Gun Game: A Peer To Peer System For Shooting Yourself

Gun Game Team

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Overview

Welcome to GUN GAME on the BASE L2 blockchain. Using the power of Telegram, we offer an enhanced gaming experience.

This game, inspired by the high-stakes game of Russian Roulette, is played within Telegram. In traditional Russian Roulette, participants take turns spinning the chamber of a revolver loaded with a single bullet, taking a shot at themselves. The player who ends up firing the bullet-loaded chamber is eliminated, and the game concludes. Each player wagers a stake at the beginning, and the stakes of the eliminated player are distributed among the survivors. The Gun Game Bot facilitates these virtual games on Telegram, enabling players to bet with $GG tokens. The bot manages the game by placing each player's stake into escrow at the start and then distributing the tokens based on the game's outcome. To participate, players must link their wallets to the bot, acquire GUN GAME ($GG) tokens, and enter a Telegram channel where the bot orchestrates the games. This new version is powered by a team of fresh developers **COMPLETELY UNRELATED TO ANY OTHER SIMILAR GAME**. We are committed to providing a seamless and dynamic gaming experience on the BASE L2 chain.

Addresses that are permataxed will need to trigger 2x the amount of their initial buy AND all buys/sells that occur within 48 hours of the launch in buy/sell volume in order to remove the permatax. We increase the amount required during the first 48 hours instead of crediting it in order to keep the earliest snipers out of the charts so normal buyers can enter more comfortably.

This mechanism is designed in such a way that snipers can engage in a dutch auction for transaction ordering, but in a way where the fees accrue to the liquidity pool. Additionally, having to contribute volume to the chart to fully remove the permatax further deepens this liquidity pool. This should ideally align those who buy earliest with the success of the project while significantly mitigating the impact of early buyers obtaining higher amounts of the supply.

These measures ensure a fair launch and protect the investment of those who support us.

Game Contract

The game contract plays a crucial role in handling the tokens at the start of each game and ensuring they are distributed correctly when the game concludes.

1

When players link their wallets to the bot, they are required to execute the connectAndApprove function from the Gun Game Token contract. This function grants the game contract permission for unlimited use of Gun Game Tokens. At the game's start, the bot initiates a transaction to the game contract to gather bets. Thanks to the prior approval, the game contract then moves the specified number of tokens from each player's wallet to the contract. Players have the option to withdraw permission for the Gun Game Token by the game contract or set it to a certain limit at any time. Should the game contract try to move more tokens than permitted, the transaction will be aborted, resulting in the game's cancellation. At the game's end, the bot dispatches a transaction to the game contract containing details about the winner and additional information, such as the factors confirming the randomness of the selection process for the game, which supports the provability of fairness. The game contract then allocates the winnings to the surviving players, retaining a portion and burning a small amount to ensure the token remains deflationary.

Token Approval and Security

Players must grant permission for their Gun Game Tokens. This authorization occurs seamlessly when players execute the connectAndApprove during their initial setup in the bot's commands via /connect. It's crucial to note that at no time does the bot gain access to your wallet's private key, nor will it ever request your private key to participate in the game. This approval allows the Game contract to transfer a players buy in at the start of a game, and to stake their tokens for revenue sharing

Tokenomics

- **Supply**: 88,800,000 tokens.

- **Token Ticker**: $GG

- **No new tokens will be minted.**

- **Allocation**:

  - 15% team vested for 6 months
  - 10% airdrop in waves, phase 1 at launch, and phase 2 dripped to keep attention
  - 15% locked for 6 months in an extensible time lock for future developments (to be used for cross-chain bridge pools and other game modes where we need a pool of tokens. One example: Solana to ETH, or ETH to TON)
  - 60% into the liquidity pool at launch

- **Tax**: 2/2 tax for buys/sells of $GG

- **Game Rake Allocation**:

  - Of the prize pool for each game, there is a rake each game. These percents may have to be changed in the future to incorporate other game modes, or for other reasons. 10% of the total bet is taken from the loser's buy-in. Of that 10%:

∗ 20% is burned

　　　∗ 30% goes to team/marketing/gas

　　　∗ 50% goes to revenue share to token stakers

This makes the token deflationary as long as people keep playing.

Anti-Sniper Mitigations

To protect our launch and community from snipers who aim to buy a significant portion of the supply early and then tank the chart, we have implemented robust anti-sniper mitigation. Some of them are quite novel, and to our knowledge have never been attempted before, so please bear with us through this explanation.

This mechanism is complex and novel. It's designed to create a fair launch environment and protect the project from harmful trading practices. While it may seem complicated, it ultimately aims to benefit genuine users and long-term supporters of the project. If you're unsure about participating in the Gauntlet, it's perfectly fine to wait until after the initial 5-minute period to make your purchase. The goal is to create a stable and fair market for all participants, whether they choose to engage with the Gauntlet or enter the market afterward. An itemized overview, to start:

- 30% temporary baseline launch fee. All buys within the first 30 minutes will pay a 30% tax.

- Max wallet balance cap. Unless buying during the initial mitigation (to be described later), the cap starts at 1% and procedurally raises to 8.88% after 3 days.

- 5 block transfer cooldown to prevent sandwich attacks and reduce the efficacy of other forms of MEV

- Alignment Gauntlet period where earliest buyers will pay a multi-faceted alignment tax for the privilege of getting the best price execution. Those whose buys are first have the highest alignment tax. This is essentially a dutch auction for transaction ordering where users have to wait to pay a lower fee to enter. This period lasts 5 minutes total. The majority of this explainer is dedicated to this in the Gauntlet section.

30% Launch Tax

Every buyer/seller of the token will be exposed to a minimum tax of 30%. Regardless of what Gauntlet tier you enter, if the fee described in that section is beneath the 30% you will still be charged no less than 30% on your first buy only. The Gauntlet percentages are for its latter stages. The Gauntlet Qualifiers are the first 5 minutes after LP launch, so all buys between 5-30 minutes will still pay the 30% tax. After 30 minutes, the tax reduces to the standard 2/2 buy/sell tax.

Max Wallet Balance Cap

The max wallet balance cap increases in stages gradually. This is mostly just a gimmick mechanic, except for the earliest stages. We understand that the nature of modern snipers

allows for multi-wallet sniping, however, in combination with the Gauntlet, we find that they might not be as effective as previously seen onchain.

The first balance cap is 1% of the supply. This applies to everyone except those who enter the Gauntlet at above a 20% Alignment Tax (again, explained later in the Gauntlet section). Gauntlet participants (above 20% AT) will have no balance cap applied. The mechanics of the Gauntlet will explain why. The following tiers procedurally increase over time. Here's the tier summary, with all times indicating time since LP was funded:

- 0-60 minutes: 1%

- 1-2 hours: 2%

- 2-3 hours: 3%

- 3-24 hours: 4%

- 24-48 hours: 5%

- 48-72 hours: 6%

- 72 hours+: 8.88%

At the end of the max wallet balance cap period, the mechanism will be disabled within the smart contract, reducing overall balance transfer costs, and permanently lock in at 8.88%.

Block Transfer Cooldowns

There is a global 5 block transfer cooldown, except when interacting with the Game contract. This is to prevent toxic frontrunning, sandwich attacks, and to reduce the efficacy of other MEV strategies. It is global in order to avoid wallet shuffling as a means to evade it. Blocks on Base are 2 seconds long, so this cooldown is 10 seconds total. Specifically for Gauntlet participants (all tiers), they will face a 150 block (5 minute) cooldown until they Escape the Gauntlet, after which they too will face the standard 5 block cooldown.

The Alignment Gauntlet

This is the section I'm sure you're most interested about! You'll soon understand why each other facet was provided individually before explaining this one, as they all are interwoven into this sniper maze that we call The Alignment Gauntlet. In order to truly ensure our token gets into the hands of our most aligned players, this mechanism is designed to deter, scare, and even outright frighten any sniper from attempting to buy.

Before we begin, we must state that it is our intent that people do not wish to programmatically buy our token at launch, as the majority of users still use DeFi frontends such as Uniswap. The Gauntlet was intentionally designed for these users in mind. If you do not understand the mechanism overall, we implore you to wait out the initial 5 minutes after launch, and then buy when you feel comfortable. Whether this is whenever you find the token contract address, or after the 30 minute launch tax, by simply waiting 5 minutes, you will not Enter the Gauntlet.

The Gauntlet Period

The first mechanism to understand is the Gauntlet Period itself. For the first 5 minutes, all buyers will be labeled as a sniper internally within the smart contract. Because of the 150 block cooldown (5 minutes), you will only be allowed to execute one transaction within the Gauntlet Period, so if you do decide to Enter, make it count! During the Gauntlet Period, the Alignment Tax starts high and procedurally decreases over each Tax Epoch, which are 30 seconds in length, for a total of 10 epochs. After the 5 minute Gauntlet Period is over, no further addresses will enter.

The Alignment Tax

In the first epoch, the Alignment Tax is set at 99%, and procedurally decreases with each epoch. We did this intentionally as it is statistically improbable that any human being can get the contract address from the point of deployment into Uniswap or some other DeFi frontend and execute their buy successfully within 30 seconds of our LP transaction completing. If you can, you need to go touch some grass, and I'd be willing to bet you had some kind of programmatic or scripted infrastructure to assist you.

We find it to be a reasonable assumption that the average retail buyer could not possibly get their buy in from the point of our LP TX completing, them seeing our announcement messages (which are the only place you should be retrieving addresses from, via our official channels such as the group chat the bot operates in. /ca in our Telegram chat), inputting the parameters into the Uniswap frontend, and waiting for their TX to complete in under 2 minutes and 30 seconds. If you are more prepared than this, you MUST read the following sections before you buy so you know what you're doing.

The Gauntlet Qualifiers

After the 30 second 99% epoch ends, the Alignment Tax drops to 90%. From here, it will decrease every 30 second epoch by 10%. The 10th and final epoch will have a 10% Alignment Tax. The following ranges describe the number of blocks since the LP was funded:

- 0-14: 99%

- 15-29: 90%

- 30-44: 80%

- 45-59: 70%

- 60-74: 60%

- 75-89: 50%

- 90-104: 40%

- 105-119: 30%

- 120-134: 20% (1% balance cap is enabled here)

- 135-149: 10%

After the 150 block Gauntlet Qualifiers, no further addresses will Enter the Gauntlet. Only those who execute a transaction during this time period will Enter.

Enter The Gauntlet

If you execute an initial buy during the Gauntlet Qualifiers, you will face your 150 block (5 minute) cooldown, which coincidentally extends until after the end of the Qualifiers. Additionally, you will not be allowed to transfer tokens to any address except the Uniswap pair and the Game contract as to prevent Gauntlet evasion. After this cooldown period, you have a challenging journey ahead of you. Upon entering the Gauntlet, you will have 2x the amount of your initial buy pre-taxes assigned to you as your Gauntlet Amount. You need to exhaust your Gauntlet Amount to Leave the Gauntlet. However, in order to do so, you must wait out a 48 hour cooling period before your next trades. If you don't, all trades you make will not only have the Alignment Tax applied, but they will also ADD to your Gauntlet Amount rather than subtracting from it.

This is intentionally designed to make sure that those who got the literal *BEST* price execution stay out of the chart for 2 days to allow the market some time to stabilize before they reenter. If they decide to max-sell their bag and pay the Alignment Tax doing so, the increase in their Gauntlet Amount (thus prolonging their time in the Gauntlet) will deter them from coming back and re-entering in dips. This allows normal buyers to participate while the market situates itself.

Leaving the Gauntlet

After the 48 hour cooling period, all buy and sell amounts pre-Alignment Tax will start counting towards reducing your Gauntlet Amount. Once the Gauntlet Amount is entirely paid off, the Alignment Tax will be removed entirely. Those who Enter the Gauntlet at lower tax tiers and thus later epochs should have an easier time paying off the Alignment Tax while still remaining in profit. Remember, Gauntlet Entrants are the earliest of all buyers.

Motivation and Summary

The Alignment Gauntlet was designed for multiple end goals, the most important of which being protecting our players from snipers. By structuring the first 5 minutes after the token becomes tradable this way, we can delay the effectiveness of snipers such that adept and even normal users can selectively pay a tax they feel comfortable with in exchange for early block ordering. We anticipate that this mechanism will slow down capital throughput for the first 5 minutes substantially too, so users who are truly aligned with the project will have a chance to enter at whatever rates they feel comfortable with for better price execution. 30 second epochs are long enough for users to determine which epoch they want, determine exactly which epoch we're in (just compare the timestamp of the LP TX to the current time), and execute their buy reliably (due to 2 second block times).

Secondly, by running launch transaction ordering like a Dutch Auction, we are able to save our earnest users money that they do not need to pay to validators, bundlers, sniper bots, etc in order to beat other snipers. The mechanism is deliberately designed to make

such bots unprofitable long enough that gas fees should not spike as hard as they would for your average token launch. Everyone knows what Banana Bot is and what it does. This is a direct solution to that problem.

Thirdly, instead of all this extraneous value going directly to validators/etc, the users instead funnel it into the token's LP directly. Additionally, those Alignment Taxes are self-managed by the token contract. 25% of ALL taxes collected by the contract are automatically used to deepen liquidity before the remaining 75% are sent to the team for use in things like deepening liquidity further, topping off our procedural airdrop mechanism, increasing staking rewards, competitions, and for use in later games.

Additionally, Gauntlet participants above the 20% epoch are excluded from the max balance cap because the more they're allowed to buy, the harder it is for them to profit. Any buys happening in the earliest tiers would aggressively fund the LP and team, while having minimal impact from their sells. As this tax drops, these two facets start to diverge, which is why the max wallet balance cap is enabled for the most favorable two epochs.

Lastly, due to the mechanism making early sniping almost impossible to profit from, those who enter earliest will also leave earliest too. This means that not only is the impact from their entry and exit reduced, but the market will be able absorb them better. They'll also be deterred from reentering due to the increased Gauntlet Amount. The persistent Alignment Tax over the entirety of the Gauntlet Amount means that those who participate are already aligned anyways, and thus will buy more before selling their bags. We tried our hardest to create an early trading environment for such users. If you intend to buy more instead of just sell and leave, the Alignment Tax shouldn't matter that much to you. It only severely impacts the value extractor. After all, these are tokens meant to be gambled with, not traded for value extraction.

Play-to-Claim Airdrop

We've built a special airdrop mechanism where we can distribute funds to players while also obtaining extremely high rates of player conversion. In order to claim, all a player has to do is play a game! By ensuring the player gets through connecting their wallet, which is the only moderate-friction part of this process, they've done everything necessary to use the bot. By having them actually play a game, they've been exposed to and learned the flow of using the bot too. Because of this, we expect more claimers to stick around and contribute revenue to the project via playing with their airdrop, and potentially buy more to access the game's revenue stream via staking.

This airdrop mechanism uses merkle proofs in order to dynamically allocate amounts to each address. The contract itself tracks how much has been distributed to each address, and the amounts are included in the proofs. By updating the merkle root, we can update the allocations for the entire address set, thus allowing us to reallocate unclaimed airdrop tokens and roll it out in phases. We've been thoroughly inspired by Unicorn Chain's airdrop strategy, and have designed ours so that we can distribute in this similar, yet different manner.

Once a player who qualifies for an airdrop finishes their first game, the bot will distribute it to them alongside the endGame transaction. If the buy in for the game the player wishes to join is less than their total unclaimed airdrop, they'll be able to play the game for free! The buy in will simply be paid for using their airdrop funds. If they win, they'll receive the full airdrop alongside their profit. If they lose, they'll receive their

airdrop minus the buy in. This makes the claim process extremely straightforward and low-friction. The player only needs to afford the full buy in if the games they're trying to join are greater than their airdrop.

The bot has an /airdrop command that can inform players if their connected wallet qualifies. The player will also be notified by the bot when their airdrop is distributed.

Delegation

If you have an address that qualifies for the airdrop, you can claim it with a completely fresh address! By leveraging the Delegate Registry, players can indicate which wallet their hot wallet is claiming for. The player simply needs to set their delegation at delegate.xyz on Base from their qualifying wallet towards the hot wallet they'll play the game with. Once set, the player just needs to DM the bot the /delegate command and inform it what cold address it is claiming for. Once set, the next game will process their airdrop, with the same free entry mechanism taking effect if possible, but it will be sent to the hot wallet they're connected with.

It is important to note that if a delegation is set in the bot, it will only try to claim airdrops for that address. If the user's connected wallet qualifies for a future airdrop, it will need to clear the delegation in the bot to claim it. However, the delegation in the Delegate Registry can remain in place.

For those unfamiliar with the Delegate Registry, it's a free onchain immutable primitive that allows you to attest that one wallet can act on behalf of your assets in another wallet. The actions enabled to your delegate wallet are entirely determined by the integrating application, which in our case is to claim an airdrop. It does not give rights to transfer assets or sign transactions *for* the other wallet, which is why it's a powerful primitive that can keep your assets safe. It allows you to claim without putting those assets at risk in the first place, as the wallet holding them never has to connect to the bot at all.

The phase 1 airdrop will include Milady, Remilio, Radbro, Schizoposters, and Sprotos. It will also include a list of our friends, which has been limited to about 25 friends per team member, so please don't fret if you didn't make the list, it wasn't very big to begin with. Lastly, it'll include our beta testers. We will be airdropping communities on a per-NFT basis on the following scale:

- Close Friends: 8888 $GG/ea

- Milady: 100 $GG/ea

- Remilio: 50 $GG/ea

- Radbro: 50 $GG/ea

- Schizoposters: 50 $GG/ea

- Sprotos: 50 $GG/ea

- Beta Testers: Variable based on beta test activity. Uncommon actions such as Delegation and interacting with the Staking modules will have higher weights than bets, however a lot of games played and thus bets scored you the most tokens overall. Wins are weighted higher than losses, but not by too much.

The phase 1 airdrop will last for 30 days. All unclaimed airdrops will be deallocated and rolled forward into future phases. Future phases will be determined by a mix of team preferences and communities that have a strong turnout in the Gun Game chat and in bot utilization. If we find specific communities have banded together and enjoy the game, we will likely incentivize more of their members to play and reward them for their participation.

Provably Fair

We generate a verifiably random number, which the bot automatically hashes before storing it on-chain. At the end of the game, all VRF proofs and relevant values are provided to the contract, ensuring the number came from the VRF and was not tampered with during the game. The contract then announces the bullet chamber value for player verification. This on-chain verification ensures tamper-proof integrity, as any attempt to alter the values would cause the endGame transaction to revert.

Conclusion

Have fun and get into the telegram.