

Deploying Registry V2 Container

This guide showcases how to make an **INSECURE** registry V2 container that will be used to store Docker images that you create with the `docker build` and `docker tag` commands.

This is very helpful when you want to have images stored and accesible only within the enterprise network.

Resources Used

1. [Docker Documentation - Deploying your registry](#)

Deploying the container

We want to run a local registry on a machine that will be accessible through the host's port 5000.

```
docker run -d -p 5000:5000 --restart=always --name registry registry:2
```

This will make the registry restart whenever Docker gets restarted.

```
[worker@worker-2 ~]$ docker run -d -p 5000:5000 --restart=always --name registry registry:2
Unable to find image 'registry:2' locally
2: Pulling from library/registry
ca7dd9ec2225: Pull complete
c41ae7ad2b39: Pull complete
1ed0fc8a6161: Pull complete
21df229223d2: Pull complete
626897ccab21: Pull complete
Digest: sha256:ce14a6258f37702ff3cd92232a6f5b81ace542d9f1631966999e9f7c1ee6ddba
Status: Downloaded newer image for registry:2
9f09c58accc49d4e42454bc0d32248bf6b876715b6c0cac126b7dafcf07d6c0f
[worker@worker-2 ~]$ docker ps -a
CONTAINER ID   IMAGE          COMMAND                  CREATED        STATUS        PORTS                               NAMES
9f09c58accc4   registry:2    "/entrypoint.sh /etc..." 3 seconds ago  Up 2 seconds  0.0.0.0:5000->5000/tcp, :::5000->5000/tcp  registry
[worker@worker-2 ~]$
```

Now, you have a registry that can house your own custom container images.

Testing a custom image

For this, we can use our own Dockerfile to create a custom image that we'll upload to our registry.

```
[worker@worker-2 ~]$ docker build . -t registryDemo:latest
invalid argument "registryDemo:latest" for "-t, --tag" flag: invalid reference format: repository name must be lowercase
See 'docker build --help'.
[worker@worker-2 ~]$ docker build . -t registry-demo:latest
Sending build context to Docker daemon 13.82kB
Step 1/5 : FROM ubuntu:20.04
```

Note: I included the error message to make sure that you understand that the name of build images must be lowercase.

Once the build completes, you'll be able to see your image in your images.

```
[worker@worker-2 ~]$ docker images
```

REPOSITORY	TAG	IMAGE ID	CREATED	SIZE
registry-demo	latest	3f54ec60b161	3 minutes ago	182MB
ubuntu	20.04	e40cf56b4be3	8 days ago	72.8MB

With this, we can try to upload this to our registry. We can do this with the **tag** and **push** commands.

The format of the **tag** command is:

```
docker tag <source image> <remoteIP>:<port>/<tag>
```

So, for this demo, the image was made locally. We can test connectivity with localhost. Now, we need to push the image onto the registry.

```
docker tag registry-demo localhost:5000/registry-demo-uploaded
```

The format of the **push** command is:

```
docker push
```

You will see a slight progress bar and a confirmation message.

```
[worker@worker-2 ~]$ docker tag registry-demo localhost:5000/registry-demo-uploaded
[worker@worker-2 ~]$ docker push localhost:5000/registry-demo-uploaded
Using default tag: latest
The push refers to repository [localhost:5000/registry-demo-uploaded]
9cfc76865dde: Pushed
ae09e26e528d: Pushed
bb45af69beaa: Pushed
d543b8cad89e: Pushed
latest: digest: sha256:a45a5446fb112c779ffebcf44beb9a700d05c4271dc018c926b81958be2eb446 size: 1160
[worker@worker-2 ~]$
```

This means that the registry has the image. You can now further test this by deleting the image locally and then pulling it from your registry.

```
[worker@worker-2 ~]$ docker images
REPOSITORY          TAG             IMAGE ID        CREATED         SIZE
ubuntu              20.04          e40cf56b4be3   8 days ago     72.8MB
nextcloud           latest         3539f97df93a   3 weeks ago    1.02GB
portainer/portainer-ce latest         5f11582196a4   2 months ago   287MB
registry            2              81c944c2288b   2 months ago   24.1MB
[worker@worker-2 ~]$ docker pull localhost:5000/registry-demo-uploaded
Using default tag: latest
latest: Pulling from registry-demo-uploaded
7608715873ec: Already exists
6fe049c48588: Pull complete
845a39714054: Pull complete
411dcc6d859c: Pull complete
Digest: sha256:a45a5446fb112c779ffebe9a700d05c4271dc018c926b81958be2eb446
Status: Downloaded newer image for localhost:5000/registry-demo-uploaded:latest
localhost:5000/registry-demo-uploaded:latest
[worker@worker-2 ~]$ docker images
REPOSITORY          TAG             IMAGE ID        CREATED         SIZE
localhost:5000/registry-demo-uploaded latest         3f54ec60b161   31 minutes ago  182MB
ubuntu              20.04          e40cf56b4be3   8 days ago     72.8MB
nextcloud           latest         3539f97df93a   3 weeks ago    1.02GB
portainer/portainer-ce latest         5f11582196a4   2 months ago   287MB
registry            2              81c944c2288b   2 months ago   24.1MB
[worker@worker-2 ~]$
```

You now have a local **insecure** registry.

You can continue to look through the resource used to figure out how to secure this.