

Node Tracing / JSON RPC Requirements

Standard JSON RPC Requirements

- Archive node with JSON RPC interface should strictly follow input/output interface described in <https://eth.wiki/json-rpc/API>
- .
- WebSocket interface (optional/highly recommended to enable) is used to subscribe to new block heads. Otherwise, Blockscout will trigger new blocks fetching by periodical polling the JSON RPC `eth_blockNumber` method.
- Support for the following standard Ethereum JSON RPC methods:
 - - [eth_blockNumber](#)
 - - [eth_call](#)
 - - [eth_getBalance](#)
 - - [eth_getCode](#)
 - - [eth_getBlockByHash](#)
 - - [eth_getBlockByNumber](#)
 - - [eth_getTransactionByHash](#)
 - - [eth_getTransactionByBlockHashAndIndex](#)
 - - [eth_getTransactionByBlockNumberAndIndex](#)
 - - [eth_getTransactionReceipt](#)
 - - [eth_getUncleByBlockHashAndIndex](#)
 - - [eth_getLogs](#)
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Fetching Pending Transactions

Client Method OpenEthereum Nethermind Erigon * `parity_pendingTransactions` * Geth * `txpool_content` * (for `parity_pendingTransactions`) *

Enable Tracing to Fetch Internal Transactions

Client Method OpenEthereum Nethermind Erigon * `trace_replayBlockTransactions` * `trace_block` * (fetch block rewards) * Geth * `debug_traceTransaction` * (for `trace_replayBlockTransactions`). Starting from the Blockscout 5.1.0 release, `callTracer` * is used by default. To switch to a custom JS tracer, the Blockscout maintainer should set the `export INDEXER_INTERNAL_TRANSACTIONS_TRACER_TYPE=js` * environment variable. Prior to the 5.1.0 release, js tracer was a default option. *

JSON RPC Performance Benchmarks

Time measures for response time of crucial JSON RPC methods for indexing in Blockscout [Ways to improve speed](#) .

1. `eth_getBlockByNumber`
2. without transaction receipts for a block with 15 transactions: Desired response time is < 0.5s. For instance, in case of the Gnosis chain archive node, the response time for the block with ~20 transactions is ~0.4s.
3. `eth_getTransactionReceipt`
4. for random transactions desired response time is < 0.5s. For the Gnosis chain archive node the response time is ~0.3 - 0.4s.
5. Batched `eth_getTransactionReceipt`
6. for 15 transactions acceptable response time is Less than 1s. For the Gnosis chain archive node, it is ~0.6 - 0.7s
- 7.

Rate Limit

The desired rate limit for RPC endpoint is 200 req/sec for the indexing phase and 100 req/sec for the indexed chain.

EVM Requirements & Clients

- All EVM chains must [define these variables](#)
- during configuration.
- BlockScout currently supports Erigon, Geth, Nethermind, Hyperledger Besu, and Ganache clients. Define the node variant using the `ETHEREUM_JSONRPC_VARIANT`
- environment variable. [More information](#)
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Last updated 3 months ago