

Assure DeFi[®]

THE VERIFICATION **GOLD STANDARD**



Security Assessment

Metabot



Date: 12/10/2024

Audit Status: PASS

Audit Edition: Advanced



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 Low	Low-level vulnerabilities are primarily associated with outdated or unused code snippets that generally do not significantly impact execution, sometimes they can be ignored.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 Metabot contracts followed by issue reporting, along with mitigation and remediation instructions outlined in this report.

Target Code And Revision

Project	Assure
Language	Solidity
Codebase	Token_contract_main.zip [SHA256]: 3a4197bd22663669f18c6166d993218bb919ae6c24a02a01d7d4c1344a0f33f9 token-contract-e2a144bb685e9ae95f12bfdd218008bd2e931b89.zip [Fixed version - SHA256] 652394752fc97f23c1bdb19b1906fbb27eafd9e8aba0734751dc462b76fa3dda
Audit Methodology	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">• Compiler warnings.• Race conditions and Reentrancy. Cross-function race conditions.• Possible delays in data delivery.• Oracle calls.• Front running.• Timestamp dependence.• Integer Overflow and Underflow.• DoS with Revert.• DoS with block gas limit.• Methods execution permissions.• Economy model.• Private user data leaks.• Malicious Event log.• Scoping and Declarations.• Uninitialized storage pointers.• Arithmetic accuracy.• Design Logic.• Cross-function race conditions.• Safe Zeppelin module.• Fallback function security.• Overpowered functions / Owner privileges

AUDIT OVERVIEW



1. Deployment Failure in constructor() Due to Incorrect swapTokensAtAmount Initialization [Fixed ✓]

Function: constructor()

Issue: Calling `_mint()` before setting `swapTokensAtAmount` prevents contract deployment. The `_update()` function is overridden, causing the contract to call `_swapBack()` because `_canSwap` is true when both `_contractTokenBalance` and `swapTokensAtAmount` are 0.

Recommendation: Initialize `swapTokensAtAmount` with a value greater than 0 before minting the supply to the owner.

2. Gas Exhaustion Risk in claimEthFees() Due to Missing Balance Check [Fixed ✓]

Function: claimEthFees()

Issue: The contract does not verify the `msg.sender` balance. If the claimed amount exceeds the sender's balance, the contract could run out of gas.

Recommendation: Add a check to ensure `balanceOf(msg.sender)` is greater than or equal to the claimed amount.



1. Potentially Excessive Value in updateBuySellTaxBps() Function [Fixed ✓]

Function: updateBuySellTaxBps()

Issue: The `buySellTaxBps` value can be set too high, leading to undesired behavior.

Recommendation: Implement a `require()` statement to enforce a maximum limit for `buySellTaxBps`.



LOW

1. Incorrect Initialization in constructor() Due to Zero swapTokensAtAmount [Fixed ✓]

Function: constructor()

Issue: Setting swapTokensAtAmount to 0 causes improper contract behavior.

Recommendation: Add a require() to enforce a minimum value for swapTokensAtAmount during initialization.

2. Zero Address Risk in updateUniswapV2Router() and updateTaxShareWallets() [Fixed ✓]

Function: updateUniswapV2Router(), updateTaxShareWallets()

Issue: The addresses for _newHolderTaxShareWallet, _newTeamTaxShareWallet, and _newUniswapV2Router can be set to the zero address, leading to potential issues.

Recommendation: Implement a require() statement to ensure these addresses are not set to the zero address.



INFORMATIONAL

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.*

Metabot contract tests:

```
tests/test_meta_bot.py::test_set_automated_pair RUNNING
Transaction sent: 0x876cfaaaa808f865ff830cac67b649e3246f325bdf4bf01ad8bdfdb9217733a57
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 0
WETH9.constructor confirmed Block: 1 Gas used: 476546 (3.97%)
WETH9 deployed at: 0x3194c80C3dbcd3E11a07892e7bA5c3394048Cc87

Transaction sent: 0x0edfd72d516d9f1b2ff12d34fe42535f100a86d823984ff7b03793e0295c0584
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 1
UniswapV2Factory.constructor confirmed Block: 2 Gas used: 2412742 (20.11%)
UniswapV2Factory deployed at: 0x602C71e40AC47a042Ee7f46E0aee17F94A3bA086

Transaction sent: 0x85b4ad7295e213b140227a87688711a3c1e7f552d12b8ff31c5f853035a2890f
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: 0x5ec8e0a9eb539fdefb380d0633e17d16b7b82d1bde21102dc0031d11d68202ec
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 3
MetaBotToken.constructor confirmed Block: 4 Gas used: 3668731 (30.57%)
MetaBotToken deployed at: 0x6951b58d815043E3F842c1b026b0Fa888Cc2D085

Transaction sent: 0xf2cae678831d83c83bc9ce7f7b4f50a0d638b421a86f800dd49a76c6aeb7b5af
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 0
MetaBotToken.setIsAutomatedMarketMakerPair confirmed (reverted) Block: 5 Gas used: 22991 (0.19%)

Transaction sent: 0x8fb1100f1f6ef4c2d1df644a4358fcc8ec975f9ed3308559894d42ddble664f7
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 4
MetaBotToken.setIsAutomatedMarketMakerPair confirmed Block: 6 Gas used: 45336 (0.38%)

tests/test_meta_bot.py::test_set_automated_pair PASSED
tests/test_meta_bot.py::test_set_exclude_fee RUNNING
Transaction sent: 0x78e9c240b6b7356f60a38acc57bdd8ff74315d2cfcfc94b09f90e69d5acab643
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 5
WETH9.constructor confirmed Block: 7 Gas used: 476546 (3.97%)
WETH9 deployed at: 0x6b48De1086912A6Cb24ce3d843b3466e6c72AFD3

Transaction sent: 0x69bf21a014e4e0da52904a4d9bfldeea9120b0ec2427bdfd677e55fff4d44642
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 6
UniswapV2Factory.constructor confirmed Block: 8 Gas used: 2412742 (20.11%)
UniswapV2Factory deployed at: 0x9E4c14403d7d9A8A782044E86a93CAE09D7B2ac9

Transaction sent: 0x4651414611dce9592cd781d37edfeb3a25868a857b5f44c746f13f717bea6d04
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 7
UniswapV2Router02.constructor confirmed Block: 9 Gas used: 3895430 (32.46%)
UniswapV2Router02 deployed at: 0xcCB53c9429d32594F404d01fbc9E65ED1DCda809

Transaction sent: 0xba7d7fc3979834147656da77dc5783cdffff39105b47f01aa3aabec93ec949c
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 8
MetaBotToken.constructor confirmed Block: 10 Gas used: 3668733 (30.57%)
MetaBotToken deployed at: 0x420b109989ef5baba6D92029594eF45E19A04A4A

Transaction sent: 0xef8104d9794e3388f57c8237b5b0ed60841a05274002d1339d62821045d69f17
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 1
MetaBotToken.setExcludeFromFees confirmed (reverted) Block: 11 Gas used: 22892 (0.19%)

Transaction sent: 0xda8d449aa070fbbc137c0e437b37828ea96692d963767fb364c73666a3ab3ada
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 9
MetaBotToken.setExcludeFromFees confirmed Block: 12 Gas used: 45237 (0.38%)

tests/test_meta_bot.py::test_set_exclude_fee PASSED
```

```
tests/test_meta_bot.py::test_update_swap_tokens RUNNING
Transaction sent: 0x614029e26b571f32d6ada65da2fa6c5ec623920529838fae9035aaf80ac9952c
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 10
WETH9.constructor confirmed Block: 13 Gas used: 476546 (3.97%)
WETH9 deployed at: 0xb6286fAfd0451320ad6A8143089b216C2152c025

Transaction sent: 0xb60277c16670e93c49e50b1e9786d0f22ab6cd1516ad08a53d9ab57a4318ee03
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 11
UniswapV2Factory.constructor confirmed Block: 14 Gas used: 2412742 (20.11%)
UniswapV2Factory deployed at: 0x7a3d735ee6873f170bdcab1d51B604928dc10d92

Transaction sent: 0x26861404fce255dff46d5baf45152abc71624dc7e075599e6eb6372bdf6e0b4
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 12
UniswapV2Router02.constructor confirmed Block: 15 Gas used: 3895430 (32.46%)
UniswapV2Router02 deployed at: 0x2c15A315610Bfa5248E4CbCbd693320e908E03Cc

Transaction sent: 0xaf142f27985fab2eeb5583d50c82ab9ea698e04fb92b93ee9dd6239bc582c1d1
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 13
MetaBotToken.constructor confirmed Block: 16 Gas used: 3668743 (30.57%)
MetaBotToken deployed at: 0xe692Cf21B12e0B2717C4bF647F9768Fa58861c8b

Transaction sent: 0x851a745ef82e606d9a8ef440da214be1149495742638758beacbaea8c6112af1
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 2
MetaBotToken.updateSwapTokensAtAmount confirmed (reverted) Block: 17 Gas used: 22543 (0.19%)

Transaction sent: 0xcfbff2370f8efa99194bcf428bbc80ff8655d7721d502b56460a7ad6ac0d4148
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 14
MetaBotToken.updateSwapTokensAtAmount confirmed Block: 18 Gas used: 29625 (0.25%)

tests/test_meta_bot.py::test_update_swap_tokens PASSED
tests/test_meta_bot.py::test_update_router RUNNING
Transaction sent: 0x4ae14654173cb125663c2899d11c1c71519f9ab58e80d5f827571e0e7c5f8394
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 15
WETH9.constructor confirmed Block: 19 Gas used: 476546 (3.97%)
WETH9 deployed at: 0x303758532345B01cB8c2AD12541b09E9Aa53A93d

Transaction sent: 0x37fa0c9cd72b80050elf3226e8e3f7699004c014c4c1c3bf581741cf9ca1ba01
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 16
UniswapV2Factory.constructor confirmed Block: 20 Gas used: 2412742 (20.11%)
UniswapV2Factory deployed at: 0x26f153358B1C6a4C0B660e0d694a0555A9F1cce3

Transaction sent: 0x06137b925ba6060a2b5bf9334f3c960644b8f157bfec10990d714fb061f1b9fb
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 17
UniswapV2Router02.constructor confirmed Block: 21 Gas used: 3895430 (32.46%)
UniswapV2Router02 deployed at: 0xFb0588c72B438fa04Cf7c0879c8F730Faa2130a0

Transaction sent: 0x13c1204e0ccc8d5e8442564f6a7574d9aaa2f10a11d6606cbcd8c3c35c4cbdce
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 18
MetaBotToken.constructor confirmed Block: 22 Gas used: 3668743 (30.57%)
MetaBotToken deployed at: 0xed00238F9A0F7b4d93842033cdF56cC832C781c2

Transaction sent: 0x5b99b6c3cbe965b3eb4f1b9088149341f9f7cfa9e406df6bef1de62a8bc596ee
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 3
MetaBotToken.updateUniswapV2Router confirmed (reverted) Block: 23 Gas used: 22748 (0.19%)

Transaction sent: 0xfea59e508cc34aaa4fcbec020f41b5d3bee9e65b8cc427ad1de31d9f358f7290
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 19
MetaBotToken.updateUniswapV2Router confirmed Block: 24 Gas used: 30717 (0.26%)

tests/test_meta_bot.py::test_update_router PASSED
```



```
tests/test_meta_bot.py::test_update_tax_share_wallets RUNNING
Transaction sent: 0xc9754c2874c8478d9e498a21ac9624742cdc2320fef9829edf1277f4f2cffa49
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 20
WETH9.constructor confirmed Block: 25 Gas used: 476546 (3.97%)
WETH9 deployed at: 0xdCF93F11ef216cEC9C07fd31d0801c9b2b39Afb4

Transaction sent: 0x404ef865e8433bc83b21305e4efc39cac99ab7cedea8bef144426bd1ab1baf4
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 21
UniswapV2Factory.constructor confirmed Block: 26 Gas used: 2412742 (20.11%)
UniswapV2Factory deployed at: 0x8cb61491F1859f53438918F1A5aFCA542Af9D397

Transaction sent: 0x6d24b4fa8407e4b5ed0152d07802e35b918425884cf7d96d8e31b63af4ed3b16
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 22
UniswapV2Router02.constructor confirmed Block: 27 Gas used: 3895430 (32.46%)
UniswapV2Router02 deployed at: 0xD22363efee93190f82b52FC062B7Dbcb920eF658

Transaction sent: 0xa9c9536b366dbbd119cb5822a039ef36ef07dc28aa93de3e14824acbd1af6480
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 23
MetaBotToken.constructor confirmed Block: 28 Gas used: 3668733 (30.57%)
MetaBotToken deployed at: 0x4D1B781ce59B8C184F63B99D39d6719A522f46B5

Transaction sent: 0x8059e2746b6728faf111f2359f2a4ded5bb9dbf5e4d49ee138ce804bd97ade20
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 4
MetaBotToken.updateTaxShareWallets confirmed (reverted) Block: 29 Gas used: 23228 (0.19%)

Transaction sent: 0x580a812c8d95b4541fa2956cabe9207cff54d84414c91156c1e8012bd9f69b6e
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 24
MetaBotToken.updateTaxShareWallets confirmed Block: 30 Gas used: 68598 (0.57%)

tests/test_meta_bot.py::test_update_tax_share_wallets PASSED
tests/test_meta_bot.py::test_update_buy_sell RUNNING
Transaction sent: 0x8e9bf31aa091f95cfa094578911e6c45ecc0fe73c62bc7f4d7aea65e6dcf2973
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 25
WETH9.constructor confirmed Block: 31 Gas used: 476546 (3.97%)
WETH9 deployed at: 0x654f70d8442EA18904FA1AD79114f7250F7E9336

Transaction sent: 0x3e6dc6bcc165962476312a324184ba544158b82bc61945554ffc5c05631f4e7f
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 26
UniswapV2Factory.constructor confirmed Block: 32 Gas used: 2412742 (20.11%)
UniswapV2Factory deployed at: 0xADe061D42dE86f9058386D1D0d739d20C7eAfC43

Transaction sent: 0xf284f55957a2395fc7725c240684b8dc9b320119ea81e4bfff16e7a10723e79e9
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 27
UniswapV2Router02.constructor confirmed Block: 33 Gas used: 3895430 (32.46%)
UniswapV2Router02 deployed at: 0x832698Daec363C9A7aB036C224Af5821280b3AC6

Transaction sent: 0x7c7f54cd2b471a0a01da0756668d44cd1d9ec2dd559460c5d44152b8fc125c9
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 28
MetaBotToken.constructor confirmed Block: 34 Gas used: 3668743 (30.57%)
MetaBotToken deployed at: 0xA95916C3D979400C7443961330b3092510a229Ba

Transaction sent: 0xd7db9ea29f9a8b5c80f17d3183509ad83379833811b45cb8d9982f4147549cfb
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 5
MetaBotToken.updateBuySellTaxBps confirmed (reverted) Block: 35 Gas used: 22409 (0.19%)

Transaction sent: 0xb0965a9a65b69386a50e5ec55df41de2f039630a934f9ac083f6ea4b226e6c3f
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 29
MetaBotToken.updateBuySellTaxBps confirmed Block: 36 Gas used: 44491 (0.37%)

tests/test_meta_bot.py::test_update_buy_sell PASSED
```

```
tests/test_meta_bot.py::test_update_tax_share_bps RUNNING
Transaction sent: 0x66f5da2bfe3bd00ce3f13451ee03f0e08be64291255860f7e9eb2a7820af0175
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 30
WETH9.constructor confirmed Block: 37 Gas used: 476546 (3.97%)
WETH9 deployed at: 0xF06D5f5BfFFC86a52c84cfebc03AD35637728E73

Transaction sent: 0x086f05ec51c57c4239da77d1cd027a1ddaeb0382505ed1134112fd83975dc9be
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 31
UniswapV2Factory.constructor confirmed Block: 38 Gas used: 2412742 (20.11%)
UniswapV2Factory deployed at: 0x82c83b7f88aef2eD99d4869D547b6ED28e69C8df

Transaction sent: 0x3059b3ed65df1ea749d6b95a5372c5a74150818fa7cdaffa8a6dbe25bb93655d
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 32
UniswapV2Router02.constructor confirmed Block: 39 Gas used: 3895430 (32.46%)
UniswapV2Router02 deployed at: 0x724Ca58E1e6e648F81E15d7Eec0fe1E5f581c7b0

Transaction sent: 0x581827aea656259f9287afe84f667c07c5bb374dd3592e928143efe2eab62ed0
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 33
MetaBotToken.constructor confirmed Block: 40 Gas used: 3668733 (30.57%)
MetaBotToken deployed at: 0x34b97ffa01dc00C959c5f1176273D0de3be914C1

Transaction sent: 0x550804d51f7a00e25b6c749339a75895408a1a5f7319efe2ddd71a6d1c16f732
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 6
MetaBotToken.updateTaxShareBps confirmed (reverted) Block: 41 Gas used: 22778 (0.19%)

Transaction sent: 0xd8497d652dbaacc76e3e8dea4d73bf24728ec049682f61dbf770e151227cf253a
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 34
MetaBotToken.updateTaxShareBps confirmed (reverted) Block: 42 Gas used: 27800 (0.23%)

Transaction sent: 0x86125b8de196a9aae00e252eae58616d20853c98c7be8e82732f98c2453b2afa
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 35
MetaBotToken.updateTaxShareBps confirmed Block: 43 Gas used: 68559 (0.57%)

tests/test_meta_bot.py::test_update_tax_share_bps PASSED
tests/test_meta_bot.py::test_claim_eth_fees RUNNING
Transaction sent: 0xacf6bf92364d4b6407554a216c377926e18c67752106385b6c57b0e8f7761f2c
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 36
WETH9.constructor confirmed Block: 44 Gas used: 476546 (3.97%)
WETH9 deployed at: 0x741e3E1f81041c62C2A97d0b6E567AcaB09A6232

Transaction sent: 0xc00bbf8638f9e430271797a589d1787608de481d6fff253cc36ab65a9f972780
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 37
UniswapV2Factory.constructor confirmed Block: 45 Gas used: 2412742 (20.11%)
UniswapV2Factory deployed at: 0x480FccF53589c1F185B35db88b8315a0b8F9a3e0

Transaction sent: 0x608fe17207686333c088c6c721c85feec69b3e88caee32578920abdc9d91dcd
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 38
UniswapV2Router02.constructor confirmed Block: 46 Gas used: 3895430 (32.46%)
UniswapV2Router02 deployed at: 0xFE0F4Cf81B5c0a6Fd65a610FD9488F33aE9095cB

Transaction sent: 0xb6b968905fbb73e2616ca9f94dbd858203ca3be4b6bb5ffbd45207793ab7ddf22
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 39
MetaBotToken.constructor confirmed Block: 47 Gas used: 3668733 (30.57%)
MetaBotToken deployed at: 0x4e3E7dC9D84dA78E8f017f4C36153A61341736d4

Transaction sent: 0xd1361da7c3983ffe0513a820a393505bbb60d0145ae0c2a59f9c428f7cfa6cac
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 7
MetaBotToken.claimEthFees confirmed Block: 48 Gas used: 24093 (0.20%)

tests/test_meta_bot.py::test_claim_eth_fees PASSED
```

```
tests/test_meta_bot.py::test_transfer RUNNING
Transaction sent: 0x9885e91a31b2d0140c053a55eaf3d7c86b7b00192e3c3dc3b5389a61aa389472
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 40
WETH9.constructor confirmed Block: 49 Gas used: 476546 (3.97%)
WETH9 deployed at: 0x0AC45e945A00803fc19da8f591be8601C1F63130

Transaction sent: 0x7606a9e553faa065fda2c24d6c592362591b94b8322cef84bf91a689833418b1
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 41
UniswapV2Factory.constructor confirmed Block: 50 Gas used: 2412742 (20.11%)
UniswapV2Factory deployed at: 0x5847798CE8c89e3Ff59AE5fA308EC0d406b5687

Transaction sent: 0x8b24e10d04778763b6994b784d3f56cb99025700fe14ef4c66d91062537bf8e4
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 42
UniswapV2Router02.constructor confirmed Block: 51 Gas used: 3895418 (32.46%)
UniswapV2Router02 deployed at: 0x0C60536783db9ED5A28216970810FF2243d317d0

Transaction sent: 0x90f89527ed2c23fe6742e867eba8ad63937f741d693288e811448d07153484fd
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 43
UniswapV2AddLiquidity.constructor confirmed Block: 52 Gas used: 449853 (3.75%)
UniswapV2AddLiquidity deployed at: 0x0e19E87b3630D7a3af5c45C95ab6885367251894

Transaction sent: 0x58f23c84b283b48aa6aa799960ablba44342ba3fe2772df14140114e36c198d4
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 44
MetaBotToken.constructor confirmed Block: 53 Gas used: 3668743 (30.57%)
MetaBotToken deployed at: 0xaA7e46855e0506401214c9b1C35f3d889669609e

Transaction sent: 0x4379ef8dc10e9aa5ffald0c9fc259d7bee4d8bc54f2d54da8432e19966f1536d
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 45
MetaBotToken.transfer confirmed Block: 54 Gas used: 53871 (0.45%)

Transaction sent: 0x2c4f3f93e5d621c17bf4ccd0be873a5f4fe261e1203a6af8c9bb3ef857cb346f
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 46
MetaBotToken.updateBuySellTaxBps confirmed Block: 55 Gas used: 44491 (0.37%)

Transaction sent: 0x0535128e070d266a8e6d8f337bc5b1996a3a6bef3d59707ee4a45e1ec8842c69
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 8
MetaBotToken.transfer confirmed Block: 56 Gas used: 81313 (0.68%)

Transaction sent: 0x225f7d30c95ae0c9f69f5ca3ffa051770a28251f28bdbb5c8faabc2fa36ccb06
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 47
MetaBotToken.updateTaxShareBps confirmed Block: 57 Gas used: 68559 (0.57%)

Transaction sent: 0x25f2c644df0a737b47dfcab3dac774efc38cc531f48950f7032c89da8f9a0578
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 48
WETH9.deposit confirmed Block: 58 Gas used: 43706 (0.36%)

Transaction sent: 0xd67f800cc30be9e8aldeaf62ee5703aa7effb7ad23c1d30fa972f0096a2a025c
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 49
WETH9.approve confirmed Block: 59 Gas used: 43998 (0.37%)

Transaction sent: 0x31b37356f8dbff6d53b82576604db706f6561ec84a7bdf98e29b370831cef8d
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 50
MetaBotToken.approve confirmed Block: 60 Gas used: 44351 (0.37%)

Transaction sent: 0x4e0ec9b9b2fbd187f048d36db83eca31587f335f9dc37178110a5484025233a4
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 51
UniswapV2AddLiquidity.addLiquidity confirmed Block: 61 Gas used: 285612 (2.38%)

Transaction sent: 0xf53781e60ca61b4330ff46d4b7f35d220c7ab041ea165ef5a8e5337317c4b75e
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 52
MetaBotToken.transfer confirmed Block: 62 Gas used: 38871 (0.32%)

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

Annexes

Testing code:

Testing_Metabot:

```
from brownie import (

    reverts,

)

from scripts.helpful_scripts import (

    ZERO_ADDRESS,

    get_account,

)

from scripts.deploy import (

    deploy_weth,

    deploy_factory,

    deploy_router,

    deploy_liquidity,

    deploy_meta_bot

)

def test_set_automated_pair(only_local):

    # Arrange

    owner = get_account(0)

    other = get_account(1)

    fake_pair = "0xd88954F65E3E168730A892cCf740F0F6CC89D7f7"

    weth = deploy_weth(owner)
```

```
factory = deploy_factory(owner, owner)

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

token = deploy_meta_bot(owner, 1000000, router.address, 10e18)

with reverts():

    token.setIsAutomatedMarketMakerPair(fake_pair, True, {"from": other})

token.setIsAutomatedMarketMakerPair(fake_pair, True, {"from": owner})
```

```
def test_set_exclude_fee(only_local):
```

```
    # Arrange
```

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

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

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

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

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

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

```
    token = deploy_meta_bot(owner, 1000000, router.address, 10e18)
```

```
    with reverts():
```

```
        token.setExcludeFromFees(extra, True, {"from": other})
```

```
    token.setExcludeFromFees(extra, True, {"from": owner})
```

```
    assert token.isExcludedFromFees(extra) == True
```

```
def test_update_swap_tokens(only_local):
```

```
    # Arrange
```

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

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



```

weth = deploy_weth(owner)

factory = deploy_factory(owner, owner)

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

token = deploy_meta_bot(owner, 1000000, router.address, 10e18)


with reverts():

    token.updateSwapTokensAtAmount(1e18, {"from": other})

assert token.swapTokensAtAmount() == 10e18

token.updateSwapTokensAtAmount(1e18, {"from": owner})

assert token.swapTokensAtAmount() == 1e18


def test_update_router(only_local):

    # Arrange

    owner = get_account(0)

    other = get_account(1)

    fake_router = "0xd88954F65E3E168730A892cCf740F0F6CC89D7f7"


    weth = deploy_weth(owner)

    factory = deploy_factory(owner, owner)

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

    token = deploy_meta_bot(owner, 1000000, router.address, 10e18)


    with reverts():

        token.updateUniswapV2Router(fake_router, {"from": other})

    assert token.uniswapV2Router() == router.address

    token.updateUniswapV2Router(fake_router, {"from": owner})

    assert token.uniswapV2Router() == fake_router

```

```

def test_update_tax_share_wallets(only_local):

    # Arrange

    owner = get_account(0)

    other = get_account(1)

    extra = get_account(2)

    another = get_account(3)


    weth = deploy_weth(owner)

    factory = deploy_factory(owner, owner)

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

    token = deploy_meta_bot(owner, 1000000, router.address, 10e18)


    with reverts():

        token.updateTaxShareWallets(extra, another, {"from": other})

    assert token.holderTaxShareWallet() == ZERO_ADDRESS

    assert token.teamTaxShareWallet() == ZERO_ADDRESS

    token.updateTaxShareWallets(extra, another, {"from": owner})

    assert token.holderTaxShareWallet() == extra

    assert token.teamTaxShareWallet() == another


def test_update_buy_sell(only_local):

    # Arrange

    owner = get_account(0)

    other = get_account(1)


    weth = deploy_weth(owner)

    factory = deploy_factory(owner, owner)

```

```

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

token = deploy_meta_bot(owner, 1000000, router.address, 10e18)

with reverts():

    token.updateBuySellTaxBps(1000, {"from": other})

assert token.buySellTaxBps() == 0

token.updateBuySellTaxBps(1000, {"from": owner})

assert token.buySellTaxBps() == 1000

def test_update_tax_share_bps(only_local):

    # Arrange

    owner = get_account(0)

    other = get_account(1)

    weth = deploy_weth(owner)

    factory = deploy_factory(owner, owner)

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

    token = deploy_meta_bot(owner, 1000000, router.address, 10e18)

    with reverts():

        token.updateTaxShareBps(0, 5000, 5000, {"from": other})

    with reverts("MetaBotToken_Invalid_Arguments: "):

        token.updateTaxShareBps(5000, 5000, 5000, {"from": owner})

    assert token.lpTaxShareBps() == 0

    assert token.holderTaxShareBps() == 0

    assert token.teamTaxShareBps() == 0

    token.updateTaxShareBps(0, 5000, 5000, {"from": owner})

    assert token.lpTaxShareBps() == 0

```

```
assert token.holderTaxShareBps() == 5000
```

```
assert token.teamTaxShareBps() == 5000
```

```
def test_claim_eth_fees(only_local):
```

```
    # Arrange
```

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

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

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

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

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

```
    token = deploy_meta_bot(owner, 1000000, router.address, 10e18)
```

```
    token.claimEthFees(0, {"from": other})
```

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

```
    # Arrange
```

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

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

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

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

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

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

```
    liquidity = deploy_liquidity(owner, factory.address, router.address)
```

```
    token = deploy_meta_bot(owner, 1000000, router.address, 10e18)
```

```
    tx = token.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


token.updateBuySellTaxBps(1000, {"from": owner})

# 10% fee set

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

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

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

assert tx.events['Transfer'][1]['value'] == 0.9e18


token.updateTaxShareBps(0, 5000, 5000, {"from": owner})


# add liquidity

weth.deposit({"from": owner, "value": 10e18})

weth.approve(liquidity.address, 100e18, {"from": owner})

token.approve(liquidity.address, 100e18, {"from": owner})

liquidity.addLiquidity(token.address, weth.address, 1000e6, 1e18, {"from": owner})


tx = token.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
```


Technical Findings Summary

Findings

Vulnerability Level	Total	Pending	Not Apply	Acknowledged	Partially Fixed	Fixed
<div><div></div>High</div>	2					2
<div><div></div>Medium</div>	1					1
<div><div></div>Low</div>	2					2
<div><div></div>Informational</div>	0					

Assessment Results

Score Results

Review	Score
Global Score	95/100
Assure KYC	https://assuredefi.com/projects/metabotai/
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 Metabot project, we inform you that the cybersecurity audit has failed due to multiple critical issues identified during the review, which pose significant risks to the contract's functionality and security. Immediate remediation is required to address these vulnerabilities.

Update: All vulnerabilities are fixed in commit
e2a144bb685e9ae95f12bfdd218008bd2e931b89

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 adMetabot 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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