Introducing the DIN – Dash Information Network

12/10/17

Background

A self-funded DAO is a fundamentally new way of thinking about governance and corporations, where democracy and capitalism work hand-in-hand to create a positive feedback loop that leads to improvements for the system itself.

The Dash DAO has grown exponentially in the last year, from $60,000 a month in treasury funds to over $4.6 Million a month today. The way in which the majority of decisions have been made for how to distribute those funds is through a centralized application built off-chain, called DashCentral.

It's done a good job up until now but as it continues to scale, it will face bigger and bigger issues and it is not ready for the challenges it faces down the road.

The Problem

One of the problems being faced by the Dash Governance system is that of centralization. The basic component of the governance system relies on the work of one community individual, @rango.

When the budget was much smaller, it didn't really attract much in the way of spam/ manipulation but as the budget grows it is becoming ripe for spam (comments and users) and manipulation. If a hacker were to pull off a DDOS attack near the end of the budget cycle – thus limiting access, or corrupt the database underpinning DashCentral, it would take down the entire second layer to the budget information system and millions of dollars would be in limbo as people are unable to comment on proposals and read the requisite information necessary to make an informed decision regarding how to allocate funds.

As the budget system continues to scale and has more users, more data, and more money at stake – it becomes clear that the solution for our problems is much the same as it is for Dash and other blockchain projects. Every problem we're facing, has a potential solution in decentralization.

Another problem is that of user experience and user interfaces. We think we can deliver a cleaner and simpler interface for submission of proposals, addition of well formatted and easily digestible information, storage of additional budget materials (PDF's, Images, Videos) and comments using modern web frameworks that make Dash governance a first class citizen in the crypto ecosystem and encourages competition and growth in the proposal system.

We envision something more akin to a Kickstarter UI that displays proposals in a much more accessible manner and encourages more feedback and participation than we're currently seeing.

The Solution

Very much in the spirit of Dash, we propose the addition of an additional tier to the governance layer and a new Web 3.0 application built using IPDB and IPFS that will be both fault-tolerant and highly-available due to replication and decentralization.

I propose naming this system, the DIN, or Dash Information Network. While the idea of building some of this functionality into DashDrive is definitely attractive, I think that the data stored in this network will grow a bit more quickly than the data stored on Masternodes to support the Evolution release and its features and could potentially lead to an undue burden placed on **every** Masternode for something that doesn't really need to be on every masternode.

The advantage to making this an additional tier of the system is that it can be run by volunteers, looking to help keep the system online and scale as large as we want it to be. Every additional node operator opens us up to further scalability and redundancy.

Tier 1 of the governance layer will continue to live on the blockchain itself, subject to current consensus rules and security.

Tier 2 will be built on IPFS and BigchainDB and will only touch the centralized web at the DNS layer. As far as I know there isn't really another way to do this unless Dash is willing to share some of the code behind the DAPI.

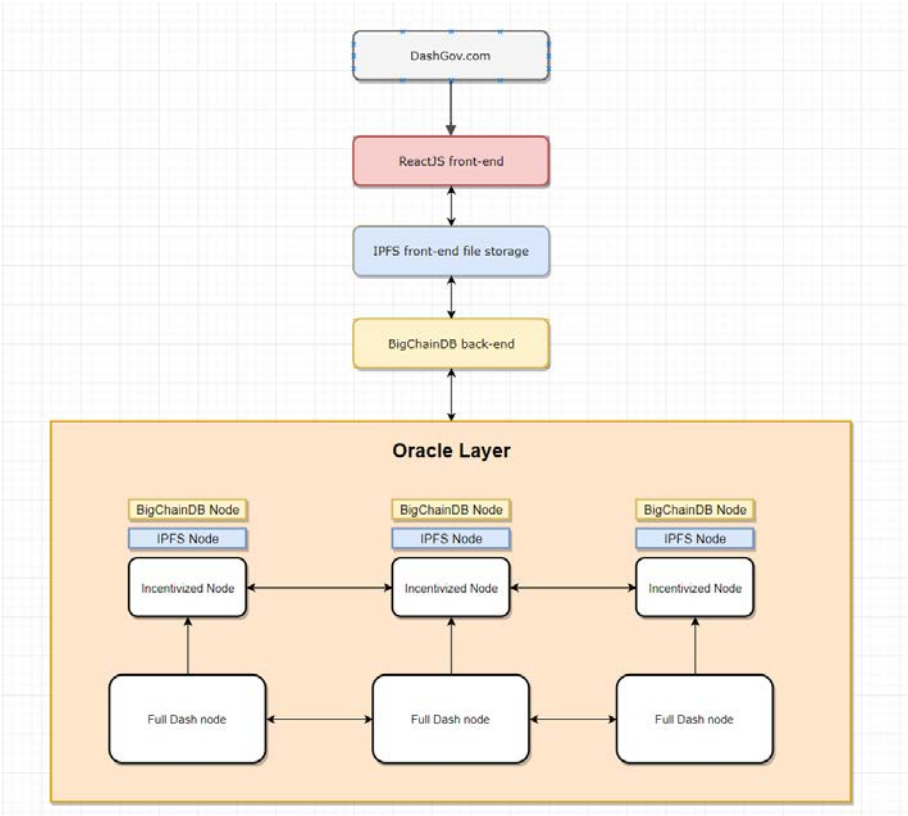

Figure 1 – proposed top-level system overview and key components

We'll be relying on two important developments to come out of the push for a decentralized web. IPFS will be used as a decentralized object storage for Javascript, HTML, and media files. BigchainDB is a potential solution for the decentralized database portion.

Each DIN node will also operate as an Oracle that connects the governance objects in Tier 1 of the network to the additional tier, while making sure that consensus is still achieved when any changes occur (addition or removal of Tier 1 governance objects). This is to prevent any malicious spam of 'new' budget objects.

Conclusion

I think all code should be open-sourced and shared with the community (despite the eventual copycats) and this could grow to be a core component of the Dash ecosystem and part of what makes Dash great from a technological perspective.

The Dash network has the financial capability to overcome any obstacles in our path with well thought-out solutions and application of resources.

Additional Ideas

We're exploring the idea of incentivization of these nodes, either by making them part of the required master nodes tools (maybe installed with Sentinel), or through a budget system making payments to a sub-DAO that manages the governance system.

Looking forward to your feedback.