

MINGW64:/c/Users/Owner/desktop/Unit-18-blockchain-homework/POA-Development-Chain/Tools

```
Owner@DZ3XX32 MINGW64 ~/desktop/Unit-18-blockchain-homework/POA-Development-Chain/Tools (main)
$ cd Tools/
(base)
Owner@DZ3XX32 MINGW64 ~/desktop/Unit-18-blockchain-homework/POA-Development-Chain/Tools (main)
$ ./geth account new --datadir node1
INFO [10-21|07:41:19.160] Maximum peer count          ETH=50 LES=0
total=50
Your new account is locked with a password. Please give a password. Do not forget this password.
Password:
Repeat password:

Your new key was generated

Public address of the key: 0x020B80DD83af87341741c8fb28fe1373E730F687
Path of the secret key file: node1\keystore\UTC--2021-10-21T11-41-27.042605200Z--020b80dd83af87341741c8fb28fe1373e730f687

- You can share your public address with anyone. Others need it to interact with you.
- You must NEVER share the secret key with anyone! The key controls access to your funds!
- You must BACKUP your key file! Without the key, it's impossible to access account funds!
- You must REMEMBER your password! Without the password, it's impossible to decrypt the key!

(base)
Owner@DZ3XX32 MINGW64 ~/desktop/Unit-18-blockchain-homework/POA-Development-Chain/Tools (main)
$ ./geth account new --datadir node2
INFO [10-21|07:41:47.169] Maximum peer count          ETH=50 LES=0
total=50
Your new account is locked with a password. Please give a password. Do not forget this password.
Password:
Repeat password:

Your new key was generated

Public address of the key: 0x8f00840a70a6467a6A53467544c08C95b6156f3c
Path of the secret key file: node2\keystore\UTC--2021-10-21T11-41-51.571055500Z--8f00840a70a6467a6a53467544c08c95b6156f3c

- You can share your public address with anyone. Others need it to interact with you.
- You must NEVER share the secret key with anyone! The key controls access to your funds!
```

MINGW64:/c/Users/Owner/desktop/Unit-18-blockchain-homework/POA-Development-Chain/Tools

```
(base)
Owner@DZ3XX32 MINGW64 ~
$ cd ~/desktop
(base)
Owner@DZ3XX32 MINGW64 ~/desktop
$ cd Unit-18-blockchain-homework/
(base)
Owner@DZ3XX32 MINGW64 ~/desktop/Unit-18-blockchain-homework (main)
$ ls
Blockchain-Case-Study/  POA-Development-Chain/  README.md
(base)
Owner@DZ3XX32 MINGW64 ~/desktop/Unit-18-blockchain-homework (main)
$ cd POA-Development-Chain/
(base)
Owner@DZ3XX32 MINGW64 ~/desktop/Unit-18-blockchain-homework/POA-Development-Chain (main)
$ mkdir Screenshots
(base)
Owner@DZ3XX32 MINGW64 ~/desktop/Unit-18-blockchain-homework/POA-Development-Chain (main)
$ ls
Screenshots/  Tools/
(base)
Owner@DZ3XX32 MINGW64 ~/desktop/Unit-18-blockchain-homework/POA-Development-Chain (main)
$ cd Tools
(base)
Owner@DZ3XX32 MINGW64 ~/desktop/Unit-18-blockchain-homework/POA-Development-Chain/Tools (main)
$ ./puppeth
+-----+
| Welcome to puppeth, your Ethereum private network manager |
|
| This tool lets you create a new Ethereum network down to |
| the genesis block, bootnodes, miners and ethstats servers |
| without the hassle that it would normally entail.         |
|
| Puppeth uses SSH to dial in to remote servers, and builds |
| its network components out of Docker containers using the |
| docker-compose toolset.                                   |
+-----+

Please specify a network name to administer (no spaces, hyphens or capital letters please)
> homework

Sweet, you can set this via --network=homework next time!

INFO [10-21|07:34:09.652] Administering Ethereum network
name=homework
```

INFO [10-21|07:50:50.134] Genesis block destroyed

What would you like to do? (default = stats)

1. Show network stats
2. Configure new genesis
3. Track new remote server
4. Deploy network components

> 2

What would you like to do? (default = create)

1. Create new genesis from scratch
2. Import already existing genesis

> 1

Which consensus engine to use? (default = clique)

1. Ethash - proof-of-work
2. Clique - proof-of-authority

> 2

How many seconds should blocks take? (default = 15)

>

Which accounts are allowed to seal? (mandatory at least one)

> 0x

> 0x020B80DD83af87341741c8fB28fe1373E730F687

> 0x8f00840a70a6467a6A53467544c08C95b6156f3c

> 0x

Which accounts should be pre-funded? (advisable at least one)

> 0x020B80DD83af87341741c8fB28fe1373E730F687

> 0x8f00840a70a6467a6A53467544c08C95b6156f3c

> 0x

Should the precompile-addresses (0x1 .. 0xff) be pre-funded with 1 wei? (advisable yes)

> no

Specify your chain/network ID if you want an explicit one (default = random)

> 333

INFO [10-21|07:52:14.741] Configured new genesis block

What would you like to do? (default = stats)

1. Show network stats
2. Manage existing genesis
3. Track new remote server
4. Deploy network components

> 2

```
What would you like to do? (default = stats)
1. Show network stats
2. Manage existing genesis
3. Track new remote server
4. Deploy network components
> 2

1. Modify existing configurations
2. Export genesis configurations
3. Remove genesis configuration
> 2

Which folder to save the genesis specs into? (default = current)
Will create homework.json, homework-aleth.json, homework-harmony.json, homework-parity.json
>
INFO [10-21|07:52:29.505] Saved native genesis chain spec      path=homework.json
ERROR[10-21|07:52:29.529] Failed to create Aleth chain spec     err="unsupported consensus engine"
ERROR[10-21|07:52:29.536] Failed to create Parity chain spec    err="unsupported consensus engine"
INFO [10-21|07:52:29.539] Saved genesis chain spec              client=harmony path=homework-harmony.json

What would you like to do? (default = stats)
1. Show network stats
2. Manage existing genesis
3. Track new remote server
4. Deploy network components
> ^C
> ^C
> ^C
>
```

Restarted

MINGW64:/c/Users/Owner/desktop/Unit-18-blockchain-homework/POA-Development-Chain/Tools

Owner@DZ3XX32 MINGW64 ~/desktop/Unit-18-blockchain-homework/POA-Development-Chain (main)

\$ cd Tools/

(base)

Owner@DZ3XX32 MINGW64 ~/desktop/Unit-18-blockchain-homework/POA-Development-Chain/Tools (main)

\$ ./geth account new --datadir node1

INFO [10-21|08:11:08.250] Maximum peer count ETH=50 LES=0 total=50

Your new account is locked with a password. Please give a password. Do not forget this password.

Password:

Repeat password:

Your new key was generated

Public address of the key: 0xffffb22083f69bc6d9e133730416e00a85098224b

Path of the secret key file: node1\keystore\UTC--2021-10-21T12-11-13.005769100Z-ffffb22083f69bc6d9e133730416e00a85098224b

- You can share your public address with anyone. Others need it to interact with you.

- You must NEVER share the secret key with anyone! The key controls access to your funds!

- You must BACKUP your key file! Without the key, it's impossible to access account funds!

- You must REMEMBER your password! Without the password, it's impossible to decrypt the key!

(base)

Owner@DZ3XX32 MINGW64 ~/desktop/Unit-18-blockchain-homework/POA-Development-Chain/Tools (main)

\$ ./geth account new --datadir node2

INFO [10-21|08:11:59.131] Maximum peer count ETH=50 LES=0 total=50

Your new account is locked with a password. Please give a password. Do not forget this password.

Password:

Repeat password:

Your new key was generated

Public address of the key: 0x597eba70512839f7d755f79bdAFE934b488AcAb0

Path of the secret key file: node2\keystore\UTC--2021-10-21T12-12-03.813781700Z-597eba70512839f7d755f79bdAFE934b488acab0

- You can share your public address with anyone. Others need it to interact with you.

- You must NEVER share the secret key with anyone! The key controls access to your funds!

```
What would you like to do? (default = stats)
  1. Show network stats
  2. Manage existing genesis
  3. Track new remote server
  4. Deploy network components
> 2

  1. Modify existing configurations
  2. Export genesis configurations
  3. Remove genesis configuration
> 3
INFO [10-21|08:12:38.064] Genesis block destroyed

What would you like to do? (default = stats)
  1. Show network stats
  2. Configure new genesis
  3. Track new remote server
  4. Deploy network components
> 2

What would you like to do? (default = create)
  1. Create new genesis from scratch
  2. Import already existing genesis
> 1

Which consensus engine to use? (default = clique)
  1. Ethash - proof-of-work
  2. Clique - proof-of-authority
> 2

How many seconds should blocks take? (default = 15)
>

Which accounts are allowed to seal? (mandatory at least one)
> 0xffffb22083f69bc6d9e133730416e00a85098224Bffffb22083f69bc6d9e133730416e00a85098
```

How many seconds should blocks take? (default = 15)

>

Which accounts are allowed to seal? (mandatory at least one)

> 0xffffb22083f69bc6d9e133730416e00a850982248ffffb22083f69bc6d9e133730416e00a850982248ffffb22083f69bc6d9e133730416e00a8509822480xffffb22083f69bc6d9e133730416e00a8509822480xffffb22083f69bc6d9e133730416e00a8509822480xffffb22083f69bc6d9e133730416e00a850982248biygffffb22083f69bc6d9e133730416e00a850982248ffffb22083f69bc6d9e133730416e00a85098

ERROR[10-21|08:14:09.301] Invalid address length, please retry

> 0x2248ffffb22083f69bc6d9e133730416e00a850982248ffffb22083f69bc6d9e133730416e00a85098

ERROR[10-21|08:14:09.378] Invalid address length, please retry

> 0x22480xffffb22083f69bc6d9e133730416e00a8509822480xffffb22083f69bc6d9e133730416e00a85098

ERROR[10-21|08:14:09.393] Invalid address length, please retry

> 0x509822480xffffb22083f69bc6d9e133730416e00a850982248biyg

ERROR[10-21|08:14:09.401] Invalid address length, please retry

> 0xffffb22083f69bc6d9e133730416e00a850982248ffffb22083f69bc6d9e133730416e00a85098

ERROR[10-21|08:14:15.279] Invalid address length, please retry

> 0x2248ffffb22083f69bc6d9e133730416e00a850982248ffffb22083f69bc6d9e133730416e00a85098

ERROR[10-21|08:14:15.292] Invalid address length, please retry

> 0x22480xffffb22083f69bc6d9e133730416e00a8509822480xffffb22083f69bc6d9e133730416e00a85098

ERROR[10-21|08:14:15.308] Invalid address length, please retry

> 0x509822480xffffb22083f69bc6d9e133730416e00a850982248biyg

ERROR[10-21|08:14:15.317] Invalid address length, please retry

> 0xffffb22083f69bc6d9e133730416e00a850982248ffffb22083f69bc6d9e133730416e00a85098

1. Modify existing configurations

2. Export genesis configurations

3. Remove genesis configuration

> 2

Which folder to save the genesis specs into? (default = current)

Will create homework.json, homework-aleth.json, homework-harmony.json, homework-parity.json

>

INFO [10-21|08:15:41.723] Saved native genesis chain spec

path=homework.json

ERROR[10-21|08:15:41.723] Failed to create Aleth chain spec

err="unsupported consensus engine"

ERROR[10-21|08:15:41.723] Failed to create Parity chain spec

err="unsupported consensus engine"

INFO [10-21|08:15:41.757] Saved genesis chain spec

client=harmony path=homework-harmony.json

What would you like to do? (default = stats)

1. Show network stats

2. Manage existing genesis

3. Track new remote server

4. Deploy network components

>

>



```
$ ./geth init homework.json --datadir node1
INFO [10-21|08:16:27.386] Maximum peer count           ETH=50 LES=0
total=50
INFO [10-21|08:16:27.413] Set global gas cap           cap=50,000,00
0
INFO [10-21|08:16:27.420] Allocated cache and file handles database=C:\U
sers\Owner\desktop\Unit-18-blockchain-homework\POA-Development-Chain\Tools\node1
\geth\chaindata cache=16.00MiB handles=16
INFO [10-21|08:16:27.726] Writing custom genesis block
INFO [10-21|08:16:27.741] Persisted trie from memory database nodes=3 size=
455.00B time=1.5674ms gcnodes=0 gcsiz=0.00B gctime=0s livenodes=1 livesize=0.00
B
INFO [10-21|08:16:27.769] Successfully wrote genesis state database=chai
ndata hash=98bdb4..61be45
INFO [10-21|08:16:27.791] Allocated cache and file handles database=C:\U
sers\Owner\desktop\Unit-18-blockchain-homework\POA-Development-Chain\Tools\node1
\geth\lightchaindata cache=16.00MiB handles=16
INFO [10-21|08:16:28.096] Writing custom genesis block
INFO [10-21|08:16:28.101] Persisted trie from memory database nodes=3 size=
455.00B time=0s gcnodes=0 gcsiz=0.00B gctime=0s livenodes=1 livesize=0.00
B
INFO [10-21|08:16:28.113] Successfully wrote genesis state database=ligh
tchaindata hash=98bdb4..61be45
(base)
Owner@DZ3XX32 MINGW64 ~/desktop/Unit-18-blockchain-homework/POA-Development-Chai
n/Tools (main)
$ ./geth init homework.json --datadir node2
INFO [10-21|08:17:06.977] Maximum peer count           ETH=50 LES=0
total=50
INFO [10-21|08:17:06.997] Set global gas cap           cap=50,000,00
0
INFO [10-21|08:17:07.002] Allocated cache and file handles database=C:\U
sers\Owner\desktop\Unit-18-blockchain-homework\POA-Development-Chain\Tools\node2
\geth\chaindata cache=16.00MiB handles=16
INFO [10-21|08:17:07.250] Writing custom genesis block
INFO [10-21|08:17:07.262] Persisted trie from memory database nodes=3 size=
455.00B time="568.5µs" gcnodes=0 gcsiz=0.00B gctime=0s livenodes=1 livesize=0.0
0B
INFO [10-21|08:17:07.294] Successfully wrote genesis state database=chai
ndata hash=98bdb4..61be45
INFO [10-21|08:17:07.322] Allocated cache and file handles database=C:\U
sers\Owner\desktop\Unit-18-blockchain-homework\POA-Development-Chain\Tools\node2
\geth\lightchaindata cache=16.00MiB handles=16
INFO [10-21|08:17:07.610] Writing custom genesis block
INFO [10-21|08:17:07.615] Persisted trie from memory database nodes=3 size=
455.00B time="520.2µs" gcnodes=0 gcsiz=0.00B gctime=0s livenodes=1 livesize=0.0
0B
INFO [10-21|08:17:07.628] Successfully wrote genesis state database=ligh
tchaindata hash=98bdb4..61be45
(base)
```



```
MINGW64/c/Users/Owner/desktop/Unit-18-blockchain-homework/POA-Development-Chain/Tools
ndies=8192
INFO [10-21|08:27:06.211] Opened ancient database      database=C:\Users\Owner\desktop\Unit-18-blockchain-homework\POA-Development-Chain\Tools\node1\geth\chaindata\ancient readonl
=False
INFO [10-21|08:27:06.229] Initialised chain configuration      config={ChainID: 333 Homestead: 0 DAO: <nil> DAOsupport: false EIP150: 0 EIP155: 0 EIP158: 0 Byzantium: 0 Constantinople: 0
Petersburg: 0 Istanbul: 0 Muir Glacier: <nil>, Berlin: <nil>, London: <nil>, Engine: clique}
INFO [10-21|08:27:06.251] Initialising Ethereum protocol      network=1 downloader=<nil>
INFO [10-21|08:27:06.265] Loaded most recent local header      number=0 hash=98b4d4.61be45 td=1 age=14m19s
INFO [10-21|08:27:06.275] Loaded most recent local full block  number=0 hash=98b4d4.61be45 td=1 age=14m19s
INFO [10-21|08:27:06.283] Loaded most recent local fast block  number=0 hash=98b4d4.61be45 td=1 age=14m19s
WARN [10-21|08:27:06.293] Failed to load snapshot, regenerating err=missing or corrupted snapshot
INFO [10-21|08:27:06.302] Rebuilding state snapshot            root=622dd11..b40a47 accounts=0 slots=0 storage=0.008 elapsed="565.7µs"
INFO [10-21|08:27:06.306] Resuming state snapshot generation  transactions=0 accounts=0
INFO [10-21|08:27:06.309] Regenerated local transaction journal accounts=2 slots=0 storage=140.008 elapsed=14.493ms
INFO [10-21|08:27:06.320] Generated state snapshot             threshold=2
INFO [10-21|08:27:06.327] Gasprice oracle is ignoring threshold set threshold=2
INFO [10-21|08:27:06.327] Stored checkpoint snapshot to disk   number=0 hash=98b4d4.61be45
WARN [10-21|08:27:06.342] Error reading unclean shutdown markers error="leveldb: not found"
INFO [10-21|08:27:06.356] Starting peer-to-peer node          instance=Geth/v1.10.11-stable-7231b3ef/windows-amd64/go1.17.2
INFO [10-21|08:27:06.506] New local node record               seq=1,634,819,226,504 id=64204f9fb8802a35 ip=127.0.0.1 udp=30303 tcp=30303
INFO [10-21|08:27:06.528] Started P2P networking              self=enode://073a3941252653b040ab15dd3c7b38252fade085327b4a98f21b5abfb3179f6b261a214d0ad380d4161f3be0941870e8115d261e7e6d
fa74b8fc42980828127.0.0.1:30303
INFO [10-21|08:27:06.529] IPC endpoint opened                 url=\\.\pipe\geth.ipc
INFO [10-21|08:27:06.552] Transaction pool price threshold updated price=1,000,000,000
INFO [10-21|08:27:06.558] Transaction pool price threshold updated price=1,000,000,000
INFO [10-21|08:27:06.564] Etherbase automatically configured  address=0xffffb22083f69bc6d9e133730416e00a850982248
WARN [10-21|08:27:06.573] Block sealing failed                err="authentication needed: password or unlock"
INFO [10-21|08:27:06.573] Commit new mining work              number=1 sealhash=d0ca9d..82b05d uncles=0 gas=0 fees=0 elapsed=0s
INFO [10-21|08:27:06.685] New local node record               seq=1,634,819,226,505 id=64204f9fb8802a35 ip=99.231.120.20 udc=30303 tcp=30303
INFO [10-21|08:27:09.498] Mapped network port                 proto=udp extport=30303 intport=30303 interface="UPNP IGDv1-IP1"
INFO [10-21|08:27:09.990] Mapped network port                 proto=tcp extport=30303 intport=30303 interface="UPNP IGDv1-IP1"
INFO [10-21|08:27:16.557] Looking for peers                   peercount=0 tried=15 static=0
INFO [10-21|08:27:26.571] Looking for peers                   peercount=0 tried=29 static=0
ERROR [10-21|08:27:28.384] Snapshot extension registration failed peer=8d7bd968 err="peer connected on snap without compatible eth support"
INFO [10-21|08:27:36.692] Looking for peers                   peercount=0 tried=25 static=0
ERROR [10-21|08:27:42.680] Snapshot extension registration failed peer=04dfa983 err="peer connected on snap without compatible eth support"
INFO [10-21|08:27:47.557] Looking for peers                   peercount=0 tried=26 static=0
INFO [10-21|08:27:57.888] Looking for peers                   peercount=0 tried=34 static=0
INFO [10-21|08:28:08.219] Looking for peers                   peercount=2 tried=32 static=0
INFO [10-21|08:28:18.244] Looking for peers                   peercount=0 tried=34 static=0
INFO [10-21|08:28:18.471] Got interrupt, shutting down...
INFO [10-21|08:28:18.483] IPC endpoint closed                 url=\\.\pipe\geth.ipc
INFO [10-21|08:28:18.492] Ethereum protocol stopped
INFO [10-21|08:28:18.500] Transaction pool stopped
INFO [10-21|08:28:18.506] Writing snapshot state to disk      root=622dd11..b40a47
INFO [10-21|08:28:18.512] Persisted trie from memory database nodes=0 size=0.008 time=0s gcnodes=0 gcsize=0.008 gctime=0s livenodes=1 livenessize=0.008
INFO [10-21|08:28:18.522] Writing clean trie cache to disk    path=C:\Users\Owner\desktop\Unit-18-blockchain-homework\POA-Development-Chain\Tools\node1\geth\triecache threads=4
INFO [10-21|08:28:18.556] Persisted the clean trie cache      path=C:\Users\Owner\desktop\Unit-18-blockchain-homework\POA-Development-Chain\Tools\node1\geth\triecache elapsed=19.444ms
INFO [10-21|08:28:18.573] Blockchain stopped
```