**Helm** is an application package management tool for Kubernetes that helps you easily manage, deploy, and upgrade applications in a Kubernetes cluster. It works like a package manager like apt for Ubuntu or yum for CentOS but specifically for Kubernetes.

Here are some key components and concepts related to Helm:

1. **Chart** :
   * A Helm chart is a package containing all the files needed to deploy an application or service on Kubernetes. A chart can be compared to a formula in another package manager.
   * The chart includes YAML templates, which help you define how your Kubernetes resources will be deployed.
2. **Release** :
   * Each time you deploy a chart on your Kubernetes cluster, Helm creates an entity called release. Release represents a deployed version of a chart with a specific configuration.
3. **Repository** :
   * Helm charts can be stored in online repositories, allowing users to search and install charts from a variety of sources.
4. **Templates** :
   * Helm uses a powerful template system, allowing you to create dynamic, customized YAML manifests based on configuration or user-supplied values.

**Benefits of using Helm**

* **Easy Management** : Helps manage complex Kubernetes applications easily and systematically.
* **Scalability** : Supports deployment and upgrade of applications easily and automatically.
* **Sharing and reuse** : Allows sharing and reuse of charts for different projects or across organizations.

First is to install Helm

Open Power Shell with Administrator rights and run the following commands:

brew install helm - MacOS

choco install kubernetes-helm – Windows

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Add Repository Helm to store charts

helm repo add stable https://charts.helm.sh/stable

Update Helm repositories

helm repo update

Create a new chart

helm create <name\_chart>

Search Charts

helm search repo <name\_chart>

Structure of Chart:

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<name\_chart>/

├ ── Chart.yaml Contains metadata information about the chart.

├ ── values.yaml Contains default values for templates.

├ ── charts/ Directory containing dependent charts.

├ ── templates/ Contains template files that define Kubernetes resources.

└── .helmignore This file lists files and directories that will be ignored when packing the chart.

In the values.yaml file

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Correct the path containing the Container Registry image on Azure

az login

az aks get-credentials --resource-group <resource\_group> --name <cluster\_name>

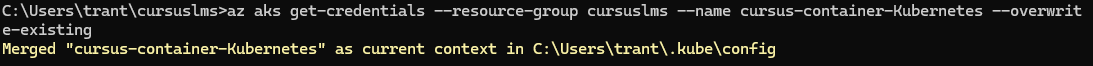


Chart Settings

helm install <release\_name> ./<chart\_name>

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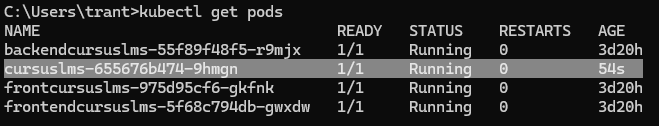
To upgrade a release

helm upgrade <release\_name> <chart\_name>

To delete a release

helm uninstall <release\_name>

kubectl get pods

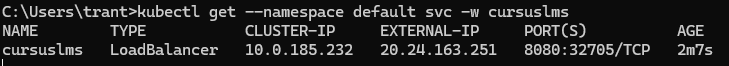


kubectl get svc

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kubectl get --namespace default svc -w <Chart Name>



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Enter External IP on the browser URL and test the API

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The process of deploying the project to Kubernetes using Helm was successful

End!