

API Designing, Implementation, Management, and Security.

Duration: 5 Days

Course Overview

This course provides a **comprehensive understanding** of API (Application Programming Interface) design, development, deployment, management, and security. Participants will gain **hands-on experience** in designing RESTful and GraphQL APIs, implementing best practices, managing API lifecycles, and securing APIs against threats and vulnerabilities.

By the end of this training, attendees will be able to **design scalable APIs, manage API traffic, enforce security policies, and optimize API performance.**

Target Audience

This course is designed for:

- Software Developers and Engineers
- API Architects and Designers
- DevOps and Cloud Engineers
- IT Security Professionals
- Product Managers and Technical Leads
- System Integrators

Course Objectives

By the end of this course, participants will be able to:

- ✓ Design and implement robust APIs following industry standards
- ✓ Secure APIs using best practices and security protocols
- ✓ Manage APIs effectively using API gateways and monitoring tools
- ✓ Optimize API performance and scalability
- ✓ Troubleshoot and resolve common API-related issues

What You Will Learn.

Module 1: Introduction to APIs

- Understanding APIs and their importance
- Types of APIs (REST, SOAP, GraphQL, gRPC)
- API lifecycle and best practices

Module 2: API Design Principles

- RESTful API principles and architecture

- GraphQL API fundamentals
- Designing for scalability and reusability
- API versioning and documentation (Swagger/OpenAPI)

Module 3: API Implementation

- Implementing RESTful and GraphQL APIs using Node.js, Python, and Java
- Handling requests and responses
- Error handling and logging
- API testing (Postman, JMeter)

Module 4: API Management

- API gateways and their role
- Traffic management and rate limiting
- API monetization strategies
- API analytics and monitoring

Module 5: API Security Best Practices

- Authentication & Authorization (OAuth 2.0, JWT, API keys)
- Rate limiting and throttling
- Data encryption and transport security (HTTPS, TLS)
- Threat detection and mitigation strategies

Module 6: Deploying and Monitoring APIs

- Deploying APIs on cloud platforms (AWS, Azure, Google Cloud)
- CI/CD for API deployments
- API logging and monitoring tools

Module 7: Case Studies and Hands-on Projects

- Real-world API implementation scenarios
- Hands-on project: Building a secure API from scratch
- Group discussions and Q&A