MagnaChain Component How-To

Here is a brief introduction on how to use MagnaChain and its components.

1 Preparation

1.1 Change directory to ./download/magnachain

cd ./download.magnachain

1.2 Set execution rights on files

chmod 700 loadlib.sh magnachaind magnachain-cli

1.3 Add your path to the system load .so files

sudo ./loadlib.sh

2 Starting a node

2.1 To connect to the network (currently our testnet) please type

sudo ./magnachaind -daemon

2.2 Specify data path

Default on Linux

~/.magnachain

2.3 Specify startup parameters

Common parameters:

-daemon -> background process
-printtoconsole -> log output to the console
-datadir=your_dir -> specify the data directory (uses the default path if not specified)
-regtest=1 -> regression test network, not connected to external network nodes

2.4 Test connection to the network

sudo ./magnachain-cli getinfo

On success, connections are non-zero and blocks are updated in the return data, like：


```
{
  "deprecation-warning": "WARNING: getinfo is deprecated and will be fully removed in 0.16.
Projects should transition to using getblockchaininfo, getnetworkinfo, and getwalletinfo
before upgrading to 0.16",
  "version": 260100,
  "protocolversion": 70015,
  "walletversion": 139900,
  "balance": 1623596738.00000000,
```

```
  "blocks": 628,
  "timeoffset": 0,
  "connections": 0,
  "proxy": "",
  "difficulty": 1.017115240193942e-08,
  "testnet": false,
  "keypoololdest": 1545131331,
  "keypoolsize": 2000,
  "paytxfee": 0.00000000,
  "relayfee": 0.00100000,
  "errors": ""
}
```


3 Stopping a node

sudo ./magnachain-cli stop

4 Useful RPC commands

4.1 *getinfo*

Returns an object containing various state info

sudo ./magnachain-cli -datadir=*your_dir* -regtest=1 getinfo

4.2 *getnewaddress*

Returns a new Bitcoin address for receiving payments

sudo ./magnachain-cli -datadir=*your_dir* -regtest=1 getnewaddress

4.3 *getbalance*

Returns the total amount in MGC received for this account

sudo ./magnachain-cli -datadir=*your_dir* -regtest=1 getbalance

4.4 *getbalanceof*

Returns the total amount in MGC received for this address

sudo ./magnachain-cli -datadir=*your_dir* -regtest=1 getbalanceof your_MGC_address

4.5 *generate*

Mine up to nblocks blocks immediately (before the RPC call returns) to an address in the wallet

sudo ./magnachain-cli -datadir==*your_dir* -regtest=1 generate 1

5 Publishing a smart contract

5.1: get the address (currently our regtest)

sudo ./magnachain-cli -datadir=your_dir -regtest=1 getnewaddress

The command will return a new address like "XQSD7PUPNCf8psJdfFMjfWXKuaHXFwSFRf"

5.2: publish

sudo ./magnachain-cli -datadir=your_dir -regtest=1 publishcontract game.lua XQSD7PUPNCf8psJdfFMjfWXKuaHXFwSFRf

The command returns something similar to the following:


```
{
  "txid": "7501667a85d2c35e57258f7f165a72156f7f8d43e9c03c4fe2e59875abacd3c6",
  "contractaddress": "UpcuLWL6HcSSH5Rc5xQy6e6yEMPQZ9xvWs",
  "senderaddress": "XQSD7PUPNCf8psJdfFMjfWXKuaHXFwSFRf"
}
```


This indicates that your contract has been successfully deployed, and "UpcuLWL6HcSSH5Rc5xQy6e6yEMPQZ9xvWs" is the contract address.

6 Calling a smart contract

sudo ./magnachain-cli -datadir=your_dir -regtest=1 callcontract true 0 UpcuLWL6HcSSH5Rc5xQy6e6yEMPQZ9xvWs XQSD7PUPNCf8psJdfFMjfWXKuaHXFwSFRf killMonster

Every time we execute a command, we will kill one more monster. Let's take a look at how many we killed.

sudo ./magnachain-cli -datadir=your_dir -regtest=1 callcontract true 0 UpcuLWL6HcSSH5Rc5xQy6e6yEMPQZ9xvWs XQSD7PUPNCf8psJdfFMjfWXKuaHXFwSFRf showNum

This command will return the number of monsters we killed.