Parity

The world's fastest and lightest Ethereum client
Proof-of-Authority Chains

• Parity supports a Proof-of-Authority consensus engine to be used with EVM based chains

  • Secure
  • Green
  • Performant
  • Predictable
Proof of Work

• Proof of work is a requirement to define an expensive computer calculation that needs to be performed in order to create a new group of trustless transactions on a distributed ledger.

  • To verify the legitimacy of a transaction, or avoiding the so-called double-spending

  • To create new digital currencies by rewarding miners for performing the task
Proof of Stake

• Proof of stake is a greener and cheaper way to validate transactions based and achieve the distributed consensus.

• Miners may potentially own none of the digital currency they are mining.

• The creator of a new block is chosen in a deterministic way, depending on its wealth, also defined as stake.
**Proof of Work vs Proof of Stake**

**Proof of Work**
- Proof of work is a requirement to define an expensive computer calculation, also called mining.
- A reward is given to the first miner who solves each blocks problem.
- Network miners compete to be the first to find a solution for the mathematical problem.

**Proof of Stake**
- Proof of stake, the creator of a new block is chosen in a deterministic way, depending on its wealth, also defined as stake.
- The PoS system there is no block reward, so, the miners take the transaction fees.
- Proof of Stake currencies can be several thousand times more cost effective.
Why not Proof of Stake?

Bob: 50:50

Alice: 90:10

1000 EXL
Proof of Authority

• Instead of stake with the monetary value, a validator’s identity performs the role of stake.
PoS vs PoA

• Similarity
  • identity as a form of stake is also scarce.

• Difference
  • PoA only has one identity per person.
  • It is much harder to get your stake (identity) back in PoA.
Conditions

• Identity must be true.

• Eligibility for staking identity should be difficult to obtain.

• The procedure of establishing the authority needs to be the same for all validators.
Approaches

• The notaries would go through the formal on-chain identity verification via the POA Network DApps.

• Candidates for validators have to overcome the hurdle of passing notary exams.

• The first approach makes the procedure of gaining the reputation/authority explicit and unified.
Conclusions

Proof of Work  Proof of Stake  Proof of Authority
Thank you!