Bonding (Staking)

We discuss two types of bonding:

1. Non-self bonding
2. (referred to as delegating in many other ecosystems, but not to be confused with governance delegation on Namada)
3. Self-bonding

Non-self bonding (delegating)

ð¤¡ Note the use of the placeholderaliace for the alias parameter. This is a completely configurable parameter, and should just refer to the alias of the key/address used to bond. Users can bond to any number of validators at any time. When a user bond tokens, the bonds won't count towards the validator's stake (which in turn determines its voting power) until the beginning of epochn + 2 in the current epochn (the literal2 is set by PoS parameterpipeline_len). The bonded tokens will be deducted from the bonder's account immediately, and will be credited to the PoS system's account.

To bond tokens from the source address with aliasaliace to a validator with aliasvalidator-1 :

namada

client

bond \ --source

aliace \ --validator

validator-1 \ --amount

12.34 You can query your bonds:

namada

client

bonds

--owner

aliace The result of this query will inform the epoch from which your bonds will be active.

Because the PoS system is just an account, you can query its balance, which is the sum of all currently bonded tokens as well as the unbonded tokens that have not yet been withdrawn:

namada

client

balance

--owner

PoS

Self-bonding

It is also possible to increase a validator's voting power through bonding NAM from the validator's liquid balance to itself. A user can submit a self-bonding transaction of tokens from a validator account to the PoS system with:

namada

client

bond \ --validator

my-validator \ --amount

3.3

Query a validator'sbonded-stake

A validator's bonded-stake (voting-power in cometbft) is determined by the sum of all their active self-bonds and bonds from delegators, with slashes applied, if any.

When tokens are un-bonded, the bonded amount does not count towards the validator's stake until the beginning of epochn + 2 in the current epochn . The bonded amount of tokens will be deducted from the validator's account immediately and will be credited to the PoS system's account.

To see all validators and their voting power, which is exactly equal to the amount of staked NAM tokens from their self-bonds and delegated bonds, you can query:

```
namada

client
```

bonded-stake With this command, you can specify--epoch to find the voting powers at some future epoch. Note that only the voting powers for the current and the next epoch are final.

Slashes

Should a validator exhibit punishable behavior, the bonds towards this validator are also liable for slashing. Only the bonds that were active in the epoch in which the fault occurred will be slashed by the slash rate of the fault type. If any of your bonds have been slashed, this will be displayed in thebonds query. You can also find all the slashes applied with:

```
namada

client

slashes
```

Unbonding

While tokens are bonded, they are locked-in the PoS system and hence are not liquid until the bonder withdraw them. To do that, the bonder first need to send a transaction to âunbondâ its tokens. A user can unbond any amount, up to the sum of all its bonds to the given validator, even before the bonds become active.

Non-self unbonding

To submit an unbonding of tokens from a source address to the validator:

```
namada

client

unbond \ --source

aliace \ --validator

validator-1 \ --amount

1.2
```

Self-unbonding

To submit an unbonding of self-bonded tokens from a validator:

```
namada

client

unbond \ --validator

my-validator \ --amount

0.3
```

Withdrawing Unbonded Tokens

When a user unbonds tokens, the user won't be able to withdraw them immediately. Instead, tokens unbonded in the epochn will be withdrawable starting from the epochn + 6 (the literal6 is set by PoS parameterunbonding_len). After tokens are unbonded, the user will be able to see when they can withdraw them via thebonds query:

namada

client

bonds

--owner

aliace When the chain reaches the epoch in which you can withdraw the tokens (or anytime after), `aliace`` can submit a withdrawal of unbonded tokens back to her account:

namada

client

withdraw \ --source

aliace \ --validator

validator-1 Upon success, the withdrawn tokens will be credited backaliace 's account and debited from the PoS system.

Validator setup Proof of stake