Armors Labs

HBTToken

Smart Contract Audit

HBTToken Audit Summary

Project name : HBTToken Contract

Project address: None

Code URL : https://bscscan.com/address/0x94ab0513efb4a8143c3455ad89decf7853746f15#code

Commit : None

Project target : HBTToken Contract Audit

Blockchain : Binance Smart Chain（BSC）

Test result : PASSED

Audit Info

Audit NO : 0X202304030026

Audit Team : Armors Labs

Audit Proofreading: https://armors.io/#project-cases

HBTToken Audit

The HBTToken team asked us to review and audit their HBTToken contract. We looked at the code and now publish our results.

Here is our assessment and recommendations, in order of importance.

Document information

Name	Auditor	Version	Date
HBTToken Audit	Rock, Sophia, Rushairer, Rico, David, Alice	1.0.0	2023-04-03

Audit results

Note that as of the date of publishing, the above review reflects the current understanding of known security patterns as they relate to the HBTToken contract. The above should not be construed as investment advice.

Based on the widely recognized security status of the current underlying blockchain and smart contract, this audit report is valid for 3 months from the date of output.

Disclaimer

Armors Labs Reports is not and should not be regarded as an "approval" or "disapproval" of any particular project or team. These reports are not and should not be regarded as indicators of the economy or value of any "product" or "asset" created by any team. Armors do not cover testing or auditing the integration with external contract or services (such as Unicrypt, Uniswap, PancakeSwap etc'…)

Armors Labs Reports represent an extensive auditing process intending to help our customers increase the quality of their code while reducing the high level of risk presented by cryptographic tokens and blockchain technology. Armors does not guarantee the safety or functionality of the technology agreed to be analyzed.

Armors Labs postulates that the information provided is not missing, tampered, deleted or hidden. If the information provided is missing, tampered, deleted, hidden or reflected in a way that is not consistent with the actual situation, Armors Labs shall not be responsible for the losses and adverse effects caused. Armors Labs Audits should not be used in any way to make decisions around investment or involvement with any particular project. These reports in no way provide investment advice, nor should be leveraged as investment advice of any sort.

Audited target file

file	md5
HBTToken.sol	833b71a62ac58ee8a7aaf9797d9de742

Vulnerability analysis

Vulnerability distribution

vulnerability level	number
Critical severity	0
High severity	0
Medium severity	0
Low severity	0

Summary of audit results

Vulnerability	status
Re-Entrancy	safe
Arithmetic Over/Under Flows	safe
Unexpected Blockchain Currency	safe
Delegatecall	safe
Default Visibilities	safe
Entropy Illusion	safe
External Contract Referencing	safe
Short Address/Parameter Attack	safe
Unchecked CALL Return Values	safe
Race Conditions / Front Running	safe
Denial Of Service (DOS)	safe

Vulnerability	status
Block Timestamp Manipulation	safe
Constructors with Care	safe
Unintialised Storage Pointers	safe
Floating Points and Numerical Precision	safe
tx.origin Authentication	safe
Permission restrictions	safe

Contract file

```
        /**
 *Submitted for verification at BscScan.com on 2022-11-18
*/

// SPDX-License-Identifier: MIT

pragma solidity ^0.8.0;

/*
 * @dev Provides information about the current execution context, including the
 * sender of the transaction and its data. While these are generally available
 * via msg.sender and msg.data, they should not be accessed in such a direct
 * manner, since when dealing with meta-transactions the account sending and
 * paying for execution may not be the actual sender (as far as an application
 * is concerned).
 *
 * This contract is only required for intermediate, library-like contracts.
 */
abstract contract Context {
    function _msgSender() internal view virtual returns (address) {
        return msg.sender;
    }

    function _msgData() internal view virtual returns (bytes calldata) {
        this; // silence state mutability warning without generating bytecode - see https://github.co
        return msg.data;
    }
}

// File: @openzeppelin/contracts/access/Ownable.sol


pragma solidity ^0.8.0;

        /**
 * @dev Contract module which provides            a         basic access control mechanism, where
 * there is            an          account (          an             owner) that can be granted exclu:
 * specific functions.
 *
 * By default,            the          owner account          will          be          the
 * can later be changed with {transferOwnership}.
 *
```

```
 * This module is used through inheritance. It          will         make available          the
 * `onlyOwner`, which can be applied to          your         functions to restrict their use to
 *          the          owner.
 */
abstract contract Ownable is Context {
    address private _owner;

    event OwnershipTransferred(address indexed previousOwner, address indexed newOwner);

            /**
  * @dev Initializes          the          contract setting          the          deployer as
  */
    constructor () {
        address msgSender = _msgSender();
        _owner = msgSender;
        emit OwnershipTransferred(address(0), msgSender);
    }

            /**
  * @dev Returns          the          address of          the          current owner.
  */
    function owner() public view virtual returns (address) {
        return _owner;
    }

            /**
  * @dev Throws if called by any account other than          the          owner.
  */
    modifier onlyOwner() {
        require(owner() == _msgSender(), "Ownable: caller is not the owner");
        _;
    }

            /**
  * @dev Leaves          the          contract without owner. It          will          not b
  * `onlyOwner` functions anymore. Can only be called by          the          current owner.
  *
  *          NOTE:          Renouncing ownership          will          leave
  * thereby removing any functionality that is only available to          the          owner.
  */
    function renounceOwnership() public virtual onlyOwner {
        emit OwnershipTransferred(_owner, address(0));
        _owner = address(0);
    }

            /**
  * @dev Transfers ownership of          the          contract to          a          new ac
  * Can only be called by          the          current owner.
  */
    function transferOwnership(address newOwner) public virtual onlyOwner {
        require(newOwner != address(0), "Ownable: new owner is the zero address");
        emit OwnershipTransferred(_owner, newOwner);
        _owner = newOwner;
    }
}

// File: contracts/token/BEP20/lib/IBEP20.sol
```

```solidity
pragma solidity ^0.8.0;

        /**
 * @dev Interface of              the              BEP standard.
 */
interface IBEP20 {

          /**
  * @dev Returns            the            token name.
  */
    function name() external view returns (string memory);

          /**
  * @dev Returns            the            token symbol.
  */
    function symbol() external view returns (string memory);

          /**
  * @dev Returns            the            token decimals.
  */
    function decimals() external view returns (uint8);

          /**
  * @dev Returns            the            amount of tokens in existence.
  */
    function totalSupply() external view returns (uint256);

          /**
  * @dev Returns            the            amount of tokens owned by `account`.
  */
    function balanceOf(address account) external view returns (uint256);

          /**
  * @dev Returns            the            token owner.
  */
    function getOwner() external view returns (address);

          /**
  * @dev Moves `amount` tokens from          the          caller's account to `recipient`.
  *
  * Returns          a          boolean value indicating whether          the          opera
  *
  * Emits          a          {Transfer} event.
  */
    function transfer(address recipient, uint256 amount) external returns (bool);

          /**
  * @dev Moves `amount` tokens from `sender` to `recipient` using          the
  * allowance mechanism. `amount` is then deducted from          the          caller's
  * allowance.
  *
  * Returns          a          boolean value indicating whether          the          opera
  *
```

```solidity
     * Emits            a              {Transfer} event.
     */
    function transferFrom(address sender, address recipient, uint256 amount) external returns (bool);

            /**
     * @dev Sets `amount` as            the          allowance of `spender` over            the
     *
     * Returns            a            boolean value indicating whether            the            opera
     *
     * IMPORTANT: Beware that changing            an            allowance with this method brings
     * that someone may use both            the          old and            the            new allov
     * transaction ordering. One possible solution to mitigate this race
     * condition is to first reduce            the          spender's allowance to 0 and set            the
     * desired value afterwards:
     * https://github.com/ethereum/EIPs/issues/20#issuecomment-263524729
     *
     * Emits            an            {Approval} event.
     */
    function approve(address spender, uint256 amount) external returns (bool);

            /**
     * @dev Returns            the            remaining number of tokens that `spender`            will
     * allowed to spend on behalf of `owner` through {transferFrom}. This is
     * zero by default.
     *
     * This value changes when {approve} or {transferFrom}            are            called.
     */
    function allowance(address _owner, address spender) external view returns (uint256);

            /**
     * @dev Emitted when `value` tokens            are            moved from one account (`from`) to
     * another (`to`).
     *
     * Note that `value` may be zero.
     */
    event Transfer(address indexed from, address indexed to, uint256 value);

            /**
     * @dev Emitted when            the            allowance of            a            `spender` for
     *            a            call to {approve}. `value` is            the            new allowance.
     */
    event Approval(address indexed owner, address indexed spender, uint256 value);
}

// File: contracts/token/BEP20/lib/BEP20.sol


pragma solidity ^0.8.0;


            /**
     * @dev Implementation of            the            {IBEP20} interface.
     *
```

```
 * This implementation is agnostic to          the          way tokens          a
 * that          a          supply mechanism has to be added in          a          derived co
 *
 * We have followed general OpenZeppelin guidelines: functions revert instead
 * of returning `false` on failure. This behavior is nonetheless conventional
 * and does not conflict with          the          expectations of BEP20 applications.
 *
 * Additionally,          an          {Approval} event is emitted on calls to {transferFrom}.
 * This allows applications to reconstruct          the          allowance for all accounts          j
 * by listening to said events. Other implementations of          the          EIP may not emit
 * these events, as it          isn't          required by          the          specification.
 *
 * Finally,          the          non-standard {decreaseAllowance} and {increaseAllowance}
 * functions have been added to mitigate          the          well-known issues around setting
 * allowances. See {IBEP20-approve}.
 */
contract BEP20 is Ownable, IBEP20 {
    mapping (address => uint256) private _balances;

    mapping (address => mapping (address => uint256)) private _allowances;

    uint256 private _totalSupply;

    string private _name;
    string private _symbol;
    uint8 private _decimals;

            /**
 * @dev Sets          the          values for {name} and {symbol}, initializes {decimals} with
 *          a          default value of 18.
 *
 * To select          a          different value for {decimals}, use {_setupDecimals}.
 *
 * All three of these values          are          immutable:          they          can only
 * construction.
 */
    constructor (string memory name_, string memory symbol_) {
        _name = name_;
        _symbol = symbol_;
        _decimals = 18;
    }

            /**
 * @dev Returns          the          name of          the          token.
 */
    function name() public view override returns (string memory) {
        return _name;
    }

            /**
 * @dev Returns          the          symbol of          the          token, usually
 * name.
 */
    function symbol() public view override returns (string memory) {
        return _symbol;
    }
```

```
            /**
 * @dev Returns          the          number of decimals used to get its user representation.
 * For example, if `decimals` equals `2`,          a          balance of `505` tokens          shou
 * be displayed to          a          user as `5,05` (`505 / 10 ** 2`).
 *
 * Tokens usually opt for          a          value of 18, imitating          the          rela
 * Ether and Wei. This is          the          value {BEP20} uses, unless {_setupDecimals} is
 * called.
 *
 *          NOTE:          This information is only used for _display_ purposes: it in
 * no way affects any of          the          arithmetic of          the          contract, in
 * {IBEP20-balanceOf} and {IBEP20-transfer}.
 */
  function decimals() public view override returns (uint8) {
      return _decimals;
  }

            /**
 * @dev See {IBEP20-totalSupply}.
 */
  function totalSupply() public view override returns (uint256) {
      return _totalSupply;
  }

            /**
 * @dev See {IBEP20-balanceOf}.
 */
  function balanceOf(address account) public view override returns (uint256) {
      return _balances[account];
  }

            /**
 * @dev See {IBEP20-getOwner}.
 */
  function getOwner() public view override returns (address) {
      return owner();
  }

            /**
 * @dev See {IBEP20-transfer}.
 *
 * Requirements:
 *
 * - `recipient` cannot be          the          zero address.
 * -          the          caller must have          a          balance of at least `amount`.
 */
  function transfer(address recipient, uint256 amount) public virtual override returns (bool) {
      _transfer(_msgSender(), recipient, amount);
      return true;
  }

            /**
 * @dev See {IBEP20-transferFrom}.
 *
```

*Emits an {Approval} event indicating the updated allow

*required by the EIP. See the note at the

*

*Requirements:

*

*- `sender` and `recipient` cannot be the zero address.

*- `sender` must have a balance of at least `amount`.

*- the caller must have allowance for ``sender``'s tokens of at least

*`amount`.

*/

```
function transferFrom(address sender, address recipient, uint256 amount) public virtual override
    _transfer(sender, recipient, amount);

    uint256 currentAllowance = _allowances[sender][_msgSender()];
    require(currentAllowance >= amount, "BEP20: transfer amount exceeds allowance");
    _approve(sender, _msgSender(), currentAllowance - amount);

    return true;
}
```

/**

*@dev See {IBEP20-approve}.

*

*Requirements:

*

*- `spender` cannot be the zero address.

*/

```
function approve(address spender, uint256 amount) public virtual override returns (bool) {
    _approve(_msgSender(), spender, amount);
    return true;
}
```

/**

*@dev See {IBEP20-allowance}.

*/

```
function allowance(address owner, address spender) public view virtual override returns (uint256)
    return _allowances[owner][spender];
}
```

/**

*@dev Atomically increases the allowance granted to `spender` by t

*

*This is an alternative to {approve} that can be used as a

*problems described in {IBEP20-approve}.

*

*Emits an {Approval} event indicating the updated allow

*

*Requirements:

*

*- `spender` cannot be the zero address.

*/

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

```
              /**
 * @dev Atomically decreases        the           allowance granted to `spender` by
 *
 * This is           an           alternative to {approve} that can be used as          a
 * problems described in {IBEP20-approve}.
 *
 * Emits          an           {Approval} event indicating          the           updated allow
 *
 * Requirements:
 *
 * - `spender` cannot be        the           zero address.
 * - `spender` must have allowance for          the           caller of at least
 * `subtractedValue`.
 */
  function decreaseAllowance(address spender, uint256 subtractedValue) public virtual returns (bool
      uint256 currentAllowance = _allowances[_msgSender()][spender];
      require(currentAllowance >= subtractedValue, "BEP20: decreased allowance below zero");
      _approve(_msgSender(), spender, currentAllowance - subtractedValue);

      return true;
  }

          /**
 * @dev Moves tokens `amount` from `sender` to `recipient`.
 *
 * This is internal function is equivalent to {transfer}, and can be used to
 * e.g. implement automatic token fees, slashing mechanisms, etc.
 *
 * Emits          a           {Transfer} event.
 *
 * Requirements:
 *
 * - `sender` cannot be          the           zero address.
 * - `recipient` cannot be          the           zero address.
 * - `sender` must have          a           balance of at least `amount`.
 */
  function _transfer(address sender, address recipient, uint256 amount) internal virtual {
      require(sender != address(0), "BEP20: transfer from the zero address");
      require(recipient != address(0), "BEP20: transfer to the zero address");

      _beforeTokenTransfer(sender, recipient, amount);

      uint256 senderBalance = _balances[sender];
      require(senderBalance >= amount, "BEP20: transfer amount exceeds balance");
      _balances[sender] = senderBalance - amount;
      _balances[recipient] += amount;

      emit Transfer(sender, recipient, amount);
  }

          /** @dev Creates `amount` tokens and assigns them to `account`, increasing
 *          the           total supply.
 *
 * Emits          a           {Transfer} event with `from` set to          the           zero add
 *
```

```
* Requirements:
*
* - `to` cannot be                the                zero address.
*/
  function _mint(address account, uint256 amount) internal virtual {
      require(account != address(0), "BEP20: mint to the zero address");

      _beforeTokenTransfer(address(0), account, amount);

      _totalSupply += amount;
      _balances[account] += amount;
      emit Transfer(address(0), account, amount);
  }

          /**
* @dev Destroys `amount` tokens from `account`, reducing          the
* total supply.
*
* Emits          a          {Transfer} event with `to` set to          the          zero addres
*
* Requirements:
*
* - `account` cannot be          the          zero address.
* - `account` must have at least `amount` tokens.
*/
  function _burn(address account, uint256 amount) internal virtual {
      require(account != address(0), "BEP20: burn from the zero address");

      _beforeTokenTransfer(account, address(0), amount);

      uint256 accountBalance = _balances[account];
      require(accountBalance >= amount, "BEP20: burn amount exceeds balance");
      _balances[account] = accountBalance - amount;
      _totalSupply -= amount;

      emit Transfer(account, address(0), amount);
  }

          /**
* @dev Sets `amount` as          the          allowance of `spender` over          the
*
* This internal function is equivalent to `approve`, and can be used to
* e.g. set automatic allowances for certain subsystems, etc.
*
* Emits          an          {Approval} event.
*
* Requirements:
*
* - `owner` cannot be          the          zero address.
* - `spender` cannot be          the          zero address.
*/
  function _approve(address owner, address spender, uint256 amount) internal virtual {
      require(owner != address(0), "BEP20: approve from the zero address");
      require(spender != address(0), "BEP20: approve to the zero address");

      _allowances[owner][spender] = amount;
      emit Approval(owner, spender, amount);
```

```
                    }

                    /**
    * @dev Sets {decimals} to                a            value other than              the            defaul
    *
    * WARNING: This function            should              only be called from            the
    * applications that interact with token contracts            will            not expect
    * {decimals} to ever change, and may work incorrectly if it does.
    */
      function _setupDecimals(uint8 decimals_) internal {
          _decimals = decimals_;
      }

                    /**
    * @dev Hook that is called before any transfer of tokens. This includes
    * minting and burning.
    *
    * Calling conditions:
    *
    * - when `from` and `to`            are            both non-zero, `amount` of ``from``'s tokens
    *            will            be to transferred to `to`.
    * - when `from` is zero, `amount` tokens            will            be minted for `to`.
    * - when `to` is zero, `amount` of ``from``'s tokens            will            be burned.
    * - `from` and `to`            are            never both zero.
    *
    * To learn            more            about hooks, head to xref:ROOT:extending-contracts.adoc#using-ho
    */
      function _beforeTokenTransfer(address from, address to, uint256 amount) internal virtual { }
}

// File: contracts/token/BEP20/lib/BEP20Burnable.sol


pragma solidity ^0.8.0;


            /**
 * @dev Extension of {BEP20} that allows token holders to destroy both their own
 * tokens and those that            they            have            an            allowance for, in
 * recognized off-chain (via event analysis).
 */
abstract contract BEP20Burnable is BEP20 {
                /**
    * @dev Destroys `amount` tokens from            the            caller.
    *
    * See {BEP20-_burn}.
    */
      function burn(uint256 amount) public virtual {
          _burn(_msgSender(), amount);
      }

}

pragma solidity ^0.8.0;
```

```
contract HBTToken is BEP20Burnable {

    constructor ()
    BEP20("Hebeto", "HBT")
    {
        uint8 decimals = 18;
        uint256 initialBalance = 120000000 * 10 ** decimals;
        _setupDecimals(decimals);
        _mint(_msgSender(), initialBalance);
    }

    bool public onlyOwnerCanBurn = true;

    event SetOnlyOwnerCanBurn(bool onlyOwnerCanBurn);

    function setOnlyOwnerCanBurn(bool _onlyOwnerCanBurn) public onlyOwner {
        onlyOwnerCanBurn = _onlyOwnerCanBurn;
        emit SetOnlyOwnerCanBurn(_onlyOwnerCanBurn);
    }

    function _burn(address account, uint256 amount) internal override {
        if (onlyOwnerCanBurn) require(_msgSender() == getOwner(), "Only owner can burn");
        return super._burn(account, amount);
    }
}
```

Analysis of audit results

Re-Entrancy

- **Description:**
  One of the features of smart contracts is the ability to call and utilise code of other external contracts. Contracts also typically handle Blockchain Currency, and as such often send Blockchain Currency to various external user addresses. The operation of calling external contracts, or sending Blockchain Currency to an address, requires the contract to submit an external call. These external calls can be hijacked by attackers whereby they force the contract to execute further code (i.e. through a fallback function) , including calls back into itself. Thus the code execution "re-enters" the contract. Attacks of this kind were used in the infamous DAO hack.

- **Detection results:**

  ```
  PASSED!
  ```

- **Security suggestion:**
  no.

Arithmetic Over/Under Flows

- **Description:**
  The Virtual Machine (EVM) specifies fixed-size data types for integers. This means that an integer variable, only has a certain range of numbers it can represent. A uint8 for example, can only store numbers in the range [0,255]. Trying to store 256 into a uint8 will result in 0. If care is not taken, variables in Solidity can be exploited if user input is unchecked and calculations are performed which result in numbers that lie outside the range of the data type that stores them.

- **Detection results:**

  ```
  PASSED!
  ```

- **Security suggestion:**
  no.

Unexpected Blockchain Currency

- **Description:**
  Typically when Blockchain Currency is sent to a contract, it must execute either the fallback function, or another function described in the contract. There are two exceptions to this, where Blockchain Currency can exist in a contract without having executed any code. Contracts which rely on code execution for every Blockchain Currency sent to the contract can be vulnerable to attacks where Blockchain Currency is forcibly sent to a contract.
- **Detection results:**

  PASSED !

- **Security suggestion:** no.

Delegatecall

- **Description:**
  The CALL and DELEGATECALL opcodes are useful in allowing developers to modularise their code. Standard external message calls to contracts are handled by the CALL opcode whereby code is run in the context of the external contract/function. The DELEGATECALL opcode is identical to the standard message call, except that the code executed at the targeted address is run in the context of the calling contract along with the fact that msg.sender and msg.value remain unchanged. This feature enables the implementation of libraries whereby developers can create reusable code for future contracts.
- **Detection results:**

  PASSED !

- **Security suggestion:** no.

Default Visibilities

- **Description:**
  Functions in Solidity have visibility specifiers which dictate how functions are allowed to be called. The visibility determines whBlockchain Currency a function can be called externally by users, by other derived contracts, only internally or only externally. There are four visibility specifiers, which are described in detail in the Solidity Docs. Functions default to public allowing users to call them externally. Incorrect use of visibility specifiers can lead to some devestating vulernabilities in smart contracts as will be discussed in this section.
- **Detection results:**

  PASSED !

- **Security suggestion:**
  no.

Entropy Illusion

- **Description:**

  All transactions on the blockchain are deterministic state transition operations. Meaning that every transaction modifies the global state of the ecosystem and it does so in a calculable way with no uncertainty. This ultimately means that inside the blockchain ecosystem there is no source of entropy or randomness. There is no rand() function in Solidity. Achieving decentralised entropy (randomness) is a well established problem and many ideas have been proposed to address this (see for example, RandDAO or using a chain of Hashes as described by Vitalik in this post).

- **Detection results:**

  PASSED!

- **Security suggestion:**

  no.

External Contract Referencing

- **Description:**

  One of the benefits of the global computer is the ability to re-use code and interact with contracts already deployed on the network. As a result, a large number of contracts reference external contracts and in general operation use external message calls to interact with these contracts. These external message calls can mask malicious actors intentions in some non-obvious ways, which we will discuss.

- **Detection results:**

  PASSED!

- **Security suggestion:**

  no.

Unsolved TODO comments

- **Description:**

  Check for Unsolved TODO comments

- **Detection results:**

  PASSED!

- **Security suggestion:**

  no.

Short Address/Parameter Attack

- **Description:**

  This attack is not specifically performed on Solidity contracts themselves but on third party applications that may interact with them. I add this attack for completeness and to be aware of how parameters can be manipulated in contracts.

- **Detection results:**

  PASSED!

- **Security suggestion:**

  no.

Unchecked CALL Return Values

- **Description:**

  There a number of ways of performing external calls in solidity. Sending Blockchain Currency to external accounts is commonly performed via the transfer() method. However, the send() function can also be used and, for more versatile external calls, the CALL opcode can be directly employed in solidity. The call() and send() functions return a boolean indicating if the call succeeded or failed. Thus these functions have a simple caveat, in that the transaction that executes these functions will not revert if the external call (intialised by call() or send()) fails, rather the call() or send() will simply return false. A common pitfall arises when the return value is not checked, rather the developer expects a revert to occur.

- **Detection results:**

  PASSED !

- **Security suggestion:**

  no.

Race Conditions / Front Running

- **Description:**

  The combination of external calls to other contracts and the multi-user nature of the underlying blockchain gives rise to a variety of potential Solidity pitfalls whereby users race code execution to obtain unexpected states. Re-Entrancy is one example of such a race condition. In this section we will talk more generally about different kinds of race conditions that can occur on the blockchain. There is a variety of good posts on this subject, a few are: Wiki - Safety, DASP - Front-Running and the Consensus - Smart Contract Best Practices.

- **Detection results:**

  PASSED !

- **Security suggestion:**

  no.

Denial Of Service (DOS)

- **Description:**

  This category is very broad, but fundamentally consists of attacks where users can leave the contract inoperable for a small period of time, or in some cases, permanently. This can trap Blockchain Currency in these contracts forever, as was the case with the Second Parity MultiSig hack

- **Detection results:**

  PASSED !

- **Security suggestion:**

  no.

Block Timestamp Manipulation

- **Description:**

  Block timestamps have historically been used for a variety of applications, such as entropy for random numbers (see the Entropy Illusion section for further details), locking funds for periods of time and various state-changing

conditional statements that are time-dependent. Miner's have the ability to adjust timestamps slightly which can prove to be quite dangerous if block timestamps are used incorrectly in smart contracts.

- **Detection results:**

  PASSED!

- **Security suggestion:**
  no.

Constructors with Care

- **Description:**
  Constructors are special functions which often perform critical, privileged tasks when initialising contracts. Before solidity v0.4.22 constructors were defined as functions that had the same name as the contract that contained them. Thus, when a contract name gets changed in development, if the constructor name isn't changed, it becomes a normal, callable function. As you can imagine, this can (and has) lead to some interesting contract hacks.

- **Detection results:**

  PASSED!

- **Security suggestion:**
  no.

Unintialised Storage Pointers

- **Description:**
  The EVM stores data either as storage or as memory. Understanding exactly how this is done and the default types for local variables of functions is highly recommended when developing contracts. This is because it is possible to produce vulnerable contracts by inappropriately intialising variables.

- **Detection results:**

  PASSED!

- **Security suggestion:**
  no.

Floating Points and Numerical Precision

- **Description:**
  As of this writing (Solidity v0.4.24), fixed point or floating point numbers are not supported. This means that floating point representations must be made with the integer types in Solidity. This can lead to errors/vulnerabilities if not implemented correctly.

- **Detection results:**

  PASSED!

- **Security suggestion:**
  no.

tx.origin Authentication

- **Description:**

  Solidity has a global variable, tx.origin which traverses the entire call stack and returns the address of the account that originally sent the call (or transaction). Using this variable for authentication in smart contracts leaves the contract vulnerable to a phishing-like attack.

- **Detection results:**

  PASSED!

- **Security suggestion:**

  no.

Permission restrictions

- **Description:**

  Contract managers who can control liquidity or pledge pools, etc., or impose unreasonable restrictions on other users.

- **Detection results:**

  PASSED!

- **Security suggestion:**

  no.

armors.io

contact@armors.io