

Pantheon Report

Generated at 2018-11-03 11:42:44 (UTC).

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

Repeated the test of 18 congestion control schemes 5 times.

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

NTP offsets were measured against `time.google.com` and have been applied to correct the timestamps in logs.

System info:

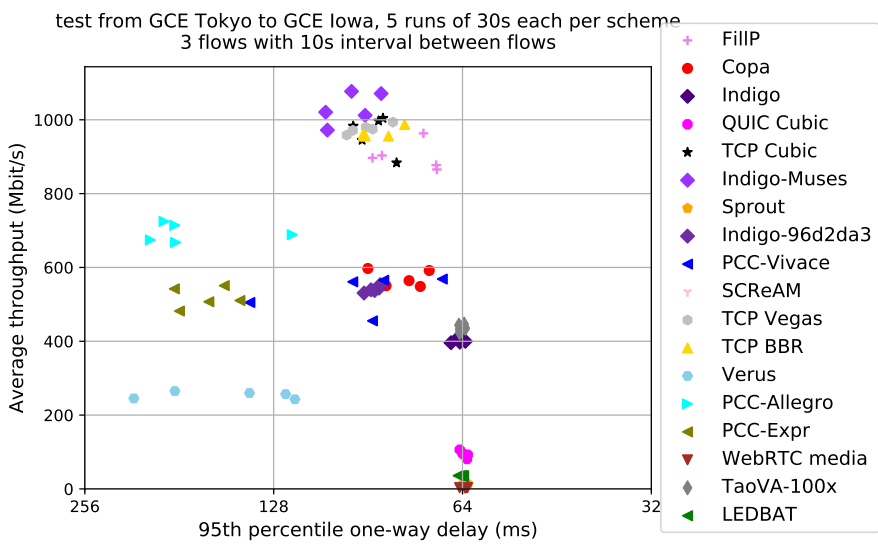
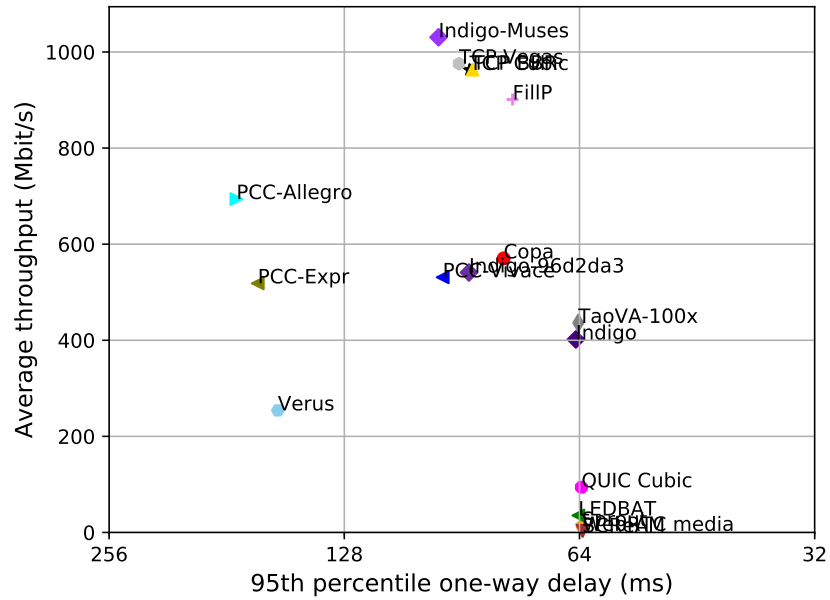
```
Linux 4.15.0-1021-gcp
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912
```

Git summary:

```
branch: muses @ 794ca3866981572cb73700a276691acf79c60f2b
third_party/fillp @ d6da1459332fcee56963885d7eba17e6a32d4519
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdf58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecd90c077e64d
third_party/indigo-96d2da3 @ 8413272d46f8aa0bcb967ed7048b6a8f994abb95
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/muses @ 65ac1b19bbefed0c6349ae986009b4fa8643c40a
third_party/pantheon-tunnel @ f866d3f58d27afd942717625ee3a354cc2e802bd
third_party/pcc @ 1afc958fa0d66d18b623c091a55fec872b4981e1
M receiver/src/buffer.h
M receiver/src/core.cpp
M sender/src/buffer.h
M sender/src/core.cpp
third_party/pcc-experimental @ cd43e34e3f5f5613e8acd08fab92c4eb24f974ab
third_party/proto-quick @ 77961f1a82733a86b42f1bc8143ebc978f3cff42
third_party/scream-reproduce @ f099118d1421aa3131bf11ff1964974e1da3bdb2
M src/ScreamClient
M src/ScreamServer
third_party/sprout @ 366e35c6178b01e31d4a46ad18c74f9415f19a26
M src/examples/cellsim.cc
M src/examples/sproutbt2.cc
M src/network/sproutconn.cc
third_party/verus @ d4b447ea74c6c60a261149af2629562939f9a494
M src/verus.hpp
M tools/plot.py
```

third_party/vivace @ 2baf86211435ae071a32f96b7d8c504587f5d7f4
third_party/webrtc @ 3f0cc2a9061a41b6f9dde4735770d143a1fa2851

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



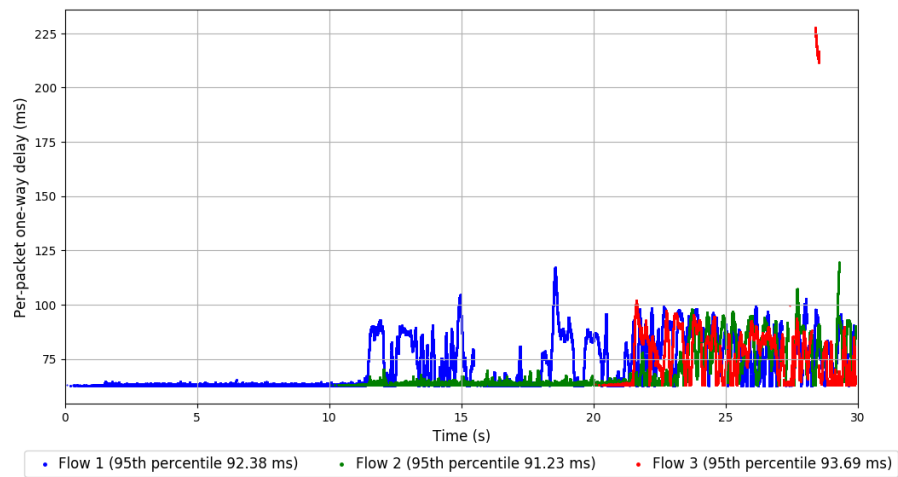
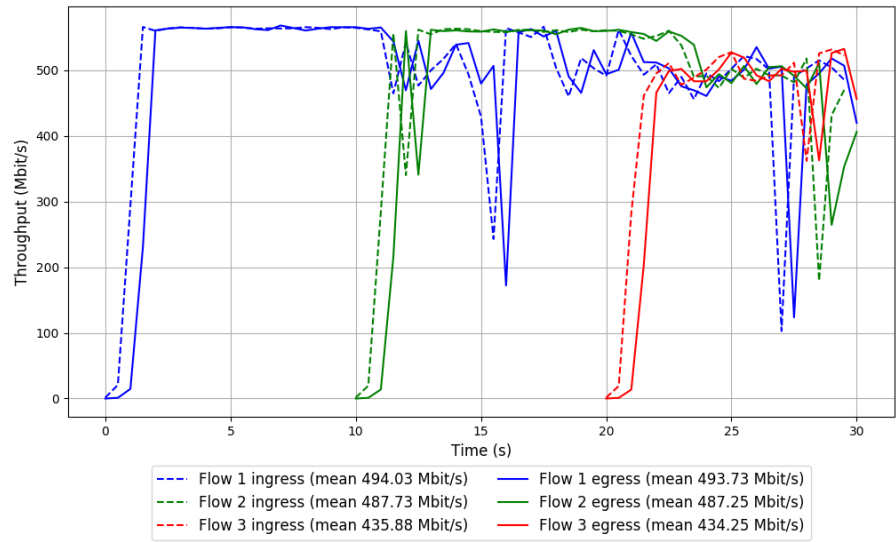
scheme	# runs	mean avg tput (Mbit/s)			mean 95th-%ile delay (ms)			mean loss rate (%)		
		flow 1	flow 2	flow 3	flow 1	flow 2	flow 3	flow 1	flow 2	flow 3
TCP BBR	5	499.55	478.46	442.33	83.47	91.96	87.98	0.47	0.60	1.61
Copa	5	295.89	289.54	249.24	77.78	80.17	101.68	0.38	0.56	1.40
TCP Cubic	5	503.38	472.78	439.74	82.65	86.98	90.62	0.43	0.69	1.54
FillP	5	574.20	369.58	249.29	82.67	68.73	67.74	0.42	0.51	1.56
Indigo	5	211.74	198.40	175.81	64.57	65.06	64.83	0.43	0.62	1.40
Indigo-96d2da3	5	287.33	261.81	245.35	87.76	88.15	92.70	0.28	0.83	1.52
LEDBAT	5	22.60	15.50	7.55	64.29	63.94	63.94	0.78	1.27	2.57
Indigo-Muses	5	573.75	501.36	382.98	96.73	99.39	97.45	0.40	0.66	1.78
PCC-Allegro	5	417.86	295.17	246.24	178.81	135.16	148.33	4.11	1.67	2.82
PCC-Expr	5	289.79	257.19	177.20	141.70	157.17	96.20	2.65	1.42	1.88
QUIC Cubic	5	58.00	41.25	24.81	63.60	63.62	63.62	0.58	1.15	1.43
SCReAM	5	0.22	0.22	0.22	63.40	63.26	63.31	0.38	0.65	1.16
Sprout	5	6.81	6.73	6.38	63.49	63.49	63.61	0.39	0.63	1.38
TaoVA-100x	5	224.63	220.62	196.91	64.01	64.37	64.54	0.46	0.69	1.03
TCP Vegas	5	519.41	468.61	439.33	82.43	92.20	93.24	0.42	0.60	1.23
Verus	5	146.87	125.02	74.47	137.94	137.64	84.32	0.76	1.76	1.64
PCC-Vivace	5	330.73	227.23	151.41	84.71	103.21	95.59	0.72	1.08	2.62
WebRTC media	5	1.73	1.14	0.43	63.35	63.37	63.36	0.54	0.82	1.59

Run 1: Statistics of TCP BBR

Start at: 2018-11-03 06:43:23
End at: 2018-11-03 06:43:53
Local clock offset: -0.024 ms
Remote clock offset: -0.018 ms

Below is generated by plot.py at 2018-11-03 09:44:26
Datalink statistics
-- Total of 3 flows:
Average throughput: 960.80 Mbit/s
95th percentile per-packet one-way delay: 92.085 ms
Loss rate: 0.74%
-- Flow 1:
Average throughput: 493.73 Mbit/s
95th percentile per-packet one-way delay: 92.383 ms
Loss rate: 0.48%
-- Flow 2:
Average throughput: 487.25 Mbit/s
95th percentile per-packet one-way delay: 91.229 ms
Loss rate: 0.73%
-- Flow 3:
Average throughput: 434.25 Mbit/s
95th percentile per-packet one-way delay: 93.686 ms
Loss rate: 1.64%

Run 1: Report of TCP BBR — Data Link



Run 2: Statistics of TCP BBR

Start at: 2018-11-03 07:14:55

End at: 2018-11-03 07:15:25

Local clock offset: 0.003 ms

Remote clock offset: 0.457 ms

Below is generated by plot.py at 2018-11-03 09:44:26

Datalink statistics

-- Total of 3 flows:

Average throughput: 956.37 Mbit/s

95th percentile per-packet one-way delay: 91.916 ms

Loss rate: 0.49%

-- Flow 1:

Average throughput: 488.69 Mbit/s

95th percentile per-packet one-way delay: 92.110 ms

Loss rate: 0.48%

-- Flow 2:

Average throughput: 493.79 Mbit/s

95th percentile per-packet one-way delay: 90.673 ms

Loss rate: 0.00%

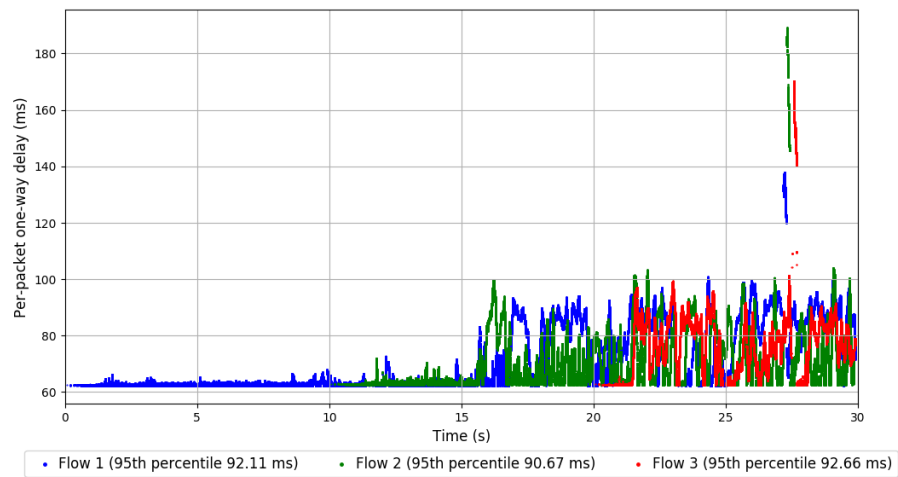
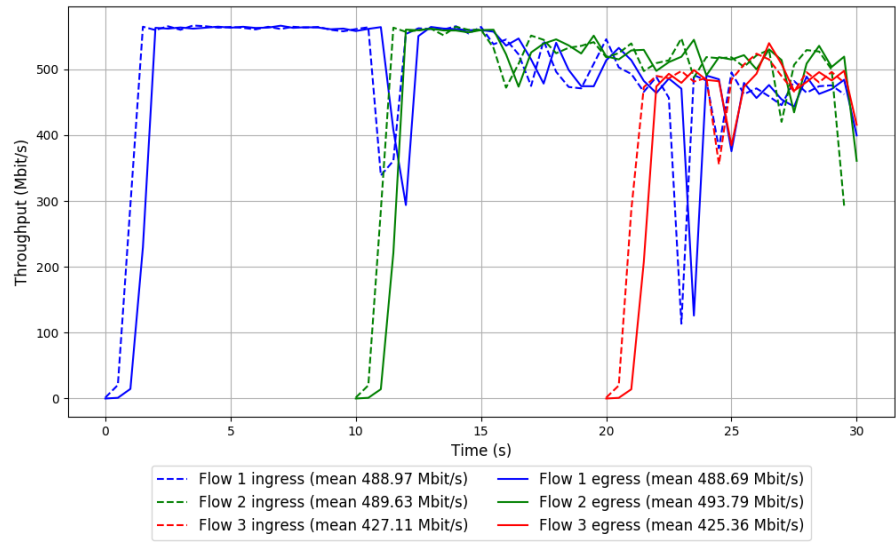
-- Flow 3:

Average throughput: 425.36 Mbit/s

95th percentile per-packet one-way delay: 92.662 ms

Loss rate: 1.67%

Run 2: Report of TCP BBR — Data Link



Run 3: Statistics of TCP BBR

Start at: 2018-11-03 07:46:34

End at: 2018-11-03 07:47:04

Local clock offset: -0.05 ms

Remote clock offset: 0.395 ms

Below is generated by plot.py at 2018-11-03 09:45:11

Datalink statistics

-- Total of 3 flows:

Average throughput: 987.30 Mbit/s

95th percentile per-packet one-way delay: 79.129 ms

Loss rate: 0.72%

-- Flow 1:

Average throughput: 512.50 Mbit/s

95th percentile per-packet one-way delay: 74.157 ms

Loss rate: 0.46%

-- Flow 2:

Average throughput: 486.49 Mbit/s

95th percentile per-packet one-way delay: 85.030 ms

Loss rate: 0.73%

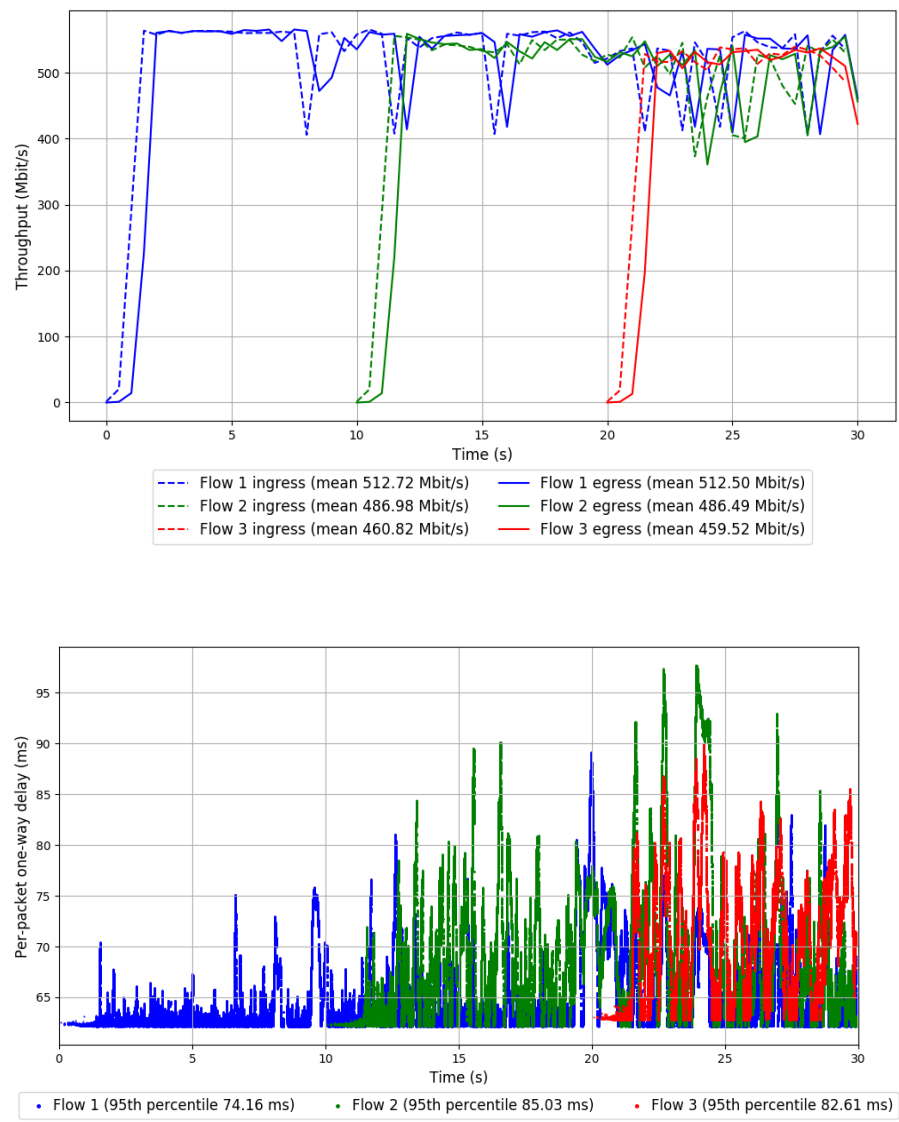
-- Flow 3:

Average throughput: 459.52 Mbit/s

95th percentile per-packet one-way delay: 82.611 ms

Loss rate: 1.55%

Run 3: Report of TCP BBR — Data Link

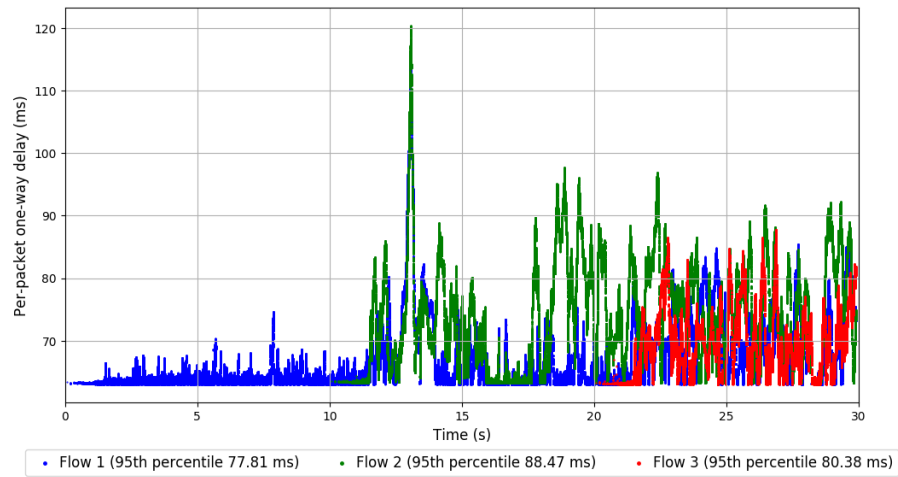
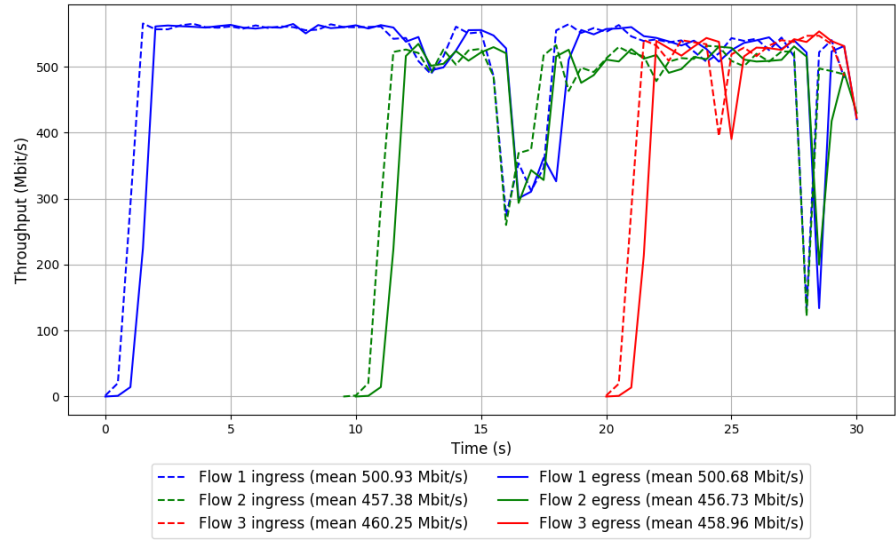


Run 4: Statistics of TCP BBR

Start at: 2018-11-03 08:18:18
End at: 2018-11-03 08:18:48
Local clock offset: -0.14 ms
Remote clock offset: -0.178 ms

Below is generated by plot.py at 2018-11-03 09:45:11
Datalink statistics
-- Total of 3 flows:
Average throughput: 955.78 Mbit/s
95th percentile per-packet one-way delay: 83.980 ms
Loss rate: 0.74%
-- Flow 1:
Average throughput: 500.68 Mbit/s
95th percentile per-packet one-way delay: 77.809 ms
Loss rate: 0.47%
-- Flow 2:
Average throughput: 456.73 Mbit/s
95th percentile per-packet one-way delay: 88.470 ms
Loss rate: 0.77%
-- Flow 3:
Average throughput: 458.96 Mbit/s
95th percentile per-packet one-way delay: 80.381 ms
Loss rate: 1.54%

Run 4: Report of TCP BBR — Data Link



Run 5: Statistics of TCP BBR

Start at: 2018-11-03 08:49:57

End at: 2018-11-03 08:50:27

Local clock offset: -0.068 ms

Remote clock offset: 1.401 ms

Below is generated by plot.py at 2018-11-03 09:45:11

Datalink statistics

-- Total of 3 flows:

Average throughput: 956.05 Mbit/s

95th percentile per-packet one-way delay: 91.426 ms

Loss rate: 0.74%

-- Flow 1:

Average throughput: 502.15 Mbit/s

95th percentile per-packet one-way delay: 80.869 ms

Loss rate: 0.47%

-- Flow 2:

Average throughput: 468.05 Mbit/s

95th percentile per-packet one-way delay: 104.387 ms

Loss rate: 0.76%

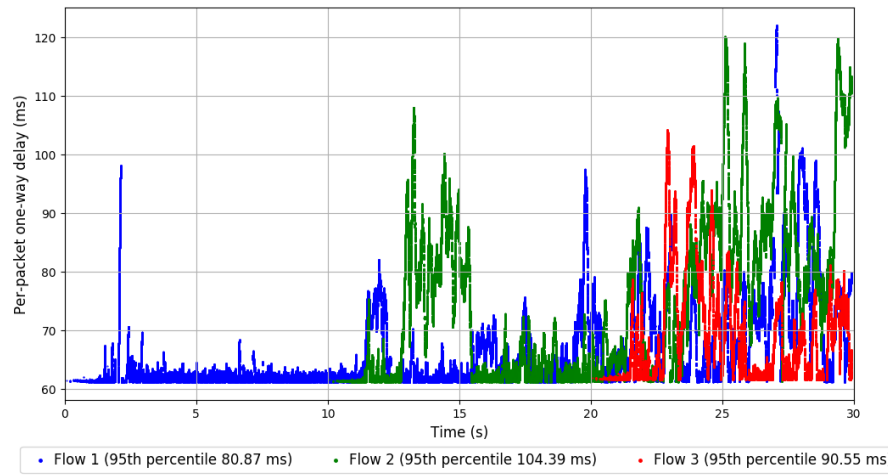
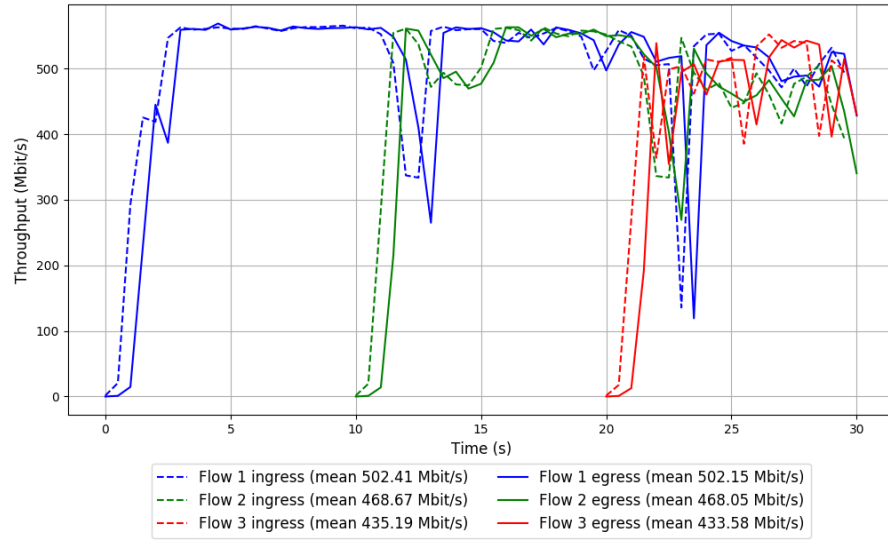
-- Flow 3:

Average throughput: 433.58 Mbit/s

95th percentile per-packet one-way delay: 90.547 ms

Loss rate: 1.64%

Run 5: Report of TCP BBR — Data Link

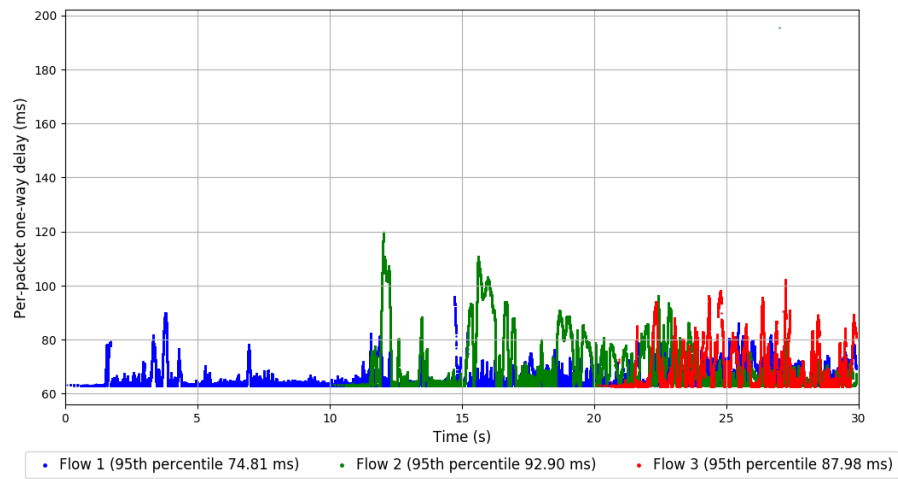
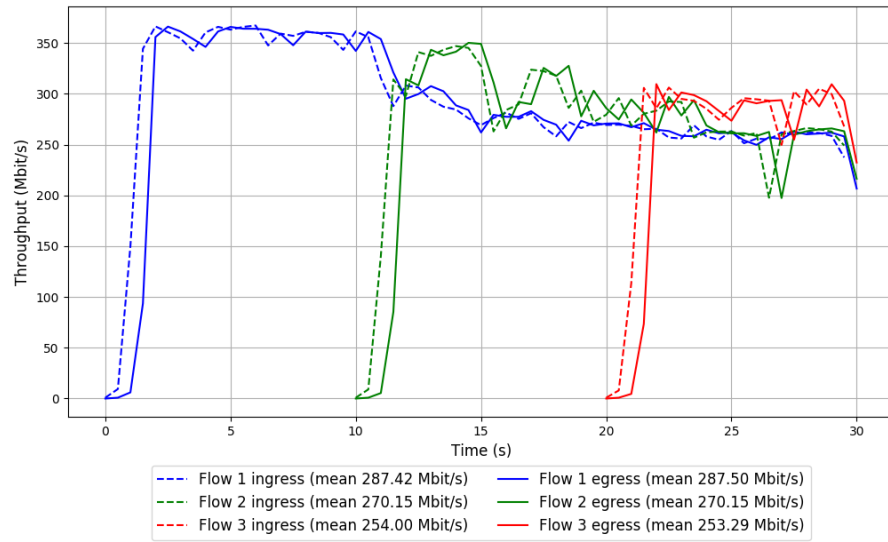


Run 1: Statistics of Copa

Start at: 2018-11-03 06:54:38
End at: 2018-11-03 06:55:08
Local clock offset: 0.009 ms
Remote clock offset: -0.071 ms

Below is generated by plot.py at 2018-11-03 09:45:44
Datalink statistics
-- Total of 3 flows:
Average throughput: 550.39 Mbit/s
95th percentile per-packet one-way delay: 84.731 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 287.50 Mbit/s
95th percentile per-packet one-way delay: 74.815 ms
Loss rate: 0.39%
-- Flow 2:
Average throughput: 270.15 Mbit/s
95th percentile per-packet one-way delay: 92.901 ms
Loss rate: 0.63%
-- Flow 3:
Average throughput: 253.29 Mbit/s
95th percentile per-packet one-way delay: 87.981 ms
Loss rate: 1.54%

Run 1: Report of Copa — Data Link



Run 2: Statistics of Copa

Start at: 2018-11-03 07:25:54

End at: 2018-11-03 07:26:24

Local clock offset: -0.03 ms

Remote clock offset: -0.11 ms

Below is generated by plot.py at 2018-11-03 09:47:06

Datalink statistics

-- Total of 3 flows:

Average throughput: 597.17 Mbit/s

95th percentile per-packet one-way delay: 90.579 ms

Loss rate: 0.58%

-- Flow 1:

Average throughput: 320.27 Mbit/s

95th percentile per-packet one-way delay: 92.522 ms

Loss rate: 0.40%

-- Flow 2:

Average throughput: 290.74 Mbit/s

95th percentile per-packet one-way delay: 86.776 ms

Loss rate: 0.52%

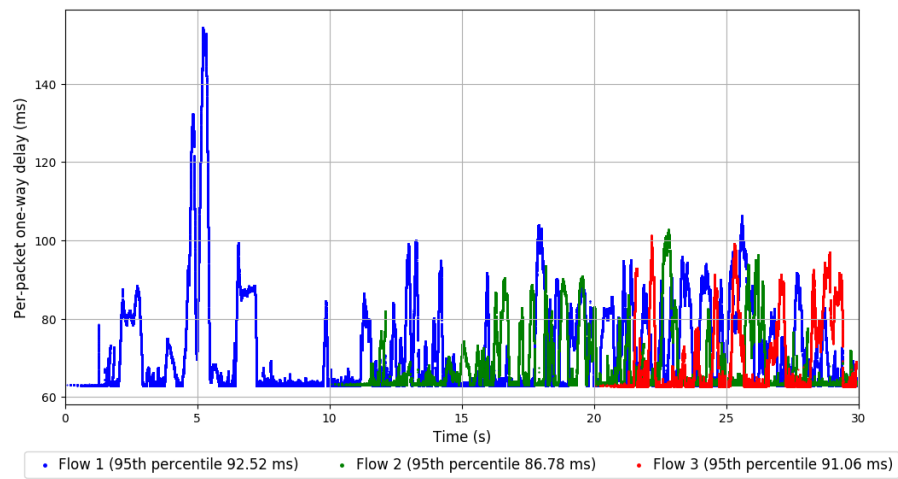
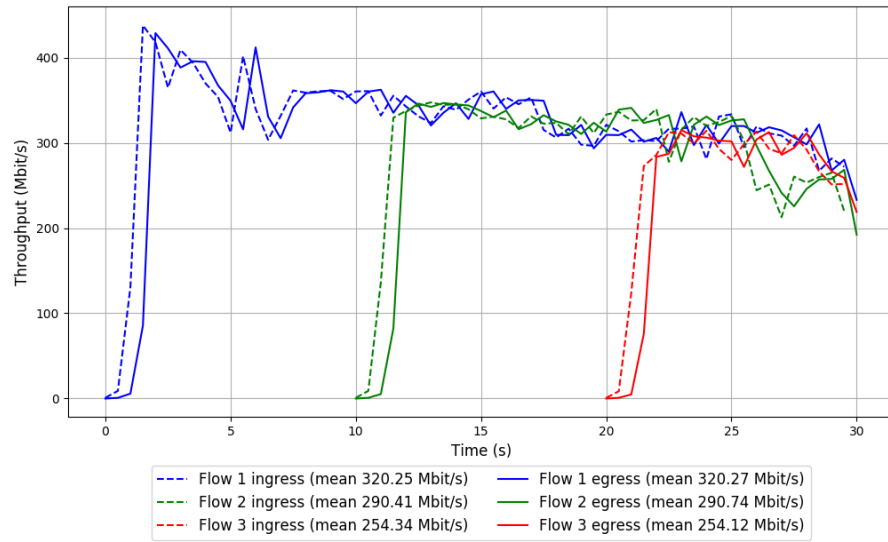
-- Flow 3:

Average throughput: 254.12 Mbit/s

95th percentile per-packet one-way delay: 91.055 ms

Loss rate: 1.35%

Run 2: Report of Copa — Data Link

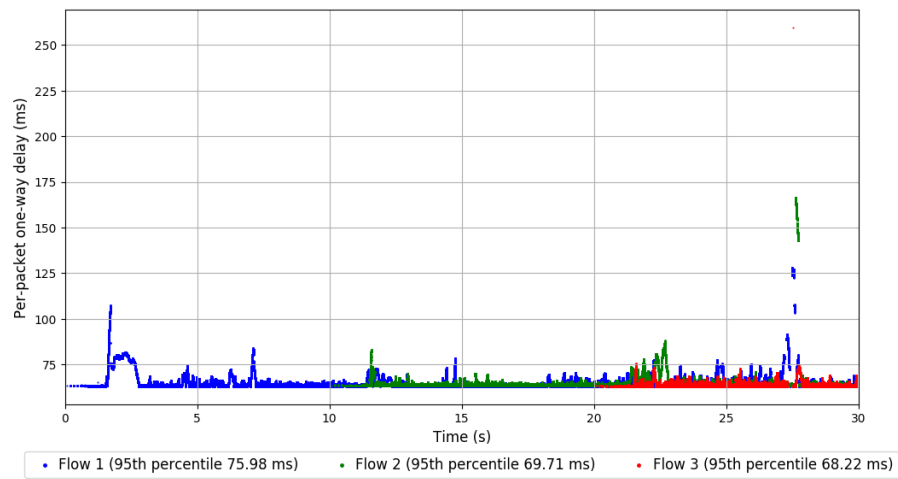
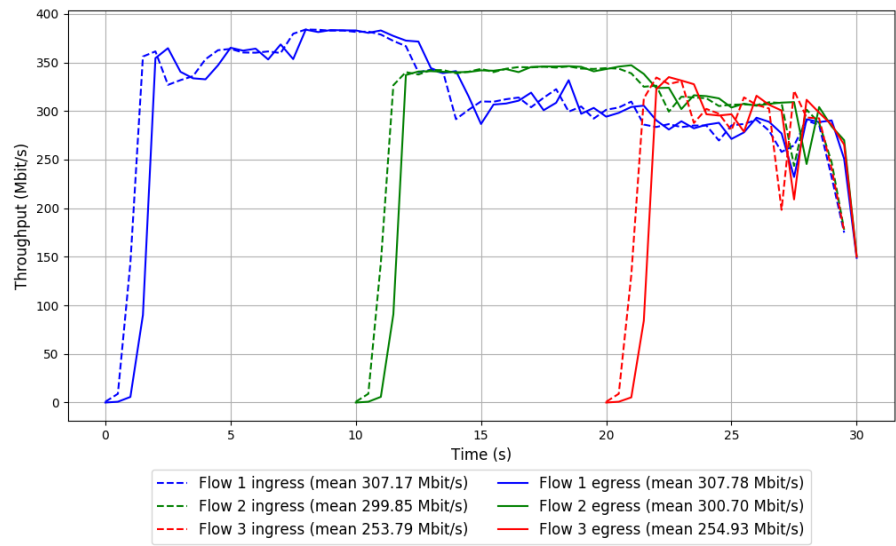


Run 3: Statistics of Copa

Start at: 2018-11-03 07:58:03
End at: 2018-11-03 07:58:33
Local clock offset: -0.126 ms
Remote clock offset: -0.489 ms

Below is generated by plot.py at 2018-11-03 09:47:06
Datalink statistics
-- Total of 3 flows:
Average throughput: 591.75 Mbit/s
95th percentile per-packet one-way delay: 72.314 ms
Loss rate: 0.36%
-- Flow 1:
Average throughput: 307.78 Mbit/s
95th percentile per-packet one-way delay: 75.976 ms
Loss rate: 0.23%
-- Flow 2:
Average throughput: 300.70 Mbit/s
95th percentile per-packet one-way delay: 69.709 ms
Loss rate: 0.36%
-- Flow 3:
Average throughput: 254.93 Mbit/s
95th percentile per-packet one-way delay: 68.219 ms
Loss rate: 0.83%

Run 3: Report of Copa — Data Link



Run 4: Statistics of Copa

Start at: 2018-11-03 08:29:30

End at: 2018-11-03 08:30:00

Local clock offset: -0.06 ms

Remote clock offset: 0.155 ms

Below is generated by plot.py at 2018-11-03 10:02:46

Datalink statistics

-- Total of 3 flows:

Average throughput: 548.49 Mbit/s

95th percentile per-packet one-way delay: 74.724 ms

Loss rate: 0.75%

-- Flow 1:

Average throughput: 277.26 Mbit/s

95th percentile per-packet one-way delay: 73.527 ms

Loss rate: 0.47%

-- Flow 2:

Average throughput: 277.53 Mbit/s

95th percentile per-packet one-way delay: 79.217 ms

Loss rate: 0.69%

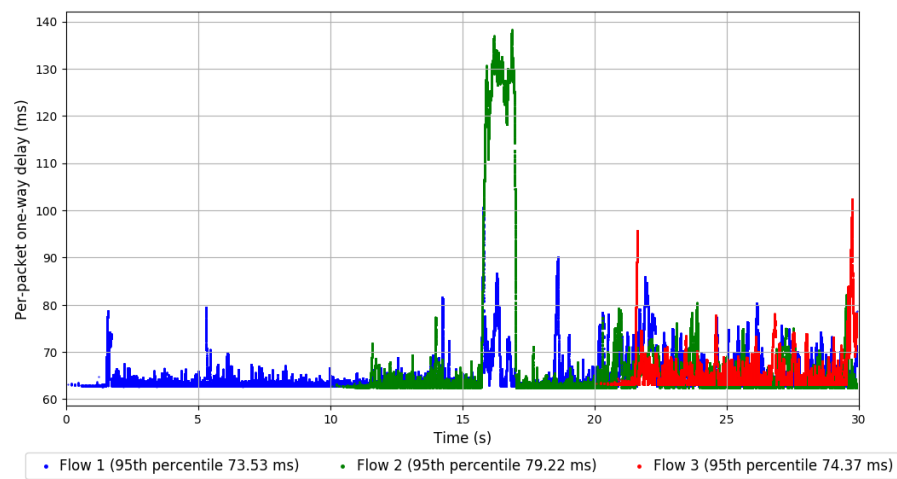
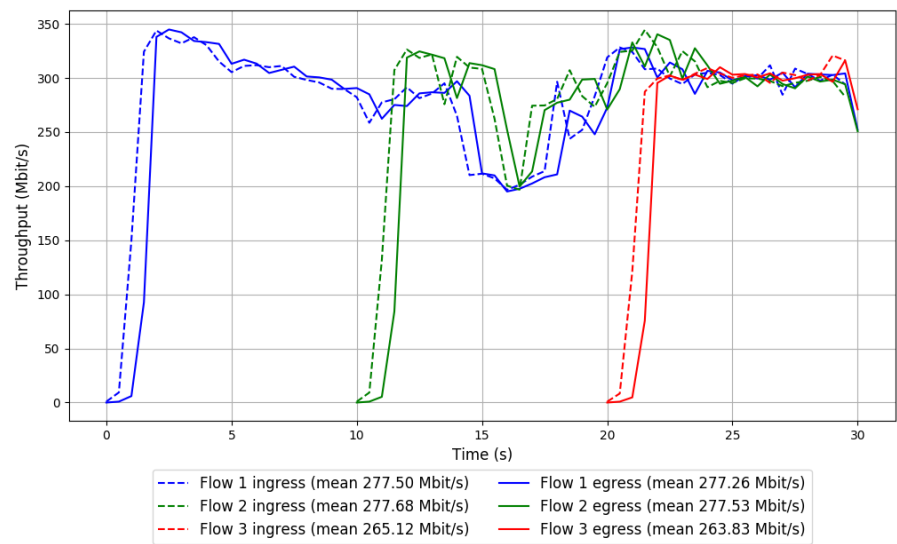
-- Flow 3:

Average throughput: 263.83 Mbit/s

95th percentile per-packet one-way delay: 74.368 ms

Loss rate: 1.75%

Run 4: Report of Copa — Data Link



Run 5: Statistics of Copa

Start at: 2018-11-03 09:01:09

End at: 2018-11-03 09:01:39

Local clock offset: -0.06 ms

Remote clock offset: 0.474 ms

Below is generated by plot.py at 2018-11-03 10:03:18

Datalink statistics

-- Total of 3 flows:

Average throughput: 564.21 Mbit/s

95th percentile per-packet one-way delay: 77.873 ms

Loss rate: 0.64%

-- Flow 1:

Average throughput: 286.64 Mbit/s

95th percentile per-packet one-way delay: 72.083 ms

Loss rate: 0.43%

-- Flow 2:

Average throughput: 308.58 Mbit/s

95th percentile per-packet one-way delay: 72.233 ms

Loss rate: 0.62%

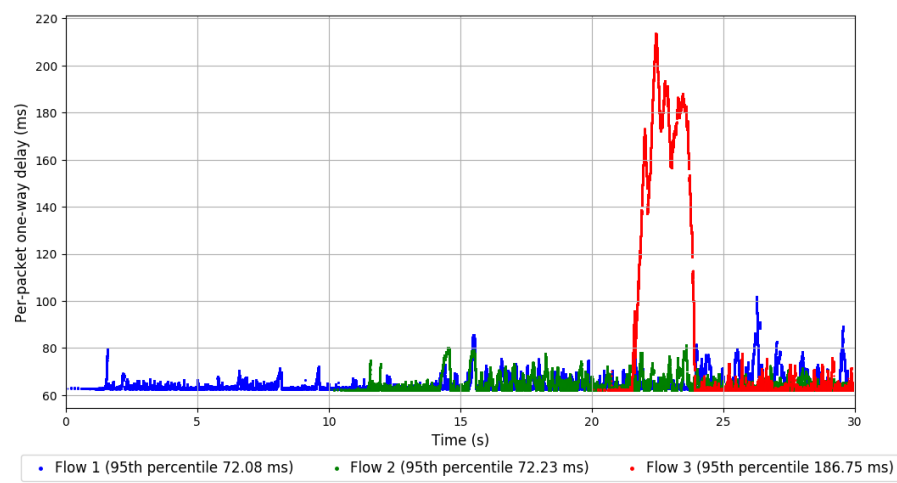
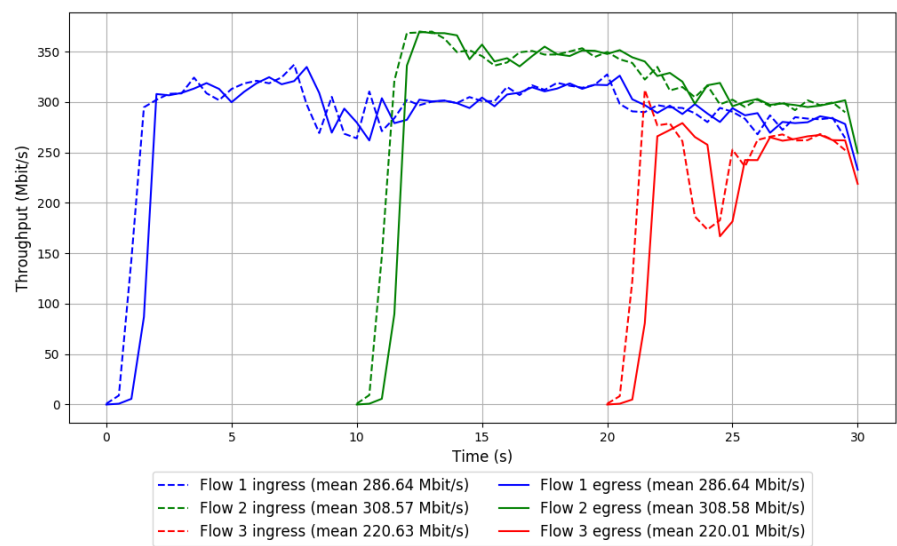
-- Flow 3:

Average throughput: 220.01 Mbit/s

95th percentile per-packet one-way delay: 186.754 ms

Loss rate: 1.55%

Run 5: Report of Copa — Data Link



Run 1: Statistics of TCP Cubic

Start at: 2018-11-03 06:38:03

End at: 2018-11-03 06:38:33

Local clock offset: 0.003 ms

Remote clock offset: -0.09 ms

Below is generated by plot.py at 2018-11-03 10:03:18

Datalink statistics

-- Total of 3 flows:

Average throughput: 883.59 Mbit/s

95th percentile per-packet one-way delay: 81.519 ms

Loss rate: 0.59%

-- Flow 1:

Average throughput: 447.26 Mbit/s

95th percentile per-packet one-way delay: 76.346 ms

Loss rate: 0.31%

-- Flow 2:

Average throughput: 446.60 Mbit/s

95th percentile per-packet one-way delay: 83.135 ms

Loss rate: 0.66%

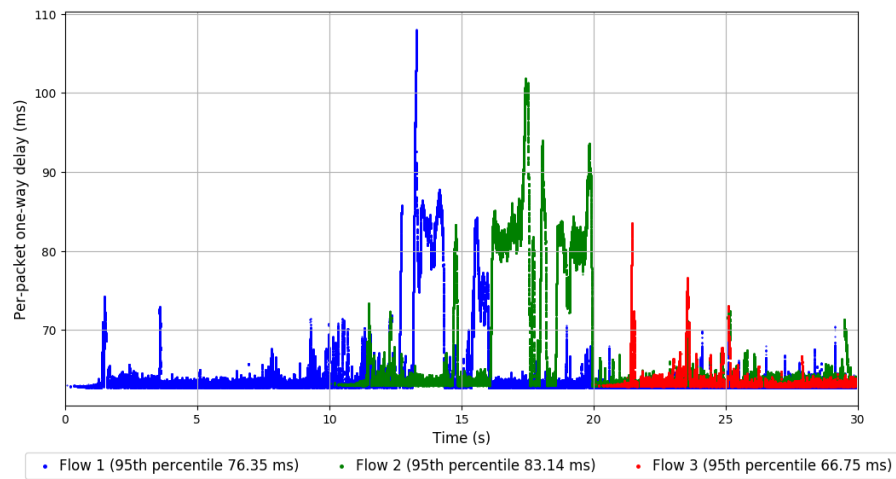
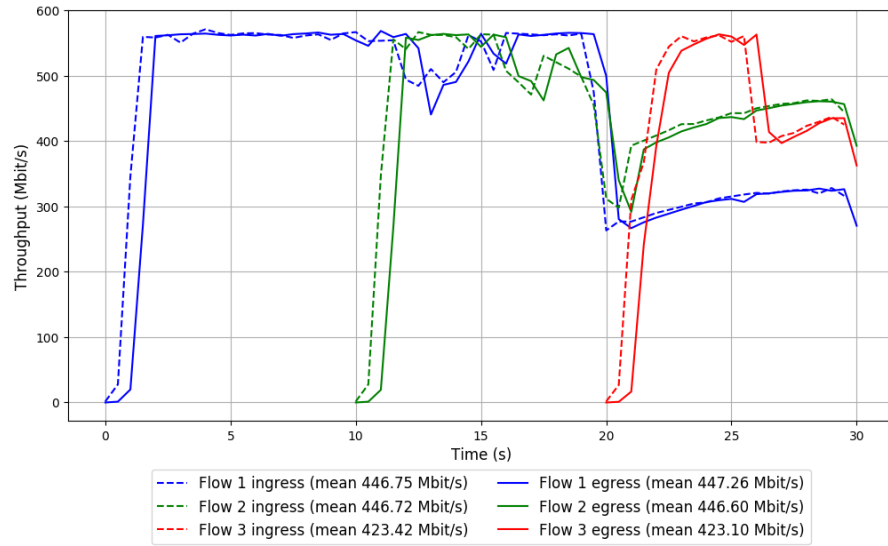
-- Flow 3:

Average throughput: 423.10 Mbit/s

95th percentile per-packet one-way delay: 66.746 ms

Loss rate: 1.33%

Run 1: Report of TCP Cubic — Data Link



Run 2: Statistics of TCP Cubic

Start at: 2018-11-03 07:09:27

End at: 2018-11-03 07:09:57

Local clock offset: 0.025 ms

Remote clock offset: 1.161 ms

Below is generated by plot.py at 2018-11-03 10:03:18

Datalink statistics

-- Total of 3 flows:

Average throughput: 1004.20 Mbit/s

95th percentile per-packet one-way delay: 85.694 ms

Loss rate: 0.70%

-- Flow 1:

Average throughput: 527.21 Mbit/s

95th percentile per-packet one-way delay: 74.234 ms

Loss rate: 0.45%

-- Flow 2:

Average throughput: 489.41 Mbit/s

95th percentile per-packet one-way delay: 89.026 ms

Loss rate: 0.72%

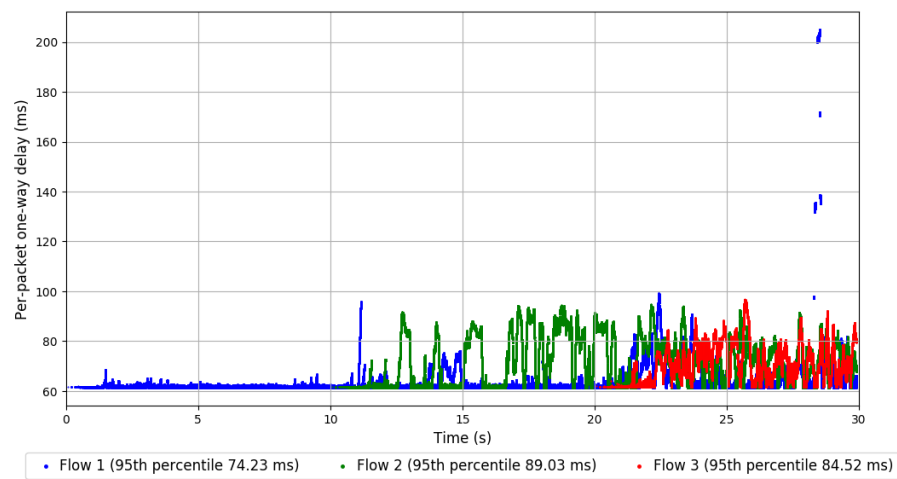
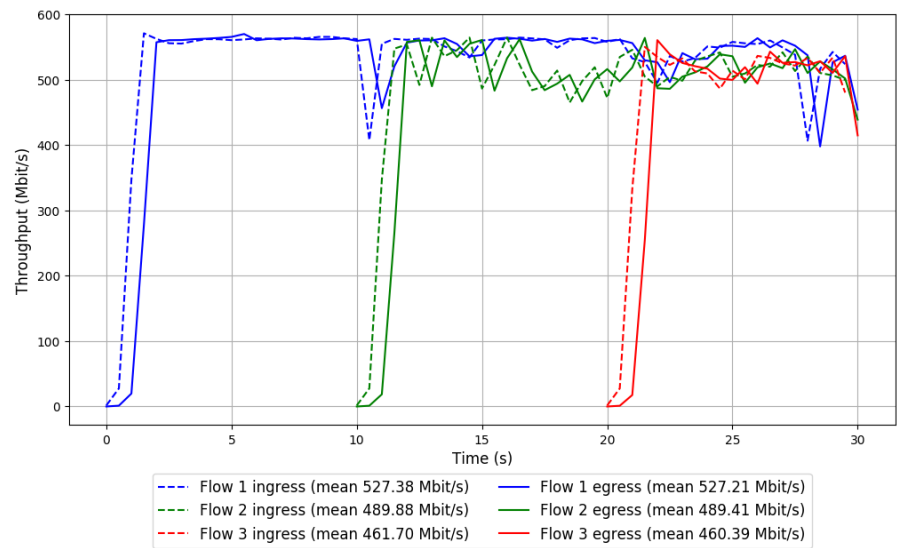
-- Flow 3:

Average throughput: 460.39 Mbit/s

95th percentile per-packet one-way delay: 84.520 ms

Loss rate: 1.54%

Run 2: Report of TCP Cubic — Data Link

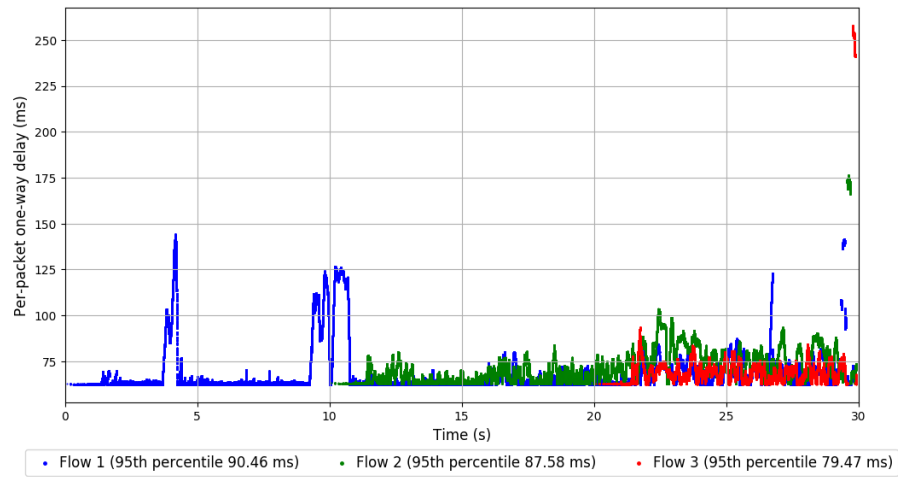
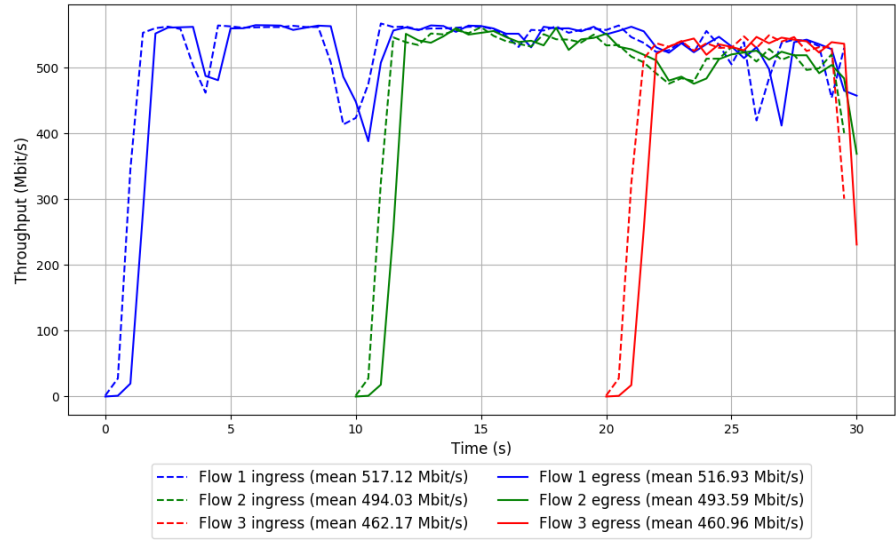


Run 3: Statistics of TCP Cubic

Start at: 2018-11-03 07:41:13
End at: 2018-11-03 07:41:43
Local clock offset: -0.075 ms
Remote clock offset: 0.156 ms

Below is generated by plot.py at 2018-11-03 10:03:18
Datalink statistics
-- Total of 3 flows:
Average throughput: 996.92 Mbit/s
95th percentile per-packet one-way delay: 87.103 ms
Loss rate: 0.70%
-- Flow 1:
Average throughput: 516.93 Mbit/s
95th percentile per-packet one-way delay: 90.456 ms
Loss rate: 0.46%
-- Flow 2:
Average throughput: 493.59 Mbit/s
95th percentile per-packet one-way delay: 87.575 ms
Loss rate: 0.72%
-- Flow 3:
Average throughput: 460.96 Mbit/s
95th percentile per-packet one-way delay: 79.474 ms
Loss rate: 1.48%

Run 3: Report of TCP Cubic — Data Link



Run 4: Statistics of TCP Cubic

Start at: 2018-11-03 08:12:58

End at: 2018-11-03 08:13:28

Local clock offset: -0.144 ms

Remote clock offset: 0.004 ms

Below is generated by plot.py at 2018-11-03 10:03:39

Datalink statistics

-- Total of 3 flows:

Average throughput: 983.23 Mbit/s

95th percentile per-packet one-way delay: 95.583 ms

Loss rate: 0.72%

-- Flow 1:

Average throughput: 516.50 Mbit/s

95th percentile per-packet one-way delay: 86.010 ms

Loss rate: 0.46%

-- Flow 2:

Average throughput: 487.11 Mbit/s

95th percentile per-packet one-way delay: 95.818 ms

Loss rate: 0.73%

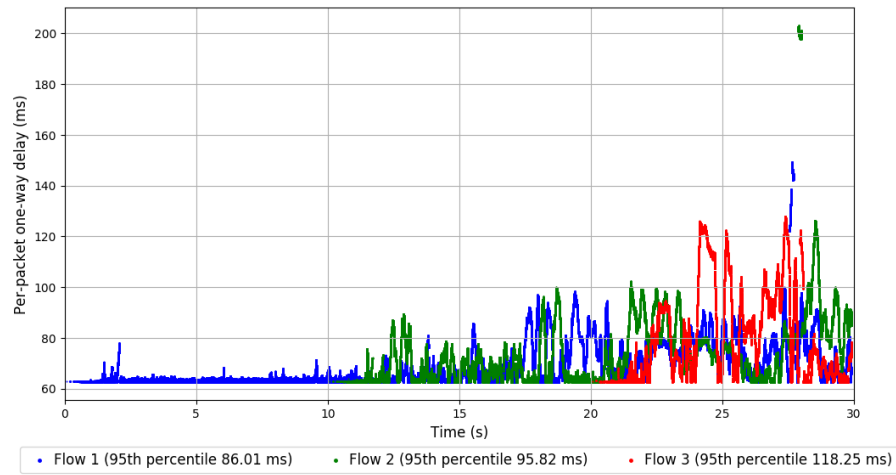
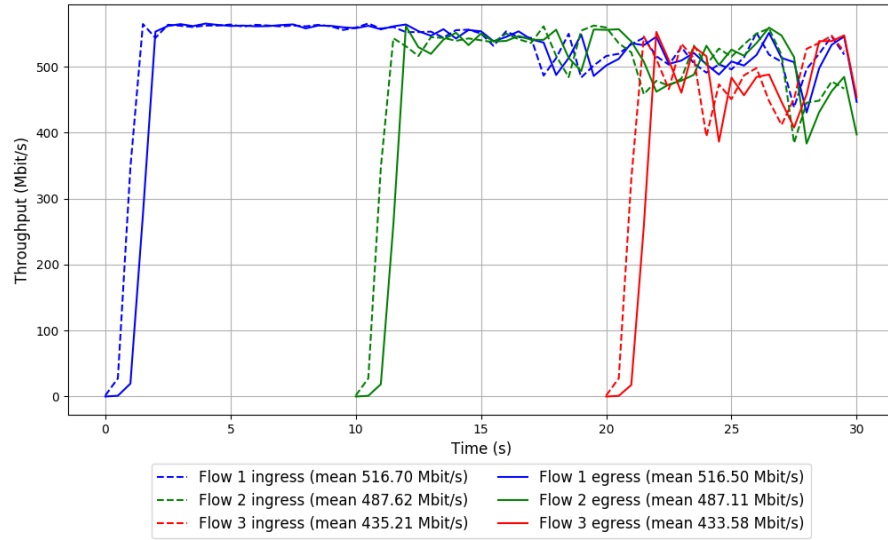
-- Flow 3:

Average throughput: 433.58 Mbit/s

95th percentile per-packet one-way delay: 118.247 ms

Loss rate: 1.63%

Run 4: Report of TCP Cubic — Data Link

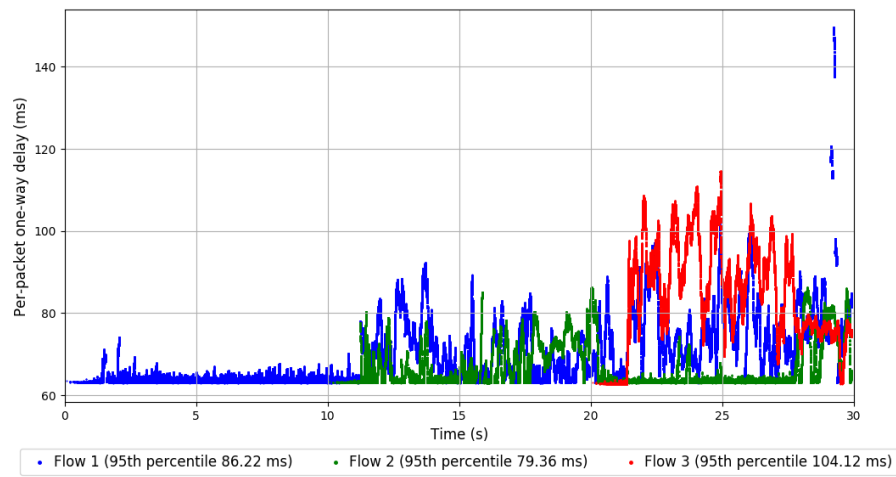
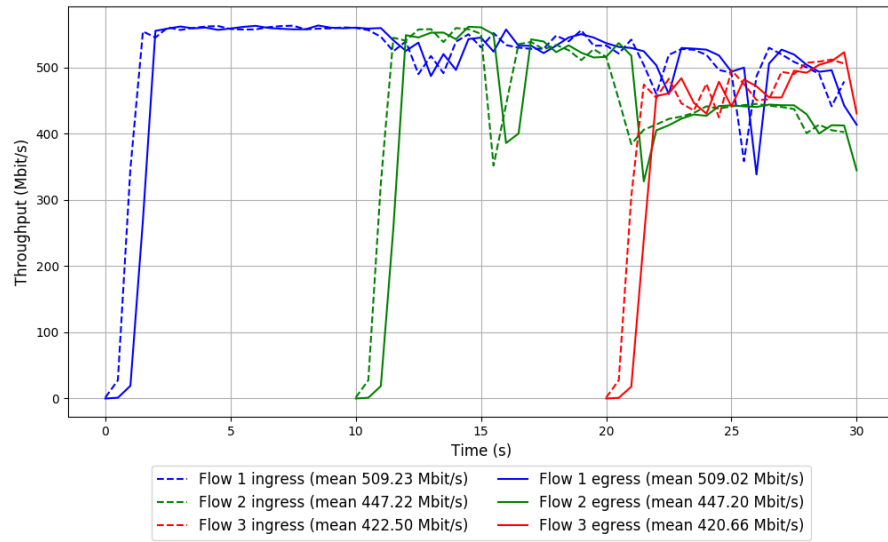


Run 5: Statistics of TCP Cubic

Start at: 2018-11-03 08:44:37
End at: 2018-11-03 08:45:07
Local clock offset: -0.016 ms
Remote clock offset: -0.117 ms

Below is generated by plot.py at 2018-11-03 10:04:08
Datalink statistics
-- Total of 3 flows:
Average throughput: 944.98 Mbit/s
95th percentile per-packet one-way delay: 92.529 ms
Loss rate: 0.70%
-- Flow 1:
Average throughput: 509.02 Mbit/s
95th percentile per-packet one-way delay: 86.218 ms
Loss rate: 0.47%
-- Flow 2:
Average throughput: 447.20 Mbit/s
95th percentile per-packet one-way delay: 79.362 ms
Loss rate: 0.64%
-- Flow 3:
Average throughput: 420.66 Mbit/s
95th percentile per-packet one-way delay: 104.118 ms
Loss rate: 1.70%

Run 5: Report of TCP Cubic — Data Link

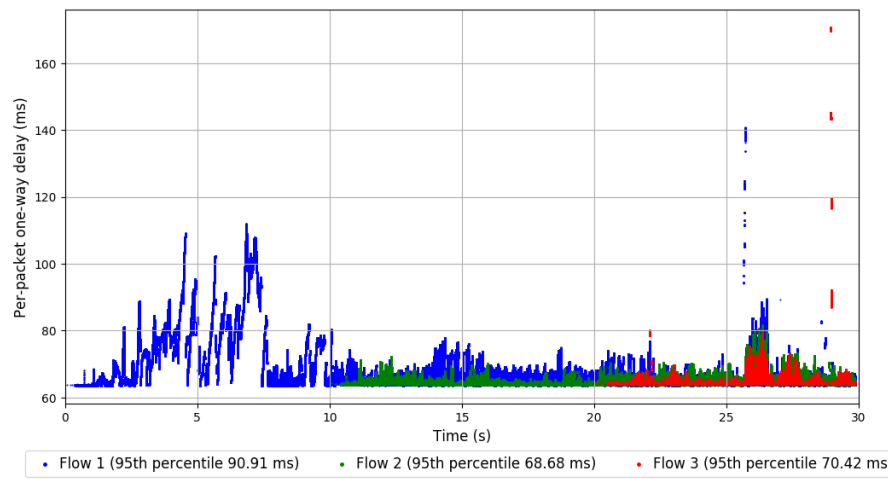
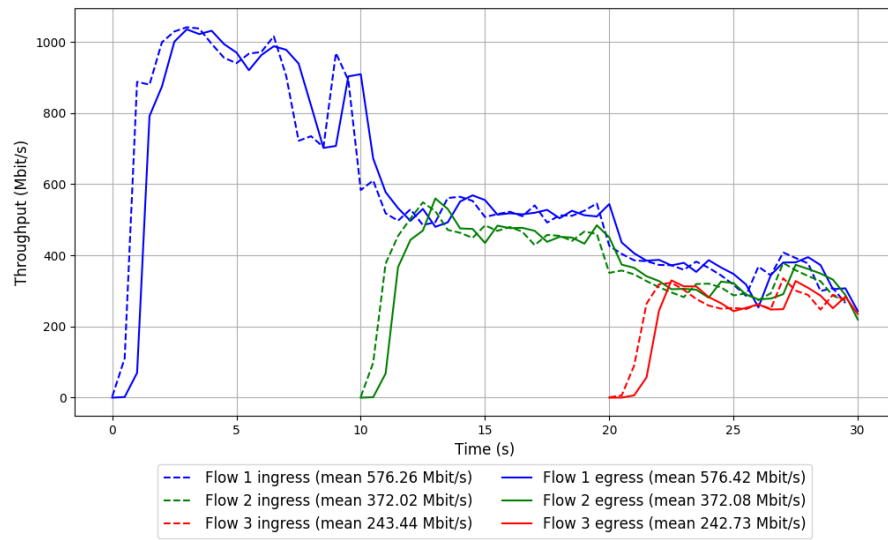


Run 1: Statistics of FillP

Start at: 2018-11-03 06:52:45
End at: 2018-11-03 06:53:15
Local clock offset: 0.009 ms
Remote clock offset: -0.932 ms

Below is generated by plot.py at 2018-11-03 10:06:29
Datalink statistics
-- Total of 3 flows:
Average throughput: 903.34 Mbit/s
95th percentile per-packet one-way delay: 86.007 ms
Loss rate: 0.52%
-- Flow 1:
Average throughput: 576.42 Mbit/s
95th percentile per-packet one-way delay: 90.905 ms
Loss rate: 0.33%
-- Flow 2:
Average throughput: 372.08 Mbit/s
95th percentile per-packet one-way delay: 68.678 ms
Loss rate: 0.57%
-- Flow 3:
Average throughput: 242.73 Mbit/s
95th percentile per-packet one-way delay: 70.420 ms
Loss rate: 1.71%

Run 1: Report of FillP — Data Link

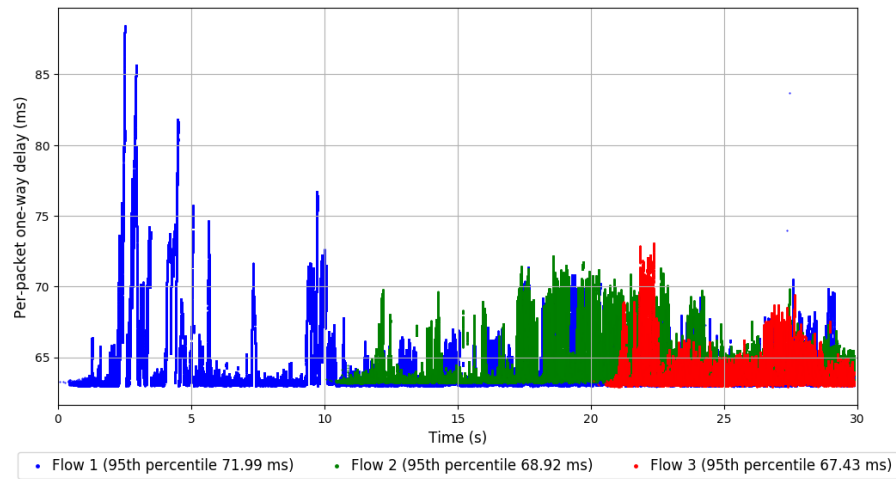
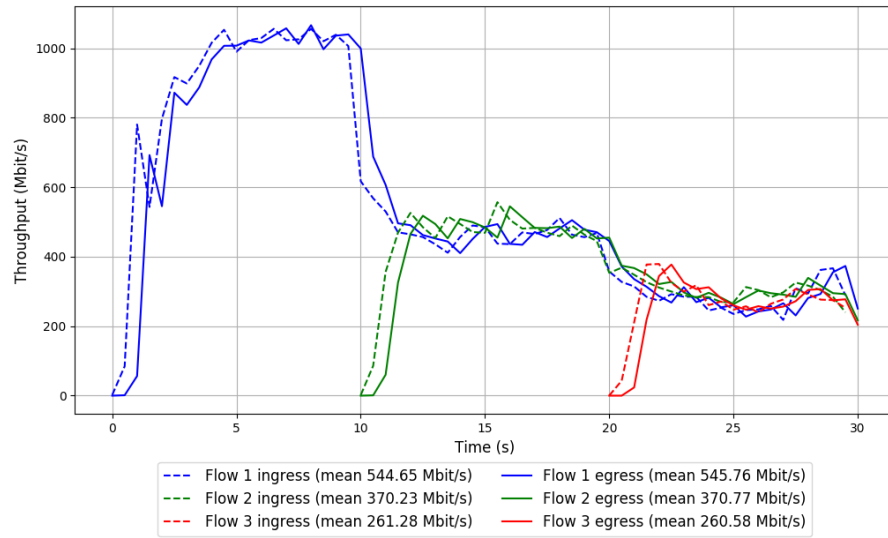


Run 2: Statistics of FillP

Start at: 2018-11-03 07:24:04
End at: 2018-11-03 07:24:34
Local clock offset: -0.014 ms
Remote clock offset: -0.274 ms

Below is generated by plot.py at 2018-11-03 10:19:40
Datalink statistics
-- Total of 3 flows:
Average throughput: 877.31 Mbit/s
95th percentile per-packet one-way delay: 70.497 ms
Loss rate: 0.42%
-- Flow 1:
Average throughput: 545.76 Mbit/s
95th percentile per-packet one-way delay: 71.990 ms
Loss rate: 0.26%
-- Flow 2:
Average throughput: 370.77 Mbit/s
95th percentile per-packet one-way delay: 68.920 ms
Loss rate: 0.40%
-- Flow 3:
Average throughput: 260.58 Mbit/s
95th percentile per-packet one-way delay: 67.433 ms
Loss rate: 1.44%

Run 2: Report of FillP — Data Link

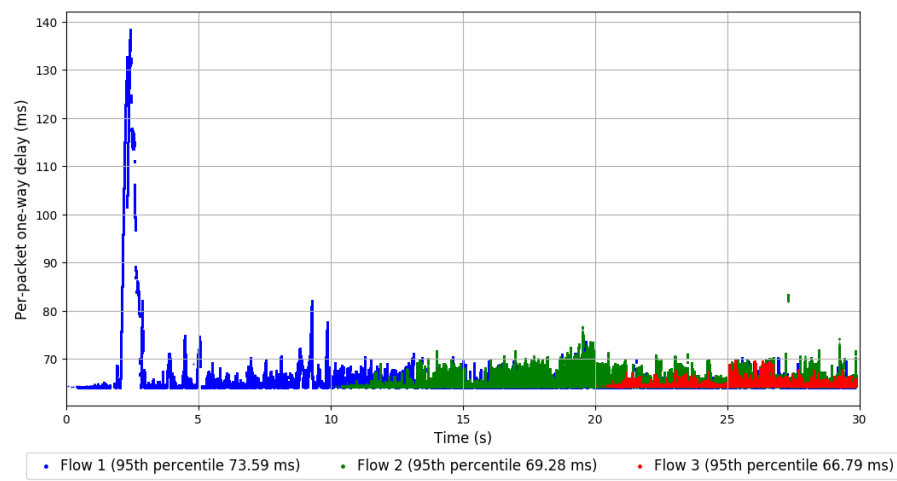
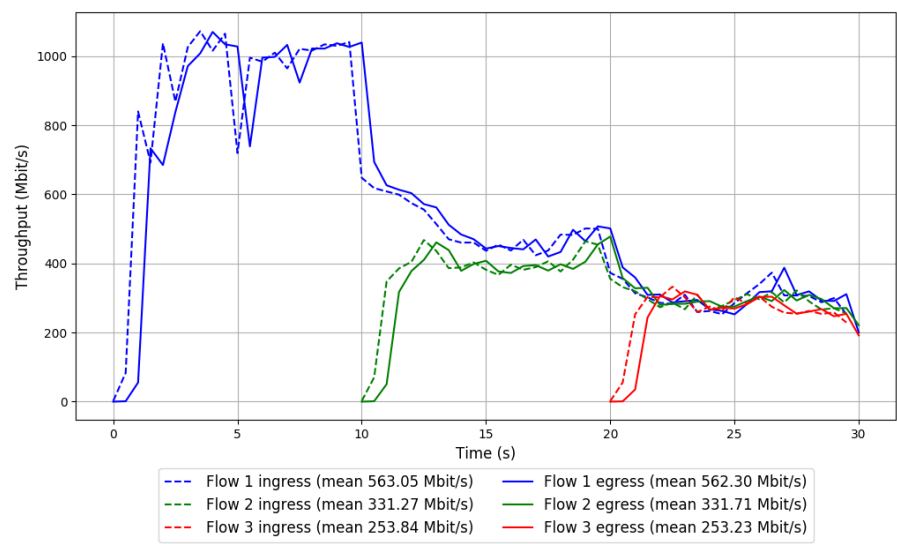


Run 3: Statistics of FillP

Start at: 2018-11-03 07:56:14
End at: 2018-11-03 07:56:44
Local clock offset: -0.124 ms
Remote clock offset: -1.257 ms

Below is generated by plot.py at 2018-11-03 10:21:12
Datalink statistics
-- Total of 3 flows:
Average throughput: 865.42 Mbit/s
95th percentile per-packet one-way delay: 70.312 ms
Loss rate: 0.66%
-- Flow 1:
Average throughput: 562.30 Mbit/s
95th percentile per-packet one-way delay: 73.587 ms
Loss rate: 0.61%
-- Flow 2:
Average throughput: 331.71 Mbit/s
95th percentile per-packet one-way delay: 69.280 ms
Loss rate: 0.54%
-- Flow 3:
Average throughput: 253.23 Mbit/s
95th percentile per-packet one-way delay: 66.787 ms
Loss rate: 1.36%

Run 3: Report of FillP — Data Link

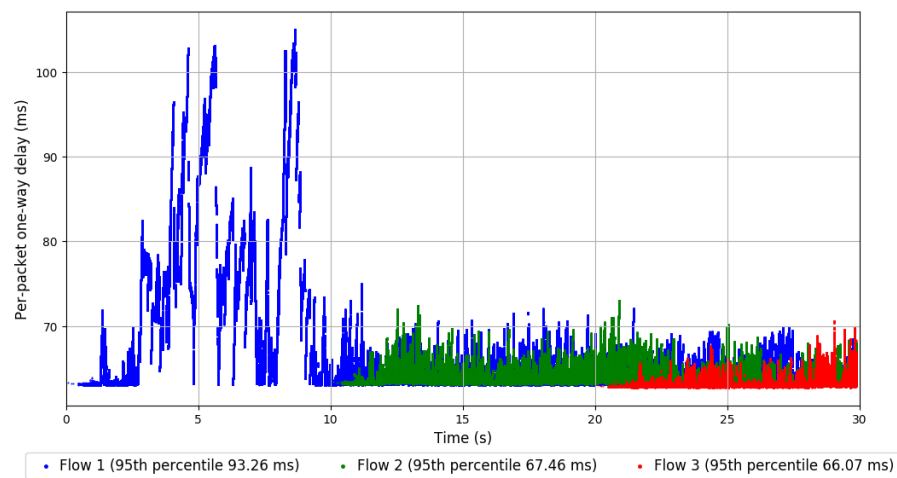
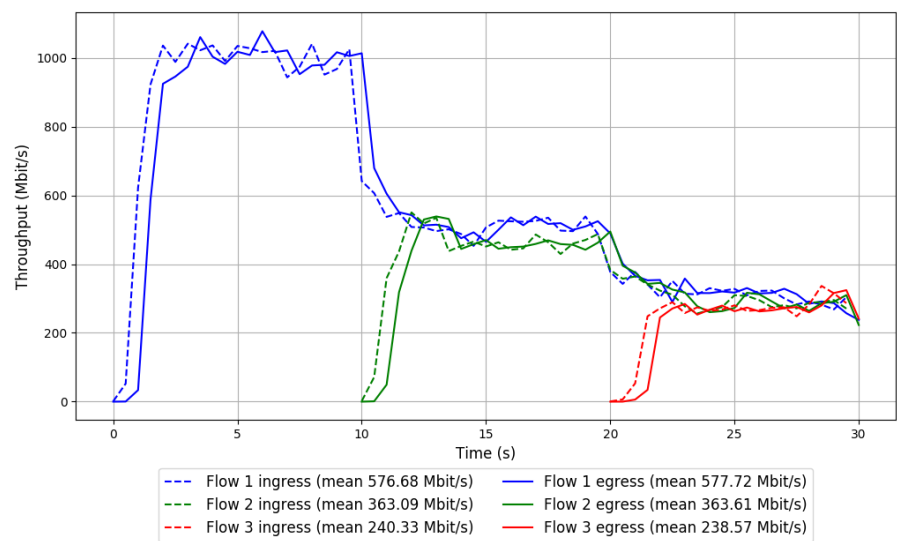


Run 4: Statistics of FillP

Start at: 2018-11-03 08:27:39
End at: 2018-11-03 08:28:09
Local clock offset: -0.117 ms
Remote clock offset: -0.186 ms

Below is generated by plot.py at 2018-11-03 10:22:16
Datalink statistics
-- Total of 3 flows:
Average throughput: 896.87 Mbit/s
95th percentile per-packet one-way delay: 89.049 ms
Loss rate: 0.50%
-- Flow 1:
Average throughput: 577.72 Mbit/s
95th percentile per-packet one-way delay: 93.259 ms
Loss rate: 0.30%
-- Flow 2:
Average throughput: 363.61 Mbit/s
95th percentile per-packet one-way delay: 67.459 ms
Loss rate: 0.53%
-- Flow 3:
Average throughput: 238.57 Mbit/s
95th percentile per-packet one-way delay: 66.068 ms
Loss rate: 1.83%

Run 4: Report of FillP — Data Link

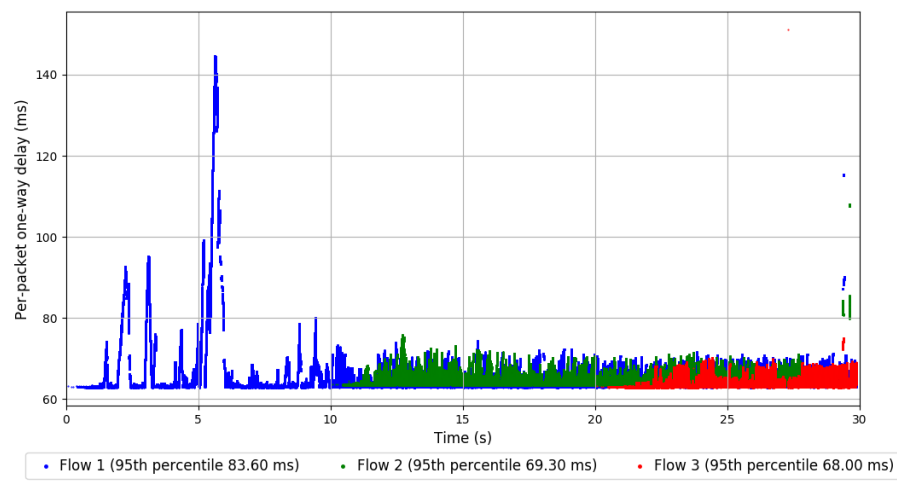
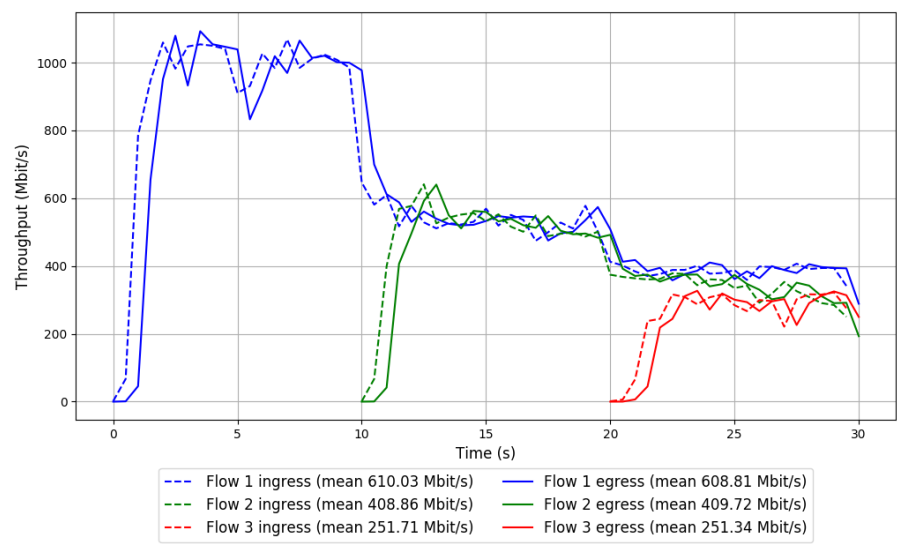


Run 5: Statistics of FillP

Start at: 2018-11-03 08:59:16
End at: 2018-11-03 08:59:46
Local clock offset: -0.032 ms
Remote clock offset: -0.122 ms

Below is generated by plot.py at 2018-11-03 10:23:46
Datalink statistics
-- Total of 3 flows:
Average throughput: 963.23 Mbit/s
95th percentile per-packet one-way delay: 73.870 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 608.81 Mbit/s
95th percentile per-packet one-way delay: 83.603 ms
Loss rate: 0.59%
-- Flow 2:
Average throughput: 409.72 Mbit/s
95th percentile per-packet one-way delay: 69.302 ms
Loss rate: 0.51%
-- Flow 3:
Average throughput: 251.34 Mbit/s
95th percentile per-packet one-way delay: 68.005 ms
Loss rate: 1.44%

Run 5: Report of FillP — Data Link

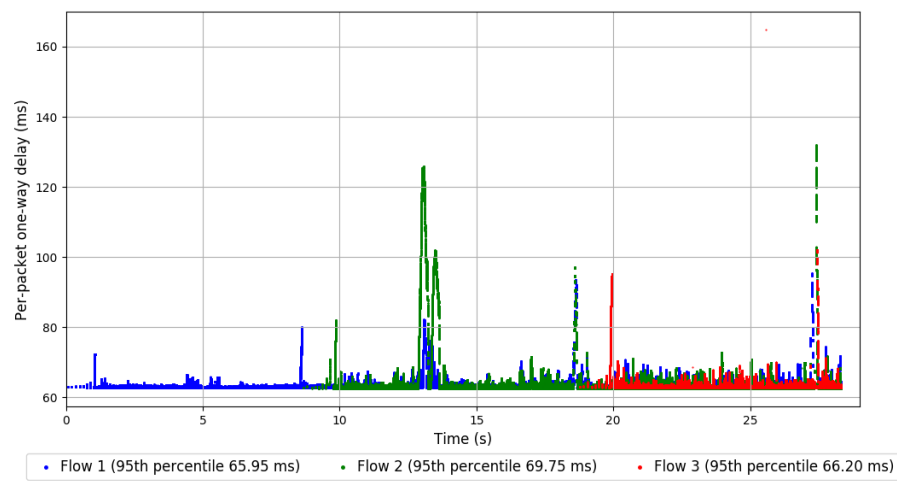
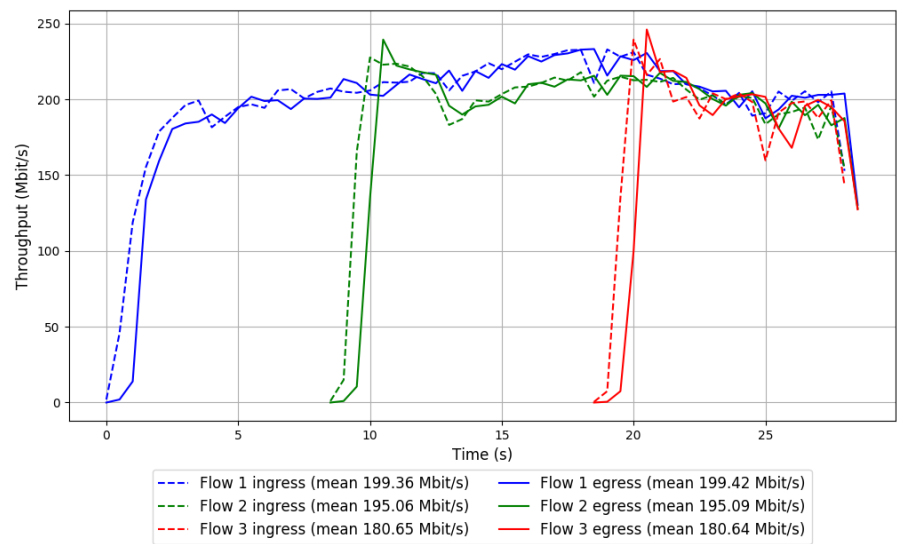


```
Run 1: Statistics of Indigo

Start at: 2018-11-03 06:48:55
End at: 2018-11-03 06:49:25
Local clock offset: -0.015 ms
Remote clock offset: 0.074 ms

# Below is generated by plot.py at 2018-11-03 10:23:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 396.00 Mbit/s
95th percentile per-packet one-way delay: 66.758 ms
Loss rate: 0.63%
-- Flow 1:
Average throughput: 199.42 Mbit/s
95th percentile per-packet one-way delay: 65.952 ms
Loss rate: 0.41%
-- Flow 2:
Average throughput: 195.09 Mbit/s
95th percentile per-packet one-way delay: 69.749 ms
Loss rate: 0.64%
-- Flow 3:
Average throughput: 180.64 Mbit/s
95th percentile per-packet one-way delay: 66.197 ms
Loss rate: 1.34%
```

Run 1: Report of Indigo — Data Link



Run 2: Statistics of Indigo

Start at: 2018-11-03 07:20:19

End at: 2018-11-03 07:20:49

Local clock offset: 0.032 ms

Remote clock offset: 0.201 ms

Below is generated by plot.py at 2018-11-03 10:23:46

Datalink statistics

-- Total of 3 flows:

Average throughput: 397.62 Mbit/s

95th percentile per-packet one-way delay: 64.616 ms

Loss rate: 0.63%

-- Flow 1:

Average throughput: 213.47 Mbit/s

95th percentile per-packet one-way delay: 64.568 ms

Loss rate: 0.49%

-- Flow 2:

Average throughput: 190.65 Mbit/s

95th percentile per-packet one-way delay: 64.390 ms

Loss rate: 0.56%

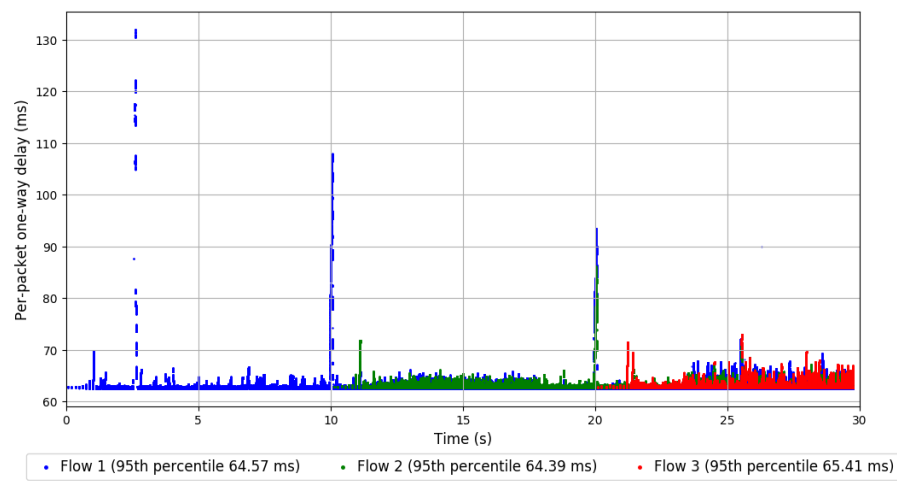
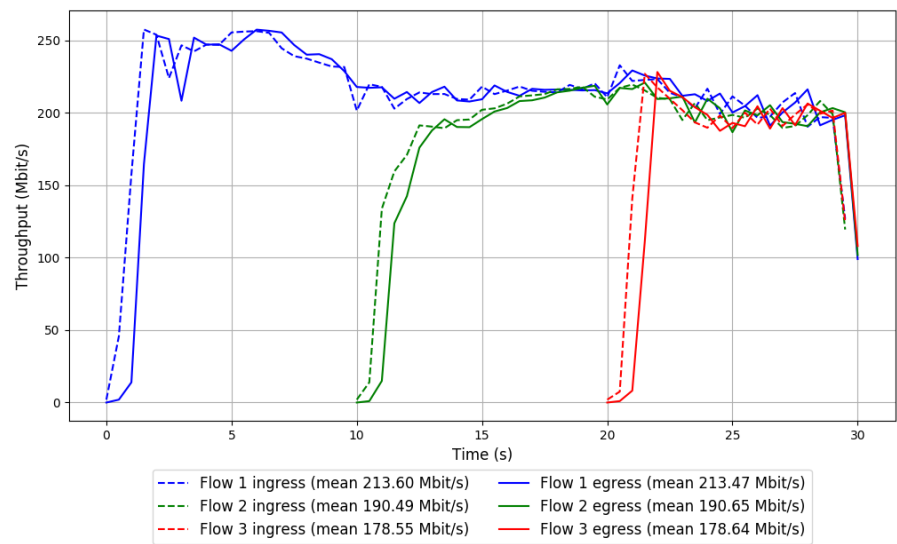
-- Flow 3:

Average throughput: 178.64 Mbit/s

95th percentile per-packet one-way delay: 65.409 ms

Loss rate: 1.26%

Run 2: Report of Indigo — Data Link

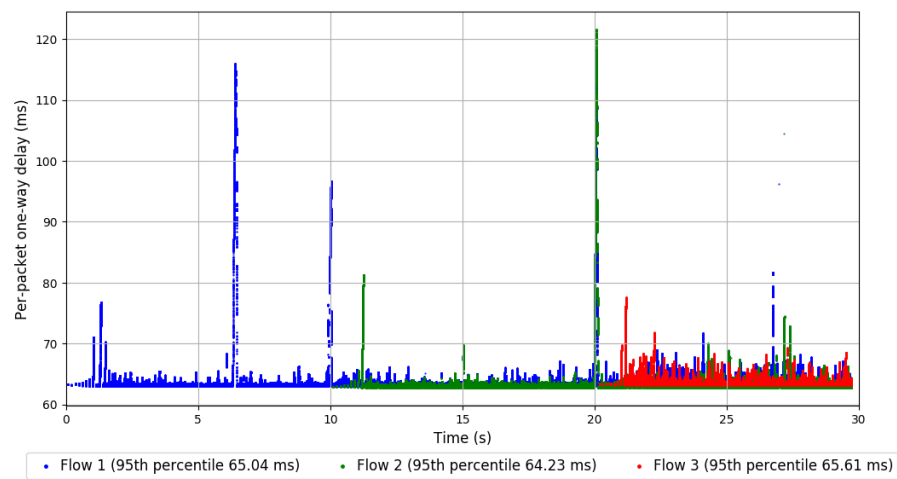
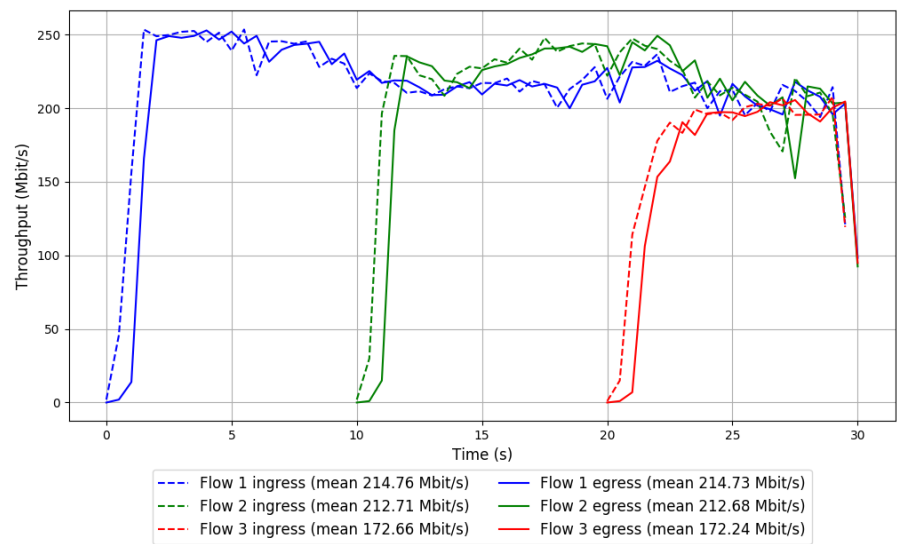


Run 3: Statistics of Indigo

Start at: 2018-11-03 07:52:25
End at: 2018-11-03 07:52:55
Local clock offset: -0.066 ms
Remote clock offset: -0.221 ms

Below is generated by plot.py at 2018-11-03 10:23:46
Datalink statistics
-- Total of 3 flows:
Average throughput: 410.84 Mbit/s
95th percentile per-packet one-way delay: 64.927 ms
Loss rate: 0.66%
-- Flow 1:
Average throughput: 214.73 Mbit/s
95th percentile per-packet one-way delay: 65.039 ms
Loss rate: 0.44%
-- Flow 2:
Average throughput: 212.68 Mbit/s
95th percentile per-packet one-way delay: 64.227 ms
Loss rate: 0.65%
-- Flow 3:
Average throughput: 172.24 Mbit/s
95th percentile per-packet one-way delay: 65.609 ms
Loss rate: 1.54%

Run 3: Report of Indigo — Data Link



Run 4: Statistics of Indigo

Start at: 2018-11-03 08:23:52

End at: 2018-11-03 08:24:22

Local clock offset: -0.11 ms

Remote clock offset: 1.136 ms

Below is generated by plot.py at 2018-11-03 10:23:46

Datalink statistics

-- Total of 3 flows:

Average throughput: 404.27 Mbit/s

95th percentile per-packet one-way delay: 63.813 ms

Loss rate: 0.60%

-- Flow 1:

Average throughput: 213.08 Mbit/s

95th percentile per-packet one-way delay: 64.013 ms

Loss rate: 0.41%

-- Flow 2:

Average throughput: 206.67 Mbit/s

95th percentile per-packet one-way delay: 63.558 ms

Loss rate: 0.60%

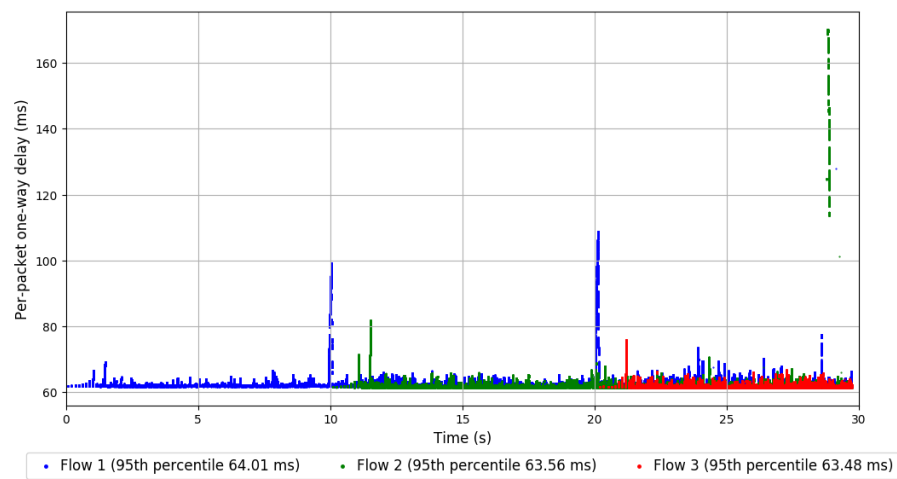
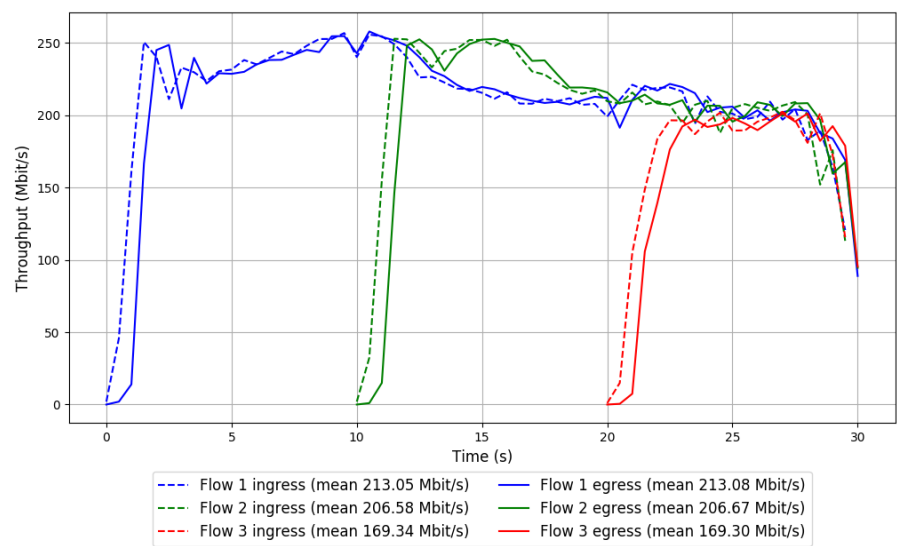
-- Flow 3:

Average throughput: 169.30 Mbit/s

95th percentile per-packet one-way delay: 63.475 ms

Loss rate: 1.34%

Run 4: Report of Indigo — Data Link



Run 5: Statistics of Indigo

Start at: 2018-11-03 08:55:28

End at: 2018-11-03 08:55:58

Local clock offset: -0.037 ms

Remote clock offset: 1.306 ms

Below is generated by plot.py at 2018-11-03 10:30:01

Datalink statistics

-- Total of 3 flows:

Average throughput: 399.84 Mbit/s

95th percentile per-packet one-way delay: 63.331 ms

Loss rate: 0.63%

-- Flow 1:

Average throughput: 217.98 Mbit/s

95th percentile per-packet one-way delay: 63.276 ms

Loss rate: 0.39%

-- Flow 2:

Average throughput: 186.92 Mbit/s

95th percentile per-packet one-way delay: 63.372 ms

Loss rate: 0.64%

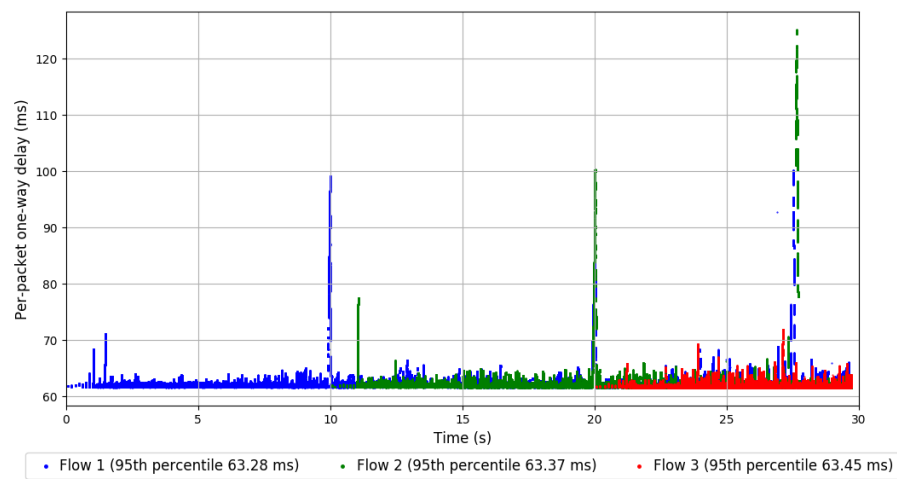
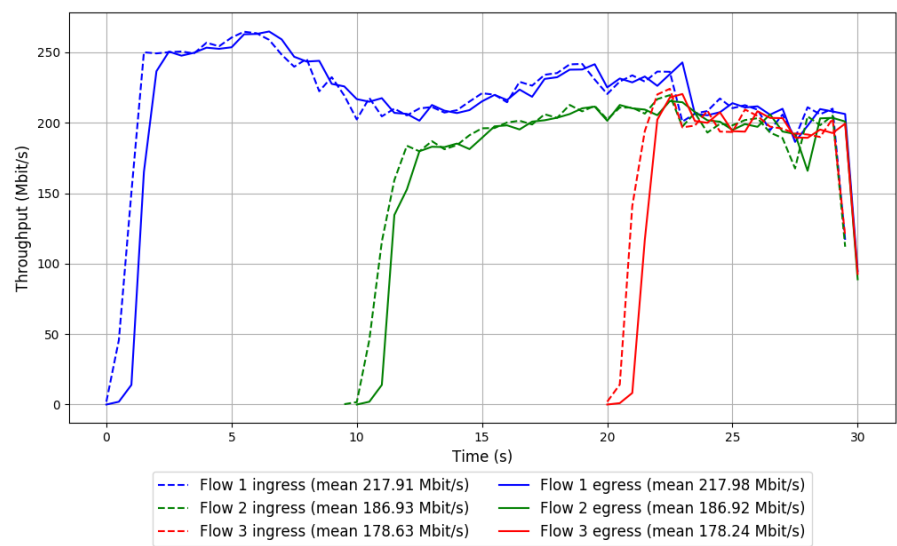
-- Flow 3:

Average throughput: 178.24 Mbit/s

95th percentile per-packet one-way delay: 63.453 ms

Loss rate: 1.51%

Run 5: Report of Indigo — Data Link

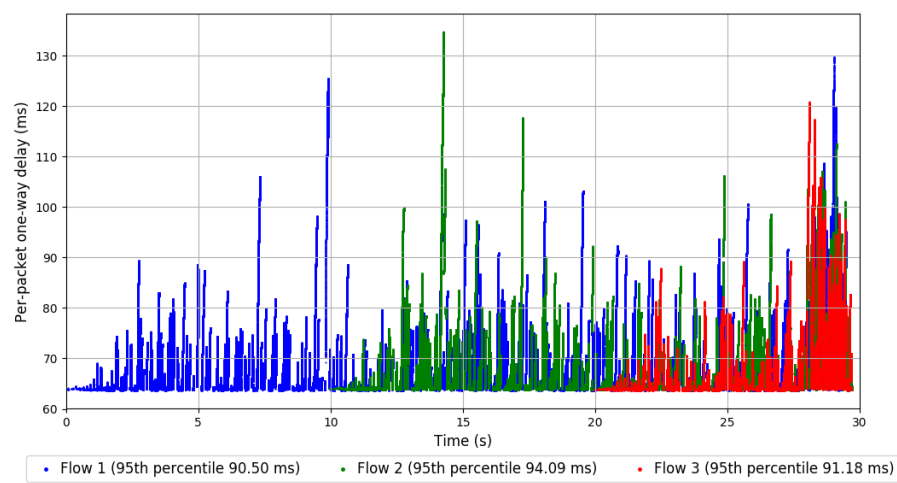
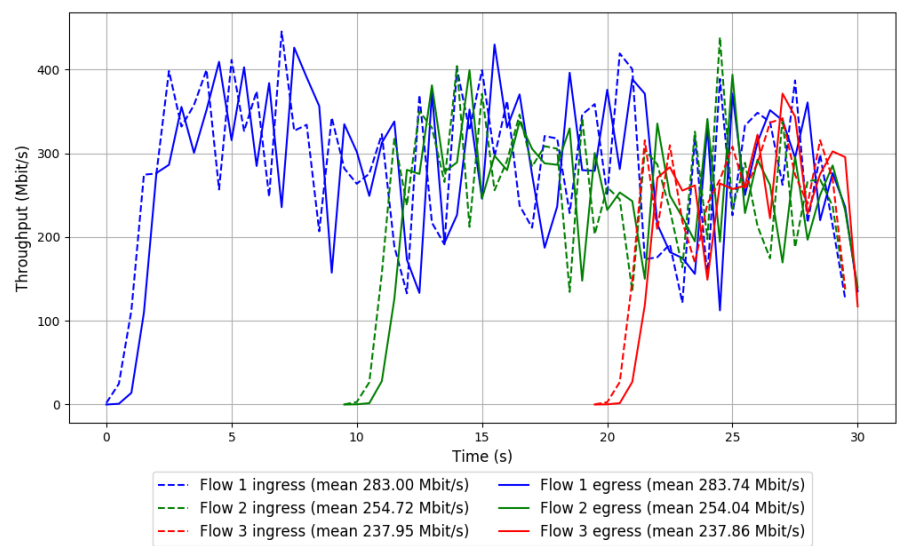


Run 1: Statistics of Indigo-96d2da3

Start at: 2018-11-03 06:56:43
End at: 2018-11-03 06:57:13
Local clock offset: 0.0 ms
Remote clock offset: -0.872 ms

Below is generated by plot.py at 2018-11-03 10:30:01
Datalink statistics
-- Total of 3 flows:
Average throughput: 530.63 Mbit/s
95th percentile per-packet one-way delay: 91.858 ms
Loss rate: 0.39%
-- Flow 1:
Average throughput: 283.74 Mbit/s
95th percentile per-packet one-way delay: 90.497 ms
Loss rate: 0.18%
-- Flow 2:
Average throughput: 254.04 Mbit/s
95th percentile per-packet one-way delay: 94.091 ms
Loss rate: 0.44%
-- Flow 3:
Average throughput: 237.86 Mbit/s
95th percentile per-packet one-way delay: 91.182 ms
Loss rate: 1.03%

Run 1: Report of Indigo-96d2da3 — Data Link

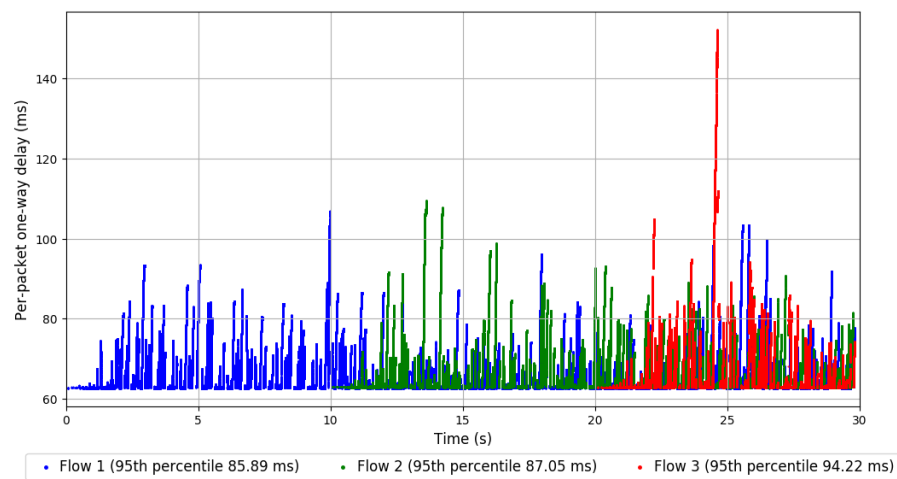
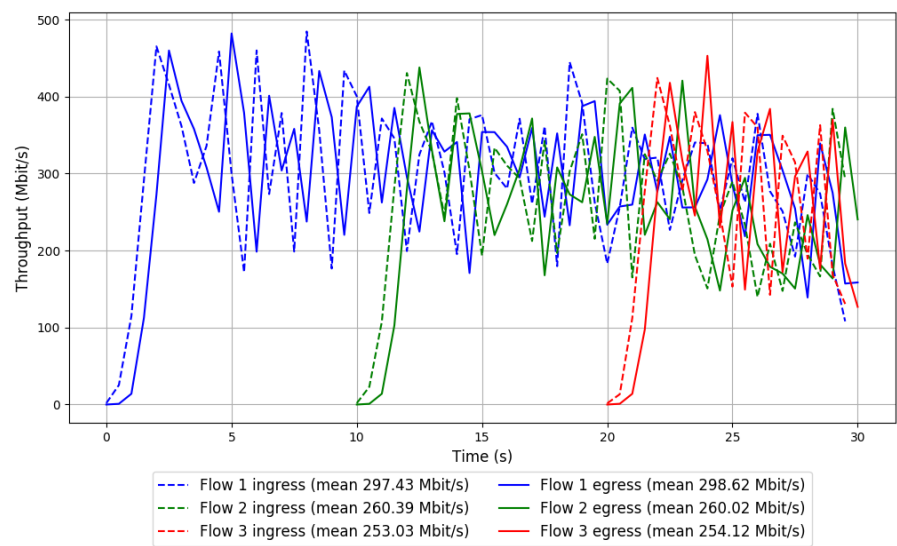


Run 2: Statistics of Indigo-96d2da3

Start at: 2018-11-03 07:28:23
End at: 2018-11-03 07:28:53
Local clock offset: -0.011 ms
Remote clock offset: -0.055 ms

Below is generated by plot.py at 2018-11-03 10:30:01
Datalink statistics
-- Total of 3 flows:
Average throughput: 553.47 Mbit/s
95th percentile per-packet one-way delay: 86.536 ms
Loss rate: 0.51%
-- Flow 1:
Average throughput: 298.62 Mbit/s
95th percentile per-packet one-way delay: 85.892 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 260.02 Mbit/s
95th percentile per-packet one-way delay: 87.048 ms
Loss rate: 1.15%
-- Flow 3:
Average throughput: 254.12 Mbit/s
95th percentile per-packet one-way delay: 94.222 ms
Loss rate: 0.82%

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



Run 3: Statistics of Indigo-96d2da3

Start at: 2018-11-03 08:00:11

End at: 2018-11-03 08:00:41

Local clock offset: -0.1 ms

Remote clock offset: 1.117 ms

Below is generated by plot.py at 2018-11-03 10:30:01

Datalink statistics

-- Total of 3 flows:

Average throughput: 543.97 Mbit/s

95th percentile per-packet one-way delay: 86.955 ms

Loss rate: 0.94%

-- Flow 1:

Average throughput: 283.99 Mbit/s

95th percentile per-packet one-way delay: 86.303 ms

Loss rate: 0.26%

-- Flow 2:

Average throughput: 255.41 Mbit/s

95th percentile per-packet one-way delay: 80.702 ms

Loss rate: 0.94%

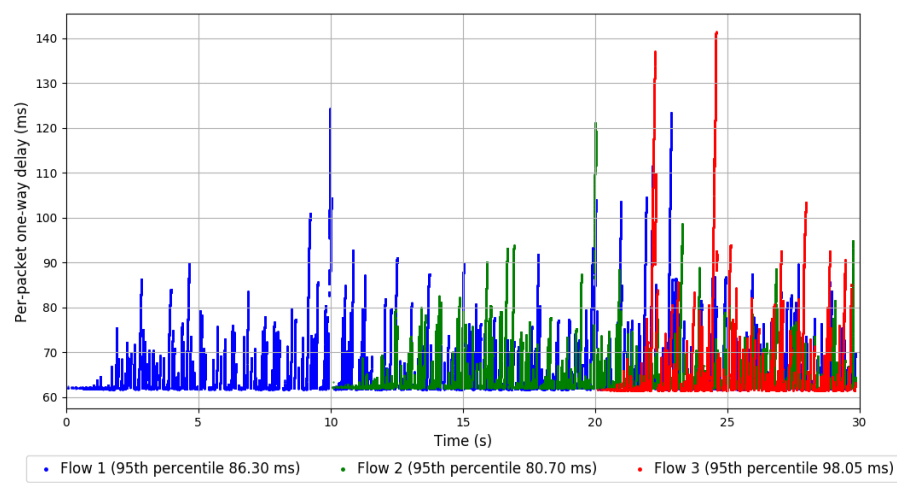
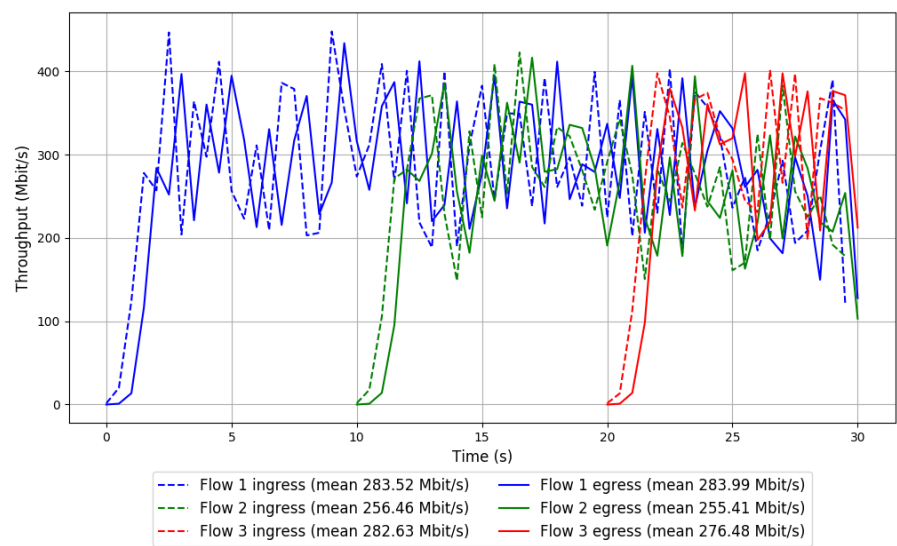
-- Flow 3:

Average throughput: 276.48 Mbit/s

95th percentile per-packet one-way delay: 98.047 ms

Loss rate: 2.99%

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

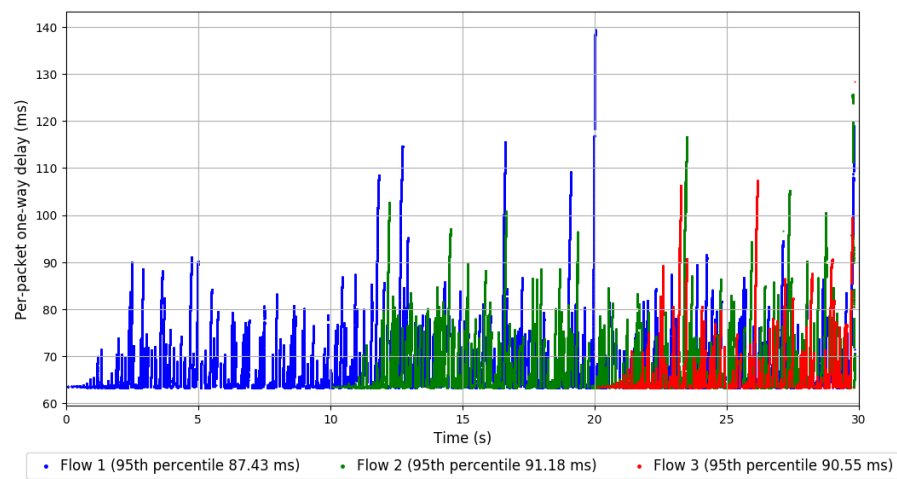
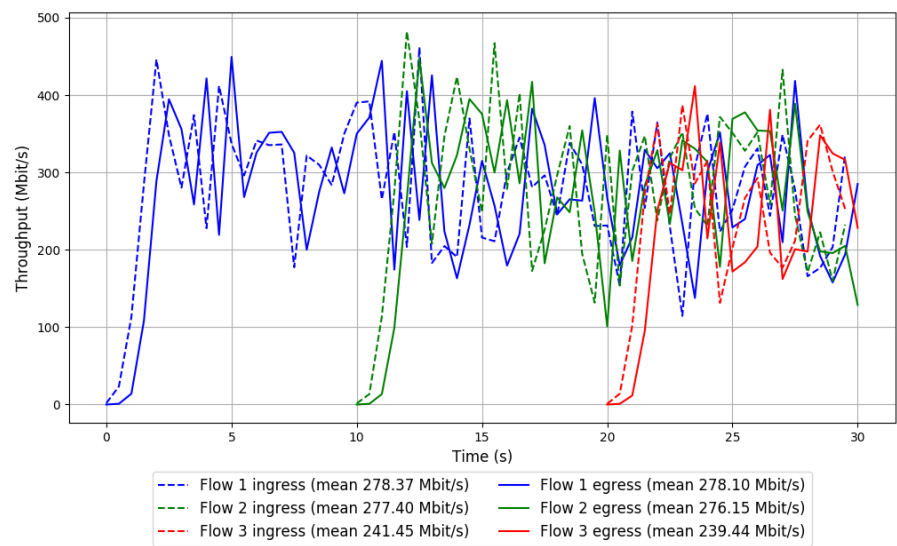


Run 4: Statistics of Indigo-96d2da3

Start at: 2018-11-03 08:31:35
End at: 2018-11-03 08:32:05
Local clock offset: -0.081 ms
Remote clock offset: -0.717 ms

Below is generated by plot.py at 2018-11-03 10:31:02
Datalink statistics
-- Total of 3 flows:
Average throughput: 539.38 Mbit/s
95th percentile per-packet one-way delay: 89.548 ms
Loss rate: 0.79%
-- Flow 1:
Average throughput: 278.10 Mbit/s
95th percentile per-packet one-way delay: 87.433 ms
Loss rate: 0.52%
-- Flow 2:
Average throughput: 276.15 Mbit/s
95th percentile per-packet one-way delay: 91.181 ms
Loss rate: 0.97%
-- Flow 3:
Average throughput: 239.44 Mbit/s
95th percentile per-packet one-way delay: 90.549 ms
Loss rate: 1.35%

Run 4: Report of Indigo-96d2da3 — Data Link

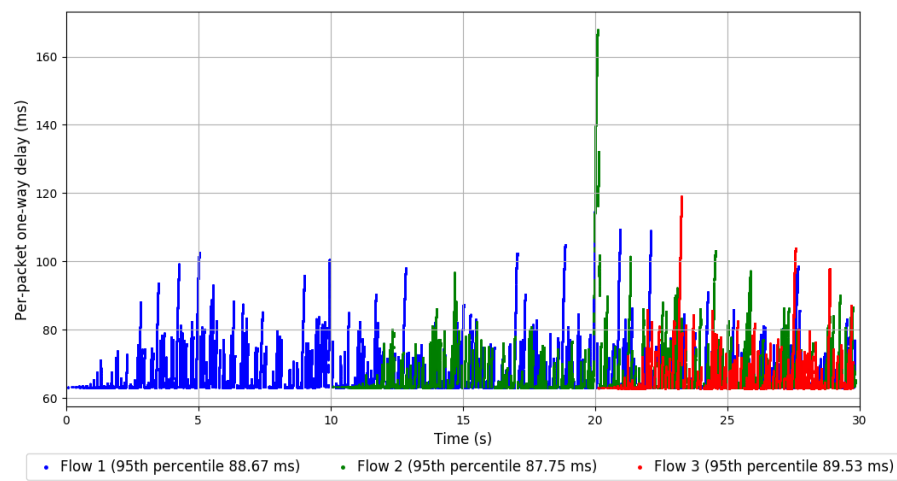
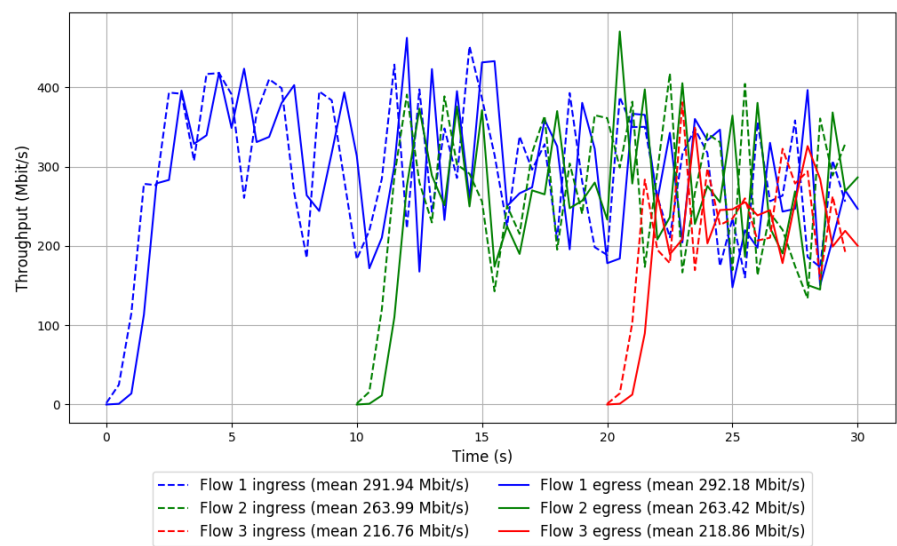


Run 5: Statistics of Indigo-96d2da3

Start at: 2018-11-03 09:03:17
End at: 2018-11-03 09:03:47
Local clock offset: -0.076 ms
Remote clock offset: -0.124 ms

Below is generated by plot.py at 2018-11-03 10:31:26
Datalink statistics
-- Total of 3 flows:
Average throughput: 537.57 Mbit/s
95th percentile per-packet one-way delay: 88.350 ms
Loss rate: 0.61%
-- Flow 1:
Average throughput: 292.18 Mbit/s
95th percentile per-packet one-way delay: 88.665 ms
Loss rate: 0.40%
-- Flow 2:
Average throughput: 263.42 Mbit/s
95th percentile per-packet one-way delay: 87.749 ms
Loss rate: 0.66%
-- Flow 3:
Average throughput: 218.86 Mbit/s
95th percentile per-packet one-way delay: 89.525 ms
Loss rate: 1.39%

Run 5: Report of Indigo-96d2da3 — Data Link

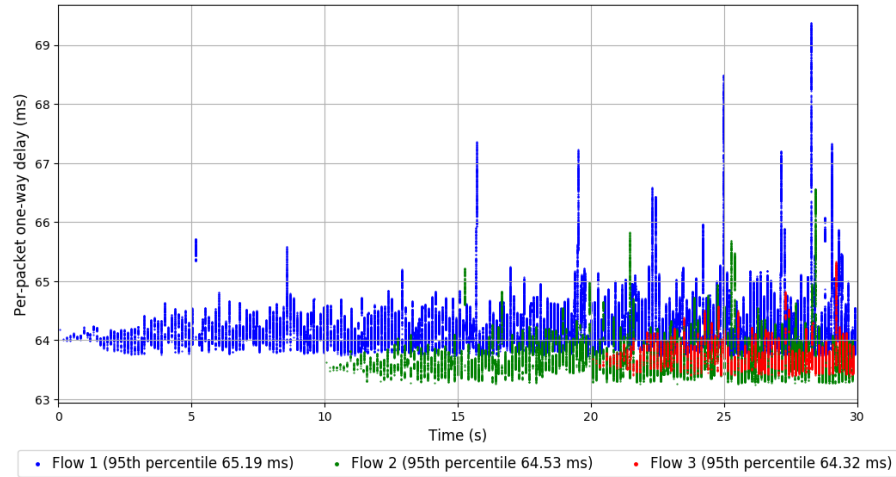
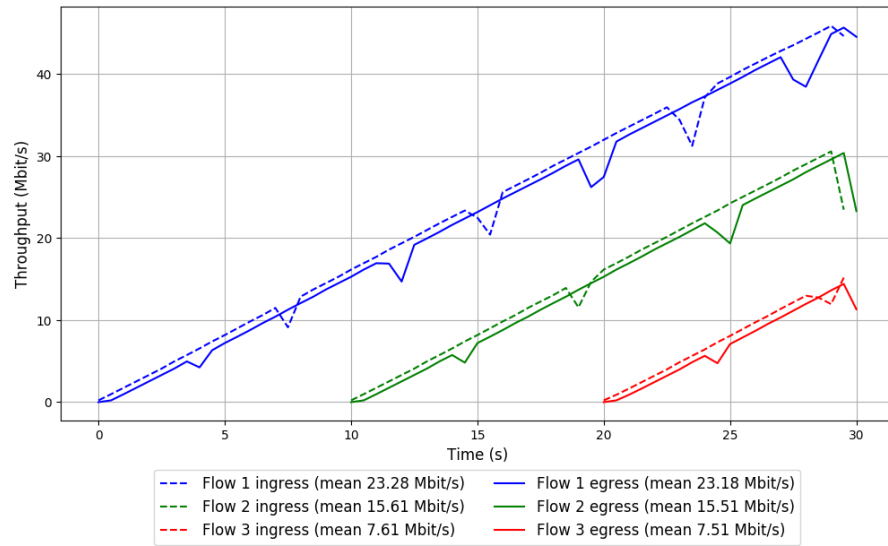


```
Run 1: Statistics of LEDBAT

Start at: 2018-11-03 07:00:23
End at: 2018-11-03 07:00:53
Local clock offset: 0.037 ms
Remote clock offset: -0.66 ms

# Below is generated by plot.py at 2018-11-03 10:31:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 35.89 Mbit/s
95th percentile per-packet one-way delay: 65.037 ms
Loss rate: 1.08%
-- Flow 1:
Average throughput: 23.18 Mbit/s
95th percentile per-packet one-way delay: 65.190 ms
Loss rate: 0.84%
-- Flow 2:
Average throughput: 15.51 Mbit/s
95th percentile per-packet one-way delay: 64.528 ms
Loss rate: 1.27%
-- Flow 3:
Average throughput: 7.51 Mbit/s
95th percentile per-packet one-way delay: 64.317 ms
Loss rate: 2.57%
```

Run 1: Report of LEDBAT — Data Link



Run 2: Statistics of LEDBAT

Start at: 2018-11-03 07:32:08

End at: 2018-11-03 07:32:38

Local clock offset: -0.048 ms

Remote clock offset: 0.072 ms

Below is generated by plot.py at 2018-11-03 10:31:26

Datalink statistics

-- Total of 3 flows:

Average throughput: 32.70 Mbit/s

95th percentile per-packet one-way delay: 63.818 ms

Loss rate: 0.95%

-- Flow 1:

Average throughput: 20.00 Mbit/s

95th percentile per-packet one-way delay: 63.803 ms

Loss rate: 0.57%

-- Flow 2:

Average throughput: 15.43 Mbit/s

95th percentile per-packet one-way delay: 63.803 ms

Loss rate: 1.27%

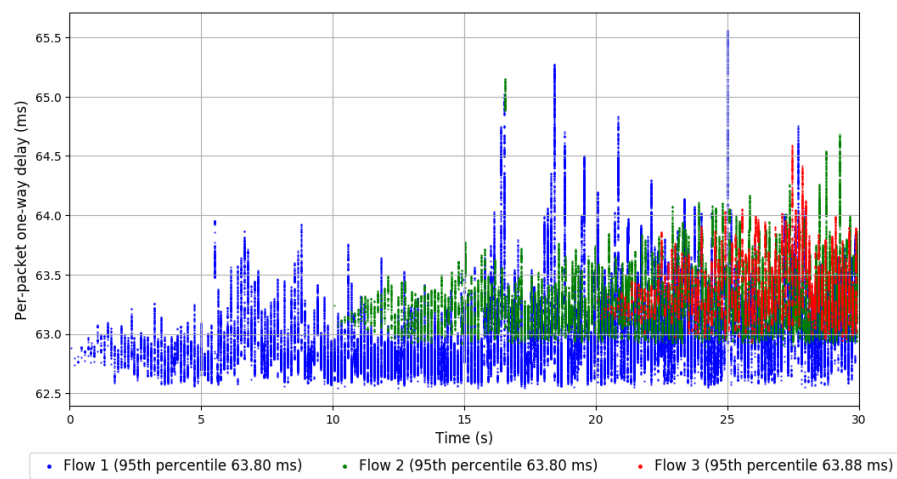
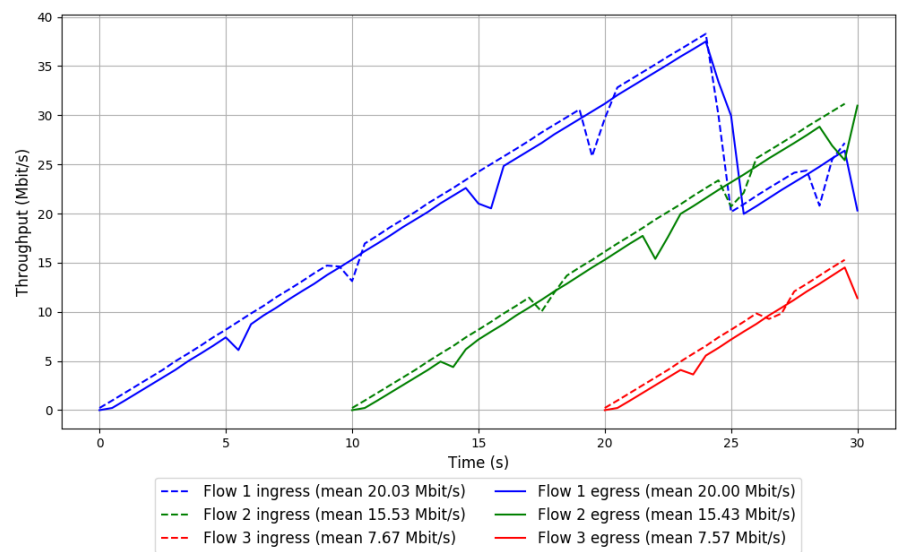
-- Flow 3:

Average throughput: 7.57 Mbit/s

95th percentile per-packet one-way delay: 63.885 ms

Loss rate: 2.56%

Run 2: Report of LEDBAT — Data Link

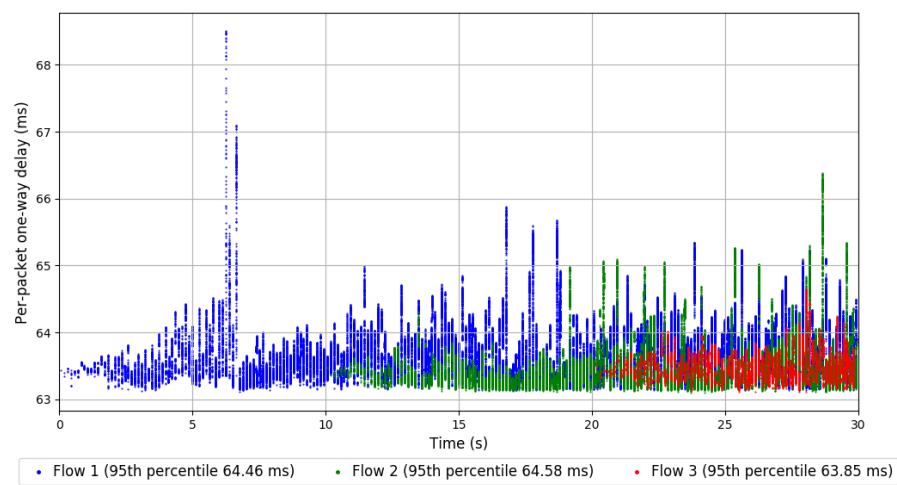
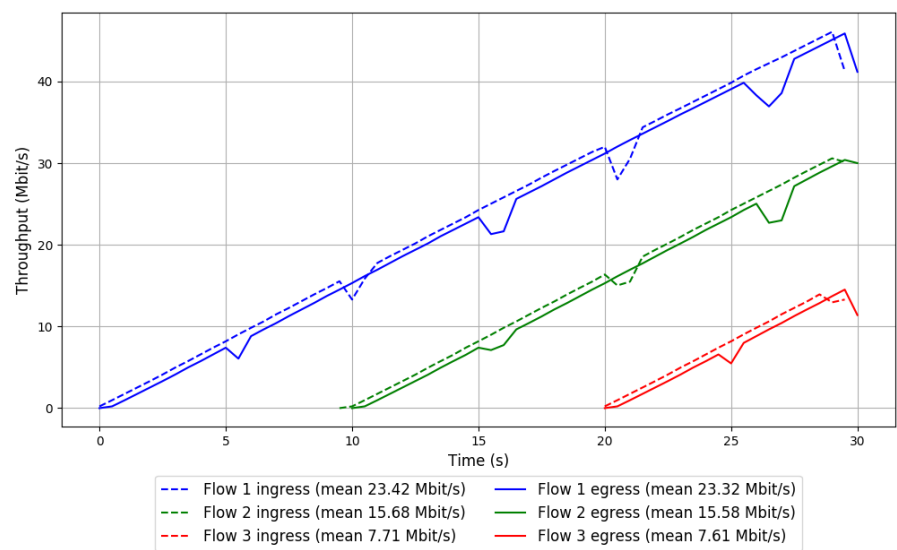


Run 3: Statistics of LEDBAT

Start at: 2018-11-03 08:03:55
End at: 2018-11-03 08:04:25
Local clock offset: -0.125 ms
Remote clock offset: -0.535 ms

Below is generated by plot.py at 2018-11-03 10:31:26
Datalink statistics
-- Total of 3 flows:
Average throughput: 36.17 Mbit/s
95th percentile per-packet one-way delay: 64.448 ms
Loss rate: 1.07%
-- Flow 1:
Average throughput: 23.32 Mbit/s
95th percentile per-packet one-way delay: 64.461 ms
Loss rate: 0.83%
-- Flow 2:
Average throughput: 15.58 Mbit/s
95th percentile per-packet one-way delay: 64.581 ms
Loss rate: 1.26%
-- Flow 3:
Average throughput: 7.61 Mbit/s
95th percentile per-packet one-way delay: 63.852 ms
Loss rate: 2.56%

Run 3: Report of LEDBAT — Data Link

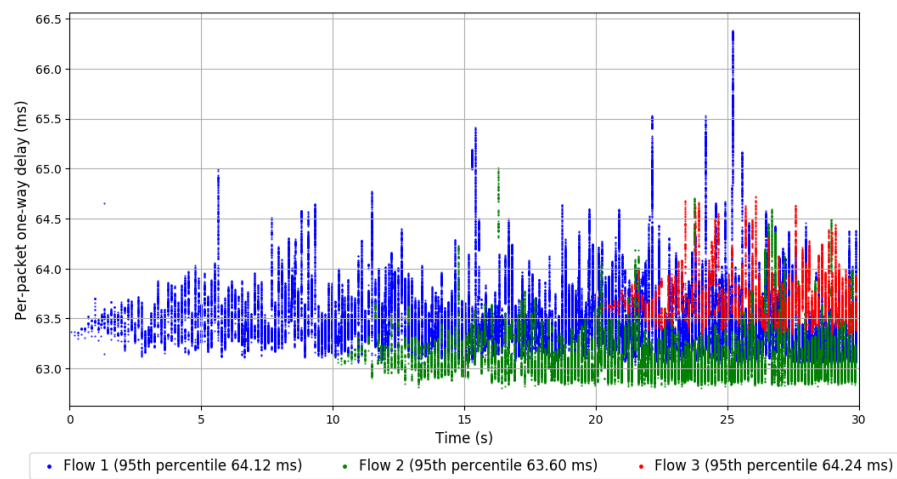
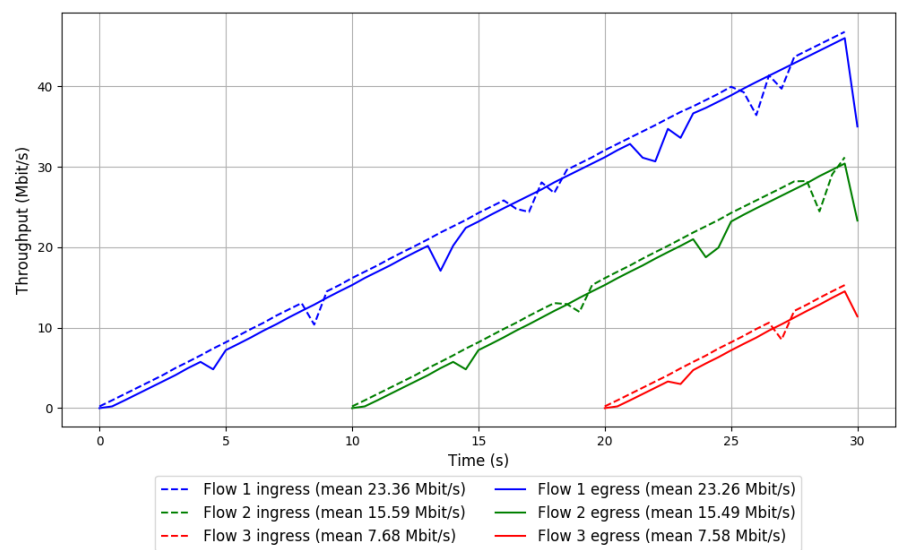


Run 4: Statistics of LEDBAT

Start at: 2018-11-03 08:35:36
End at: 2018-11-03 08:36:06
Local clock offset: 0.004 ms
Remote clock offset: -0.185 ms

Below is generated by plot.py at 2018-11-03 10:31:26
Datalink statistics
-- Total of 3 flows:
Average throughput: 36.02 Mbit/s
95th percentile per-packet one-way delay: 64.066 ms
Loss rate: 1.08%
-- Flow 1:
Average throughput: 23.26 Mbit/s
95th percentile per-packet one-way delay: 64.124 ms
Loss rate: 0.84%
-- Flow 2:
Average throughput: 15.49 Mbit/s
95th percentile per-packet one-way delay: 63.605 ms
Loss rate: 1.27%
-- Flow 3:
Average throughput: 7.58 Mbit/s
95th percentile per-packet one-way delay: 64.241 ms
Loss rate: 2.56%

Run 4: Report of LEDBAT — Data Link



Run 5: Statistics of LEDBAT

Start at: 2018-11-03 09:06:56

End at: 2018-11-03 09:07:26

Local clock offset: -0.048 ms

Remote clock offset: 0.482 ms

Below is generated by plot.py at 2018-11-03 10:31:26

Datalink statistics

-- Total of 3 flows:

Average throughput: 35.94 Mbit/s

95th percentile per-packet one-way delay: 63.737 ms

Loss rate: 1.08%

-- Flow 1:

Average throughput: 23.22 Mbit/s

95th percentile per-packet one-way delay: 63.868 ms

Loss rate: 0.84%

-- Flow 2:

Average throughput: 15.48 Mbit/s

95th percentile per-packet one-way delay: 63.161 ms

Loss rate: 1.27%

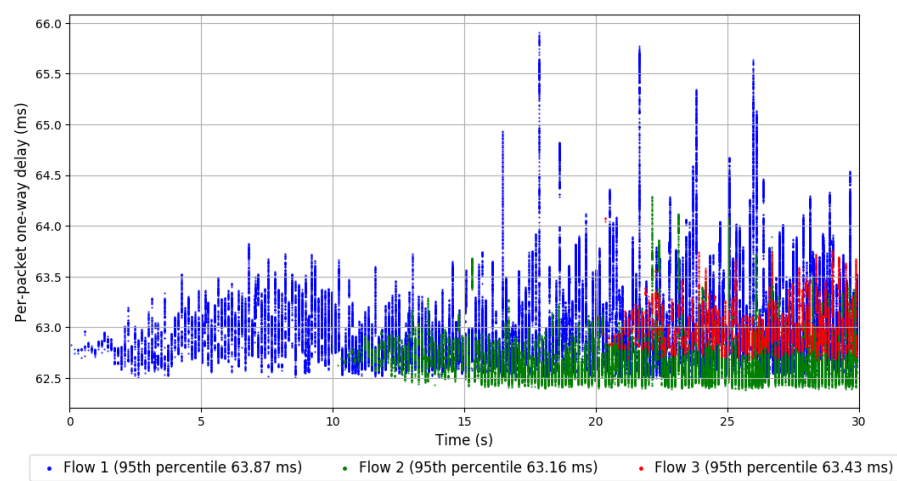
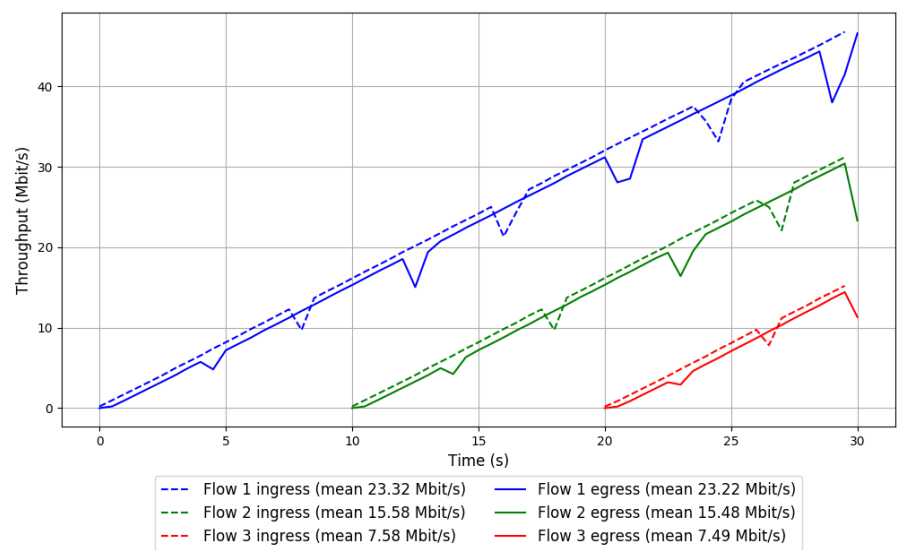
-- Flow 3:

Average throughput: 7.49 Mbit/s

95th percentile per-packet one-way delay: 63.426 ms

Loss rate: 2.58%

Run 5: Report of LEDBAT — Data Link



Run 1: Statistics of Indigo-Muses

Start at: 2018-11-03 06:34:44

End at: 2018-11-03 06:35:14

Local clock offset: -0.022 ms

Remote clock offset: 0.002 ms

Below is generated by plot.py at 2018-11-03 10:45:12

Datalink statistics

-- Total of 3 flows:

Average throughput: 1077.01 Mbit/s

95th percentile per-packet one-way delay: 96.174 ms

Loss rate: 0.65%

-- Flow 1:

Average throughput: 591.42 Mbit/s

95th percentile per-packet one-way delay: 95.153 ms

Loss rate: 0.38%

-- Flow 2:

Average throughput: 522.75 Mbit/s

95th percentile per-packet one-way delay: 110.362 ms

Loss rate: 0.75%

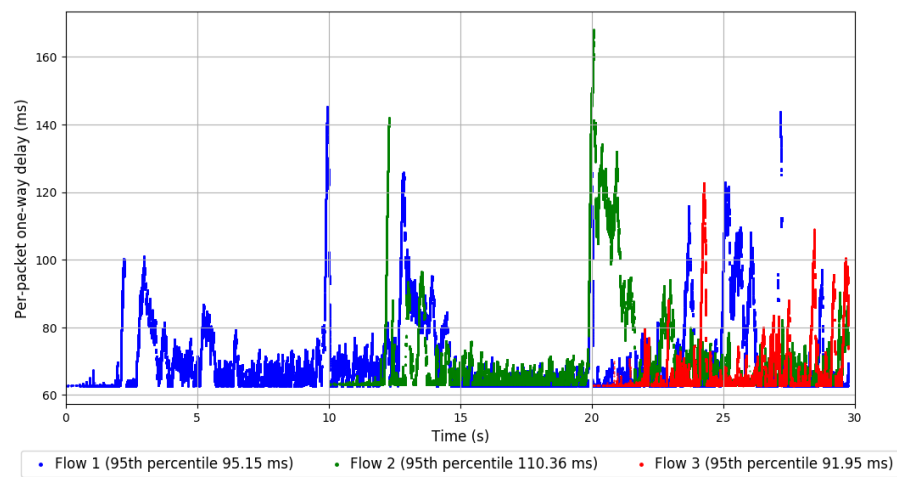
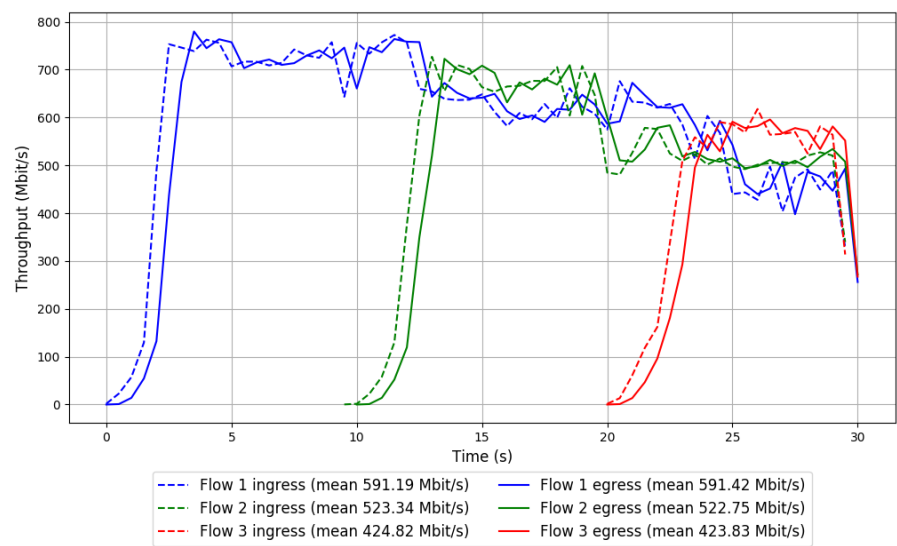
-- Flow 3:

Average throughput: 423.83 Mbit/s

95th percentile per-packet one-way delay: 91.953 ms

Loss rate: 1.52%

Run 1: Report of Indigo-Muses — Data Link

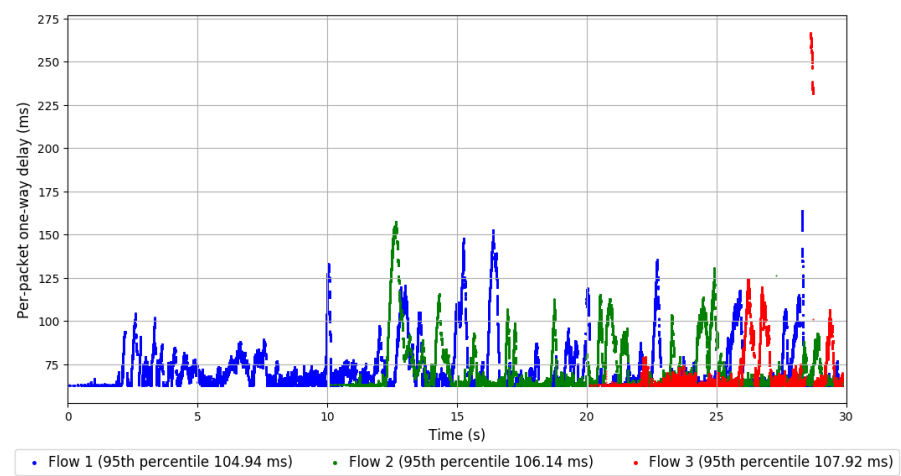
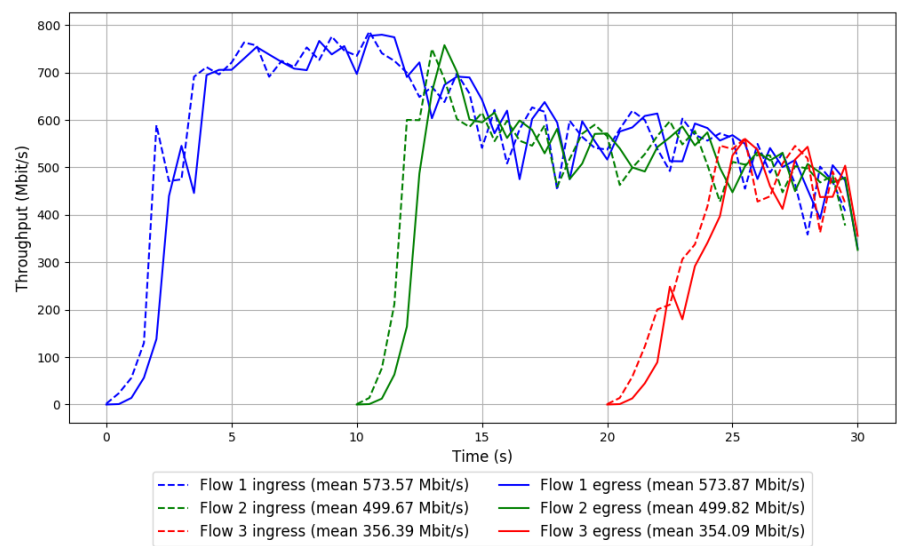


Run 2: Statistics of Indigo-Muses

Start at: 2018-11-03 07:06:09
End at: 2018-11-03 07:06:39
Local clock offset: 0.034 ms
Remote clock offset: -0.085 ms

Below is generated by plot.py at 2018-11-03 10:45:12
Datalink statistics
-- Total of 3 flows:
Average throughput: 1020.64 Mbit/s
95th percentile per-packet one-way delay: 105.764 ms
Loss rate: 0.63%
-- Flow 1:
Average throughput: 573.87 Mbit/s
95th percentile per-packet one-way delay: 104.945 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 499.82 Mbit/s
95th percentile per-packet one-way delay: 106.138 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 354.09 Mbit/s
95th percentile per-packet one-way delay: 107.922 ms
Loss rate: 1.94%

Run 2: Report of Indigo-Muses — Data Link



Run 3: Statistics of Indigo-Muses

Start at: 2018-11-03 07:37:54

End at: 2018-11-03 07:38:24

Local clock offset: -0.003 ms

Remote clock offset: 0.566 ms

Below is generated by plot.py at 2018-11-03 10:45:44

Datalink statistics

-- Total of 3 flows:

Average throughput: 1071.13 Mbit/s

95th percentile per-packet one-way delay: 86.269 ms

Loss rate: 0.67%

-- Flow 1:

Average throughput: 587.23 Mbit/s

95th percentile per-packet one-way delay: 91.445 ms

Loss rate: 0.43%

-- Flow 2:

Average throughput: 528.09 Mbit/s

95th percentile per-packet one-way delay: 82.983 ms

Loss rate: 0.60%

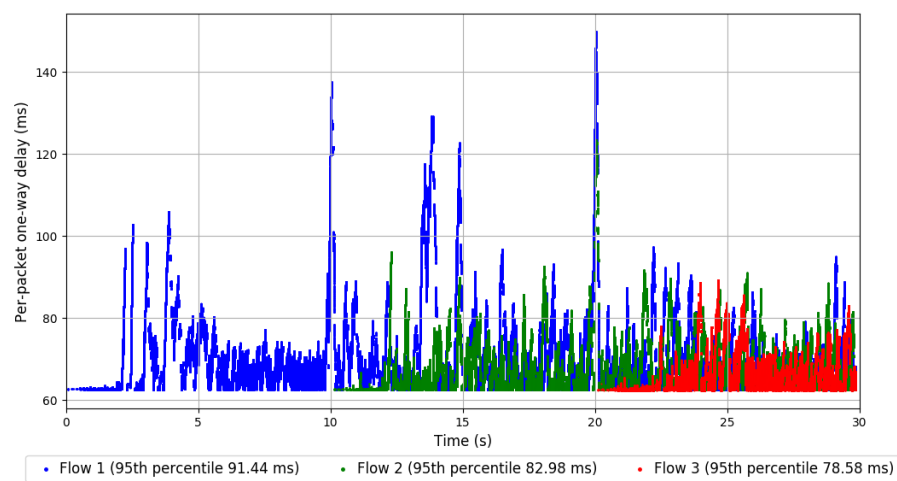
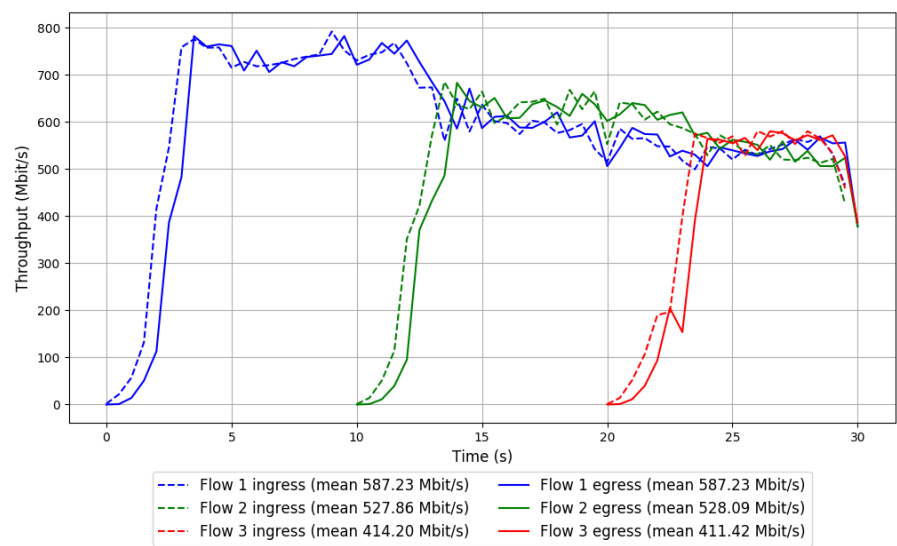
-- Flow 3:

Average throughput: 411.42 Mbit/s

95th percentile per-packet one-way delay: 78.576 ms

Loss rate: 1.92%

Run 3: Report of Indigo-Muses — Data Link

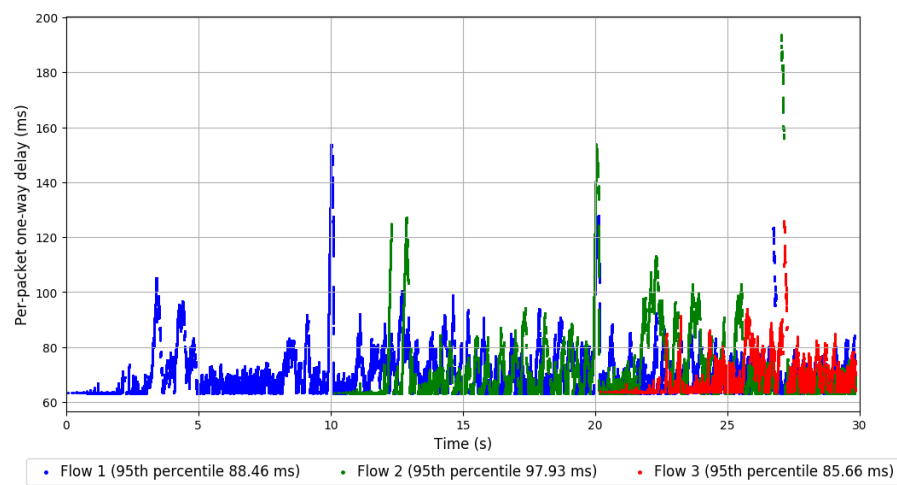
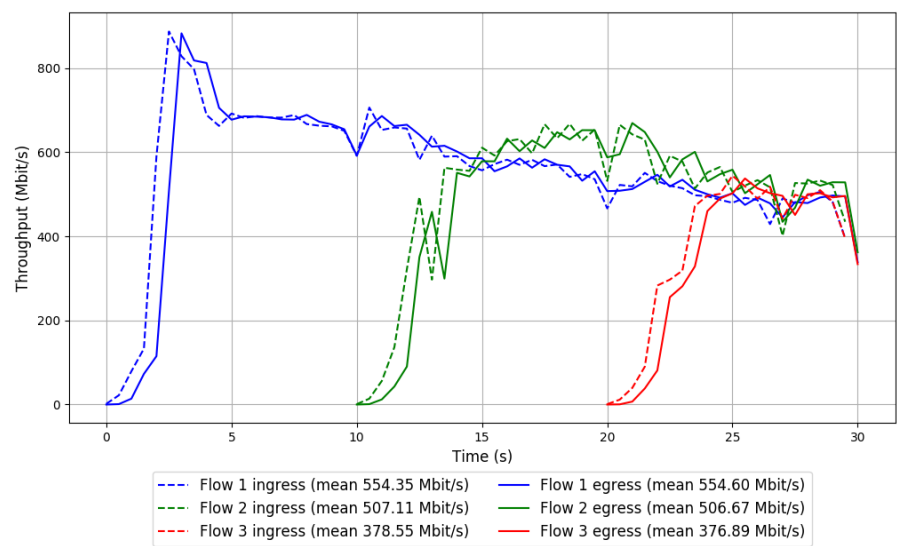


Run 4: Statistics of Indigo-Muses

Start at: 2018-11-03 08:09:41
End at: 2018-11-03 08:10:11
Local clock offset: -0.131 ms
Remote clock offset: -0.589 ms

Below is generated by plot.py at 2018-11-03 10:46:03
Datalink statistics
-- Total of 3 flows:
Average throughput: 1012.14 Mbit/s
95th percentile per-packet one-way delay: 91.495 ms
Loss rate: 0.66%
-- Flow 1:
Average throughput: 554.60 Mbit/s
95th percentile per-packet one-way delay: 88.463 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 506.67 Mbit/s
95th percentile per-packet one-way delay: 97.927 ms
Loss rate: 0.72%
-- Flow 3:
Average throughput: 376.89 Mbit/s
95th percentile per-packet one-way delay: 85.661 ms
Loss rate: 1.74%

Run 4: Report of Indigo-Muses — Data Link

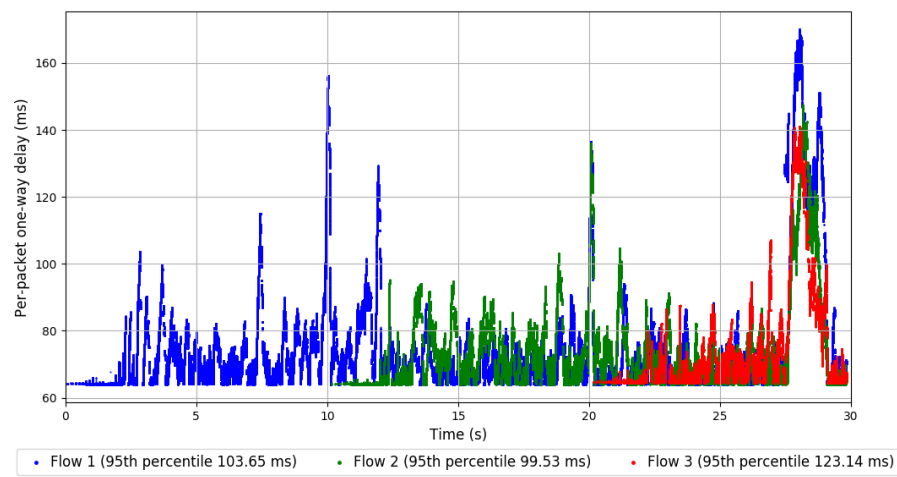
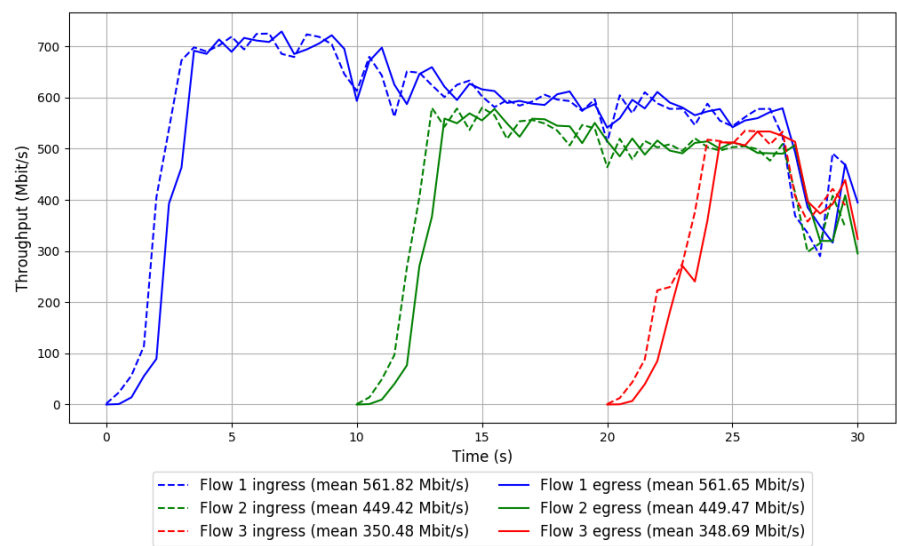


Run 5: Statistics of Indigo-Muses

Start at: 2018-11-03 08:41:22
End at: 2018-11-03 08:41:52
Local clock offset: -0.05 ms
Remote clock offset: -1.391 ms

Below is generated by plot.py at 2018-11-03 10:46:40
Datalink statistics
-- Total of 3 flows:
Average throughput: 972.10 Mbit/s
95th percentile per-packet one-way delay: 105.084 ms
Loss rate: 0.66%
-- Flow 1:
Average throughput: 561.65 Mbit/s
95th percentile per-packet one-way delay: 103.647 ms
Loss rate: 0.45%
-- Flow 2:
Average throughput: 449.47 Mbit/s
95th percentile per-packet one-way delay: 99.526 ms
Loss rate: 0.63%
-- Flow 3:
Average throughput: 348.69 Mbit/s
95th percentile per-packet one-way delay: 123.137 ms
Loss rate: 1.77%

Run 5: Report of Indigo-Muses — Data Link

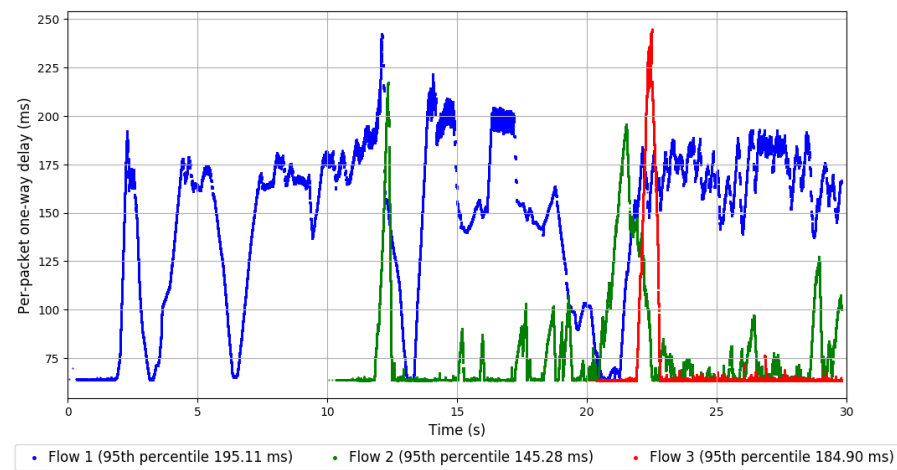
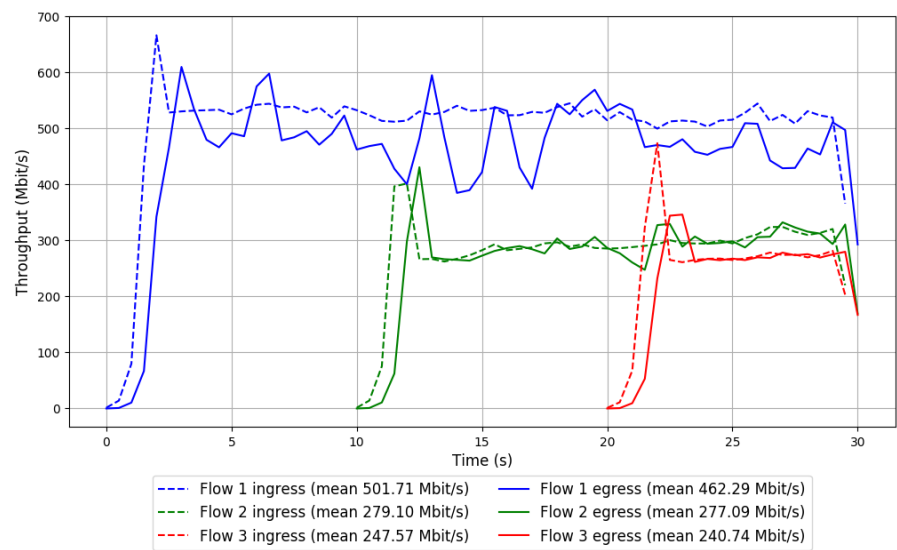


```
Run 1: Statistics of PCC-Allegro

Start at: 2018-11-03 06:41:19
End at: 2018-11-03 06:41:49
Local clock offset: 0.009 ms
Remote clock offset: -0.706 ms

# Below is generated by plot.py at 2018-11-03 10:54:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 724.58 Mbit/s
95th percentile per-packet one-way delay: 191.363 ms
Loss rate: 6.13%
-- Flow 1:
Average throughput: 462.29 Mbit/s
95th percentile per-packet one-way delay: 195.112 ms
Loss rate: 8.25%
-- Flow 2:
Average throughput: 277.09 Mbit/s
95th percentile per-packet one-way delay: 145.280 ms
Loss rate: 1.35%
-- Flow 3:
Average throughput: 240.74 Mbit/s
95th percentile per-packet one-way delay: 184.903 ms
Loss rate: 4.00%
```

Run 1: Report of PCC-Allegro — Data Link



Run 2: Statistics of PCC-Allegro

Start at: 2018-11-03 07:12:52

End at: 2018-11-03 07:13:22

Local clock offset: 0.011 ms

Remote clock offset: -0.15 ms

Below is generated by plot.py at 2018-11-03 10:55:27

Datalink statistics

-- Total of 3 flows:

Average throughput: 714.12 Mbit/s

95th percentile per-packet one-way delay: 183.995 ms

Loss rate: 3.54%

-- Flow 1:

Average throughput: 456.14 Mbit/s

95th percentile per-packet one-way delay: 186.940 ms

Loss rate: 4.56%

-- Flow 2:

Average throughput: 267.16 Mbit/s

95th percentile per-packet one-way delay: 106.011 ms

Loss rate: 0.75%

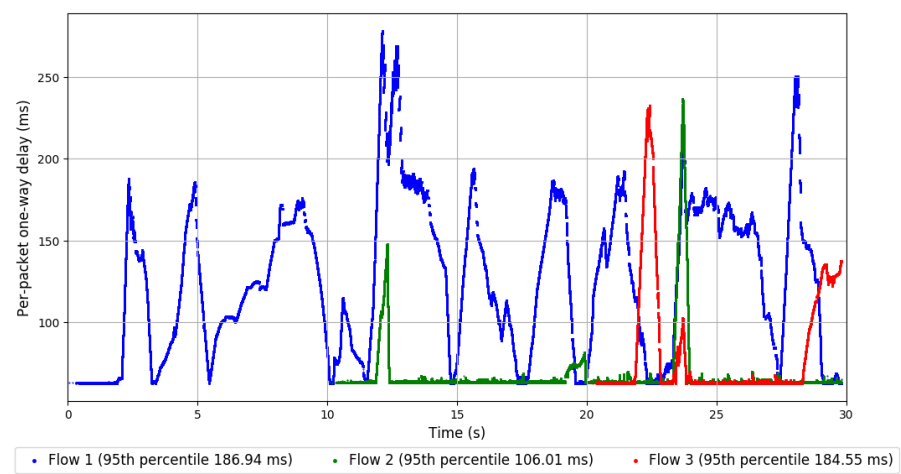
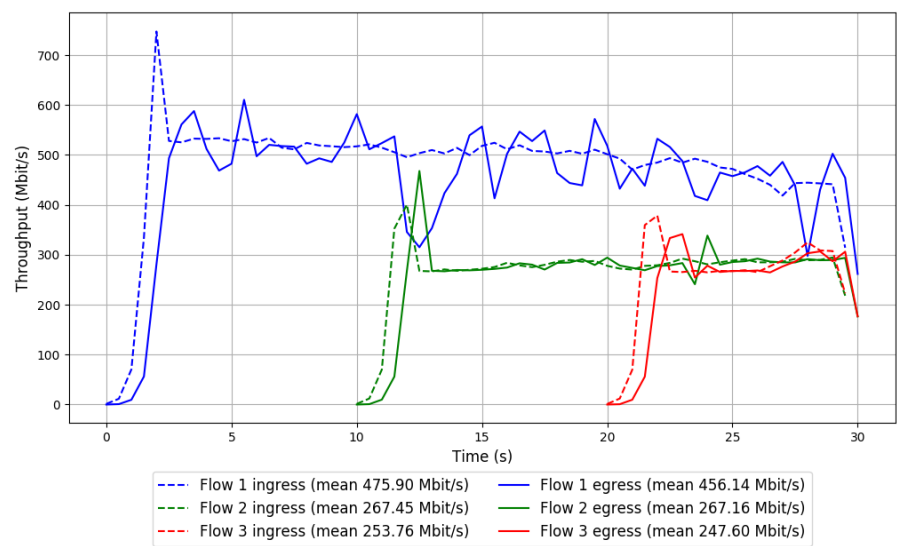
-- Flow 3:

Average throughput: 247.60 Mbit/s

95th percentile per-packet one-way delay: 184.547 ms

Loss rate: 3.71%

Run 2: Report of PCC-Allegro — Data Link

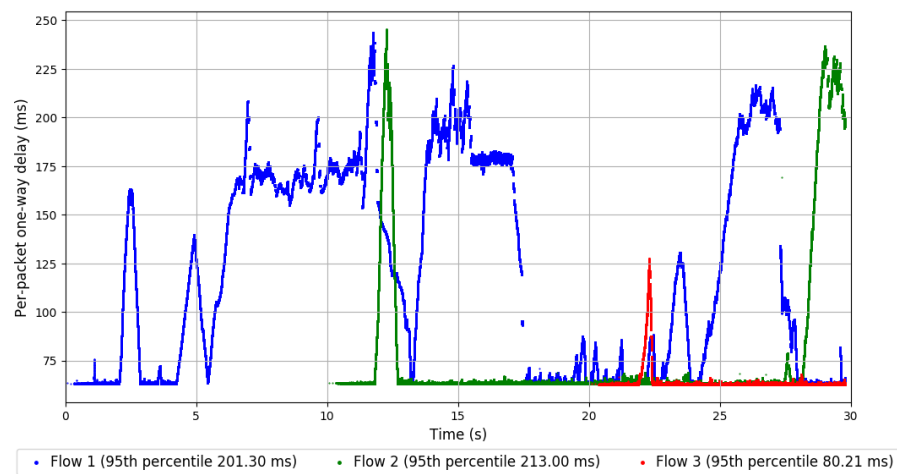
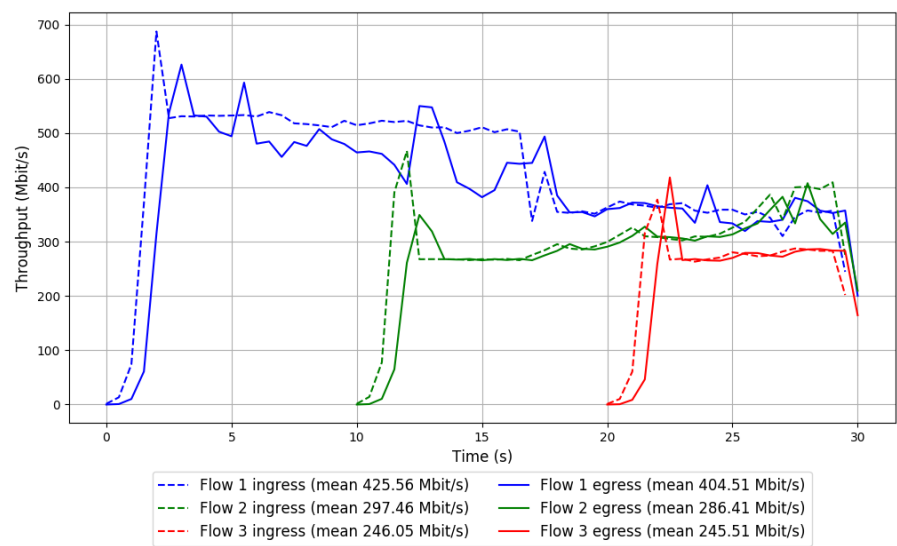


Run 3: Statistics of PCC-Allegro

Start at: 2018-11-03 07:44:35
End at: 2018-11-03 07:45:05
Local clock offset: -0.038 ms
Remote clock offset: -0.136 ms

Below is generated by plot.py at 2018-11-03 10:55:27
Datalink statistics
-- Total of 3 flows:
Average throughput: 674.48 Mbit/s
95th percentile per-packet one-way delay: 201.241 ms
Loss rate: 4.63%
-- Flow 1:
Average throughput: 404.51 Mbit/s
95th percentile per-packet one-way delay: 201.296 ms
Loss rate: 5.36%
-- Flow 2:
Average throughput: 286.41 Mbit/s
95th percentile per-packet one-way delay: 212.998 ms
Loss rate: 4.34%
-- Flow 3:
Average throughput: 245.51 Mbit/s
95th percentile per-packet one-way delay: 80.213 ms
Loss rate: 1.51%

Run 3: Report of PCC-Allegro — Data Link



Run 4: Statistics of PCC-Allegro

Start at: 2018-11-03 08:16:20

End at: 2018-11-03 08:16:50

Local clock offset: -0.115 ms

Remote clock offset: 0.497 ms

Below is generated by plot.py at 2018-11-03 11:09:33

Datalink statistics

-- Total of 3 flows:

Average throughput: 667.69 Mbit/s

95th percentile per-packet one-way delay: 183.453 ms

Loss rate: 1.63%

-- Flow 1:

Average throughput: 373.97 Mbit/s

95th percentile per-packet one-way delay: 189.576 ms

Loss rate: 1.92%

-- Flow 2:

Average throughput: 320.55 Mbit/s

95th percentile per-packet one-way delay: 127.790 ms

Loss rate: 0.72%

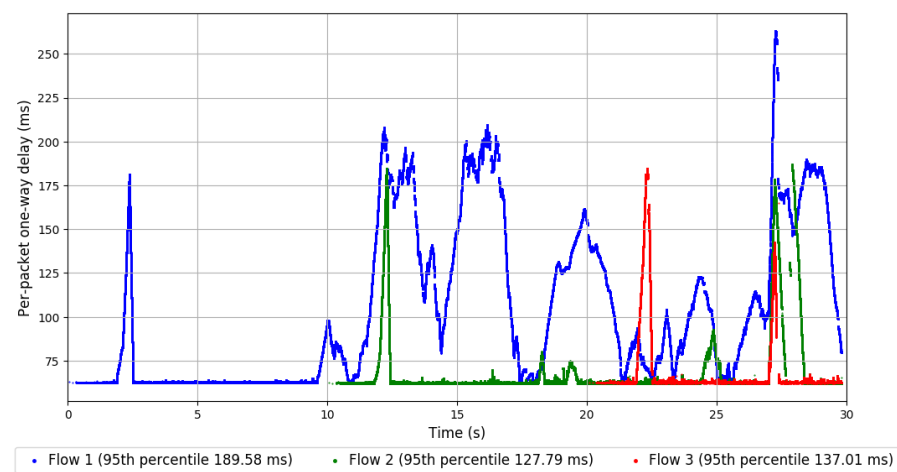
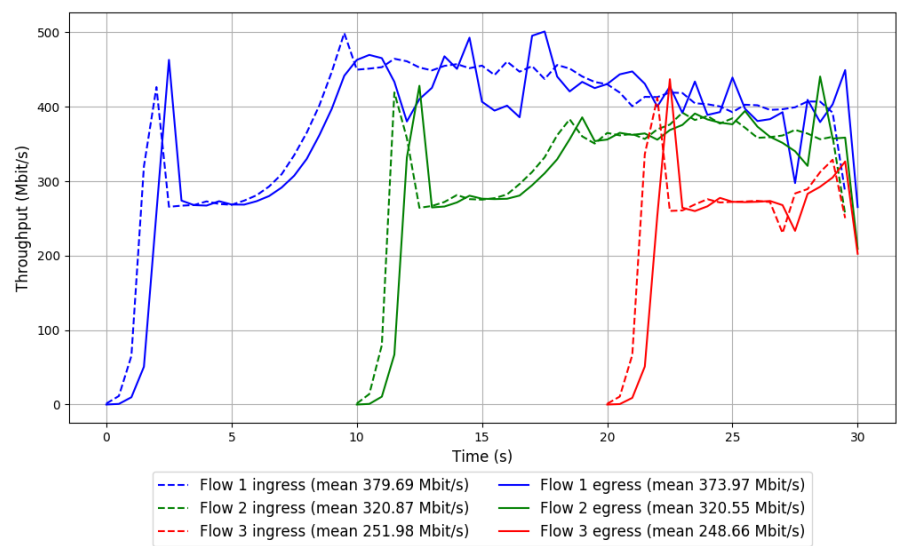
-- Flow 3:

Average throughput: 248.66 Mbit/s

95th percentile per-packet one-way delay: 137.007 ms

Loss rate: 2.60%

Run 4: Report of PCC-Allegro — Data Link

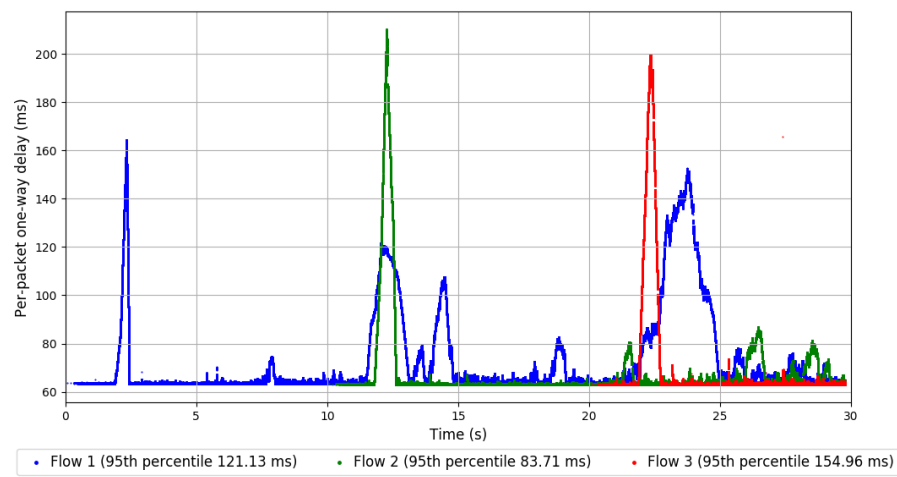
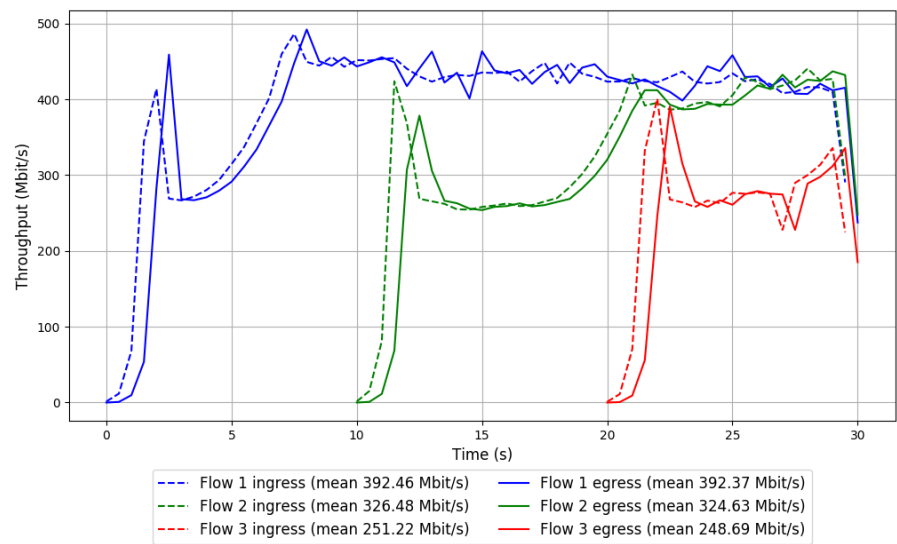


Run 5: Statistics of PCC-Allegro

Start at: 2018-11-03 08:47:58
End at: 2018-11-03 08:48:28
Local clock offset: -0.031 ms
Remote clock offset: -0.508 ms

```
# Below is generated by plot.py at 2018-11-03 11:10:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 688.75 Mbit/s
95th percentile per-packet one-way delay: 119.543 ms
Loss rate: 0.90%
-- Flow 1:
Average throughput: 392.37 Mbit/s
95th percentile per-packet one-way delay: 121.132 ms
Loss rate: 0.45%
-- Flow 2:
Average throughput: 324.63 Mbit/s
95th percentile per-packet one-way delay: 83.714 ms
Loss rate: 1.20%
-- Flow 3:
Average throughput: 248.69 Mbit/s
95th percentile per-packet one-way delay: 154.964 ms
Loss rate: 2.27%
```

Run 5: Report of PCC-Allegro — Data Link

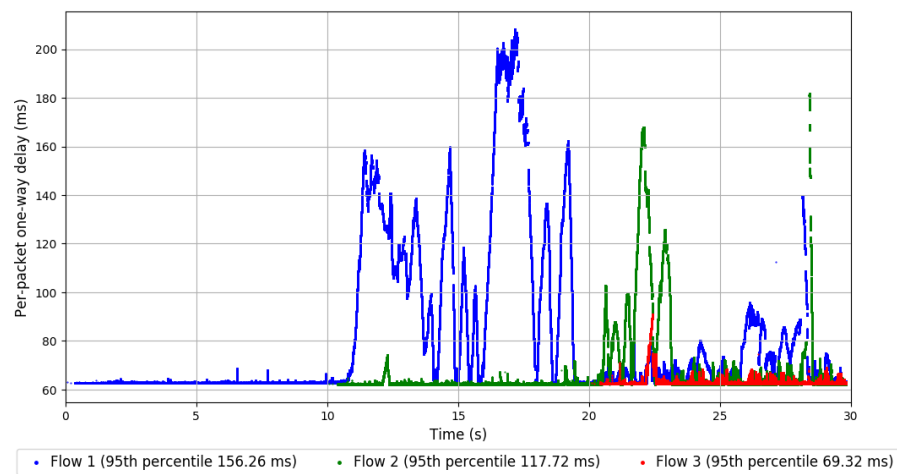
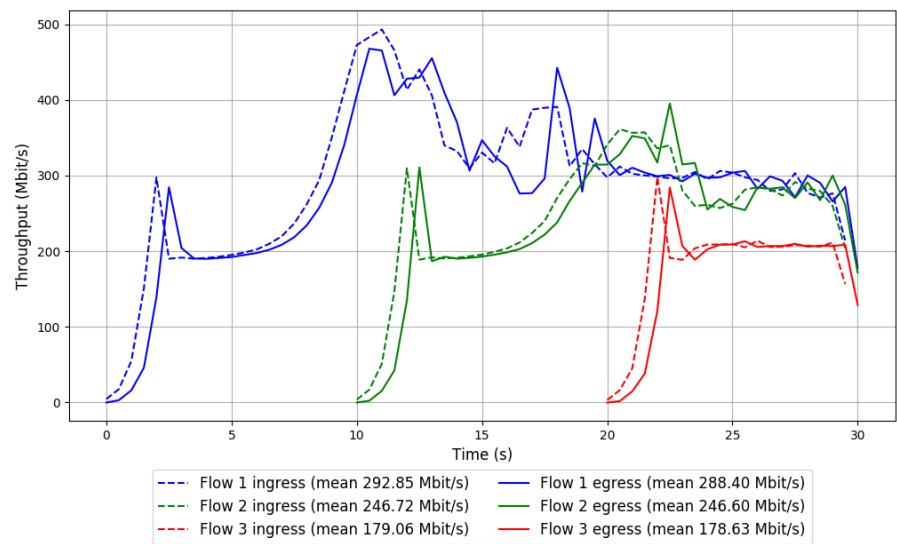


```
Run 1: Statistics of PCC-Expr

Start at: 2018-11-03 06:58:24
End at: 2018-11-03 06:58:54
Local clock offset: 0.026 ms
Remote clock offset: 0.47 ms

# Below is generated by plot.py at 2018-11-03 11:10:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 510.42 Mbit/s
95th percentile per-packet one-way delay: 144.888 ms
Loss rate: 1.50%
-- Flow 1:
Average throughput: 288.40 Mbit/s
95th percentile per-packet one-way delay: 156.257 ms
Loss rate: 1.94%
-- Flow 2:
Average throughput: 246.60 Mbit/s
95th percentile per-packet one-way delay: 117.718 ms
Loss rate: 0.68%
-- Flow 3:
Average throughput: 178.63 Mbit/s
95th percentile per-packet one-way delay: 69.319 ms
Loss rate: 1.57%
```

Run 1: Report of PCC-Expr — Data Link

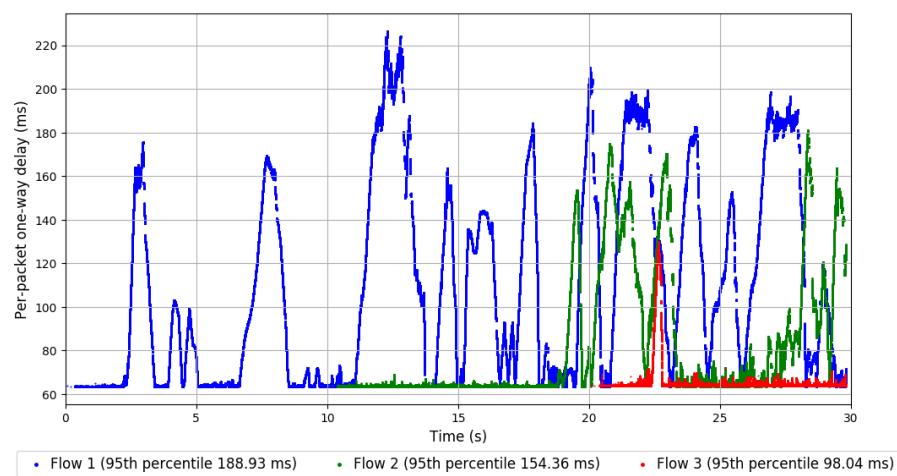
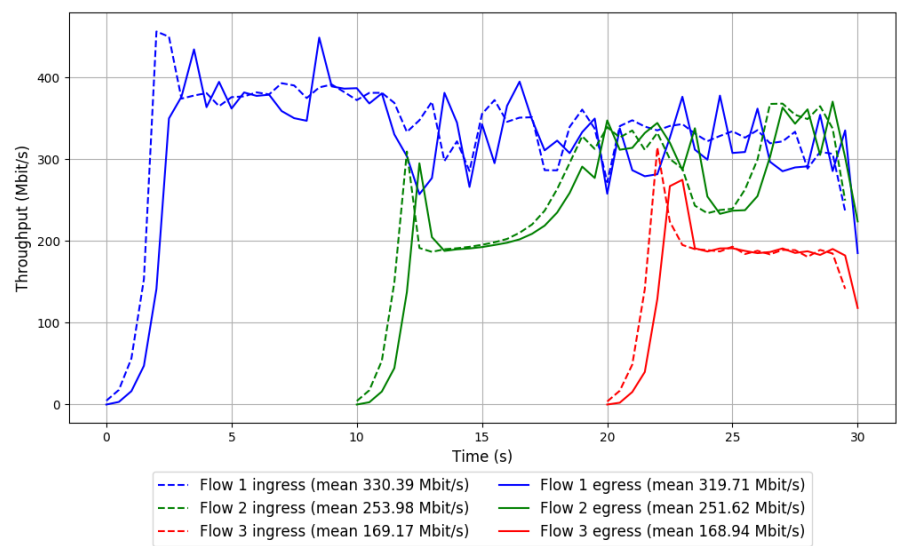


Run 2: Statistics of PCC-Expr

Start at: 2018-11-03 07:30:05
End at: 2018-11-03 07:30:35
Local clock offset: 0.008 ms
Remote clock offset: -0.697 ms

Below is generated by plot.py at 2018-11-03 11:10:52
Datalink statistics
-- Total of 3 flows:
Average throughput: 541.96 Mbit/s
95th percentile per-packet one-way delay: 184.300 ms
Loss rate: 2.80%
-- Flow 1:
Average throughput: 319.71 Mbit/s
95th percentile per-packet one-way delay: 188.927 ms
Loss rate: 3.64%
-- Flow 2:
Average throughput: 251.62 Mbit/s
95th percentile per-packet one-way delay: 154.356 ms
Loss rate: 1.60%
-- Flow 3:
Average throughput: 168.94 Mbit/s
95th percentile per-packet one-way delay: 98.042 ms
Loss rate: 1.42%

Run 2: Report of PCC-Expr — Data Link

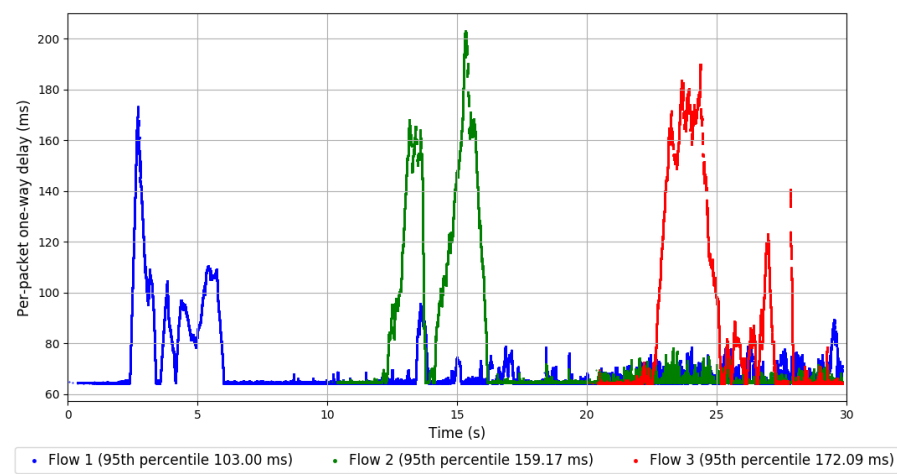
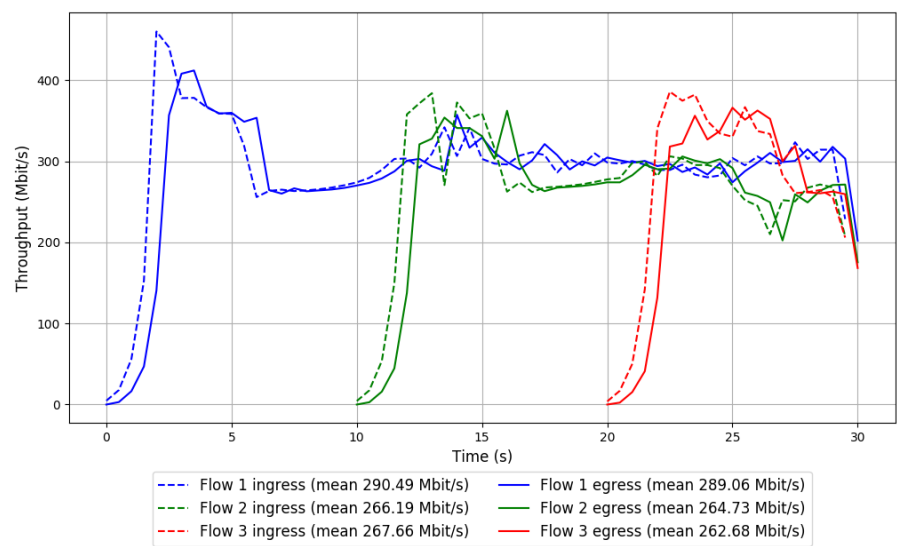


Run 3: Statistics of PCC-Expr

Start at: 2018-11-03 08:01:52
End at: 2018-11-03 08:02:22
Local clock offset: -0.107 ms
Remote clock offset: -1.447 ms

Below is generated by plot.py at 2018-11-03 11:10:53
Datalink statistics
-- Total of 3 flows:
Average throughput: 550.77 Mbit/s
95th percentile per-packet one-way delay: 153.458 ms
Loss rate: 1.35%
-- Flow 1:
Average throughput: 289.06 Mbit/s
95th percentile per-packet one-way delay: 103.000 ms
Loss rate: 0.92%
-- Flow 2:
Average throughput: 264.73 Mbit/s
95th percentile per-packet one-way delay: 159.173 ms
Loss rate: 1.18%
-- Flow 3:
Average throughput: 262.68 Mbit/s
95th percentile per-packet one-way delay: 172.087 ms
Loss rate: 3.13%

Run 3: Report of PCC-Expr — Data Link



Run 4: Statistics of PCC-Expr

Start at: 2018-11-03 08:33:16

End at: 2018-11-03 08:33:46

Local clock offset: -0.076 ms

Remote clock offset: -0.07 ms

Below is generated by plot.py at 2018-11-03 11:13:01

Datalink statistics

-- Total of 3 flows:

Average throughput: 507.10 Mbit/s

95th percentile per-packet one-way delay: 162.373 ms

Loss rate: 1.24%

-- Flow 1:

Average throughput: 258.33 Mbit/s

95th percentile per-packet one-way delay: 80.822 ms

Loss rate: 0.43%

-- Flow 2:

Average throughput: 290.04 Mbit/s

95th percentile per-packet one-way delay: 169.004 ms

Loss rate: 2.28%

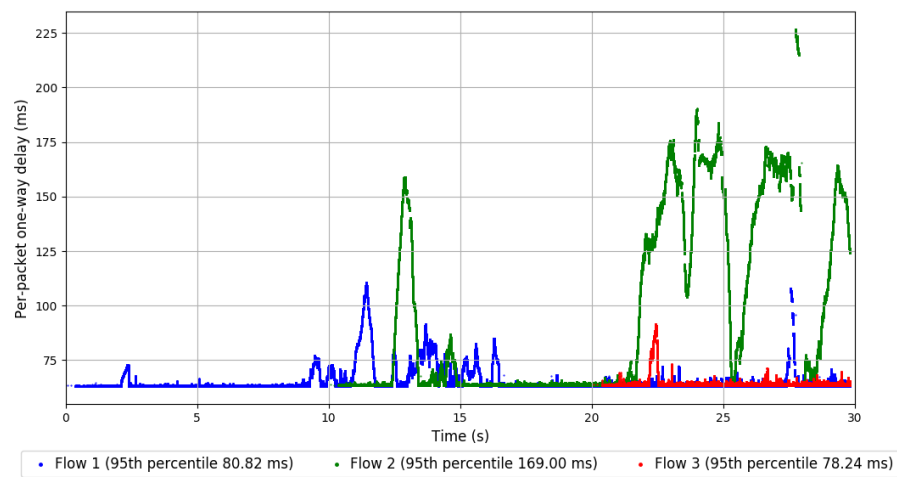
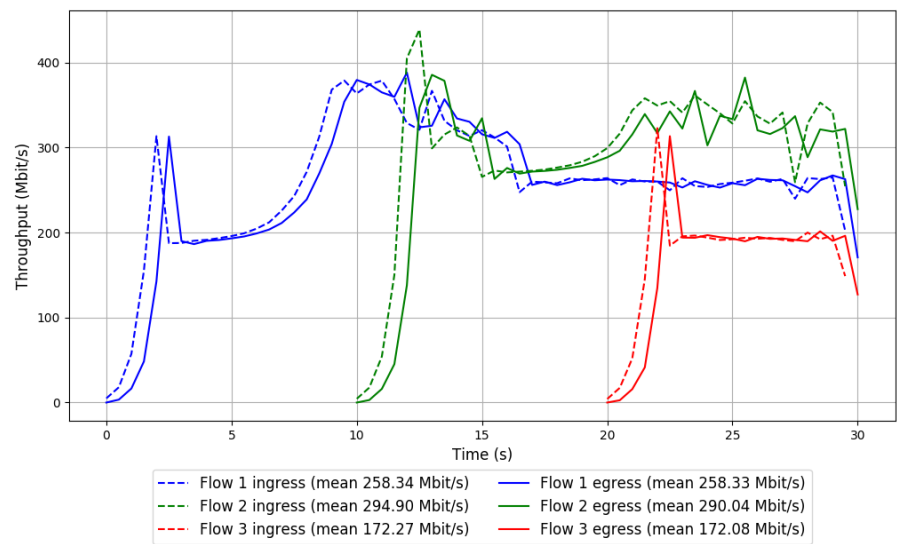
-- Flow 3:

Average throughput: 172.08 Mbit/s

95th percentile per-packet one-way delay: 78.244 ms

Loss rate: 1.40%

Run 4: Report of PCC-Expr — Data Link



Run 5: Statistics of PCC-Expr

Start at: 2018-11-03 09:04:58

End at: 2018-11-03 09:05:28

Local clock offset: -0.098 ms

Remote clock offset: 1.162 ms

Below is generated by plot.py at 2018-11-03 11:13:01

Datalink statistics

-- Total of 3 flows:

Average throughput: 481.94 Mbit/s

95th percentile per-packet one-way delay: 180.906 ms

Loss rate: 4.48%

-- Flow 1:

Average throughput: 293.46 Mbit/s

95th percentile per-packet one-way delay: 179.515 ms

Loss rate: 6.32%

-- Flow 2:

Average throughput: 232.94 Mbit/s

95th percentile per-packet one-way delay: 185.617 ms

Loss rate: 1.37%

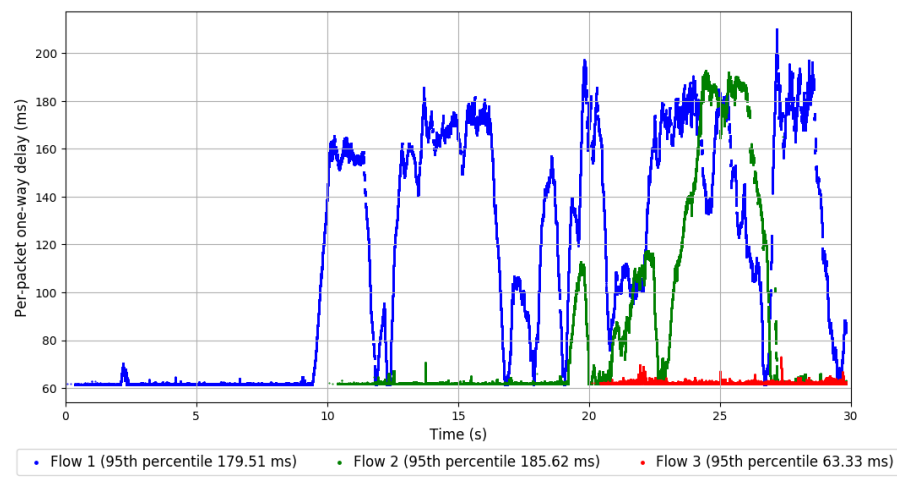
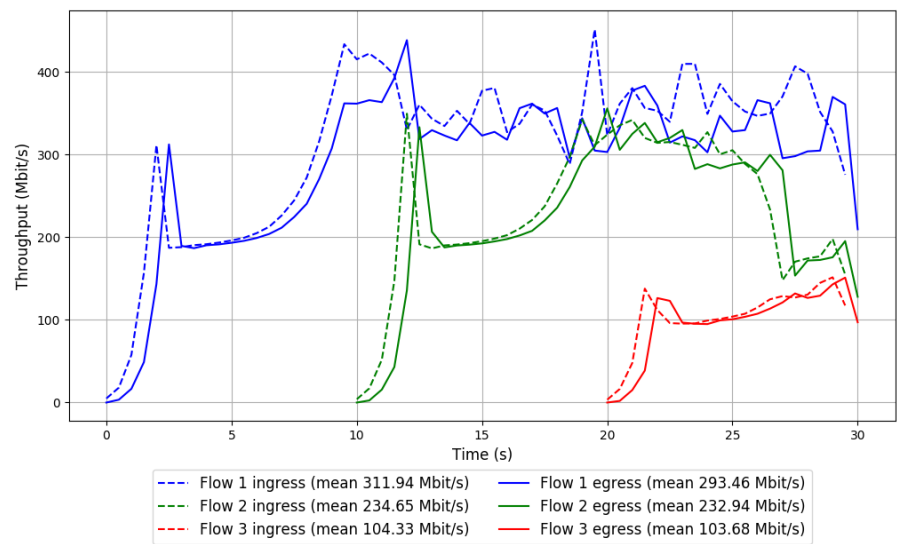
-- Flow 3:

Average throughput: 103.68 Mbit/s

95th percentile per-packet one-way delay: 63.330 ms

Loss rate: 1.90%

Run 5: Report of PCC-Expr — Data Link

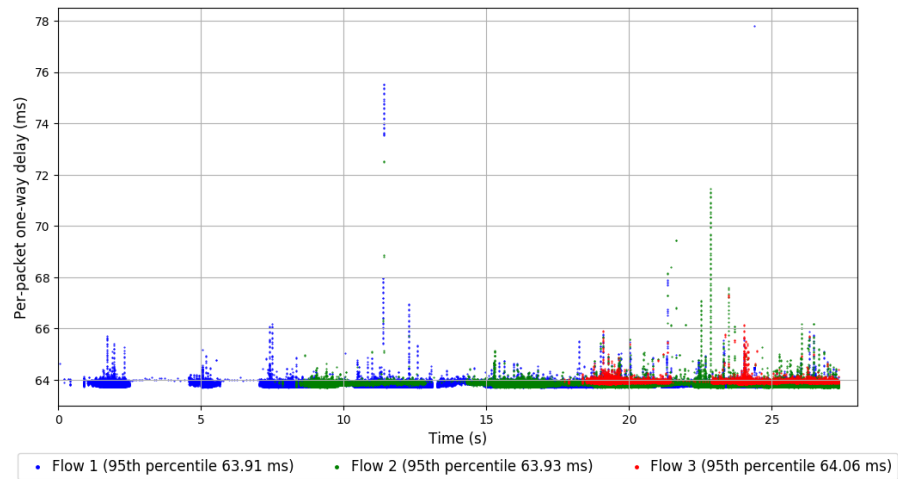
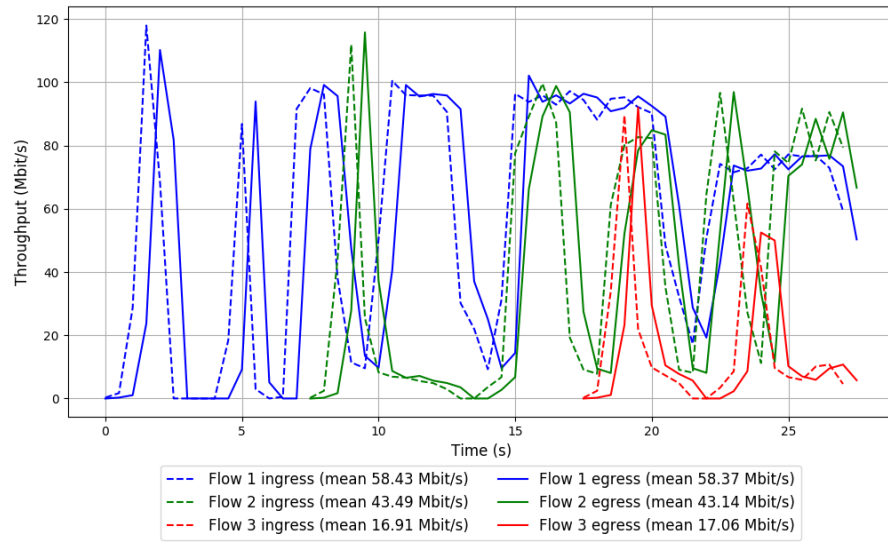


Run 1: Statistics of QUIC Cubic

Start at: 2018-11-03 06:40:01
End at: 2018-11-03 06:40:31
Local clock offset: -0.031 ms
Remote clock offset: -0.771 ms

Below is generated by plot.py at 2018-11-03 11:13:01
Datalink statistics
-- Total of 3 flows:
Average throughput: 95.70 Mbit/s
95th percentile per-packet one-way delay: 63.946 ms
Loss rate: 0.83%
-- Flow 1:
Average throughput: 58.37 Mbit/s
95th percentile per-packet one-way delay: 63.912 ms
Loss rate: 0.57%
-- Flow 2:
Average throughput: 43.14 Mbit/s
95th percentile per-packet one-way delay: 63.930 ms
Loss rate: 1.44%
-- Flow 3:
Average throughput: 17.06 Mbit/s
95th percentile per-packet one-way delay: 64.058 ms
Loss rate: 0.07%

Run 1: Report of QUIC Cubic — Data Link

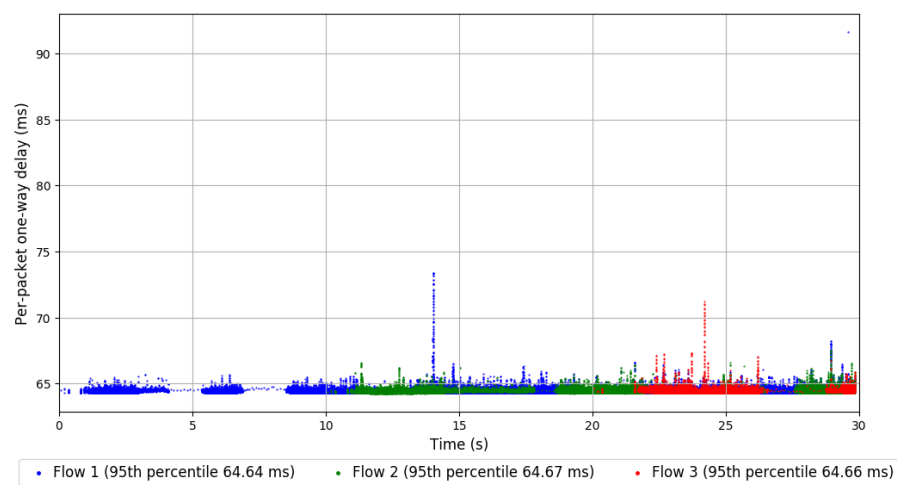
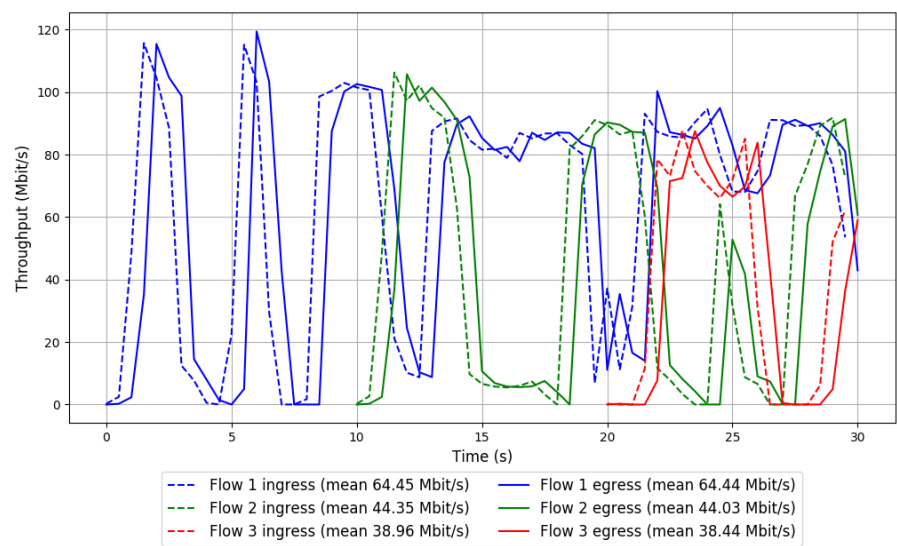


Run 2: Statistics of QUIC Cubic

Start at: 2018-11-03 07:11:33
End at: 2018-11-03 07:12:03
Local clock offset: 0.009 ms
Remote clock offset: -1.346 ms

Below is generated by plot.py at 2018-11-03 11:13:01
Datalink statistics
-- Total of 3 flows:
Average throughput: 106.28 Mbit/s
95th percentile per-packet one-way delay: 64.653 ms
Loss rate: 0.95%
-- Flow 1:
Average throughput: 64.44 Mbit/s
95th percentile per-packet one-way delay: 64.644 ms
Loss rate: 0.44%
-- Flow 2:
Average throughput: 44.03 Mbit/s
95th percentile per-packet one-way delay: 64.668 ms
Loss rate: 1.36%
-- Flow 3:
Average throughput: 38.44 Mbit/s
95th percentile per-packet one-way delay: 64.664 ms
Loss rate: 2.59%

Run 2: Report of QUIC Cubic — Data Link

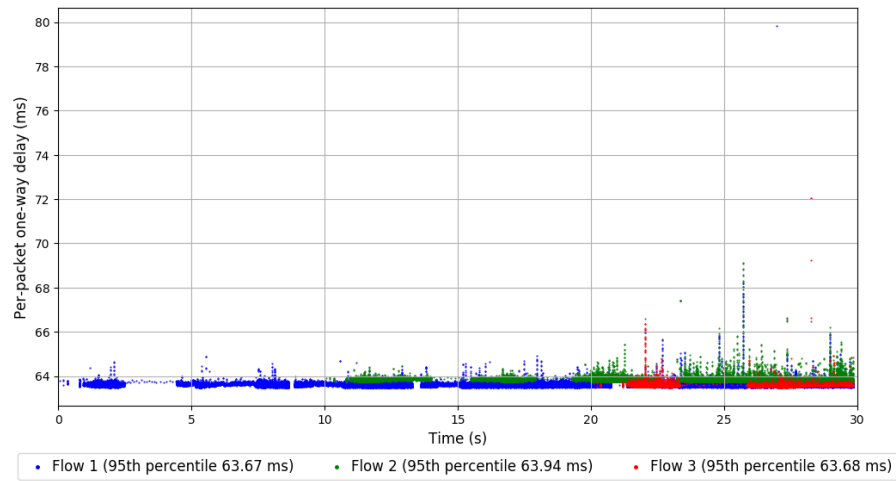
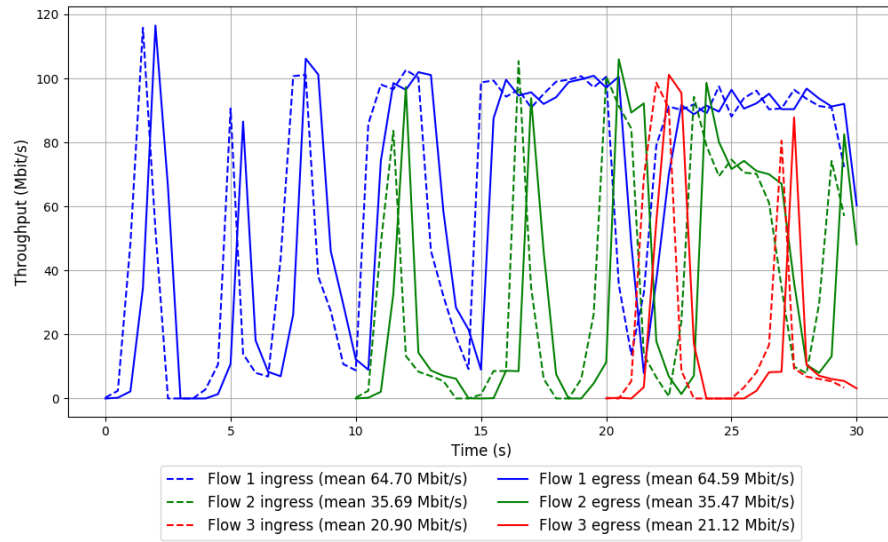


Run 3: Statistics of QUIC Cubic

Start at: 2018-11-03 07:43:17
End at: 2018-11-03 07:43:47
Local clock offset: -0.018 ms
Remote clock offset: -0.741 ms

Below is generated by plot.py at 2018-11-03 11:13:01
Datalink statistics
-- Total of 3 flows:
Average throughput: 95.04 Mbit/s
95th percentile per-packet one-way delay: 63.858 ms
Loss rate: 0.74%
-- Flow 1:
Average throughput: 64.59 Mbit/s
95th percentile per-packet one-way delay: 63.668 ms
Loss rate: 0.60%
-- Flow 2:
Average throughput: 35.47 Mbit/s
95th percentile per-packet one-way delay: 63.944 ms
Loss rate: 1.26%
-- Flow 3:
Average throughput: 21.12 Mbit/s
95th percentile per-packet one-way delay: 63.680 ms
Loss rate: 0.23%

Run 3: Report of QUIC Cubic — Data Link

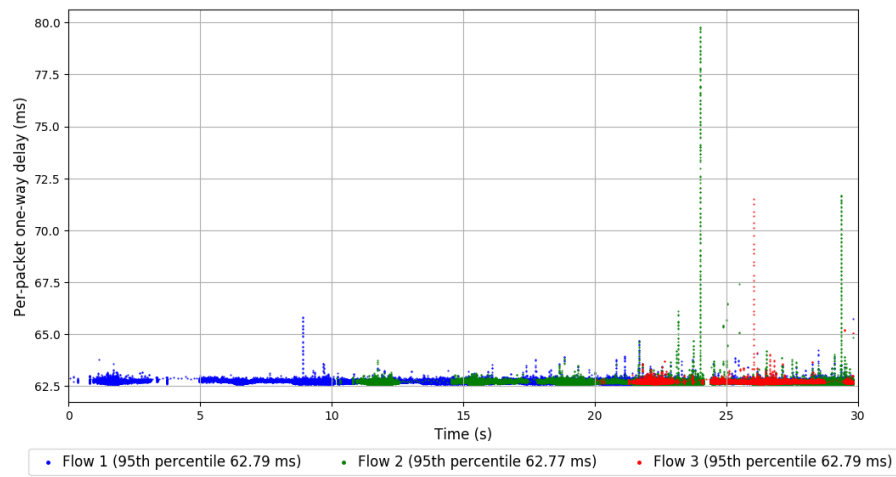
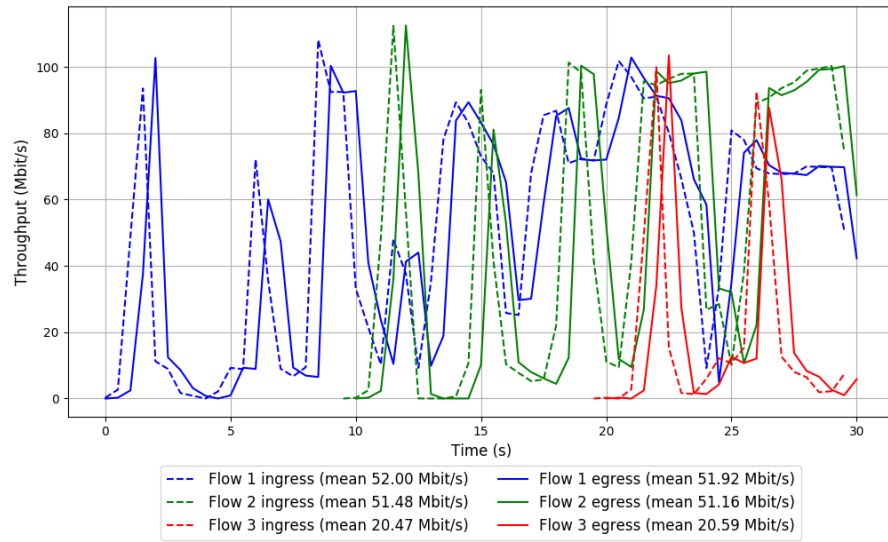


Run 4: Statistics of QUIC Cubic

Start at: 2018-11-03 08:15:01
End at: 2018-11-03 08:15:31
Local clock offset: -0.169 ms
Remote clock offset: -0.031 ms

Below is generated by plot.py at 2018-11-03 11:13:01
Datalink statistics
-- Total of 3 flows:
Average throughput: 92.67 Mbit/s
95th percentile per-packet one-way delay: 62.783 ms
Loss rate: 0.82%
-- Flow 1:
Average throughput: 51.92 Mbit/s
95th percentile per-packet one-way delay: 62.789 ms
Loss rate: 0.55%
-- Flow 2:
Average throughput: 51.16 Mbit/s
95th percentile per-packet one-way delay: 62.769 ms
Loss rate: 1.26%
-- Flow 3:
Average throughput: 20.59 Mbit/s
95th percentile per-packet one-way delay: 62.789 ms
Loss rate: 0.66%

Run 4: Report of QUIC Cubic — Data Link



Run 5: Statistics of QUIC Cubic

Start at: 2018-11-03 08:46:40

End at: 2018-11-03 08:47:10

Local clock offset: -0.023 ms

Remote clock offset: 0.032 ms

Below is generated by plot.py at 2018-11-03 11:13:01

Datalink statistics

-- Total of 3 flows:

Average throughput: 81.00 Mbit/s

95th percentile per-packet one-way delay: 62.958 ms

Loss rate: 0.99%

-- Flow 1:

Average throughput: 50.69 Mbit/s

95th percentile per-packet one-way delay: 62.980 ms

Loss rate: 0.75%

-- Flow 2:

Average throughput: 32.46 Mbit/s

95th percentile per-packet one-way delay: 62.810 ms

Loss rate: 0.44%

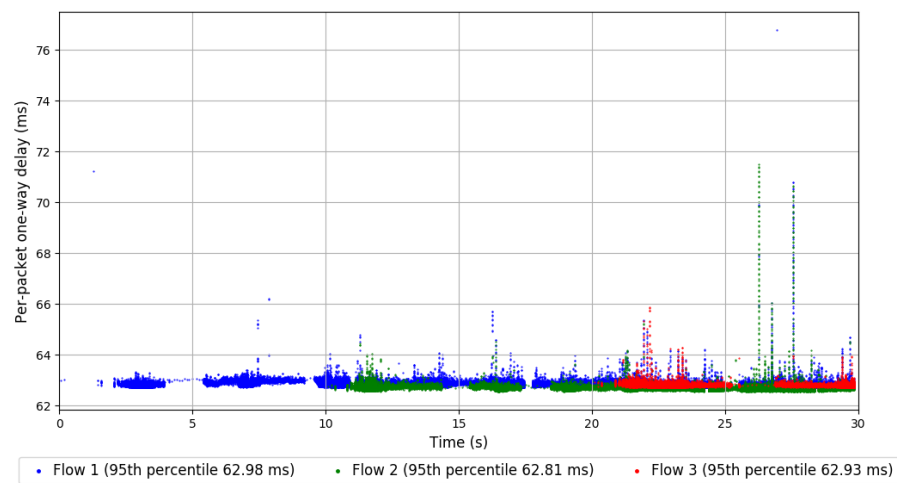
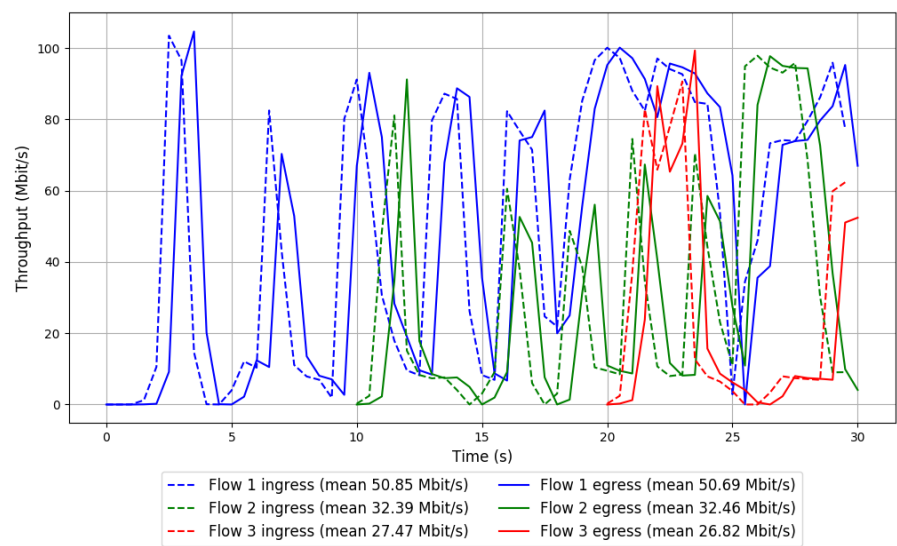
-- Flow 3:

Average throughput: 26.82 Mbit/s

95th percentile per-packet one-way delay: 62.928 ms

Loss rate: 3.61%

Run 5: Report of QUIC Cubic — Data Link

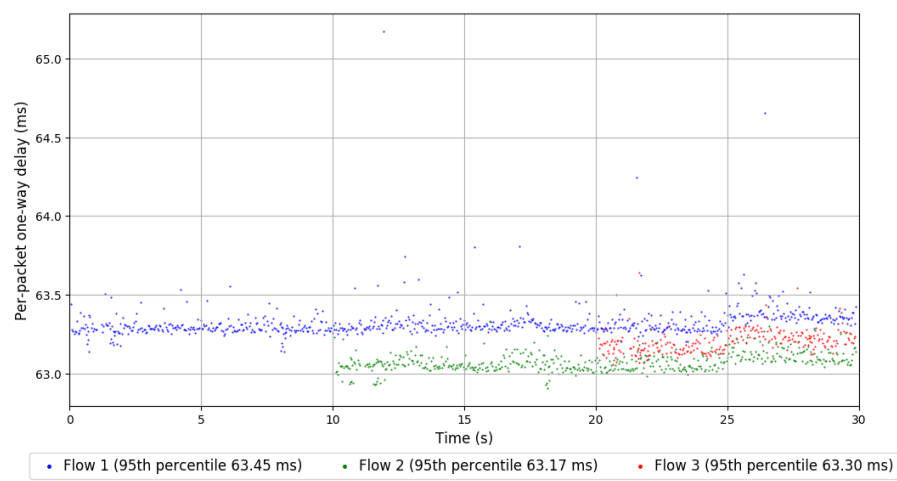
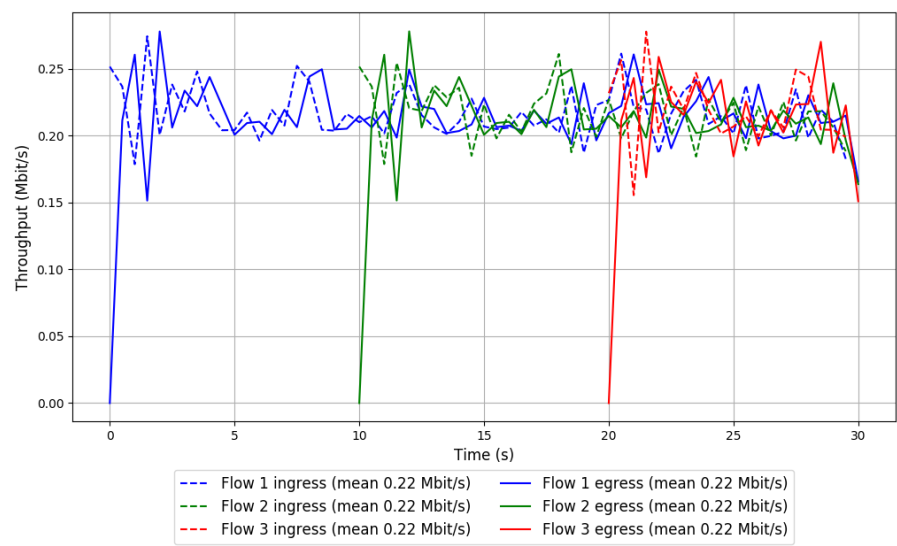


```
Run 1: Statistics of SReAM

Start at: 2018-11-03 06:36:51
End at: 2018-11-03 06:37:21
Local clock offset: -0.022 ms
Remote clock offset: -0.078 ms

# Below is generated by plot.py at 2018-11-03 11:13:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 63.390 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.448 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.174 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.296 ms
Loss rate: 1.45%
```

Run 1: Report of SCReAM — Data Link

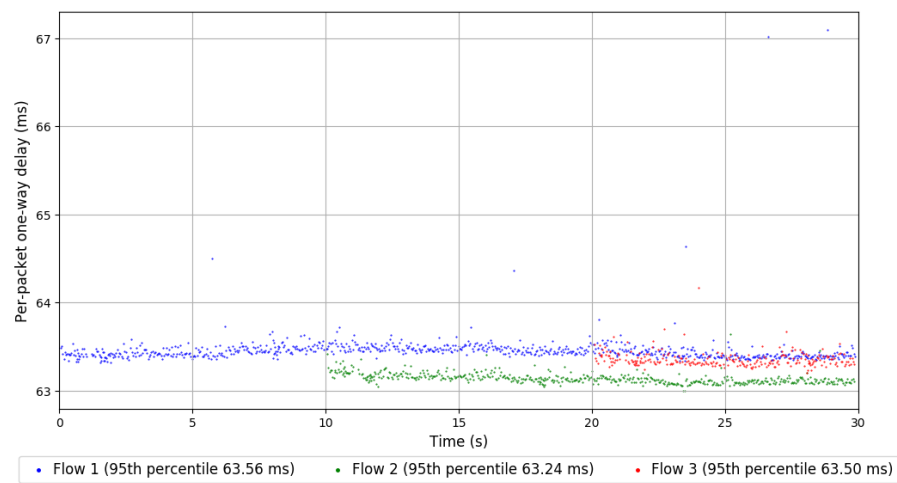
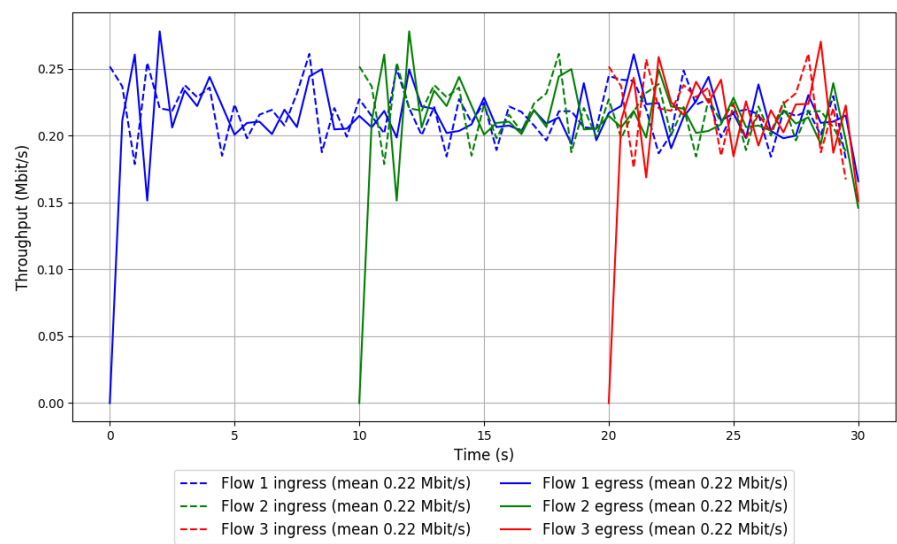


Run 2: Statistics of SReAM

Start at: 2018-11-03 07:08:14
End at: 2018-11-03 07:08:44
Local clock offset: 0.045 ms
Remote clock offset: -0.013 ms

Below is generated by plot.py at 2018-11-03 11:13:01
Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 63.536 ms
Loss rate: 0.65%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.559 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.245 ms
Loss rate: 0.82%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.496 ms
Loss rate: 1.10%

Run 2: Report of SReAM — Data Link

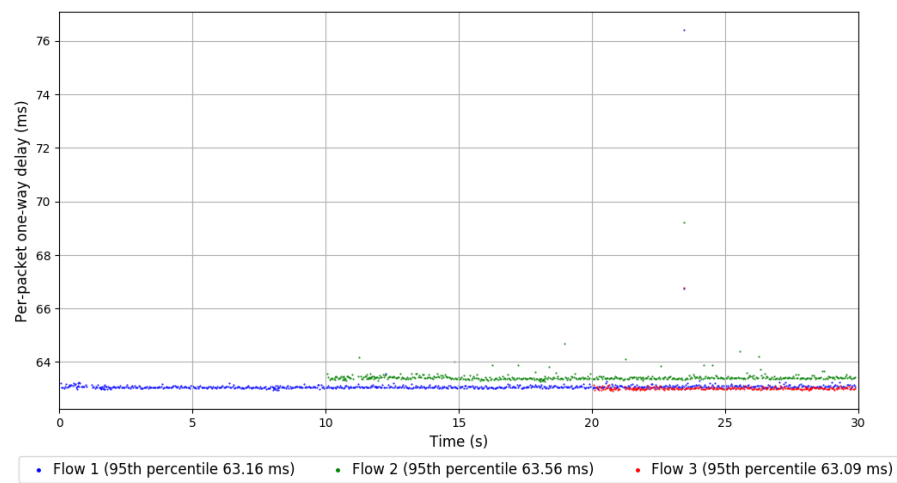
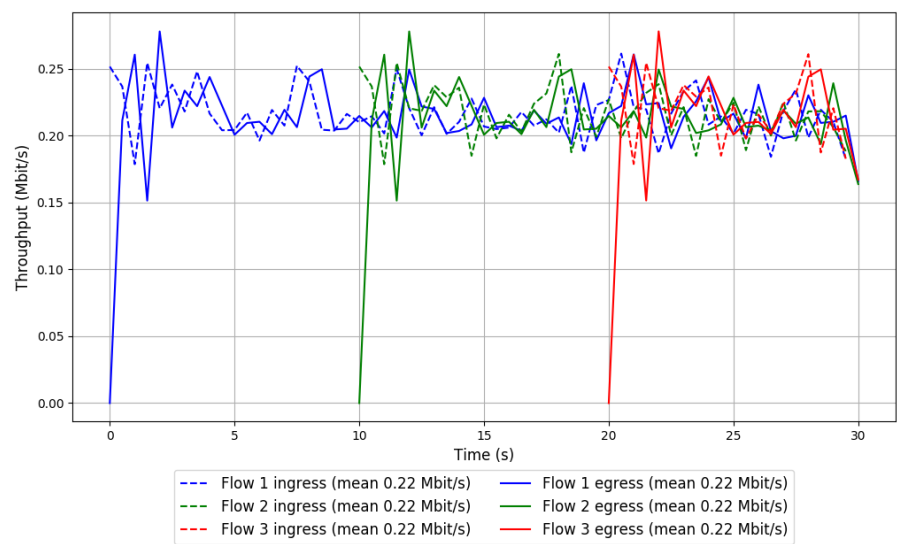


Run 3: Statistics of SReAM

Start at: 2018-11-03 07:40:01
End at: 2018-11-03 07:40:31
Local clock offset: -0.043 ms
Remote clock offset: -0.181 ms

Below is generated by plot.py at 2018-11-03 11:13:01
Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 63.470 ms
Loss rate: 0.58%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.161 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.558 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.087 ms
Loss rate: 1.08%

Run 3: Report of SReAM — Data Link

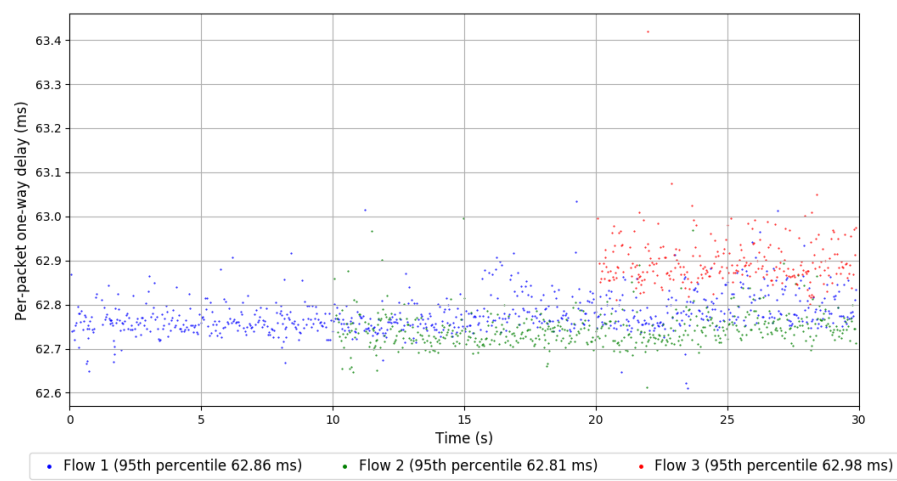
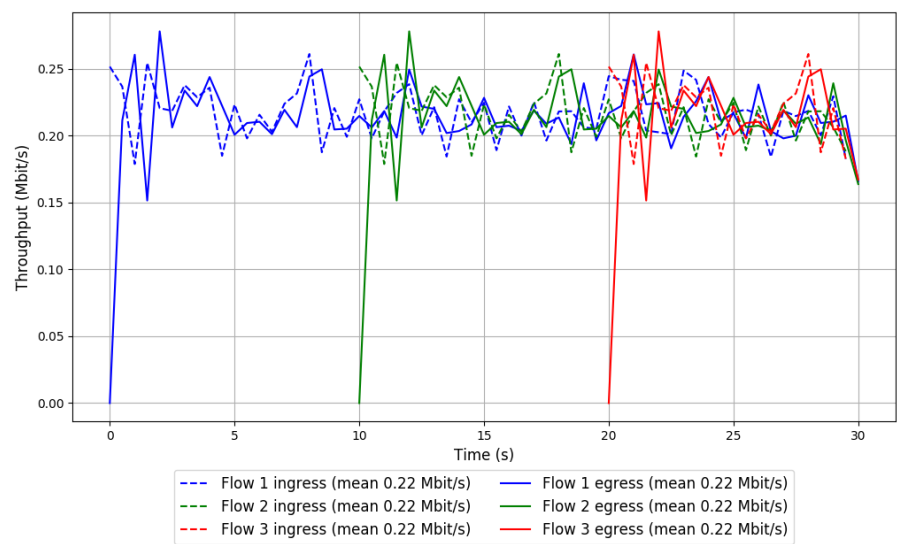


Run 4: Statistics of SReAM

Start at: 2018-11-03 08:11:45
End at: 2018-11-03 08:12:15
Local clock offset: -0.163 ms
Remote clock offset: 0.041 ms

Below is generated by plot.py at 2018-11-03 11:13:01
Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 62.918 ms
Loss rate: 0.58%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 62.858 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 62.811 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 62.984 ms
Loss rate: 1.08%

Run 4: Report of SReAM — Data Link

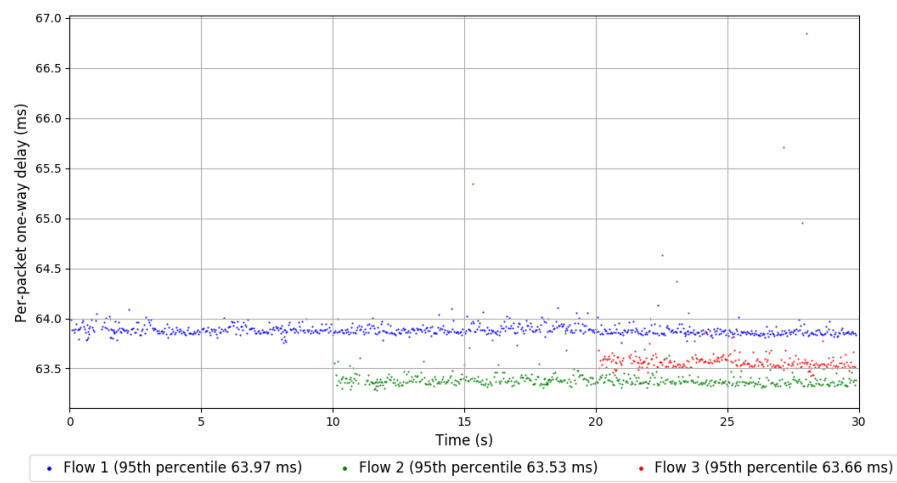
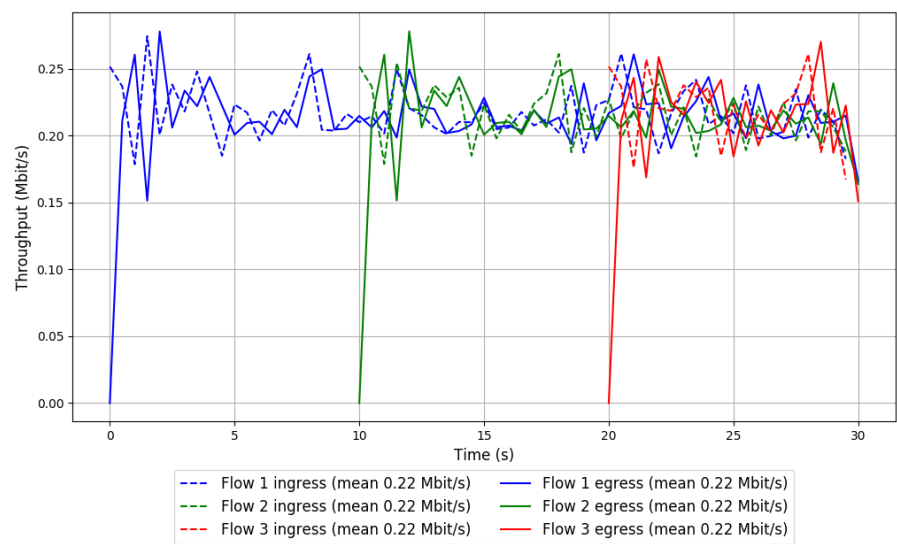


Run 5: Statistics of SReAM

Start at: 2018-11-03 08:43:25
End at: 2018-11-03 08:43:55
Local clock offset: -0.048 ms
Remote clock offset: -0.556 ms

Below is generated by plot.py at 2018-11-03 11:13:01
Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 63.952 ms
Loss rate: 0.58%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.972 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.527 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.662 ms
Loss rate: 1.10%

Run 5: Report of SReAM — Data Link

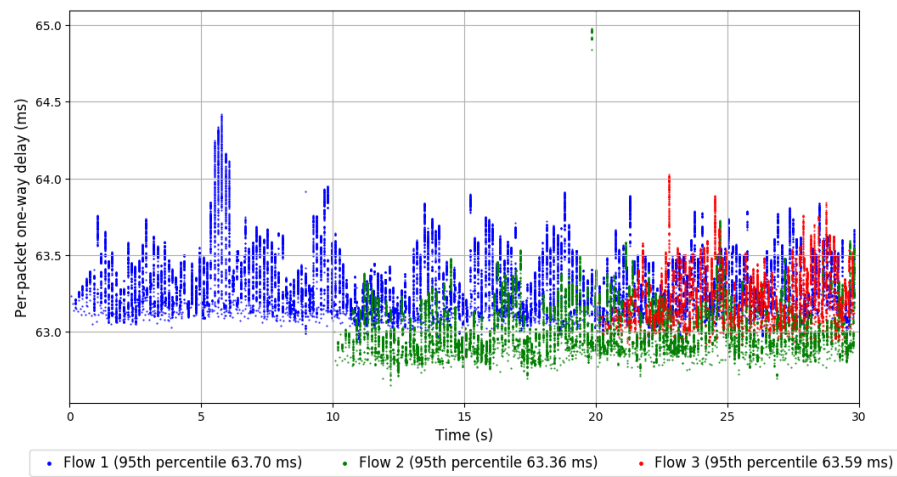
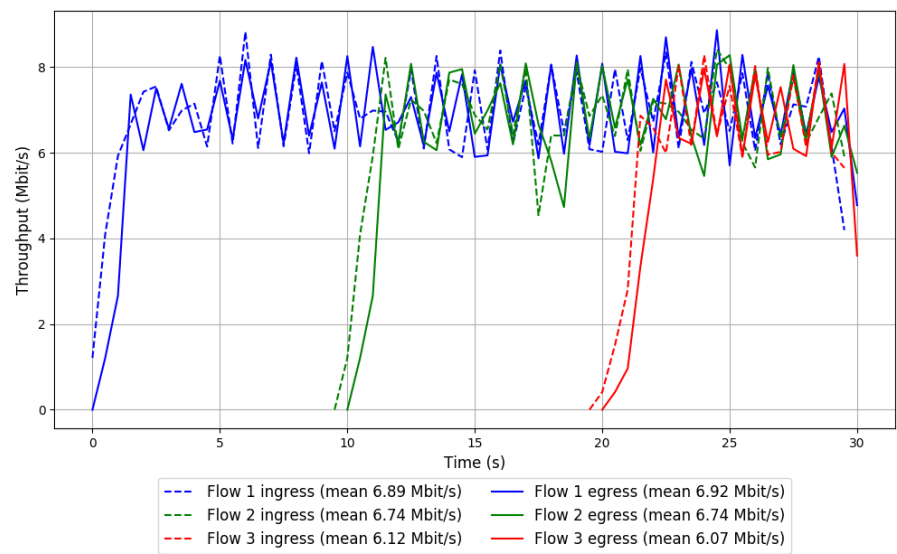


Run 1: Statistics of Sprout

Start at: 2018-11-03 07:01:40
End at: 2018-11-03 07:02:10
Local clock offset: 0.022 ms
Remote clock offset: -0.074 ms

Below is generated by plot.py at 2018-11-03 11:13:01
Datalink statistics
-- Total of 3 flows:
Average throughput: 13.37 Mbit/s
95th percentile per-packet one-way delay: 63.629 ms
Loss rate: 0.55%
-- Flow 1:
Average throughput: 6.92 Mbit/s
95th percentile per-packet one-way delay: 63.699 ms
Loss rate: 0.07%
-- Flow 2:
Average throughput: 6.74 Mbit/s
95th percentile per-packet one-way delay: 63.361 ms
Loss rate: 0.77%
-- Flow 3:
Average throughput: 6.07 Mbit/s
95th percentile per-packet one-way delay: 63.587 ms
Loss rate: 1.70%

Run 1: Report of Sprout — Data Link

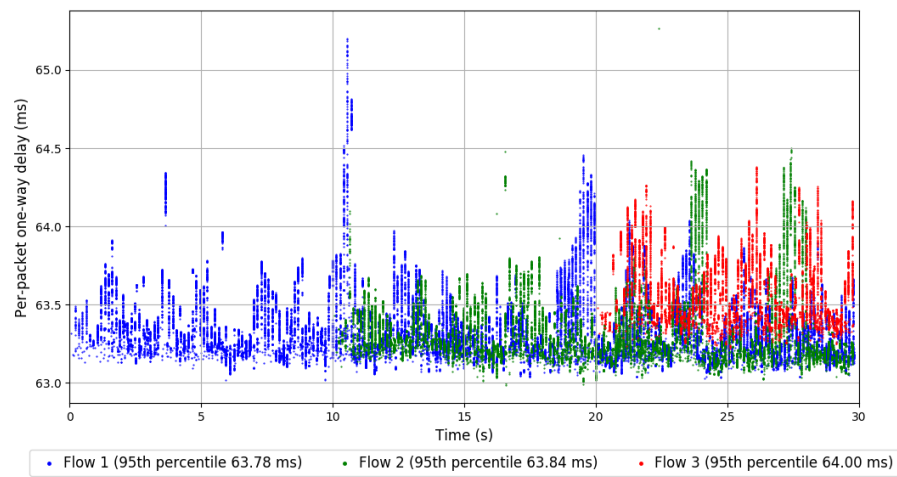
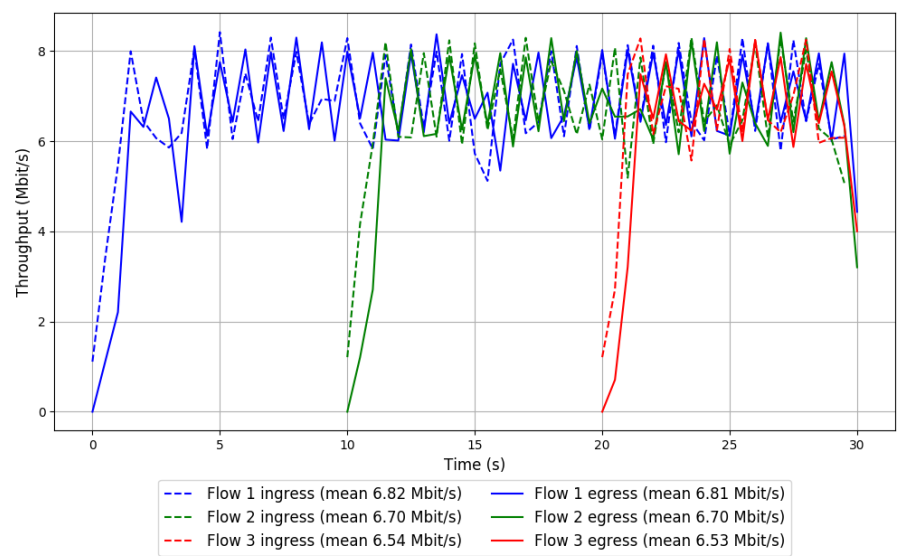


Run 2: Statistics of Sprout

Start at: 2018-11-03 07:33:24
End at: 2018-11-03 07:33:54
Local clock offset: -0.067 ms
Remote clock offset: -0.483 ms

```
# Below is generated by plot.py at 2018-11-03 11:13:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 13.38 Mbit/s
95th percentile per-packet one-way delay: 63.893 ms
Loss rate: 0.71%
-- Flow 1:
Average throughput: 6.81 Mbit/s
95th percentile per-packet one-way delay: 63.782 ms
Loss rate: 0.43%
-- Flow 2:
Average throughput: 6.70 Mbit/s
95th percentile per-packet one-way delay: 63.840 ms
Loss rate: 0.70%
-- Flow 3:
Average throughput: 6.53 Mbit/s
95th percentile per-packet one-way delay: 64.002 ms
Loss rate: 1.61%
```

Run 2: Report of Sprout — Data Link

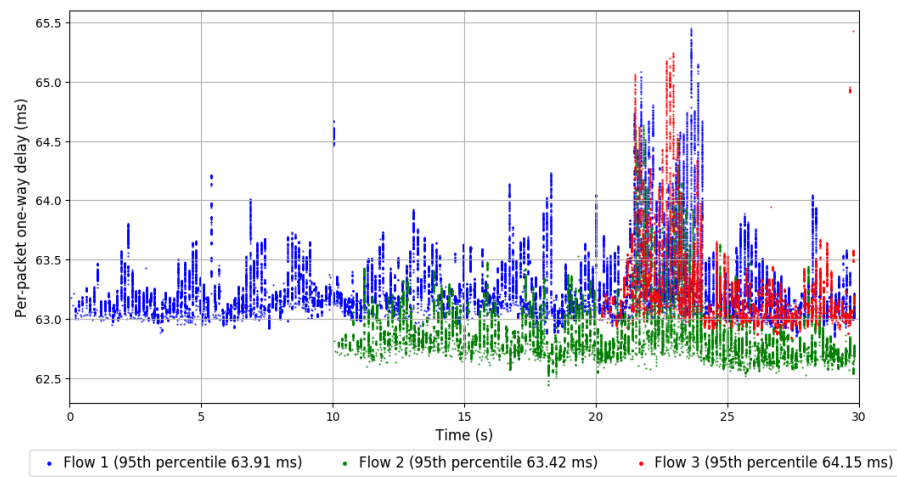
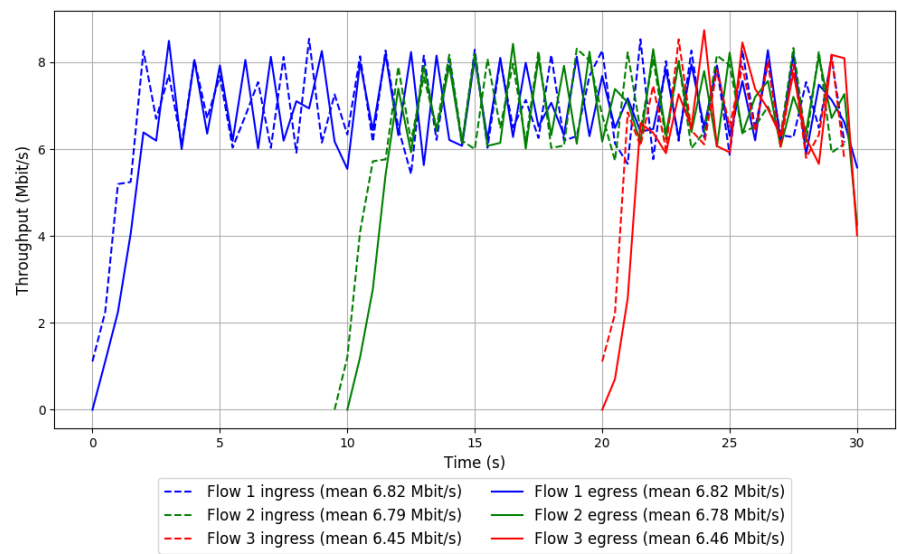


Run 3: Statistics of Sprout

Start at: 2018-11-03 08:05:12
End at: 2018-11-03 08:05:42
Local clock offset: -0.124 ms
Remote clock offset: 0.179 ms

```
# Below is generated by plot.py at 2018-11-03 11:13:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 13.44 Mbit/s
95th percentile per-packet one-way delay: 63.833 ms
Loss rate: 0.74%
-- Flow 1:
Average throughput: 6.82 Mbit/s
95th percentile per-packet one-way delay: 63.906 ms
Loss rate: 0.51%
-- Flow 2:
Average throughput: 6.78 Mbit/s
95th percentile per-packet one-way delay: 63.419 ms
Loss rate: 0.76%
-- Flow 3:
Average throughput: 6.46 Mbit/s
95th percentile per-packet one-way delay: 64.151 ms
Loss rate: 1.44%
```

Run 3: Report of Sprout — Data Link

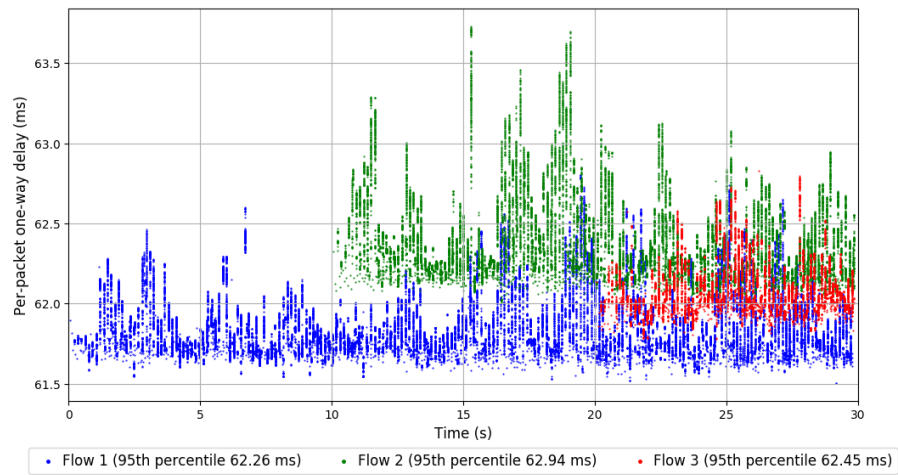
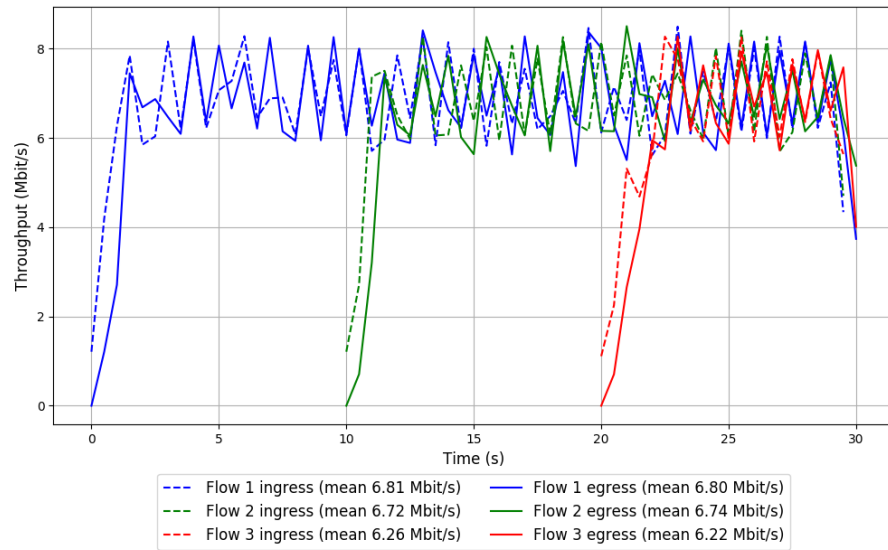


Run 4: Statistics of Sprout

Start at: 2018-11-03 08:36:53
End at: 2018-11-03 08:37:23
Local clock offset: -0.062 ms
Remote clock offset: 1.135 ms

```
# Below is generated by plot.py at 2018-11-03 11:13:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 13.30 Mbit/s
95th percentile per-packet one-way delay: 62.669 ms
Loss rate: 0.58%
-- Flow 1:
Average throughput: 6.80 Mbit/s
95th percentile per-packet one-way delay: 62.262 ms
Loss rate: 0.49%
-- Flow 2:
Average throughput: 6.74 Mbit/s
95th percentile per-packet one-way delay: 62.939 ms
Loss rate: 0.26%
-- Flow 3:
Average throughput: 6.22 Mbit/s
95th percentile per-packet one-way delay: 62.450 ms
Loss rate: 1.58%
```

Run 4: Report of Sprout — Data Link

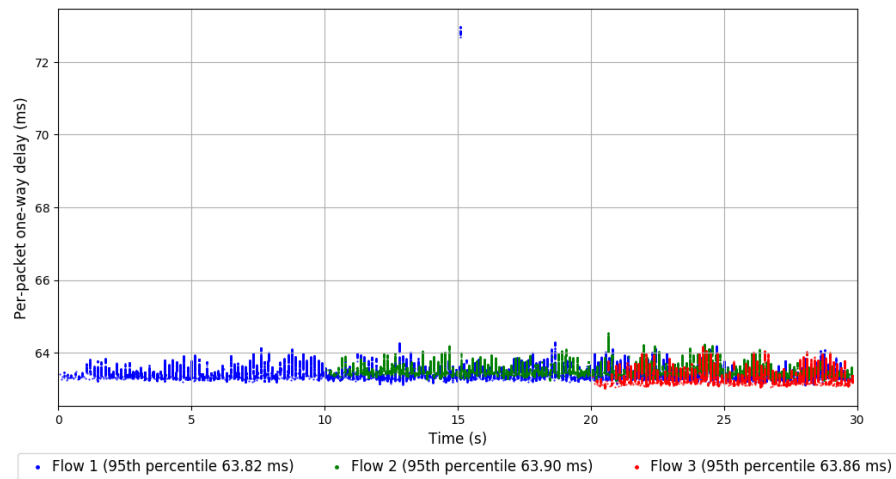
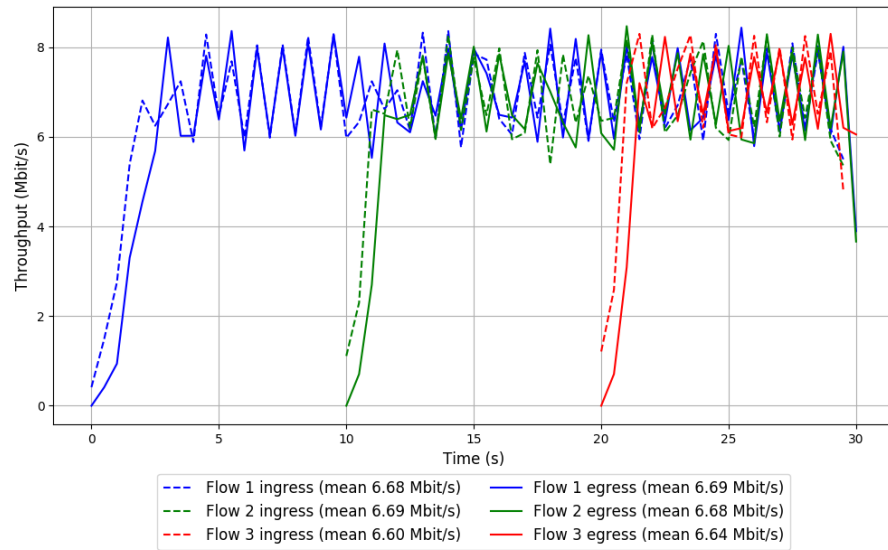


Run 5: Statistics of Sprout

Start at: 2018-11-03 09:08:13
End at: 2018-11-03 09:08:43
Local clock offset: -0.105 ms
Remote clock offset: -0.34 ms

Below is generated by plot.py at 2018-11-03 11:13:01
Datalink statistics
-- Total of 3 flows:
Average throughput: 13.29 Mbit/s
95th percentile per-packet one-way delay: 63.861 ms
Loss rate: 0.53%
-- Flow 1:
Average throughput: 6.69 Mbit/s
95th percentile per-packet one-way delay: 63.818 ms
Loss rate: 0.44%
-- Flow 2:
Average throughput: 6.68 Mbit/s
95th percentile per-packet one-way delay: 63.903 ms
Loss rate: 0.65%
-- Flow 3:
Average throughput: 6.64 Mbit/s
95th percentile per-packet one-way delay: 63.861 ms
Loss rate: 0.56%

Run 5: Report of Sprout — Data Link

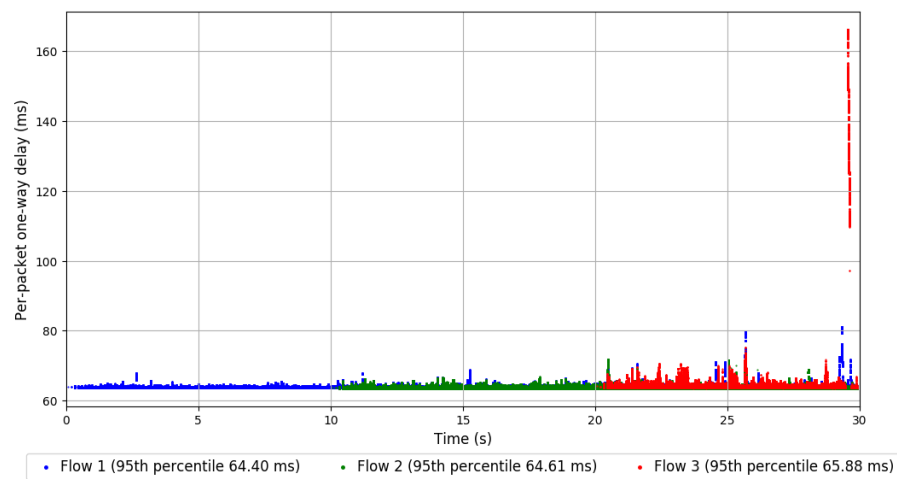
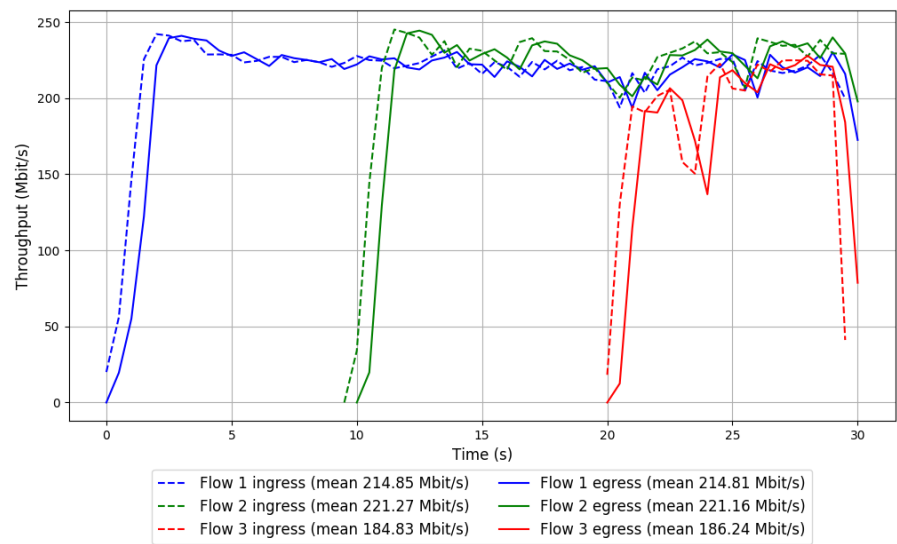


```
Run 1: Statistics of TaoVA-100x

Start at: 2018-11-03 06:50:44
End at: 2018-11-03 06:51:14
Local clock offset: 0.009 ms
Remote clock offset: -0.745 ms

# Below is generated by plot.py at 2018-11-03 11:20:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 423.27 Mbit/s
95th percentile per-packet one-way delay: 64.670 ms
Loss rate: 0.53%
-- Flow 1:
Average throughput: 214.81 Mbit/s
95th percentile per-packet one-way delay: 64.401 ms
Loss rate: 0.44%
-- Flow 2:
Average throughput: 221.16 Mbit/s
95th percentile per-packet one-way delay: 64.607 ms
Loss rate: 0.69%
-- Flow 3:
Average throughput: 186.24 Mbit/s
95th percentile per-packet one-way delay: 65.879 ms
Loss rate: 0.48%
```

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

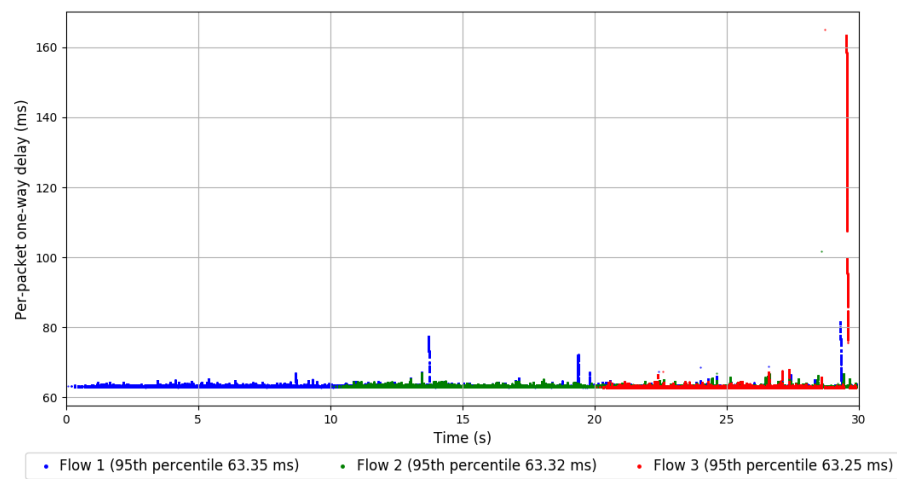
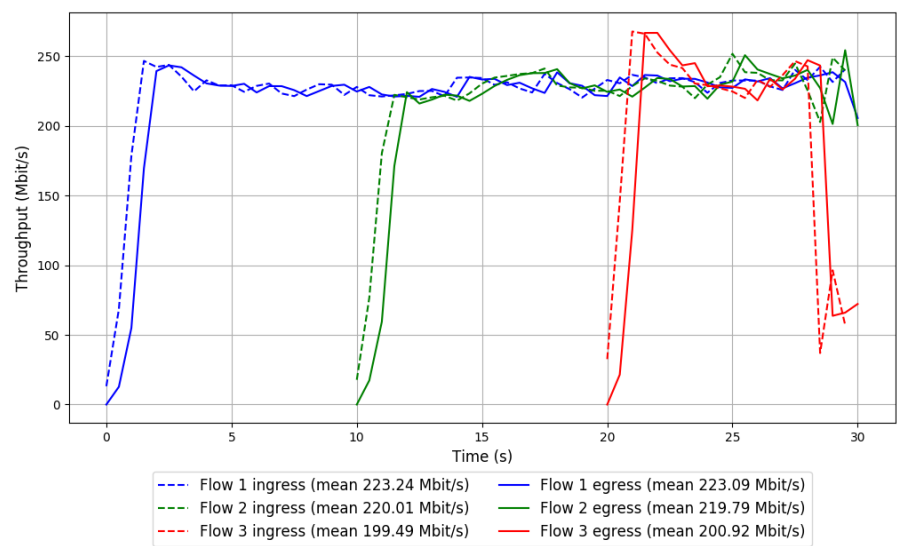


Run 2: Statistics of TaoVA-100x

Start at: 2018-11-03 07:22:10
End at: 2018-11-03 07:22:40
Local clock offset: -0.006 ms
Remote clock offset: -0.176 ms

Below is generated by plot.py at 2018-11-03 11:21:21
Datalink statistics
-- Total of 3 flows:
Average throughput: 435.17 Mbit/s
95th percentile per-packet one-way delay: 63.330 ms
Loss rate: 0.57%
-- Flow 1:
Average throughput: 223.09 Mbit/s
95th percentile per-packet one-way delay: 63.348 ms
Loss rate: 0.49%
-- Flow 2:
Average throughput: 219.79 Mbit/s
95th percentile per-packet one-way delay: 63.316 ms
Loss rate: 0.74%
-- Flow 3:
Average throughput: 200.92 Mbit/s
95th percentile per-packet one-way delay: 63.253 ms
Loss rate: 0.48%

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



Run 3: Statistics of TaoVA-100x

Start at: 2018-11-03 07:54:18

End at: 2018-11-03 07:54:48

Local clock offset: -0.079 ms

Remote clock offset: -1.59 ms

Below is generated by plot.py at 2018-11-03 11:21:42

Datalink statistics

-- Total of 3 flows:

Average throughput: 443.53 Mbit/s

95th percentile per-packet one-way delay: 64.854 ms

Loss rate: 0.58%

-- Flow 1:

Average throughput: 233.60 Mbit/s

95th percentile per-packet one-way delay: 64.590 ms

Loss rate: 0.45%

-- Flow 2:

Average throughput: 216.21 Mbit/s

95th percentile per-packet one-way delay: 64.914 ms

Loss rate: 0.66%

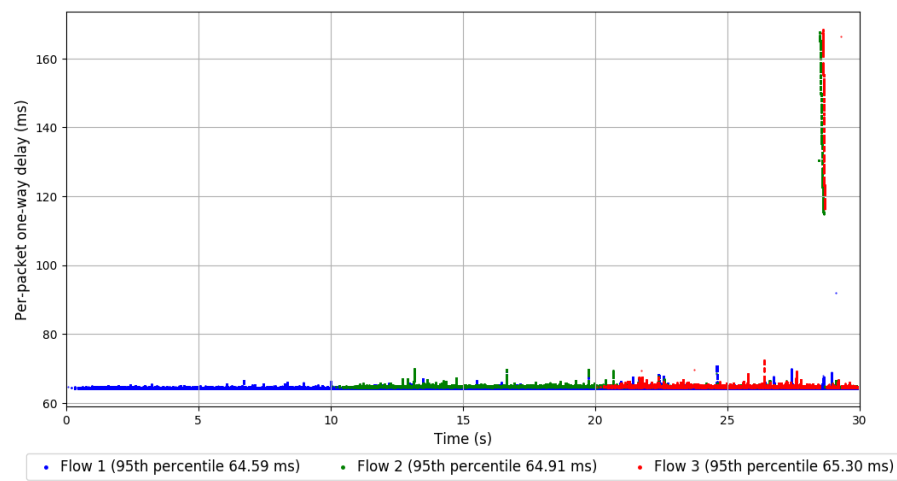
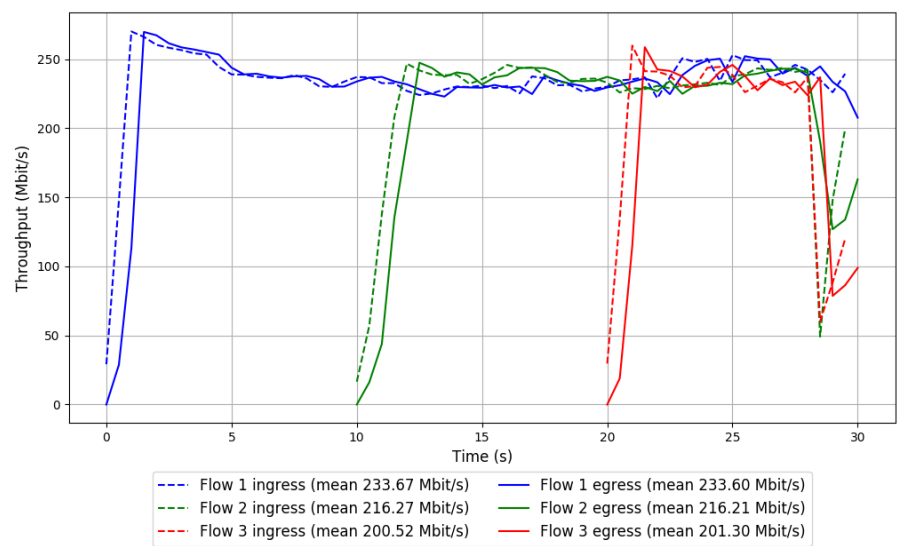
-- Flow 3:

Average throughput: 201.30 Mbit/s

95th percentile per-packet one-way delay: 65.302 ms

Loss rate: 0.90%

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

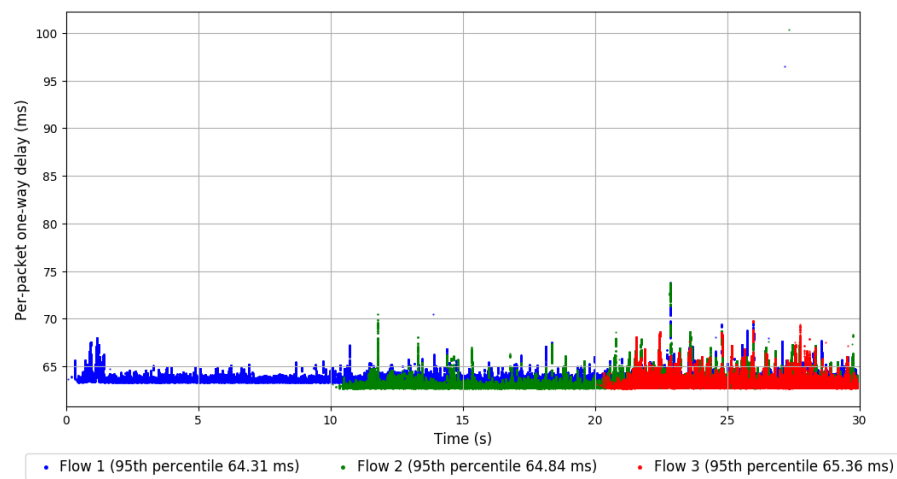
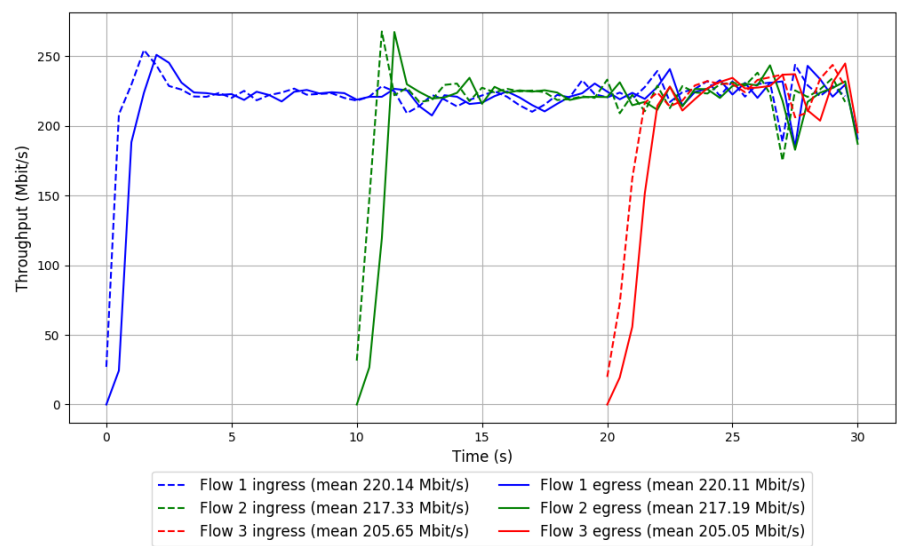


Run 4: Statistics of TaoVA-100x

Start at: 2018-11-03 08:25:44
End at: 2018-11-03 08:26:14
Local clock offset: -0.103 ms
Remote clock offset: -0.122 ms

Below is generated by plot.py at 2018-11-03 11:21:52
Datalink statistics
-- Total of 3 flows:
Average throughput: 432.06 Mbit/s
95th percentile per-packet one-way delay: 64.681 ms
Loss rate: 0.70%
-- Flow 1:
Average throughput: 220.11 Mbit/s
95th percentile per-packet one-way delay: 64.310 ms
Loss rate: 0.44%
-- Flow 2:
Average throughput: 217.19 Mbit/s
95th percentile per-packet one-way delay: 64.838 ms
Loss rate: 0.69%
-- Flow 3:
Average throughput: 205.05 Mbit/s
95th percentile per-packet one-way delay: 65.361 ms
Loss rate: 1.56%

Run 4: Report of TaoVA-100x — Data Link



Run 5: Statistics of TaoVA-100x

Start at: 2018-11-03 08:57:20

End at: 2018-11-03 08:57:50

Local clock offset: -0.041 ms

Remote clock offset: 0.149 ms

Below is generated by plot.py at 2018-11-03 11:24:47

Datalink statistics

-- Total of 3 flows:

Average throughput: 446.42 Mbit/s

95th percentile per-packet one-way delay: 63.619 ms

Loss rate: 0.71%

-- Flow 1:

Average throughput: 231.53 Mbit/s

95th percentile per-packet one-way delay: 63.378 ms

Loss rate: 0.46%

-- Flow 2:

Average throughput: 228.75 Mbit/s

95th percentile per-packet one-way delay: 64.188 ms

Loss rate: 0.67%

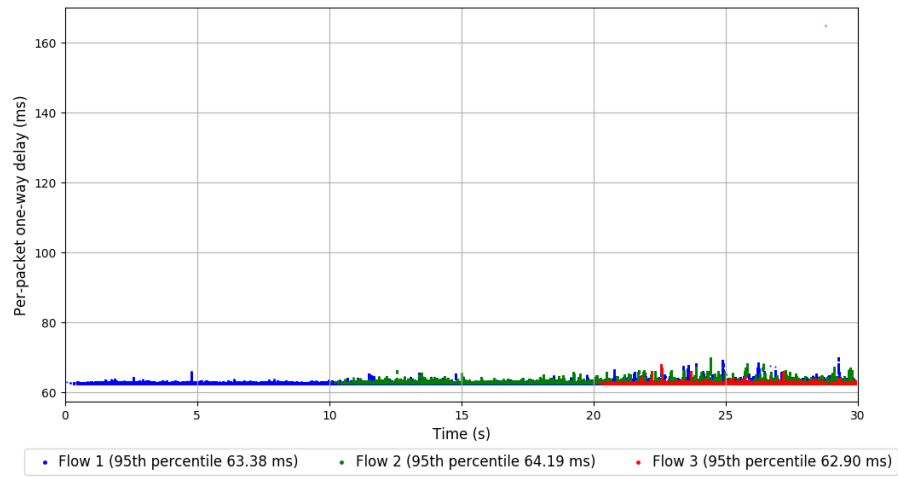
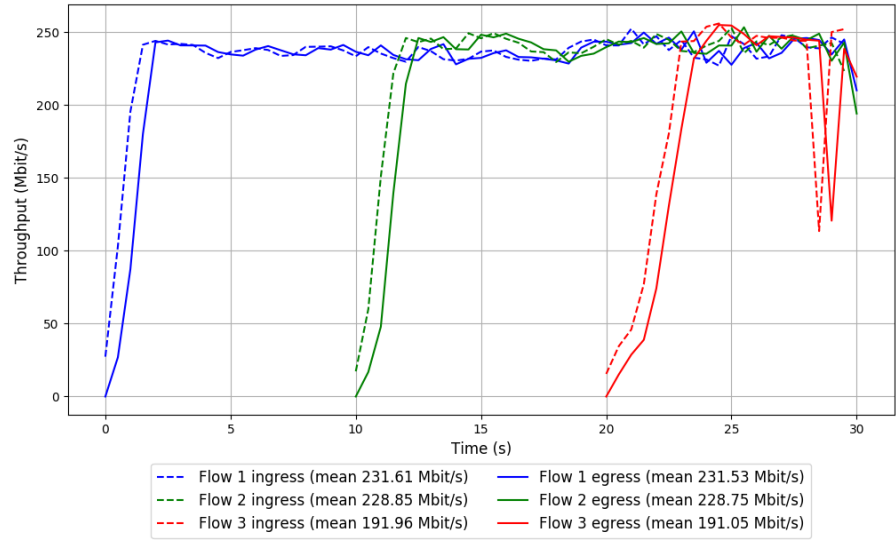
-- Flow 3:

Average throughput: 191.05 Mbit/s

95th percentile per-packet one-way delay: 62.904 ms

Loss rate: 1.74%

Run 5: Report of TaoVA-100x — Data Link



Run 1: Statistics of TCP Vegas

Start at: 2018-11-03 06:32:43

End at: 2018-11-03 06:33:13

Local clock offset: -0.036 ms

Remote clock offset: 1.138 ms

Below is generated by plot.py at 2018-11-03 11:29:17

Datalink statistics

-- Total of 3 flows:

Average throughput: 971.29 Mbit/s

95th percentile per-packet one-way delay: 95.694 ms

Loss rate: 0.64%

-- Flow 1:

Average throughput: 515.12 Mbit/s

95th percentile per-packet one-way delay: 89.631 ms

Loss rate: 0.46%

-- Flow 2:

Average throughput: 468.75 Mbit/s

95th percentile per-packet one-way delay: 107.859 ms

Loss rate: 0.62%

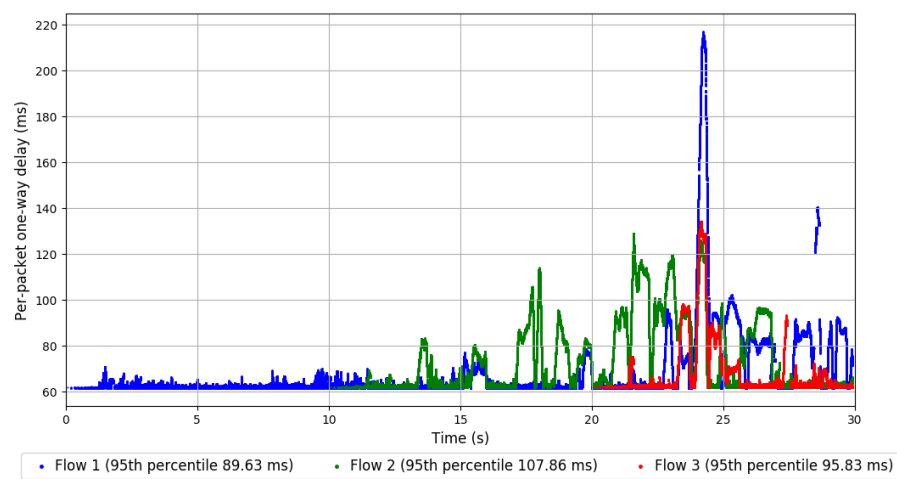
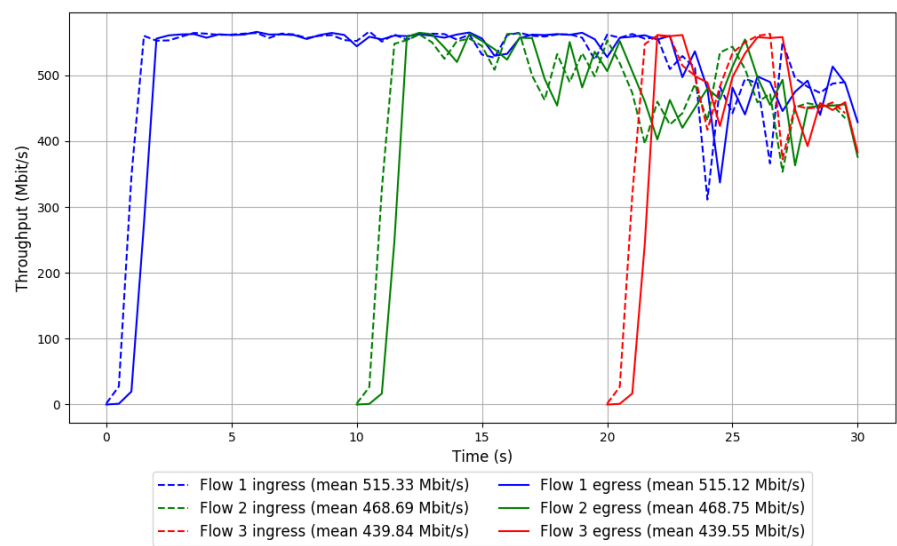
-- Flow 3:

Average throughput: 439.55 Mbit/s

95th percentile per-packet one-way delay: 95.832 ms

Loss rate: 1.33%

Run 1: Report of TCP Vegas — Data Link

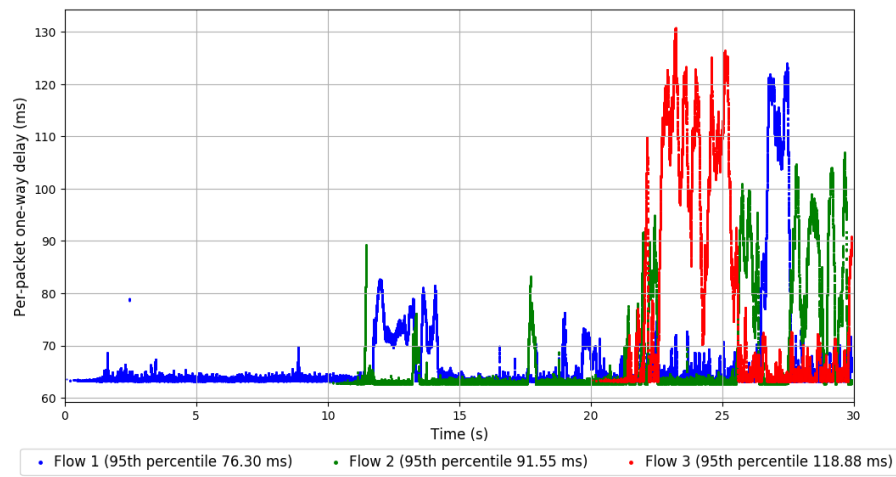
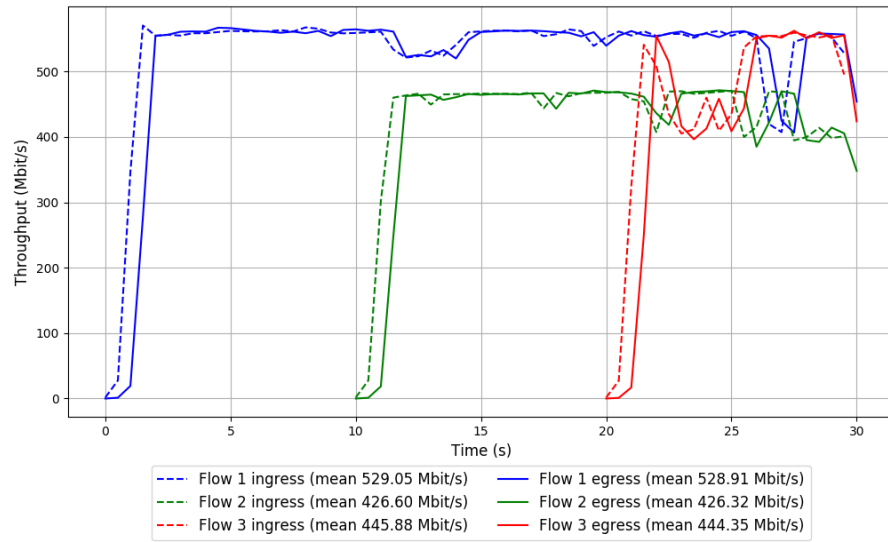


Run 2: Statistics of TCP Vegas

Start at: 2018-11-03 07:04:07
End at: 2018-11-03 07:04:37
Local clock offset: 0.019 ms
Remote clock offset: -0.053 ms

Below is generated by plot.py at 2018-11-03 11:31:11
Datalink statistics
-- Total of 3 flows:
Average throughput: 958.59 Mbit/s
95th percentile per-packet one-way delay: 97.892 ms
Loss rate: 0.70%
-- Flow 1:
Average throughput: 528.91 Mbit/s
95th percentile per-packet one-way delay: 76.298 ms
Loss rate: 0.45%
-- Flow 2:
Average throughput: 426.32 Mbit/s
95th percentile per-packet one-way delay: 91.550 ms
Loss rate: 0.69%
-- Flow 3:
Average throughput: 444.35 Mbit/s
95th percentile per-packet one-way delay: 118.882 ms
Loss rate: 1.60%

Run 2: Report of TCP Vegas — Data Link

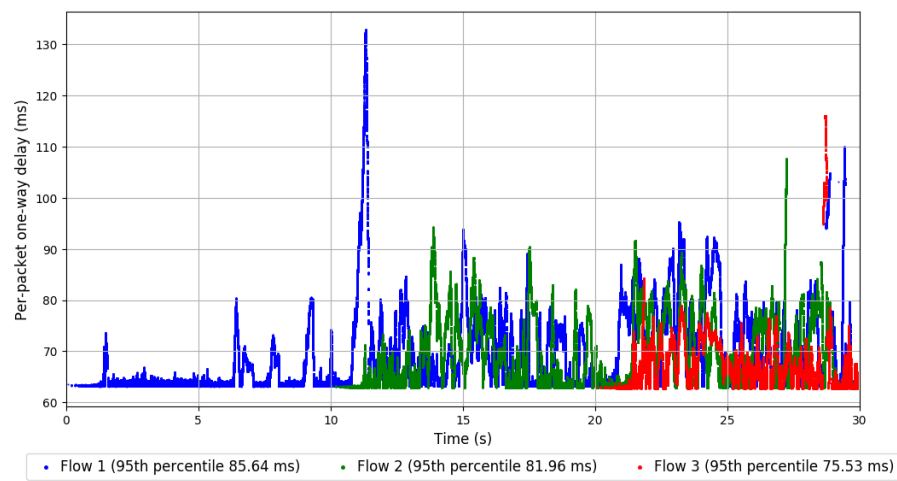
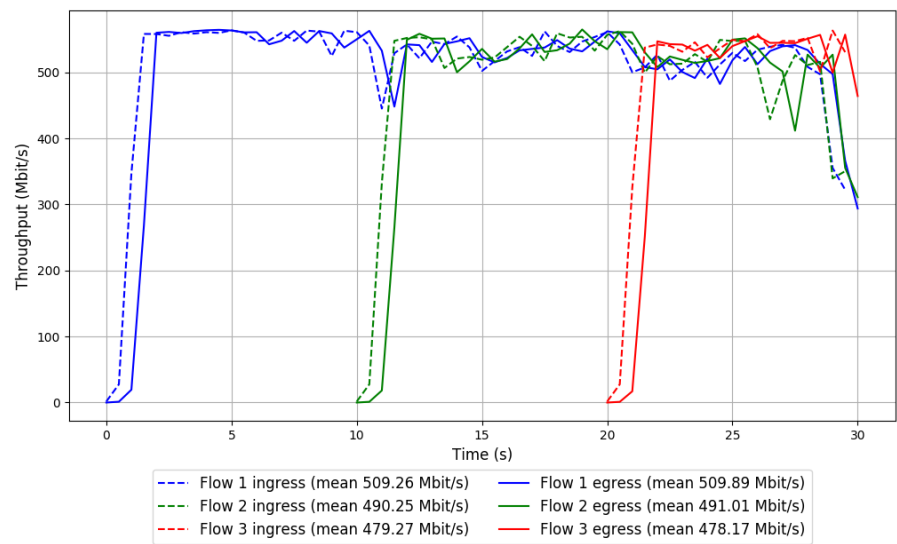


Run 3: Statistics of TCP Vegas

Start at: 2018-11-03 07:35:51
End at: 2018-11-03 07:36:21
Local clock offset: -0.035 ms
Remote clock offset: -0.283 ms

Below is generated by plot.py at 2018-11-03 11:32:18
Datalink statistics
-- Total of 3 flows:
Average throughput: 993.75 Mbit/s
95th percentile per-packet one-way delay: 82.622 ms
Loss rate: 0.55%
-- Flow 1:
Average throughput: 509.89 Mbit/s
95th percentile per-packet one-way delay: 85.636 ms
Loss rate: 0.30%
-- Flow 2:
Average throughput: 491.01 Mbit/s
95th percentile per-packet one-way delay: 81.958 ms
Loss rate: 0.47%
-- Flow 3:
Average throughput: 478.17 Mbit/s
95th percentile per-packet one-way delay: 75.529 ms
Loss rate: 1.49%

Run 3: Report of TCP Vegas — Data Link

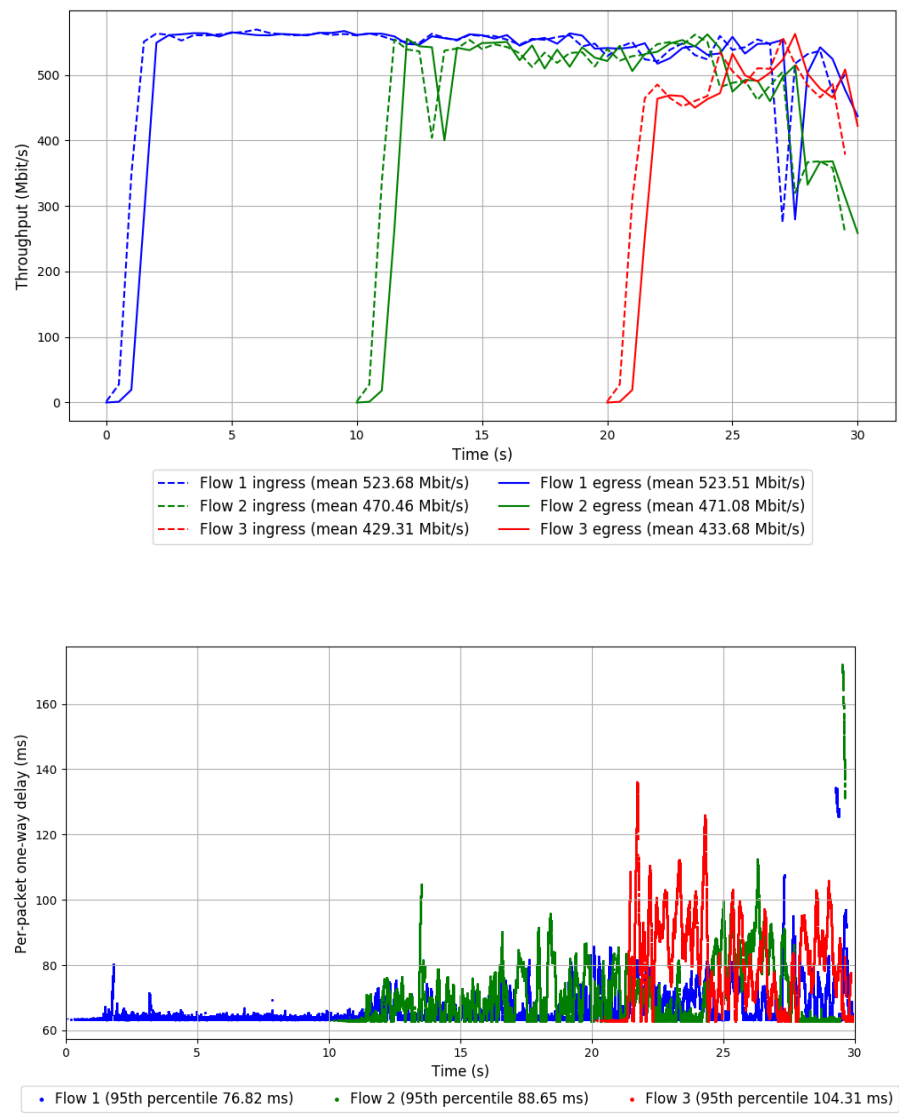


Run 4: Statistics of TCP Vegas

Start at: 2018-11-03 08:07:39
End at: 2018-11-03 08:08:09
Local clock offset: -0.117 ms
Remote clock offset: -0.195 ms

Below is generated by plot.py at 2018-11-03 11:40:15
Datalink statistics
-- Total of 3 flows:
Average throughput: 979.69 Mbit/s
95th percentile per-packet one-way delay: 91.249 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 523.51 Mbit/s
95th percentile per-packet one-way delay: 76.822 ms
Loss rate: 0.45%
-- Flow 2:
Average throughput: 471.08 Mbit/s
95th percentile per-packet one-way delay: 88.647 ms
Loss rate: 0.50%
-- Flow 3:
Average throughput: 433.68 Mbit/s
95th percentile per-packet one-way delay: 104.309 ms
Loss rate: 0.28%

Run 4: Report of TCP Vegas — Data Link

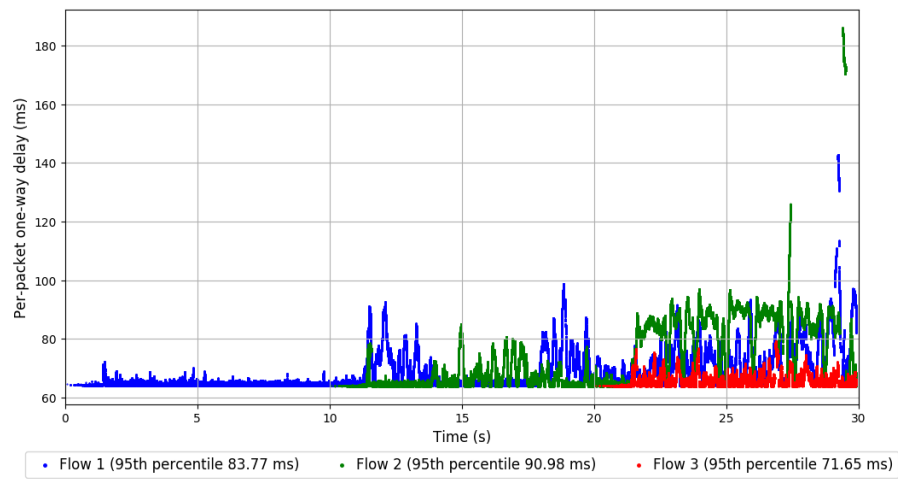
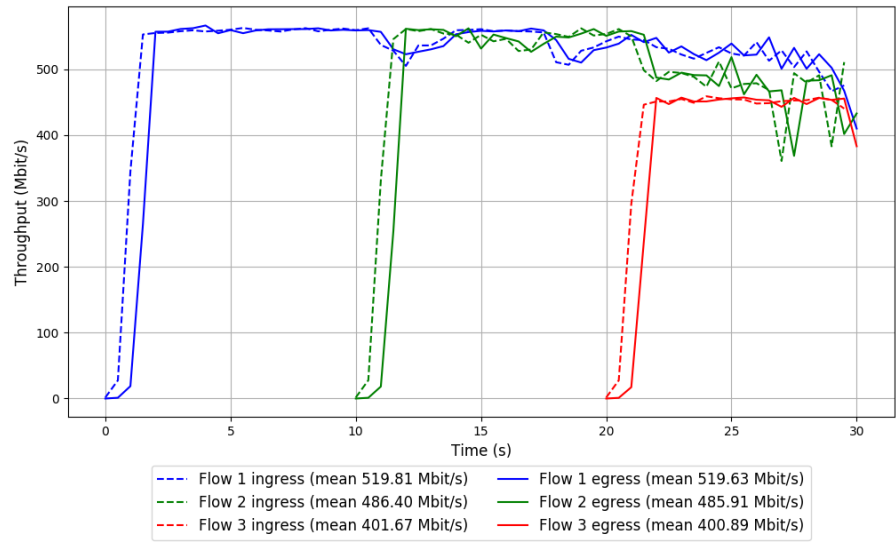


Run 5: Statistics of TCP Vegas

Start at: 2018-11-03 08:39:20
End at: 2018-11-03 08:39:50
Local clock offset: -0.058 ms
Remote clock offset: -0.945 ms

Below is generated by plot.py at 2018-11-03 11:40:51
Datalink statistics
-- Total of 3 flows:
Average throughput: 974.72 Mbit/s
95th percentile per-packet one-way delay: 89.006 ms
Loss rate: 0.69%
-- Flow 1:
Average throughput: 519.63 Mbit/s
95th percentile per-packet one-way delay: 83.767 ms
Loss rate: 0.46%
-- Flow 2:
Average throughput: 485.91 Mbit/s
95th percentile per-packet one-way delay: 90.984 ms
Loss rate: 0.73%
-- Flow 3:
Average throughput: 400.89 Mbit/s
95th percentile per-packet one-way delay: 71.647 ms
Loss rate: 1.46%

Run 5: Report of TCP Vegas — Data Link

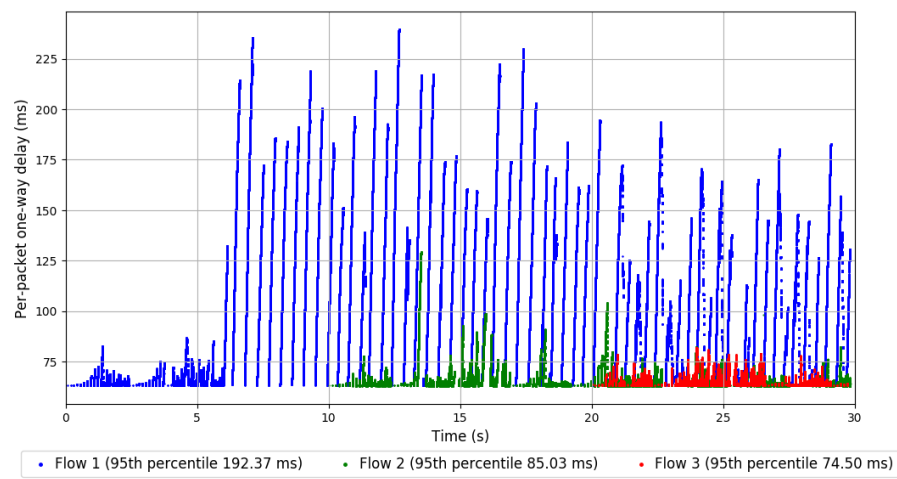
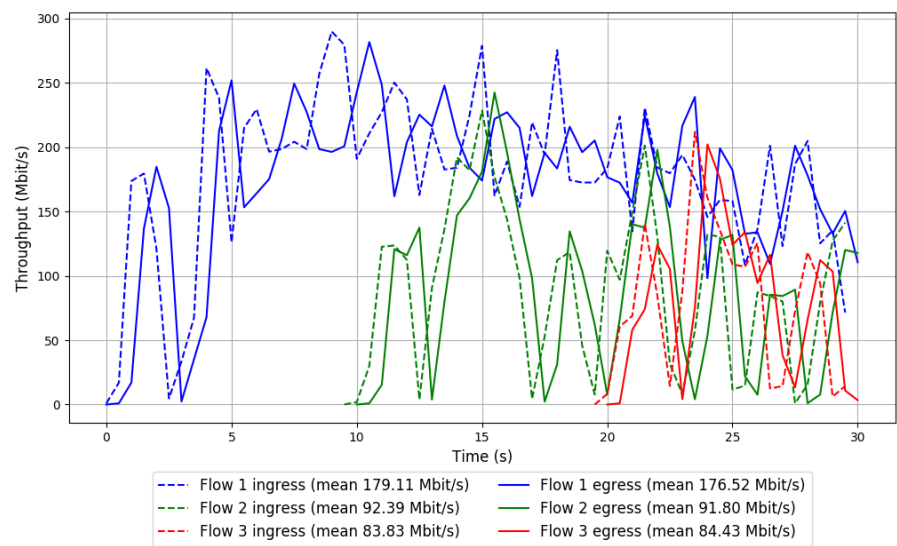


Run 1: Statistics of Verus

Start at: 2018-11-03 06:47:16
End at: 2018-11-03 06:47:46
Local clock offset: -0.029 ms
Remote clock offset: -0.321 ms

Below is generated by plot.py at 2018-11-03 11:40:51
Datalink statistics
-- Total of 3 flows:
Average throughput: 265.00 Mbit/s
95th percentile per-packet one-way delay: 183.944 ms
Loss rate: 1.18%
-- Flow 1:
Average throughput: 176.52 Mbit/s
95th percentile per-packet one-way delay: 192.367 ms
Loss rate: 1.22%
-- Flow 2:
Average throughput: 91.80 Mbit/s
95th percentile per-packet one-way delay: 85.031 ms
Loss rate: 1.26%
-- Flow 3:
Average throughput: 84.43 Mbit/s
95th percentile per-packet one-way delay: 74.500 ms
Loss rate: 0.67%

Run 1: Report of Verus — Data Link



Run 2: Statistics of Verus

Start at: 2018-11-03 07:18:42

End at: 2018-11-03 07:19:12

Local clock offset: -0.002 ms

Remote clock offset: 0.229 ms

Below is generated by plot.py at 2018-11-03 11:40:51

Datalink statistics

-- Total of 3 flows:

Average throughput: 242.87 Mbit/s

95th percentile per-packet one-way delay: 118.373 ms

Loss rate: 0.68%

-- Flow 1:

Average throughput: 119.50 Mbit/s

95th percentile per-packet one-way delay: 143.755 ms

Loss rate: 0.30%

-- Flow 2:

Average throughput: 155.43 Mbit/s

95th percentile per-packet one-way delay: 99.300 ms

Loss rate: 0.99%

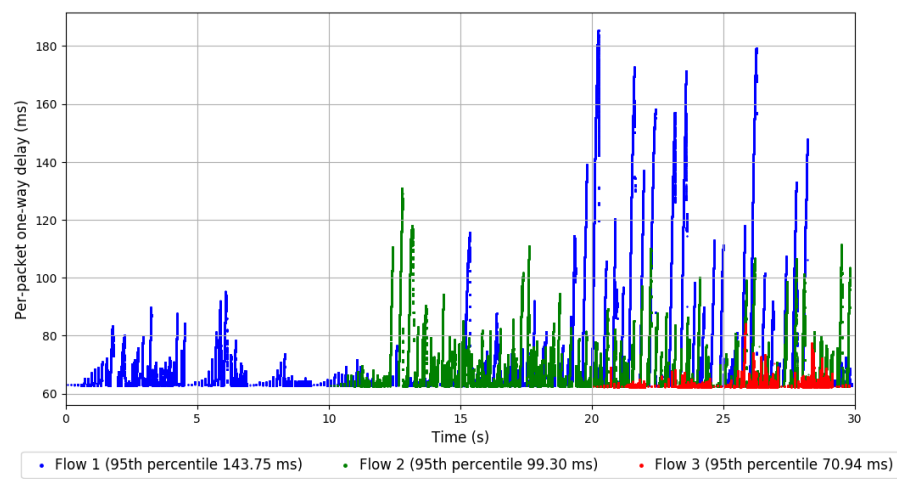
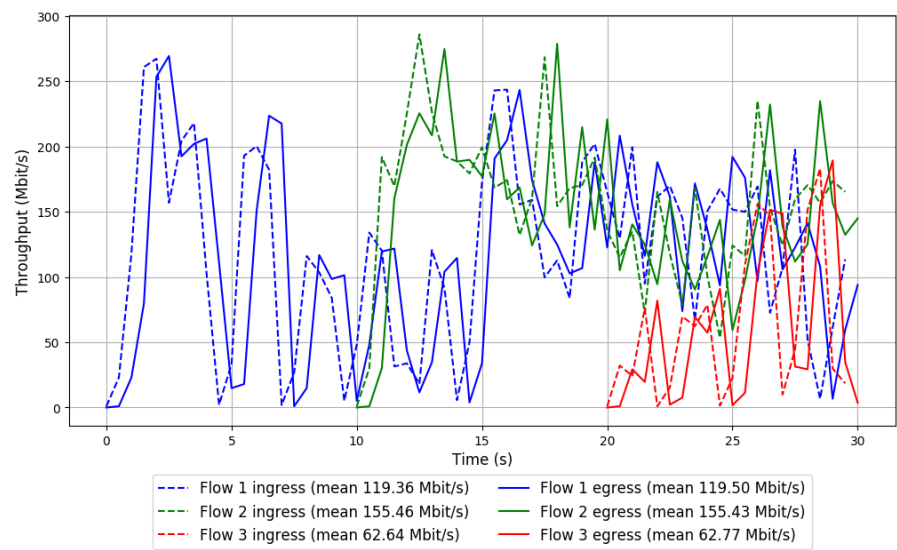
-- Flow 3:

Average throughput: 62.77 Mbit/s

95th percentile per-packet one-way delay: 70.940 ms

Loss rate: 1.26%

Run 2: Report of Verus — Data Link

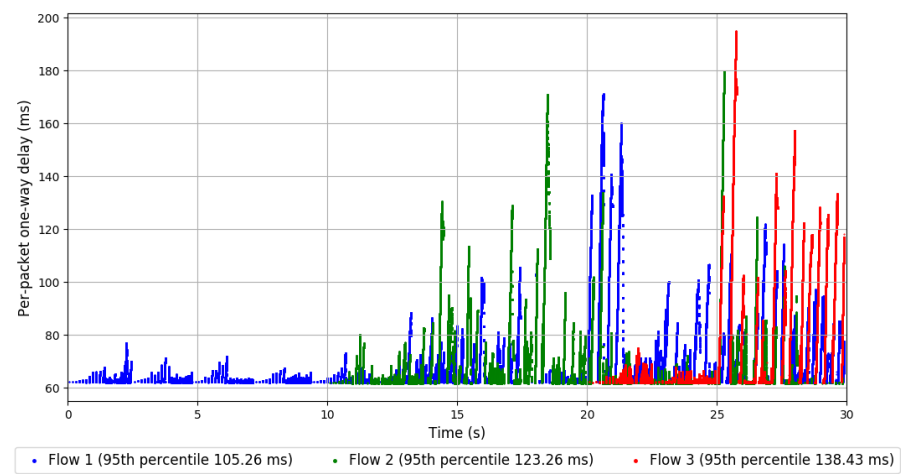
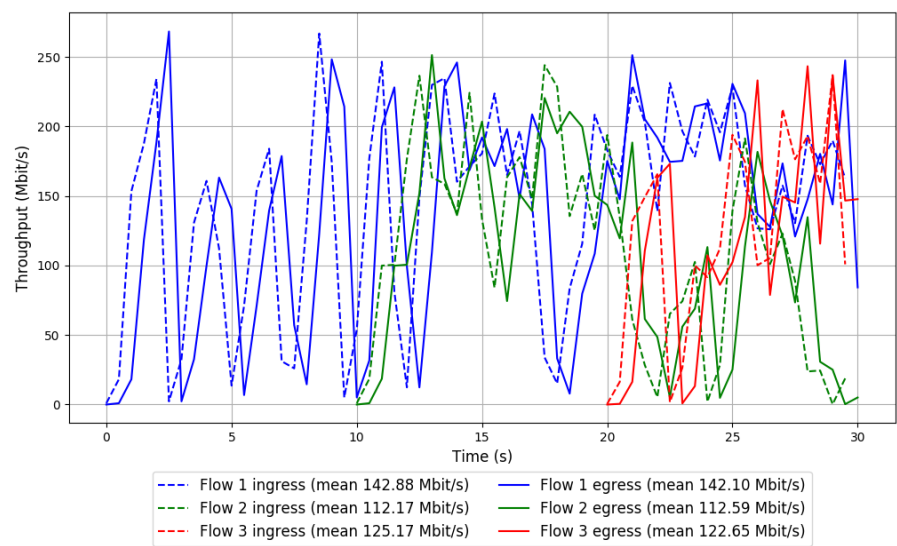


Run 3: Statistics of Verus

Start at: 2018-11-03 07:50:47
End at: 2018-11-03 07:51:17
Local clock offset: -0.055 ms
Remote clock offset: 0.781 ms

Below is generated by plot.py at 2018-11-03 11:40:51
Datalink statistics
-- Total of 3 flows:
Average throughput: 256.94 Mbit/s
95th percentile per-packet one-way delay: 122.490 ms
Loss rate: 0.90%
-- Flow 1:
Average throughput: 142.10 Mbit/s
95th percentile per-packet one-way delay: 105.264 ms
Loss rate: 0.96%
-- Flow 2:
Average throughput: 112.59 Mbit/s
95th percentile per-packet one-way delay: 123.259 ms
Loss rate: 0.31%
-- Flow 3:
Average throughput: 122.65 Mbit/s
95th percentile per-packet one-way delay: 138.434 ms
Loss rate: 1.77%

Run 3: Report of Verus — Data Link

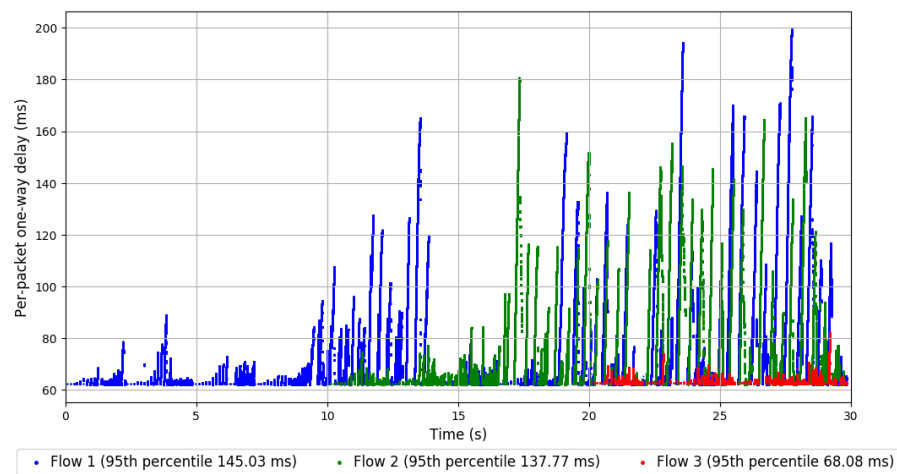
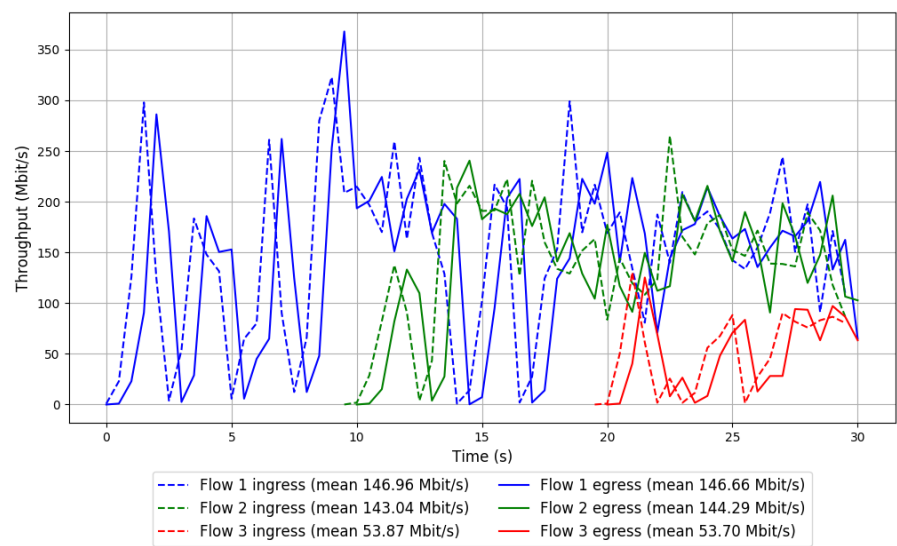


Run 4: Statistics of Verus

Start at: 2018-11-03 08:22:14
End at: 2018-11-03 08:22:44
Local clock offset: -0.139 ms
Remote clock offset: 0.512 ms

Below is generated by plot.py at 2018-11-03 11:40:51
Datalink statistics
-- Total of 3 flows:
Average throughput: 259.77 Mbit/s
95th percentile per-packet one-way delay: 139.879 ms
Loss rate: 0.59%
-- Flow 1:
Average throughput: 146.66 Mbit/s
95th percentile per-packet one-way delay: 145.032 ms
Loss rate: 0.63%
-- Flow 2:
Average throughput: 144.29 Mbit/s
95th percentile per-packet one-way delay: 137.768 ms
Loss rate: 0.34%
-- Flow 3:
Average throughput: 53.70 Mbit/s
95th percentile per-packet one-way delay: 68.075 ms
Loss rate: 1.60%

Run 4: Report of Verus — Data Link

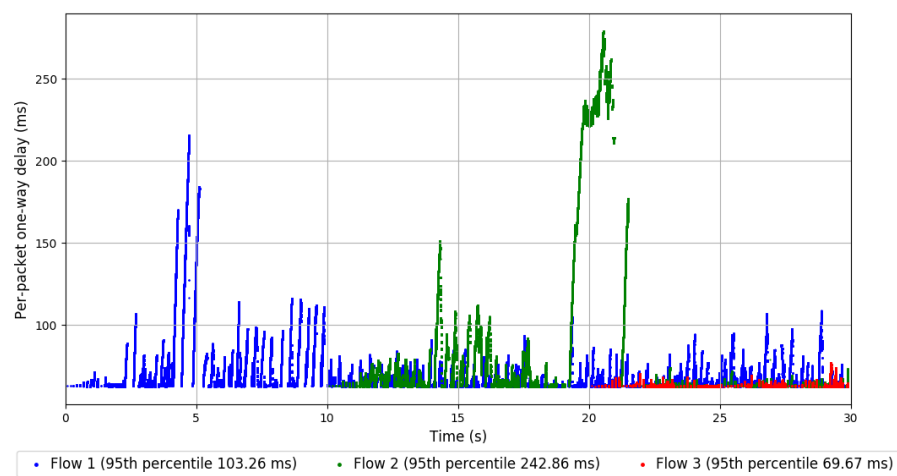
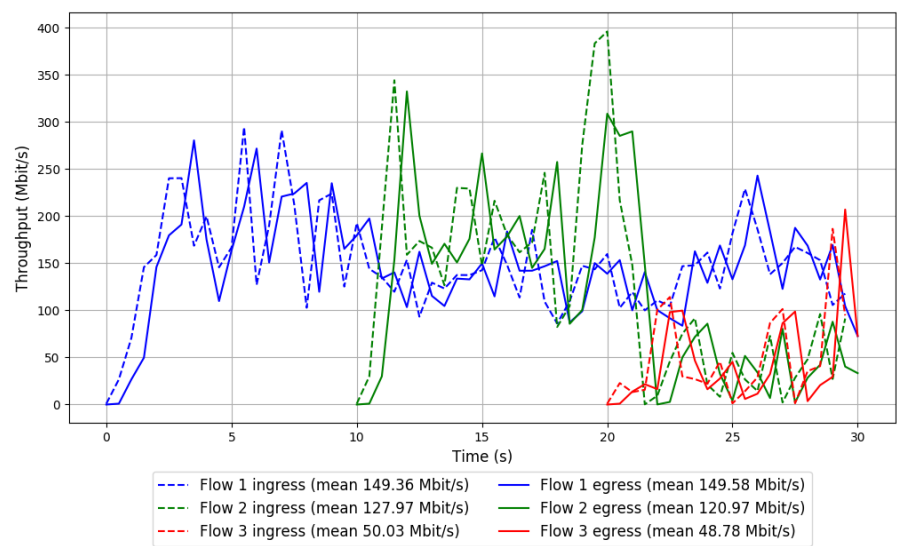


Run 5: Statistics of Verus

Start at: 2018-11-03 08:53:51
End at: 2018-11-03 08:54:21
Local clock offset: -0.047 ms
Remote clock offset: -0.111 ms

Below is generated by plot.py at 2018-11-03 11:40:51
Datalink statistics
-- Total of 3 flows:
Average throughput: 245.31 Mbit/s
95th percentile per-packet one-way delay: 213.824 ms
Loss rate: 2.59%
-- Flow 1:
Average throughput: 149.58 Mbit/s
95th percentile per-packet one-way delay: 103.262 ms
Loss rate: 0.69%
-- Flow 2:
Average throughput: 120.97 Mbit/s
95th percentile per-packet one-way delay: 242.856 ms
Loss rate: 5.89%
-- Flow 3:
Average throughput: 48.78 Mbit/s
95th percentile per-packet one-way delay: 69.668 ms
Loss rate: 2.89%

Run 5: Report of Verus — Data Link

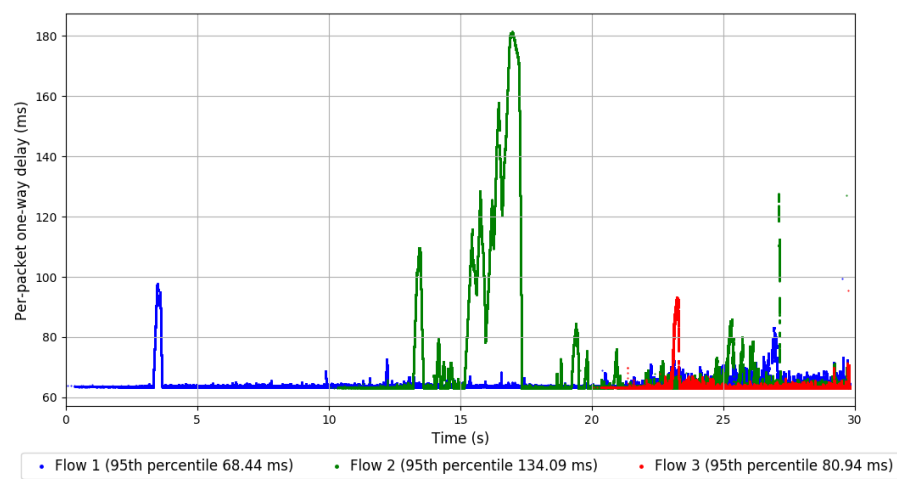
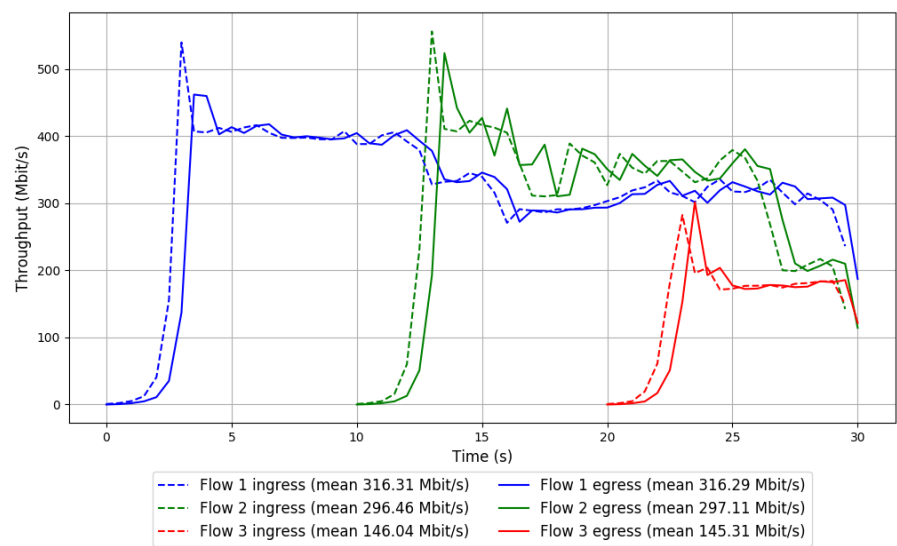


Run 1: Statistics of PCC-Vivace

Start at: 2018-11-03 06:45:24
End at: 2018-11-03 06:45:54
Local clock offset: -0.008 ms
Remote clock offset: -0.243 ms

Below is generated by plot.py at 2018-11-03 11:41:46
Datalink statistics
-- Total of 3 flows:
Average throughput: 561.05 Mbit/s
95th percentile per-packet one-way delay: 95.751 ms
Loss rate: 0.55%
-- Flow 1:
Average throughput: 316.29 Mbit/s
95th percentile per-packet one-way delay: 68.440 ms
Loss rate: 0.44%
-- Flow 2:
Average throughput: 297.11 Mbit/s
95th percentile per-packet one-way delay: 134.088 ms
Loss rate: 0.43%
-- Flow 3:
Average throughput: 145.31 Mbit/s
95th percentile per-packet one-way delay: 80.943 ms
Loss rate: 1.79%

Run 1: Report of PCC-Vivace — Data Link



Run 2: Statistics of PCC-Vivace

Start at: 2018-11-03 07:16:57

End at: 2018-11-03 07:17:27

Local clock offset: -0.004 ms

Remote clock offset: -0.25 ms

Below is generated by plot.py at 2018-11-03 11:41:46

Datalink statistics

-- Total of 3 flows:

Average throughput: 455.24 Mbit/s

95th percentile per-packet one-way delay: 89.073 ms

Loss rate: 1.23%

-- Flow 1:

Average throughput: 339.43 Mbit/s

95th percentile per-packet one-way delay: 102.753 ms

Loss rate: 1.19%

-- Flow 2:

Average throughput: 120.72 Mbit/s

95th percentile per-packet one-way delay: 94.433 ms

Loss rate: 1.07%

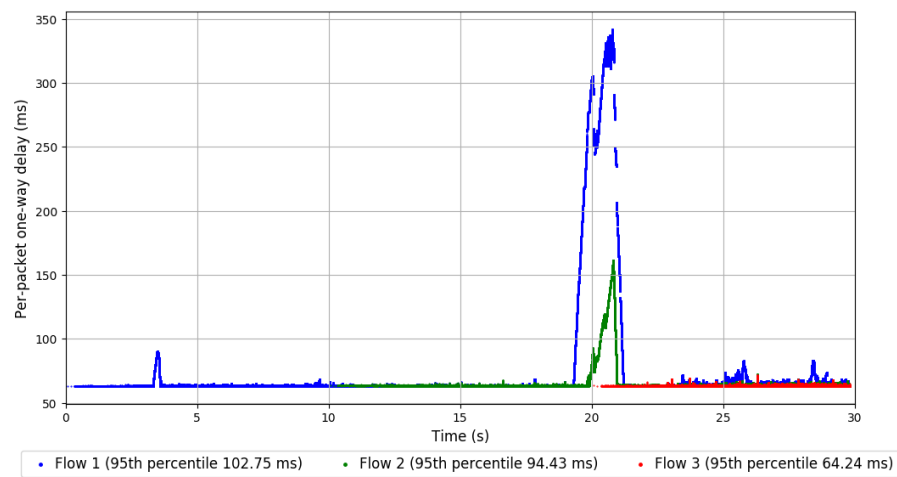
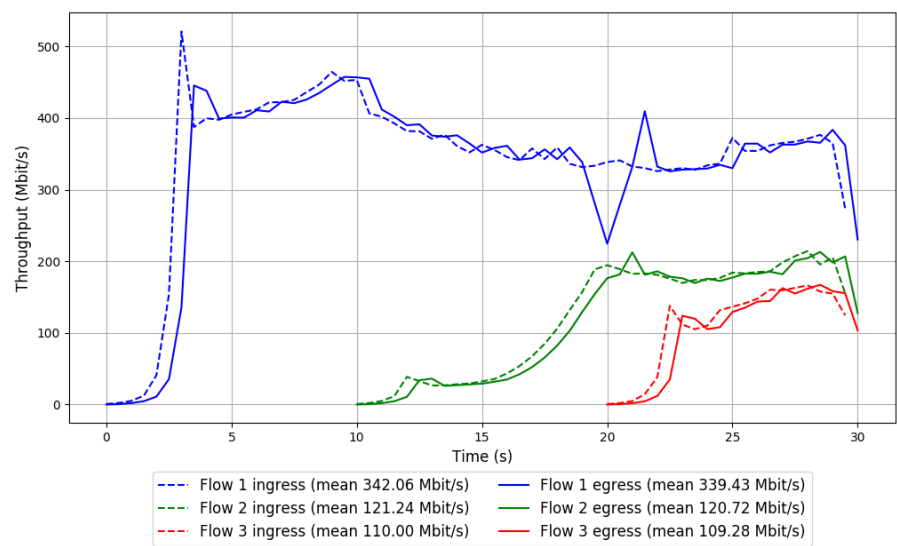
-- Flow 3:

Average throughput: 109.28 Mbit/s

95th percentile per-packet one-way delay: 64.238 ms

Loss rate: 1.92%

Run 2: Report of PCC-Vivace — Data Link

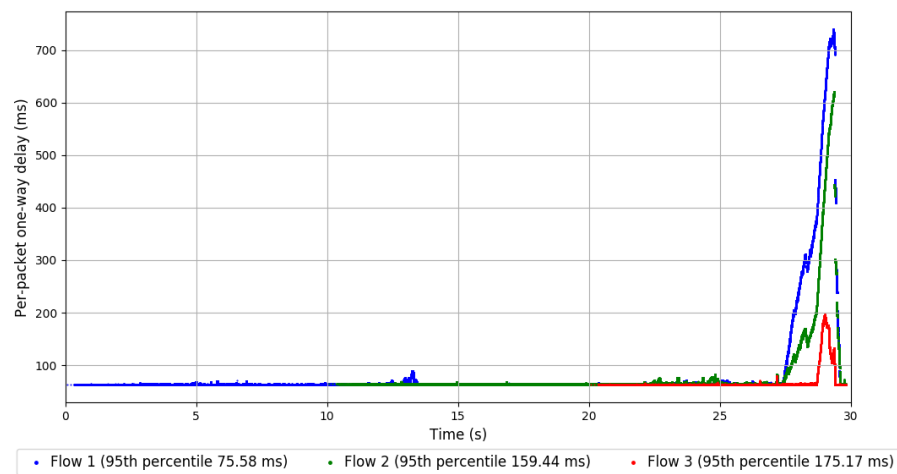
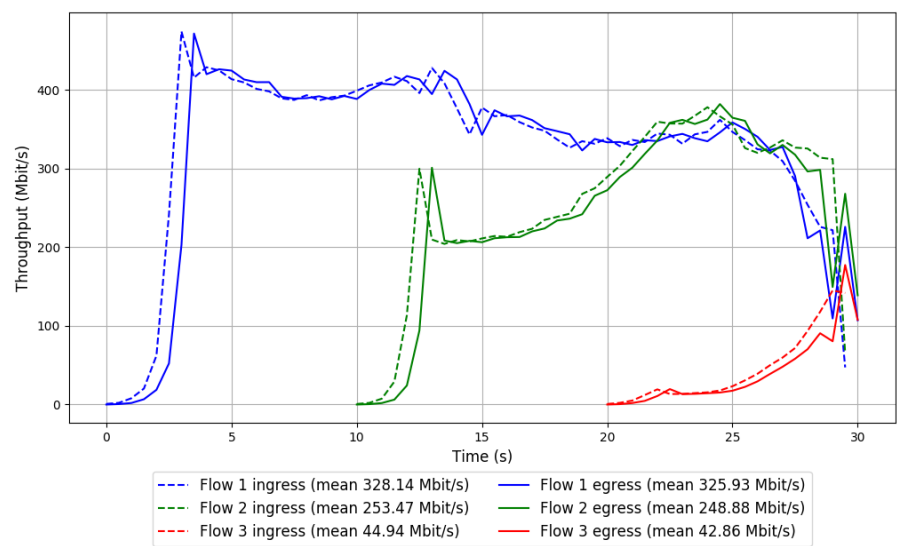


Run 3: Statistics of PCC-Vivace

Start at: 2018-11-03 07:48:58
End at: 2018-11-03 07:49:28
Local clock offset: -0.025 ms
Remote clock offset: -0.189 ms

Below is generated by plot.py at 2018-11-03 11:41:46
Datalink statistics
-- Total of 3 flows:
Average throughput: 505.03 Mbit/s
95th percentile per-packet one-way delay: 139.681 ms
Loss rate: 1.68%
-- Flow 1:
Average throughput: 325.93 Mbit/s
95th percentile per-packet one-way delay: 75.578 ms
Loss rate: 1.10%
-- Flow 2:
Average throughput: 248.88 Mbit/s
95th percentile per-packet one-way delay: 159.440 ms
Loss rate: 2.44%
-- Flow 3:
Average throughput: 42.86 Mbit/s
95th percentile per-packet one-way delay: 175.172 ms
Loss rate: 5.86%

Run 3: Report of PCC-Vivace — Data Link



Run 4: Statistics of PCC-Vivace

Start at: 2018-11-03 08:20:20

End at: 2018-11-03 08:20:50

Local clock offset: -0.106 ms

Remote clock offset: 0.011 ms

Below is generated by plot.py at 2018-11-03 11:42:19

Datalink statistics

-- Total of 3 flows:

Average throughput: 568.56 Mbit/s

95th percentile per-packet one-way delay: 68.931 ms

Loss rate: 0.56%

-- Flow 1:

Average throughput: 335.98 Mbit/s

95th percentile per-packet one-way delay: 69.960 ms

Loss rate: 0.31%

-- Flow 2:

Average throughput: 224.62 Mbit/s

95th percentile per-packet one-way delay: 63.949 ms

Loss rate: 0.60%

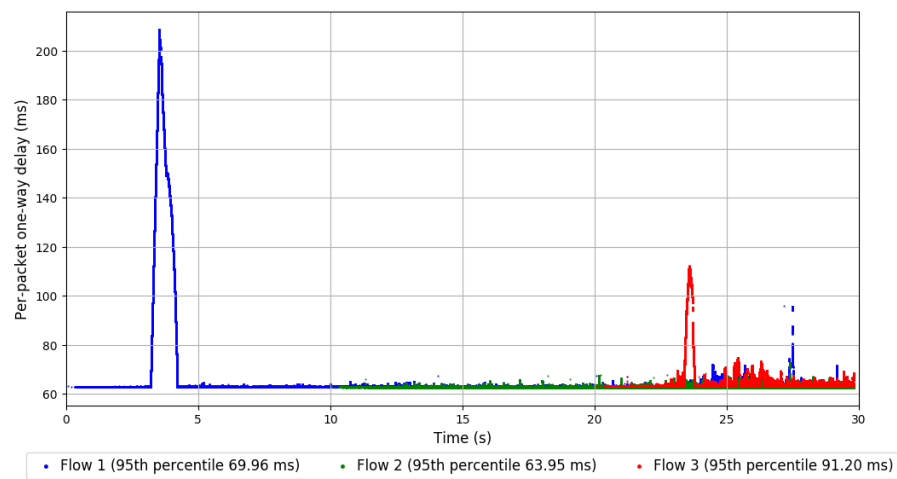
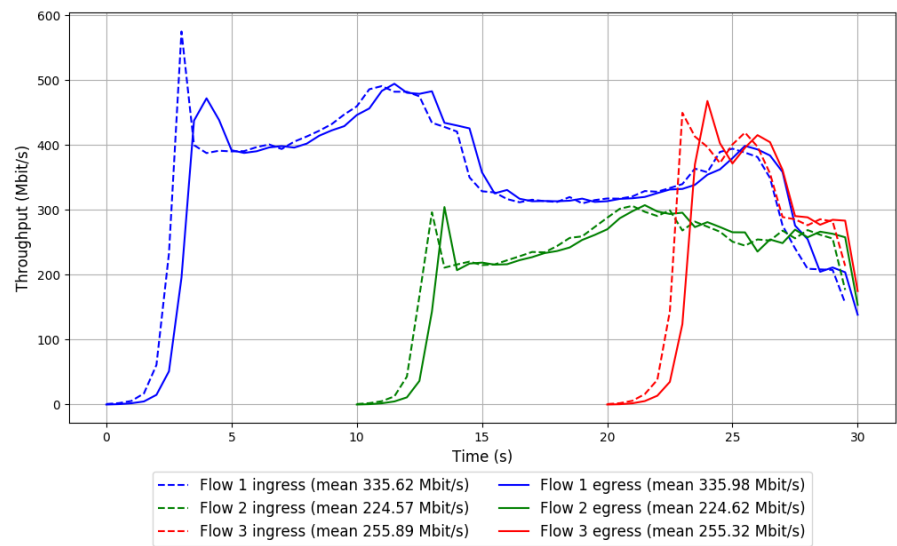
-- Flow 3:

Average throughput: 255.32 Mbit/s

95th percentile per-packet one-way delay: 91.202 ms

Loss rate: 1.50%

Run 4: Report of PCC-Vivace — Data Link



Run 5: Statistics of PCC-Vivace

Start at: 2018-11-03 08:51:58

End at: 2018-11-03 08:52:28

Local clock offset: -0.024 ms

Remote clock offset: 0.664 ms

Below is generated by plot.py at 2018-11-03 11:42:40

Datalink statistics

-- Total of 3 flows:

Average throughput: 565.28 Mbit/s

95th percentile per-packet one-way delay: 85.458 ms

Loss rate: 0.81%

-- Flow 1:

Average throughput: 336.00 Mbit/s

95th percentile per-packet one-way delay: 106.823 ms

Loss rate: 0.55%

-- Flow 2:

Average throughput: 244.81 Mbit/s

95th percentile per-packet one-way delay: 64.139 ms

Loss rate: 0.84%

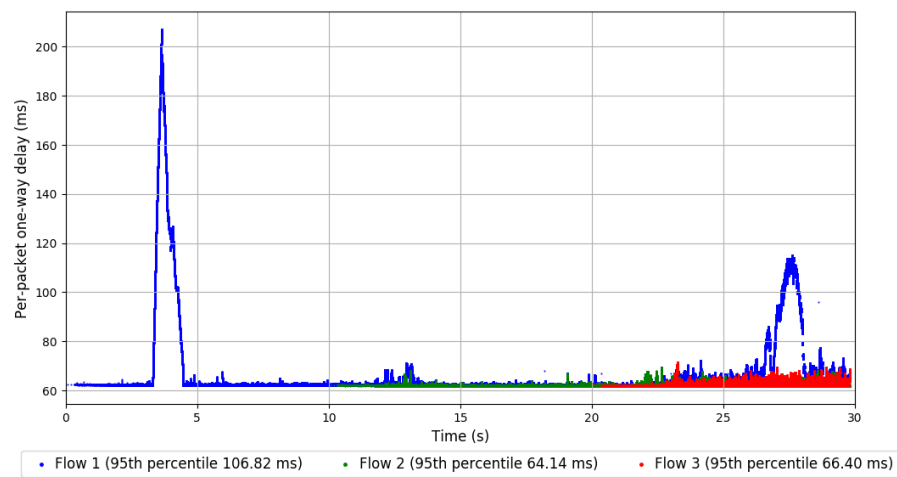
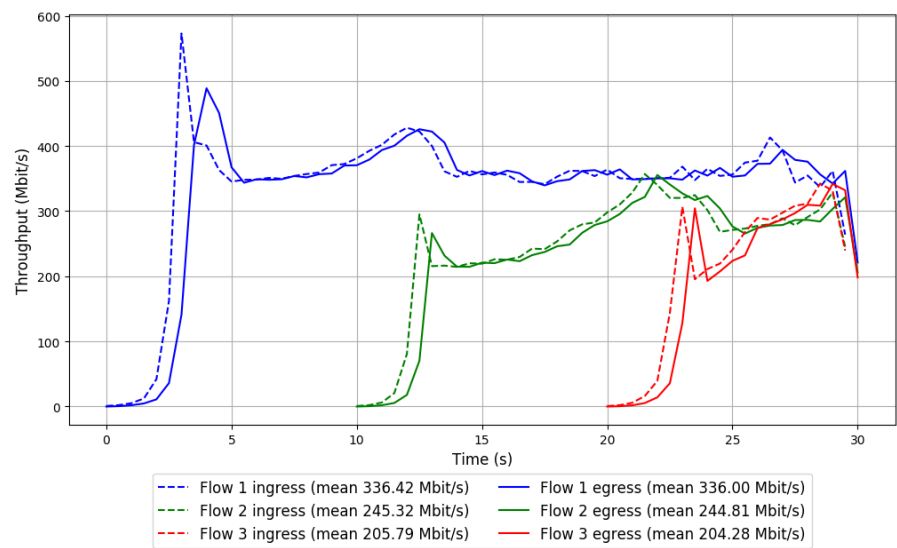
-- Flow 3:

Average throughput: 204.28 Mbit/s

95th percentile per-packet one-way delay: 66.396 ms

Loss rate: 2.01%

Run 5: Report of PCC-Vivace — Data Link

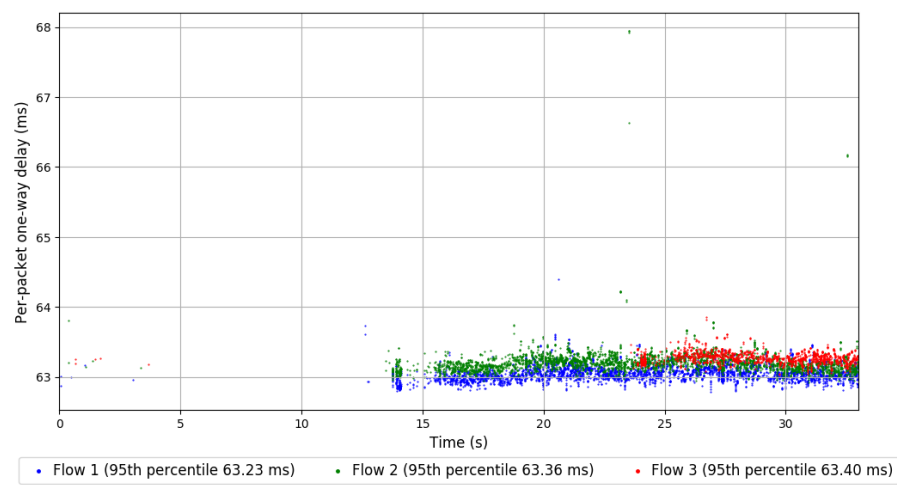
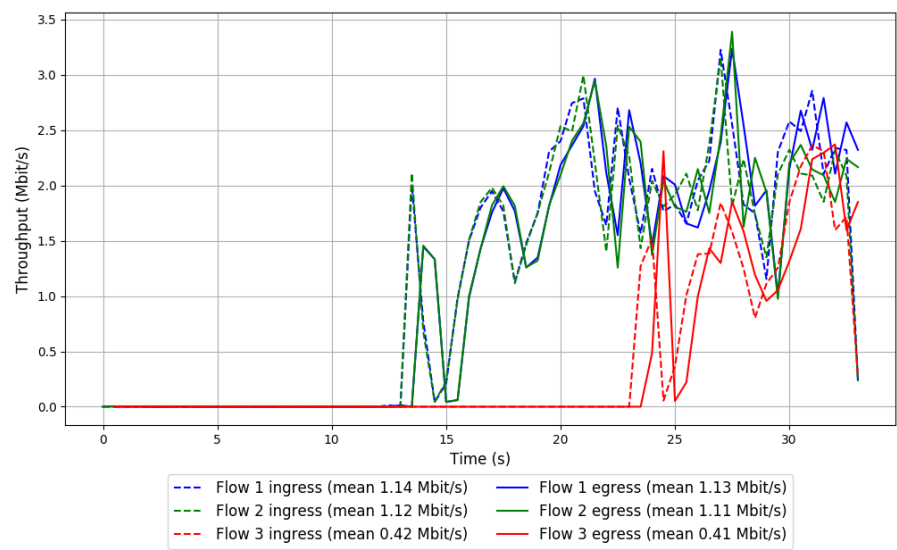


Run 1: Statistics of WebRTC media

Start at: 2018-11-03 07:02:54
End at: 2018-11-03 07:03:24
Local clock offset: 0.062 ms
Remote clock offset: -0.123 ms

Below is generated by plot.py at 2018-11-03 11:42:40
Datalink statistics
-- Total of 3 flows:
Average throughput: 2.64 Mbit/s
95th percentile per-packet one-way delay: 63.357 ms
Loss rate: 0.75%
-- Flow 1:
Average throughput: 1.13 Mbit/s
95th percentile per-packet one-way delay: 63.225 ms
Loss rate: 0.62%
-- Flow 2:
Average throughput: 1.11 Mbit/s
95th percentile per-packet one-way delay: 63.363 ms
Loss rate: 0.63%
-- Flow 3:
Average throughput: 0.41 Mbit/s
95th percentile per-packet one-way delay: 63.398 ms
Loss rate: 1.46%

Run 1: Report of WebRTC media — Data Link

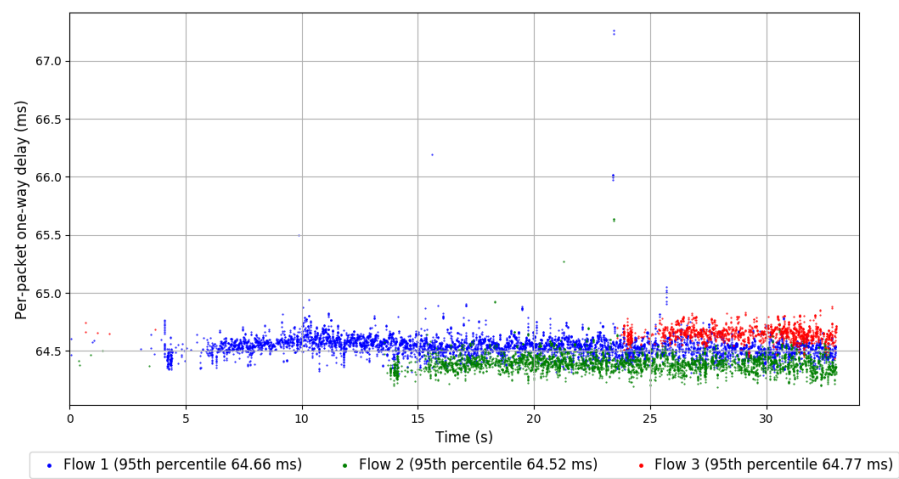
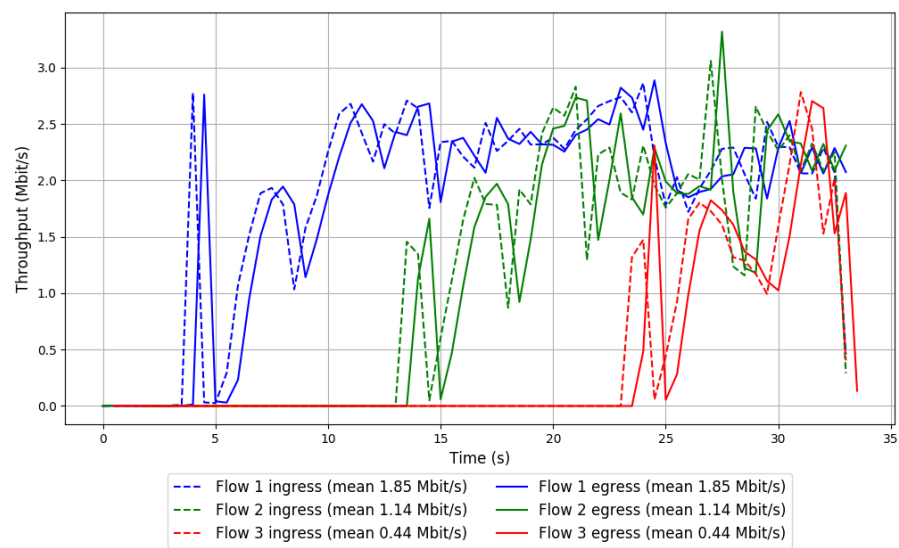


Run 2: Statistics of WebRTC media

Start at: 2018-11-03 07:34:38
End at: 2018-11-03 07:35:08
Local clock offset: -0.027 ms
Remote clock offset: -1.534 ms

Below is generated by plot.py at 2018-11-03 11:42:40
Datalink statistics
-- Total of 3 flows:
Average throughput: 3.40 Mbit/s
95th percentile per-packet one-way delay: 64.686 ms
Loss rate: 0.75%
-- Flow 1:
Average throughput: 1.85 Mbit/s
95th percentile per-packet one-way delay: 64.662 ms
Loss rate: 0.56%
-- Flow 2:
Average throughput: 1.14 Mbit/s
95th percentile per-packet one-way delay: 64.521 ms
Loss rate: 0.62%
-- Flow 3:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 64.767 ms
Loss rate: 1.87%

Run 2: Report of WebRTC media — Data Link



Run 3: Statistics of WebRTC media

Start at: 2018-11-03 08:06:26

End at: 2018-11-03 08:06:56

Local clock offset: -0.136 ms

Remote clock offset: 0.537 ms

Below is generated by plot.py at 2018-11-03 11:42:40

Datalink statistics

-- Total of 3 flows:

Average throughput: 3.47 Mbit/s

95th percentile per-packet one-way delay: 62.871 ms

Loss rate: 0.80%

-- Flow 1:

Average throughput: 1.90 Mbit/s

95th percentile per-packet one-way delay: 62.775 ms

Loss rate: 0.61%

-- Flow 2:

Average throughput: 1.14 Mbit/s

95th percentile per-packet one-way delay: 62.920 ms

Loss rate: 0.92%

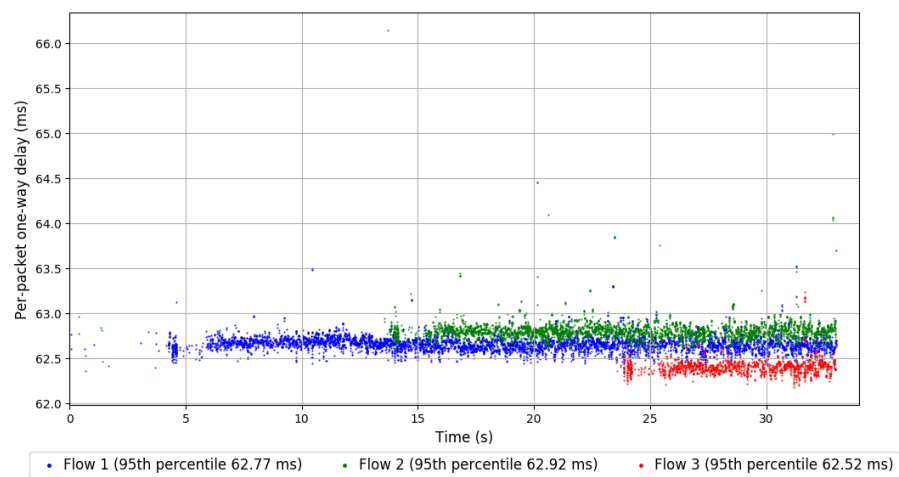
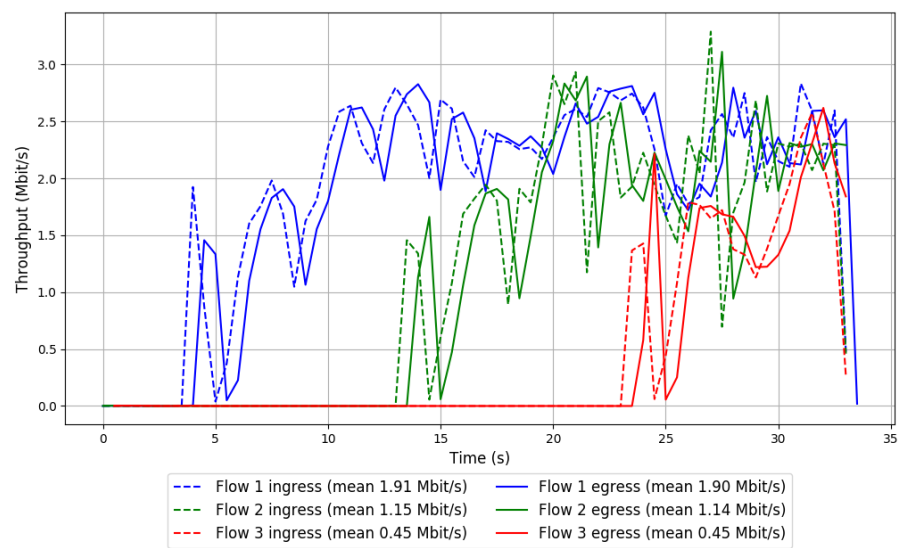
-- Flow 3:

Average throughput: 0.45 Mbit/s

95th percentile per-packet one-way delay: 62.519 ms

Loss rate: 1.35%

Run 3: Report of WebRTC media — Data Link



Run 4: Statistics of WebRTC media

Start at: 2018-11-03 08:38:07

End at: 2018-11-03 08:38:37

Local clock offset: -0.027 ms

Remote clock offset: 0.471 ms

Below is generated by plot.py at 2018-11-03 11:42:40

Datalink statistics

-- Total of 3 flows:

Average throughput: 3.47 Mbit/s

95th percentile per-packet one-way delay: 62.971 ms

Loss rate: 0.83%

-- Flow 1:

Average throughput: 1.90 Mbit/s

95th percentile per-packet one-way delay: 62.897 ms

Loss rate: 0.54%

-- Flow 2:

Average throughput: 1.16 Mbit/s

95th percentile per-packet one-way delay: 63.015 ms

Loss rate: 0.92%

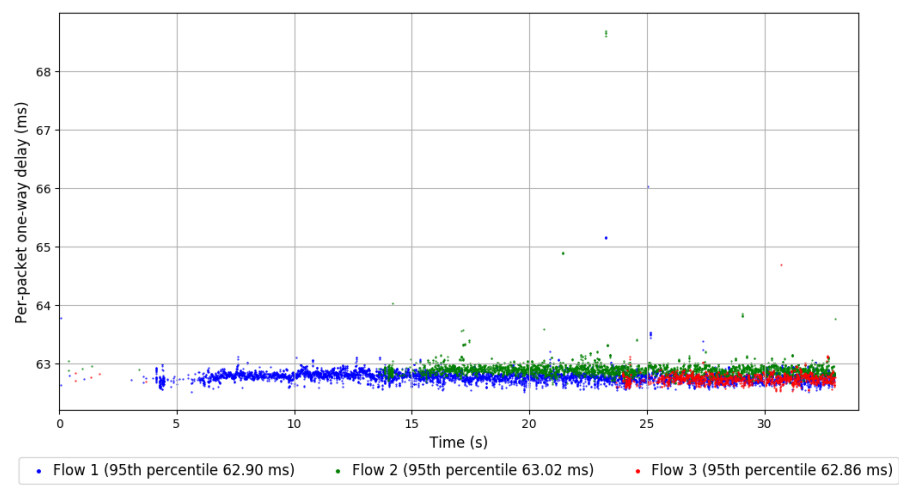
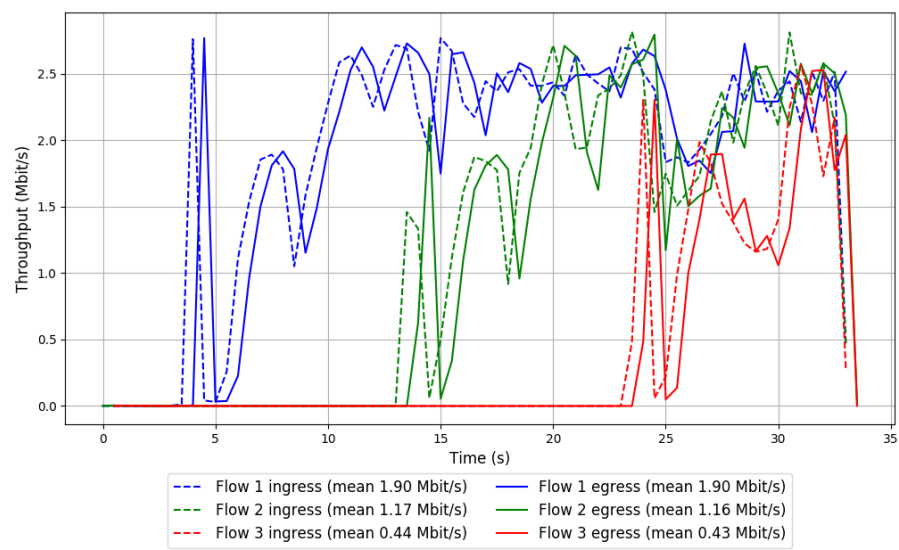
-- Flow 3:

Average throughput: 0.43 Mbit/s

95th percentile per-packet one-way delay: 62.857 ms

Loss rate: 1.89%

Run 4: Report of WebRTC media — Data Link



Run 5: Statistics of WebRTC media

Start at: 2018-11-03 09:09:27
End at: 2018-11-03 09:09:57
Local clock offset: -0.067 ms
Remote clock offset: -0.063 ms

Below is generated by plot.py at 2018-11-03 11:42:40
Datalink statistics
-- Total of 3 flows:
Average throughput: 3.44 Mbit/s
95th percentile per-packet one-way delay: 63.193 ms
Loss rate: 0.71%
-- Flow 1:
Average throughput: 1.89 Mbit/s
95th percentile per-packet one-way delay: 63.192 ms
Loss rate: 0.37%
-- Flow 2:
Average throughput: 1.13 Mbit/s
95th percentile per-packet one-way delay: 63.036 ms
Loss rate: 1.00%
-- Flow 3:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 63.246 ms
Loss rate: 1.40%

Run 5: Report of WebRTC media — Data Link

