

Whitepaper

# Gable V1

Redefining Staking and Liquidity on  
Radix DLT

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# Abstract

Staking has long been a cornerstone of blockchain networks, offering security and passive income to participants. However, Gable, built on the Radix DLT, seeks to redefine staking by introducing a novel approach that combines liquidity collection with staking rewards. This whitepaper explores Gable's innovative protocol, focusing on two key features: liquidity collection through staking rewards and flash loans as a lending solution. Gable's approach aims to enhance network resilience, promote liquidity, and create synergy between liquidity and lending products while navigating the unique characteristics of the Radix network.

# 1. Introduction

Gable is a liquidity market protocol built on the Radix DLT, designed to provide lending solutions for borrowers and liquidity solutions for suppliers. This whitepaper delves into the first version of Gable. Version 1 of Gable Liquidity Protocol is founded on the concept of collecting liquidity via staking rewards. Introducing a groundbreaking approach to collect liquidity, and redefining the concept of staking. The liquidity and lending solutions integrated into the protocol are designed to be mutually compatible with both each other and the underlying network.

## 2. Background

### Traditional Staking

In traditional proof of stake (PoS) blockchain or DLT networks, staking involves participants (validators or stakers) locking up a certain amount of cryptocurrency as collateral to support network operations. In return, these participants are rewarded with additional tokens, commonly referred to as staking rewards or dividends. Staking serves several purposes, including:

- **Security:** Staking incentivizes participants to maintain a secure and reliable network. Validators have a stake in the network's stability, as they can lose their collateral if they behave maliciously.
- **Decentralization:** PoS networks aim to decentralize control by allowing multiple validators to participate. Staking encourages a wide distribution of validators, reducing the risk of centralization.
- **Network Governance:** Stakers often have voting rights or influence over network governance decisions, promoting community involvement in the network's evolution.

### Staking Rewards

While staking rewards are crucial for the security and functioning of PoS networks, there are limitations to their traditional distribution and use:

- **Idle Rewards:** In many PoS networks, staking rewards accumulate in validators' accounts but are often left idle until the staker decides to unstake. During this period, these rewards do not actively contribute to the network's operations or liquidity.

- **Limited Liquidity:** Staked tokens are typically locked up for a specific duration, often ranging from days to weeks. This lock-up period reduces the liquidity of the staked assets, making them less accessible for immediate use or trading.
- **Opportunity Cost:** Staking rewards are automatically restaked, thereby compounding. However, this practice can be seen as a missed opportunity to allocate these assets for other purposes, such as providing liquidity to decentralized exchanges or participating in lending markets.

Gable addresses these limitations by redirecting staking rewards into a liquidity pool, effectively putting these assets to work in the protocol.

## 3. Liquidity Collection

### The Traditional Staking Model

In traditional staking, users earn rewards that accumulate alongside their staked assets. These rewards typically remain locked until the user initiates an unstaking event, usually lasting around two weeks on the Radix network. Gable introduces a fundamental departure from this model by releasing these staking rewards on behalf of the staker. This allows users to further utilize staking rewards and accessing them from the liquidity pool instead of the validator node, thereby creating additional value.

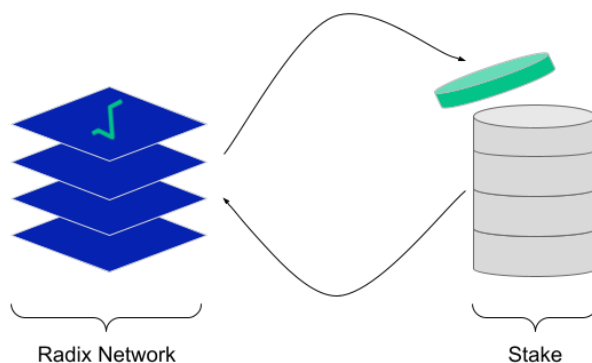


Figure 1: traditional staking process flow

### Gable's Approach

By imposing a 100% fee on staking, rewards can be diverted to the 'owner' of the validator node rather than the staker itself. This 'owner' can be any entity assigned the 'owner' role, such as an account address or a component address, like a smart contract. This innovative approach allows for the construction of entire decentralized applications (dApps) around the staking rewards, forming the cornerstone of Gable version 1.

Gable's validator node applies this fee to staking, releasing the staking rewards from the staked assets into a liquidity pool. From this pool, lending products are generated, creating interest income. Suppliers, or stakers, receive both 100% of the staking rewards (proportional to their stake) and a share of the generated interest, thus compounding their return on staking rewards. This unique combination empowers stakers to maximize their earnings from staking.

Collecting liquidity via staking rewards represents an unprecedented and innovative concept in the crypto space, offering immediate value to users.

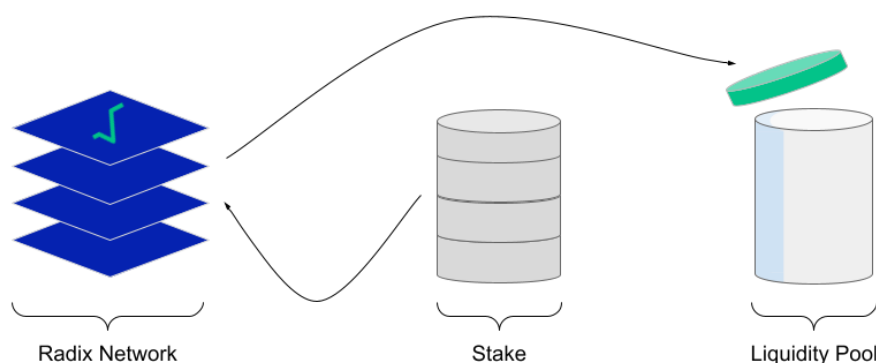


Figure 2: Gable's novel staking process flow

The significant benefits of participating in liquidity collection via staking rewards is the opportunity to earn passive income twice, (1) on XRD that you stake, and subsequently (2) on the rewards earned from staking.

1. As a supplier, when you stake your assets to our validator node, you contribute to the consensus and validation process of the Radix network. In return for your contribution, you receive rewards in the form of additional tokens. These rewards can serve as a consistent income stream, allowing you to benefit from your involvement without actively participating in day-to-day trading or complex investment strategies.
2. The rewards that you have earned from staking are contributed to Sundae's liquidity pool, from which lending products are offered. The issuance of these lending products generate interest income that is distributed, equally, to the suppliers and Sundae Liquidity Protocol.

Liquidity collection via staking rewards offers a unique opportunity for asset holders to leverage their holdings effectively. Instead of keeping your assets idle, staking them to our validator node allows users to put them to (extra) work by supporting the issuance of lending products. By doing so, users actively contribute to the security of the network by staking, and to the liquidity of the ecosystem by delegating their rewards to the protocol.

However, it is essential to consider certain drawbacks and considerations associated with (1) staking and (2) liquidity collection via staking rewards:

1. There are certain risks involved in staking in general, such as potential slashing risks (which will be introduced in the future to the Radix network) and falling out of the top validators entitled to rewards.
2. Validator owners on the Radix network experience an extended delay period, in addition to the standard two-week lock-up period. The process of transferring staking rewards from the validator node to the liquidity pool is overseen by the validator owner. Consequently, this approach to gathering liquidity entails a cumulative lock-up period of four weeks. This results in two key outcomes:

Firstly, it takes a total of six weeks before the initial stream of rewards enters the liquidity pool. Subsequently, a consistent flow of rewards should continually replenish the pool.

Secondly, there exists a delay of a specific number of weeks between the rewards being collected by the user and their actual generation. Given the anticipation of minimal fluctuations in staking yield, particularly over the specified time frame, any differences should be relatively insignificant.

3. When staking assets with a validator node, users have the opportunity to compound rewards over time. This means that as staking rewards are earned, those rewards are added to the staked assets, allowing the user to earn rewards on an increasing base. However, when staking rewards are contributed to a liquidity pool, those rewards are used for liquidity provision and lending activities within the protocol.

It's important to note that while the user loses the compounding effect on its staking rewards from the validator node, the user gains the compounding effect from interest earnings generated by the protocol's activities.

The compounding effect facilitated by the Radix network on staking rewards tends to be modest. To illustrate, let's assume a 5% annual interest rate paid out every 30 minutes.

The Annual Percentage Yield (APY) encompassing the compounding effect can be calculated with the formula:

$$APY = \left(1 + \left(\frac{r}{n}\right)\right)^n - 1$$

Where:

- $r$  is the annual interest rate (5% or 0.05 in decimal form).

- $n$  is the number of compounding periods per year (48 compounding periods per day times 365 days in a year).

Therefore the APY is:

$$APY = \left(1 + \left(\frac{0.05}{48 \cdot 365}\right)\right)^{48 \cdot 365} - 1 = 0.051271$$

This signifies that, in this scenario, the compounding effect on a 5% annual interest rate is approximately 0.1271%. Although this is just an illustrative example - it gives a feeling on the magnitude of compounding.

The protocol aspires to ensure that the compounding effect on interest earnings surpasses that of staking rewards.

## 4. Lending Product

Effective liquidity collection requires an understanding of characteristics like durability, seasonality, magnitude, and timing of liquidity streams. Gable's model aligns its lending products with these characteristics, creating a highly durable approach due to the network's inherent 'freeze' feature during the two-week unstaking period.

Flash loans are a distinctive concept in the crypto space, allowing for loans within a single transaction. Sundae's implementation of flash loans is made secure by the smart contract's ability to revert the loan if the agreed-upon terms are not met before finalization, eliminating the need for collateral.

The absence of collateral requirements spares Sundae from implementing an oracle service for real-time price information, enhancing security. Issuing flash loans with Radix's native coin (XRD) helps mitigate price disparities across exchanges, eliminating the need for stablecoin loans.

Furthermore, the instantaneous nature of flash loans minimizes the impact of market fluctuations, ensuring the pool remains balanced over time, providing a dynamic and flexible solution.

## 5. Synergy

### Protocol Synergy

The synergy between liquidity collection via staking rewards and flash loans as a lending product in Gable's protocol is rooted in their complementary nature and their ability to address different aspects of liquidity and lending in the cryptocurrency ecosystem.



By channeling staking rewards into a liquidity pool, Sundae creates a source of durable liquidity. Stakers' assets are essentially locked up during the staking period, reducing the risk of sudden withdrawals that could destabilize the liquidity pool.

Flash loans provide a dynamic and flexible source of liquidity that can adapt quickly to changing market conditions. Since these loans are returned within a single transaction, there is minimal impact on the overall liquidity pool's balance, making it less susceptible to sudden fluctuations.

Staking rewards offer stability and passive income for users who prefer long-term investments, while flash loans provide agility and flexibility for users with short-term borrowing needs. Together, these components contribute to a more resilient and efficient liquidity infrastructure within the Radix DLT network.

## Network Synergy

With Radix DLT's upcoming Babylon launch, the network is poised to undergo certain stages of development, characterized by growing adoption, limited third-party applications, and potential liquidity constraints.

### Growing adoption

As adoption is expected to be low at the initial stage of Radix's mainnet, staking participation is expected to be favorable and popular. Offering users the ability to stake and participate in liquidity supply simultaneously is expected to be appealing, especially early on. As the ecosystem grows, and user adoption and participation in dApps increases, Gable will adjust accordingly.

### Liquidity constraints

To mitigate liquidity issues and price discrepancies across exchanges, flash loans offer instant liquidity, promoting arbitrage opportunities and liquidity enhancements. This feature aims to bolster the network and overcome early-stage imperfections.

### Limited third-part applications

Gable's initial release is tailored to address these characteristics by avoiding external dependencies until the ecosystem matures. Therefore, no oracle services or stable coins are yet integrated into the protocol.

## 6. Business Model

The resources that the supplier is entitled to can be divided into two categories: (1) staking rewards and (2) Interest earnings.

### Staking rewards

Sundae's validator node charges a 100% fee on staking rewards earned by participants. However, instead of keeping this fee, the protocol facilitates the direct deposit of staking rewards into the liquidity pool. As a result, the effective staking fee for suppliers becomes 0%, as they can retrieve their staking rewards from the liquidity pool. This setup enables suppliers to participate in the staking process without incurring any direct fees, allowing them to fully benefit from the rewards generated by their staked assets. It aligns the interests of the protocol and the suppliers, creating a fair and transparent system for liquidity provision and staking participation.

### Interest earnings

You may wonder, how does Sundae earn revenue? Sundae generates revenue through the issuance of lending products to borrowers. The funds for these products are financed by the staking rewards contributed by our suppliers. The interest earnings generated from the lending activities are then divided equally between the suppliers and the protocol. This means that both parties receive an equal share of the interest earnings, providing a fair and balanced distribution of the generated profits. By sharing the rewards in this manner, we incentivize suppliers to contribute their assets and participate in the liquidity pool, fostering a mutually beneficial ecosystem for all stakeholders involved.

The following table illustrates the composition of earnings:

	<b>Supplier</b>	<b>Gable</b>
<b>Staking Rewards</b>	100%	0%
<b>Interest Earnings</b>	50%	50%

*Table 1: distribution of earnings*

