Morphene Blockchain

Boone Development

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Abstract

Morphene is an application specific blockchain database that supports auctions that reward users with cryptocurrency. Morphene reinvents upon a traditionally trust-based system with an innovative approach towards a trust-less system. Important aspect of auction based bidding systems are transparency and proper accounting. Morphene is the first Graphene based blockchain that attempts to reward all participants in the network through means of a novel auction bidding system.

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Introduction

The online internet auction market has steadily grown every year since 2014[1]. **Current market forecasts predict this trend is nowhere near stopping.** Sites like eBay, uBid, QuiBids, and more, have shown there is indeed a demand for online auction systems. However, one of the cons to such a system is the level of trust required to be put into those that are running, or hosting, the auction. Morphene aims to reduce the level of trust required in online auction systems by incorporating them into a distributed blockchain database that provides complete transparency.

The core components included with Morphene allow a highly efficient, trust-less system to handle the processing and management of auctions in a fair and transparent manner. It is also part of the Morphene Blockchain to provide rewards in the form of vested cryptocurrency to the accounts that have been elected to produce blocks, either through witness votes or through Proof-of-Work discovery.

Through the creation and discovery of new auctions, individuals will be able to take part in the token distribution of the token economy. Auctions tokens will be consumed when users place bids on auctions. Each successful bid will add an additional ten seconds to the auction duration, as well as increase the value of the auction by one token. Upon completion of an auction, both auction consigner and the winning bidder will receive a portion of the cryptocurrency reward.

The goal of the Morphene Blockchain is to demonstrate the highly efficient nature of application specific blockchain implementations. The online auction system was chosen to perform this demonstration due to its requirements for quick processing, funds validation, fault tolerance, and transaction transparency. As time goes on the built in auction system will be enhanced and new systems or sub-chains may be created.

This paper will explore the pros and cons of existing online auction systems in comparison to those that are made possible through the use of Morphene Blockchain.

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1. 2019 U.S. Industry Statistics & Market Research - Online (Internet) Auctions, Anything Research, May 2019 - https://www.anythingresearch.com/industry/Online-Internet-Auctions.htm

Methodology

To address the challenge of deciding which Proof-of-Concept to pursue first with Morphene Blockchain, we performed extensive market research into different areas of the internet where trust was a large part of the business model. Ultimately, online auctions were decided upon due to the large amount of money that is processed each day in regards to online auctions.

With millions of people using online auction services, we first set out to identify the largest. In terms of user base, eBay is by far the largest with around 180 million users[1]. One important aspect of any blockchain is the possibility for it to scale to support real-world scenarios.

Morphene has a three second block interval with the ability to process thousands of transactions per block[2]. This level of speed and efficiency can easily handle the demand of a combination of the current largest online auction websites.

Morphene, like Steem, is built upon the Graphene library. It is the Graphene library that provides the Delegated Proof-of-Stake consensus mechanism for block production. Unlike, Steem, however, Morphene is built to be application specific and much more efficient for the tasks that it has to perform.

Blockchain networks in general tend to want to over develop and offer more than is necessary. While being nice to have extra features, sometimes it is this level of generalization that directly reduces efficiency of the system as a whole.

1. Number of eBay's total active buyers from 1st quarter 2010 to 1st quarter 2019 (in millions) - Statista, 2019, https://www.statista.com/statistics/242235/number-of-ebays-total-active-users/
2. Block'Tivity, 2019. https://www.blocktivity.info/

Online Auction Format

Online auctions have been around since the early days of the internet. There have been many different types of online auctions that have been created. The specific model that Morphene intends to focus on is often referred to as a Penny Auction.

Within the Morphene network, a user, *consigner*, is able to create an auction consisting of an initial fee, a start time, and an end time. The initial fee is required when creating an auction, however, it can be set to zero (0).

The start time needs to be set for a time in the future and the end time needs to be set for at least one (1) second after the start time. When the Morphene blockchain head block time passes the auction's defined start time, the auction will become active and ready to receive bids.

Each bid an auction receives will subtract one (1) MORPH from the user, *bidder*, and will increment the auction value by one (1) MORPH. At the same time, ten (10) more seconds will be added to the auction's end time.

When the auction's time runs out and it has received no more bids, the auction will end, resulting in a payout to the auction consigner and the last bidder. The reward portion assigned to the consigner is ten (10) percent and the portion assigned to the winning bidder is the remaining ninety (90) percent.

Trust-Based Systems

Online auction systems require a high level of trust to be placed into the company or server that is actually hosting the auction. This level of trust can lead to manipulation and corruption behind the scenes that may not be apparent to the general public.

Through the use of blockchain technology, Morphene seeks to demonstrate that this trust-based system can be effectively converted in a trust-less system that provides full transparency for all transactions.

The immutable blockchain ledger will contain the entire history of the auctions, bids, and payouts in the system. This information can be further digested into a general database and visualized into an application referred to as a Block Explorer.

Application Specificity

Blockchain networks often suffer from issues relating to latency and reliability. This is largely due to the fact that blockchains are traditionally trying to achieve a fully decentralized implementation while also having plenty of features that bloat the entire network.

Morphene aims to remove this issue by relying on application specificity from the very beginning. By focusing on exactly what issue or use case needs to be solved and building that directly into an immutable, fault tolerant blockchain, Morphene will be able to retain high efficiency in processing without compromising its functionality.

Consensus Algorithm

With Morphene block production is done in rounds. Each round 21 witnesses are selected to create and sign blocks of transactions

Nineteen (19) of these witnesses are selected by approval voting, one (1) is reserved for miners, and one (1) is timeshared by every witness that didn’t make it into the top 20 proportional to their total votes

The twenty-one (21) active witnesses are shuffled every round to prevent any one witness from constantly ignoring blocks produced by the same witness placed before. Any witness who misses a block and hasn't produced in the last 24 hours will be disabled until they update their block signing key.

This process is designed to provide the best reliability while ensuring that everyone has the potential to participate in block production regardless of whether they are popular enough to get voted to the top

Because the active witnesses are known in advance, Morphene is able to schedule witnesses to produce blocks every 3 seconds. For some applications, the block interval can be further reduced.

Witnesses synchronize their block production via the NTP protocol. A variation of this algorithm has been in use by the Steem and BitShares networks where it has been proven to be reliable.

Mining Algorithm

Morphene allows a set number of witnesses to get scheduled for production by submitting a valid Proof-of-Work discovery using sha256 hashing. When a miner discovers and submits the proof, they will be scheduled for block production as a witness.

Initial Allocation & Supply

The Morphene network started with an initial supply of one billion (1,000,000,000) MORPH and allocated MORPH via inflation at a rate of approximately 75 MORPH per minute. The initial inflation rate started at 49.5% and narrowed by 0.01% every 21k blocks (~17.5 hours) until it stops at 0.95%.

The initial token supply will be used to fund development, account creations, giveaways, promotions, and an initial token sale offering.

Development Goals

The Morphene network and team behind it plan to see Morphene core development out into the foreseeable future. Through the use of the initial token supply fund and further efforts around fund-raising, marketing, and community engagement, Morphene hopes to grow steadily for years to come during the blockchain revolution.

Over time, Morphene believes it can develop into a code base that can be used to readily deploy application specific blockchains with the ability to share their token economy with existing blockchains. By bridging the existing cryptocurrencies into an auction system, Morphene hopes to have a large supporting community to lean upon.

Conclusion

Morphene is an experimental and innovative new take on distributed blockchain technology. We believe through our proof-of-concept implementation of the online auction system, our technology will be much easier to digest and comprehend for the average user or investor.

No single blockchain should try to do way more than is necessary to accomplish their goals. Application specificity enables companies to be able to properly rely on blockchain technology for production grade efficiency. Morphene will effectively demonstrate over the course of the network lifetime that removing trust from online auctions can be done without a major compromise to efficiency or processing speed.

As a result of this proof-of-concept, MORPH tokens will be created by the system. We will work as a team to involve the community in getting these tokens listed on various cryptocurrency exchanges when the time comes. It is our idea that the generated MORPH supply will be used to provide an asset vehicle mechanism to convert various types of cryptocurrencies.

Morphene Blockchain

Strong, Stable, Efficient

Morphene will effectively demonstrate that application specific blockchains can provide a high level of security and efficiency without the requirement for traditional trust-based models.

Online Auction Proof-of-Concept

The online auction proof-of-concept is the perfect model to effectively convey Morphene's mission statement as well as generate a high level of interaction and engagement from the cryptocurrency and gambling communities.

CEO & Founder – Andrew Chaney

Blockchain technology is set to completely revolutionize the way we see online, trust-based systems in the future.

Thank You

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