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# ARBITRUM



# What is Arbitrum

Arbitrum is a layer 2 solution that enhances Ethereum smart contracts by improving their speed, scalability, and privacy. It allows developers to run Ethereum Virtual Machine (EVM) contracts and transactions on a second layer while maintaining Ethereum's strong security.

Arbitrum addresses issues like poor efficiency and high costs in Ethereum-based smart contracts. It uses optimistic rollups, where transactions are processed off-chain and then bundled and submitted to the Ethereum mainnet. This reduces the computational and storage burden on Ethereum, lowering costs for users. Transactions are assumed valid unless disputed during a challenge period.

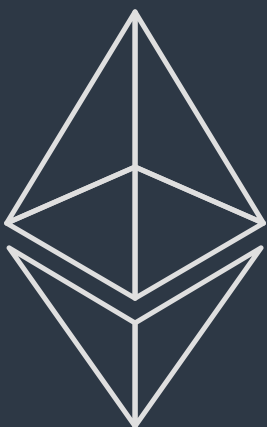
Offchain Labs, led by blockchain experts Ed Felten, Steven Goldfeder, and Harry Kalodner, is developing Arbitrum and other scaling solutions to make cryptocurrencies more efficient.



# How Does Arbitrum Work?

Arbitrum is an optimistic rollup technology that helps Ethereum smart contracts scale by processing transactions on a secondary layer and recording the results on the main Ethereum chain. This boosts speed and efficiency.

With optimistic rollup, validators can post and confirm blocks, assuming they are valid unless challenged. Most transactions happen on Arbitrum's layer, with results recorded on Ethereum. Validators check the chain's state, and full nodes aggregate transactions, earning rewards in ETH. Validators can challenge incorrect blocks, and dishonest validators lose their stake if proven wrong. The Arbitrum Virtual Machine (AVM) runs Arbitrum smart contracts, translating Ethereum-compatible contracts to work on Arbitrum. This setup ensures efficient, secure, and scalable smart contract execution on Ethereum.



# Arbitrum Compared to Other Layer 2s

The Ethereum layer-2 (L2) space is full of projects competing for users, developers, and total value locked (TVL). Arbitrum is a rollup-based L2 and is currently the most popular by TVL. Optimism is a close second, with over 117 active protocols and around \$1 billion in TVL. Other examples include Metis and Boba Network, which have less development and usage.

Optimism rollups are currently leading the L2 space, but they might face competition from Polygon Hermez, Loopring, StarkWare, and zkSync. The main difference is that zk-rollups are expected to be more efficient because they post less information back to the main Ethereum chain. Optimistic rollups have a challenge window for disputing transactions, while zk-rollups use computational methods to prove validity.

However, some believe zk-rollups may not scale as well as optimistic rollups due to the computational work needed for cryptographic proofs.

# Arbitrum Rug Pulls

A rug pull refers to a type of cryptocurrency scam where developers establish credibility on social media, generate significant hype around a project, and raise substantial funds. After the project's tokens are made available to the public, the developers withdraw all liquidity, leaving investors with worthless tokens.

In 2023, Arbitrum was faced with an unfortunate rug pull scam. The Arbitrum (ARB) DeFi ecosystem was greatly affected by this as developers of Chibi Finance organized a malicious contract that allowed them to steal \$1 million of user funds.

Before investing in any projects, it is crucial to conduct thorough research on the team and developers. If an opportunity appears too good to be true, it likely is.

# Crypto Track PRO

Crypto Track PRO is a robust blockchain analytical engine designed to enhance investigative capabilities. As a private forensic firm, we collaborate with U.S. law enforcement as well as international investigators.

Crypto Track PRO now supports the Arbitrum blockchain with more layer 2s on the way. This will greatly aid investigators that continue to work cases on these blockchains!

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