

# On the Future of Web3

Paving the Way to End-to-End Fully-Decentralized Web

Qi Zhou

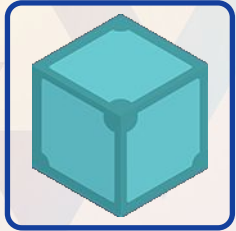
Founder, EthStorage.io



Section 1

# State of the Art of dWeb

# State of the Art of dWeb



**ipfs://**

Decentralized access protocol



**libp2p**

Decentralized Networking Layer



**FILECOIN**

Decentralized Incentivized Storage Layer

# Limitation of Current Solutions



## Limited Storage Semantics

Mostly work for static files  
Inefficient update and delete  
No data composability



## Steep Learning Curve

Users have to learn new  
wallets/address/token-economy



Section 2

# Features Needed in Future Web3

# Features Needed in Future Web3



## Rich Storage Semantics

Create/Read/Update/Delete BLOBs  
on Large Dynamic Datasets  
Programmable by Smart Contracts



## Simple User Onboarding

Just Use ETH-Compatible  
Wallet such as Metamask



## End-to-End Fully Decentralized

No Centralized Identity From  
Frontend to Blockchain to Storage



Section 3

# Solution



# Solution to Future Web3



Proof of Publication  
via Data Availability

Increase Data Upload Speed Using  
KZG Commitment and Reed-Solomon  
Code



EthStorage: External Data Retention L2 Network `web3://` Access Protocol

Proof of Storage on Large  
Dynamic Datasets  
~ PB Capacity with CRUD



Decentralized Access to Web  
Objects Hosted by Smart Contracts

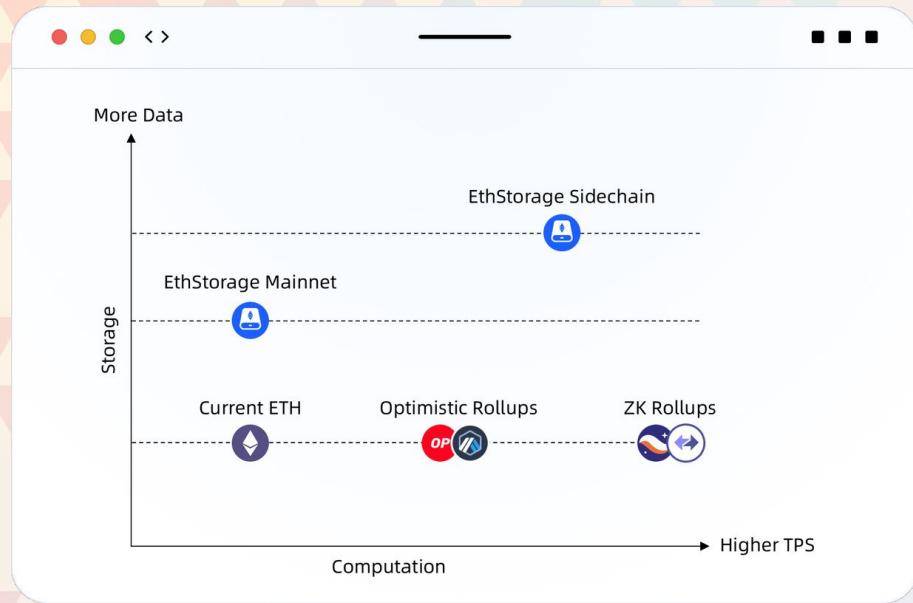


# web3:// Access Protocol

- ERC-4804: Web3 URL Standard - an IANA Registered Scheme
- Render Web Objects Hosted by Smart Contracts

The diagram illustrates the structure of a web3:// URL. The URL is `web3://qizhou.eth@example.eth:333/balanceOf/zuck.eth?returns=(uint256)`. Brackets and labels identify the following parts:

- scheme**: `web3` (orange label, bracket under `web3`)
- userinfo**: `qizhou.eth` (blue label, bracket under `qizhou.eth`)
- authority**: `@example.eth:333` (purple label, bracket under `@example.eth:333`)
- contract**: `balanceOf` (green label, bracket under `balanceOf`)
- chainid**: `zuck.eth` (orange label, bracket under `zuck.eth`)
- methodId**: `?` (blue label, bracket under `?`)
- arg0**: `returns` (blue label, bracket under `returns`)
- query**: `=(uint256)` (green label, bracket under `=(uint256)`)



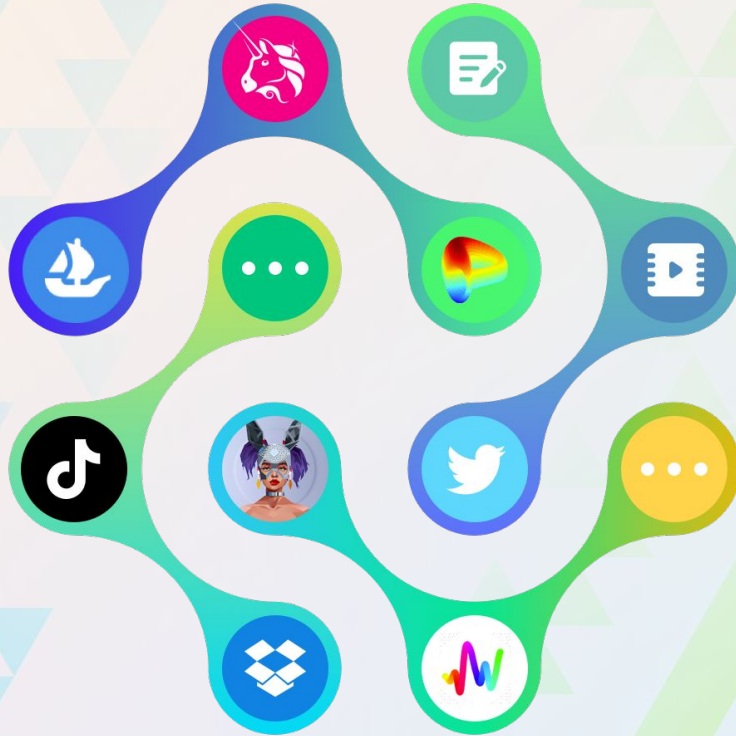
## EthStorage - L2 to Scale Ethereum Storage and Enable Future Web3

- A L2 Solution of Ethereum for Scaling Storage
  - Instead of computation that most L2 work on
  - Support both Ethereum Mainnet and Our Storage-Specific Sidechain



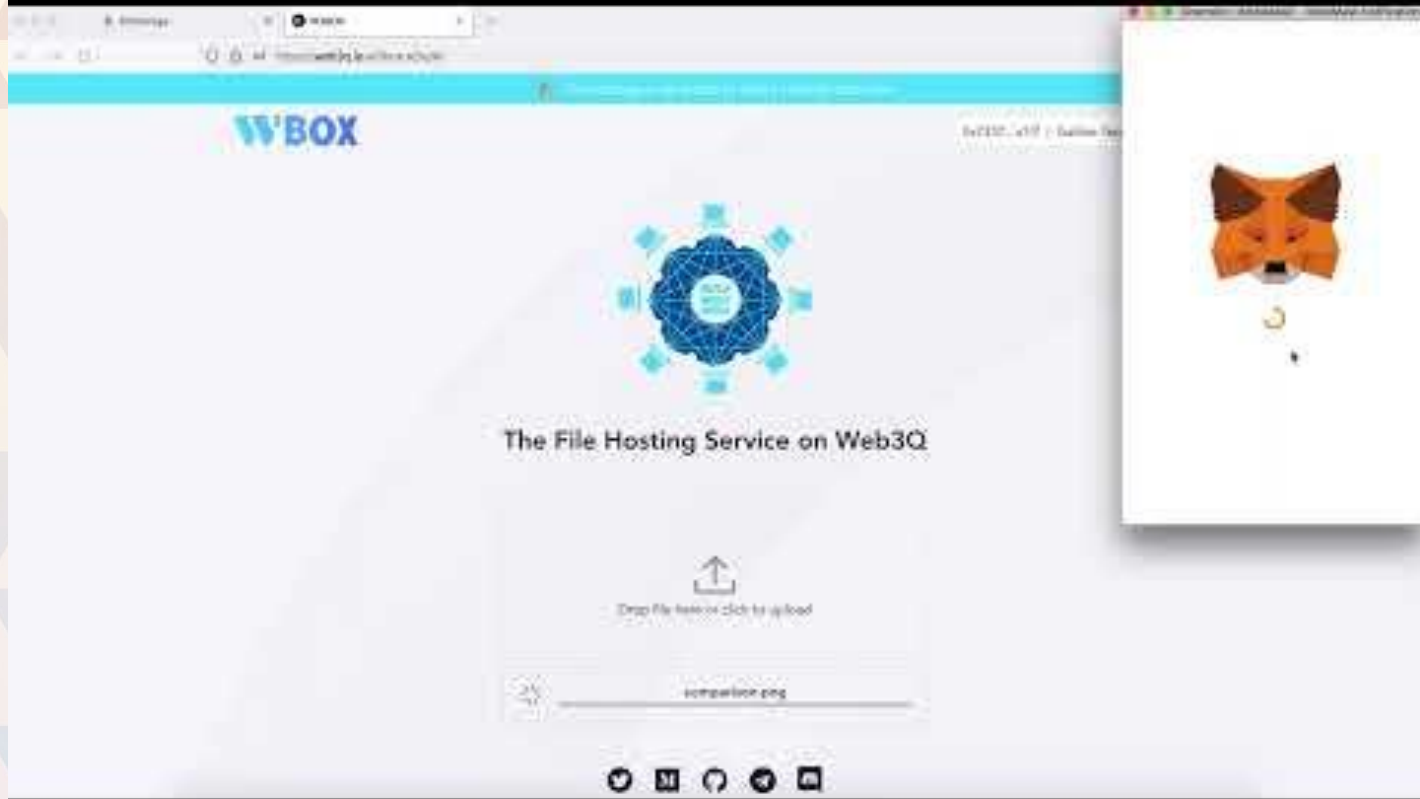
	Filecoin	Arweave	Ethereum SSTORE/SLOAD	EthStorage
Store Object	Static Files	Static Files	KV Store	
Semantics	CRD	CR		
On-Chain Programmable	⊘	⊘	✓	✓
Proof of Storage	Proof of Space-Time with Challenge	Succinct Proof of Random Access	Fully Replicated	Dynamic Sharding with Proof of Random Access
Replication Guarantee	High	Medium	Very High	High
Storage Cost	Very Low	Low	Very High	Low
Capacity	~ EB	~ 100 TB (Currnet)	~ 1 TB	~ PB
Access Protocol	ipfs://	N/A	web3://	
Wallet	Filecoin Wallet	ArWallet		

# Applications



DEMO







# Thank you!

Qi Zhou

Founder, EthStorage.io

qizhou@ethstorage.io



@qc\_qizhou