Pantheon Report

Generated at 2018-09-08 00:01:31 (UTC).

Data path: Colombia cellular on `ppp0` (*remote*) →AWS Brazil 2 on `ens5` (*local*).

Repeated the test of 18 congestion control schemes 3 times.

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

NTP offsets were measured against `gps.ntp.br` and have been applied to correct the timestamps in logs.

```
System info:
Linux 4.15.0-1020-aws
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912
net.ipv4.tcp_mem = 536870912 536870912 536870912

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

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

test from Colombia cellular to AWS Brazil 2, 3 runs of 30s each per scheme
3 flows with 10s interval between flows (mean of all runs by scheme)
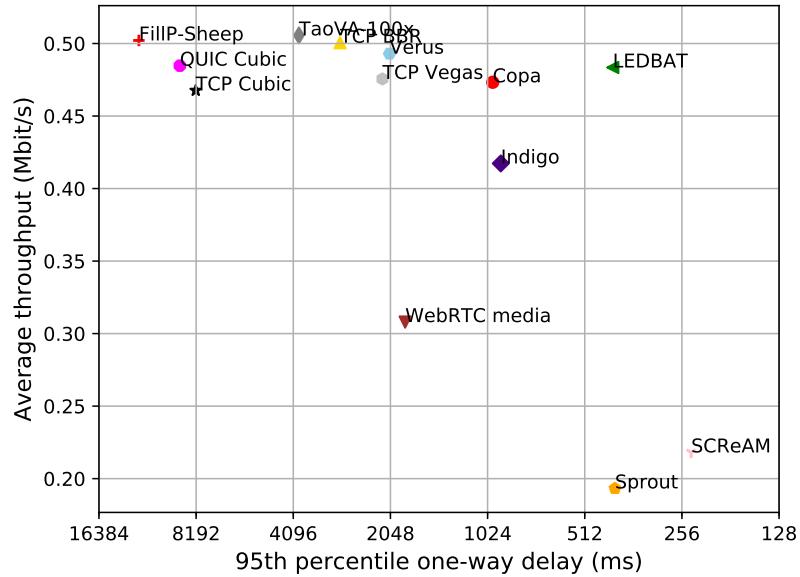
test from Colombia cellular to AWS Brazil 2, 3 runs of 30s each per scheme
3 flows with 10s interval between flows
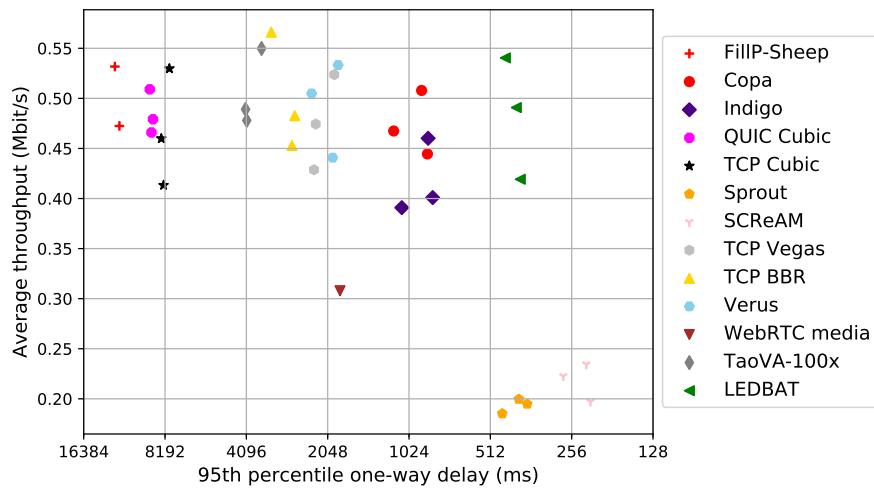
scheme	# runs	mean avg tput (Mbit/s)			mean 95th-%ile delay (ms)			mean loss rate (%)		
		flow 1	flow 2	flow 3	flow 1	flow 2	flow 3	flow 1	flow 2	flow 3
TCP BBR	3	0.31	0.25	0.08	2863.85	3024.67	2426.54	4.43	9.45	33.30
Copa	3	0.27	0.23	0.16	961.09	968.25	1044.21	2.93	4.92	11.07
TCP Cubic	3	0.46	0.02	0.00	8217.07	7424.63	8356.31	31.64	53.78	92.23
FillP	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FillP-Sheep	2	0.50	0.01	0.00	12333.30	10924.20	7838.70	25.38	0.00	86.69
Indigo	3	0.22	0.21	0.20	726.25	995.23	1039.22	0.55	0.89	2.22
LEDBAT	3	0.23	0.29	0.21	388.06	421.99	421.51	0.25	1.22	6.35
Indigo-Muses	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
PCC-Allegro	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
PCC-Expr	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
QUIC Cubic	3	0.49	0.00	0.01	9194.07	9201.03	9510.66	33.60	44.44	86.11
SCReAM	3	0.08	0.11	0.17	224.20	236.28	262.34	0.75	1.06	2.10
Sprout	3	0.09	0.10	0.10	1028.99	278.79	332.47	1.04	0.93	2.55
TaoVA-100x	3	0.30	0.23	0.23	3081.70	3741.14	4616.35	4.87	8.98	19.22
TCP Vegas	3	0.32	0.19	0.13	1942.14	2178.55	2268.75	3.69	7.23	34.47
Verus	3	0.48	0.01	0.01	2062.00	2040.81	1853.55	5.14	6.43	12.73
PCC-Vivace	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
WebRTC media	1	0.14	0.09	0.07	1708.68	1914.89	1750.52	1.55	2.08	8.47

```
Run 1: Statistics of TCP BBR

Start at: 2018-09-07 23:02:51
End at: 2018-09-07 23:03:21
Local clock offset: -1.745 ms
Remote clock offset: 1.303 ms


# Below is generated by plot.py at 2018-09-08 00:00:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.48 Mbit/s
95th percentile per-packet one-way delay: 2711.445 ms
Loss rate: 7.40%
-- Flow 1:
Average throughput: 0.30 Mbit/s
95th percentile per-packet one-way delay: 2700.052 ms
Loss rate: 3.78%
-- Flow 2:
Average throughput: 0.24 Mbit/s
95th percentile per-packet one-way delay: 2723.951 ms
Loss rate: 8.72%
-- Flow 3:
Average throughput: 0.11 Mbit/s
95th percentile per-packet one-way delay: 2175.723 ms
Loss rate: 31.10%
```

Run 1: Report of TCP BBR — Data Link

- Flow 1 ingress (mean 0.31 Mbit/s)
- Flow 1 egress (mean 0.30 Mbit/s)
- Flow 2 ingress (mean 0.26 Mbit/s)
- Flow 2 egress (mean 0.24 Mbit/s)
- Flow 3 ingress (mean 0.11 Mbit/s)
- Flow 3 egress (mean 0.11 Mbit/s)

- Flow 1 (95th percentile 2700.05 ms)
- Flow 2 (95th percentile 2723.95 ms)
- Flow 3 (95th percentile 2175.72 ms)
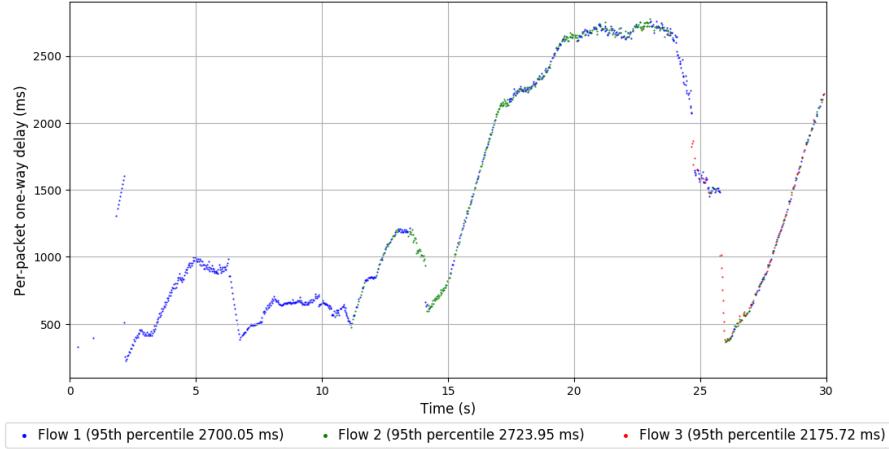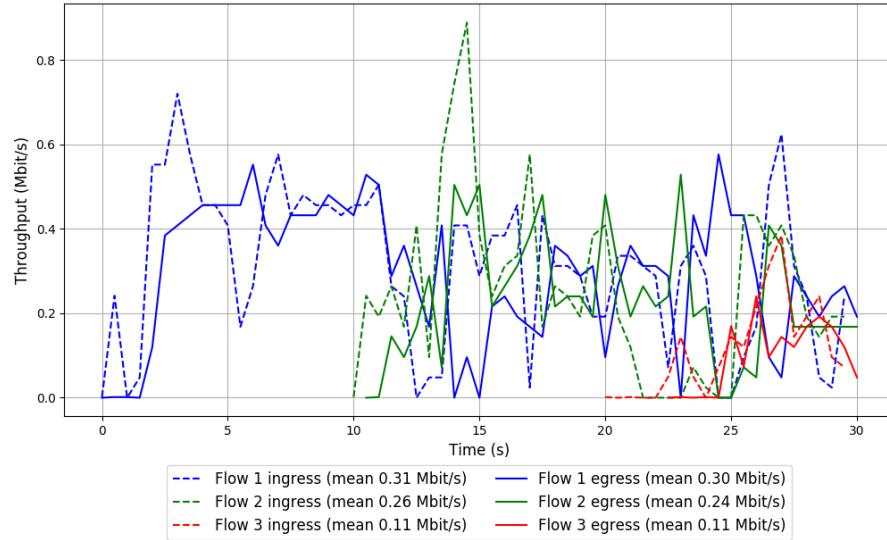
```
Run 2: Statistics of TCP BBR

Start at: 2018-09-07 23:25:17
End at: 2018-09-07 23:25:47
Local clock offset: -3.344 ms
Remote clock offset: 3.365 ms


# Below is generated by plot.py at 2018-09-08 00:00:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 3312.537 ms
Loss rate: 3.86%
-- Flow 1:
Average throughput: 0.36 Mbit/s
95th percentile per-packet one-way delay: 3157.660 ms
Loss rate: 2.07%
-- Flow 2:
Average throughput: 0.29 Mbit/s
95th percentile per-packet one-way delay: 3342.574 ms
Loss rate: 5.41%
-- Flow 3:
Average throughput: 0.04 Mbit/s
95th percentile per-packet one-way delay: 3077.283 ms
Loss rate: 29.97%
```

Run 2: Report of TCP BBR — Data Link

Flow 1 ingress (mean 0.37 Mbit/s)   Flow 1 egress (mean 0.36 Mbit/s)
Flow 2 ingress (mean 0.30 Mbit/s)   Flow 2 egress (mean 0.29 Mbit/s)
Flow 3 ingress (mean 0.04 Mbit/s)   Flow 3 egress (mean 0.04 Mbit/s)

Flow 1 (95th percentile 3157.66 ms)   Flow 2 (95th percentile 3342.57 ms)   Flow 3 (95th percentile 3077.28 ms)

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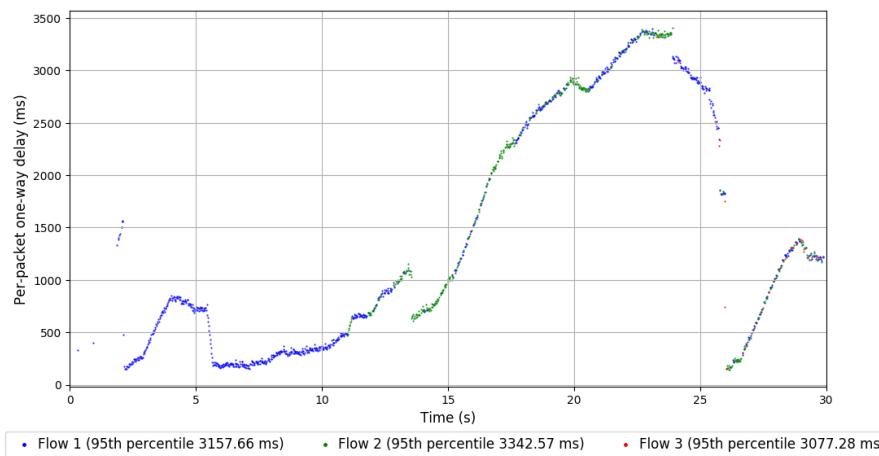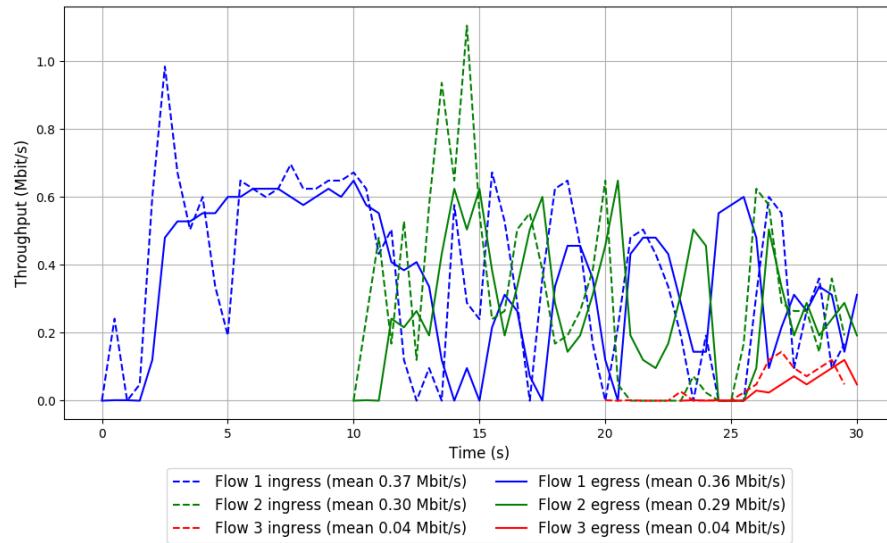
```
Run 3: Statistics of TCP BBR

Start at: 2018-09-07 23:47:34
End at: 2018-09-07 23:48:04
Local clock offset: -2.153 ms
Remote clock offset: 8.398 ms


# Below is generated by plot.py at 2018-09-08 00:00:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.45 Mbit/s
95th percentile per-packet one-way delay: 2776.385 ms
Loss rate: 12.16%
-- Flow 1:
Average throughput: 0.28 Mbit/s
95th percentile per-packet one-way delay: 2733.827 ms
Loss rate: 7.43%
-- Flow 2:
Average throughput: 0.23 Mbit/s
95th percentile per-packet one-way delay: 3007.471 ms
Loss rate: 14.22%
-- Flow 3:
Average throughput: 0.10 Mbit/s
95th percentile per-packet one-way delay: 2026.604 ms
Loss rate: 38.82%
```

Run 3: Report of TCP BBR — Data Link
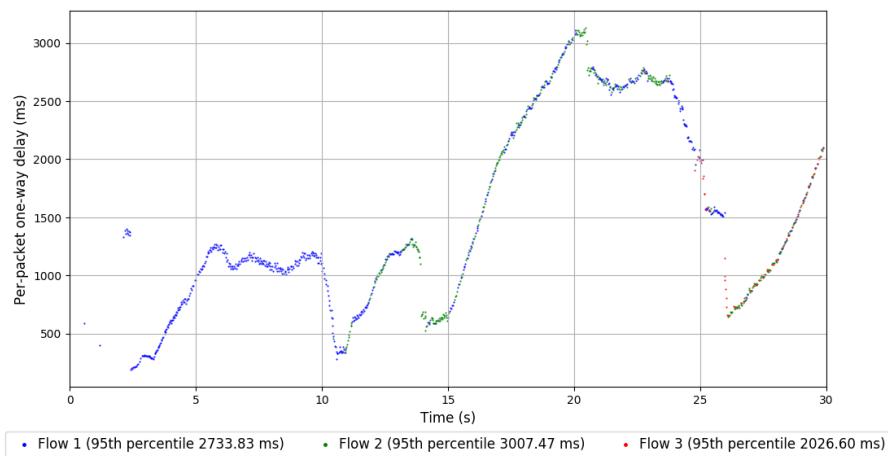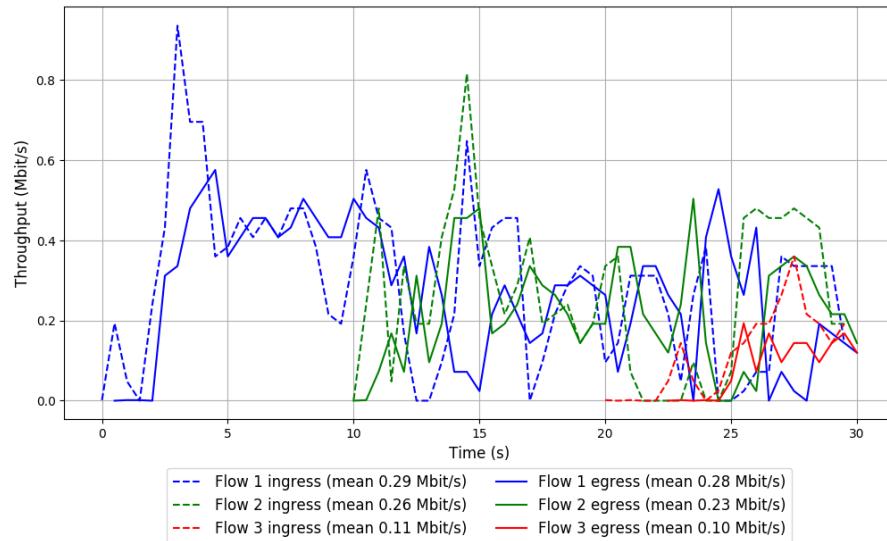
```
Run 1: Statistics of Copa

Start at: 2018-09-07 23:09:20
End at: 2018-09-07 23:09:50
Local clock offset: -1.43 ms
Remote clock offset: 1.849 ms


# Below is generated by plot.py at 2018-09-08 00:00:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.47 Mbit/s
95th percentile per-packet one-way delay: 1167.187 ms
Loss rate: 6.04%
-- Flow 1:
Average throughput: 0.26 Mbit/s
95th percentile per-packet one-way delay: 1164.053 ms
Loss rate: 4.45%
-- Flow 2:
Average throughput: 0.26 Mbit/s
95th percentile per-packet one-way delay: 1158.594 ms
Loss rate: 6.89%
-- Flow 3:
Average throughput: 0.11 Mbit/s
95th percentile per-packet one-way delay: 1234.992 ms
Loss rate: 13.59%
```

Run 1: Report of Copa — Data Link

Flow 1 ingress (mean 0.27 Mbit/s)   Flow 1 egress (mean 0.26 Mbit/s)
Flow 2 ingress (mean 0.27 Mbit/s)   Flow 2 egress (mean 0.26 Mbit/s)
Flow 3 ingress (mean 0.11 Mbit/s)   Flow 3 egress (mean 0.11 Mbit/s)

Flow 1 (95th percentile 1164.05 ms)   Flow 2 (95th percentile 1158.59 ms)   Flow 3 (95th percentile 1234.99 ms)
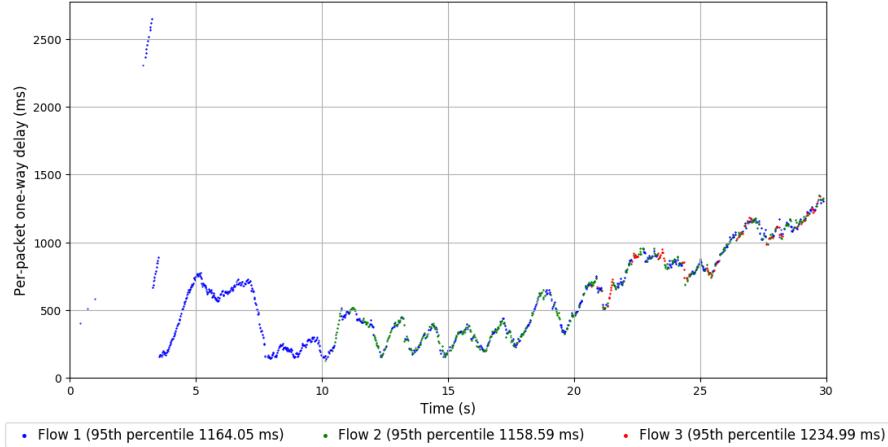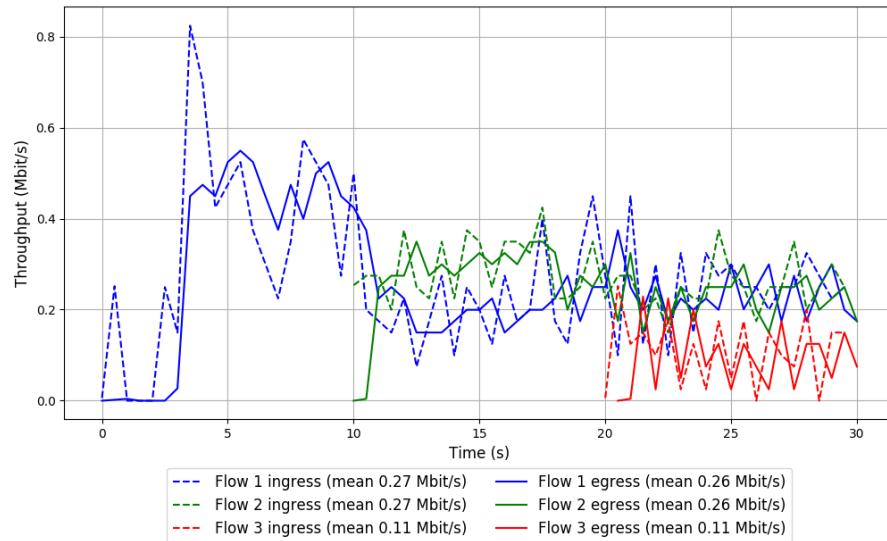
```
Run 2: Statistics of Copa

Start at: 2018-09-07 23:31:26
End at: 2018-09-07 23:31:56
Local clock offset: -3.598 ms
Remote clock offset: 8.013 ms


# Below is generated by plot.py at 2018-09-08 00:00:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.51 Mbit/s
95th percentile per-packet one-way delay: 919.802 ms
Loss rate: 4.00%
-- Flow 1:
Average throughput: 0.29 Mbit/s
95th percentile per-packet one-way delay: 845.831 ms
Loss rate: 2.25%
-- Flow 2:
Average throughput: 0.23 Mbit/s
95th percentile per-packet one-way delay: 880.455 ms
Loss rate: 5.00%
-- Flow 3:
Average throughput: 0.19 Mbit/s
95th percentile per-packet one-way delay: 978.140 ms
Loss rate: 9.36%
```

Run 2: Report of Copa — Data Link

Flow 1 ingress (mean 0.30 Mbit/s)   Flow 1 egress (mean 0.29 Mbit/s)
Flow 2 ingress (mean 0.24 Mbit/s)   Flow 2 egress (mean 0.23 Mbit/s)
Flow 3 ingress (mean 0.20 Mbit/s)   Flow 3 egress (mean 0.19 Mbit/s)

Flow 1 (95th percentile 845.83 ms)   Flow 2 (95th percentile 880.46 ms)   Flow 3 (95th percentile 978.14 ms)

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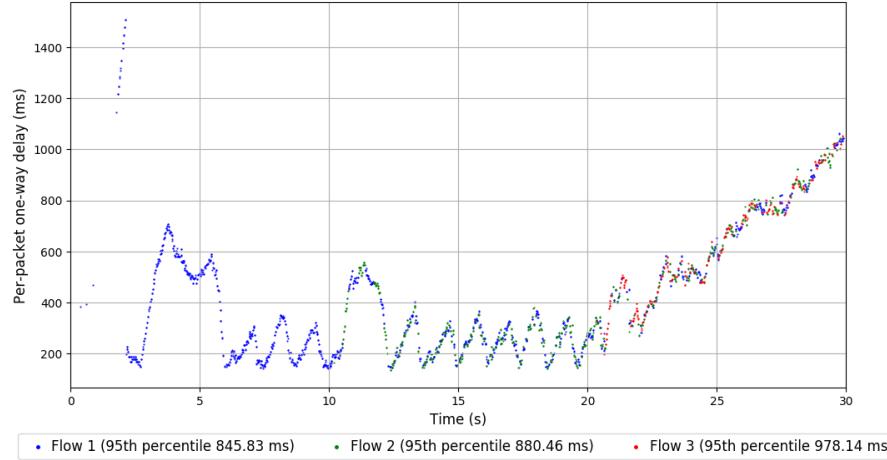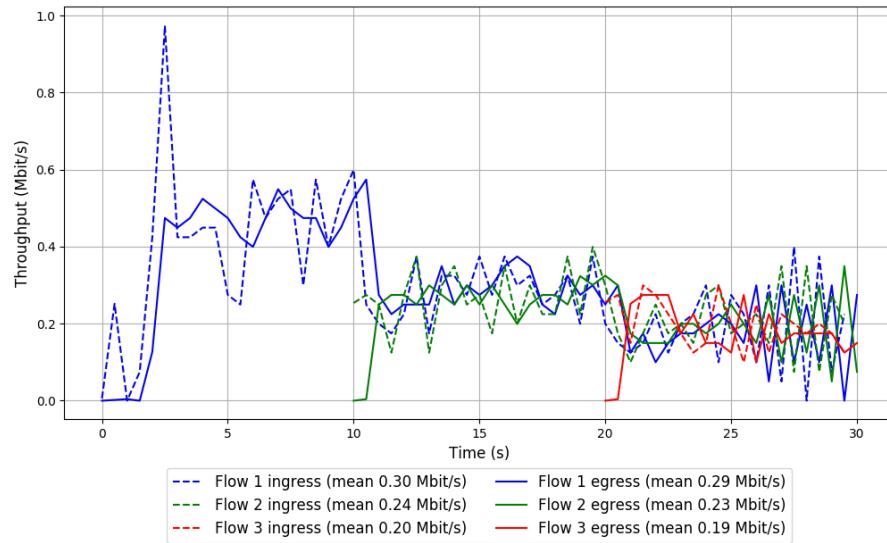
```
Run 3: Statistics of Copa

Start at: 2018-09-07 23:53:59
End at: 2018-09-07 23:54:29
Local clock offset: -0.961 ms
Remote clock offset: 7.522 ms


# Below is generated by plot.py at 2018-09-08 00:00:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 875.173 ms
Loss rate: 3.49%
-- Flow 1:
Average throughput: 0.26 Mbit/s
95th percentile per-packet one-way delay: 873.393 ms
Loss rate: 2.10%
-- Flow 2:
Average throughput: 0.20 Mbit/s
95th percentile per-packet one-way delay: 865.697 ms
Loss rate: 2.88%
-- Flow 3:
Average throughput: 0.18 Mbit/s
95th percentile per-packet one-way delay: 919.485 ms
Loss rate: 10.25%
```

Run 3: Report of Copa — Data Link

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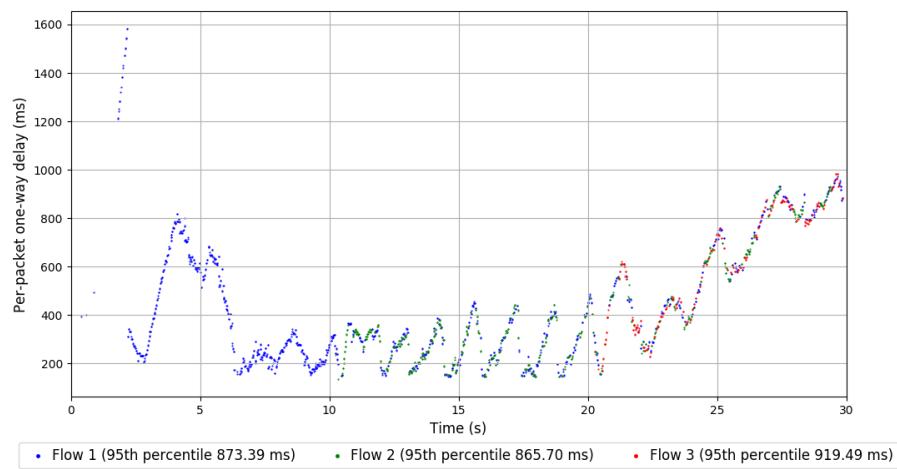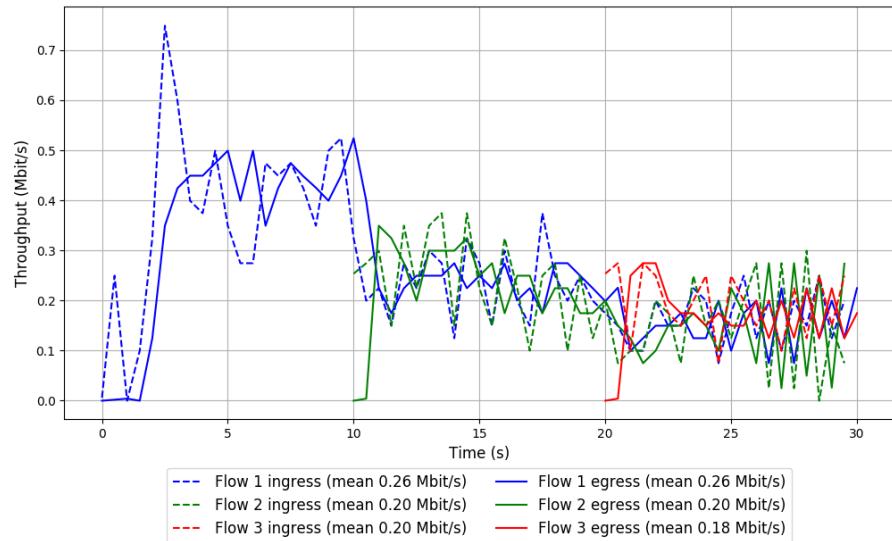
```
Run 1: Statistics of TCP Cubic

Start at: 2018-09-07 22:55:13
End at: 2018-09-07 22:55:43
Local clock offset: -0.137 ms
Remote clock offset: 1.465 ms


# Below is generated by plot.py at 2018-09-08 00:00:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.41 Mbit/s
95th percentile per-packet one-way delay: 8295.775 ms
Loss rate: 32.04%
-- Flow 1:
Average throughput: 0.41 Mbit/s
95th percentile per-packet one-way delay: 8290.976 ms
Loss rate: 31.87%
-- Flow 2:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 6936.517 ms
Loss rate: 53.44%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 8572.491 ms
Loss rate: 90.68%
```

Run 1: Report of TCP Cubic — Data Link
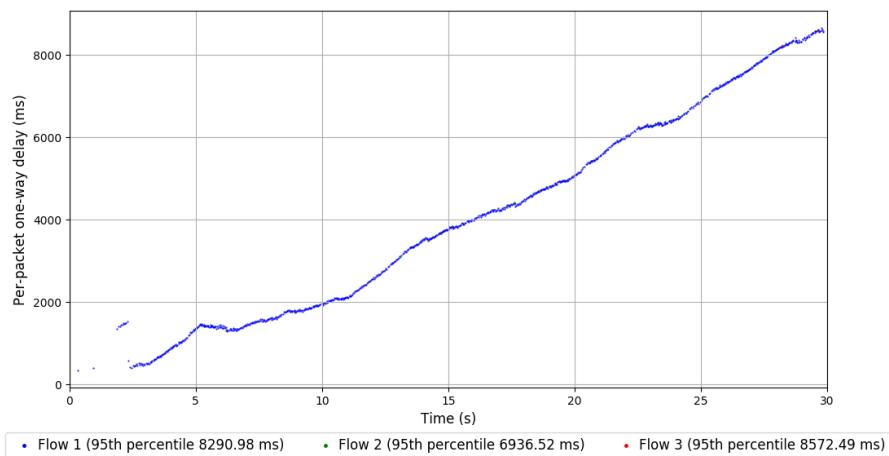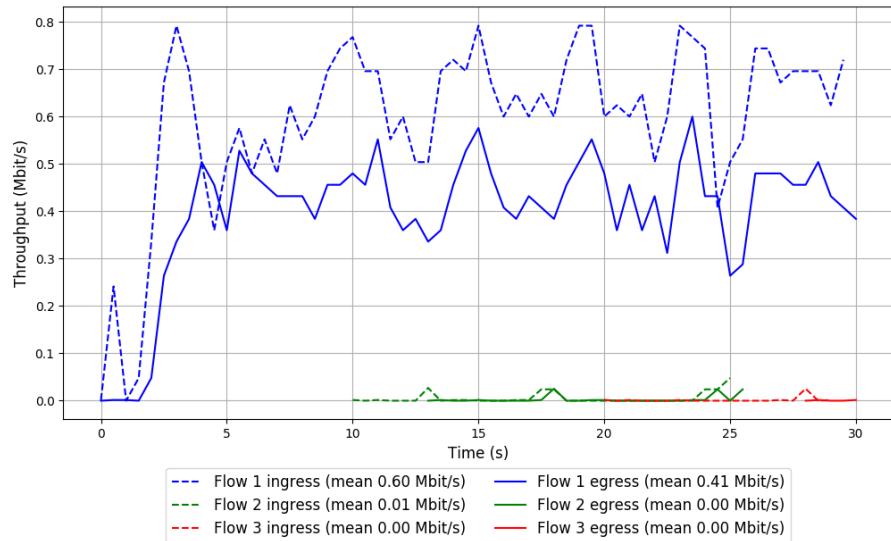
```
Run 2: Statistics of TCP Cubic

Start at: 2018-09-07 23:17:57
End at: 2018-09-07 23:18:27
Local clock offset: -2.727 ms
Remote clock offset: 6.683 ms


# Below is generated by plot.py at 2018-09-08 00:00:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.46 Mbit/s
95th percentile per-packet one-way delay: 8455.526 ms
Loss rate: 32.56%
-- Flow 1:
Average throughput: 0.45 Mbit/s
95th percentile per-packet one-way delay: 8464.869 ms
Loss rate: 31.61%
-- Flow 2:
Average throughput: 0.02 Mbit/s
95th percentile per-packet one-way delay: 8163.364 ms
Loss rate: 54.30%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 8526.919 ms
Loss rate: 95.34%
```

Run 2: Report of TCP Cubic — Data Link
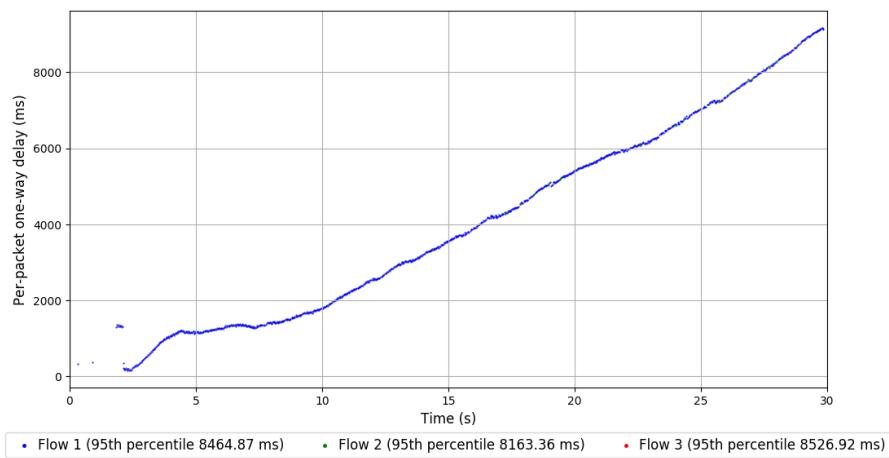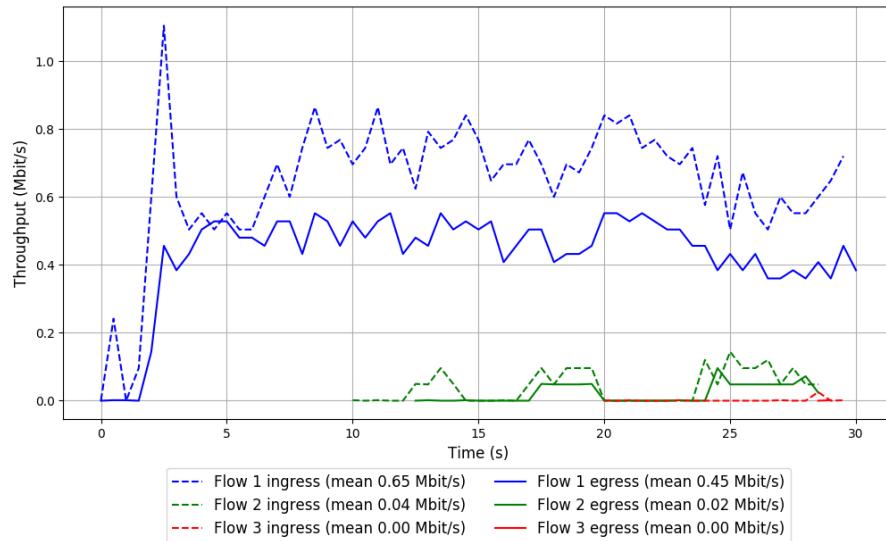
```
Run 3: Statistics of TCP Cubic

Start at: 2018-09-07 23:40:07
End at: 2018-09-07 23:40:37
Local clock offset: -3.951 ms
Remote clock offset: 8.173 ms


# Below is generated by plot.py at 2018-09-08 00:01:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.53 Mbit/s
95th percentile per-packet one-way delay: 7894.714 ms
Loss rate: 32.24%
-- Flow 1:
Average throughput: 0.52 Mbit/s
95th percentile per-packet one-way delay: 7895.361 ms
Loss rate: 31.45%
-- Flow 2:
Average throughput: 0.03 Mbit/s
95th percentile per-packet one-way delay: 7174.016 ms
Loss rate: 53.60%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 7969.530 ms
Loss rate: 90.68%
```

Run 3: Report of TCP Cubic — Data Link
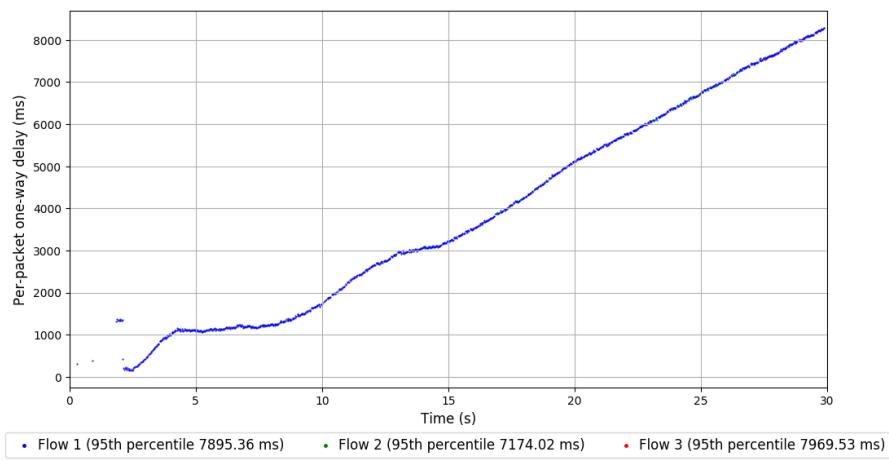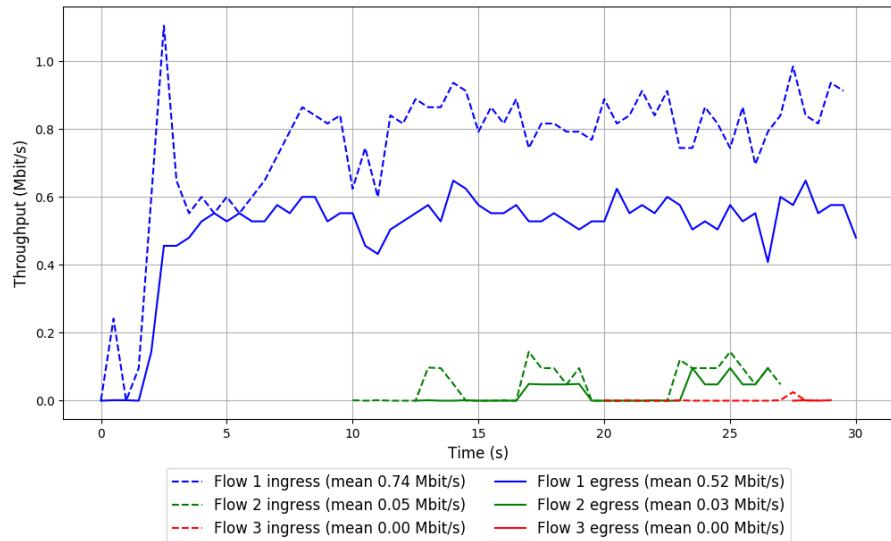
```
Run 1: Statistics of FillP

Start at: 2018-09-07 23:04:05
End at: 2018-09-07 23:04:35
Local clock offset: -1.102 ms
Remote clock offset: 1.477 ms
```

Run 1: Report of FillP — Data Link
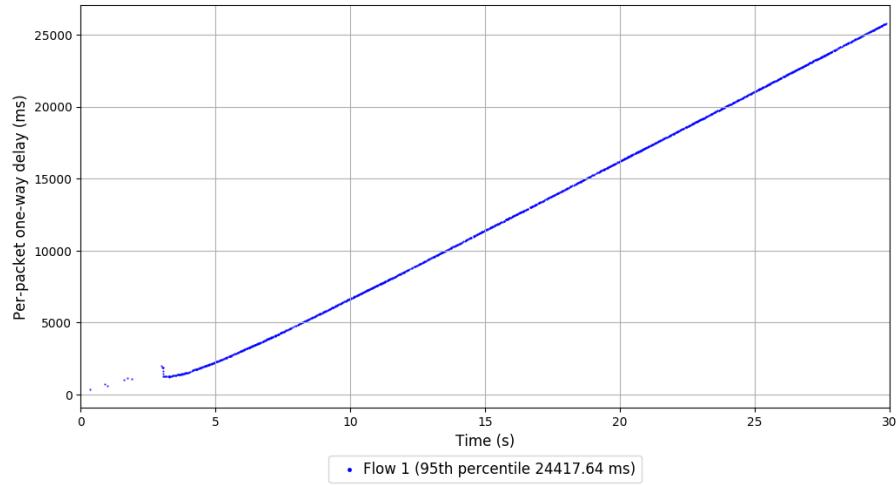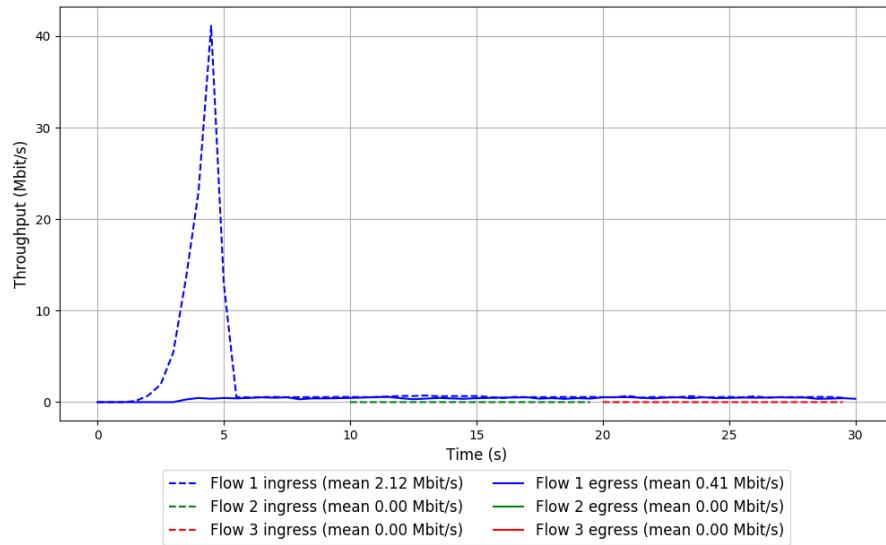
```
Run 2: Statistics of FillP

Start at: 2018-09-07 23:26:30
End at: 2018-09-07 23:27:00
Local clock offset: -2.659 ms
Remote clock offset: 3.026 ms
```

Run 2: Report of FillP — Data Link

- Flow 1 ingress (mean 3.48 Mbit/s)
- Flow 2 ingress (mean 0.00 Mbit/s)
- Flow 3 ingress (mean 0.00 Mbit/s)
- Flow 1 egress (mean 0.50 Mbit/s)
- Flow 2 egress (mean 0.00 Mbit/s)
- Flow 3 egress (mean 0.00 Mbit/s)

- Flow 1 (95th percentile 23746.96 ms)
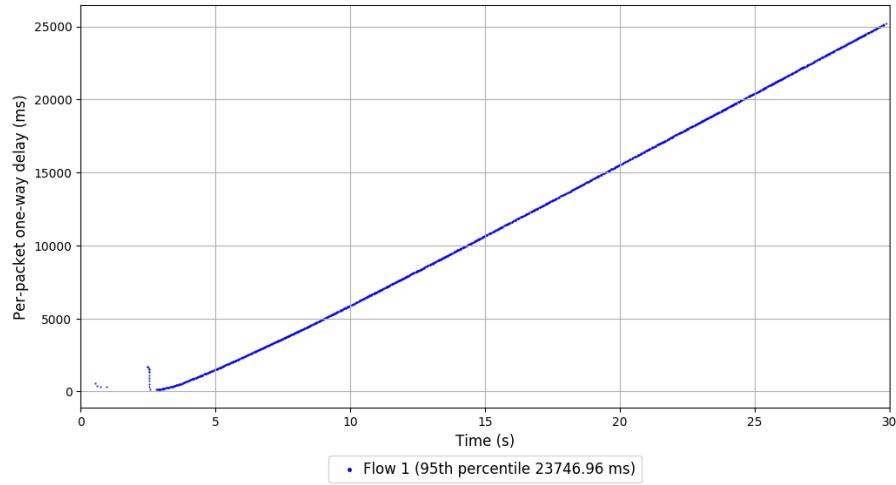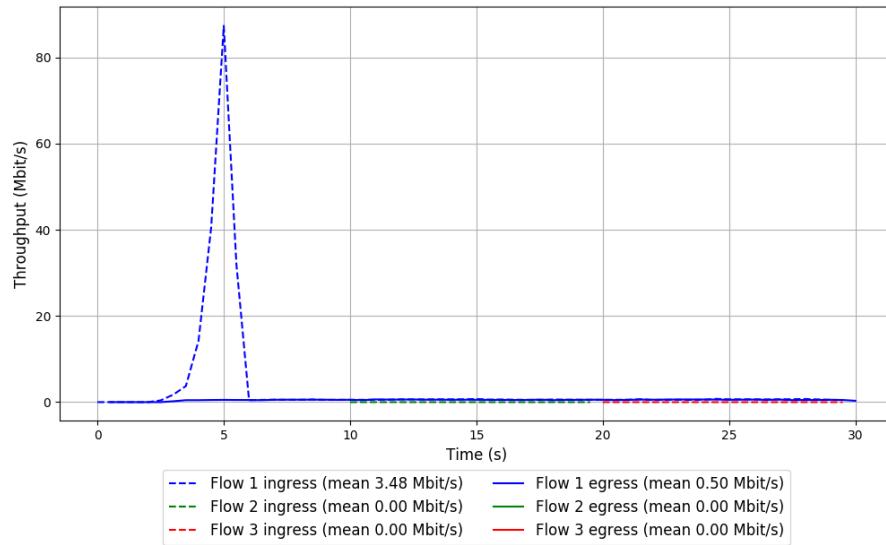
```
Run 3: Statistics of FillP

Start at: 2018-09-07 23:48:47
End at: 2018-09-07 23:49:17
Local clock offset: -2.411 ms
Remote clock offset: 7.936 ms
```

Run 3: Report of FillP — Data Link

Flow 1 ingress (mean 1.90 Mbit/s)   Flow 1 egress (mean 0.49 Mbit/s)
Flow 2 ingress (mean 0.00 Mbit/s)   Flow 2 egress (mean 0.00 Mbit/s)
Flow 3 ingress (mean 0.00 Mbit/s)   Flow 3 egress (mean 0.00 Mbit/s)

Flow 1 (95th percentile 24928.48 ms)
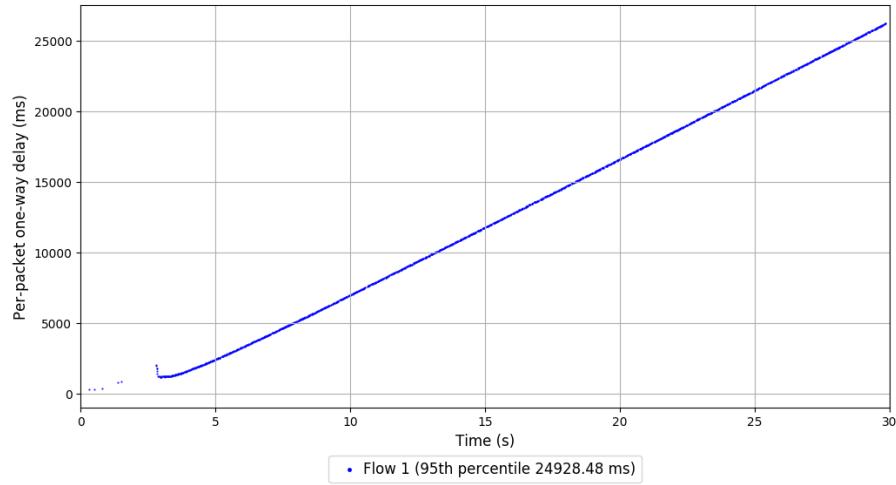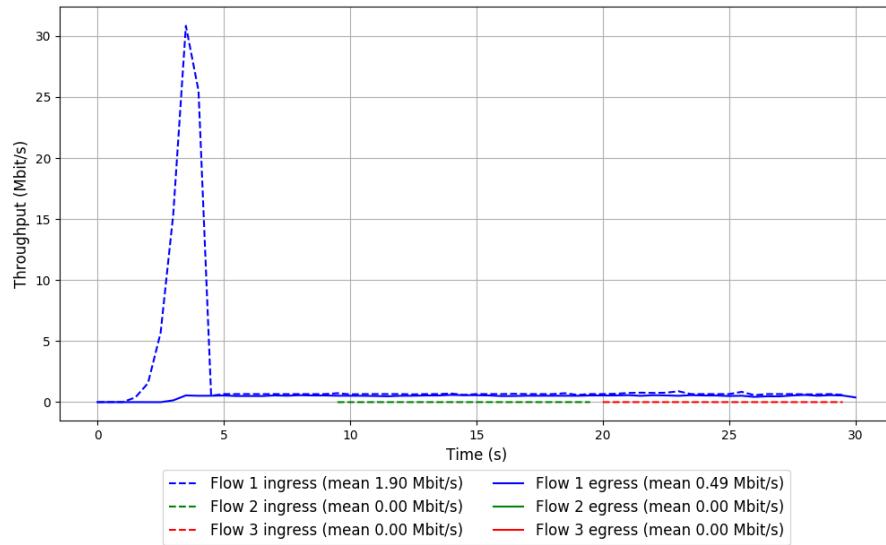
Run 1: Statistics of FillP-Sheep

/home/ubuntu/pantheon/data/2018-09-07T22-53-Colombia-cellular-to-AWS-Brazil-2-3-runs-3-flows

Run 1: Report of FillP-Sheep — Data Link

Figure is missing

Figure is missing

```
Run 2: Statistics of FillP-Sheep

Start at: 2018-09-07 23:21:36
End at: 2018-09-07 23:22:06
Local clock offset: -2.294 ms
Remote clock offset: 6.963 ms


# Below is generated by plot.py at 2018-09-08 00:01:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.53 Mbit/s
95th percentile per-packet one-way delay: 12561.828 ms
Loss rate: 23.67%
-- Flow 1:
Average throughput: 0.53 Mbit/s
95th percentile per-packet one-way delay: 12571.064 ms
Loss rate: 23.53%
-- Flow 2:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 11182.653 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 7153.104 ms
Loss rate: 83.83%
```

Run 2: Report of FillP-Sheep — Data Link

Flow 1 ingress (mean 0.69 Mbit/s)   Flow 1 egress (mean 0.53 Mbit/s)
Flow 2 ingress (mean 0.00 Mbit/s)   Flow 2 egress (mean 0.01 Mbit/s)
Flow 3 ingress (mean 0.01 Mbit/s)   Flow 3 egress (mean 0.00 Mbit/s)

• Flow 1 (95th percentile 12571.06 ms)   • Flow 2 (95th percentile 11182.65 ms)   • Flow 3 (95th percentile 7153.10 ms)
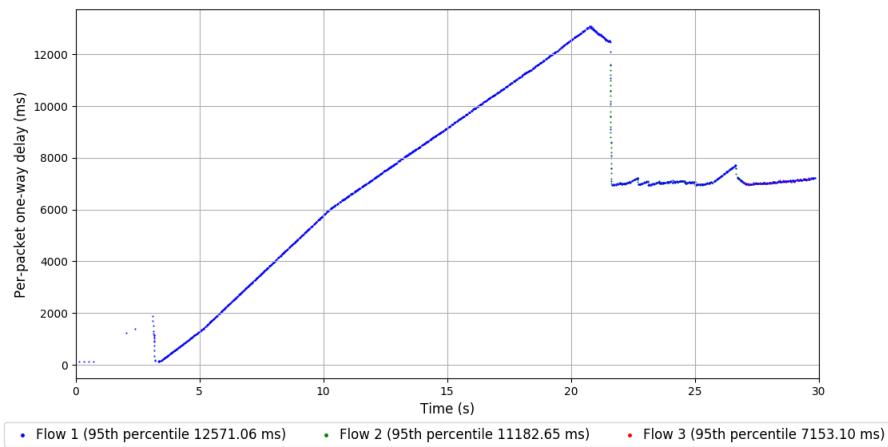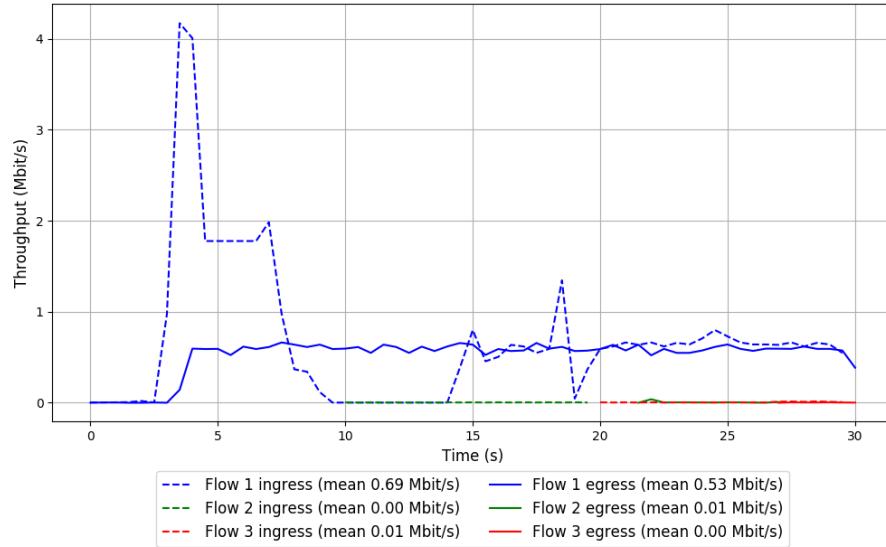
```
Run 3: Statistics of FillP-Sheep

Start at: 2018-09-07 23:43:52
End at: 2018-09-07 23:44:22
Local clock offset: -4.093 ms
Remote clock offset: 4.225 ms


# Below is generated by plot.py at 2018-09-08 00:01:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.47 Mbit/s
95th percentile per-packet one-way delay: 12085.162 ms
Loss rate: 27.33%
-- Flow 1:
Average throughput: 0.47 Mbit/s
95th percentile per-packet one-way delay: 12095.533 ms
Loss rate: 27.22%
-- Flow 2:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 10665.751 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 8524.302 ms
Loss rate: 89.54%
```

Run 3: Report of FillP-Sheep — Data Link

Flow 1 ingress (mean 0.64 Mbit/s) --- Flow 1 egress (mean 0.47 Mbit/s)
Flow 2 ingress (mean 0.00 Mbit/s) --- Flow 2 egress (mean 0.01 Mbit/s)
Flow 3 ingress (mean 0.01 Mbit/s) --- Flow 3 egress (mean 0.00 Mbit/s)

Flow 1 (95th percentile 12095.53 ms)   Flow 2 (95th percentile 10665.75 ms)   Flow 3 (95th percentile 8524.30 ms)

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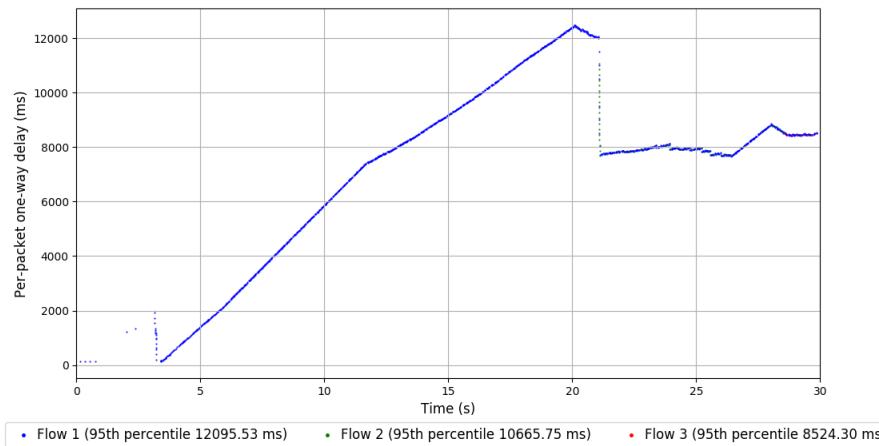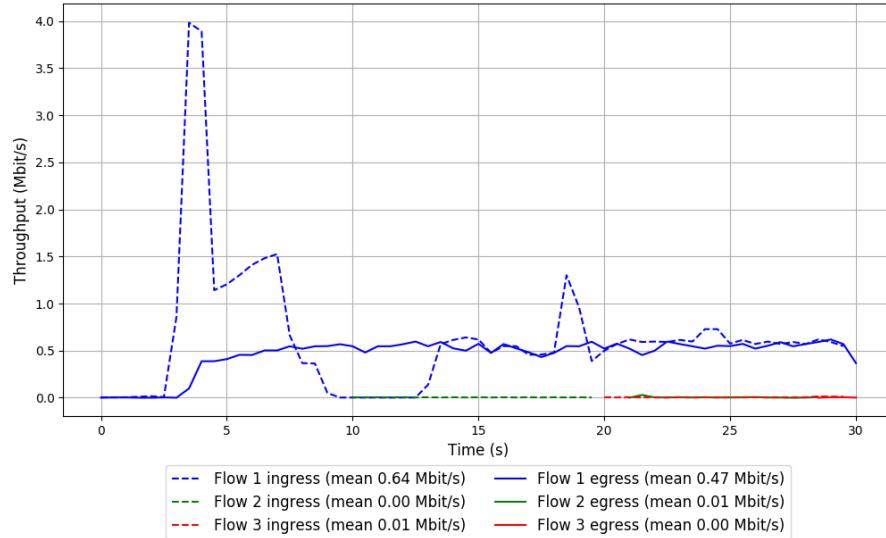
```
Run 1: Statistics of Indigo

Start at: 2018-09-07 22:54:00
End at: 2018-09-07 22:54:30
Local clock offset: 0.081 ms
Remote clock offset: 5.998 ms


# Below is generated by plot.py at 2018-09-08 00:01:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.39 Mbit/s
95th percentile per-packet one-way delay: 1089.111 ms
Loss rate: 0.73%
-- Flow 1:
Average throughput: 0.18 Mbit/s
95th percentile per-packet one-way delay: 1010.415 ms
Loss rate: 0.46%
-- Flow 2:
Average throughput: 0.25 Mbit/s
95th percentile per-packet one-way delay: 959.257 ms
Loss rate: 0.74%
-- Flow 3:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 1348.144 ms
Loss rate: 1.61%
```

Run 1: Report of Indigo — Data Link
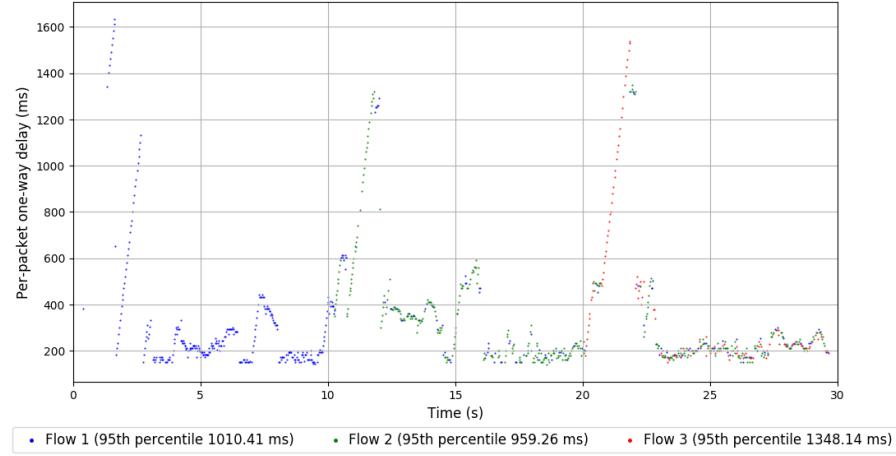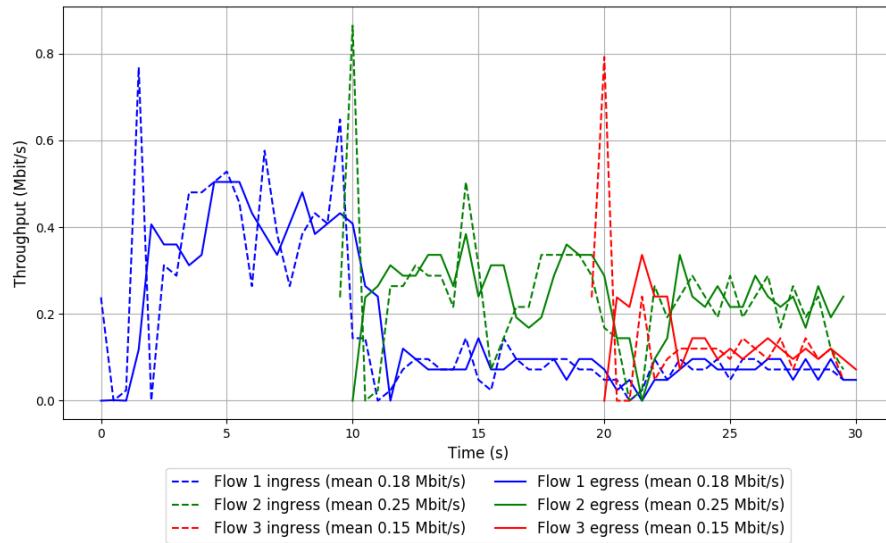
```
Run 2: Statistics of Indigo

Start at: 2018-09-07 23:16:44
End at: 2018-09-07 23:17:14
Local clock offset: -2.642 ms
Remote clock offset: 6.881 ms


# Below is generated by plot.py at 2018-09-08 00:01:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.40 Mbit/s
95th percentile per-packet one-way delay: 836.965 ms
Loss rate: 1.10%
-- Flow 1:
Average throughput: 0.23 Mbit/s
95th percentile per-packet one-way delay: 567.804 ms
Loss rate: 0.69%
-- Flow 2:
Average throughput: 0.13 Mbit/s
95th percentile per-packet one-way delay: 1017.311 ms
Loss rate: 0.93%
-- Flow 3:
Average throughput: 0.25 Mbit/s
95th percentile per-packet one-way delay: 809.619 ms
Loss rate: 2.39%
```

Run 2: Report of Indigo — Data Link
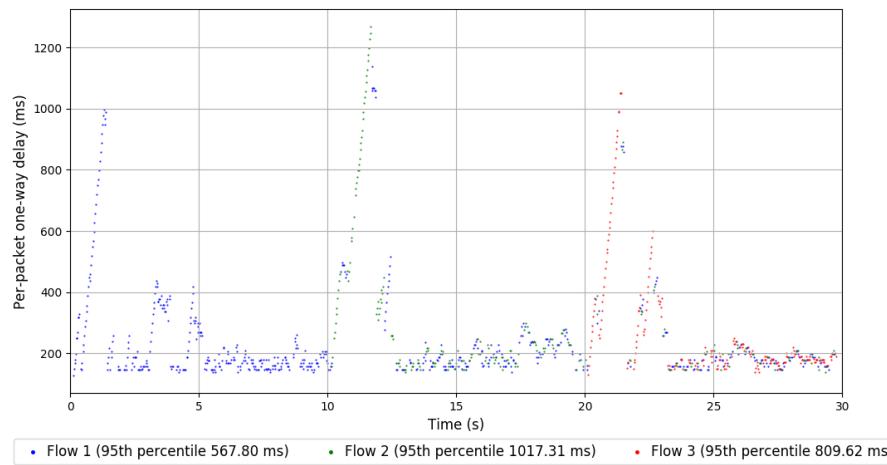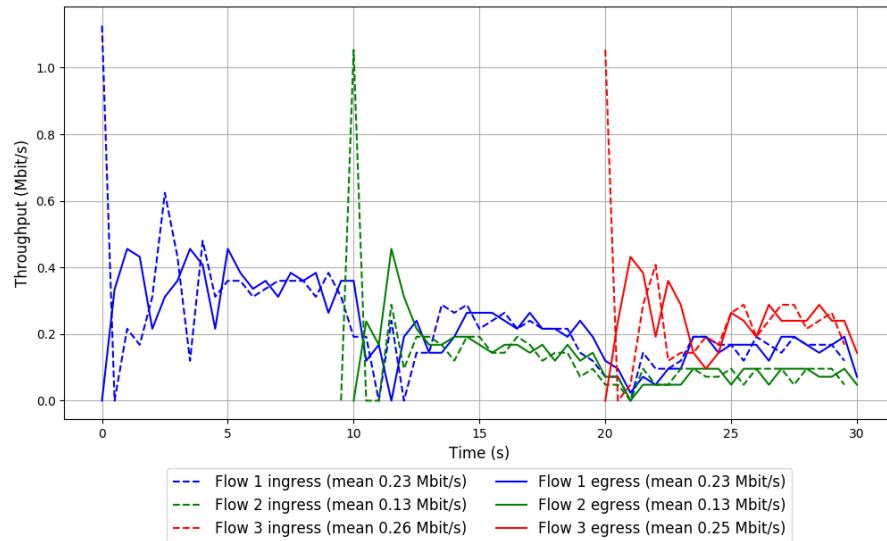
```
Run 3: Statistics of Indigo

Start at: 2018-09-07 23:38:54
End at: 2018-09-07 23:39:24
Local clock offset: -3.911 ms
Remote clock offset: 4.07 ms

# Below is generated by plot.py at 2018-09-08 00:01:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.46 Mbit/s
95th percentile per-packet one-way delay: 870.226 ms
Loss rate: 0.96%
-- Flow 1:
Average throughput: 0.24 Mbit/s
95th percentile per-packet one-way delay: 600.527 ms
Loss rate: 0.50%
-- Flow 2:
Average throughput: 0.24 Mbit/s
95th percentile per-packet one-way delay: 1009.125 ms
Loss rate: 1.00%
-- Flow 3:
Average throughput: 0.19 Mbit/s
95th percentile per-packet one-way delay: 959.907 ms
Loss rate: 2.67%
```

Run 3: Report of Indigo — Data Link
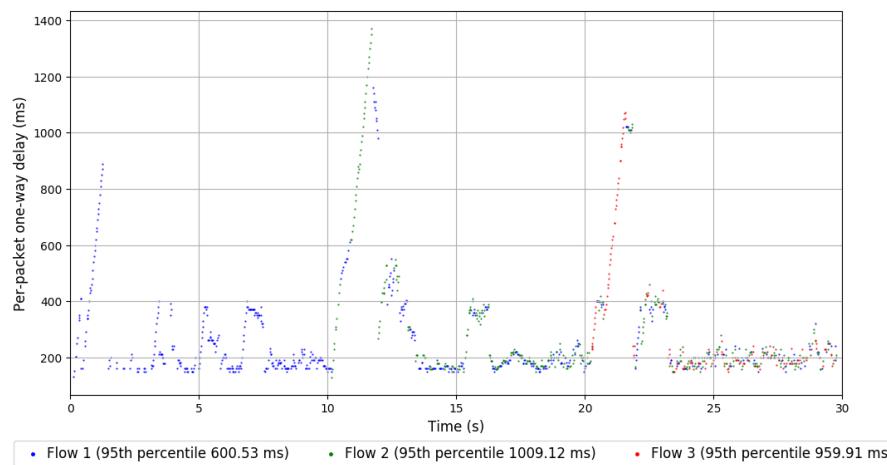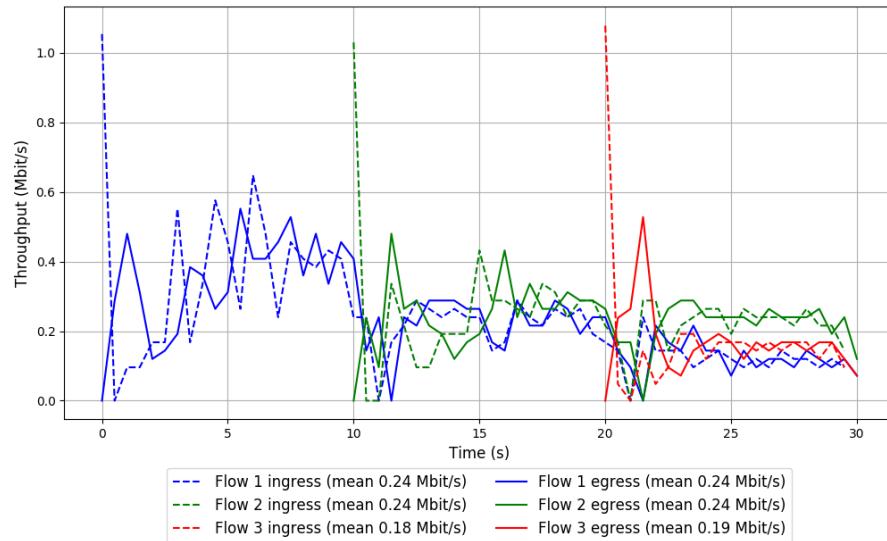
```
Run 1: Statistics of LEDBAT

Start at: 2018-09-07 23:00:25
End at: 2018-09-07 23:00:55
Local clock offset: -0.782 ms
Remote clock offset: 1.747 ms

# Below is generated by plot.py at 2018-09-08 00:01:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.42 Mbit/s
95th percentile per-packet one-way delay: 396.782 ms
Loss rate: 1.49%
-- Flow 1:
Average throughput: 0.27 Mbit/s
95th percentile per-packet one-way delay: 397.304 ms
Loss rate: 0.74%
-- Flow 2:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 375.682 ms
Loss rate: 1.95%
-- Flow 3:
Average throughput: 0.16 Mbit/s
95th percentile per-packet one-way delay: 374.840 ms
Loss rate: 4.31%
```

Run 1: Report of LEDBAT — Data Link

- - - - Flow 1 ingress (mean 0.26 Mbit/s)   ——— Flow 1 egress (mean 0.27 Mbit/s)
- - - - Flow 2 ingress (mean 0.15 Mbit/s)   ——— Flow 2 egress (mean 0.15 Mbit/s)
- - - - Flow 3 ingress (mean 0.16 Mbit/s)   ——— Flow 3 egress (mean 0.16 Mbit/s)

• Flow 1 (95th percentile 397.30 ms)   • Flow 2 (95th percentile 375.68 ms)   • Flow 3 (95th percentile 374.84 ms)

42
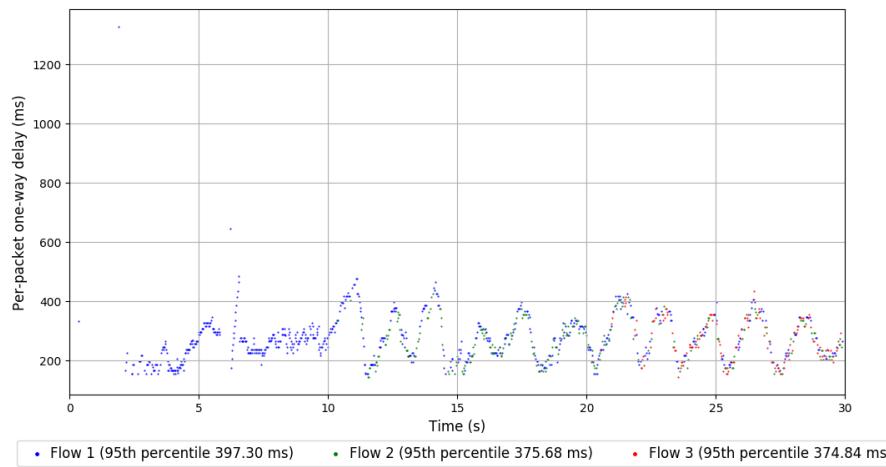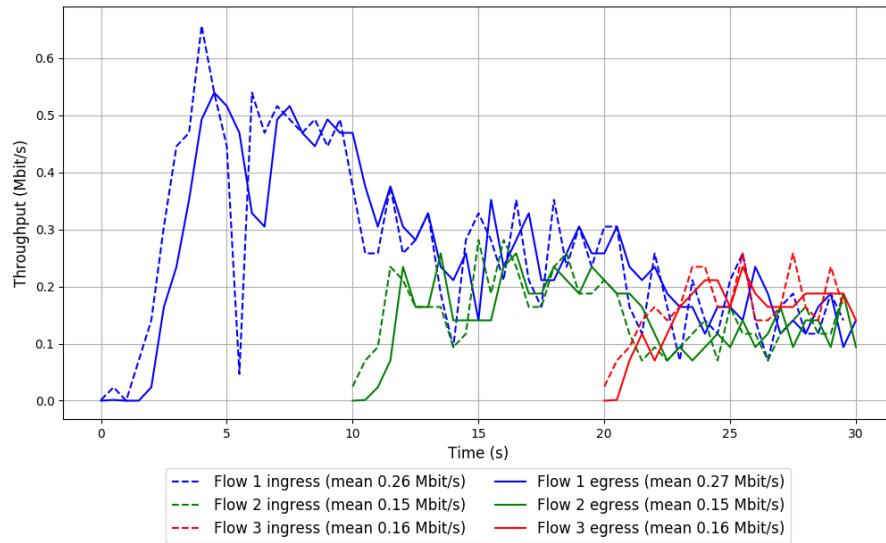
```
Run 2: Statistics of LEDBAT

Start at: 2018-09-07 23:22:50
End at: 2018-09-07 23:23:20
Local clock offset: -2.381 ms
Remote clock offset: 6.683 ms


# Below is generated by plot.py at 2018-09-08 00:01:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.54 Mbit/s
95th percentile per-packet one-way delay: 450.611 ms
Loss rate: 1.52%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 387.324 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.36 Mbit/s
95th percentile per-packet one-way delay: 450.530 ms
Loss rate: 0.67%
-- Flow 3:
Average throughput: 0.27 Mbit/s
95th percentile per-packet one-way delay: 460.538 ms
Loss rate: 7.17%
```

Run 2: Report of LEDBAT — Data Link
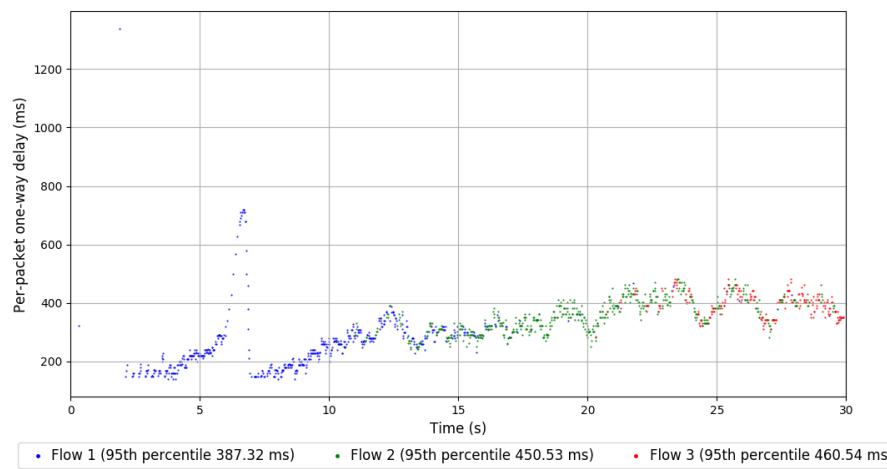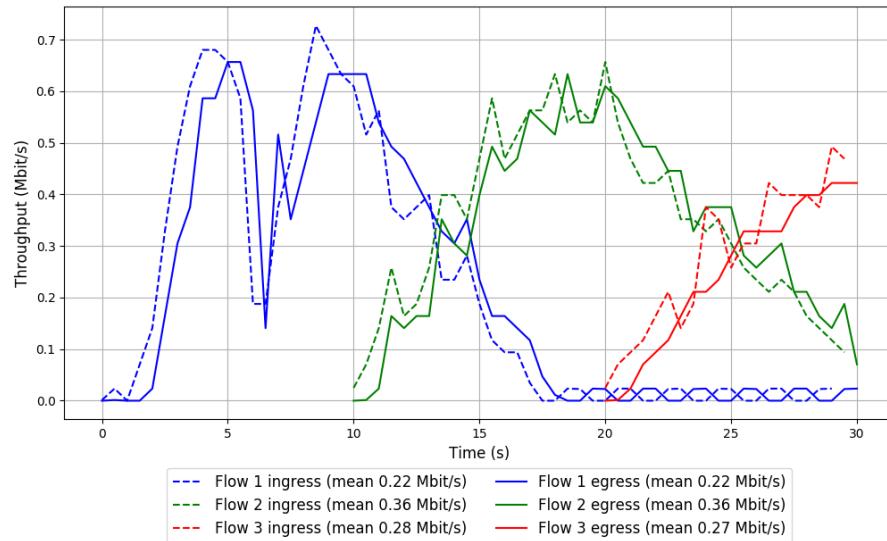
```
Run 3: Statistics of LEDBAT

Start at: 2018-09-07 23:45:05
End at: 2018-09-07 23:45:35
Local clock offset: -4.073 ms
Remote clock offset: 4.519 ms

# Below is generated by plot.py at 2018-09-08 00:01:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.49 Mbit/s
95th percentile per-packet one-way delay: 410.445 ms
Loss rate: 1.51%
-- Flow 1:
Average throughput: 0.20 Mbit/s
95th percentile per-packet one-way delay: 379.558 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.35 Mbit/s
95th percentile per-packet one-way delay: 439.753 ms
Loss rate: 1.03%
-- Flow 3:
Average throughput: 0.20 Mbit/s
95th percentile per-packet one-way delay: 429.148 ms
Loss rate: 7.56%
```

# Run 3: Report of LEDBAT — Data Link
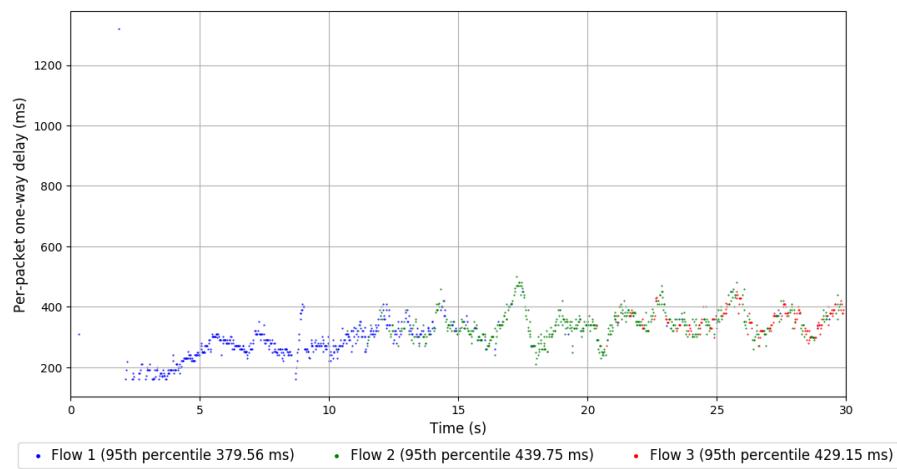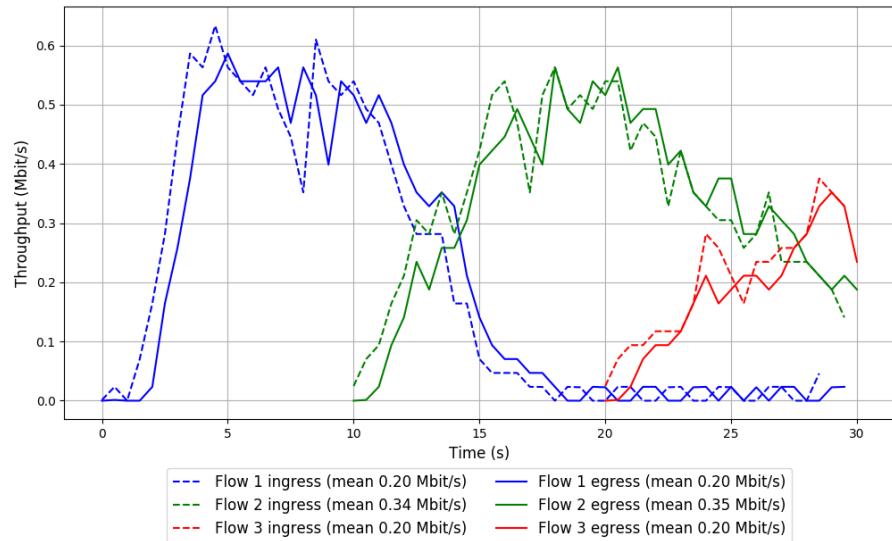
```
Run 1: Statistics of Indigo-Muses

Start at: 2018-09-07 23:13:03
End at: 2018-09-07 23:13:33
Local clock offset: -1.674 ms
Remote clock offset: 6.033 ms
```

Run 1: Report of Indigo-Muses — Data Link

Flow 1 ingress (mean 7.88 Mbit/s)   Flow 1 egress (mean 0.46 Mbit/s)
Flow 2 ingress (mean 0.02 Mbit/s)   Flow 2 egress (mean 0.00 Mbit/s)
Flow 3 ingress (mean 0.02 Mbit/s)   Flow 3 egress (mean 0.00 Mbit/s)

Flow 1 (95th percentile 19876.38 ms)

48
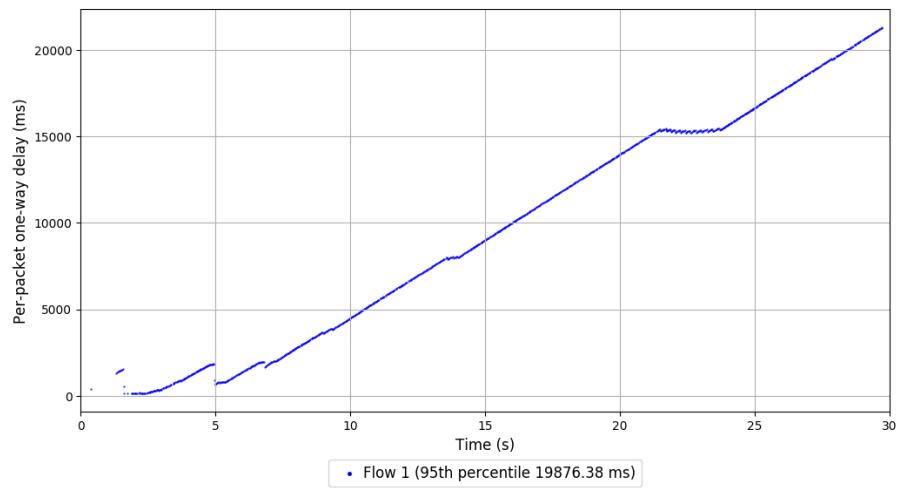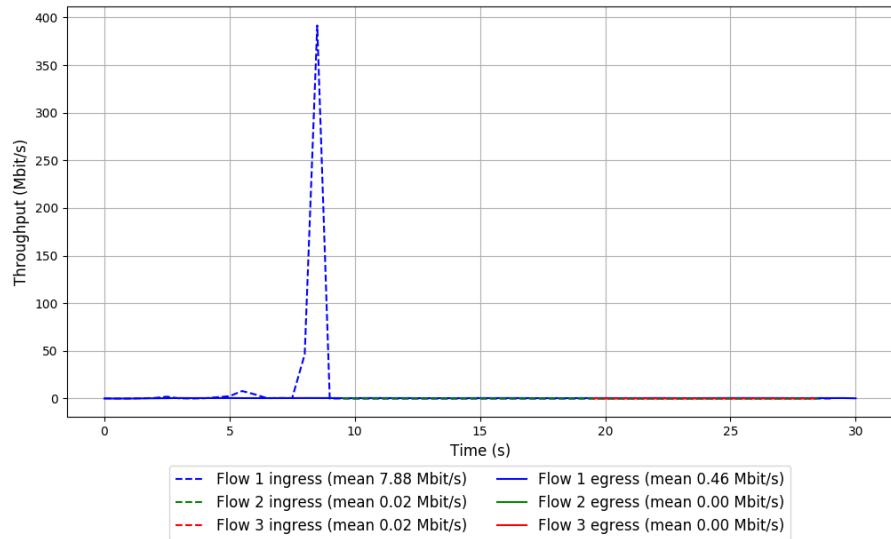
```
Run 2: Statistics of Indigo-Muses

Start at: 2018-09-07 23:35:10
End at: 2018-09-07 23:35:40
Local clock offset: -3.086 ms
Remote clock offset: 7.789 ms
```

Run 2: Report of Indigo-Muses — Data Link

Flow 1 ingress (mean 7.85 Mbit/s) --- Flow 1 egress (mean 0.45 Mbit/s)
Flow 2 ingress (mean 0.02 Mbit/s) --- Flow 2 egress (mean 0.00 Mbit/s)
Flow 3 ingress (mean 0.02 Mbit/s) --- Flow 3 egress (mean 0.00 Mbit/s)

Flow 1 (95th percentile 20211.54 ms)
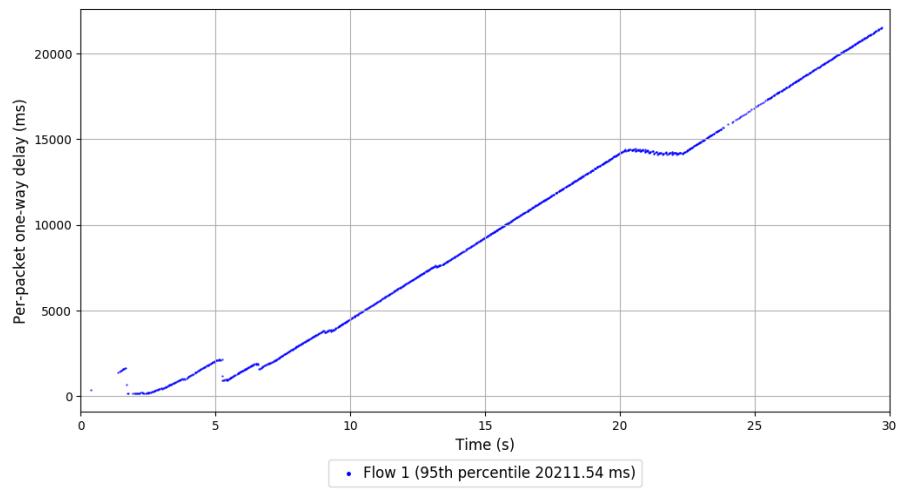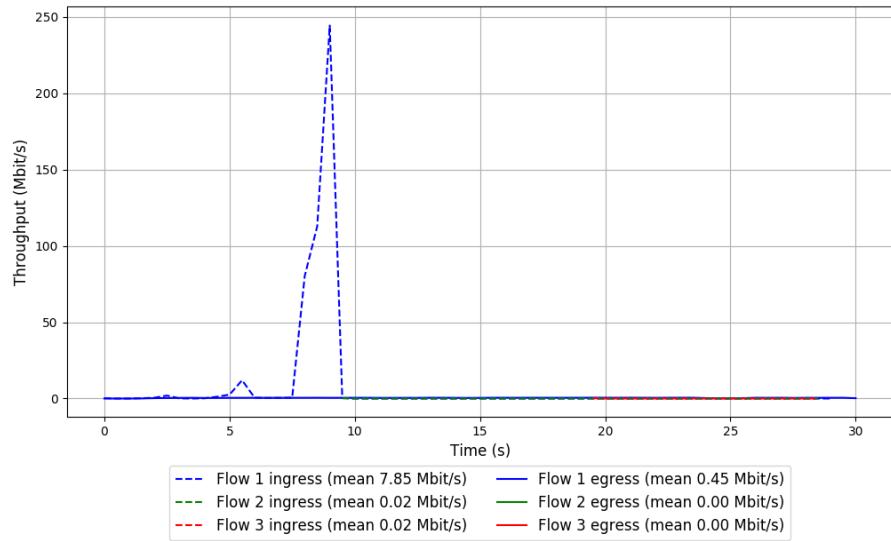
```
Run 3: Statistics of Indigo-Muses

Start at: 2018-09-07 23:57:45
End at: 2018-09-07 23:58:15
Local clock offset: 0.442 ms
Remote clock offset: 7.807 ms
```

Run 3: Report of Indigo-Muses — Data Link

Flow 1 ingress (mean 0.60 Mbit/s) — — —   Flow 1 egress (mean 0.43 Mbit/s)
Flow 2 ingress (mean 0.02 Mbit/s) — — —   Flow 2 egress (mean 0.00 Mbit/s)
Flow 3 ingress (mean 0.02 Mbit/s) — — —   Flow 3 egress (mean 0.00 Mbit/s)

Flow 1 (95th percentile 21458.36 ms)
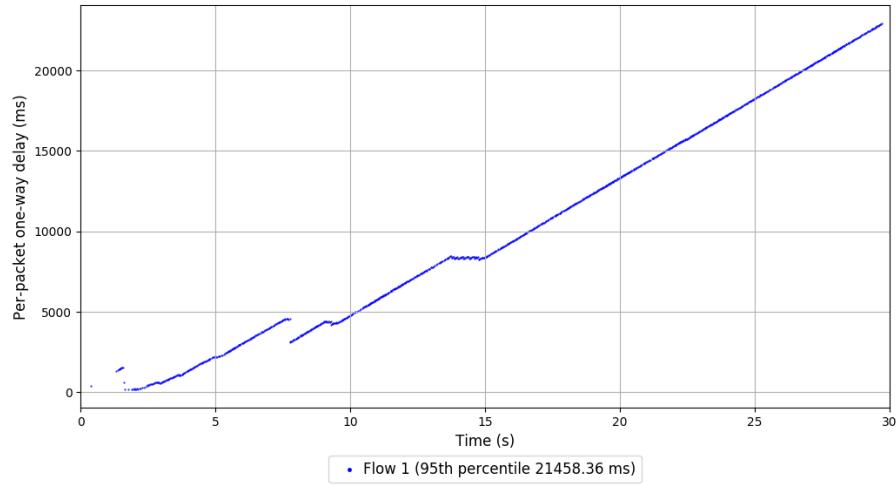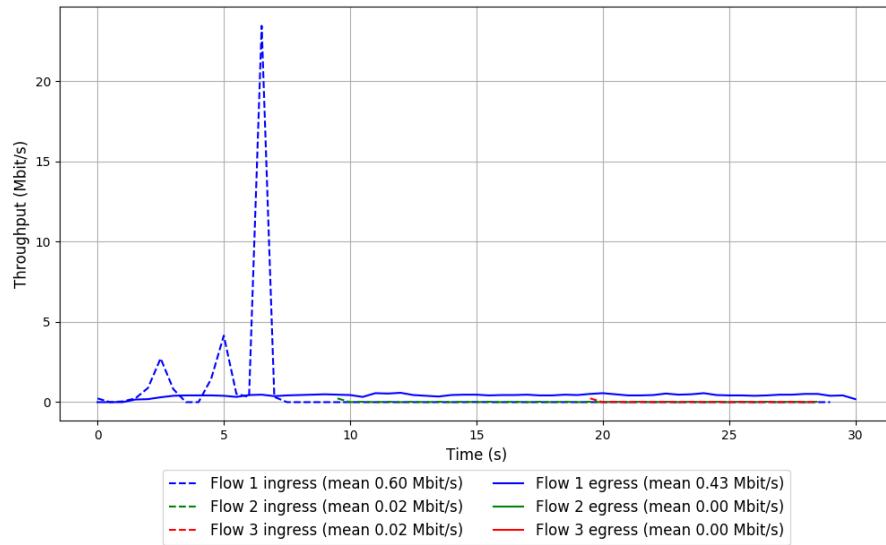
```
Run 1: Statistics of PCC-Allegro

Start at: 2018-09-07 23:10:33
End at: 2018-09-07 23:11:03
Local clock offset: -2.302 ms
Remote clock offset: 1.963 ms
```

Run 1: Report of PCC-Allegro — Data Link
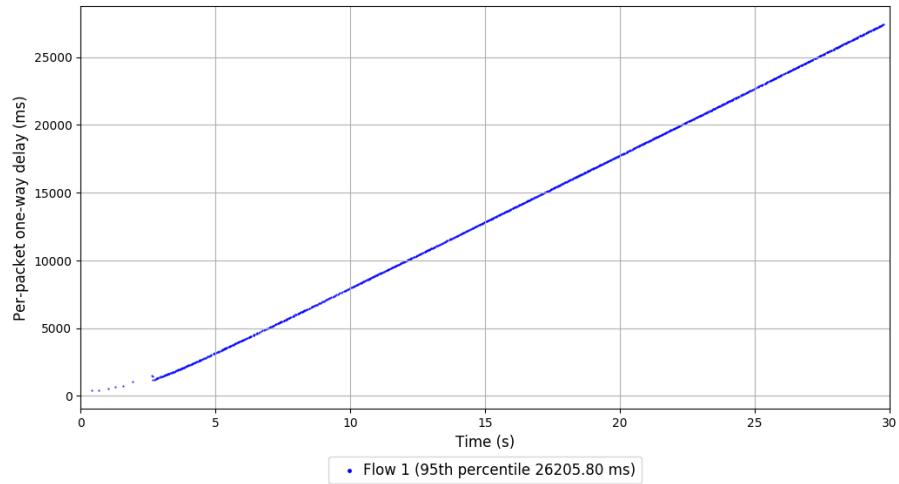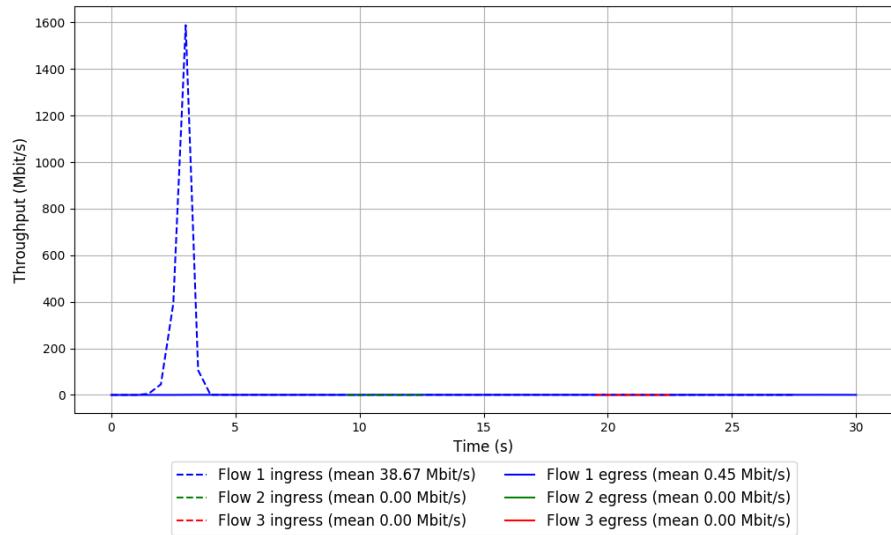
```
Run 2: Statistics of PCC-Allegro

Start at: 2018-09-07 23:32:39
End at: 2018-09-07 23:33:09
Local clock offset: -3.626 ms
Remote clock offset: 7.801 ms
```

Run 2: Report of PCC-Allegro — Data Link
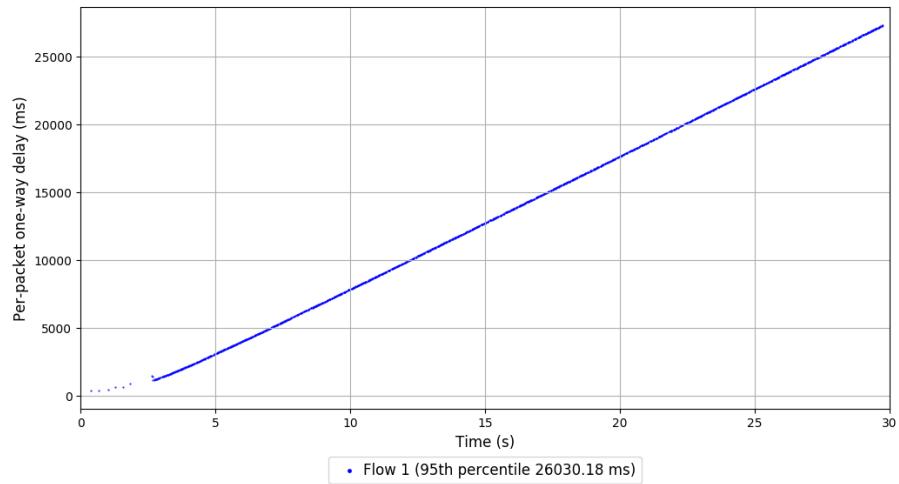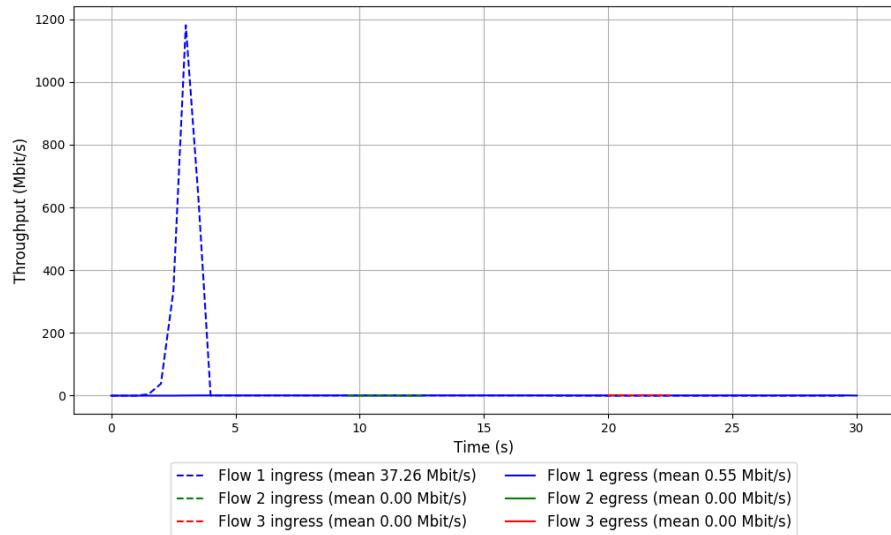
```
Run 3: Statistics of PCC-Allegro

Start at: 2018-09-07 23:55:13
End at: 2018-09-07 23:55:43
Local clock offset: -0.8 ms
Remote clock offset: 8.26 ms
```

Run 3: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 37.36 Mbit/s) — — —   Flow 1 egress (mean 0.49 Mbit/s)
Flow 2 ingress (mean 0.00 Mbit/s) — — —   Flow 2 egress (mean 0.00 Mbit/s)
Flow 3 ingress (mean 0.00 Mbit/s) — — —   Flow 3 egress (mean 0.00 Mbit/s)

Flow 1 (95th percentile 25781.69 ms)
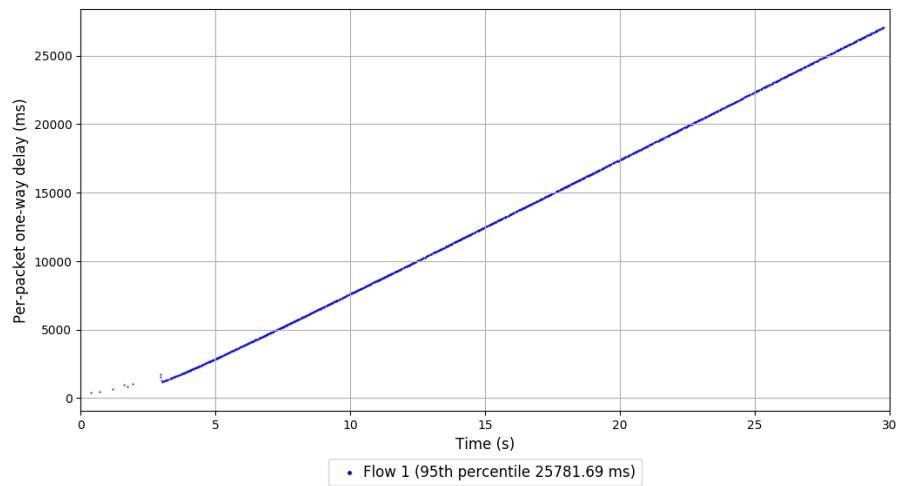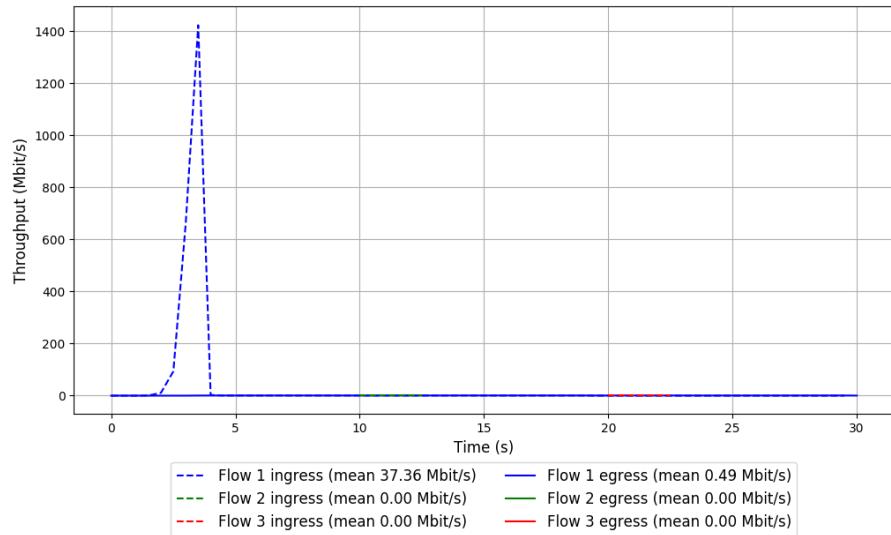
```
Run 1: Statistics of PCC-Expr

Start at: 2018-09-07 23:15:31
End at: 2018-09-07 23:16:01
Local clock offset: -2.468 ms
Remote clock offset: 2.325 ms
```

Run 1: Report of PCC-Expr — Data Link
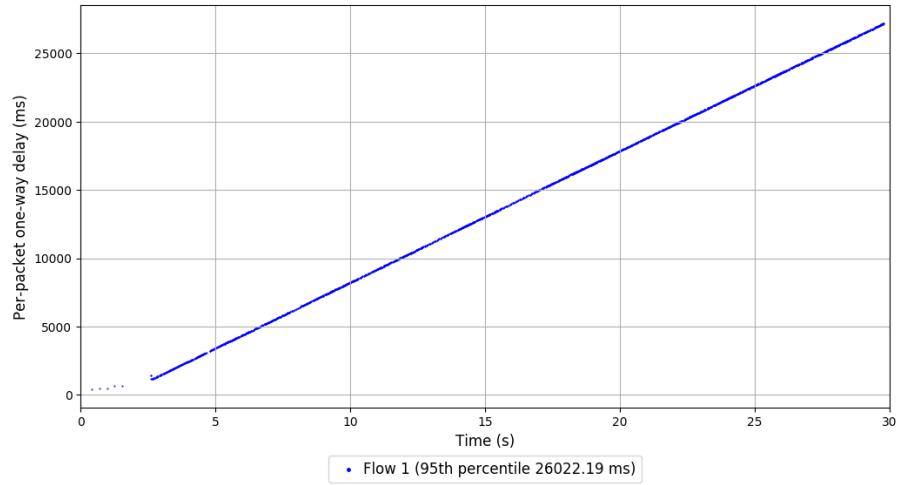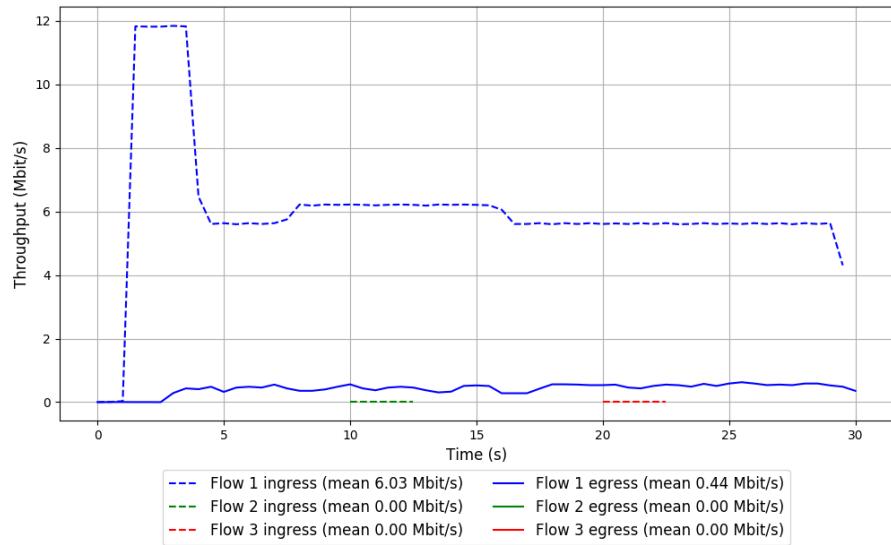
```
Run 2: Statistics of PCC-Expr

Start at: 2018-09-07 23:37:38
End at: 2018-09-07 23:38:08
Local clock offset: -3.859 ms
Remote clock offset: 7.991 ms
```

Run 2: Report of PCC-Expr — Data Link
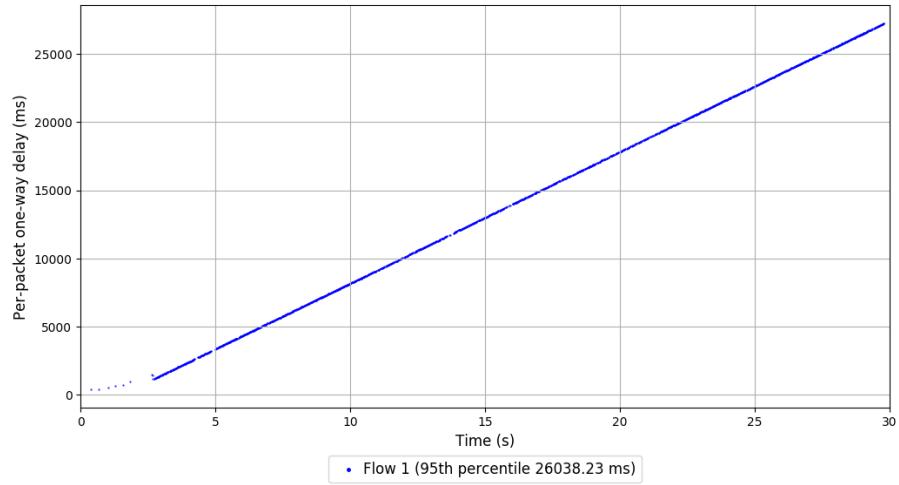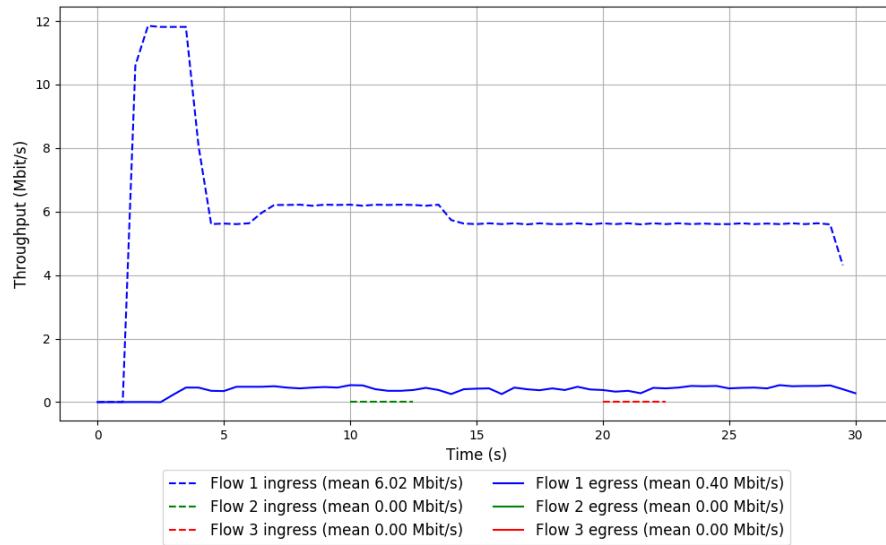
```
Run 3: Statistics of PCC-Expr

Start at: 2018-09-08 00:00:11
End at: 2018-09-08 00:00:41
Local clock offset: 0.681 ms
Remote clock offset: 4.232 ms
```

Run 3: Report of PCC-Expr — Data Link
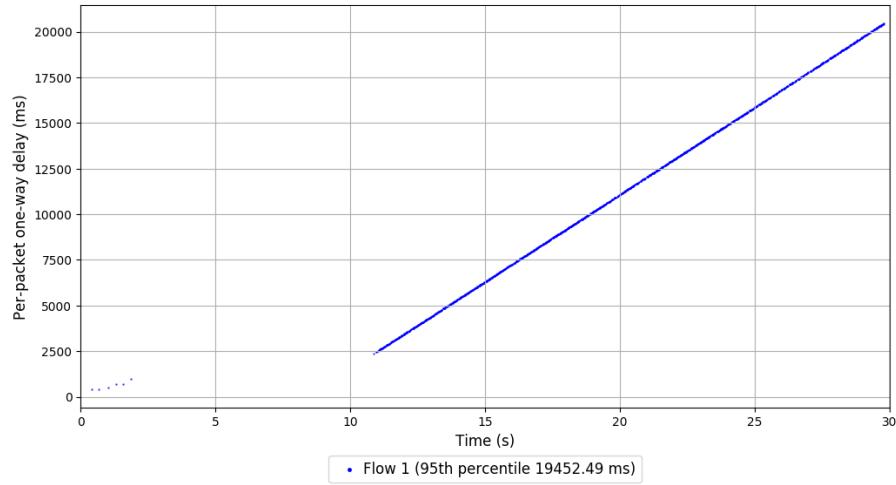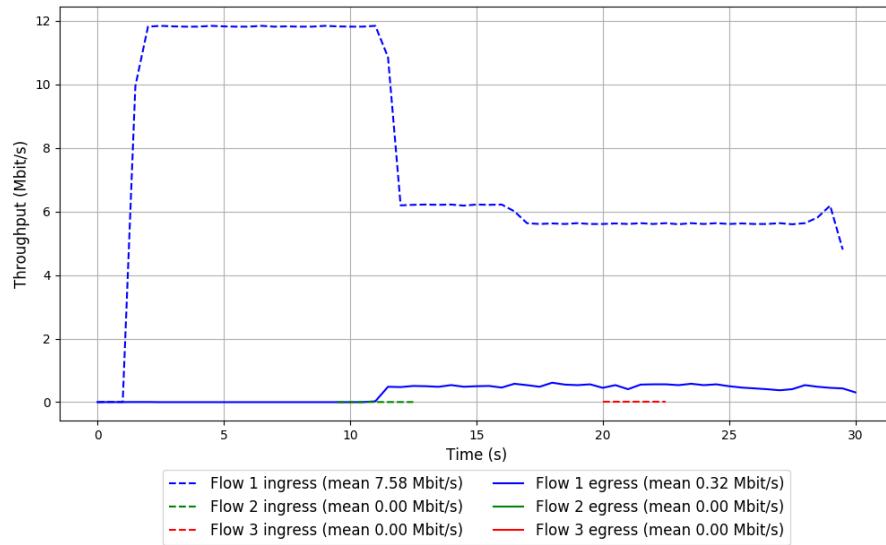
```
Run 1: Statistics of QUIC Cubic

Start at: 2018-09-07 23:06:51
End at: 2018-09-07 23:07:21
Local clock offset: -2.03 ms
Remote clock offset: 5.526 ms


# Below is generated by plot.py at 2018-09-08 00:01:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.47 Mbit/s
95th percentile per-packet one-way delay: 9196.422 ms
Loss rate: 33.74%
-- Flow 1:
Average throughput: 0.47 Mbit/s
95th percentile per-packet one-way delay: 9188.067 ms
Loss rate: 33.71%
-- Flow 2:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 8983.341 ms
Loss rate: 45.83%
-- Flow 3:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 9561.562 ms
Loss rate: 83.33%
```

Run 1: Report of QUIC Cubic — Data Link
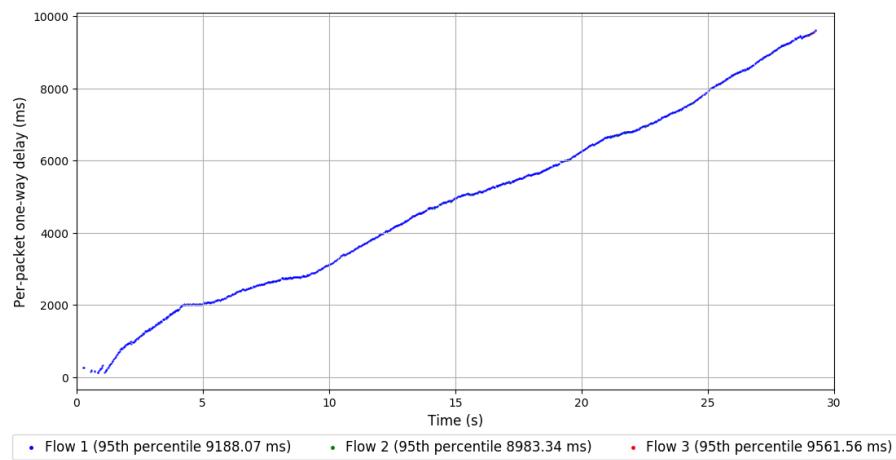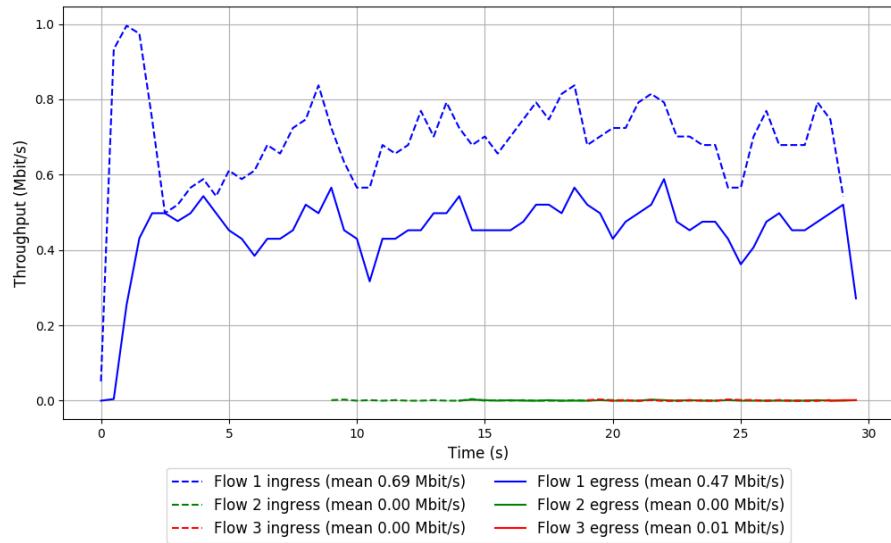
```
Run 2: Statistics of QUIC Cubic

Start at: 2018-09-07 23:29:00
End at: 2018-09-07 23:29:30
Local clock offset: -2.75 ms
Remote clock offset: 7.554 ms


# Below is generated by plot.py at 2018-09-08 00:01:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.48 Mbit/s
95th percentile per-packet one-way delay: 9078.870 ms
Loss rate: 33.64%
-- Flow 1:
Average throughput: 0.48 Mbit/s
95th percentile per-packet one-way delay: 9075.707 ms
Loss rate: 33.61%
-- Flow 2:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 9298.801 ms
Loss rate: 41.67%
-- Flow 3:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 9297.479 ms
Loss rate: 83.33%
```

## Run 2: Report of QUIC Cubic — Data Link

- Flow 1 ingress (mean 0.71 Mbit/s)
- Flow 2 ingress (mean 0.00 Mbit/s)
- Flow 3 ingress (mean 0.00 Mbit/s)
- Flow 1 egress (mean 0.48 Mbit/s)
- Flow 2 egress (mean 0.00 Mbit/s)
- Flow 3 egress (mean 0.01 Mbit/s)

- Flow 1 (95th percentile 9075.71 ms)
- Flow 2 (95th percentile 9298.80 ms)
- Flow 3 (95th percentile 9297.48 ms)
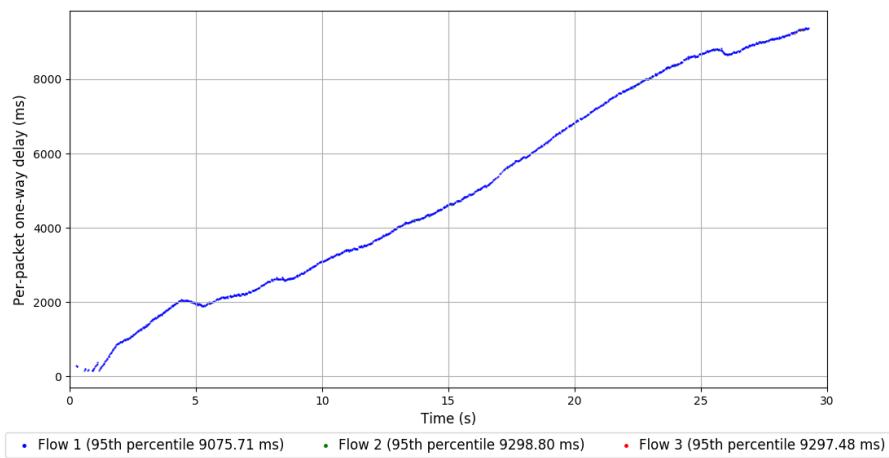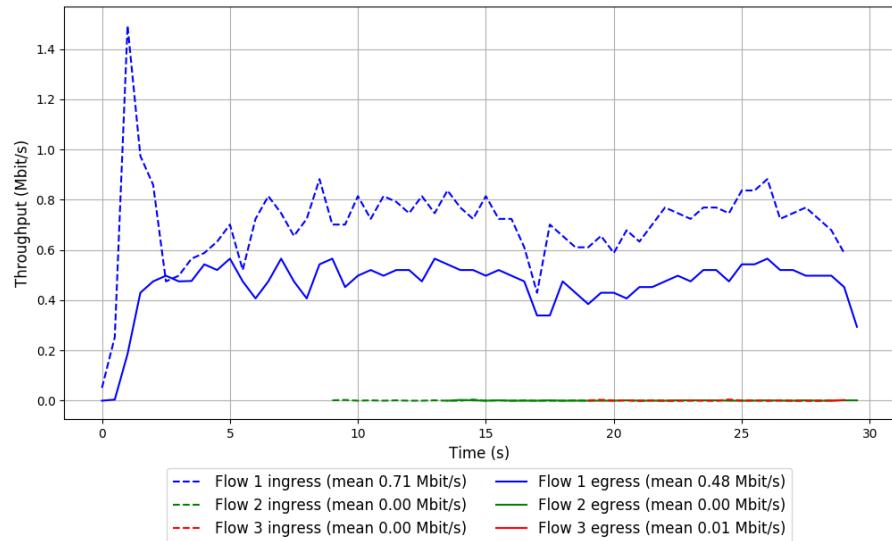
```
Run 3: Statistics of QUIC Cubic

Start at: 2018-09-07 23:51:32
End at: 2018-09-07 23:52:02
Local clock offset: -1.54 ms
Remote clock offset: 4.234 ms


# Below is generated by plot.py at 2018-09-08 00:01:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.51 Mbit/s
95th percentile per-packet one-way delay: 9328.288 ms
Loss rate: 33.53%
-- Flow 1:
Average throughput: 0.51 Mbit/s
95th percentile per-packet one-way delay: 9318.423 ms
Loss rate: 33.49%
-- Flow 2:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 9320.961 ms
Loss rate: 45.83%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 9672.929 ms
Loss rate: 91.67%
```

# Run 3: Report of QUIC Cubic — Data Link
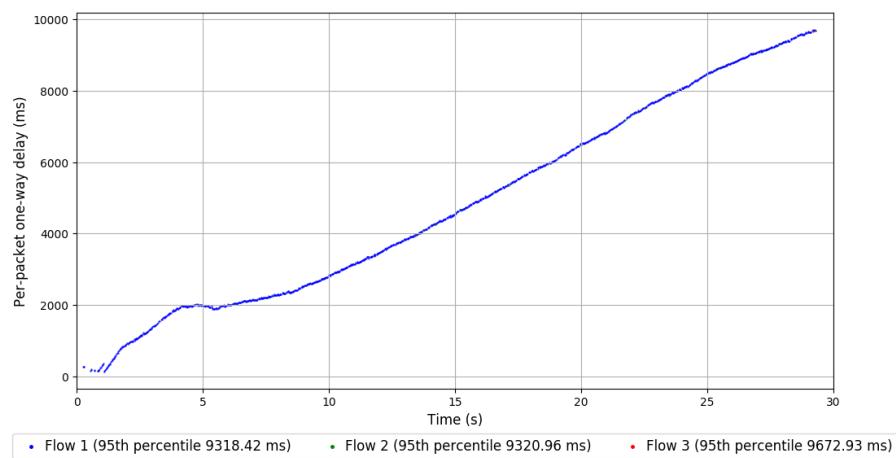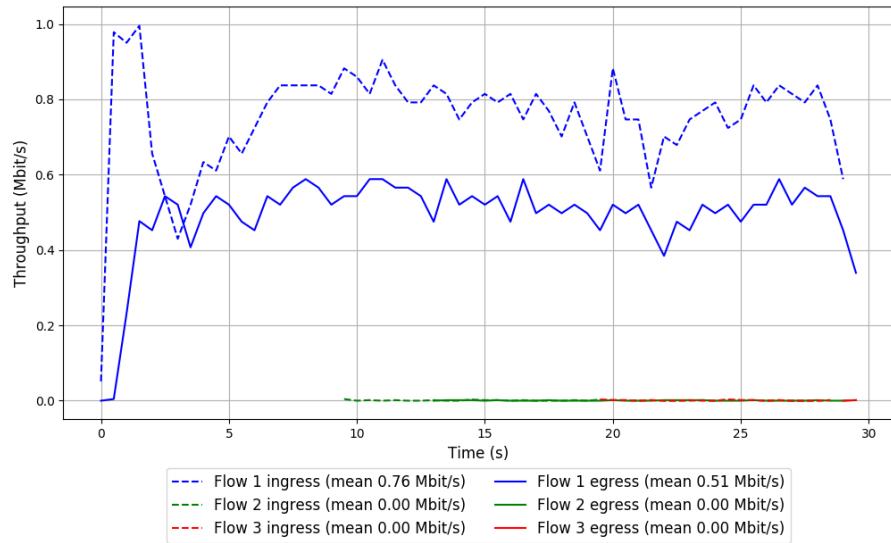
```
Run 1: Statistics of SCReAM

Start at: 2018-09-07 23:08:04
End at: 2018-09-07 23:08:34
Local clock offset: -2.11 ms
Remote clock offset: 5.973 ms


# Below is generated by plot.py at 2018-09-08 00:01:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.23 Mbit/s
95th percentile per-packet one-way delay: 225.874 ms
Loss rate: 1.04%
-- Flow 1:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 205.573 ms
Loss rate: 0.66%
-- Flow 2:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 216.973 ms
Loss rate: 0.83%
-- Flow 3:
Average throughput: 0.17 Mbit/s
95th percentile per-packet one-way delay: 257.454 ms
Loss rate: 1.89%
```

Run 1: Report of SCReAM — Data Link
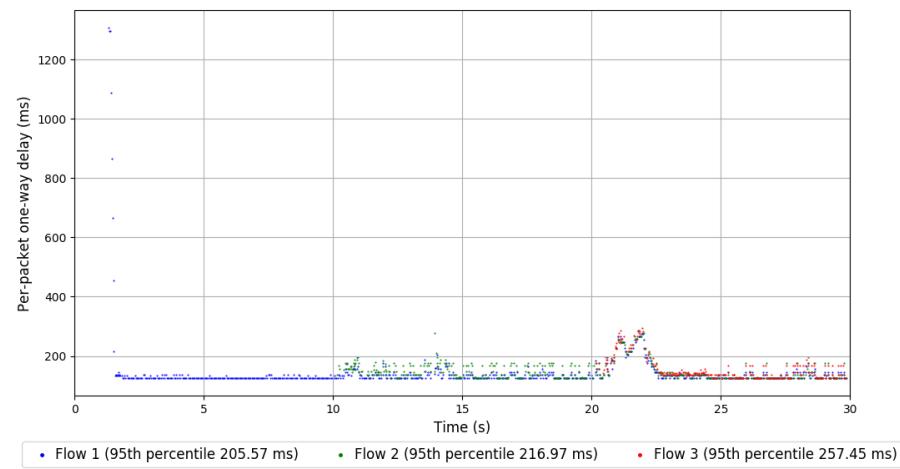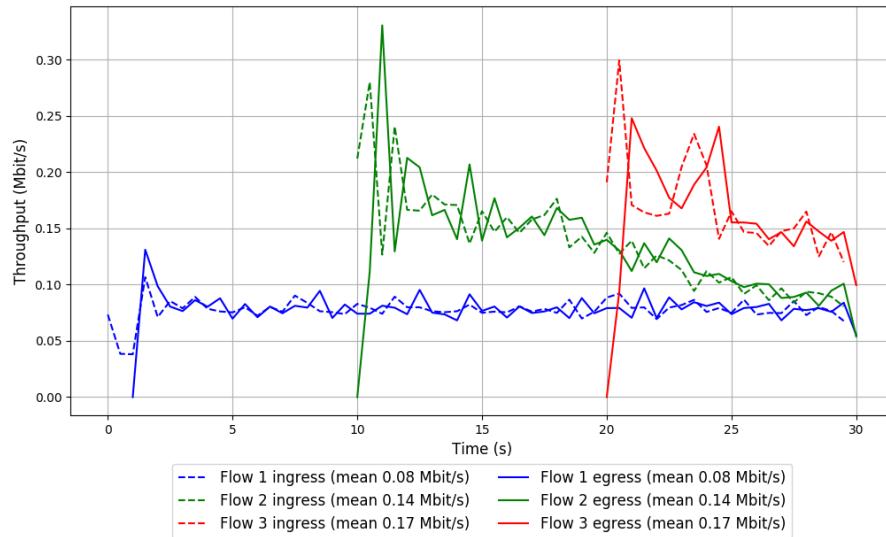
```
Run 2: Statistics of SCReAM

Start at: 2018-09-07 23:30:13
End at: 2018-09-07 23:30:43
Local clock offset: -3.572 ms
Remote clock offset: 3.38 ms


# Below is generated by plot.py at 2018-09-08 00:01:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.20 Mbit/s
95th percentile per-packet one-way delay: 218.102 ms
Loss rate: 1.57%
-- Flow 1:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 208.388 ms
Loss rate: 0.92%
-- Flow 2:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 208.352 ms
Loss rate: 1.52%
-- Flow 3:
Average throughput: 0.17 Mbit/s
95th percentile per-packet one-way delay: 236.168 ms
Loss rate: 2.48%
```

Run 2: Report of SCReAM — Data Link
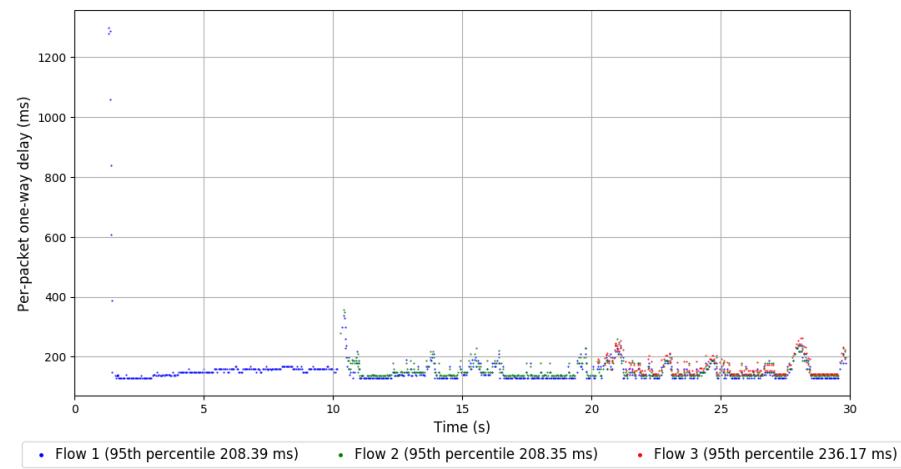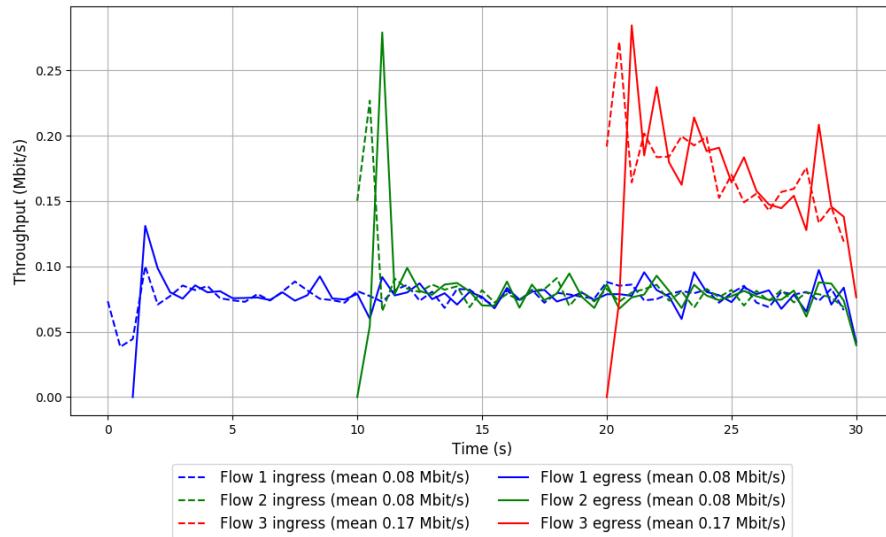
```
Run 3: Statistics of SCReAM

Start at: 2018-09-07 23:52:46
End at: 2018-09-07 23:53:16
Local clock offset: -1.296 ms
Remote clock offset: 7.633 ms


# Below is generated by plot.py at 2018-09-08 00:01:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 274.935 ms
Loss rate: 1.06%
-- Flow 1:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 258.638 ms
Loss rate: 0.66%
-- Flow 2:
Average throughput: 0.12 Mbit/s
95th percentile per-packet one-way delay: 283.507 ms
Loss rate: 0.83%
-- Flow 3:
Average throughput: 0.18 Mbit/s
95th percentile per-packet one-way delay: 293.410 ms
Loss rate: 1.92%
```

## Run 3: Report of SCReAM — Data Link
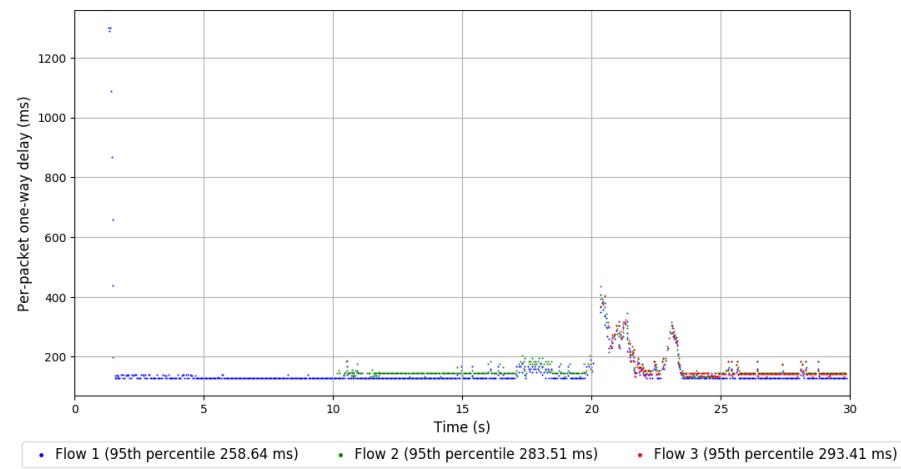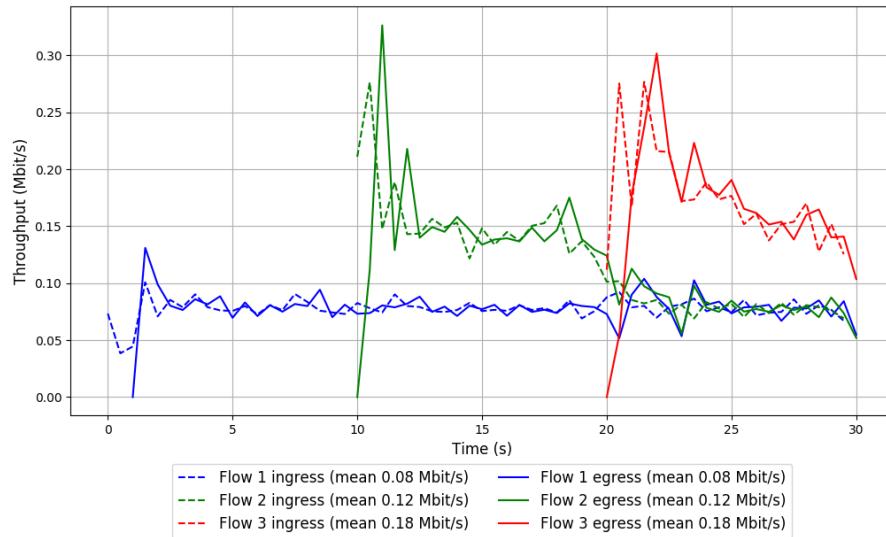
```
Run 1: Statistics of Sprout

Start at: 2018-09-07 23:01:38
End at: 2018-09-07 23:02:08
Local clock offset: -1.644 ms
Remote clock offset: 5.844 ms

# Below is generated by plot.py at 2018-09-08 00:01:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.19 Mbit/s
95th percentile per-packet one-way delay: 462.463 ms
Loss rate: 1.20%
-- Flow 1:
Average throughput: 0.09 Mbit/s
95th percentile per-packet one-way delay: 1201.271 ms
Loss rate: 0.62%
-- Flow 2:
Average throughput: 0.09 Mbit/s
95th percentile per-packet one-way delay: 338.795 ms
Loss rate: 1.29%
-- Flow 3:
Average throughput: 0.10 Mbit/s
95th percentile per-packet one-way delay: 335.405 ms
Loss rate: 2.52%
```

Run 1: Report of Sprout — Data Link
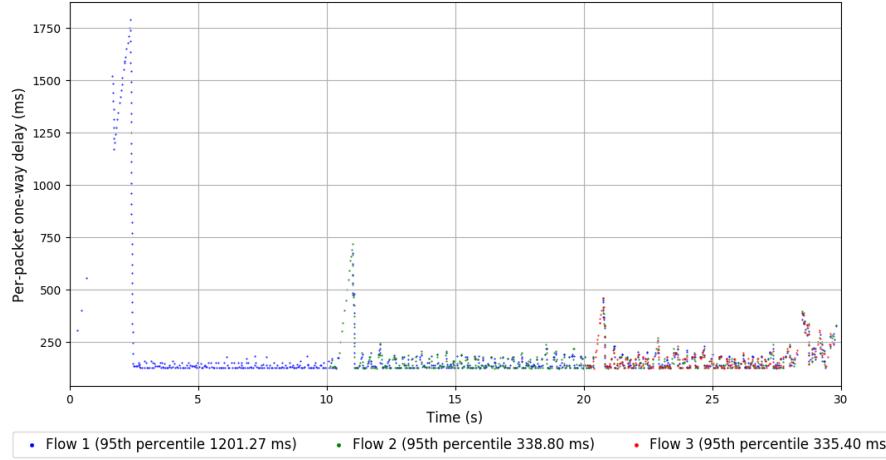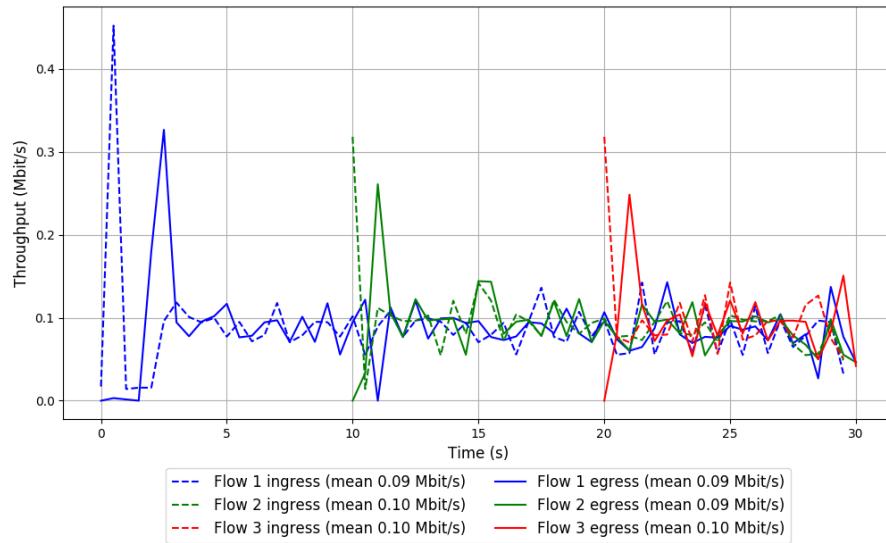
```
Run 2: Statistics of Sprout

Start at: 2018-09-07 23:24:03
End at: 2018-09-07 23:24:33
Local clock offset: -2.502 ms
Remote clock offset: 6.728 ms


# Below is generated by plot.py at 2018-09-08 00:01:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.20 Mbit/s
95th percentile per-packet one-way delay: 401.584 ms
Loss rate: 1.12%
-- Flow 1:
Average throughput: 0.10 Mbit/s
95th percentile per-packet one-way delay: 856.464 ms
Loss rate: 1.19%
-- Flow 2:
Average throughput: 0.10 Mbit/s
95th percentile per-packet one-way delay: 260.303 ms
Loss rate: 0.73%
-- Flow 3:
Average throughput: 0.11 Mbit/s
95th percentile per-packet one-way delay: 342.177 ms
Loss rate: 1.68%
```

Run 2: Report of Sprout — Data Link
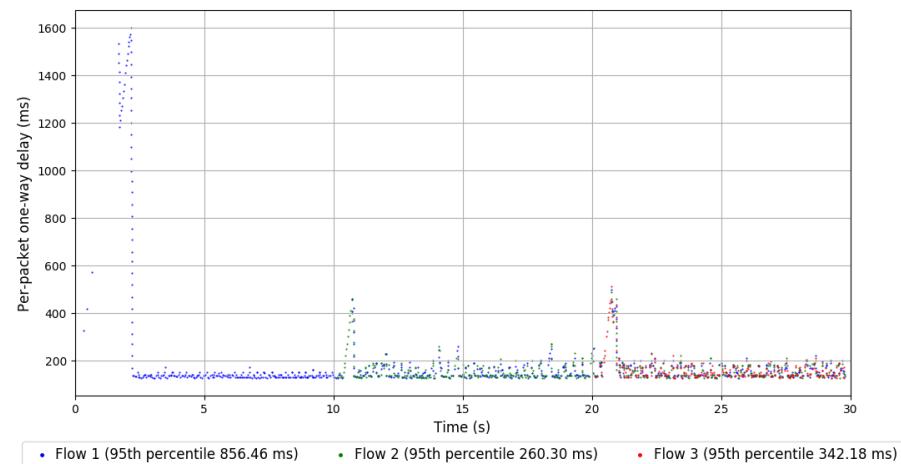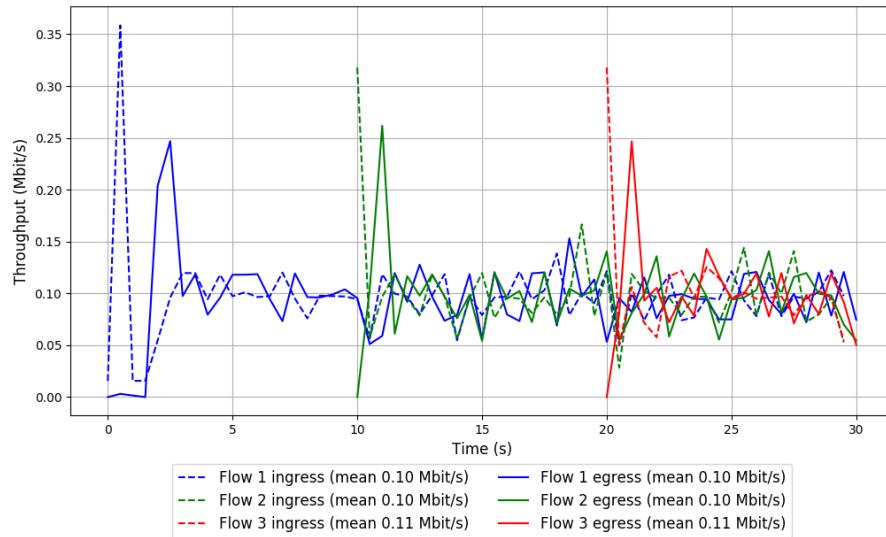
```
Run 3: Statistics of Sprout

Start at: 2018-09-07 23:46:20
End at: 2018-09-07 23:46:50
Local clock offset: -2.624 ms
Remote clock offset: 4.713 ms


# Below is generated by plot.py at 2018-09-08 00:01:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.19 Mbit/s
95th percentile per-packet one-way delay: 374.098 ms
Loss rate: 1.48%
-- Flow 1:
Average throughput: 0.09 Mbit/s
95th percentile per-packet one-way delay: 1029.233 ms
Loss rate: 1.32%
-- Flow 2:
Average throughput: 0.11 Mbit/s
95th percentile per-packet one-way delay: 237.266 ms
Loss rate: 0.76%
-- Flow 3:
Average throughput: 0.10 Mbit/s
95th percentile per-packet one-way delay: 319.821 ms
Loss rate: 3.44%
```

Run 3: Report of Sprout — Data Link
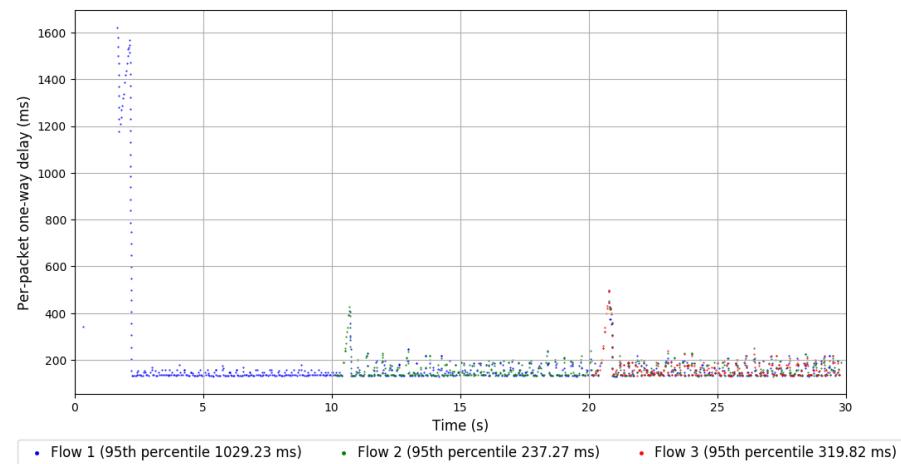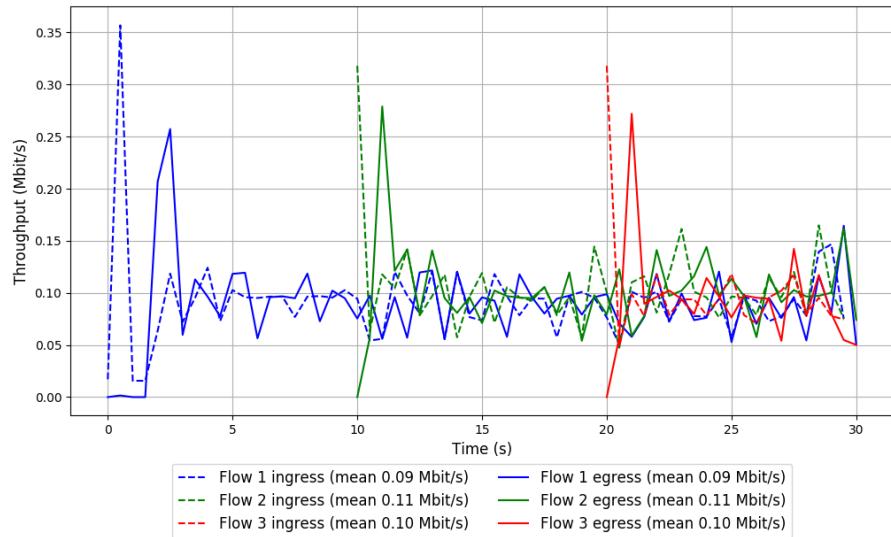
```
Run 1: Statistics of TaoVA-100x

Start at: 2018-09-07 22:56:26
End at: 2018-09-07 22:56:56
Local clock offset: -0.283 ms
Remote clock offset: 1.781 ms


# Below is generated by plot.py at 2018-09-08 00:01:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.49 Mbit/s
95th percentile per-packet one-way delay: 4124.060 ms
Loss rate: 8.48%
-- Flow 1:
Average throughput: 0.28 Mbit/s
95th percentile per-packet one-way delay: 2999.696 ms
Loss rate: 5.13%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 3692.029 ms
Loss rate: 9.15%
-- Flow 3:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 4764.199 ms
Loss rate: 20.26%
```

Run 1: Report of TaoVA-100x — Data Link
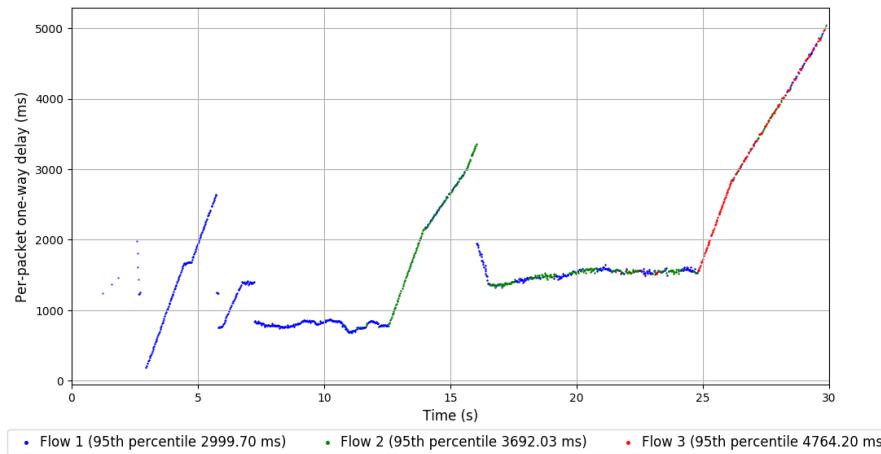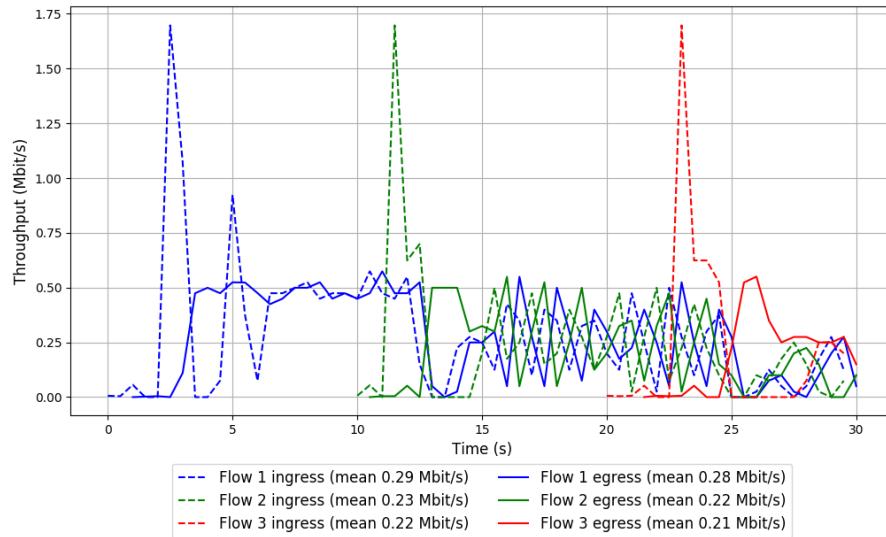
```
Run 2: Statistics of TaoVA-100x

Start at: 2018-09-07 23:19:10
End at: 2018-09-07 23:19:40
Local clock offset: -2.116 ms
Remote clock offset: 7.073 ms


# Below is generated by plot.py at 2018-09-08 00:01:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.55 Mbit/s
95th percentile per-packet one-way delay: 3598.900 ms
Loss rate: 7.42%
-- Flow 1:
Average throughput: 0.33 Mbit/s
95th percentile per-packet one-way delay: 2839.131 ms
Loss rate: 4.34%
-- Flow 2:
Average throughput: 0.25 Mbit/s
95th percentile per-packet one-way delay: 3501.379 ms
Loss rate: 8.25%
-- Flow 3:
Average throughput: 0.24 Mbit/s
95th percentile per-packet one-way delay: 4323.264 ms
Loss rate: 19.17%
```

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

Flow 1 ingress (mean 0.34 Mbit/s) — Flow 1 egress (mean 0.33 Mbit/s)
Flow 2 ingress (mean 0.26 Mbit/s) — Flow 2 egress (mean 0.25 Mbit/s)
Flow 3 ingress (mean 0.25 Mbit/s) — Flow 3 egress (mean 0.24 Mbit/s)

Flow 1 (95th percentile 2839.13 ms)   Flow 2 (95th percentile 3501.38 ms)   Flow 3 (95th percentile 4323.26 ms)

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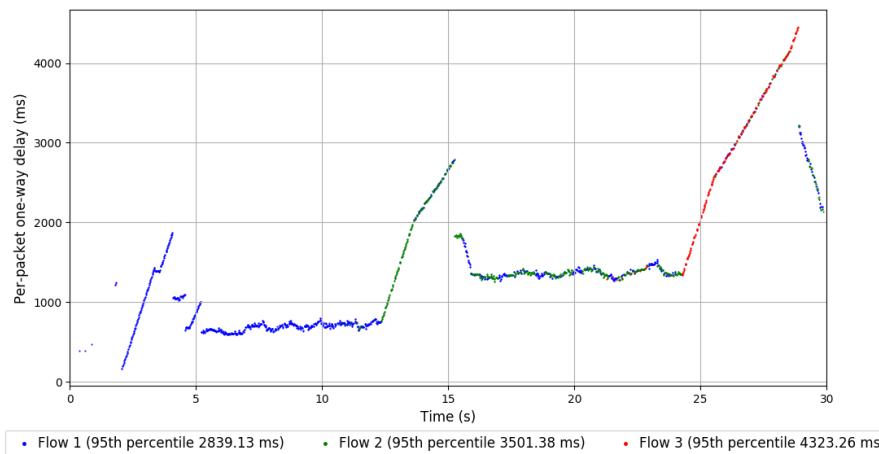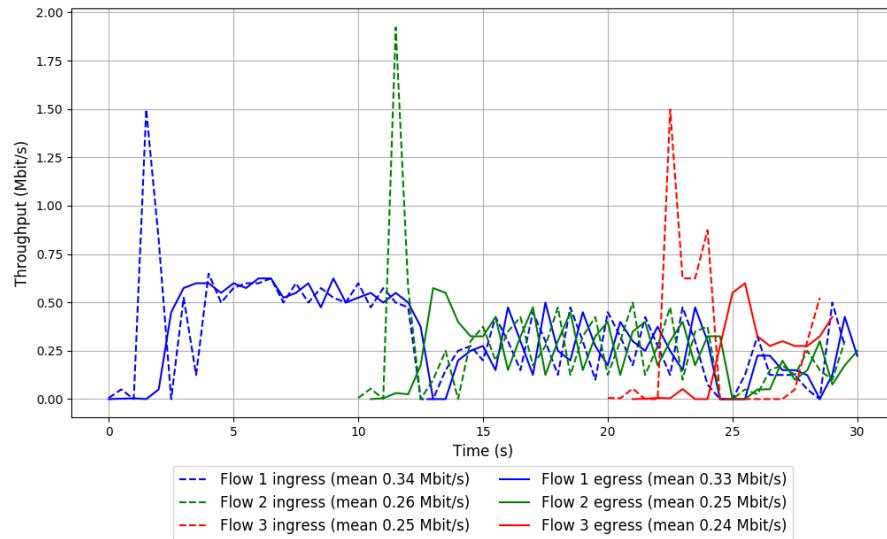
```
Run 3: Statistics of TaoVA-100x

Start at: 2018-09-07 23:41:21
End at: 2018-09-07 23:41:51
Local clock offset: -3.999 ms
Remote clock offset: 4.15 ms


# Below is generated by plot.py at 2018-09-08 00:01:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.48 Mbit/s
95th percentile per-packet one-way delay: 4082.052 ms
Loss rate: 8.43%
-- Flow 1:
Average throughput: 0.28 Mbit/s
95th percentile per-packet one-way delay: 3406.285 ms
Loss rate: 5.14%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 4030.020 ms
Loss rate: 9.55%
-- Flow 3:
Average throughput: 0.23 Mbit/s
95th percentile per-packet one-way delay: 4761.589 ms
Loss rate: 18.22%
```

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

Flow 1 ingress (mean 0.29 Mbit/s)　　Flow 1 egress (mean 0.28 Mbit/s)
Flow 2 ingress (mean 0.23 Mbit/s)　　Flow 2 egress (mean 0.22 Mbit/s)
Flow 3 ingress (mean 0.23 Mbit/s)　　Flow 3 egress (mean 0.23 Mbit/s)

Flow 1 (95th percentile 3406.28 ms)　　Flow 2 (95th percentile 4030.02 ms)　　Flow 3 (95th percentile 4761.59 ms)
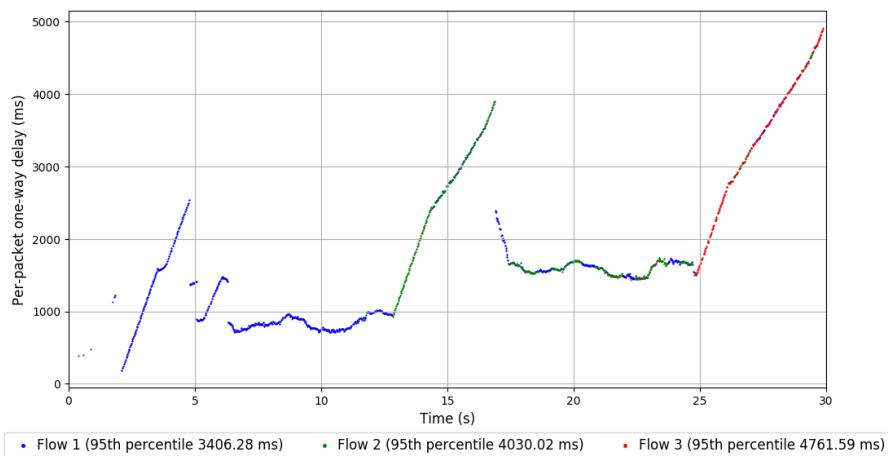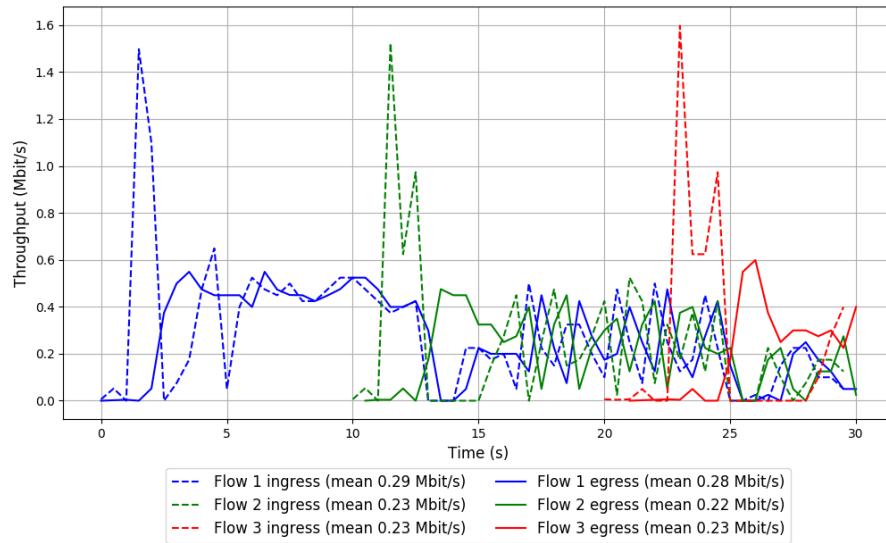
```
Run 1: Statistics of TCP Vegas

Start at: 2018-09-07 23:11:49
End at: 2018-09-07 23:12:19
Local clock offset: -2.297 ms
Remote clock offset: 2.319 ms


# Below is generated by plot.py at 2018-09-08 00:01:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 2301.426 ms
Loss rate: 10.21%
-- Flow 1:
Average throughput: 0.30 Mbit/s
95th percentile per-packet one-way delay: 1897.046 ms
Loss rate: 4.10%
-- Flow 2:
Average throughput: 0.16 Mbit/s
95th percentile per-packet one-way delay: 2288.091 ms
Loss rate: 7.80%
-- Flow 3:
Average throughput: 0.12 Mbit/s
95th percentile per-packet one-way delay: 2448.599 ms
Loss rate: 45.26%
```

Run 1: Report of TCP Vegas — Data Link
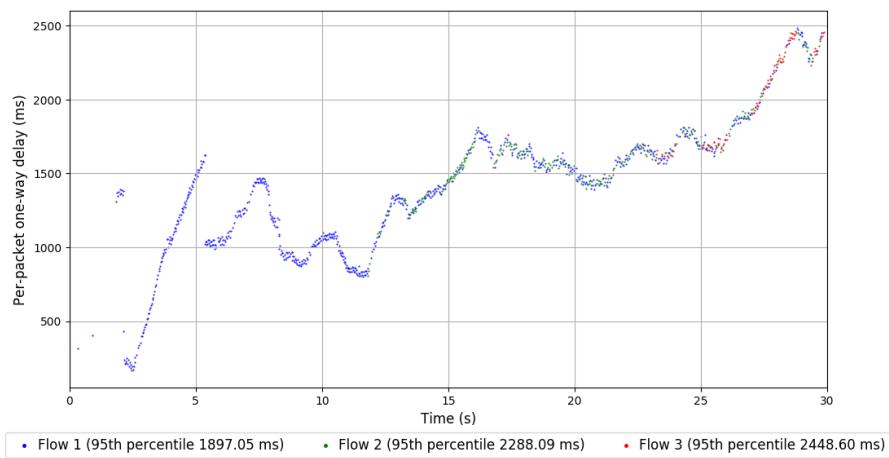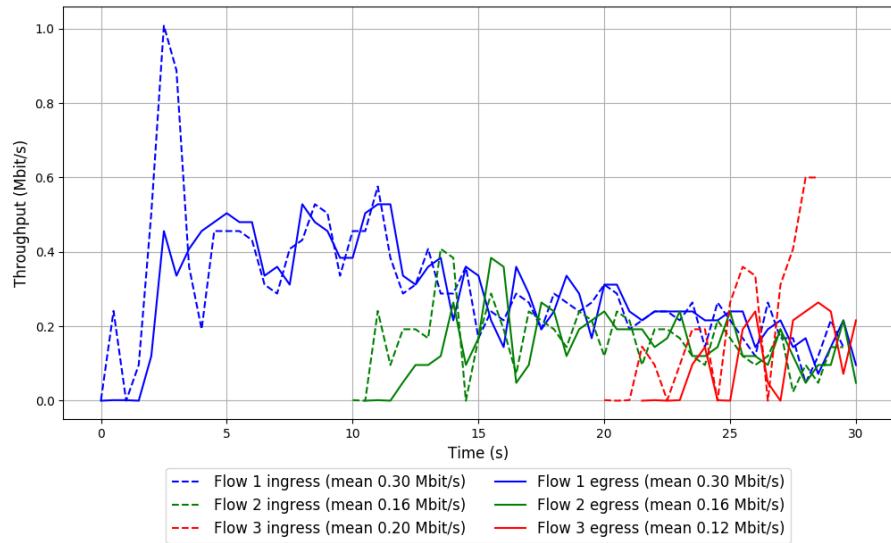
```
Run 2: Statistics of TCP Vegas

Start at: 2018-09-07 23:33:57
End at: 2018-09-07 23:34:27
Local clock offset: -2.958 ms
Remote clock offset: 7.785 ms


# Below is generated by plot.py at 2018-09-08 00:01:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.47 Mbit/s
95th percentile per-packet one-way delay: 2267.329 ms
Loss rate: 7.44%
-- Flow 1:
Average throughput: 0.33 Mbit/s
95th percentile per-packet one-way delay: 2100.595 ms
Loss rate: 3.98%
-- Flow 2:
Average throughput: 0.18 Mbit/s
95th percentile per-packet one-way delay: 2307.181 ms
Loss rate: 7.69%
-- Flow 3:
Average throughput: 0.10 Mbit/s
95th percentile per-packet one-way delay: 2388.848 ms
Loss rate: 34.18%
```

Run 2: Report of TCP Vegas — Data Link
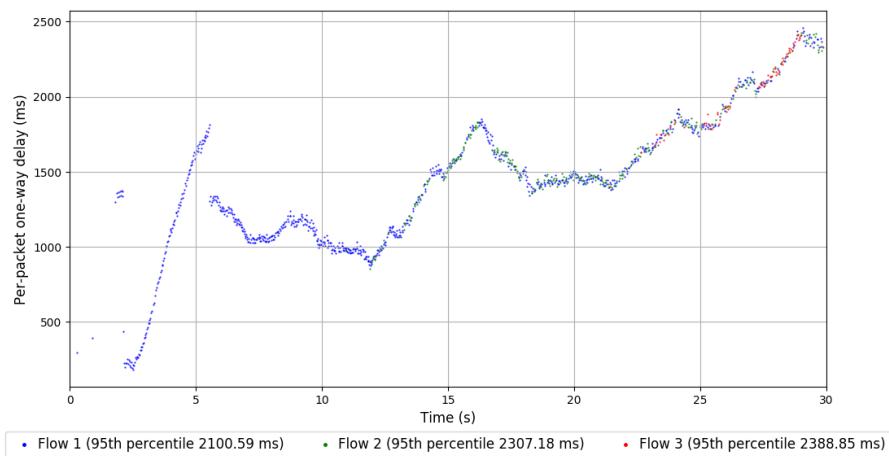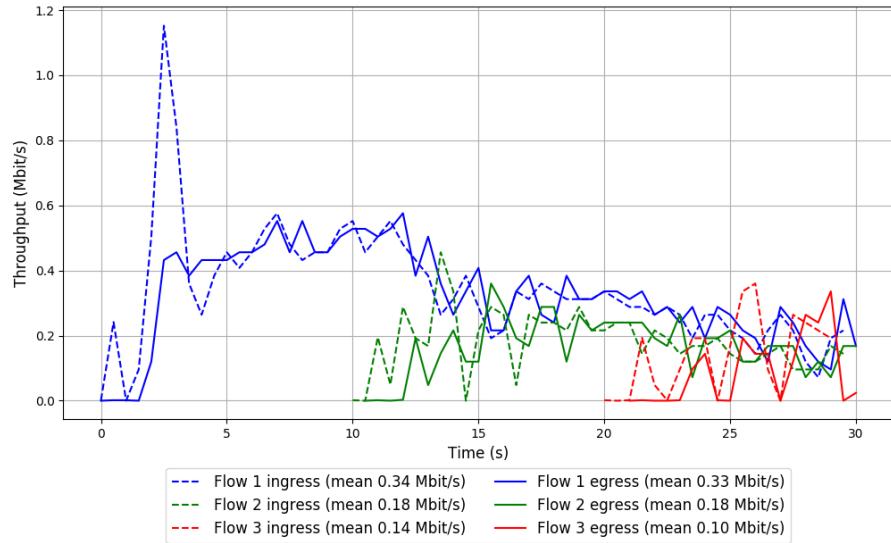
```
Run 3: Statistics of TCP Vegas

Start at: 2018-09-07 23:56:29
End at: 2018-09-07 23:56:59
Local clock offset: 0.176 ms
Remote clock offset: 3.966 ms


# Below is generated by plot.py at 2018-09-08 00:01:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.52 Mbit/s
95th percentile per-packet one-way delay: 1936.864 ms
Loss rate: 6.18%
-- Flow 1:
Average throughput: 0.33 Mbit/s
95th percentile per-packet one-way delay: 1828.792 ms
Loss rate: 2.98%
-- Flow 2:
Average throughput: 0.23 Mbit/s
95th percentile per-packet one-way delay: 1940.383 ms
Loss rate: 6.20%
-- Flow 3:
Average throughput: 0.16 Mbit/s
95th percentile per-packet one-way delay: 1968.790 ms
Loss rate: 23.96%
```

Run 3: Report of TCP Vegas — Data Link
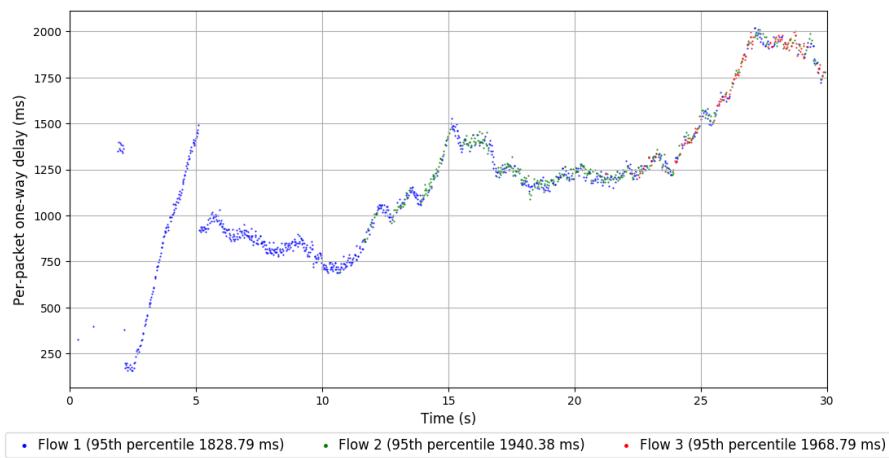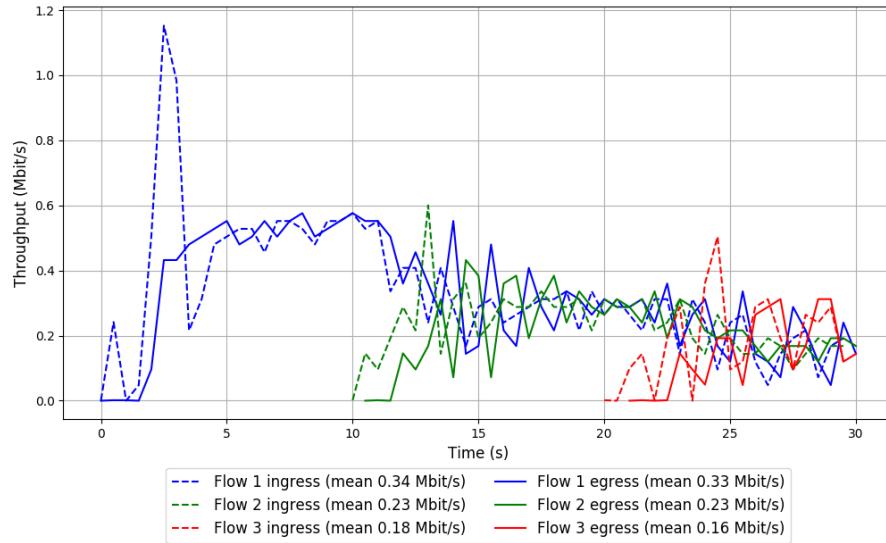
```
Run 1: Statistics of Verus

Start at: 2018-09-07 23:14:17
End at: 2018-09-07 23:14:47
Local clock offset: -2.393 ms
Remote clock offset: 6.423 ms

# Below is generated by plot.py at 2018-09-08 00:01:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.53 Mbit/s
95th percentile per-packet one-way delay: 1874.332 ms
Loss rate: 7.04%
-- Flow 1:
Average throughput: 0.52 Mbit/s
95th percentile per-packet one-way delay: 1874.332 ms
Loss rate: 7.04%
-- Flow 2:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 1836.942 ms
Loss rate: 5.00%
-- Flow 3:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 1845.498 ms
Loss rate: 10.00%
```

Run 1: Report of Verus — Data Link
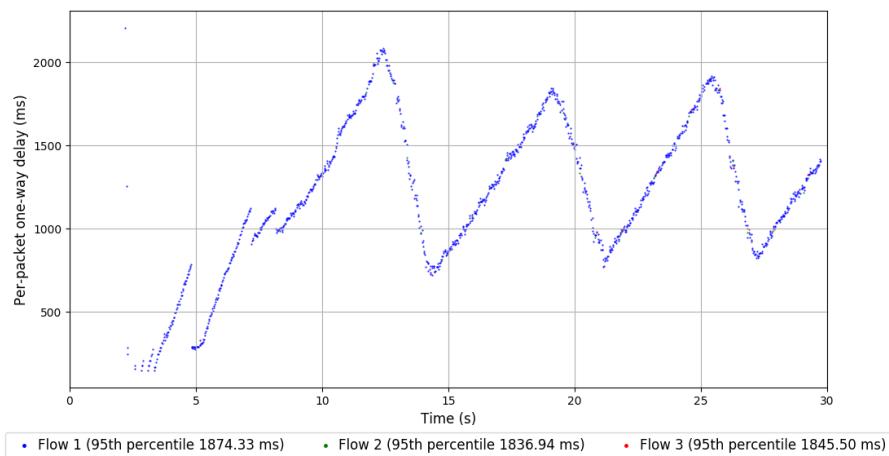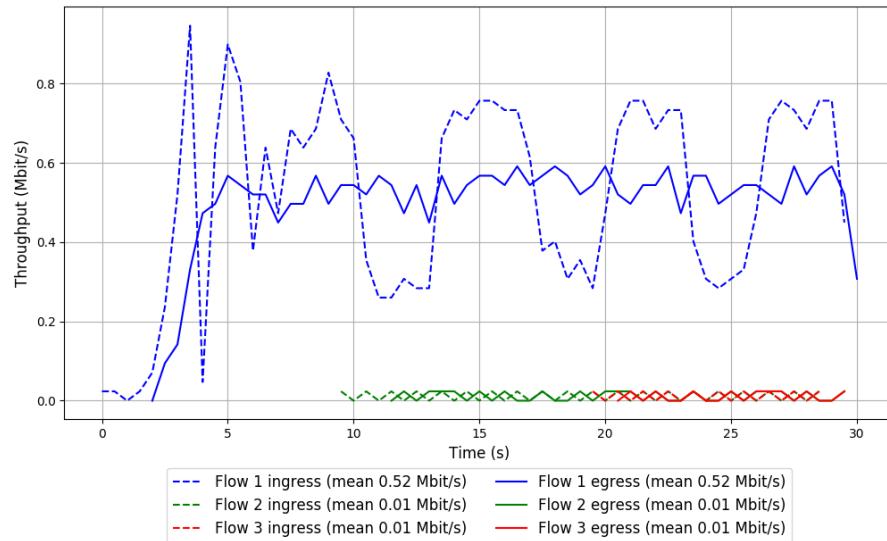
```
Run 2: Statistics of Verus

Start at: 2018-09-07 23:36:25
End at: 2018-09-07 23:36:55
Local clock offset: -3.812 ms
Remote clock offset: 3.719 ms


# Below is generated by plot.py at 2018-09-08 00:01:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.50 Mbit/s
95th percentile per-packet one-way delay: 2348.328 ms
Loss rate: 5.30%
-- Flow 1:
Average throughput: 0.49 Mbit/s
95th percentile per-packet one-way delay: 2348.328 ms
Loss rate: 5.27%
-- Flow 2:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 2407.242 ms
Loss rate: 4.76%
-- Flow 3:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 1836.849 ms
Loss rate: 10.00%
```

Run 2: Report of Verus — Data Link
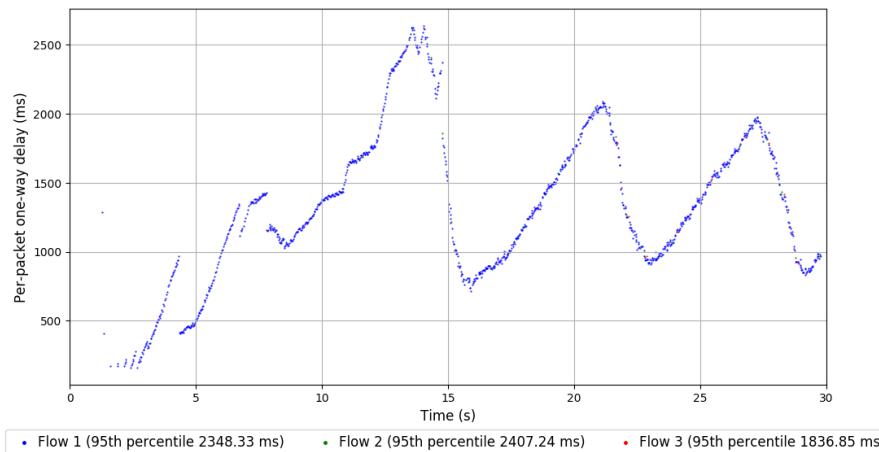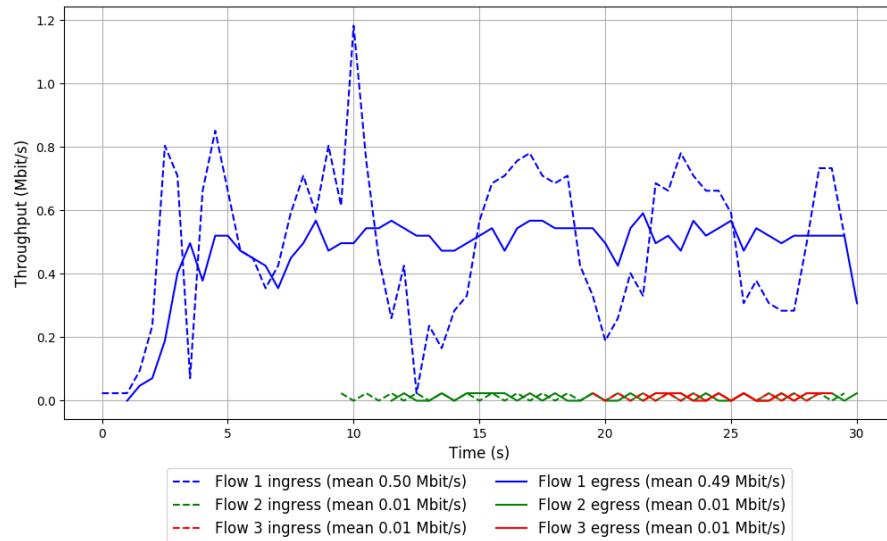
```
Run 3: Statistics of Verus

Start at: 2018-09-07 23:58:58
End at: 2018-09-07 23:59:28
Local clock offset: 0.551 ms
Remote clock offset: 4.032 ms


# Below is generated by plot.py at 2018-09-08 00:01:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 1963.353 ms
Loss rate: 3.37%
-- Flow 1:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 1963.353 ms
Loss rate: 3.10%
-- Flow 2:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 1878.239 ms
Loss rate: 9.52%
-- Flow 3:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 1878.295 ms
Loss rate: 18.18%
```

Run 3: Report of Verus — Data Link
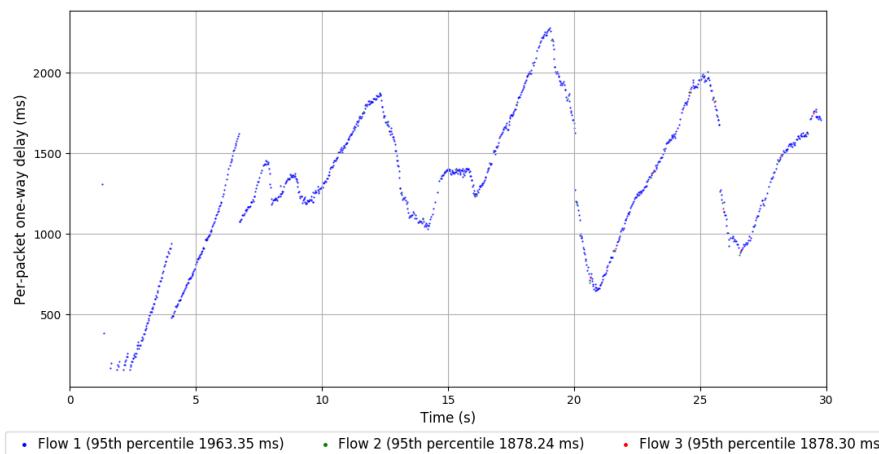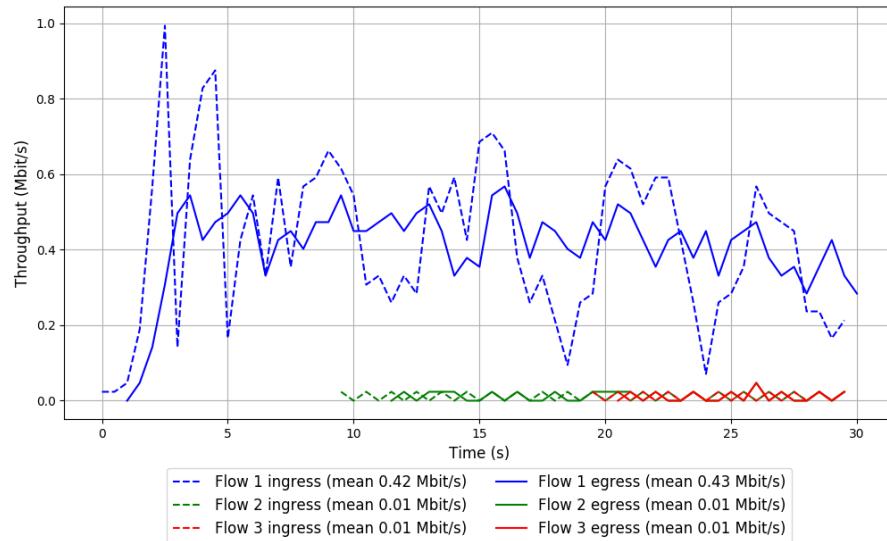
```
Run 1: Statistics of PCC-Vivace

Start at: 2018-09-07 22:57:39
End at: 2018-09-07 22:58:09
Local clock offset: -0.493 ms
Remote clock offset: 5.985 ms
```

Run 1: Report of PCC-Vivace — Data Link
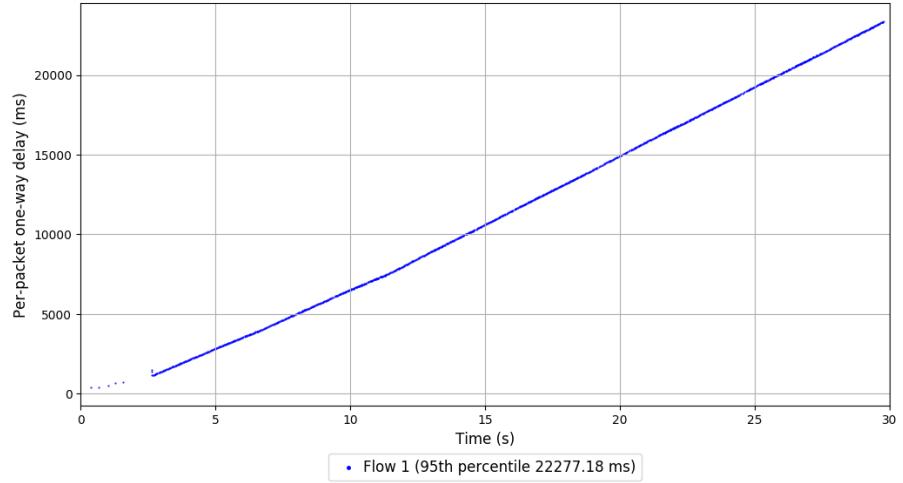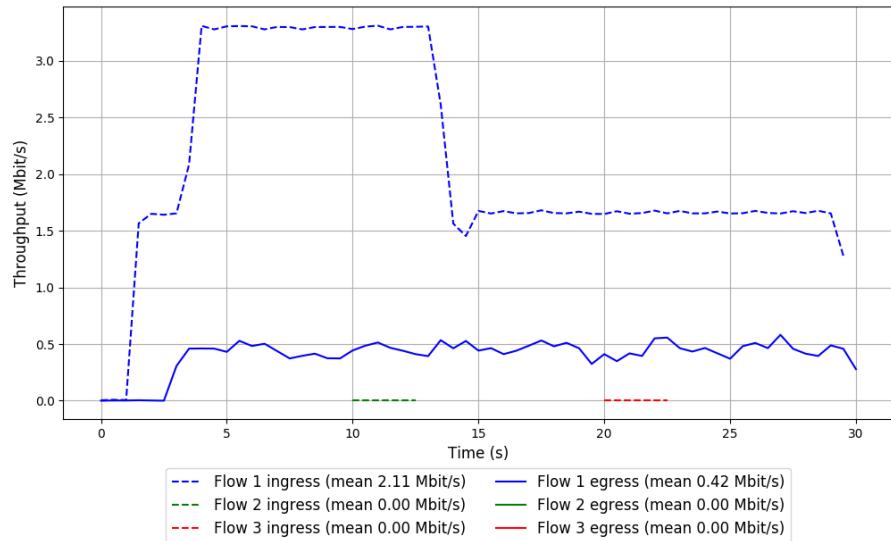
```
Run 2: Statistics of PCC-Vivace

Start at: 2018-09-07 23:20:24
End at: 2018-09-07 23:20:54
Local clock offset: -2.948 ms
Remote clock offset: 3.116 ms
```

Run 2: Report of PCC-Vivace — Data Link
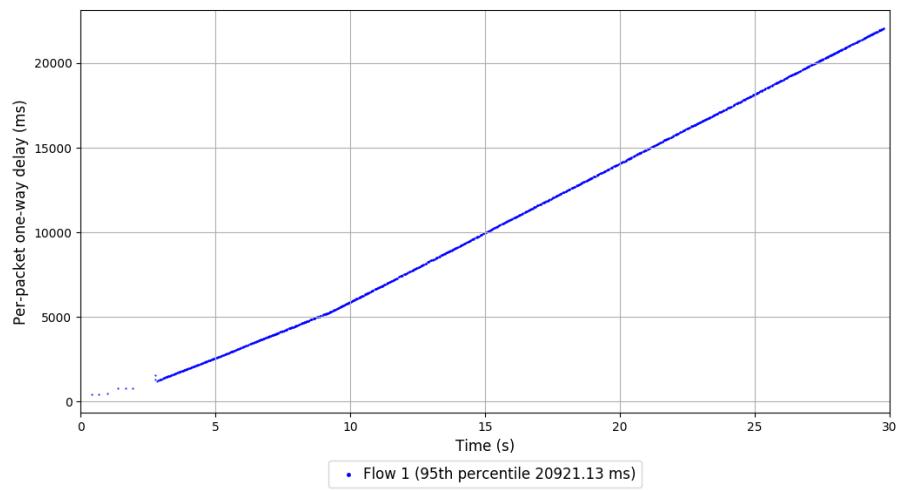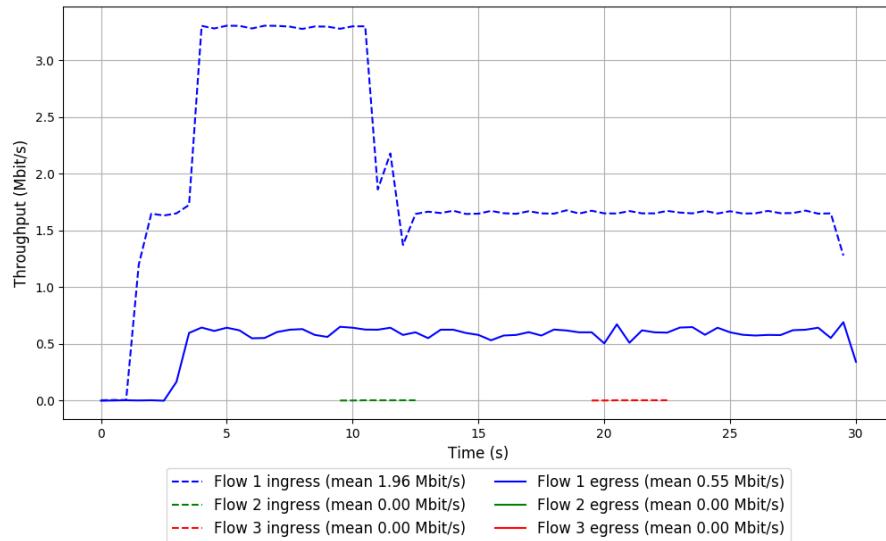
```
Run 3: Statistics of PCC-Vivace

Start at: 2018-09-07 23:42:34
End at: 2018-09-07 23:43:04
Local clock offset: -3.308 ms
Remote clock offset: 8.639 ms
```

# Run 3: Report of PCC-Vivace — Data Link
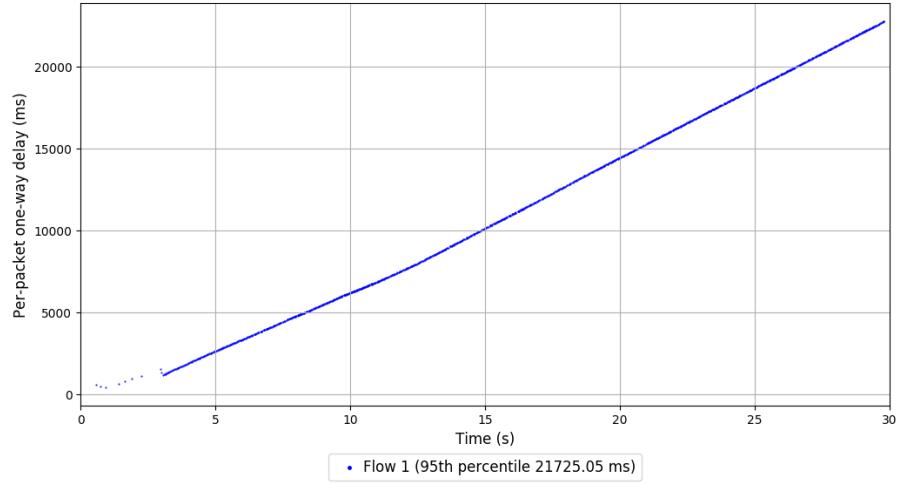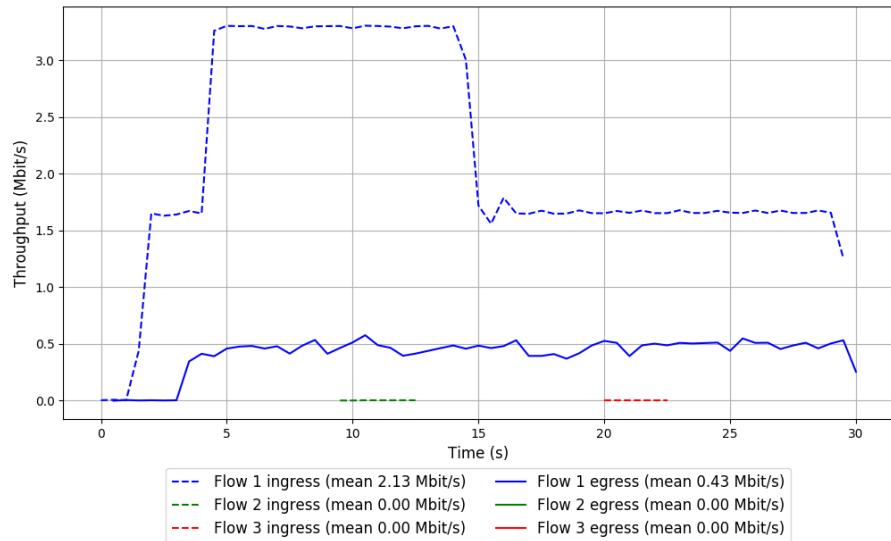
Run 1: Statistics of WebRTC media

/home/ubuntu/pantheon/data/2018-09-07T22-53-Colombia-cellular-to-AWS-Brazil-2-3-runs-3-flows

Run 1: Report of WebRTC media — Data Link

Figure is missing


Figure is missing

```
Run 2: Statistics of WebRTC media

Start at: 2018-09-07 23:27:46
End at: 2018-09-07 23:28:16
Local clock offset: -3.425 ms
Remote clock offset: 7.522 ms

Below is generated by plot.py at 2018-09-08 00:01:29
Datalink statistics
-- Total of 3 flows:
Average throughput: 0.31 Mbit/s
95th percentile per-packet one-way delay: 1843.764 ms
Loss rate: 3.42%
-- Flow 1:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 1708.680 ms
Loss rate: 1.55%
-- Flow 2:
Average throughput: 0.09 Mbit/s
95th percentile per-packet one-way delay: 1914.895 ms
Loss rate: 2.08%
-- Flow 3:
Average throughput: 0.07 Mbit/s
95th percentile per-packet one-way delay: 1750.519 ms
Loss rate: 8.47%
```

Run 2: Report of WebRTC media — Data Link
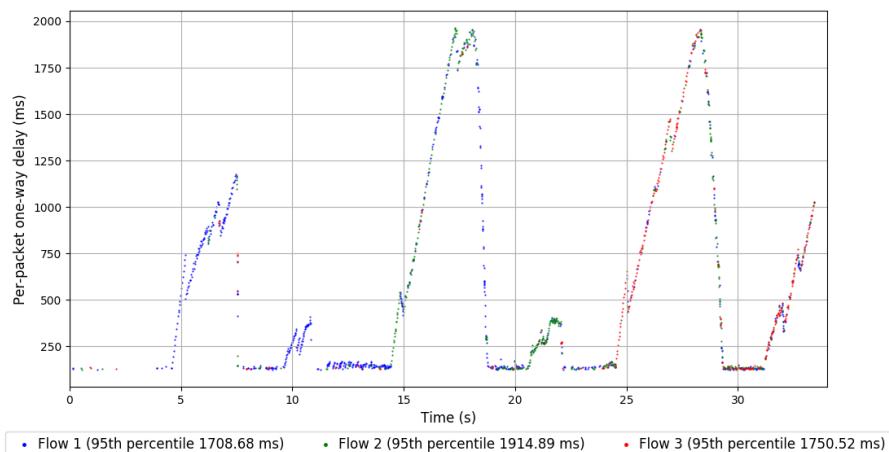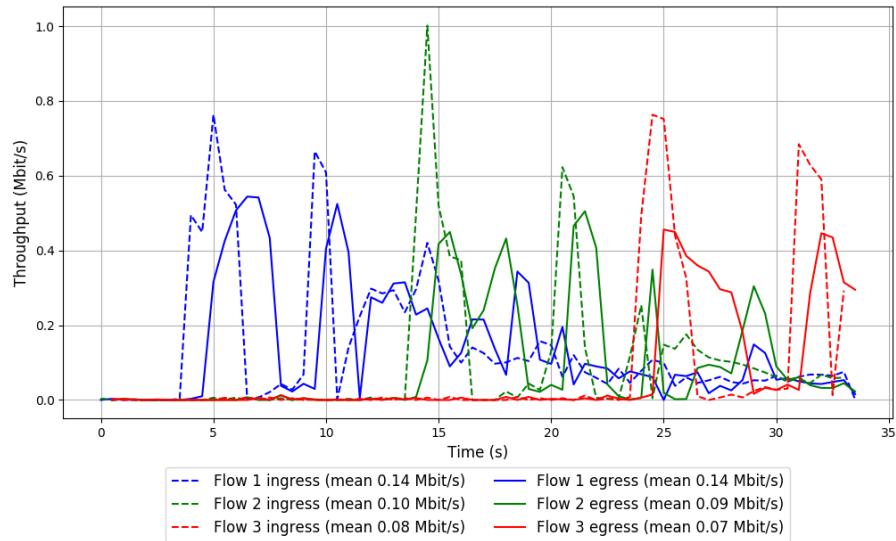
Run 3: Statistics of WebRTC media

/home/ubuntu/pantheon/data/2018-09-07T22-53-Colombia-cellular-to-AWS-Brazil-2-3-runs-3-flows

Run 3: Report of WebRTC media — Data Link

Figure is missing


Figure is missing