Consensus Layer Configuration Options (op-node)

You can configure your node using the command line options below (also called flags). There are also sub-commands, which can be used to invoke functionality such as the console or blockchain import/export. This page list all configuration options forop-node .op-node implements most rollup-specific functionality as Consensus-Layer, similar to a L1 beacon-node. The following options are from the--help inv1.7.5(opens in a new tab) .

Global Options

conductor.enabled

Enable the conductor service. The default value isfalse .

Syntax Example Environment Variable --conductor.enabled=

conductor.rpc

Conductor service rpc endpoint. The default value ishttp://127.0.0.1:8547 .

Syntax Example Environment Variable --conductor.rpc=

conductor.rpc-timeout value

Conductor service rpc timeout. The default value is1s .

Syntax Example Environment Variable --conductor.rpc-timeout value=

heartbeat.enabled

Enables or disables heartbeating. The default value isfalse .

Syntax Example Environment Variable --heartbeat.enabled=

heartbeat.moniker

Sets a moniker for this node.

Syntax Example Environment Variable --heartbeat.moniker=

heartbeat.url

Sets the URL to heartbeat to. The default value is"https://heartbeat.optimism.io" .

Syntax Example Environment Variable --heartbeat.url=

l1

Address of L1 User JSON-RPC endpoint to use (eth namespace required). The default value is"http://127.0.0.1:8545" .

Syntax Example Environment Variable --l1=

l1.beacon

Address of L1 Beacon-node HTTP endpoint to use.

Syntax Example Environment Variable --l1.beacon=

l1.beacon.fetch-all-sidecars

If true, all sidecars are fetched and filtered locally. Workaround for buggy Beacon nodes. The default value isfalse .

Syntax Example Environment Variable --l1.beacon.fetch-all-sidecars=

l1.beacon.ignore

When false, halts op-node startup if the healthcheck to the Beacon-node endpoint fails. The default value isfalse .

Syntax Example Environment Variable --l1.beacon.ignore=

l1.epoch-poll-interval

Poll interval for retrieving new L1 epoch updates such as safe and finalized block changes. Disabled if 0 or negative. The default value is6m24s .

Syntax Example Environment Variable --l1.epoch-poll-interval=

l1.http-poll-interval

Polling interval for latest-block subscription when using an HTTP RPC provider. Ignored for other types of RPC endpoints. The default value is12s .

Syntax Example Environment Variable --l1.http-poll-interval=

l1.max-concurrency

Maximum number of concurrent RPC requests to make to the L1 RPC provider. The default value is10 .

Syntax Example Environment Variable --l1.max-concurrency=

l1.rpc-max-batch-size

Maximum number of RPC requests to bundle, e.g., during L1 blocks receipt fetching. The L1 RPC rate limit counts this as N items, but allows it to burst at once. The default value is20 .

Syntax Example Environment Variable --l1.rpc-max-batch-size=

l1.rpc-rate-limit

Optional self-imposed global rate-limit on L1 RPC requests, specified in requests / second. Disabled if set to 0. The default value is0 .

Syntax Example Environment Variable --l1.rpc-rate-limit=

l1.rpckind

The kind of RPC provider, used to inform optimal transactions receipts fetching, and thus reduce costs. Valid options: alchemy, quicknode, infura, parity, nethermind, debug_geth, erigon, basic, any, standard. The default value isstandard .

Syntax Example Environment Variable --l1.rpckind= For details on additional values, seeRPC Receipts(opens in a new tab) .

l1.runtime-config-reload-interval

Poll interval for reloading the runtime config, useful when config events are not being picked up. Disabled if 0 or negative. The default value is10m0s .

Syntax Example Environment Variable --l1.runtime-config-reload-interval=

l1.trustrpc

Trust the L1 RPC, sync faster at risk of malicious/buggy RPC providing bad or inconsistent L1 data. The default value isfalse .

If you're running an Erigon Ethereum execution client for your L1 provider you will need to include--l1.trustrpc . At the time of writing, Erigon doesn't support theeth_getProof that we prefer to use to load L1 data for some processing inop-node . The trustrpc flag makes it use something else that erigon supports, but theop-node can't verify for correctness.

Syntax Example Environment Variable --l1.trustrpc=

l2

Address of L2 Engine JSON-RPC endpoints to use (engine and eth namespace required).

Syntax Example Environment Variable --l2=

l2.jwt-secret

Path to JWT secret key. Keys are 32 bytes, hex encoded in a file. A new key will be generated if left empty.

Syntax Example Environment Variable --l2.jwt-secret=

log.color

Color the log output if in terminal mode. The default value isfalse .

Syntax Example Environment Variable --log.color=

log.format

Format the log output. Supported formats: 'text', 'terminal', 'logfmt', 'json', 'json-pretty'. The default value istext .

Syntax Example Environment Variable --log.format=

log.level

The lowest log level that will be output. The default value isinfo .

Syntax Example Environment Variable --log.level=

metrics.addr

Metrics listening address. The default value is"0.0.0.0" .

Syntax Example Environment Variable --metrics.addr=

metrics.enabled

Enable the metrics server. The default value isfalse .

Syntax Example Environment Variable --metrics.enabled=

metrics.port

Metrics listening port. The default value is7300 .

Syntax Example Environment Variable --metrics.port=

network

Predefined network selection. Available networks: oplabs-devnet-0-sepolia-dev-0, op-labs-chaosnet-0-goerli-dev-0, zora-mainnet, base-sepolia, pgn-sepolia, zora-sepolia, base-devnet-0-sepolia-dev-0, base-goerli, base-devnet-0-goerli-dev-0, conduit-devnet-0-goerli-dev-0, base-mainnet, pgn-mainnet, op-sepolia, lyra-mainnet, mode-mainnet, op-mainnet, op-goerli, op-labs-devnet-0-goerli-dev-0, orderly-mainnet.

Syntax Example Environment Variable --network=

override.canyon

Manually specify the Canyon fork timestamp, overriding the bundled setting. The default value is0 .

Syntax Example Environment Variable --override.canyon=

override.delta

Manually specify the Delta fork timestamp, overriding the bundled setting. The default value is0 .

Syntax Example Environment Variable --override.delta=

override.ecotone

Manually specify the ecotone fork timestamp, overriding the bundled setting. The default value is0 .

Syntax Example Environment Variable --override.ecotone=

p2p.advertise.ip

The IP address to advertise in Discv5, put into the ENR of the node. This may also be a hostname/domain name to resolve to an IP.

Syntax Example Environment Variable --p2p.advertise.ip=

p2p.advertise.tcp

The TCP port to advertise in Discv5, put into the ENR of the node. Set to p2p.listen.tcp value if 0. The default value is0 .

Syntax Example Environment Variable --p2p.advertise.tcp=

p2p.advertise.udp

The UDP port to advertise in Discv5 as a fallback if not determined by Discv5, put into the ENR of the node. Set to p2p.listen.udp value if 0. The default value is0 .

Syntax Example Environment Variable --p2p.advertise.udp=

p2p.ban.duration

The duration that peers are banned for. The default value is1h0m0s .

Syntax Example Environment Variable --p2p.ban.duration=

p2p.ban.peers

Enables peer banning. The default value istrue .

Syntax Example Environment Variable --p2p.ban.peers=

p2p.ban.threshold

The minimum score below which peers are disconnected and banned. The default value is-100 .

Syntax Example Environment Variable --p2p.ban.threshold=

p2p.bootnodes

Comma-separated base64-format ENR list. Bootnodes to start discovering other node records from.

Syntax Example Environment Variable --p2p.bootnodes=

p2p.disable

Completely disable the P2P stack. The default value isfalse .

Syntax Example Environment Variable --p2p.disable=

p2p.discovery.path

Enables persistent storage of discovered ENRs in a database to recover from a restart without bootstrapping the discovery process again. Set to 'memory' to never persist the peerstore. The default value isopnode_discovery_db .

Syntax Example Environment Variable --p2p.discovery.path=

p2p.listen.ip

Specifies the IP to bind LibP2P and Discv5 to. The default value is0.0.0.0 .

Syntax Example Environment Variable --p2p.listen.ip=

p2p.listen.tcp

Defines the TCP port to bind LibP2P to. Any available system port if set to 0. The default value is9222 .

Syntax Example Environment Variable --p2p.listen.tcp=

p2p.listen.udp

Sets the UDP port to bind Discv5 to. It will be the same as the TCP port if left at 0. The default value is0 .

Syntax Example Environment Variable --p2p.listen.udp=

p2p.nat

Enables NAT traversal with PMP/UPNP devices to learn external IP. The default value isfalse .

Syntax Example Environment Variable --p2p.nat=

p2p.netrestrict

Specifies a comma-separated list of CIDR masks. P2P will only try to connect on these networks.

Syntax Example Environment Variable --p2p.netrestrict=

p2p.no-discovery

Disables Discv5 (node discovery). The default value isfalse .

Syntax Example Environment Variable --p2p.no-discovery=

p2p.peers.grace

Determines the grace period to keep a newly connected peer around, if it is not misbehaving. The default value is30s .

Syntax Example Environment Variable --p2p.peers.grace=

p2p.peers.hi

Sets the high-tide peer count. The node starts pruning peer connections slowly after reaching this number. The default value is30 .

Syntax Example Environment Variable --p2p.peers.hi=

p2p.peers.lo

Determines the low-tide peer count. The node actively searches for new peer connections if below this amount. The default value is20 .

Syntax Example Environment Variable --p2p.peers.lo=

p2p.peerstore.path

Specifies the Peerstore database location. Persisted peerstores help recover peers after restarts. Set to 'memory' to never persist the peerstore. Warning: a copy of the priv network key of the local peer will be persisted here. The default value is"opnode_peerstore_db" .

Syntax Example Environment Variable --p2p.peerstore.path=

p2p.priv.path

Defines the file path for reading the hex-encoded 32-byte private key for the peer ID. Created if not already exists. Important for maintaining the same network identity after restarting. The default value is"opnode_p2p_priv.txt" .

Syntax Example Environment Variable --p2p.priv.path=

p2p.scoring

Sets the peer scoring strategy for the P2P stack. Options include 'none' or 'light'. The default value is"light" .

Syntax Example Environment Variable --p2p.scoring=

p2p.sequencer.key

Hex-encoded private key for signing off on p2p application messages as sequencer.

Syntax Example Environment Variable --p2p.sequencer.key=

p2p.static

Comma-separated multiaddr-format(an unsigned address, containing: IP, TCP port PeerID) peer list. Static connections to make and maintain, these peers will be regarded as trusted. Addresses of the local peer are ignored. Duplicate/Alternative addresses for the same peer all apply, but only a single connection per peer is maintained.

Syntax Example Environment Variable --p2p.static=

p2p.sync.req-resp

Enables P2P req-resp alternative sync method, on both server and client side. Default istrue .

Syntax Example Environment Variable --p2p.sync.req-resp=[true|false]

pprof.addr

pprof listening address. Default is"0.0.0.0" .

Syntax Example Environment Variable --pprof.addr=

pprof.enabled

Enable the pprof server. Default isfalse .

Syntax Example Environment Variable --pprof.enabled=[true|false]

pprof.path

pprof file path. If it is a directory, the path is {dir}/{profileType}.prof

Syntax Example Environment Variable --pprof.path=

pprof.port

pprof listening port. Default is6060 .

Syntax Example Environment Variable --pprof.port=

pprof.type

pprof profile type. One of cpu, heap, goroutine, threadcreate, block, mutex, allocs

Syntax Example Environment Variable --pprof.type=

rollup.config

Rollup chain parameters.

Syntax Example Environment Variable --rollup.config=

rollup.halt

Opt-in option to halt on incompatible protocol version requirements of the given level (major/minor/patch/none), as signaled onchain in L1.

Syntax Example Environment Variable --rollup.halt=

rollup.load-protocol-versions

Load protocol versions from the superchain L1 ProtocolVersions contract (if available), and report in logs and metrics. Default isfalse .

Syntax Example Environment Variable --rollup.load-protocol-versions=[true|false]

rpc.addr

RPC listening address. Default is"127.0.0.1" .

Syntax Example Environment Variable --rpc.addr=

rpc.admin-state

File path used to persist state changes made via the admin API so they persist across restarts. Disabled if not set.

Syntax Example Environment Variable --rpc.admin-state=

rpc.enable-admin

Enable the admin API (experimental). Default isfalse .

Syntax Example Environment Variable --rpc.enable-admin=[true|false]

rpc.port

RPC listening port. Default is9545 .

Syntax Example Environment Variable --rpc.port=

sequencer.enabled

Enable sequencing of new L2 blocks. A separate batch submitter has to be deployed to publish the data for verifiers. Default isfalse .

Syntax Example Environment Variable --sequencer.enabled=[true|false]

sequencer.l1-confs

Number of L1 blocks to keep distance from the L1 head as a sequencer for picking an L1 origin. Default is4 .

Syntax Example Environment Variable --sequencer.l1-confs=

sequencer.max-safe-lag

Maximum number of L2 blocks for restricting the distance between L2 safe and unsafe. Disabled if 0. Default is0 .

Syntax Example Environment Variable --sequencer.max-safe-lag=

sequencer.stopped

Initialize the sequencer in a stopped state. The sequencer can be started using the admin_startSequencer RPC. Default isfalse .

Syntax Example Environment Variable --sequencer.stopped=[true|false]

snapshotlog.file

Path to the snapshot log file.

Syntax Example Environment Variable --snapshotlog.file=

verifier.l1-confs

Number of L1 blocks to keep distance from the L1 head before deriving L2 data from. Reorgs are supported, but may be slow to perform. Default is0 .

Syntax Example Environment Variable --verifier.l1-confs=

Miscellaneous

--help, -h

Show help. The default value isfalse .

Syntax Example --help OR-h

--version, -v

Nodes built from source do not output the correct version numbers that are reported on the GitHub release page. Print the

version. The default value isfalse .

Syntax Example --version OR-v