DePinStore

WHITE PAPER

DEPINSTORE

ABSTRACT

As blockchain technology continues to evolve and find practical applications, the demand for constructing decentralized physical infrastructures has been increasing, along with rising standards and expectations.

The DePinStore project is dedicated to building a decentralized physical infrastructure ecosystem for Web3 applications. This encompasses multiple modules, including payment, transaction, social networking, computing, and storage.

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Chapter 1

INTRODUCTION

DEPINSTORE

1.1
BACKGROUND

In the current Web3 domain, we are facing several significant challenges: network congestion, privacy breaches, and a lack of overall system robustness. These issues severely impact user experience and threaten the system's security and reliability. To address these challenges, the DePinStore project utilizes the latest blockchain technology and advanced network protocols, striving to create an efficient, secure decentralized network solution.

Our core objective is to enhance the network's processing capacity to handle congestion issues while ensuring the secure transmission of data to prevent privacy breaches. By adopting a decentralized architecture, the DePinStore project not only improves network transparency and user trust but also effectively reduces the risk of single points of failure, enhancing the system's overall robustness.

Furthermore, our solution focuses on user experience, aiming to provide a smooth, seamless interface, ensuring that even non-technical users can easily get started. By integrating these advanced technologies, the DePinStore project aims to bring a safer, more reliable, and more user-friendly network environment to the Web3 ecosystem.

1.2
OBJECTIVES

The DePinStore project is committed to building a comprehensive decentralized network platform, aiming to provide users with a range of efficient and secure network services. Our goal is to realize this vision through the following key services.

Efficient Private Payment Services:

We prioritize user privacy and security. By adopting the latest encryption technologies, we can provide a secure payment environment, allowing users to remain anonymous during transactions and thus ensuring their financial privacy.

Secure And Fast Network Transmission Services:

Our network design emphasizes speed and security. Utilizing advanced encryption protocols and optimized network routing, we ensure the speed and security of data transmission, reducing the risk of delays and interruptions.

End-To-End Encrypted Instant Messaging And Video Conferencing Services:

In today's digital age, communication security is crucial. Our instant messaging and video conferencing solutions use end-to-end encryption to ensure the security of conversations and data during transmission.

Stable And Reliable Blockchain RPC Services:

Our blockchain RPC services are not only stable and reliable but also capable of handling large-scale requests, supporting complex blockchain operations and transactions.

Powerful Distributed Computing Services:

With our distributed computing platform, users can access large-scale computational resources, essential for processing complex data analysis and machine learning tasks.

Fast And Robust Storage And Distribution Services:

Our storage solutions aim to provide fast, reliable data access and distribution, ensuring efficient storage and retrieval speeds regardless of data size.

Stable And Reliable Trading Platform:

Our trading platform is designed with a focus on stability and reliability, ensuring a seamless experience during transactions and reducing the risk of trade failures.

Through these services, the DePinStore project aims not only to meet current market needs but also to drive the future development of decentralized network technology, providing users with a comprehensive, efficient, and secure network experience.

02

Chapter 2

TECHNICAL ARCHITECTURE

DEPINSTORE

2.1

ANONYMOUS FRAMEWORK AND SMART CONTRACTS

The DePinStore project, by integrating zero-knowledge proofs and other cutting-edge cryptographic technologies, is dedicated to constructing a secure digital ecosystem. Our core innovation lies in providing unique mainnet tokens that ensure complete privacy for users, along with optional privacy for derivative tokens. This means that during any transaction, sensitive information and transaction details remain strictly confidential, ensuring total anonymity.

In the digital era, privacy protection is not just a basic user requirement but also the cornerstone of free expression and innovation. The DePinStore project employs advanced technologies such as zero-knowledge proofs and ring signatures to validate the legitimacy of transactions without exposing any personal identity information. This unique privacy protection mechanism not only enhances users' trust in the system but also strengthens resistance to external scrutiny and monitoring, ensuring transaction privacy and security even in stringent regulatory environments.

Integrating Ethereum's smart contract technology, the DePinStore project further enhances its decentralized network platform. This allows users to enjoy unprecedented privacy protection while engaging in complex transactions and application logic in a secure, transparent environment. We are committed to providing a safe and efficient decentralized network experience to meet the growing privacy and security needs of the modern digital economy.

```
func ProveRangeBulletproof(C *crypto.Key, mask *crypto.Key, amount uint64)
BulletProof {
 tmpmask := crypto.SkGen()
 copy(mask[:], tmpmask[:])
 proof := BULLETPROOF_Prove_Amount(amount, mask)
 if len(proof.V) != 1{
  panic(fmt.Sprintf("V has not exactly one element"))
 }
 copy(C[:], proof.V[0][:]) //C = proof.V[0];
 return *proof
}

func get_exponent(base crypto.Key, idx uint64) crypto.Key {

 salt := "bulletproof"
 var idx_buf [9]byte

 idx_buf_size := binary.PutUvarint(idx_buf[:], idx)

 hash_buf := append(base[:], []byte(salt)...)
```

2.2

POS MECHANISM AND VRF

In the DePinStore project, we adopt the advanced Verifiable Random Function (VRF) technology to implement our Proof of Stake (PoS) mechanism. This innovative approach ensures the decentralization of the network and absolute fairness in the node election process. The introduction of VRF technology is crucial as it provides unpredictable and verifiable randomness, enhancing the security of the PoS mechanism and the network's resistance to attacks.

Using VRF technology, DePinStore can randomly and transparently select nodes for validation and block production, thereby eliminating potential centralization risks and biases. This introduction marks a significant improvement over traditional PoS mechanisms, making the network more secure and providing a fairer and more transparent environment for users. By doing so, we ensure that every participant in the network can contribute and benefit in a fair competitive environment, promoting the health and sustainable development of the blockchain ecosystem.

2.3

INNOVATIVE NEW TUNNEL PROTOCOL

In the DePinStore project, we have ingeniously integrated the WireGuard and WebRTC technologies to ensure fast and reliable connections between basic POS nodes.

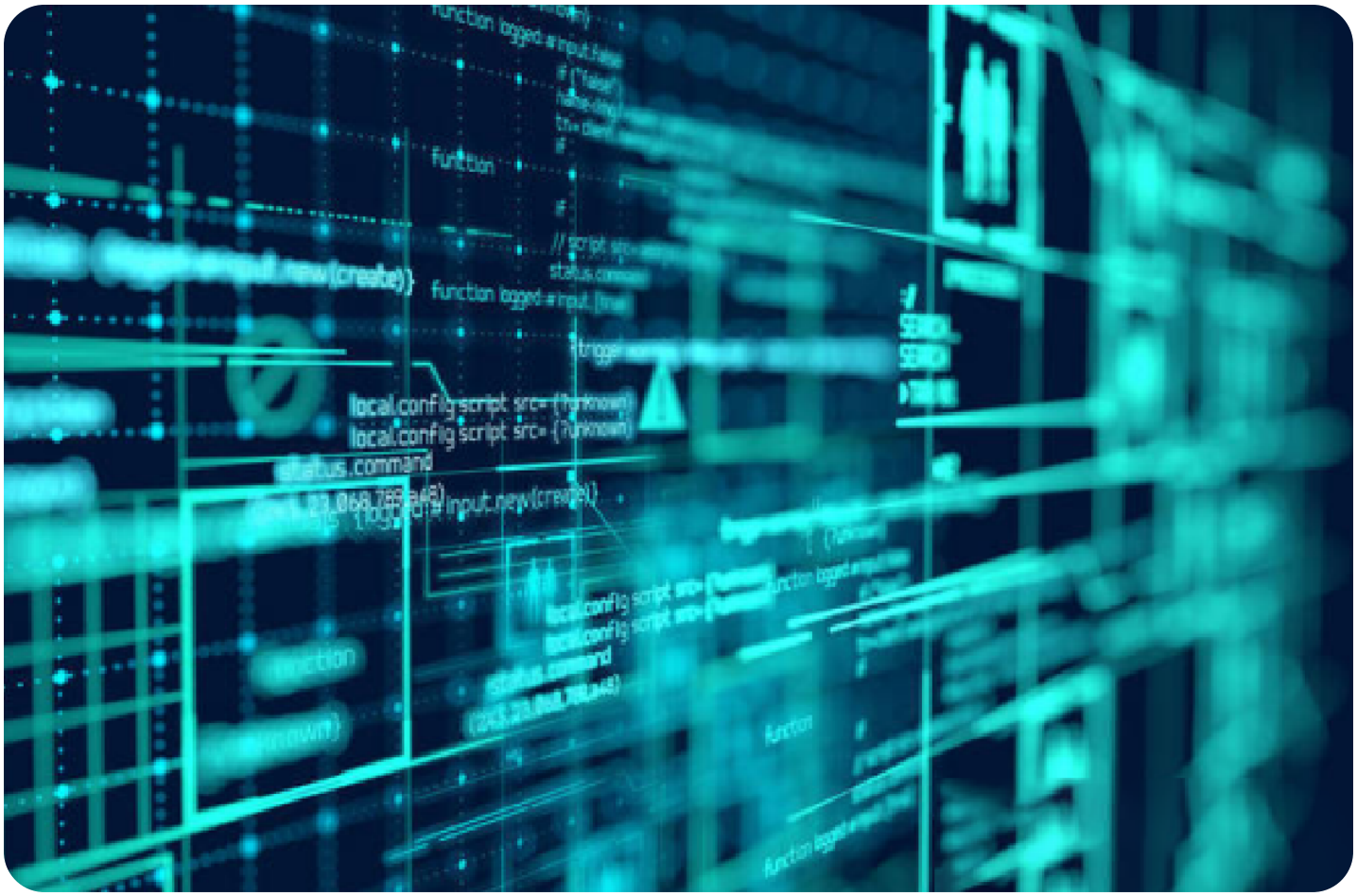
This innovative networking approach allows each node to easily integrate into a fast and secure dedicated network.

Thanks to the network traversal capability of WebRTC technology, nodes can easily bypass NAT and various firewalls, improving accessibility of connections.

At the same time, the use of WireGuard technology enhances the flexibility and security of the network, making it simple and efficient to build a private network.

With WireGuard, each basic POS node can freely join the network without undergoing a complex configuration process. This technology supports the automatic retrieval or manual configuration of private IP routing information, greatly enhancing the adaptability and user experience of the network. This flexible configuration not only improves data transmission speed, but also significantly enhances the privacy of network communication. Through this design, DePinStore ensures that each node can enjoy fast and reliable network services while safeguarding data security.

In summary, the DePinStore project, through the integration of WireGuard technology, not only enhances the performance and security of the network, but also provides an easily manageable and highly configurable solution, supporting the rapid development of decentralized networks and meeting the growing demand for secure and efficient networks in the digital age.

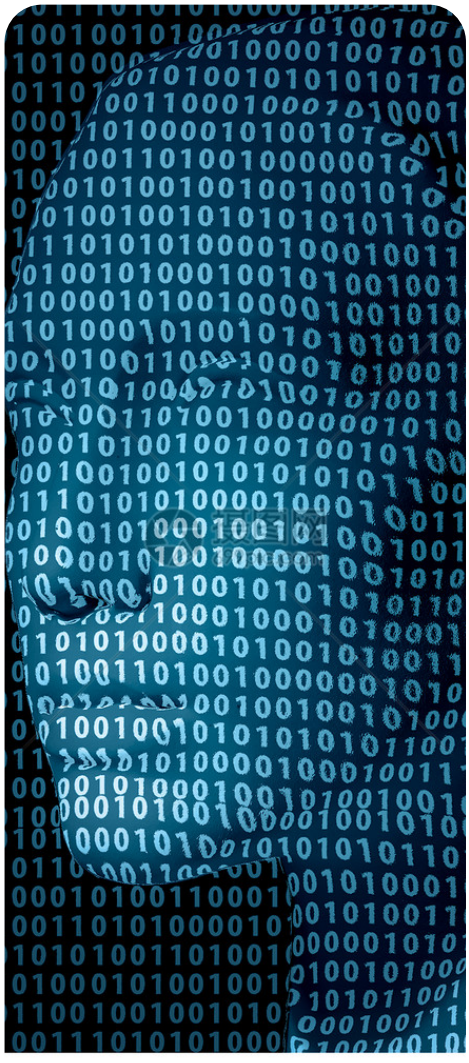


2.4

PROPRIETARY HIGH-SPEED NETWORK CONSTRUCTION

In the current global internet environment, the surge in network usage has led to increasingly severe congestion problems in public networks across countries and states. Especially during peak data transfer periods, users often face slow connection speeds and unstable network services. This not only harms the online experience of individual users but also significantly impacts the operational efficiency of businesses.

As an innovative solution, the DePinStore project encourages users to establish their own dedicated cross-country and cross-border physical network lines. Utilizing the open WireGuard protocol, users can easily deploy nodes and connect to DePinStore's private network. This approach allows data transfer to bypass congested public networks, significantly improving transfer speed and reliability.



Moreover, the point-to-point network connection method adopted by the DePinStore project not only significantly enhances network quality but also increases the redundancy of the entire network. This means the network is more robust and better equipped to withstand failures and interruptions. Through this private network architecture, DePinStore provides users with a more efficient, reliable, and secure method of data transmission, effectively addressing the challenge of global network congestion.

2.4.1

INCENTIVE MECHANISM FOR PROPRIETARY CROSS-COUNTRY, CROSS-BORDER PHYSICAL LINES

To encourage users to actively participate in building and maintaining the DePinStore project's proprietary network lines, we have introduced a unique incentive mechanism: issuing native anonymous TOKENs as rewards. When users establish new physical network connections or enhance the quality of existing connections, they receive TOKEN rewards proportionate to their contribution to the overall network quality. This incentive mechanism not only benefits users but also motivates them to maintain and optimize the network.

These TOKEN rewards serve multiple purposes: users can use them to pay for network services or trade them within the DePinStore ecosystem, even exchanging them for other services. The implementation of this economic incentive strategy not only effectively alleviates public network congestion but also fosters the development of decentralized network infrastructure, making each participant a significant contributor to the network's quality and stability.

As more users participate and the network expands, DePinStore is poised to form a high-performance private network on a global scale. This will greatly enhance the efficiency and security of data transmission, providing users with an unparalleled network experience. We believe that this innovative incentive mechanism will greatly promote the healthy development of our network ecosystem, creating a more reliable and efficient digital world.

```
// prove an amount
func BULLETPROOF_Prove_Amount(v uint64, gamma *crypto.Key) *BulletProof {
 sv := crypto.Zero

 sv[0] = byte(v & 255)
 sv[1] = byte((v >> 8) & 255)
 sv[2] = byte((v >> 16) & 255)
 sv[3] = byte((v >> 24) & 255)
 sv[4] = byte((v >> 32) & 255)
 sv[5] = byte((v >> 40) & 255)
 sv[6] = byte((v >> 48) & 255)
 sv[7] = byte((v >> 56) & 255)

 return BULLETPROOF_Prove(&sv, gamma)
}

func (proof *BulletProof) BULLETPROOF_BasicChecks() (result bool) {

 // check whether any of the values in the proof are not 0 or 1
 if proof.V[0] == crypto.Zero ||
  proof.A == crypto.Zero ||
  proof.S == crypto.Zero ||
  proof.T1 == crypto.Zero ||
```

2.5

END-TO-END ENCRYPTED WEB3 SOCIAL

In the field of digital communication, ensuring the security and privacy of information is not only a basic requirement but also key to maintaining data integrity and trust. With the increasing prevalence of Instant Messaging (IM) chat systems and video conferencing systems in everyday communication, these platforms are frequently used to transmit sensitive information, including personal conversations, business secrets, and crucial decision-making discussions. Therefore, adopting effective security measures, such as end-to-end encryption (E2EE), is essential to protect these sensitive communications from unauthorized third-party breaches.

End-to-end encryption technology ensures the integrity and confidentiality of information transmission, allowing only the communicating parties to read the content. This means that even if data is intercepted during transmission, the strong encryption layer makes it unreadable to potential interceptors. End-to-end encryption not only effectively protects users' personal privacy and prevents data leakage but also provides a crucial line of defense against network eavesdropping and other forms of cyber-attacks. In today's digital age, this encryption method has become an indispensable part of ensuring digital communication security, safeguarding the safety and privacy of user information.

2.5.1

KEY DISTRIBUTION SYSTEM IN THE DEPINSTORE PROJECT

The DePinStore project employs end-to-end encryption technology based on the Signal protocol in its Instant Messaging (IM) chat and video conferencing systems, along with a series of key upgrades and optimizations. The Signal protocol, as a widely recognized open-source encryption framework, has been proven to provide reliable forward secrecy and robust end-to-end encryption functionality. For the DePinStore project, we have implemented the following critical upgrades to enhance system security and user experience.

Distributed Key Management:

DePinStore adopts a decentralized key management mechanism, which significantly reduces the risk of single points of failure compared to traditional centralized key servers, thereby enhancing the system's resistance to censorship and security performance.

Anonymous Credential System:

To strengthen user privacy protection, DePinStore introduces an anonymous credential system, ensuring that users do not need to reveal any identifiable personal information during identity verification, thus safeguarding user privacy.

Multi-Device Synchronization:

Through an improved key synchronization mechanism, we ensure that users can securely sync messages across multiple devices while maintaining communication security and the confidentiality of sensitive information.

Automated Key Updates:

Considering the risk of key leakage over long-term use, DePinStore periodically and automatically updates keys to ensure ongoing communication security.

Quantum-Resistant Algorithms:

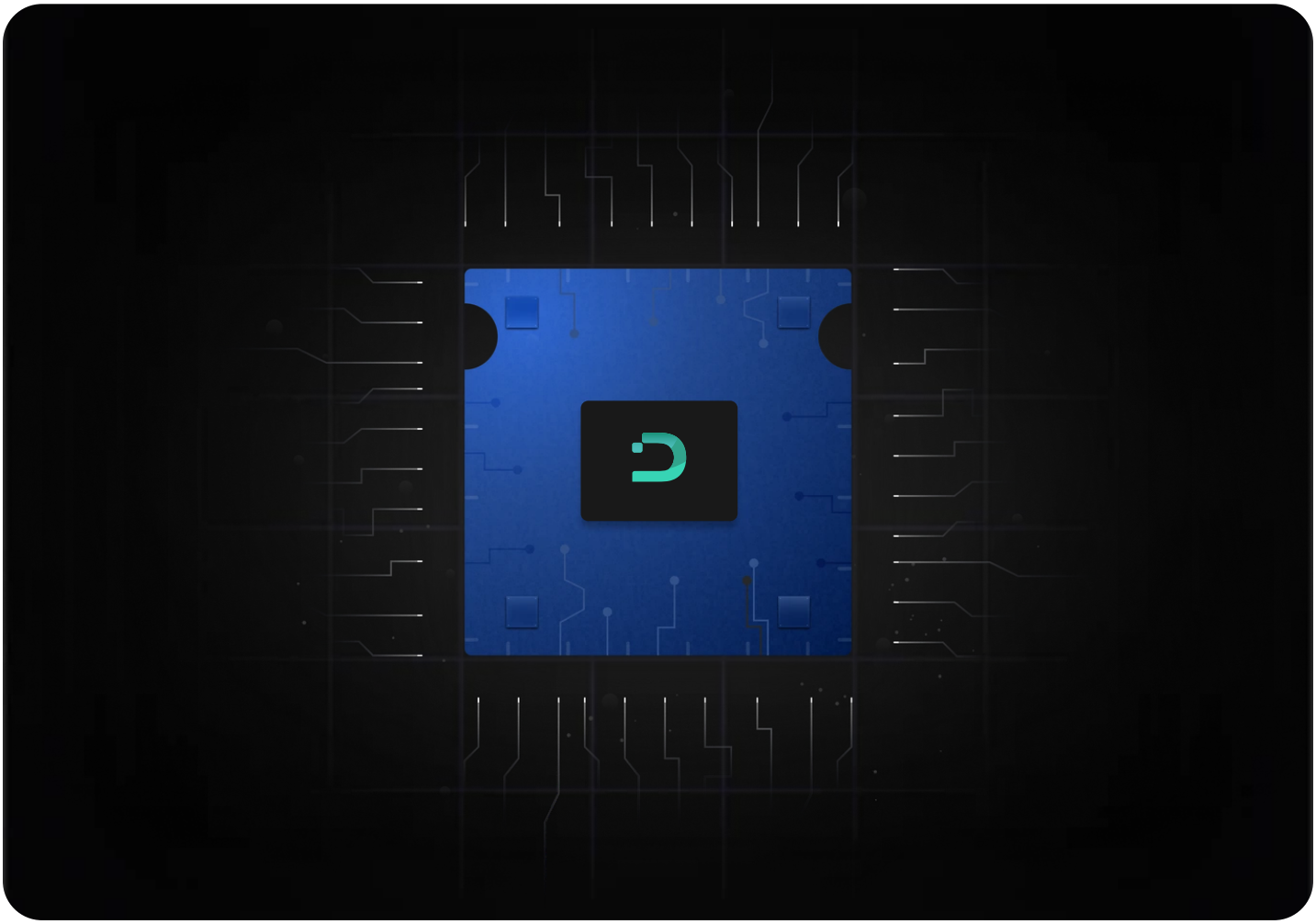
Anticipating future increases in computing capabilities and potential threats from quantum computing, we have upgraded our encryption algorithms to quantum-resistant levels to counter potential attacks from future quantum computers.

Through these comprehensive upgrades and optimizations, the DePinStore project is dedicated to creating a secure, private, and user-friendly communication platform. We ensure that users enjoy a seamless communication experience while benefiting from the highest level of conversational privacy protection afforded by our advanced encryption technologies.

2.6

WEB3 FOUNDATIONAL BLOCKCHAIN RPC SERVERS

In the Web3 ecosystem, blockchain full nodes play an indispensable role. They are responsible for downloading and maintaining the complete historical data of the blockchain and independently verify all transactions and blocks. These nodes are crucial for ensuring network security, decentralization, and data integrity. However, running a full node poses several challenges.



Storage Space:

As mainstream blockchains like Ethereum, Binance Smart Chain, Solana, and Avalanche grow in use, so does the size of the blockchain. Devices running full nodes require sufficient storage space to house the entire blockchain history.

CPU And Memory Needs:

Full nodes need substantial computational power to validate transactions and blocks, meaning they must be equipped with high-performance CPUs and ample memory.

Network Bandwidth:

Full nodes require stable and fast internet connections with sufficient bandwidth to handle the substantial data flow for downloading and uploading.

Node Distribution Issue:

The uneven distribution of nodes is a problem. Many full nodes are concentrated in a few major data centers, potentially leading to single points of failure and security risks.

To address these challenges, the DePinStore project has adopted a community-distributed deployment model for full nodes, coupled with an anonymous TOKEN as an economic incentive mechanism to encourage and reward community members for participating and maintaining the network. This model has several advantages:

Decentralized Incentives:

The anonymous TOKEN incentive mechanism encourages more community members to participate in running and maintaining full nodes, increasing network decentralization, diversity, and security.

Enhanced Network Robustness:

Community members running nodes and receiving TOKEN rewards add redundancy and fault tolerance to the network, ensuring its overall performance remains unaffected even if some nodes fail.

Improved Network Resilience:

By deploying nodes in different geographical locations, the network becomes more robust against attacks or natural disasters.

Supporting Web3 Service Development:

Incentivizing community members to provide stable RPC services reduces dependence on single service providers and promotes the widespread adoption and development of Web3 services.

Cost-Effectiveness:

Introducing anonymous TOKENs allows community members to earn rewards by maintaining nodes, sharing resources, and reducing the costs of running individual full nodes.

Stimulating Innovation:

The economic incentive mechanism lowers technical barriers and stimulates innovation and application development in blockchain technology.

Through this community-driven, distributed deployment of full nodes and the anonymous TOKEN economic incentive mechanism, the DePinStore project aims to build a healthy, sustainable blockchain infrastructure, contributing to the prosperity of the Web3 ecosystem and bringing tangible economic benefits to community members.

2.7

ACCELERATED CRYPTOGRAPHIC COMPUTATION AND AI COMPUTATIONAL SERVICES

To optimize network performance and maximize the computational potential of nodes, our project has adopted a key strategy: allowing nodes to integrate high-performance Graphics Processing Units (GPUs). This strategy capitalizes on the immense computational power of GPUs to accelerate complex cryptographic computations, such as zero-knowledge proofs. This not only significantly enhances the overall processing speed and efficiency of the network but also opens up possibilities for additional AI computational services.

Through fast and secure dedicated network connections, we dynamically allocate idle GPU resources. This means that when specific task demands increase, these efficient computational resources can be quickly assigned to them. This flexible resource management not only improves the overall computational capacity of the network but also ensures the maximization of resource utilization, reducing waste.

Furthermore, this system design brings dual benefits: on one hand, it supports the efficient operation of the network, and on the other, it provides opportunities for participants to contribute their computational resources in exchange for corresponding rewards. This model encourages community participation and collaboration, while also expanding our network's application prospects, such as further development in the AI field.

```
// these checks try to filter out rogue inputs
 if proof.BULLETPROOF_BasicChecks() == false {
  return false
 }

 logN := len(proof.L)
 N := int(1 << uint(logN))

 // reconstruct the challenges
 hashcache := *(crypto.HashToScalar(proof.V[0][:])) //rct::key hash_cache =
rct::hash_to_scalar(proof.V[0]);
 y := hash_cache_mash2(&hashcache, proof.A, proof.S) // rct::key y =
hash_cache_mash(hash_cache, proof.A, proof.S);

 hashcache = *(crypto.HashToScalar(y[:])) // rct::key z = hash_cache =
rct::hash_to_scalar(y);
 z := hashcache
 x := hash_cache_mash3(&hashcache, z, proof.T1, proof.T2) //rct::key x =
hash_cache_mash(hash_cache, z, proof.T1, proof.T2);

 x_ip := hash_cache_mash4(&hashcache, x, proof.taux, proof.mu, proof.t) //rct::key
x_ip = hash_cache_mash(hash_cache, x, proof.taux, proof.mu, proof.t);

 // PAPER LINE 61
 //rct::key L61Left = rct::addKeys(rct::scalarmultBase(proof.taux),
```

2.7.1

TYPES OF AI COMPUTATIONAL SERVICES

To fully utilize the computational capabilities of nodes in our network, especially those integrated with high-performance GPUs, we have developed a range of AI services. These services not only showcase our network's technical capabilities but also provide practical value to different users and industries. Specifically, our nodes can offer the following types of AI services:

AI Artwork And Image Rendering:

This service focuses on complex image processing and generation tasks, utilizing the efficient computational capabilities of GPUs. Our services include, but are not limited to, neural network-driven artistic creation and high-resolution image rendering. This provides artists and designers with a new tool for exploring novel forms of artistic expression.

AI Video Processing:

We offer advanced video processing services, including video enhancement, format conversion, and real-time rendering. These services are particularly suitable for content creators and media platforms, helping them optimize the visual quality of media content and enhance viewing experiences.

Large Model Inference:

Our network is capable of running large machine learning models, providing inference services. These services can be used for various applications such as language translation, data analysis, and complex problem-solving. Our goal is to provide powerful computational resources to research institutions, companies, and developers, assisting them in solving complex problems and accelerating the innovation process.

Through these AI services, we not only enhance the functionality of our network but also provide practical value and useful tools to our users. We are committed to continuously expanding our service offerings to meet the evolving market demands and needs.

2.7.2
TOKEN REWARD MECHANISM

To encourage and motivate nodes in our network to participate in providing AI computational services, we have designed a comprehensive TOKEN reward mechanism. This mechanism aims to stimulate node activity and ensure the quality and efficiency of the AI services provided. The specific implementation strategies are as follows:

Demand-Based Reward System:

We will issue TOKEN rewards to nodes providing AI services based on market demand and service quality. This means that the more popular and higher quality the services provided by the nodes, the more rewards they will receive. This mechanism ensures the efficient use of resources while motivating nodes to continually improve and enhance their service quality.

Performance Benchmarking:

To ensure consistency and reliability of services, nodes will undergo regular performance benchmarking. These tests aim to assess the quality and efficiency of the services provided. Nodes that perform exceptionally well, especially those exceeding standard performance benchmarks, will receive additional TOKEN rewards.

Dynamic Pricing Model:

To more fairly and transparently distribute rewards, the issuance of TOKENs will be based on a dynamic pricing model, which will adjust the quantity of TOKEN rewards according to market supply and demand and the actual value of the services.

Contribution Assessment System:

We will establish a comprehensive contribution assessment system to quantify each node's contribution to the network's AI computational power and allocate TOKEN rewards accordingly.

With this incentive mechanism, our network not only provides powerful cryptographic computational capabilities but also forms a distributed AI computational market, combining the latest developments in blockchain technology and artificial intelligence. This significantly enhances the functionality and market value of our network, creating potential economic benefits for TOKEN holders, and providing strong support for the overall development of the AI field.

2.8

FILE STORAGE AND DISTRIBUTION SERVICES

In the DePinStore architecture, we have adopted an innovative approach that separates data storage and content distribution, differing from the integrated service model commonly seen in traditional internet settings. This decoupled design aims to provide efficient and long-term data storage and distribution services, combining the characteristics of permanent storage with the capabilities of a high-speed Content Delivery Network (CDN).

Data Storage Layer (Arweave):

In this layer, data such as website content, multimedia files, and documents are uploaded and stored. We use a permanent storage solution to ensure that data does not get lost over time. Each uploaded file is assigned a unique transaction ID for future retrieval.

Data Indexing And Management:

Considering that on-chain retrieval speed might be lower than traditional CDNs, we have established an indexing service that maintains data indices in a fast database. This significantly speeds up the data retrieval process and allows for quick updating of CDN cache content.

CDN Integration:

The CDN service is used to cache data retrieved from the chain, accelerating data access. Whether the data is stored in the DePinStore module or any other blockchain project, the CDN can provide rapid access. If the latest data copy is not available in the CDN, it will request the data from the chain and cache it for faster future access.

Smart Cache Updating:

To ensure the currency of data in the CDN, we have designed a monitoring system to regularly check for updates on the chain. Once an update is detected, the system automatically instructs the CDN to refresh its cache.

User Interface And API:

We provide an easy-to-use user interface for customers to upload, manage their data, and view usage and performance metrics. We also offer an API interface, making it easy for developers to integrate this service into their applications or automation tools.

Security And Optimization:

We ensure the security of data transmission by using encryption protocols like HTTPS. In addition, we optimize data, such as compressing images and videos, to reduce transmission time and costs, and provide geographic optimization by caching data on CDN nodes near the user to reduce latency.

Payment And Incentive Mechanism:

Users pay fees based on their data transmission volume and storage needs with the CDN service and DePinStore. Incentives are provided to CDN node operators to maintain the efficiency and stability of the service.

Through this combined storage and distribution approach, DePinStore is able to provide users with a reliable and efficient data storage and distribution service, particularly suitable for scenarios requiring permanent storage of large amounts of data, such as online archives, media libraries, and website backups.

2.9

UNLICENSED 5G SPECTRUM FOR DEDICATED WEB3 NETWORKS AND CUSTOMIZED MOBILE TERMINALS

To provide an efficient and cost-effective network solution in the Web3 domain, we have developed a 4G/5G communication network based on open-source technology. Operating in unlicensed frequency bands, this network is designed with a focus on high security and enhanced efficiency. This approach enables communities to implement these advanced network services at a lower cost.

The Network's Hardware Requirements Are As Follows

Services: Deployment of Open5GS core network components is essential for building the 5G core network.

SDR Equipment: Devices like USRP X300/X310 are used in conjunction with srsRAN software to enable wireless communication in the 5.8GHz frequency band.

Terminal Devices: 5G devices compatible with the 5.8GHz band, such as test smartphones or specific communication modules, are needed for wireless access.

The Software Requirements Include

Open5GS: Utilized for constructing the 5G core network, forming the central part of the communication system.

srsRAN: Provides the functionality of gNB (5G base station), a key software component for wireless communication.

Network Configuration Requirements Are

Wireguard Tunnel: Establishes connections between network nodes, ensuring network stability and security.

High-Speed Network Access and IMS VOLTE: Crucial for external information access, ensuring efficient handling of voice and data services.

In summary, this 4G/5G communication network, built on unlicensed frequency bands and integrating the latest open-source technology with advanced hardware, offers a secure and efficient solution for the Web3 domain. It allows communities to enjoy high-quality network services at a lower cost.

The proprietary Web3 5G physical network infrastructure plays a crucial role in enhancing decentralization and privacy protection, with its importance evident in various aspects:

Strengthened Decentralization:

Independent operation of 5G infrastructures disperses network control, reducing reliance on any single provider, thus enhancing network resilience and reliability.

Enhanced Privacy Protection:

Combining strict data management and access control with advanced Web3 privacy technologies ensures secure data transmission and protects user privacy.

Edge Computing Security:

Decentralized edge computing nodes support efficient data processing, reducing dependence on centralized data centers while protecting user data privacy.

Secure Integration Of IoT Devices:

Offers secure connection options for various IoT devices within the Web3 ecosystem, preventing unauthorized access and data breaches.

Autonomous Network Management:

Allows operators to customize network security settings based on their specific needs and policies, meeting particular security and privacy requirements.

Establishing A Foundation Of Trust:

Controlled network environments increase user trust in Web3 platforms, knowing their data is well-protected.

Decentralized Identity Verification:

Integrates decentralized identity recognition (DID) solutions, providing secure, blockchain-based identity management services for users.

Fostering Innovation And Experimentation:

Provides a platform for Web3 developers and innovators to rapidly iterate and test new technologies.

Freedom Of Service Provider Choice:

Users have the liberty to choose their network service providers, fostering a competitive environment that enhances service quality.

Customized Services:

Offers tailored network services for different application needs, ensuring transaction security and user privacy.

Customized Terminals:

To meet application requirements, customized Web3-specific mobile terminals are provided, offering enhanced security, faster speed, and stronger privacy protection.

In summary, the proprietary Web3 5G network infrastructure solidly supports decentralization and privacy enhancement, being key to building a secure, open, and free digital world.

2.10

DECENTRALIZED WEB3 MARKETPLACE SYSTEM

Integrating a Web3 marketplace into the client has significantly bolstered the overall development of our ecosystem, with impactful influences across several key areas.

Impact On Ecosystem Construction

One-stop comprehensive services: The integration of the marketplace offers a platform for users to manage assets and conduct transactions in one place, greatly enhancing the user experience and the attractiveness of the ecosystem.

Strengthening ecosystem interaction: The trading activities within the marketplace have increased the liquidity of cryptocurrencies, enhancing their practical value and attracting more users and developers to participate in the ecosystem.

Importance Of Logical Consistency

Seamless experience: The close integration of the wallet with the marketplace ensures continuity in the user experience, enabling users to conduct transactions without leaving the application, thus providing a seamless experience.

Integrity of the value chain: The use and transfer of value of cryptocurrencies within the same platform ensures the completeness and logical consistency of the value chain.

Strengthening The Ecosystem's Closed Loop

Financial loop: Users can directly consume in the marketplace using the funds in their wallets, creating an internal financial loop and reducing capital outflow.

Data utilization cycle: By collecting and analyzing user data, the ecosystem can offer improved services and personalized recommendations, enhancing the user experience.

Prospects For Future Scalability

Support for diverse cryptocurrencies: As the cryptocurrency market evolves, new types of currencies can be integrated, enhancing the inclusivity and diversity of the ecosystem.

Cross-chain interoperability: Through the implementation of cross-chain functionality, the ecosystem can connect with different blockchain networks, expanding the range of services and user base.

Continual expansion of services and products: Based on market trends and user needs, the ecosystem can continuously add new products and services, maintaining its vitality and innovative capacity.

Positive Impact Of Openness

Encouraging external participation: An open API and cooperation mechanism allow third-party developers and merchants to join and enrich the ecosystem's content.

Community participation: Encouraging community members to contribute to the construction and management of the ecosystem fosters its continuous development and innovation.

Promoting internal and external cooperation and competition: The openness not only attracts external partners but also stimulates healthy competition within the ecosystem.

In summary, by integrating the Web3 marketplace into the client, we have not only created a self-sufficient, dynamically interactive ecosystem but also built an open, transparent, and diverse trading platform for users, developers, and merchants. This collective effort is pushing forward the advancement of cryptocurrency and blockchain technology.

03

Chapter 3

ECONOMIC MODEL

DEPINSTORE

To ensure transparent and fair token distribution, our project adopts a clear and balanced token issuance strategy. The total supply is set at 210 million tokens, allocated as follows:

Seed Round Sale:

Accounting for 15% of the total issuance, these tokens are primarily for early investors to support the initial development and operation of the project.

Private Sale:

Comprising 30%, these tokens are aimed at attracting initial large-scale investors and partners, providing stable financial backing for the project.

Validator Round Sale:

Making up 10%, these tokens are specifically allocated to network validators as a reward for maintaining network security and stability.

Development Team Tokens:

Representing 15%, this allocation recognizes the effort and contributions of the project development team, ensuring their active participation in the project's long-term development.

Foundation Tokens:

Also at 15%, these tokens are used to support the operations of the foundation, including marketing, partnership development, and other key project expenditures.

Community Tokens:

Comprising 15%, these tokens are for community rewards and incentive programs to encourage active participation and contribution from community members.

This allocation ensures that each key aspect of the project receives appropriate funding support, maintaining a balanced and healthy development of the entire ecosystem. The strategy aims to foster long-term collaboration, continuous innovation, and community engagement, laying a solid foundation for the project's success.

3.1
REWARD MECHANISM

To motivate and encourage network participants' contributions to our ecosystem, we have designed two main Proof of Stake (PoS) node reward mechanisms, ensuring the network's stable operation and development:

Basic PoS Node Rewards:

Basic PoS nodes contribute to maintaining fundamental network communication and processing transaction packaging and blockchain inclusion. To reward these essential yet crucial services, participating nodes receive our native TOKEN as compensation. This mechanism aims to recognize and motivate those who ensure the smooth operation of the network's basic functions.

Enhanced PoS Node Rewards:

Enhanced PoS nodes offer a broader range of services, including network connections, communication services, computing services, storage distribution services, and RPC (Remote Procedure Call) services. Given the advanced nature and complexity of these services, rewards for these enhanced nodes are also distributed through our marketplace system. This mechanism encourages node operators to provide higher levels of network support and services, further enhancing the network's performance and reliability.

Through this tiered reward system, we ensure the stability and efficiency of the network infrastructure and motivate community members to provide diverse and high-quality services. This will foster the healthy development and innovation of our entire ecosystem.

3.2
TOKEN ECONOMY

To support the healthy operation and ongoing development of the DePinStore network, we introduced a native TOKEN as the primary currency within the network. These TOKENs have various uses, including but not limited to paying for network services, rewarding node operators who maintain network stability, and incentivizing active participation from users. This mechanism aims to create a mutually beneficial ecosystem where every member's contribution is appropriately rewarded. We have devised a detailed TOKEN economic strategy:

Handling Of Transaction Gas Fees:

We destroy 40% of the Gas fees generated from transactions, helping to reduce the overall TOKEN supply and thereby supporting its long-term value stability. This mechanism also encourages users and developers to optimize their transactions and smart contracts, reducing unnecessary network burden.

Distribution Mechanism:

The remaining 60% of Gas fees are distributed to key network participants, with 15% going to PoS node operators as a reward for running and maintaining the network infrastructure. The other 45% is allocated to members involved in node validation, incentivizing their contributions to network security and stability.

Through this economic model, we aim to stimulate active participation from community members while ensuring the network's long-term sustainability and healthy development. This circulation and distribution mechanism of TOKENs will create value for all participants in the DePinStore network, ensuring that every contributor benefits from the network's growth.

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Chapter 4

ROADMAP

DEPINSTORE

4.1
SHORT-TERM GOALS

Network Prototype Development And Testing:

Our primary task is to complete the development of the network prototype and conduct comprehensive testing to ensure its stability and feasibility.

Launching And Operating Initial Nodes:

Next, we will launch the first batch of nodes and start operating a private network. The key in this phase is to ensure the robustness and reliability of the network infrastructure.

Launch Of Basic IM Chat And Video Conferencing Systems:

We plan to introduce basic versions of Instant Messaging (IM) and video conferencing systems, providing users with essential communication services.

4.2
LONG-TERM GOALS

Network Expansion:

As the project evolves, we aim to continually expand the network, adding more nodes to enhance its capacity and performance.

Enhancing IM Chat And Video Conferencing Systems:

We will continue to refine and optimize the IM chat and video conferencing systems, adding advanced features and improving user experience.

Integrating AI Tools:

To increase the efficiency and functionality of the network, we plan to integrate additional AI tools for intelligent data processing and analysis.

Attracting More Web3 Projects To Use RPC Services:

Our goal is to attract more Web3 projects to utilize our Remote Procedure Call (RPC) services, expanding our service coverage and influence.

Launching The DePinStore Marketplace:

Ultimately, we will launch the DePinStore marketplace, providing a platform for users to conveniently purchase products and services, further enhancing user experience and ecosystem activity.

By achieving these short-term and long-term goals, the DePinStore project will not only establish a powerful and efficient network platform but will also create a vibrant and innovative ecosystem in the Web3 domain.

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Chapter 5

CONCLUSION

DEPINSTORE

The DePinStore project represents a significant supplement and improvement to the current Web3 infrastructure. Its core is to establish a decentralized, secure, and efficient network service platform, addressing the limitations of existing systems and introducing numerous innovative features and services to comprehensively propel the development of the blockchain ecosystem and significantly enhance user experience:

Innovation In Network Architecture:

DePinStore integrates advanced technologies like distributed PoS nodes, zero-knowledge proofs, WireGuard technology, and more, ensuring high performance and security of the network. This fusion of technologies provides users with a stable and reliable decentralized network environment.

Enhancing User Experience:

By integrating basic and enhanced PoS nodes, DePinStore not only improves network performance but also creates a mutually beneficial ecosystem through the native TOKEN incentive mechanism, encouraging user participation and contribution.

Balancing The Economic Model:

The project's detailed TOKEN economic strategy, including partial destruction of transaction Gas fees and their rational distribution, ensures the stability of TOKEN value and the healthy development of the network economy.

Setting Short-Term And Long-Term Goals:

DePinStore clearly defines its development objectives, including the development and testing of the network prototype, launching and operating nodes, and the online marketplace, ensuring steady progress and sustainable development.

Openness And Scalability:

The integration of the Web3 marketplace offers users a multifunctional platform for trading and shopping, while open APIs and community participation mechanisms open doors for future innovation and development.

DEPINSTORE

Through its comprehensive and innovative approach, the DePinStore project not only provides important supplements and improvements to existing Web3 infrastructure but also brings new vitality and potential to the entire blockchain ecosystem. We firmly believe that through these strategic developments and innovative implementations, DePinStore will effectively promote the application and popularization of blockchain technology, offering users a safer, more convenient, and richer experience, while contributing to the development of the entire blockchain field.

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WHITE PAPER

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