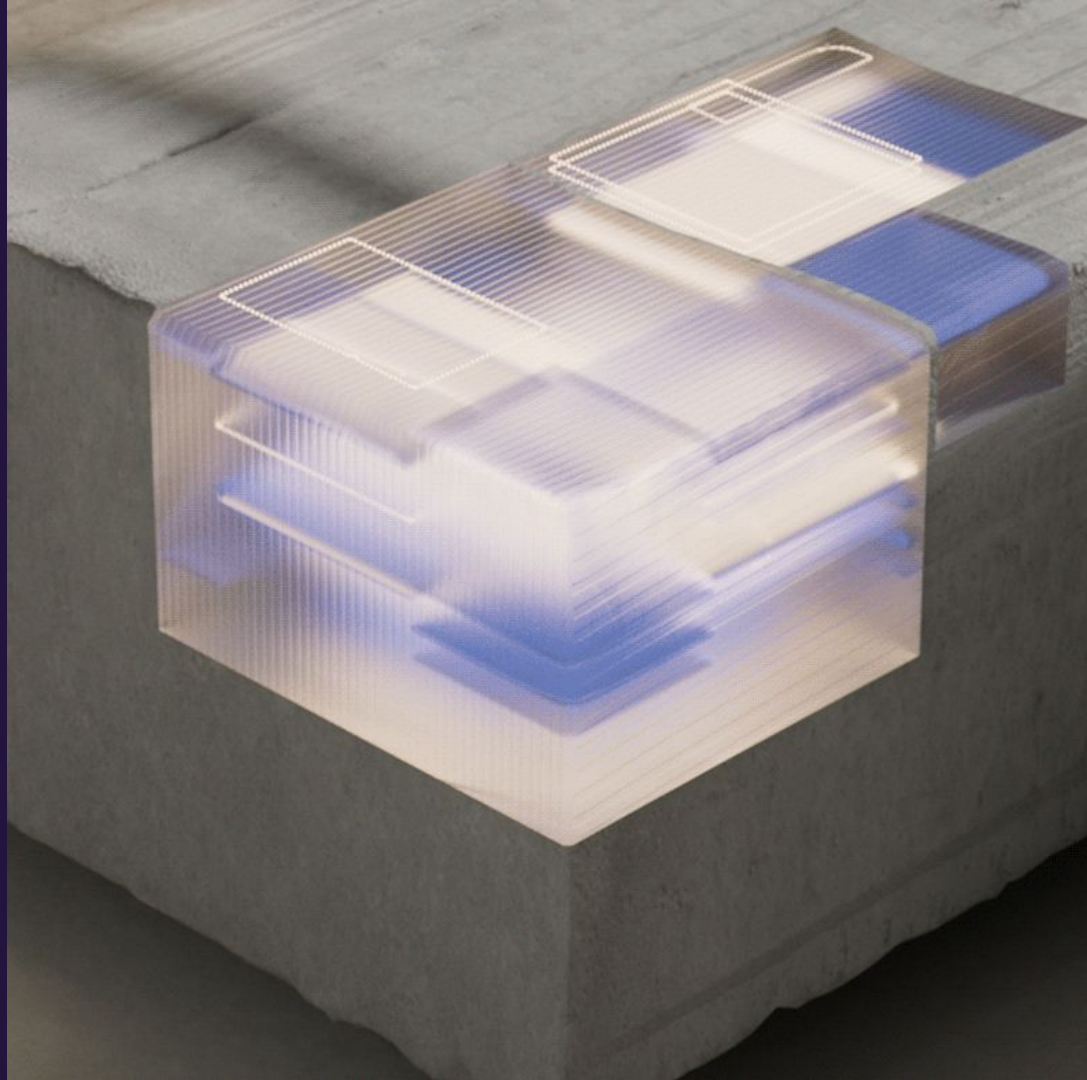
Polygon zkEVM Product Overview



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Agenda

- Why Polygon zkEVM?
- What is Polygon zkEVM and Mainnet Beta?
- What is a ZK rollup?
- Key Features and Benefits
- Polygon zkEVM Industry Use Cases
- Launch Ecosystem

Why Polygon zkEVM ?

Polygon zkEVM is the next chapter of Ethereum scaling

For Ethereum developers, Polygon zkEVM allows them to **seamlessly deploy** their Ethereum Smart Contracts while **retaining the inherent security of Ethereum with fast finality** and low costs.

As Polygon zkEVM launches on mainnet beta, a roadmap toward EVM equivalence type 2 category zkEVM rollup, TPS performance and cost reduction starts the next stage of optimizations.

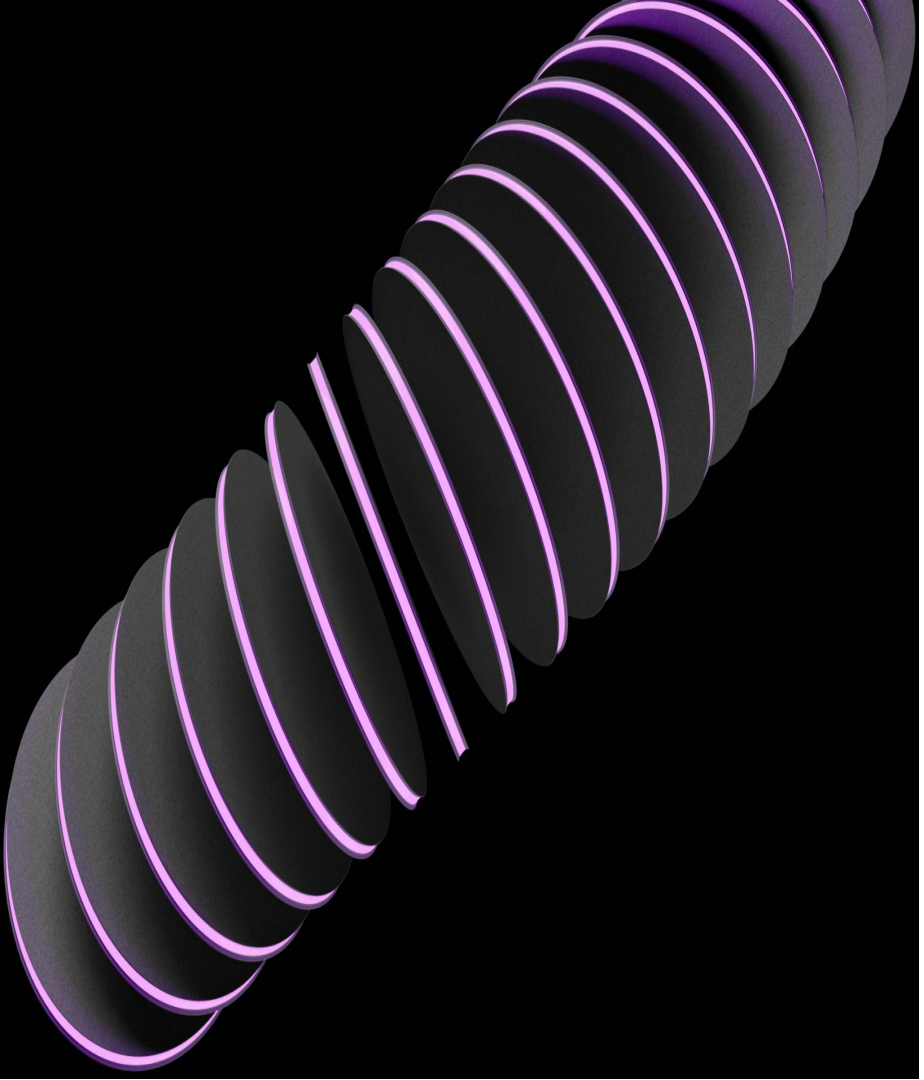
What is Polygon zkEVM?

Polygon zkEVM is the leading ZK scaling solution that is equivalent to Ethereum Virtual Machine: The *vast majority of* existing smart contracts, developer tools and wallets work seamlessly.

Polygon zkEVM harnesses the power of ZK proofs to reduce transaction cost and increase throughput, all while inheriting the security of Ethereum L1.

Polygon zkEVM is a new layer 2 Ethereum **scaling** solution for Ethereum (It is NOT a privacy solution)

Polygon zkEVM scales ETHEREUM. It is not related to Polygon PoS at all and does not scale it



What is Polygon zkEVM Mainnet Beta?

Polygon zkEVM Mainnet Beta allows developers to permissionlessly deploy their dApps on the mainnet beta chain.

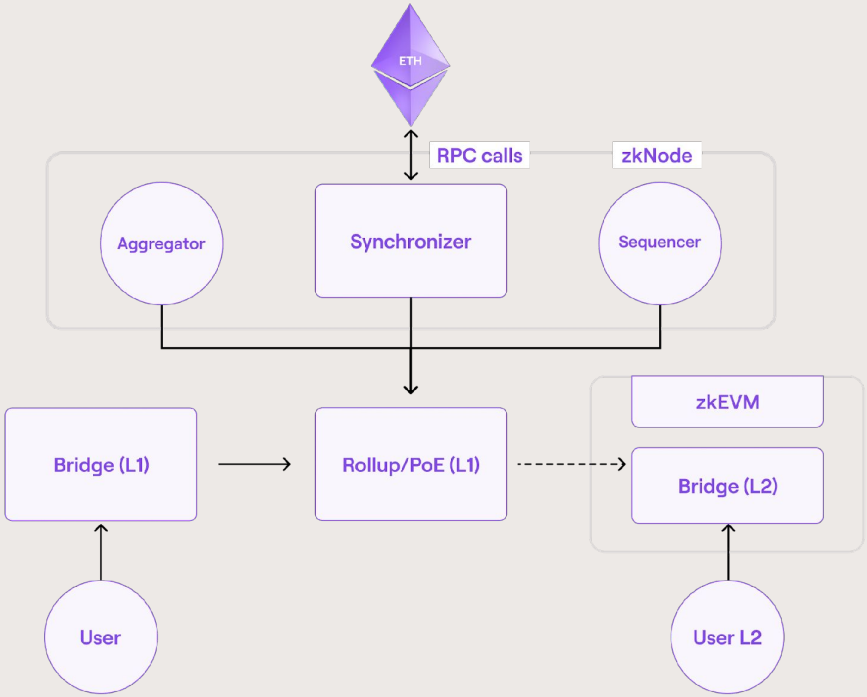
It allows users users to connect to the mainnet and in a permissionless way to bridge funds.

Why is it Mainnet Beta?

We are launching the first version of what a mainnet may look like but in test. This means, the Mainnet Beta will potentially have bugs, availability issues and it's not feature complete - it will happen with Type-2 or full EVM-equivalence.

A single centralized sequencer will be run but censorship resistance is ultimately preserved by design.

But what on earth is a zk-rollup?



Q

What is Zero Knowledge?

A

Zero knowledge proofs are used to prove the validity of a statement without revealing the statement. This is used to communicate state transitions in context of blockchains and zkEVM solutions.

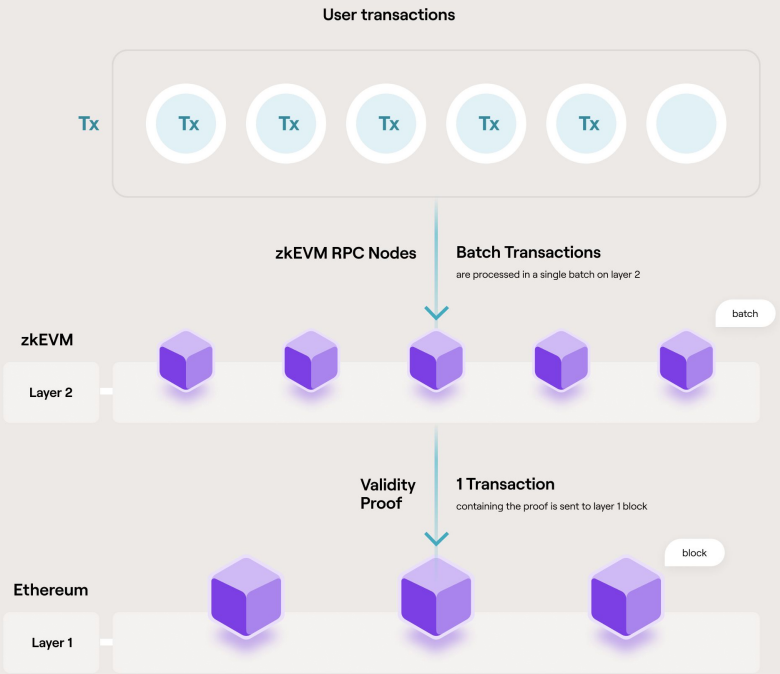
Q

What is a rollup?

A

Zero-knowledge rollups (ZK-rollups) are layer 2 scaling solutions that increase throughput on Ethereum Mainnet by moving computation and state-storage to Layer2. ZK-rollups can process thousands of transactions in a batch and then only post some minimal summary data to Ethereum Mainnet.

What is a zkEVM rollup?



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A

What is zkEVM rollup?

zkEVMs are a type of ZK rollup that is designed to mimic the same transaction execution environment as mainnet Ethereum. Implementation of zkEVMs differ in their proving algorithms, as well as data availability strategy.

zkEVMs also differ in their level of EVM-equivalence. There are four main levels of EVM-equivalence.

Benefits and features

Polygon zkEVM makes it possible for dApps to leverage the frictionless scalability of EVM equivalence and the time-to-finality of zero-knowledge proofs, without compromising the top-notch security of the most mature Layer 1 public protocol, Ethereum.

Web3 mass adoption has arrived.

Security: Leveraging zero-knowledge proofs, Polygon zkEVM inherits security from Ethereum

Scalability: Polygon zkEVM allows dApps to achieve scalability by batching many transactions together. This unlocks higher performance.

Costs: Polygon zkEVM brings down the cost for dApp users leading to mass adoption.

Equivalence: Benefit from the existing Ethereum dev tools and ecosystem. Simply copy-paste your existing smart contracts.

The only cost that is shared between transactions is the proof cost, but that's becoming marginal since most of the cost is data and this depends on each tx.

The estimate for L1 finality (consolidated finality) is ~30mins to 1 hr initially, these will come down as the volumes increase. The same metric for optimistic rollups is 7 days

Industry Use Cases

All use cases currently enabled on **Polygon PoS** are also suitable for **Polygon zkEVM**.

Find more details on our Notion one-pager

DeFi

Polygon zkEVM is well suited for DeFi projects as it inherits Ethereum Security.

Gaming

Games involving purchase/trading of high value assets (such as skins) might benefit from the superior security of **Polygon zkEVM.**

TradFi

Polygon zkEVM provides a secure and fast platform for TradFi, offering Ethereum security at high speeds and low costs with fast finality.

Energy Infrastructure

The energy sector is a high security space, and hence could benefit from deploying on **Polygon zkEVM** for tokenizing, etc.

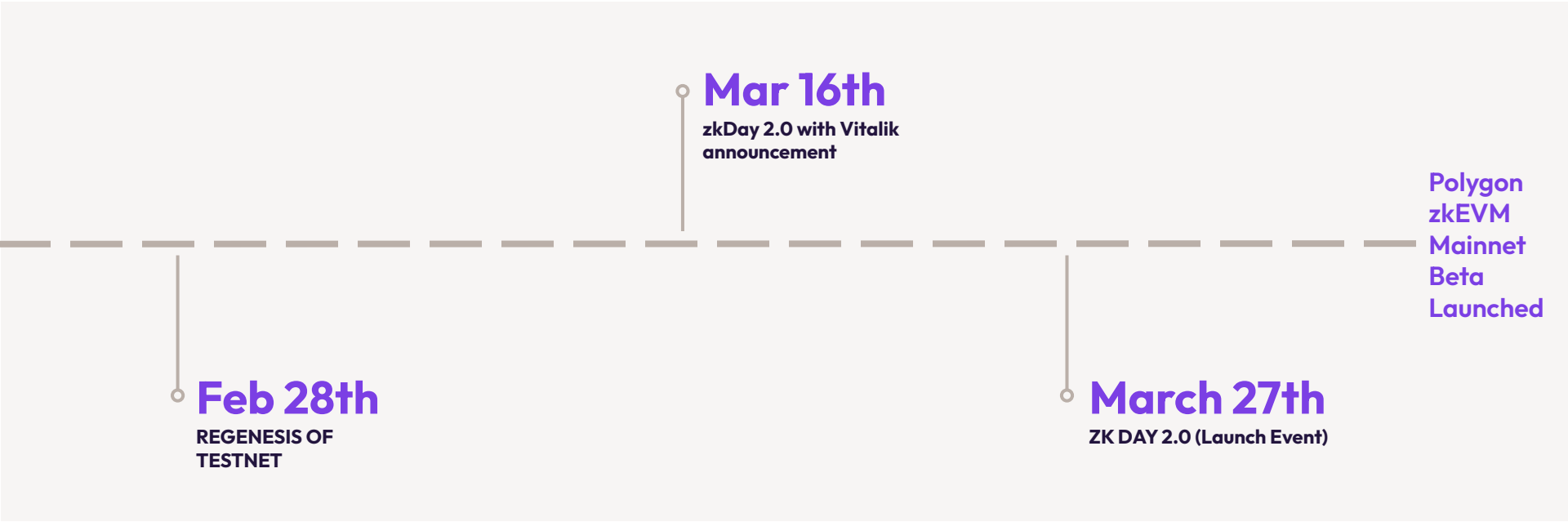
Supply Chain

Polygon zkEVM can increase transaction speed by allowing for fast and efficient tracking and verification of goods.

Healthcare

Polygon zkEVM can increase transaction speed by allowing for fast and secure sharing of medical records.

Road to Mainnet

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