# The OP Stack: What's New?

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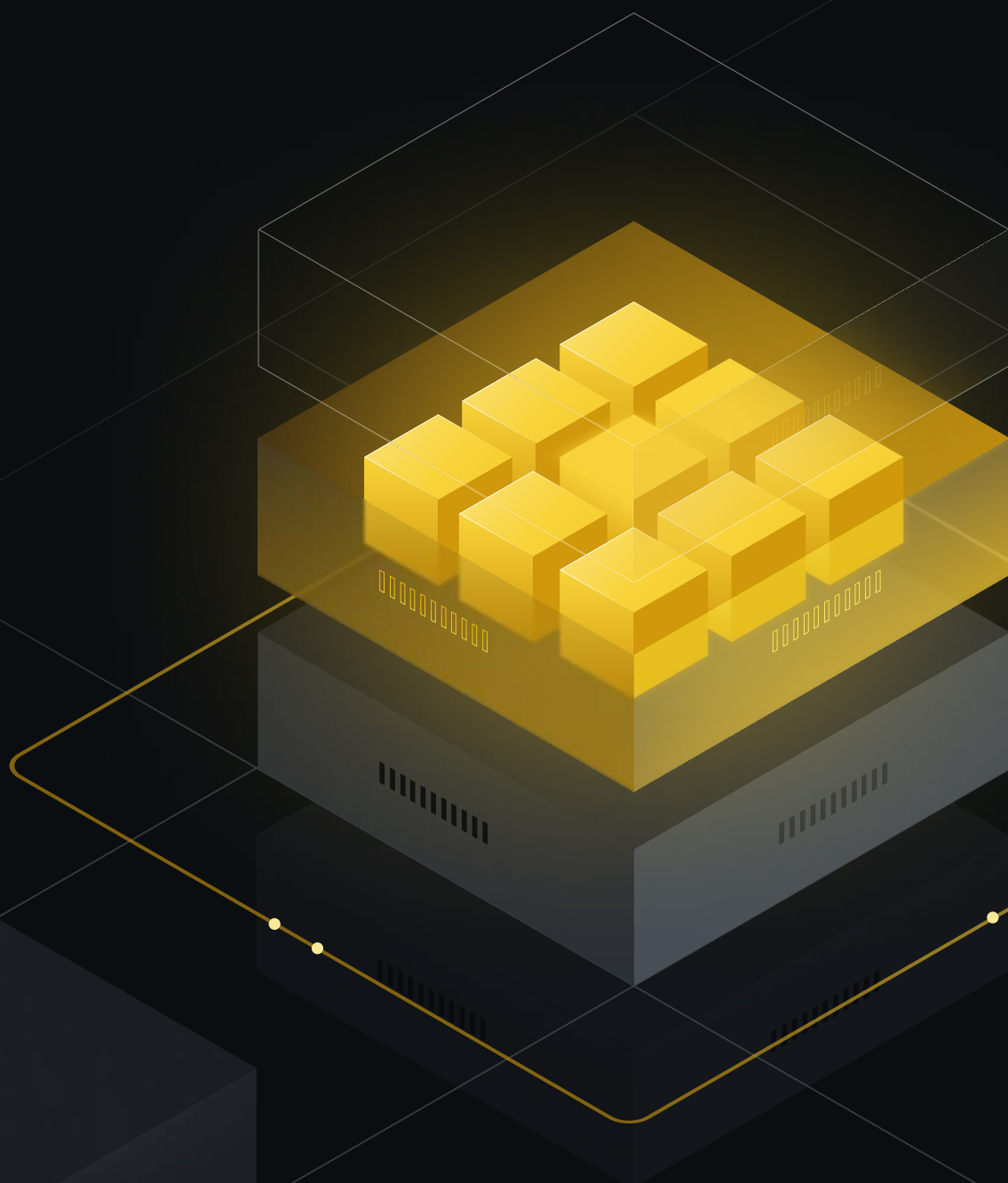
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# **Key Takeaways**

**1**

❖ Layer-2 ("L2") adoption keeps rising and activity has hit an all-time high. A number of new L2 rollups are building their software using the OP Stack.

❖ The OP Stack is an open-source software development stack that powers OP Mainnet and can be used to create new L2s. It consists of a number of different modules that can be customized to create tailored L2s.

❖ Optimism envisions a future with a decentralized network of L2s that share security, a communication layer, and are all built using the OP Stack. They refer to this as the Superchain.

❖ Base is one of the most popular OP Stack L2s that have recently been released. A glance at the metrics show us that Base's cumulative unique addresses and transactions are significantly higher than other OP Stack chains (excluding OP Mainnet).

❖ Zora Network (an NFT-focused L2) and the Gitcoin-backed Public Goods Network (a public goods-focused general-purpose L2) are also both live on mainnet.

❖ Mode (general-purpose), DeBank Chain (SocialFi), and Ancient8 Chain (gaming) are OP Stack chains that are currently deployed in testnet.

❖ Conduit's rollup-as-a-service ("RaaS") platform has been an integral part of this growing narrative, having partnered with Zora, Public Goods Network, Mode, and Ancient8, among others. AltLayer's recent support for the OP Stack is also likely to further contribute in the coming months.

# ⑵ Introduction

The era of Layer-2 ("L2") rollups is upon us and activity on Ethereum's L2s is at an all-time high.

**Figure 1: The average transactions per second ("TPS") of L2s has exceeded that of Ethereum since late 2022.**
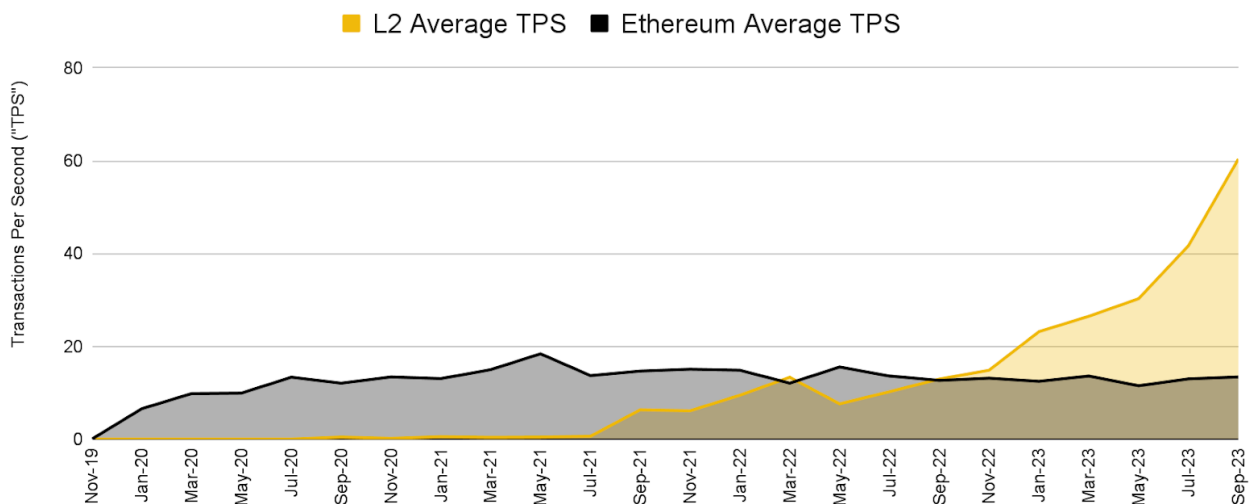


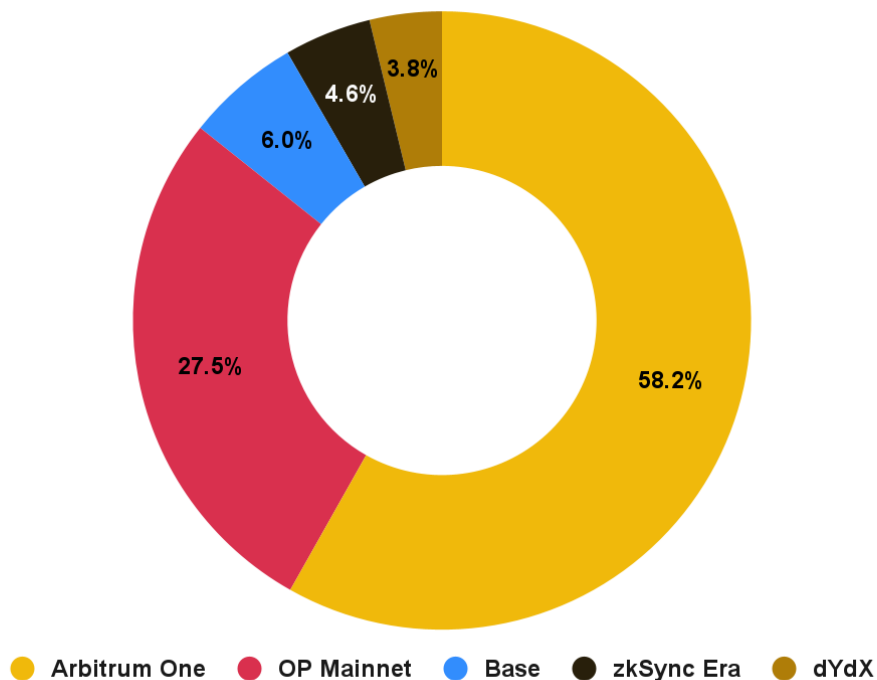Source: l2beat.com, Binance Research, as of September 16, 2023

With the latest wave of new L2 announcements, we note that many of them have been built using **Optimism's open-source software development stack, the OP Stack**. The OP Stack powers major Ethereum L2, OP Mainnet, as well as new entrants like Base and Zora Network. Optimism envisions a future where these rollups, alongside hundreds and thousands of others, will join together to create a **decentralized network of L2 chains, i.e., the Superchain**.

In this report, we take a closer look at the OP Stack and the Superchain Thesis. We then explore the growing OP Stack ecosystem, including Base, Zora Network, DeBank Chain, and others. We also take a look at the infrastructure solutions that are making this wave of OP Stack chains accessible to developers and builders of all backgrounds.

## 3   A Refresher on Optimism

Optimism is the company behind OP Mainnet, an Ethereum Virtual Machine ("EVM") -equivalent optimistic rollup that has been live since 2021 and is one of the leading Ethereum L2 solutions. As of the time of writing this report, OP Mainnet has over US$2.6B in total value locked ("TVL") and commands the second largest market capitalization among all Ethereum L2 solutions, with over 25% in market share[1].

**Figure 2: OP Mainnet is a leading Ethereum L2 solution.**



Source: l2beat.com, Binance Research, as of September 19, 2023

In October 2022, Optimism introduced the **OP Stack**, which they described as a "**modular, open-source blueprint for highly scalable, highly interoperable blockchains of all kinds**"[2]. This marked an evolution in their design and vision for the world of Ethereum scalability beyond just running their optimistic rollup solution. It also introduced us to the idea of the so-called **Superchain**, which refers to a group of highly integrated and unified L2 blockchains built on the OP Stack. The next major development in the new Optimism vision was **the migration of their flagship L2 rollup to Bedrock**, which was the first official release of the OP Stack and brought numerous operational and user improvements to their product.

To learn more about Bedrock, please see our recent report, "**The Layer-2 Evolution: Superchains, L3s, and More**".

**Figure 3: An abbreviated timeline of Optimism's journey thus far.**
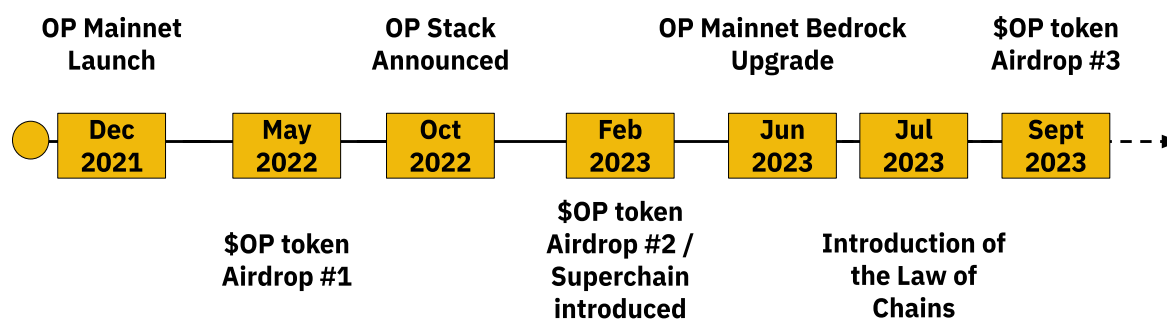


Source: Optimism website, Binance Research

## The OP Stack

The **OP Stack is a standardized, shared, and open-source development stack** (i.e., a set of software) that powers OP Mainnet. It consists of **various software components** (i.e., modules or libraries of code) that together form Optimism's L2 rollup and can be used to create a network of shared, interoperable, and coordinated sets of L2 blockchains. It is important to note that the **OP Stack is an evolving concept** that will grow as Optimism itself grows. Essentially, the OP Stack aims to simplify the creation of L2 blockchains and can be considered a **"build-an-L2" supermarket**.

> *"Essentially, the OP Stack aims to simplify the creation of L2 blockchains and can be considered a "build-an-L2" supermarket."*

The OP Stack **consists of a number of different conceptual layers with various "modules"[3] that fit inside each layer** (some of which are in development or proposed). For example, the Data Availability ("DA") layer defines where the raw inputs to an OP Stack chain are published. The most widely used DA module for the OP Stack is the Ethereum DA module, which the OP Mainnet rollup uses. Of note, Celestia, the modular blockchain network, has developed an alternative DA layer[4] specifically for the OP Stack. This is currently in beta.

The other layers include the Sequencing Layer, the Derivation Layer, the Execution Layer, the Settlement Layer, and the Governance Layer. For a more detailed description of each individual layer, please see our recent report, "**The Layer-2 Evolution: Superchains, L3s, and More**".

The important thing to remember is that **builders can easily modify existing modules or create new ones to tailor to their specific needs**. The **OP Stack essentially deconstructs all of the different components that go into building an L2 and packages them as**

**separate modules**. Builders can then combine the most suitable modules to create their own L2. Eventually, Optimism foresees an incoming explosion of highly compatible L2s, which they refer to as **OP Chains**. They believe these chains will eventually bring forth the **Superchain** (more explained below).

Benefits of the OP Stack

Optimism has always had a strong focus on alignment with Ethereum, and the **OP Stack is, therefore, an EVM-equivalent rollup development kit**. This comes with a number of key benefits that will be crucial in helping them realize a potential Superchain future.

❖ **Extensibility:** OP Stack code is designed with the view that other builders will want to use and build on top of it. As such, their **code is open-source and generally modular so that other developers can easily build on it**. This means that Ethereum Improvement Proposals ("EIPs") and future upgrades should be simple to implement.

❖ **Simplicity:** Optimism builds with the philosophy that complex code does not scale. They strive to **make their code as simple as possible and prefer to reuse existing code that has been battle-tested**. This vision is why they chose to use a Geth fork as OP Stacks' default execution client[5] (which has been tested on Ethereum for years). Generally, the simpler the code, the less vulnerable it is to potential bugs and attacks.

❖ **Familiarity:** Existing Ethereum developers should find it relatively easy to build on the OP Stack, given their alignment with Ethereum and its code.

❖ **Client Diversity:** Multiple client implementations are possible across the OP Stack. This diversity brings liveness and safety benefits. We have already seen the **mainnet launch of OP-Erigon**, an alternative execution client for the OP Stack, and the **announcement of Magi**, an alternative OP Stack rollup client.

## The Superchain Thesis

Optimism's vision for the rollup-centric future involves upgrading its ecosystem to the Superchain. **The Superchain is envisioned as a decentralized network of L2 chains (called OP Chains) that share security, a communication layer, and an open-source technology stack (the OP Stack)**. These chains will be standardized and intended to be used as interchangeable resources, with the goal of **supercharging chain interoperability**. This standardization will enable builders to create applications that target the Superchain as a whole rather than just the underlying chain the app runs on. It is important to note that the Superchain is currently just a concept and very much a work in progress. In fact, the Optimism team believes it to be a "multi-year (if not decade) journey"[6].

**Figure 4: Visual representation of the Superchain.**
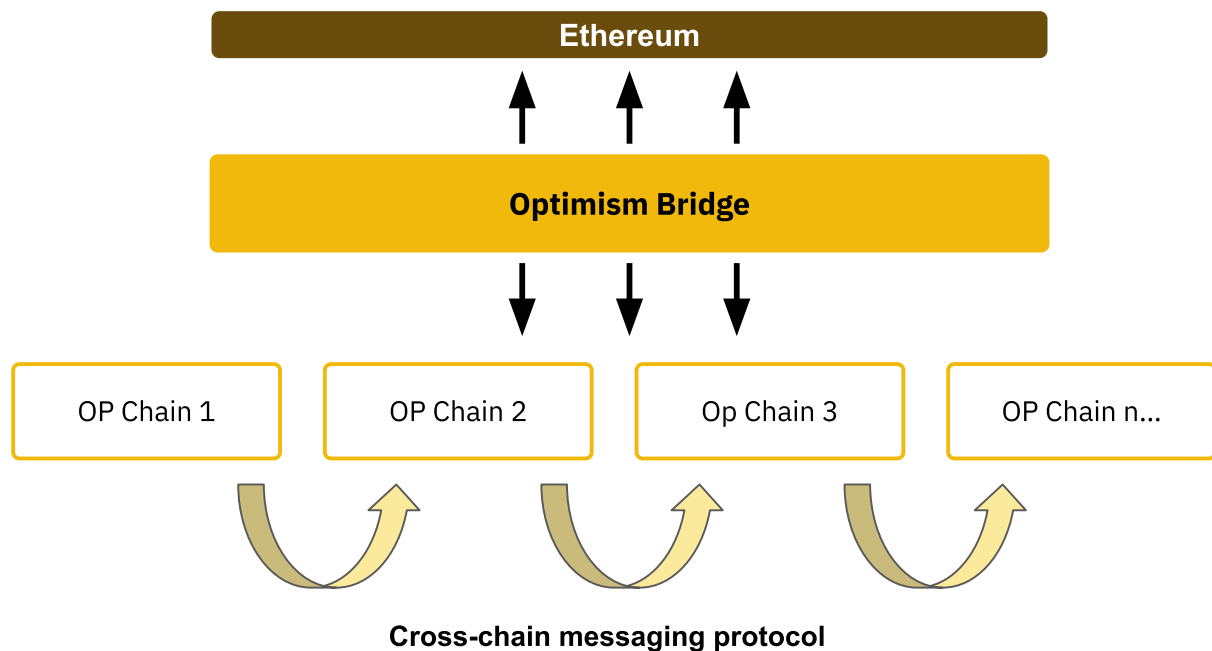


Source: Optimism website, Binance Research

What will the Superchain unlock?

- ❖ **Hardened and secure code base:** As the number of chains grows, each sharing and contributing to the modular and standardized codebase underpinning them, it hardens the system. More iterations and development on the same standardized code will help simplify it, making it **more resistant to attacks and bugs**. Given the prevalence of hacks and security breaches in the system, this will be a key benefit of a structure like the Superchain.
- ❖ **Atomic cross-chain composability**[7]**:** This refers to seamless transactions between different OP chains simultaneously without any need for bridging or intermediaries. Despite the Superchain being made up of multiple chains, the end user gets the experience of using a single, unified chain. In practice, this can lead to **improvements such as universal block explorers** (as opposed to different explorers for each chain like we currently have) and the **removal of network switching when using apps** (e.g., no dropdown menu inside MetaMask).
- ❖ **Common Ethereum infrastructure:** This makes the job of developers significantly easier and allows existing Ethereum developers to seamlessly switch over to building OP Chains.

OP Stack Hacks

Chains that **swap out standardized modules with experimental alternatives are considered "Hacks"** in the OP world. These hacks create chains that aren't exactly OP Stack, possibly leading to security vulnerabilities and **ineligibility to join the Superchain**.

However, they provide a useful avenue for developers to experiment with and create novel apps. OPCraft[8] is one such experiment that runs a modified EVM at the execution layer to create a fully on-chain crafting-based 3D voxel game. The Optimistic Game Boy[9] was another example where developers swapped out the execution engine for a Game Boy emulator.

## Optimism Collective, Retroactive Public Goods Funding, & More

Optimism describes the Optimism Collective as a "**band of companies, communities, and citizens working together to reward public goods and build a sustainable future for Ethereum**"[10]. It is an essential part of the governance model of Optimism and is bound to the axiom of "**impact=profit**," which is a core part of their vision. The principle behind the axiom is that a positive impact on the collective should be rewarded with profit to the individual.

More specifically, the **Optimism Collective seeks to dispel the idea that public goods cannot be profitable.** Often, builders are discouraged from working on public goods because they are difficult to collect fees on. **Public goods are goods or services that are non-excludable and non-rivalrous, i.e., you cannot exclude others from using them, nor does one person's usage degrade another's.** These goods are often underfunded and many are reluctant to work on them as there is often limited profit potential for the builders themselves (this is why governments, rather than private businesses, often provide public goods in our daily lives, e.g., roads, public parks, etc.). Optimism seeks to change this and accelerate the development of public goods for Optimism and Ethereum by using a model to reward those who create or sustain public goods, namely, **retroactive public goods funding ("RetroPGF")**[11].

**Figure 5: The RetroPGF virtuous cycle**



Source: Optimism website, Binance Research

The core idea behind RetroPGF is that it is easier to see and agree on what was useful and who built it, rather than what might be useful and which team will be the best at building it.

The **possibility of a retroactive payment is also encouraging for investors to initially fund public goods development,** similar to how the possibility of an initial public offering ("IPO") encourages investors to fund startups. As of the time of writing, two rounds of RetroPGF have been completed, with the third currently in progress. Round 1 allocated US$1M to 58 different projects, while Round 2 allocated 10M $OP tokens to 195 unique projects. Round 3 is set to allocate 30M $OP tokens and will conclude later this year.

*"The core idea behind retroactive public goods funding is that it is easier to see and agree on what was useful and who built it, rather than what might be useful and which team will be the best at building it."*

Optimism's **governance is done through a collaboration between the Optimism Foundation and the Optimism Collective**. The Optimism Foundation serves as a steward of the Collective and operates to support its establishment, the development of the ecosystem and the underlying technology.

The **Collective itself is governed co-equally by the Citizens' House and the Token House**[12]. The Token House was established by the first $OP token airdrop and consists of token holders who can vote on various types of proposals, including governance grants, protocol upgrades, etc. The Citizens' House consists of badge holders (determined by the Optimism Foundation) and, as for now, is solely responsible for voting on the allocation of RetroPGF. This role is expected to evolve over time.

Law of Chains

The Law of Chains ("LoC") is a **governing document that creates guiding principles for Optimism's Governance and the Superchain**. Optimism Governance moves from governing a single chain to governing a standard shared by many chains, and the LoC provides a framework for effective and neutral governance.

The LoC sets out categories of stakeholders across the Superchain and then defines the protections and expectations that should apply to those participants. The LoC will only apply to OP Stack chains that opt-in to join the Superchain and will aim to enable further interoperability.

The LoC is a social contract, not a legal one. V0 is currently open for community discussion [here](#).

# 4 The Growing OP Stack Ecosystem

Following the Bedrock release in June 2023, we have seen a number of OP Stack-based rollups get announced. In this section, we take a closer look at some of the most notable projects in that list. We also go over a couple of the major infrastructure projects that are helping this process along.

Having a quick look at the metrics for the top OP Stack chains below, we note that **Base's numbers are quite high relative to other competitors**. In fact, **Base's cumulative unique address number is even higher than that of OP Mainnet.** Base's Onchain Summer event and the fact that it has integrations with Coinbase and access to its user base are likely to be some of the key reasons for these relatively high numbers.

Note that only OP Mainnet, Base, Zora Network, and Public Goods Network are in mainnet, while the remaining three projects we cover are still in the testnet stage.

**Figure 6: Key metrics for the most notable OP Stack chains.**

| Logo | Name | Rollup type | Cumulative Transactions (M) | Cumulative Unique Addresses (M) |
|------|------|-------------|-----------------------------|----------------------------------|
| OP | OP Mainnet | General-Purpose | 158.7 | 12.7 |
| | Base | General-Purpose | 34.3 | 20.5 |
| | Zora Network | NFT | 8.4 | 1.2 |
| | Public Goods Network | General-Purpose / Public Goods | 3.1 | 0.01 |
| M | Mode (Testnet) | General Purpose | 3.9 | 0.1 |
| DB | DeBank Chain (Testnet) | SocialFi | 2.1 | 0.05 |
| | Ancient8 Chain (Testnet) | Gaming | 2.7 | 0.01 |

# Notable Projects

## Base

Base was one of the first OP Stack L2s to be announced (originally in February 2023) and launched their public mainnet on August 9. Base is a **general-purpose L2** and, after OP Mainnet, is the most popular OP Stack chain.

- ❖ **Onchain Summer:**
  - ➢ Onchain Summer was a **month-long launch event** unveiled alongside the launch of Base and featured **NFT mints** with a number of different partners, including Coca-Cola[13].

  - ➢ The event saw **over 700K mints from over 268K unique wallets** across 75 unique collections[14].

- ❖ **Incubated by Coinbase:**
  - ➢ Given Base's association with Coinbase, Base has a number of integrations with the exchange. This provides Base the advantage of quick fiat on-ramps and access to the users of the Coinbase.

  - ➢ Base launched with 100+ dApps and has continued to see growth in its ecosystem[15].

- ❖ **friend.tech:**
  - ➢ friend.tech is a **SocialFi platform** on Base that gained significant traction through the course of August. friend.tech is a Twitter (or X)-linked mobile app that **allows users to trade tokenized "Keys" of other users' profiles (referred to as Subjects)**. Owning a Key grants the user access to exclusive content and private chat rooms with the Subject.

  - ➢ Since its launch on August 10, friend.tech has generated **over US$23M in fees**[16], across **6.5M+ transactions**[17]. A 10% fee applies to all trades, 5% of which goes to the Subject, while the remaining 5% goes to the protocol.

  - ➢ The dApp is **currently in beta**, and has not yet disclosed a clear roadmap, with a full launch likely to be a few months away.

  - ➢ friend.tech has disclosed a Paradigm-led seed round[18]. They have also announced a program to reward beta testers with 100M points over a six-month period.

  - ➢ With transaction volumes and overall hype having see-sawed so far, a focus on attracting non-crypto/web2 personalities is likely to be key for growth going forward.

**Figure 7: After the initial buzz in mid-August, friend.tech's daily transactions slowed down significantly, before seeing more interest in the last couple of weeks.**
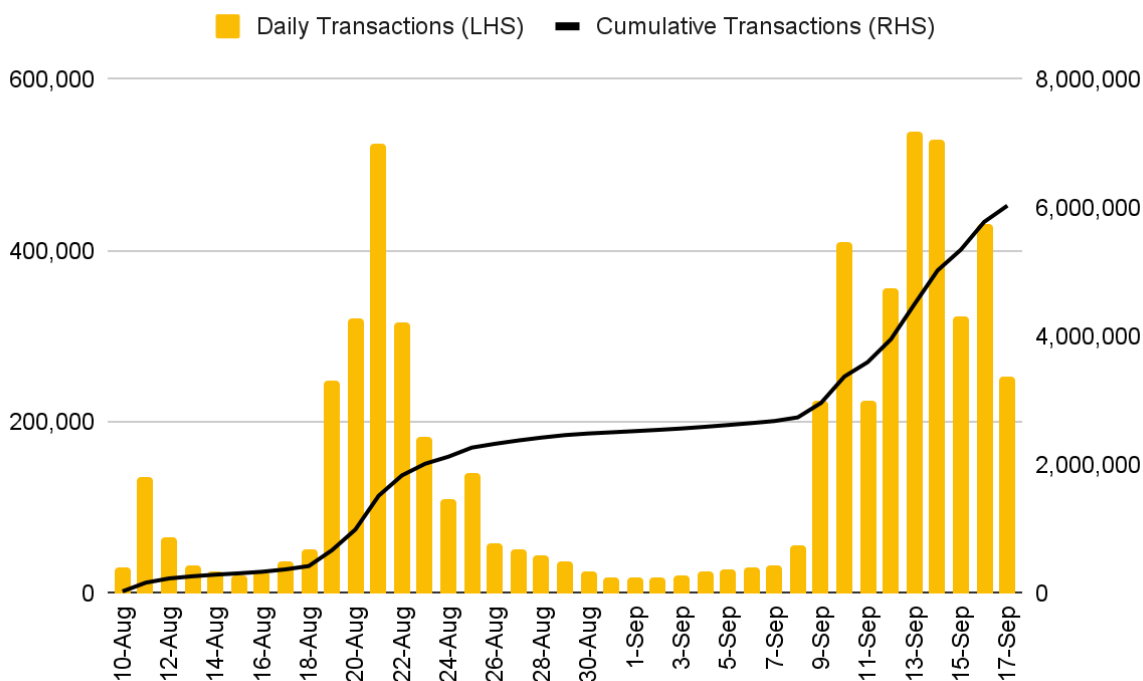


Source: Dune Analytics (@cryptokoryo), Binance Research, as of September 17, 2023

❖ **Base Ecosystem Fund:**

➢ The Base Ecosystem Fund is led by Coinbase Ventures and aims to invest in early stage (pre-seed to seed) projects building on Base.

➢ They received over 800 applications for their initial round and recently announced their first six investments[19].

➢ Projects that received investment included DeFi, fiat on/off-ramp, and creator platforms.

❖ **Pessimism:**

➢ The Base team recently announced the release of Pessimism, an open-source **monitoring system to enhance the security of OP Stack and other EVM-compatible chains.**

➢ Monitoring involves the collection and analysis of data to assess the overall security of a blockchain. This is critical to identifying and mitigating security risks and responding to incidents in a time-sensitive manner.

➢ Pessimism can detect protocol threats specific to the OP Stack, as well as those applicable to general EVM-compatible chains. The team's **next main focus will be on providing comprehensive coverage for the native OP**

**Stack bridge** (the bridge used to transfer funds between Ethereum and the L2s).

**Figure 8: Since launching mainnet in early August, Base's user metrics saw significant growth across September.**
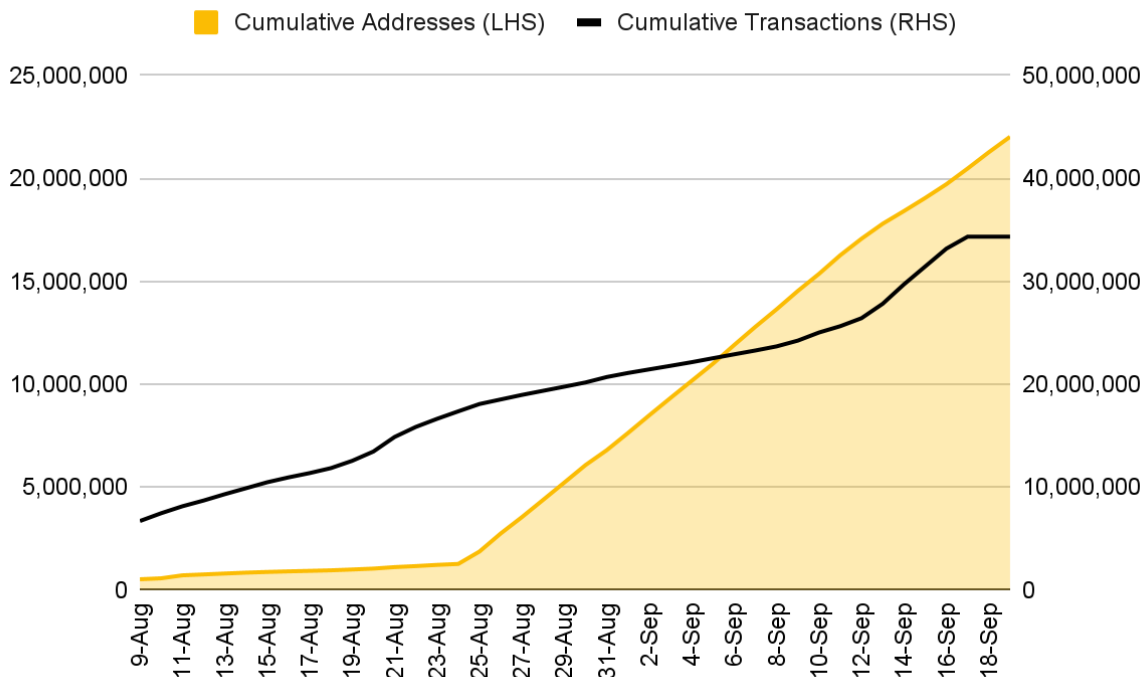


Source: Base block explorer, Binance Research, as of September 19, 2023

- ❖ **Partnership with Optimism Collective:**
  - ➢ Given the collaboration between Optimism and Base (which has also involved **Base joining as the second core development team for the OP Stack**), they have put in place an economic agreement[20].

  - ➢ Base is set to **contribute either 2.5% of its total sequencer revenue or 15% of its net profits, whichever is greater, to the Optimism Collective**. In return, **Base will have the opportunity to earn up to 118 million $OP tokens** (~US$164 million) over the next six years.

  - ➢ While it has not been explicitly announced, **many have assumed that other OP Stack Chains have a similar revenue share agreement with the Optimism Collective**. Given the focus on RetroPGF and the idea of contributing to the collective infrastructure of the Superchain, it would be fair to think that some type of revenue share agreement is in place between the Collective and other OP Stack chains.

# Zora Network

Zora is a decentralized, permissionless protocol that allows anyone to **buy, sell, and create NFTs**. Zora Network is its very own OP Stack L2 designed to help support its users and minimize costs on its platform. Zora Network describes itself as an **L2 that puts NFTs first** (as opposed to many L2s that are optimized for decentralized finance ("DeFi")). Zora Network launched its **mainnet on June 21**.

❖ **Overview**

➢ Minting an NFT costs **less than US$0.50**, with many **free mints available** on their platform.

➢ The time between blocks is 12 seconds for Ethereum, while it is only 2 seconds for the OP Stack[21] (following the Bedrock release). This means that **transactions on Zora Network are confirmed in seconds**, providing a better user experience for NFT traders.

❖ **Key Features**

➢ **Protocol Rewards**: creators and developers can now earn on-chain rewards. The mint fee that Zora charges collectors to mint on their platform (0.000777 $ETH) is now split between Zora, creators, and developers. Users can now **get rewards for every mint of their NFT collection and for referring others to mint or create their own collections.** The first minter of each NFT collection can also get a small reward. Details provided [here](#).

➢ Zora provides **support for both ERC-721 and ERC-1155 token standards**. **ERC-721 is the most well-known and popular NFT standard**, with each ERC-721 token being unique and distinct. This makes ERC-721 tokens ideal for single-edition and/or unique 1-of-1 NFT collections, e.g., each CryptoPunk has distinct traits and rarity and is a unique ERC-721 token.

➢ **ERC-1155** is an alternative token standard that provides more **flexibility and versatility**. ERC-1155 tokens seek to incorporate the best of the non-fungible ERC-721 standard and the fungible ERC-20 standard. These tokens **can represent fungible, semi-fungible, and non-fungible tokens**, making them **suitable to represent a wide variety of assets**. They can also facilitate **batch transfers** (whereas ERC-721 tokens have to be transferred one at a time), which reduces network congestion and lowers gas costs. These features, alongside others, make ERC-1155 tokens more suitable for issuing NFTs of related pieces of work, e.g., a music album, the cover art, and the lyrics (a combination of fungible, and non-fungible assets).

❖ **Funding:**
  ➢ Zora has **raised a total of US$60M** across three funding rounds[22], including a US$50M round led by Haun Ventures in 2022, which valued the company at US$600M[23].

**Figure 9: Zora Network's user metrics have been experiencing steady growth since late July.**
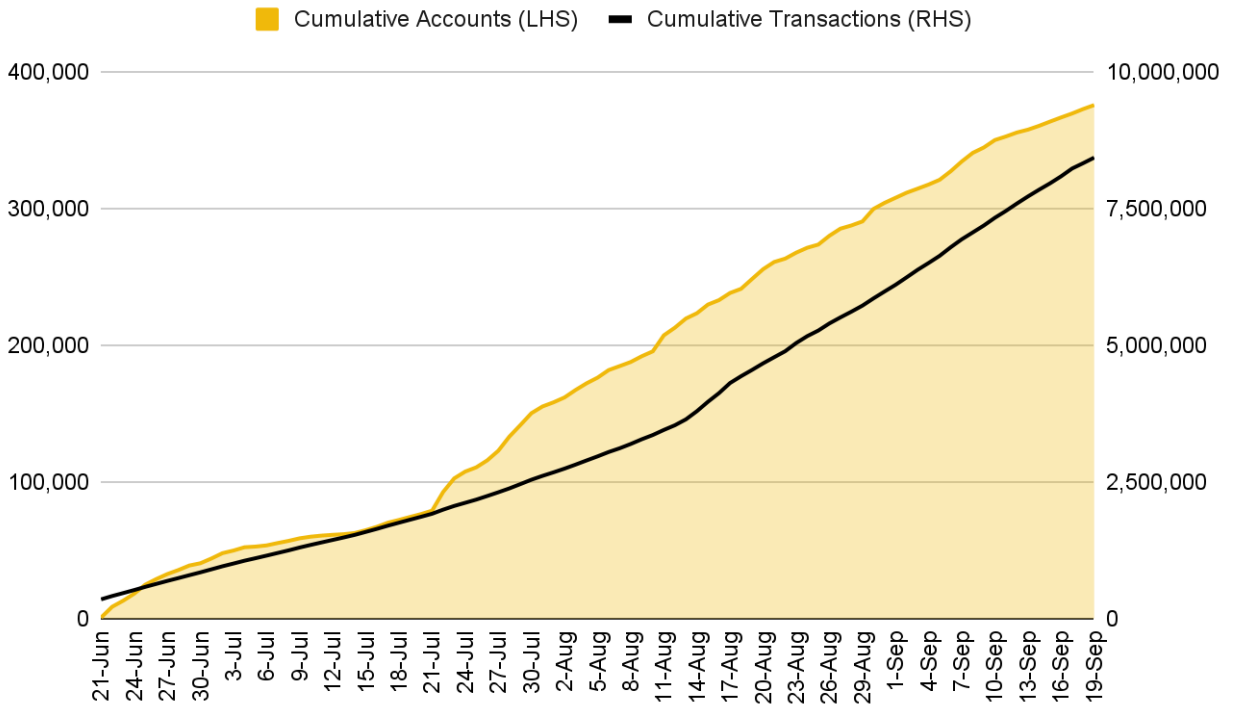


Source: Zora Network block explorer, Binance Research, as of September 19, 2023

# Public Goods Network

Public Goods Network ("PGN") is an L2 **designed specifically to support public goods**. Public goods, as previously [discussed](), are goods or services that are non-excludable and non-rivalrous, i.e., you cannot exclude others from using them, nor does one person's usage degrade another's. In our daily lives, examples of public goods are public parks, libraries, and road infrastructure. In the digital world, we can think of public goods as open-source software, permissionless data & AI models, open standards, etc.

PGN development has been **led by Gitcoin** and SuperModular, with support from a number of public goods advocates, including Public Nouns, Clr.fund, Hypercerts, etc. These parties together form the Public Goods Alliance, which is the governing and organizing body behind PGN.

Following a testnet release in early July, **PGN released its mainnet on July 25**. Interestingly, Gitcoin has stated that this is a **minimum two-year experiment**[24].

- ❖ **How does it work?**
  - ➢ PGN's documentation states that the "**vast majority of net sequencer fees will go to public goods projects**"[25]. Thus, the more activity that PGN is able to generate on its L2, the more funds will accrue for public goods projects.

  - ➢ PGN aims to **attract all types of dApps to deploy on its L2**, not just public goods-related projects. For example, the Zora NFT marketplace is one of the protocols that are live on PGN[26].

  - ➢ Six months after the network launches, i.e., January 2024, PGN will assess the fees they have generated and allocate them to public goods projects based on the cumulative six months of data. More details are expected to be released in the coming weeks.

  - ➢ PGN also plans on utilizing **Contract Secured Revenue** ("CSR") after October 2023. CSR will allow developers to claim a percentage of the transaction fees that their contracts generate and will support them in creating sustainable business models.

  - ➢ CSR might become a bigger part of the broader L2 landscape, noting that there is even a **draft Ethereum Improvement Proposal ("EIP") that [proposes]() the introduction of CSR on EVM-based L2s.**

❖ **Gitcoin**

➢ Gitcoin has been active in public goods markets since 2017, having distributed over US$50M in funding to support relevant projects.

➢ Their **Gitcoin Grants Program**, launched in 2019 and run every quarter, is one of their most popular initiatives. Gitcoin Grants implements the **Quadratic Funding ("QF") crowdfunding distribution mechanism**, first introduced by Vitalik Buterin in 2018[27]. During a QF round, the community contributes to projects that they think should be funded, and a matching partner offers funds to match the community's contributions (not necessarily 1:1). The likes of 1inch, Coin Center, and Optimism have previously raised[28] funds through Gitcoin Grants.

**Figure 10: PGN's user metric saw steady growth in August. Although new accounts have slowed down in September, transactions continue to climb.**
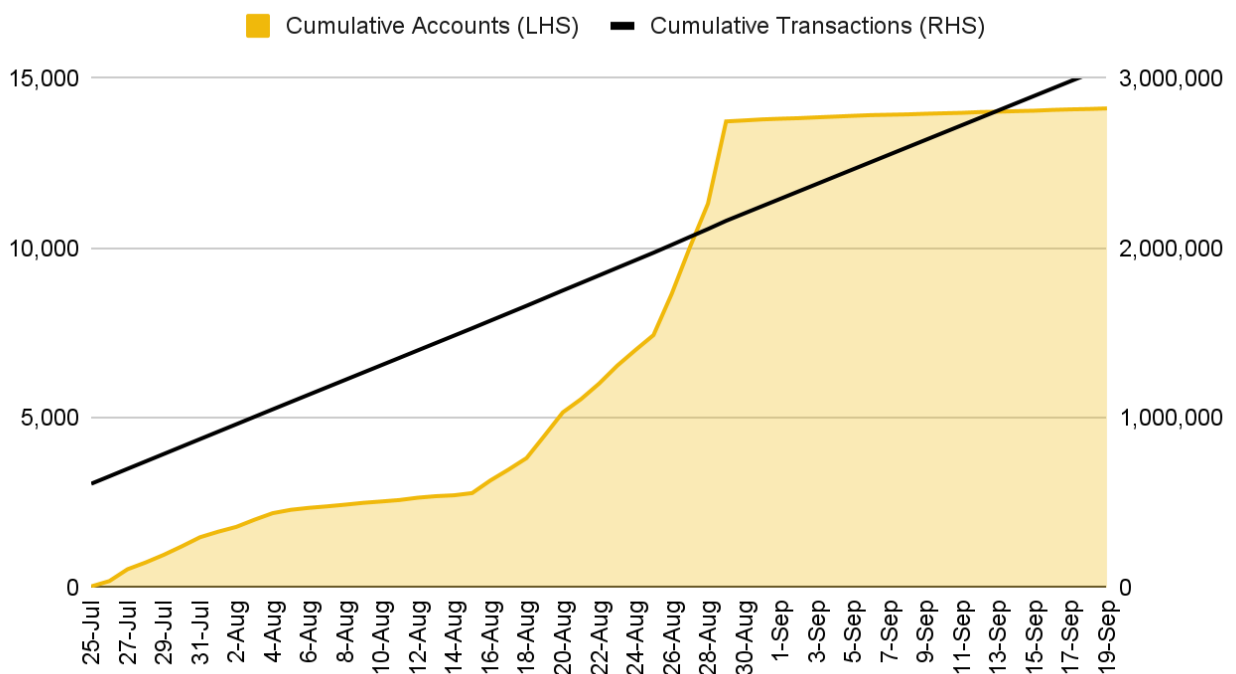


Source: PGN block explorer, Binance Research, as of September 19, 2023

# Mode

Mode describes itself as **"the L2 designed for hyper-growth"**[29]. The team believes that this is best done by directly rewarding users and developers for their contributions and empowering them to build world-class applications and scale the ecosystem. **Revenue-sharing incentives** are a key part of this equation.

Running an L2 involves operating a sequencer, which orders the L2 transactions, processes them, and sends them to the parent L1. Users pay transaction fees to the L2 for this process, which typically go to the DAO or the company running the sequencer as revenue (after paying the gas fees for sending data to the L1). **Mode, however, wants to distribute these sequencing fees to the developers and users that grow the network.**

To learn more about sequencers and how L2 rollups operate, please check out our recent report, [Ethereum's Rollups are Centralized. A Look Into Decentralized Sequencers](#).

- ❖ **Contract Secured Revenue ("CSR"):**
    - ➢ **Developers** building on Mode will **earn a proportion of Mode's sequencer revenue, based on the transaction fees they generate from the contracts they deploy**. These will be paid in $ETH and claimable every two weeks.

    - ➢ Mode released V0.1 of their **Sequencer Fee Sharing ("SFS") module**[30] on September 12. In SFS V0.1 they are using an off-chain module to determine fee sharing and distributions. In V1, which is expected to be released in Q4 2023, they will use smart contracts to create a fully on-chain process.

    - ➢ Developers can mint an NFT when registering their smart contract with Mode, and any sequencer fee rewards will accrue to this NFT. Multiple smart contracts can be assigned to accrue rewards to the same NFT.

    - ➢ The goal is to **make building on Mode predictable and scalable**, which is great for developers who want to create sustainable Web3 business models.

    - ➢ In this way, developers get directly rewarded for their efforts and have an active stake in helping grow the network.

*"The goal is to make building on Mode predictable and scalable, which is great for developers who want to create sustainable Web3 business models. "*

❖ **Referral Revenue:**
  ➢ Any **user, developer, or protocol that refers new parties to Mode, can also earn a share of transaction fee revenue**. This further incentivizes organic growth of the chain.

❖ **Developer Support:**
  ➢ Mode seeks to support developers to grow their applications and will look to implement **integrated growth tooling** within their protocol. They are **basing this strategy on notable web2 e-commerce company, Shopify**, which is well known for having helped some of their users grow multi-million dollar businesses through their platform.

  ➢ Mode is taking a platform approach to their ecosystem building and is working on a **developer dashboard**. This dashboard will provide **key metrics and insights,** e.g., the contracts you have deployed, what transaction fees they are generating, and what % of fees you can receive via CSR. Mode will also **provide grants from US$10K-100K**, as well as additional generalized support for launching on Mode or across the Superchain.

  ➢ Mode will also **integrate a number of external tools and services into their dashboard** to help developers scale more easily. Example integrations include **Spindl (Web3 analytics), Guild (community management), Galxe (community building), Addressable (Web3 advertising), and more.** The tools will give developers access to distribution channels to build sustainable businesses, while the dashboard will provide insights to help resource allocation for efficient scaling.

❖ **Mode DAO:**
  ➢ Mode takes an approach of governance minimization, with the DAO only expected to vote on a few key matters.

  ➢ One of these would be determining how much sequencer fee revenue goes towards users (for network referrals), versus how much goes towards developers.

**Figure 11: Mode is nearing 4M transactions and has over 36K unique accounts.**
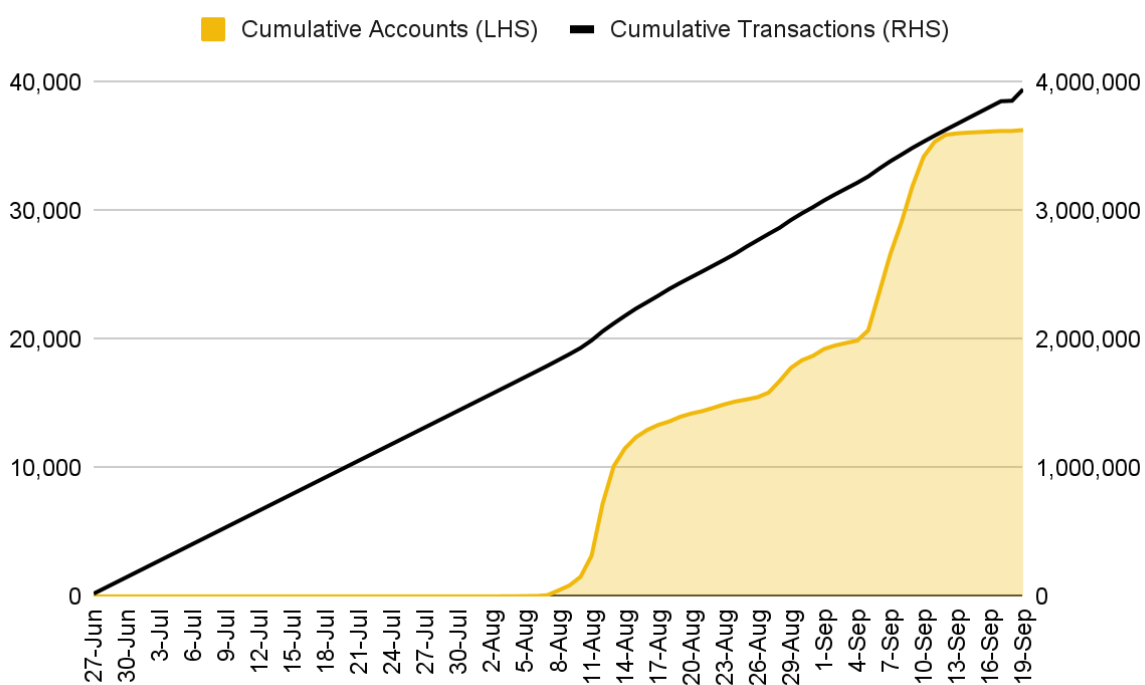


Source: Mode block explorer, Binance Research, as of September 19, 2023

❖ **Next steps:**

➢ Mode is currently in public testnet, which is expected to continue until the end of September. Mainnet is expected to launch in Q4 2023.
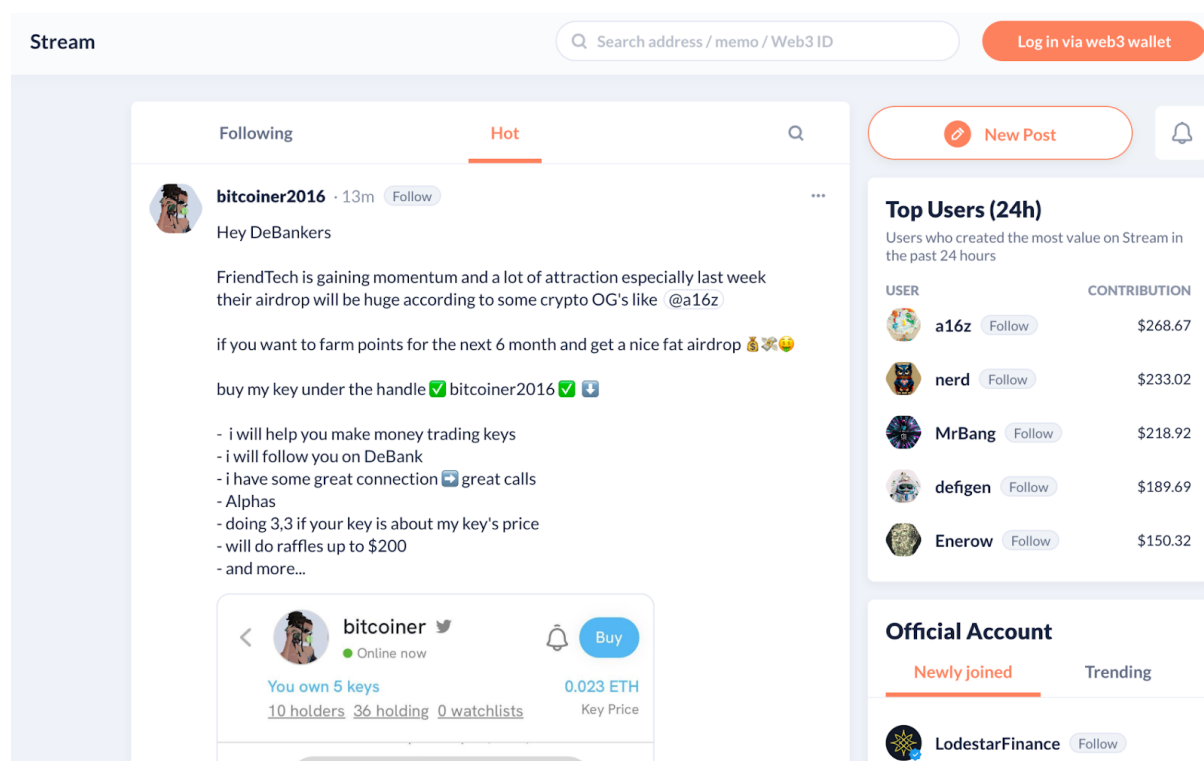
# DeBank Chain

DeBank is a **Web3 portfolio tracking protocol** that recently announced the testnet launch of their OP Stack-based L2 chain. DeBank Chain's **mainnet launch is expected in 2024**.

- ❖ **DeBank**
  - ➢ DeBank offers a number of products, with its portfolio tracker being a key highlight. It **tracks all of a user's tokens, DeFi holdings, and NFTs on all major EVM-compatible blockchains and wallets** and provides analytics to aid portfolio management.

  - ➢ There is a major **social networking aspect to DeBank** as well, with the **DeBank Hi Web3 messaging service** and **DeBank Stream social interface**. DeBank offers "Web3 Badge" NFTs for on-chain activities (e.g., for collecting airdrops) and also has a number of other features like "Web3 Social Ranking", community polls & voting, "whale" tracking, etc.

**Figure 12: DeBank's Stream product has a traditional social media look.**



Source: DeBank

- ❖ **DeBank Chain**
  - ➢ DeBank Chain will aim to reduce the transaction cost of interacting within the DeBank ecosystem, i.e., when minting NFTs or interacting on the social networking interface.

- ➢ The team stated that after modifying the consensus mechanism, they have reduced "the **gas cost of individual transactions by 100 to 400 times to accommodate the high-frequency nature of social interactions**"[31]. We should note that consensus-level modification is an example of the level of flexibility developers can have when building their own L2 chain for their product when compared to deploying it on an L1, where these protocol-level changes would not be possible.

*"...consensus-level modification is an example of the level of flexibility developers can have when building their own L2 chain for their product, when compared to deploying it on an L1, where these protocol-level changes would not be possible."*

- ➢ DeBank Chain will also have **account abstraction ("AA")** features built directly into the protocol. More details on AA in our recent report, [A Primer on Account Abstraction](#).

- ➢ Being an L2 and thus running a sequencer (more detail [here](#)), DeBank Chain will also **generate revenue** for the protocol. For example, **Base has generated over 2,900 $ETH since launch, while Zora Network has generated ~371 $ETH**[32].

- ❖ **User statistics:**
  - ➢ Since launching their testnet on August 11, DeBank Chain has recorded over 2.1M transactions across 50K+ unique wallet addresses[33].

  - ➢ DeBank has 250K+ total registered users[34].

# Ancient8 Chain

Since 2021, **Ancient8 has been operating as a gaming guild** and has **partnered with over 100 games to help 200K+ gamers** in their journey through Web3 gaming. Specifically, Ancient8 is Vietnam's largest gaming guild[35].

**Ancient8 Chain is their gaming-focused Ethereum L2 rollup** that they are launching with the aim to onboard millions of gamers into Web3. Ancient8 Chain launched their **testnet** on September 15.

- ❖ **Ancient8**
    - ➢ Ancient8 is a **GameFi infrastructure developer** with a strong focus on community and software. Their **gaming guild** has been their most popular initiative, where they have over **3,500 scholars**[36].

    - ➢ Ancient8 has partnerships with a number of popular Web3 games, including Axie Infinity and Phantom Galaxies. They regularly announce more partnerships, competitions, and events on their official [blog](#).

    - ➢ Ancient8 is involved in helping gamers discover high-quality Web3 gaming, access guild scholarships, learn about blockchain, and help them through their Web3 gaming journey. The announcement of Ancient8 Chain is a continuation of this journey and will help them **provide game developers with a scalable, EVM-compatible, and interoperable venue to create the next generation of Web3 games**.

- ❖ **Ancient8 Ecosystem**
    - ➢ Ancient8 seeks to **create an entire gaming ecosystem covering every aspect of game development and marketing**, from creation to promotion.

    - ➢ To this end, the Ancient8 ecosystem already consists of a **suite of integrations with five partners**[37] **to help game developers**:

        i. Dojo: an NFT sales launchpad for Web3 gaming projects on Ancient8 Chain.
        ii. PlayNation: a gaming community with online and real-life events. This can be useful for localization purposes for games.
        iii. EKO ID: to create a gaming identity and credentials in the Ancient8 ecosystem
        iv. Space3: an online gaming community/loyalty platform that can be helpful for user on-boarding.
        v. Gosu Network: a DAO for content creators which could be used to help projects with marketing.

❖ **Ancient8 Collective**
  ➢ The **Ancient8 Collective consists of 8 core partners composed of top Web3 gaming thought leaders**. The Ancient8 Chain ecosystem will be collaboratively built by the Collective.

  ➢ The Ancient8 Foundation is another key party and will focus on fostering adoption of the Ancient8 Chain and its decentralized governance.

  ➢ The Foundation is **currently offering grants of US$50-500K** for projects that build on Ancient8 Chain and help grow the ecosystem.

❖ **Funding:**
  ➢ Ancient8 raised a total of US$10M in financing over two rounds through the course of 2022[38].

❖ **User statistics:**
  ➢ While it's only been a few days since Ancient8 Chain launched their testnet, they have already seen **over 2M transactions across nearly 5K unique accounts**.

**Figure 13: It is early days for Ancient8 Chain's testnet.**
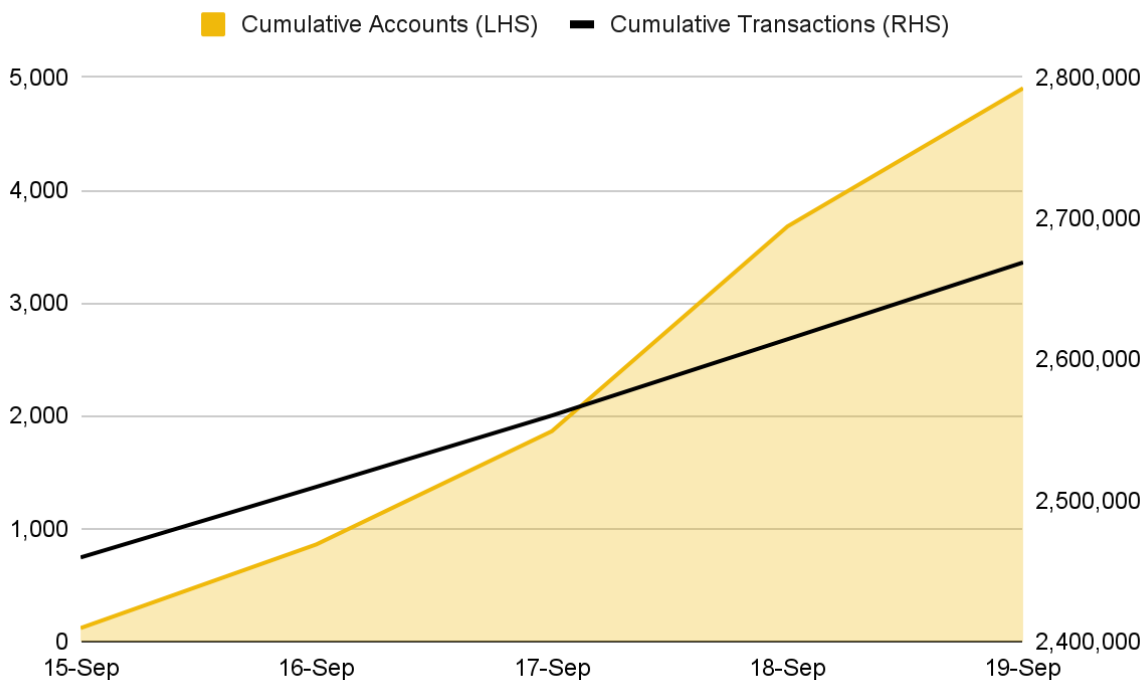


Source: Ancient8 Chain block explorer, Binance Research, as of September 19, 2023

# Infrastructure

## Conduit

Conduit is a **rollup-as-a-service ("RaaS") platform** that allows developers to **easily launch their own optimistic rollups**. While Conduit initially focused exclusively on the OP Stack, they have also recently added support for [Arbitrum Orbit](#). The Conduit team operates and maintains the rollup so that developers can focus on building products, rather than dealing with infrastructure.

Since launching their **mainnet** in March 2023, a number of different OP Stack chains, including **Zora Network, Public Goods Network, Ancient8 Chain and Mode, have chosen to partner with Conduit** in launching their rollups. Given their recently announced support for Arbitrium Orbit, we are yet to see any rollup launches with the Arbitrum suite.

**Figure 14: Conduit works hand-in-hand with the OP Stack.**

Source: Optimism Twitter (@optimismFND)

❖ **What does Conduit help with?**
  ➢ Conduit helps with all aspects of launching and maintaining a L2 rollup. While launching your own application-specific rollup can take weeks to months of development and engineering effort, Conduit's solutions allow developers to spin up an L2 in just a few minutes.

➢ Conduit's deployments come with a **block explorer, transaction tracer, autoscalable RPCs (which are crucial to build dApps), logs, chain monitoring**, and more.

➢ The Conduit team will also ensure that each of their partner L2s are **automatically updated with the latest OP Stack code base and integrated into the Optimism Superchain** (when available).

➢ Rollup teams that launch with Conduit are also eligible to **earn a share of the sequencer fees and MEV from their rollups**[39]. Part of the fees will also be committed towards the Optimism Collective for public goods funding.

❖ **Conduit Integrations**

➢ **Integrations** are part of Conduit's rollup management service and allow their rollup partners to **connect to other helpful infrastructure projects**. Example Integrations include Token Terminal, Zora, Axelar, Snapshot, etc.

➢ This further adds to Conduit's all-in-one infrastructure and makes it easier for rollups to grow their user base after launching.

❖ **Funding**

➢ Conduit has raised a **US$7M seed round** (led by Paradigm).

# AltLayer

AltLayer is also a **RaaS** protocol that allows developers to launch optimistic rollups. AltLayer's platform is designed for a **multi-chain and multi-VM** world and thus **supports EVM, as well as WASM** (used by Cosmos, Polkadot, etc.). AltLayer also has plans to support the Solana VM (Sealevel) and the Move VM[40].

A **notable distinction to Conduit's** solution is that AltLayer offers support for multiple different software development platforms. While **Conduit recently announced support for its second product suite (Arbitrum Orbit), its primary focus has been the OP Stack, while AltLayer also supports Arbitrum Orbit, Polygon zkEVM, and others** alongside the OP Stack.

AltLayer is **currently in testnet**.

❖ **What do they offer?**
  ➢ AltLayer's product offering consists of **three core components:**
    i. **No-code dashboard**: this allows developers or even users with limited coding experience to **spin up a customized L2 rollup within minutes**. Customization includes network-level (e.g., number of sequencers) and chain-level (e.g., block gas limit) parameters, alongside middleware such as bridges and RPCs.
    ii. **Rollup SDK:** as an alternative to the no-code dashboard for developers who would like to integrate the rollup-service directly into their own offering.
    iii. **Shared sequencer set:** AltLayer uses a common network of nodes called the Beacon Layer (more detail below), which can serve as a shared sequencer set for L2 rollups deploying with AltLayer. This also makes **cross-chain atomic transactions and messaging** possible with other L2s that launch with AltLayer.

  ➢ Other than supporting various rollup SDKs, AltLayer also supports a number of different data availability solutions, sequencer sets, and interoperability platforms.

❖ **The Beacon Layer**
  ➢ AltLayer offers a core network called the Beacon Layer. **The Beacon Layer is an intermediate layer between the execution layer of the L2, and its data availability layer.**

  ➢ The Beacon Layer facilitates a number of services, including providing a Shared Sequencing Layer, Verification Layer, Staking/Slashing Layer,

Interoperability Layer, and more. Each rollup can be verified by the nodes of the Beacon Layer and will also have a trust-minimized bridge to it.

➢ Given that every AltLayer rollup will have a bridge to the Beacon Layer, it will act as a bridging hub to allow asset transfers and messaging between rollups, increasing interoperability.

❖ **Flash Layer Rollups**

➢ Flash Layers (also called **ephemeral rollups**) are **disposable application-specific rollups**. With Flash Layers, a developer expecting an increase in traffic for their application can quickly spin up a disposable, temporary rollup, and then dispose of it when demand tapers off.

➢ Flash Layers can be **extremely useful in high-traffic events**[41] **like NFT mints**, mini-games, event ticketing, etc. These events, particularly hot NFT mints, often cause a large spike in traffic for a very short period of time and can cause significant fluctuations in gas fees on L1 networks. Being able to use Flash Layers to prevent the clogging up of the L1 can be very helpful for events like this. Interestingly, AltLayer has announced a collaboration with EigenLayer to secure Flash Layers through restaking[42].

➢ AltLayer also offers **standard optimistic rollups** as part of their platform. Dubbed "**Persistent Rollups,**" these are more ideal for longer-term focused applications, e.g., GameFi, SocialFi, etc.

❖ **Funding**

➢ AltLayer raised a US$7.2M seed round in 2022 (led by Polychain Capital).

**Figure 15: AltLayer's versatile rollup stack supports a variety of protocols.**
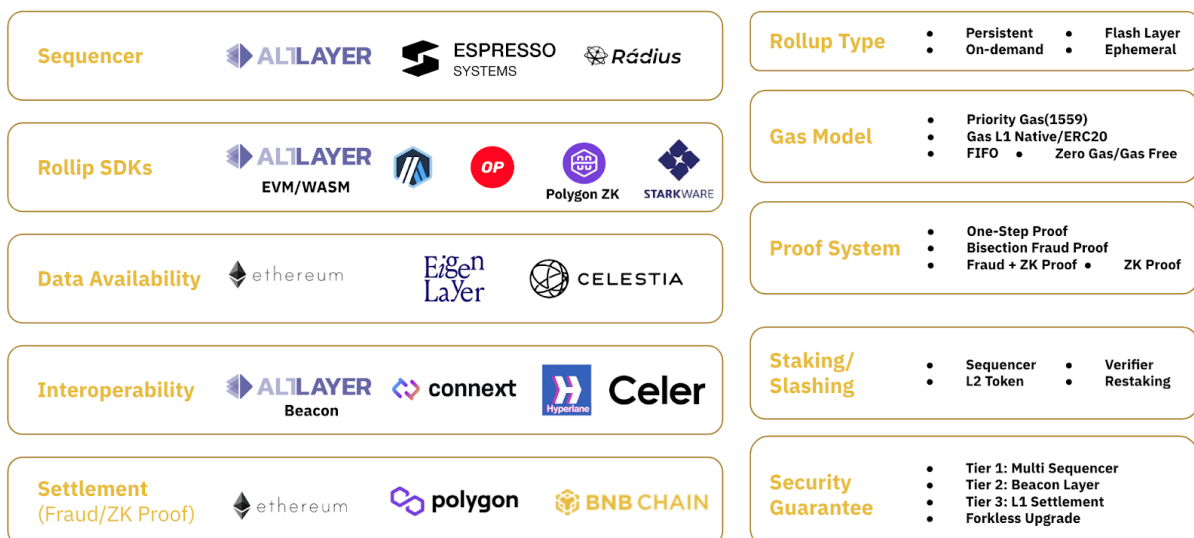


Source: AltLayer documentation, Binance Research

It is exciting to see that we are seeing a variety of OP Stack chains being launched. Not only are we seeing general-purpose L2s like Base and Mode, we are also witnessing more specialized chains like Zora Network, DeBank Chain, and Ancient8 Chain.

New features like Conduit's Integrations make it even easier to deploy and grow OP Stack rollups, and makes it more likely that we see more rollups launching using the Stack. Conduit simplifies the process of deploying an OP Stack rollup, working on its behalf to continue growing the network. Its exclusivity with the OP Stack is a key point, although this has now changed with support for Arbitrum Orbit. It will be interesting to see if competing frameworks, like zkSync's ZK Stack, use dedicated RaaS providers to grow.

With Etheruem rollup metrics breaching new all-time highs on a weekly basis, and an increasing number of dApps deciding to deploy on L2s rather than L1s, it is clear that the era of the L2 rollup is upon us. EIP-4844 i.e., Proto-Danksharding, is expected to lower L2 rollup fees by orders of magnitude and further increase their competitiveness. The combination of all-time high L2 usage, easier L2 deployment through the OP Stack and infrastructure like Conduit, as well as a bright future with EIP-4844 on the horizon, is likely to continue growing the L2 narrative. We look forward to seeing how things develop.

**Figure 16: Four of the top eight Ethereum gas users are L2s. How will this look in 2024?**

| | Protocol | Market Sector | Gas Used Last 90 days (US$M) |
|---|---|---|---|
| | Uniswap | DEX | 121.7 |
| MEV Bot | n/a | MEV | 21.6 |
| | Tether | Stablecoin | 17.0 |
| | zkSync | L2 | 12.7 |
| | Arbitrum | L2 | 7.3 |
| | Starknet | L2 | 6.2 |
| | OpenSea | NFT | 6.2 |
| | OP Mainnet | L2 | 5.9 |

Source: Token Terminal, Binance Research, as of September 19, 2023

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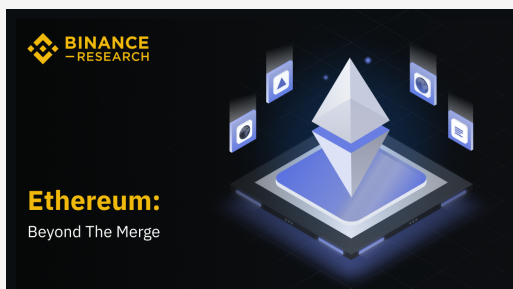


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