Tron Classic Whitepaper

Version 2.0

Tron Classic (TCC) is a Proof-of-Stake blockchain designed to improve decentralization, provide deterministic finality, reduce infrastructure costs, and enable native cross-chain interoperability while maintaining compatibility with the TRON Virtual Machine (TVM).

1. Introduction

Tron Classic is a high-performance Layer-1 network designed to evolve the TRON ecosystem toward greater decentralization and interoperability.

The network focuses on three pillars: open validator participation, fast cryptographic finality, and cross-chain interoperability as a core protocol feature.

2. Problem Statement

Current high-throughput networks face challenges including validator concentration, high node storage requirements, limited native interoperability, and weak finality guarantees.

These limitations restrict decentralization, increase operational costs, and complicate secure cross-chain infrastructure.

3. Design Goals

Tron Classic is designed to support 100+ permissionless validators, achieve finality within 10 seconds, maintain TVM compatibility, reduce node storage requirements, and enable governance-driven upgrades.

4. Network Parameters

Block time: 2 seconds.

Finality target: 6–10 seconds.

Validator target: 100.

Maximum validators: 150.

Epoch duration: 6 hours.

5. Proof-of-Stake Consensus

Validators participate by staking TCC tokens.

The validator set updates at epoch boundaries.

Slashing penalties apply for double-signing, downtime, or malicious activity.

Block rewards are distributed proportionally to stake.

6. Deterministic Finality

Blocks are finalized when two-thirds of validators sign.

Finalized blocks cannot be reverted.

Finality proofs enable secure cross-chain verification and exchange safety.

7. TVM Compatibility

Tron Classic supports TRC-20 and TRC-721 standards.

Smart contracts compiled for TVM execute without modification.

Address format, ABI behavior, and event logs are designed to match TRON expectations.

8. State and Storage Optimization

Snapshot synchronization allows new nodes to sync within hours instead of days.

Historical pruning reduces long-term storage requirements.

Full node storage target is under 500 GB.

9. Native Cross-Chain Architecture

The protocol includes a MessageBus, BridgeVault, and pluggable verification module.

Phase 1 uses threshold signature verification.

Phase 2 introduces validator finality proof verification.

Replay protection, rate limits, and emergency pause mechanisms are included.

10. Tokenomics

Total supply: 1,000,000,000 TCC.

Annual inflation target: 2%.

Validator rewards target 5–8% APR depending on total staked supply.

TCC is used for staking, fees, governance, and network security.

11. Governance

On-chain governance controls protocol parameters, validator limits, inflation, and upgrades.

All critical changes are protected by timelock mechanisms.

12. Roadmap

Phase 1: Private Devnet.

Phase 2: Public Testnet.

Phase 3: Bridge Testnet.

Phase 4: Mainnet Launch.

Phase 5: Trust-minimized light-client bridges.

13. Security Model

Validator slashing enforces honest participation.

Deterministic finality improves bridge and exchange security.

External audits and bug bounty programs will be implemented prior to mainnet.

14. Differentiation from TRON

100+ validators instead of 27.

Cryptographic BFT finality.

Lower node storage requirements.

Native cross-chain interoperability.

On-chain governance.