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What is Stacks (STX)? A Full Guide to the Popular Bitcoin Layer-2 Protocol

Stacks has been making waves since the beginning of the year as Bitcoin Ordinals brought attention to Bitcoin NFTs that already exist as second layer NFTs on the Stacks blockchain, resulting in a surge in demand for STX and an increase in trading volume of Stacks-based NFTs.

In this guide, we look at the Stacks blockchain, how it works, how it differs from other chains, and what types of decentralized applications (DApps) you can find in the Stacks ecosystem.

What is Stacks (STX)?

Stacks is a Bitcoin layer 2 blockchain protocol that is improving the functionality of Bitcoin through self-executing smart contracts without the need for a Bitcoin fork.

This means that Stacks can bring new functionalities to Bitcoin, like decentralized applications and smart contract functionality, without changing any of Bitcoin's features. It uses the Proof-of-Transfer (PoX) consensus mechanism, which we'll cover more in this guide.

Before its rebranding to Stacks in 2020, Stacks was known as Blockstack and was co-founded by two Princeton alumni – Muneeb Ali and Ryan Shea – in 2017. Its development began after the company secured $50 million via a token offering. The company spent 2018 developing its mainnet, and in 2019, Blockstack had its public sale becoming the first-ever US Securities and Exchange Commission (SEC) controlled token sale.

In the same year, STX was listed by multiple leading crypto asset exchanges. Today, Stacks has established itself as a popular Layer-2 protocol for Bitcoin, with a small but growing ecosystem of Bitcoin builders looking to create Web3 applications secured by the Bitcoin network.

The Stacks blockchain has its own native digital token, known as Stacks (STX), which powers the Stacks ecosystem.

STX is used to execute Bitcoin smart contracts that utilize the Clarity programming language, process transactions, reward miners on the Stacks network, and enable its holders to earn BTC via a process known as stacking.

At the time of writing, STX has has a total market capitalization of over $1.5 billion and the token's price is hovering around $1.15.

What Exactly is Proof-of-Transfer?

Crypto networks use a consensus mechanism to secure the blockchain. Two of the most commonly used consensus mechanism are Proof-of-Work (PoW) and Proof-of-Stake (PoS).

In PoW, miners have to solve a mathematical puzzle to validate a transaction, while in PoS, the blockchain relies on stakers to verify crypto transactions. With both mechanisms, miners and stakers earn rewards in exchange for validating transactions.

Proof-of-Burn (PoB) is another infrequently used consensus mechanism. In PoB, miners compete to 'burn' a PoW token as a substitute for computing resources.

Stacks' consensus mechanism – PoX (Proof of Transfer) – is an extension of PoB. How? The PoX mechanism relies on a PoW digital currency of an already-established blockchain (Bitcoin) to secure a new blockchain. However, contrary to the Proof-of-Burn mechanism, miners must transfer the pledged digital tokens to selected participants within the network instead of burning the tokens. Also, because all Stacks' transactions are settled on Bitcoin, users can enjoy Bitcoin's security.

Miners within the Stacks ecosystem transfer Bitcoin that's used to give Stacking rewards paid in BTC to token holders as a reward for helping to secure the network. To achieve this, Stackers have to lock up their STX tokens for a specific period of time and provide their BTC address to receive their rewards. Stackers get to unlock their STX holdings once the cycles they committed to come to an end.

The Proof-of-Transfer mechanism has several benefits for blockchains like Stacks.

- Stacks leverages Bitcoin’s security.
- Apps that have been developed on Stacks can easily interact with Bitcoin’s on-chain state and data.
- No special hardware is needed to participate in PoX. Thus, anyone can become a miner. In addition, they also get to reuse the energy that Bitcoin had already expended via its Proof-of-Work consensus mechanism.
- Stackers get to earn BTC for securing the network.

What is Stacking Stacks and How It Works?

Stacking stacks is a progressive mechanism that rewards STX token holders for participating in Stacks’ Proof-of-Transfer consensus mechanism. STX holders who engage in stacking are known as Stackers.

Each time a new block gets mined on the Stacks blockchain, the platform sends the committed BTC by miners to Stackers as a reward for securing the network. All Stackers get awarded Bitcoin after roughly every stacking cycle. However, the stacking cycles aren’t constant and vary based on various factors.

To participate in Stacking, Stackers need to have a Stacks wallet whose version is 4 or higher. Additionally, they can also use various applications and services offered by other entities. STX holders also need a minimum amount of STX to take part in stacking directly. The amount is approximately 100,000 STX, which varies based on the overall supply and participation.

Any STX holder keen on participating and doesn’t hold the minimum STX needed can join a stacking pool.

What to Find in the Stacks Ecosystem

The Stacks layer-2 protocol has multiple benefits for developers as it can unlock non-fungible tokens (NFTs), decentralized finance (DeFi), and other web3 applications. Let’s look at what you can find on Stacks.

NFTs

Non-fungible tokens (NFTs) are unique cryptographic tokens representing an asset or an item. NFTs are built on the Stacks blockchain using the Clarity programming language and then settled and secured using Bitcoin. Users can then send, receive, and store their NFTs using a non-custodial Stacks wallet like Hiro or Xverse.

DeFi

The Bitcoin decentralized finance sector remains a largely untapped market despite the increased adoption of Bitcoin.

Stacks has been built to enhance DeFi for Bitcoin as it can leverage Bitcoin's settlement and security assurances. The ability for smart contracts to be executed on Bitcoin is also a functionality that's been made possible through the Stacks blockchain. Additionally, all transactions on Stacks settle on Bitcoin via the PoX consensus mechanism.

Games

Like most blockchains, Stacks users can access various games on the Stacks network. The best part is that users can enjoy various games without revealing identifying information. Additionally, as a gamer, you can potentially earn rewards in STX.

Is Stacks a Good Investment?

Whether Stacks is a good investment depends on your risk tolerance and investment strategy. If you are comfortable taking a lot of risk and want to invest in a Bitcoin layer-2 token, STX may be right for you.

However, it's important to note that Stacks has its own blockchain and ecosystem. So, if Bitcoin succeeds, it doesn't necessarily mean Stacks will also experience similar success.

Before deciding to invest or not to invest in Stacks, you must research STX to ensure that you fully understand what you are investing in. Also, all cryptocurrency investments come with risks and you should not invest more than you can afford to lose.

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