Cyberscope

Audit Report

AME Chain

December 2022

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Contract Review

Github	https://github.com/AME-AMEChain/amechain_quantum
Commit	7be7537d0ac00ea980075f27463b7b22c22fcd54

Audit Updates

Initial Audit	17 December 2022

AME Chain Quantum Technology

AME chain uses quantum security technologies like quantum random number generators (QRNG) to secure its digital assets.

Quantum Random Numbers (QRN)

- AME chain uses QRNs in its cryptographic protocols to generate seeds, initial random values, nonces (salts), blinding values and padding bytes and perform hashing and encryption.

- The QRNs are created by single photon splitting. A laser produces a stream of the elementary particle, photon. The photons generated from the laser are used to generate the random numbers.

AME chain quantum certification

AME chain's QRNG technology has undergone various standardized tests conducted by TÜV Rheinland and has passed all of them. The test suite included:

- Entropy test

- Diehard tests

- NIST tests

Layer 1 EVM Blockchain

A quantum blockchain is a type of blockchain technology that makes use of quantum computing principles and techniques to secure and validate transactions on the blockchain. AME Chain is a Quantum Secured Layer-1 EVM compatible Blockchain.

Quantum computers are highly powerful computing devices that are based on the principles of quantum mechanics. They are able to perform certain types of calculations much faster than traditional computers, and they have the potential to revolutionize many fields, including cryptography and blockchain technology.

In a quantum blockchain, the security of the network is enhanced by using quantum techniques to verify transactions and protect against tampering or fraud. This can be achieved through the use of quantum-resistant cryptographic algorithms, which are designed to be resistant to attacks by quantum computers.

It is important to note that quantum blockchains are still in the early stages of development and are not yet widely deployed. However, they hold promise as a potential future evolution of blockchain technology that could provide improved security and scalability for decentralized networks.

Proof Of Authority

AMA chains utilizes a group of nodes that are connected to each other using a peer-to-peer schema. Each node holds the entire blockchain state and executes the transactions. The nodes are validating the transactions.

Proof of Authority (PoA) is a type of consensus algorithm that is used to validate transactions and secure the AMA network. In a PoA network, a set of "validators" or "authorities" are responsible for validating transactions and adding them to the blockchain. These validators are chosen based on their reputation or trustworthiness, and they are typically identified by a unique digital signature or identity.

The PoA consensus algorithm is often used in the AMA blockchain network, where the validators are known and trusted parties. These validators are responsible for verifying transactions and adding them to the blockchain, and they are typically required to follow specific rules and guidelines to ensure the integrity of the network.

One advantage of the PoA consensus algorithm is that it can be faster and more efficient than other algorithms, such as Proof of Work (PoW) or Proof of Stake (PoS), because it does not require a large number of nodes to reach consensus on each block. This can make it well-suited for use in high-throughput applications or environments where low latency is important.

However, the PoA consensus algorithm is also less decentralized than other algorithms, as it relies on a small group of trusted validators to maintain the network. This can make it less resistant to censorship or tampering, and it may be less secure if a validator is compromised or becomes untrustworthy. As a result, PoA is often used in combination with other algorithms or security measures to ensure the integrity of the network.

Quantum random number generators consern

There are several potential issues or challenges associated with using Quantum random number generators (QRNGs).

Limited availability

QRNGs can be difficult and expensive to build, and they may not be widely available. This can limit their use in some applications.
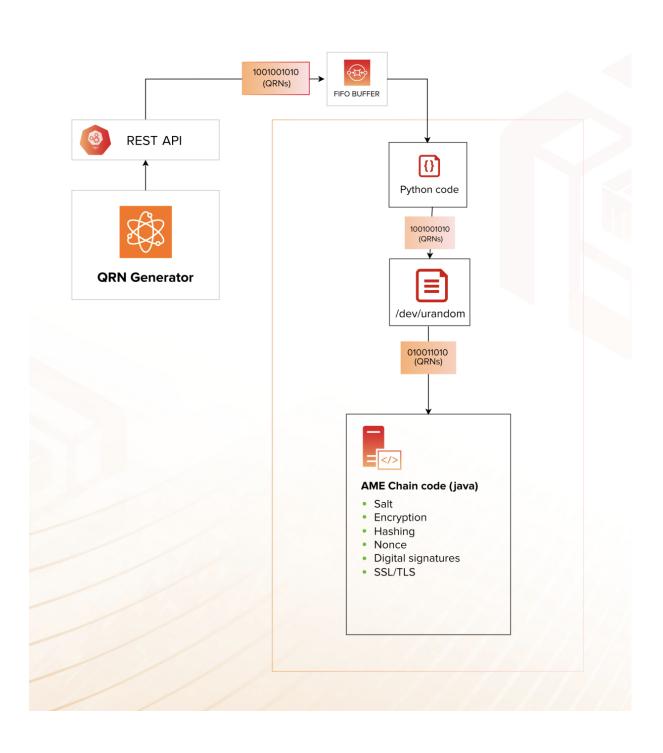
Calibration and maintenance

QRNGs may require frequent calibration and maintenance to ensure that they are generating truly random numbers. This can be a time-consuming and resource-intensive process.

Security vulnerabilities

Like any computer system, QRNGs may be vulnerable to hacking or other security threats. This can be a concern in applications where the security of the generated numbers is critical.

Overall, while QRNGs have the potential to provide truly random numbers that are difficult or impossible to predict, they also come with a number of challenges and potential vulnerabilities that must be carefully considered when using them in various applications.

Quantom and Blockchain Integration

Random Numbers

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Blockchain technology and cryptographic assets present a high level of ongoing risk Cyberscope's position is that each company and individual are responsible for their own due diligence and continuous security Cyberscope's goal is to help reduce the attack vectors and the high level of variance associated with utilizing new and consistently changing technologies and in no way claims any guarantee of security or functionality of the technology we agree to analyze. The assessment services provided by Cyberscope are subject to dependencies and are under continuing development. You agree that your access and/or use including but not limited to any services reports and materials will be at your sole risk on an as-is where-is and as-available basis Cryptographic tokens are emergent technologies and carry with them high levels of technical risk and uncertainty. The assessment reports could include false positives false negatives and other unpredictable results. The services may access and depend upon multiple layers of third parties.

About Cyberscope

Cyberscope is a blockchain cybersecurity company that was founded with the vision to make web3.0 a safer place for investors and developers. Since its launch, it has worked with thousands of projects and is estimated to have secured tens of millions of investors' funds.

Cyberscope is one of the leading smart contract audit firms in the crypto space and has built a high-profile network of clients and partners.

The Cyberscope team

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