Implement DevSecOps On SAP Training

Curriculum 5 Days

Day - 1

Introduction to DevSecOps and Security in SAP

- **Welcome and Course Introduction**
  - Overview of the course objectives, tools, and the DevSecOps approach.
  - Why DevSecOps is crucial in SAP environments.
- **DevSecOps Fundamentals**
  - Understanding DevOps, SecOps, and the principles of integrating security into DevOps (DevSecOps).
  - Key challenges and benefits of implementing DevSecOps in SAP systems.
- **Overview of SAP Security Requirements**
  - Security concerns specific to SAP systems: data protection, compliance, and vulnerability management.
- **DevSecOps Workflow in SAP**
  - Building a secure pipeline for SAP development.
  - Integrating security practices into the CI/CD pipeline.
- **Tools Setup for DevSecOps on SAP**
  - Introduction to version control using GitLab/GitHub.
  - Setting up Jenkins for automation and integrating with SAP.
- **Hands-on Lab**
  - Setting up GitLab/GitHub repositories for SAP applications.
  - Creating a basic Jenkins pipeline for SAP code.

Day - 2

Secure Development and Automated Code Scanning

- **Secure Coding Practices for SAP**
  - Identifying and mitigating security vulnerabilities during SAP development.
  - Using OWASP Top 10 security practices in SAP development.

- **Static Application Security Testing (SAST) with SonarQube**
  - Introduction to SonarQube for detecting vulnerabilities in source code.
  - Integrating SonarQube into the CI/CD pipeline for continuous code quality checks.

- **Automated Code Scanning for SAP**
  - Setting up automated security scanning in Jenkins using SonarQube.
  - Customizing code quality checks for SAP environments.

- **Hands-on Lab**
  - Configuring SonarQube with Jenkins for code scanning.
  - Running static code analysis on SAP applications.

Day - 3

Containerization and Secure Deployment with Docker and Kubernetes

- **Introduction to Containerization in DevSecOps**
  - The role of Docker in securing SAP applications.
  - Benefits of containerization for consistency and security.

- **Docker Security Best Practices**
  - Ensuring secure Docker containers: image scanning, hardening, and secrets management.

- **Kubernetes Security**
  - Kubernetes architecture and its role in securing containerized applications.
  - Implementing role-based access control (RBAC), network policies, and security contexts in Kubernetes.

- **Deploying SAP Applications Securely Using Docker and Kubernetes**
  - Containerizing an SAP application and deploying it to a Kubernetes cluster.
  - Best practices for securing SAP applications during deployment.

- **Hands-on Lab:**
  - Containerizing an SAP application with Docker.
  - Deploying the containerized application to a Kubernetes cluster.

Day - 4

Security Monitoring, Vulnerability Scanning, and Secrets Management

- **Security Monitoring with Prometheus & Grafana**
  - Setting up Prometheus for continuous monitoring of SAP application security metrics.
  - Visualizing security metrics with Grafana dashboards.

- **Vulnerability Scanning with OWASP ZAP**
  - Using OWASP ZAP to scan SAP applications for vulnerabilities.
  - Automating vulnerability scanning as part of the CI/CD pipeline.

- **Secrets Management with HashiCorp Vault**
  - Introduction to Vault for managing sensitive data and secrets.
  - Best practices for handling passwords, API keys, and certificates securely in SAP environments.

- **Hands-On Labs**
  - Setting up Prometheus and Grafana to monitor SAP applications.
  - Running a security scan with OWASP ZAP.
  - Integrating HashiCorp Vault into the SAP DevSecOps pipeline for secrets management.

Day - 5

Incident Management, Compliance, and Capstone Projec

- **Incident Response and Logging**
  - Best practices for handling security incidents in SAP environments.
  - Logging and monitoring security events and incidents.
- **Compliance and Auditing in SAP DevSecOps**
  - Ensuring compliance with security standards such as ISO 27001, GDPR, and SAP Security Guidelines.
  - Using Terraform to automate compliance checks and enforce security policies.
- **Capstone Project**
  - Participants will implement a complete DevSecOps pipeline for SAP, integrating code scanning, containerization, deployment, and monitoring.
  - Review and presentation of the capstone project.
- **Closing Remarks and Q&A**
  - Recap of the course and next steps in implementing DevSecOps for SAP environments.
  - Certification and continued learning resources.