For SHIBNOBIINU
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Smart Contract Security Assessment

Final Report

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Cryptocurrencies and any technologies by extension directly or indirectly related to cryptocurrencies are highly volatile and speculative by nature. All reasonable due diligence and safeguards may yet be insufficient, and users should exercise considerable caution when participating in any shape or form in this nascent industry.

The audit report has made all reasonable attempts to provide clear and articulate recommendations to the Project team with respect to the rectification, amendment and/or revision of any highlighted issues, vulnerabilities or exploits within the contracts provided. It is the sole responsibility of the Project team to sufficiently test and perform checks, ensuring that the contracts are functioning as intended, specifically that the functions therein contained within said contracts have the desired intended effects, functionalities and outcomes of the Project team.

1 Overview

This report has been prepared for SHIBNOBI INU on the Binance Smart Chain (BSC). Maxloop provides a user-centred examination of the smart contracts to look for vulnerabilities, logic errors or other issues from both an internal and external perspective.

1.1 Summary

Project Name	Shibnobi Inu
URL	**https://shibnobiinu.com/**
Platform	Binance Smart Chain
Language	Solidity

1.2 Contracts Assessed

Name	Contract	Live Code Match
Shibnobi InuToken	0x1c7083c691695F78eff373922eAdFdb6F3301f94	MATCH
Shibnobi InuMasterChef	0x1f2952769ED1ce42fFe57274fF44D155D74C8e1e	MATCH

Audit Summary

Delivery Date	Feb. 03th, 2021
Method of Audit	Static Analysis, Manual Review
Consultants Engaged	2
Timeline	Feb. 01, 2022 - Feb. 03, 2022

1.3 Findings Summary

Severity	Found	Resolved	Partially Resolved	Acknowledged (no change made)
High	0	-	-	-
Medium	0	-	-	-
Low	3	1	-	2
Informational	1	-	-	1
Total	**4**	**1**	**-**	**3**

Classification of Issues

Severity	Description
High	Exploits, vulnerabilities or errors that will certainly or probabilistically lead towards loss of funds, control, or impairment of the contract and its functions. Issues under this classification are recommended to be fixed with utmost urgency.

Medium	Bugs or issues with that may be subject to exploit, though their impact is somewhat limited. Issues under this classification are recommended to be fixed as soon as possible.
Low	Effects are minimal in isolation and do not pose a significant danger to the project or its users. Issues under this classification are recommended to be fixed nonetheless.
Informational	Consistency, syntax or style best practices. Generally pose a negligible level of risk, if any.

1.3.1 Shibnobi Inu Token

ID	Severity	Summary	Status
01	LOW	Mint function can be used to pre-mint large amounts of tokens before Ownership is transferred to the **Masterchef**	RESOLVED

1.3.2 Shibnobi InuMasterChef

ID	Severity	Summary	Status
01	LOW	Inconsistency between deposit fee cap in add and set	ACKNOWLEDGED
02	LOW	PendingMondo will show inaccurate pending harvests on the dapp frontend If the pending rewards causes totalSupply to be exceed **MAXSUPPLYCAP**	ACKNOWLEDGED
03	INFO	Total token supply might not be minted due to try and catch pattern	ACKNOWLEDGED

2 Findings

2.1 Shibnobi InuToken

The Shibnobi Inu token is a simple BEP-20 token which will be used as the main reward token for the Masterchef. The contract allows for Shibnobi Inu tokens to be minted when the mint function is called by the contract Owner, who at the time of deployment would be the deployer. Ownership is generally transferred to the Masterchef via the transferOwnership function for emission rewards to be minted and distributed to users staking in the Masterchef. The token has a max supply cap of 1,000,000,000,000.

2.1.1 Token Overview

Address	**0x1c7083c691695F78eff373922eAdFdb6F3301f94**
Token Supply	1,000,000,000,000
Decimal Places	9
Transfer Max Size	No maximum
Transfer Min Size	No minimum
Transfer Fees	None
Pre-mints	10,000

2.1.2 Privileges

The following functions can be called by the owner of the contract:

- mint
- renounceOwnership
- transferOwnership

2.1.3 Issues & Recommendations

Issue #01	**mint function can be used to pre-mint large amounts of tokens before ownership is transferred to the Masterchef**
Severity	LOW SEVERITY
Description	The mint function could be used to pre-mint tokens for legitimate uses including, but not limited to, the injection of initial liquidity, token presale, or airdrops; however, this function may also be used to pre-mint and dump tokens when the token contract has been deployed but before ownership is set to the Masterchef contract. This risk is prevalent amongst less-reputable projects, and any premints can be prominently seen on the Blockchain.
Recommendation	Consider being forthright if this mint function is to be used by letting your community know how much was minted, where they are currently stored, if a vesting contract was used for token unlocking, and finally the purpose of the mints.
Resolution	RESOLVED 10,000 tokens were pre-minted and ownership has been transferred to the Masterchef.

2.2 Shibnobi InuMasterChef

The Shibnobi Inu Masterchef is a fork of Goose Finance's Masterchef. A notable feature of forking the latter is the removal of the migrator function from the original Sushiswap, which could possibly be used maliciously to steal user's tokens.
BAKERGuild has limited the deposit fee to at most 8%.

There is also a maximum emission rate of 60 Shibnobi Inu tokens per block. 10% of the emissions are minted to the devAddr.

2.2.1 Privileges

The following functions can be called by the owner of the Masterchef:

- add
- set
- updateEmissionRate
- updateStartTimestamp
- transferOwnership
- renounceOwnership

The following functions can be called by the DevAddr of the Masterchef:

- setDevAddress

The following functions can be called by the FeeAddr of the Masterchef:

- setFeeAddress

2.2.2 Issues & Recommendations

Issue #02	Inconsistency between deposit fee cap in add and set
Severity	LOW SEVERITY
Description	For deposit fees, while add has a max cap of 8%, set has a max cap of 4%. add: Line 1136 require(_depositFeeBP <= 800, "add: invalid deposit fee basis points"); set: Line 1159 require(_depositFeeBP <= 400, "set: invalid deposit fee basis points"); This behavior is inconsistent, and could allow the owner to add a pool with 8% fee, even if 4% is the expected maximum cap.
Recommendation	The Shibnobi Inu team should clarify what their maximum cap on the deposit fee is, and ensure that checks in both add and set use the same value. It is encouraged to use the lower value as the cap.

Location	Similarly to updatePool, pendingShibnobiInu does not check if the pending rewards will cause the total supply to exceed the MAXSUPPLYCAP. This can cause inaccurate pending harvests to be shown towards the end of token emissions.
Description	Consider factoring in the MAXSUPPLYCAP, and set the pending reward to be the difference between MAXSUPPLYCAP and totalSupply if the pending reward causes totalSupply to exceed MAXSUPPLYCAP. uint256 ShibnobiInuReward = multiplier.mul(Shibnobi InuPerBlock).mul(pool.allocPoint).div(total AllocPoint);
Resolution	ACKNOWLEDGED

Issue #03	**pendingShibnobi Inu will show inaccurate pending harvests on the dapp frontend if the pending rewards causes totalSupply to be exceed MAXSUPPLYCAP**
Severity	LOW SEVERITY

```
if (Shibnobi Inu.totalSupply().add(Shibnobi InuReward) >
Shibnobi Inu.maxSupply()) {      Shibnobi InuReward =
```

```
Shibnobi Inu.maxSupply() .sub(Shibnobi Inu.totalSupply());
}
```

```
accShibnobi InuPerShare = accShibnobi InuPerShare.add(Shibnobi
InuReward.mul(1e9).div(pool.lpSupply ));
```

Recommendation	pendingShibnobi Inu will show inaccurate pending harvests on the dapp frontend if the pending rewards causes totalSupply to be exceed MAXSUPPLYCAP.
Resolution	ACKNOWLEDGED

Issue #04	**Total token supply might not be minted due to try and catch pattern**
Severity	INFORMATIONAL

Description

As there is a MAXCAPSUPPLY for the Shibnobi Inu token, minting the reward and causing the maximum cap to exceed would result in a revert.

```
Shibnobi InuToken::Line 814: require(_totalSupply.add(amount) <=
MAXCAPSUPPLY, "Max supply reached");
```

To prevent this, the following try and catch pattern is done in updatePool.

```
Line 1209~
try Shibnobi Inu.mint(devaddr, Shibnobi InuReward.div(10)) {
} catch (bytes memory reason) {     Shibnobi InuReward =
0;
    emit Shibnobi InuMintError(reason);
}
```

```
try Shibnobi Inu.mint(address(this), Shibnobi InuReward) {
} catch (bytes memory reason) {     Shibnobi InuReward =
0;
```

```
emit Shibnobi InuMintError(reason); }
```

In the case where totalSupply + amount does exceed MAXCAPSUPPLY, the mint will not be done. This means that the token supply could be capped at an amount slightly lower than MAXCAPSUPPLY.

Recommendation

Consider minting the difference between MAXCAPSUPPLY and totalSupply, if any.

```
uint256 Shibnobi InuReward = multiplier.mul(Shibnobi
InuPerBlock).mul(pool.allocPoint).div(total AllocPoint);
uint256 devReward = Shibnobi InuReward.div(10); uint256
totalRewards = Shibnobi
Inu.totalSupply().add(devReward).add(Shibnobi InuReward);

if (totalRewards  <= Shibnobi Inu.maxSupply()) {
   //  mint dev reward as normal as not at maxSupply
   Shibnobi Inu.mint(devaddr, devReward);
} else {
   // update Shibnobi InuReward to difference
   Shibnobi InuReward= Shibnobi Inu.maxSupply() - Shibnobi Inu.totalSupply();
}
if (Shibnobi InuReward != 0) {
   // only mint to MC and calculate and update accShibnobi InuPerShare if
Shibnobi InuReward is non 0     Shibnobi Inu.mint(address(this), Shibnobi
InuReward);     pool.accShibnobi InuPerShare = pool.accShibnobi
InuPerShare.add(Shibnobi InuReward.mul(1e18).div(pool.lpS upply)); }
pool.lastRewardBlock = block.number;
```

Resolution

ACKNOWLEDGED


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