Riche Chain Whitepaper

v1.0

High-Performance EVM Network Powered by QBFT Consensus

for Instant Finality

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Abstract

The blockchain industry faces a trilemma of scalability, security, and decentralization. While existing Layer 1 solutions have made significant strides, many still suffer from probabilistic finality, high latency, and fluctuating gas fees that hinder enterprise adoption and high-frequency DeFi applications.

Riche Chain introduces a next-generation Layer 1 blockchain fully compatible with the Ethereum Virtual Machine (EVM), utilizing the Quorum Byzantine Fault Tolerance (QBFT) consensus mechanism. This architecture achieves instant finality, zero block reorganization, 3-second block times, and a high-throughput gas limit of 25,000,000, creating an ideal environment for financial institutions and decentralized applications requiring absolute transaction certainty.

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1 Introduction

1.1 The Problem

Current blockchain infrastructures often rely on Proof of Work (PoW) or standard Proof of Stake (PoS) variants that introduce ”Probabilistic Finality.” In these systems, a transaction is not immediately permanent; users must wait for multiple confirmations to ensure a block is not ”orphaned” or reorganized (reorg). This latency creates uncertainty for:

- **Real-time Payments:** Merchants cannot accept crypto instantly without risk of double-spending or rollback.
- **DeFi Arbitrage:** Reorgs can cause failed trades, massive slippage, or MEV exploitation.
- **Supply Chain:** Data integrity requires immediate, immutable timestamping which PoW/PoS cannot instantly guarantee.

1.2 The Riche Chain Solution

Riche Chain addresses these challenges by implementing **QBFT (Quorum Byzantine Fault Tolerance)**. Unlike Nakamoto consensus (longest chain rule), QBFT offers **Immediate Finality**. Once a block is minted and signed by the validator quorum, it is final. It cannot be reverted. This feature, combined with low transaction costs and EVM compatibility, positions Riche Chain as a robust alternative for both Web3 developers and traditional enterprises.

2 Technical Architecture

2.1 Consensus Mechanism: QBFT

Riche Chain utilizes the IBFT 2.0 (Istanbul BFT) variant known as QBFT. It requires a supermajority ($\geq 2/3$) of validators to sign a block before it is committed to the chain.

- **Validators:** A set of authorized nodes responsible for validating transactions and creating blocks.
- **Supermajority:** A block is committed only when $\geq 2/3$ of validators sign it.
- **Zero Reorganization:** Since a block requires a supermajority to be created, forks are mathematically impossible under normal operation. This guarantees that *block n* is the permanent predecessor of *block n+1*.

Key Benefit: Instant Finality eliminates the need for ”confirmation waits,” dramatically improving user experience for dApps.

2.2 Network Specifications

The following table outlines the core parameters of the Riche Chain Mainnet:

Parameter	Value	Description
Network Name	Riche Chain Mainnet	Official designation
Chain ID	132026	Hex: 0x203ba
Consensus	QBFT	Instant finality & security
Block Time	∼3 Seconds	Fast block production
Gas Limit	25,000,000	High throughput capacity
Native Currency	Riche Coin (RIC)	Gas fees & transfer

2.3 EVM Compatibility

Riche Chain is built on the Geth (Go-Ethereum) client architecture (or Besu-compatible standards), ensuring **100% compatibility** with existing Ethereum tooling. Developers can migrate their dApps with zero code changes.

Supported ecosystem tools include:

- **Languages:** Solidity, Vyper (v0.8.25 recommended).
- **Wallets:** MetaMask, Trust Wallet, Hardware Wallets.
- **Tooling:** Hardhat, Foundry, Remix IDE.
- **Standards:** ERC-20, ERC-721, ERC-1155.

3 Economic Model (Tokenomics)

3.1 Native Asset: RIC

The **RIC** coin is the lifeblood of the network. It serves two primary functions:

1. **Gas Fees:** Used to pay for computation and storage on the network. The fee market is designed to be ultra-low cost to encourage high-volume usage and micro-transactions.
2. **Governance:** RIC holders will eventually participate in on-chain governance to vote on network upgrades, parameter adjustments, and validator elections in future phases.

3.2 Supply & Distribution

- **Total Supply:** 100,000,000 RIC
- **Ticker:** RIC
- **Inflation Model:** Deflationary mechanism via fee burning (EIP-1559 implementation planned) or fixed supply model to ensure long-term value retention.

4 Ecosystem & Utility

4.1 For Developers

Riche Chain provides a ”Build-First” environment with robust infrastructure ready from Day 1:

- **Public RPC:** High availability endpoints for seamless dApp connectivity.
- **WebSocket (WSS):** Real-time event listening support for dynamic interfaces.
- **Block Explorer:** Full transparency and verification tools via RicheScan.

4.2 Use Cases

DeFi & High-Frequency Trading
With 3-second block times and instant finality, arbitrage bots and trading protocols can operate without the risk of failed trades due to reorganization.

GameFi & Metaverse
In-game assets are transferred instantly. No more waiting for ”12 confirmations” before a player receives their item.

Enterprise Solutions
Supply chain and identity management systems require the absolute data certainty that QBFT provides, ensuring audit trails are immutable immediately.

5 Roadmap

Phase 0: Testnet (Completed)

Focus: Network Stress Testing & Optimization

- Deployment of Testnet environment.
- Stress testing of QBFT consensus mechanism.
- Faucet implementation and initial bug bounties.

Phase 1: Genesis (Completed)

Focus: Mainnet Launch & Core Infra

- Network architecture design & Genesis Block.
- Mainnet Launch (Chain ID: 132026).
- Deployment of RPC Nodes and Block Explorer.

Phase 2: Ecosystem Growth (Current)

Focus: Expansion & Adoption

- Launch of official Documentation & Whitepaper.
- Developer Grant Program rollout.
- Strategic partnerships with wallets and exchanges.
- Bridge implementation to Ethereum/BSC.

Phase 3: Decentralization

Focus: Governance & Sustainability

- Onboarding external validator nodes.
- Launch of RIC Staking mechanisms.
- DAO governance implementation for network parameters.

6 Conclusion

Riche Chain is not just another EVM chain; it is a specialized infrastructure layer designed for **certainty**. By leveraging QBFT, we eliminate the risks associated with block reorganizations, providing a stable, fast, and scalable foundation for the next wave of decentralized applications.

We invite developers, enterprises, and users to join us in building the decentralized future.

Resources & References

- **Website:** `https://richecoin.org`
- **Explorer:** `https://richescan.com`
- **RPC Endpoint:** `https://seed-richechain.com/`
- **GitHub:** `https://github.com/richechain`
- **Community:** Twitter | Telegram

Disclaimer: *This whitepaper is for informational purposes only and does not constitute financial advice. The technical specifications and roadmap are subject to change based on community governance and technical requirements.*