

1 User Documentation

1.1 Capability Summary

Our web application has these capabilities:

- create and schedule NFT drops
- reservation and minting of NFTs after it dropped
- allow users to buy and view NFTs in their own collection
- direct interaction with the blockchain, retrieving and displaying up-to-date NFT-Drop and Blockchain ABI information
- minted NFTs usable even without the webservice
- announcement creation, editing and deletion
- User management (signup, login/logout, password change, password reset, add to verified partners team, add to admins team)
- Wallet connection

1.2 Unregistered User

An unregistered user has the least abilities and can take a look at NFT-Drops and at the announcements but has no profile.

At the moment, potentially everyone is able to connect their wallet to the application and reserve a buying position on an NFT Drop, even unregistered users.

1.2.1 sign up

One can create a new account on the signup page. Enter a username, email and password, and create a new account.

Sign up to NFT The world!

Required fields have an asterisk: *

Sign Up

[Already have an account?](#)

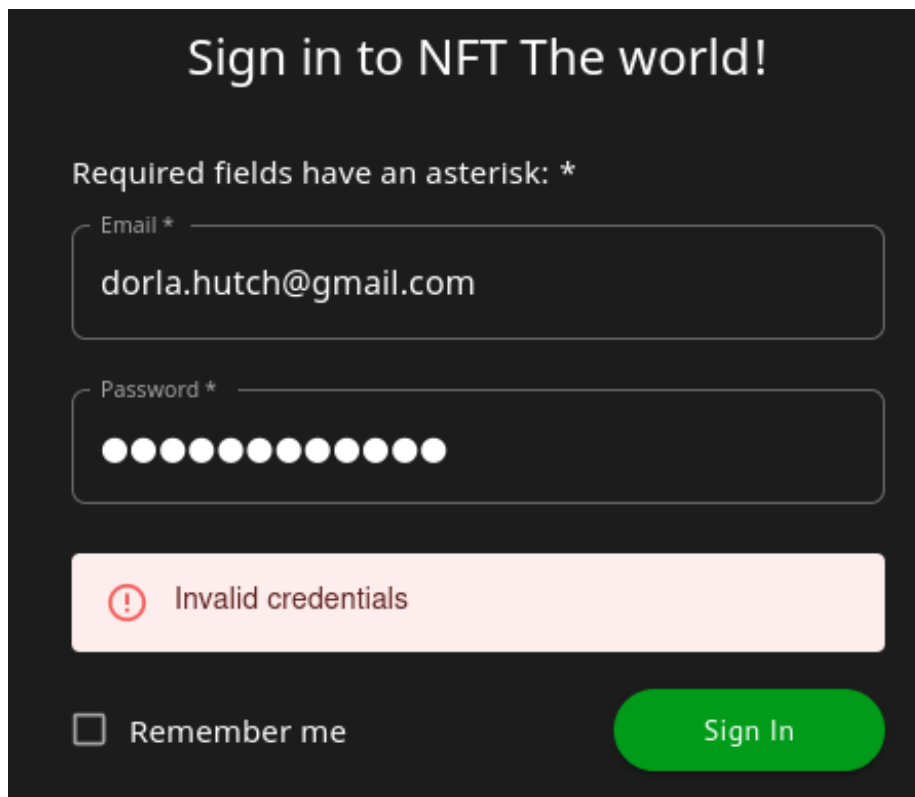
Figure 1: Sign up

The email address is minimally checked for a certain syntactic format. It must be unique and cannot be shared by multiple accounts.

The code in this project won't use your email address for any unsolicited purposes or marketing except for security purposes which are explicitly initiated by users.

The password must at least contain 6 characters. There is no second password check field. It doesn't help so much if you just could copy and paste your password in both password fields.

It will help you with a hint, it something didn't work. Same for the login page.



Sign in to NFT The world!

Required fields have an asterisk: *

Email *
dorla.hutch@gmail.com

Password *
●●●●●●●●●●

Invalid credentials

☐ Remember me

Sign In

Figure 2: invalid login

This image shows an example for an invalid login password.

email confirmation After creating an account, an email is automatically sent to the email address specified at sign up. The address is verified by clicking on the link in the received email.

The email (in German) will look something like this:

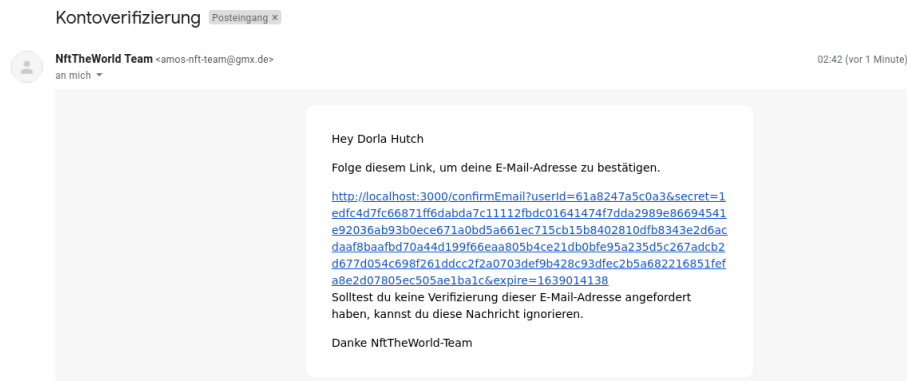


Figure 3: Confirm mail

1.2.2 Log In

They can log in their account by accessing the login page. The application header features a login-button in the top right (second from left).



Figure 4: Header

On the login page, they need to enter their email and password.

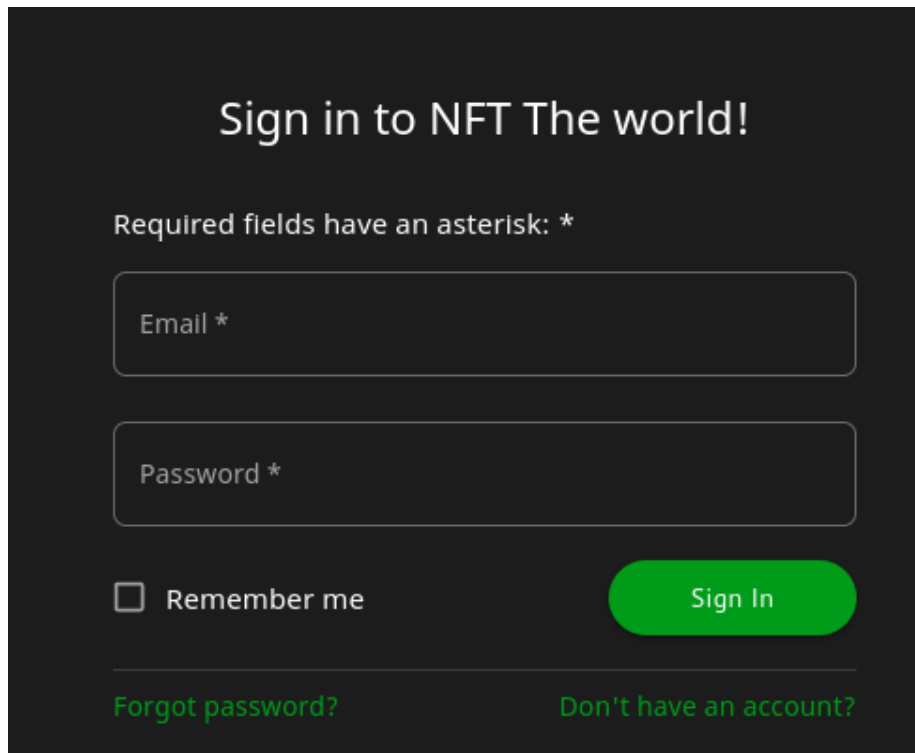
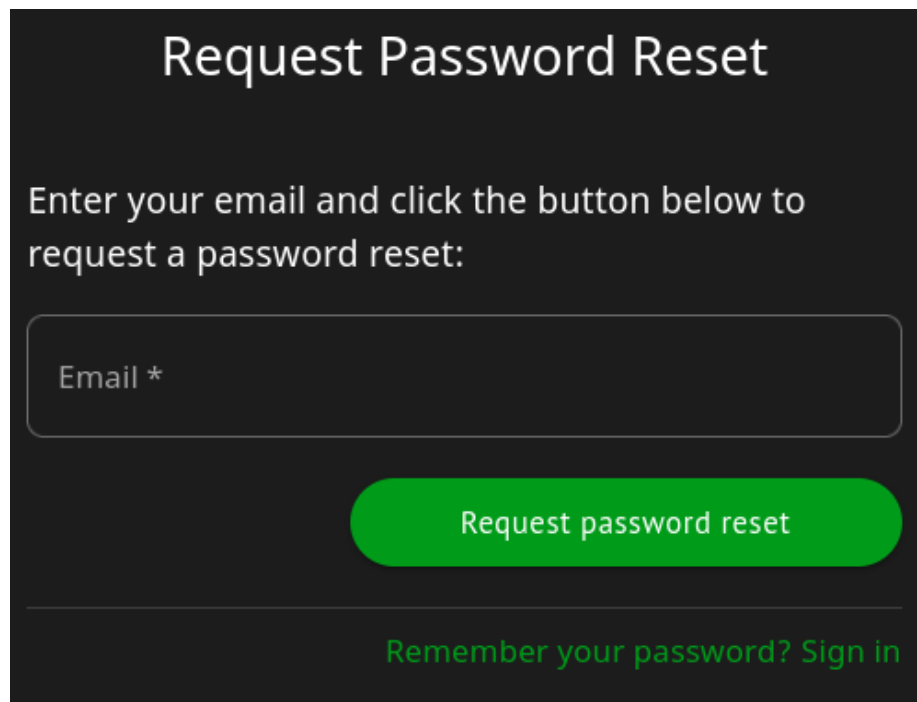
The image shows a login page with a dark background. At the top, the text "Sign in to NFT The world!" is displayed in white. Below this, a message states "Required fields have an asterisk: *". There are two input fields: "Email *" and "Password *", both with light gray borders. Below the "Email" field is a checkbox labeled "Remember me". To the right of the input fields is a green rounded button labeled "Sign In". At the bottom of the form, there are two links in green text: "Forgot password?" and "Don't have an account?".

Figure 5: Login

The lower-right corner will redirect you to the signup page in case you notice that you don't actually have an account ;-).

Reset Password If you think, you forgot your password, you can send a password-reset-request to an email address that is linked to the account. To access this page, click on **Forget password?** in the lower-left corner of the login page.

A dark-themed form titled "Request Password Reset". It contains a text input field labeled "Email *" and a green button labeled "Request password reset". Below the button is a horizontal line and a link that says "Remember your password? Sign in".

Request Password Reset

Enter your email and click the button below to request a password reset:

Email *

Request password reset

[Remember your password? Sign in](#)

Figure 6: Request Password reset

The email contains a link which allows a one-time password recovery. (German in our case.)

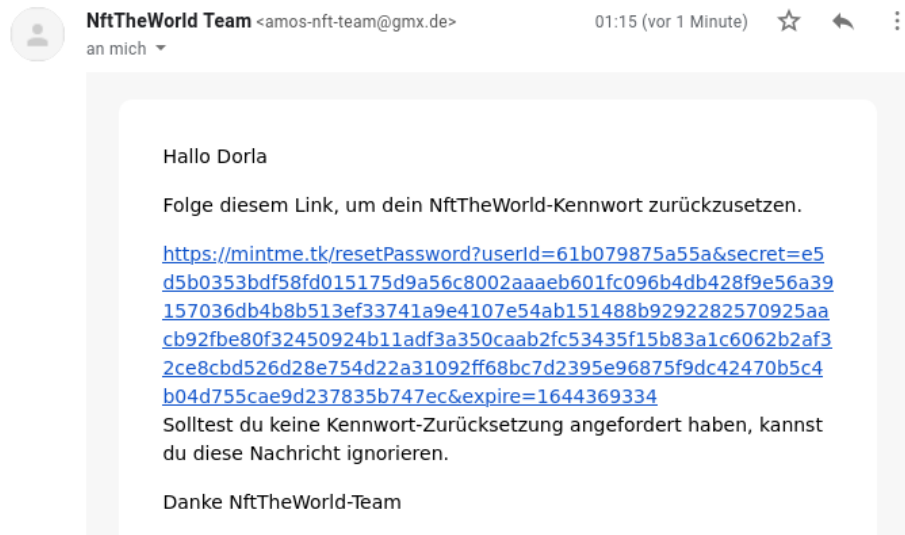


Figure 7: Password reset email

While you can use as many different password reset links as you like until they expire after a finite time, each link can reset the password only once.

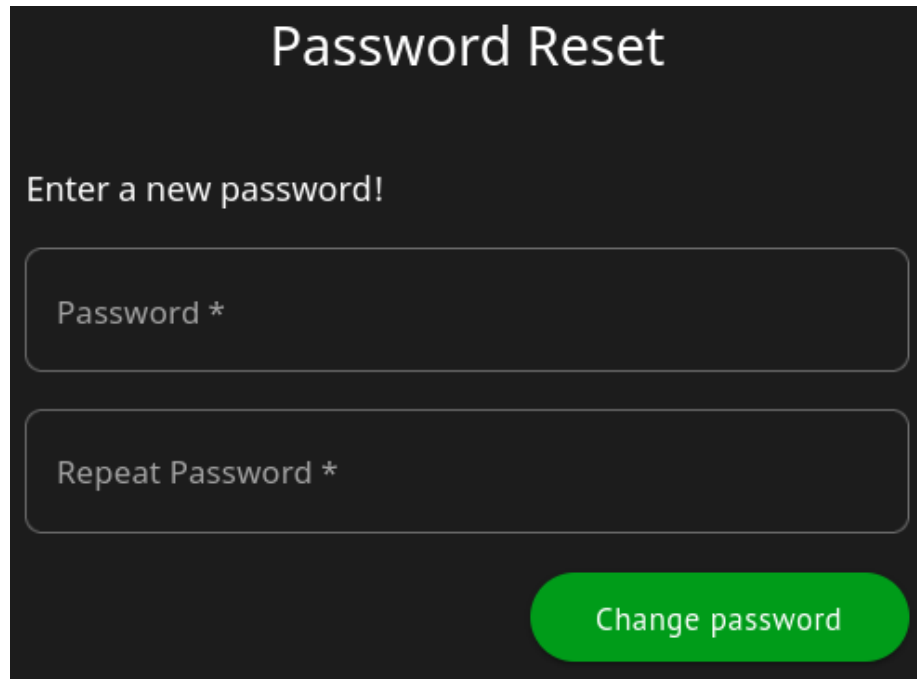
A dark-themed user interface for a password reset. At the top, the title "Password Reset" is displayed in a large, white, sans-serif font. Below the title, the instruction "Enter a new password!" is shown in a smaller white font. There are two input fields, each with a light gray border and rounded corners. The first field is labeled "Password *" and the second is labeled "Repeat Password *", both in a light gray font. At the bottom right of the form is a bright green button with rounded corners and the text "Change password" in white.

Figure 8: Password Reset

1.2.3 NFT Drops

NFT Drops are collections of random NFTs which have a countdown. During the countdown you can reserve a “buying position” that you can use after the countdown to buy them. The reservation has no binding character but is required for being able to buy them later. Buyers receive a random NFT from that collection that they potentially can sell to others or use for whatever legal purpose.

Be aware that buying NFTs will not automatically transfer you legal or owner rights of any real or metaverse space or estate! As of 2022, the meaning of NFTs underlies community conventions and software application-logic and transfers no legal rights.

Users can view the NFTs of an NFT Drop by clicking on an entry in the NFT Drop container on the landing page.

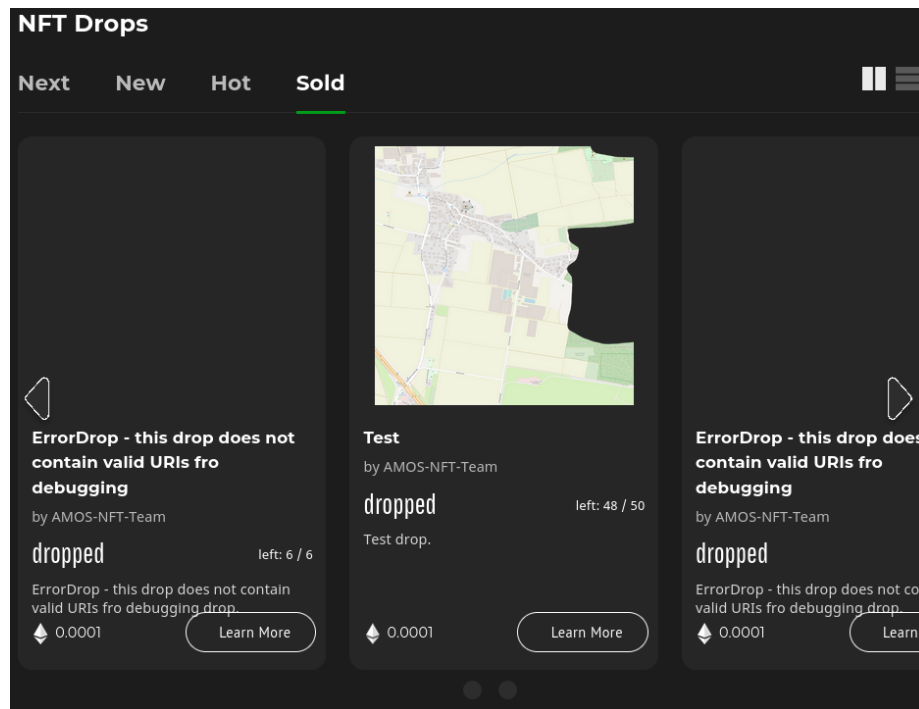


Figure 9: NFT Drop container

This leads to the NFT Drop page. An example NFT Drop (for Nürnberg NFTs) looks like this:

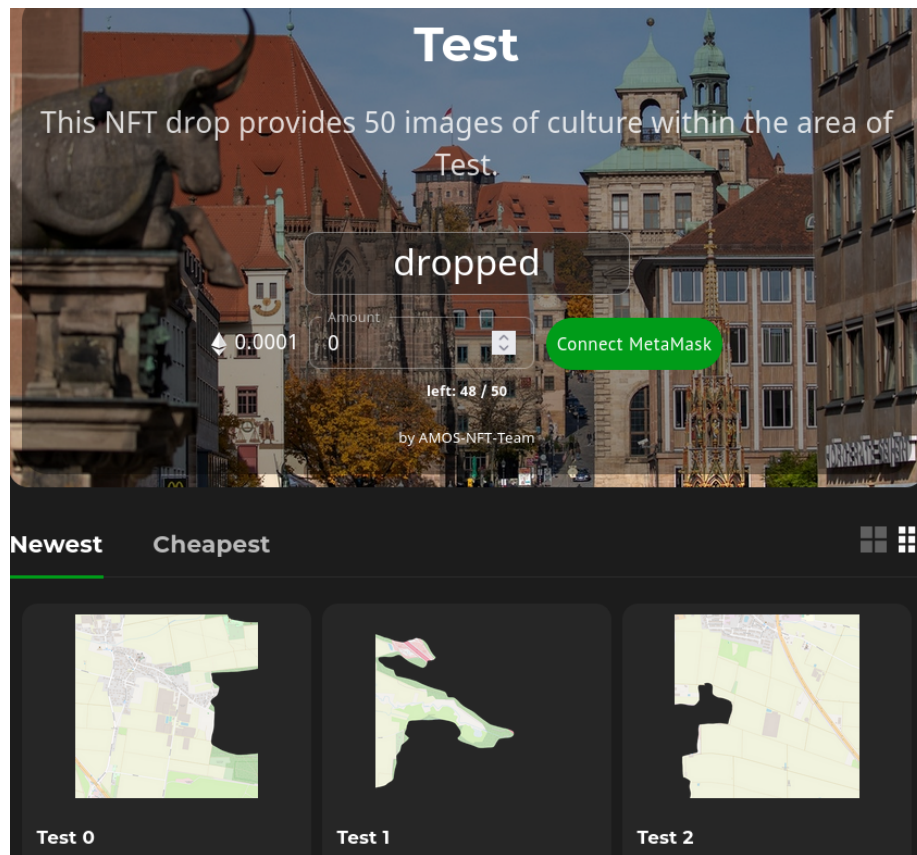


Figure 10: NFT Drop page

It shows example NFTs as cards.

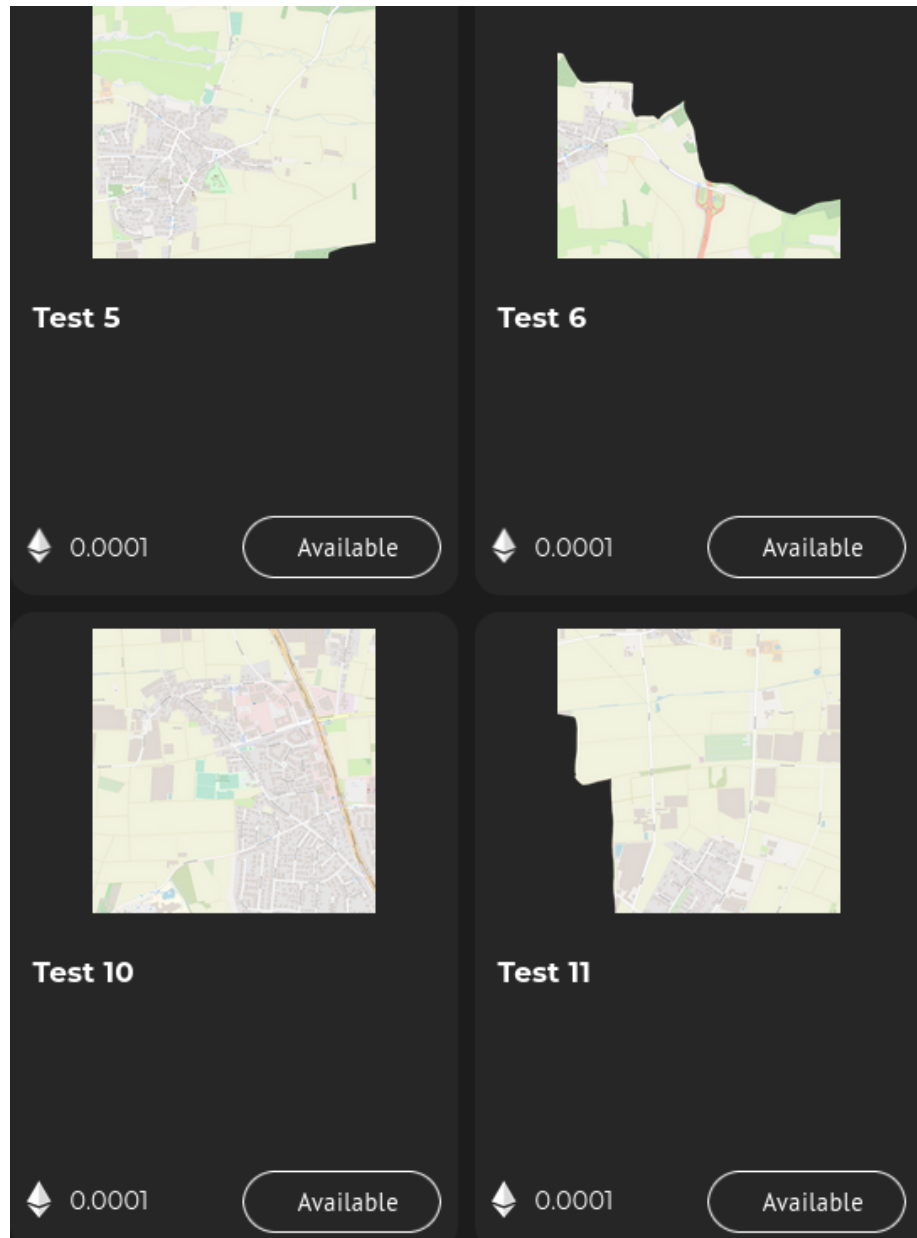


Figure 11: NFTs

We also designed an individual NFT page with specific information which you can see in the `/assets/README.md` but we didn't implement it because other things were more important.

If you didn't connect your wallet so far, you have the ability to do now when you want to buy some.

You can only reserve up to 5% of the total number of NFTs. Not a bug, it's a feature.

Buying NFTs CAUTION! Despite anyone being offered to buy NFTs of stale NFT Drops, not having registered a buying position during the countdown will make the transaction fail and waste your money!!

Also don't waste time until buying them because Drop creators can set an arbitrary time limit how long your buying position remains valid after the countdown reached zero!

Select the number of NFTs that you have reserved to buy earlier.

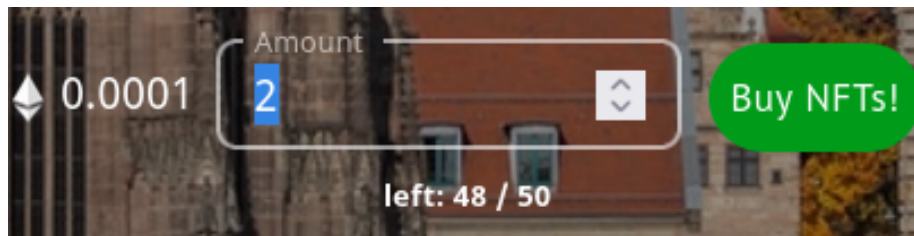


Figure 12: amount of NFTs

When clicking on **Buy NFTs!** on a stale NFT Drop, MetaMask will open where you can confirm the transaction. If you are sure, you have a valid buying position and entered a valid number of NFTs to buy, *skip the red warning about the transaction being expected to fail.*

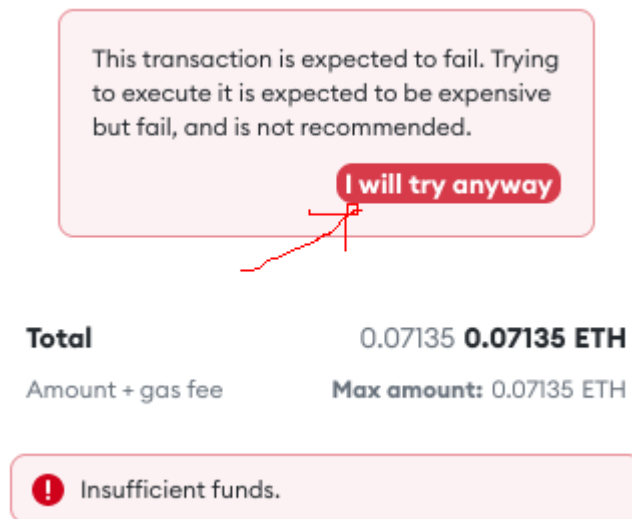


Figure 13: skip metamask warning

Before going ahead you probably want to adapt your gas fees for the transaction. Click on the blue **edit** link that appeared after dismissing the warning. Then you'll see this intermediate gas preview:

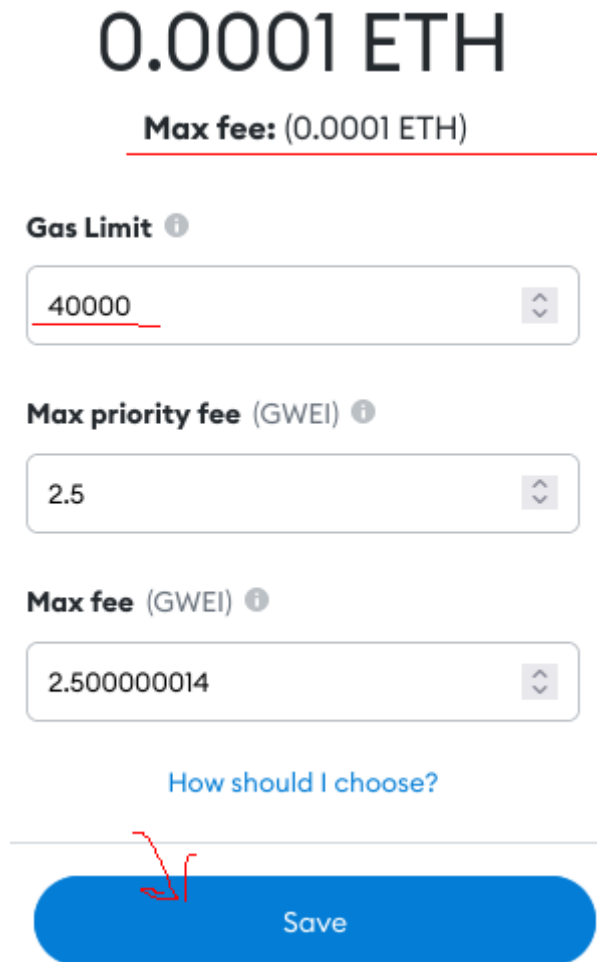
0.07125 ETH

Max fee: (0.07125 ETH)



Figure 14: suggested gas

Ignore the yellow warning on the gas preview screen. The default gas estimation is quite over-exaggerated. Adapt your gas fees in MetaMask:



The image shows the MetaMask gas fee adjustment screen. At the top, the gas fee is displayed as 0.0001 ETH. Below this, the 'Max fee' is shown as (0.0001 ETH) with a red underline. The 'Gas Limit' is set to 40000. The 'Max priority fee (GWEI)' is set to 2.5. The 'Max fee (GWEI)' is set to 2.500000014. A blue button labeled 'Save' is at the bottom, with a red arrow pointing to it. Above the button, the text 'How should I choose?' is displayed.

0.0001 ETH

Max fee: (0.0001 ETH)

Gas Limit ⓘ

40000

Max priority fee (GWEI) ⓘ

2.5

Max fee (GWEI) ⓘ

2.500000014

How should I choose?

Save

Figure 15: change gas

There are three options.

- gas limit: The gas amount estimates how much effort (work) is needed to execute and verify the transaction. For buying NFTs from us, 40000 is a good upper estimation for the transaction. The more NFTs you buy, the more work might be required to execute the Smart Contract. If you buy a huge amount of NFTs, say 10000 this would require more gas than just a fee for 100 and you should maybe estimate with a higher gas limit than 40000.

You should not be too stingy here. If you estimate too low, the transaction will fail and you wasted your money. But if you estimate too much, you will only pay the amount of gas that was actually used.

- priority fee: This is like a “salary” for the blockchain workers (“miners”) to verify your transaction which you are ready to pay. This loan is paid per single gas unit of work.

Of course, more miserly payment gives workers fewer incentive, particularly if you want to burden them with a higher gas limit, and they will let your transaction wait longer until they pick it up, if they will at all.

A value of 2.5 has been shown to provide very good incentives and will finish your transaction within 10 seconds.

- max fee This is the upper limit for priority fee + base fee that you are willing to pay AT MOST for each unit of gas. It caps the amount of work in a second way. The base fee are fixed costs which are negligible (at least for the Kovan testnet).

When your account can cover the chosen gas fees and you are fine, you can save it.

Then confirm the transaction or reject it.

EDIT

Estimated gas fee

Site suggested

0.0001 0.0001 ETH

Max fee: 0.0001 ETH

Total

Amount + gas fee

0.0002 0.0002 ETH

Max amount: 0.0002 ETH

Reject


Confirm

Figure 16: confirm gas


1.2.4 View Announcements

Announcements are displayed on the landing page and the FAQ page.


Announcements



Halli Galli
Feb 02 2022
Zehn zahme Ziegen zogen zehn
Zentner Zucker zum Zoo.
[Read more](#)



La Li Lu
Feb 02 2022
Nur der Mann im Mond schaut zu.
[Read more](#)



Bella Balla
Feb 02 2022
Tam tam, tschuff, aba babba du
[Read more](#)

Figure 17: announcement sidebar

They can click on the announcement to be redirected to the dedicated announcement page.

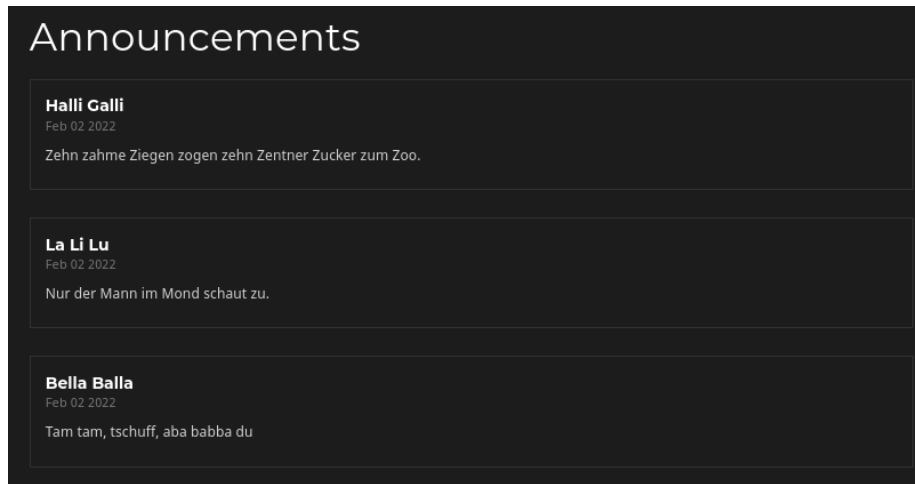


Figure 18: announcement page

1.2.5 FAQ page

On the FAQ page users can get answers to frequently asked questions. A link is available right to the project logo very left in the application header.

The FAQ page lists some important questions for newbies. By clicking on a question, it will expand an answer underneath and the question is emphasized in green color. The answer can be collapsed back to normal by reclicking an expanded question.

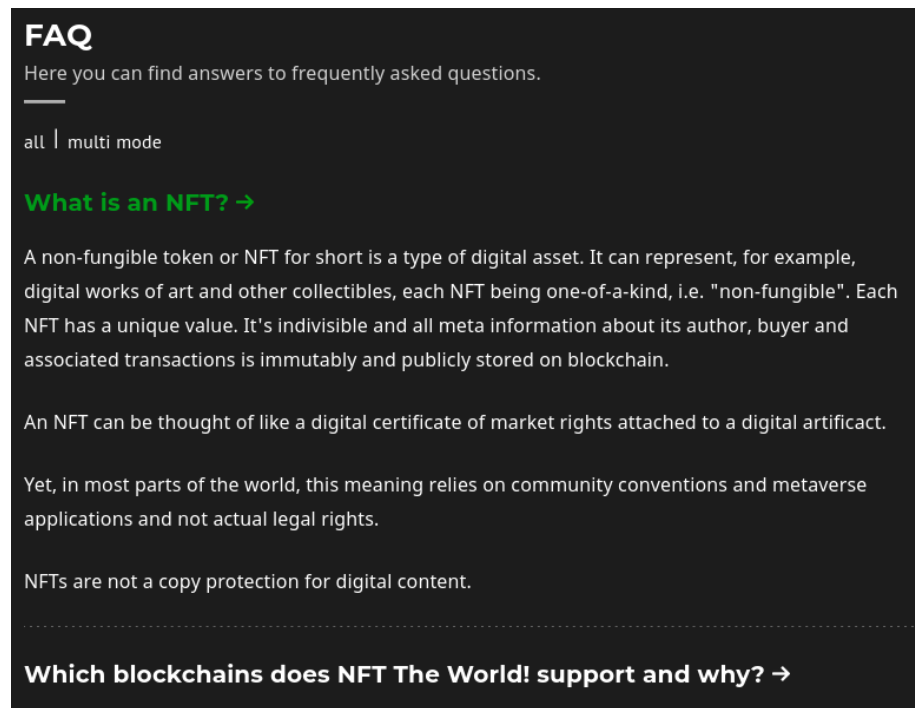


Figure 19: FAQ

The **all** button will collapse all questions if and only if all questions are expanded. Otherwise it will expand all.

The **multi-mode** button toggles the expansion mode. By default, only one question is expanded at a time. With **multi-mode**, you can expand multiple.

Regular Users

If you sign up with a new account, you will be a regular user. There is also an email confirmation mechanism which is unfortunately not required at the moment to use your account.

A regular user can do a subset of what Partners or Admins can do. In addition to unregistered users, they can view their NFT collection and can be promoted to become partners or Admins.

In potential future development, additional features for registered users and limitations for unregistered users are possible. One vision was to incorporate a communication platform for NFT enthusiasts around certain suppliers (or artists) to offer an all-in-one solution without multiple accounts.

1.2.6 User Profile

In the profile users can see basic information regarding their profile.

Profile Settings

Userpic

max 180x180

Click on picture to [edit](#)

NFT Collection

NFT collection

Username

Dorla letters, digits, punctuation

Email

dorla.hutch@gmail.com letters, digits, .+@

Figure 20: Profile

The profile picture doesn't work?! At the point of writing, the profile image uses a static image and cannot be changed. There is a PR (announcement images) which contains a reusable EditableImage Component for (untested) uploading, updating and showing the image.

At the bottom of the page, you can end the user session with the read `logout` button.

There is currently no simple GUI way implemented to delete user accounts.

Re-request email confirmation This feature exists because email confirmation is not necessary yet for using the account. Improved user management should remove this feature later.

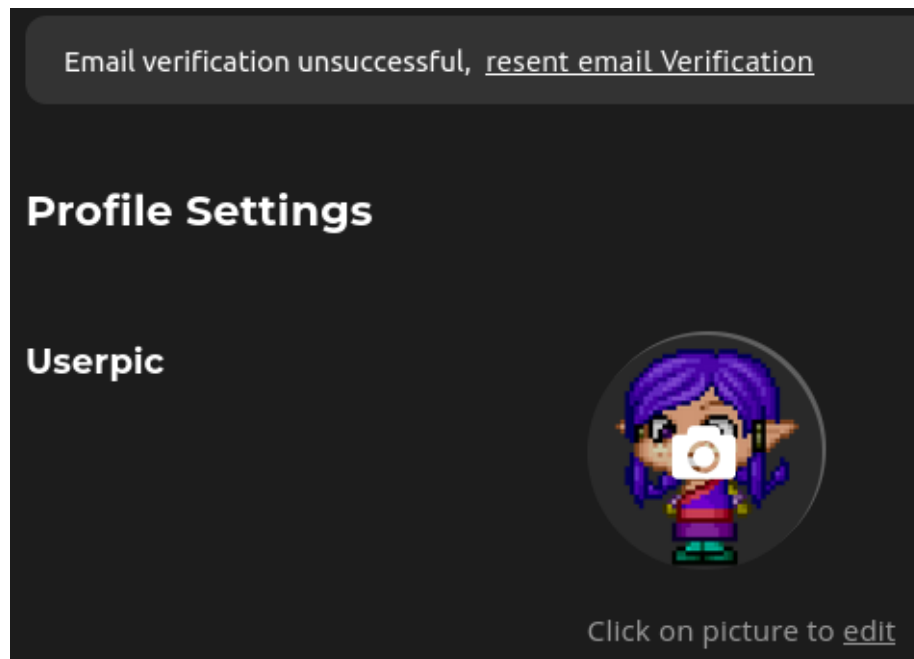


Figure 21: resend email confirmation

An email confirmation can be re-requested by clicking on the “resent email verification” link at top of the profile page. It is not display if you are already verified. Then you will see a green checkmark in the password section.

Profile’s NFT Collection You can access your collection either by click on the **My Collection** on the right side of the application header (when logged in)



Figure 22: Admin Headerbar

or by clicking on the button **NFT Collection** under the image in your profile (see profile image above).

If you didn’t connect your wallet to the application recently, then you need to click on the blue **Connect MetaMask Wallet** button under the profile’s statistics.

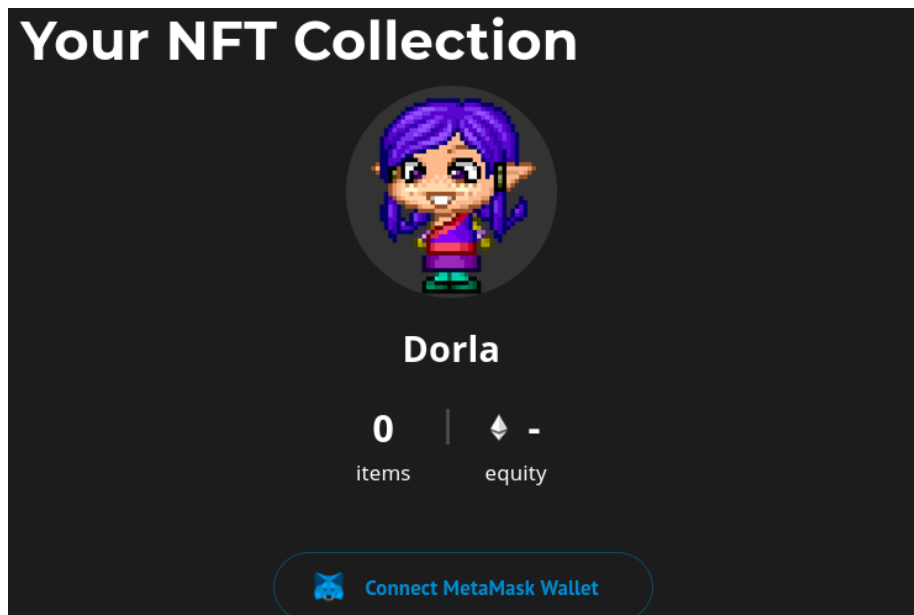


Figure 23: NFT Collection

If it can load your NFTs successfully, it will show an NFT-card container like the one used on the NFT Drop page.

Password Change They can change their password within the profile page.

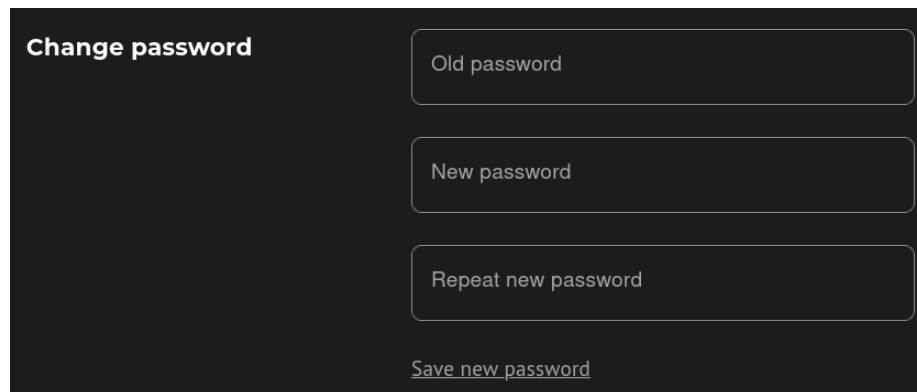
A screenshot of a 'Change password' form. The form is titled 'Change password' in bold. It contains three input fields: 'Old password', 'New password', and 'Repeat new password'. Below these fields is a button labeled 'Save new password'.

Figure 24: Password change


In the **Change Password** section, enter your old and a new password. Repeat your new password for confirmation. Click on **save new password** below the text fields to activate the change.

If it doesn't work, it will give you helpful error messages what didn't work.

Old password

New password

Repeat new password

 Invalid credentials

Save new password

The image shows a dark-themed user interface for changing a password. It consists of three stacked, rounded rectangular input fields with light gray borders. The first field is labeled 'Old password', the second 'New password', and the third 'Repeat new password'. Below these fields is a light pink error message box containing a red circular icon with an exclamation mark and the text 'Invalid credentials'. At the bottom of the form is a text label 'Save new password' with a red underline.

Figure 25: Invalid Password Change

The image shows an example where the user didn't provide the correct old password.

Connect Crypto Wallet with account They can connect their ETH wallet by accessing the profile. Currently, only MetaMask is supported. To this end, you need to click on the connect wallet button

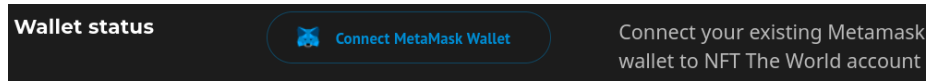


Figure 26: connect meta mask

and confirm that you want to connect your wallet in MetaMask.

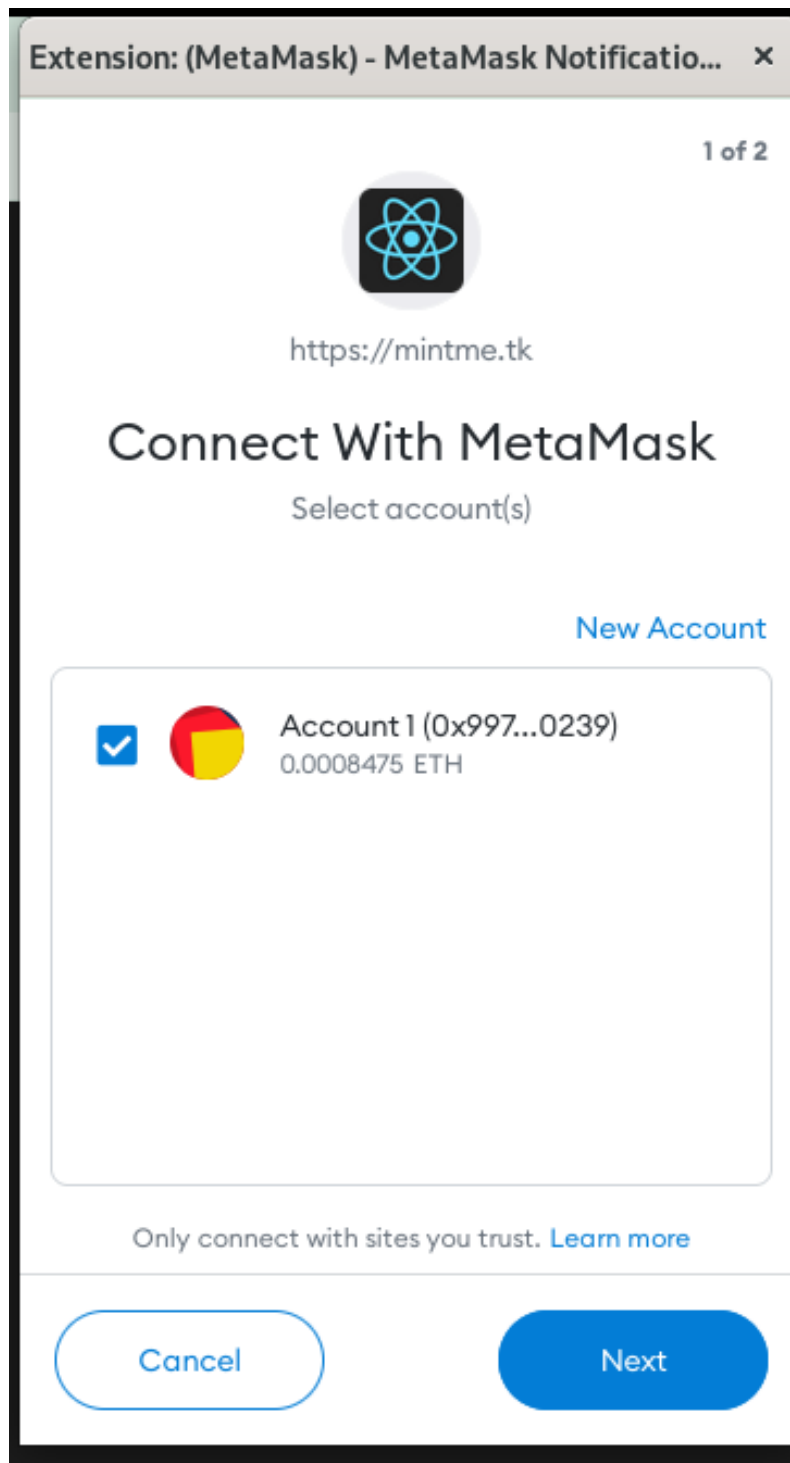


Figure 27: connect meta mask2
27

You can always trust us.

1.3 Partner Features

Only partners are able to successfully create NFT Drops. For this ability, they need to be registered at the blockchain but unlike Admins they might not have the same administrative power.

1.3.1 NFT Drop Creation

On their profile page, they have an additional button which allows them to access the drop creation page.

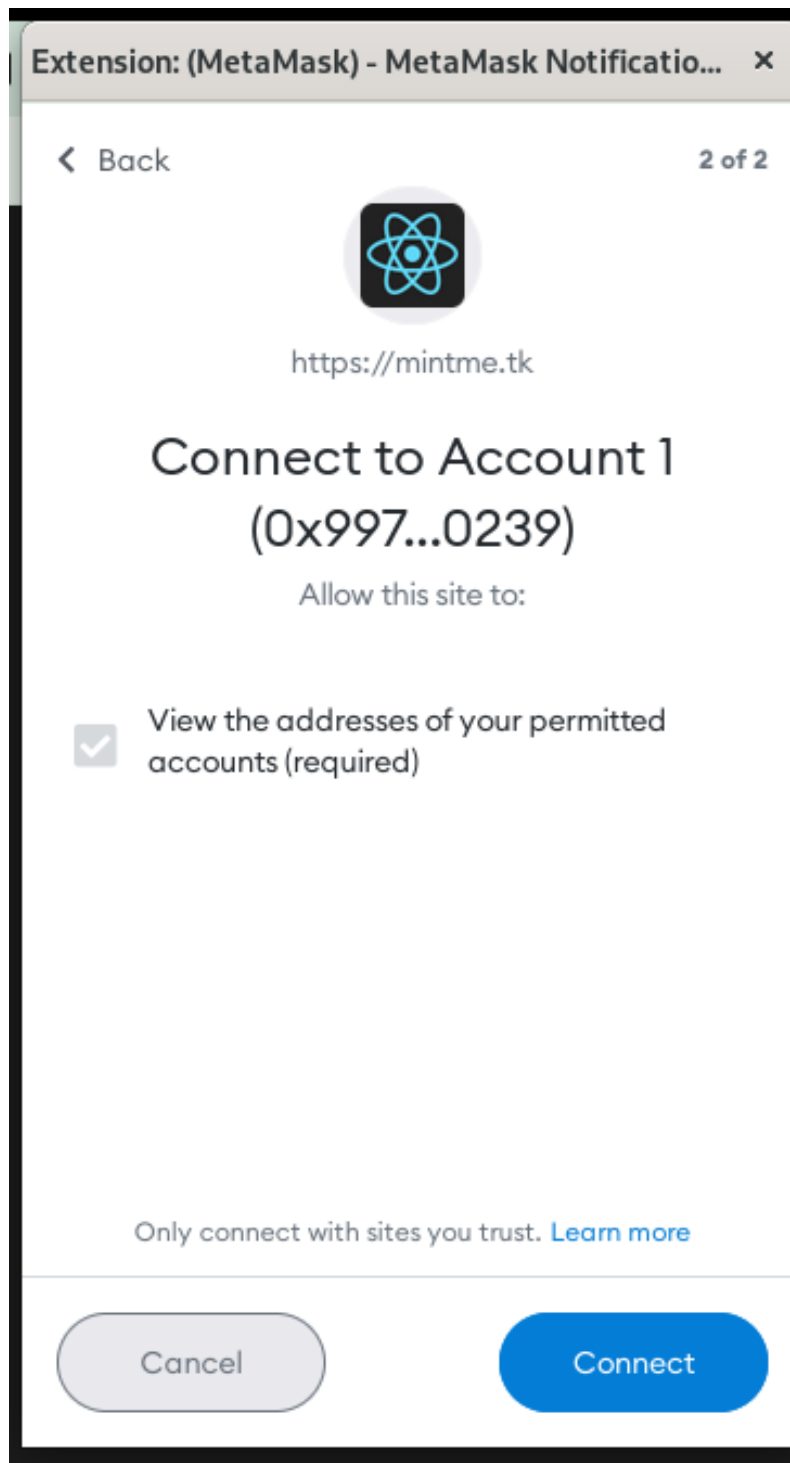


Figure 28: connect meta mask3
29



Figure 29: Partner profile section

The Drop Creation Page is tailored to make the whole process fairly easy for non-technical users to create one with just clicks and copy-pasting of URLs.

A dark-themed form titled "Create new drop" in white. Below the title is a paragraph: "Enter the required information below, press continue, confirm the entered data and pay the required fee in MetaMask to create a new drop." The form contains five input sections, each with a label and a text input field:

- Label: "Enter the name of every new NFT in the drop." Input field: "NFT name *"
- Label: "Enter NFT token name of every new NFT in the drop. Must be at most 11 characters long." Input field: "NFT token name *"
- Label: "Enter the price of every new NFT in the drop in ETH." Input field: "New NFT price (ETH) *"
- Label: "Enter the time a user has to actually buy the NFT after a drop was dropped." Input field: "NFT buy timeout (seconds) *"
- Label: "Select the time at which the drop will be dropped." Input field: "Drop date & time" with the value "02/09/2022 06:10" and a calendar icon on the right.

Figure 30: NFT Drop Creation Page

There are mainly the NFT (Drop) name + price, a countdown, and a valid buying timespan (after the drop countdown) to set and of course the NFT images.

If you are done, click on the green **confirm entered data** button at the bottom of the page to arrive at the confirmation where you check all your details for correctness.



Confirm the creation of the drop

Please check if the provided information is correct and confirm below if you want to create the drop. If you want to make changes to the information, just close this dialog, change any value and press "Confirm" again.

The NFTs will have the name

My Vegetable Zoo

The NFTs will have the token/symbol name

Hakunamatse

The NFTs will have the price

0 ETH (0 WEI)

The NFTs buy timeout will be

100000 seconds

The drop time of the NFTs will be

1644383453290 (unix timestamp: 1644383453)

The following number of new NFTs will be created during the drop

5

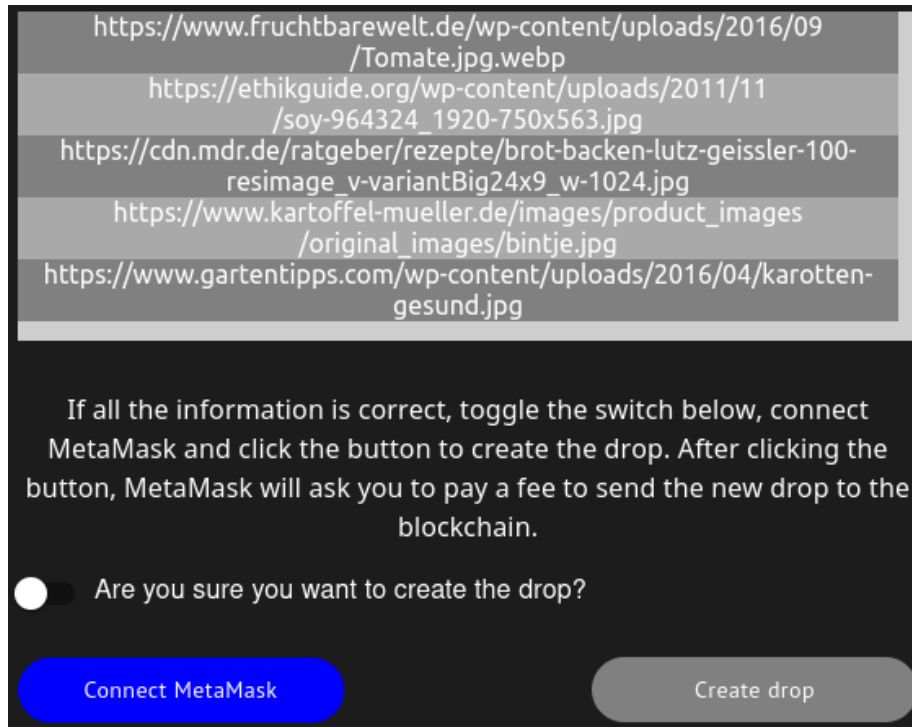
The following image URIs will be used for the NFT creation

<https://www.fruchtbarewelt.de/wp-content/uploads/2016/09>

Figure 31: NFT Drop creation confirmation

You can go back to the editing form by clicking on the rather hidden white cross in the upper right corner. You have to scroll up to the top to see it.

If you are fine with the displayed settings, click on the blue **connect Wallet** button on the left and afterwards on the green **blockchain** button which opens up MetaMask to confirm the actual transaction which will create the NFT Drop.



https://www.fruchtbarewelt.de/wp-content/uploads/2016/09/Tomate.jpg.webp
https://ethikguide.org/wp-content/uploads/2011/11/soy-964324_1920-750x563.jpg
https://cdn.mdr.de/ratgeber/rezepte/brot-backen-lutz-geissler-100-resimage_v-variantBig24x9_w-1024.jpg
https://www.kartoffel-mueller.de/images/product_images/original_images/bintje.jpg
https://www.gartentipps.com/wp-content/uploads/2016/04/karotten-gesund.jpg

If all the information is correct, toggle the switch below, connect MetaMask and click the button to create the drop. After clicking the button, MetaMask will ask you to pay a fee to send the new drop to the blockchain.

☐ Are you sure you want to create the drop?

Connect MetaMask Create drop

Figure 32: NFT Drop confirmation question

Any change to the blockchain like the NFT Drop creation is a transaction for which you need to pay gas fees.

You can estimate with a gas limit of 50000.

1.4 Admin Features

Regular Admins (which aren't also verified Partners) cannot create drops but can manage users and, most important, create announcements ;-).

1.4.1 Admin Area 51

They can access a transcendental area by clicking the Admin button on the right side of the Admin's application header.



Figure 33: Admin Header

Users, that try to access that URL without Admin rights won't see anything, mysterious!

This is not just made up, here it is:

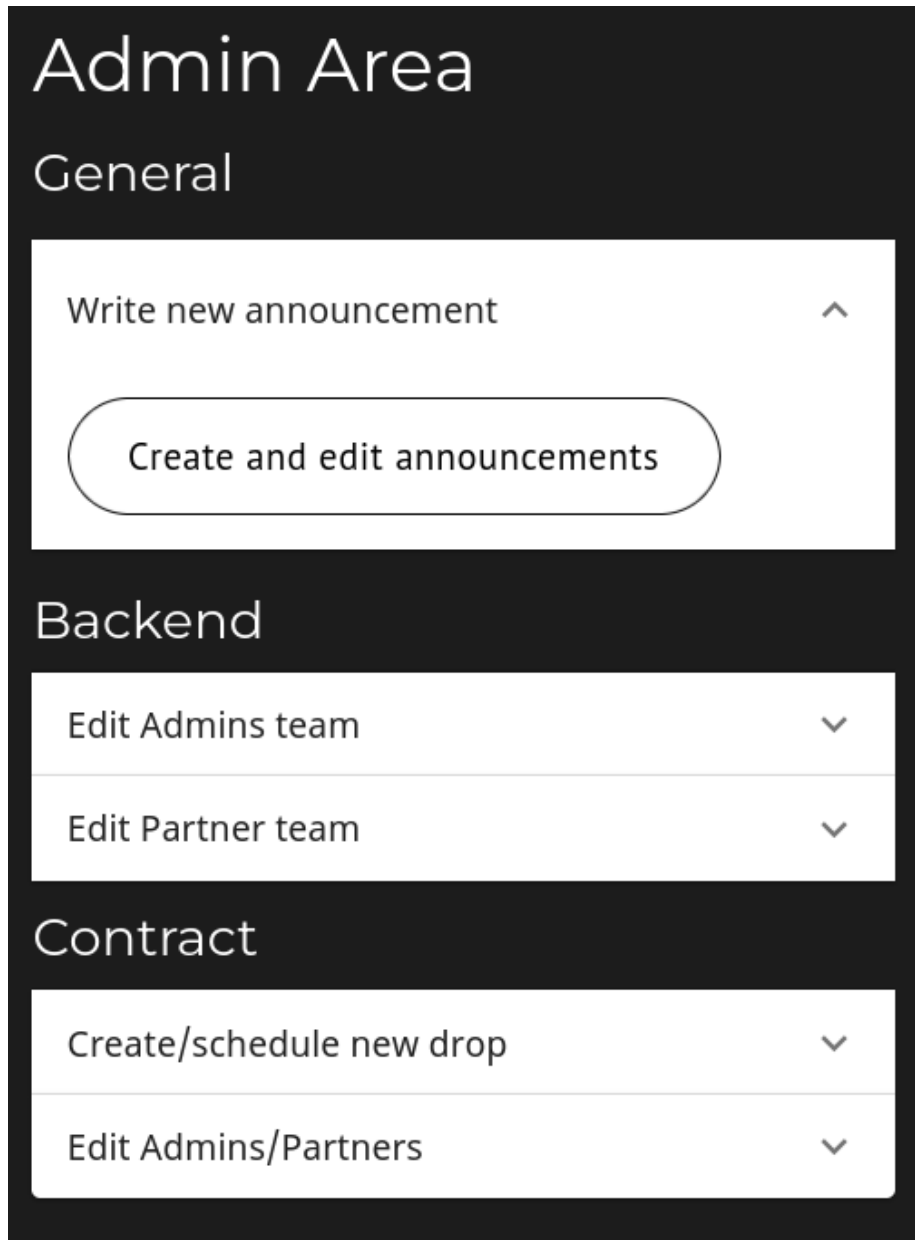


Figure 34: Admin Area

The Admin Area allows for inviting or removing users from certain teams. Only Admins with partners status can fiddle around with the blockchain.

1.4.2 General

Creation, deletion and modification of Announcements As an admin, announcements can be created. Announcements are news messages which can be used to notify visitors of the site about upcoming or interesting changes. All other users can view announcements, e.g. on the landing page. For admins, extra buttons are displayed.

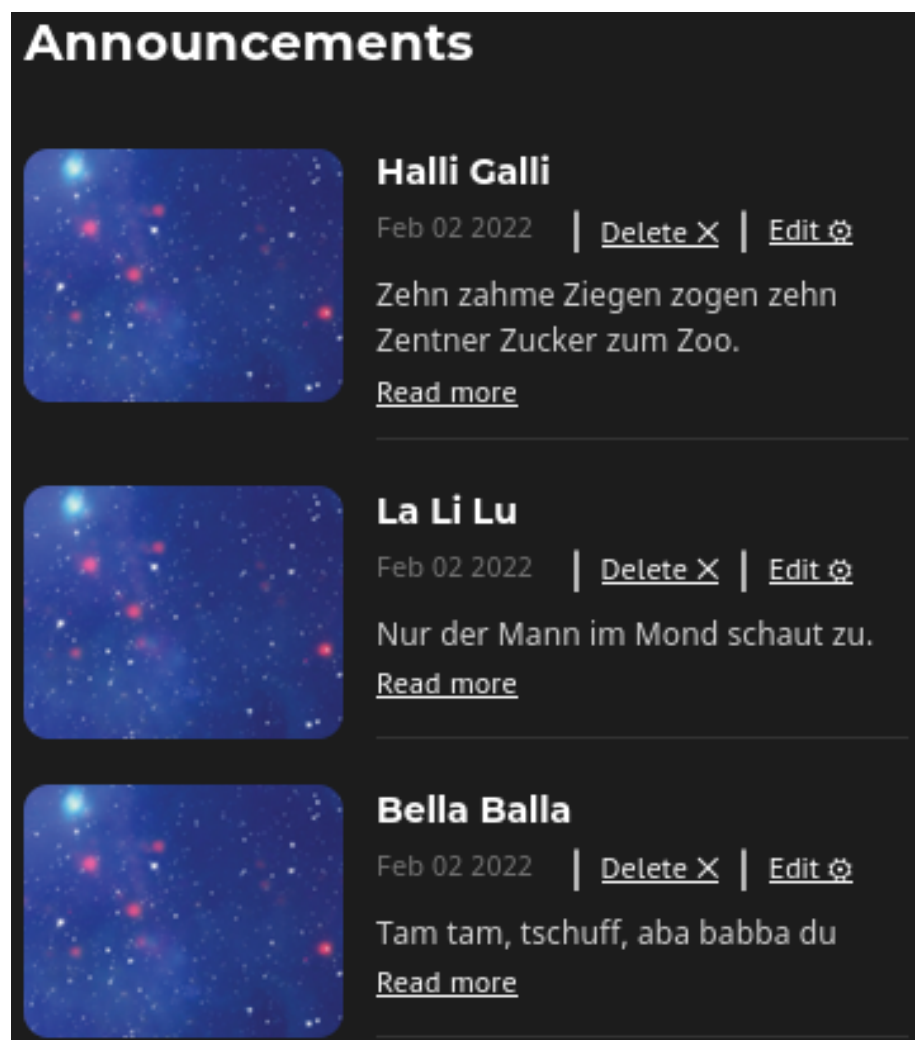
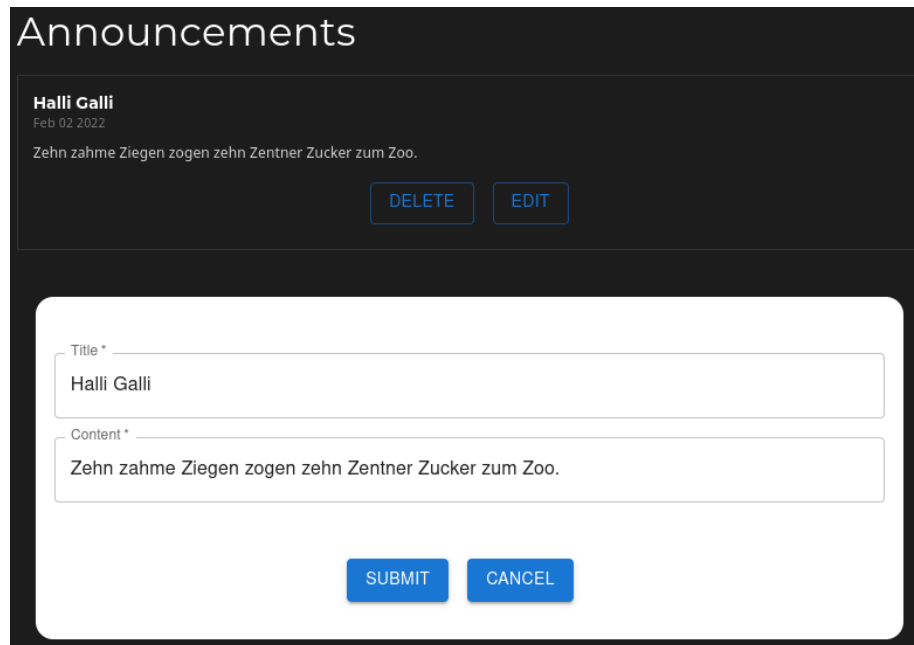


Figure 35: Admin announcement view

Clicking “Delete” will instantly kill the announcement without a question. “Edit” will lead you to the regular announcement page which however is enhanced with extra functionality for Admins where announcements can be edited.

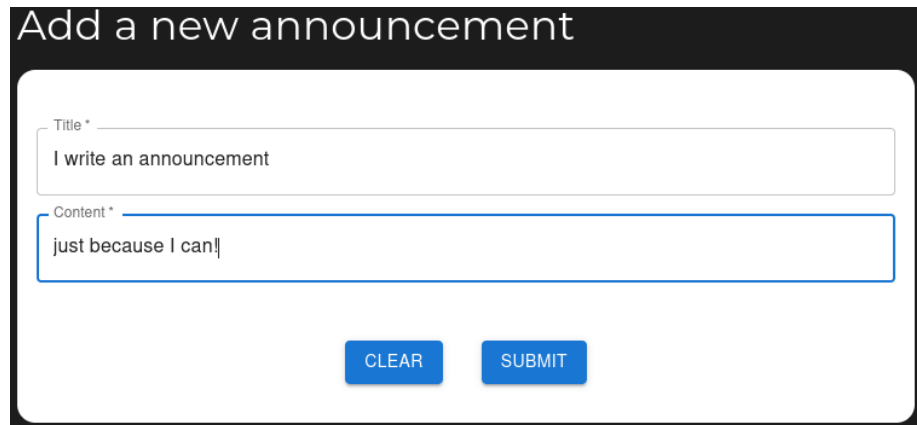
You can reach this page either by clicking on a link in the announcement sidebar when it is embedded into a page or by using the **create and edit announcements** button which you can see in the above image of the Admin area.



The screenshot displays the 'Announcements' management interface. At the top, the title 'Announcements' is shown in a large, light-colored font. Below this, a specific announcement is listed with the title 'Halli Galli', the date 'Feb 02 2022', and the content 'Zehn zahme Ziegen zogen zehn Zentner Zucker zum Zoo.'. To the right of the content are two buttons: 'DELETE' and 'EDIT'. Below the announcement list is a form for editing the announcement. The form has two input fields: 'Title *' with the value 'Halli Galli' and 'Content *' with the value 'Zehn zahme Ziegen zogen zehn Zentner Zucker zum Zoo.'. At the bottom of the form are two buttons: 'SUBMIT' and 'CANCEL'.

Figure 36: Admin Announcement page

You can either create a very new announcement by filling out the text fields in the announcement editor at the top of the page or you can edit existing announcements to update or delete them.

The image shows a web form titled "Add a new announcement" in a dark header. The form has two text input fields. The first field is labeled "Title *" and contains the text "I write an announcement". The second field is labeled "Content *" and contains the text "just because I can!". Below the fields are two blue buttons: "CLEAR" and "SUBMIT".

Add a new announcement

Title *
I write an announcement

Content *
just because I can!

CLEAR SUBMIT

Figure 37: Admin new announcement

1.4.3 Backend - Team Database Management

This section contains database operations in regards to the user teams.

Inviting and editing Admins Team Admins can change Admin team associations by entering the email address of a person for which an operation should be applied. Then click on **SEARCH USER** button emphasized in blue.

Edit Admins team



Search for a user by their email and remove them from the Admins team or send an invite to someone to join the Admins teams.

SEARCH USER

Figure 38: Add Admins

It will search for the email address in the database and based on the result, it will suggest you to add the email address when not found, or remove the email address when found. The email address acts as represent for the account that is associated with it.

Edit Admins team



Search for a user by their email and remove them from the Admins team or send an invite to someone to join the Admins teams.

Email *

carlos@corp.org|

SEARCH USER

The user with the email "**carlos@corp.org**" is **not** in the Admins team. You can invite them to the Admins team below.

☐

Are you sure you want to **invite** this user to the Admins team?

SEND INVITE

Figure 39: admin invitation

Before you can apply the operation, you first need to check the checkbox for confirmation to prevent accidentally clicking on the button.

With an invitation, it will send an email to the provided email address, notifying them about their invitation which they can accept.

You can also remove Admins, including yourself!

Edit Admins team



Search for a user by their email and remove them from the Admins team or send an invite to someone to join the Admins teams.

Email *

dorla.hutch@gmail.com

SEARCH USER

The user with the email
"dorla.hutch@gmail.com" is **in** the Admins team. Below, you can remove them from the Admins team.

☐

Are you sure you want to **remove** this user from the Admins team?

REMOVE USER FROM ADMINS TEAM

Figure 40: admin removal

Let this be a lesson and don't invite people as Admins that could want to grab for power and kick you from your Admin status!

Inviting and editing Partners Team As a verified Partner and Admin, you can invite new partners. There is no more powerful creature out there in “NFT The World” :-). .

Admins without Partner status cannot add new Partners to the database or remove existing ones.

Create/schedule new drop



You are not in the Partner team and thus cannot create a new drop. If you think this is a mistake, please message an Admin.

Figure 41: Only Partners can manage Partners

Otherwise, as a partner, you can add new partners in the same way how new Admins can be added.

Edit Partner team



Search for a user by their email and remove them from the Partner team or send an invite to someone to join the Partner teams.

SEARCH USER

Figure 42: Adding Partners

1.4.4 Contract - Smart Contract interaction

In this section, special blockchain transactions can be initiated which append live blockchain data. For security, the partners association is saved directly on the blockchain.

Creating an NFT Drop Basically just a convenient shortcut for the additional profile button which can be used by Partners with Admin status. Read more about NFT Drop creation in the Partners Capabilities section.

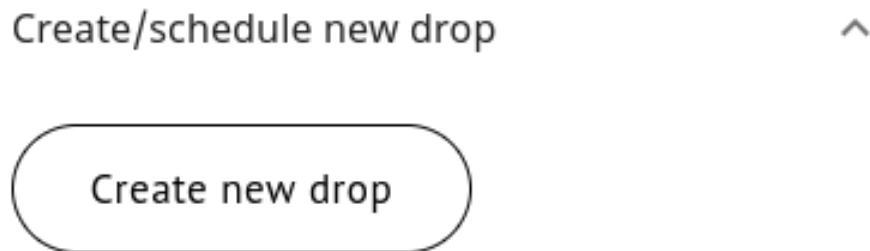


Figure 43: NFT Drop Creation Admin Button

Adding Partners/Admins Well, actually every Admin can add Partners and thus themselves as well.

Edit Admins/Partners



Successfully connected to MetaMask.

Select a team, select if you want to add or remove an address, and enter an address!

Team to edit

Partner



Action to perform

Add



ETH address to add to team Partner *

0iCCcbF8c5b96Ce678092036624cC3cc560239|

ADD USER TO CONTRACT PARTNER TEAM

Figure 44: Add a partner

Select which team should be modified and below the operation to apply to a (potential) team member.

Then enter the hexadecimal address of the wallet that should obtain Partner status. A registered user logged in with that wallet will be entitled to the capabilities of verified partners!

Click on the emphasized blue button saying **ADD USER TO CONTRACT PARTNER TEAM** to conduct the operation. Keep in mind that this is a blockchain transaction and requires paying a gas fee. MetaMask will open and prompt you for confirmation.

You can estimate the gas limit with 30000.