



**CERTIFICATION PROGRAM**

# DevOps Specialization

2 Months | Online Instructor-led Course



# CloudxLab & Course

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At Cloudxlab, we are building one of the best gamified learning environments to make technology learning fun and for life. More than 50,000 users across the world have been benefitted by our signature courses on Machine Learning and Big Data. Our vision is to upskill people on high-end technologies like Deep Learning, Machine Learning, Big Data and make them employable.

DevOps is becoming a highly sought after skill in the market, especially, in this Automation era.

DevOps consists of software development practices and tools which aim at better and continuous integration of development and operations part of the software development life cycle to enhance the efficiency.

There is massive growth in the DevOps space, and job opportunities are skyrocketing, making this the perfect time to launch your career in this space.



**Sandeep Giri**

Founder at CloudXLab

# Why CloudxLab

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40+ Hours of Instructor-led Training



Learn DevOps from industry experts



Online cloud lab for hands-on for real-world experience



Work on real-world projects.



Earn Certificate which you can share on LinkedIn



Interact with the international community of peers via the discussion forum



Lifetime course access



Best-in-class support throughout your learning journey

# Course Creators

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## Ashok Singh

Devops Consultant at Cisco  
Past: MYCOM OSI, Wipro

Course Instructor

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## Sandeep Giri

Founder at CloudxLab  
Past: Amazon, InMobi, D.E.Shaw

Course Developer

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## Abhinav Singh

Co-Founder at CloudxLab  
Past: Byjus

Course Developer

[Know more](#)

# Course Curriculum

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## 1 Introduction

1. Introduction to DevOps
2. 10,000 foot view
3. Why DevOps ?
4. Dev-Test-Deploy
5. DevOps Principles
6. DevOps Toolchain
7. Overview of DevOps Tools
8. Correlation between Agile & DevOps
9. Categories of DevOps Tools
10. Summary
11. Quiz

**2**

## Version Control

1. Objective
2. What is SCM
3. Git branching and merging
4. Git Overview
5. Creating pull request
6. Code Review
7. Merging changes
8. Lab: Create a repo and push code on GitHub / Bitbucket
9. Advanced topic
10. Quiz

**3**

## Container

1. Objective
2. Container Concept
3. Container Vs Virtual Machine
4. Installing docker on Centos , Debian and Windows
5. Managing Container with Docker Commands
6. Docker Compose
7. Docker registry - Docker Hub
8. Networking inside single docker container
9. Networking across container and platform
10. Lab: 1. Running a container Image with Docker  
2. Building own docker image

**4**

## **Container orchestration- Kubernetes**

1. Objective
2. Overview of Kubernetes, Docker Swarm and Console
3. Kubernetes - Architecture and functional component
4. Installing Kubernetes on VM
5. Configure Pods and Containers
6. Kubernetes - Cluster Administrator Tasks
7. Kubernetes - App Developer Tasks
8. Running application on kubernetes cluster
9. Scaling app in cluster using rolling update
10. Services, Load Balancing, and Networking
11. Security and Configuration
12. Running Automated Tasks with a CronJob
13. Stateful set to manage apps
14. Managing and using storage in pod and cluster level
15. Continuous deployment of app from git repository
16. Horizontal Pod Autoscaler

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## **Ansible - Configuration Management**

1. Objective
2. Configuration Management Tools in DevOps
3. Ansible fundamental
4. Ansible installation and version
5. Single command execution using ansible
6. Roles and ansible galaxy
7. Playbook and jinja2 template
8. Debugging and Troubleshooting
9. Quiz

6

## **Terraform - IaC**

1. Objective
2. Infra as a Code
3. Terraform Initialisation
4. Terraform provider , variable , resource group
5. Creating VM in AWS using terraform code
6. Creating and using Terraform Module
7. Version control of Terraform Code

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## Jenkins

1. Objective
2. Jenkins Installation
3. Run Jenkins Job
4. Jenkins Job to copy build on deployment VM
5. Jenkins job to deploy on Docker container
6. Jenkins job to deploy on Kubernetes

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## Continuous Monitoring with Grafana

1. Objective
2. Introduction to Continuous Monitoring
3. Introduction to Grafana
4. Installing Grafana
5. Adding customised dashboard in Grafana



## 6 Public Cloud

1. Objective
2. Introduction to AWS
3. Devops using AWS service
4. Kubernetes on AWS
5. Docker on AWS
6. Various AWS services -  
EC2 , S3, VPC , Subnet , IAM

## Taxi Stream Processing Project

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1 Build a fault tolerant, scalable web service that calculates basic metrics over taxi data. You will obtain the live data from Pub/-Sub. Your web service will return the total number of trips in the past one hour. You will be working on the following challenges

1. Deployment of services and dependencies on a distributed cluster
2. Running each service in Docker and kubernetes

## Course Details and Fees

Please find more information about the course and fees here:

<https://cloudxlab.com/course/60/devops-specialization>

## Mode of Learning —

Online Instructor-Led Training. Classes will be held every **Saturday and Sunday from 2:30 PM - 4:30 PM UTC (8-10 PM IST)**

## Our Esteemed Customers —



Cornell University



## For Further Details —

Contact us at **+080-4920-2224** or **+1 412-568-3901** or contact:



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## For Business —

For corporate training and bulk enrollments, write to us at [reachus@cloudxlab.com](mailto:reachus@cloudxlab.com)

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