

The Tangle Whitepaper

What is Tangle? What is its purpose?

Tangle is a token that incentivizes its own attractiveness. Its purpose is to serve as a utility currency for an upcoming defi prediction market platform called Forutsi. It strives to be the pinnacle of utility tokens. Tangle combines, improves, and innovates new utility token functions in order to be the most advanced utility token on the market.

What is Tangle's history? How was Tangle started?

Tangle started out under a different name: Orbicular. Orbicular was an attempt at improving the Ampleforth protocol. Simply put, Orbicular understood that the fundamental purpose of Ampleforth's rebase events served as arbitrage opportunities that incentivized trading, and these arbitrage opportunities gave it unique trading activity that set it apart from other tokens. Orbicular made the arbitrage opportunities more permanent and stronger by having rebase events occur according to a sine wave, instead of pegged to the US dollar value of the token. Eventually, we discovered that these arbitrage opportunities generated by the Ampleforth protocol were actually harmful to the token, and allowed any user to skim tokens out of the liquidity pool due to an oversight, namely that rebases needed to be restricted to not influence the holdings of a liquidity pool to prevent skimming. This discovery led to the creation of Tangle, which has a very unique and novel reflection (reflection is a more modern term for rebase) mechanic, much more advanced than Ampleforth. Tangle understood the bigger picture regarding such mechanics, that the mechanic was meant to make the token more attractive by altering its behavior or providing incentives. With this in mind, Tangle has several features that are the most advanced of their kind, or that don't exist in any other token, with the purpose of incentivizing Tangle's attractiveness.

What are Tangle's features?

1. Tangle implements EIP-2535.
2. Tangle has a flexible yield farm structure.
3. Tangle has a unique and advanced yield farm reward algorithm.
4. Tangle has flexible reflections.
5. Tangle currently implements a liquidity token staking yield farm.
6. Tangle currently implements an airdrop yield farm.
7. Tangle is "sticky".

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What do these features mean?

1. Tangle implements EIP-2535.

EIP-2535, also known as Diamonds or the Multi-Facet Proxy, allows a smart contract to be infinitely upgradeable after being deployed, without needing to redeploy the entire contract. If any bugs are found in any existing Tangle implementations, they can be fixed. If any new features are found that could benefit Tangle, they can be implemented or added to Tangle. If any existing features or implementations of Tangle can be improved upon, they can be improved. Each of these things can be done without needing to redeploy every contract, without needing to airdrop or create an “upgrade” process for users to acquire the new token, and each of these things can be done quickly, easily, and cheaply. By using EIP-2535, Tangle can adapt and expand as new discoveries are made.

2. Tangle has a flexible yield farm structure.

Tangle has a highly advanced yield farm structure, not seen in any existing tokens. Yield farms in Tangle are an abstract construction that can be created, altered, or destroyed at any time. If there is a quality or property of Tangle or something related to Tangle that can be incentivized, a yield farm can be created to incentivize it. If an existing yield farm has any bugs or issues, or needs a change to be made, it can be changed. If an existing yield farm is found to be obsolete or no longer necessary, it can be removed. Tangle can have an infinite amount of yield farms incentivizing an infinite amount of behaviors.

3. Tangle has a unique and advanced yield farm reward algorithm.

Tangle’s most advanced feature is the yield farm algorithm it uses to reward those who participate in a Tangle yield farm. The development team has experimented with several reward algorithms, settling on the one named the Generalized Disinflationary Smart Reward Function, or GDSRF for short. It is a formula that allows for extremely flexible, customizable, and sustainable rewards.

$$R(t) = M - \frac{D * (M - R(t'))}{t + D - t'}$$

Figure 1 - The GDSRF. Variable definitions: R(t) – Rewards with respect to time, M – Maximum amount of rewards, D – Distribution Constant, t’ – The time that M was last changed, t – Elapsed time since the start of reward distribution

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This reward formula distributes rewards with respect to a disinflation curve, the same kind of reward curve that Bitcoin generally follows. A disinflation curve distributes rewards the fastest at the beginning of distribution, and slows down over time. It technically never stops distributing rewards, only getting closer and closer to the maximum amount. Where this formula differs the most from Bitcoin's is that the rate of rewards and the maximum amount of rewards can be changed. The rate of rewards can be changed by altering the Distribution Constant of the GDSRF. This can be done only by the owner of the Tangle contract.

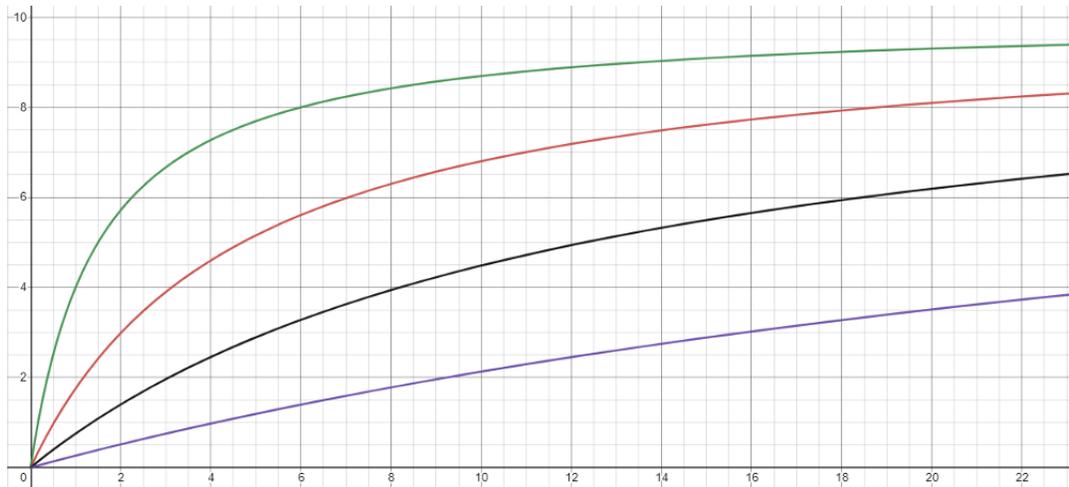


Figure 2 - Distribution constants when $M=10$, $R(t')=0$, and $t' = 0$; Green: 1.5, Red: 4.7, Black: 12.3, Purple: 37. Lines represent the amount of rewards distributed over about 22.5 seconds when the maximum reward amount is 10.

The distribution constant can be updated after a reward farm is started.

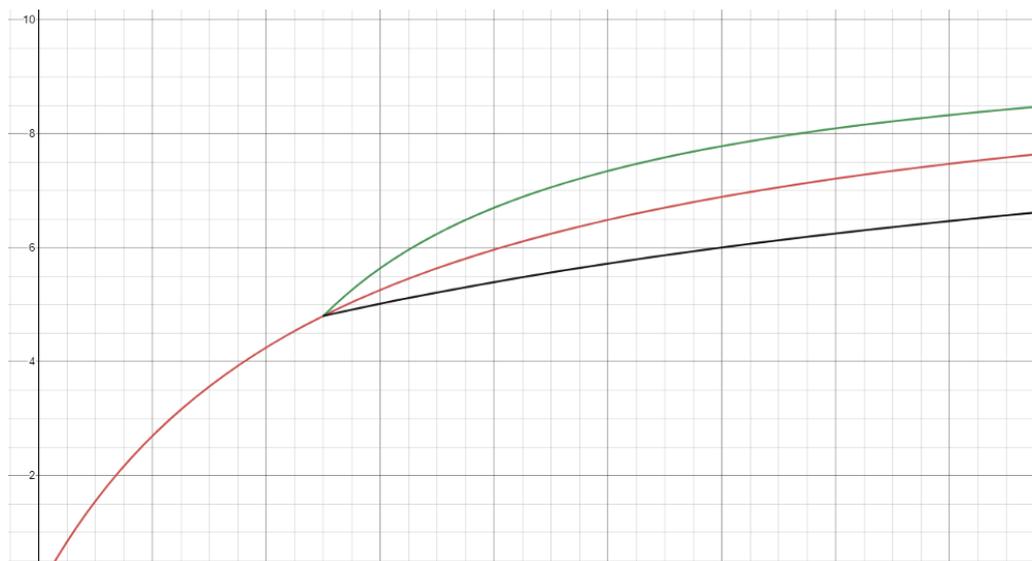


Figure 3 - Red — Original Reward Distribution, Green — Increased Reward Distribution Rate, Black — Decreased Distribution Rate

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The maximum amount of rewards change occurs every time a transfer (including buying or selling) of Tangle is made. Every Tangle transfer is taxed, and the majority of these taxes go to yield farm rewards. When these taxes are added to the yield farm reward pools, the GDSRF's maximum amount of rewards is updated to reflect that there are more rewards available.

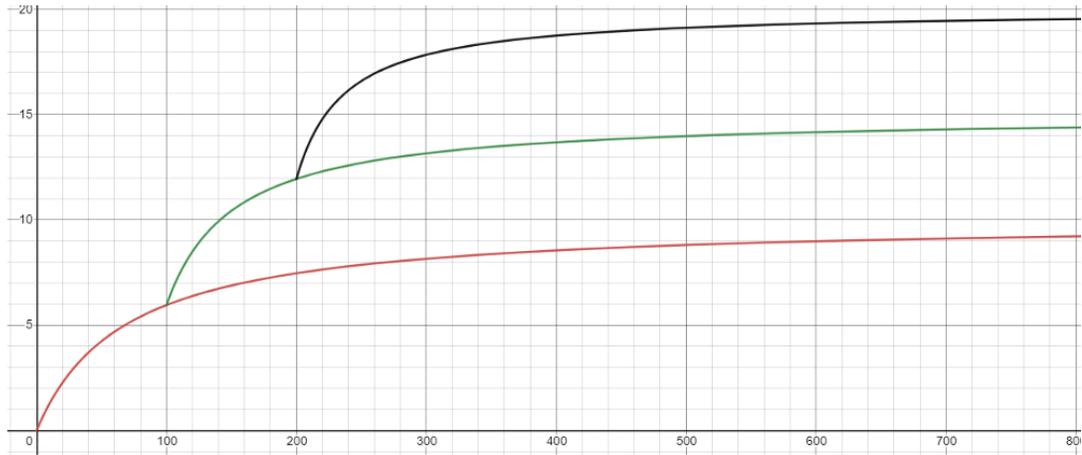


Figure 4 - Red — Original Reward Distribution, $M=10$; Green — $M=15$, $t'=100$; Black — $M=20$, $t'=200$

4. Tangle has flexible reflections.

Tangle's reflection system works in a way that does not exist in any token currently offering reflections. Since the discovery that reflections or rebases that alter the balance of a liquidity pool can lead to stolen funds, Tangle's reflections have a "blacklist" system that allows reflections to ignore an arbitrary list of addresses. Currently, Tangle blacklists liquidity pool addresses and the main token holding address. The liquidity pool address is blacklisted to avoid the "skimming" issue, and the main token holding address is blacklisted so that reflections go to the actual users of Tangle. If the main token holding address was not blacklisted, the majority of each reflection would end up going back to the main token holding address instead of benefiting the community. Currently, 1% of every Tangle transfer is reflected.

5. Tangle currently implements a liquidity token staking yield farm.

Tangle has a yield farm for liquidity token staking. This incentivizes users to add to Tangle's liquidity pool, making Tangle more stable and more attractive. Users can add to the liquidity pool for a Tangle liquidity pair, then stake the liquidity tokens they receive on the Tangle App to receive Tangle as rewards. Currently, 75% of the

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Tangle sent to the yield farm rewards pool is reserved for liquidity token staking rewards.

6. Tangle currently implements an airdrop yield farm.

Tangle has a yield farm for airdropping. This incentivizes users to airdrop Tangle to those who don't hold Tangle, spreading awareness of Tangle across the blockchain. Users can use the Tangle App to "build" a list of addresses that are human, active, and have funds, then once the list reaches a pre-selected amount, the user can airdrop 1 Tangle to each address on the list. Currently, 25% of the Tangle sent to the yield farm rewards pool is reserved for liquidity token staking rewards.

7. Tangle is "sticky".

Probably the most controversial feature of Tangle is that it is "sticky". What this means is that a developer-chosen amount of Tangle *cannot* leave a wallet under any circumstance. Right now, this value is a very insignificant value of 0.000000001 Tangle. This low value ensures that if a person is looking at that holder count of Tangle using a blockchain explorer such as etherscan or bscscan, the amount of holders only ever increases. This incentivizes Tangle's attractiveness, as tokens with a higher holder count are more attractive than tokens with a lower holder count. The low value was chosen so that those holding Tangle can still sell their Tangle, but once Tangle is in an address, it is permanent.

Where is Tangle available?

Tangle is currently available on Fantom, Avalanche, and the Binance Smart Chain. Tangle is being added to Arbitrum and Ethereum. Exchange links, this whitepaper, a metrics dashboard with price, marketcap, and staking APY information can be found at <https://tngl.io>.

What is the distribution of Tangle?

The distribution of Tangle is different depending on the chain due to existing circumstances. Each chain has a total supply of one billion Tangle (1,000,000,000.000000000 TNGL). Tangle is a "final upgrade" for those who held TangleV3, the previous version of Tangle as well as those who held pre-Tangle tokens, such as Orbicular or OrbicularV2. 0.1% of each transfer is taxed. Approximately 20% of the supply of Fantom-Tangle, Avalanche-Tangle, and Arbitrum-Tangle was distributed to those who held TangleV3 and pre-Tangle projects. Approximately 40% of the supply of BSC-Tangle will be distributed to those who held TangleV1/2/3 and pre-Tangle projects. Approximately 60% of the supply of Ethereum-Tangle

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will be distributed to those who held TangleV1/2/3 and pre-Tangle projects. Arbitrum and Ethereum will also have a % of the supply, approximately 15%, allocated to a presale to fund the contract deployment costs on those chains.

What is the future of Tangle?

Tangle is intended to be the utility token for a defi prediction market platform named Forutsi. Forutsi will be a unique prediction market platform, being the first one to not have any consensus system. This will make Forutsi extremely fast, cheap, simple, and secure compared to competitor prediction markets. Tangle is also involved in the Meta and XDEX projects. Meta is an NFT collection that turns addresses into NFTs. XDEX will be a cross-chain hybrid-decentralized cross-chain exchange, the only one that allows anyone to create or add to cross-chain liquidity pools.

Website: <https://tngl.io>

Twitter: <https://twitter.com/TangleCoin>

Telegram: <https://t.me/TangleCoin>

Discord: <https://discord.gg/kNx8rmYCWk>