# Setup Full Node

This document details how to join the Secret Networksecret-4 mainnet as a full node. Once your full node is running and synced to the last block, you can use it

Requirements

Secret Network has strict Hardware Requirements, seeHardware Compliance . If your machine does not meet them, it will *NOT* work as a node. * Ubuntu/Debian host, recommended is Ubuntu 20.04 LTS or 22.04 LTS. * A public IP address, so that other nodes can connect to you. * Open portsTCP 26656 & 26657 * Note: If you're behind a router or firewall then you'll need to port forward on the network device. * ReadingTendermint: Running in production * RPC address of an already active node. You can use any node that exposes RPC services, please seeAPI Endpoints Mainnet (Secret-4) * . *

Installation

Install SGX and secretd

This guide assumes you've already installed the latest version of secretd and SGX. For more information on how to install SGX, see instructions forInstall SGX .

If you need help with installing secretd, please take a look atInstall secretd .

Initialize Secret Network Configs

Choose amoniker for yourself, and replace with whatever name you like (could be some random string, or just how you like to name to node) below. This moniker is your public nickname of the node in the network.

```

Copy secretdinit--chain-idsecret-4

```

This will generate the following files in~/.secretd/config/

- genesis.json
- node_key.json
- priv_validator_key.json
-

Download genesis.json

```

Copy wget -O ~/.secretd/config/genesis.json "https://github.com/scrtlabs/SecretNetwork/releases/download/v1.2.0/genesis.json"

# verify genesis.json checksum

echo "759e1b6761c14fb448bf4b515ca297ab382855b20bae2af88a7bdd82eb1f44b9 HOME/.secretd/config/genesis.json" | sha256sum --check

```

Initialize Secret Enclave

Initialize/opt/secret/.sgx_secrets :

```

Copy mkdir-p/opt/secret/.sgx_secrets

```

You can choose between two methods,automatic or manual :

Initialize Secret Enclave - Automatic Registration (EXPERIMENTAL)

WARNING: This method is experimental, and may not work. If it doesn't work, skip tomanual registration . The following

commands will create the necessary environment variables and attempt to automatically register the node.

```
Copy exportSCRT_ENCLAVE_DIR=/usr/lib exportSCRT_SGX_STORAGE=/opt/secret/.sgx_secrets secretdauto-register
```

If this step was successful, you can skip straight to Optimization .

Initialize Secret Enclave - Manual Registration

```
Copy secretdinit-enclave
```

Verify Enclave Initialization

The attestation certificate should have been created by the previous step

```
Copy ls-lh/opt/secret/.sgx_secrets/attestation_cert.der
```

Verify the certificate is valid. A 64-character registration key will be printed if it was successful.

```
Copy PUBLIC_KEY=(secretdparse/opt/secret/.sgx_secrets/attestation_cert.der2>/dev/null|cut-c3-) echoPUBLIC_KEY
```

If registration was NOT succesfull consider checking out the Registration troubleshoot help or contact a fellow validator on our discord .

Configure secretd

The following steps should usesecretd be ran on the full node itself. To run the steps withsecretd on a local machine set up the CLI there. Configuresecretd . Initially you'll be using the bootstrap node, as you'll need to connect to a running node and your own node is not running yet.

```
Copy secretdconfigchain-idsecret-4 secretdconfignodehttps://rpc.mainnet.secretsaturn.net secretdconfigoutputjson
```

Fund Secret Wallet

If you already have a wallet funded withSCRT , you can import the wallet by doing the following:

```
Copy secretdkeysadd--recover
```

Otherwise, you will need to set up a key. Make sure you back up the mnemonic and the keyring password.

```
Copy secretdkeysadd
```

This will output your address, a 45 character-string starting withsecret1... .

Configure Node Attestation

1. Register your node on-chain
2.

```

Copy secretdtxregisterauth/opt/secret/.sgx_secrets/attestation_cert.der-y--from

```

1. Pull & check your node's encrypted seed from the network

```

Copy SEED=(secretdqueryregisterseedPUBLIC_KEY|cut-c3-) echoSEED

```

1. Get additional network parameters

These are necessary to configure the node before it starts.

```

Copy secretdqueryregistersecret-network-params ls-lh./io-master-key.txt./node-master-key.txt

```

Configure Secret Node

From here on, commands must be ran on the full node. ```

Copy mkdir-p~/.secretd/.node secretdconfigure-secretnode-master-key.txtSEED

```

Optimization

In order to be able to handle NFT minting and other Secret Contract-heavy operations, it's recommended to update your SGX memory enclave cache:

```

Copy sed -i.bak -e "s/^contract-memory-enclave-cache-size =./contract-memory-enclave-cache-size = \"15\"/"
~/.secretd/config/app.toml

```

Also checkoutthis document byblock pane for fine tuning your machine for better uptime.

Set minimum-gas-price Parameter

We recommend0.1uscrt per gas unit:

```

Copy perl-i-pe's/^minimum-gas-prices = .+?/minimum-gas-prices = "0.1uscrt"/'~/.secretd/config/app.toml

```

Your node will not accept transactions that specify--fees lower than theminimun-gas-price you set here.

Set IAVL-disable-fastnode

IAVL fast nodemust be disabled, otherwise the daemon will attempt to upgrade the database whil state sync is occuring.

```

Copy sed -i.bak -e "s/^iavl-disable-fastnode =./iavl-disable-fastnode = true/" HOME/.secretd/config/app.toml

```

Enable secret-node :

Note that thesecret-node system file is created when installing sgx. ```

Copy sudosystemctlenablesecret-node

```

You are now a now ready to finally sync the full node.                    .

Go toStatesync orQuicksync / Snapshot to continue.

Snapshot

To sync to head quickly, please seeQuicksync / Snapshot .

State Sync

You can skip syncing from scratch or download a snapshot byStatesync to the current block.

Get Node ID

secretd tendermint show-node-id

And publish yourself as a node with this ID:

```

Copy @:26656

```

Be sure to point your CLI to your running node instead of the bootstrap node

secretcli config node tcp://localhost:26657

If someone wants to add you as a peer, have them add the above address to their persistent_peers in their ~/.secretd/config/config.toml.

And if someone wants to use your node from their secretcli then have them run:

```

Copy secretcli config chain-id secret-4 secretcli config output json secretcli config indent true secretcli config node tcp://:26657

```

Optional: Become a Validator

To turn your full node into a validator, seeJoining Mainnet as a Validator .

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