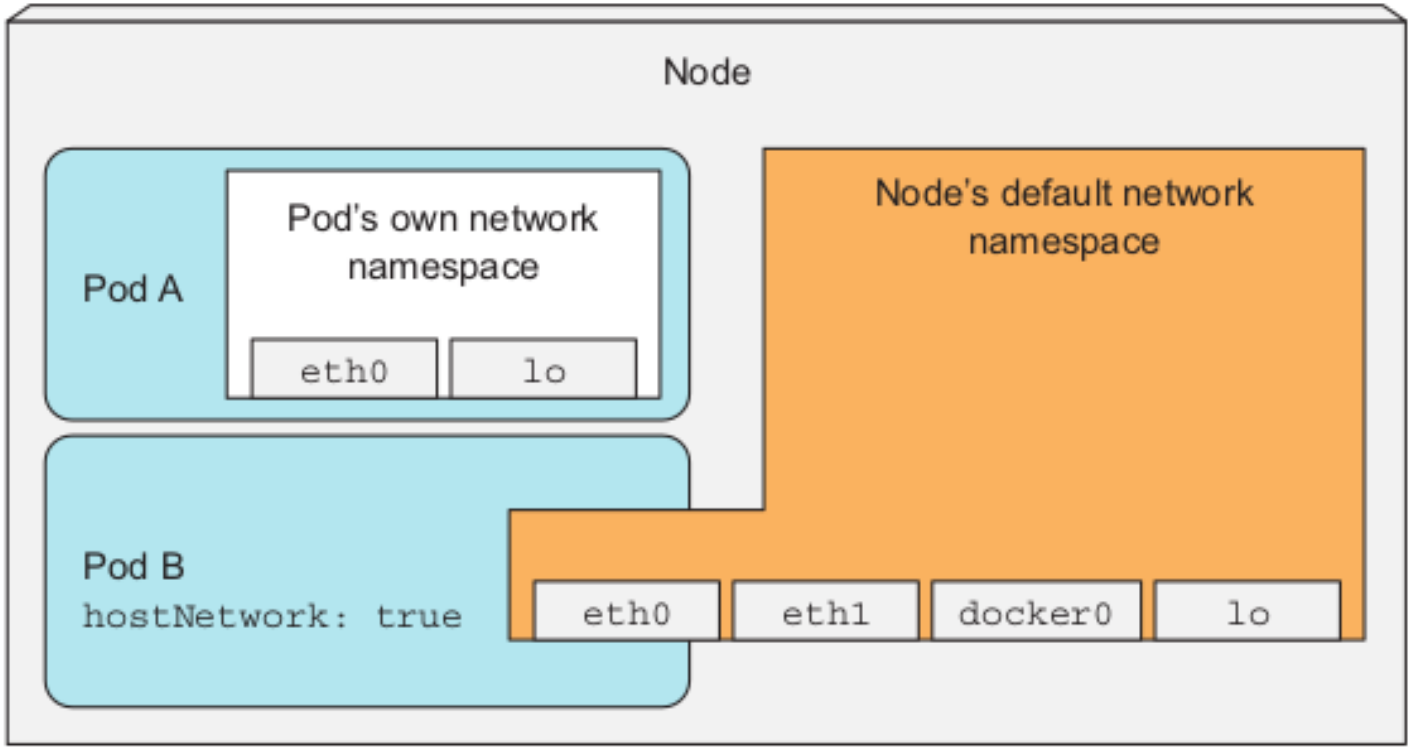
# KUBERNETES – NETWORKING

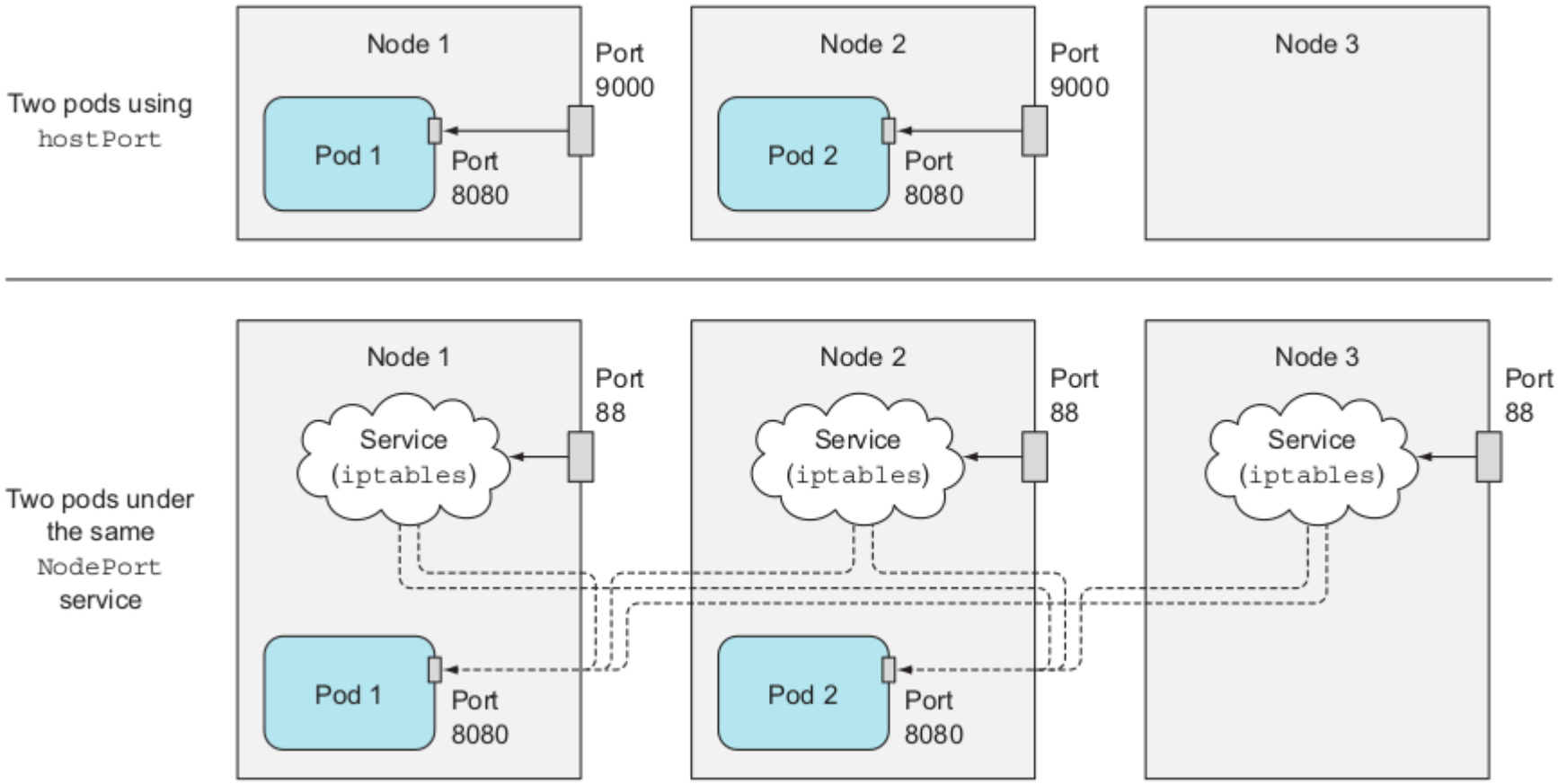
# Github repo..

**https://github.com/vsaini44/KubernetesRepo.git**

# Host node’s namespace

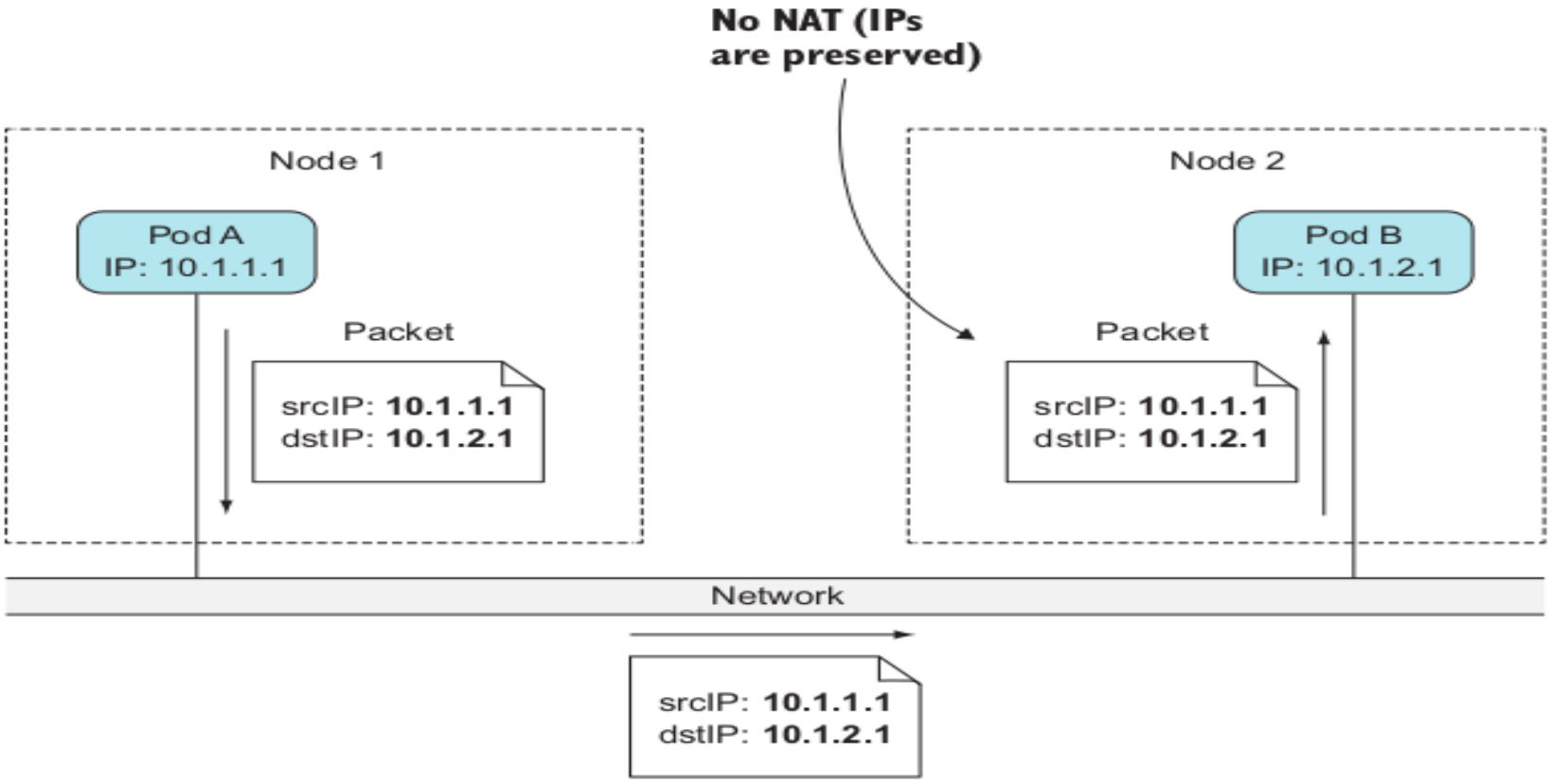


# HostPort v/s Nodeport



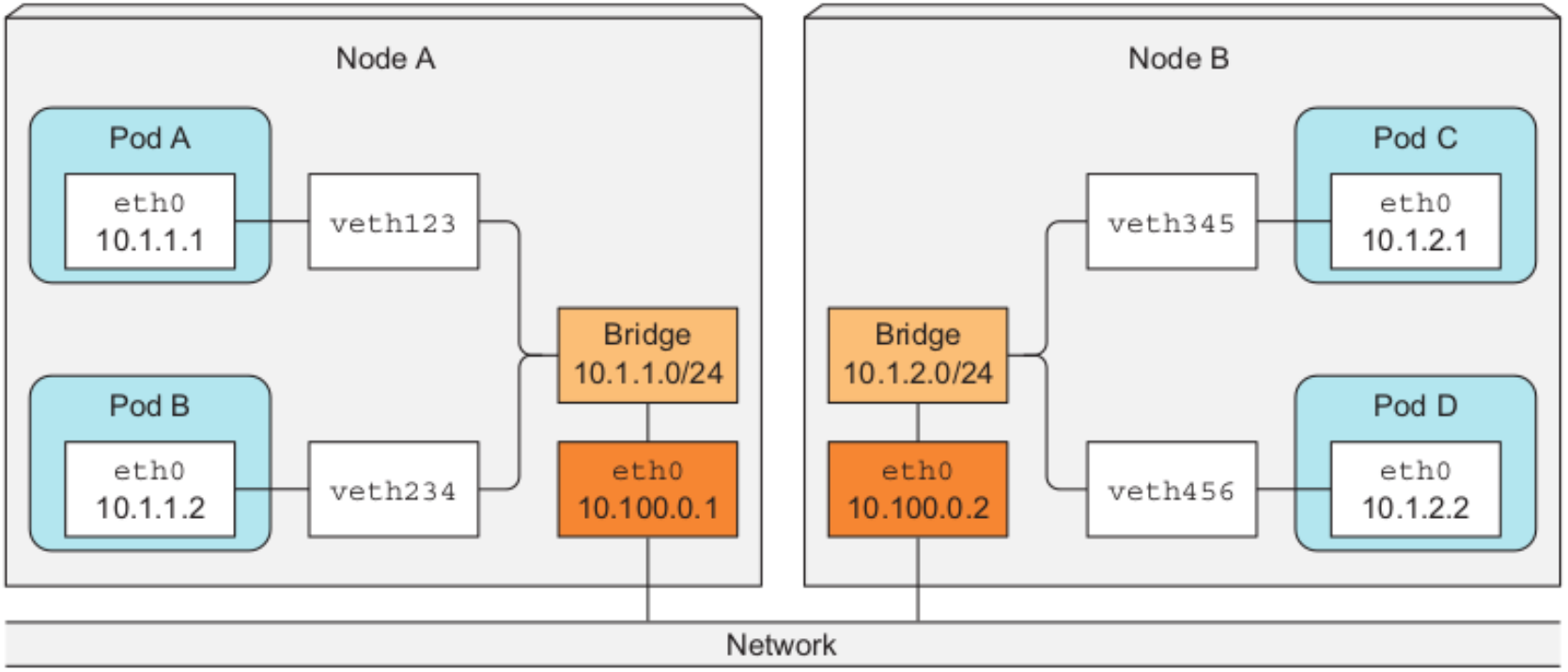
# Understanding Network

## This is what kubernetes wants ..



# Understanding Network

## This is what we have



# Container Network Interface

**CNI Project plugins allow makes the nodes appear as though they’re connected to the same network switch, regardless of the actual underlying network topology, no matter how complex it is.**

**Packets sent from the pod are encapsulated and sent over the network to the node running the other pod, where they are de-encapsulated and delivered to the pod in their original form.**

# Plugins

- Calico
- Flannel
- Romana
- Weave Net
- And others ..

# The pause container

**A piece of infrastructure that enables many networking features in Kubernetes is known as the pause container.**

**This container runs alongside the containers defined in a Pod and is responsible for providing the network namespace that the other containers share**

# The flannel CNI

**Flannel is one of the most straightforward network providers for Kubernetes.**

**It operates at Layer 3 and offloads the actual packet forwarding to a backend such as VxLAN or IPSec.  It assigns a large network to all hosts in the cluster and then assigns a portion of that network to each host.**

**Routing between containers on a host happens via the usual channels, and Flannel handles routing between hosts using one of its available options.**

# The Calico CNI

**Calico operates at Layer 3 and assigns every workload a routable IP address.**

**It prefers to operate by using BGP without an overlay network for the highest speed and efficiency, but in scenarios where hosts cannot directly communicate with one another, it can utilize an overlay solution such as VxLAN or IP-in-IP.**

# The network Policy

**By default, pods in a given namespace can be accessed by anyone.**

**Network policy offers us the solution of network isolation in a namespace.**