How to Monitor Containers in Docker?

written by sysadmin | 10 May 2025

After you run containers in Docker on your server or your Docker Host, you should monitor all existing containers to find out the performance of each container.

Problem

How to monitor containers in Docker?

Solution

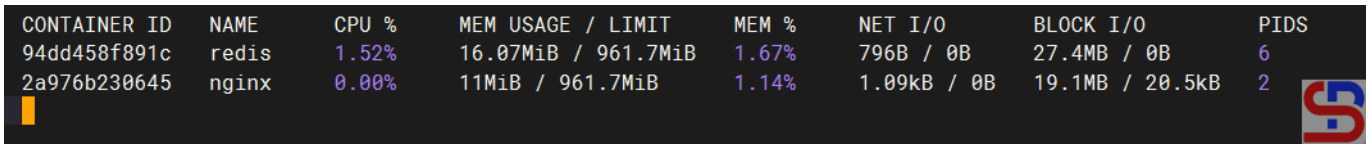
There are 2 methods for container monitors in Docker:

A. Via CLI

In CLI, to monitor all containers in Docker, you can use the command:

```
docker stats
```

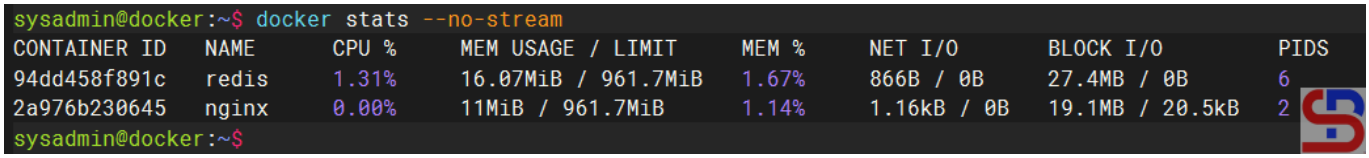
You will see the display as below:



Using the docker stats command

From the image above, you can see that the command displays the results in streaming, and to exit from the command above, press **Ctrl+Z** or **Ctrl-C**. If you don't want to display the results in streaming mode, then use the command below:

```
docker stats --no-stream
```



Display monitor containers in Docker without stream

B. Via Website

If you want to monitor Docker via a website, you can use the Portainer tool. Portainer is a tool for managing containers through a browser that can support Docker host, Docker Swarm, Nomad, and Kubernetes. It has 2 components, namely Portainer Server, which is used to manage containers, networks, and environments, and Portainer Agent is the component installed on another Docker system to enable communication with the server. Portainer has 2 editions, namely Portainer Business Edition or PBE and Portainer Community Edition or PCE, where both editions at the time of this writing (April 2025) have version 2.27.3. This article will discuss how to install Portainer Community Edition. Here are the steps:

1. Create Docker Volume

Type the command below to create a new volume in Docker:

```
docker volume create portainer_data
```

2. Install Portainer

Type the command below to install the latest version of Portainer:

```
docker run -d \
-p 8000:8000 \
-p 9443:9443 \
--name portainer \
--restart=always \
-v /var/run/docker.sock:/var/run/docker.sock \
-v portainer_data:/data portainer/portainer-ce
```

```
sysadmin@docker:~$ docker run -d \
-p 8000:8000 \
-p 9443:9443 \
--name portainer \
--restart=always \
-v /var/run/docker.sock:/var/run/docker.sock \
-v portainer_data:/data portainer/portainer-ce
Unable to find image 'portainer/portainer-ce:latest' locally
latest: Pulling from portainer/portainer-ce
e2e06b27b87e: Pull complete
1fed1531b45b: Pull complete
04de093ad5ed: Pull complete
86a7cce72d42: Pull complete
e09df2601140: Pull complete
eae3ebf29ea8: Pull complete
c12aa3fbd31a: Pull complete
f111bda3f9a6: Pull complete
81021110ed01: Pull complete
4f4fb700ef54: Pull complete
Digest: sha256:7f10a26bfdda3fc58295ea09b860117ecd86a642d66fb94ce1f27a4c221d4649
Status: Downloaded newer image for portainer/portainer-ce:latest
12496e61ee8addcff1a3a18ff95ade6802c951622fe6e4a6e2b23a030d6bb082
sysadmin@docker:~$
```
Install portainer

3. Check the Portainer

The following command can be used to determine whether Portainer is operating or not:

```
docker ps
```

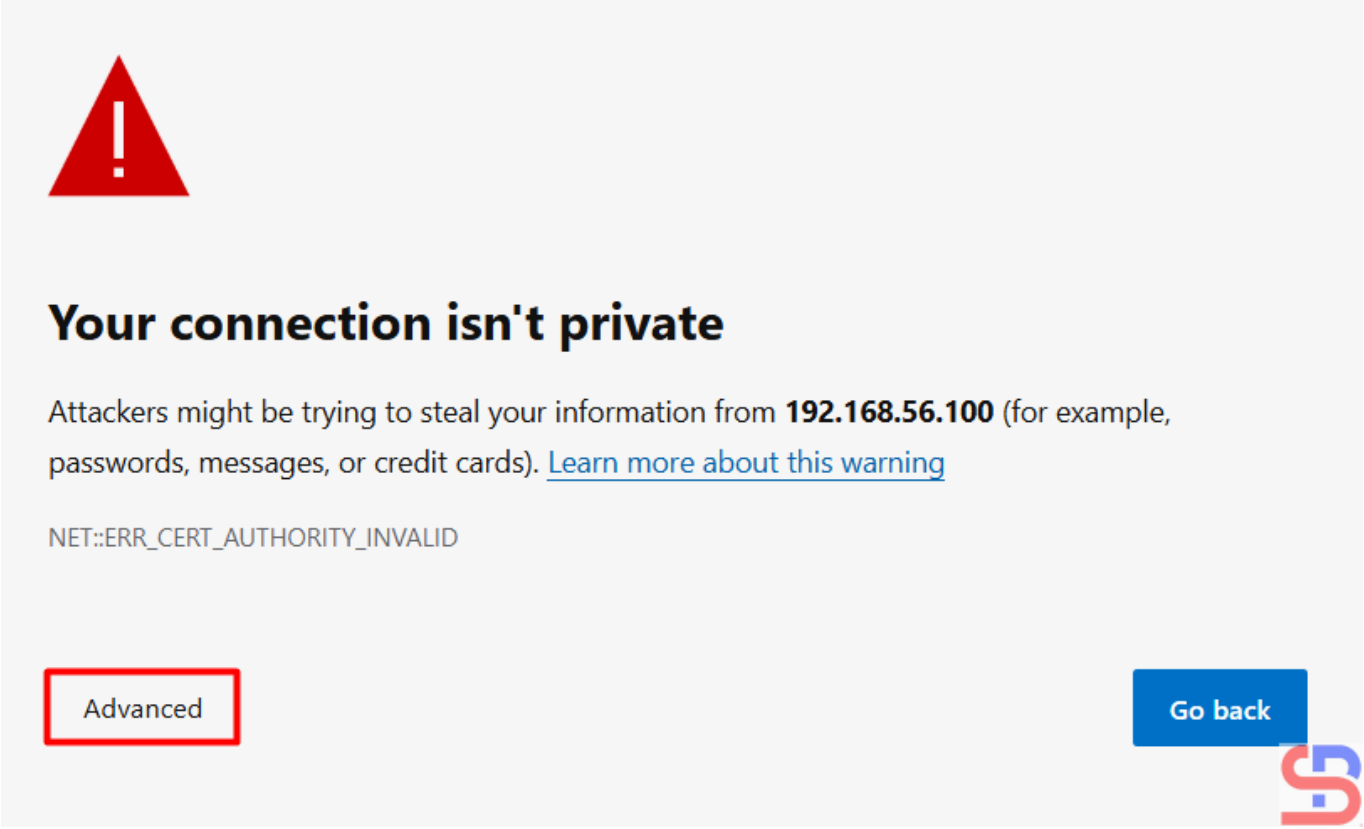
```
sysadmin@docker:~$ docker ps
CONTAINER ID   IMAGE                    COMMAND                  CREATED          STATUS          PORTS
                                                                      NAMES
12496e61ee8a   portainer/portainer-ce   "/portainer"             4 minutes ago    Up 4 minutes    0.0.0.0:8000->8000/tcp,
:::8000->8000/tcp, 0.0.0.0:9443->9443/tcp, :::9443->9443/tcp, 9000/tcp   portainer
94dd458f891c   redis                    "docker-entrypoint.s…"   29 minutes ago   Up 29 minutes   6379/tcp
                                                                      redis
2a976b230645   nginx                    "/docker-entrypoint.…"   31 minutes ago   Up 31 minutes   80/tcp
                                                                      nginx
sysadmin@docker:~$
```
Check the container

4. Access the Portainer

After that, open your browser and type:

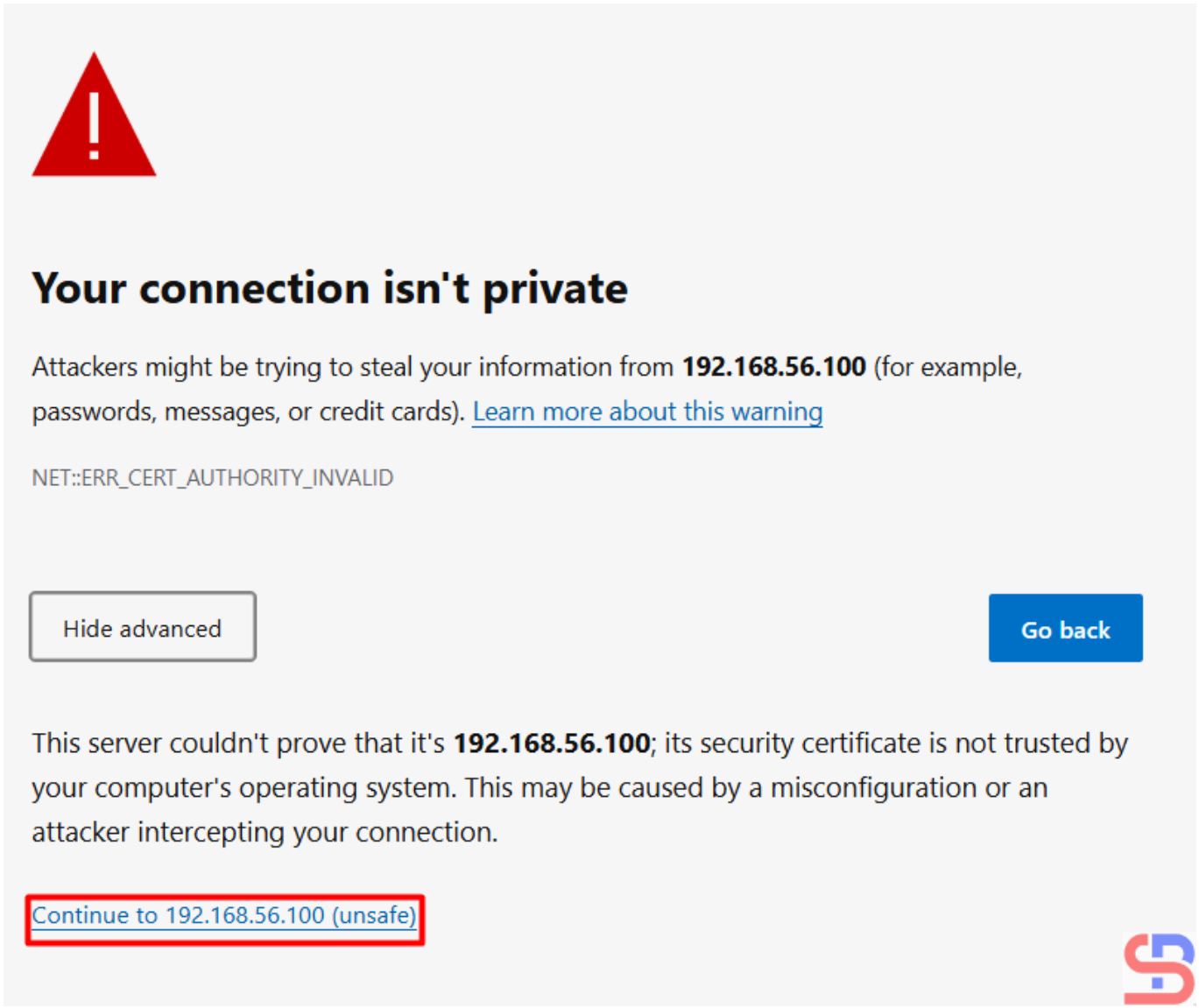
```
https://your_IP_server:9443
```

There will be an image like below:



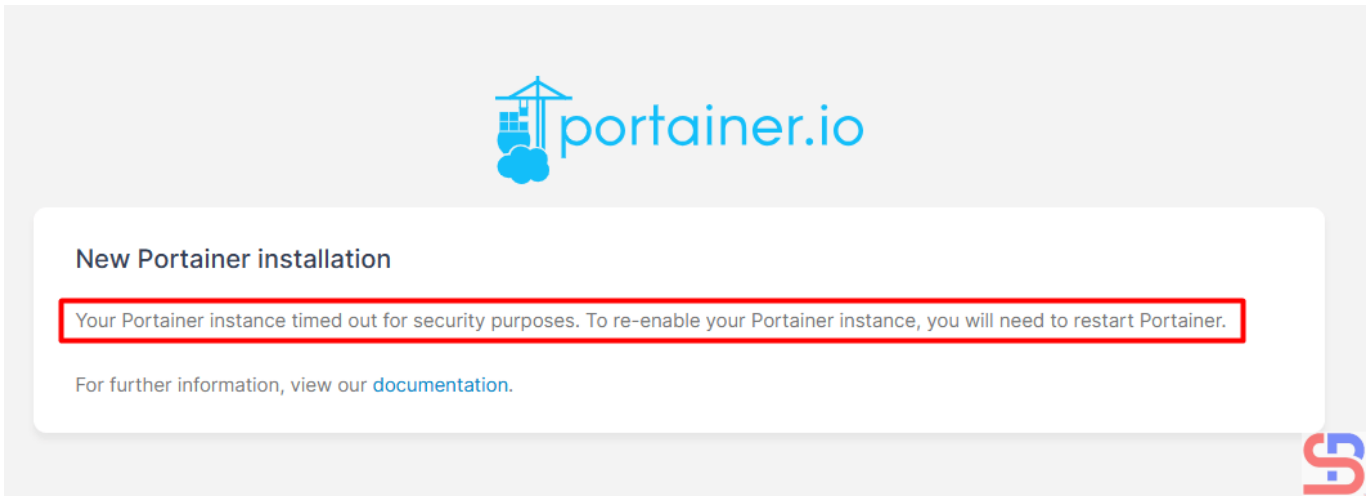
Click Advanced

A picture similar to the one below will appear when you click the **Advanced** button:



Click the unsafe link

Click the **unsafe** link in your browser, and then there will be an image like below:

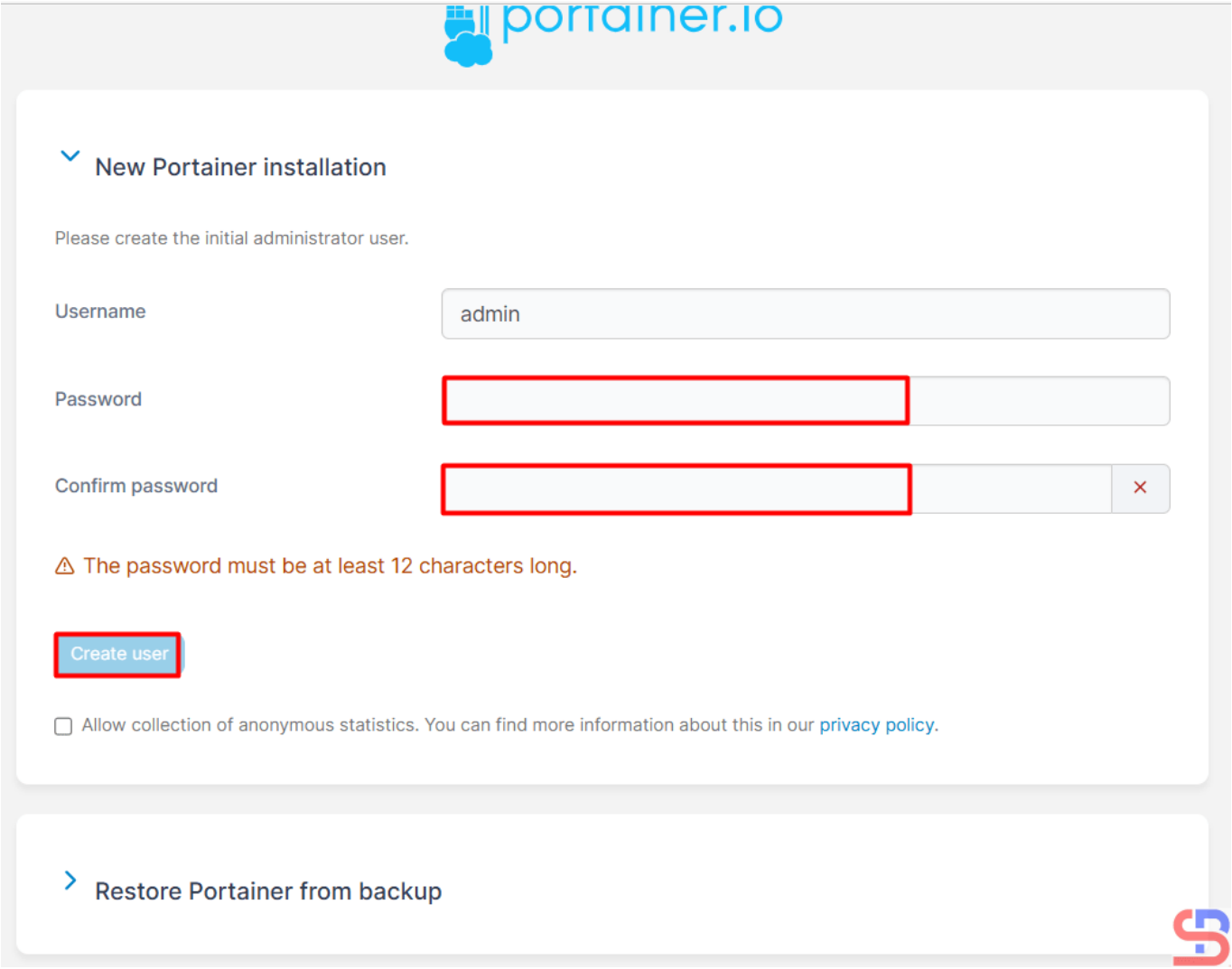


Restart Portainer

If you have an error like the picture above, then restart Portainer by running the command below:

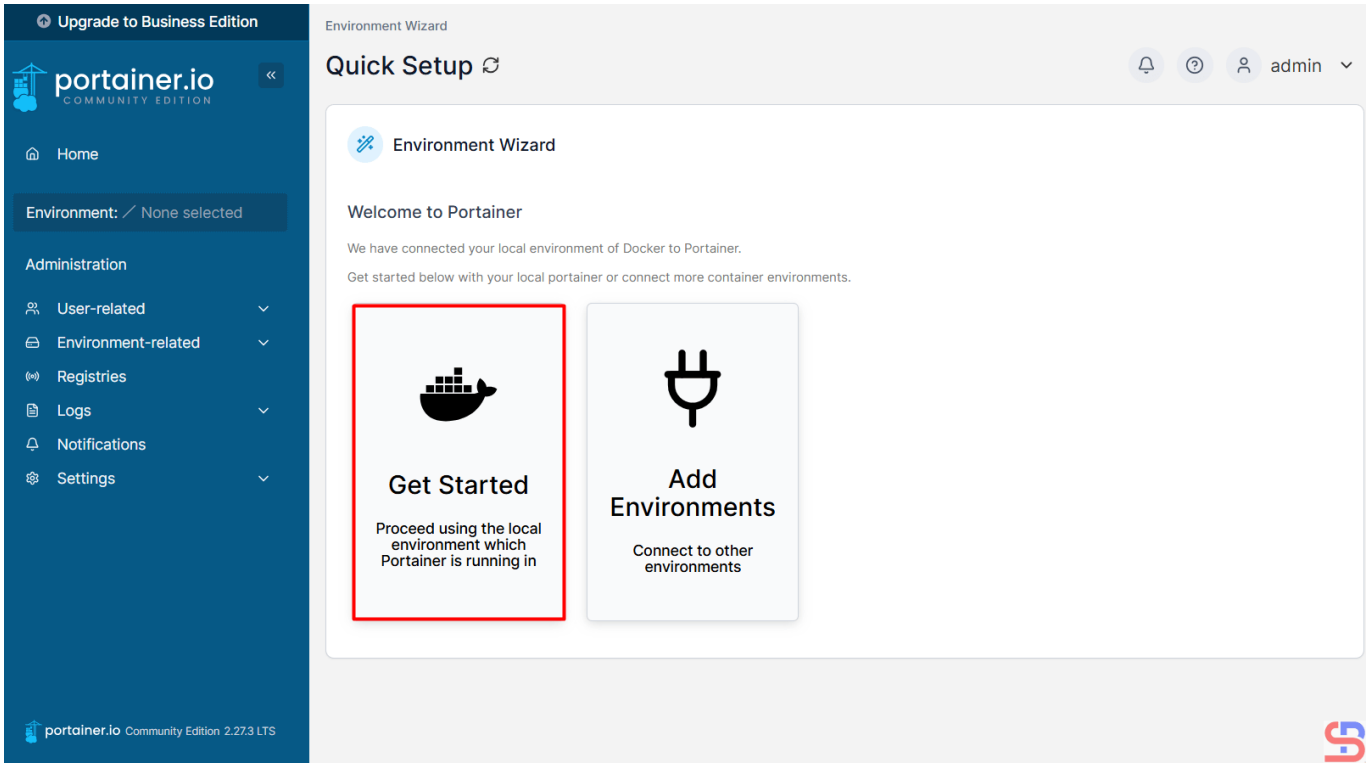
```
docker restart portainer
```

Enter the desired name and password, then click the **Create user** button, and you will see an image below:



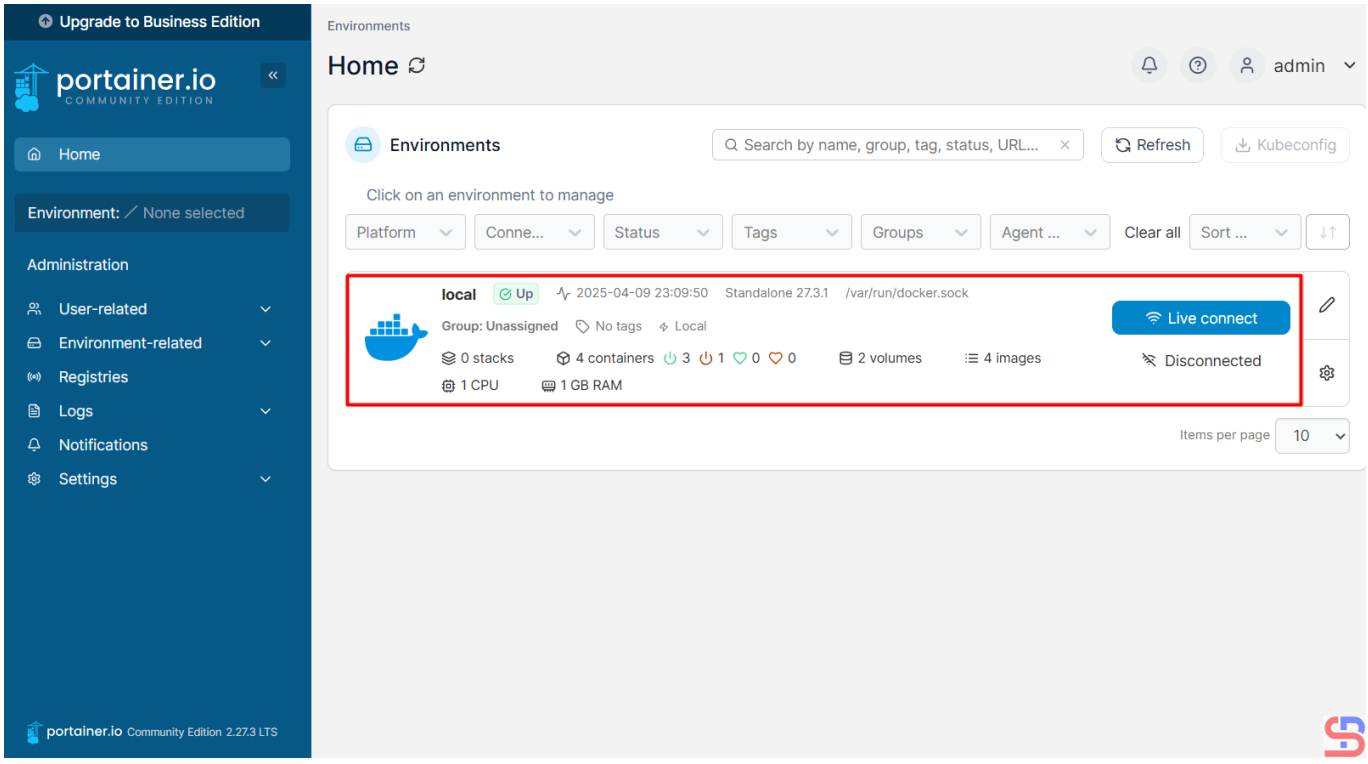
Write the username and password

The Portainer dashboard will appear. Click the **Get Started** box like in the above image, and there will be an image below:



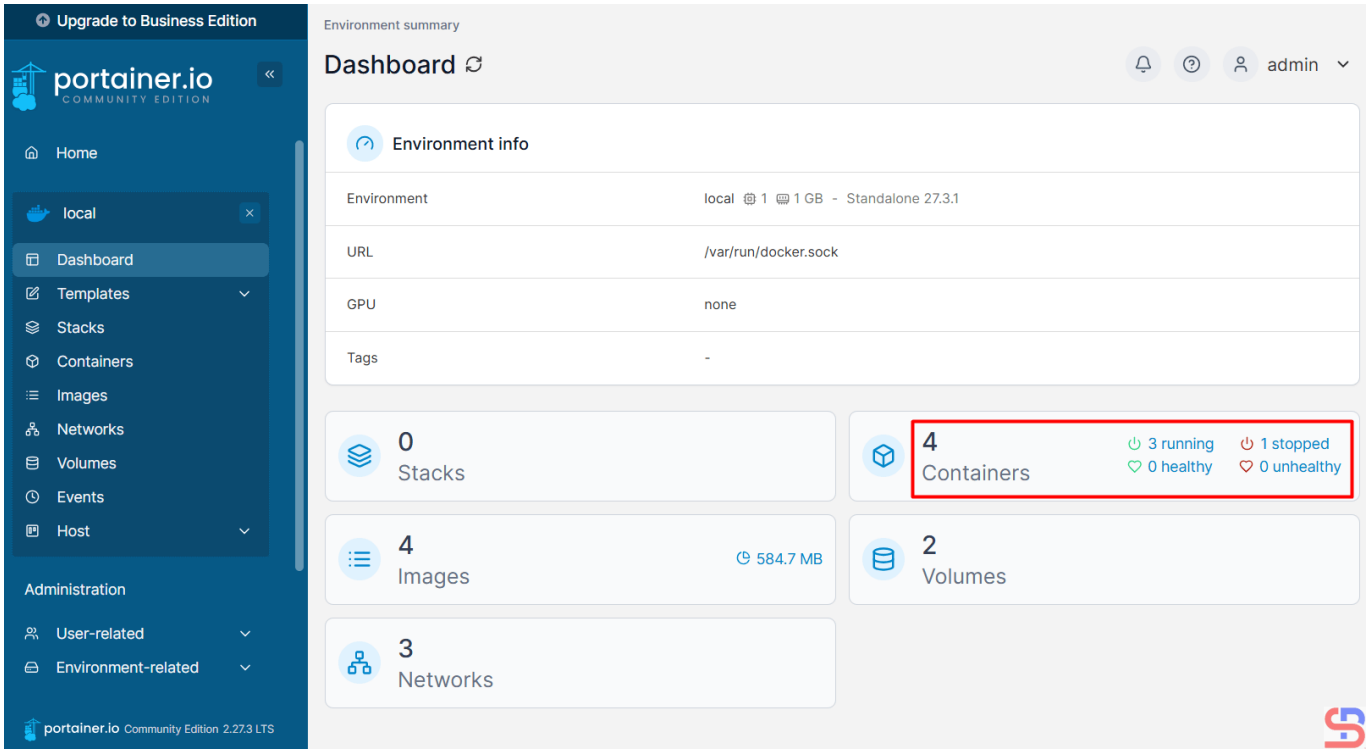
Click the Get Started box

There will be an image below:



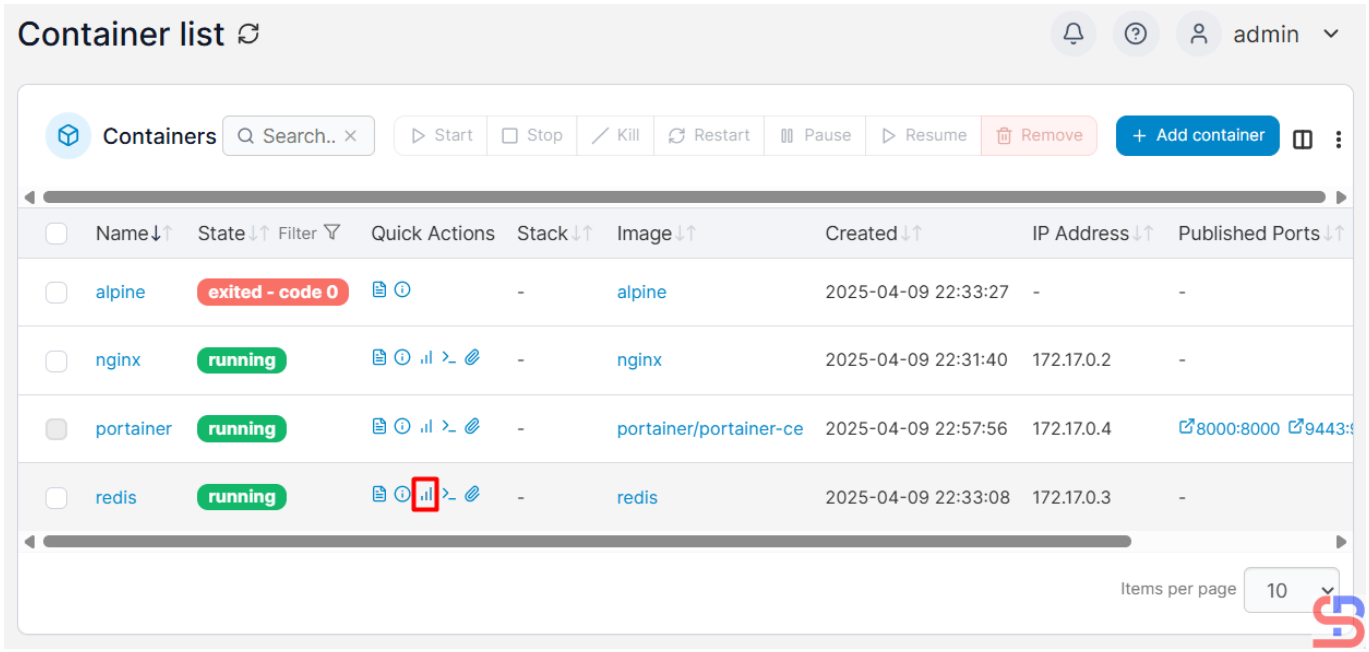
The Portainer dashboard

Click on the red box, and there will be an image below:



The information about the container(s) in Docker

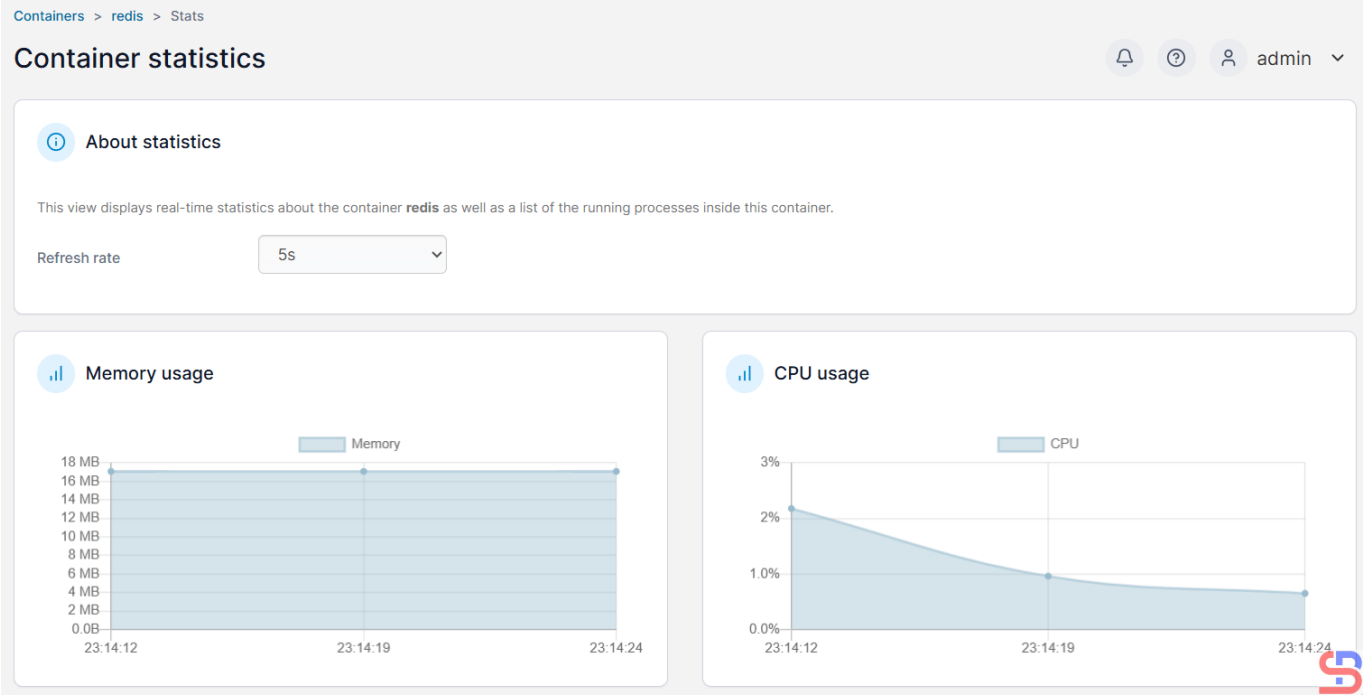
I have 4 containers in my server, but I want to detail each container, so I click in the red box, and there will be an image below:



The detailed information of each container

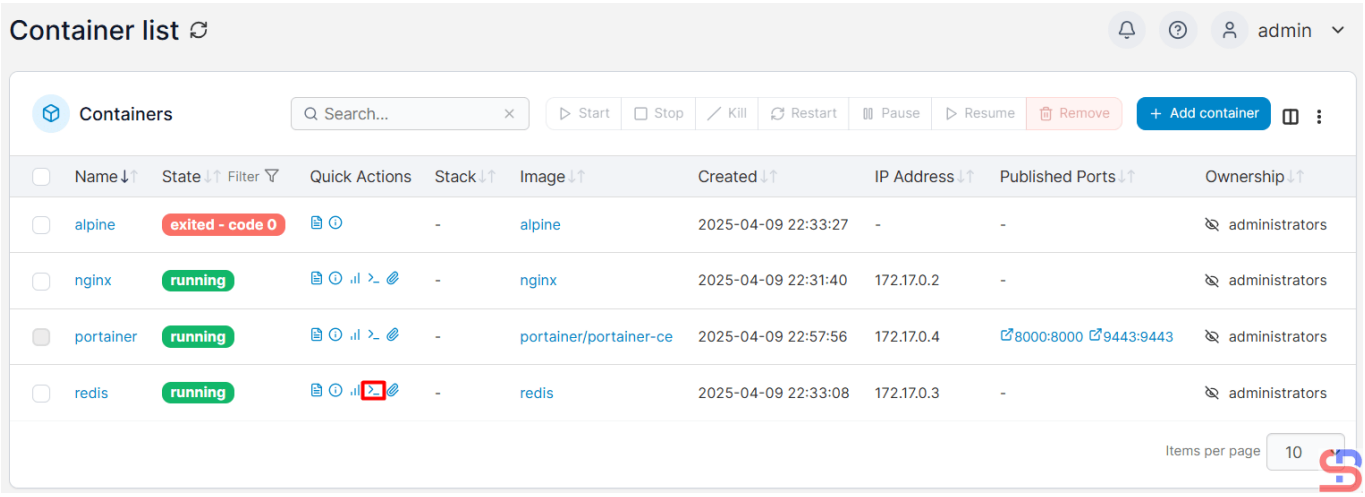
If I want to display the resource of the Redis instance, click the icon in the red box, and there will be a display

below:



The resource is displayed in a container

If I want to access a container, I click the icon like in the red box:

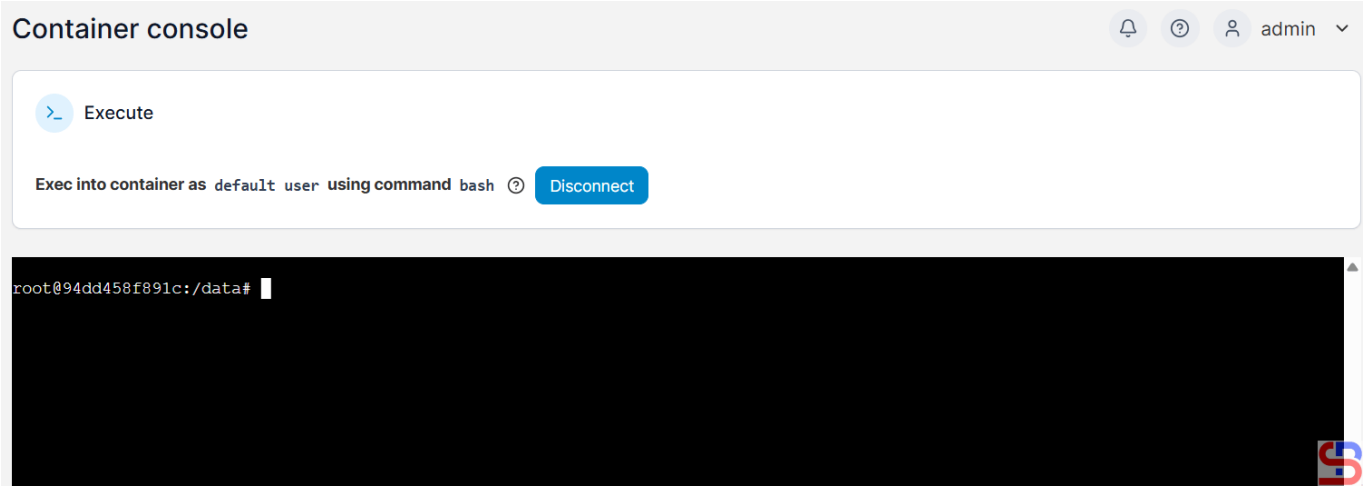


Click the icon to access the container

There will be a display like in the image below:

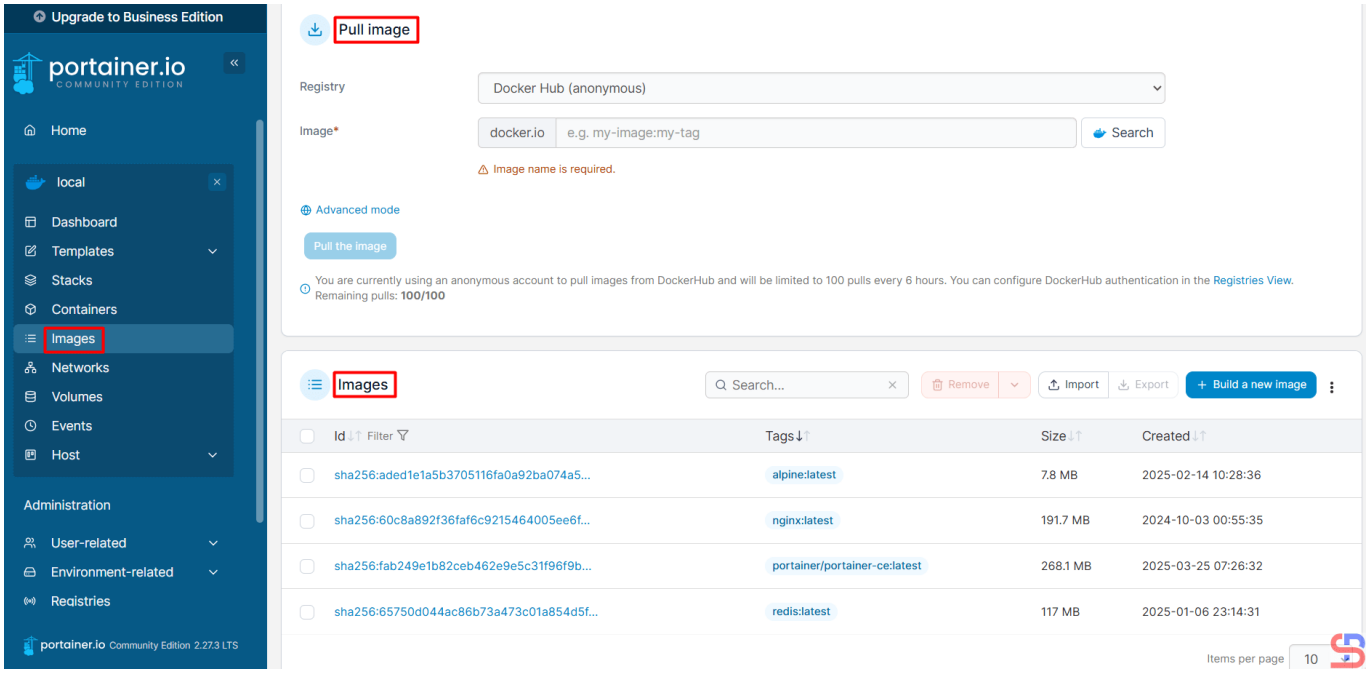
Click the Connect button after you choose the options

Select the command used in the container and select the desired user. After that, click the **Connect** button, and there will image like in the image below:



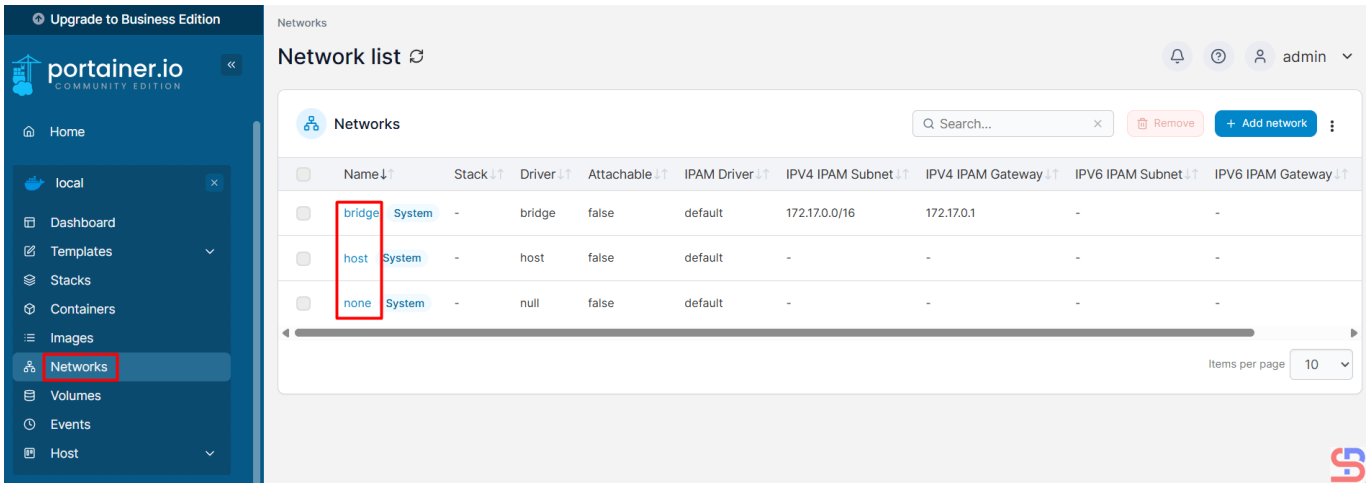
Access to the container

You can access the inside of the container and give the Linux command from your browser to the container. From this tool, you can see the images in your Docker when you click Images, like in the image below:



Display the Images

You can display the [Volume](#) in Docker after you click the Volumes, like in the image below:



Display the Volumes

Note

If you want to monitor Docker on another server using Portainer, you have to install the agent using the command below:

```
curl -L https://downloads.portainer.io/agent-stack.yml -o agent-stack.yml && docker stack deploy --compose-file=agent-stack.yml portainer-agent
```

References

youtube.dimas-maryanto.com
docs.portainer.io
phoenixnap.com
musaamin.web.id
letscloud.io