

Commune Incentives v1 "Coherence"

CommuneX
Fam

April 2, 2024

1 Introduction

Incentives v1 is the first of the planned updates to the Commune protocol and the largest update since the beginning of the protocol. It aims to increase ecosystem prosperity by improving the protocol incentive landscape, creating more profit opportunities in honest value contribution to the ecosystem. It will be virtually impossible for junk modules to gain incentives on the general subnet, while all other subnets run on Yuma Consensus, meaning self-voting resilient autonomous validation specialized to create a clear mining competition to produce a focused utility output. This allows to preserve the linear generality of subnet 0, while fundamentally increasing the coherence between protocol participants.

2 Key changes

2.1 Subnet Yuma consensus

All subnets (except "general" netuid 0) will run on the [Yuma Consensus](#). Requiring a majority of Validator Stake to agree on the value of a miner before producing incentives, preventing self-voting. This will significantly increase the profit in honest mining, while forcing every individual subnet to converge to a uniform validation methodology creating clear terms of mining competition and clear goals for what its output should be.

Since majority Stake in Yuma Consensus is local to the active stake on each subnet, Commune's current local Stake model creates a vulnerability. If for instance only 1% of Stake is on a subnet, 0.5% of Stake will be enough to exploit the mechanism. Until we transition to a global Stake model, we solve this through requiring subnets to meet a adjustable minimum active Stake requirement before producing emissions by introducing a new global parameter **SubnetStakeThreshold**.

This parameter determines the minimum proportion of the total network stake a subnet must possess to start emission production. The default starting value is 10%, meaning a subnet needs at least 10% of the network's total stake to start emission distribution. This change aims to direct stake towards subnets generating real utility while making it difficult for individuals to overtake Yuma Consensus on low-stake subnets.

For more details on the implementation, please refer to the GitHub issue: [issue-39](#).

2.2 General Subnet 0

Subnet 0 role as the general subnet will be strengthened by this update, making it the only subnet where generality is technically possible. Allowing manual validation of unconstrained usecases with a intuitive and simple linear relationship between stake and reward. Meaning Commune can incentivize new usecases and initiatives represented as modules without requiring a whole subnet and autonomous validation developed for them, significantly increasing flexibility and our ability to incentivise what is needed quickly on the fly.

However, without a prevention mechanism, this model is vulnerable to self-voting cabals. Given the strength of its advantages, it makes sense to take a pragmatic approach to solve this issue.

We propose a discord-native Module curation DAO. This DAO will curate a whitelist of modules the DAO members are in 2/3 majority agreement on have legit development and ecosystem contribution backing it, giving it a clear reason to exist. For good user experience and high daily participation rate, members will interact with the DAO through a discord bot, using commands on a dedicated channel where discussion can take place in parallel.

Module owners will submit their module for approval by opening a ticket through the bot, this will tag DAO members calling them to manually validate the module, voting either for or against its request to join the whitelist. DAO members can open tickets to remove modules from the whitelist, as well as to add or remove DAO members anytime. Every action requires a 2/3 majority agreement, a dynamic threshold based on the number of members. Initially we will start with 12 members picked based on their level of trust and activity within the community. The whitelist and DAO itself is fully onchain, the discord bot sends on-chain calls through a multisignature.

The whitelist stores the modules ss58 addresses, allowing it to act as a condition to register / be registered on subnet 0. Meaning if a module de-registers it won't have to be re-validated by the DAO.

The implementation can be found at [DAO implementation](#).

Having a discord bot as the interface instead of terminal where members locally hold multisignature keys is a compromise in decentralization we believe is necessary to get a high daily participation rate from members. The bot is a single point of failure, with only the entity managing the bot holding all of the multisignature keys. However, to mitigate this, the public address of the multisignature account is stored as a global on-chain parameter. This means if the entity running the bot becomes unavailable, corrupted or is otherwise unable to continue running the bot, the governance process can vote to change the global parameter to a new multisignature address. This effectively allows the community to replace the bot with a new instance on the fly, as the bot is fully open source and can be run by anyone.

After the DAO's validation process has proven itself effective and the community believes every legit Module currently registered on the general subnet has joined the whitelist, it should become a onchain condition to be registered on subnet 0. This will cause a mass de-registration event of all exempt junk modules, cleaning up the subnet.

2.3 New Global Parameters

Yuma Consensus Hyper-parameters:

- **κ : Majority-ratio** *default*: 0.6 (% of stake necessary to agree on a miner weight before gaining incentive)
- **β : Bonds penalty** *default*: 1 (validation dividend penalty for out-of-consensus weights)
- **ξ : Emission ratio** *default*: 0.5 (ratio between validation and mining reward)
- **SubnetStakeThreshold**: Minimum proportion of total network stake required for a subnet to start emission distribution

For General Subnet:

- **Curator**: Multisignature address having the ability to add and remove modules from the subnet 0 whitelist

2.4 User actions

- **Do I have to do anything if I am staked on a validator?**

No actions for stakers are necessary, although it's likely that a lot of validators will be moving or operating on specialized subnets over the coming months.

- **How can I start mining?**

On the general subnet, you can propose **any** way in which you add value to Commune. Once you are approved by the DAO you will be rewarded according to how well your value is recognised by the community. Communication, brand and marketing will be essential to maximize your rewards.

We will also soon be releasing the Synthia subnet, focused on synthetic data generation, that will likely quickly accumulate enough stake for reward distribution to start. We make accessible and clear mining with direct value generation the priority. Please refer to the [Synthia README](#) for more information.

- **I'm a developer that is funded through the general subnet. What actions should I take with this change?**

Apply your model via discord to the DAO for the general subnet 0. The Discord development channel 'subnet-0 apply' will be started when the update takes place.

- **I'm currently active in another subnet differing from S0, what should I do?**

If you are engaging in a autonomous uniform validation method, either as validator or miner, meaning it is compatible with yuma consensus. You will have to re-register the subnet but can resume activity like usual. If your activity is not compatible with Yuma Consensus, move to the general subnet.

We're also currently working on new validator optimized for the general subnet, giving delegators a intuitive interface to vote for and explore the legit modules. Before the whitelist becomes a onchain condition, large validators will be encouraged to locally adopt the standard.

3 Conclusion

Incentives v1 represents a significant step forward for the Commune protocol, aiming to enhance the profitability of honest miners, killing parasites and encourage specialized subnets while maintaining the generality and flexibility of the subnet 0. The introduction of the Module curation DAO for subnet 0 and Yuma Consensus for all other subnets are key changes that will prevent cabals, direct stake towards modules generating real utility and development and stimulating ecosystem prosperity. As the protocol continues to evolve, these updates will play a crucial role in ensuring the long-term success and stability of Commune.