Pantheon Report

Generated at 2019-01-21 13:18:42 (UTC).

Data path: AWS India 1 on `ens5` (*local*) →India on `em1` (*remote*).

Repeated the test of 21 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 `nets.org.sg` and have been applied to correct the timestamps in logs.
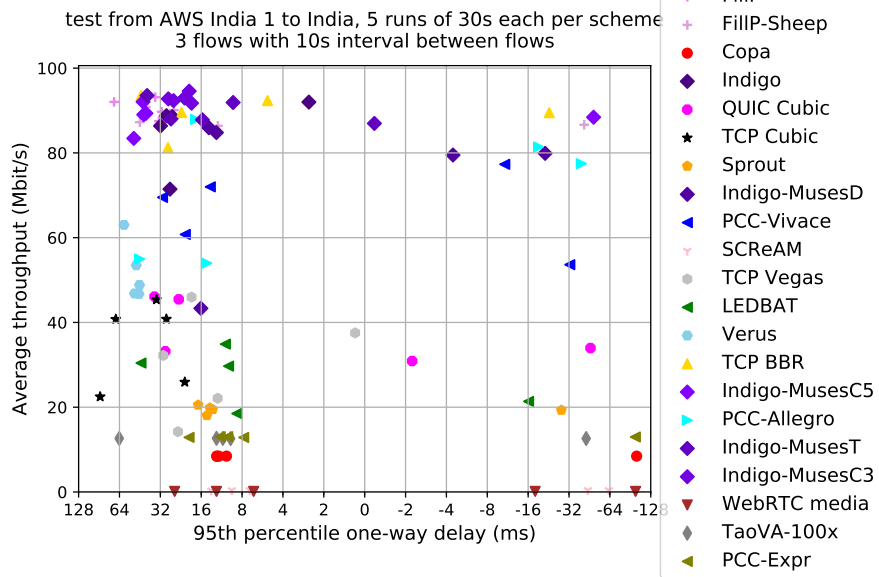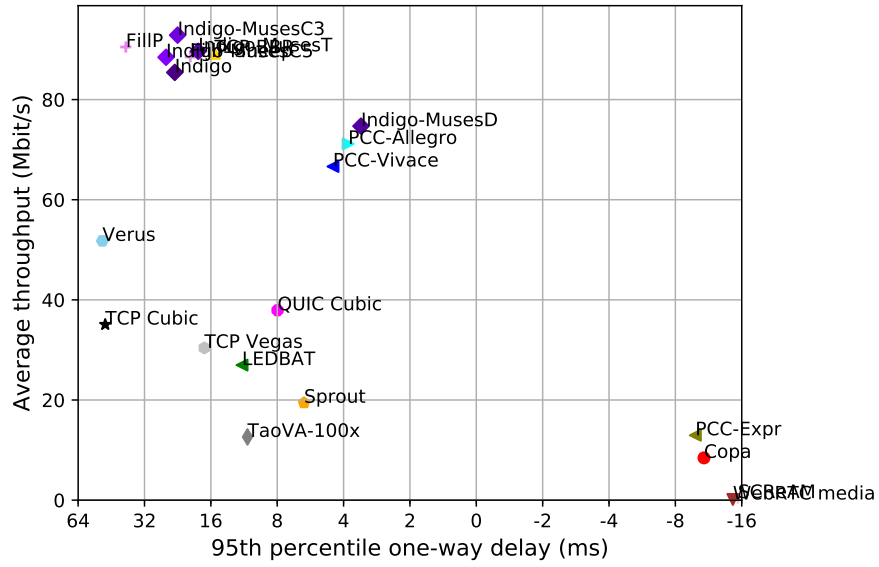
```
System info:
Linux 4.15.0-1031-aws
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912

Git summary:
branch: muses @ 89d24e57783e7fbfec537a619071de937b639e38
third_party/fillp @ d6da1459332fcee56963885d7eba17e6a32d4519
third_party/fillp-sheep @ 0e5bb722943babcd2b090d2c64fcd45e12e923f9
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdfe58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/muses @ 1ddcff131048c6962f123bcd22b4d166a422adde
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 AWS India 1 to India, 5 runs of 30s each per scheme
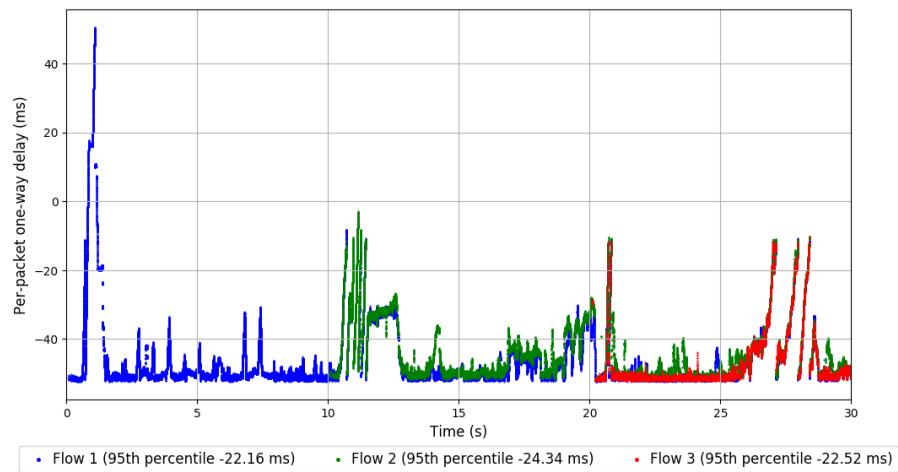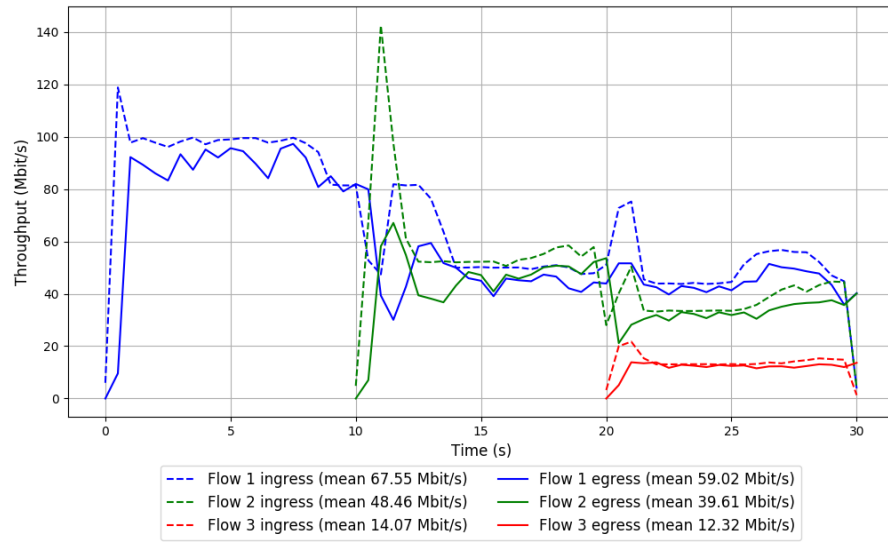3 flows with 10s interval between flows (mean of all runs by scheme)

test from AWS India 1 to India, 5 runs of 30s each per scheme
3 flows with 10s interval between flows

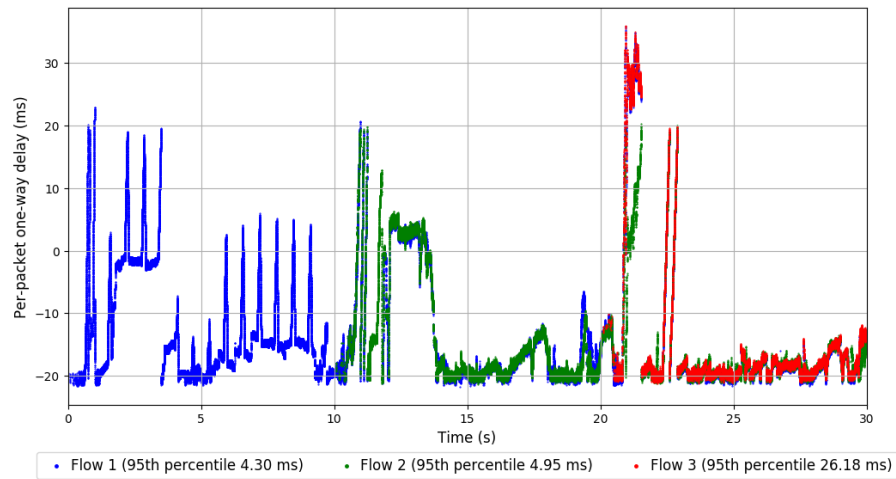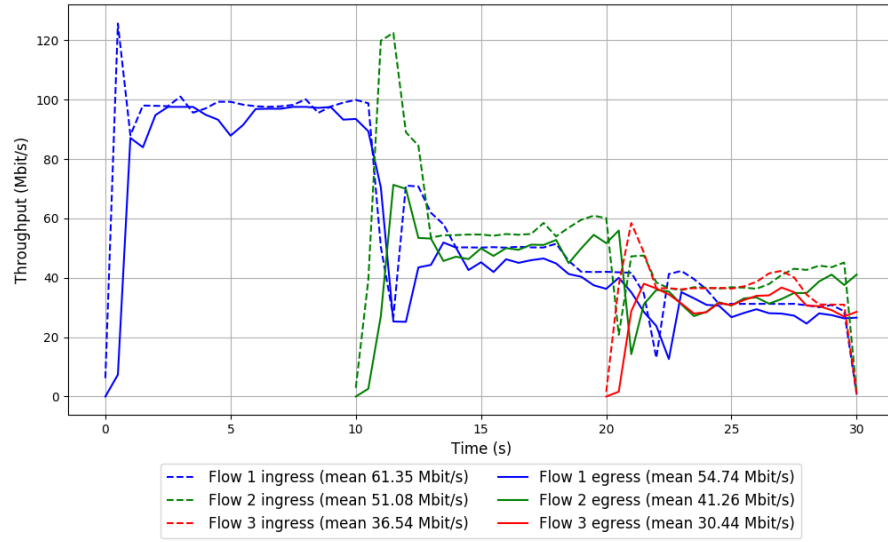| scheme	# runs	mean avg tput (Mbit/s)			mean 95th-%ile delay (ms)			mean loss rate (%)		
		flow 1	flow 2	flow 3	flow 1	flow 2	flow 3	flow 1	flow 2	flow 3
TCP BBR	5	54.27	36.99	31.08	16.43	14.41	16.41	12.62	19.27	18.64
Copa	5	0.00	10.10	5.19	-13.82	-10.32	-12.42	98.23	53.74	64.07
TCP Cubic	5	14.35	18.87	24.51	50.20	40.62	33.18	2.89	2.15	2.55
FillP	5	54.74	40.23	27.14	36.89	40.85	35.01	22.30	33.94	39.55
FillP-Sheep	5	55.59	36.74	25.80	18.75	22.03	16.24	11.55	16.77	17.10
Indigo	5	53.97	31.80	32.07	20.58	25.53	26.65	4.27	7.17	9.29
Indigo-MusesC3	5	58.76	42.30	22.14	21.16	22.21	25.43	5.71	6.29	7.37
Indigo-MusesC5	5	60.25	38.76	9.91	24.06	28.39	20.02	7.95	11.28	5.95
Indigo-MusesD	5	63.68	13.63	7.36	2.82	3.35	1.77	3.67	4.60	2.73
Indigo-MusesT	5	68.31	31.65	2.64	19.58	15.92	10.92	10.49	15.78	12.01
LEDBAT	5	15.93	11.74	9.77	10.51	12.69	11.79	0.17	0.15	0.08
PCC-Allegro	5	48.71	29.93	7.42	0.80	4.48	9.07	3.62	4.29	5.00
PCC-Expr	5	8.29	5.28	3.51	-11.08	-10.03	4.80	42.00	33.95	31.57
QUIC Cubic	5	23.31	12.12	20.00	12.23	-2.79	3.35	5.98	0.99	2.79
SCReAM	5	0.21	0.22	0.21	-15.44	-15.34	-15.13	0.07	0.04	0.09
Sprout	5	9.98	9.68	9.17	6.03	6.05	6.10	0.11	0.14	0.30
TaoVA-100x	5	7.47	5.81	3.89	1.10	26.64	2.94	25.86	34.61	32.87
TCP Vegas	5	13.65	17.28	15.77	19.24	6.98	20.69	1.58	1.13	2.11
Verus	5	30.76	24.82	15.48	50.06	48.16	49.92	48.08	42.55	39.35
PCC-Vivace	5	54.77	12.50	10.76	3.22	4.37	4.17	2.50	2.97	3.13
WebRTC media	5	0.05	0.04	0.05	-13.94	-18.38	-17.91	0.00	0.02	0.00

```
Run 1: Statistics of TCP BBR

Start at: 2019-01-21 11:14:12
End at: 2019-01-21 11:14:42
Local clock offset: 1.353 ms
Remote clock offset: -63.455 ms


# Below is generated by plot.py at 2019-01-21 13:10:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 89.50 Mbit/s
95th percentile per-packet one-way delay: -22.876 ms
Loss rate: 14.37%
-- Flow 1:
Average throughput: 59.02 Mbit/s
95th percentile per-packet one-way delay: -22.165 ms
Loss rate: 12.62%
-- Flow 2:
Average throughput: 39.61 Mbit/s
95th percentile per-packet one-way delay: -24.339 ms
Loss rate: 18.28%
-- Flow 3:
Average throughput: 12.32 Mbit/s
95th percentile per-packet one-way delay: -22.523 ms
Loss rate: 12.60%
```
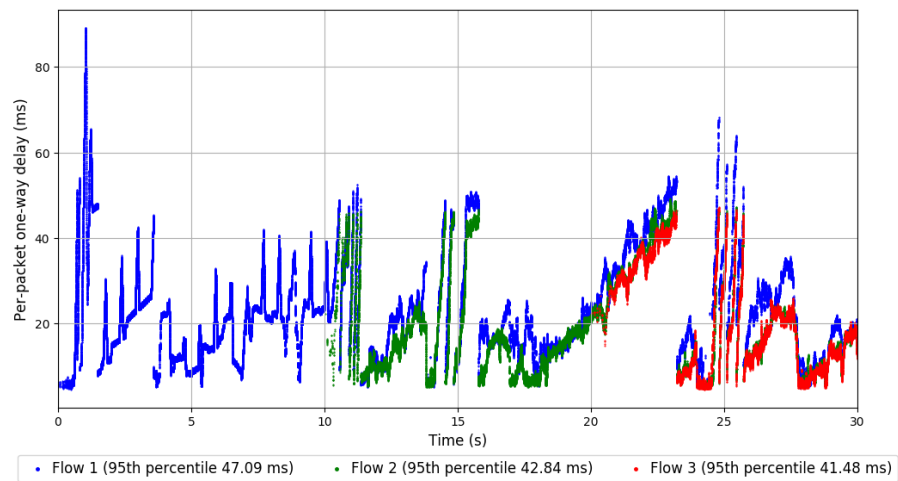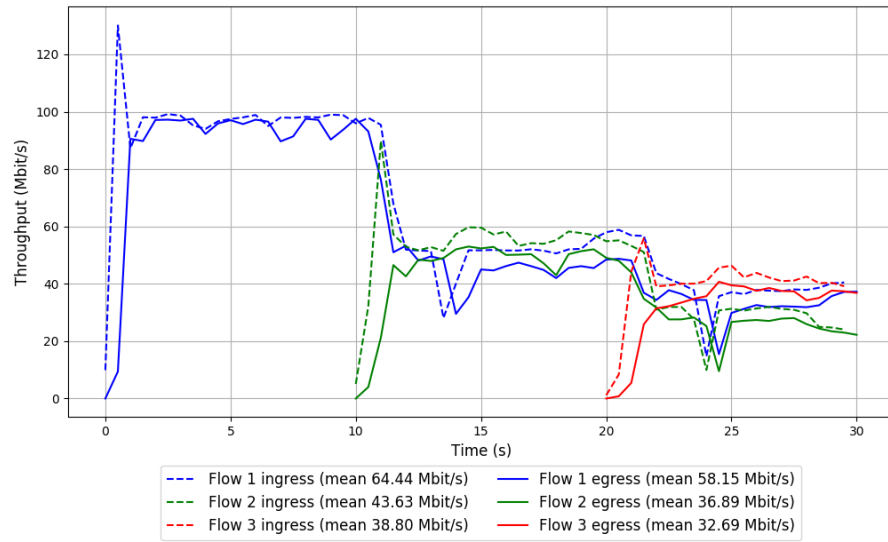
Run 1: Report of TCP BBR — Data Link

```
Run 2: Statistics of TCP BBR

Start at: 2019-01-21 11:41:09
End at: 2019-01-21 11:41:39
Local clock offset: 0.451 ms
Remote clock offset: -34.951 ms


# Below is generated by plot.py at 2019-01-21 13:10:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.34 Mbit/s
95th percentile per-packet one-way delay: 5.193 ms
Loss rate: 14.10%
-- Flow 1:
Average throughput: 54.74 Mbit/s
95th percentile per-packet one-way delay: 4.297 ms
Loss rate: 10.76%
-- Flow 2:
Average throughput: 41.26 Mbit/s
95th percentile per-packet one-way delay: 4.947 ms
Loss rate: 19.21%
-- Flow 3:
Average throughput: 30.44 Mbit/s
95th percentile per-packet one-way delay: 26.178 ms
Loss rate: 16.70%
```
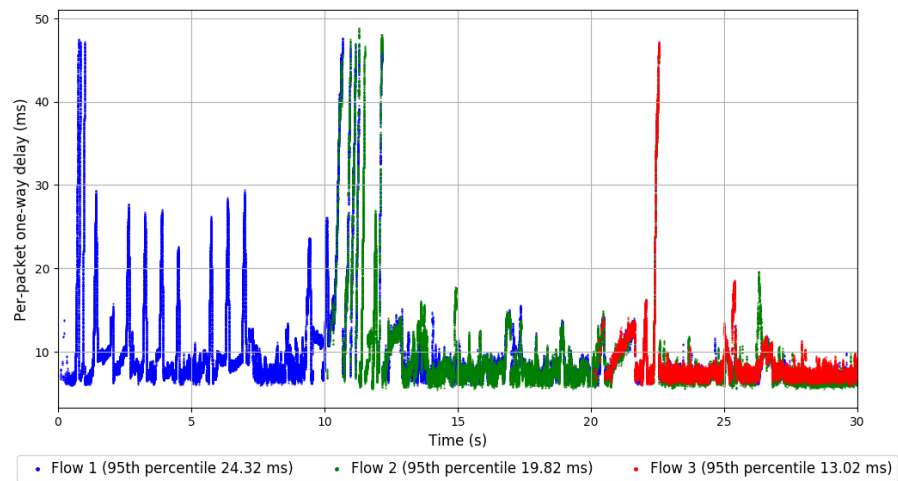
Run 2: Report of TCP BBR — Data Link

```
Run 3: Statistics of TCP BBR

Start at: 2019-01-21 12:07:29
End at: 2019-01-21 12:07:59
Local clock offset: 2.316 ms
Remote clock offset: -9.775 ms


# Below is generated by plot.py at 2019-01-21 13:10:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.57 Mbit/s
95th percentile per-packet one-way delay: 44.292 ms
Loss rate: 12.05%
-- Flow 1:
Average throughput: 58.15 Mbit/s
95th percentile per-packet one-way delay: 47.086 ms
Loss rate: 9.74%
-- Flow 2:
Average throughput: 36.89 Mbit/s
95th percentile per-packet one-way delay: 42.835 ms
Loss rate: 15.49%
-- Flow 3:
Average throughput: 32.69 Mbit/s
95th percentile per-packet one-way delay: 41.481 ms
Loss rate: 15.85%
```
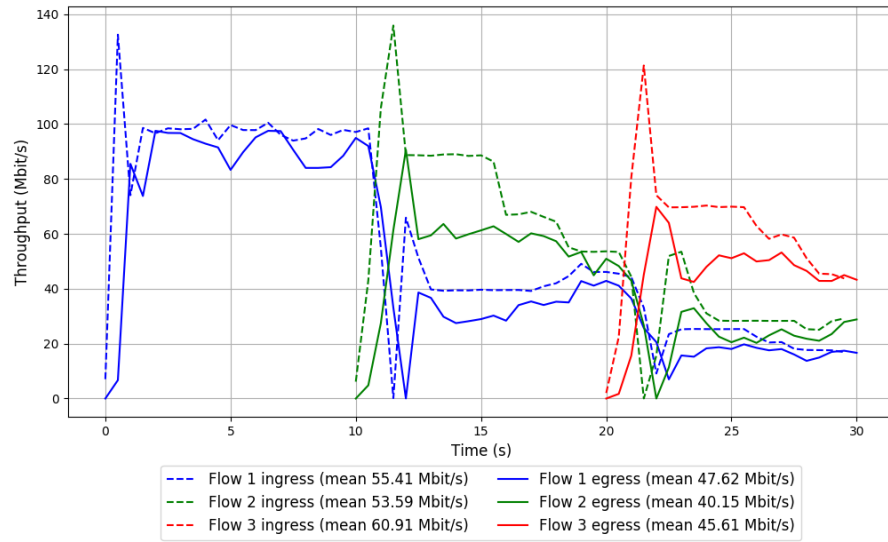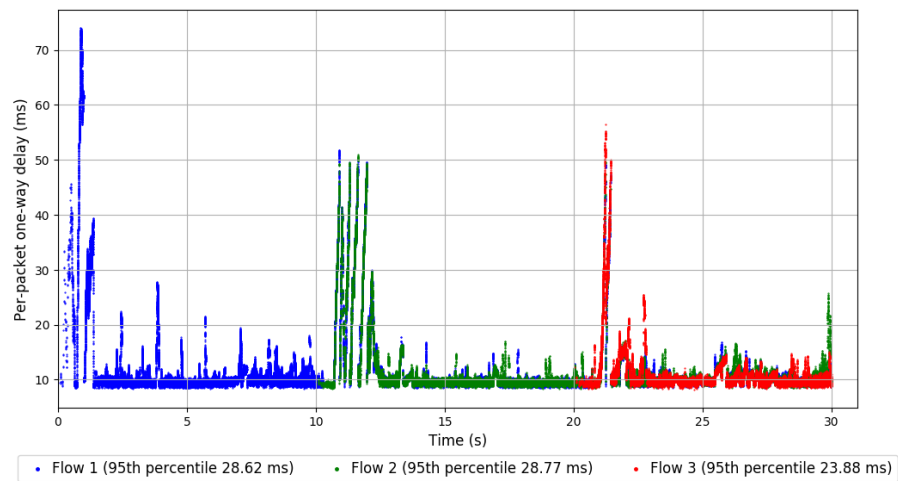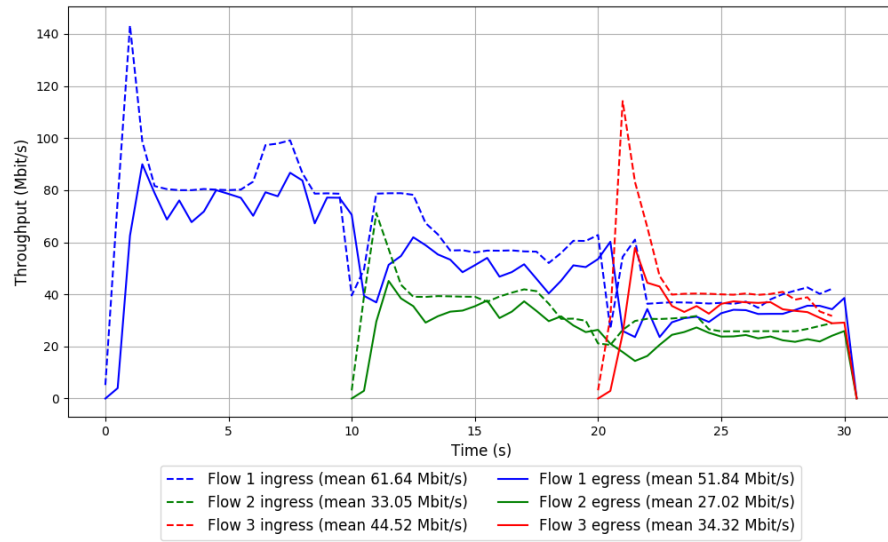
Run 3: Report of TCP BBR — Data Link

Flow 1 ingress (mean 64.44 Mbit/s) — Flow 1 egress (mean 58.15 Mbit/s)
Flow 2 ingress (mean 43.63 Mbit/s) — Flow 2 egress (mean 36.89 Mbit/s)
Flow 3 ingress (mean 38.80 Mbit/s) — Flow 3 egress (mean 32.69 Mbit/s)

Flow 1 (95th percentile 47.09 ms) Flow 2 (95th percentile 42.84 ms) Flow 3 (95th percentile 41.48 ms)

```
Run 4: Statistics of TCP BBR

Start at: 2019-01-21 12:33:39
End at: 2019-01-21 12:34:09
Local clock offset: 1.243 ms
Remote clock offset: -10.061 ms


# Below is generated by plot.py at 2019-01-21 13:10:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 89.52 Mbit/s
95th percentile per-packet one-way delay: 22.323 ms
Loss rate: 19.61%
-- Flow 1:
Average throughput: 47.62 Mbit/s
95th percentile per-packet one-way delay: 24.325 ms
Loss rate: 14.06%
-- Flow 2:
Average throughput: 40.15 Mbit/s
95th percentile per-packet one-way delay: 19.815 ms
Loss rate: 25.11%
-- Flow 3:
Average throughput: 45.61 Mbit/s
95th percentile per-packet one-way delay: 13.021 ms
Loss rate: 25.12%
```
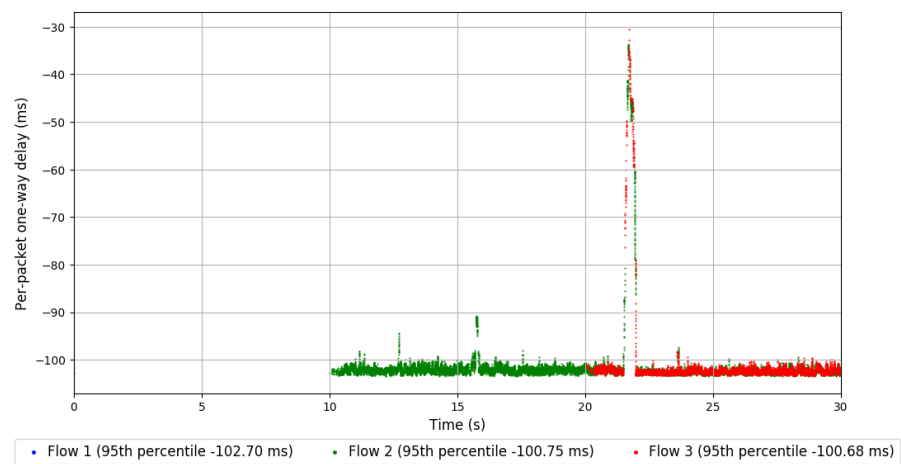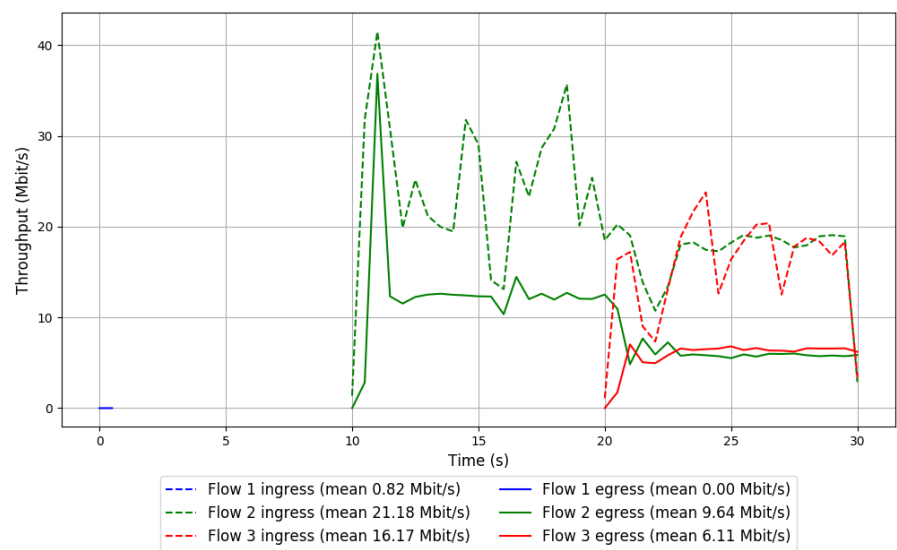
Run 4: Report of TCP BBR — Data Link

```
Run 5: Statistics of TCP BBR

Start at: 2019-01-21 13:00:00
End at: 2019-01-21 13:00:30
Local clock offset: 0.209 ms
Remote clock offset: -8.505 ms


# Below is generated by plot.py at 2019-01-21 13:10:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 81.25 Mbit/s
95th percentile per-packet one-way delay: 28.119 ms
Loss rate: 17.49%
-- Flow 1:
Average throughput: 51.84 Mbit/s
95th percentile per-packet one-way delay: 28.625 ms
Loss rate: 15.91%
-- Flow 2:
Average throughput: 27.02 Mbit/s
95th percentile per-packet one-way delay: 28.769 ms
Loss rate: 18.24%
-- Flow 3:
Average throughput: 34.32 Mbit/s
95th percentile per-packet one-way delay: 23.876 ms
Loss rate: 22.94%
```
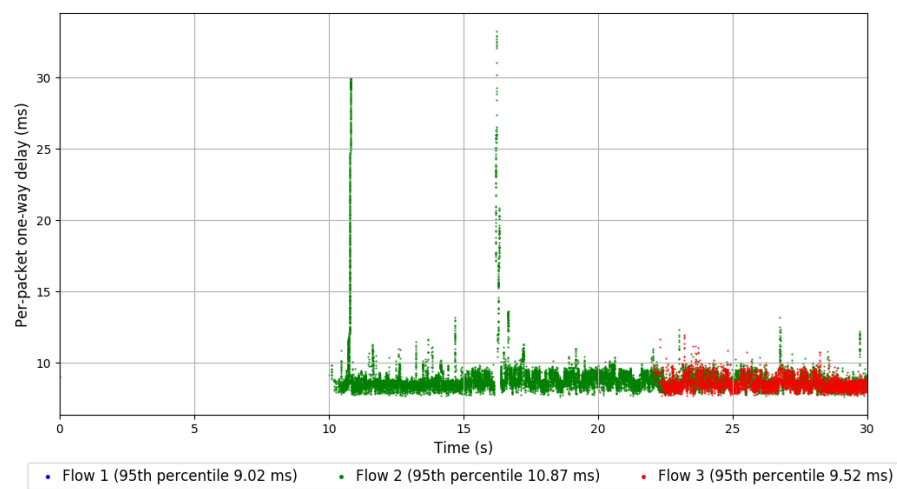
Run 5: Report of TCP BBR — Data Link

```
Run 1: Statistics of Copa

Start at: 2019-01-21 11:02:53
End at: 2019-01-21 11:03:23
Local clock offset: -1.947 ms
Remote clock offset: -116.865 ms


# Below is generated by plot.py at 2019-01-21 13:10:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.45 Mbit/s
95th percentile per-packet one-way delay: -100.745 ms
Loss rate: 56.63%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: -102.699 ms
Loss rate: 98.60%
-- Flow 2:
Average throughput: 9.64 Mbit/s
95th percentile per-packet one-way delay: -100.754 ms
Loss rate: 54.50%
-- Flow 3:
Average throughput: 6.11 Mbit/s
95th percentile per-packet one-way delay: -100.678 ms
Loss rate: 62.20%
```
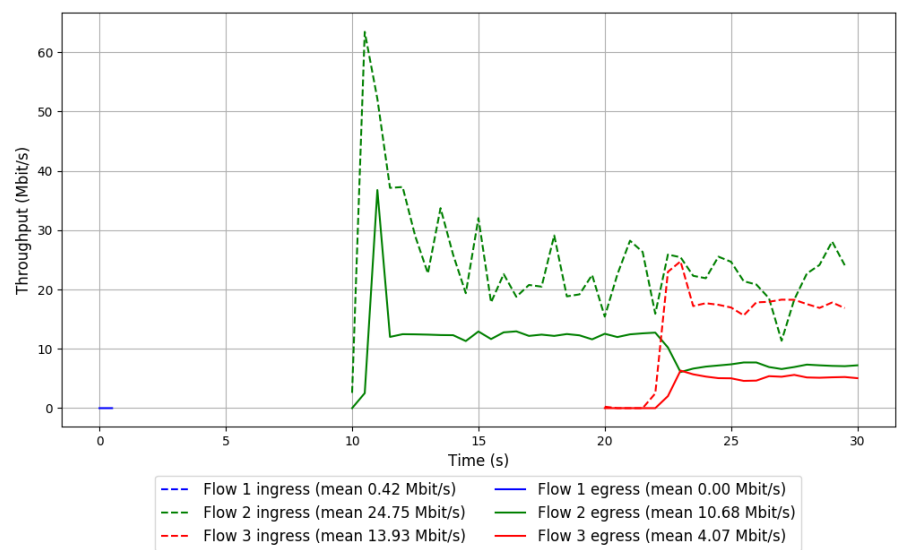
Run 1: Report of Copa — Data Link

Legend:
- Flow 1 ingress (mean 0.82 Mbit/s)
- Flow 1 egress (mean 0.00 Mbit/s)
- Flow 2 ingress (mean 21.18 Mbit/s)
- Flow 2 egress (mean 9.64 Mbit/s)
- Flow 3 ingress (mean 16.17 Mbit/s)
- Flow 3 egress (mean 6.11 Mbit/s)

Legend:
- Flow 1 (95th percentile -102.70 ms)
- Flow 2 (95th percentile -100.75 ms)
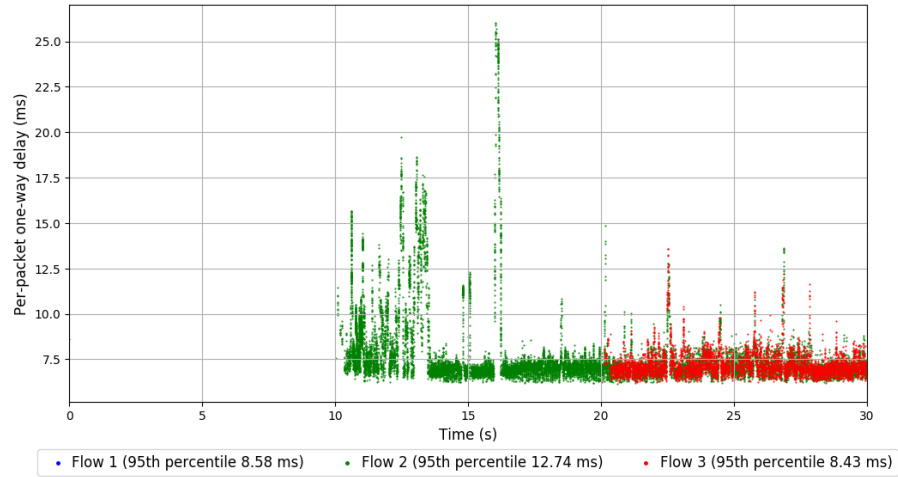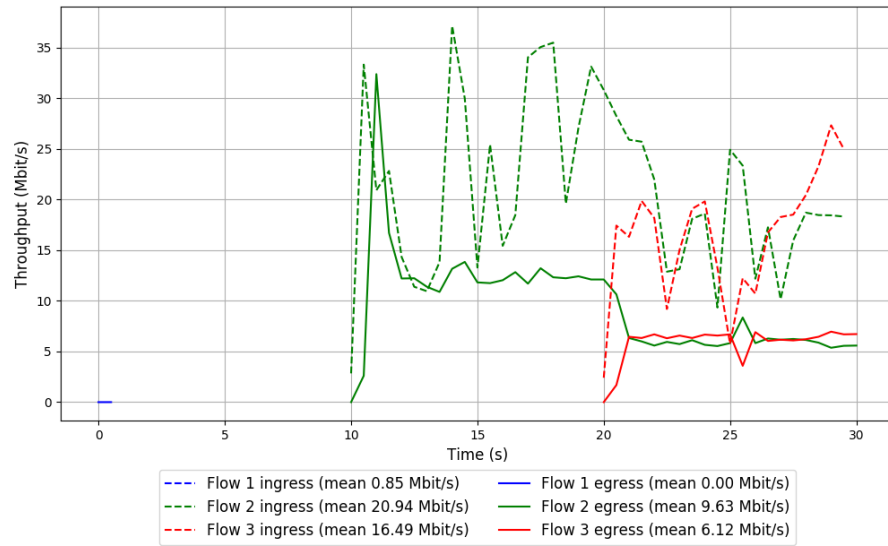- Flow 3 (95th percentile -100.68 ms)

```
Run 2: Statistics of Copa

Start at: 2019-01-21 11:29:24
End at: 2019-01-21 11:29:54
Local clock offset: -1.615 ms
Remote clock offset: -7.262 ms


# Below is generated by plot.py at 2019-01-21 13:10:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.46 Mbit/s
95th percentile per-packet one-way delay: 10.421 ms
Loss rate: 59.91%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 9.023 ms
Loss rate: 97.24%
-- Flow 2:
Average throughput: 10.68 Mbit/s
95th percentile per-packet one-way delay: 10.874 ms
Loss rate: 56.85%
-- Flow 3:
Average throughput: 4.07 Mbit/s
95th percentile per-packet one-way delay: 9.521 ms
Loss rate: 70.81%
```
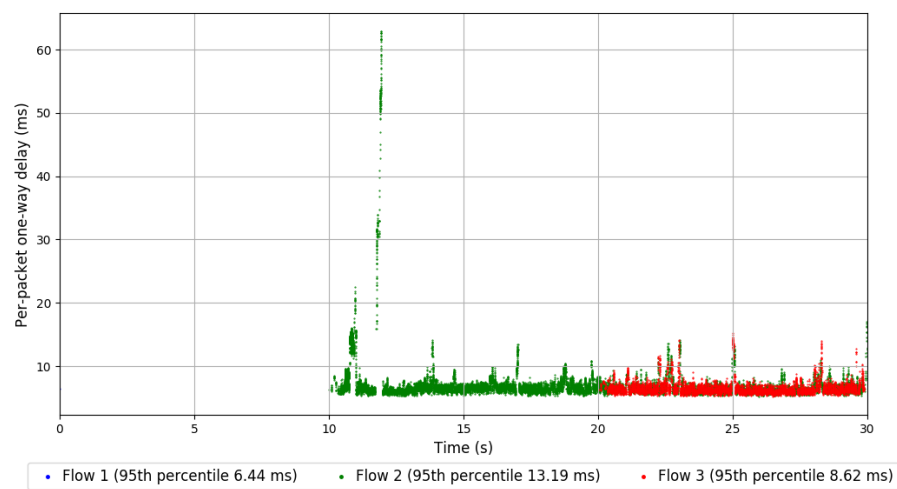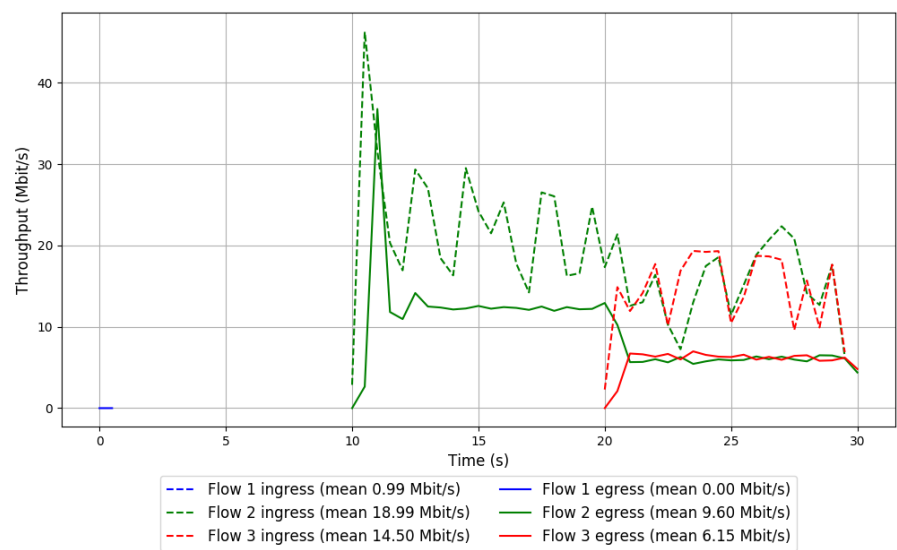
Run 2: Report of Copa — Data Link

```
Run 3: Statistics of Copa

Start at: 2019-01-21 11:56:01
End at: 2019-01-21 11:56:31
Local clock offset: 1.969 ms
Remote clock offset: -7.871 ms


# Below is generated by plot.py at 2019-01-21 13:10:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.45 Mbit/s
95th percentile per-packet one-way delay: 11.859 ms
Loss rate: 56.53%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 8.584 ms
Loss rate: 98.60%
-- Flow 2:
Average throughput: 9.63 Mbit/s
95th percentile per-packet one-way delay: 12.740 ms
Loss rate: 54.04%
-- Flow 3:
Average throughput: 6.12 Mbit/s
95th percentile per-packet one-way delay: 8.430 ms
Loss rate: 62.86%
```
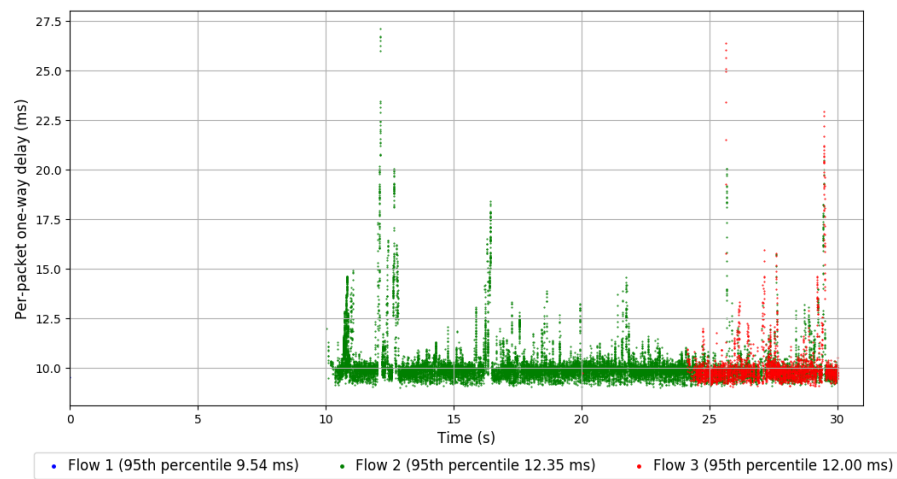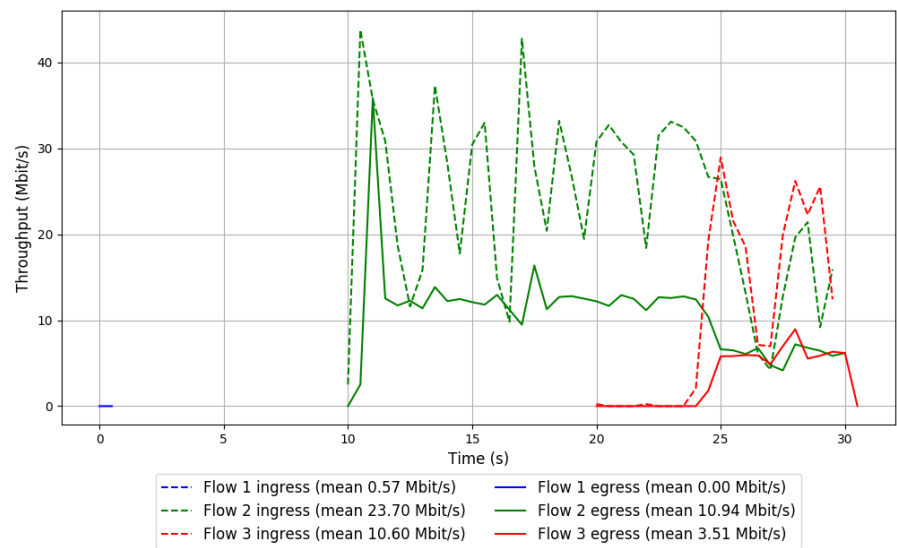
Run 3: Report of Copa — Data Link

```
Run 4: Statistics of Copa

Start at: 2019-01-21 12:22:37
End at: 2019-01-21 12:23:07
Local clock offset: 0.285 ms
Remote clock offset: -11.738 ms


# Below is generated by plot.py at 2019-01-21 13:10:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.41 Mbit/s
95th percentile per-packet one-way delay: 12.230 ms
Loss rate: 51.68%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 6.437 ms
Loss rate: 98.80%
-- Flow 2:
Average throughput: 9.60 Mbit/s
95th percentile per-packet one-way delay: 13.192 ms
Loss rate: 49.45%
-- Flow 3:
Average throughput: 6.15 Mbit/s
95th percentile per-packet one-way delay: 8.624 ms
Loss rate: 57.60%
```
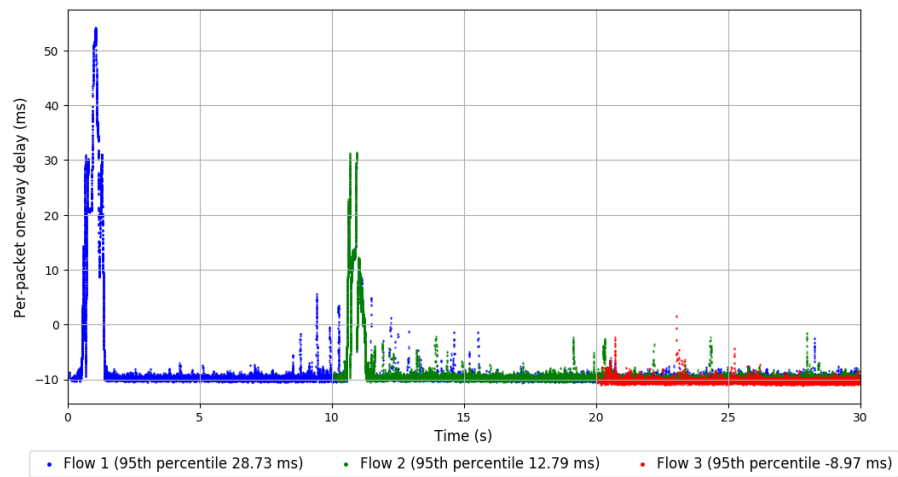
Run 4: Report of Copa — Data Link

```
Run 5: Statistics of Copa

Start at: 2019-01-21 12:48:48
End at: 2019-01-21 12:49:18
Local clock offset: 0.675 ms
Remote clock offset: -7.365 ms


# Below is generated by plot.py at 2019-01-21 13:10:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.45 Mbit/s
95th percentile per-packet one-way delay: 12.305 ms
Loss rate: 56.23%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 9.545 ms
Loss rate: 97.92%
-- Flow 2:
Average throughput: 10.94 Mbit/s
95th percentile per-packet one-way delay: 12.351 ms
Loss rate: 53.85%
-- Flow 3:
Average throughput: 3.51 Mbit/s
95th percentile per-packet one-way delay: 12.004 ms
Loss rate: 66.87%
```

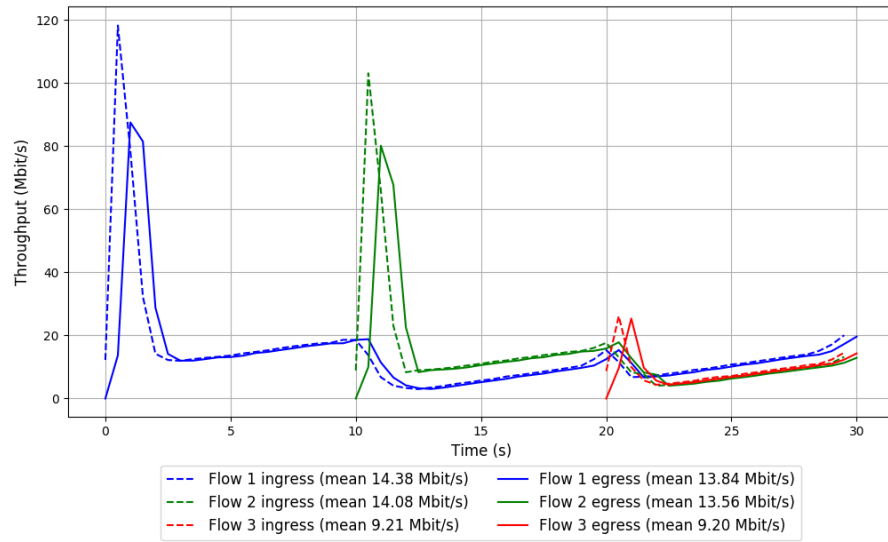Run 5: Report of Copa — Data Link

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```
Run 1: Statistics of TCP Cubic

Start at: 2019-01-21 11:16:43
End at: 2019-01-21 11:17:13
Local clock offset: 1.601 ms
Remote clock offset: -22.02 ms


# Below is generated by plot.py at 2019-01-21 13:10:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 25.93 Mbit/s
95th percentile per-packet one-way delay: 21.144 ms
Loss rate: 3.31%
-- Flow 1:
Average throughput: 13.84 Mbit/s
95th percentile per-packet one-way delay: 28.728 ms
Loss rate: 3.72%
-- Flow 2:
Average throughput: 13.56 Mbit/s
95th percentile per-packet one-way delay: 12.790 ms
Loss rate: 3.71%
-- Flow 3:
Average throughput: 9.20 Mbit/s
95th percentile per-packet one-way delay: -8.966 ms
Loss rate: 0.14%
```

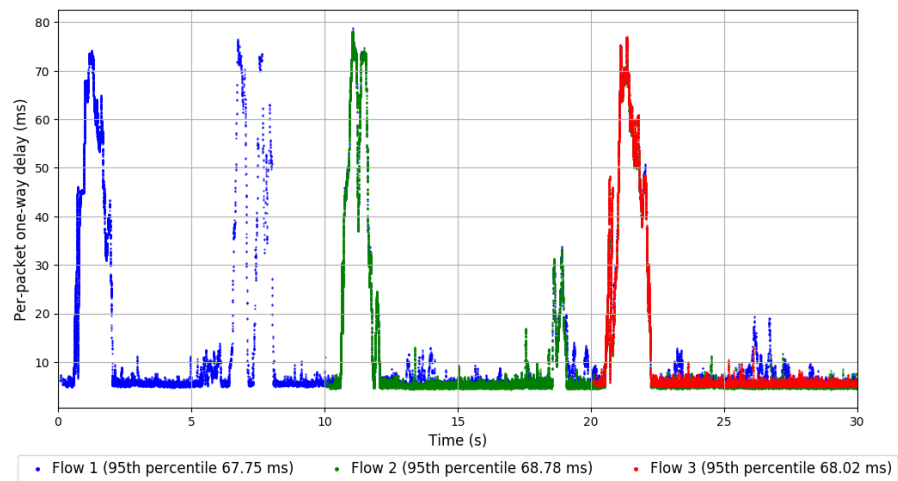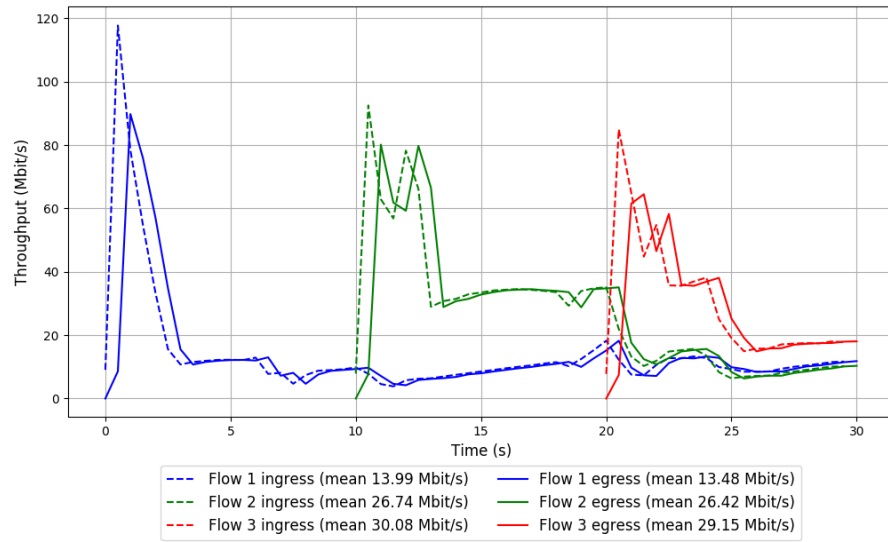Run 1: Report of TCP Cubic — Data Link

```
Run 2: Statistics of TCP Cubic

Start at: 2019-01-21 11:43:43
End at: 2019-01-21 11:44:13
Local clock offset: 1.981 ms
Remote clock offset: -7.479 ms


# Below is generated by plot.py at 2019-01-21 13:10:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 40.76 Mbit/s
95th percentile per-packet one-way delay: 68.151 ms
Loss rate: 2.48%
-- Flow 1:
Average throughput: 13.48 Mbit/s
95th percentile per-packet one-way delay: 67.746 ms
Loss rate: 3.62%
-- Flow 2:
Average throughput: 26.42 Mbit/s
95th percentile per-packet one-way delay: 68.776 ms
Loss rate: 1.23%
-- Flow 3:
Average throughput: 29.15 Mbit/s
95th percentile per-packet one-way delay: 68.023 ms
Loss rate: 3.11%
```
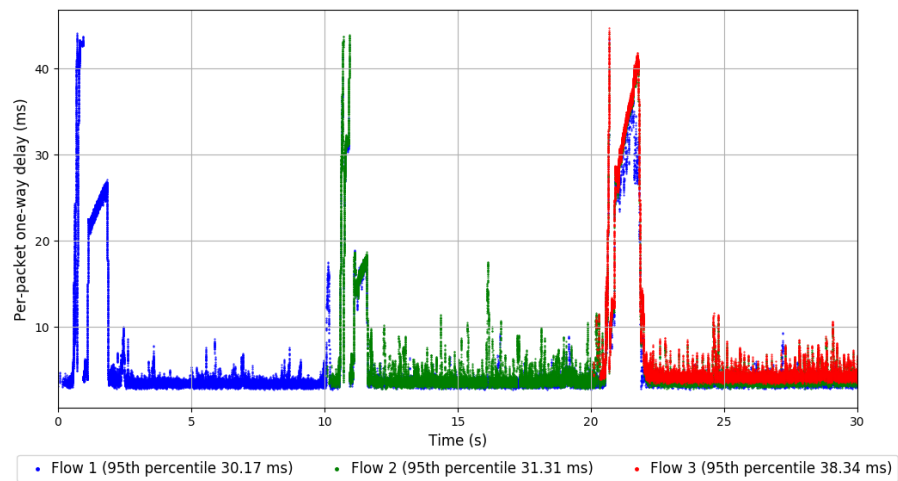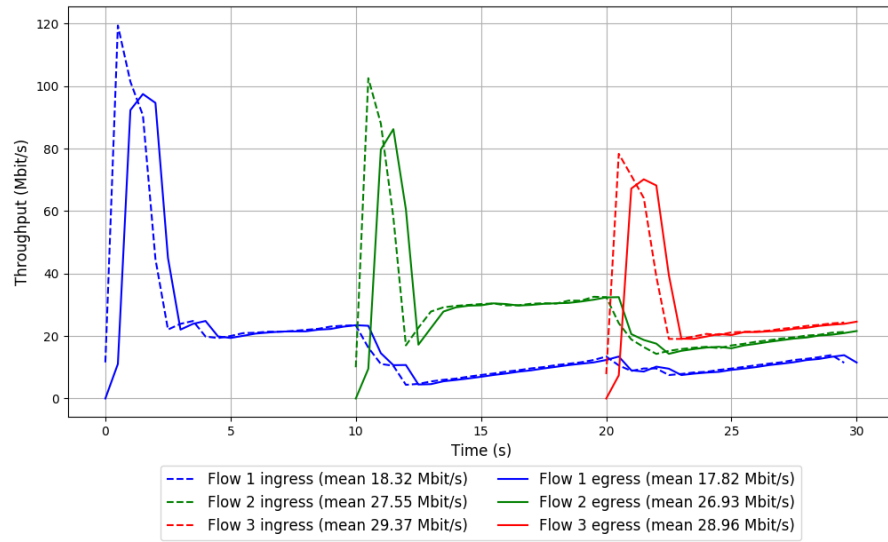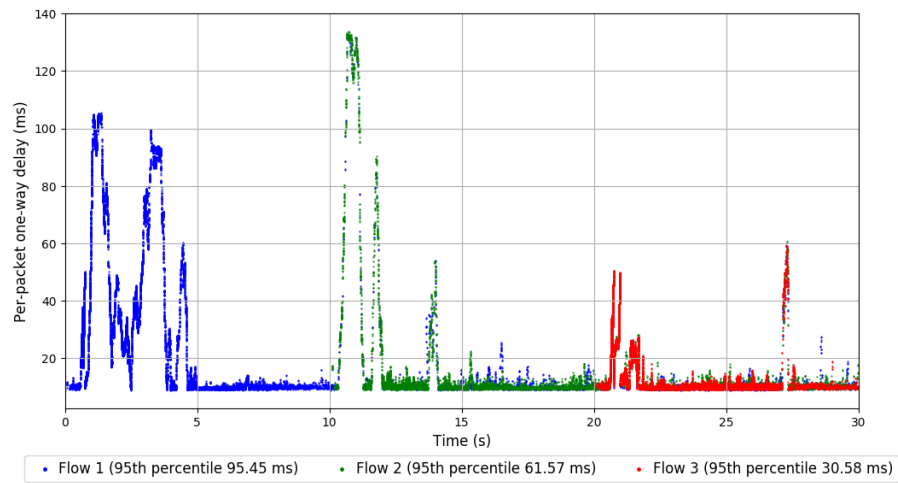
Run 2: Report of TCP Cubic — Data Link

- - - Flow 1 ingress (mean 13.99 Mbit/s) —— Flow 1 egress (mean 13.48 Mbit/s)
- - - Flow 2 ingress (mean 26.74 Mbit/s) —— Flow 2 egress (mean 26.42 Mbit/s)
- - - Flow 3 ingress (mean 30.08 Mbit/s) —— Flow 3 egress (mean 29.15 Mbit/s)

- Flow 1 (95th percentile 67.75 ms)   • Flow 2 (95th percentile 68.78 ms)   • Flow 3 (95th percentile 68.02 ms)

```
Run 3: Statistics of TCP Cubic

Start at: 2019-01-21 12:10:06
End at: 2019-01-21 12:10:36
Local clock offset: 2.343 ms
Remote clock offset: -11.654 ms


# Below is generated by plot.py at 2019-01-21 13:10:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 45.38 Mbit/s
95th percentile per-packet one-way delay: 34.146 ms
Loss rate: 2.27%
-- Flow 1:
Average throughput: 17.82 Mbit/s
95th percentile per-packet one-way delay: 30.167 ms
Loss rate: 2.76%
-- Flow 2:
Average throughput: 26.93 Mbit/s
95th percentile per-packet one-way delay: 31.311 ms
Loss rate: 2.25%
-- Flow 3:
Average throughput: 28.96 Mbit/s
95th percentile per-packet one-way delay: 38.345 ms
Loss rate: 1.38%
```
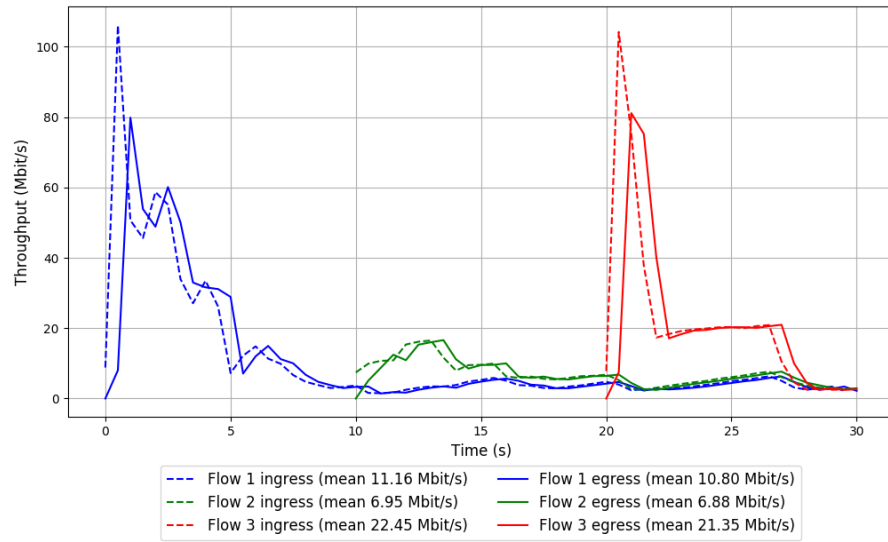
Run 3: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 18.32 Mbit/s) --- Flow 1 egress (mean 17.82 Mbit/s)
Flow 2 ingress (mean 27.55 Mbit/s) --- Flow 2 egress (mean 26.93 Mbit/s)
Flow 3 ingress (mean 29.37 Mbit/s) --- Flow 3 egress (mean 28.96 Mbit/s)

Flow 1 (95th percentile 30.17 ms)   Flow 2 (95th percentile 31.31 ms)   Flow 3 (95th percentile 38.34 ms)
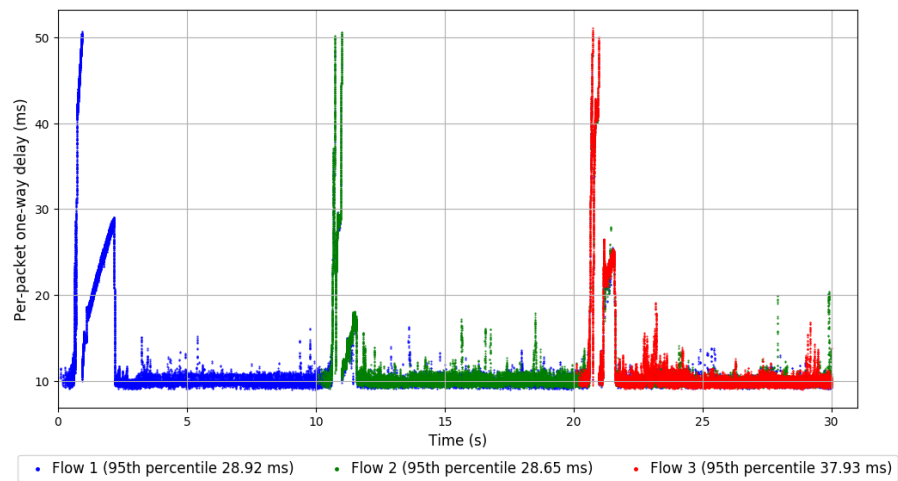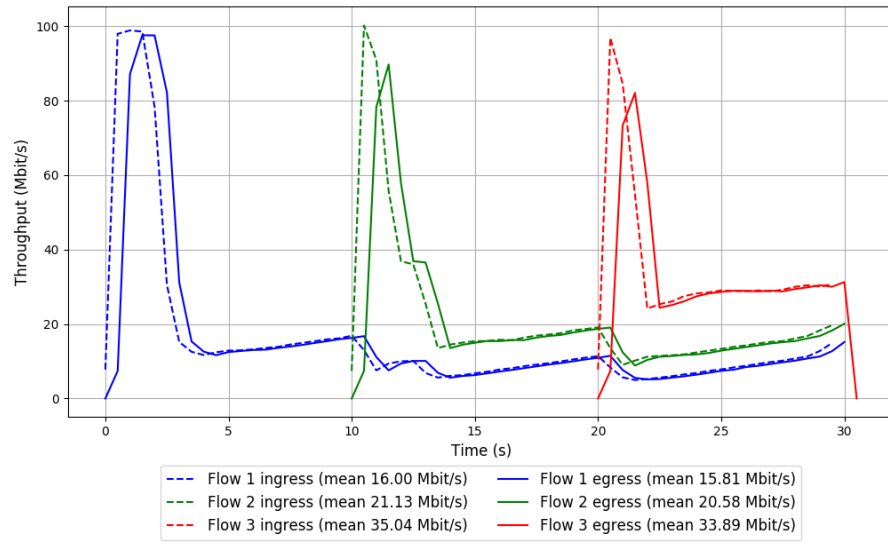
```
Run 4: Statistics of TCP Cubic

Start at: 2019-01-21 12:36:22
End at: 2019-01-21 12:36:52
Local clock offset: -1.111 ms
Remote clock offset: -9.425 ms


# Below is generated by plot.py at 2019-01-21 13:10:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 22.47 Mbit/s
95th percentile per-packet one-way delay: 88.811 ms
Loss rate: 3.31%
-- Flow 1:
Average throughput: 10.80 Mbit/s
95th percentile per-packet one-way delay: 95.452 ms
Loss rate: 3.21%
-- Flow 2:
Average throughput: 6.88 Mbit/s
95th percentile per-packet one-way delay: 61.570 ms
Loss rate: 1.00%
-- Flow 3:
Average throughput: 21.35 Mbit/s
95th percentile per-packet one-way delay: 30.580 ms
Loss rate: 4.89%
```
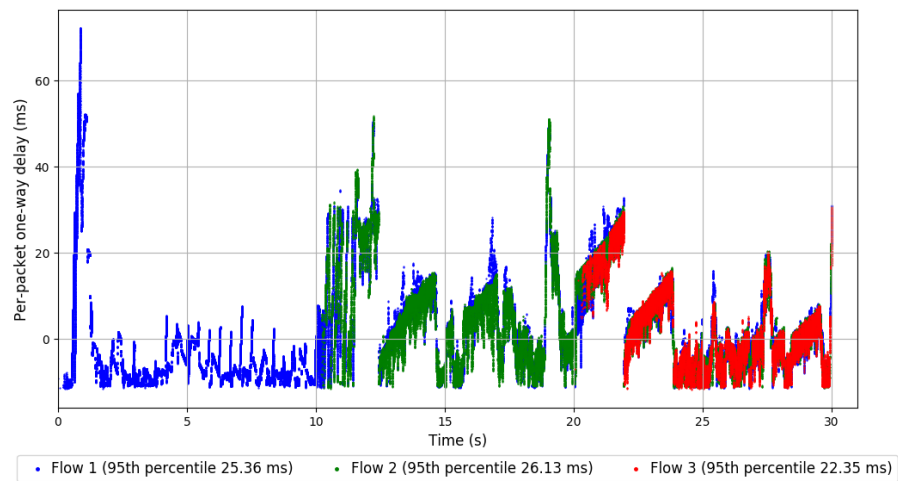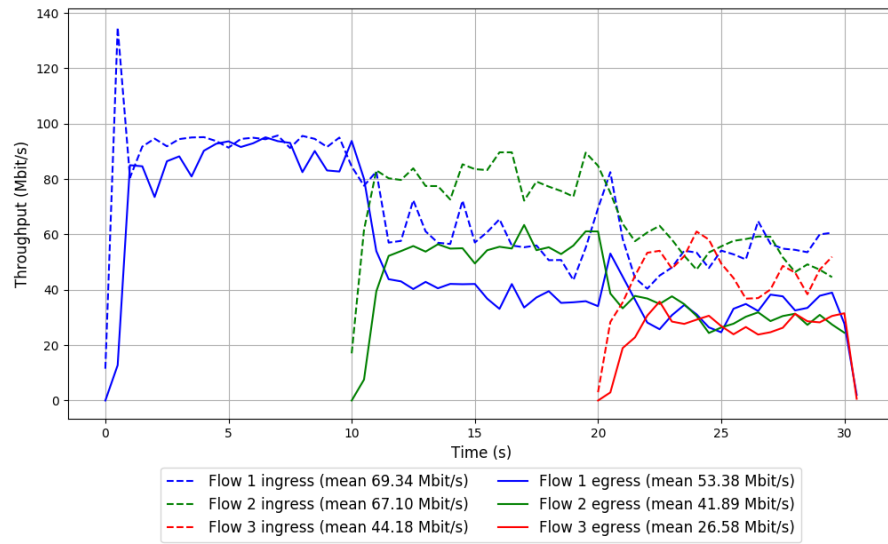
Run 4: Report of TCP Cubic — Data Link

```
Run 5: Statistics of TCP Cubic

Start at: 2019-01-21 13:02:35
End at: 2019-01-21 13:03:05
Local clock offset: -1.589 ms
Remote clock offset: -9.518 ms


# Below is generated by plot.py at 2019-01-21 13:10:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 40.79 Mbit/s
95th percentile per-packet one-way delay: 28.875 ms
Loss rate: 2.22%
-- Flow 1:
Average throughput: 15.81 Mbit/s
95th percentile per-packet one-way delay: 28.920 ms
Loss rate: 1.16%
-- Flow 2:
Average throughput: 20.58 Mbit/s
95th percentile per-packet one-way delay: 28.651 ms
Loss rate: 2.56%
-- Flow 3:
Average throughput: 33.89 Mbit/s
95th percentile per-packet one-way delay: 37.929 ms
Loss rate: 3.24%
```

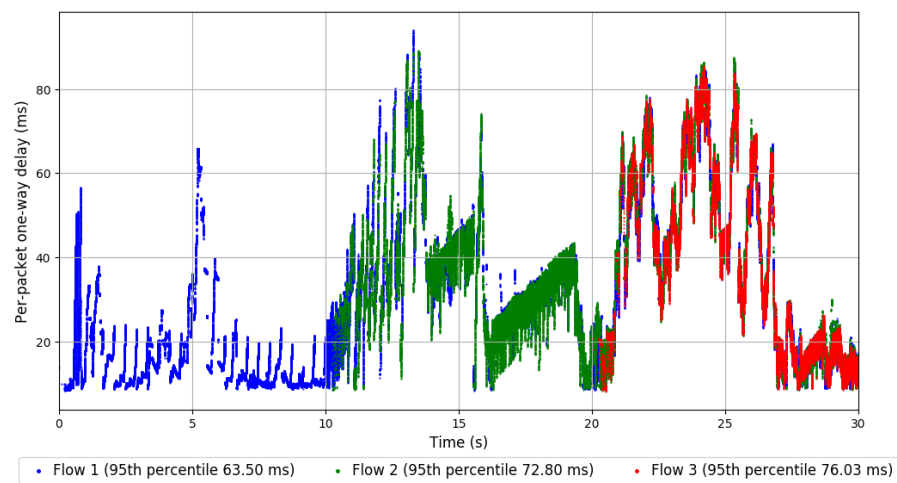Run 5: Report of TCP Cubic — Data Link

```
Run 1: Statistics of FillP

Start at: 2019-01-21 11:17:53
End at: 2019-01-21 11:18:23
Local clock offset: 2.424 ms
Remote clock offset: -22.131 ms


# Below is generated by plot.py at 2019-01-21 13:11:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 90.09 Mbit/s
95th percentile per-packet one-way delay: 25.463 ms
Loss rate: 29.88%
-- Flow 1:
Average throughput: 53.38 Mbit/s
95th percentile per-packet one-way delay: 25.360 ms
Loss rate: 22.92%
-- Flow 2:
Average throughput: 41.89 Mbit/s
95th percentile per-packet one-way delay: 26.128 ms
Loss rate: 37.50%
-- Flow 3:
Average throughput: 26.58 Mbit/s
95th percentile per-packet one-way delay: 22.351 ms
Loss rate: 39.64%
```

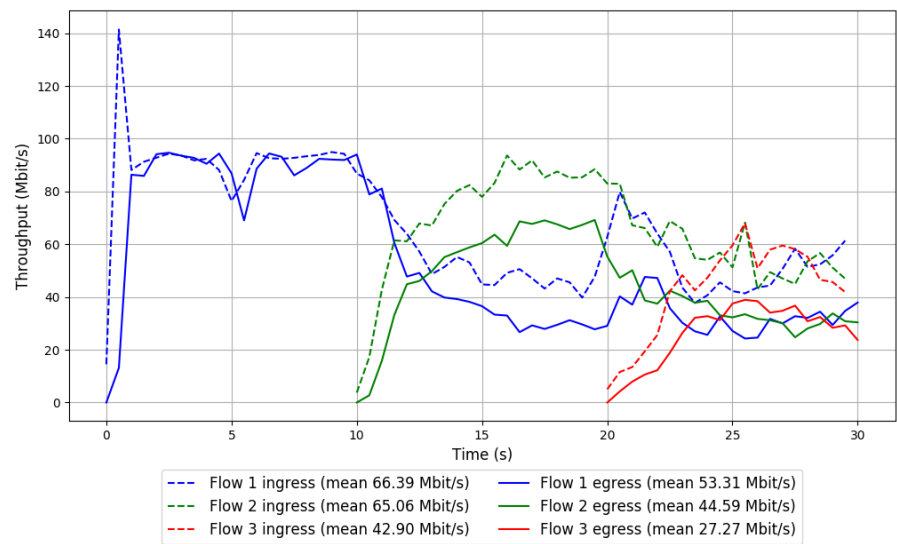Run 1: Report of FillP — Data Link

```
Run 2: Statistics of FillP

Start at: 2019-01-21 11:44:55
End at: 2019-01-21 11:45:25
Local clock offset: 0.019 ms
Remote clock offset: -6.064 ms

# Below is generated by plot.py at 2019-01-21 13:11:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.03 Mbit/s
95th percentile per-packet one-way delay: 70.072 ms
Loss rate: 25.74%
-- Flow 1:
Average throughput: 53.31 Mbit/s
95th percentile per-packet one-way delay: 63.501 ms
Loss rate: 19.69%
-- Flow 2:
Average throughput: 44.59 Mbit/s
95th percentile per-packet one-way delay: 72.795 ms
Loss rate: 31.47%
-- Flow 3:
Average throughput: 27.27 Mbit/s
95th percentile per-packet one-way delay: 76.029 ms
Loss rate: 36.51%
```
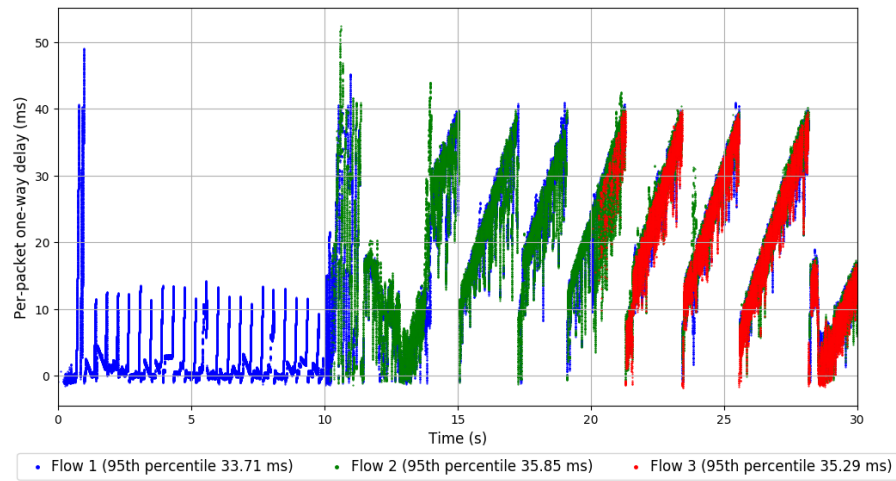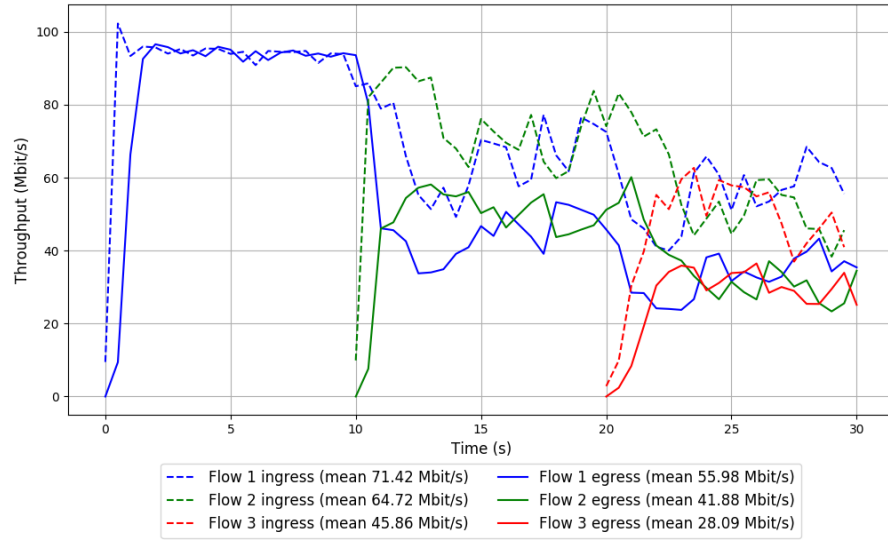
Run 2: Report of FillP — Data Link

Flow 1 ingress (mean 66.39 Mbit/s) --- Flow 1 egress (mean 53.31 Mbit/s)
Flow 2 ingress (mean 65.06 Mbit/s) --- Flow 2 egress (mean 44.59 Mbit/s)
Flow 3 ingress (mean 42.90 Mbit/s) --- Flow 3 egress (mean 27.27 Mbit/s)

Flow 1 (95th percentile 63.50 ms)   Flow 2 (95th percentile 72.80 ms)   Flow 3 (95th percentile 76.03 ms)
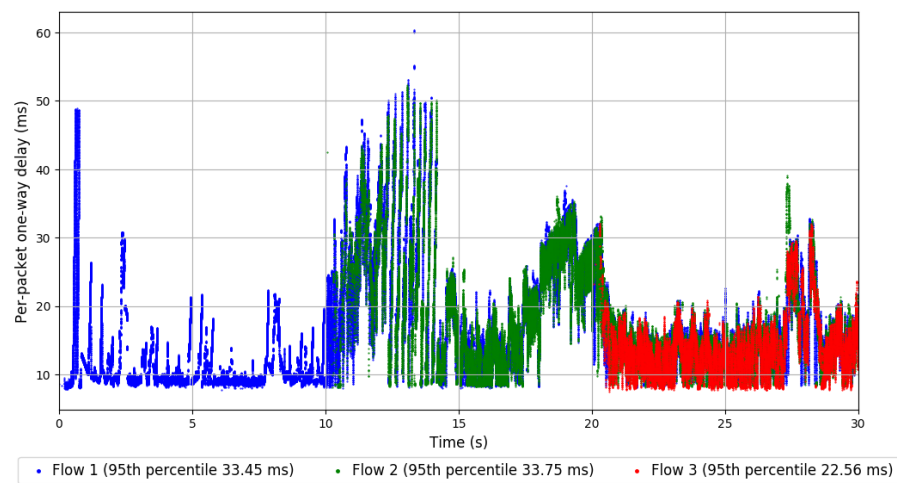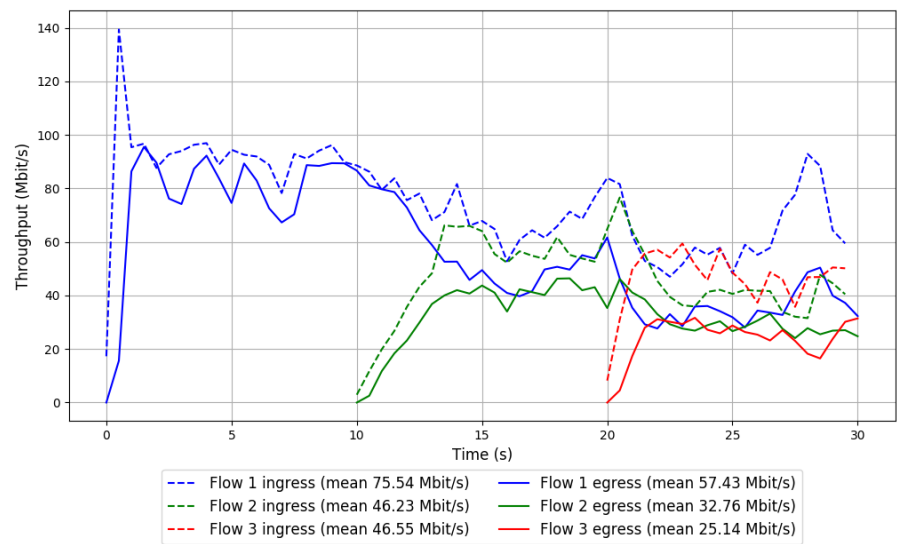
```
Run 3: Statistics of FillP

Start at: 2019-01-21 12:11:21
End at: 2019-01-21 12:11:51
Local clock offset: -0.555 ms
Remote clock offset: -19.126 ms

# Below is generated by plot.py at 2019-01-21 13:12:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.14 Mbit/s
95th percentile per-packet one-way delay: 34.862 ms
Loss rate: 28.13%
-- Flow 1:
Average throughput: 55.98 Mbit/s
95th percentile per-packet one-way delay: 33.712 ms
Loss rate: 21.58%
-- Flow 2:
Average throughput: 41.88 Mbit/s
95th percentile per-packet one-way delay: 35.850 ms
Loss rate: 35.23%
-- Flow 3:
Average throughput: 28.09 Mbit/s
95th percentile per-packet one-way delay: 35.292 ms
Loss rate: 38.80%
```

Run 3: Report of FillP — Data Link

```
Run 4: Statistics of FillP

Start at: 2019-01-21 12:37:35
End at: 2019-01-21 12:38:05
Local clock offset: -0.865 ms
Remote clock offset: -10.12 ms


# Below is generated by plot.py at 2019-01-21 13:12:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 87.50 Mbit/s
95th percentile per-packet one-way delay: 32.813 ms
Loss rate: 28.09%
-- Flow 1:
Average throughput: 57.43 Mbit/s
95th percentile per-packet one-way delay: 33.454 ms
Loss rate: 23.96%
-- Flow 2:
Average throughput: 32.76 Mbit/s
95th percentile per-packet one-way delay: 33.750 ms
Loss rate: 29.24%
-- Flow 3:
Average throughput: 25.14 Mbit/s
95th percentile per-packet one-way delay: 22.559 ms
Loss rate: 46.04%
```
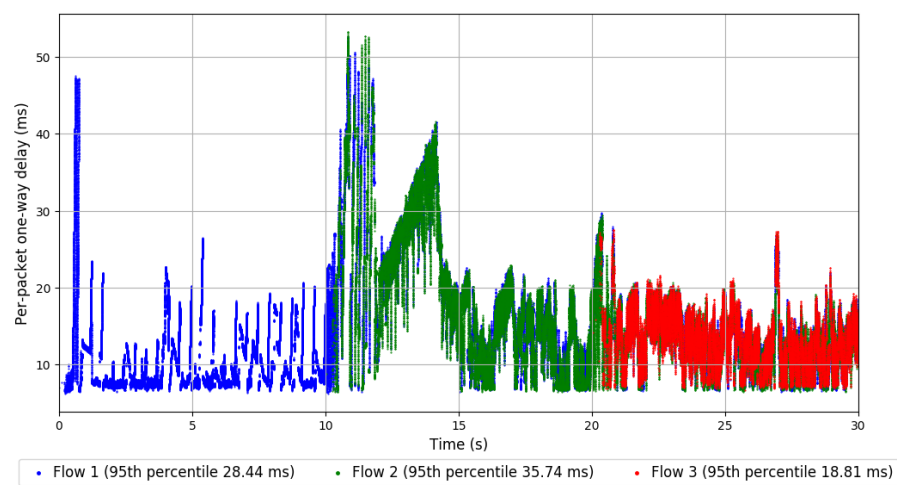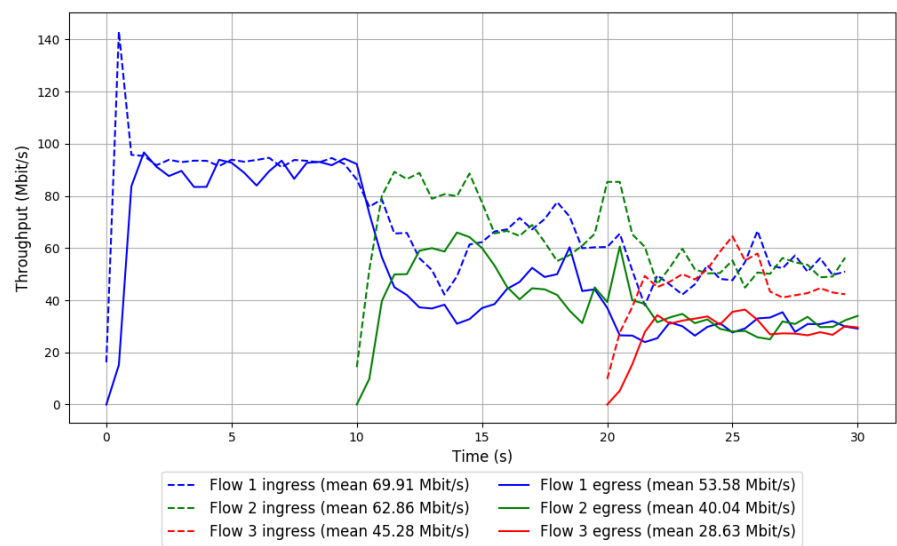
Run 4: Report of FillP — Data Link

```
Run 5: Statistics of FillP

Start at: 2019-01-21 13:03:48
End at: 2019-01-21 13:04:18
Local clock offset: 2.862 ms
Remote clock offset: -7.43 ms


# Below is generated by plot.py at 2019-01-21 13:12:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 89.72 Mbit/s
95th percentile per-packet one-way delay: 31.255 ms
Loss rate: 29.21%
-- Flow 1:
Average throughput: 53.58 Mbit/s
95th percentile per-packet one-way delay: 28.442 ms
Loss rate: 23.35%
-- Flow 2:
Average throughput: 40.04 Mbit/s
95th percentile per-packet one-way delay: 35.736 ms
Loss rate: 36.28%
-- Flow 3:
Average throughput: 28.63 Mbit/s
95th percentile per-packet one-way delay: 18.811 ms
Loss rate: 36.77%
```

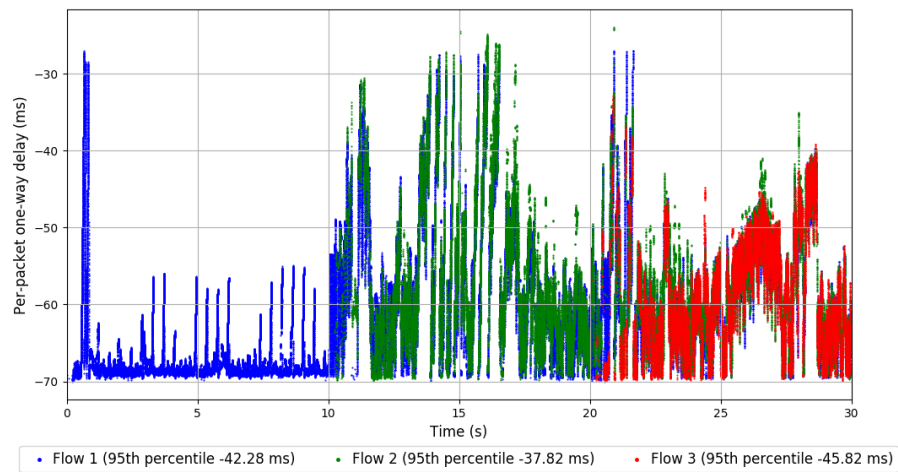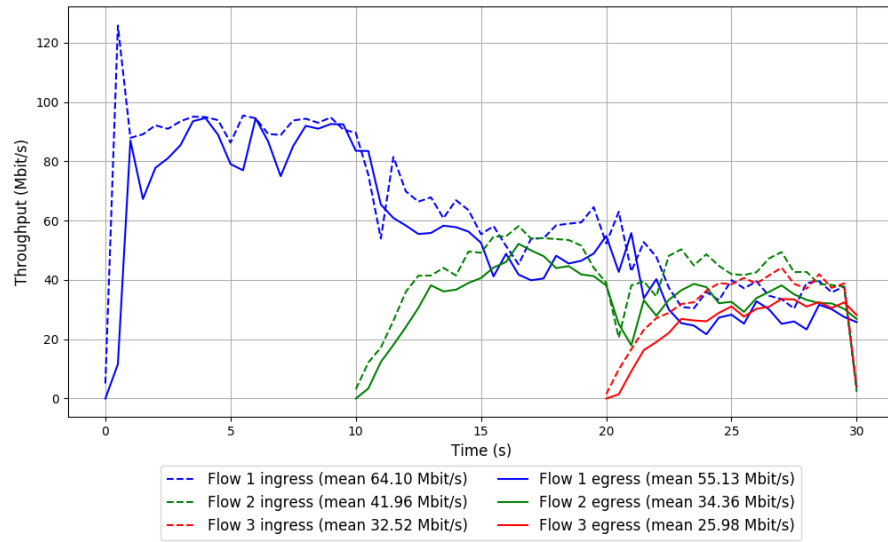Run 5: Report of FillP — Data Link

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```
Run 1: Statistics of FillP-Sheep

Start at: 2019-01-21 10:56:27
End at: 2019-01-21 10:56:57
Local clock offset: 1.388 ms
Remote clock offset: -78.896 ms


# Below is generated by plot.py at 2019-01-21 13:12:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 86.64 Mbit/s
95th percentile per-packet one-way delay: -41.382 ms
Loss rate: 15.75%
-- Flow 1:
Average throughput: 55.13 Mbit/s
95th percentile per-packet one-way delay: -42.278 ms
Loss rate: 14.00%
-- Flow 2:
Average throughput: 34.36 Mbit/s
95th percentile per-packet one-way delay: -37.820 ms
Loss rate: 18.07%
-- Flow 3:
Average throughput: 25.98 Mbit/s
95th percentile per-packet one-way delay: -45.824 ms
Loss rate: 20.08%
```

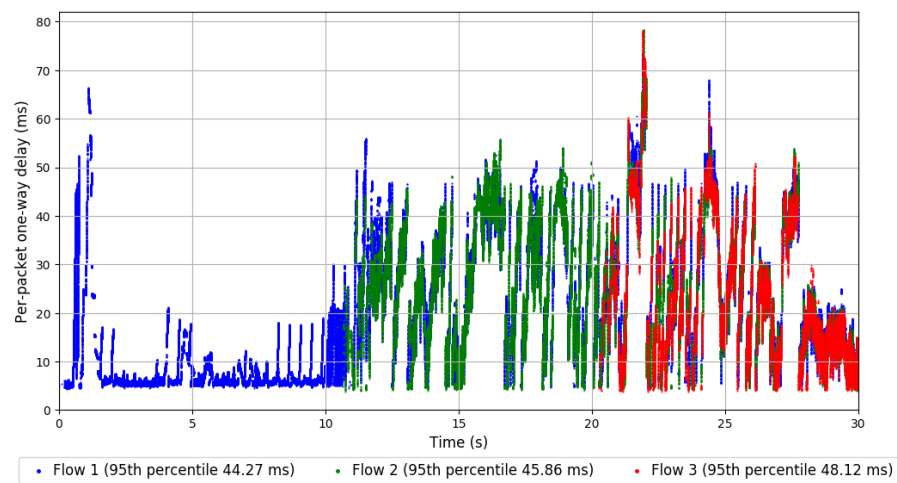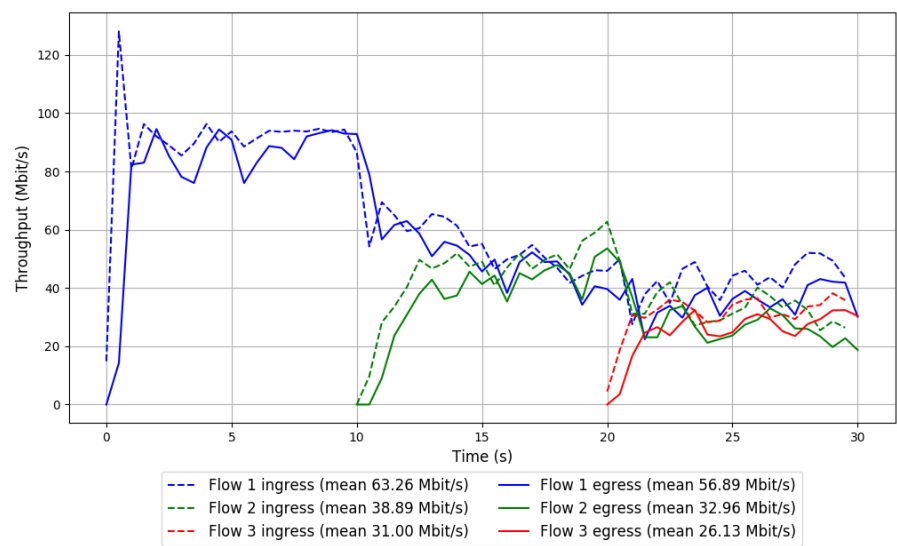## Run 1: Report of FillP-Sheep — Data Link

- - - - Flow 1 ingress (mean 64.10 Mbit/s) —— Flow 1 egress (mean 55.13 Mbit/s)
- - - - Flow 2 ingress (mean 41.96 Mbit/s) —— Flow 2 egress (mean 34.36 Mbit/s)
- - - - Flow 3 ingress (mean 32.52 Mbit/s) —— Flow 3 egress (mean 25.98 Mbit/s)

- Flow 1 (95th percentile -42.28 ms) • Flow 2 (95th percentile -37.82 ms) • Flow 3 (95th percentile -45.82 ms)
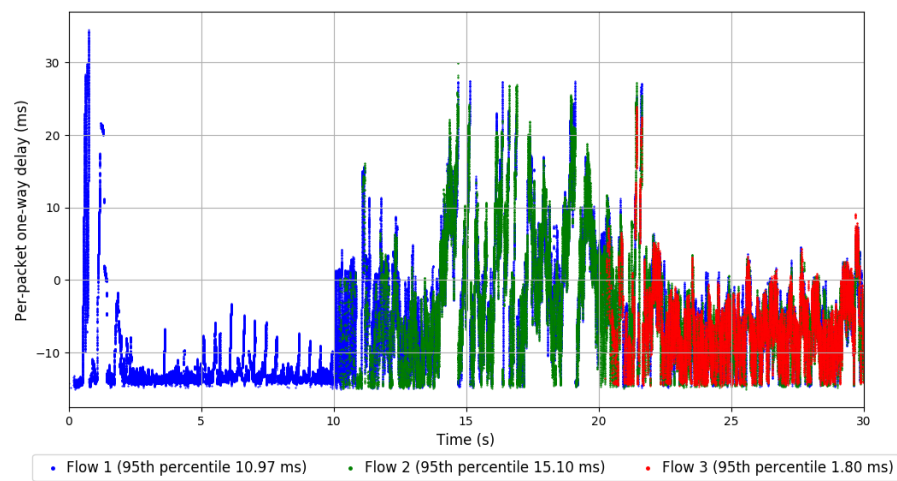
46

```
Run 2: Statistics of FillP-Sheep

Start at: 2019-01-21 11:23:05
End at: 2019-01-21 11:23:35
Local clock offset: 0.991 ms
Remote clock offset: -7.693 ms


# Below is generated by plot.py at 2019-01-21 13:12:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 87.25 Mbit/s
95th percentile per-packet one-way delay: 45.297 ms
Loss rate: 12.23%
-- Flow 1:
Average throughput: 56.89 Mbit/s
95th percentile per-packet one-way delay: 44.268 ms
Loss rate: 10.07%
-- Flow 2:
Average throughput: 32.96 Mbit/s
95th percentile per-packet one-way delay: 45.859 ms
Loss rate: 16.13%
-- Flow 3:
Average throughput: 26.13 Mbit/s
95th percentile per-packet one-way delay: 48.118 ms
Loss rate: 15.71%
```

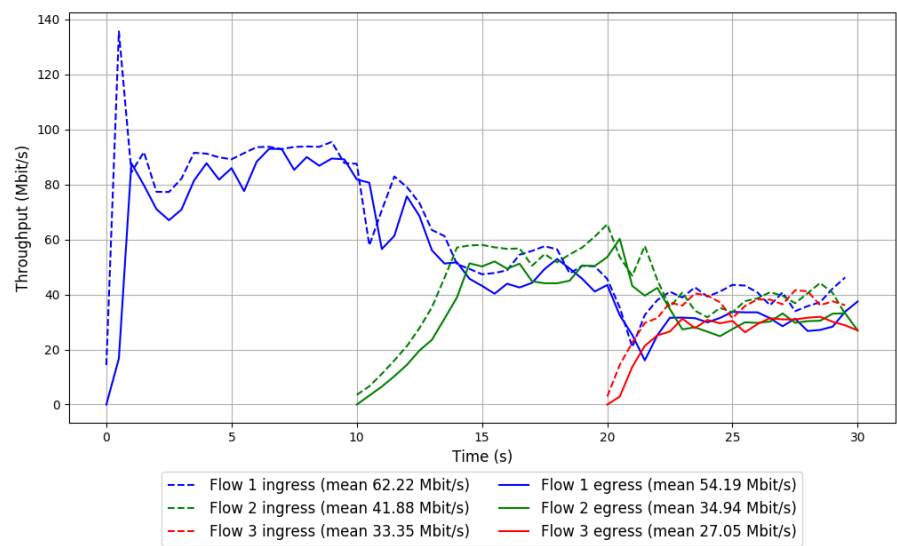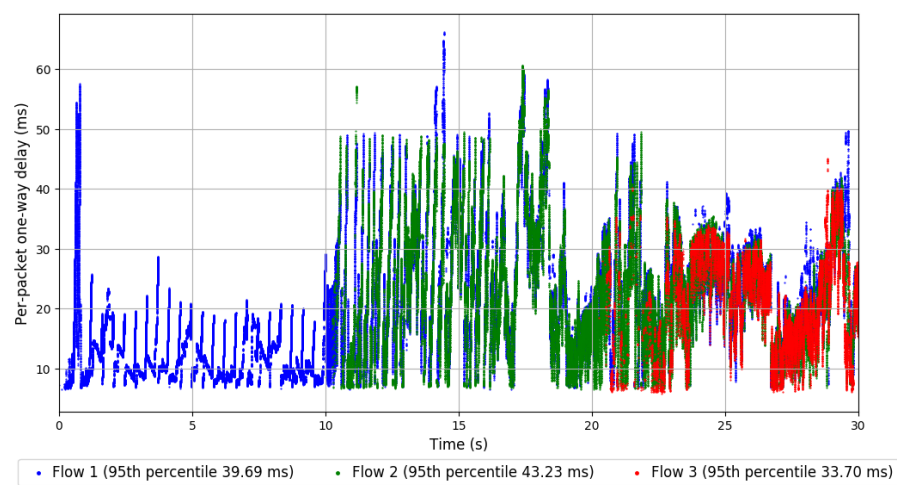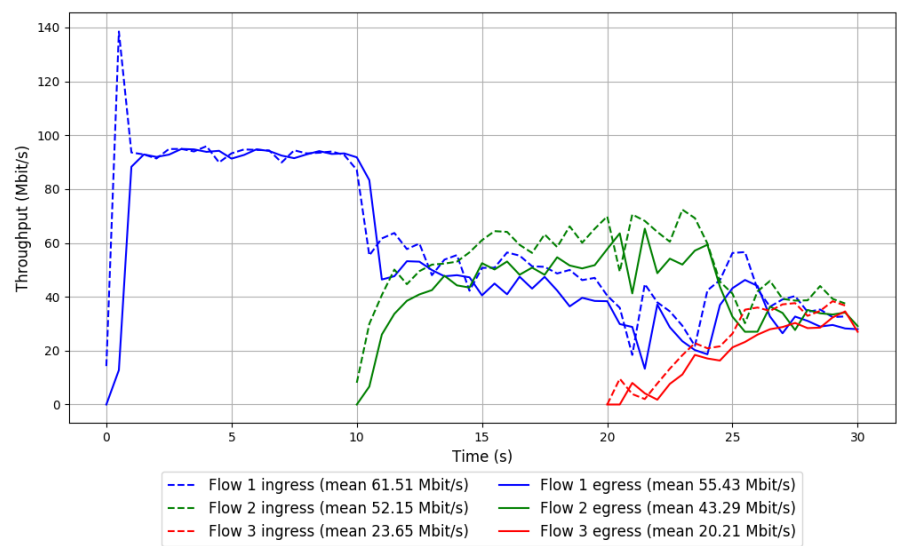Run 2: Report of FillP-Sheep — Data Link

Flow 1 ingress (mean 63.26 Mbit/s) --- Flow 1 egress (mean 56.89 Mbit/s)
Flow 2 ingress (mean 38.89 Mbit/s) --- Flow 2 egress (mean 32.96 Mbit/s)
Flow 3 ingress (mean 31.00 Mbit/s) --- Flow 3 egress (mean 26.13 Mbit/s)

Flow 1 (95th percentile 44.27 ms)   Flow 2 (95th percentile 45.86 ms)   Flow 3 (95th percentile 48.12 ms)

```
Run 3: Statistics of FillP-Sheep

Start at: 2019-01-21 11:49:49
End at: 2019-01-21 11:50:19
Local clock offset: -2.335 ms
Remote clock offset: -32.053 ms


# Below is generated by plot.py at 2019-01-21 13:12:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 86.38 Mbit/s
95th percentile per-packet one-way delay: 12.047 ms
Loss rate: 14.57%
-- Flow 1:
Average throughput: 54.19 Mbit/s
95th percentile per-packet one-way delay: 10.972 ms
Loss rate: 12.89%
-- Flow 2:
Average throughput: 34.94 Mbit/s
95th percentile per-packet one-way delay: 15.096 ms
Loss rate: 16.55%
-- Flow 3:
Average throughput: 27.05 Mbit/s
95th percentile per-packet one-way delay: 1.796 ms
Loss rate: 19.03%
```

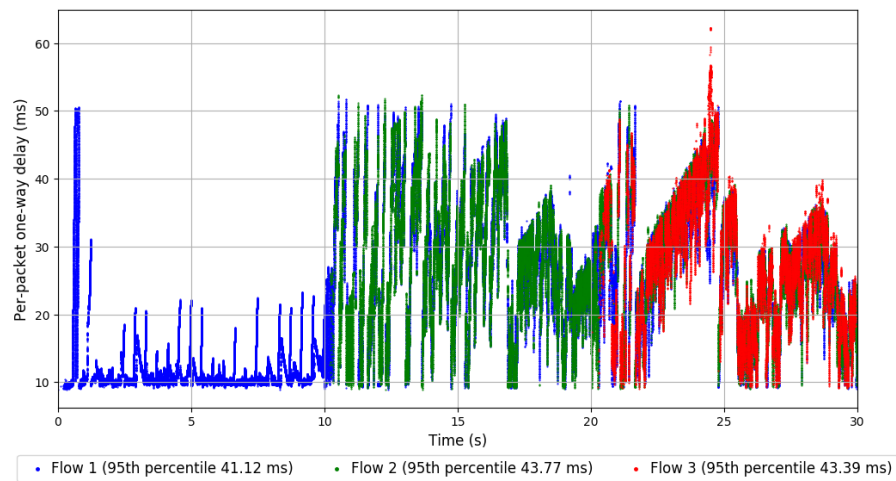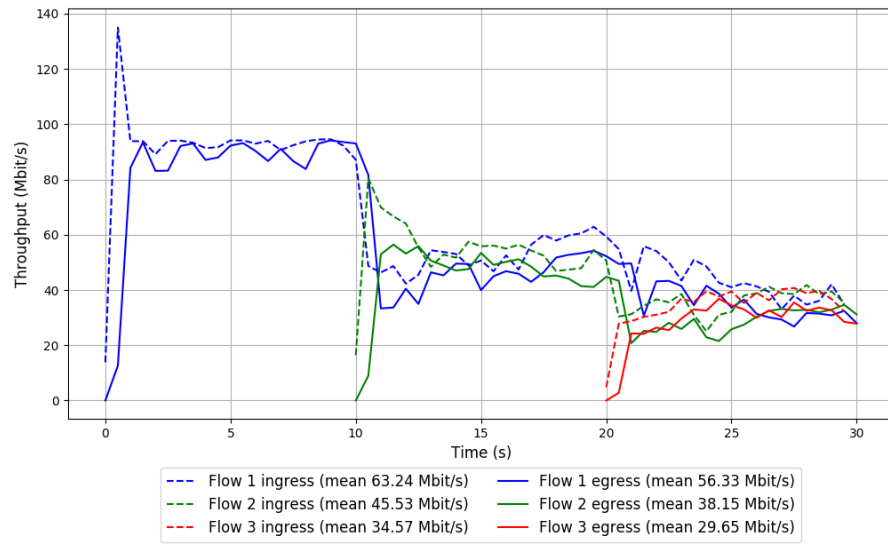Run 3: Report of FillP-Sheep — Data Link

```
Run 4: Statistics of FillP-Sheep

Start at: 2019-01-21 12:16:31
End at: 2019-01-21 12:17:01
Local clock offset: 1.463 ms
Remote clock offset: -9.435 ms


# Below is generated by plot.py at 2019-01-21 13:13:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 90.78 Mbit/s
95th percentile per-packet one-way delay: 40.833 ms
Loss rate: 12.71%
-- Flow 1:
Average throughput: 55.43 Mbit/s
95th percentile per-packet one-way delay: 39.687 ms
Loss rate: 9.84%
-- Flow 2:
Average throughput: 43.29 Mbit/s
95th percentile per-packet one-way delay: 43.225 ms
Loss rate: 16.94%
-- Flow 3:
Average throughput: 20.21 Mbit/s
95th percentile per-packet one-way delay: 33.701 ms
Loss rate: 16.44%
```

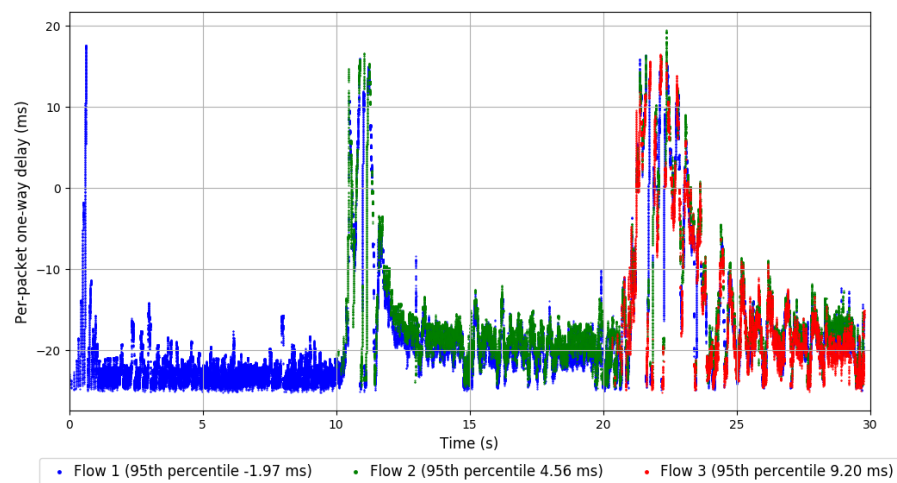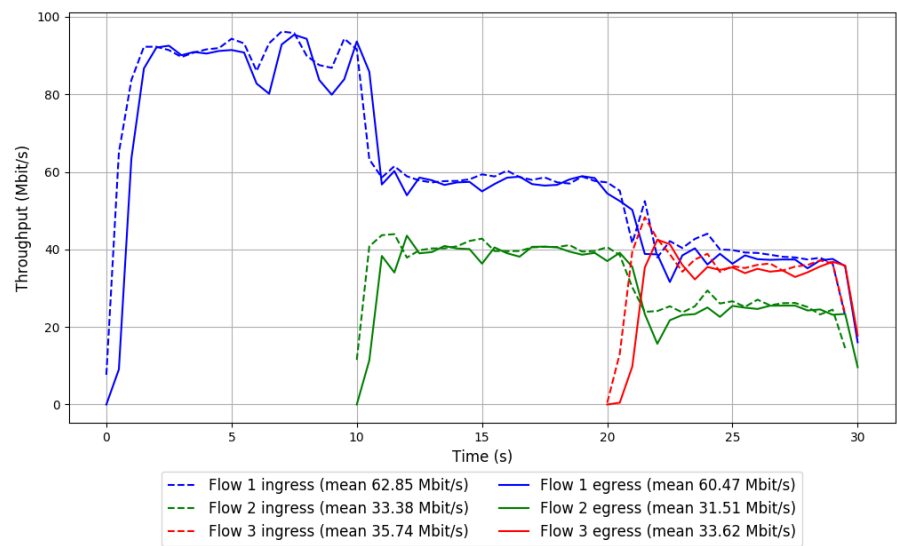Run 4: Report of FillP-Sheep — Data Link

Flow 1 ingress (mean 61.51 Mbit/s) --- Flow 1 egress (mean 55.43 Mbit/s)
Flow 2 ingress (mean 52.15 Mbit/s) --- Flow 2 egress (mean 43.29 Mbit/s)
Flow 3 ingress (mean 23.65 Mbit/s) --- Flow 3 egress (mean 20.21 Mbit/s)

Flow 1 (95th percentile 39.69 ms)   Flow 2 (95th percentile 43.23 ms)   Flow 3 (95th percentile 33.70 ms)

```
Run 5: Statistics of FillP-Sheep

Start at: 2019-01-21 12:42:43
End at: 2019-01-21 12:43:13
Local clock offset: -1.23 ms
Remote clock offset: -9.571 ms


# Below is generated by plot.py at 2019-01-21 13:13:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.49 Mbit/s
95th percentile per-packet one-way delay: 42.372 ms
Loss rate: 12.81%
-- Flow 1:
Average throughput: 56.33 Mbit/s
95th percentile per-packet one-way delay: 41.125 ms
Loss rate: 10.93%
-- Flow 2:
Average throughput: 38.15 Mbit/s
95th percentile per-packet one-way delay: 43.771 ms
Loss rate: 16.18%
-- Flow 3:
Average throughput: 29.65 Mbit/s
95th percentile per-packet one-way delay: 43.386 ms
Loss rate: 14.24%
```

Run 5: Report of FillP-Sheep — Data Link

Flow 1 ingress (mean 63.24 Mbit/s) — Flow 1 egress (mean 56.33 Mbit/s)
Flow 2 ingress (mean 45.53 Mbit/s) — Flow 2 egress (mean 38.15 Mbit/s)
Flow 3 ingress (mean 34.57 Mbit/s) — Flow 3 egress (mean 29.65 Mbit/s)

Flow 1 (95th percentile 41.12 ms) • Flow 2 (95th percentile 43.77 ms) • Flow 3 (95th percentile 43.39 ms)

```
Run 1: Statistics of Indigo

Start at: 2019-01-21 11:09:02
End at: 2019-01-21 11:09:32
Local clock offset: 3.777 ms
Remote clock offset: -33.355 ms

# Below is generated by plot.py at 2019-01-21 13:13:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.99 Mbit/s
95th percentile per-packet one-way delay: 2.576 ms
Loss rate: 4.43%
-- Flow 1:
Average throughput: 60.47 Mbit/s
95th percentile per-packet one-way delay: -1.974 ms
Loss rate: 3.77%
-- Flow 2:
Average throughput: 31.51 Mbit/s
95th percentile per-packet one-way delay: 4.564 ms
Loss rate: 5.56%
-- Flow 3:
Average throughput: 33.62 Mbit/s
95th percentile per-packet one-way delay: 9.201 ms
Loss rate: 5.89%
```
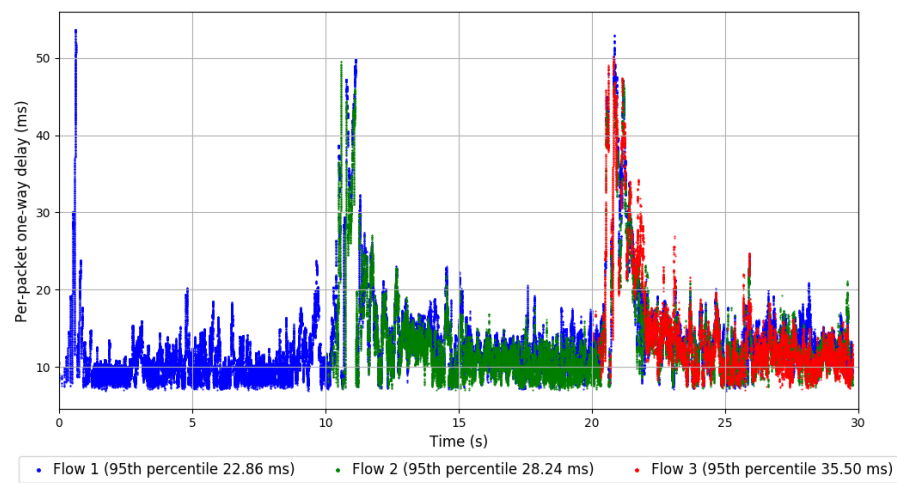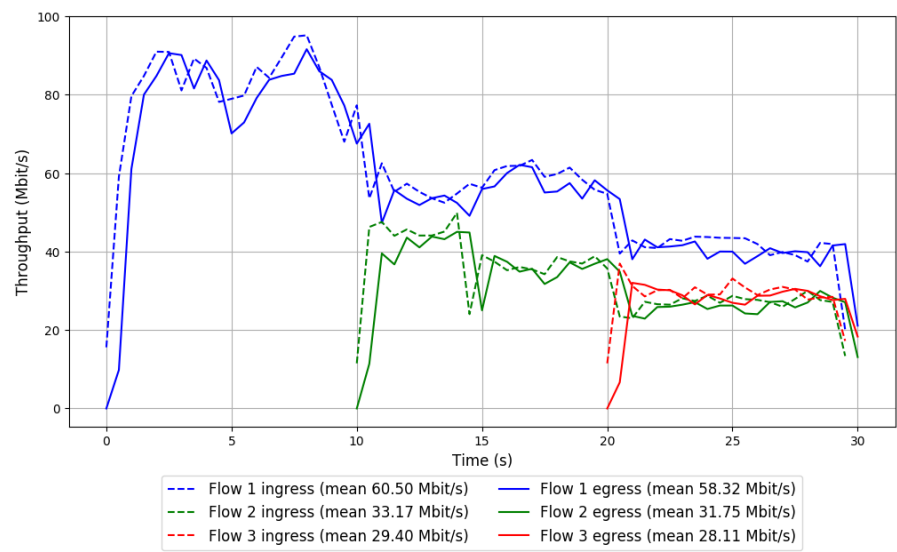
Run 1: Report of Indigo — Data Link

Flow 1 ingress (mean 62.85 Mbit/s) — Flow 1 egress (mean 60.47 Mbit/s)
Flow 2 ingress (mean 33.38 Mbit/s) — Flow 2 egress (mean 31.51 Mbit/s)
Flow 3 ingress (mean 35.74 Mbit/s) — Flow 3 egress (mean 33.62 Mbit/s)

• Flow 1 (95th percentile -1.97 ms)   • Flow 2 (95th percentile 4.56 ms)   • Flow 3 (95th percentile 9.20 ms)
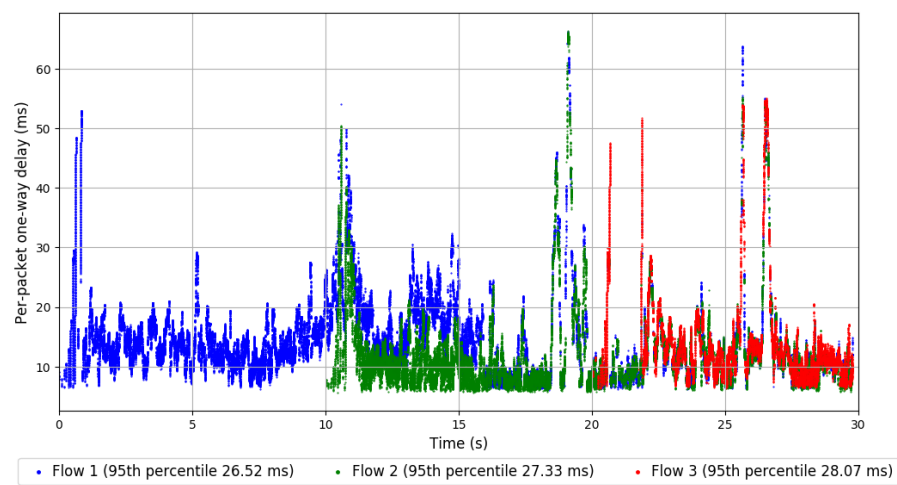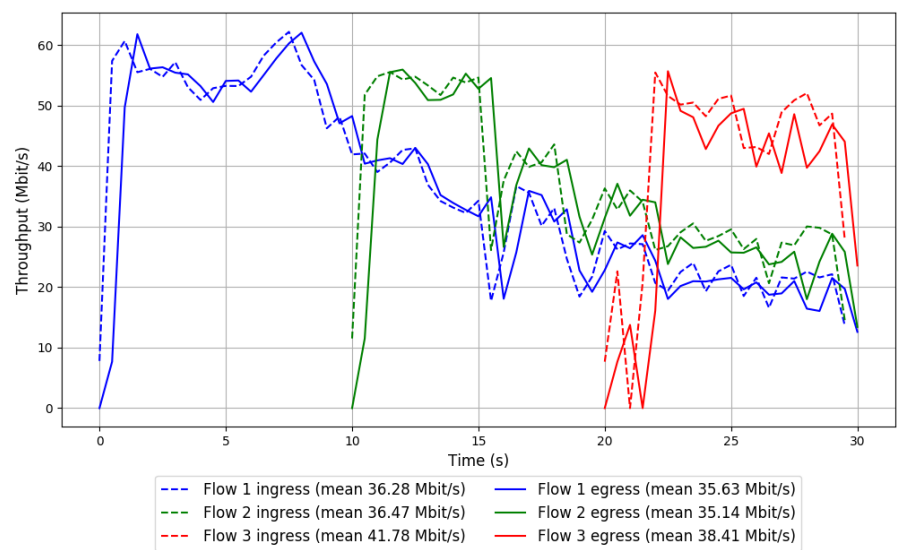
```
Run 2: Statistics of Indigo

Start at: 2019-01-21 11:35:48
End at: 2019-01-21 11:36:18
Local clock offset: 0.205 ms
Remote clock offset: -12.641 ms


# Below is generated by plot.py at 2019-01-21 13:13:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 88.78 Mbit/s
95th percentile per-packet one-way delay: 28.835 ms
Loss rate: 2.91%
-- Flow 1:
Average throughput: 62.76 Mbit/s
95th percentile per-packet one-way delay: 26.403 ms
Loss rate: 2.25%
-- Flow 2:
Average throughput: 24.14 Mbit/s
95th percentile per-packet one-way delay: 31.531 ms
Loss rate: 3.27%
-- Flow 3:
Average throughput: 30.98 Mbit/s
95th percentile per-packet one-way delay: 32.901 ms
Loss rate: 6.30%
```
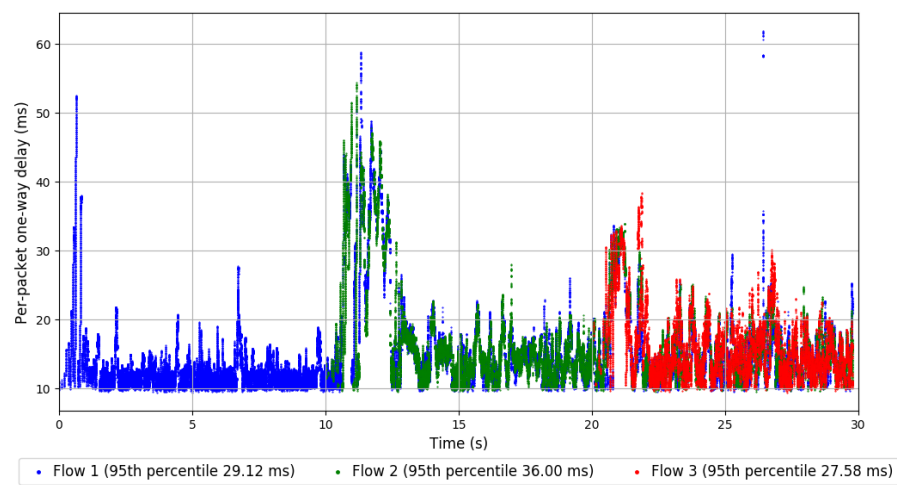
Run 2: Report of Indigo — Data Link

```
Run 3: Statistics of Indigo

Start at: 2019-01-21 12:02:03
End at: 2019-01-21 12:02:33
Local clock offset: -0.516 ms
Remote clock offset: -9.99 ms


# Below is generated by plot.py at 2019-01-21 13:13:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 88.55 Mbit/s
95th percentile per-packet one-way delay: 26.134 ms
Loss rate: 3.85%
-- Flow 1:
Average throughput: 58.32 Mbit/s
95th percentile per-packet one-way delay: 22.855 ms
Loss rate: 3.61%
-- Flow 2:
Average throughput: 31.75 Mbit/s
95th percentile per-packet one-way delay: 28.241 ms
Loss rate: 4.28%
-- Flow 3:
Average throughput: 28.11 Mbit/s
95th percentile per-packet one-way delay: 35.497 ms
Loss rate: 4.41%
```
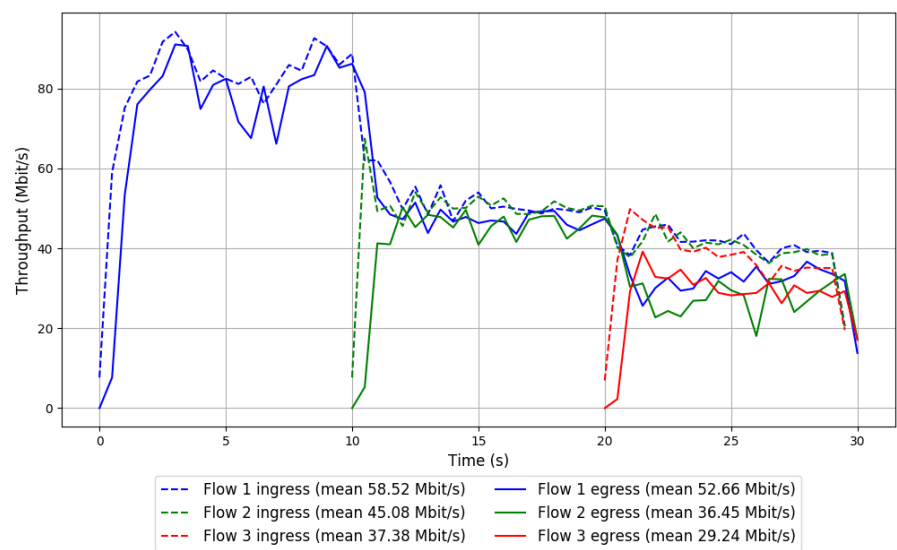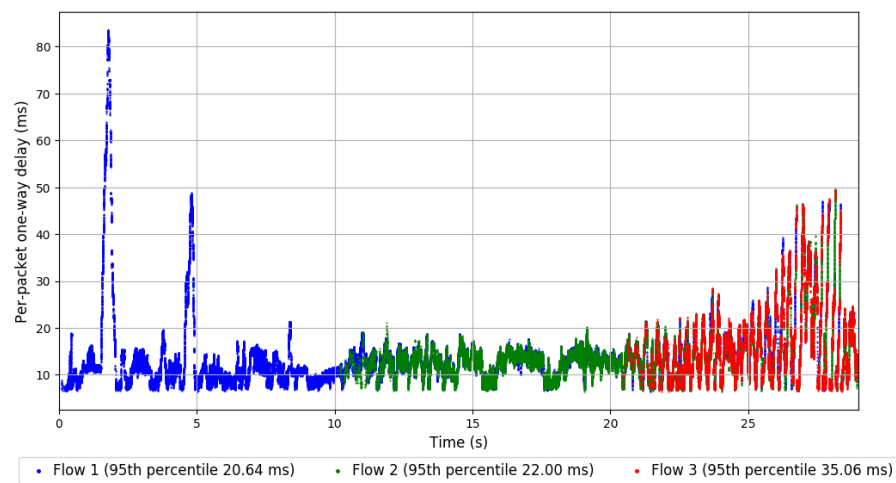
Run 3: Report of Indigo — Data Link

```
Run 4: Statistics of Indigo

Start at: 2019-01-21 12:28:42
End at: 2019-01-21 12:29:12
Local clock offset: 0.059 ms
Remote clock offset: -11.046 ms


# Below is generated by plot.py at 2019-01-21 13:13:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 71.45 Mbit/s
95th percentile per-packet one-way delay: 27.174 ms
Loss rate: 3.54%
-- Flow 1:
Average throughput: 35.63 Mbit/s
95th percentile per-packet one-way delay: 26.518 ms
Loss rate: 1.76%
-- Flow 2:
Average throughput: 35.14 Mbit/s
95th percentile per-packet one-way delay: 27.333 ms
Loss rate: 3.65%
-- Flow 3:
Average throughput: 38.41 Mbit/s
95th percentile per-packet one-way delay: 28.070 ms
Loss rate: 8.06%
```
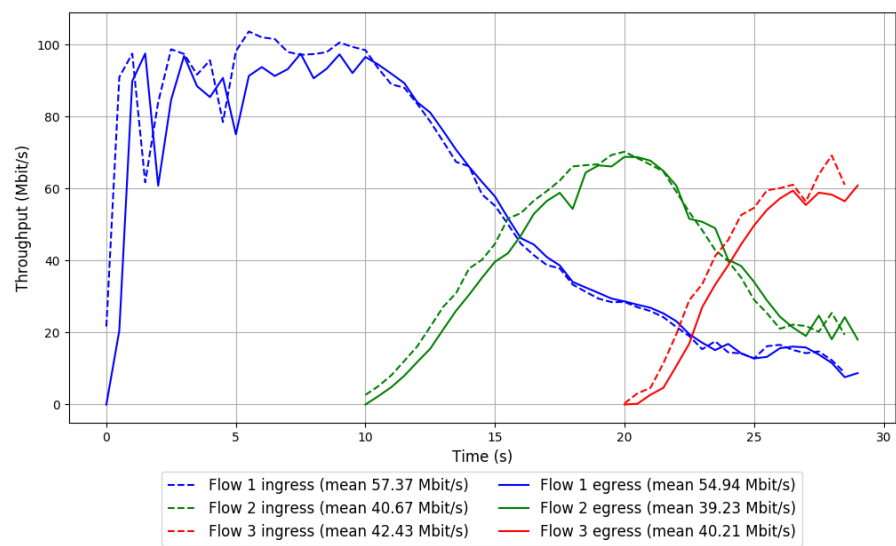
Run 4: Report of Indigo — Data Link

```
Run 5: Statistics of Indigo

Start at: 2019-01-21 12:54:55
End at: 2019-01-21 12:55:25
Local clock offset: 0.122 ms
Remote clock offset: -7.502 ms


# Below is generated by plot.py at 2019-01-21 13:13:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 86.36 Mbit/s
95th percentile per-packet one-way delay: 31.904 ms
Loss rate: 14.13%
-- Flow 1:
Average throughput: 52.66 Mbit/s
95th percentile per-packet one-way delay: 29.122 ms
Loss rate: 9.98%
-- Flow 2:
Average throughput: 36.45 Mbit/s
95th percentile per-packet one-way delay: 36.003 ms
Loss rate: 19.11%
-- Flow 3:
Average throughput: 29.24 Mbit/s
95th percentile per-packet one-way delay: 27.580 ms
Loss rate: 21.78%
```
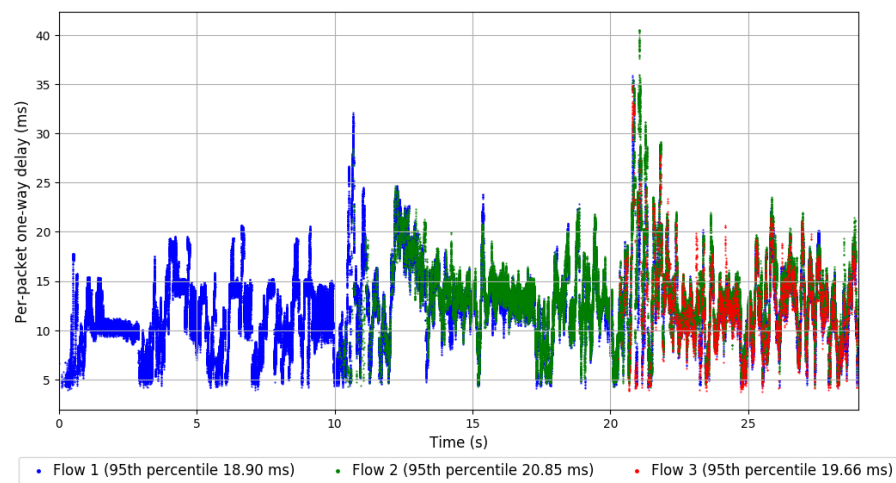
Run 5: Report of Indigo — Data Link

```
Run 1: Statistics of Indigo-MusesC3

Start at: 2019-01-21 11:21:44
End at: 2019-01-21 11:22:14
Local clock offset: 0.215 ms
Remote clock offset: -6.405 ms


# Below is generated by plot.py at 2019-01-21 13:13:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.34 Mbit/s
95th percentile per-packet one-way delay: 25.591 ms
Loss rate: 4.16%
-- Flow 1:
Average throughput: 54.94 Mbit/s
95th percentile per-packet one-way delay: 20.636 ms
Loss rate: 4.21%
-- Flow 2:
Average throughput: 39.23 Mbit/s
95th percentile per-packet one-way delay: 21.995 ms
Loss rate: 3.55%
-- Flow 3:
Average throughput: 40.21 Mbit/s
95th percentile per-packet one-way delay: 35.058 ms
Loss rate: 5.20%
```
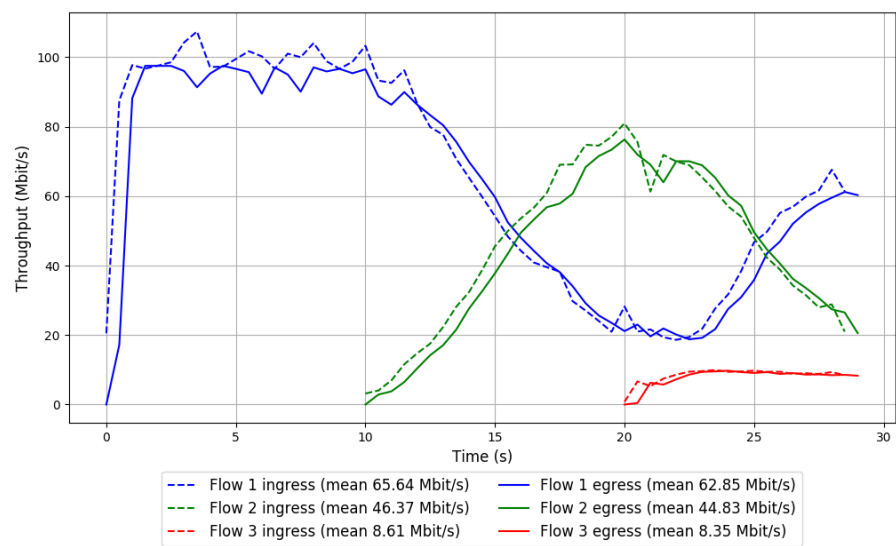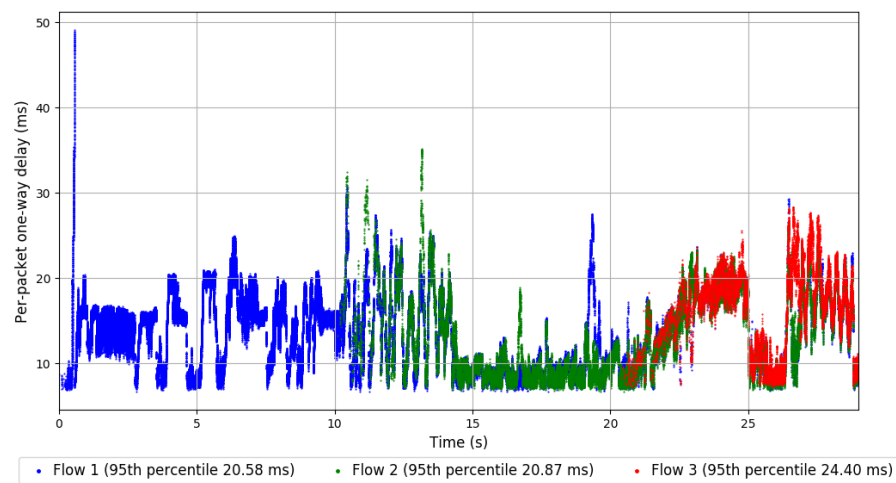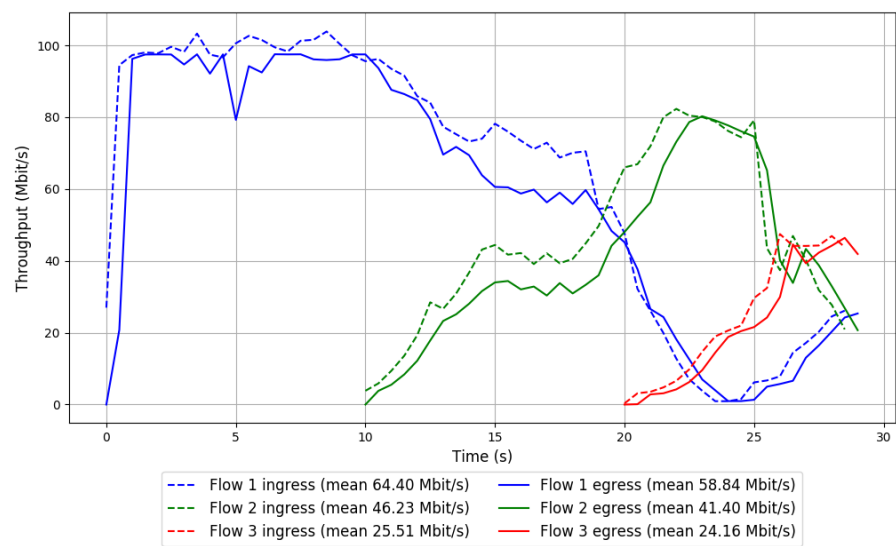
Run 1: Report of Indigo-MusesC3 — Data Link

Flow 1 ingress (mean 57.37 Mbit/s) --- Flow 1 egress (mean 54.94 Mbit/s)
Flow 2 ingress (mean 40.67 Mbit/s) --- Flow 2 egress (mean 39.23 Mbit/s)
Flow 3 ingress (mean 42.43 Mbit/s) --- Flow 3 egress (mean 40.21 Mbit/s)

Flow 1 (95th percentile 20.64 ms)   Flow 2 (95th percentile 22.00 ms)   Flow 3 (95th percentile 35.06 ms)
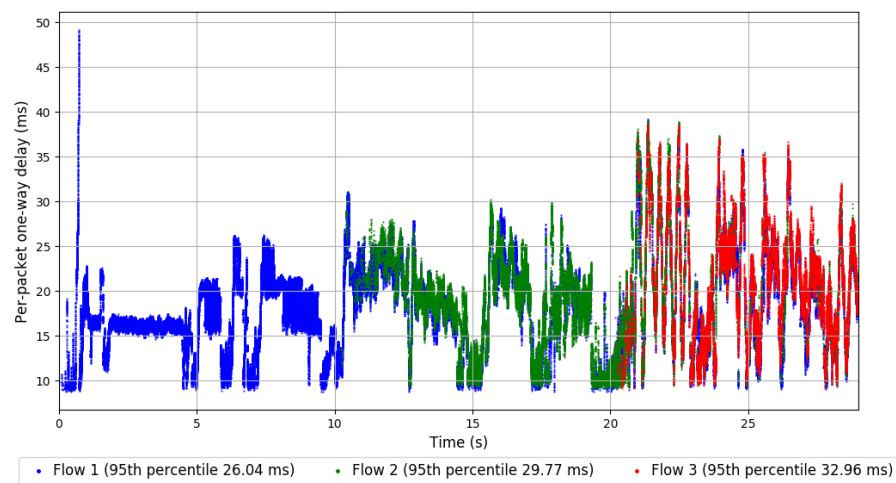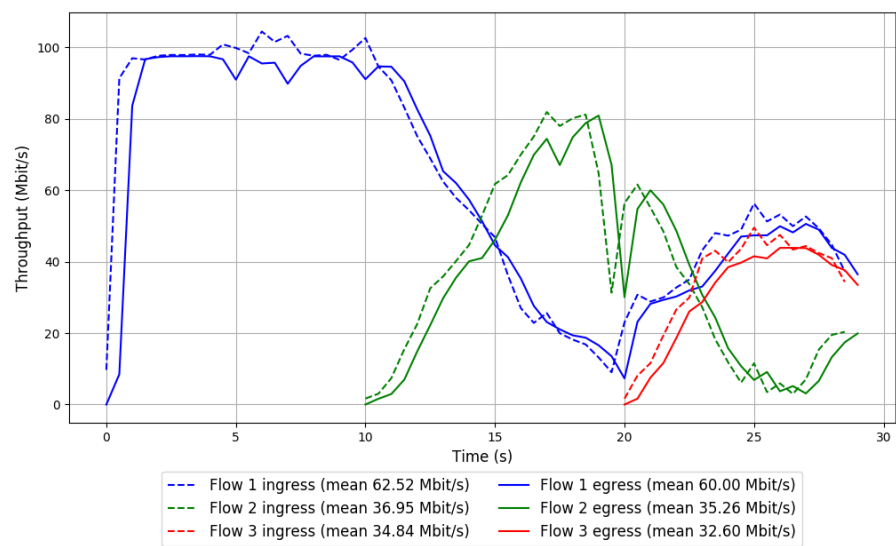
66

```
Run 2: Statistics of Indigo-MusesC3

Start at: 2019-01-21 11:48:35
End at: 2019-01-21 11:49:05
Local clock offset: 2.296 ms
Remote clock offset: -8.655 ms


# Below is generated by plot.py at 2019-01-21 13:14:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.57 Mbit/s
95th percentile per-packet one-way delay: 19.615 ms
Loss rate: 3.92%
-- Flow 1:
Average throughput: 62.85 Mbit/s
95th percentile per-packet one-way delay: 18.898 ms
Loss rate: 4.23%
-- Flow 2:
Average throughput: 44.83 Mbit/s
95th percentile per-packet one-way delay: 20.847 ms
Loss rate: 3.32%
-- Flow 3:
Average throughput: 8.35 Mbit/s
95th percentile per-packet one-way delay: 19.664 ms
Loss rate: 3.04%
```

Run 2: Report of Indigo-MusesC3 — Data Link

```
Run 3: Statistics of Indigo-MusesC3

Start at: 2019-01-21 12:15:11
End at: 2019-01-21 12:15:41
Local clock offset: 2.178 ms
Remote clock offset: -8.037 ms


# Below is generated by plot.py at 2019-01-21 13:14:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.97 Mbit/s
95th percentile per-packet one-way delay: 21.229 ms
Loss rate: 8.93%
-- Flow 1:
Average throughput: 58.84 Mbit/s
95th percentile per-packet one-way delay: 20.578 ms
Loss rate: 8.63%
-- Flow 2:
Average throughput: 41.40 Mbit/s
95th percentile per-packet one-way delay: 20.868 ms
Loss rate: 10.47%
-- Flow 3:
Average throughput: 24.16 Mbit/s
95th percentile per-packet one-way delay: 24.402 ms
Loss rate: 5.28%
```

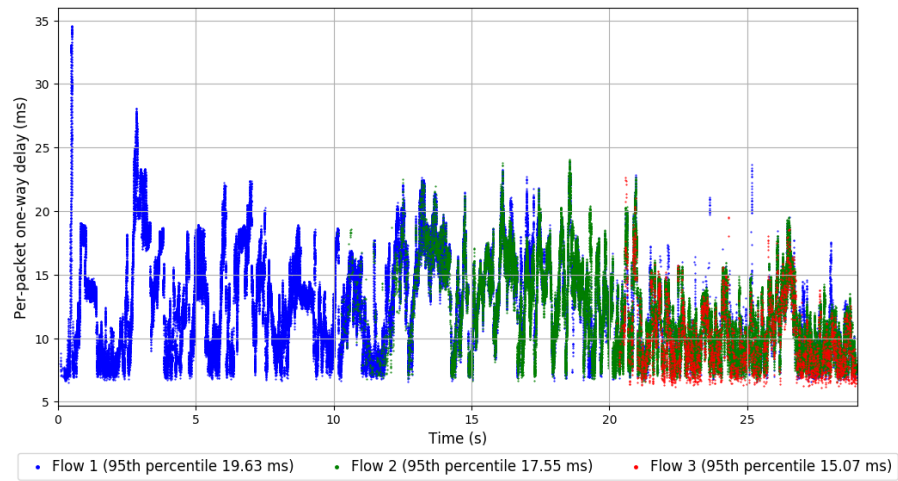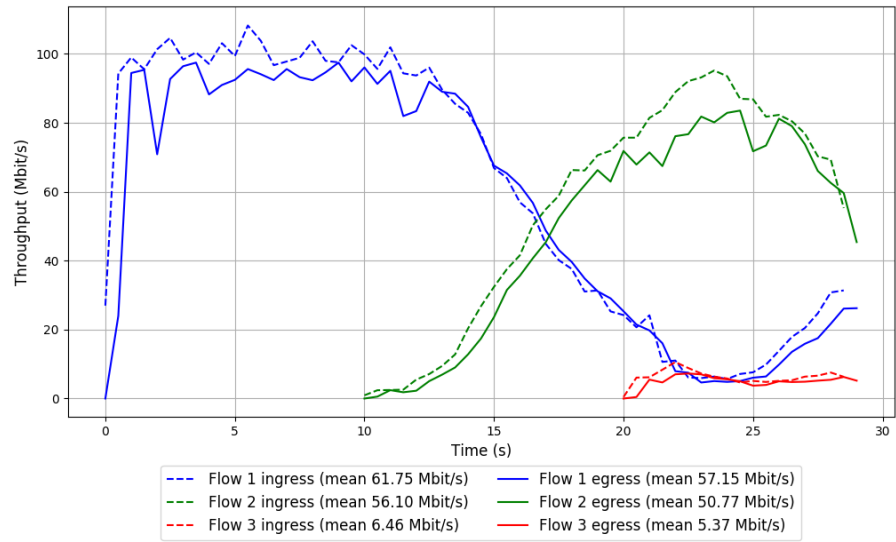Run 3: Report of Indigo-MusesC3 — Data Link

```
Run 4: Statistics of Indigo-MusesC3

Start at: 2019-01-21 12:41:26
End at: 2019-01-21 12:41:56
Local clock offset: 0.362 ms
Remote clock offset: -7.837 ms


# Below is generated by plot.py at 2019-01-21 13:14:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.75 Mbit/s
95th percentile per-packet one-way delay: 27.943 ms
Loss rate: 4.40%
-- Flow 1:
Average throughput: 60.00 Mbit/s
95th percentile per-packet one-way delay: 26.038 ms
Loss rate: 4.00%
-- Flow 2:
Average throughput: 35.26 Mbit/s
95th percentile per-packet one-way delay: 29.770 ms
Loss rate: 4.57%
-- Flow 3:
Average throughput: 32.60 Mbit/s
95th percentile per-packet one-way delay: 32.964 ms
Loss rate: 6.40%
```

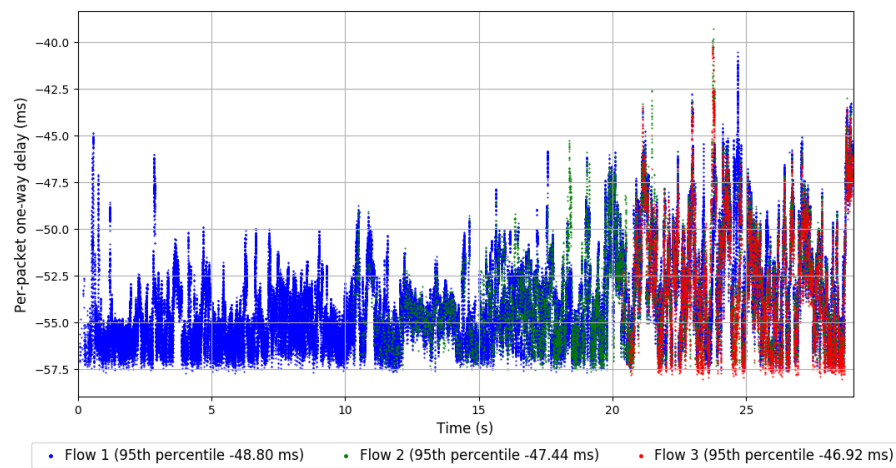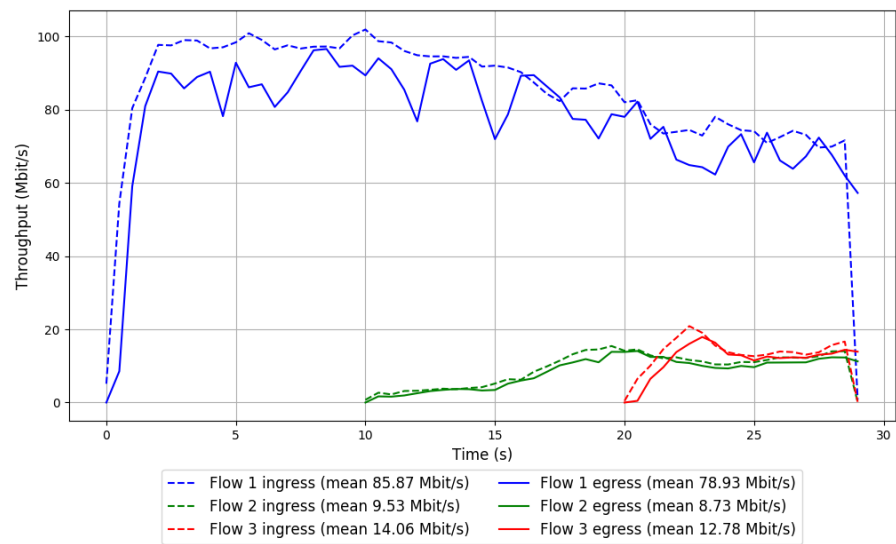Run 4: Report of Indigo-MusesC3 — Data Link

```
Run 5: Statistics of Indigo-MusesC3

Start at: 2019-01-21 13:07:37
End at: 2019-01-21 13:08:07
Local clock offset: 1.613 ms
Remote clock offset: -8.808 ms


# Below is generated by plot.py at 2019-01-21 13:14:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.73 Mbit/s
95th percentile per-packet one-way delay: 18.851 ms
Loss rate: 8.41%
-- Flow 1:
Average throughput: 57.15 Mbit/s
95th percentile per-packet one-way delay: 19.634 ms
Loss rate: 7.46%
-- Flow 2:
Average throughput: 50.77 Mbit/s
95th percentile per-packet one-way delay: 17.550 ms
Loss rate: 9.56%
-- Flow 3:
Average throughput: 5.37 Mbit/s
95th percentile per-packet one-way delay: 15.071 ms
Loss rate: 16.95%
```
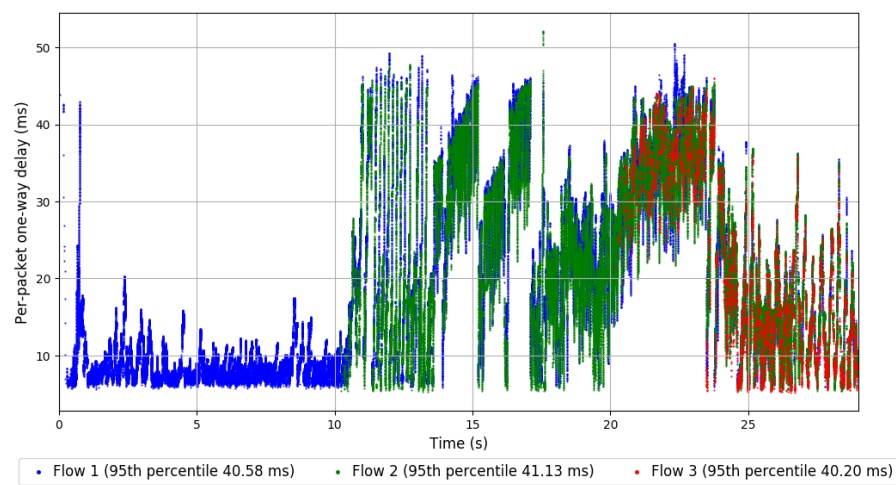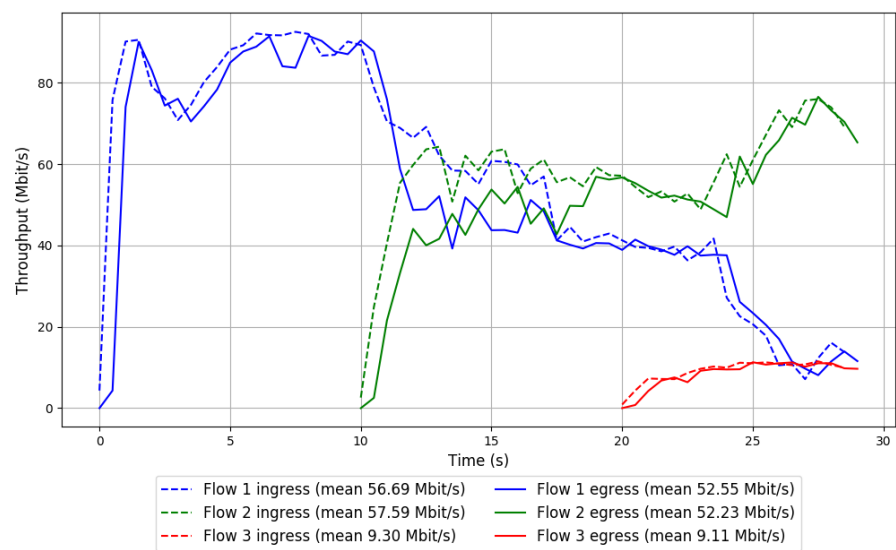
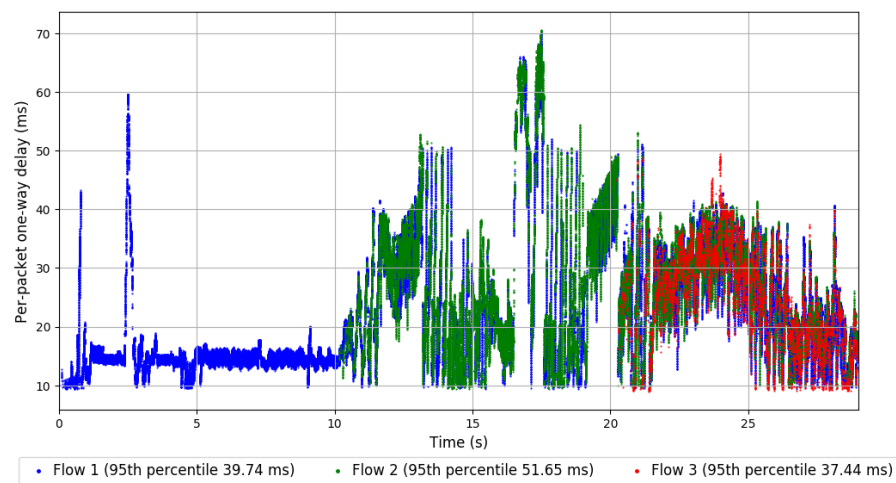Run 5: Report of Indigo-MusesC3 — Data Link

```
Run 1: Statistics of Indigo-MusesC5

Start at: 2019-01-21 11:06:27
End at: 2019-01-21 11:06:57
Local clock offset: 2.162 ms
Remote clock offset: -67.54 ms


# Below is generated by plot.py at 2019-01-21 13:14:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 88.42 Mbit/s
95th percentile per-packet one-way delay: -48.534 ms
Loss rate: 8.11%
-- Flow 1:
Average throughput: 78.93 Mbit/s
95th percentile per-packet one-way delay: -48.797 ms
Loss rate: 8.05%
-- Flow 2:
Average throughput: 8.73 Mbit/s
95th percentile per-packet one-way delay: -47.444 ms
Loss rate: 8.35%
-- Flow 3:
Average throughput: 12.78 Mbit/s
95th percentile per-packet one-way delay: -46.923 ms
Loss rate: 9.05%
```

Run 1: Report of Indigo-MusesC5 — Data Link

- - - Flow 1 ingress (mean 85.87 Mbit/s) ——— Flow 1 egress (mean 78.93 Mbit/s)
- - - Flow 2 ingress (mean 9.53 Mbit/s) ——— Flow 2 egress (mean 8.73 Mbit/s)
- - - Flow 3 ingress (mean 14.06 Mbit/s) ——— Flow 3 egress (mean 12.78 Mbit/s)

- Flow 1 (95th percentile -48.80 ms)   - Flow 2 (95th percentile -47.44 ms)   - Flow 3 (95th percentile -46.92 ms)
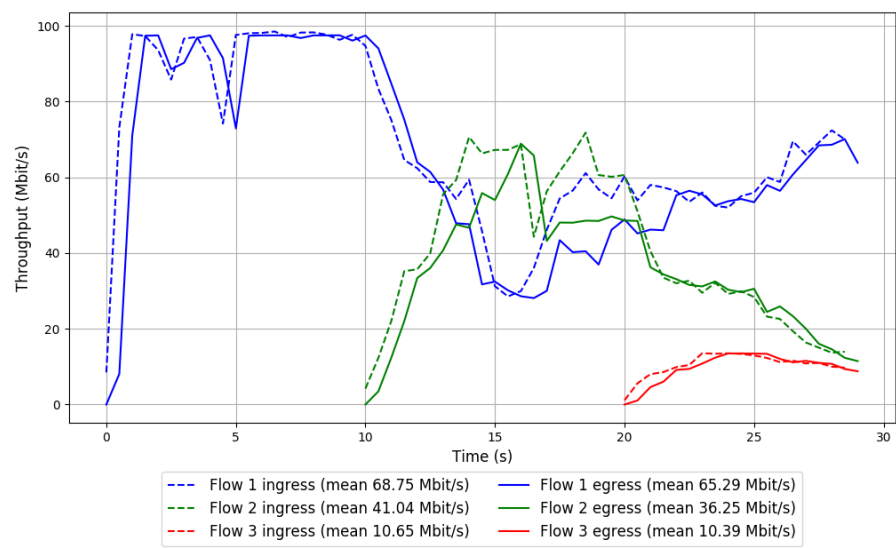
```
Run 2: Statistics of Indigo-MusesC5

Start at: 2019-01-21 11:33:18
End at: 2019-01-21 11:33:48
Local clock offset: 0.817 ms
Remote clock offset: -7.027 ms


# Below is generated by plot.py at 2019-01-21 13:14:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 89.34 Mbit/s
95th percentile per-packet one-way delay: 40.828 ms
Loss rate: 7.99%
-- Flow 1:
Average throughput: 52.55 Mbit/s
95th percentile per-packet one-way delay: 40.582 ms
Loss rate: 7.40%
-- Flow 2:
Average throughput: 52.23 Mbit/s
95th percentile per-packet one-way delay: 41.135 ms
Loss rate: 9.32%
-- Flow 3:
Average throughput: 9.11 Mbit/s
95th percentile per-packet one-way delay: 40.205 ms
Loss rate: 2.16%
```

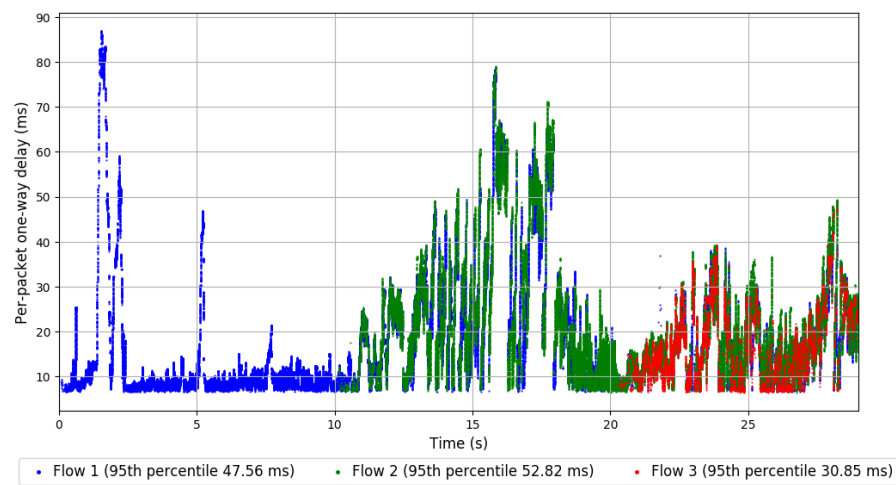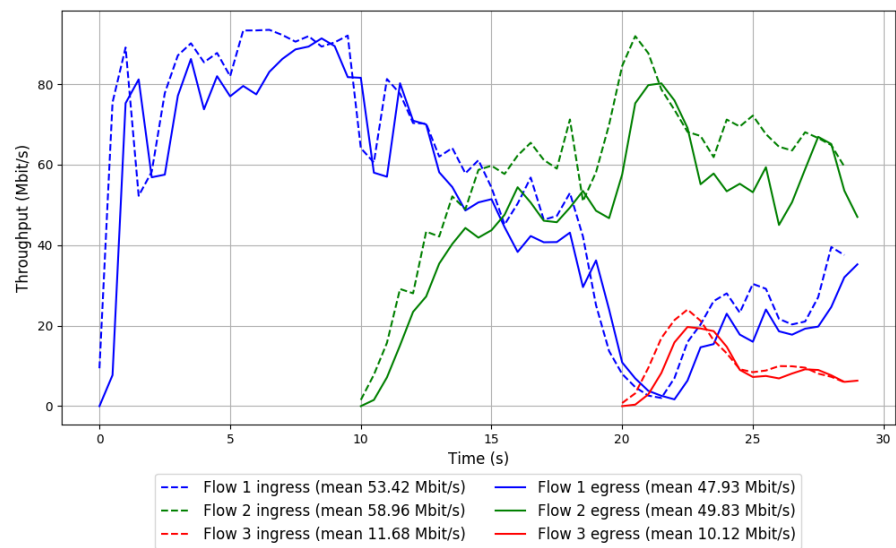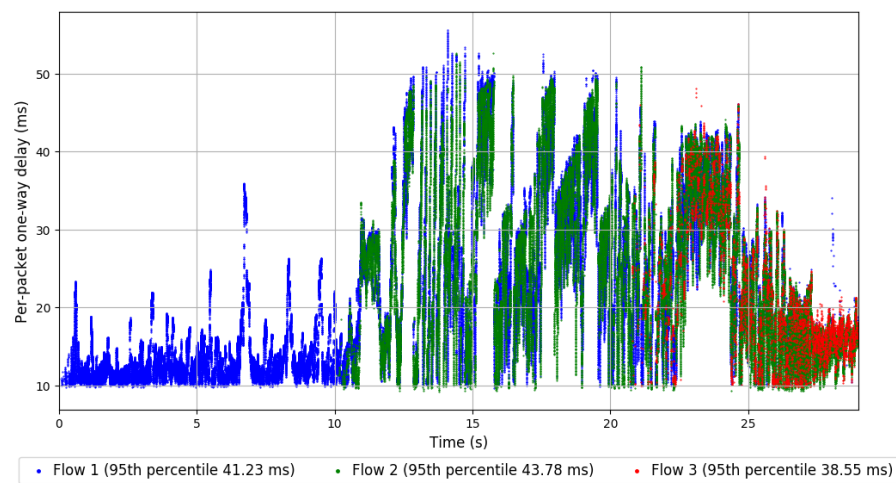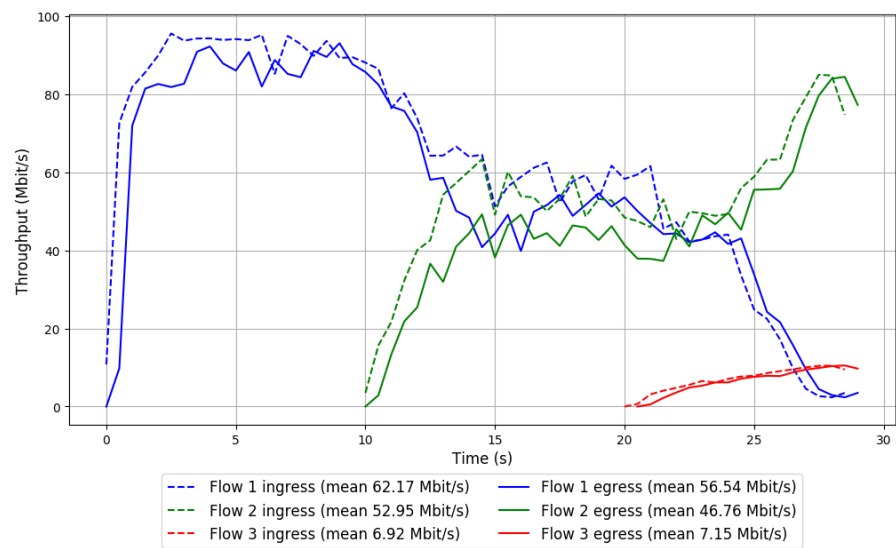Run 2: Report of Indigo-MusesC5 — Data Link

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```
Run 3: Statistics of Indigo-MusesC5

Start at: 2019-01-21 11:59:32
End at: 2019-01-21 12:00:02
Local clock offset: -1.256 ms
Remote clock offset: -8.543 ms


# Below is generated by plot.py at 2019-01-21 13:14:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.05 Mbit/s
95th percentile per-packet one-way delay: 42.873 ms
Loss rate: 6.74%
-- Flow 1:
Average throughput: 65.29 Mbit/s
95th percentile per-packet one-way delay: 39.737 ms
Loss rate: 5.01%
-- Flow 2:
Average throughput: 36.25 Mbit/s
95th percentile per-packet one-way delay: 51.651 ms
Loss rate: 11.67%
-- Flow 3:
Average throughput: 10.39 Mbit/s
95th percentile per-packet one-way delay: 37.438 ms
Loss rate: 2.77%
```

Run 3: Report of Indigo-MusesC5 — Data Link

- - - - Flow 1 ingress (mean 68.75 Mbit/s) ——— Flow 1 egress (mean 65.29 Mbit/s)
- - - - Flow 2 ingress (mean 41.04 Mbit/s) ——— Flow 2 egress (mean 36.25 Mbit/s)
- - - - Flow 3 ingress (mean 10.65 Mbit/s) ——— Flow 3 egress (mean 10.39 Mbit/s)

• Flow 1 (95th percentile 39.74 ms)   • Flow 2 (95th percentile 51.65 ms)   • Flow 3 (95th percentile 37.44 ms)

```
Run 4: Statistics of Indigo-MusesC5

Start at: 2019-01-21 12:26:07
End at: 2019-01-21 12:26:37
Local clock offset: -0.835 ms
Remote clock offset: -11.202 ms


# Below is generated by plot.py at 2019-01-21 13:14:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 83.43 Mbit/s
95th percentile per-packet one-way delay: 50.192 ms
Loss rate: 12.45%
-- Flow 1:
Average throughput: 47.93 Mbit/s
95th percentile per-packet one-way delay: 47.558 ms
Loss rate: 10.26%
-- Flow 2:
Average throughput: 49.83 Mbit/s
95th percentile per-packet one-way delay: 52.819 ms
Loss rate: 15.41%
-- Flow 3:
Average throughput: 10.12 Mbit/s
95th percentile per-packet one-way delay: 30.850 ms
Loss rate: 13.25%
```

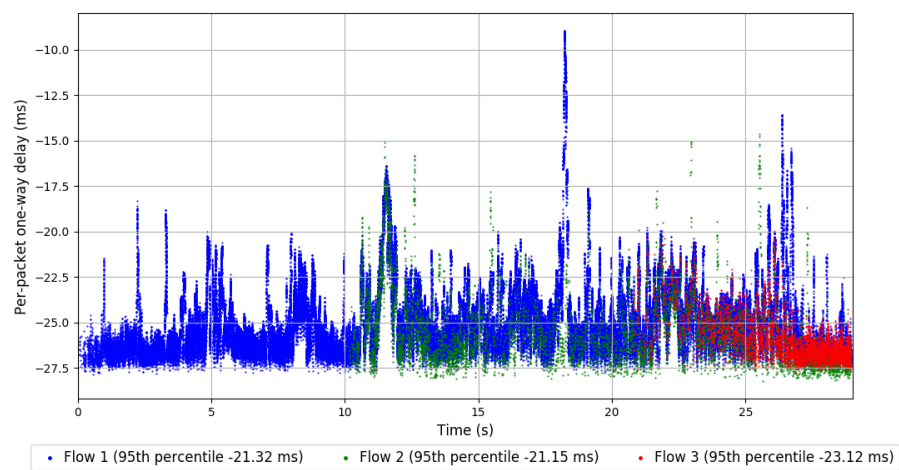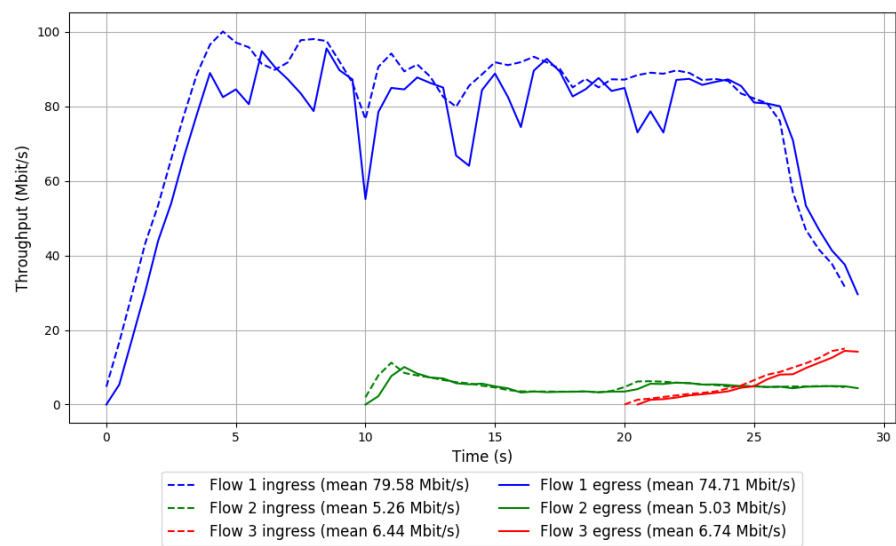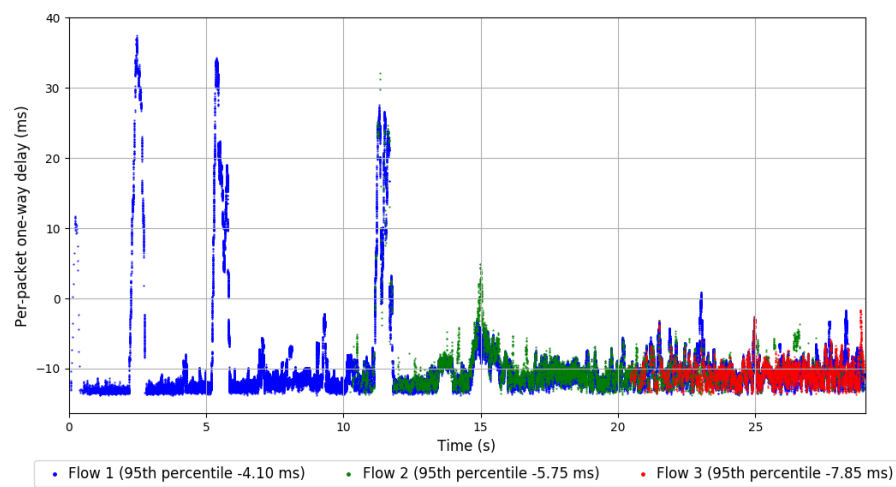Run 4: Report of Indigo-MusesC5 — Data Link

```
Run 5: Statistics of Indigo-MusesC5

Start at: 2019-01-21 12:52:24
End at: 2019-01-21 12:52:54
Local clock offset: -1.768 ms
Remote clock offset: -9.172 ms


# Below is generated by plot.py at 2019-01-21 13:15:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 89.03 Mbit/s
95th percentile per-packet one-way delay: 42.397 ms
Loss rate: 9.83%
-- Flow 1:
Average throughput: 56.54 Mbit/s
95th percentile per-packet one-way delay: 41.230 ms
Loss rate: 9.05%
-- Flow 2:
Average throughput: 46.76 Mbit/s
95th percentile per-packet one-way delay: 43.777 ms
Loss rate: 11.67%
-- Flow 3:
Average throughput: 7.15 Mbit/s
95th percentile per-packet one-way delay: 38.548 ms
Loss rate: 2.53%
```
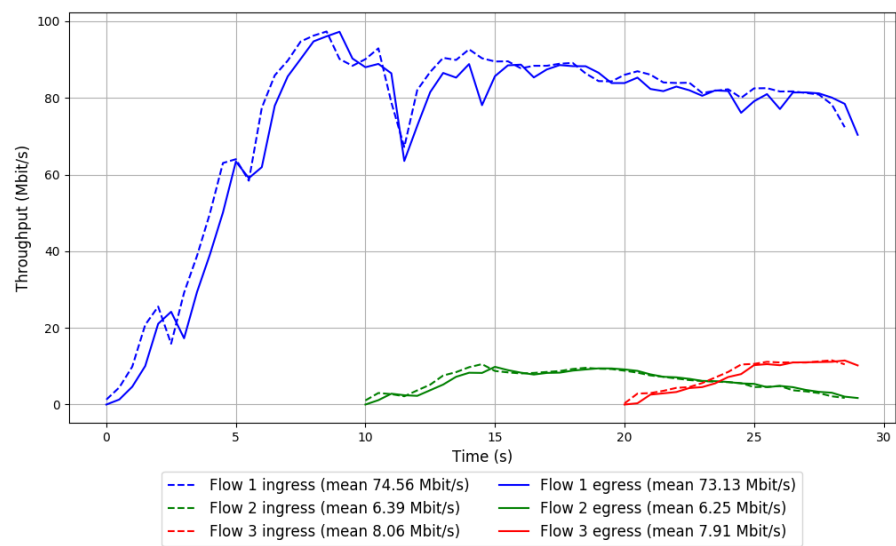
Run 5: Report of Indigo-MusesC5 — Data Link

```
Run 1: Statistics of Indigo-MusesD

Start at: 2019-01-21 10:57:48
End at: 2019-01-21 10:58:18
Local clock offset: 0.994 ms
Remote clock offset: -37.427 ms


# Below is generated by plot.py at 2019-01-21 13:15:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 79.90 Mbit/s
95th percentile per-packet one-way delay: -21.343 ms
Loss rate: 5.94%
-- Flow 1:
Average throughput: 74.71 Mbit/s
95th percentile per-packet one-way delay: -21.317 ms
Loss rate: 6.12%
-- Flow 2:
Average throughput: 5.03 Mbit/s
95th percentile per-packet one-way delay: -21.151 ms
Loss rate: 4.37%
-- Flow 3:
Average throughput: 6.74 Mbit/s
95th percentile per-packet one-way delay: -23.117 ms
Loss rate: 1.35%
```
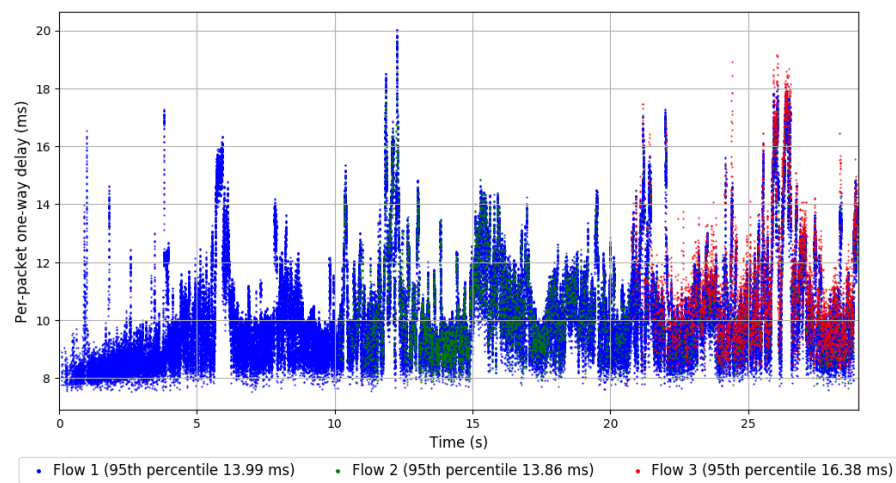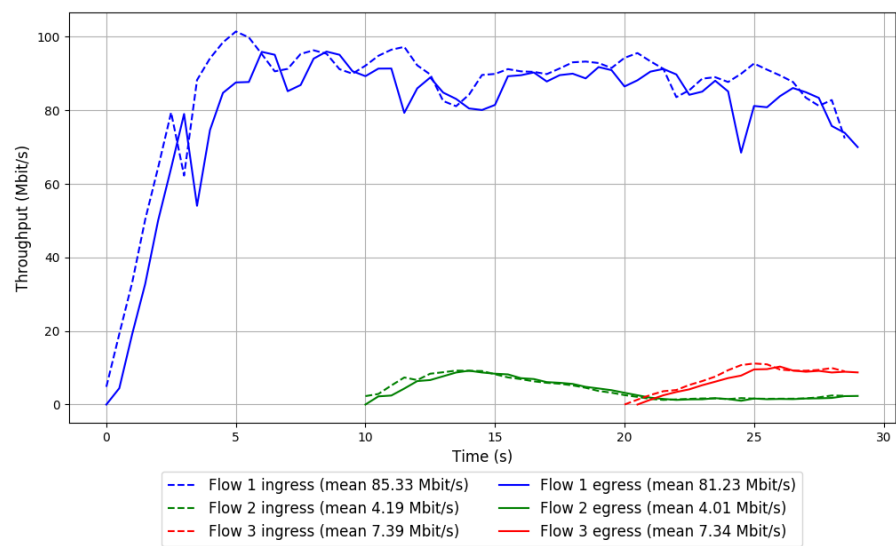
Run 1: Report of Indigo-MusesD — Data Link

- Flow 1 ingress (mean 79.58 Mbit/s)
- Flow 1 egress (mean 74.71 Mbit/s)
- Flow 2 ingress (mean 5.26 Mbit/s)
- Flow 2 egress (mean 5.03 Mbit/s)
- Flow 3 ingress (mean 6.44 Mbit/s)
- Flow 3 egress (mean 6.74 Mbit/s)

- Flow 1 (95th percentile -21.32 ms)
- Flow 2 (95th percentile -21.15 ms)
- Flow 3 (95th percentile -23.12 ms)

```
Run 2: Statistics of Indigo-MusesD

Start at: 2019-01-21 11:24:24
End at: 2019-01-21 11:24:54
Local clock offset: 0.048 ms
Remote clock offset: -26.814 ms


# Below is generated by plot.py at 2019-01-21 13:15:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 79.50 Mbit/s
95th percentile per-packet one-way delay: -4.472 ms
Loss rate: 1.94%
-- Flow 1:
Average throughput: 73.13 Mbit/s
95th percentile per-packet one-way delay: -4.101 ms
Loss rate: 1.92%
-- Flow 2:
Average throughput: 6.25 Mbit/s
95th percentile per-packet one-way delay: -5.755 ms
Loss rate: 2.26%
-- Flow 3:
Average throughput: 7.91 Mbit/s
95th percentile per-packet one-way delay: -7.853 ms
Loss rate: 1.88%
```
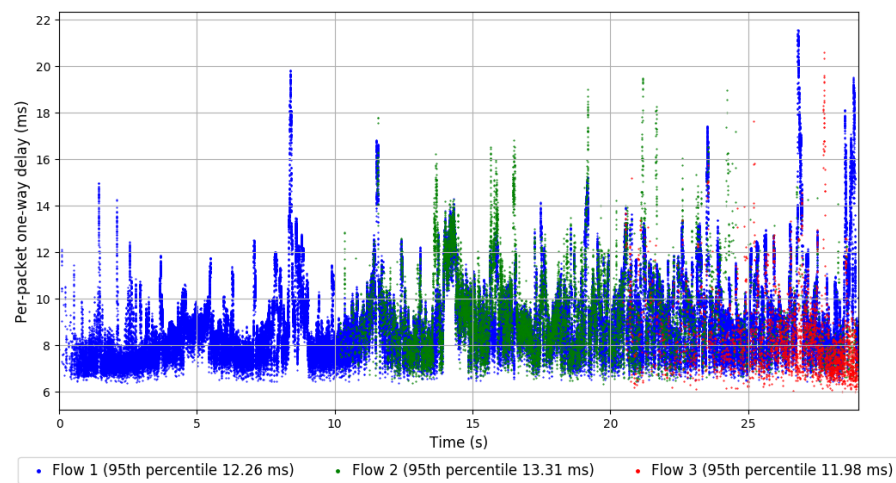
Run 2: Report of Indigo-MusesD — Data Link

```
Run 3: Statistics of Indigo-MusesD

Start at: 2019-01-21 11:51:01
End at: 2019-01-21 11:51:31
Local clock offset: -1.952 ms
Remote clock offset: -9.31 ms


# Below is generated by plot.py at 2019-01-21 13:15:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 85.93 Mbit/s
95th percentile per-packet one-way delay: 14.039 ms
Loss rate: 4.82%
-- Flow 1:
Average throughput: 81.23 Mbit/s
95th percentile per-packet one-way delay: 13.991 ms
Loss rate: 4.79%
-- Flow 2:
Average throughput: 4.01 Mbit/s
95th percentile per-packet one-way delay: 13.863 ms
Loss rate: 4.35%
-- Flow 3:
Average throughput: 7.34 Mbit/s
95th percentile per-packet one-way delay: 16.383 ms
Loss rate: 6.31%
```
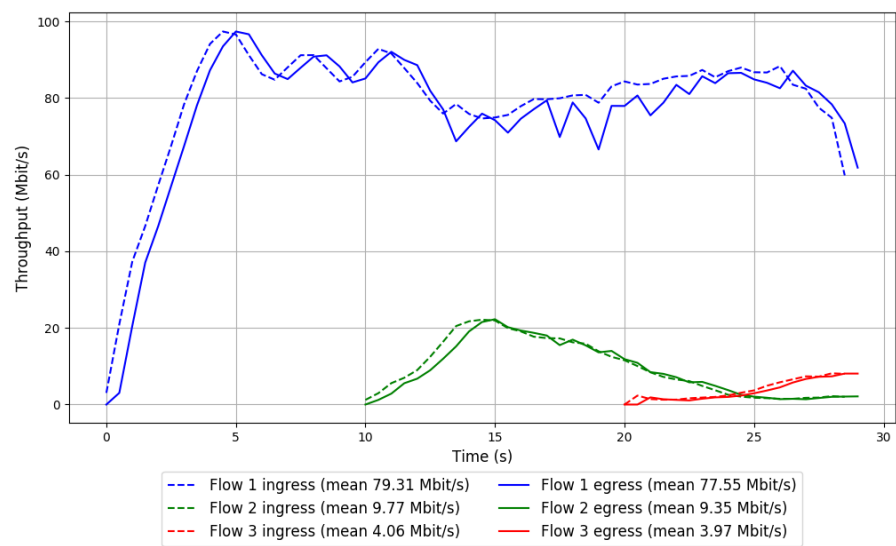
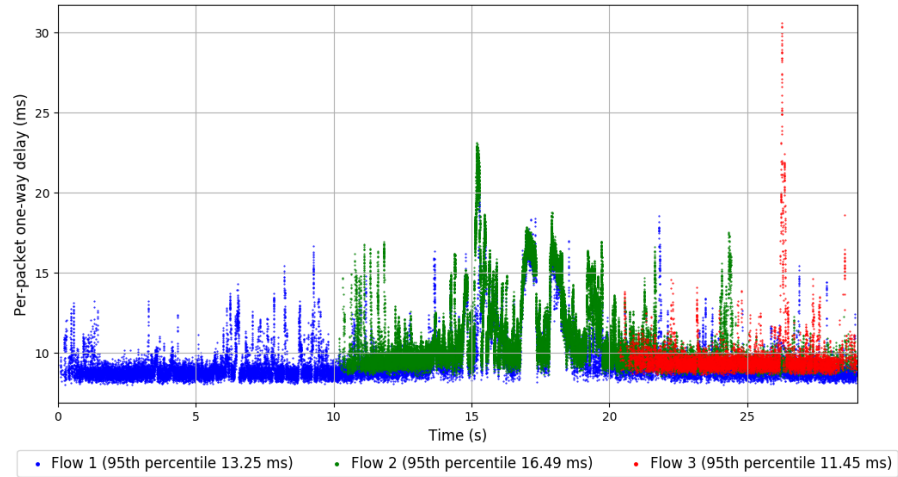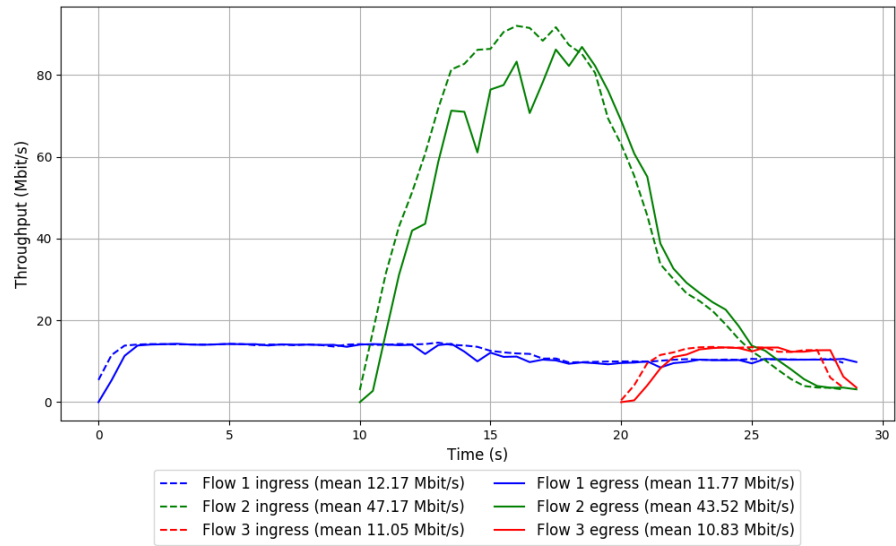Run 3: Report of Indigo-MusesD — Data Link

- - - Flow 1 ingress (mean 85.33 Mbit/s) ——— Flow 1 egress (mean 81.23 Mbit/s)
- - - Flow 2 ingress (mean 4.19 Mbit/s) ——— Flow 2 egress (mean 4.01 Mbit/s)
- - - Flow 3 ingress (mean 7.39 Mbit/s) ——— Flow 3 egress (mean 7.34 Mbit/s)

• Flow 1 (95th percentile 13.99 ms)   • Flow 2 (95th percentile 13.86 ms)   • Flow 3 (95th percentile 16.38 ms)

```
Run 4: Statistics of Indigo-MusesD

Start at: 2019-01-21 12:17:46
End at: 2019-01-21 12:18:16
Local clock offset: 1.729 ms
Remote clock offset: -9.29 ms


# Below is generated by plot.py at 2019-01-21 13:15:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 84.80 Mbit/s
95th percentile per-packet one-way delay: 12.367 ms
Loss rate: 2.36%
-- Flow 1:
Average throughput: 77.55 Mbit/s
95th percentile per-packet one-way delay: 12.260 ms
Loss rate: 2.21%
-- Flow 2:
Average throughput: 9.35 Mbit/s
95th percentile per-packet one-way delay: 13.314 ms
Loss rate: 4.27%
-- Flow 3:
Average throughput: 3.97 Mbit/s
95th percentile per-packet one-way delay: 11.984 ms
Loss rate: 2.17%
```
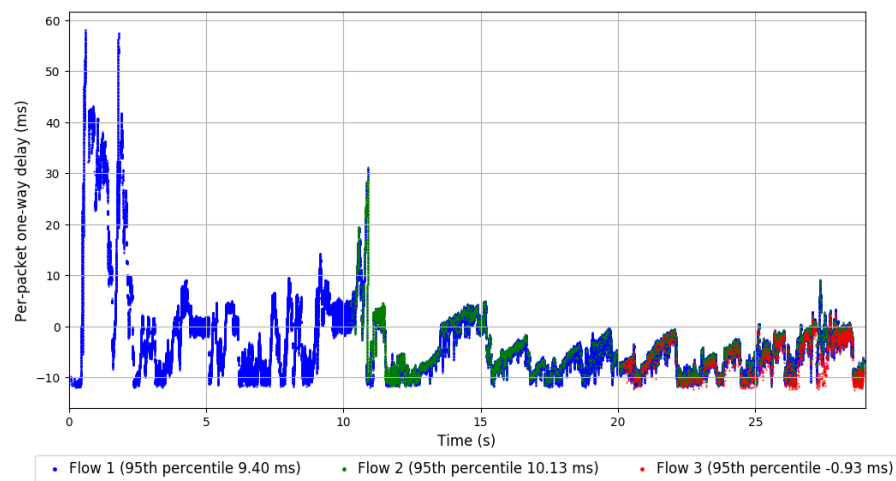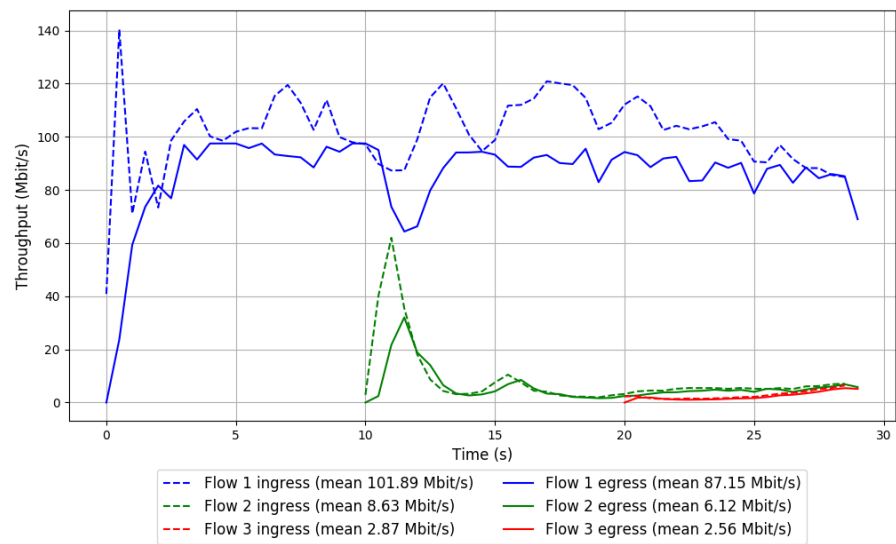
Run 4: Report of Indigo-MusesD — Data Link

Flow 1 ingress (mean 79.31 Mbit/s) --- Flow 1 egress (mean 77.55 Mbit/s)
Flow 2 ingress (mean 9.77 Mbit/s) --- Flow 2 egress (mean 9.35 Mbit/s)
Flow 3 ingress (mean 4.06 Mbit/s) --- Flow 3 egress (mean 3.97 Mbit/s)

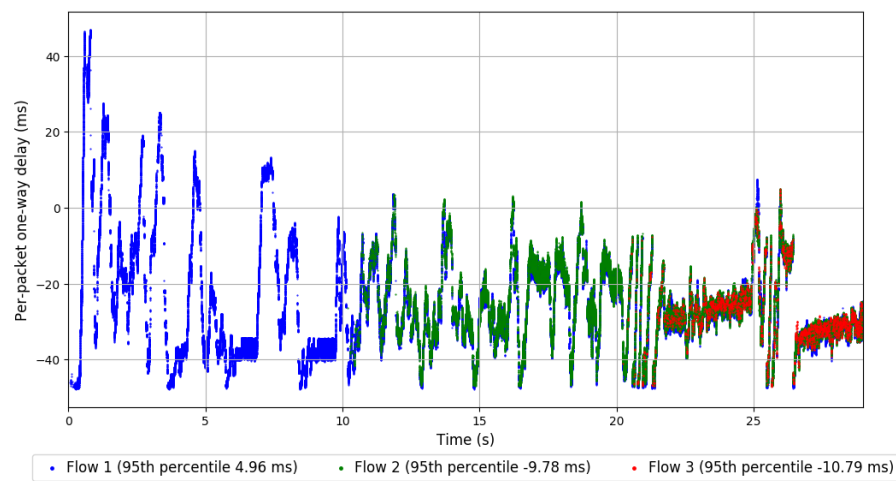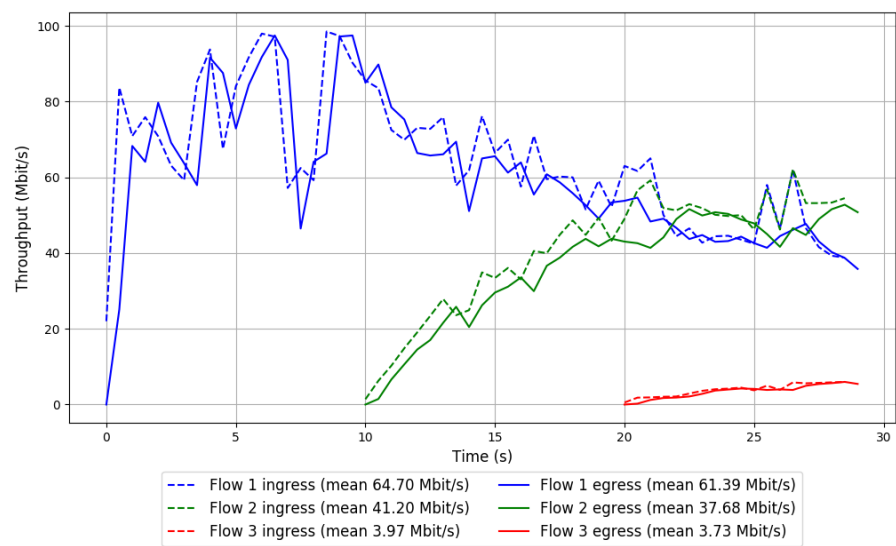Flow 1 (95th percentile 12.26 ms)   Flow 2 (95th percentile 13.31 ms)   Flow 3 (95th percentile 11.98 ms)

```
Run 5: Statistics of Indigo-MusesD

Start at: 2019-01-21 12:43:58
End at: 2019-01-21 12:44:28
Local clock offset: -0.716 ms
Remote clock offset: -9.375 ms


# Below is generated by plot.py at 2019-01-21 13:15:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 43.33 Mbit/s
95th percentile per-packet one-way delay: 16.087 ms
Loss rate: 6.15%
-- Flow 1:
Average throughput: 11.77 Mbit/s
95th percentile per-packet one-way delay: 13.254 ms
Loss rate: 3.31%
-- Flow 2:
Average throughput: 43.52 Mbit/s
95th percentile per-packet one-way delay: 16.487 ms
Loss rate: 7.73%
-- Flow 3:
Average throughput: 10.83 Mbit/s
95th percentile per-packet one-way delay: 11.449 ms
Loss rate: 1.93%
```
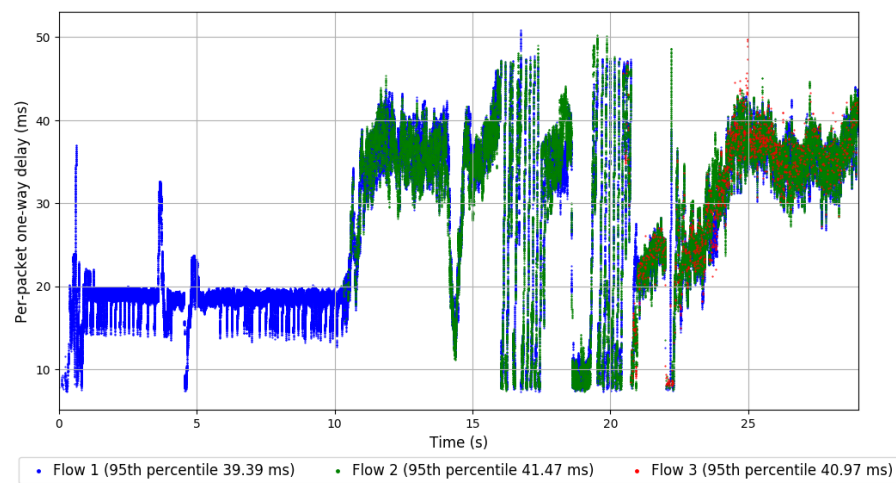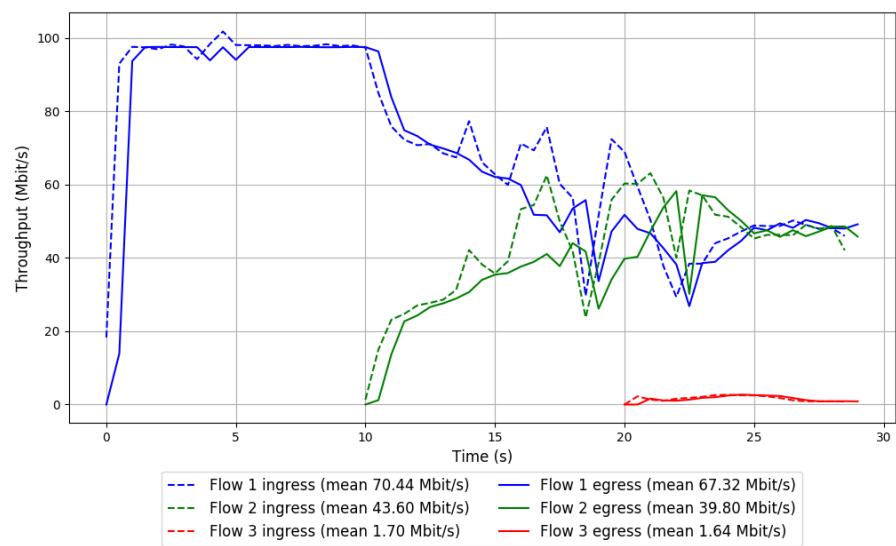
Run 5: Report of Indigo-MusesD — Data Link

```
Run 1: Statistics of Indigo-MusesT

Start at: 2019-01-21 11:19:10
End at: 2019-01-21 11:19:40
Local clock offset: 0.436 ms
Remote clock offset: -24.521 ms


# Below is generated by plot.py at 2019-01-21 13:15:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.89 Mbit/s
95th percentile per-packet one-way delay: 9.310 ms
Loss rate: 15.18%
-- Flow 1:
Average throughput: 87.15 Mbit/s
95th percentile per-packet one-way delay: 9.404 ms
Loss rate: 14.46%
-- Flow 2:
Average throughput: 6.12 Mbit/s
95th percentile per-packet one-way delay: 10.131 ms
Loss rate: 29.08%
-- Flow 3:
Average throughput: 2.56 Mbit/s
95th percentile per-packet one-way delay: -0.931 ms
Loss rate: 10.86%
```

Run 1: Report of Indigo-MusesT — Data Link

- - - Flow 1 ingress (mean 101.89 Mbit/s) —— Flow 1 egress (mean 87.15 Mbit/s)
- - - Flow 2 ingress (mean 8.63 Mbit/s) —— Flow 2 egress (mean 6.12 Mbit/s)
- - - Flow 3 ingress (mean 2.87 Mbit/s) —— Flow 3 egress (mean 2.56 Mbit/s)

- Flow 1 (95th percentile 9.40 ms) • Flow 2 (95th percentile 10.13 ms) • Flow 3 (95th percentile -0.93 ms)

```
Run 2: Statistics of Indigo-MusesT

Start at: 2019-01-21 11:46:11
End at: 2019-01-21 11:46:41
Local clock offset: 2.386 ms
Remote clock offset: -59.484 ms

# Below is generated by plot.py at 2019-01-21 13:15:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 86.95 Mbit/s
95th percentile per-packet one-way delay: -0.475 ms
Loss rate: 6.07%
-- Flow 1:
Average throughput: 61.39 Mbit/s
95th percentile per-packet one-way delay: 4.955 ms
Loss rate: 5.05%
-- Flow 2:
Average throughput: 37.68 Mbit/s
95th percentile per-packet one-way delay: -9.781 ms
Loss rate: 8.54%
-- Flow 3:
Average throughput: 3.73 Mbit/s
95th percentile per-packet one-way delay: -10.792 ms
Loss rate: 5.97%
```
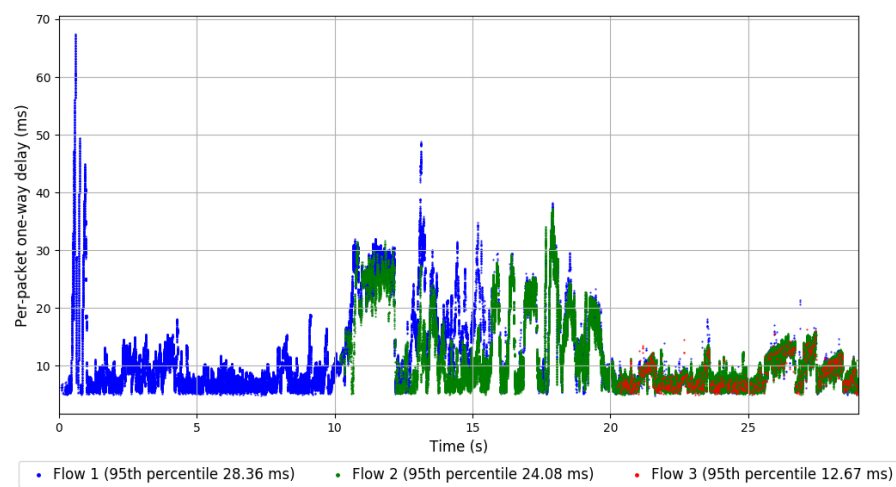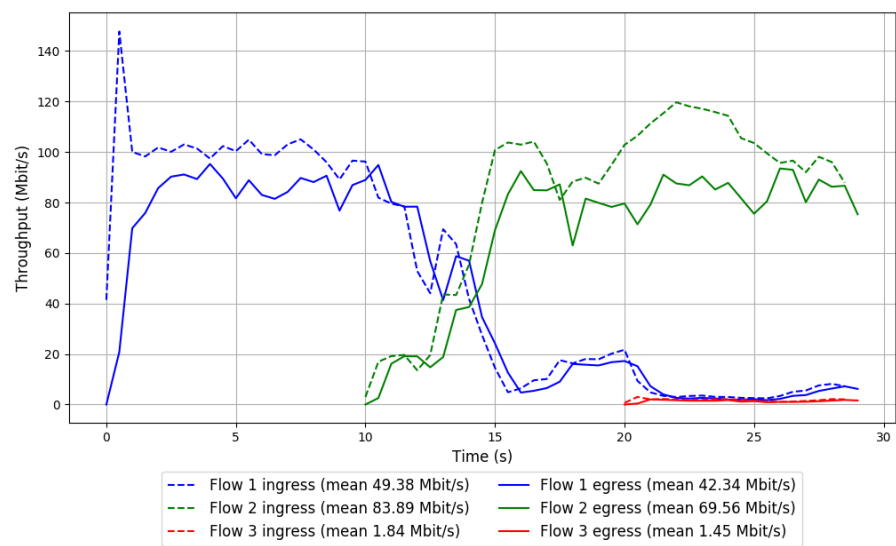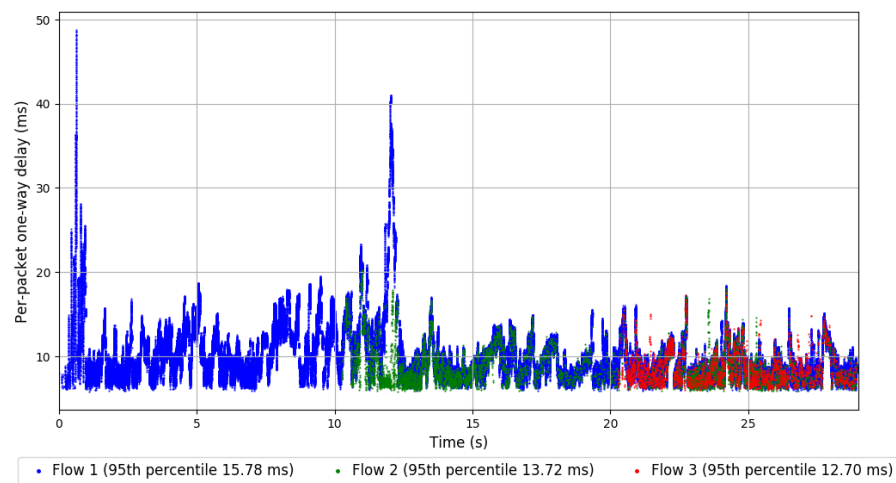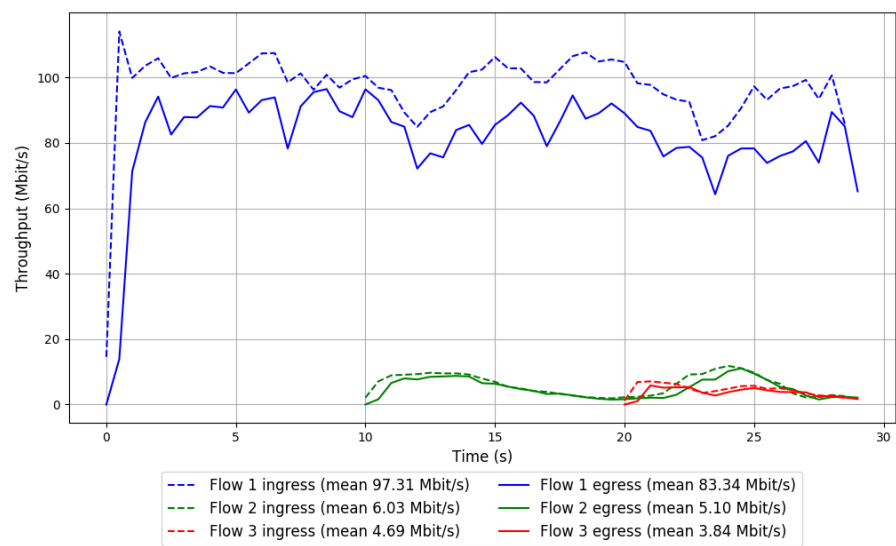
Run 2: Report of Indigo-MusesT — Data Link

```
Run 3: Statistics of Indigo-MusesT

Start at: 2019-01-21 12:12:38
End at: 2019-01-21 12:13:08
Local clock offset: 0.513 ms
Remote clock offset: -9.023 ms


# Below is generated by plot.py at 2019-01-21 13:15:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.54 Mbit/s
95th percentile per-packet one-way delay: 40.041 ms
Loss rate: 5.54%
-- Flow 1:
Average throughput: 67.32 Mbit/s
95th percentile per-packet one-way delay: 39.387 ms
Loss rate: 4.32%
-- Flow 2:
Average throughput: 39.80 Mbit/s
95th percentile per-packet one-way delay: 41.469 ms
Loss rate: 8.62%
-- Flow 3:
Average throughput: 1.64 Mbit/s
95th percentile per-packet one-way delay: 40.969 ms
Loss rate: 3.54%
```

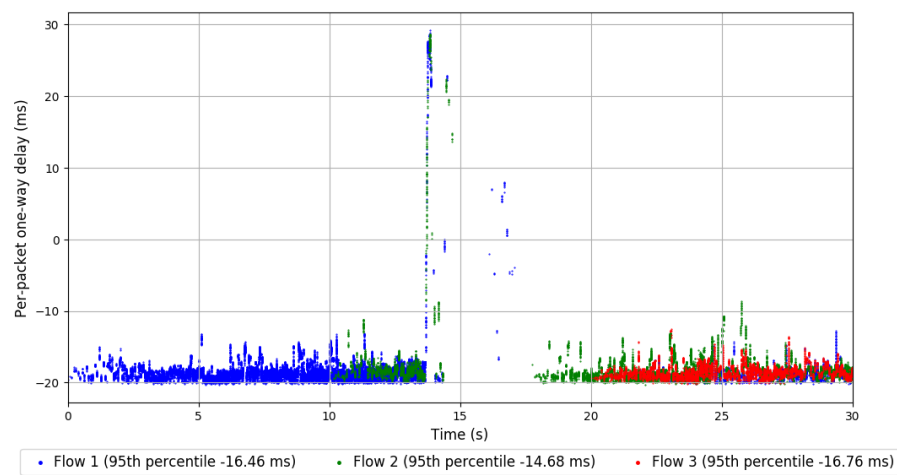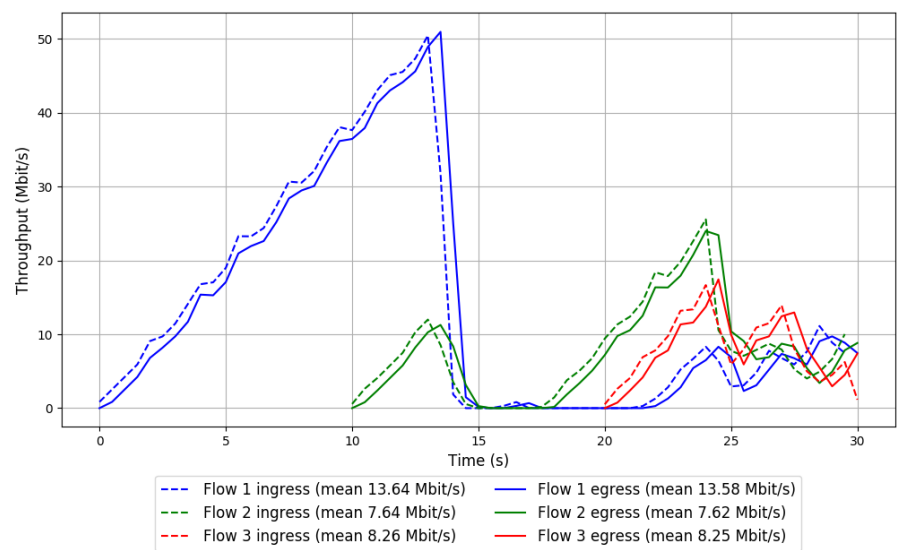Run 3: Report of Indigo-MusesT — Data Link

```
Run 4: Statistics of Indigo-MusesT

Start at: 2019-01-21 12:38:53
End at: 2019-01-21 12:39:23
Local clock offset: 2.607 ms
Remote clock offset: -9.69 ms


# Below is generated by plot.py at 2019-01-21 13:16:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 88.01 Mbit/s
95th percentile per-packet one-way delay: 26.736 ms
Loss rate: 15.77%
-- Flow 1:
Average throughput: 42.34 Mbit/s
95th percentile per-packet one-way delay: 28.364 ms
Loss rate: 14.25%
-- Flow 2:
Average throughput: 69.56 Mbit/s
95th percentile per-packet one-way delay: 24.079 ms
Loss rate: 17.08%
-- Flow 3:
Average throughput: 1.45 Mbit/s
95th percentile per-packet one-way delay: 12.669 ms
Loss rate: 21.49%
```
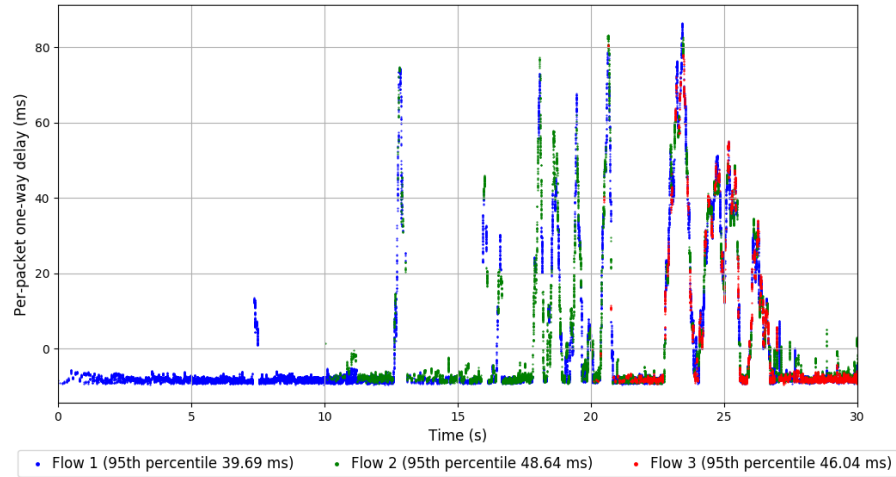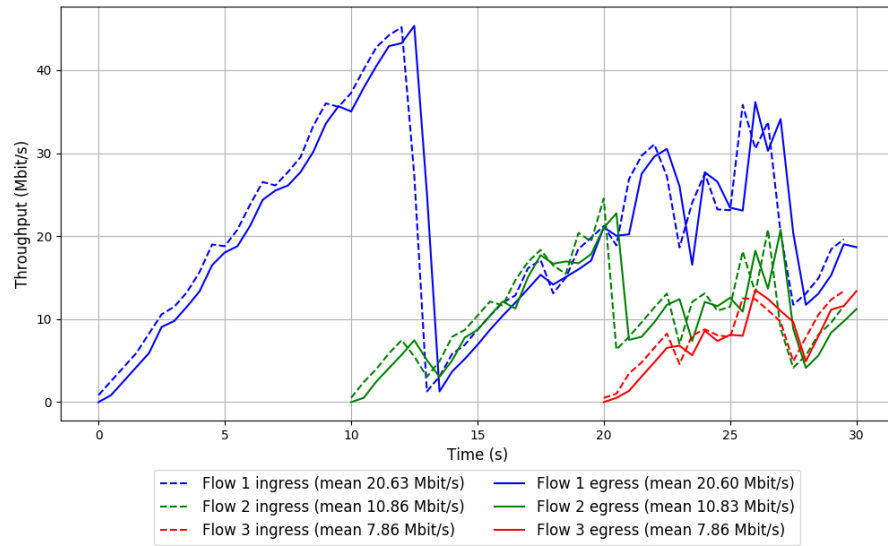
Run 4: Report of Indigo-MusesT — Data Link

- - - Flow 1 ingress (mean 49.38 Mbit/s) ——— Flow 1 egress (mean 42.34 Mbit/s)
- - - Flow 2 ingress (mean 83.89 Mbit/s) ——— Flow 2 egress (mean 69.56 Mbit/s)
- - - Flow 3 ingress (mean 1.84 Mbit/s) ——— Flow 3 egress (mean 1.45 Mbit/s)

- Flow 1 (95th percentile 28.36 ms)   - Flow 2 (95th percentile 24.08 ms)   - Flow 3 (95th percentile 12.67 ms)

```
Run 5: Statistics of Indigo-MusesT

Start at: 2019-01-21 13:05:03
End at: 2019-01-21 13:05:33
Local clock offset: 1.918 ms
Remote clock offset: -9.188 ms


# Below is generated by plot.py at 2019-01-21 13:16:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 87.81 Mbit/s
95th percentile per-packet one-way delay: 15.681 ms
Loss rate: 14.45%
-- Flow 1:
Average throughput: 83.34 Mbit/s
95th percentile per-packet one-way delay: 15.778 ms
Loss rate: 14.35%
-- Flow 2:
Average throughput: 5.10 Mbit/s
95th percentile per-packet one-way delay: 13.718 ms
Loss rate: 15.57%
-- Flow 3:
Average throughput: 3.84 Mbit/s
95th percentile per-packet one-way delay: 12.701 ms
Loss rate: 18.21%
```
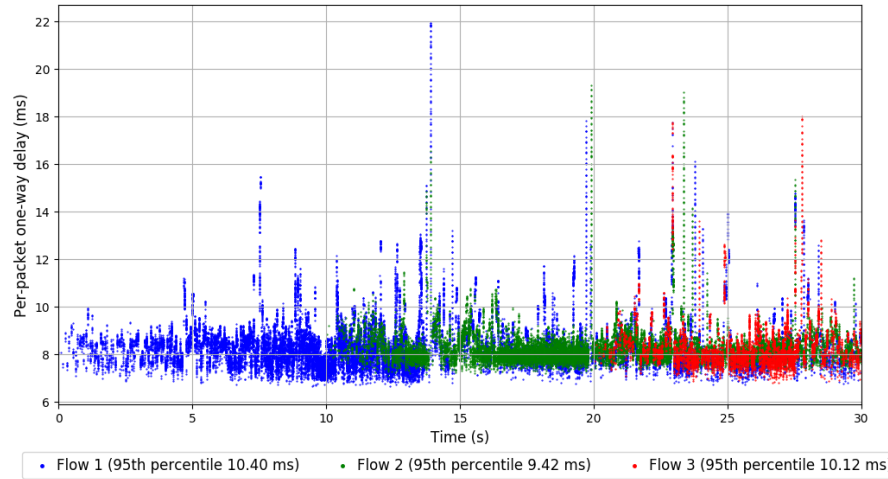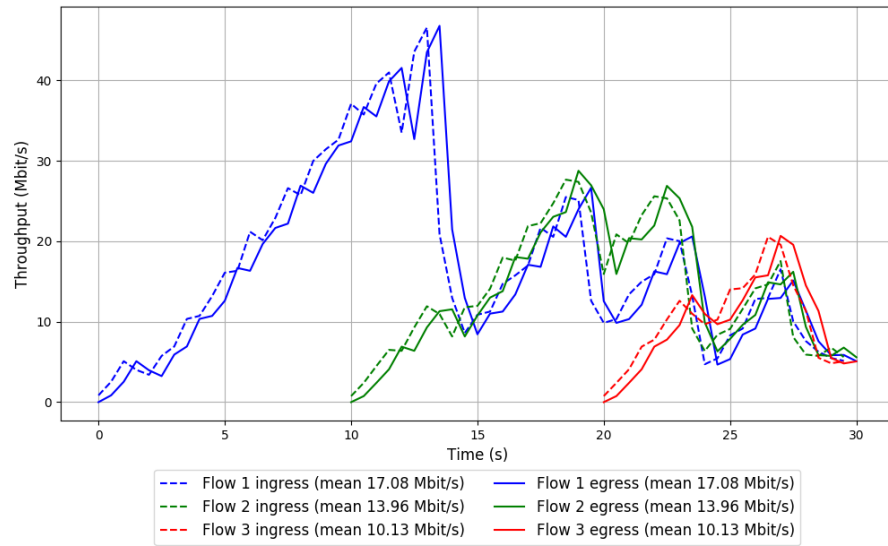
Run 5: Report of Indigo-MusesT — Data Link

```
Run 1: Statistics of LEDBAT

Start at: 2019-01-21 11:00:31
End at: 2019-01-21 11:01:01
Local clock offset: -0.663 ms
Remote clock offset: -32.082 ms

# Below is generated by plot.py at 2019-01-21 13:16:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 21.36 Mbit/s
95th percentile per-packet one-way delay: -16.110 ms
Loss rate: 0.40%
-- Flow 1:
Average throughput: 13.58 Mbit/s
95th percentile per-packet one-way delay: -16.459 ms
Loss rate: 0.49%
-- Flow 2:
Average throughput: 7.62 Mbit/s
95th percentile per-packet one-way delay: -14.677 ms
Loss rate: 0.33%
-- Flow 3:
Average throughput: 8.25 Mbit/s
95th percentile per-packet one-way delay: -16.762 ms
Loss rate: 0.11%
```
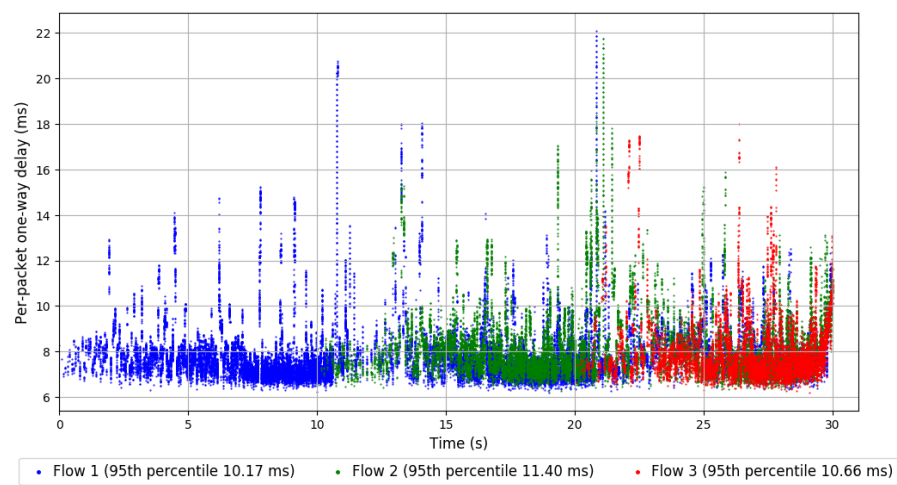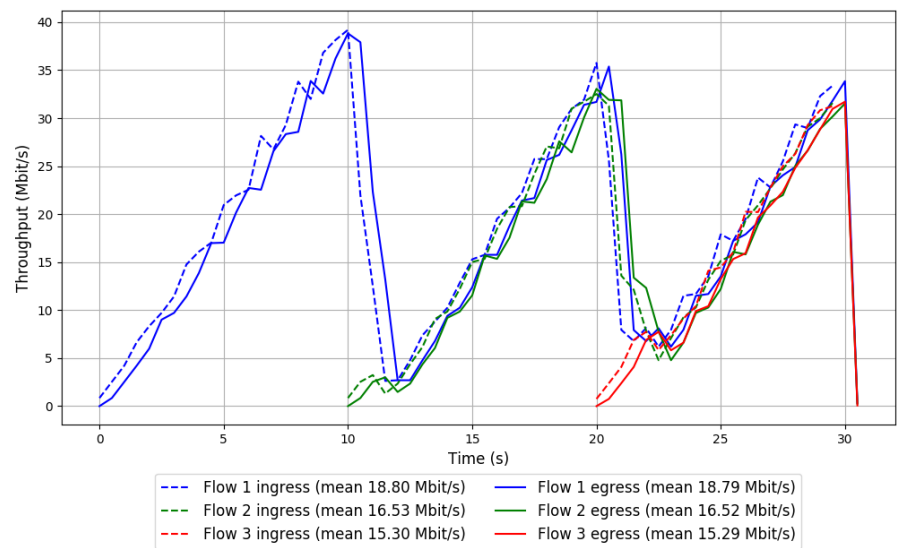
Run 1: Report of LEDBAT — Data Link

```
Run 2: Statistics of LEDBAT

Start at: 2019-01-21 11:26:59
End at: 2019-01-21 11:27:29
Local clock offset: -0.498 ms
Remote clock offset: -23.208 ms

# Below is generated by plot.py at 2019-01-21 13:16:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 30.42 Mbit/s
95th percentile per-packet one-way delay: 44.454 ms
Loss rate: 0.16%
-- Flow 1:
Average throughput: 20.60 Mbit/s
95th percentile per-packet one-way delay: 39.691 ms
Loss rate: 0.14%
-- Flow 2:
Average throughput: 10.83 Mbit/s
95th percentile per-packet one-way delay: 48.636 ms
Loss rate: 0.26%
-- Flow 3:
Average throughput: 7.86 Mbit/s
95th percentile per-packet one-way delay: 46.040 ms
Loss rate: 0.07%
```
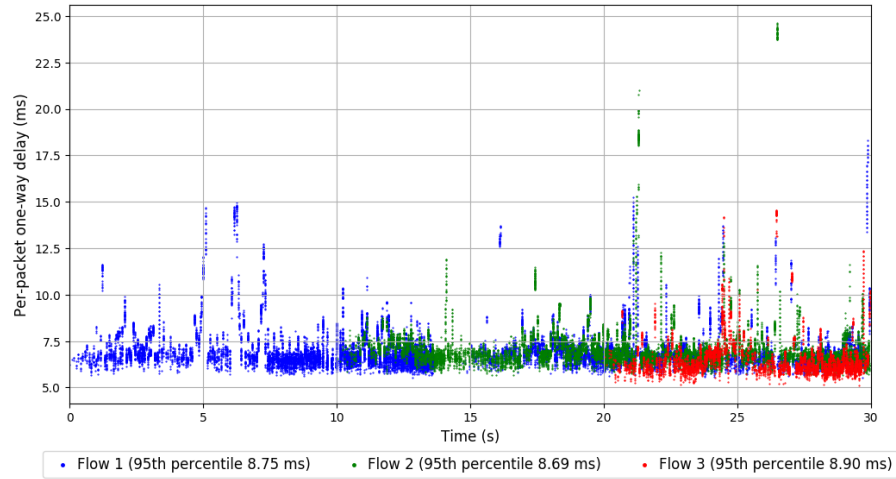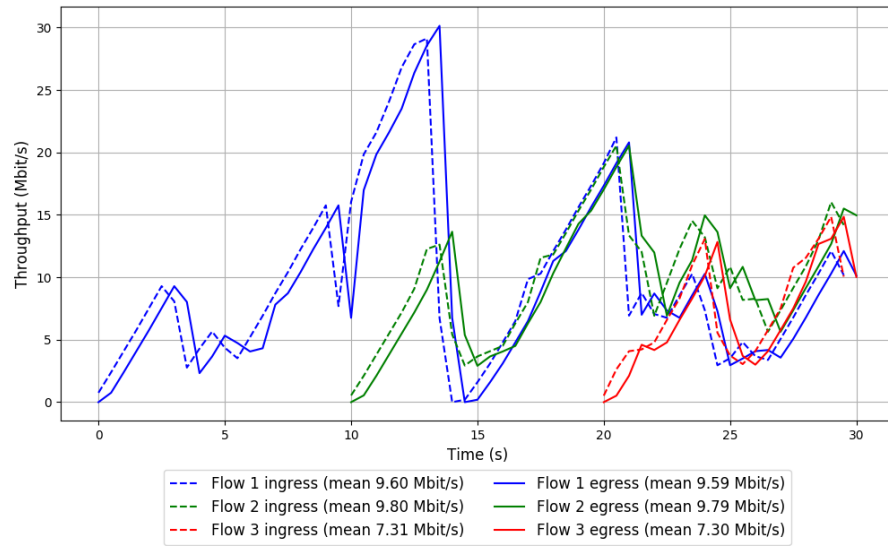
Run 2: Report of LEDBAT — Data Link

```
Run 3: Statistics of LEDBAT

Start at: 2019-01-21 11:53:33
End at: 2019-01-21 11:54:03
Local clock offset: -2.007 ms
Remote clock offset: -10.573 ms


# Below is generated by plot.py at 2019-01-21 13:16:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 29.69 Mbit/s
95th percentile per-packet one-way delay: 10.066 ms
Loss rate: 0.05%
-- Flow 1:
Average throughput: 17.08 Mbit/s
95th percentile per-packet one-way delay: 10.402 ms
Loss rate: 0.05%
-- Flow 2:
Average throughput: 13.96 Mbit/s
95th percentile per-packet one-way delay: 9.421 ms
Loss rate: 0.05%
-- Flow 3:
Average throughput: 10.13 Mbit/s
95th percentile per-packet one-way delay: 10.122 ms
Loss rate: 0.06%
```
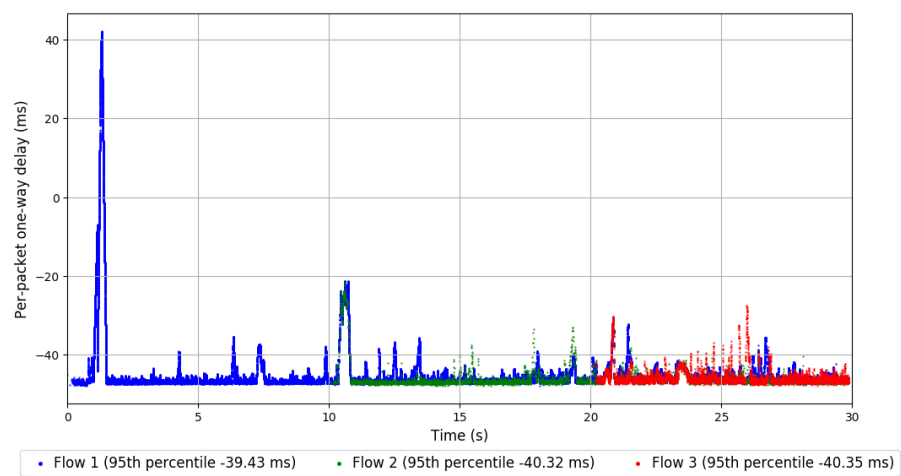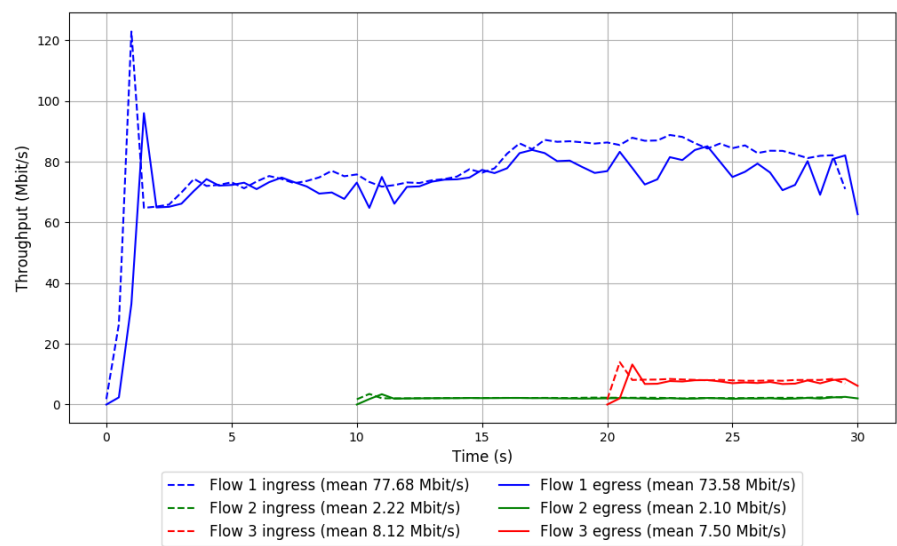
Run 3: Report of LEDBAT — Data Link

Flow 1 ingress (mean 17.08 Mbit/s) --- Flow 1 egress (mean 17.08 Mbit/s)
Flow 2 ingress (mean 13.96 Mbit/s) --- Flow 2 egress (mean 13.96 Mbit/s)
Flow 3 ingress (mean 10.13 Mbit/s) --- Flow 3 egress (mean 10.13 Mbit/s)

Flow 1 (95th percentile 10.40 ms)   Flow 2 (95th percentile 9.42 ms)   Flow 3 (95th percentile 10.12 ms)

```
Run 4: Statistics of LEDBAT

Start at: 2019-01-21 12:20:14
End at: 2019-01-21 12:20:44
Local clock offset: 1.667 ms
Remote clock offset: -9.512 ms


# Below is generated by plot.py at 2019-01-21 13:16:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 34.88 Mbit/s
95th percentile per-packet one-way delay: 10.623 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 18.79 Mbit/s
95th percentile per-packet one-way delay: 10.172 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 16.52 Mbit/s
95th percentile per-packet one-way delay: 11.404 ms
Loss rate: 0.03%
-- Flow 3:
Average throughput: 15.29 Mbit/s
95th percentile per-packet one-way delay: 10.663 ms
Loss rate: 0.01%
```

Run 4: Report of LEDBAT — Data Link

```
Run 5: Statistics of LEDBAT

Start at: 2019-01-21 12:46:25
End at: 2019-01-21 12:46:55
Local clock offset: 2.695 ms
Remote clock offset: -8.987 ms


# Below is generated by plot.py at 2019-01-21 13:16:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 18.51 Mbit/s
95th percentile per-packet one-way delay: 8.750 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 9.59 Mbit/s
95th percentile per-packet one-way delay: 8.748 ms
Loss rate: 0.16%
-- Flow 2:
Average throughput: 9.79 Mbit/s
95th percentile per-packet one-way delay: 8.689 ms
Loss rate: 0.09%
-- Flow 3:
Average throughput: 7.30 Mbit/s
95th percentile per-packet one-way delay: 8.897 ms
Loss rate: 0.13%
```
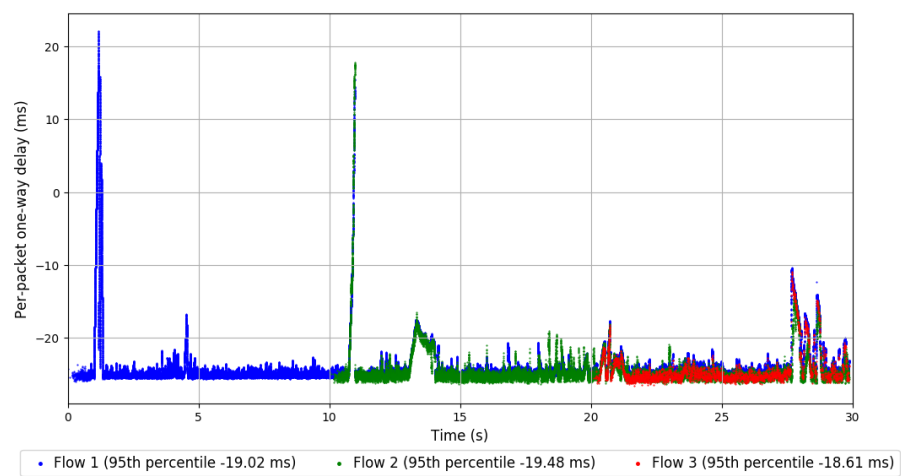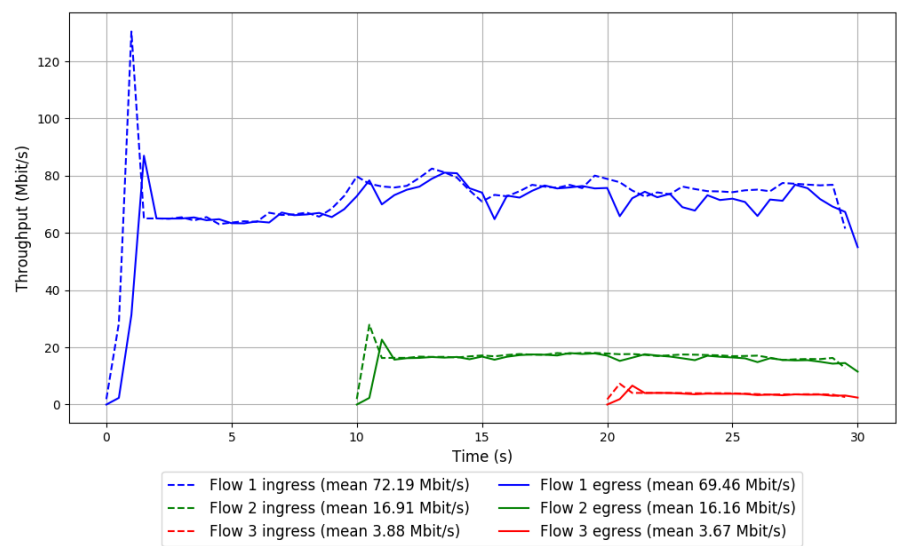
Run 5: Report of LEDBAT — Data Link

Flow 1 ingress (mean 9.60 Mbit/s)   Flow 1 egress (mean 9.59 Mbit/s)
Flow 2 ingress (mean 9.80 Mbit/s)   Flow 2 egress (mean 9.79 Mbit/s)
Flow 3 ingress (mean 7.31 Mbit/s)   Flow 3 egress (mean 7.30 Mbit/s)

Flow 1 (95th percentile 8.75 ms)   Flow 2 (95th percentile 8.69 ms)   Flow 3 (95th percentile 8.90 ms)

```
Run 1: Statistics of PCC-Allegro

Start at: 2019-01-21 11:15:31
End at: 2019-01-21 11:16:01
Local clock offset: 1.193 ms
Remote clock offset: -59.281 ms


# Below is generated by plot.py at 2019-01-21 13:16:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 77.46 Mbit/s
95th percentile per-packet one-way delay: -39.455 ms
Loss rate: 5.35%
-- Flow 1:
Average throughput: 73.58 Mbit/s
95th percentile per-packet one-way delay: -39.427 ms
Loss rate: 5.28%
-- Flow 2:
Average throughput: 2.10 Mbit/s
95th percentile per-packet one-way delay: -40.323 ms
Loss rate: 5.29%
-- Flow 3:
Average throughput: 7.50 Mbit/s
95th percentile per-packet one-way delay: -40.352 ms
Loss rate: 7.62%
```
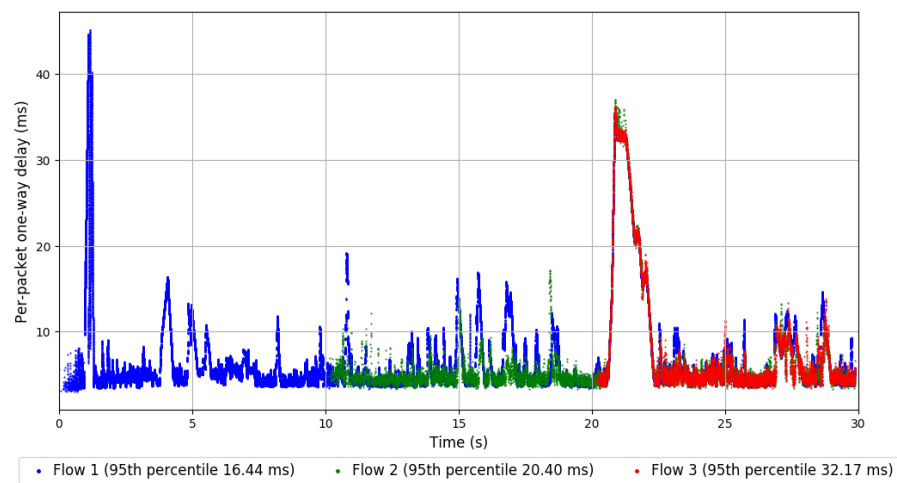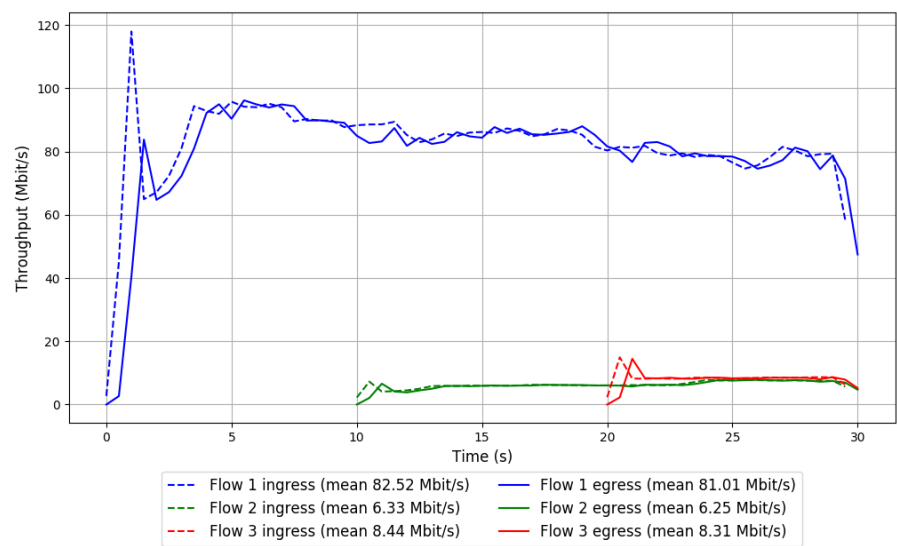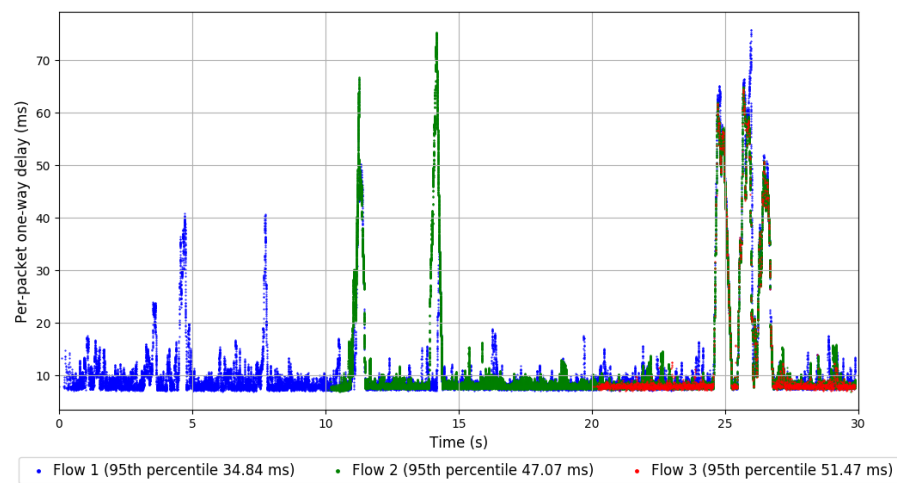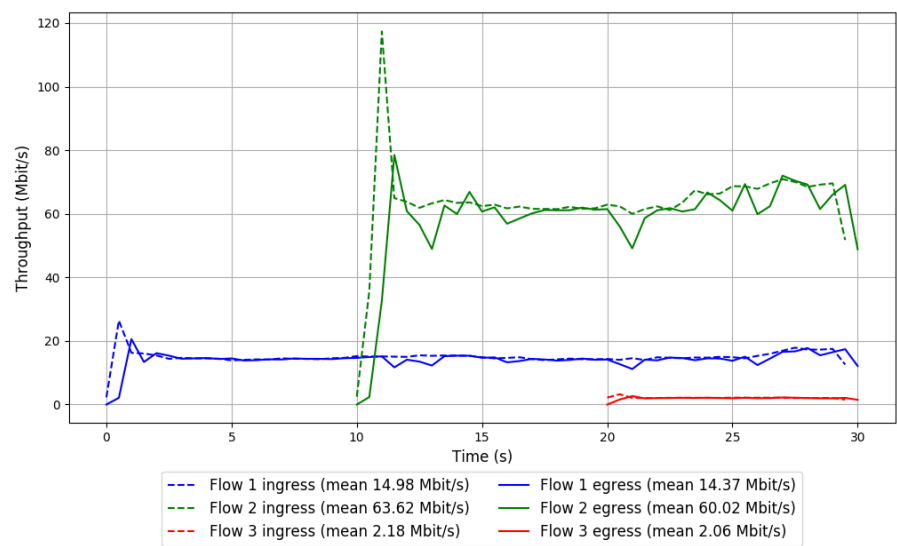
Run 1: Report of PCC-Allegro — Data Link

- - - Flow 1 ingress (mean 77.68 Mbit/s)   —— Flow 1 egress (mean 73.58 Mbit/s)
- - - Flow 2 ingress (mean 2.22 Mbit/s)   —— Flow 2 egress (mean 2.10 Mbit/s)
- - - Flow 3 ingress (mean 8.12 Mbit/s)   —— Flow 3 egress (mean 7.50 Mbit/s)

- Flow 1 (95th percentile -39.43 ms)   • Flow 2 (95th percentile -40.32 ms)   • Flow 3 (95th percentile -40.35 ms)

```
Run 2: Statistics of PCC-Allegro

Start at: 2019-01-21 11:42:29
End at: 2019-01-21 11:42:59
Local clock offset: -6.665 ms
Remote clock offset: -46.817 ms


# Below is generated by plot.py at 2019-01-21 13:16:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 81.41 Mbit/s
95th percentile per-packet one-way delay: -19.077 ms
Loss rate: 3.90%
-- Flow 1:
Average throughput: 69.46 Mbit/s
95th percentile per-packet one-way delay: -19.019 ms
Loss rate: 3.79%
-- Flow 2:
Average throughput: 16.16 Mbit/s
95th percentile per-packet one-way delay: -19.485 ms
Loss rate: 4.41%
-- Flow 3:
Average throughput: 3.67 Mbit/s
95th percentile per-packet one-way delay: -18.611 ms
Loss rate: 5.43%
```

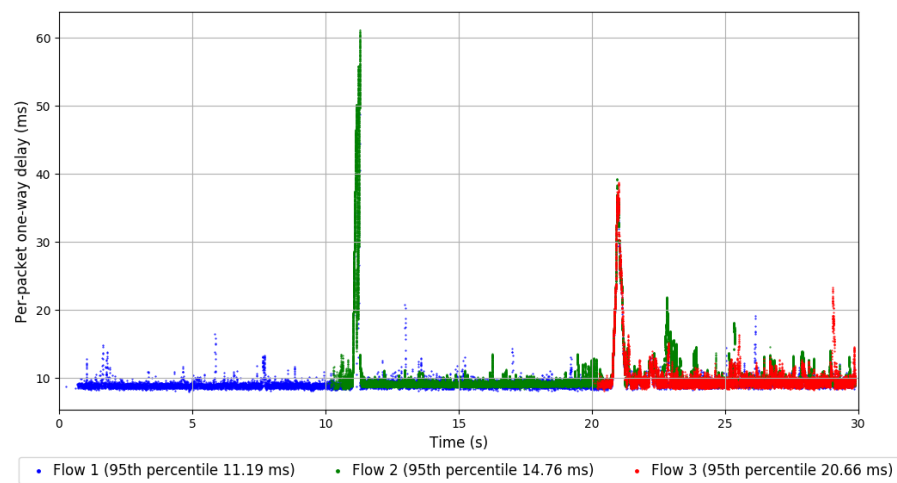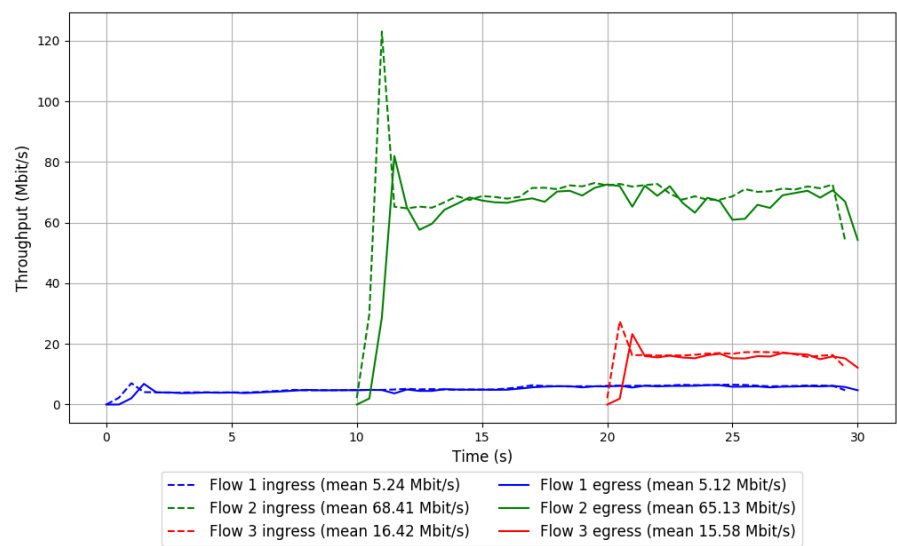# Run 2: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 72.19 Mbit/s) — — — — Flow 1 egress (mean 69.46 Mbit/s)
Flow 2 ingress (mean 16.91 Mbit/s) — — — — Flow 2 egress (mean 16.16 Mbit/s)
Flow 3 ingress (mean 3.88 Mbit/s) — — — — Flow 3 egress (mean 3.67 Mbit/s)

Flow 1 (95th percentile -19.02 ms) · Flow 2 (95th percentile -19.48 ms) · Flow 3 (95th percentile -18.61 ms)

```
Run 3: Statistics of PCC-Allegro

Start at: 2019-01-21 12:08:45
End at: 2019-01-21 12:09:15
Local clock offset: 1.576 ms
Remote clock offset: -12.243 ms


# Below is generated by plot.py at 2019-01-21 13:16:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 87.91 Mbit/s
95th percentile per-packet one-way delay: 17.594 ms
Loss rate: 1.80%
-- Flow 1:
Average throughput: 81.01 Mbit/s
95th percentile per-packet one-way delay: 16.439 ms
Loss rate: 1.83%
-- Flow 2:
Average throughput: 6.25 Mbit/s
95th percentile per-packet one-way delay: 20.396 ms
Loss rate: 1.28%
-- Flow 3:
Average throughput: 8.31 Mbit/s
95th percentile per-packet one-way delay: 32.171 ms
Loss rate: 1.63%
```
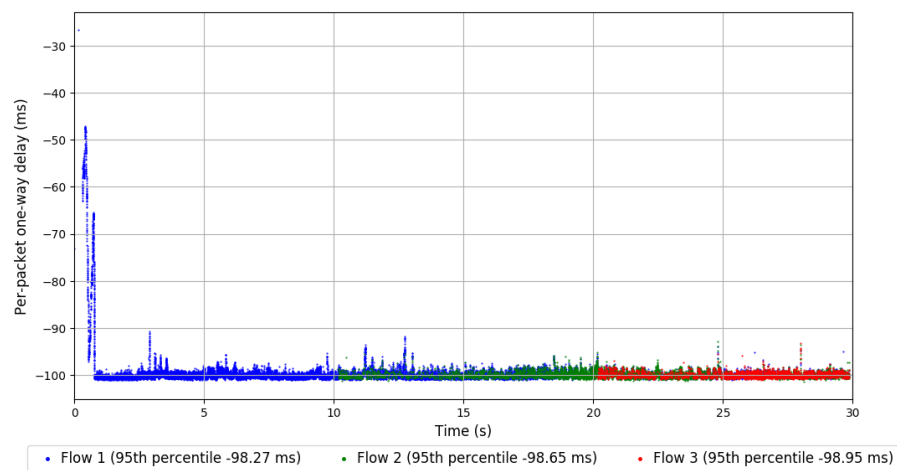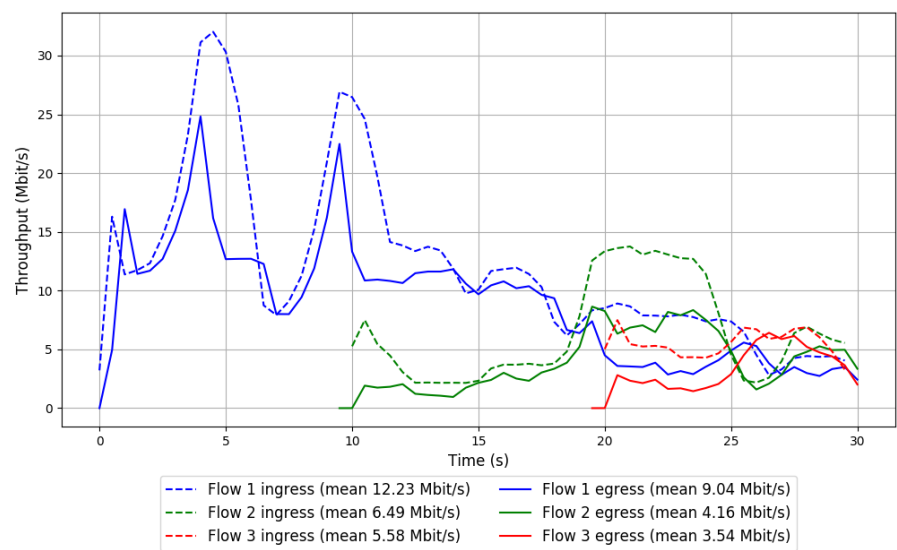
Run 3: Report of PCC-Allegro — Data Link

- - - Flow 1 ingress (mean 82.52 Mbit/s) —— Flow 1 egress (mean 81.01 Mbit/s)
- - - Flow 2 ingress (mean 6.33 Mbit/s) —— Flow 2 egress (mean 6.25 Mbit/s)
- - - Flow 3 ingress (mean 8.44 Mbit/s) —— Flow 3 egress (mean 8.31 Mbit/s)

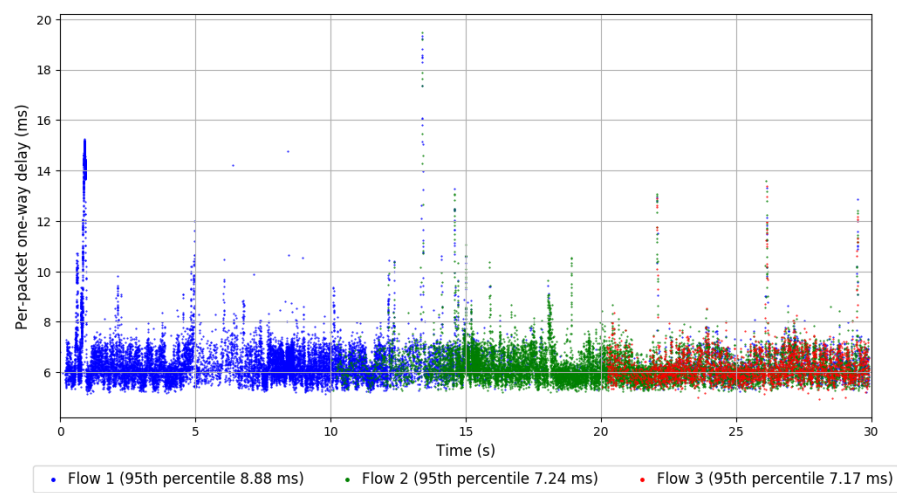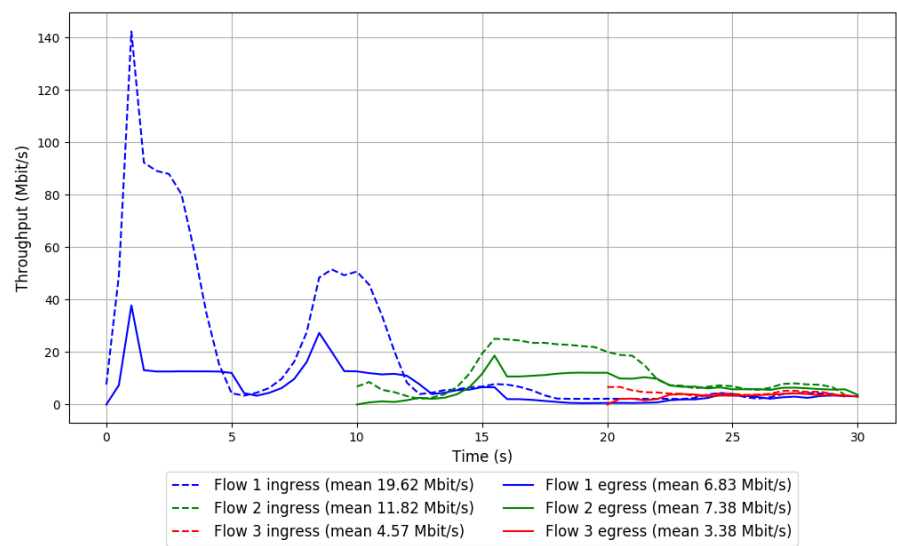• Flow 1 (95th percentile 16.44 ms) • Flow 2 (95th percentile 20.40 ms) • Flow 3 (95th percentile 32.17 ms)

```
Run 4: Statistics of PCC-Allegro

Start at: 2019-01-21 12:35:03
End at: 2019-01-21 12:35:33
Local clock offset: 0.612 ms
Remote clock offset: -9.613 ms


# Below is generated by plot.py at 2019-01-21 13:16:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 54.96 Mbit/s
95th percentile per-packet one-way delay: 45.429 ms
Loss rate: 5.25%
-- Flow 1:
Average throughput: 14.37 Mbit/s
95th percentile per-packet one-way delay: 34.839 ms
Loss rate: 4.04%
-- Flow 2:
Average throughput: 60.02 Mbit/s
95th percentile per-packet one-way delay: 47.069 ms
Loss rate: 5.67%
-- Flow 3:
Average throughput: 2.06 Mbit/s
95th percentile per-packet one-way delay: 51.465 ms
Loss rate: 5.27%
```
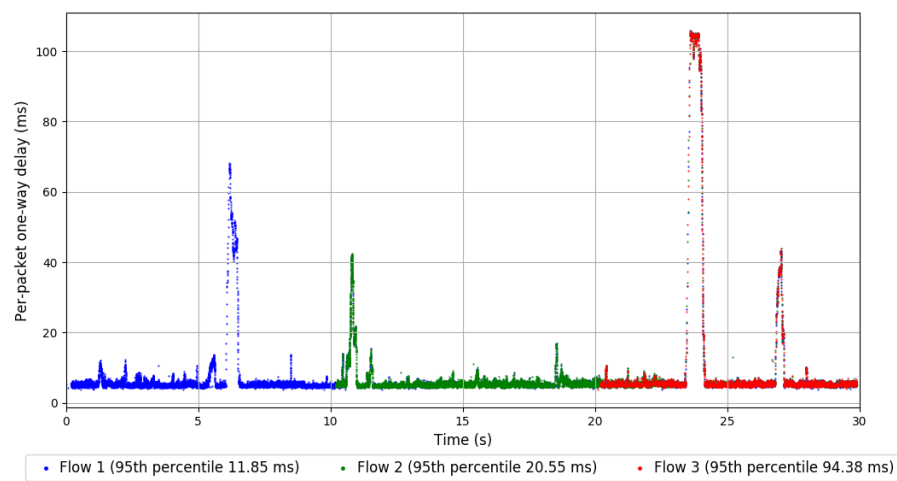
Run 4: Report of PCC-Allegro — Data Link

```
Run 5: Statistics of PCC-Allegro

Start at: 2019-01-21 13:01:16
End at: 2019-01-21 13:01:46
Local clock offset: 0.053 ms
Remote clock offset: -8.292 ms


# Below is generated by plot.py at 2019-01-21 13:16:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 53.99 Mbit/s
95th percentile per-packet one-way delay: 14.579 ms
Loss rate: 4.67%
-- Flow 1:
Average throughput: 5.12 Mbit/s
95th percentile per-packet one-way delay: 11.190 ms
Loss rate: 3.15%
-- Flow 2:
Average throughput: 65.13 Mbit/s
95th percentile per-packet one-way delay: 14.761 ms
Loss rate: 4.79%
-- Flow 3:
Average throughput: 15.58 Mbit/s
95th percentile per-packet one-way delay: 20.659 ms
Loss rate: 5.06%
```

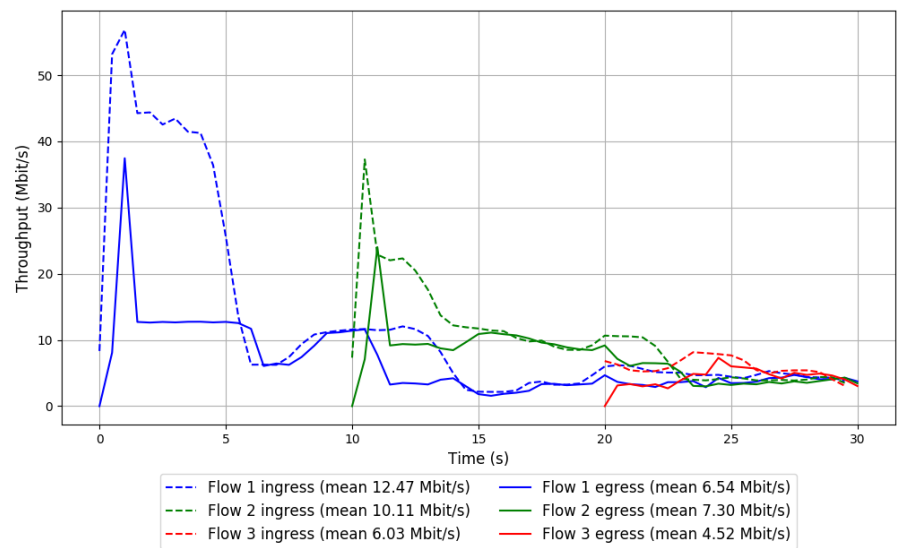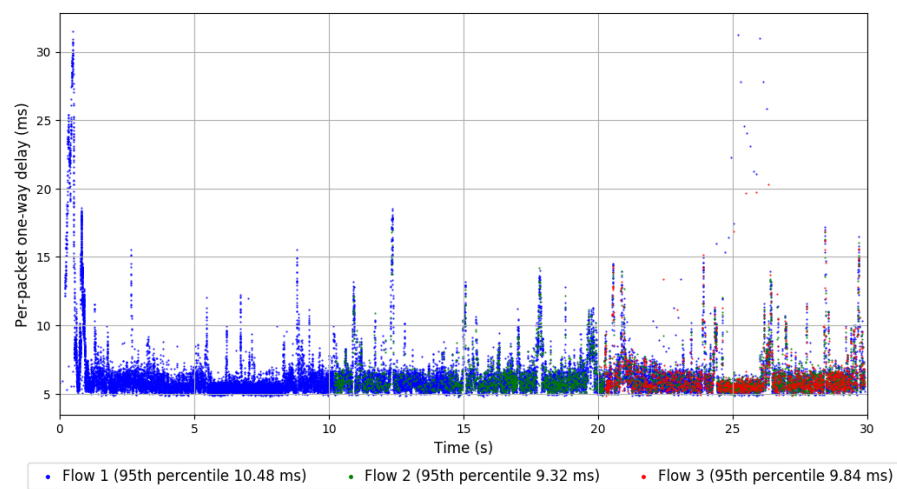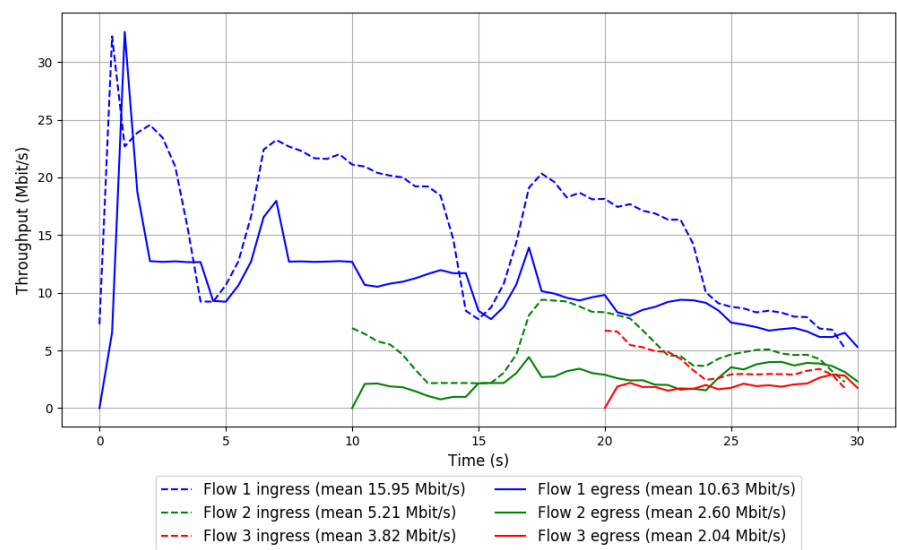Run 5: Report of PCC-Allegro — Data Link

```
Run 1: Statistics of PCC-Expr

Start at: 2019-01-21 11:05:13
End at: 2019-01-21 11:05:43
Local clock offset: 1.564 ms
Remote clock offset: -111.348 ms


# Below is generated by plot.py at 2019-01-21 13:16:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.97 Mbit/s
95th percentile per-packet one-way delay: -98.508 ms
Loss rate: 29.50%
-- Flow 1:
Average throughput: 9.04 Mbit/s
95th percentile per-packet one-way delay: -98.270 ms
Loss rate: 26.16%
-- Flow 2:
Average throughput: 4.16 Mbit/s
95th percentile per-packet one-way delay: -98.652 ms
Loss rate: 35.93%
-- Flow 3:
Average throughput: 3.54 Mbit/s
95th percentile per-packet one-way delay: -98.946 ms
Loss rate: 36.61%
```

Run 1: Report of PCC-Expr — Data Link

```
Run 2: Statistics of PCC-Expr

Start at: 2019-01-21 11:32:04
End at: 2019-01-21 11:32:34
Local clock offset: 0.303 ms
Remote clock offset: -7.905 ms


# Below is generated by plot.py at 2019-01-21 13:16:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.86 Mbit/s
95th percentile per-packet one-way delay: 7.786 ms
Loss rate: 55.65%
-- Flow 1:
Average throughput: 6.83 Mbit/s
95th percentile per-packet one-way delay: 8.882 ms
Loss rate: 65.18%
-- Flow 2:
Average throughput: 7.38 Mbit/s
95th percentile per-packet one-way delay: 7.236 ms
Loss rate: 37.56%
-- Flow 3:
Average throughput: 3.38 Mbit/s
95th percentile per-packet one-way delay: 7.169 ms
Loss rate: 26.02%
```
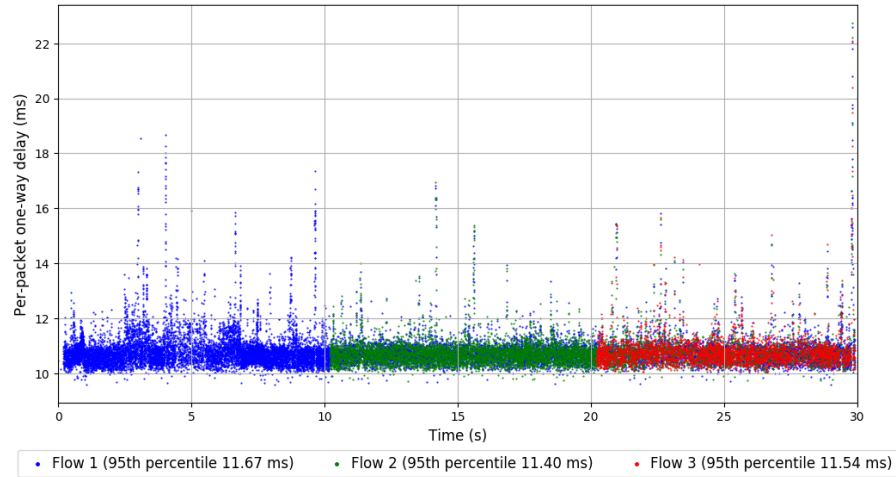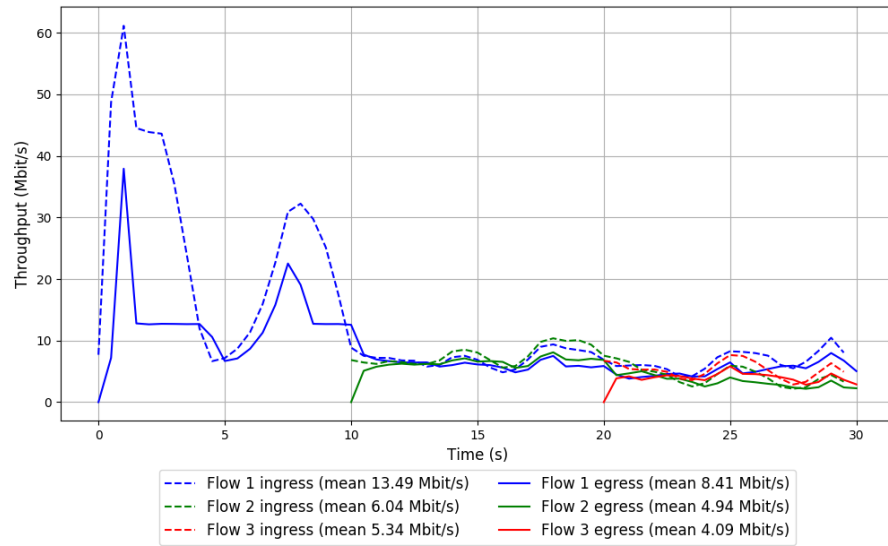
Run 2: Report of PCC-Expr — Data Link

```
Run 3: Statistics of PCC-Expr

Start at: 2019-01-21 11:58:20
End at: 2019-01-21 11:58:50
Local clock offset: 1.517 ms
Remote clock offset: -10.64 ms


# Below is generated by plot.py at 2019-01-21 13:16:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.88 Mbit/s
95th percentile per-packet one-way delay: 19.664 ms
Loss rate: 39.20%
-- Flow 1:
Average throughput: 6.54 Mbit/s
95th percentile per-packet one-way delay: 11.845 ms
Loss rate: 47.58%
-- Flow 2:
Average throughput: 7.30 Mbit/s
95th percentile per-packet one-way delay: 20.555 ms
Loss rate: 27.82%
-- Flow 3:
Average throughput: 4.52 Mbit/s
95th percentile per-packet one-way delay: 94.380 ms
Loss rate: 25.12%
```
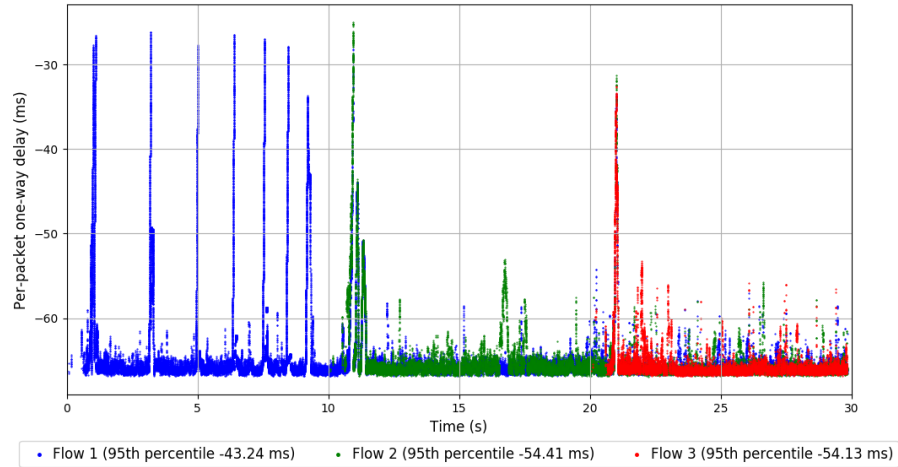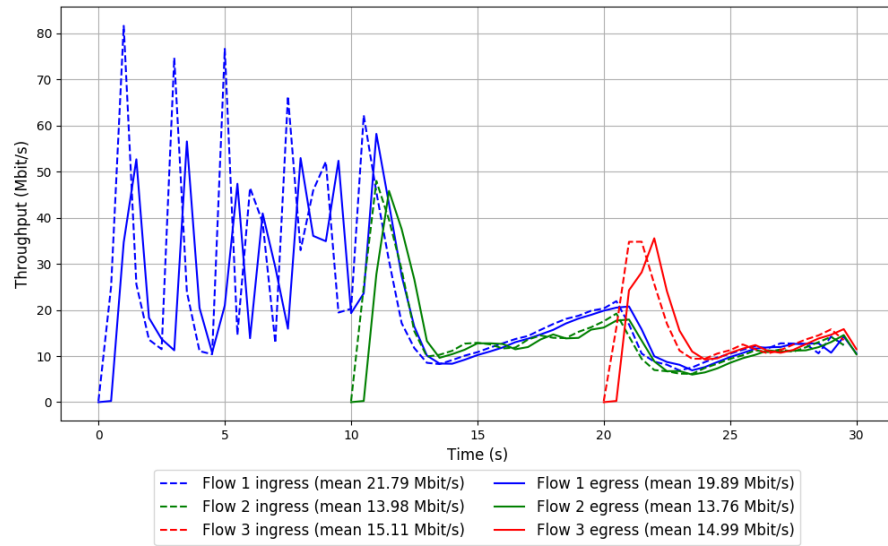
Run 3: Report of PCC-Expr — Data Link

```
Run 4: Statistics of PCC-Expr

Start at: 2019-01-21 12:24:56
End at: 2019-01-21 12:25:26
Local clock offset: 1.548 ms
Remote clock offset: -10.921 ms


# Below is generated by plot.py at 2019-01-21 13:16:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 13.03 Mbit/s
95th percentile per-packet one-way delay: 10.204 ms
Loss rate: 36.99%
-- Flow 1:
Average throughput: 10.63 Mbit/s
95th percentile per-packet one-way delay: 10.482 ms
Loss rate: 33.37%
-- Flow 2:
Average throughput: 2.60 Mbit/s
95th percentile per-packet one-way delay: 9.318 ms
Loss rate: 50.15%
-- Flow 3:
Average throughput: 2.04 Mbit/s
95th percentile per-packet one-way delay: 9.839 ms
Loss rate: 46.66%
```
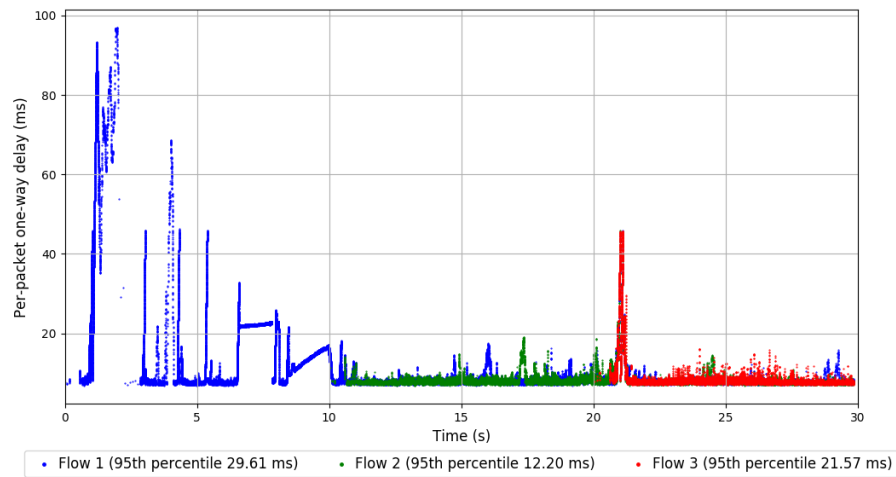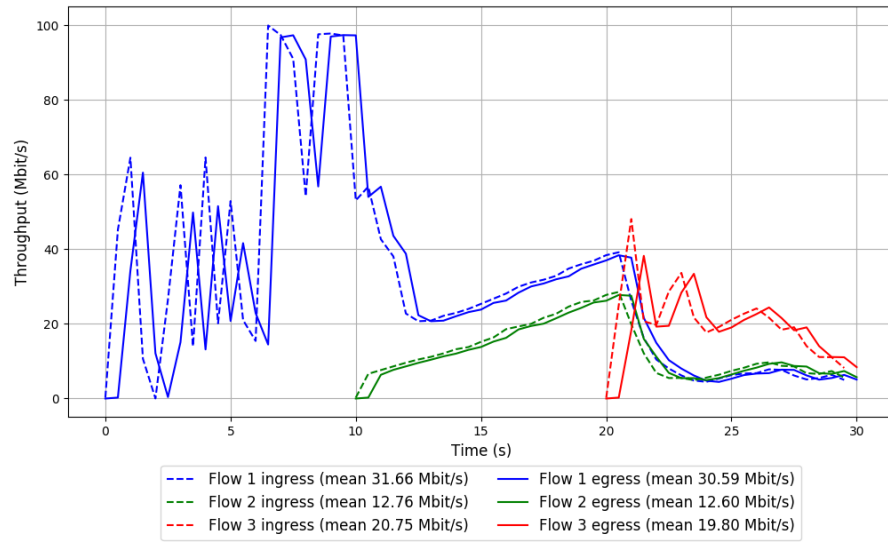
Run 4: Report of PCC-Expr — Data Link

```
Run 5: Statistics of PCC-Expr

Start at: 2019-01-21 12:51:10
End at: 2019-01-21 12:51:40
Local clock offset: -0.857 ms
Remote clock offset: -7.9 ms


# Below is generated by plot.py at 2019-01-21 13:16:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 13.04 Mbit/s
95th percentile per-packet one-way delay: 11.602 ms
Loss rate: 32.35%
-- Flow 1:
Average throughput: 8.41 Mbit/s
95th percentile per-packet one-way delay: 11.674 ms
Loss rate: 37.71%
-- Flow 2:
Average throughput: 4.94 Mbit/s
95th percentile per-packet one-way delay: 11.404 ms
Loss rate: 18.27%
-- Flow 3:
Average throughput: 4.09 Mbit/s
95th percentile per-packet one-way delay: 11.541 ms
Loss rate: 23.44%
```
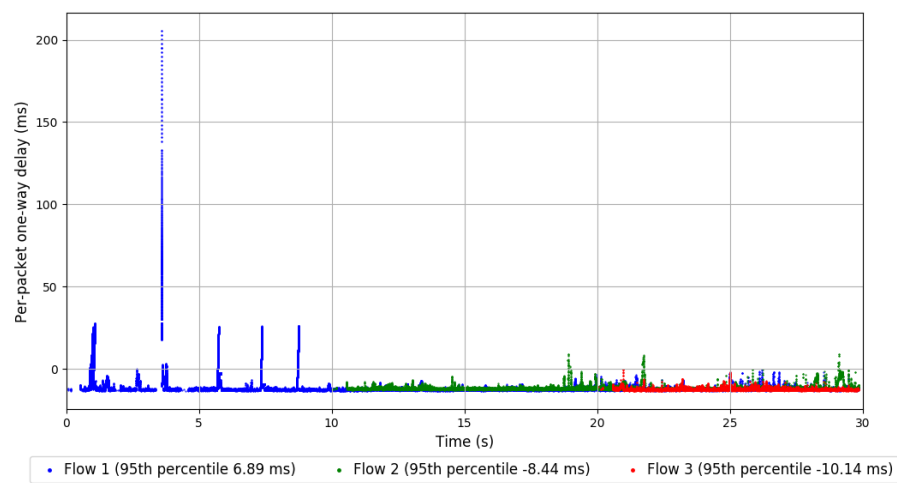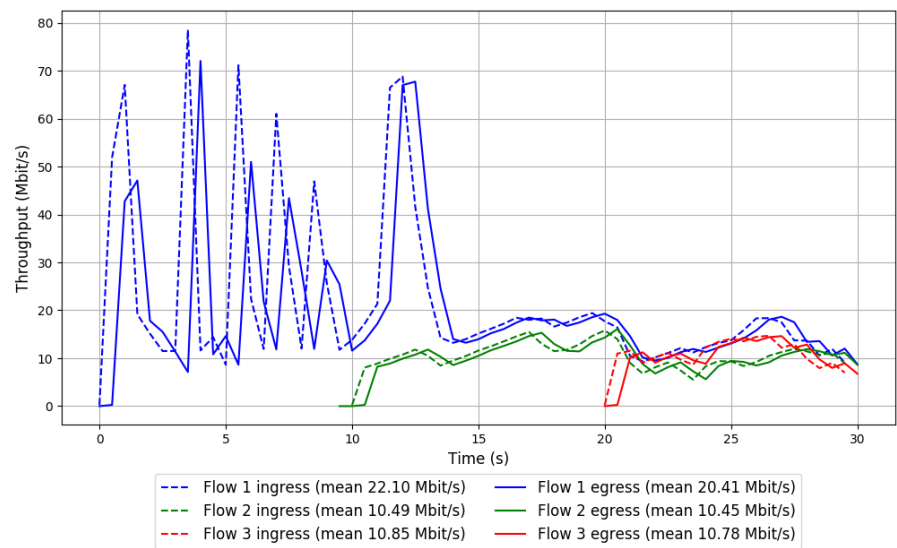
Run 5: Report of PCC-Expr — Data Link

```
Run 1: Statistics of QUIC Cubic

Start at: 2019-01-21 11:07:47
End at: 2019-01-21 11:08:17
Local clock offset: 1.348 ms
Remote clock offset: -77.607 ms


# Below is generated by plot.py at 2019-01-21 13:16:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 33.96 Mbit/s
95th percentile per-packet one-way delay: -46.056 ms
Loss rate: 5.77%
-- Flow 1:
Average throughput: 19.89 Mbit/s
95th percentile per-packet one-way delay: -43.243 ms
Loss rate: 8.68%
-- Flow 2:
Average throughput: 13.76 Mbit/s
95th percentile per-packet one-way delay: -54.407 ms
Loss rate: 1.59%
-- Flow 3:
Average throughput: 14.99 Mbit/s
95th percentile per-packet one-way delay: -54.129 ms
Loss rate: 0.83%
```

Run 1: Report of QUIC Cubic — Data Link

```
Run 2: Statistics of QUIC Cubic

Start at: 2019-01-21 11:34:35
End at: 2019-01-21 11:35:05
Local clock offset: 0.763 ms
Remote clock offset: -5.869 ms

# Below is generated by plot.py at 2019-01-21 13:17:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 45.46 Mbit/s
95th percentile per-packet one-way delay: 23.424 ms
Loss rate: 3.16%
-- Flow 1:
Average throughput: 30.59 Mbit/s
95th percentile per-packet one-way delay: 29.615 ms
Loss rate: 3.35%
-- Flow 2:
Average throughput: 12.60 Mbit/s
95th percentile per-packet one-way delay: 12.200 ms
Loss rate: 1.31%
-- Flow 3:
Average throughput: 19.80 Mbit/s
95th percentile per-packet one-way delay: 21.569 ms
Loss rate: 4.60%
```
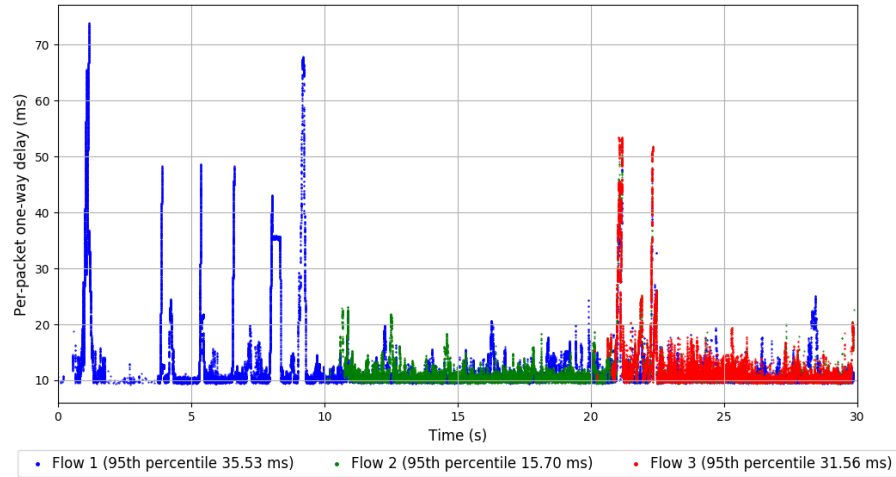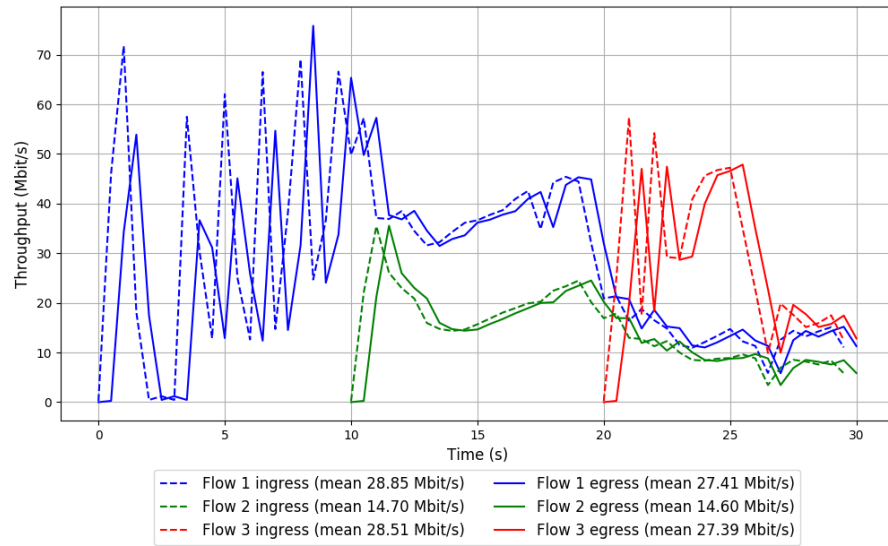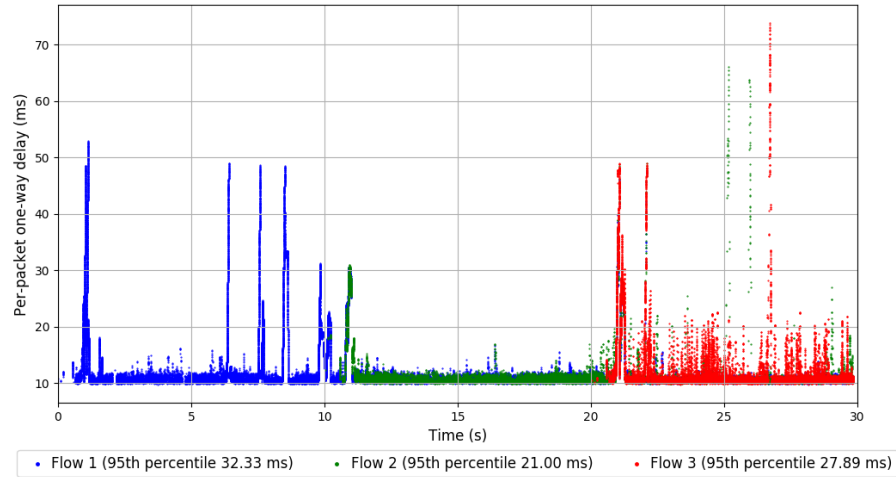
Run 2: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 31.66 Mbit/s) --- Flow 1 egress (mean 30.59 Mbit/s)
Flow 2 ingress (mean 12.76 Mbit/s) --- Flow 2 egress (mean 12.60 Mbit/s)
Flow 3 ingress (mean 20.75 Mbit/s) --- Flow 3 egress (mean 19.80 Mbit/s)

Flow 1 (95th percentile 29.61 ms) • Flow 2 (95th percentile 12.20 ms) • Flow 3 (95th percentile 21.57 ms)

```
Run 3: Statistics of QUIC Cubic

Start at: 2019-01-21 12:00:50
End at: 2019-01-21 12:01:20
Local clock offset: -1.475 ms
Remote clock offset: -31.031 ms


# Below is generated by plot.py at 2019-01-21 13:17:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 30.89 Mbit/s
95th percentile per-packet one-way delay: -2.236 ms
Loss rate: 5.36%
-- Flow 1:
Average throughput: 20.41 Mbit/s
95th percentile per-packet one-way delay: 6.895 ms
Loss rate: 7.67%
-- Flow 2:
Average throughput: 10.45 Mbit/s
95th percentile per-packet one-way delay: -8.442 ms
Loss rate: 0.39%
-- Flow 3:
Average throughput: 10.78 Mbit/s
95th percentile per-packet one-way delay: -10.141 ms
Loss rate: 0.73%
```
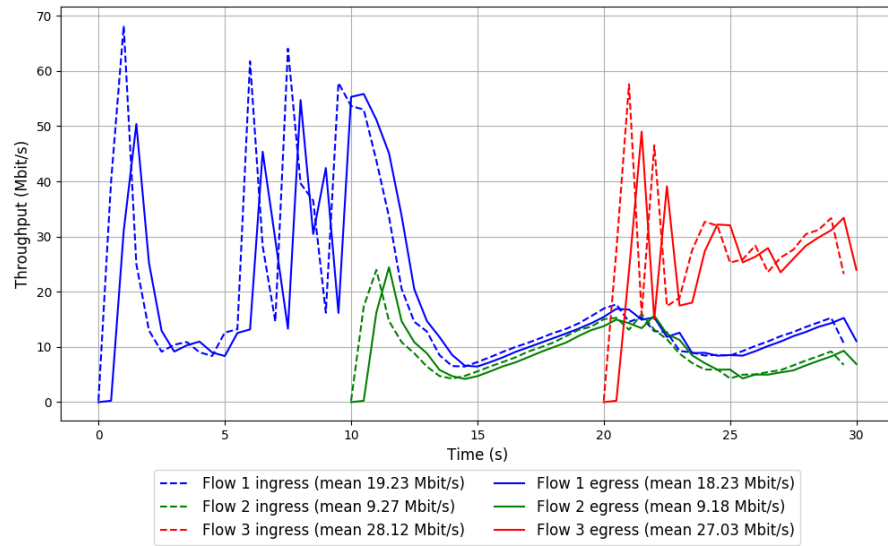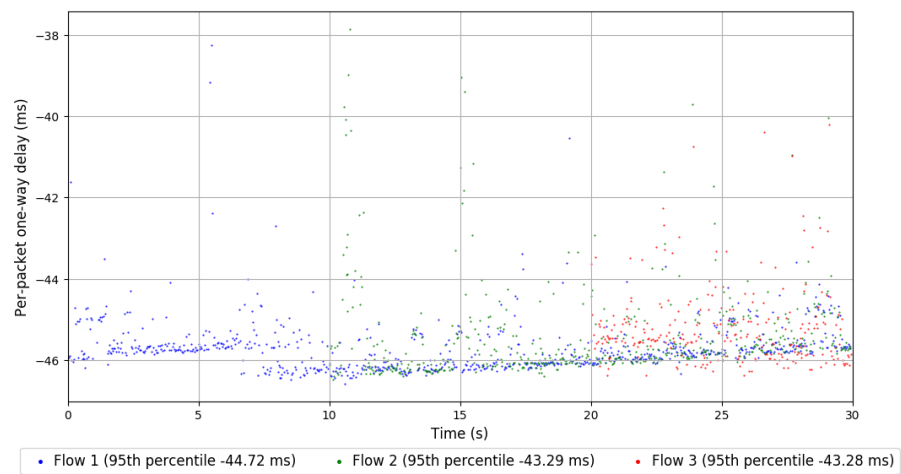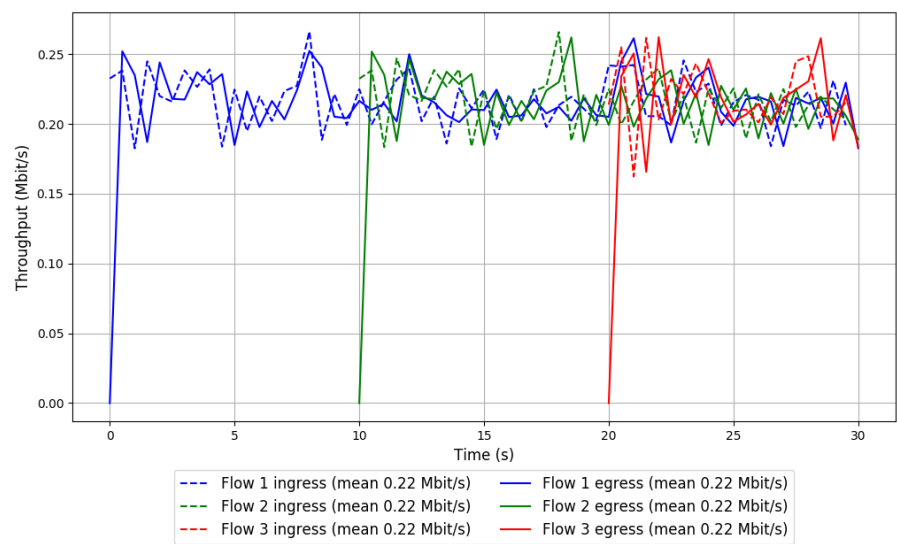
Run 3: Report of QUIC Cubic — Data Link

```
Run 4: Statistics of QUIC Cubic

Start at: 2019-01-21 12:27:28
End at: 2019-01-21 12:27:58
Local clock offset: -0.689 ms
Remote clock offset: -8.58 ms


# Below is generated by plot.py at 2019-01-21 13:17:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 46.10 Mbit/s
95th percentile per-packet one-way delay: 35.318 ms
Loss rate: 3.91%
-- Flow 1:
Average throughput: 27.41 Mbit/s
95th percentile per-packet one-way delay: 35.530 ms
Loss rate: 5.01%
-- Flow 2:
Average throughput: 14.60 Mbit/s
95th percentile per-packet one-way delay: 15.695 ms
Loss rate: 0.66%
-- Flow 3:
Average throughput: 27.39 Mbit/s
95th percentile per-packet one-way delay: 31.557 ms
Loss rate: 3.91%
```

Run 4: Report of QUIC Cubic — Data Link

```
Run 5: Statistics of QUIC Cubic

Start at: 2019-01-21 12:53:43
End at: 2019-01-21 12:54:13
Local clock offset: -1.224 ms
Remote clock offset: -8.454 ms


# Below is generated by plot.py at 2019-01-21 13:17:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 33.21 Mbit/s
95th percentile per-packet one-way delay: 29.427 ms
Loss rate: 4.10%
-- Flow 1:
Average throughput: 18.23 Mbit/s
95th percentile per-packet one-way delay: 32.332 ms
Loss rate: 5.21%
-- Flow 2:
Average throughput: 9.18 Mbit/s
95th percentile per-packet one-way delay: 20.996 ms
Loss rate: 0.98%
-- Flow 3:
Average throughput: 27.03 Mbit/s
95th percentile per-packet one-way delay: 27.889 ms
Loss rate: 3.87%
```

Run 5: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 19.23 Mbit/s)   Flow 1 egress (mean 18.23 Mbit/s)
Flow 2 ingress (mean 9.27 Mbit/s)   Flow 2 egress (mean 9.18 Mbit/s)
Flow 3 ingress (mean 28.12 Mbit/s)   Flow 3 egress (mean 27.03 Mbit/s)

Flow 1 (95th percentile 32.33 ms)   Flow 2 (95th percentile 21.00 ms)   Flow 3 (95th percentile 27.89 ms)
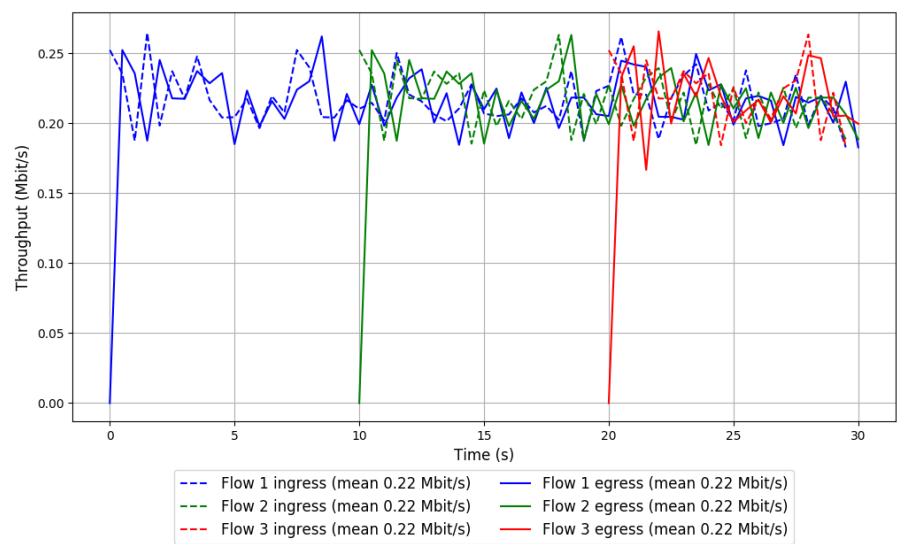
```
Run 1: Statistics of SCReAM

Start at: 2019-01-21 11:13:03
End at: 2019-01-21 11:13:33
Local clock offset: 1.9 ms
Remote clock offset: -57.438 ms


# Below is generated by plot.py at 2019-01-21 13:17:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: -44.025 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: -44.715 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: -43.291 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: -43.277 ms
Loss rate: 0.00%
```
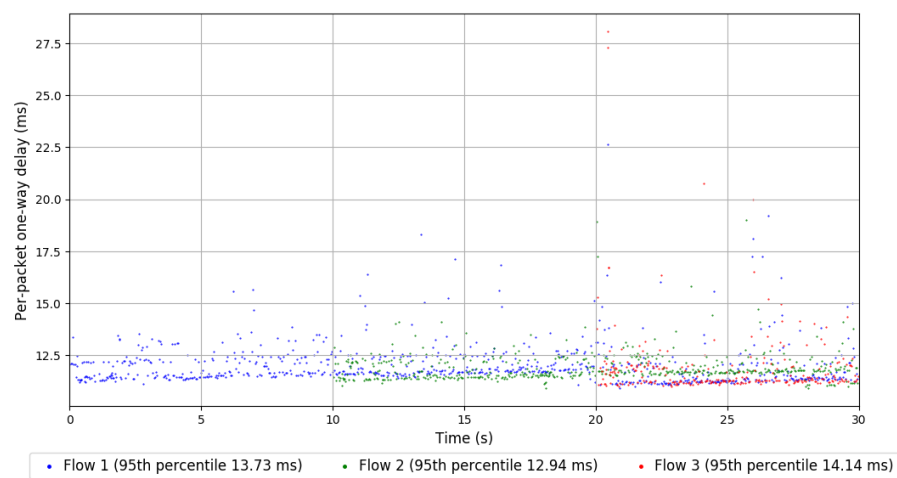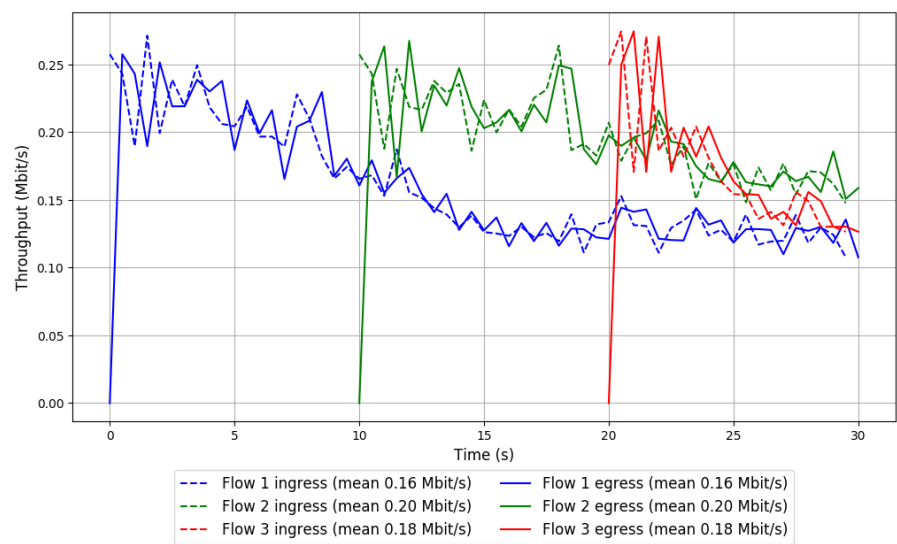
Run 1: Report of SCReAM — Data Link

```
Run 2: Statistics of SCReAM

Start at: 2019-01-21 11:40:00
End at: 2019-01-21 11:40:30
Local clock offset: 1.192 ms
Remote clock offset: -78.843 ms


# Below is generated by plot.py at 2019-01-21 13:17:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: -62.873 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: -62.751 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: -62.781 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: -63.559 ms
Loss rate: 0.00%
```
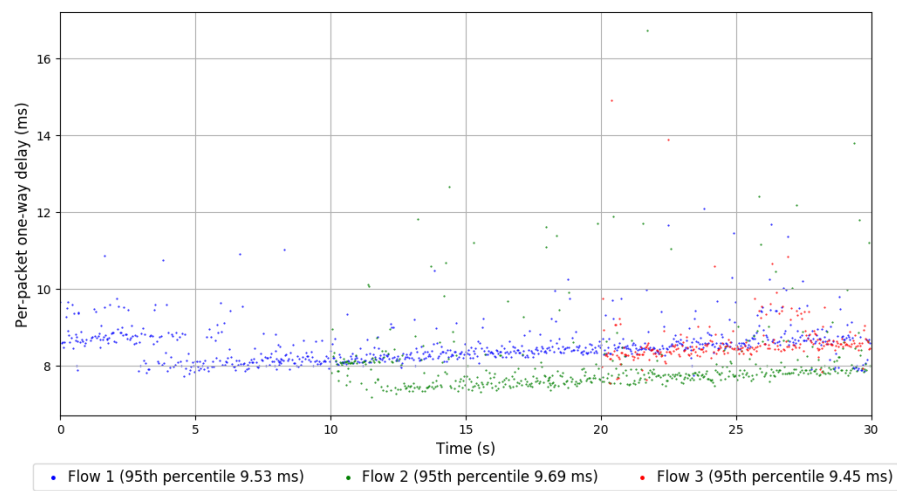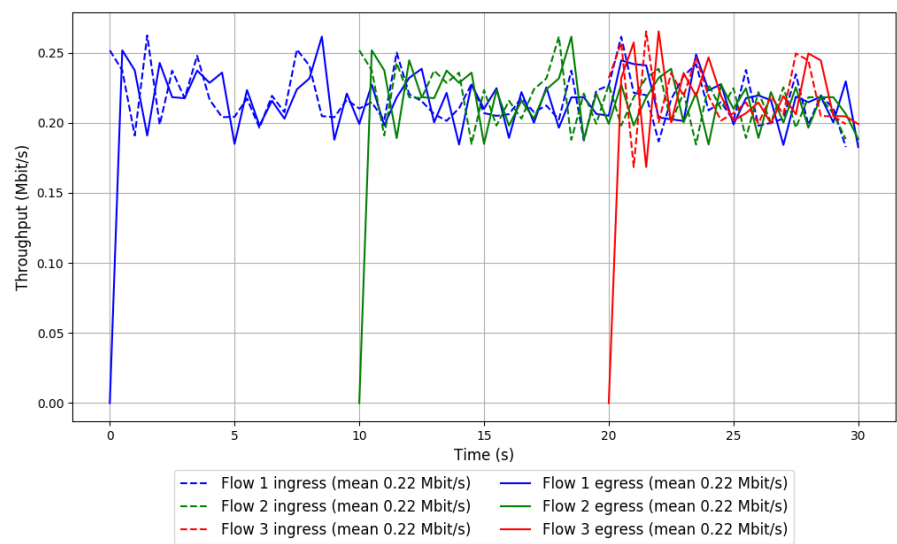
Run 2: Report of SCReAM — Data Link

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```
Run 3: Statistics of SCReAM

Start at: 2019-01-21 12:06:20
End at: 2019-01-21 12:06:50
Local clock offset: 1.869 ms
Remote clock offset: -10.781 ms


# Below is generated by plot.py at 2019-01-21 13:17:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 7.039 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 6.989 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 6.751 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 7.578 ms
Loss rate: 0.00%
```
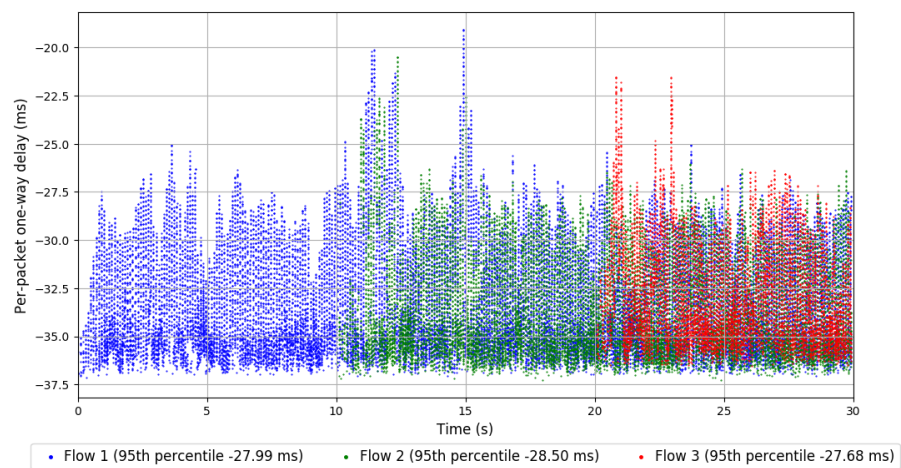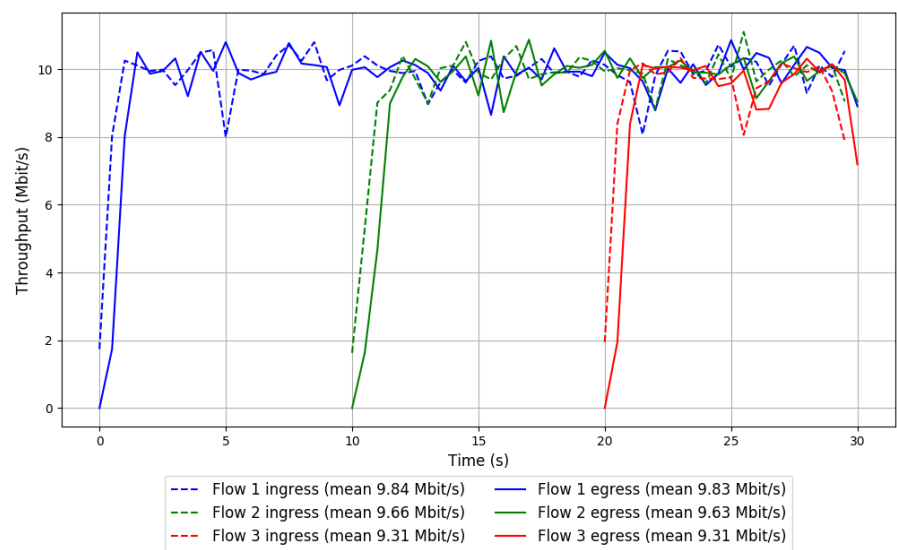
Run 3: Report of SCReAM — Data Link

```
Run 4: Statistics of SCReAM

Start at: 2019-01-21 12:32:30
End at: 2019-01-21 12:33:00
Local clock offset: -1.399 ms
Remote clock offset: -7.721 ms


# Below is generated by plot.py at 2019-01-21 13:17:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.35 Mbit/s
95th percentile per-packet one-way delay: 13.501 ms
Loss rate: 0.30%
-- Flow 1:
Average throughput: 0.16 Mbit/s
95th percentile per-packet one-way delay: 13.727 ms
Loss rate: 0.33%
-- Flow 2:
Average throughput: 0.20 Mbit/s
95th percentile per-packet one-way delay: 12.941 ms
Loss rate: 0.21%
-- Flow 3:
Average throughput: 0.18 Mbit/s
95th percentile per-packet one-way delay: 14.140 ms
Loss rate: 0.44%
```
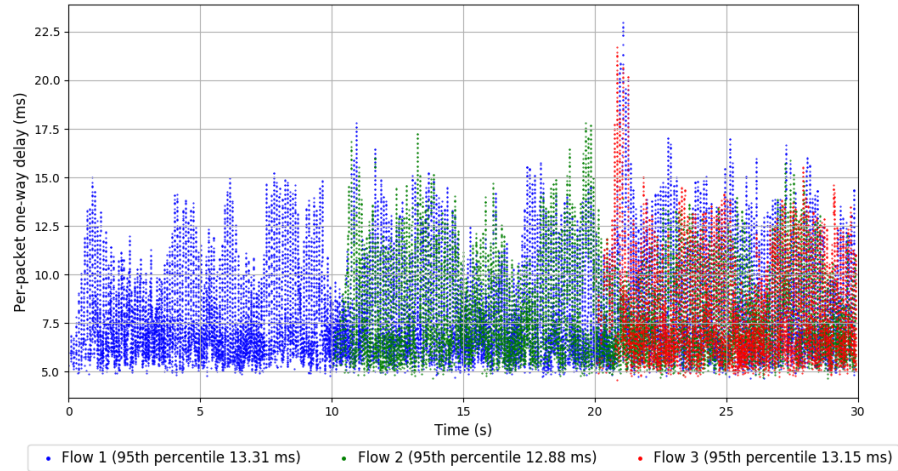
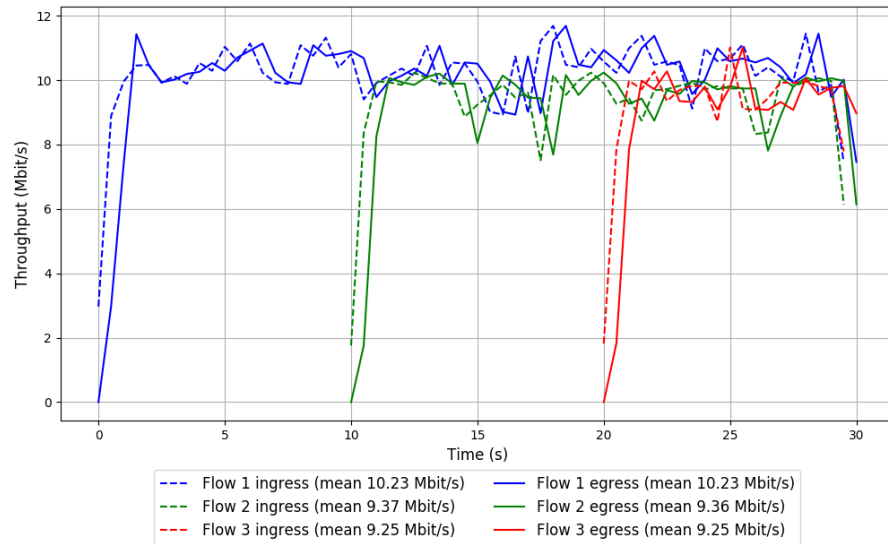# Run 4: Report of SCReAM — Data Link

```
Run 5: Statistics of SCReAM

Start at: 2019-01-21 12:58:51
End at: 2019-01-21 12:59:21
Local clock offset: 0.038 ms
Remote clock offset: -9.328 ms


# Below is generated by plot.py at 2019-01-21 13:17:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 9.517 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 9.526 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 9.691 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 9.447 ms
Loss rate: 0.00%
```

Run 5: Report of SCReAM — Data Link

```
Run 1: Statistics of Sprout

Start at: 2019-01-21 11:01:42
End at: 2019-01-21 11:02:12
Local clock offset: 0.67 ms
Remote clock offset: -47.307 ms


# Below is generated by plot.py at 2019-01-21 13:17:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 19.31 Mbit/s
95th percentile per-packet one-way delay: -28.125 ms
Loss rate: 0.17%
-- Flow 1:
Average throughput: 9.83 Mbit/s
95th percentile per-packet one-way delay: -27.991 ms
Loss rate: 0.14%
-- Flow 2:
Average throughput: 9.63 Mbit/s
95th percentile per-packet one-way delay: -28.504 ms
Loss rate: 0.30%
-- Flow 3:
Average throughput: 9.31 Mbit/s
95th percentile per-packet one-way delay: -27.682 ms
Loss rate: 0.00%
```
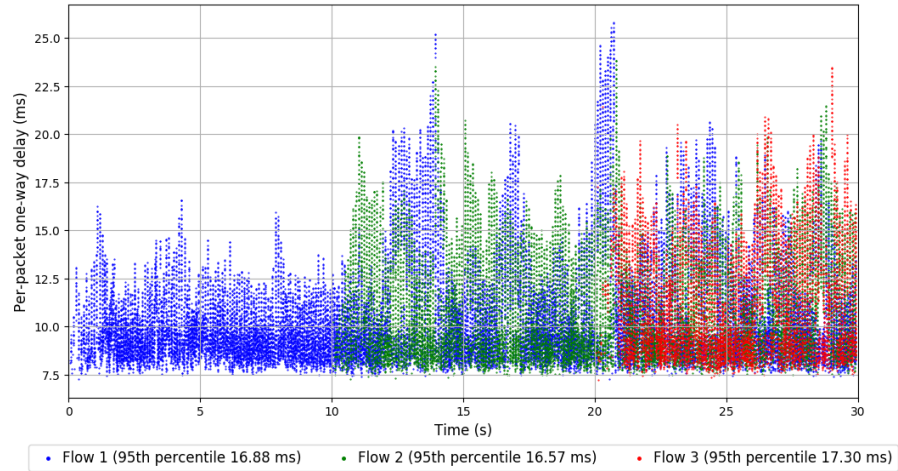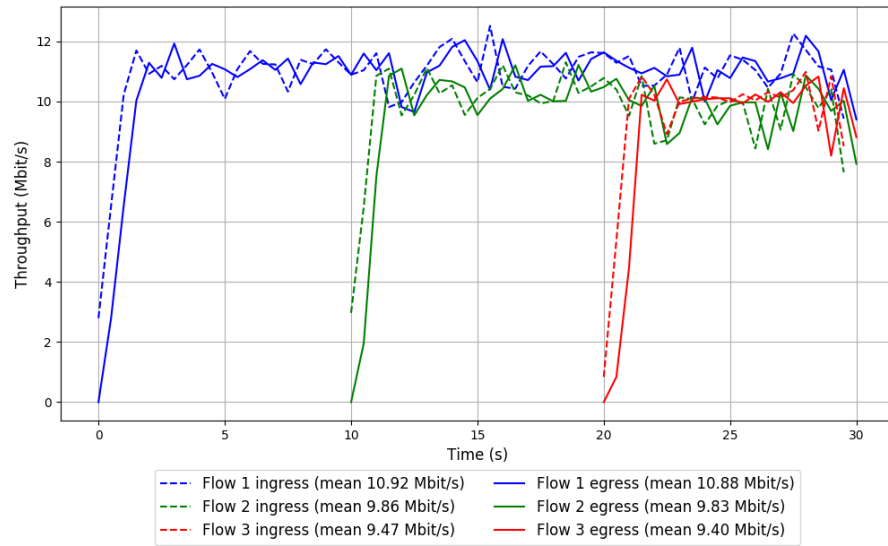
Run 1: Report of Sprout — Data Link

```
Run 2: Statistics of Sprout

Start at: 2019-01-21 11:28:12
End at: 2019-01-21 11:28:42
Local clock offset: 1.808 ms
Remote clock offset: -6.753 ms


# Below is generated by plot.py at 2019-01-21 13:17:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 19.49 Mbit/s
95th percentile per-packet one-way delay: 13.171 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 10.23 Mbit/s
95th percentile per-packet one-way delay: 13.312 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 9.36 Mbit/s
95th percentile per-packet one-way delay: 12.878 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 9.25 Mbit/s
95th percentile per-packet one-way delay: 13.147 ms
Loss rate: 0.03%
```
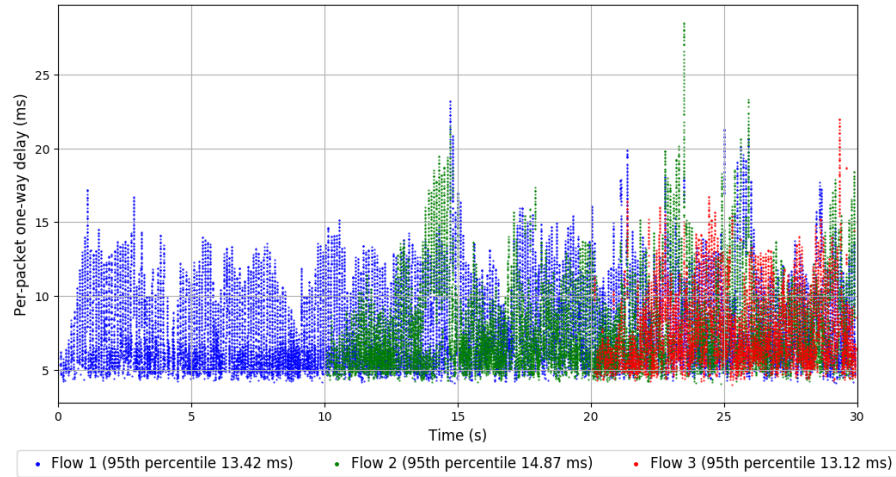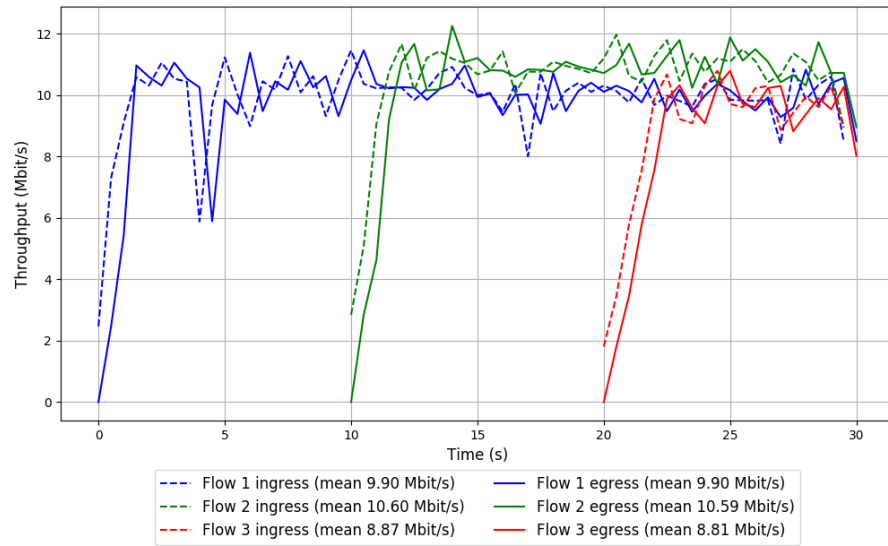
Run 2: Report of Sprout — Data Link

```
Run 3: Statistics of Sprout

Start at: 2019-01-21 11:54:47
End at: 2019-01-21 11:55:17
Local clock offset: -0.812 ms
Remote clock offset: -9.29 ms


# Below is generated by plot.py at 2019-01-21 13:17:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 20.53 Mbit/s
95th percentile per-packet one-way delay: 16.847 ms
Loss rate: 0.36%
-- Flow 1:
Average throughput: 10.88 Mbit/s
95th percentile per-packet one-way delay: 16.882 ms
Loss rate: 0.32%
-- Flow 2:
Average throughput: 9.83 Mbit/s
95th percentile per-packet one-way delay: 16.573 ms
Loss rate: 0.26%
-- Flow 3:
Average throughput: 9.40 Mbit/s
95th percentile per-packet one-way delay: 17.299 ms
Loss rate: 0.73%
```
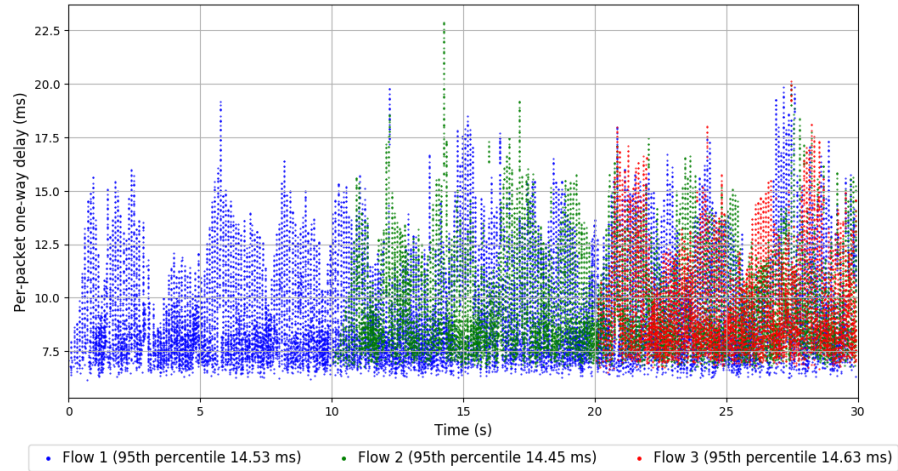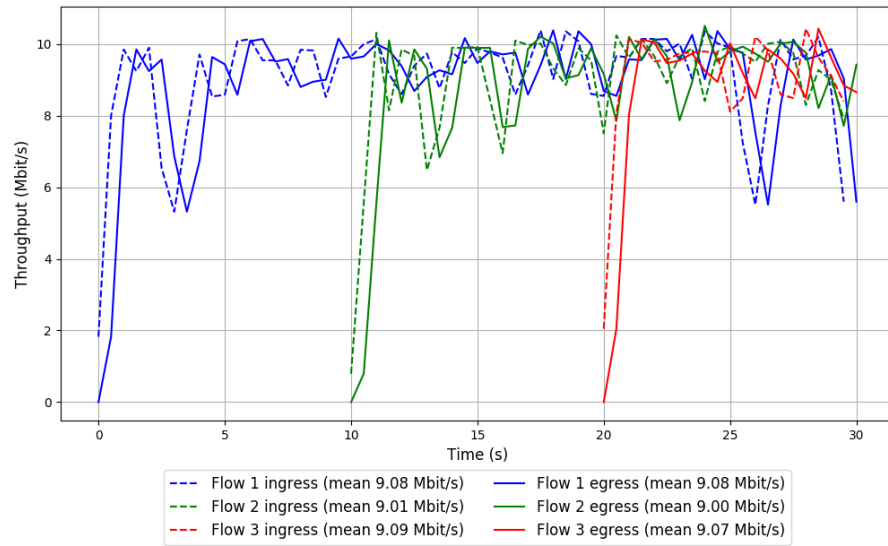
Run 3: Report of Sprout — Data Link

```
Run 4: Statistics of Sprout

Start at: 2019-01-21 12:21:26
End at: 2019-01-21 12:21:56
Local clock offset: 1.685 ms
Remote clock offset: -11.626 ms


# Below is generated by plot.py at 2019-01-21 13:17:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 19.84 Mbit/s
95th percentile per-packet one-way delay: 13.807 ms
Loss rate: 0.15%
-- Flow 1:
Average throughput: 9.90 Mbit/s
95th percentile per-packet one-way delay: 13.423 ms
Loss rate: 0.03%
-- Flow 2:
Average throughput: 10.59 Mbit/s
95th percentile per-packet one-way delay: 14.869 ms
Loss rate: 0.10%
-- Flow 3:
Average throughput: 8.81 Mbit/s
95th percentile per-packet one-way delay: 13.123 ms
Loss rate: 0.65%
```
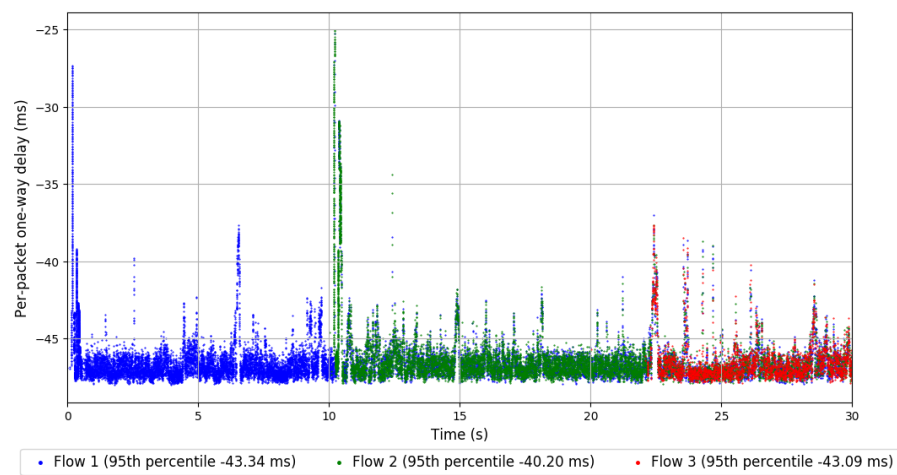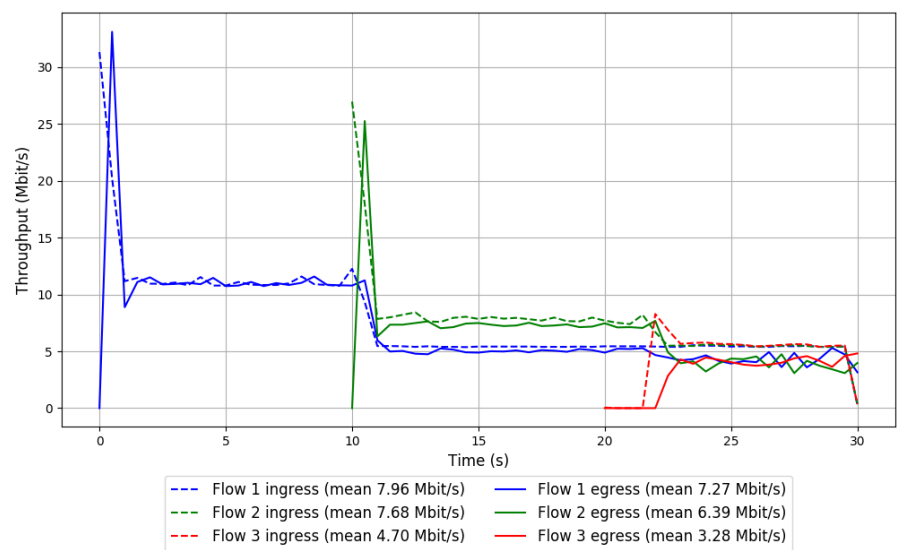
Run 4: Report of Sprout — Data Link

```
Run 5: Statistics of Sprout

Start at: 2019-01-21 12:47:36
End at: 2019-01-21 12:48:06
Local clock offset: 2.06 ms
Remote clock offset: -8.431 ms


# Below is generated by plot.py at 2019-01-21 13:17:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 18.06 Mbit/s
95th percentile per-packet one-way delay: 14.528 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 9.08 Mbit/s
95th percentile per-packet one-way delay: 14.527 ms
Loss rate: 0.07%
-- Flow 2:
Average throughput: 9.00 Mbit/s
95th percentile per-packet one-way delay: 14.446 ms
Loss rate: 0.04%
-- Flow 3:
Average throughput: 9.07 Mbit/s
95th percentile per-packet one-way delay: 14.629 ms
Loss rate: 0.07%
```
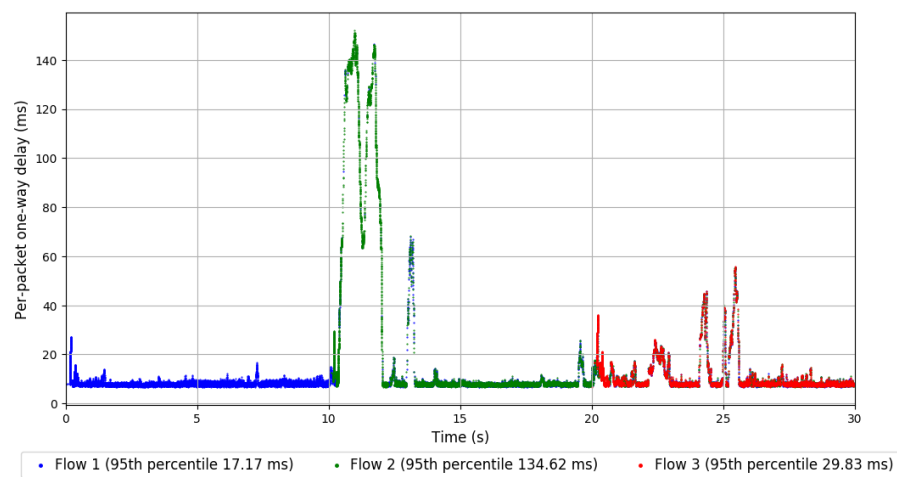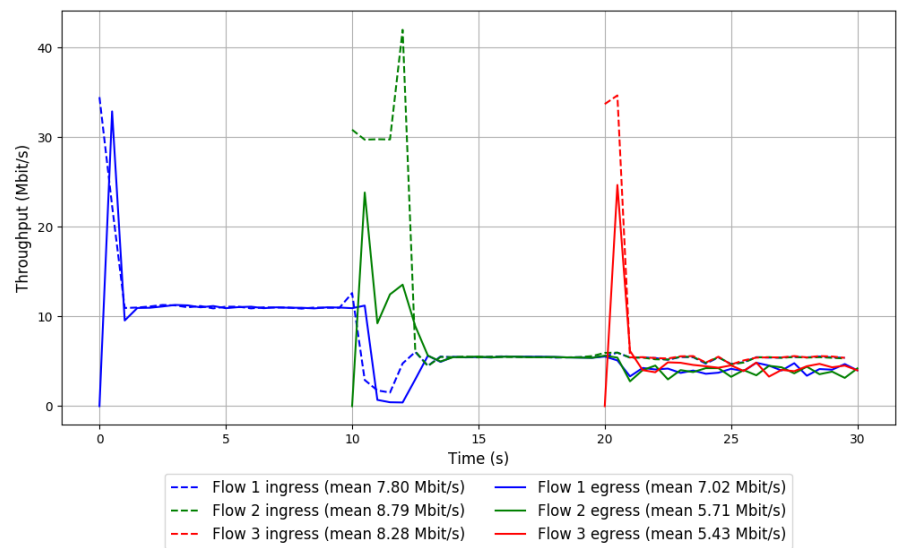
Run 5: Report of Sprout — Data Link

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

Start at: 2019-01-21 11:10:30
End at: 2019-01-21 11:11:00
Local clock offset: 2.349 ms
Remote clock offset: -58.059 ms


# Below is generated by plot.py at 2019-01-21 13:17:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.62 Mbit/s
95th percentile per-packet one-way delay: -42.807 ms
Loss rate: 13.85%
-- Flow 1:
Average throughput: 7.27 Mbit/s
95th percentile per-packet one-way delay: -43.344 ms
Loss rate: 8.73%
-- Flow 2:
Average throughput: 6.39 Mbit/s
95th percentile per-packet one-way delay: -40.200 ms
Loss rate: 16.81%
-- Flow 3:
Average throughput: 3.28 Mbit/s
95th percentile per-packet one-way delay: -43.085 ms
Loss rate: 30.27%
```
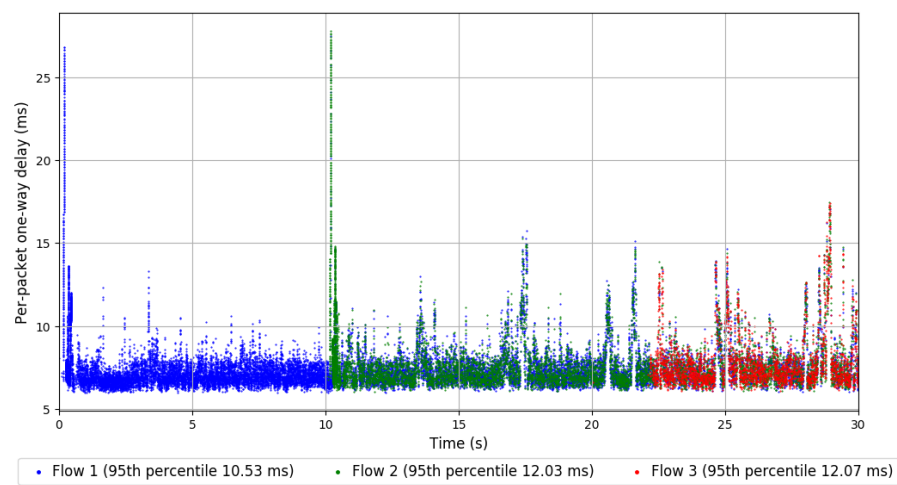
Run 1: Report of TaoVA-100x — Data Link

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

Start at: 2019-01-21 11:37:20
End at: 2019-01-21 11:37:50
Local clock offset: 1.008 ms
Remote clock offset: -6.071 ms


# Below is generated by plot.py at 2019-01-21 13:17:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.63 Mbit/s
95th percentile per-packet one-way delay: 64.251 ms
Loss rate: 23.04%
-- Flow 1:
Average throughput: 7.02 Mbit/s
95th percentile per-packet one-way delay: 17.169 ms
Loss rate: 10.05%
-- Flow 2:
Average throughput: 5.71 Mbit/s
95th percentile per-packet one-way delay: 134.618 ms
Loss rate: 35.02%
-- Flow 3:
Average throughput: 5.43 Mbit/s
95th percentile per-packet one-way delay: 29.829 ms
Loss rate: 34.39%
```

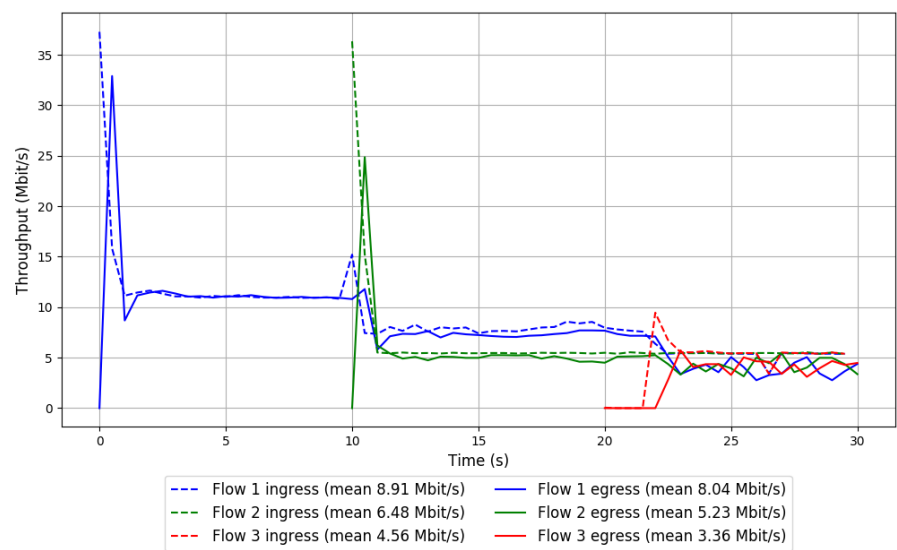Run 2: Report of TaoVA-100x — Data Link

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

Start at: 2019-01-21 12:03:28
End at: 2019-01-21 12:03:58
Local clock offset: 0.399 ms
Remote clock offset: -10.489 ms


# Below is generated by plot.py at 2019-01-21 13:17:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.64 Mbit/s
95th percentile per-packet one-way delay: 11.075 ms
Loss rate: 14.24%
-- Flow 1:
Average throughput: 8.04 Mbit/s
95th percentile per-packet one-way delay: 10.527 ms
Loss rate: 9.79%
-- Flow 2:
Average throughput: 5.23 Mbit/s
95th percentile per-packet one-way delay: 12.029 ms
Loss rate: 19.22%
-- Flow 3:
Average throughput: 3.36 Mbit/s
95th percentile per-packet one-way delay: 12.071 ms
Loss rate: 26.26%
```
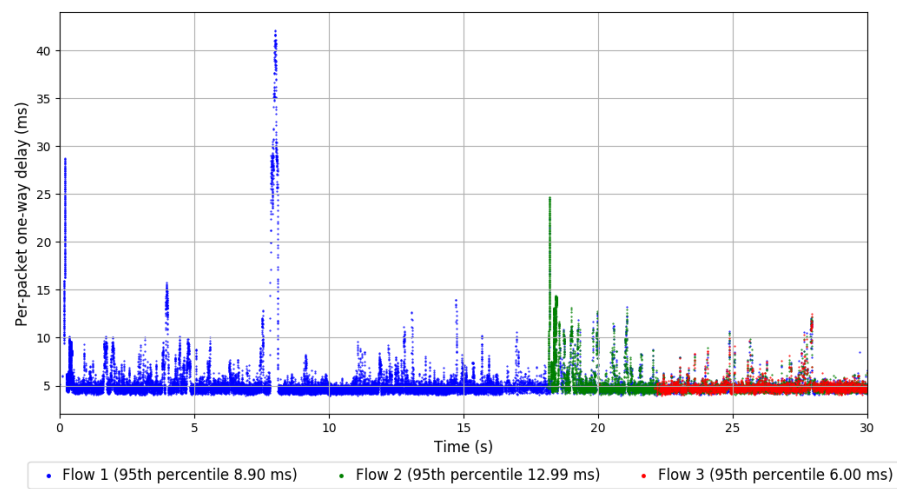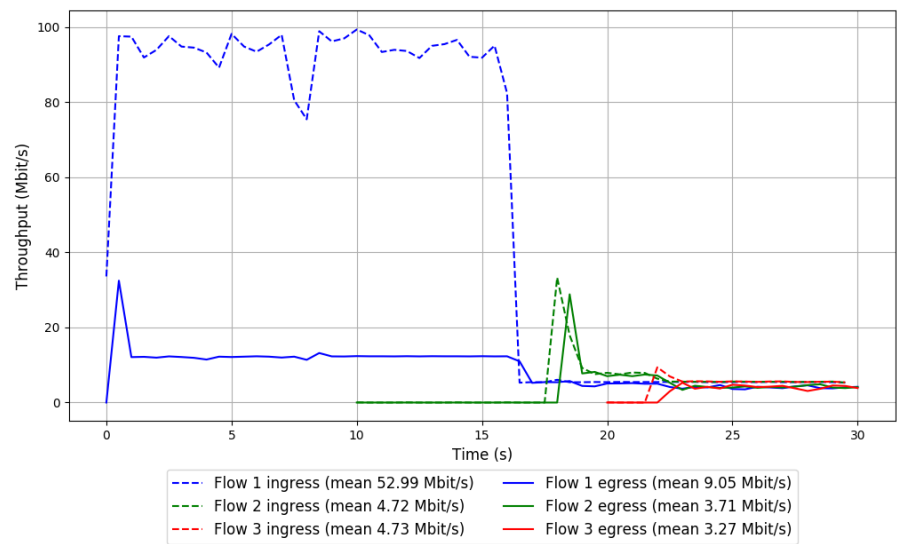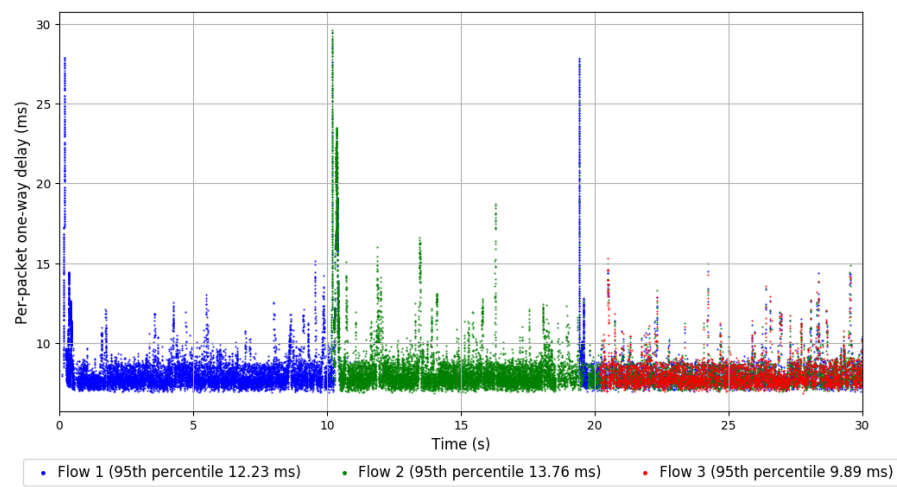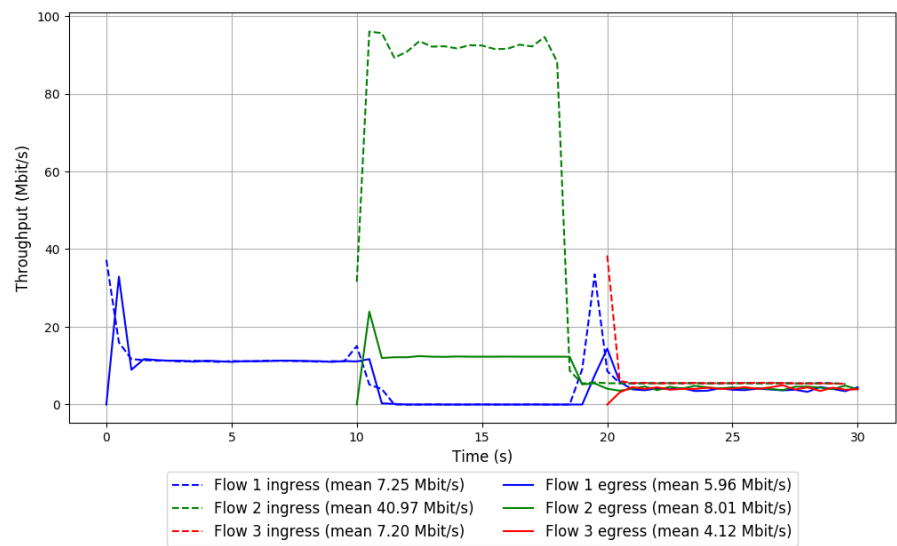
Run 3: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 8.91 Mbit/s) — Flow 1 egress (mean 8.04 Mbit/s)
Flow 2 ingress (mean 6.48 Mbit/s) — Flow 2 egress (mean 5.23 Mbit/s)
Flow 3 ingress (mean 4.56 Mbit/s) — Flow 3 egress (mean 3.36 Mbit/s)

Flow 1 (95th percentile 10.53 ms)   Flow 2 (95th percentile 12.03 ms)   Flow 3 (95th percentile 12.07 ms)

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

Start at: 2019-01-21 12:30:04
End at: 2019-01-21 12:30:34
Local clock offset: 2.202 ms
Remote clock offset: -11.015 ms


# Below is generated by plot.py at 2019-01-21 13:17:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.60 Mbit/s
95th percentile per-packet one-way delay: 9.716 ms
Loss rate: 78.16%
-- Flow 1:
Average throughput: 9.05 Mbit/s
95th percentile per-packet one-way delay: 8.902 ms
Loss rate: 82.93%
-- Flow 2:
Average throughput: 3.71 Mbit/s
95th percentile per-packet one-way delay: 12.991 ms
Loss rate: 21.55%
-- Flow 3:
Average throughput: 3.27 Mbit/s
95th percentile per-packet one-way delay: 5.996 ms
Loss rate: 30.70%
```
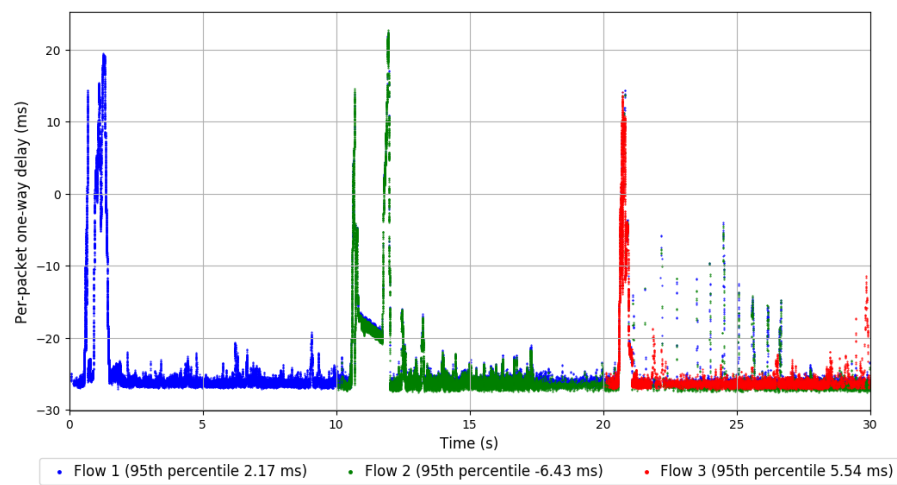
Run 4: Report of TaoVA-100x — Data Link

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

Start at: 2019-01-21 12:56:20
End at: 2019-01-21 12:56:50
Local clock offset: -5.314 ms
Remote clock offset: -15.422 ms


# Below is generated by plot.py at 2019-01-21 13:17:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.66 Mbit/s
95th percentile per-packet one-way delay: 12.345 ms
Loss rate: 65.71%
-- Flow 1:
Average throughput: 5.96 Mbit/s
95th percentile per-packet one-way delay: 12.229 ms
Loss rate: 17.80%
-- Flow 2:
Average throughput: 8.01 Mbit/s
95th percentile per-packet one-way delay: 13.758 ms
Loss rate: 80.45%
-- Flow 3:
Average throughput: 4.12 Mbit/s
95th percentile per-packet one-way delay: 9.887 ms
Loss rate: 42.75%
```
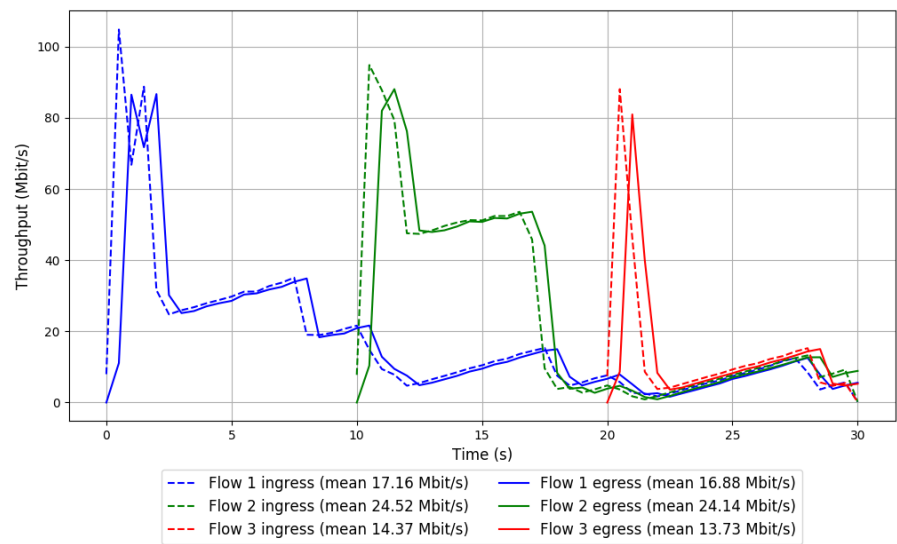
Run 5: Report of TaoVA-100x — Data Link

- - - Flow 1 ingress (mean 7.25 Mbit/s) —— Flow 1 egress (mean 5.96 Mbit/s)
- - - Flow 2 ingress (mean 40.97 Mbit/s) —— Flow 2 egress (mean 8.01 Mbit/s)
- - - Flow 3 ingress (mean 7.20 Mbit/s) —— Flow 3 egress (mean 4.12 Mbit/s)

• Flow 1 (95th percentile 12.23 ms)   • Flow 2 (95th percentile 13.76 ms)   • Flow 3 (95th percentile 9.89 ms)
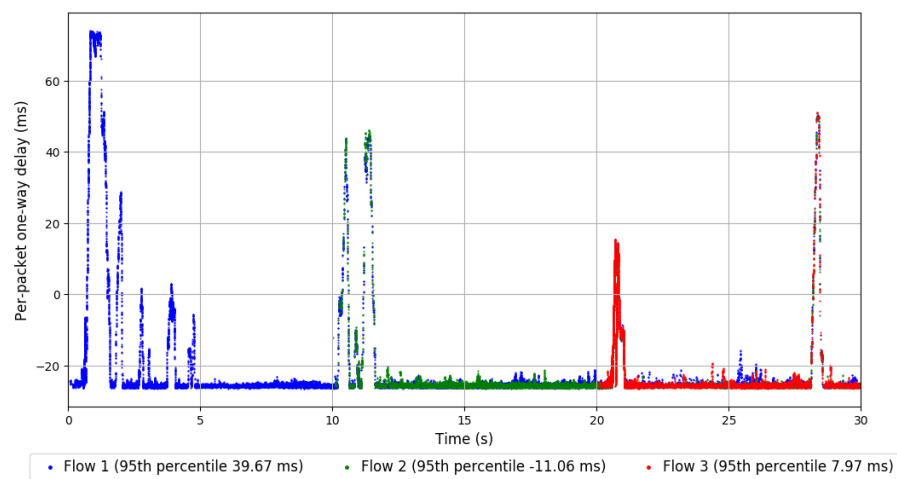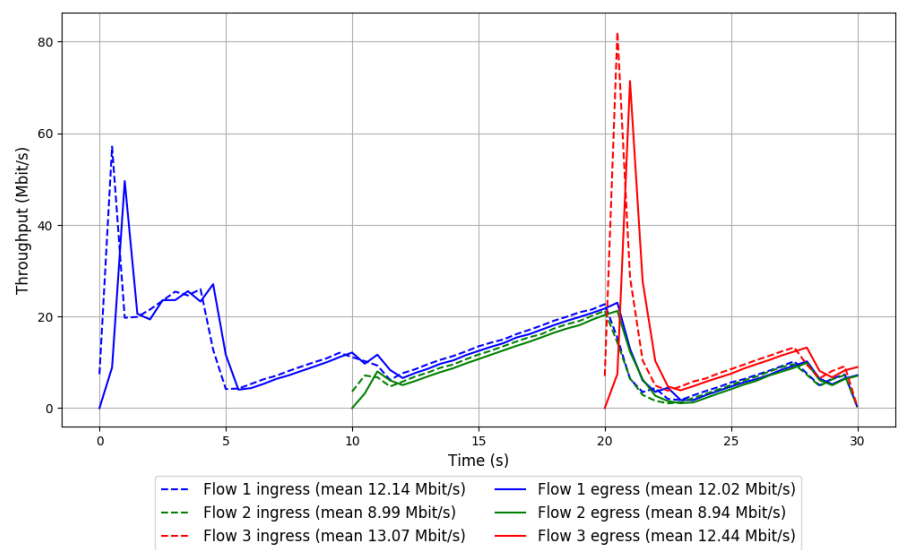
```
Run 1: Statistics of TCP Vegas

Start at: 2019-01-21 11:20:30
End at: 2019-01-21 11:21:00
Local clock offset: 2.136 ms
Remote clock offset: -37.996 ms


# Below is generated by plot.py at 2019-01-21 13:17:43
# Datalink statistics
-- Total of 3 flows:
Average throughput: 37.52 Mbit/s
95th percentile per-packet one-way delay: 0.468 ms
Loss rate: 1.96%
-- Flow 1:
Average throughput: 16.88 Mbit/s
95th percentile per-packet one-way delay: 2.165 ms
Loss rate: 1.64%
-- Flow 2:
Average throughput: 24.14 Mbit/s
95th percentile per-packet one-way delay: -6.426 ms
Loss rate: 1.55%
-- Flow 3:
Average throughput: 13.73 Mbit/s
95th percentile per-packet one-way delay: 5.540 ms
Loss rate: 4.51%
```
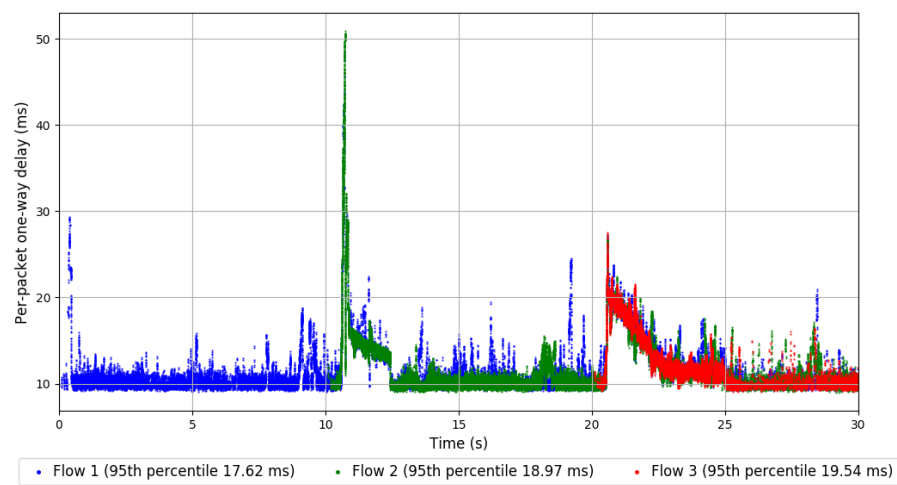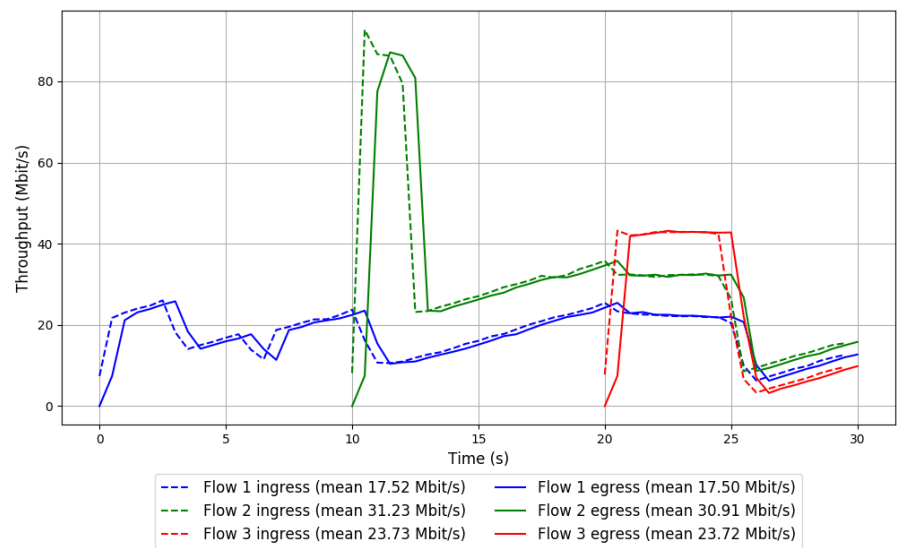
Run 1: Report of TCP Vegas — Data Link

```
Run 2: Statistics of TCP Vegas

Start at: 2019-01-21 11:47:25
End at: 2019-01-21 11:47:55
Local clock offset: 0.299 ms
Remote clock offset: -40.904 ms


# Below is generated by plot.py at 2019-01-21 13:17:43
# Datalink statistics
-- Total of 3 flows:
Average throughput: 22.11 Mbit/s
95th percentile per-packet one-way delay: 12.104 ms
Loss rate: 1.64%
-- Flow 1:
Average throughput: 12.02 Mbit/s
95th percentile per-packet one-way delay: 39.675 ms
Loss rate: 1.02%
-- Flow 2:
Average throughput: 8.94 Mbit/s
95th percentile per-packet one-way delay: -11.065 ms
Loss rate: 0.59%
-- Flow 3:
Average throughput: 12.44 Mbit/s
95th percentile per-packet one-way delay: 7.973 ms
Loss rate: 4.82%
```

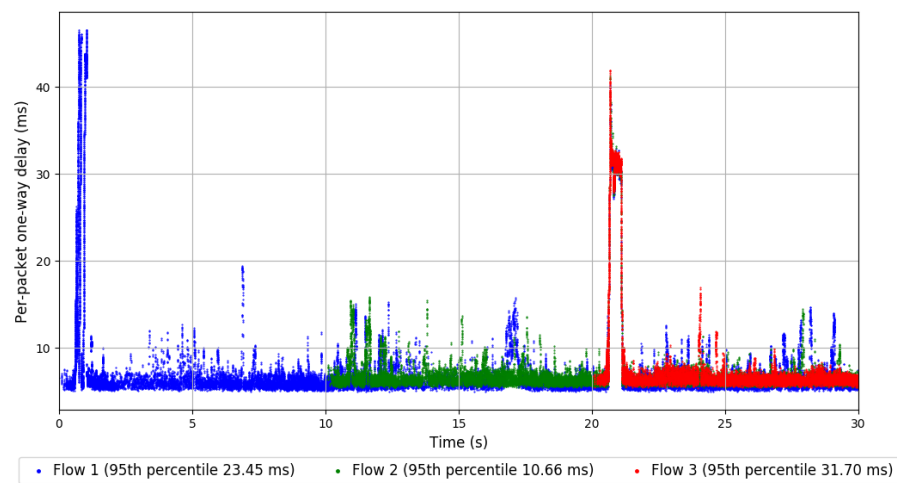Run 2: Report of TCP Vegas — Data Link

```
Run 3: Statistics of TCP Vegas

Start at: 2019-01-21 12:13:56
End at: 2019-01-21 12:14:26
Local clock offset: -0.769 ms
Remote clock offset: -9.032 ms


# Below is generated by plot.py at 2019-01-21 13:17:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 45.97 Mbit/s
95th percentile per-packet one-way delay: 18.845 ms
Loss rate: 0.53%
-- Flow 1:
Average throughput: 17.50 Mbit/s
95th percentile per-packet one-way delay: 17.625 ms
Loss rate: 0.13%
-- Flow 2:
Average throughput: 30.91 Mbit/s
95th percentile per-packet one-way delay: 18.972 ms
Loss rate: 1.05%
-- Flow 3:
Average throughput: 23.72 Mbit/s
95th percentile per-packet one-way delay: 19.541 ms
Loss rate: 0.03%
```

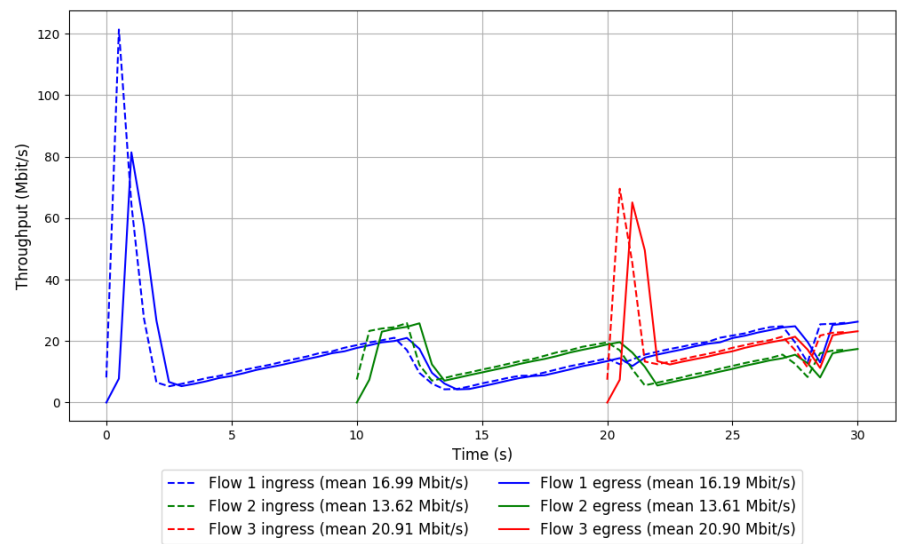Run 3: Report of TCP Vegas — Data Link

```
Run 4: Statistics of TCP Vegas

Start at: 2019-01-21 12:40:15
End at: 2019-01-21 12:40:45
Local clock offset: 3.506 ms
Remote clock offset: -8.355 ms


# Below is generated by plot.py at 2019-01-21 13:17:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 32.21 Mbit/s
95th percentile per-packet one-way delay: 30.454 ms
Loss rate: 2.43%
-- Flow 1:
Average throughput: 16.19 Mbit/s
95th percentile per-packet one-way delay: 23.451 ms
Loss rate: 4.70%
-- Flow 2:
Average throughput: 13.61 Mbit/s
95th percentile per-packet one-way delay: 10.664 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 20.90 Mbit/s
95th percentile per-packet one-way delay: 31.698 ms
Loss rate: 0.03%
```

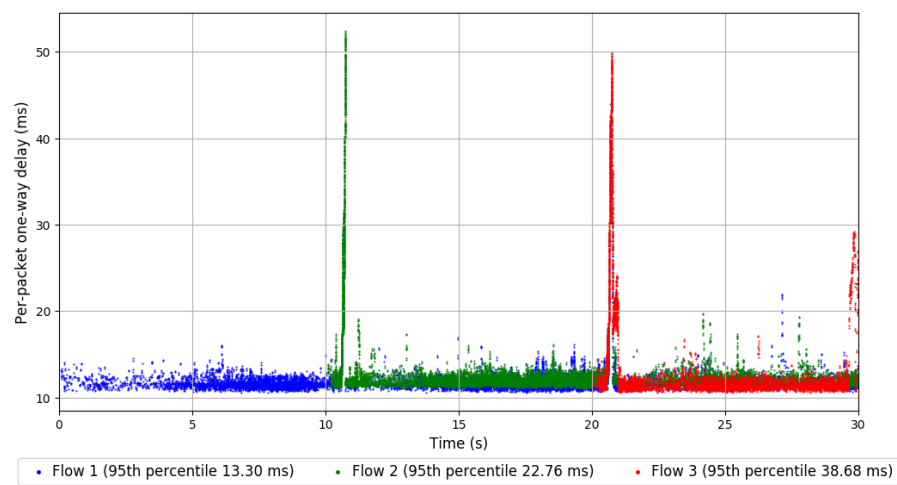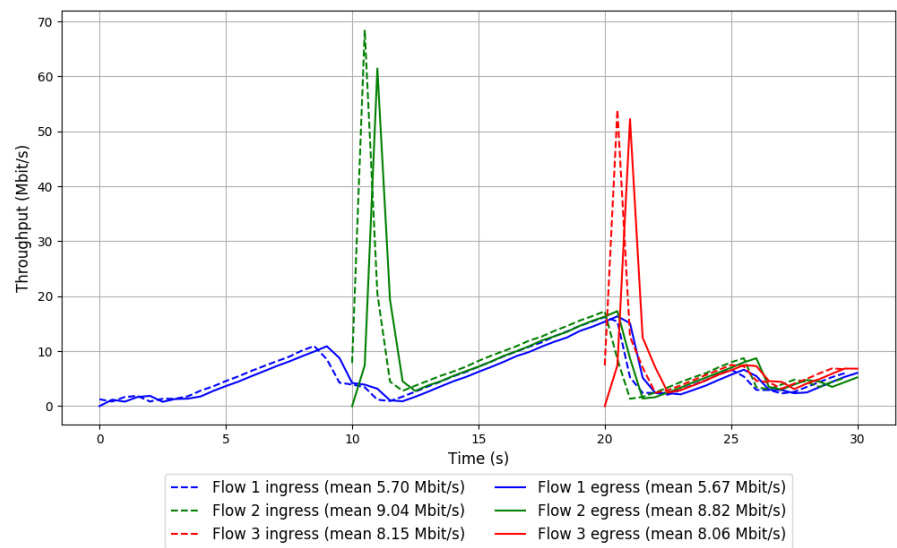Run 4: Report of TCP Vegas — Data Link

```
Run 5: Statistics of TCP Vegas

Start at: 2019-01-21 13:06:22
End at: 2019-01-21 13:06:52
Local clock offset: -2.045 ms
Remote clock offset: -7.976 ms


# Below is generated by plot.py at 2019-01-21 13:17:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 14.23 Mbit/s
95th percentile per-packet one-way delay: 23.729 ms
Loss rate: 1.41%
-- Flow 1:
Average throughput: 5.67 Mbit/s
95th percentile per-packet one-way delay: 13.302 ms
Loss rate: 0.43%
-- Flow 2:
Average throughput: 8.82 Mbit/s
95th percentile per-packet one-way delay: 22.764 ms
Loss rate: 2.45%
-- Flow 3:
Average throughput: 8.06 Mbit/s
95th percentile per-packet one-way delay: 38.677 ms
Loss rate: 1.15%
```

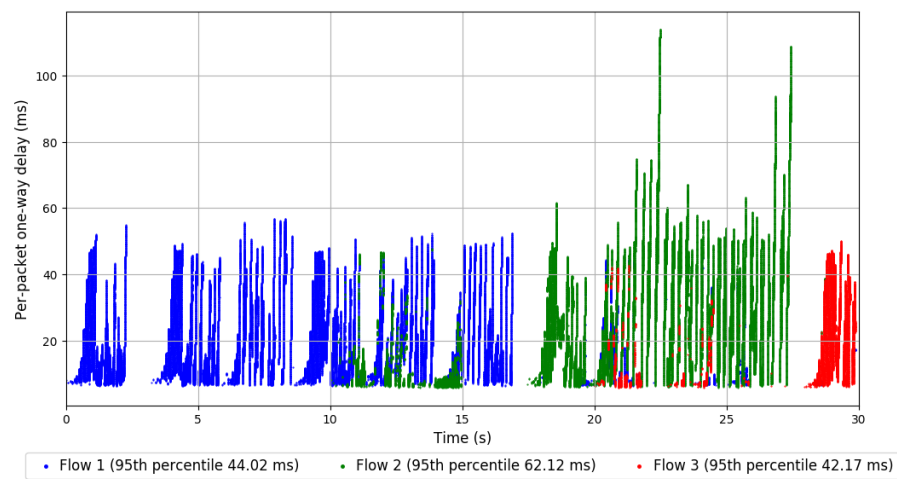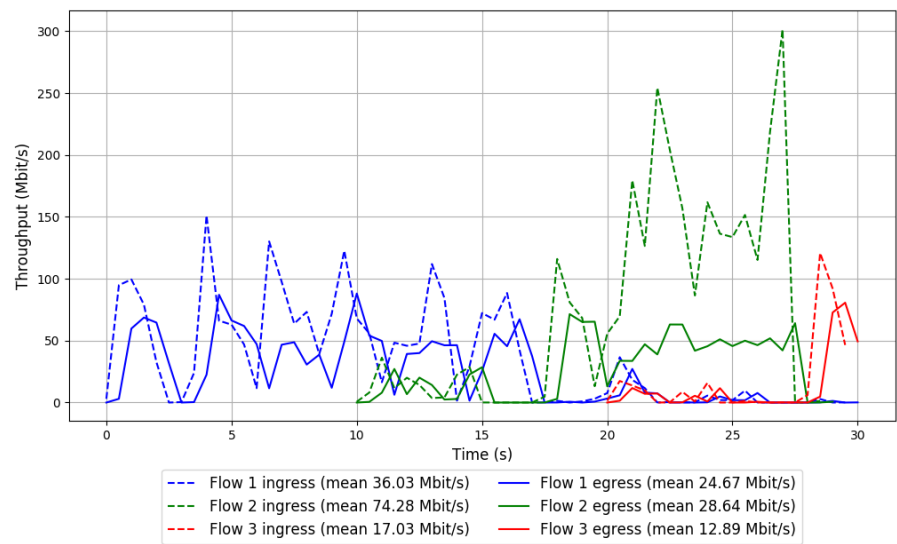Run 5: Report of TCP Vegas — Data Link

```
Run 1: Statistics of Verus

Start at: 2019-01-21 10:59:13
End at: 2019-01-21 10:59:43
Local clock offset: -1.478 ms
Remote clock offset: -6.218 ms


# Below is generated by plot.py at 2019-01-21 13:17:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 46.84 Mbit/s
95th percentile per-packet one-way delay: 49.591 ms
Loss rate: 46.94%
-- Flow 1:
Average throughput: 24.67 Mbit/s
95th percentile per-packet one-way delay: 44.016 ms
Loss rate: 31.50%
-- Flow 2:
Average throughput: 28.64 Mbit/s
95th percentile per-packet one-way delay: 62.116 ms
Loss rate: 61.61%
-- Flow 3:
Average throughput: 12.89 Mbit/s
95th percentile per-packet one-way delay: 42.167 ms
Loss rate: 24.19%
```

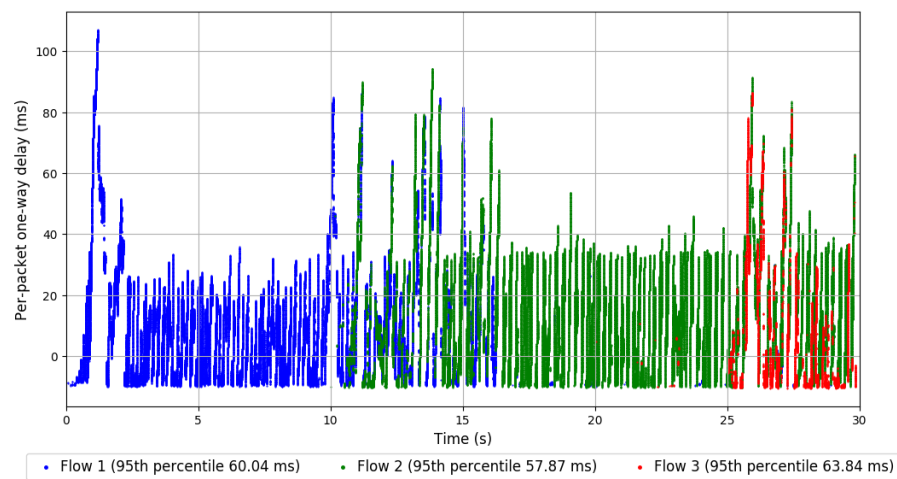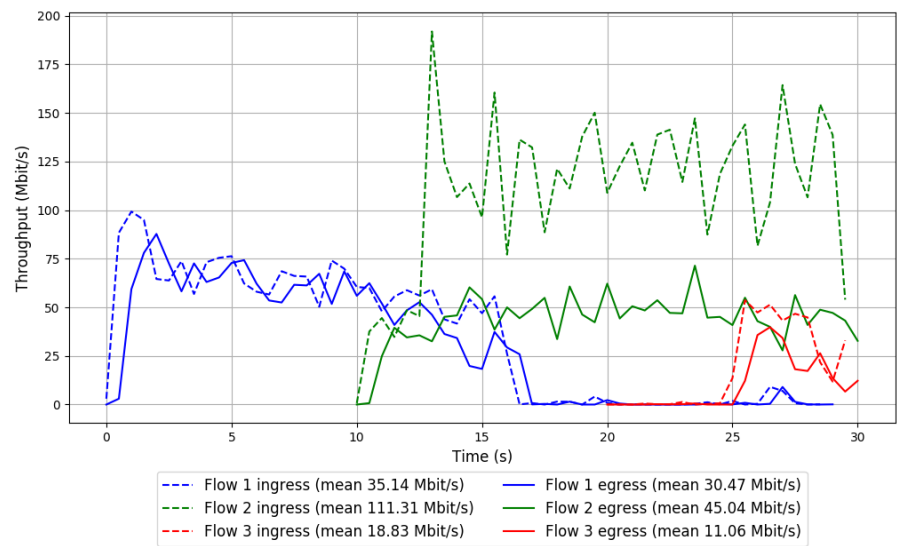Run 1: Report of Verus — Data Link

```
Run 2: Statistics of Verus

Start at: 2019-01-21 11:25:41
End at: 2019-01-21 11:26:11
Local clock offset: 1.814 ms
Remote clock offset: -21.376 ms


# Below is generated by plot.py at 2019-01-21 13:18:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 63.02 Mbit/s
95th percentile per-packet one-way delay: 59.275 ms
Loss rate: 44.63%
-- Flow 1:
Average throughput: 30.47 Mbit/s
95th percentile per-packet one-way delay: 60.037 ms
Loss rate: 13.48%
-- Flow 2:
Average throughput: 45.04 Mbit/s
95th percentile per-packet one-way delay: 57.865 ms
Loss rate: 59.38%
-- Flow 3:
Average throughput: 11.06 Mbit/s
95th percentile per-packet one-way delay: 63.840 ms
Loss rate: 41.33%
```

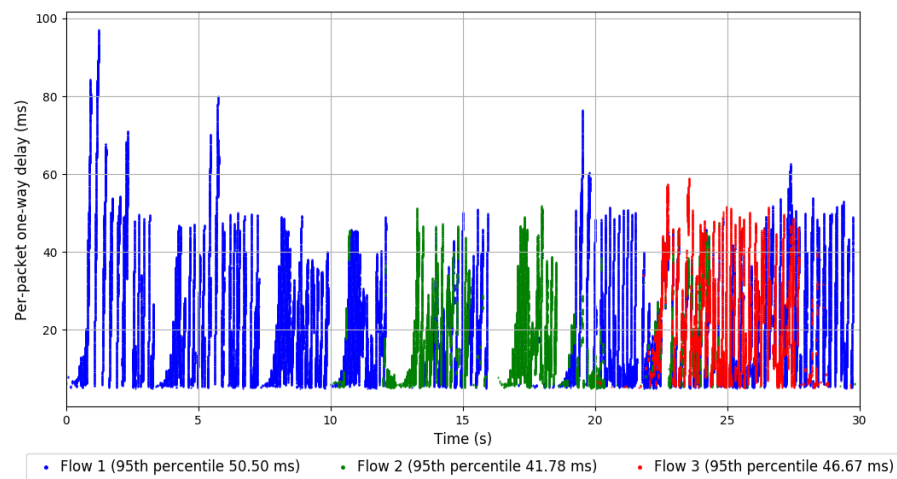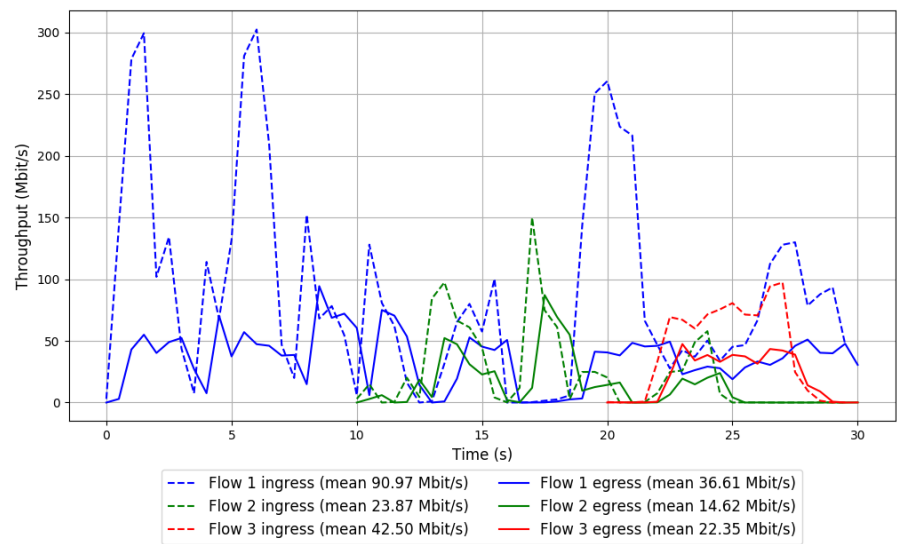# Run 2: Report of Verus — Data Link

```
Run 3: Statistics of Verus

Start at: 2019-01-21 11:52:14
End at: 2019-01-21 11:52:44
Local clock offset: 0.374 ms
Remote clock offset: -10.175 ms


# Below is generated by plot.py at 2019-01-21 13:18:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 53.49 Mbit/s
95th percentile per-packet one-way delay: 48.161 ms
Loss rate: 55.61%
-- Flow 1:
Average throughput: 36.61 Mbit/s
95th percentile per-packet one-way delay: 50.503 ms
Loss rate: 59.74%
-- Flow 2:
Average throughput: 14.62 Mbit/s
95th percentile per-packet one-way delay: 41.778 ms
Loss rate: 38.75%
-- Flow 3:
Average throughput: 22.35 Mbit/s
95th percentile per-packet one-way delay: 46.671 ms
Loss rate: 47.85%
```

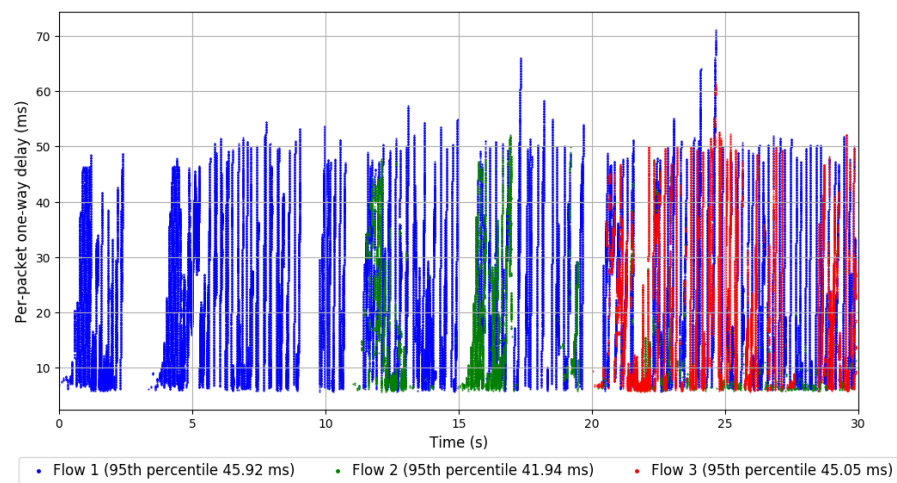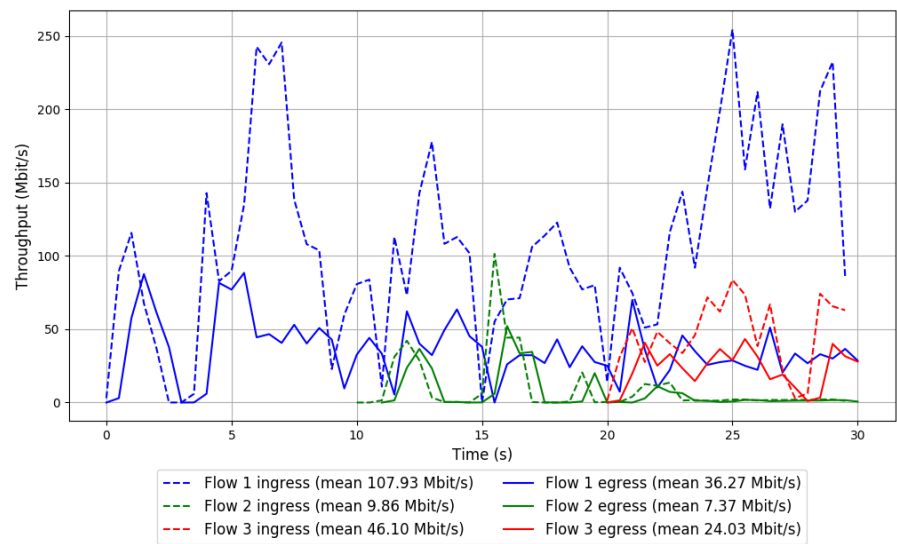Run 3: Report of Verus — Data Link

```
Run 4: Statistics of Verus

Start at: 2019-01-21 12:19:00
End at: 2019-01-21 12:19:30
Local clock offset: 3.096 ms
Remote clock offset: -8.562 ms


# Below is generated by plot.py at 2019-01-21 13:18:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 48.83 Mbit/s
95th percentile per-packet one-way delay: 45.538 ms
Loss rate: 62.31%
-- Flow 1:
Average throughput: 36.27 Mbit/s
95th percentile per-packet one-way delay: 45.919 ms
Loss rate: 66.37%
-- Flow 2:
Average throughput: 7.37 Mbit/s
95th percentile per-packet one-way delay: 41.938 ms
Loss rate: 28.99%
-- Flow 3:
Average throughput: 24.03 Mbit/s
95th percentile per-packet one-way delay: 45.054 ms
Loss rate: 47.88%
```
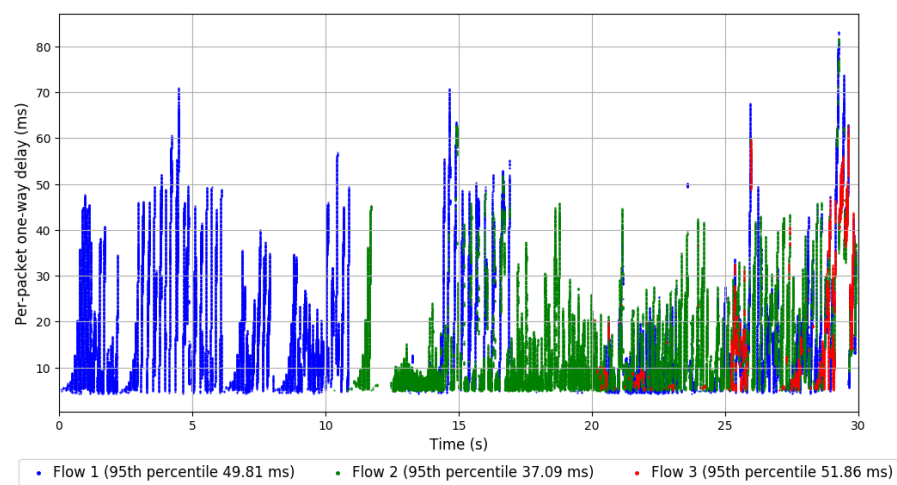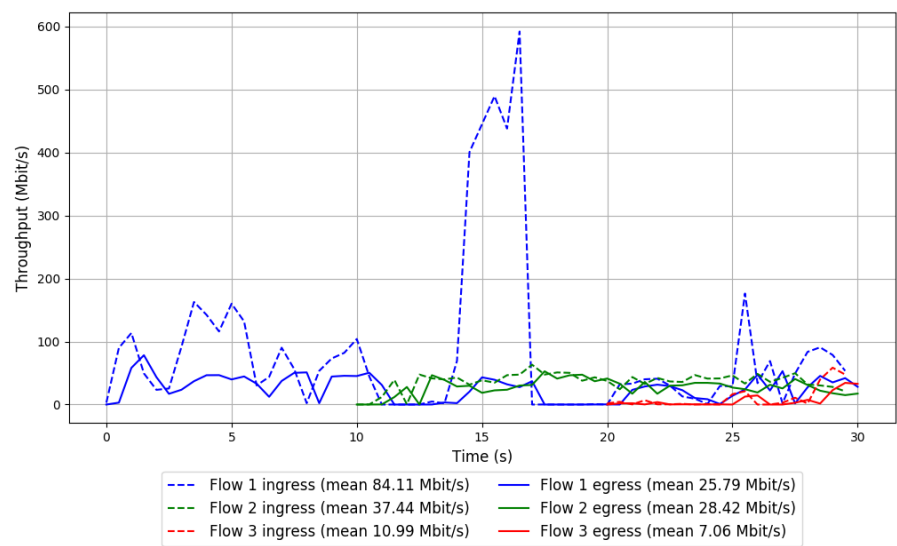
Run 4: Report of Verus — Data Link

Flow 1 ingress (mean 107.93 Mbit/s)   Flow 1 egress (mean 36.27 Mbit/s)
Flow 2 ingress (mean 9.86 Mbit/s)   Flow 2 egress (mean 7.37 Mbit/s)
Flow 3 ingress (mean 46.10 Mbit/s)   Flow 3 egress (mean 24.03 Mbit/s)

Flow 1 (95th percentile 45.92 ms)   Flow 2 (95th percentile 41.94 ms)   Flow 3 (95th percentile 45.05 ms)

```
Run 5: Statistics of Verus

Start at: 2019-01-21 12:45:10
End at: 2019-01-21 12:45:40
Local clock offset: 3.722 ms
Remote clock offset: -8.68 ms


# Below is generated by plot.py at 2019-01-21 13:18:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 46.71 Mbit/s
95th percentile per-packet one-way delay: 46.004 ms
Loss rate: 58.33%
-- Flow 1:
Average throughput: 25.79 Mbit/s
95th percentile per-packet one-way delay: 49.815 ms
Loss rate: 69.31%
-- Flow 2:
Average throughput: 28.42 Mbit/s
95th percentile per-packet one-way delay: 37.092 ms
Loss rate: 24.00%
-- Flow 3:
Average throughput: 7.06 Mbit/s
95th percentile per-packet one-way delay: 51.863 ms
Loss rate: 35.49%
```
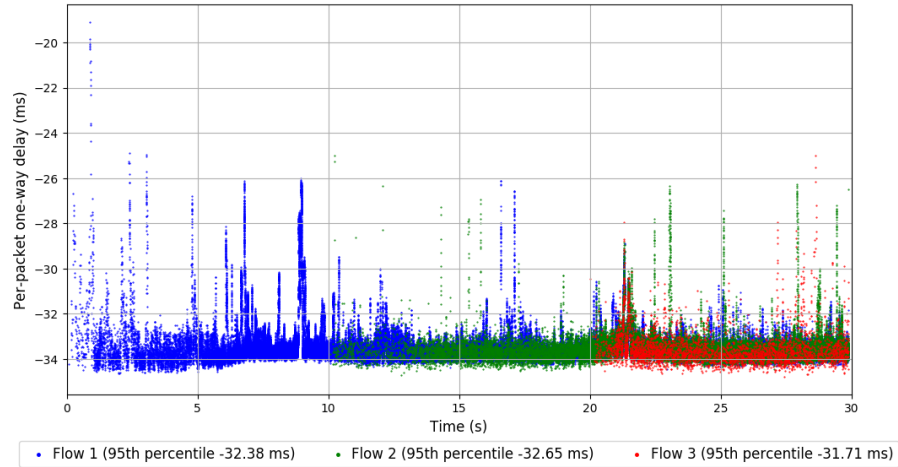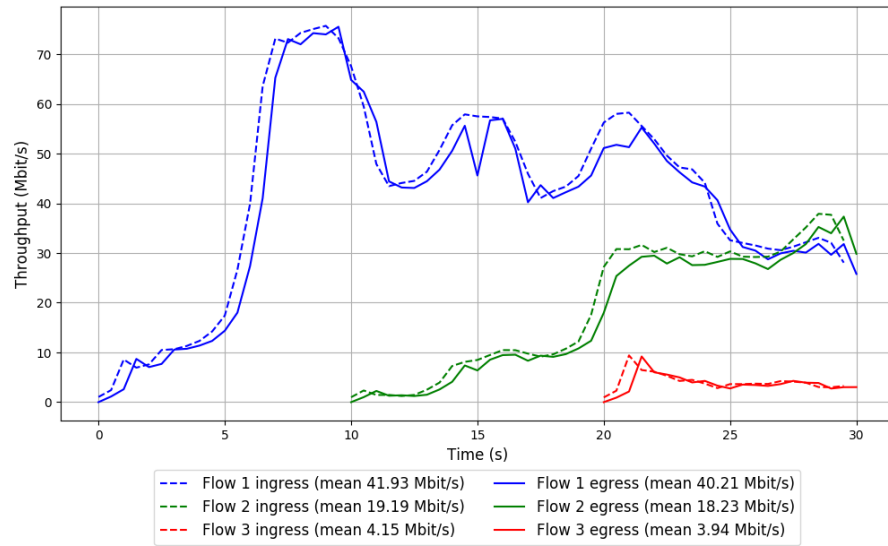
Run 5: Report of Verus — Data Link

```
Run 1: Statistics of PCC-Vivace

Start at: 2019-01-21 11:11:42
End at: 2019-01-21 11:12:12
Local clock offset: -1.701 ms
Remote clock offset: -48.907 ms


# Below is generated by plot.py at 2019-01-21 13:18:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 53.63 Mbit/s
95th percentile per-packet one-way delay: -32.418 ms
Loss rate: 4.32%
-- Flow 1:
Average throughput: 40.21 Mbit/s
95th percentile per-packet one-way delay: -32.382 ms
Loss rate: 4.10%
-- Flow 2:
Average throughput: 18.23 Mbit/s
95th percentile per-packet one-way delay: -32.645 ms
Loss rate: 4.98%
-- Flow 3:
Average throughput: 3.94 Mbit/s
95th percentile per-packet one-way delay: -31.714 ms
Loss rate: 5.20%
```

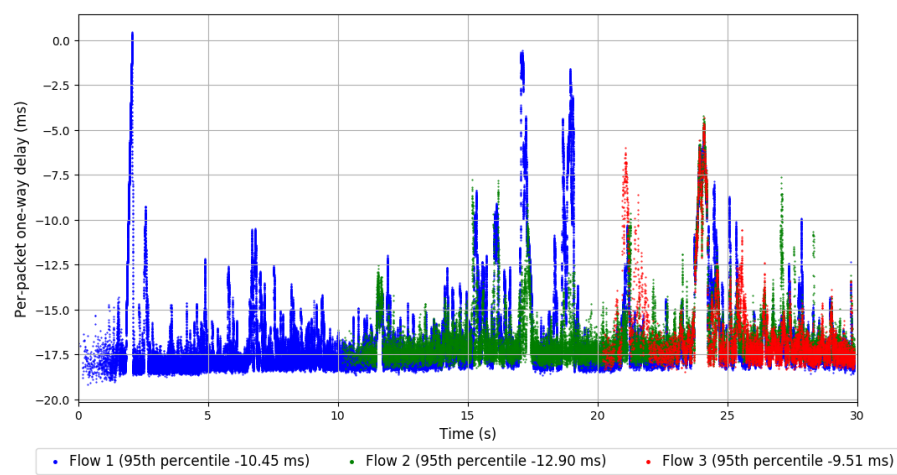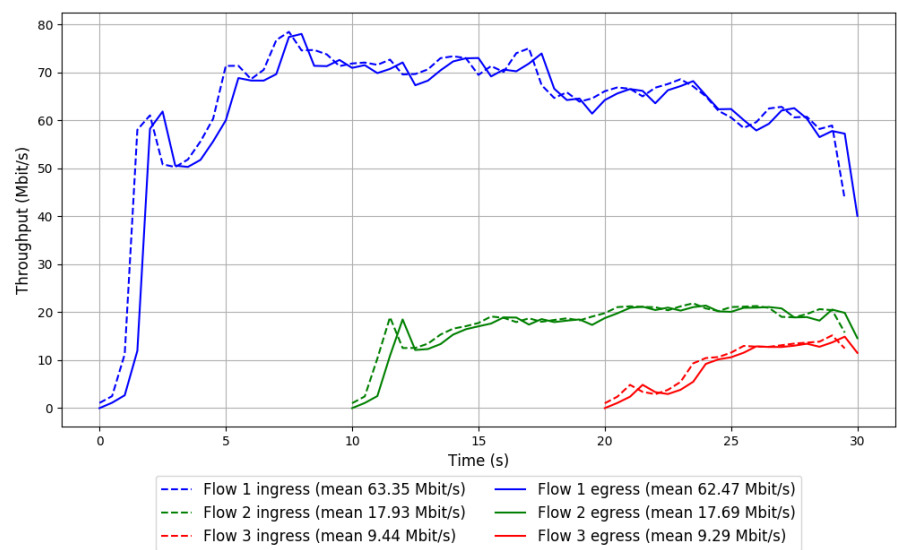Run 1: Report of PCC-Vivace — Data Link

```
Run 2: Statistics of PCC-Vivace

Start at: 2019-01-21 11:38:33
End at: 2019-01-21 11:39:03
Local clock offset: 0.218 ms
Remote clock offset: -32.165 ms


# Below is generated by plot.py at 2019-01-21 13:18:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 77.31 Mbit/s
95th percentile per-packet one-way delay: -10.758 ms
Loss rate: 1.38%
-- Flow 1:
Average throughput: 62.47 Mbit/s
95th percentile per-packet one-way delay: -10.453 ms
Loss rate: 1.38%
-- Flow 2:
Average throughput: 17.69 Mbit/s
95th percentile per-packet one-way delay: -12.901 ms
Loss rate: 1.36%
-- Flow 3:
Average throughput: 9.29 Mbit/s
95th percentile per-packet one-way delay: -9.508 ms
Loss rate: 1.58%
```

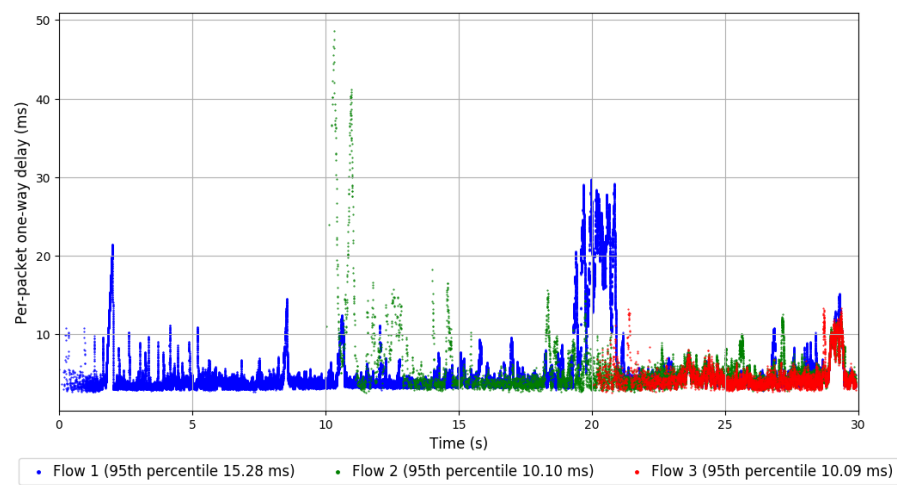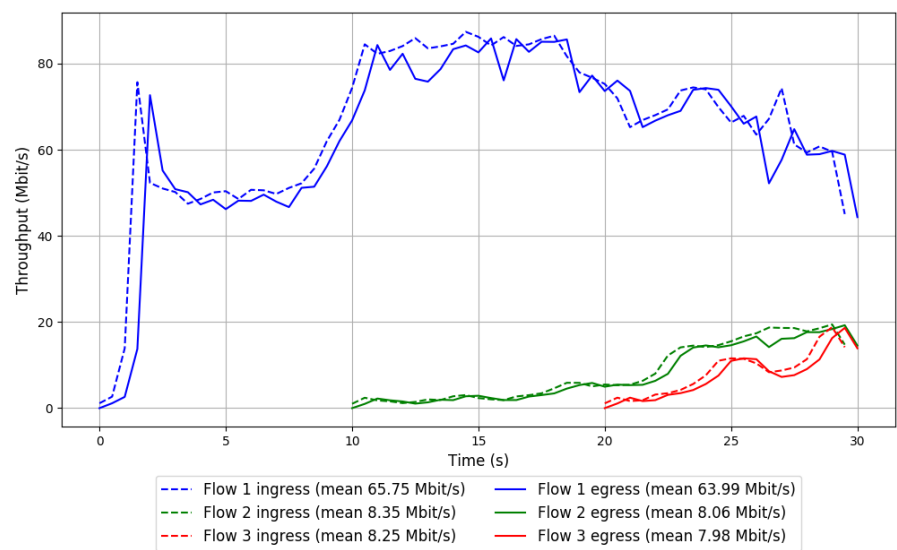# Run 2: Report of PCC-Vivace — Data Link

```
Run 3: Statistics of PCC-Vivace

Start at: 2019-01-21 12:04:59
End at: 2019-01-21 12:05:29
Local clock offset: 1.468 ms
Remote clock offset: -12.901 ms


# Below is generated by plot.py at 2019-01-21 13:18:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 71.99 Mbit/s
95th percentile per-packet one-way delay: 13.717 ms
Loss rate: 2.77%
-- Flow 1:
Average throughput: 63.99 Mbit/s
95th percentile per-packet one-way delay: 15.283 ms
Loss rate: 2.68%
-- Flow 2:
Average throughput: 8.06 Mbit/s
95th percentile per-packet one-way delay: 10.096 ms
Loss rate: 3.52%
-- Flow 3:
Average throughput: 7.98 Mbit/s
95th percentile per-packet one-way delay: 10.091 ms
Loss rate: 3.32%
```

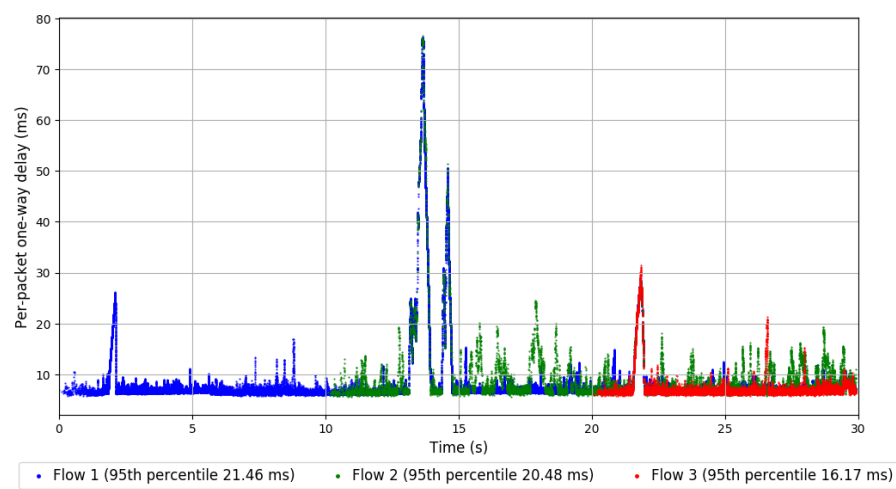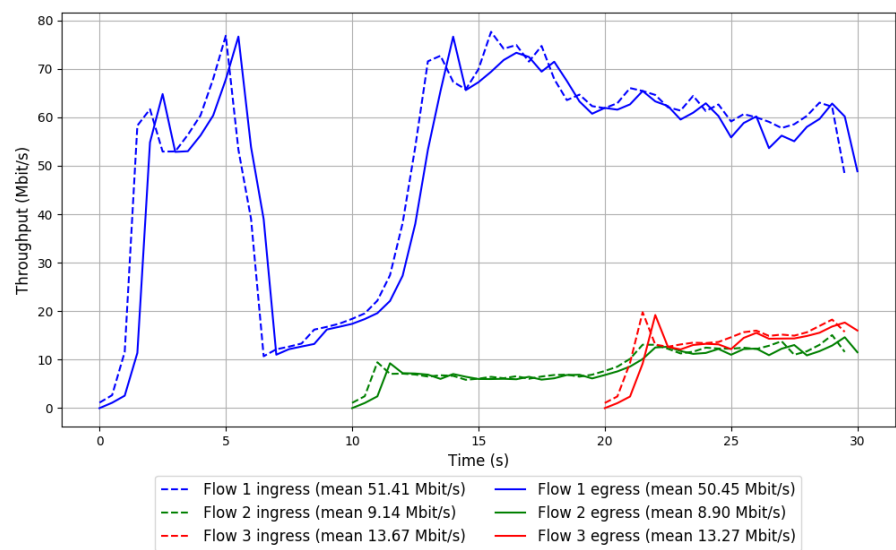Run 3: Report of PCC-Vivace — Data Link

```
Run 4: Statistics of PCC-Vivace

Start at: 2019-01-21 12:31:15
End at: 2019-01-21 12:31:45
Local clock offset: 1.176 ms
Remote clock offset: -10.321 ms


# Below is generated by plot.py at 2019-01-21 13:18:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 60.76 Mbit/s
95th percentile per-packet one-way delay: 20.966 ms
Loss rate: 2.00%
-- Flow 1:
Average throughput: 50.45 Mbit/s
95th percentile per-packet one-way delay: 21.465 ms
Loss rate: 1.85%
-- Flow 2:
Average throughput: 8.90 Mbit/s
95th percentile per-packet one-way delay: 20.483 ms
Loss rate: 2.56%
-- Flow 3:
Average throughput: 13.27 Mbit/s
95th percentile per-packet one-way delay: 16.169 ms
Loss rate: 2.89%
```
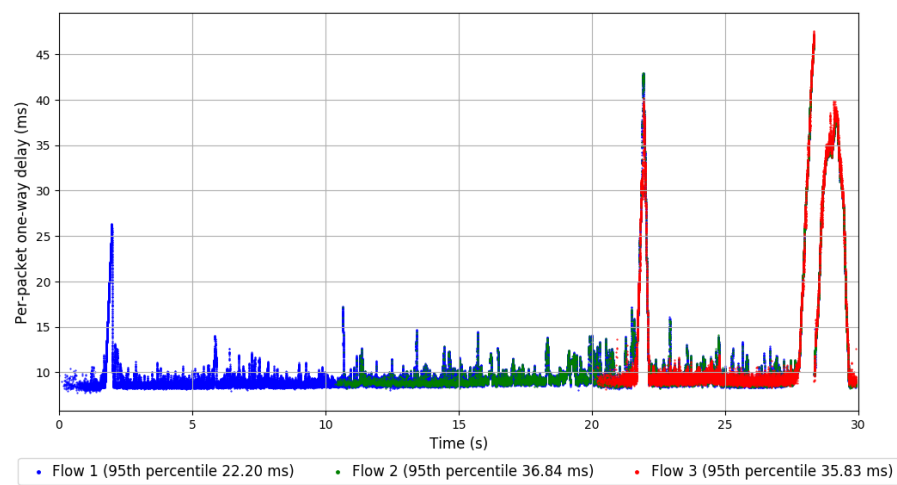
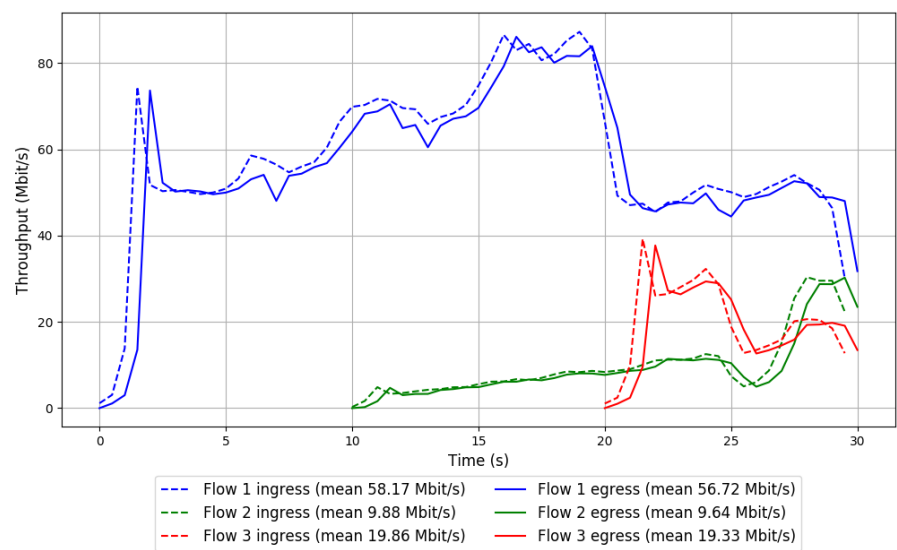Run 4: Report of PCC-Vivace — Data Link

```
Run 5: Statistics of PCC-Vivace

Start at: 2019-01-21 12:57:34
End at: 2019-01-21 12:58:04
Local clock offset: -1.448 ms
Remote clock offset: -10.137 ms


# Below is generated by plot.py at 2019-01-21 13:18:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 69.50 Mbit/s
95th percentile per-packet one-way delay: 30.840 ms
Loss rate: 2.51%
-- Flow 1:
Average throughput: 56.72 Mbit/s
95th percentile per-packet one-way delay: 22.195 ms
Loss rate: 2.51%
-- Flow 2:
Average throughput: 9.64 Mbit/s
95th percentile per-packet one-way delay: 36.842 ms
Loss rate: 2.44%
-- Flow 3:
Average throughput: 19.33 Mbit/s
95th percentile per-packet one-way delay: 35.833 ms
Loss rate: 2.66%
```

Run 5: Report of PCC-Vivace — Data Link

- - - - Flow 1 ingress (mean 58.17 Mbit/s)   —— Flow 1 egress (mean 56.72 Mbit/s)
- - - - Flow 2 ingress (mean 9.88 Mbit/s)   —— Flow 2 egress (mean 9.64 Mbit/s)
- - - - Flow 3 ingress (mean 19.86 Mbit/s)   —— Flow 3 egress (mean 19.33 Mbit/s)

- Flow 1 (95th percentile 22.20 ms)   • Flow 2 (95th percentile 36.84 ms)   • Flow 3 (95th percentile 35.83 ms)
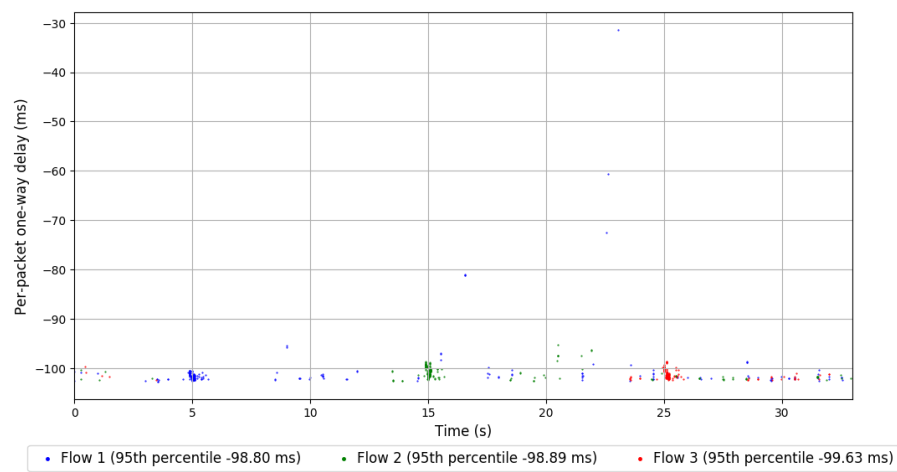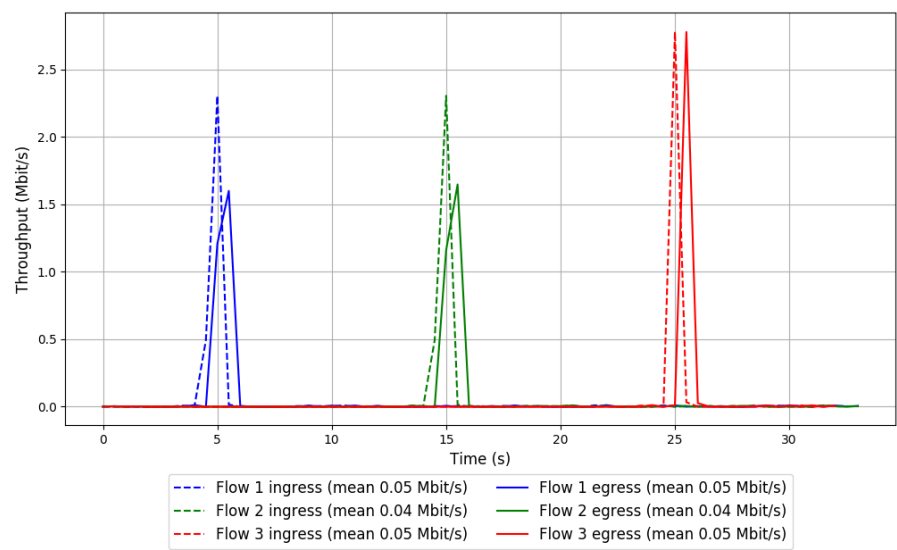
```
Run 1: Statistics of WebRTC media

Start at: 2019-01-21 11:04:03
End at: 2019-01-21 11:04:33
Local clock offset: -0.877 ms
Remote clock offset: -115.165 ms


# Below is generated by plot.py at 2019-01-21 13:18:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.13 Mbit/s
95th percentile per-packet one-way delay: -98.915 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: -98.801 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.04 Mbit/s
95th percentile per-packet one-way delay: -98.887 ms
Loss rate: 0.05%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: -99.627 ms
Loss rate: 0.00%
```

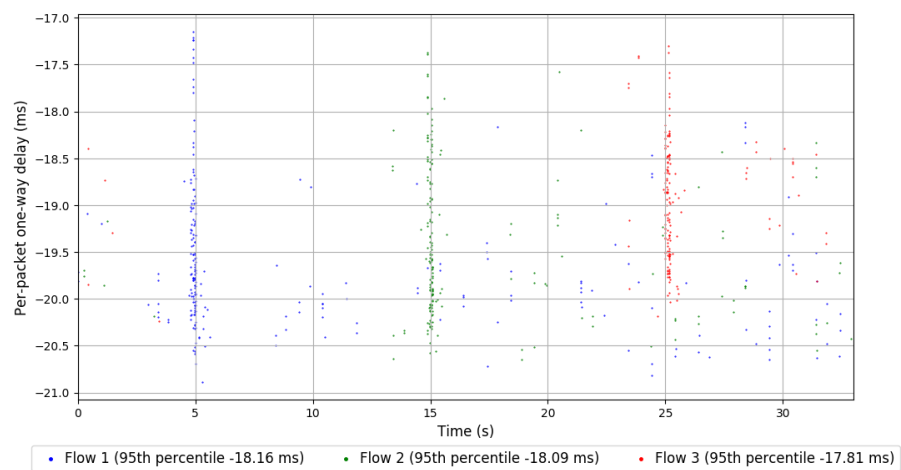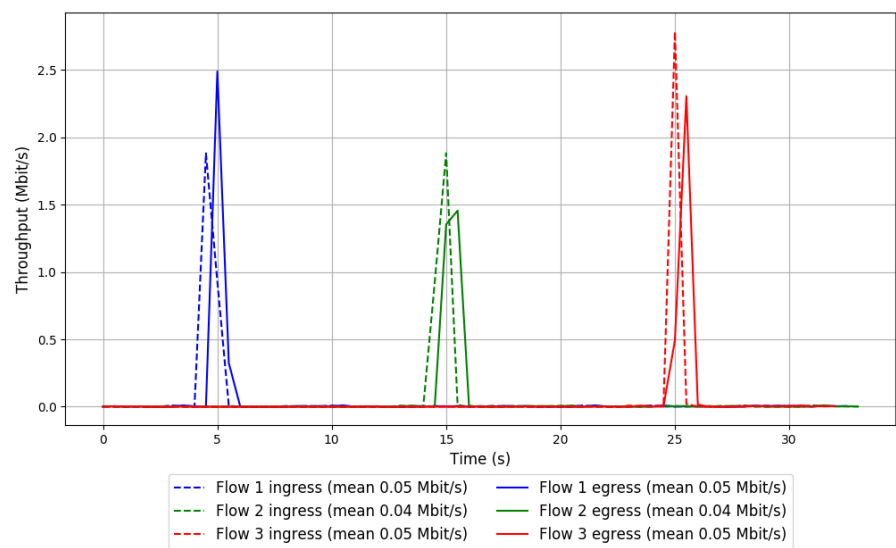Run 1: Report of WebRTC media — Data Link

```
Run 2: Statistics of WebRTC media

Start at: 2019-01-21 11:30:35
End at: 2019-01-21 11:31:05
Local clock offset: 1.259 ms
Remote clock offset: -32.325 ms

# Below is generated by plot.py at 2019-01-21 13:18:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.13 Mbit/s
95th percentile per-packet one-way delay: -18.023 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: -18.161 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.04 Mbit/s
95th percentile per-packet one-way delay: -18.086 ms
Loss rate: 0.05%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: -17.810 ms
Loss rate: 0.00%
```

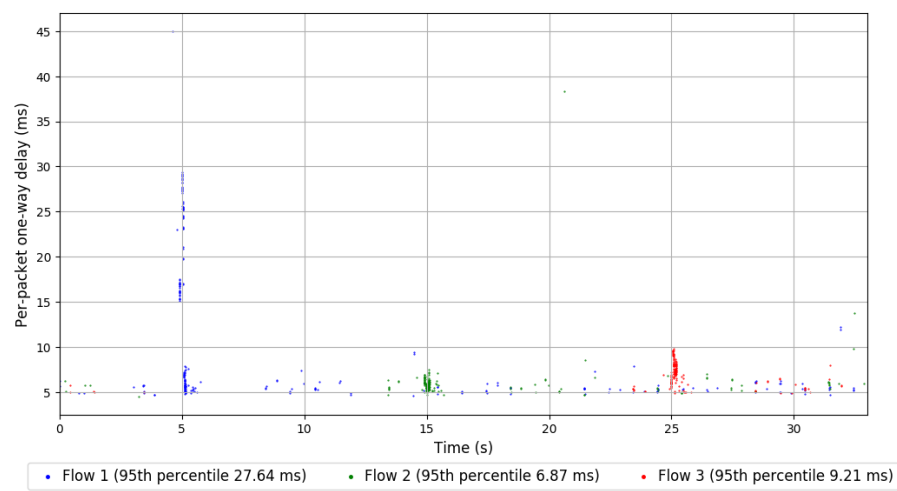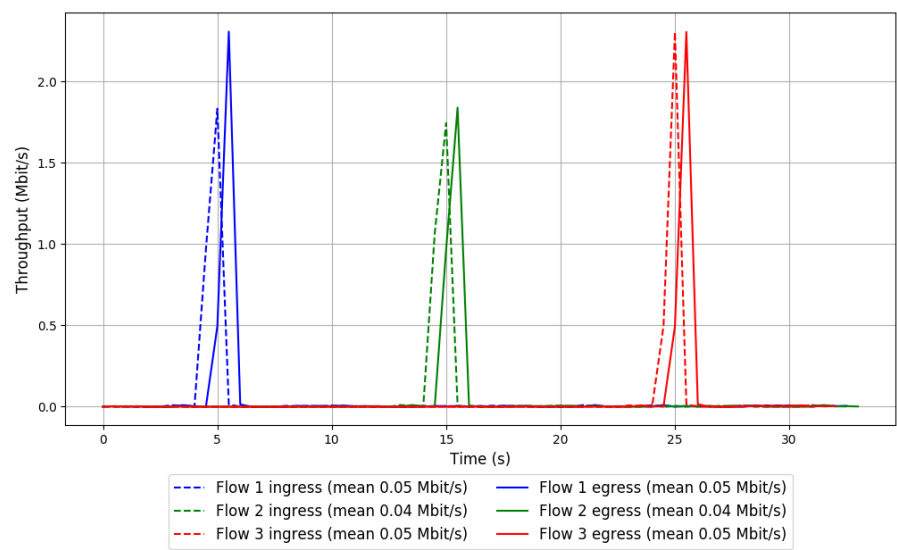Run 2: Report of WebRTC media — Data Link

```
Run 3: Statistics of WebRTC media

Start at: 2019-01-21 11:57:12
End at: 2019-01-21 11:57:42
Local clock offset: 2.059 ms
Remote clock offset: -9.144 ms


# Below is generated by plot.py at 2019-01-21 13:18:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.13 Mbit/s
95th percentile per-packet one-way delay: 25.108 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 27.645 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.04 Mbit/s
95th percentile per-packet one-way delay: 6.870 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 9.206 ms
Loss rate: 0.00%
```

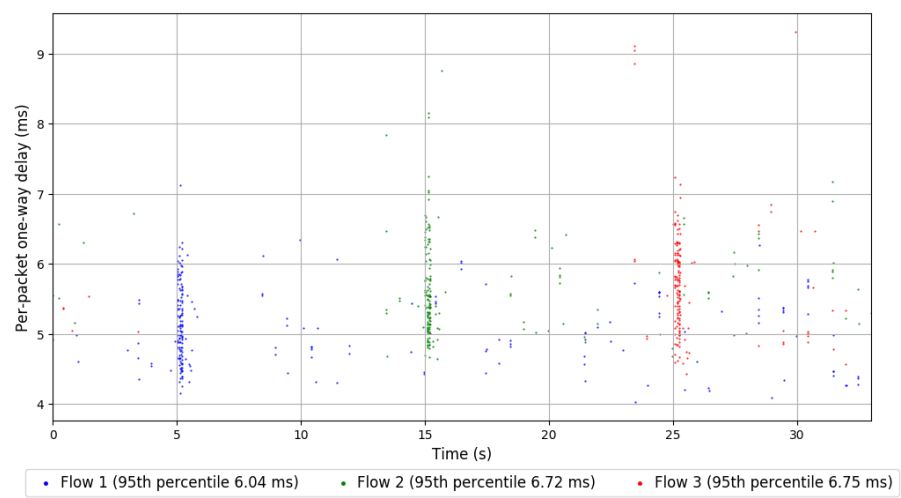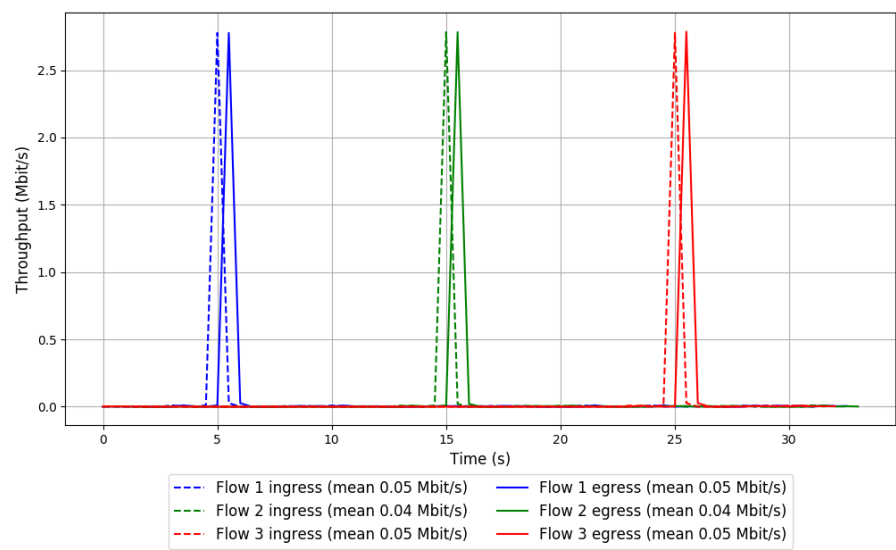Run 3: Report of WebRTC media — Data Link

```
Run 4: Statistics of WebRTC media

Start at: 2019-01-21 12:23:47
End at: 2019-01-21 12:24:17
Local clock offset: 2.185 ms
Remote clock offset: -10.648 ms


# Below is generated by plot.py at 2019-01-21 13:18:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.13 Mbit/s
95th percentile per-packet one-way delay: 6.576 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 6.039 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.04 Mbit/s
95th percentile per-packet one-way delay: 6.719 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 6.746 ms
Loss rate: 0.00%
```

Run 4: Report of WebRTC media — Data Link

```
Run 5: Statistics of WebRTC media

Start at: 2019-01-21 12:50:01
End at: 2019-01-21 12:50:31
Local clock offset: 0.065 ms
Remote clock offset: -7.052 ms


# Below is generated by plot.py at 2019-01-21 13:18:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.13 Mbit/s
95th percentile per-packet one-way delay: 12.346 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 13.591 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.04 Mbit/s
95th percentile per-packet one-way delay: 11.497 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 11.929 ms
Loss rate: 0.00%
```

Run 5: Report of WebRTC media — Data Link