< dAPP >
< CONTAINER MONITORING SYSTEM >

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Contenido

1. Abstract

Blockchain is a new tool for dApp to help coordinate peers, but they are just that – a tool. Sometimes blockchains are the right tool for the job, and sometimes they are not.

Fundamentally, the dApps must preserve the autonomy of the users, protecting them from not creating vital security features such as "shadowbans".

2. PRINCIPLES OF DISTRIBUTED PARADIGMA APPLICATION WITH BLOCKSTACK

There are as many perspectives on what makes a decentralized app (dApp) as there are dApp developers. This section defines the principles that Blockstack advocates for DApps operating within its platform.

2.1 Users own their data

DApps do not store or replicate user data. Users own their application data independent of and *outside of* the application. A Blockstack application is only considered decentralized if its users control where their data is hosted and can prove that they created the data.

Blockstack applications meet this principle if they use the Gaia storage system. Users may sign and/or encrypt their data in Gaia end-to-end. All files in Gaia are addressed by a user identifier, an application's hostname, and a filename. Through Gaia, users can prove data ownership and restrict access.

In the future, users will be able to choose on an app-by-app basis which Gaia hub serves their application data.

2.2 Users own their identities

Users are the sole administer of their own independent and unique identifiers. Within an applications, users must be distinguishable by unique identifiers. The DApp cannot mask or take away a user's identifier, and a user must be able to bind their identifier to the data they create.

Blockstack DApps anticipate that each user can own one or more IDs. In turn, these IDs are owned by a private key under the user's control. The IDs are acquired through the Blockstack naming system. First time users that log into the Blockstack application get a free id.blockstack in the Blockstack namespace.

Blockstack IDs are replicated to all peers via a blockchain, this means Blockstack cannot hide IDs. Blockstack IDs each have a public key assigned to them via the blockchain records that encode their operational history. This public key allows users to bind data to their Blockstack IDs through cryptographic signatures.

2.3 Users have free choice of clients

Identities and *data* are application independent. An application cannot be considered a DApp unless it allows users to interact with their identities and data such that the user can later do so via a different DApp.

For example, a user that creates data in client 'X' must be able access that data from a different client, 'Y', provided the client allows compatible mechanisms. Ultimately, the user has the freedom to write their own client that interacts with their own data.

Blockstack's APIs and SDKs make it easy to build applications that adhere to this principle. Existing Blockstack applications have this property today simply because they don't have any irreplaceable server-side logic.

In the future, Blockstack applications must continue to meet the first two principles but need not meet this one. For example, an application could encrypt data in-transit between the application's client and the user's chosen storage provider. Unless the app divulges the encryption key to the user, then the user does not have free choice of clients; they can only use clients that the app's servers choose to interact with.

3. USE OF BLOCKSTACK.JS LIBRARY

Blockstack JS is a library for profiles/identity, authentication, and storage.

The **authentication** portion of this library can be used to:

- create an authentication request
- create an authentication response

The **profiles/identity** portion of this library can be used to:

- transform a JSON profile into cryptographically-signed tokens
- recover a JSON profile from signed tokens
- validate signed profile tokens

The **storage** portion of this library can be used to:

- store and retrieve your app's data in storage that is controlled by the user

4. Glossary of Térms

6loWPAN. IPv6 over Low Power Wireless Personal Area Networks
API. Application Programming Interface
ATA. Actual Time of Arrival (at Port of Destination)
ATD. Actual Time of Departure (from Port of Origin)
BLE. Bluetooh Low Energy
CEP. Complex Event Processing
CO2. Carbon Dioxide
CORS. Cross-Origin Resource Sharing
CPS. Cyber Physical System
CTS. Container Tracking Service
DAG. Directed Acyclic Graph
DLT. Distributed Ledger Technologies
DSNS. Domain Sensor Name Server
EPL. Event Processing Language
ETA. Estimated Time of Arrival (at Port of Destination)
ETD. Estimated Time of Departure (from Port of Origin)
GPS. Global Positioning System
HMI. Human Machine Interface
HTTP. Hypertext Transfer Protocol
HTML. HyperText Markup Language
IANA. Internet Assigned Numbers Authority
ICO. Initial Coin Offering
IDE. Integrated Development Environment
IEEE. Institute of Electrical and Electronics Engineers
IETF. Internet Engineering Task Force
IoE. Internet of Everythings
IoT. Internet of Things
ISO. International Organization for Standardization
JSON. JavaScript Object Notation
LPWAN. Low-Power Wide-Area Network
M2M. Machine to Machine
MNO. Mobile Network Operator
O2. Oxygen
OTT. Over The Top
REST. Representational State Transfer
RFC. Request for Comments
Router ABC. Always Best Connected
SATDR. Group of Distributed Real Time Systems and Applications
STH. Short Time Historic
TEU. Twenty-foot Equivalent Unit
TMS. Traveling Messaging System
WI-SUN. Wireless Smart Ubiquitous Network

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