Cyberscope

Audit Report

Pocketcoin

March 2025

SHA256

5d1d51f2393aec0f89d3bfac425cf349cab736664d144c4f61e58ba3335260b8

Audited by © cyberscope

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Risk Classification

The criticality of findings in Cyberscope's smart contract audits is determined by evaluating multiple variables. The two primary variables are:

1. **Likelihood of Exploitation**: This considers how easily an attack can be executed, including the economic feasibility for an attacker.
2. **Impact of Exploitation**: This assesses the potential consequences of an attack, particularly in terms of the loss of funds or disruption to the contract's functionality.

Based on these variables, findings are categorized into the following severity levels:

1. **Critical**: Indicates a vulnerability that is both highly likely to be exploited and can result in significant fund loss or severe disruption. Immediate action is required to address these issues.
2. **Medium**: Refers to vulnerabilities that are either less likely to be exploited or would have a moderate impact if exploited. These issues should be addressed in due course to ensure overall contract security.
3. **Minor**: Involves vulnerabilities that are unlikely to be exploited and would have a minor impact. These findings should still be considered for resolution to maintain best practices in security.
4. **Informative**: Points out potential improvements or informational notes that do not pose an immediate risk. Addressing these can enhance the overall quality and robustness of the contract.

Severity	Likelihood / Impact of Exploitation
Critical	Highly Likely / High Impact
Medium	Less Likely / High Impact or Highly Likely/ Lower Impact
Minor / Informative	Unlikely / Low to no Impact

Review

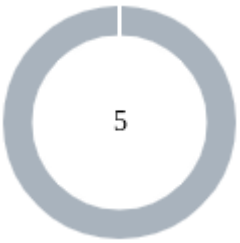
Audit Updates

Initial Audit	5 Mar 2025
Test Deploy	https://sepolia.etherscan.io/address/0x10543A2906284bBe7c4BEDb6fB65021d9039f73a

Source Files

Filename	SHA256
WPKOIN (2).sol	5d1d51f2393aec0f89d3bfac425cf349cab736664d144c4f61e58ba3335260b8

Findings Breakdown



Critical	0
Medium	0
Minor / Informative	5

Severity	Unresolved	Acknowledged	Resolved	Other
Critical	0	0	0	0
Medium	0	0	0	0
Minor / Informative	5	0	0	0

Diagnostics

Critical Medium Minor / Informative

Severity	Code	Description	Status
	CCR	Contract Centralization Risk	Unresolved
	MMN	Misleading Method Naming	Unresolved
	MT	Mints Tokens	Unresolved
	L15	Local Scope Variable Shadowing	Unresolved
	L19	Stable Compiler Version	Unresolved

CCR - Contract Centralization Risk

Criticality	Minor / Informative
Location	WPKOIN (2).sol#L26,37,52
Status	Unresolved

Description

The contract's functionality and behavior are heavily dependent on external parameters or configurations. While external configuration can offer flexibility, it also poses several centralization risks that warrant attention. Centralization risks arising from the dependence on external configuration include Single Point of Control, Vulnerability to Attacks, Operational Delays, Trust Dependencies, and Decentralization Erosion.

```
function mint(uint256 amount) external onlyOwner nonReentrant {...}
function wrap(address to, uint256 amount) external onlyOwner nonReentrant
{...}
function unwrap(uint256 amount, string memory pkoinAddress) external
nonReentrant {...}
```

Recommendation

To address this finding and mitigate centralization risks, it is recommended to evaluate the feasibility of migrating critical configurations and functionality into the contract's codebase itself. This approach would reduce external dependencies and enhance the contract's self-sufficiency. It is essential to carefully weigh the trade-offs between external configuration flexibility and the risks associated with centralization.

MMN - Misleading Method Naming

Criticality	Minor / Informative
Location	WPKOIN (2).sol#L37,52
Status	Unresolved

Description

Methods can have misleading names if their names do not accurately reflect the functionality they contain or the purpose they serve. The contract uses some method names that are too generic or do not clearly convey the underneath functionality. Misleading method names can lead to confusion, making the code more difficult to read and understand. Methods can have misleading names if their names do not accurately reflect the functionality they contain or the purpose they serve.

The contract uses the `wrap` and `unwrap` methods to transfer tokens. Wrapping and unwrapping tokens typically involves exchanging a token for another. In this case however the `wrap` method only transfers tokens from the contract to a specified address and then emits an event. Similarly, the `unwrap` function only receives tokens from the caller without further processing. Misleading method names can lead to confusion, making the code more difficult to read and understand.

```
function wrap(address to, uint256 amount) external onlyOwner
nonReentrant {
require(balanceOf(address(this)) >= amount, "Not enough tokens in
reserve");
require(to != address(0), "Cannot wrap to zero address");

_transfer(address(this), to, amount);
emit Wrap(to, amount, block.timestamp);
}

function unwrap(uint256 amount, string memory pkoinAddress)
external nonReentrant {
require(amount > 0, "Amount must be greater than zero");
require(bytes(pkoinAddress).length > 0, "PKOIN address cannot be
empty");
require(balanceOf(msg.sender) >= amount, "Insufficient token
balance");

// Check allowance and perform the transfer
_spendAllowance(msg.sender, address(this), amount); // Deduct the
approved amount
_transfer(msg.sender, address(this), amount);

emit Unwrap(msg.sender, pkoinAddress, amount, block.timestamp);
}
```

Recommendation

It's always a good practice for the contract to contain method names that are specific and descriptive. The team is advised to keep in mind the readability of the code.

MT - Mints Tokens

Criticality	Minor / Informative
Location	WPKOIN (2).sol#L26
Status	Unresolved

Description

The contract owner has the authority to mint tokens. The owner may take advantage of it by calling the `mint` function. As a result, the contract tokens will be highly inflated.

```
function mint(uint256 amount) external onlyOwner nonReentrant {
require(amount > 0, "Mint amount must be greater than zero");
_mint(address(this), amount * 10**decimals());
}
```

Recommendation

The team should carefully manage the private keys of the owner's account. We strongly recommend a powerful security mechanism that will prevent a single user from accessing the contract admin functions.

Temporary Solutions:

These measurements do not decrease the severity of the finding

- Introduce a time-locker mechanism with a reasonable delay.
- Introduce a multi-signature wallet so that many addresses will confirm the action.
- Introduce a governance model where users will vote about the actions.

Permanent Solution:

- Renouncing the ownership, which will eliminate the threats but it is non-reversible.

L15 - Local Scope Variable Shadowing

Criticality	Minor / Informative
Location	WPKOIN (2).sol#L16
Status	Unresolved

Description

Local scope variable shadowing occurs when a local variable with the same name as a variable in an outer scope is declared within a function or code block. When this happens, the local variable "shadows" the outer variable, meaning that it takes precedence over the outer variable within the scope in which it is declared.

```
string memory _name
string memory _symbol
```

Recommendation

It's important to be aware of shadowing when working with local variables, as it can lead to confusion and unintended consequences if not used correctly. It's generally a good idea to choose unique names for local variables to avoid shadowing outer variables and causing confusion.

L19 - Stable Compiler Version

Criticality	Minor / Informative
Location	WPKOIN (2).sol#L2,3
Status	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;
```

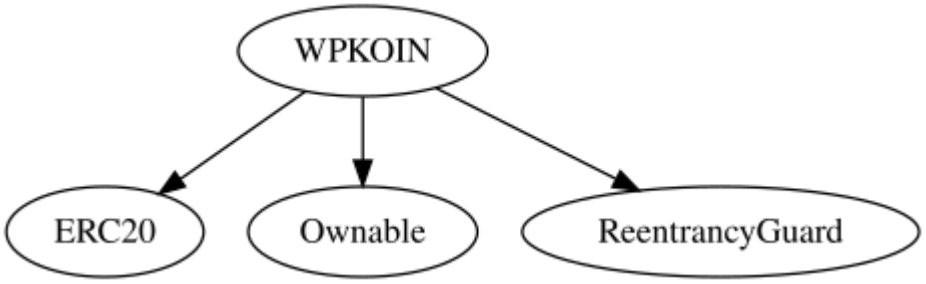
Recommendation

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.

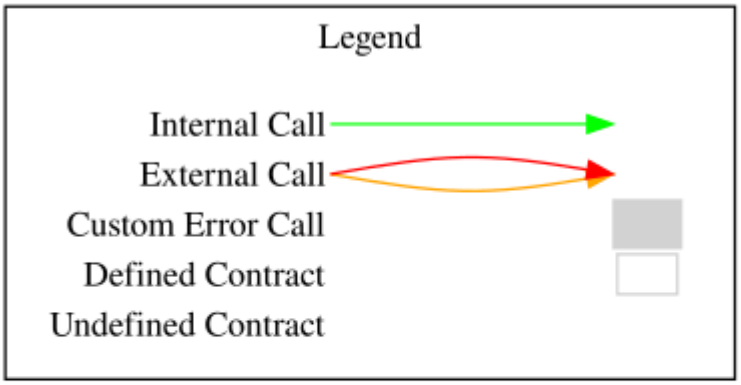
Functions Analysis

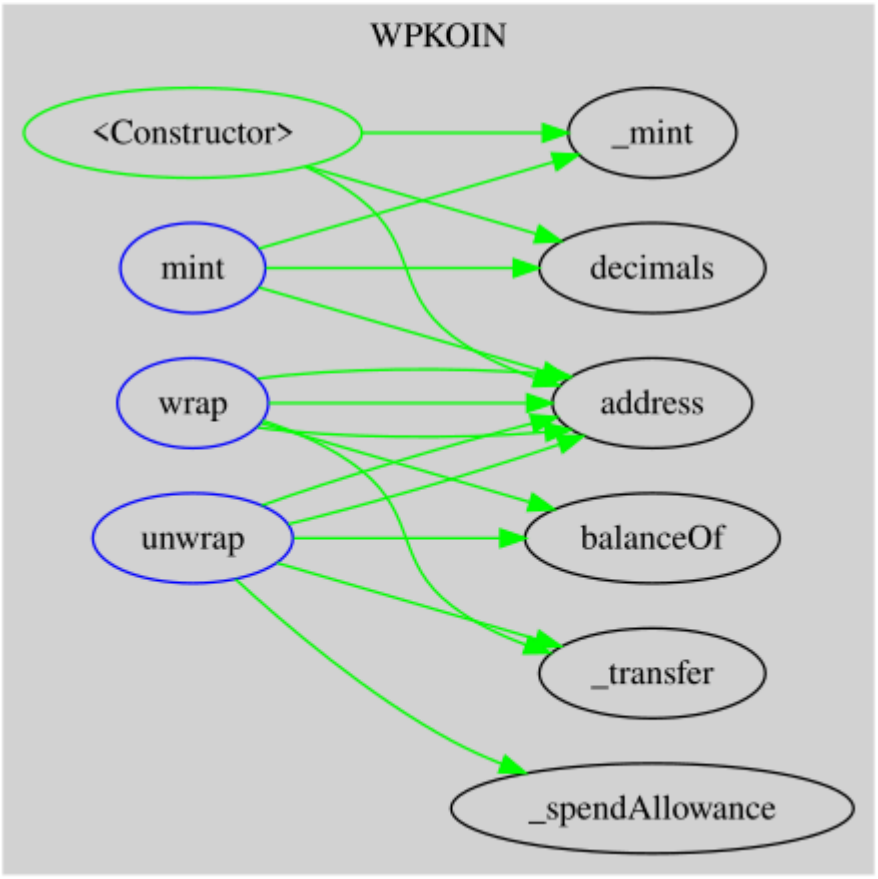
Contract	Type	Bases		
	Function Name	**Visibility**	**Mutability**	**Modifiers**
WPKOIN	Implementation	ERC20, Ownable, ReentrancyGuard		
		Public	✓	ERC20 Ownable
	mint	External	✓	onlyOwner nonReentrant
	wrap	External	✓	onlyOwner nonReentrant
	unwrap	External	✓	nonReentrant

Inheritance Graph



Flow Graph


Legend
Internal Call
External Call
Custom Error Call
Defined Contract
Undefined Contract


WPKOIN
<Constructor>
_mint
mint
decimals
wrap
address
unwrap
balanceOf
_transfer
_spendAllowance

Summary

Pocketcoin contract implements a token mechanism. This audit investigates security issues, business logic concerns and potential improvements. The Smart Contract analysis reported no compiler error or critical issues.

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Blockchain technology and cryptographic assets present a high level of ongoing risk Cyberscope's position is that each company and individual are responsible for their own due diligence and continuous security Cyberscope's goal is to help reduce the attack vectors and the high level of variance associated with utilizing new and consistently changing technologies and in no way claims any guarantee of security or functionality of the technology we agree to analyze. The assessment services provided by Cyberscope are subject to dependencies and are under continuing development. You agree that your access and/or use including but not limited to any services reports and materials will be at your sole risk on an as-is where-is and as-available basis Cryptographic tokens are emergent technologies and carry with them high levels of technical risk and uncertainty. The assessment reports could include false positives false negatives and other unpredictable results. The services may access and depend upon multiple layers of third parties.

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

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