geth --datadir "cloud-disk"

Summary - The proposal calls for creating multiple 'mirror' copies of the ETH blockchain, placed on one or more cloud disk providers and making a 'geth --datadir' option to point to a cloud disk and not to a local disk

1.Intro

Currently every user of 'geth' has to download the whole blockchain and store it on local disk or download the whole blockchain and store only the header (--syncmode 'fast' option).

In essence, everybody distrusts everybody and wants to download, verify and have a copy of the blockchain for themselves.

Even with the 'fast sync' option the size on the local disk is 25-30gb (as of Feb 2019). The complete blockchain size is more than 1tb and growing.

The situation places heavy burden on and discourages ETH users who want to have their own local private wallets and/or to run a node.

In order to have a private wallet users go to commercial wallet providers who have a single copy of the blockchain serving all of their users.

The proposal calls for modifying of the ethereum daemon to allow storing on a cloud drive.

This will create a limited number of trusted identical copies of the blockchain on cloud providers and save the ETH users from downloading and storing the whole or part of the chain.

The daemon will still have the original options of storing the blockchain to a local disk.

2. Implementation

2.1. in storing the blockchain

Modify daemon - geth so that when it runs it saves the blockchain data to one or more cloud disks, instead of getting it from local disk;

This will create multiple identical '.ethereum' folders stored on cloud disk drives;

Create an utility which will compare the data from all the cloud copies and report immediately if differences are found;

2.2. In retrieving the blockchain

Modify daemon geth so that when it runs it pulls the blockchain data from one or more up to date (having latest block) cloud disks, instead of getting it from local disk;

Optimize the way of data use between local and cloud disk so that the performance is acceptable;

2.3 In maintaining

Calls for roles of maintainers of trusted blockchain copies.

3. Benefits, pro-con

con - centralizing of the blockchain – limit the number of copies of the blockchain; place trust in a small number of blockchain copies;

pro – de-centralizing of wallets; moving away from commercial wallets; mass adoption of light private wallets from ordinary users;

pro – every wallet can be a temporary node;

pro – growth of permanent nodes; without the need to store large amount of data an user can consider running a light node on an arm system (raspberry pi) using home internet connection.

pro – spare the users of constant downloading and storing of the blockchain; slow down global warming, use less electricity and storage

pro - allow potentially quick redesign, adding features and update of the whole blockchain;

4. Big picture

After implementing of cloud access to blockchain on ETH, I plan to propose and implement cloud access to ERC20 (and later) compatible blockchains, who are not on the Etereum chain and have their own wallets and blockchains.

The 'big picture' is creating of a light unified wallet for multiple cryptocurrencies.

5. Use of funds

I like to apply and get a grant from the Ethereum Foundation in order to:
- compensate developers for time and efforts
- pay for cloud cpu-s which would run 'geth'
- pay for cloud drive storage which would have '.ethereum' folder

6. About me

I am the founder and developer of - arstech.biz , automated cryptocurrency trading system (centralized exchanges).

In my projects I use mainly 'C' and some php and java script.

Recently, related with storing large chart files, I did evaluate around 5 cloud providers. As a result I did select and currently use 2 cloud disk providers (not google or amazon) through their rest api.

And, I did build 'geth' daemon, and did research on the way of implementation.

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