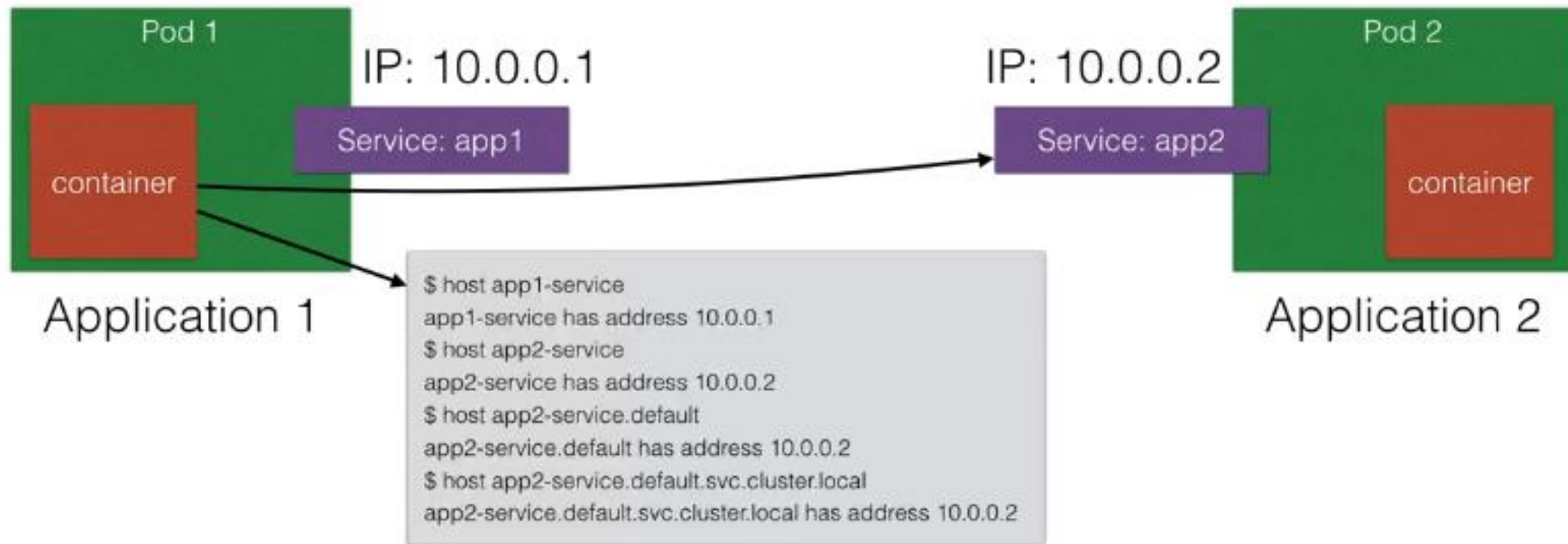


DNS

- As of Kubernetes 1.10, DNS is a **built-in** service launched automatically using add-on manager
- The DNS Service can be used within pods to find other services running on the same cluster
- Multiple containers **within 1 pod** don't need this service, as they can contact each other **directly**
- A container in the same pod can **connect / communicate** to other containers directly using **localhost:port**

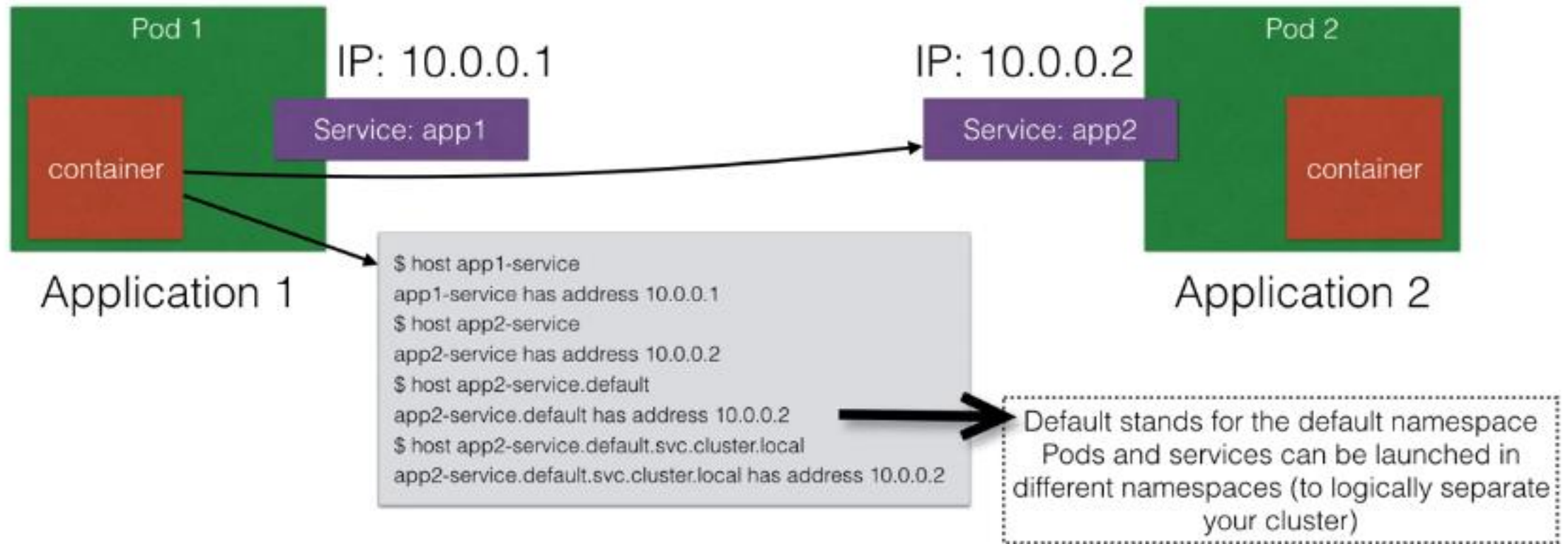
DNS

- An example of how app 1 could reach app 2 using DNS:

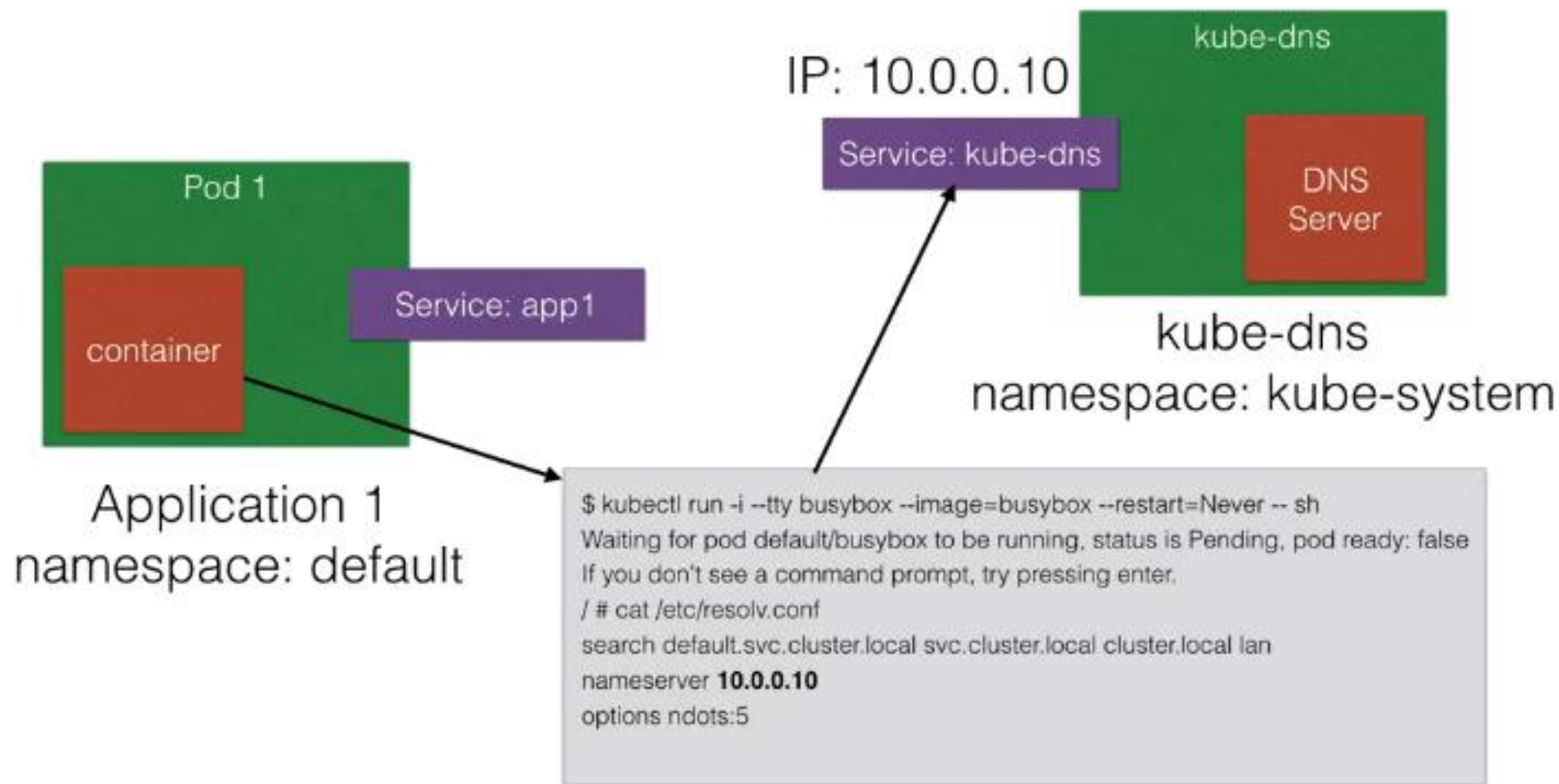


DNS

- An example of how app 1 could reach app 2 using DNS:



DNS – How does it work ?



Demo Placeholder

- Service Discovery

ConfigMap

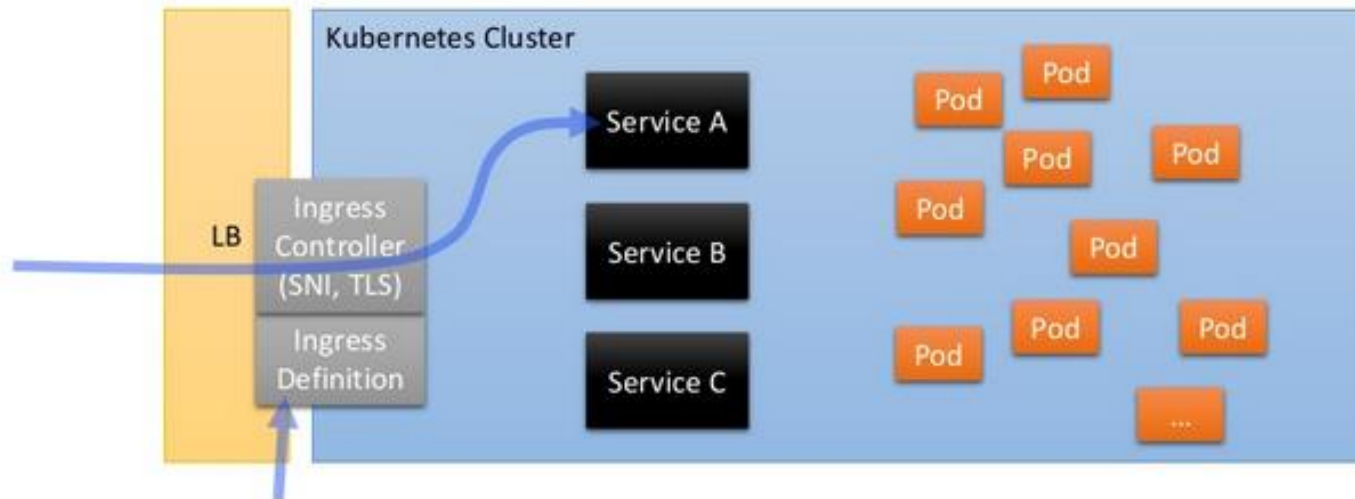
- Configuration parameters that are not secret, can be put in a **Config Map**
- The input is **again** key-value pairs
- The ConfigMap key-value pairs can then be read by the app using:
 - **Environment Variables**
 - **Container command line arguments** in the Pod Configuration
 - Using **Volumes**

Ingress

- Ingress is a solution available since kubernetes 1.1 that allows **inbound connection** to the cluster
- It's an alternative to the external LoadBalancer & NodePorts
 - Ingress allows you to **easily expose services** that need to be accessible from **outside** to the **cluster**
- With ingress you can run your own **ingress controller** (basically a LoadBalancer) within the kubernetes cluster
- There are a default ingress controllers available, or you can **write your own** ingress controller

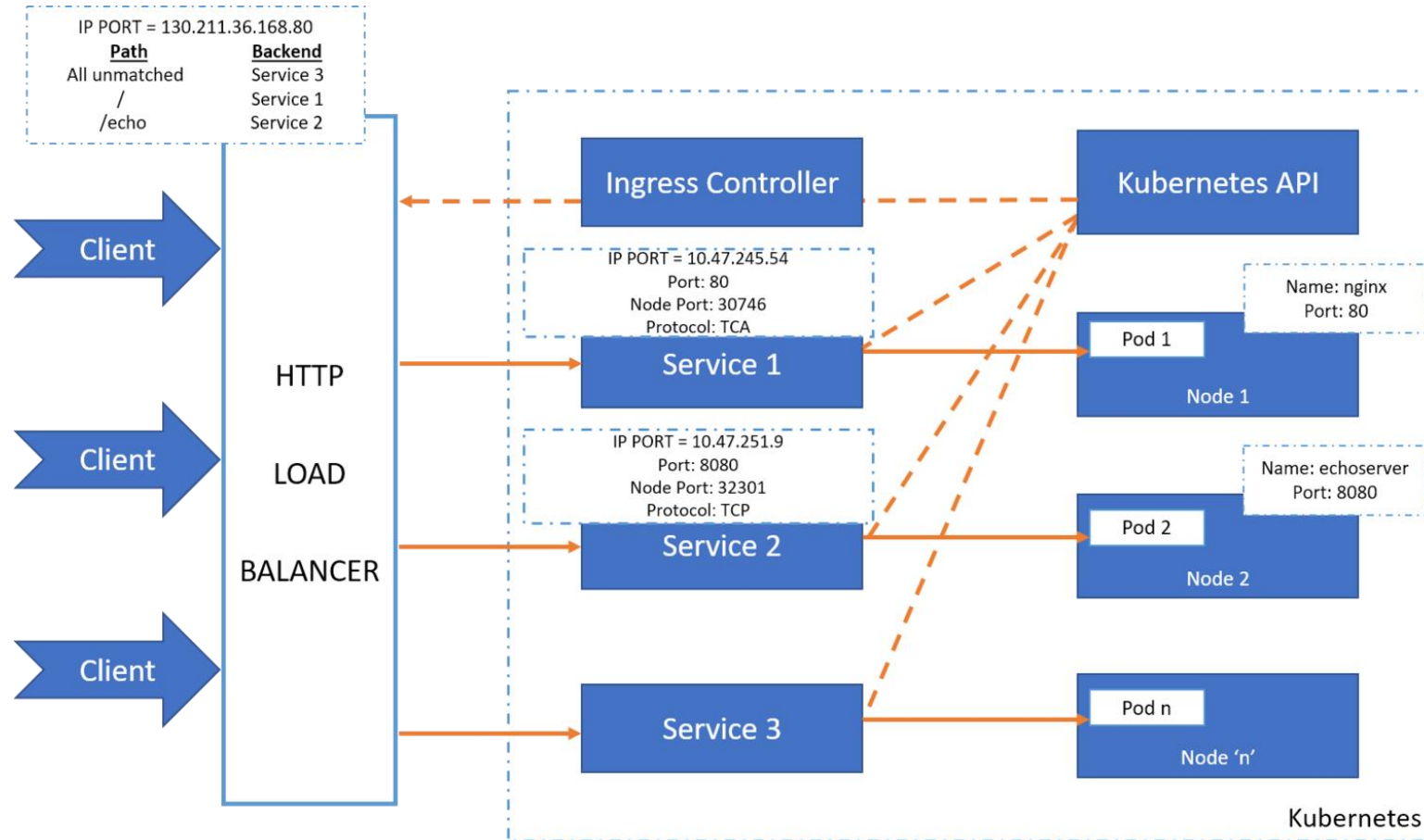
Ingress

Exposing Services (3) - Ingress



- E.g., "route Host x.y.z to Service A", "Use TLS Certificate abc for host x.y.z"
- Abstract definition of rules
- Implemented by Ingress Controller
- Flexible; leverages "LoadBalancer" on cloud provider
- Can provide SNI (Server Name Indication) and TLS termination

Ingress



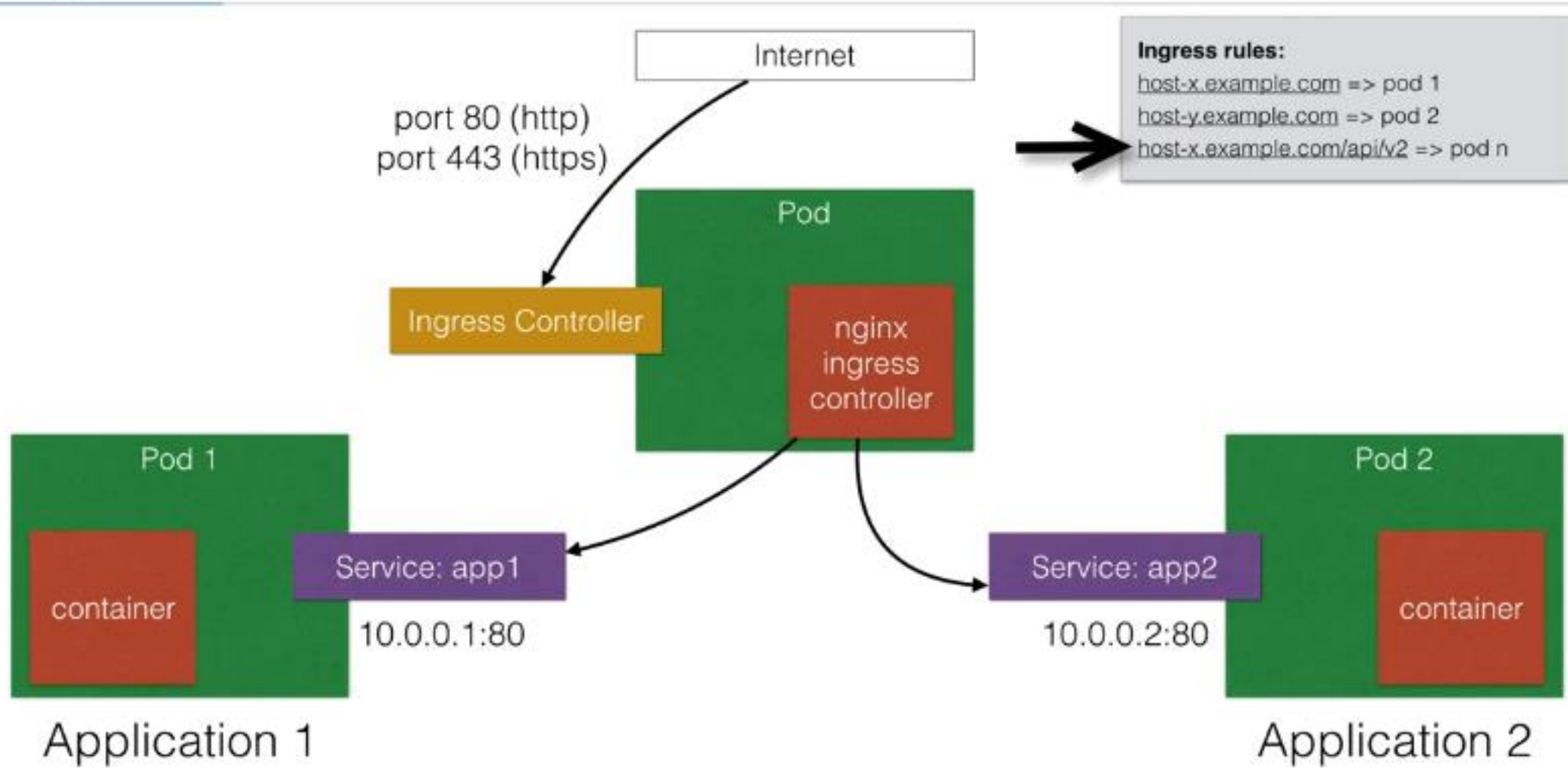
Ingress

An Ingress is **a collection of rules** that **allow inbound connections to reach the cluster services.**

Ingress Types

- Simple Fanout
- Name Based Virtual Hosting
- TLS

Ingress



Ingress

- Ingress Controller

- Nginx: <https://github.com/kubernetes/ingress-nginx>
- Voyager (HAProxy): <https://github.com/appscode/voyager/tree/3.2.2>
- Træfik: <https://docs.traefik.io/user-guide/kubernetes/>
- ...etc

Demo Placeholder

- Ingress Controller