



GEODNET

MINE the Sky!



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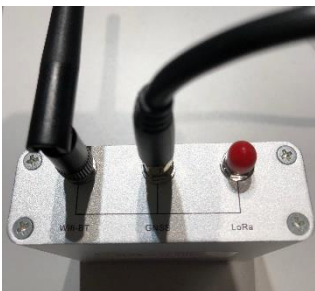
Quick-Guide MobileCM Base Station for GEODNET

1. Start-up of the hyfix device "mobilecm"

1.1 Connect all Cables to the Miner



Plug in the usb-c cable and power the device with any usb charger with at least 1amp.
(Also, a regular phone charger works)



On the device, remove the red plastic from the "wifi-BT" input, and connect the wifi antenna



Remove the red plastic for "GNSS" and connect the smaller end of the satellite antenna cable.
(sma-male connector)

The other end you connect to the satellite antenna.
(tnc-male connector)

The "LoRa" port is for future expansions and is currently not in use.

1.1 Power UP / LED Definiton



Switch your HYFIX unit to the ON position using the small slide switch.

The left **red LED** (Power) will be turn on solid

The right **green LED** (WiFi Internet) should be blinking slowly.

The middle **orange LED** (PPS) will be off and activated later.

The device is now in the “Access Point Mode” (*AP Mode*)

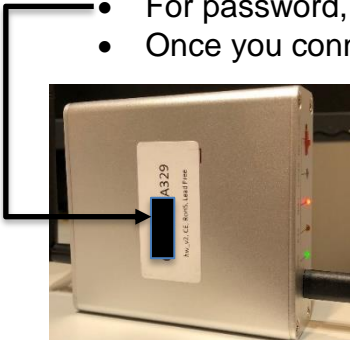
For debugging, the usb-c can be used as a serial communication port.

Note: we recommend using the provided WiFi antenna, as during testing we have seen issues with some random WiFi antenna

LED	FUNCTION	STATUS
RED	POWER	SOLID, when powered
ORANGE	PPS (Pulse Per Second)	BLINKING (1s), antenna sees satellites
GREEN	WiFi / Internet	BLINKING (SLOW): Acces Point mode, Used for configuring Internet connection (http://192.268.4.1) BLINKING (FAST): Attempting to connect to Internet via Configured SSID and Password SOLID, Internet is connected

2. WIFI Connection and Internet Setup

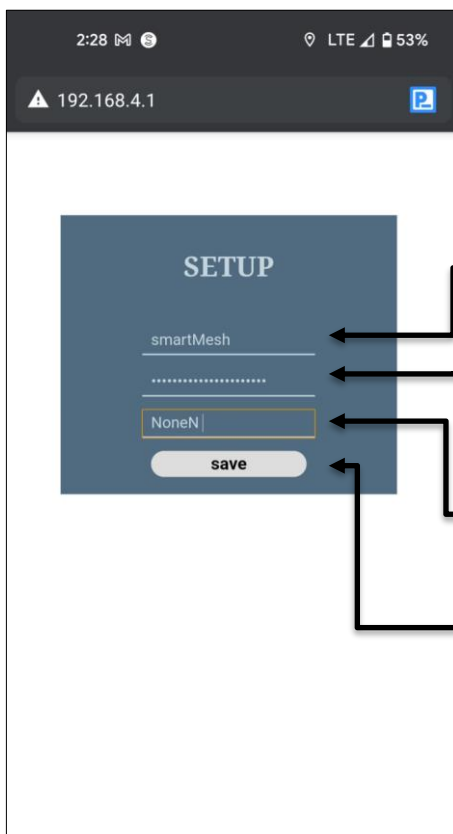
- Now using your phone, PC or MAC you want to connect to the miners WiFi.
- You don't need an internet connection for this step.
- On your phone, PC or MAC, go into the settings and networks and connect to your miner called "MobileCM"
- For password, enter in the serial number that is on the back of your miner.
- Once you connected, it may say, "no internet", that's ok.



Turn your Device and note the Number on the Sticker, You need this to register to the console.geodnet.com later on.

2.1 Configure MobileCM Network Connection (AP Mode)

Using the same device as in step 2.0 enter the IP address 192.168.4.1 and this page will pop-up.



For "SSID" fill in the network name of your Wifi
It cannot be a 5GHZ WiFi, it has to be a 2.4GHZ !!

The Password is your WiFi Router Password
(Please make sure that the password does not contain any special characters.

Create a unique minerkey

Click save, then wait a little.

The green flashing light on the miner should have gone from flashing to solid green.
That means the miner has connected to your WiFi.

If the green light starts flashing again, the miner has not connected to WiFi, and you need to check if you did it correctly and try again.

When the miner gets a full green light, you can go over to your PC/Tablet which is connected to the same internet you connected your miner to

2.2 Open MobileCM WebUI (Station Mode)

- Now open your Internet router's webpage and check the current connected Devices on your WiFi.
- In the Router Settings you will find the MobileCM listed as: **espressif**.
- Note the IP-Adress of **espressif: 192.168.x.x**
- You need to Access on the MobileCM WebUI (Station Mode)
Please be sure again you use 2.4GHZ WiFi. (5GHz is not compatible with the MobileCM)

Go into your router settings, you do that through your web browser, by entering your routers own IP address.

Follow a link on how to find that for both windows and mac users:

<https://www.howtogeek.com/233952/how-to-find-your-routers-ip-address-on-any-computer-smartphone-or-tablet/>

If you live in an apartment with shared WiFi, and you have problems with this, you can just call your internet provider and ask them for help. And you ask them the same thing that you will be looking for inside the router settings. "You are looking for the IP address of a device named espressif"

- When you have the IP address (IP 192.168).x.x enter it into your browser, and this page should pop up.



Enter in the minerkey you created in previous step

2.3 Set Miner Key and Transmit Data to GEODNET

- If you see the word “TRANSMITTING”, the setup is complete.



Your MobileCM is uploading data !!
Green LED: Status: solid

Useful information if you change location or have made a mistake in setup:

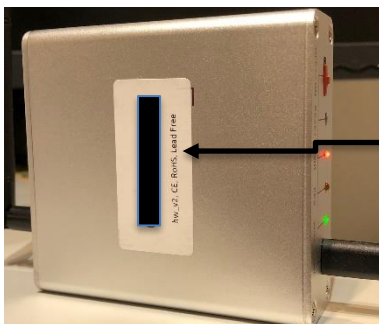
For those interested pressing the “reset” key on the back did the trick to set back to AP-Mode. Then go through basic setup again to update to new WiFi.

This is really useful when moving locations.

Please double check your WiFi name and password is entered correctly.

If it fails to connect do to mistakes in password or network name, please try again

2.4 Access the MobileCM Staion on the Console.Geodnet.com



Turn your Device and note the Number on the Sticker,
You need this to access to the console.geodnet.com

5. GEODNET Web-Console

5.1 Register New Account on the GEODNET Web-Console

Open your Internet Browser and go to <https://console.geodnet.com>

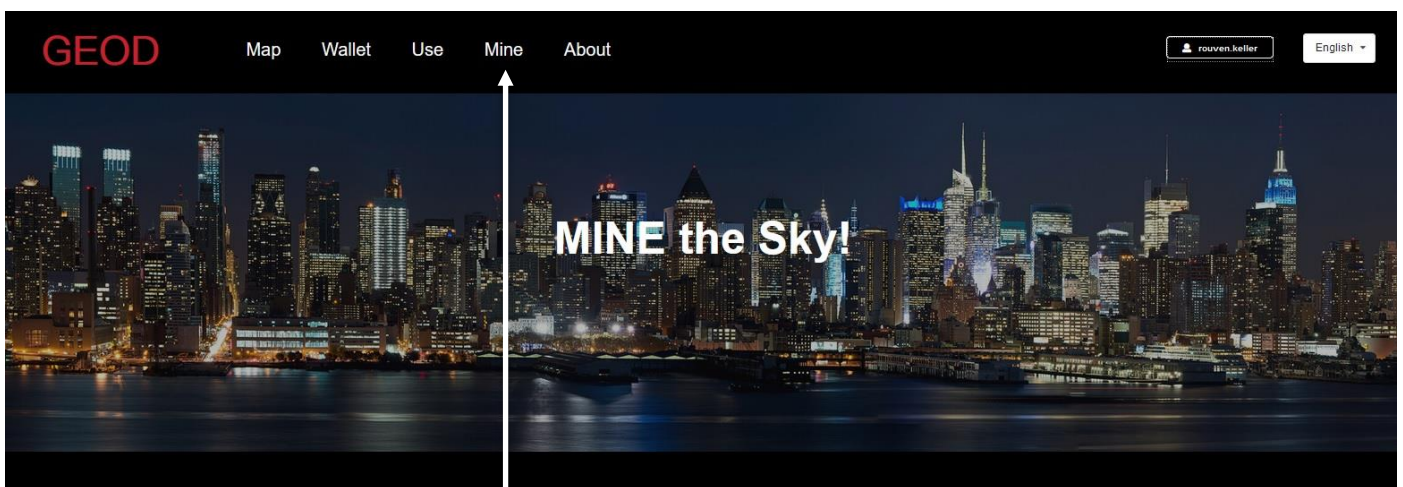


Create a new account

Don't forget to note this information.
Now you can sign into the Console

- When you have set it up and verified on your mail go to the next step

5.2 Add a new Miner



Press the Button "Mine" to add a new Device

Miners

Add miners to mine GEOD token

Miners List (1)

Miner SN	Lng/Lat	State	Total	Email reminder	Token issuance
[REDACTED]	8.7/47.21	active (100%)	115d 0h 0m 8s	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Add Miner

Press the Button "Add Miner"

- Adding a new miner

Adding Miner

Enter Miner SN and Key

Miner SN

Enter the Number from the Backside of the MobileCM Station on the sticker.

Miner Key

Enter the Miner Key you just created

show Miner Key

Save

Cancel

Save the Information

- However, if you just setup your miner and created your account, you might have to wait a bit for the Geodnet server to recognize your miner.

Congratulations: Now your devise is registered on the console.geodnet.com and visible on the map, ready to mine and get rewards.

Procedure after registering the miner and how it is available in the console afterwards

- If you do the setup of miner and register is on the console at 50minutes past the hour, then in just 10 minutes wait your miner appears on the map and all details start showing up except the number of satellites.
- Same is you register the miner on console at maybe 10 minutes past hour then you need to wait for 50minutes before the miner shows up on the map.
- The number of satellites start showing after 3 days of been online and the miner goes to stable on 7th day after install provides you are online in last 3 days before 7th day

5.3 Explanation of the individual functions under "Mine" / "Miners"

The screenshot shows the 'Miners' section of the GEOD interface. At the top, there is a navigation bar with 'Map', 'Wallet', 'Use', 'Mine', and 'About'. The 'Miners' title is followed by the subtitle 'Add miners to mine GEOD token'. Below this is a 'Miners List (1)' table with the following data:

Miner SN	Lng/Lat	State	Total	Email reminder	Token Issuance
0CDC7EC9A329	8.7/47.21	active (100%)	115d 0h 0m 8s	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Annotations and text:

- An arrow points from the text 'Geographical location' to the 'Lng/Lat' column.
- An arrow points from the text 'Status display of the miner' to the 'State' column.
- An arrow points from the text 'Email Alert: If enabled, you will automatically receive an email when the miner falls below Sat No 20 or is no longer online in the network.' to the 'Email reminder' toggle.
- An arrow points from the text 'If "Token Issuance" is switched on, the daily rewards are automatically forwarded once a day to the wallet stored in the account.' to the 'Token Issuance' toggle.
- Text below the table: 'Pressing the blue minersn opens an additional window with the details of the miner'.

5.4 Explanation of the individual functions under "Mine" / "Miners"

The screenshot shows the 'Miner Detail For' window for miner SN 329. The window is titled 'Miner Detail For ([redacted] 329)'. It contains the following information:

- Current State:** State: active (100%), Base Reward: 5443.264439 GEOD.
- Today Online Time:** 8h 0m 0s, Extra Reward: 0.000000 GEOD.
- Reward Today:** 16.000000 GEOD, Total Reward: 5443.264439 GEOD.
- Total Online Time:** 115d 0h 0m 8s.

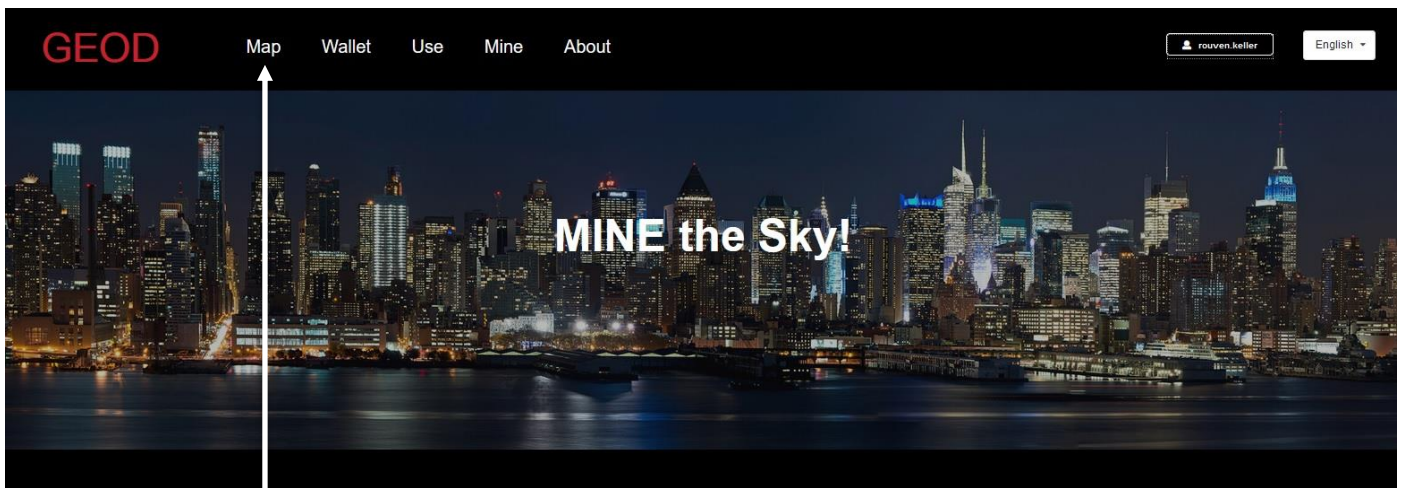
Below the statistics is a form to 'Enter Miner SN and Key':

- Miner SN: [redacted]
- Miner Key: [redacted]
- show Miner Key:
- Cancel button

At the bottom, there is a 'Mining History' table with columns: Date, State, Lng, Lat, Ht, Reward.

Text annotation: 'This function is for units with advanced features and is not active for Base Stations.' with an arrow pointing to the 'Extra Reward' field.

5.5 Map

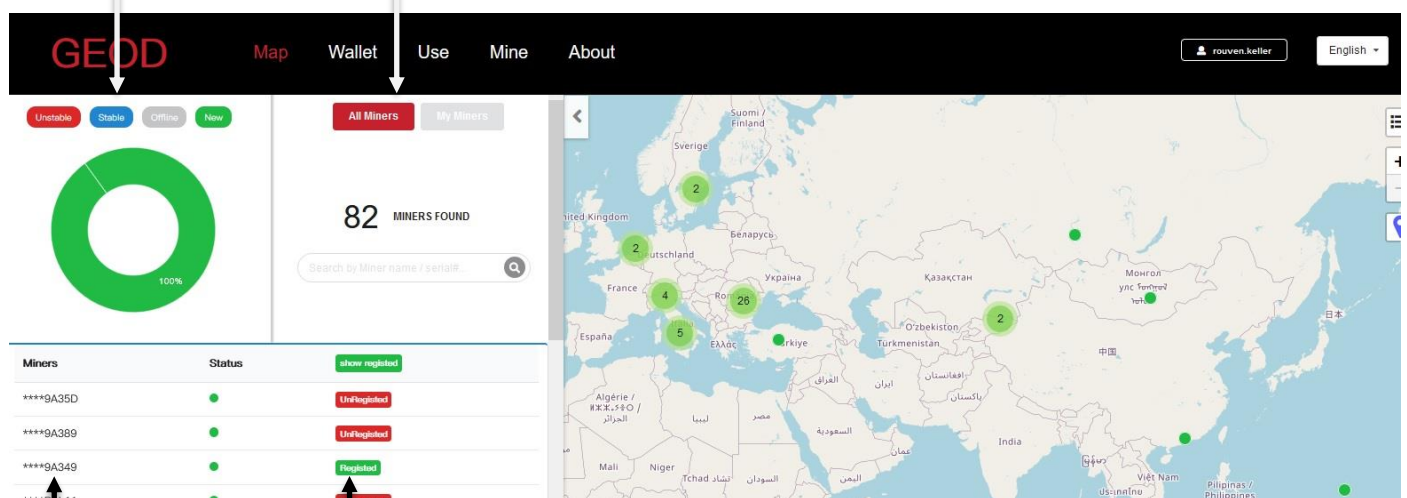


Press the Button "Map" to enter the MAP

5.6 Explanation of the individual functions in the "Map"

Select which miners you want to see or which status group should be displayed.

Here you can choose whether you want to see all or just your device, the map adapts to it



all available devices

Status of the Device

- When selecting "All Miners", all registered devices are displayed in with the corresponding Status in the map
- If you select "My Miners", and then tap on one of your registered devices, it will be displayed on the map with the corresponding status and the map will zoom to the location.
To ensure the privacy of the user, the location of the unit is shifted by a few hundred meters.

- Explanation of the display under "Map"

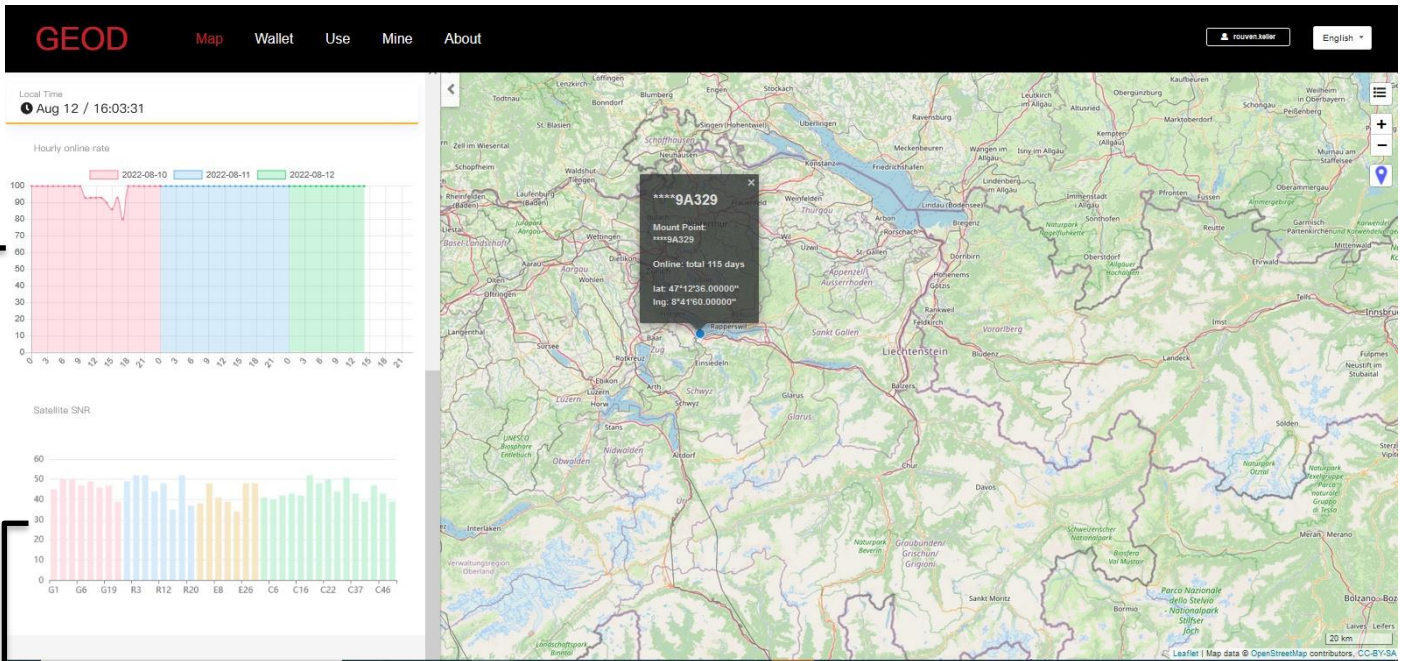
Zoom In/Out Map Show hide top bar

Distance to the next device Measure Distance on/off + flip sidebar

- Explanation of the display under "My Miners"

- Transmitted data
- Time of transmission of the last data packet
- Number of satellites seen
- Date of commissioning + registration to the console
- Current time at the Miner's city location
- Total runtime of the miner since registration and commissioning.

- Explanation of the Hourly Rate + SNR



- Display of transmission hours and any interruptions in the network

The GNSS signal travels from the GNSS satellite around 20,000km away, and arrives in GNSS receivers (miners) with a very weak power.

The GNSS signal can be easily affected by environments.

To maintain a decent quality GNSS network, the GNSS antenna should be installed at open-sky view without any obstruction.

Any bad factors will result in a bad GNSS signal quality.

In the back-end system, GEODNET will monitor the GNSS signal quality and issue token based on the GNSS signal quality in the future.

GEODNET adopts the GNSS signal SNR on L1 as an indicator for each tracked GNSS signal quality.

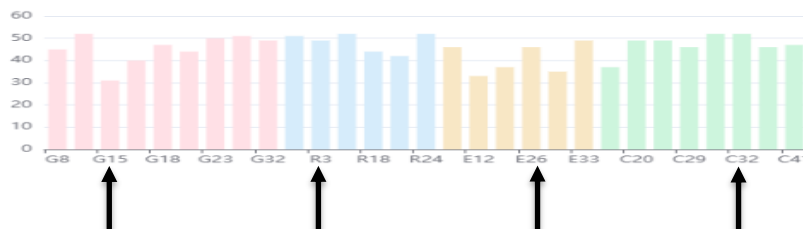
Please refer to the attachment (also <https://insidegnss.com/measuring-gnss-signal-strength/>) for details about GNSS signal SNR.

Typical GNSS L1 SNR for each satellite should be from 37-45 for an acceptable installation.

The GNSS signals with SNR below 32 will not be used in GEODNET backend algorithm.

The screenshot is the GNSS SNR signal from one online miner.

- Explanation of the + SNR



G = GPS

R = GLONASS

E = GALILEO

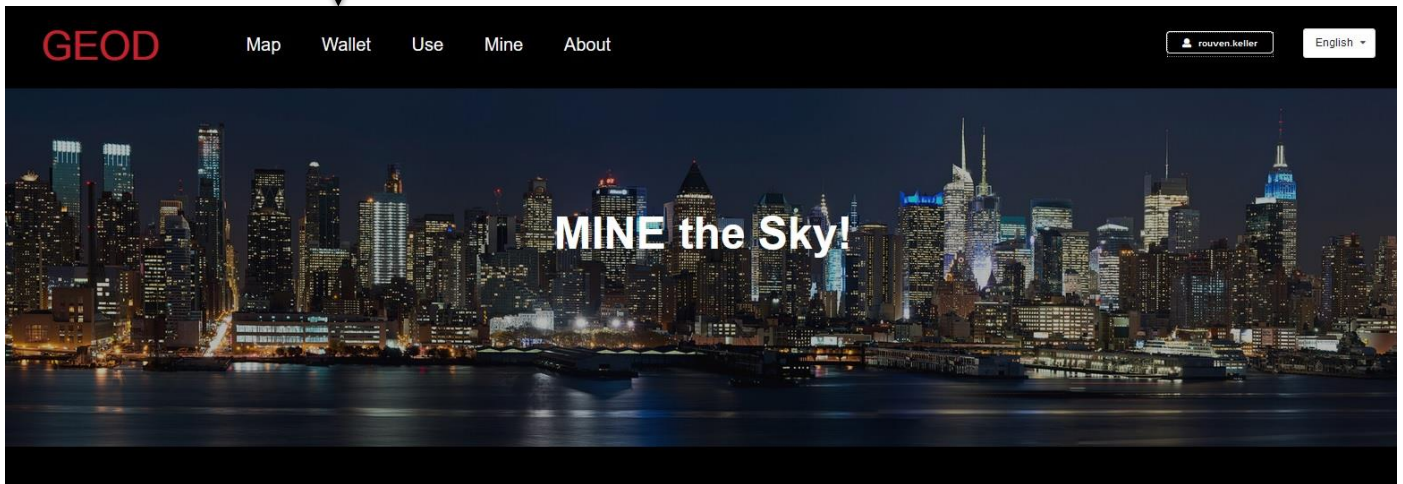
C = BDS (Beidou)

other Systems J = QZSS/QZS, S = SBS/SBAS

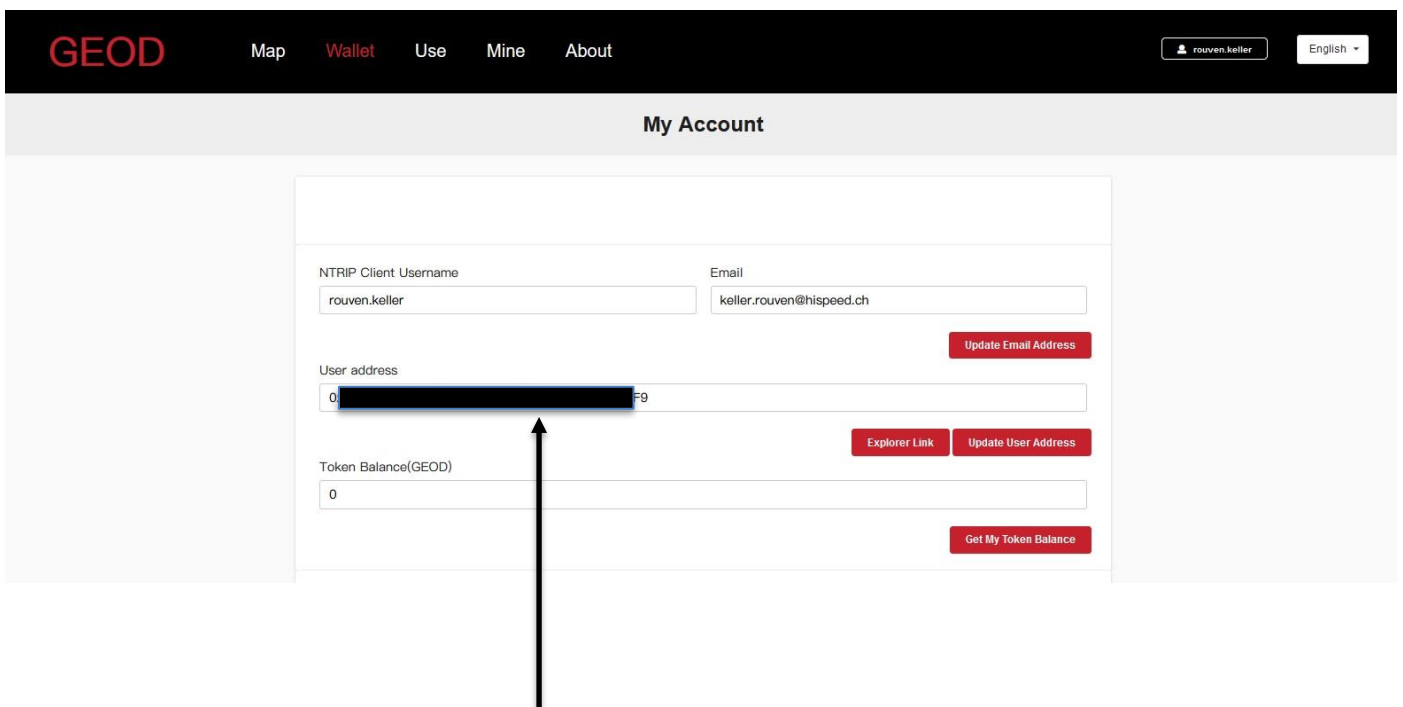
Letter stands for system; the number stands for specific satellite if the system (G01 = GPS #1)

5.7 Wallet

To add your own wallet in the console press Wallet



- Now the window opens to add your own wallet in the console



- Enter your own wallet address here and then confirm this with "Update User Address".
- How to create a wallet using MetaMask is explained in detail following this topic

*Note other wallets that support ERC-20 tokens can be used.
MetaMask ist just a very popular choice*

6. How to Add Polygon to MetaMask?

Beginner: Published Jan 14, 2022 / Updated Feb 3, 2022 (academy Binance) *(Source Reference)*

TL;DR

MetaMask is a crypto wallet app and browser extension that by default is connected to the Ethereum Mainnet. You can find the extension on the official MetaMask website, which will direct you to the correct place to download it.

To connect to other networks like Polygon, you'll need to add some basic blockchain information to MetaMask. This includes a custom RPC URL, chain ID, and network name. To add Polygon tokens, a token address must be imported.

Learning to add a new blockchain to MetaMask is a transferable skill and can be used to add other EVM networks like Binance Smart Chain.

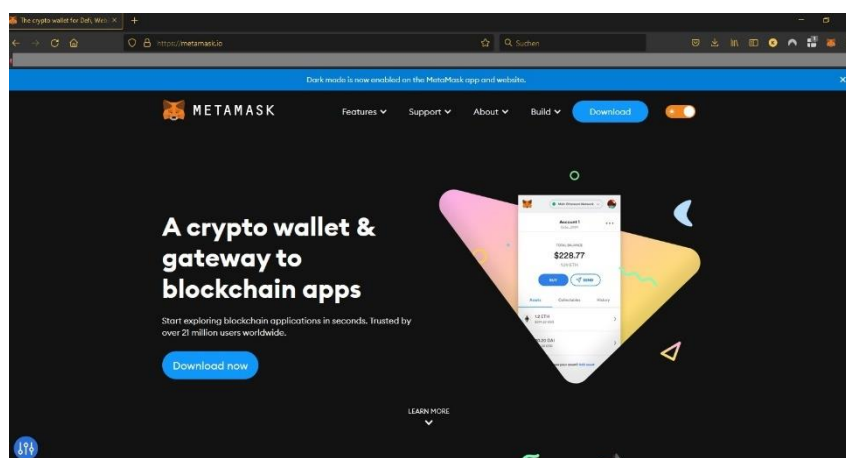
Introduction

Interacting with the [Polygon blockchain](#) requires a compatible [crypto wallet](#) such as [MetaMask](#). However, MetaMask doesn't have Polygon added as a network by default. Setting up your browser wallet to connect to Polygon is simple and can be done in just a few minutes.

7. Installing and setting up MetaMask

7.1. Download Metamask

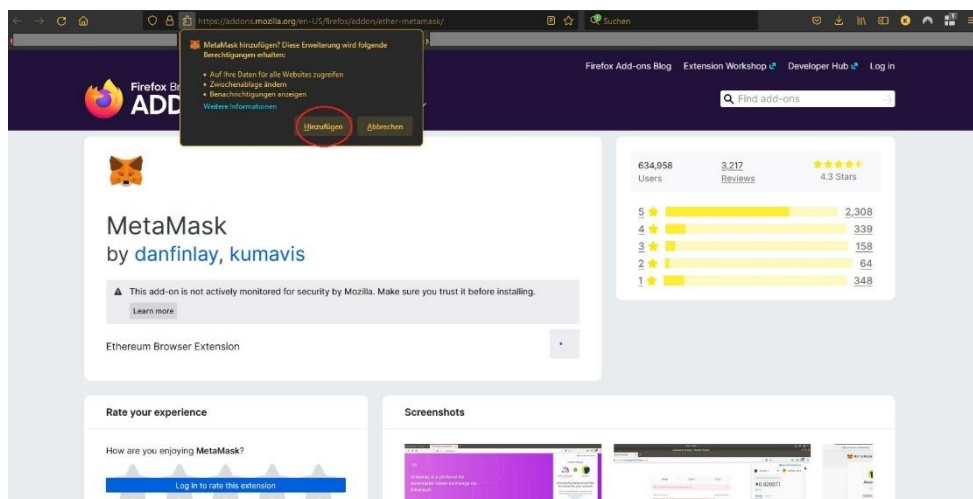
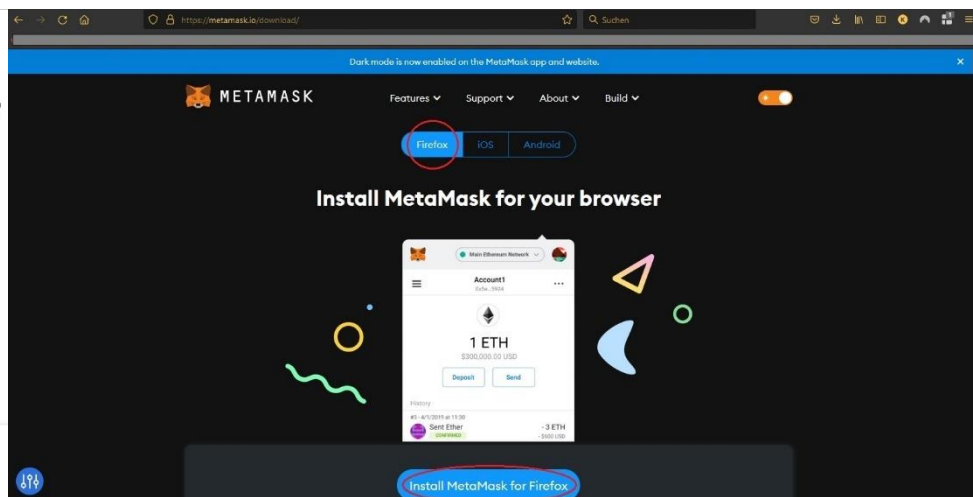
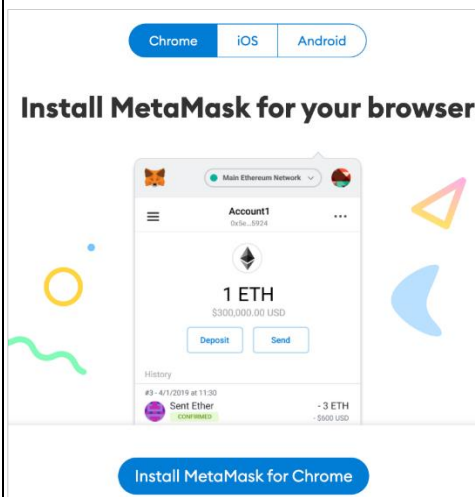
- MetaMask is available to download and install on Chrome/Firefox, iOS, or Android through the [MetaMask website](#). Always check if you are using the official website to make sure you're downloading the real MetaMask extension.



7.1.1 First Steps

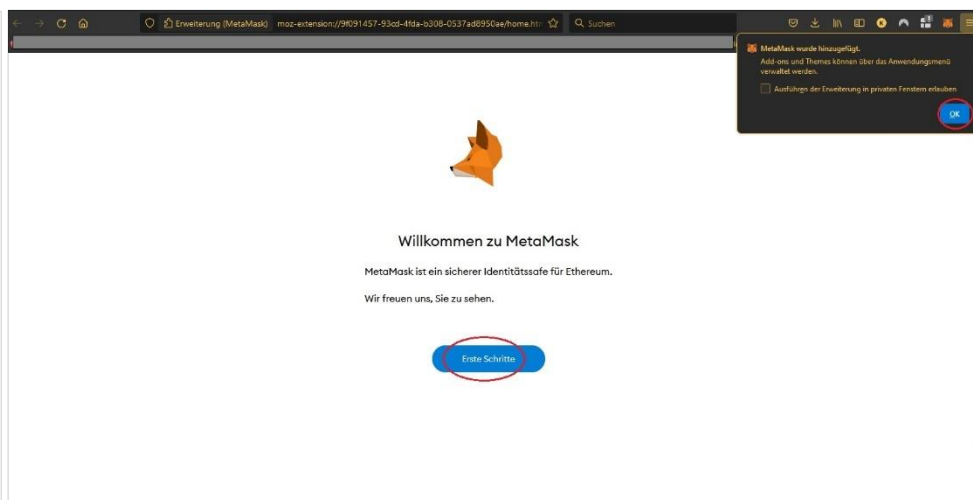
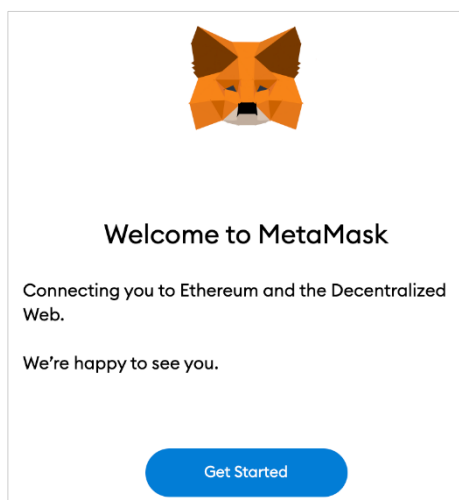
Chrome/iOS/Android

Firefox



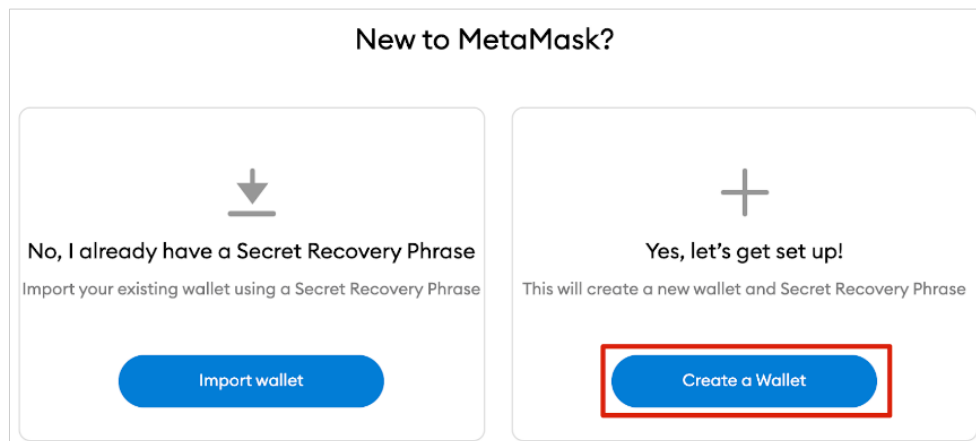
7.1.2. Installing extensions

- After downloading and installing the extension, you'll be greeted with the MetaMask welcome page. Click [Get Started] to begin.



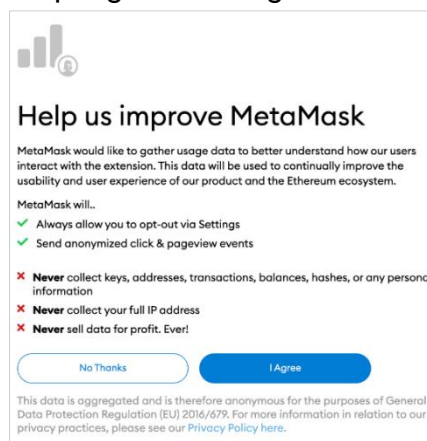
7.1.3. Create a Wallet (Import Wallet by Seed Phrase)

- If you're creating a new wallet, click the [Create a Wallet] button. You can also import an old wallet using its [seed phrase](#) with the [Import wallet] option.



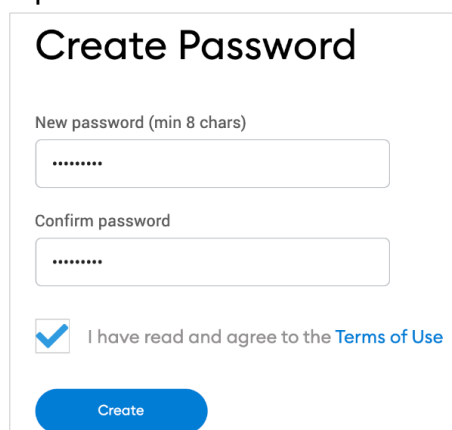
7.1.4 Help us improve Metamask

- MetaMask will ask you if you'd like to share anonymous usage data with them to help improve the extension. Accepting or refusing this will not affect your MetaMask usage.



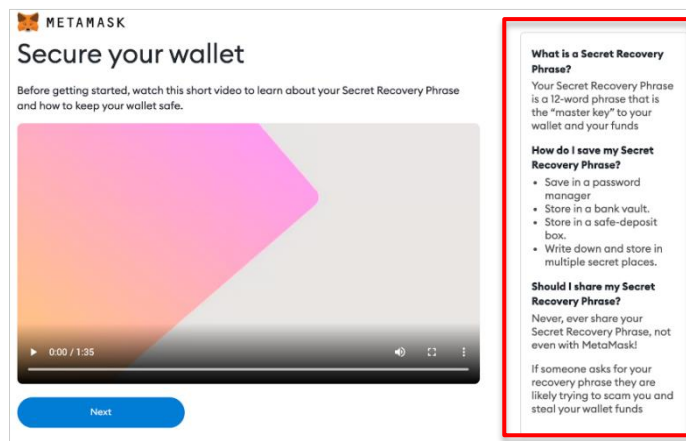
7.1.5 Create a password

- Choose a secure password to log in to your wallet from your browser. Note that this is not your seed phrase. The password is a security measure to prevent anyone using your device from accessing your wallet. If you forget your password, you can always access your crypto with your seed phrase.



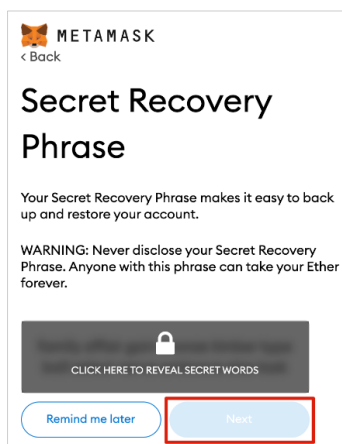
7.1.6 Secure your Wallet

- After choosing your password, MetaMask will present you with information regarding your wallet's seed phrase. Make sure to read through it if you aren't familiar with how a crypto wallet works.



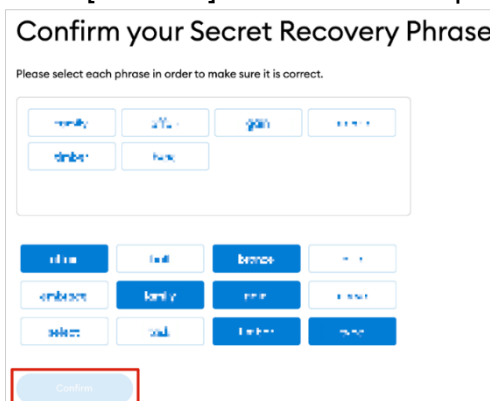
7.1.7 Secret Recovery Phrase

- You'll now be presented with your seed phrase. Click the lock to view the words and take note of them in the correct order. Keep the phrase in a secure place (preferably offline) and never share it with anyone. This string of numbers is the final backup of your wallet and its contents. Click [Next] to continue.



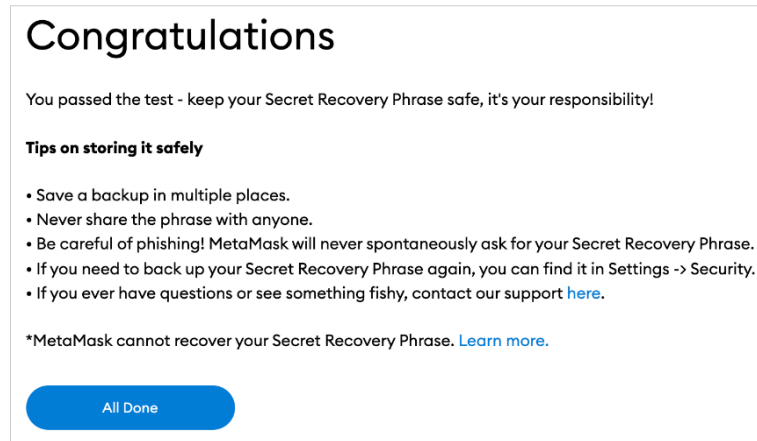
7.1.8 Confirm your Secret Recovery Phrase

- You'll now have to repeat your seed phrase by selecting the words at the bottom of the screen in the right order. Click [Confirm] once this is complete.



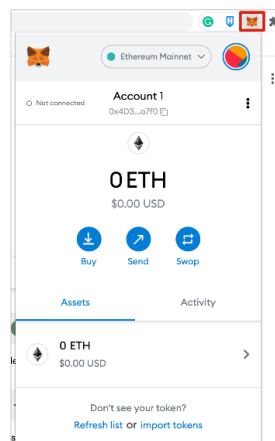
7.1.9 Congratulations, View your Wallet

- Your MetaMask wallet will now be set up ready to use. Click [All Done] to view your wallet.



7.1.10 Add ON / Puzzle on Web-Brower

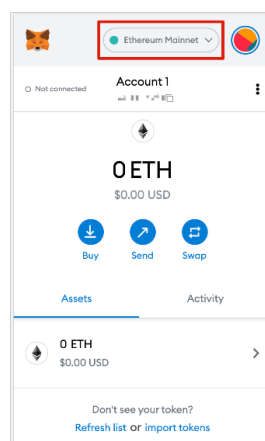
- To make MetaMask easy to access, you can pin it to your Chrome browser by clicking the puzzle icon and pinning MetaMask to the toolbar. After the initial setup, MetaMask will only be connected to [Ethereum](#). Next, we will see how to connect Metamask to Polygon.



8. Configuring the wallet

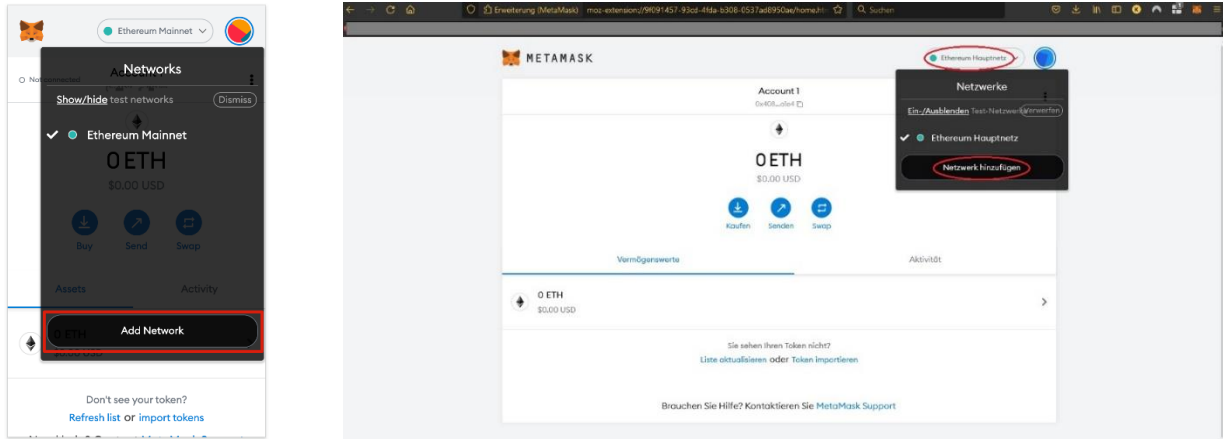
8.1 Adding Polygon Network

- Adding Polygon support to your wallet involves adding some network details to the extension. First, open MetaMask and click the network dropdown menu.



8.2 Add Network

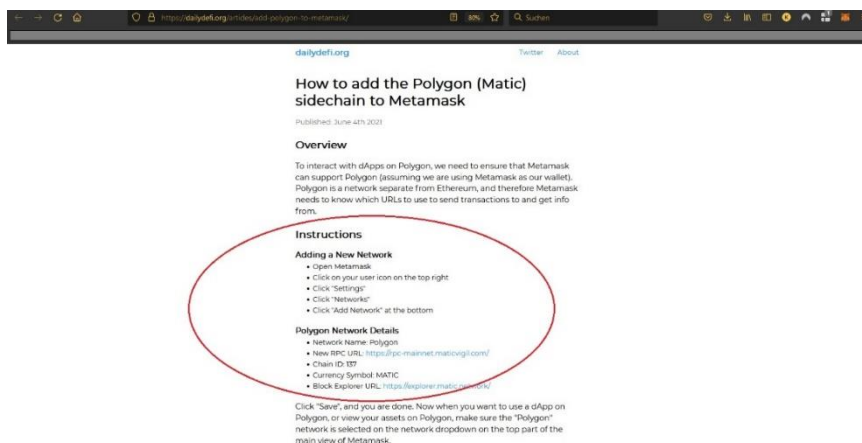
- Now, click [Add Network] on the pop-up.



8.3 Details for Polygyon Network

- You'll need to add the following details on the [Add a network] page that will open. Click [Save] when you're finished.

Network Name	Polygon Choose any of the following: https://polygon-rpc.com
New RPC URL	https://rpc-mainnet.maticvigil.com https://rpc-mainnet.matic.network https://rpc-mainnet.matic.quiknode.pro
Chain ID	137
Currency Symbol	MATIC
Block Explorer URL	https://polygonscan.com/



8.4 Successful connected to Polygon Network

- You'll now successfully be connected to the Polygon network.

Networks > Add a network

A malicious network provider can lie about the state of the blockchain and record your network activity. Only add custom networks you trust.

Network Name: Polygon

New RPC URL: https://polygon-rpc.com

Chain ID: 137

Currency Symbol (Optional): MATIC

Block Explorer URL (Optional): https://polygonscan.com/

Buttons: Cancel, Save

9. Adding Polygon tokens to MetaMask

- For Polygon tokens other than MATIC to appear on the wallet UI, you will need to add them manually. Note that your wallet can still receive tokens that haven't been imported.

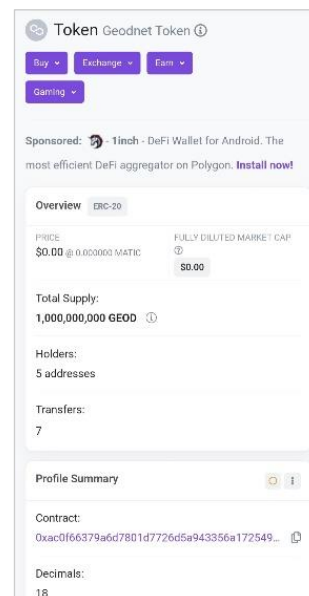
9.1 PolygonScan (find the Token Contract)

- First, head to [PolygonScan](https://polygonscan.com) and find the token contract and details of the token you'd like to add. If the token is not on PolygonScan, make sure to get the contract address from the project's official website or social media channels. Be careful with fake contracts created by scammers.

(Sample Token >> This is not GEOD!!)



GEOD-TOKEN

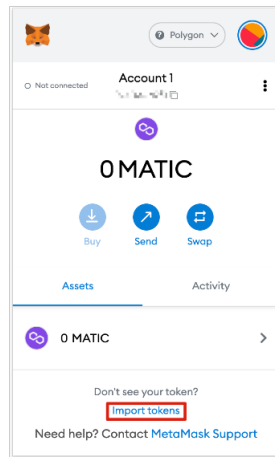


This is the official address to the GEOD Token on Polygonscan:

<https://polygonscan.com/token/0xAC0F66379A6d7801D7726d5a943356A172549Adb>

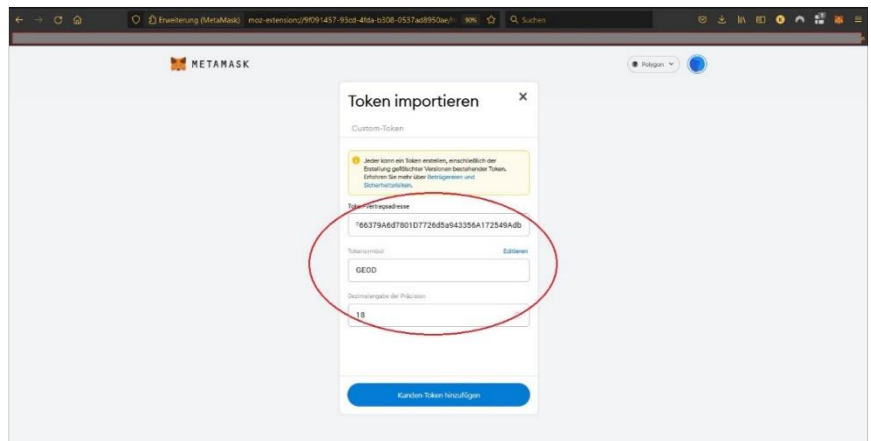
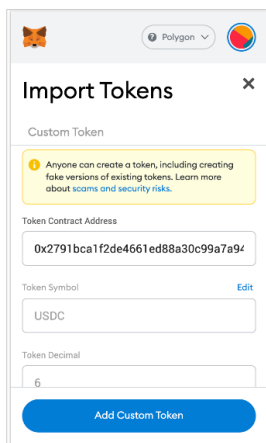
9.2 Import Token

- Return to MetaMask and click [Import tokens].

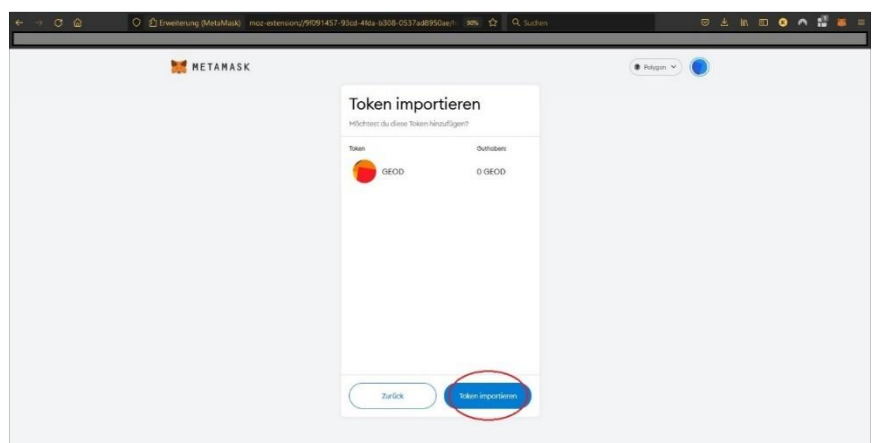
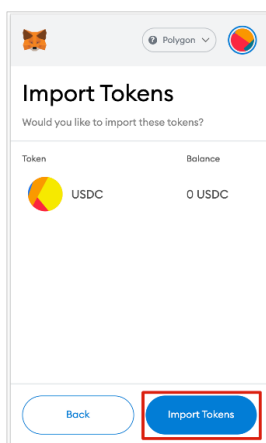


9.3 Copy Contract Address, Automatically Fill by MetaMask

- Copy in the token's contract address and MetaMask should automatically fill in the rest of the details. If not, add them manually. To finish, click [Add Custom Token].

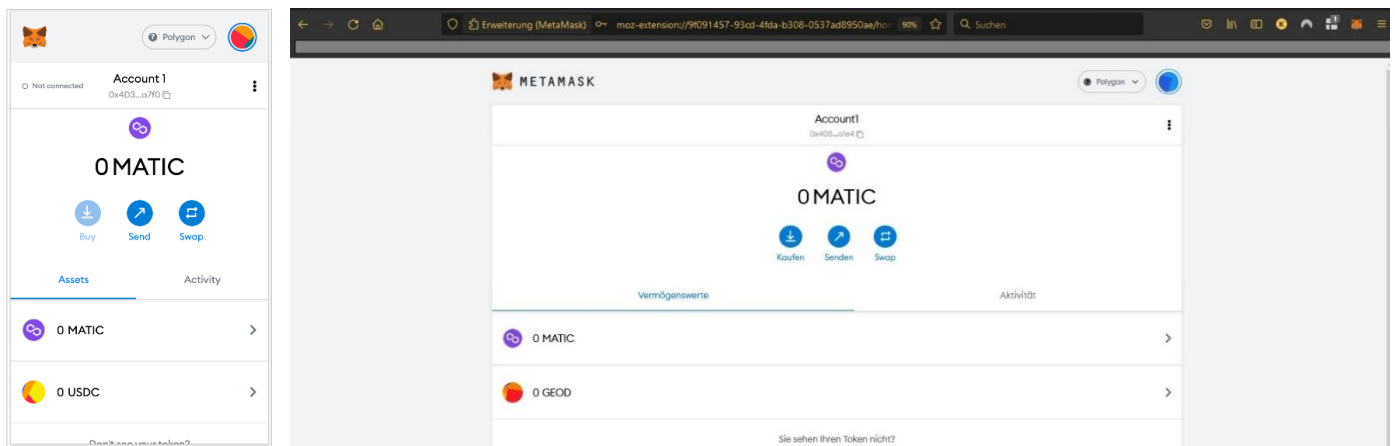


Click [Import Tokens].



9.4 Successful Display Token Balance

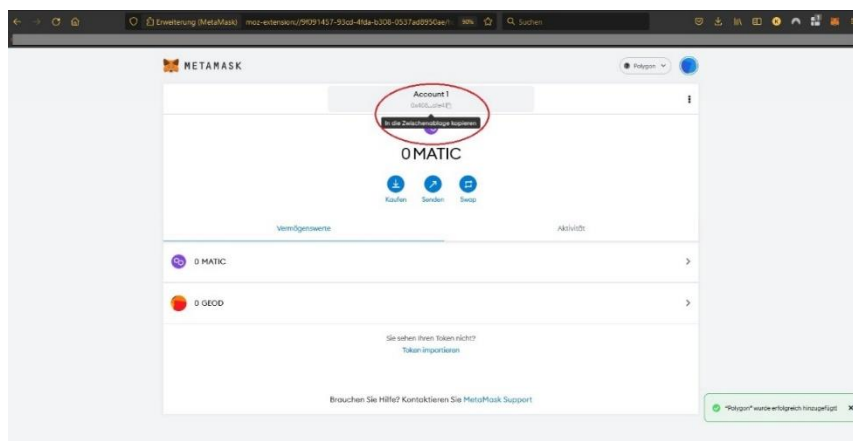
- Your wallet will now successfully display the balance of the token added.



10. Adding Wallet to the Console

10.1 Copy Metamask Wallet Address

- Copy the wallet address from your Metamask account to the clipboard



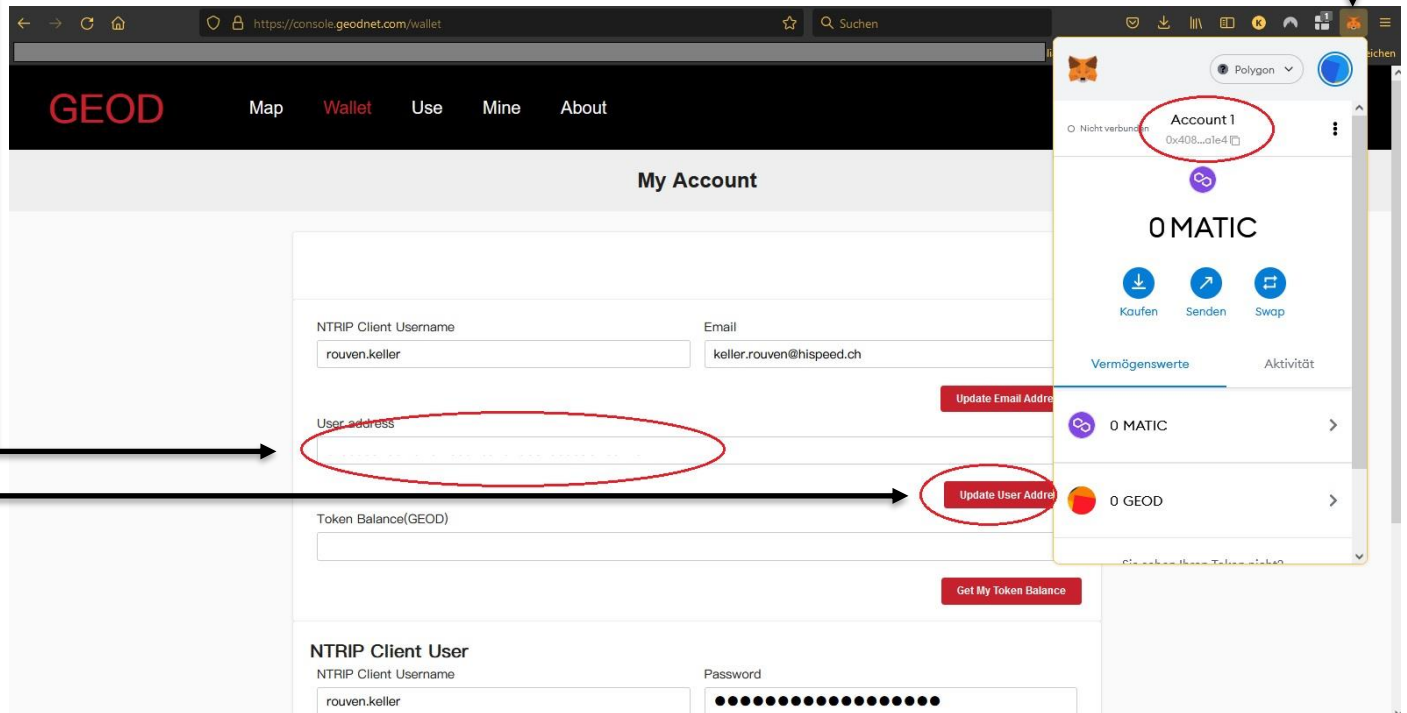
10.2 Login to the Console / Update User Address

Log into the console and go to the Wallet tab.

paste the wallet address from the clipboard into "user address".

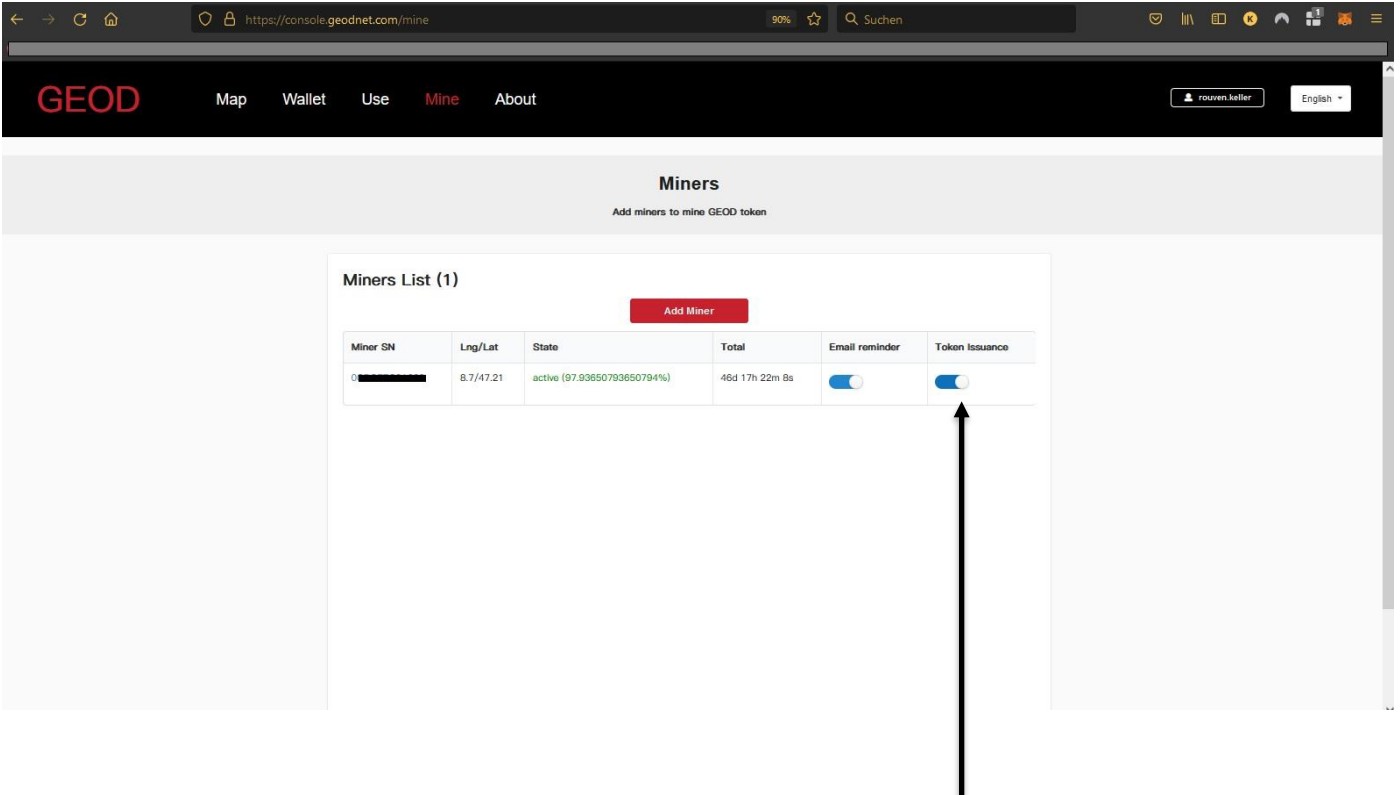
paste the wallet address from the clipboard into "user address".

With the Firefox browser you can also go directly to the MetaMask account via the add-on in the bar at the top and copy the address to the clipboard)



Finally, save the entry with "Update User Address" and the wallet address is saved and the account is ready to receive tokens.

10.3 Turn on “Token Issuance”



The screenshot shows the 'Miners' section of the GEOD console. At the top, there is a navigation bar with 'GEOD' and links for 'Map', 'Wallet', 'Use', 'Mine', and 'About'. The user is logged in as 'rouven.keller' and the language is set to 'English'. Below the navigation bar, the 'Miners' section is titled 'Miners' with the subtitle 'Add miners to mine GEOD token'. A 'Miners List (1)' is displayed, featuring a table with one entry. The table has columns for 'Miner SN', 'Lng/Lat', 'State', 'Total', 'Email reminder', and 'Token Issuance'. The 'Token Issuance' column for the listed miner has a toggle switch turned on. A black arrow points to this toggle switch.

Miner SN	Lng/Lat	State	Total	Email reminder	Token Issuance
0 [REDACTED]	8.7/47.21	active (97.93650793650794%)	46d 17h 22m 8s	<input type="checkbox"/>	<input checked="" type="checkbox"/>

If you turn ON “Token Issuance, your Rewards are forwarded to your wallet once a day! Just wait 24 hours, it will automatically be sent to your wallet.
If you let OFF “Token Issuance”, don't worry, your tokens are secured in the console wallet in your account.

Feel free to send me feedback + suggestions for improvement of this quick guide.
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As soon as new functions are active in the console, this quick guide will be updated again.