



## KUBERNETES ARCHITECTURE

# Kubernetes Architecture

## Init Containers

Not all containers are the same. Standard containers are sent to the container engine at the same time, and may start in any order. LivenessProbes, ReadinessProbes, and StatefulSets can be used to determine the order, but can add complexity. Another option can be an **init container**, which must complete before app containers will be started. Should the init container fail, it will be restarted until completion, without the app container running.

The init container can have a different view of the storage and security settings, which allows utilities and commands to be used, which the application would not be allowed to use.. Init containers can contain code or utilities that are not in an app. It also has an independent security from app containers.

The code below will run the init container until the **ls** command succeeds; then the database container will start.

**spec:**

**containers:**

- **name:** main-app

- image:** databased

**initContainers:**

- **name:** wait-database

- image:** busybox

- command:** ['sh', '-c', 'until ls /db/dir ; do sleep 5; done; ']