CSE 540:
Engineering Blockchain Applications

Project Resources

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Requirements - Ethereum

- Solidity
- Remix IDE
- Browser (Chrome, Firefox, Brave, and Edge)
- Ethereum Developer Resources

MetaMask

- To deploy a smart contract on a Polygon Amoy Network, you will first need a way to connect to a Polygon Amoy Network and pay the ‘gas fees’ associated with deploying smart contract.

- It is recommended to use the MetaMask browser extension (supported browsers include Chrome, Firefox, Brave, and Edge)
    - Provides an easy-to-use interface into Ethereum Networks.
    - Provides a wallet and wide-ranging interoperability with other smart contracts.

- MetaMask Download

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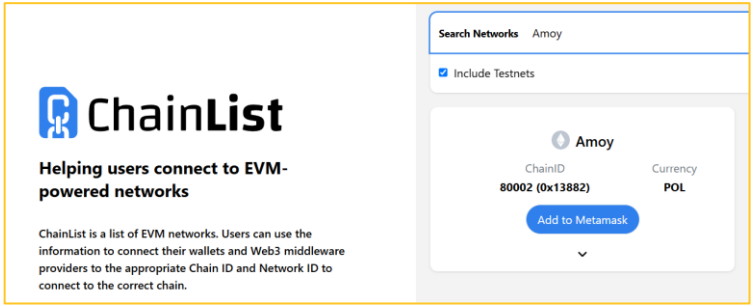
Polygon Amoy Testnet

- Testnet allows to deploy your smart contract in a live setting, without the need for real currency and other Mainnet security considerations.
- Testnets are widely used, and it is highly recommended to test and deploy smart contracts on a testnet before deploying on mainnet.
- Access ChainList add the Amoy Testnet to MetaMask.



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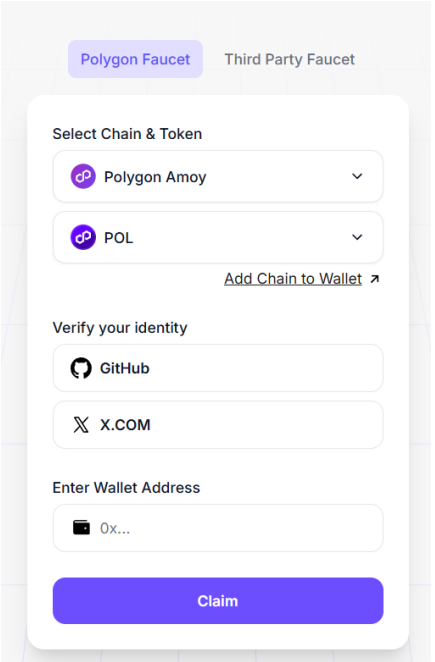
Add Testnet Tokens

- The on-chain currency for the Polygon Amoy Testnet is POL.
- You will need POL to pay gas fees when deploying your smart contract and transacting on the Polygon Amoy network.
- Go to Faucet and enter your MetaMask wallet address to get the test tokens.



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Remix IDE and Solidity

- Remix IDE https://remix.ethereum.org
  - Browser-based IDE
  - Easily connects to MetaMask
  - Allow development, test, and deployment of smart contract, all directly in browser.

- Solidity documentation: https://docs.soliditylang.org/en/v0.8.30/

Requirements – Hyperledger Fabric

- Docker
  - Mac/Windows – Docker Desktop [https://docs.docker.com/desktop/]
  - Linux – Docker Engine [https://docs.docker.com/engine/install/]
- Docker Compose
  - Mac/Windows – Bundled with Docker Desktop
  - Linux [https://docs.docker.com/compose/install/]
- Go [https://go.dev/doc/install]
- Git [https://git-scm.com/]
- jq [https://jqlang.org/]
- CURL [https://curl.se/]

Windows – Use WSL

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Setup - Hyperledger Fabric

- Verify that Docker has started on the system
- Create a project directory and go inside the directory
    - Optional – Inspect the script
      https://raw.githubusercontent.com/hyperledger/fabric/master/scripts/bootstrap.sh
    - Run ‘curl -sSL
      https://raw.githubusercontent.com/hyperledger/fabric/master/scripts/bootstrap.sh | bash -s’.

      It will download related docker images for the project, clone fabric-samples repo.
- Official Documentation
- Contract API

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Q&A

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