Local Sei Node

In this guide, we'll walk you through how to set up the Sei blockchain locally on your machine.

Prerequisites

To begin, ensure you are in the sei-chain repository on your local machine.

git

clone

https://github.com/sei-protocol/sei-chain cd

sei-chain

Running a Local Single-node Testnet

To run Sei locally, run the following command

./scripts/initialize_local_chain.sh Once you run the initialization script, the seid process will be running 1 node locally. It will also seed 50 accounts. To verify the status of the local blockchain, open a new tab and run

seid

status

|

jq If the chain is running properly, you should see output similar to the following:

{ "NodeInfo" : { "protocol_version" : { "p2p" :

"8" , "block" :

"11" , "app" :

"0" } , "id" :

"36126cf4875862c3388f04dcc636fc1557791dd7" , "listen_addr" :

"tcp://0.0.0.0:26656" , "network" :

"sei-chain" , "version" :

"0.34.19" , "channels" :

"40202122233038606100" , "moniker" :

"demo" , "other" : { "tx_index" :

"on" , "rpc_address" :

"tcp://127.0.0.1:26657" } } , "SyncInfo" : { "latest_block_hash" :

"0A708E540CC04445B3C5585ED2757FADCAD18FB8E2A403655B3DC90D0F588D49" , "latest_app_hash" :

"E3B0C44298FC1C149AFBF4C8996FB92427AE41E4649B934CA495991B7852B855" , "latest_block_height" :

"1" , "latest_block_time" :

"2022-09-04T17:59:07.314228Z" , "earliest_block_hash" :

"0A708E540CC04445B3C5585ED2757FADCAD18FB8E2A403655B3DC90D0F588D49" , "earliest_app_hash" :

"E3B0C44298FC1C149AFBF4C8996FB92427AE41E4649B934CA495991B7852B855" , "earliest_block_height" :

"1" , "earliest_block_time" :

"2022-09-04T17:59:07.314228Z" , "catching_up" :

false } , "ValidatorInfo" : { "Address" :

"13A8F763B396AF5B835A10748C4EFEDB0F99AC28" , "PubKey" : { "type" :

"tendermint/PubKeyEd25519" , "value" :

"7ztvoNO/8wxIkqTcsDQ3CLgCyF5yOz6WBqf0yGrmeuE=" } , "VotingPower" :

"70000000000000" } } To deploy multiple nodes, you can use a docker container to start a sei chain cluster.

Install Docker & Docker Compose

For MacOS:

The easiest and recommended way to get Docker and Docker Compose is to install Docker Desktop here:

https://docs.docker.com/desktop/install/mac-install/(opens in a new tab)

For Ubuntu:

Follow the below link to install docker on ubuntu

https://docs.docker.com/engine/install/ubuntu/#install-using-the-repository(opens in a new tab)

Follow the below link to install standalone docker compose

https://docs.docker.com/compose/install/other/(opens in a new tab)

Deploy Sei Chain Validators on Docker

Detailed instructions and commands can be found in theMakefile(opens in a new tab) of the sei-chain repo.

Start a 4 Node Validator Cluster

This will start a 4 node sei chain cluster, each validator node will be running in its own docker container, and each node will also run the oracle price feeder daemon

If this is the first time or you want to rebuild the binary:

make

docker-cluster-start

If you have run docker-cluster-start and build/seid exist, you can skip the build process to quick start by:

make

docker-cluster-start-skipbuild All the logs and genesis files will be generated under the temporary build/generated folder. To access the service log:

Monitor logs after cluster is started for node0

tail

-f

build/generated/seid-0.log

SSH into a single validator node

List all containers

docker

ps

-a

SSH into a running container

docker

exec

-it [container_name] /bin/bash

Deploy a State Sync Node

Requirement : Follow the above steps to start a 4 node docker cluster before starting any state sync node.

Be sure to start up a 4-node cluster before you start a state sync node

make

docker-cluster-start

Wait for at least a few minutes till the latest block height exceed 500 (this can be changed via app.toml)

seid

status

| jq

Start up a state sync node

make

run-rpc-nodesh

Local Docker for Debugging and Testing

One of the fanciest thing of using docker is fast iteration. Here we support:

- Being able to make changes locally and start up the chain to see the immediate impact
- Being able to make changes to local dependency repo (Cosmo SDK/Tendermint) and start the chain with the latest changes without bumping or release any binary version
- In order to make local debugging work, you can follow these steps:

Clone your dependency repo and put them under the same path as sei-chain

cd

sei-chain cd

../ git

clone

https://github.com/sei-protocol/sei-tendermint.git git

clone

https://github.com/sei-protocol/sei-cosmos.git

Modify go.mod file to point to local repo, must use the exact same path as below:

cd

sei-chain go

mod

edit

-replace

github.com/cosmos/cosmos-sdk=../sei-cosmos go

mod

edit

-replace

github.com/tendermint/tendermint=../sei-tendermint

Start the docker cluster

make

docker-cluster-start

You are good to go now! Make changes as you wish to any of the dependency repo and run docker to test it out.

Last updated onMarch 12, 2024 Token Standards Quickstart