What is Quorum Consensus?

Consensus

- Consensus is the agreement that allows the nodes to choose algorithms based on their requirements in terms of privacy, scalability, legal-system compatibility, and algorithmic agility.
- Updates are applied using transactions, consuming existing state objects, and producing new states.
- No need of Proof-of-Work or Proof-of-Stake consensus algorithms.

Types of Consensus Algorithms:

- **RAFT Consensus:** Used for faster blocktimes, on-demand block creation, and transaction finality.
- **Istanbul BFT Consensus:** PBFT-inspired consensus algorithm with transaction finality.
- **Clique POA Consensus:** Default POA consensus algorithm bundled with Go Ethereum.

RAFT Consensus

- A distributed consensus algorithm, designed to solve the problem of getting multiple servers to agree on a single shared state.
- It works on leader-follower model.
- Data flows in one direction, that is from leader to other servers in the network.
- Raft uses two remote procedure calls (RPCs): **RequestVotes** and **AppendEntries.**
- Divide consensus into three sub-problems:
  - **Leader Election**
  - **Log Replication**
  - **Safety**

Istanbul BFT Consensus

- Istanbul BFT is a PBFT-inspired consensus algorithm, that provides transaction finality.
- Maintains the order of the transaction.
- It uses similar validator voting mechanism as Clique POA mechanism.
- Uses a 3-phase consensus mechanism:
    - **PRE-PREPARE:** A new block proposal message.
    - **PREPARE:** Check whether all validators are working on the same sequence and round.
    - **COMMIT:** Proposed block is accepted and is going to be inserted to the blockchain.

Clique POA Consensus

- Default Proof-of-Authority consensus algorithm bundled with Go Ethereum.
- Only authorized signers mint the blocks.
- Clique involved voting protocol and block verification during synchronization.

THANK YOU!

Any questions?

You can mail us at

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