WHITEPAPER

STOX

March 2025

Token-Powered Decentralized Limit Order Book for Real-World Equities Trading

Abstract

This whitepaper introduces a Decentralized Limit Order Book for trading tokens backed by Real-World stocks.

The system leverages smart contracts to facilitate efficient, transparent, and secure trading of tokenized equities shares. We detail the design and functionality of the STOX token, the equities asset representation, and the order book smart contract architecture.

Introduction

This project focuses on tokenizing real-world equities shares and enabling their trading through a decentralized order book system. STOX serves as the utility token, enabling transactions and incentivizing participation in the ecosystem.

Components

1. STOX Token Contract

STOX is the ecosystem's utility token. It conforms to the ERC-20 standard and includes additional mechanisms for governance and utility within the trading system.

Key Features:

- Tokenomics: Fixed total supply of 1 billion tokens, divisible to 18 decimal places.
- Transfer Mechanism: Secure and gas-efficient token transfer functionalities.
- Compatibility: Fully compatible with ERC-20 wallets and exchanges.

2. NVDA Token Contract

The NVDA contract tokenizes NVIDIA shares, creating a 1:1 representation on the blockchain.

Key Features:

- Tokenization: Represents ownership of NVDA shares, backed by custodial or synthetic mechanisms.
- Divisibility: Supports fractional trading.
- Compliance: Built-in compliance features for whitelisting and regulatory adherence.

3. Order Book Contract

The ORDER_BOOK smart contract facilitates decentralized trading of NVDA tokens using STOX as the medium of exchange.

Key Features:

- Order Matching: Matches buy and sell orders based on price and timestamp.
- Transparency: All orders are recorded on-chain, ensuring auditability.
- Efficiency: Optimized gas usage for high-frequency trading.
- Cancelation Mechanism: Traders can cancel pending orders.
- Get the STOX/USDT reserve from UNISWAP in order to determine the amount of STOX to transfer to the contract in order to purchase the corresponding quantity of equity
- Equity Stock Price representation. Similarly than how Uniswap is working, we handle the decimals of the stock price by multiplying it by a constant factor of 10^{18}. See Uniswap $Q96$ calculation here.

4. Order Matching Engine

A server controlled by the DAO executes the market making on Order Book. It ensures a liquidity on for all clients willing to buy or sell stocks at the market price.

Technical Architecture

Token Standards

- STOX: ERC-20
- NVDA: ERC-20 with additional compliance logic

Order Book Workflow

1. Placing an Order: Traders submit buy or sell orders specifying the price, quantity, and type (limit or market).
2. Order Matching: The smart contract compares incoming orders against existing ones to find matches.
3. Execution: Matched orders are executed atomically, updating traders' token balances.

4. Settlement: STOX tokens are transferred to sellers, and NVDA tokens are transferred to buyers.

Security Measures

- Ownership Controls: Role-based access for critical contract functions.
- Input Validation: Strict validation of order parameters to prevent invalid orders.
- Testing: Comprehensive unit tests for all smart contract functions.

Use Cases

1. Decentralized NVDA Trading: Enables investors to trade tokenized NVIDIA shares seamlessly.
2. Liquidity Provision: Incentivizes market makers with STOX rewards.
3. Fractional Ownership: Democratizes access to NVDA shares.

Benefits

- Transparency: Blockchain's immutable ledger ensures trust.
- Efficiency: Automated order matching and execution.
- Accessibility: Global and permissionless trading platform.

Roadmap

1. Development: Complete contract audits and deploy the contracts on a testnet.
2. Beta Launch: Roll out the system to early adopters.
3. Mainnet Deployment: Launch on Ethereum mainnet with initial liquidity pools.
4. Ecosystem Growth: Introduce STOX-based governance and expand supported assets.

Conclusion

The STOX-powered decentralized order book for NVDA trading redefines traditional asset trading by leveraging blockchain's transparency and efficiency. With STOX as the backbone, the system offers a secure, accessible, and innovative platform for tokenized trading.

Disclaimer

This whitepaper is for informational purposes only. It does not constitute investment advice or a solicitation to buy or sell any assets.

Presales Rounds

Round #1

Timeline

From 2024-03-01 to 2024-03-31

Accepted Currencies

ETH Mainet: ETH, USDT, USDC
Base: BaseCoin, USDT, USDC

Accessibility

Public

Pricing

0.02 USDT / token

Min Purchase

- ETH: 0.02
- USDT: 50
- USDC: 50

Max Purchase

- ETH: 10
- USDT: 25,000
- USDC: 25,000

Softcap

1,000,000

Hardcap

5,000,000

Airdrop

Contract deployments

TESTNET DETAILS

STOX

`0xF27a9024Cf252D31705CeF15a6581F2e0aa7d8F7`

Successfully verified contract Stox on the block explorer.
https://sepolia.basescan.org/address/0xF27a9024Cf252D31705CeF15a6581F2e0aa7d8F7#code
Successfully verified contract Stox on Sourcify.
https://repo.sourcify.dev/contracts/full_match/84532/0xF27a9024Cf252D31705CeF15a6581F2e0aa7d8F7

MOCK USDT

`0xE5CFC9a03248ec13ae13788b66b7489d5339Bf89`

Successfully verified contract MockUsdt on the block explorer.
https://sepolia.basescan.org/address/0xE5CFC9a03248ec13ae13788b66b7489d5339Bf89#code
Successfully verified contract MockUsdt on Sourcify.
https://repo.sourcify.dev/contracts/full_match/84532/0xE5CFC9a03248ec13ae13788b66b7489d5339Bf89/

NVIDIA

`0x519e792F311253907E7151448B74A02344597CCf`
Constructor Parameters:
Initial Supply: 100000000000000000000
Successfully verified contract NvidiaSecurity on the block explorer.
https://sepolia.basescan.org/address/0x519e792F311253907E7151448B74A02344597CCf#code

The contract 0x519e792F311253907E7151448B74A02344597CCf has already been verified on Sourcify.
https://repo.sourcify.dev/contracts/full_match/84532/0x519e792F311253907E7151448B74A02344597CCf/

LIMIT ORDER BOOK

`0xb26b9a31CCDA28482CeC40a594AAbdC1587c2520`

Constructor Parameters:
STOX Contract Address: 0xF27a9024Cf252D31705CeF15a6581F2e0aa7d8F7
NVIDIA Contract Address: 0x519e792F311253907E7151448B74A02344597CCf

Successfully verified contract Orderbook on the block explorer.
https://sepolia.basescan.org/address/0xb26b9a31CCDA28482CeC40a594AAbdC1587c2520#code
Successfully verified contract Orderbook on Sourcify.
https://repo.sourcify.dev/contracts/full_match/84532/0xb26b9a31CCDA28482CeC40a594AAbdC1587c2520/

PRESALE

`0x88E8d471f3c0f35A1F0fcaaa604eDCC823d9CA0e`

Constructor Parameters:
PRESALE Contract STOX balance: 10000000.0
PRESALE Contract parameters:
STOX Contract Address: 0xF27a9024Cf252D31705CeF15a6581F2e0aa7d8F7
USDT Contract Address: 0xE5CFC9a03248ec13ae13788b66b7489d5339Bf89
USDC Contract Address: 0x036CbD53842c5426634e7929541eC2318f3dCF7e
ETH/USD Chainlink Price Feed Contract Address:
0x4aDC67696bA383F43DD60A9e78F2C97Fbbfc7cb1
Rate: 2
Min Purchase: 1000000000000000000
Max Purchase: 10000000000000000000000
Start Time: 1738771393
End Time: 1740067383
Softcap: 500000000000000000000
Hardcap: 5000000000000000000000000

Lock Period: 604800

Successfully verified contract UniversePreSale on the block explorer.
https://sepolia.basescan.org/address/0x88E8d471f3c0f35A1F0fcaaa604eDCC823d9CA0e#code
Successfully verified contract UniversePreSale on Sourcify.
https://repo.sourcify.dev/contracts/full_match/84532/0x88E8d471f3c0f35A1F0fcaaa604eDCC823d9CA0e/

UNISWAP POOL

Uniswap v3 Factory Address
0x4752ba5DBc23f44D87826276BF6Fd6b1C372aD24

Uniswap V3: Nonfungible Position Manager
0x27F971cb582BF9E50F397e4d29a5C7A34f11faA2

Uniswap V3 Pool: (STOX/MockUSDT - Fee Tier: 0.50%)
0xDA7FeB22c7701c4DFc05bF34F27AfD122dcd49e2
Initialization:
$10\ STOX = 1\ USDT \Leftrightarrow sqrtPriceX96 = 250541448375047948078879969925660672$

NFT - Uniswap - 0.05% - STOX/MOCKUSDT - 9.9491<>10.049
Token ID: 12302
Image Address

DAPP

URLs:
https://stoxtrading.eth.limo
https://stoxtrading.on-fleek.app

IPFS: (with compatible browsers, or using IPFS node)
ipfs://bafybeibo26pbmccozdzq2qm2vzt5wpwk4ptj3ziogoioh4bapeyyffbupq