

HATHOR NETWORK

A scalable distributed ledger for real-world applications.

What is Hathor Network?

Hathor is a digital platform for financial transactions and contracts with a unique combination of high scalability and high decentralization. It creates the perfect environment for multiple use cases where scale, efficiency, long-term security, and censorship-resistance through network distribution combined are needed or can drastically cut current costs and bureaucracy.

What makes Hathor different?

- Source-code created from scratch in Python by a team of highly-skilled developers, some of whom have been researching cryptocurrencies since 2011.
- Novel distributed ledger architecture using both DAG and blockchain data structures intertwined.
- Highly scalable with no central coordinator or any single point of failure.
- Feeless and quick transactions.
- Proof of Work mining rewards economically incentivizes the network forever, with a perpetual and low emission of native HTR tokens.
- Merged Mining with Bitcoin and Litecoin.
- Custom Tokens: create your own digital token with customized specifications on Hathor Network with only a few clicks.
- Nano-contracts: a more secure and straight-to-the-point vision for embedded smart contracting capabilities.
- Created under heavy scientific and academic scrutiny, originally a research paper written by our CEO Marcelo Brogliato and published as part of his Ph.D. thesis.

Introduction

Hathor is a transactional consensus platform comprised of an entirely novel architecture, based on concepts from both directed acyclic graph (DAG) and blockchain technologies combined. We solve a significant challenge in cryptocurrencies, the problems of scalability and decentralization maintenance among distributed ledger networks, by including a chain of mined blocks inside a DAG of transactions. The blockchain ensures security when the number of transactions per second is small, whereas the DAG prevails when the number increases significantly.

A highly scalable distributed ledger where transactions can be processed for multiple purposes with no fees will be created through its own network. At the same time, mining rewards in the form of newly generated tokens will enforce a fair distribution of economic and computational resources through decentralization and 99.99% uptime without any form of central coordination.

Hathor is the direct result of 7+ years of academic research from its founding members throughout which they have been stress-testing its assumptions and alpha versions.

A novel architecture

Source-code developed from scratch, using both DAG and blockchain technologies intertwined in our ledger (see in Fig. 1). There is no other publicly known project currently developing a solution like ours.

As in IOTA, new transactions confirm previous ones, forming a DAG. Each transaction has its own proof-of-work which is solved by the issuer before propagating the transactions in the network. IOTA made great strides towards scalability, but its solution does not seem to work when the number of transactions per second is small.

As in the case of Bitcoin, miners find new blocks which form a blockchain inside the DAG. Blocks collect newly-generated tokens and confirm all the transactions in the DAG. Each transaction has an accumulated weight which expresses the necessary effort to break the transaction, similar to the number of confirmations in Bitcoin.

Hathor's architecture lies between the ones from Bitcoin and IOTA and presents a solution to scaling, centralization and spam issues.

Main Features

Custom Tokens

You can create your own digital token with customized specifications on Hathor Network with only one click. They will fully work under the same technical assumptions of high scalability and decentralized consensus of our native HTR tokens. These tokens will always work independently of the price of 1 HTR and they can serve multiple purposes: financial participation in a company ("stock"), mileage or loyalty points of a specific store or network, votes, ownership of digital goods such as website domains, etc.

Nano Contracts

A simplified version of Smart Contracts, in which two or more people transfer their funds to a special transaction through Hathor Network, called a Nano Contract, which is set to be resolved later. A contract is simply a set of rules applied to decide the final distribution of the funds, i.e., how many tokens each participant of the contract will receive. Another important concept in Nano Contracts are the Oracles, which are agents that submit pieces of information from the real world (outside the network) into the network.

Q&A

1) Why is Hathor using merged mining?

Miners find new blocks which form a blockchain inside the DAG. It ensures security when the number of transactions per second is small. Blocks collect newly-generated tokens and confirm all the transactions in the DAG. Bitcoin is currently the most secure blockchain network, in the sense that out of hundreds of networks Bitcoin is the one with the most computational power protecting its ledger. The odds of an attack in their network are very low compared to others. Hathor opted in for piggy-backing on the Bitcoin network of miners, so that our distributed ledger can and will also be validated by its network of miners. Hathor's merged mining not only does not affect Bitcoin mining negatively, but also incentivizes its miners to keep their machines running, by giving HTR tokens to them at no extra cost.

2) What kind of wallets are available?

There are wallets for Mac, Windows and Linux available for download on the Hathor Network website.

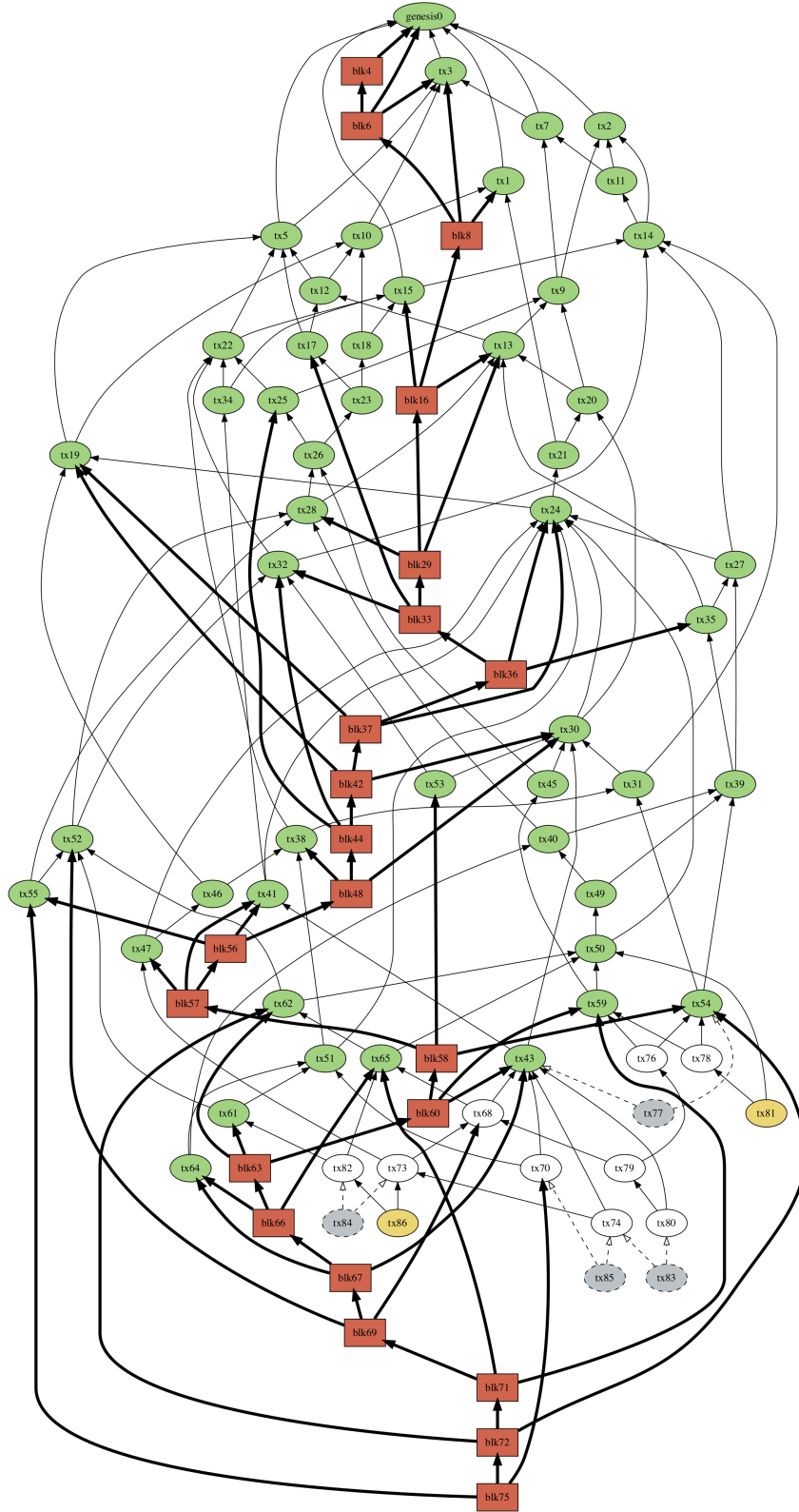


Figure 1: Visualization of Hathi's graph with transactions and block. Red boxes are blocks; green circles are confirmed transactions; white circles are in-progress transactions; yellow circles are unconfirmed transactions; and grey circles are transactions solving the proof-of-work which have not been propagated yet. The arrows show the confirmation chain. Block's arrows are in bold.