

# Pantheon Report

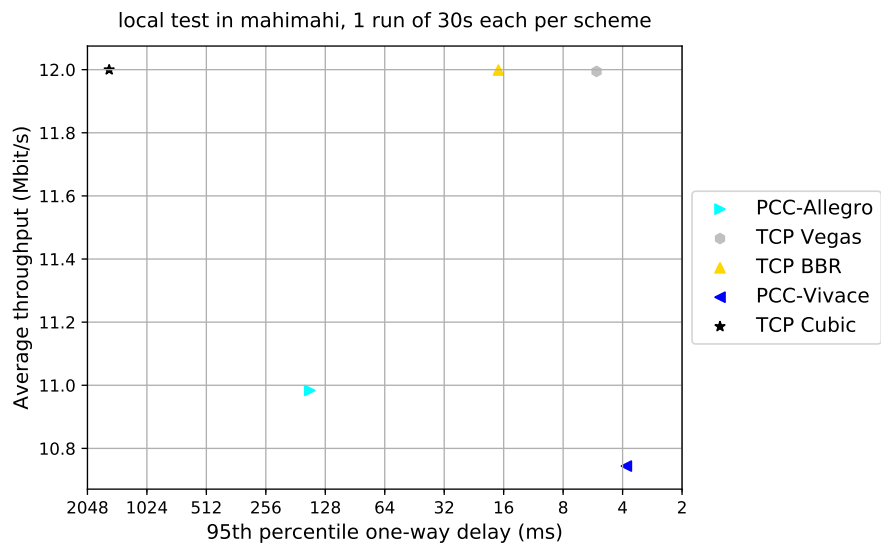
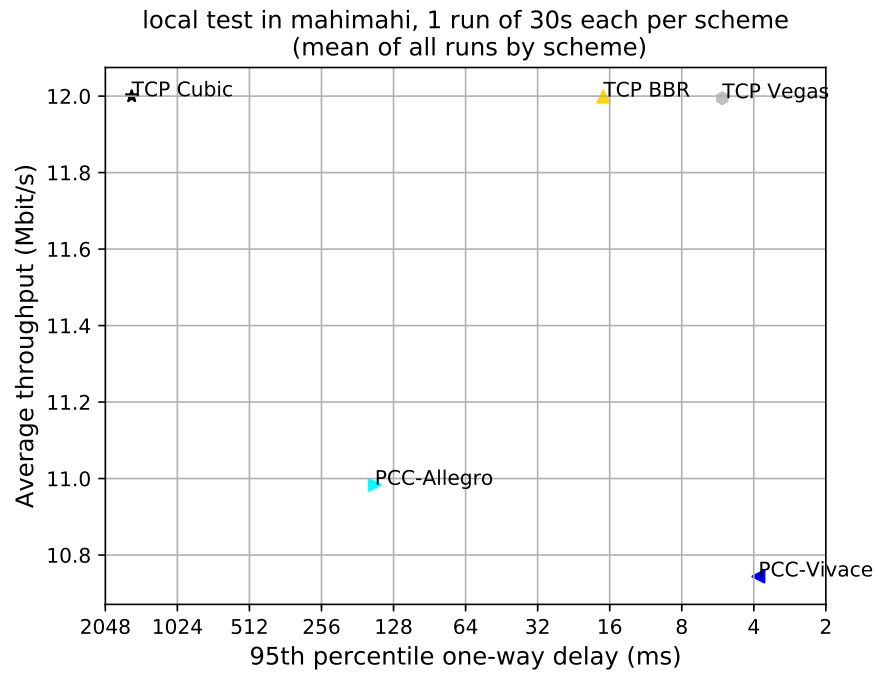
Generated at 2022-04-13 06:32:31 (UTC).  
Tested in mahimahi: mm-link 12mbps.trace 12mbps.trace  
Repeated the test of 5 congestion control schemes once.  
Each test lasted for 30 seconds running 1 flow.

## System info:

Linux 4.15.0-175-generic  
net.core.default\_qdisc = fq  
net.core.rmem\_default = 212992  
net.core.rmem\_max = 212992  
net.core.wmem\_default = 212992  
net.core.wmem\_max = 212992  
net.ipv4.tcp\_rmem = 4096 131072 6291456  
net.ipv4.tcp\_wmem = 4096 16384 4194304

## Git summary:

branch: master @ 99ce503a4b7f0c69e0a7c7e25dfa3753c361252a  
third\_party/fillp @ d6da1459332fcee56963885d7eba17e6a32d4519  
third\_party/fillp-sheep @ 0e5bb722943babcd2b090d2c64fcd45e12e923f9  
third\_party/genericCC @ d0153f8e594aa89e93b032143cedbdf5e58e562f4  
third\_party/indigo @ 463d89b09699a57bfdfbae351646df6a60040b90  
third\_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf  
third\_party/pantheon-tunnel @ f866d3f58d27afd942717625ee3a354cc2e802bd  
third\_party/pcc @ 1afc958fa0d66d18b623c091a55fec872b4981e1  
M receiver/src/buffer.h  
M receiver/src/core.cpp  
M sender/src/buffer.h  
M sender/src/core.cpp  
third\_party/pcc-experimental @ cd43e34e3f5f5613e8acd08fab92c4eb24f974ab  
third\_party/proto-quic @ 77961f1a82733a86b42f1bc8143ebc978f3cff42  
third\_party/scream-reproduce @ f099118d1421aa3131bf11ff1964974e1da3bdb2  
M src/ScreamClient  
M src/ScreamServer  
third\_party/sprout @ 366e35c6178b01e31d4a46ad18c74f9415f19a26  
M src/examples/cellsim.cc  
M src/examples/sproutbt2.cc  
M src/network/sproutconn.cc  
third\_party/verus @ d4b447ea74c6c60a261149af2629562939f9a494  
M src/verus.hpp  
M tools/plot.py  
third\_party/vivace @ 2baf86211435ae071a32f96b7d8c504587f5d7f4  
third\_party/webrtc @ 3f0cc2a9061a41b6f9dde4735770d143a1fa2851



scheme	# runs	mean avg tput (Mbit/s) flow 1	mean 95th-%ile delay (ms) flow 1	mean loss rate (%) flow 1
TCP BBR	1	12.00	17.01	0.05
TCP Cubic	1	12.00	1589.56	4.54
PCC-Allegro	1	10.98	153.33	0.13
TCP Vegas	1	11.99	5.42	0.02
PCC-Vivace	1	10.74	3.83	0.00

Run 1: Statistics of TCP BBR

Start at: 2022-04-13 06:27:06

End at: 2022-04-13 06:27:36

# Below is generated by plot.py at 2022-04-13 06:32:30

# Datalink statistics

-- Total of 1 flow:

Average capacity: 12.00 Mbit/s

Average throughput: 12.00 Mbit/s (100.0% utilization)

95th percentile per-packet one-way delay: 17.007 ms

Loss rate: 0.05%

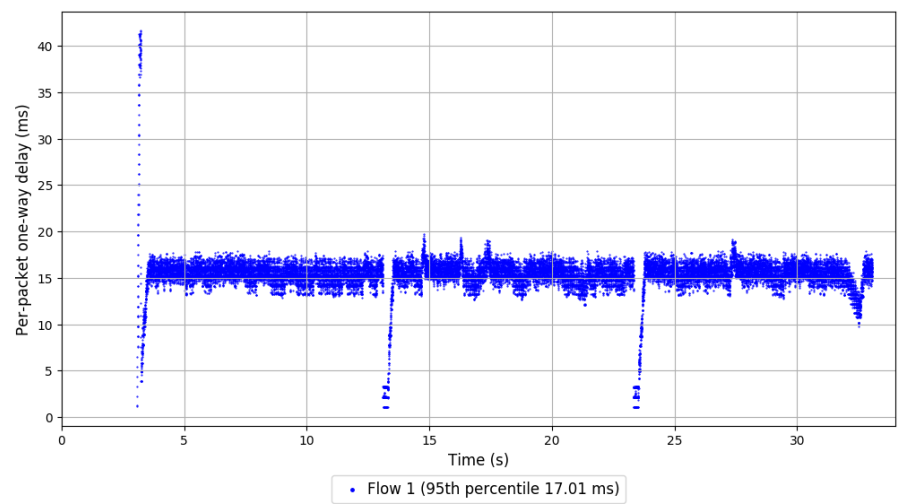
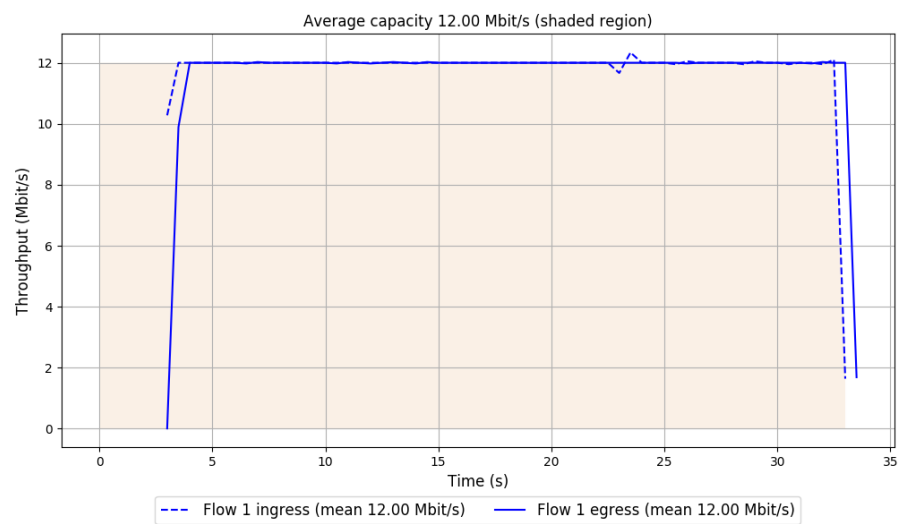
-- Flow 1:

Average throughput: 12.00 Mbit/s

95th percentile per-packet one-way delay: 17.007 ms

Loss rate: 0.05%

Run 1: Report of TCP BBR — Data Link



Run 1: Statistics of TCP Cubic

Start at: 2022-04-13 06:28:14

End at: 2022-04-13 06:28:44

# Below is generated by plot.py at 2022-04-13 06:32:30

# Datalink statistics

-- Total of 1 flow:

Average capacity: 12.00 Mbit/s

Average throughput: 12.00 Mbit/s (100.0% utilization)

95th percentile per-packet one-way delay: 1589.564 ms

Loss rate: 4.54%

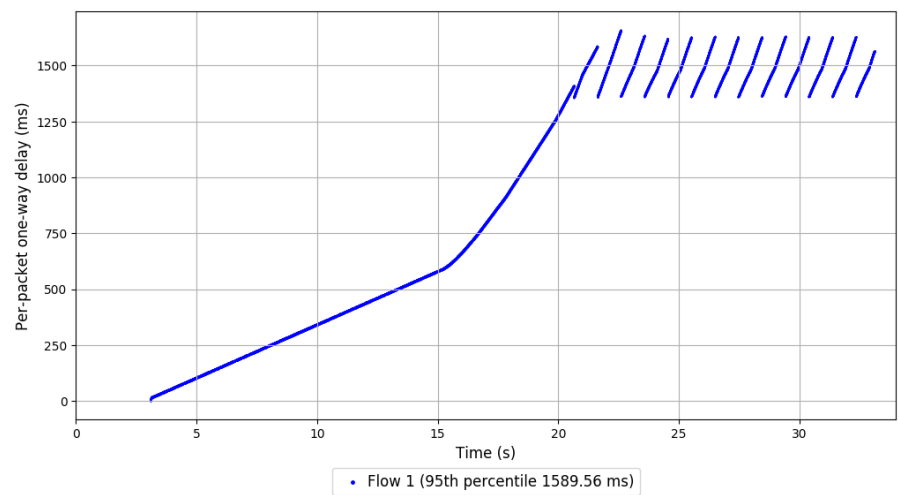
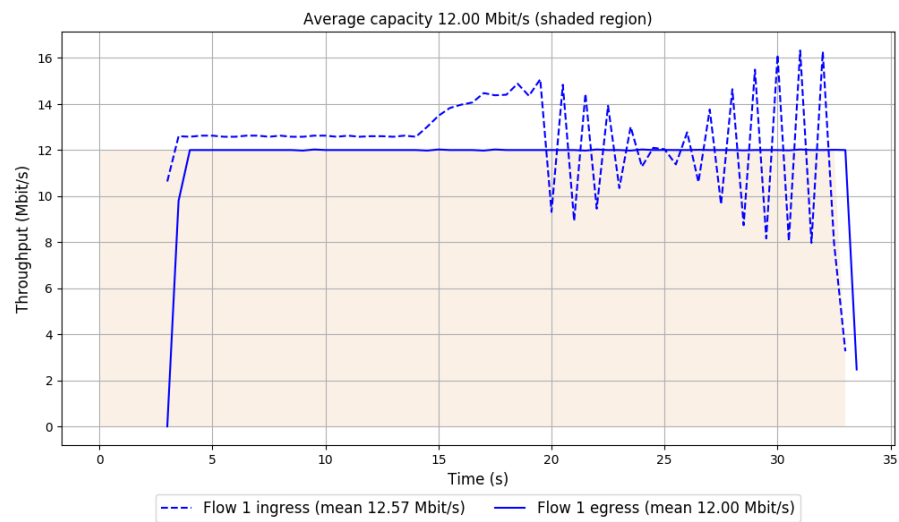
-- Flow 1:

Average throughput: 12.00 Mbit/s

95th percentile per-packet one-way delay: 1589.564 ms

Loss rate: 4.54%

Run 1: Report of TCP Cubic — Data Link



Run 1: Statistics of PCC-Allegro

Start at: 2022-04-13 06:25:58

End at: 2022-04-13 06:26:28

# Below is generated by plot.py at 2022-04-13 06:32:30

# Datalink statistics

-- Total of 1 flow:

Average capacity: 12.00 Mbit/s

Average throughput: 10.98 Mbit/s (91.5% utilization)

95th percentile per-packet one-way delay: 153.330 ms

Loss rate: 0.13%

-- Flow 1:

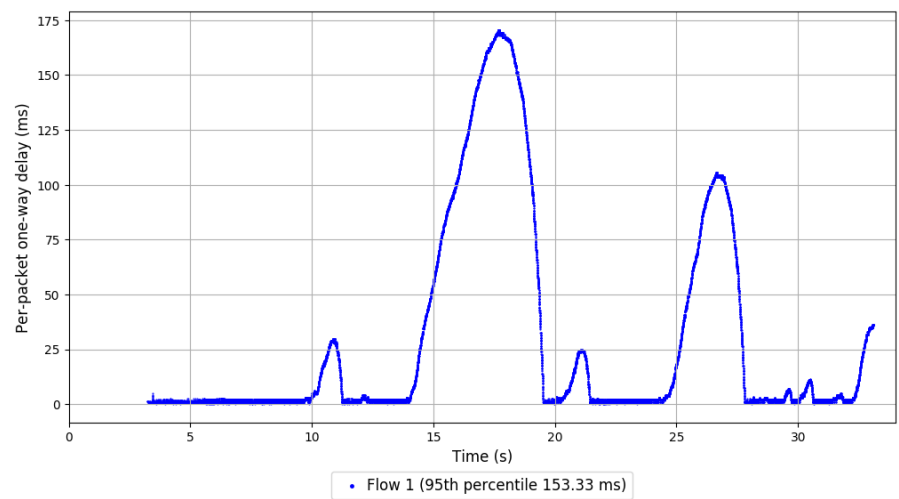
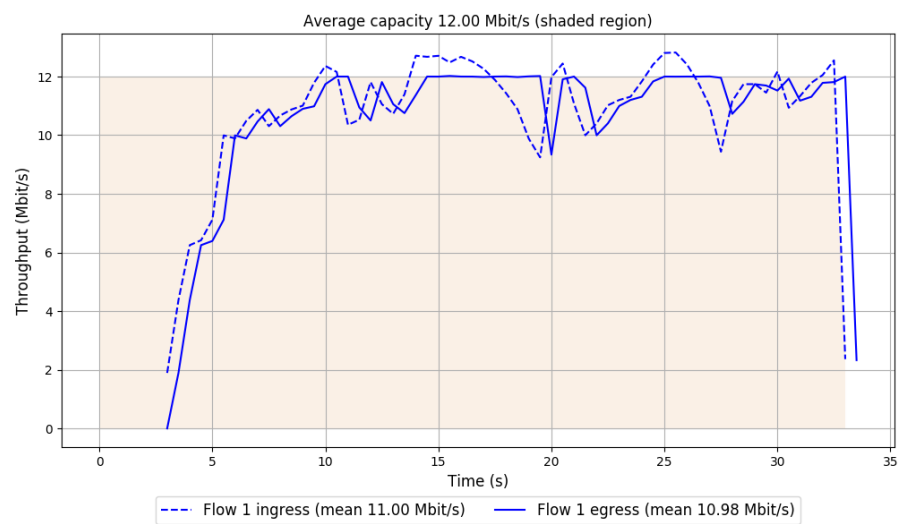
Average throughput: 10.98 Mbit/s

95th percentile per-packet one-way delay: 153.330 ms

Loss rate: 0.13%



Run 1: Report of PCC-Allegro — Data Link



Run 1: Statistics of TCP Vegas

Start at: 2022-04-13 06:26:32

End at: 2022-04-13 06:27:02

# Below is generated by plot.py at 2022-04-13 06:32:30

# Datalink statistics

-- Total of 1 flow:

Average capacity: 12.00 Mbit/s

Average throughput: 11.99 Mbit/s (100.0% utilization)

95th percentile per-packet one-way delay: 5.417 ms

Loss rate: 0.02%

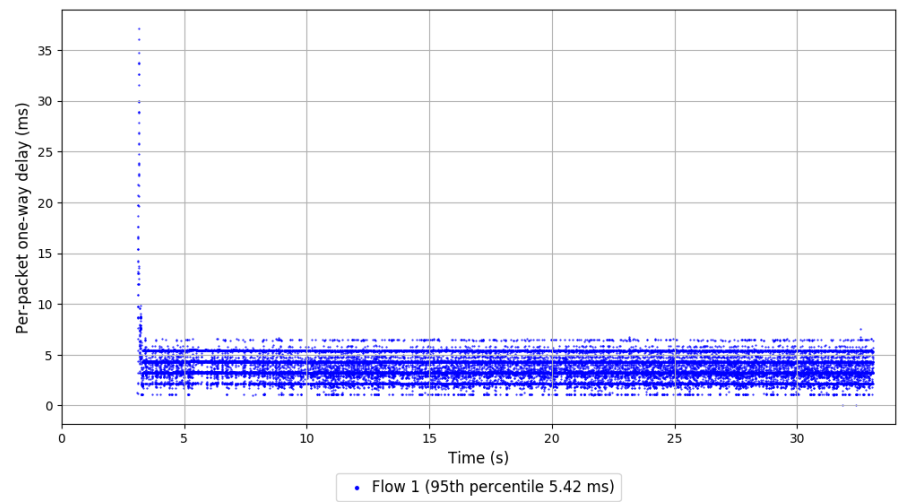
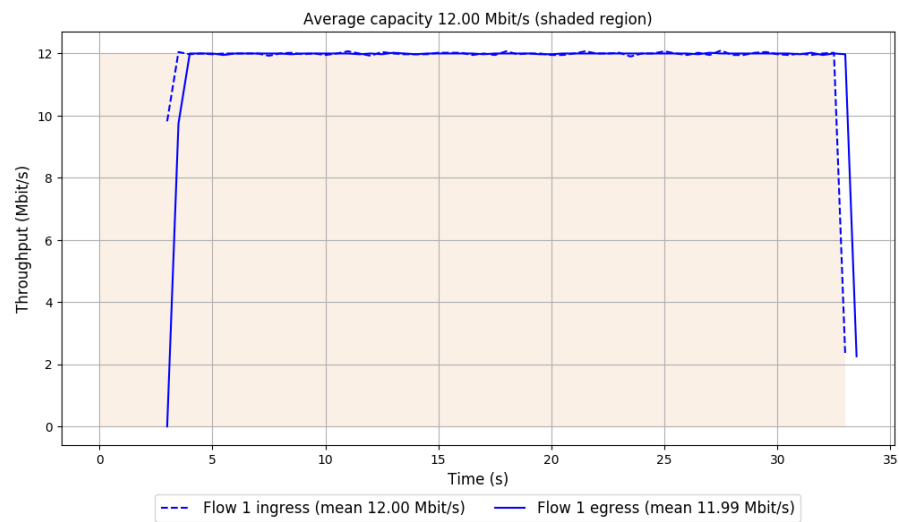
-- Flow 1:

Average throughput: 11.99 Mbit/s

95th percentile per-packet one-way delay: 5.417 ms

Loss rate: 0.02%

Run 1: Report of TCP Vegas — Data Link



Run 1: Statistics of PCC-Vivace

Start at: 2022-04-13 06:27:40

End at: 2022-04-13 06:28:10

# Below is generated by plot.py at 2022-04-13 06:32:30

# Datalink statistics

-- Total of 1 flow:

Average capacity: 12.00 Mbit/s

Average throughput: 10.74 Mbit/s (89.5% utilization)

95th percentile per-packet one-way delay: 3.828 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 10.74 Mbit/s

95th percentile per-packet one-way delay: 3.828 ms

Loss rate: 0.00%

Run 1: Report of PCC-Vivace — Data Link

