

# Assure DeFi<sup>®</sup>

THE VERIFICATION **GOLD STANDARD**



## Security Assessment

## Sentinel Incubator

Date: 22/08/2024

Audit Status: PASS

Audit Edition: Advanced



**SENTINEL  
INCUBATOR**



**ASSURE DEFI<sup>®</sup>**  
THE VERIFICATION **GOLD STANDARD**

# Risk Analysis

## Vulnerability summary

Classification	Description
 High	High-level vulnerabilities can result in the loss of assets or manipulation of data.
 Medium	Medium-level vulnerabilities can be challenging to exploit, but they still have a considerable impact on smart contract execution, such as allowing public access to critical functions.
 Low	Low-level vulnerabilities are primarily associated with outdated or unused code snippets that generally do not significantly impact execution, sometimes they can be ignored.
 Informational	Informational vulnerabilities, code style violations, and informational statements do not affect smart contract execution and can typically be disregarded.

## Executive Summary

According to the Assure assessment, the Customer's smart contract is **Well Secured**.



# Scope

## Target Code And Revision

For this audit, we performed research, investigation, and review of the Sentinel Incubator contracts followed by issue reporting, along with mitigation and remediation instructions outlined in this report.

## Target Code And Revision

<b>Project</b>	Assure
<b>Language</b>	Solidity
<b>Codebase</b>	IncubatorCodeNewComplete.sol - [SHA256] <a href="#">bdbd583abf4fc46f3348d5c9f9b08975422ade77c0d184c9af70f308e2bcc619</a>
<b>Audit Methodology</b>	Static, Manual



# Attacks made to the contract

In order to check for the security of the contract, we tested several attacks in order to make sure that the contract is secure and follows best practices.

Category	Item
Code review & Functional Review	<ul style="list-style-type: none"><li>• Compiler warnings.</li><li>• Race conditions and Reentrancy. Cross-function race conditions.</li><li>• Possible delays in data delivery.</li><li>• Oracle calls.</li><li>• Front running.</li><li>• Timestamp dependence.</li><li>• Integer Overflow and Underflow.</li><li>• DoS with Revert.</li><li>• DoS with block gas limit.</li><li>• Methods execution permissions.</li><li>• Economy model.</li><li>• Private user data leaks.</li><li>• Malicious Event log.</li><li>• Scoping and Declarations.</li><li>• Uninitialized storage pointers.</li><li>• Arithmetic accuracy.</li><li>• Design Logic.</li><li>• Cross-function race conditions.</li><li>• Safe Zeppelin module.</li><li>• Fallback function security.</li><li>• Overpowered functions / Owner privileges</li></ul>

# AUDIT OVERVIEW



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No high severity issues were found.



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No medium severity issues were found.



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No low severity issues were found.



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No Informational severity issues were found.

# Testing coverage

During the testing phase, custom use cases were written to cover all the logic of contracts. *\*Check “Annexes” to see the testing code.*

## Sentinel Incubator contracts tests:

```
tests/test_incubator.py::test_update_max_tx_amount RUNNING
Transaction sent: 0x8e0e8887cb5d5f3f093fd75b02c2e4efb9134a508cd884cb40f1e2510849d4de
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 0
UniswapV2Factory.constructor confirmed Block: 1 Gas used: 2412730 (20.11%)
UniswapV2Factory deployed at: 0x3194c80C3dbcd3E11a07892e7bA5c3394048Cc87

Transaction sent: 0xb921b1e506ef8feecf0f0287e8391d1db3cb3ff012e9ed98debcc7fe0c4eef69
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 1
WETH9.constructor confirmed Block: 2 Gas used: 476546 (3.97%)
WETH9 deployed at: 0x602C71e40AC47a042Ee7f46E0aeel7F94A3bA086

Transaction sent: 0x52602bfe59986e1046577eda43ad43d25254def838bfc2c3a0eb06944291f23c
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 2
UniswapV2Router02.constructor confirmed Block: 3 Gas used: 3895430 (32.46%)
UniswapV2Router02 deployed at: 0xE7eD6747FaC5360f88a2EFC03E00d25789F69291

Transaction sent: 0xb9ca8e9b61ac7f8b589951c46be18c4731c402d51d545a57a964b34eaa426e3d
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 3
IncubatorContract.constructor confirmed Block: 4 Gas used: 4905295 (40.88%)
IncubatorContract deployed at: 0x6951b58d815043E3F842c1b026b0Fa888Cc2D0085

Transaction sent: 0xe8439b7aa2c5883c3aa77fc95977f587921dd2c6aaf28262b374f2a756f682bb
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 0
IncubatorContract.updateMaxTransactionAmount confirmed (Ownable: caller is not the owner) Block: 5 Gas used: 22563 (0.19%)

Transaction sent: 0xb82ccbaa26df6a89f73e0def7103002ee9b1140fd92ab71a124c0cf2e73abcce
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 4
IncubatorContract.updateMaxTransactionAmount confirmed (Cannot set maxTransactionAmount lower than 1%) Block: 6 Gas used: 23540 (0.20%)

Transaction sent: 0xffd90d20fcf5095e03eb7f1005498b13e8d18f165aff1262310803ea43938895
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 5
IncubatorContract.updateMaxTransactionAmount confirmed Block: 7 Gas used: 29513 (0.25%)

tests/test_incubator.py::test_update_max_tx_amount PASSED
tests/test_incubator.py::test_update_max_wallet RUNNING
Transaction sent: 0xb407585473e3a7bb1172c7d8c764a9883cdc97e12f4798d657afd34c07d7a7e4
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 6
UniswapV2Factory.constructor confirmed Block: 8 Gas used: 2412730 (20.11%)
UniswapV2Factory deployed at: 0x9E4c14403d7d9A8A782044E86a93CAE09D7B2ac9

Transaction sent: 0xd580a7c038bafa813be6226047d9a0bf05f9ceb1738cf3b53cfdcc79e146d8
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 7
WETH9.constructor confirmed Block: 9 Gas used: 476546 (3.97%)
WETH9 deployed at: 0xcB53c9429d32594F404d01fbc9E65ED1DCda8D9

Transaction sent: 0x7479d2743d0200d8f2b7a232c02484ac45ec2985af93d5e7f71d29d140658b62
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 8
UniswapV2Router02.constructor confirmed Block: 10 Gas used: 3895430 (32.46%)
UniswapV2Router02 deployed at: 0x420b109989eF5baba6D92029594eF45E19A04A4A

Transaction sent: 0x1529bdd47fb544cd42df2079d5252a4508d2d98952f1208d9f9fd35c60eec38f
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 9
IncubatorContract.constructor confirmed Block: 11 Gas used: 4905297 (40.88%)
IncubatorContract deployed at: 0xa3853d0Cd2E3fc28e8E130288F2aB08d5EE37472

Transaction sent: 0x79f9a0ac7af67c90a37149cc5b6b3eeae60042234365aa50a517fc090e62aa49
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 1
IncubatorContract.updateMaxWallet confirmed (Ownable: caller is not the owner) Block: 12 Gas used: 22543 (0.19%)

Transaction sent: 0xa1561759b6b0776632b384c7412ea051bfff974c0879640e7157742dc5bda860c
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 10
IncubatorContract.updateMaxWallet confirmed (Cannot set maxWallet lower than 1%) Block: 13 Gas used: 23520 (0.20%)

Transaction sent: 0x6123be23a5d449f9034dd471d01cc757a51d382151be2232e54c8990c26ce15d
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 11
IncubatorContract.updateMaxWallet confirmed Block: 14 Gas used: 29482 (0.25%)

tests/test_incubator.py::test_update_max_wallet PASSED
```

```
tests/test_incubator.py::test_set_automated_market_pair RUNNING
Transaction sent: 0x1fe5f68554a998873a4d37b0e235b6e88aa01d0019b1bad9bd1efd83e7c91452
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 12
UniswapV2Factory.constructor confirmed Block: 15 Gas used: 2412730 (20.11%)
UniswapV2Factory deployed at: 0x2c15A3156108fa5248E4CbCb693320e908E03Cc

Transaction sent: 0x86ccaad7541d8fa6d70fa9cd5ddb3e65798dfeba273572e714cdabe980c01ba
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 13
WETH9.constructor confirmed Block: 16 Gas used: 476546 (3.97%)
WETH9 deployed at: 0xe692Cf21B12e0B2717C4bF647F9768Fa58861c8b

Transaction sent: 0xeadd3ccc4bb6bfe8ccdf36404ac96c6416660acd48a11876a53b17b3674d96e
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 14
UniswapV2Router02.constructor confirmed Block: 17 Gas used: 3895430 (32.46%)
UniswapV2Router02 deployed at: 0xe65A7a341978d59d40d30FC23F5014FACB4f575A

Transaction sent: 0x729955819f14e3139845725621df2beef487c70b83f72b927ee92e0c4dd8e8fa
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 15
IncubatorContract.constructor confirmed Block: 18 Gas used: 4905297 (40.88%)
IncubatorContract deployed at: 0x30375B532345801cB8c2A012541b09E9Aa53A93d

Transaction sent: 0x61994467d4223935bd15ac54854aaafb0cc997e64680ba127860826eb68c7b13
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 2
IncubatorContract.setAutomatedMarketMakerPair confirmed (Ownable: caller is not the owner) Block: 19 Gas used: 22990 (0.19%)

Transaction sent: 0x2259cf83443d63ae1f08dfc42bb7bcbe5676803c208999c44549d282c3c9d41f
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 16
IncubatorContract.setAutomatedMarketMakerPair confirmed (Cannot remove pair) Block: 20 Gas used: 23037 (0.19%)

Transaction sent: 0xa7f9f5f3dc9dd7299ae0c91df6dcb06f2a0d3f315e37e8d71022ceb67bab1b73
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 17
IncubatorContract.setAutomatedMarketMakerPair confirmed Block: 21 Gas used: 45412 (0.38%)

tests/test_incubator.py::test_set_automated_market_pair PASSED
tests/test_incubator.py::test_update_project_wallet RUNNING
Transaction sent: 0x5114f2a3e633c54090f9a880727b6d66cc2a2fd94739dd146464821dc67f2c23
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 18
UniswapV2Factory.constructor confirmed Block: 22 Gas used: 2412730 (20.11%)
UniswapV2Factory deployed at: 0xed00238F9A0F7b4d93842033cdf56cCB32C781c2

Transaction sent: 0x8eeef26a875d0b720aad785a8bdcd281321c69cc6670524944e71d22efdb675c
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 19
WETH9.constructor confirmed Block: 23 Gas used: 476546 (3.97%)
WETH9 deployed at: 0xDae02e4fE488952cFB8c951771540188647a0146

Transaction sent: 0x47897cfb02d82bb21af9dd785565f14323435f8e57176c017fbb587cc828bcd7
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 20
UniswapV2Router02.constructor confirmed Block: 24 Gas used: 3895418 (32.46%)
UniswapV2Router02 deployed at: 0xdCF93F11ef216cEC9C07fd31d0801c9b2b39Afb4

Transaction sent: 0xb2dbf8ffad1d65c5de247f91978f94a16120d982daa9589e7b8245216c1d1a36
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 21
IncubatorContract.constructor confirmed Block: 25 Gas used: 4905297 (40.88%)
IncubatorContract deployed at: 0xBcb61491F1859f53438918F1A5aFCA542Af9D397

Transaction sent: 0xaea16b991bbc2c09efcec121673fb46a6baf20000ea0b676fe9235642b18efce
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 3
IncubatorContract.updateProjectWallet confirmed (Ownable: caller is not the owner) Block: 26 Gas used: 22782 (0.19%)

Transaction sent: 0x42af01433358f5d9aa862a29be04b40b4960ced70e33a79c3b54950f12fa16d1
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 22
IncubatorContract.updateProjectWallet confirmed Block: 27 Gas used: 30905 (0.26%)

tests/test_incubator.py::test_update_project_wallet PASSED
```

```
tests/test_incubator.py::test_update_buy_fee RUNNING
Transaction sent: 0x09f7f9d51a4997d080bf2b663c3467a671601dff7088659c2a1d8cda00179c1d
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 34
UniswapV2Factory.constructor confirmed Block: 41 Gas used: 2412730 (20.11%)
UniswapV2Factory deployed at: 0xc830Ad2FDfCC2f368fE5DeC93b1Dc72ecABb3691

Transaction sent: 0xb9732aa656b1c3322b2a682a19ee661aebc239f2153e7305b575abd58f954007
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 35
WETH9.constructor confirmed Block: 42 Gas used: 476546 (3.97%)
WETH9 deployed at: 0xbc8eCccb89650c3E796e803C8009BF9b898CB359

Transaction sent: 0x4ac0eacfc81f4d932b25d33283e93b5f6d5c5c3ea3dc089abc03a99da5758f7d
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 36
UniswapV2Router02.constructor confirmed Block: 43 Gas used: 3895430 (32.46%)
UniswapV2Router02 deployed at: 0x741e3E1f81041c62C2A97d0b6E567Aca809A6232

Transaction sent: 0x6951334a672b3f151f17a84e3f25ad3d7eafd1250ce9d22c842ee947fd6a83e
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 37
IncubatorContract.constructor confirmed Block: 44 Gas used: 4905297 (40.88%)
IncubatorContract deployed at: 0x480FccF53589c1F185835db88b8315a0b8F9a3e0

Transaction sent: 0xd21f4be93eab221f91a47f72be41179d8bd8655eeca7a5720b0c863f9cf07696
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 6
IncubatorContract.updateBuyFees confirmed (Ownable: caller is not the owner) Block: 45 Gas used: 22501 (0.19%)

Transaction sent: 0xb089f68a6c16fbd9eaccabcec66121e0688db6d745ff17f04933e6c57e56f23
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 38
IncubatorContract.updateBuyFees confirmed (Total buy fees cannot exceed 30%) Block: 46 Gas used: 22512 (0.19%)

Transaction sent: 0x333a38ce8b96fe3211a71b314059b80927eda70bee4ba5bb627fa53c17f934f5
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 39
IncubatorContract.updateBuyFees confirmed Block: 47 Gas used: 28482 (0.24%)

tests/test_incubator.py::test_update_buy_fee PASSED
tests/test_incubator.py::test_update_sell_fee RUNNING
Transaction sent: 0xcb1027b556e71c33c328aeb4c52f308a1cde35156df023942baeff42ec3b33f
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 40
UniswapV2Factory.constructor confirmed Block: 48 Gas used: 2412730 (20.11%)
UniswapV2Factory deployed at: 0x0AC45e945A008D3fc19da8f591be8601C1F63130

Transaction sent: 0x71fd93e382cba92052666bd0a575ed79571528690d5d24870dc8467962f0b3ef
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 41
WETH9.constructor confirmed Block: 49 Gas used: 476546 (3.97%)
WETH9 deployed at: 0x5847798CE8c89e3Fff59AE5fA308EC0d406b5687

Transaction sent: 0x31b4fb1c0f3361325310e0e319dca65b0ac971f06fcf72c405084ff0efc11d8f
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 42
UniswapV2Router02.constructor confirmed Block: 50 Gas used: 3895418 (32.46%)
UniswapV2Router02 deployed at: 0x0C60536783db9ED5A28216970B10FF2243d317d0

Transaction sent: 0xb11332d9a33c903c9416e8d00d3e36f6156a97271170ede8d10569b6a51811f3
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 43
IncubatorContract.constructor confirmed Block: 51 Gas used: 4905297 (40.88%)
IncubatorContract deployed at: 0x0e19E87b363DD7a3af5c45C95ab6885367251894

Transaction sent: 0x29cea034cbd19f35747aad3c7c9fa8e0ed5abcdda7b84f914e5d8d5168005408
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 7
IncubatorContract.updateSellFees confirmed (Ownable: caller is not the owner) Block: 52 Gas used: 22501 (0.19%)

Transaction sent: 0x0af12bb06a8a83094544a594dc06dde709538865bc16b6beld3162a0eb13195e
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 44
IncubatorContract.updateSellFees confirmed (Total sell fees cannot exceed 40%) Block: 53 Gas used: 22533 (0.19%)

Transaction sent: 0xd0dc6a43de02f06624a143a8052bf0fb5d1660cb59e4aa45c053f88a6e15011c
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 45
IncubatorContract.updateSellFees confirmed Block: 54 Gas used: 28482 (0.24%)

tests/test_incubator.py::test_update_sell_fee PASSED
```



```
tests/test_incubator.py::test_transfer RUNNING
Transaction sent: 0x00df4e56c09bc2a82599e092dbbeb3a057c7debeedd65cffa87b130f2aec9c8a
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 46
UniswapV2Factory.constructor confirmed Block: 55 Gas used: 2412730 (20.11%)
UniswapV2Factory deployed at: 0x88E16B874F47371C42498b499837Ed8707661E86

Transaction sent: 0x39007b89beb035bc53cb7d83203af03d39e3f6cb7fabbcb3df8fdd457e2208bc
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 47
WETH9.constructor confirmed Block: 56 Gas used: 476546 (3.97%)
WETH9 deployed at: 0x1aa96efd28002541E830CB7f60e473AA24e31F9A

Transaction sent: 0xa94c015ac60e9fa519efb0855f9b7165181a253602b4b49280995141907cc48c
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 48
UniswapV2Router02.constructor confirmed Block: 57 Gas used: 3895418 (32.46%)
UniswapV2Router02 deployed at: 0x8b1B4407240Ce2EE9779858af841Ec59F5458388

Transaction sent: 0x7fa471c561c9426d7cc1bafb1bb7abf5db749c12460e0a1066418b93a160db23
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 49
IncubatorContract.constructor confirmed Block: 58 Gas used: 4905307 (40.88%)
IncubatorContract deployed at: 0xC6D563d5c2243b27e7294511063f563ED701EA2C

Transaction sent: 0x0446ad2f97c5fba8513783e1d27d9047acbe136230d3e7e2520eb69d91028f7e
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 8
IncubatorContract.transfer confirmed (ERC20: transfer to the zero address) Block: 59 Gas used: 22069 (0.18%)

Transaction sent: 0x79c60bcc91ead42b302899e4bbd12904fc91accfc61ef020fa5d1880cbb9fab9
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 0
IncubatorContract.transfer confirmed (ERC20: transfer from the zero address) Block: 60 Gas used: 22262 (0.19%)

Transaction sent: 0x894652891ec76c6b0677ac025aa7599cdeaec06eb9b932368be99542c97d1f6f
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 0
IncubatorContract.transfer confirmed (Trading is not active.) Block: 61 Gas used: 24916 (0.21%)

Transaction sent: 0xda33c3dd634293c25965a61e92164f090dc244e601097e5f4536bd5c7248762
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 50
IncubatorContract.transfer confirmed Block: 62 Gas used: 57985 (0.48%)

Transaction sent: 0x2d4d17b82ba9cf7b057f953decaca2080d764665d93837e913c0c4a963ef47d0
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 51
IncubatorContract.transfer confirmed Block: 63 Gas used: 57997 (0.48%)

Transaction sent: 0x4faab811fe3f6b060883db1a14c778507791ac8c21498354e5d8d635755963f7
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 52
IncubatorContract.enableTrading confirmed Block: 64 Gas used: 70625 (0.59%)

Transaction sent: 0x3bfa47aa219fe3709f8feb04bfbf962ed3ae9ff42538c04aedae05dc2c27e30
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 1
IncubatorContract.transfer confirmed Block: 65 Gas used: 53912 (0.45%)

Transaction sent: 0x05d595843dfe2e9fce5dcc21c33e1470d368b7c4ff824a51801ad75cb9c202fe
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 9
IncubatorContract.transfer confirmed Block: 66 Gas used: 136747 (1.14%)

Transaction sent: 0x8d3c624ea18cc518b41e5598e11d53ef042f4f7d19114ad9cba2e4a816508e13
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 1
IncubatorContract.transfer confirmed Block: 67 Gas used: 78495 (0.65%)

Transaction sent: 0xf42682bfbbe9aa3fba12c4b857d040c9443b44e68302ba416327c775f651bf5f
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 10
IncubatorContract.transfer confirmed Block: 69 Gas used: 76862 (0.64%)

tests/test_incubator.py::test_transfer PASSED
```

# Annexes

Testing code:

Testing\_Sentinel Incubator:

```
from brownie import (

    reverts,

    UniswapV2Pair

)

from brownie.network.contract import Contract

from scripts.helpful_scripts import (

    ZERO_ADDRESS,

    DAY_TIMESTAMP,

    get_account,

    get_timestamp,

    get_chain_number,

    increase_timestamp

)

from scripts.deploy import (

    deploy_weth,

    deploy_router,

    deploy_factory,

    deploy_liquidity,

    deploy_incubator

)
```

```

def test_update_max_tx_amount(only_local):

    # Arrange

    owner = get_account(0)

    other = get_account(1)

    extra = get_account(2)


    factory = deploy_factory(owner, owner)

    weth = deploy_weth(owner)

    router = deploy_router(owner, factory.address, weth.address)

    incubator = deploy_incubator(owner, router.address)


    with reverts("Ownable: caller is not the owner"):

        incubator.updateMaxTransactionAmount(100000e18, {"from": extra})

    with reverts("Cannot set maxTransactionAmount lower than 1%"):

        incubator.updateMaxTransactionAmount(1e18, {"from": owner})

    prev = incubator.maxTransactionAmount()

    new = incubator.totalSupply() * 3 / 100

    incubator.updateMaxTransactionAmount(new, {"from": owner})

    assert incubator.maxTransactionAmount() != prev

    assert incubator.maxTransactionAmount() == new


def test_update_max_wallet(only_local):

    # Arrange

    owner = get_account(0)

    other = get_account(1)

    extra = get_account(2)


    factory = deploy_factory(owner, owner)

```

```

weth = deploy_weth(owner)

router = deploy_router(owner, factory.address, weth.address)

incubator = deploy_incubator(owner, router.address)

with reverts("Ownable: caller is not the owner"):

    incubator.updateMaxWallet(100000e18, {"from": extra})

with reverts("Cannot set maxWallet lower than 1%"):

    incubator.updateMaxWallet(1e18, {"from": owner})

prev = incubator.maxWallet()

new = incubator.totalSupply() * 3 / 100

incubator.updateMaxWallet(new, {"from": owner})

assert incubator.maxWallet() != prev

assert incubator.maxWallet() == new

def test_set_automated_market_pair(only_local):

    # Arrange

    owner = get_account(0)

    other = get_account(1)

    extra = get_account(2)

    factory = deploy_factory(owner, owner)

    weth = deploy_weth(owner)

    router = deploy_router(owner, factory.address, weth.address)

    incubator = deploy_incubator(owner, router.address)

    prev_pair = incubator.uniswapV2Pair()

    new_pair = "0xFE5Ad958522B5BCd33ad14ed86F7295f07CE14b8"

    with reverts("Ownable: caller is not the owner"):

```



```

        incubator.setAutomatedMarketMakerPair(new_pair, True, {"from": extra})

    with reverts("Cannot remove pair"):

        incubator.setAutomatedMarketMakerPair(prev_pair, True, {"from": owner})

    incubator.setAutomatedMarketMakerPair(new_pair, True, {"from": owner})

    assert incubator.automatedMarketMakerPairs(new_pair) == True


def test_update_project_wallet(only_local):

    # Arrange

    owner = get_account(0)

    other = get_account(1)

    extra = get_account(2)

    factory = deploy_factory(owner, owner)

    weth = deploy_weth(owner)

    router = deploy_router(owner, factory.address, weth.address)

    incubator = deploy_incubator(owner, router.address)

    new_wallet = "0xFE5Ad958522B5BCd33ad14ed86F7295f07CE14b8"

    with reverts("Ownable: caller is not the owner"):

        incubator.updateProjectWallet(new_wallet, {"from": extra})

    incubator.updateProjectWallet(new_wallet, {"from": owner})

    assert incubator.projectWallet() == new_wallet


def test_update_incubator_wallet(only_local):

    # Arrange

    owner = get_account(0)

    other = get_account(1)

    extra = get_account(2)

```

```
factory = deploy_factory(owner, owner)

weth = deploy_weth(owner)

router = deploy_router(owner, factory.address, weth.address)

incubator = deploy_incubator(owner, router.address)


new_wallet = "0xFE5Ad958522B5BCd33ad14ed86F7295f07CE14b8"

with reverts("Ownable: caller is not the owner"):

    incubator.updateIncubatorWallet(new_wallet, {"from": extra})

incubator.updateIncubatorWallet(new_wallet, {"from": owner})

assert incubator.incubatorWallet() == new_wallet
```

```
def test_update_redirection_hours(only_local):

    # Arrange

    owner = get_account(0)

    other = get_account(1)

    extra = get_account(2)


    factory = deploy_factory(owner, owner)

    weth = deploy_weth(owner)

    router = deploy_router(owner, factory.address, weth.address)

    incubator = deploy_incubator(owner, router.address)


    with reverts("Ownable: caller is not the owner"):

        incubator.updateRedirectionHours(2, {"from": extra})

    with reverts("Duration must be between 1 and 2160 hours"):

        incubator.updateRedirectionHours(0, {"from": owner})
```

```
incubator.updateRedirectionHours(10, {"from": owner})
```

```
assert incubator.redirectionHours() == 10
```

```
def test_update_buy_fee(only_local):
```

```
    # Arrange
```

```
    owner = get_account(0)
```

```
    other = get_account(1)
```

```
    extra = get_account(2)
```

```
    factory = deploy_factory(owner, owner)
```

```
    weth = deploy_weth(owner)
```

```
    router = deploy_router(owner, factory.address, weth.address)
```

```
    incubator = deploy_incubator(owner, router.address)
```

```
    with reverts("Ownable: caller is not the owner"):
```

```
        incubator.updateBuyFees(2, {"from": extra})
```

```
    with reverts("Total buy fees cannot exceed 30%"):
```

```
        incubator.updateBuyFees(35, {"from": owner})
```

```
    incubator.updateBuyFees(10, {"from": owner})
```

```
    assert incubator.buyTotalFees() == 10
```

```
def test_update_sell_fee(only_local):
```

```
    # Arrange
```

```
    owner = get_account(0)
```

```
    other = get_account(1)
```

```
    extra = get_account(2)
```

```
factory = deploy_factory(owner, owner)

weth = deploy_weth(owner)

router = deploy_router(owner, factory.address, weth.address)

incubator = deploy_incubator(owner, router.address)


with reverts("Ownable: caller is not the owner"):

    incubator.updateSellFees(2, {"from": extra})

with reverts("Total sell fees cannot exceed 40%"):

    incubator.updateSellFees(45, {"from": owner})


incubator.updateSellFees(10, {"from": owner})

assert incubator.sellTotalFees() == 10
```

```
def test_transfer(only_local):
```

```
    # Arrange
```

```
    owner = get_account(0)
```

```
    other = get_account(1)
```

```
    extra = get_account(2)
```

```
    factory = deploy_factory(owner, owner)
```

```
    weth = deploy_weth(owner)
```

```
    router = deploy_router(owner, factory.address, weth.address)
```

```
    incubator = deploy_incubator(owner, router.address)
```

```
    pair_addr = incubator.uniswapV2Pair()
```

```
    with reverts("ERC20: transfer to the zero address"):
```

```
        incubator.transfer(ZERO_ADDRESS, 1e18, {"from": extra})
```

```
    with reverts("ERC20: transfer from the zero address"):
```



```

        incubator.transfer(extra, 1e18, {"from": ZERO_ADDRESS})

with reverts("Trading is not active."):

    incubator.transfer(extra, 1e18, {"from": other})

# transfer some tokens

tx = incubator.transfer(extra, 5e18, {"from": owner})

assert tx.events['Transfer'][0]['from'] == owner
assert tx.events['Transfer'][0]['to'] == extra
assert tx.events['Transfer'][0]['value'] == 5e18

tx = incubator.transfer(other, 5e18, {"from": owner})

assert tx.events['Transfer'][0]['from'] == owner
assert tx.events['Transfer'][0]['to'] == other
assert tx.events['Transfer'][0]['value'] == 5e18

incubator.enableTrading({"from": owner})

# normal transfer

tx = incubator.transfer(extra, 1e18, {"from": other})

assert tx.events['Transfer'][0]['from'] == other
assert tx.events['Transfer'][0]['to'] == extra
assert tx.events['Transfer'][0]['value'] == 1e18

# sell transfer

tx = incubator.transfer(pair_addr, 2e18, {"from": extra})

assert tx.events['Transfer'][0]['from'] == extra
assert tx.events['Transfer'][0]['to'] == incubator.address

assert tx.events['Transfer'][0]['value'] == 2e18 * 0.4 # sell fee
assert tx.events['Transfer'][1]['from'] == extra

```

```
assert tx.events['Transfer'][1]['to'] == pair_addr

assert tx.events['Transfer'][1]['value'] == 2e18 * 0.6

# buy transfer

tx = incubator.transfer(extra, 1e18, {"from": pair_addr})

assert tx.events['Transfer'][0]['from'] == pair_addr

assert tx.events['Transfer'][0]['to'] == incubator.address

assert tx.events['Transfer'][0]['value'] == 1e18 * 0.3 # buy fee

assert tx.events['Transfer'][1]['from'] == pair_addr

assert tx.events['Transfer'][1]['to'] == extra

assert tx.events['Transfer'][1]['value'] == 1e18 * 0.7

increase_timestamp(1800)

# test sell transfer with timeElapse 30 minutes

tx = incubator.transfer(pair_addr, 1e18, {"from": extra})

assert tx.events['Transfer'][0]['from'] == extra

assert tx.events['Transfer'][0]['to'] == incubator.address

assert tx.events['Transfer'][0]['value'] == 1e18 * 0.05 # sell fee

assert tx.events['Transfer'][1]['from'] == extra

assert tx.events['Transfer'][1]['to'] == pair_addr

assert tx.events['Transfer'][1]['value'] == 1e18 * 0.95
```

# Technical Findings Summary

## Findings

Vulnerability Level	Total	Pending	Not Apply	Acknowledged	Partially Fixed	Fixed
<div><div></div>High</div>	0					
<div><div></div>Medium</div>	0					
<div><div></div>Low</div>	0					
<div><div></div>Informational</div>	0					

# Assessment Results

## Score Results

Review	Score
Global Score	90/100
Assure KYC	Pending
Audit Score	90/100

The Following Score System Has been Added to this page to help understand the value of the audit, the maximum score is 100, however to attain that value the project must pass and provide all the data needed for the assessment. Our Passing Score has been changed to 84 Points for a higher standard, if a project does not attain 85% is an automatic failure. Read our notes and final assessment below. The Global Score is a combination of the evaluations obtained between having or not having KYC and the type of contract audited together with its manual audit.

## Audit PASS

Following our comprehensive security audit of the token contract for the Sentinel Incubator project, we inform you that the project has met the necessary security standards.



# Disclaimer

Assure Defi has conducted an independent security assessment to verify the integrity of and highlight any vulnerabilities or errors, intentional or unintentional, that may be present in the reviewed code for the scope of this assessment. This report does not constitute agreement, acceptance, or advocating for the Project, and users relying on this report should not consider this as having any merit for financial advice in any shape, form, or nature. The contracts audited do not account for any economic developments that the Project in question may pursue, and the veracity of the findings thus presented in this report relate solely to the proficiency, competence, aptitude, and discretion of our independent auditors, who make no guarantees nor assurance that the contracts are entirely free of exploits, bugs, vulnerabilities or deprecation of technologies.

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