

## Pantheon Report

Generated at 2018-09-06 08:35:53 (UTC).

Data path: AWS India 1 on `ens5` (*local*) → India cellular on `ppp0` (*remote*).

Repeated the test of 18 congestion control schemes 3 times.

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

NTP offsets were measured against `nets.org.sg` and have been applied to correct the timestamps in logs.

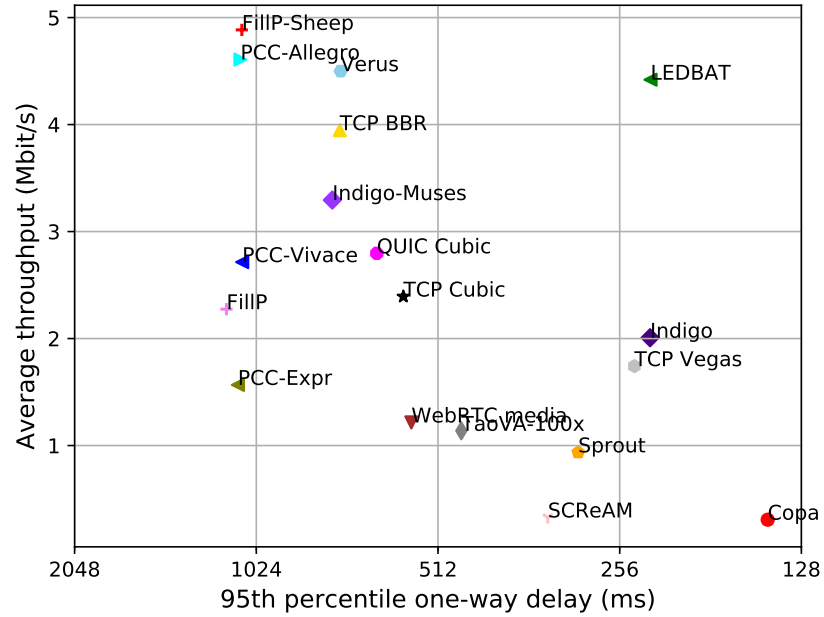
### System info:

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

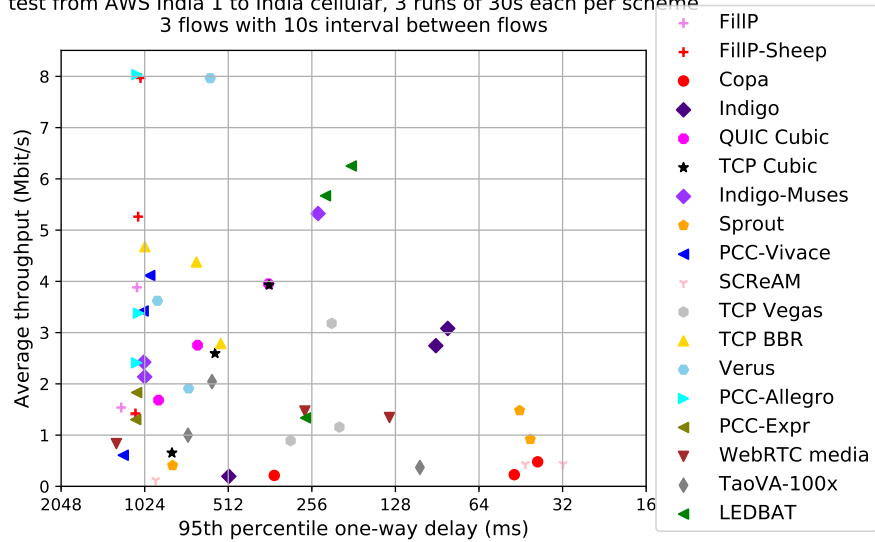
### Git summary:

```
branch: muses @ f392ce15d580343f4432c3d7e068b3290f03eb4a
third_party/fillp @ d47f4fa1b454a5e3c0537115c5a28436dbd4b834
third_party/fillp-sheep @ daed0c84f98531712514b2231f43ec6901114ffe
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdf58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/muses @ a28d20fb82a95a965a3da65fd1eb71b8994e9b84
third_party/pantheon-tunnel @ cbfce6db5ff5740dafa1771f813cd646339e1952
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
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 cellular, 3 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 cellular, 3 runs of 30s each per scheme  
 3 flows with 10s interval between flows



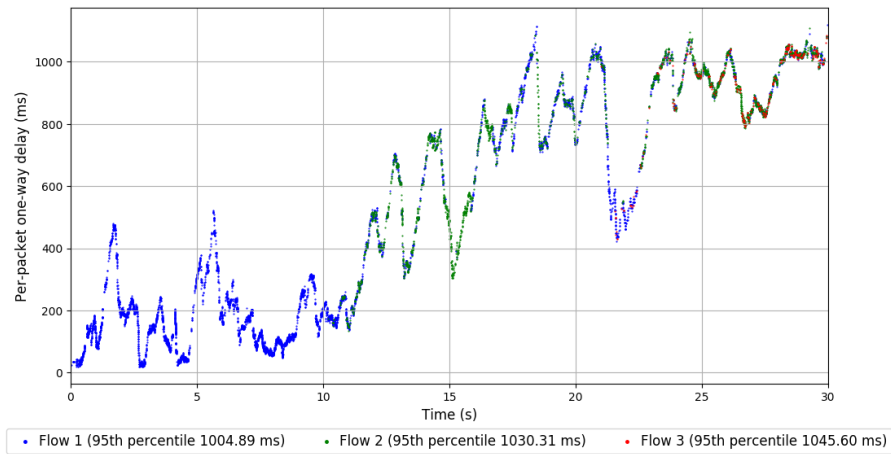
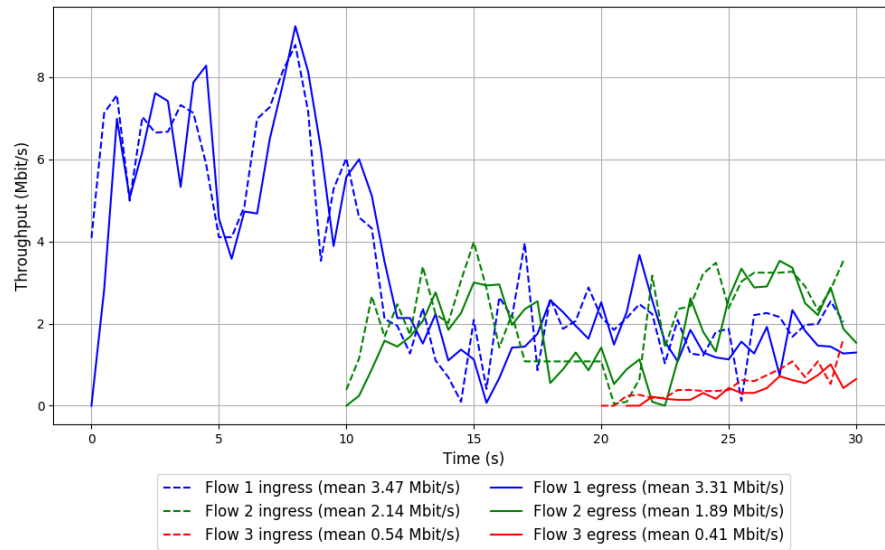
scheme	# runs	mean avg tput (Mbit/s)			mean 95th-%ile delay (ms)			mean loss rate (%)		
		flow 1	flow 2	flow 3	flow 1	flow 2	flow 3	flow 1	flow 2	flow 3
TCP BBR	3	2.54	1.65	0.96	715.90	756.30	797.60	2.34	5.42	13.06
Copa	3	0.00	0.08	0.77	35.39	111.77	159.74	98.04	79.43	33.87
TCP Cubic	3	1.32	0.99	1.28	498.58	635.13	652.05	1.64	2.22	2.75
FillP	3	1.69	0.68	0.52	1170.34	1105.23	1108.62	78.21	75.20	81.11
FillP-Sheep	3	3.21	1.91	1.37	1063.05	1091.98	1083.01	32.25	56.19	66.98
Indigo	3	1.08	0.96	1.17	216.96	1920.71	176.79	1.95	4.71	6.64
LEDBAT	3	2.66	2.17	1.01	218.42	245.20	252.41	0.35	0.90	2.03
Indigo-Muses	3	2.29	1.00	1.15	541.67	756.38	778.19	2.37	17.61	35.56
PCC-Allegro	3	2.94	2.20	0.85	1070.88	1100.10	1139.88	37.71	75.11	89.69
PCC-Expr	2	1.16	0.41	0.53	1085.03	1109.08	1106.94	78.37	93.47	93.50
QUIC Cubic	3	1.68	1.05	1.31	575.86	681.84	688.20	1.40	2.82	4.73
SCReAM	3	0.16	0.17	0.16	158.98	332.46	534.64	0.06	0.02	0.12
Sprout	3	0.47	0.50	0.41	190.25	267.94	555.49	0.14	0.16	0.56
TaoVA-100x	3	0.62	0.37	0.82	389.99	411.94	698.68	54.36	62.95	55.47
TCP Vegas	3	0.84	0.81	1.10	159.16	227.14	197.21	0.32	0.32	0.43
Verus	3	2.95	1.96	0.97	691.60	851.76	740.29	2.20	30.83	6.48
PCC-Vivace	3	1.44	1.37	1.14	1014.58	1159.54	686.47	12.30	24.23	21.73
WebRTC media	3	0.66	0.36	0.20	1043.00	230.17	183.01	4.46	0.10	0.40

Run 1: Statistics of TCP BBR

Start at: 2018-09-06 07:39:29  
End at: 2018-09-06 07:39:59  
Local clock offset: -1.026 ms  
Remote clock offset: -2.214 ms

# Below is generated by plot.py at 2018-09-06 08:35:11  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 4.68 Mbit/s  
95th percentile per-packet one-way delay: 1022.648 ms  
Loss rate: 7.84%  
-- Flow 1:  
Average throughput: 3.31 Mbit/s  
95th percentile per-packet one-way delay: 1004.893 ms  
Loss rate: 4.61%  
-- Flow 2:  
Average throughput: 1.89 Mbit/s  
95th percentile per-packet one-way delay: 1030.313 ms  
Loss rate: 12.86%  
-- Flow 3:  
Average throughput: 0.41 Mbit/s  
95th percentile per-packet one-way delay: 1045.600 ms  
Loss rate: 30.68%

# Run 1: Report of TCP BBR — Data Link

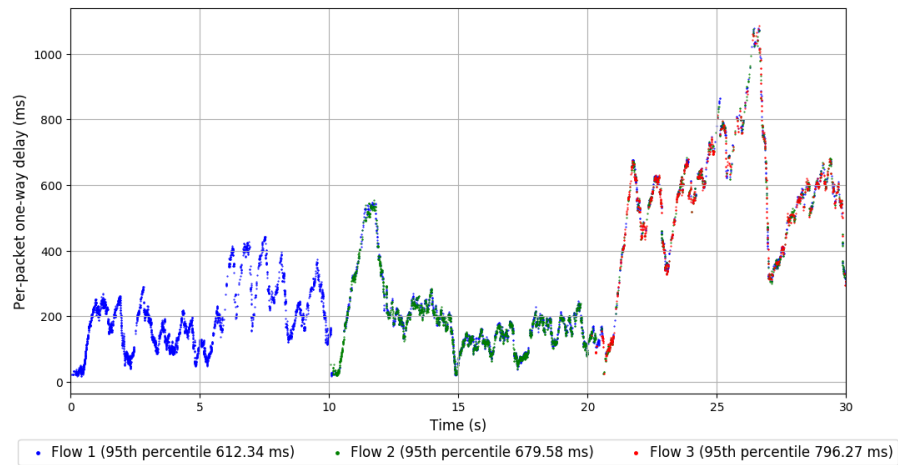
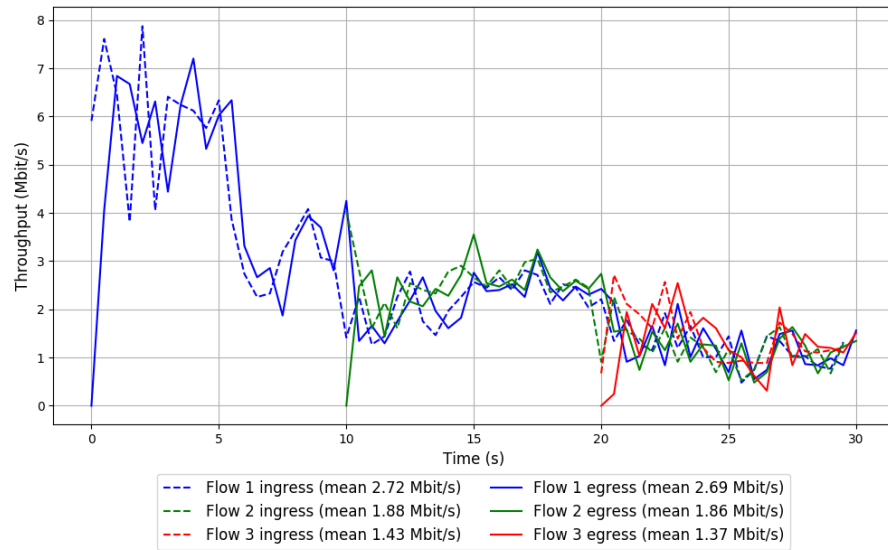


Run 2: Statistics of TCP BBR

Start at: 2018-09-06 08:00:35  
End at: 2018-09-06 08:01:05  
Local clock offset: 0.917 ms  
Remote clock offset: -2.423 ms

# Below is generated by plot.py at 2018-09-06 08:35:11  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 4.38 Mbit/s  
95th percentile per-packet one-way delay: 666.881 ms  
Loss rate: 1.67%  
-- Flow 1:  
Average throughput: 2.69 Mbit/s  
95th percentile per-packet one-way delay: 612.344 ms  
Loss rate: 1.07%  
-- Flow 2:  
Average throughput: 1.86 Mbit/s  
95th percentile per-packet one-way delay: 679.583 ms  
Loss rate: 1.69%  
-- Flow 3:  
Average throughput: 1.37 Mbit/s  
95th percentile per-packet one-way delay: 796.267 ms  
Loss rate: 5.07%

## Run 2: Report of TCP BBR — Data Link



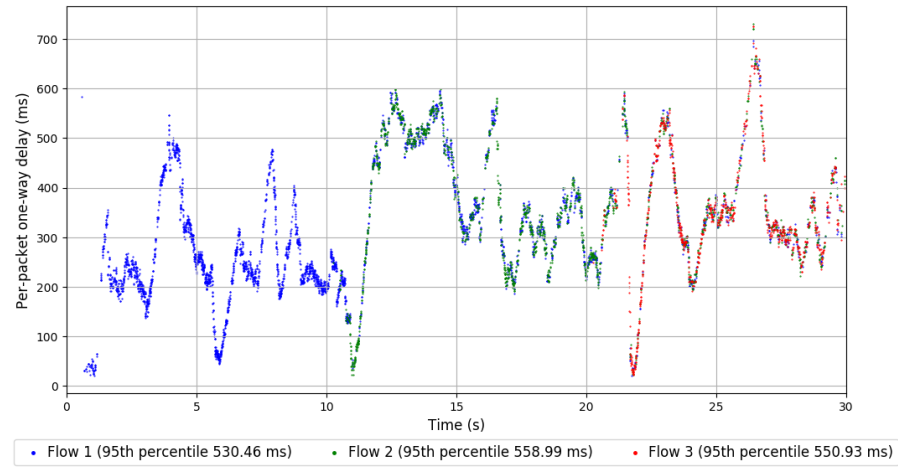
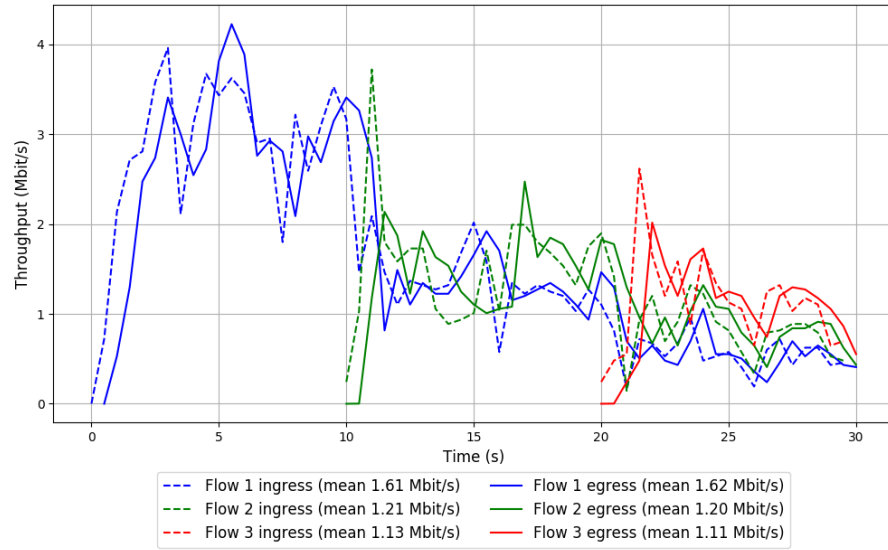
Run 3: Statistics of TCP BBR

Start at: 2018-09-06 08:21:00  
End at: 2018-09-06 08:21:30  
Local clock offset: 1.077 ms  
Remote clock offset: -1.963 ms

# Below is generated by plot.py at 2018-09-06 08:35:11  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 2.79 Mbit/s  
95th percentile per-packet one-way delay: 544.887 ms  
Loss rate: 1.73%  
-- Flow 1:  
Average throughput: 1.62 Mbit/s  
95th percentile per-packet one-way delay: 530.461 ms  
Loss rate: 1.35%  
-- Flow 2:  
Average throughput: 1.20 Mbit/s  
95th percentile per-packet one-way delay: 558.989 ms  
Loss rate: 1.70%  
-- Flow 3:  
Average throughput: 1.11 Mbit/s  
95th percentile per-packet one-way delay: 550.930 ms  
Loss rate: 3.44%



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

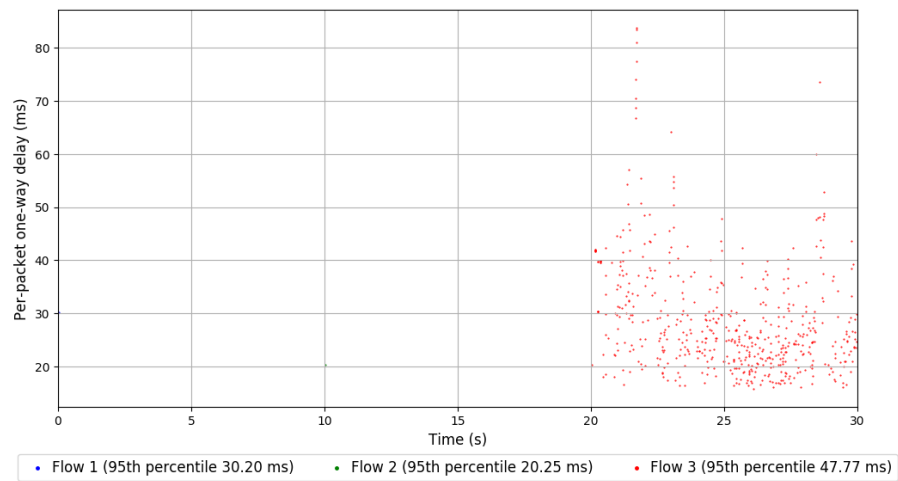
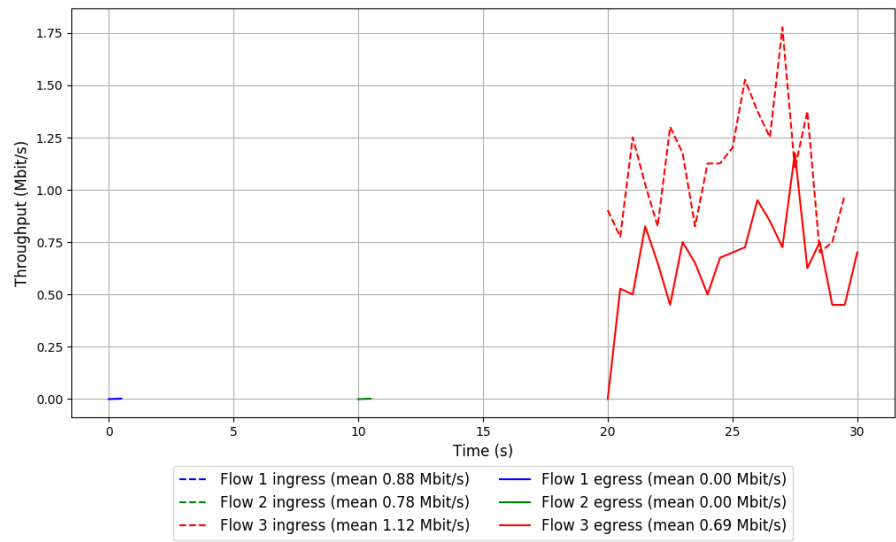


Run 1: Statistics of Copa

Start at: 2018-09-06 07:36:09  
End at: 2018-09-06 07:36:39  
Local clock offset: 2.663 ms  
Remote clock offset: -1.109 ms

# Below is generated by plot.py at 2018-09-06 08:35:11  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 0.23 Mbit/s  
95th percentile per-packet one-way delay: 47.765 ms  
Loss rate: 39.77%  
-- Flow 1:  
Average throughput: 0.00 Mbit/s  
95th percentile per-packet one-way delay: 30.195 ms  
Loss rate: 98.65%  
-- Flow 2:  
Average throughput: 0.00 Mbit/s  
95th percentile per-packet one-way delay: 20.252 ms  
Loss rate: 98.39%  
-- Flow 3:  
Average throughput: 0.69 Mbit/s  
95th percentile per-packet one-way delay: 47.765 ms  
Loss rate: 39.03%

## Run 1: Report of Copa — Data Link

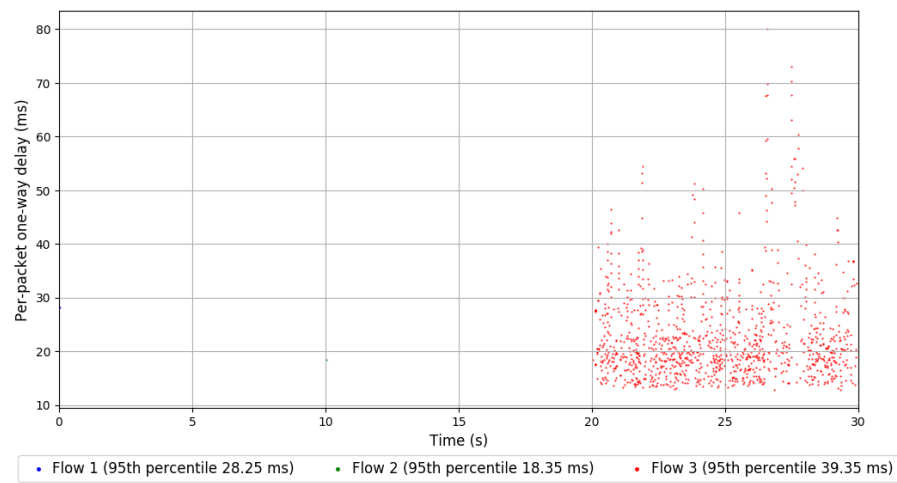
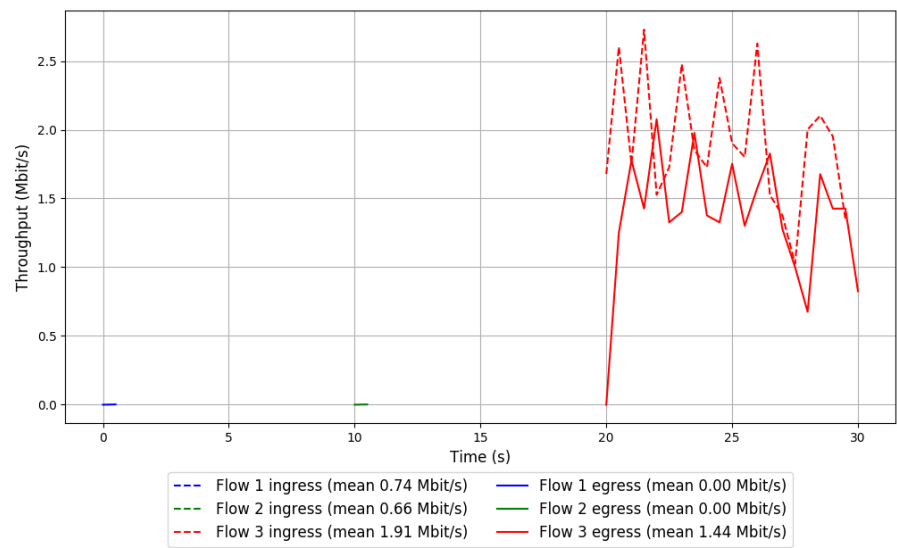


Run 2: Statistics of Copa

Start at: 2018-09-06 07:56:59  
End at: 2018-09-06 07:57:29  
Local clock offset: 3.058 ms  
Remote clock offset: -3.548 ms

# Below is generated by plot.py at 2018-09-06 08:35:11  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 0.48 Mbit/s  
95th percentile per-packet one-way delay: 39.349 ms  
Loss rate: 25.22%  
-- Flow 1:  
Average throughput: 0.00 Mbit/s  
95th percentile per-packet one-way delay: 28.245 ms  
Loss rate: 98.65%  
-- Flow 2:  
Average throughput: 0.00 Mbit/s  
95th percentile per-packet one-way delay: 18.348 ms  
Loss rate: 98.39%  
-- Flow 3:  
Average throughput: 1.44 Mbit/s  
95th percentile per-packet one-way delay: 39.349 ms  
Loss rate: 24.69%

Run 2: Report of Copa — Data Link

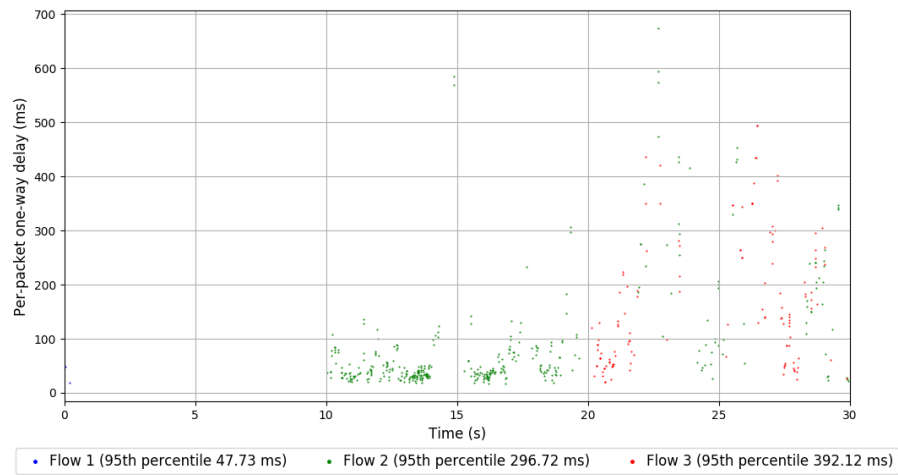
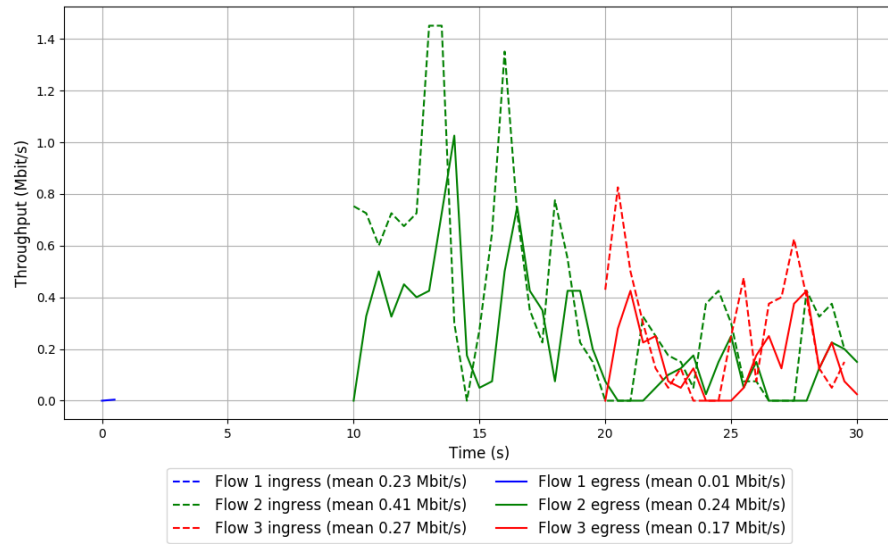


Run 3: Statistics of Copa

Start at: 2018-09-06 08:17:19  
End at: 2018-09-06 08:17:49  
Local clock offset: 3.522 ms  
Remote clock offset: -2.649 ms

```
# Below is generated by plot.py at 2018-09-06 08:35:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 349.574 ms
Loss rate: 40.95%
-- Flow 1:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 47.727 ms
Loss rate: 96.83%
-- Flow 2:
Average throughput: 0.24 Mbit/s
95th percentile per-packet one-way delay: 296.722 ms
Loss rate: 41.51%
-- Flow 3:
Average throughput: 0.17 Mbit/s
95th percentile per-packet one-way delay: 392.120 ms
Loss rate: 37.89%
```

### Run 3: Report of Copa — Data Link



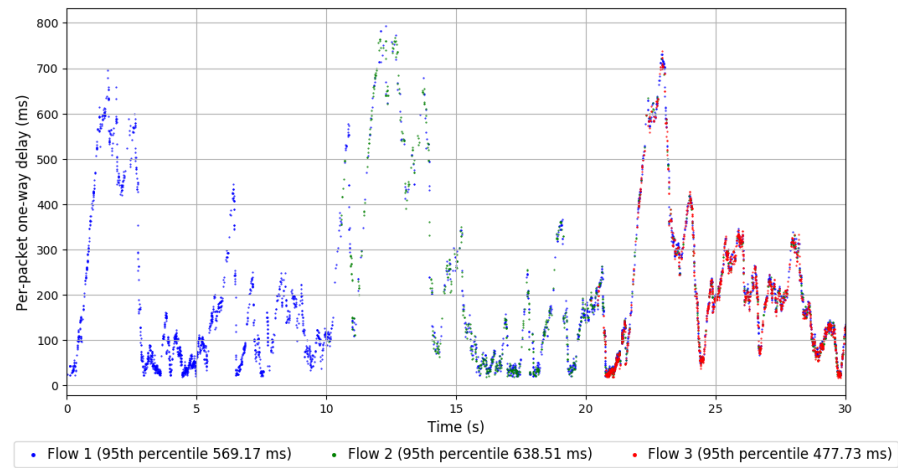
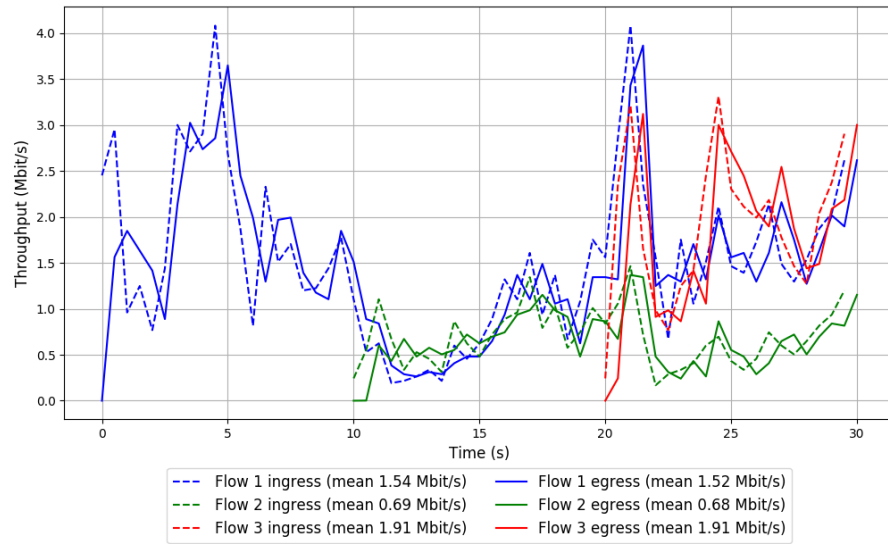
Run 1: Statistics of TCP Cubic

Start at: 2018-09-06 07:45:04  
End at: 2018-09-06 07:45:34  
Local clock offset: 1.215 ms  
Remote clock offset: -1.426 ms

# Below is generated by plot.py at 2018-09-06 08:35:11  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 2.59 Mbit/s  
95th percentile per-packet one-way delay: 571.212 ms  
Loss rate: 1.36%  
-- Flow 1:  
Average throughput: 1.52 Mbit/s  
95th percentile per-packet one-way delay: 569.169 ms  
Loss rate: 1.02%  
-- Flow 2:  
Average throughput: 0.68 Mbit/s  
95th percentile per-packet one-way delay: 638.515 ms  
Loss rate: 2.18%  
-- Flow 3:  
Average throughput: 1.91 Mbit/s  
95th percentile per-packet one-way delay: 477.732 ms  
Loss rate: 1.58%



## Run 1: Report of TCP Cubic — Data Link



Run 2: Statistics of TCP Cubic

Start at: 2018-09-06 08:06:10

End at: 2018-09-06 08:06:40

Local clock offset: 1.731 ms

Remote clock offset: -2.01 ms

# Below is generated by plot.py at 2018-09-06 08:35:11

# Datalink statistics

-- Total of 3 flows:

Average throughput: 0.65 Mbit/s

95th percentile per-packet one-way delay: 816.871 ms

Loss rate: 4.34%

-- Flow 1:

Average throughput: 0.32 Mbit/s

95th percentile per-packet one-way delay: 629.840 ms

Loss rate: 3.64%

-- Flow 2:

Average throughput: 0.27 Mbit/s

95th percentile per-packet one-way delay: 877.873 ms

Loss rate: 4.09%

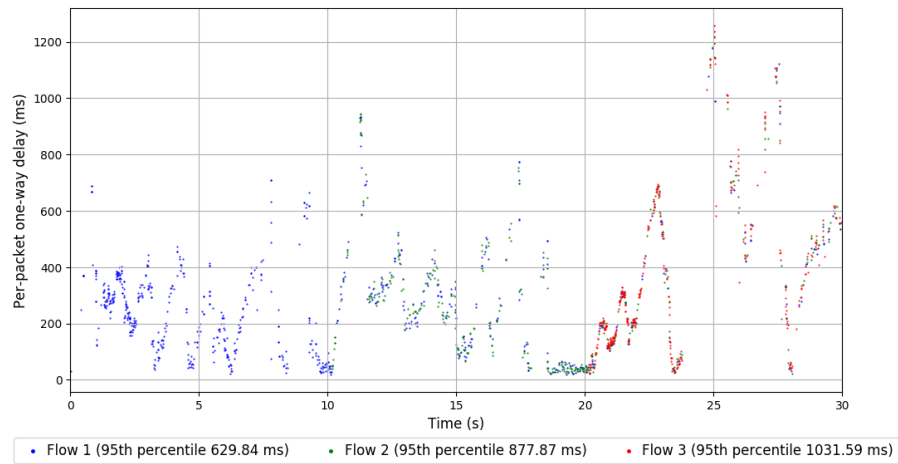
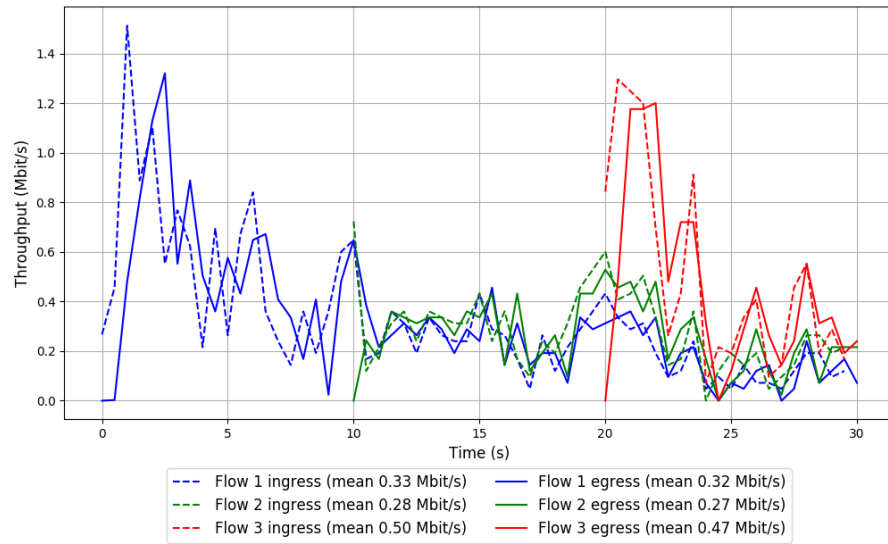
-- Flow 3:

Average throughput: 0.47 Mbit/s

95th percentile per-packet one-way delay: 1031.591 ms

Loss rate: 5.99%

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

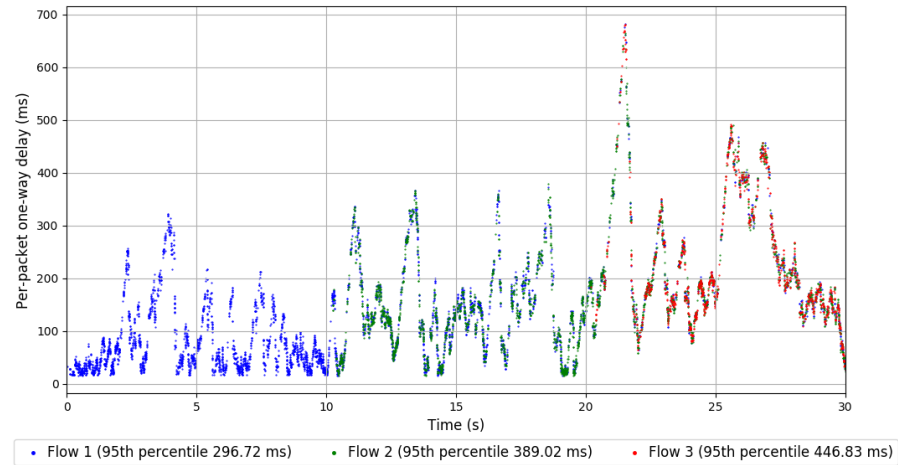
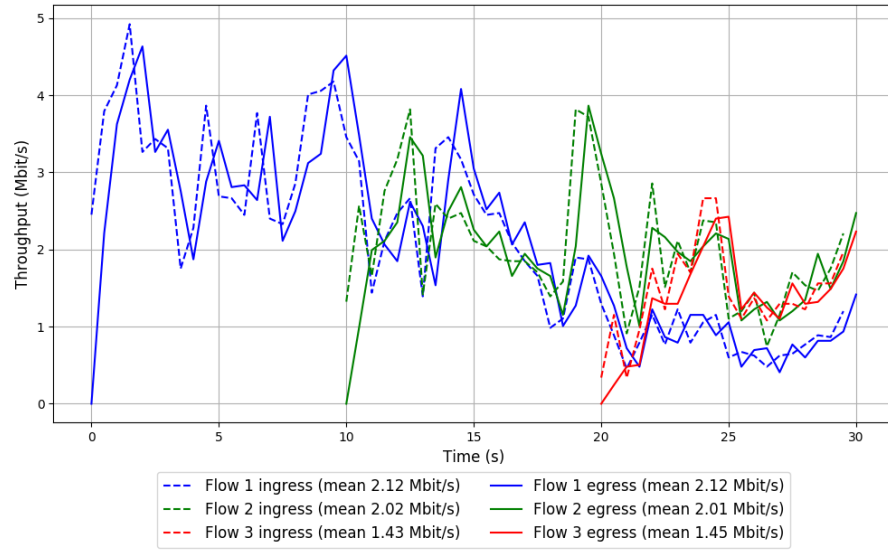


Run 3: Statistics of TCP Cubic

Start at: 2018-09-06 08:26:36  
End at: 2018-09-06 08:27:06  
Local clock offset: 3.393 ms  
Remote clock offset: -2.404 ms

# Below is generated by plot.py at 2018-09-06 08:35:11  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 3.93 Mbit/s  
95th percentile per-packet one-way delay: 364.924 ms  
Loss rate: 0.36%  
-- Flow 1:  
Average throughput: 2.12 Mbit/s  
95th percentile per-packet one-way delay: 296.721 ms  
Loss rate: 0.26%  
-- Flow 2:  
Average throughput: 2.01 Mbit/s  
95th percentile per-packet one-way delay: 389.017 ms  
Loss rate: 0.39%  
-- Flow 3:  
Average throughput: 1.45 Mbit/s  
95th percentile per-packet one-way delay: 446.827 ms  
Loss rate: 0.67%

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

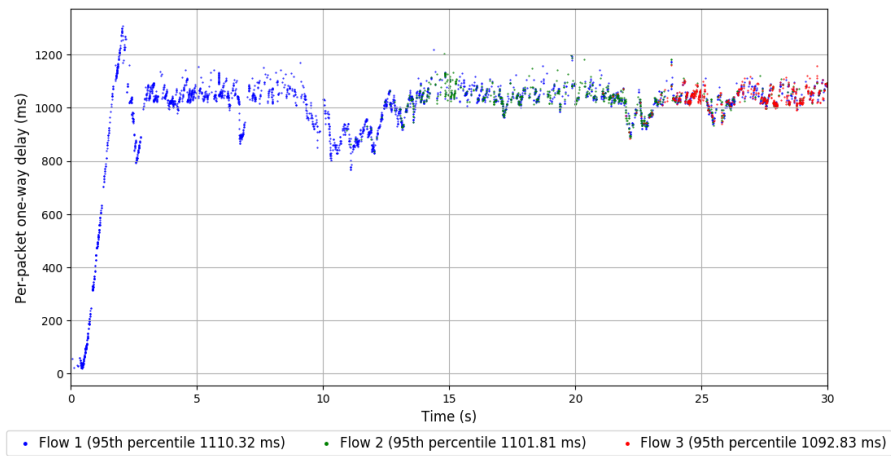
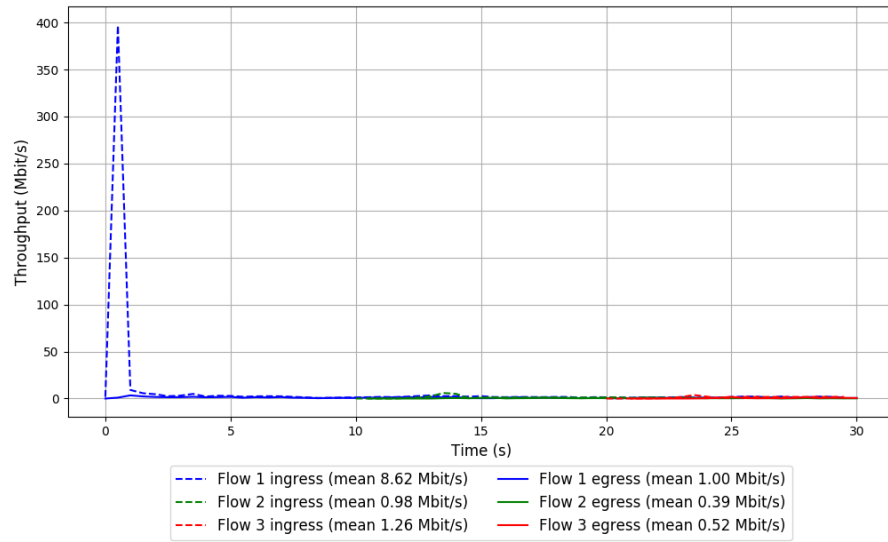


Run 1: Statistics of FillP

Start at: 2018-09-06 07:47:18  
End at: 2018-09-06 07:47:48  
Local clock offset: 0.874 ms  
Remote clock offset: -2.186 ms

# Below is generated by plot.py at 2018-09-06 08:35:13  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 1.40 Mbit/s  
95th percentile per-packet one-way delay: 1106.566 ms  
Loss rate: 85.56%  
-- Flow 1:  
Average throughput: 1.00 Mbit/s  
95th percentile per-packet one-way delay: 1110.315 ms  
Loss rate: 88.43%  
-- Flow 2:  
Average throughput: 0.39 Mbit/s  
95th percentile per-packet one-way delay: 1101.812 ms  
Loss rate: 62.01%  
-- Flow 3:  
Average throughput: 0.52 Mbit/s  
95th percentile per-packet one-way delay: 1092.825 ms  
Loss rate: 62.97%

## Run 1: Report of FillP — Data Link



Run 2: Statistics of FillP

Start at: 2018-09-06 08:08:23

End at: 2018-09-06 08:08:53

Local clock offset: -6.871 ms

Remote clock offset: -9.43 ms

# Below is generated by plot.py at 2018-09-06 08:35:16

# Datalink statistics

-- Total of 3 flows:

Average throughput: 1.54 Mbit/s

95th percentile per-packet one-way delay: 1244.107 ms

Loss rate: 88.06%

-- Flow 1:

Average throughput: 0.97 Mbit/s

95th percentile per-packet one-way delay: 1313.190 ms

Loss rate: 74.01%

-- Flow 2:

Average throughput: 0.76 Mbit/s

95th percentile per-packet one-way delay: 1118.307 ms

Loss rate: 92.74%

-- Flow 3:

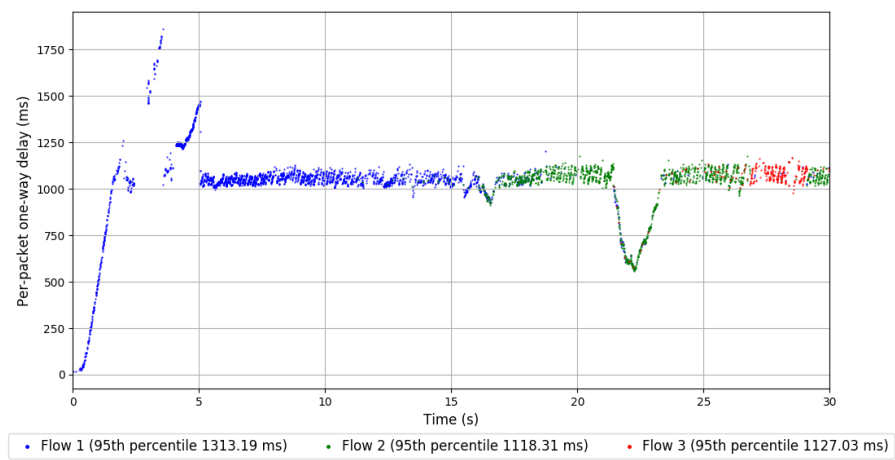
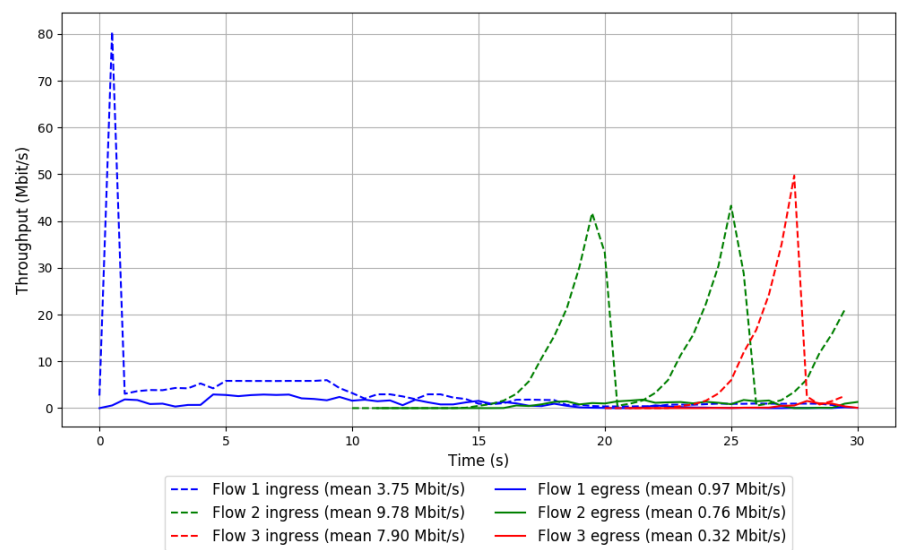
Average throughput: 0.32 Mbit/s

95th percentile per-packet one-way delay: 1127.033 ms

Loss rate: 96.52%



Run 2: Report of FillP — Data Link

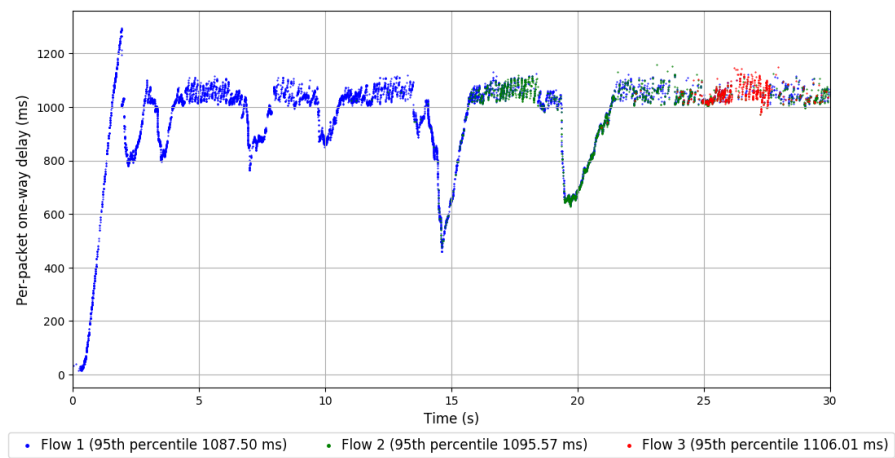
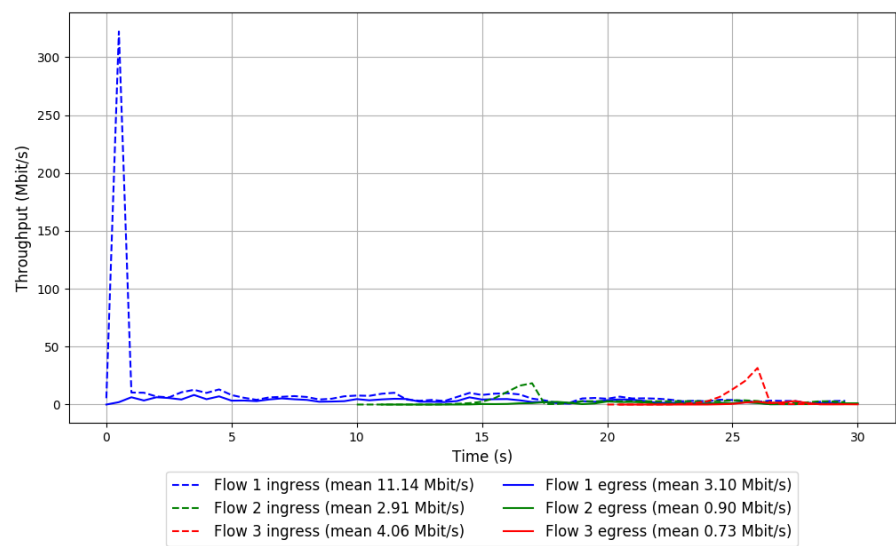


Run 3: Statistics of FillP

Start at: 2018-09-06 08:28:50  
End at: 2018-09-06 08:29:20  
Local clock offset: 4.414 ms  
Remote clock offset: -2.687 ms

# Below is generated by plot.py at 2018-09-06 08:35:20  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 3.88 Mbit/s  
95th percentile per-packet one-way delay: 1091.481 ms  
Loss rate: 73.09%  
-- Flow 1:  
Average throughput: 3.10 Mbit/s  
95th percentile per-packet one-way delay: 1087.501 ms  
Loss rate: 72.19%  
-- Flow 2:  
Average throughput: 0.90 Mbit/s  
95th percentile per-packet one-way delay: 1095.568 ms  
Loss rate: 70.84%  
-- Flow 3:  
Average throughput: 0.73 Mbit/s  
95th percentile per-packet one-way delay: 1106.013 ms  
Loss rate: 83.83%

Run 3: Report of FillP — Data Link

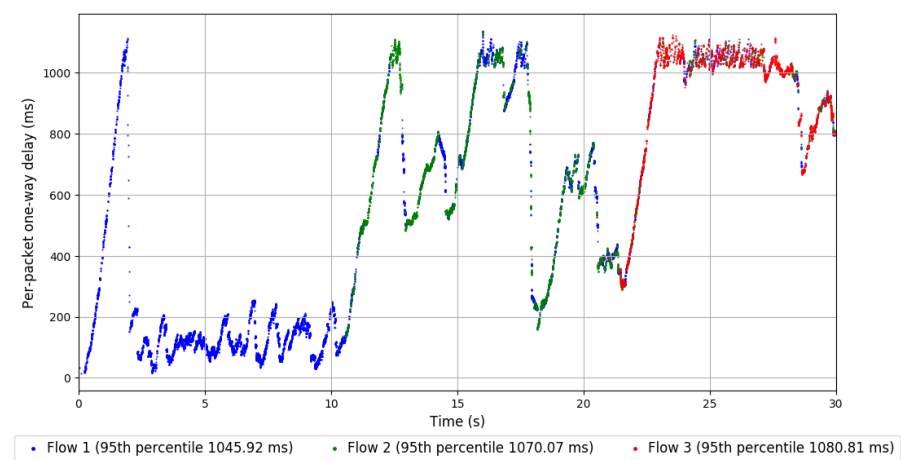
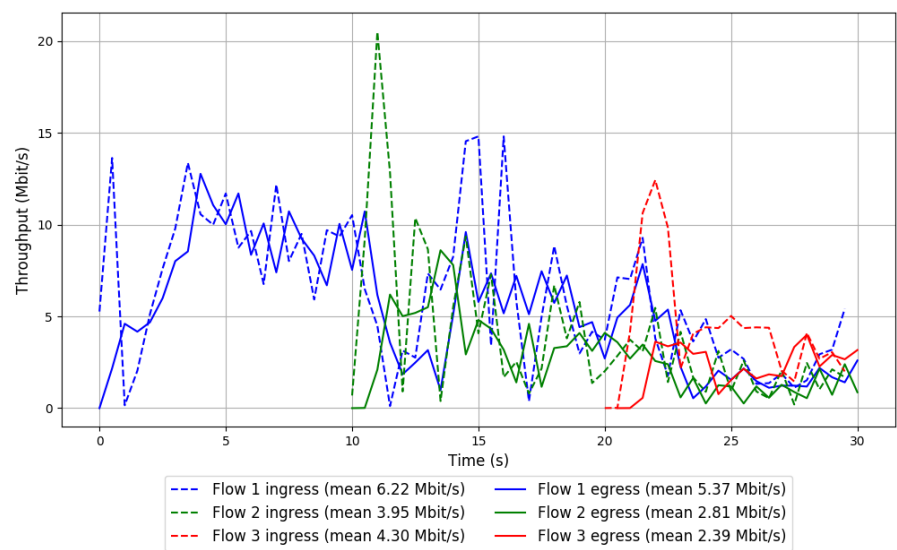


Run 1: Statistics of FillP-Sheep

Start at: 2018-09-06 07:48:25  
End at: 2018-09-06 07:48:55  
Local clock offset: 1.14 ms  
Remote clock offset: -2.926 ms

# Below is generated by plot.py at 2018-09-06 08:35:25  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 7.97 Mbit/s  
95th percentile per-packet one-way delay: 1060.092 ms  
Loss rate: 22.52%  
-- Flow 1:  
Average throughput: 5.37 Mbit/s  
95th percentile per-packet one-way delay: 1045.917 ms  
Loss rate: 13.93%  
-- Flow 2:  
Average throughput: 2.81 Mbit/s  
95th percentile per-packet one-way delay: 1070.066 ms  
Loss rate: 29.38%  
-- Flow 3:  
Average throughput: 2.39 Mbit/s  
95th percentile per-packet one-way delay: 1080.809 ms  
Loss rate: 47.28%

Run 1: Report of FillP-Sheep — Data Link

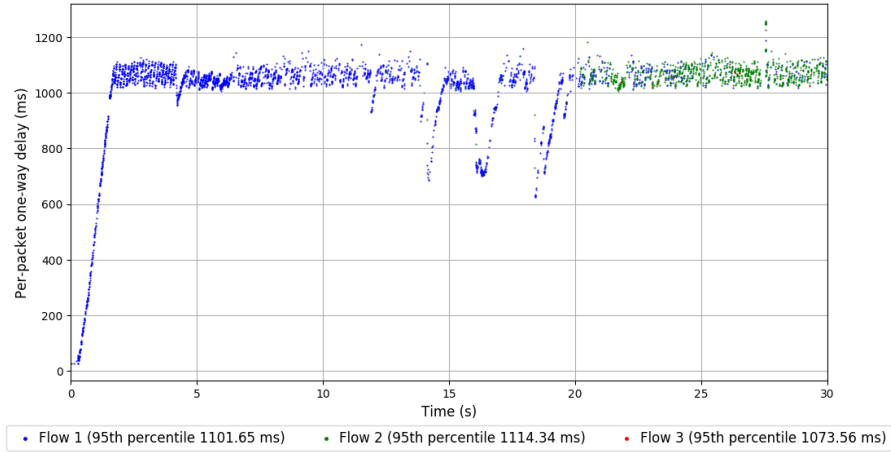
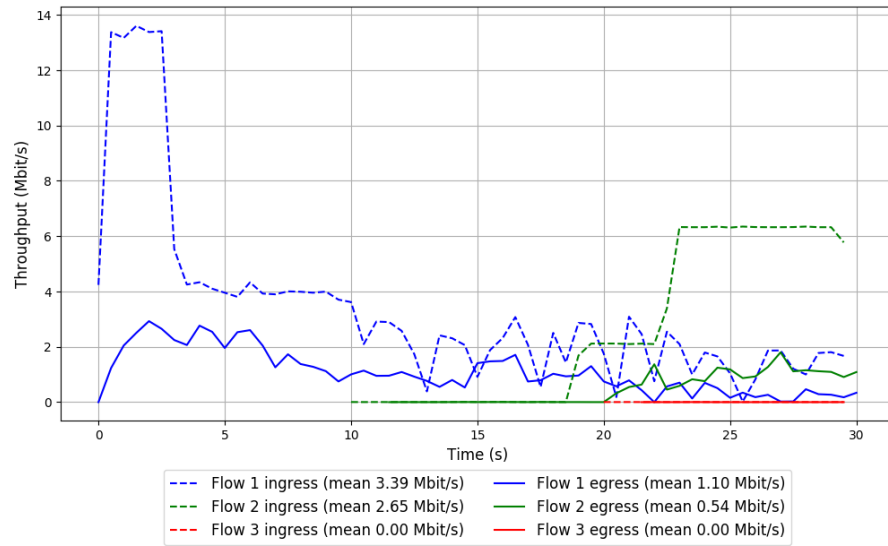


Run 2: Statistics of FillP-Sheep

Start at: 2018-09-06 08:09:30  
End at: 2018-09-06 08:10:00  
Local clock offset: -0.334 ms  
Remote clock offset: -2.309 ms

# Below is generated by plot.py at 2018-09-06 08:35:25  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 1.42 Mbit/s  
95th percentile per-packet one-way delay: 1105.377 ms  
Loss rate: 72.40%  
-- Flow 1:  
Average throughput: 1.10 Mbit/s  
95th percentile per-packet one-way delay: 1101.654 ms  
Loss rate: 67.52%  
-- Flow 2:  
Average throughput: 0.54 Mbit/s  
95th percentile per-packet one-way delay: 1114.343 ms  
Loss rate: 81.75%  
-- Flow 3:  
Average throughput: 0.00 Mbit/s  
95th percentile per-packet one-way delay: 1073.563 ms  
Loss rate: 86.00%

## Run 2: Report of FillP-Sheep — Data Link



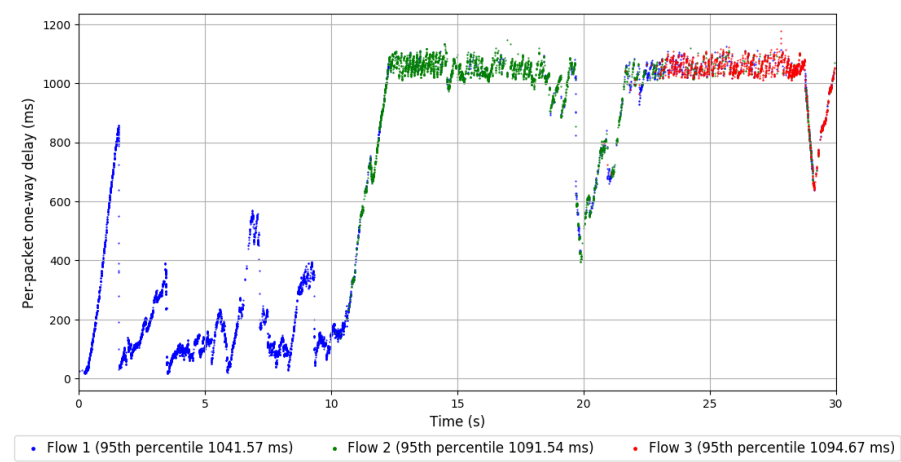
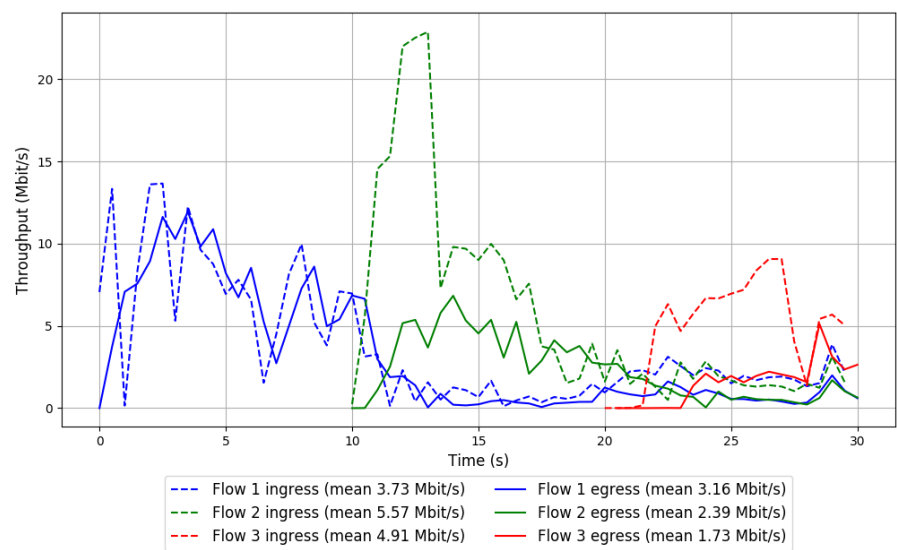
Run 3: Statistics of FillP-Sheep

Start at: 2018-09-06 08:29:57  
End at: 2018-09-06 08:30:27  
Local clock offset: 4.053 ms  
Remote clock offset: -1.634 ms

# Below is generated by plot.py at 2018-09-06 08:35:25  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 5.26 Mbit/s  
95th percentile per-packet one-way delay: 1080.807 ms  
Loss rate: 41.95%  
-- Flow 1:  
Average throughput: 3.16 Mbit/s  
95th percentile per-packet one-way delay: 1041.570 ms  
Loss rate: 15.29%  
-- Flow 2:  
Average throughput: 2.39 Mbit/s  
95th percentile per-packet one-way delay: 1091.536 ms  
Loss rate: 57.45%  
-- Flow 3:  
Average throughput: 1.73 Mbit/s  
95th percentile per-packet one-way delay: 1094.667 ms  
Loss rate: 67.67%



Run 3: Report of FillP-Sheep — Data Link

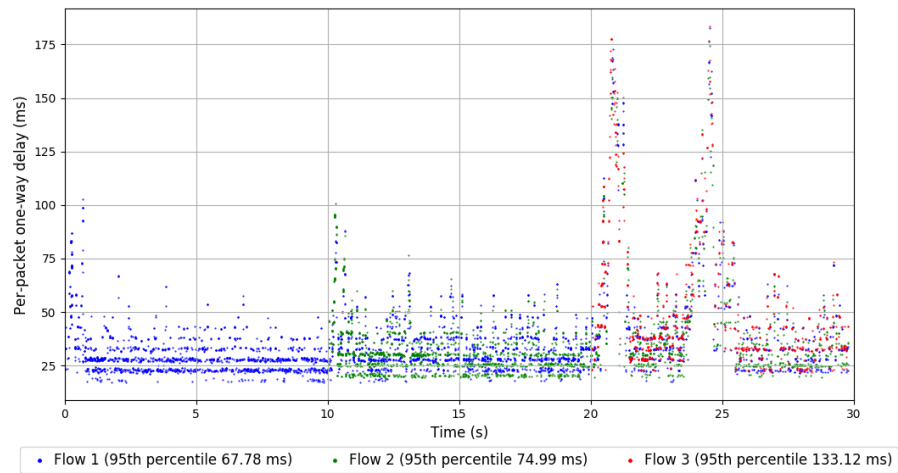
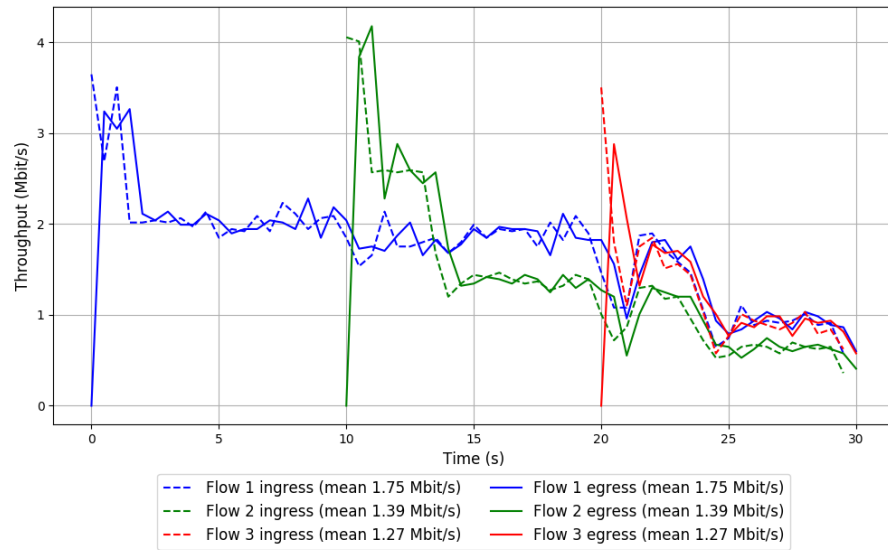


```
Run 1: Statistics of Indigo

Start at: 2018-09-06 07:49:33
End at: 2018-09-06 07:50:03
Local clock offset: -1.063 ms
Remote clock offset: -2.981 ms

# Below is generated by plot.py at 2018-09-06 08:35:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.08 Mbit/s
95th percentile per-packet one-way delay: 82.922 ms
Loss rate: 0.09%
-- Flow 1:
Average throughput: 1.75 Mbit/s
95th percentile per-packet one-way delay: 67.781 ms
Loss rate: 0.05%
-- Flow 2:
Average throughput: 1.39 Mbit/s
95th percentile per-packet one-way delay: 74.992 ms
Loss rate: 0.09%
-- Flow 3:
Average throughput: 1.27 Mbit/s
95th percentile per-packet one-way delay: 133.117 ms
Loss rate: 0.29%
```

## Run 1: Report of Indigo — Data Link

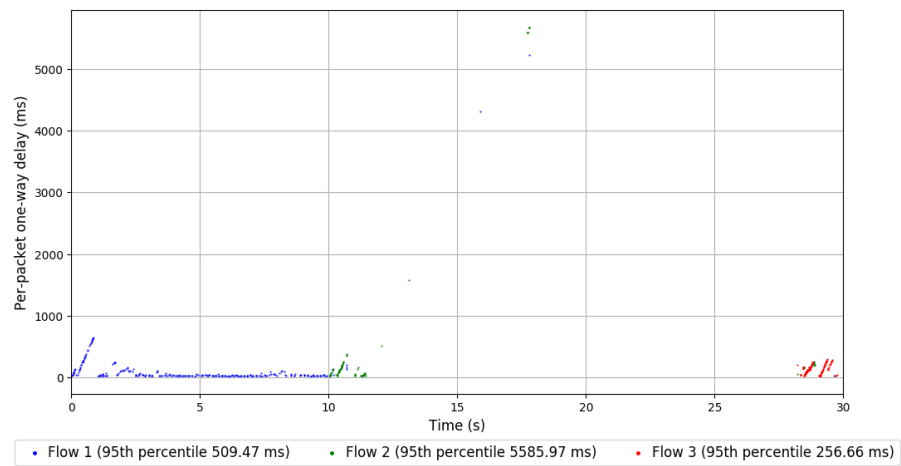
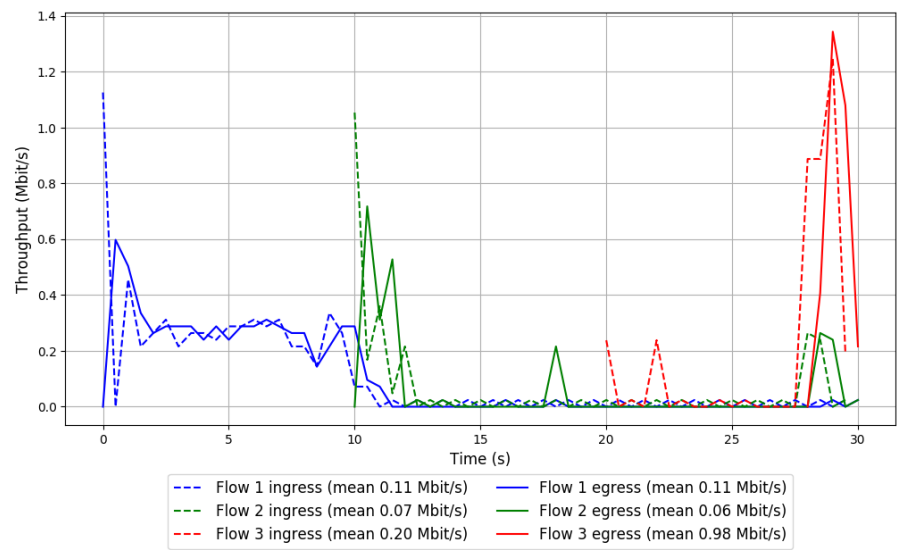


Run 2: Statistics of Indigo

Start at: 2018-09-06 08:10:37  
End at: 2018-09-06 08:11:07  
Local clock offset: 0.221 ms  
Remote clock offset: -2.905 ms

# Below is generated by plot.py at 2018-09-06 08:35:25  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 0.20 Mbit/s  
95th percentile per-packet one-way delay: 509.469 ms  
Loss rate: 11.47%  
-- Flow 1:  
Average throughput: 0.11 Mbit/s  
95th percentile per-packet one-way delay: 509.469 ms  
Loss rate: 5.80%  
-- Flow 2:  
Average throughput: 0.06 Mbit/s  
95th percentile per-packet one-way delay: 5585.974 ms  
Loss rate: 14.05%  
-- Flow 3:  
Average throughput: 0.98 Mbit/s  
95th percentile per-packet one-way delay: 256.664 ms  
Loss rate: 19.53%

Run 2: Report of Indigo — Data Link

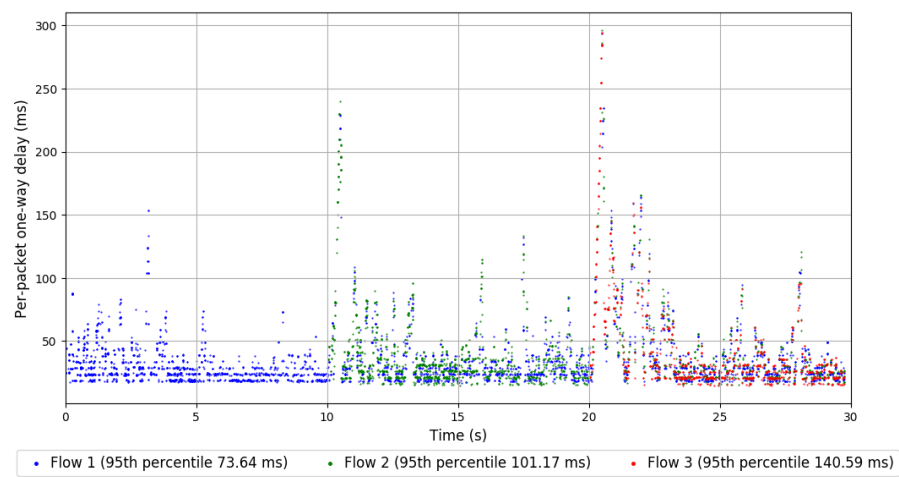
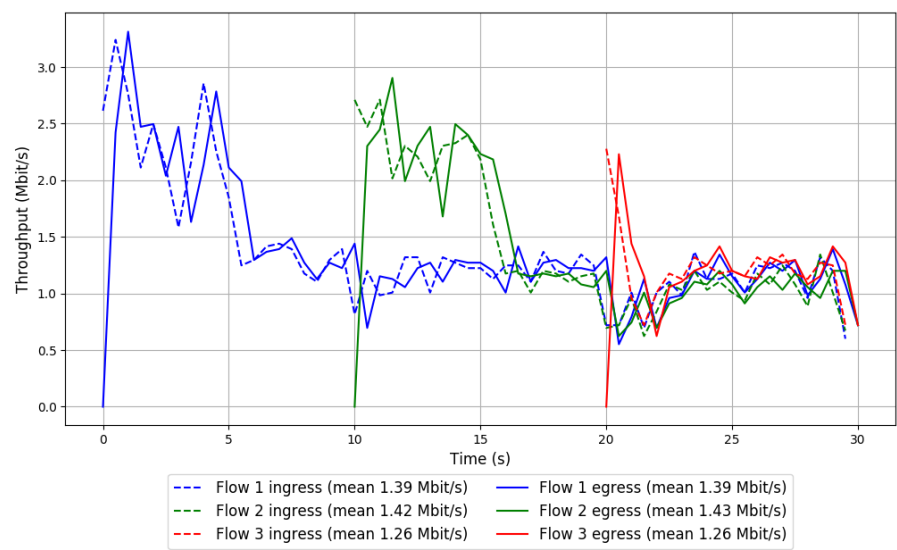


Run 3: Statistics of Indigo

Start at: 2018-09-06 08:31:04  
End at: 2018-09-06 08:31:34  
Local clock offset: 5.676 ms  
Remote clock offset: -1.771 ms

# Below is generated by plot.py at 2018-09-06 08:35:25  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 2.74 Mbit/s  
95th percentile per-packet one-way delay: 91.541 ms  
Loss rate: 0.01%  
-- Flow 1:  
Average throughput: 1.39 Mbit/s  
95th percentile per-packet one-way delay: 73.644 ms  
Loss rate: 0.00%  
-- Flow 2:  
Average throughput: 1.43 Mbit/s  
95th percentile per-packet one-way delay: 101.165 ms  
Loss rate: 0.00%  
-- Flow 3:  
Average throughput: 1.26 Mbit/s  
95th percentile per-packet one-way delay: 140.588 ms  
Loss rate: 0.10%

Run 3: Report of Indigo — Data Link



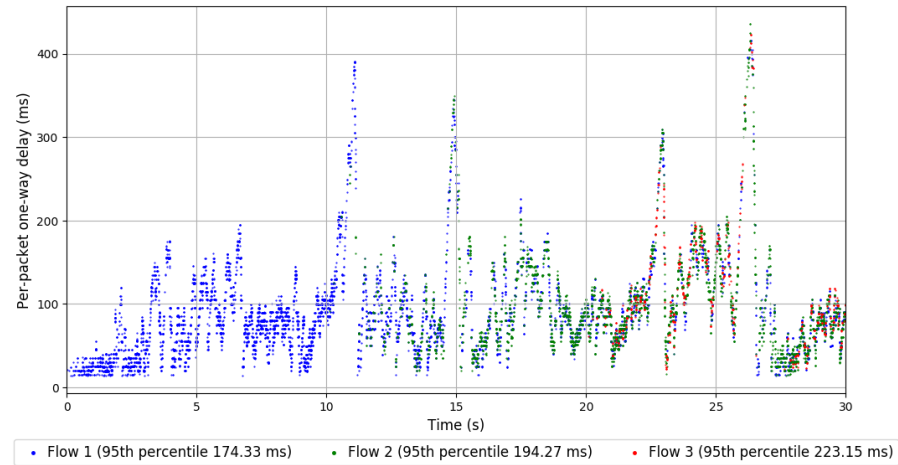
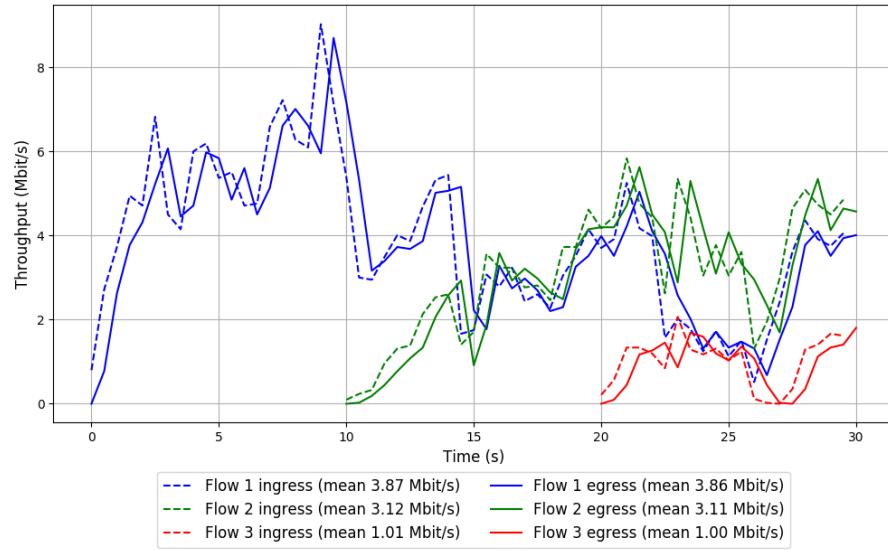
```
Run 1: Statistics of LEDBAT

Start at: 2018-09-06 07:51:46
End at: 2018-09-06 07:52:16
Local clock offset: 2.833 ms
Remote clock offset: -2.489 ms

# Below is generated by plot.py at 2018-09-06 08:35:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 6.25 Mbit/s
95th percentile per-packet one-way delay: 184.613 ms
Loss rate: 0.55%
-- Flow 1:
Average throughput: 3.86 Mbit/s
95th percentile per-packet one-way delay: 174.334 ms
Loss rate: 0.34%
-- Flow 2:
Average throughput: 3.11 Mbit/s
95th percentile per-packet one-way delay: 194.267 ms
Loss rate: 0.77%
-- Flow 3:
Average throughput: 1.00 Mbit/s
95th percentile per-packet one-way delay: 223.150 ms
Loss rate: 1.64%
```



## Run 1: Report of LEDBAT — Data Link

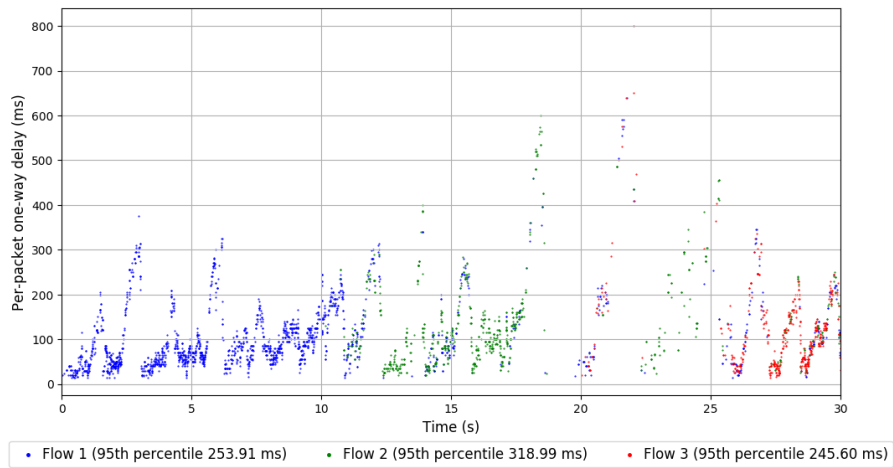
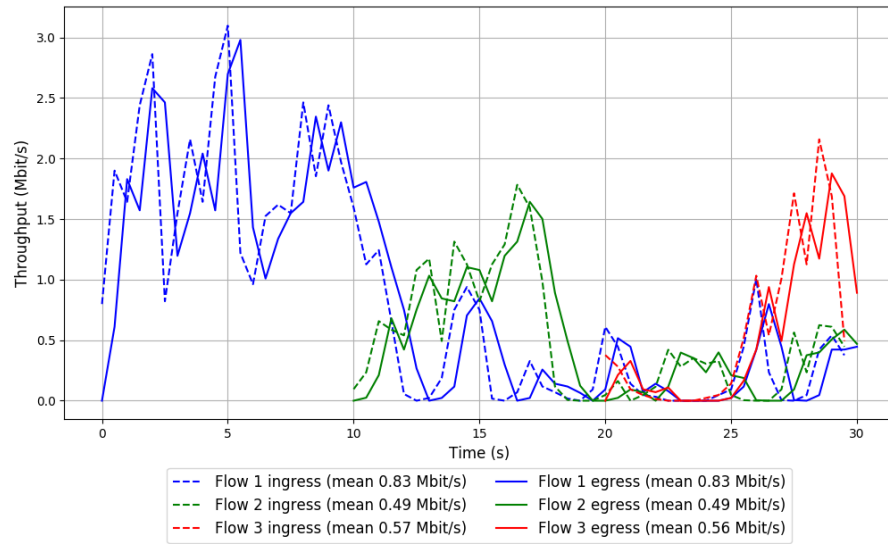


Run 2: Statistics of LEDBAT

Start at: 2018-09-06 08:12:50  
End at: 2018-09-06 08:13:20  
Local clock offset: 1.599 ms  
Remote clock offset: -3.578 ms

# Below is generated by plot.py at 2018-09-06 08:35:25  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 1.34 Mbit/s  
95th percentile per-packet one-way delay: 269.613 ms  
Loss rate: 0.73%  
-- Flow 1:  
Average throughput: 0.83 Mbit/s  
95th percentile per-packet one-way delay: 253.909 ms  
Loss rate: 0.42%  
-- Flow 2:  
Average throughput: 0.49 Mbit/s  
95th percentile per-packet one-way delay: 318.987 ms  
Loss rate: 1.19%  
-- Flow 3:  
Average throughput: 0.56 Mbit/s  
95th percentile per-packet one-way delay: 245.600 ms  
Loss rate: 1.25%

## Run 2: Report of LEDBAT — Data Link

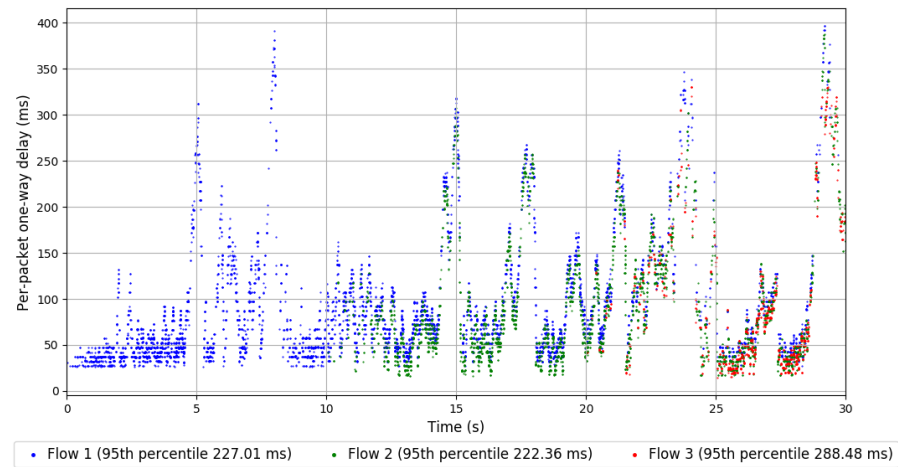
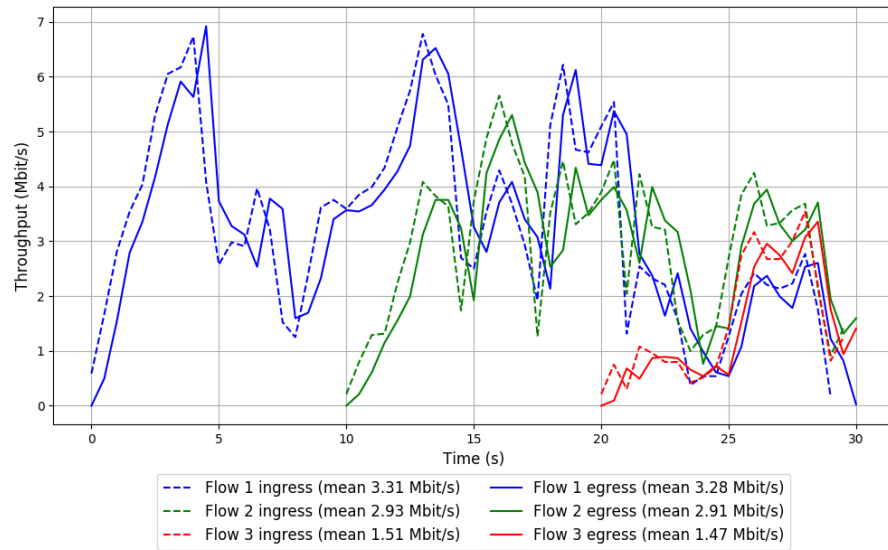


Run 3: Statistics of LEDBAT

Start at: 2018-09-06 08:33:18  
End at: 2018-09-06 08:33:48  
Local clock offset: 6.642 ms  
Remote clock offset: -1.838 ms

# Below is generated by plot.py at 2018-09-06 08:35:26  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 5.67 Mbit/s  
95th percentile per-packet one-way delay: 228.631 ms  
Loss rate: 0.71%  
-- Flow 1:  
Average throughput: 3.28 Mbit/s  
95th percentile per-packet one-way delay: 227.012 ms  
Loss rate: 0.30%  
-- Flow 2:  
Average throughput: 2.91 Mbit/s  
95th percentile per-packet one-way delay: 222.360 ms  
Loss rate: 0.74%  
-- Flow 3:  
Average throughput: 1.47 Mbit/s  
95th percentile per-packet one-way delay: 288.477 ms  
Loss rate: 3.20%

### Run 3: Report of LEDBAT — Data Link

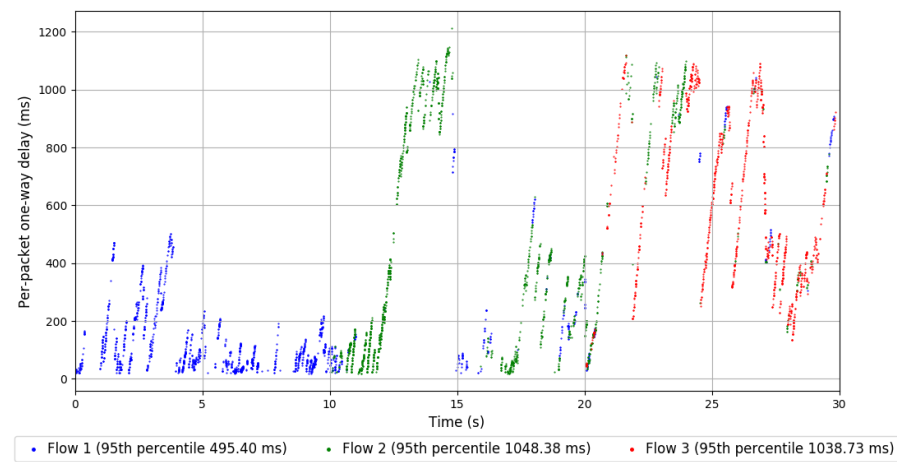
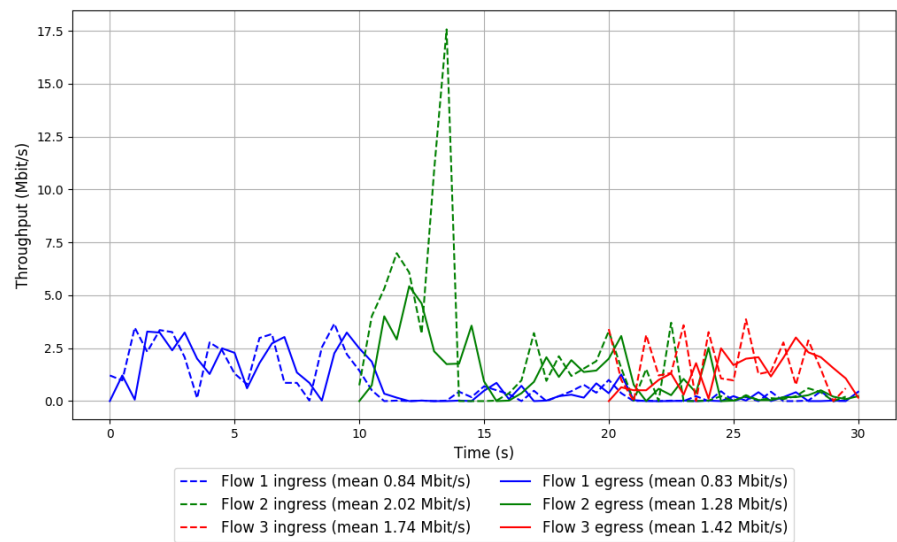


Run 1: Statistics of Indigo-Muses

Start at: 2018-09-06 07:42:51  
End at: 2018-09-06 07:43:21  
Local clock offset: -0.127 ms  
Remote clock offset: -2.719 ms

# Below is generated by plot.py at 2018-09-06 08:35:26  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 2.14 Mbit/s  
95th percentile per-packet one-way delay: 1024.112 ms  
Loss rate: 22.16%  
-- Flow 1:  
Average throughput: 0.83 Mbit/s  
95th percentile per-packet one-way delay: 495.398 ms  
Loss rate: 1.39%  
-- Flow 2:  
Average throughput: 1.28 Mbit/s  
95th percentile per-packet one-way delay: 1048.382 ms  
Loss rate: 37.00%  
-- Flow 3:  
Average throughput: 1.42 Mbit/s  
95th percentile per-packet one-way delay: 1038.733 ms  
Loss rate: 18.14%

Run 1: Report of Indigo-Muses — Data Link



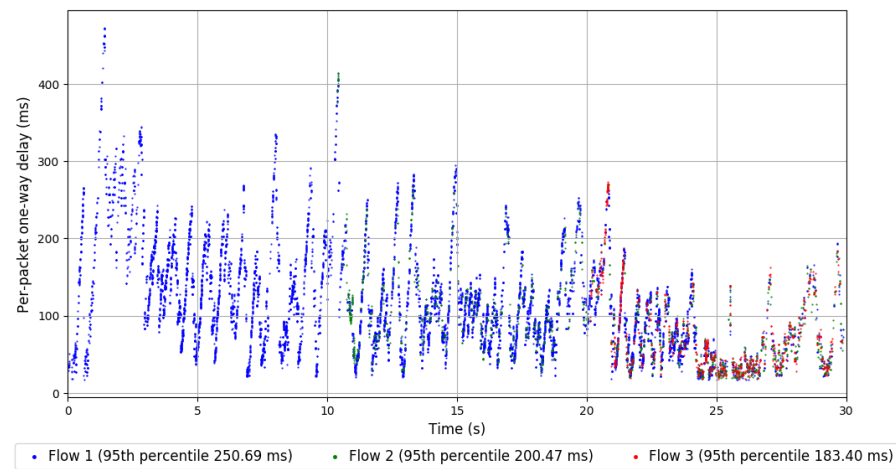
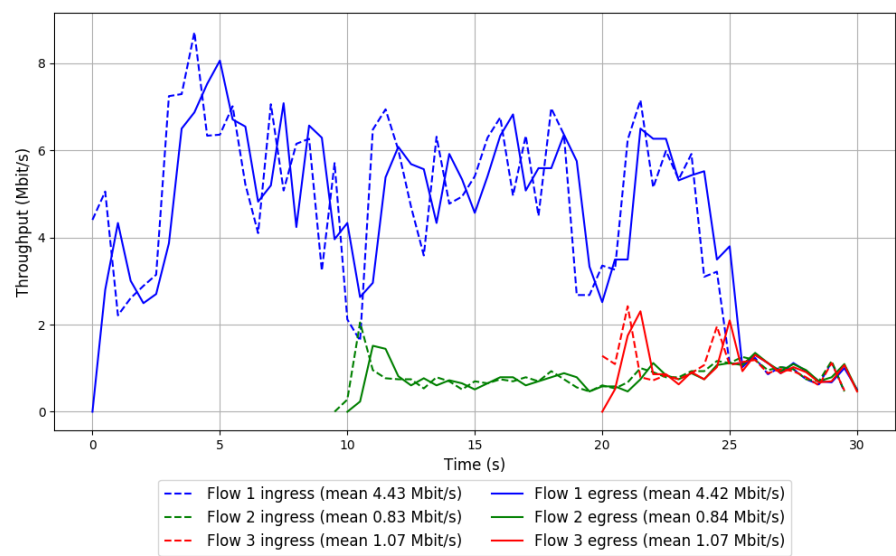
Run 2: Statistics of Indigo-Muses

Start at: 2018-09-06 08:03:56  
End at: 2018-09-06 08:04:26  
Local clock offset: 1.881 ms  
Remote clock offset: -1.132 ms

# Below is generated by plot.py at 2018-09-06 08:35:26  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 5.32 Mbit/s  
95th percentile per-packet one-way delay: 243.155 ms  
Loss rate: 0.29%  
-- Flow 1:  
Average throughput: 4.42 Mbit/s  
95th percentile per-packet one-way delay: 250.688 ms  
Loss rate: 0.20%  
-- Flow 2:  
Average throughput: 0.84 Mbit/s  
95th percentile per-packet one-way delay: 200.467 ms  
Loss rate: 0.49%  
-- Flow 3:  
Average throughput: 1.07 Mbit/s  
95th percentile per-packet one-way delay: 183.399 ms  
Loss rate: 1.11%



Run 2: Report of Indigo-Muses — Data Link



Run 3: Statistics of Indigo-Muses

Start at: 2018-09-06 08:24:21

End at: 2018-09-06 08:24:51

Local clock offset: 4.955 ms

Remote clock offset: -1.75 ms

# Below is generated by plot.py at 2018-09-06 08:35:26

# Datalink statistics

-- Total of 3 flows:

Average throughput: 2.42 Mbit/s

95th percentile per-packet one-way delay: 1031.463 ms

Loss rate: 48.10%

-- Flow 1:

Average throughput: 1.63 Mbit/s

95th percentile per-packet one-way delay: 878.928 ms

Loss rate: 5.51%

-- Flow 2:

Average throughput: 0.87 Mbit/s

95th percentile per-packet one-way delay: 1020.284 ms

Loss rate: 15.33%

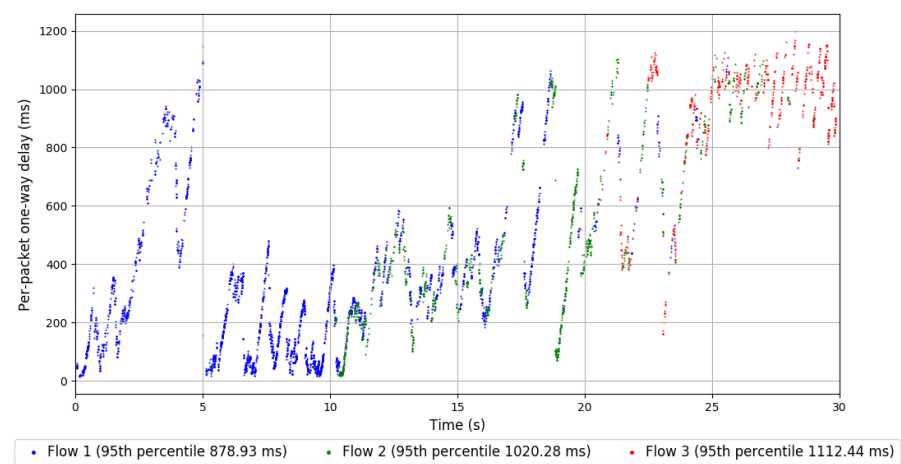
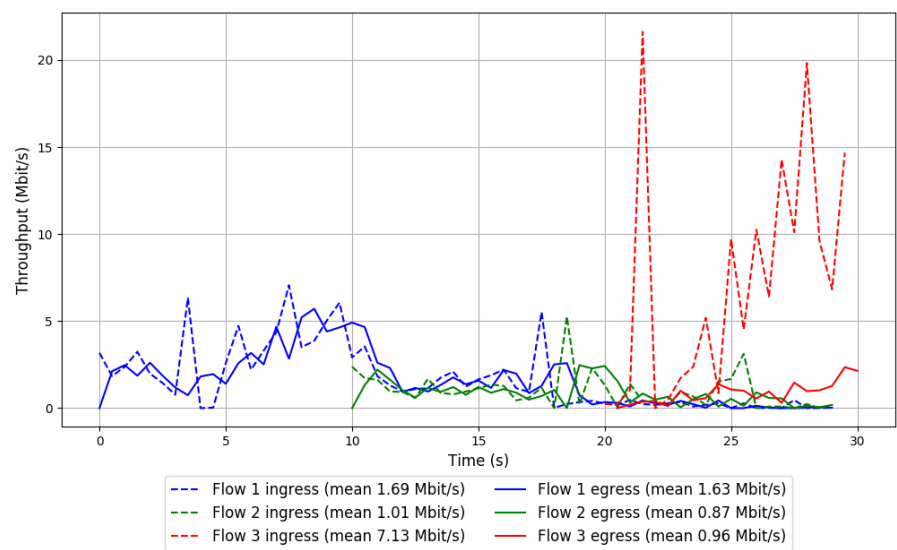
-- Flow 3:

Average throughput: 0.96 Mbit/s

95th percentile per-packet one-way delay: 1112.437 ms

Loss rate: 87.42%

Run 3: Report of Indigo-Muses — Data Link

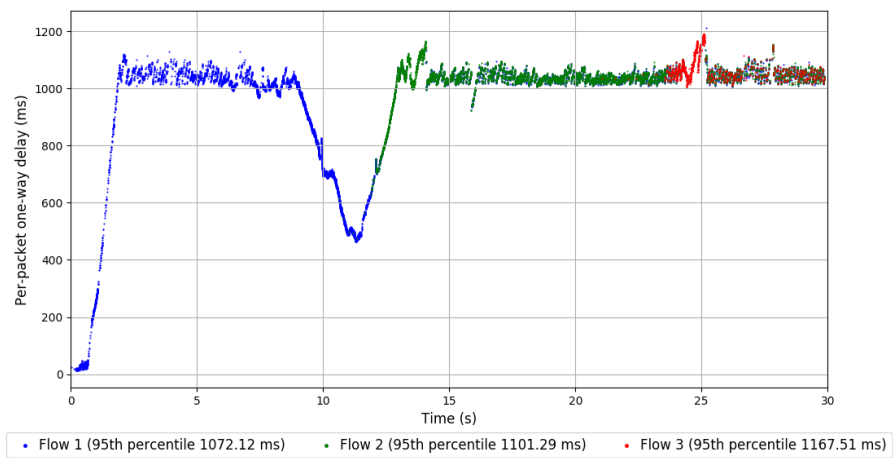
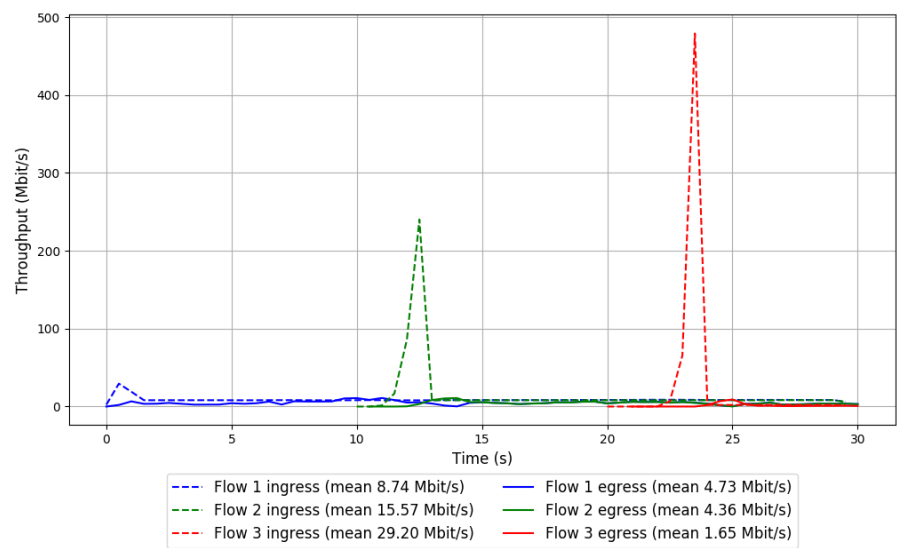


Run 1: Statistics of PCC-Allegro

Start at: 2018-09-06 07:52:58  
End at: 2018-09-06 07:53:28  
Local clock offset: 2.678 ms  
Remote clock offset: -3.202 ms

# Below is generated by plot.py at 2018-09-06 08:35:46  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 8.03 Mbit/s  
95th percentile per-packet one-way delay: 1091.699 ms  
Loss rate: 72.05%  
-- Flow 1:  
Average throughput: 4.73 Mbit/s  
95th percentile per-packet one-way delay: 1072.124 ms  
Loss rate: 45.88%  
-- Flow 2:  
Average throughput: 4.36 Mbit/s  
95th percentile per-packet one-way delay: 1101.286 ms  
Loss rate: 72.86%  
-- Flow 3:  
Average throughput: 1.65 Mbit/s  
95th percentile per-packet one-way delay: 1167.511 ms  
Loss rate: 94.93%

Run 1: Report of PCC-Allegro — Data Link

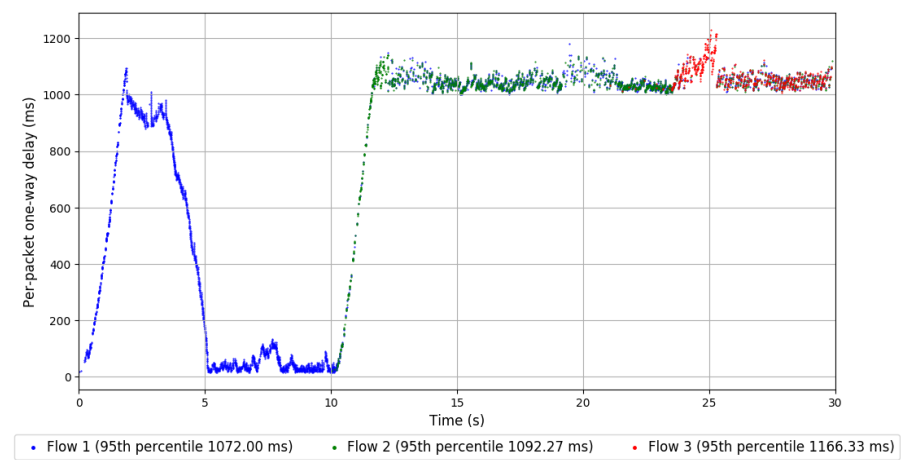
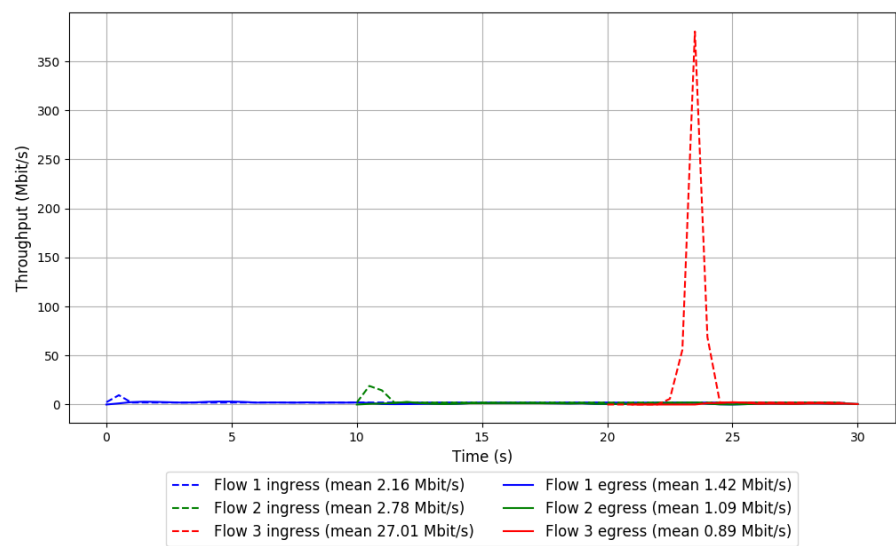


Run 2: Statistics of PCC-Allegro

Start at: 2018-09-06 08:13:57  
End at: 2018-09-06 08:14:27  
Local clock offset: -0.413 ms  
Remote clock offset: -3.048 ms

# Below is generated by plot.py at 2018-09-06 08:35:46  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 2.41 Mbit/s  
95th percentile per-packet one-way delay: 1094.119 ms  
Loss rate: 81.36%  
-- Flow 1:  
Average throughput: 1.42 Mbit/s  
95th percentile per-packet one-way delay: 1072.003 ms  
Loss rate: 34.07%  
-- Flow 2:  
Average throughput: 1.09 Mbit/s  
95th percentile per-packet one-way delay: 1092.272 ms  
Loss rate: 60.71%  
-- Flow 3:  
Average throughput: 0.89 Mbit/s  
95th percentile per-packet one-way delay: 1166.331 ms  
Loss rate: 97.06%

Run 2: Report of PCC-Allegro — Data Link



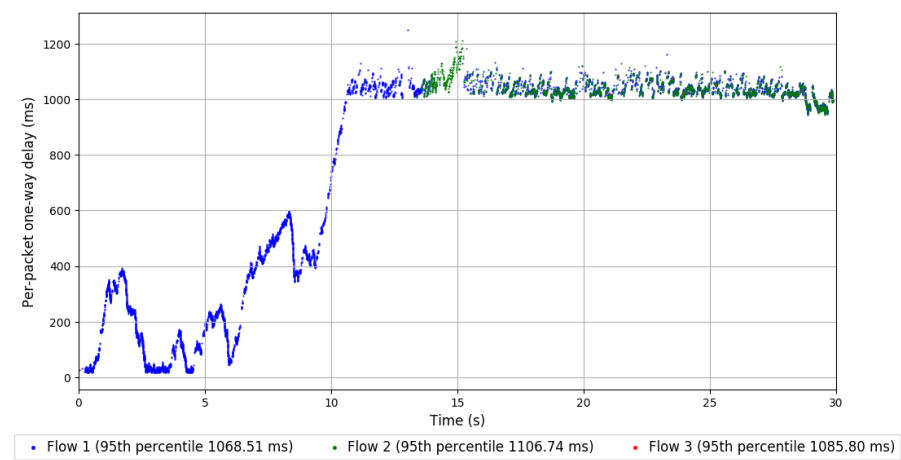
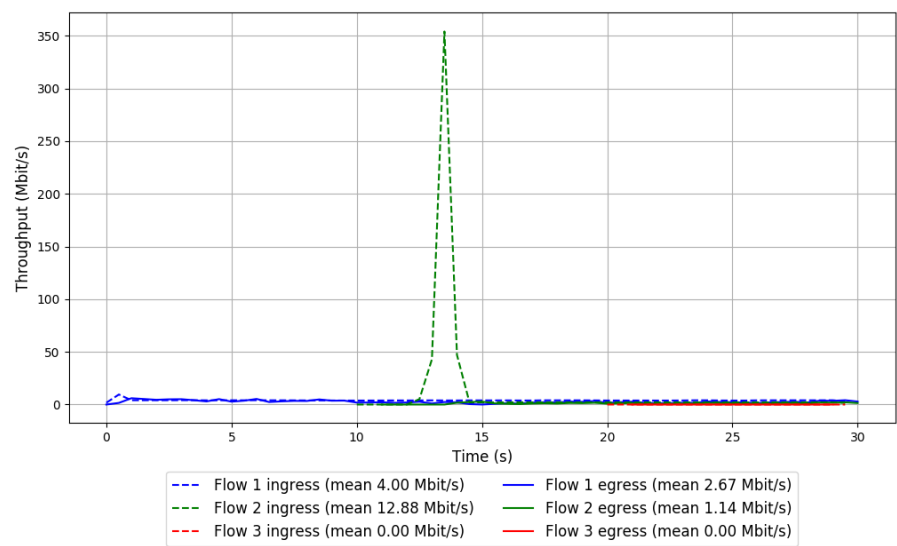
Run 3: Statistics of PCC-Allegro

Start at: 2018-09-06 08:34:25  
End at: 2018-09-06 08:34:55  
Local clock offset: 5.099 ms  
Remote clock offset: -0.961 ms

# Below is generated by plot.py at 2018-09-06 08:35:46  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 3.38 Mbit/s  
95th percentile per-packet one-way delay: 1077.926 ms  
Loss rate: 73.12%  
-- Flow 1:  
Average throughput: 2.67 Mbit/s  
95th percentile per-packet one-way delay: 1068.510 ms  
Loss rate: 33.18%  
-- Flow 2:  
Average throughput: 1.14 Mbit/s  
95th percentile per-packet one-way delay: 1106.737 ms  
Loss rate: 91.75%  
-- Flow 3:  
Average throughput: 0.00 Mbit/s  
95th percentile per-packet one-way delay: 1085.803 ms  
Loss rate: 77.07%



Run 3: Report of PCC-Allegro — Data Link

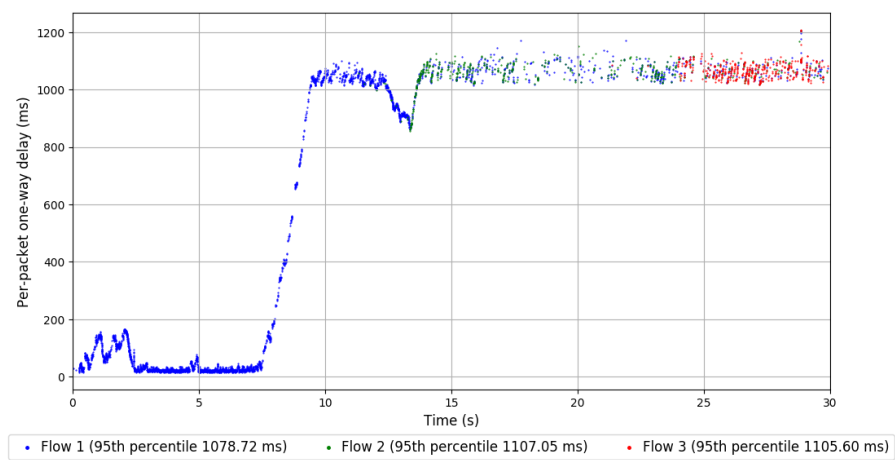
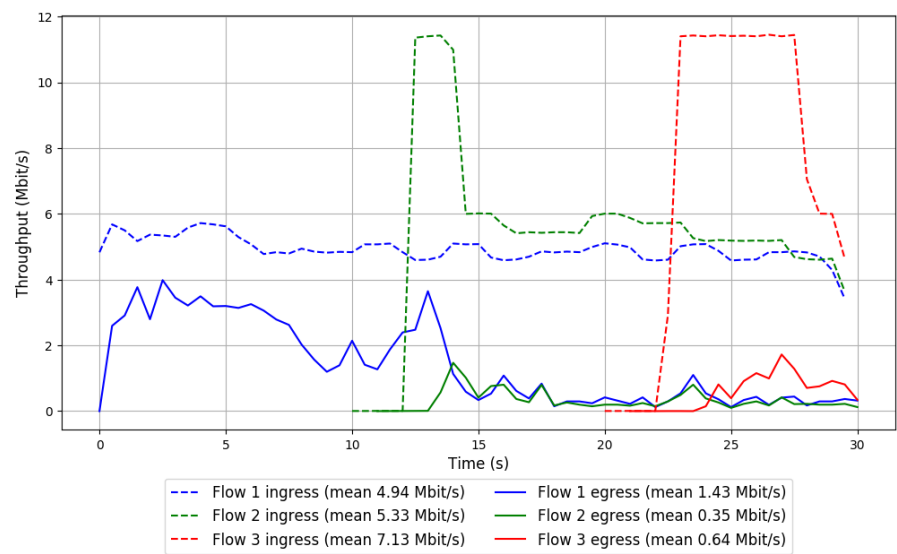


Run 1: Statistics of PCC-Expr

Start at: 2018-09-06 07:37:15  
End at: 2018-09-06 07:37:45  
Local clock offset: 2.74 ms  
Remote clock offset: -1.688 ms

# Below is generated by plot.py at 2018-09-06 08:35:46  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 1.83 Mbit/s  
95th percentile per-packet one-way delay: 1094.508 ms  
Loss rate: 83.13%  
-- Flow 1:  
Average throughput: 1.43 Mbit/s  
95th percentile per-packet one-way delay: 1078.720 ms  
Loss rate: 71.05%  
-- Flow 2:  
Average throughput: 0.35 Mbit/s  
95th percentile per-packet one-way delay: 1107.054 ms  
Loss rate: 93.94%  
-- Flow 3:  
Average throughput: 0.64 Mbit/s  
95th percentile per-packet one-way delay: 1105.602 ms  
Loss rate: 92.22%

Run 1: Report of PCC-Expr — Data Link

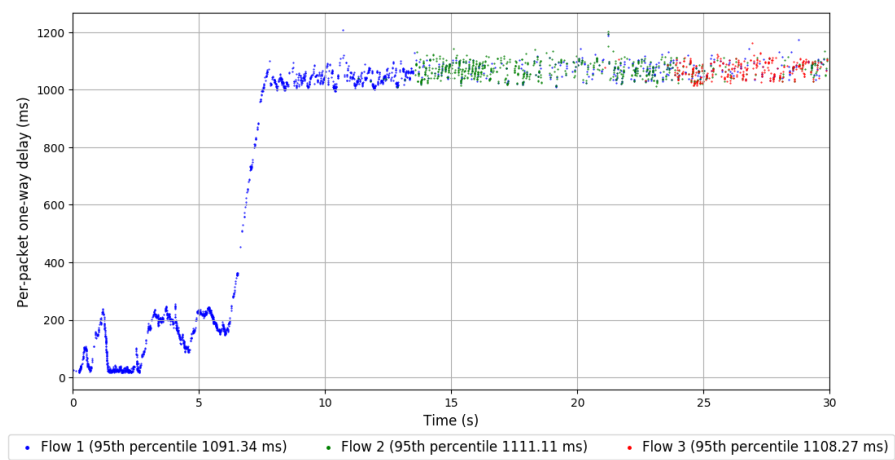
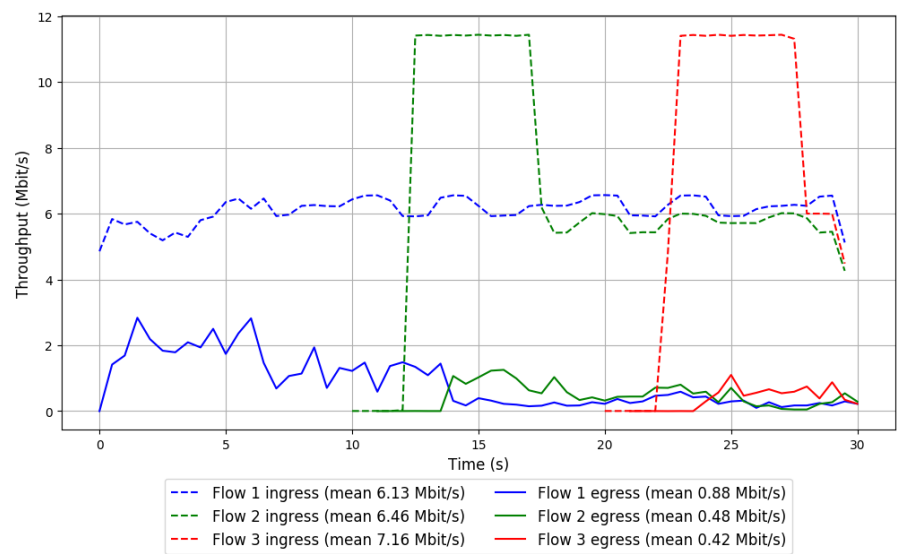


Run 2: Statistics of PCC-Expr

Start at: 2018-09-06 07:58:07  
End at: 2018-09-06 07:58:37  
Local clock offset: 1.472 ms  
Remote clock offset: -1.919 ms

# Below is generated by plot.py at 2018-09-06 08:35:46  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 1.30 Mbit/s  
95th percentile per-packet one-way delay: 1102.659 ms  
Loss rate: 89.82%  
-- Flow 1:  
Average throughput: 0.88 Mbit/s  
95th percentile per-packet one-way delay: 1091.341 ms  
Loss rate: 85.68%  
-- Flow 2:  
Average throughput: 0.48 Mbit/s  
95th percentile per-packet one-way delay: 1111.111 ms  
Loss rate: 92.99%  
-- Flow 3:  
Average throughput: 0.42 Mbit/s  
95th percentile per-packet one-way delay: 1108.269 ms  
Loss rate: 94.79%

Run 2: Report of PCC-Expr — Data Link



Run 3: Statistics of PCC-Expr

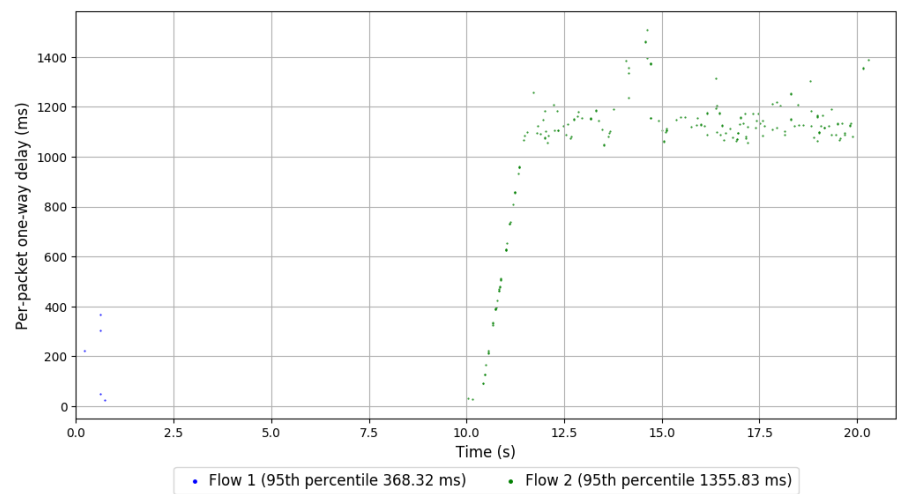
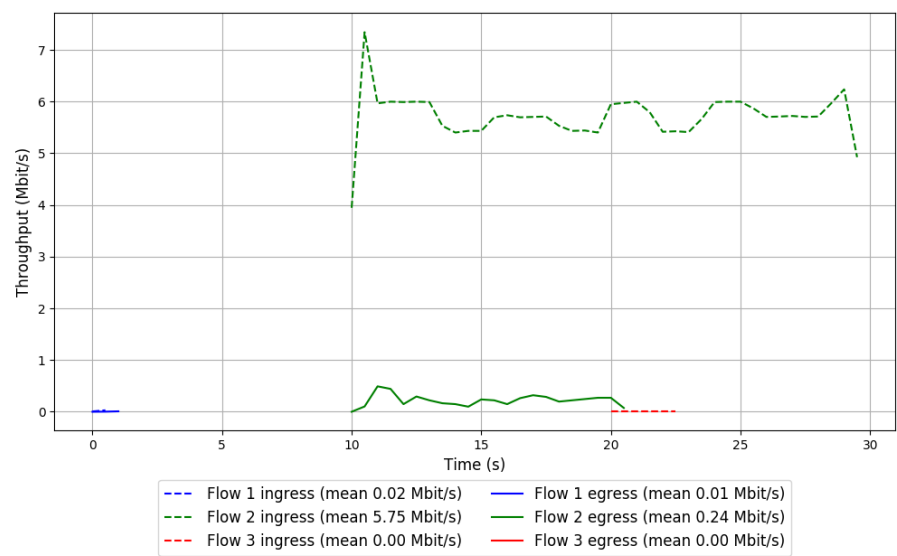
Start at: 2018-09-06 08:18:27

End at: 2018-09-06 08:18:57

Local clock offset: 3.664 ms

Remote clock offset: -2.209 ms

Run 3: Report of PCC-Expr — Data Link



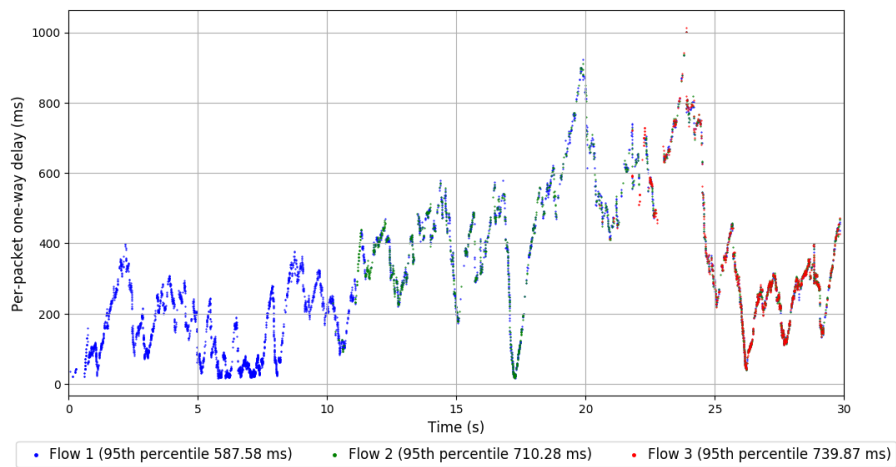
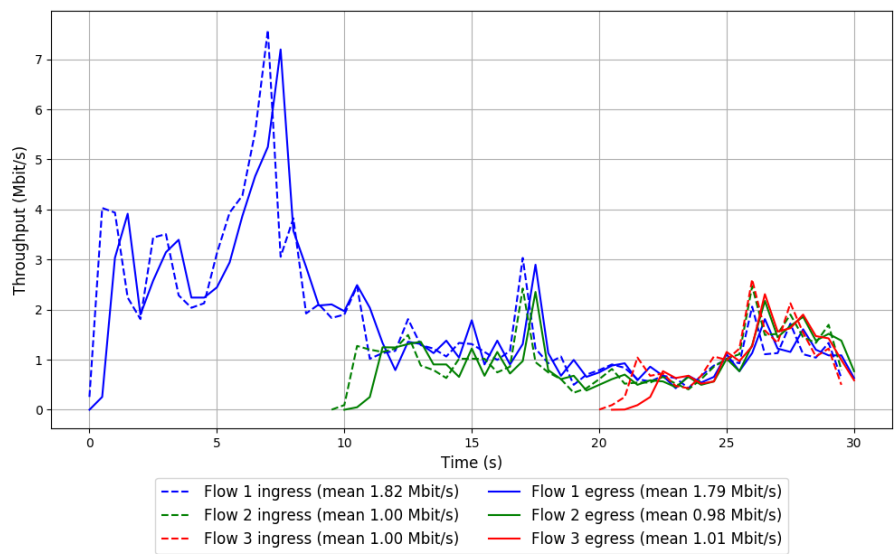
Run 1: Statistics of QUIC Cubic

Start at: 2018-09-06 07:38:22  
End at: 2018-09-06 07:38:52  
Local clock offset: 1.694 ms  
Remote clock offset: -0.953 ms

# Below is generated by plot.py at 2018-09-06 08:35:46  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 2.75 Mbit/s  
95th percentile per-packet one-way delay: 660.578 ms  
Loss rate: 2.18%  
-- Flow 1:  
Average throughput: 1.79 Mbit/s  
95th percentile per-packet one-way delay: 587.576 ms  
Loss rate: 1.36%  
-- Flow 2:  
Average throughput: 0.98 Mbit/s  
95th percentile per-packet one-way delay: 710.281 ms  
Loss rate: 3.41%  
-- Flow 3:  
Average throughput: 1.01 Mbit/s  
95th percentile per-packet one-way delay: 739.871 ms  
Loss rate: 4.26%



Run 1: Report of QUIC Cubic — Data Link

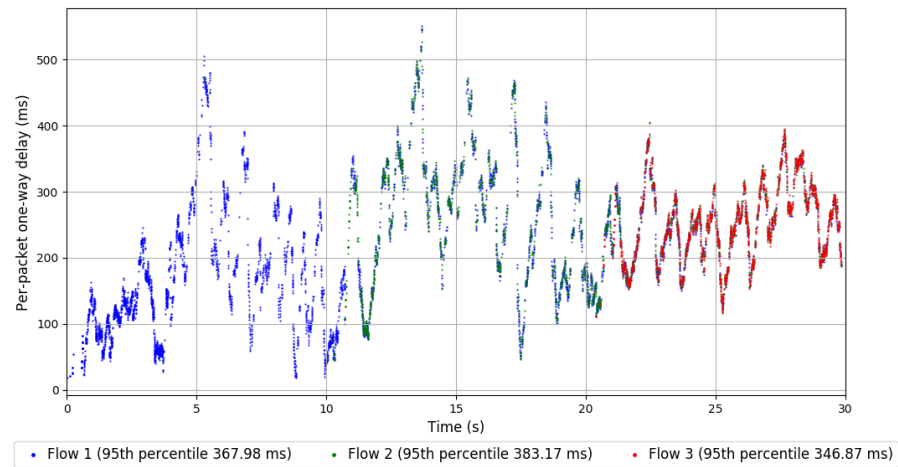
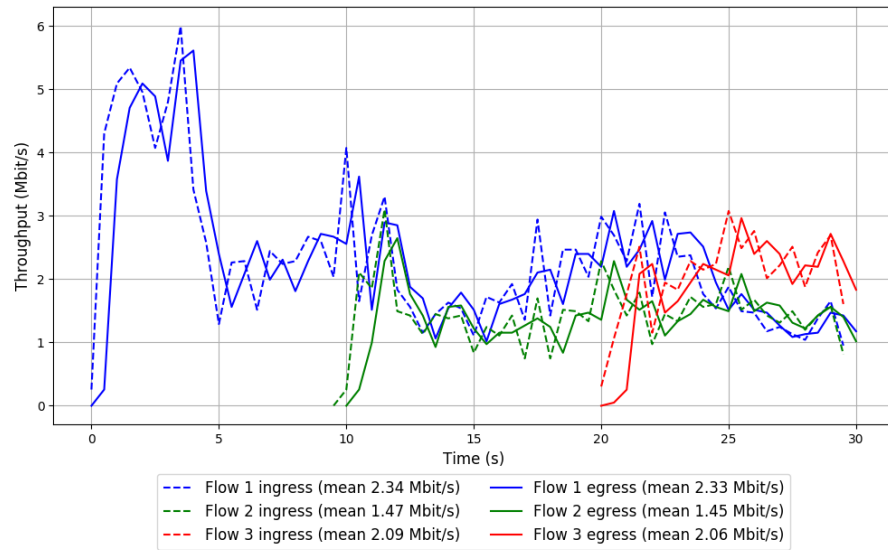


Run 2: Statistics of QUIC Cubic

Start at: 2018-09-06 07:59:18  
End at: 2018-09-06 07:59:48  
Local clock offset: 1.624 ms  
Remote clock offset: -0.966 ms

# Below is generated by plot.py at 2018-09-06 08:35:46  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 3.95 Mbit/s  
95th percentile per-packet one-way delay: 366.564 ms  
Loss rate: 1.40%  
-- Flow 1:  
Average throughput: 2.33 Mbit/s  
95th percentile per-packet one-way delay: 367.975 ms  
Loss rate: 0.81%  
-- Flow 2:  
Average throughput: 1.45 Mbit/s  
95th percentile per-packet one-way delay: 383.166 ms  
Loss rate: 1.67%  
-- Flow 3:  
Average throughput: 2.06 Mbit/s  
95th percentile per-packet one-way delay: 346.873 ms  
Loss rate: 3.04%

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

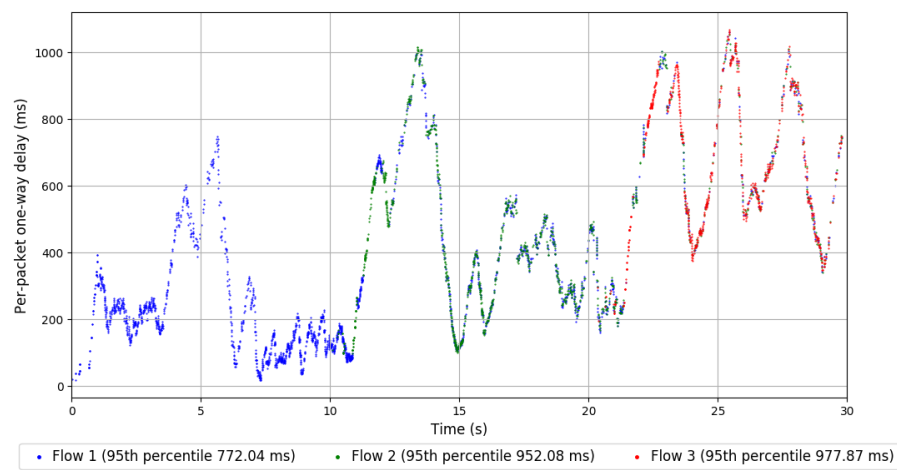
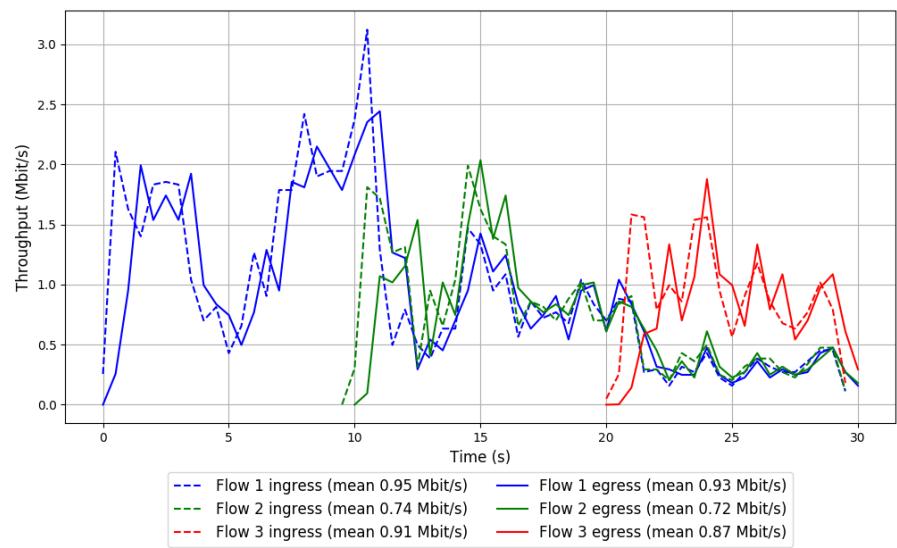


Run 3: Statistics of QUIC Cubic

Start at: 2018-09-06 08:19:54  
End at: 2018-09-06 08:20:24  
Local clock offset: 1.489 ms  
Remote clock offset: -2.316 ms

# Below is generated by plot.py at 2018-09-06 08:35:46  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 1.68 Mbit/s  
95th percentile per-packet one-way delay: 912.781 ms  
Loss rate: 3.25%  
-- Flow 1:  
Average throughput: 0.93 Mbit/s  
95th percentile per-packet one-way delay: 772.041 ms  
Loss rate: 2.04%  
-- Flow 2:  
Average throughput: 0.72 Mbit/s  
95th percentile per-packet one-way delay: 952.079 ms  
Loss rate: 3.39%  
-- Flow 3:  
Average throughput: 0.87 Mbit/s  
95th percentile per-packet one-way delay: 977.869 ms  
Loss rate: 6.89%

Run 3: Report of QUIC Cubic — Data Link

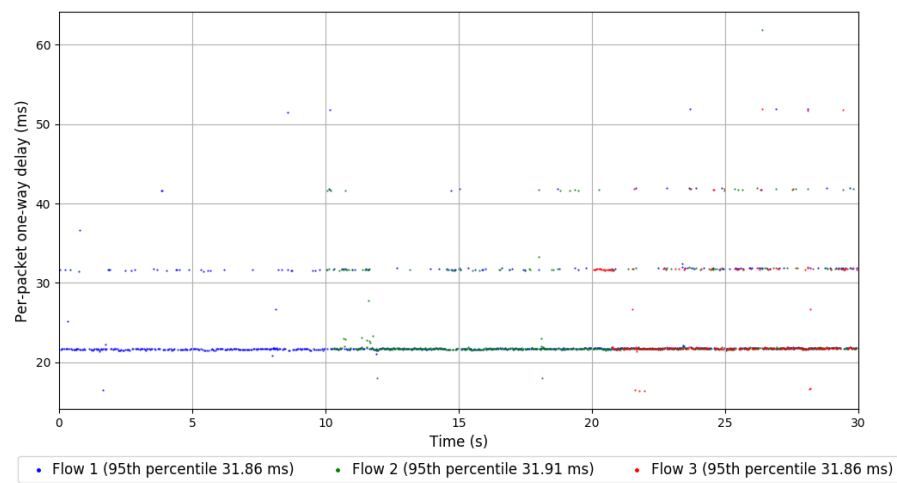
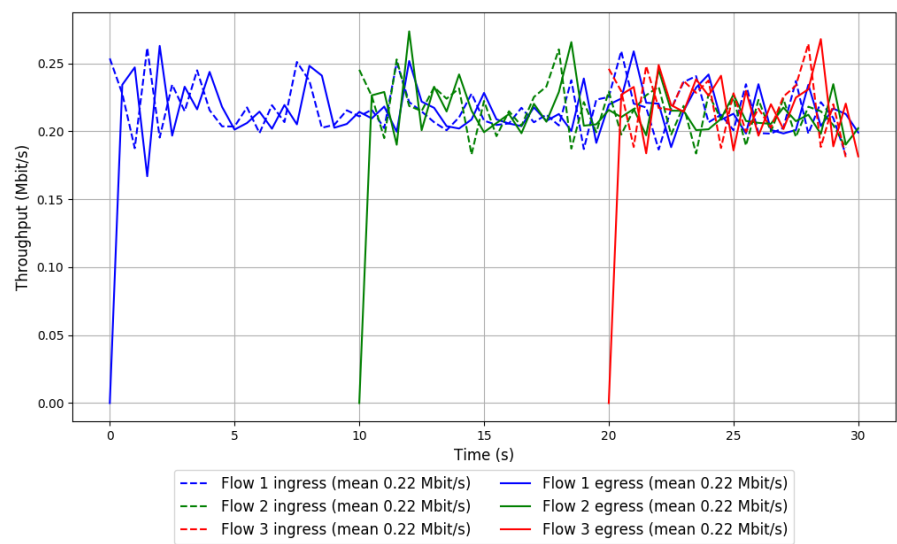


Run 1: Statistics of SReAM

Start at: 2018-09-06 07:40:37  
End at: 2018-09-06 07:41:07  
Local clock offset: 2.804 ms  
Remote clock offset: -1.234 ms

# Below is generated by plot.py at 2018-09-06 08:35:46  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 0.43 Mbit/s  
95th percentile per-packet one-way delay: 31.881 ms  
Loss rate: 0.06%  
-- Flow 1:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 31.859 ms  
Loss rate: 0.00%  
-- Flow 2:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 31.912 ms  
Loss rate: 0.00%  
-- Flow 3:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 31.864 ms  
Loss rate: 0.35%

Run 1: Report of SReAM — Data Link



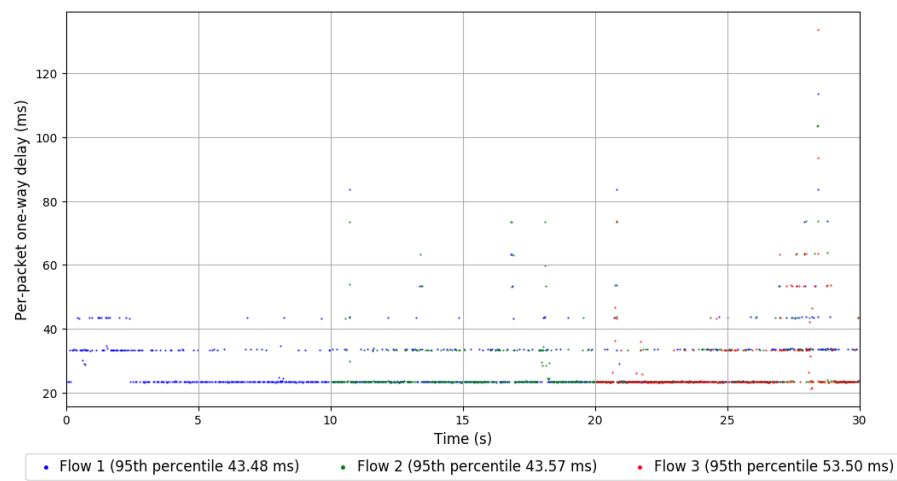
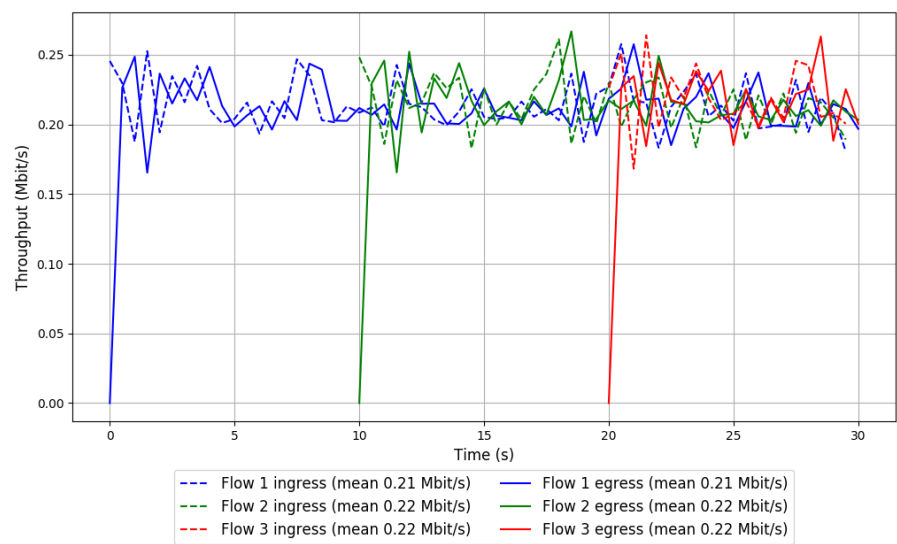
Run 2: Statistics of SReAM

Start at: 2018-09-06 08:01:42  
End at: 2018-09-06 08:02:12  
Local clock offset: 0.132 ms  
Remote clock offset: -1.485 ms

# Below is generated by plot.py at 2018-09-06 08:35:46  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 0.43 Mbit/s  
95th percentile per-packet one-way delay: 43.582 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 0.21 Mbit/s  
95th percentile per-packet one-way delay: 43.478 ms  
Loss rate: 0.00%  
-- Flow 2:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 43.569 ms  
Loss rate: 0.00%  
-- Flow 3:  
Average throughput: 0.22 Mbit/s  
95th percentile per-packet one-way delay: 53.498 ms  
Loss rate: 0.00%



Run 2: Report of SReAM — Data Link

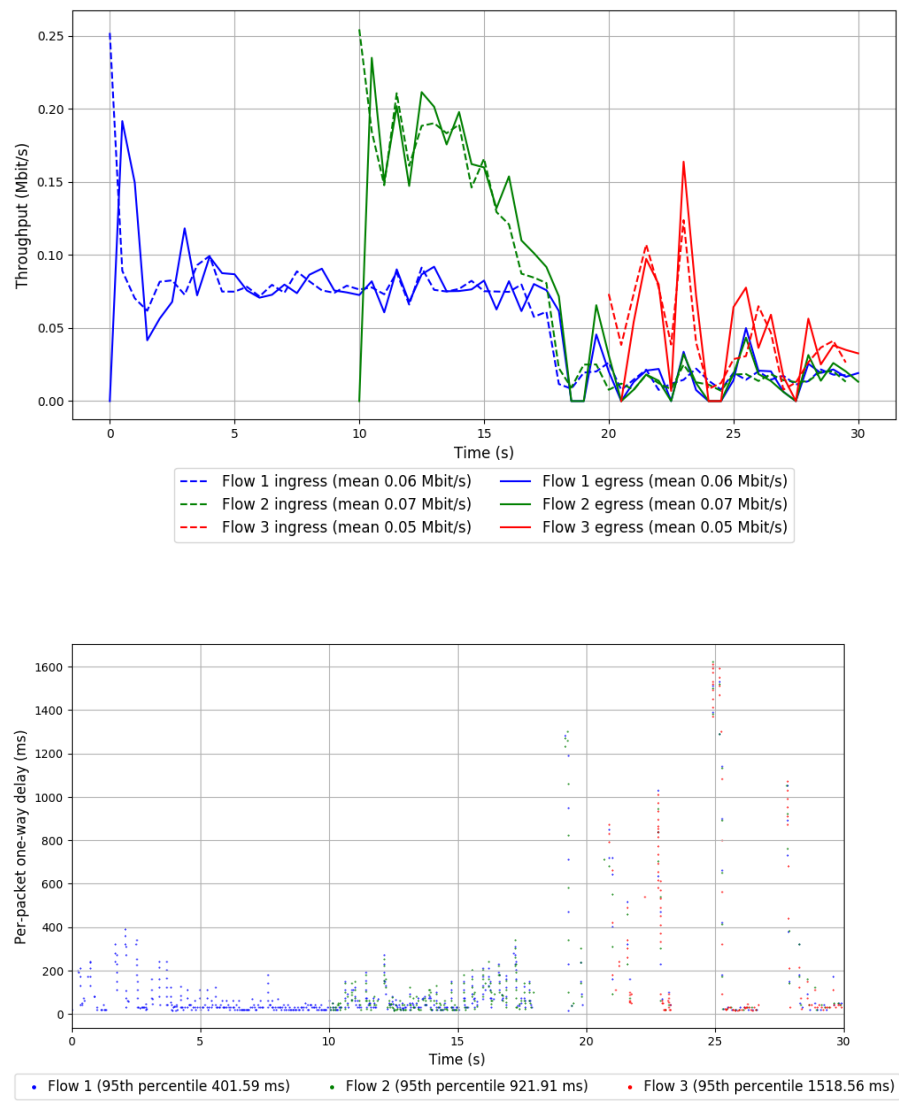


Run 3: Statistics of SCReAM

Start at: 2018-09-06 08:22:08  
End at: 2018-09-06 08:22:38  
Local clock offset: 2.934 ms  
Remote clock offset: -2.531 ms

# Below is generated by plot.py at 2018-09-06 08:35:46  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 0.12 Mbit/s  
95th percentile per-packet one-way delay: 934.629 ms  
Loss rate: 0.10%  
-- Flow 1:  
Average throughput: 0.06 Mbit/s  
95th percentile per-packet one-way delay: 401.592 ms  
Loss rate: 0.17%  
-- Flow 2:  
Average throughput: 0.07 Mbit/s  
95th percentile per-packet one-way delay: 921.911 ms  
Loss rate: 0.05%  
-- Flow 3:  
Average throughput: 0.05 Mbit/s  
95th percentile per-packet one-way delay: 1518.559 ms  
Loss rate: 0.00%

Run 3: Report of SReAM — Data Link

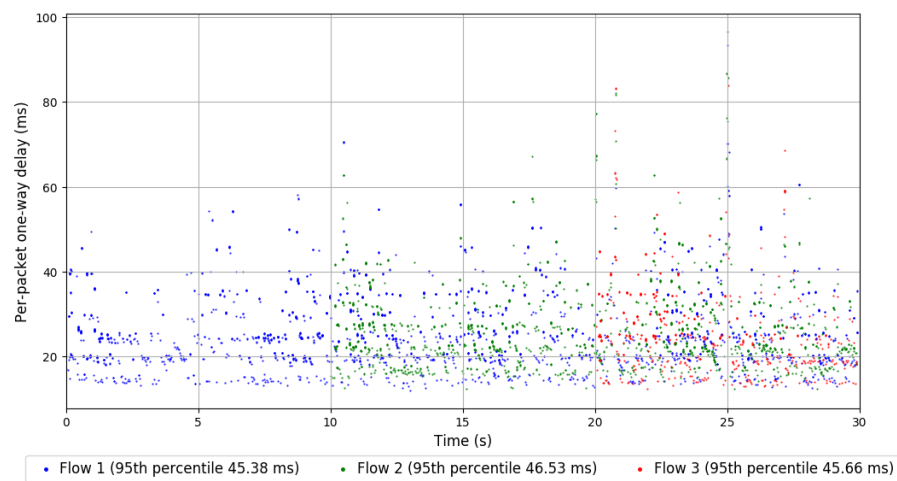
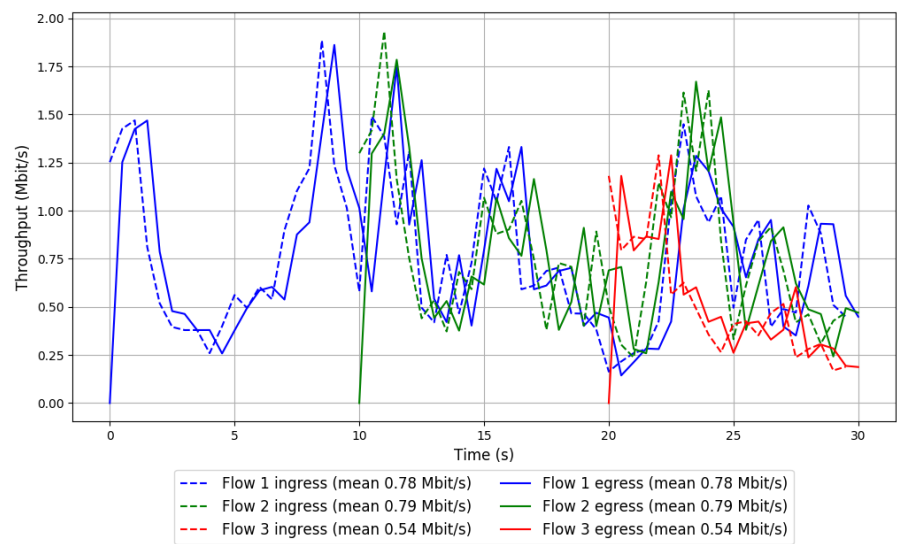


Run 1: Statistics of Sprout

Start at: 2018-09-06 07:50:40  
End at: 2018-09-06 07:51:10  
Local clock offset: 1.409 ms  
Remote clock offset: -3.487 ms

# Below is generated by plot.py at 2018-09-06 08:35:46  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 1.48 Mbit/s  
95th percentile per-packet one-way delay: 45.696 ms  
Loss rate: 0.00%  
-- Flow 1:  
Average throughput: 0.78 Mbit/s  
95th percentile per-packet one-way delay: 45.376 ms  
Loss rate: 0.00%  
-- Flow 2:  
Average throughput: 0.79 Mbit/s  
95th percentile per-packet one-way delay: 46.527 ms  
Loss rate: 0.00%  
-- Flow 3:  
Average throughput: 0.54 Mbit/s  
95th percentile per-packet one-way delay: 45.662 ms  
Loss rate: 0.01%

Run 1: Report of Sprout — Data Link

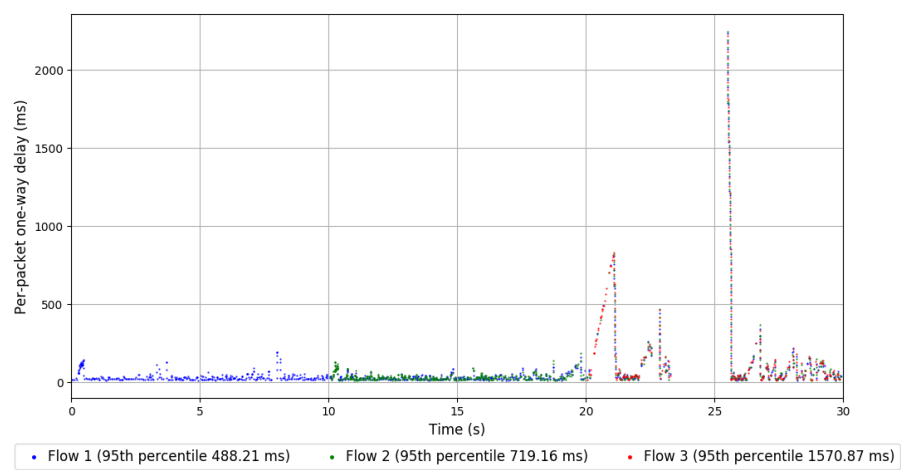
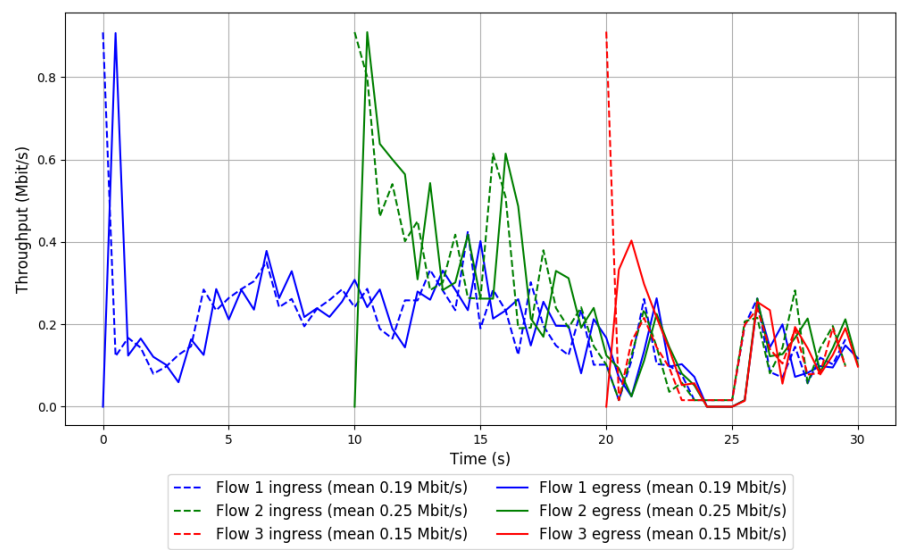


## Run 2: Statistics of Sprout

Start at: 2018-09-06 08:11:43  
End at: 2018-09-06 08:12:13  
Local clock offset: 3.497 ms  
Remote clock offset: -2.908 ms

```
# Below is generated by plot.py at 2018-09-06 08:35:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.41 Mbit/s
95th percentile per-packet one-way delay: 812.248 ms
Loss rate: 0.59%
-- Flow 1:
Average throughput: 0.19 Mbit/s
95th percentile per-packet one-way delay: 488.210 ms
Loss rate: 0.41%
-- Flow 2:
Average throughput: 0.25 Mbit/s
95th percentile per-packet one-way delay: 719.162 ms
Loss rate: 0.47%
-- Flow 3:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 1570.870 ms
Loss rate: 1.67%
```

Run 2: Report of Sprout — Data Link



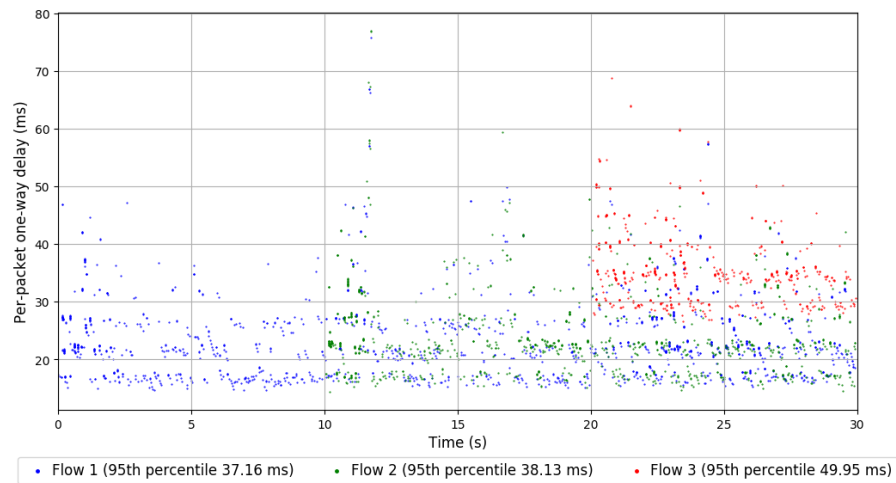
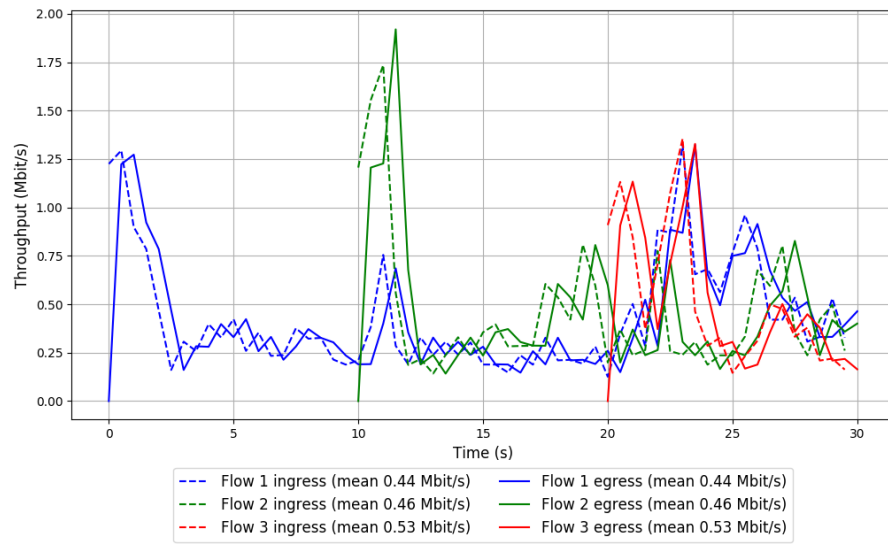
### Run 3: Statistics of Sprout

Start at: 2018-09-06 08:32:11  
End at: 2018-09-06 08:32:41  
Local clock offset: 4.746 ms  
Remote clock offset: -1.897 ms

```
# Below is generated by plot.py at 2018-09-06 08:35:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.92 Mbit/s
95th percentile per-packet one-way delay: 41.821 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 37.155 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.46 Mbit/s
95th percentile per-packet one-way delay: 38.130 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.53 Mbit/s
95th percentile per-packet one-way delay: 49.949 ms
Loss rate: 0.00%
```



### Run 3: Report of Sprout — Data Link



Run 1: Statistics of TaoVA-100x

Start at: 2018-09-06 07:41:43

End at: 2018-09-06 07:42:13

Local clock offset: 1.048 ms

Remote clock offset: -1.91 ms

# Below is generated by plot.py at 2018-09-06 08:35:46

# Datalink statistics

-- Total of 3 flows:

Average throughput: 1.00 Mbit/s

95th percentile per-packet one-way delay: 715.005 ms

Loss rate: 44.83%

-- Flow 1:

Average throughput: 0.60 Mbit/s

95th percentile per-packet one-way delay: 681.281 ms

Loss rate: 41.68%

-- Flow 2:

Average throughput: 0.42 Mbit/s

95th percentile per-packet one-way delay: 707.407 ms

Loss rate: 44.34%

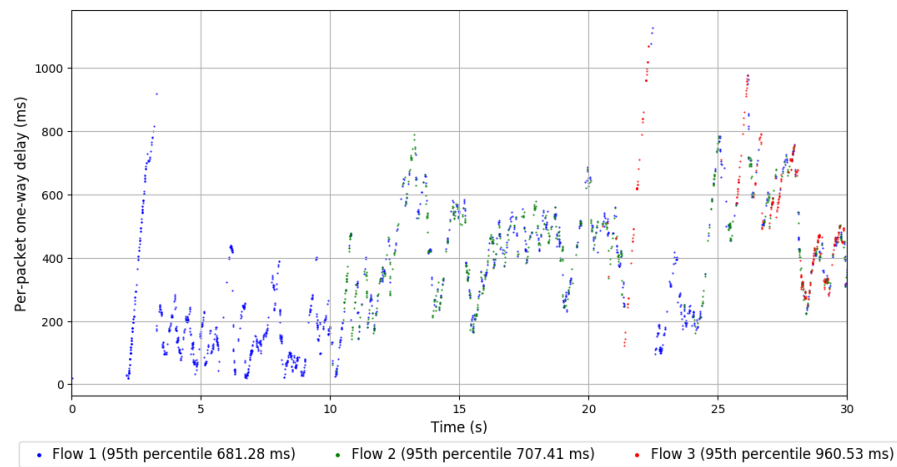
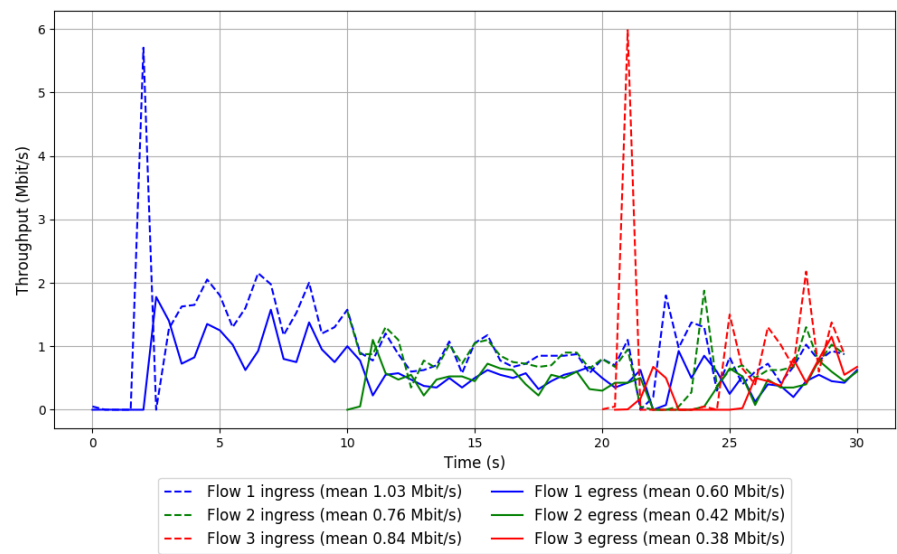
-- Flow 3:

Average throughput: 0.38 Mbit/s

95th percentile per-packet one-way delay: 960.534 ms

Loss rate: 57.34%

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

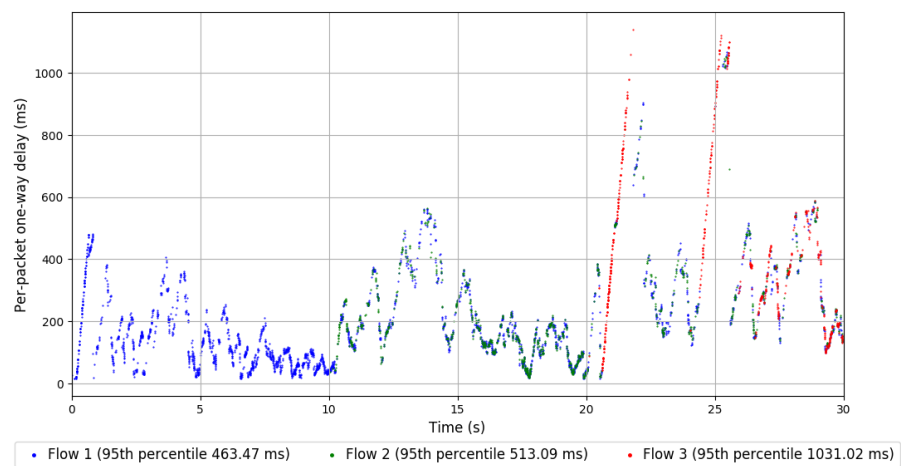
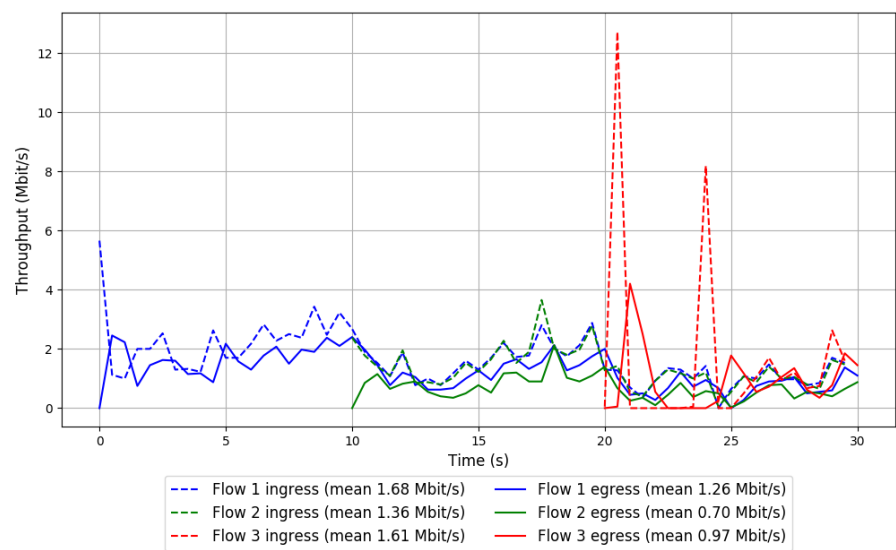


Run 2: Statistics of TaoVA-100x

Start at: 2018-09-06 08:02:49  
End at: 2018-09-06 08:03:19  
Local clock offset: 2.726 ms  
Remote clock offset: -2.836 ms

# Below is generated by plot.py at 2018-09-06 08:35:46  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 2.04 Mbit/s  
95th percentile per-packet one-way delay: 585.823 ms  
Loss rate: 34.54%  
-- Flow 1:  
Average throughput: 1.26 Mbit/s  
95th percentile per-packet one-way delay: 463.467 ms  
Loss rate: 25.34%  
-- Flow 2:  
Average throughput: 0.70 Mbit/s  
95th percentile per-packet one-way delay: 513.090 ms  
Loss rate: 48.43%  
-- Flow 3:  
Average throughput: 0.97 Mbit/s  
95th percentile per-packet one-way delay: 1031.021 ms  
Loss rate: 39.97%

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

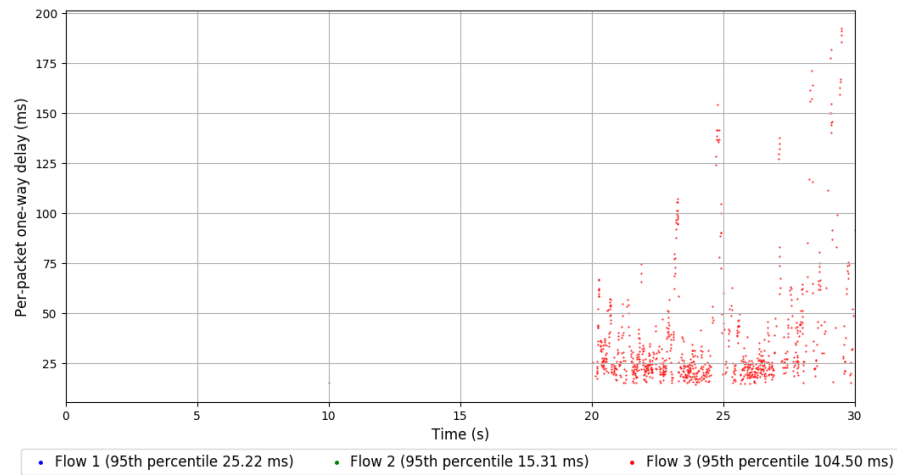
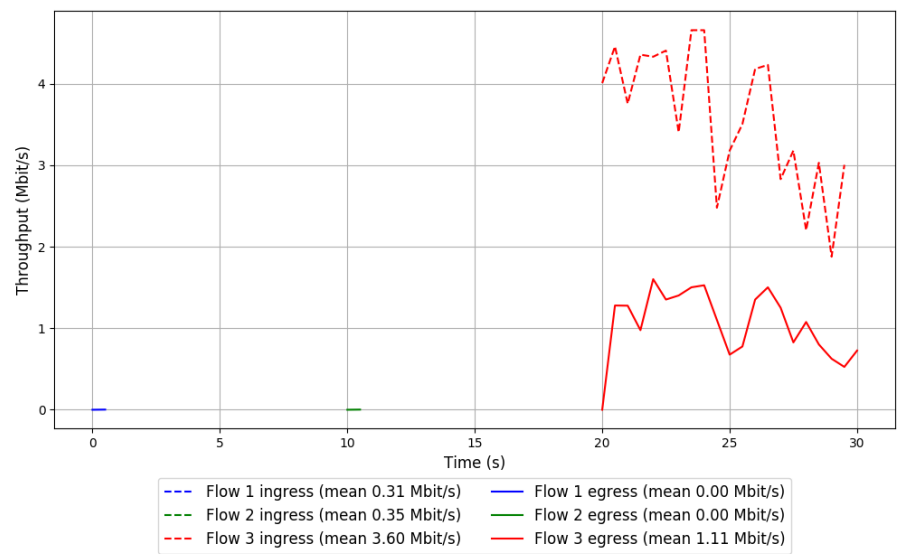


Run 3: Statistics of TaoVA-100x

Start at: 2018-09-06 08:23:14  
End at: 2018-09-06 08:23:44  
Local clock offset: 5.168 ms  
Remote clock offset: -1.976 ms

# Below is generated by plot.py at 2018-09-06 08:35:46  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 0.37 Mbit/s  
95th percentile per-packet one-way delay: 104.499 ms  
Loss rate: 69.15%  
-- Flow 1:  
Average throughput: 0.00 Mbit/s  
95th percentile per-packet one-way delay: 25.217 ms  
Loss rate: 96.07%  
-- Flow 2:  
Average throughput: 0.00 Mbit/s  
95th percentile per-packet one-way delay: 15.314 ms  
Loss rate: 96.07%  
-- Flow 3:  
Average throughput: 1.11 Mbit/s  
95th percentile per-packet one-way delay: 104.499 ms  
Loss rate: 69.11%

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



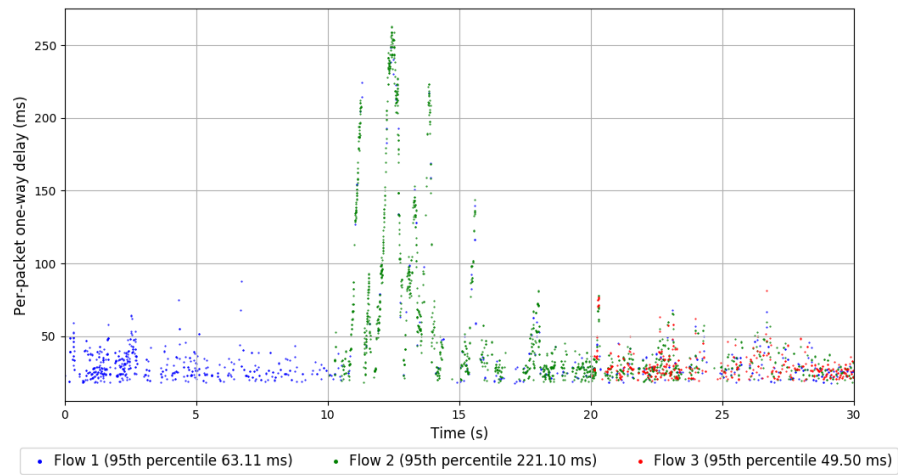
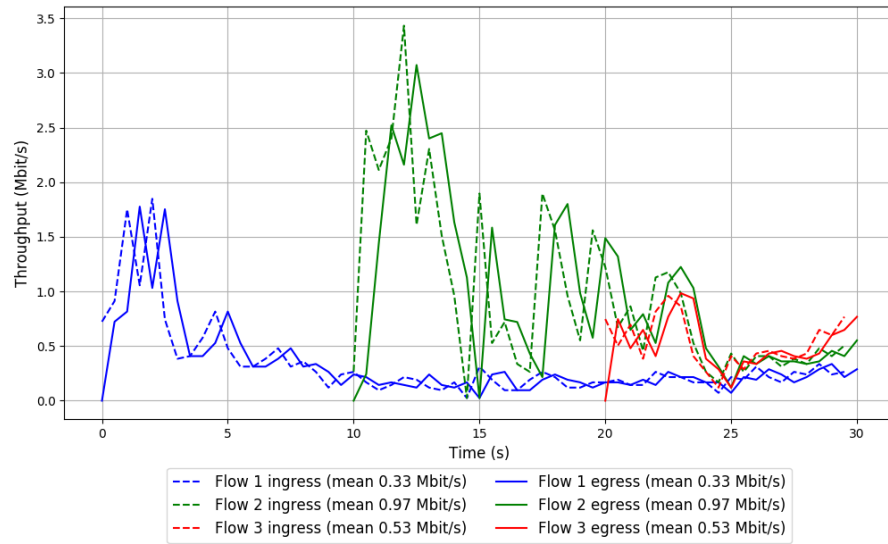
Run 1: Statistics of TCP Vegas

Start at: 2018-09-06 07:46:12  
End at: 2018-09-06 07:46:42  
Local clock offset: -0.717 ms  
Remote clock offset: -3.196 ms

# Below is generated by plot.py at 2018-09-06 08:35:46  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 1.16 Mbit/s  
95th percentile per-packet one-way delay: 203.721 ms  
Loss rate: 0.03%  
-- Flow 1:  
Average throughput: 0.33 Mbit/s  
95th percentile per-packet one-way delay: 63.107 ms  
Loss rate: 0.00%  
-- Flow 2:  
Average throughput: 0.97 Mbit/s  
95th percentile per-packet one-way delay: 221.096 ms  
Loss rate: 0.06%  
-- Flow 3:  
Average throughput: 0.53 Mbit/s  
95th percentile per-packet one-way delay: 49.503 ms  
Loss rate: 0.00%



## Run 1: Report of TCP Vegas — Data Link

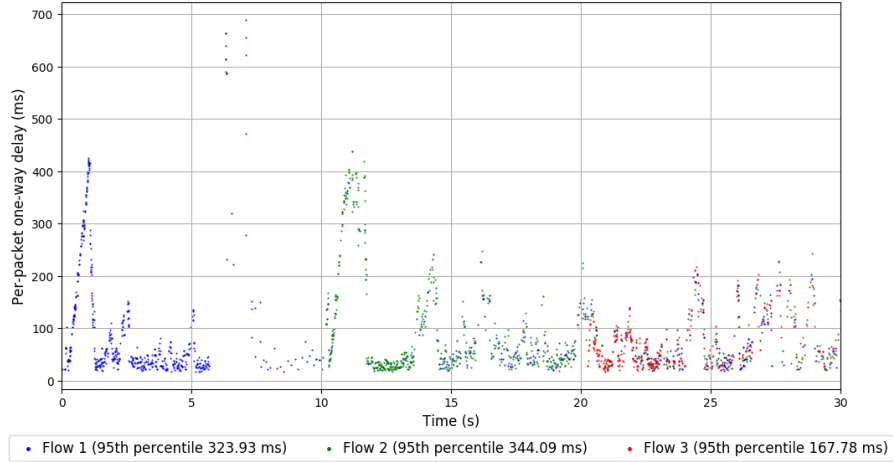
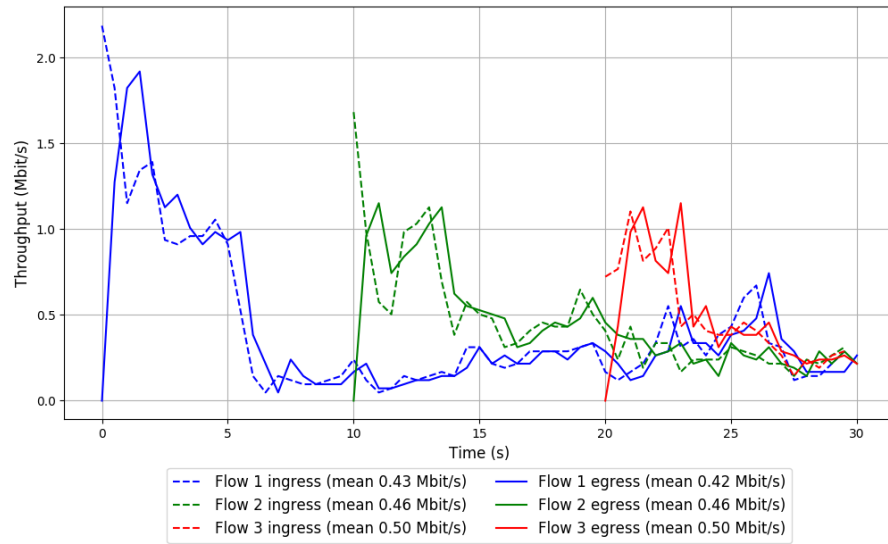


Run 2: Statistics of TCP Vegas

Start at: 2018-09-06 08:07:16  
End at: 2018-09-06 08:07:46  
Local clock offset: 1.102 ms  
Remote clock offset: -2.064 ms

# Below is generated by plot.py at 2018-09-06 08:35:46  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 0.89 Mbit/s  
95th percentile per-packet one-way delay: 305.259 ms  
Loss rate: 0.76%  
-- Flow 1:  
Average throughput: 0.42 Mbit/s  
95th percentile per-packet one-way delay: 323.927 ms  
Loss rate: 0.85%  
-- Flow 2:  
Average throughput: 0.46 Mbit/s  
95th percentile per-packet one-way delay: 344.093 ms  
Loss rate: 0.65%  
-- Flow 3:  
Average throughput: 0.50 Mbit/s  
95th percentile per-packet one-way delay: 167.779 ms  
Loss rate: 0.72%

## Run 2: Report of TCP Vegas — Data Link

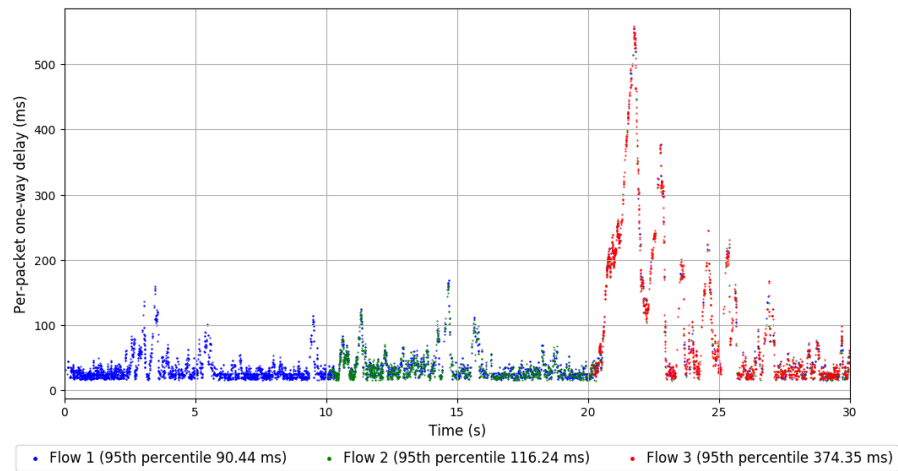
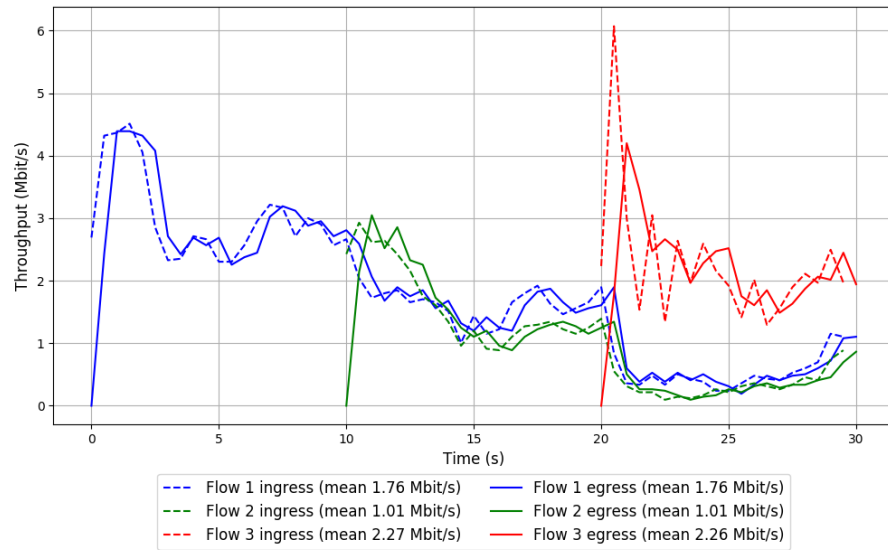


Run 3: Statistics of TCP Vegas

Start at: 2018-09-06 08:27:42  
End at: 2018-09-06 08:28:13  
Local clock offset: 3.847 ms  
Remote clock offset: -2.113 ms

# Below is generated by plot.py at 2018-09-06 08:35:46  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 3.18 Mbit/s  
95th percentile per-packet one-way delay: 217.206 ms  
Loss rate: 0.25%  
-- Flow 1:  
Average throughput: 1.76 Mbit/s  
95th percentile per-packet one-way delay: 90.436 ms  
Loss rate: 0.11%  
-- Flow 2:  
Average throughput: 1.01 Mbit/s  
95th percentile per-packet one-way delay: 116.239 ms  
Loss rate: 0.24%  
-- Flow 3:  
Average throughput: 2.26 Mbit/s  
95th percentile per-packet one-way delay: 374.346 ms  
Loss rate: 0.58%

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

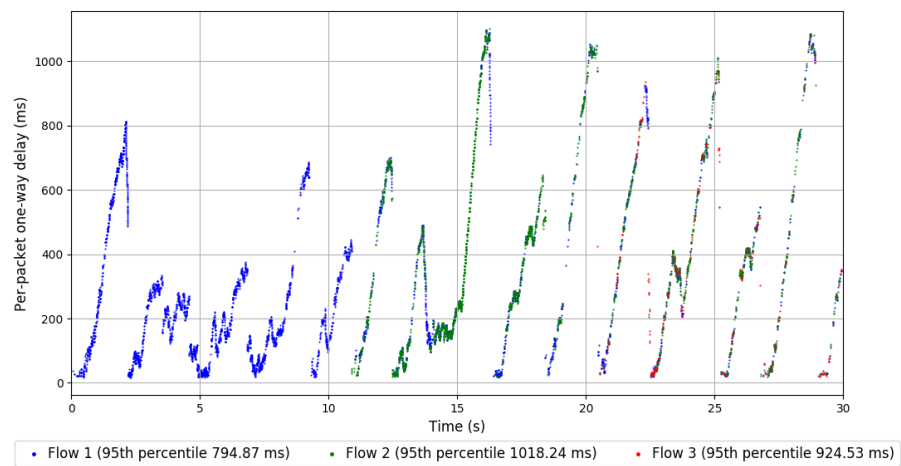
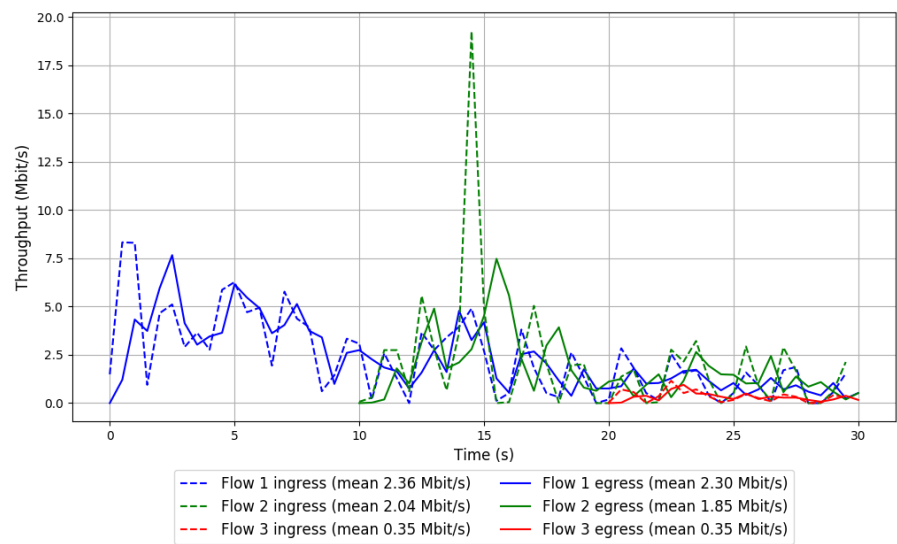


Run 1: Statistics of Verus

Start at: 2018-09-06 07:33:54  
End at: 2018-09-06 07:34:24  
Local clock offset: 0.441 ms  
Remote clock offset: -2.366 ms

# Below is generated by plot.py at 2018-09-06 08:35:47  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 3.62 Mbit/s  
95th percentile per-packet one-way delay: 921.306 ms  
Loss rate: 5.61%  
-- Flow 1:  
Average throughput: 2.30 Mbit/s  
95th percentile per-packet one-way delay: 794.874 ms  
Loss rate: 2.66%  
-- Flow 2:  
Average throughput: 1.85 Mbit/s  
95th percentile per-packet one-way delay: 1018.236 ms  
Loss rate: 10.86%  
-- Flow 3:  
Average throughput: 0.35 Mbit/s  
95th percentile per-packet one-way delay: 924.530 ms  
Loss rate: 4.42%

Run 1: Report of Verus — Data Link



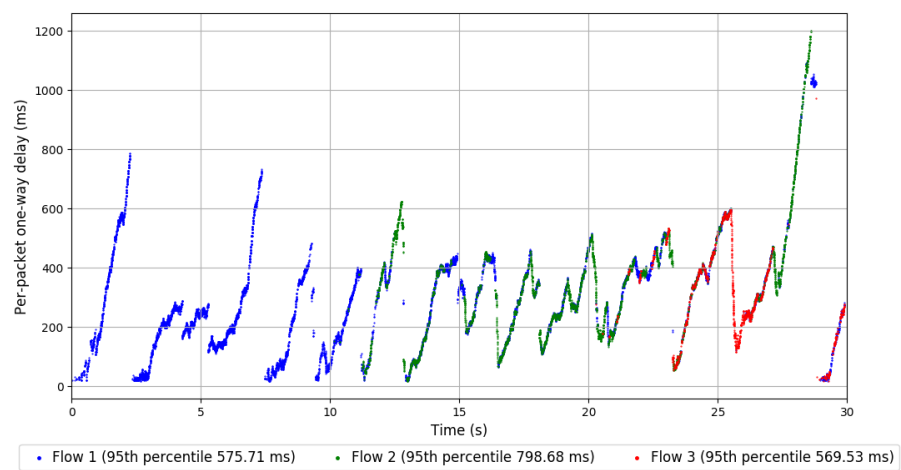
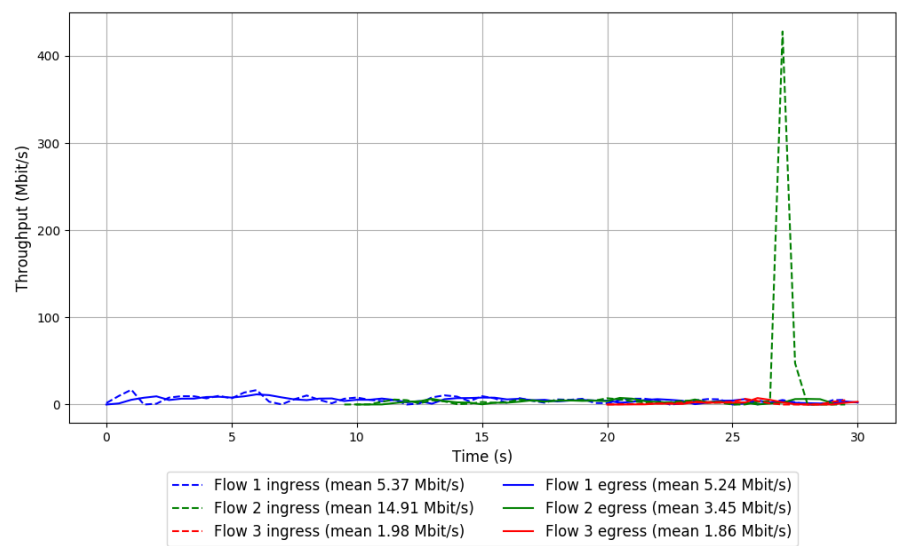
Run 2: Statistics of Verus

Start at: 2018-09-06 07:54:12  
End at: 2018-09-06 07:54:42  
Local clock offset: -0.336 ms  
Remote clock offset: -2.361 ms

# Below is generated by plot.py at 2018-09-06 08:35:52  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 7.96 Mbit/s  
95th percentile per-packet one-way delay: 594.540 ms  
Loss rate: 49.69%  
-- Flow 1:  
Average throughput: 5.24 Mbit/s  
95th percentile per-packet one-way delay: 575.709 ms  
Loss rate: 2.44%  
-- Flow 2:  
Average throughput: 3.45 Mbit/s  
95th percentile per-packet one-way delay: 798.685 ms  
Loss rate: 78.32%  
-- Flow 3:  
Average throughput: 1.86 Mbit/s  
95th percentile per-packet one-way delay: 569.534 ms  
Loss rate: 8.18%



Run 2: Report of Verus — Data Link

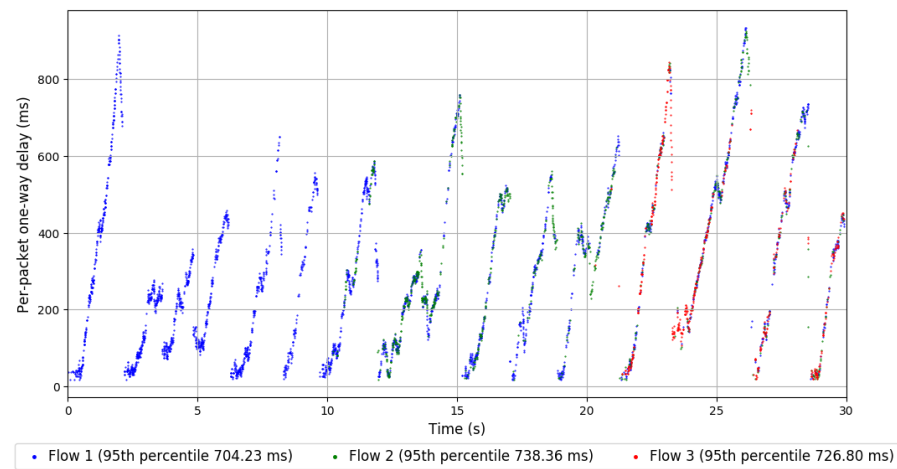
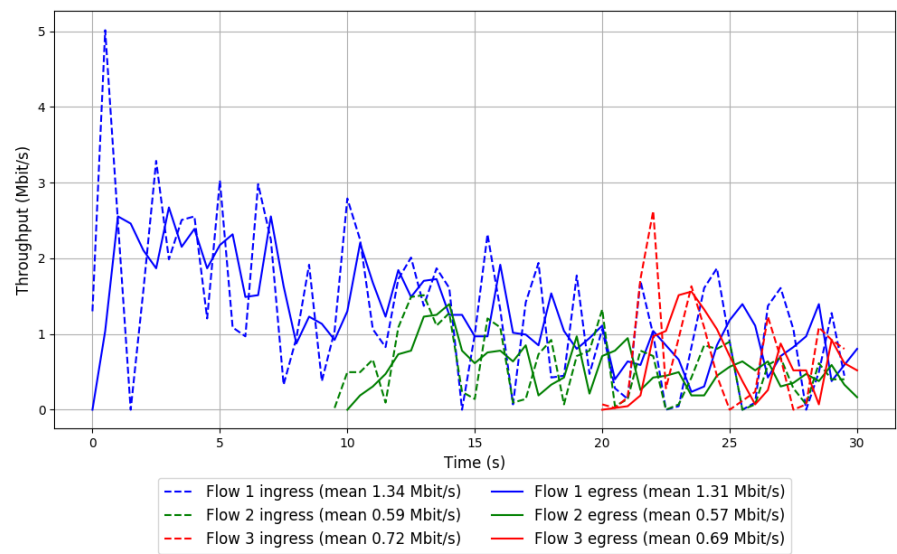


Run 3: Statistics of Verus

Start at: 2018-09-06 08:15:04  
End at: 2018-09-06 08:15:34  
Local clock offset: 0.93 ms  
Remote clock offset: -2.626 ms

# Below is generated by plot.py at 2018-09-06 08:35:52  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 1.91 Mbit/s  
95th percentile per-packet one-way delay: 711.401 ms  
Loss rate: 2.51%  
-- Flow 1:  
Average throughput: 1.31 Mbit/s  
95th percentile per-packet one-way delay: 704.229 ms  
Loss rate: 1.49%  
-- Flow 2:  
Average throughput: 0.57 Mbit/s  
95th percentile per-packet one-way delay: 738.361 ms  
Loss rate: 3.31%  
-- Flow 3:  
Average throughput: 0.69 Mbit/s  
95th percentile per-packet one-way delay: 726.804 ms  
Loss rate: 6.84%

Run 3: Report of Verus — Data Link

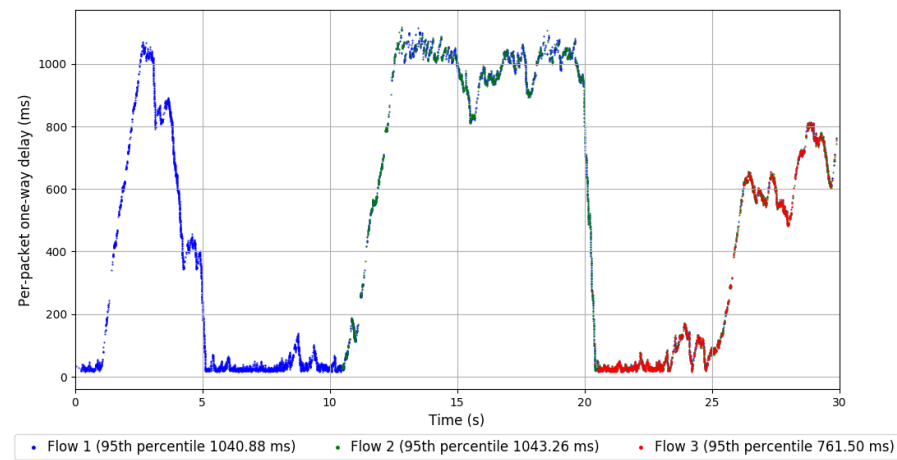
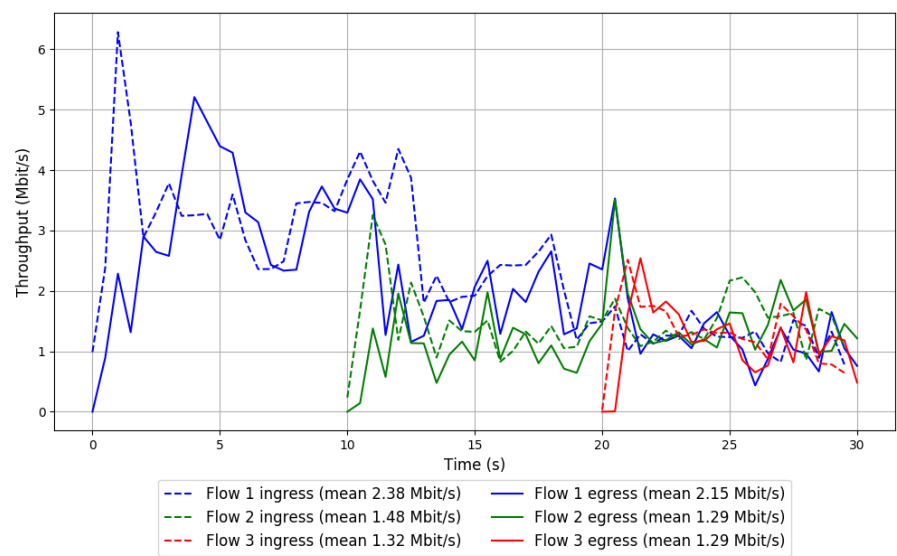


Run 1: Statistics of PCC-Vivace

Start at: 2018-09-06 07:35:02  
End at: 2018-09-06 07:35:32  
Local clock offset: 0.285 ms  
Remote clock offset: -2.558 ms

# Below is generated by plot.py at 2018-09-06 08:35:52  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 3.42 Mbit/s  
95th percentile per-packet one-way delay: 1037.365 ms  
Loss rate: 10.09%  
-- Flow 1:  
Average throughput: 2.15 Mbit/s  
95th percentile per-packet one-way delay: 1040.881 ms  
Loss rate: 9.79%  
-- Flow 2:  
Average throughput: 1.29 Mbit/s  
95th percentile per-packet one-way delay: 1043.258 ms  
Loss rate: 13.08%  
-- Flow 3:  
Average throughput: 1.29 Mbit/s  
95th percentile per-packet one-way delay: 761.503 ms  
Loss rate: 5.04%

Run 1: Report of PCC-Vivace — Data Link

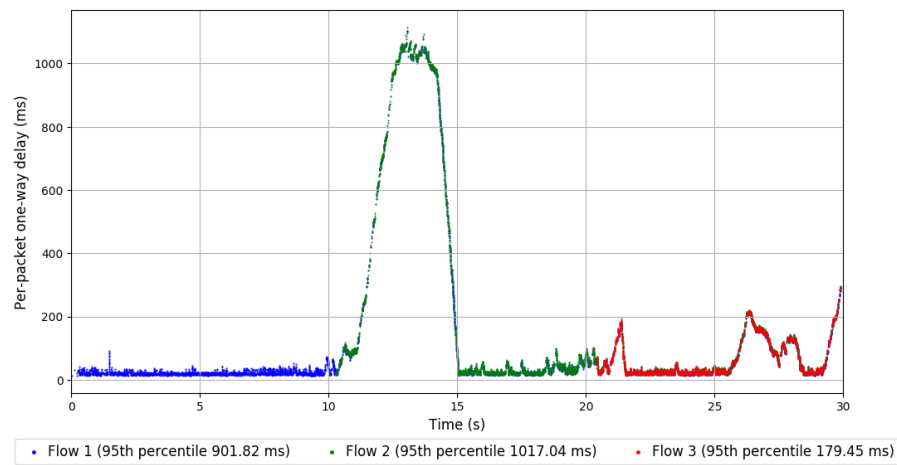
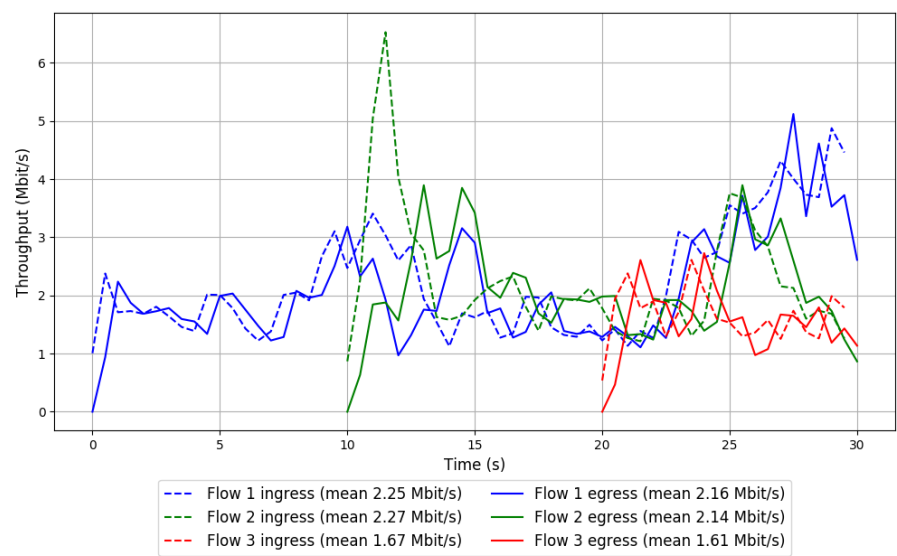


Run 2: Statistics of PCC-Vivace

Start at: 2018-09-06 07:55:37  
End at: 2018-09-06 07:56:07  
Local clock offset: 1.004 ms  
Remote clock offset: -3.242 ms

# Below is generated by plot.py at 2018-09-06 08:35:52  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 4.11 Mbit/s  
95th percentile per-packet one-way delay: 981.586 ms  
Loss rate: 4.61%  
-- Flow 1:  
Average throughput: 2.16 Mbit/s  
95th percentile per-packet one-way delay: 901.816 ms  
Loss rate: 4.18%  
-- Flow 2:  
Average throughput: 2.14 Mbit/s  
95th percentile per-packet one-way delay: 1017.040 ms  
Loss rate: 5.51%  
-- Flow 3:  
Average throughput: 1.61 Mbit/s  
95th percentile per-packet one-way delay: 179.452 ms  
Loss rate: 3.95%

Run 2: Report of PCC-Vivace — Data Link



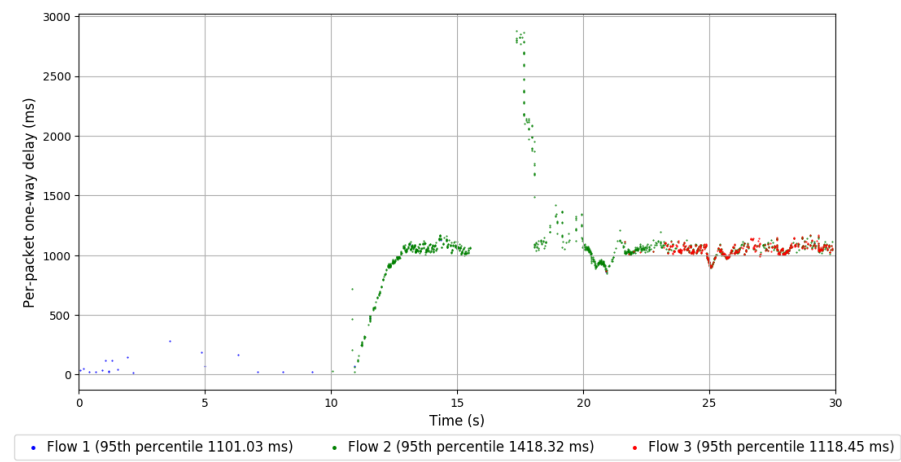
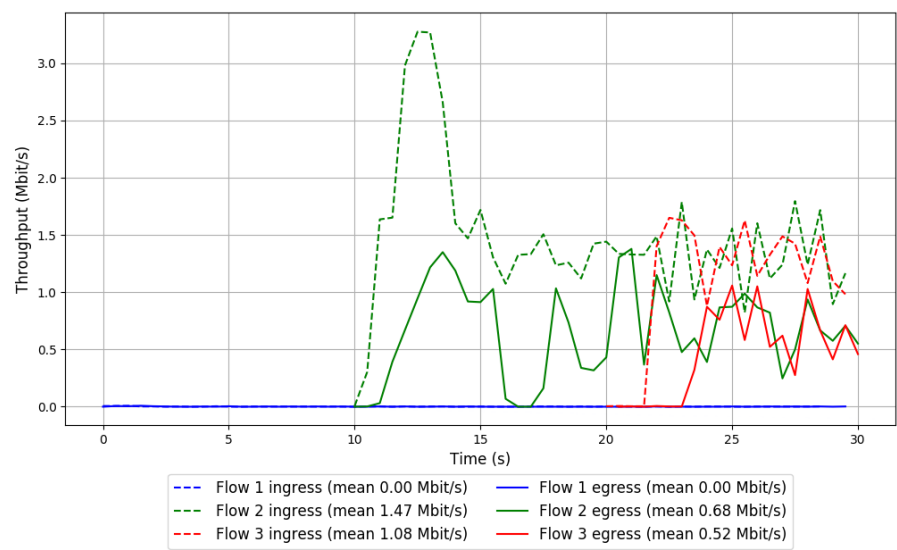
Run 3: Statistics of PCC-Vivace

Start at: 2018-09-06 08:16:11  
End at: 2018-09-06 08:16:41  
Local clock offset: 1.03 ms  
Remote clock offset: -3.982 ms

# Below is generated by plot.py at 2018-09-06 08:35:52  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 0.61 Mbit/s  
95th percentile per-packet one-way delay: 1223.086 ms  
Loss rate: 54.63%  
-- Flow 1:  
Average throughput: 0.00 Mbit/s  
95th percentile per-packet one-way delay: 1101.028 ms  
Loss rate: 22.94%  
-- Flow 2:  
Average throughput: 0.68 Mbit/s  
95th percentile per-packet one-way delay: 1418.319 ms  
Loss rate: 54.10%  
-- Flow 3:  
Average throughput: 0.52 Mbit/s  
95th percentile per-packet one-way delay: 1118.450 ms  
Loss rate: 56.20%



Run 3: Report of PCC-Vivace — Data Link



Run 1: Statistics of WebRTC media

Start at: 2018-09-06 07:43:58

End at: 2018-09-06 07:44:28

Local clock offset: -0.543 ms

Remote clock offset: -1.67 ms

# Below is generated by plot.py at 2018-09-06 08:35:52

# Datalink statistics

-- Total of 3 flows:

Average throughput: 1.47 Mbit/s

95th percentile per-packet one-way delay: 271.140 ms

Loss rate: 0.22%

-- Flow 1:

Average throughput: 0.80 Mbit/s

95th percentile per-packet one-way delay: 433.200 ms

Loss rate: 0.17%

-- Flow 2:

Average throughput: 0.37 Mbit/s

95th percentile per-packet one-way delay: 280.900 ms

Loss rate: 0.14%

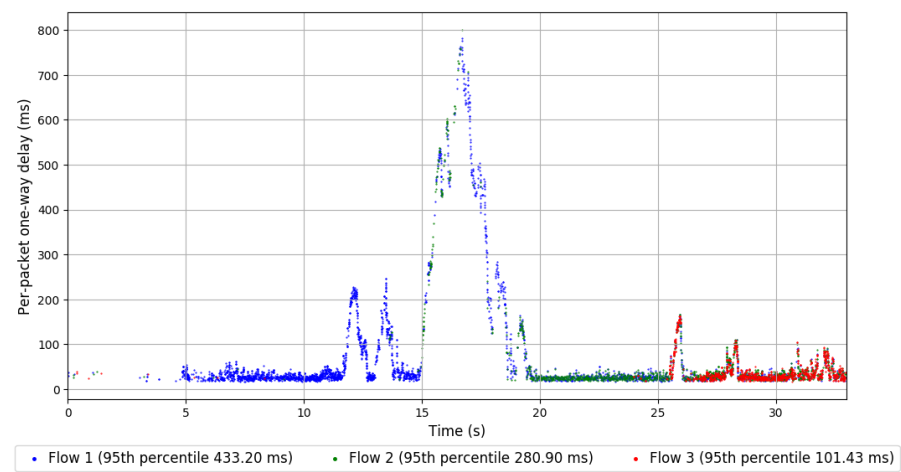
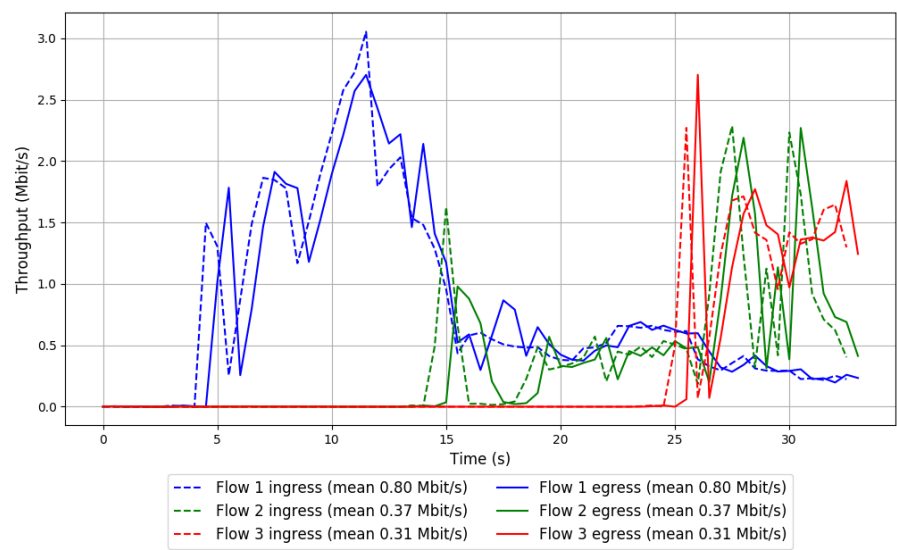
-- Flow 3:

Average throughput: 0.31 Mbit/s

95th percentile per-packet one-way delay: 101.434 ms

Loss rate: 0.45%

Run 1: Report of WebRTC media — Data Link

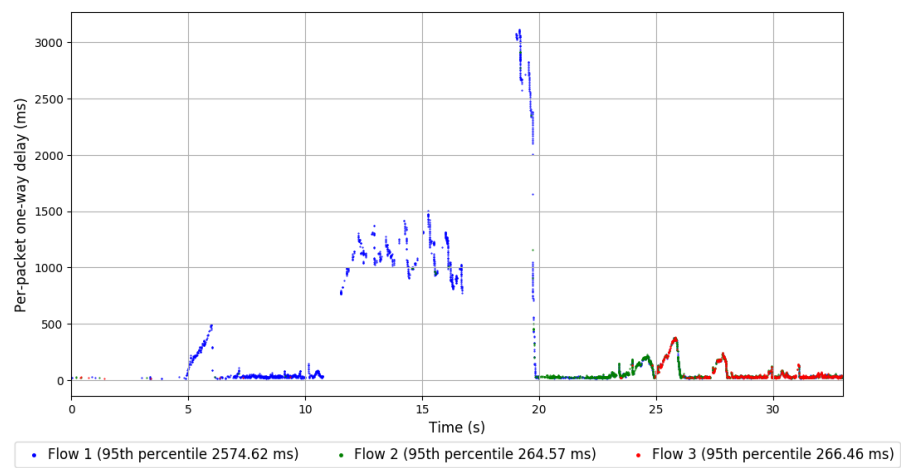
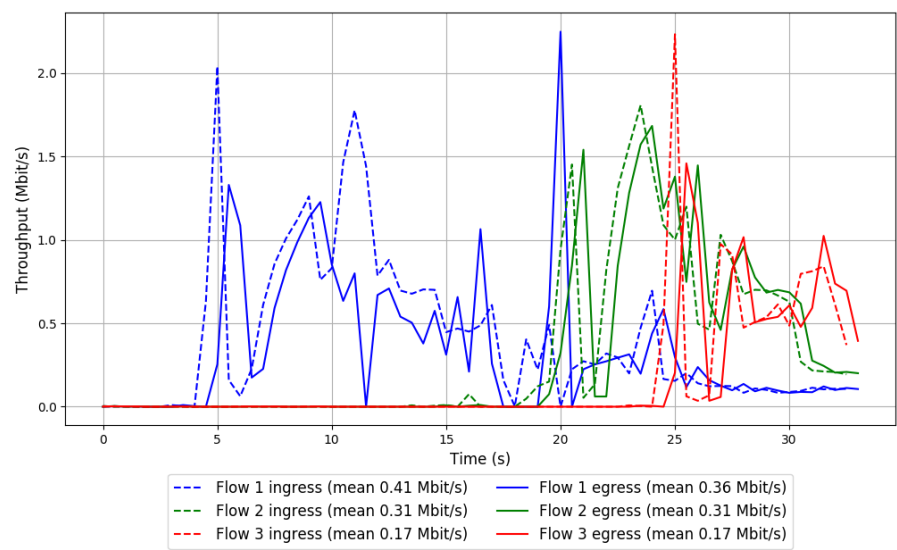


Run 2: Statistics of WebRTC media

Start at: 2018-09-06 08:05:03  
End at: 2018-09-06 08:05:33  
Local clock offset: 2.129 ms  
Remote clock offset: -1.163 ms

# Below is generated by plot.py at 2018-09-06 08:35:52  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 0.83 Mbit/s  
95th percentile per-packet one-way delay: 1294.863 ms  
Loss rate: 6.23%  
-- Flow 1:  
Average throughput: 0.36 Mbit/s  
95th percentile per-packet one-way delay: 2574.619 ms  
Loss rate: 13.22%  
-- Flow 2:  
Average throughput: 0.31 Mbit/s  
95th percentile per-packet one-way delay: 264.571 ms  
Loss rate: 0.11%  
-- Flow 3:  
Average throughput: 0.17 Mbit/s  
95th percentile per-packet one-way delay: 266.462 ms  
Loss rate: 0.31%

Run 2: Report of WebRTC media — Data Link



Run 3: Statistics of WebRTC media

Start at: 2018-09-06 08:25:29  
End at: 2018-09-06 08:25:59  
Local clock offset: 3.634 ms  
Remote clock offset: -2.689 ms

# Below is generated by plot.py at 2018-09-06 08:35:52  
# Datalink statistics  
-- Total of 3 flows:  
Average throughput: 1.34 Mbit/s  
95th percentile per-packet one-way delay: 134.462 ms  
Loss rate: 0.05%  
-- Flow 1:  
Average throughput: 0.83 Mbit/s  
95th percentile per-packet one-way delay: 121.184 ms  
Loss rate: 0.00%  
-- Flow 2:  
Average throughput: 0.40 Mbit/s  
95th percentile per-packet one-way delay: 145.026 ms  
Loss rate: 0.05%  
-- Flow 3:  
Average throughput: 0.12 Mbit/s  
95th percentile per-packet one-way delay: 181.129 ms  
Loss rate: 0.45%

Run 3: Report of WebRTC media — Data Link

