

Life of a Transaction with demo

Group 3:

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Outline

- Demo
- Transaction

Demo

(libra尚未上線，所以mainnet無法使用，在testnet嘗試demo)

Testnet 數據

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Network Statistics

Current Version	3709
Network Uptime (since last reset)	5 days, 9 hours and 14 seconds
All Time Statistics	
Average Transactions (Versions) Per Second	0.007
Percentage of Mint Transactions	0%
Percentage of P2P Transactions	0%
Percentage of Other Transactions	100%
All Time Amount Minted	0 Libra
All Time Amount Sent from Peer to Peer	0 Libra
All Time Amount Used in non-p2p transfers	24146327343870.605 Libra
Unique Accounts	1238
Active Accounts (sent funds at least once)	216

Testnet 數據

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Network Statistics

Current Version	59301
Network Uptime (since last reset)	12 days, 11 hours, 23 minutes and 8 seconds
All Time Statistics	
Average Transactions (Versions) Per Second	0.055
Percentage of Mint Transactions	0%
Percentage of P2P Transactions	0%
Percentage of Other Transactions	100%
All Time Amount Minted	0 Libra
All Time Amount Sent from Peer to Peer	0 Libra
All Time Amount Used in non-p2p transfers	1551997388402990.2 Libra
Unique Accounts	17981
Active Accounts (sent funds at least once)	9082

Libra使用介面

- (1) linux載入相關套件

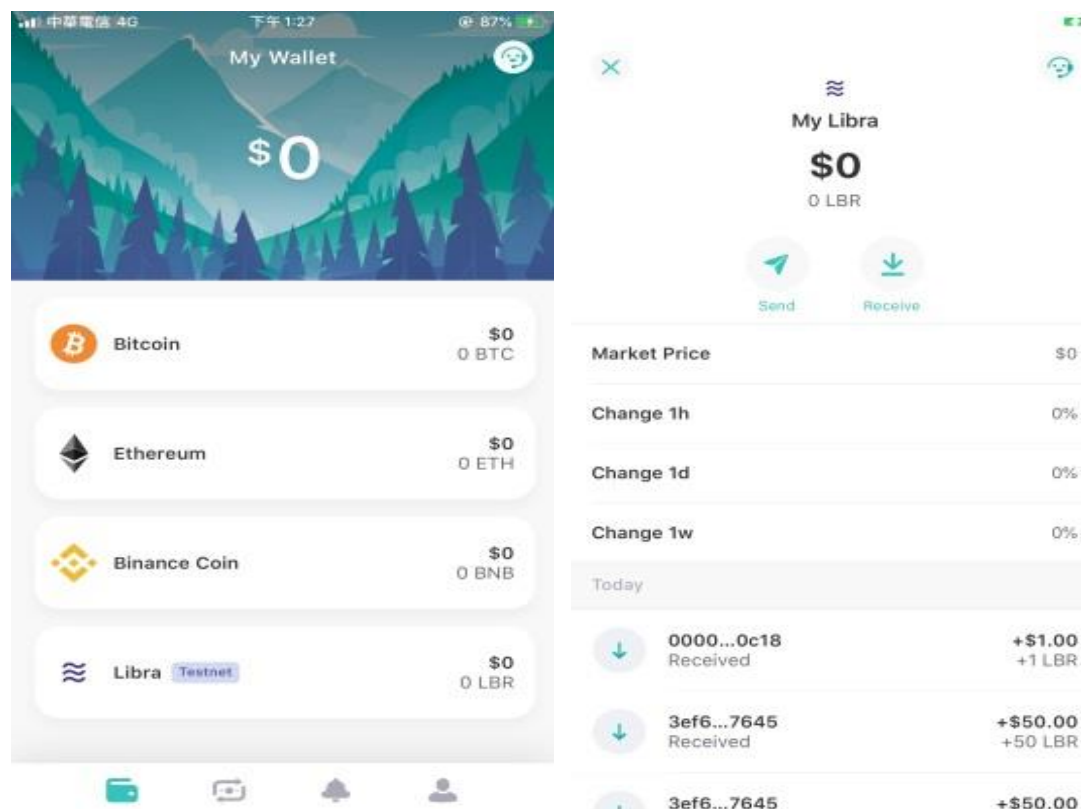
```
Connected to validator at: ac.testnet.libra.org:8000
usage: <command> <args>

Use the following commands:

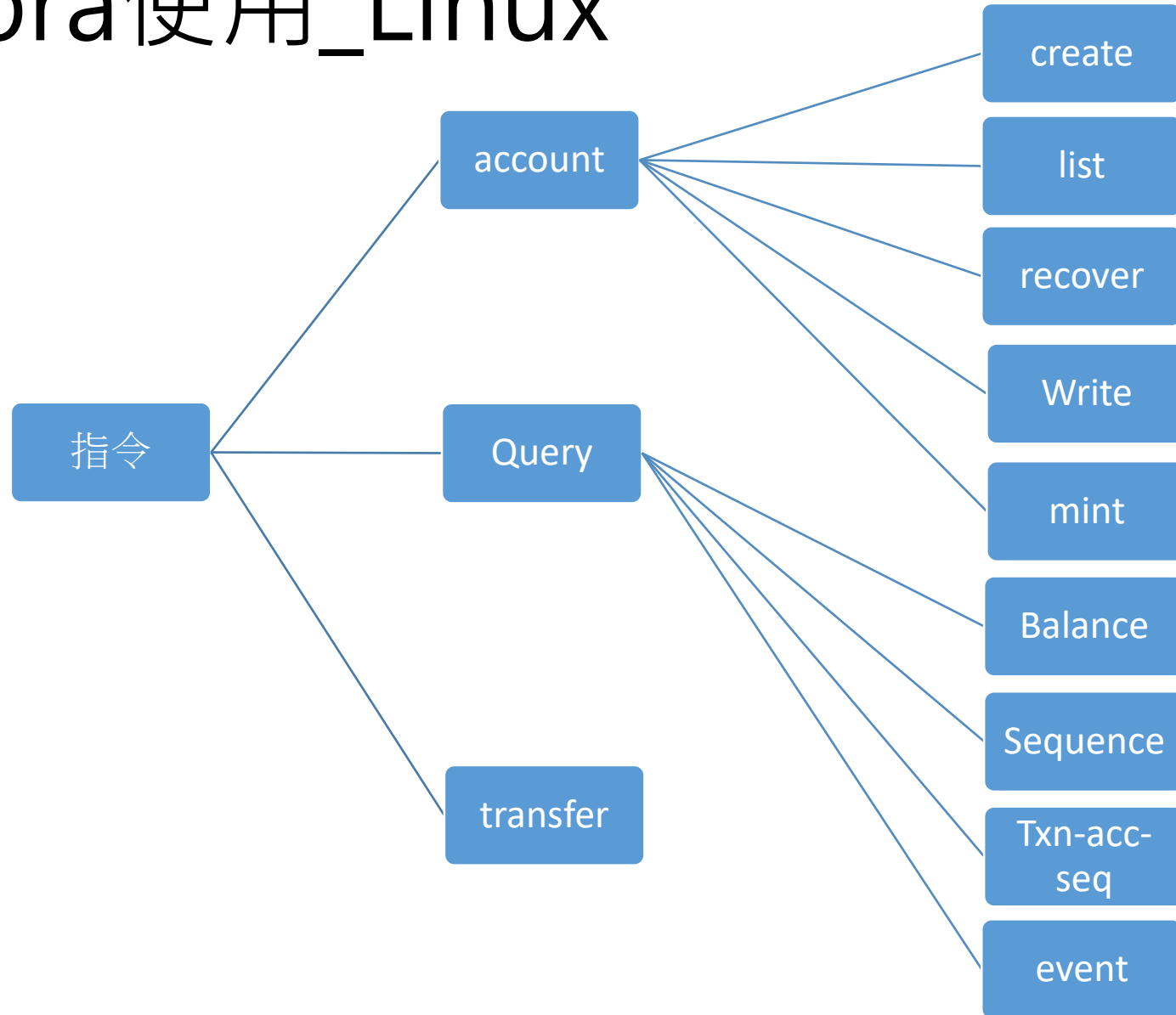
account | a
        Account operations
query | q
        Query operations
transfer | transferb | t | tb
        <sender_account_ref_id> <receiver_account_address
>|<receiver_account_ref_id> <number_of_coins> [gas_unit_price_in_micro_libras (def
ault=0)] [max_gas_amount_in_micro_libras (default 140000)] Suffix 'b' is for block
ing.
        Transfer coins (in libra) from account to another.
help | h
        Prints this help
quit | q!
        Exit this client

Please, input commands:
Show Applications
```

- (2) 手機端使用Zengo



Libra使用_Linux



On My Mac

Clone the Libra Core R...
12:26 PM git clone http...

Notes

June 19, 2019 at 12:26 PM

Clone the Libra Core Repository:
git clone <https://github.com/libra/libra.git>

Setup Libra Core:
cd libra
./scripts/dev_setup.sh

Build Libra CLI Client and Connect to the Testnet
./scripts/cli/start_cli_testnet.sh

Check if the CLI Client is Running on Your System:
account

Create Alice's Account
account create

Create Bob's Account:
account create

List Accounts:
account list

Add Libra to Alice's Account:
account mint 0

Add Libra to Bob's Account
account mint 1

Check the Balance:
query balance 0
query balance 1

Query the Accounts' Sequence Numbers
query sequence 0
query sequence 1

Transfer Money
transfer 0 1 10

Retrieve the information about the transaction :
query txn_acc_seq 0 0 true

Query Sequence Number After Transfer
query sequence 0
query sequence 1

Check the Balance in Both Accounts After Transfer
query balance 0
query balance 1

New Folder

yu22 -- bash -- 24x40

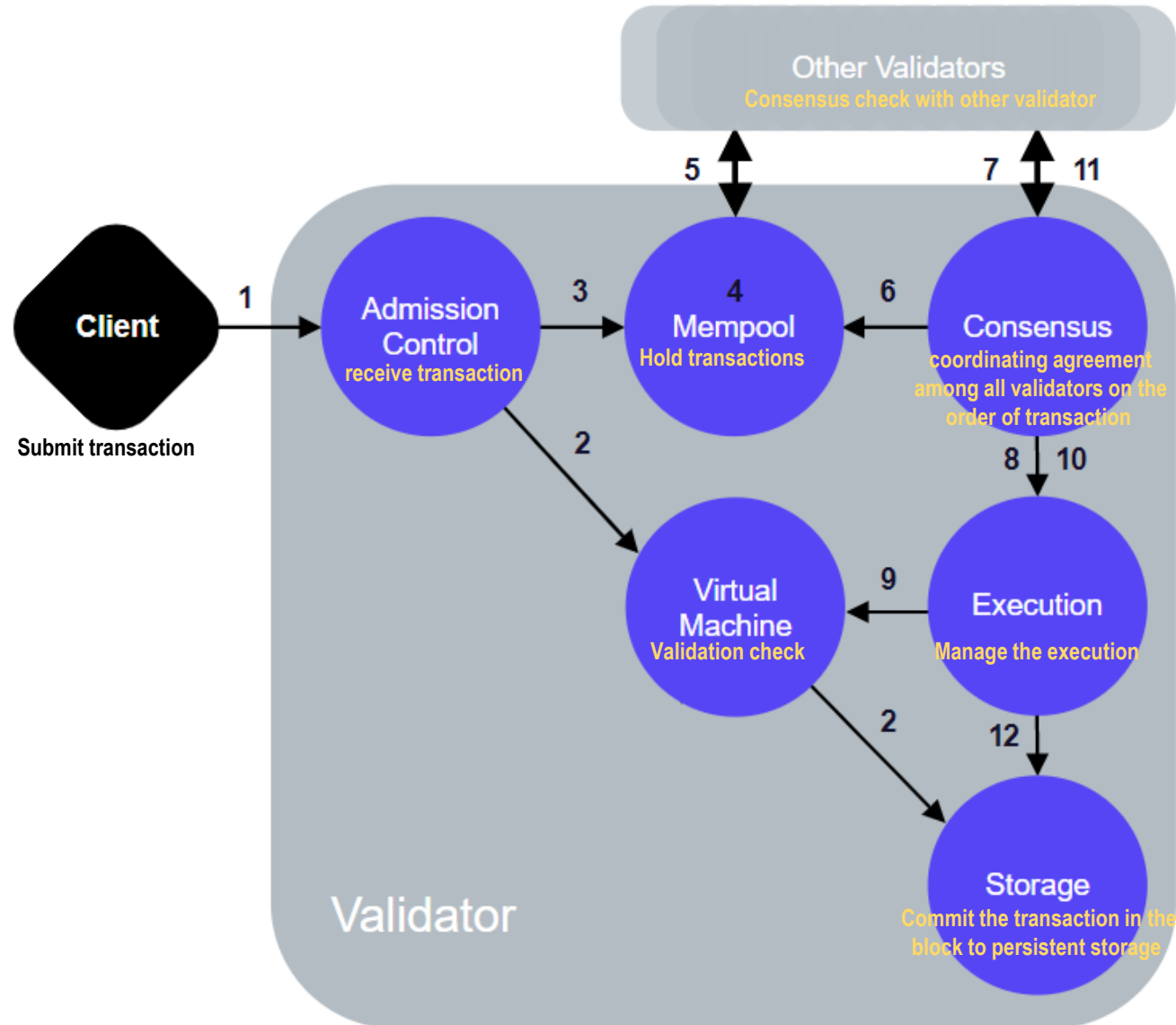
Yudiz-yuvi :~ yudiz\$

-- bash

啟用 Windows
移至 [設定] 以啟用 Windows。

Transaction

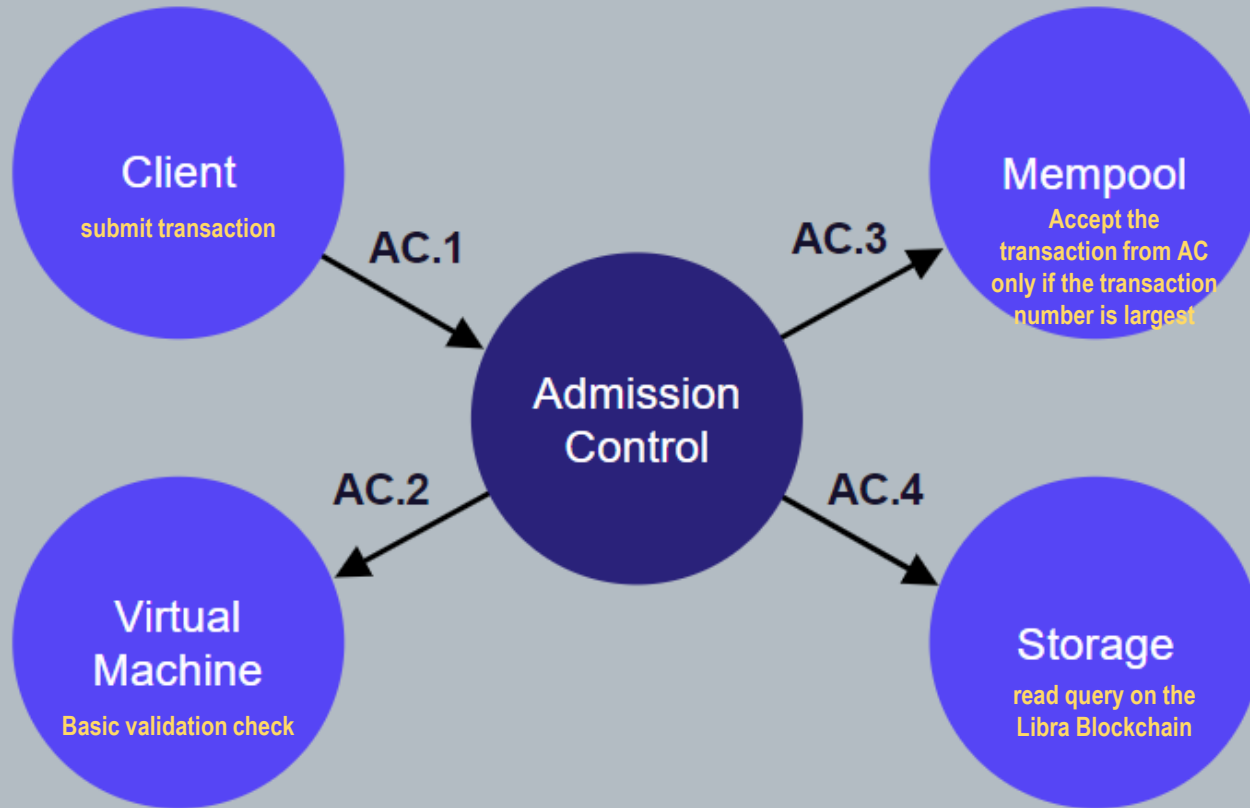
Lifecycle of the Transaction



Validation check :
signature verification
the account has sufficient balance
The transaction is not being replayed

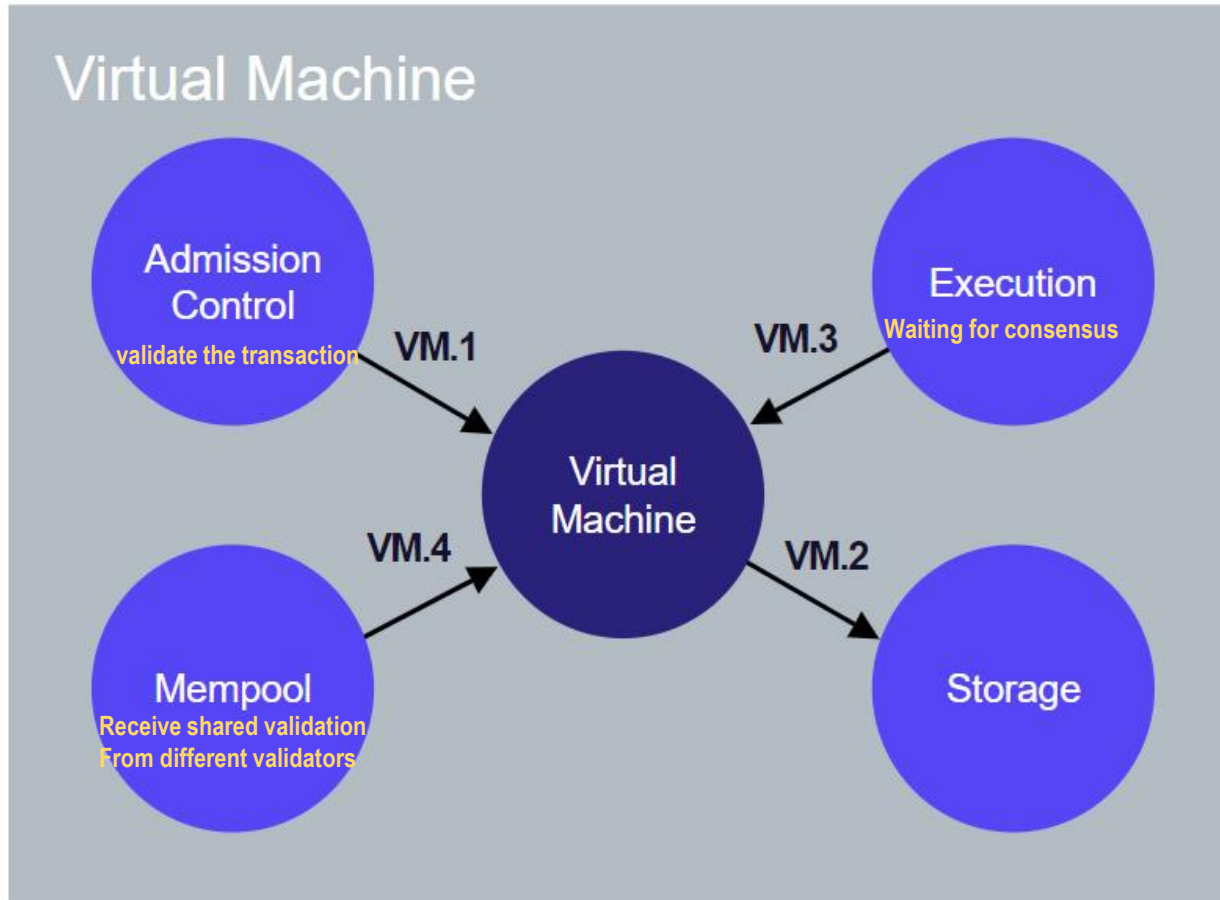
Admission Control (AC)

Admission Control



- Interface between client and validator

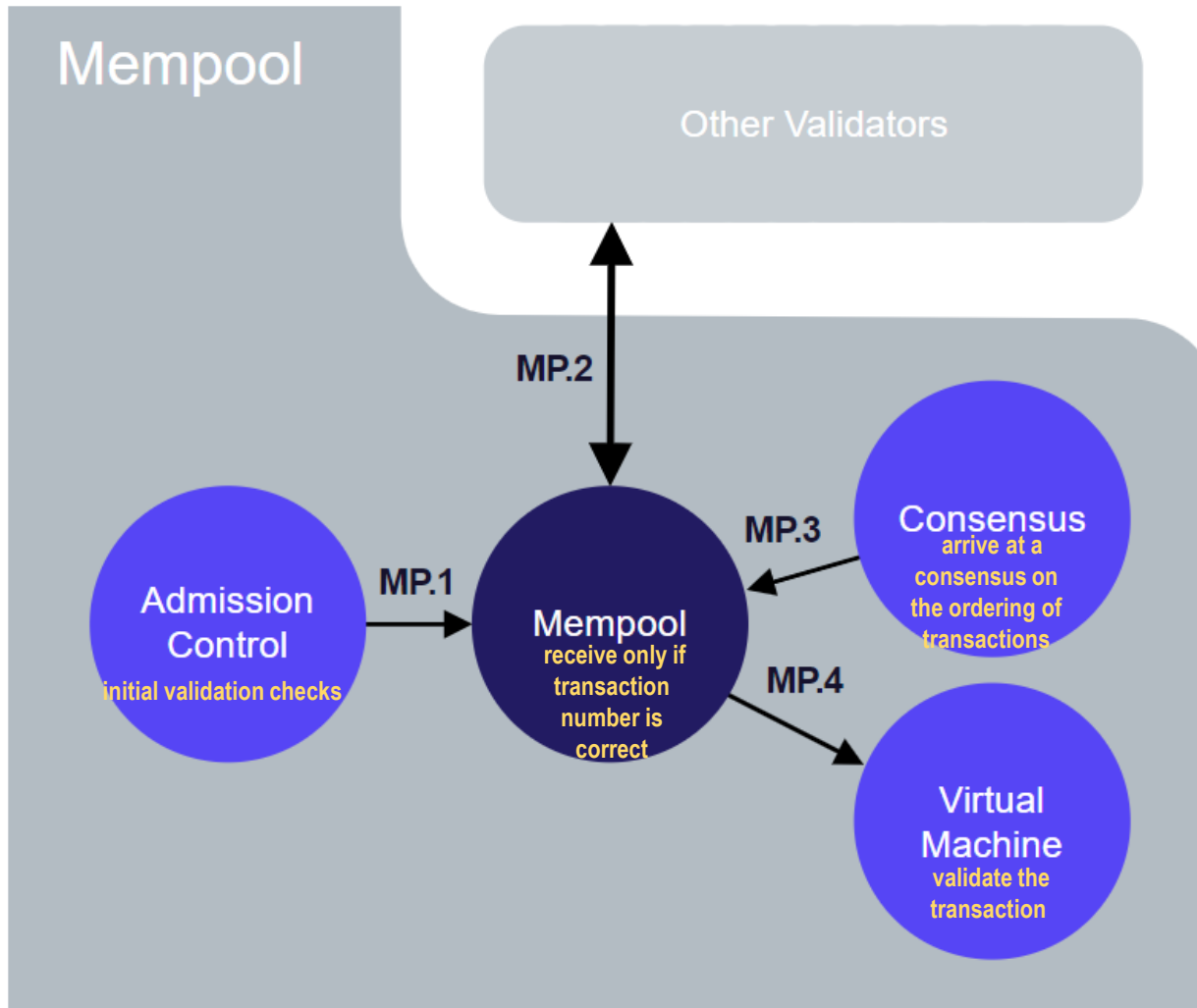
Virtual Machine (VM)



- The Move virtual machine (VM) verifies and executes transaction scripts written in Move bytecode
- Checks the input signature
- Checks that the sender's account authentication key (the same as the hash of the public key)
- Verifies that the sequence number for the transaction
- Verifies that the program in the signed transaction is not malformed, as a malformed program cannot be executed by the VM.
- Verifies that there is sufficient balance in the sender's account to support the max gas amount specified in the transaction

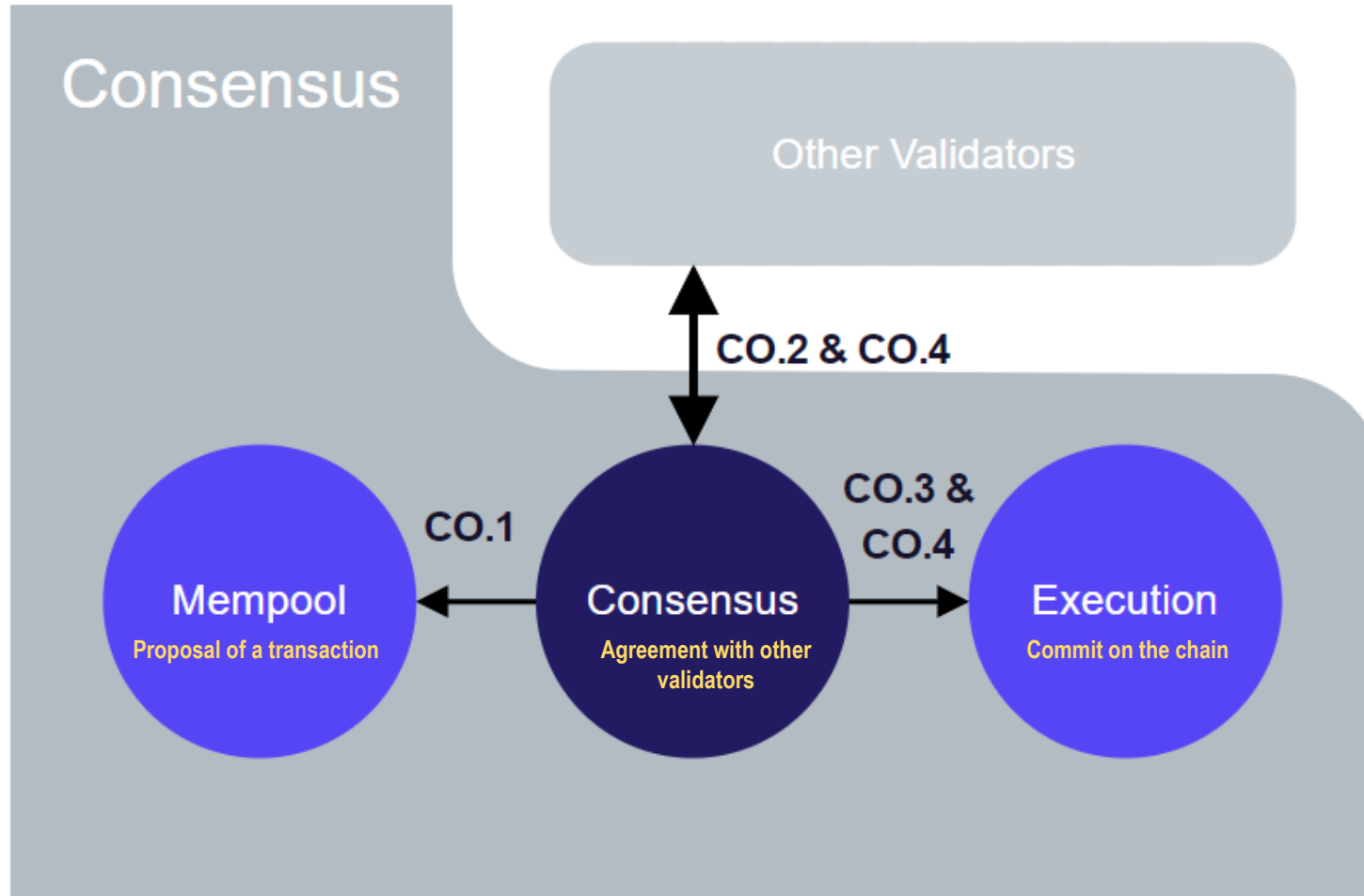
Mempool

- shared buffer that holds the transactions that are “waiting” to be executed



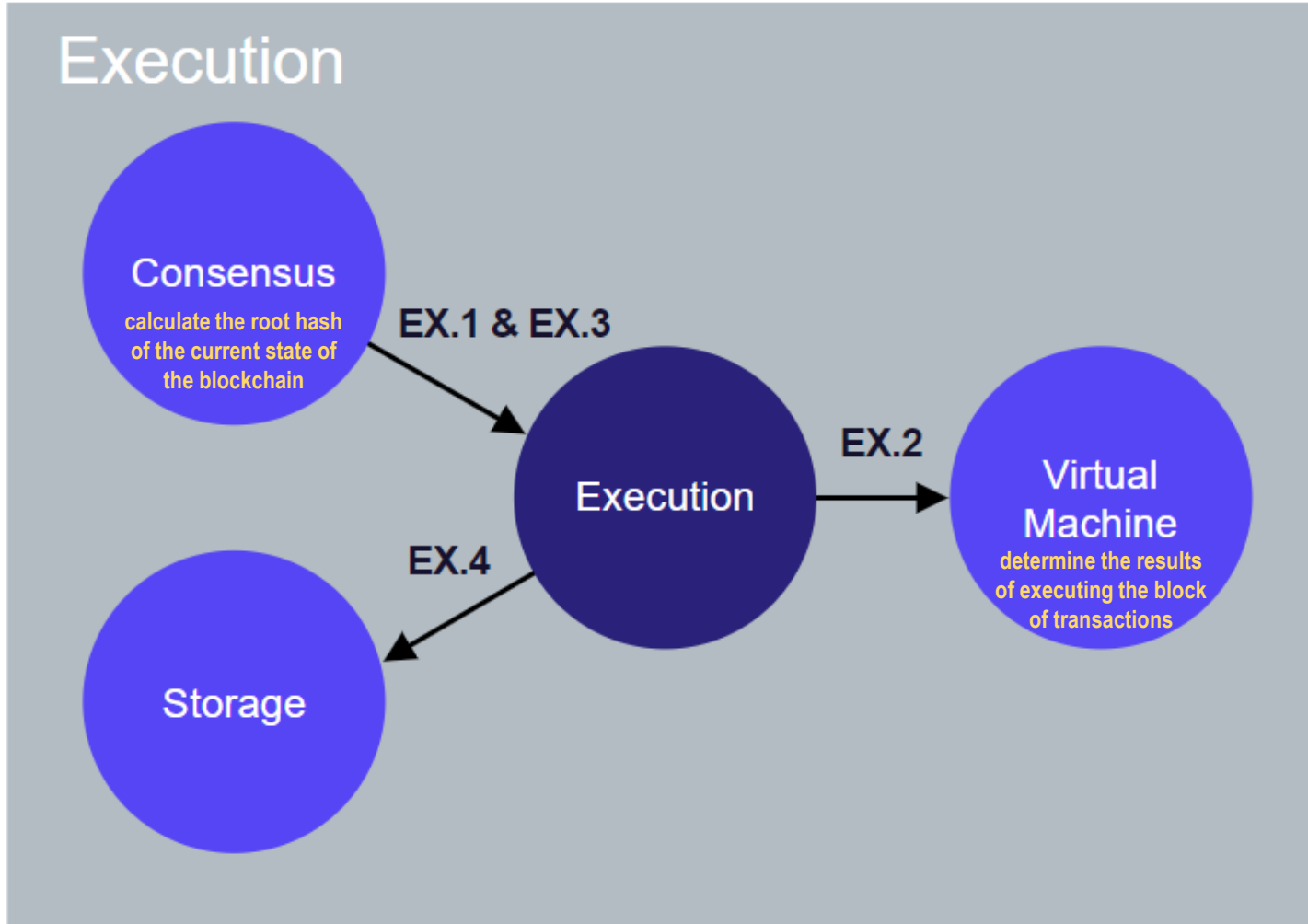
Consensus

- responsible for ordering blocks of transactions and agreeing on the results of execution



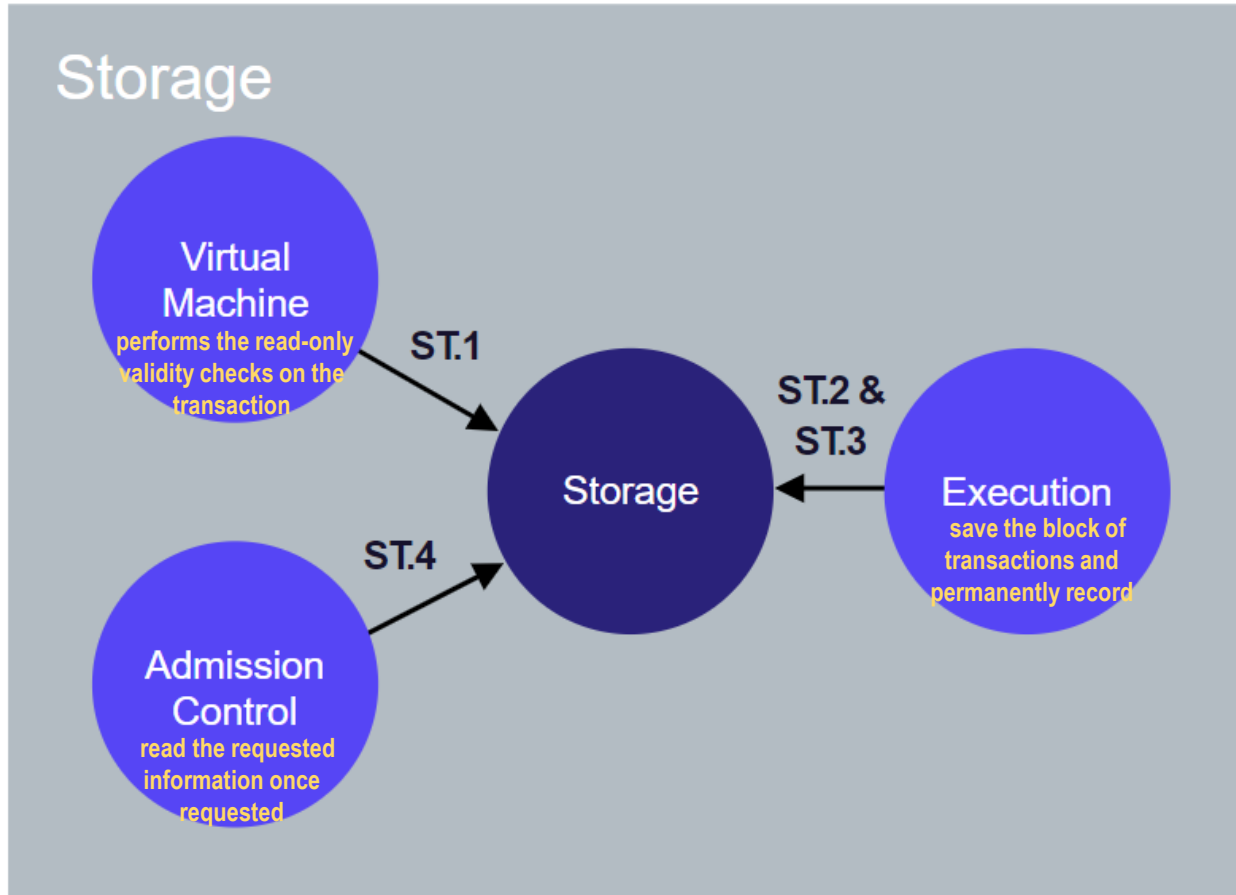
Execution

- coordinate the execution of a block of transactions



Storage

- persists agreed upon blocks of transactions and their execution results



- agreement between more than $2f+1$ of the validators participating in consensus on all of the following:
 - ◆ The transactions to include in a block.
 - ◆ The order of the transactions.
 - ◆ The execution results of the transactions to be included in the block

Ref

- <https://developers.libra.org/docs/life-of-a-transaction>