S9 Copy Editing Test

Hello! Thank you for your interest in becoming an editor at Bankless Publishing. Successful copy editors are eagle-eyed and dedicated to clarity of message, ensuring vocabulary, punctuation, grammar, and structure all support the reader's understanding. In this test we mainly want you to spot errors. A few words of advice:

1. **Please make a copy of this doc before starting! If you don't do this, you will automatically fail.** Go to File > Make a copy.
2. If you haven't yet, grab a BPub tag from #role-select in Discord.
3. Pay close attention to the Editing Framework.
4. As above, please make a clean copy of this document, then edit using '**Suggesting**' mode (top right) so we can track your changes. Ensure you make the access 'Anyone with the link can edit' using the Share menu at top right.
5. Copy the link (Share menu, top right) and DM to @TREWKAT.ETH when it's finished.
6. Have fun!!

Optimism Network for Beginners

By almost any metric, Ethereum is the most widely used blockchain in the cryptoverse. Ethereum's growth underpins most Web 3.0 infrastructure, whether that's decentralized finance (DeFi), non-fungible tokens (NFTs), or governance and social tokens. For now, Ethereum is the clear victor of the blockchain wars. And yet, because of this success, users of Ethereum are suffering. The costs to transact on Ethereum's blockchain are high. Giwei, the measurement of this transaction cost, continues to be prohibitive for everyday transactions. On top of high transaction costs, the length of time it takes to include a transaction within a block continues to grow. The double-edge sword of Ethereum's high transactions costs and long inclusion times often pushes users to less decentralized and less secure blockchains.

Fortunately for Ethereum's users, many scaling solutions are emerging which may solve these twin encumbrances. Known as Layer 2 solutions (whereas Ethereum, as a settlement layer, is known as a Layer 1), these technologies seek to reduce both transaction costs and inclusion times to make utilizing Ethereum more cost-effective for regular users.These scaling solutions often utilize rollups, which permit transactions to execute outside of Layer 1. Proof of that transaction is bundled (rolled up) and settled on the Layer 1 security layer. Among Layer 2 scaling solutions; Optimistic rollups are emerging as a timely scaling technology. These rollups use Ethereum as a settlement layer but permit low transaction costs and fast inclusion times by moving execution out of the Ethereum chain. Without question, Layer-2 scaling solutions are the

future of the Ethereum ecosystem. Among the solutions at the forefront of Ethereum scaling is Optimistic Ethereum (Optimism).
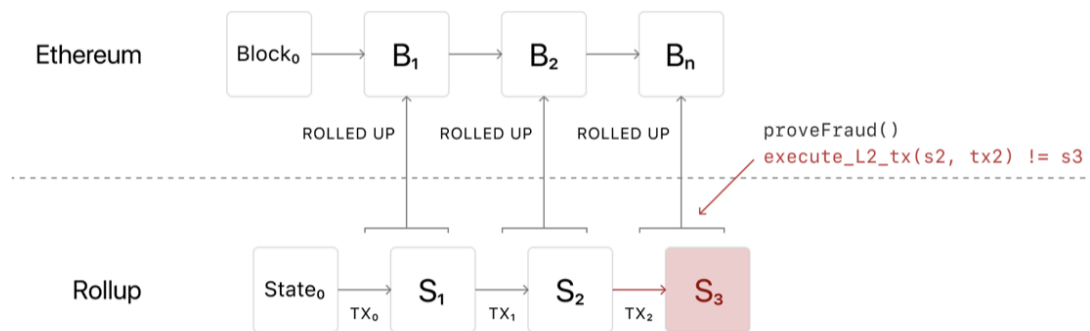
An explanation of Optimistic Rollups

Before we discuss the Optimism ecosystem, it's essential to have some understanding of how Optimistic rollups work and why they are a secure, scalable Layer 3 solution.

The Optimistic rollup is a layer that sits "on top" of the Ethereum chain. Although it's tempting to call this type of scaling solution a [side chain](), an Optimistic rollup is not a sidechain in the traditional sense because the data generated by the transactions executed on this layer are bundled and then secured by the Ethereum chain. Importantly, Optimistic rollups do not run computations on the Ethereum chain, where transactions are expensive due to the demand for blockspace. This computation-free framework is what allows optimistic rollups to scale so well — it's not unusual for these rollups to be 10x-100x more [efficient]() per transaction. This means that if a transaction on the Ethereum chain costs 225 gwei (~$150 USD at current prices) and takes 1 minute to confirm, that same transaction on a platform utilizing Optimistic rollups could cost as little at $1.25 and take under one second for inclusion. This is the power of Layer Two scaling.

Since Optimistic rollups don't compute transactions on the Ethereum chain, and (unlike other scaling solutions) will assume that each transaction is valid (hence the term optimistic), there must be sum later mechanism to ensure the transactions are legitimate. To ensure the legitimacy of transactions, Optimistic rollups use fraud proofs.

The way this works is that full transaction data is sent to Layer 2 block organizers (sequencers) at the time of the transaction. The sequencers then organize the data and post a condensed snapshot of that data to the Ethereum chain. Other sequencers then try to recreate the snapshot of the Layer 2 state. The "policemen" (validators) look for discrepancies in the various snapshots. If a discrepancy is found, the disputed Layer 2 sequence is computed on the Ethereum chain. If fraud is found, the fraudulent sequence is rolled back and the fraudulent sequencer is subject to various economic penalties. There is a seven-day challenge period for validators to flag suspect transactions. After that period, the Layer 2 state is immutable. The below diagram illustrates the fraud-proof flow below.

Ethereum

Block$_0$ → B$_1$ → B$_2$ → B$_n$

ROLLED UP   ROLLED UP   ROLLED UP

proveFraud()
execute_L2_tx(s2, tx2) != s3

Rollup

State$_0$ → S$_1$ → S$_2$ → S$_3$
TX$_0$ TX$_1$ TX$_2$

There are two main benefits to using Optimistic rollups. First, there is no loss of functionality—platforms using Optimistic rollups are fully EVM equivalent, meaning any application that runs on the Ethereum chain is also available on the Optimistic rollup layer. Second of all, since all transaction data is stored on the Ethereum chain, Optimistic rollups inherent the security and decentralization of the Ethereum chain.

This decentralized framework allows users to withdraw their funds back to Layer 1 even during downtime. The downside of the fraud-proof mechanism, however, is that users can't remove assets from Layer 2 during the seven-day challenge period, at least without using third-party protocols. In practice, this means it takes a week for user's assets to be accessible, but for many user's the withdrawal time is a small burden given the efficiency gains, further, as discussed below, 3rd-party bridges allow Optimism users (and Layer 2 users in general to avoid the seven-day withdrawal period altogether, so it's easy to get all of the benefits of Layer 1 without the annoyance of delayed withdrawal times.

Welcome to the Power of Layer 2

Given that Optimism is a relative newcomer, the platform's options are at present limited to decentralized exchanges and trading and pooling protocols. Since Optimism recently became fully EVM equivalent we can expect many more protocols to deploy there very soon. However you can start now by swapping tokens on UniSwap or 1inch free from the worry of expensive transaction fees. For those of us accustomed to using only Layer 1, this freedom is akin to pure joy. If you are interested in synthetic assets, navigate to Synthetix. Perhaps the most intriguing protocol currently available on Optimism is Lyra. Lyra is an automated market maker (AMM) natively built for Optimism. Allowing users to trade options or to provide liquidity to a variety of pools to help stabilize option trading. Users who choose to provide liquidity enter into incentivized pools and earn both yields and rewards. Rewards are in the form of Lyra's native token, LYRA.The platform is clean, simple to use, yet powerful. Lyra is worth a close look

An Optimistic Future

The issues which arise from transacting directly on Ethereum are well documented and [oft-lamented](), high transaction costs and slow inclusion times. The Layer 1 network is just too busy. Ethereum is burdened by its own success. And while many of us can look past slow inclusion times, high transaction fees are too disincentivizing for most people, for most transactions. Layer 2 solutions have emerged to solve these problems, and Optimism is one of the most promising Layer 2 technologies. Optimism is not just a platform that relies on the Optimistic rollup; it's also a metaphor for the power of technology to solve existing problems and to show us new ways of transacting, new ways of living. And that should make us all optimistic.