Solo Audit Report

Project Name: BOSS Token

Introduction

BOSS Token is a project aimed at creating a decentralized token that will serve as the native currency within the Birds of Space ecosystem. The token will enable users to participate in various activities, including governance voting, staking, and in-game transactions.
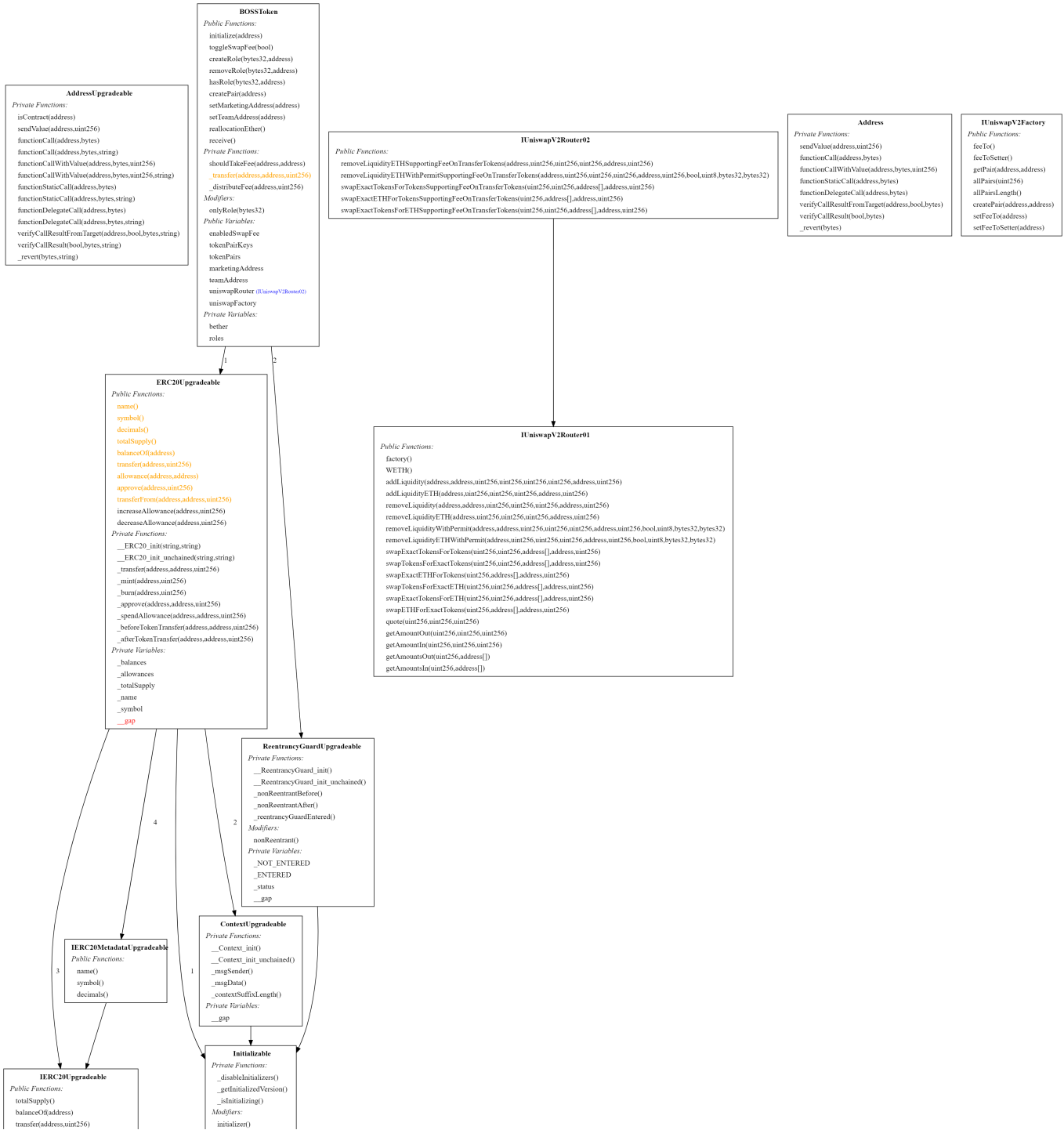
Audit Overview

This audit report provides a detailed analysis of the security and functionality of the BOSS Token smart contracts. The audit includes a review of the codebase, identification of potential vulnerabilities, and assessment of compliance with industry best practices. The report also offers recommendations for improving the security and efficiency of the BOSS Token contracts.

Conclusion

The audit of BOSS Token reveals a well-structured and secure smart contract system. While some minor issues were identified during the audit, overall, the project demonstrates a strong commitment to security and best practices. Implementing the recommendations outlined in this report will further enhance the security and reliability of BOSS Token.

Summary of Code Compilation and Quality Analysis

BOSSToken

Public Functions:
- initialize(address)
- toggleSwapFee(bool)
- createRole(bytes32,address)
- removeRole(bytes32,address)
- hasRole(bytes32,address)
- createPair(address)
- setMarketingAddress(address)
- setTeamAddress(address)
- reallocationEther()
- receive()

Private Functions:
- shouldTakeFee(address,address)
- _transfer(address,address,uint256)
- _distributeFee(address,uint256)

Modifiers:
- onlyRole(bytes32)

Public Variables:
- enabledSwapFee
- tokenPairKeys
- tokenPairs
- marketingAddress
- teamAddress
- uniswapRouter *(IUniswapV2Router02)*
- uniswapFactory

Private Variables:
- bether
- roles

AddressUpgradeable

Private Functions:
- isContract(address)
- sendValue(address,uint256)
- functionCall(address,bytes)
- functionCall(address,bytes,string)
- functionCallWithValue(address,bytes,uint256)
- functionCallWithValue(address,bytes,uint256,string)
- functionStaticCall(address,bytes)
- functionStaticCall(address,bytes,string)
- functionDelegateCall(address,bytes)
- functionDelegateCall(address,bytes,string)
- verifyCallResultFromTarget(address,bool,bytes,string)
- verifyCallResult(bool,bytes,string)
- _revert(bytes,string)

IUniswapV2Router02

Public Functions:
- removeLiquidityETHSupportingFeeOnTransferTokens(address,uint256,uint256,uint256,address,uint256)
- removeLiquidityETHWithPermitSupportingFeeOnTransferTokens(address,uint256,uint256,uint256,address,uint256,bool,uint8,bytes32,bytes32)
- swapExactTokensForTokensSupportingFeeOnTransferTokens(uint256,uint256,address[],address,uint256)
- swapExactETHForTokensSupportingFeeOnTransferTokens(uint256,address[],address,uint256)
- swapExactTokensForETHSupportingFeeOnTransferTokens(uint256,uint256,address[],address,uint256)

Address

Private Functions:
- sendValue(address,uint256)
- functionCall(address,bytes)
- functionCallWithValue(address,bytes,uint256)
- functionStaticCall(address,bytes)
- functionDelegateCall(address,bytes)
- verifyCallResultFromTarget(address,bool,bytes)
- verifyCallResult(bool,bytes)
- _revert(bytes)

IUniswapV2Factory

Public Functions:
- feeTo()
- feeToSetter()
- getPair(address,address)
- allPairs(uint256)
- allPairsLength()
- createPair(address,address)
- setFeeTo(address)
- setFeeToSetter(address)

ERC20Upgradeable

Public Functions:
- name()
- symbol()
- decimals()
- totalSupply()
- balanceOf(address)
- transfer(address,uint256)
- allowance(address,address)
- approve(address,uint256)
- transferFrom(address,address,uint256)
- increaseAllowance(address,uint256)
- decreaseAllowance(address,uint256)

Private Functions:
- __ERC20_init(string,string)
- __ERC20_init_unchained(string,string)
- _transfer(address,address,uint256)
- _mint(address,uint256)
- _burn(address,uint256)
- _approve(address,address,uint256)
- _spendAllowance(address,address,uint256)
- _beforeTokenTransfer(address,address,uint256)
- _afterTokenTransfer(address,address,uint256)

Private Variables:
- _balances
- _allowances
- _totalSupply
- _name
- _symbol
- __gap

IUniswapV2Router01

Public Functions:
- factory()
- WETH()
- addLiquidity(address,address,uint256,uint256,uint256,uint256,address,uint256)
- addLiquidityETH(address,uint256,uint256,uint256,address,uint256)
- removeLiquidity(address,address,uint256,uint256,uint256,address,uint256)
- removeLiquidityETH(address,uint256,uint256,uint256,address,uint256)
- removeLiquidityWithPermit(address,address,uint256,uint256,uint256,address,uint256,bool,uint8,bytes32,bytes32)
- removeLiquidityETHWithPermit(address,uint256,uint256,uint256,address,uint256,bool,uint8,bytes32,bytes32)
- swapExactTokensForTokens(uint256,uint256,address[],address,uint256)
- swapTokensForExactTokens(uint256,uint256,address[],address,uint256)
- swapExactETHForTokens(uint256,address[],address,uint256)
- swapTokensForExactETH(uint256,uint256,address[],address,uint256)
- swapExactTokensForETH(uint256,uint256,address[],address,uint256)
- swapETHForExactTokens(uint256,address[],address,uint256)
- quote(uint256,uint256,uint256)
- getAmountOut(uint256,uint256,uint256)
- getAmountIn(uint256,uint256,uint256)
- getAmountsOut(uint256,address[])
- getAmountsIn(uint256,address[])

ReentrancyGuardUpgradeable

Private Functions:
- __ReentrancyGuard_init()
- __ReentrancyGuard_init_unchained()
- _nonReentrantBefore()
- _nonReentrantAfter()
- _reentrancyGuardEntered()

Modifiers:
- nonReentrant()

Private Variables:
- _NOT_ENTERED
- _ENTERED
- _status
- __gap

IERC20MetadataUpgradeable

Public Functions:
- name()
- symbol()
- decimals()

ContextUpgradeable

Private Functions:
- __Context_init()
- __Context_init_unchained()
- _msgSender()
- _msgData()
- _contextSuffixLength()

Private Variables:
- __gap

IERC20Upgradeable

Public Functions:
- totalSupply()
- balanceOf(address)
- transfer(address,uint256)

Initializable

Private Functions:
- _disableInitializers()
- _getInitializedVersion()
- _isInitializing()

Modifiers:
- initializer()

allowance(address,address)
approve(address,uint256)
transferFrom(address,address,uint256)

reinitializer(uint8)
onlyInitializing()
Private Variables:
_initialized
_initializing

BOSS Token Flow

- Compiled with solc
- Total number of contracts in source files: 12
- Source lines of code (SLOC) in source files: 629
- Number of assembly lines: 0
- Number of optimization issues: 1
- Number of informational issues: 73
- Number of low issues: 3
- Number of medium issues: 2
- Number of high issues: 0

ERCs: ERC20

Name	# functions	ERCS	ERC20 info	Complex code	Features
AddressUpgradeable	13			No	Send ETH
					Delegatecall
					Assembly
IUniswapV2Router02	24			No	Receive ETH
Address	8			No	Send ETH
					Delegatecall
					Assembly
IUniswapV2Factory	8			No	
BOSSToken	55	ERC20	No Minting	No	Receive ETH
			Approve Race Cond.		Send ETH
					Upgradeable

Contract AddressUpgradeable

Function	Modifiers
isContract	[]
sendValue	[]
functionCall	[]
functionCall	[]
functionCallWithValue	[]
functionCallWithValue	[]
functionStaticCall	[]
functionStaticCall	[]
functionDelegateCall	[]
functionDelegateCall	[]
verifyCallResultFromTarget	[]
verifyCallResult	[]
_revert	[]

Contract IUniswapV2Router02

Function	Modifiers
factory	[]
WETH	[]
addLiquidity	[]
addLiquidityETH	[]
removeLiquidity	[]
removeLiquidityETH	[]
removeLiquidityWithPermit	[]
removeLiquidityETHWithPermit	[]
swapExactTokensForTokens	[]
swapTokensForExactTokens	[]
swapExactETHForTokens	[]
swapTokensForExactETH	[]
swapExactTokensForETH	[]
swapETHForExactTokens	[]
quote	[]
getAmountOut	[]
getAmountIn	[]
getAmountsOut	[]

Function	Modifiers
getAmountsIn	[]
removeLiquidityETHSupportingFeeOnTransferTokens	[]
removeLiquidityETHWithPermitSupportingFeeOnTransferTokens	[]
swapExactTokensForTokensSupportingFeeOnTransferTokens	[]
swapExactETHForTokensSupportingFeeOnTransferTokens	[]
swapExactTokensForETHSupportingFeeOnTransferTokens	[]

Contract Address

Function	Modifiers
sendValue	[]
functionCall	[]
functionCallWithValue	[]
functionStaticCall	[]
functionDelegateCall	[]
verifyCallResultFromTarget	[]
verifyCallResult	[]
_revert	[]

Contract IUniswapV2Factory

Function	Modifiers
feeTo	[]
feeToSetter	[]
getPair	[]
allPairs	[]
allPairsLength	[]
createPair	[]
setFeeTo	[]
setFeeToSetter	[]

Contract BOSSToken

Function	Modifiers
__ReentrancyGuard_init	['onlyInitializing']
__ReentrancyGuard_init_unchained	['onlyInitializing']
_nonReentrantBefore	[]
_nonReentrantAfter	[]
_reentrancyGuardEntered	[]
_disableInitializers	[]
_getInitializedVersion	[]
_isInitializing	[]
__ERC20_init	['onlyInitializing']
__ERC20_init_unchained	['onlyInitializing']
name	[]
symbol	[]
decimals	[]
totalSupply	[]
balanceOf	[]
transfer	['nonReentrant']
allowance	[]
approve	[]
transferFrom	['nonReentrant']
increaseAllowance	[]
decreaseAllowance	[]
_transfer	[]
_mint	[]
_burn	[]
_approve	[]
_spendAllowance	[]
_beforeTokenTransfer	[]
_afterTokenTransfer	[]
name	[]
symbol	[]
decimals	[]
totalSupply	[]
balanceOf	[]
transfer	[]
allowance	[]
approve	[]
transferFrom	[]

Function	Modifiers
__Context_init	['onlyInitializing']
__Context_init_unchained	['onlyInitializing']
_msgSender	[]
_msgData	[]
_contextSuffixLength	[]
initialize	['initializer', 'onlyInitializing']
toggleSwapFee	['onlyRole']
createRole	['onlyRole']
removeRole	['onlyRole']
hasRole	[]
createPair	['onlyRole']
setMarketingAddress	['onlyRole']
setTeamAddress	['onlyRole']
shouldTakeFee	[]
_transfer	['nonReentrant']
_distributeFee	['nonReentrant']
reallocationEther	['onlyRole']
receive	[]

Contract AddressUpgradeable

- Contract vars: []
- Inheritance:: []

Function	Visibility	Modifiers	Read	Write	Internal Calls	External Calls	Cyclomatic Complexity
isContract(address)	internal	[]	[]	[]	['code(address)']	[]	1
sendValue(address,uint256)	internal	[]	['this']	[]	['balance(address)', 'require(bool,string)']	['recipient.call{value: amount}()']	1
functionCall(address,bytes)	internal	[]	[]	[]	['functionCallWithValue']	[]	1
functionCall(address,bytes,string)	internal	[]	[]	[]	['functionCallWithValue']	[]	1
functionCallWithValue(address,bytes,uint256)	internal	[]	[]	[]	['functionCallWithValue']	[]	1
functionCallWithValue(address,bytes,uint256,string)	internal	[]	['this']	[]	['balance(address)', 'require(bool,string)']	['target.call{value: value}(data)']	1
					['verifyCallResultFromTarget']		
functionStaticCall(address,bytes)	internal	[]	[]	[]	['functionStaticCall']	[]	1
functionStaticCall(address,bytes,string)	internal	[]	[]	[]	['verifyCallResultFromTarget']	['target.staticcall(data)']	1
functionDelegateCall(address,bytes)	internal	[]	[]	[]	['functionDelegateCall']	[]	1
functionDelegateCall(address,bytes,string)	internal	[]	[]	[]	['verifyCallResultFromTarget']	['target.delegatecall(data)']	1
verifyCallResultFromTarget(address,bool,bytes,string)	internal	[]	[]	[]	['_revert', 'isContract']	[]	2

Function	Visibility	Modifiers	Read	Write	Internal Calls	External Calls	Cyclomatic Complexity
					['require(bool,string)']		
verifyCallResult(bool,bytes,string)	internal	[]	[]	[]	['_revert']	[]	1
_revert(bytes,string)	private	[]	[]	[]	['mload(uint256)', 'revert(string)']	[]	2
					['revert(uint256,uint256)']		

Modifiers	Visibility	Read	Write	Internal Calls	External Calls	Cyclomatic Complexity

Contract Initializable

- Contract vars: ['_initialized', '_initializing']
- Inheritance:: []

Function	Visibility	Modifiers	Read	Write	Internal Calls	External Calls	Cyclomatic Complexity
_disableInitializers()	internal	[]	['_initialized', '_initializing']	['_initialized']	['require(bool,string)']	[]	2
_getInitializedVersion()	internal	[]	['_initialized']	[]	[]	[]	1
_isInitializing()	internal	[]	['_initializing']	[]	[]	[]	1

Modifiers	Visibility	Read	Write	Internal Calls	External Calls	Cyclomatic Complexity
initializer()	internal	['_initialized', '_initializing']	['_initialized', '_initializing']	['require(bool,string)']	['AddressUpgradeable.isContract(address(this))']	3
			['this']			
reinitializer(uint8)	internal	['_initialized', '_initializing']	['_initialized', '_initializing']	['require(bool,string)']		1
onlyInitializing()	internal	['<bos>initializing']		['require(bool,string)']		1

Contract ReentrancyGuardUpgradeable

- Contract vars: ['_NOT_ENTERED', '_ENTERED', '_status', '__gap']
- Inheritance:: ['Initializable']

Function	Visibility	Modifiers	Read	Write	Internal Calls	External Calls	Cyclomatic Complexity
_disableInitializers()	internal	[]	['_initialized', '_initializing']	['_initialized']	['require(bool,string)']	[]	2
_getInitializedVersion()	internal	[]	['_initialized']	[]	[]	[]	1
_isInitializing()	internal	[]	['_initializing']	[]	[]	[]	1
__ReentrancyGuard_init()	internal	['onlyInitializing']	[]	[]	['__ReentrancyGuard_init_unchained', 'onlyInitializing']	[]	1
__ReentrancyGuard_init_unchained()	internal	['onlyInitializing']	['_NOT_ENTERED']	['_status']	['onlyInitializing']	[]	1
_nonReentrantBefore()	private	[]	['_ENTERED', '_status']	['_status']	['require(bool,string)']	[]	1

Function	Visibility	Modifiers	Read	Write	Internal Calls	External Calls	Cyclomatic Complexity
_nonReentrantAfter()	private	[]	['_NOT_ENTERED']	['_status']	[]	[]	1
_reentrancyGuardEntered()	internal	[]	['_ENTERED', '_status']	[]	[]	[]	1
slitherConstructorConstantVariables()	internal	[]	[]	['_ENTERED', '_NOT_ENTERED']	[]	[]	1

Modifiers	Visibility	Read	Write	Internal Calls	External Calls	Cyclomatic Complexity
initializer()	internal	['_initialized', '_initializing']	[]	['_initialized', '_initializing', 'require(bool,string)', 'AddressUpgradeable.isContract(address(this))']	[]	3
reinitializer(uint8)	internal	['_initialized', '_initializing']	[]	['_initialized', '_initializing', 'require(bool,string)']	[]	1
onlyInitializing()	internal	['_initializing']	[]	['_initializing', 'require(bool,string)']	[]	1
nonReentrant()	internal	[]	[]	['_nonReentrantAfter', '_nonReentrantBefore']	[]	1

Contract IERC20Upgradeable

- Contract vars: []
- Inheritance:: []

Function	Visibility	Modifiers	Read	Write	Internal Calls	External Calls	Cyclomatic Complexity
totalSupply()	external	[]	[]	[]	[]	[]	2
balanceOf(address)	external	[]	[]	[]	[]	[]	2
transfer(address,uint256)	external	[]	[]	[]	[]	[]	2
allowance(address,address)	external	[]	[]	[]	[]	[]	2
approve(address,uint256)	external	[]	[]	[]	[]	[]	2
transferFrom(address,address,uint256)	external	[]	[]	[]	[]	[]	2

Modifiers	Visibility	Read	Write	Internal Calls	External Calls	Cyclomatic Complexity

Contract IERC20MetadataUpgradeable

- Contract vars: []
- Inheritance:: ['IERC20Upgradeable']

Function	Visibility	Modifiers	Read	Write	Internal Calls	External Calls	Cyclomatic Complexity
totalSupply()	external	[]	[]	[]	[]	[]	2
balanceOf(address)	external	[]	[]	[]	[]	[]	2
transfer(address,uint256)	external	[]	[]	[]	[]	[]	2

Function	Visibility	Modifiers	Read	Write	Internal Calls	External Calls	Cyclomatic Complexity
allowance(address,address)	external	[]	[]	[]	[]	[]	2
approve(address,uint256)	external	[]	[]	[]	[]	[]	2
transferFrom(address,address,uint256)	external	[]	[]	[]	[]	[]	2
name()	external	[]	[]	[]	[]	[]	2
symbol()	external	[]	[]	[]	[]	[]	2
decimals()	external	[]	[]	[]	[]	[]	2

Modifiers	Visibility	Read	Write	Internal Calls	External Calls	Cyclomatic Complexity

Contract ContextUpgradeable

- Contract vars: ['__gap']
- Inheritance:: ['Initializable']

Function	Visibility	Modifiers	Read	Write	Internal Calls	External Calls	Cyclomatic Complexity
_disableInitializers()	internal	[]	['_initialized', '_initializing']	['_initialized']	['require(bool,string)']	[]	2
_getInitializedVersion()	internal	[]	['_initialized']	[]	[]	[]	1
_isInitializing()	internal	[]	['_initializing']	[]	[]	[]	1
__Context_init()	internal	['onlyInitializing']	[]	[]	['onlyInitializing']	[]	1
__Context_init_unchained()	internal	['onlyInitializing']	[]	[]	['onlyInitializing']	[]	1
_msgSender()	internal	[]	['msg.sender']	[]	[]	[]	1
_msgData()	internal	[]	['msg.data']	[]	[]	[]	1
_contextSuffixLength()	internal	[]	[]	[]	[]	[]	1

Modifiers	Visibility	Read	Write	Internal Calls	External Calls	Cyclomatic Complexity
initializer()	internal	['_initialized', '_initializing']	['_initialized', '_initializing']	['require(bool,string)']	['AddressUpgradeable.isContract(address(this))']	3
		['this']				
reinitializer(uint8)	internal	['_initialized', '_initializing']	['_initialized', '_initializing']	['require(bool,string)']		1
onlyInitializing()	internal	['_initializing']				1

Contract ERC20Upgradeable

- Contract vars: ['_balances', '_allowances', '_totalSupply', '_name', '_symbol', '__gap']
- Inheritance:: ['IERC20MetadataUpgradeable', 'IERC20Upgradeable', 'ContextUpgradeable', 'Initializable']

Function	Visibility	Modifiers	Internal Calls	External Calls	Cyclomatic Complexity
name()	external	[]	[]	[]	2
symbol()	external	[]	[]	[]	2
decimals()	external	[]	[]	[]	2
totalSupply()	external	[]	[]	[]	2
balanceOf(address)	external	[]	[]	[]	2
transfer(address,uint256)	external	[]	[]	[]	2
allowance(address,address)	external	[]	[]	[]	2
approve(address,uint256)	external	[]	[]	[]	2
transferFrom(address,address,uint256)	external	[]	[]	[]	2
__Context_init()	internal	['onlyInitializing']	[]	[]	1
__Context_init_unchained()	internal	['onlyInitializing']	[]	[]	1
_msgSender()	internal	[]	['msg.sender']	[]	1
_msgData()	internal	[]	['msg.data']	[]	1
_contextSuffixLength()	internal	[]	[]	[]	1
_disableInitializers()	internal	[]	['_initialized', '_initializing']	['_initialized']	2
_getInitializedVersion()	internal	[]	['_initialized']	[]	1
_isInitializing()	internal	[]	['_initializing']	[]	1
__ERC20_init(string,string)	internal	['onlyInitializing']	[]	[]	1
__ERC20_init_unchained(string,string)	internal	['onlyInitializing']	[]	['_name', '_symbol']	1
name()	public	[]	['_name']	[]	1
symbol()	public	[]	['_symbol']	[]	1
decimals()	public	[]	[]	[]	1
totalSupply()	public	[]	['_totalSupply']	[]	1
balanceOf(address)	public	[]	['_balances']	[]	1
transfer(address,uint256)	public	[]	[]	['_msgSender', '_transfer']	1
allowance(address,address)	public	[]	['_allowances']	[]	1
approve(address,uint256)	public	[]	[]	['_approve', '_msgSender']	1
transferFrom(address,address,uint256)	public	[]	[]	['_msgSender', '_spendAllowance']	1
increaseAllowance(address,uint256)	public	[]	[]	['_approve', '_msgSender']	1
decreaseAllowance(address,uint256)	public	[]	[]	['_approve', '_msgSender']	1
_transfer(address,address,uint256)	internal	[]	['_balances']	['_balances']	1
_mint(address,uint256)	internal	[]	['_balances', '_totalSupply']	['_balances', '_totalSupply']	1
_burn(address,uint256)	internal	[]	['_balances', '_totalSupply']	['_balances', '_totalSupply']	1
_approve(address,address,uint256)	internal	[]	[]	['_allowances']	1
_spendAllowance(address,address,uint256)	internal	[]	[]	[]	2
_beforeTokenTransfer(address,address,uint256)	internal	[]	[]	[]	1
_afterTokenTransfer(address,address,uint256)	internal	[]	[]	[]	1

Modifiers	Visibility	Read	Write	Internal Calls	External Calls	Cyclomatic Complexity
initializer()	internal	['_initialized', '_initializing']	['_initialized', '_initializing']	['require(bool,string)']	['AddressUpgradeable.isContract(address(this))']	3
		['this']				
reinitializer(uint8)	internal	['_initialized', '_initializing']	['_initialized', '_initializing']	['require(bool,string)']		1
onlyInitializing()	internal	['_initializing']		['require(bool,string)']		1

Contract IUniswapV2Router01

- Contract vars: []
- Inheritance:: []

Function	Visibility	Modifiers	Read	Write	Internal Calls	External Calls	Cyclomatic Complexity
factory()	external	[]	[]	[]	[]	[]	2
WETH()	external	[]	[]	[]	[]	[]	2
addLiquidity(address,address,uint256,uint256,uint256,uint256,address,uint256)	external	[]	[]	[]	[]	[]	2
addLiquidityETH(address,uint256,uint256,uint256,address,uint256)	external	[]	[]	[]	[]	[]	2
removeLiquidity(address,address,uint256,uint256,uint256,address,uint256)	external	[]	[]	[]	[]	[]	2
removeLiquidityETH(address,uint256,uint256,uint256,address,uint256)	external	[]	[]	[]	[]	[]	2
removeLiquidityWithPermit(address,address,uint256,uint256,uint256,address,uint256,bool,uint8,bytes32,bytes32)	external	[]	[]	[]	[]	[]	2
removeLiquidityETHWithPermit(address,uint256,uint256,uint256,address,uint256,bool,uint8,bytes32,bytes32)	external	[]	[]	[]	[]	[]	2
swapExactTokensForTokens(uint256,uint256,address[],address,uint256)	external	[]	[]	[]	[]	[]	2
swapTokensForExactTokens(uint256,uint256,address[],address,uint256)	external	[]	[]	[]	[]	[]	2
swapExactETHForTokens(uint256,address[],address,uint256)	external	[]	[]	[]	[]	[]	2
swapTokensForExactETH(uint256,uint256,address[],address,uint256)	external	[]	[]	[]	[]	[]	2
swapExactTokensForETH(uint256,uint256,address[],address,uint256)	external	[]	[]	[]	[]	[]	2
swapETHForExactTokens(uint256,address[],address,uint256)	external	[]	[]	[]	[]	[]	2
quote(uint256,uint256,uint256)	external	[]	[]	[]	[]	[]	2
getAmountOut(uint256,uint256,uint256)	external	[]	[]	[]	[]	[]	2
getAmountIn(uint256,uint256,uint256)	external	[]	[]	[]	[]	[]	2
getAmountsOut(uint256,address[])	external	[]	[]	[]	[]	[]	2
getAmountsIn(uint256,address[])	external	[]	[]	[]	[]	[]	2

Modifiers	Visibility	Read	Write	Internal Calls	External Calls	Cyclomatic Complexity

Contract IUniswapV2Router02

- Contract vars: []
- Inheritance:: ['IUniswapV2Router01']

Function	Visibility	Modifiers	Read	Write	Internal Calls	External Calls	Cyclomatic Complexity
factory()	external	[]	[]	[]	[]	[]	2
WETH()	external	[]	[]	[]	[]	[]	2
addLiquidity(address,address,uint256,uint256,uint256,uint256,address,uint256)	external	[]	[]	[]	[]	[]	2
addLiquidityETH(address,uint256,uint256,uint256,address,uint256)	external	[]	[]	[]	[]	[]	2
removeLiquidity(address,address,uint256,uint256,uint256,address,uint256)	external	[]	[]	[]	[]	[]	2
removeLiquidityETH(address,uint256,uint256,uint256,address,uint256)	external	[]	[]	[]	[]	[]	2
removeLiquidityWithPermit(address,address,uint256,uint256,uint256,address,uint256,bool,uint8,bytes32,bytes32)	external	[]	[]	[]	[]	[]	2
removeLiquidityETHWithPermit(address,uint256,uint256,uint256,address,uint256,bool,uint8,bytes32,bytes32)	external	[]	[]	[]	[]	[]	2
swapExactTokensForTokens(uint256,uint256,address[],address,uint256)	external	[]	[]	[]	[]	[]	2
swapTokensForExactTokens(uint256,uint256,address[],address,uint256)	external	[]	[]	[]	[]	[]	2
swapExactETHForTokens(uint256,address[],address,uint256)	external	[]	[]	[]	[]	[]	2
swapTokensForExactETH(uint256,uint256,address[],address,uint256)	external	[]	[]	[]	[]	[]	2
swapExactTokensForETH(uint256,uint256,address[],address,uint256)	external	[]	[]	[]	[]	[]	2
swapETHForExactTokens(uint256,address[],address,uint256)	external	[]	[]	[]	[]	[]	2
quote(uint256,uint256,uint256)	external	[]	[]	[]	[]	[]	2
getAmountOut(uint256,uint256,uint256)	external	[]	[]	[]	[]	[]	2
getAmountIn(uint256,uint256,uint256)	external	[]	[]	[]	[]	[]	2
getAmountsOut(uint256,address[])	external	[]	[]	[]	[]	[]	2
getAmountsIn(uint256,address[])	external	[]	[]	[]	[]	[]	2
removeLiquidityETHSupportingFeeOnTransferTokens(address,uint256,uint256,uint256,address,uint256)	external	[]	[]	[]	[]	[]	2
removeLiquidityETHWithPermitSupportingFeeOnTransferTokens(address,uint256,uint256,uint256,address,uint256,bool,uint8,bytes32,bytes32)	external	[]	[]	[]	[]	[]	2
swapExactTokensForTokensSupportingFeeOnTransferTokens(uint256,uint256,address[],address,uint256)	external	[]	[]	[]	[]	[]	2
swapExactETHForTokensSupportingFeeOnTransferTokens(uint256,address[],address,uint256)	external	[]	[]	[]	[]	[]	2
swapExactTokensForETHSupportingFeeOnTransferTokens(uint256,uint256,address[],address,uint256)	external	[]	[]	[]	[]	[]	2

Modifiers	Visibility	Read	Write	Internal Calls	External Calls	Cyclomatic Complexity

Contract Address

- Contract vars: []

- Inheritance:: []

Function	Visibility	Modifiers	Read	Write	Internal Calls	External Calls	Cyclomatic Complexity
sendValue(address,uint256)	internal	[]	['this']	[]	['balance(address)', 'revert AddressInsufficientBalance(address)', 'revert FailedInnerCall()']	['recipient.call{value: amount}()', 'revert FailedInnerCall()']	3
functionCall(address,bytes)	internal	[]	[]	[]	['functionCallWithValue']	[]	1
functionCallWithValue(address,bytes,uint256)	internal	[]	['this']	[]	['balance(address)', 'revert AddressInsufficientBalance(address)']	['target.call{value: value}(data)', 'revert FailedInnerCall()']	2
functionStaticCall(address,bytes)	internal	[]	[]	[]	['verifyCallResultFromTarget']	['target.staticcall(data)']	1
functionDelegateCall(address,bytes)	internal	[]	[]	[]	['verifyCallResultFromTarget']	['target.delegatecall(data)']	1
verifyCallResultFromTarget(address,bool,bytes)	internal	[]	[]	[]	['_revert', 'code(address)', 'revert AddressEmptyCode(address)']	[]	2
verifyCallResult(bool,bytes)	internal	[]	[]	[]	['_revert']	[]	1
_revert(bytes)	private	[]	[]	[]	['mload(uint256)', 'revert FailedInnerCall()', 'revert(uint256,uint256)']	[]	2

Modifiers	Visibility	Read	Write	Internal Calls	External Calls	Cyclomatic Complexity	

Contract IUniswapV2Factory

- Contract vars: []
- Inheritance:: []

Function	Visibility	Modifiers	Read	Write	Internal Calls	External Calls	Cyclomatic Complexity
feeTo()	external	[]	[]	[]	[]	[]	2
feeToSetter()	external	[]	[]	[]	[]	[]	2
getPair(address,address)	external	[]	[]	[]	[]	[]	2
allPairs(uint256)	external	[]	[]	[]	[]	[]	2
allPairsLength()	external	[]	[]	[]	[]	[]	2
createPair(address,address)	external	[]	[]	[]	[]	[]	2
setFeeTo(address)	external	[]	[]	[]	[]	[]	2
setFeeToSetter(address)	external	[]	[]	[]	[]	[]	2
2							

Modifiers	Visibility	Read	Write	Internal Calls	External Calls	Cyclomatic Complexity	

Contract BOSSToken

- Contract vars: ['enabledSwapFee', 'tokenPairKeys', 'tokenPairs', 'marketingAddress', 'teamAddress', 'uniswapRouter', 'uniswapFactory', 'bether', 'roles']
- Inheritance:: ['ReentrancyGuardUpgradeable', 'ERC20Upgradeable', 'IERC20MetadataUpgradeable', 'IERC20Upgradeable', 'ContextUpgradeable', 'Initializable']

Function	Visibility	Modifiers	Read	Write	Internal Calls	External Calls	Cyclomatic Complexity
__ReentrancyGuard_init()	internal	['onlyInitializing']	[]	[]	['__ReentrancyGuard_init_unchained', 'onlyInitializing']	[]	1
__ReentrancyGuard_init_unchained()	internal	['onlyInitializing']	['_NOT_ENTERED']	['_status']	['onlyInitializing']	[]	1
_nonReentrantBefore()	private	[]	['_ENTERED', '_status']	['_status']	['require(bool,string)']	[]	1
_nonReentrantAfter()	private	[]	['_NOT_ENTERED']	['_status']	[]	[]	1
_reentrancyGuardEntered()	internal	[]	['_ENTERED', '_status']	[]	[]	[]	1
_disableInitializers()	internal	[]	['_initialized', '_initializing']	['_initialized']	['require(bool,string)']	[]	2
_getInitializedVersion()	internal	[]	['_initialized']	[]	[]	[]	1
_isInitializing()	internal	[]	['_initializing']	[]	[]	[]	1
__ERC20_init(string,string)	internal	['onlyInitializing']	[]	[]	['__ERC20_init_unchained', 'onlyInitializing']	[]	1
__ERC20_init_unchained(string,string)	internal	['onlyInitializing']	[]	['_name', '_symbol']	['onlyInitializing']	[]	1
name()	public	[]	['_name']	[]	[]	[]	1
symbol()	public	[]	['_symbol']	[]	[]	[]	1
decimals()	public	[]	[]	[]	[]	[]	1
totalSupply()	public	[]	['_totalSupply']	[]	[]	[]	1
balanceOf(address)	public	[]	['_balances']	[]	[]	[]	1
transfer(address,uint256)	public	[]	[]	[]	['_msgSender', '_transfer']	[]	1
allowance(address,address)	public	[]	['_allowances']	[]	[]	[]	1
approve(address,uint256)	public	[]	[]	[]	['_approve', '_msgSender']	[]	1
transferFrom(address,address,uint256)	public	[]	[]	[]	['_msgSender', '_spendAllowance']	[]	1
					['_transfer']		
increaseAllowance(address,uint256)	public	[]	[]	[]	['_approve', '_msgSender']	[]	1
					['allowance']		
decreaseAllowance(address,uint256)	public	[]	[]	[]	['_approve', '_msgSender']	[]	1
					['allowance', 'require(bool,string)']		
_transfer(address,address,uint256)	internal	[]	['_balances']	['_balances']	['_afterTokenTransfer', '_beforeTokenTransfer']	[]	1
					['require(bool,string)']		
_mint(address,uint256)	internal	[]	['_balances', '_totalSupply']	['_balances', '_totalSupply']	['_afterTokenTransfer', '_beforeTokenTransfer']	[]	1
					['require(bool,string)']		

Function	Visibility	Modifiers	Read	Write	Internal Calls	External Calls	Cyclomatic Complexity
_burn(address,uint256)	internal	[]	['_balances', '_totalSupply']	['_balances', '_totalSupply']	['_afterTokenTransfer', '_beforeTokenTransfer']	[]	1
					['require(bool,string)']		
_approve(address,address,uint256)	internal	[]	[]	['_allowances']	['require(bool,string)']	[]	1
_spendAllowance(address,address,uint256)	internal	[]	[]	[]	['_approve', 'allowance']	[]	2
					['require(bool,string)']		
_beforeTokenTransfer(address,address,uint256)	internal	[]	[]	[]	[]	[]	1
_afterTokenTransfer(address,address,uint256)	internal	[]	[]	[]	[]	[]	1
name()	external	[]	[]	[]	[]	[]	2
symbol()	external	[]	[]	[]	[]	[]	2
decimals()	external	[]	[]	[]	[]	[]	2
totalSupply()	external	[]	[]	[]	[]	[]	2
balanceOf(address)	external	[]	[]	[]	[]	[]	2
transfer(address,uint256)	external	[]	[]	[]	[]	[]	2
allowance(address,address)	external	[]	[]	[]	[]	[]	2
approve(address,uint256)	external	[]	[]	[]	[]	[]	2
transferFrom(address,address,uint256)	external	[]	[]	[]	[]	[]	2
__Context_init()	internal	['onlyInitializing']	[]	[]	['onlyInitializing']	[]	1
__Context_init_unchained()	internal	['onlyInitializing']	[]	[]	['onlyInitializing']	[]	1
_msgSender()	internal	[]	['msg.sender']	[]	[]	[]	1
_msgData()	internal	[]	['msg.data']	[]	[]	[]	1
_contextSuffixLength()	internal	[]	[]	[]	[]	[]	1
initialize(address)	public	['initializer']	['msg.sender', 'this']	['bether', 'enabledSwapFee']	['__ERC20_init', '_mint']	['IUniswapV2Factory(uniswapFactory).createPair(address(this),uniswapRouter.WETH())', 'tokenPairKeys.push(address(this))']	1
			['tokenPairKeys', 'uniswapFactory']	['roles', 'tokenPairKeys']	['decimals', 'initializer']	['uniswapRouter.WETH()', 'uniswapRouter.WETH()']	
			['uniswapRouter']	['tokenPairs', 'uniswapFactory']	['keccak256(bytes)']	['uniswapRouter.factory()']	
				['uniswapRouter']			
toggleSwapFee(bool)	external	['onlyRole']	[]	['enabledSwapFee']	['keccak256(bytes)', 'onlyRole']	[]	1
createRole(bytes32,address)	external	['onlyRole']	[]	['roles']	['hasRole', 'keccak256(bytes)']	[]	1
					['onlyRole', 'require(bool,string)']		
removeRole(bytes32,address)	external	['onlyRole']	[]	['roles']	['hasRole', 'keccak256(bytes)']	[]	1
					['onlyRole', 'require(bool,string)']		
hasRole(bytes32,address)	public	[]	['roles']	[]	[]	[]	1
createPair(address)	external	['onlyRole']	['this', 'tokenPairKeys']	['tokenPairKeys', 'tokenPairs']	['keccak256(bytes)', 'onlyRole']	['factory.createPair(address(this),tokenPair)', 'tokenPairKeys.push(tokenPair)']	1
			['uniswapFactory']				
setMarketingAddress(address)	external	['onlyRole']	[]	['marketingAddress']	['keccak256(bytes)', 'onlyRole']	[]	1
					['require(bool,string)']		
setTeamAddress(address)	external	['onlyRole']	[]	['teamAddress']	['keccak256(bytes)', 'onlyRole']	[]	1

Function	Visibility	Modifiers	Read	Write	Internal Calls	External Calls	Cyclomatic Complexity
					['require(bool,string)']		
shouldTakeFee(address,address)	internal	[]	['enabledSwapFee', 'tokenPairKeys']	[]	[]	[]	3
			['tokenPairs']				
_transfer(address,address,uint256)	internal	[]	['this']	[]	['_distributeFee', '_transfer']	[]	3
					['shouldTakeFee']		
_distributeFee(address,uint256)	internal	['nonReentrant']	['marketingAddress', 'teamAddress']	[]	['_transfer', 'nonReentrant']	[]	2
reallocationEther()	public	['onlyRole']	['msg.sender', 'this']	[]	['balance(address)', 'keccak256(bytes)']	['to.transfer(address(this).balance)']	1
					['onlyRole']		
receive()	external	[]	[]	[]	[]	[]	1

Modifiers	Visibility	Read	Write	Internal Calls	External Calls	Cyclomatic Complexity
nonReentrant()	internal	[]	[]	['_nonReentrantAfter', '_nonReentrantBefore']	[]	1
initializer()	internal	['_initialized', '_initializing']	['_initialized', '_initializing']	['require(bool,string)']	['AddressUpgradeable.isContract(address(this))']	3
		['this']				
reinitializer(uint8)	internal	['_initialized', '_initializing']	['_initialized', '_initializing']	['require(bool,string)']	[]	1
onlyInitializing()	internal	['_initializing']	[]	['require(bool,string)']	[]	1
onlyRole(bytes32)	internal	['msg.sender']	[]	['hasRole', 'require(bool,string)']	[]	1