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Myria Whitepaper

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Myria Overview

Myria is an Ethereum Layer 2 ("L2") scaling solution, purpose-built to scale NFTs, blockchain gaming and more. Myria's scaling solution, built in partnership with StarkWare, offers instant trade confirmation, 0 gas fees when minting and trading NFTs without compromising the security of users' assets.

Myria's L2, developed using StarkWare's STARK prover, utilizes Zero-Knowledge Rollup (ZK-Rollup) technology to bundle large numbers of transfers into a single transaction to facilitate up to 9,000 transactions per section (TPS).

Since its launch in August 2022, over 250 partners have joined Myria and minted more than 500,000 NFTs on the platform.

MYRIA INFRASTRUCTURE AND DEVELOPER TOOLS

Myria is developing infrastructure to power the next generation of blockchain gaming.

Myria L2 utilizes StarkWare's prover and rollup zero-knowledge technology to aggregate thousands of L2 transactions into single Ethereum transactions. The results are dramatically increased throughput and lower transaction costs which are prerequisites for seamless token experiences.

Myria's Developer Solutions are an API-first abstraction layer consisting of blockchain-level, and game-level SDKs.

MYRIA PLATFORM AND USER TOOLS

Myria is creating an all-in-one user platform including a Myria L2 wallet and an NFT marketplace to enable third party gaming studios, NFT communities, and developers to easily develop and play blockchain-powered games, DApps, and experiences.

MYRIA STUDIOS

Myria Studios is a player-focused gaming studio centered around AAA-quality games that drives true ownership and rewards. Myria Studios is leveraging Myria's core stack to create a leading blockchain gaming hub.

MYRIA TOKEN

MYRIA is an ERC-20 utility token. The token serves as the basis for transactions on the Myria L2 scaling protocol. MYRIA will be distributed to selected gamedeveloping partners, node operators, and other participants in the ecosystem, creating a circular economy between users to accelerate ecosystem growth.

A problem worth solving

THE GAMING LANDSCAPE

The global gaming industry is currently estimated to be worth US\$200 billion and growing rapidly at 12% per year¹. Despite some early pushback from gamers, blockchain titles will be the next evolution of top-tier games driven by a number of factors.

On the user side, games built on the blockchain provide users with real ownership of their underlying assets and the ability to realize the value of any in-game assets through secondary markets.

For studios, there is a greater ability to monetize their games and allow communities to contribute to the often high upfront development costs through NFT drops and token sales. In the future, there may also be additional in-game mechanics that can be unlocked via the blockchain with several innovative games such as the zkSNARK-based MMO Dark Forest providing a compelling proof of concept.

ETHEREUM SCALABILITY

The original pioneer in the first blockchain 2.0 movement back in 2014, Ethereum remains by a significant margin the dominant network for both NFTs and DeFi. This first-mover advantage has allowed Ethereum to develop one of the largest, most decentralized and most secure networks, supported by a vast array of mission-critical tooling including user-friendly wallets and NFT marketplaces, an immense user base, and high liquidity. However, due to ever-increasing demand, the network of late has been plagued by network congestion, low throughput and slow transaction speeds, making Ethereum at an L1 level almost completely untenable for gaming and other high-velocity use cases.

Despite the Merge, Ethereum is far from being the finished article as envisioned by Vitalik Buterin, the founder of Ethereum. Optimistic rollups have long withdrawal times, which leads to a poor user experience, and sharding scalability solutions are years down the roadmap.

With new L1s delivering high transaction capabilities right off the bat — but still lacking the enviable level of security Ethereum boasts — the world's leading Web3 network needs to deliver speed and cost-efficiencies for dApp developers and users now.

With the NFT and gaming markets growing at pace, even during crypto's bear market, Ethereum needs to be ready to handle sudden spikes in demand — which, in the world of crypto, could happen at any time — without clogging up and sending gas fees into orbit. The only feasible way to do this is through L2s running ZK-rollups like StarkEx, which means that L2s will be around for a long time to come.

CHALLENGES FOR DEVELOPERS

New blockchain gaming and NFT application developers are often faced with a confluence of aggravating factors that work to make the learning curve exceedingly steep.

First of all, the interdisciplinary nature of blockchain requires developers to have at least an intermediate-level grasp on an extremely wide range of usually unrelated computer science fields. Developers are expected to understand advanced cryptography, largescale decentralized networking, complex quantitative financial models, and more.

This challenge is compounded by the rate developers are required to learn new programming languages, smart contract standards, and blockchain network design, in such a rapidly changing space. This results in developers spending an excessive portion of their development time building the backend rather than focusing on what they set out to do: build innovative and unique applications for their users.

The lack of access to pre-built infrastructure with simple APIs and platform-specific

SDKs has created a tremendous barrier to entry for new projects, a problem that Myria seeks to solve.

NFT ILLIQUIDITY

The foundational concept of all NFT marketplaces is the use of order books. The term order book refers to an electronic list of buy and sell orders for a specific NFT organized by price level. An order book lists the number of items being bid on or offered at each price point, or market depth. Current NFT marketplaces operate with their own order book. This means an NFT listing only appears on the originating marketplace, which limits the liquidity of the particular NFT as it is only offered to the buyers or sellers of that marketplace. This issue becomes increasingly apparent when specific games build in-game marketplaces for a better gamer experience yet will have to sacrifice access to the maker orders necessary for instant purchases or price discovery due to its standalone order book.

Myria's Solution

MYRIA INFRASTRUCTURE



Diagram I: Myria L2 Protocol Architecture

MYRIA L2 - A ZK-ROLLUP LAYER TWO SCALING SOLUTION

Myria L2 is a layer two (L2) scaling solution, purpose-built for games and other NFT use cases on the Ethereum network. Myria is an advocate for the security and decentralization of the Ethereum network and believes gaming developers should not need to forego these benefits to onboard onto the blockchain.

By building an Ethereum-anchored L2 rather than a loosely coupled or even entirely independent sidechain, Myria can comfortably meet the performance requirements of some of the most demanding use cases on the market without sacrificing the desire of end-users to continue leveraging Ethereum's battle-tested consensus protocol. The oft-mentioned tradeoff between genuine usability and fully decentralized security is a false one - Myria L2 offers both.

That harmony between scalability and security is moot, however, if developers are unable to leverage it. To that effect, Myria's suite of developer tools, a diverse array of Application Programming Interfaces (APIs), Software Development Kits (SDKs), and a Domain Specific Language (DSL), aims to abstract away the complexity of writing and interacting with zero-knowledge compatible smart contracts without curtailing creator ingenuity.

Simply put, this means any transaction, from minting an NFT or launching a new collection to transferring or exchanging existing tokens requires no direct smart contract or network knowledge on the part of the developer. Any developer, who is able to connect to a REST API, knows how to produce, manage, and interact with tokenization projects on Myria L2.

Central to the goal of accomplishing the above without restricting use-case flexibility, as stated, will be Myria's tokenization rules engine and Domain Specific Language (DSL). Existing smart contract development tools restrict box developers from making key decisions about the nature of the contracts they deploy on behalf of the creators themselves. Myria's rules engine and DSL will grant developers the ability to customize low-level aspects of their assets without complicating the process for more novice users.

ZK-ROLLUP SCALING ENGINE

At its core, Myria combines the cutting-edge ZK-rollup scaling solution by StarkWare with NFT-specific proof logic to create one of the most progressive NFT trading protocols. By batching hundreds of transactions into a single zero-knowledge proof known as ZK-STARK (zero-knowledge scalable transparent arguments of knowledge), it enforces the integrity and privacy of computations on blockchains, using novel cryptographic proofs and modern algebra. ZK-STARKs allow blockchains to move computations to a single off-chain STARK prover and then verify the integrity of those computations using an onchain STARK verifier.

DEVELOPER APIS

Myria is building a variety of developer and administrative tools to shield developers from protocol-level complexity and ultimately make the process of integrating blockchain frictionless. The tools which exist in the market today are either difficult to use, support a far-too limited set of functionality for any serious use cases, or both.

Critically, those tools of today ignore the fact that third-party developers, though they may not necessarily want to engage at a low level with smart contract code, nevertheless want the smart contracts they do use to support arbitrarily complex use cases.

To that end, Myria will develop a rules engine specifically tailored for the potential use cases which interested developers may desire. This rules engine will support a variety of customization in regards to supply (e.g. existence of a hard cap, or adjusting cap based on other on-chain actions, etc.), transfer logic (e.g. applicable royalty on transfer, on-chain actions prerequisite to a transfer, etc.), metadata (on-chain implications of metadata, combination or transformation of metadata of different NFTs, etc.), and more. The rules engine will be responsible for combining the developer's requirements in a succinct and coherent way, then translating those rule requirements into on-chain contracts using Cairo.

PLATFORM SDKS

To allow developers to easily build on blockchain, our high-level Myria SDK will include plugins and tools to support a variety of engines (Unity, Unreal, HTML5). Myria's SDK offers developers an intuitive portal to seamlessly integrate with the Myria gaming ecosystem, including character and item interoperability, login/authentication, inventory management, as well as a number of other services to provide a deep and rich gaming and social experience.

Additionally, partners opting to leverage the power of the Myria chain whilst maintaining an independent gaming and economic ecosystem can choose to integrate our highperformance, closer to the metal MyriaCore SDK (Javascript, Python, C#, C++) which will empower our partners to design and implement their own on-chain asset structure and behavior without having to be concerned with creating and deploying smart contracts.

UNIVERSAL ORDER BOOK

Beyond being an NFT scaling solution, Myria looks to solve the order book fragmentation problem by introducing universal order books. Myria's universal order books will allow orders created on one marketplace to be filled at another. This not only solves the liquidity and price discoverability issues of NFT marketplaces but further empowers those who utilize Myria's white label NFT marketplace solutions to continue the pursuit of customized user experiences without limiting the visibility of their collections.

COMPLIANCE

Myria recognizes the importance of regulatory compliance when working with NFTs, such as global Anti-Money Laundering (AML) and KYC legislations and the protection of consumer data. This has become an increasingly important factor for businesses and creators when choosing the right solution. Myria's platform and the solutions provided will be fully compliant for the trusted partners so they can operate their NFT projects with ease.

PLATFORM

MYRIA WALLET

The Myria wallet aims to solve the problem which has emerged for many scaling solutions in the last few years – the more impressive the underlying technology, the more onerous the user experience seems to become.

The Myria wallet attempts to address this by providing a seamless in-browser wallet, enabling users to have custody over and manage their digital assets including tokens and NFTs. The wallet will allow players to easily buy, sell, and store tokens, as well as interact with Myria's Marketplace and gaming ecosystem.

Crucially, anyone who uses Metamask will intuitively be able to leverage the Myria wallet. Although there is a different cryptographic scheme and private key required for Myria L2 interactions, that complexity will be hidden from the user. Any blockchain that exposes an Ethereum-compatible JSON RPC API, including custom and private blockchains, will be compatible with the Myria wallet.

NFT MARKETPLACE

Myria's NFT marketplace allows users to purchase NFTs produced by Myria Studios and other developers directly from the Myria listing, as well as those from other marketplaces connected through Myria's universal order book.

In order to combat the issue of fake NFTs that plague other NFT marketplaces, we have developed a strict project verification protocol to ensure the integrity of our marketplace.



Diagram 2: Myria Ecosystem

Fees on Myria

Myria has various revenue streams where users and creators will exchange the MYRIA token.

PROTOCOL FEE

Myria will collect a fee from third parties licensed to use the Myria protocol, for all trades executed.

MARKETPLACE FEE

Successful sales of NFT assets on Myria's NFT marketplace will attract a fee.

PRIMARY SALES FEE

Myria will collect a fee from all primary sales minted using Myria protocol.

A percentage of the entire ecosystem revenue (transaction fees from the NFT marketplace, store fees, protocol fees, etc.) will circulate into MYRIA token staking in the future.

Myria Nodes

Myria nodes underpin Myria's ecosystem. Each node contributes to the ecosystem's growth by providing functions necessary to run a decentralized and secure L2 network. There will only ever be 40,000 Myria nodes. Myria node operators will be contributing to the growth of the Myria ecosystem. Those who operate the node to the daily requirement will be rewarded with daily MYRIA distribution.

Myria node operators contribute to the scaling of future digital asset ownership. Nodes will be used for various activities, including:

- Initial network tests
- Decentralized data storage
- Oracles, which are data feeds that provide smart contracts with off-chain data
- Governance

MYRIA Token

OVERVIEW

MYRIA is an ERC-20 utility token. The token serves as the basis for transactions on the Myria L2 scaling protocol. MYRIA will be distributed to selected game-developing partners, node operators, and other participants in the ecosystem, creating a circular economy between users to accelerate ecosystem growth.

We strongly believe that community ownership of tokens helps align incentives of stakeholders within the Myria ecosystem, including developers, node operators, content creators, and others. Token holders become incentivized to support the growth of the gaming ecosystem and thus the value of the token.

TOKEN UTILITY

The MYRIA token has the following utility:

PROTOCOL FEEA proportion of protocol fees on every Myria transaction will
be paid in MYRIA tokens.

MYRIA NODE PURCHASE Myria Nodes can only be purchased using MYRIA tokens.

- **STAKING** Staking rewards will be introduced upon the implementation of protocol fees. A dedicated staking reward pool will allow those who meet the staking requirements of MYRIA tokens to receive rewards from this pool.
- **GOVERNANCE** As a holder of MYRIA, you hold the key to deciding the future direction of Myria. Governance will be introduced and MYRIA token holders will be able to vote on ecosystem fund allocation, future development, and the strategic direction of the ecosystem.

EXCLUSIVE NFT PURCHASE

The MYRIA token will be utilized for purchasing exclusive NFT collections under Myria Studios

TOKENOMICS

TOKEN SUPPLY	&
ALLOCATION	

The total supply is 50 billion MYRIA tokens.

SUPPLY I	DISTRIBUTION	TOTAL 50.000.000	.000 TOKENS
	Node Emissions		36%
عر	Project Development	•••••	19%
0	Ecosystem Fund		40%
•	Strategic Reserve	••	2%
	TGE & Liquidity Provision	• • •	3%

Note: This is the planned tokenomics and may be subject to change.

Due to release schedules and locks, the token unlock schedule differs based on the different allocation types:

PURPOSE	TOKEN SUPPLY SCHEDULE
TGE (Token Generation Event) and Liquidity Provision	Immediately Unlocked
Node emissions	Distributed daily based on a halving schedule. Halving occurs every 2 years
	The protocol will distribute approximately 12 million MYRIA per day until the scheduled halving. The first halving will happen in year three, which will decrease the daily distribution to 6 million MYRIA.

PURPOSE	TOKEN SUPPLY SCHEDULE
Ecosystem	13% unlocked immediately, remainder allocation is unlocked over 36 months
Project Development	6 months cliff, linearly unlocked over 48 months
Strategic reserve	Immediately Unlocked



Legal disclaimers

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