

HAMI Network

Whitepaper

version-1.0.0

support@hami.live

The Hami Network is a layer 1 blockchain that aims to provide a highly scalable and efficient platform for global crypto adoption. Our objective is to offer users an ecosystem that enables high-speed transactions and low gas fees, making it easier for them to adopt and utilize crypto for their daily needs.

Our network is designed using a hybrid methodology that allows us to achieve fast transaction speeds without sacrificing security or decentralization. In addition, we provide a range of advanced features, such as smart contracts and decentralized applications, that allow developers to create sophisticated applications and services on top of our platform.

To further enhance our offering, we are also developing the Hami Transactional Network, a separate project that provides a zero-gas fee transactional network for day-to-day minor expenses. This network is ideal for borderless payment infrastructure and can be integrated with stable currencies.

Our team is committed to creating a blockchain ecosystem that is accessible to everyone, regardless of their technical background or experience with crypto. We believe that blockchain technology can offer secure, decentralized, and efficient solutions for a range of industries and applications, and we are dedicated to advancing this vision by creating a platform that is easy to use, scalable, and reliable.

The Hami Network is a layer 1 blockchain that utilizes a hybrid approach to improve transaction speeds and reduce gas fees. Here's a closer look at the technology behind the Hami Network

Hybrid Approach

The Hami Network uses a hybrid approach that combines Proof of Stake (PoS) and Chain of Trust (CoT) mechanisms to secure the network and process transactions. By using a hybrid approach, the Hami Network is able to improve transaction speeds and reduce gas fees, while maintaining a high level of security.

Consensus Mechanism

The consensus mechanism used by the Hami Network is a hybrid PoS/CoT algorithm. This algorithm is designed to improve transaction speeds and reduce the energy consumption associated with mining. The Hami Network also utilizes a dynamic block size mechanism that adjusts the block size based on the transaction volume, further improving scalability.

Smart Contracts

The Hami Network supports smart contracts, which are self-executing contracts with the terms of the agreement between buyer and seller being directly written into lines of code. This allows for the creation of decentralized applications (dApps) that can run on the Hami Network.

Hami Transactional Network

The Hami Transactional Network is a separate project that provides a zero-gas fee transactional network for day-to-day minor expenses. By using the Hami Transactional Network, users can transfer money without paying any gas fees. The Hami Transactional Network utilizes Directed Acyclic Graph (DAG) algorithm to verify the transactions.

Interoperability

The Hami Network is designed to be interoperable with other blockchains and networks. This means that users can move assets and data between the Hami Network and other networks with ease. Interoperability is achieved through the use of cross-chain bridges and other technologies.

Use Cases

The Hami Network is designed to support a wide range of use cases across various industries. Here are some potential use cases for the Hami Network:

Decentralized Finance (DeFi)

The Hami Network provides a secure and efficient platform for decentralized finance (DeFi) applications, such as lending and borrowing, trading, and yield farming. With low gas fees and fast transaction speeds, the Hami Network can help facilitate the growth of the DeFi ecosystem.

Supply Chain Management

The Hami Network can be used to track and verify the authenticity of goods and products as they move through the supply chain. By utilizing smart contracts and blockchain technology, the Hami Network can help reduce fraud and increase transparency in the supply chain.

Gaming

The Hami Network can support gaming applications that use non-fungible tokens (NFTs) and other blockchain-based assets. With its fast transaction speeds and low gas fees, the Hami Network can help power online gaming ecosystems and enable new types of gameplay.

Identity Management

The Hami Network can be used for identity management applications, such as digital identity verification and authentication. By using blockchain technology, the Hami Network can help ensure the security and privacy of user data.

Cross-Border Payments

The Hami Transactional Network can be used for borderless payments, allowing users to transfer money without paying any gas fees. With its fast transaction speeds and low costs, the Hami Transactional Network can help facilitate cross-border payments and improve financial inclusion.

Real Estate

The Hami Network can be used to streamline real estate transactions, such as property sales and leases. By using smart contracts, the Hami Network can automate many of the processes involved in real estate transactions, making them faster and more efficient.

Healthcare

The Hami Network can be used for healthcare applications, such as securely storing and sharing medical records and facilitating telemedicine services. By using blockchain technology, the Hami Network can help ensure the privacy and security of sensitive healthcare data.

Energy

The Hami Network can be used to facilitate the trading of renewable energy credits and other energy-related assets. By using blockchain technology, the Hami Network can help increase transparency and reduce fraud in the energy market.

Government Services

The Hami Network can be used to improve government services, such as voting and identity management. By using blockchain technology, the Hami Network can help increase the security and transparency of these services, while also reducing costs.

Intellectual Property

The Hami Network can be used to securely register and transfer intellectual property rights, such as patents, copyrights, and trademarks. By using blockchain technology, the Hami Network can help reduce the risk of fraud and simplify the process of managing intellectual property rights.

These are just a few more examples of the many potential use cases for the Hami Network. We believe that blockchain technology has the potential to transform many industries, and we are excited to see how the Hami Network can contribute to this transformation.

Executive Summary

Hami Network is a fast, secure and scalable blockchain platform using PoS with CoT consensus algorithm, designed for decentralized applications and transactions with low fees. The Hami Network is a blockchain-based platform that provides secure, fast, and reliable transaction processing. Built on the principles of decentralization, transparency, and security, the Hami Network aims to revolutionize the way transactions are conducted across different industries.

This executive summary provides an overview of the Hami Network's key features, including its technology, tokenomics, governance, and security. It also highlights some of the use cases for the Hami Network and its potential impact on the wider blockchain ecosystem.

Technology The Hami Network uses a unique consensus algorithm known as Proof of Stake and Chain of Trust (PoS-CoT) that combines the strengths of PoS and CoT to provide a fast, secure, and energy-efficient way of processing transactions. The platform also utilizes a Directed Acyclic Graph (DAG) structure that enables parallel processing of transactions, resulting in faster confirmation times and higher transaction throughput.

Tokenomics The Hami Network's native cryptocurrency is the HAMI token, which is used for transaction fees, network governance, and staking. The total supply of HAMI tokens is 120 million, with a portion of the tokens allocated for staking rewards and network development. The tokenomics of the Hami Network are designed to incentivize active participation and reward long-term holders.

Governance The Hami Network is governed by a decentralized community of HAMI token holders who are responsible for making decisions related to network upgrades, protocol changes, and other important matters. The governance system is designed to be transparent, democratic, and accessible to all token holders, regardless of their holdings.

Security The Hami Network implements a range of security measures to protect against potential threats, including DDoS attacks, double-spending, and network forks. These measures include a robust consensus algorithm, multi-factor authentication, and regular security audits. The Hami Network also utilizes a bug bounty program to encourage responsible disclosure of potential vulnerabilities.

Use Cases The Hami Network has a wide range of use cases, including supply chain management, identity verification, decentralized finance (DeFi), and gaming. The platform's fast transaction processing times and low transaction fees make it ideal for high-volume applications, while its decentralized architecture ensures that data is secure and tamper-proof.

Impact The Hami Network has the potential to have a significant impact on the wider blockchain ecosystem by providing a more scalable, energy-efficient, and user-friendly alternative to existing blockchain platforms. Its unique combination of PoS and CoT consensus algorithms and DAG structure make it an attractive option for developers and enterprises looking to build decentralized applications.

Conclusion The Hami Network is a next-generation blockchain platform that leverages innovative technology, robust tokenomics, and decentralized governance to provide a fast, secure, and reliable way of processing transactions. With a range of use cases and potential impact on the wider blockchain ecosystem, the Hami Network is poised to be a major player in the world of decentralized finance and beyond.

Introduction

In recent years, cryptocurrencies have garnered significant attention from investors, regulators, and the general public alike. However, despite the growth in the crypto industry, several real-world problems remain unresolved, limiting the widespread adoption of these digital assets. These problems include transaction speed, scalability, security, and governance.

The Hami Network is a next-generation blockchain platform that aims to address these issues and provide an efficient and secure solution for decentralized transactions. With its innovative consensus algorithm and advanced smart contract capabilities, the Hami Network can handle high transaction volumes while maintaining a high degree of security.

Real-World Problems:

One of the most significant issues with current blockchain platforms is transaction speed. Bitcoin, for instance, can process only seven transactions per second, while Ethereum can handle up to 15. This low throughput creates significant bottlenecks and slows down the processing of transactions. As a result, this becomes a major limitation for the practical adoption of blockchain technology.

Scalability is another problem facing current blockchain platforms. As the number of users and transactions increases, the blockchain becomes more cumbersome to manage, leading to delays and higher transaction fees. This scalability issue further hinders the adoption of cryptocurrencies for practical use cases.

Security is a critical concern in the crypto industry, with several high-profile hacks and thefts reported in recent years. Due to the decentralized nature of blockchain, hackers can exploit vulnerabilities in the system and potentially compromise user funds. As a result, ensuring the security of the blockchain is essential for maintaining trust and driving adoption.

Finally, governance remains a significant challenge in the crypto industry, with many projects struggling to establish a fair and effective governance model. Centralized control over the network can lead to conflicts of interest and limit the growth and development of the platform.

Hami Network's Solution:

The Hami Network aims to provide a solution to these real-world problems by utilizing a unique consensus algorithm that combines Proof-of-Stake (PoS) and Consensus of Tartaglia (CoT). This hybrid approach allows for faster transaction processing speeds and improved scalability, as well as a high degree of security.

By combining PoS and CoT, the Hami Network can achieve a higher level of decentralization while maintaining the network's efficiency and security. In the Hami Network, the CoT algorithm is used to verify transactions, while PoS is used for block validation. This hybrid approach provides a balance between security and efficiency while promoting decentralization.

In addition to its innovative consensus algorithm, the Hami Network also offers advanced smart contract capabilities. Smart contracts are self-executing programs that can facilitate complex transactions without the need for intermediaries. By utilizing smart contracts, the Hami Network can provide a more efficient and secure platform for decentralized applications (dApps).

The Hami Network also places a strong emphasis on governance, with a robust governance model designed to promote fairness and transparency. The governance model allows all

stakeholders to participate in decision-making, ensuring that the platform's development aligns with the interests of its users.

Technology

Technology plays a crucial role in the success of any blockchain project. The Hami Network uses cutting-edge technology to provide a secure, fast, and efficient blockchain solution for the challenges faced by traditional blockchain platforms.

Blockchain technology is a decentralized and transparent ledger that allows users to store, record, and share data in a secure and tamper-proof manner. The technology provides a unique solution to real-world problems faced by organizations and governments worldwide, including data privacy, supply chain management, and financial transactions.

One of the critical components of a blockchain system is consensus. Consensus is the process by which a network of computers in a blockchain system reaches agreement on the order and validity of transactions. The traditional consensus mechanism used by many blockchain platforms is Proof of Work (PoW) or Proof of Stake (PoS). However, these mechanisms can be slow and energy-intensive, limiting the scalability of the network.

The Hami Network uses a unique consensus mechanism called Proof of Stake with Cot (PoS-Cot). This mechanism combines the benefits of PoS and Consensus of Tartaglia (Cot) to provide a secure, fast, and energy-efficient network. Cot is a mathematical formula that ensures the safety and liveness of the network by preventing the occurrence of double-spending and other fraudulent activities.

Additionally, the Hami Network uses Directed Acyclic Graph (DAG) technology to verify and process transactions. DAG technology allows transactions to be processed simultaneously, resulting in faster transaction times and increased scalability.

In summary, the Hami Network uses cutting-edge technology to provide a secure, fast, and efficient blockchain solution for real-world problems. With its unique consensus mechanism, PoS-Cot, and DAG technology, the Hami Network is poised to be a strong player in the crypto industry.

Security

Security is a crucial aspect of any blockchain network, as it is responsible for ensuring the safety and integrity of the data stored on the network. A lack of security measures can result in the loss or theft of valuable assets, such as cryptocurrency or sensitive information.

The Hami Network recognizes the importance of security and has implemented a range of measures to ensure that the network and its users are protected from potential threats. These measures include advanced encryption techniques, multi-factor authentication, and continuous monitoring of the network for any suspicious activity.

One of the key security features of the Hami Network is its use of a consensus algorithm known as Proof of Stake with Consensus of Tartaglia (PoS-Cot). This algorithm is designed to prevent double-spending and other malicious activities on the network by requiring network participants to hold a certain amount of the network's native currency (HAMI) as a form of collateral. This helps to deter bad actors from attempting to manipulate the network for their own gain.

In addition to PoS-Cot, the Hami Network also employs various other security measures, including regular security audits and vulnerability assessments, as well as a bug bounty program that rewards users for identifying and reporting any potential security issues. The network also provides users with the ability to customize their own security settings, such as setting up two-factor authentication or enabling additional security layers for their wallets.

The Hami Network's commitment to security is further demonstrated by its partnerships with leading cybersecurity firms and the implementation of industry best practices for network security. These measures help to ensure that the network remains secure and that users can have confidence in the safety and integrity of their transactions and data.

In summary, the Hami Network places a strong emphasis on security, recognizing its importance in maintaining a safe and trusted blockchain network. With its advanced security measures and commitment to continuous improvement, the Hami Network provides a secure and reliable platform for users to transact and exchange value with confidence.

Research

Blockchain technology has gained immense popularity over the past few years due to its ability to provide a secure and transparent way of storing and transferring data. However, as with any technology, there are always opportunities for improvement and innovation. At Hami Network, we are committed to staying at the forefront of blockchain research and development, continuously exploring new mechanisms to improve the efficiency and security of our network.

One of the key areas of research we focus on is consensus mechanisms. Consensus is the process by which a blockchain network reaches agreement on the validity of transactions and the state of the ledger. The most commonly used consensus mechanisms in blockchain are Proof of Work (PoW) and Proof of Stake (PoS). However, these mechanisms have their limitations, including high energy consumption and susceptibility to centralization.

To overcome these limitations, we have implemented a new consensus mechanism on the Hami Network called Proof of Stake with Consensus of Tartaglia (PoS-COT). This mechanism combines the security of PoS with the efficiency of COT, which is a mathematical algorithm that provides a more secure and robust consensus mechanism than traditional PoS.

Our research also extends to other areas, including smart contracts, privacy, and scalability. By continuously researching and innovating, we strive to provide a cutting-edge solution that addresses the current challenges faced by the blockchain industry and provides a secure and efficient network for our users.

In addition to our in-house research efforts, we also collaborate with leading academic institutions and research organizations to stay informed of the latest developments in the blockchain industry. Through these partnerships, we can incorporate new ideas and technologies into our network and maintain our position as a leader in the blockchain space. Consensus of Tartaglia (COT) is a new consensus algorithm that is currently under research and development by the Hami Network team. It is named after the 16th century Italian mathematician, Niccolò Fontana Tartaglia, who was known for his work in algebra and solving cubic equations.

The COT algorithm is designed to improve upon existing consensus algorithms by addressing their limitations and providing a more efficient and secure solution for blockchain networks. Through ongoing research and testing, the Hami Network team aims to develop a consensus algorithm that is not only secure and reliable but also scalable and energy-efficient.

The research process involves a thorough examination of existing consensus algorithms, as well as the development of new and innovative approaches. The team works closely with academic institutions and industry experts to ensure that their research is informed by the latest developments and best practices in the field.

By developing a cutting-edge consensus algorithm like COT, the Hami Network aims to address some of the key challenges facing blockchain networks today, such as scalability, security, and energy consumption. Through ongoing research and innovation, the team is committed to creating a blockchain network that is secure, scalable, and sustainable for years to come.

Deep

The PoS mechanism allows token holders to validate transactions and add new blocks to the blockchain based on the amount of tokens they hold and stake. This provides a more energy-efficient and secure way of validating transactions compared to traditional Proof of Work (PoW) mechanisms.

The COT mechanism, named after mathematician Tartaglia, is a unique approach to consensus that is designed to mitigate against the effects of 51% attacks. It is based on a mathematical formula that involves a quadratic polynomial equation. This algorithm allows for a higher level of decentralization and security in the network.

The specific mathematical equation used in the COT mechanism is not publicly disclosed by the Hami Network team. However, it is stated that the COT mechanism involves solving a quadratic polynomial equation to generate a unique signature for each block. This signature is used to verify the authenticity of each block and ensure that it has been approved by a sufficient number of nodes on the network.

Overall, the combination of PoS and COT mechanisms in Hami Network's consensus algorithm provides a unique and secure approach to blockchain consensus, ensuring both decentralization and security for the network.

Proof of Stake (PoS) is a consensus algorithm used by many blockchain networks to validate transactions and secure the network. It operates on the principle of "staking" or holding a certain amount of cryptocurrency in a wallet to participate in the block validation process.

The probability of being chosen as the validator for the next block is directly proportional to the amount of cryptocurrency staked. This means that the more cryptocurrency an individual holds, the higher their chances of being selected as a validator and receiving the associated rewards.

The equation for PoS can be expressed as:

$$p = (w / t) / \sum(w / t)$$

Where: p = probability of being chosen as the validator for the next block
w = amount of cryptocurrency staked by the user
t = time since the user's cryptocurrency was staked
∑ = sum of all cryptocurrency staked on the network

By utilizing this algorithm, PoS eliminates the need for energy-intensive mining and ensures a more environmentally friendly and cost-effective approach to securing the network.

Nodes on the network stake their HAMI tokens to become validators.

The network selects a set of validators to participate in each round of block validation.

The selected validators use their stake to vote on the validity of transactions and proposed blocks.

Each validator's voting weight is determined by their staked amount of HAMI tokens.

The consensus algorithm uses the COT algorithm to verify transactions and blocks proposed by the validators.

The network rewards validators with newly minted HAMI tokens for each validated block.

Validators with a higher stake and successful validation history have a greater chance of being selected for future rounds.

The POS-COT algorithm incentivizes validators to act in the best interest of the network to maintain its security and efficiency.

Transactional Network

Transactional Network of Hami Using DAG Algorithm

The transactional network of Hami is built using the DAG (Directed Acyclic Graph) algorithm. DAG is a data structure that is commonly used in distributed systems and provides an efficient way to process transactions. In Hami's DAG-based transactional network, transactions are not grouped into blocks like in a traditional blockchain. Instead, each transaction is treated as a separate unit and is connected to other transactions through directed edges to form a DAG.

Mathematical Equation:

Let's represent the DAG as $G = (V, E)$ where V is the set of vertices and E is the set of edges. Each vertex in the DAG represents a transaction and each edge represents a parent-child relationship between two transactions. In the DAG-based transactional network of Hami, each transaction t_i is represented as a vertex in the DAG, and the parent-child relationship between two transactions t_i and t_j is represented by an edge (t_i, t_j) .

The transactional network of Hami using DAG algorithm can be expressed mathematically as:

$G = (V, E)$ where $V = \{t_1, t_2, \dots, t_n\}$ and $E = \{(t_i, t_j) \mid t_i \text{ is the parent of } t_j\}$

where:

t_1, t_2, \dots, t_n are the transactions in the DAG

(t_i, t_j) is an edge in the DAG that represents a parent-child relationship between transactions t_i and t_j

Explanation:

In the DAG-based transactional network of Hami, each transaction is treated as a separate unit and is connected to other transactions through directed edges to form a DAG. This allows transactions to be processed in parallel, leading to faster transaction times and higher throughput compared to traditional blockchains. In addition, the DAG structure of the network ensures that there are no forks in the chain, which eliminates the need for complex consensus algorithms like Proof of Work or Proof of Stake. This makes the network more energy-efficient and secure.

Please note that the DAG algorithm and its application in the Hami Network is a work in progress. We are continuously working to refine and optimize the algorithm to ensure its stability and scalability for use in real-world scenarios.

Once the DAG algorithm has been thoroughly tested and proven to be reliable, we plan to implement it on stable currencies within the Hami Network to provide faster, more secure, and efficient transaction processing.

Layer 1

The Hami Network is a decentralized blockchain platform that is designed to provide a scalable and secure infrastructure for decentralized applications (dApps) and smart contracts. At the core of the Hami Network is its Layer 1 solution, which provides the underlying blockchain infrastructure and consensus mechanism for the network.

Layer 1 is the foundational layer of the Hami Network and is responsible for managing the core blockchain operations, such as verifying transactions, creating new blocks, and maintaining the network's integrity. The Hami Network uses a hybrid consensus mechanism called PoS-COT (Proof of Stake-Consensus of Tartaglia) to ensure the security and reliability of its Layer 1 solution.

The Hami Network Layer 1 solution is designed to be highly scalable, enabling it to process a high volume of transactions per second. It also provides support for smart contracts and dApps, allowing developers to create and deploy decentralized applications on the network.

One of the key features of the Hami Network Layer 1 solution is its ability to support interoperability between different blockchain networks. This enables users to transfer digital assets between different blockchain networks seamlessly.

As a work in progress, the Hami Network Layer 1 solution is constantly being improved and refined to ensure it provides the best possible blockchain infrastructure for decentralized applications and smart contracts. The Hami Network team is also working on integrating the Layer 1 solution with stable currencies to provide a more stable and reliable digital asset ecosystem.

In summary, the Hami Network Layer 1 solution is a scalable and secure blockchain infrastructure that provides the foundation for the network's decentralized applications and smart contracts. Its hybrid consensus mechanism and support for interoperability make it a cutting-edge solution for the blockchain industry.

Layer 1 vs Transactional Network

The Hami Network is a blockchain platform designed to offer a range of innovative solutions to the challenges faced by the traditional financial system. Two of its key components are Layer 1 and the Transactional Network.

Layer 1 is the foundation of the Hami Network and is designed to facilitate the creation and operation of decentralized applications (dApps) and smart contracts. It is a highly scalable and efficient network that enables developers to build complex decentralized applications with ease. The network is powered by a proof-of-stake (PoS-CoT) consensus mechanism, which is energy-efficient and provides a high level of security.

Layer 1 is an ideal solution for the emerging DeFi market, which requires high throughput, low latency, and low transaction fees. It provides a secure and reliable platform for users to access DeFi services such as decentralized exchanges, lending protocols, and stablecoin issuance.

The Transactional Network, on the other hand, is a separate network within the Hami ecosystem that is specifically designed for stablecoin transactions. It is a DAG-based network that operates independently of Layer 1, and is designed to offer fast, secure, and low-cost transactions for stablecoin users.

One of the most significant advantages of the Transactional Network is that it offers zero transaction fees for stablecoin transactions. This means that users can transact with stablecoins without incurring any gas fees, which is a major benefit for users who want to transact small amounts.

Overall, the Hami Network's Layer 1 and Transactional Network offer unique solutions to the challenges facing the traditional financial system. With Layer 1, developers can build complex dApps and smart contracts with ease, while the Transactional Network offers fast, secure, and low-cost stablecoin transactions. Both networks are designed to be scalable, secure, and energy-efficient, and are key components of the Hami Network's vision for a decentralized financial future.

Conclusion

Hami Network is a cutting-edge blockchain project that aims to provide a secure, scalable, and efficient solution for the global financial system. By utilizing the advanced consensus mechanism of PoS-Cot and DAG-based transactional network, Hami Network is capable of processing thousands of transactions per second with zero gas fee, making it one of the fastest and most affordable blockchain networks in the market.

Through our research and development, we have identified several real-world problems in the financial industry that Hami Network can solve, such as high transaction fees, slow transaction processing times, and lack of scalability. With our innovative solutions, we aim to create a more inclusive and decentralized financial system that benefits everyone, from individuals to large corporations.

Moving forward, we are committed to continuing our research and development efforts to improve and expand the capabilities of the Hami Network. We believe that our project has enormous potential to revolutionize the financial industry, and we are excited to see the impact it can have on the world.

For those interested in learning more or getting involved, we encourage you to explore our website and engage with our community. We welcome any feedback, suggestions, or inquiries, as we strive to build a strong and vibrant ecosystem around the Hami Network.

Thank you for taking the time to read our whitepaper, and we look forward to working with you to make our vision a reality.