Exercise 13.1: Review Log File Locations

Overview

In addition to various logs files and command output, you can use **journalctl** to view logs from the node perspective. We will view common locations of log files, then a command to view container logs. There are other logging options, such as the use of a **sidecar** container dedicated to loading the logs of another container in a pod.

Whole cluster logging is not yet available with Kubernetes. Outside software is typically used, such as **Fluentd**, part of http://fluentd.org/, which is another member project of CNCF.io, like Kubernetes.

Take a quick look at the following log files and web sites. As server processes move from node level to running in containers the logging also moves.

1. If using a **systemd**.based Kubernetes cluster, view the node level logs for **kubelet**, the local Kubernetes agent. Each node will have different contents as this is node specific.

   ```
   student@cp:~$ journalctl -u kubelet |less
   ```

   ```
   <output_omitted>
   ```

2. Major Kubernetes processes now run in containers. You can view them from the container or the pod perspective. Use the **find** command to locate the **kube-apiserver** log. Your output will be different, but will be very long.

   ```
   student@cp:~$ sudo find / -name "*apiserver*log"
   ```

   ```
   /var/log/containers/kube-apiserver-cp_kube-system_kube-apiserver-423
   d25701998f68b503e64d41dd786e657fc09504f13278044934d79a4019e3c.log
   ```

3. Take a look at the log file.

   ```
   student@cp:~$ sudo less /var/log/containers/kube-apiserver-cp_kube-system_kube-
   apiserver-423d25701998f68b503e64d41dd786e657fc09504f13278044934d79a4019e3c.log
   ```

   ```
   <output_omitted>
   ```

4. Search for and review other log files for `coredns`, `kube-proxy`, and other cluster agents.

5. If **not** on a Kubernetes cluster using **systemd** which collects logs via **journalctl** you can view the text files on the cp node.

   (a) `/var/log/kube-apiserver.log`
   Responsible for serving the API

   (b) `/var/log/kube-scheduler.log`
   Responsible for making scheduling decisions

   (c) `/var/log/kube-controller-manager.log`
   Controller that manages replication controllers

6. `/var/log/containers`
   Various container logs

7. `/var/log/pods/`
   More log files for current Pods.

8. Worker Nodes Files (on non-**systemd** systems)
   (a) `/var/log/kubelet.log`
   Responsible for running containers on the node
   (b) `/var/log/kube-proxy.log`
   Responsible for service load balancing
9. More reading: https://kubernetes.io/docs/tasks/debug-application-cluster/debug-service/ and https://kubernetes.io/docs/tasks/debug-application-cluster/determine-reason-pod-failure/