

Workshop 5: Docker

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Docker Overview

Docker: a tool to 'containerize' (aka virtualize) applications and software

- Reduces coupling to host machine (among other things)

Dockerfile: A human readable file that exactly specifies an image



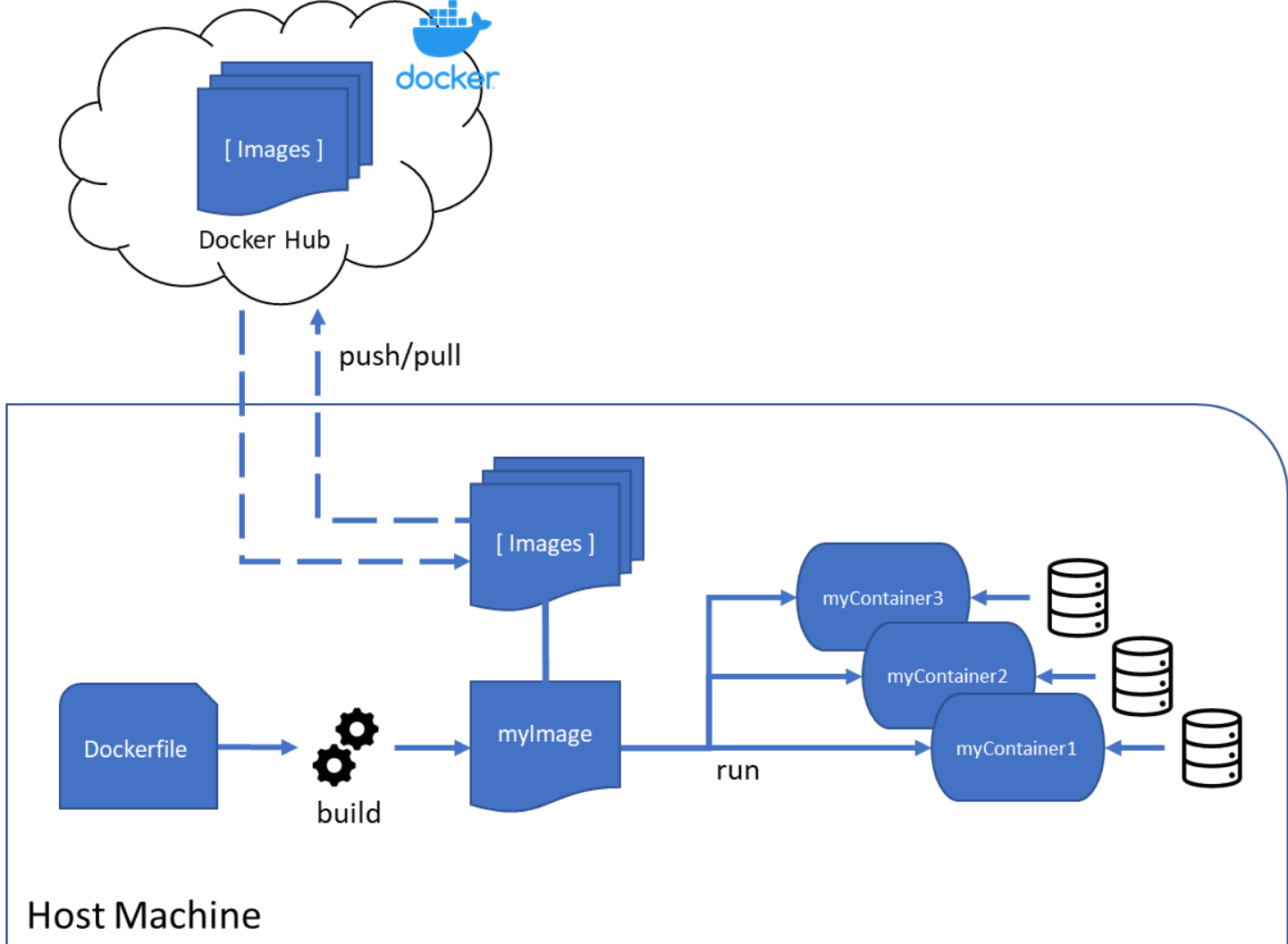
Dockerfile

Image: A snapshot of an entire computer's state

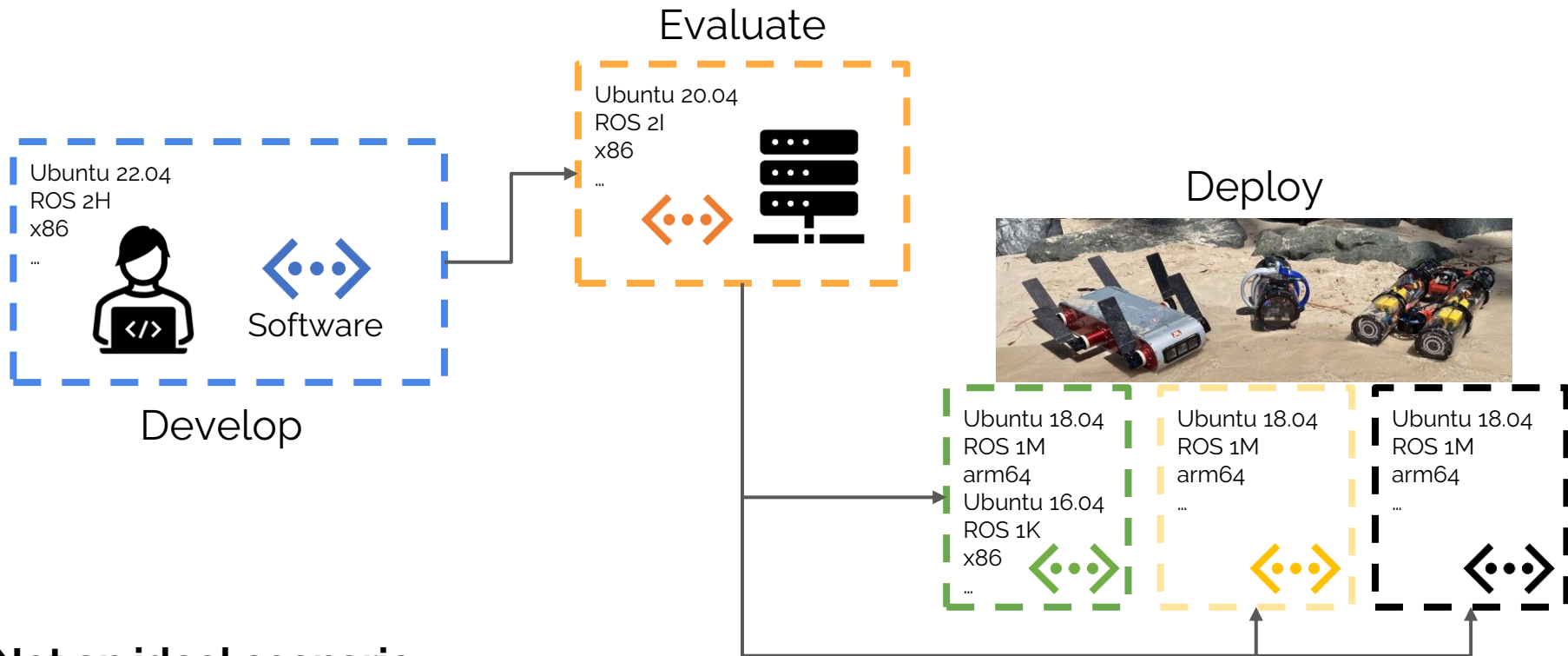
myImage

Container: An instance of an image. A lightweight "virtual machine"

myContainer1

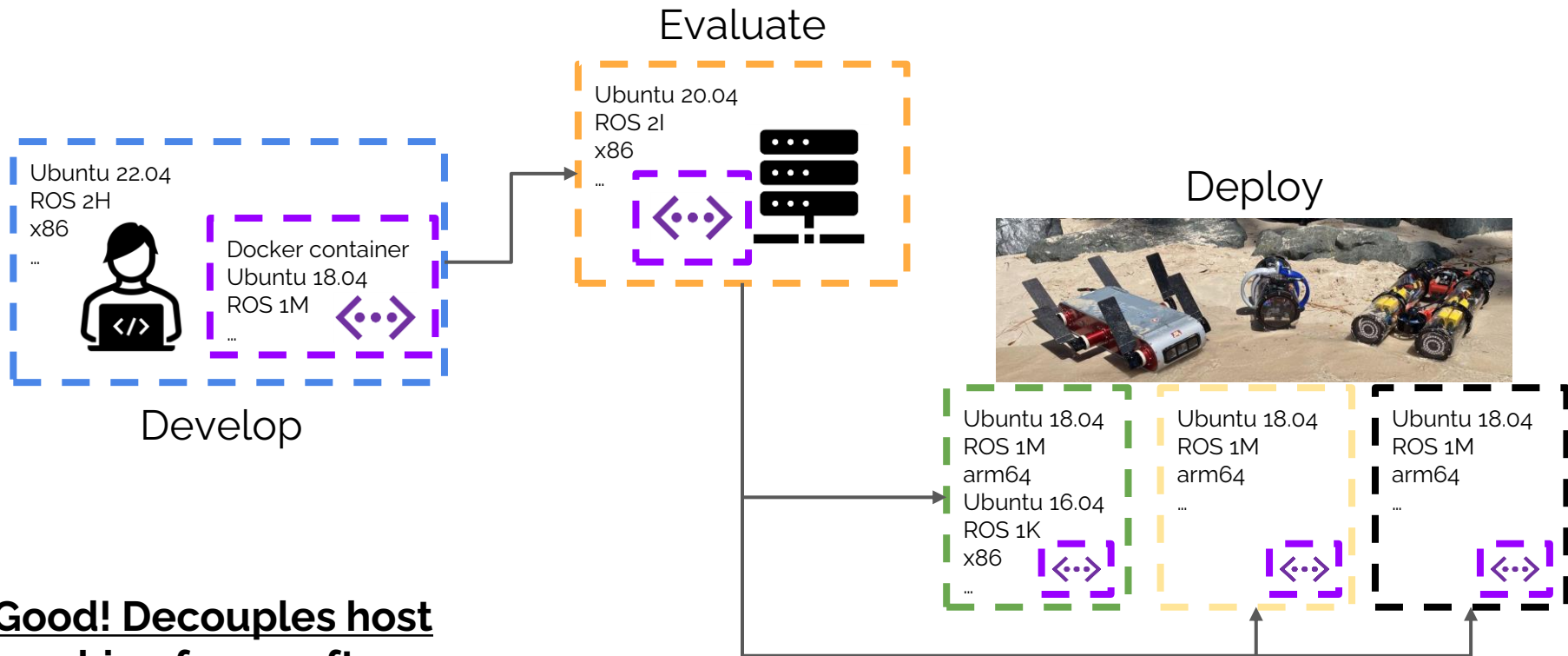


Docker use case: Robot software development



Not an ideal scenario

Docker use case: Robot software development



Good! Decouples host machine from software

Example deployment: Game servers

```
# Host a Factorio server
```

```
docker run -d \  
  -p 34197:34197/udp \  
  -p 27015:27015/tcp \  
  -v factorio:/factorio \  
  --name factorio \  
  factoriotools/factorio
```

Example deployment: Game servers

```
# Host a Minecraft server
```

```
docker run -d \  
  -p 25565:25565 \  
  --name mc \  
  itzg/minecraft-server
```

```
cknutson.org:25565
```

Workshop 5

<https://github.umn.edu/umn-csci-3081-f23/public-workshop5>