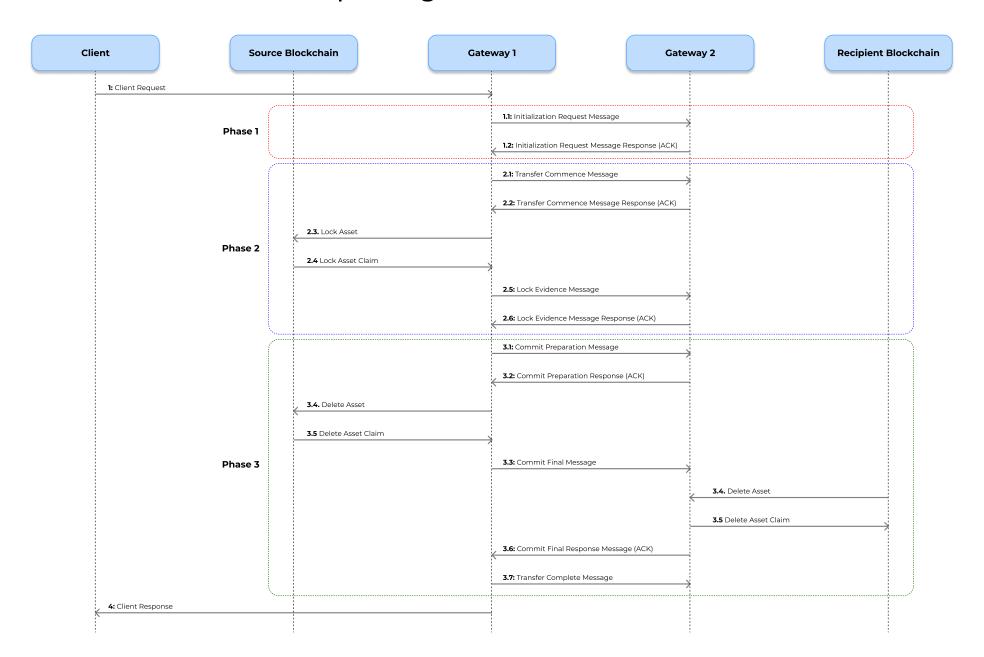
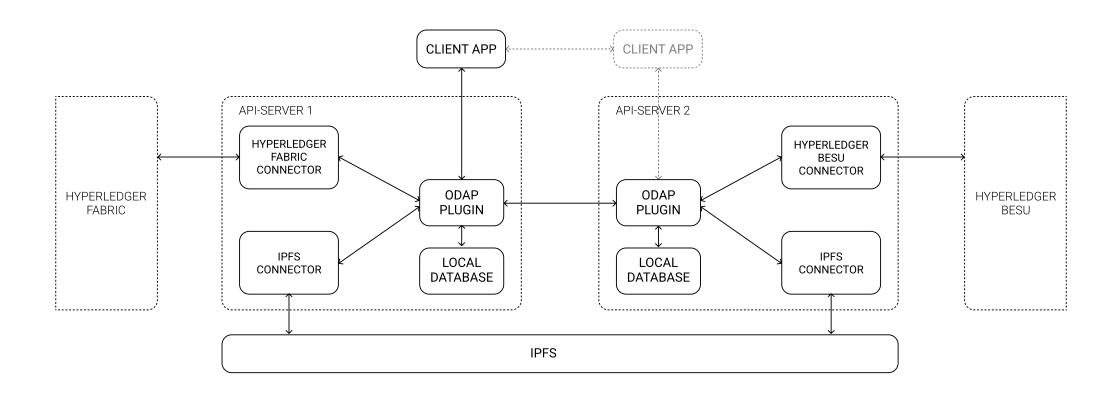
## Gateway-Based Blockchain Interoperability



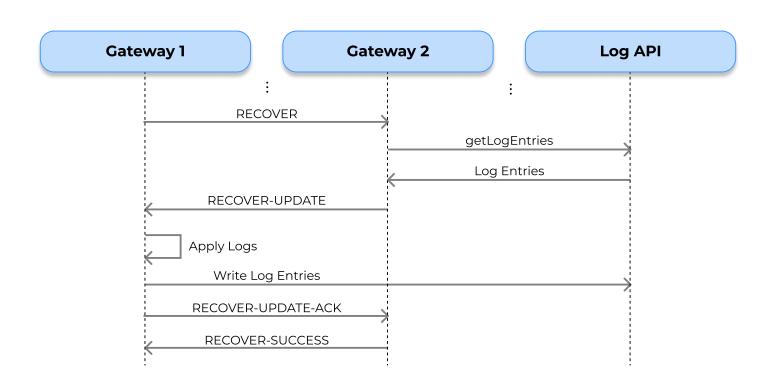
## Open Digital Asset Protocol



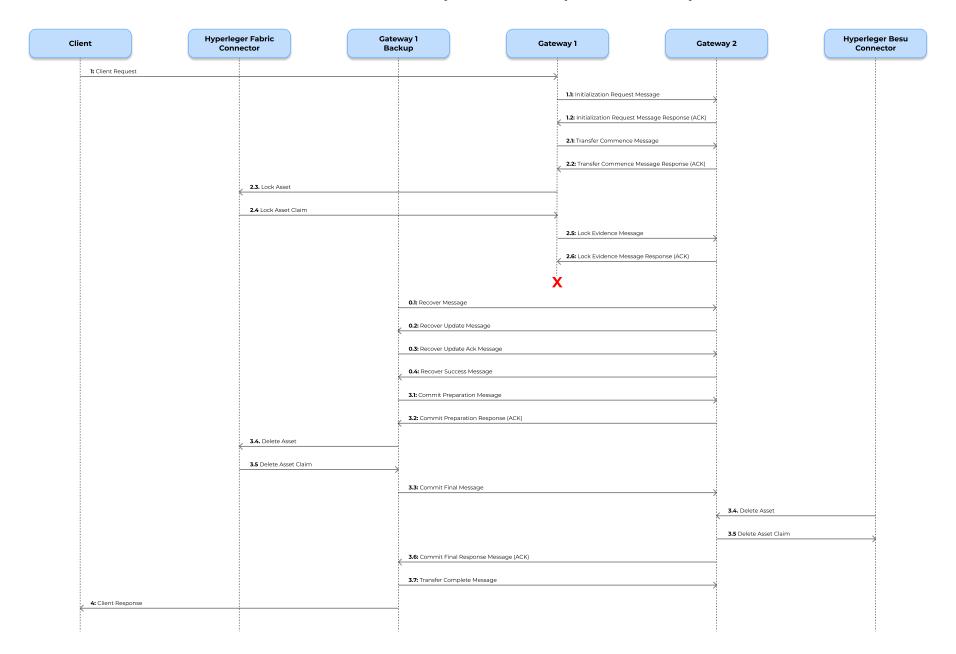
# Hyperledger Cactus Implementation Architecture



## Crash Recovery – Self Healing



#### Crash Recovery – Backup Gateway



#### Properties:

ACID + Auditability + Termination

There are three ways of terminating:

- rollback protocol
- self-heal
- primary-backup scheme

#### **Privacy**:

Each gateway needs to have read/write permission to access the ledgers.

- In Fabric side we assume the gateway belongs to one of the organisations of the channel.
- In Besu side we assume the gateway has the keys to access the destination address.

#### Relevant links:

- HERMES paper: <a href="https://www.sciencedirect.com/science/article/abs/pii/S0167739X21004337">https://www.sciencedirect.com/science/article/abs/pii/S0167739X21004337</a>
- SAT: <a href="https://datatracker.ietf.org/doc/bofreq-hardjono-secure-asset-transfer-protocol/">https://datatracker.ietf.org/doc/bofreq-hardjono-secure-asset-transfer-protocol/</a>
- ODAP draft: <a href="https://datatracker.ietf.org/doc/draft-hargreaves-odap/03/">https://datatracker.ietf.org/doc/draft-hargreaves-odap/03/</a>
- ODAP-2PC draft: https://datatracker.ietf.org/doc/html/draft-belchior-gateway-recovery-04