



Lytix White Paper
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1 Introduction.....	3
1.1 Lytix.....	3
2 Lytix coin specs.....	3
3. Lytix economics.....	4
3.1 QuarkTX mining algorithm.....	5
3.5 Lytix innovations.....	5
3.6 Development and release practices.....	5
4 Proof of Stake consensus.....	6
4.1 Staking LYTX and zLYTX.....	6
5 Masternode network.....	6
5.1 Masternode network technical functions.....	6
5.2 Lytix governance.....	7
5.3 Proposal voting.....	7
5.4 Masternode acquisition.....	8
5.5 Maxnode system.....	8

1 Introduction

There are countless cryptocurrency or crypto coin projects in the market today. Each has their own flavor to meet the needs of a niche service. Lytix was born out of PivX, which was forked from Dash. The Lytix team is committed to delivering a quality product that can fill the needs of different industries that require immutable transaction proof.

As you will notice, Lytix is not a coin like the others. First of all, and unlike most blockchain projects, the technology backbone came first. Then the purpose and the vision emerged. It's one of our many ways to be disruptive, in a sphere where disruption is key, and though it may seem like a negative point, we are trying the challenge of making it an advantage. We aim to create a platform to track transactions and provide proof of the transaction occurring. Our plan is to build on top of the existing client APIs to enable descriptions and private functions within the transactions to provide organizations and individuals with a means of storing code or data within the blockchain itself. This will provide an immutable and assured environment for anyone to perform any form of transaction and have it permanently preserved.

1.1 Lytix

Lytix (LYTX) was initially a proof of work coin. At first we thought about making Lytix a pool friendly coin, but as we moved forward it came to us that making it exclusively solo mined and CPU only would be the best way to make it accessible to everyone, and thus promote mass adoption.

By including CPU mining we aimed to have a coin that was available for all to mine and obtain. Some of the unfortunate events of the boom of Bitcoin led to a centralizing of mining pools and manufacturers. This was never the intention or dream of the original creators of Bitcoin. Our goal is to provide for decentralization by putting the power back into the individual miner's hands and to reward them with the Masternode system after they accumulate 5000 LYTX. They will also have the opportunity to participate in the Maxnode system with 100,000 LYTX collateral.

Masternodes also have a critical role in voting for changes to the Lytix ecosystem. As the coin matures and the foundation develops, we will use the voting system to provide changes to the foundation and the coin itself.

2 Lytix coin specs

Maximum Coin Supply: 100,000,000 LYTX (will be lower due to fee burning + partial budget generation)

Coin Supply Control: ALL transaction fees are burnt from coin supply.

PoW phase	2-100,000
PoS phase	100,001-forever
Block size	2 MiB
Block time	60 seconds
Retarget time	1 block

PoS Stake Eligibility (requires wallet online and connected to network)

Minimum input age	60 blocks
Reward maturity delay	15 blocks

Transaction Send Eligibility

Minimum input age 6 blocks

SwiftX Eligibility

Locking delay 1 block

Spending delay 6 blocks

Collateral hold time 15 blocks

Proof of Work phase rewards breakdown (50% Miner, 50% Masternode)

Block height	Total Rewards	Masternodes	Maxnodes	Miner	Dev Fee
2-100,000	30	15	0	15	0

Proof of Stake phase rewards breakdown (25% Staker, 40% Masternode, 30% Maxnode, 5% Dev Fee)

Block height	Total Rewards	Masternodes	Maxnodes	Staker	Dev Fee
100,00 – 110,000	100	50	0	50	0
110,000 – 286,000	30	15	0	15	0
286,001 – 300,000	30	12	9	7.5	1.5
300,001 – 350,000	15	6	4.5	3.75	0.75
350,001 – 700,000	10	4	3	2.5	0.5
700,001 – 1,050,000	7	2.8	2.1	1.75	0.35
1,050,001 – 1,400,000	5	2	1.5	1.25	0.25
1,400,001 – 1,750,000	3	1.2	0.9	0.75	0.15
1,750,001 - forever	1	0.4	0.3	0.25	0.05

A development fund consisting of 5% of the block reward was approved by the community and added in at block 286,000. An initial 500,000 LYTX premine was used for expenses such as exchange listings, hosting services, rewards for contributions, and other small fees that came up in the course of running the project. All fees and charges will be documented and published on the lytixchain.org website to provide complete transparency of the effort.

3. Lytix economics

Lytix, as a clone of PIVX, burns its transaction fees as PIVX does. The platform is opened as a currency with decreasing rewards as blocks progress into the millions as described above to help offset inflation. The goal is to eventually become a token platform that can also be used as a currency.

There is a cap of 100,000,000 LYTX. Once that cap is reached there will be no more LYTX available for awards. This may be revisited some time if the hard cap becomes an issue. The idea was to have it high enough that the ecosystem could be flexible, but create some value with the cap. Rewards after block 100,000 will be through staking and through hosting the Masternode network. Please see the schedule above for the rewards breakdown.

3.1 QuarkTX mining algorithm

In the PoW phase, Lytix utilizes the QuarkTX algorithm for its primary algorithm. QuarkTX is specific to Lytix but can be reproduced by any coin running Quark and ZeroCoin after the first block. Considering the needs of the community and a desire for a good CPU-mineable coin the decision was made to keep the current algorithm and call it QuarkTX. The algorithm will change after the transition to PoS. Lytix will then use the X11 algorithm to improve energy efficiency and decrease resources used by the clients.

3.2 Lytix innovations

Lytix has similar features as the coins it was cloned from but aims to improve on them with true API functionality which allows for direct storage of other elements in the blockchain. It will be used as a currency or as a secure storage platform for decisions that require immutability. The blockchain is a fantastic mechanism to provide this and Lytix aims to provide the security, stability and peace of mind by ensuring that information will be immutable.

Due to the nature of the distributed network the security and stability is almost a given. By using the coin as a means of payment as well as providing the reliability and immutability of the blockchain itself it allows enterprises to use the network as a decision storage matrix and for the miners and stakers to use the coin for purchases or for trading items of value.

Some potential use cases would be a financial services company that is undergoing regulatory pressure and needs a means of recording decisions about auditing tasks or completion of certain checklists. They could use the Lytix blockchain to record these decisions in an immutable storage system. This could also be used for chain of custody type situations where someone needs to prove that certain events or decisions occurred. Once they are entered into the blockchain they cannot be removed or altered.

With some of these use cases we plan to provide a second-tier network of Maxnodes which will house the APIs used by the decision information to enter data elements into the blockchain. Starting a Maxnode requires 100,000 LYTX. Maxnodes will also participate in the regular Lytix ecosystem and receive 30% of the block rewards. On top of the earnings from the Lytix network they will also collect fees from the API calls for information storage they receive. This is undetermined at this point and the document will be updated later as the idea comes more into focus.

3.3 Development and release practices

Lytix is a project currently developed by the Lytix Chain team. Development is currently funded by the premine and out of pocket costs from the founder. The goal will be for more developers and contributors to join the project and changes to the platform will be approved by the community and the Lytix Chain team. We will try and utilize funding from voting for changes or dev funding utilizing the DAO governance system. As the premine is used to fund hosting, exchange fees, etc. it will be necessary to use the network to keep the network and development moving.

The Lytix Chain team utilizes a public GitHub repository to make updates, allowing the entire community to see what is coming and what the particular impacts will be. It's important that there is complete transparency in code and the organization. All costs will be public as well.

The team also utilizes the standard Bitcoin testing utilized with Travis Code verification. No release will ever be allowed to fail testing. All changes are tracked, issues are documented, and all releases are on the GitHub site. The GitHub repository is the authoritative source for code, releases, and all documentation related to the code that supports the Lytix platform.

It is highly recommended that people and organizations use the latest stable release to mine/stake and participate in the network. It is possible to compile and run the code on your own, however non-released code may be marked as dirty or unknown and eventually banned from the Lytix network. Code consistency and stability is of vital importance to the Lytix Chain team and the future of the Lytix Foundation. The Lytix Chain team reserves the right to ban any node from the network that may cause issues or is running non-standard code.

4 Proof of Stake consensus

Like PIVX, the Lytix network will function on a Proof of Stake consensus algorithm after the Proof of Work period will end at the 100,000th block. Staking will be active after that.

Simply put, staking is making computing resources available to the network, which may select the node to generate the upcoming block on the chain based on delimited competition. In the case of Lytix, these limits are demarcated by considering the balance (UTXOs) staked by the wallet of every staking node which is competing at creating a valid block, very much like in PoW. Nodes, however, are technically limited in the number of tries within a given time (eliminating the need for higher computing power) and the difficulty to get a valid block is inversely proportional to the amount being staked. A higher staked balance means a higher chance of satisfying the difficulty criteria, validating the block, and being rewarded.

Staking is significantly less demanding on resources than PoW mining, as there is no need to push towards ever increasing difficulty, and the associated increase in computing power to solve it. As such, PoS is an environmentally friendly alternative to PoW.

Lytix enabled Proof of Work for a longer period to enable everyone to have a chance to obtain the funds prior to an exchange listing. We wanted to allow everyone to have the opportunity to obtain the coins and not limit the availability to those that could financially afford it. The original plan was to allow PoW for 500,000 blocks but considering that the majority of the community have already participated in mining and growth, the number was brought down to 100,000.

Lytix, like its predecessor PIVX, is considerate of the demands that mining causes on the increase of electricity costs and the demand on electricity providers' resources to provide electricity for the community and wants to establish an energy-efficient platform.

4.1 Staking LYTX

LYTX can be staked on the Lytix network, rewarding users for utilizing Lytix features. Staking on the Lytix network requires holding at least 1 smallest unit of LYTX (0.00000001) in the wallet, the wallet to be synchronized with the network with the block information up to date, and for the wallet to be unlocked for staking.

While staking is active, it doesn't necessarily ensure users will mint new LYTX right away. As participating in PoS means a node may hash a block to contribute to the blockchain at any point and depending on the quantity being staked (the more staked, the higher the chance of being selected). For this reason, variance exists in Lytix staking as rewards are not allocated regularly but are randomly awarded per the hashing competition of the PoS consensus model.

5 Masternode network

The Lytix network is three-tiered. The network is composed of the first, staking tier, in which all Lytix wallet owners can participate through staking their LYTX. A second, Masternode tier, exists which processes and validates transactions on the network. The third tier is the Maxnode tier which is described below.

Masternodes are a set of nodes on a network within the Lytix network responsible for the handling of particular specialized tasks. The Lytix Masternode network has been carried over from PIVX, though with the significant restructure to a Proof of Stake consensus algorithm. The functions carried out by Lytix Masternodes are fundamentally similar, however, to those of PIVX Masternodes. As such, these nodes are an integral part of the Lytix digital ecosystem, and necessary to network functionality.

5.1 Masternode network technical functions

The Masternode network fulfills a range of functions independent of staking nodes. These distinct functions are limited to Masternodes and cannot be carried out by a standard staking node. These responsibilities are distributed across the Masternode network, and no one Masternode has power or authority in excess of others in the network.

This section dissects these Masternode network functions individually.

5.2 Lytix governance

Lytix inherits the idea of a Decentralized Autonomous Organization (DAO), however the Lytix Chain development team will also have a say in the future of the coin. The community and the Masternode owners will have the ability to vote to help direct the coin and any new features that are to be added to the ecosystem. The Lytix Chain development team will also participate in the system by owning Masternodes, Maxnodes and voting on measures. The amount of Masternodes and Maxnodes the development team may own will not be more than 10% of the total active Masternodes and Maxnodes. Each DAO has difficulties in proposal voting which is explained below. The majority of Masternode owners tend to not exercise their right to vote. This leaves the coin system and the network hostage to apathy and inaction. To avoid these issues the Lytix Chain development community reserves the right to vote on enhancements and changes to the overall ecosystem in order for it to thrive.

We need to keep in mind that changes are not supposed to cause any harm to the system. On the contrary, they are made to move the project forward, to stay competitive in the global markets and in the digital payments arena. The Lytix Chain development community will work hand-in-hand with the community and the Masternode owners and hopefully we can avoid the stagnation and apathy that has hobbled similar efforts. Lytix operates and abides by its own community self-governance. No one entity, nor a small group of aligned entities, possesses the ability to dictate the direction in which Lytix grows. This organic approach to governance is intended to draw the most value from members of the Lytix community, who themselves act in their own collective best interest.

Everyone in the community, including partners, coin holders, developers, and foundation members will have the opportunity to open proposals. Proposals will help us decide funding, direction, and addition of new features.

Masternode operators are granted the ability to vote on proposals made by community members with the intention of bettering Lytix, or circumstances for it, in some way. All members and community input is important. Ideas can come from anywhere and voting on proposals is an important step in defining where the Lytix coin will go in the future.

To ensure that the Lytix ecosystem flourishes and does not remain stagnant Foundation members, Enterprise partners, and Masternode owners will vote on proposals. The Foundation will act in the best interest of the community and will ensure that no one group holds sway over the coin or that the coin becomes stagnant. Control of the voting and the required amount of votes (percentage) is determined by the community. It's unlikely that we will get a majority of votes for proposals, because owners are busy and will not be able to put in the time required to vote.

To keep the ecosystem functional and moving forward we will break up ownership of Masternodes and Maxnodes to certain percentages to ensure that no one group has complete control of the ecosystem and dominates the decisions. Partners and corporate entities will be able to participate in the Maxnode system as well as community members. To ensure that the network is not dominated by Maxnodes there will be a cap and a cryptographic registration process required for registering a Maxnode.

Maxnodes may not represent more than 33% of the total Lytix ecosystem keeping in mind that each Maxnode has 20 times the collateral of a Masternode. The foundation and development team will only operate a maximum of 20% of the Masternodes with the development team capped at 10%. 10% of the Masternode proceeds from the foundation will go to charitable donations. The remaining 80% will be in the hands of the community. It will be an attempt to keep the ecosystem flourishing while giving all interested parties a voice.

The enforcement details and technical details on how to achieve this will be forthcoming.

5.3 Proposal voting

Currently, the Masternode network is responsible for voting on proposals that collectively determine the direction Lytix moves in. Each Masternode in the network is entitled to one vote on any given proposal, and a majority will determine whether or not a proposal is passed.

The Masternode network offers a decentralized voting mechanism set up in the rules governing the blockchain. This allows Lytix among other things to hire core developers and pay them directly after approval of the work in a decentralized fashion. A Masternode is able to vote on a proposal using commands inside the wallet, or tools outside of it. The vote then propagates across the network and is validated and recorded as a blockchain object. As current governance operations function, the ability to vote is restricted to those operators of Masternodes.

The current voting system functions by having a proposal voted on by the Masternode network. However, reaching the voting stage is not the beginning of a proposal's lifecycle. As a general rule, proposals have the following lifecycle:

Community discussion takes place, usually via Lytix Discord (discord.lytix.org). Here a proposal is introduced to active members of the Lytix community, with the general details being discussed, and members giving input based on initial impressions.

We are still in the process of formulating the official proposal process and this white paper will be updated when specifics are finalized.

5.4 Masternode acquisition

Operating a Masternode on the Lytix Masternode network is a very rewarding and somewhat technical task. We are working on the whole process to make it as user friendly as possible and as close to 'one click operation' as can be. There is no justification for the process to be accessible only to tech-aware people, so one of our goals will be to facilitate it. Each Masternode owner has to have some level of skill and be able to maintain their own nodes, keep them online and available to participate in the rewards. Currently, Masternodes receive half of the awards for each block.

5,000 LYTX is stored on the Masternode controlling wallet address. These LYTX must remain unspent as long as they are associated with a Masternode wallet address. This wallet address should also be distinct from the one used to make transactions. Spending or moving these LYTX in any way will suspend the Masternode status of the host wallet address, thus revoking the eligibility for Masternode rewards and the capacity to participate in voting. The necessity of these 5,000 LYTX serves several purposes, including ensuring a high enough percentage of staking nodes, and that the Masternode host is likely to reliably provide a Masternode service for the network over time, rather than simply dabbling.

Each Masternode instance requires a 5,000 LYTX investment and needs to be reachable from a static IPv4 or IPv6 address. Our innovative membership has found a process to have multiple Masternodes on a single instance. We love innovation and applaud the ingenuity, especially since this innovation works in the direction of a more sustainable and environment-friendly network. Each Masternode needs to have its own alias, private key, transaction ID (transaction showing the investment), and listen on its own RPC Port.

You may run a Masternode on any platform as long as the above has been secured. We have Masternodes on many different platforms and applaud the diversity and technical know-how of our community.

Our Masternode guide is located on the main website at <https://lytix-chain-foundation.gitbook.io/docs/Masternode-guide>

Our Maxnode guide is located on the main website at <https://lytix-chain-foundation.gitbook.io/docs/Maxnode-guide>

5.6 Maxnode system

The Maxnode system is unique to Lytix. Maxnodes will hold the open APIs that entities will be able to use to store data, decisions, or any other configurable items in the blockchain. They will come in a single tier and cost 100,000 LYTX. They receive 30% of the rewards from each block. They will be the only points of entry to the data storage and decisioning matrix within the Lytix blockchain. Maxnodes are unique and identified by a cryptographic signature that will tie it to the clients that own and use that Maxnode. Max nodes can also be private and the information stored and the decisions tracked can also be private. If the entries are deemed private they will be signed with the cryptographic signature and encrypted before placement into the blockchain. Only key holders that are part of that group will be able to view and decrypt that information.

Maxnodes will also receive LYTX for each storage transaction. The cost of these transactions is still to be decided in the course of development, but it is currently estimated to be 1 LYTX or a fraction of a LYTX. As Maxnodes move through testing we will have a better idea of how much it will cost to insert and retrieve data elements. Processing these transactions is a feature unique to Maxnodes. Maxnodes will not process regular transactions like Masternodes and will not be part of their network. The Maxnode network will be the third tier in the ecosystem.

Maxnodes will also differ from Masternodes in that they will not participate in the budget voting or proposal submission process. That will stay a Masternode function and not be a part of the Maxnode system now or in the future. The reasoning

behind this is to keep the systems separate and the functions specialized for each tier.

Maxnodes will at some point hold the data inserted into the chain depending on their size and capacity. Upon initial configuration of a Maxnode the Lytix daemon will determine the capacity for storage and memory and assign either a small or large flag to the Maxnode. Depending on the amount and type of the data that is inserted into the chain the Maxnode will hold shards of that data encrypted locally. Using the distributed data network each piece of data that is inserted will be broken up and sent to different Maxnodes with at least a 10x redundancy. Meaning that if any of the nodes goes dark or is unavailable then the data will be recoverable by the other nodes on the network. This will take the strain off of the overall client network and not bloat the chain with an excessive amount of data. Maxnode s will shoulder this responsibility.

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