

# How to run a full node for an Orbit chain

This how-to provides step-by-step instructions for running an Orbit node on your local machine.

## Minimum hardware configuration

- RAM
- : 8-16 GB
- CPU
- : 2-4 core CPU (For AWS: t3 xLarge)
- Storage
- : It depends on the Orbit chain and its traffic during the time.

## Prerequisites

- Latest Docker Image: `offchainlabs/nitro-node:v2.3.2-064fa11`

## Required parameters

- Parent chain RPC URL\* Use the parameter `--parent-chain.connection.url=`
- - It must provide a standard RPC endpoint for an EVM node, whether self-hosted or obtained from a node service provider\* Would be set to appropriate Arbitrum One, Arbitrum Nova, or Arbitrum Sepolia RPC URL
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- - Note: [Arbitrum RPC endpoints](#)
- - rate limit connections, So you will need to run a local node for the parent chain or rely on third-party RPC providers
- L3 Orbit chain info and chain name\* Providing the flag `--chain.info-json=` is mandatory. The chain info json string contains vital information about the Orbit chain, which is necessary for the node to commence operations. An example of the chain info json string is available in the subsequent sections.
- - `--chain.name=`
- 
- - must be provided, and it must match the chain name that is used in `--chain.info-json`
- 
- - content.
- 
- - For an Anytrust chain, it is essential to provide `--node.data-availability.enable`
- 
- - .

## Important ports

- RPC:8547
- Sequencer Feed:9642
- WebSocket:8548
- 
- - WS port8548
- 
- - needs extra args to be opened. Please use these flags:\* `--ws.port=8548`
- 
- - - `--ws.addr=0.0.0.0`
- 
- - - `--ws.origins=*`

## Putting it all together

- When running docker image, an external volume should be mounted to persist the database across restarts. The mount point inside the docker image should be `/home/user/.arbitrum`
- Here is an example of how to run a node for an Orbit chain:
- - Note that is important that `/some/local/dir/arbitrum`
- - already exists, otherwise the directory might be created with root
- - as owner, and the docker container won't be able to write to it
- `docker`
- `run --rm -it -v /some/local/dir/arbitrum:/home/user/.arbitrum -p`
- `0.0`
- `.0.0:8547:8547 -p`
- `0.0`
- `.0.0:8548:8548 offchainlabs/nitro-node:v2.3.2-064fa11 --parent-chain.connection.url`
- `=`
- `<`
- Parent chain RPC URL
- 
- `--chain.id`
- `=`
- `<`
- L3ChainId
- 
- `--chain.name`
- `=`
- `<`
- My Arbitrum L3 Chain
- 
- `--http.api`
- `=`
- `net,web3,eth --http.corsdomain`
- `=`
- - `--http.addr`
- `=`
- `0.0`
- `.0.0 --http.vhosts`
- `=`
- - `--chain.info-json`
- `=`
- `<`
- Orbit Chain's chain info
- 
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- Please note that when using the flag--chain.info-json=
- , it is essential to replacewith the specificchain info
- json string of the Orbit chain for which you wish to run the node. For your convenience, an example of an chain info json string is provided below:
- chain.info-json="{\"chain-id\":\"94692861356\",\"parent-chain-id\":\"421614\",\"chain-name\":\"My Arbitrum L3 Chain\",\"chain-config\":{\"chainId\":\"94692861356\",\"homesteadBlock\":0,\"daoForkBlock\":null,\"daoForkSupport\":true,\"eip150Block\":0,\"eip150Hash\":\"0x00\",\"period\":0,\"epoch\":0,\"arbitrum\":{\"EnableArbOS\":true,\"AllowDebugPrecompiles\":false,\"DataAvailabilityCommittee\":false,\"InitialArbOSVersion\":10,\"InitialChainOwner\":\"0xAde4000C87923244f0e95b41f0e45aa3C02f1Bb2\",\"bridge\":{\"0xde835286442c6446E36992c036EF6261AcD87F6d\",\"inbox\":{\"0x0592d3861Ea929B5d108d915c36f64EE69418049\",\"sequencer-inbox\":{\"0xf9d77199288f00440Ed0f494Adc0005f362c17b1\",\"rollup\":{\"0xF5A42aDA664E7c2dFE9DDa4459B927261BF90E09\",\"validator-utils\":{\"0xB11EB62DD2B352886A4530A9106fE427844D515f\",\"validator-wallet-creator\":{\"0xEb9885B6c0e117D339F47585cC06a2765AaE2E0b\",\"deployed-at\":\"1764099}}}}\"}
- Note for Anytrust chains, it is essential to add--node.data-availability.enable
- , and--node.data-availability.rest-aggregator.urls=
- or--node.data-availability.rest-aggregator.online-url-list=
- to the command or configuration.
- When shutting down docker image, it is important to allow for a graceful shutdown so that the current state can be saved to disk. Here is an example of how to do a graceful shutdown of all docker images currently running
- docker
- stop --time
- =
- 300
- (
- docker
- ps
- aq
- )

## Note on permissions

The Docker image is configured to run as non-root UID 1000. This means if you are running in Linux or OSX and you are getting permission errors when trying to run the docker image, run this command to allow all users to update the persistent folders

mkdir /data/arbitrum chmod -fR 777 /data/arbitrum

## Optional parameters

We show here a list of the parameters that are most commonly used when running your Orbit node. You can also use the flag--help for a full comprehensive list of the available parameters.

Flag Description --execution.rpc.classic-redirect= Redirects archive requests for pre-nitro blocks to this RPC of an Arbitrum Classic node with archive database. Only for Arbitrum One. --http.api Offered APIs over the HTTP-RPC interface. Default:net,web3,eth,arb . Addebug for tracing. --http.corsdomain Accepts cross origin requests from these comma-separated domains (browser enforced). --http.vhosts Accepts requests from these comma-separated virtual hostnames (server enforced). Default:localhost . Accepts\* . --http.addr Address to bind RPC to. May require0.0.0.0 for Docker networking. --execution.caching.archive Retains past block state. For archive nodes. --node.feed.input.url= Default:wss://.arbitrum.io/feed . ⚠ One feed relay per datacenter is advised. See[feed relay guide](#) . --execution.forwarding-target= Defaults to the L2 Sequencer RPC based on provided L1 and L2 chain IDs. --execution.rpc.evm-timeout Default:5s . Timeout foreth\_call . (0 == no timeout). --execution.rpc.gas-cap Default:50000000 . Gas cap foreth\_call /estimateGas . (0 = no cap). --execution.rpc.tx-fee-cap Default:1 . Transaction fee cap (in ether) for RPC APIs. (0 = no cap). --ipc.path Filename for IPC socket/pipe within datadir. Not supported on macOS. Note the path is within the Docker container. --init.prune Prunes database before starting the node. Can be "full -init.url="" (Non-Orbit Nitro nodes only) URL to download the genesis database from. Required only for the first startup of an Arbitrum One node. Reference [to snapshots](#) and[archive node guide](#) . --init.download-path="/path/to/dir" (Non-Orbit Nitro nodes only) Temporarily saves the downloaded database snapshot. Defaults to/tmp/ . Used with--init.url . --node.batch-poster.post-4844-blobs Boolean. Default:false . Used to enable or disable the posting of transaction data using Blobs to L1 Ethereum. If using calldata is more expensive and if the parent chain supports EIP4844 blobs, the batch poster will use blobs when this flag is set totrue . Can betrue orfalse . --node.batch-poster.ignore-blob-price Boolean. Default:false . If the parent chain supports EIP4844 blobs andignore-blob-price is set totrue , the batch poster will use EIP4844 blobs even if using calldata is cheaper. Can betrue orfalse . [Edit this page](#) Last updatedonMar 26, 2024 [Previous Monitoring tools and considerations](#) [Next How to add your Orbit chain to Arbitrum's bridge](#)