Docker for Web Developers

Building and deploying web applications using containers

Downloading the web application

```
git clone https://github.com/OutboundSpade/nuxt-demo.git
```

Analyzing the Dockerfile

```dockerfile
FROM node:18

WORKDIR /data

COPY package.json .

RUN yarn install

COPY . .

RUN yarn build

ENV MONGO_URI=mongodb://mongodb

CMD node .output/server/index.mjs
```

Building the container (optional)

```
docker build -t <username>/nuxt-demo .
```

Pushing the container to Docker Hub (optional)

```
docker login
```

```
docker push <username>/nuxt-demo
```

Basic Docker Deployment

Creating the network

```
docker network create web
```

Deploying the database

```
docker run -d --name mongodb --network web mongo
```

Deploying the web application

```
docker run -d --name website --network web -p 80:3000 outboundspade48/nuxt-demo
```

Cleaning up

```
docker kill website mongodb
```

```
docker rm website mongodb
```

```
docker network rm web
```

Docker Swarm Deployment

Starting the Visualizer (optional)

```
docker run -d -p 8080:8080 -v /var/run/docker.sock:/var/run/docker.sock dockersamples/visualizer
```

Initializing the swarm

```
docker swarm init --advertise-addr 192.168.0.XX
```

Joining the worker nodes

```
docker swarm join --token XXXXXX-X-X... 192.168.0.XX:XXXX
```

Optional: Prevent manager from running workloads

```
docker node update --availability drain node1
```

Creating the network

```
docker network create -d overlay db-internal
```

Deploying the database

```
docker service create --replicas 1 --name mongodb --network db-internal mongo
```

Deploying the web application

```
docker service create --replicas 3 --name website \
--network db-internal -p 80:3000 outboundspade48/nuxt-demo
```

Scaling the web application

```
docker service scale website=5
```

Deploying a new version

```
docker service update --image outboundspade48/nuxt-demo:v1.1 website
```

Resources

- Get Started with Docker

- Get Docker

- Docker playground

- Use the Docker command line

Container Images used

- mongo

- node

- outboundspade48/nuxt-demo