



RugFreeCoins Audit



Epic Hero Token Audit

Smart Contract Security Audit

September 10, 2021

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Audit details



Audited project

Epic Hero Token



Contract Address

0x47cC5334F65611EA6Be9e933C49485c88C17F5F0



Client contact

Epic Hero Token Team



Blockchain

Binance smart chain



Project website

<https://Epic Hero.io/>

Disclaimer

This is a limited report on our findings based on our analysis, in accordance with good industry practice as at the date of this report, in relation to cybersecurity vulnerabilities and issues in the framework and algorithms based on smart contracts, the details of which are set out in this report. In order to get a full view of our analysis, it is crucial for you to read the full report. While we have done our best in conducting our analysis and producing this report, it is important to note that you should not rely on this report and cannot claim against us on the basis of what it says or doesn't say, or how we produced it, and it is important for you to conduct your own independent investigations before making any decisions. We go into more detail on this in the disclaimer below – please make sure to read it in full.

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Background

Rugfreecoins was commissioned by Epic Hero to perform an audit of the smart contract.

<https://bscscan.com/token/0x47cC5334F65611EA6Be9e933C49485c88C17F5F0>

The focus of this audit is to verify that the smart contract is secure, resilient and working according to the specifications.

The information in this report should be used to understand the risk exposure of the smart contract, project feasibility, long term sustainability and as a guide to improve the security posture of the smart contract by remediating the issues that were identified.

About the project

Epic Hero is a token built on the Binance Smart Chain that powers the Epic Hero NFT game; users can use \$EPIC HERO in game or just hold it to earn Thoreum reflection rewards. Each transaction, purchase incur a 5% fee, and sales incur an 15% fee, transfers incur a fee of 10%.

\$EPIC HERO is acquired by winning battles, completing quests, or simply participating in games. While \$EPIC HERO tokens are released regularly as game rewards, they are also burned by many in-game activities like summoning a new hero, evolving a hero to next level, merging two existing heroes to create a new one, and many more exciting interactions. These burns help bring balance to the supply.

\$EPIC HERO is also required for expenses when challenging dungeons and upgrading the equipment. You can also use \$EPIC HERO to hire other player's heroes to form a team together, etc. \$EPIC HERO can be obtained by mining, by participating in daily works. \$EPIC HERO can also be traded through the DEX platform.

All of this action, excitement, competition and collecting brought to you on the Fair Launch ITO Platform of Thoreum Finance, the stable choice for projects looking to guarantee a smooth and fair launch for ALL their users, not only a lucky few.

Features

- ❖ The automatic Thoreum rewards will be distributed among every holder proportional to how many tokens each individual holds in values of 0.75% when buying and 2.25% when selling.
- ❖ The automatic WBNB rewards will be distributed among NFT holders proportional to how many tokens each individual holds in values of 1.25% when buying and 3.75% when selling.
- ❖ Tokens are getting burnt in every transaction with the fee of 0.25% when buying and 0.75% when selling.
- ❖ The fee of 0.25% when buying and 0.75% when selling will be allocated for the game incentive pool to distribute among the game winners and activities related to the game.
- ❖ The sustainability fee of 2.5% when buying and 7.5% when selling for Dev & marketing is what allows Epic Hero to hold the aforementioned promise. Tokens will be swapped into BNB and will be sent to a marketing wallet per transaction. This way, Epic Hero will have enough funds to promote the coin and spend for future development without selling tokens as the traditional way.

Features

All the distinctive gaming features revolving around our ecosystem



PLAY or JUST HOLD NFT TO EARN

The 1st Play to Earn NFT game ever with Hold to Earn mode. Just hold NFTs in your wallet and get 5% rewards in BNB from transaction tax. Your NFTs become more valuable than ever.



OWNERSHIP

Your Heroes and Equipment are securely stored on the blockchain in the form of an NFT.



MARKETPLACE

Use the Marketplace to find your best Hero and trade rare equipment with other players.



WAR GAME

Become the King of all Heroes through Epic War System: 1 vs. 1, 3 vs. 3, 5 vs. 5 and Thousands vs. Thousands with real prize money!

Tokenomics

5% fee when buying

- ❖ 0.75% of trade goes to holders' pockets in Thorem.
- ❖ 1.25% of trade goes to NFT holders' pockets in WBNB.
- ❖ 0.25% of trade goes to burn tokens.
- ❖ 2.5% of trade goes to marketing & dev wallet.
- ❖ 0.25% of trade goes to the game incentive pool.

15% fee when selling

- ❖ 2.25% of trade goes to holders' pockets in Thorem.
- ❖ 3.75% of trade goes to NFT holders' pockets in WBNB.
- ❖ 0.75% of trade goes to burn tokens.
- ❖ 7.5% of trade goes to marketing & dev wallet.
- ❖ 0.75% of trade goes to the game incentive pool.



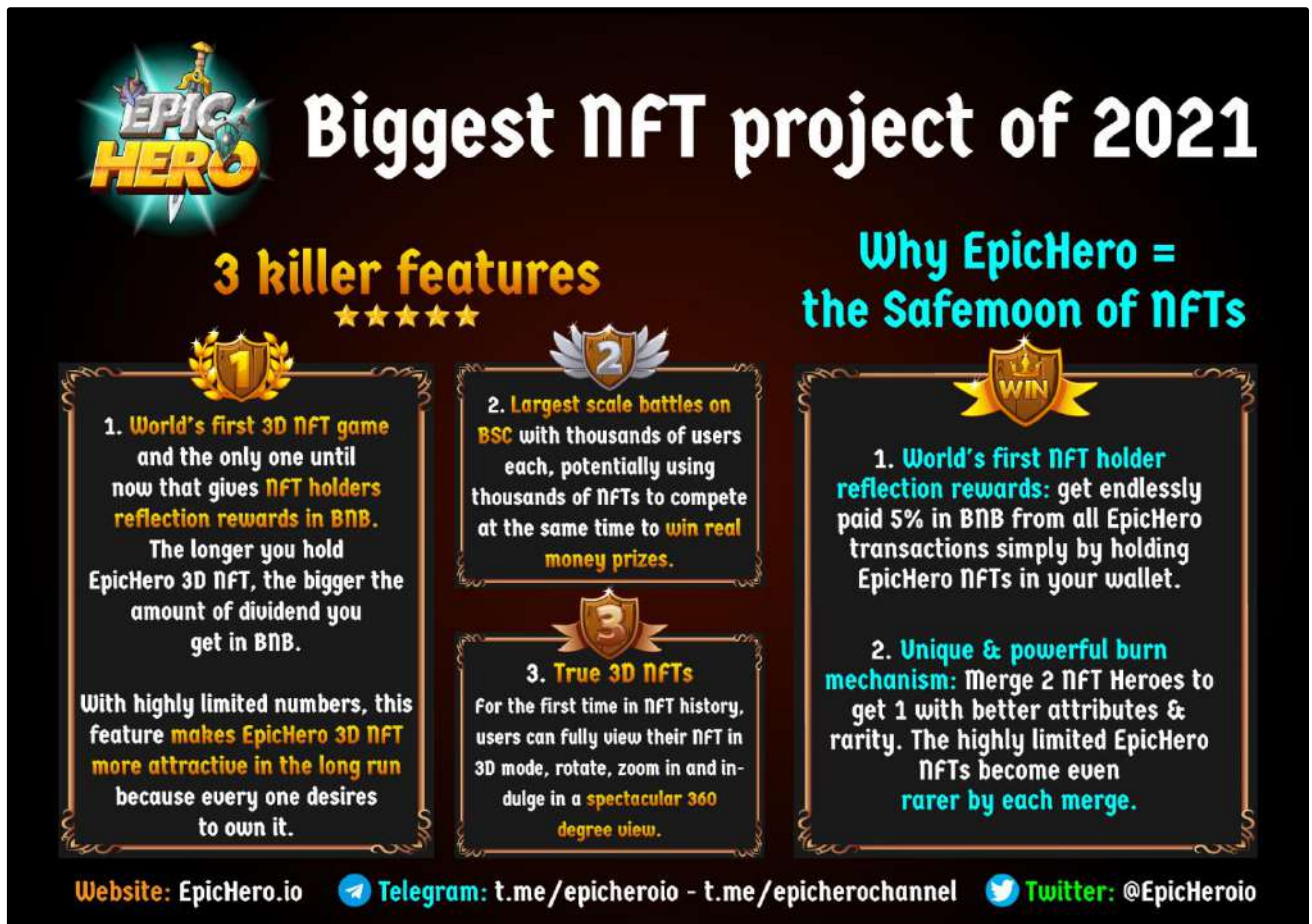
Target market and the concept

Target market

- ❖ Anyone who's interested in Crypto space with long term investment plans.
- ❖ Anyone who's ready to earn a passive income in Thoreum by holding tokens.
- ❖ Anyone who's ready to earn a passive income in BNB by holding EPIC Hero NFTs.
- ❖ Anyone who's interested in owning 3D NFTs.
- ❖ Any casual or hardcore gamers out there play the war game and win rewards in \$Epic Hero or win in real money prices.
- ❖ Anyone who's interested in doing daily tasks in the game and gets rewards in \$Epic Hero tokens.
- ❖ Anyone who's interested in collecting NFTs or trading NFTs.
- ❖ Anyone who's interested in trading tokens.
- ❖ All Thoreum and BNB investors and fans out there.
- ❖ Anyone who's interested in taking part with the future plans of the Epic Hero token.
- ❖ Anyone who's interested in making financial transactions with any other party using \$Epic Hero, Thoreum or BNB as the currency.

Core concept

Epic Hero NFT game



EPIC HERO Biggest NFT project of 2021

3 killer features ★★★★★

- 1. World's first 3D NFT game** and the only one until now that gives **NFT holders reflection rewards in BNB**. The longer you hold EpicHero 3D NFT, the bigger the amount of dividend you get in BNB. With highly limited numbers, this feature **makes EpicHero 3D NFT more attractive in the long run** because every one desires to own it.
- 2. Largest scale battles on BSC** with thousands of users each, potentially using thousands of NFTs to compete at the same time to **win real money prizes**.
- 3. True 3D NFTs** For the first time in NFT history, users can fully view their NFT in 3D mode, rotate, zoom in and indulge in a **spectacular 360 degree view**.

Why EpicHero = the Safemoon of NFTs

- 1. World's first NFT holder reflection rewards:** get endlessly paid 5% in BNB from all EpicHero transactions simply by holding EpicHero NFTs in your wallet.
- 2. Unique & powerful burn mechanism:** Merge 2 NFT Heroes to get 1 with better attributes & rarity. The highly limited EpicHero NFTs become even **rarer by each merge**.

Website: EpicHero.io **Telegram:** t.me/epicheroio - t.me/epicherochannel **Twitter:** [@EpicHeroio](https://twitter.com/EpicHeroio)

Stunning 3D designs, amazing gameplay, Epic Hero is the biggest War Game on the Binance Smart Chain Network. Collect and build an unstoppable force of characters by choosing from your favorite heroes from Greek, Norse, China, Japan, Egypt, India and Roman Mythology. Users can summon, merge and evolve thousands of Collectable Epic Hero Battle Card NFTs and bring them to the largest arena to do battle against other Epic Heroes.

Epic Hero is created to bring about the most unique gaming experiences on BSC. Summon, Merge, Fight, Quest, Join a Clan, Hire a hero from other users, Own your land and invade other's. We have many activities planned for users to Interact and Show Off their Collection. Dominate your opponents and raise your banner over the Epic Hero ranks. Do you have what it takes to rise up and overcome your enemies?

It will be the first NFT game with a 1000 vs. 1000 battle where thousands of players can fight with others at the same time to win a big real money prize monthly.

Each Epic Hero's NFT has a stunning 3D graphic, unlike other projects with just 2D NFT graphics, our NFT is truly 3D, users can view their hero in high definition and rotate them 360 degrees with a zoom in and zoom out function, a unique feature not yet implemented in any BSC NFT game.

For those not into battling and questing, collect exciting unique sets and combos, perfect for the collector in every group. One-off limited edition Epic Hero Battle Card NFTs will set you apart from other so-called, would-be collectors. Show off your collection of rare and precious NFT Epic Hero and be the envy of all.



The Theorum reward system

0.75% of each transaction when buying and 2.25% when selling gets converted to Theorum and is split amongst all holders. The rewards are sent to holders that have at least 200,000 Epic Hero tokens, holders will be eligible to receive tokens everyone hour and rewards are proportional to how many tokens each individual holds.

The NFT reward system

The longer the holders hold NFTs the bigger the amount of dividends that they get in BNB, it gives holders the incentive to hold to collect dividends and with highly limited numbers, this feature makes the NFT look more attractive in the long run because everyone desires to have it.

NFT burning mechanism

Not only is Epic Hero NFT highly limited in numbers, but also it will become rarer and rarer day by day because of our NFT merging (burning) mechanism. Users can choose 2 heroes to merge into a new 1 with better attributes or rarity, so the number of heroes will be decreased a lot over time.

Sustainable mechanism

The **sustainability fee of 2.5% when buying and 7.5% when selling for Dev & marketing** is what allows Epic Hero to promote the token and use funds to further development of the platform. Tokens will be swapped into BNB and will be sent to a marketing wallet per transaction. This way, Epic Hero will have access to the funds without selling tokens as the traditional way, which will enable them to consume funds without hurting the project.

The fee of 0.25% when buying and 0.75% when selling burn that benefits and rewards those who invest long-term. This feature slowly reduces supply making Epic Hero price more and more valuable.

The fee of 0.25% when buying and 0.75% when selling will be allocated for the game incentive pool to distribute among the game winners and activities related to the game.

Potential to grow with score points

1.	Project efficiency	10/10
2.	Project uniqueness	10/10
3	Information quality	10/10
4	Service quality	9/10
5	System quality	10/10
6	Impact on the community	10/10
7	Impact on the business	10/10
8	Preparing for the future	10/10
Total Points		9.88/10

Contract details

Token contract details for 10th September 2021

Contract name	Epic Hero.io 3D NFT
Contract address	0x47cC5334F65611EA6Be9e933C49485c88C17F5F0
Token supply	1,000,000,000
Token ticker	EPIC HERO
Decimals	18
Token holders	0
Transaction count	0
Game treasury wallet	0xb7497bb4dec6b4be62f77dbdeb90f4e179d8fcfe
Team wallet	0x9bf2891fa94f6d9954d6eafa89c759b3c9ddc05a
Marketing wallet address	0x02ad160cb2e10984ad492df2ace18ad725b8a70c
Thoremum Dividend token	0x580de58c1bd593a43dadcf0a739d504621817c05
Thoremum Dividend tracker	0x2e0098362d5fe36a83ab2dcf0c49d008813d079f
WBNB Dividend token	0xbb4cdb9cbd36b01bd1cbaebf2de08d9173bc095c
WBNB Dividend tracker	0x4fbee542a42216e5abf8b361d975d8f55c4d01a9
Burn alliance token	0x580de58c1bd593a43dadcf0a739d504621817c05
Contract deployer address	0x8E377Cc27aBfB273313791097bcCe590a84F1F97
Contract's current owner address	0x8e377cc27abfb273313791097bcce590a84f1f97

Token distribution

Tokens are distributed as follows:

- ❖ Initial Burn: 50%
- ❖ Angel investors rounds: 5%. Distribution: 1 month full locked, then 0.1% weekly.
- ❖ Advisors: 2.5%. Distribution: 6 months full locked, then 0.5% Quarterly
- ❖ Team: 5%. Distribution: 6 months full locked, then 1% Quarterly
- ❖ Foundation: 10% Marketing, Audit, Exchanges, etc. + 2.5% partnership
- ❖ Game Incentives (farming, PvP, PvE, prizes) : 17.5%
- ❖ Airdrop: 1.25%
- ❖ Public sale: 5%
- ❖ Liquidity: 1.25%.







































































Contract code function details






















































No	Category	Item	Result
1	Coding conventions	BRC20 Token standards	pass
		compile errors	pass
		Compiler version security	pass
		visibility specifiers	pass
		Gas consumption	pass
		SafeMath features	pass
		Fallback usage	pass
		tx.origin usage	pass
		deprecated items	pass
		Redundant code	pass
		Overriding variables	pass
2	Function call audit	Authorization of function call	pass
		Low level function (call/delegate call) security	pass
		Returned value security	pass
		Selfdestruct function security	pass
3	Business security	Access control of owners	informational
		Business logics	pass
		Business implementations	pass
4	Integer overflow/underflow		pass
5	Reentrancy		pass
6	Exceptional reachable state		pass
7	Transaction ordering dependence		pass
8	Block properties dependence		pass
9	Pseudo random number generator (PRNG)		pass
10	DoS (Denial of Service)		pass
11	Token vesting implementation		pass
12	Fake deposit		pass
13	Event security		pass

Contract description table

Below table represents the summary of the contracts and methods in the token contract. We scanned the whole contract and listed down all the Interfaces, functions and implementations with its visibility and mutability.

Contract	Type	Bases		
L	Function Name	Visibility	Mutability	Modifiers
Context	Implementation			
L	_msgSender	Internal		
L	_msgData	Internal		
Ownable	Implementation	Context		
L		Public		NO
L	owner	Public		NO
L	renounceOwnership	Public		onlyOwner
L	transferOwnership	Public		onlyOwner
L	lock	Public		onlyOwner
IERC20	Interface			
L	totalSupply	External		NO
L	balanceOf	External		NO
L	transfer	External		NO
L	allowance	External		NO
L	approve	External		NO
L	transferFrom	External		NO
ERC20	Implementation	Context, IERC20		
L		Public		NO
L	name	Public		NO
L	symbol	Public		NO
L	decimals	Public		NO
L	totalSupply	Public		NO
L	balanceOf	Public		NO

L	transfer	Public 		NO 
L	allowance	Public 		NO 
L	approve	Public 		NO 
L	transferFrom	Public 		NO 
L	increaseAllowance	Public 		NO 
L	decreaseAllowance	Public 		NO 
L	_transfer	Internal 		
L	_mint	Internal 		
L	_burn	Internal 		
L	_approve	Internal 		
L	_setupDecimals	Internal 		
L	_beforeTokenTransfer	Internal 		
IDividendPayingToken	Interface			
L	dividendOf	External 		NO 
L	withdrawDividend	External 		NO 
L	withdrawableDividendOf	External 		NO 
L	withdrawnDividendOf	External 		NO 
L	accumulativeDividendOf	External 		NO 
DividendPayingToken	Implementation	ERC20, IDividendPayingToken		
L		Public 		ERC20
L		External 		NO 
L	distributeDividends	Public 		NO 
L	withdrawDividend	Public 		NO 
L	setOnlyCaller	External 		NO 
L	setDividendTokenAddress	External 		NO 
L	setMinTokenBeforeSendDividend	External 		NO 
L	retrieveTokens	External 		NO 
L	retrieveBNB	External 		NO 
L	_withdrawDividendOfUser	Internal 		
L	dividendOf	Public 		NO 



L	withdrawableDividendOf	Public 		NO 
L	withdrawnDividendOf	Public 		NO 
L	accumulativeDividendOf	Public 		NO 
L	_transfer	Internal 		
L	_mint	Internal 		
L	_burn	Internal 		
L	_setBalance	Internal 		
IDEXFactory		Interface		
L	createPair	External 		NO 
IDEXRouter		Interface		
L	factory	External 		NO 
L	WETH	External 		NO 
L	addLiquidity	External 		NO 
L	addLiquidityETH	External 		NO 
L	swapExactTokensForTokensSupportingFeeOnTransferTokens	External 		NO 
L	swapExactETHForTokensSupportingFeeOnTransferTokens	External 		NO 
L	swapExactTokensForETHSupportingFeeOnTransferTokens	External 		NO 
IterableMapping		Library		
L	get	Public 		NO 
L	getIndexOfKey	Public 		NO 
L	getKeyAtIndex	Public 		NO 
L	size	Public 		NO 
L	set	Public 		NO 
L	remove	Public 		NO 
SafeMath		Library		
L	tryAdd	Internal 		
L	trySub	Internal 		
L	tryMul	Internal 		

L	tryDiv	Internal 🔒		
L	tryMod	Internal 🔒		
L	add	Internal 🔒		
L	sub	Internal 🔒		
L	mul	Internal 🔒		
L	div	Internal 🔒		
L	mod	Internal 🔒		
L	sub	Internal 🔒		
L	div	Internal 🔒		
L	mod	Internal 🔒		
SafeMathInt	Library			
L	mul	Internal 🔒		
L	div	Internal 🔒		
L	sub	Internal 🔒		
L	add	Internal 🔒		
L	toUint256Safe	Internal 🔒		
SafeMathUint	Library			
L	toInt256Safe	Internal 🔒		
ThoreumDividendTracker	Implementation	DividendPaying Token, Ownable		
L		Public 📡	🔒	DividendPayingToken
L	setDividendTokenAddress	External 📡	🔒	onlyOwner
L	updateMinimumTokenBalanceForDividends	External 📡	🔒	onlyOwner
L	excludeFromDividends	External 📡	🔒	onlyOwner
L	updateClaimWait	External 📡	🔒	onlyOwner
L	setBalance	External 📡	🔒	onlyOwner
L	processAccount	Public 📡	🔒	onlyOwner
L	process	Public 📡	🔒	NO📡
L	_transfer	Internal 🔒		
L	withdrawDividend	Public 📡		NO📡
L	getNumberOfTokenHolders	External 📡		NO📡

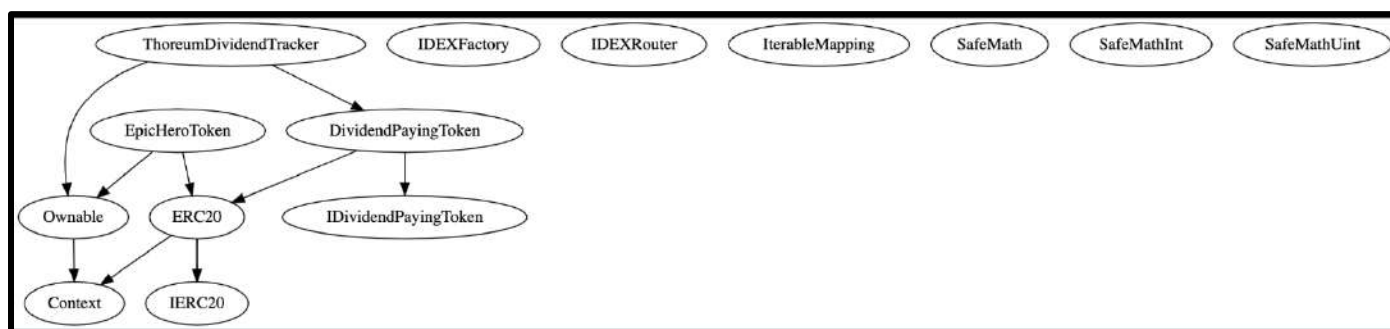
L	getAccount	Public		NO
L	getAccountAtIndex	Public		NO
L	_canAutoClaim	Private		
Epic HeroToken	Implementation	ERC20, Ownable		
L		Public		ERC20
L		External		NO
L	afterPreSale	External		onlyOwner
L	prepareForPartner	External		onlyOwner
L	setMaxBuyTransaction	External		onlyOwner
L	setMaxSellTransaction	External		onlyOwner
L	setThoreumDividendToken	External		onlyOwner
L	setMinThoreumBeforeSendDividend	External		onlyOwner
L	setSendThoreumInTx	External		onlyOwner
L	setWbnbReflectToken	External		onlyOwner
L	setWbnbReflectTracker	External		onlyOwner
L	setTeamWallet	External		onlyOwner
L	setMarketingWallet	External		onlyOwner
L	setBurnAllianceToken	External		onlyOwner
L	setToBurnAllianceFee	External		onlyOwner
L	setToBurnTokenFee	External		onlyOwner
L	setGameTreasuryFee	External		onlyOwner
L	setMaxWalletToken	External		onlyOwner
L	setSwapTokensAtAmount	External		onlyOwner
L	setSellTransactionMultiplier	External		onlyOwner
L	setTradingIsEnabled	External		onlyOwner
L	setMinBNBAfterBuyback	Public		onlyOwner
L	setMinSellToTriggerBuyback	Public		onlyOwner
L	setBuyBackUpperLimitBNB	External		onlyOwner
L	setThoreumDividendTracker	External		onlyOwner
L	setThoreumDividendRewardFee	External		onlyOwner

L	setWbnbReflectRewardFee	External		onlyOwner
L	setMarketingFee	External		onlyOwner
L	setBuyBackFee	External		onlyOwner
L	setLiquidityFee	External		onlyOwner
L	setDexRouter	External		onlyOwner
L	setIsBlacklisted	External		onlyOwner
L	setFeesOnNormalTransfers	External		onlyOwner
L	setAutomatedMarketMakerPair	Public		onlyOwner
L	_setAutomatedMarketMakerPair	Private		onlyOwner
L	setGasForProcessing	External		onlyOwner
L	setMinimumBalanceForDividends	External		onlyOwner
L	setClaimWait	External		onlyOwner
L	excludeFromFees	Public		onlyOwner
L	excludeFromDividend	Public		onlyOwner
L	processDividendTracker	External		onlyOwner
L	manualBuyBackAndBurn	Public		onlyOwner
L	retrieveTokens	External		onlyOwner
L	retrieveBNB	External		onlyOwner
L	claim	External		NO
L	_updateTotalFee	Internal		
L	_transfer	Internal		
L	_swapAndLiquify	Private		
L	_addLiquidity	Private		
L	_buyBackAllianceTokenAndBurn	Private		
L	_buyBackAndBurn	Private		
L	_swapTokensForBNB	Private		
L	_swapTokensForDividendToken	Private		
L	_swapAndSendThorumDividends	Private		
L	_swapAndSendWbnbReflects	Private		
L	_transferToWallet	Private		

Legend

Symbol	Meaning
	Function can modify state
	Function is payable

Inheritance Hierarchy



Security issue checking status

❖ High severity issues

- No high severity issues found.

❖ Medium severity issues

- No medium severity issues found.

❖ Low severity issues

- No low severity issues found.

❖ Informational

- The owner can limit the max selling amount without any limitation.

```
ftrace | funcSig
function setMaxSellTransaction(uint256 _maxTxn↑) external onlyOwner {
    maxSellTransactionAmount = _maxTxn↑;
}
```

- The owner can increase sell fees without any limitation.

```
ftrace | funcSig
function setSellTransactionMultiplier(uint256 _multiplier↑)
    external
    onlyOwner
{
    sellFeeIncreaseFactor = _multiplier↑;
}
```

- The owner can enable and disable trading at any time.

```
ftrace | funcSig
function setTradingIsEnabled(bool _enabled↑) external onlyOwner {
    tradingIsEnabled = _enabled↑;
}
ftrace | funcSig
```

- The owner can change the minimum balance for dividend without any limit.

```
ftrace | funcSig
function setMinimumBalanceForDividends(uint256 newMinimumBalance↑)
    external
    onlyOwner
{
    thoreumDividendTracker.updateMinimumTokenBalanceForDividends(
        newMinimumBalance↑
    );
}
```

Owner privileges

- ❖ The owner can exclude address from dividend.

```
ftrace | funcSig
function prepareForPartner(address _partnerOrExchangeAddress↑)
    external
    onlyOwner
{
    thoreumDividendTracker.excludeFromDividends(_partnerOrExchangeAddress↑);
    excludeFromFees(_partnerOrExchangeAddress↑, true);
}
```

- ❖ The owner can change the max buy amount.

```
ftrace | funcSig
function setMaxBuyTransaction(uint256 _maxTxn↑) external onlyOwner {
    maxBuyTransactionAmount = _maxTxn↑;
}
```

- ❖ The owner can change the max sell amount.

```
ftrace | funcSig
function setMaxSellTransaction(uint256 _maxTxn↑) external onlyOwner {
    maxSellTransactionAmount = _maxTxn↑;
}
```

- ❖ The owner can change Thoreum Dividend token address.

```
ftrace | funcSig
function setThoreumDividendToken(address _newContract↑) external onlyOwner {
    thoreumDividendToken = _newContract↑;
    thoreumDividendTracker.setDividendTokenAddress(_newContract↑);
}
```

- ❖ The owner can change the minimum Thoreum to send dividends.

```
ftrace | funcSig
function setMinThoreumBeforeSendDividend(uint256 _newAmount↑)
    external
    onlyOwner
{
    thoreumDividendTracker.setMinTokenBeforeSendDividend(_newAmount↑);
}
```

- ❖ The owner can enable/disable sending dividend in every transaction.

```
ftrace | funcSig
function setSendThoreumInTx(bool _newStatus↑) external onlyOwner {
    sendThoreumInTx = _newStatus↑;
}
```

- ❖ The owner can change WBNB reflection tracker and token address.

```
ftrace | funcSig
function setWbnbReflectToken(address _newContract↑) external onlyOwner {
    wbnbReflectToken = _newContract↑;
}

ftrace | funcSig
function setWbnbReflectTracker(address _newContract↑) external onlyOwner {
    wbnbReflectTracker = _newContract↑;
}
```

- ❖ The owner can change Team and marketing wallet.

```
ftrace | funcSig
function setTeamWallet(address _newWallet↑) external onlyOwner {
    excludeFromFees(_newWallet↑, true);
    teamWallet = _newWallet↑;
}

ftrace | funcSig
function setMarketingWallet(address _newWallet↑) external onlyOwner {
    excludeFromFees(_newWallet↑, true);
    marketingWallet = _newWallet↑;
}
```

- ❖ The owner can change Alliance token addresses to burn.

```
ftrace | funcSig
function setBurnAllianceToken(address _newAddress↑) external onlyOwner {
    toBurnAllianceToken = _newAddress↑;
}
```

- ❖ The owner can change Burn Alliance fee, token burn fee and Game Treasury fee up to 25%.

```
ftrace | funcSig
function setToBurnAllianceFee(uint256 newFee↑) external onlyOwner {
    require(newFee↑ <= MAX_FEE_RATE, "wrong");
    toBurnAllianceFee = newFee↑;
    _updateTotalFee();
}

ftrace | funcSig
function setToBurnTokenFee(uint256 newFee↑) external onlyOwner {
    require(newFee↑ <= MAX_FEE_RATE, "wrong");
    toBurnTokenFee = newFee↑;
    _updateTotalFee();
}

ftrace | funcSig
function setGameTreasuryFee(uint256 newFee↑) external onlyOwner {
    require(newFee↑ <= MAX_FEE_RATE, "wrong");
    gameTreasuryFee = newFee↑;
    _updateTotalFee();
}
```

- ❖ The owner can change max wallet token and token swap amount.

```
ftrace | funcSig
function setMaxWalletToken(uint256 _maxToken↑) external onlyOwner {
    maxWalletToken = _maxToken↑;
}

ftrace | funcSig
function setSwapTokensAtAmount(uint256 _swapAmount↑) external onlyOwner {
    swapTokensAtAmount = _swapAmount↑;
}
```


- ❖ The owner can change the max sell token limit.

```
ftrace | funcSig
function setSellTransactionMultiplier(uint256 _multiplier↑)
    external
    onlyOwner
{
    sellFeeIncreaseFactor = _multiplier↑;
}
```

- ❖ The owner can enable and disable trading.

```
ftrace | funcSig
function setTradingIsEnabled(bool _enabled↑) external onlyOwner {
    tradingIsEnabled = _enabled↑;
}

ftrace | funcSig
```

- ❖ The owner can set minimum BNB to buy back, minimum sell to trigger buy back and buy back upper limit.

```
ftrace | funcSig
function setMinBNBAfterBuyback(uint256 _newAmount↑) public onlyOwner {
    require(_newAmount↑ >= 0, "newAmount error");
    minBNBAfterBuyback = _newAmount↑;
}

ftrace | funcSig
function setMinSellToTriggerBuyback(uint256 _newAmount↑) public onlyOwner {
    require(_newAmount↑ > 0, "newAmount error");
    minSellToTriggerBuyback = _newAmount↑;
}

ftrace | funcSig
function setBuyBackUpperLimitBNB(uint256 buyBackLimit↑) external onlyOwner {
    require(buyBackLimit↑ > 0, "buyBackLimit error");
    buybackUpperLimitBNB = buyBackLimit↑;
}
```

- ❖ The owner can change all fees; each fee can set max up to 25%.

```
ftrace | funcSig
function setThoreumDividendRewardFee(uint8 newFee↑) external onlyOwner {
    require(newFee↑ <= MAX_FEE_RATE, "wrong");
    thoreumDividendRewardsFee = newFee↑;
    _updateTotalFee();
}

ftrace | funcSig
function setWbnbReflectRewardFee(uint8 newFee↑) external onlyOwner {
    require(newFee↑ <= MAX_FEE_RATE, "wrong");
    wbnbReflectRewardsFee = newFee↑;
    _updateTotalFee();
}

ftrace | funcSig
function setMarketingFee(uint8 newFee↑) external onlyOwner {
    require(newFee↑ <= MAX_FEE_RATE, "wrong");
    marketingFee = newFee↑;
    _updateTotalFee();
}

ftrace | funcSig
function setBuyBackFee(uint8 newFee↑) external onlyOwner {
    require(newFee↑ <= MAX_FEE_RATE, "wrong");
    buyBackFee = newFee↑;
    _updateTotalFee();
}

ftrace | funcSig
function setLiquidityFee(uint8 newFee↑) external onlyOwner {
    require(newFee↑ <= MAX_FEE_RATE, "wrong");
    liquidityFee = newFee↑;
    _updateTotalFee();
}
```

- ❖ The owner can change the dex router address.

```
ftrace | funcSig
function setDexRouter(address newAddress↑) external onlyOwner {
    dexRouter = IDexRouter(newAddress↑);
}
```

- ❖ The owner can enable or disable getting fees on normal transactions.

```
ftrace | funcSig
function setFeesOnNormalTransfers(bool _enabled↑) external onlyOwner {
    feesOnNormalTransfers = _enabled↑;
}
```

- ❖ The owner can change the minimum token balance requirement to get rewards.

```
ftrace | funcSig
function setMinimumBalanceForDividends(uint256 newMinimumBalance↑)
    external
    onlyOwner
{
    thoreumDividendTracker.updateMinimumTokenBalanceForDividends(
        newMinimumBalance↑
    );
}
```

- ❖ The owner can change the claim wait.

```
ftrace | funcSig
function setClaimWait(uint256 claimWait↑) external onlyOwner {
    thoreumDividendTracker.updateClaimWait(claimWait↑);
}
```

- ❖ The owner can exclude wallet from fees and dividends.

```
ftrace | funcSig
function excludeFromFees(address account↑, bool excluded↑) public onlyOwner {
    require(isExcludedFromFees[account↑] != excluded↑, "Already excluded");
    isExcludedFromFees[account↑] = excluded↑;

    emit ExcludeFromFees(account↑, excluded↑);
}

ftrace | funcSig
function excludeFromDividend(address account↑) public onlyOwner {
    thoreumDividendTracker.excludeFromDividends(address(account↑));
}
```

- ❖ The owner can process the dividend tracker manually.

```
ftrace | funcSig
function processDividendTracker(uint256 gas↑) external onlyOwner {
    (
        uint256 aIterations,
        uint256 aClaims,
        uint256 aLastProcessedIndex
    ) = thoreumDividendTracker.process(gas↑);
    emit ProcessedThoreumDividendTracker(
        aIterations,
        aClaims,
        aLastProcessedIndex,
        false,
        gas↑,
        tx.origin
    );
}
```

- ❖ The owner can manually buy back tokens.

```
ftrace | funcSig
function manualBuyBackAndBurn(uint256 _amount↑) public onlyOwner {
    uint256 balance = address(this).balance;
    require(
        balance >= minBNBAfterBuyback.add(_amount↑),
        "amount is too big"
    );

    if (!swapping) {
        _buyBackAndBurn(_amount↑);
    }
}
```

- ❖ The owner can transfer BNB and token balance in contract to the owner wallet.

```
ftrace | funcSig
function retrieveTokens(address token↑, uint256 amount↑) external onlyOwner {
    require(IERC20(token↑).transfer(msg.sender, amount↑), "Transfer failed");
}

ftrace | funcSig
function retrieveBNB(uint256 amount↑) external onlyOwner {
    (bool success, ) = payable(msg.sender).call{value: amount↑}("");
    require(success, "Failed to retrieve BNB");
}
```

Audit conclusion

While conducting the audit of the Epic Hero smart contract, it was observed that there is nothing alarming with the code and it only contains informational concerns.