Let me give a quick explanation of deploy smart contacts to ropsten testnet

1. Pre requirement

* Wallet for contract deployment

Using Metamask I have created a new account.

And receive some airdrop(faucet) for ropsten testnet (ex: <https://faucet.egorfine.com/>) to my account.

* Infura project ID

I am using Infura for blockchain Node provider.

Go to [www.infura.to](http://www.infura.to) , create an account and create a project.

It will give me the infura project\_id, will be used for deploy Node URL.

1. Compile contract

$ npx hardhat compile

1. Test the contract using testing javascript

./test/test.js

const { expect } = require("chai");

const { ethers } = require("hardhat");

describe("DocumentScore", function () {

  let documentScore;

  beforeEach(async () => {

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

    documentScore = await DocumentScore.deploy();

  });

$npx hardhat test

1. Prepare deploy script

./scripts/deploy.js

  const DocumentScore = await hre.ethers.getContractFactory("DocumentScore");

  const documentScore = await DocumentScore.deploy();

  await documentScore.deployed();

  console.log("DocumentScore deployed to:", documentScore.address);

}

// We recommend this pattern to be able to use async/await everywhere

// and properly handle errors.

main()

  .then(() => process.exit(0))

  .catch((error) => {

    console.error(error);

    process.exit(1);

  });

I will prompt the contract address on ropsten test after deployed

1. Save the Wallet account private key and infura project\_id to .env file

./.env

MNEMONIC=

PRIVATE\_KEY=0add6502b23554aa78e1d077f60cb7dd24fa27f039ae959d539357463220bd90

PUBLIC\_KEY=0xd865592F81B5f3D5BBb0573b89A59194865FC3e4

INFURA\_PROJECT\_ID=9aa3d95b3bc440fa88ea12eaa4456161

ETHERSCAN\_API\_KEY=

1. Configuration for deployment

./hardhat.config.js

const getHDWallet = () => {

  const { MNEMONIC, PRIVATE\_KEY } = process.env;

  if (PRIVATE\_KEY && PRIVATE\_KEY !== "") {

    return [PRIVATE\_KEY];

  }

  if (MNEMONIC && MNEMONIC !== "") {

    return {

      mnemonic: MNEMONIC,

    };

  }

  throw Error("Private Key Not Set! Please set up .env");

};

    ropsten: {

      url: `https://ropsten.infura.io/v3/${process.env.INFURA\_PROJECT\_ID}`,

      accounts: getHDWallet(),

    }

1. Run command for deploy

$npx hardhat run ./scripts/deploy.js –network ropsten

1. Check the smart contract address on etherscan ([https://ropsten.etherscan.io/address/[ADDRESS](https://ropsten.etherscan.io/address/%5bADDRESS)])