Certified Lead SCADA Security Manager Training

Duration: **4 Day**

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Certified Lead SCADA Security Manager is a four-day, instructor-led course designed to develop the knowledge and practical expertise required to plan, design, and implement an effective security programme for SCADA and industrial control system environments.

As critical infrastructure and operational technology become increasingly connected, the cyber risks affecting SCADA systems continue to grow. Protecting these environments requires more than technical controls alone; organisations need a structured approach that combines governance, operational practices, risk management, and security architecture.

Throughout the course, participants examine common threats, vulnerabilities, and risk scenarios affecting industrial control systems. The programme explores how technical, operational, and management controls work together within a SCADA security programme and presents a structured methodology for managing security across high-impact environments.

Key topics include network segmentation, defence-in-depth, secure remote access, vulnerability management, incident response, high availability, and security testing. By the end of the course, participants will be better prepared to lead SCADA security initiatives and sit the **PECB Certified Lead SCADA Security Manager** examination.

Prerequisites

Participants should have:

- A fundamental understanding of SCADA security concepts,
- Basic knowledge of industrial control systems and networking,
- Familiarity with information security principles.

Who Should Attend

This course is designed for:

- Security professionals who want to develop SCADA security management skills,
- IT professionals looking to strengthen their technical knowledge of operational technology environments,
- IT and risk managers who need a deeper understanding of industrial control systems and SCADA,
- SCADA system developers,
- SCADA engineers and operators,
- IT professionals working with SCADA environments.

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What You Will Learn

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

- Explain the purpose, architecture, and risks associated with SCADA systems, distributed control systems, and programmable logic controllers,
- Identify threats and vulnerabilities affecting industrial control system environments,
- Develop and support a proactive SCADA security programme, including security policy development and vulnerability management,
- Design network architectures that incorporate defence-in-depth security controls for SCADA environments,
- Explain the relationship between management, operational, and technical controls within a SCADA security programme,
- Design resilient and highly available SCADA systems,
- Plan and manage an effective programme of security testing activities.

Training Outline

Fundamental Principles and Concepts of SCADA and SCADA Security

This section introduces SCADA and industrial control systems and examines the security principles that apply specifically to operational technology environments.

- Overview of SCADA and industrial control systems
- Components of distributed control systems
- Programmable logic controllers
- Operational Technology compared with Information Technology
- Core security principles for SCADA systems
- Regulatory and compliance considerations in critical infrastructure
- Security challenges specific to SCADA environments

Industrial Control System Characteristics, Threats, and Vulnerabilities

Participants examine how ICS environments are structured and the threats and weaknesses that can affect them.

- ICS architecture and communication protocols
- Common threat actors targeting SCADA systems
- Common attack vectors
- Vulnerability types within operational technology networks
- Risk scenarios affecting critical infrastructure
- Potential consequences of cyber incidents in industrial environments
- Case studies of SCADA and ICS security breaches

Designing and Developing an ICS Security Programme

This section focuses on developing a structured and risk-based security programme using recognised guidance.

- Overview of **NIST SP 800-82**

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- Establish governance for SCADA security
- Develop security policies
- Apply risk assessment methodologies for operational technology
- Asset identification and classification
- Security awareness and training within ICS environments
- Integrate security into system lifecycle management

Network Security Architecture for SCADA Systems

- Network segmentation and zoning strategies
- Defence-in-depth architecture principles
- Secure remote access
- Communication controls
- Firewalls, intrusion detection, and monitoring in ICS networks
- Secure configuration and hardening of SCADA components
- Manage third-party and vendor access

Implementing Security Controls for SCADA Systems

- Technical security controls for industrial networks
- Access control and identity management
- Patch and vulnerability management strategies
- Incident response planning for ICS
- Backup, recovery, and business continuity
- Integration of physical and cyber security controls

Developing Resilient and Robust Systems

- High-availability design principles
- Redundancy and fault tolerance in SCADA environments
- Secure system design
- Secure coding practices
- Monitoring and logging strategies
- Evaluate system performance and resilience
- Continually improve the SCADA security posture

Security Testing of SCADA Systems

- Security testing methodologies for industrial environments
- Vulnerability assessment approaches
- Penetration testing considerations
- Testing limitations within operational technology systems
- Manage testing without disrupting operations
- Reporting and remediation planning
- Align testing outcomes with risk management processes

Exams and Assessments

Participants will sit the **PECB Certified Lead SCADA Security Manager** examination following the course. The exam is delivered in accordance with the requirements of the PECB Examination and

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Certification Programme.