TEN (formerly Obscuro)

Confidential Smart Contracts for Ethereum

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> 1. 天 (Japanese) Heaven; sky; the celestial;
> 2. **T**he **E**ncrypted **N**etwork.

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Abstract

We present TEN, a decentralised Ethereum Layer 2 Rollup protocol designed to achieve data confidentiality, computational privacy and prevent Maximal Extractable Value (MEV) by leveraging hardware-based Trusted Execution Environments (TEE).

The design of TEN ensures that hardware manufacturers do not have to be trusted for the safety of the ledger. If one manufacturer turns malicious or there is a breach in the TEE technology, the protocol falls back to the behaviour of a public blockchain that preserves the ledger's integrity but makes the transactions public.

The design also focuses on preserving privacy for the limited period when it matters most, which removes the need for a privacy technique that is robust against all adversaries in perpetuity.

TEN sits in what we believe is a sweet spot between the existing rollup-based L2 offerings Optimistic and ZK Rollups. The use of confidential computing techniques coupled with economic incentives allows TEN to retain the performance and programming model simplicity of Optimistic rollups, and on top of that attain confidentiality, short withdrawal periods, and address MEV.