Celestia App network instantiation guide

This guide is for helping instantiate a new testnetwork and following the correct steps to do so with Celestia App. You should only follow this guide if you want to experiment with your own Celestia test network (testnet) or if you want to test out new features to build as a core developer.

Hardware requirements

You will need tofollow hardware requirements .

Setup dependencies

You will need tosetup dependencies by following the guide .

celestia-app installation

You will need toinstallcelestia-app by following the guide .

Spin up a Celestia testnet

If you want to spin up a quick testnet with your friends, you can follow these steps. Unless otherwise noted, every step must be done by everyone who wants to participate in this testnet.

Optional: Reset working directory

If you have already initialized a working directory forcelestia-appd in the past, you must clean up before reinitializing a new directory. You can do so by running the following command:

sh celestia-appd

tendermint

unsafe-reset-all

--home HOME /.celestia-app celestia-appd

tendermint

unsafe-reset-all

--home HOME /.celestia-app

Initialize a working directory

Run the following command:

sh VALIDATOR_NAME = validator1 CHAIN_ID = testnet celestia-appd

init VALIDATOR_NAME --chain-id CHAIN_ID VALIDATOR_NAME = validator1 CHAIN_ID = testnet celestia-appd

init VALIDATOR_NAME --chain-id CHAIN_ID * The value we will use forVALIDATOR_NAME * isvalidator1 * but you should choose your own node name. * The value we will use forCHAIN_ID * istestnet * . TheCHAIN_ID * must remain the same for everyone participating in this network.

Create a new key

Next, run the following command:

sh KEY_NAME = validator celestia-appd

keys

add KEY_NAME --keyring-backend

test KEY_NAME = validator celestia-appd

keys

add KEY_NAME --keyring-backend

test This will create a new key, with a name of your choosing. Save the output of this command somewhere; you'll need the address generated here later. Here, we set the value of our keyKEY_NAME tovalidator for demonstration.

Add genesis account KeyName

Run the following command:

sh TIA_AMOUNT = "10000000utia" celestia-appd

add-genesis-account KEY_NAME TIA_AMOUNT --keyring-backend

test TIA_AMOUNT = "10000000utia" celestia-appd

add-genesis-account KEY_NAME TIA_AMOUNT --keyring-backend

test HereKEY_NAME is the same key name as before.

Optional: Adding other validators

If other participants in your testnet also want to be validators, repeat the command above with the specific amount for their public keys.

Once all the validators are added, thegenesis.json file is created. You need to share it with all other validators in your testnet in order for everyone to proceed with the following step.

You can find thegenesis.json atHOME/.celestia-app/config/genesis.json

Create the genesis transaction for new chain

Run the following command:

sh STAKING_AMOUNT = 9000000 utia celestia-appd

gentx KEY_NAME STAKING_AMOUNT --chain-id CHAIN_ID \ --keyring-backend

test STAKING_AMOUNT = 9000000 utia celestia-appd

gentx KEY_NAME STAKING_AMOUNT --chain-id CHAIN_ID \ --keyring-backend

test This will create the genesis transaction for your new chain. HereSTAKING_AMOUNT should be at least9000000utia . If you provide too much or too little, you will encounter an error when starting your node.

You will find the generated gentx JSON file insideHOME/.celestia-app/config/gentx/gentx-KEY_NAME.json

NOTE

If you have other validators in your network, they need to also run the above command with thegenesis.json file you shared with them in the previous step.

Creating the genesis JSON file

Once all participants have submitted their gentx JSON files to you, you will pull all those gentx files inside the following directory:HOME/.celestia-appd/config/gentx and use them to create the finalgenesis.json file.

Once you added the gentx files of all the participants, run the following command:

sh celestia-appd

collect-gentxs celestia-appd

collect-gentxs This command will look for the gentx files in this repo which should be moved to the following directoryHOME/.celestia-app/config/gentx .

It will update thegenesis.json file after in this locationHOME/.celestia-app/config/genesis.json which now includes the gentx of other participants.

You should then share this finalgenesis.json file with all the other participants who must add it to theirHOME/.celestia-app/config directory.

Everyone must ensure that they replace their existinggenesis.json file with this new one created.

Modify your config file

Open the following fileHOME/.celestia-app/config/config.toml to modify it.

Inside the file, add the other participants by modifying the following line to include other participants as persistent peers:

text

Comma separated list of nodes to keep persistent connections to

persistent_peers = "[validator_address]@[ip_address]:[port],[validator_address]@[ip_address]:[port]"

Comma separated list of nodes to keep persistent connections to

persistent_peers = "[validator_address]@[ip_address]:[port],[validator_address]@[ip_address]:[port]"

Add your node as a persistent peer

The following allows you to share your node as a persistent peer that you can share in the networks repo or with others so other participants can peer with you.

Run the following command:

sh IP_ADDRESS = (curl ifconfig.me) NODE_ID = (celestia-appd tendermint show-node-id) PORT_NUMBER = 26656 IP_ADDRESS = (curl ifconfig.me) NODE_ID = (celestia-appd tendermint show-node-id) PORT_NUMBER = 26656 Note that the default port is26656

Now you can run the following command to output your validator node address:

sh PEER = " NODE_ID @ IP_ADDRESS : PORT_NUMBER " echo PEER PEER = " NODE_ID @ IP_ADDRESS : PORT_NUMBER " echo PEER The output is your validator node address which you can share with other validators so they can peer with you.

Instantiate the network

You can start your node by running the following command:

sh celestia-appd

start celestia-appd

start TIP

Refer tothe ports section of the celestia-node troubleshooting page for information on which ports are required to be open on your machine. Now you have a new Celestia testnet to play around with! [][Edit this page on GitHub] Last updated: Previous page Slashing mechanics Next page Helpful CLI commands []