
Cloud security Engineer

1.Introduction to Cloud Security

- 1.1 Overview of Cloud Computing and Deployment Models
- 1.2 Cloud Security Threats and Challenges
- 1.3 Shared Responsibility Model
- 1.4 Cloud Security Compliance and Regulations (e.g., GDPR,HIPAA)

2.Cloud Identity and Access Management (IAM)

- 2.1 Identity and Access Management Basics..
- 2.2 Identity Providers and Single Sign-On (SSO)
- 2.3 Role-Based Access Control (RBAC)
- 2.4 Multi-Factor Authentication (MFA)
- 2.5 IAM Best Practices

3.Network Security in the Cloud

- 3.1 Virtual Private Cloud (VPC) and Network Isolation
- 3.2 Security Groups and Network ACLs
- 3.3 DDoS Mitigation
- 3.4 VPNs and Direct Connect
- 3.5 Cloud WAF (Web Application Firewall)

4.Data Security

- 4.1 Encryption at Rest and in Transit
- 4.2 Key Management Services
- 4.3 Data Classification and Handling
- 4.4 Data Loss Prevention (DLP)



5. Application Security

- 5.1 Secure Software Development Lifecycle (SDLC)
- 5.2 OWASP Top Ten Risks
- 5.3 API Security
- 5.4 Serverless Security
- 5.5 Container Security (e.g., Docker, Kubernetes)

6. Security Monitoring and Incident Response

- 6.1 Cloud Security Monitoring and Logging
- 6.2 Security Information and Event Management (SIEM)
- 6.3 Cloud Security Incident Response
- 6.4 Threat Detection and Response

7. Cloud Compliance and Governance

- 7.1 Cloud Security Best Practices and Frameworks
- 7.2 Cloud Compliance Auditing (e.g., AWS Config, Azure Policy)
- 7.3 Security Automation and Orchestration
- 7.4 Risk Assessment and Management

8. Cloud Security Tools and Services

- 8.1 Security Services from Cloud Providers (e.g., AWS Security Hub, Azure Security Center)
- 8.2 Third-party Security Tools and Solutions
- 8.3 Cloud-native Security Automation

9.DevSecOps and Continuous Security

9.1 Integrating Security into CI/CD Pipelines

9.2 Infrastructure as Code (IaC) Security

9.3 Security Testing (e.g., Static Analysis, Dynamic Analysis)

10.Cloud Security Case Studies and Practical Labs

10.1 Real-world cloud security scenarios

10.2 Hands-on labs and exercises to apply knowledge

10.3 Security Assessment and Penetration Testing

11.Final Project and Capstone

11.1 Building a secure cloud environment

11.2 Capstone project to demonstrate security skills

11.3 Presentation and Evaluation

12.Emerging Trends and Future Challenges

12.1 -Trends in Cloud Security and Preparing for Future Cloud Security Challenges