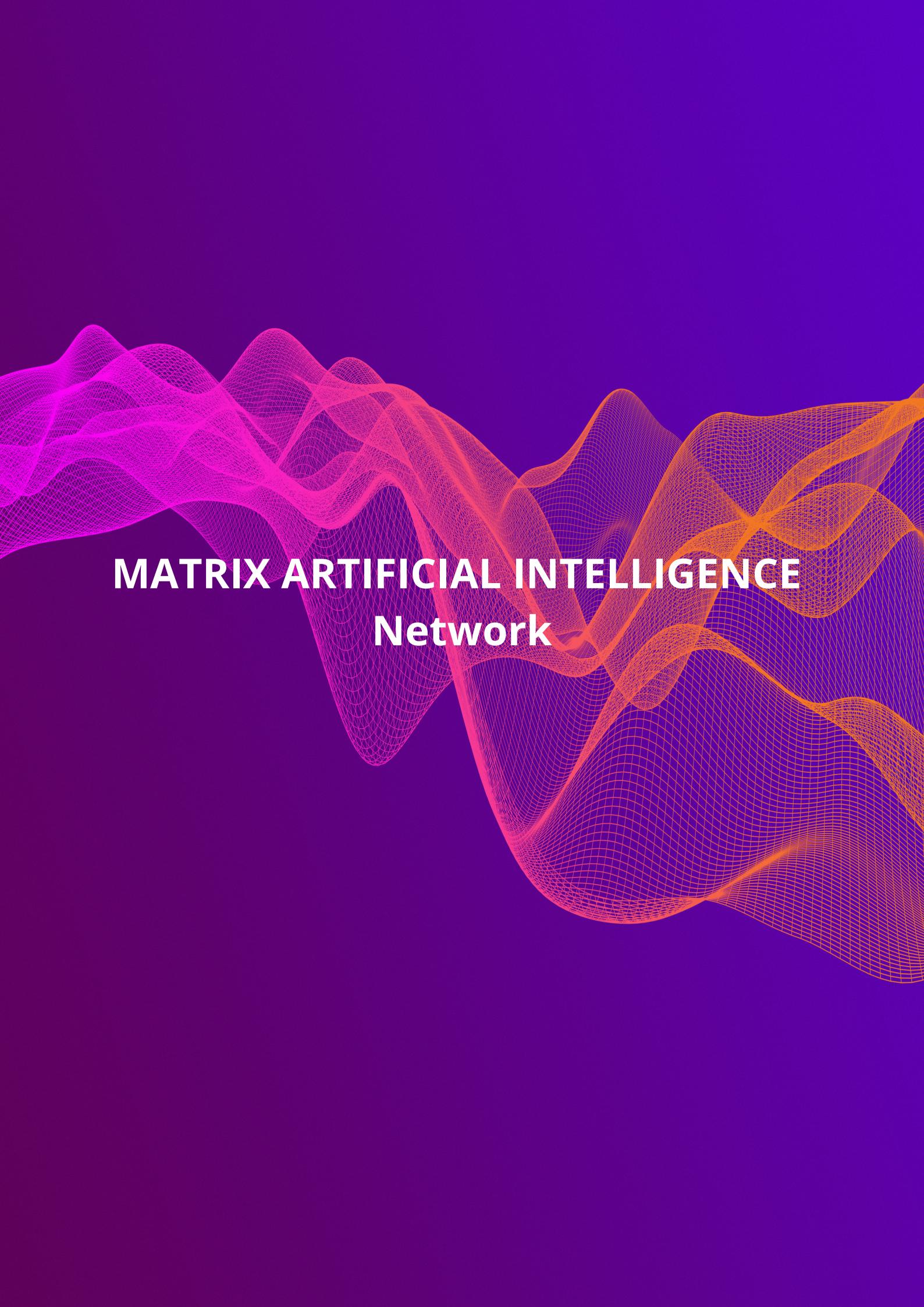


# Matrix AI Network

## Node Deployment Guide





# MATRIX ARTIFICIAL INTELLIGENCE Network

Thank you for supporting the Matrix AI Network by choosing to become a node! This article details how to stake and run a functioning Matrix mining and/or verification masternode.

PLEASE NOTE THAT ALL INFORMATION CONTAINED HEREIN IS SUBJECT TO CHANGE WITHOUT NOTICE. THIS INCLUDES BUT IS NOT LIMITED TO BLOCKTIME AND BLOCK REWARDS.

## **MATRIX Masternodes: Miners and Verifiers**

The Matrix AI Network uses a unique HPOW consensus. The miner network and the verification network are both responsible for maintaining the normal operation of the Matrix blockchain – namely, packaging and verifying transactions.

### **Reward Mechanism**

The Matrix AI Network's blocktime is currently set to 6 seconds. Each block yields 10 MAN tokens. The Mining Network receives 30% of these tokens, while the Verification Network receives 70%. Each election cycle (300 blocks), 21 mining nodes and 24 verification nodes (5 server as backup verifiers) will be selected.

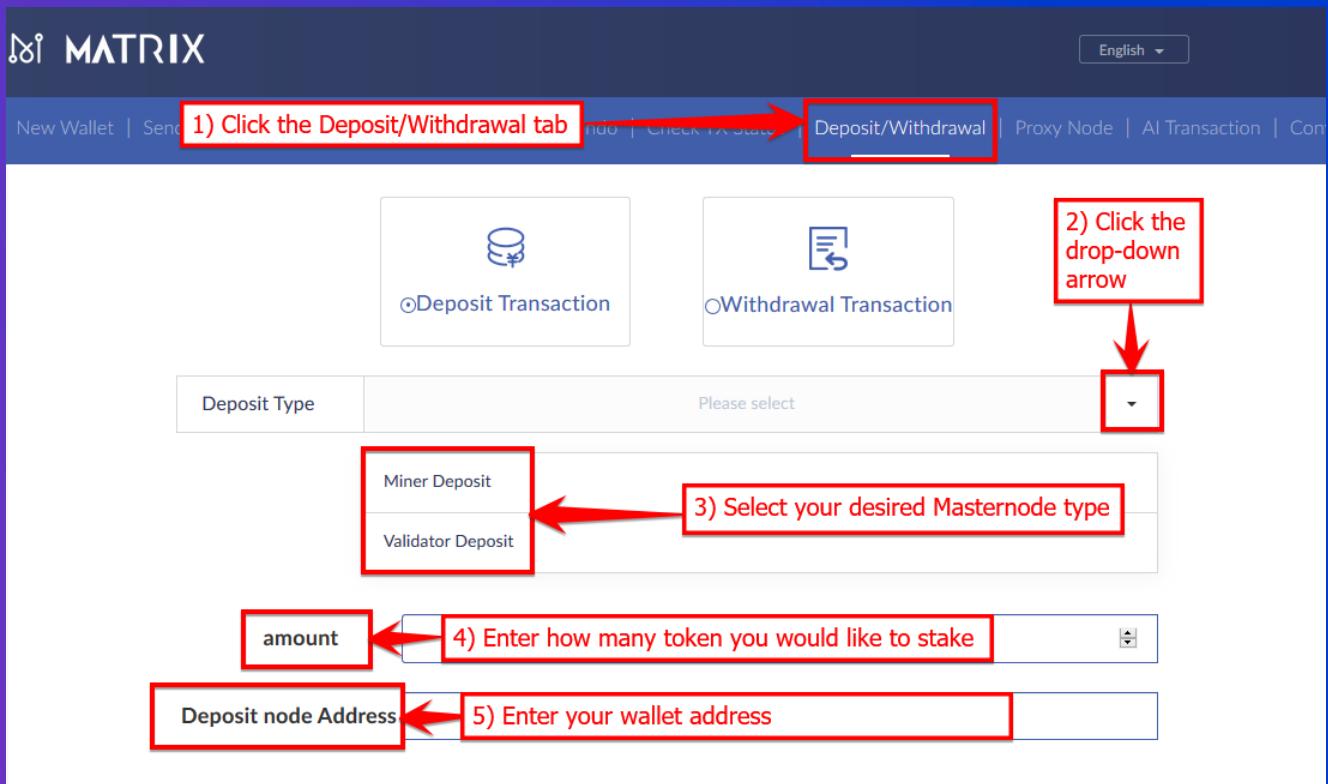
The individual block miner receives a 40% share of the Mining Network's rewards. The remaining elected miners share 50% of the Mining Network's rewards according to the amount of MAN tokens they have staked. The individual block verifier receives a 50% share of the Verification Network's rewards. The remaining elected verifiers share 50% of the Verification Network's rewards according to the amount of MAN tokens have staked.

In addition to the block rewards, MATRIX provides stake rewards. The estimated value of the stake rewards is over 3% per year. However, this assumes 100% uptime. Stake rewards will be prorated according to uptime.

# How to Stake Tokens to Run a Masternode

The Matrix web wallet allows you to stake tokens to run masternodes via the Deposit/Withdrawal tab.

The wallet is accessible at: <http://wallet.matrix.io/>



As shown in the image above, you can choose the relevant masternode (Miner Deposit vs Validator Deposit) by clicking the Deposit Type drop-down arrow.

Please note that you must stake at least 10,000 MAN tokens to be eligible to run a mining masternode. Similarly, you must stake at least 100,000 MAN tokens to be eligible to run a verification masternode.

The "Deposit node Address" is the wallet address that will automatically receive all future rewards.

Please be sure to properly input your own wallet address!

# How to Deploy a Masternode

Please note that the following steps will need to be repeated every time the Matrix team updates the gman(windows).zip package.



## Download gman(windows).zip

1. Download and save the gman(windows).zip package. Up-to-date versions can be downloaded from the Matrix Github page.

<https://github.com/MatrixAINetwork/>

or the Matrix website

<https://www.matrix.io/downloads/>

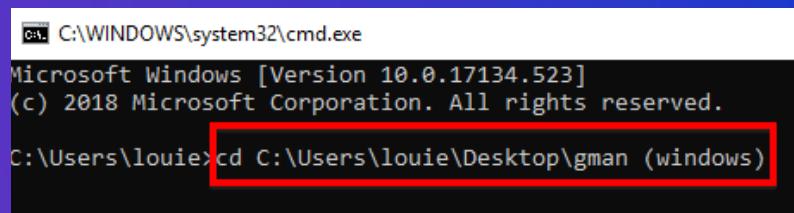
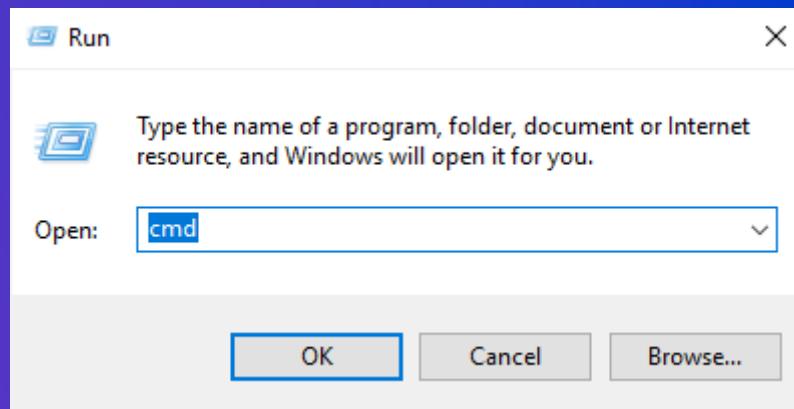
2. Decompress the package using a file archiver software.
3. Save the folder contained therein. The folder can be saved anywhere. This guide will assume that it was saved to your desktop.



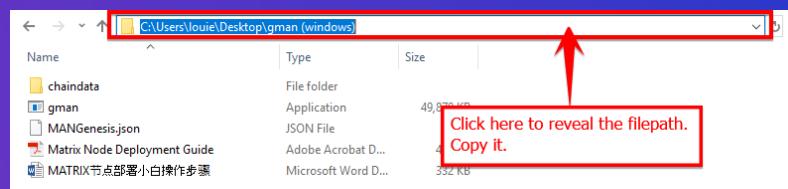
## Prime Your computer

1. Open your system's Command Prompt.

This can be done by first clicking "Windows Key + R" and typing "cmd" into the resulting dialog box. Click "OK".



2. Locate the "gman (Windows)" folder. Click the address bar to reveal the file path. Copy it.





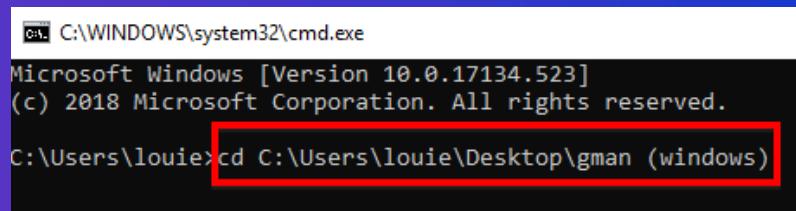
## Prime Your computer

3. Return to the Command Prompt window. If you saved the "gman (Windows)" folder on your C drive, confirm that Command Prompt indicates that it is engaging with the C drive.

If you saved the "gman(Windows)" folder elsewhere, confirm that Command Prompt is engaging with the relevant drive.

For example, if you saved the "gman (Windows)" folder on the D drive, type "D:" into the Command Prompt window.

4. Enter "cd " then paste the recently copied file path. Please note the space after the d in "cd ".

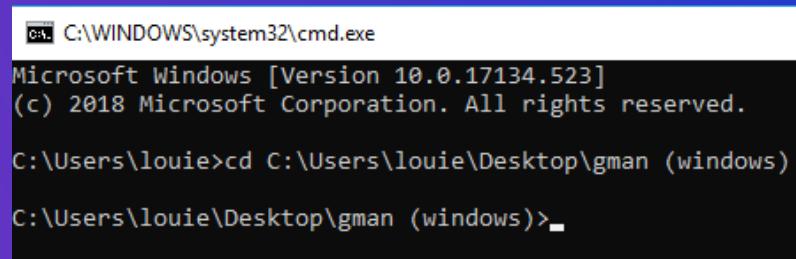


```
C:\WINDOWS\system32\cmd.exe
Microsoft Windows [Version 10.0.17134.523]
(c) 2018 Microsoft Corporation. All rights reserved.

C:\Users\louie>cd C:\Users\louie\Desktop\gman (windows)
```

A screenshot of a Windows Command Prompt window. The title bar says 'C:\WINDOWS\system32\cmd.exe'. The window content shows the standard Windows 10 welcome message. Below that, the command 'cd' is entered, followed by a path 'C:\Users\louie\Desktop\gman (windows)'. This last part is highlighted with a red rectangular box.

5. Click Enter



```
C:\WINDOWS\system32\cmd.exe
Microsoft Windows [Version 10.0.17134.523]
(c) 2018 Microsoft Corporation. All rights reserved.

C:\Users\louie>cd C:\Users\louie\Desktop\gman (windows)

C:\Users\louie\Desktop\gman (windows)>
```

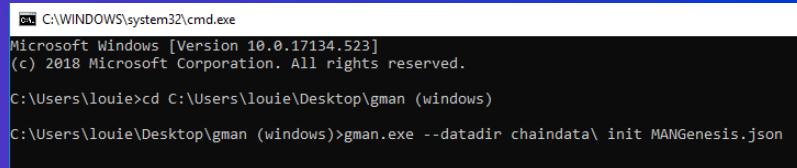
A screenshot of a Windows Command Prompt window. The title bar says 'C:\WINDOWS\system32\cmd.exe'. The window content shows the standard Windows 10 welcome message. Below that, the command 'cd' is entered, followed by a path 'C:\Users\louie\Desktop\gman (windows)'. After the path, there is a blank line with a cursor, indicating the user has pressed the Enter key to execute the command.



## Prime Your computer

6. Copy the following and paste into the command prompt window:

```
gman.exe --datadir chaindata\ init MANGenesis.json
```

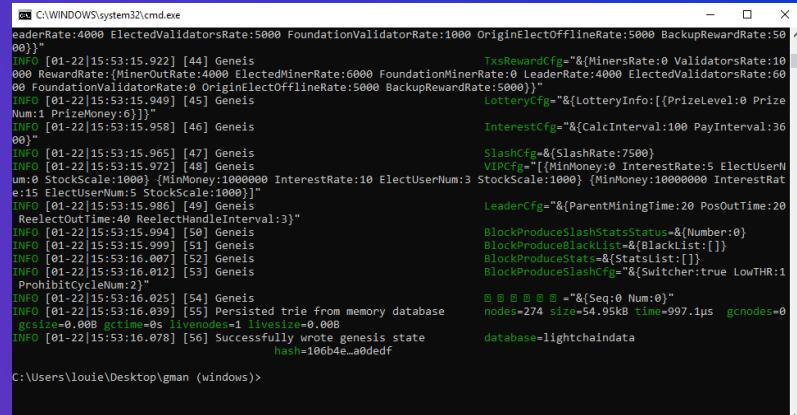


```
C:\WINDOWS\system32\cmd.exe
Microsoft Windows [Version 10.0.17134.523]
(c) 2018 Microsoft Corporation. All rights reserved.

C:\Users\louie>cd C:\Users\louie\Desktop\gman (windows)

C:\Users\louie\Desktop\gman (windows)>gman.exe --datadir chaindata\ init MANGenesis.json
```

7. Press Enter. A string of data should appear after a few seconds.



```
C:\WINDOWS\system32\cmd.exe
EaderRate:4000 ElectedValidatorRate:5000 FoundationValidatorRate:1000 OriginElectOfflineRate:5000 BackupRewardRate:5000
INFO [01-22|15:53:15.922] [44] Genesis TxRewardCfg="&{MinersRate:0 ValidatorsRate:10000 RewardRate:0 [MinerOutRate:4000 ElectedMinerRate:6000 FoundationMinerRate:0 LeaderRate:4000 ElectedValidatorsRate:6000 FoundationValidatorRate:0 OriginElectOfflineRate:5000 BackupRewardRate:5000}"
INFO [01-22|15:53:15.949] [45] Genesis LotteryCfg="&{LotteryInfo:[{PrizeLevel:0 PrizeNum:1 PrizeMoney:6}]}"
INFO [01-22|15:53:15.958] [46] Genesis InterestCfg="{CalcInterval:100 PayInterval:3600}"
INFO [01-22|15:53:15.965] [47] Genesis SlashCfg="&{SlashRate:7500}
INFO [01-22|15:53:15.972] [48] Genesis VIPCfg="&[MinMoney:0 InterestRate:5 ElectUserN um:0 StockScale:10000 ({MinMoney:1000000 InterestRate:10 ElectUserNum:3 StockScale:1000000 ({MinMoney:10000000 InterestRate:15 ElectUserNum:5 StockScale:10000})}]"
INFO [01-22|15:53:15.986] [49] Genesis LeaderCfg="&{ParentMiningTime:20 PosOutTime:20 ReelectOutTime:40 ReelectHandleInterval:3}"
INFO [01-22|15:53:15.994] [50] Genesis BlockProduceSlashStatsStatus=&{Number:0}
INFO [01-22|15:53:15.999] [51] Genesis BlockProduceBlackList=&{BlackList:[]}
INFO [01-22|15:53:16.007] [52] Genesis BlockProduceStat=&{StatsList:[]}
INFO [01-22|15:53:16.012] [53] Genesis BlockProduceSlashCfg="&{Switcher:true LowTHR:1 PriorityCycleNum:2}"
INFO [01-22|15:53:16.025] [54] Genesis S S S S = "&{Seq:0 Num:0}"
INFO [01-22|15:53:16.039] [55] Persisted trie from memory database nodes=274 size=54.95kB time=997.1µs gcnodes=0
INFO [01-22|15:53:16.078] [56] Successfully wrote genesis state database=lightchaindata
hash=106b4e-a0dedf
```

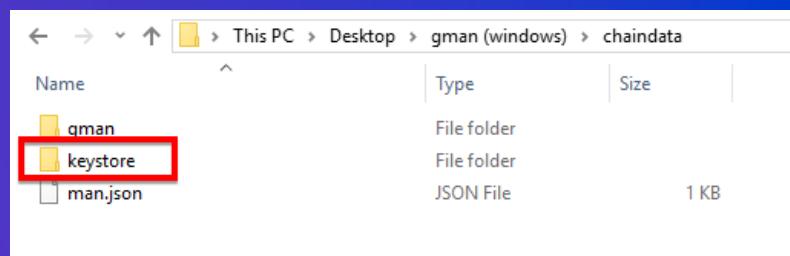
8. If your Command Prompt looks anything like the above image, you have successfully primed your computer. Congratulations!



## Configure Your Wallet

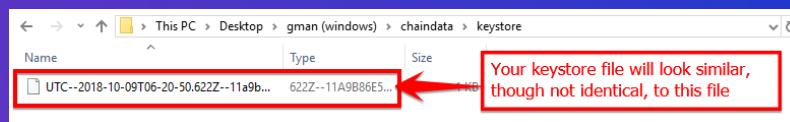
1. If you have successfully primed your computer, there should now be a folder called "keystore" in the "chaindata" folder.

The "chaindata" folder is found in the "gman(Windows)" folder.



2. Move your wallet keystore file (your wallet file) to the "keystore" folder.

If you do not have a Matrix wallet keystore file, please create and download one at <http://wallet.matrix.io/>

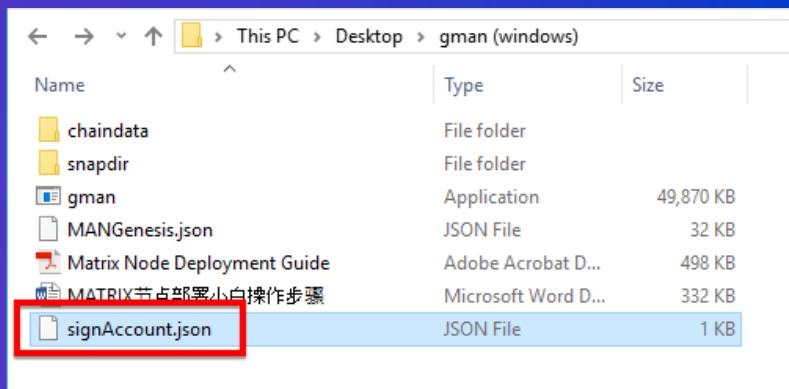




## Configure Your signAccount

1. Create a new .txt document using Notepad or another word processing software.

Name it as "signAccount.json" and save it in the "gman(windows)" folder.



2. In the signAccount.json document, copy and paste the following while replacing the highlighted content with your personal wallet address and wallet unlock password.

Mind the brackets and apostrophes. All must be included.

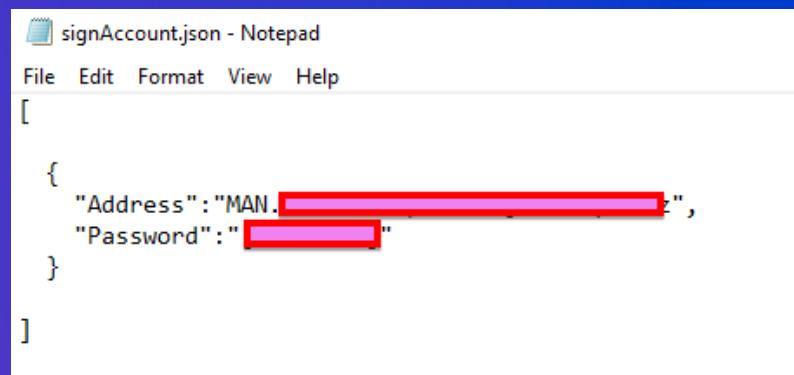
[

```
{  
  "Address": "Wallet address (own wallet address)",  
  "Password": "Wallet unlock password (your own unlock code)"  
}
```

]



## Configure Your signAccount



```
signAccount.json - Notepad
File Edit Format View Help
[

{
    "Address": "MAN.[REDACTED]Z",
    "Password": "[REDACTED]"
}

]
```

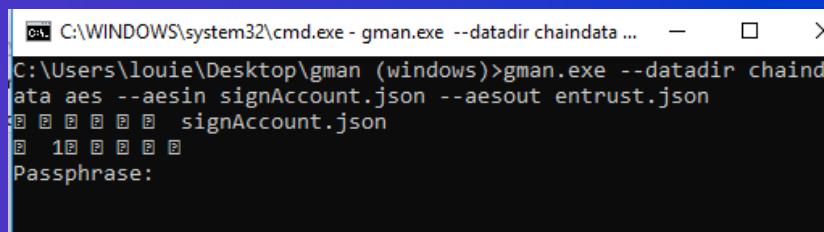
3. Save the file. Please note that the name "signAccount.json" must be manually typed in. Do not copy and paste the name of the file from elsewhere.



## Generate A Password

1. Open the Command Prompt window. Enter or Paste:

```
gman.exe --datadir chaindata aes --aesin signAccount.json --aesout entrust.json
```



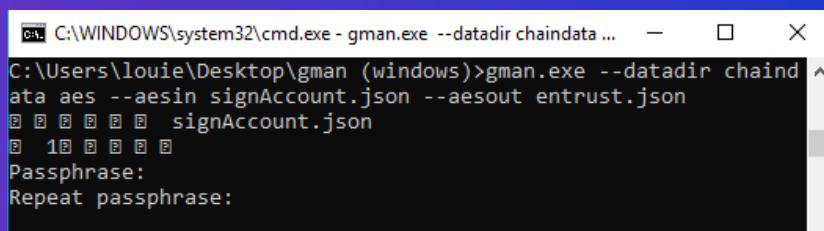
```
C:\WINDOWS\system32\cmd.exe - gman.exe --datadir chaindata ... — □ ×  
C:\Users\louie\Desktop\gman (windows)>gman.exe --datadir chaindata ...  
ata aes --aesin signAccount.json --aesout entrust.json  
█ █ █ █ █ signAccount.json  
█ 1 █ █ █ █  
Passphrase:
```

2. Enter your password. Your password MUST contain both upper and lower case letters, numbers, and special characters.

Your password also MUST include a minimum of 8 characters. You will not see your password as you type it.

The Command Prompt window will remain blank.

Press Enter.



```
C:\WINDOWS\system32\cmd.exe - gman.exe --datadir chaindata ... — □ ×  
C:\Users\louie\Desktop\gman (windows)>gman.exe --datadir chaindata ...  
ata aes --aesin signAccount.json --aesout entrust.json  
█ █ █ █ █ signAccount.json  
█ 1 █ █ █ █  
Passphrase:  
Repeat passphrase:
```

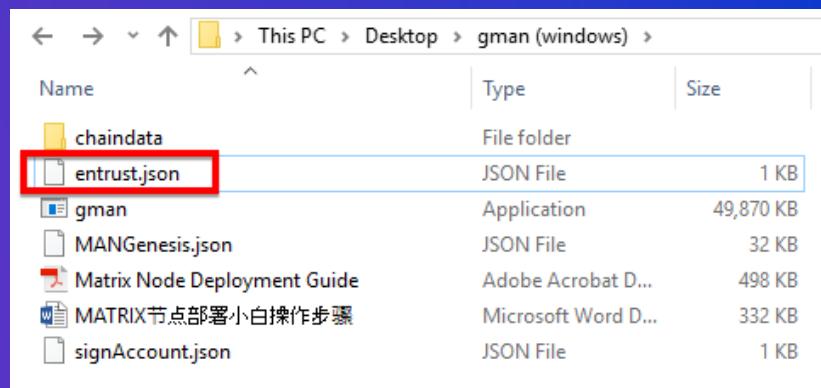


## Generate A Password

3. Enter your password again. As previously, you will not be able to see your password as you type it.

4. After successfully entering your password twice, a message containing “entrust.json” will appear.

You can confirm that your password has been successfully generated by verifying that your “gman(windows)” folder now contains an “entrust.json” file.





## Launch Your Masternode

1. Open Notepad or another word processing software.

Copy and paste the following string into a separate document and replace the yellow section with your own wallet address.

After doing so, ensure that the entirety is a single string of text. Copy it and paste it into the Command Prompt.

```
gman --datadir chaindata --networkid 1 --debug --verbosity 5 --manAddress  
MAN.2skXxxxXxxxXxXXXXxxXXxx8B3NgxX --entrust entrust.json --gcmode archive --outputinfo 1 --  
Syncmode full
```

A screenshot of a Windows Command Prompt window titled 'C:\WINDOWS\system32\cmd.exe'. The window contains the command: 'C:\Users\louie\Desktop\gman (windows)>gman --datadir chaindata --networkid 1 --debug --verbosity 5 --manAddress MAN.2skXxxxXxXXXXxxXXxx8B3NgxX --entrust entrust.json --gcmode archive --outputinfo 1 -- Syncmode full'.

2. Press Enter.

You will be prompted to enter the password you just set up. As before, you will not be able to see your password as you write it.

Type your password and press enter.

A screenshot of a Windows Command Prompt window showing a password entry prompt. The text reads: 'C:\Users\louie\Desktop\gman (windows)>gman --datadir chaindata --networkid 1 --debug --verbosity 5 --manAddress MAN.3mV7FcH7Tl06ZCKdojEQs8MRB2m --entrust entrust.json --gcmode archive --outputinfo 1 -- Syncmode full' followed by 'log will write in new file' and a series of five question marks. Below this, it says 'Passphrase:'.



## Launch Your Masternode

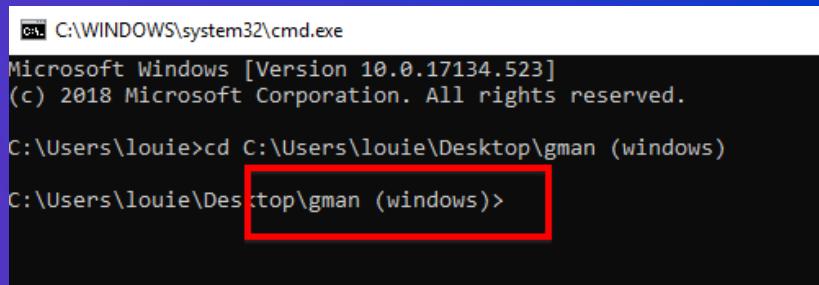
3. After entering your password, you should see an empty Passphrase field, as in the picture above. That's it! Your node is set up!
4. Please note that if you close this Command Prompt window, you will take your masternode offline.



## View Your Masternode

1. To view the status of your masternode, open a new Command Prompt window.

Ensure that Command Prompt is engaging with the "gman(windows)" folder, as before.



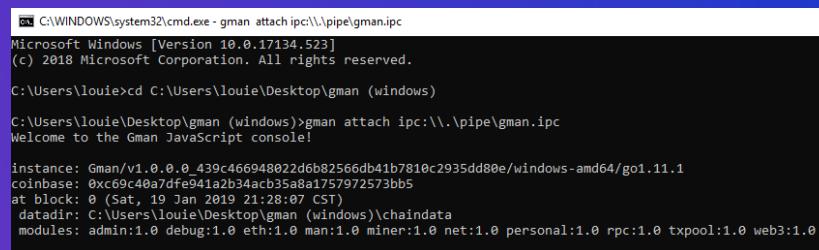
```
C:\ C:\WINDOWS\system32\cmd.exe
Microsoft Windows [Version 10.0.17134.523]
(c) 2018 Microsoft Corporation. All rights reserved.

C:\Users\louie>cd C:\Users\louie\Desktop\gman (windows)

C:\Users\louie\Desktop\gman (windows)>
```

2. Copy and paste the following into the Command Prompt.

gman attach ipc:\\.\pipe\gman.ipc



```
C:\ C:\WINDOWS\system32\cmd.exe - gman attach ipc:\\.\pipe\gman.ipc
Microsoft Windows [Version 10.0.17134.523]
(c) 2018 Microsoft Corporation. All rights reserved.

C:\Users\louie>cd C:\Users\louie\Desktop\gman (windows)

C:\Users\louie\Desktop\gman (windows)>gman attach ipc:\\.\pipe\gman.ipc
Welcome to the Gman JavaScript console!

instance: Gman/v1.0.0.0.439c466948022d6b82566db41b7810c2935dd80e/windows-amd64/go1.11.1
coinbase: 0xc69c40a7dfe941a2b34acb35a8a1757972573bb5
at block: 0 (Sat, 19 Jan 2019 21:28:07 CST)
datadir: C:\Users\louie\Desktop\gman (windows)\chaindata
modules: admin:1.0 debug:1.0 eth:1.0 man:1.0 miner:1.0 net:1.0 personal:1.0 rpc:1.0 txpool:1.0 web3:1.0
```

3. You can enter a variety of commands here. To see what commands are available to you, enter "man." while omitting the apostrophes then click the tab-button.

4. To view information about your received rewards and account balance, you can search for your wallet address in the Matrix Blockchain Browser at <http://tom.matrix.io/>

# Matrix AI Network

