

Advanced-smartcontracts

**OPEN EDITORS**

- BridgeBsc... 1
- BridgeBas... 1
- IToken.sol Lab...
- Migrations.sol...
- JS eth-bsc-bridge...
- .env Lab-Assign...
- truffle-config.js
- JS eth-bsc-transfer...
- JS eth-token-bal...

**ADVANCED-SMARTCON...**

- TokenEth.sol
- migrations
  - .gitkeep
  - JS 1\_initial\_mig...
  - JS 2\_deploy\_co...
- node\_modules
- scripts
  - JS bsc-token-b...
  - JS eth-bsc-brid...
  - JS eth-bsc-tran...
  - JS eth-token-b...
- test
  - .env
  - .gitignore
  - hardhat.config...
  - package-lock...
  - package.json
  - truffle-config.js

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
Compiling your contracts...
=====
> Everything is up to date, there is nothing to compile.

Starting migrations...
=====
> Network name: 'bscTestnet'
> Network id: 97
> Block gas limit: 5000000 (0x2faf080)

1_initial_migration.js
=====

Deploying 'Migrations'

> transaction hash: 0x07485aa4c51b11a52259c2ee610514d3cf6586b2f9120ed0c340e15be6210074
> Blocks: 4
> Seconds: 12
> contract address: 0xf1d7e3c30e249EbAaae77070a663e4013faf6286
> block number: 33909241
> block timestamp: 1696424764
> account: 0x97d25e3352C946715521FDed8A39c5134fA9446e
> balance: 0.099386
> gas used: 245600 (0x3bf60)
> gas price: 2.5 gwei
> value sent: 0 ETH
> total cost: 0.000614 ETH
```

Ln 68, Col 12 Spaces: 2 UTF-8 LF ⚡ Babel JavaScript ⚡ Go Live ⚡ Prettier

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**ADVANCED-SMARTCON...**

- TokenEth.sol
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  - package-lock...
  - package.json
  - truffle-config.js

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
Lab-Assignment-submission > Assignment1 > truffle-config.js > <unknown> > networks > ethTestnet > provider
=====
62 // Useful for deploying to a public network.
63 // NB: It's important to wrap the provider as a function.
64 ethTestnet: {
65   provider: () =>
66     new HDWalletProvider(
67       process.env.MNEMONIC_METAMASK,
68       "wss://sepolia.infura.io/ws/v3/52bc3a35e8244537bc4848e8d20bb882",
69       0,
70       1
71     ),
72   }

=====
> Everything is up to date, there is nothing to compile.

Starting migrations...
=====
> Network name: 'bscTestnet'
> Network id: 97
> Block gas limit: 5000000 (0x2faf080)

1_initial_migration.js
=====

Deploying 'Migrations'

> transaction hash: 0x07485aa4c51b11a52259c2ee610514d3cf6586b2f9120ed0c340e15be6210074
> Blocks: 4
> Seconds: 12
> contract address: 0xf1d7e3c30e249EbAaae77070a663e4013faf6286
> block number: 33909241
> block timestamp: 1696424764
> account: 0x97d25e3352C946715521FDed8A39c5134fA9446e
> balance: 0.099386
> gas used: 245600 (0x3bf60)
> gas price: 2.5 gwei
> value sent: 0 ETH
> total cost: 0.000614 ETH

2_deploy_contracts.js
=====

Saving migration to chain.
Saving artifacts
Total cost: 0.000614 ETH

=====
Deploying 'TokenBsc'

> transaction hash: 0xa3dddea411a40a1f0f65ab2e1cd6728f17c44bda5b7ccf732af198ea0c1c53a
> Blocks: 6
> Seconds: 16
> contract address: 0x0e82773A4e0E457812C9b2cd11039dC078029b8C
> block number: 33909255
> block timestamp: 1696424806
> account: 0x97d25e3352C946715521FDed8A39c5134fA9446e
> balance: 0.0953774175
> gas used: 1557520 (0x17c410)
> gas price: 2.5 gwei
> value sent: 0 ETH
> total cost: 0.0038938 ETH
```

Ln 68, Col 12 Spaces: 2 UTF-8 LF ⚡ Babel JavaScript ⚡ Go Live ⚡ Prettier

Advanced-smartcontracts

**OPEN EDITORS**

- JS eth-bsc-bridge.js
- .env
- truffle-config.js
- JS eth-bsc-transfer.js
- JS eth-token-balance.js
- JS bsc-toke...

```

Lab-Assignment-submission > Assignment1 > truffle-config.js > <unknown> > networks > ethTestnet > provider
62 // Useful for deploying to a public network.
63 // NB: It's important to wrap the provider as a function.
64 ethTestnet: {
65   provider: () =>
66     new HDWalletProvider(
67       process.env.MNEMONIC_METAMASK,
68       "wss://sepolia.infura.io/ws/v3/52bc3a35e8244537bc4848e8d20bb882",
69       0,
70       1
71     ),

```

**PROBLEMS** 3 OUTPUT DEBUG CONSOLE TERMINAL PORTS

> total cost: 0.0038938 ETH

Deploying 'BridgeBsc'

```

> transaction hash: 0x1c6e76dc70896d888456f3651f35cd666495f54302f9d720e84c0dd30fb91f
> Blocks: 5 Seconds: 16
> contract address: 0xFEAdd38446fd0afBd39cd4833CEC19C268feE6c
> block number: 33909262
> block timestamp: 1696424827
> account: 0x97d725e3352C946715521FDed8A39c5134fA9446e
> balance: 0.093878535
> gas used: 599553 (0x92601)
> gas price: 2.5 gwei
> value sent: 0 ETH
> total cost: 0.0014988825 ETH

> Saving migration to chain.
> Saving artifacts

```

> Total cost: 0.0053926825 ETH

Summary =====

```

> Total deployments: 3
> Final cost: 0.0060066825 ETH

```

---

**BridgeEth.test.js**

Lab-Assignment-submission > Assignment1 > test > BridgeEth.test.js > ...

```

1 const BridgeBsc = artifacts.require("BridgeBsc");
2 const TokenBase = artifacts.require("TokenBase");
3 require("dotenv").config();
4 contract("BridgeBsc", [accounts]) => {
5   let bridgeBsc;
6   let token;
7
8   before(async () => {
9     token = await TokenBase.new("BSC Token", "BTK");
10    bridgeBsc = await BridgeBsc.new(token.address);
11  });
12
13  it("should allow burning tokens", async () => {
14    const recipient = accounts[1];
15    const amount = 100;
16
17    // Mint some tokens to the deployer account
18    await token.mint(accounts[0], amount);
19
20    // Approve the BridgeBsc contract to spend tokens on behalf of the deployer
21    await token.approve(bridgeBsc.address, amount, { from: accounts[0] });

```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

Compiling your contracts...

```

=====
```

> Compiling ./contracts/BridgeBase.sol  
> Compiling ./contracts/BridgeBsc.sol  
> Compiling ./contracts/BridgeEth.sol  
> Compiling ./contracts/IToken.sol  
> Compiling ./contracts/IToken.sol  
> Compiling ./contracts TokenName.sol  
> Compiling ./contracts TokenName.sol  
> Compiling ./contracts TokenName.sol  
> Artifacts written to /Users/athikafatima/Desktop/Advanced-smartcontracts/Lab-Assignment-submission/Assignment1/build/contracts  
> Compiled successfully using:  
- solc: 0.8.0+commit.c7dfd78e.Emscripten.clang

Ln 45, Col 1 Spaces: 2 UTF-8 LF ⚡ Babel JavaScript ⚡ Go Live ✅ Prettier

package.json

```
BridgeEth.test.js
```

```
Lab-Assignment-submission > Assignment1 > test > BridgeEth.test.js > ...
1 const BridgeBsc = artifacts.require("BridgeBsc");
2 const TokenBase = artifacts.require("TokenBase");
3 require("dotenv").config();
4 contract("BridgeBsc", [accounts]) => {
5   let bridgeBsc;
6   let token;
7
8   before(async () => {
9     token = await TokenBase.new("BSC Token", "BTK");
10    bridgeBsc = await BridgeBsc.new(token.address);
11  });
12}

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS zsh - Assignment1 + ... ^ x
```

Starting migrations...

```
=====
> Network name: 'ethTestnet'
> Network id: 5777
> Block gas limit: 6721975 (0x6691b7)

1_initial_migration.js
=====
```

Replacing 'Migrations'

```
> transaction hash: 0xcb300d6d677d87bedf20fb3586f0b88697e63c096cf82945903af8310bb9955f
> Blocks: 0 Seconds: 0
> contract address: 0x2c8186c0f2E65168CAA96bdC8b530f25F199F2
> block number: 8
> block timestamp: 1697281381
> account: 0xfef5fe5462779E2A32b6d867B939ffB264bd009cc
> balance: 99.93341174
> gas used: 284884 (0x458d4)
> gas price: 20 gwei
> value sent: 0 ETH
> total cost: 0.00569768 ETH

> Saving migration to chain.
> Saving artifacts
```

package.json

package.json

```
BridgeEth.test.js
```

```
Lab-Assignment-submission > Assignment1 > test > BridgeEth.test.js > ...
1 const BridgeBsc = artifacts.require("BridgeBsc");
2 const TokenBase = artifacts.require("TokenBase");
3 require("dotenv").config();
4 contract("BridgeBsc", [accounts]) => {
5   let bridgeBsc;
6   let token;
7
8   before(async () => {
9     token = await TokenBase.new("BSC Token", "BTK");
10    bridgeBsc = await BridgeBsc.new(token.address);
11  });
12}

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS zsh - Assignment1 + ... ^ x
```

> value sent: 0 ETH

```
> total cost: 0.00569768 ETH
```

> Saving migration to chain.

> Saving artifacts

> Total cost: 0.00569768 ETH

2\_deploy\_contracts.js

Replacing 'TokenEth'

```
> transaction hash: 0x33c8a44b48555f87a5036008aa92bd00755c5ce0a1158493c32209647f79c9e4
> Blocks: 0 Seconds: 0
> contract address: 0x2137C8c1526911e6768a0c214411684E404B5853
> block number: 10
> block timestamp: 1697281382
> account: 0xfef5fe5462779E2A32b6d867B939ffB264bd009cc
> balance: 99.895005244
> gas used: 1875792 (0x1c9f50)
> gas price: 20 gwei
> value sent: 0 ETH
> total cost: 0.03751584 ETH
```

Step 4: Bridges deployed, and Transaction successful!

```

const BridgeBsc = artifacts.require("BridgeBsc");
const TokenBase = artifacts.require("TokenBase");
require("dotenv").config();
contract("BridgeBsc", (accounts) => {
  let bridgeBsc;
  let token;
  before(async () => {
    token = await TokenBase.new("BSC Token", "BTK");
    bridgeBsc = await BridgeBsc.new(token.address);
  });
})

```

Replacing 'BridgeEth'

```

transaction hash: 0xa891533f5868478304f211ffd5fefd08c637852e29d413e87a28da13f4e5a157
Blocks: 0 Seconds: 0
contract address: 0x7031c42e2c9ba5c1fb33702bcc6d1157661ac19
block number: 12
block timestamp: 1697281383
account: 0xfe5fe5462779e2a32b6d867b939ff264bd009cc
balance: 99.87933706
gas used: 718993
gas price: 20 gwei
value sent: 0 ETH
total cost: 0.01437986 ETH

Saving migration to chain.
Saving artifacts
Total cost: 0.0518957 ETH

Summary
=====
Total deployments: 3
Final cost: 0.05759338 ETH

```

Step 4: Bridges deployed, and Transaction successful!

```

const BridgeBsc = artifacts.require("BridgeBsc");
const TokenBase = artifacts.require("TokenBase");
require("dotenv").config();
contract("BridgeBsc", (accounts) => {
  let bridgeBsc;
  let token;
  before(async () => {
    token = await TokenBase.new("BSC Token", "BTK");
    bridgeBsc = await BridgeBsc.new(token.address);
  });
})

```

Replacing 'BridgeBsc'

```

transaction hash: 0x17ea2e46ba18eeb3fa90325604c865e2d6f311d31ca5b1c27398d56a348d55b2
Blocks: 3 Seconds: 8
contract address: 0x34eb026e55a2b1ff13f46f5149431c5755905
block number: 34194834
block timestamp: 1697281750
account: 0x97d25e3352c946715521fded8a39c5134fa9446e
balance: 0.08701725
gas used: 599529 (0x925e9)
gas price: 2.5 gwei
value sent: 0 ETH
total cost: 0.0014988225 ETH

Saving migration to chain.
Saving artifacts
Total cost: 0.0053926225 ETH

Summary
=====
Total deployments: 3
Final cost: 0.0060066225 ETH

```

The screenshot shows the VS Code interface with the following details:

- EXPLORER**: Shows the project structure with files like `BridgeEth.sol`, `Migrations.sol`, and `BridgeEth.test.js`.
- OPEN EDITORS**: Shows the `BridgeEth.test.js` file open.
- TERMINAL**: Displays the output of the deployment process:

```
Replacing 'BridgeEth'
> transaction hash: 0xa891533f5868478304f211ffd5fefd08c637852e29d413e87a28da13f4e5a157
> Blocks: 0 Seconds: 0
> contract address: 0x7031c42e2c9ba5cc1fb33702bcc6d1157661ac19
> block number: 12
> block timestamp: 1697281383
> account: 0xfe5fe5462779E2A32b6d867B939Fb264bd009cc
> balance: 99.87933786
> gas used: 718993 (0xaf891)
> gas price: 20 gwei
> value sent: 0 ETH
> total cost: 0.01437986 ETH

> Saving migration to chain.
> Saving artifacts
> Total cost: 0.0518957 ETH

Summary
=====
> Total deployments: 3
> Final cost: 0.05759338 ETH
```

The screenshot shows the VS Code interface with the following details:

- EXPLORER**: Shows the project structure with files like `BridgeEth.sol`, `Migrations.sol`, and `BridgeEth.test.js`.
- OPEN EDITORS**: Shows the `BridgeEth.sol` file open.
- TERMINAL**: Displays the deployment and test results:

```
// BridgeEth.sol
1 const BridgeEth = artifacts.require("BridgeEth");
2 const TokenEth = artifacts.require("TokenEth");
3
4 contract("BridgeEth", (accounts) => {
5   it("should deploy the BridgeEth contract and initialize with the correct token address", async () => {
6     const tokenEth = await TokenEth.new();
7
8     const bridgeEthInstance = await BridgeEth.new(tokenEth.address);
9
10    const bridgeTokenAddress = await bridgeEthInstance.token();
11
12    assert.equal(
13      bridgeTokenAddress,
14      tokenEth.address,
15      "Token address not set correctly"
16    );
17  });
18}
19});
```

Using network 'test'.

Compiling your contracts...

Contract: BridgeEth

✓ should deploy the BridgeEth contract and initialize with the correct token address (96ms)

1 passing (197ms)