Metallicus

Metal L2

Whitepaper v1.0

Abstract

Metal L2 is a Layer 2 scaling solution for Ethereum, developed on the Optimism stack. As a future potential member of the Optimism Superchain ecosystem, Metal L2 addresses the scalability issues of Ethereum by leveraging optimistic rollups. This whitepaper provides a comprehensive overview of Metal L2, its architecture, key features, and the benefits it brings to the Ethereum network.

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1. Introduction

1.1 Background

Ethereum has faced challenges with scalability, high transaction fees, and network congestion. Metal L2 aims to overcome these obstacles by introducing a Layer 2 scaling solution based on the Optimism protocol.

Metal DAO (MTL) was formed in 2016 with the introduction of a concept called “PoPP” or Proof-of-Processed-Payment. This was an experiment in token distribution, whereby spending fiat currency would be rewarded in MTL. This was active in the Metal Pay app from 2018-2021 for three years.

During that time users earned MTL through traditional peer-to-peer payments. Metal Pay was built on the premise that more fiat ramps were needed in crypto, and that the cryptocurrency community needed a “venmo for crypto”, flash forward eight years (2016-2024) and now Venmo has cryptocurrency and mainstream trading apps like Robinhood support trading digital assets. Metal Pay has evolved to be a custodial trading platform to interact with the XPR Network where trades can be executed from the decentralized exchange (Metal X) while using the XMD (Metal Dollar) a basket-based stablecoin.

While consumer cryptocurrency adoption has grown significantly, with many great apps, there are few platforms for the corporate banking layer. Many tech companies are adopting digital banking and card issuance services like Mercury, Brex, Ramp, etc but none of these platforms have integrated crypto capability natively. We’ve learned from Metal DAO that stablecoin adoption and risk management are critical, to this end the Metal Dollar XMD stablecoin was born.

The Metal Dollar (XMD) comprises DAO-elected stablecoins in a risk-weighted basket managed by the core maintainer (Metallicus, but can be changed by DAO governance vote). This model creates a versatile stablecoin that can adapt to fluctuating market conditions but can allow for redemption with a myriad of banks, fintechs, and other top stablecoins like USDC, PayPal, and more. Metal Pay created the framework for an app that could easily be open-sourced for digital banking, the next step is the enterprise business layer.

The dominance of Ethereum has become undeniable, along with the Ethereum Virtual Machine, Solidity is the preferred smart contracting language of web3 developers globally.

With the rise of Ethereum we are witnessing the rise of L2's, specifically Arbitrum, zkSync and Optimism Superchain. One of the major reasons for Ethereum's success is its network effect in attracting every platform and app in crypto to integrate it. To that effect Metal DAO makes the perfect candidate to enter the Ethereum L2 ecosystem through the Optimism Superchain. There are many unique reasons why the Metal DAO is suited to enhance Ethereum scalability. In particular:

- **WebAuth wallet non-custodial wallet with Web Authentication:**
  - Bring Web Authentication to Ethereum (never leave the browser to sign)

- **Decentralized Identity (DID) standard:**
  - To add for easy fiat-onboarding as well as future compliance regtech
  - Bring ENS to Metal L2 and connect the Metal DID (trustless Merkle-proof-based CCIP resolvers)

- **Multi-chain bridging of all major blockchains**
  - Enhanced liquidity and interoperability

- **Metal Pay fiat ramping for card and bank payments**
  - Expanding to new regions beyond the United States (Korea, New Zealand, Australia, Canada, Mexico, European Union, Singapore, Japan, etc)
  - Adding Federal Payment Systems for instant payments

- **Metal Dollar stablecoin**
  - Interoperability with all major stables (USDC, etc), governed by Metal DAO
  - Native Ethereum support

- **Metal X decentralized exchange**
  - An open source version of Metal X that works on Metal L2 (Optimism)
  - Currently over 70% of all MTL is off-chain on centralized exchanges, the optimal situation for decentralization is inversely proportional
  - By bringing all MTL to trade on its own DEX, we can derisk the protocol from centralized exchange risk (recently we have seen both FTX and Celsius sell off MTL in bankruptcy proceedings)

- **Open Source Metal Pay**
  - Bring the consumer version of Metal Pay 3.0 to complete open source
    - Integrate the current Metal Pay with Metal X on Metal L2 (Ethereum)
  - Bring the enterprise version of Metal Pay 1.0 to complete open source
  - Grow the community of open source developers around Metal Pay

1.2 Objectives

Metal L2 focuses on enhancing Ethereum's throughput, reducing transaction fees, and improving overall user experience. By leveraging Optimistic Rollups, Metal L2 aims to provide fast and secure transactions while maintaining compatibility with existing Ethereum smart contracts.

2. Metal L2 Architecture

2.1 Optimistic Rollups

Metal L2 utilizes Optimistic Rollups, a layer 2 scaling solution that allows for faster and cheaper transactions by offloading most computation and storage to layer 2 while retaining the security of the Ethereum mainnet.

2.2 Components

Metal L2 consists of the following core components:

- **Smart Contracts:** Metal L2 deploys smart contracts on the Ethereum mainnet to manage the rollup chain's consensus and dispute resolution.
- **Rollup Chain:** The rollup chain is where transactions are batched and executed, providing the scalability needed to accommodate a higher transaction throughput.
- **Operator Nodes:** Responsible for processing transactions and submitting the compressed data to the Ethereum mainnet, operator nodes play a crucial role in maintaining the network.
- **Metal X:** Decentralized trading and lending engine
- **WebAuth Wallet:** Web Authentication for Metal L2 and Ethereum
- **Metal Pay:** Open source platform for consumer and business

3. Features of Metal L2

3.1 Fast and Low-Cost Transactions

Metal L2 significantly reduces transaction fees and confirmation times by batching multiple transactions and submitting them as a single transaction to the Ethereum mainnet.

3.2 Web Authentication

Metal L2 will integrate native Web Authentication for the Optimism Superchain, bringing trustless signing to the browser and the potential to access the secure enclave of the device you're using along with other FIDO-compliant devices like Yubi. The importance of Web Authentication can not be understated, with billions and growing in Metamask targeted phishing attacks per year. Web Authentication removes the need for any browser plugin or third party software (or switching between apps) while taking advantage of the secure element of the device to sign transactions.

3.3 Metal X trading and lending platform

Extending the Metal X trading and lending platform to Metal L2 encourages the decentralization of Metal DAO (MTL) community members to trade directly on-chain while retaining self-custody.

3.4 EVM Compatibility

Maintaining compatibility with the Ethereum Virtual Machine (EVM) ensures that existing smart contracts can be seamlessly migrated to Metal L2, preserving the existing ecosystem.

3.5 Security and Decentralization

Metal L2 inherits security from the Ethereum mainnet through the Optimistic Rollups protocol, ensuring the highest level of trust and decentralization.

3.6 Decentralized Identity (DID)

Adding a native layer for decentralized identity while onboarding all the top issuers from the identity space.

4. Optimism Superchain Integration

4.1 Synergy with Optimism Superchain

Metal L2 seamlessly integrates with the Optimism Superchain, a network of interconnected Optimistic Rollup chains (Optimism, Base). This integration enhances the overall scalability and interoperability of the Metal L2 network.

4.2 MTL as gas on Metal L2

MTL could be used to pay for gas fees on the Metal L2 network, bringing further utility to the asset. Users can earn gas for simply participating in the network through the L2 incentive program.

5. Tokenomic Changes

5.1 Conversion

Metal DAO (MTL) originally started with 66,588,888 MTL at Genesis. We propose a change that will create an incentive for L2 participation, developer bounties, and core development of the Layer 2 network. This change would bring the total circulating supply from 66,588,888 to 78,588,888 with 7.634% inflation and diminishing per year (7.093% year two, 6.623% year three, 6.211% year four, etc)

5.2 L2 Incentive

Creating an early incentive for L2 participation by adding a one-time grant of 6,000,000 MTL to be distributed in three tranches of 2,000,000 MTL each that cover three areas of growth:

Metal L2 onboarding

Metal X trading volume

Metal X TVL

Allocations to be determined based upon DAO governance vote via Snapshot.

5.3 Sequencer Creation Grant

Creating a one-time grant of 6,000,000 MTL for the sequencer which funds the maintenance costs, development of the protocol, and additional open source tooling with Metal Pay, WebAuth wallet which will be brought to open source.

5.4 Ongoing Maintenance and Core Development Grant

Creating an annual perpetual grant of 6,000,000 MTL per year to go to the elected Core Developer of Metal DAO

6. Contract Details

6.1 V1 Contract Address Details

The address of the version one contract can be found here:
0xF433089366899D83a9f26A773D59ec7eCF30355ez

6.2 V1 Audit Details

The version one contract audit can be found here:
blog.openzeppelin.com/metal-token-audit-d7e4dbf17bcf

6.3 V2 Contract Address Details

The address of the version two contract can be found here:
0×709c999b4Bc5d19B5a2EE30297129D5aB4AAe454

6.4 V2 Audit Details

The version two contract audit can be found here:
migrate.metall2.com/Metal_L2_Audit.pdf

6.5 Conversion to V2

The conversion will be made possible through the **MetalL2.com** website and participating exchanges.

Conclusion:

Metal L2 represents a significant leap forward in addressing Ethereum's scalability challenges. By implementing Optimistic Rollups and integrating with the Optimism Superchain, Metal L2 provides a scalable, secure, and cost-effective solution for decentralized applications and users on the Ethereum network.

7. Future Developments

Metal L2's development roadmap includes ongoing optimizations, research, and community involvement with the Optimism Superchain and Optimism Foundation. Future updates will focus on further reducing transaction fees, enhancing scalability, and exploring new technologies to improve the overall efficiency of the network.

8. Acknowledgments

The development of Metal L2 is a collaborative effort involving a dedicated team of developers, researchers, and community contributors. The project extends gratitude to the Ethereum community and the Optimism Foundation for their continued support and collaboration.


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