Architecture Design

Description

SecDove is a secure messaging web application. It uses a client-server architecture.

Client

- Gives a User Interface for utilizing app features
- Handles encryption/decryption of messages
- Handles key generation
- Sends encrypted messages to server
- Stores temporary data in browser (JWT to keep logged in, private key stored in local storage)

Server

- Handles Authentication process of users
- Stores account data (hashed+salted password)
- Stores encrypted messages
- Stores conversation keys

High-Level Architecture Diagram

Client Tier (React)

User Interface Components

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Context Providers

↓ (to Cryptography Layer, API Client)

Cryptography Layer   API Client

Network Layer

HTTP/HTTPS   WebSocket/Socket.IO

Server Tier (Node.js)

Express.js Server   Socket.IO Server

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Middleware Layer

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Route Handlers

Data Tier

SQLite Database   File System