Guide to Becoming a Validator for the Kima Network

Testing Environment: Ubuntu 22.04

Minimum Requirements

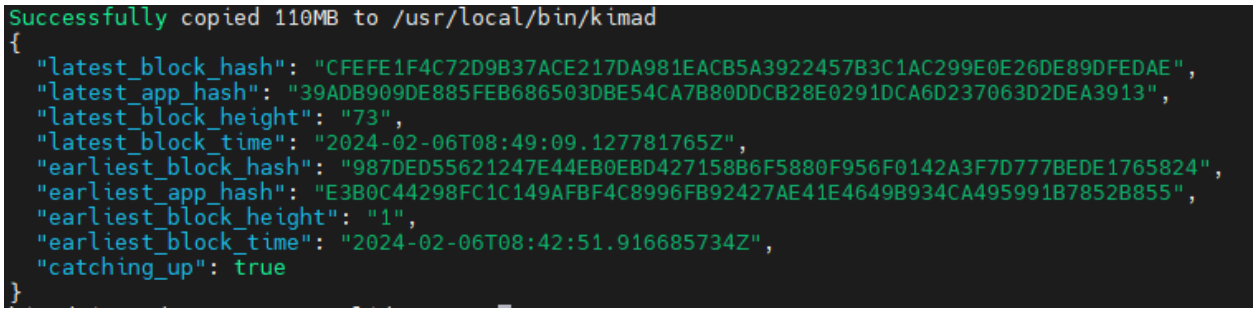
- **Operating System:** Ubuntu 22.04
- **CPU:** 4vCPU (8vCPU recommended)
  - Must be an Intel XEON E-series or any other XEON supporting SGX-SPS (Server Platform Services). The motherboard must also support SGX.
  - Please See Appendix A
- **RAM:** 16GB (32GB recommended)
- **Storage:** 512GB HDD (1TB recommended)
- **Network**
  - Public static IP
  - **Open Ports:**
    - 22: SSH (Secure Shell) protocol
    - 26656: Cosmos app CometBFT gossiping port for consensus
    - 26657: Cosmos app CometBFT RPC port
    - 9090: Cosmos app gRPC port
    - 5051: TSS-ECDSA P2P port
    - 5052: TSS-EDDSA P2P port
    - 5053: TSS app EDDSA (Solana chain signer) gossiping port
    - 8081: TSS-ECDSA info address
    - 8082: TSS-ECDSA info address

Installation Steps

1. **Initial Setup:**
   - Download scripts from the Github repository to your server using any convenient method.
     - `git clone git@github.com:kima-finance/kima-external-validator.git`

2. **Prepare Scripts:**
   - Make the files executable with
     - `sudo chmod +x prepare-validator-resources.sh`
     - `sudo chmod +x setup-validator-environment.sh`
     - `sudo chmod +x update-config.sh`

3. **Execute First Script:**
   - Run `./prepare-validator-resources.sh <validator-node-name>`
   - This script installs all necessary components and starts the software installation process.
   - After successful installation, the status will indicate as such:



4. **Synchronization:**
   - Synchronizing with the blockchain network might take some time. Monitor the progress with `watch -n 1 'kimad status | jq .SyncInfo'`.

- Once synchronization is complete, the `catching_up` status will indicate as such:

```
Every 1.0s: kimad status | jq .SyncInfo

{
  "latest_block_hash": "7C350722E0ED9481C9DF33136043E7D7F093C379009D67ABBC47F97C05F239C6",
  "latest_app_hash": "7FA20BE7AFE43CC4A111F480708E846D3641234A730502AD67941569B039A130",
  "latest_block_height": "37369",
  "latest_block_time": "2024-02-08T13:53:54.714413136Z",
  "earliest_block_hash": "987DED55621247E44EB0EBD427158B6F5880F956F0142A3F7D777BEDE1765824",
  "earliest_app_hash": "E3B0C44298FC1C149AFBF4C8996FB92427AE41E4649B934CA495991B7852B855",
  "earliest_block_height": "1",
  "earliest_block_time": "2024-02-06T08:42:51.916685734Z",
  "catching_up": false
}
```

5. **Execute Second Script:**
   - Run `./setup-validator-environment.sh`
   - It completes the validation node setup. Upon successful completion, you become a validator for the Kima Network blockchain.

Additional Information

Monitoring Containers: Use `docker ps` to see the status of the application container.

```
kimadmin@ci-node-2-development:~$ docker ps
CONTAINER ID   IMAGE                 COMMAND                  CREATED          STATUS                    PORTS
                                NAMES
b23b9f8277e6   kima_validator_kima   "/bin/sh -c ./entryp…"   27 seconds ago   Up 24 seconds (healthy)   0.0.0.0:1317→1317/tcp,
26656-26657→26656-26657/tcp   kima_validator_kima
```

Viewing Logs: To check the application logs, please replace the container ID field and execute `docker logs <CONTAINER ID> --tail 100`.

```
9:51AM INF committed state app_hash=2639067DF920CCB3EE5CED2F9E830BB1462F84EE81A2CC10B7FDA079DDF4F18B height=2310
9:51AM INF indexed block exents height=2310 module=txindex
9:51AM INF minted coins from module account amount=12150788uKIMA from=mint module=x/bank
9:51AM INF executed block height=2311 module=state num_invalid_txs=0 num_valid_txs=0
9:51AM INF commit synced commit=436F6D6D697449447B5B323139203336203231382033352032313020313634203831203820313339232
3239203834203937203533203132332033342032303950 3A3930377D module=server
9:51AM INF committed state app_hash=DB24DA23D2A451088B8B914DF3EA4DE64C9667BD4AAF2584BA1D5461357B22D1 height=2311
```

If you encounter any errors, please capture a screenshot and send it to us for assistance.

Appendix A

Kima SGX Hardware Requirements

Below is a list of hardware that’s compliant with Kima SGX requirements, updated to 2024.

Supported SGX Compliant CPU's List

CPU Model
Intel XEON E-2174G
Intel XEON E-2176G
Intel XEON E-2178G
Intel XEON E-2186G
Intel XEON E-2188G
Intel XEON E-2274G
Intel XEON E-2276G
Intel XEON E-2278G
Intel XEON E-2286G
Intel XEON E-2288G
Intel XEON E-2334G
Intel XEON E-2386G
Intel XEON E-2388G

Supermicro Servers list

Manufacturer	Motherboard Model
Supermicro	X11SCM-F
Supermicro	X11SCM-LN8F
Supermicro	X11SCW-F
Supermicro	X11SCZ-F
Supermicro	X11SSL-F
Supermicro	X11SCD-F
Supermicro	X11SCE-F
Supermicro	X11SCH-F
Supermicro	X11SCH-LN4F
Supermicro	X11SCL-F
Supermicro	X11SCL-LN4F
Supermicro	X12STW-TF
Supermicro	X12STW-F
Supermicro	X12STL-IF
Supermicro	X12STL-F
Supermicro	X12STH-SYS
Supermicro	X12STH-LN4F

Manufacturer	Motherboard Model
Supermicro	X12STH-F
Supermicro	X12STE-F
Supermicro	X12STD-F

Dell Servers list

Model
Dell R240
Dell R350

HP Servers list

Model
HP DL20 G10
HP DL20 G10+