



# PLENTEUM

*Transaction Fees... Eat Our Dust!*

# PLENTEUM

## Abstract

Plenteum is a cryptocurrency with the primary objective of replacing enforced transaction fees with a "DustFund" to sustain the long-term viability of the blockchain by creating a sustainable mining reward fund.

Through this, we provide more control over the future viability of the network to our community members.

## Coin Info

- Website: [www.plenteum.com](http://www.plenteum.com)
- Mining Algo: Cryptonight Turtle Lite
- 120 second block time
- 21,000,000,000 total supply after emission
- 2.5% premine (525,000,000)
- 1,350,000,000 current circulating supply (end-March 2019)
- Exchanges:
  - <https://app.stex.com>
  - <https://www.fcbaccount.com>
  - <https://bisq.network>

# Challenges

Plenteum is a relatively small cryptocurrency by comparison to other coins. As such, it faces some challenges that the development team are working to overcome or mitigate as much as possible.

With few miners currently participating, our network hash rate remains relatively low on average. This makes it easy for individuals with large mining farms (CPU / GPU mining farms) to temporarily add new hash rate to the network and significantly grow the hash rate of the network by percentage. This has been referred to as "shadow-mining" as these individuals are also not mining through known pools, so remain anonymous within the community.

While we do not believe there is any malicious intent from these individuals, the impact of significant and temporary increases and decreases in hash rate is two-fold.

Firstly, this increases the difficulty for all miners, reducing rewards for individuals who are consistently mining with smaller hash rates. Secondly, this in-turn keeps the price low for traders and investors.

We are currently working on a mechanism to mitigate the impact of this "shadow mining" which is further explained in the "Network Protection" section of this document.

*As a community-focussed project aiming to provide more influence over the future viability of the network to our community, we believe that everyday users should be able to participate in all aspects of the network.*

# Core Software

The development team have been consistently working on a number of improvements to the core software.

- **Difficulty window update:** The next core software release will include a change to the difficulty window. This will allow the network to adjust to hash rate variation much faster, which will reduce the impact on the network when large percentages of the network hash rate are removed.
- **Soft shell:** A new PoW algorithm has been prepared that will further protect the network against ASIC/FPGA based mining. Soft-shell is a variable scratchpad CPU optimised algorithm that changes the memory (scratchpad) requirements of the miner with each new block (height). We will only shift to this algo if absolutely necessary.
- **Network Protection:** As previously mentioned, "shadow mining" with high percentage hash rates impacts the network and community in a number of negative ways. The PLE development team is currently researching and testing a number of additions to the core software to mitigate against the impact of this. See below for more information.

- **Dust Fund v2:** The Dust fund has been accumulating since block 65500. As discussed in our first light paper we will be making some changes to how this accumulation continues. These are two-fold.

Firstly, network fees are currently optional on the PLE blockchain. Where fees are added in order to prioritise a transaction, a portion of these fees (70%) will be added to the dust fund and a portion will go to the miner (30%). This will increase the rate at which the dust fund accumulates.

Secondly, we will be changing the way the Dust Fund balance is stored "on chain". This essentially means that Dust Fund contributions will reduce the circulating supply by the amount contributed for each new block.

We expect an increased accumulation rate from the first change, and a move towards incorporating Dust Fund reward calculations from the second change.

# Network Protection

We are currently researching and testing a new approach to protecting the PLE network from high percentage hash rates from individual or unknown miners.

There are two aspects to this enhancement.

1. P2P Authorisation
2. Block Submission rate limiting

Firstly, **P2P Authorisation** is a process through which each new node joining the network is assigned a "key" that anonymously tracks the individual nodes activity on the network. This is done through a shared secret that each official seed node configures.

When a new node joins it will be assigned a key from the seed node it first connects to. This allows all other nodes to validate that the key is authentic by matching it back to the known seed node as it's first entry point to the network.

Secondly, when a node submits a new block to the rest of the network, it's assigned node key will be transmitted along with the Block and stored within the blockchain storage. This allows the network to track the rate at which a particular node is submitting blocks to the network. Should an individual node then begin submitting blocks at a rate above 50% of the total block submissions rate limiting will kick in, effectively rejecting blocks that would push that nodes hash rate above 50% of the total network hash rate.

While we are aware this may be a controversial move, we believe the benefits outweigh any drawbacks.

As mentioned we are still working on and refining the technical details of this process. A full technical paper will be released describing the implementation aspects in due course.

# App Services and Use Cases

PLE App Services is a set of API's and Services that will allow any developers to build blockchain enabled applications on top of the Plenteum Blockchain.

This includes a set of **Payment Processing** and **Data Validation** services that allows individuals or corporates to provide their own services or applications using PLE as their Blockchain.

The payment processing services provide the ability to build applications that sell goods and/or services with PLE as the payment medium.

Data validation services will allow application developers to store a "hash" of custom data on the PLE Blockchain (within a transaction) that can be later used to validate that the data in question remains unchanged.

PLE App Services will allow developers to build Blockchain enable applications without having to implement any of the complex technical aspects of the Blockchain itself.

The core development team has been working tirelessly on building samples and demonstration applications that showcase the power of the App Services Platform. A few examples of this include:

- Mobile Pre-paid purchasing platform
- Plenteum Digital Identity Gateway
- Plenteum Provenance Platform
- Plenteum Asset Platform
- PLE Online Poker (just for fun)

Further information will be released on each of these and the Core PLA App Services framework in the near to medium term.

Chat with us in Discord if you have ideas for how you would like to use the platform or to gain early access: <http://chat.pletem.com>

# PLENTEUM

## New wallets

Our Android wallet is available in the App Store with the iOS version to follow shortly.

Cross platform desktop wallets are available from Github.

<https://github.com/plenteum/plenteum-wallet-electron>

The wallet backend re-write and testing is progressing steadily and a new version of the CLI wallet, Wallet API and Service wallets will be available soon.

## Where to from here?

The development roadmap for the foreseeable future is available on our website, [www.plenteum.com](http://www.plenteum.com).

Beyond what is listed in the website roadmap, we will be determining future direction based on community feedback and participation.

As we indicated, one of the key outcomes of the solution we are implementing is that it gives more control over the future of the coin to the community. It's this community-driven approach we want to build upon to determine future direction as we don't presume to know what the community's needs will be years from now.