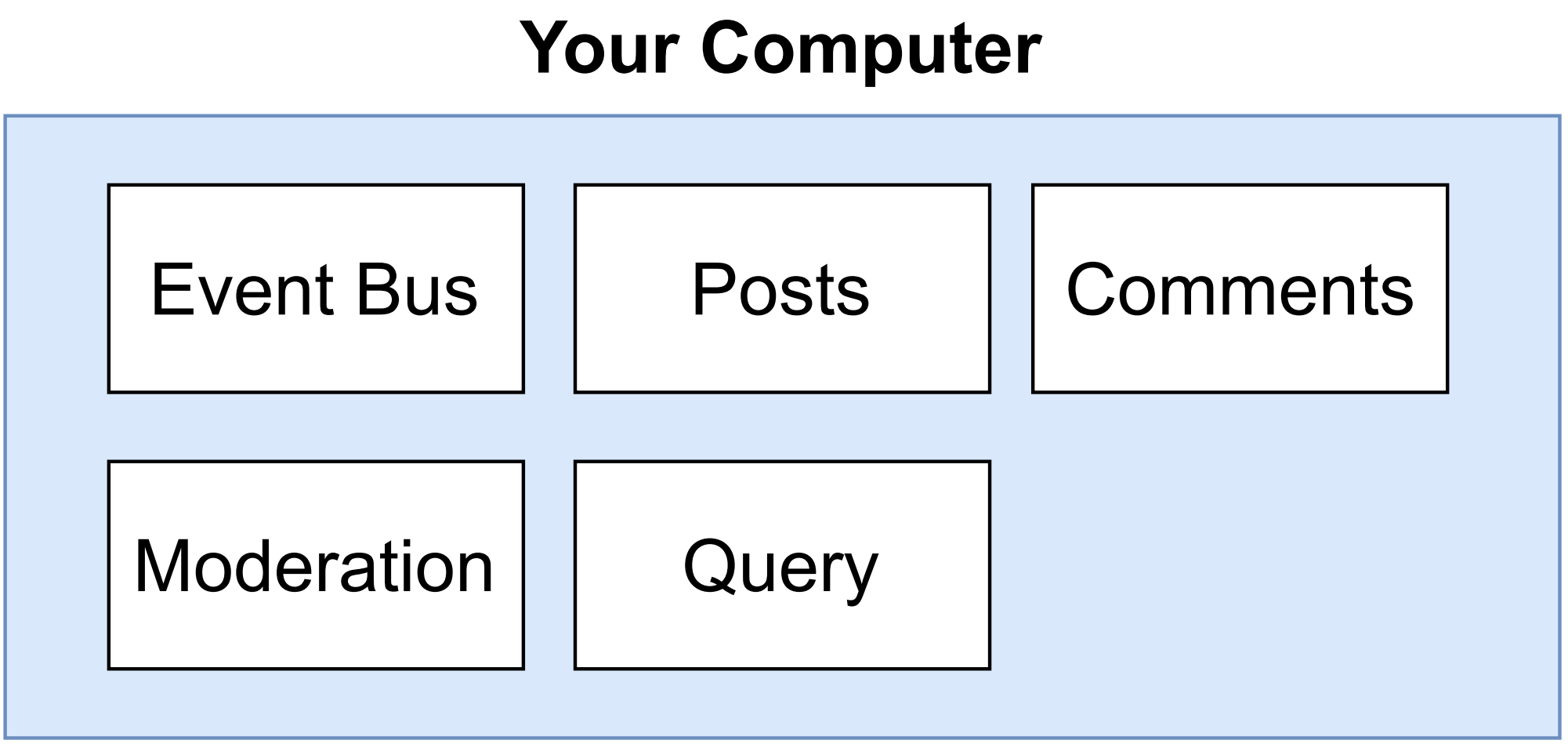
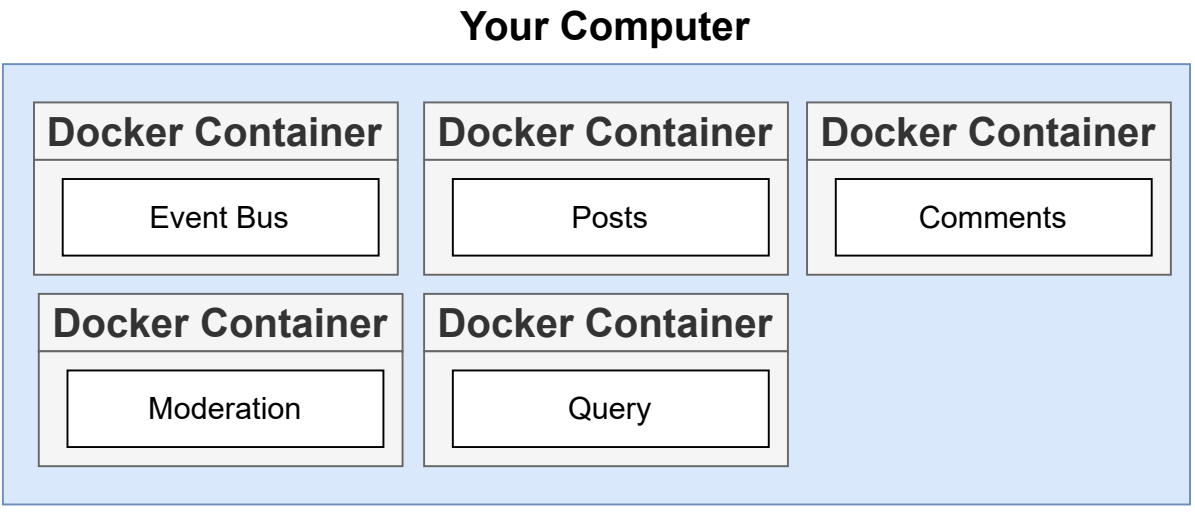
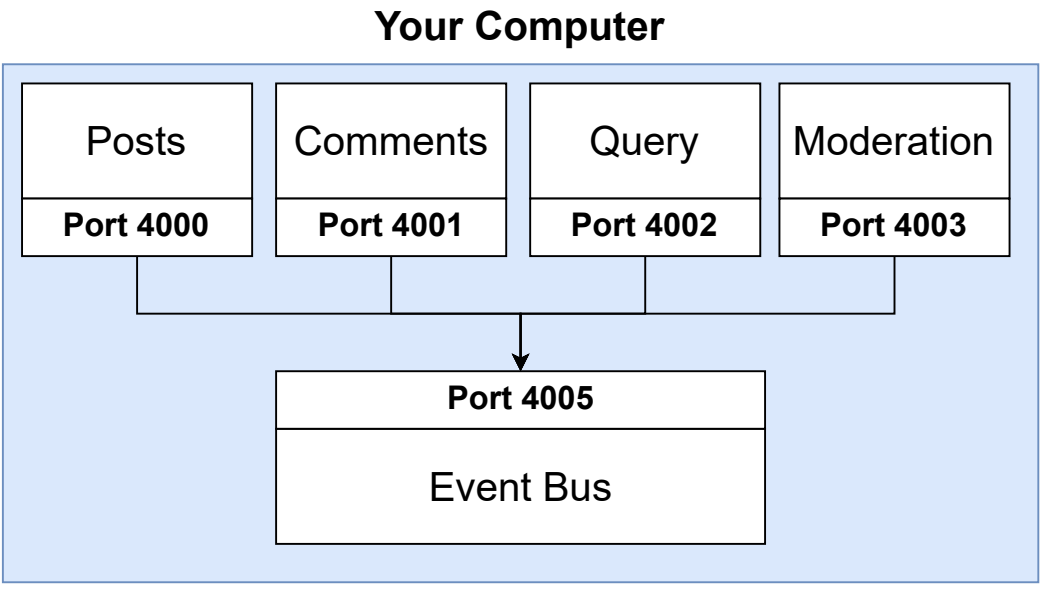
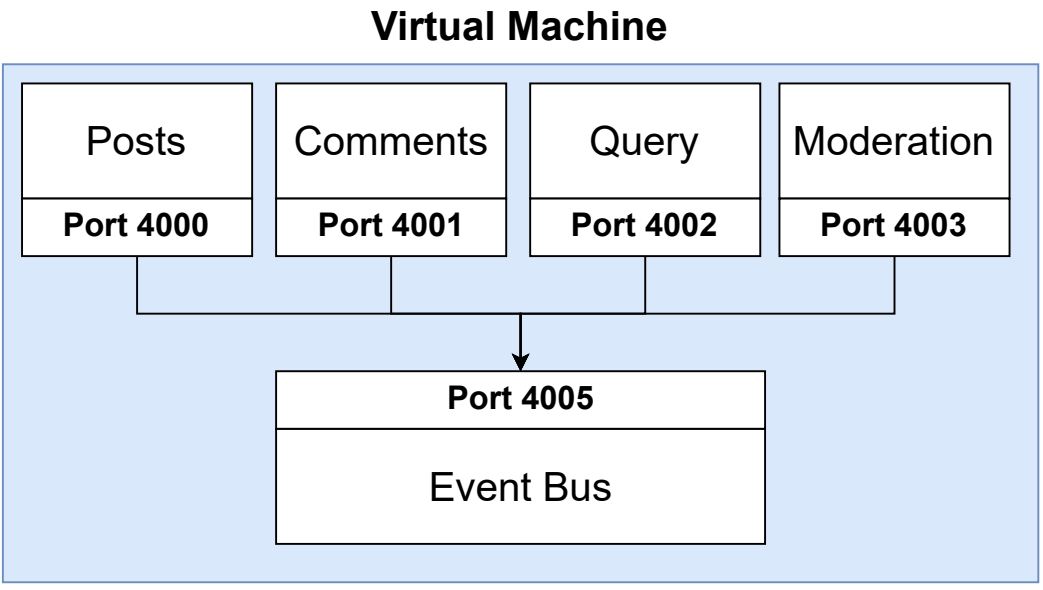
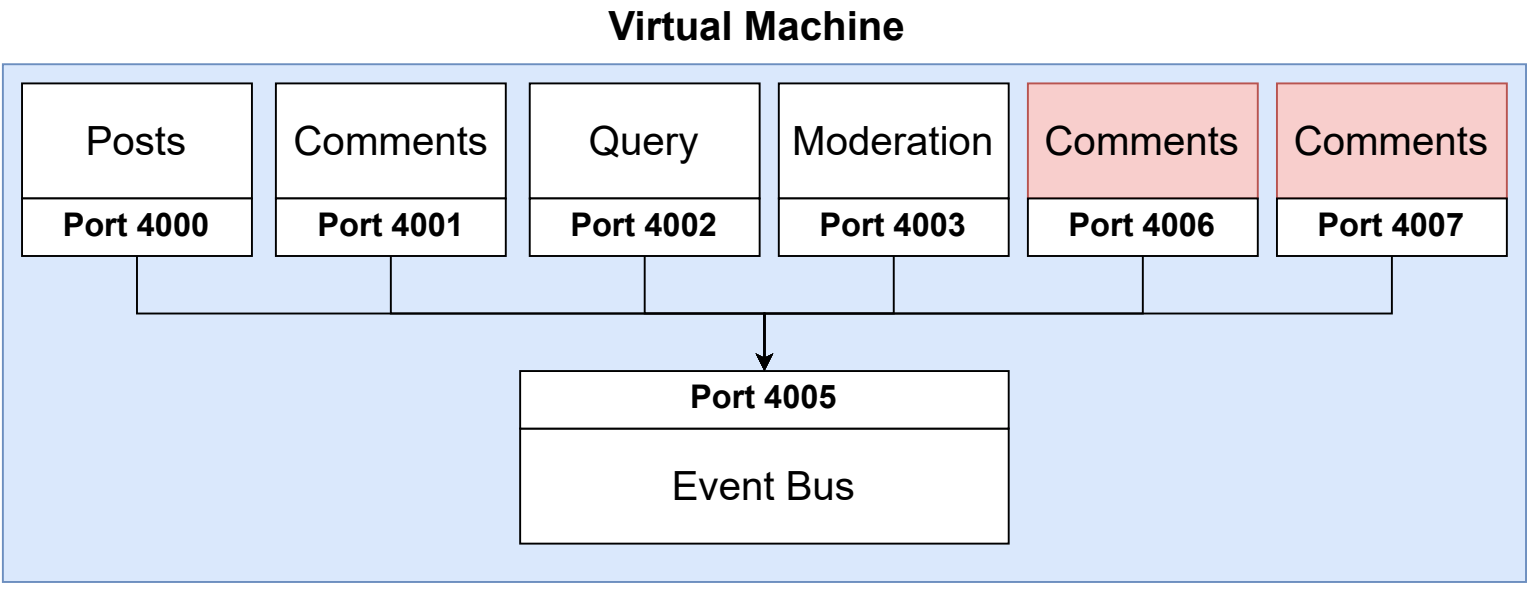
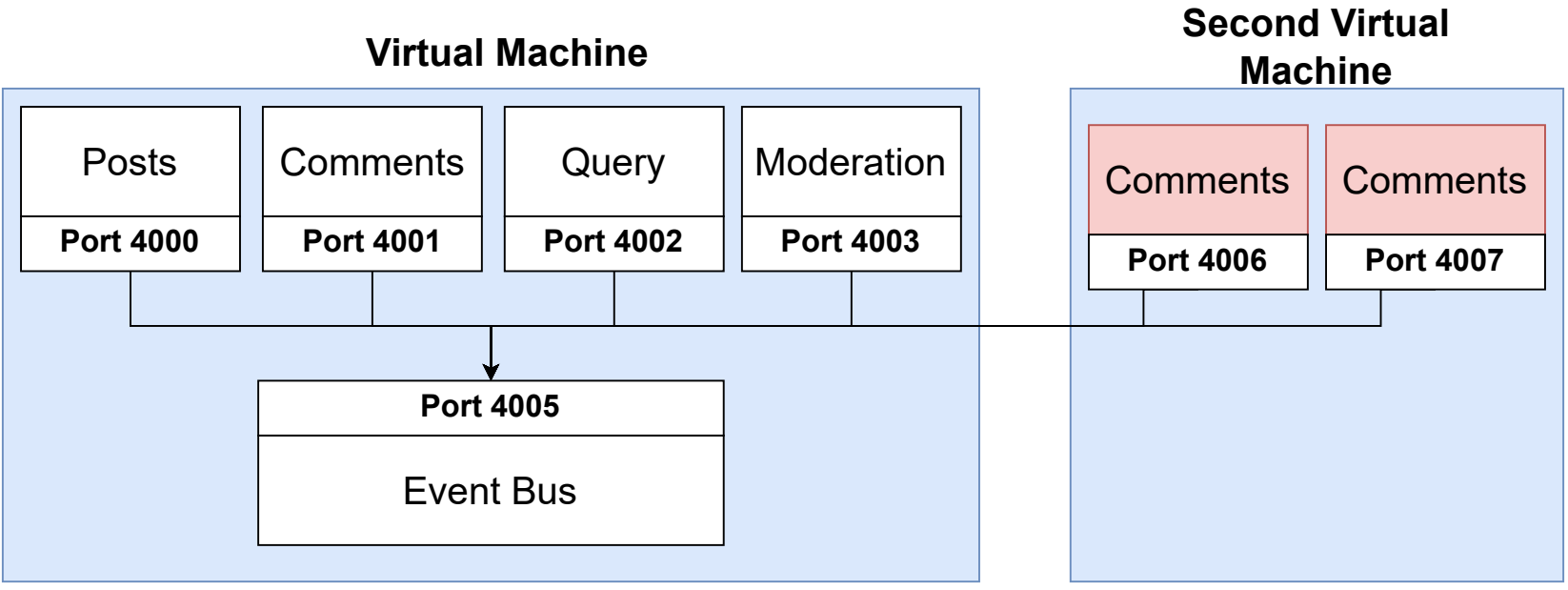

Your Computer
Event Bus
Posts
Comments
Moderation
Query

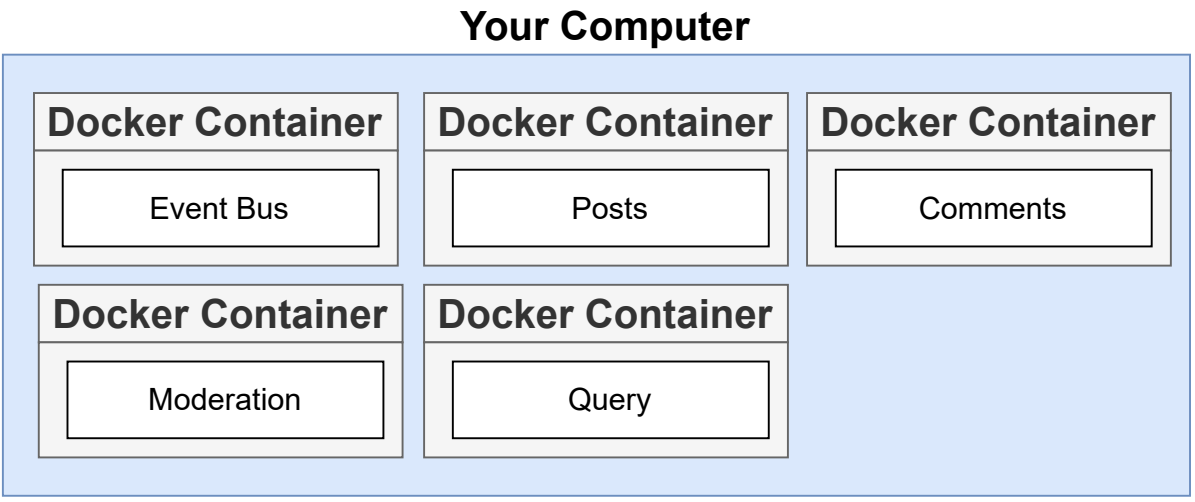

Your Computer
Docker Container
Event Bus
Docker Container
Posts
Docker Container
Comments
Docker Container
Moderation
Docker Container
Query


Your Computer
Posts
Port 4000
Comments
Port 4001
Query
Port 4002
Moderation
Port 4003
Port 4005
Event Bus


Virtual Machine
Posts
Port 4000
Comments
Port 4001
Query
Port 4002
Moderation
Port 4003
Port 4005
Event Bus


Virtual Machine
Posts
Port 4000
Comments
Port 4001
Query
Port 4002
Moderation
Port 4003
Comments
Port 4006
Comments
Port 4007
Port 4005
Event Bus


Virtual Machine
Second Virtual Machine
Posts
Port 4000
Comments
Port 4001
Query
Port 4002
Moderation
Port 4003
Comments
Port 4006
Comments
Port 4007
Port 4005
Event Bus

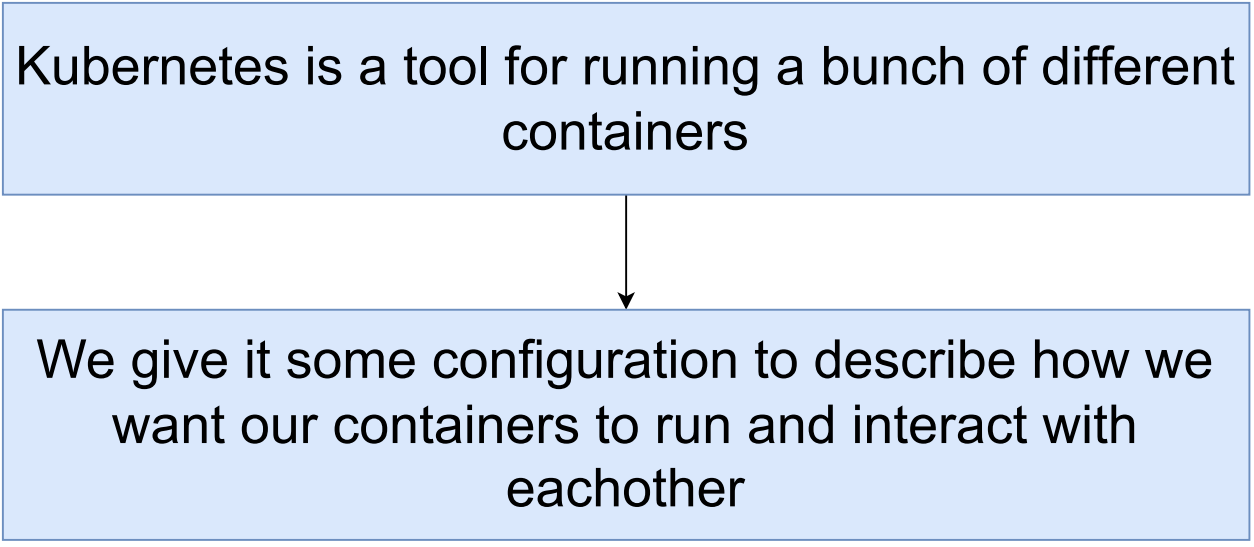

Your Computer
Docker Container
Event Bus
Docker Container
Posts
Docker Container
Comments
Docker Container
Moderation
Docker Container
Query

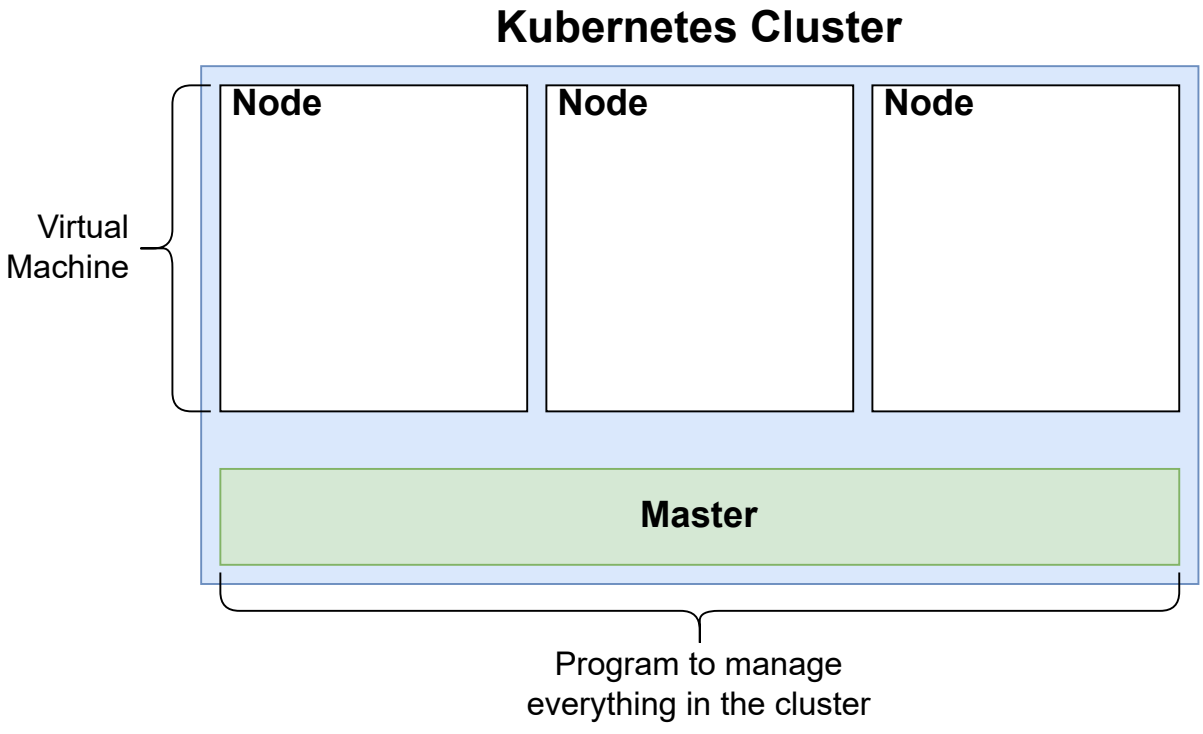
Wait...Why Docker?

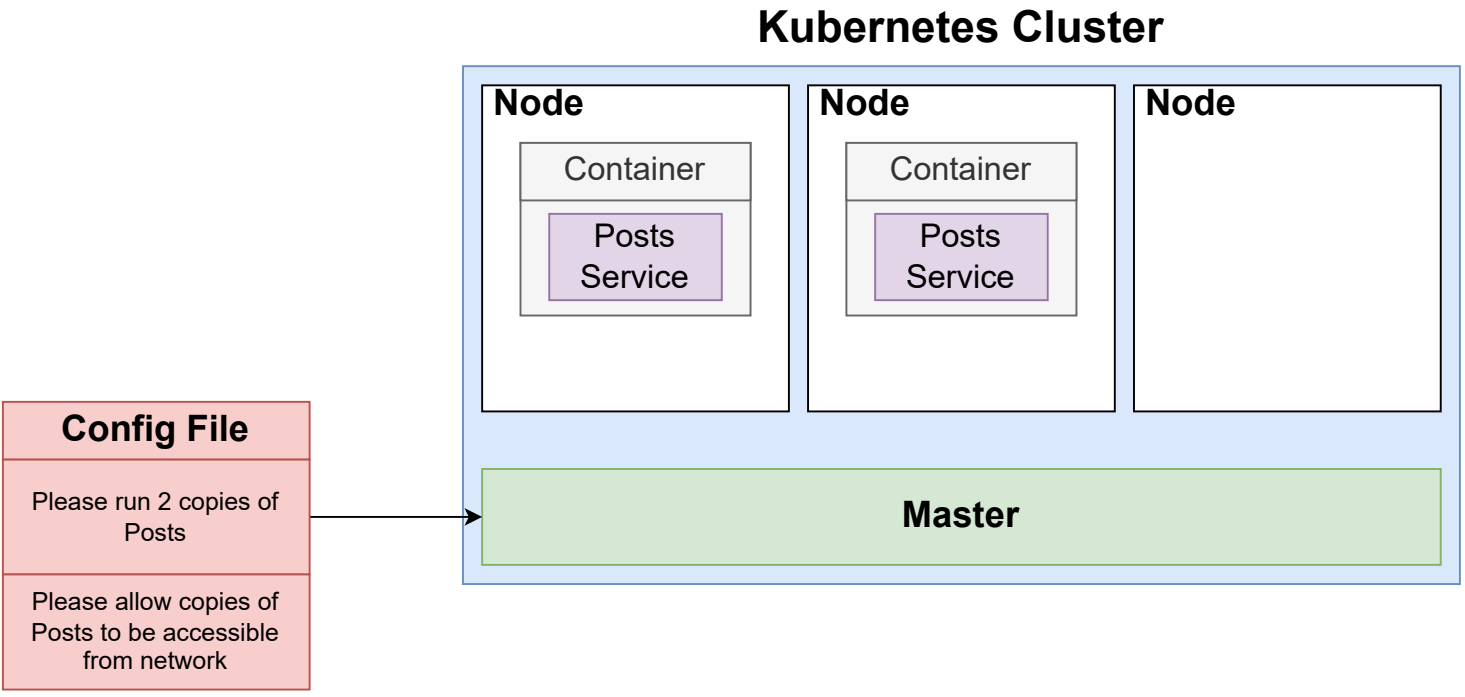
Running our app right now makes big assumptions about our environment

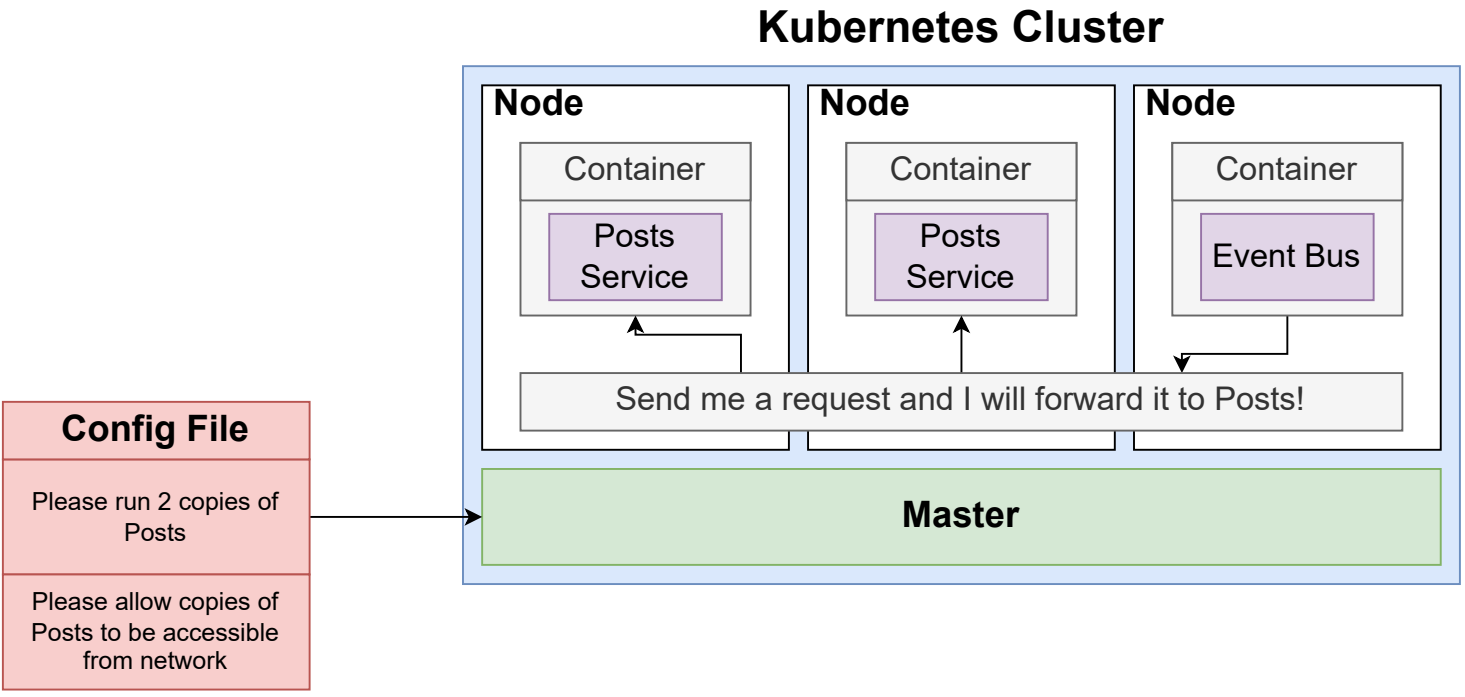
Running our app requires precise knowledge of how to start it (npm start)

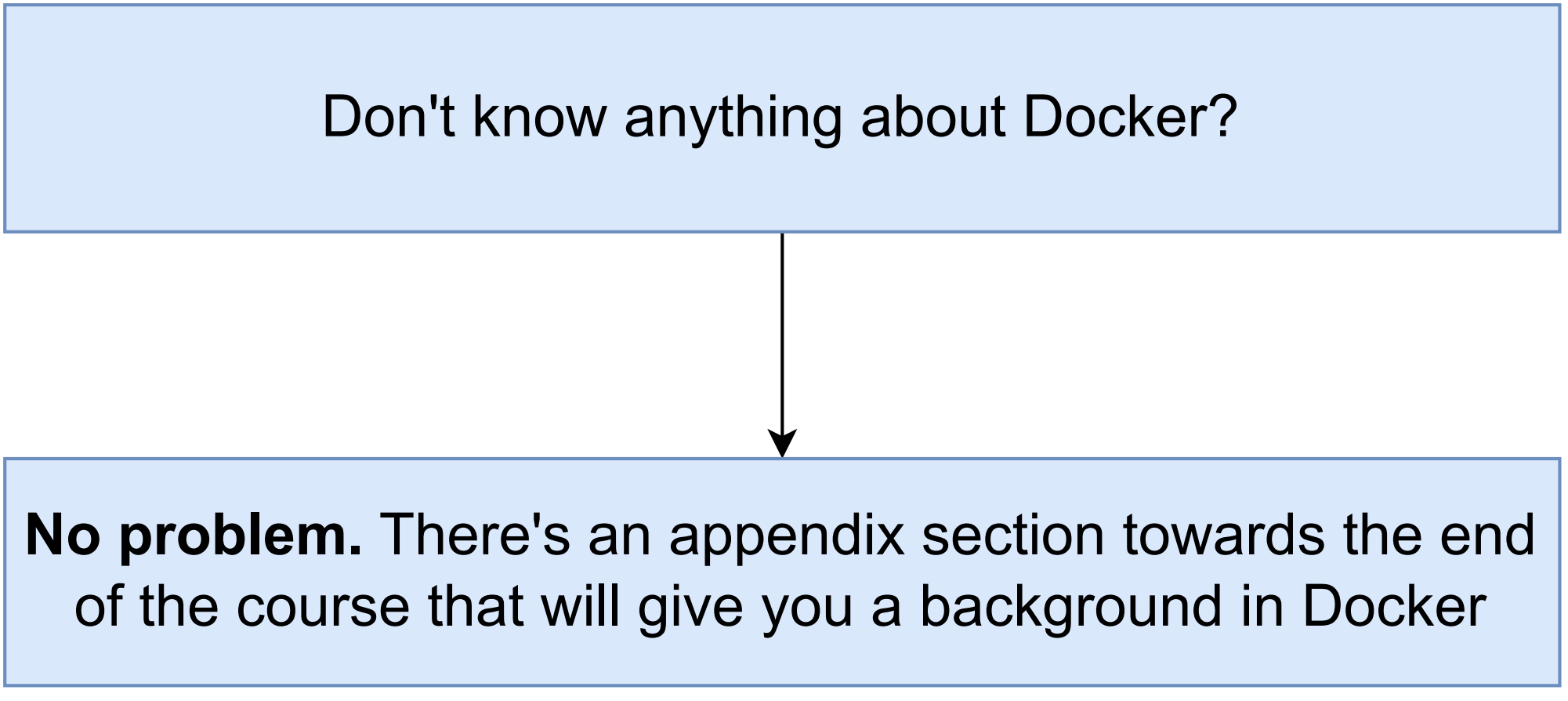
Docker solves both these issues. Containers wrap up everything that is needed for a program + how to start and run it

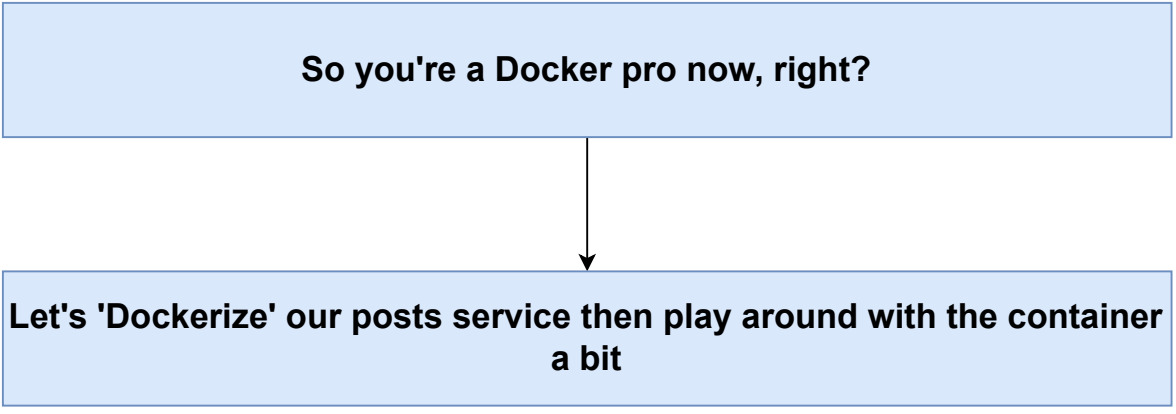

Kubernetes is a tool for running a bunch of different containers
We give it some configuration to describe how we want our containers to run and interact with eachother

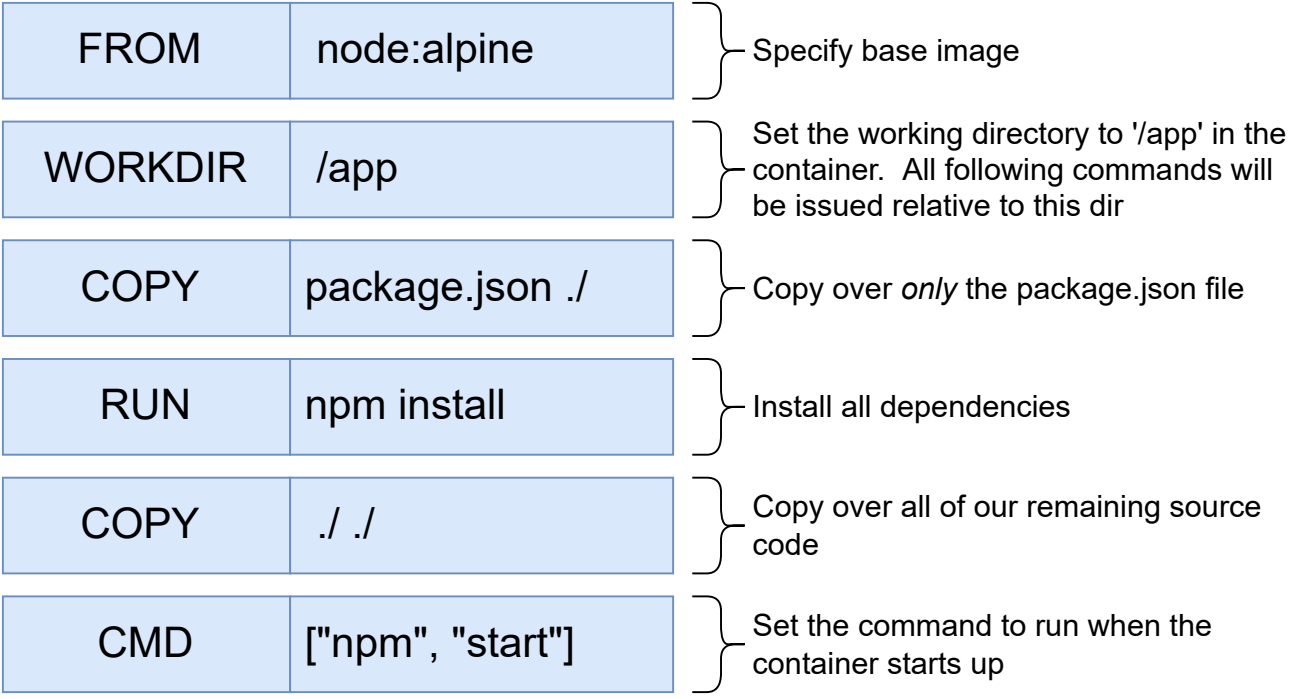

Kubernetes Cluster
Node
Node
Node
Virtual Machine
Master
Program to manage everything in the cluster


Kubernetes Cluster
Node
Container
Posts Service
Node
Container
Posts Service
Node
Master
Config File
Please run 2 copies of Posts
Please allow copies of Posts to be accessible from network


Kubernetes Cluster
Node
Container
Posts Service
Node
Container
Posts Service
Node
Container
Event Bus
Send me a request and I will forward it to Posts!
Master
Config File
Please run 2 copies of Posts
Please allow copies of Posts to be accessible from network


Don't know anything about Docker?
No problem. There's an appendix section towards the end of the course that will give you a background in Docker


So you're a Docker pro now, right?
Let's 'Dockerize' our posts service then play around with the container a bit


FROM
node:alpine
Specify base image
WORKDIR
/app
Set the working directory to '/app' in the container. All following commands will be issued relative to this dir
COPY
package.json ./
Copy over only the package.json file
RUN
npm install
Install all dependencies
COPY
./ ./
Copy over all of our remaining source code
CMD
["npm", "start"]
Set the command to run when the container starts up

`docker build -t stephengrider/posts .`	Build an image based on the dockerfile in the current directory. Tag it as 'stephengrider/posts'
`docker run` **`[image id or image tag]`**	Create and start a container based on the provided image id or tag
`docker run -it` **`[image id or image tag] [cmd]`**	Create and start container, but also override the default command
`docker ps`	Print out information about all of the running containers
`docker exec -it` **`[container id] [cmd]`**	Execute the given command in a running container
`docker logs` **`[container id]`**	Print out logs from the given container