HELPCOIN

WHITEPAPER

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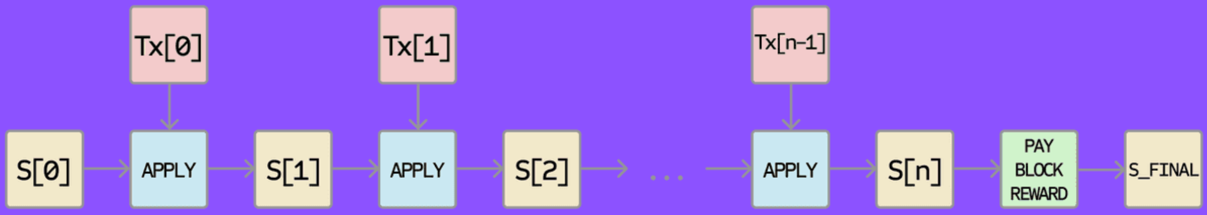
1 About Us

Our vision is to become the most used digital currency for donations around the World. Our hope is for everyone to give back because it teaches us to find compassion within ourselves and to stay attached to values that are linked to the common good.

With every purchase comes a 10 cent transaction fee that goes fully to HelpCoin charity program.

2 Blockchain and Mining

Ethereum apply block diagram



The Ethereum blockchain is in many ways similar to the Bitcoin blockchain, although it does have some differences. The main difference between Ethereum and Bitcoin with regard to the blockchain architecture is that, unlike Bitcoin, Ethereum blocks contain a copy of both the transaction list and the most recent state. Aside from that, two other values, the block number and the difficulty, are also stored in the block. The basic block validation algorithm in Ethereum is as follow

Check if the previous block referenced exists and is valid.

Check that the timestamp of the block is greater than that of the referenced previous block and less than 15 minutes into the future

Check that the block number, difficulty, transaction root, uncle root and gas limit (various low-level Ethereum-specific concepts) are valid.

Check that the proof-of-work on the block is valid.

Let S[0] be the state at the end of the previous block.

Let TX be the block's transaction list, with n transactions. For all i in 0...n-1, set S[i+1] = APPLY(S[i],TX[i]). If any applications returns an error, or if the total gas consumed in the block up until this point exceeds the GASLIMIT, return an error.

Let S_FINAL be S[n], but adding the block reward paid to the miner.

Check if the Merkle tree root of the state S_FINAL is equal to the final state root provided in the block header. If it is, the block is valid; otherwise, it is not valid.

The approach may seem highly inefficient at first glance, because it needs to store the entire state with each block, but in reality efficiency should be comparable to that of Bitcoin. The reason is that the state is stored in the tree structure, and after every block only a small part of the tree needs to be changed. Thus, in general, between two adjacent blocks the vast majority of the tree should be the same, and therefore the data can be stored once and referenced twice using pointers (ie. hashes of subtrees). A special kind of tree known as a "Patricia tree" is used to accomplish this, including a modification to the Merkle tree concept that allows for nodes to be inserted and deleted, and not just changed, efficiently. Additionally, because all of the state information is part of the last block, there is no need to store the entire blockchain history - a strategy which, if it could be applied to Bitcoin, can be calculated to provide 5-20x savings in space.

A commonly asked question is "where" contract code is executed, in terms of physical hardware. This has a simple answer: the process of executing contract code is part of the definition of the state transition function, which is part of the block validation algorithm, so if a transaction is added into block B the code execution spawned by that transaction will be executed by all nodes, now and in the future, that download and validate block B.

Source: https://ethereum.org/en/whitepaper/#blockchain-and-mining

3 Team

The HelpCoin developer team includes outstanding IT Developers with impressive backgrounds as developers in various other crypto projects, to achieve our vision of an sustainable cryptocurrency which can be used as the top 1 donation currency.