INSTALLATION AND CONFIGURATION

Installation and Configuration

Installing a Pod Network

Prior to initializing the Kubernetes cluster, the network must be considered and IP conflicts avoided. There are several Pod networking choices, in varying levels of development and feature set.

Many of the projects will mention the Container Network Interface (CNI), which is a CNCF project. Several container runtimes currently use CNI. As a standard to handle deployment management and cleanup of network resources, CNI will become more popular.

Click on each box to learn about available pod networking choices.

Pod Networking Choices

Calico

Close

A flat Layer 3 network which communicates without IP encapsulation, used in production with software such as Kubernetes, OpenShift, Docker, Mesos and OpenStack. Viewed as a simple and flexible networking model, it scales well for large environments. Another network option, Canal, also part of this project, allows for integration with Flannel. Allows for implementation of network policies.

For more details, check out the Project Calico web page.

Flannel

Close

A Layer 3 IPv4 network between the nodes of a cluster. Developed by CoreOS, it has a long history with Kubernetes. Focused on traffic between hosts, not how containers configure local networking, it can use one of several backend mechanisms, such as VXLAN. A flanneld agent on each node allocates subnet leases for the host. While it can be configured after deployment, it is much easier prior to any Pods being added.

You can learn more about Flannel from their GitHub pages.

Kube-Router

Close

Feature-filled single binary which claims to "*do it all*". The project is in the alpha stage, but promises to offer a distributed load balancer, firewall, and router purposely built for Kubernetes.

For more details, check out the Kube-Router web page.

Cilium

Close

This is a newer but incredibly powerful network plugin which is used by major cloud providers. Via the use of eBPF and other features, this network plugin has become so powerful it is considered a service mesh, which we will discuss later in the course.

To learn more about Cilium, visit the project page.