Massa NFT Storage

Introduction

Massa NFT Storage is a decentralized data storage solution built on the Massa blockchain's node infrastructure. It focuses on storing critical data, particularly metadata and content of NFTs (Non-Fungible Tokens), in a decentralized manner. The idea is to leverage the storage space available on Massa nodes to ensure the permanence and accessibility of NFTs over time.

Inspired by Protocol Labs' NFT Storage and its use of IPFS (InterPlanetary File System), Massa NFT Storage aims to offer a secure, scalable, and decentralized way to manage NFTs and their associated data.

Target Users

There are three main types of users involved in the Massa NFT Storage project:

1. **NFT Builders**: Creators who wish to store their NFTs in a long-term, decentralized manner.
2. **Massa Moderators**: Users who moderate the content stored in the system, ensuring that it meets the platform's standards.
3. **Node Runners**: Operators of Massa nodes who choose which moderated content they wish to store (pin) on their nodes.

1. For NFT Builders

NFT Builders need to store two main components for each NFT mint:

1.1. NFT Metadata: The metadata associated with an NFT, typically in JSON format.

1.2. NFT Content: The actual content of the NFT, such as an image, video, audio, or other formats, stored in raw or binary format.

2. For Massa Moderators

Moderators are responsible for reviewing and managing the files stored in the system. They can filter, sort, and search through files to ensure that only appropriate content is stored.

2.1 **Listing of All Files**: Display file details such as name, size, date of storage, and file type.

2.2 **Pagination**: Allow users to navigate through the list of files more efficiently.

2.3 **Sorting**: Enable sorting by various fields (file name, size, type, etc.).

2.4 **Filtering**: Apply filters to narrow down the file list.

2.5 **Search Function**: A search engine to quickly locate specific files.

2.6 **File Moderation**: Moderators can validate or reject individual files or groups of files (e.g., entire pages of files).

3. For Node Runners

Node Runners are responsible for deciding which files they wish to "pin" (store permanently) on their nodes. They can only interact with the files that have already been moderated.

Key Functionalities:

This functionality is similar to the validation process used by moderators.

- **Similar to moderators**, Node Runners will have access to functionalities like file listing, sorting, filtering, and searching, but limited to files that have already been moderated.
- **File Pinning**: Node Runners can "pin" (store) selected files onto their nodes for long-term availability. This functionality is similar to the validation process used by moderators.

Architecture

To achieve these functionalities, the following architecture will be used:

1. **IPFS Installation**: A IPFS server will be installed on the Massa nodes that choose to participate in storing files. IPFS is used for decentralized storage and retrieval of NFT-related data.
2. **SDK (TypeScript)**: A TypeScript SDK will be delivered for developers to ease integration with the system.
3. **UI (Svelte)**: A user interface will be developed for the three types of users (NFT Builders, Moderators, and Node Runners). This UI will be hosted on IPFS, leveraging the IPFS Pin API for file management.

Massa Node Requirements:

- Nodes that choose to participate in this project will store the UI files on their nodes by default.
- The SDK will provide the necessary integration tools for users and developers to interact with the platform.

Project Timeline

- **Duration**: The project will be completed in one month by the Kredeum team.
- **Budget**: The project will require 150,000 Massa tokens for its implementation.

Deliverables

1. **SDK**: A TypeScript SDK hosted on GitHub, offering developers the tools needed to integrate with the Massa NFT Storage platform.
2. **UI**: A Svelte-based user interface, accessible at `nft.storage.massa`, hosted on IPFS.
3. **Tutorials**:
   - Detailed guides for the three user types (NFT Builders, Moderators, Node Runners).
   - SDK usage tutorials for developers not using the UI.
4. **Bonus**: Promotional LinkedIn posts to raise awareness and engagement for the project.

This framework will enable Massa NFT Storage to create a decentralized, secure, and scalable platform for the long-term storage of NFTs and their associated data.