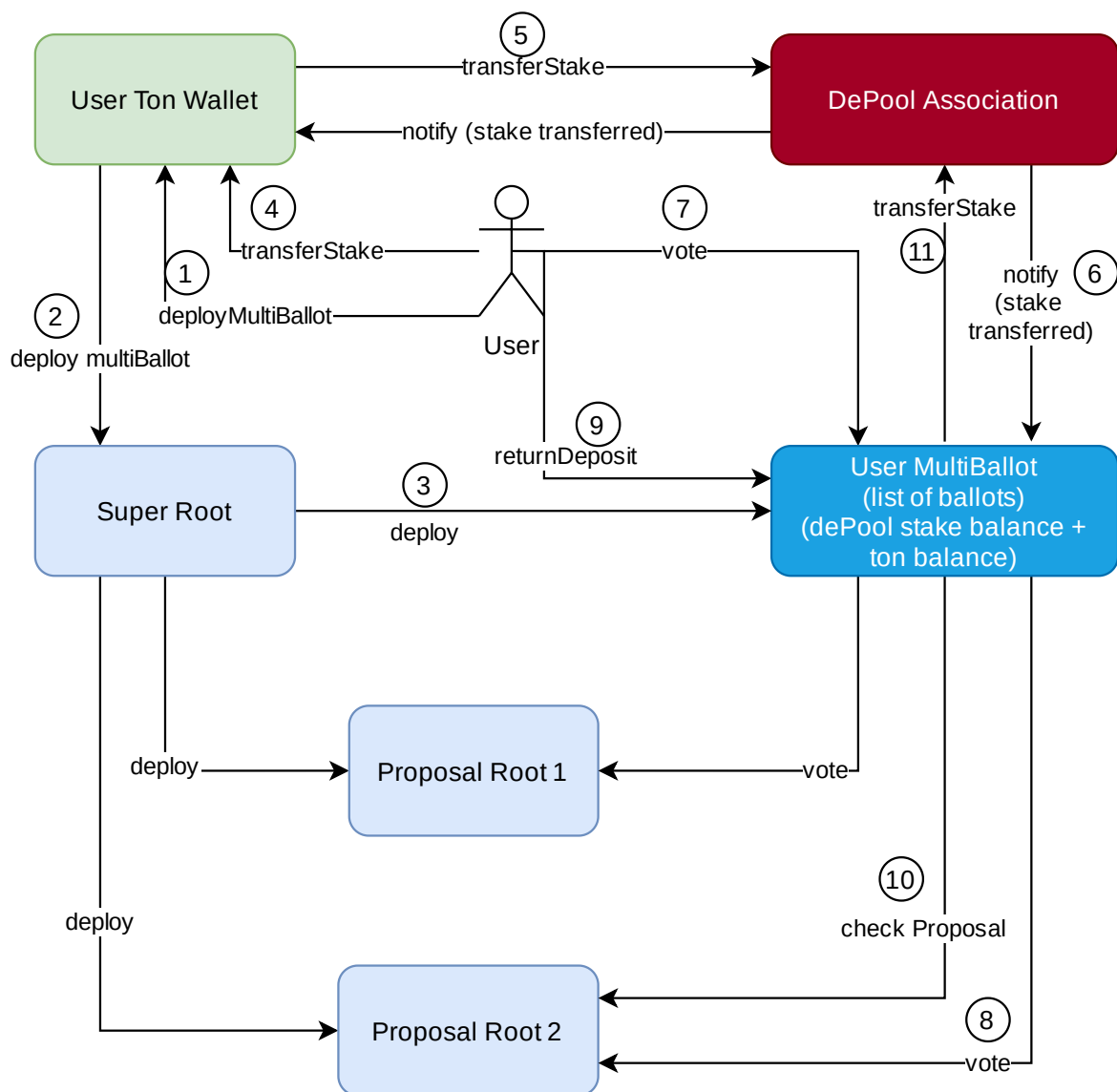




SMV MutliBallot & Stake Collateral

https://s3-us-west-2.amazonaws.com/secure.notion-static.com/661ae96e-8235-420e-8e9b-f08ef1f91895/SMV_voting.drawio

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SuperRoot is able to deploy ProposalRoot for each proposal and MultiBallot for each user.

```
[[internal, noaccept, dyn_chain_parse]]
bool_t createProposal(uint256 id, VotesType totalVotes,
    uint32 starttime, uint32 endtime, bytes desc,
    bool_t superMajority, DepositType votePrice,
    bool_t finalMsgEnabled,
    cell finalMsg, uint256 finalMsgValue, uint256 finalMsgRequestValue,
    bool_t whiteListEnabled, dict_array<uint256> whitePubkeys);

[[internal, noaccept, dyn_chain_parse]]
address createMultiBallot(uint256 pubkey, DepositType tonsToBallot);
```

MultiBallot keeps both native deposit and DePool stake deposit.

```
// Receive native funds transfer and keep it in deposit
[[internal, noaccept]]
void receiveNativeTransfer(DepositType amount);

// Receive stake transfer notify (from solidity IParticipant::onTransfer(address source, uint128 amount))
[[internal, noaccept]]
void receiveStakeTransfer(address source, uint128 amount) = 0x23c4771d; // = hash_v<"onTransfer(address,uint128)()v2">
```

MultiBallot allows to vote for specific proposal using external request:

```
// Sends all votes (for deposit) to Proposal Root contract
[[external, noaccept, dyn_chain_parse]]
sendVotesResult sendVote(address proposal, bool_t yesOrNo);
```

`sendVote` will call proposal's `vote` function (with `deposit = native_deposit + stake_deposit`).

```
// Allows a multi ballot to vote for proposal
[[internal, noaccept, answer_id]]
VotesInfo vote(uint256 pubkey, DepositType deposit, bool_t yes);
```

Proposal calculates votes count for specified deposit value, increases `yesVotes` or `noVotes` and generates `VotesChanged` event.

Also it may generate `VotingFinished` event if voting is finished early with this votes.

The same MultiBallot with deposit may be used to vote in several proposals.

Each related proposal is registered in MultiBallot.

After the related proposals are finished, user may request deposits back:

```
// The function must request affected proposals the voting is finished,
// set to zero deposit variables and return stake and native deposits to user_wallet
[[external, noaccept, dyn_chain_parse]]
resumable<void> requestDeposit(address user_wallet);
```

The `requestDeposit` function will iterate registered proposals in loop and check that they are all finished:

```
for (auto proposal : proposals_) {
    ...
    bool_t finished = co_await proposal_root(Grams(isFinishedTons)).checkFinished();
```

```

    if (!finished)
        co_return { bool_t{false}, proposal.first };
}
if (stake_deposit_ != 0) {
    ...
    depool_h(Grams(transferStakeTons)).transferStake(user_wallet, uint64{0});
}
if (native_deposit_ != 0) {
    tvm_transfer(user_wallet, native_deposit_.get(), true, DEFAULT_MSG_FLAGS);
}
native_deposit_ = 0;
stake_deposit_ = 0;

```

When deposits are requested, user may request `finalize` to return any remaining native funds and convert MultiBallot in frozen state.

```

// send all remaining tons to user_wallet
[[external, noaccept, dyn_chain_parse]]
void finalize(address user_wallet);

```

How to test

Tonos-cli version 0.2.x must be used:

<https://github.com/tonlabs/tonos-cli/releases/>

`./tonos-cli config --url https://cinet.tonlabs.io/`

SMV smart contracts deployed on cinet:

Super Root address 0:4e1bcac1f07ab3d139fac4c524716e66c94f74bd13b5608a8ef579a7f3b06c57
 Stats deployed address 0:6a01c3ebee13eba6732929e54bb43996ed90c9e90ebcdf4333962c95a3f4bd6b
 Budget address: 0:9ef0eadd5d3843f3e389c08b355d289ca4ce44609e20105ca23692395fc820ab

SMV DeBot

`./tonos-cli debot fetch 0:1577b97e4c5cae23b1ecde74245e34f4a88fc378cafa8230052160d5dd29385f`

1. Vote

Interface to Vote for existing proposals (it will ask you for your Ballot PubKey). You will be able to add funds from your multisig account or DePool here.

2. Deploy proposal

Interface to deploy new proposal

3. Deploy MultiBallot

Interface to create a Ballot Wallet to be able to Vote for a proposal

4. Show statistic

Will show current SMV statistics

5. Additional information

Some info about proposals and ballots you may need

6. Quit

▲ Note! Because of current limitations of the DeBot browser the Proposal should be one line string. It will be fixed in production, off course.

Multisig with some tokens

0:34924328810a312ac5c678f3b2d327848069c0ad7ba4eb3d9352000f9e63ad23

"umbrella urge private zone agree pizza list better brain approve glad eager"

If the tokens has run out and you are a contest judge please request more tokens from TON Labs team.

More information

Project repository: <https://github.com/tonlabs/ton-labs-contracts/tree/master/governance/SMV>

For more information please refer to Readme