

**EVAULT FOR STORING
GOVERNMENT
DOCUMENTS USING
HYPERLEDGER
FABRIC"**

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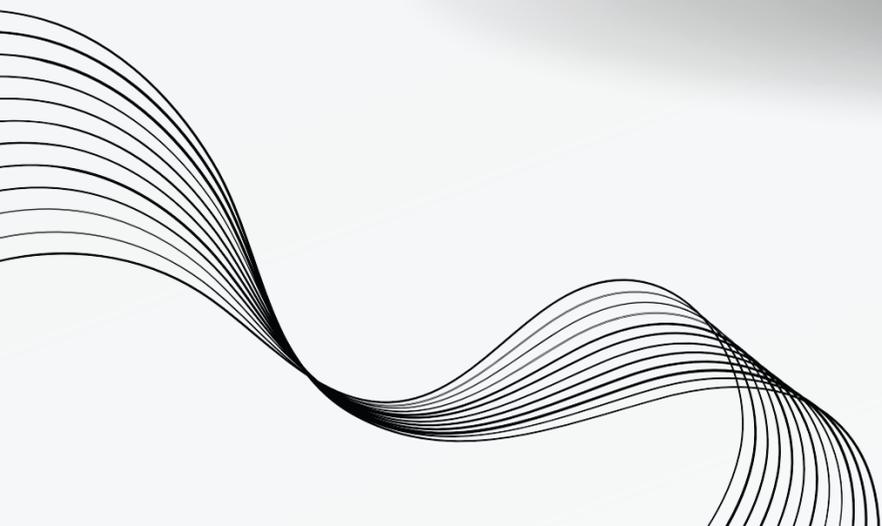
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CONCLUSION

INTRODUCTION



- Project Overview: Evault for Secure Government Document Storage
- Hyperledger Fabric: A Blockchain Platform for Enterprise Solutions
- Key Benefits of Using Hyperledger Fabric: Security, Privacy, Traceability, Interoperability



TECHNICAL OBJECTIVES

Node Setup

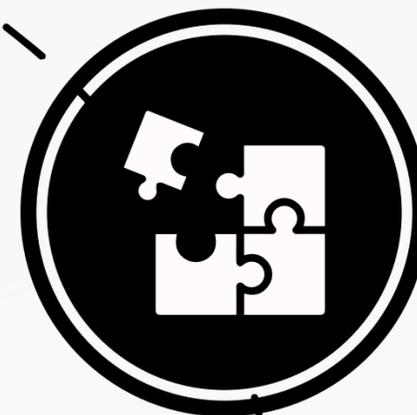
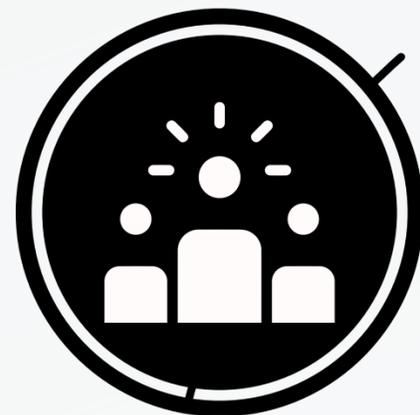
Peer Nodes:Peer nodes are responsible for maintaining the ledger and state of the blockchain. They store a copy of the entire blockchain, execute smart contracts and maintain the current state of the ledger , Orderer Nodes:Manage the order of transactions in the blockchain, MSP(Member Service Provider) , Channels

Sharing and Retriving aspect

Document Storage and Retrieval Using CouchDB for storing of Documents

Validator Node

Validator Node:They typically participate in a consensus algorithm where a set of nodes (validators) collectively agree on the state of the blockchain and Responsibilities



DOCUMENT STORAGE AND RETRIEVAL

- Document Encryption and Hashing Using AES for encryption and decryption and SHA256 for hashing the documents
- Document Storage on the Blockchain Ledger:As direct storing of Documents is not possible we store the hash of the document on the blockchain

- Document Retrieval Process
- Access Control Mechanisms

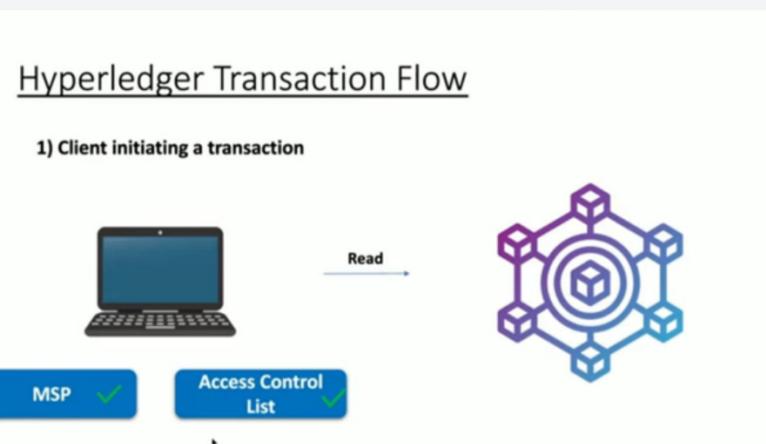
VALIDATOR NODES AND CHAINCODE

- Validator nodes play a crucial role in achieving consensus.
- Responsibilities include validating transactions and proposing blocks.
- Form the network's consensus algorithm to agree on the state of the blockchain.
- Chaincode is the smart contract in Hyperledger Fabric.
- Executes business logic, processes transactions, and updates the ledger.
- Written in programming languages like Go, JavaScript, or Java.
- Lives on peer nodes and interacts with the blockchain network.

MSP CERTIFICATION

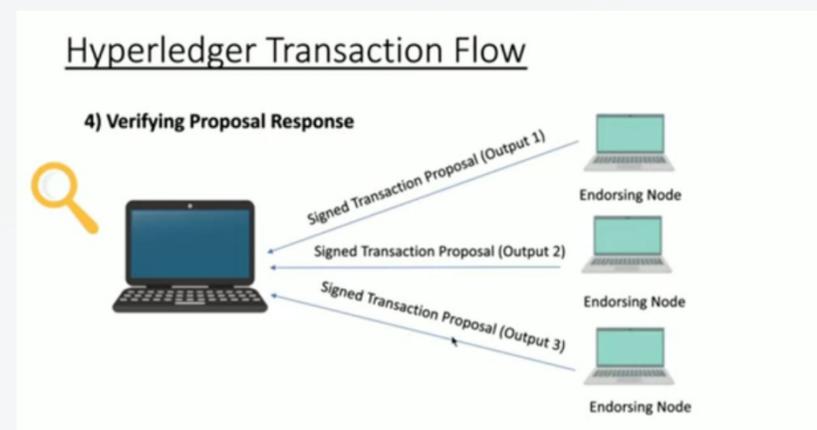
- Validates and authenticates the identity of participants (organizations, users) in the network.
- Includes Certificate Authorities (CA) that issue X.509 certificates to network participants.
- Each participant's MSP configuration is defined to specify the rules for validating and authenticating participants based on their certificates.

TRANSACTIONS IN HYPERLEDGER FABRIC



A client initiates a transaction by submitting a transaction proposal to endorsing peers. The proposal includes the proposed updates to the ledger.

PROJECT 1

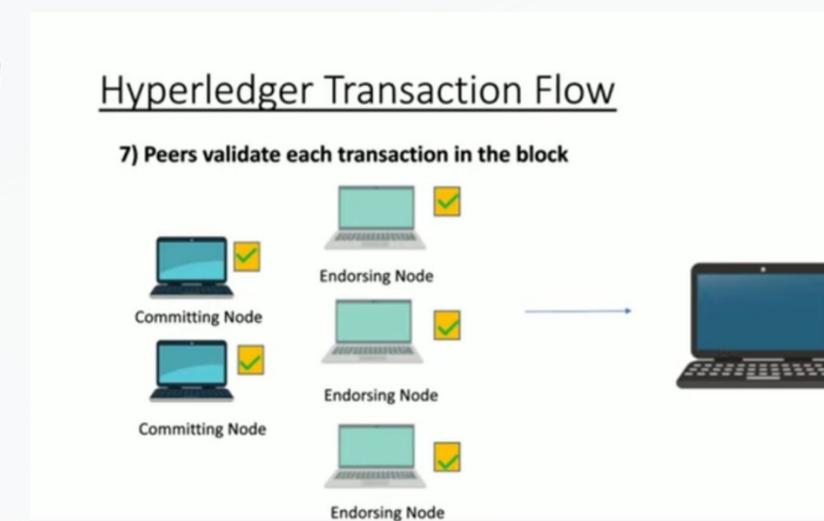


- Endorsing peers simulate the transaction by executing the corresponding chaincode
- The endorsed transactions are collected by the ordering service.

PROJECT 2

- Each peer validates the transactions in the block against endorsement policies.
- Valid transactions are committed to the ledger, updating the world state.

PROJECT 3



THANK YOU

