aws

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**Lab:
Using Helm to Install a Database**

Configuring Helm

- In this lab, you will install MariaDB on your cluster with Helm

Verify Minikube Is Running

- From a codespaces terminal, check if Minikube is still running with:
  `minikube status`

- If it is stopped, start it again with:
  `minikube start`

- Stop the port forward if you have one running:
  - In the terminal window running the port forward, press **CTRL+C** to stop it
  - Then run the following command to stop the tunnel:
    `pkill -f "minikube tunnel"`

Installing MariaDB

- Run the following command to install the chart:

```
helm install database-server oci://registry-1.docker.io/bitnamicharts/mariadb
```

- This will start the installation of MariaDB
- You will also see information displayed about how to obtain the database root password
    - It is using Kubernetes secrets

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Viewing the MariaDB Installation

- Run the following to view the installation:
  ```
  kubectl get pods
  kubectl get statefulsets
  kubectl get service
  ```
  - Notice the chart is using a StatefulSet

- That is it!
  - Using Helm is easy

- To retrieve the status of your database
  - helm status database-server

- To retrieve all installed charts
  - helm list

Installing Another Chart

- You can search for public charts at: https://artifacthub.io/
  - Feel free to search for things like redis, tomcat, kafka, mongo, etc.

- Install a Tomcat chart on your cluster with:

```
helm install tomcat-server oci://registry-1.docker.io/bitnamicharts/tomcat
```

- Run the following commands view the installation:
  ```
  kubectl get pods
  kubectl get deployments
  kubectl get service
  ```
- Create a port forward for tomcat

  - ```
    minikube tunnel & kubectl port-forward service/tomcat-server 8080:80
    ```
  - Try accessing in a browser
    - You should see the Tomcat home page

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Upgrading and Uninstalling a Chart

- Perform an upgrade on the installed `tomcat-server`

```
helm upgrade tomcat-server oci://registry-1.docker.io/bitnamicharts/tomcat
```

- Uninstall the `tomcat-server`

```
helm uninstall tomcat-server
```

- Run the following commands verify it is uninstalled:

```
kubectl get pods
kubectl get deployments
kubectl get service
```

  - It may take a minute for all the resources to delete

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Clean Up

- Stop the port forward:
  - In the terminal window running the port forward, press **CTRL+C** to stop it
  - Then run the following command to stop the tunnel:

    ```
    pkill -f "minikube tunnel"
    ```

- Be sure to leave the MariaDB service running on your cluster
  - We will use it later

Success

- **Congratulations**! You have successfully installed a workload with Helm
  - Installed MariaDB using a Helm chart
  - Installed Tomcat using a Helm chart
  - Upgraded an installed chart
  - Uninstalled a chart

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