



CryptoKitties

Technical Performance Analysis: A Glimpse Behind the Craze

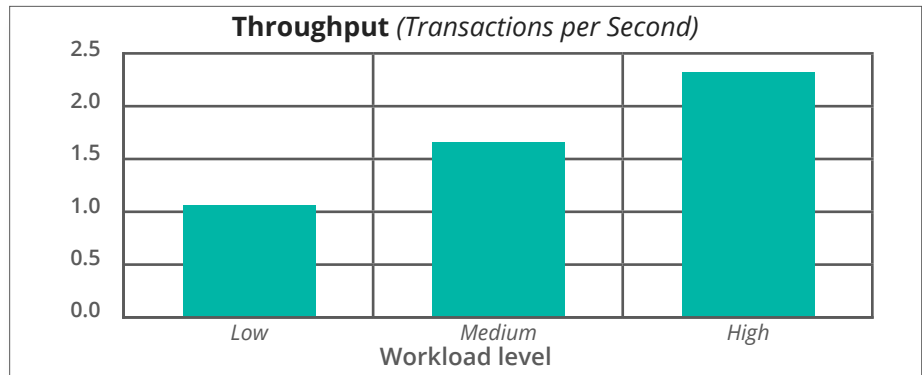
Testbed Results*

Fail Ratio: 0.00% – 0.02%

Latency: 1.26s – 1.49s

Throughput: 1.05TPS – 2.31TPS

Potential Vulnerabilities: 2



Methodology

BlockTEST's patented testbed is an intelligent platform that evaluates blockchain projects based on objective performance measures.

We tested 11 basic CryptoKitties functions (i.e. *createPromoKitty*, *isReadyToBreed*, *_breedWith*, *approveSiring*, and *transfer*), with minor adjustments within the code to enable the contracts for testing.

We ran each contract through a series of tests, varying workload (1-4 threads) and network size (2-16 nodes). Through each test, the testbed monitors project performance and uses what it sees to calculate a number of metrics that measure the project's efficiency, security, and scalability.

The testbed currently supports projects built on Ethereum and Hyperledger.

For our code and more information, visit our GitHub: github.com/blocktest-official/cryptokitties-test

*Ranges are given with respect to varying workload levels

Synopsis

Overall, the CryptoKitties blockchain displays impressive scalability and performance efficiency with respect to variable network and workload sizes.

With each increase in workload level, meaning a doubled number of transactions, latency increased by <10% and throughput increased by roughly 50%. This indicates that the CryptoKitties blockchain responds appropriately to stress on the network – more transactions are passed per second, and speeds remain relatively stable despite more activity.

CryptoKitties' failure rate is low across the board, staying below .02% regardless of network or workload size.

Across all metrics we tested, (including latency, throughput, fail ratio, CPU usage and RAM usage) all remain fairly stable with respect to network size, adjusting appropriately with the addition of new nodes.

CryptoKitties employs an impressive deployment hierarchy with few vulnerabilities. Our testbed highlighted only informational warnings: multiple sends executed in a single transaction in the *createAuction* function, and an unchecked call return value in the *withdrawBalance* function.

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About BlockTEST

We reduce complexity in the blockchain world by providing the tools & insights needed for professionals & developers to create, improve and adopt blockchain projects.

Questions? Comments? Reach out to us!

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