# Crypto Mchanga Application (Microservice Architecture)

**Crypto Mchanga** is a decentralized application (DApp) built to bridge M-Pesa and Ethereum networks, allowing users to send funds between them seamlessly. The project is structured in a microservices architecture, with separate components for the frontend, backend, smart contract interactions, and middleware.

## Frontend

- **Hosted:** Crypto Mchanga Frontend
- **Code:** Frontend GitHub Repository

## Backend (Smart Contract)

- **Hosted Contract:** Crypto Mchanga Smart Contract on Sepolia
- **Code:** Backend GitHub Repository

## MPesa to ETH Middleware

- **Hosted Contract:** MPesa to ETH Middleware Contract on Sepolia
- **Code:** Middleware GitHub Repository

## Contract Interaction with Node API

- **Hosted API:** MPesa to ETH Bridge API
- **Code:** API GitHub Repository

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## Architecture Overview

### 1. Frontend

- Built with React and deployed to Vercel for a seamless user experience.
- Integrates with the backend to interact with the Ethereum network and the M-Pesa bridge.

### 2. Backend (Smart Contract)

- Deployed on the Sepolia test network.
- Allows ETH transfers and manages the logic for conversions between ETH and M-Pesa.

### 3. MPesa to ETH Middleware

- Provides the crucial bridge between M-Pesa and Ethereum, allowing users to fund their ETH wallet using M-Pesa.

### 4. Contract Interaction with Node API

- A Node.js API that handles requests between the frontend and the smart contracts.
- Facilitates smooth communication between the M-Pesa STK push, the Ethereum network, and the user's frontend application.

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Feel free to check out the project's various components and contribute or offer feedback!