

Machine Identity Security Training

COURSE CONTENT

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About Multisoft

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About Course

Machine Identity Security Training by Multisoft Systems is designed to help professionals understand and implement secure machine identity management across modern enterprise environments. As organizations increasingly rely on cloud computing, APIs, containers, DevOps pipelines, IoT devices, and automated systems, managing machine identities such as certificates, keys, secrets, and tokens has become a critical cybersecurity requirement.

Module 1: Introduction to Machine Identity Security

- ✓ Overview of Machine Identity Security
- ✓ Human Identity vs Machine Identity
- ✓ Importance of Machine Identities
- ✓ Enterprise Security Challenges
- ✓ Digital Trust Concepts
- ✓ Zero Trust Security Fundamentals
- ✓ Machine Identity Use Cases
- ✓ Industry Applications

Module 2: Machine Identity Architecture

- ✓ Machine Identity Security Architecture
- ✓ Public Key Infrastructure (PKI) Overview
- ✓ Digital Certificates Fundamentals
- ✓ Certificate Authorities (CA)
- ✓ Trust Chains and Validation
- ✓ Key Management Architecture
- ✓ Identity Lifecycle Framework
- ✓ Hybrid and Multi-Cloud Security Models

Module 3: Public Key Infrastructure (PKI)

- ✓ Introduction to PKI
- ✓ SSL/TLS Certificate Concepts
- ✓ Certificate Issuance Process
- ✓ Certificate Signing Requests (CSR)
- ✓ Certificate Renewal and Revocation
- ✓ Root and Intermediate CAs
- ✓ Certificate Policies
- ✓ PKI Governance and Compliance

Module 4: Certificate Lifecycle Management

- ✓ Certificate Discovery
- ✓ Certificate Enrollment
- ✓ Automated Certificate Provisioning
- ✓ Certificate Renewal Automation
- ✓ Certificate Revocation Management
- ✓ Expired Certificate Risk Mitigation
- ✓ Certificate Inventory Management
- ✓ Certificate Monitoring and Alerts

Module 5: Secrets Management

- ✓ Introduction to Secrets Management
- ✓ API Keys and Tokens
- ✓ Secure Credential Storage
- ✓ Password Vaulting Concepts
- ✓ Encryption Key Management
- ✓ Secrets Rotation
- ✓ Secrets Access Policies
- ✓ Secure Application Authentication

Module 6: Cloud and DevOps Security

- ✓ Cloud Machine Identities
- ✓ Kubernetes Security Concepts
- ✓ Container Identity Management
- ✓ DevOps Pipeline Security
- ✓ CI/CD Secrets Protection
- ✓ Cloud-Native Certificate Management
- ✓ Service Mesh Security
- ✓ API Security Best Practices

Module 7: Identity Security for Applications and APIs

- ✓ API Authentication Methods
- ✓ OAuth and OpenID Connect Basics
- ✓ Mutual TLS (mTLS)
- ✓ Application Identity Management
- ✓ Secure Service Communication
- ✓ Token-Based Authentication
- ✓ API Gateway Security
- ✓ Identity Federation Concepts

Module 8: IoT and Device Identity Security

- ✓ IoT Identity Management
- ✓ Device Authentication
- ✓ Embedded Certificates
- ✓ Secure Device Communication
- ✓ Edge Device Security
- ✓ Firmware Signing Concepts
- ✓ Device Lifecycle Security
- ✓ Industrial IoT Security

Module 9: Zero Trust and Advanced Security Models

- ✓ Zero Trust Architecture
- ✓ Continuous Authentication
- ✓ Risk-Based Authentication
- ✓ Identity Threat Detection
- ✓ Behavioral Analytics
- ✓ Micro-Segmentation Concepts
- ✓ Adaptive Access Controls
- ✓ Security Automation

Module 10: Compliance and Governance

- ✓ Security Compliance Standards
- ✓ GDPR and Data Privacy
- ✓ PCI DSS Concepts
- ✓ HIPAA Security Requirements
- ✓ NIST Cybersecurity Framework
- ✓ Audit and Compliance Reporting
- ✓ Security Governance Models
- ✓ Risk Management Strategies

Module 11: Monitoring and Threat Detection

- ✓ Security Monitoring Fundamentals
- ✓ Certificate Monitoring
- ✓ Identity Threat Analytics
- ✓ SIEM Integration Concepts
- ✓ Incident Response Workflow
- ✓ Threat Intelligence Integration
- ✓ Anomaly Detection
- ✓ Real-Time Security Alerts

Module 12: Automation and Orchestration

- ✓ Security Automation Concepts
- ✓ Automated Certificate Management
- ✓ Infrastructure as Code (IaC) Security
- ✓ DevSecOps Automation
- ✓ Workflow Orchestration
- ✓ Policy-Based Automation
- ✓ Integration with Security Tools
- ✓ Automated Remediation

Module 13: Administration and Integration

- ✓ User and Role Management
- ✓ Policy Configuration
- ✓ Security Administration
- ✓ API Integration Basics
- ✓ Integration with IAM Platforms
- ✓ Cloud Security Integration
- ✓ Third-Party Security Tool Integration
- ✓ Troubleshooting and Maintenance

Module 14: Real-Time Business Scenarios

- ✓ Enterprise PKI Deployment Scenario
- ✓ Kubernetes Security Use Case
- ✓ API Security Implementation
- ✓ Cloud Certificate Management
- ✓ IoT Device Authentication Example
- ✓ DevOps Pipeline Security Scenario
- ✓ Zero Trust Deployment Example