MAINNET

Mosaic Galaxy

Staking Explorer Mainnet Guide

ENG

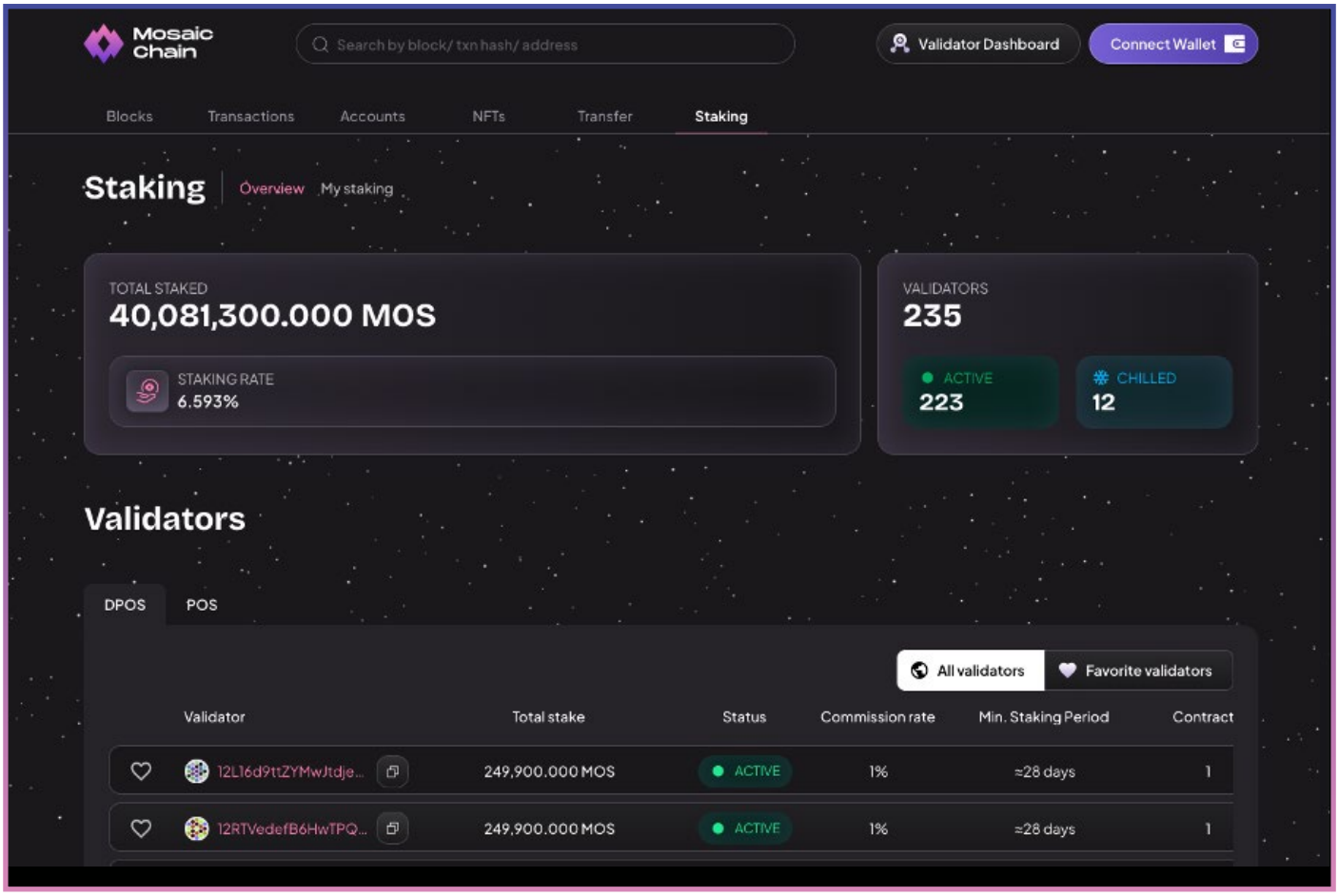
Mosaic Explorer Staking (Delegation)

Since there is no unified translation for blockchain-related terms, and English terms have become established in many languages' colloquial usage, we will use the English terms in this guide. You will find a more detailed definition at the end of the document, and the following glossary will help you interpret the terms:

English term	Meaning
staking	Staking tokens (including NFT) for network security and rewards.
stake	The total of staked tokens.
validator	A node that produces and validates blocks.
delegator	The user who stakes their tokens to a validator.
reward	The rewards of validators and their delegators
commission	The validator's share of their delegators' rewards.
slashing	Stake deduction due to malicious or malfunctioning activity.
unstaking	The process of unstaking - unlocking the stake (often with a waiting period).
session	The time unit for staking rewards calculation periods.
minimum stake / min. staking amount	The minimum amount that must be staked to participate.
minimum staking period	The time that the token must be staked before it can be unlocked.
contract	It contains the terms of the staking agreement between the validator and the delegator (or the validator and themselves).

Staking page on Mosaic Explorer

The staking page consists of two main sections: Overview and the user's own staking (My Staking), with the selector at the top of the page allowing you to choose between the two sub-pages.



Staking overview

At the top of the page you will see global staking statistics:
- Total stake: the total value of assets staked on the Mosaic blockchain.
- Staking rate: the ratio of staked tokens to total issued tokens.
- Validators: the number of validators on the Mosaic blockchain, broken down by active and chilled status.

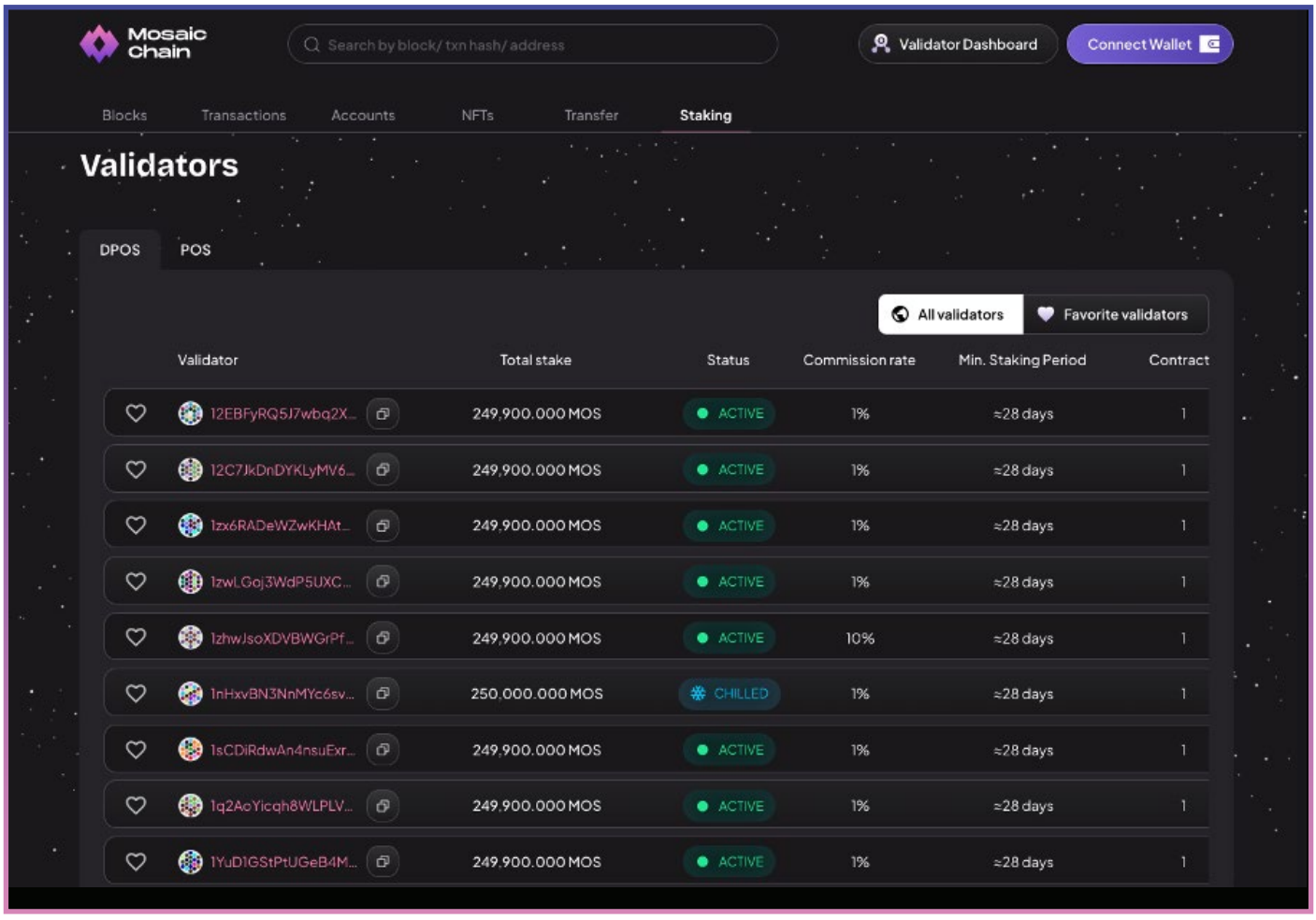
Below this you find the list of Validators, with DPOS and POS validators in a separate table, as only DPOS validators can be staked to.
It is possible to mark your favorite validators whose operation and changes in their conditions you would like to monitor. Those you mark by clicking on the icon at the beginning of the row will appear in a separate list, which you can view by clicking on the "Favourite validators" button in the upper right corner of the table.

Validators

In the list of DPOS validators you can see the following information (the table can be scrolled horizontally, not all columns are visible at once):

- Validator: The validator's account address; by clicking on this you can navigate to the "Validator details" page.
- Total stake: The validator's total stake, including the value of their own NFT, the NFTs delegated to them and the rewards.
- Status: Active, faulted or chilled.
- Commission rate: The rate that the validator receives from the delegator's reward after staking with them.
- Min. Staking Period: minimum staking period. The default value is 672 sessions, which corresponds to approx. 28 days based on the average session length. The validator can set this to a higher value.
- Contracts: The number of staking contracts of the validator, including the one for their own validator NFT.
- Accepts delegations: Whether delegation to the validator is possible. Validators can set to not accept stake from delegators for a period of time.

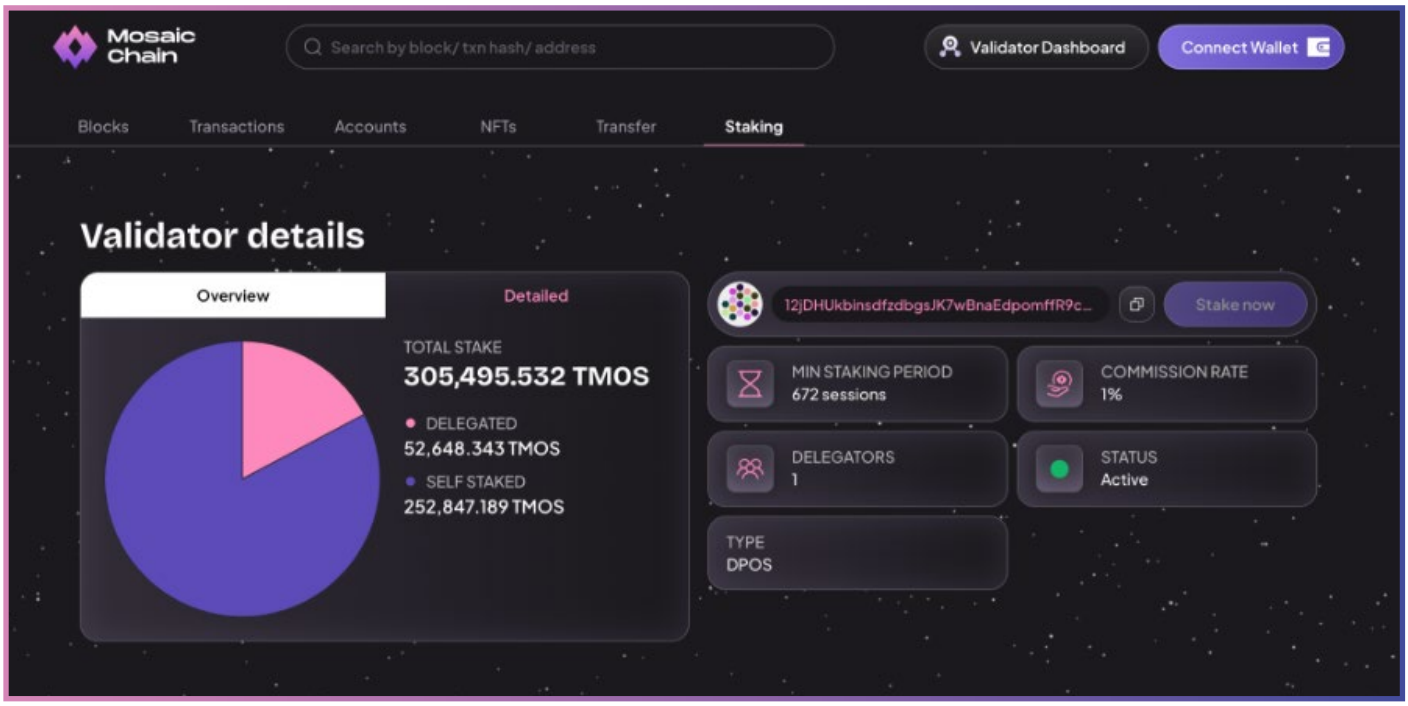
The minimum stake is currently 50 MOS for all validators.



Select a validator from the table, click on their account address and view their details on the Validator Details page that opens.

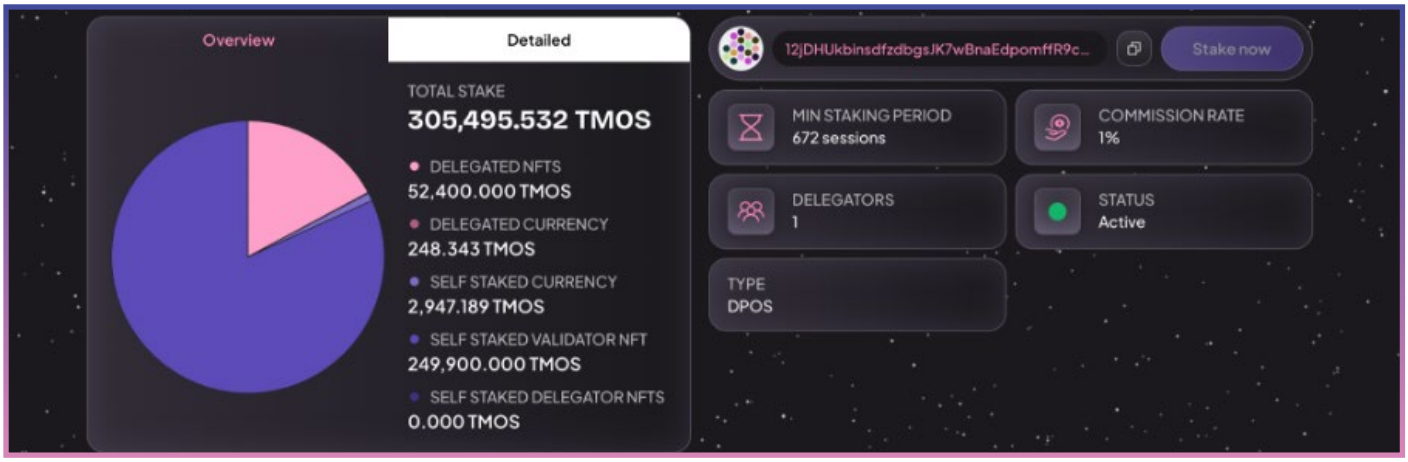
Validator Details

On this page, on the right side, you see the min. staking period, commission rate, and status, but here we see the number of delegators instead of contracts, so the own validator contract is not included in this number.
(Validators can manage their staking contract terms, such as min. staking period and commission rate on the Validator Dashboard Settings platform.)



The pie chart shows the breakdown of the validator's total stake. Under the Overview tab, the validator's own stake is combined with the stake delegated by others. In the Detailed view, this is broken down further into:

- delegated NFTs: the nominal value of the delegator NFTs delegated to the validator
- delegated currency: the amount of MOS delegated to the validator
- self staked currency: the amount of MOS staked by the validator to themselves, including rewards
- self staked validator NFT: the nominal value of the validator's bound validator NFT
- self staked delegator NFTs: the nominal value of the delegator NFTs delegated by the validator to themselves



If you like the details of the validator and would like to stake to them, you can do so by clicking the Stake now button.
If your wallet is not yet connected to the site, click the Connect wallet button in the upper right corner and connect your wallet. (See the wallet connection process at the end of the document.) Select the acccount address you would like to stake with, which holds your delegate NFT.
Once you have connected your wallet, click the “Stake now” button.

Stake process

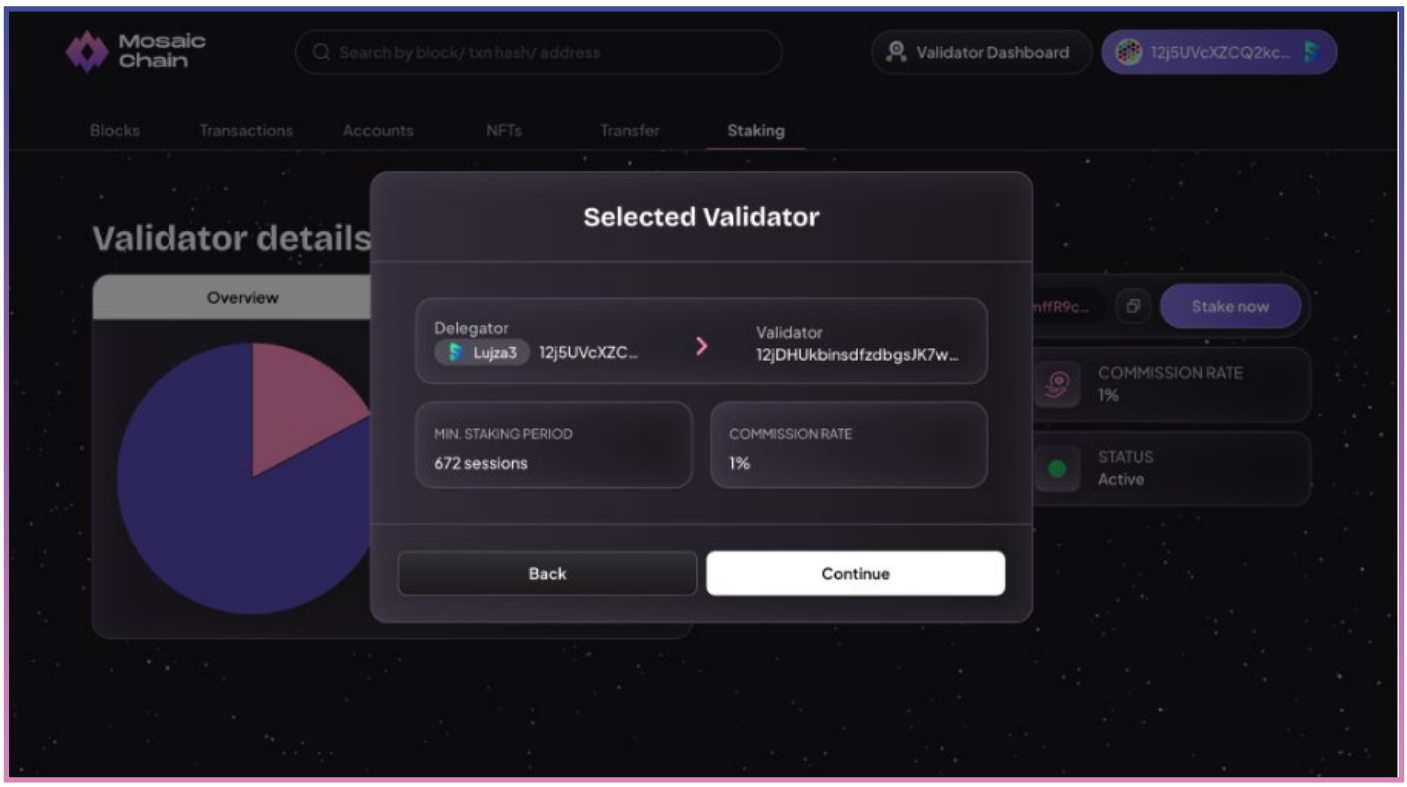
Important information

What you stake will be tied up for at least the minimum staking period. (Unless a validator has been in a chilled status for at least 72 sessions, in which case an “extraordinary” unstaking is possible.)
The delegator NFT’s expiration period starts from its first staking (binding) and can not be interrupted! If you unstake it and it is not staked for a while, the counting of the expiration period does not stop!
Ensure a minimum spendable amount in your balance for the transaction fee of staking and unstaking.
The reward will be paid out at the end of the session and added to your stake amount, you cannot withdraw it from the stake during the minimum staking period.
Monitor your stake and change validators if necessary, as circumstances may change.

A delegator NFT can be staked if
- it has not yet been staked to another validator, i.e. its status is not bound,
- its nominal value is greater than or equal to the minimum staking amount,
- it does not expire before the end of the minimum staking period.

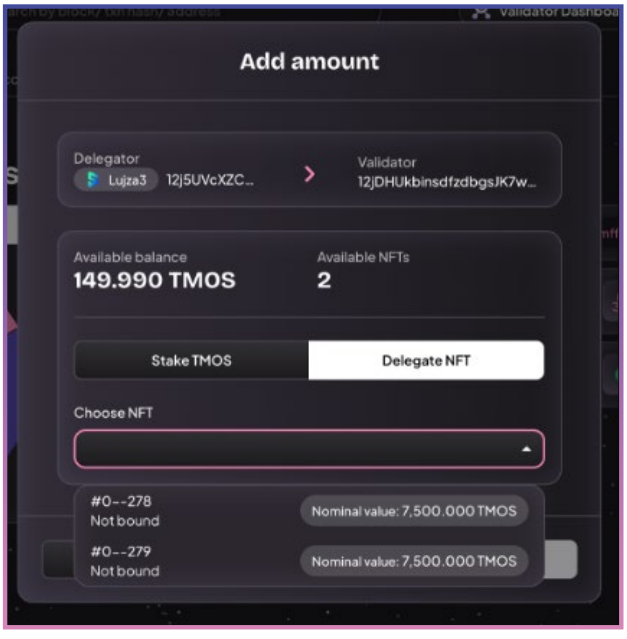
After clicking the “Stake now” button on the validator page, you need to follow the steps below.

1. Selected Validator:
This is a confirmation window, you will see your delegator account on the left, the account address of the selected validator on the right, as well as the validator's minimum staking period and commission rate. If you find it OK, click the Continue button.



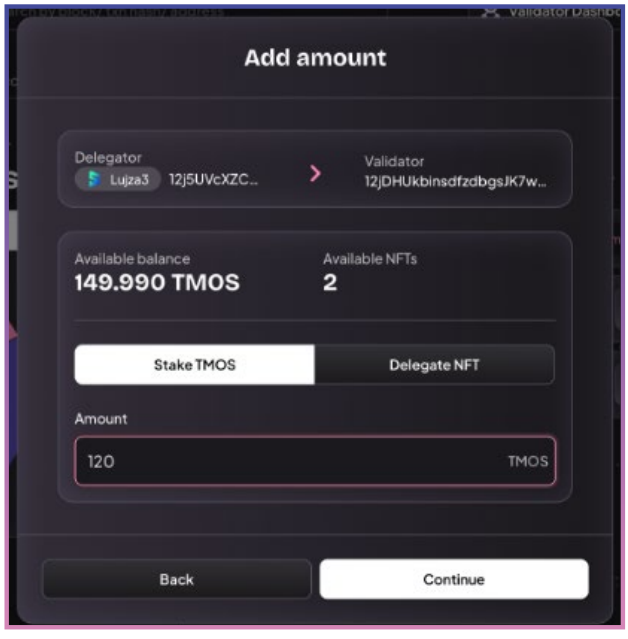
2. Add amount:
You can choose whether you want to stake MOS or delegate NFT, if you have any on your account.

Staking Delegator NFT
Click the Delegate NFT button, then click in the field below Choose NFT to see the delegator NFTs on your account. Select the NFT you want to delegate.



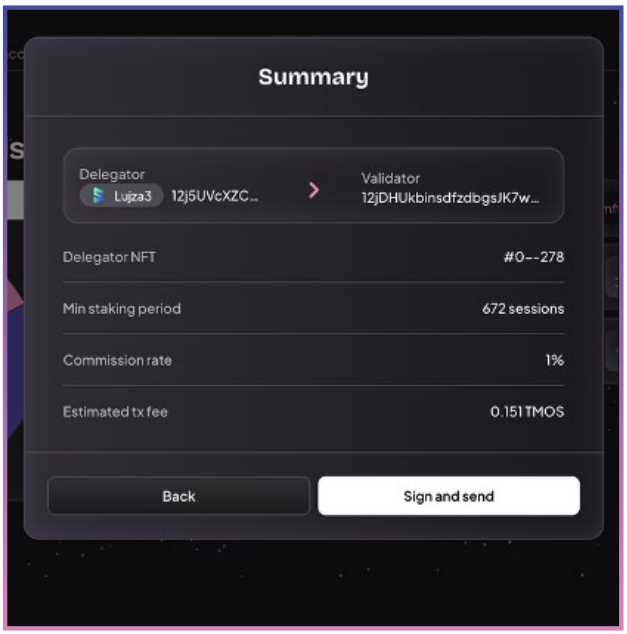
After you have selected your delegator NFT, click the Continue button!

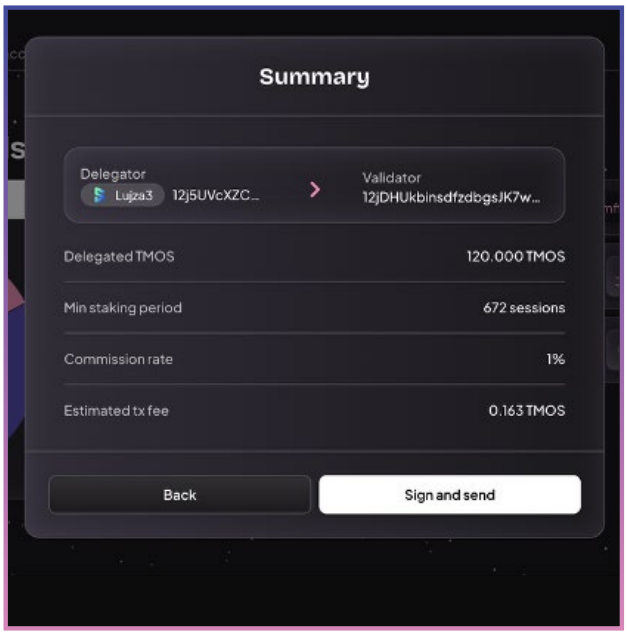
Staking MOS
Enter the amount you want to stake in the amount field. If you enter an amount less than the min. staking amount or more than your balance, you will see a red warning.



After you have entered the MOS amount, click the Continue button!

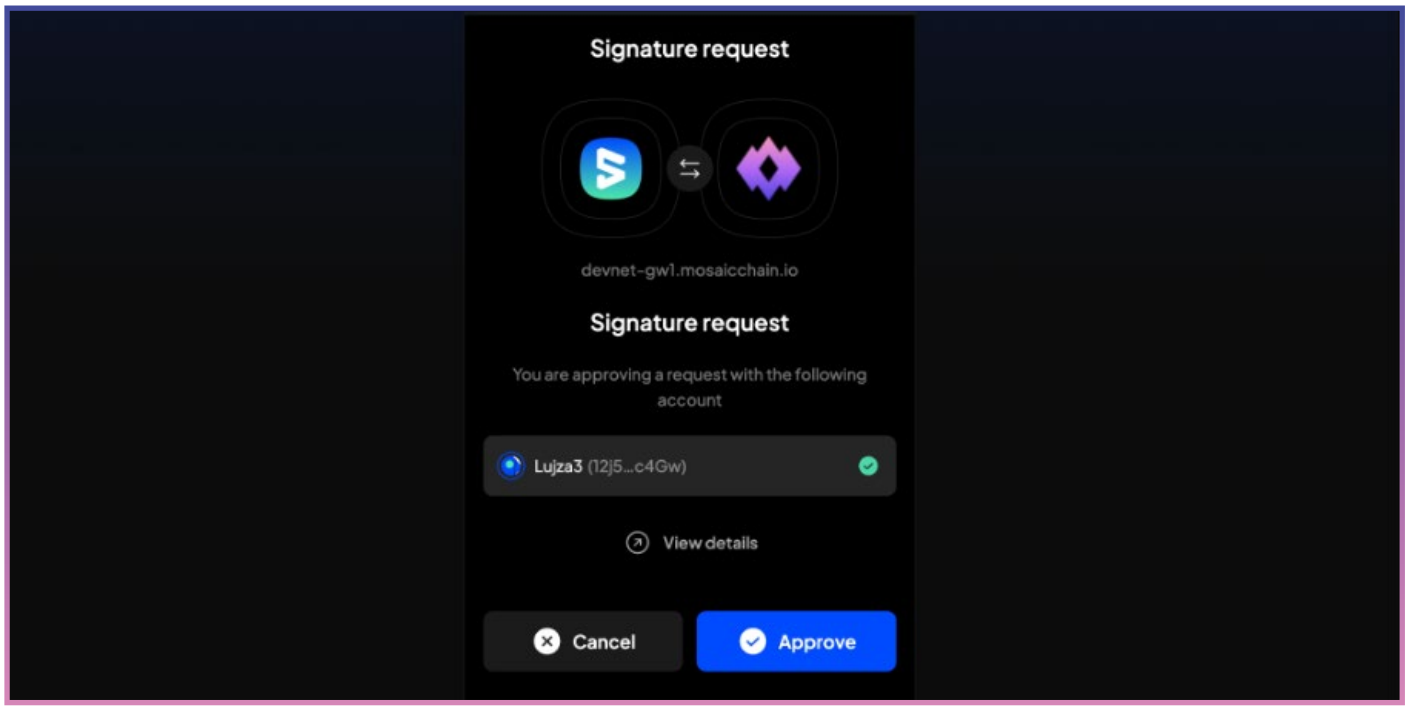
3. Summary:
The window that appears summarizes the data entered for staking. New information is the “estimated tx fee”, which is the estimated transaction fee of the staking transaction.

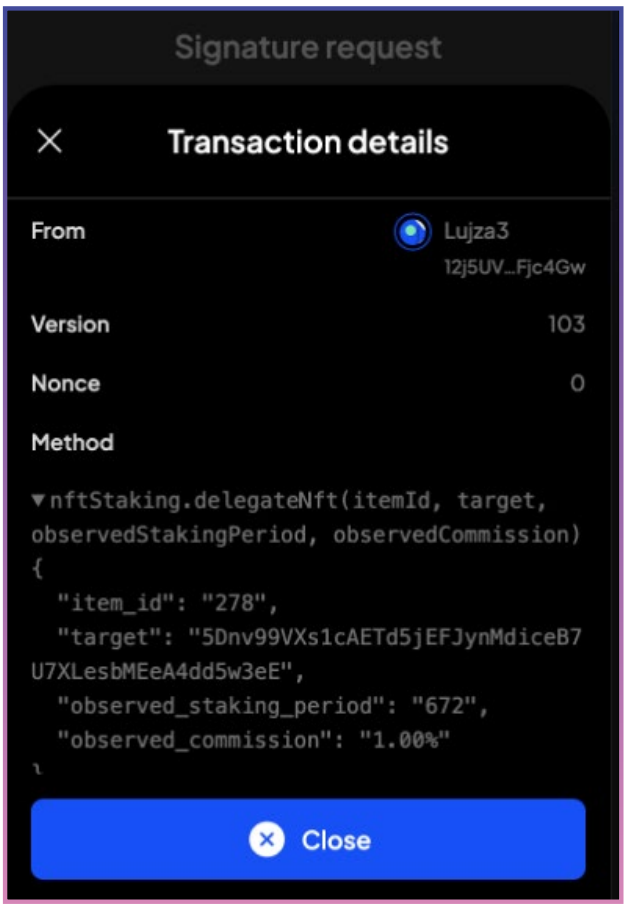


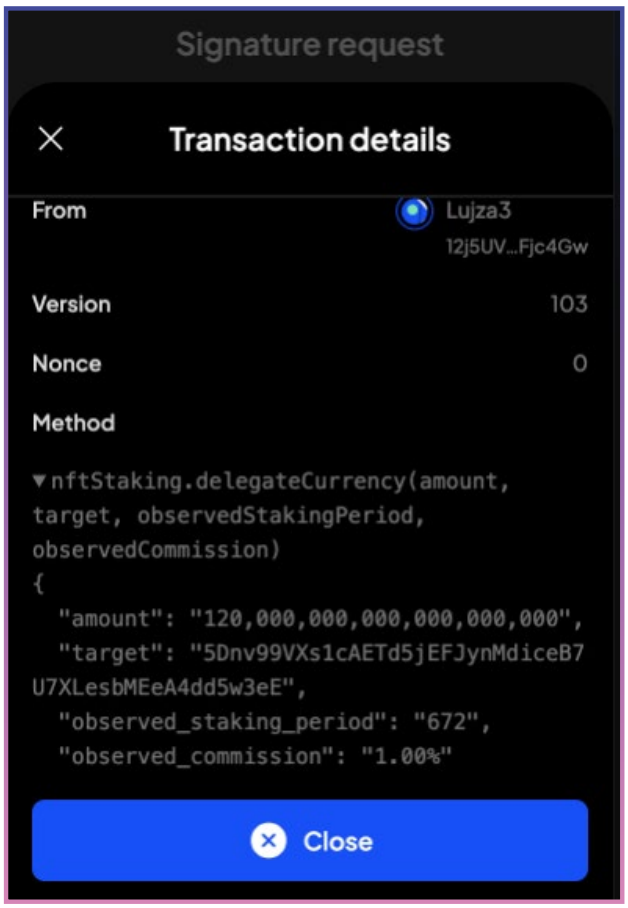


If the details are correct, click the Sign and send button.

4. The SubWallet window will then appear, enter your password if necessary, then check the transaction details by clicking the view details button before signing!

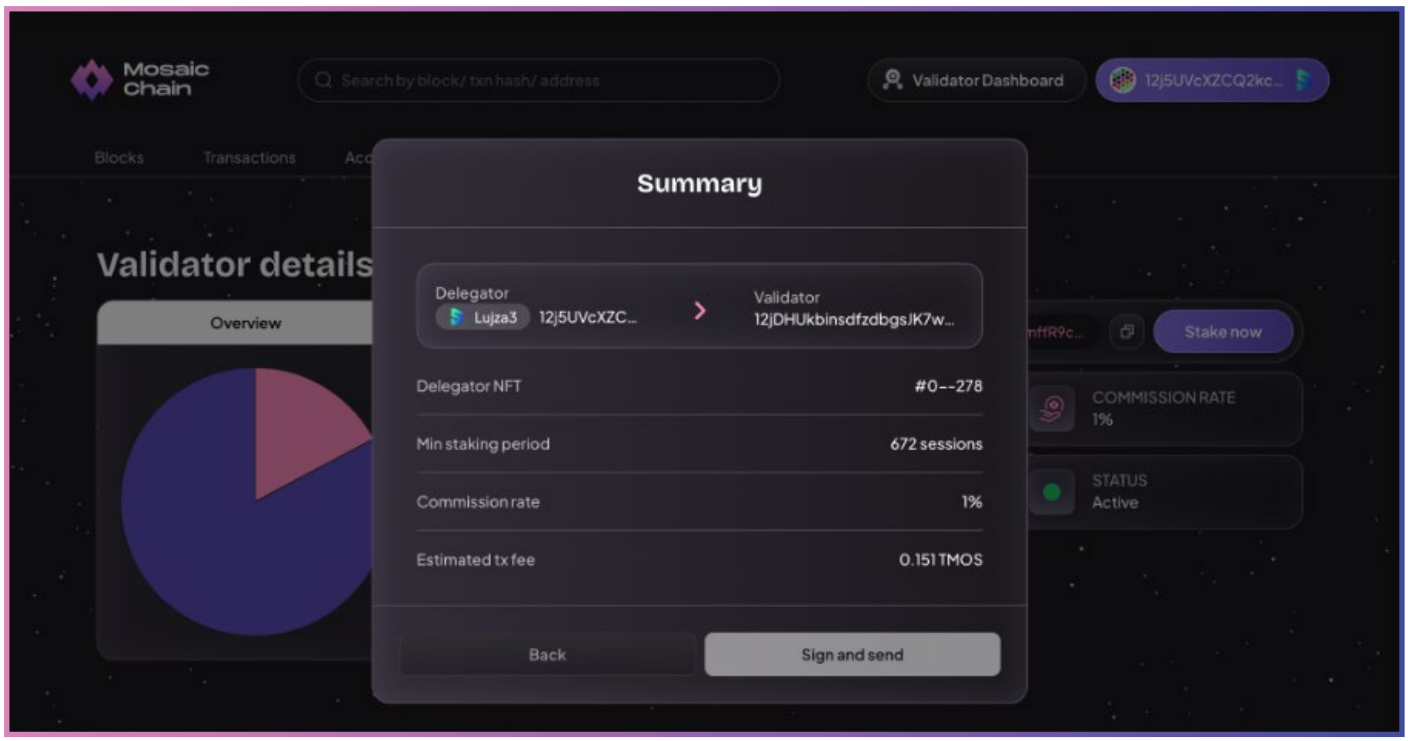




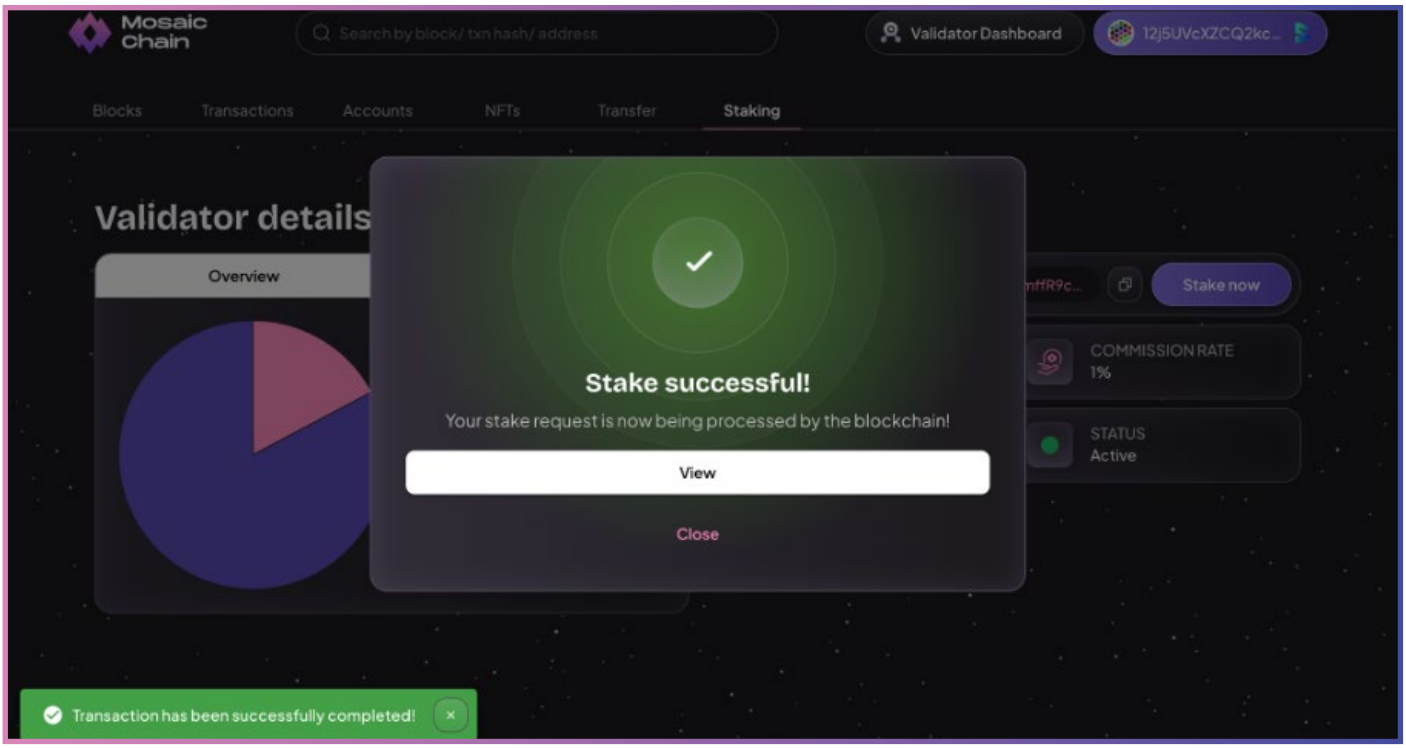


(The amount is expressed in MOS "change", 1 MOS = 10^18 tiles)

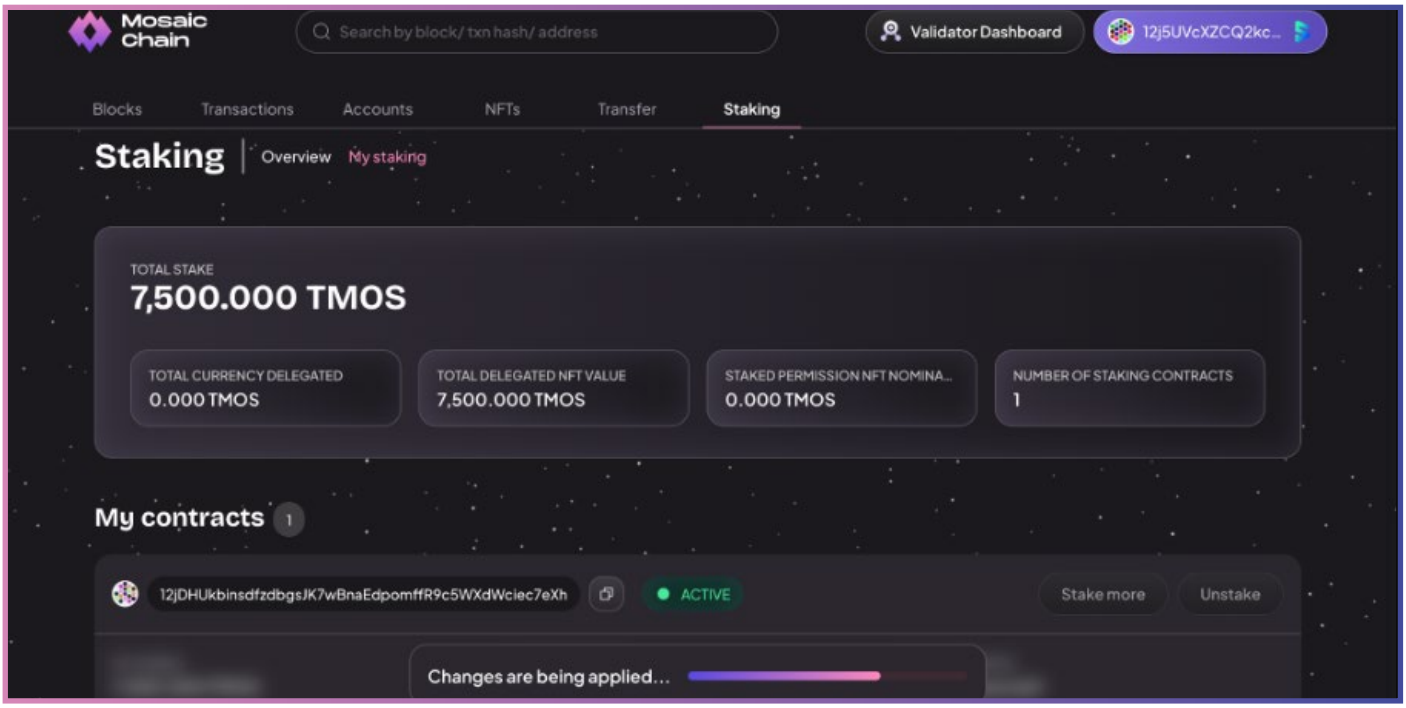
If the details are correct, close this window with the Close button, then click the approve button! After the SubWallet window closes, you can see the transaction status in the blue bar that appears in the lower left corner of Explorer.

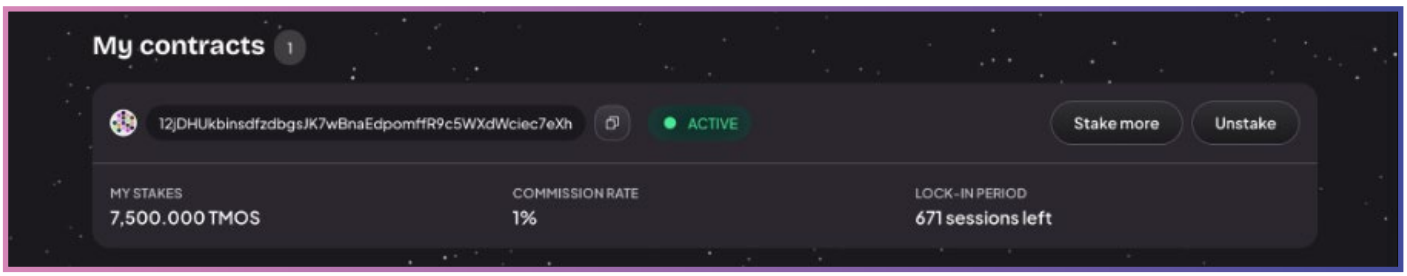


If the transaction has been added to the blockchain, a “Stake successful” message will appear. The “View” button will navigate you to your own staking page, the “Close” button will close this message and you will remain on the validator page. Click the View button.



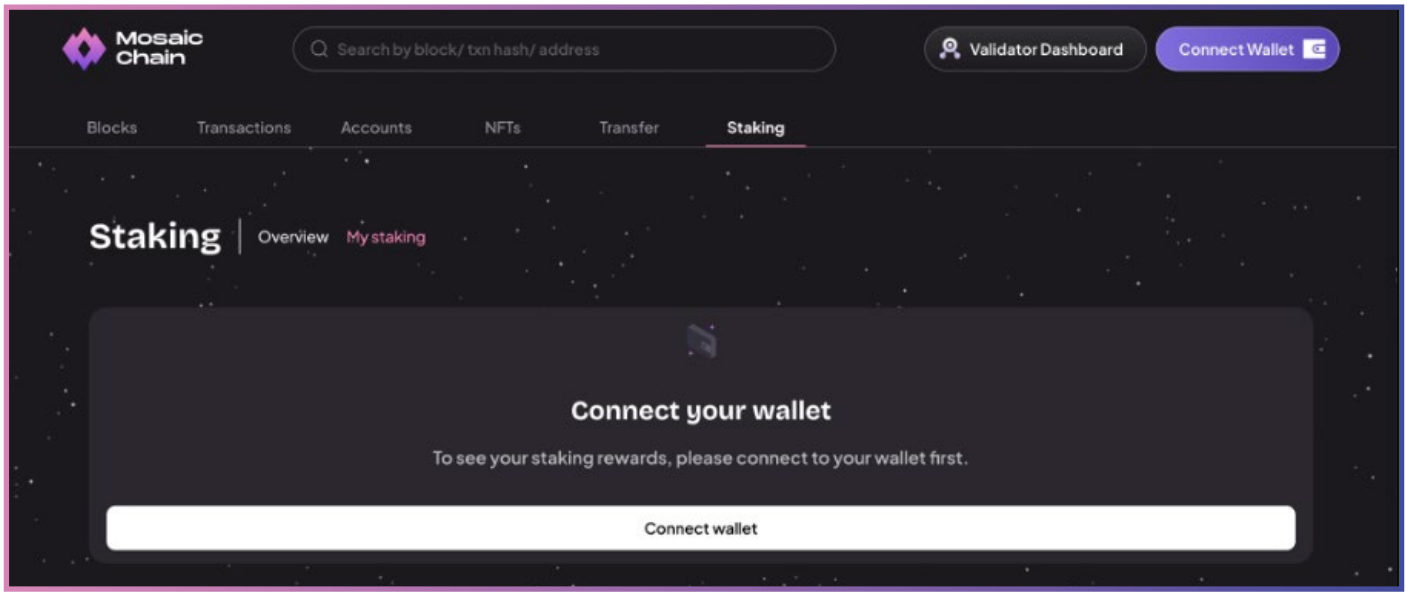
The new stake will appear on the “My Staking” page under “My Contracts”, i.e. among your staking contracts. You will not see the details yet, because although the staked amount or delegated NFT is immediately deposited (locked or bound), it will only be added to the validator’s stake in the next session. This can take up to an hour. This is because there are no partial time units when calculating the reward, so that someone who only participated in the validation for 2/3 of the time will receive 2/3 of the reward, etc., so each stake is always considered per session.



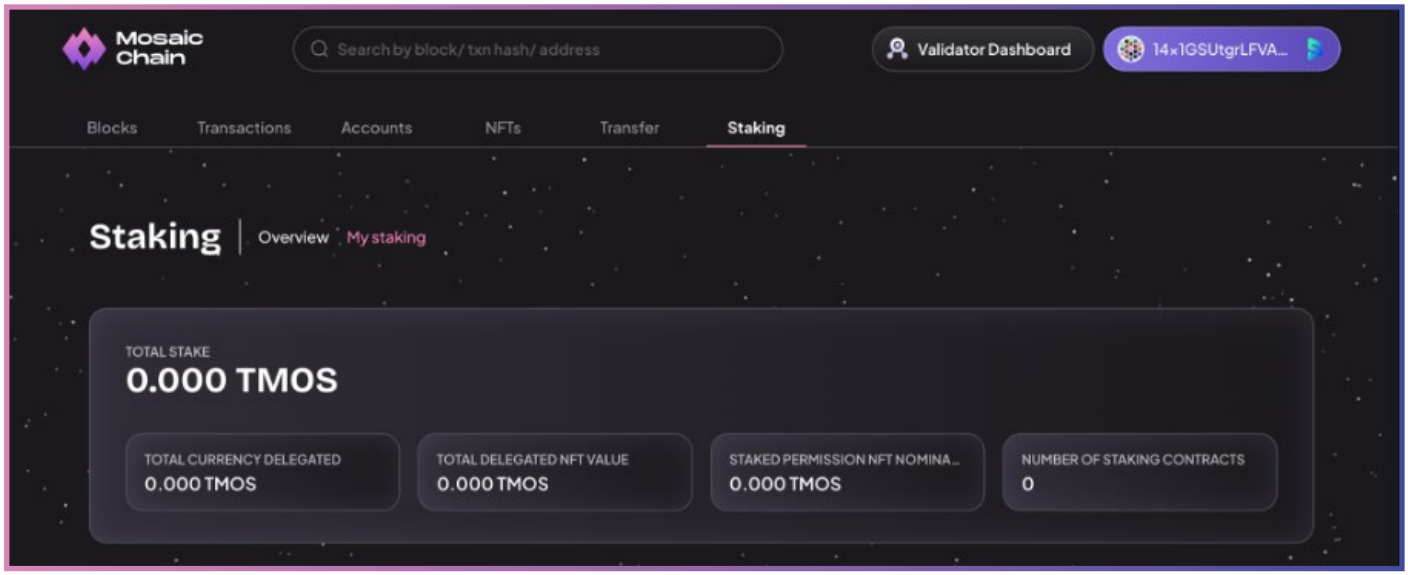


My Staking page

You can see your stake details on the My Staking page. If your account is not yet connected to the page, click the Connect wallet button in the middle of the page or in the upper right corner and connect your wallet. (See the wallet connection process at the end of the document.) Select the account address for which you would like to see the stake details, you can only see the details of one account at a time on the page.

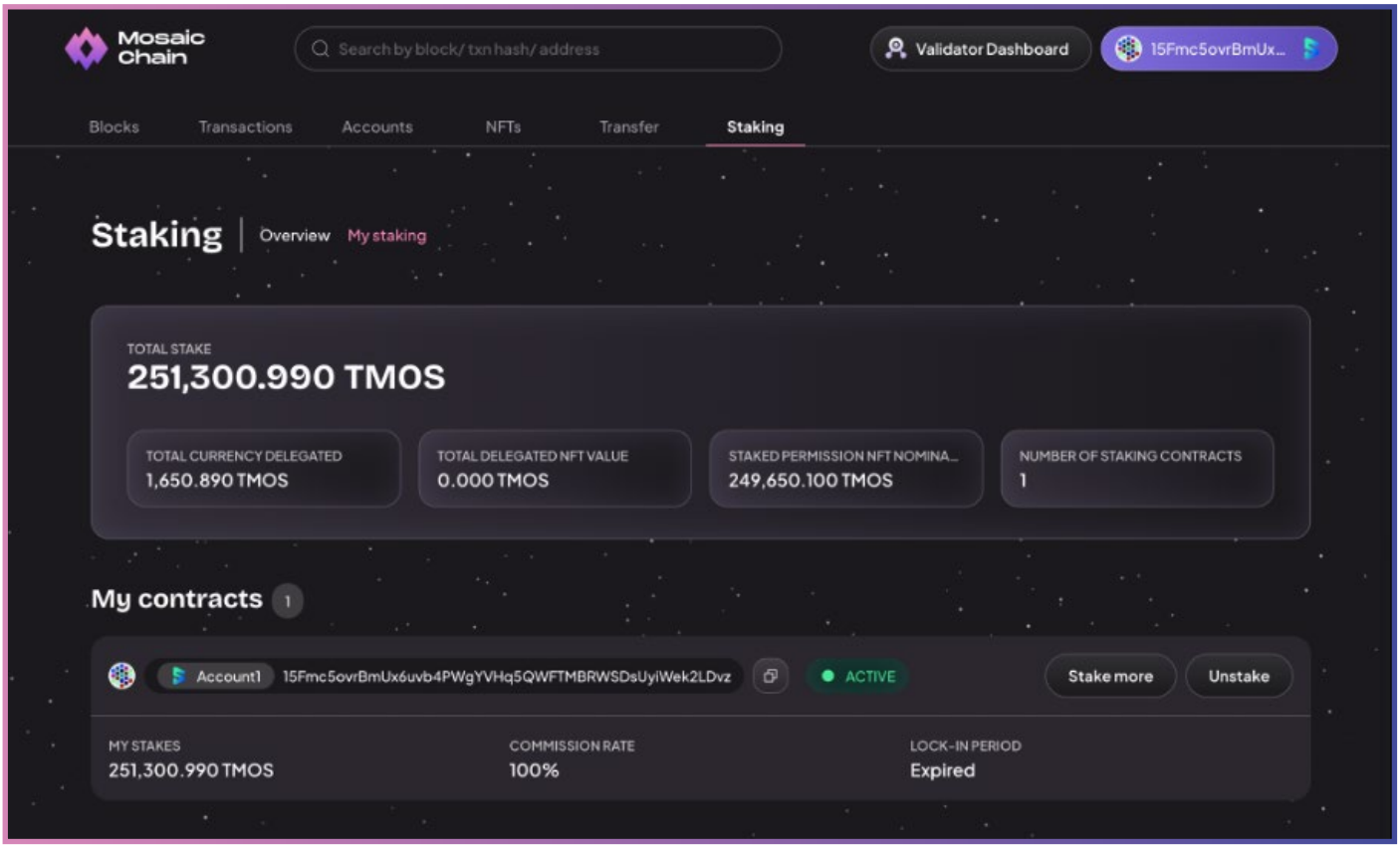


If you don't have any stake yet, all amounts will be zero.



If you have any staking contracts, whether from a bound validator NFT, a delegated NFT, or staked MOS, the summary will appear in the upper part, and also a list of your contracts with the contract data.

The image below shows the stake page of a validator who has no other contract besides their own bound validator NFT, i.e. has no delegator. In the upper part, you can see an amount at total currency delegated, which the validator could have staked to themselves, but in this example, it is the amount of their rewards, which is automatically credited to the stake.
Among the contract data, you can see the validator's account address at the top, and its current status.
The bottom line shows the total amount of the stake (NFT nominal value + staked MOS), the commission rate, which is 100% because this is a validator self-stake contract. Finally, it appears that the minimum staking period (here lock-in period) has expired, meaning the bound NFT and staked amount are no longer "locked", and the validator can unstake it.
Note: The validator can only unstake the reward here, the validator can unbind the NFT on the Validator Dashboard.



There are two buttons on the contract: Stake more and Unstake.

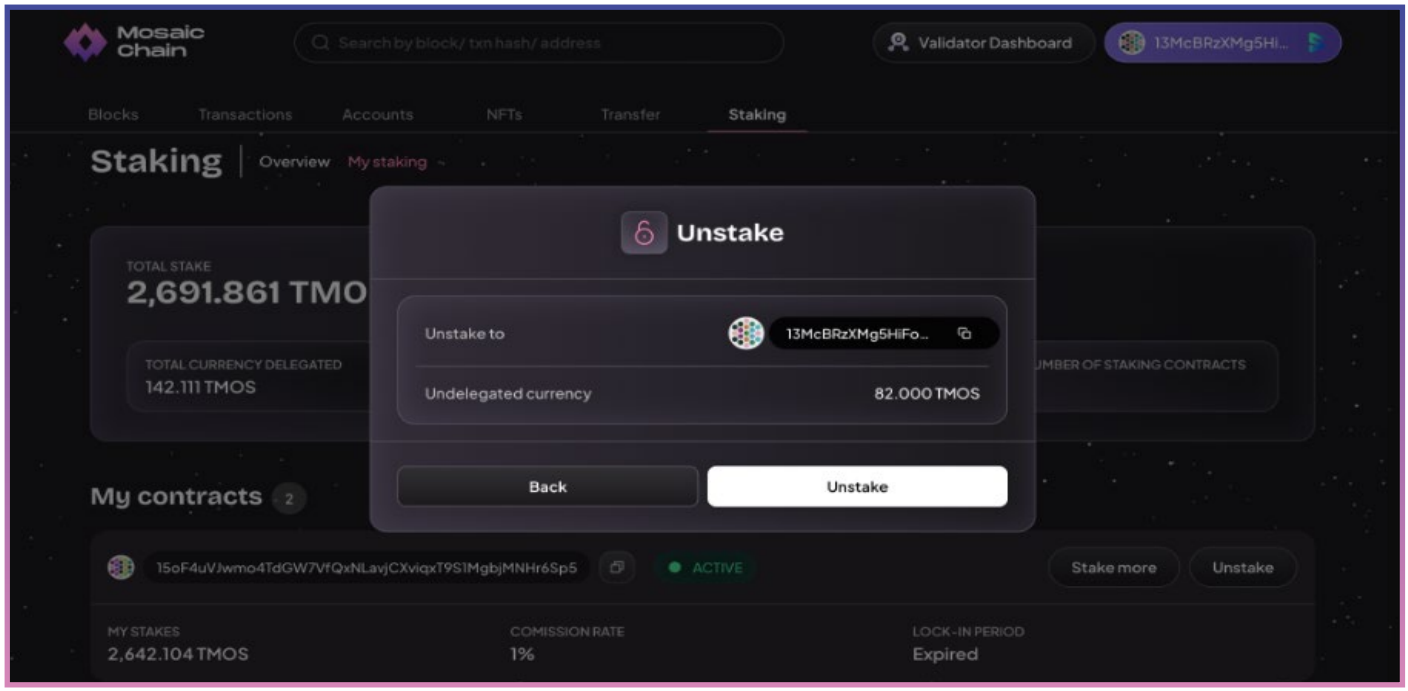
By clicking on Stake more, you can perform the steps described above in the Staking process chapter, to the validator in the contract. What is important is that by adding a new stake, the contract is modified according to the currently valid conditions (min. staking period, commission rate), and the minimum staking period restarts also for the previously staked amount. The changes will only be applied in the next session, the previous conditions will apply until the end of the current session.

Unstake

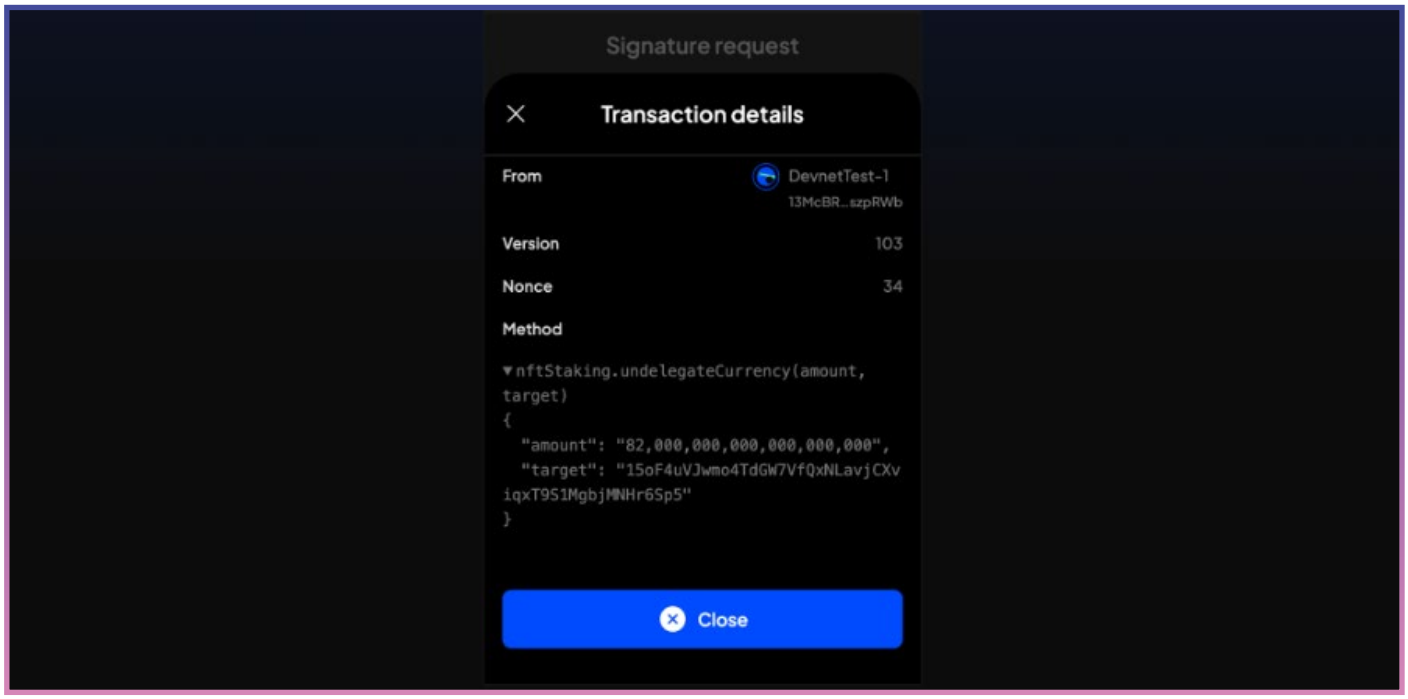
On the “My Staking” page, you can unstake, i.e. remove the stake amount that is no longer locked from the staking by clicking the Unstake button on the given contract. In the Unstake process, it is possible to unstake a partial amount, only MOS, only NFT, or even everything at once. However, it is important that if you do not unstake everything, a stake equal to or greater than the minimum staking amount must remain in the contract.

In the pop-up window, select with the slider, or enter the amount directly that you want to unstake, and/or check the NFT’s checkbox you want to unstake, then click the Unstake button!

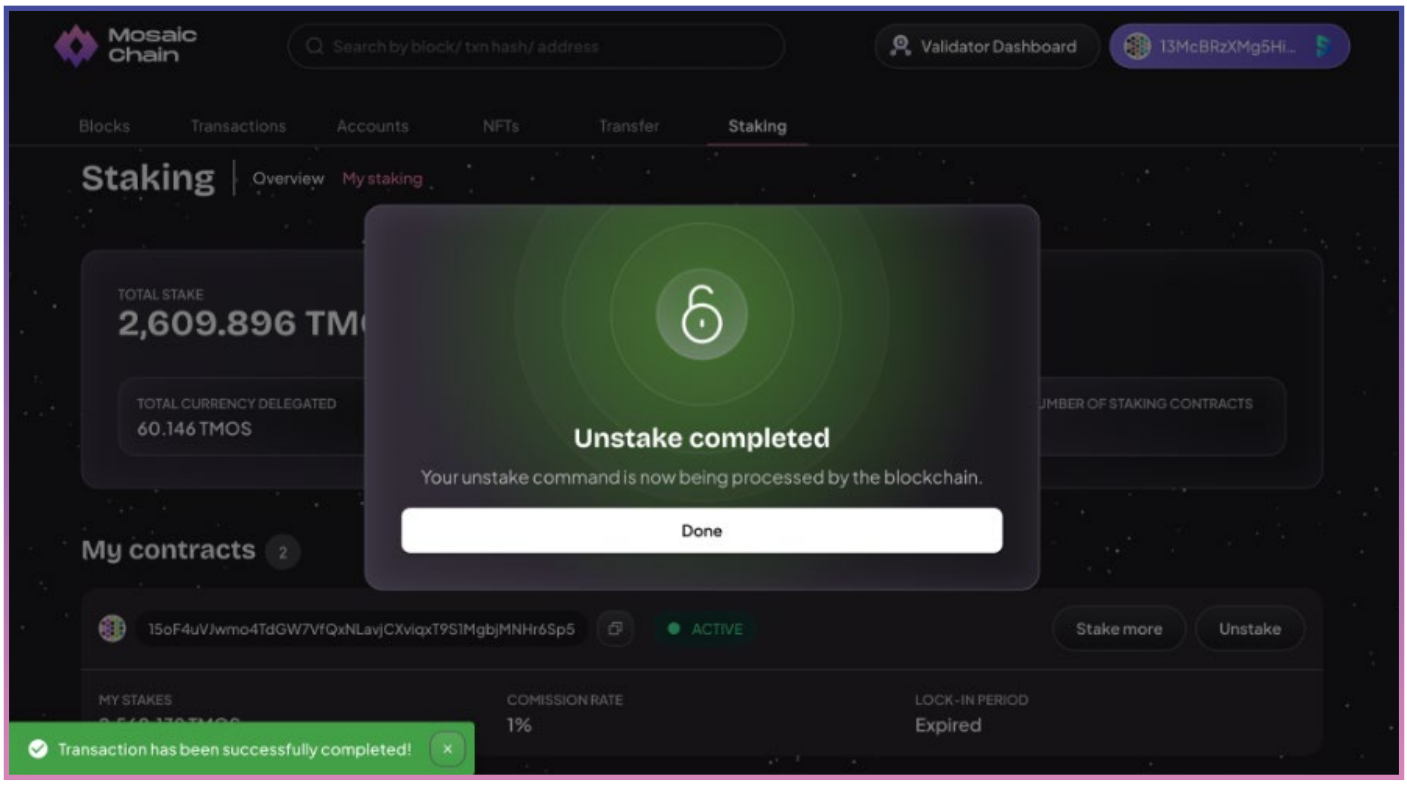
In the confirmation window, click the Unstake button.



In the SubWallet window that pops up, click the view details button to check the details, and if they are correct, close this window, then click the Approve button.



You will see the transaction status in the bottom left corner of the Explorer. When the transaction has been finalized on the blockchain, a success message will appear. It is important to note that even with unstaking, you must wait until the end of the session for the contract modification to take place if the validator is selected for validation in the given session.



Knowledge base

What is staking in general?

Delegated Proof of Stake is a crypto-economic security system based on game theory to effectively secure permissionless (open to anyone) blockchains, where millions of dollars are stored. To ensure the safety of the capital stored on the blockchain, it is crucial to protect the blockchain's state from external, malicious events. Such events can include replacing validators' software with custom software, thereby running malicious code on nodes, or multiple validators simultaneously disconnecting from the blockchain.

To ensure validators perform their tasks properly, including the constant production of blocks, they must be incentivized to behave correctly. This is achieved through staking, where tokens are either independently self-staked by validators or delegated to them by the delegators. If a validator performs well as expected, it receives staking rewards. However, if it fails to meet its obligations (such as disconnecting from the internet or running fake software), the system will not only slash the validator's own self-staked tokens, but the tokens delegated to it too. This creates an economic incentive for validators to behave appropriately. In the long term, well-behaved validators who follow the rules will remain and receive staking rewards, while those who perform poorly will eventually be eliminated.

Validators

Validators on the Mosaic Chain produce blocks to maintain and keep the blockchain running. As a Mosaic validator owner, you must monitor and maintain the performance of your validator. Each validator has a Validator NFT, which is bound to it, meaning that it is active and the validator currently participates in the staking system. We can say that this Validator NFT is basically the self-stake, because every Validator NFTs has a nominal value in MOS.

Delegator NFT

The Delegator NFTs have nominal values which represent some amount in MOS. These NFTs can be delegated to Validators. Thus delegating these, delegators add more funds to the staking system, thus the economic security of the DPoS mechanism increases. Delegator NFT owners should continuously monitor the performance of the validators delegated to, and take care the validator doesn't make mistakes that could result in slashing of funds.

Validator commission

Reward received by a validator is split between the validator and their delegators. The validator can apply a commission on the part of the reward that goes to their delegators. This commission is set as a percentage. Each validator is free to set their commission percentage, which they can change anytime, but cannot change below a minimum commission percentage, which commission is 1%. When a delegator stakes an NFT or MOS coin, they accept the current commission rate. Any future changes to the commission rate do not affect existing staking contracts, ensuring validators cannot adjust the commission without the knowledge of those who previously delegated to them.

Minimum Staking Period

Each time a delegator stakes some MOS or Delegation NFT, or a validator self-stakes, they cannot unstake for a certain number of sessions (now 672) on Mosaic Chain.
If a delegator adds new stakes and so the delegator and the validator accepts a new contract, the restart of the minimum staking period applies also for the existing stake, not just the incremental one.

Slashing and Auto-Chilling

Since validators can be slashed, i.e. their funds can be reduced, the nominal value of validator NFTs can drop below their initial nominal value. Slashing can occur multiple times depending on the behavior of the validator. When a validator faults twice in a row, it receives two slashes and its status automatically changes from active (i.e. faulted) to chilled. Automatic chilling is a safety mechanism that protects stakeholders from excessive abuse and financial loss by removing the validator from the subset of active validators and preventing them from returning until they are manually unchilled.

Slacking period

If a validator is continuously chilled for 72 sessions (approximately 3 days), delegators can terminate the staking contract after this so-called “slacking period”, i.e. unstake from the validator without waiting for the end of the minimum staking period, as long as the validator remains chilled.

NFT Top Up

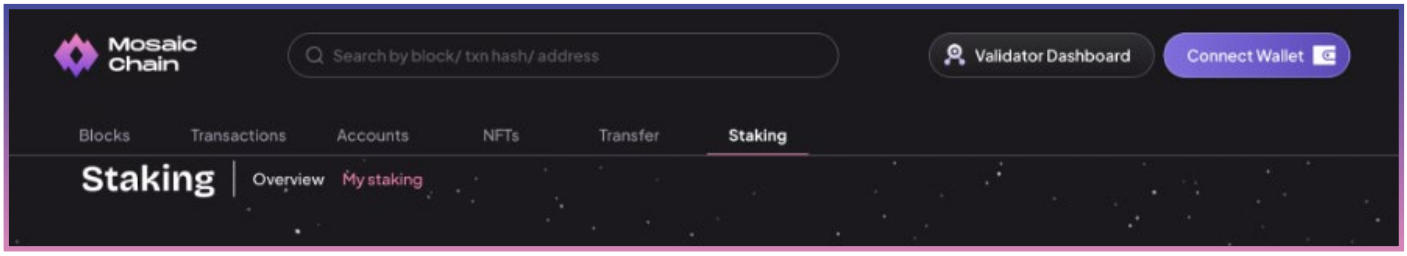
If a validator's NFT value drops below 80% of its initial nominal value, the validator will automatically enter a chilled state. The validator will not be able to unchill, i.e. become active for block production and reward earning, until the validator's NFT value is topped up to its initial nominal value.

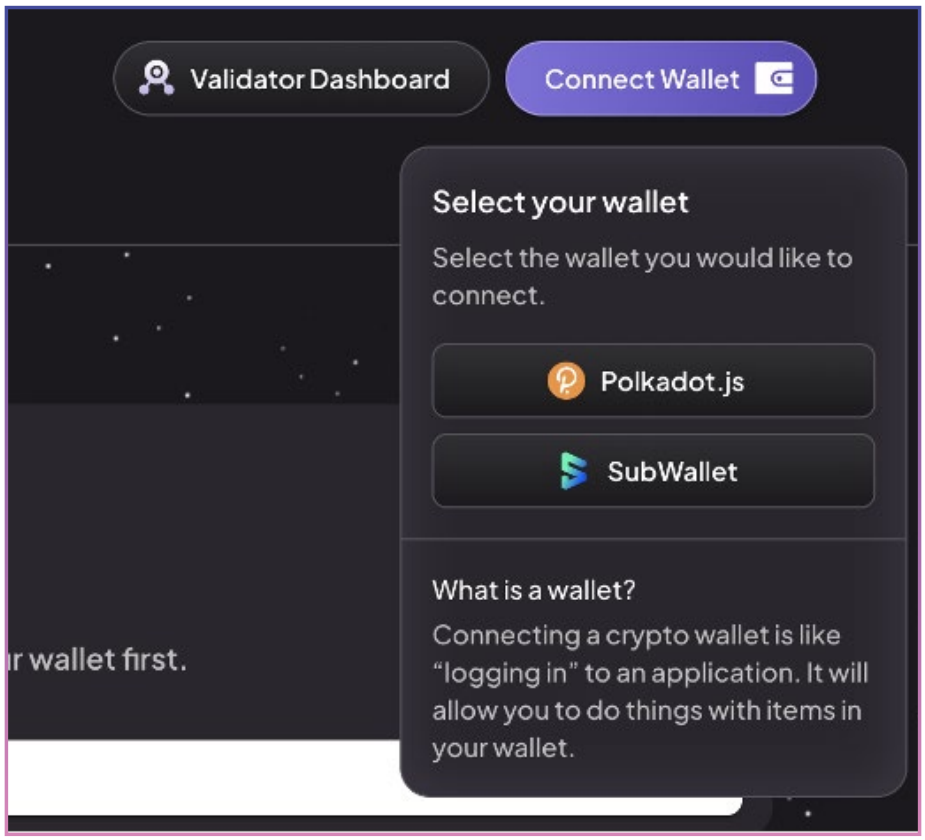
Kick Delegator

After the minimum staking period has passed, the validator can also decide to remove a delegator, i.e. terminate the contract between them, which means that the delegated NFTs and MOS tokens will be released at the beginning of the next session. The delegator can stake them with another validator, or even with the same validator, according to its currently valid terms.

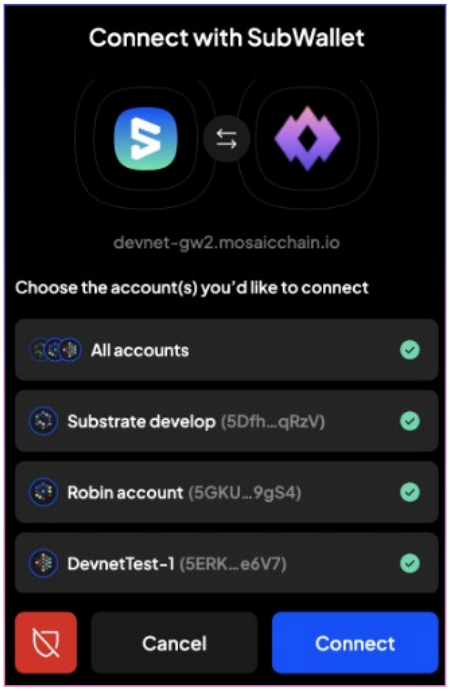
Connecting wallet

In the upper right corner of Mosaic Explorer, click the Connect Wallet button, then select SubWallet.

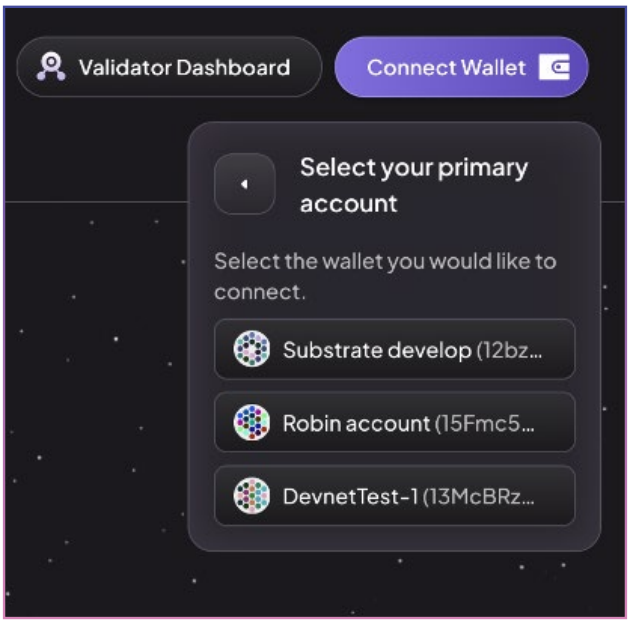




If you have not connected your SubWallet before to this page, the SubWallet window will appear. Select all accounts and click the Connect button.



Then in the Explorer, select an account to be your primary account. If you only have 1 account in your wallet, click on it anyway.



A green message will appear stating that you have successfully connected your wallet, and you will see your account name/address in place of the Connect Wallet button.

Attention! In case of a SubWallet mobile application, you must open the Explorer page in the SubWallet's browser, this is the only way to connect your wallet. Select the dApps menu item in the bottom menu of SubWallet, enter mainnet-explorer.mosaicchain.io in the search box at the top of the page that appears, and you can connect your wallet on the website that appears here as described above. You can find detailed instructions here: https://docs.subwallet.app/main/mobile-app-user-guide/connect-dapps-and-manage-website-access#connect-dapps