

Pollchain

Gasless Polling

Marcel Schubert, Colin van Loo, Tareq Kattit



Inhalt

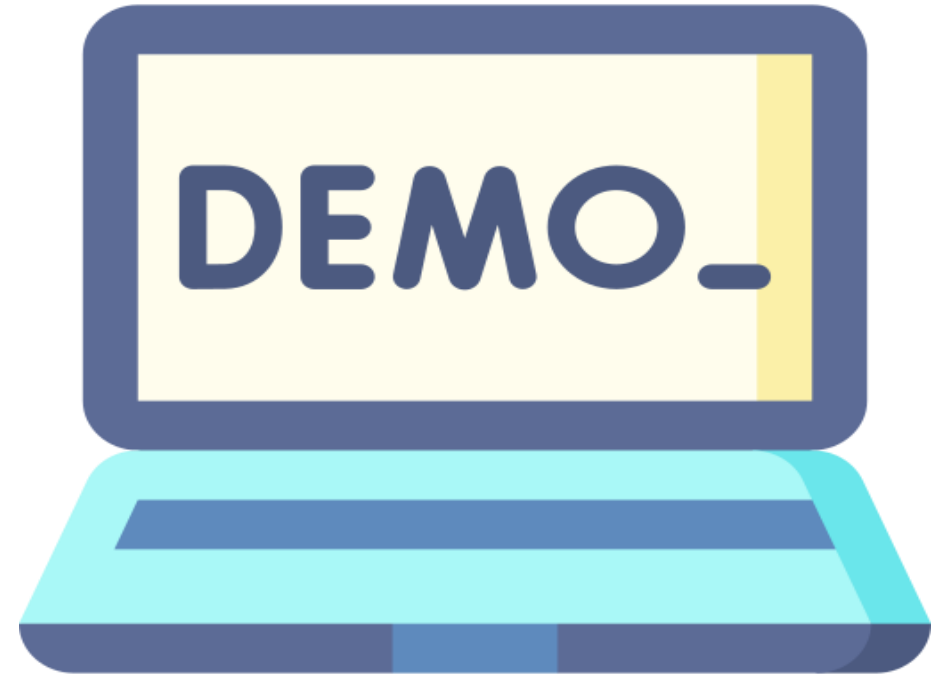
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Introduction

- Gasless polling
- Funded by the owner

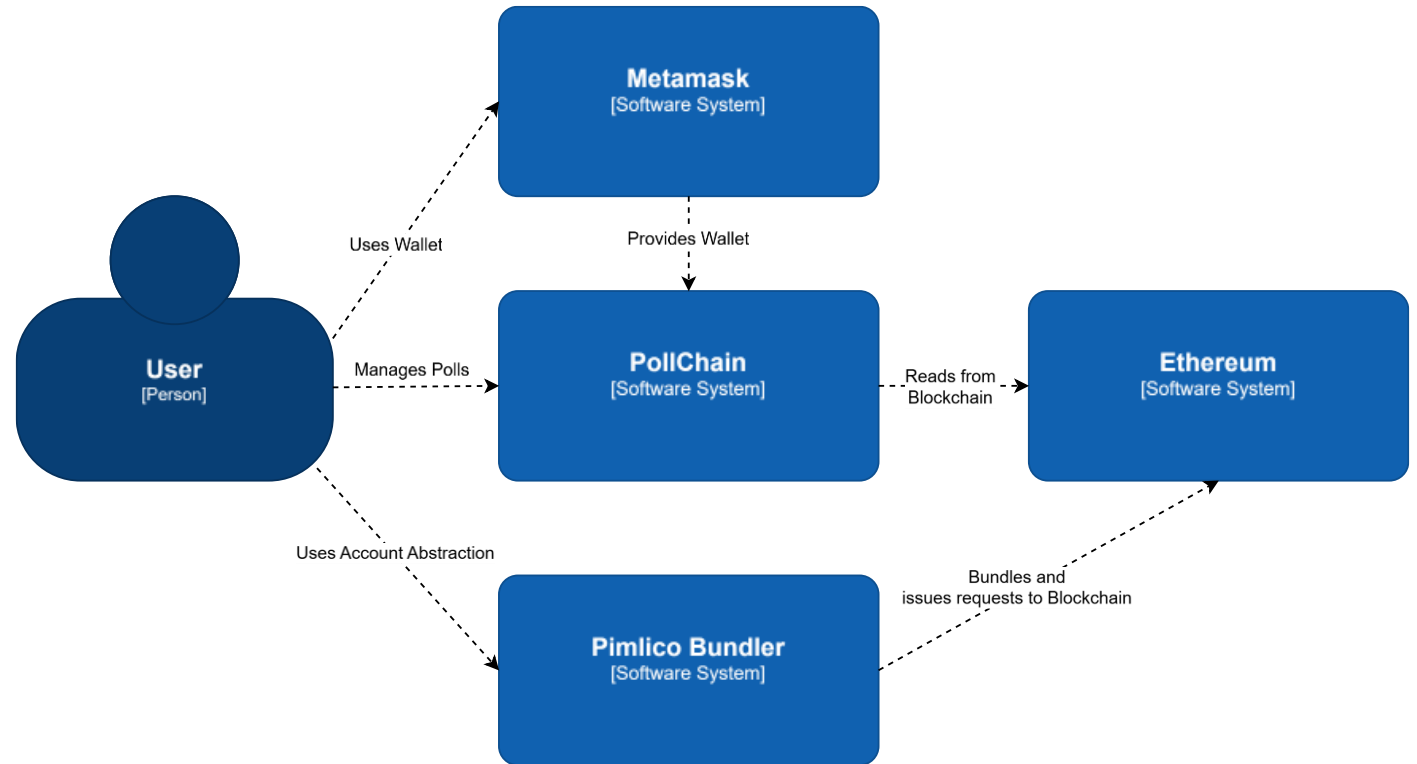
- Every user can create a poll
- Every user can cast a vote once
- Polls can be deleted by the creator

Live Demo



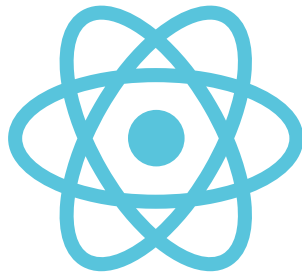
Architecture

- **User:** Interacts via browser wallet (MetaMask)
- **PollChain:** React app, connects to blockchain via Alchemy RPC or Pimlico Bundler
- **Ethereum (Sepolia):** Hosts Smart Contracts (PollChain, SimpleAccount, EntryPoint v7)
- **Pimlico Bundler:** Submits UserOperations for gasless transactions



Tech-Stack

- Vite React
 - viem for Web3 interactions
 - Tailwind
 - Wagmi, permissionless
- Hardhat for contract deployment
- Pimlico bundler
- ERC-4337 Account Abstraction



Hardhat



Contract Deployment

```
# 1. Deploy PollChain contract
npm run deploy

# 2. Deploy owner's SimpleAccount
npm run deploy:owner

# 3. Deploy SimpleAccounts for other users (repeat as needed)
npx hardhat deploy-user --network sepolia --address [0xUserAddress]

# 4. Fund SimpleAccounts (if needed)
npx hardhat fund-simpleaccount --network sepolia --address [0xSimpleAccountAddress]
```



```
# deploy.cjs

console.log("Deploying PollChain contract...");

const PollChain =
  await ethers.getContractFactory("PollChain");

const pollChain =
  await PollChain.deploy(deployer.address);
```

Design Decisions

- Use OpenZeppelin as much as possible (robust, battle-tested)
- One contract stores all polls
- Every user has his own SimpleAccount contract
- Every SimpleAccount is funded by the owner

Fragerunde

