



Decentralised Storage

+

IPFS

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bitfwd

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Grassroots Blockchain Community





Grassroots Blockchain Community





Agenda

- 1. Storage
- 2. Decentralised storage
- 3. IPFS
- 4. Current Projects + Use Cases
- 5. Demo





What is Storage?



Storage Sizing

- 1.44MB
- 8GB
- 1TB





Challenges for Storage

Rachael Bale @Rachael_Bale · Oct 31
Has anyone had @googledocs lock you out of a doc before? My draft of a story about wildlife crime was just frozen for violating their TOS.
126 532 557

Rachael Bale @Rachael_Bale · Oct 31
Weirdly, this is one of the more tame articles I've worked on recently. It's actually about legal, but ethically dubious activity.
6 15 76

Rachael Bale @Rachael_Bale · Oct 31
Just to be sure, I reviewed the TOS, and there's nothing in this doc that I can see that actually violates it.
4 15 75

Rachael Bale @Rachael_Bale
@Rachael_Bale

Replying to @Rachael_Bale @googledocs
I like to use Google Docs for drafts because my editor and I can work together in real time, but this kind of monitoring is creepy

6:29 AM - 31 Oct 2017

52 Retweets 198 Likes

12 52 198

Tweet your reply

Rachael Bale @Rachael_Bale · Oct 31
Replies to @Rachael_Bale @googledocs
Though clearly very naive of me not to have considered it before...

2 9 87

The EQUIFAX logo, featuring the word "EQUIFAX" in a bold, white, sans-serif font with a registered trademark symbol (®) at the end.



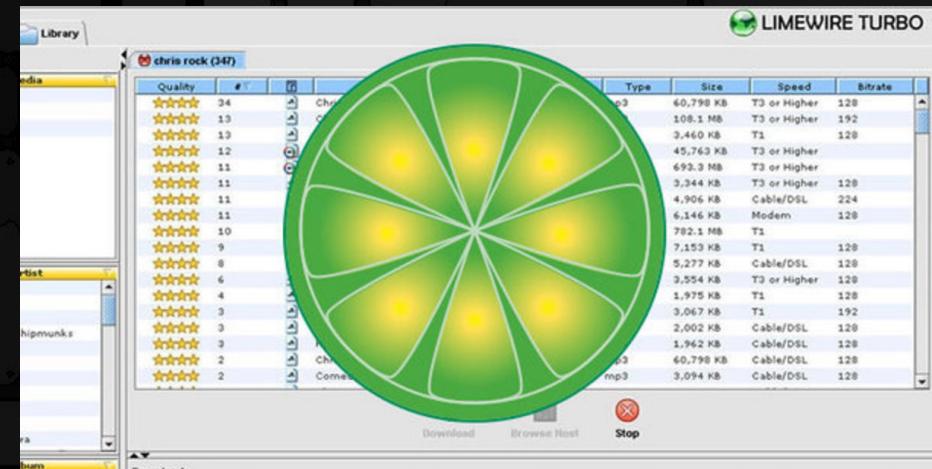
The word "Dropbox" in a large, blue, sans-serif font.



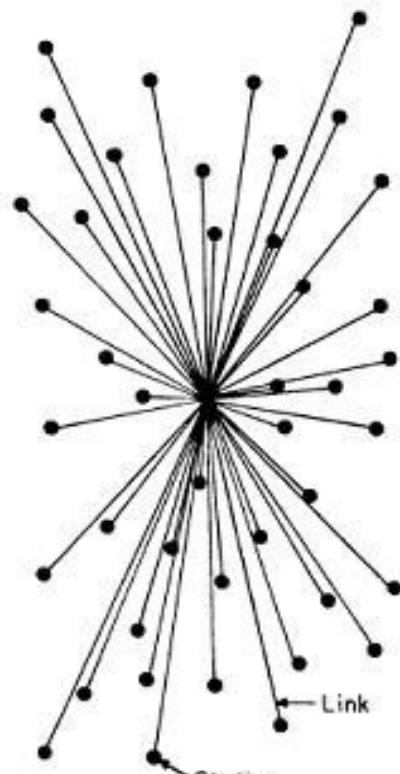


What is Decentralised Storage?

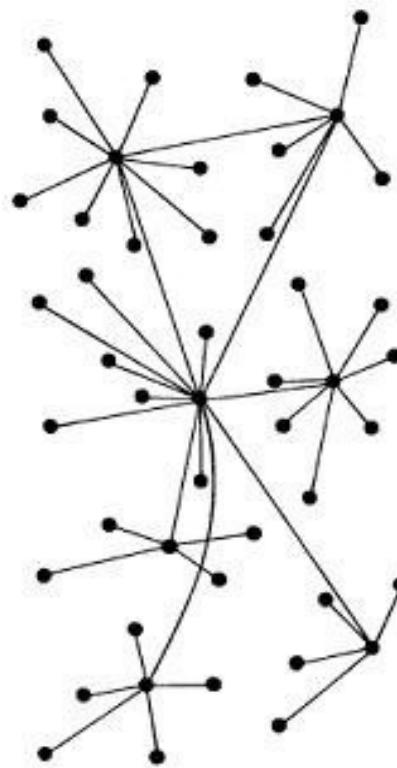
Peer 2 Peer
Security
Privacy
File loss prevention
Cost efficient



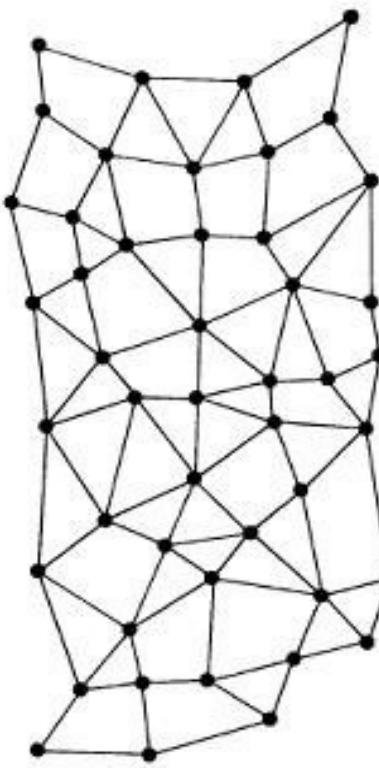
What is Decentralised Storage?



CENTRALIZED
(A)



DECENTRALIZED
(B)



DISTRIBUTED
(C)



<http://bitfwd.com/blockathon.pdf>



16.23.63.14



16.23.63.14





Content vs. Location Based

<http://bitfwd.com/blockathon.pdf>

Location
addressing



<http://16.23.63.14.com/blockathon.pdf>

<http://bitfwd.com/blockathon.pdf>

Content
addressing



<ipfs/xh12n23nd1F/blockathon.pdf>





What is IPFS?

IPFS is a peer-to-peer distributed file system that seeks to connect all computing devices with the same system of files.



Here's how IPFS works

Let's take a look at what happens when you add files to IPFS:



Each file and all of the **blocks within it** are given a **unique fingerprint** called a **cryptographic hash**.



IPFS **removes duplications** across the network and tracks **version history** for every file.



Each **network node** stores only content it is interested in, and some indexing information that helps figure out who is storing what.



When **looking up files**, you're asking the network to find nodes storing the content behind a unique hash.



What is IPFS?

- Version Control (Git)
- Distributed Hash tables
- Block Exchanges - BitSwap
- Merkle DAG

- Points of Failure
- Censorship
- HTTP 404
- File loss prevention
- Cost efficient
- Offline





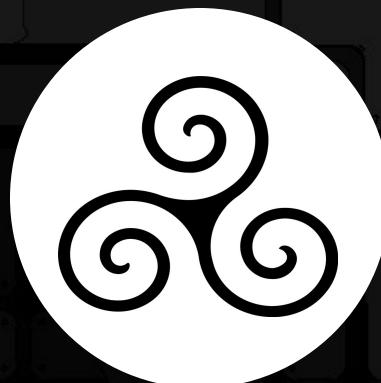
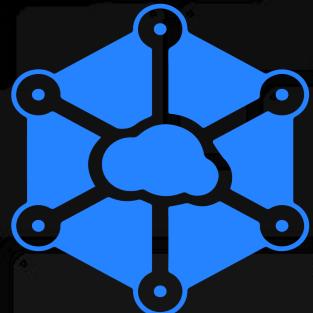
What is IPFS?

- With the Distributed Hash Table, nodes can store & share data without central coordination
- IPNS allows exchanged data to be instantly pre-authenticated and verified using public key cryptography.
- The Merkle DAG enables uniquely identified, tamper-resistant and permanently stored data
- You can access past versions of edited data via the Version Control System





Projects





FileCoin

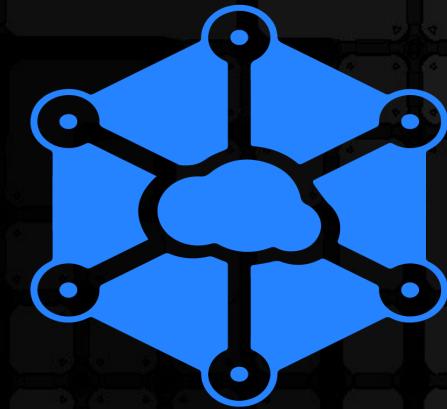
- IPFS
- \$250M Raised
- Incentived mechanism
- Marketplace
- Proof of Space
- Proof of Replication
- Stage: Development
- Token distribution: 2 Billion





Storj

- Ethereum
- UX + Leading in market
- 2GB vs 25GB
- Incentivse mechanism
- Stage: Live
- Token: 29.78M/Uncapped
- 3/6 pieces + Scoring





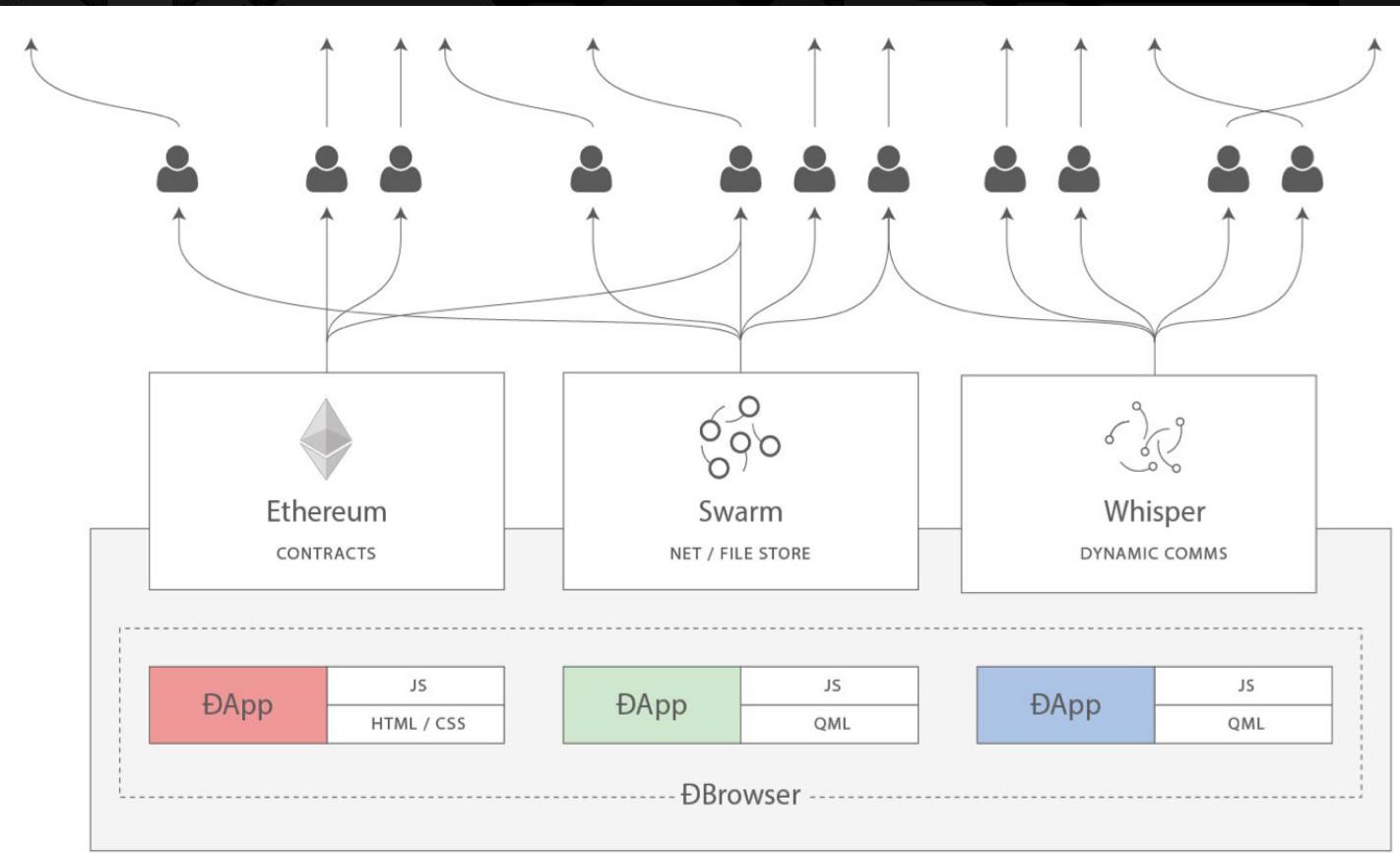
Sia

- 2015
- Incentivse mechanism
- File Contracts
- Stage: Live
- Token 98.5/425 Million
- Splits into 10/30





Swarm





Challenges

- IPFS Files aren't kept forever
- Competitive marketplace
- UX has to be there for people to be able to use it
- Centralised vs. decentralised model



Summary

- Storage is retrievable data and many changes
- Challenges to current Cloud Storage Solutions
- Alternatives of decentralised storage
- Location based vs. content based addressing
- IPFS protocol
- Projects: FileCoin, Sia, Storj, Swarm
- Projects: Akasha, Origin Protocol, uPort
- Potential can be interesting for IPFS + other decentralised storage solutions





Demo

Adding files to IPFS network

<https://ipfs.io/docs/getting-started/>

