

Polyroll Token

Smart Contract

Audit Report





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AUDITED DETAILS

Audited Project

Project name	Token ticker	Blockchain	
Polyroll Token	ROLL	Polygon Matic	

Addresses

Contract address	0xc68e83a305b0fad69e264a1769a0a070f190d2d6
Contract deployer address	0x7a2B82B7427e587Ca75c7962679d001Fb737ffA4

Project Website

https://twitter.com/PolyrollOrg

Codebase

https://polygonscan.com/address/0xc68e83a305b0fad69e264a1769a0a070f190d2d6#code



SUMMARY

Polyroll is a decentralized casino built on Polygon Network and Chainlink. Unlike traditional casinos that operate in black boxes, Polyroll runs on smart contracts that are fair, transparent, and immutable. Polyroll is conducting a proper launch of its native token, ROLL, through yield farming.

Contract Summary

Documentation Quality

Polyroll Token provides a very good documentation with standard of solidity base code.

• The technical description is provided clearly and structured and also dont have any high risk issue.

Code Quality

The Overall quality of the basecode is standard.

 Standard solidity basecode and rules are already followed by Polyroll Token with the discovery of several low issues.

Test Coverage

Test coverage of the project is 100% (Through Codebase)

Audit Findings Summary

- SWC-103 | Pragma statements can be allowed to float when a contract is intended on lines 10, 36, 180, 342, 422 and 733.
- SWC-116 | It is recommended to use oracles for block values as a proxy for time on lines 930.
- SWC-120 | It is recommended to use external sources of randomness via oracles on lines 960, 1033 and 960.



CONCLUSION

We have audited the Polyroll Token project released on June 2021 to discover issues and identify potential security vulnerabilities in Polyroll Token Project. This process is used to find technical issues and security loopholes which might be found in the smart contract.

The security audit report provides a satisfactory result with some low-risk issues.

The issues found in the Polyroll Token smart contract code do not pose a considerable risk. The writing of the contract is close to the standard of writing contracts in general. The low-risk issues found are some floating pragma is set, control flow decision is made based on The block.timestamp environment variable, and potential use of "block.number" as a source of randomness. Specifying a fixed compiler version is recommended to ensure that the bytecode produced does not vary between builds. This is especially important if you rely on bytecode-level verification of the code. The block.timestamp environment variable determines a control flow decision. Note that the values of variables like coinbase, gaslimit, block number, and timestamp are predictable and can be manipulated by a malicious miner. Also, keep in mind that attackers know hashes of earlier blocks. Don't use any of those environment variables as sources of randomness, and be aware that using these variables introduces a certain level of trust in miners.



AUDIT RESULT

Article	Category	Description	Result	
Default Visibility	SWC-100 SWC-108	Functions and state variables visibility should be set explicitly. Visibility levels should be specified consciously.	PASS	
Integer Overflow and Underflow	SWC-101	If unchecked math is used, all math operations should be safe from overflows and underflows.	PASS	
Outdated Compiler Version	SWC-102	It is recommended to use a recent version of the Solidity compiler.	PASS	
Floating Pragma	SWC-103	Contracts should be deployed with the same compiler version and flags that they have been tested thoroughly.	ISSUE FOUND	
Unchecked Call Return Value	SWC-104	The return value of a message call should be checked.	PASS	
Unprotected Ether Withdrawal	SWC-105	Due to missing or insufficient access controls, malicious parties can withdraw from the contract.	PASS	
SELFDESTRUCT Instruction	SWC-106	The contract should not be self-destructible while it has funds belonging to users.	it PASS	
Reentrancy	SWC-107	Check effect interaction pattern should be followed if the code performs recursive call.	PASS	
Uninitialized Storage Pointer	SWC-109	Uninitialized local storage variables can point to unexpected storage locations in the contract.	PASS	
Assert Violation	SWC-110 SWC-123	Properly functioning code should never reach a failing assert statement.	ver reach a PASS	
Deprecated Solidity Functions	SWC-111	Deprecated built-in functions should never be used.	PASS	
Delegate call to Untrusted Callee	SWC-112	Delegatecalls should only be allowed to trusted addresses.	PASS	



DoS (Denial of Service)	SWC-113 SWC-128	Execution of the code should never be blocked by a specific contract state unless required.		
Race Conditions	SWC-114	ce Conditions and Transactions Order Dependency puld not be possible.		
Authorization through tx.origin	SWC-115	tx.origin should not be used for authorization.	PASS	
Block values as a proxy for time	SWC-116	Block numbers should not be used for time calculations.		
Signature Unique ID	SWC-117 SWC-121 SWC-122	Signed messages should always have a unique id. A transaction hash should not be used as a unique id.		
Incorrect Constructor Name	SWC-118	Constructors are special functions that are called only once during the contract creation.		
Shadowing State Variable	SWC-119	State variables should not be shadowed.		
Weak Sources of Randomness	SWC-120	Random values should never be generated from Chain Attributes or be predictable.	ISSUE FOUND	
Write to Arbitrary Storage Location	SWC-124	The contract is responsible for ensuring that only authorized user or contract accounts may write to sensitive storage locations.	PASS	
Incorrect Inheritance Order	SWC-125	When inheriting multiple contracts, especially if they have identical functions, a developer should carefully specify inheritance in the correct order. The rule of thumb is to inherit contracts from more /general/ to more /specific/.		
Insufficient Gas Griefing	SWC-126	Insufficient gas griefing attacks can be performed on contracts which accept data and use it in a sub-call on another contract.		
Arbitrary Jump Function	SWC-127	As Solidity doesnt support pointer arithmetics, it is impossible to change such variable to an arbitrary value.	PASS	



Typographical Error	SWC-129	A typographical error can occur for example when the intent of a defined operation is to sum a number to a variable.	PASS	
Override control character	SWC-130	Malicious actors can use the Right-To-Left-Override unicode character to force RTL text rendering and confuse users as to the real intent of a contract.		
Unused variables	SWC-131 SWC-135	Unused variables are allowed in Solidity and they do not pose a direct security issue.	PASS	
Unexpected Ether balance	SWC-132	Contracts can behave erroneously when they strictly assume a specific Ether balance.		
Hash Collisions Variable	SWC-133	Using abi.encodePacked() with multiple variable length arguments can, in certain situations, lead to a hash collision.		
Hardcoded gas amount	SWC-134	The transfer() and send() functions forward a fixed amount of 2300 gas.		
Unencrypted Private Data	SWC-136	It is a common misconception that private type variables cannot be read.	PASS	



SMART CONTRACT ANALYSIS

Started	Wednesday Jun 16 2021 04:41:17 GMT+0000 (Coordinated Universal Time)		
Finished	Thursday Jun 17 2021 20:58:26 GMT+0000 (Coordinated Universal Time)		
Mode	Standard		
Main Source File	RollToken.sol		

Detected Issues

ID	Title	Severity	Status
SWC-103	A FLOATING PRAGMA IS SET.	low	acknowledged
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SWC-103	A FLOATING PRAGMA IS SET.	low	acknowledged
SWC-116	A CONTROL FLOW DECISION IS MADE BASED ON THE BLOCK.TIMESTAMP ENVIRONMENT VARIABLE.	low	acknowledged
SWC-120	POTENTIAL USE OF "BLOCK.NUMBER" AS SOURCE OF RANDOMNESS.	low	acknowledged
SWC-120	POTENTIAL USE OF "BLOCK.NUMBER" AS SOURCE OF RANDOMNESS.	low	acknowledged
SWC-120	A CONTROL FLOW DECISION IS MADE BASED ON THE BLOCK.NUMBER ENVIRONMENT VARIABLE.	low	acknowledged



LINE 10

low SEVERITY

The current pragma Solidity directive is ""^0.6.0"". It is recommended to specify a fixed compiler version to ensure that the bytecode produced does not vary between builds. This is especially important if you rely on bytecode-level verification of the code.

Source File

- RollToken.sol

```
9
10 pragma solidity ^0.6.0;
11
12 /*
13 * @dev Provides information about the current execution context, including the
14
```



LINE 36

low SEVERITY

The current pragma Solidity directive is ""^0.6.2"". It is recommended to specify a fixed compiler version to ensure that the bytecode produced does not vary between builds. This is especially important if you rely on bytecode-level verification of the code.

Source File

- RollToken.sol

```
35
36 pragma solidity ^0.6.2;
37
38 /**
39 * @dev Collection of functions related to the address type
40
```



LINE 180

low SEVERITY

The current pragma Solidity directive is ""^0.6.0"". It is recommended to specify a fixed compiler version to ensure that the bytecode produced does not vary between builds. This is especially important if you rely on bytecode-level verification of the code.

Source File

- RollToken.sol

```
179
180 pragma solidity ^0.6.0;
181
182 /**
183 * @dev Wrappers over Solidity's arithmetic operations with added overflow
184
```



LINE 342

low SEVERITY

The current pragma Solidity directive is ""^0.6.0"". It is recommended to specify a fixed compiler version to ensure that the bytecode produced does not vary between builds. This is especially important if you rely on bytecode-level verification of the code.

Source File

- RollToken.sol

```
341
342 pragma solidity ^0.6.0;
343
344 /**
345 * @dev Interface of the ERC20 standard as defined in the EIP.
346
```



LINE 422

low SEVERITY

The current pragma Solidity directive is ""^0.6.0"". It is recommended to specify a fixed compiler version to ensure that the bytecode produced does not vary between builds. This is especially important if you rely on bytecode-level verification of the code.

Source File

- RollToken.sol

```
421
422 pragma solidity ^0.6.0;
423
424
425
426
```



LINE 733

low SEVERITY

The current pragma Solidity directive is ""^0.6.0"". It is recommended to specify a fixed compiler version to ensure that the bytecode produced does not vary between builds. This is especially important if you rely on bytecode-level verification of the code.

Source File

- RollToken.sol

```
732
733 pragma solidity ^0.6.0;
734
735 /**
736 * @dev Contract module which provides a basic access control mechanism, where
737
```



SWC-116 | A CONTROL FLOW DECISION IS MADE BASED ON THE BLOCK.TIMESTAMP ENVIRONMENT VARIABLE.

LINE 930

low SEVERITY

The block timestamp environment variable is used to determine a control flow decision. Note that the values of variables like coinbase, gaslimit, block number and timestamp are predictable and can be manipulated by a malicious miner. Also keep in mind that attackers know hashes of earlier blocks. Don't use any of those environment variables as sources of randomness and be aware that use of these variables introduces a certain level of trust into miners.

Source File

- RollToken.sol

```
929 require(nonce == nonces[signatory]++, "EGG::delegateBySig: invalid nonce");
930 require(now <= expiry, "EGG::delegateBySig: signature expired");
931 return _delegate(signatory, delegatee);
932 }
933
934</pre>
```



SWC-120 | POTENTIAL USE OF "BLOCK.NUMBER" AS SOURCE OF RANDOMNESS.

LINE 960

low SEVERITY

The environment variable "block.number" looks like it might be used as a source of randomness. Note that the values of variables like coinbase, gaslimit, block number and timestamp are predictable and can be manipulated by a malicious miner. Also keep in mind that attackers know hashes of earlier blocks. Don't use any of those environment variables as sources of randomness and be aware that use of these variables introduces a certain level of trust into miners.

Source File

- RollToken.sol

```
959 {
960 require(blockNumber < block.number, "EGG::getPriorVotes: not yet determined");
961
962 uint32 nCheckpoints = numCheckpoints[account];
963 if (nCheckpoints == 0) {
964
```



SWC-120 | POTENTIAL USE OF "BLOCK.NUMBER" AS SOURCE OF RANDOMNESS.

LINE 1033

low SEVERITY

The environment variable "block.number" looks like it might be used as a source of randomness. Note that the values of variables like coinbase, gaslimit, block number and timestamp are predictable and can be manipulated by a malicious miner. Also keep in mind that attackers know hashes of earlier blocks. Don't use any of those environment variables as sources of randomness and be aware that use of these variables introduces a certain level of trust into miners.

Source File

- RollToken.sol

```
1032 {
1033    uint32 blockNumber = safe32(block.number, "EGG::_writeCheckpoint: block number
exceeds 32 bits");
1034
1035    if (nCheckpoints > 0 && checkpoints[delegatee][nCheckpoints - 1].fromBlock ==
blockNumber) {
1036     checkpoints[delegatee][nCheckpoints - 1].votes = newVotes;
1037
```



SWC-120 | A CONTROL FLOW DECISION IS MADE BASED ON THE BLOCK.NUMBER ENVIRONMENT VARIABLE.

LINE 960

low SEVERITY

The block.number environment variable is used to determine a control flow decision. Note that the values of variables like coinbase, gaslimit, block number and timestamp are predictable and can be manipulated by a malicious miner. Also keep in mind that attackers know hashes of earlier blocks. Don't use any of those environment variables as sources of randomness and be aware that use of these variables introduces a certain level of trust into miners.

Source File

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```



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This is a limited report on our findings based on our analysis, in accordance with good industry practice as of 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 below disclaimer below – please make sure to read it in full.

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