kubernetes

Kubernetes Networking

Kubernetes in Depth

Networking basics

- Every Pod in a cluster has its own unique cluster-wide IP address
- Fundamental requirements on any networking implementation
  - pods can communicate with all other pods on any other node without NAT
  - agents on a node (e.g. kubelet) can communicate with all pods on that node
- Containers within a Pod share their network namespaces
  - this includes their IP address and MAC address
  - containers within a Pod can all reach each other's ports on localhost
  - containers within a Pod must coordinate port usage

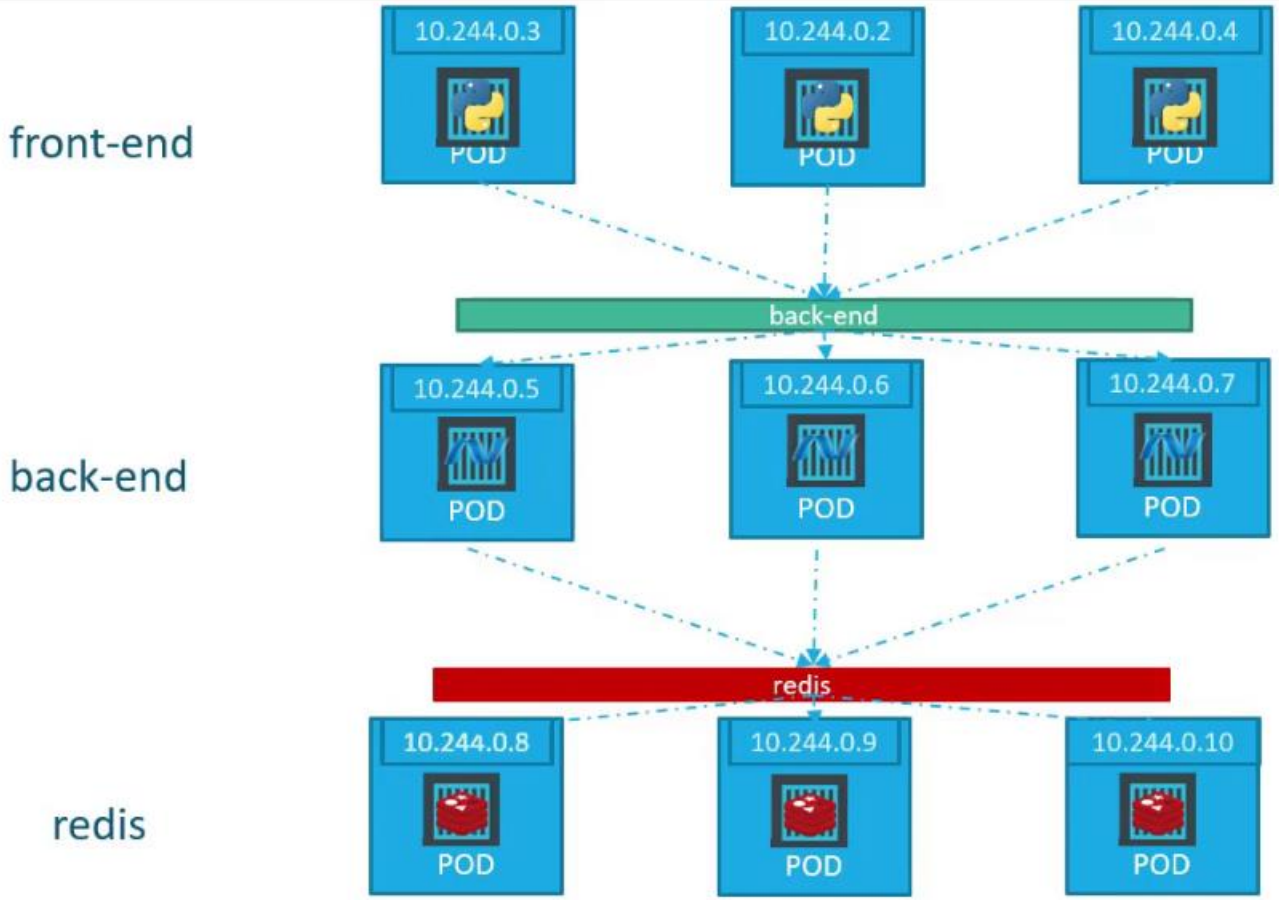
Service

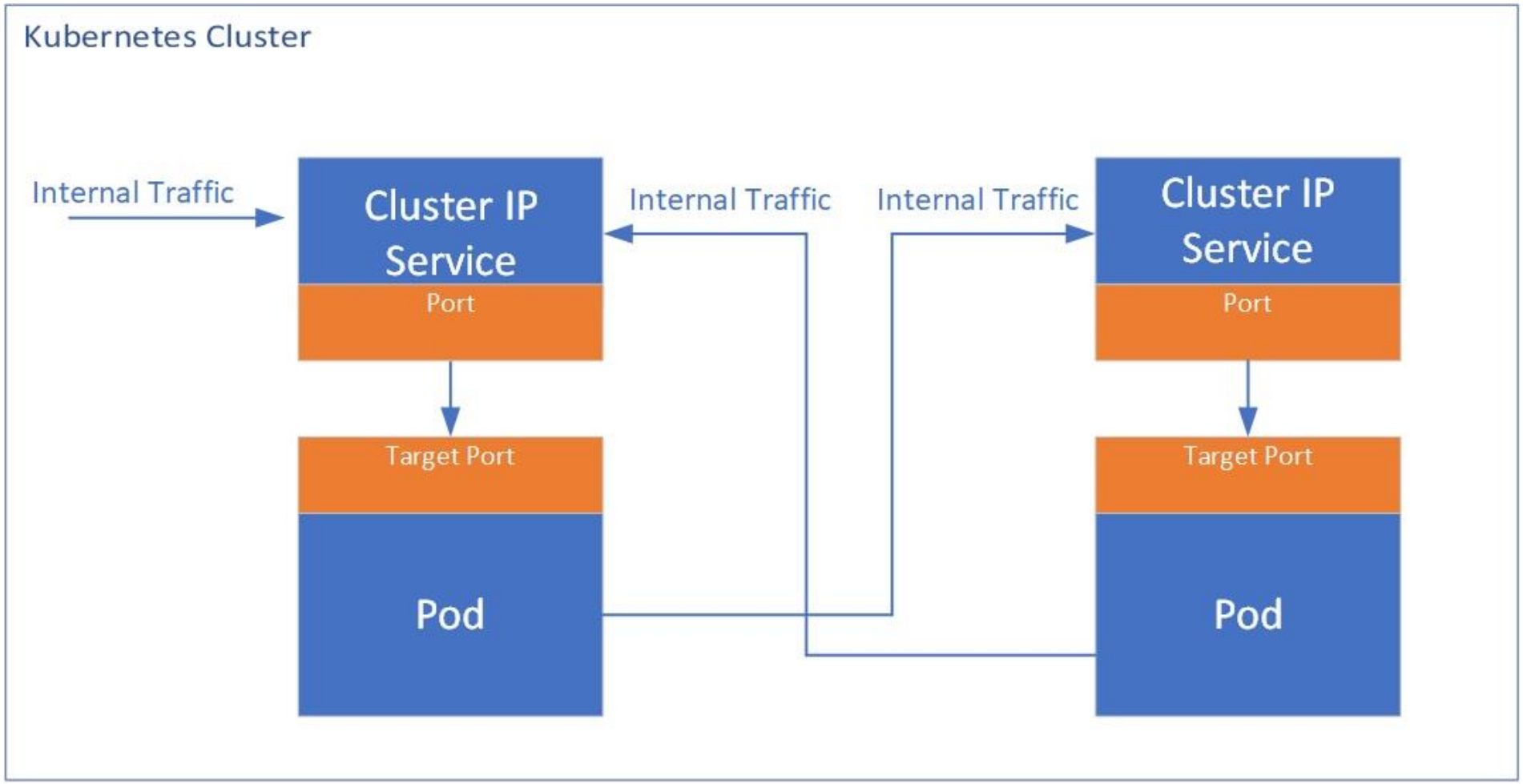
- method for exposing an application running as one or more Pods in your cluster for external access
  - allows external clients to interact with it
  - particularly very useful for allowing frontend pods to locate and interact with backend pods
- Each Service object defines a logical set of endpoints
  - usually these endpoints are Pods
  - also provide a policy about how to make those pods accessible.

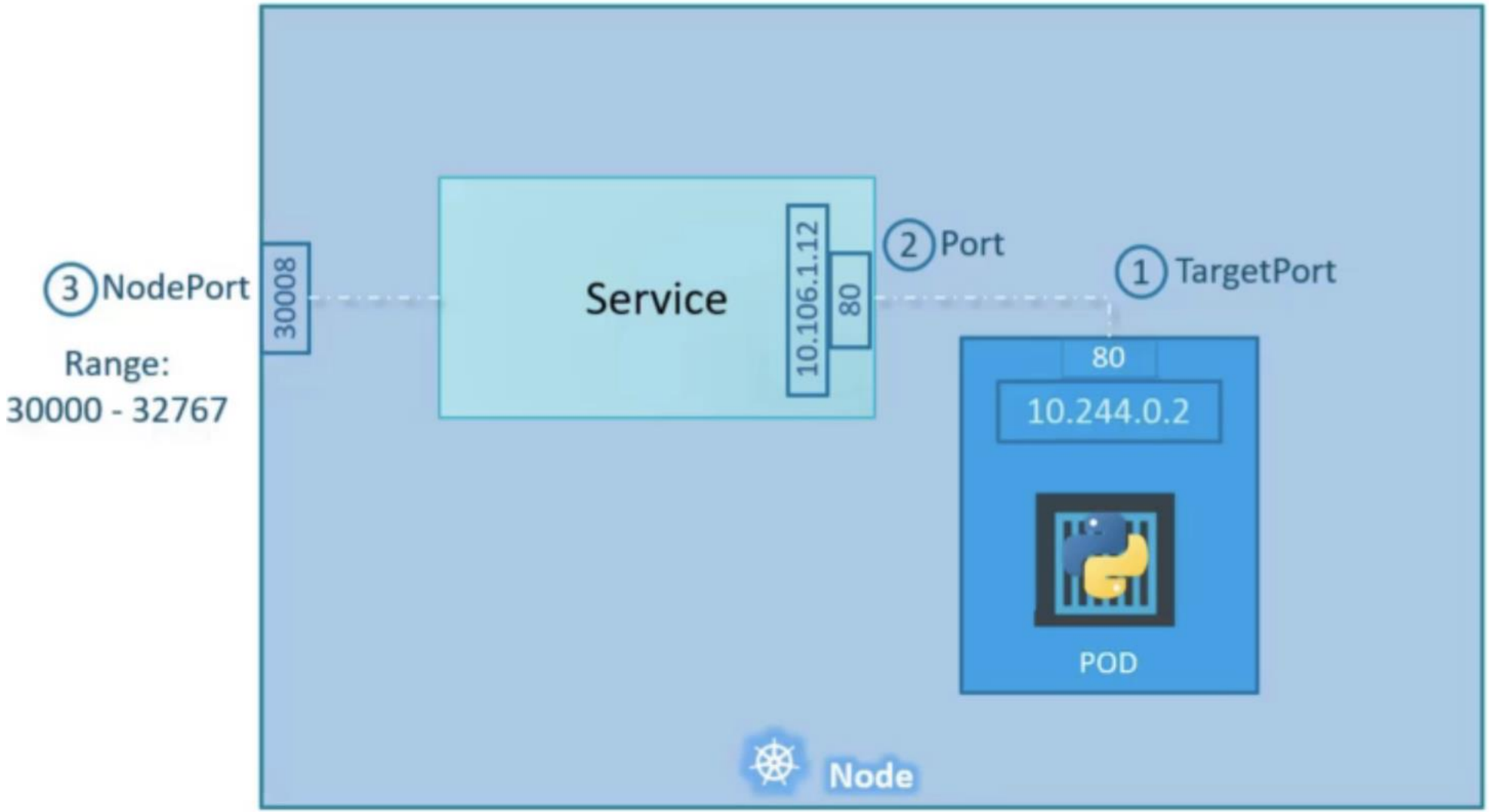
Service types

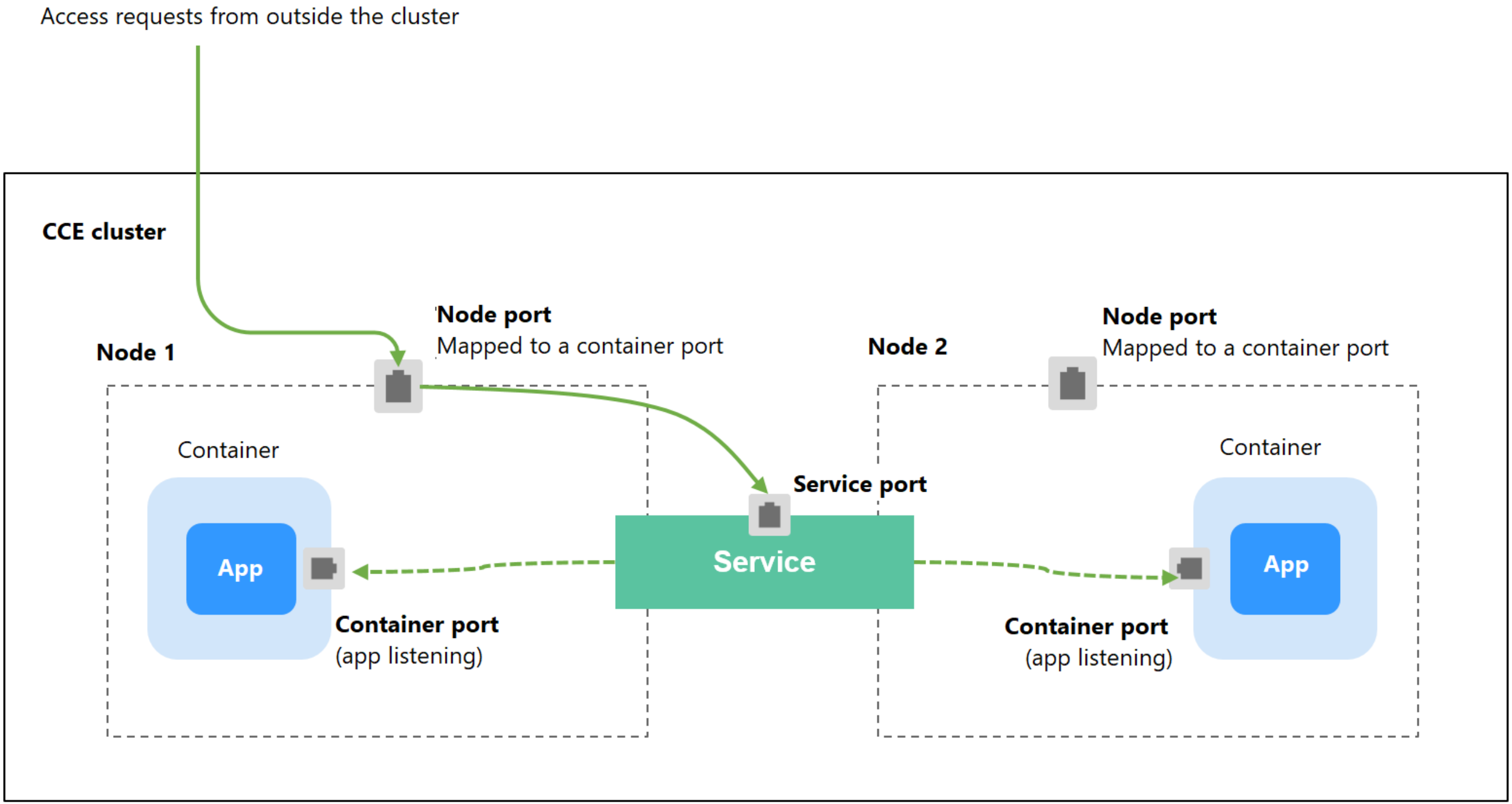
- ClusterIP
  - Exposes the Service on a cluster-internal IP
  - The Service only reachable from within the cluster
- NodePort
  - Exposes the Service on each Node's IP at a static port (the NodePort)

ClusterIP



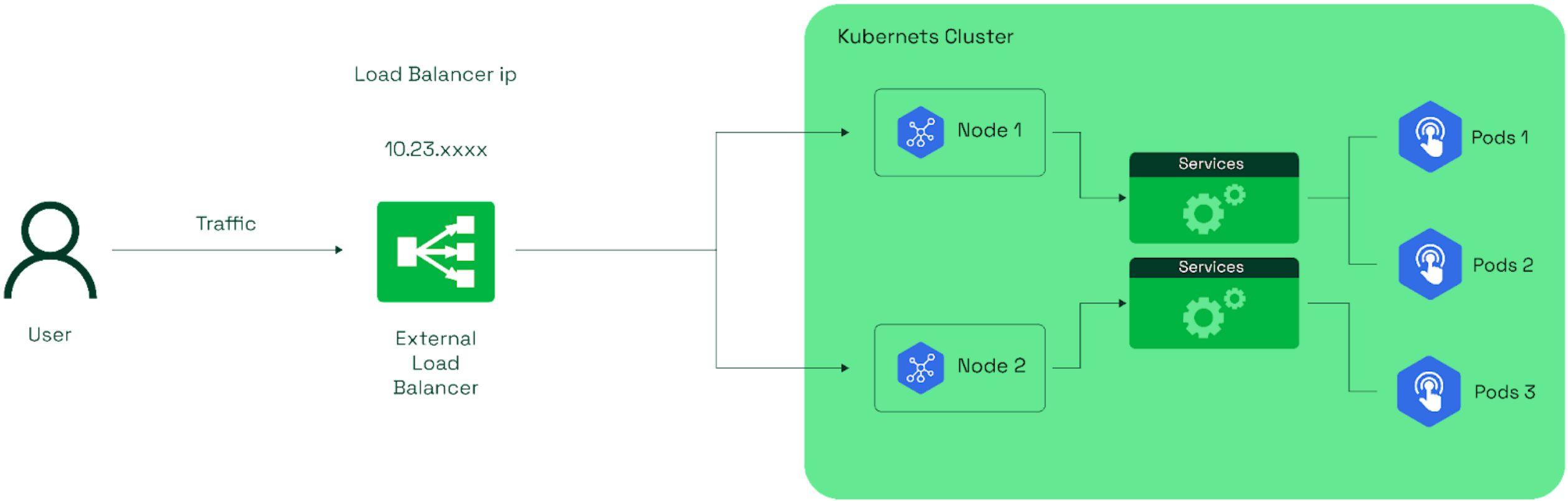


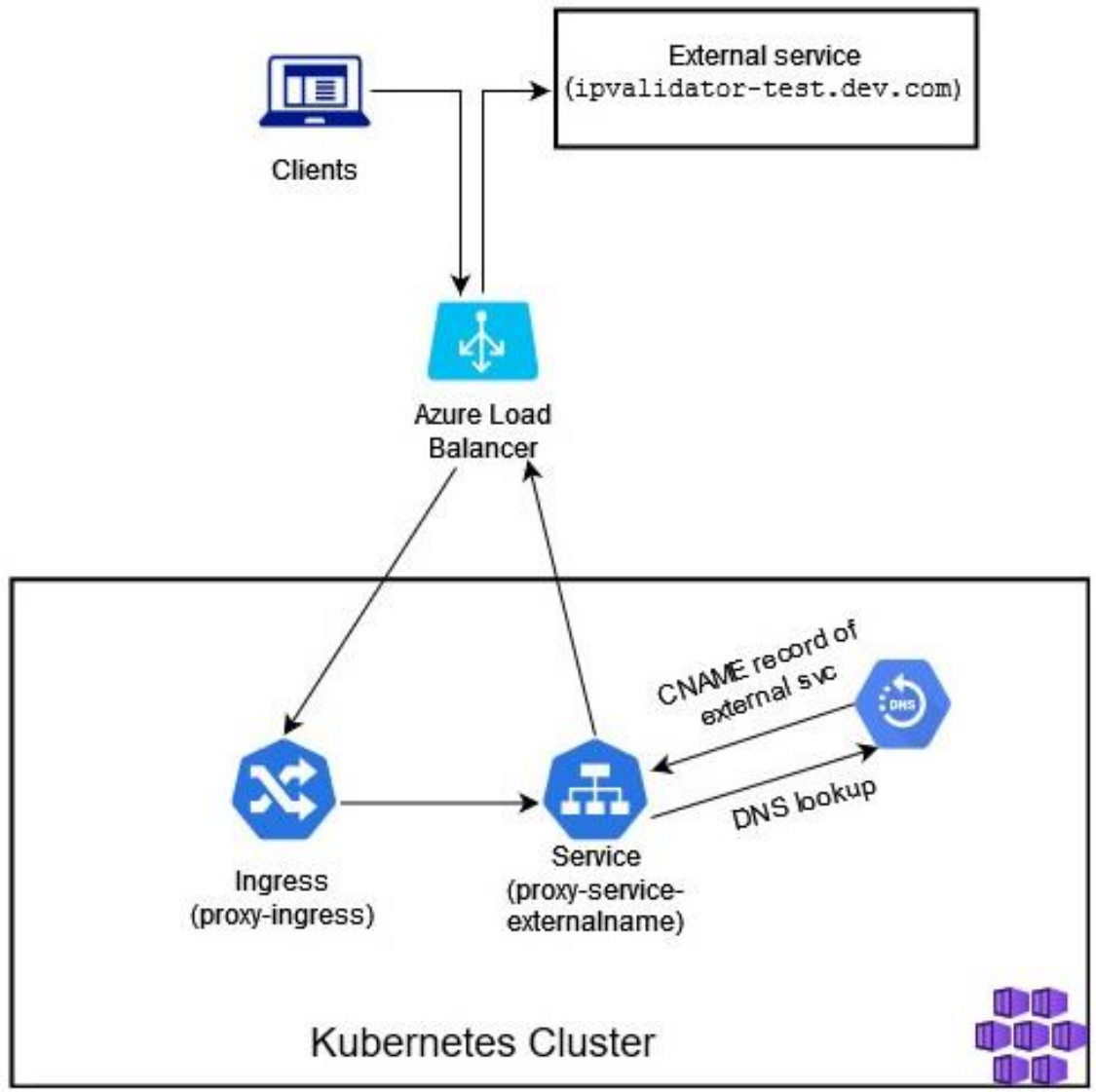




Service types

- LoadBalancer
  - Exposes the Service externally using an external load balancer.
  - Kubernetes does not directly offer a load balancing component; you must provide one, or you can integrate your Kubernetes cluster with a cloud provider
- ExternalName
  - Maps the Service to the contents of the externalName field
  - The mapping configures the cluster's DNS server to return a CNAME record with that external hostname value.





Things that we want to work with

- First things
  - Asdf
  - asdf
- Second things
- Fourth things

kubernetes

Looking at how to make things happen

Its important for us to know this

Things that you want to look at

- I am not really sure
- More things
- Think hard about those things