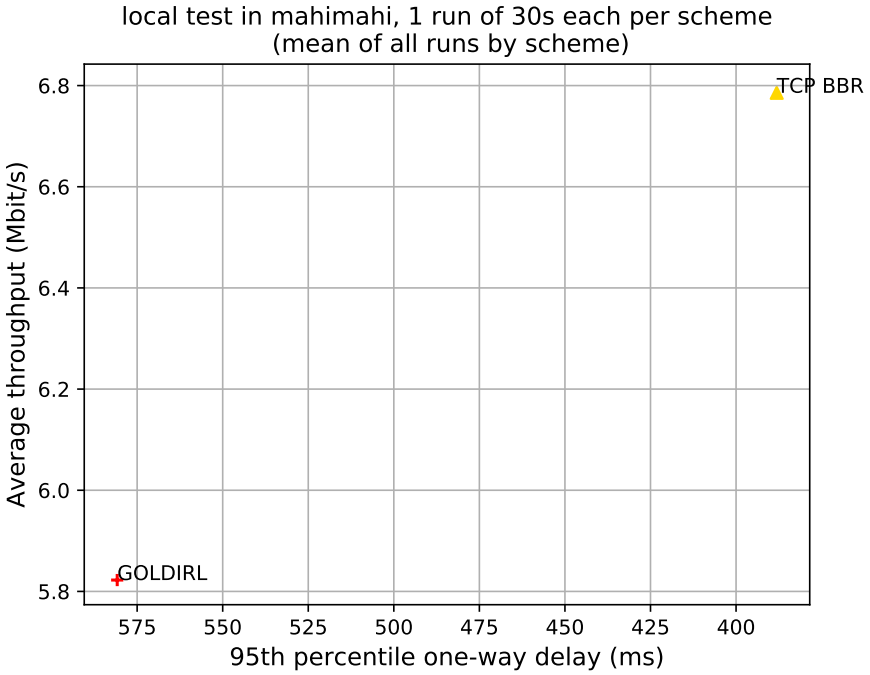
Pantheon Report

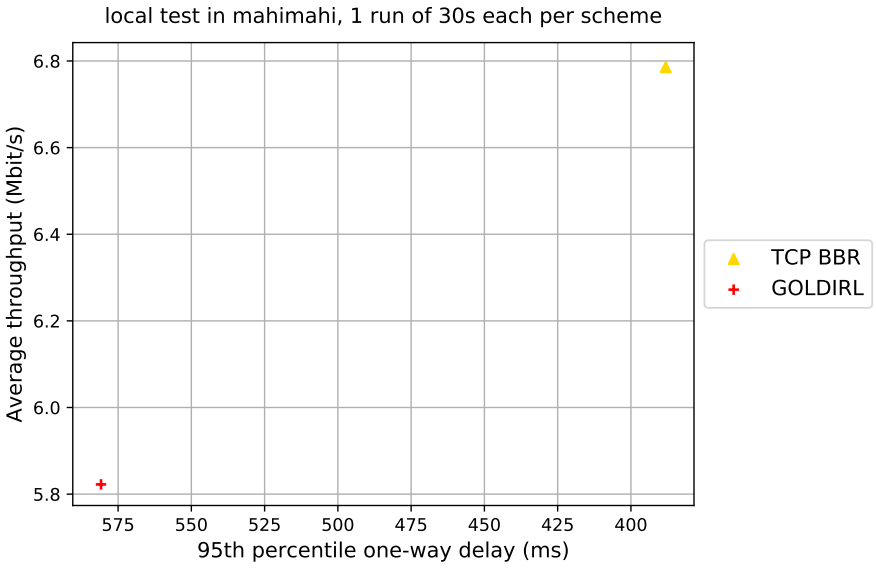
Generated at 2019-07-23 23:31:39 (UTC).
Tested in mahimahi: `mm-delay 40 mm-link Verizon-LTE-short.up Verizon-LTE-short.down`
Repeated the test of 2 congestion control schemes once.
Each test lasted for 30 seconds running 1 flow.

```
System info:
Linux 4.15.0-54-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 87380 6291456
net.ipv4.tcp_wmem = 4096 16384 4194304
```

```
Git summary:
branch: master @ 5e654bd1c81cf4cfd7ffb7b3b39e37247dc5888f
third_party/fillp @ d6da1459332fcee56963885d7eba17e6a32d4519
third_party/fillp-sheep @ 0e5bb722943babcd2b090d2c64fcd45e12e923f9
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdfe58e562f4
third_party/gold @ e47bed6d7495aa223eec8de2c7a43035967074ef
 M environment/__pycache__/datagram_pb2.cpython-36.opt-1.pyc
 M environment/__pycache__/datagram_pb2.cpython-36.pyc
 M environment/__pycache__/environment.cpython-36.opt-1.pyc
 M environment/__pycache__/helpers.cpython-36.opt-1.pyc
 M environment/__pycache__/helpers.cpython-36.pyc
 M environment/__pycache__/mahimahi.cpython-36.opt-1.pyc
 M environment/__pycache__/project_root.cpython-36.opt-1.pyc
 M environment/__pycache__/project_root.cpython-36.pyc
 M environment/__pycache__/receiver.cpython-36.opt-1.pyc
 M environment/__pycache__/receiver.cpython-36.pyc
 M environment/logs.txt
 M model
third_party/goldIRL @ ce4f56f2f4950a9216385bc4630664478e9d2b81
 M sender-receiver/sender-receiver/sender_receiver/envs/DeepRL/deep_rl_2/agent/A2C_agent.py
 M sender-receiver/sender-receiver/sender_receiver/envs/model/model.pt
third_party/goldLSTM @ 6b512ee75b163fd680d7bf3cde4cf6d6aa7102c4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d
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
```


local test in mahimahi, 1 run of 30s each per scheme
(mean of all runs by scheme)
Average throughput (Mbit/s)
95th percentile one-way delay (ms)
TCP BBR
GOLDIRL
6.8
6.6
6.4
6.2
6.0
5.8
575
550
525
500
475
450
425
400


local test in mahimahi, 1 run of 30s each per scheme
Average throughput (Mbit/s)
95th percentile one-way delay (ms)
TCP BBR
GOLDIRL
6.8
6.6
6.4
6.2
6.0
5.8
575
550
525
500
475
450
425
400

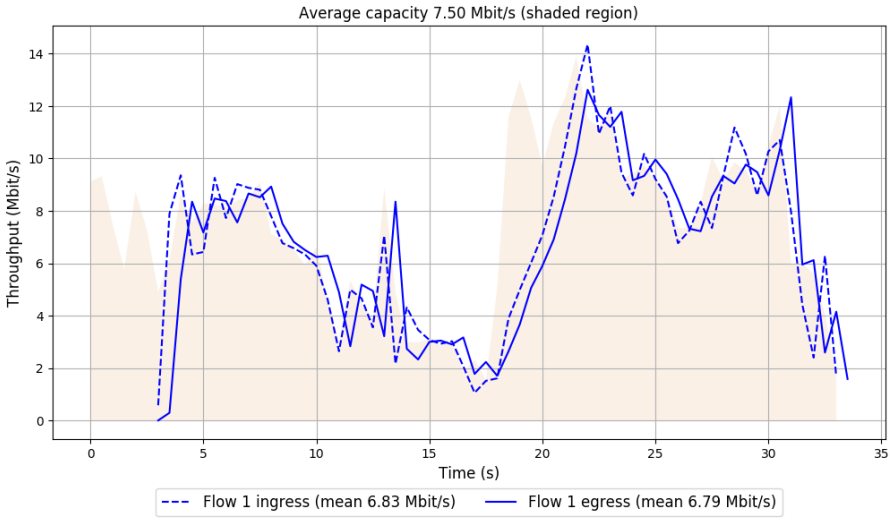
scheme	# runs	mean avg tput (Mbit/s) flow 1	mean 95th-%ile delay (ms) flow 1	mean loss rate (%) flow 1
TCP BBR	1	6.79	388.12	0.93
GOLDIRL	1	5.82	580.82	6.08

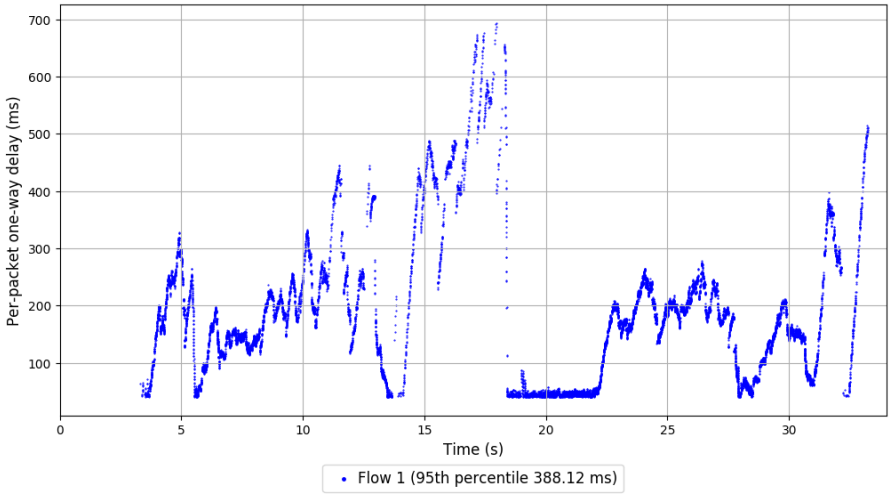
```
Run 1: Statistics of TCP BBR

Start at: 2019-07-23 23:30:00
End at: 2019-07-23 23:30:30

# Below is generated by plot.py at 2019-07-23 23:31:38
# Datalink statistics
-- Total of 1 flow:
Average capacity: 7.50 Mbit/s
Average throughput: 6.79 Mbit/s (90.4% utilization)
95th percentile per-packet one-way delay: 388.120 ms
Loss rate: 0.93%
-- Flow 1:
Average throughput: 6.79 Mbit/s
95th percentile per-packet one-way delay: 388.120 ms
Loss rate: 0.93%
```

Run 1: Report of TCP BBR — Data Link





```
Run 1: Statistics of GOLDIRL

Start at: 2019-07-23 23:30:34
End at: 2019-07-23 23:31:04

# Below is generated by plot.py at 2019-07-23 23:31:38
# Datalink statistics
-- Total of 1 flow:
Average capacity: 7.50 Mbit/s
Average throughput: 5.82 Mbit/s (77.6% utilization)
95th percentile per-packet one-way delay: 580.820 ms
Loss rate: 6.08%
-- Flow 1:
Average throughput: 5.82 Mbit/s
95th percentile per-packet one-way delay: 580.820 ms
Loss rate: 6.08%
```

Run 1: Report of GOLDIRL — Data Link