

# GIAC Cloud Security Automation



## Online Course

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## Course Modules

### 1. Microservice Security

- o Understanding of microservice architecture and implementation in a DevOps environment.
- o Architecture's attack surface and appropriate security controls used in various architectural designs and conditions.

### 2. Automated Remediation

- o Event-based monitoring systems, alerting and security automation tools, and cloud management tools like Cloud Custodian.

### 3. Compliance as Code

- o Understanding of the Secure DevOps auditing controls and how to leverage automated scanners to automate policy requirements.

### 4. Configuration Management as Code

- o Understanding of managing infrastructure using programmable configuration management toolsets.
- o Understanding of the new attack surfaces presented by CI, CD, and CM tools and familiarity with techniques for how to harden these tools.

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## 5. Container Security

- o Understanding of container security issues, hardening containerized environments, container orchestration tools, and running these workloads in the cloud.

## 6. Continuous Security Monitoring

- o Understanding of what metrics and monitoring tools are needed to inform security efforts in cloud and DevOps environments.
- o How this data is collected, parsing log files, network collection, setting thresholds, and alerting the security team.

## 7. Deployment Orchestration and Secure Content Delivery

- o Understanding of deployment patterns, such as canary and blue/green deployment processes, their benefits, and how to choose which approach is appropriate for a given situation.
- o Demonstrate familiarity with the purposes and issues involved with using Content Delivery Networks (CDN).
- o Understanding of methods to safely bypass the Same Origin Policy, CDN configuration practices and issues, & demonstrate ways that access to CDN content can be controlled securely.





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## 8. DevOps Fundamentals

Familiarity with Secure DevOps fundamentals and culture, including terminology, automation, cloud infrastructure integration, & security risks.

## 9. DevSecOps Security Controls

Understanding of the DevOps deployment pipeline and security considerations for each step of the Continuous Delivery and Continuous Integration processes.

## 10. Kubernetes Security

- o Understanding of container runtimes and orchestrators, such as Kubernetes, and their security.
- o Familiarity with Kubernetes access control, namespaces, service accounts, secrets, and AWS and Azure Kubernetes Services, as well as container runtime security controls.

## 11. Runtime Security Protection

- o Understanding of virtual patching in the cloud using Security as a Service, such as the Web Application Firewall.
- o Understanding of how to configure those services to protect against common website attacks.



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## **12. Secrets Administration**

- o Understanding of cloud secret keepers and vaults.
- o Understanding of storing and retrieving sensitive data in these services.

## **13. Secure Infrastructure as Code**

- o Understanding of setting up and managing cloud infrastructure via code.
- o Cloud provider and third-party tools used to manage cloud infrastructure resources.

## **14. Securing Cloud Architecture**

- o Securing cloud architecture using Continuous Integration / Continuous Deployment / Continuous Delivery pipelines.
- o Azure and AWS toolsets to track work items, code, test, build, and release, and how each stage is secured and automated.

## **15. Serverless Security**

- o Serverless architectures, their features, advantages, security concerns, and tactics for deploying effective security in serverless implementations.

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