KOENIG SOLUTIONS · COURSE OUTLINE

System & Network Security

6	49
MODULES	TOPICS

LEARNING OBJECTIVES

- Identify real threats such as spoofing, sniffing and eavesdropping
- Explain the role of a cyber security policy in organisational protection
- Compare symmetric and asymmetric encryption such as AES and RSA
- Apply hashing to ensure data integrity and build digital signatures
- Assess password policies and strong authentication with biometrics
- Evaluate host authentication solutions for wireless networks
- Identify system vulnerabilities and apply OS hardening measures
- Deploy firewalls to protect web services from network intrusions

COURSE SYLLABUS

6 Modules, 49 Topics

01

Building a Secure Organization

REAL THREATS THAT IMPACT CYBERSECURITY

- Hackers inside and out
- Eavesdropping
- Spoofing
- Sniffing
- Trojan horses
- Viruses
- Wiretaps

A CYBER SECURITY POLICY: THE FOUNDATION OF YOUR PROTECTION

- Defining your information assurance objectives
- Assessing your exposure

02

A Cryptography Primer

SECURING DATA WITH SYMMETRIC ENCRYPTION

- **Choosing your algorithm:** DES, AES, Rc4 and others
- Assessing key length and key distribution

SOLVING KEY DISTRIBUTION ISSUES WITH ASYMMETRIC ENCRYPTION

- Generating keys
- Encrypting with RSA
- PGP and GnuPG
- Evaluating Web of Trust and PKI

ENSURING INTEGRITY WITH HASHES

- Hashing with Md5 and SHA
- Protecting data in transit
- Building the digital signature

03

Verifying User and Host Identity

ASSESSING TRADITIONAL STATIC PASSWORD SCHEMES

- Creating a good quality password policy to prevent password guessing and cracking
- Protecting against social engineering attacks
- Encrypting passwords to mitigate the impact of password sniffing

EVALUATING STRONG AUTHENTICATION METHODS

- Preventing password replay using one-time and tokenized passwords
- Employing biometrics as part of multi-factor authentication

AUTHENTICATING HOSTS

- Distrusting IP addresses
- Address-spoofing issues and countermeasures
- Solutions for wireless networks

04

Preventing System Intrusions

DISCOVERING SYSTEM VULNERABILITIES

- Searching for operating system vulnerabilities
- Discovering file permission issues
- Limiting access via physical security

ENCRYPTING FILES FOR CONFIDENTIALITY

- Encryption with application-specific tools
- Recovering encrypted data

HARDENING THE OPERATING SYSTEM

- Locking down user accounts
- Securing administrator's permissions
- Protecting against viruses

05

Guarding Against Network Intrusions

SCANNING FOR VULNERABILITIES

Searching for rogue servers · Profiling systems and services

REDUCING DENIAL OF SERVICE (DOS) ATTACKS

Securing DNS · Limiting the impact of common attacks

DEPLOYING FIREWALLS TO CONTROL NETWORK TRAFFIC

Preventing intrusions with filters · Implementing cyber security policy · Deploying personal firewalls

PROTECTING WEB SERVICES AND APPLICATIONS

Validating user input · Controlling information leakage

06

Ensuring Network Confidentiality

THREATS FROM THE LAN

- Sniffing the network
- Mitigating threats from connected hosts
- Partitioning the network to prevent data leakage
- Identifying wireless LAN vulnerabilities

CONFIDENTIALITY ON EXTERNAL CONNECTIONS

- Ensuring confidentiality with encryption
- Securing communication with IPSec

WHAT IS INCLUDED

Everything You Need to Succeed

- Koenig course material for every module
- Delivery by certified instructors and subject matter experts
- Hands-on exercises throughout the course
- Course completion certificate from Koenig

ABOUT KOENIG

Who We Are

Established in 1993, Koenig Solutions is a globally recognised training provider with 35+ technology partnerships, 5,000+ training programmes and a network of certified instructors and subject matter experts, supporting individuals and enterprise teams worldwide.

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