# Docker Walkthrough

* + Introducing Containers
  + Containers Vs. VM’s
  + Docker Architecture
  + Quick Review of Docker Components
  + Creating Sample Docker Images to be used in Kubernetes Practical
  + Pushing Docker Images in Docker Hub

# Kubernetes

* + Kubernetes Cluster Architecture
  + Understanding Kubernetes Components
  + Pods
  + Replicasets
  + Deployments
  + Labels, Selectors & Annotations
  + NodeSelectors
  + Pod Affinity
  + Node Affinity
  + Taints & Tolerations
  + Taints & Tolerations vs Node Affinity
  + Namespaces
  + Quotas
  + Roles
  + Policies
  + Environment Variables
  + Secrets
  + Configmaps
  + Security Context
  + Service Account
  + Readiness & Liveness
  + Understanding POD Network
  + Services
  + Upgrades (Rolling Upgrades & Rollbacks)
  + Jobs & Cron Jobs
  + Volumes, Persistent Volumes & Persistent Volume Claims
  + Using PVCs in PODs
  + Understanding & Configuring Ingress
  + Daemonsets in Kubernetes and their importance
  + Statefulsets in Kubernetes
  + RBAC – Role Based Access Control
  + Gracefully shutdown or moving pods to different nodes
  + Horizontal Scaling for Pods with load
  + Kubernetes object deletion process
  + Scale up an application
  + Scale down an application

# Helm Charts

* + Working with Helm Charts and Releases
  + Helm Architecture and concepts
  + Create Helm Charts and Deploy applications to Kubernetes using Helm
  + Working with Stable and Custom Helm Charts
  + Create Automated Kubernetes Deployments with Helm

# Spinnaker

* + Understanding the concepts of Continuous Integration & Continuous Deployment
  + Understanding Spinnaker Architecture & Concepts
  + Creating Pipelines in Spinnaker to deploy on Kubernetes

# End to end deployment pipeline using

* + JIRA
  + GitHub
  + Docker CRI
  + Docker Hub
  + Nexus
  + Kubernetes
  + Spinnaker
  + Jenkins
  + Sample Application

**PS:** We will be using GIT & GITHUB throughout our session for managing the versions of different YAML files we will create during hands-on labs sessions for future reference

**Prerequisites:** Participants should have basic understanding of Docker, Docker Hub, Nexus, VCS, Distribution Management.