

# State Sync

When any operator of Namada, be it a full node or validator, joins the network, their node will need to sync to the tip of the chain. The simplest way to do this is to replay all blocks of the chain starting from genesis. However, this is not the most efficient way.

If an operator trusts the chain past a certain block height, they can fetch snapshots from peers (if they are configured to provide snapshots) and then only replay the chain from this snapshot onward. This is called `state sync`.

## Hosting snapshots

If an operator wishes to produce snapshots, then the `blocks_between_snapshots` parameter must be set under the `[ledger.shell]` table in their `config.toml` file.

This means that when the chain reaches a block height that is a multiple of the value set for `blocks_between_snapshots`, a background process is started and creates a snapshot file inside the node's base directory.

This process is not particularly fast, so the number of blocks should be relatively large. Indeed, there is little need to have more than one per epoch. In testnets with short epochs, the number of blocks should be configured so that snapshots are created roughly once per hour.

It is also recommended that operators choose the same value for `blocks_between_snapshots` so that syncing nodes can use multiple peers while syncing.

If an operator wishes to keep more than a single snapshot at a time, this can be configured via the `snapshots_to_keep` parameter under the `[ledger.shell]` table as well. If not set, it defaults to one.

## Syncing with State Sync

An operator wishing to sync with state sync needs to configure the `[ledger.cometbft.statesync]` table in their `config.toml`. It should be noted that state sync works only when syncing from genesis.

First, the `enable` flag should be set to `true`. Second, at least two RPC servers need to be provided to the `rpc_servers` parameter. This is a string containing a comma separated list of URLs (no spaces).

The `trust_height` and `trust_hash` are the block height and block hash of the point at which the chain is trusted. Only snapshots after this point will be fetched. These can be queried via

```
curl
```

```
-s RPC_ADDRESS /commit
```

```
|
```

```
jq
```

```
"{height: .result.signed_header.header.height, hash: .result.signed_header.commit.block_id.hash}"
```

 The `trust_period` must also be set.

According to the Cometbft documentation, `trust_period` is the period in which headers can be verified.

This value should be significantly smaller than the unbonding period. To estimate the unbonding period length in time, use the following query:

```
namadac
```

```
query-protocol-parameters
```

 From this, multiply the unbonding length by the minimum epoch duration.

The `temp_dir` directory can be specified as the place to store partial downloads of a snapshot; the default is `/tmp/`.

If any part of state sync fails or is misconfigured, the node will fall back to block sync, i.e. replaying all blocks from genesis.

[Troubleshooting Integration Guide](#)