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What is SCP?

? Secure Consensus Mechanism: SCP is the method Stellar uses to validate transactions and update its ledger in a decentralised manner. SCP ensures that the Stellar network remains secure, scalable, and efficient.

2. Key Features of SCP:

?? Federated Byzantine Agreement (FBA): Nodes reach consensus by selecting trusted subsets of other nodes (quorum slices). These slices overlap, forming a decentralised "web of trust."

? Decentralisation: Each node chooses its trusted peers, ensuring no single entity controls the network.

? Scalability & Security: SCP scales efficiently and tolerates faults, continuing to operate even if some nodes fail or act maliciously.

3. How SCP Works:

? Quorum Slices: Nodes vote on transactions within their trusted quorum slices. Consensus is reached when enough slices agree on a transaction.

? Federated Voting: SCP uses a three-step process: vote, accept, and confirm, ensuring all honest nodes agree on the same transactions before adding them to the ledger.

4. Benefits of SCP:

?? Fast Transactions: SCP ensures quick transaction confirmation and high throughput, ideal for financial applications.

?? Low Energy Consumption: Unlike energy-intensive proof-of-work systems, SCP is eco-friendly.

5. Applications of SCP:

? Cross-Border Payments: SCP powers Stellar's fast, low-cost global payment system.

? Asset Issuance: Organisations use SCP to securely issue and manage digital assets on the Stellar network.

6. How to Teach Others:

? Use Voting Analogies: Compare SCP to a voting system where trust is built through trusted voters. Decisions are made when enough trusted votes agree.

? Emphasise Decentralisation: Highlight how SCP allows Stellar to operate without a central authority, promoting a secure and open financial network.

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