

Online Workshop

Docker & Kubernetes

Session #2 | @inicipaez



Session 2 Agenda

- Image generation strategies
- Multi-stage builds
- Dockerfiles recommendations

How do I create an image?

Image generation: docker commit

```
docker run -it node:8 /bin/sh
```


```
> git clone https://github.com/nicopaez/passwordapi.git /usr/src/app  
> cd /usr/src/app  
> npm install --only=production
```

```
docker commit \
```

```
-c 'WORKDIR /usr/src/app' \  
-c 'CMD ["npm", "start" ]' \  
65493a7396c9 passwordapi-node:2
```

Image generation: docker build

<https://github.com/nicopaez/passwordapi>

```
 Dockerfile > ...  
1 FROM node:8  
2 WORKDIR /usr/src/app  
3 RUN git clone https://.../passwordapi.git /usr/src/app  
4 RUN npm install --only=production  
5 EXPOSE 3000  
6 CMD [ "npm", "start" ]
```

Docker build -t passwordapi:1 .

Images & Layers

Multi-stage image generation

Common scenarios:

- jdk / dev tools
- Runtime

Docker build -t appnet .

```
1  # https://hub.docker.com/_/microsoft-dotnet
2  FROM mcr.microsoft.com/dotnet/sdk:5.0 AS build
3  WORKDIR /source
4
5  # copy csproj and restore as distinct layers
6  COPY *.sln .
7  COPY aspnetapp/*.csproj ./aspnetapp/
8  RUN dotnet restore
9
10 # copy everything else and build app
11 COPY aspnetapp/. ./aspnetapp/
12 WORKDIR /source/aspnetapp
13 RUN dotnet publish -c release -o /app --no-restore
14
15 # final stage/image
16 FROM mcr.microsoft.com/dotnet/aspnet:5.0
17 WORKDIR /app
18 COPY --from=build /app ./
19 ENTRYPOINT ["dotnet", "aspnetapp.dll"]
```

USER command

Dockerfile recommendations

Choose carefully the base image

Consider the count and order of layers

Set a non-root user explicitly

Expose ports

Docker for Java Spring-Boot Apps

```
FROM fabric8/java-alpine-openjdk8-jdk:u181
```

```
ARG JAR_FILE
```

```
COPY ${JAR_FILE} /deployments/app.jar
```

```
EXPOSE 8080
```

```
USER 405
```

```
docker build -t app.jar . --build-arg JAR_FILE=./target/app.jar
```

End of Session 2