Teksands High Impact Series

DevOps Mastery

Course Duration: 30 Hours

Mode of Delivery: Online, LIVE, Instructor Led

30 Hours	11 Modules	8 Mini Projects	Additional Resources	Certificate

Version Control with Git	Monitoring using Prometheus and Grafana
Continuous Integration using Jenkins	Provisioning using Terraform
Configuration Management Using Ansible	Selenium
Containerization using Docker	Nagios
Orchestration using Kubernetes	AWS EC2 and IAM

INTENDED AUDIENCE

DEVELOPERS | TECH MANAGERS | LEADERS | ARCHITECTS | STUDENTS

Contact: info@teksands.ai

Table of Contents

ABOUT TEKSANDS HIGH IMPACT SERIES

Teksands High Impact Series is designed specifically for the busy professionals who would want to develop the maximum understanding on the topics in the shortest time possible. This course uses a completely practical based approach to run through as much as projects/code/demo as possible and explain both the concepts and coding/solutions parts on the go with the demo. The learners are then given additional projects as practice assignments for them to solve them on their own and solidify their understandings.

INTENDED AUDIENCE

- All Software Developers, Engineers including Data Engineers, AI/ML Engineers, IoT Engineers, professionals from all other specific disciplines today need to apply DevOps in their Engineering practices.
- Infra and Production Engineers whose role convers functions such as Deployments, Migrations, Monitoring, etc are especially in need for DevOps tools and technologies.
- Professionals who are aiming to become specialist DevOps Engineers.

PRE-REQUISITE

None. However, some understanding of Software Development life-cycles and exposure to scripting languages will be beneficial.

TEACHING METHODOLOGY

The Delivery method is **Online, Live Classes** led by Professional, Industry Experienced Instructors.

DURATION

30 Hours.

Weekday Courses*: Over 3 Weeks, all Weekdays (Monday to Friday), 2 hour Sessions per day.*

Weekend Courses: *Over 4 Weekends, Saturdays and Sundays, 3.5 hour Sessions per day.*

(Please check your specific course schedule)

CERTIFICATION

Certificates will be issued to every learner based on attendance and successful completion of the Course Quizzes.

UNDERSTANDING DEVOPS

> "The global DevOps market exhibited strong growth during 2015-2020. Looking forward, the global DevOps market to grow at a CAGR of around 21% during 2021-2026."
>
> *---- BusinessWire, June, 21*

DevOps has taken the Software Development world by storm in the last few years, making the traditional Software Engineering process much more efficient, disciplined, easily repeatable and making engineering process tasks highly automated. As a result, the demand for DevOps professionals have increased tremendously. Not only have exclusive DevOps roles have emerged offering lucrative career options, all Developers and Engineers are also expected to have solid DevOps knowledge and become full-stack.

The DevOps market is expected to grow at a CAGR of 20-25% yearly between 2021-26. This underscores the phenomenal rate at which DevOps professionals will be needed in the Market.

Virtually, every company in the world with a significant Software Development practice is in need of DevOps professionals and the gap in demand-supply is massive at this moment indicating the huge opportunity that lies ahead for skilled professionals. A simple search in Naukri.com reveals more than 30,000 DevOps openings in India at the moment this page is written.

The **DevOps Mastery Program** from Teksands is crafted to provide you with deep knowledge of a full gamut of DevOps tools including ***Git, Jenkins, Docker, Ansible, Terraform, Kubernetes, Prometheus, and Grafana***. This DevOps program is completely hands-on driven and covers all DevOps areas such as ***Continuous Development, Configuration Management and Continuous Integration, and finally, Continuous Monitoring*** of software throughout its development life cycle.

COURSE OVERVIEW

Topic	What you will Learn
DevOps Introduction	Understand how DevOps facilitate collaborative approaches to make the Application Development team and the IT Operations team of an organization to seamlessly work with better communication. In this section you will learn about the DevOps process areas introduction and introduction to DevOps Pipelines.
Version Control with Git	A *version control* system is based around the concept of managing changes on your applications, facilitating concurrent development and synchronisations between changes. In this section, you will learn Git, the most popular version control tool in use today. You will learn how to create branches, manage concurrency, cloning, checkout, merging, and all other commonly used commands.
Continuous Integration using Jenkins	Jenkins is an open-source automation tool written in Java with plugins built for Continuous Integration purposes and is the most popular tool now for Continuous Integration automation. In this section, you will learn how to deploy code and manage pipelines using Jenkins, including managing master-slave architecture and notifications management.
Configuration Management Using Ansible	*Configuration management* is a process for maintaining computer systems, servers, and software in a desired, consistent state. In this section, you will learn Ansible, the most popular Configuration Management tool in use today, concepts such as Inventory, Hosts and Tasks, how to create playbooks, and more.
Containerization using Docker	Containerization is the process of bundling an application together with all of its required libraries, frameworks, configuration files and dependencies so that it can be run efficiently in different computing environments. In this section, you will learn in detail about Docker and how to create and manage containers using Docker including concepts such as Images, Networks, Swarms, Docker-compose, Container Registries and more.
Orchestration using Kubernetes	Kubernetes is **a powerful open-source system**, initially developed by Google, for managing containerized applications in a clustered environment. In this section, you will learn about Container Orchestration, Kubernetes Architecture, Deployments, Microservices and more.
Monitoring using Prometheus and Grafana	Grafana is an open source solution for running data analytics, pulling up metrics that make sense of the massive amount of data & to monitor our apps with the help of cool customizable dashboards and *Prometheus* is an open-source systems monitoring and alerting toolkit. In this section, you will learn the concepts of Monitoring, and Monitoring using Graphana and *Prometheus.*
Provisioning using Terraform	*Provisioning* is the enterprise-wide configuration, deployment and management of multiple types of IT system resources. In this section, you will learn about Infrastructure provisioning automation using Terraform.
Selenium	*Selenium* is a free (open-source) automated testing framework used to validate web applications across different browsers and platforms. In this section, you will learn about test automation and use of Selenium to Automate test cases for your application, and also integrate
Nagios	Nagios provides a monitoring, alerting, graphing, and reporting platform for your entire infrastructure, including servers, operating systems, applications, network devices, websites, hypervisors, cloud servers, and much more. In this section, you will learn Nagios Network Monitoring, Nagios Server, and commonly used commands.

AWS Fundamentals	In this section, you will learn about AWS fundamentals, setting up an AWS instance, Creating Security Groups, AWS CLI, understand virtualisation, etc.

REAL-LIFE PROJECTS

You will have the following projects to work on as part of the Course.

- Create an AWS Instance and write a small web-app (a web-page for example)
- Create and run a CI/CD pipeline using Jenkins for an app.
- Set up Git version management.
- Set up Ansible Configuration Management.
- Set up using Docker Containers.
- Set up Orchestration using Kubernetes.
- Set up a couple of test cases using Selenium.
- Set up monitoring using Graphana.

COURSE STRUCTURE

Teksands High Impact Series – DevOps Mastery: 30 Hours.

Course structure as follows:

Topic	***Detailed Structure***
DevOps Introduction	• Current challenges in Software Engineering processes • Role of DevOps in Software Engineering Life-cycle • DevOps processes overview • Introduction to DevOps Tools • Introduction to DevOps Delivery Pipeline
Version Control with Git	• Understanding Version Control and its role • Understanding key concepts of Git • Perform various Git commands such as git add, git fetch, git commit, git init, git checkout, git clone, git branch, etc. • Remotes
Continuous Integration using Jenkins	• Introduction to Jenkins • Deploying Code using Jenkins • Jenkins Pipelines • Master-Slave Architecture • Authorizations • Notifications in Jenkins

Configuration Management Using Ansible	• Introduction to Configuration Management • Introduction to Ansible • Ansible Setup • Inventory, Hosts and Tasks • Ansible Playbooks • Packages and Services • Ansible Roles, handlers, variables • Troubleshooting
Containerization using Docker	• Understanding Containerization • Introduction to Docker • Setting up Docker • Creating Containers • Docker Networks • Managing Images • Container Lifetime and Persistency • Docker-compose • Docker Swarm • Container Registries with Docker
Orchestration using Kubernetes	• Container Orchestration • Kubernetes Architecture • Setting up Kubernetes • PODs, Replicasets, Deployments • Working with YAML • Networking in Kubernetes • Kubernetes Services • Microservices Architecture
Monitoring using Prometheus and Grafana	• Understanding Monitoring • Introduction to Grafana • Setting up Grafana • Building Blocks of Grafana • Creating Dashboards • Timerage • Alerts • Variables • Organising Dashboards
Provisioning using Terraform	• Understand Provisioning • Introduction to Terraform • Terraform Architecture • Deploy a Terraform Configuration File • Use Basic Terraform Commands • Terraform Resources • State Commands

	• Deploy a Terraform Project
Selenium	• Learn and install Selenium • Create Test Cases in Selenium WebDriver • Utilize X-Path and TestNG to locate elements • Execute code on several browsers using Selenium suite of tools • Integrate Selenium with Jenkins
Nagios	• Understanding Network Monitoring • Introduction to Nagios • Setting up Nagios Server • Connecting Remote Servers • Plugins and Objects • Implement Nagios commands
AWS EC2 and IAM	• Introduction to AWS • Setting up your Account • AWS Management Console • IAM overview • IAM Policies and Roles • EC2 Setup • Security Groups • AWS CLI • IAM Service • Understand Virtualization

For more Information, please visit teksands.ai or reach out to us on

Email: info@teksands.ai
or
WhatsApp/Call: +91 63 6273 2428