

Pantheon Report

Generated at 2018-07-03 10:07:23 (UTC).

Data path: AWS India 1 Ethernet (*local*) → India ppp0 ppp0 (*remote*).

Repeated the test of 17 congestion control schemes 3 times.

Each test lasted for 30 seconds running 1 flow.

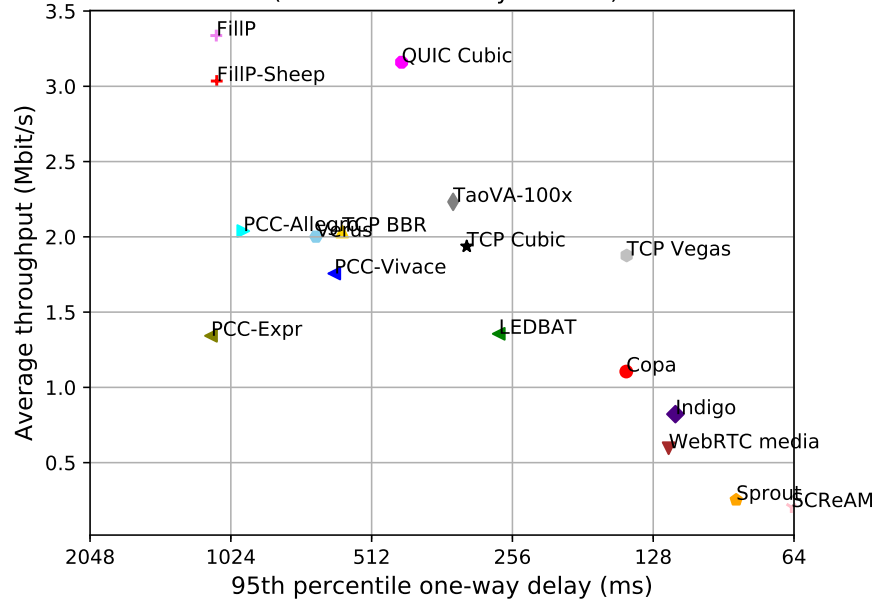
Increased UDP receive buffer to 16 MB (default) and 32 MB (max).

NTP offsets were measured against [nets.org.sg](https://www.nets.org.sg) and have been applied to correct the timestamps in logs.

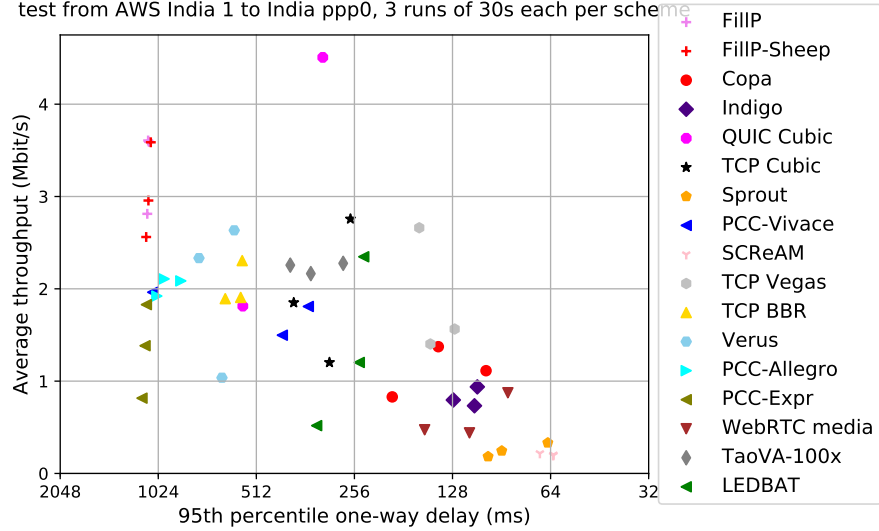
Git summary:

```
branch: master @ 9250dbeec7fb57193cdff1ba8c440b4e16ab30f0
third_party/fillp @ d47f4fa1b454a5e3c0537115c5a28436dbd4b834
third_party/fillp-sheep @ 37162fe9af85249aeccac061c93e75640ef710b5
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdf58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/pantheon-tunnel @ 6f038ed31259d366f9840f65b82cbe8f464b1b39
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-quirk @ 77961f1a82733a86b42f1bc8143ebc978f3cff42
third_party/scream-reproduce @ f099118d1421aa3131bf11ff1964974e1da3bdb2
  M src/ScreamClient
  M src/ScreamServer
third_party/sprout @ 366e35c6178b01e31d4a46ad18c74f9415f19a26
third_party/verus @ d4b447ea74c6c60a261149af2629562939f9a494
  M src/verus.hpp
  M tools/plot.py
third_party/vivace @ 2baf86211435ae071a32f96b7d8c504587f5d7f4
third_party/webrtc @ 3f0cc2a9061a41b6f9dde4735770d143a1fa2851
```

test from AWS India 1 to India ppp0, 3 runs of 30s each per scheme
(mean of all runs by scheme)



test from AWS India 1 to India ppp0, 3 runs of 30s each per scheme



scheme	# runs	mean avg tput (Mbit/s) flow 1	mean 95th-%ile delay (ms) flow 1	mean loss rate (%) flow 1
TCP BBR	3	2.04	591.88	1.58
Copa	3	1.10	146.15	0.58
TCP Cubic	3	1.94	320.59	0.69
FillP	3	3.34	1100.03	65.73
FillP-Sheep	3	3.04	1097.59	32.28
Indigo	3	0.82	114.75	0.23
LEDBAT	3	1.36	273.82	0.62
PCC-Allegro	3	2.04	963.18	7.62
PCC-Expr	3	1.34	1129.19	72.99
QUIC Cubic	2	3.16	441.76	1.38
SCReAM	3	0.20	64.85	0.09
Sprout	3	0.25	85.06	0.42
TaoVA-100x	3	2.23	342.80	0.69
TCP Vegas	3	1.87	145.87	0.27
Verus	3	2.00	673.20	2.74
PCC-Vivace	3	1.76	615.43	5.36
WebRTC media	3	0.59	118.64	0.18

Run 1: Statistics of TCP BBR

Start at: 2018-07-03 09:26:15

End at: 2018-07-03 09:26:45

Local clock offset: 0.647 ms

Remote clock offset: -1.584 ms

Below is generated by plot.py at 2018-07-03 10:06:48

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.89 Mbit/s

95th percentile per-packet one-way delay: 637.832 ms

Loss rate: 1.67%

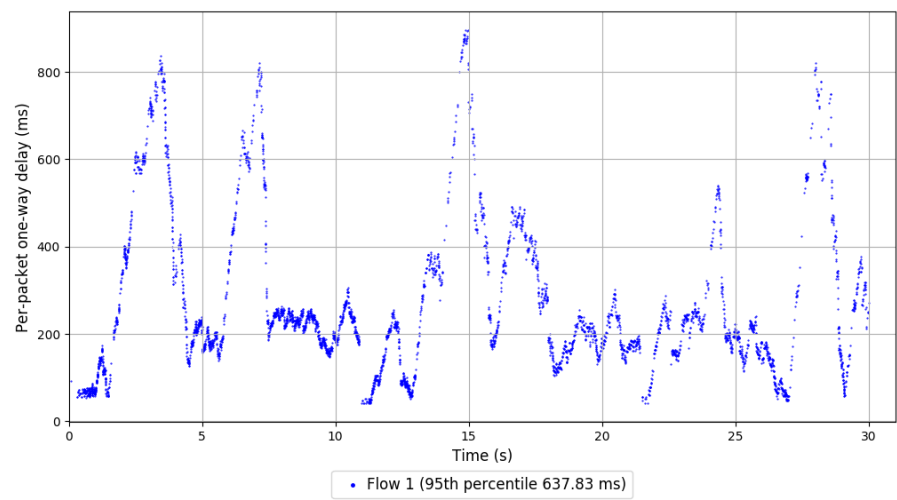
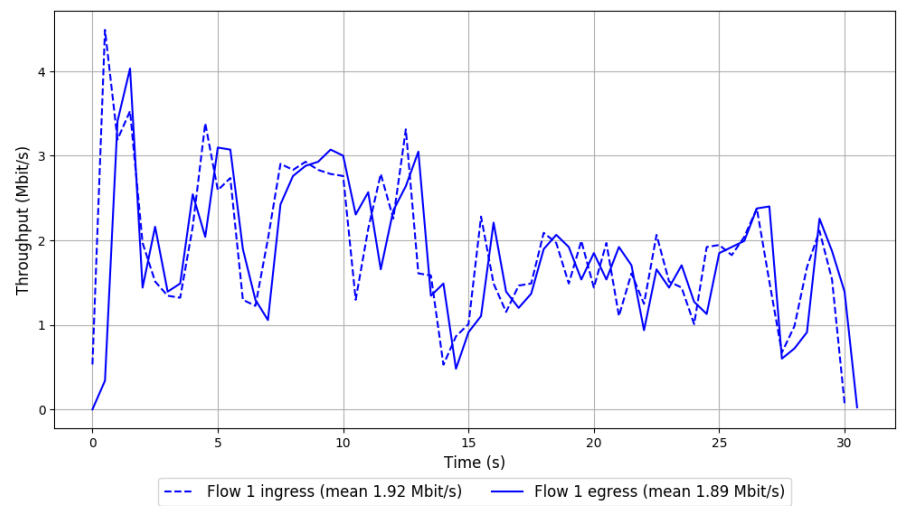
-- Flow 1:

Average throughput: 1.89 Mbit/s

95th percentile per-packet one-way delay: 637.832 ms

Loss rate: 1.67%

Run 1: Report of TCP BBR — Data Link



Run 2: Statistics of TCP BBR

Start at: 2018-07-03 09:44:38

End at: 2018-07-03 09:45:08

Local clock offset: 0.982 ms

Remote clock offset: -0.541 ms

Below is generated by plot.py at 2018-07-03 10:06:49

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.31 Mbit/s

95th percentile per-packet one-way delay: 565.857 ms

Loss rate: 1.22%

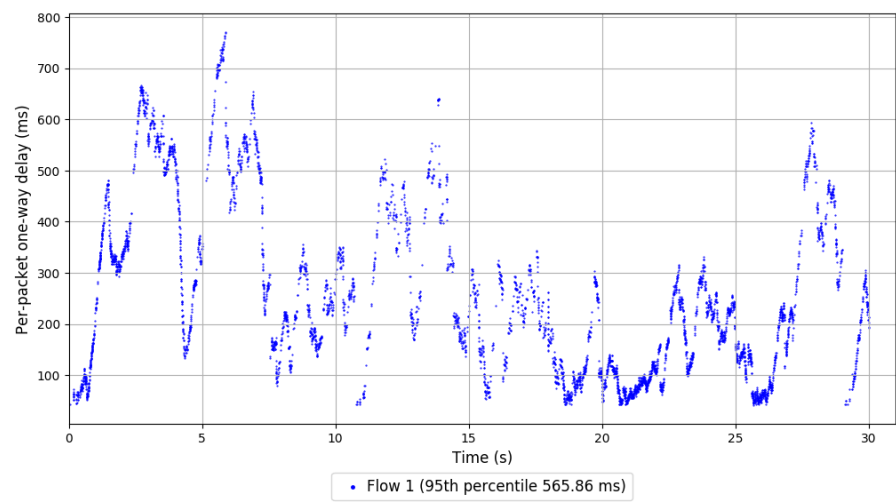
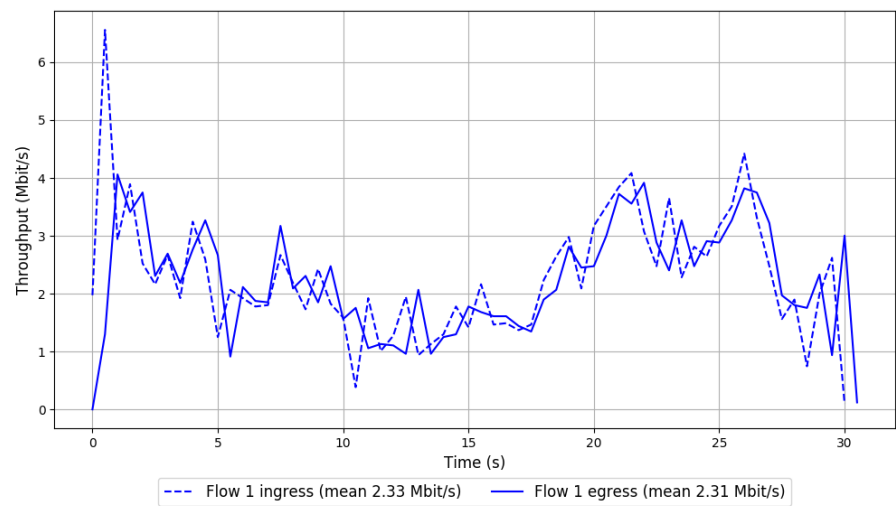
-- Flow 1:

Average throughput: 2.31 Mbit/s

95th percentile per-packet one-way delay: 565.857 ms

Loss rate: 1.22%

Run 2: Report of TCP BBR — Data Link



Run 3: Statistics of TCP BBR

Start at: 2018-07-03 10:02:55

End at: 2018-07-03 10:03:25

Local clock offset: 0.646 ms

Remote clock offset: -1.349 ms

Below is generated by plot.py at 2018-07-03 10:06:49

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.91 Mbit/s

95th percentile per-packet one-way delay: 571.954 ms

Loss rate: 1.84%

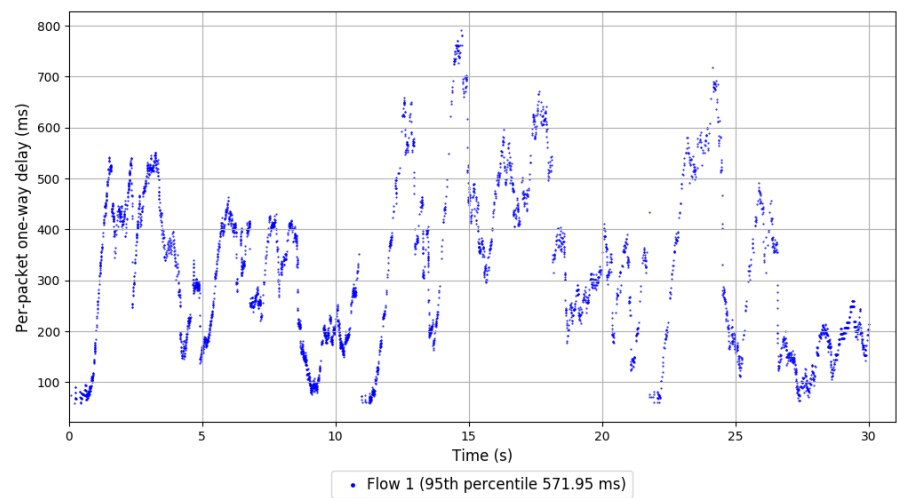
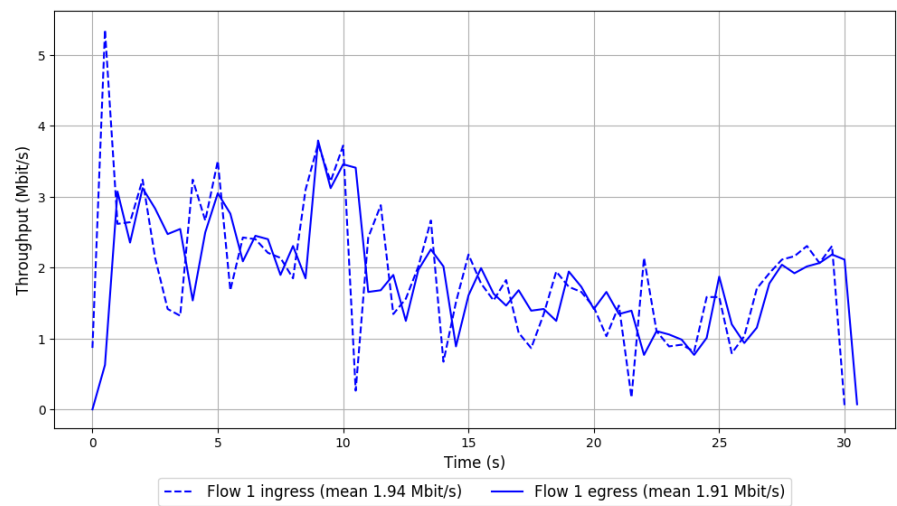
-- Flow 1:

Average throughput: 1.91 Mbit/s

95th percentile per-packet one-way delay: 571.954 ms

Loss rate: 1.84%

Run 3: Report of TCP BBR — Data Link

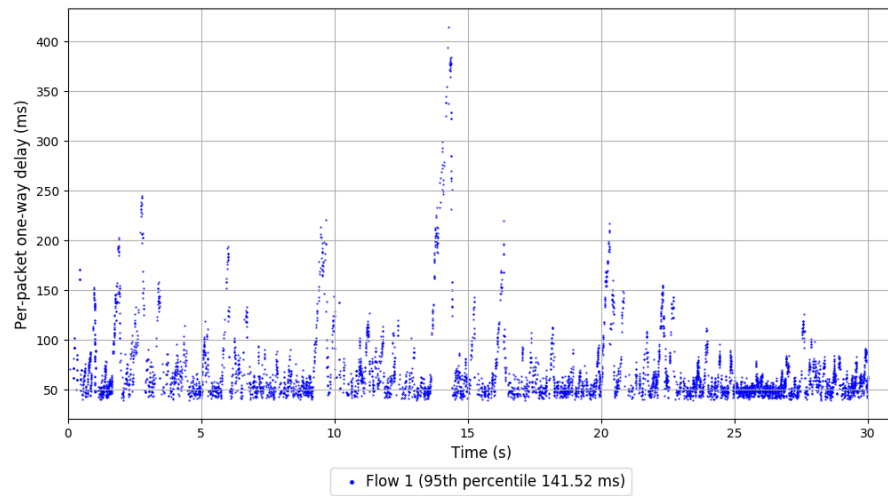
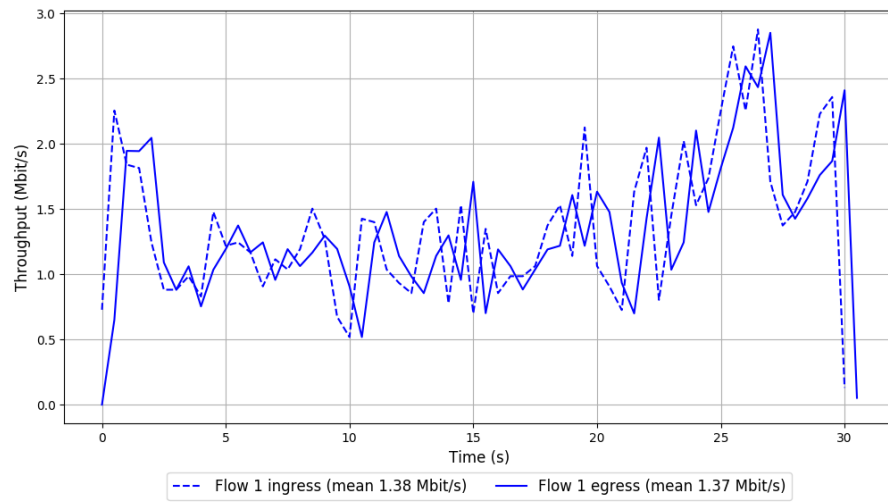


Run 1: Statistics of Copa

Start at: 2018-07-03 09:17:40
End at: 2018-07-03 09:18:10
Local clock offset: -2.478 ms
Remote clock offset: -2.529 ms

Below is generated by plot.py at 2018-07-03 10:06:49
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.37 Mbit/s
95th percentile per-packet one-way delay: 141.523 ms
Loss rate: 0.63%
-- Flow 1:
Average throughput: 1.37 Mbit/s
95th percentile per-packet one-way delay: 141.523 ms
Loss rate: 0.63%

Run 1: Report of Copa — Data Link

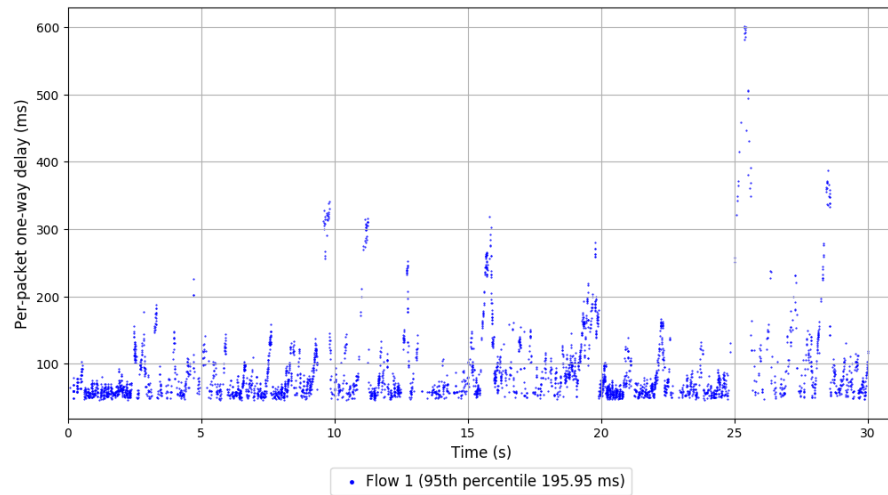
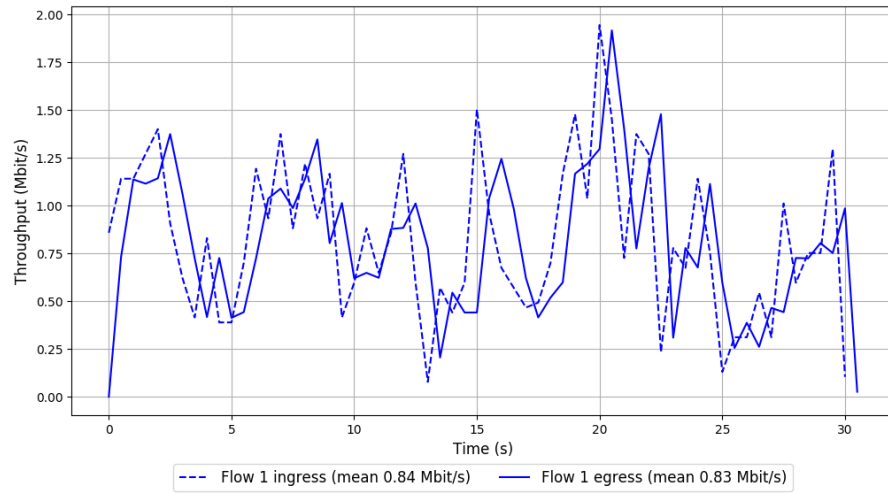


Run 2: Statistics of Copa

Start at: 2018-07-03 09:35:56
End at: 2018-07-03 09:36:26
Local clock offset: -2.861 ms
Remote clock offset: -1.381 ms

Below is generated by plot.py at 2018-07-03 10:06:49
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.83 Mbit/s
95th percentile per-packet one-way delay: 195.946 ms
Loss rate: 1.10%
-- Flow 1:
Average throughput: 0.83 Mbit/s
95th percentile per-packet one-way delay: 195.946 ms
Loss rate: 1.10%

Run 2: Report of Copa — Data Link

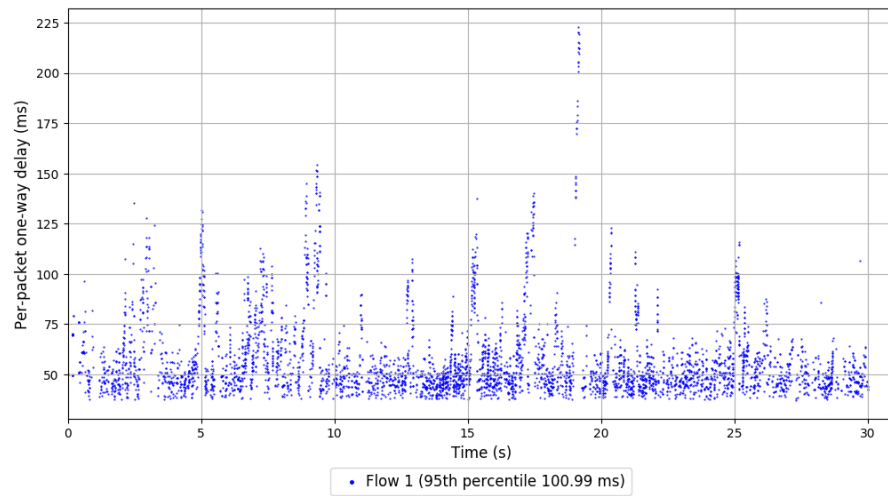
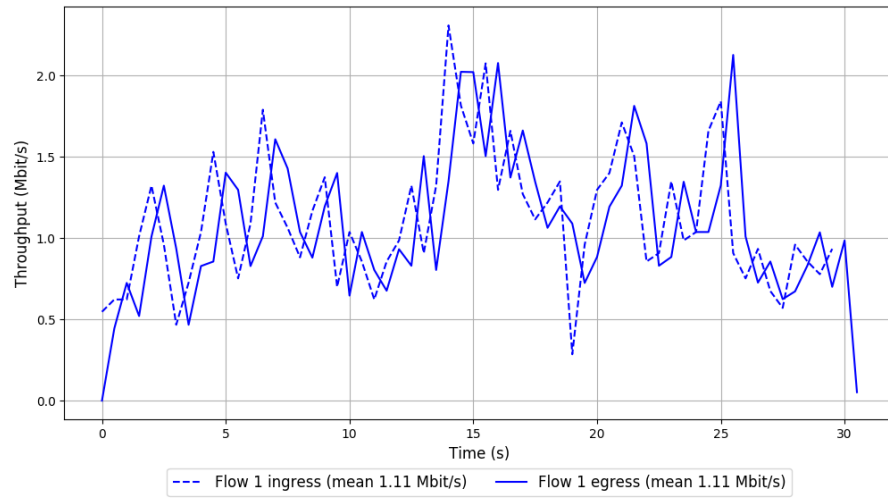


Run 3: Statistics of Copa

Start at: 2018-07-03 09:54:18
End at: 2018-07-03 09:54:48
Local clock offset: 2.981 ms
Remote clock offset: -0.492 ms

Below is generated by plot.py at 2018-07-03 10:06:49
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.11 Mbit/s
95th percentile per-packet one-way delay: 100.992 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.11 Mbit/s
95th percentile per-packet one-way delay: 100.992 ms
Loss rate: 0.00%

Run 3: Report of Copa — Data Link

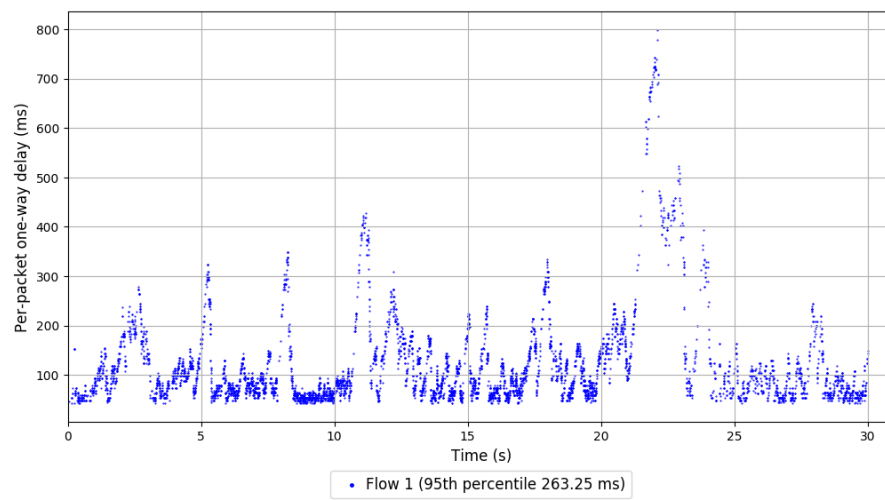
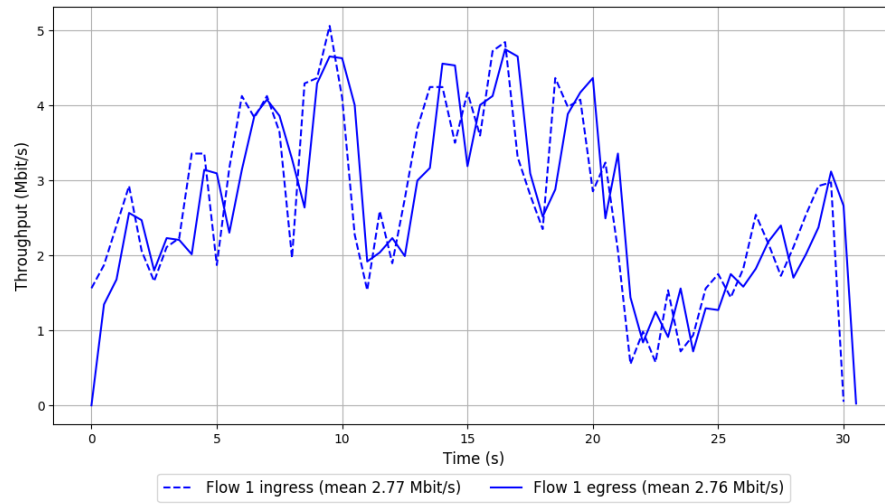


Run 1: Statistics of TCP Cubic

Start at: 2018-07-03 09:19:49
End at: 2018-07-03 09:20:19
Local clock offset: -3.106 ms
Remote clock offset: -0.818 ms

Below is generated by plot.py at 2018-07-03 10:06:50
Datalink statistics
-- Total of 1 flow:
Average throughput: 2.76 Mbit/s
95th percentile per-packet one-way delay: 263.255 ms
Loss rate: 0.59%
-- Flow 1:
Average throughput: 2.76 Mbit/s
95th percentile per-packet one-way delay: 263.255 ms
Loss rate: 0.59%

Run 1: Report of TCP Cubic — Data Link

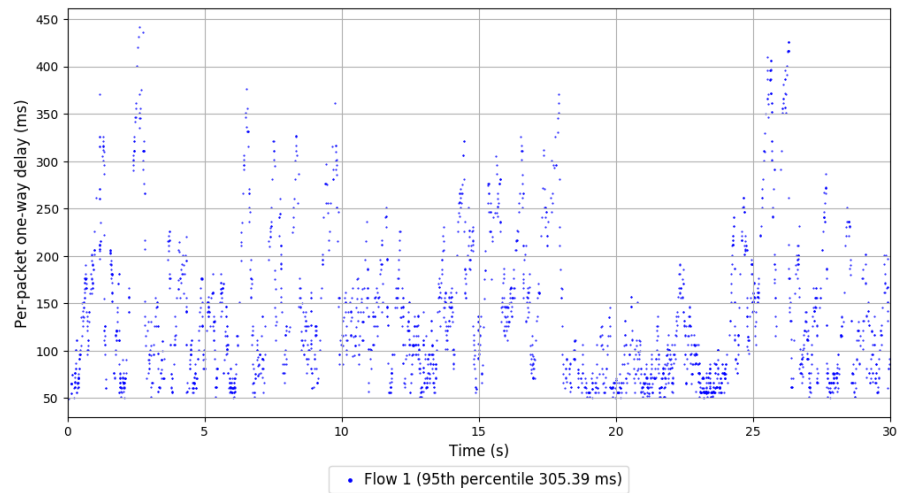
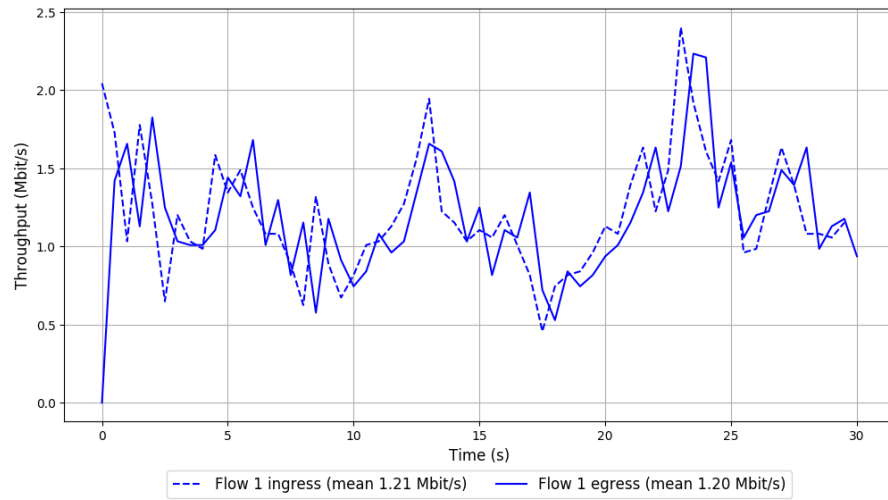


Run 2: Statistics of TCP Cubic

Start at: 2018-07-03 09:38:05
End at: 2018-07-03 09:38:35
Local clock offset: -4.732 ms
Remote clock offset: -1.092 ms

Below is generated by plot.py at 2018-07-03 10:06:50
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.20 Mbit/s
95th percentile per-packet one-way delay: 305.388 ms
Loss rate: 1.02%
-- Flow 1:
Average throughput: 1.20 Mbit/s
95th percentile per-packet one-way delay: 305.388 ms
Loss rate: 1.02%

Run 2: Report of TCP Cubic — Data Link



Run 3: Statistics of TCP Cubic

Start at: 2018-07-03 09:56:27

End at: 2018-07-03 09:56:57

Local clock offset: 3.256 ms

Remote clock offset: 0.902 ms

Below is generated by plot.py at 2018-07-03 10:06:50

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.85 Mbit/s

95th percentile per-packet one-way delay: 393.119 ms

Loss rate: 0.47%

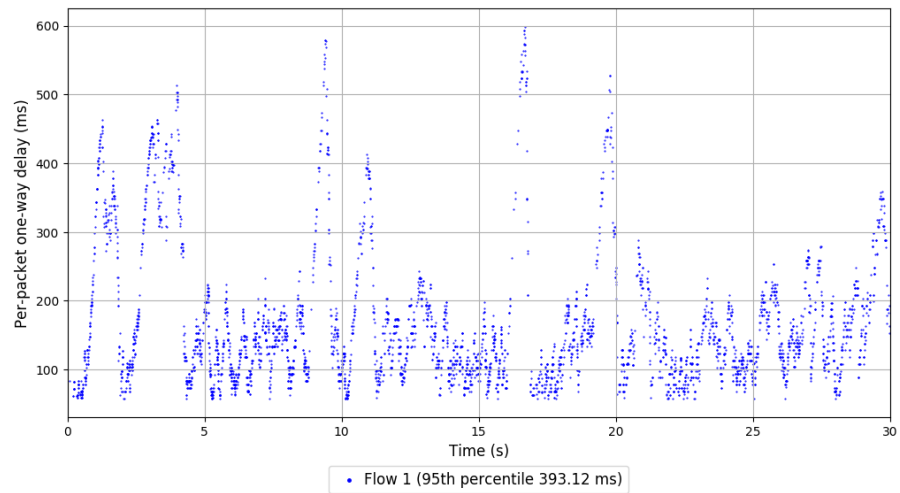
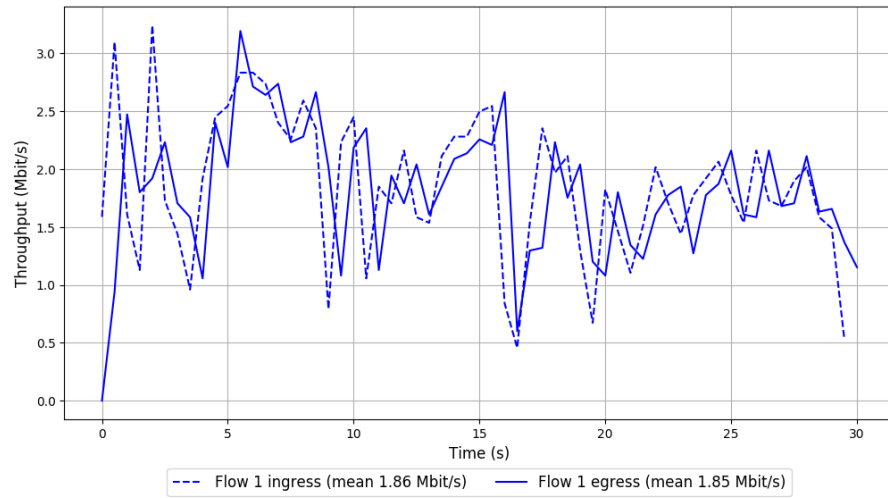
-- Flow 1:

Average throughput: 1.85 Mbit/s

95th percentile per-packet one-way delay: 393.119 ms

Loss rate: 0.47%

Run 3: Report of TCP Cubic — Data Link

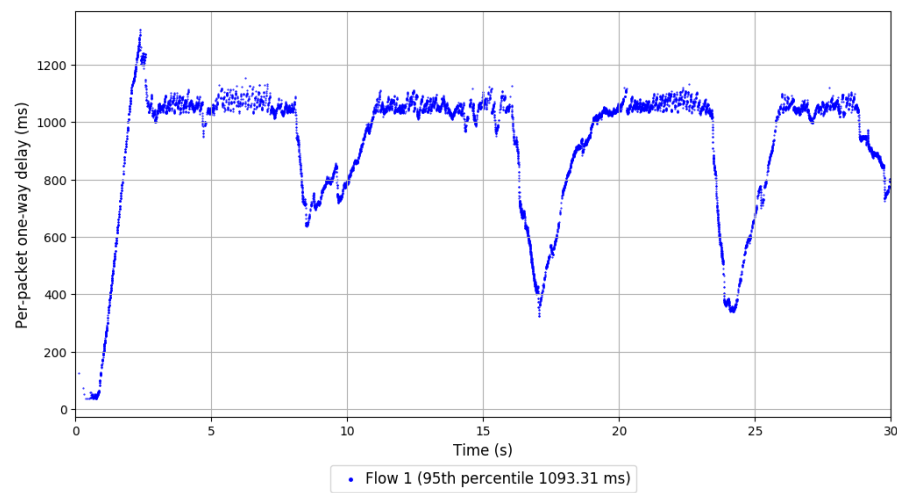
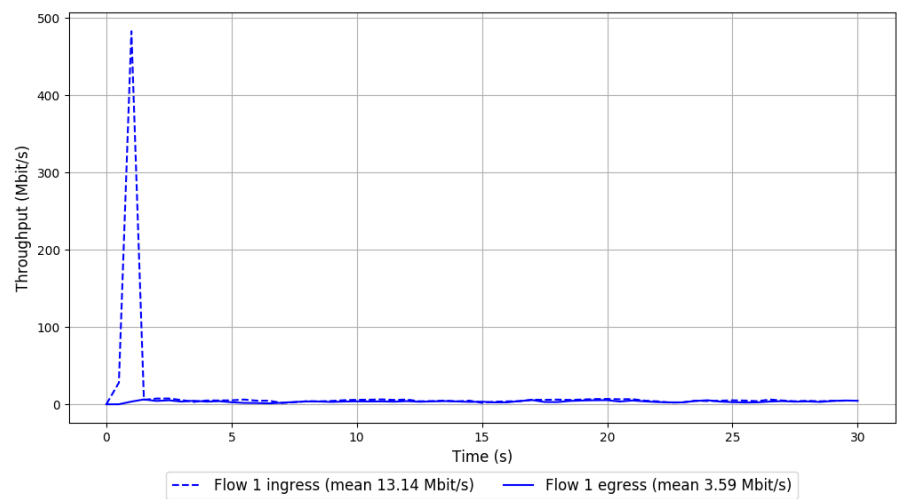


Run 1: Statistics of FillP

Start at: 2018-07-03 09:13:21
End at: 2018-07-03 09:13:51
Local clock offset: -1.52 ms
Remote clock offset: -4.031 ms

Below is generated by plot.py at 2018-07-03 10:07:02
Datalink statistics
-- Total of 1 flow:
Average throughput: 3.59 Mbit/s
95th percentile per-packet one-way delay: 1093.310 ms
Loss rate: 72.78%
-- Flow 1:
Average throughput: 3.59 Mbit/s
95th percentile per-packet one-way delay: 1093.310 ms
Loss rate: 72.78%

Run 1: Report of FillP — Data Link

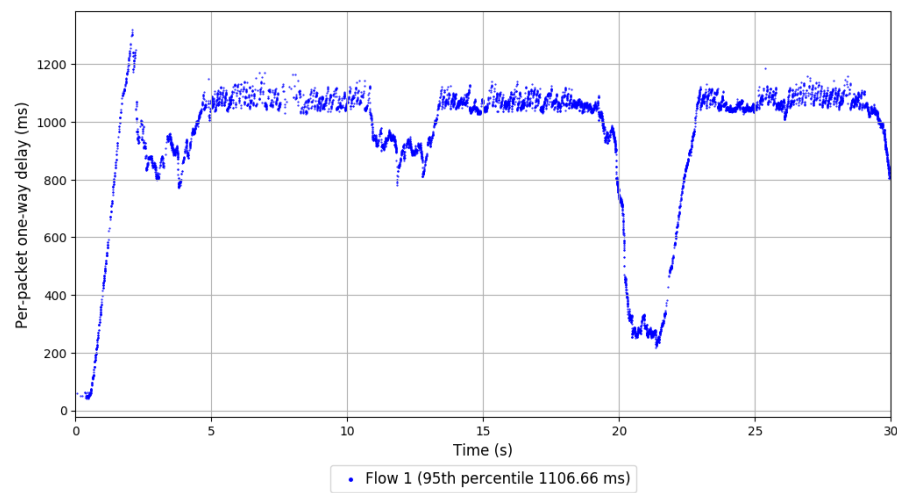
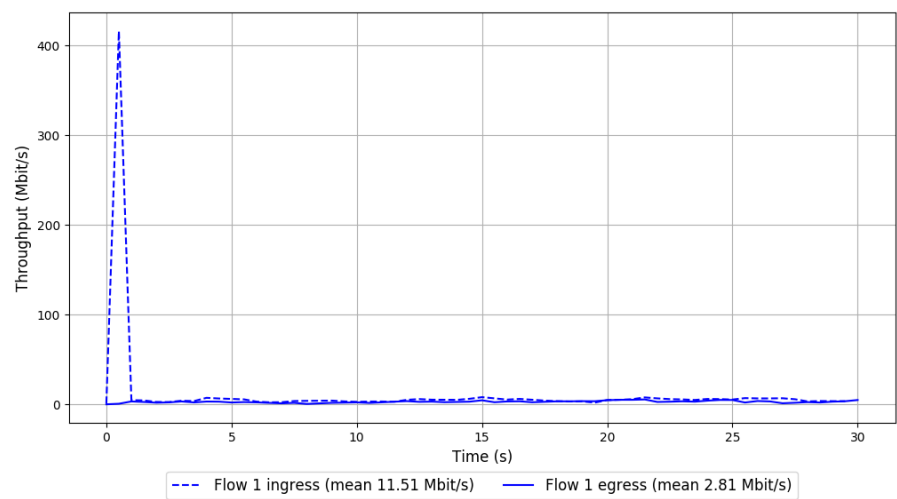


Run 2: Statistics of FillP

Start at: 2018-07-03 09:31:38
End at: 2018-07-03 09:32:08
Local clock offset: -2.406 ms
Remote clock offset: -1.449 ms

Below is generated by plot.py at 2018-07-03 10:07:02
Datalink statistics
-- Total of 1 flow:
Average throughput: 2.81 Mbit/s
95th percentile per-packet one-way delay: 1106.659 ms
Loss rate: 75.60%
-- Flow 1:
Average throughput: 2.81 Mbit/s
95th percentile per-packet one-way delay: 1106.659 ms
Loss rate: 75.60%

Run 2: Report of FillP — Data Link

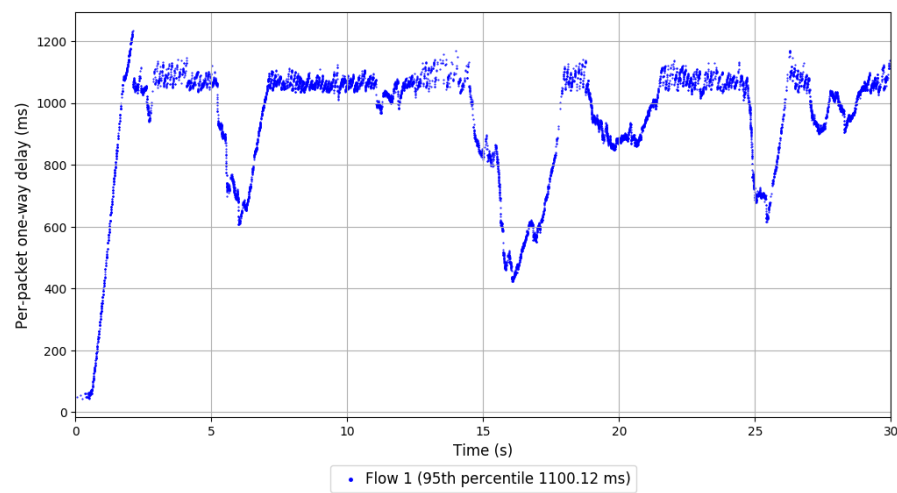
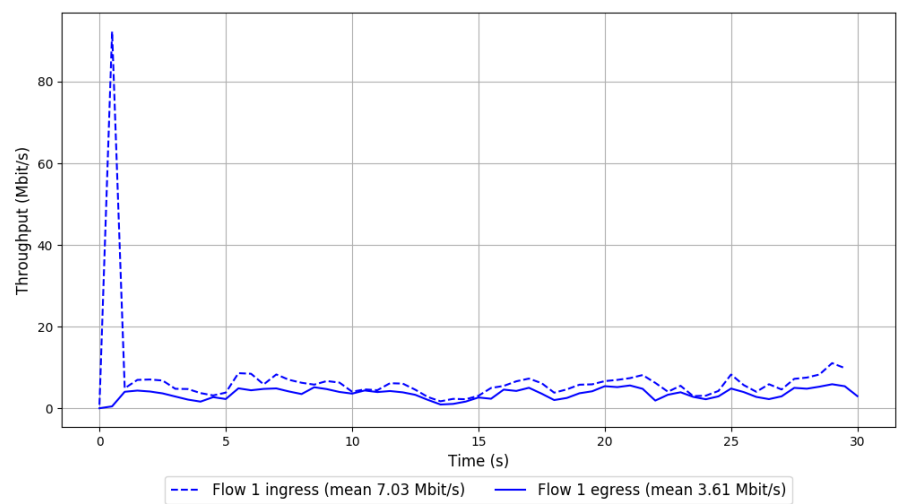


Run 3: Statistics of FillP

Start at: 2018-07-03 09:50:00
End at: 2018-07-03 09:50:30
Local clock offset: -1.438 ms
Remote clock offset: -0.687 ms

Below is generated by plot.py at 2018-07-03 10:07:02
Datalink statistics
-- Total of 1 flow:
Average throughput: 3.61 Mbit/s
95th percentile per-packet one-way delay: 1100.119 ms
Loss rate: 48.81%
-- Flow 1:
Average throughput: 3.61 Mbit/s
95th percentile per-packet one-way delay: 1100.119 ms
Loss rate: 48.81%

Run 3: Report of FillP — Data Link



Run 1: Statistics of FillP-Sheep

Start at: 2018-07-03 09:24:06

End at: 2018-07-03 09:24:36

Local clock offset: 0.068 ms

Remote clock offset: -2.097 ms

Below is generated by plot.py at 2018-07-03 10:07:02

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.56 Mbit/s

95th percentile per-packet one-way delay: 1115.331 ms

Loss rate: 44.37%

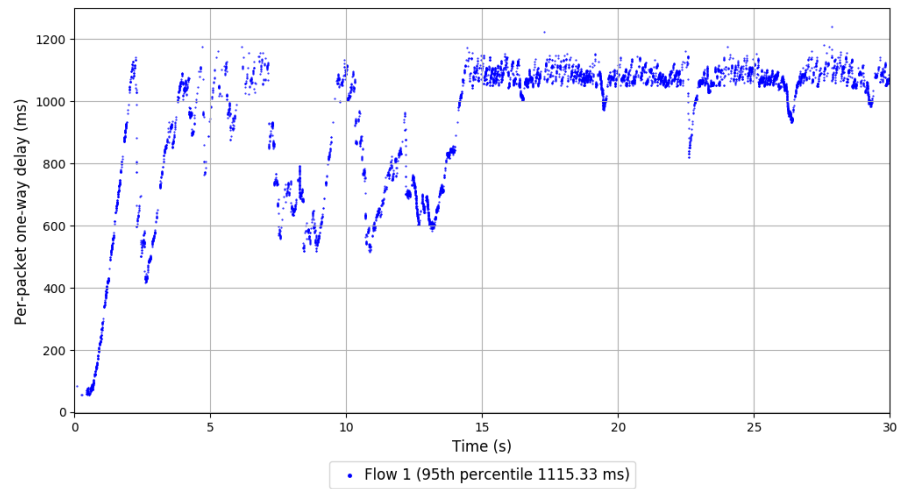
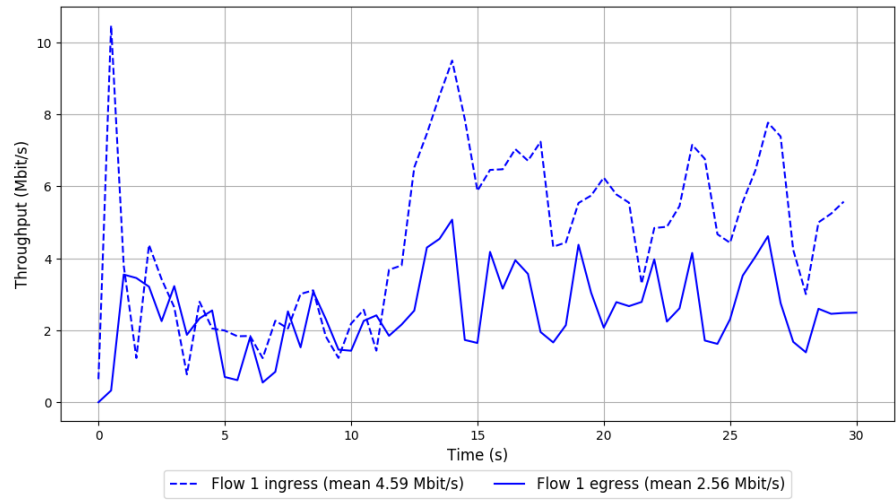
-- Flow 1:

Average throughput: 2.56 Mbit/s

95th percentile per-packet one-way delay: 1115.331 ms

Loss rate: 44.37%

Run 1: Report of FillP-Sheep — Data Link

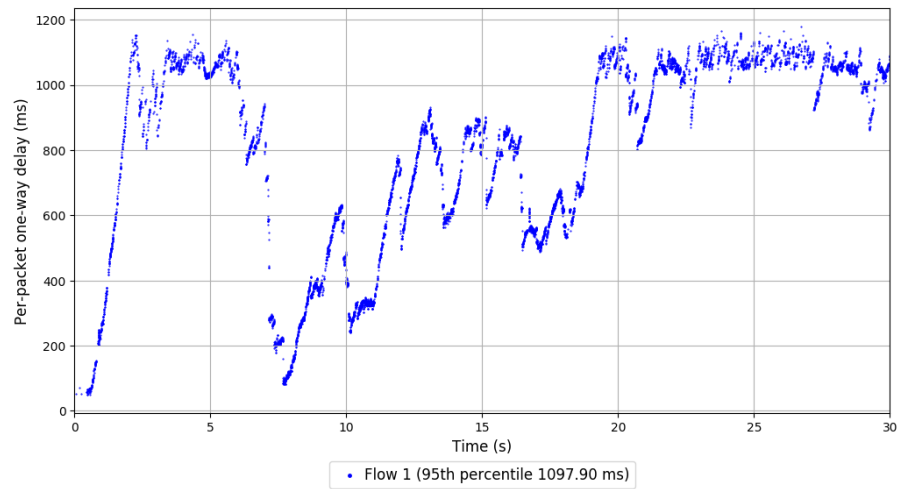
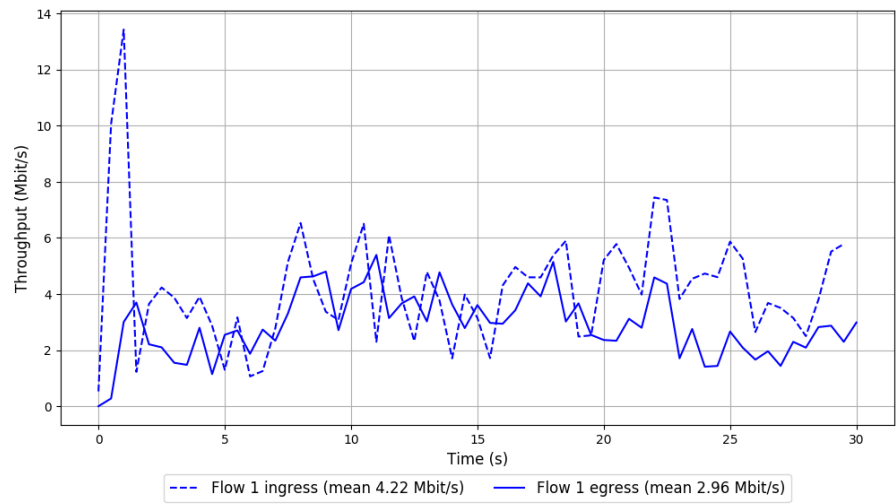


Run 2: Statistics of FillP-Sheep

Start at: 2018-07-03 09:42:29
End at: 2018-07-03 09:42:59
Local clock offset: -5.321 ms
Remote clock offset: -0.963 ms

Below is generated by plot.py at 2018-07-03 10:07:02
Datalink statistics
-- Total of 1 flow:
Average throughput: 2.96 Mbit/s
95th percentile per-packet one-way delay: 1097.905 ms
Loss rate: 30.08%
-- Flow 1:
Average throughput: 2.96 Mbit/s
95th percentile per-packet one-way delay: 1097.905 ms
Loss rate: 30.08%

Run 2: Report of FillP-Sheep — Data Link

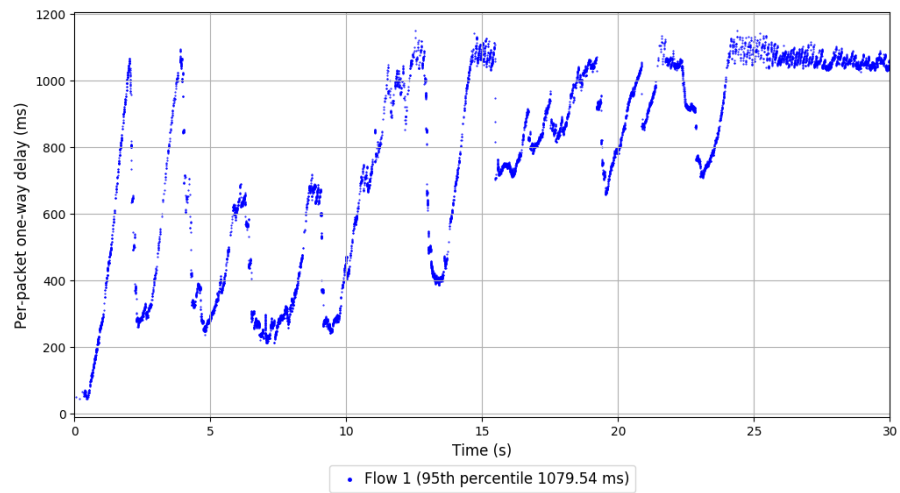
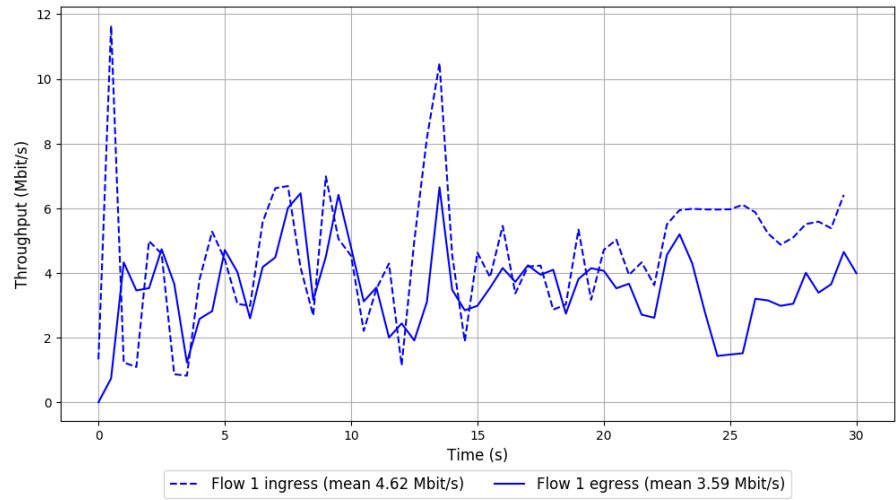


Run 3: Statistics of FillP-Sheep

Start at: 2018-07-03 10:00:46
End at: 2018-07-03 10:01:16
Local clock offset: 0.599 ms
Remote clock offset: -0.347 ms

Below is generated by plot.py at 2018-07-03 10:07:02
Datalink statistics
-- Total of 1 flow:
Average throughput: 3.59 Mbit/s
95th percentile per-packet one-way delay: 1079.541 ms
Loss rate: 22.39%
-- Flow 1:
Average throughput: 3.59 Mbit/s
95th percentile per-packet one-way delay: 1079.541 ms
Loss rate: 22.39%

Run 3: Report of FillP-Sheep — Data Link

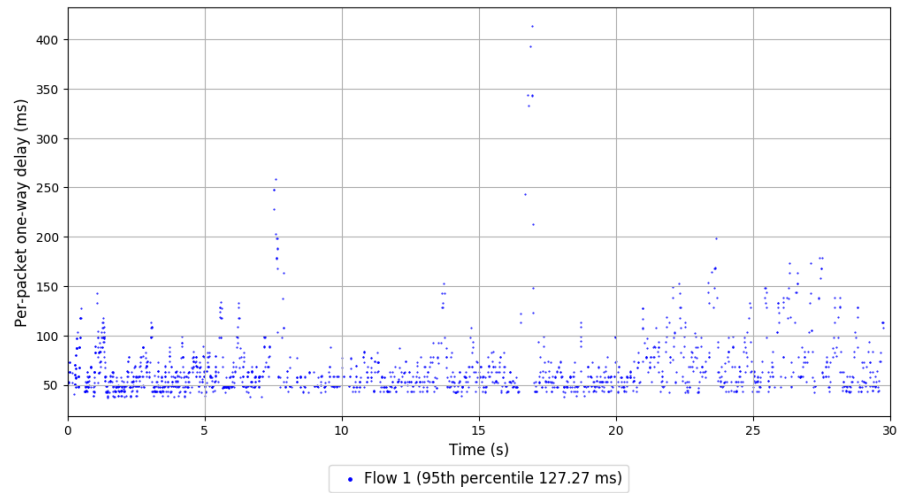
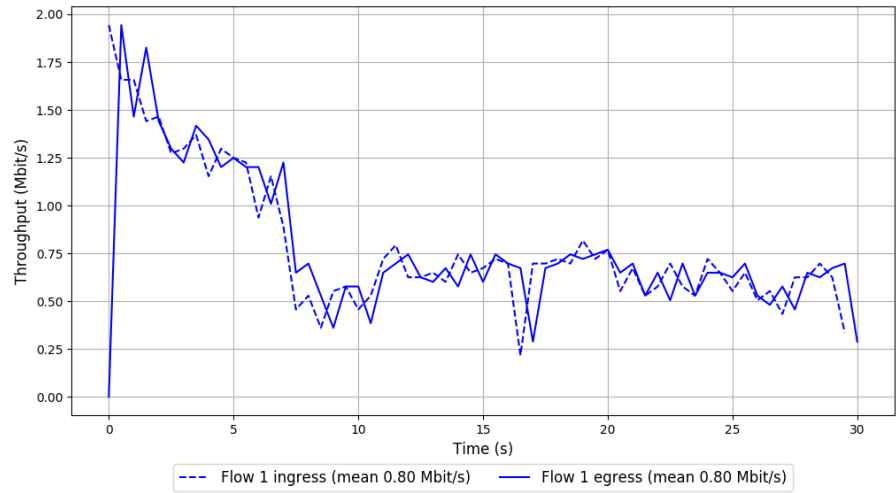


```
Run 1: Statistics of Indigo

Start at: 2018-07-03 09:18:44
End at: 2018-07-03 09:19:14
Local clock offset: -0.588 ms
Remote clock offset: -2.404 ms

# Below is generated by plot.py at 2018-07-03 10:07:02
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.80 Mbit/s
95th percentile per-packet one-way delay: 127.266 ms
Loss rate: 0.15%
-- Flow 1:
Average throughput: 0.80 Mbit/s
95th percentile per-packet one-way delay: 127.266 ms
Loss rate: 0.15%
```

Run 1: Report of Indigo — Data Link

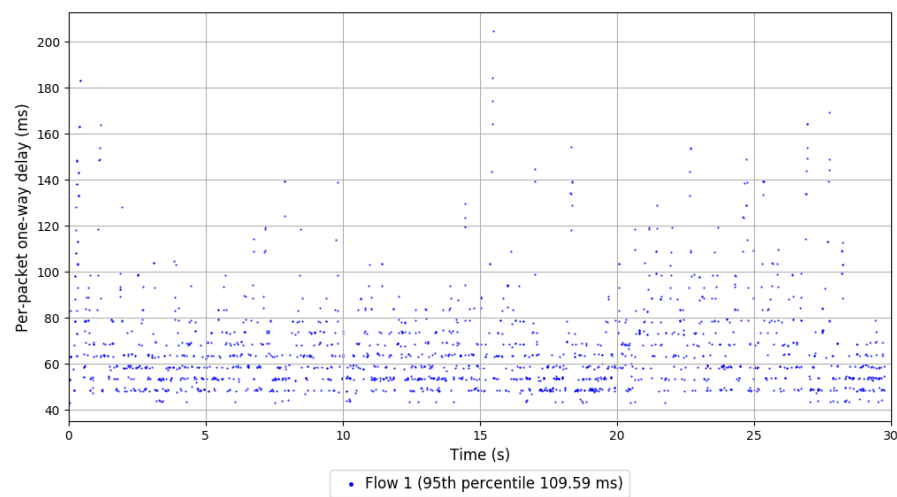
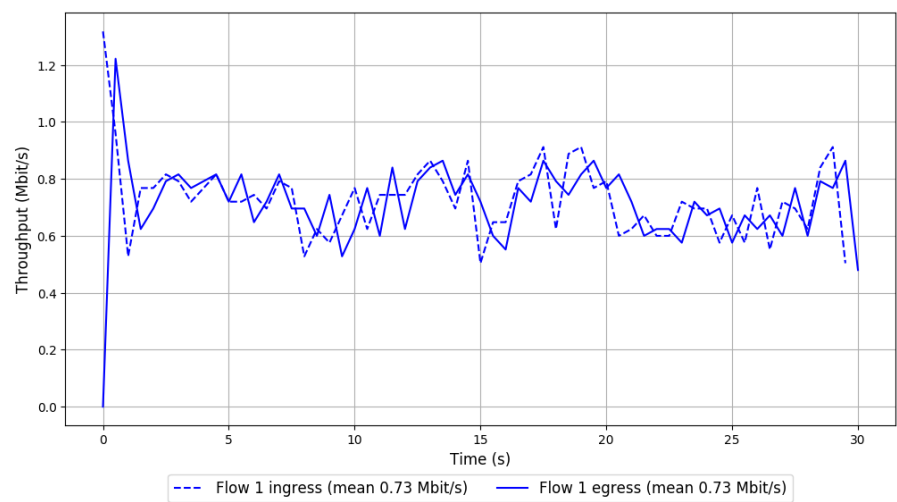


Run 2: Statistics of Indigo

Start at: 2018-07-03 09:37:01
End at: 2018-07-03 09:37:31
Local clock offset: 1.59 ms
Remote clock offset: -1.229 ms

Below is generated by plot.py at 2018-07-03 10:07:02
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.73 Mbit/s
95th percentile per-packet one-way delay: 109.593 ms
Loss rate: 0.33%
-- Flow 1:
Average throughput: 0.73 Mbit/s
95th percentile per-packet one-way delay: 109.593 ms
Loss rate: 0.33%

Run 2: Report of Indigo — Data Link



Run 3: Statistics of Indigo

Start at: 2018-07-03 09:55:23

End at: 2018-07-03 09:55:53

Local clock offset: 0.553 ms

Remote clock offset: -0.796 ms

Below is generated by plot.py at 2018-07-03 10:07:02

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.94 Mbit/s

95th percentile per-packet one-way delay: 107.400 ms

Loss rate: 0.21%

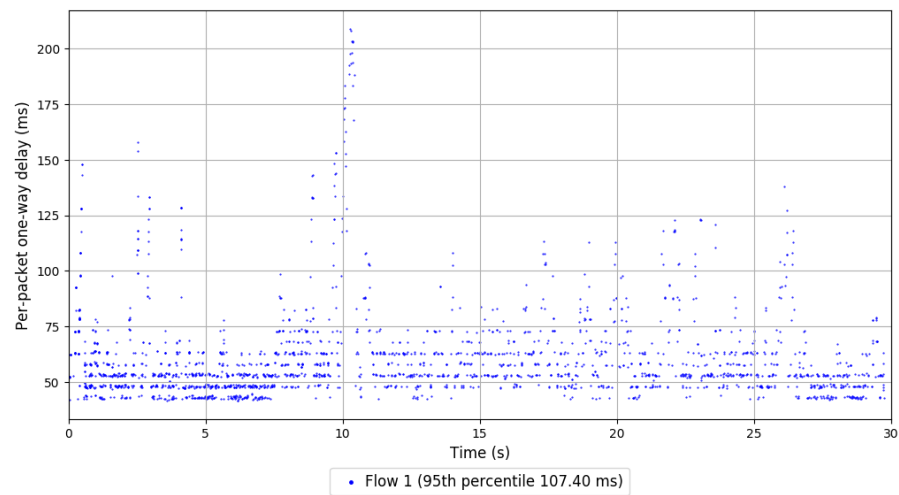
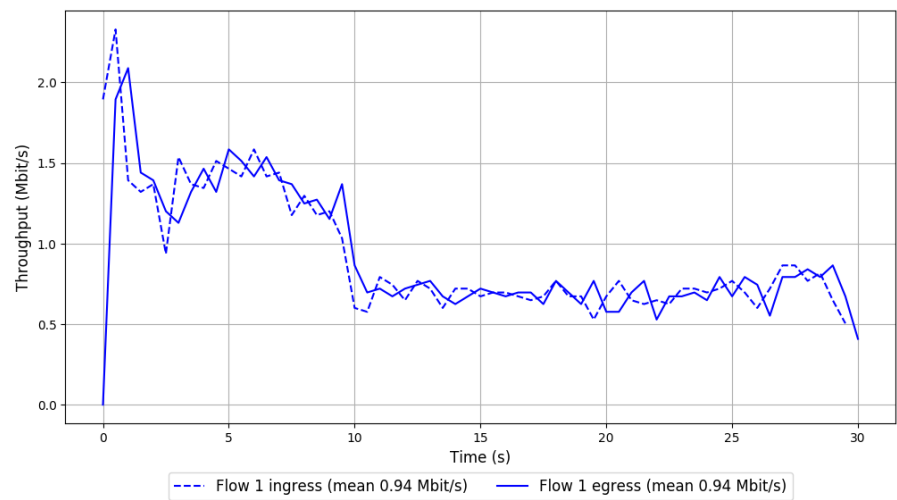
-- Flow 1:

Average throughput: 0.94 Mbit/s

95th percentile per-packet one-way delay: 107.400 ms

Loss rate: 0.21%

Run 3: Report of Indigo — Data Link

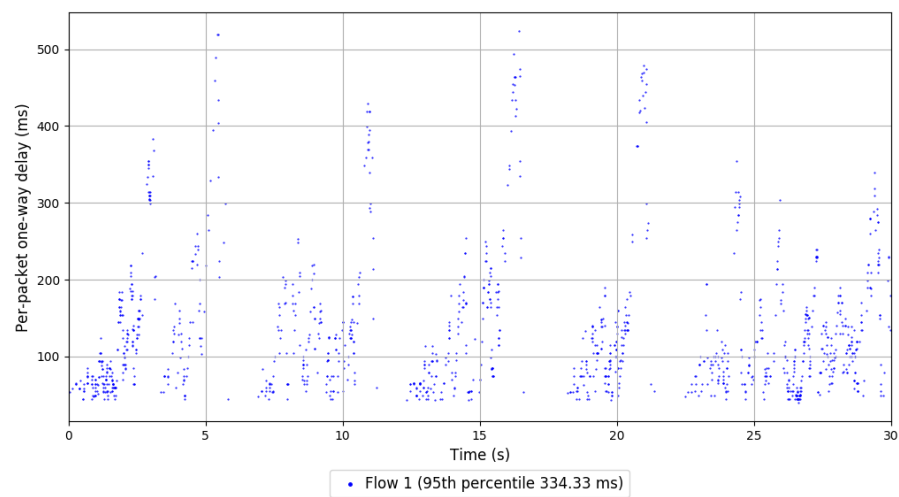
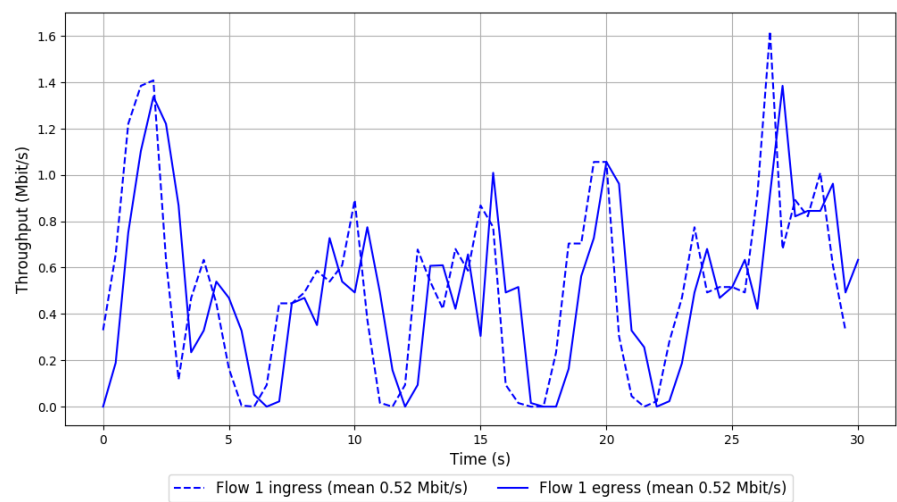


```
Run 1: Statistics of LEDBAT

Start at: 2018-07-03 09:27:20
End at: 2018-07-03 09:27:50
Local clock offset: -2.457 ms
Remote clock offset: -1.849 ms

# Below is generated by plot.py at 2018-07-03 10:07:02
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.52 Mbit/s
95th percentile per-packet one-way delay: 334.334 ms
Loss rate: 0.83%
-- Flow 1:
Average throughput: 0.52 Mbit/s
95th percentile per-packet one-way delay: 334.334 ms
Loss rate: 0.83%
```

Run 1: Report of LEDBAT — Data Link

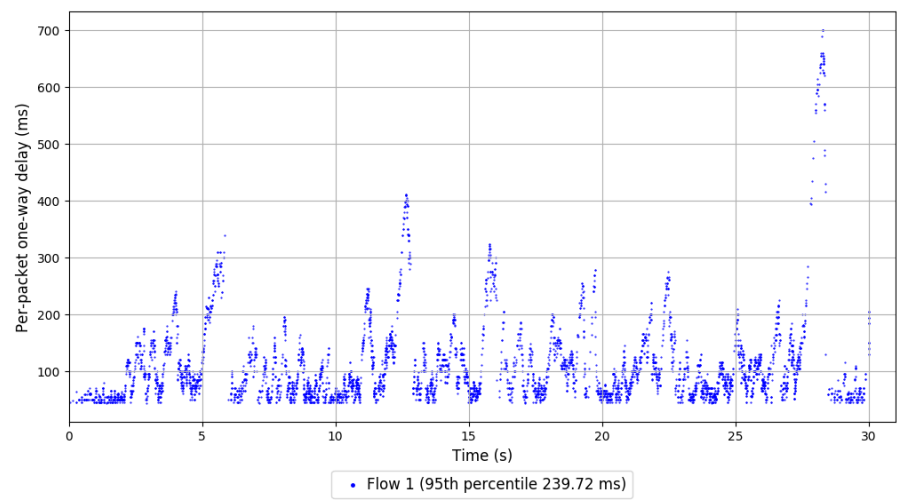
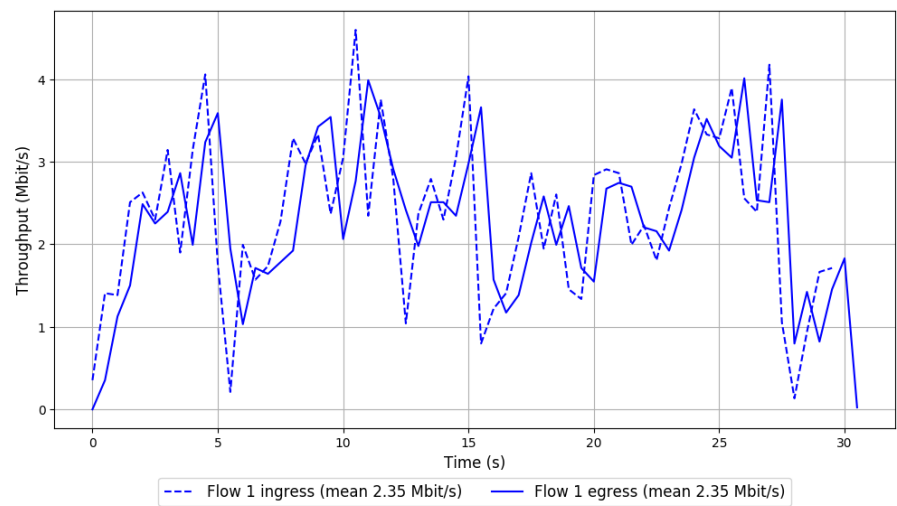


Run 2: Statistics of LEDBAT

Start at: 2018-07-03 09:45:42
End at: 2018-07-03 09:46:12
Local clock offset: -1.474 ms
Remote clock offset: -0.972 ms

Below is generated by plot.py at 2018-07-03 10:07:02
Datalink statistics
-- Total of 1 flow:
Average throughput: 2.35 Mbit/s
95th percentile per-packet one-way delay: 239.722 ms
Loss rate: 0.25%
-- Flow 1:
Average throughput: 2.35 Mbit/s
95th percentile per-packet one-way delay: 239.722 ms
Loss rate: 0.25%

Run 2: Report of LEDBAT — Data Link

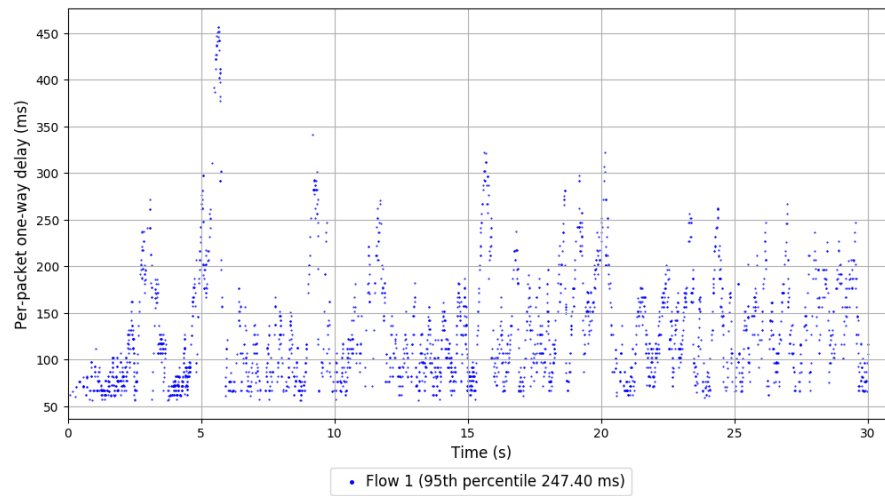
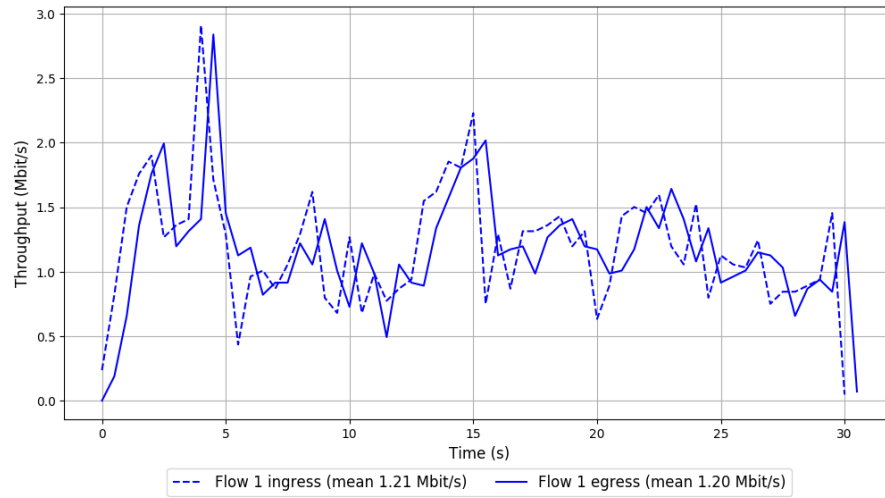


Run 3: Statistics of LEDBAT

Start at: 2018-07-03 10:03:59
End at: 2018-07-03 10:04:29
Local clock offset: 2.173 ms
Remote clock offset: -1.302 ms

Below is generated by plot.py at 2018-07-03 10:07:02
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.20 Mbit/s
95th percentile per-packet one-way delay: 247.402 ms
Loss rate: 0.78%
-- Flow 1:
Average throughput: 1.20 Mbit/s
95th percentile per-packet one-way delay: 247.402 ms
Loss rate: 0.78%

Run 3: Report of LEDBAT — Data Link

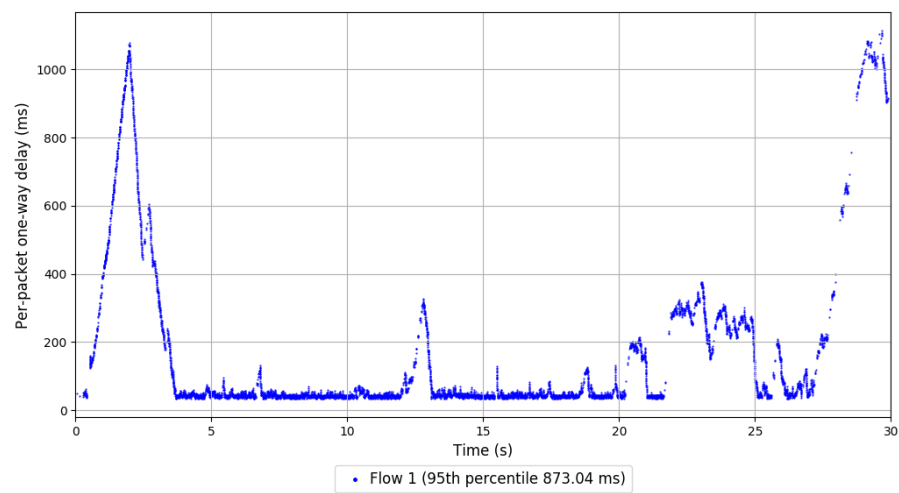
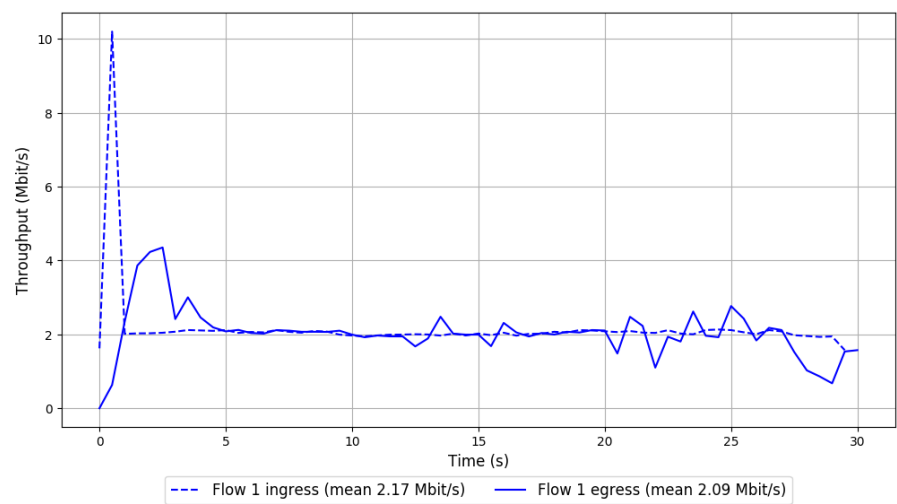


```
Run 1: Statistics of PCC-Allegro

Start at: 2018-07-03 09:12:16
End at: 2018-07-03 09:12:46
Local clock offset: 0.141 ms
Remote clock offset: -3.22 ms

# Below is generated by plot.py at 2018-07-03 10:07:02
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.09 Mbit/s
95th percentile per-packet one-way delay: 873.045 ms
Loss rate: 3.98%
-- Flow 1:
Average throughput: 2.09 Mbit/s
95th percentile per-packet one-way delay: 873.045 ms
Loss rate: 3.98%
```

Run 1: Report of PCC-Allegro — Data Link



Run 2: Statistics of PCC-Allegro

Start at: 2018-07-03 09:30:33

End at: 2018-07-03 09:31:03

Local clock offset: 0.901 ms

Remote clock offset: -1.613 ms

Below is generated by plot.py at 2018-07-03 10:07:03

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.11 Mbit/s

95th percentile per-packet one-way delay: 982.348 ms

Loss rate: 10.69%

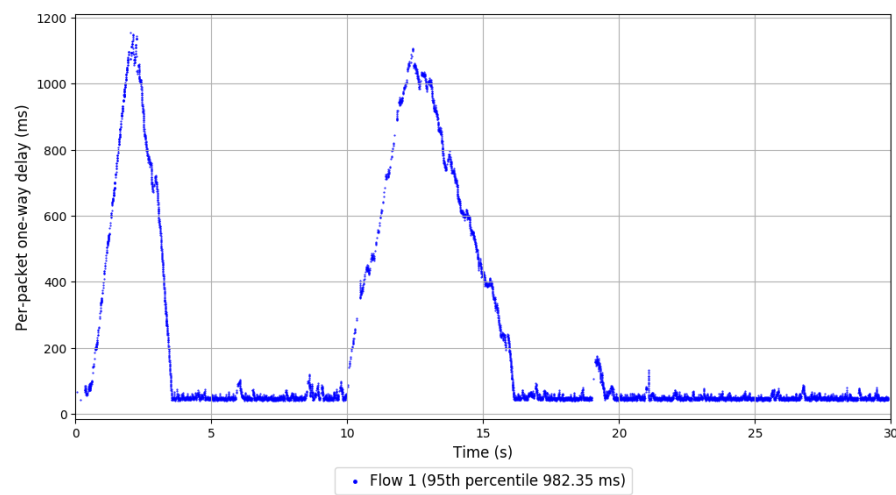
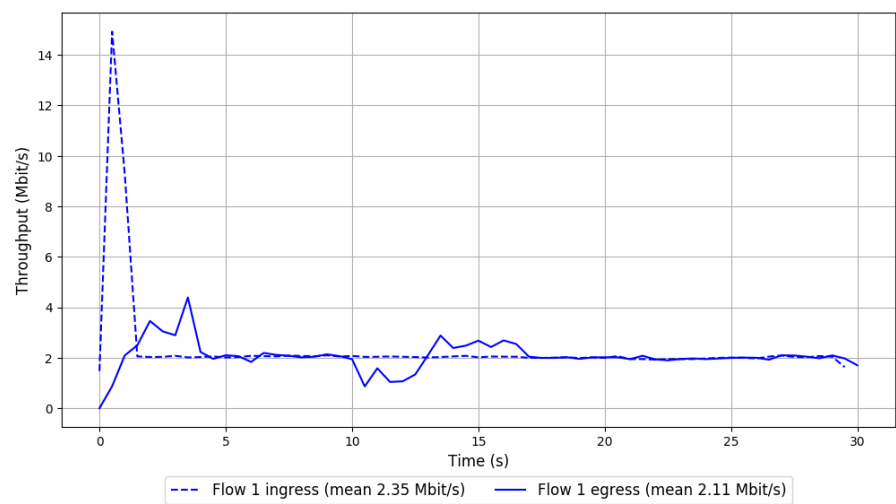
-- Flow 1:

Average throughput: 2.11 Mbit/s

95th percentile per-packet one-way delay: 982.348 ms

Loss rate: 10.69%

Run 2: Report of PCC-Allegro — Data Link



Run 3: Statistics of PCC-Allegro

Start at: 2018-07-03 09:48:56

End at: 2018-07-03 09:49:26

Local clock offset: -3.353 ms

Remote clock offset: 0.096 ms

Below is generated by plot.py at 2018-07-03 10:07:03

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.92 Mbit/s

95th percentile per-packet one-way delay: 1034.135 ms

Loss rate: 8.19%

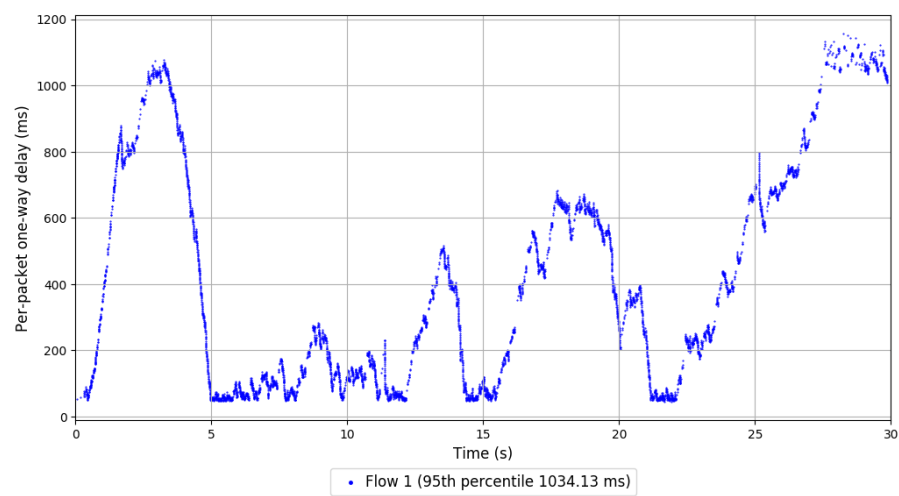
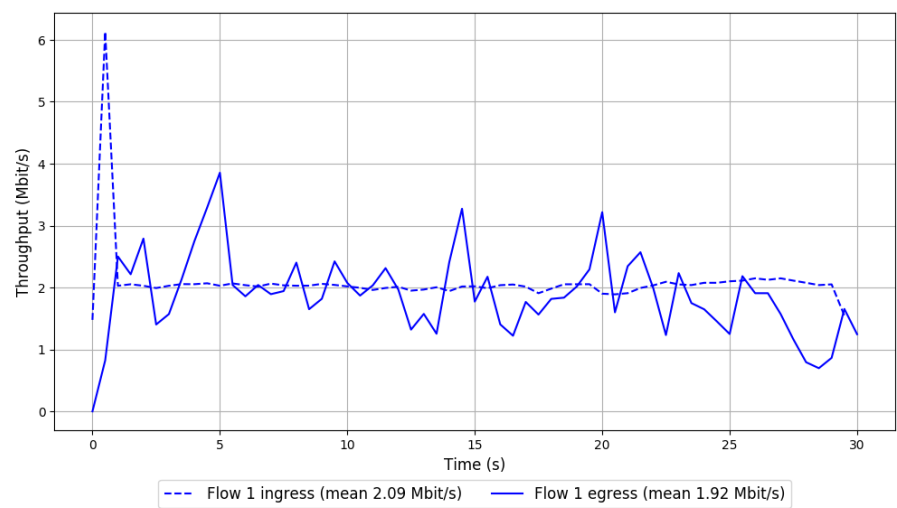
-- Flow 1:

Average throughput: 1.92 Mbit/s

95th percentile per-packet one-way delay: 1034.135 ms

Loss rate: 8.19%

Run 3: Report of PCC-Allegro — Data Link

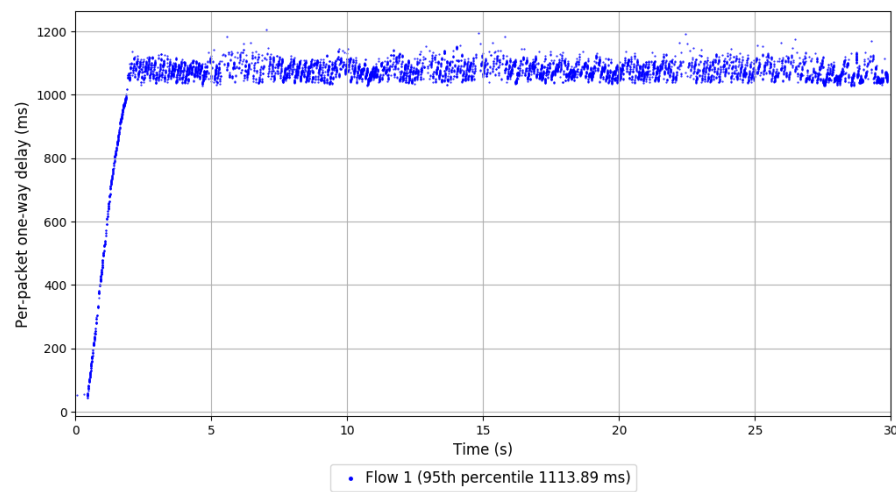
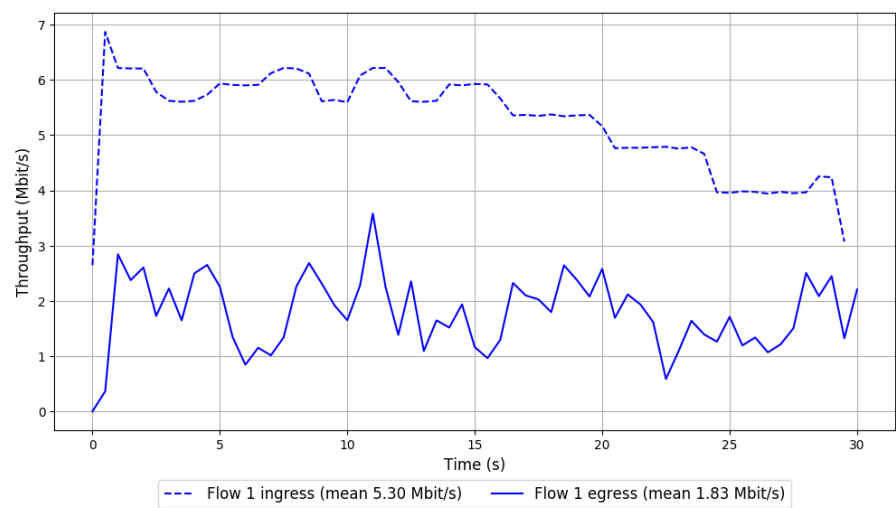


Run 1: Statistics of PCC-Expr

Start at: 2018-07-03 09:15:31
End at: 2018-07-03 09:16:01
Local clock offset: -1.881 ms
Remote clock offset: -2.464 ms

Below is generated by plot.py at 2018-07-03 10:07:10
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.83 Mbit/s
95th percentile per-packet one-way delay: 1113.889 ms
Loss rate: 65.53%
-- Flow 1:
Average throughput: 1.83 Mbit/s
95th percentile per-packet one-way delay: 1113.889 ms
Loss rate: 65.53%

Run 1: Report of PCC-Expr — Data Link

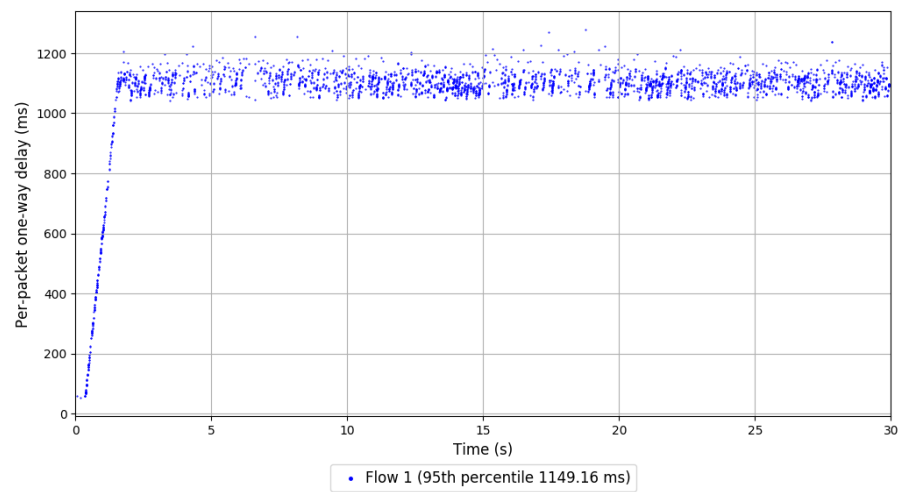
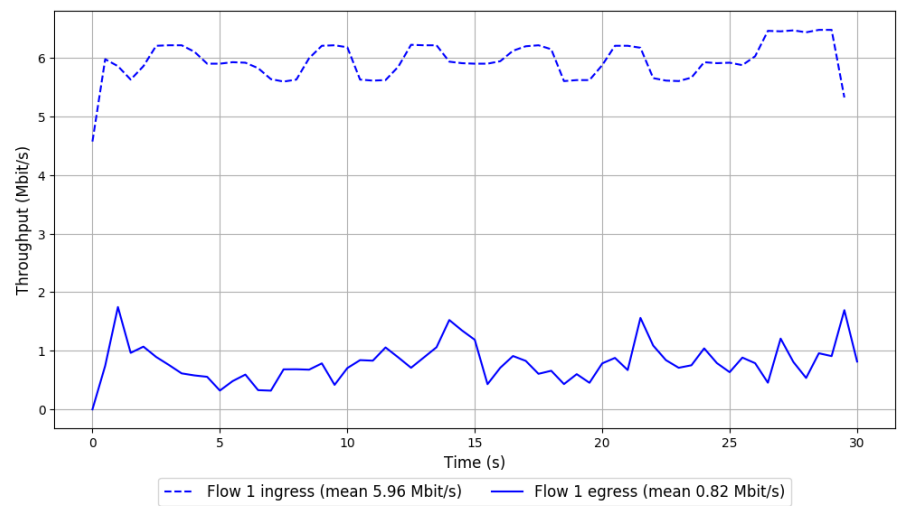


Run 2: Statistics of PCC-Expr

Start at: 2018-07-03 09:33:47
End at: 2018-07-03 09:34:17
Local clock offset: -3.037 ms
Remote clock offset: -0.977 ms

Below is generated by plot.py at 2018-07-03 10:07:10
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.82 Mbit/s
95th percentile per-packet one-way delay: 1149.163 ms
Loss rate: 86.35%
-- Flow 1:
Average throughput: 0.82 Mbit/s
95th percentile per-packet one-way delay: 1149.163 ms
Loss rate: 86.35%

Run 2: Report of PCC-Expr — Data Link

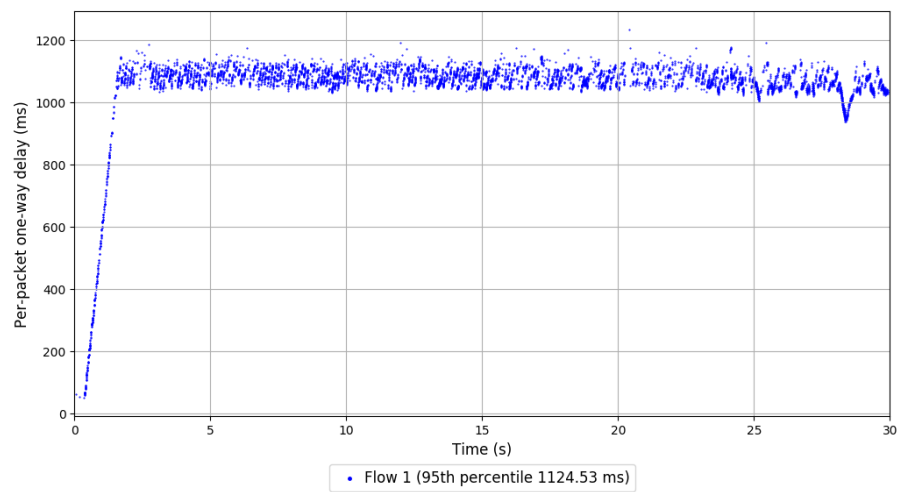
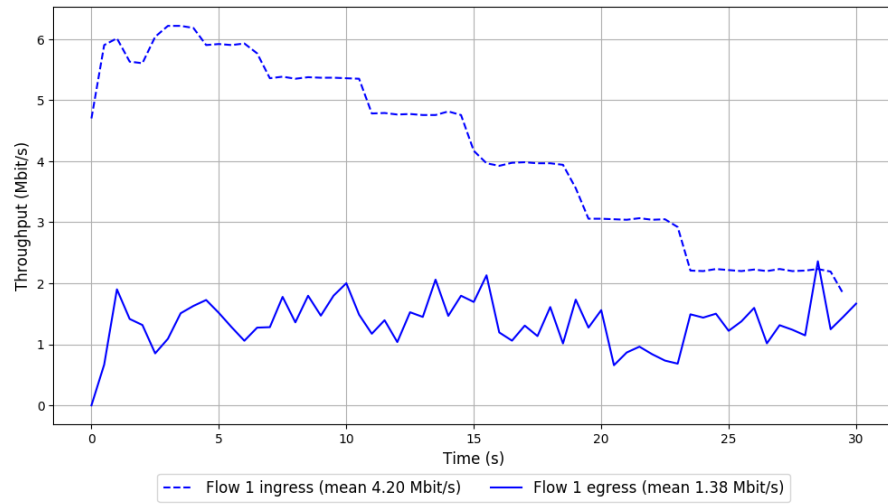


Run 3: Statistics of PCC-Expr

Start at: 2018-07-03 09:52:09
End at: 2018-07-03 09:52:39
Local clock offset: 3.07 ms
Remote clock offset: -0.822 ms

Below is generated by plot.py at 2018-07-03 10:07:10
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.38 Mbit/s
95th percentile per-packet one-way delay: 1124.533 ms
Loss rate: 67.10%
-- Flow 1:
Average throughput: 1.38 Mbit/s
95th percentile per-packet one-way delay: 1124.533 ms
Loss rate: 67.10%

Run 3: Report of PCC-Expr — Data Link



Run 1: Statistics of QUIC Cubic

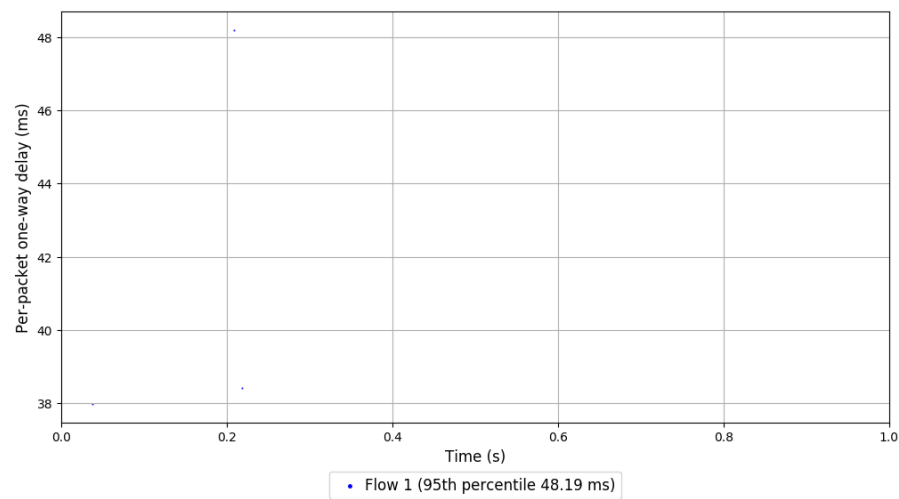
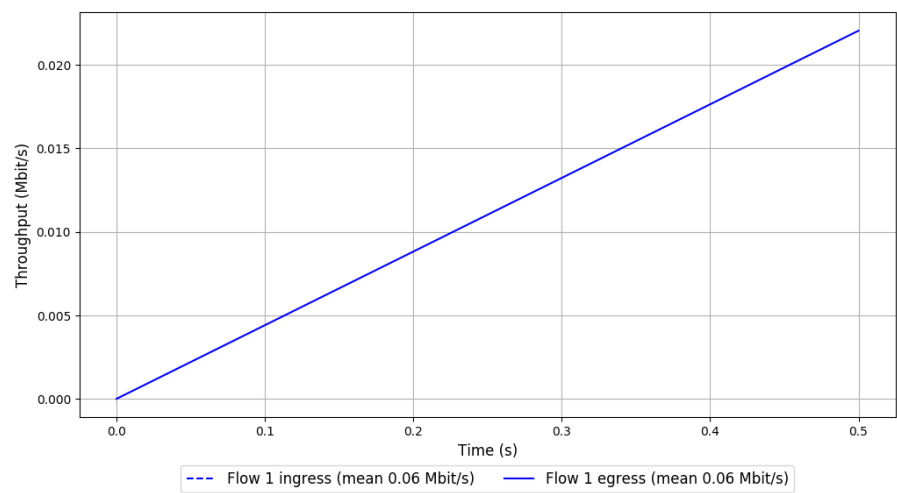
Start at: 2018-07-03 09:23:02

End at: 2018-07-03 09:23:32

Local clock offset: 0.137 ms

Remote clock offset: -2.058 ms

Run 1: Report of QUIC Cubic — Data Link

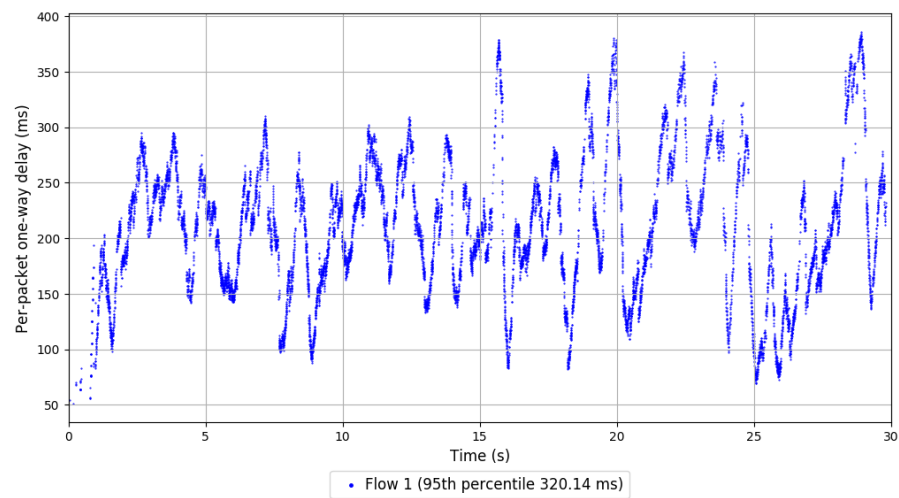
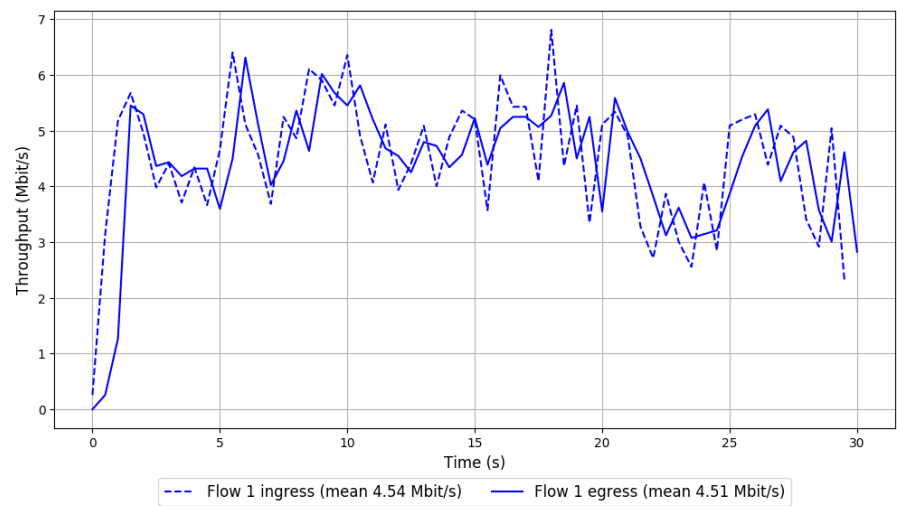


Run 2: Statistics of QUIC Cubic

Start at: 2018-07-03 09:41:19
End at: 2018-07-03 09:41:49
Local clock offset: -4.946 ms
Remote clock offset: -0.668 ms

Below is generated by plot.py at 2018-07-03 10:07:12
Datalink statistics
-- Total of 1 flow:
Average throughput: 4.51 Mbit/s
95th percentile per-packet one-way delay: 320.140 ms
Loss rate: 0.89%
-- Flow 1:
Average throughput: 4.51 Mbit/s
95th percentile per-packet one-way delay: 320.140 ms
Loss rate: 0.89%

Run 2: Report of QUIC Cubic — Data Link



Run 3: Statistics of QUIC Cubic

Start at: 2018-07-03 09:59:41

End at: 2018-07-03 10:00:11

Local clock offset: -1.611 ms

Remote clock offset: 0.249 ms

Below is generated by plot.py at 2018-07-03 10:07:12

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.81 Mbit/s

95th percentile per-packet one-way delay: 563.378 ms

Loss rate: 1.87%

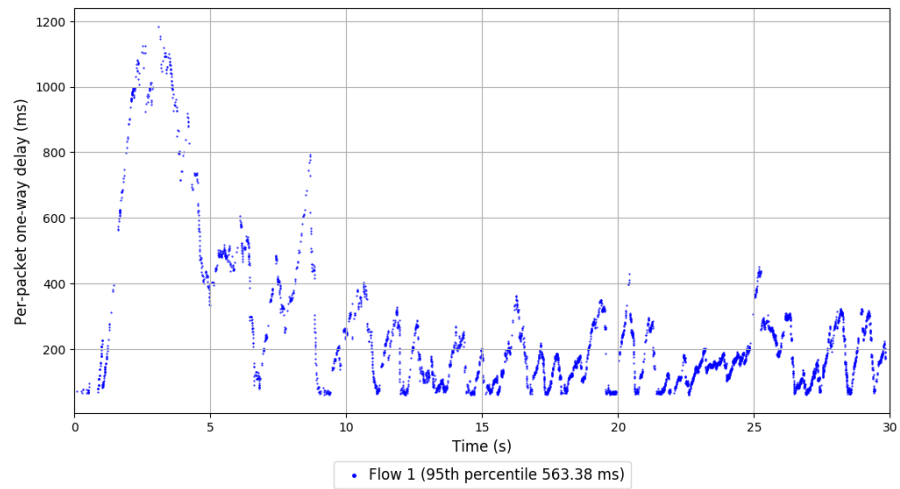
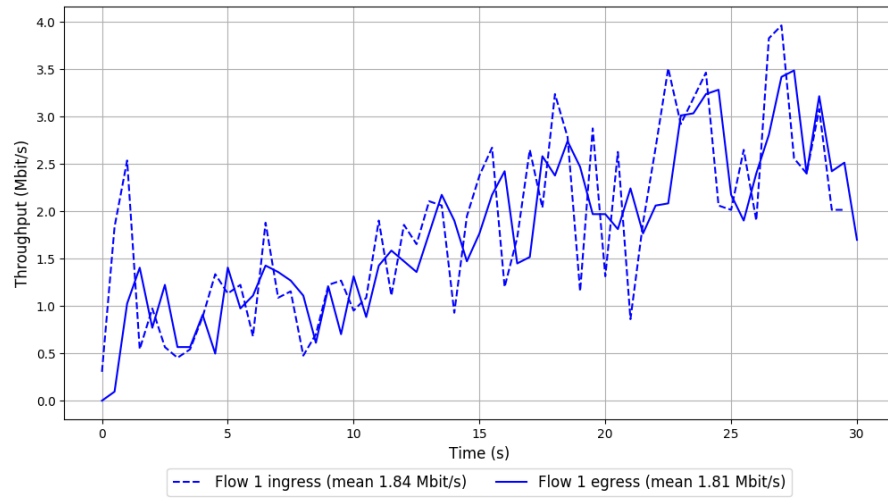
-- Flow 1:

Average throughput: 1.81 Mbit/s

95th percentile per-packet one-way delay: 563.378 ms

Loss rate: 1.87%

Run 3: Report of QUIC Cubic — Data Link

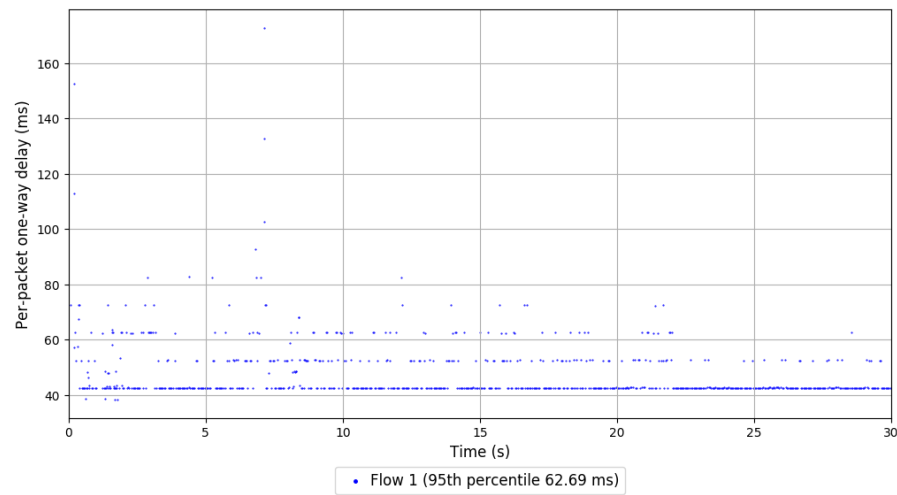
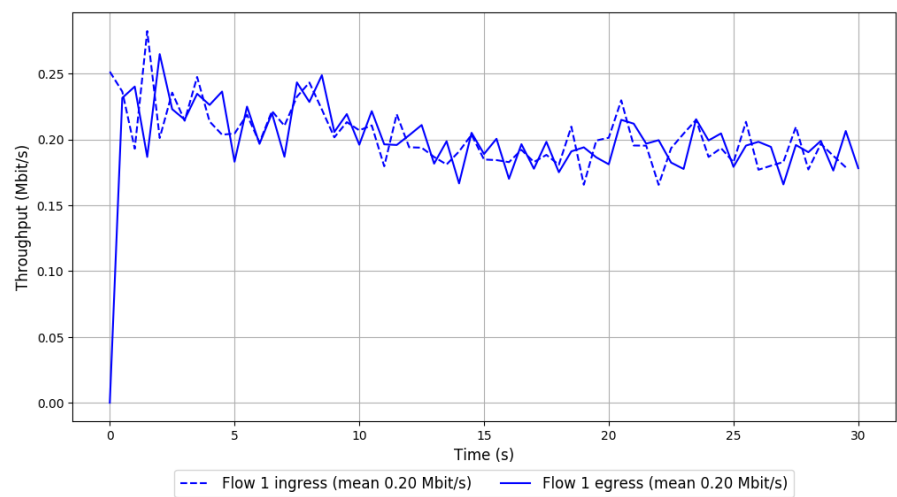


Run 1: Statistics of SCReAM

Start at: 2018-07-03 09:28:24
End at: 2018-07-03 09:28:54
Local clock offset: -1.298 ms
Remote clock offset: -1.472 ms

Below is generated by plot.py at 2018-07-03 10:07:12
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.20 Mbit/s
95th percentile per-packet one-way delay: 62.687 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 0.20 Mbit/s
95th percentile per-packet one-way delay: 62.687 ms
Loss rate: 0.13%

Run 1: Report of SReAM — Data Link

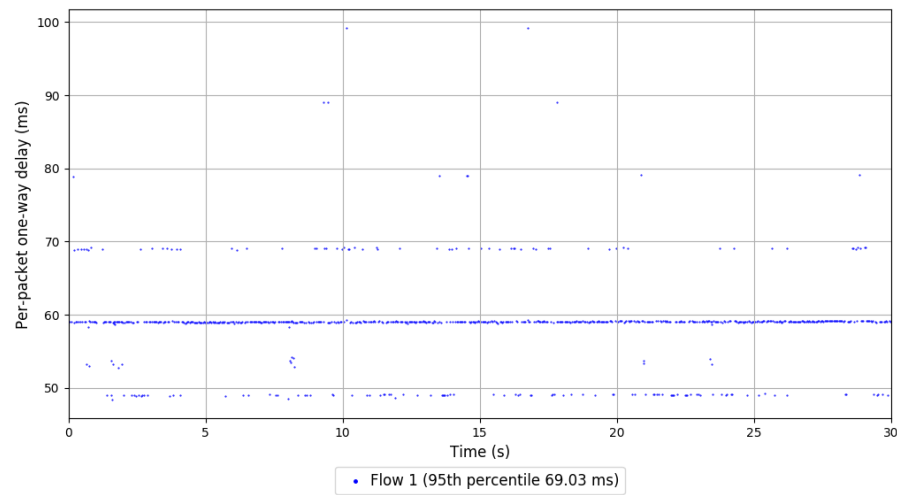
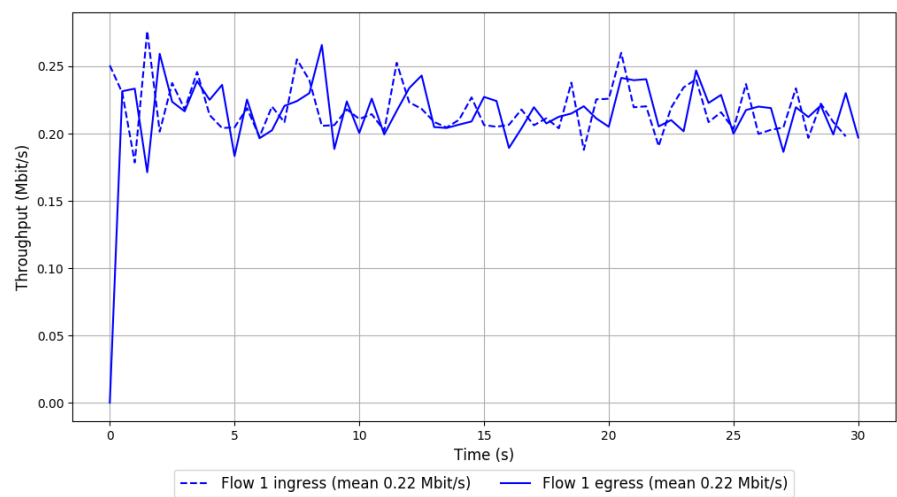


Run 2: Statistics of SCReAM

Start at: 2018-07-03 09:46:47
End at: 2018-07-03 09:47:17
Local clock offset: -4.893 ms
Remote clock offset: -0.928 ms

Below is generated by plot.py at 2018-07-03 10:07:12
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 69.025 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 69.025 ms
Loss rate: 0.13%

Run 2: Report of SReAM — Data Link

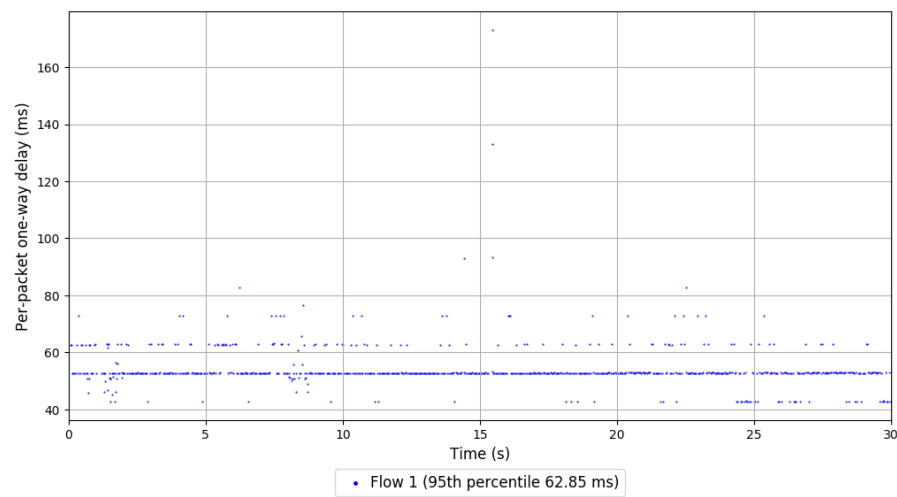
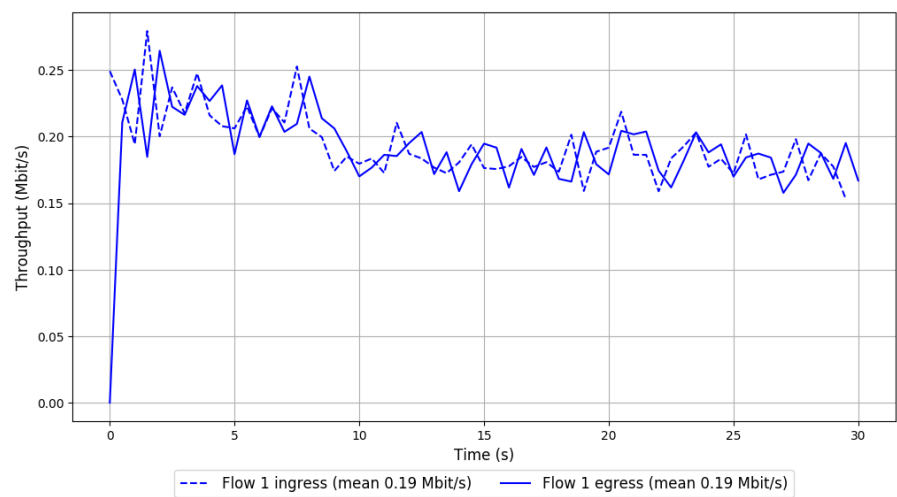


Run 3: Statistics of SCReAM

Start at: 2018-07-03 10:05:04
End at: 2018-07-03 10:05:34
Local clock offset: -2.592 ms
Remote clock offset: -1.744 ms

Below is generated by plot.py at 2018-07-03 10:07:12
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.19 Mbit/s
95th percentile per-packet one-way delay: 62.847 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.19 Mbit/s
95th percentile per-packet one-way delay: 62.847 ms
Loss rate: 0.00%

Run 3: Report of SReAM — Data Link

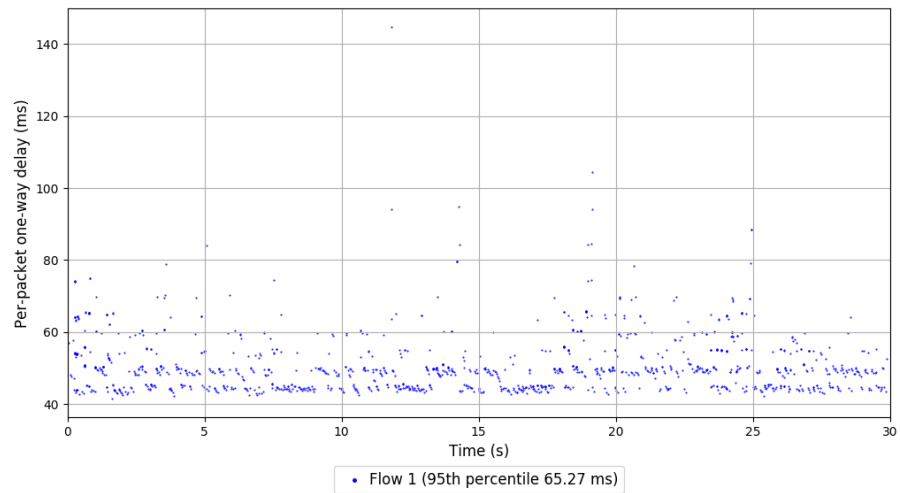
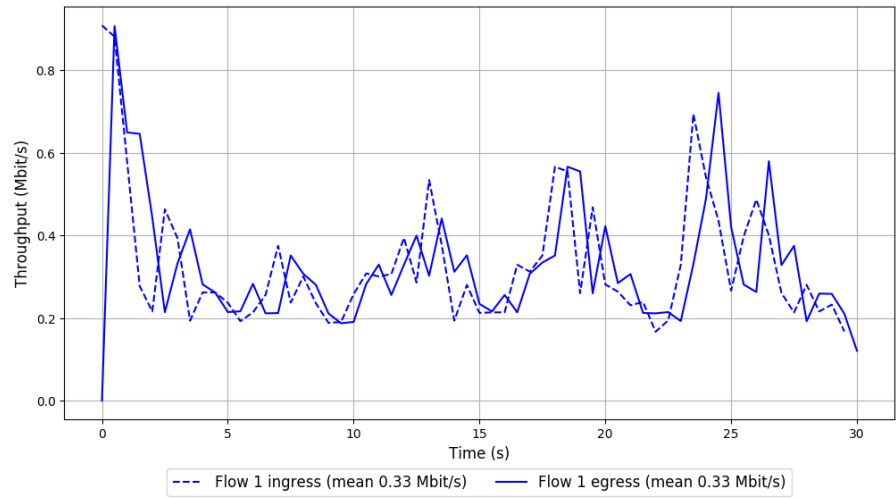


Run 1: Statistics of Sprout

Start at: 2018-07-03 09:16:35
End at: 2018-07-03 09:17:05
Local clock offset: -3.159 ms
Remote clock offset: -2.556 ms

Below is generated by plot.py at 2018-07-03 10:07:12
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.33 Mbit/s
95th percentile per-packet one-way delay: 65.268 ms
Loss rate: 0.36%
-- Flow 1:
Average throughput: 0.33 Mbit/s
95th percentile per-packet one-way delay: 65.268 ms
Loss rate: 0.36%

Run 1: Report of Sprout — Data Link

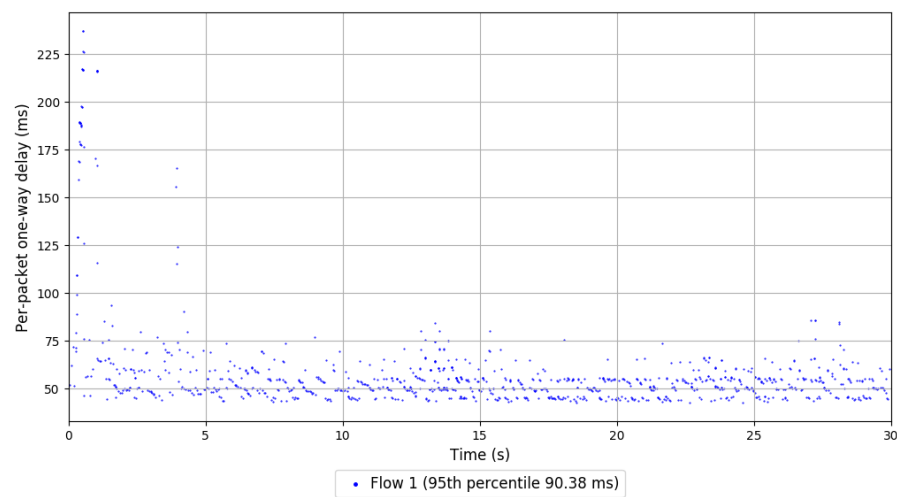
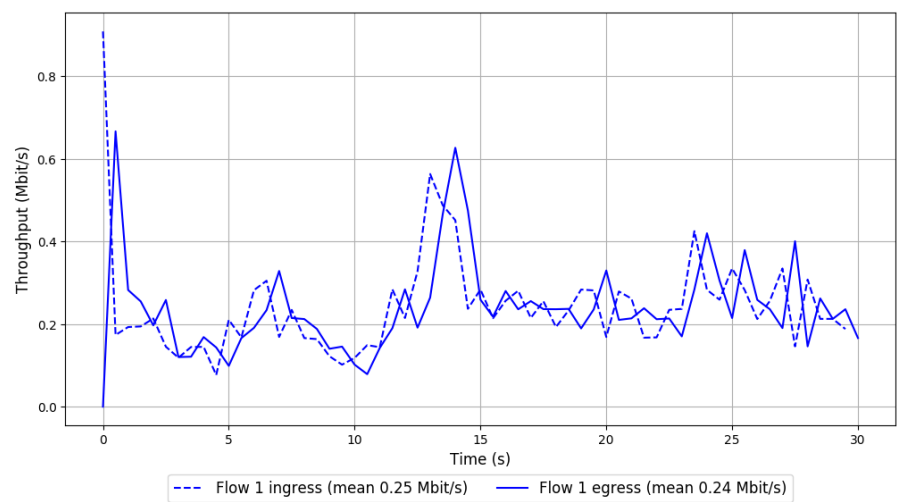


Run 2: Statistics of Sprout

Start at: 2018-07-03 09:34:52
End at: 2018-07-03 09:35:22
Local clock offset: -2.327 ms
Remote clock offset: -2.319 ms

Below is generated by plot.py at 2018-07-03 10:07:12
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.24 Mbit/s
95th percentile per-packet one-way delay: 90.383 ms
Loss rate: 0.31%
-- Flow 1:
Average throughput: 0.24 Mbit/s
95th percentile per-packet one-way delay: 90.383 ms
Loss rate: 0.31%

Run 2: Report of Sprout — Data Link



Run 3: Statistics of Sprout

Start at: 2018-07-03 09:53:14

End at: 2018-07-03 09:53:44

Local clock offset: -0.415 ms

Remote clock offset: 0.54 ms

Below is generated by plot.py at 2018-07-03 10:07:12

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.18 Mbit/s

95th percentile per-packet one-way delay: 99.544 ms

Loss rate: 0.60%

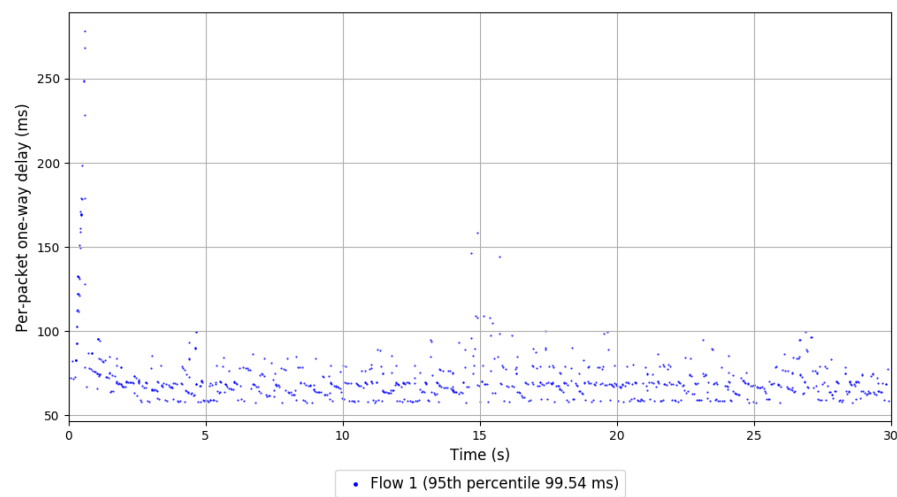
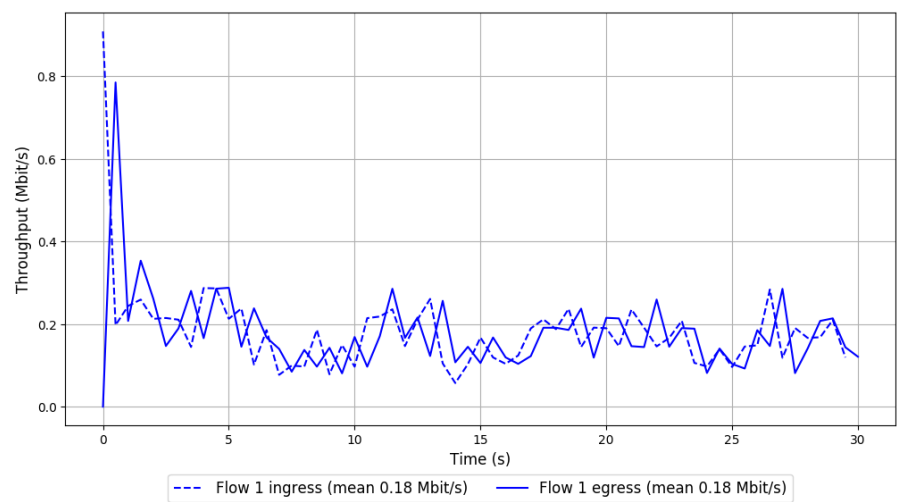
-- Flow 1:

Average throughput: 0.18 Mbit/s

95th percentile per-packet one-way delay: 99.544 ms

Loss rate: 0.60%

Run 3: Report of Sprout — Data Link



Run 1: Statistics of TaoVA-100x

Start at: 2018-07-03 09:21:58

End at: 2018-07-03 09:22:28

Local clock offset: -1.58 ms

Remote clock offset: -2.101 ms

Below is generated by plot.py at 2018-07-03 10:07:16

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.16 Mbit/s

95th percentile per-packet one-way delay: 348.401 ms

Loss rate: 0.51%

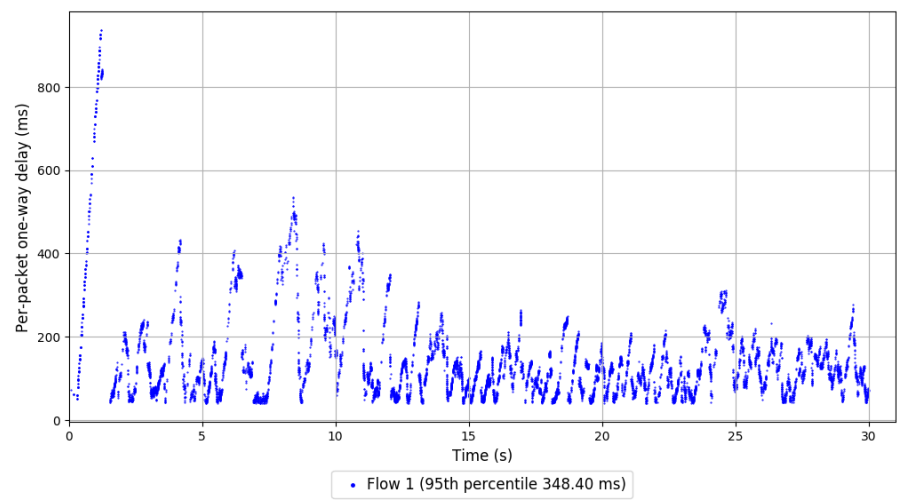
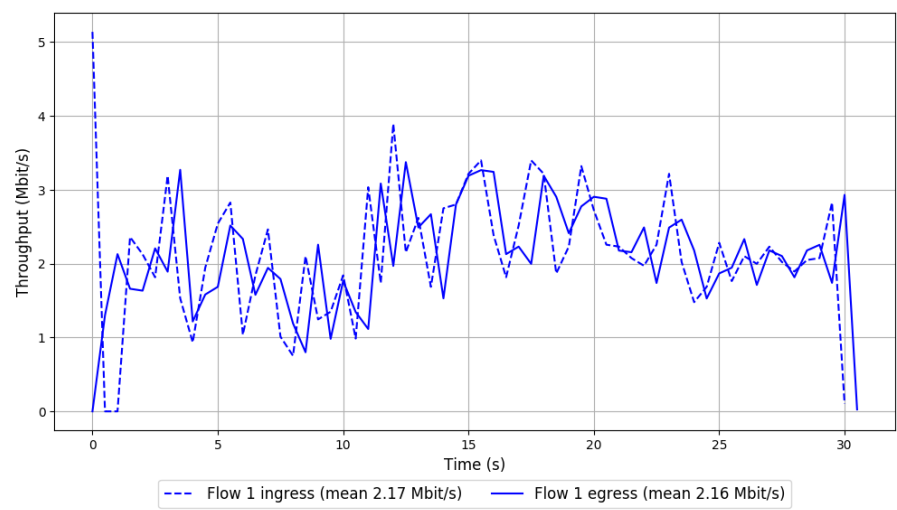
-- Flow 1:

Average throughput: 2.16 Mbit/s

95th percentile per-packet one-way delay: 348.401 ms

Loss rate: 0.51%

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



Run 2: Statistics of TaoVA-100x

Start at: 2018-07-03 09:40:14

End at: 2018-07-03 09:40:44

Local clock offset: -2.635 ms

Remote clock offset: -1.566 ms

Below is generated by plot.py at 2018-07-03 10:07:17

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.26 Mbit/s

95th percentile per-packet one-way delay: 402.839 ms

Loss rate: 1.09%

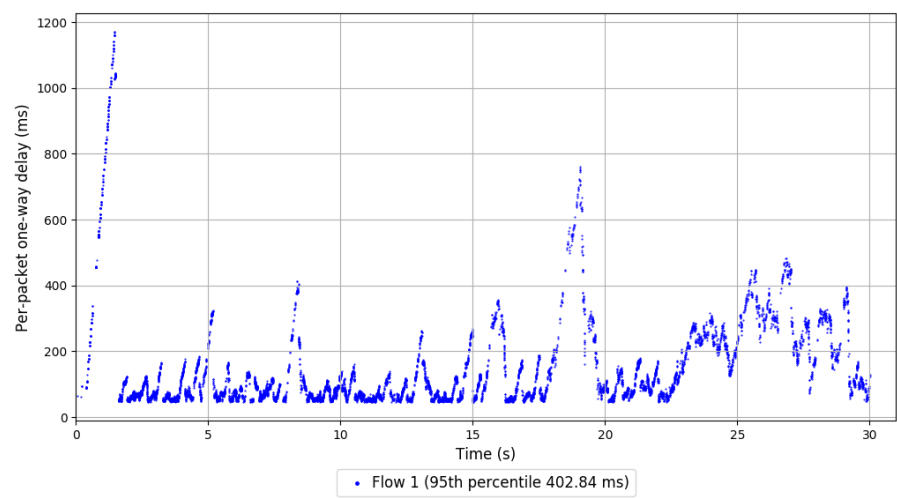
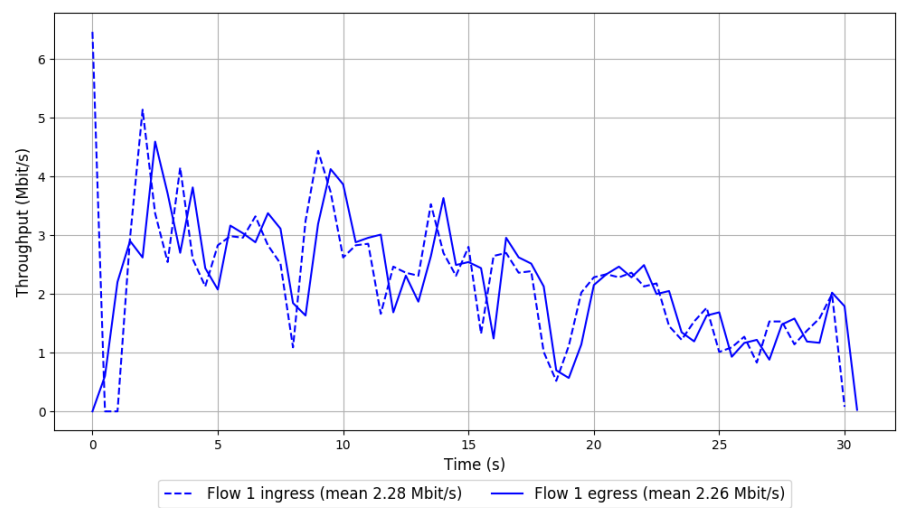
-- Flow 1:

Average throughput: 2.26 Mbit/s

95th percentile per-packet one-way delay: 402.839 ms

Loss rate: 1.09%

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



Run 3: Statistics of TaoVA-100x

Start at: 2018-07-03 09:58:36

End at: 2018-07-03 09:59:06

Local clock offset: 0.465 ms

Remote clock offset: 0.531 ms

Below is generated by plot.py at 2018-07-03 10:07:18

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.28 Mbit/s

95th percentile per-packet one-way delay: 277.163 ms

Loss rate: 0.47%

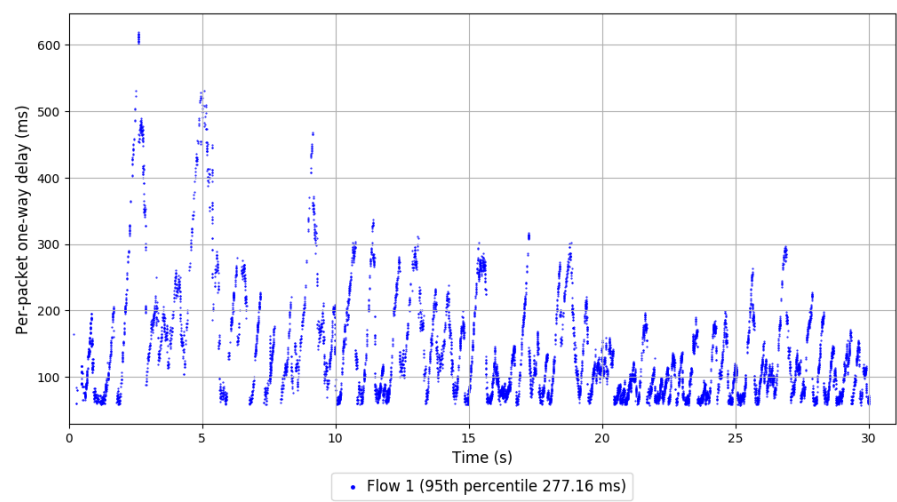
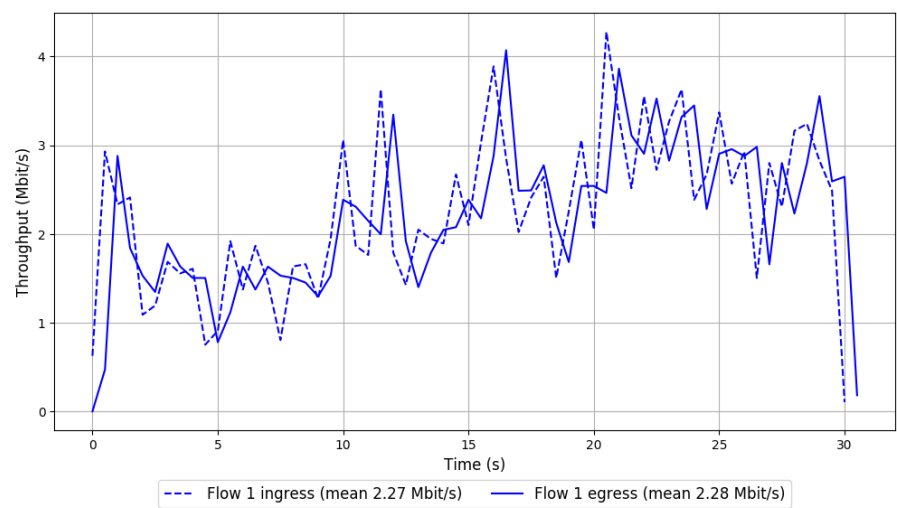
-- Flow 1:

Average throughput: 2.28 Mbit/s

95th percentile per-packet one-way delay: 277.163 ms

Loss rate: 0.47%

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

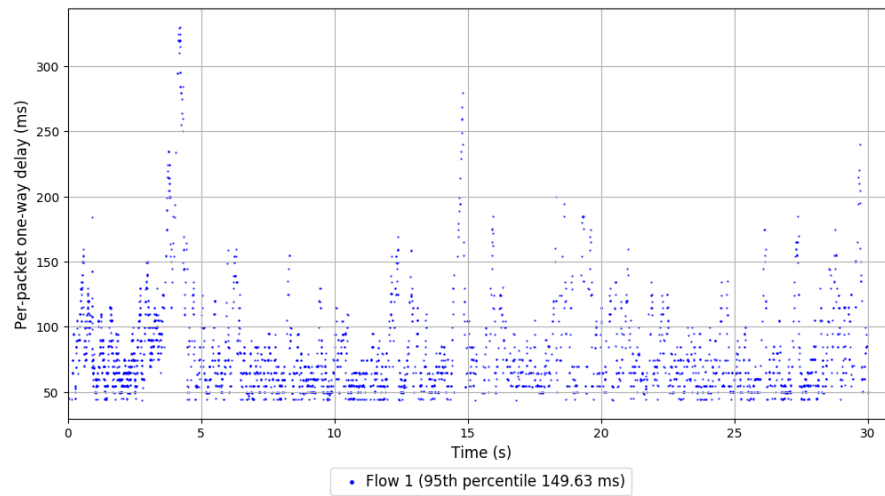
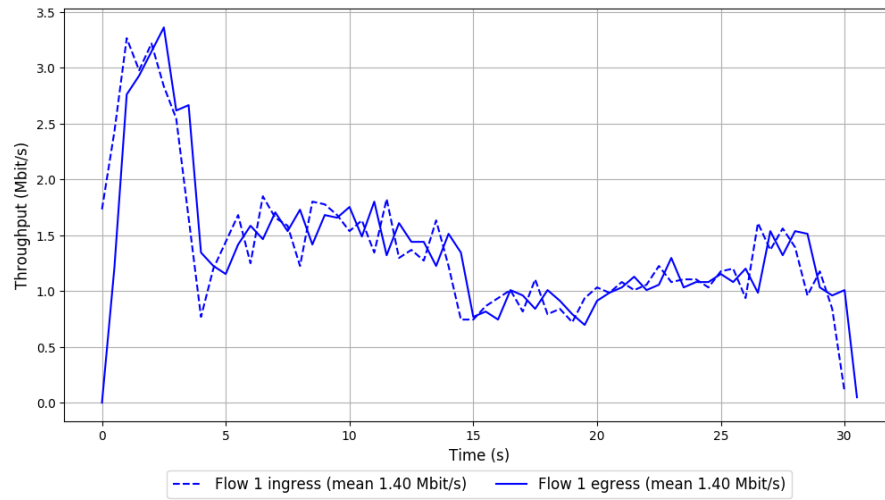


Run 1: Statistics of TCP Vegas

Start at: 2018-07-03 09:29:29
End at: 2018-07-03 09:29:59
Local clock offset: -2.298 ms
Remote clock offset: -2.082 ms

Below is generated by plot.py at 2018-07-03 10:07:18
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.40 Mbit/s
95th percentile per-packet one-way delay: 149.631 ms
Loss rate: 0.20%
-- Flow 1:
Average throughput: 1.40 Mbit/s
95th percentile per-packet one-way delay: 149.631 ms
Loss rate: 0.20%

Run 1: Report of TCP Vegas — Data Link



Run 2: Statistics of TCP Vegas

Start at: 2018-07-03 09:47:51

End at: 2018-07-03 09:48:21

Local clock offset: -1.336 ms

Remote clock offset: 0.482 ms

Below is generated by plot.py at 2018-07-03 10:07:18

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.66 Mbit/s

95th percentile per-packet one-way delay: 161.916 ms

Loss rate: 0.08%

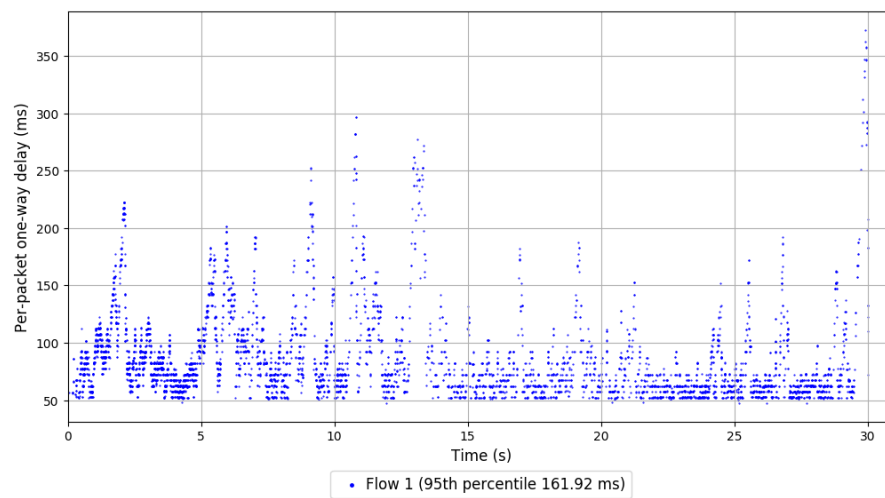
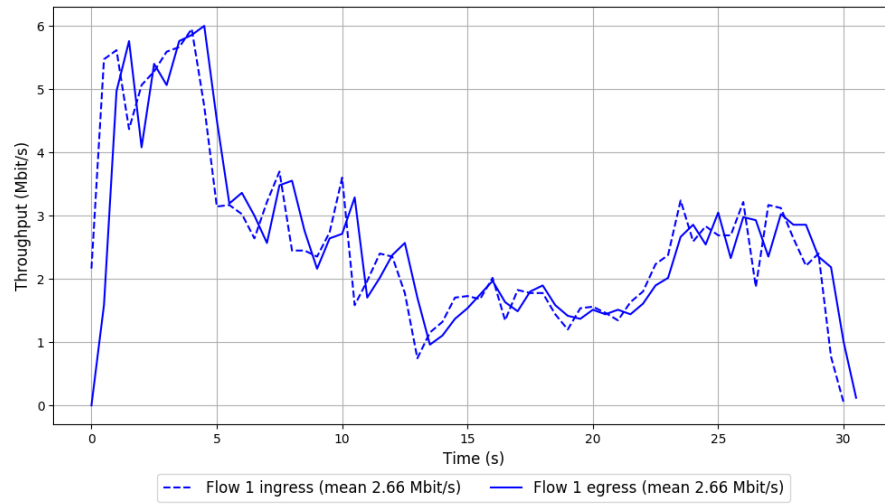
-- Flow 1:

Average throughput: 2.66 Mbit/s

95th percentile per-packet one-way delay: 161.916 ms

Loss rate: 0.08%

Run 2: Report of TCP Vegas — Data Link



Run 3: Statistics of TCP Vegas

Start at: 2018-07-03 10:06:08

End at: 2018-07-03 10:06:38

Local clock offset: 2.065 ms

Remote clock offset: -1.403 ms

Below is generated by plot.py at 2018-07-03 10:07:18

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.56 Mbit/s

95th percentile per-packet one-way delay: 126.061 ms

Loss rate: 0.54%

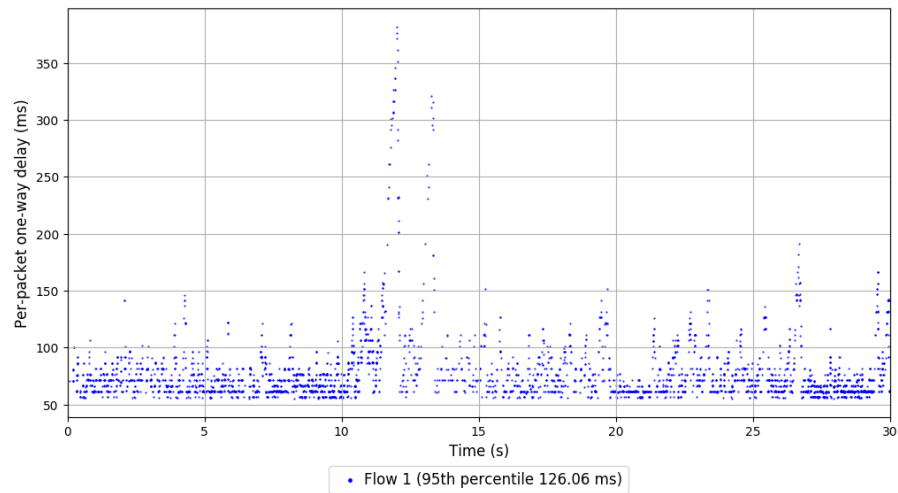
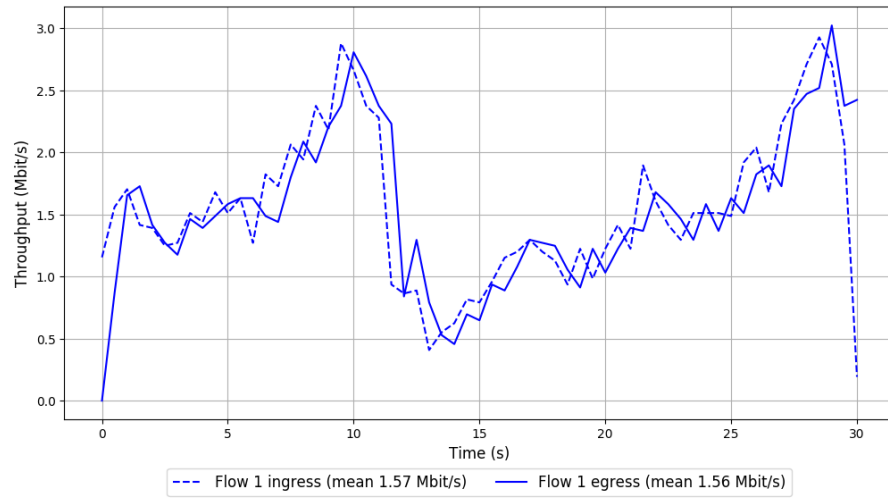
-- Flow 1:

Average throughput: 1.56 Mbit/s

95th percentile per-packet one-way delay: 126.061 ms

Loss rate: 0.54%

Run 3: Report of TCP Vegas — Data Link



Run 1: Statistics of Verus

Start at: 2018-07-03 09:14:26

End at: 2018-07-03 09:14:56

Local clock offset: -0.833 ms

Remote clock offset: -3.83 ms

Below is generated by plot.py at 2018-07-03 10:07:18

Datalink statistics

-- Total of 1 flow:

Average throughput: 2.63 Mbit/s

95th percentile per-packet one-way delay: 598.666 ms

Loss rate: 2.35%

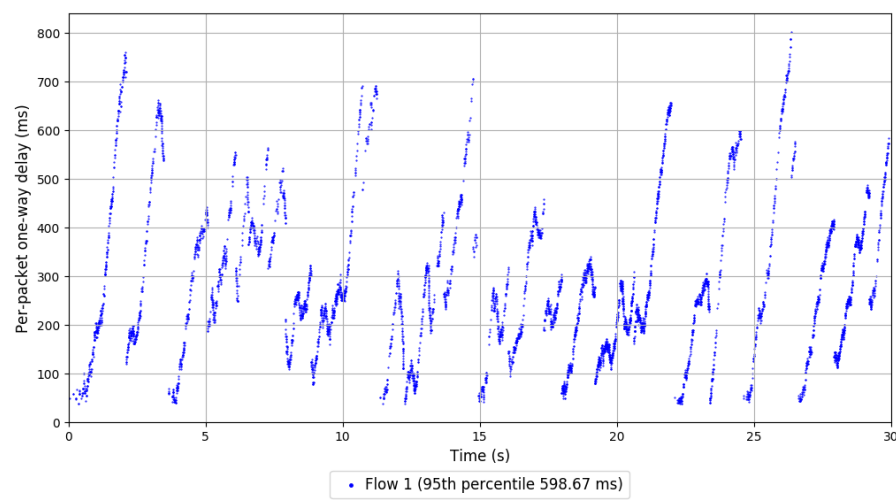
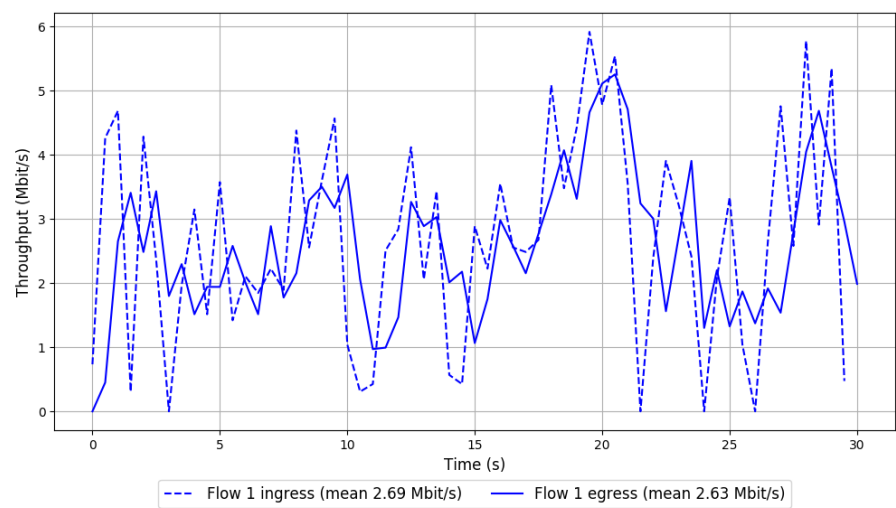
-- Flow 1:

Average throughput: 2.63 Mbit/s

95th percentile per-packet one-way delay: 598.666 ms

Loss rate: 2.35%

Run 1: Report of Verus — Data Link

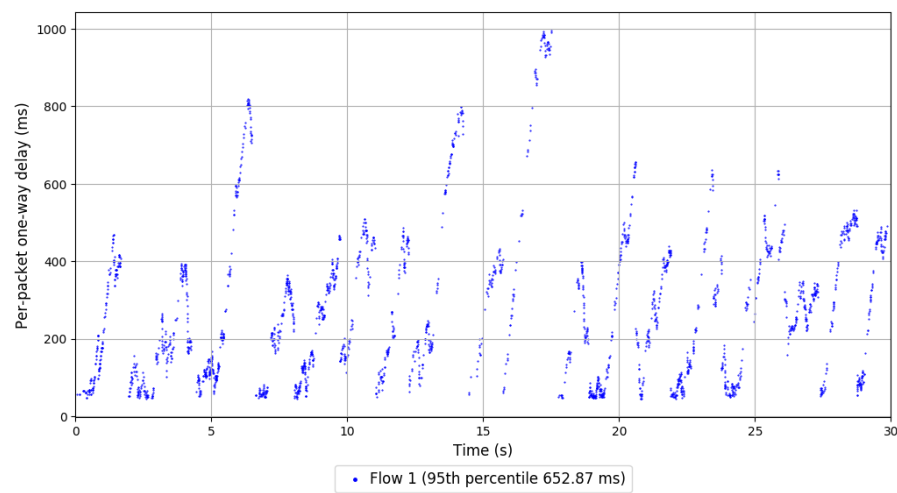
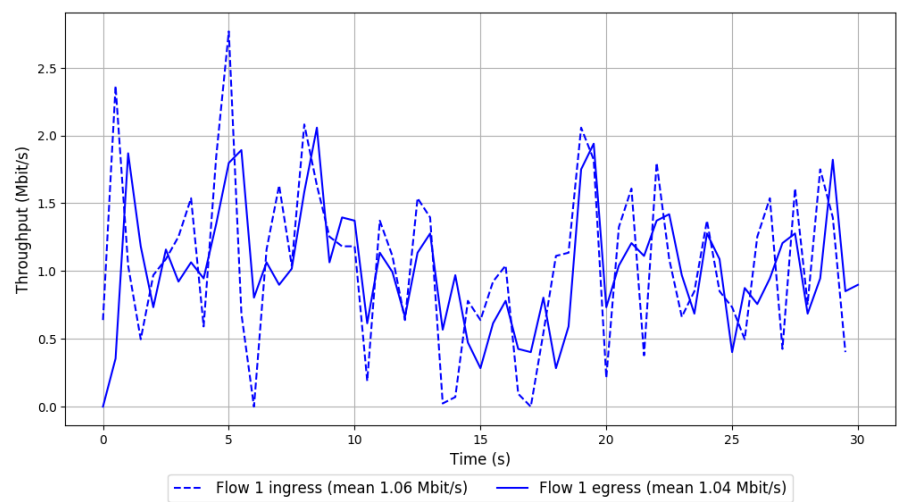


Run 2: Statistics of Verus

Start at: 2018-07-03 09:32:43
End at: 2018-07-03 09:33:13
Local clock offset: -3.12 ms
Remote clock offset: -1.304 ms

Below is generated by plot.py at 2018-07-03 10:07:18
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.04 Mbit/s
95th percentile per-packet one-way delay: 652.865 ms
Loss rate: 2.57%
-- Flow 1:
Average throughput: 1.04 Mbit/s
95th percentile per-packet one-way delay: 652.865 ms
Loss rate: 2.57%

Run 2: Report of Verus — Data Link

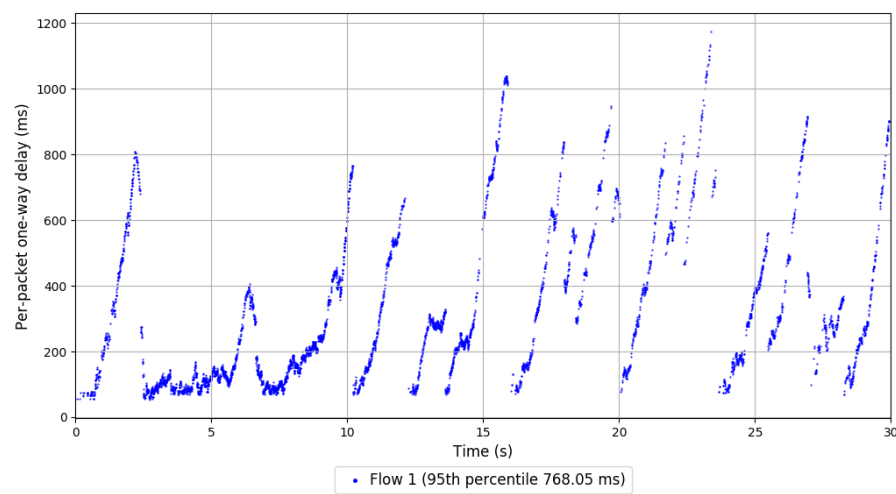
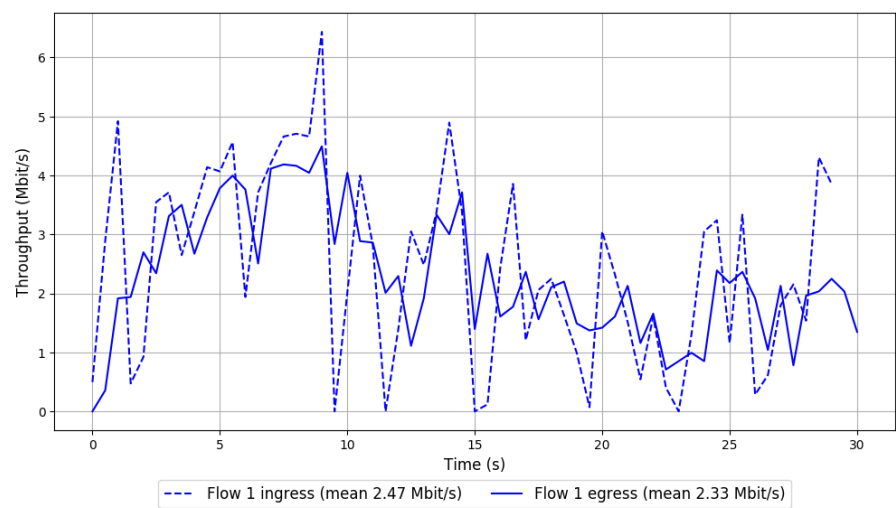


Run 3: Statistics of Verus

Start at: 2018-07-03 09:51:05
End at: 2018-07-03 09:51:35
Local clock offset: -4.225 ms
Remote clock offset: -0.324 ms

Below is generated by plot.py at 2018-07-03 10:07:19
Datalink statistics
-- Total of 1 flow:
Average throughput: 2.33 Mbit/s
95th percentile per-packet one-way delay: 768.055 ms
Loss rate: 3.30%
-- Flow 1:
Average throughput: 2.33 Mbit/s
95th percentile per-packet one-way delay: 768.055 ms
Loss rate: 3.30%

Run 3: Report of Verus — Data Link



Run 1: Statistics of PCC-Vivace

Start at: 2018-07-03 09:20:53

End at: 2018-07-03 09:21:23

Local clock offset: -1.65 ms

Remote clock offset: -2.31 ms

Below is generated by plot.py at 2018-07-03 10:07:21

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.81 Mbit/s

95th percentile per-packet one-way delay: 354.678 ms

Loss rate: 2.26%

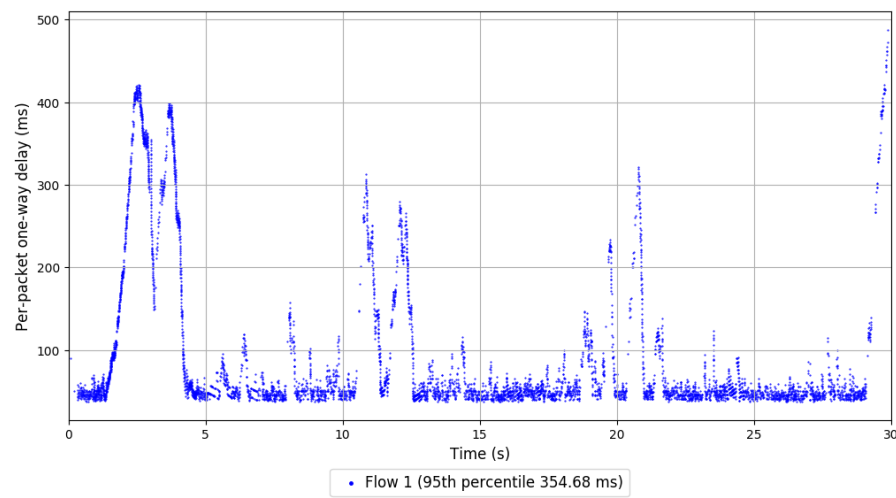
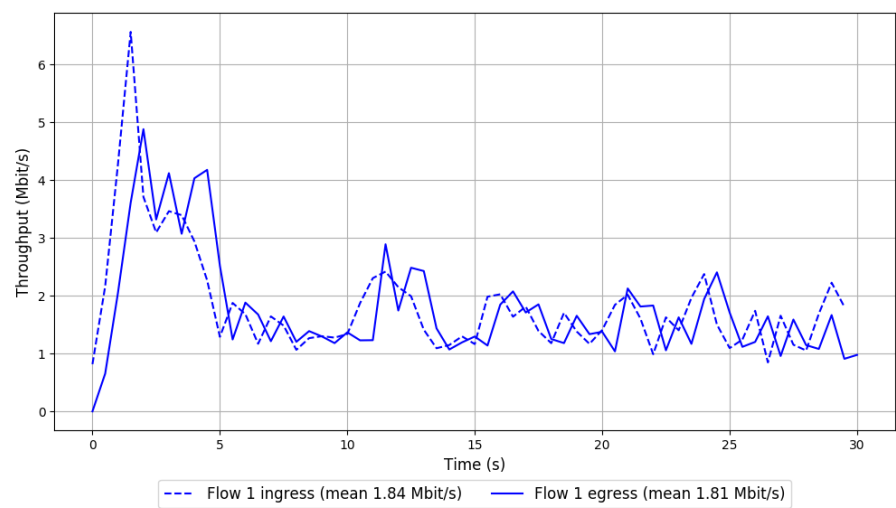
-- Flow 1:

Average throughput: 1.81 Mbit/s

95th percentile per-packet one-way delay: 354.678 ms

Loss rate: 2.26%

Run 1: Report of PCC-Vivace — Data Link

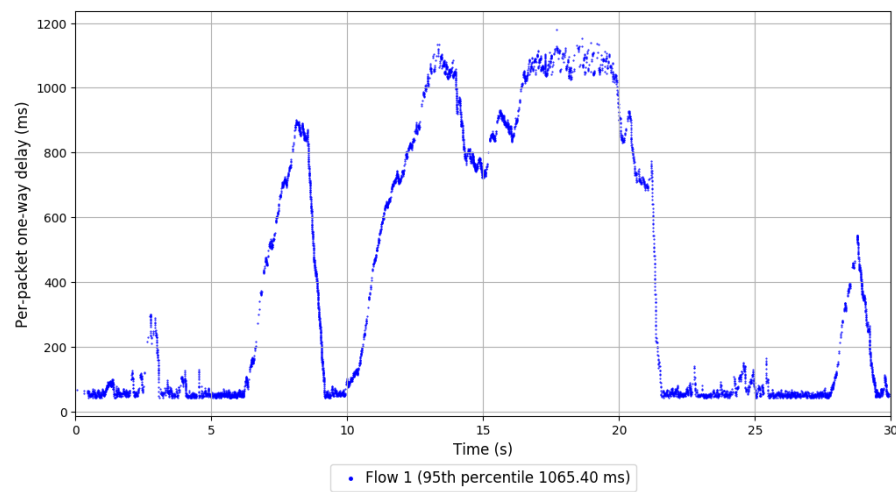
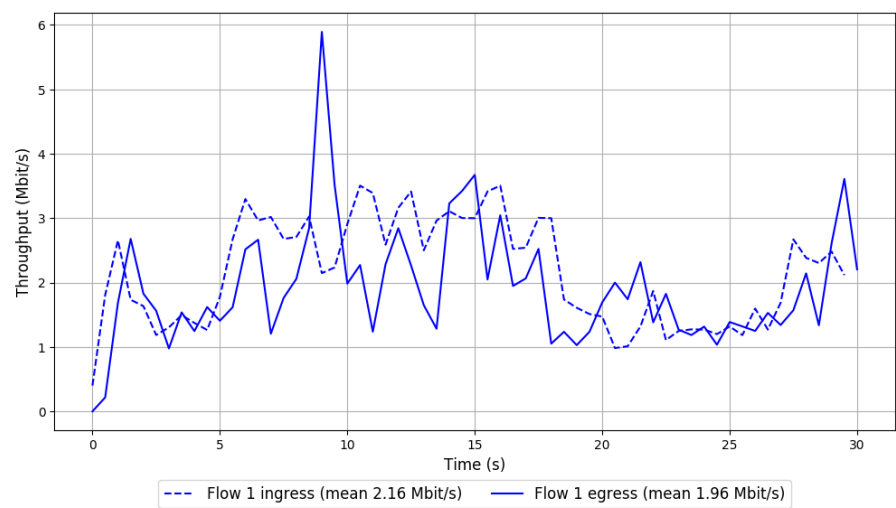


Run 2: Statistics of PCC-Vivace

Start at: 2018-07-03 09:39:10
End at: 2018-07-03 09:39:40
Local clock offset: -2.236 ms
Remote clock offset: -1.624 ms

Below is generated by plot.py at 2018-07-03 10:07:21
Datalink statistics
-- Total of 1 flow:
Average throughput: 1.96 Mbit/s
95th percentile per-packet one-way delay: 1065.405 ms
Loss rate: 9.50%
-- Flow 1:
Average throughput: 1.96 Mbit/s
95th percentile per-packet one-way delay: 1065.405 ms
Loss rate: 9.50%

Run 2: Report of PCC-Vivace — Data Link



Run 3: Statistics of PCC-Vivace

Start at: 2018-07-03 09:57:32

End at: 2018-07-03 09:58:02

Local clock offset: 0.896 ms

Remote clock offset: -0.559 ms

Below is generated by plot.py at 2018-07-03 10:07:21

Datalink statistics

-- Total of 1 flow:

Average throughput: 1.50 Mbit/s

95th percentile per-packet one-way delay: 426.198 ms

Loss rate: 4.31%

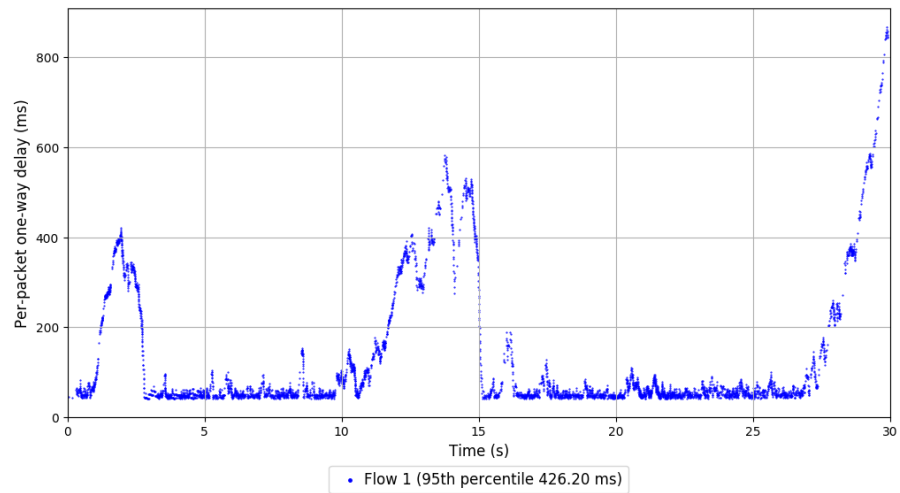
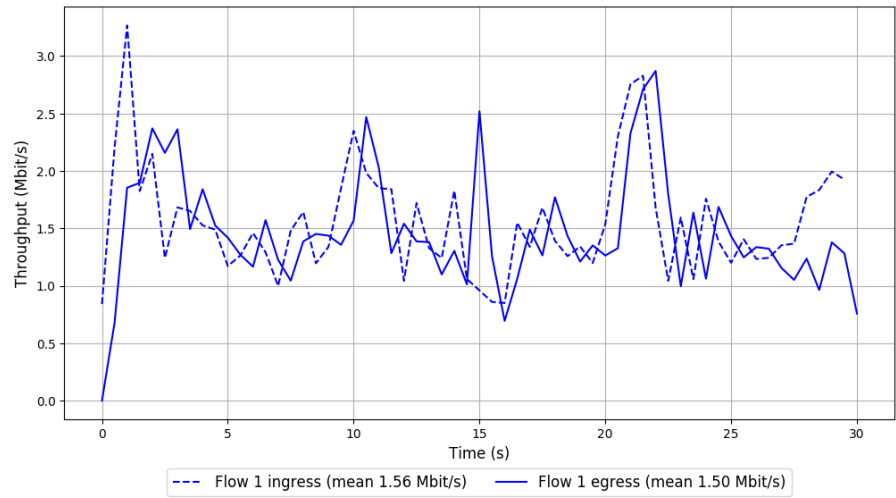
-- Flow 1:

Average throughput: 1.50 Mbit/s

95th percentile per-packet one-way delay: 426.198 ms

Loss rate: 4.31%

Run 3: Report of PCC-Vivace — Data Link



Run 1: Statistics of WebRTC media

Start at: 2018-07-03 09:25:11

End at: 2018-07-03 09:25:41

Local clock offset: 0.312 ms

Remote clock offset: -2.679 ms

Below is generated by plot.py at 2018-07-03 10:07:21

Datalink statistics

-- Total of 1 flow:

Average throughput: 0.47 Mbit/s

95th percentile per-packet one-way delay: 155.845 ms

Loss rate: 0.22%

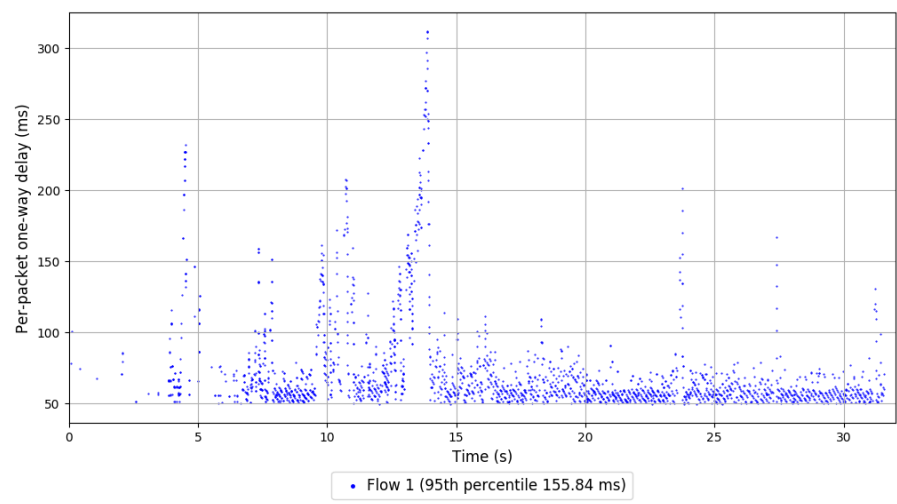
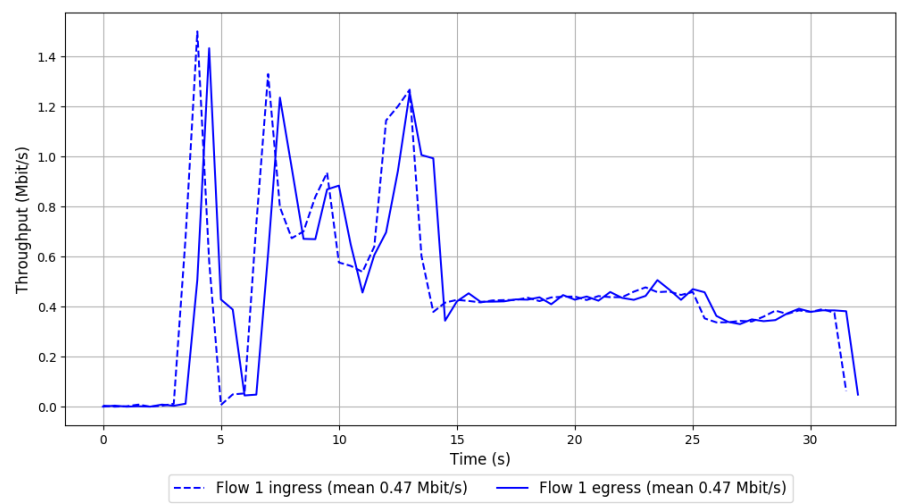
-- Flow 1:

Average throughput: 0.47 Mbit/s

95th percentile per-packet one-way delay: 155.845 ms

Loss rate: 0.22%

Run 1: Report of WebRTC media — Data Link

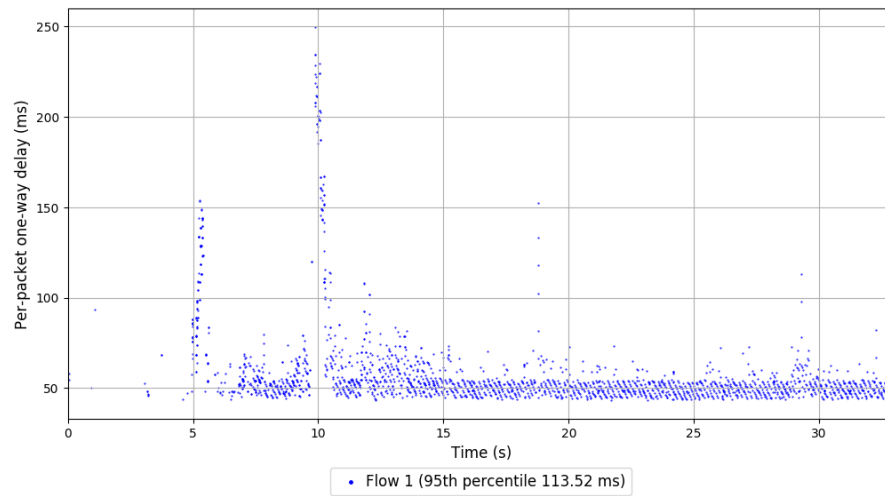
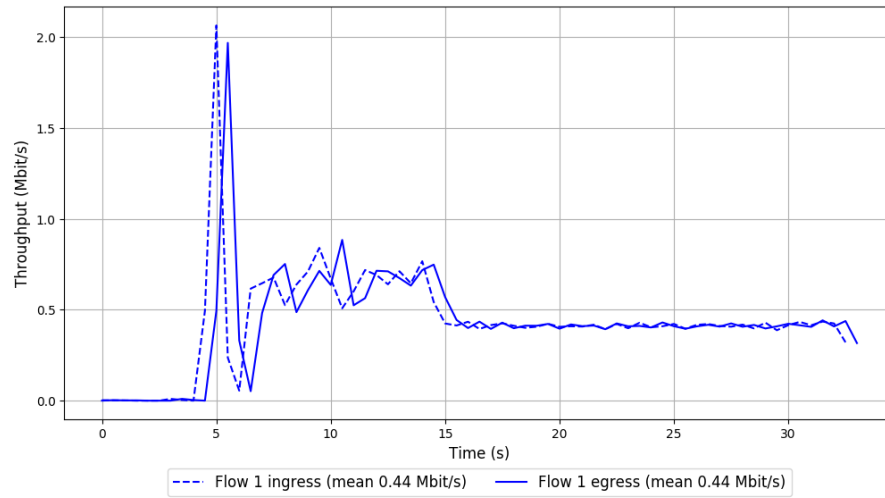


Run 2: Statistics of WebRTC media

Start at: 2018-07-03 09:43:33
End at: 2018-07-03 09:44:04
Local clock offset: -0.559 ms
Remote clock offset: -0.701 ms

Below is generated by plot.py at 2018-07-03 10:07:21
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 113.518 ms
Loss rate: 0.16%
-- Flow 1:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 113.518 ms
Loss rate: 0.16%

Run 2: Report of WebRTC media — Data Link



Run 3: Statistics of WebRTC media

Start at: 2018-07-03 10:01:50
End at: 2018-07-03 10:02:20
Local clock offset: -1.787 ms
Remote clock offset: -1.726 ms

Below is generated by plot.py at 2018-07-03 10:07:22
Datalink statistics
-- Total of 1 flow:
Average throughput: 0.87 Mbit/s
95th percentile per-packet one-way delay: 86.544 ms
Loss rate: 0.17%
-- Flow 1:
Average throughput: 0.87 Mbit/s
95th percentile per-packet one-way delay: 86.544 ms
Loss rate: 0.17%

Run 3: Report of WebRTC media — Data Link

