

# Quark / gVisor / Kata Performance Comparison

# Startup and Memory overhead

	Runc	Quark	gVsior	Kata
Startup (ms)	607	625	708	1747

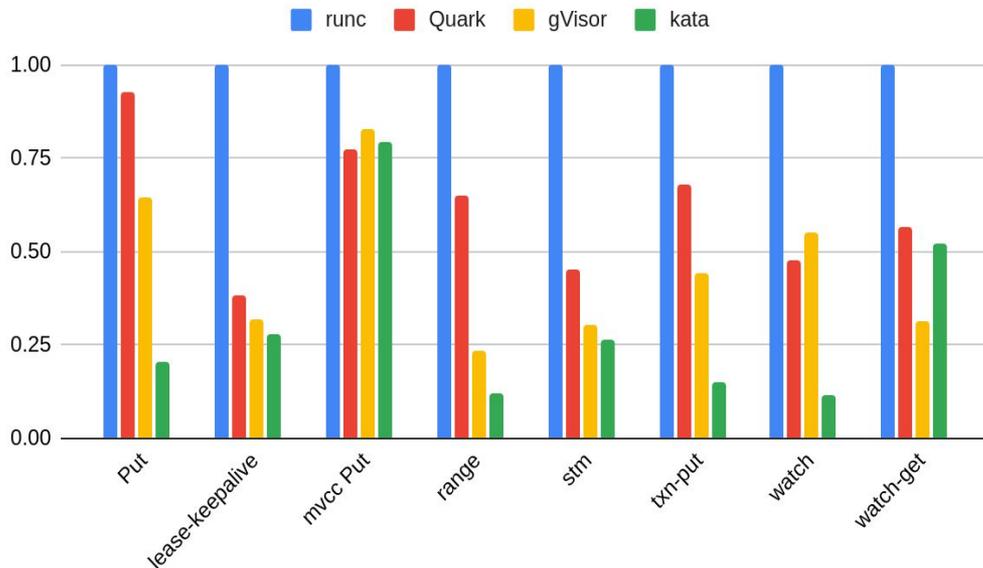
- Quark startup time is almost same as Runc
- Kata startup time is almost 3 folders of Quark

	Quark	gVsior	Kata
Memory Overhead (MB)	11.8	28.1	184.3

- Quark memory overhead is minimal
  - gVisor takes more than 2 times memory
  - Kata takes 15 times memory

# Etcd v3

runc, Quark, gVisor and kata



- Quark is fast
- Kata is very slow in some benchmark

	runc	Quark	gVisor	kata
Put	3741	3471	2408	770
lease-keepalive	17884	6803	5647	4983
mvcc Put	127377	98251	105232	101257
range	7856	5118	1837	932
stm	7878	3545	2379	2059
txn-put	4934	3359	2190	747
watch	243689	116216	134686	28036
watch-get	3419	1942	1072	1775



# Nginx (Http Get)

	Runc	Quark	gVsior	Kata
RPS (Request Per Second)	6136	2274.74	1296.7	928.96

- Quark RPS is must faster than gVisor and Kata
- Kata is slowest.

# MariaDB/MySql Initialization Time

	Runc	Quark	gVsior	Kata
MariaDB (Second)	8	10	14	12
MySql (Second)	18	20	32	N/A

- Quark is fastest in secure container
- Note: Kata can't run Mysql

# Summary

- Quark's memory overhead is minimal
- Quark's startup overhead is minimal
- Quark is performance is best in secure container runtime