Step 1: Getting Started

CapRover can be installed on various cloud providers, including **AWS (Amazon Web Services)**, **Google Cloud**, **Azure**, and **DigitalOcean**. The recommended approach is to select a server that allows SSH access, making it easy to manage your installation.

Video Guide

Creating a Server

Begin by creating a server instance on your chosen cloud provider. Ensure that the server has the following specifications for optimal performance:

- **At least 2GB of RAM**
- **1 CPU**

This configuration will provide sufficient resources for running applications effectively. Most cloud providers allow you to upgrade your server resources later if needed.

Through out this setup, we've used DigitalOcean as our cloud provider, however you can use any cloud provider as stated earlier. You can do same using this link: Get

Started on DigitalOcean

Selecting a Server Location

When selecting a location for your server, choose a region that minimizes latency by being geographically closer to you. This will enhance performance and responsiveness.

Setting Up SSH Key

For secure and convenient access to your server, it's highly recommended to use an SSH key. This simplifies authentication and enhances security.

> If your cloud provider gives you Remote Access through browser then you can avoid below given steps.

Here's how to set it up:

1. **Generate an SSH Key** (if you don't have one):
   - Open your terminal.
   - Run the command:
     ```
     ssh-keygen -t rsa -b 4096 -C "your_email@example.com"
     ```
   - Accept the default file location by pressing **Enter**.
   - Optionally, set a passphrase for extra security.
2. **Copy Your SSH Key**:
   - Use one of the following methods to copy your public key:
     - **Command Line**:
       ```
       cat ~/.ssh/id_rsa.pub
       ```
       Copy the output manually.
     - **File Location**: Navigate to your file location & open `~/.ssh/id_rsa.pub` using a text editor and copy the contents.

3. **Add SSH Key to Your Provider**:

   - Log in to your cloud provider's dashboard.
   - Locate the section for SSH keys (often found under **Security** or **Settings**).
   - Paste your copied SSH key into the designated field and give it a recognizable name.

Once your SSH key is set up, you're ready to proceed with installing CapRover and configuring your server. Remember to **note your server's IP address** for future use.

Last updated on October 11, 2024

We expect that you have created Server on your cloud provider. Now it's time to access the server and install the Caprover.

Video Guide

Step 2: CapRover Installation

First, open the terminal or console of your **Ubuntu server**. You can do this by using SSH to connect to your server. or use broswer based SSH to connect. For example:

```
ssh root@[YOUR_SERVER_IP]
```

Docker Installation:

Run the following command to uninstall all conflicting packages:

```
for pkg in docker.io docker-doc docker-compose docker-compose-v2 podman-docker containerd runc; do sudo apt-get remove $pkg;
```

Installing using `apt` Repository

Step 1: setup docker's `apt` Repository

Copy and paste the given commands to terminal.

```
# Add Docker's official GPG key:
```

```
sudo apt-get update
sudo apt-get install ca-certificates curl
sudo install -m 0755 -d /etc/apt/keyrings
sudo curl -fsSL https://download.docker.com/linux/ubuntu/gpg -o /etc/apt/keyrings/docker.asc
sudo chmod a+r /etc/apt/keyrings/docker.asc

# Add the repository to Apt sources:
echo \
  "deb [arch=$(dpkg --print-architecture) signed-by=/etc/apt/keyrings/docker.asc] https://download.docker.com/linux/ubuntu \
  $(. /etc/os-release && echo "$VERSION_CODENAME") stable" | \
  sudo tee /etc/apt/sources.list.d/docker.list > /dev/null
sudo apt-get update
```

Step 2: Install the Docker packages.

Copy and paste below command to your server/SSH terminal.

```
sudo apt-get install docker-ce docker-ce-cli containerd.io docker-buildx-plugin docker-compose-plugin
```

Step 3: Verify Docker Installation.

to verify the installation run following command.

```
sudo docker run hello-world
```

This command downloads a test image and runs it in a container. When the container runs, it prints a confirmation message and exits.

Step 4: Configuring Firewall

Copy and paste the below given command to SSH terminal, to modify firewall settings.

Note: Some providers like AWS restricts the firewall settings, However they provide dedicated page to manage Inbound & Outbound Ports. You'll have to look for the your cloud provider's guide to setup the firewall.

For DigitalOcean it's straight foreward, just paste the below given command, and that's it.

```
ufw allow 80,443,3000,996,7946,4789,2377,3306,22/tcp; ufw allow 7946,4789,2377/udp;
```

🎉 You have now successfully installed and started Docker Engine.

Installing Caprover using Docker:

Once Docker is installed, run the following command to install CapRover:

```
docker run -p 80:80 -p 443:443 -p 3000:3000 -e ACCEPTED_TERMS=true -v /var/run/docker.sock:/var/run/docker.sock -v /captain
```

⚠️ NOTE: Do not change the port mappings. CapRover only works on the specified ports.

You will see a bunch of outputs on your screen. Once CapRover is initialized, visit http://[IP_OF_YOUR_SERVER]:3000 in your browser and log in to CapRover using the **default password** `captain42`. You can change your password later. However, do not make any changes in the dashboard. We'll use the command line tool to set up the server (recommended).

STEP 3 : Custom Domain Configuration

To set up your own domain to point to your server, follow these steps:

1. **Find Your Server's External IP Address**:
   - You can find your server's IP address in your hosting provider's control panel. This is referred to as the **Primary IP** / **Public IP** or **External IP**.
2. **Login to Your Domain Registrar**:
   - Go to the website where you purchased your domain (e.g. Hostinger, GoDaddy, Namecheap).
   - Locate the **DNS management panel** for your domain. This is where you'll configure your domain records.
3. **Add an A Record**:
   - You'll need to add an **A Record** to point your domain to your server's external IP address.
   - Create an A Record for a **wildcard subdomain** (e.g., `*.yourdomain.com`) to point to your server's IP.

   For example, if your server's Public IP is `45.210.99.200` and you're using a wildcard subdomain like `*.apps`, your A Record will look like this:

Type	Host	Value	TTL
A Record	*.apps	45.210.99.200	Automatic
A Record	backend	45.210.99.200	Automatic
A Record	@	45.210.99.200	Automatic

4. **Finish DNS Setup**:
   - Once the A Records are added, DNS is configured, and you won't need to change anything further in your domain settings.

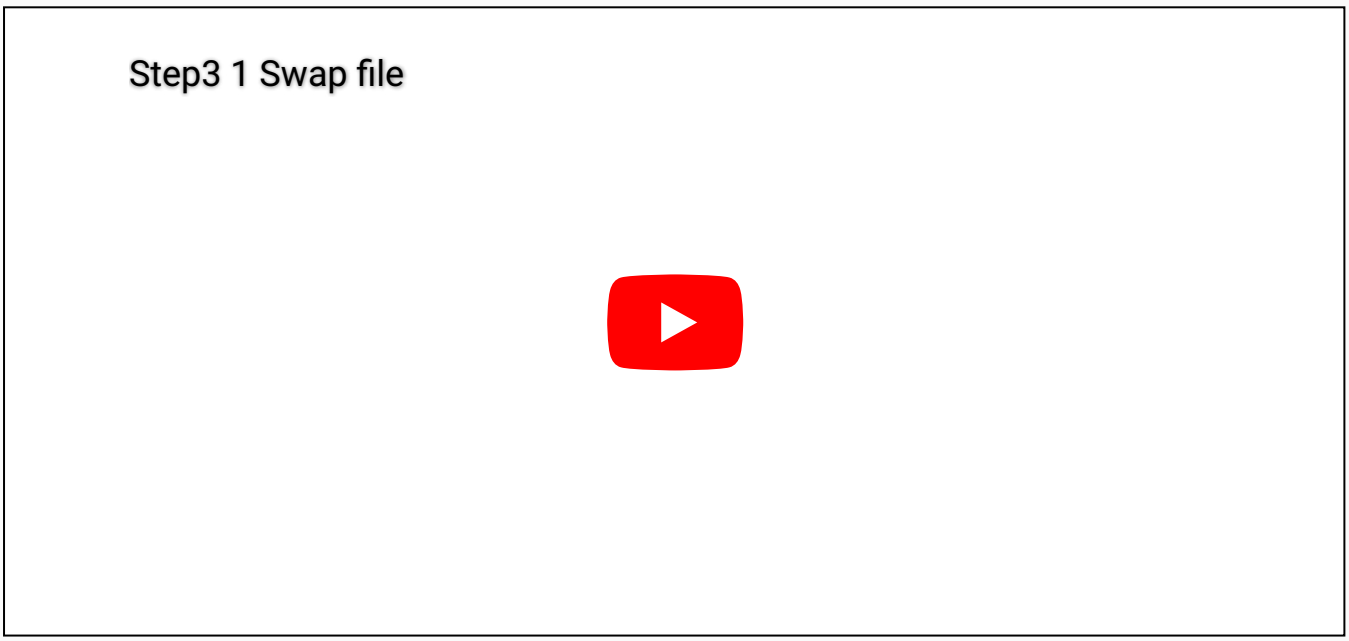
That's it! You're ready to move on to the next step in setting up your server.

Last updated on October 12, 2024

Set Up a Swap File (Optional)

If your server doesn't have enough RAM, you might encounter issues, especially when building Docker images. Instead of purchasing more RAM, you can create a swap file, which acts as virtual memory. Here's how you can add 1GB of swap to your server (you can adjust the size by replacing `1G` with `2G` for 2GB, etc.):

Video Guide



In your server SSH Terminal, paste the following commands to create SWAP.

Steps to Add 1GB Swap File:

1. **Create the Swap File**:

```
sudo fallocate -l 1G /swapfile
```

If you get an error with fallocate, use this alternative command:

```
sudo dd if=/dev/zero of=/swapfile bs=1024 count=1048576
```

2. Set the Correct Permissions (only root should access it):

```
sudo chmod 600 /swapfile
```

3. Set Up the Swap Area:

```
sudo mkswap /swapfile
```

4. Enable the Swap:

```
sudo swapon /swapfile
```

To make the change permanent open the /etc/fstab file and append the following line:

```
/swapfile swap swap defaults 0 0
```

5. Verify Swap Activation:

```
sudo swapon --show
```

Example output:

```
NAME      TYPE  SIZE   USED PRIO
/swapfile file 1024M  507M   -1
```

You can also use:

```
sudo free -h
```

Example output:

```
total        used        free      shared  buff/cache   available
Mem:           488M        158M         83M        2.3M        246M        217
Swap:          1.0G        506M        517M
```

This step is optional, but it helps avoid memory-related issues, especially on servers with limited RAM.

Last updated on October 11, 2024

Step 4: Setting Up CapRover CLI

To manage your CapRover installation, you need to install Node.js on your local machine. Node.js allows you to access NPM (Node Package Manager), which is essential for installing the CapRover CLI. You can download Node.js from the official website.

Video Guide

Install CapRover CLI

After installing Node.js, open your terminal and run the following command to install the CapRover CLI:

```
npm install -g caprover
```

Configure Your Server

Once the CapRover CLI is installed, you'll need to set up your server. Use the following command to start the setup process:

```
caprover serversetup
```

During this process, you'll be prompted to enter your root domain. This root domain should match the domain or subdomain you configured to point to your server's IP address.

For example, if you set up ***.apps.yourdomain.com** as a wildcard domain in your DNS settings, your root domain would be **`apps.yourdomain.com`**. This allows CapRover to manage subdomains like `captain.apps.yourdomain.com` for the admin dashboard and other apps.

This command will guide you through several steps to configure your server. Remember to choose a secure password during this process.

Logging into CapRover

Now that everything is configured, you can log in to your CapRover server. Make sure your domain points to your server's IP address. To access the dashboard, go to:

```
https://captain.apps.yourdomain.com
```

Replace `yourdomain.com` with your actual domain name. Use the password you set during the CLI setup to log in.

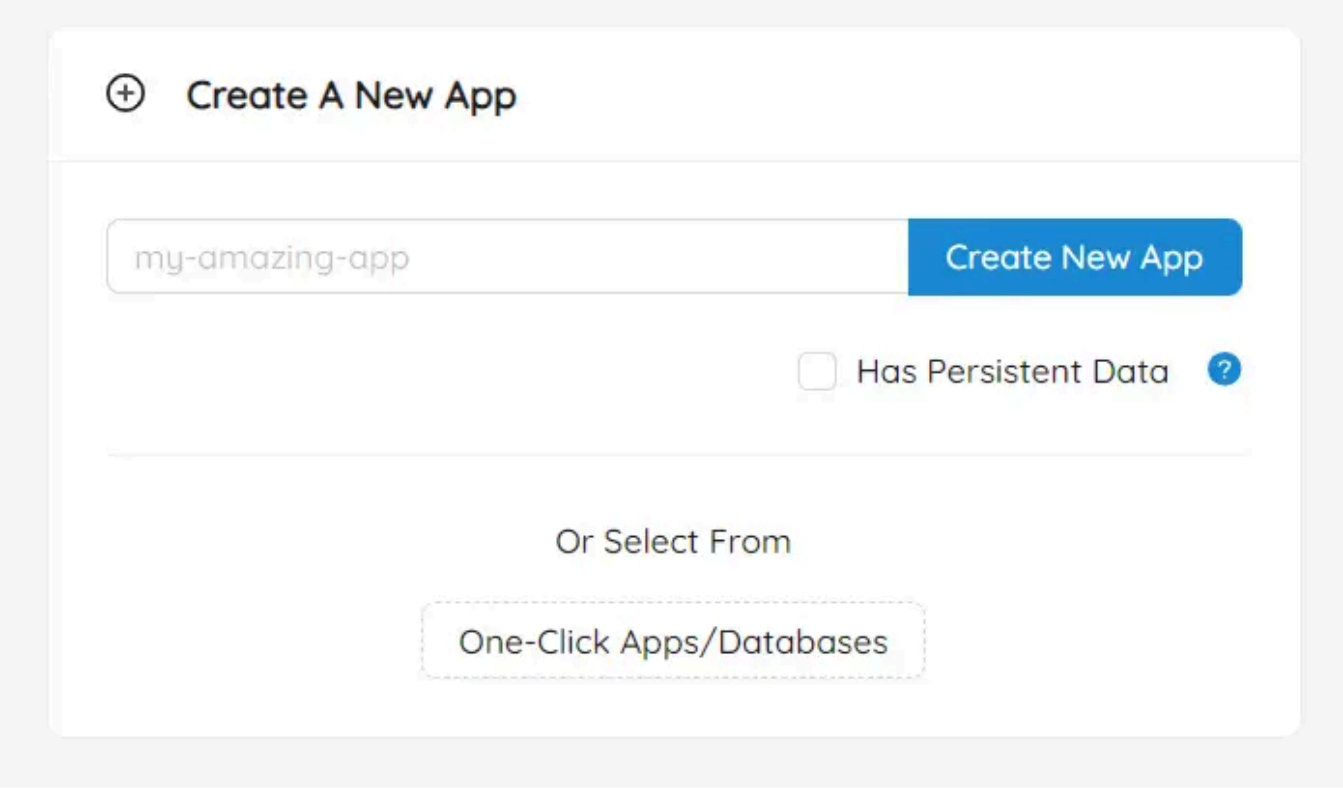
Last updated on October 11, 2024

Step 5: Deploy MySQL Database

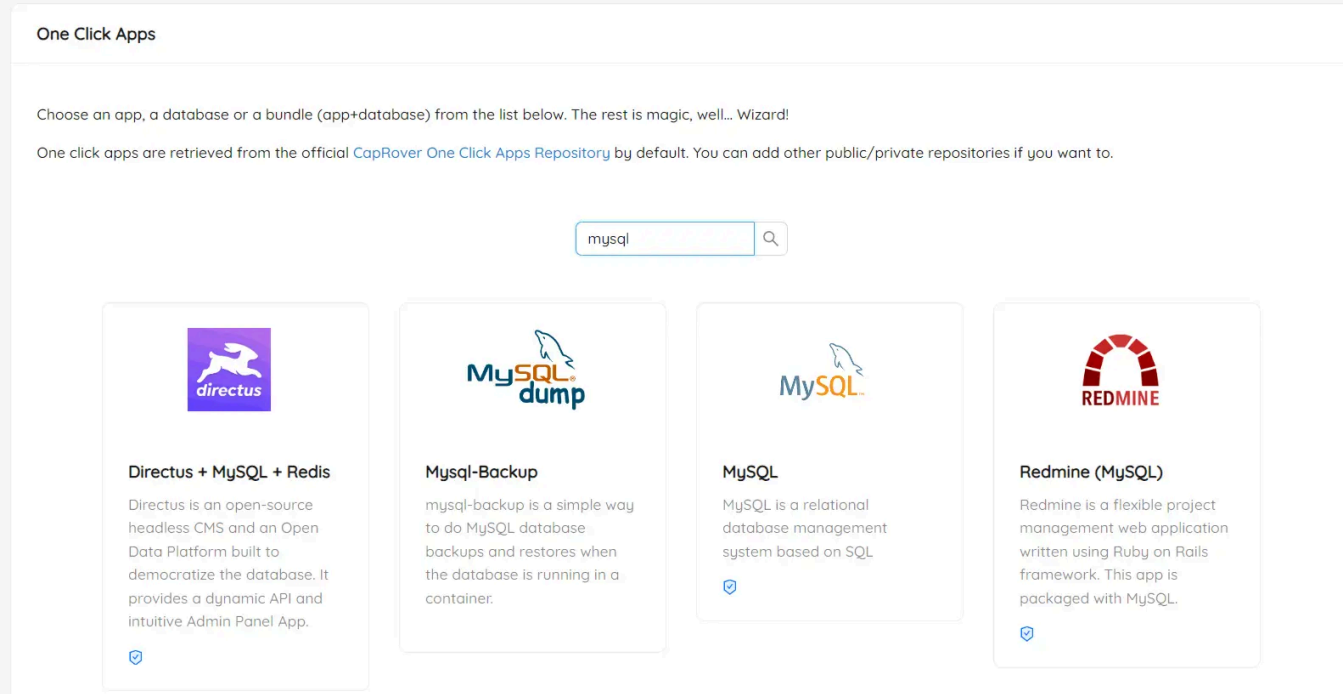
Video Guide

5.1 Create a New App

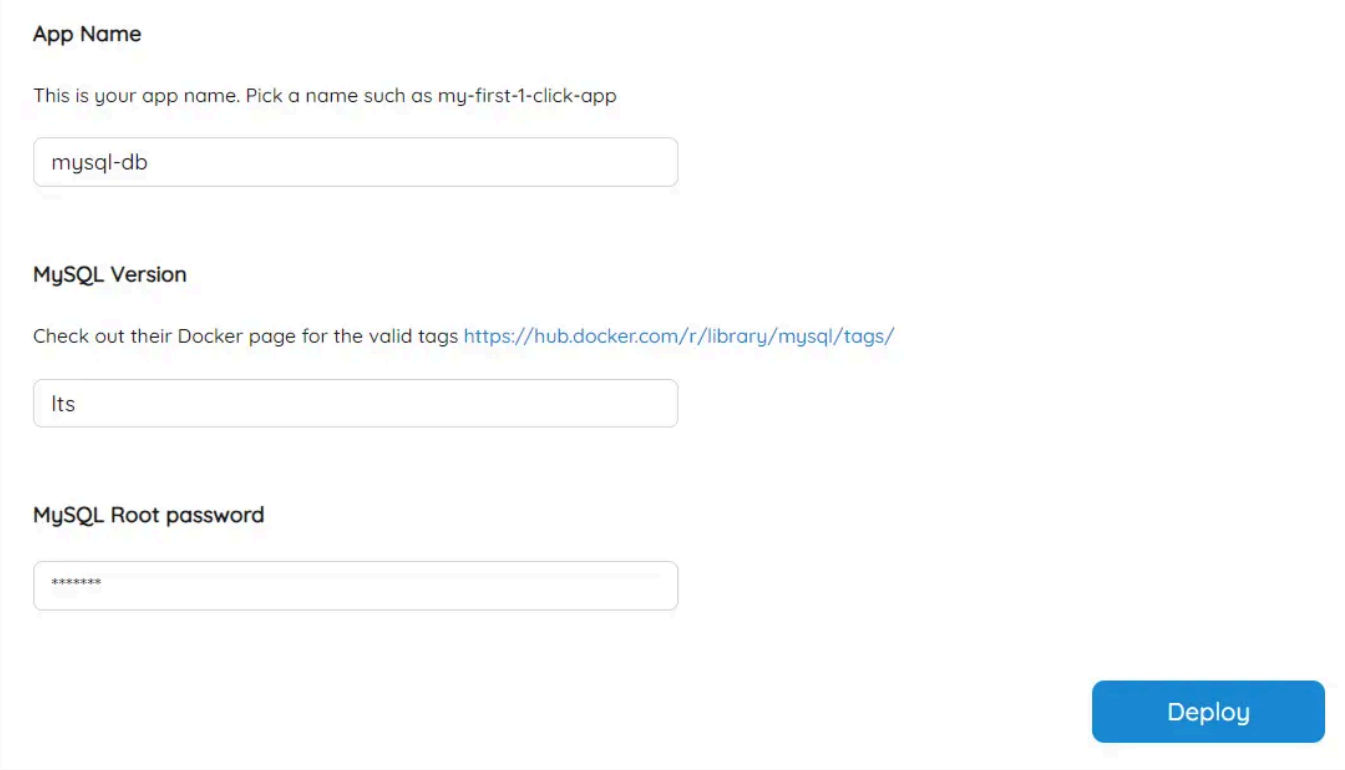
- Login to your Caprover dashboard by visiting `https://captain.apps.yourdomain.com`, replace `yourdomain.com` with your actual domain.
- In the Caprover dashboard, click on **Apps** in the left menu.
- Navigate to **One-Click Apps/Databases**.



- Search for or select **MySQL** from the list of available apps.

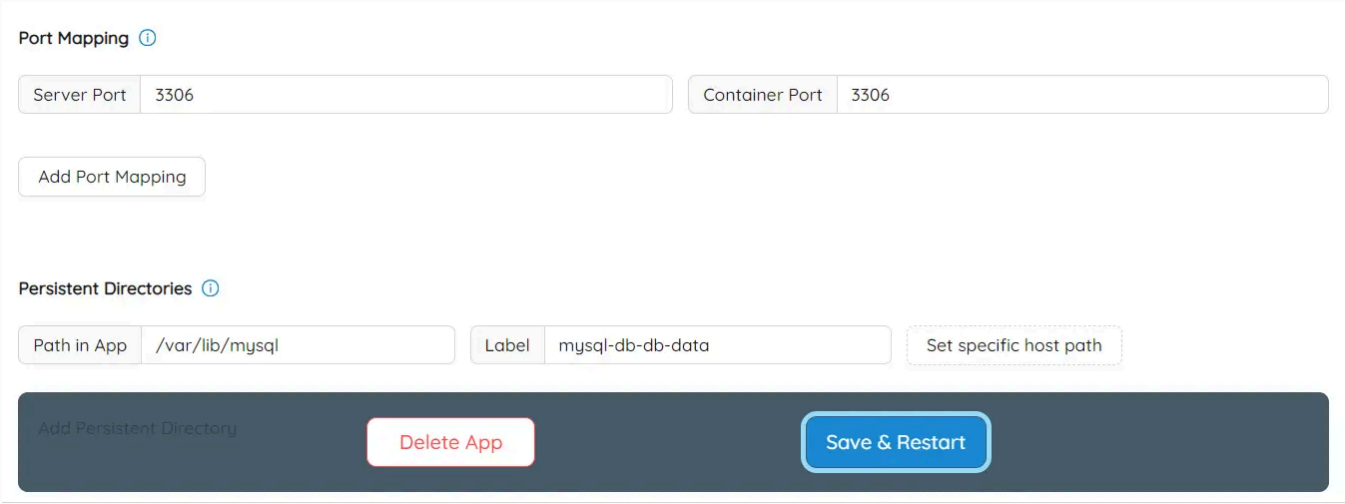


- Fill in the required details:
  - **App Name**: (e.g., `mysql-db`)
  - **MySQL Root Password**: Choose a strong password.
  - **MySQL Version**: Prefer the LTS version for stability.
- Click **Deploy** to initiate the process.

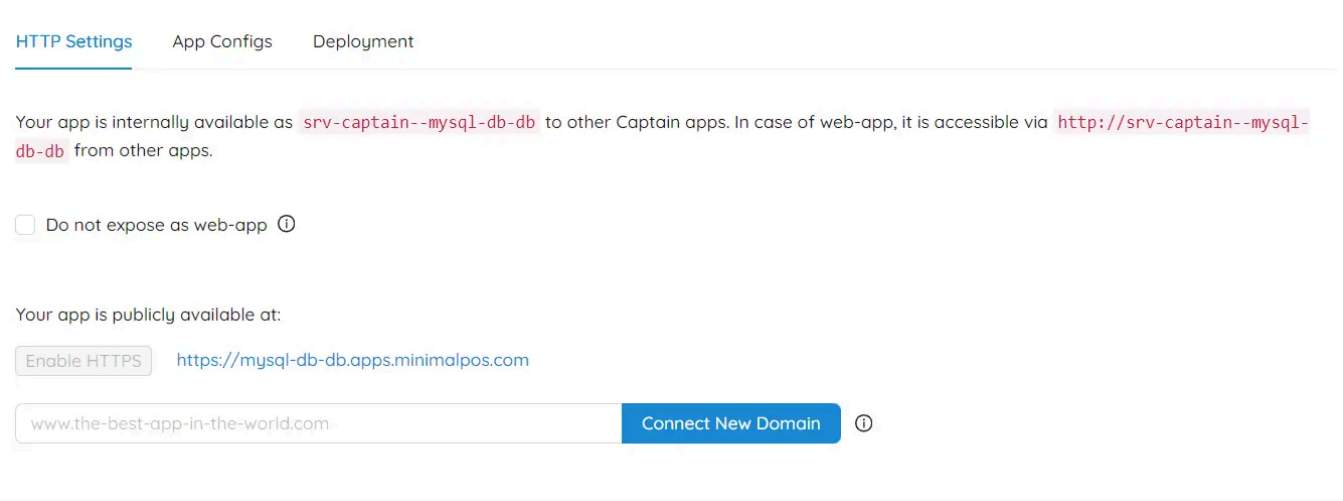


5.2 Access Database Credentials

- After the deployment is complete, return to the **Apps** section.
- Click on your newly created `mysql-db` app.
- Navigate to **App Configs** to set up the port mapping. Add the necessary port, then click **Save** and **Restart** to apply the changes.



- Next, Go to **HTTP Settings**:
  - Remove the option to not expose as a web app.
  - Enable **HTTPS** for secure connections.

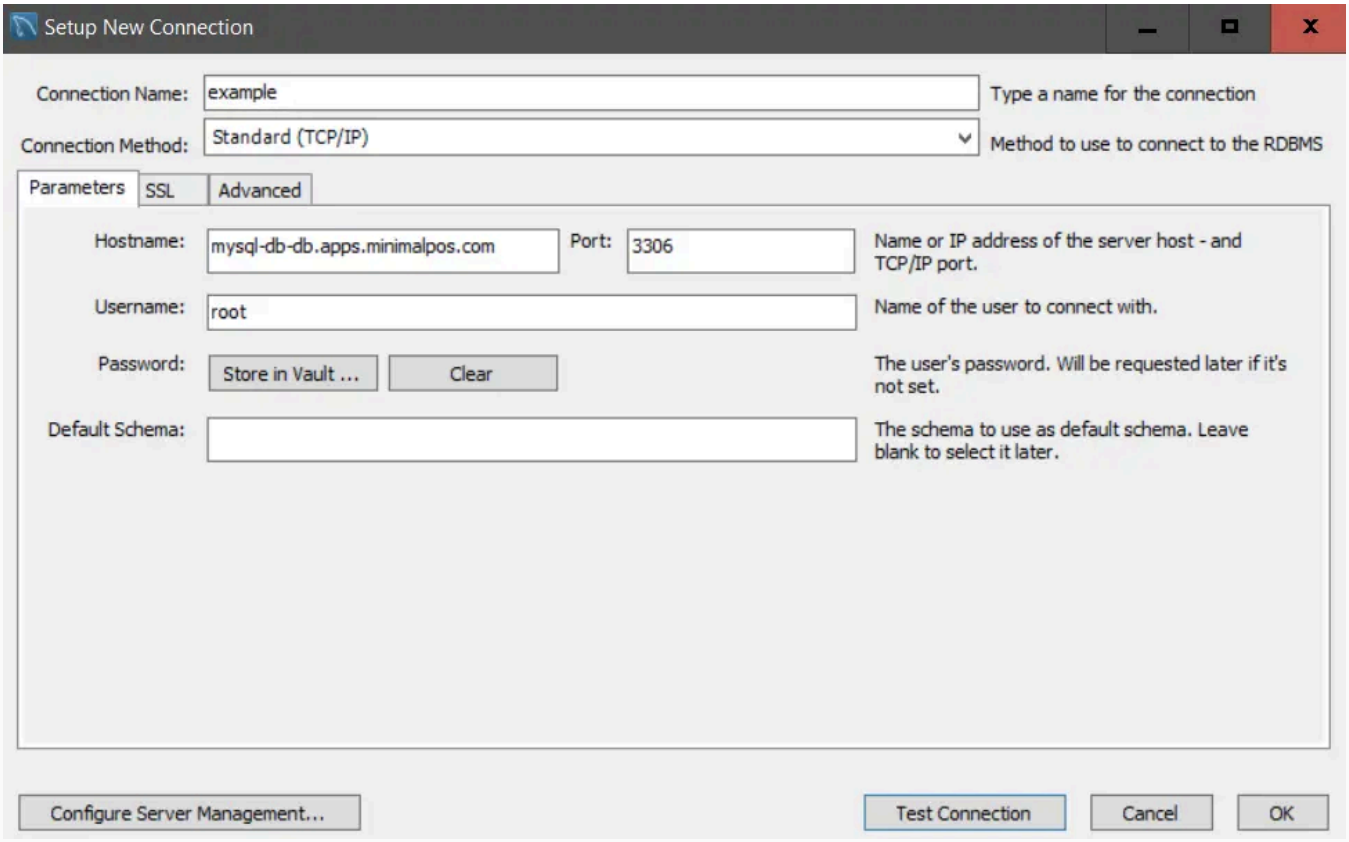


- Save & Restart to Apply Changes

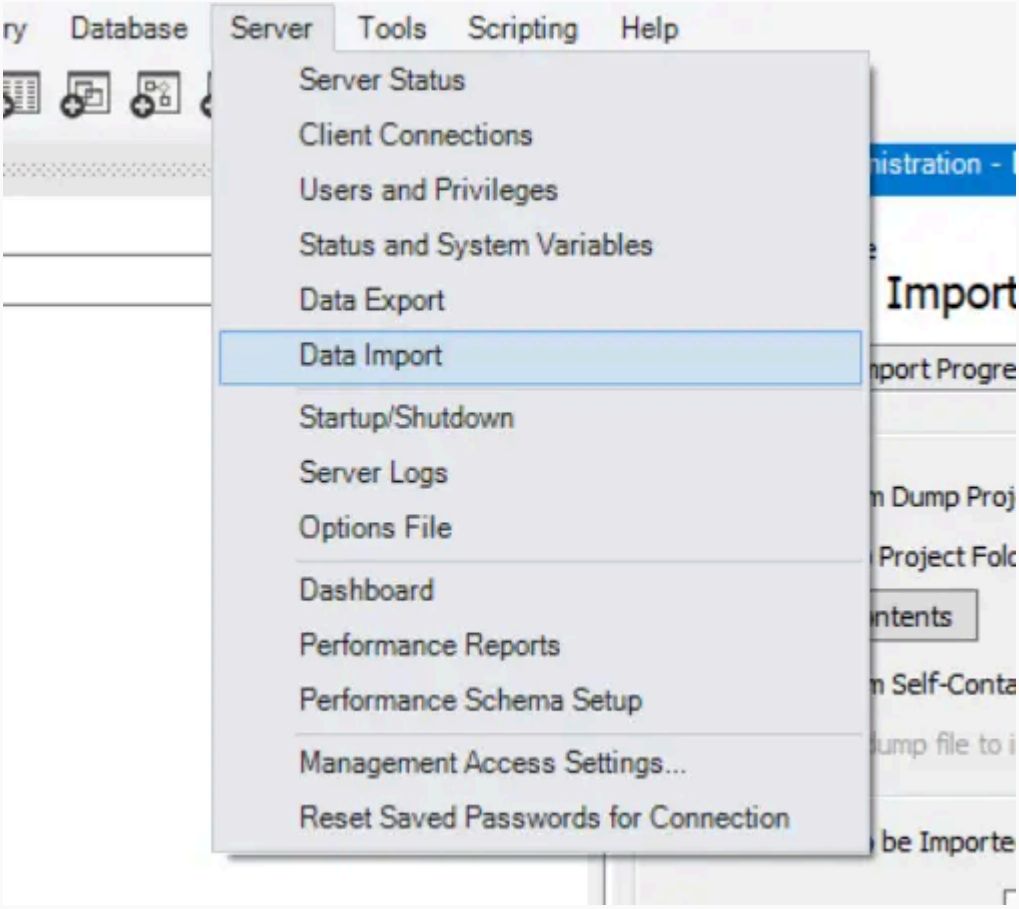
5.3 Connect to Your MySQL Database

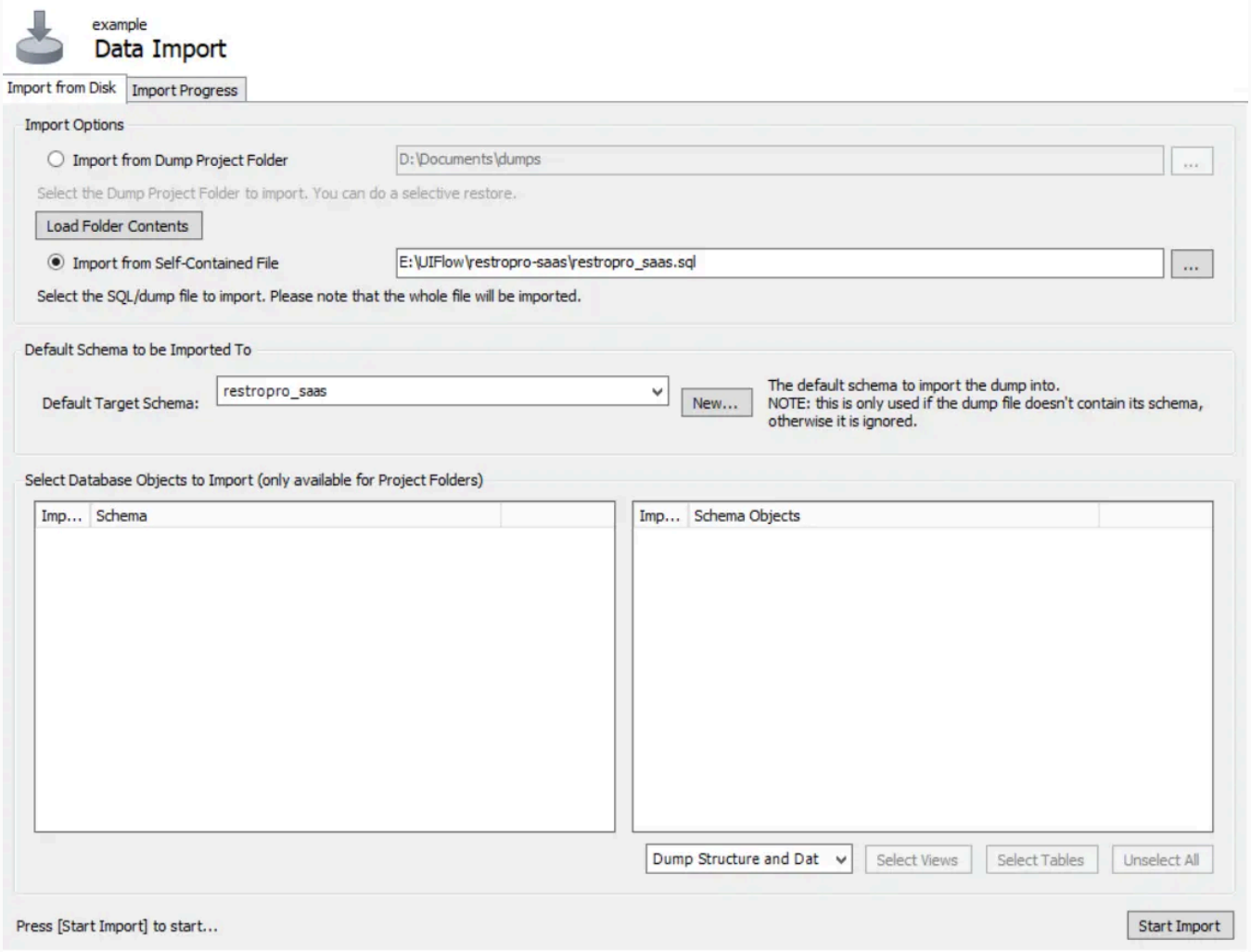
- Use a MySQL client like MySQL Workbench or any other MySQL Client to connect from your application using the following credentials:
  - **Hostname**: Displayed in **HTTP Settings** beside **Enable HTTPS**.

  - **Port**: `3306` (the default MySQL port).
- Create a new connection using the credentials you set earlier.



- After successfully setting up the connection, import your database file (e.g., `restropro_saas.sql`). Which is provided in the zip file that you downloaded.

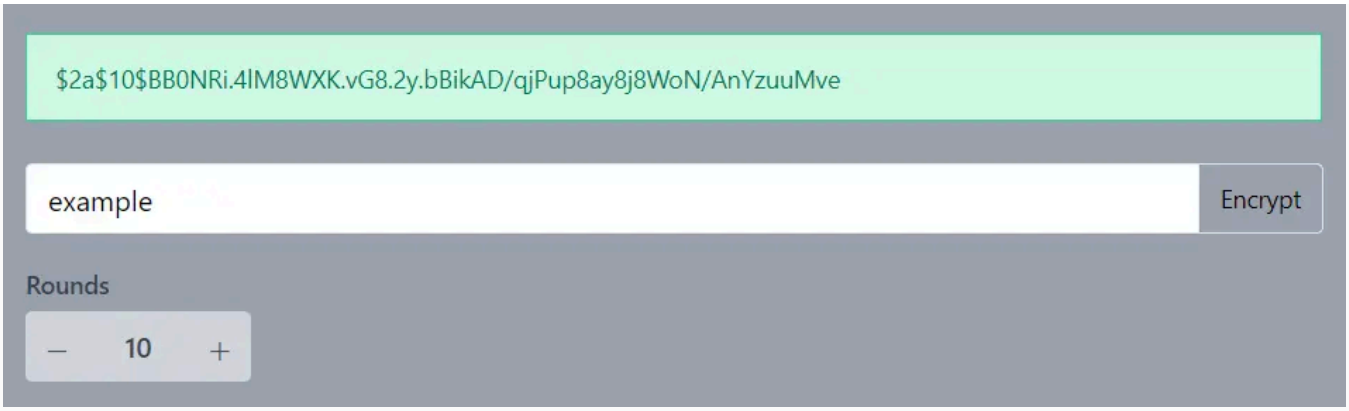




Congratulations! Your MySQL database has been successfully deployed and is ready for use. Enjoy managing your data with ease!

5.4: Add SuperAdmin User

To create superadmin user, first you will need to create encrypted password. to do so visit [bcrypt-generator] and set the number of **rounds to** `10`. Use this generated password in the insert query.




```
In the below given SQL Query, replace the following details:
YOUR_EMAIL
YOUR_ENCRYPTED_PASSWORD
YOUR_NAME
```

```sql
INSERT INTO `superadmins`
VALUES
(
  'YOUR_EMAIL',
  'YOUR_ENCRYPTED_PASSWORD',
  'YOUR_NAME'
);
```

Now open your MySQL Client, and paste & run this query.

> 🎉 You've successfully created superadmin user. to access the SuperAdmin Dashboard, your superadmin URL will look like this https://yourdomain.com/superadmin
>
> However, we still have Backend and Frontend setup pending so the URL will not be accessible yet.

Last updated on October 11, 2024

Step 6: Deploy Your Backend Application

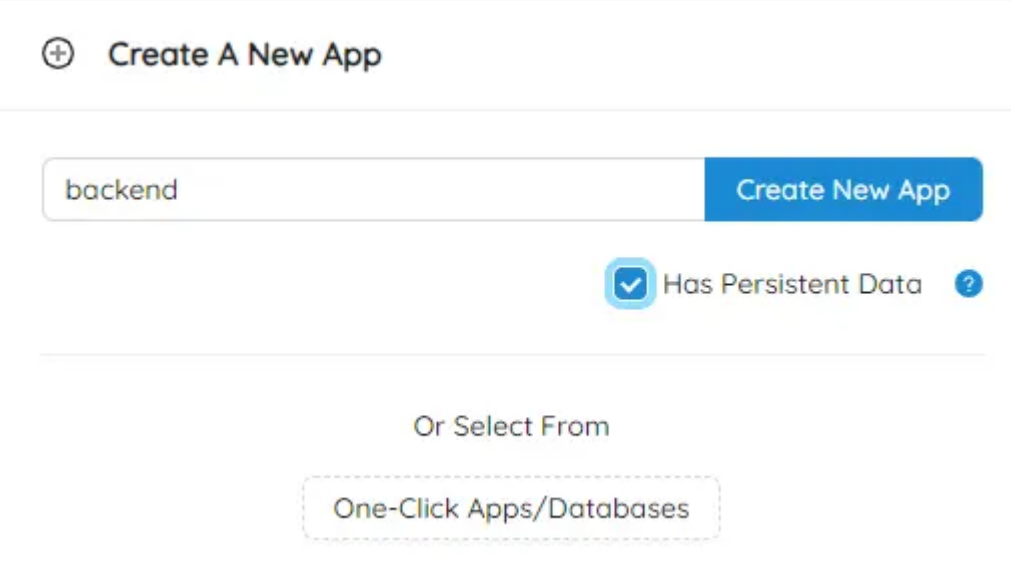
Video Guide

Step6 setup backend

6.1 Create a New App

- In the dashboard, click on **Apps** in the left menu.
- Click on the **Create New App** button.
- Enter a name for your app (e.g., `backend`) and click **Create New App**.

- Ensure you select the option for persistent data.



6.2 Setup .env file in App Config

- Configure Your Environment Variables: Each environment variable defines specific settings for your app. Here's a general breakdown of the important variables and how they might change based on your app's domain:

6.2.1 Database URL

- This URL connects your app to the database. It typically includes the database type (mysql in our case), username, password, host, port, and database name.

```
DATABASE_URL='mysql://[username]:[password]@[host]:[port]/[database_name]'
```

Replace the host, password as per configured in new app created. We get the host in HTTP Settings of the created DB (mysql-db) app as shown.

Eg :

```
DATABASE_URL='mysql://root:YOURPASSWORD@srv-captain--mysql-db-db:3306/restropro_saas'
```

6.2.2 Jwt Secret

- The JWT_SECRET is used to sign JSON Web Tokens (JWT) for authentication. Set this value as a secure, unique string to ensure the safety of your app

6.2.3 Frontend Domain & Cookie

- These values define your frontend's URL and its cookie domain. Update these according to the domain name where your frontend is hosted. For example: If frontend is hosted on `https://yourdomain.com`, the cookie value will be `yourdomain.com`.

```
FRONTEND_DOMAIN="https://yourdomain.com"
FRONTEND_DOMAIN_COOKIE="yourdomain.com"
```

6.2.4 Stripe Credentials

- To configure subscriptions for the app, follow the mentioned steps & then get your stripe credentails - STRIPE_SECRET & STRIPE_WEBHOOK_SECRET as required.

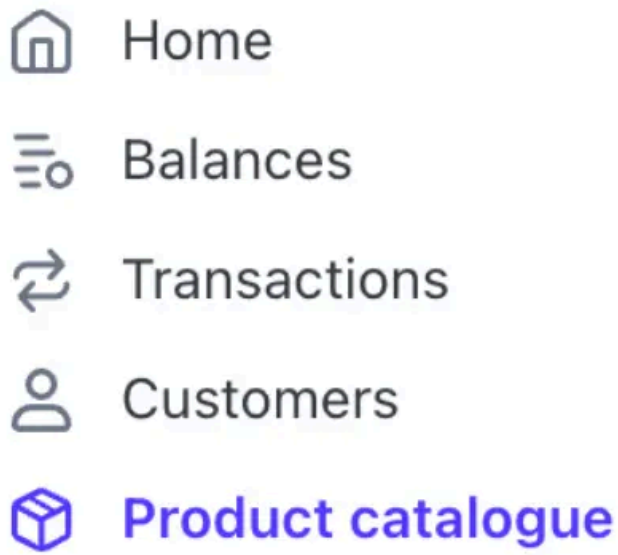
6.2.4.1 Stripe Subscription Setup

- Goto Stripe and set up your account according to your business registration type. Once you activate your account, follow the given procedure.
- Goto Stripe Dashboard and Select “Product catalogue”, then Add new product.

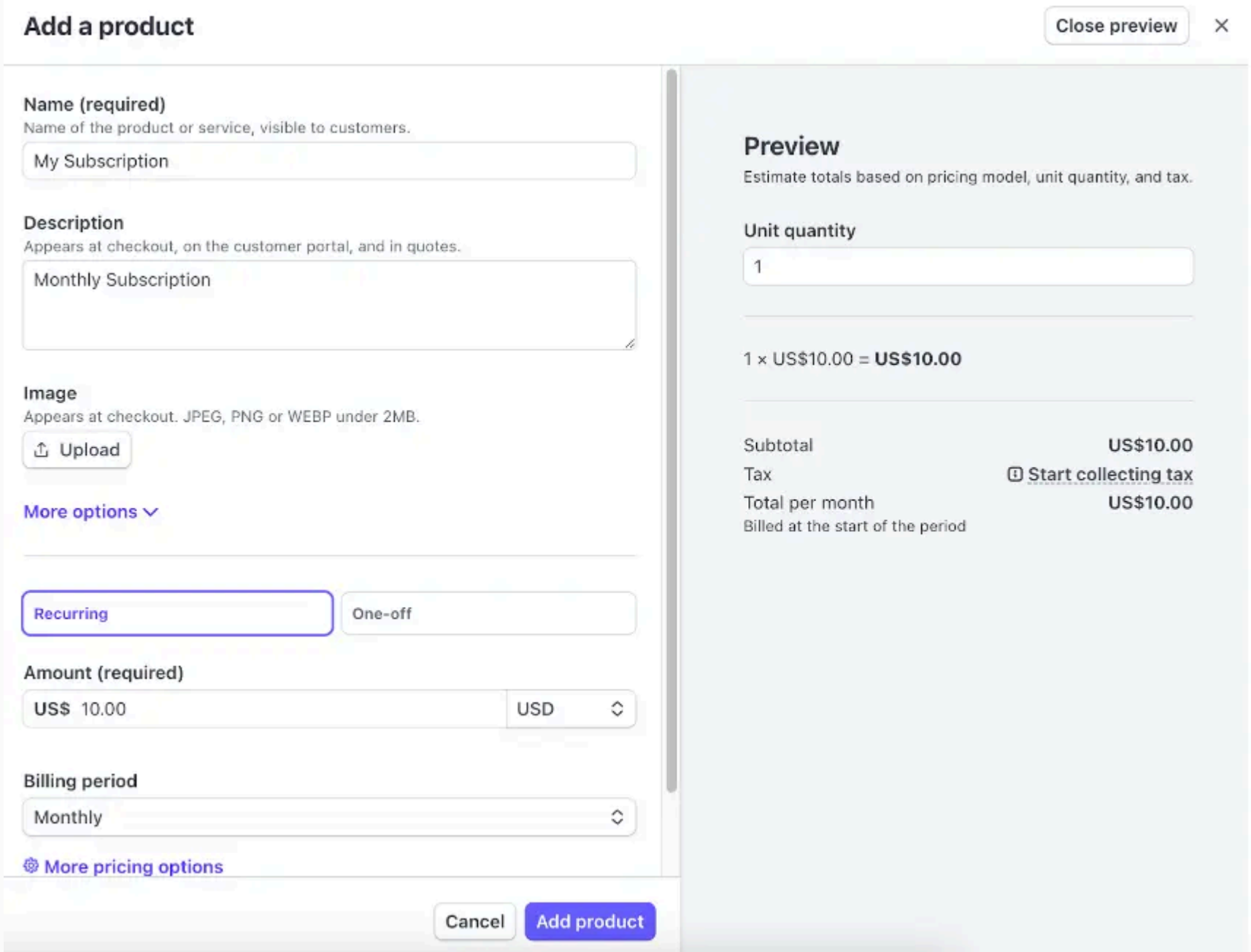
2. Stripe Subscription Setup

Goto stripe.com and set up your account according to your business registration type. Once you activate your account, follow the given procedure.

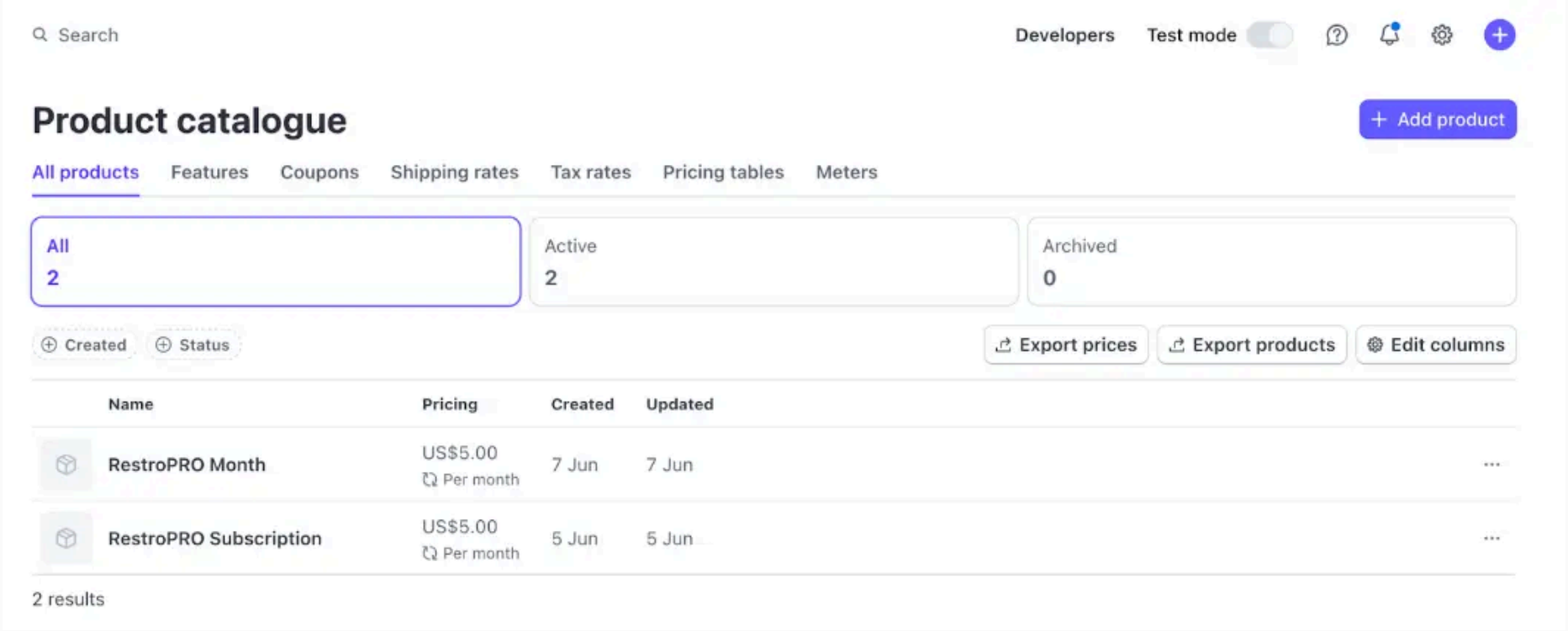
Goto Stripe Dashboard and Select “Product catalogue”, then Add new product.



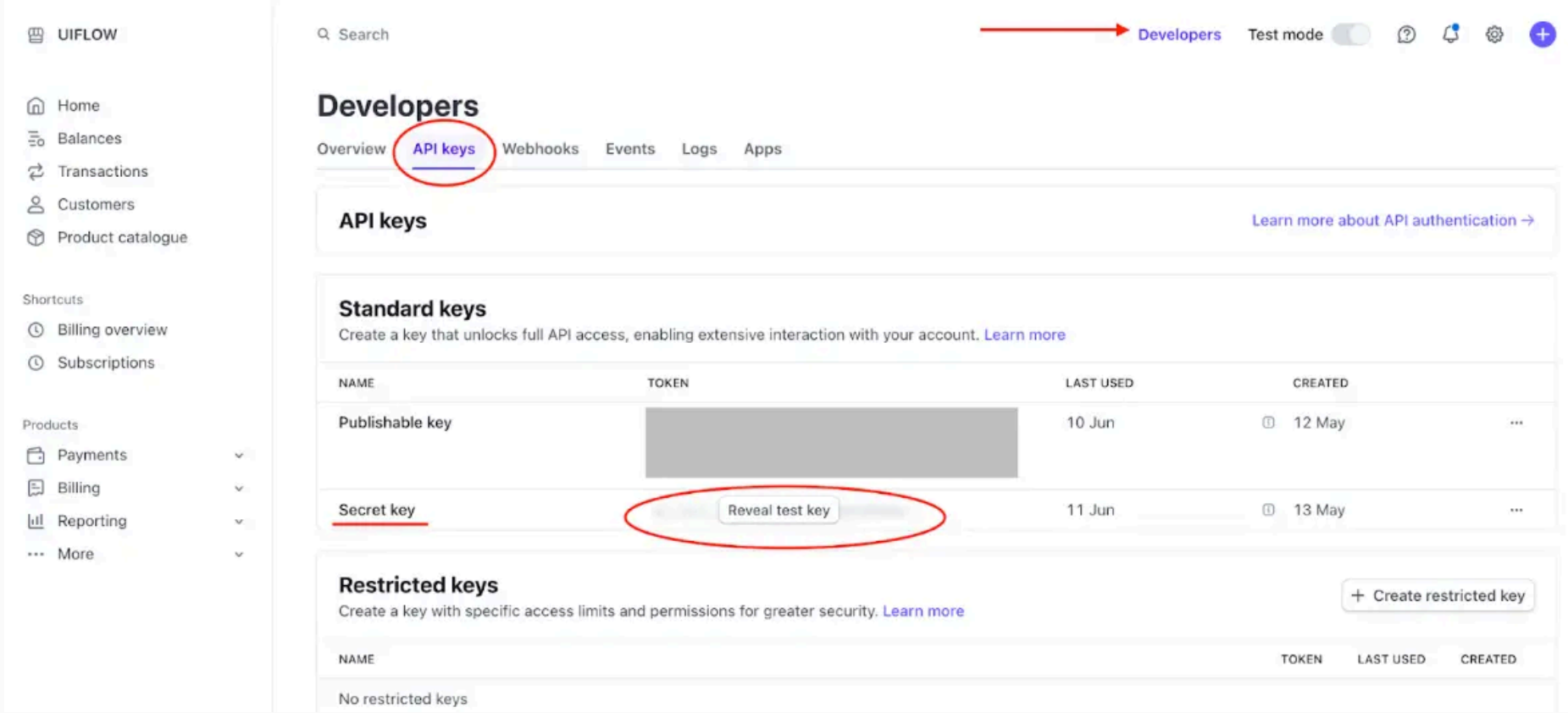
- Fill the details as per your business requirements.



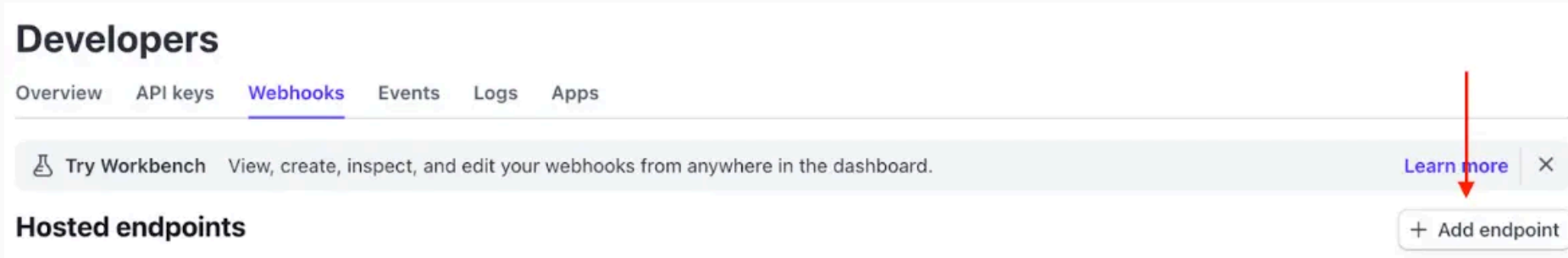
- Once you create the Subscription Product, you will see it like this.



- Now go back to Stripe Dashboard and open the developers page, you will get API keys from there. Look for a secret key, and copy it. This will be your `STRIPE_SECRET`.

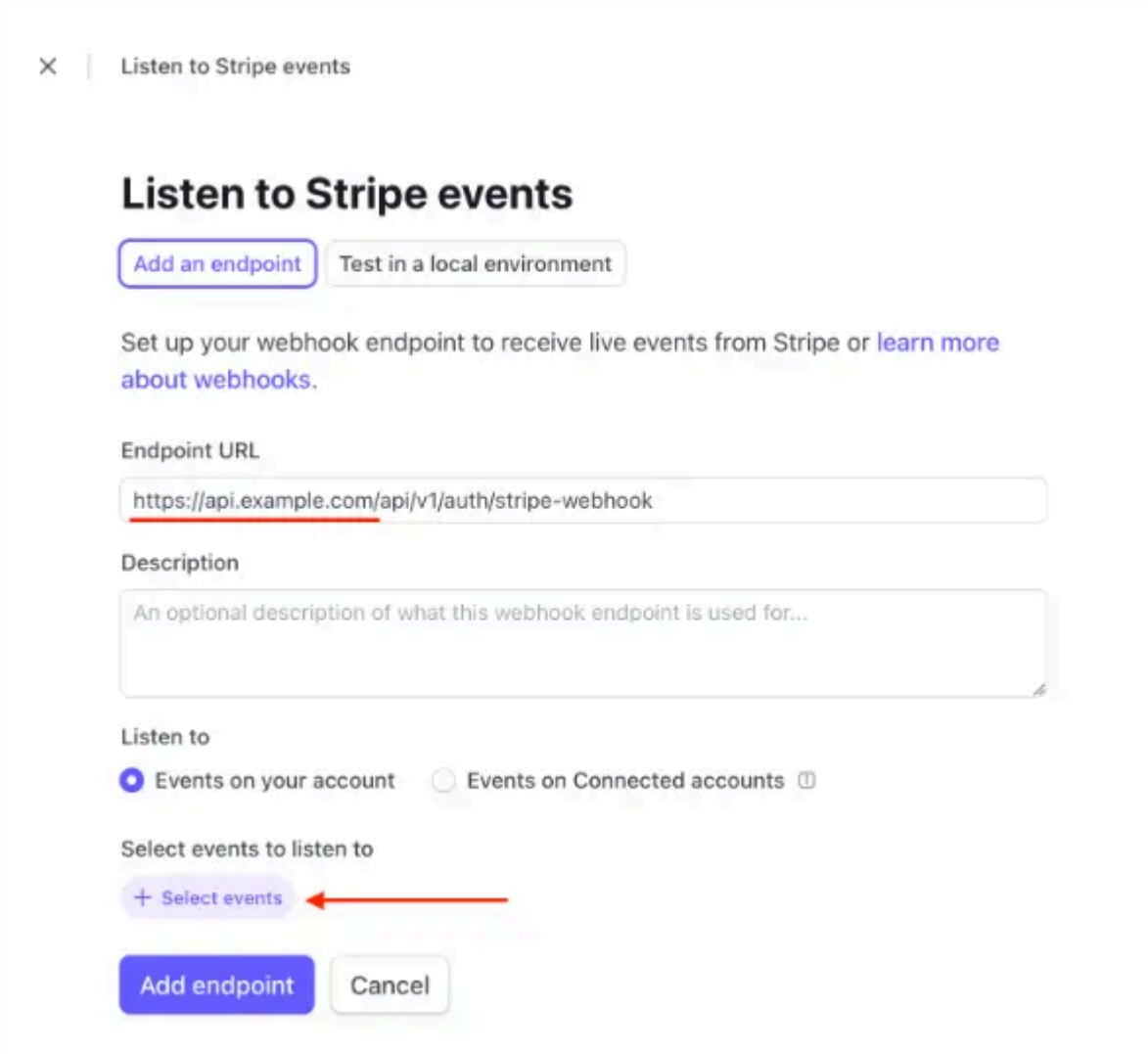


- Now we will set up the webhook. For that open Stripe Dashboard and goto developers page again. Goto Webhooks Tab, then click on Add endpoint.

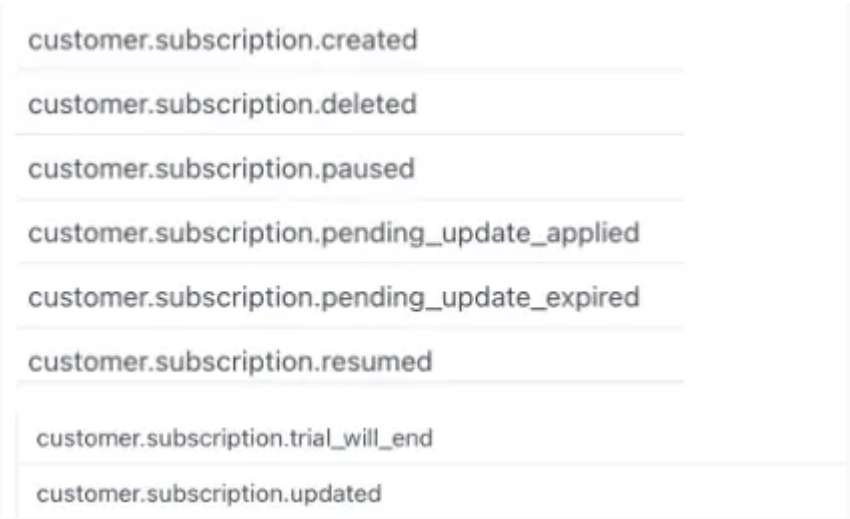


- Then provide the webhook URL, this will be our backend route webhook handler, so we're yet to setup the backend, so you just need to provide the url. For example if i'm setting Backend on domain "api.example.com" then the webhook URL will look like

this.Webhook URL: https://api.example.com/api/v1/auth/stripe-webhook. Replace the domain, to your backend domain. After placing endpoint URL, click on the ‘select events to listen to’



- Look for the following events and select them.



- Once you add it open the created webhook endpoint in Stripe Dashboard.
- Click on the 'Reveal' to copy the Webhook Signing Secret.

- Paste the copied secret in STRIPE_WEBHOOK_SECRET

```
STRIPE_SECRET=YOUR_STRIPE_SECRET
STRIPE_WEBHOOK_SECRET=YOUR_STRIPE_WEBHOOK_SECRET
```

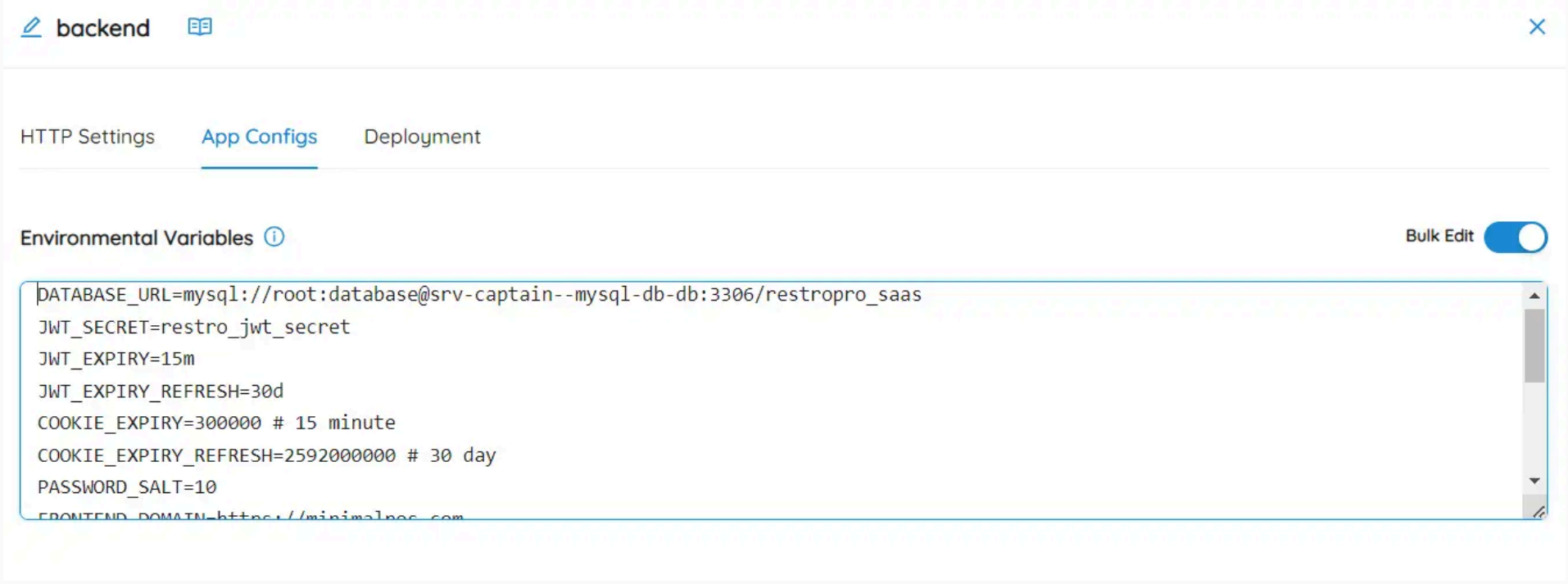
6.2.5 SMTP Credentials

- These values configure email sending. Adjust them based on your SMTP provider. Update the host, port, username, and password to match your email service.

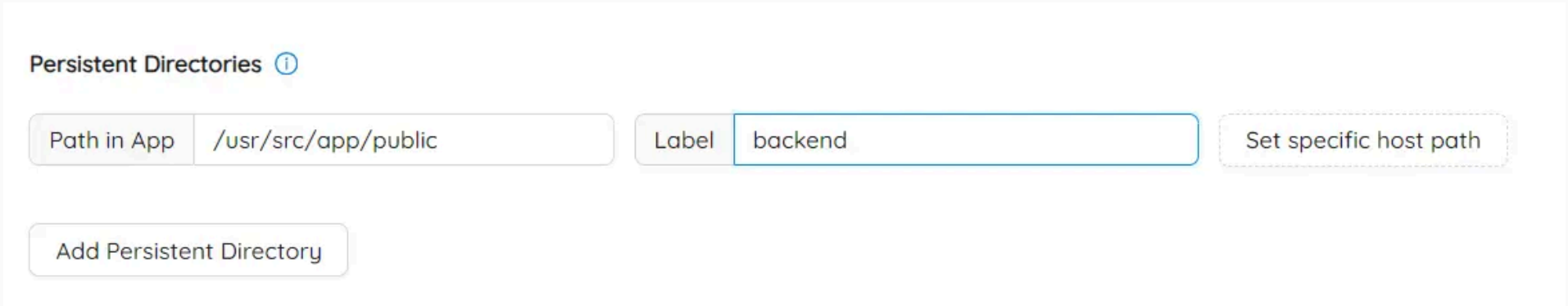
Sample .env

```
DATABASE_URL=mysql://root:thisismypassword@srv-captain--mysql-db-db:3306/restropro_saas
JWT_SECRET=SECRET
JWT_EXPIRY=15m
JWT_EXPIRY_REFRESH=30d
COOKIE_EXPIRY=300000
COOKIE_EXPIRY_REFRESH=2592000000
PASSWORD_SALT=10
FRONTEND_DOMAIN=https://yourdomain.com
FRONTEND_DOMAIN_COOKIE=yourdomain.com
STRIPE_SECRET=sk_live_51PFbvQSCWiCS3BjbcjbcjoWGPCZkgLEmtRksfOoTpbRwPQ0H84OrD0r000QNu0Zkm
STRIPE_WEBHOOK_SECRET=whsec_nqjVQsMQP7PHshrWbkTbdjsbjvhZWl33W85sWaMz
SMTP_HOST=sandbox.smtp.mailtrap.io
SMTP_PORT=2525
SMTP_EMAIL=4d049cab28855f
SMTP_PASSWORD=d388ajdsb2ddfae7
ENCRYPTION_KEY=uiflow
```

- Navigate to the **App Configs** section of your newly created app.
- Paste the contents of your `.env` file into the environmental variables section using **Bulk Edit** option
- ensure all environment variables are set correctly.

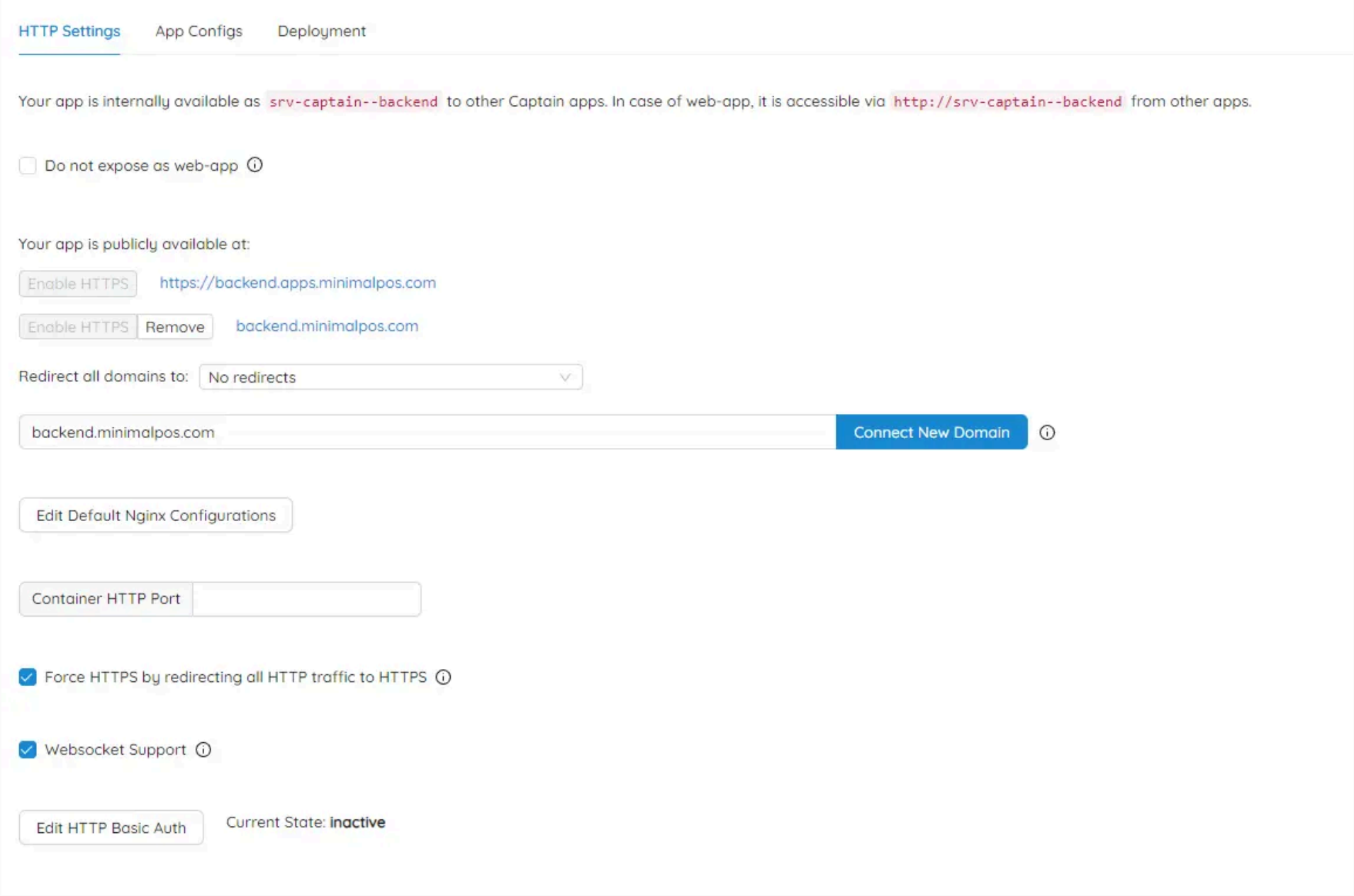


- Also add the persistent directory as shown



6.3 Connect New Domain in HTTP Settings

- Navigate to the **HTTP Settings** section.
- Enter your custom domain (e.g., `backend.yourdomain.com`) and click on **Connect New Domain**.
- Ensure to enable **HTTPS** for secure communication.
- Select the option for **Force Https** & **WebSocket Support** to allow real-time communication.



6.4 CapRover Deploy

Here are two convenient methods for deploying your application to CapRover: Drag & Drop, which allows for quick uploads, and Git, which enables seamless version control integration. Choose the method that best fits your workflow. However caprover supports more methods of deployments, you can explore more at here.

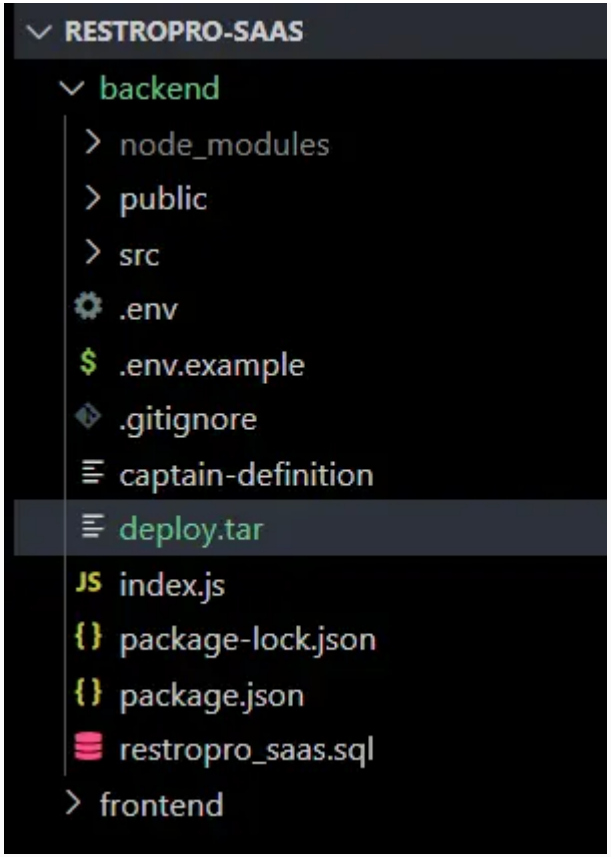
6.4.1 Method 1: Drag & Drop

Package Your Application

- Open the terminal preferably Git Bash. Navigate to where your backend folder is located.
- Create a tarball (.tar) containing the source code and necessary files for deployment (e.g., Dockerfile, app files, etc.) using the below command.

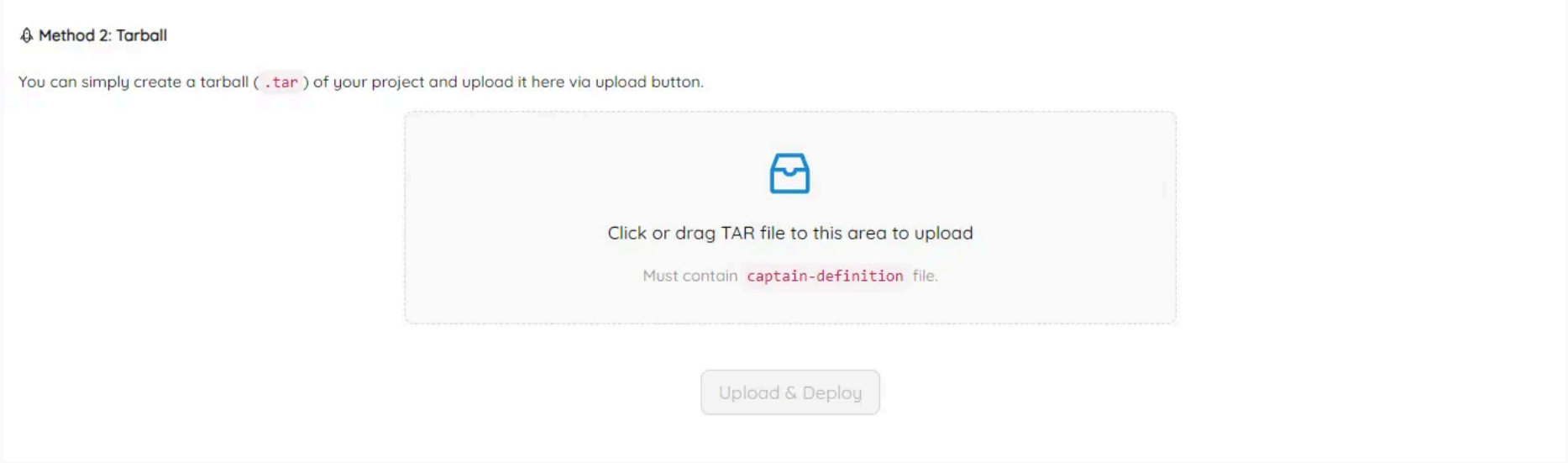
```
tar -cvf ./deploy.tar --exclude='.map' --exclude='node_modules' --exclude='.git' ./captain-definition ./
```

- A new file deploy.tar will be created in the same directory. This is the file to be uploaded for deployment.

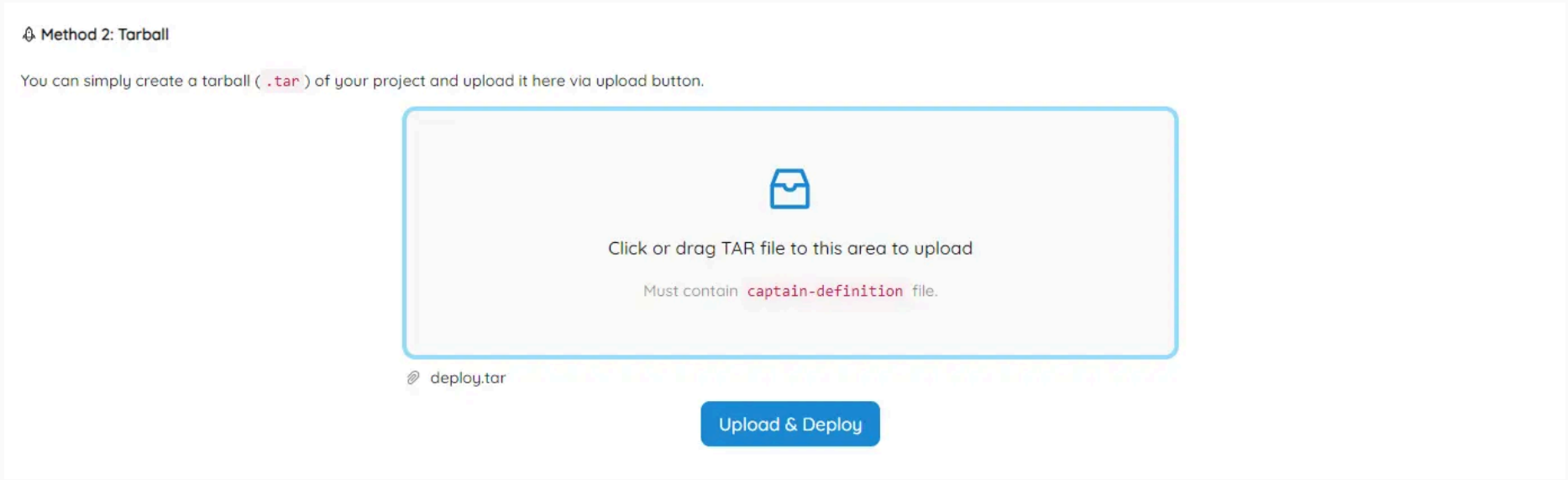


Drag & Drop to deploy

- Go the deployments & Scroll to Tarball section.



- Simply drag your generated file deploy.tar into the “Upload & Deploy” section of the app page.



- CapRover will handle the deployment process based on your uploaded package.

6.4.2 Method 2: Using Git

This method uses git to deploy your backend application to CapRover with the latest changes from your selected branch.

- Open your terminal preferably Git Bash and navigate to the backend folder where your Git repository is configured.
- Make sure to select the appropriate branch (e.g., `main`) that you want to push changes from.
- Run the following command to deploy your application:

```
caprover deploy
```

- On Success, you will get this output.

```
Deployed successfully backend
App is available at https://backend.apps.minimalpos.com
```

🎉 Congratulations! Your backend application has been successfully deployed on CapRover and is ready to handle requests. Enjoy building and scaling your application with ease!

Last updated on October 12, 2024

Step 7: Deploy Your Frontend Application

Video Guide

Optional: Customize Your App's Logo and Name

Before proceeding with the deployment, you might want to customize your app's branding by changing the logo and app name. This step is completely your wish but can help personalize your application for your business.

Changing the Logo

- Go to vite.config file & change the icons.

> ℹ️ In the `vite.config.js` file, two different logo sizes are specified for use in various contexts, such as web app icons or progressive web app (PWA) installations:
>
> - **192x192 logo**: This smaller version (`logo_192.png`) is typically used for mobile and app icons. Its size makes it optimal for displaying on smaller screens or as a favicon in browsers.
> - **512x512 logo**: The larger version (`logo.png`) is used for high-resolution displays or larger contexts, such as app splash screens or more detailed icons.

```
icons: [
  {
    src: "/logo_192.png",
    sizes: "192x192",
    type: "image/png",
  },
  {
    src: "/logo.png",
    sizes: "512x512",
    type: "image/png",
  },
],
```

- Next, change the favicon from `index.html` file. To change the favicon, simply replace the favicon.png file with your desired image.

> ℹ️ The favicon is the small icon displayed in browser tabs and bookmark

```
<!doctype html>
<html lang="en">
  <head>
    <meta charset="UTF-8" />
    <link rel="icon" type="image/png" href="/favicon.png" />
    <meta name="viewport" content="width=device-width, initial-scale=1.0" />
    <title>Restro PRO - App for Restaurant, Cafe, Hotel, Bar.</title>
  </head>
  <body>
    <div id="root"></div>
    <script type="module" src="/src/main.jsx"></script>
  </body>
</html>
```

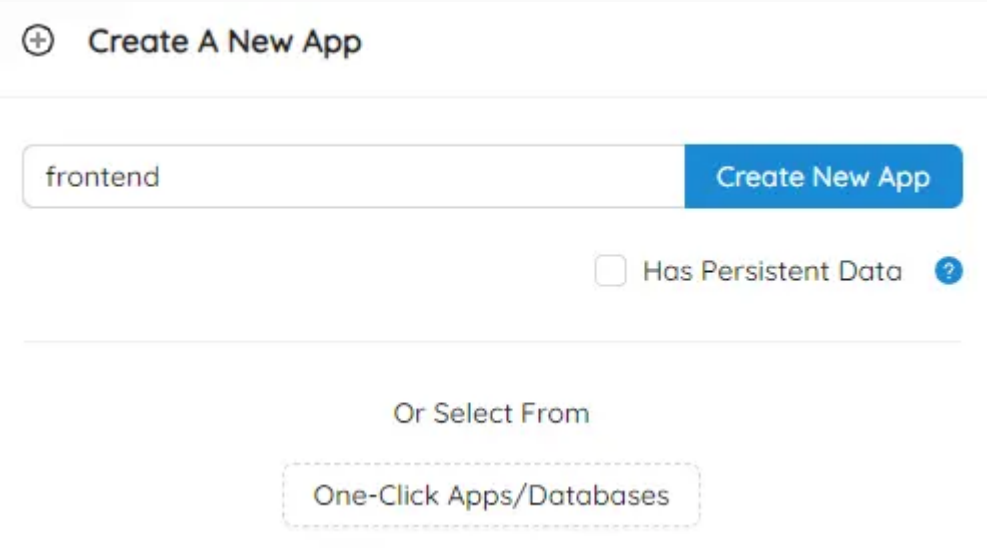
Updating the App Name

- To customize the app's name, simply open the index.html file and modify the `<title>` tag. This will update the name displayed in the browser tab when users visit your app. Adjust it to reflect your app's branding or purpose.

7.1 Create a New App

- In the dashboard, click on **Apps** in the left menu.

- Click on the **Create New App** button.
- Enter a name for your app (e.g., `frontend`) and click **Create New App**.

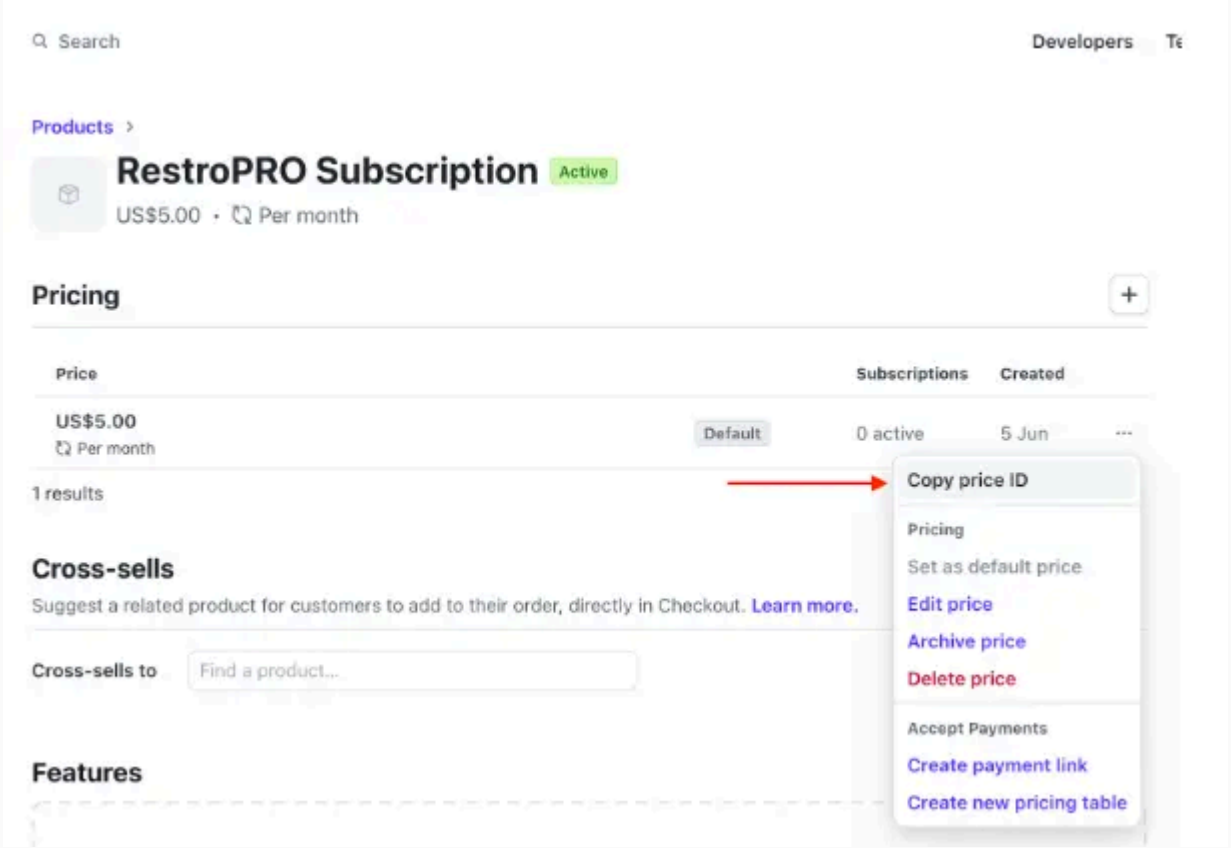


7.2 Setup .env file in App Config

- Configure Your Environment Variables: Each environment variable defines specific settings for your app. Here's a general breakdown of the important variables and how they might change based on your app's domain

7.2.1 Stripe Credentials

- Go to stripe & click on your created Subscription Product as made earlier. Look for Pricing, and click on options three dots.
- Set subscriptionPrice to the price that you want for the subscription. Copy the price id. This will be your `VITE_STRIPE_PRODUCT_SUBSCRIPTION_KEY`

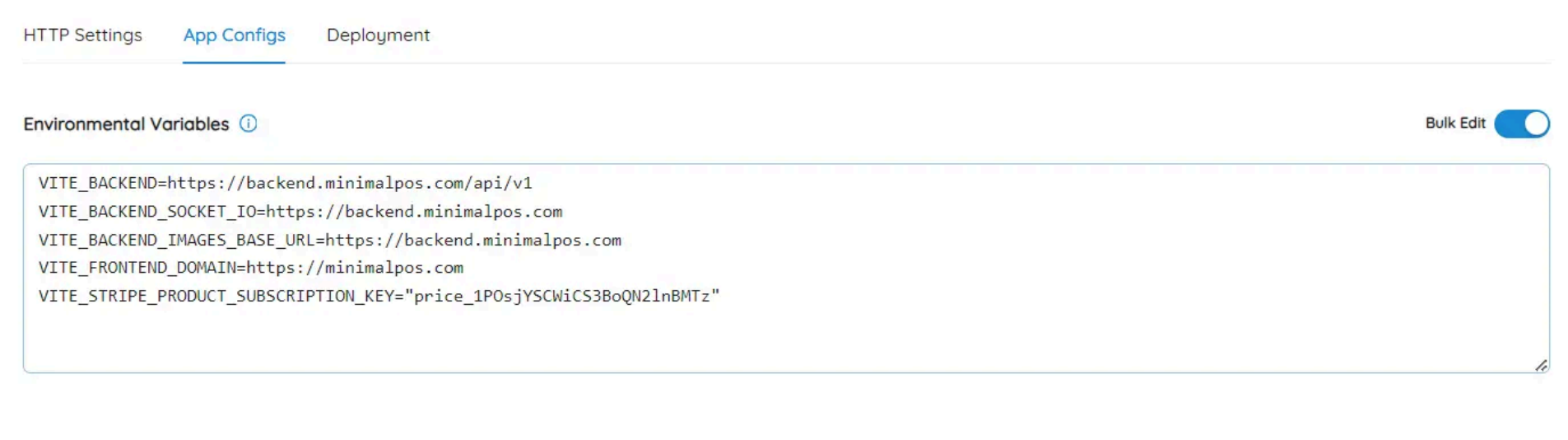


Sample .env

```
VITE_BACKEND=https://backend.YOURDOMAIN.com/api/v1
VITE_BACKEND_SOCKET_IO=https://backend.YOURDOMAIN.com
VITE_BACKEND_IMAGES_BASE_URL=https://backend.YOURDOMAIN.com
VITE_FRONTEND_DOMAIN=https://YOURDOMAIN.com
VITE_STRIPE_PRODUCT_SUBSCRIPTION_KEY=price_1POsjYSCWiCS3Basdhuiwheuwh
```

- Navigate to the **App Configs** section of your newly created app.

- Paste the contents of your `.env` file into the environmental variables section using **Bulk Edit**.
- ensure all environment variables are set correctly.



7.3 Connect New Domain in HTTP Settings

- Navigate to the **HTTP Settings** section.
- Enter your domain (e.g., `yourdomain.com`) and click on **Connect New Domain**.
- Ensure to enable **HTTPS** for secure communication.
- Select the option for **Force Https** & **WebSocket Support** to allow real-time communication.

Your app is publicly available at:

Enable HTTPS https://frontend.apps.minimalpos.com

Enable HTTPS Remove minimalpos.com

Redirect all domains to: No redirects

www.the-best-app-in-the-world.com Connect New Domain

Edit Default Nginx Configurations

Container HTTP Port

Force HTTPS by redirecting all HTTP traffic to HTTPS

Websocket Support

Edit HTTP Basic Auth Current State: **inactive**

7.4 CapRover Deploy

Here are two convenient methods for deploying your application to CapRover: Drag & Drop, which allows for quick uploads, and Git, which enables seamless version control integration. Choose the method that best fits your workflow. However caprover supports more methods of deployments, you can explore more at here.

7.4.1 Method 1: Drag & Drop

Package Your Application

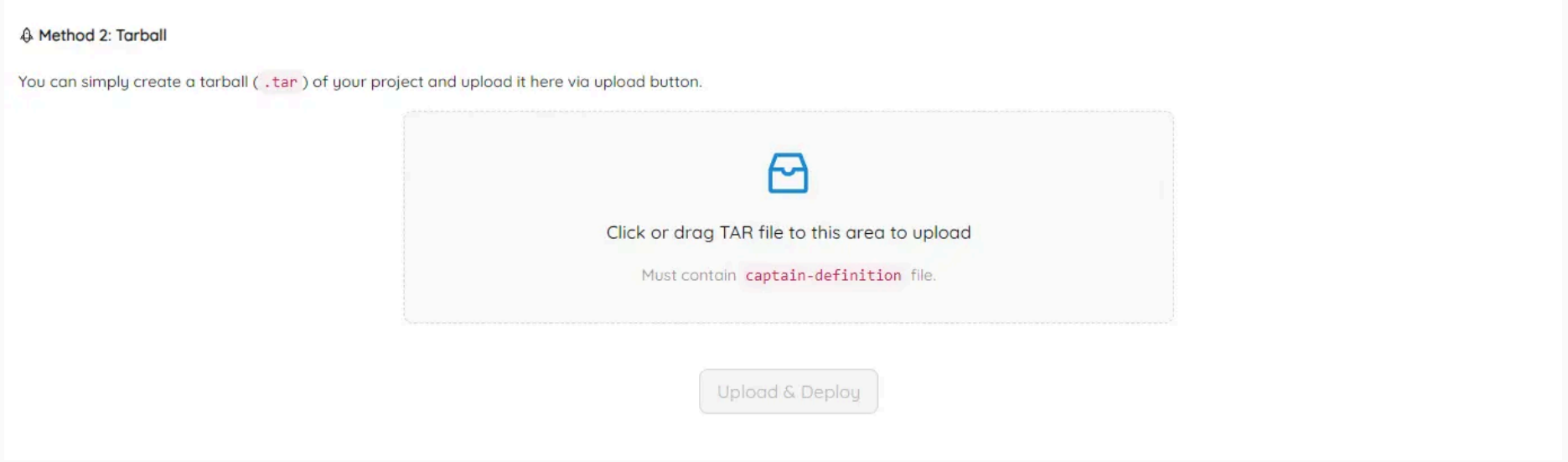
- Open the terminal preferably Git Bash. Navigate to where your frontend folder is located.
- Create a tarball (.tar) containing the source code and necessary files for deployment (e.g., Dockerfile, app files, etc.) using the below command.

```
tar -cvf ./deploy.tar --exclude='.map' --exclude='node_modules' --exclude='.git' ./captain-definition ./
```

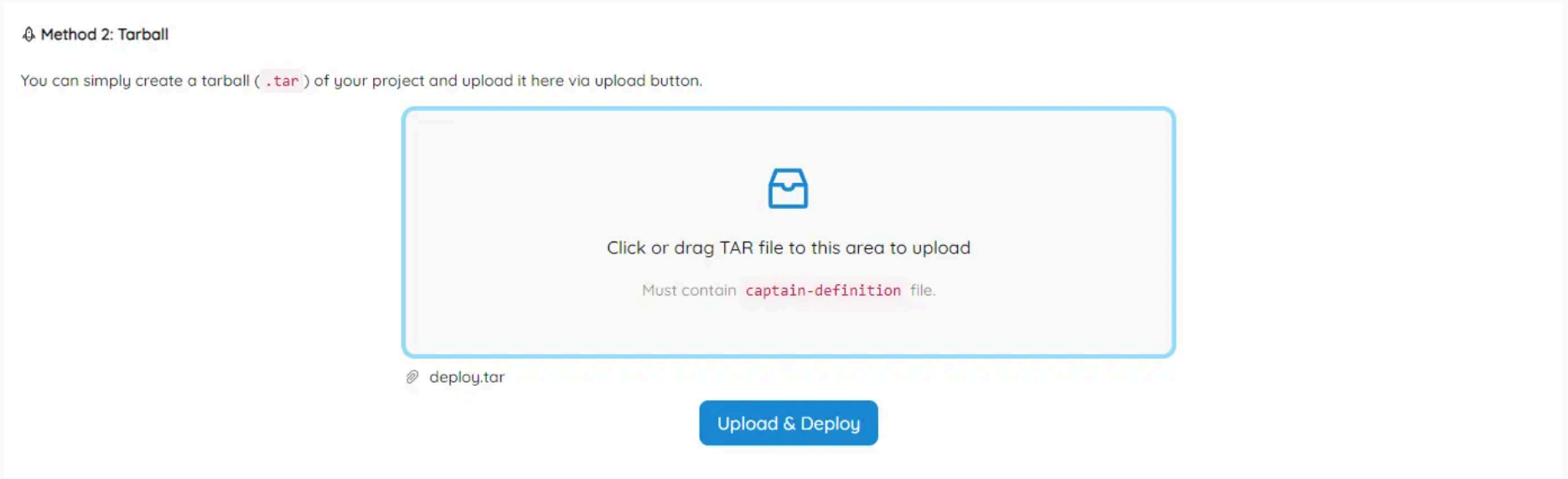
- A new file deploy.tar will be created in the same directory. This is the file to be uploaded for deployment.

Drag & Drop to deploy

- Go the deployments & Scroll to Tarball section.



- Simply drag your .tar into the “Upload & Deploy” section of the app page.



- CapRover will handle the deployment process based on your uploaded package.

7.4.2 Method 2: Using Git

- Open your terminal and navigate to the frontend folder where your Git repository is configured.
- Make sure to select the appropriate branch (e.g., `main`) that you want to push changes from.
- Run the following command to deploy your application:

```
caprover deploy
```

🎉 Congratulations! Your Frontend application has been successfully deployed on CapRover and is ready to handle requests. Enjoy building and scaling your application with ease!

Last updated on October 12, 2024