Best Decentralized Storage Networks 2023

Introduction

Open source and decentralization are the core ethos of Web 3.0. Chris Dixon explains why decentralization matters in this medium blog. Decentralized file storage is critical for the success of Web 3.0 so users and creators can take control of the internet once and for all. While blockchains are built for decentralized storage, they are not designed to store large file sizes. They are meant for handling transaction data, smart contracts, and source code.

To put it in perspective, both Bitcoin and Ethereum ledger are less than 1 TB each whereas, in 2020, the internet stored 40 billion TB of data as per some estimates. Most value creation or value transfer on the internet in the future will involve some content or a file that needs a decentralized, permanent storage solution. The good news is that there are a number of solutions/projects that are working while keeping decentralized permanent storage in mind.

What is a Decentralized Storage Network?

Before learning about the best decentralized storage networks, let's find out what a decentralized storage network is in the first place, shall we? When it comes to the storage of data, these are our usual options:

- Storages for small files like USB drives.
- Centralized cloud storage, where your data is stored on a central cloud space owned and controlled by a third-party entity. The problem here is that your data now belongs to a said entity operating the cloud, and thus loses out on the freedom and security factors.

This is where decentralized storage networks come into play as a solution. This way, any data is stored on a network spread among multiple users across the globe. These users are incentivized to join and operate the network so as to keep it decentralized, and also to ensure the data is accessible at all times. The servers used are thus hosted by a group of people instead of a single authoritative body.
Anyone can join a decentralized network based on a blockchain. Smart contracts ensure the users' integrity and authenticity, and they are incentivized with native tokens to run the network. Said tokens come with a range of benefits, namely governance rights.

Why should you choose a decentralized storage network over centralized storage?

- The security factor is much stronger, and blockchain technology puts up greater resistance to data breaches.
- The chances of attacks like DDoS are much less.
- You get to have complete ownership over your personal data.
- There are much less censorship and surveillance associated with decentralized storage networks.

List of Top Decentralized Storage Projects

1. IPFS

The InterPlanetary File System was invented by Juan Bennet at Protocol Labs. IPFS is used in a distributed file system to store and share data. It is similar to torrent, but for the web – the files are not hosted in a single location, but rather by anyone who has a copy and wants to host it.

2. BitTorrent File System

BitTorrent is a decentralized file-sharing protocol created by developer Brad Cohen in 2001. In 2018, Tron Foundation acquired the BitTorrent Foundation and launched the BTT token in 2019.

3. Arweave

Arweave was originally named Archain. It is a decentralized storage network founded by Sam Williams and William Jones. The goal of Arweave is to permanently store files over a distributed network of computers.

Arweave protocol works on two layers:

1. Blockweave: Arweave stores its data in a graph of blocks. Each block is linked to two earlier blocks in Arweave, forming a structure called a “blockweave.”
2. Permaweb: everything published on the permaweb is available forever. The permaweb offers low-cost, zero maintenance, permanent hosting of web apps and web pages.

4. FileCoin

Filecoin is a decentralized storage network in which anybody can rent storage space. Instead of entrusting your documents to one company, they can be split up and stored on computers all over the world. It is an incentive layer built on top of IPFS that incentivizes users to rent out their storage space by paying them in FIL tokens.

5. Siacoin

Siacoin (SC) is the native token of the Sia network. It allows any computer to rent out unused hard drive space to users looking to store files. Sia has designed software that is capable of creating a peer-to-peer storage (P2P) network that allows anyone to be part of that network.

6. Storj

Storj decentralized cloud storage is an open-source decentralized network for storing data. It aims to solve for high durability with minimum expansion. It does not follow the typical approach of replicating files in multiple nodes and instead fragments files into multiple nodes, thereby maintaining high durability (probability of surviving outage) with low expansion (additional storage required).