Backup.Finance: ERC-20 Staking Platform

Abstract

Backup.Finance is a decentralized ERC-20 staking platform that allows users to stake their digital assets securely while earning rewards. The platform supports Ethereum (ETH), Tether (USDT), USD Coin (USDC), Chainlink (LINK), and Wrapped Bitcoin (WBTC), with staking durations of 15, 30, 60, and 90 days. Backup.Finance emphasizes security, transparency, and user-friendly interactions, providing a comprehensive solution for staking in the Ethereum ecosystem.

1. Introduction

1.1 Overview

Backup.Finance offers a decentralized solution for staking top ERC-20 tokens, providing users with multiple staking options tailored to different investment strategies. By integrating with MetaMask, the platform ensures that users can easily connect their wallets, stake their tokens, and earn rewards with minimal friction.

1.2 Mission

Our mission is to democratize access to decentralized finance (DeFi) through secure and flexible staking options. We aim to create a platform that combines ease of use with robust security measures, allowing users to confidently participate in the growing DeFi ecosystem.

1.3 Market Opportunity

With the rapid adoption of DeFi, there is a growing need for secure and efficient staking platforms. Backup.Finance addresses this need by providing a platform that supports multiple ERC-20 tokens, catering to a broad range of users from individual investors to institutional stakeholders.

2. System Architecture

2.1 Supported Tokens

Backup.Finance supports the following ERC-20 tokens:

- **Ethereum (ETH):** The native currency of the Ethereum blockchain, widely used for staking and other DeFi activities.
- **Tether (USDT):** A popular stablecoin that is widely used for trading and as a store of value.
- **USD Coin (USDC):** Another leading stablecoin, known for its transparency and compliance with regulations.
- **Chainlink (LINK):** A decentralized oracle network token that plays a crucial role in the DeFi ecosystem.
- **Wrapped Bitcoin (WBTC):** A tokenized version of Bitcoin that operates on the Ethereum blockchain, enabling Bitcoin holders to participate in DeFi.

2.2 Staking Pools

Backup.Finance offers multiple staking pools with varying durations to meet the diverse needs of its users:

- **15 days**
- **30 days**
- **60 days**
- **90 days**

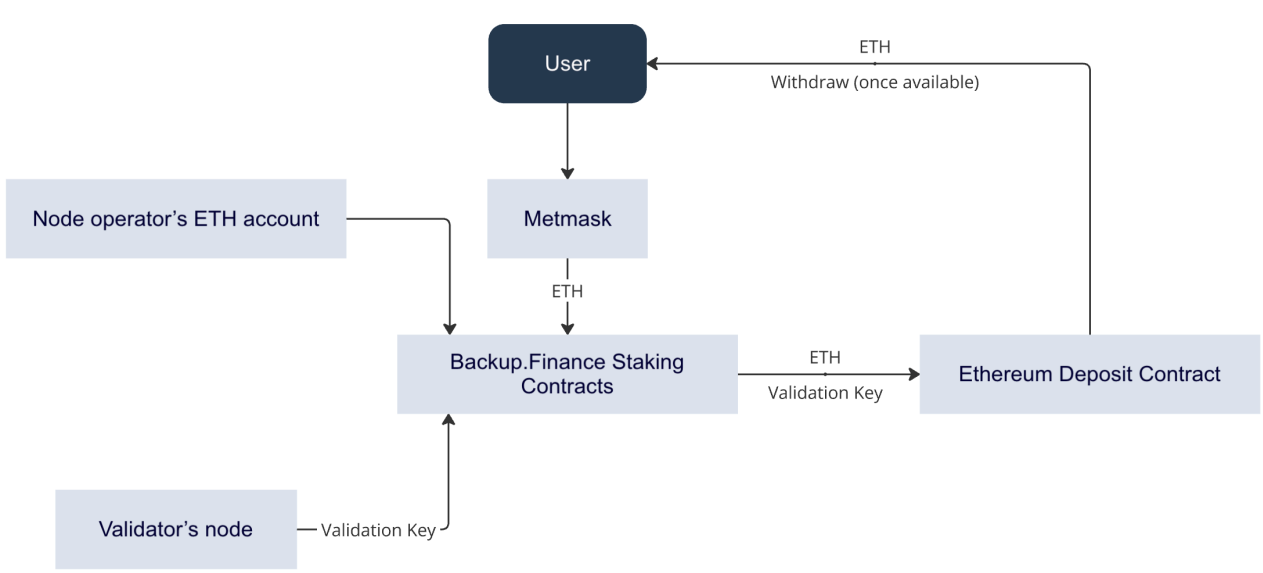
Each pool has different liquidity and staking limits based on the token and the duration, providing flexibility for users to choose their preferred staking strategy.

2.3 Liquidity and Limits

- **Liquidity:** Liquidity varies by token and duration, ensuring that users can participate in staking with adequate resources. For example:
  - ETH pools may offer liquidity ranging from $11.24 million to $13.67 million.
  - WBTC pools may offer liquidity ranging from $9.87 million to $12.45 million.

- **Staking Limits:** The platform sets specific upper and lower staking limits for each token to manage risk and reward. For example:
  - ETH: 0.10 ETH to 90.00 ETH.
  - USDT: $250.00 to $260,000.00.

2.4 System Architecture Diagram



(Figure 1: System Architecture Diagram)

This diagram illustrates the flow of assets and the interaction between different components of the Backup.Finance platform, including smart contracts, MetaMask integration, and the user interface.

3. Security and Compliance

3.1 Smart Contract Audits

Security is a top priority for Backup.Finance. Our smart contracts are audited by leading third-party security firms, ensuring that they are free from vulnerabilities and capable of securely managing user funds.

3.2 Security Measures

- **MetaMask Integration:** The platform is integrated with MetaMask, providing secure wallet authentication and transaction processing.
- **Regular Security Audits:** Continuous monitoring and periodic audits are conducted to maintain the highest levels of security.

3.3 Compliance

Backup.Finance adheres to industry best practices and regulatory standards, ensuring that all operations are conducted in a compliant manner.

3.4 Risk Mitigation

To mitigate risks associated with staking, such as smart contract vulnerabilities or slashing penalties, Backup.Finance employs a multi-layered security approach. This includes insurance coverage for slashing events and redundant security measures to protect user assets.

4. Tokenomics

4.1 APY and Fees

Annual Percentage Yield (APY):
APY is a critical measure for users deciding where to stake their tokens. It reflects the real rate of return earned on staked assets over a year, considering compounding effects. Backup.Finance calculates APY dynamically based on several factors, including the total amount staked in each pool, the liquidity available, and the staking duration.

APY Rates for Supported Tokens:

Here are the APY rates for each supported token across the different staking durations, along with the pool limits:

- **Ethereum (ETH)**
  - **15-day pool:**
    - **Liquidity:** $11,240,283
    - **Limits:** 0.10 ETH - 25.00 ETH
    - **APY:** 3.50%
  - **30-day pool:**
    - **Liquidity:** $7,580,283
    - **Limits:** 25.00 ETH - 50.00 ETH
    - **APY:** 4.00%
  - **60-day pool:**
    - **Liquidity:** $14,359,842
    - **Limits:** 50.00 ETH - 75.00 ETH
    - **APY:** 5.00%
  - **90-day pool:**
    - **Liquidity:** $13,673,940
    - **Limits:** 75.00 ETH - 90.00 ETH
    - **APY:** 6.00%

- **Tether (USDT)**
  - **15-day pool:**
    - **Liquidity:** $926,083
    - **Limits:** $250.00 - $65,000.00
    - **APY:** 4.00%
  - **30-day pool:**
    - **Liquidity:** $6,003,645
    - **Limits:** $65,000.00 - $130,000.00
    - **APY:** 4.50%
  - **60-day pool:**
    - **Liquidity:** $13,837,356
    - **Limits:** $130,000.00 - $195,000.00
    - **APY:** 5.50%
  - **90-day pool:**
    - **Liquidity:** $1,837,537
    - **Limits:** $195,000.00 - $260,000.00
    - **APY:** 6.50%

- **USD Coin (USDC)**
  - **15-day pool:**
    - **Liquidity:** $2,528,403
    - **Limits:** $200.00 - $60,000.00
    - **APY:** 4.00%
  - **30-day pool:**
    - **Liquidity:** $5,568,235
    - **Limits:** $60,000.00 - $120,000.00
    - **APY:** 4.50%
  - **60-day pool:**
    - **Liquidity:** $1,354,928
    - **Limits:** $120,000.00 - $180,000.00
    - **APY:** 5.50%
  - **90-day pool:**
    - **Liquidity:** $10,002,535
    - **Limits:** $180,000.00 - $240,000.00
    - **APY:** 6.50%

- **Chainlink (LINK)**

  - **15-day pool:**
    - **Liquidity:** $5,896,472
    - **Limits:** 55.00 LINK - 2,800.00 LINK
    - **APY:** 3.75%

  - **30-day pool:**
    - **Liquidity:** $3,127,285
    - **Limits:** 2,800.00 LINK - 5,600.00 LINK
    - **APY:** 4.25%

  - **60-day pool:**
    - **Liquidity:** $8,736,529
    - **Limits:** 5,600.00 LINK - 8,400.00 LINK
    - **APY:** 5.25%

  - **90-day pool:**
    - **Liquidity:** $6,451,193
    - **Limits:** 8,400.00 LINK - 10,000.00 LINK
    - **APY:** 6.25%

- **Wrapped Bitcoin (WBTC)**

  - **15-day pool:**
    - **Liquidity:** $9,870,834
    - **Limits:** 0.01 WBTC - 10.00 WBTC
    - **APY:** 3.25%

  - **30-day pool:**
    - **Liquidity:** $7,567,023
    - **Limits:** 10.00 WBTC - 15.00 WBTC
    - **APY:** 3.75%

  - **60-day pool:**
    - **Liquidity:** $12,453,387
    - **Limits:** 15.00 WBTC - 25.00 WBTC
    - **APY:** 4.75%

  - **90-day pool:**
    - **Liquidity:** $11,234,534
    - **Limits:** 25.00 WBTC - 30.00 WBTC
    - **APY:** 5.75%

Detailed APY Calculation:
APY is determined by various factors, including the duration of the stake, the overall liquidity in the pool, and market conditions for each token. Longer staking periods generally offer higher APYs due to the extended commitment and increased risk associated with market fluctuations over time.

Example APY Calculations:

- **Ethereum (ETH) - 90-Day Staking Example:**
  - **Staked Amount:** 20 ETH
  - **APY:** 6.00%
  - **Projected Rewards:** After 90 days, the projected reward would be approximately 0.3 ETH. Compounded annually, this could yield a total of approximately 1.2 ETH in rewards over a year.

- **Tether (USDT) - 60-Day Staking Example:**
  - **Staked Amount:** 100,000 USDT
  - **APY:** 5.50%
  - **Projected Rewards:** After 60 days, the projected reward would be approximately 902 USDT. If compounded, this could yield a total of approximately 5,500 USDT over a year.

Compound Interest:
Backup.Finance allows users to automatically reinvest their rewards, taking full advantage of compound interest. Compounding can significantly enhance effective APY, especially for longer staking periods. For instance, a 6.50% APY on USDC compounded quarterly could result in an effective yield closer to 6.67%.

4.2 Fees

- **Staking Fee:** Backup.Finance charges a 2% fee on staking rewards. This fee is used to cover operational costs, continuous security audits, and future platform development.
- **Withdrawal Fee:** No fees are charged for withdrawals, but users are responsible for covering gas fees associated with transactions on the Ethereum network.

Fee Allocation:

- **Security and Audits:** 50% of the fees are allocated toward ongoing security audits and platform security enhancements.
- **Development:** 30% of the fees are reinvested into the development of new features and improving the user experience.
- **Community Incentives:** 20% of the fees are reserved for community-driven initiatives and loyalty rewards.

4.3 Reward Distribution

Rewards are distributed proportionally based on the amount staked and the duration of the stake. Users can claim their rewards at the end of the staking period, with rewards being automatically transferred to their MetaMask wallets.

Projected Earnings Table:

Token	Duration	Staked Amount	APY	Projected Rewards	Compounded APY
ETH	90 Days	20 ETH	6.00%	0.3 ETH	6.07%
USDT	60 Days	10,000 USDT	5.50%	902 USDT	5.57%
USDC	90 Days	50,000 USDC	6.50%	812 USDC	6.67%
LINK	30 Days	1,000 LINK	4.25%	35.5 LINK	4.32%
WBTC	60 Days	5 WBTC	4.75%	0.02 WBTC	4.82%

This table will detail the flow of rewards and fees within the Backup.Finance ecosystem, illustrating how user stakes translate into rewards, how fees are utilized, and how compounding works.

5. System Operation

5.1 How to Stake

1. **Connect Wallet:** Users begin by connecting their MetaMask wallet to Backup.Finance.
2. **Choose a Pool:** Users select their preferred token and staking duration.
3. **Stake Tokens:** Tokens are securely staked in the chosen pool, and the staking process begins.
4. **Earn Rewards:** Rewards accrue based on the staking duration and pool-specific APY.
5. **Withdraw:** At the end of the staking period, users can withdraw their staked tokens along with any earned rewards.

5.2 Reward Distribution

Rewards are distributed proportionally based on the amount staked and the staking duration. Users can claim their rewards after the staking period ends, with rewards being automatically transferred to their MetaMask wallet.

6. Governance and Roadmap

6.1 Governance

Backup.Finance is committed to decentralized governance. As the platform evolves, community members will have the opportunity to participate in decision-making processes, such as voting on platform upgrades, staking parameters, and fee structures.

6.2 Roadmap

- **Q1 2024:**
  - Launch Backup.Finance with support for ETH, USDT, USDC, LINK, and WBTC.
  - Conduct initial security audits and launch a bug bounty program.

- **Q1 2025:**
  - Expand staking pool options and enhance security measures.
  - Introduce community governance mechanisms and launch the governance token.

- **Q2 2025:**
  - Integrate additional DeFi protocols and explore cross-chain staking opportunities.
  - Continue platform development based on community feedback and governance decisions.

7. Conclusion

Backup.Finance is dedicated to providing a secure, transparent, and user-friendly platform for staking leading ERC-20 tokens. With a focus on security, compliance, and community governance, we aim to become a trusted platform in the DeFi ecosystem.