INTRODUCING

T R E X • R E X • M R E X

written by the REX community
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NETWORK

Name: Smart Chain (Binance) / “BSC”
Network Name: Smart Chain
RPC URL: https://bsc-dataseed.binance.org/
ChainID: 56 | Symbol: BNB
Block Explorer URL: https://bscscan.com/

CONTRACT ADDRESSES

REX (REX): (to be deployed)
TREX (TREX): (to be deployed)
MREX (MREX): 0x76837D56D1105bb493CDDbEFeDDf136e7c34f0c4
REX Daily Auctions (RDA): (to be deployed)
REX stake DEX (DEX): (to be deployed)
REX Airdrop (AIR): (to be deployed)
CRYPTOCURRENCY
TRADEABLE CERTIFICATE OF DEPOSIT
FLEXIBLE INTERNET BOND

REX is an ethical, decentralized and permissionless cryptocurrency, that may be received, held and sent without any restrictions.

In addition, unlike Bitcoin, REX natively provides properties of a certificate of deposit (CD) and a bond. Today, as a simplification, REX would be called an internet bond. However, compared to bonds in traditional finance, REX offers extended flexibility and additional features. REX might also be called a staking token, in crypto speech.

Special features of REX deposits (“stakes”)

- Stakes may be named
- Interest may be withdrawn from active stakes anytime
- Active stakes may be transferred to other addresses
- Active stakes may be sold on a native DEX for deposits
- Interest rates may be boosted with supportive tokens

The REX ecosystem consists of trustless, ownerless and unchangeable smart contracts. They run on a blockchain, the “Binance Smart Chain”, and provide functions for interaction. The standard interface for its usage is the official website. A wallet (like MetaMask) is needed to receive, hold, send and manage REX and REX deposits.

This technical paper explains all functions and features of the REX ecosystem. It shall be helpful, useful and profitable to fully read and understand it. REX is made by the community for the community. Feel free to use it.

Requirements

Users will need to operate a wallet and hold BNB (BSC native currency) in this wallet to execute functions (pay the blockchain gas fees). REX contracts also use BUSD token to take part in auctions, pay fees, use the DEX, therefore it is recommended to hold BUSD.
1. INTRODUCTION

This document is a general technical specification of REX and its functionality.

After reading this specification, further questions may arise. Please feel free to ask the community on telegram, discord or twitter. Find the links on the main website. All interested, respectful parties are warmly welcomed to the community.

To learn about the background and purpose of REX, visit medium.com to read:

REX: A hybrid-interest blockchain certificate-of-deposit

Mainnet launch of REX on Binance Smart Chain is scheduled for Jan 21, 2022

1.1. INTERACTION WITH SMART CONTRACTS

READ CAREFULLY to understand risks and how to avoid them.

⚠ Always do your own research (DYOR). Take responsibility for your actions.
⚠ Never consider other people’s words/messages/posts as financial advice (NFA).

⚠ Be aware, people do steal identities, fake accounts and deceive.
⚠ ONCE you reveal your private keys, seed phrases, passwords or any sensitive data or personal information to anyone, for whatever reason, or connect your wallet to any third-party website, app or service, all your funds can be stolen.

⚠ Always take all the time you need to do your own research. Don’t let people rush you.
⚠ When using the website/app, make sure it is an official one and the domain is written correctly.

⚠ Don’t interact with REX smart contracts, if prohibited by any law or regulation.
⚠ REX smart contracts run on decentralized blockchains. Those blockchains are to be considered “third party” and their availability cannot be and is not guaranteed at any time.
⚠ REX smart contracts might be used via main website, but its availability - although well designed and protected - cannot be and is not guaranteed at any time.

⚠ Read rex-token.com/safety for a detailed instructions on safety.

⚠ Cryptocurrencies should be considered a new technology bearing immense risk, including total loss of tokens or their values (“funds”). Always apply the general rules for investments.

⚠ Read rex-token.com/investment-rules for a detailed information.
2. ABOUT REX AND REX SMART CONTRACTS

REX

- REX is a blockchain-based advanced high-interest flexible staking ecosystem.
- REX is not an organization, institution or person.
- REX is a set of decentralized, unchangeable and irrevocable smart contracts.
- REX is immutable code. Thoroughly tested, proven and made public.
- REX source code is packed with English comments, so everybody may understand it.
- REX source code may be examined by everyone to decide whether to interact with it.

REX smart contracts

- audited, no-admin, built-to-last
- completely non-custodial, immutable, verifiable security
- not being controlled by any person or institution or organization
- provides several functions to interact with it via apps and websites
- standard user interface: main website

Once deployed, initialized and "ownershipRenounced," REX contracts have no functionality granted to the deploying account and no administrative keys and are unchangeable forever. All users, including the developers, have precisely equal access to the contract’s functionality.

Time is tracked by the contracts in whole day increments, beginning at REX DAY 0, which starts at the set LAUNCH_TIME (defined as unix time) in the REX contract.

REX smart contracts provide REX token, TREX token and MREX token.
3. **REX - MAIN TOKEN**

- REX is the main token. It is fungible and transferable.
- The name is REX, the token symbol is REX, and decimals is 18.
- The base unit is PRINCE. 1 REX is composed of one quintillion \(10^{18}\) PRINCES.
- REX may be held in a private wallet (like MetaMask, for example).
- The core purpose of REX is staking to gain interest.
- REX provides usual staking functions (lock to earn interest) and advanced staking functions (naming stakes, transferring stakes and withdrawing interest).
- REX provides new features (offering/selling/buying stakes on an integrated STAKE DEX).

3.1. **HOW TO GET REX**

1. Take part in the daily auctions as a participant or referrer.
2. Swap other tokens for REX on decentralized exchanges, such as Pancake Swap.
3. Claim an airdrop as a participant of the predecessor protocol REX CLASSIC.

3.2. **REX - TOKEN SUPPLY**

- No fixed supply.
- No preminted supply.
- Minted by participants and referrers after daily auctions.
- Minted by users when ending a stake or withdrawing interest.
- Minted by contract when providing liquidity to PancakeSwap.
- Minted by users by claiming the airdrop from REX CLASSIC.

The main part of the supply is minted by participants of the daily auctions (and their referrers). The auctions will create a (maximum of) 307,065,466,667 REX in the course of the 222 auction days. As those tokens will inflate during the auction phase, the supply from auctions at the end of the auction phase will be higher, max. 321,639,210,192 REX.

Also, supply will be generated by the contract when providing liquidity on PancakeSwap. Every 24 hours, when an auction day has ended, 10% of the sent BUSD are forwarded to the REX-BUSD pair (liquidity pool, “LP”) on PancakeSwap, together with the corresponding amount of new REX. This number of REX, which is minted and sent with the BUSD, depends upon the amount of forwarded BUSD and the actual price on PancakeSwap. The number is calculated daily, minted and sent to the LP. Of course, the
LP tokens are burned, so the liquidity is locked forever. In this way, users can always count on a given liquidity to trade REX tokens against BUSD.

Also, an initial liquidity between 1,000,000 and 10,000,000 USD (50% REX + 50% BUSD) is provided in the PancakeSwap REX/BUSD pair. To achieve this, the Daily Auctions contract is able to receive BUSD tokens from early investors before REX DAY 1. Then, on REX DAY 2, the Daily Auctions contract will mint 7143 REX tokens per 1 BUSD token received (which results in a starting price of 0.000139997 BUSD/REX) and send both token amounts to the REX/BUSD pair. In this manner, the contract will create another 3,571,500,000 to 35,715,000,000 REX tokens. This initial liquidity will be locked within the auction phase and then be released (vested: 10% every 30 days), so that the rising locked liquidity (10% from the daily auctions) will be the backbone of future liquidity.

The actual total supply (circulating REX / liquid REX) may be fetched from the contract with the function `totalSupply()`. To include the REX that are locked in stakes (“principals”), the function `allocatedSupply()` has been implemented.

```
function allocatedSupply() external view returns (uint256) {
    return totalSupply() + globals.totalStaked;
}
```

### 3.3. SUPPLY INFLATION

The allocated supply of REX (circulating + staked REX) inflates at a constant rate of 12.9% per year. At the end of every day, the contract calculates how many new REX will need to be minted for that day in order to achieve that rate of inflation.

```
totalREXSupply = circulatingREX + stakedREX
dailyInflationRate = (1.129 ^ (1 / 365) - 1)
dailyInflationRate = 0.00033247247636
newREXToday = totalREXSupply × dailyInflationRate
```

These new daily inflation REX are not immediately minted. Instead, they are earmarked for distribution to all active stakes’ SHARES on that day. Each active stake is earmarked a fraction of this new REX in proportion to the stake’s SHARES percentage of the total SHARE pool that day. Once a stake is closed (or interest withdrawn), all earmarked tokens of the stake for all past days (until the desired withdrawal day, in case of an interest withdrawal) are then minted at once.

Example scenario:

On REX DAY X, suppose there are

- **100,000,000 total circulating REX**
- **30,000,000 total staked REX**
- **10,000,000 total SHARES**
The total new REX that will be generated on REX DAY X is then:

\[
\text{newREXDayX} = (100,000,000 + 30,000,000) \times 0.00033247247636 \\
\text{newREXDayX} = 43,221.4219268 \text{ REX}
\]

Now, suppose user A has an active stake that is 2,000,000 SHARES.

On day X, this user’s stake then gets REX earmarked for it:

\[
\text{userANewREXDayX} = \text{newREXDayX} \times \frac{\text{stakeShares}}{\text{totalShares}} \\
\text{userANewREXDayX} = 43,221.4219268 \times \frac{2,000,000}{10,000,000} \\
\text{userANewREXDayX} = 8,644.28438536 \text{ REX}
\]

In addition, the penalties from users ending stakes early are added to the inflation. Therefore, the actual inflation also depends upon the penalties that occur based on the users’ taking behavior. The complete formula in the code is

\[
(_\text{totalStaked} + _\text{totalSupply}) \times \text{INFLATION\_RATE} + _\text{totalPenalties}
\]

**Code explanations**

Inside the code, this “inflation amount” (on a certain day) is saved in the daily snapshot as snapshots[_day].inflationAmount. When a user ends a stake and the rewards (interest) are calculated (for each day, unless interest has been withdrawn already), this daily number is used for calculating the daily reward:

\[
_\text{rewardAmount} [\text{day}] \mathrel{+}= \\
(_\text{stakeShares} \times \text{PRECISION}) / \\
(_\text{TOTAL\_SHARES} \times \text{PRECISION} / \text{snapshots[_day].inflationAmount})
\]

or, more simply:

\[
_\text{rewardAmount} [\text{day}] \mathrel{+}= (_\text{myShares} / _\text{totalShares}) \times \text{snapshots[_day].inflationAmount}
\]

So, the staker receives their portion of the total inflation for every staking day.
Sustainability considerations

Token total supply: REX inflation creates 12.9% more tokens per year, distributed to stakers.

This leads to a \(5x\) of token supply after \(13\) years, \(20x\) after \(25\) years:
4. **TREX - BOOST TOKEN**

TREX is an optional fungible token for boosting user experience and user benefits.

The name is TREX, the token symbol is TREX, and decimals is 0.

The initial price of a TREX is 500 BUSD at the time of Rex Launch Day 1.

It rises by 5 BUSD every 100 TREX sold, called the “TREX halving.”

The supply is unlimited.

4.1. **TREX BENEFITS**

An address holding 1 or more TREX gets:

1. Staking: 33.3% more SHARES when creating a stake

2. Staking: Ability to create irrevocable stakes

3. Auctions: 50% higher limits (+2,500 BUSD)

4.2. **HOW TO GET TREX**

The user may use the “buy” function of the TREX contract. The actual price (in BUSD) will be withdrawn from the user’s wallet and 1 TREX will be minted to the wallet.

A user may use the main website to see if an address is eligible.

⚠ Contracts cannot buy TREX.

Holders of the predecessor “REX CLASSIC TREX” (early supporters of REX CLASSIC) are eligible to claim 10 TREX per “REX CLASSIC TREX” held at the time of the snapshot by using the claim function of TREX contract. A user may check the main website to see if an address is eligible.
5. **MREX - BOOST TOKEN**

MREX is an optional fungible token for boosting user experience and user benefits. The name is MREX, the token symbol is MREX, and decimals is 0.

MREX BSC Address: 0x76837d56d1105bb493cddbefeddf136e7c34f0c4

https://bscscan.com/address/0x76837d56d1105bb493cddbefeddf136e7c34f0c4

NOTE: This MREX is the same token as was used to boost Rex Classic.

5.1. **MREX BENEFITS**

An address holding from 1 to 5 MREX gets:

1. Referral rewards: Earn up to 5% of the BUSD sent to auction by a referee (1% per MREX)

2. Auctions: Up to 10% more REX from auctions (2% per MREX)

3. REX stake DEX: No buyer fee (1% of the stake’s price) when holding MREX

5.2. **HOW TO GET MREX**

Buy via pancakeswap.finance
(token address: 0x76837d56d1105bb493cddbefeddf136e7c34f0c4)

⚠️ Only 10,000 MREX are available in total.
6. **REX STAKING**

REX allows users to stake (time deposit) their REX, locking it up for a period of time, in order to earn interest.

Users may open as many stakes as they like. After a stake reaches full maturity, the user may close it at any time to receive their full principal, plus interest, without penalty.

REX never penalizes the principal of a mature stake, no matter how late it is eventually closed, but its interest decreases after a 14-day grace period, which starts after a stake’s maturity. Then the interest is cut by 1% per week as long as the stake is not closed. This allows users a lot of flexibility in planning, especially for taxable income purposes.

6.1. **OPENING STAKES**

When a user opens a new stake, they choose an amount of REX to stake, a stake length in days, and the name of the stake. The minimum stake amount is 0.000000000001 REX (1000000 PRINCES). The minimum stake length is 7 days, and the maximum stake length is 3,563 days (approx. 10 years). The longer the duration of a stake, the more REX SHARES are received.

Once a stake is opened, it is in “pending” status. This means that the stake won’t technically begin until the following REX DAY. A user may close a pending stake, receiving back the stake’s principal, without penalty or interest.

Pending stakes begin “active” status once the next REX DAY begins. At this point, closing the stake before it reaches “mature” status will incur a penalty.

When a stake is opened, the REX tokens staked are burned by the REX contract and converted into SHARES. These SHARES exist for the life of the stake, provided no interest is withdrawn before it matures. Once the stake is closed, the SHARES are deleted and REX is minted back to the user (with any interest added and any penalties deducted).
6.2. SHARES AND INTEREST

When opening a stake, the REX tokens are burned (and saved in the contract as the stake’s "principal") and SHARES are created. These SHARES represent the stake size and length. The amount of SHARES a newly opened stake gets is determined by a global "SHARE price" tracked in the REX contract, as well as a percentage bonus based on the length of the stake. This SHARE price increases with time and never decreases, hence staking earlier is better than later.

🚀 Participants holding at least 1 TREX at the time of the stake's opening will receive a 25% discount on the SHARE price. Therefore, a stake created while holding a TREX will have 33.3% more SHARES and thus create **33.3% more interest per day**.

Stakes earn interest daily through the REX supply inflation, as well as from other stakes' penalties paid. The REX supply inflates at 12.9% per year (= 0.00033247247636 REX per day). This inflation is distributed daily to all active stakes, in proportion to their SHARES as compared to the total SHARE pool.

Depending on the length of the stake, a bonus amount of SHARES will be generated on top: "LONGER PAYS BETTER."

The number of SHARES received is calculated in such a way that a user gets 5% more SHARES when staking **365 days**. So, the daily bonus percentage is \( \frac{105\%}{365} \). This is valid for stakes up to 365 days (linear).

When staking longer than 365 days (1 full year), the amount above 365 receives another 5%, starting from the first day after day 365. For example, consider staking 465 days. The stake will receive 465 days \( \times \frac{105\%}{365} \) plus 100 days \( \times \frac{105\%}{365} \) more SHARES. In total, that could be expressed in short as \( (465+100) \times \frac{105\%}{365} \).

This model increases for every new full year.

When staking for 1,122 days, that is more than 3 full years, so the stake receives:

\[
\begin{align*}
1,112 & \times \frac{(100\%+5\%)}{365} + \\
757 & \times \frac{(100\%+5\%)}{365} + \\
392 & \times \frac{(100\%+5\%)}{365} + \\
27 & \times \frac{(100\%+5\%)}{365} = \\
(1,112+757+392+27) & \times \frac{105\%}{365} = 2298 \times \frac{105\%}{365}.
\end{align*}
\]

So, staking 1,112 days receives the same number of SHARES as one would receive if staking 2,298 days (30.93% more SHARES). **Staking 3,653 days (≈ max.) receives the same number of SHARES as if staking 20,108 days (275.45% more SHARES).**
The website provides a calculator to quickly compute the time multiplier. The formula is:

```javascript
const currentDays = desiredDepositDays;

var _days = 0;

if (currentDays <= 365) { _days = currentDays; }
else {
    for (var i = 0; i < Math.floor(currentDays / 365); i++) {
        _days = _days + currentDays - (i * 365);
    }
    _days += currentDays - (Math.floor(currentDays / 365) * 365);
}

result = (10000000000 + ((_days * 10000000000) / 7300)) / 10000000000;
```

The SHARE price starts at a predetermined value of 0.1 REX SHARE. Whenever any stake is closed, the contract calculates a ratio of that stake's total return (principal + interest - penalty) to its SHARES. If this ratio is greater than the current SHARE price, then the SHARE price is immediately set to this new, increased value. The rise of the price is capped at +2%.

The SHARE price can only increase over time, albeit fairly slowly. This ensures that earlier stakes get more SHARES than later stakes using the same amount of REX. This SHARE price increase mechanism also prevents users from being able to compound their interest with a sequence of smaller stakes in order to try and outperform a single long stake of the same size.
6.3. WITHDRAWING STAKE INTEREST

The user may withdraw already earned interest from an active stake before the stake fully matures.

The user may choose how much interest they wish to withdraw, up to the maximum available. Withdrawing interest from an active stake may be done multiple times over the course of the stake.

Withdrawing interest is possible starting on day 2 of the active stake. On day 1, the first active day, the stake has not yet completed a full day of being active, and thus has not yet accrued any interest.

When a stake is closed, whether active or mature, the interest minted back to the user only includes interest that hasn’t already been withdrawn.

Withdrawing interest will not affect the stake’s principal, but will reduce the number of SHARES the stake has going forward. This effectively means that the stake will earn less interest on the current day (the day the interest has been withdrawn) and on all future days of the stake than it otherwise would have. This SHARE reduction prevents users from being able to end up with more overall SHARES if they choose to immediately re-stake their withdrawn interest.

Withdrawing interest may cause a SHARE price increase, just as when closing a stake. Stakes track exactly how much cumulative interest the user has withdrawn over the course of the stake, for the purpose of these calculations. The process for determining the possible SHARE price increase and the stake SHARES reduction is as follows:

First, calculate a possible new SHARE price based on the stake’s pseudo-return (principal plus all withdrawn interest thus far, including this withdrawal) divided by the stake’s initial SHARES:

\[
\text{newSharePrice} = \frac{\text{stakePrincipal} + \text{cumulativeWithdrawnInterest}}{\text{stakeInitialShares}}
\]

Next, if this new SHARE price is greater than the current global SHARE price, update the global SHARE price (which may have just increased due to this withdraw):

\[
\text{if (newSharePrice} > \text{globalSharePrice)} \text{ globalSharePrice} = \text{newSharePrice}
\]

Next, calculate an amount of SHARES to be removed from the stake, based on the interest being withdrawn now and the global SHARE price:

\[
\text{stakeSharesToRemove} = \frac{\text{interestBeingWithdrawnNow}}{\text{globalSharePrice}}
\]

Finally, reduce the stake’s current SHARES:
\[\text{stakeCurrentShares} = \text{stakeCurrentShares} - \text{stakeSharesToRemove}\]

⚠ Withdrawing interest incurs a fee of 5 BUSD.
⚠ It is not possible to withdraw interest from an irrevocable stake.

### 6.4. CLOSING STAKES

A user may close a stake at any time (unless it is “irrevocable”). Depending on the stake’s status (where the stake is in its lifecycle), different things will happen:

- **Closing a pending stake** - the stake SHARES are destroyed. The entire stake principal is minted back to the user, without interest or penalty.
- **Closing an active (premature) stake** - the stake SHARES are destroyed. The stake principal is penalized (see below) and minted back to the user along with all interest accumulated thus far.
- **Closing a mature stake** - the stake SHARES are destroyed. The entire stake principal and all interest accumulated is minted back to the user. If the stake is closed later than 14 days after maturity, the interest is penalized by 1% per week thereafter.

#### Closing an active stake early

If an active stake is closed earlier than 50% of the scheduled duration, the amount of staked REX principal will be penalized. Between the first active day of staking and 50% of the scheduled duration, the penalty is linear from 100% to 0%. After having fulfilled 50% of the scheduled duration, there will no penalty for the principal at any time thereafter.

**Example:**

Ending a 100-day active stake on day 1 will penalize the principal with 98%, because \((2/100) = 2\%\) of the needed duration, so it is lost almost completely.

Ending a 100-day active stake on day 25 will penalize the principal with 50%, because \((25/2)/100 = 50\%\), so half of it is lost.
Ending a 100-days active stake on day 50 will not penalize the principal, because \((50 \times 2)/100 = 100\%\) of the needed duration.

The formula is:

\[
\text{int scheduledDuration} = \text{deposit.scheduledEnd} - \text{deposit.start};
\]

\[
\text{int realDuration} = \text{deposit.realEnd} - \text{deposit.start};
\]

\[
\text{int perc} = (\text{realDuration} / \text{scheduledDuration} \times 100) < 0 ? 0 : \text{Math.min}(\text{realDuration} / \text{scheduledDuration} \times 100), 100);
\]

\[
\text{if (perc >= 50) \{ return 0; \}}
\]

\[
\text{if (deposit.realEnd < deposit.start) \{ return 0; \}}
\]

\[
\text{int penalty} = (1-(perc/50)) \times \text{deposit.amount};
\]

Any such REX penalized from a stake's return is earmarked for distribution to all active stake SHARES that day. These penalty distributions are only realized by those stakes' SHARES when each of those stakes end.

**Interest**

Interest will be paid for every full staked day, but will be penalized when closing early or late.

If an active stake is ended early, the interest is penalized in proportion to the percentage of the scheduled duration.

**Example:**

Ending a 100-day active stake on day 20 will calculate all interest and then deduct a penalty of 80%.

Ending a 100-day active stake on day 50 will calculate all interest and then deduct a penalty of 50%.

⚠ Irrevocable stakes cannot be ended early.

### 6.5. SPLIT A STAKE

A user may split an active stake into two stakes of equal size, each one being half the original stake size (staked amount of REX and SHARES). The new split stakes have the same name and duration. Neither stake can be split again.
⚠ Splitting is not possible if interest has been withdrawn before.

⚠ Splitting is not possible if the stake has less than double the minimum REX staking amount.

6.6. TRANSFER A STAKE

A user may transfer an active stake to another address.

⚠ Stakes which have any of their interest withdrawn are not transferable.

⚠ It is not possible to transfer a stake to a contract.

⚠ It is not possible to transfer a stake to the sender’s own address.

6.7. RENAME A STAKE

The user may rename a stake, which is effectively changing its “description.”

⚠ Irrevocable stakes cannot be renamed. Not even when holding TREX.

⚠ It’s not possible to rename a stake to “🤴Irrevocable stake”. Not even when holding TREX.

6.8. IRREVOCABLE STAKES

🚀 When holding at least 1 TREX, the user may name a new stake “🤴 Irrevocable Stake.” Such a stake is restricted from certain functions: It can’t be renamed, interest can’t be withdrawn and it can’t be ended early. An irrevocable stake may be split, transferred to another address or sold on the REX stake DEX.
6.9. BUYING AND SELLING A STAKE

REX provides its own native decentralized exchange (“DEX”) for stakes, where users may offer their stakes for sale. This is implemented in the DEX contract.

When offering a stake, the user must set a desired BUSD price (5 BUSD minimum) and an offer duration from 1 to 30 days, where the scheduled end of the offer must be before the stake’s maturity date.

Offering a stake will list the stake on the DEX (in the DEX contract) and set the offered stake inactive, so the user can’t transfer, rename, end or split the stake, nor withdraw interest during the time of the offering, and the stake will be renamed to “STAKE offered on DEX” so the user notices the status in their stake list. The offered stake will be buyable by other users until the offer has expired.

A stake offer may be revoked by the seller anytime within the offer duration, unless a buyer has bought it.

Successfully buying a stake creates for the buyer a new active stake with the exact properties of the offered stake, with the description set to “Bought on DEX” and closes the offered stake of the seller, changing its description to “Sold on DEX.” Irrevocable stakes will retain their name and status.

If the offered stake isn’t sold before expiry, the seller must actively revoke the offer to restore the original name of the stake and reactivate it.

⚠ The stake must have fulfilled at least 10% of the staking duration to be offered.

⚠ Stake offers may be submitted from REX DAY 111 (DEX activation day).

⚠ Stakes that have any of their interest withdrawn can’t be offered.

⚠ Offering a stake incurs a fee of 5 BUSD.

⚠ Buying a stake incurs a fee of 5 BUSD (for the buyer) plus an additional fee of 1% of the stake’s BUSD price.

🚀 If the buyer holds at least one MREX, this additional fee (1% of the stake’s BUSD price) is not charged.
7. **DAILY AUCTIONS**

7.1. **AUCTION PHASE**

The launch of REX will kick off the Auction Phase of 222 days. In this phase an address may send BUSD to the contract to reserve REX. The minimum participation amount is **50 BUSD**, maximum is **5,000 BUSD**. The participation limit shall serve as a whale protection.

🚀 The participation limit may be boosted by 50% to **7,500 BUSD** when holding TREX.

Sending BUSD reserves a fraction of the daily auctioned REX. The amount of REX assigned is in direct proportion to the sent BUSD (excluding the referrer and MREX bonuses). The assigned REX may be minted and staked on the next REX DAY.

Each day’s generated REX are split amongst the users who sent BUSD to auction that day, in direct proportion. For example, consider a user that made a reservation on a particular auction day by sending 100 BUSD, and the total amount of BUSD sent to auction that day was 10,000 BUSD. If the total amount of new REX available that day is 40,000 REX, the user will be able to mint \( \frac{100}{10,000} \times 40,000 = 400 \) REX.

The contract provides public functions for viewing the total amount of BUSD currently assigned to each auction day across all users, as well as the total REX available for each day.

7.2. **DAILY REX**

Each day of the Auction Phase will have an amount of REX tokens that are reservable by all those who deposit BUSD that day. The amount of daily REX will decrease over time.

Auctioned REX amounts:

- On auction day 1 there will be 2,000,000,000 REX in the auction.
- On auction day 2, there will be 1,600,000,000 REX in the auction.
- On auction day 3, there will be 1,400,000,000 REX in the auction.

*After day 3, the daily amount decreases by 2.1M REX every day.*

- On auction day 4, there will be 1,397,900,000 REX in the auction.
On auction day 222, there will be 934,746,667 REX in the auction.

In total, **261,005,646,667 REX** are claimable/mintable from REX daily auctions.

### 7.3. MINTING/CLAIMING REX AFTER AN AUCTION

After an auction day has ended and the daily ratio "REX/BUSD" has been calculated for that day, users and referrers may mint their REX. The minting of REX is done on-demand by the user through the front-end website interface. The interface shows how many REX are mintable for the metamask-connected address, in total, from all past days’ auction participation and/or referrals that haven’t yet been claimed.

Users may mint their liquid REX immediately. Alternatively, users may claim their REX as a stake, which has the advantage of making the address eligible for Random Personal Big Pay Days.

⚠ REX received from auctions **must always** be claimed as a **stake** for the address to be **eligible** for Random Personal Big Pay Days.

⚠ Claiming liquid REX **once** from auctions will **exclude** the address from **all** further Random Personal Big Pay Days.

⚠ The REX received from auctions must be claimed by REX DAY 259 or it is lost.

### 7.4. REFERRALS

The REX referral system is an incentive to help increase the amount of BUSD sent to auction and to increase the recognition and adoption of REX.

The REX contract has a unique referral system that rewards both the referrer and referee with REX and the referrer with additional BUSD (**Hybrid Referral Rewards**).
7.4.1. REFEREE BONUS: 10% IN REX

- If an auction participant has set a referrer, the referee participant receives a bonus of 10% more REX.
- The same 10% bonus amount of REX is also credited to the referrer.
- An address cannot refer itself. This is handled as non-referral.
- It is not necessary for a referrer address to have taken part in an auction itself.
- Users may provide a different referral address with every new auction reservation.

On REX reservation, the user may provide the referrer’s address. The REX contract then makes note of the referrer’s address and associates it with the referee’s token reservation. The contract also tags the user’s token reservation as having been through a referral, and this reservation is credited as having been 10% more BUSD than it actually was. When the user mints their reserved tokens at the beginning of the next day, each token reservation that was through a referral will thus mint 10% more REX than if it hadn’t been through a referral.

7.4.2. REFERRER BONUSES: 10% IN REX

The 10% more REX that a referee gets is also the amount of REX for the referrer.

Example:

The user has sent 50 BUSD and gave a valid referrer address, the user’s address gets REX assigned as if 55 BUSD were sent by the address. The referrer address is assigned REX as if it had sent 5 BUSD to auctions itself.

⚠ The REX received from referrals must be claimed before REX DAY 259 or it is lost.

7.4.3. REFERRER BONUSES: 1% TO 5% IN BUSD

🚀 In addition to the (10%) free REX for the referrer, the REX smart contract reserves up to 5% of the sent BUSD (by the auction participant) for the referrer, depending on the referrer’s MREX holdings at the time of the (each) referee’s auction participation.

If a referrer address holds 0 MREX, it gets 0% of the BUSD.
If a referrer address holds 1 MREX, it gets 1% of the BUSD.
If a referrer address holds 2 MREX, it gets 2% of the BUSD.
If a referrer address holds 3 MREX, it gets 3% of the BUSD.
If a referrer address holds 4 MREX, it gets 4% of the BUSD.
If a referrer address holds 5 MREX, it gets 5% of the BUSD.
If a referrer address holds more than 5 MREX, it gets 5% of the BUSD.

It is not necessary for a referrer address to have taken part in an auction itself, neither for receiving free REX, nor for receiving free BUSD. In this way, a user may send a “Rex+BUSD surprise” to any wallet holder, regardless of whether they previously held REX prior to you naming them as a referral.

That BUSD may be withdrawn by the referrer anytime without any conditions on its use.

⚠ If a referrer hasn’t claimed their BUSD before REX DAY 250, the BUSD becomes unclaimable.

⚠ On REX DAY 251 all unclaimed BUSD are sent to the BUSD-TREASURY.

7.4.4. Referrer Special: ULTRA-REXICAN

When the referral BUSD of the referrer reaches (or exceeds) 10,000 BUSD and is withdrawn in a single transaction, the referrer is appointed "ULTRA-REXICAN" in the REX smart contract. ULTRA-REXICANs will be surprised with extra benefits to be revealed in the future.

7.5. END OF AUCTION PHASE

When the final Auction Phase day (REX DAY 222) ends, no further token reservations can be made. Reserved REX from the auctions can be fetched, by both participants and referrers, until REX DAY 259 (last day).
8. REX CLASSIC AIRDROP RULES

If an address is eligible for the airdrop, the address may claim its assigned amount, starting from REX DAY 2, any time until REX DAY 222.

The airdrop may be claimed as liquid REX in the basic airdrop amount of REX tokens, or as one REX stake with free bonus tokens. When claimed as a stake, the stake’s duration must be chosen to be between 30 and 3653 days.

**Bonus calculation**: When staking for 30 days or more, the address receives a bonus of 10% more REX tokens added to the stake’s principal. When staking for 600 days or more, the address receives a bonus of 50% more REX tokens added to the stake’s principal. When staking between 30 and 600 days, the bonus calculation is linear. When staking for more than 600 days, the address receives the maximum bonus of 50% more REX tokens.

⚠️ The REX STAKE created from the airdrop is an irrevocable stake.

When creating an airdrop REX stake, the usual REX staking mechanisms apply: Longer pays better by giving more SHARES, with regard to the SHARE PRICE, and the presence of a TREX earns 33% more SHARES.
9. RANDOM PERSONAL BIG PAY DAYS (BPD)

A Random Personal Big Pay Day is when a randomly selected address receives back all of the BUSD that it has invested into the Daily Auctions to date.

To be eligible for BPD, an address needs to send BUSD to the Daily Auction and "Claim REX as a STAKE" the next REX DAY. The duration of that STAKE must be set between 222 and 3653 days. The stake will be irrevocable.

For BPD payouts, 75% of the BUSD that is sent to Daily Auctions is collected in the "BUSD-POOL." That BUSD is redistributed to the eligible addresses every 24 hours.

Procedure:
Every 24 hours, the Daily Auctions contract creates a new BPD event, where randomly selected addresses receive the right to claim back their total invested BUSD. Technically, the first contract interaction after every full 24 hours triggers the distribution routines for all past days, since the last contract interaction.

The distribution function randomly picks an eligible address and grants that address the right to claim back all their invested BUSD ("payout"), then moves on to the next eligible address and so on, until the BUSD-POOL is empty or every eligible address has been hit.

The BPD amount per address is limited by two factors:
1. If there are more than 50 addresses eligible and the payout for a specific address exceeds 2% of the BUSD-POOL, each payout will be limited to 2% of the BUSD-POOL.
2. If the payout exceeds the BUSD-POOL, it will be limited to what is left in the BUSD-POOL.

These limitations may lead to payouts less than an address’s total BUSD investment amount.

The cap at 2% of the BUSD-POOL serves as whale protection and leads to the advantage that at least 50 addresses shall receive a BPD every day. This is only valid if more than 50 addresses are eligible.

An address may be hit only once a day by the random distribution function. However, an address may be hit every day, again and again. Therefore, it is possible that an address might receive more BUSD back than it has ever sent. All of the BUSD that an address has sent in to Daily Auctions counts, provided the REX received from auction was staked as required. Every personal BPD tries to pay back the whole invested BUSD every time.

The BPD BUSD is not distributed or sent automatically, but must be claimed in the user’s "Dashboard" on the REX website. An address must claim its “BUSD from BPD” before the 28th day after the end of the Daily Auctions. So, the last “BUSD from BPD” claiming day is REX DAY 250.
⚠ If an address hasn’t claimed their BUSD by REX DAY 250, the BUSD becomes unclaimable.
⚠ On REX DAY 251 all unclaimed BUSD will be sent to the BUSD-TREASURY.

9.1. BUSD-TREASURY

The BUSD-TREASURY is a pool of BUSD that will be granted to all participants of the Daily Auctions that were never hit by a Random Personal Big Pay Day.

It comprises

✅ 0% to 5% of the daily sent BUSD (see “Referral bonuses / BUSD”)
✅ all unclaimed BUSD from Random Personal Big Pay Days
✅ all unclaimed BUSD from Referral BUSD

The BUSD-TREASURY shall be “opened” on REX DAY 252:

All BUSD will be made claimable for all addresses that have participated in auctions and who always claimed their REX from auctions as STAKES - but were never hit by the random generator. The claimable BUSD amount is in proportion to what that address invested relative to the total invested BUSD of the other eligible addresses. Therefore, it might be the case that the eligible addresses receive more BUSD than they invested.

The TREASURY BUSD must be claimed within 7 days (REX DAY 258). Afterwards, all unclaimed BUSD will be unclaimable.
10. **BEP20 FUNCTIONALITY**

REX, TREX and MREX are BEP20 tokens that fully conform with BEP20/ERC20 token standard.

Please read the Binance FAQ to learn more.
11. ACKNOWLEDGEMENTS

Everyone helping blockchain technology evolve and proceed is thanked.

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- **OpenZeppelin** — for your development of essential Solidity smart contract interfaces and building blocks.
- **The REX community** — for your steady stream of valuable ideas, constructive criticism, honest feedback, witty banter, and comic relief throughout the design and development process.
12. AVAILABILITY

The web version of this paper will be available soon.
13. APPENDICES

13.1. APPENDIX A  TERMINOLOGY

- REX — the token and contract described herein.
- PRINCE — the base unit of the REX token, analogous to wei for $ETH, or satoshi for $BTC. One REX equals one quintillion PRINCES (1,000,000,000,000,000,000).
- STAKE — a time locked deposit of REX which earns interest over time.
- Auction Phase — the first 222 days of the contract’s existence, during which users may deposit BUSD to receive a part of the supply of REX.

13.2. APPENDIX B  CODING STANDARDS

- The REX contracts are written entirely in Solidity and compiled with solc 0.7.4.
- The code should adhere to the formats prescribed by the style guide section of the official Solidity 0.7.4 documentation.
- All public interfaces (at a minimum) should be annotated using the NatSpec format.
- Unit tests should provide 100% coverage of the source code. All conceivable edge and corner cases should be covered.
- Function and variable names should convey their purpose and usage as clearly and tersely as possible, in plain English. Avoid using digits, unnecessary abbreviations, acronyms, shorthand, or slang.
- Functions should be as short as is practical. They should do what their name implies, and not much else. A good rule of thumb is that a function should try to be viewable in its entirety on a typical monitor, at a typical font size, if at all possible.
- Comments should be employed rexly. Don’t comment to explain what code does. Good function and variable names will accomplish that. Rather, use comments to explain why something is coded a certain way. Use comments to explain any non-obvious technical points or decisions involved in a piece of code.
- require() function calls should return a short but descriptive error message, always prefixed with "REX: ".
- Avoid duplicated code (don’t repeat yourself).
- Wherever possible and practical, write with gas efficiency as a priority. Some parts of the code may sacrifice minuscule gas efficiencies for various important reasons. When deemed to be of greater value, code legibility, clean architecture, and a straightforward and fully featured end-user experience should take priority over such tiny gas savings.