Node Metrics and Monitoring

The Optimismop-node exposes a variety of metrics to help observe the health of the system and debug issues. Metrics are formatted for use with Prometheus and exposed via a metrics endpoint. The default metrics endpoint ishttp://localhost:7300/metrics .

To enable metrics, pass the--metrics.enabled flag to theop-node . You can customize the metrics port and address via the--metrics.port and--metrics.addr flags, respectively.

Important Metrics

To monitor the health of your node, you should monitor the following metrics:

- op_node_default_refs_number
- : This metric represents theop-node
- 's current L1/L2 reference block number for different sync types. If it stops increasing, it means that the node is not syncing. If it goes backwards, it means your node is reorging.
- op_node_default_peer_count
- : This metric represents how many peers theop-node
- is connected to. Without peers, theop-node
- cannot sync unsafe blocks and your node will lag behind the sequencer as it will fall back to syncing purely from L1.
- op_node_default_rpc_client_request_duration_seconds
- : This metric measures the latency of RPC requests initiated by theop-node
- . This metric is important when debugging sync performance, as it will reveal which specific RPC calls are slowing down sync. This metric exposes one timeseries per RPC method. The most important RPC methods to monitor are:* engine_forkChoiceUpdatedV1
  - ,engine_getPayloadV1
  - , andengine_newPayloadV1
  - : These methods are used to execute blocks onop-geth
  - . If these methods are slow, it means that sync time is bottlenecked by eitherop-geth
  - itself or your connection to it.
  - eth_getBlockByHash
  - ,eth_getTransactionReceipt
  - , andeth_getBlockByNumber
  - : These methods are used by theop-node
  - to fetch transaction data from L1. If these methods are slow, it means that sync time is bottlenecked by your L1 RPC.

Available Metrics

A complete list of available metrics is below:

METRIC DESCRIPTION LABELS TYPE op_node_default_info Pseudo-metric tracking version and config info version gauge op_node_default_up 1 if the op node has finished starting up

gauge op_node_default_rpc_server_requests_total Total requests to the RPC server method counter op_node_default_rpc_server_request_duration_seconds Histogram of RPC server request durations method histogram op_node_default_rpc_client_requests_total Total RPC requests initiated by the opnode's RPC client method counter op_node_default_rpc_client_request_duration_seconds Histogram of RPC client request durations method histogram op_node_default_rpc_client_responses_total Total RPC request responses received by the opnode's RPC client method,error counter op_node_default_l1_source_cache_size L1 Source cache cache size type gauge op_node_default_l1_source_cache_get L1 Source cache lookups, hitting or not type,hit counter op_node_default_l1_source_cache_add L1 Source cache additions, evicting previous values or not type,evicted counter op_node_default_l2_source_cache_size L2 Source cache cache size type gauge op_node_default_l2_source_cache_get L2 Source cache lookups, hitting or not type,hit counter op_node_default_l2_source_cache_add L2 Source cache additions, evicting previous values or not type,evicted counter op_node_default_derivation_idle 1 if the derivation pipeline is idle

gauge op_node_default_pipeline_resets_total Count of derivation pipeline resets events

counter op_node_default_last_pipeline_resets_unix Timestamp of last derivation pipeline resets event

gauge op_node_default_unsafe_payloads_total Count of unsafe payloads events

counter op_node_default_last_unsafe_payloads_unix Timestamp of last unsafe payloads event

gauge op_node_default_derivation_errors_total Count of derivation errors events

counter op_node_default_last_derivation_errors_unix Timestamp of last derivation errors event

gauge op_node_default_sequencing_errors_total Count of sequencing errors events

counter op_node_default_last_sequencing_errors_unix Timestamp of last sequencing errors event

gauge op_node_default_publishing_errors_total Count of p2p publishing errors events

counter op_node_default_last_publishing_errors_unix Timestamp of last p2p publishing errors event

gauge op_node_default_unsafe_payloads_buffer_len Number of buffered L2 unsafe payloads

gauge op_node_default_unsafe_payloads_buffer_mem_size Total estimated memory size of buffered L2 unsafe payloads

gauge op_node_default_refs_number Gauge representing the different L1/L2 reference block numbers layer,type gauge op_node_default_refs_time Gauge representing the different L1/L2 reference block timestamps layer,type gauge op_node_default_refs_hash Gauge representing the different L1/L2 reference block hashes truncated to float values layer,type gauge op_node_default_refs_seqnr Gauge representing the different L2 reference sequence numbers type gauge op_node_default_refs_latency Gauge representing the different L1/L2 reference block timestamps minus current time, in seconds layer,type gauge op_node_default_l1_reorg_depth Histogram of L1 Reorg Depths

histogram op_node_default_transactions_sequenced_total Count of total transactions sequenced

gauge op_node_default_p2p_peer_count Count of currently connected p2p peers

gauge op_node_default_p2p_stream_count Count of currently connected p2p streams

gauge op_node_default_p2p_gossip_events_total Count of gossip events by type type counter op_node_default_p2p_bandwidth_bytes_total P2P bandwidth by direction direction gauge op_node_default_sequencer_building_diff_seconds Histogram of Sequencer building time, minus block time

histogram op_node_default_sequencer_building_diff_total Number of sequencer block building jobs

counter op_node_default_sequencer_sealing_seconds Histogram of Sequencer block sealing time

histogram op_node_default_sequencer_sealing_total Number of sequencer block sealing jobs

counter

Using Snap Sync Troubleshooting