



About QuickXpert Infotech

Empowering Careers Since 2014

QuickXpert Infotech is a leading IT training institute for Job-Focused courses with Industry-relevant skills & our 100% Proven Placement Framework, helping students build successful IT careers. Since 2014, we have trained thousands of students and prepared them for real-world jobs with hands-on learning, live projects, AI-powered tools, internships, and end-to-end placement support.

Whether you're a student, graduate, working professional, or career changer, our courses are designed to help you gain the skills companies are looking for.

Why Choose QuickXpert Infotech?

- 10+ Years of Excellence
- 100% Practical & Job-Oriented Training
- AI-Integrated Courses
- Classroom, Online & Hybrid Learning
- Live Projects & Internship Opportunities
- Industry Expert Trainers & Professional Guidance

- Resume Building & Interview Preparation
- 1000+ Hiring Companies Network
- Dedicated Team & Early Placement Initiation
- Proven Placement Framework
- Industry-Recognized Certification
- Reasonable Fees
- Free Demo Session & more

Our Popular Courses

- Full Stack Development
- Data Science & Data Analytics
- Cyber Security
- Software Testing
- Cloud Computing
- Artificial Intelligence (AI)
- Digital Marketing
- Database Technologies
- & more

About our AWS DevOps Engineering Course with MLOPS and AI

Start Your Career in Cloud Engineering

The AWS DevOps Engineering Course is designed to help learners build practical expertise in **Amazon Web Services (AWS), DevOps practices, automation, CI/CD, containers, and cloud infrastructure**. The course covers essential AWS services along with industry-relevant DevOps tools and methodologies used to build, deploy, manage, and monitor modern applications.

At QuickXpert Infotech, you'll learn through practical training, live projects, AI tools, and real-world assignments to become job-ready.

What You'll Learn

- DevOps fundamentals, SDLC, Agile, Scrum, and CI/CD concepts
- Linux administration, shell scripting, networking, and system management
- Git, GitHub, and GitLab for version control and collaboration
- Maven build automation and dependency management
- AWS Cloud services including EC2, IAM, S3, VPC, ECR, and EKS
- Load Balancing & Auto Scaling
- Route 53 & CloudFront
- Cloud Security & Monitoring
- AWS Lambda & Serverless Architecture
- Docker & Containerization
- CI/CD with AWS DevOps tools
- Infrastructure as Code with Terraform
- Jenkins for Continuous Integration and Continuous Deployment (CI/CD)
- Docker for containerization and Docker Compose for multi-container applications
- Kubernetes for container orchestration and application deployment
- Terraform for Infrastructure as Code (IaC)
- Ansible for configuration management and automated server provisioning
- Monitoring and logging using Prometheus, Grafana, CloudWatch, and ELK Stack
- DevSecOps concepts, secure CI/CD pipelines, SonarQube, Trivy, and security best practices
- AI-powered DevOps tools including ChatGPT, GitHub Copilot, Amazon Q, and Google Gemini

- MLOps fundamentals, AIOps, and AI-assisted infrastructure automation
- End-to-end DevOps pipeline implementation using industry-standard tools
- Real-time projects, interview preparation, resume building, and practical troubleshooting scenarios to become industry ready.

Who Can Join?

- Students after 12th
- Graduates & Freshers
- Working Professionals
- Job Seekers
- Anyone interested in building a career in Cloud Computing

Career Opportunities

- DevOps Engineer
- Junior DevOps Engineer
- AWS Cloud Engineer
- Cloud Support Engineer
- AWS Administrator
- Cloud Operations Engineer
- Linux System Administrator
- Build & Release Engineer
- CI/CD Engineer
- Infrastructure Automation Engineer
- Platform Engineer
- Site Reliability Engineer (SRE)
- Kubernetes Administrator
- Docker Engineer
- Infrastructure Engineer
- DevSecOps Engineer

- Cloud Operations Engineer
- & more

• Certifications & Recognitions •



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Learn from industry experts, work on live projects, earn a recognized certificate, and get placement assistance to kick-start your career.

TOOLS COVERED



Git



GitHub



GitLab



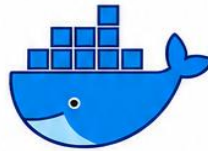
Maven



AWS



Jenkins



Docker



Kubernetes



Terraform



Ansible



Prometheus



Grafana



SonarQube



Trivy



ChatGPT



Google Gemini

and many more...

Syllabus

Introduction to Cloud and AWS

- Introduction to Cloud Computing
- Traditional IT vs Cloud
- Benefits of Cloud Computing
- Cloud Deployment Models (Public, Private, Hybrid)
- Cloud Service Models (IaaS, PaaS, SaaS)
- Introduction to AWS
- AWS Global Infrastructure
- Regions, Availability Zones & Edge Locations
- AWS Global Services vs Regional Services
- AWS Management Console
- AWS Free Tier
- AWS Pricing Model
- AWS Shared Responsibility Model

EC2 (Elastic Compute Cloud)

- Introduction to EC2 (Elastic Compute Cloud).
- How to create EC2 instance.
- Stages of instance (Stop, Running, Start, Terminate)
- Types of instances
- Introduction to AMI (Amazon Machine Images)
- What are .Pem and .PPK files
- Launching and connecting Windows server
- Launching and connecting Linux server
- Launching and connecting Ubuntu server
- Private IP VS Public IP
- Elastic IP in AWS

- Apache test using Linux OS
- Creating AMI images (Snapshot)
- Launching new instance with AMI images

AWS Billing & Organizations

- AWS Billing Dashboard
- Cost Explorer
- AWS Budgets
- Billing Alerts
- AWS Organizations
- AWS Account Best Practices

IAM (Identity Access Management)

- Introduction to IAM
- Root User vs IAM User
- IAM Users
- IAM Groups
- IAM Roles
- IAM Policies
- Managed Policies
- Inline Policies
- MFA
- Password Policy
- Access Keys
- Secret Keys
- IAM Best Practices

Networking & VPC (Virtual Private Cloud)

- Networking Fundamentals
 - IPv4 & IPv6
 - Public IP vs Private IP
 - CIDR
 - DNS Working & Resolution
 - DNS Records
 - HTTP vs HTTPS
 - SSL/TLS Basics
- VPC
 - Introduction to VPC
 - VPC Components
 - Public & Private Subnets
 - Route Tables
 - Internet Gateway
 - NAT Gateway
 - Elastic IP
 - Security Groups
 - Network ACL
 - VPC Peering
 - VPN Connection
 - Bastion Host
- DNS & CDN
 - Amazon Route 53
 - Hosted Zones
 - Routing Policies
 - Amazon CloudFront

- CDN
- Edge Locations
- EC2 (Compute Services)
 - Introduction to EC2
 - EC2 Instance Types
 - Amazon Machine Image (AMI)
 - Launch Templates
 - Key Pair (.pem/.ppk)
 - Connecting to EC2 Instances
 - User Data
 - EC2 Lifecycle
 - Elastic IP
 - EC2 Best Practices

Storage Services

- Amazon EBS
 - EBS Overview
 - Volume Types
 - Snapshots
 - Volume Management
- Amazon S3
 - Buckets & Objects
 - Storage Classes
 - Versioning
 - Lifecycle Rules
 - Bucket Policies
 - Static Website Hosting

- Amazon EFS
 - EFS Overview
 - AWS Backup

Database Services

- Database Fundamentals
- SQL vs NoSQL
- Introduction to Amazon RDS
- RDS Database Engines
- Creating & Configuring RDS Instance
- Multi-AZ
- Read Replica
- Backup & Snapshots
- Introduction to Amazon Aurora
- Introduction to Amazon DynamoDB
- Tables & Items
- Partition Key
- Introduction to Amazon ElastiCache
- Redis vs Memcached
- Introduction to Amazon Redshift
- Data Warehouse
- Hands-on: RDS & DynamoDB

Load Balancing & Auto Scaling

- Introduction to Elastic Load Balancer (ELB)
- Types of Load Balancers (ALB, NLB, Gateway Load Balancer - Overview)
- Application Load Balancer (ALB)
- Network Load Balancer (NLB)
- Target Groups

- Health Checks
- Path-Based & Host-Based Routing
- Introduction to Auto Scaling Groups (ASG)
- Launch Templates
- Scaling Policies (Dynamic & Scheduled)
- Horizontal vs Vertical Scaling
- High Availability & Fault Tolerance
- Hands-on: Configure ELB with ASG

Serverless Computing

- Introduction to Serverless
- Benefits of Serverless
- AWS Lambda
- Lambda Functions
- Lambda Triggers
- Event-Driven Architecture
- API Gateway
- Lambda Use Cases
- Hands-on: Create & Trigger Lambda Function

Infrastructure as Code (IaC)

- Introduction to Infrastructure as Code
- AWS CloudFormation
- Templates
- Resources
- Parameters
- Outputs
- Stacks
- Stack Updates
- Change Sets

- Hands-on: Deploy Infrastructure using CloudFormation

AWS CLI

- AWS CLI Installation
- AWS CLI Configuration
- IAM using CLI
- EC2 using CLI
- S3 using CLI
- Basic Automation using CLI
- AWS CloudShell

Monitoring & Security

- Amazon CloudWatch
- Metrics
- Logs
- Alarms
- Dashboards
- AWS CloudTrail
- AWS Config
- AWS Trusted Advisor

Container Services

- Amazon ECS
- Amazon ECR
- AWS Fargate
- Amazon EKS

Developer Services

- AWS Amplify
- AWS CodePipeline
- AWS CodeBuild
- AWS CodeDeploy
- CI/CD Workflow using AWS Developer Tools

AI Services

- Introduction to AI on AWS
- Amazon Q Developer
- Amazon Bedrock
- Amazon SageMaker
- AI Use Cases in AWS

Project

- Create IAM Users & Roles
- Configure VPC & Networking
- Launch EC2 Instance
- Attach EBS Volume
- Create S3 Bucket
- Configure Route 53
- Configure CloudFront
- Create RDS Instance
- Create DynamoDB Table
- Configure ELB & ASG
- Deploy Lambda Function
- Create CloudFormation Stack
- Manage AWS using CLI
- Deploy Application using ECS

Introduction to DevOps

- SDLC Basics
- Waterfall vs Agile
- Agile & Scrum
- Introduction to DevOps
- DevOps Lifecycle
- DevOps Principles (CALMS)
- DevOps Toolchain
- CI/CD Concepts
- DevOps Workflow
- DevOps Roles & Responsibilities
- Infrastructure as Code (Intro)
- Configuration Management (Intro)
- Containerization (Intro)
- Kubernetes/Orchestration (Intro)
- Monitoring & Logging (Intro)
- DevSecOps (Intro)
- GitOps (Intro)
- AI in DevOps (Intro)

Networking Basics

- Introduction to Computer Networking
- Types of Networks (LAN, MAN, WAN)
- Network Components
- OSI Model

- TCP/IP Model
- IP Addressing (IPv4 & IPv6)
- Public IP vs Private IP
- Subnetting & CIDR (Basics)
- MAC Address
- DNS (Domain Name System)
- DHCP (Overview)
- HTTP vs HTTPS
- SSL/TLS Basics
- Ports & Protocols (SSH, HTTP, HTTPS, FTP, SMTP, DNS)
- NAT (Overview)
- Firewalls & Security Groups
- VPN (Overview)
- Load Balancer (Introduction)
- Reverse Proxy (Nginx Overview)
- Network Troubleshooting Commands (ping, traceroute, nslookup, dig, telnet, curl, netstat, ss)

Unix / Linux

- Introduction to Unix & Linux
- Linux Distributions (Ubuntu, Amazon Linux, RHEL, Rocky Linux)
- Linux Architecture
- Linux File System Hierarchy

- Basic Linux Commands (pwd, ls, cd, mkdir, rmdir, touch, cat, cp, mv, rm, tree)
- File Searching & Text Processing (find, locate, grep, head, tail, less, more, sort, uniq, wc, cut)
- File Editors (nano, vi/vim)
- File & Directory Permissions (chmod, chown, chgrp, umask)
- User & Group Management
- Soft Links & Hard Links
- Compression & Archiving (tar, gzip, zip)
- Package Management (apt, yum, dnf, rpm)
- Process Management (ps, top, htop, kill, jobs)
- Service Management (systemctl, service, journalctl)
- Networking Commands (hostname, ip, ifconfig, ping, ssh, scp, curl, wget, netstat, ss)
- Disk & System Management (df, du, free, mount, lsblk, uname, cat /etc/os-release)
- Input/Output Redirection & Pipes
- Shell Scripting Basics
- Cron Jobs
- Linux Logs & Basic Troubleshooting

Git, GitHub & GitLab

- Introduction to Version Control System (VCS)
- Centralized vs Distributed Version Control
- Source Code Management (SCM)
- Introduction to Git

- Advantages of Git
- Git Architecture
- Git Workflow
- Git Repository (Local & Remote)
- Working Directory, Staging Area & Repository
- Installing & Configuring Git
- Git Basic Commands (init, clone, status, add, commit)
- Git Branching & Merging
- Git Checkout & Switch
- Merge Conflicts
- Git Log & Commit History
- Git Diff
- Git Stash
- Git Reset & Revert
- Git Cherry-pick
- Git Tags
- Git Fetch, Pull & Push
- Git Clean & Remove
- Git Ignore (.gitignore)
- Git Remote Repository
- Introduction to GitHub
- Creating & Managing GitHub Repositories
- Public & Private Repositories
- Clone, Fork & Pull Requests (PR)
- Branch Protection Rules

- GitHub Actions (Introduction)
- Introduction to GitLab
- GitLab Repository Management
- GitLab Merge Requests (MR)
- GitLab CI/CD (Overview)
- GitHub vs GitLab
- Git Best Practices
- Real-Time Git Workflow & Hands-on Exercises

Build Tools

- Introduction to Build & Build Automation
- Purpose of Build Tools
- Evolution of Build Tools (Overview)
- Types of Build Tools
- Java Build Tools (Maven, Gradle – Overview)
- Introduction to Maven
- Why Maven?
- Advantages of Maven
- Maven Architecture
- Installing & Configuring Maven
- Maven Directory Structure
- Maven Build Lifecycle
- Maven Repositories (Local, Central & Remote)
- POM.xml
- Maven Coordinates (Group ID, Artifact ID & Version)

- Maven Dependencies
- Dependency Management
- Maven Plugins
- Maven Goals & Phases (clean, validate, compile, test, package, verify, install, deploy)
- Maven Profiles (Overview)
- Multi-Module Projects (Overview)
- Creating & Building a Maven Project
- Packaging Java Applications (JAR & WAR)
- Maven Integration with Git
- Maven Integration with Jenkins
- Best Practices for Maven Projects

Jenkins

- Introduction to Jenkins
- What is CI/CD?
- Why Jenkins?
- Jenkins Features
- Jenkins Architecture (Controller & Agent)
- Installing & Configuring Jenkins
- Jenkins Dashboard & GUI
- Jenkins Plugins
- Jenkins User Management
- Creating Freestyle Jobs
- Jenkins Build Triggers
- Poll SCM & Webhooks

- Source Code Integration with Git & GitHub
- Jenkins Credentials Management
- Pipeline as Code (Jenkinsfile)
- Scripted Pipeline
- Declarative Pipeline
- Multi-Branch Pipeline
- Parameterized Builds
- Maven Integration
- Docker Integration
- Jenkins with AWS (EC2)
- Jenkins Notifications (Email/Slack Overview)
- Blue Ocean (Overview)
- Jenkins Backup & Best Practices
- Introduction to GitHub Actions
- Real-Time CI/CD Pipeline Project

Docker

- Introduction to Docker
- Why Docker?
- Docker Architecture
- Virtualization vs Containerization
- Docker Components
- Installing & Configuring Docker
- Docker Images & Containers
- Docker Basic Commands

- Docker Image Management
- Container Lifecycle Management
- Docker Volumes
- Docker Networking
- Dockerfile
- Dockerfile Instructions
- Building Custom Docker Images
- Docker Compose
- Multi-Container Applications
- Docker Hub (Public & Private Repositories)
- Pulling & Pushing Images
- Docker Logs & Container Monitoring
- Docker Environment Variables
- Docker Best Practices
- Docker Security (Overview)
- Docker Integration with Jenkins
- Docker on AWS EC2
- Real-Time Docker Project

Kubernetes

- Introduction to Kubernetes
- Why Kubernetes?
- Kubernetes Architecture
- Kubernetes Cluster Components (Control Plane & Worker Node)
- Kubernetes Objects

- Pods & Pod Lifecycle
- ReplicaSet
- Deployments
- Rollout & Rollback
- Namespaces
- Labels, Selectors & Annotations
- Manifest (YAML) Files
- Services (ClusterIP, NodePort, LoadBalancer)
- ConfigMaps & Secrets
- Volumes & Persistent Volumes (PV/PVC)
- Kubernetes Networking
- Ingress & Ingress Controller
- Resource Requests & Limits
- Horizontal Pod Autoscaler (HPA)
- StatefulSets & DaemonSets (Overview)
- Jobs & CronJobs (Overview)
- Helm & Helm Charts
- RBAC (Role-Based Access Control)
- Kubernetes Dashboard (Overview)
- Kubernetes on AWS EKS (Overview)
- Kubernetes Troubleshooting
- Deploying Applications on Kubernetes
- Real-Time Kubernetes Project

Terraform

- Introduction to Infrastructure as Code (IaC)
- Introduction to Terraform
- Why Terraform?
- Terraform Architecture
- Installing & Configuring Terraform
- HashiCorp Configuration Language (HCL)
- Terraform Providers
- Terraform Resources
- Terraform Variables
- Terraform Output Values
- Terraform Data Sources
- Terraform Commands (init, validate, plan, apply, destroy)
- Terraform State File
- Remote Backend (S3)
- State Locking (DynamoDB - Overview)
- Terraform Modules
- Terraform Workspaces
- Terraform Provisioners (Overview)
- Terraform Import
- Creating AWS Resources (EC2, S3, VPC)
- Terraform Best Practices
- Terraform with Git & Jenkins
- Real-Time Infrastructure Deployment Project

Ansible

- Introduction to Configuration Management
- Introduction to Ansible
- Why Ansible?
- Ansible vs Terraform
- Ansible Architecture
- Installing & Configuring Ansible
- SSH & Passwordless Authentication
- Ansible Inventory
- Ansible Configuration File (ansible.cfg)
- Ansible Ad-hoc Commands
- Ansible Modules
- YAML Basics
- Ansible Playbooks
- Ansible Variables
- Ansible Facts
- Ansible Conditionals
- Ansible Loops
- Ansible Handlers
- Ansible Roles
- Ansible Templates (Jinja2)
- Ansible Vault
- Ansible Tags
- Error Handling in Ansible
- Ansible Galaxy (Overview)

- Deploying Applications using Ansible
- Installing & Managing Packages using Ansible
- Managing Multiple Hosts
- Ansible Best Practices
- Ansible with AWS EC2 (Dynamic Inventory - Overview)
- Ansible with Docker (Overview)
- Real-Time Ansible Project

Monitoring & Logging

- Introduction to Monitoring & Logging
- Why Monitoring is Important?
- Types of Monitoring (Infrastructure, Application & Network)
- Introduction to Prometheus
- Prometheus Architecture
- Installing & Configuring Prometheus
- Prometheus Exporters (Node Exporter)
- PromQL Basics
- Introduction to Grafana
- Installing & Configuring Grafana
- Creating Dashboards
- Alerting with Alertmanager
- Introduction to Loki (Log Monitoring)
- Introduction to ELK Stack (Elasticsearch, Logstash & Kibana) – Overview
- Amazon CloudWatch (Overview)

- Monitoring Docker Containers
- Monitoring Kubernetes Cluster
- Application & Server Health Monitoring
- Log Analysis & Troubleshooting
- Monitoring Best Practices
- Real-Time Monitoring Project

DevSecOps

- Introduction to DevSecOps
- Why DevSecOps?
- DevOps vs DevSecOps
- Shift Left Security
- Secure CI/CD Pipeline
- Security Best Practices
- Secrets Management
- IAM Security Best Practices
- Docker Security Basics
- Kubernetes Security Basics
- Infrastructure Security (Terraform Best Practices)
- Image Scanning with Trivy
- Static Code Analysis with SonarQube
- Dependency Vulnerability Scanning (Overview)
- OWASP Top 10 (Overview)
- Container & Image Security
- Security in GitHub/GitLab Pipelines (Overview)

- Security Monitoring & Compliance (Overview)
- DevSecOps Best Practices
- Real-Time DevSecOps Pipeline (Overview)

Generative AI (GenAI) Focus

- Introduction to Generative AI
- Introduction to Prompt Engineering
- ChatGPT for DevOps
- GitHub Copilot (Overview)
- Amazon Q Developer (Overview)
- Google Gemini (Overview)
- AI for Linux Commands & Shell Scripting
- AI for Dockerfile & Docker Compose Generation
- AI for Kubernetes YAML Generation
- AI for Jenkins Pipeline Generation
- AI for Terraform & Ansible Code Generation
- AI for Documentation Generation
- Basic Practical
- Generate a Dockerfile
- Generate a Jenkinsfile
- Generate a Terraform Script
- Generate Linux Commands using AI

Cloud & Enterprise AIOps Programs

- Introduction to AIOps
- AI in Monitoring
- AI in Log Analysis
- AI in Incident Management
- AI in Root Cause Analysis
- AI in Cloud Operations
- AI for Cost Optimization (Overview)
- Enterprise AIOps (Overview)
- Basic Practical
- Analyse Logs using AI
- Troubleshoot AWS/Docker Errors using AI
- Generate Monitoring Suggestions using AI

Advanced MLOps & Agentic AI

- Introduction to MLOps
- MLOps Lifecycle
- What is Agentic AI?
- What are AI Agents?
- AI-Assisted CI/CD
- AI-Assisted Infrastructure Automation
- AI-Assisted Kubernetes Management
- Future of AI in DevOps
- AI Best Practices & Limitations

- Basic Practical
- Generate CI/CD Pipeline using AI
- AI-assisted Kubernetes YAML
- AI-assisted Infrastructure Automation Demo

Projects

- DevOps Real time project - 1
- DevOps Real time project - 2
- CI-CD Pipeline projects
- Interview questions (Technical, Manager & HR)
- Resume preparation & Evaluation
- Real time Scenarios
- Day-to Day activities
- Provide Material

Duration

5-6 months

more info - <https://quickxpertinfotech.com/dev-ops-course>

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