**Treasury Pallet - Monitoring Treasury Balance and Author Balance**

**Run Xode-Blockchain using Zombienet**

**Step 1: Clone the Xode Blockchain Repository.**

git clone git@github.com:Xode-DAO/xode-blockchain.git

**Step 2: Compile the code.**

cd xode-blockchain

cargo build –release –package xode-node

**Step 3: Go to zombienet directory**

cd zombienet

**Step 4: Download Polkadot and Zombienet Binaries**

Polkadot: wget https://github.com/paritytech/polkadot/releases/download/v1.0.0/polkadot

Zombienet: wget https://github.com/paritytech/zombienet/releases/download/v1.3.109/zombienet-linux-x64

**Step 5: Make the binaries executable**

chmod +x polkadot zombienet-linux-x64

**Step 6: Modify zombienet.toml**

sudo nano zombienet.toml

Change default\_command = "../../polkadot/target/release/polkadot" under [relaychain] to default\_command = "./polkadot"

Save the file Ctrl X then Y Enter.

**Step 7: Modify the zombienet-launch.sh**

sudo nano zombienet-launch.sh

Change ./bin/zombienet-macos-x64 to ./zombienet-linux-x64

Save the file Ctrl X then Y Enter.

**Step 8: Run the Zombienet**

./zombienet-launch.sh

**Step 9: Go to PolkadotJS UI**

Click the link provided by the zombienet.

It will redirect to PolkadotJS UI

**Monitoring Treasury Balance and Author Balance**

**Step 1: Check who is currently authoring the blocks.**

Dave is currently authoring the blocks.

**Step 2: Check Author Balance**

Go to Chain State > Storage > system > account. Choose Dave account which is the author. Click + button to check the balance.

Balance is 1,152,921,504,606,846,976

**Step 3: Retrieved Treasury Account**

Go to Developer > Extrinsics > xodeStaking > retrieveTreasuryAccount

Click Submit Transaction

Check the fees, its 1.0817 milli XON

Click Sign and Submit

**Step 4: Check Treasury Balance**

Go to Network > Explorer > recentEvents. It displayed the TreasuryAccountRetrieved. Check the balance.

Balance is 1,000,000,000

**Step 5. Check again the Author Balance if the balance changes.**

Go to Chain State > Storage > system > account. Choose Dave account which is the author. Click + button to check the balance.

The balance is now 1,152,921,504,823,206,839. It gains 20% from the fees which is 1.0817 milli XON.

**Step 6. Check Treasury Balance from Chain State**

Go to Chain State > Storage > system > account. Choose treasury account. Click + button to check the balance.

The balance is now 1,865,439,452. It gains 80% from the fees which is 1.0817 milli XON.

**Step 7. Transfer Balance from one account to another.**

A. Go to Accounts > Accounts then click send button from BOB account

b. Send 1000 XON to Ferdie Account. Click Make Transfer.

c. Check the fees of this transaction

Fees are 1.4923 milli XON. Click Sign and Submit

D. Go to Network > Explorer > recentEvents to check if the transaction is successful.

**Step 8. Check again the Author Balance if the balance changes.**

Go to Chain State > Storage > system > account. Choose Dave account which is the author. Click + button to check the balance.

The balance is now 1,152,921,505,121,667,278. It gains 20% from the fees which is 1.4923 milli XON.

**Step 9. Check Treasury Balance from Chain State**

Go to Chain State > Storage > system > account. Choose treasury account. Click + button to check the balance.

The balance is now 3,059,281,204. It gains 80% from the fees which is 1.4923 milli XON.

**Monitoring Table**

|  | Default | From 1.0817 milli XON fees | From 1.4923 milli XON fees |
| --- | --- | --- | --- |
| Author Balance | 1,152,921,504,606,846,976 | 1,152,921,504,823,206,839 | 1,152,921,505,121,667,278 |
| Treasury Balance | 1,000,000,000 | 1,865,439,452 | 3,059,281,204 |

**Calculation**

| Author Balance | |
| --- | --- |
| Default | 1,152,921,504,606,846,976 |
| 20% of 1.0817 milli XON (0.0010817996) | 216,359,920 |
| Total | 1,152,921,504,823,206,896 |
| 20% of 1.4923 milli XON | 298,460,000 |
| Total | 1,152,921,505,121,666,896 |

| Treasury Balance | |
| --- | --- |
| Default | 1,000,000,000 |
| 80% of 1.0817 milli XON (0.0010817996) | 865,439,680 |
| Total | 1,865,439,680 |
| 80% of 1.4923 milli XON | 1,193,840,000 |
| Total | 3,059,279,680 |

**Test Treasury Proposal and Adding Membership**

**Build the Xode Blockchain code to the latest commit**

1. Go to xode-blockchain directory. Type this command

cargo build –release –package xode-node

1. Run Xode in Zombienet

Go to zombienet directory and launch it

cd zombienet

./zombienet-launch.sh

1. Open xode in Polkadot JS by clicking the provided URL of Zombienet under charlie or dave

**Propose a balance transfer from Treasury to another wallet (Treasury->SpendLocal)**

1. Once you are in the PolkadotJS, go to Developer > extrinsics > treasuryCouncil > propose > treasury > spendlocal

1. Click Submit Transaction Then Sign and Submit.

1. Check recent events

D. Go to Developer > Chain State > treasuryCouncil > proposal then click +button

After that, copy the result and paste it in proposalOf then click +button

**Result:** treasuryCouncilPropose successfully

**Technical Council: Propose a runtime upgrade (System->SetCode)**

1. Go to Developer > Extrinsics > technicalCouncil > propose > system > setcode and upload the wasm file of xode-node located at target/release/wbuild/xode-runtime/xode\_runtime.compact.compressed.wasm
2. Click Submit Transaction Then Sign and Submit
3. Go to Developer > Chain State > technicalCouncil > proposal then click +button

After that, copy the result and paste it in proposalOf then click +button

**Result:** technicalCouncilPropose successfully

**Voting a proposal in Technical and Treasury Council**

**Vote a proposal in Technical Council**

1. Go to Developer > Chain State > technicalCouncil > propose then click + button.

To check the proposal hash.

1. Copy the result.

1. Go to Developer > Extrinsic > technicalCouncil > vote then paste here the proposal hash. Charlie will vote the proposal
2. Click Submit Transaction Then Sign and Submit

1. Go to Developer > Chain State > technicalCouncil > vote > paste the proposal hash then click + button to check if charlie has voted to the proposal

Result: Charlie has voted for the proposal.

**Vote a proposal in Treasury Council**

1. Go to Developer > Chain State > treasuryCouncil > propose then click + button.

To check the proposal hash.

1. Copy the result.

1. Go to Developer > Extrinsic > treasuryCouncil > vote then paste here the proposal hash. Eve will vote on the proposal.

1. Click Submit Transaction Then Sign and Submit
2. Go to Developer > Chain State > treasuryCouncil > vote > paste the proposal hash then click + button to check if Eve has voted to the proposal.

**Result:** Eve has voted for the proposal.

**Adding a member in the Technical and Treasury Council (SetMember)**

**Adding a member in the Technical Council**

1. Propose a proposal to add a member.

Go to Developer > Extrinsics > technicalCouncil > propose > techinalCouncilMembership > addMember

B. Click Submit Transaction Then Sign and Submit

C. Vote for the proposal

Follow the Vote a Proposal in Technical Council process.

D. Close the proposal. Go to Developer > Extrinsic > technicalCouncil > close

E. Click Submit Transaction and Sign and Submit

F. Check recentEvents

Proposal was approved and executed

G. Check if the Kusama Validator Wallet Address has been added to the technicalCouncil Member. Go to Developer > Chain state > technicalCouncil > members click +button.

Kusama Validator Wallet Address has been added.

**Adding a member in the Treasury Council**

1. Propose a proposal to add a member.

Go to Developer > Extrinsics > treasuryCouncil > propose > treasuryCouncilMembership > addMember

B. Click Submit Transaction Then Sign and Submit

C. Vote for the proposal

Follow the Vote a Proposal in Treasury Council process.

D. Close the proposal. Go to Developer > Extrinsic > treasuryCouncil > close

E. Click Submit Transaction and Sign and Submit

F. Check recentEvents

Proposal was approved and executed

G. Check if the Kusama Validator Wallet Address has been added to the treasuryCouncil Member. Go to Developer > Chain state > treasuryCouncil > members click +button.

Kusama Validator Wallet Address has been added.

**Execute Runtime Upgrade**

Note: The runtime code's spec\_version was updated from 1 to 2 to test whether the runtime upgrade would succeed.

1. Go to Governance> Tech. Comm. > Proposal

1. Click Submit proposal > whitelist > whitelistCall and enter callhash of setcode then click submit.

1. To locate the callhash of setcode, go to Developer > Extrinsic > system > setcode then upload the wasm file of xode. You can see the encoded call hash at the bottom left.

1. Vote the proposal

Vote Aye for Alice, Bob and Charlie

E. Close the Proposal and check recent events

F. After the whitelistcall is approved, propose Dispatch WhitelistedCall

Go back to Governance > Tech. Comm. > Proposal

Click Submit proposal > whitelist >

dispatchWhitelistedCallWithPreimage(call) > system > setcode then upload the wasm file of xode then click submit

G. Vote the proposal

Vote Aye for Alice, Bob and Charlie

H. Close the Proposal and check recent events

After the proposal is executed, wait for the spec version to update to 2.

**Result:** Spec version of xode runtime updated from 1 to 2. Both charlie and dave node has been updated.

Successfully Executed Runtime Upgrade.

**Command on getting the runtime code from the node.**

1. Modify the spec\_version in the runtime located at runtime/src/lib.rs from 1 to 2 to prepare for the runtime upgrade.

1. Execute the command: cargo build --release.
2. Locate the WASM file at target/release/wbuild/xode-runtime/xode\_runtime.compact.compressed.wasm, then copy and paste it to a different directory for safekeeping.
3. Revert the spec\_version back to 1 and rebuild the runtime by running cargo build --release.
4. Start the network with Zombienet and perform the runtime upgrade using the previously copied WASM file.

**Test Cases for the Xode Staking Pallet**

**Register Candidate**

1. Once you are in Xode PolkadotJS, go to Developer > Extrinsics > xodeStaking > registerCandidate.

1. Choose the account you want to register then click Submit Transaction

1. Click Sign and Submit then check recent events.

**Bond Candidate**

1. Go to Developer > Extrinsics > xodeStaking > bondCandidate.

1. Choose the account you want to bond and amount to bond then click Submit Transaction

1. Click Sign and Submit then check recent events.

**Stake Candidate**

1. Go to Developer > Extrinsics > xodeStaking > stakeCandidate.

1. Choose the account of the candidate you want to stake from author example Dave and the amount to stake then click Submit Transaction

1. Click Sign and Submit then check recent events.

**Set Commission**

1. Go to Developer > Extrinsics > xodeStaking > setCommission.
2. Choose the account you want to set commission and the amount of commission then click Submit Transaction.

1. Click Sign and Submit then check recent events.

**Unstake Candidate**

1. Go to Developer > Extrinsics > xodeStaking > unstakeCommission.
2. Choose the account of the candidate you want to stake from author example Dave then click Submit Transaction.
3. Click Sign and Submit then check recent events.

**Offline Candidate**

1. Go to Developer > Extrinsics > xodeStaking > offlineCandidate.
2. Choose the account of the candidate you want to be offline then click Submit Transaction

1. Click Sign and Submit then check recent events.

**Online Candidate**

1. Go to Developer > Extrinsics > xodeStaking > onlineCandidate.
2. Choose the account of the candidate you want to be online then click Submit Transaction

1. Click Sign and Submit then check recent events.

**Leave Candidate**

1. Go to Developer > Extrinsics > xodeStaking > leaveCandidate.
2. Choose the account of the candidate you want to leave then click Submit Transaction

1. Click Sign and Submit then check recent events.