Annotations

We have seen before how labels in Kubernetes are used for identifying, selecting and organizing objects, labels are just one way to attach metadata to Kubernetes objects.

Another way is Annotations which is a key/value maps that attach non-identifying metadata to objects, Annotation has a lot of use cases such as attaching  
- pointers for logging and analytics

- phone number, directory entries and web site

- timestamps, image hashes and registry address

- network, namespaces

In this book we will focus on using Annotations to assign network information to POD and we will see later on in chapter 4 how Kubernetes annotation can instruct contrail to attach an interface to certain network

Before seeing Annotations in action lets first create a network with minimum configuration based on the De-facto Kubernetes Network custom resource definition.  
Network Attachment Definition is used to indicate the CNI as well the paraments of the network where we will attached interface POD to

apiVersion: "k8s.cni.cncf.io/v1"

kind: NetworkAttachmentDefinition

metadata:

name: net-a

spec:

config: '{

"cniVersion": "0.3.0",

"type": "awesome-plugin"

}'

The type in the example “awesome-plugin” is the name of the CNI which and could be Flannel, Calico, Contrail-K8s-cni , …,etc

Creating a POD and using annotations to attach its interface to a network called net-a

kind: Pod

metadata:

name: my-pod

namespace: my-namespace

annotations:

k8s.v1.cni.cncf.io/networks: net-a

Note: According to De-facto Kubernetes Network custom resource definition   
the annotation "k8s.v1.cni.cncf.io/networks” is used to represent “NetworkAttachmentDefinition” and has two format

1- Network   
 k8s.v1.cni.cncf.io/networks: net-a

2-Namespace/network name

k8s.v1.cni.cncf.io/networks: ns/net-a

Note : To maintain compatibility with existing Kubernetes deployments, All pods must still be attached to the cluster-wide default network. which means even if we attached one POD interface to a specific network, this POD would have two interfaces one attached to the cluster-wide default network and the other interface is attached to the network specified in the annotation argument (net-a in this case)