Kubernetes

General Notes for Running This Project in Kubernetes

- Load-Balancers are handled by Kubernetes, not Terraform, so if you don't destroy the LB in Kubernetes, but you tear down the VPC, you'll have issues.
- You must have `aws-iam-authenticator` installed as well as API tokens set as environment variables in order to interact with Kubernetes. More on that later.
- Use FQDN for services, such as: `SERVICE_NAME.NAMESPACE.svc.cluster.local`

Shortcut

Here's a multi-line command that will bootstrap `helm` and the dashboard in the cluster:

```
for SPACE in client monitoring; do kubectl create namespace $SPACE; done && \
kubectl create -f "./server/k8s/rbac/helm.yaml" && \
helm init --service-account tiller --upgrade && \
sleep 30s && \
kubectl create -f "./server/k8s/rbac/k8s-dashboard-readonly.yaml" && \
helm install --name kubernetes-dashboard --namespace kube-system --values './server/
kubectl -n kube-system describe secret $(kubectl -n kube-system get secrets | grep
```

Initial Cluster Setup

1. (Optional) Enable Shell Autocompletion:

```
source <(kubectl completion bash)
```

2. Create Namespaces:

```
for SPACE in client monitoring; do kubectl create namespace $SPACE; done
```

Helm

- `helm` and RBAC
- `helm` Charts
- Using `helm`

1. Create a **powerful** service account for `helm` (`tiller`):

```
kubectl create -f "./server/k8s/rbac/helm.yaml"
```

2. Ensure the proper `kubeconfig` is located at `~/.kube/config` . The `terraform-eks-aws` module will download it to `./aws/terraform/` by default.

3. Install `aws-iam-authenticator` :

```
sudo sh -c 'curl -o /usr/local/bin/aws-iam-authenticator https://amazon-eks.s3-us-w
```

See Amazon's docs on `aws-iam-authenticator`

4. Install `helm` into k8s cluster:

```
helm init --service-account tiller --upgrade
```

5. See if you can interact with the cluster:

```
kubectl get nodes -o wide
```

Generic Helm Usage

- https://github.com/helm/helm/blob/master/docs/using_helm.md

Install Chart Into Namespace

```
helm install --name <NAME_OF_CHART> --namespace <NAMESPACE> <GITHUB_STABLE_OR_INCUB
```

Update a Release

```
helm upgrade <NAME_OF_CHART> <GITHUB_STABLE_OR_INCUBATOR>/<NAME_OF_CHART_ON_GITHUB>
```

Delete Chart Installation

```
helm del --purge <NAME_OF_RELEASE>
```