Metrics

Nethermind provides a few ways of gathering information, monitoring and collecting metrics about itself. The following options are available at the moment:

1. dotnet-counters.md
2. setting-up-local-metrics-infrastracture.md

Parameters by namespace

Aura

- nethermind_au_ra_step
- Current AuRa step
- nethermind_commit_hash_transaction
- RANDAO number of commit hash transactions
- nethermind_emit_initiate_change
- POSDAO number of emit init change transactions
- nethermind_reported_benign_misbehaviour
- Number of reported benign misbehaviour validators
- nethermind_reported_malicious_misbehaviour
- Number of reported malicious misbehaviour validators
- nethermind_reveal_number
- RANDAO number of reveal number transactions
- nethermind_sealed_transactions
- Number of sealed transactions generated by engine
- nethermind_validators_count
- Number of current AuRa validators

Blockchain

- nethermind_best_known_block_number
- The estimated highest block available.
- nethermind_blockchain_height
- The current height of the canonical chain.
- nethermind_blocks
- Total number of blocks processed
- nethermind_blocks_sealed
- Total number of sealed blocks
- nethermind_failed_block_seals
- Total number of failed block seals
- nethermind_gas_limit
- Gas Limit for processed blocks
- nethermind_gas_used
- Gas Used in processed blocks
- nethermind_last_difficulty
- Difficulty of the last block
- nethermind_mgas
- Total MGas processed
- nethermind_processing_queue_size
- Number of blocks awaiting for processing.
- nethermind_recovery_queue_size
- Number of blocks awaiting for recovery of public keys from signatures.
- nethermind_reorganizations
- Total number of chain reorganizations
- nethermind_total_difficulty
- Total difficulty on the chain
- nethermind_transactions
- Total number of transactions processed

Db

- nethermind_bad_blocks_db_reads
- Number of BadBlocks DB reads.
- nethermind_bad_blocks_db_writes
- Number of BadBlocks DB writes.
- nethermind_blob_transactions_db_reads

- Number of BlobTransactions DB reads.
- nethermind_blob_transactions_db_writes
- Number of BlobTransactions DB writes.
- nethermind_block_infos_db_reads
- Number of Block Infos DB reads.
- nethermind_block_infos_db_size
- Size of blockInfos DB in bytes
- nethermind_block_infos_db_writes
- Number of Block Infos DB writes.
- nethermind_block_number_db_reads
- Number of BlockNumbers DB reads.
- nethermind_block_number_db_writes
- Number of BlockNumbers DB writes.
- nethermind_blocks_db_reads
- Number of Blocks DB reads.
- nethermind_blocks_db_size
- Size of blocks DB in bytes
- nethermind_blocks_db_writes
- Number of Blocks DB writes.
- nethermind_bloom_db_reads
- Number of Bloom DB reads.
- nethermind_bloom_db_size
- Size of bloom DB in bytes
- nethermind_bloom_db_writes
- Number of Bloom DB writes.
- nethermind_c_h_t_db_reads
- Number of CHT DB reads.
- nethermind_cht_db_size
- Size of cht DB in bytes
- nethermind_c_h_t_db_writes
- Number of CHT DB writes.
- nethermind_code_db_reads
- Number of Code DB reads.
- nethermind_code_db_size
- Size of code DB in bytes
- nethermind_code_db_writes
- Number of Code DB writes.
- nethermind_db_block_cache_memory_size
- Size of unmanaged memory for DB block caches in bytes
- nethermind_db_index_filter_memory_size
- Size of unmanaged memory for DB indexes and filters in bytes
- nethermind_db_memtable_memory_size
- Size of unmanaged memory for DB memtables in bytes
- nethermind_db_stats
- Metrics extracted from RocksDB Compaction Stats and DB Statistics
- nethermind_db_total_memory_size
- Size of total unmanaged memory for DB in bytes
- nethermind_header_db_reads
- Number of Headers DB reads.
- nethermind_header_db_writes
- Number of Headers DB writes.
- nethermind_headers_db_size
- Size of headers DB in bytes
- nethermind_metadata_db_reads
- Number of Metadata DB reads.
- nethermind_metadata_db_size
- Size of metadata DB in bytes
- nethermind_metadata_db_writes
- Number of Metadata DB writes.
- nethermind_other_db_reads
- Number of other DB reads.
- nethermind_other_db_writes
- Number of other DB writes.
- nethermind_receipts_db_reads
- Number of Receipts DB reads.
- nethermind_receipts_db_size
- Size of receipts DB in bytes
- nethermind_receipts_db_writes

- Number of Receipts DB writes.
- nethermind_state_db_pruning
- Indicator if StadeDb is being pruned.
- nethermind_state_db_reads
- Number of State DB reads.
- nethermind_state_db_size
- Size of state DB in bytes
- nethermind_state_db_writes
- Number of State DB writes.
- nethermind_state_tree_reads
- Number of State Trie reads.
- nethermind_state_tree_writes
- Number of Blocks Trie writes.
- nethermind_storage_tree_reads
- Number of storge trie reads.
- nethermind_storage_tree_writes
- Number of storage trie writes.
- nethermind_witness_db_reads
- Number of Witness DB reads.
- nethermind_witness_db_size
- Size of witness DB in bytes
- nethermind_witness_db_writes
- Number of Witness DB writes.

Evm

- nethermind_blockhash_opcode
- Number of BLOCKHASH opcodes executed.
- nethermind_bn254_add_precompile
- Number of BN254_ADD precompile calls.
- nethermind_bn254_mul_precompile
- Number of BN254_MUL precompile calls.
- nethermind_bn254_pairing_precompile
- Number of BN254_PAIRING precompile calls.
- nethermind_calls
- Number of calls to other contracts.
- nethermind_creates
- Number of contract create calls.
- nethermind_ec_recover_precompile
- Number of EC_RECOVERY precompile calls.
- nethermind_empty_calls
- Number of calls made to addresses without code.
- nethermind_evm_exceptions
- Number of EVM exceptions thrown by contracts.
- nethermind_m_copy_opcode
- Number of MCOPY opcodes executed.
- nethermind_mod_exp_opcode
- Number of MODEXP precompiles executed.
- nethermind_mod_exp_precompile
- Number of MODEXP precompile calls.
- nethermind_point_evaluation_precompile
- Number of Point Evaluation precompile calls.
- nethermind_ripemd160_precompile
- Number of RIPEMD160 precompile calls.
- nethermind_self_destructs
- Number of SELFDESTRUCT calls.
- nethermind_sha256_precompile
- Number of SHA256 precompile calls.
- nethermind_sload_opcode
- Number of SLOAD opcodes executed.
- nethermind_sstore_opcode
- Number of SSTORE opcodes executed.
- nethermind_tload_opcode
- Number of TLOAD opcodes executed.
- nethermind_tstore_opcode
- Number of TSTORE opcodes executed.

JsonRpc

- nethermind_json_rpc_bytes_received
- Number of JSON RPC bytes received.
- nethermind_json_rpc_bytes_sent
- Number of JSON RPC bytes sent.
- nethermind_json_rpc_errors
- Number of JSON RPC requests processed with errors.
- nethermind_json_rpc_invalid_requests
- Number of JSON RPC requests that were invalid.
- nethermind_json_rpc_request_deserialization_failures
- Number of JSON RPC requests that failed JSON deserialization.
- nethermind_json_rpc_requests
- Total number of JSON RPC requests received by the node.
- nethermind_json_rpc_successes
- Number of JSON RPC requests processed successfully.

Merge

- nethermind_forkchoice_upded_execution_time
- ForkchoiceUpded request execution time
- nethermind_get_payload_requests
- Number of GetPayload Requests
- nethermind_new_payload_execution_time
- NewPayload request execution time
- nethermind_number_of_transactions_in_get_payload
- Number of Transactions included in the Last GetPayload Request

Network

- nethermind_already_connected_disconnects
- Number of received disconnects due to already connected
- nethermind_breach_of_protocol_disconnects
- Number of received disconnects due to breach of protocol
- nethermind_client_quitting_disconnects
- Number of received disconnects due to client quitting
- nethermind_disconnect_requested_disconnects
- Number of received disconnects due to disconnect requested
- nethermind_eth62_block_bodies_received
- Number of eth.62 BlockBodies messages received
- nethermind_eth62_block_headers_received
- Number of eth.62 BlockHeaders messages received
- nethermind_eth62_get_block_bodies_received
- Number of eth.62 GetBlockBodies messages received
- nethermind_eth62_get_block_headers_received
- Number of eth.62 GetBlockHeaders messages received
- nethermind_eth62_new_block_hashes_received
- Number of eth.62 NewBlockHashes messages received
- nethermind_eth62_new_block_received
- Number of eth.62 NewBlock messages received
- nethermind_eth62_transactions_received
- Number of eth.62 Transactions messages received
- nethermind_eth63_get_node_data_received
- Number of eth.63 GetNodeData messages received
- nethermind_eth63_get_receipts_received
- Number of eth.63 GetReceipts messages received
- nethermind_eth63_node_data_received
- Number of eth.63 NodeData messages received
- nethermind_eth63_receipts_received
- Number of eth.63 Receipts messages received
- nethermind_eth65_get_pooled_transactions_received
- Number of eth.65 GetPooledTransactions messages received
- nethermind_eth65_get_pooled_transactions_requested
- Number of eth.65 GetPooledTransactions messages sent
- nethermind_eth65_new_pooled_transaction_hashes_received
- Number of eth.65 NewPooledTransactionHashes messages received
- nethermind_eth65_new_pooled_transaction_hashes_sent
- Number of eth.65 NewPooledTransactionHashes messages sent
- nethermind_eth65_pooled_transactions_received
- Number of eth.65 PooledTransactions messages received

- nethermind_eth66_block_bodies_received
- Number of eth.66 BlockBodies messages received
- nethermind_eth66_block_headers_received
- Number of eth.66 BlockHeaders messages received
- nethermind_eth66_get_block_bodies_received
- Number of eth.66 GetBlockBodies messages received
- nethermind_eth66_get_block_headers_received
- Number of eth.66 GetBlockHeaders messages received
- nethermind_eth66_get_node_data_received
- Number of eth.66 GetNodeData messages received
- nethermind_eth66_get_pooled_transactions_received
- Number of eth.66 GetPooledTransactions messages received
- nethermind_eth66_get_pooled_transactions_requested
- Number of eth.66 GetPooledTransactions messages sent
- nethermind_eth66_get_receipts_received
- Number of eth.66 GetReceipts messages received
- nethermind_eth66_node_data_received
- Number of eth.66 NodeData messages received
- nethermind_eth66_pooled_transactions_received
- Number of eth.66 PooledTransactions messages received
- nethermind_eth66_receipts_received
- Number of eth.66 Receipts messages received
- nethermind_eth68_new_pooled_transaction_hashes_received
- Number of eth.68 NewPooledTransactionHashes messages received
- nethermind_eth68_new_pooled_transaction_hashes_sent
- Number of eth.68 NewPooledTransactionHashes messages sent
- nethermind_get_node_data_received
- Number of GetNodeData messages received via NodeData protocol
- nethermind_handshakes
- Number of devp2p handshakes
- nethermind_handshake_timeouts
- Number of devp2p handshke timeouts
- nethermind_hellos_received
- Number of devp2p hello messages received
- nethermind_hellos_sent
- Number of devp2p hello messages sent
- nethermind_incoming_connections
- Number of incoming connection.
- nethermind_incompatible_p2_p_disconnects
- Number of received disconnects due to incompatible devp2p version
- nethermind_les_statuses_received
- Number of les status messages received
- nethermind_les_statuses_sent
- Number of les status messages sent
- nethermind_local_already_connected_disconnects
- Number of initiated disconnects due to already connected
- nethermind_local_breach_of_protocol_disconnects
- Number of sent disconnects due to breach of protocol
- nethermind_local_client_quitting_disconnects
- Number of initiated disconnects due to client quitting
- nethermind_local_disconnect_requested_disconnects
- Number of initiated disconnects due to disconnect requested
- nethermind_local_disconnects_total
- Number of local disconnects
- nethermind_local_incompatible_p2_p_disconnects
- Number of initiated disconnects due to incompatible devp2p
- nethermind_local_null_node_identity_disconnects
- Number of initiated disconnects due to missing node identity
- nethermind_local_other_disconnects
- Number of initiated disconnects due to other reason
- nethermind_local_receive_message_timeout_disconnects
- Number of initiated disconnects due to request timeout
- nethermind_local_same_as_self_disconnects
- Number of initiated disconnects due to connection to self
- nethermind_local_tcp_subsystem_error_disconnects
- Number of initiated disconnects due to TCP error
- nethermind_local_too_many_peers_disconnects
- Number of initiated disconnects due to breach of protocol

- nethermind_local_unexpected_identity_disconnects
- Number of initiated disconnects due to node identity info mismatch
- nethermind_local_useless_peer_disconnects
- Number of sent disconnects due to useless peer
- nethermind_node_data_received
- Number of NodeData messages received via NodeData protocol
- nethermind_null_node_identity_disconnects
- Number of received disconnects due to missing peer identity
- nethermind_other_disconnects
- Number of received disconnects due to other reasons
- nethermind_outgoing_connections
- Number of outgoing connection.
- nethermind_peer_limit
- The maximum number of peers this node allows to connect.
- nethermind_receive_message_timeout_disconnects
- Number of received disconnects due to request timeouts
- nethermind_remote_disconnects_total
- Number of remote disconnects
- nethermind_same_as_self_disconnects
- Number of received disconnects due to connecting to self
- nethermind_snap_account_range_received
- Number of SNAP AccountRange messages received
- nethermind_snap_byte_codes_received
- Number of SNAP ByteCodes messages received
- nethermind_snap_get_account_range_received
- Number of SNAP GetAccountRange messages received
- nethermind_snap_get_account_range_sent
- Number of SNAP GetAccountRange messages sent
- nethermind_snap_get_byte_codes_received
- Number of SNAP GetByteCodes messages received
- nethermind_snap_get_byte_codes_sent
- Number of SNAP GetByteCodes messages sent
- nethermind_snap_get_storage_ranges_received
- Number of SNAP GetStorageRanges messages received
- nethermind_snap_get_storage_ranges_sent
- Number of SNAP GetStorageRanges messages sent
- nethermind_snap_get_trie_nodes_received
- Number of SNAP GetTrieNodes messages received
- nethermind_snap_get_trie_nodes_sent
- Number of SNAP GetTrieNodes messages sent
- nethermind_snap_storage_ranges_received
- Number of SNAP StorageRanges messages received
- nethermind_snap_trie_nodes_received
- Number of SNAP TrieNodes messages received
- nethermind_statuses_received
- Number of eth status messages received
- nethermind_statuses_sent
- Number of eth status messages sent
- nethermind_tcp_subsystem_error_disconnects
- Number of disconnects due to TCP error
- nethermind_too_many_peers_disconnects
- Number of received disconnects due to too many peers
- nethermind_unexpected_identity_disconnects
- Number of received disconnects due to peer identity information mismatch
- nethermind_useless_peer_disconnects
- Number of received disconnects due to useless peer

Pruning

- nethermind_cached_nodes_count
- Nodes that are currently kept in cache (either persisted or not)
- nethermind_committed_nodes_count
- Nodes that have been committed since the session start. These nodes may have been pruned, persisted or replaced.
- nethermind_deep_pruned_persisted_nodes_count
- Nodes that have been removed from the cache during deep pruning because they have been persisted before.
- nethermind_deep_pruning_time
- Time taken by the last deep pruning.
- nethermind_last_persisted_block_number

- Last persisted block number (snapshot).
- nethermind_loaded_from_cache_nodes_count
- Number of reads from the node cache.
- nethermind_loaded_from_db_nodes_count
- Number of DB reads.
- nethermind_loaded_from_rlp_cache_nodes_count
- Number of reads from the RLP cache.
- nethermind_memory_used_by_cache
- Estimated memory used by cache.
- nethermind_persisted_node_count
- Nodes that have been persisted since the session start.
- nethermind_pruned_persisted_nodes_count
- Nodes that have been removed from the cache during pruning because they have been persisted before.
- nethermind_pruned_transient_nodes_count
- Nodes that have been removed from the cache during pruning because they were no longer needed.
- nethermind_pruning_time
- Time taken by the last pruning.
- nethermind_replaced_nodes_count
- Number of nodes that have been exactly the same as other nodes in the cache when committing.
- nethermind_snapshot_persistence_time
- Time taken by the last snapshot persistence.

Runner

- nethermind_version
- Version number

Trie

- nethermind_tree_node_hash_calculations
- Number of trie node hash calculations.
- nethermind_tree_node_rlp_decodings
- Number of trie node RLP decodings.
- nethermind_tree_node_rlp_encodings
- Number of trie node RLP encodings.

TxPool

- nethermind_blobs_in_block
- Number of blobs in the block.
- nethermind_blob_transaction_count
- Number of blob transactions in pool.
- nethermind_blob_transactions_in_block
- Number of blob transactions in the block.
- nethermind_dark_pool_ratio_level1
- Ratio of transactions in the block absent in hashCache.
- nethermind_dark_pool_ratio_level2
- Ratio of transactions in the block absent in pending transactions.
- nethermind_eip1559_transactions_ratio
- Ratio of 1559-type transactions in the block.
- nethermind_pending1559_transactions_added
- Number of pending 1559-type transactions added to transaction pool.
- nethermind_pending_blob_transactions_added
- Number of pending blob-type transactions added to transaction pool.
- nethermind_pending_transactions_added
- Number of pending transactions added to transaction pool.
- nethermind_pending_transactions_balance_below_value
- Number of pending transactions received that were ignored because balance is less than txn value.
- nethermind_pending_transactions_conflicting_tx_type
- Number of transactions rejected because of already pending tx of other type (allowed blob txs or others, not both at once).
- nethermind_pending_transactions_discarded
- Number of pending transactions received that were ignored.
- nethermind_pending_transactions_evicted
- Number of pending transactions evicted from transaction pool.
- nethermind_pending_transactions_gas_limit_too_high
- Number of pending transactions received that were ignored because the gas limit was to high for the block.
- nethermind_pending_transactions_hashes_received

- Number of hashes of pending transactions received from peers.
- nethermind_pending_transactions_hashes_sent
- Number of hashes of pending transactions broadcasted to peers.
- nethermind_pending_transactions_known
- Number of already known pending transactions.
- nethermind_pending_transactions_low_nonce
- Number of transactions with already used nonce.
- nethermind_pending_transactions_malformed
- Number of malformed transactions.
- nethermind_pending_transactions_nonce_gap
- Number of pending transactions received that were ignored because of not having preceding nonce of this sender in TxPool.
- nethermind_pending_transactions_nonce_too_far_in_future
- Number of transactions with nonce too far in future.
- nethermind_pending_transactions_not_supported_tx_type
- Number of pending transactions received that were ignored because of not supported transaction type.
- nethermind_pending_transactions_passed_filters_but_cannot_compete_on_fees
- Number of pending transactions received that were ignored after passing early rejections as balance is too low to compete with lowest effective fee in transaction pool.
- nethermind_pending_transactions_passed_filters_but_cannot_replace
- Number of pending transactions received that were trying to replace tx with the same sender and nonce and failed.
- nethermind_pending_transactions_received
- Number of pending transactions received from peers.
- nethermind_pending_transactions_sent
- Number of pending transactions broadcasted to peers.
- nethermind_pending_transactions_too_low_balance
- Number of pending transactions received that were ignored because balance too low for fee to be higher than the lowest fee in transaction pool.
- nethermind_pending_transactions_too_low_fee
- Number of pending transactions received that were ignored because of fee lower than the lowest fee in transaction pool.
- nethermind_pending_transactions_too_low_priority_fee
- Number of pending transactions received that were ignored because of priority fee lower than minimal requirement.
- nethermind_pending_transactions_unresolvable_sender
- Number of pending transactions received that were ignored because the sender couldn't be resolved.
- nethermind_pending_transactions_with_expensive_filtering
- Number of pending transactions that reached filters which are resource expensive
- nethermind_pending_transactions_zero_balance
- Number of pending transactions received that were ignored because balance is zero and cannot pay gas.
- nethermind_transaction_count
- Number of transactions in pool. Edit this page Last updatedonMar 26, 2024 Previous web3 Next dotnet-counters