POA Network Whitepaper

Abstract

In this paper we propose an open permissioned network based on Ethereum protocol with Proof of Authority consensus by independent validators.

Keywords: Ethereum, Proof of Authority, Consensus, Validators, Public Notary
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Introduction
POA Network is an open, public, permissioned blockchain based on Ethereum[^fn1] protocol. To reach consensus on a global state, it uses a Proof of Authority consensus algorithm. PoA consensus is a straightforward and efficient form of Proof of Stake with known validators and governance-based penalty system. A list of validators is managed by a smart contract with governance by validators. During an initial ceremony, master of ceremony distributes keys to 12 independent validators. They add 12 plus one more to reach initial requirements for the consensus. To be validators on the network, a master of ceremony asks them to have an active notary public license within the United States. A concerned third party can cross-validate validators' identities using open data sources and ensure that each validator is a good actor with no criminal records. In the proposed network, identity of individual validator and trust to independent and non-affiliated participants will secure the consensus.

The network is fully compatible with Ethereum protocol. The network supports only Parity client version 1.7 and later. The network supports trusted setup, on-chain governance, and a variety of "proof of identity" oracles. We believe that POA Network will close a gap between private and public networks, and will become a model for open networks based on PoA consensus.

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