

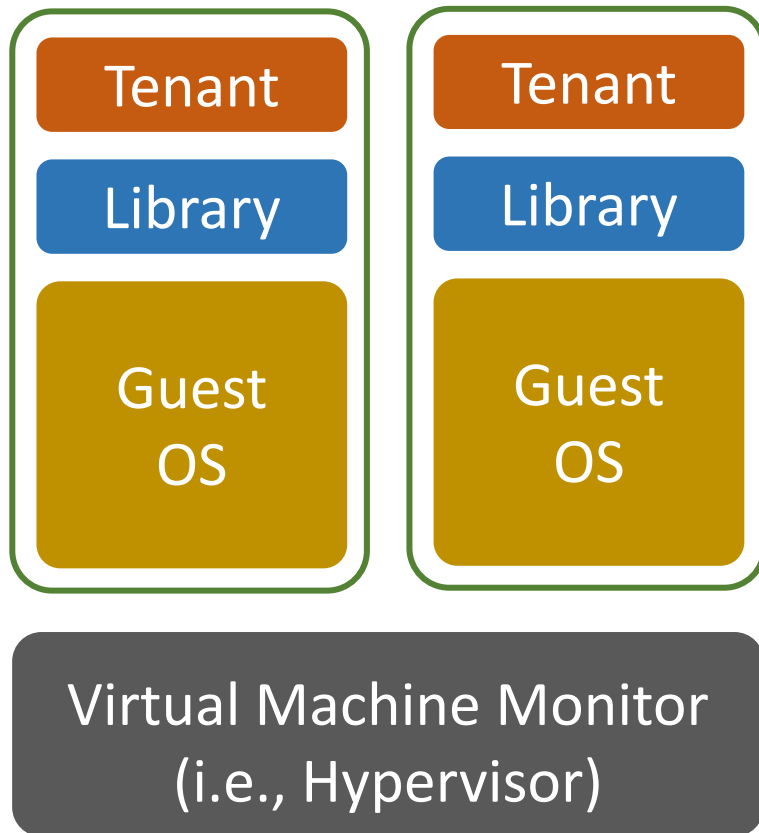
# Containers

*ENGR689 (Sprint)*

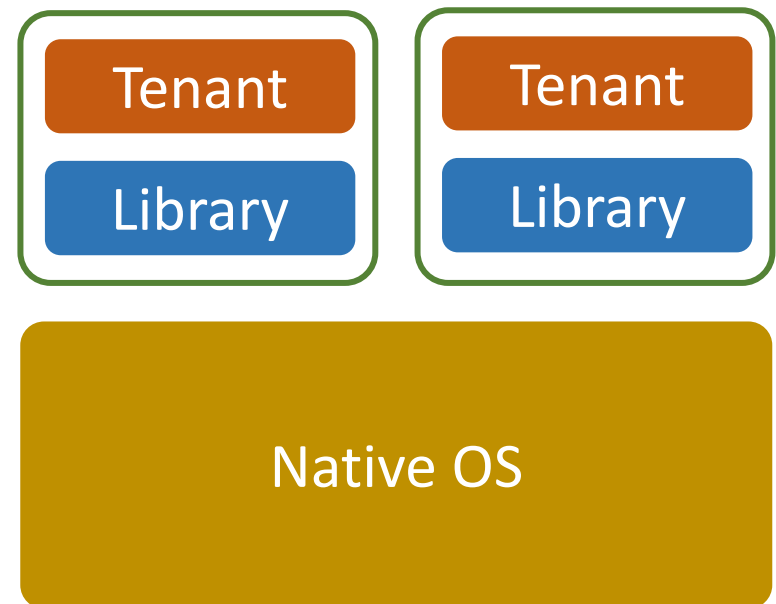


# VMs vs Containers

## Virtual Machines



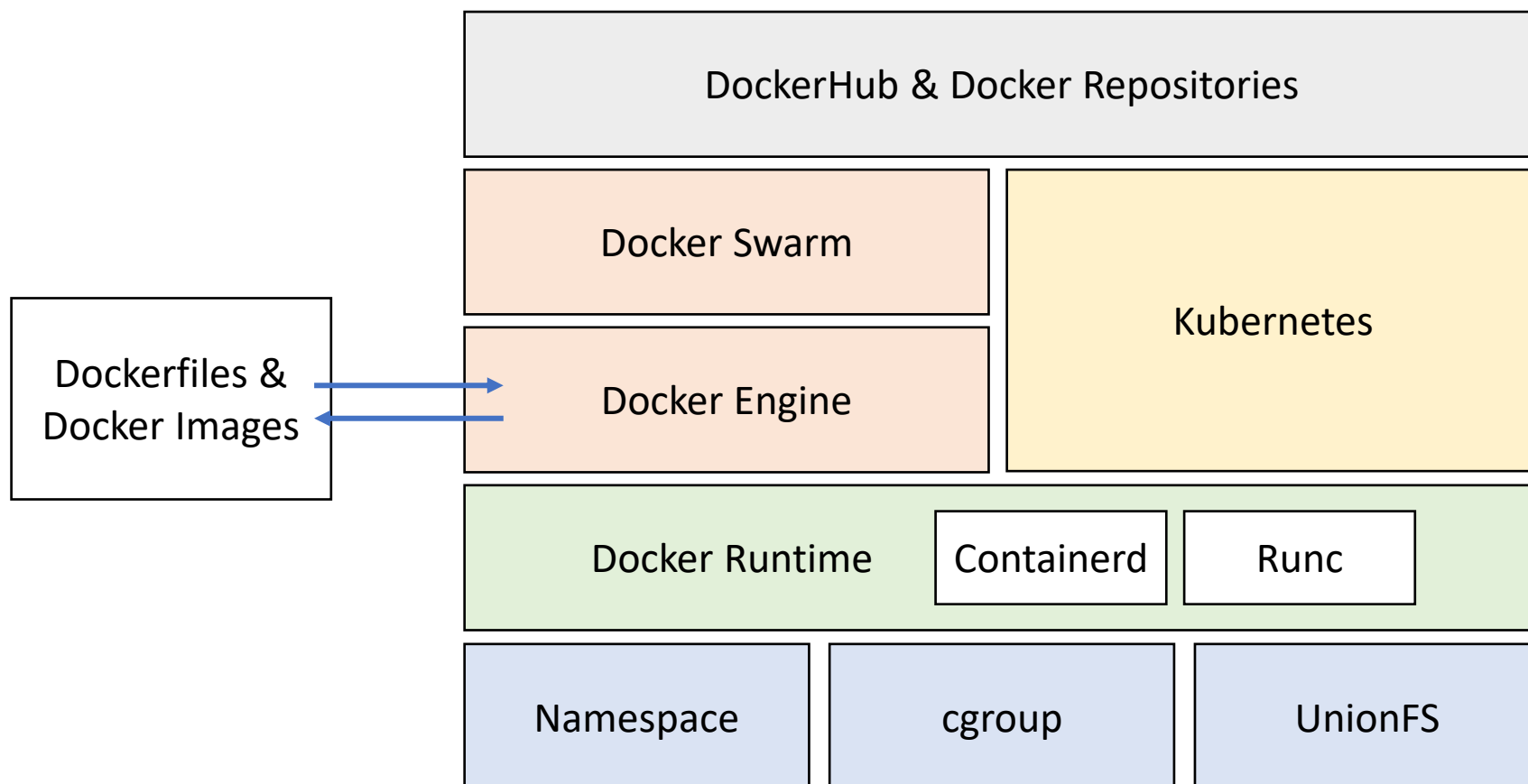
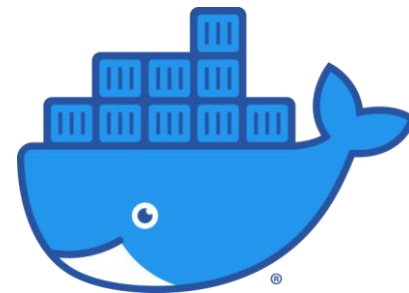
## Containers



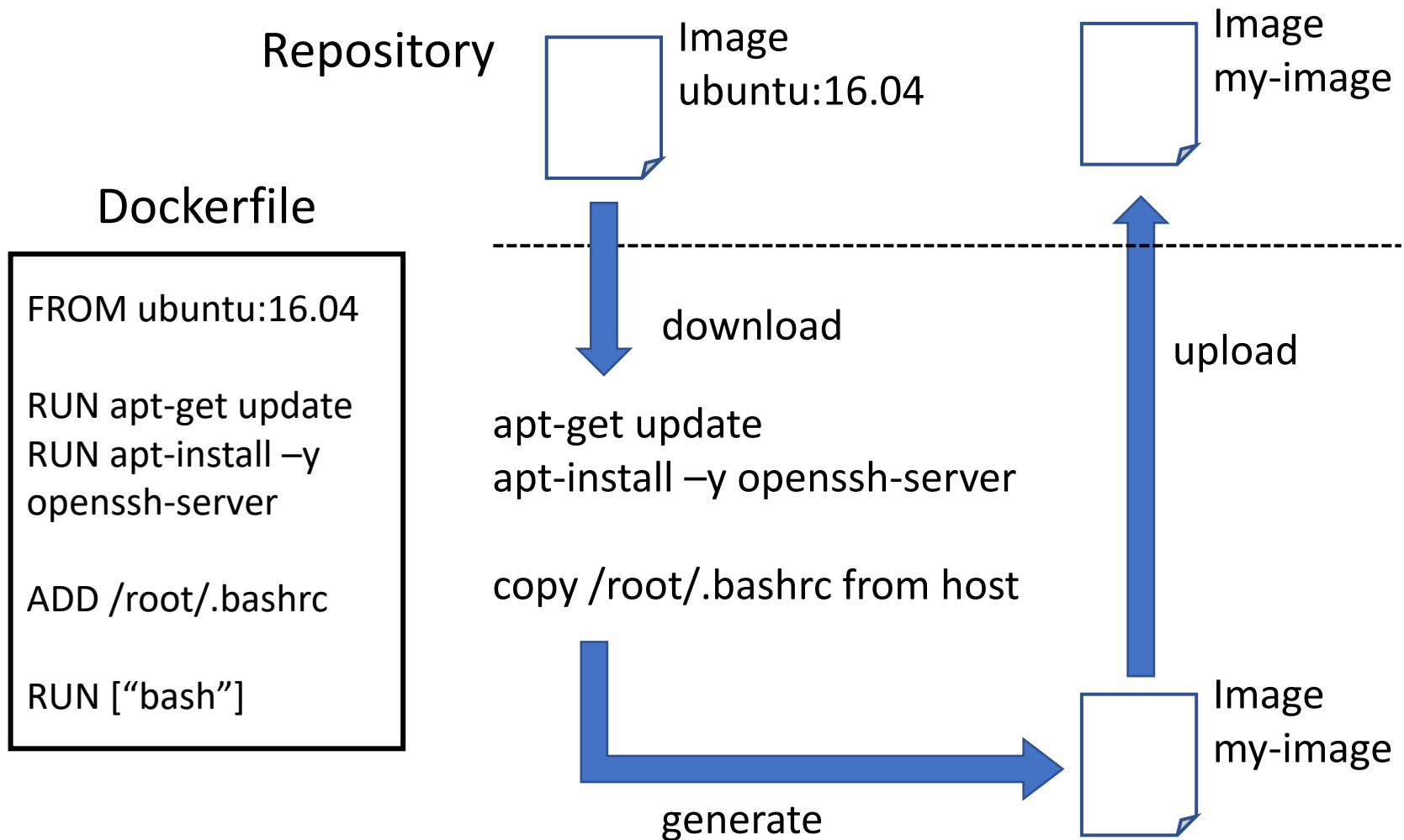
# Docker Containers

- **Focuses on user experience (UX) of containers**
  - Tools for composing and managing containers
  - Abstracting LXC interfaces
  - Agile deployment and extension

# Docker Fundamentals



# Dockerfiles and Images



# Binary Compatibility

## Dockerfile 1

```
FROM ubuntu:16.04

RUN apt-get update
RUN apt-install -y
python2.6

RUN ["python"]
```

## Dockerfile 2

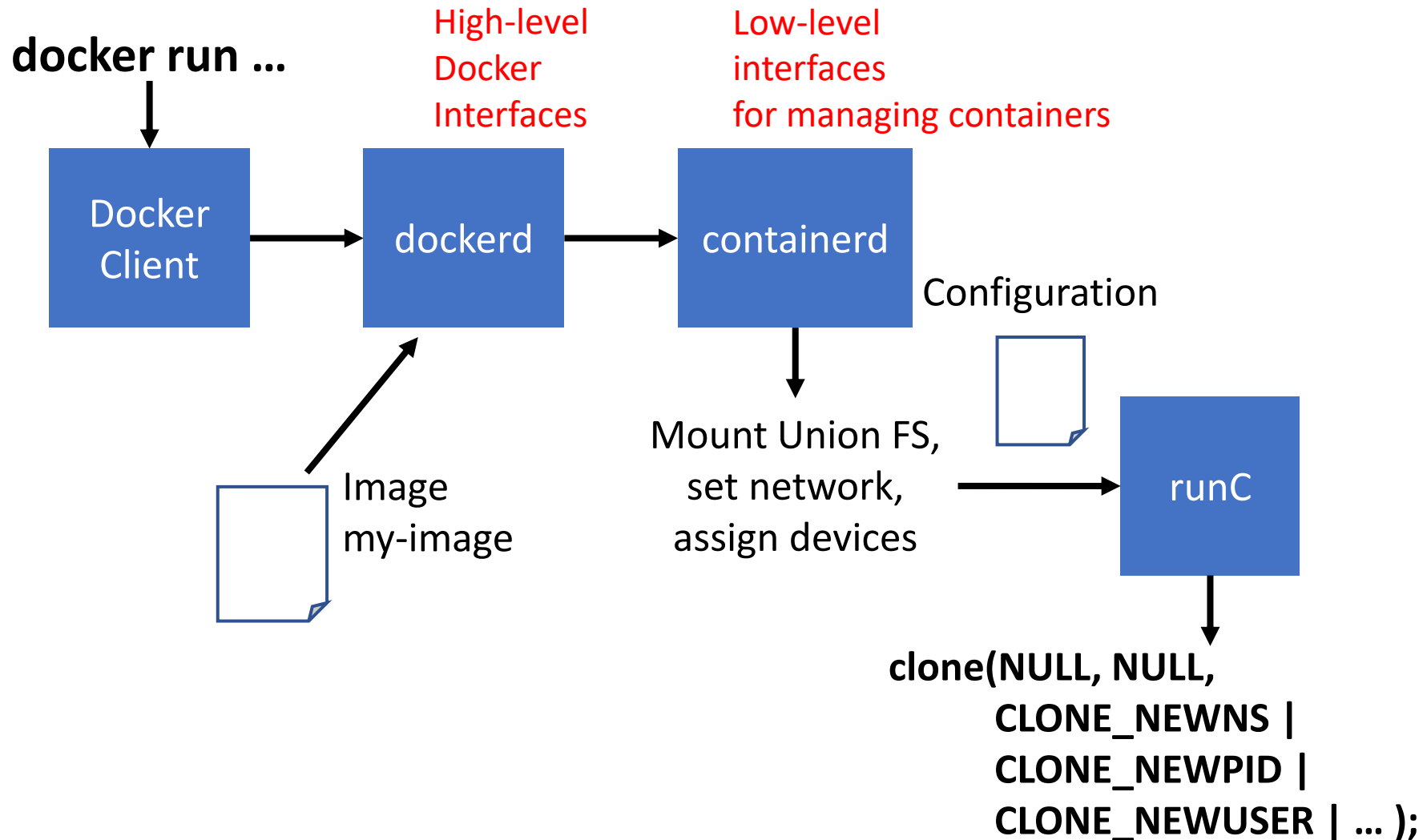
```
FROM ubuntu:18.04

RUN apt-get update
RUN apt-install -y
python3.3

RUN ["python"]
```

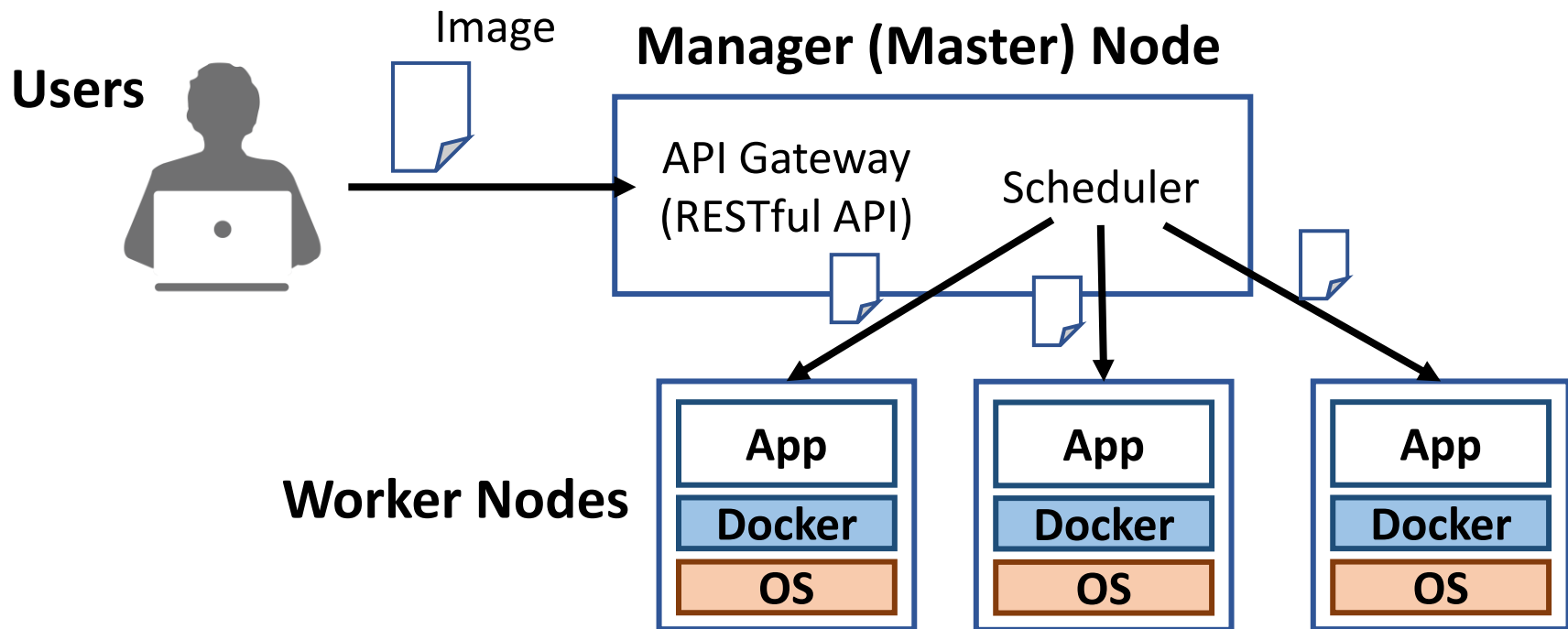
- Choose library versions and customize configuration specific to each application
- Remove unnecessary packages for security
- Ease of deployment and reproduction

# Docker Framework



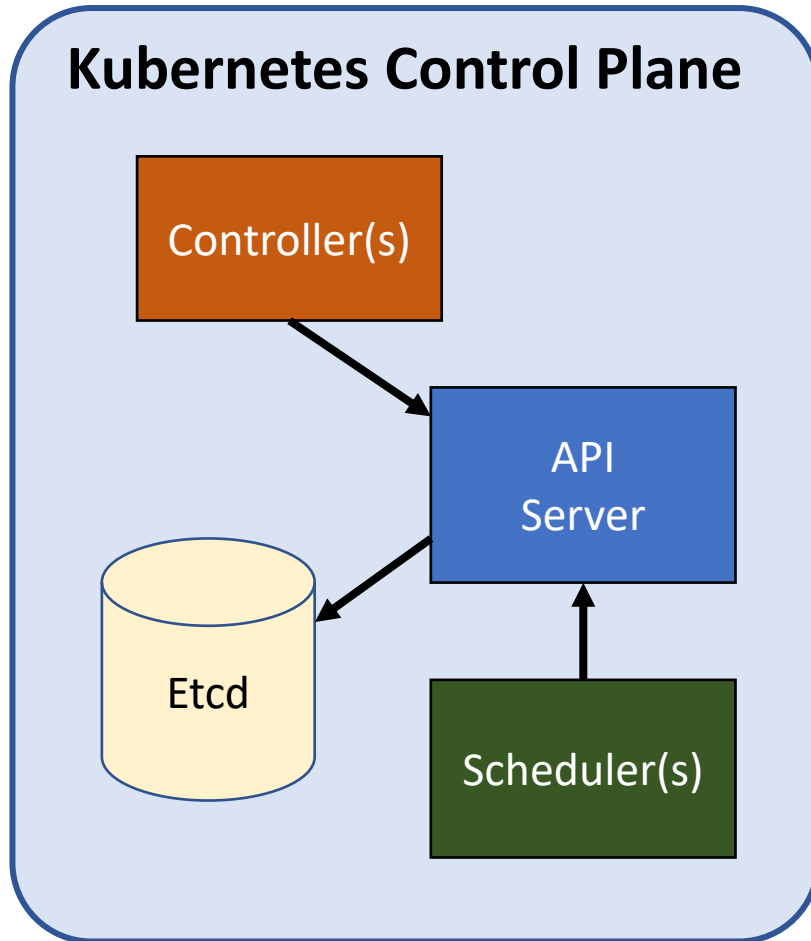
# Kubernetes (k8s)

- Container orchestration frameworks
  - Equivalent to EC2 or Openstack for VMs
  - Can scale out containers onto multiple physical nodes

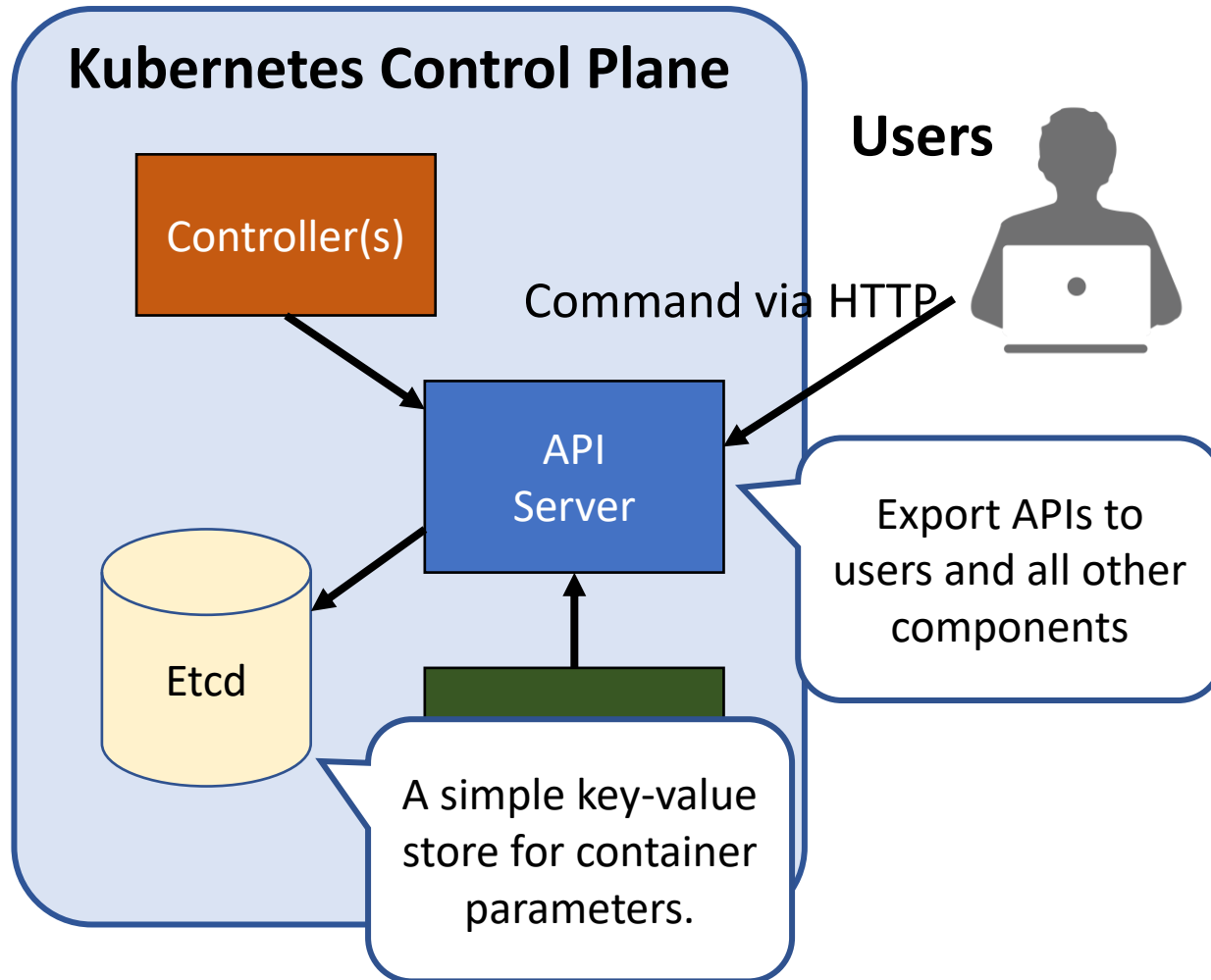




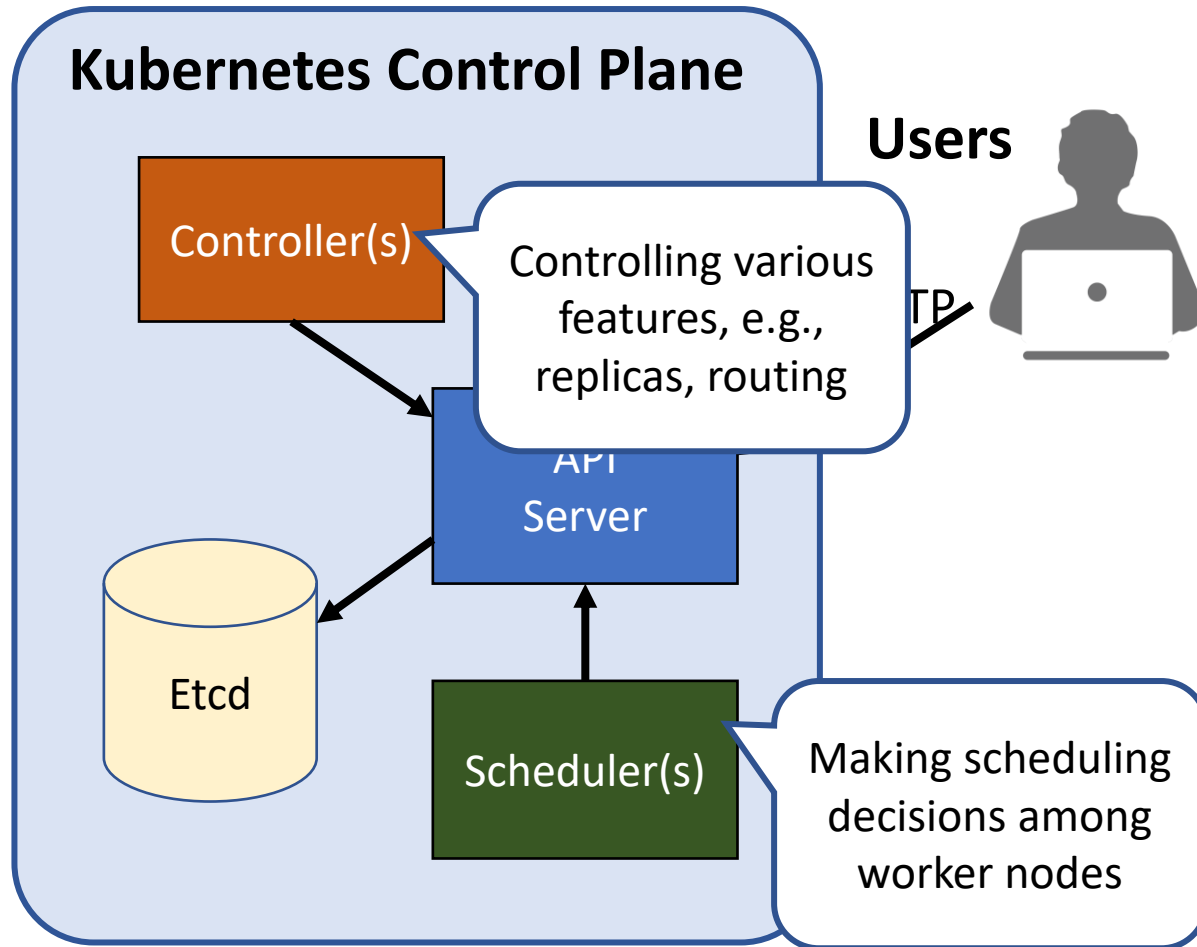
# Kubernetes (k8s)



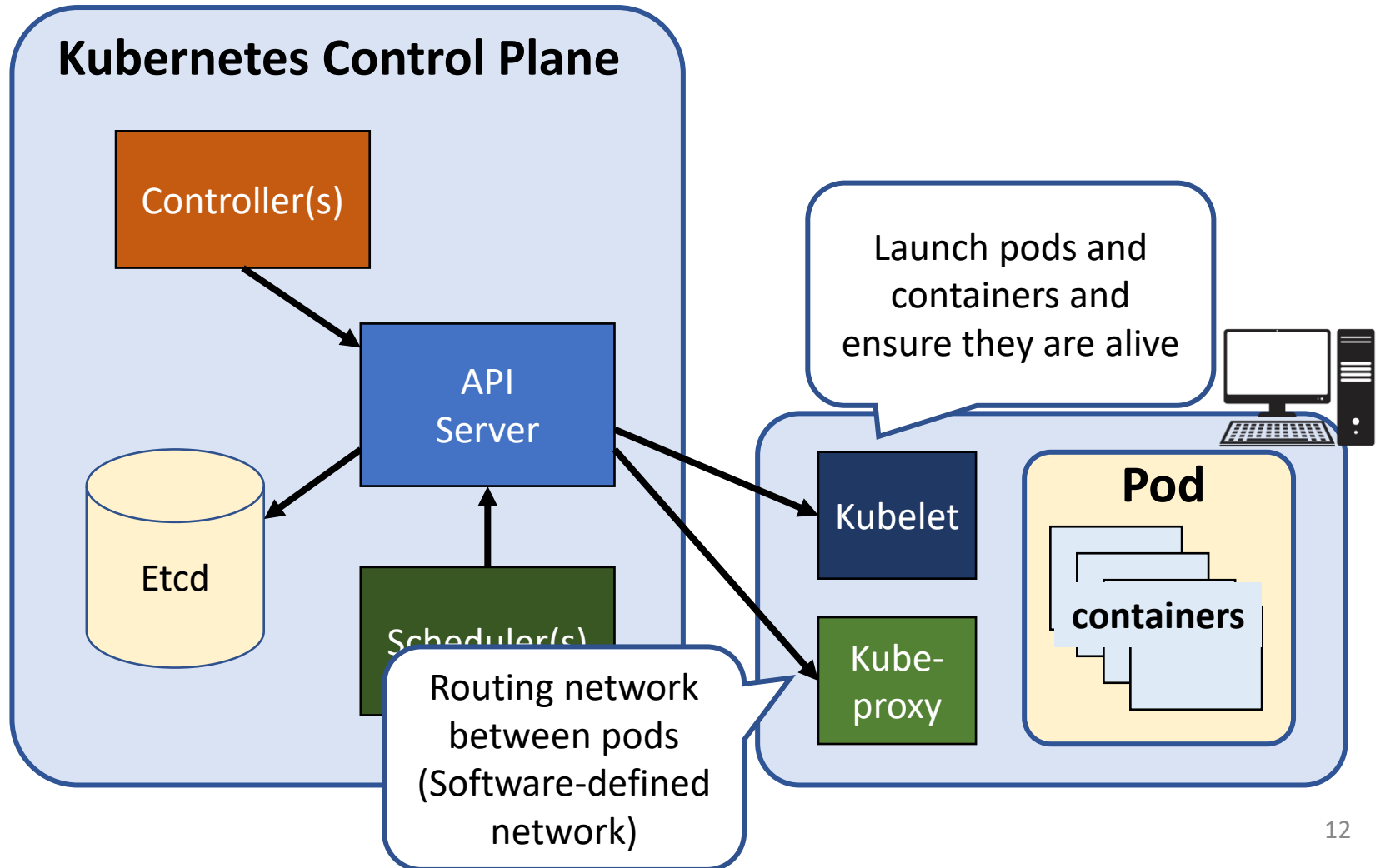
# Kubernetes (k8s)



# Kubernetes (k8s)



# Kubernetes (k8s)



# Kubernetes (k8s)

