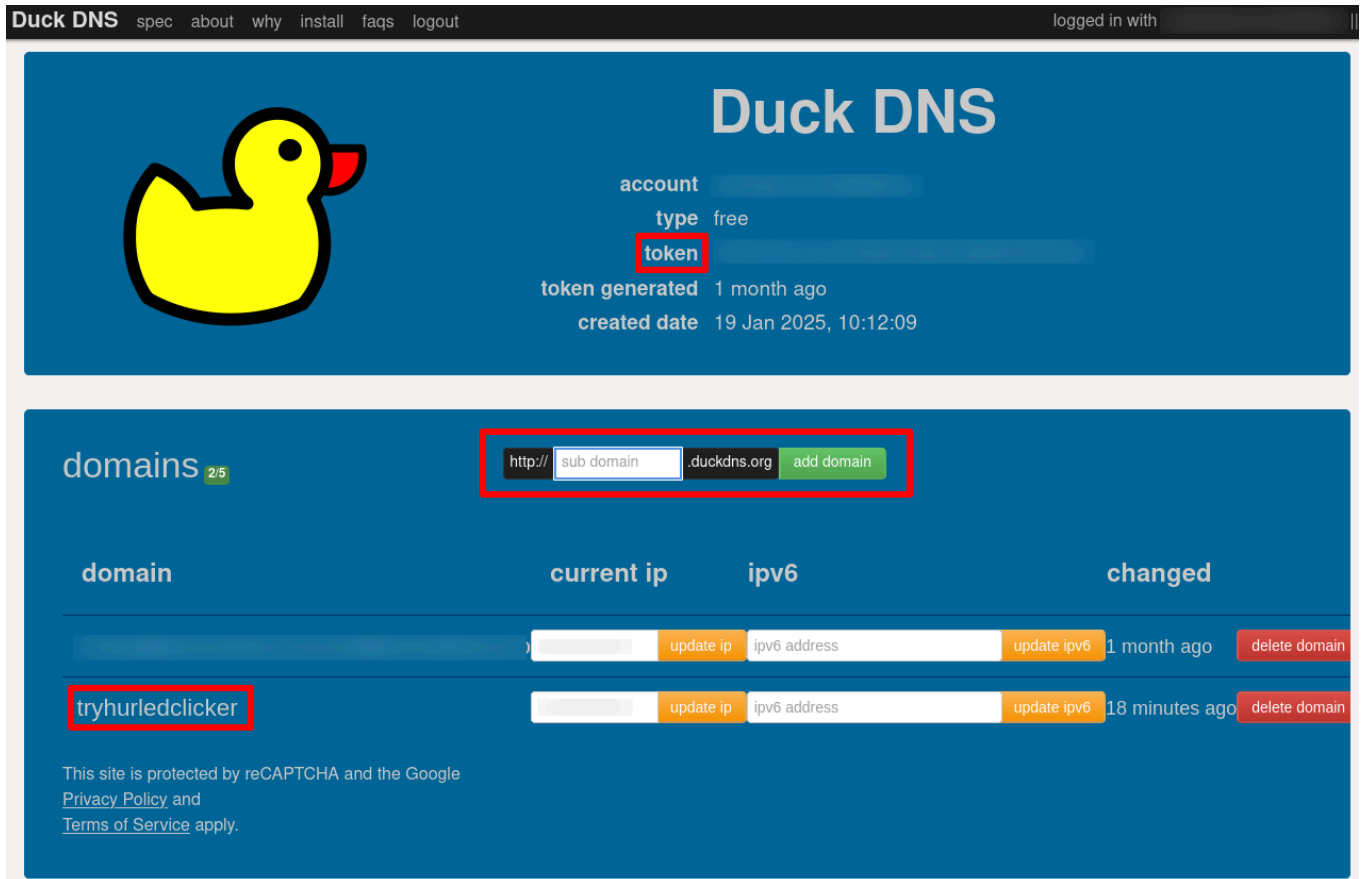


# Letsencrypt certificate request

In order to obtain a valid certificate from Letsencrypt we should perform 2 steps

1. Obtain a valid Domain
2. Request letsencrypt certificate using Certbot



## Obtain a valid domain

**DuckDNS** is a service which allows users to obtain up to 5 third-level domains free of charge.

1. Connect to <https://www.duckdns.org/> website and create a new account with your personal email address (you can also use google or github login)
2. In the home page you see the list of your domains, initially empty.
3. Add a domain of your choice.
4. Check the ip, it should automatically be the external one from which you are connecting to the site. You can change it if necessary.
5. Take note of the name you choose and the token you find on this page in your data

## Request letsencrypt certificate using Certbot and DuckDNS

1. Install Certbot  

```
sudo apt install Certbot
```
2. Request a valid certificate  

```
sudo certbot -d YOUR_DOMAIN --manual --preferred-challenges dns  
certonly
```

3. Follow the instructions on the console
4. Finally, your certificate request will be forwarded and Certbot will ask you to add a new DNS TXT record to your domain dns

```
-----  
Please deploy a DNS TXT record under the name  
_acme-challenge.networksecurity2021.tk with the following value:  
  
5g76v4pw4nbRUfMEm4on3yPHcfyF1Kw6EZAUpZAUg8  
  
Before continuing, verify the record is deployed.
```

5. You must now insert a new TXT record with the code you see in the console. In another terminal window you must make a curl as follows

```
curl  
https://www.duckdns.org/update?domains={YOURVALUE}&token={YOURVALUE}&txt={YOURVALUE}
```

The **domains** must be entered without .duckdns.org.

The **token** is personal and can be found on <https://www.duckdns.org> after logging in.

The **txt** is the code provided by certbot

If the answer is OK, then the change was saved correctly.

6. Go on <https://toolbox.googleapps.com/apps/dig/#TXT> and look for \_acme-challenge.<<your\_domain\_name>>
7. Wait until your txt record is visible on some servers as suggested by Certbot
8. When txt record is visible on some DNS server, come back on Certbot shell and press **Enter** in order to complete the process
9. At the end of the process your certificate will be visible on /etc/letsencrypt/live/<<YOUR\_DOMAIN>>/ folder, containing the following files:
  - a. cert.pem
  - b. privkey.pem
  - c. chain.pem
  - d. fullchain.pem