

# Master Course of Helm The Package Manager

**Duration: 3 days (8hrs/day)**

**Prerequisite: --**

- Basic System Administration
- Basics of Kubernetes

**Course Objective:**

Learn the fundamentals and basic concepts of OpenShift that you will need to build a production ready OpenShift cluster and get started with deploying and managing Application.

**Lab Requirement: -- Koenig DC**

## Module 1: Introduction

- Introduction
- Helm Introduction
- Package manager need & purpose
- Introduction to the Helm Component
- Difference between Helm V2 & V3
- Installation of Helm V3
- Introduction to Repository & Chart
- Create new Helm Chart
- Helm with Kubernetes

## Module 2: Kubernetes Basic

- Introduction to Container Orchestration
- Introduction to Kubernetes Components
- YAML Introduction
- Kubernetes Cluster Installation
- Pod Creation with Labels and Selector
- ReplicaSet Introduction
- Deployment Introduction
- Service Introduction
- Volume Introduction
- Namespace Introduction

## Module 3: Chart - Templates

- Create Chart template
- Built-in objects
- Read values for templates
- Set values to templates
- Template functions
- Template pipeline & default values

- Control flow with if-else condition
- Defining scope with Range & Variables
- Include content from same file with Notes
- Sub chart & Global Sub Chart

#### **Module 4: Repository Management**

- Repository Workflow with Hosting options
- Chartmuseum installation with adding repository
- Maintain Chart Version with Multiple Chart
- Chart push plugin
- Maintain github Repository
- Add Chart to github repository

#### **Module 5: Chart Management**

- Upgrade Helm Installed Chart
- Rollback of Helm Installed Chart
- Helm Dependency
- Chart Hook
- Pre & Post Install Hook
- Kubernetes job as Hook
- Hook execution as Weight

#### **Module 6: Testing and Verification**

- Helm Lint
- Helm Hook Test
- Helm Get and Status
- Provenance and Integrity