

Day - 1

- **Introduction to Kubernetes**
 - Welcome and Registration
 - Course Overview and Objectives
 - Understanding containerization and container orchestration
 - Kubernetes fundamentals and architecture
 - Installation and setup of a Kubernetes cluster
- **Deploying and Managing Applications in Kubernetes**
 - Creating and deploying pods, services, and deployments
 - Service discovery and load balancing
 - Scaling applications in Kubernetes
- **Advanced Kubernetes Concepts**
 - ConfigMaps and Secrets for configuration management
 - StatefulSets for managing stateful applications
 - Pod affinity and anti-affinity
 - Taints and tolerations for node-specific configurations
- **Kubernetes Networking and Security**
 - Kubernetes networking models
 - Network policies for security
 - Securing access to the Kubernetes API

- **Understanding DevOps Principles**

- Definition of DevOps
- DevOps Culture and Collaboration
- Key DevOps Principles (CI/CD, Automation, Feedback Loop)

- **Introduction to Prometheus**

- What is Prometheus?
- Features and Benefits
- Prometheus Architecture

- **Setting up Prometheus**

- Installing Prometheus
- Configuring Prometheus
- Basic PromQL Queries

- **Instrumenting Applications with Prometheus**

- Exporters and Instrumentation Libraries
- Collecting Metrics
- Best Practices for Instrumentation

- **Understanding DevOps Principles**

- Definition of DevOps
- DevOps Culture and Collaboration

- **Alerting with Prometheus**

- Defining Alerts and Alert Rules
- Alertmanager Configuration
- Hands-on: Configuring Alerts

- **Grafana and Prometheus**

- Introduction to Grafana
- Integrating Prometheus with Grafana
- Creating Dashboards

- **Scaling Prometheus and Best Practices**

- Handling High Cardinality
- Federation and Remote Storage
- Backup and Recovery

Day - 3

- **Introduction to Advanced DevOps and ELK**
 - Registration and Welcome
 - Introduction to Advanced DevOps and the ELK Stack
 - The Role of ELK in DevOps
- **ELK Fundamentals**
 - Understanding Elasticsearch, Logstash, and Kibana
 - Log Management and Analysis Best Practices with ELK
- **Advanced ELK Usage**
 - Ingesting and Parsing Data with Logstash
 - Advanced Elasticsearch Indexing and Searching
- **Integrating ELK with DevOps Tools**
 - Monitoring and Alerting with the ELK Stack
- **Hands-On Workshops and Case Studies**
 - Building Custom Log Processing Pipelines with Logstash
 - Real-World Case Studies: How Companies Use ELK in DevOps
- **Q&A and Closing Remarks**
 - Q&A Session
 - Workshop Conclusion and Networking

Day - 4

- **Introduction to Advanced DevOps and Grafana**
 - Registration and Welcome
 - Introduction to Advanced DevOps and Grafana
 - The Role of Grafana in DevOps
- **Grafana Fundamentals**
 - Understanding Grafana: Features and Components
 - Building Effective Dashboards with Grafana
- **Advanced Grafana Usage**
 - Data Sources and Plugins for Grafana
 - Advanced Visualization Techniques in Grafana
- **Integrating Grafana with DevOps Tools**
 - Alerting and Monitoring with Grafana
- **Hands-On Workshops and Case Studies**
 - Building Custom Dashboards in Grafana
 - Real-World Case Studies: How Companies Use Grafana in DevOps
- **Q&A and Closing Remarks**
 - Q&A Session
 - Workshop Conclusion and Networking

- **Introduction to Advanced DevOps and ArgoCD**
 - Registration and Welcome
 - Introduction to Advanced DevOps and ArgoCD
 - Understanding the Role of ArgoCD in DevOps
- **ArgoCD Fundamentals**
 - Exploring ArgoCD Architecture and Components
 - Application Management with ArgoCD
- **ArgoCD Fundamentals**
 - Exploring ArgoCD Architecture and Components
 - Application Management with ArgoCD
- **Integrating ArgoCD with DevOps Tools**
 - CI/CD Pipeline Integration with ArgoCD
- **Hands-On Workshops and Case Studies**
 - Setting Up and Managing Applications in ArgoCD
 - Real-World Case Studies: How Companies Use ArgoCD in DevOps
- **Q&A and Closing Remarks**
 - Q&A Session
 - Workshop Conclusion and Networking