



# Cyberscope

## Audit Report

# **Oxpad**

January 2023

Type	BEP20
Network	BSC
Address	0xbbb603da8a209188b1d083a6f7a6f66d4992a5f4
Audited by	© cyberscope

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# Review

<b>Contract Name</b>	ZeroXPad
<b>Compiler Version</b>	v0.8.9+commit.e5eed63a
<b>Optimization</b>	200 runs
<b>Explorer</b>	<a href="https://bscscan.com/address/0xbbb603da8a209188b1d083a6f7a6f66d4992a5f4">https://bscscan.com/address/0xbbb603da8a209188b1d083a6f7a6f66d4992a5f4</a>
<b>Address</b>	0xbbb603da8a209188b1d083a6f7a6f66d4992a5f4
<b>Network</b>	BSC
<b>Symbol</b>	ZXP
<b>Decimals</b>	9
<b>Total Supply</b>	10,000,000

## Audit Updates

<b>Initial Audit</b>	19 Jan 2023 <a href="https://github.com/cyberscope-io/audits/blob/main/zxp/v1/audit.pdf">https://github.com/cyberscope-io/audits/blob/main/zxp/v1/audit.pdf</a>
<b>Corrected Phase 2</b>	23 Jan 2023 <a href="https://github.com/cyberscope-io/audits/blob/main/zxp/v2/audit.pdf">https://github.com/cyberscope-io/audits/blob/main/zxp/v2/audit.pdf</a>
<b>Corrected Phase 3</b>	25 Jan 2023 <a href="https://github.com/cyberscope-io/audits/blob/main/zxp/v3/audit.pdf">https://github.com/cyberscope-io/audits/blob/main/zxp/v3/audit.pdf</a>
<b>Corrected Phase 4</b>	27 Jan 2023

## Source Files

Filename	SHA256
ZeroXPad.sol	3336287f7d96d6a4f328723285df50d0d23a893096429672ce9a3bb985d1438f

# Analysis

● Critical ● Medium ● Minor / Informative ● Pass

Severity	Code	Description	Status
●	ST	Stops Transactions	Passed
●	OCTD	Transfers Contract's Tokens	Passed
●	OTUT	Transfers User's Tokens	Passed
●	ELFM	Exceeds Fees Limit	Passed
●	ULTW	Transfers Liquidity to Team Wallet	Passed
●	MT	Mints Tokens	Passed
●	BT	Burns Tokens	Passed
●	BC	Blacklists Addresses	Passed

# Diagnostics

● Critical   ● Medium   ● Minor / Informative

Severity	Code	Description	Status
●	BLC	Business Logic Concern	Unresolved
●	L04	Conformance to Solidity Naming Conventions	Unresolved
●	L18	Multiple Pragma Directives	Unresolved
●	L19	Stable Compiler Version	Unresolved

## BLC - Business Logic Concern

Criticality	Minor / Informative
Location	ZeroXPad.sol#L1368
Status	Unresolved

### Description

The implementation may not follow the expected behavior. The disable trade variable disables only the buy transactions.

```
function _transfer(  
    address from,  
    address to,  
    uint256 amount  
) internal virtual override {  
    if (isExcludedFromFees_[from] || isExcludedFromFees_[to] ||  
msg.sender == owner()) {  
        super._transfer(from, to, amount);  
    } else if (from == pancakePair_) {  
        require(tradingEnabled_, "OxPad: trading is currently disabled");  
        uint256 fees = amount.mul(buyFee_).div(10000);  
        uint256 rest = amount - fees;  
        super._transfer(from, treasury_, fees);  
        super._transfer(from, to, rest);  
    } else if (to == pancakePair_) {  
        uint256 fees = 0;  
        if (protectionEnabled_) {  
            uint256 penaltyPercentage = sellFee_.add(  
                sellFee_.mul(protectionModifier_)  
            );  
            fees = amount.mul(penaltyPercentage).div(10000);  
        } else {  
            fees = amount.mul(sellFee_).div(10000);  
        }  
        uint256 rest = amount - fees;  
        super._transfer(from, treasury_, fees);  
        super._transfer(from, to, rest);  
    } else {  
        super._transfer(from, to, amount);  
    }  
}
```

## Recommendation

The team is advised to carefully check if the implementation follows the expected business logic. It is recommended to disable trading for buy and sell transactions. For instance,

```
if (!isExcludedFromFees_[from] || !isExcludedFromFees_[to]){  
  require(tradingEnabled_, "OxPad: trading is currently disabled");  
}
```



## L04 - Conformance to Solidity Naming Conventions

<b>Criticality</b>	Minor / Informative
<b>Location</b>	ZeroXPad.sol#L8
<b>Status</b>	Unresolved

### Description

The Solidity style guide is a set of guidelines for writing clean and consistent Solidity code. Adhering to a style guide can help improve the readability and maintainability of the Solidity code, making it easier for others to understand and work with.

The followings are a few key points from the Solidity style guide:

1. Use camelCase for function and variable names, with the first letter in lowercase (e.g., myVariable, updateCounter).
2. Use PascalCase for contract, struct, and enum names, with the first letter in uppercase (e.g., MyContract, UserStruct, ErrorEnum).
3. Use uppercase for constant variables and enums (e.g., MAX\_VALUE, ERROR\_CODE).
4. Use indentation to improve readability and structure.
5. Use spaces between operators and after commas.
6. Use comments to explain the purpose and behavior of the code.
7. Keep lines short (around 120 characters) to improve readability.

```
function WETH() external pure returns (address);
```

### Recommendation

By following the Solidity naming convention guidelines, the codebase increased the readability, maintainability, and makes it easier to work with.

Find more information on the Solidity documentation

<https://docs.soliditylang.org/en/v0.8.17/style-guide.html#naming-convention>.

## L18 - Multiple Pragma Directives

<b>Criticality</b>	Minor / Informative
<b>Location</b>	ZeroXPad.sol#L4,102,148,171,401,428,513,598,628,1019,1060,1097
<b>Status</b>	Unresolved

### Description

If the contract includes multiple conflicting pragma directives, it may produce unexpected errors. To avoid this, it's important to include the correct pragma directive at the top of the contract and to ensure that it is the only pragma directive included in the contract.

```
pragma solidity >=0.6.2;  
pragma solidity >=0.5.0;  
pragma solidity ^0.8.0;  
pragma solidity 0.8.9;
```

### Recommendation

It is important to include only one pragma directive at the top of the contract and to ensure that it accurately reflects the version of Solidity that the contract is written in.

By including all required compiler options and flags in a single pragma directive, the potential conflicts could be avoided and ensure that the contract can be compiled correctly.

## L19 - Stable Compiler Version

<b>Criticality</b>	Minor / Informative
<b>Location</b>	ZeroXPad.sol#L171,401,428,513,598,628,1019,1060
<b>Status</b>	Unresolved

### Description

The `^` symbol indicates that any version of Solidity that is compatible with the specified version (i.e., any version that is a higher minor or patch version) can be used to compile the contract. The version lock is a mechanism that allows the author to specify a minimum version of the Solidity compiler that must be used to compile the contract code. This is useful because it ensures that the contract will be compiled using a version of the compiler that is known to be compatible with the code.

```
pragma solidity ^0.8.0;
```

### Recommendation

The team is advised to lock the pragma to ensure the stability of the codebase. The locked pragma version ensures that the contract will not be deployed with an unexpected version. An unexpected version may produce vulnerabilities and undiscovered bugs. The compiler should be configured to the lowest version that provides all the required functionality for the codebase. As a result, the project will be compiled in a well-tested LTS (Long Term Support) environment.

# Functions Analysis

Contract	Type	Bases		
	Function Name	Visibility	Mutability	Modifiers
<b>IUniswapV2Router01</b>	Interface			
	factory	External		-
	WETH	External		-
	addLiquidity	External	✓	-
	addLiquidityETH	External	Payable	-
	removeLiquidity	External	✓	-
	removeLiquidityETH	External	✓	-
	removeLiquidityWithPermit	External	✓	-
	removeLiquidityETHWithPermit	External	✓	-
	swapExactTokensForTokens	External	✓	-
	swapTokensForExactTokens	External	✓	-
	swapExactETHForTokens	External	Payable	-
	swapTokensForExactETH	External	✓	-
	swapExactTokensForETH	External	✓	-
	swapETHForExactTokens	External	Payable	-
	quote	External		-
	getAmountOut	External		-
	getAmountIn	External		-
	getAmountsOut	External		-
	getAmountsIn	External		-
<b>IUniswapV2Router02</b>	Interface	IUniswapV2Router01		
	removeLiquidityETHSupportingFeeOnTransferTokens	External	✓	-

	removeLiquidityETHWithPermitSupportingFeeOnTransferTokens	External	✓	-
	swapExactTokensForTokensSupportingFeeOnTransferTokens	External	✓	-
	swapExactETHForTokensSupportingFeeOnTransferTokens	External	Payable	-
	swapExactTokensForETHSupportingFeeOnTransferTokens	External	✓	-
<b>IUniswapV2Factory</b>	Interface			
	feeTo	External		-
	feeToSetter	External		-
	getPair	External		-
	allPairs	External		-
	allPairsLength	External		-
	createPair	External	✓	-
	setFeeTo	External	✓	-
	setFeeToSetter	External	✓	-
<b>SafeMath</b>	Library			
	tryAdd	Internal		
	trySub	Internal		
	tryMul	Internal		
	tryDiv	Internal		
	tryMod	Internal		
	add	Internal		
	sub	Internal		
	mul	Internal		
	div	Internal		
	mod	Internal		
	sub	Internal		
	div	Internal		

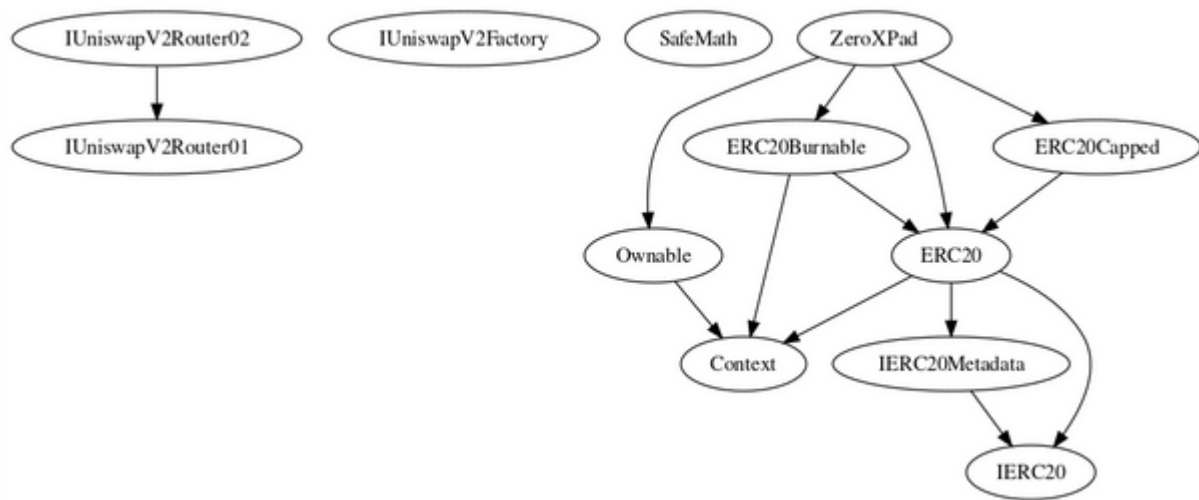
	mod	Internal		
<b>Context</b>	Implementation			
	_msgSender	Internal		
	_msgData	Internal		
<b>Ownable</b>	Implementation	Context		
		Public	✓	-
	owner	Public		-
	_checkOwner	Internal		
	renounceOwnership	Public	✓	onlyOwner
	transferOwnership	Public	✓	onlyOwner
	_transferOwnership	Internal	✓	
<b>IERC20</b>	Interface			
	totalSupply	External		-
	balanceOf	External		-
	transfer	External	✓	-
	allowance	External		-
	approve	External	✓	-
	transferFrom	External	✓	-
<b>IERC20Metadata</b>	Interface	IERC20		
	name	External		-
	symbol	External		-
	decimals	External		-
<b>ERC20</b>	Implementation	Context, IERC20, IERC20Metadata		

		Public	✓	-
	name	Public		-
	symbol	Public		-
	decimals	Public		-
	totalSupply	Public		-
	balanceOf	Public		-
	transfer	Public	✓	-
	allowance	Public		-
	approve	Public	✓	-
	transferFrom	Public	✓	-
	increaseAllowance	Public	✓	-
	decreaseAllowance	Public	✓	-
	_transfer	Internal	✓	
	_mint	Internal	✓	
	_burn	Internal	✓	
	_approve	Internal	✓	
	_spendAllowance	Internal	✓	
	_beforeTokenTransfer	Internal	✓	
	_afterTokenTransfer	Internal	✓	
<b>ERC20Burnable</b>	Implementation	Context, ERC20		
	burn	Public	✓	-
	burnFrom	Public	✓	-
<b>ERC20Capped</b>	Implementation	ERC20		
		Public	✓	-
	cap	Public		-
	_mint	Internal	✓	

<b>ZeroXPad</b>	Implementation	ERC20, ERC20Capped, ERC20Burnable, Ownable		
		Public	✓	ERC20Capped ERC20
	decimals	Public		-
	setBuyFee	Public	✓	onlyOwner
	setSellFee	Public	✓	onlyOwner
	setProtectionModifier	Public	✓	onlyOwner
	enableTrading	Public	✓	onlyOwner
	disableProtection	Public	✓	onlyOwner
	excludeFromFees	Public	✓	onlyOwner
	includeInFees	Public	✓	onlyOwner
	setPancakePair	Public	✓	onlyOwner
	_transfer	Internal	✓	
	_mint	Internal	✓	



# Inheritance Graph



# Flow Graph

## Summary

Oxpad is an interesting project that has a friendly and growing community. The Smart Contract analysis reported no compiler errors or critical issues. The Contract Owner can access some admin functions that can not be used in a malicious way to disturb the users' transactions. The contract includes a protection fee, causing the fees to be set at 24% until the owner disables the protection. There is also a limit of max 3% fee.

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# About Cyberscope

Cyberscope is a blockchain cybersecurity company that was founded with the vision to make web3.0 a safer place for investors and developers. Since its launch, it has worked with thousands of projects and is estimated to have secured tens of millions of investors' funds.

Cyberscope is one of the leading smart contract audit firms in the crypto space and has built a high-profile network of clients and partners.



The Cyberscope team

<https://www.cyberscope.io>