FACULDADE SENAC GOIÁS
Sistemas Operacionais
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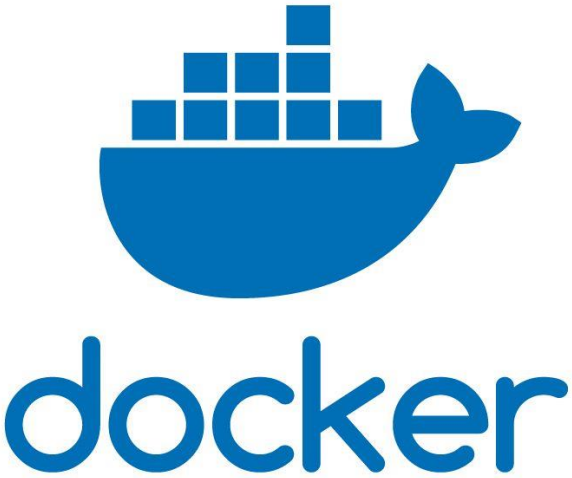


O que é Docker?

Docker é uma plataforma aberta para desenvolvedores e administradores de sistemas para construir, entregar e rodar aplicações distribuídas.

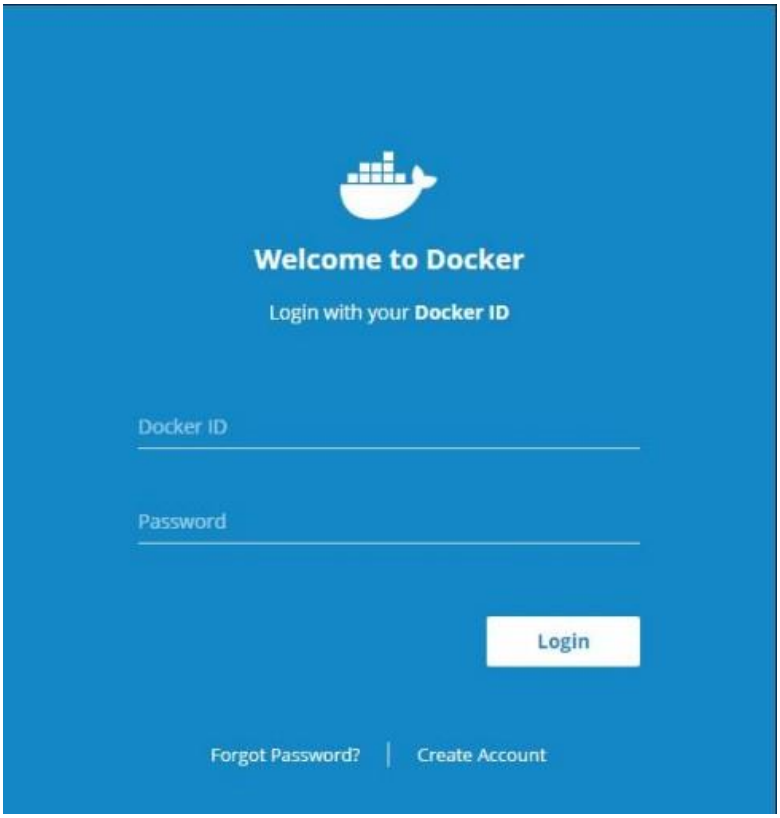
O Docker permite que as aplicações sejam rapidamente montadas e elimina o atrito e a diferença entre os ambientes de desenvolvimento, testes e produção

O que não é Docker?

Docker não é uma ferramenta de virtualização de máquinas, ele é um ambiente de virtualização de Linux, construído sobre os LinuX Containers (LxC), que utiliza a funcionalidade cgroups para criar e rodar ambientes Linux virtuais isolados em um único host.

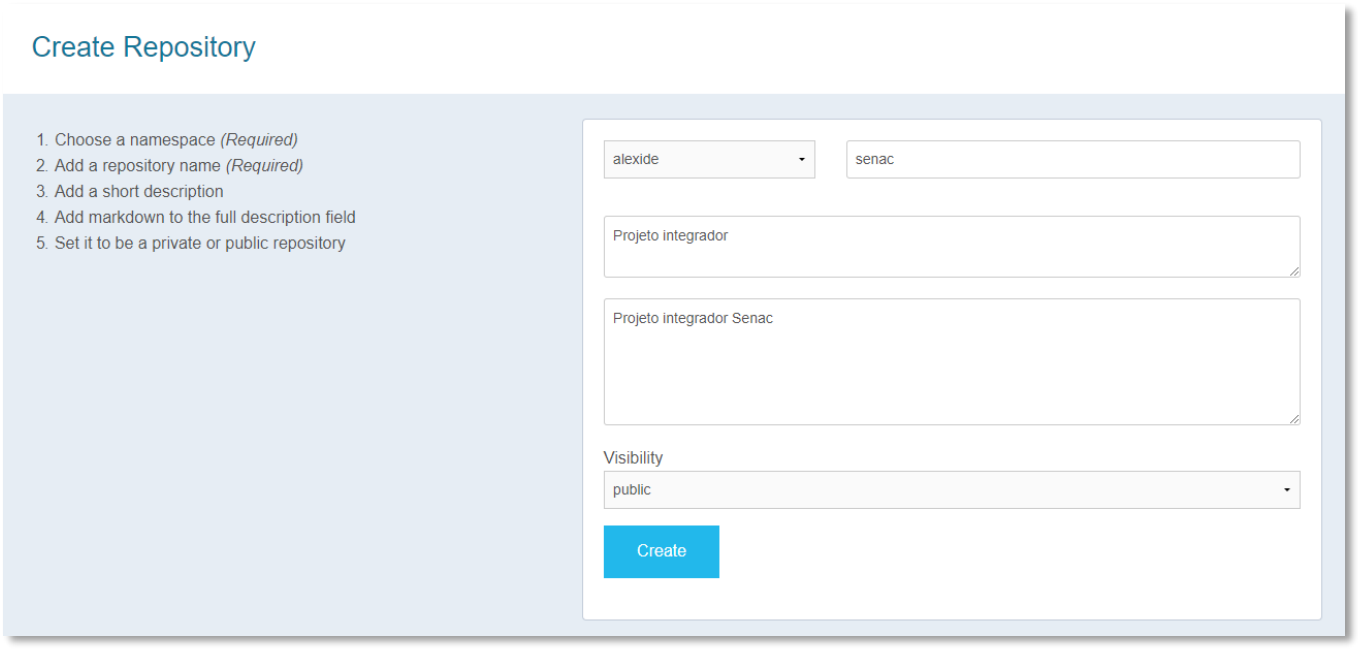
Iniciando Docker

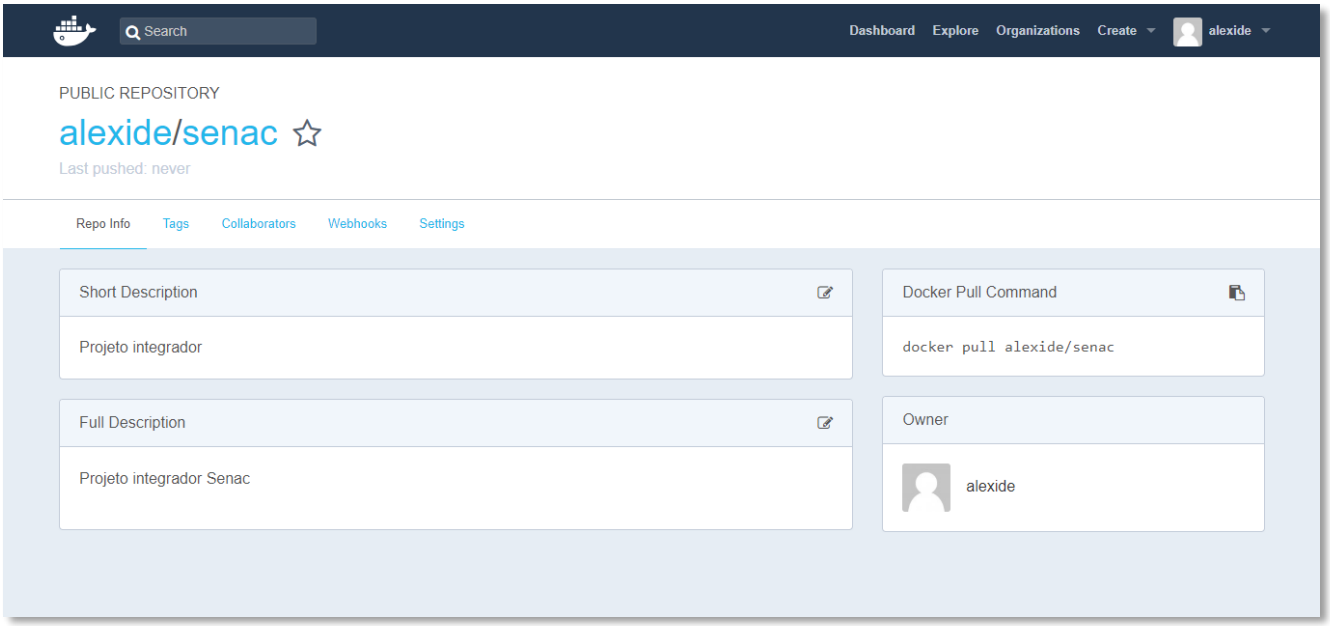
Registre-se no site https://www.docker.com/ e faça o login.



Criando Repositório

Em Create Repository, crie um repositório.





Instalando Docker no Linux

Comandos para instalação do docker

sudo apt-get update

sudo apt-key adv --keyserver hkp://p80.pool.sks-keyservers.net:80 --recv-keys58118E89F3A912897C070ADBF76221572C52609D

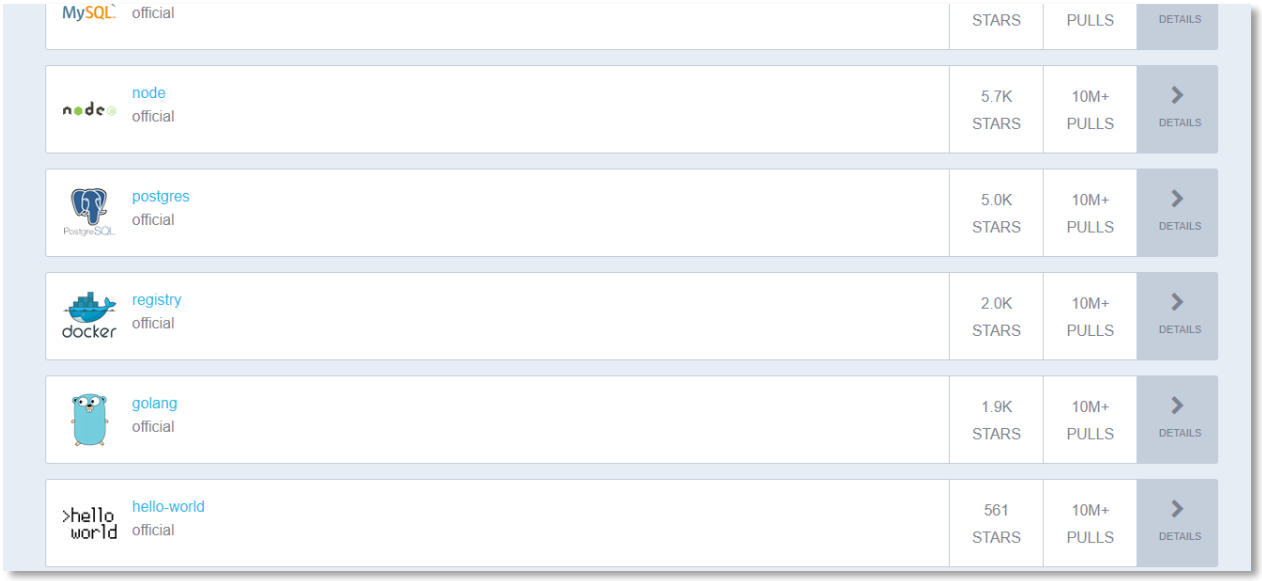
sudo apt-add-repository 'deb https://apt.dockerproject.org/repo ubuntu-trusty main'

sudo apt-get update

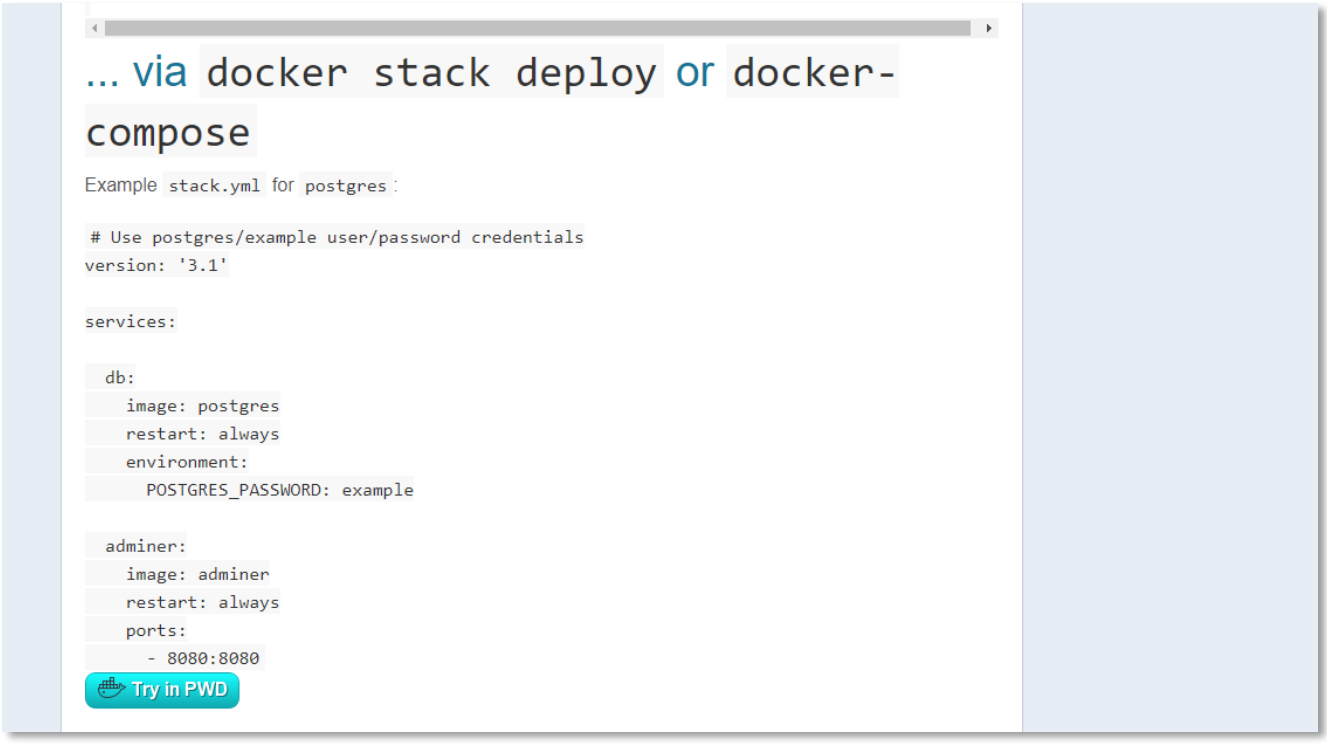
sudo apt-get install -y docker-engine

Instalando Postgres Docker

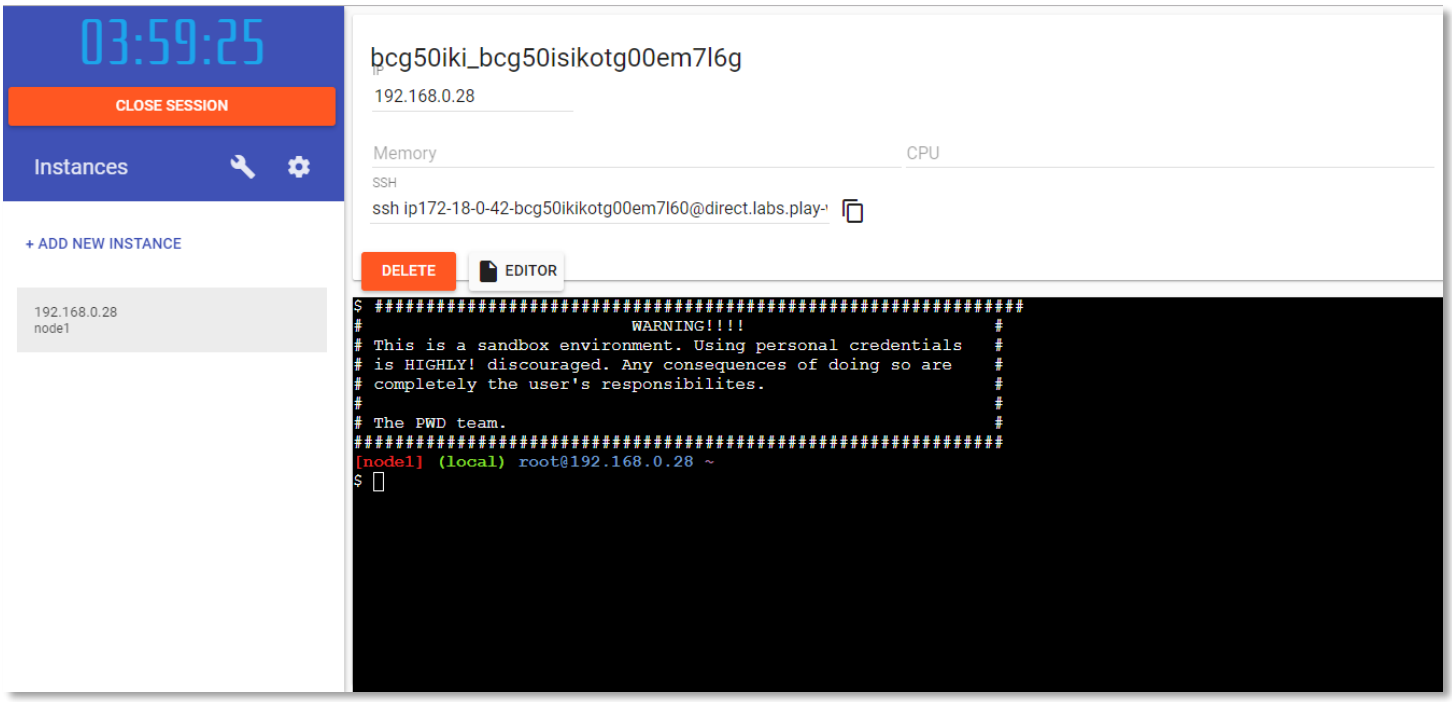
Em explore escolha postgres



Clique em '***Try in PWD***'




Play with Docker
A simple, interactive and fun playground to learn Docker
Start


03:59:25
CLOSE SESSION
Instances
+ ADD NEW INSTANCE
192.168.0.28
node1
bcg50iki_bcg50isikotg00em7l6g
IP
192.168.0.28
Memory
CPU
SSH
ssh ip172-18-0-42-bcg50ikikotg00em7l60@direct.labs.play-
DELETE
EDITOR
$ ##
# WARNING!!!! #
# This is a sandbox environment. Using personal credentials #
# is HIGHLY! discouraged. Any consequences of doing so are #
# completely the user's responsibilites. #
# #
# The PWD team. #
##
[node1] (local) root@192.168.0.28 ~
$

Comandos no Docker

Para fazer login no Docker:

$ docker login

```
$ ##############################################################
#                          WARNING!!!!                         #
# This is a sandbox environment. Using personal credentials    #
# is HIGHLY! discouraged. Any consequences of doing so are     #
# completely the user's responsibilites.                       #
#                                                              #
# The PWD team.                                                #
##############################################################
[node1] (local) root@192.168.0.28 ~
$ docker login
Login with your Docker ID to push and pull images from Docker Hub. If you don't have a Docker ID, head o
ver to https://hub.docker.com to create one.
Username: alexide
Password:
Login Succeeded
[node1] (local) root@192.168.0.28 ~
$
```

Para executar uma imagem em um container:

$ docker run hello-world

```
[node1] (local) root@192.168.0.28 ~
$ docker run hello-world
Unable to find image 'hello-world:latest' locally
latest: Pulling from library/hello-world
9bb5a5d4561a: Pull complete
Digest: sha256:f5233545e43561214ca4891fd1157e1c3c563316ed8e237750d59bde73361e77
Status: Downloaded newer image for hello-world:latest

Hello from Docker!
This message shows that your installation appears to be working correctly.

To generate this message, Docker took the following steps:
 1. The Docker client contacted the Docker daemon.
 2. The Docker daemon pulled the "hello-world" image from the Docker Hub.
    (amd64)
 3. The Docker daemon created a new container from that image which runs the
    executable that produces the output you are currently reading.
 4. The Docker daemon streamed that output to the Docker client, which sent it
    to your terminal.

To try something more ambitious, you can run an Ubuntu container with:
 $ docker run -it ubuntu bash

Share images, automate workflows, and more with a free Docker ID:
 https://hub.docker.com/
```

Listar os containers:

$ docker ps –a

Listar as imagens:

$ docker images

```
[node1] (local) root@192.168.0.28 ~
$ docker ps -a
CONTAINER ID        IMAGE               COMMAND                  CREATED             STATUS                         PORTS               NA
MES
42580ba23f34        hello-world         "/hello"                 About a minute ago  Exited (0) About a minute ago                      th
irsty_rosalind
97b80e307732        postgres:latest     "docker-entrypoint.s…"   2 minutes ago       Up 2 minutes                   5432/tcp            pw
d_db.1.vfvi8bb6p1u3936atia88so6b
d81f074e9d14        adminer:latest      "entrypoint.sh docke…"   2 minutes ago       Up 2 minutes                   8080/tcp            pw
d_adminer.1.ro9csppp8a61gt4jrb0hoppg3
[node1] (local) root@192.168.0.28 ~
$ docker images
REPOSITORY          TAG                 IMAGE ID            CREATED             SIZE
postgres            latest              65bf726222e1        3 days ago          236MB
adminer             latest              9dfa6dff9392        5 days ago          69.5MB
hello-world         latest              e38bc07ac18e        2 months ago        1.85kB
```

Baixar a imagem postgres:

$ docker pull postgres

Executar a imagem postgres em um novo container:

$ docker run postgres

```
[node1] (local) root@192.168.0.28 ~
$ docker pull postgres
Using default tag: latest
latest: Pulling from library/postgres
Digest: sha256:d9c44f9fc460dd8962c388eacf88a0e252b858ccdf33bc223f68112617e81fc9
Status: Image is up to date for postgres:latest
[node1] (local) root@192.168.0.28 ~
$ docker run postgres
The files belonging to this database system will be owned by user "postgres".
This user must also own the server process.

The database cluster will be initialized with locale "en_US.utf8".
The default database encoding has accordingly been set to "UTF8".
The default text search configuration will be set to "english".

Data page checksums are disabled.

fixing permissions on existing directory /var/lib/postgresql/data ... ok
creating subdirectories ... ok
selecting default max_connections ... 100
selecting default shared_buffers ... 128MB
selecting dynamic shared memory implementation ... posix
creating configuration files ... ok
running bootstrap script ... ok
performing post-bootstrap initialization ... ok
syncing data to disk ...
```

OBS: Use ‘Ctrl+C’ para sair do modo texto

Para selecionar a imagem para enviar

$ docker commit nomeDaImagem login/repositório

Para enviar imagem para repositório:

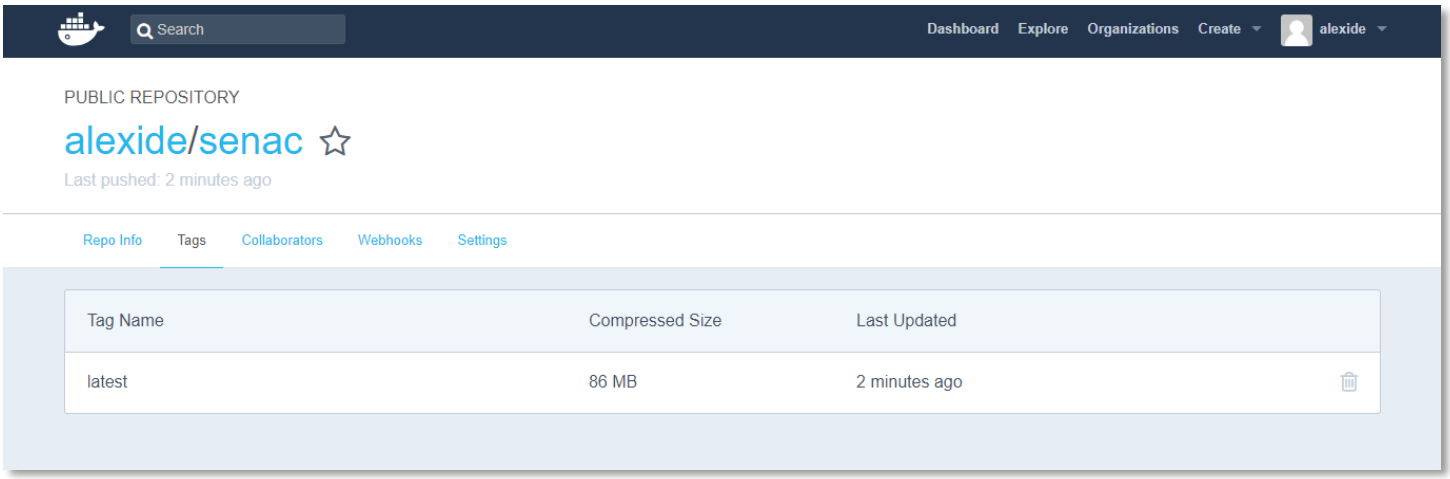
$ docker push login/repositório

OBS: Use ***$ docker ps -a*** para verificar qual o nome da imagem

```
[node1] (local) root@192.168.0.28 ~
$ docker ps -a
CONTAINER ID        IMAGE               COMMAND                  CREATED             STATUS                          PORTS               NA
MES
ecf8a983d046        postgres            "docker-entrypoint.s…"   About a minute ago  Exited (0) About a minute ago                       jo
vial_pare
42580ba23f34        hello-world         "/hello"                 4 minutes ago       Exited (0) 4 minutes ago                            th
irsty_rosalind
97b80e307732        postgres:latest     "docker-entrypoint.s…"   6 minutes ago       Up 6 minutes                    5432/tcp            pw
d_db.1.vfvi8bb6p1u3936atia88so6b
d81f074e9d14        adminer:latest      "entrypoint.sh docke…"   6 minutes ago       Up 6 minutes                    8080/tcp            pw
d_adminer.1.ro9csppp8a61gt4jrb0hoppg3
[node1] (local) root@192.168.0.28 ~
```

```
[node1] (local) root@192.168.0.28 ~
$ docker commit jovial_pare alexide/senac
sha256:284aed99f95852e5bc9a1e52c4f35d27f309333a432dce7a6cc108ee05c545bd
[node1] (local) root@192.168.0.28 ~
$ docker push alexide/senac
The push refers to repository [docker.io/alexide/senac]
b4e4cd92c9a7: Pushed
742f2f42844f: Mounted from library/postgres
2d42980cd20d: Mounted from library/postgres
ccaa9b2b12ff: Mounted from library/postgres
b2f90e2001a0: Mounted from library/postgres
1fae930fa461: Mounted from library/postgres
c330a0cadc55: Mounted from library/postgres
24e6635d6743: Mounted from library/postgres
b354232874a3: Mounted from library/postgres
0cc8e17d3648: Mounted from library/postgres
55193a0db6f0: Mounted from library/postgres
b3ec50991a7b: Mounted from library/postgres
3661ba0947c0: Mounted from library/postgres
cf9f0e677740: Mounted from library/postgres
d626a8ad97a1: Mounted from library/postgres
latest: digest: sha256:6b0cad0e3eed275b7bfbab14394410578a97a5c351277c6a8f2a60599d8f9644 size: 3450
```

Em ‘TAG’ veja a imagem criada



Para ter acesso ao repositório criado:

https://hub.docker.com/r/alexide/senac/

Imagem docker criada:

$ docker pull alexide/senac