



Lytix White Paper
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1 Introduction

There are countless cryptocurrency or cryptotoken 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 forked from Dash, emanated from the original Bitcoin project. 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 to the existing client APIs to enable descriptions and private functions within the transactions to benefit organizations and individuals 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 saved for all time.

1.1 Lytix

Lytix (LYTX) is 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 after 5000 LYTX with the masternode system.

Masternodes are a critical part of Lytix and share the rewards with miners/stakers. As of this time the 30 LYTX reward is split between the two. Upon each new block, a masternode is randomly chosen and will receive the 15 LYTX reward.

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 was approved by the community and added in block 286,000 at 5% of rewards. An initial 500,000 LYTX premine that 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 eventually to become a token platform that can also be used as a currency.

Lytix now issues 30 LYTX into circulation every minute (15 for the miner or staker and 15 for the masternode owner)

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 coin the decision was made to stick with the current algorithm and call it QuarkTX. This will move on after the PoS transition. Lytix will use the X11 algorithm moving forward after the PoS transition to be more energy efficient and not consume so many resources on the clients. The Quark was, however, shed with the shift to PoS.

3.2 Lytix innovations

Lytix has similar feature to the coins it was cloned but aims to move forward with true API functionality allowing direct storage of other elements into the blockchain. It will be used as a currency or as 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 that information will be immutable and never to be changed.

By 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 chain 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 Maxnode 2nd tier network that will house the APIs that the decision information will use to enter this into the blockchain. The maxnode system costs 100,000 LYTX to house a node and participate in that network. They will also participate in the regular Lytix ecosystem and receive 30% of the rewards. On top of the earnings from the Lytix network they will also collect fees from the API calls they receive to house information. 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 and lead developer. The goal will be for more people to join 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 functions 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 every staking node is competing trying to create a valid block, very much like in PoW. Nodes, however, are technically limited in the number of trials in 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 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 going on an exchange. We wanted to allow all people to have the opportunity to obtain the coins and not limit the availability to those that could financially afford it. The original thought 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 enable a platform that is energy efficient.

4.1 Staking LYTX

LYTX can be staked on the Lytix network, rewarding users for utilizing Lytix features. Staking either LYTX on the Lytix network requires at least 1 of the smallest unit of either LYTX (0.000000001) held within, the wallet to be synchronized with the network with 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 in through staking their LYTX. A masternode tier exists that operators process and validate transactions on the network. The third tier is the maxnode 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. 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 completed 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 SwiftX

The masternode network allows for near instantaneous transactions, as short as a single second. With transaction times provided by SwiftX. SwiftX transactions take place independently of the network proper, as they are isolated to the masternode network.

This function takes place via a quorum between masternodes. When a SwiftX transaction is proposed, the inputs of said transaction are locked by a random delegate masternode, making them spendable only through a specific transaction. All conflicting blocks or transactions would then be rejected. The hash of the locked transaction is broadcast by the delegate via ZeroMQ (a high-performance asynchronous messaging library) over the masternode network, near-instantly achieving consensus and eliminating the need to await confirmations without the risk of a double-spend.

The benefit of SwiftX lies in the ability to make transactions as point-of-sale comparable to current systems such as Visa. The difference being that SwiftX is decentralized, with no point of failure. Each node speeds this process and transactions on the Lytix network are fast and reliable.

5.3 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 votes to help direct the coin and new features that are 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 masternodes and maxnodes in production. 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 collection of aligned entities, possess 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 not one group has complete control of the ecosystem and dominates the decisions. Partners and corporate entities will be able to participate in the Max node system as well as community members. To ensure that the network is not dominated by Max nodes there will be a cap and a cryptographic registration process required for registering a maxnode.

Maxnodes can not be more than 33% of the total Lytix ecosystem keeping in mind that each Maxnode is 10x a masternode. The foundation and development team will only operate a 20% max 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.

5.4 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 the masternode network, however, reaching the voting stage is not the beginning of a proposal's lifecycle. As a general rule, proposals have a lifecycle as follows:

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.

5.5 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 involved and be able to maintain their own nodes and keep them up 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. These LYTX must remain unspent as long as they are associated with a masternode wallet. This wallet should also be a distinct wallet from the one used to make transactions. Spending or moving in any way these LYTX will suspend the masternode status of the host wallet, thus revoking the eligibility for masternode rewards and the capacity to participate in vote. 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, key, transaction ID (transaction showing the investment), and listen on its own RPC Port.

Our masternode guide is located on the main website at <https://www.lytixchain.org/guides/masternode.html>

Our ingenious masternode virtual how to is currently stored at <https://www.lytixchain.org/guides/mnhack.txt>

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.

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 into the blockchain. They will come in a single tier and cost 100,000 LYTX. They will receive 30% of the rewards for each block. They will be the only points of entry to the data storage and decisioning matrix with the Lytix blockchain. Max nodes are unique and identified by a cryptographic signature that will tie it to the clients that own and use that Max node. 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 in development, but the current thought is 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. Maxnodes will uniquely be able to process these transactions. 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. Reasoning behind this is to keep the systems separate and the functions specialized for each tier.

Disclaimer

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