Docker and Kubernetes Training

DURATION : 8 weeks

MODE OF TRAINING : Online / Classroom

LEVEL : Advanced

Introduction

Docker is a software platform that lets you create, test, and deploy applications quickly. Docker software into standardized units called containers that contain everything the software needs to work, including libraries, system tools, code, and runtime. By using Docker, you can quickly deploy and scale applications in any environment and know that your code will be executed.

Kubernetes is an open source orchestration system developed to manage containerized applications on multiple hosts in a clustered environment.

Who can learn?

This course is designed for System administrators, developers or anyone who is engaged in the technical DevOps method and desires to learn how to set up and handle Linux Container applying Docker.

Pre requisites

Awareness of Linux server administration and Linux command line

Why AnnexIT?

- We Offer Real-time Project explanation.
- 1:1 System Based Training
- Technical Assistance even after Course Completion
- Backup Classes
- Lab Facility
- Career Guidance
- Mock Interviews and Exams Conducted

Docker and Kubernetes Course Curriculum

Docker Engine

- Docker Overview
- Docker Architecture
- Images and layers
- Underlying technology of Docker like namespaces, cgroups etc.,

- Docker CE Vs Docker EE and supported platforms
- Pulling images from Docker registry
- The Docker Hub
- Docker Engine Installation on Linux Servers (CentOS/Ubuntu)
- Docker commands
- Images, ps, pull, push, run, create, commit, attach, exec, cp, rm, rmi, login, export, import, pause, unpause, system, volumes, build, rename, save, tag, network, logs, port, search, history
- Docker network
- Container volume management
- Creating custom network (bridge)
- Building custom images using Dockerfile and through container and pushing to the Docker hub
- Creating containers with limited resources (CPU, memory etc.,)
- Building apache with mysql database storage using Dockerfile
- Assigning/remove multiple network to the running container.
- Selecting storage driver for the Docker Engine
- Setting limit on the resource like CPU, memory for running container
- Setup and configure universal control plane(UCP) and docker trusted repository (DTR)
- Container lifecycle

Understanding Docker Machine and Docker Swarm (Cluster).

- Setting up swarm (Configure manager)
- Setting up nodes (Adding nodes to the manager)
- Managing applications in Swarm with service
- Replication in Swarm
- Demonstrate the usage of templates with “docker service create”
- Identify the steps needed to troubleshoot a service not deploying
- Describe How Storage and Volumes Can Be Used Across Cluster Nodes for Persistent Storage

Kubernetes Orchestration

- Difference between Docker Swarm and Kubernetes Orchestration
- Kubernetes overview
- Kubernetes Architecture
- Understanding the underlying concept of Kubernetes Orchestration
- Designing a kubernetes cluster
- hardware and underlying infrastructure
- Service running on manage node and minions
- Overview of pods, replication, deployment, service, endpoints
- Deploying the application through PODs
- Building multiple pods with high availability
- Rolling updates of the Pods with the Deployment

- Kubernetes underlying network like overlay network with flannel, etcd etc.,
- Storage types in Kubernetes
- Upgrading kubernetes components
- Troubleshooting in kubernetes

POC

- launching Virtual Machines from Kubernetes cluster
- Cirros Image and Ubuntu images based Virtual Machine creation from k8s cluster