Setup a Solana RPC Node

Since a Solana RPC server runs the same process as a consensus validator, first follow the instructions on how to setup a Solana validator to get started. Note, that you do not need to create a vote account if you are operating an RPC node. An RPC node typically does not vote.

After your validator is running, you can refer to this section for the RPC node specific setup instructions.

Sample RPC Node

Below is an examplevalidator.sh file for atestnet RPC server.

You will want to be aware of the following flags:

- --full-rpc-api
- : enables all RPC operations on this validator.
- --no-voting
- : runs the validator without participating in consensus. Typically, you do not want to run a validator asboth
- a consensus node and a full RPC node due to resource constraints.
- --private-rpc
- : does not publish the validator's open RPC port in thesolana gossip
- command

For more explanation on the flags used in the command, refer to thesolana-validator --help command

!/bin/bash

exec solana-validator \ --identity /home/sol/validator-keypair.json \ --known-validator 5D1fNXzvv5NjV1ysLjirC4WY92RNsVH18vjmcszZd8on \ --known-validator dDzy5SR3AXdYWVqbDEkVFdvSPCtS9ihF5kJkHCtXoFs \ --known-validator eoKpUABi59aT4rR9HGS3LcMecfut9x7zJyodWWP43YQ \ --known-validator 7XSY3MrYnK8vq693Rju17bbPkCN3Z7KvvfvJx4kdrsSY \ --known-validator Ft5fbkqNa76vnsjYNwjDZUXoTWpP7VYm3mtsaQckQADN \ --known-validator 9QxCLckBiJc783jnMvXZubK4wH86Eqqvashtrwvcsgkv \ --only-known-rpc \ --full-rpc-api \ --no-voting \ --ledger /mnt/ledger \ --accounts /mnt/accounts \ --log /home/sol/solana-rpc.log \ --rpc-port 8899 \ --rpc-bind-address 0.0.0.0 \ --private-rpc \ --dynamic-port-range 8000-8020 \ --entrypoint entrypoint.testnet.solana.com:8001 \ --entrypoint entrypoint2.testnet.solana.com:8001 \ --entrypoint entrypoint3.testnet.solana.com:8001 \ --expected-genesis-hash 4uhcVJyU9pJkvQyS88uRDiswHXSCkY3zQawwpjk2NsNY \ --wal-recovery-mode skip_any_corrupted_record \ --limit-ledger-size

Solana Bigtable

The Solana blockchain is able to create many transactions per second. Because of the volume of transactions on the chain, it is not practical for an RPC node to store the entire blockchain on the machine. Instead, RPC operators use the--limit-ledger-size flag to specify how many blocks to store on the RPC node. If the user of the RPC node needs historical blockchain data then the RPC server will have to access older blocks through a Solana bigtable instance.

If you are interested in setting up your own bigtable instance, see these docs in the Solana GitHub repositorysolana-labs/solana-bigtable

Example Known Validators

The identities of theknown validators supplied in these example snippets (via the--known-validator flag) are:

- 5D1fNXzvv5NjV1ysLjirC4WY92RNsVH18vjmcszZd8on
-
    - Solana Labs
- dDzy5SR3AXdYWVqbDEkVFdvSPCtS9ihF5kJkHCtXoFs
-
    - MonkeDAO
- Ft5fbkqNa76vnsjYNwjDZUXoTWpP7VYm3mtsaQckQADN
-
    - Certus One
- eoKpUABi59aT4rR9HGS3LcMecfut9x7zJyodWWP43YQ
-
    - SerGo

- 9QxCLckBiJc783jnMvXZubK4wH86Eqqvashtrwvcsgkv
-
    - Algo|Stake

Examples for other clusters

Additional examples of other Solana cluster specific validator commands can be found on the Clusters page.

Keep in mind, you will still need to customize these commands to operate as an RPC node, as well other operator specific configuration settings.

Account indexing

As the number of populated accounts on the cluster grows, account-data RPC requests that scan the entire account set -- likegetProgramAccounts andSPL-token-specific requests -- may perform poorly. If your validator needs to support any of these requests, you can use the--account-index parameter to activate one or more in-memory account indexes that significantly improve RPC performance by indexing accounts by the key field. Currently supports the following parameter values:

- program-id
- : each account indexed by its owning program; used bygetProgramAccounts
- spl-token-mint
- : each SPL token account indexed by its token Mint; used bygetTokenAccountsByDelegate
- , andgetTokenLargestAccounts
- spl-token-owner
- : each SPL token account indexed by the token-owner address; used bygetTokenAccountsByOwner
- , andgetProgramAccounts
- requests that include an spl-token-owner filter. Previous Setup a Validator Next Best Practices: Validator Operations