AIM[1]-010: Function Results in Tx Results

platfowner 2020-05-07

Problem Description

- Currently, transaction execution results don't include any function triggering results
- In order to implement **atomic native function trigger**, we need to know the results of triggered functions so that the transaction can be reverted if any of the triggered native functions are unsuccessful

Proposed Changes

Key Ideas

- Use func_results and op_results to include triggered function results and their operation results
- Change SET operation's result structure: [] -> { result_list: [] }

AS-IS

Single set operation (e.g. SET_VALUE):

```
{
    "code": 0,
    "result": {
        "tx_hash":
"0xafeefd16e1332467babe583ba8375f4389ea7f599732cba7fda99cf66920b1e5",
        "result": {
            "code": 0,
            "gas": {
                "gas_amount": {
                    "service": 1003
                }
            }
        }
    }
```

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[1] AI Network Improvement Memo. Visit https://docs.ainetwork.ai for the full list.

```
    }
```

Multi-set operation (i.e., SET):

```
    {
      "code": 0,
      "result": {
        "tx_hash":
"0xafeefd16e1332467babe583ba8375f4389ea7f599732cba7fda99cf66920b1e5",
        "result": [
          {
            "code": 0,
            "gas": {
              "gas_amount": {
                "service": 1,
              }
            },
            {
              "code": 201,
              "error_message": "Not a number type: bar or 10"
            }
          ]
        }
      }
    }
```

TO-BE

Single set operation (e.g. SET_VALUE):

```
{
    "code": 0,
    "result": {
        "tx_hash":
"0x4ddcd931d10e939d44304cc91cde5b09bfdce999b169ab6d958ed9438b6f0c5b",
        "result": {
            ".func_results": {
                "_transfer": {
                    ".op_results": [
                        {
                            "path":
"/accounts/0x09A0d53FDf1c36A131938eb379b98910e55EEfe1/balance",
                            "result": {
                                "code": 0,
                                "gas_amount": 1
                            }
                        },
```

```
                        {
                            "path":
"/accounts/0x7BE37246A6102270fC7dbdC2Fc199bf187500bC3/balance",
                            "result": {
                                "code": 0,
                                "gas_amount": 1
                            }
                        },
                        {
                            "path":
"/transfer/0x09A0d53FDf1c36A131938eb379b98910e55EEfe1/0x7BE37246A6102270fC7dbd
C2Fc199bf187500bC3/1/result",
                            "result": {
                                "code": 0,
                                "gas_amount": 1
                            }
                        }
                    ],
                    "code": "SUCCESS",
                    "gas_amount": 1000,
                }
            },
            "code": 0,
            "gas_amount": 1,
        }
    }
}
```

Multi-set operation (i.e., SET):

```
    {
      "code": 0,
      "result": {
        "tx_hash":
"0x4ddcd931d10e939d44304cc91cde5b09bfdce999b169ab6d958ed9438b6f0c5b",
        "result": {
          "result_list": [
            {
              ".func_results": {
                "_saveLastTx": {
                  ".op_results": [
                    {
                      "path":
"/test/test_function_triggering/allowed_path/.last_tx/value",
                      "result": {
                        ".func_results": {
                          "_eraseValue": {
                            ".op_results": [
                              {
                                "path":
```

```
"/test/test_function_triggering/allowed_path/.last_tx/value",
                              "result": {
                                "code": 0,
                                "gas_amount": 1
                              }
                            }
                          ],
                          "code": "SUCCESS",
                          "gas_amount": 0,
                        }
                      },
                      "code": 0,
                      "gas_amount": 1
                    }
                  }
                ],
                "code": "SUCCESS",
                "gas_amount": 0,
              }
            },
            "code": 0,
            "gas_amount": 1
          },
          {
            "code": 0,
            "gas_amount": 1,
          },
        ],
        "code": 0,
        "gas_amount": 1,
      }
    }
  }
```

Document History

Date	Who	Change	Notes
2021-05-07	platfowner	Initial draft	
2021-05-11	platfowner, liayoo, minsulee2, cshcomcom, shyun-comcom, minho-comcom-ai	Internal review	
2021-05-13	platfowner	Published	