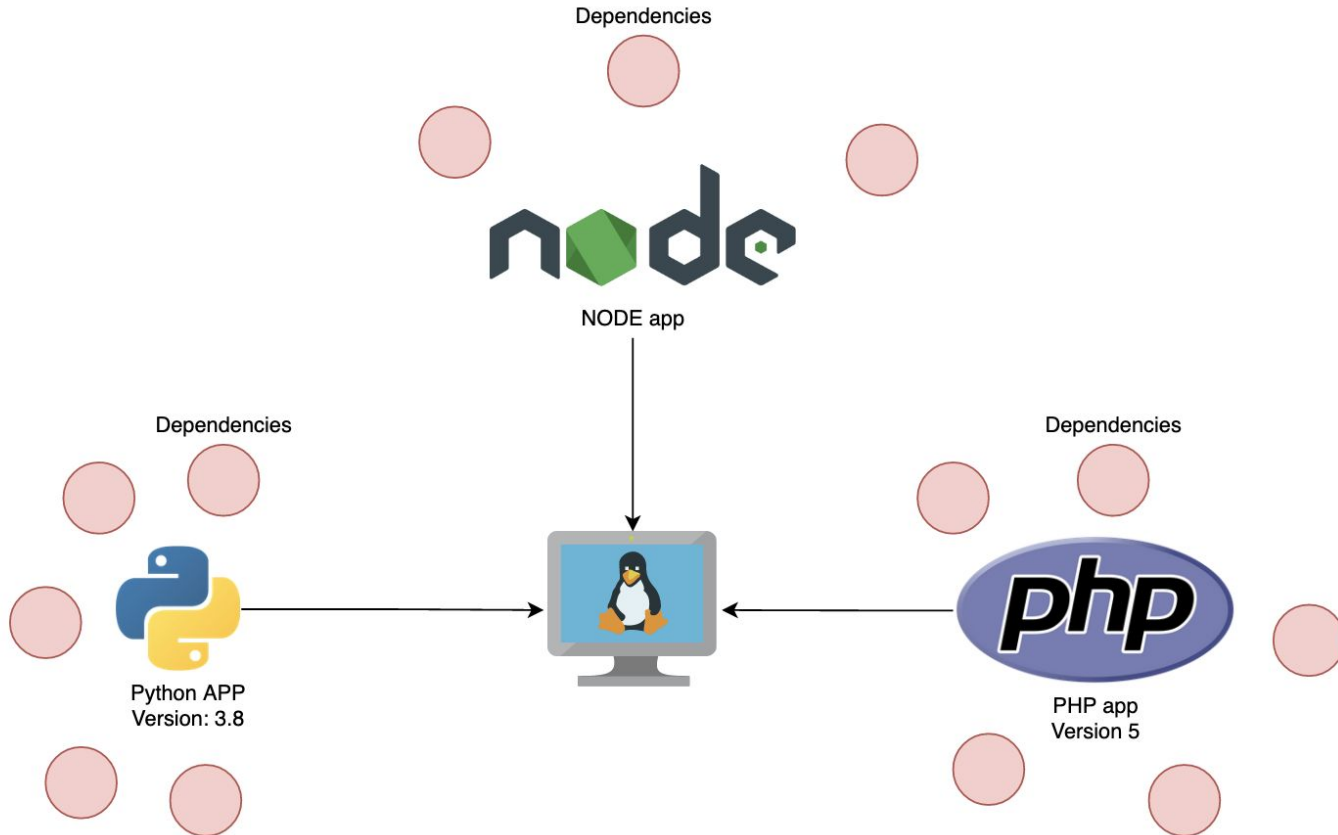


CONTAINERS, POD,  
SERVICE AND  
NAMESPACE

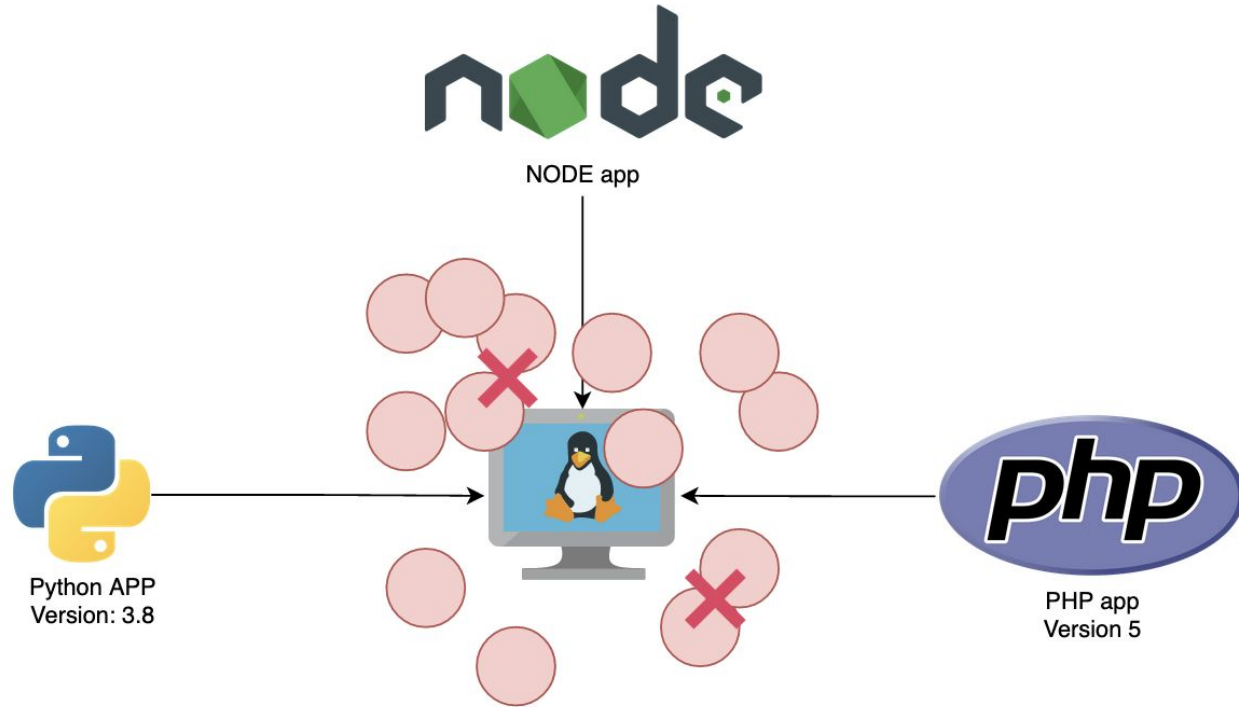


**kubernetes**

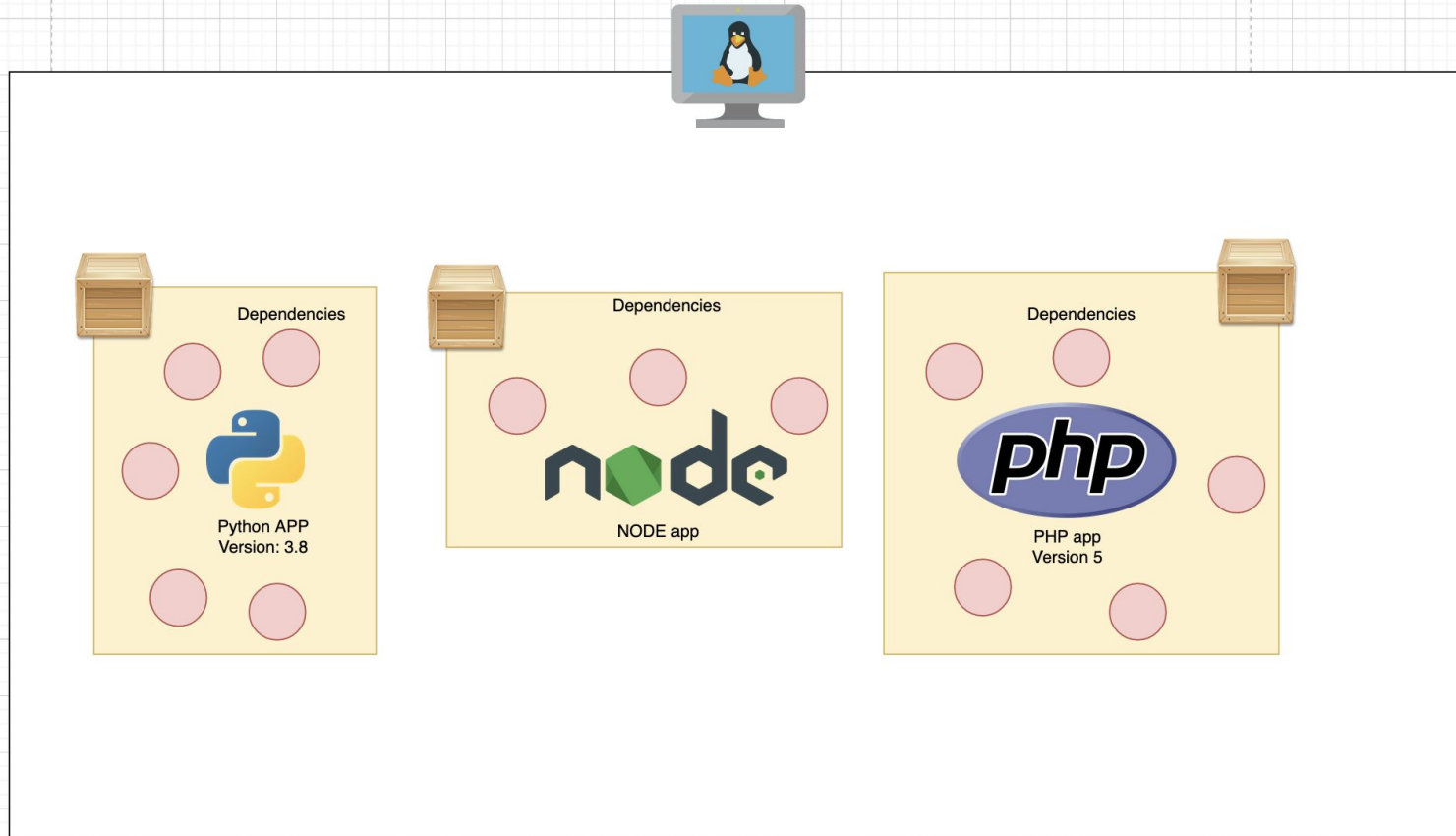
# Why we need container



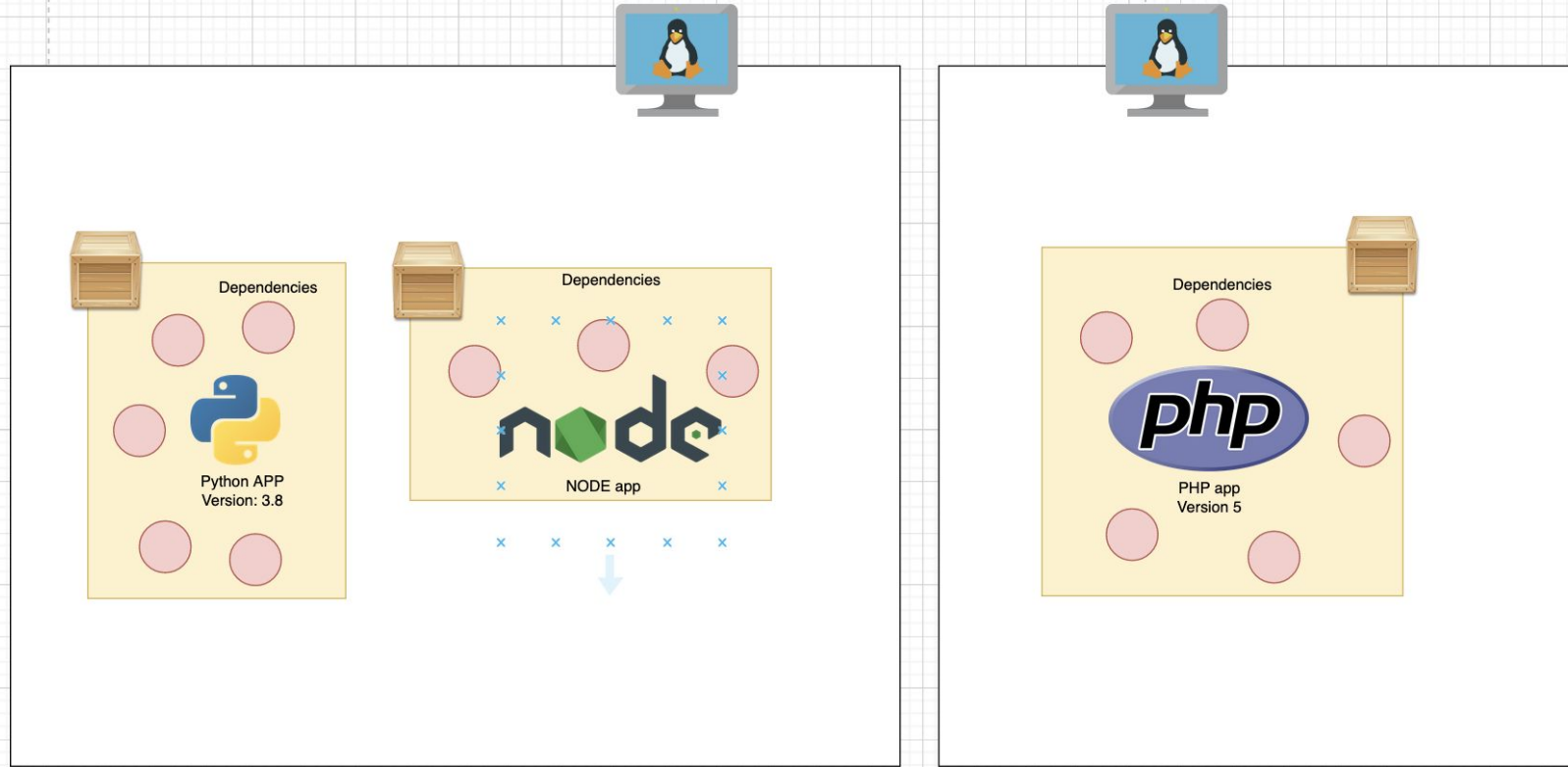
# Why we need container



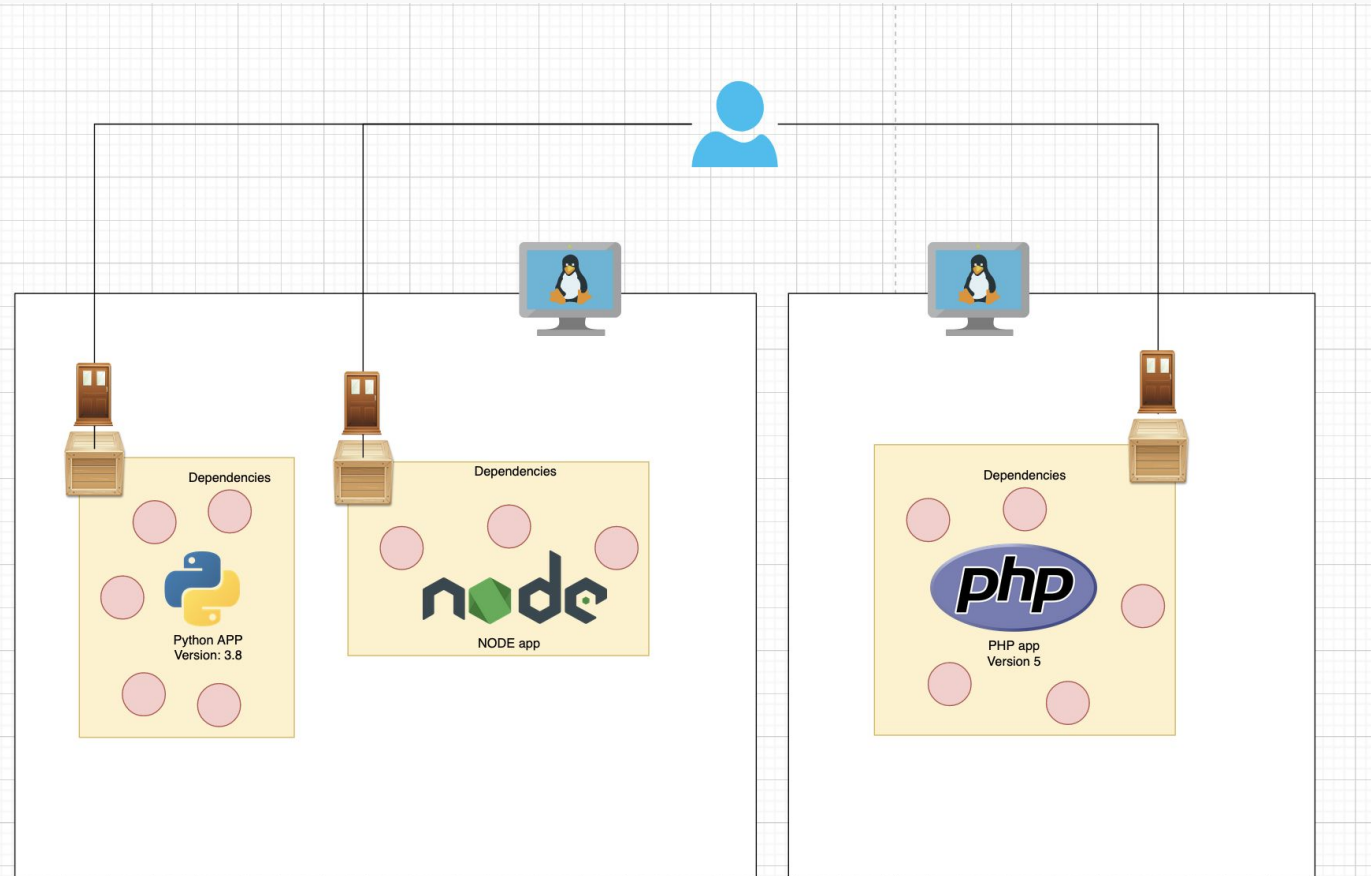
# Why we need container



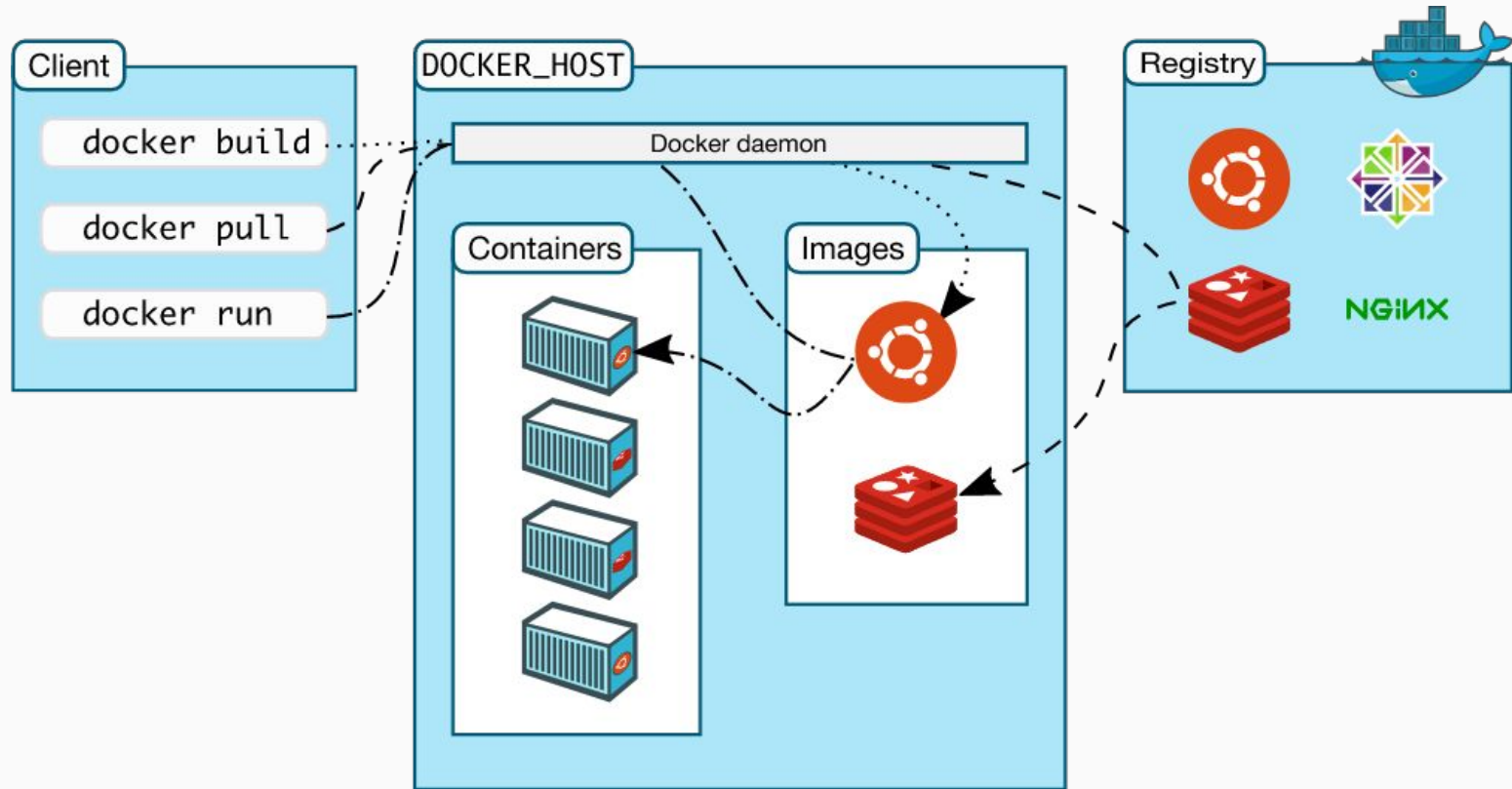
# Why we need container



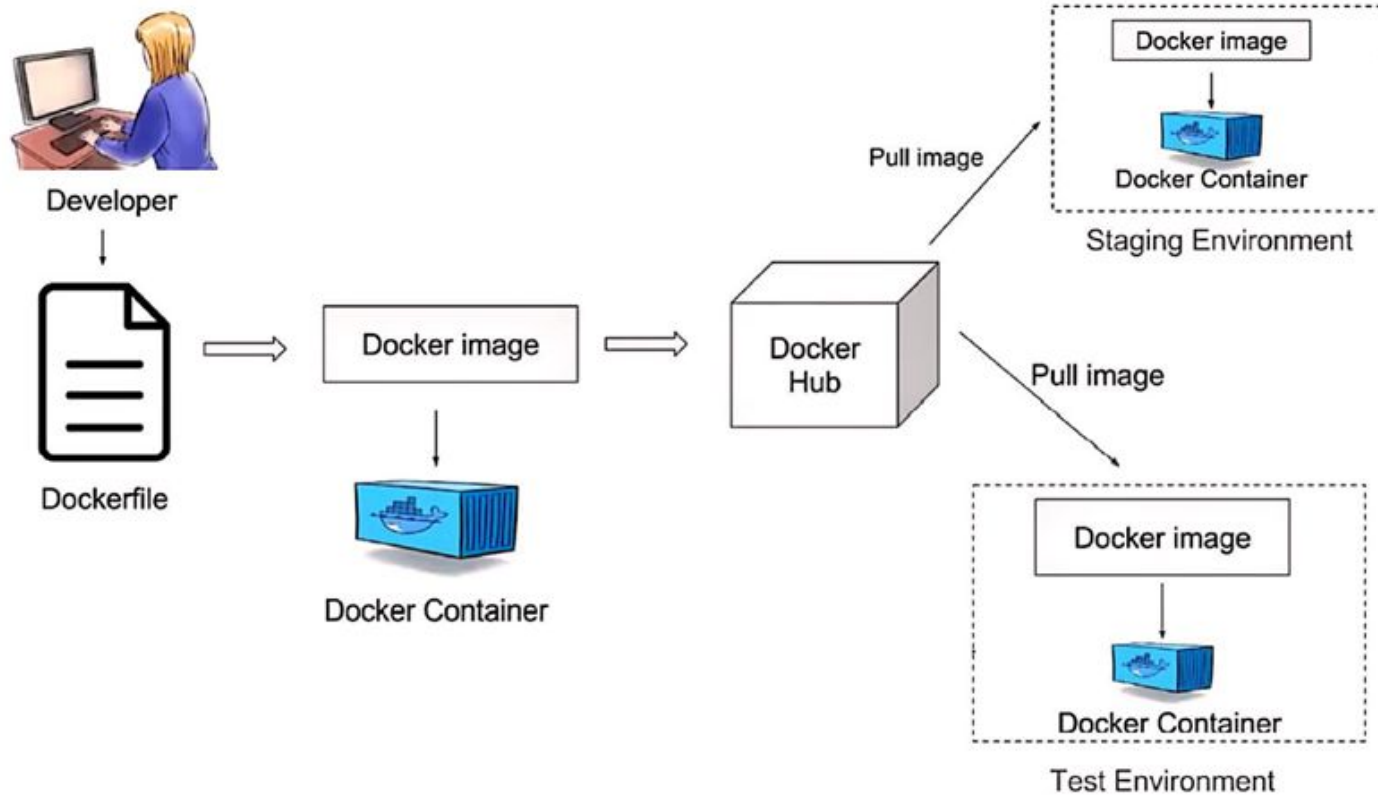
# Why we need container



# What is Container



# What is Container



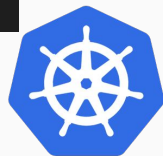


## Dockerfile - create the image

```
FROM node:13
WORKDIR /var/www/html
COPY . ./

RUN apt-get update
RUN apt-get install -y gconf-service libasound2 libatk1.0-0

RUN npm install
EXPOSE 3001
CMD ["npm", "start"]
```

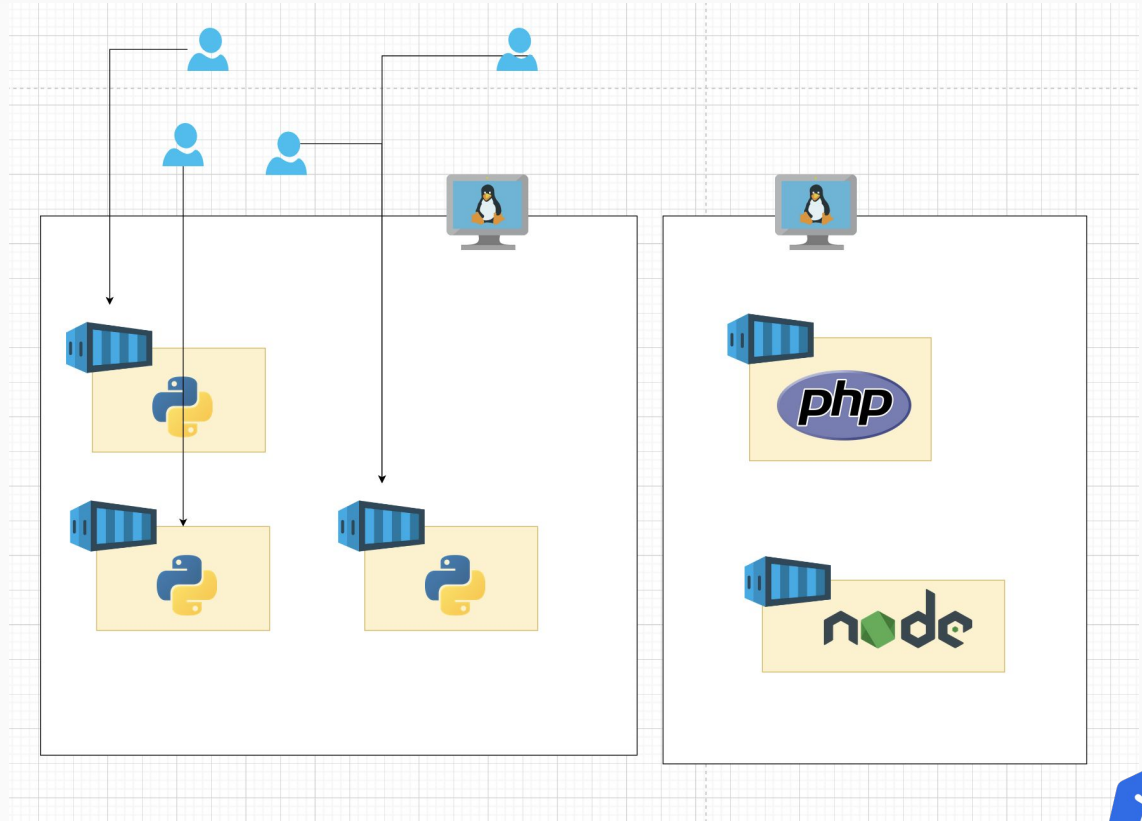


- **Build image**
  - `docker build . -t <DOCKER-REPO-NAME>/<IMAGE-NAME>`
- **Run container**
  - `docker run -d -it --expose <PORT> -p 3001:3001 <DOCKER-REPO-NAME>/<IMAGE-NAME>`
- **Enter in container**
  - `docker exec -it <CONTAINER-ID> bash`

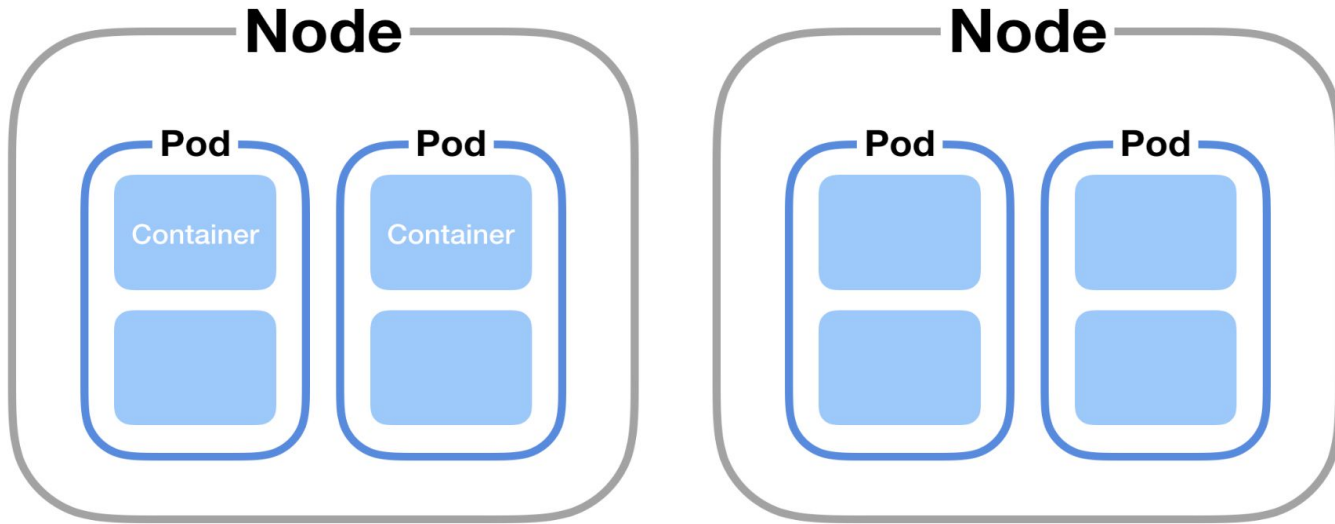


# Problem

- Create replicas
- Balance the requests through containers
- Insure that replicas are running

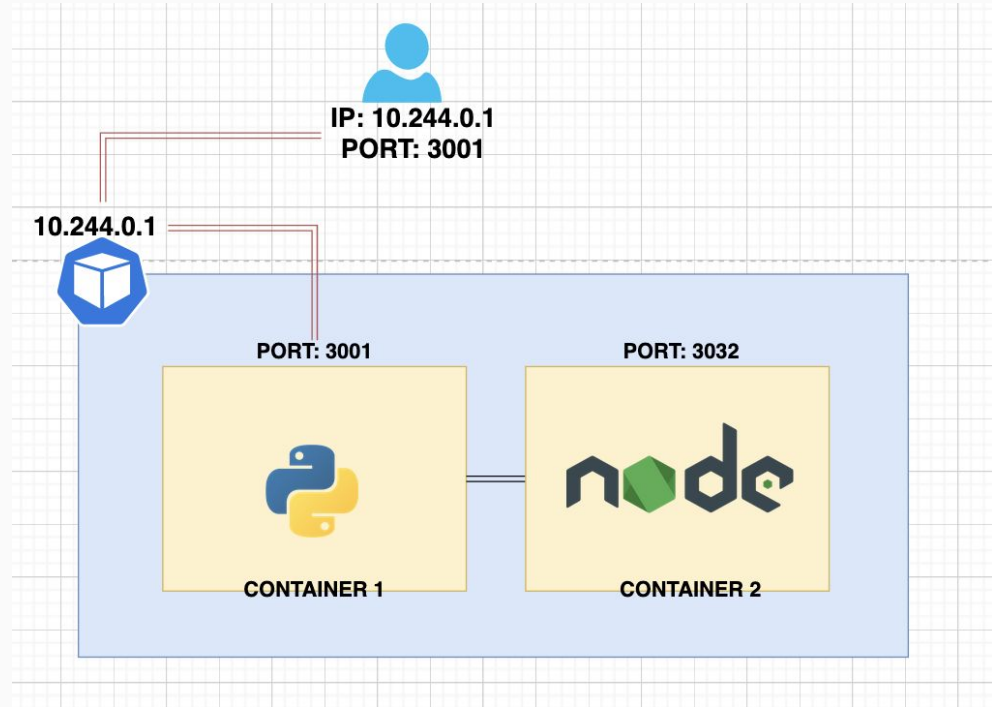


## Cluster



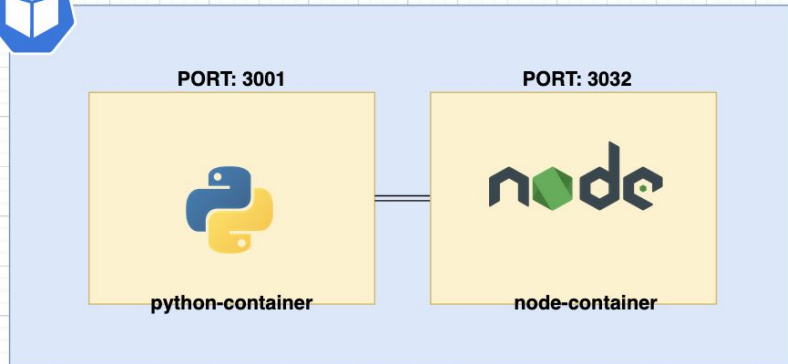
# What is a POD

- Containers can communicate with each other
- Specify POD IP address and the container PORT



# Pod example YAML

pod-example



- “Kind” defines the k8s resource
- Command to create the resource:
  - **Kubectl apply -f file.yaml**

```
apiVersion: v1
```

```
kind: Pod
```

```
metadata:
```

```
  name: pod-example
```

```
spec:
```

```
  containers:
```

```
    - name: node-container
```

```
      image: node
```

```
      ports:
```

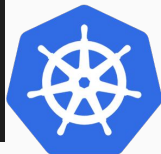
```
        - containerPort: 3032
```

```
    - name: python-container
```

```
      image: python
```

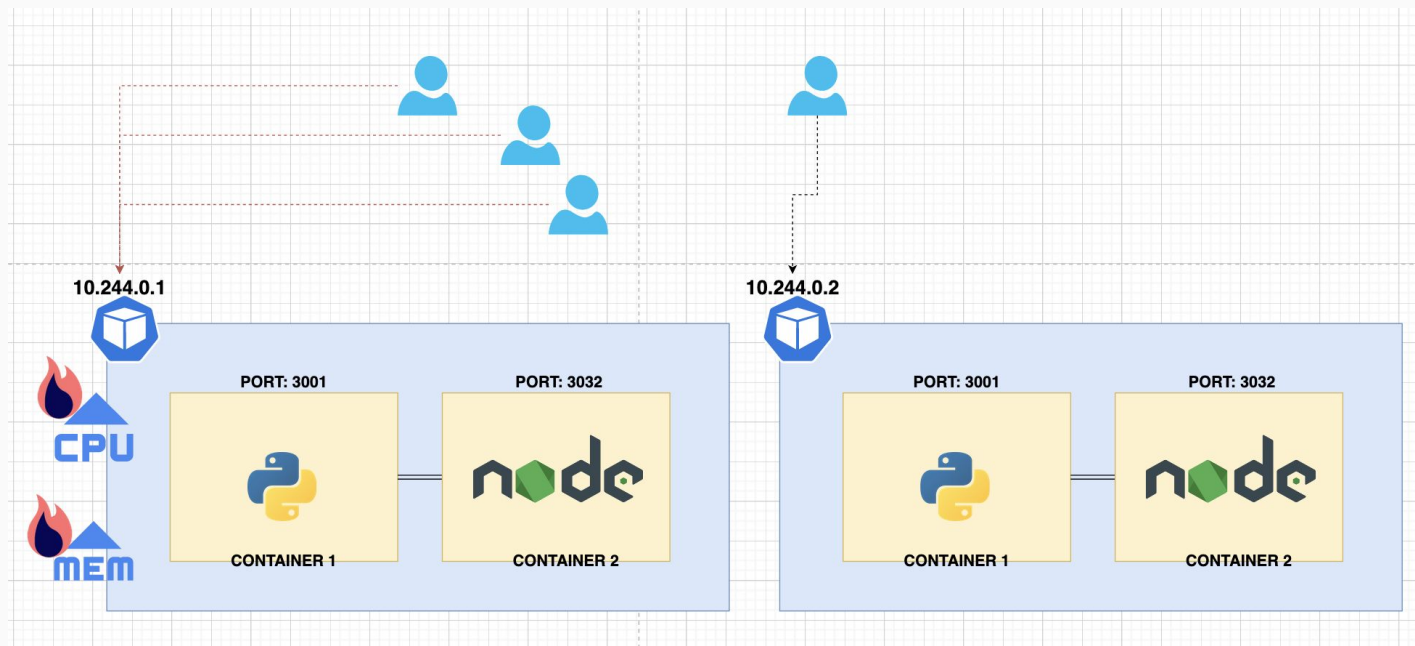
```
      ports:
```

```
        - containerPort: 3001
```

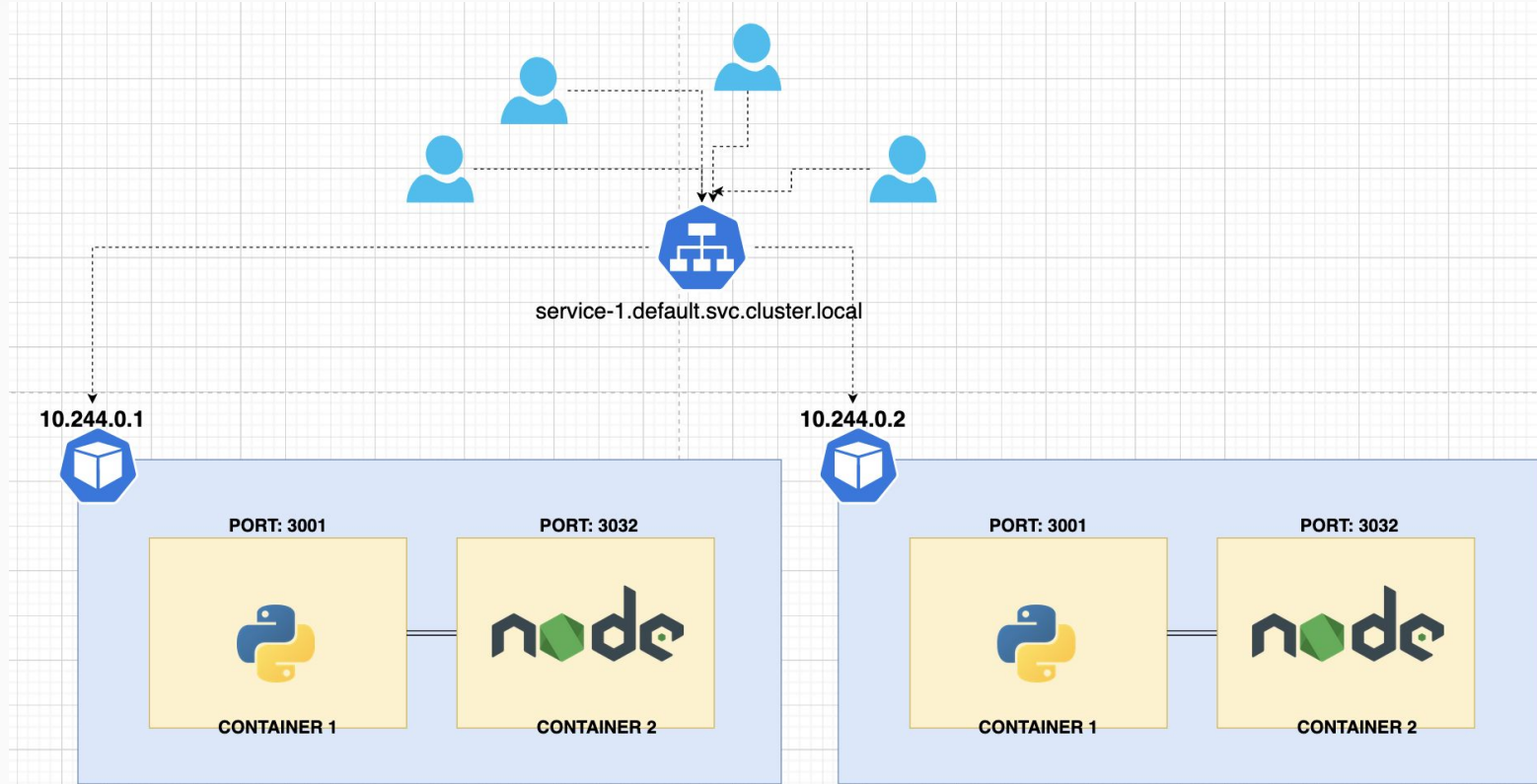


# Scaling the pods

- I need something that balance the requests between multiple pods



# Services resource





# Service YAML

- Service name will be a DNS
- You can access the service by using the “**service-test**” DNS in the same namespace

```
apiVersion: v1
kind: Pod
metadata:
  name: pod-test-1
  labels:
    name: pod-test
spec:
  containers:
  - name: container
    image: brunoteleginski/node-session-1
    ports:
    - containerPort: 3001
```

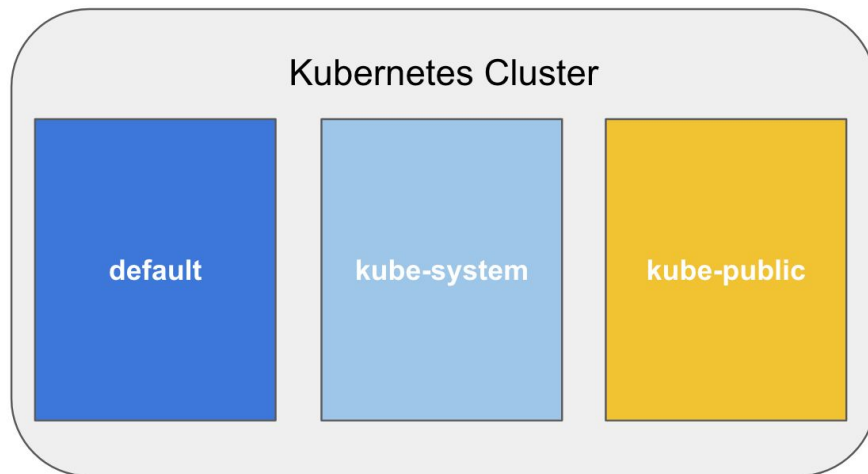
```
apiVersion: v1
kind: Pod
metadata:
  name: pod-test-2
  labels:
    name: pod-test
spec:
  containers:
  - name: container
    image: brunoteleginski/node-session-1
    ports:
    - containerPort: 3001
```

```
apiVersion: v1
kind: Service
metadata:
  name: service-test
spec:
  selector:
    name: pod-test
  ports:
  - protocol: TCP
    port: 80
    targetPort: 3001
```



# Namespace

```
apiVersion: v1
kind: Namespace
metadata:
  name: <insert-namespace-name-here>
```



# LET'S DO THE TASK

