



BitANT

Smart Contract Audit Report

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Disclaimer

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AUDITED DETAILS

Audited Project

| Project name | Token ticker | Blockchain |
|--------------|--------------|------------|
| BitANT | BitANT | Ethereum |

Addresses

| | |
|---------------------------|--|
| Contract address | 0x15ee120fd69bec86c1d38502299af7366a41d1a6 |
| Contract deployer address | 0x15Ee120fD69BEc86C1d38502299af7366a41D1a6 |

Project Website

<https://bitbtc.money/>

Codebase

<https://etherscan.io/address/0x15ee120fd69bec86c1d38502299af7366a41d1a6#code>

SUMMARY

The BitBTC Protocol is to solve the problems of the high price of BTC and slow transfer speed, the BitBTC Protocol proposes a solution to split BTC into BitBTC on the Ethereum through smart contracts, that is, 1BTC = 1 million BitBTC. BitBTC has faster transfer speed, lower transfer fees, is more suitable for micropayment, more energy saving, and more convenient participation in DeFi. BitBTC makes BTC simpler to buy everything. All exchange fees between BTC and BitBTC are used to repurchase and burn BitANT.

Contract Summary

Documentation Quality

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

- The technical description is provided clearly and structured and also don't have any high risk issue.

Code Quality

The Overall quality of the basecode is standard.

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

Test Coverage

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

Audit Findings Summary

- SWC-101 | It is recommended to use vetted safe math libraries for arithmetic operations consistently on lines 988, 1007, 1029, 1062, 1064, 1085, 1086, 1111, 1113, 1226, 1773, 1781, 1902, 1902, 1913, 1913, 1913, 2224, 2274, 2278, 2390, 2393, 2394, 2401, 2405, 2528, 2528, 2529, 2529, 2529, 1781, 2224, 2278, 2390, 2393 and 2394.
- SWC-103 | Pragma statements can be allowed to float when a contract is intended on lines 5.
- SWC-110 SWC-123 | It is recommended to use of revert(), assert(), and require() in Solidity, and the new REVERT opcode in the EVM on lines 2202, 2224, 2271, 2278, 2390, 2393 and 2394.
- SWC-120 | It is recommended to use external sources of randomness via oracles on lines 2235, 2248, 2393 and 2396.

CONCLUSION

We have audited the BitANT project released on October 2022 to discover issues and identify potential security vulnerabilities in BitANT 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 BitANT 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 arithmetic operation issues, a state variable visibility is not set, weak sources of randomness, and out-of-bounds array access which the index access expression can cause an exception in case of the use of an invalid array index value. We recommend to don't using any of those environment variables as sources of randomness and being aware that the use of 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. | ISSUE FOUND |
| 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. | 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. | ISSUE FOUND |
| 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. | PASS |
| Race Conditions | SWC-114 | Race Conditions and Transactions Order Dependency should not be possible. | PASS |
| 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. | PASS |
| 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. | PASS |
| Incorrect Constructor Name | SWC-118 | Constructors are special functions that are called only once during the contract creation. | PASS |
| Shadowing State Variable | SWC-119 | State variables should not be shadowed. | PASS |
| 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/. | PASS |
| 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. | PASS |
| 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. | PASS |
| 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. | PASS |
| Hash Collisions Variable | SWC-133 | Using <code>abi.encodePacked()</code> with multiple variable length arguments can, in certain situations, lead to a hash collision. | PASS |
| Hardcoded gas amount | SWC-134 | The <code>transfer()</code> and <code>send()</code> functions forward a fixed amount of 2300 gas. | PASS |
| Unencrypted Private Data | SWC-136 | It is a common misconception that private type variables cannot be read. | PASS |

SMART CONTRACT ANALYSIS

| | |
|------------------|--|
| Started | Wednesday Oct 05 2022 07:59:22 GMT+0000 (Coordinated Universal Time) |
| Finished | Thursday Oct 06 2022 17:25:27 GMT+0000 (Coordinated Universal Time) |
| Mode | Standard |
| Main Source File | BitANT.sol |

Detected Issues

| ID | Title | Severity | Status |
|---------|--------------------------------------|----------|--------------|
| SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED | low | acknowledged |
| SWC-101 | ARITHMETIC OPERATION "+" DISCOVERED | low | acknowledged |
| SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED | low | acknowledged |
| SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED | low | acknowledged |
| SWC-101 | ARITHMETIC OPERATION "+=" DISCOVERED | low | acknowledged |
| SWC-101 | ARITHMETIC OPERATION "+=" DISCOVERED | low | acknowledged |
| SWC-101 | ARITHMETIC OPERATION "+=" DISCOVERED | low | acknowledged |
| SWC-101 | ARITHMETIC OPERATION "+=" DISCOVERED | low | acknowledged |
| SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED | low | acknowledged |
| SWC-101 | ARITHMETIC OPERATION "-=" DISCOVERED | low | acknowledged |
| SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED | low | acknowledged |
| SWC-101 | ARITHMETIC OPERATION "+=" DISCOVERED | low | acknowledged |
| SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED | low | acknowledged |
| SWC-101 | ARITHMETIC OPERATION "+" DISCOVERED | low | acknowledged |
| SWC-101 | ARITHMETIC OPERATION "/" DISCOVERED | low | acknowledged |

| | | | |
|---------|---|-----|--------------|
| SWC-101 | ARITHMETIC OPERATION "+" DISCOVERED | low | acknowledged |
| SWC-101 | ARITHMETIC OPERATION "/" DISCOVERED | low | acknowledged |
| SWC-101 | ARITHMETIC OPERATION "%" DISCOVERED | low | acknowledged |
| SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED | low | acknowledged |
| SWC-101 | ARITHMETIC OPERATION "+" DISCOVERED | low | acknowledged |
| SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED | low | acknowledged |
| SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED | low | acknowledged |
| SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED | low | acknowledged |
| SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED | low | acknowledged |
| SWC-101 | ARITHMETIC OPERATION "+" DISCOVERED | low | acknowledged |
| SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED | low | acknowledged |
| SWC-101 | ARITHMETIC OPERATION "/" DISCOVERED | low | acknowledged |
| SWC-101 | ARITHMETIC OPERATION "*" DISCOVERED | low | acknowledged |
| SWC-101 | ARITHMETIC OPERATION "/" DISCOVERED | low | acknowledged |
| SWC-101 | ARITHMETIC OPERATION "*" DISCOVERED | low | acknowledged |
| SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED | low | acknowledged |
| SWC-101 | COMPILER-REWRITABLE "<UINT> - 1" DISCOVERED | low | acknowledged |

| | | | |
|---------|--|-----|--------------|
| SWC-101 | COMPILER-REWRITABLE "<UINT> - 1" DISCOVERED | low | acknowledged |
| SWC-101 | COMPILER-REWRITABLE "<UINT> - 1" DISCOVERED | low | acknowledged |
| SWC-101 | COMPILER-REWRITABLE "<UINT> - 1" DISCOVERED | low | acknowledged |
| SWC-101 | COMPILER-REWRITABLE "<UINT> - 1" DISCOVERED | low | acknowledged |
| SWC-101 | COMPILER-REWRITABLE "<UINT> - 1" DISCOVERED | low | acknowledged |
| SWC-103 | A FLOATING PRAGMA IS SET. | low | acknowledged |
| SWC-110 | OUT OF BOUNDS ARRAY ACCESS | low | acknowledged |
| SWC-110 | OUT OF BOUNDS ARRAY ACCESS | low | acknowledged |
| SWC-110 | OUT OF BOUNDS ARRAY ACCESS | low | acknowledged |
| SWC-110 | OUT OF BOUNDS ARRAY ACCESS | low | acknowledged |
| SWC-110 | OUT OF BOUNDS ARRAY ACCESS | low | acknowledged |
| SWC-110 | OUT OF BOUNDS ARRAY ACCESS | low | acknowledged |
| SWC-110 | OUT OF BOUNDS ARRAY ACCESS | low | acknowledged |
| SWC-110 | OUT OF BOUNDS ARRAY ACCESS | 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 | 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-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 988

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- BitANT.sol

Locations

```
987     unchecked {
988         _approve(sender, _msgSender(), currentAllowance - amount);
989     }
990
991     return true;
992
```

SWC-101 | ARITHMETIC OPERATION "+" DISCOVERED

LINE 1007

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- BitANT.sol

Locations

```
1006     function increaseAllowance(address spender, uint256 addedValue) public virtual
returns (bool) {
1007     _approve(_msgSender(), spender, _allowances[_msgSender()][spender] + addedValue);
1008     return true;
1009 }
1010
1011
```

SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 1029

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- BitANT.sol

Locations

```
1028 unchecked {  
1029   _approve(_msgSender(), spender, currentAllowance - subtractedValue);  
1030 }  
1031  
1032 return true;  
1033
```

SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 1062

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- BitANT.sol

Locations

```
1061 unchecked {  
1062   _balances[sender] = senderBalance - amount;  
1063 }  
1064 _balances[recipient] += amount;  
1065  
1066
```

SWC-101 | ARITHMETIC OPERATION "+=" DISCOVERED

LINE 1064

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- BitANT.sol

Locations

```
1063     }
1064     _balances[recipient] += amount;
1065
1066     emit Transfer(sender, recipient, amount);
1067
1068
```


SWC-101 | ARITHMETIC OPERATION "+=" DISCOVERED

LINE 1085

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- BitANT.sol

Locations

```
1084
1085     _totalSupply += amount;
1086     _balances[account] += amount;
1087     emit Transfer(address(0), account, amount);
1088
1089
```

SWC-101 | ARITHMETIC OPERATION "+=" DISCOVERED

LINE 1086

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- BitANT.sol

Locations

```
1085  _totalSupply += amount;  
1086  _balances[account] += amount;  
1087  emit Transfer(address(0), account, amount);  
1088  
1089  _afterTokenTransfer(address(0), account, amount);  
1090
```

SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 1111

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- BitANT.sol

Locations

```
1110 unchecked {  
1111   _balances[account] = accountBalance - amount;  
1112 }  
1113 _totalSupply -= amount;  
1114  
1115
```

SWC-101 | ARITHMETIC OPERATION "-=" DISCOVERED

LINE 1113

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- BitANT.sol

Locations

```
1112     }  
1113     _totalSupply -= amount;  
1114  
1115     emit Transfer(account, address(0), amount);  
1116  
1117
```

SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 1226

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- BitANT.sol

Locations

```
1225 unchecked {  
1226   _approve(account, _msgSender(), currentAllowance - amount);  
1227 }  
1228 _burn(account, amount);  
1229 }  
1230
```

SWC-101 | ARITHMETIC OPERATION "+=" DISCOVERED

LINE 1773

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- BitANT.sol

Locations

```
1772     unchecked {  
1773         counter._value += 1;  
1774     }  
1775 }  
1776  
1777
```

SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 1781

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- BitANT.sol

Locations

```
1780     unchecked {  
1781         counter._value = value - 1;  
1782     }  
1783 }  
1784  
1785
```

SWC-101 | ARITHMETIC OPERATION "+" DISCOVERED

LINE 1902

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- BitANT.sol

Locations

```
1901 // (a + b) / 2 can overflow.  
1902 return (a & b) + (a ^ b) / 2;  
1903 }  
1904  
1905 /**  
1906
```


SWC-101 | ARITHMETIC OPERATION "/" DISCOVERED

LINE 1902

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- BitANT.sol

Locations

```
1901 // (a + b) / 2 can overflow.  
1902 return (a & b) + (a ^ b) / 2;  
1903 }  
1904  
1905 /**  
1906
```

SWC-101 | ARITHMETIC OPERATION "+" DISCOVERED

LINE 1913

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- BitANT.sol

Locations

```
1912 // (a + b - 1) / b can overflow on addition, so we distribute.
1913 return a / b + (a % b == 0 ? 0 : 1);
1914 }
1915 }
1916
1917
```

SWC-101 | ARITHMETIC OPERATION "/" DISCOVERED

LINE 1913

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- BitANT.sol

Locations

```
1912 // (a + b - 1) / b can overflow on addition, so we distribute.  
1913 return a / b + (a % b == 0 ? 0 : 1);  
1914 }  
1915 }  
1916  
1917
```

SWC-101 | ARITHMETIC OPERATION "%" DISCOVERED

LINE 1913

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- BitANT.sol

Locations

```
1912 // (a + b - 1) / b can overflow on addition, so we distribute.
1913 return a / b + (a % b == 0 ? 0 : 1);
1914 }
1915 }
1916
1917
```

SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 2224

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- BitANT.sol

Locations

```
2223     uint256 pos = _checkpoints[account].length;
2224     return pos == 0 ? 0 : _checkpoints[account][pos - 1].votes;
2225 }
2226
2227 /**
2228
```

SWC-101 | ARITHMETIC OPERATION "+" DISCOVERED

LINE 2274

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- BitANT.sol

Locations

```
2273     } else {  
2274     low = mid + 1;  
2275     }  
2276     }  
2277  
2278
```

SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 2278

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- BitANT.sol

Locations

```
2277
2278     return high == 0 ? 0 : ckpts[high - 1].votes;
2279     }
2280
2281     /**
2282
```

SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 2390

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- BitANT.sol

Locations

```
2389     uint256 pos = ckpts.length;
2390     oldWeight = pos == 0 ? 0 : ckpts[pos - 1].votes;
2391     newWeight = op(oldWeight, delta);
2392
2393     if (pos > 0 && ckpts[pos - 1].fromBlock == block.number) {
2394
```


SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 2393

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- BitANT.sol

Locations

```
2392
2393   if (pos > 0 && ckpts[pos - 1].fromBlock == block.number) {
2394     ckpts[pos - 1].votes = SafeCastUpgradeable.toUint224(newWeight);
2395   } else {
2396     ckpts.push(Checkpoint({fromBlock: SafeCastUpgradeable.toUint32(block.number),
votes: SafeCastUpgradeable.toUint224(newWeight)}));
2397
```

SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 2394

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- BitANT.sol

Locations

```
2393   if (pos > 0 && ckpts[pos - 1].fromBlock == block.number) {
2394     ckpts[pos - 1].votes = SafeCastUpgradeable.toUint224(newWeight);
2395   } else {
2396     ckpts.push(Checkpoint({fromBlock: SafeCastUpgradeable.toUint32(block.number),
votes: SafeCastUpgradeable.toUint224(newWeight)}));
2397   }
2398
```

SWC-101 | ARITHMETIC OPERATION "+" DISCOVERED

LINE 2401

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- BitANT.sol

Locations

```
2400 function _add(uint256 a, uint256 b) private pure returns (uint256) {
2401     return a + b;
2402 }
2403
2404 function _subtract(uint256 a, uint256 b) private pure returns (uint256) {
2405
```

SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 2405

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- BitANT.sol

Locations

```
2404 function _subtract(uint256 a, uint256 b) private pure returns (uint256) {  
2405     return a - b;  
2406 }  
2407 uint256[47] private __gap;  
2408 }  
2409
```

SWC-101 | ARITHMETIC OPERATION "/" DISCOVERED

LINE 2528

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- BitANT.sol

Locations

```
2527     } else {  
2528     super._transfer(sender, _feeCollector, amount * _fee / FEE_RATIO);  
2529     super._transfer(sender, recipient, amount * (FEE_RATIO - _fee) / FEE_RATIO);  
2530     }  
2531     }  
2532
```

SWC-101 | ARITHMETIC OPERATION "*" DISCOVERED

LINE 2528

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- BitANT.sol

Locations

```
2527     } else {  
2528     super._transfer(sender, _feeCollector, amount * _fee / FEE_RATIO);  
2529     super._transfer(sender, recipient, amount * (FEE_RATIO - _fee) / FEE_RATIO);  
2530     }  
2531     }  
2532
```

SWC-101 | ARITHMETIC OPERATION "/" DISCOVERED

LINE 2529

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- BitANT.sol

Locations

```
2528 super._transfer(sender, _feeCollector, amount * _fee / FEE_RATIO);
2529 super._transfer(sender, recipient, amount * (FEE_RATIO - _fee) / FEE_RATIO);
2530 }
2531 }
2532
2533
```

SWC-101 | ARITHMETIC OPERATION "*" DISCOVERED

LINE 2529

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- BitANT.sol

Locations

```
2528 super._transfer(sender, _feeCollector, amount * _fee / FEE_RATIO);
2529 super._transfer(sender, recipient, amount * (FEE_RATIO - _fee) / FEE_RATIO);
2530 }
2531 }
2532
2533
```


SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 2529

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- BitANT.sol

Locations

```
2528 super._transfer(sender, _feeCollector, amount * _fee / FEE_RATIO);
2529 super._transfer(sender, recipient, amount * (FEE_RATIO - _fee) / FEE_RATIO);
2530 }
2531 }
2532
2533
```

SWC-101 | COMPILER-REWRITABLE "<UINT> - 1" DISCOVERED

LINE 1781

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- BitANT.sol

Locations

```
1780     unchecked {  
1781         counter._value = value - 1;  
1782     }  
1783 }  
1784  
1785
```

SWC-101 | COMPILER-REWRITABLE "<UINT> - 1" DISCOVERED

LINE 2224

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- BitANT.sol

Locations

```
2223     uint256 pos = _checkpoints[account].length;
2224     return pos == 0 ? 0 : _checkpoints[account][pos - 1].votes;
2225 }
2226
2227 /**
2228
```

SWC-101 | COMPILER-REWRITABLE "<UINT> - 1" DISCOVERED

LINE 2278

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- BitANT.sol

Locations

```
2277
2278     return high == 0 ? 0 : ckpts[high - 1].votes;
2279     }
2280
2281     /**
2282
```

SWC-101 | COMPILER-REWRITABLE "<UINT> - 1" DISCOVERED

LINE 2390

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- BitANT.sol

Locations

```
2389 uint256 pos = ckpts.length;
2390 oldWeight = pos == 0 ? 0 : ckpts[pos - 1].votes;
2391 newWeight = op(oldWeight, delta);
2392
2393 if (pos > 0 && ckpts[pos - 1].fromBlock == block.number) {
2394
```

SWC-101 | COMPILER-REWRITABLE "<UINT> - 1" DISCOVERED

LINE 2393

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- BitANT.sol

Locations

```
2392
2393   if (pos > 0 && ckpts[pos - 1].fromBlock == block.number) {
2394     ckpts[pos - 1].votes = SafeCastUpgradeable.toUint224(newWeight);
2395   } else {
2396     ckpts.push(Checkpoint({fromBlock: SafeCastUpgradeable.toUint32(block.number),
votes: SafeCastUpgradeable.toUint224(newWeight)}));
2397
```

SWC-101 | COMPILER-REWRITABLE "<UINT> - 1" DISCOVERED

LINE 2394

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- BitANT.sol

Locations

```
2393   if (pos > 0 && ckpts[pos - 1].fromBlock == block.number) {
2394     ckpts[pos - 1].votes = SafeCastUpgradeable.toUint224(newWeight);
2395   } else {
2396     ckpts.push(Checkpoint({fromBlock: SafeCastUpgradeable.toUint32(block.number),
votes: SafeCastUpgradeable.toUint224(newWeight)}));
2397   }
2398
```

SWC-103 | A FLOATING PRAGMA IS SET.

LINE 5

low SEVERITY

The current pragma Solidity directive is ""^0.8.0"". 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

- BitANT.sol

Locations

```
4
5  pragma solidity ^0.8.0;
6
7  // SPDX-License-Identifier: MIT
8
9
```


SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 2202

low SEVERITY

The index access expression can cause an exception in case of use of invalid array index value.

Source File

- BitANT.sol

Locations

```
2201  function checkpoints(address account, uint32 pos) public view virtual returns
(Checkpoint memory) {
2202  return _checkpoints[account][pos];
2203  }
2204
2205  /**
2206
```

SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 2224

low SEVERITY

The index access expression can cause an exception in case of use of invalid array index value.

Source File

- BitANT.sol

Locations

```
2223     uint256 pos = _checkpoints[account].length;
2224     return pos == 0 ? 0 : _checkpoints[account][pos - 1].votes;
2225 }
2226
2227 /**
2228
```

SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 2271

low SEVERITY

The index access expression can cause an exception in case of use of invalid array index value.

Source File

- BitANT.sol

Locations

```
2270 uint256 mid = MathUpgradeable.average(low, high);
2271 if (ckpts[mid].fromBlock > blockNumber) {
2272     high = mid;
2273 } else {
2274     low = mid + 1;
2275
```

SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 2278

low SEVERITY

The index access expression can cause an exception in case of use of invalid array index value.

Source File

- BitANT.sol

Locations

```
2277
2278     return high == 0 ? 0 : ckpts[high - 1].votes;
2279     }
2280
2281     /**
2282
```

SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 2390

low SEVERITY

The index access expression can cause an exception in case of use of invalid array index value.

Source File

- BitANT.sol

Locations

```
2389  uint256 pos = ckpts.length;
2390  oldWeight = pos == 0 ? 0 : ckpts[pos - 1].votes;
2391  newWeight = op(oldWeight, delta);
2392
2393  if (pos > 0 && ckpts[pos - 1].fromBlock == block.number) {
2394
```

SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 2393

low SEVERITY

The index access expression can cause an exception in case of use of invalid array index value.

Source File

- BitANT.sol

Locations

```
2392
2393   if (pos > 0 && ckpts[pos - 1].fromBlock == block.number) {
2394     ckpts[pos - 1].votes = SafeCastUpgradeable.toUint224(newWeight);
2395   } else {
2396     ckpts.push(Checkpoint({fromBlock: SafeCastUpgradeable.toUint32(block.number),
votes: SafeCastUpgradeable.toUint224(newWeight)}));
2397
```

SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 2394

low SEVERITY

The index access expression can cause an exception in case of use of invalid array index value.

Source File

- BitANT.sol

Locations

```
2393   if (pos > 0 && ckpts[pos - 1].fromBlock == block.number) {
2394     ckpts[pos - 1].votes = SafeCastUpgradeable.toUint224(newWeight);
2395   } else {
2396     ckpts.push(Checkpoint({fromBlock: SafeCastUpgradeable.toUint32(block.number),
votes: SafeCastUpgradeable.toUint224(newWeight)}));
2397   }
2398
```

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

LINE 2235

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

- BitANT.sol

Locations

```
2234 function getPastVotes(address account, uint256 blockNumber) public view returns
(uint256) {
2235     require(blockNumber < block.number, "ERC20Votes: block not yet mined");
2236     return _checkpointsLookup(_checkpoints[account], blockNumber);
2237 }
2238
2239
```


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

LINE 2248

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

- BitANT.sol

Locations

```
2247 function getPastTotalSupply(uint256 blockNumber) public view returns (uint256) {  
2248     require(blockNumber < block.number, "ERC20Votes: block not yet mined");  
2249     return _checkpointsLookup(_totalSupplyCheckpoints, blockNumber);  
2250 }  
2251  
2252
```

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

LINE 2393

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

- BitANT.sol

Locations

```
2392
2393  if (pos > 0 && ckpts[pos - 1].fromBlock == block.number) {
2394  ckpts[pos - 1].votes = SafeCastUpgradeable.toUint224(newWeight);
2395  } else {
2396  ckpts.push(Checkpoint({fromBlock: SafeCastUpgradeable.toUint32(block.number),
votes: SafeCastUpgradeable.toUint224(newWeight)}));
2397
```

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

LINE 2396

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

- BitANT.sol

Locations

```
2395     } else {  
2396     ckpts.push(Checkpoint({fromBlock: SafeCastUpgradeable.toUint32(block.number),  
votes: SafeCastUpgradeable.toUint224(newWeight)}));  
2397     }  
2398     }  
2399  
2400
```

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