

Stellar Platform

- Decentralized
- public blockchain
- current 0.29
- global
 - supports over 180 countries and over 20 digital assets. By integrating anchor services such as on and off-ramps, cross-border payments and fiat-backed digital assets, builders can offer new payment services for end users and reach customers in new markets worldwide.
- Targeted towards organizations that offer fast payment services worldwide
- Stellar lumens(XLM)
- Consensus algorithm is faster, cheaper, and more energy efficient compared to bitcoin
- The Stellar blockchain was launched in 2016 by Jed McCaleb, who also founded Mt. Gox and co-founded Ripple.
- Stellar is forked from Ripples code base
- Goal was to process 60% of cross border payments
- In 2016, prominent technology consulting firm Deloitte also announced a partnership with Stellar to develop a payments app.² At a conference in 2017, McCaleb confirmed that 30 banks signed up to use Stellar's blockchain for cross-border transfers.³
- It runs a network of decentralized servers with a distributed ledger that is updated every two to five seconds among all nodes.⁵ The most prominent distinguishing factor between Stellar and Bitcoin is its consensus protocol.
- Stellar's consensus protocol does not rely on the entire miner network to approve transactions. Instead, it uses the Federated Byzantine Agreement (FBA) algorithm, which enables faster transaction processing. This is because it uses quorum slices (or a portion of the network) to approve and validate a transaction rather than a network-wide competition to propose blocks.
- Each node in the Stellar network chooses another set of "trustworthy" nodes. Once a transaction is approved by all nodes within this set, then it is considered approved. The shortened process has made Stellar's network extremely fast, and it is said to be able to process thousands of network operations per second

- The current process for cross-border transfers is a complicated one. It requires domestic banks to maintain accounts in foreign jurisdictions in local currencies. Their correspondent banks must operate a similar account in the original country.
- The Nostro-Vostro process, as it is known, for cross-border transactions with fiat currencies is a lengthy one involving conversion and reconciliation of accounts. Because it enables simultaneous validation, Stellar's blockchain can shorten or eliminate the delays and complexity involved in this process.
- It is designed for fast, cheap transactions with minimal computational or energy costs.
- Problems:
- High number of lumen tokens controlled by stellar's development foundation, which made investors worry since those tokens can be sold and mess with the investors holdings. Solved by SDF destroying 55 million tokens

Fraud Detection

- Study using ethereum
 - 97% addresses were found to be correctly predicted to be blacklisted
- Cryptographic hashing
 - each data is converted into a code, and those codes connect the blocks
- Distributing Ledger
 - data is stored using multiple computers
 - consensus is needed to change information
 - all users have access to the ledger
- Immutable transactions
 - accurate data
 - reduces disputes and disagreements
- Identity theft
 - Data is immutable
- payment fraud
 - record of all transactions
- credit card fraud
 - record of transactions
- ripple

- focuses on anti money laundering
- ethereum
 - Graph neural networks, GNNs, examines historical data
- stellar
 - StellarPay's built-in fraud detection, PCI compliance, and encrypted transactions to keep sensitive data secure.

Resources:

<https://www.investopedia.com/news/what-stellar/>

<https://ieeexplore.ieee.org/document/9922045>

<https://www.damcogroup.com/blogs/blockchain-immutability-powerful-weapon-in-combating-fraud>

<https://www.justice.gov/archives/opa/pr/ripple-labs-inc-resolves-criminal-investigation#:~:text=In%20addition%2C%20the%20agreement%20calls,a%20parallel%20civil%20enforcement%20action.>

[https://www.sciencedirect.com/science/article/pii/S1566253525001472#:~:text=Et hereum%20fraud%20detection%20primarily%20relies,16%5D%2C%20%5B17%5D.](https://www.sciencedirect.com/science/article/pii/S1566253525001472#:~:text=Et%20hereum%20fraud%20detection%20primarily%20relies,16%5D%2C%20%5B17%5D.)

<https://stellarwp.com/introducing-stellarpay/#:~:text=Both%20you%20and%20yo ur%20customers,to%20keep%20sensitive%20data%20secure.>