

# Cloud Computing with DevOps Technology and Python Full Stack Web Development

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# Cloud Computing

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Intro to On-premise architecture

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Why we should move from On-Premise Environments to Cloud ?

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What is Cloud computing ?

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Types of cloud computing

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Cloud services offered by the organization

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What are the uses of Cloud?

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What are hardware components required to build Cloud Infra ?

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Major software services are required to build cloud

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Introduction of OpenStack Cloud

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OpenStack Cloud Components

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Other Cloud providers in IT industry

# Core Components Of Cloud Computing

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Intro to OSI Model

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Switch

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Router

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Subnetting

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Important Port details using in Cloud (SSH/SMTP/SFTP/HTTP/HTTPS )

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CPUS/Memory /Process management

# DevOps

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Application Development Process

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DevOps History

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Why should we use DevOps ?

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DevOps Culture

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What is DevOps Architecture?

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DevOps Life Cycle

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Overview of DevOps Tools

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What are the advantages of DevOps

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DevOps Best Practices

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Cloud With DevOps Technology

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DevSecOps

# DevOps Tools

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Version Control using Git / SVN

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Repository Orchestration ( GitHub/GitLab/BitBucket)

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Infrastructure as a Code

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Configuration Management tools

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Ansible/Puppet/SaltStack/Chef Tools

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CI/CD Tools Using Jenkins

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Sonarqube/Jfrog/JIRA/Confluence

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Containerization using Docker

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Container Orchestrator using Kubernetes / Docker Swarm

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Prometheus/Grafana

# Version Control using Git

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What is repository?

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SVN Approach to store data

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Introduction to Git

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Why use git ?

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Git Architecture

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Basic git commands

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Branching

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Stashing in Git

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Repository Manager GitHub/BitBucket

# Ansible

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Introduction to Ansible

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How Ansible works ?

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Ansible architecture

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Core Components of Ansible

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Usage of Inventory file

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Ansible Variables and Facts

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Ansible Vault

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Ansible Tags

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Ansible Module/Play /Playbook

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Ansible Roles

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Ansible Galaxy

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Ansible Handlers and Notifications

# Containerization

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Virtualization

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Virtualization vs Containerization

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Docker Architecture

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Docker CLI commands

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Docker Images and Containers

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Dockerfile and Docker image creation

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Docker Compose

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Docker Networking

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Docker Registries

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Docker in realtime world

# Kubernetes

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Docker Swam vs Kubernetes

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Kubernetes Architecture

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Concepts of Kubernetes

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What is Kubernetes services ?

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Kubernetes deployment and replicaset

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Volumes in Kubernetes

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Kubernetes ConfigMaps and Secrets

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Kubernetes Networking

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Kubernetes Security

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Scaling in Kubernetes ( Horizontal , Virtual )

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Kubernetes Monitoring and Logs

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Helm

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Kubernetes Ingress

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# Jenkins

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What CICD ?

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Continuous Integration

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Continuous Deployments

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Introduction to Jenkins

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Jenkins Architecture

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Jenkins Pipelines and Jobs

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Declarative vs Scripted Pipelines

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Jenkins Plugins

---

Jenkins Integrations

---

Master Slave architecture

---

Jenkins Security

---

Jenkins Monitoring

---

Jenkins and Cloud Services

---

Jenkins and Docker

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Jenkins and Kubernetes

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Jenkins Backup and Restore

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Kubernetes application deployment using Jenkins

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Sample Java application deployment using Jenkins

# Automation Python

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Introduction to Python Automation

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Core Concepts of Python Automation

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Automating Web Tasks

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Working with APIs for automation

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Data-Related tasks using python

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Automation with Cloud Services

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CICD Automation using Python

# Django Web Framework

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Introduction to Django

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Setting Up Django

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Django Architecture

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Django Model creation

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Django templates

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Django Sample Project