2. Docker.md 2025-07-26

Notes & Cheatsheet: "Dockerizing an App – CKA Series #2"

@ Goal of the video

- Show, **from scratch**, how to containerise ("dockerise") a sample Node.js app, push it to Docker Hub and run it anywhere.
- Lays foundation for later CKA topics (pods, images, registries, best-practices).

1 Prerequisites & Sandbox options

- Local install: **Docker Desktop** (Mac, Windows, Linux).
- Zero-install alternative: **Play-with-Docker** (Docker-provided 4-hour sandbox).

```
labs.play-with-docker.com → Start → Add new instance
```

2 Clone sample project

```
# create workspace
mkdir day02_code && cd day02_code

# pull sample "getting-started" todo app
git clone https://github.com/docker/getting-started.git
cd getting-started/app # contains package.json, src/, etc.
```

3 Write the Dockerfile

```
# — 1. Base image
FROM node:18-alpine # tiny Linux + Node.js

# — 2. Set workdir inside container
WORKDIR /app

# — 3. Copy source code into image — COPY . .

# — 4. Install prod deps only — RUN yarn install --production

# — 5. Expose port app listens on — EXPOSE 3000

# — 6. Container start-up command — CMD ["node","src/index.js"]
```

2. Docker.md 2025-07-26

🗱 Flow diagram

```
Host FS → docker build

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▼

Dockerfile → Layered Image (base → code → deps) → Registry
```

4 Build image locally

```
docker build -t day02-todo:latest .
```

Image is now visible via: docker images or Docker-Desktop > Images.

5 Push to Docker Hub

```
# 1. create repo on hub: /test-repo (public is fine)

# 2. tag local image for hub
docker tag day02-todo:latest /test-repo:latest

# 3. login and push
docker login
docker push /test-repo:latest
```

6 Run the container anywhere

```
# pull (if on fresh machine)
docker pull /test-repo:latest

# run detached, publish host:3000 → container:3000
docker run -d -p 3000:3000 --name todoapp /test-repo:latest
```

Open http://localhost:3000 **☑** ☑.

7 Troubleshoot inside the container

```
# open an interactive shell (Alpine uses sh)
docker exec -it todoapp sh
# inspect files, logs, env, etc.
```

2. Docker.md 2025-07-26

8 Key Docker CLI quick-ref

Task	Command
List images	docker images
List running containers	docker ps
Stop & remove	docker stop && docker rm
Remove image	docker rmi
Clean dangling layers	docker system prune

9 Next-step teaser 🏵

Image weighs 217 MB—too big for a tiny todo app!

Hint for next video: multi-stage builds and other best practices shrink it dramatically.

- **Dockerfile = deterministic recipe** → identical runtime everywhere.
- Layered cache speeds builds & transfers.
- Registry push/pull workflow mirrors real CI/CD pipelines.
- Knowing basic docker build/run/exec is a must before jumping into Kubernetes objects (pods, deployments, etc.).