Blog Post

Background

On 16 May 2023, dYdX Trading Inc.published a blog post about the technical architecture of the dYdX v4 open-source software – the “dYdX Chain.”

The dYdX Chain will be a proof-of-stake blockchain network and, as such, if and when deployed on mainnet, Layer 1 (“L1”

) protocol token holders will need to stake to one or more validators to secure the dYdX Chain. Validators will be key stakeholders of the dYdX Chain - they will be responsible for storing orders in an in-memory orderbook, gossipping transactions to other validators, and producing new blocks for the dYdX Chain through the consensus process, among other things.

As a proof-of-stake blockchain, dYdX Chain stakers (referred to as delegators in theCosmos SDK documentation) would play an important role in determining the strength of the network by delegating the validation rights associated with their L1 protocol tokens to one or more validators and directly increasing those validators’ chances of entering or staying in the active set of validators who can participate in the network’s consensus process.

Further, validators are particularly important in thegovernance of the dYdX Chain because (1) only staked tokens can be used to vote and determine the outcome of governance proposals, and (2) a validator inherits the voting power associated with the number of L1 protocol tokens (1-1) that a given delegator has staked to the respective validator unless the delegator chooses to vote and override the validator’s vote with its own.

In furtherance of its mission to support and promote the dYdX ecosystem by enabling communities, developers, and decentralized governance, the dYdX Foundation is releasing a list of potential good practices for prospective validators of the dYdX Chain. This list aims to assist token holders in making informed decisions when selecting the validators to stake to and for validators to potentially increase the likelihood that dYdX Chain L1 token holders will stake to them.

Given the critical role that validators will play in the dYdX Chain (if and when mainnet is launched), we encourage the dYdX community to discuss and iterate on the list of potential best practices outlined below.

Some Good Practices for dYdX Chain Validators and Stakers

We have organized our list of potential good practices into six categories: MEV, performance, operations and security, transparency, governance participation, and dYdX ecosystem considerations.

[MEV

](https://dydx.exchange/blog/dydx-v4-and-mev)

- dYdX Chain validators should not engage in MEV activities that could harm protocol users, community members, or advantage any trading parties over others.
- dYdX Chain validators should provide afair and honest trading experience for end users of the open-source software.
- The dYdX community should leverage theSkip dYdX MEV Dashboard to introduce social measures to discourage MEV extraction.
- We expect that the dYdX community will take steps to disincentivize and punish bad actors who engage in MEV activities. As such, a delegator should consider that they may be impacted if they are delegating to a validator engaging in MEV.

Performance

- Validators should strive to keep mempools across the network more consistent to provide a better user experience for traders.
- Validators should maintain a high and consistent uptime: dYdX Chain validators should ensure their node is online and actively participating in the consensus process.
- Validators should keep their node software and dependencies up to date with the latest versions and security patches.
- Validator’s commission:
- Validators should clearly and transparently disclose their commission rate.
- Validators should avoid erratic behavior and/or misleading practices concerning determining and disclosing their commission rate.

- Delegators may want to choose validators with a sustainable commission rate. There are costs associated with maintaining a validator.
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Operations and Security

- Validator's self-delegation: Validators with more dYdX Chain L1 tokens self-delegated have more skin in the game and may be more likely to operate in the best interest of their delegators.
- Slashing: Validators should take necessary steps to minimize slashing risk by actively monitoring their nodes' performance and staying informed about any conditions that could result in slashing.
- It's inadvisable to use "sentries" given increased latency, but instead opt for a threshold signer like TMKMS or Horcrux for redundant infrastructure.
- Bare-metal setups (i.e., self-owned hardware) are always preferable to data centers, but if they are used, make sure they are high-quality.
- Downtime Notice: Validators should provide their delegators with sufficient notice of any known or anticipated events that could result in downtime, so delegators can decide whether to unbond their delegation.
- Validators should publish a Terms of Service for delegators.
- Validators should ensure that their validator keys and password(s) are stored securely and backed up to server(s) in a separate location.
- Signing keys should not be stored directly on the validator machine but signed via a remote signer like TMKMS (if not using Horcrux).
- Validators should maintain a fully synchronized backup node separate from their primary validator node.
- Validators should implement a system for monitoring node performance and alerting of critical issues. Some examples are Grafana, PANIC, and Tenderduty.
- Validators should participate in dYdX Chain testnets and conduct test transactions before performing upgrades, where applicable.
- Conflicts of interest: dYdX Chain Validators should disclose any conflicts of interest or potential biases that may impact their operations to delegators and the community.
- Given potential conflicts of interest, including MEV, market makers and professional trading firms on the dYdX Chain should not run validators on the dYdX Chain.
- Limited liability entity: Validators should consider operating their nodes through a legal entity that provides limited liability protection.
- Validator's compliance with applicable laws: Validators of the dYdX Chain should ensure that their operations comply with applicable laws, rules, and regulations. Delegators should consider the location of a given validator before staking to such validator.

Governance Participation

- Validators should use their best efforts to participate in governance votes.
- Validators should independently assess and critically analyze governance proposals to understand if the proposal benefits the ecosystem.
- Validators should publish decision-making criteria for governance participation (ideally in advance) to allow delegators to make informed governance decisions.

- Validators should vote in line with the best interests of the protocol and the ecosystem.

Transparency

- Validators should engage with the dYdX Community by introducing themselves on theforums using the community template and maintaining the accuracy of that information.
- Validators should ensure reliable contact methods are available to delegators and the community.
- Validators should communicate the rationale behind governance and other key decisions to their delegators and the community (ideally in advance, when possible).
- Validators should be accessible (within reason) to the community to receive feedback, answer questions, respond to comments, and discuss issues.
- Validators may choose to be transparent about their operations and provide regular updates to their delegators. This includes publishing information about geographic location, redundancy, physical security, node performance, uptime, and rewards distribution, among other things, and full disclosure of the total number of validators operated and the total stake controlled by them.
- Validators that experience any issue(s) that could likely result in a delegator deciding to unbond their tokens should publish a status report that details the issue and provides steps to mitigate future occurrences.

Ecosystem Considerations

- Decentralization:
- Nakamoto coefficient: Delegators should consider theNakamoto Coefficient of the dYdX Chain (if and when deployed on mainnet) when delegating to a given validator. The community may choose to stake their tokens to validators that contribute to a higher Nakamoto coefficient, thus promoting the decentralization and security of the dYdX Chain.
- Geographic distribution: Distributing validator nodes across multiple regions may increase the network's overall decentralization and resiliency.
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- Contributions to the ecosystem: Delegators should take account of the contributions that a given validator makes to the ecosystem, including but not limited to tooling, educational material, governance participation, block explorers, threat identification, and upgrades.
- Delegators may want to consider which validators are running IBC relay operations.

Conclusion

The potential launch of the dYdX Chain could mark a significant stride in the evolution of decentralized finance. As the dYdX community embarks on this journey, aligning on potential good practices for validators could be important in guiding responsible participation and decision-making within the dYdX Chain ecosystem. This blog post aims to foster a collaborative and open dialogue around potential good practices for dYdX Chain validators. Given the critical role that validators will play in the dYdX Chain (if and when deployed on mainnet), we encourage the dYdX community to discuss and iterate on the list of potential good practices for validators and stakers in the dYdX Chain.