

CALCTOPIA

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Zero-Knowledge Proof of Identity

# Mining Node Registration Guide

ZERO-KNOWLEDGE PROOF OF IDENTITY

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## Technical requisites

*A mining node with an Intel® SGX processor*

Your mining node must have the following features:

- Intel® CPU with SGX2 or SGX1 with FLC (*Flexible Launch Control*)
- 24/7 availability
- 1 GB MB of RAM and 10 GB of free disk-space
- A public IP-address and two open ports

Your processor must support Intel SGX2 instructions or SGX1 with FLC. Check the following official documentation from Intel:

- [Detecting and Enabling Intel® SGX](#) (Youtube Video)
- Search for your processor in [Intel Ark](#)
- On Linux:

```
cat /proc/cpuinfo | grep "sgx2"
```

```
cat /proc/cpuinfo | grep sgx_lc
```

Additionally, note that the presence of the SGX CPUID is not enough, SGX must also be enabled on the BIOS.

## Installation Guide

Follow the next steps:

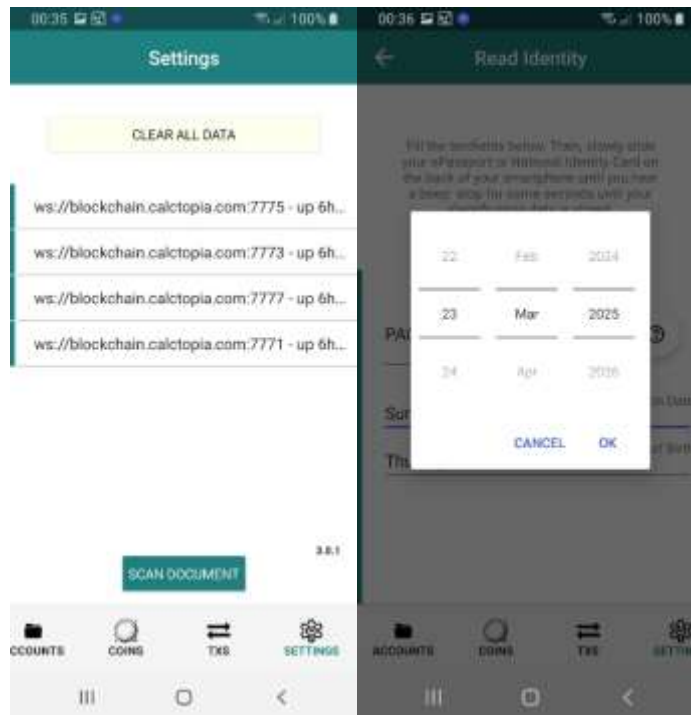


1. Install [Docker](#)
2. Install [Occlum](#)
3. Download [Zero-Knowledge Proof of Identity](#)
4. Decompress inside the docker container with SGX enabled
5. Follow the next steps

## Trusted Certificate from an Electronic Passport (Raziel Wallet - Android)

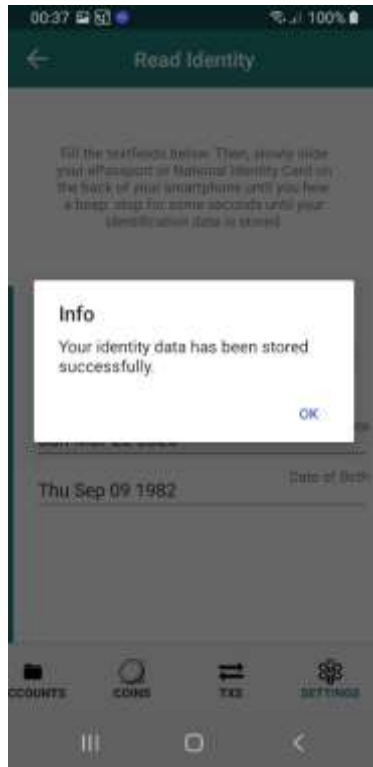
Follow the next steps:

1. On Android, [install the Raziel Wallet from Google Play](#)
2. On Settings>Scan Document, set your passport BAC key: Document Number, Date of Birth and Date of Expiry.

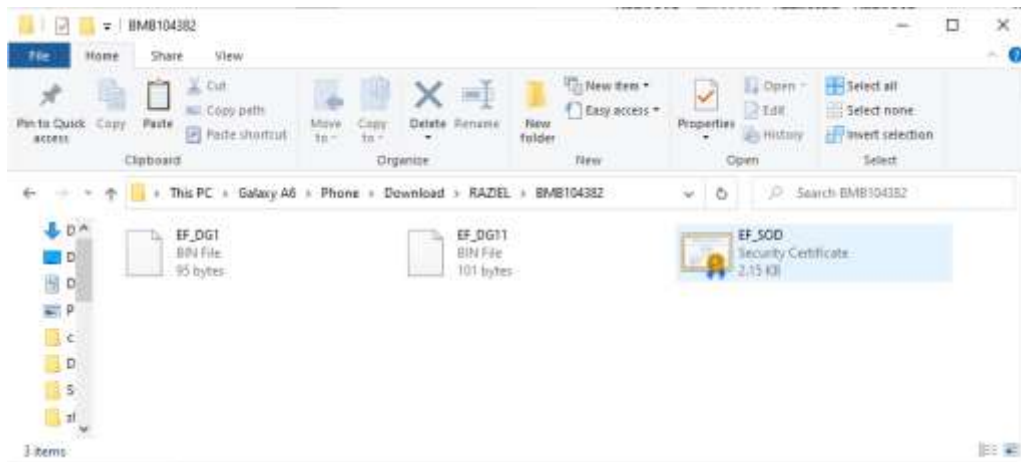


3. Read your passport chip: move very slowly your passport under your smartphone until you hear a beep, then stand still until the passport is completely read.
4. If identity data were read successfully, an information box should appear.

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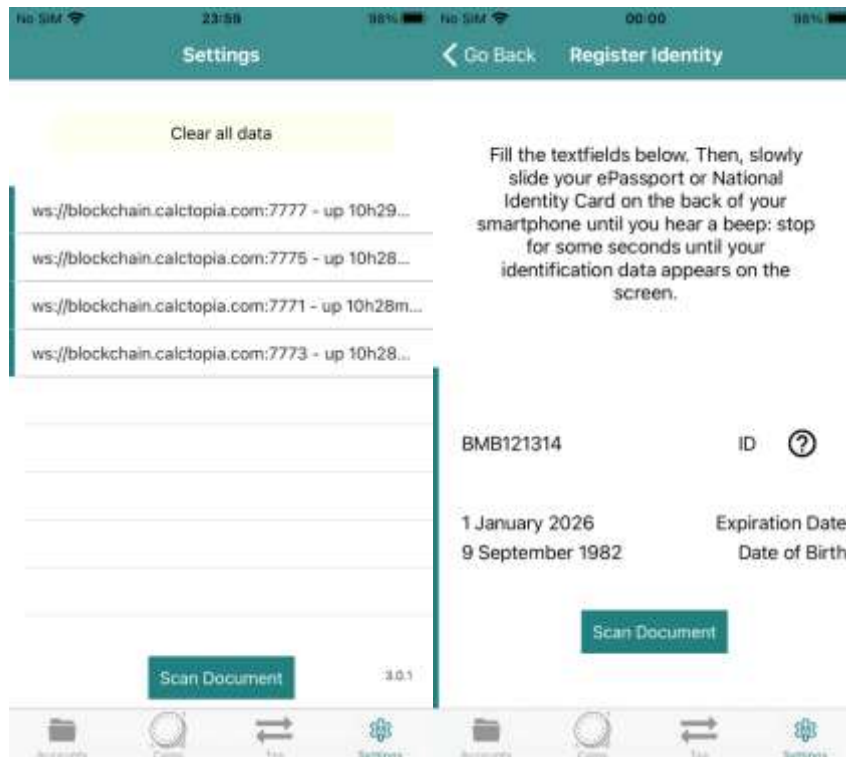
5. Connect your smartphone to your computer using an USB cable and copy the saved identity data from the external storage.



## Trusted Certificate from an Electronic Passport (Raziel Wallet - iPhone)

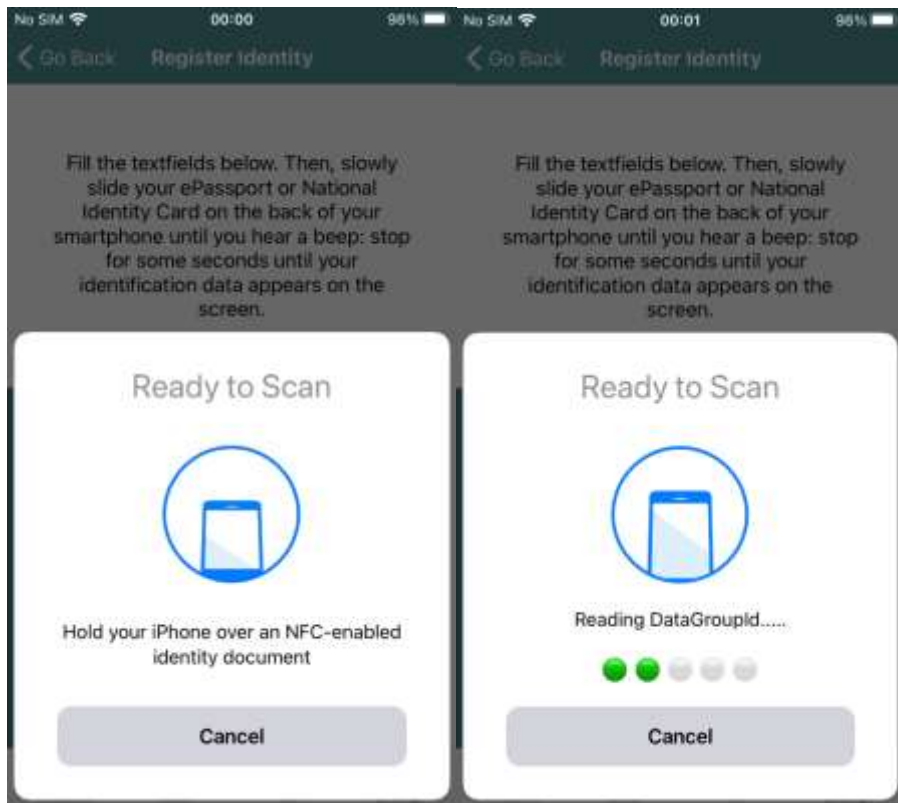
Follow the next steps:

1. On iOS, [install the Raziel Wallet from App Store](#)
2. On Settings>Scan Document, Set your passport BAC key: Document Number, Date of Birth and Date of Expiry.

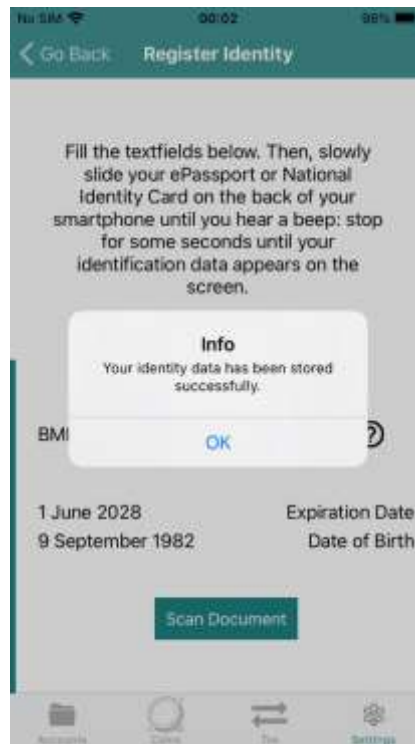


3. Read your passport chip: press the “Scan Document” button, and move very slowly your passport under your smartphone until you hear a beep, then stand still until the passport is completely read.

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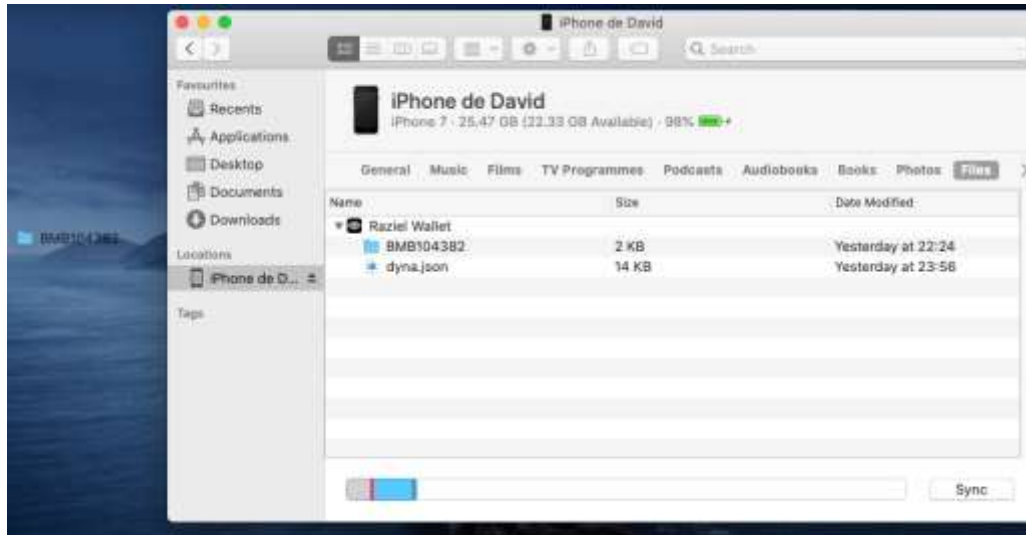
4. If your identity data was read successfully, an information box should appear.



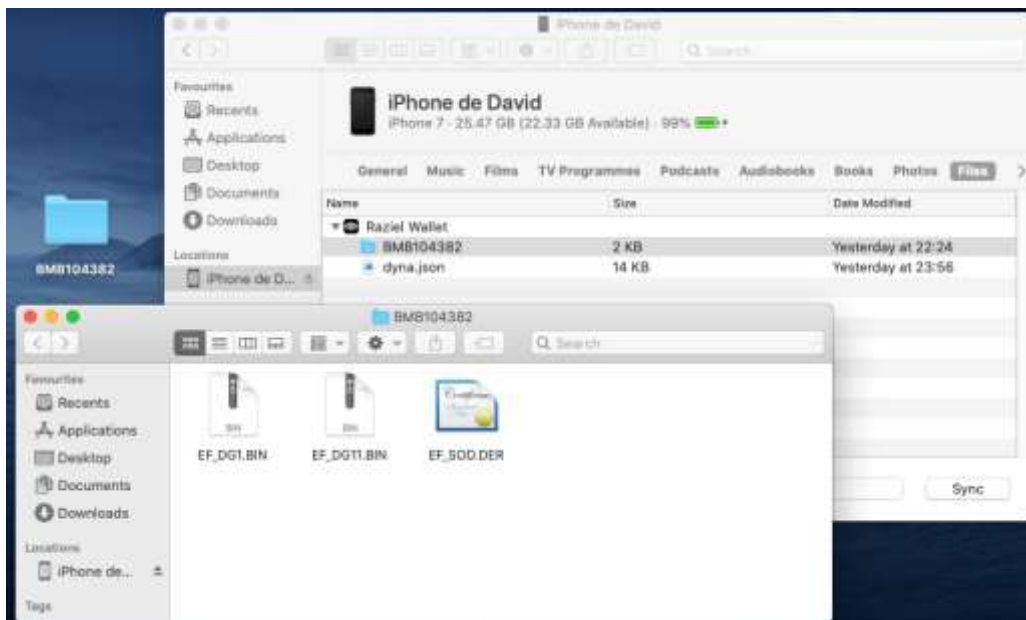


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5. Connect your smartphone to your computer using a USB cable and copy your saved identity data: go to Finder > your iPhone as Location > Files > expand the folder “Raziel Wallet” > drag and drop the folder with your document number to the Desktop, as shown in the image below.



You should obtain a folder with files representing Data Groups from your electronic passport, as shown below.



## Registration

Registering an Identity from an Electronic Passport:

1. Copy the files EF\_SOD.DER; EF\_DG1.BIN and EF\_DG11.BIN to the directory of the zkPOI instance for Occlum
2. Execute the following command line:

```
occlum run /bin/client --userPassword 12345 --address  
tls://conode.yourhost.com:7770 --url tls://conode.yournode.com:7771
```

3. If registration was successful, two files (**public.toml** and **private.toml**) will be created that you must use as configuration for your blockchain node

## Index

Android  
BAC key  
BIOS

Intel Ark  
passport chip  
SGX CPUID