Audit report of Genext

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Prepared On: - 17/11/2022

Prepared for: Genext

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THIS AUDIT REPORT WILL CONTAIN CONFIDENTIAL INFORMATION ABOUT THE SMART CONTRACT AND INTELLECTUAL PROPERTY OF THE CUSTOMER AS WELL AS INFORMATION ABOUT POTENTIAL VULNERABILITIES OF THEIR EXPLOITATION.

THE INFORMATION FROM THIS AUDIT REPORT CAN BE USED INTERNALLY BY THE CUSTOMER OR IT CAN BE DISCLOSED PUBLICLY AFTER ALL VULNERABILITIES ARE FIXED - UPON THE DECISION OF THE CUSTOMER.

1. Disclaimer

The smart contracts given for audit have been analyzed in accordance with the best industry practices at the date of this report, in relation to cybersecurity vulnerabilities and issues in smart contract source code, the details of which are disclosed in this report, (Source Code); the Source Code compilation, deployment, and functionality (performing the intended functions). Because the total numbers of test cases are unlimited, the audit makes no statements or warranties on the security of the code.

It also cannot be considered as a sufficient assessment regarding the utility and safety of the code, bug-free status, or any other statements of the contract. While we have done our best in conducting the analysis and producing this report, it is important to note that you should not rely on this report only - we recommend proceeding with several independent audits and a public bug bounty program to ensure the security of smart contracts.

Smart contracts are deployed and executed on a blockchain platform. The platform, its programming language, and other software related to the smart contract can have their own vulnerabilities that can lead to hacks. Thus, the audit can’t guarantee explicit security of the audited smart contracts.

2. Introduction

Kishan Patel (Consultant) was contacted by Genext (Customer) to conduct a Smart Contracts Code Review and Security Analysis. This report presents the findings of the security assessment of Customer`s smart contracts and its code review conducted between 17/11/2022 – 18/11/2022.

The project has 1 file. It contains approx 300 lines of Solidity code. All the functions and state variables are well commented on using the natspec documentation, but that does not create any vulnerability.

3. Project information

Token Name	Genext
Token Symbol	GXT
Platform	Binance Smart Chain (BSC)
Order Started Date	17/11/2022
Order Completed Date	18/11/2022

4. List of attacks checked

- Over and under flows
- Short address attack
- Visibility & Delegate call
- Reentrancy / TheDAO hack
- Forcing BUSD to a contract
- Timestamp Dependence
- Gas Limit and Loops
- DoS with (Unexpected) Throw
- DoS with Block Gas Limit
- Transaction-Ordering Dependence
- Byte array vulnerabilities
- Style guide violation
- Transfer forwards all gas
- ERC20 API violation
- Malicious libraries
- Compiler version not fixed
- Unchecked external call - Unchecked math
- Unsafe type inference

5. Severity Definitions

Risk	Level Description
Critical	Critical vulnerabilities are usually straightforward to exploit and can lead to tokens loss etc.
Medium	Medium-level vulnerabilities are important to fix; however, they can’t lead to tokens lose
Low	Low-level vulnerabilities are mostly related to outdated, unused etc. code snippets, that can’t have significant impact on execution

6. Good things in code

- **Good required condition in functions:-**
  - Here you are checking that newOwner address is valid and proper.

```
337  function _transferOwnership(address newOwner) internal {
338    require(newOwner != address(0), "Ownable: new owner is the zero
339    emit OwnershipTransferred(_owner, newOwner);
```

  - Here you are checking that sender and recipient addresses are valid and proper, and sender has sufficient balance to transfer.

```
535   */
536  function _transfer(address sender, address recipient, uint256 amo
537    require(sender != address(0), "BEP20: transfer from the zero ad
538    require(recipient != address(0), "BEP20: transfer to the zero a
```

  - Here you are checking that account address is valid and proper and balance in account address is sufficient to burn it.

```
557  function _burn(address account, uint256 amount) internal {
558    require(account != address(0), "BEP20: burn from the zero addre
559
560    _balances[account] = _balances[account].sub(amount, "BEP20: bur
```

  - Here you are checking that owner and spender addresses are valid and proper.

```
578  function _approve(address owner, address spender, uint256 amount)
579    require(owner != address(0), "BEP20: approve from the zero addr
580    require(spender != address(0), "BEP20: approve to the zero addr
```

7. Critical vulnerabilities in code

- **No Critical vulnerabilities found**

8. Medium vulnerabilities in code

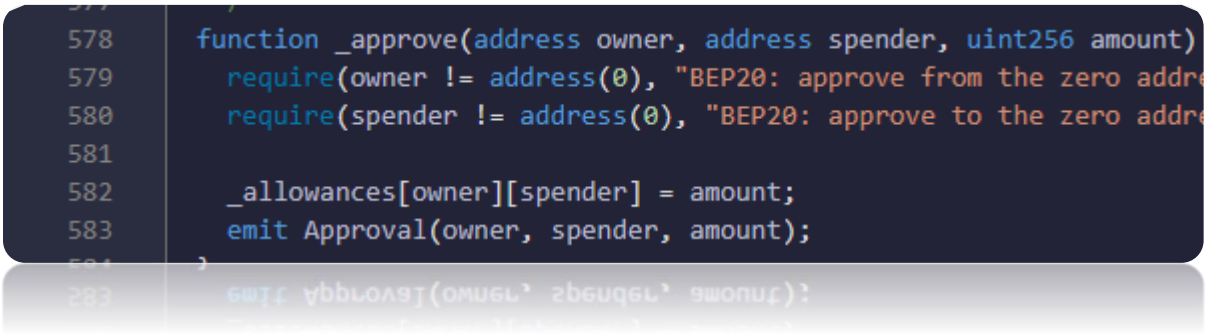
- **No Medium vulnerabilities found**

9. Low vulnerabilities in code

9.1. Suggestions to add code validations:-

=> You have implemented required validation in contract.
=> There are some place where you can improve validation and security of your code.
=> These are all just suggestion it is not bug.

Function: - approve



- Here in approve function you can check that owner has sufficient balance to give allowance to spender address.

Function: - transfer, approve, transferFrom, burn

```
416   function transfer(address recipient, uint256 amount) external ove
417     _transfer(_msgSender(), recipient, amount);
```

```
435   function approve(address spender, uint256 amount) external overri
436     _approve(_msgSender(), spender, amount);
437     return true;
```

```
452   function transferFrom(address sender, address recipient, uint256
453     _transfer(sender, recipient, amount);
454     _approve(sender, _msgSender(), _allowances[sender][_msgSender()
```

```
499   function burn(uint256 amount) public virtual {
500       _burn(_msgSender(), amount);
501   }
```

- Here in all function you can check that amount value is bigger than 0.

10. Summary

- **Number of problems in the smart contract as per severity level**

Critical	Medium	Low
0	**0**	**2**

According to the assessment, the smart contract code is well secured. The code is written with all validation and all security is implemented. Code is performing well and there is no way to steal funds from this contract.

- **Good Point:** Code performance and quality are good. All kind of necessary validation added into smart contract and all validations are working as excepted.

- **Suggestions:** Please try to implement suggested code validations. Use latest version of solidity.