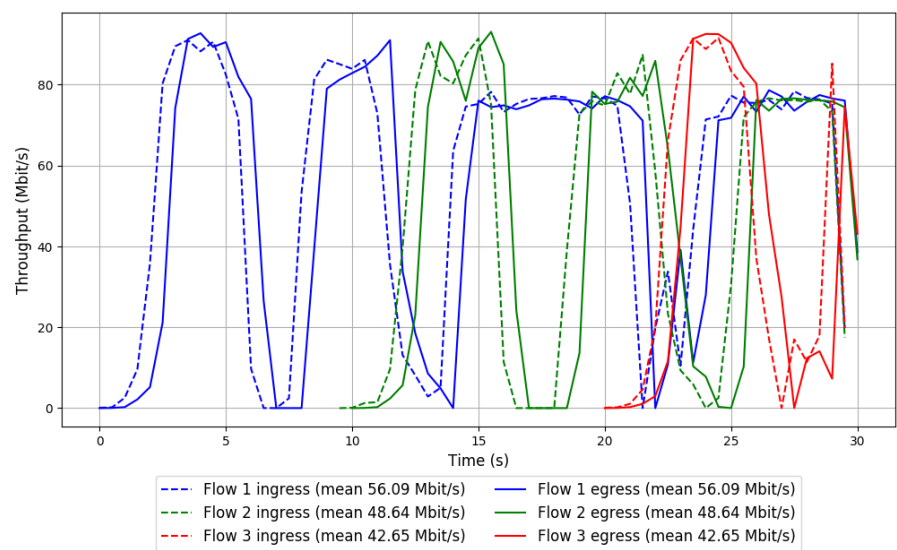Run 4: Report of PCC-Expr — Data Link

- - - Flow 1 ingress (mean 306.01 Mbit/s) —— Flow 1 egress (mean 291.72 Mbit/s)
- - - Flow 2 ingress (mean 203.47 Mbit/s) —— Flow 2 egress (mean 203.37 Mbit/s)
- - - Flow 3 ingress (mean 149.66 Mbit/s) —— Flow 3 egress (mean 149.65 Mbit/s)

• Flow 1 (95th percentile 247.16 ms)   • Flow 2 (95th percentile 191.94 ms)   • Flow 3 (95th percentile 146.95 ms)

```
Run 5: Statistics of PCC-Expr

Start at: 2018-12-20 15:17:27
End at: 2018-12-20 15:17:57
Local clock offset: -0.13 ms
Remote clock offset: 0.001 ms

# Below is generated by plot.py at 2018-12-20 17:43:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 446.51 Mbit/s
95th percentile per-packet one-way delay: 161.558 ms
Loss rate: 0.45%
-- Flow 1:
Average throughput: 279.92 Mbit/s
95th percentile per-packet one-way delay: 159.139 ms
Loss rate: 0.72%
-- Flow 2:
Average throughput: 177.31 Mbit/s
95th percentile per-packet one-way delay: 165.505 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 147.49 Mbit/s
95th percentile per-packet one-way delay: 174.774 ms
Loss rate: 0.00%
```
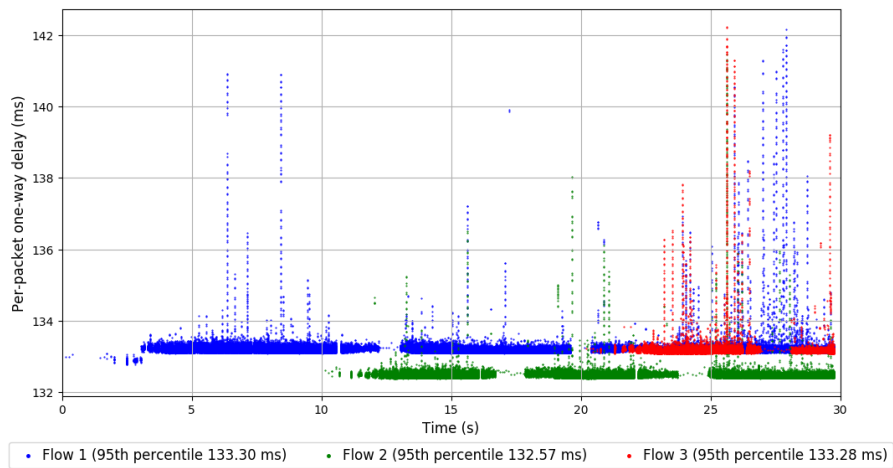
Run 5: Report of PCC-Expr — Data Link

```
Run 1: Statistics of QUIC Cubic

Start at: 2018-12-20 12:52:38
End at: 2018-12-20 12:53:08
Local clock offset: -0.073 ms
Remote clock offset: -0.015 ms


# Below is generated by plot.py at 2018-12-20 17:43:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 85.96 Mbit/s
95th percentile per-packet one-way delay: 133.464 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 41.79 Mbit/s
95th percentile per-packet one-way delay: 133.506 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 46.77 Mbit/s
95th percentile per-packet one-way delay: 133.262 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 40.56 Mbit/s
95th percentile per-packet one-way delay: 132.985 ms
Loss rate: 0.00%
```

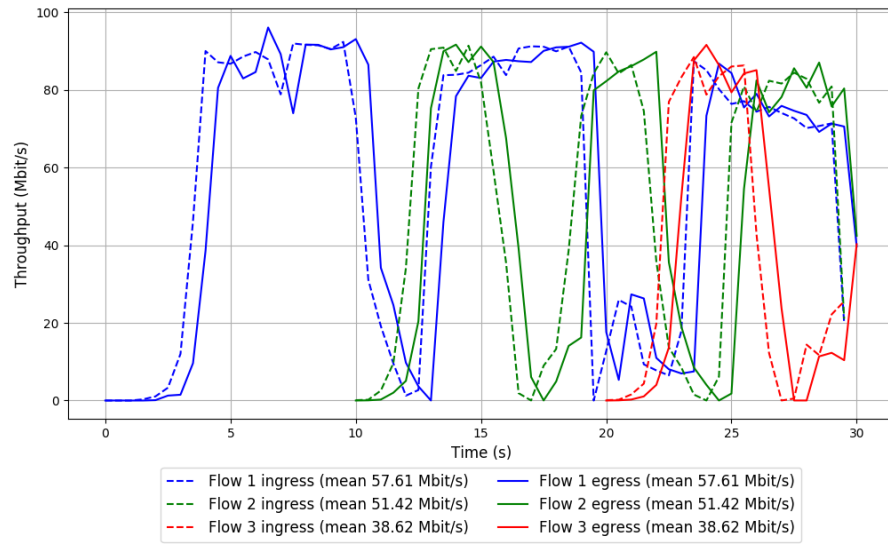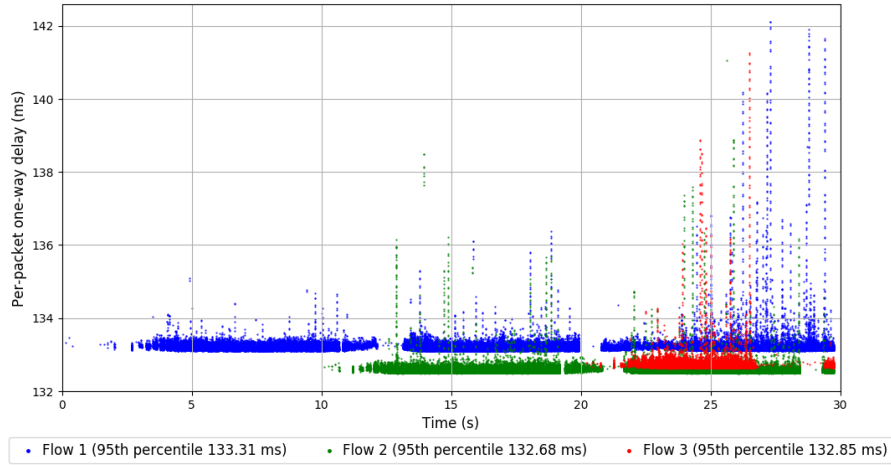Run 1: Report of QUIC Cubic — Data Link

```
Run 2: Statistics of QUIC Cubic

Start at: 2018-12-20 13:28:00
End at: 2018-12-20 13:28:30
Local clock offset: -0.024 ms
Remote clock offset: -0.069 ms


# Below is generated by plot.py at 2018-12-20 17:43:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 102.14 Mbit/s
95th percentile per-packet one-way delay: 133.098 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 56.09 Mbit/s
95th percentile per-packet one-way delay: 133.130 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 48.64 Mbit/s
95th percentile per-packet one-way delay: 132.862 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 42.65 Mbit/s
95th percentile per-packet one-way delay: 132.034 ms
Loss rate: 0.00%
```

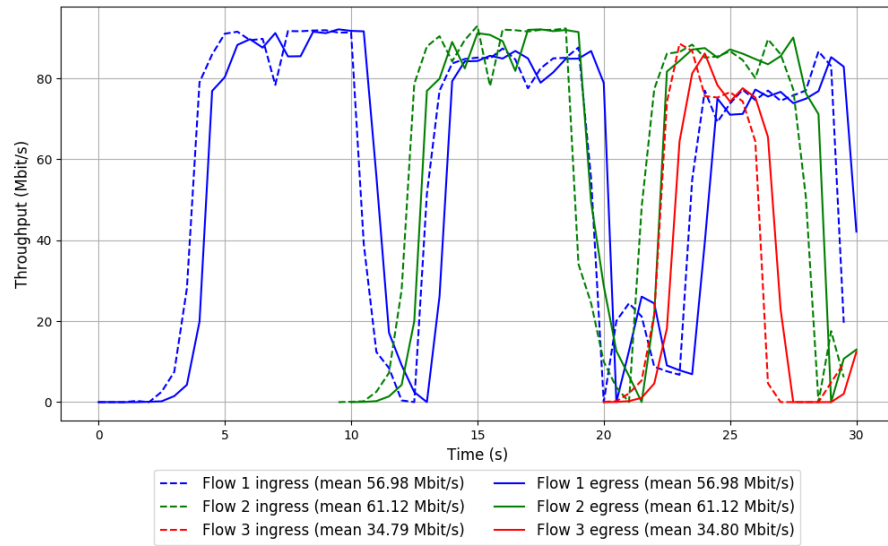Run 2: Report of QUIC Cubic — Data Link

```
Run 3: Statistics of QUIC Cubic

Start at: 2018-12-20 14:03:58
End at: 2018-12-20 14:04:28
Local clock offset: -0.136 ms
Remote clock offset: -0.076 ms


# Below is generated by plot.py at 2018-12-20 17:43:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 104.13 Mbit/s
95th percentile per-packet one-way delay: 133.278 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 57.61 Mbit/s
95th percentile per-packet one-way delay: 133.302 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 51.42 Mbit/s
95th percentile per-packet one-way delay: 132.569 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 38.62 Mbit/s
95th percentile per-packet one-way delay: 133.279 ms
Loss rate: 0.00%
```

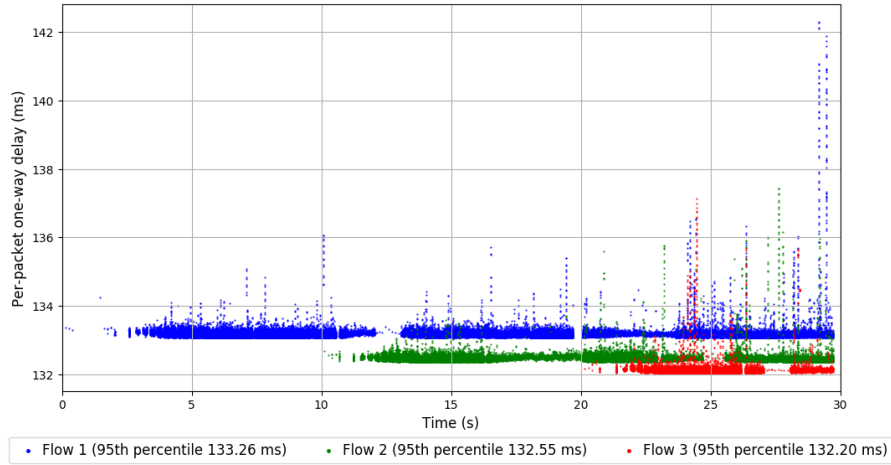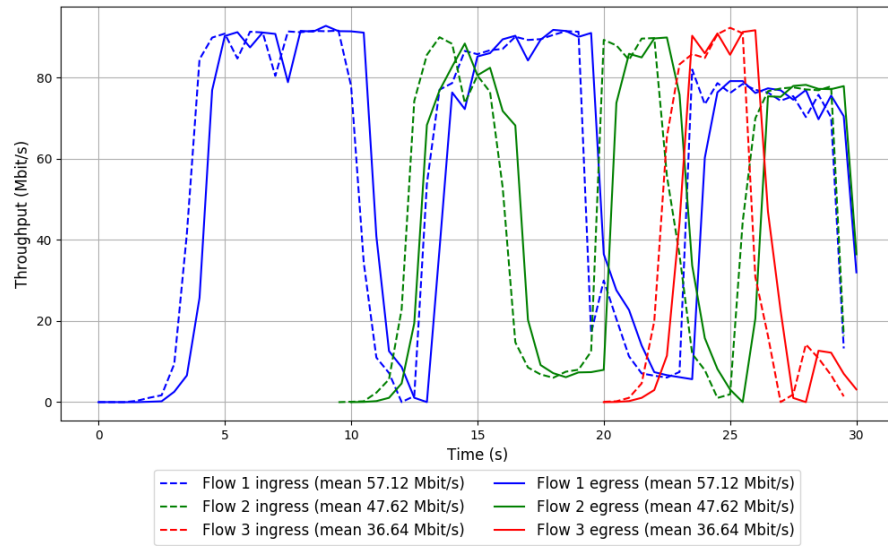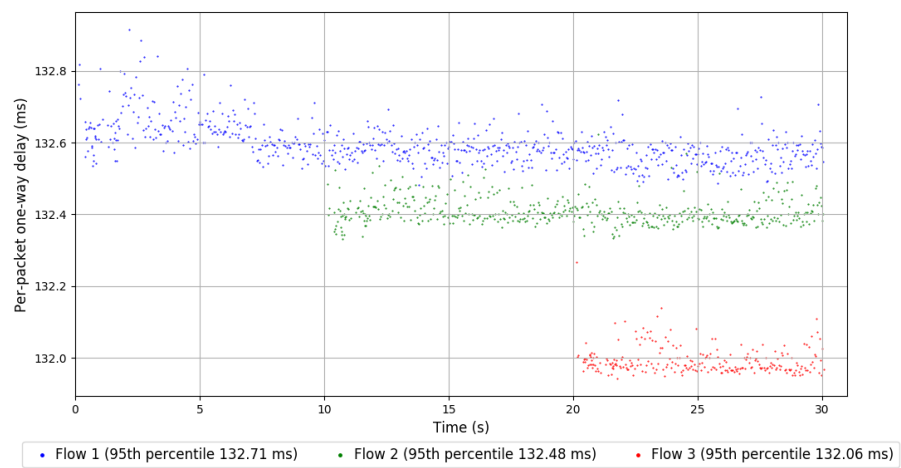# Run 3: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 57.61 Mbit/s) — — — Flow 1 egress (mean 57.61 Mbit/s)
Flow 2 ingress (mean 51.42 Mbit/s) — — — Flow 2 egress (mean 51.42 Mbit/s)
Flow 3 ingress (mean 38.62 Mbit/s) — — — Flow 3 egress (mean 38.62 Mbit/s)

Flow 1 (95th percentile 133.30 ms)   Flow 2 (95th percentile 132.57 ms)   Flow 3 (95th percentile 133.28 ms)

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```
Run 4: Statistics of QUIC Cubic

Start at: 2018-12-20 14:39:39
End at: 2018-12-20 14:40:09
Local clock offset: 0.074 ms
Remote clock offset: -0.079 ms


# Below is generated by plot.py at 2018-12-20 17:43:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 108.70 Mbit/s
95th percentile per-packet one-way delay: 133.273 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 56.98 Mbit/s
95th percentile per-packet one-way delay: 133.310 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 61.12 Mbit/s
95th percentile per-packet one-way delay: 132.678 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 34.80 Mbit/s
95th percentile per-packet one-way delay: 132.853 ms
Loss rate: 0.00%
```

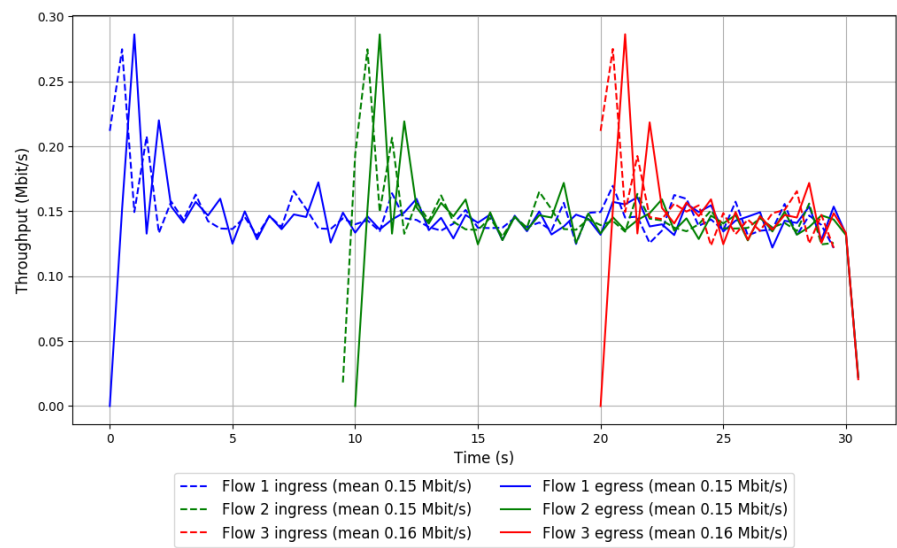Run 4: Report of QUIC Cubic — Data Link
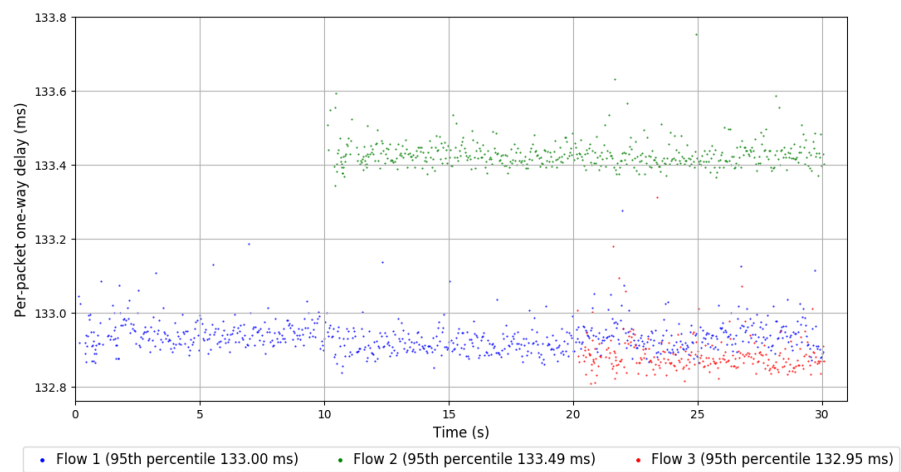
```
Run 5: Statistics of QUIC Cubic

Start at: 2018-12-20 15:16:00
End at: 2018-12-20 15:16:30
Local clock offset: -0.177 ms
Remote clock offset: -0.004 ms


# Below is generated by plot.py at 2018-12-20 17:43:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 100.51 Mbit/s
95th percentile per-packet one-way delay: 133.229 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 57.12 Mbit/s
95th percentile per-packet one-way delay: 133.259 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 47.62 Mbit/s
95th percentile per-packet one-way delay: 132.553 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 36.64 Mbit/s
95th percentile per-packet one-way delay: 132.196 ms
Loss rate: 0.00%
```
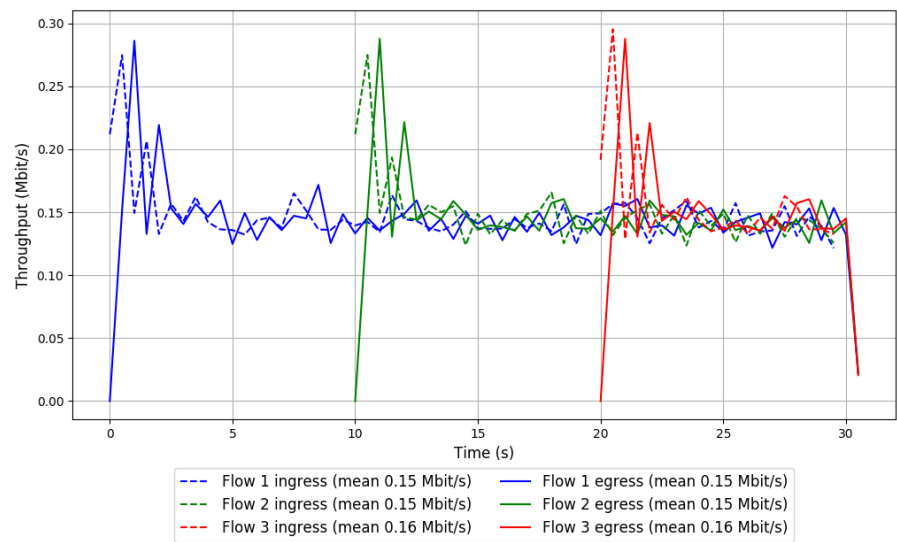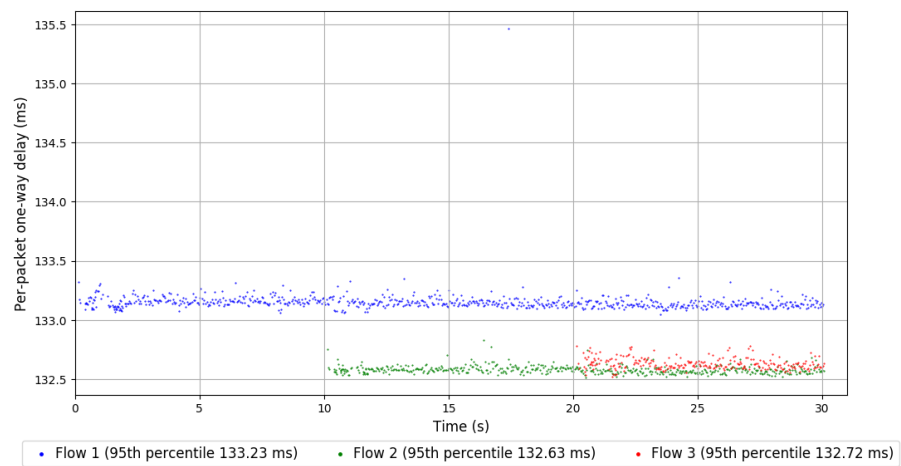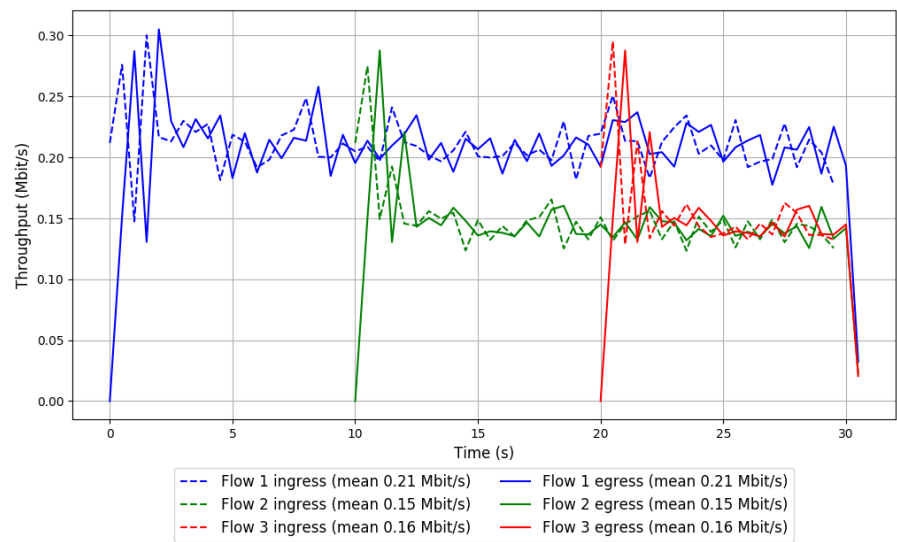
Run 5: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 57.12 Mbit/s)   Flow 1 egress (mean 57.12 Mbit/s)
Flow 2 ingress (mean 47.62 Mbit/s)   Flow 2 egress (mean 47.62 Mbit/s)
Flow 3 ingress (mean 36.64 Mbit/s)   Flow 3 egress (mean 36.64 Mbit/s)

Flow 1 (95th percentile 133.26 ms)   Flow 2 (95th percentile 132.55 ms)   Flow 3 (95th percentile 132.20 ms)

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```
Run 1: Statistics of SCReAM

Start at: 2018-12-20 12:40:17
End at: 2018-12-20 12:40:47
Local clock offset: 0.092 ms
Remote clock offset: -0.385 ms


# Below is generated by plot.py at 2018-12-20 17:43:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.30 Mbit/s
95th percentile per-packet one-way delay: 132.660 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 132.711 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 132.479 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.16 Mbit/s
95th percentile per-packet one-way delay: 132.059 ms
Loss rate: 0.00%
```
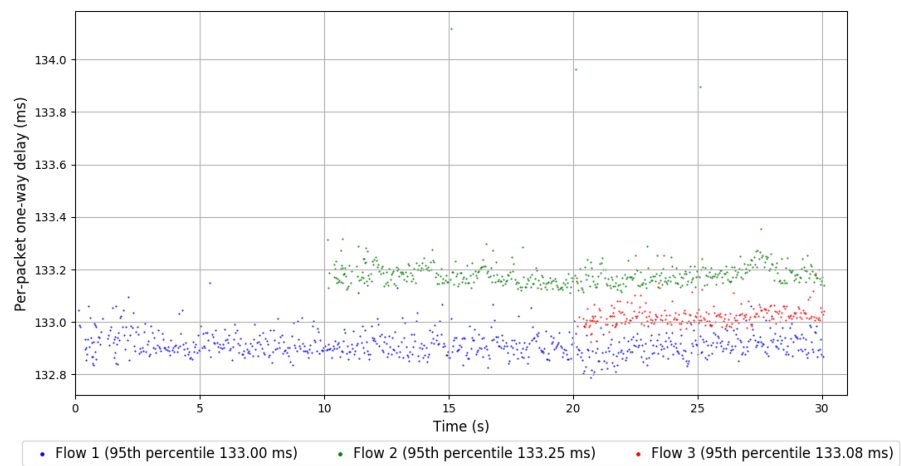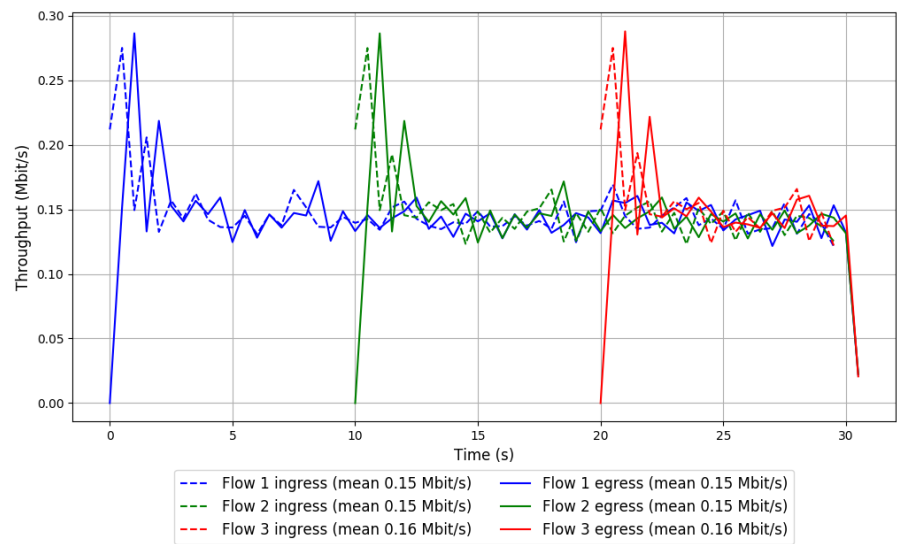
Run 1: Report of SCReAM — Data Link

```
Run 2: Statistics of SCReAM

Start at: 2018-12-20 13:15:32
End at: 2018-12-20 13:16:02
Local clock offset: -0.107 ms
Remote clock offset: -0.073 ms


# Below is generated by plot.py at 2018-12-20 17:43:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.30 Mbit/s
95th percentile per-packet one-way delay: 133.454 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 133.003 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 133.487 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.16 Mbit/s
95th percentile per-packet one-way delay: 132.951 ms
Loss rate: 0.00%
```

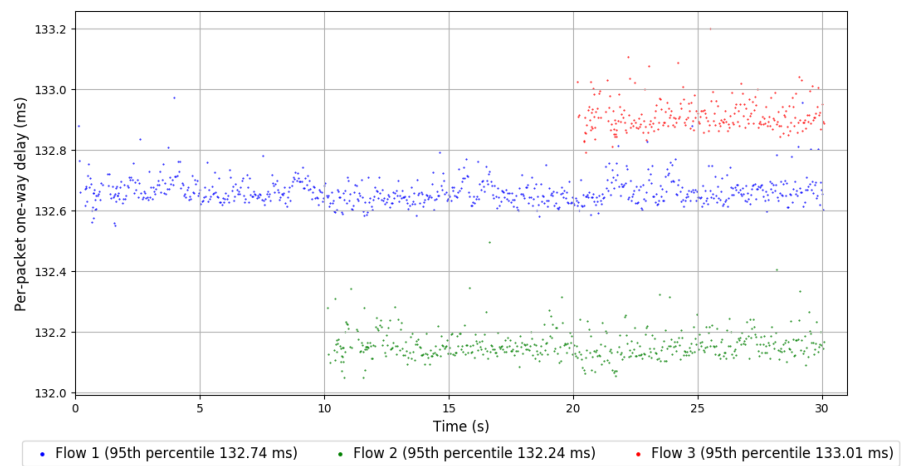# Run 2: Report of SCReAM — Data Link

```
Run 3: Statistics of SCReAM

Start at: 2018-12-20 13:51:45
End at: 2018-12-20 13:52:15
Local clock offset: -0.185 ms
Remote clock offset: -0.451 ms


# Below is generated by plot.py at 2018-12-20 17:43:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.36 Mbit/s
95th percentile per-packet one-way delay: 133.200 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 133.229 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 132.628 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.16 Mbit/s
95th percentile per-packet one-way delay: 132.725 ms
Loss rate: 0.00%
```
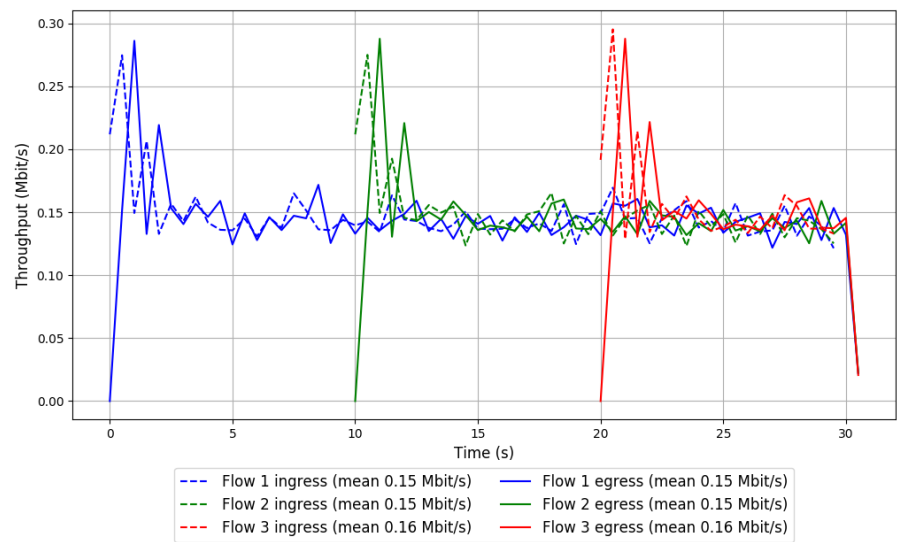
Run 3: Report of SCReAM — Data Link

```
Run 4: Statistics of SCReAM

Start at: 2018-12-20 14:27:19
End at: 2018-12-20 14:27:49
Local clock offset: 0.004 ms
Remote clock offset: -0.08 ms

# Below is generated by plot.py at 2018-12-20 17:43:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.30 Mbit/s
95th percentile per-packet one-way delay: 133.217 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 132.997 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 133.248 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.16 Mbit/s
95th percentile per-packet one-way delay: 133.079 ms
Loss rate: 0.00%
```
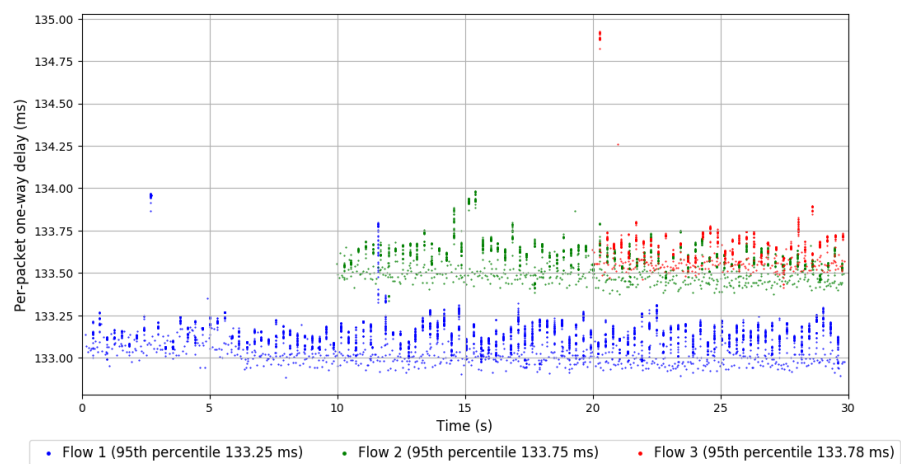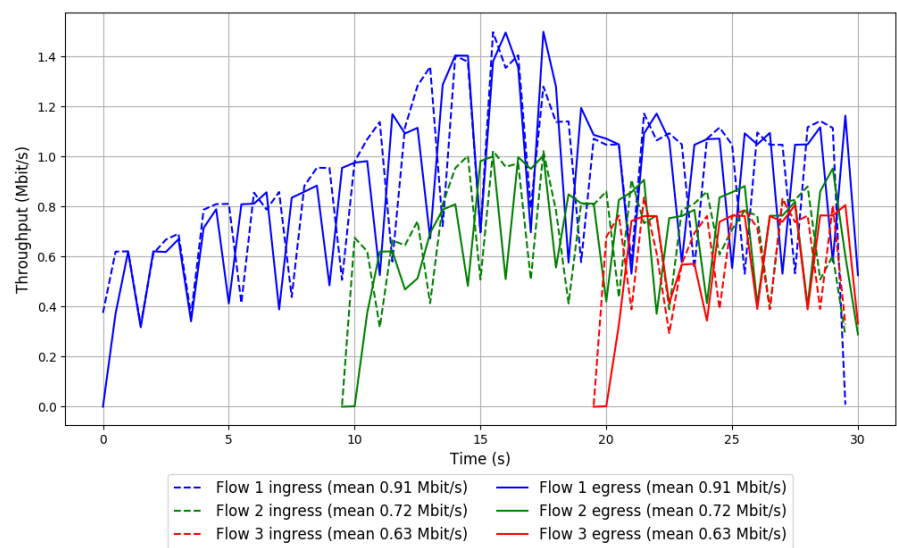
Run 4: Report of SCReAM — Data Link

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```
Run 5: Statistics of SCReAM

Start at: 2018-12-20 15:03:23
End at: 2018-12-20 15:03:53
Local clock offset: -0.125 ms
Remote clock offset: -0.399 ms


# Below is generated by plot.py at 2018-12-20 17:43:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.30 Mbit/s
95th percentile per-packet one-way delay: 132.930 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 132.742 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 132.239 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.16 Mbit/s
95th percentile per-packet one-way delay: 133.009 ms
Loss rate: 0.00%
```
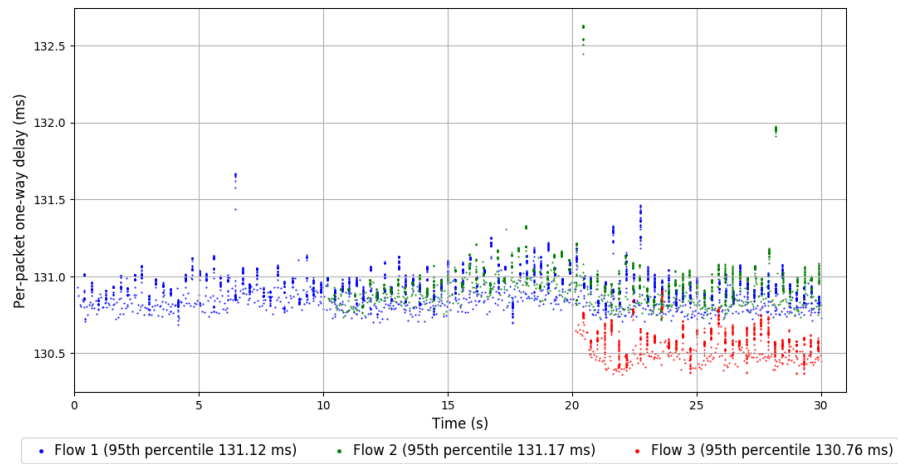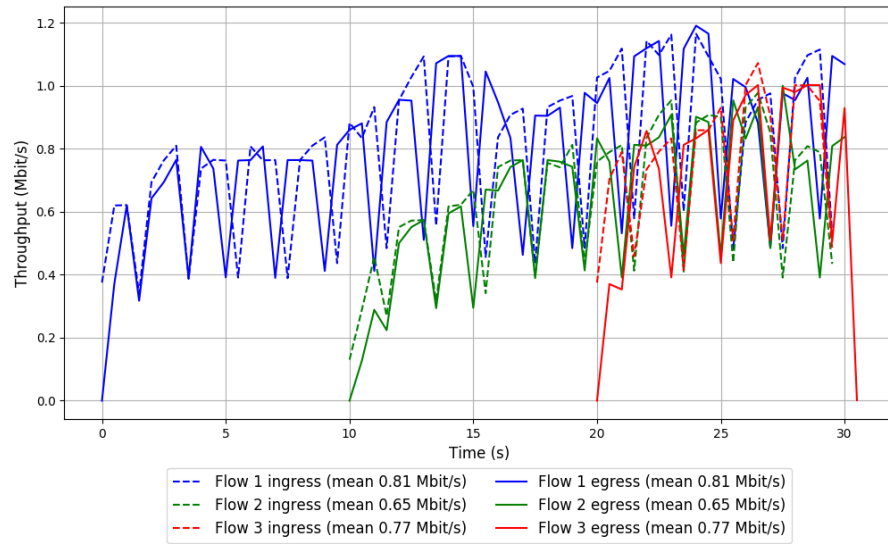
Run 5: Report of SCReAM — Data Link

```
Run 1: Statistics of Sprout

Start at: 2018-12-20 13:00:06
End at: 2018-12-20 13:00:36
Local clock offset: -0.113 ms
Remote clock offset: -0.054 ms


# Below is generated by plot.py at 2018-12-20 17:43:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.59 Mbit/s
95th percentile per-packet one-way delay: 133.717 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.91 Mbit/s
95th percentile per-packet one-way delay: 133.247 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.72 Mbit/s
95th percentile per-packet one-way delay: 133.748 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.63 Mbit/s
95th percentile per-packet one-way delay: 133.779 ms
Loss rate: 0.00%
```
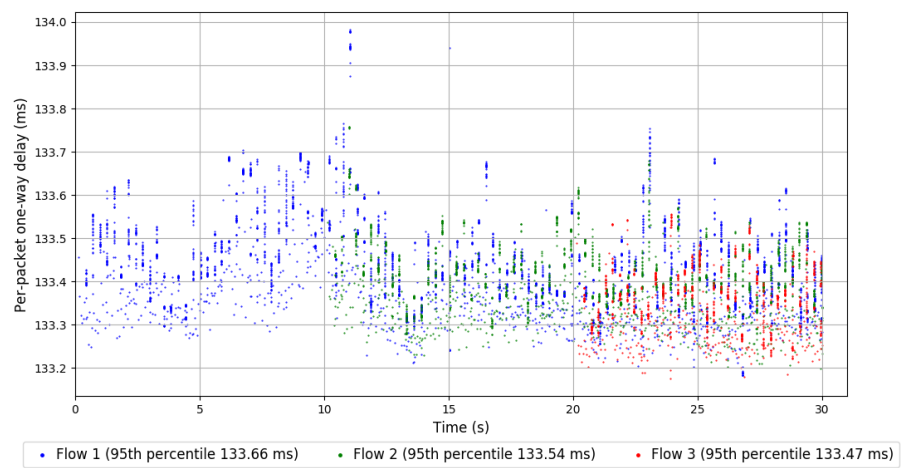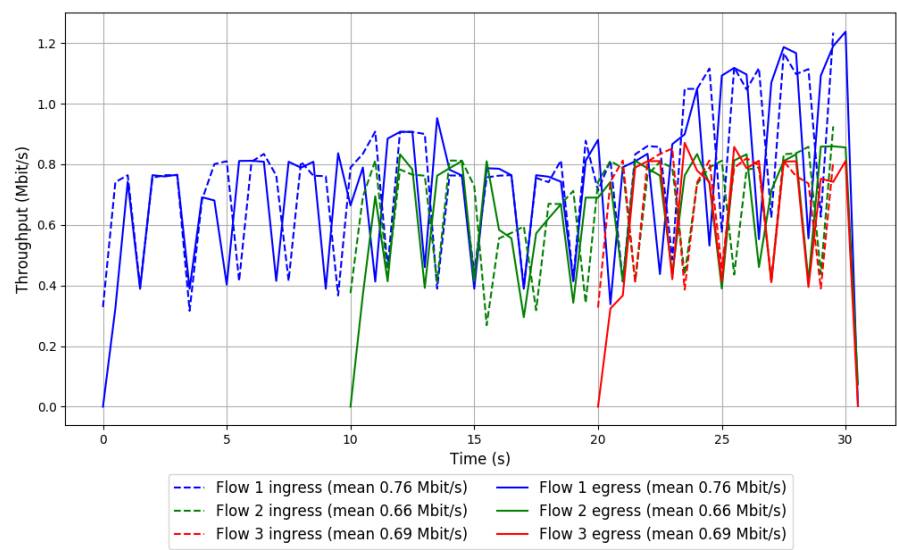
Run 1: Report of Sprout — Data Link

```
Run 2: Statistics of Sprout

Start at: 2018-12-20 13:35:34
End at: 2018-12-20 13:36:04
Local clock offset: 1.573 ms
Remote clock offset: -0.097 ms


# Below is generated by plot.py at 2018-12-20 17:43:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.49 Mbit/s
95th percentile per-packet one-way delay: 131.132 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.81 Mbit/s
95th percentile per-packet one-way delay: 131.119 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.65 Mbit/s
95th percentile per-packet one-way delay: 131.172 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.77 Mbit/s
95th percentile per-packet one-way delay: 130.761 ms
Loss rate: 0.00%
```
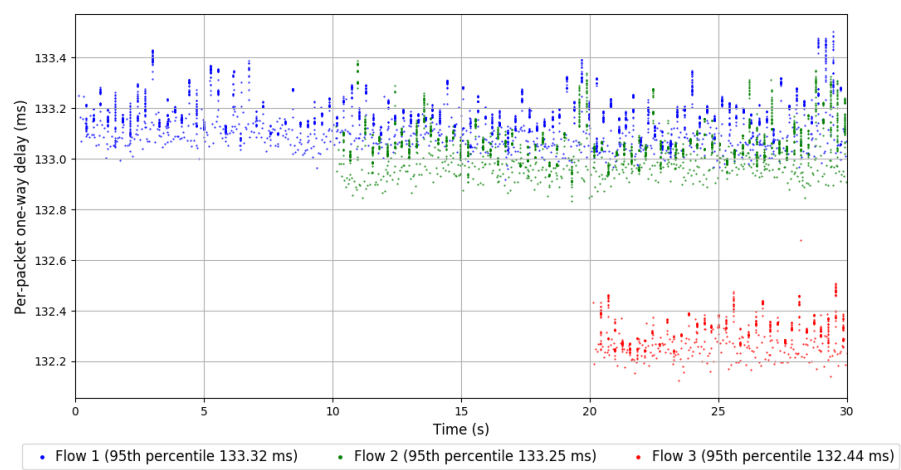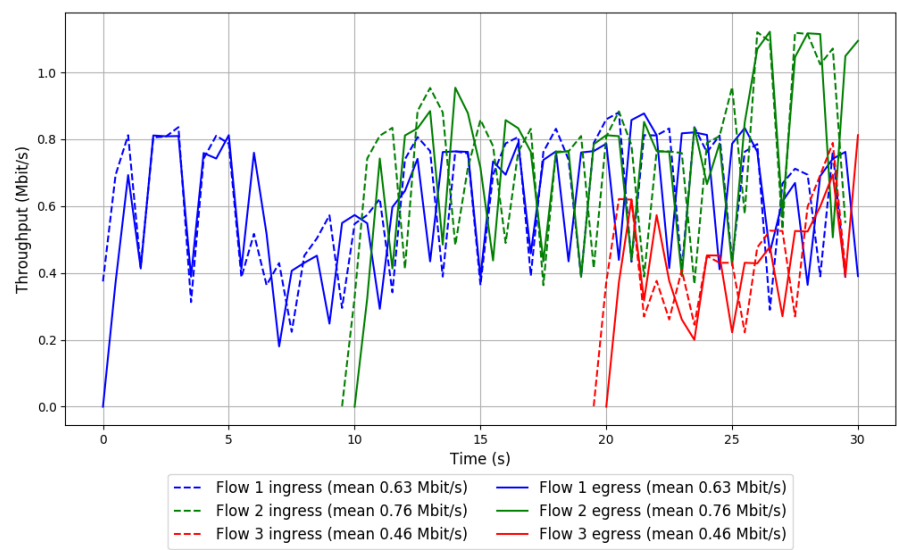
Run 2: Report of Sprout — Data Link

```
Run 3: Statistics of Sprout

Start at: 2018-12-20 14:11:25
End at: 2018-12-20 14:11:55
Local clock offset: 0.127 ms
Remote clock offset: -0.07 ms


# Below is generated by plot.py at 2018-12-20 17:43:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.42 Mbit/s
95th percentile per-packet one-way delay: 133.608 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.76 Mbit/s
95th percentile per-packet one-way delay: 133.656 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.66 Mbit/s
95th percentile per-packet one-way delay: 133.538 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.69 Mbit/s
95th percentile per-packet one-way delay: 133.468 ms
Loss rate: 0.00%
```
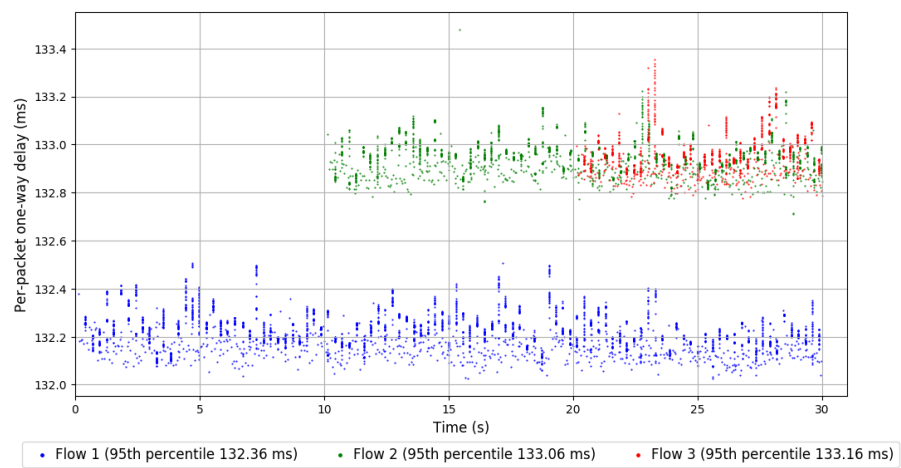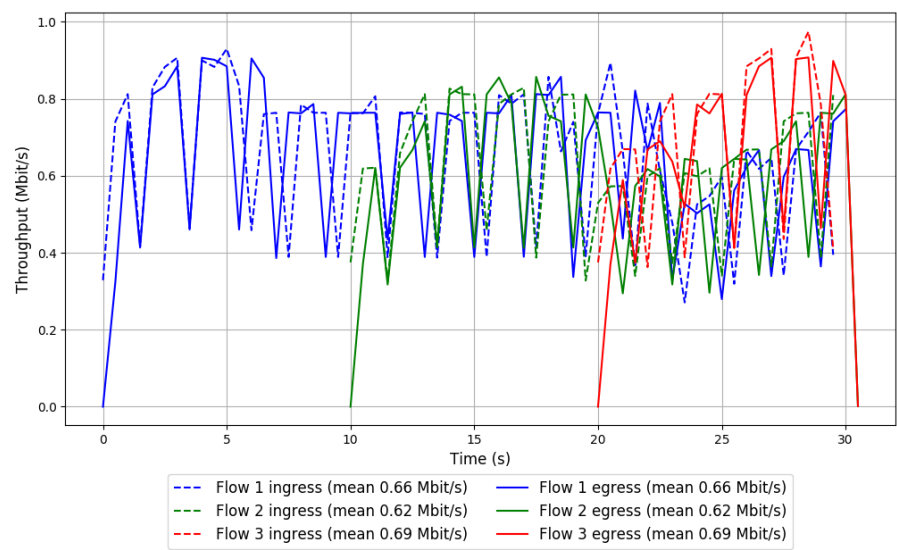
Run 3: Report of Sprout — Data Link

Flow 1 ingress (mean 0.76 Mbit/s)   Flow 1 egress (mean 0.76 Mbit/s)
Flow 2 ingress (mean 0.66 Mbit/s)   Flow 2 egress (mean 0.66 Mbit/s)
Flow 3 ingress (mean 0.69 Mbit/s)   Flow 3 egress (mean 0.69 Mbit/s)

Flow 1 (95th percentile 133.66 ms)   Flow 2 (95th percentile 133.54 ms)   Flow 3 (95th percentile 133.47 ms)

```
Run 4: Statistics of Sprout

Start at: 2018-12-20 14:47:22
End at: 2018-12-20 14:47:52
Local clock offset: -0.18 ms
Remote clock offset: -0.041 ms


# Below is generated by plot.py at 2018-12-20 17:43:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.28 Mbit/s
95th percentile per-packet one-way delay: 133.296 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.63 Mbit/s
95th percentile per-packet one-way delay: 133.322 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.76 Mbit/s
95th percentile per-packet one-way delay: 133.245 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.46 Mbit/s
95th percentile per-packet one-way delay: 132.445 ms
Loss rate: 0.00%
```
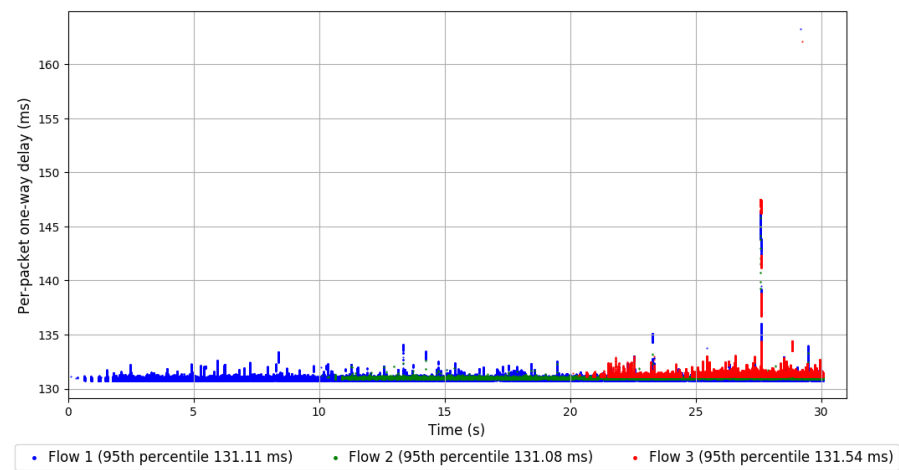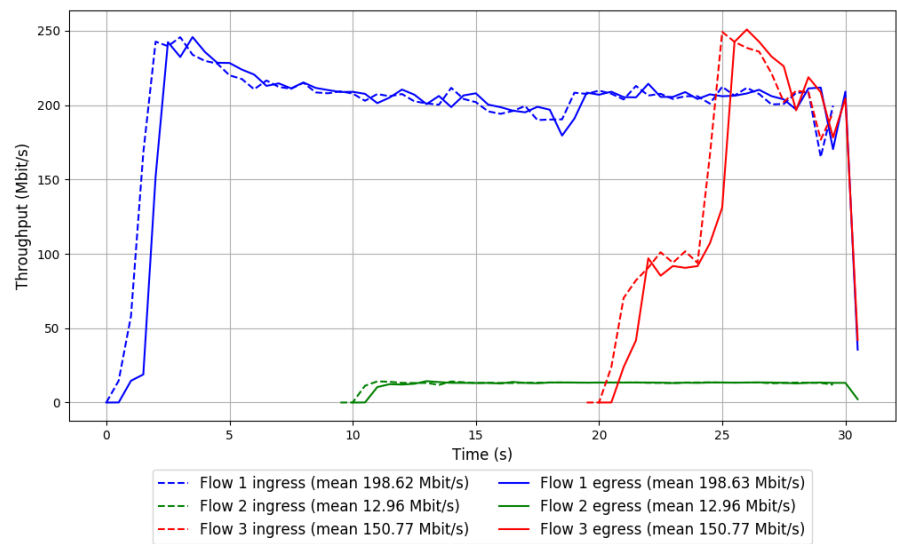
Run 4: Report of Sprout — Data Link

```
Run 5: Statistics of Sprout

Start at: 2018-12-20 15:23:32
End at: 2018-12-20 15:24:02
Local clock offset: -0.051 ms
Remote clock offset: 0.004 ms


# Below is generated by plot.py at 2018-12-20 17:43:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.30 Mbit/s
95th percentile per-packet one-way delay: 133.048 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.66 Mbit/s
95th percentile per-packet one-way delay: 132.359 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.62 Mbit/s
95th percentile per-packet one-way delay: 133.065 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.69 Mbit/s
95th percentile per-packet one-way delay: 133.156 ms
Loss rate: 0.00%
```
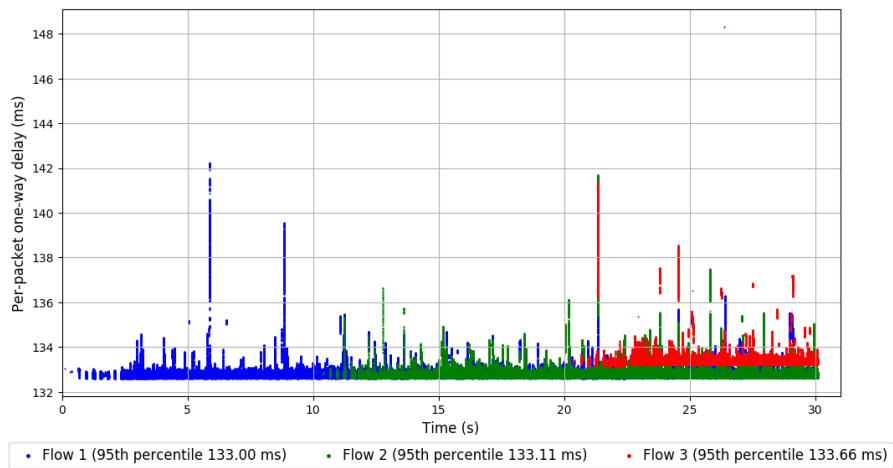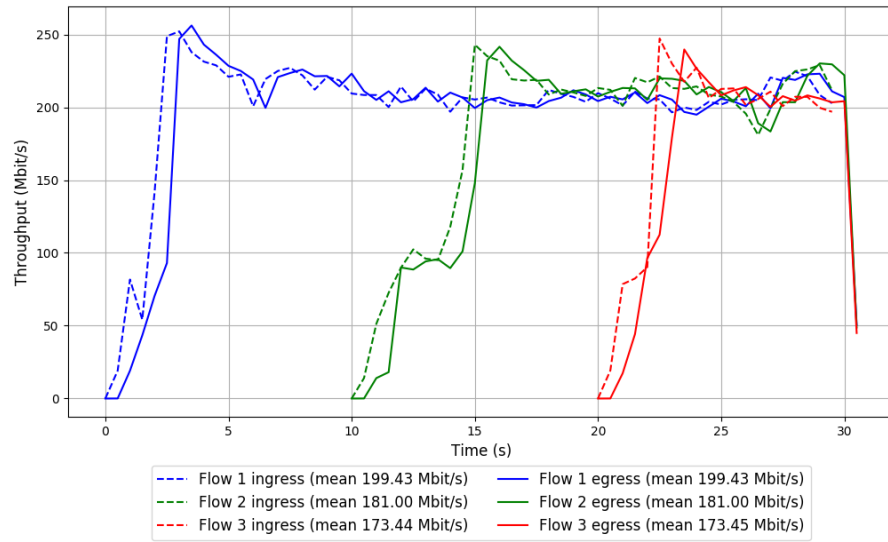
Run 5: Report of Sprout — Data Link

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

Start at: 2018-12-20 13:05:32
End at: 2018-12-20 13:06:02
Local clock offset: 1.421 ms
Remote clock offset: -0.402 ms


# Below is generated by plot.py at 2018-12-20 17:43:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 257.39 Mbit/s
95th percentile per-packet one-way delay: 131.341 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 198.63 Mbit/s
95th percentile per-packet one-way delay: 131.106 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 12.96 Mbit/s
95th percentile per-packet one-way delay: 131.081 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 150.77 Mbit/s
95th percentile per-packet one-way delay: 131.540 ms
Loss rate: 0.00%
```
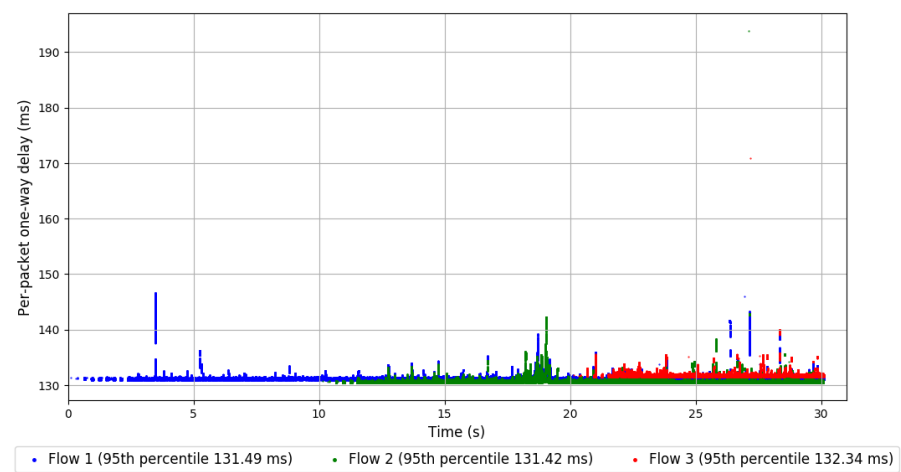
Run 1: Report of TaoVA-100x — Data Link

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

Start at: 2018-12-20 13:41:12
End at: 2018-12-20 13:41:42
Local clock offset: -0.056 ms
Remote clock offset: -0.107 ms


# Below is generated by plot.py at 2018-12-20 17:44:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 377.58 Mbit/s
95th percentile per-packet one-way delay: 133.399 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 199.43 Mbit/s
95th percentile per-packet one-way delay: 132.996 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 181.00 Mbit/s
95th percentile per-packet one-way delay: 133.109 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 173.45 Mbit/s
95th percentile per-packet one-way delay: 133.662 ms
Loss rate: 0.00%
```

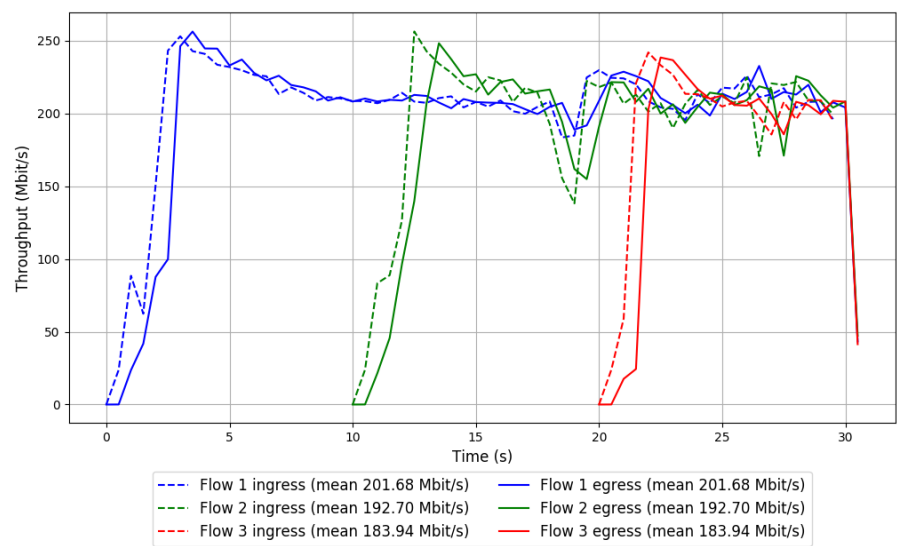# Run 2: Report of TaoVA-100x — Data Link

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

Start at: 2018-12-20 14:16:43
End at: 2018-12-20 14:17:13
Local clock offset: 1.833 ms
Remote clock offset: -0.071 ms


# Below is generated by plot.py at 2018-12-20 17:45:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 391.06 Mbit/s
95th percentile per-packet one-way delay: 131.829 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 201.68 Mbit/s
95th percentile per-packet one-way delay: 131.488 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 192.70 Mbit/s
95th percentile per-packet one-way delay: 131.424 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 183.94 Mbit/s
95th percentile per-packet one-way delay: 132.335 ms
Loss rate: 0.00%
```
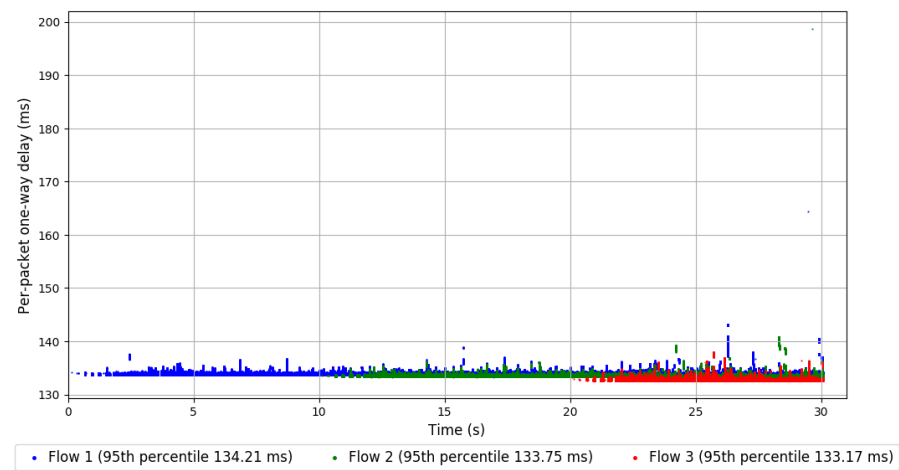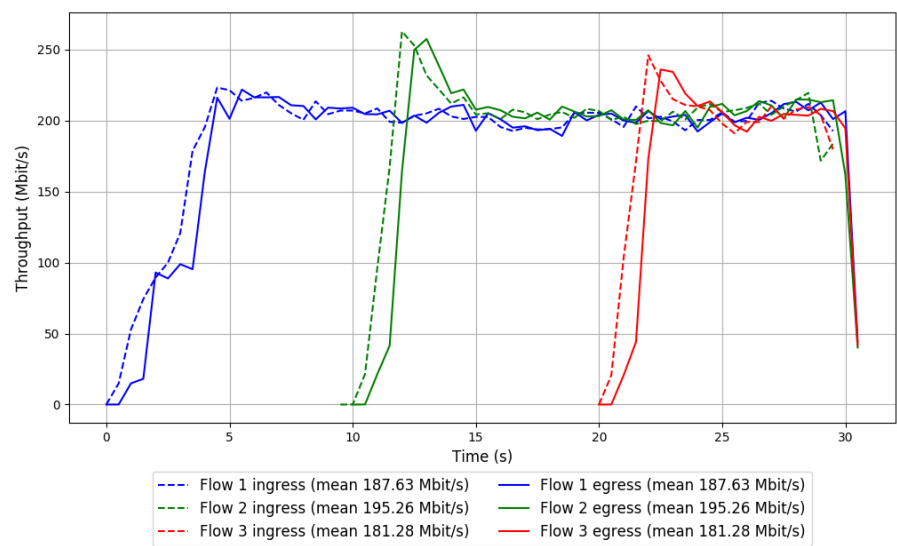
Run 3: Report of TaoVA-100x — Data Link

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

Start at: 2018-12-20 14:52:39
End at: 2018-12-20 14:53:09
Local clock offset: -0.385 ms
Remote clock offset: 0.349 ms


# Below is generated by plot.py at 2018-12-20 17:45:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 378.02 Mbit/s
95th percentile per-packet one-way delay: 134.081 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 187.63 Mbit/s
95th percentile per-packet one-way delay: 134.206 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 195.26 Mbit/s
95th percentile per-packet one-way delay: 133.752 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 181.28 Mbit/s
95th percentile per-packet one-way delay: 133.167 ms
Loss rate: 0.00%
```
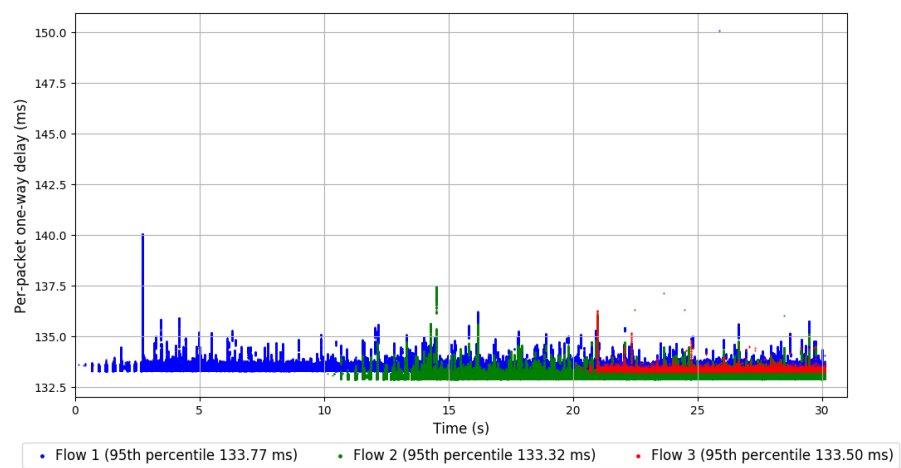
Run 4: Report of TaoVA-100x — Data Link

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

Start at: 2018-12-20 15:28:43
End at: 2018-12-20 15:29:13
Local clock offset: -0.373 ms
Remote clock offset: 0.365 ms


# Below is generated by plot.py at 2018-12-20 17:45:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 317.07 Mbit/s
95th percentile per-packet one-way delay: 133.691 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 192.01 Mbit/s
95th percentile per-packet one-way delay: 133.766 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 181.42 Mbit/s
95th percentile per-packet one-way delay: 133.317 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 12.70 Mbit/s
95th percentile per-packet one-way delay: 133.496 ms
Loss rate: 0.00%
```
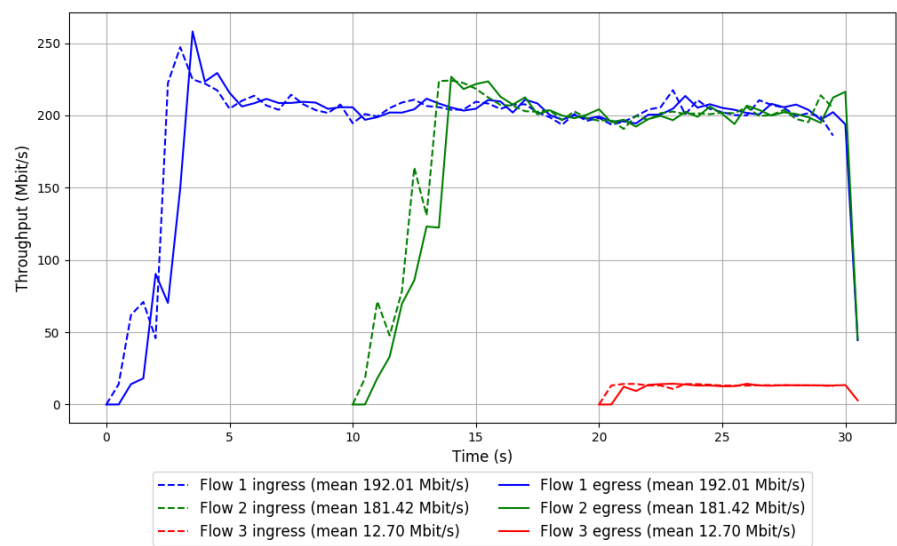
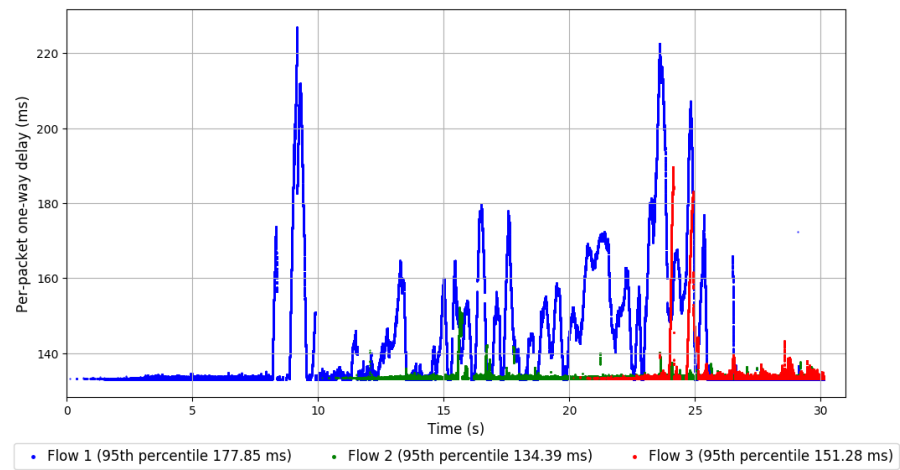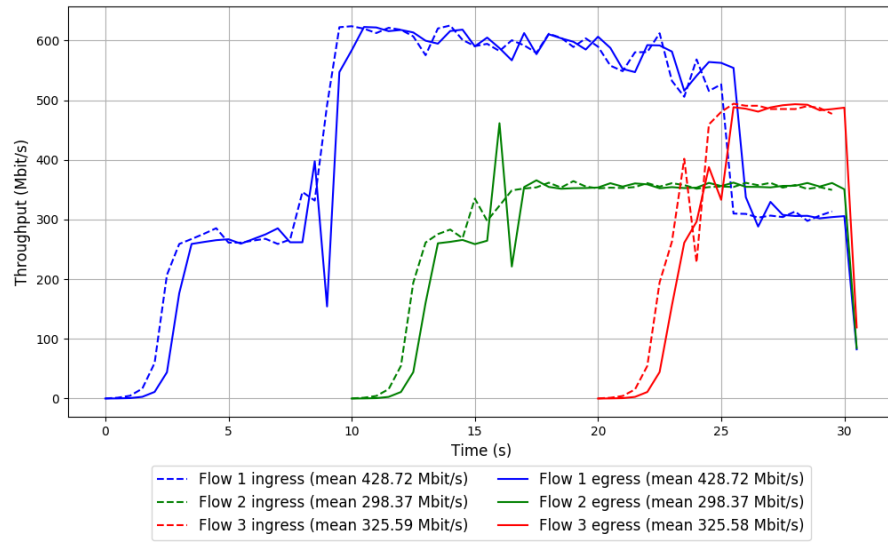Run 5: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 192.01 Mbit/s)   Flow 1 egress (mean 192.01 Mbit/s)
Flow 2 ingress (mean 181.42 Mbit/s)   Flow 2 egress (mean 181.42 Mbit/s)
Flow 3 ingress (mean 12.70 Mbit/s)   Flow 3 egress (mean 12.70 Mbit/s)

Flow 1 (95th percentile 133.77 ms)   Flow 2 (95th percentile 133.32 ms)   Flow 3 (95th percentile 133.50 ms)

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```
Run 1: Statistics of TCP Vegas

Start at: 2018-12-20 13:03:28
End at: 2018-12-20 13:03:58
Local clock offset: -0.058 ms
Remote clock offset: -0.011 ms


# Below is generated by plot.py at 2018-12-20 17:46:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 735.67 Mbit/s
95th percentile per-packet one-way delay: 170.889 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 428.72 Mbit/s
95th percentile per-packet one-way delay: 177.851 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 298.37 Mbit/s
95th percentile per-packet one-way delay: 134.388 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 325.58 Mbit/s
95th percentile per-packet one-way delay: 151.275 ms
Loss rate: 0.00%
```
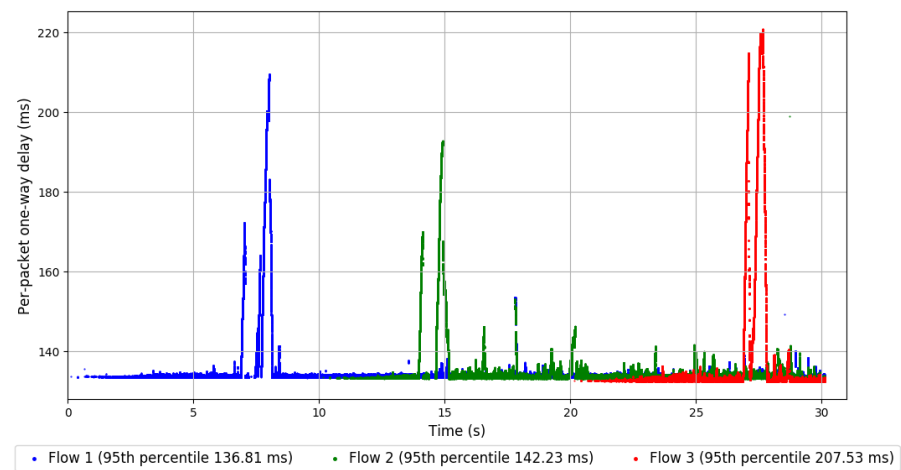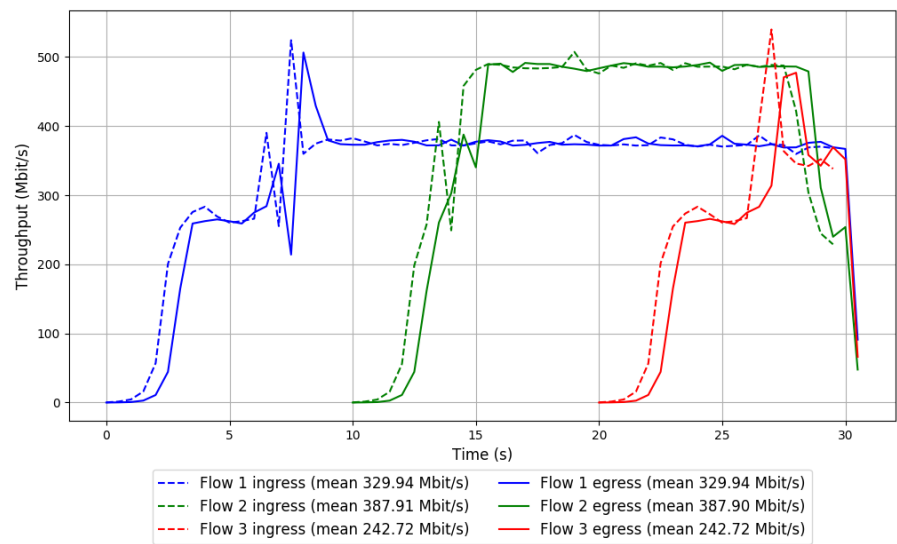
Run 1: Report of TCP Vegas — Data Link

```
Run 2: Statistics of TCP Vegas

Start at: 2018-12-20 13:39:10
End at: 2018-12-20 13:39:40
Local clock offset: -0.259 ms
Remote clock offset: -0.08 ms


# Below is generated by plot.py at 2018-12-20 17:52:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 668.99 Mbit/s
95th percentile per-packet one-way delay: 145.519 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 329.94 Mbit/s
95th percentile per-packet one-way delay: 136.814 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 387.90 Mbit/s
95th percentile per-packet one-way delay: 142.228 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 242.72 Mbit/s
95th percentile per-packet one-way delay: 207.526 ms
Loss rate: 0.00%
```

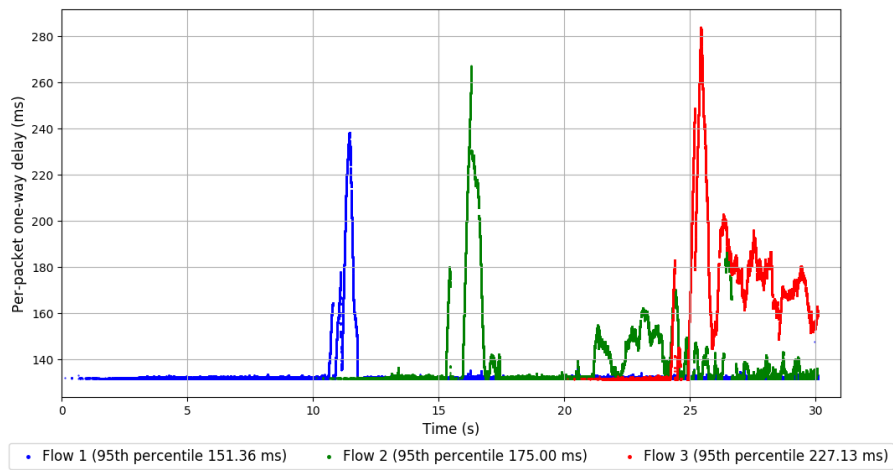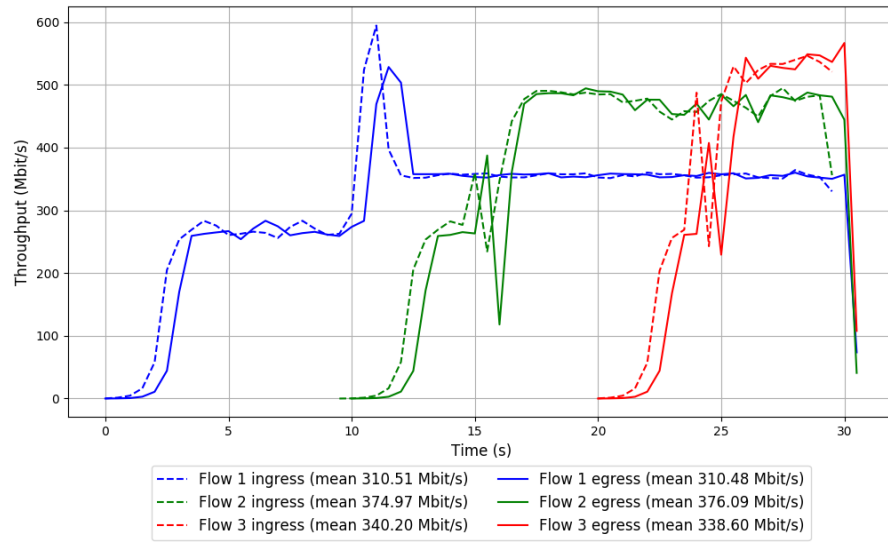Run 2: Report of TCP Vegas — Data Link

```
Run 3: Statistics of TCP Vegas

Start at: 2018-12-20 14:14:41
End at: 2018-12-20 14:15:11
Local clock offset: 1.673 ms
Remote clock offset: -0.068 ms


# Below is generated by plot.py at 2018-12-20 17:55:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 673.23 Mbit/s
95th percentile per-packet one-way delay: 186.098 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 310.48 Mbit/s
95th percentile per-packet one-way delay: 151.357 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 376.09 Mbit/s
95th percentile per-packet one-way delay: 175.000 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 338.60 Mbit/s
95th percentile per-packet one-way delay: 227.135 ms
Loss rate: 0.47%
```

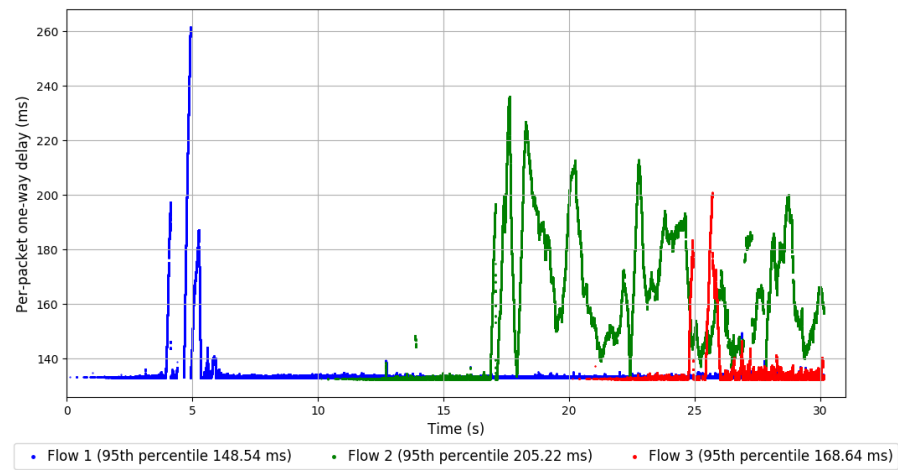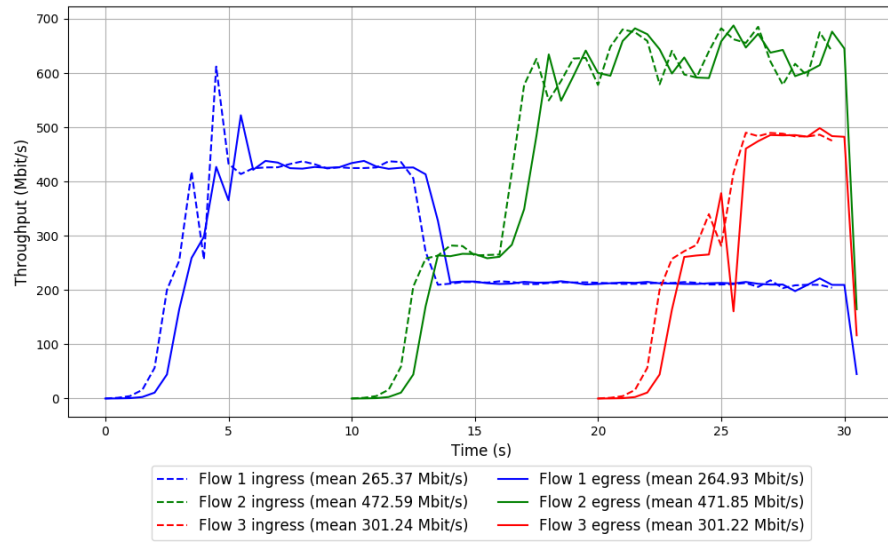## Run 3: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 310.51 Mbit/s) — Flow 1 egress (mean 310.48 Mbit/s)
Flow 2 ingress (mean 374.97 Mbit/s) — Flow 2 egress (mean 376.09 Mbit/s)
Flow 3 ingress (mean 340.20 Mbit/s) — Flow 3 egress (mean 338.60 Mbit/s)

Flow 1 (95th percentile 151.36 ms) • Flow 2 (95th percentile 175.00 ms) • Flow 3 (95th percentile 227.13 ms)

```
Run 4: Statistics of TCP Vegas

Start at: 2018-12-20 14:50:37
End at: 2018-12-20 14:51:07
Local clock offset: 0.1 ms
Remote clock offset: -0.012 ms


# Below is generated by plot.py at 2018-12-20 17:56:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 679.44 Mbit/s
95th percentile per-packet one-way delay: 193.702 ms
Loss rate: 0.14%
-- Flow 1:
Average throughput: 264.93 Mbit/s
95th percentile per-packet one-way delay: 148.537 ms
Loss rate: 0.17%
-- Flow 2:
Average throughput: 471.85 Mbit/s
95th percentile per-packet one-way delay: 205.224 ms
Loss rate: 0.16%
-- Flow 3:
Average throughput: 301.22 Mbit/s
95th percentile per-packet one-way delay: 168.644 ms
Loss rate: 0.00%
```
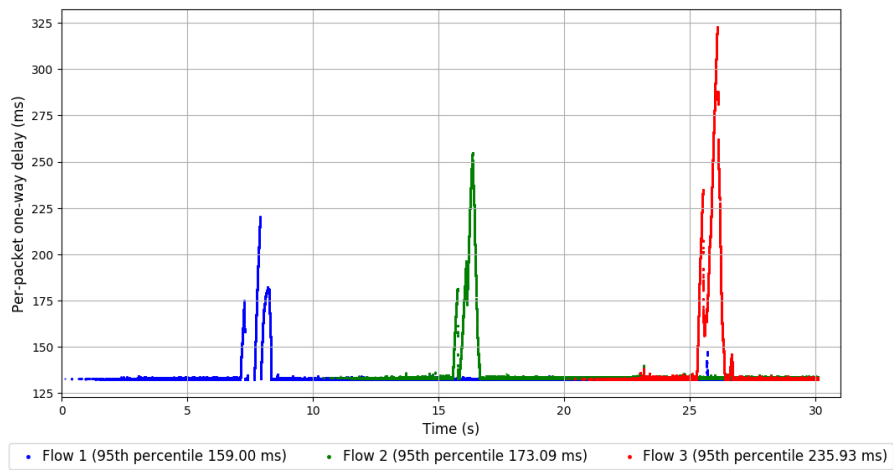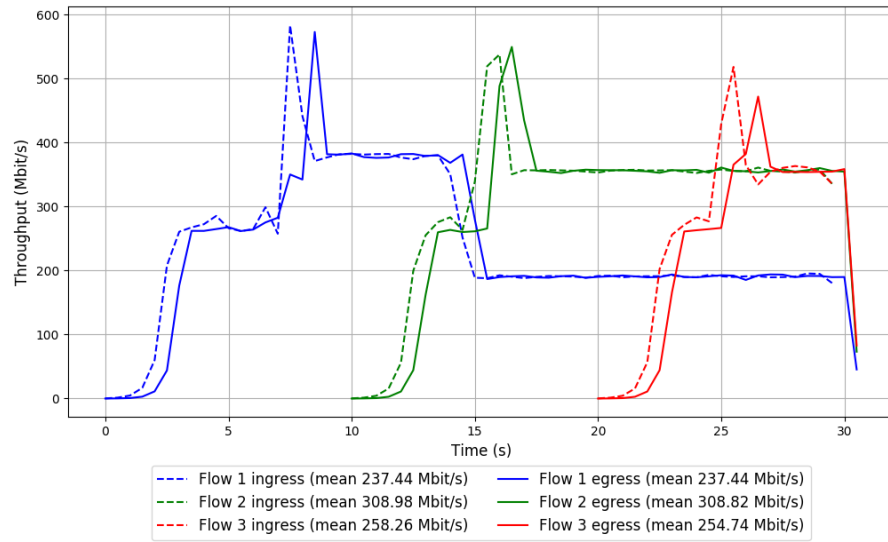
Run 4: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 265.37 Mbit/s)   Flow 1 egress (mean 264.93 Mbit/s)
Flow 2 ingress (mean 472.59 Mbit/s)   Flow 2 egress (mean 471.85 Mbit/s)
Flow 3 ingress (mean 301.24 Mbit/s)   Flow 3 egress (mean 301.22 Mbit/s)

Flow 1 (95th percentile 148.54 ms)   Flow 2 (95th percentile 205.22 ms)   Flow 3 (95th percentile 168.64 ms)
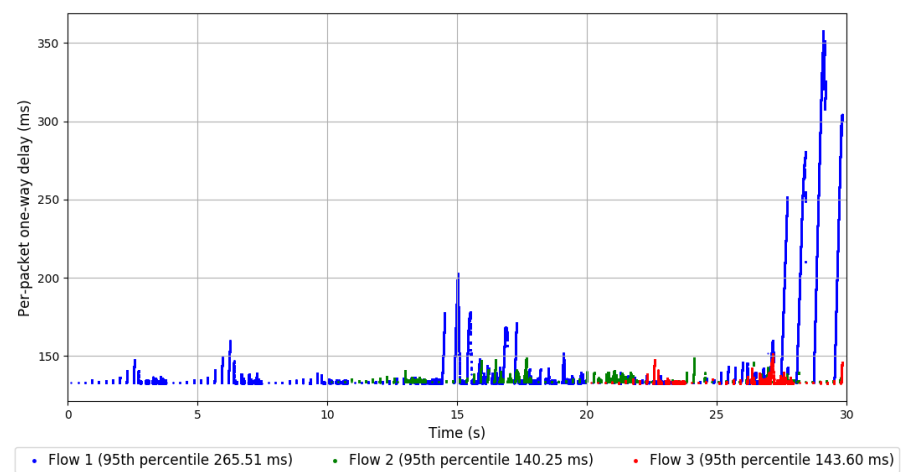
```
Run 5: Statistics of TCP Vegas

Start at: 2018-12-20 15:26:50
End at: 2018-12-20 15:27:20
Local clock offset: -0.298 ms
Remote clock offset: -0.35 ms


# Below is generated by plot.py at 2018-12-20 17:56:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 527.75 Mbit/s
95th percentile per-packet one-way delay: 175.703 ms
Loss rate: 0.24%
-- Flow 1:
Average throughput: 237.44 Mbit/s
95th percentile per-packet one-way delay: 159.004 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 308.82 Mbit/s
95th percentile per-packet one-way delay: 173.088 ms
Loss rate: 0.05%
-- Flow 3:
Average throughput: 254.74 Mbit/s
95th percentile per-packet one-way delay: 235.927 ms
Loss rate: 1.37%
```

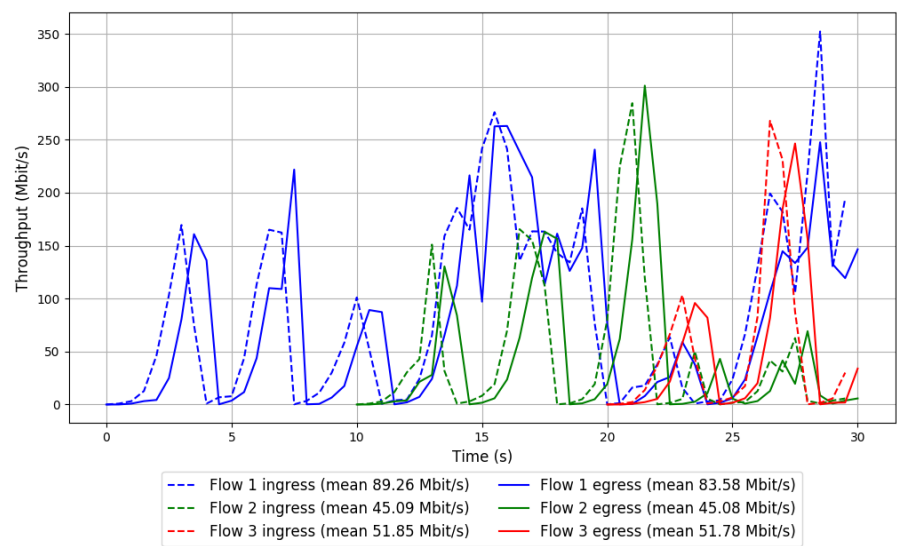# Run 5: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 237.44 Mbit/s) --- Flow 1 egress (mean 237.44 Mbit/s)
Flow 2 ingress (mean 308.98 Mbit/s) --- Flow 2 egress (mean 308.82 Mbit/s)
Flow 3 ingress (mean 258.26 Mbit/s) --- Flow 3 egress (mean 254.74 Mbit/s)

Flow 1 (95th percentile 159.00 ms)   Flow 2 (95th percentile 173.09 ms)   Flow 3 (95th percentile 235.93 ms)
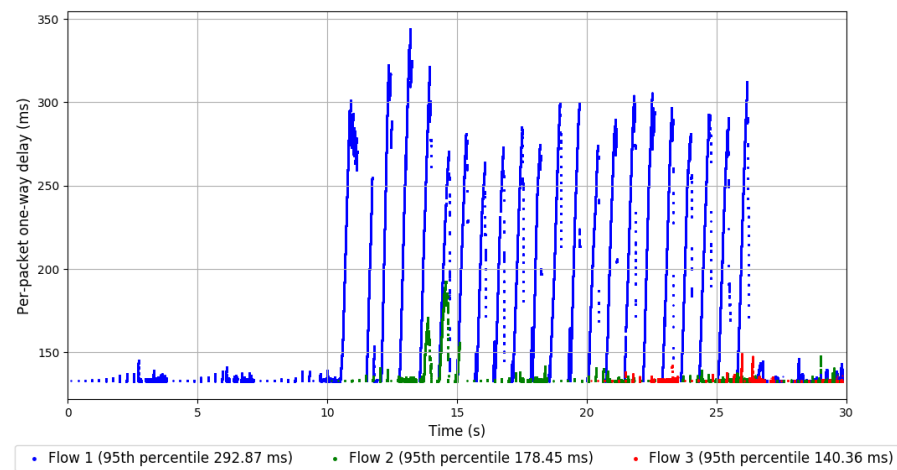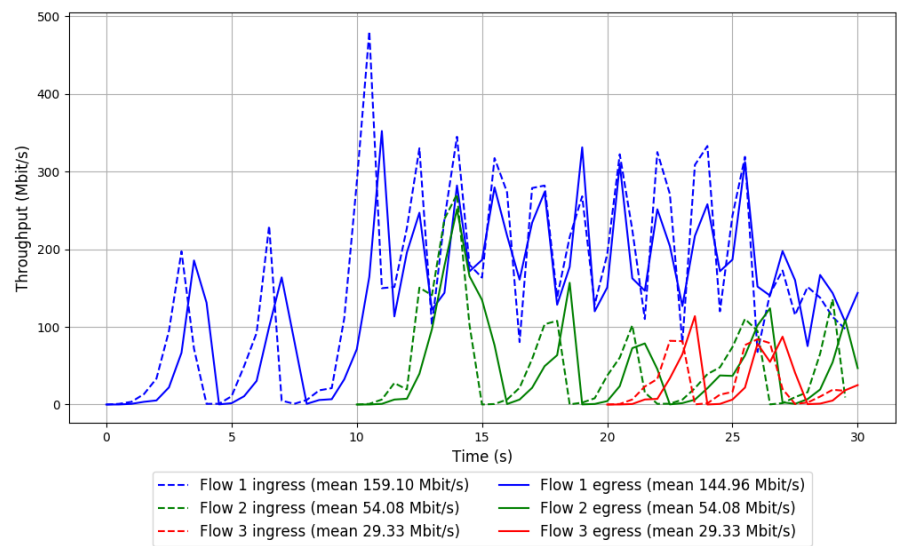
```
Run 1: Statistics of Verus

Start at: 2018-12-20 12:58:31
End at: 2018-12-20 12:59:01
Local clock offset: 0.283 ms
Remote clock offset: -0.033 ms


# Below is generated by plot.py at 2018-12-20 17:56:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 130.22 Mbit/s
95th percentile per-packet one-way delay: 235.987 ms
Loss rate: 4.14%
-- Flow 1:
Average throughput: 83.58 Mbit/s
95th percentile per-packet one-way delay: 265.511 ms
Loss rate: 6.31%
-- Flow 2:
Average throughput: 45.08 Mbit/s
95th percentile per-packet one-way delay: 140.250 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 51.78 Mbit/s
95th percentile per-packet one-way delay: 143.597 ms
Loss rate: 0.00%
```
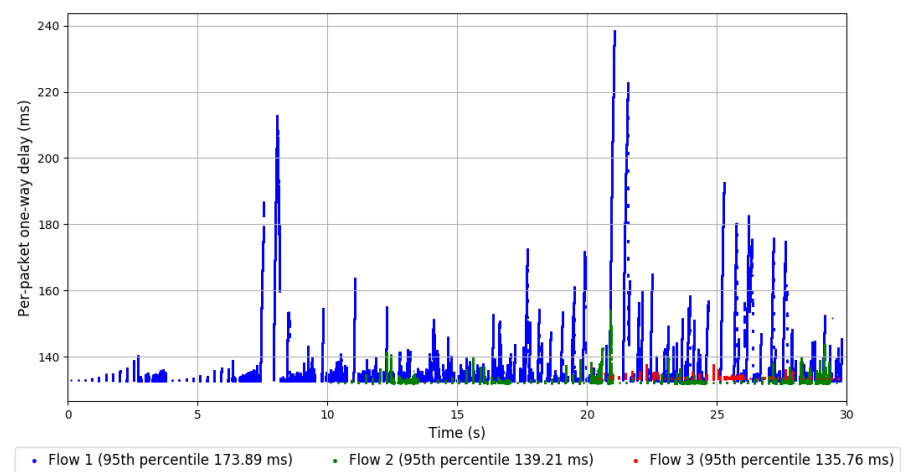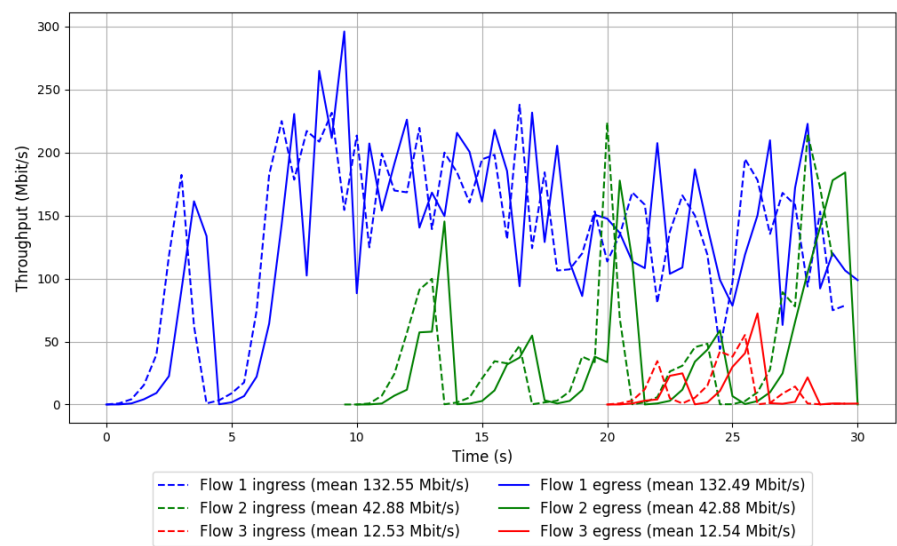
Run 1: Report of Verus — Data Link

```
Run 2: Statistics of Verus

Start at: 2018-12-20 13:33:51
End at: 2018-12-20 13:34:21
Local clock offset: -0.126 ms
Remote clock offset: -0.077 ms


# Below is generated by plot.py at 2018-12-20 17:56:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 190.13 Mbit/s
95th percentile per-packet one-way delay: 289.655 ms
Loss rate: 6.93%
-- Flow 1:
Average throughput: 144.96 Mbit/s
95th percentile per-packet one-way delay: 292.866 ms
Loss rate: 8.89%
-- Flow 2:
Average throughput: 54.08 Mbit/s
95th percentile per-packet one-way delay: 178.453 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 29.33 Mbit/s
95th percentile per-packet one-way delay: 140.357 ms
Loss rate: 0.02%
```
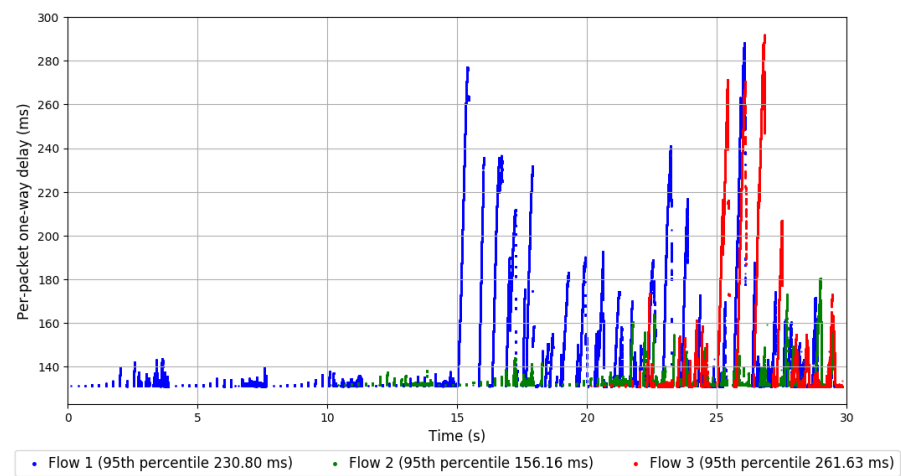
Run 2: Report of Verus — Data Link

```
Run 3: Statistics of Verus

Start at: 2018-12-20 14:09:47
End at: 2018-12-20 14:10:17
Local clock offset: -0.039 ms
Remote clock offset: -0.079 ms


# Below is generated by plot.py at 2018-12-20 17:56:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 164.66 Mbit/s
95th percentile per-packet one-way delay: 169.831 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 132.49 Mbit/s
95th percentile per-packet one-way delay: 173.894 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 42.88 Mbit/s
95th percentile per-packet one-way delay: 139.210 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 12.54 Mbit/s
95th percentile per-packet one-way delay: 135.759 ms
Loss rate: 0.00%
```

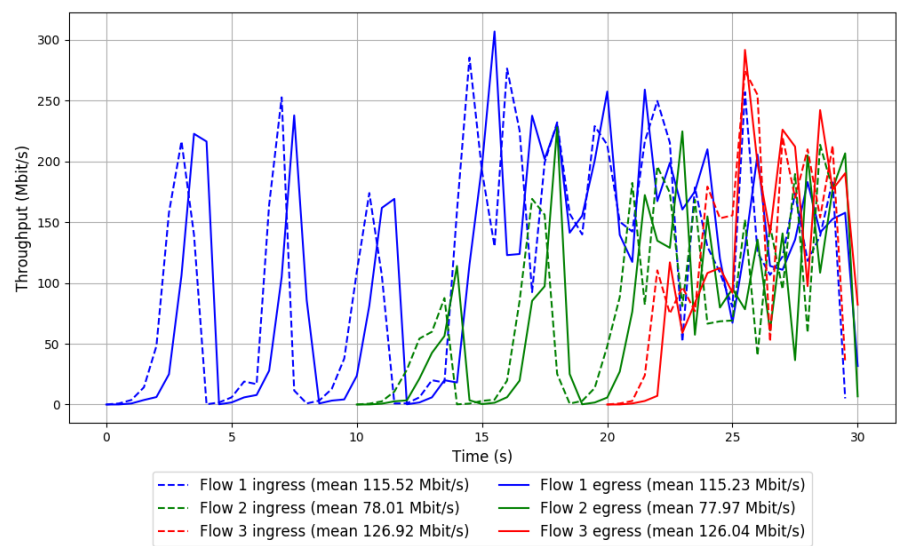Run 3: Report of Verus — Data Link

```
Run 4: Statistics of Verus

Start at: 2018-12-20 14:45:38
End at: 2018-12-20 14:46:08
Local clock offset: 1.585 ms
Remote clock offset: -0.037 ms


# Below is generated by plot.py at 2018-12-20 17:56:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 206.68 Mbit/s
95th percentile per-packet one-way delay: 231.887 ms
Loss rate: 0.28%
-- Flow 1:
Average throughput: 115.23 Mbit/s
95th percentile per-packet one-way delay: 230.802 ms
Loss rate: 0.26%
-- Flow 2:
Average throughput: 77.97 Mbit/s
95th percentile per-packet one-way delay: 156.157 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 126.04 Mbit/s
95th percentile per-packet one-way delay: 261.634 ms
Loss rate: 0.67%
```

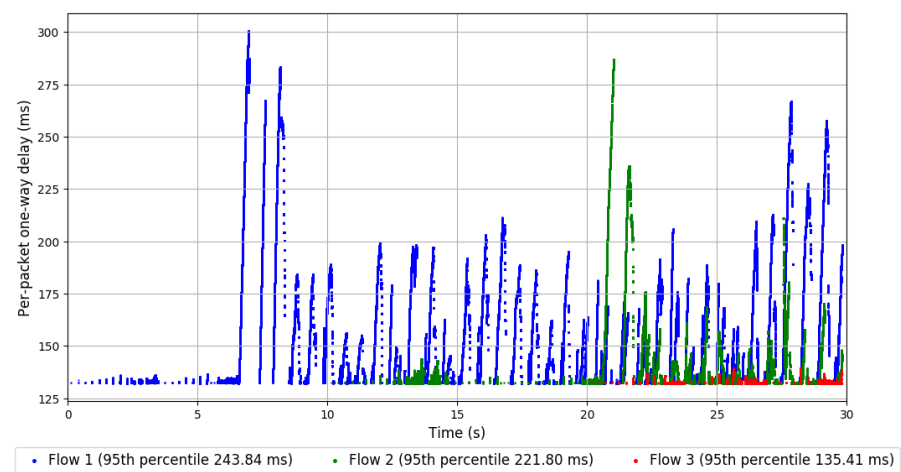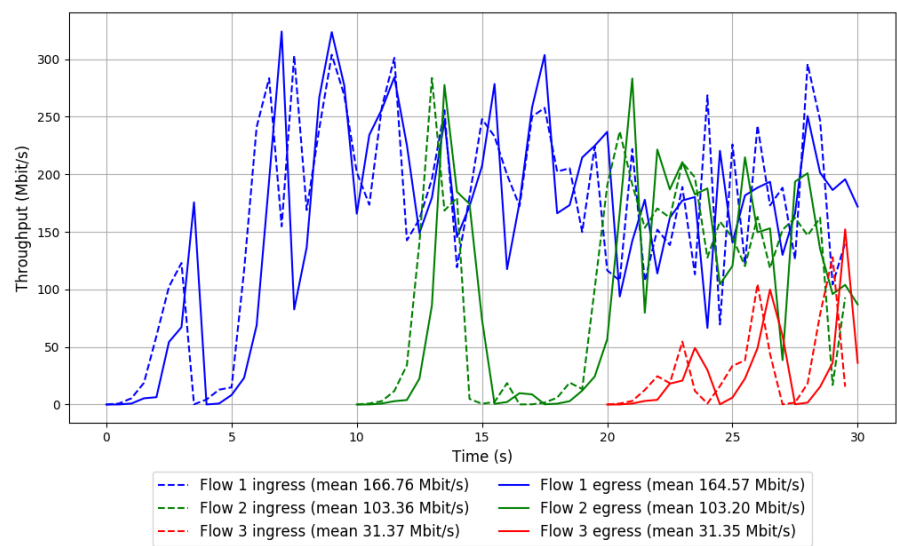# Run 4: Report of Verus — Data Link

```
Run 5: Statistics of Verus

Start at: 2018-12-20 15:21:45
End at: 2018-12-20 15:22:15
Local clock offset: 0.018 ms
Remote clock offset: -0.356 ms


# Below is generated by plot.py at 2018-12-20 17:57:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 243.14 Mbit/s
95th percentile per-packet one-way delay: 233.066 ms
Loss rate: 0.94%
-- Flow 1:
Average throughput: 164.57 Mbit/s
95th percentile per-packet one-way delay: 243.838 ms
Loss rate: 1.32%
-- Flow 2:
Average throughput: 103.20 Mbit/s
95th percentile per-packet one-way delay: 221.799 ms
Loss rate: 0.16%
-- Flow 3:
Average throughput: 31.35 Mbit/s
95th percentile per-packet one-way delay: 135.409 ms
Loss rate: 0.03%
```
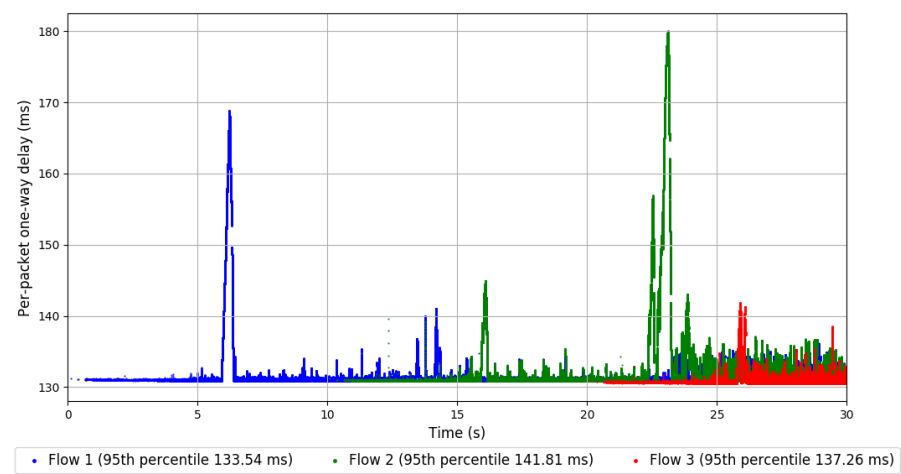
Run 5: Report of Verus — Data Link

```
Run 1: Statistics of PCC-Vivace

Start at: 2018-12-20 12:43:49
End at: 2018-12-20 12:44:19
Local clock offset: 2.747 ms
Remote clock offset: 0.312 ms


# Below is generated by plot.py at 2018-12-20 17:59:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 521.36 Mbit/s
95th percentile per-packet one-way delay: 136.606 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 293.41 Mbit/s
95th percentile per-packet one-way delay: 133.537 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 284.09 Mbit/s
95th percentile per-packet one-way delay: 141.806 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 117.39 Mbit/s
95th percentile per-packet one-way delay: 137.258 ms
Loss rate: 0.00%
```
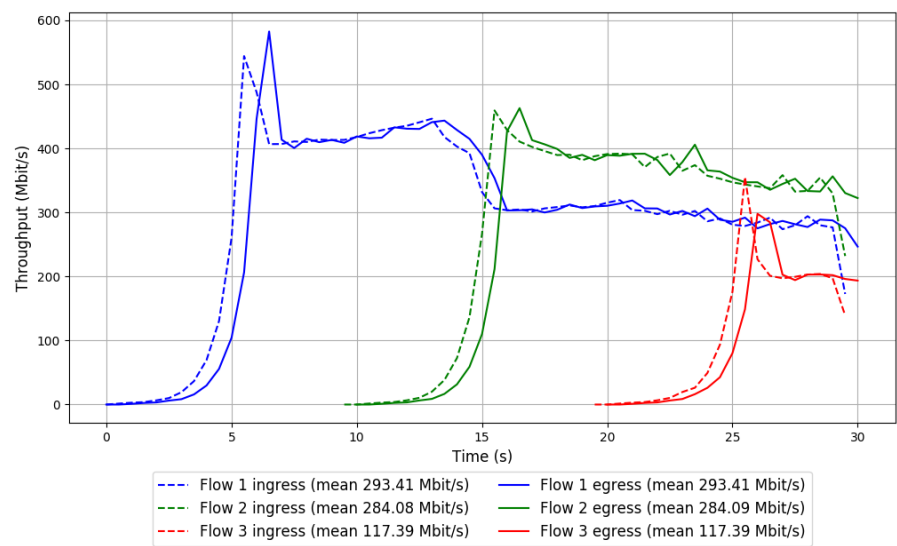
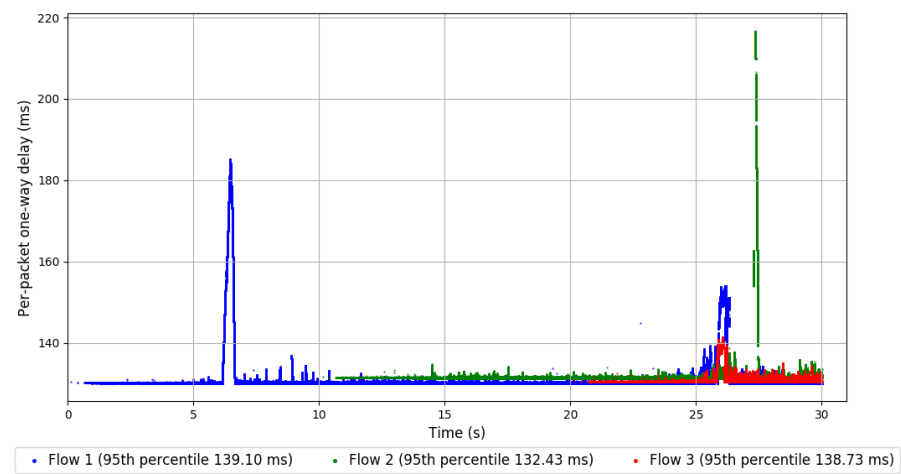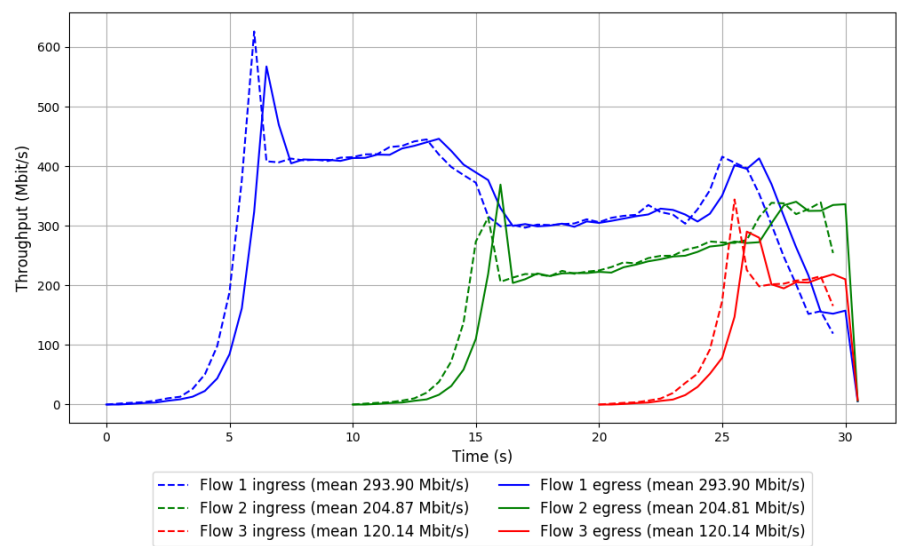# Run 1: Report of PCC-Vivace — Data Link

```
Run 2: Statistics of PCC-Vivace

Start at: 2018-12-20 13:19:08
End at: 2018-12-20 13:19:38
Local clock offset: 1.465 ms
Remote clock offset: -0.424 ms


# Below is generated by plot.py at 2018-12-20 17:59:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 469.75 Mbit/s
95th percentile per-packet one-way delay: 135.660 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 293.90 Mbit/s
95th percentile per-packet one-way delay: 139.096 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 204.81 Mbit/s
95th percentile per-packet one-way delay: 132.433 ms
Loss rate: 0.03%
-- Flow 3:
Average throughput: 120.14 Mbit/s
95th percentile per-packet one-way delay: 138.734 ms
Loss rate: 0.00%
```

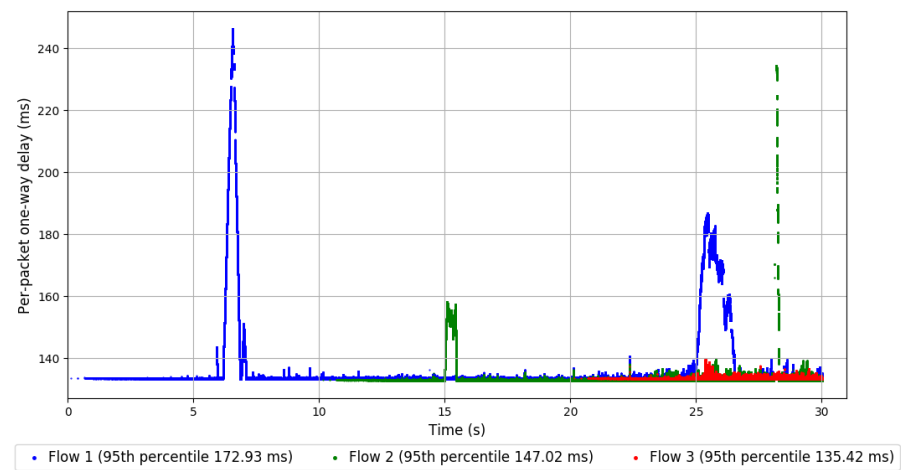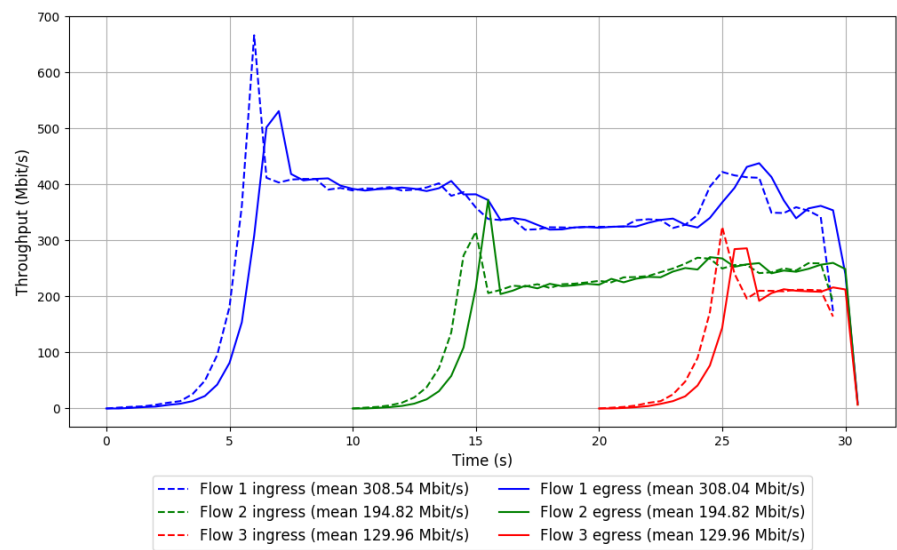Run 2: Report of PCC-Vivace — Data Link

```
Run 3: Statistics of PCC-Vivace

Start at: 2018-12-20 13:55:13
End at: 2018-12-20 13:55:43
Local clock offset: -0.168 ms
Remote clock offset: -0.098 ms

# Below is generated by plot.py at 2018-12-20 17:59:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 480.35 Mbit/s
95th percentile per-packet one-way delay: 161.969 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 308.04 Mbit/s
95th percentile per-packet one-way delay: 172.925 ms
Loss rate: 0.16%
-- Flow 2:
Average throughput: 194.82 Mbit/s
95th percentile per-packet one-way delay: 147.024 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 129.96 Mbit/s
95th percentile per-packet one-way delay: 135.424 ms
Loss rate: 0.00%
```

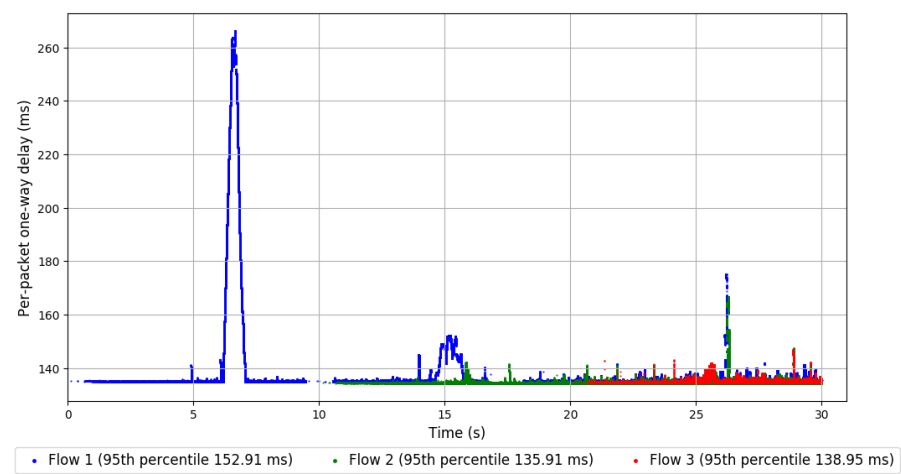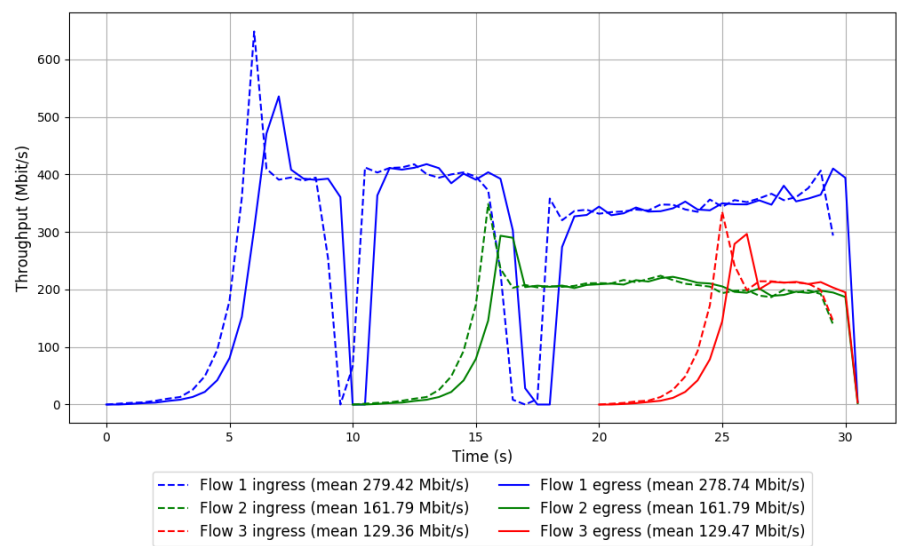## Run 3: Report of PCC-Vivace — Data Link

Flow 1 ingress (mean 308.54 Mbit/s) Flow 1 egress (mean 308.04 Mbit/s)
Flow 2 ingress (mean 194.82 Mbit/s) Flow 2 egress (mean 194.82 Mbit/s)
Flow 3 ingress (mean 129.96 Mbit/s) Flow 3 egress (mean 129.96 Mbit/s)

Flow 1 (95th percentile 172.93 ms)   Flow 2 (95th percentile 147.02 ms)   Flow 3 (95th percentile 135.42 ms)

```
Run 4: Statistics of PCC-Vivace

Start at: 2018-12-20 14:30:52
End at: 2018-12-20 14:31:22
Local clock offset: -1.617 ms
Remote clock offset: -0.102 ms

# Below is generated by plot.py at 2018-12-20 17:59:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 429.05 Mbit/s
95th percentile per-packet one-way delay: 147.483 ms
Loss rate: 0.16%
-- Flow 1:
Average throughput: 278.74 Mbit/s
95th percentile per-packet one-way delay: 152.913 ms
Loss rate: 0.24%
-- Flow 2:
Average throughput: 161.79 Mbit/s
95th percentile per-packet one-way delay: 135.907 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 129.47 Mbit/s
95th percentile per-packet one-way delay: 138.949 ms
Loss rate: 0.00%
```

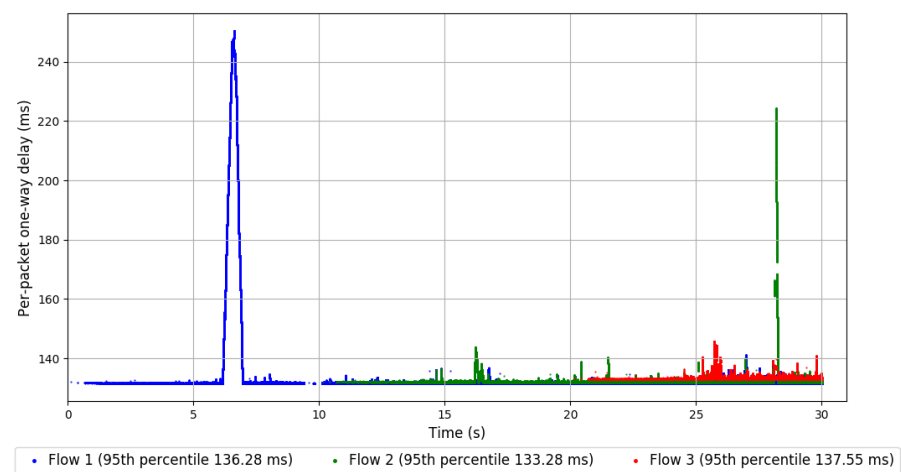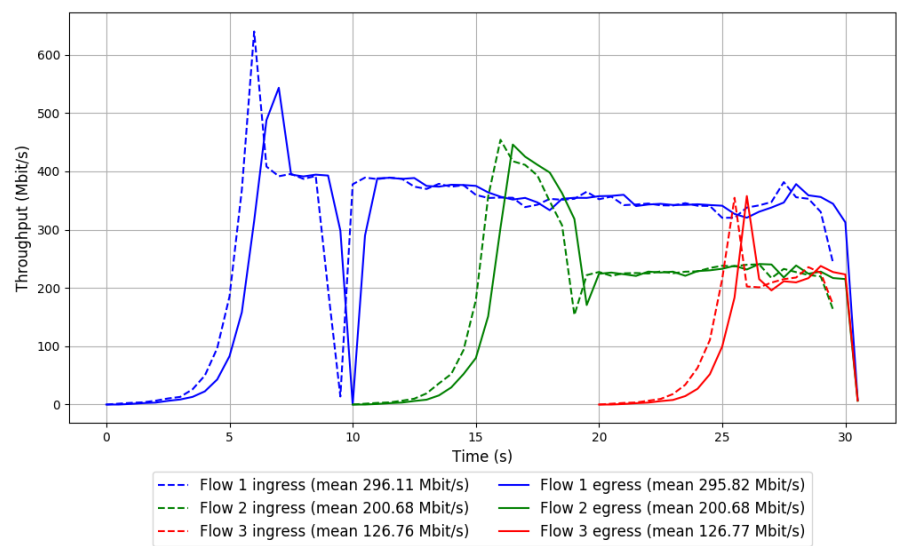# Run 4: Report of PCC-Vivace — Data Link

```
Run 5: Statistics of PCC-Vivace

Start at: 2018-12-20 15:06:58
End at: 2018-12-20 15:07:28
Local clock offset: 0.058 ms
Remote clock offset: -0.359 ms


# Below is generated by plot.py at 2018-12-20 17:59:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 470.97 Mbit/s
95th percentile per-packet one-way delay: 135.346 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 295.82 Mbit/s
95th percentile per-packet one-way delay: 136.280 ms
Loss rate: 0.10%
-- Flow 2:
Average throughput: 200.68 Mbit/s
95th percentile per-packet one-way delay: 133.279 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 126.77 Mbit/s
95th percentile per-packet one-way delay: 137.551 ms
Loss rate: 0.00%
```

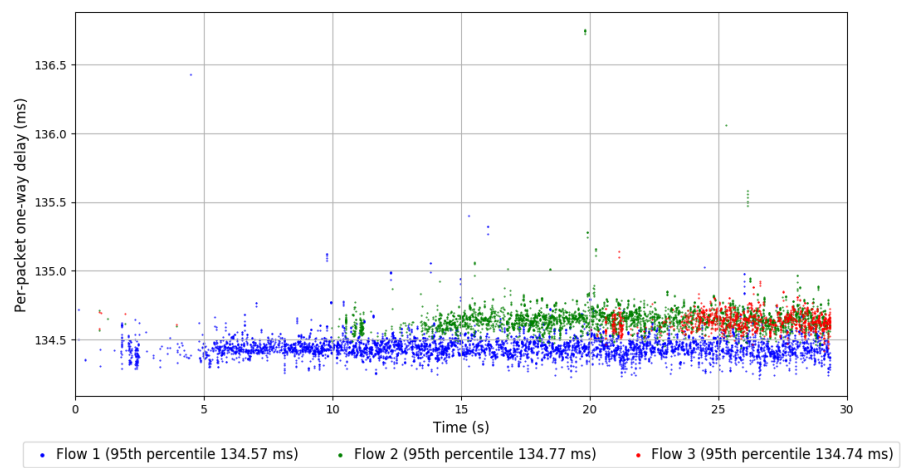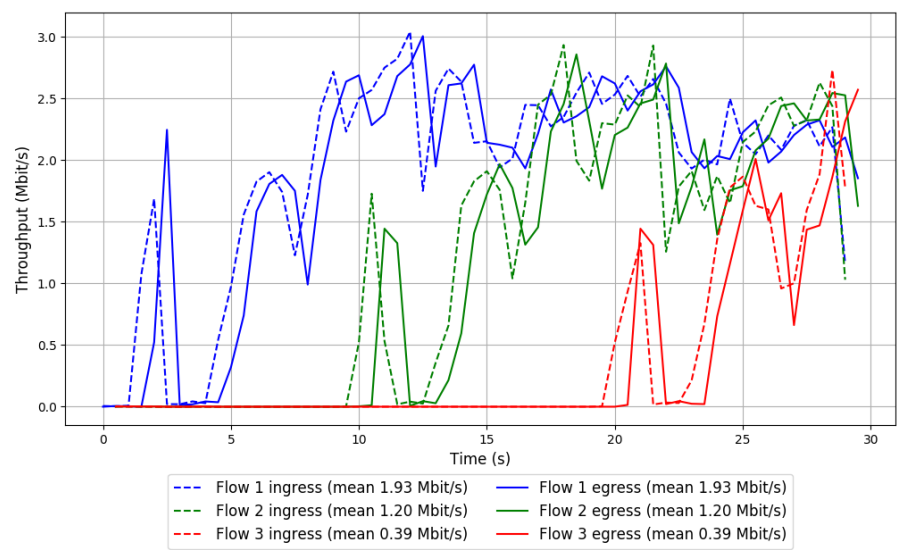# Run 5: Report of PCC-Vivace — Data Link

```
Run 1: Statistics of WebRTC media

Start at: 2018-12-20 12:45:52
End at: 2018-12-20 12:46:22
Local clock offset: -1.215 ms
Remote clock offset: -0.044 ms


# Below is generated by plot.py at 2018-12-20 17:59:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.47 Mbit/s
95th percentile per-packet one-way delay: 134.728 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.93 Mbit/s
95th percentile per-packet one-way delay: 134.566 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.20 Mbit/s
95th percentile per-packet one-way delay: 134.773 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.39 Mbit/s
95th percentile per-packet one-way delay: 134.743 ms
Loss rate: 0.00%
```

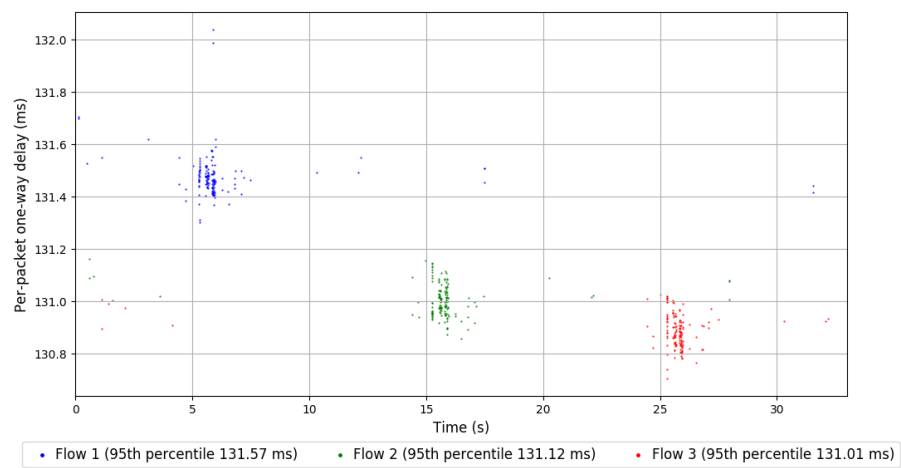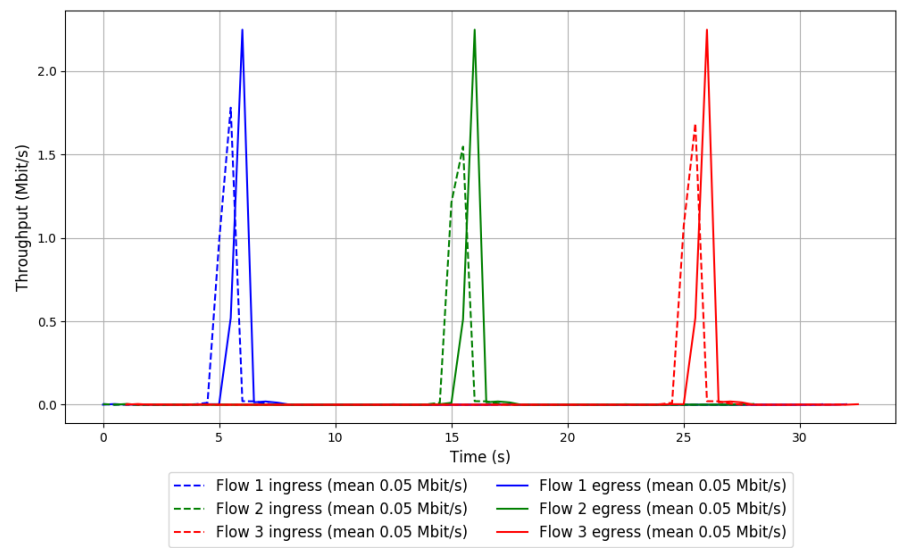Run 1: Report of WebRTC media — Data Link

```
Run 2: Statistics of WebRTC media

Start at: 2018-12-20 13:21:09
End at: 2018-12-20 13:21:39
Local clock offset: 1.524 ms
Remote clock offset: -0.401 ms


# Below is generated by plot.py at 2018-12-20 17:59:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.13 Mbit/s
95th percentile per-packet one-way delay: 131.521 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 131.574 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 131.115 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 131.006 ms
Loss rate: 0.00%
```

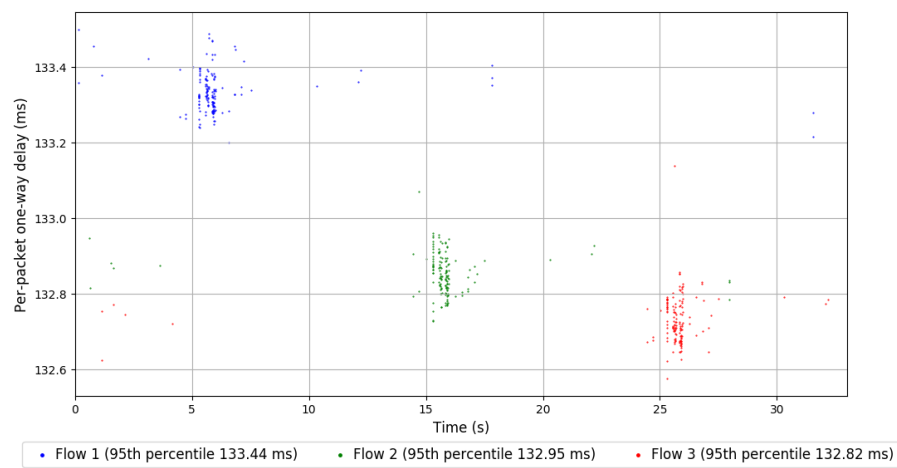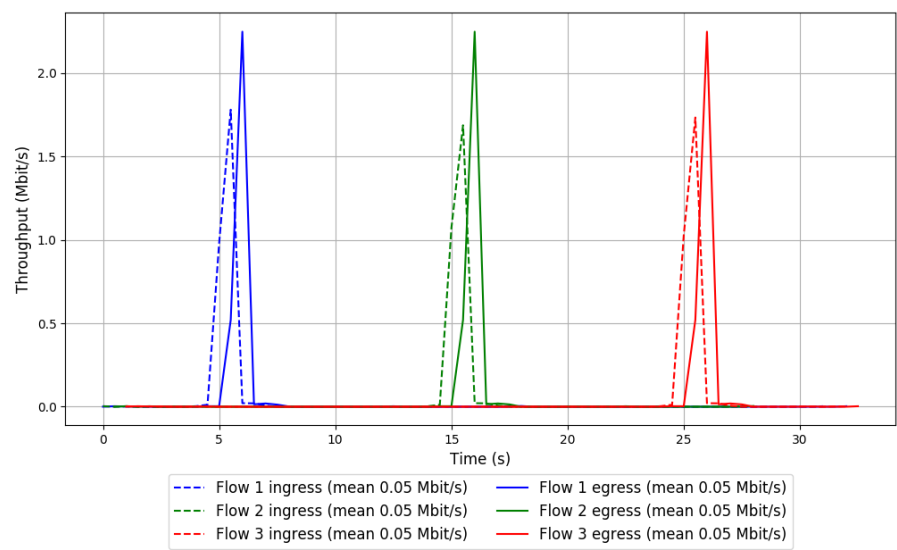Run 2: Report of WebRTC media — Data Link

```
Run 3: Statistics of WebRTC media

Start at: 2018-12-20 13:57:12
End at: 2018-12-20 13:57:42
Local clock offset: 0.053 ms
Remote clock offset: -0.084 ms

# Below is generated by plot.py at 2018-12-20 17:59:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.13 Mbit/s
95th percentile per-packet one-way delay: 133.392 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 133.436 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 132.946 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 132.820 ms
Loss rate: 0.00%
```

Run 3: Report of WebRTC media — Data Link

```
Run 4: Statistics of WebRTC media

Start at: 2018-12-20 14:32:50
End at: 2018-12-20 14:33:20
Local clock offset: 0.014 ms
Remote clock offset: -0.1 ms


# Below is generated by plot.py at 2018-12-20 17:59:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.20 Mbit/s
95th percentile per-packet one-way delay: 133.341 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.83 Mbit/s
95th percentile per-packet one-way delay: 133.363 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.05 Mbit/s
95th percentile per-packet one-way delay: 133.055 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.32 Mbit/s
95th percentile per-packet one-way delay: 132.973 ms
Loss rate: 0.00%
```
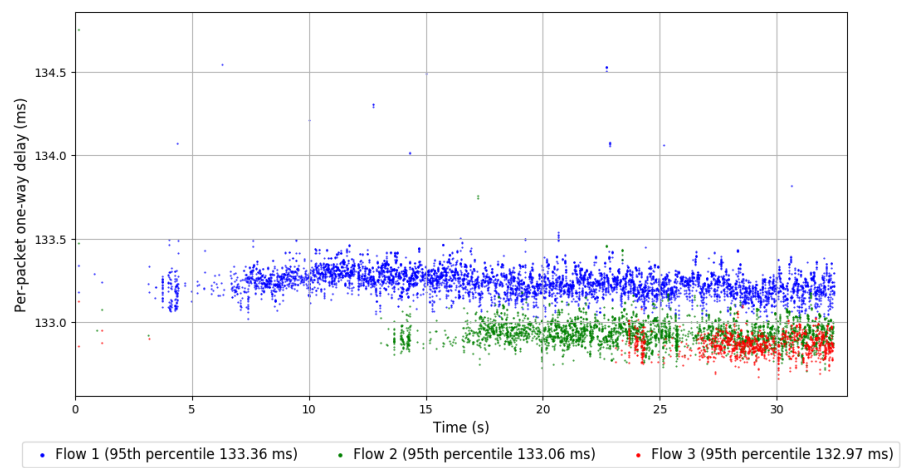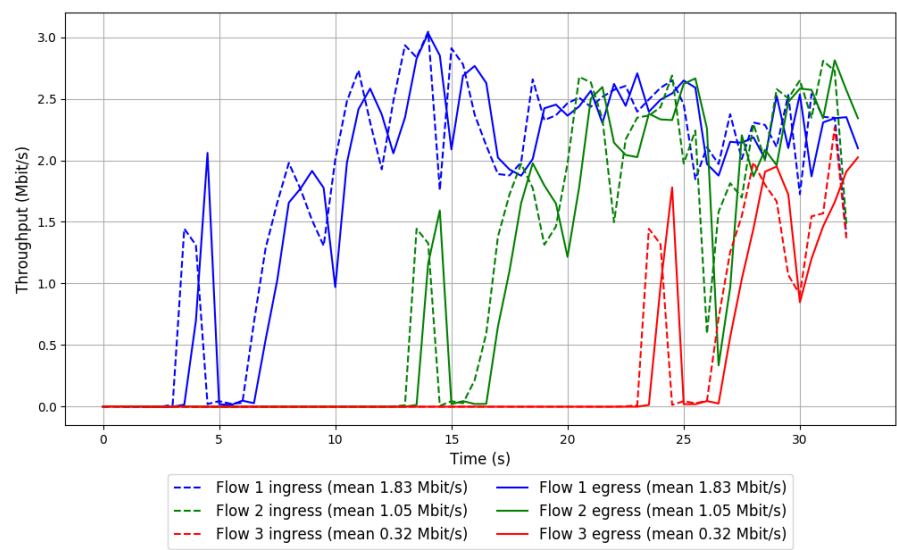
Run 4: Report of WebRTC media — Data Link

```
Run 5: Statistics of WebRTC media

Start at: 2018-12-20 15:09:08
End at: 2018-12-20 15:09:38
Local clock offset: -0.07 ms
Remote clock offset: 0.001 ms


# Below is generated by plot.py at 2018-12-20 17:59:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.13 Mbit/s
95th percentile per-packet one-way delay: 133.333 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 133.395 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 133.090 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 132.695 ms
Loss rate: 0.00%
```

Run 5: Report of WebRTC media — Data Link