

Glossary

- Reward
- value in GWei, which is assigned to the honest, goodly performed validator for each duty
- Penalty
- value in GWei, which is assigned to the poorly performed validator for each missed duty except the block proposal
- Missed reward
- possible value in GWei that would be assigned to the validator if it had done its job perfectly.

There are 3 cases when missed rewards can occur: * bad attestation (calculated as the difference between perfect attestation and the actual)

- missed proposal (calculated as average proposal reward in epoch)
- bad sync (calculated as the difference between perfect epoch sync and the actual)
- bad attestation (calculated as the difference between perfect attestation and the actual)
- missed proposal (calculated as average proposal reward in epoch)
- bad sync (calculated as the difference between perfect epoch sync and the actual)

Intro

Lido uses [ethereum-validators-monitoring](#) (aka balval, e-v-m, 'turtle')

) as a main internal real-time monitoring and alerting tool for Ethereum validators. It helps Lido contributors and Node Operators get answers to their routine questions like: "How many attestations have been missed in N epochs by X node operator?" or "How well do Lido validators perform their duties in the sync committee compared to the rest of Consensus Layer?" or "How much has the balance of the validators changed after 24 hours?" etc. But until recently, they can't get an answer to questions about rewards, penalties and missed rewards. For this purpose, Lido Automation team developed a feature that produces such metrics and Grafana dashboard that shows them. The post's main goal is to ask the community what else might be helpful on this dashboard.

Description

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The dashboard consists of Node Operator selector and several sections. Let's look at each in more detail.

App

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This row shows metrics about:

- Delay between application and beaconchain head
- Current application epoch
- Calculation error - shows the difference between the calculated balance difference and the real balance difference for selected node operators. At the current moment, it might be != 0 in slashing and inactive leak cases because they are not yet processed (but we are working on it)

Average chain validator stats

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image

2498×495 149 KB

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This section shows rewards, penalties, and missed rewards metrics for each consensus layer duty: attestation, sync committee, and propose. They are average values for the whole chain and help to investigate the impact of Lido performance on the whole chain.

Total

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This central section shows a summary of all duties.

Lifeline

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It's a compilation of stacked bars and lines with per-epoch values of rewards, penalties and missed rewards in a logarithmic view.

Total earned, rewards, penalties, missed rewards

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Each panel shows the total sum of all selected dashboard node operator values.

Total earned is Total rewards - Total penalties.

Total summary

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The table with a summary of each selected node operator

Rewards

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This section shows a per-duty separated rewards table for each selected node operator and series with per-epoch values for the selected time period.

Penalties

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This section shows the per-duty separated penalties table for each selected node operator and series with per-epoch values for the selected time period.

Missed rewards

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This section shows the per-duty separated missed rewards table for each selected node operator and series with per-epoch values for the selected time period.

We want your opinion

Lido strives to open source useful tools for the cryptocurrency community, and [ethereum-validators-monitoring](#) is an example of that.

Leave comments on what else we can implement, and it would help us improve it!