SYSCOIN 3.0
WHITE PAPER SUMMARY

A Peer-to-Peer Electronic Cash System Built For Business Applications

SYSCOIN.ORG/WHITEPAPER

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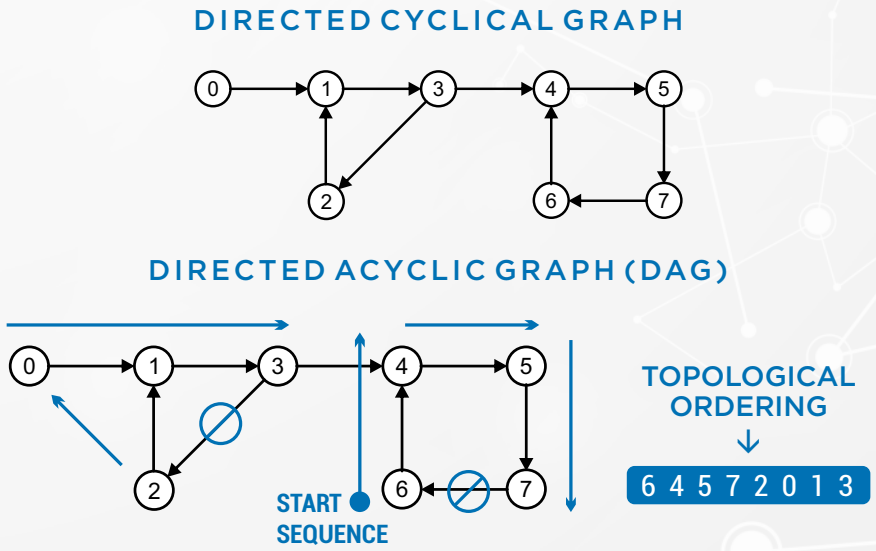
INTRODUCTION

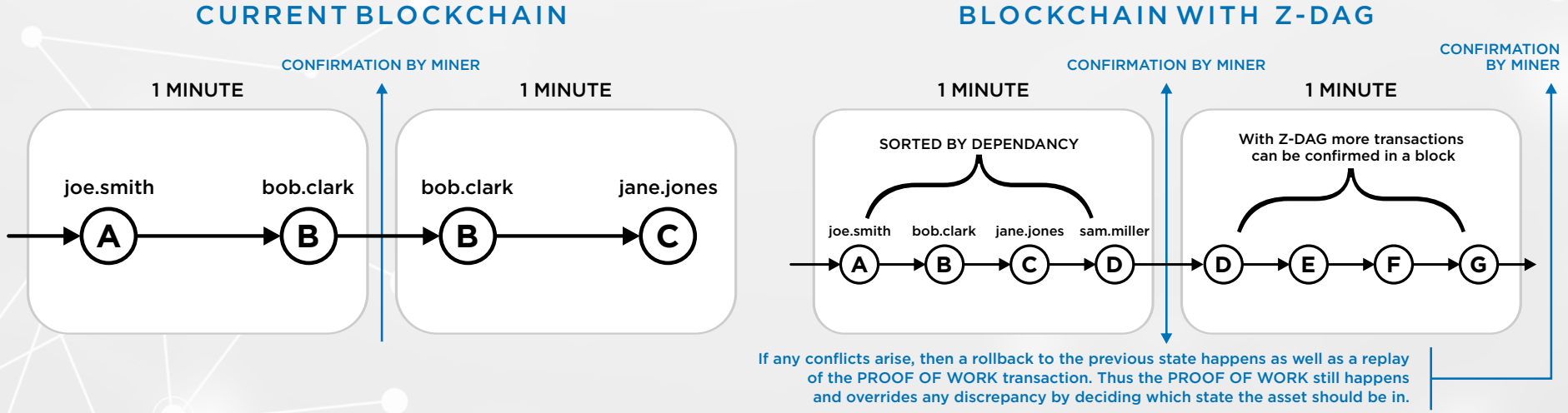
Syscoin 3.0 is an exciting new upgrade from the popular Syscoin 2.0 platform. This whitepaper summary showcases what is possible on the Syscoin 3.0 platform and details on existing features. Syscoin 3.0 now includes advanced decentralized marketplace features for added scalability and versatility, the addition of an assets and token infrastructure to serve unlimited new use cases and projects, a high-speed transaction scheme for instant payments and token transfers, and a masternode layer for a hybrid Proof of Work/Proof of Stake model, which brings two layers of security against double-spends.

Z-DAG

Z-DAG (Zero-Confirmation Directed Acyclic Graph) is an instant settlement protocol that functions for assets, offers and certificates. Z-DAG organizes transactions based on dependencies to establish the state of the transaction in a deterministic fashion. Each transaction that occurs depends upon the approval of the previous transaction.



This means that Syscoin 3.0 has two consensus layers. In the first layer, transactions are arranged in order before being written to the blockchain, providing settlement in real-time. The second layer uses Proof of Work (PoW) on the blockchain to ensure confirmation and conflict resolution, preventing double-spend events.

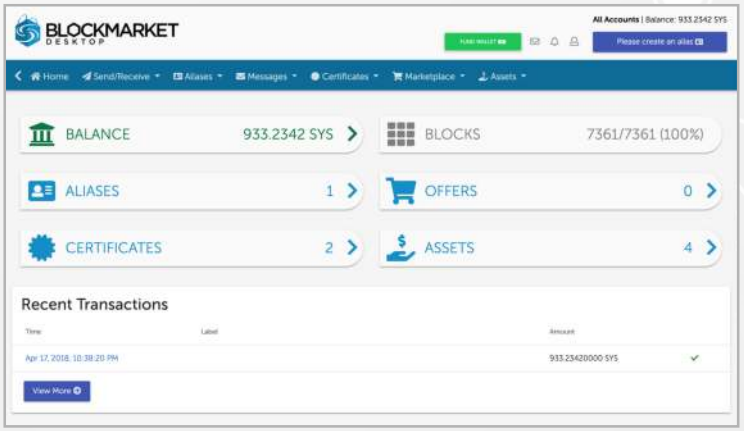


TOKENS & ASSETS

Syscoin Assets provide a layer of tokenization on top of the Syscoin Network. Use cases include loyalty points, coins supported by physical assets, and service backed currency. There are two types of tokens, non-divisible and divisible. Non-divisible tokens can represent a physical item like a diamond and can include additional data like the serial number or even how many times the diamond has been cut. Alternatively, divisible tokens can be used for hourly services, commodities (i.e. gasoline), or represent portions, like a percentage of a company. Transferring funds or ownership of a token uses the Z-DAG protocol to allow for real-time point-of-sale transactions. Tokens are units of assets; for example “Gold” is an asset class, whereas “Gold bar #415” would be represented by a single indivisible token.

OFFERS & DECENTRALIZED MARKETPLACE

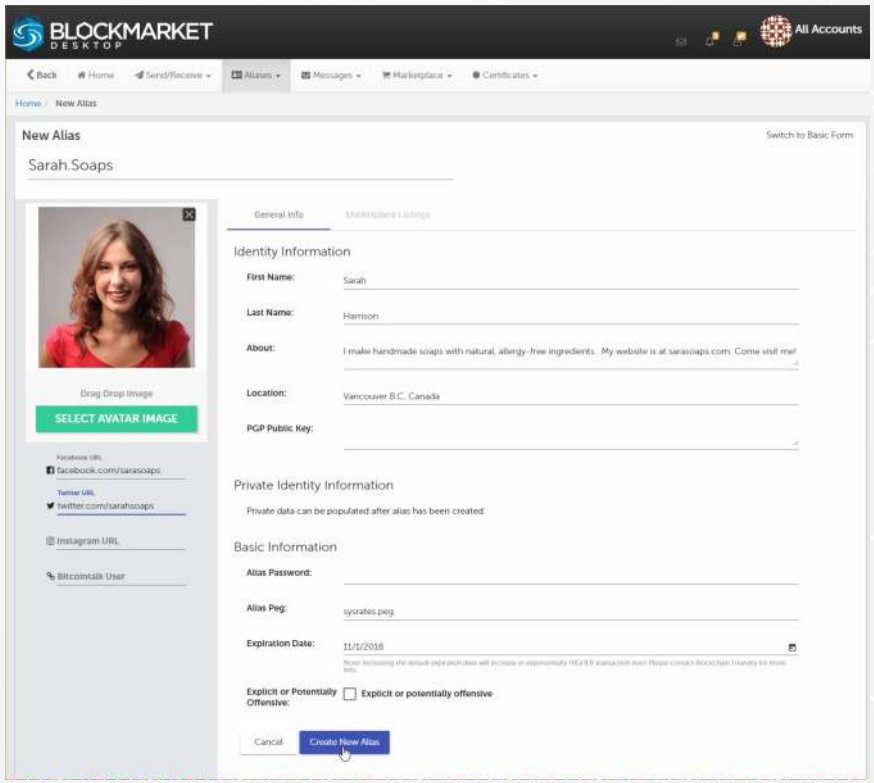
The Decentralized Marketplace - Blockmarket 3.0 allows users to securely and reliably buy or sell anything, to anyone, anywhere on Earth, without middlemen, credit card fees, or interference. Blockmarket supports currencies such as Syscoin, Bitcoin and ZCash and is capable of accepting assets within the marketplace. A merchant can set their whitelist and how much the markdown will be while a reseller decides the markup. Syscoin users will be able to create and manage their online stores through a web-portal, using a desktop computer



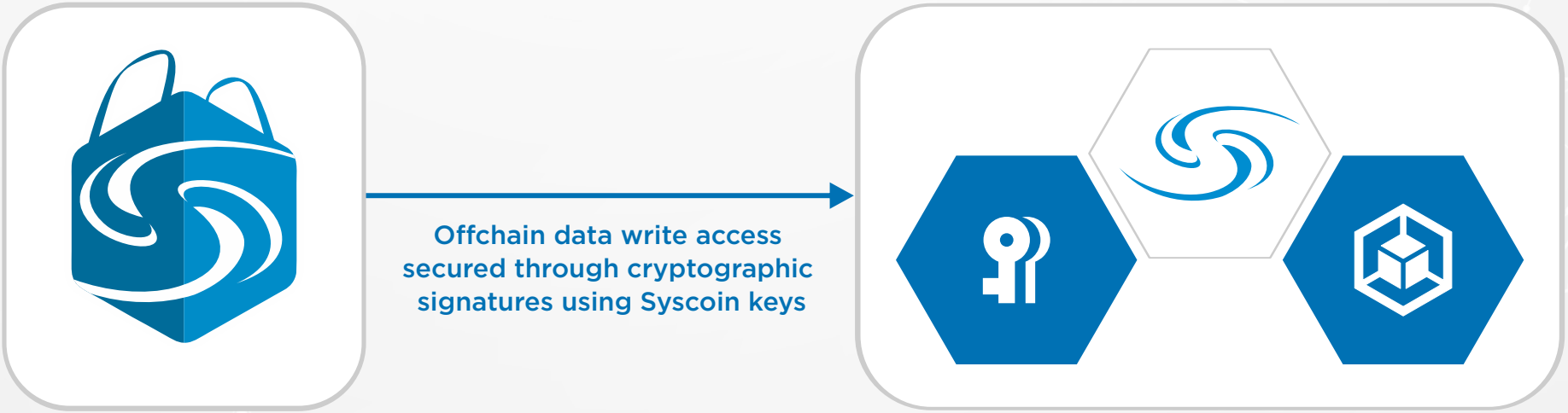
or mobile device. The buyers will be able to search listings by description or price, set filters and view seller's profiles & ratings. Integrated instant messaging allows buyers to quickly and securely contact merchants and receive support for a product in real-time prior to purchase.

SYSCOIN IDENTITIES

Basic Aliases are used to eliminate the need for long Syscoin addresses, simplifying sending and receiving funds. Building on Syscoin's Alias service, Syscoin Identities create an improved user experience. With Syscoin Identities, data is stored off-chain with a blockchain-anchor to minimize blockchain bloat, enabling users to increase the amount of data stored within their Syscoin Identity. Users can store items on their Syscoin Identity like avatar image URLs, first and last names, social network URLs, PGP public keys, bios, and more. Users can also safely store encrypted private information like a shipping address.



Syscoin Identities will continue to evolve in parallel with specifications created by the Decentralized Identity Foundation (DIF). The DIF releases new specifications for decentralized identity that can be used by regulators for things like KYC (Know Your Customer) and AML (Anti-Money Laundering). Syscoin Identities will continue to adapt to meet those specifications.



DATA ANCHORING

Data anchoring off-loads sizeable chunks of data on to distributed cloud servers which keeps the size of the blockchain small. These blocks of data are hashed and linked to your Alias (and Syscoin Identity), Offers (Marketplace), Certificates, or Assets. When creating or transferring data, the anchored data is authenticated by your private key establishing ownership by the owner of that key. No one can read from or overwrite your data without that key.

STEPS:

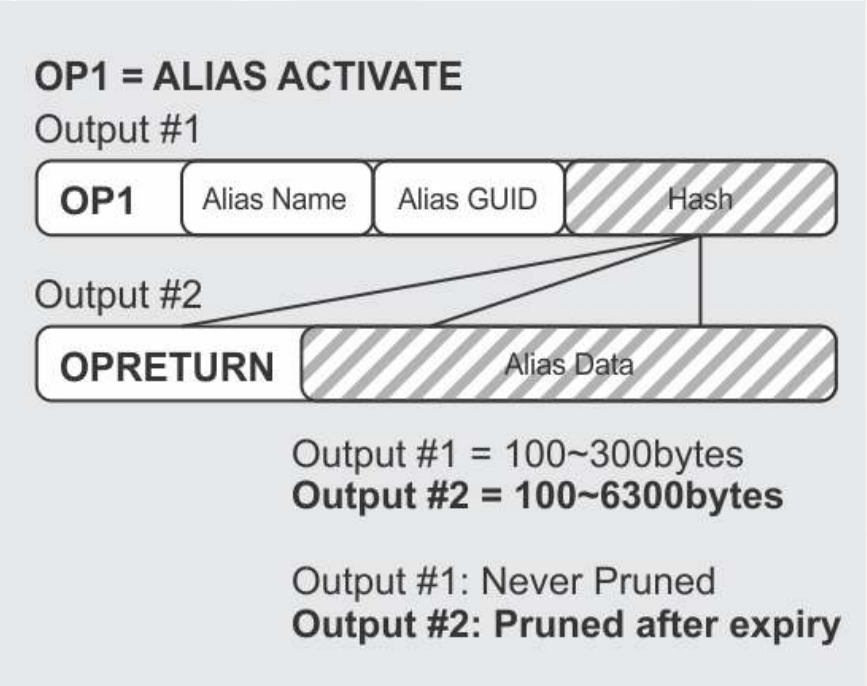
1 Blockmarket desktop takes data payload created by the user and creates a cryptographic signature using the local Syscoin private key. The private key never leaves the machine. The payload, signature, and user public address (Identity) are sent to the server.

2 The Server uses a local Syscoin full node to validate the signature for the given payload.

3 If the signature validation passes, offchain write is permitted within the scope of the public address that was used to sign the payload.

BLOCKCHAIN PRUNING

To combat blockchain bloat, the underlying infrastructure implements an innovative pruning mechanism to remove marketplace listings and other unused data. If a user is inactive, their data will be removed from the blockchain at the time of the expiration of their Syscoin Identity. Therefore, the data on the blockchain accurately represents active users on the Syscoin marketplace.



CERTIFICATES

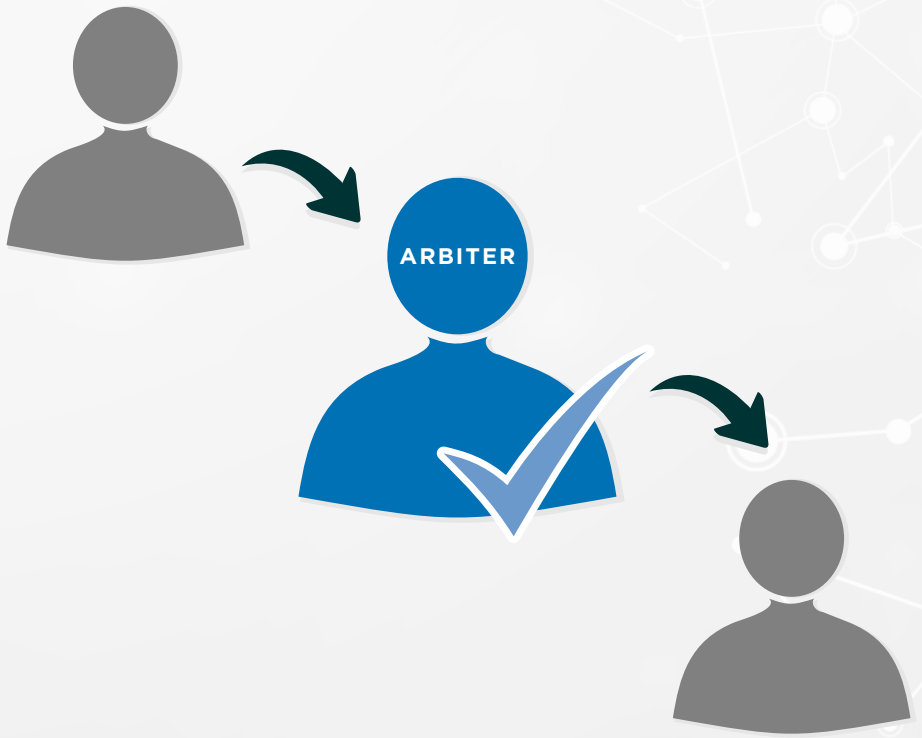
Digital certificates within the Syscoin infrastructure are useful for many kinds of applications. Certificates can be used to store bits of data, like a video game code, or more critical data such as ownership documents, which then may be sold or transferred; all with provable ownership via the blockchain.

OPEN-API SPECIFICATIONS

The Syscoin 3.0 API (Application Programming Interface) is an Open-API compatible framework for software developers. Syscoin 3.0 API provides a clear and concise solution to build, test, and deploy applications and is available in more than 60 different programming languages for developers to choose from. Developers can create their own Marketplace, add escrow services to their existing application, store critical data, and more. By combining any or all of the API's easy-to-use tools, the possibilities are endless.

ESCROW

Syscoin's integrated escrow service provides secure offer payment by holding tokens in escrow until the terms of the sale are met. The system uses an arbitrator, who acts as a trusted third-party between buyers and sellers in the decentralized marketplace. Arbitrators are only able to approve payments or return funds, they do not have any access to the coins or assets. Anyone can become an arbitrator and receive a small percentage of funds for their services if used. Arbitrators receive ratings by providing good service and establishing they are a trusted provider.

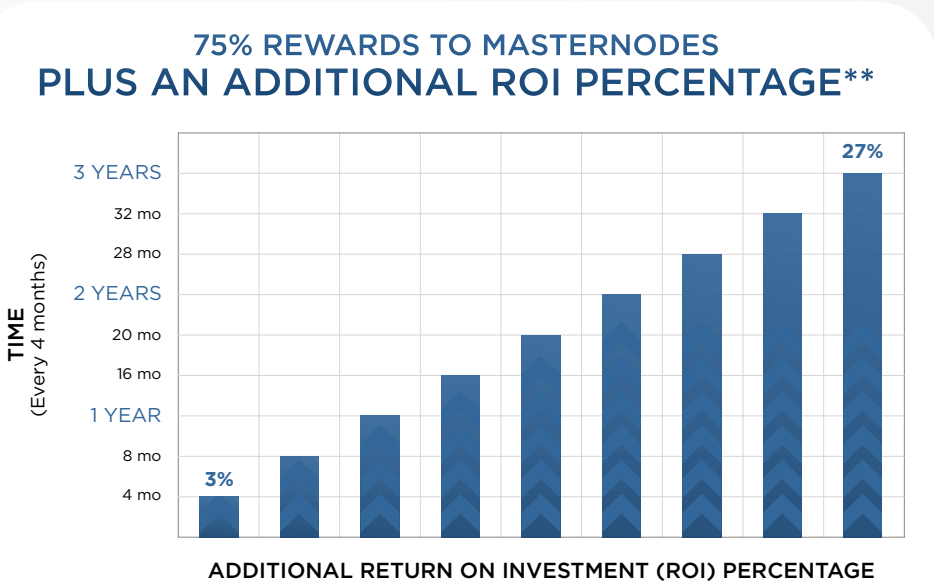


MASTERNODES

For most users a desktop wallet acts as a node running on the network and is limited to sending and receiving tokens. Each node represents a single individual in a peer-to-peer network (P2P). Masternodes are different from regular nodes. They run on high powered servers that are required by the system to provide additional services. Syscoin Masternodes offers Syscoin decentralized governance, voting for proposals, increased privacy via coin mixing, instant transactions, and Z-DAG.

MASTERNODES (cont.)

Masternode owners are required to hold 100,000 Syscoin as collateral to own and run a masternode. This adds incentive for the masternode owner to support the system and mitigates cheating or corruption. Block rewards are split 67.5% to masternodes, 22.5% to miners, and 10% toward governance proposals.



**Every 4 months worth of blocks from the time that a Masternode collateral has been established, the ROI for that Masternode will increase the base of 25.98 SYS per Masternode reward by 3%. A maximum ROI bonus of 27% to this base is possible if run for 3 years or more.

COIN MIXING

Coin mixing increases privacy by mixing multiple transactions occurring at the same time on the masternode layer. This prevents the source and the destination from being readily identified. With instant payments the layer locks the transaction funds. The receiver of the funds is then notified within seconds that their payment will be confirmed and spendable on the next block.

SENIORITY BENEFITS

Another innovation involving governance on Syscoin is seniority benefits. To increase the incentive to provide consistent and excellent service, masternode holders will be rewarded with a 3% increase in the ROI every 4 months up to a maximum bonus of 27% once the masternode is operational for 3 or more years.

SYSCOIN GOVERNANCE

Governance in a decentralized project is difficult because, by definition, there are no central bodies to make and authorize plans for the project. With Syscoin, these decisions will be made by Masternode owners. Masternode owners vote on proposals that will impact the network. Masternode governance ensures that there is a decentralized, unbiased system to manage and fund the platform. Governance is administered by operators that are invested in the future of Syscoin, unlike miners, the longer they keep Syscoin off the market, the more they benefit. This decentralized system ensures the promotion, enhancement, and long-term stability of Syscoin by guaranteeing that operators become contractors. These contractors will work for and be compensated by the network. This system gives the network the capability to sustain itself, maintain growth, and grant appropriate adjustments and changes which are not reliant on central governing bodies.

SPECS GENERAL SPECIFICATIONS FOR SYSCOIN 3.0

Max Coins:
888 million

Deflation:
5% per year until Max Coins

Consensus: PoW/Masternode Hybrid. PoW is SHA256 merge-mined with Bitcoin

Block time: 60 seconds target

Rewards: 38.5 Syscoin per block deflated 5% per year.

Allocations: 10% (3.85 Syscoin) is allocated to governance proposals. The remaining 90% is divided: 22.5% (8.6625 Syscoin) to miners and 67.5% (25.9875 Syscoin) to masternodes.

Difficulty algorithm:
Dark Gravity Wave

Masternode collateral requirement:
100,000 Syscoin

Masternode seniority: 3% every 4 months until 27% over 3 years

Governance proposals payout schedule: every month

Governance funding per round
(168,630 Syscoin per month)

ADDITIONAL LIBRARIES

Syscoin 3.0 offers additional tools for added functionality such as the Indexing Service, Price Pegging Service and the Instant Encrypted Messaging service. These tools are used by the Blockmarket projects but are also available for use in your projects.

INDEXING SERVICE

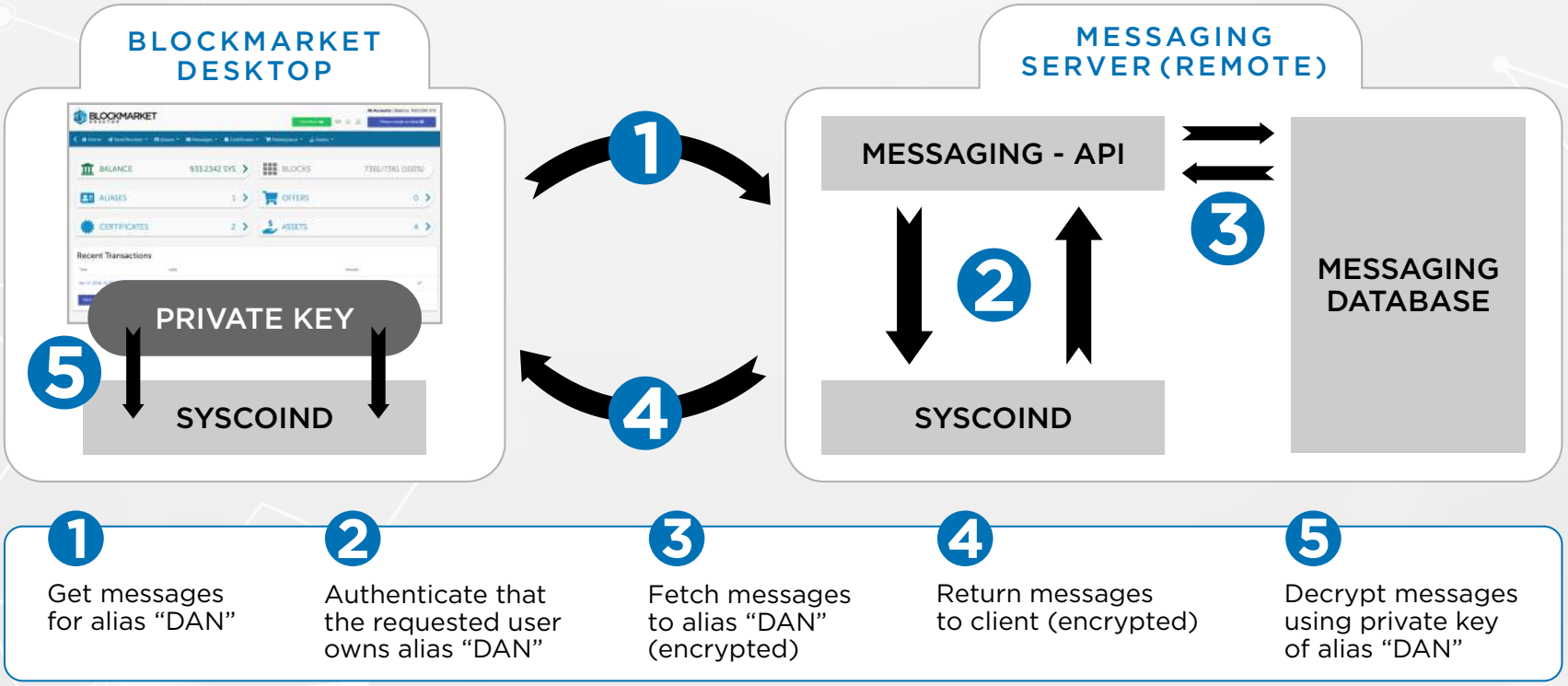
Syscoin Indexing Service is a system designed to provide a fast, powerful search and data extraction experience. Indexing speeds up and enhances searches by syncing data from the blockchain and other sources, and indexing it in a local database. As the blockchain core process receives blocks from the network, the indexer listens for messages that are emitted from the core. The indexer picks up those messages and writes details to the indexer database; by running the Indexer as a background service, one can quickly search, filter and change data.

PRICE PEGGING SERVICE

The Syscoin Price Pegging Service is designed to provide fast access to exchange and conversion rates for currencies supported by the blockchain project being developed. Exchange rates are averaged across multiple exchanges including Poloniex, Bittrex and Binance. Price Pegging allows either spot pricing (based on regular intervals and percentage movements from the current value), a moving average (based on an arbitrary number of days), or both. This will help users receive a fair rate, allow developers to customize the user experience, and is able to log historical data/rates for later queries.

ENCRYPTED INSTANT MESSAGING SYSTEM

Syscoin's Encrypted Instant Messaging System is designed to create a secure and unbreakable messaging platform that is anchored to the blockchain. Messages require a transaction fee for each message, and can be stored free for a set length of time, or permanently for an additional fee. Optional ephemeral messaging can increase security if keys or end-points are ever compromised; messages can be removed after an arbitrary length of time, and cannot be mined for data by nefarious parties if they no longer exist. Messages are encrypted using blockchain authentication and use an asymmetrical ECEIS public/private key scheme, secured by the Syscoin Identity system. Message size and rate can be limited to prevent spamming and DDOS attacks.



FUTURE PROJECTS

ENCRYPTED MESSAGING ENHANCEMENTS

With the new messaging system, it is now possible to implement optional email notifications for specific events on Blockmarket, such as notifications of a sale or an escrow request. We may add image support, enhanced (HTML) messages, attachments or support direct phone calls and text messages. You may also export messages to a file for safekeeping.

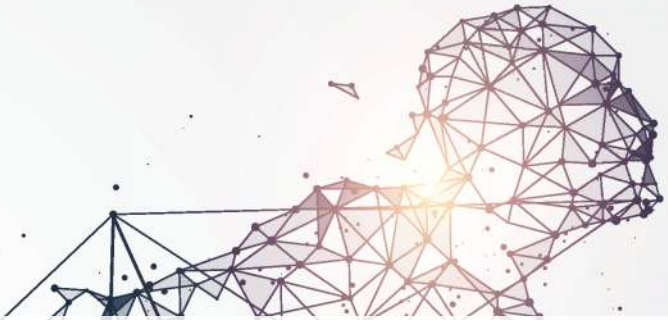
LIGHTNING NETWORKS

We are looking to develop an off-chain transaction mechanism whereby we are able to provably move Syscoin Assets in high volume without fees and without bloating the blockchain. As utility increases and masternode holders remain, a seniority metric slightly adjusts the supply base for the increased incentives. These individuals will receive a 3% increase in ROI on average for every 4 months of blocks that they bond coins and provide services. This will be accounted for in mining rewards.

OFFERS / ESCROWS

We have innovated proof-of-shipment and are expanding upon the shipping notification system from within the escrow and offer service layers. A video can be taken by the merchant, hashed, and included in a data-field from within the shipping notification transaction. This assures arbiters and buyers that disputes will be quickly and efficiently resolved. There are updates being done on the ability for autonomous agents to act as escrow agents, delivering goods to buyers within 5km of distribution centers.

SYSCOIN 4.0
NEXT GENERATION



The next generation of Syscoin will focus on scalability, creating a platform for enterprise grade applications in a permissionless blockchain environment. Syscoin serving as a public backbone for a reliable and global merkle computer is an ideal platform for development without centralization, with faster transactions and lower fees than a centralized platform. We plan to add EVM (Ethereum Virtual Machine), sidechains, and optional file systems to serve even broader use-cases and bring blockchain functionality to existing enterprise applications.

EVM adds turing complete distributed computing and allows companies to create customized smart contracts for their own projects or convert existing projects to the Syscoin platform.

Additional file storage and retrieval options for legacy and decentralized systems allow new and exciting possibilities for older systems to add blockchain functionality into projects with existing data. This allows businesses to slowly and responsibly move toward blockchain adoption for their projects, instead of creating new projects. Connections with decentralized file storage through systems like IPFS will allow decentralized storage, redundant backups, distributed storage, instant retrieval, and monetization of content opportunities; all with proof of ownership.

ACKNOWLEDGMENTS

We would like to thank Satoshi Nakamoto, the Bitcoin Core developers, and the Dash core developers for their continued excellence in software engineering, which has made it possible for others to develop innovative products on top of their accomplishments.

WHITE PAPER

For more in-depth details, see our official Syscoin 3.0 White Paper.

syscoin.org/whitepaper