Training: CompTIA
CompTIA PenTest+ Prep Course

TRAINING GOALS:

CompTIA PenTest+ validates your ability to identify, mitigate, and report system vulnerabilities. Covering all stages of penetration testing across attack surfaces like cloud, web apps, APIs, and IoT, it emphasizes hands-on skills such as vulnerability management and lateral movement. This certification equips you with the expertise to advance your career as a penetration tester or security consultant.

Skills you'll learn

- Plan and scope penetration tests while ensuring compliance with legal and ethical requirements, and develop detailed reports with remediation recommendations to support engagement management.
- Perform active and passive reconnaissance, gather information, and enumerate systems to uncover vulnerabilities effectively.
- Conduct vulnerability scans, analyze results, and validate findings to identify and address security weaknesses.
- Execute network, host-based, web application, and cloud-based attacks using appropriate tools and techniques to test system defenses.
- Maintain persistence, perform lateral movement, and document findings to support remediation efforts during post-exploitation activities.

Job roles that benefit from PenTest+ skills

- Penetration Tester
- Cybersecurity Analyst
- Security Consultant
- Cloud Penetration Tester
- Web App Penetration Tester
- Cloud Security Specialist
- Network & Security Specialist

Compendium Centrum Edukacyjne Spółka z o.o.
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Each participant in an authorized training CompTIA PenTest+ Prep Course held in Compendium CE will receive a free PT0-003 CompTIA PenTest+ Certification Exam vouchers.

CONSPECT:

- Penetration Testing - Before You Begin
  - Professional Conduct and Penetration Testing
    - What Is Penetration Testing?
    - Ethics, Legal, and Compliance Considerations of Penetration Testing
    - Importance and Examples of Documentation
    - Scoping and Authorization
    - Overview of the PenTest Report
    - Live Lab: Exploring the Lab Environment
  - Collaboration and Communication
    - Collaboration and Communication Overview
    - PenTest Team Roles and Responsibilities
    - Communicating with Clients and Team Members
    - Peer Review
    - Stakeholder Alignment
    - Root Cause Analysis
    - Escalation Path
    - Secure Distribution
    - Articulation of Risk, Severity, and Impact
    - Goal Reprioritization
    - Business Impact Analysis
    - Client Acceptance
  - Testing Frameworks and Methodologies
    - Testing Frameworks and Methodologies Overview
    - Open Source Security Testing Methodology Manual (OSSTMM)
    - Council of Registered Ethical Security Testers (CREST)
    - Penetration Testing Execution Standard (PTES)
    - MITRE ATT&CK
    - Open Web Application Security Project (OWASP) Top 10
    - OWASP Mobile Application Security Verification Standard (MASVS)
    - Purdue Model

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- Threat Modeling Frameworks
- Introduction to Scripting for Penetration Testing
  - Scripting Languages
  - Bash Shell and Bash Script
  - Python
  - PowerShell
  - Use of Libraries, Functions, and Classes
  - Logic Constructs
  - Create Logic Constructs

- Applying Pre-Engagement Activities
  - Define the Scope
    - Regulations, Frameworks, and Standards
    - Rules of Engagement
    - Agreement Types
    - Target Selection
  - Compare Types of Assessments
    - Types of Assessments Overview
    - Web and Application Assessments
    - Network Assessments
    - Activity: Assess Environmental Considerations
    - Mobile Assessments
    - Cloud Assessments
    - Wireless Assessments
    - IoT Devices and Penetration Testing
    - Information Technology Versus Operational Technology
  - Utilize the Shared Responsibility Model
    - The Shared Responsibility Model Overview
    - Hosting Provider Responsibilities
    - Customer Responsibilities
    - Penetration Tester Responsibilities
    - Third-Party Responsibilities
  - Identify Legal and Ethical Considerations
    - Authorization Letters
    - Mandatory Reporting Requirements
    - Risk to the Penetration Tester
    - Documenting Pre-Engagement Activities

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- Enumeration and Reconnaissance
  - Information Gathering Techniques
    - Active and Passive Reconnaissance
    - Tools for Reconnaissance
    - Open-Source Intelligence (OSINT)
    - Using Shodan
    - Previously Breached Password Lists
    - Network Reconnaissance
    - Basics of Scanning
    - Perform Recon with Nmap
    - Certificate Transparency Logs
    - Information Disclosure
    - Search Engine Analysis/Enumeration
    - Network Sniffing
    - Data Manipulation
  - Host and Service Discovery Techniques
    - What Is Enumeration?
    - Host Discovery
    - Scripting with Nmap
    - Activity: Scripting with Nmap
    - Banner Grabbing
    - Protocol Enumeration
    - Service Discovery
    - DNS Enumeration
    - Operating System (OS) Fingerprinting
    - Perform Enumeration with Nmap
    - Live Lab: DNS Enumeration and Reconnaissance
  - Enumeration for Attack Planning
    - Attack Path Mapping
    - Manual Enumeration
    - Simple Network Management Protocol
    - Documenting Enumeration Activities
    - Activity: Document Enumeration Activities
  - Enumeration for Specific Assets
    - Directory Enumeration
    - User Enumeration

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        - Wireless Enumeration
        - Permission Enumeration
        - Secrets Enumeration
        - Share Enumeration
        - Web Application Firewall (WAF) Enumeration
        - Perform a Decoy Scan
        - Industrial Control Systems (ICS) Vulnerability Assessment
        - Web Crawling/HTML Scraping
- Scanning and Identifying Vulnerabilities
    - Vulnerability Discovery Techniques
        - Tools for Vulnerability Discovery
        - Types of Scans
        - Container Scans
        - Application Scans
        - Scan for Cleartext Vulnerabilities
        - Network Scans
        - Activity: Scan Identified Targets
        - Host-Based Scans
        - Live Lab: Using Metasploit
        - Secrets Scanning
        - Wireless Scans
        - Use aircrack-ng to Discover Hidden Networks
        - Locate a Rogue Wireless Access Point
        - Validate Scan, Reconnaissance, and Enumeration Results
        - Applied Live Lab: Network Reconnaissance
        - Scan for Linux Vulnerabilities
    - Analyzing Reconnaissance Scanning and Enumeration
        - Public Exploit Selection
        - Use Scripting to Validate Results
    - Physical Security Concepts
        - Tailgating
        - Site Surveys
        - Universal Serial Bus (USB) Drops
        - Badge Cloning
        - Lock Picking
        - Documenting Scanning and Identifying Vulnerabilities Activities

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- Activity: Identify Physical Security Concepts

- Conducting Pentest Attacks
  - Prepare and Prioritize Attacks
    - Target Prioritization
    - High-Value Asset Identification
    - Descriptors and Metrics
    - End-of-Life Software and Systems
    - Default Configurations
    - Running Services
    - Vulnerable Encryption Methods
    - Defensive Capabilities
    - Capability Selection
    - Exploit Selection and Customization
    - Documentation Procedures for Attacks
    - Dependencies
    - Consideration of Scope Limitations
    - Activity: Customize Exploits
    - Live Lab: Evaluate EOL Software & Systems
    - Applied Live Lab: Exploiting Default Configurations with Responder
  - Scripting Automation
    - Types of Scripting Automation
    - PowerShell
    - Bash
    - Python
    - Breach and Attack Simulation (BAS)
    - Live Lab: Executing Scripts to Automate Tasks

- Web-based Attacks
  - Web-based Attacks
    - Web Application Attacks Overview
    - Types of Web Application Attacks
    - Tools for Performing Web Application Attacks
    - Brute-Force Attack
    - Collision Attack
    - Directory Traversal
    - Request Forgery Attacks
    - Deserialization Attack

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- Injection Attacks
- Activity: Injection Attacks
- Insecure Direct Object Reference
- Session Hijacking
- Arbitrary Code Execution
- File Inclusions
- API Abuse
- JSON Web Token (JWT) Manipulation
- Live Lab: Evaluating a Database Using SQLMap
- Live Lab: Exploiting Directory Traversal
- Live Lab: Performing XSS
- Live Lab: Abusing Insecure Direct Object References
- Live Lab: Performing Lateral Movement
- Live Lab: Performing RFI and LFI Exploitation

- Cloud-based Attacks
  - Cloud-based Attacks Overview
  - Types of Cloud-based Attacks
  - Tools for Performing Cloud-based Attacks
  - Metadata Service Attacks
  - Access Management Misconfigurations
  - Third-party Integrations
  - Resource Misconfiguration
  - Activity: Conduct Resource Misconfiguration Attacks
  - Logging Information Exposure
  - Image and Artifact Tampering
  - Supply Chain Attacks
  - Workload Runtime Attacks
  - Container Escape
  - Trust Relationship Abuse
  - Perform and Analyze a SYN Flood Attack

- Enterprise Attacks
  - Perform Network Attacks
    - Network Attack Types
    - Tools for Performing Network Attacks
    - Default Credentials
    - On-Path Attack

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- Certificate Services
- Misconfigured Services Exploitation
- Virtual Local Area Network (VLAN) Hopping
- Multihomed Hosts
- Relay Attack
- IDS Evasion
- Live Lab: Sniffing Network Traffic
- Applied Live Lab: Exploring the Power of Nmap NSE
- Live Lab: Discovering Vulnerabilities with Netcat
- Applied Live Lab: Performing a Relay Attack

- Perform Authentication Attacks
  - Authentication Attack Types
  - Tools for Performing Authentication Attacks
  - Multifactor Authentication (MFA) Fatigue
  - Pass-the-Hash Attacks
  - Pass-the-Ticket Attacks
  - Pass-the-Token Attacks
  - Kerberos Attacks
  - Lightweight Directory Access Protocol (LDAP) Injection
  - Dictionary Attacks
  - Crack a Password with John the Ripper
  - Brute-Force Attacks
  - Mask Attacks
  - Password Spraying
  - Credential Stuffing
  - OpenID Connect (OIDC) Attacks
  - Security Assertion Markup Language (SAML) Attacks
  - Live Lab: Cracking Passwords
- Perform Host-Based Attacks
  - Types of Host-Based Attacks
  - Tools for Performing Host-Based Attacks
  - Privilege Escalation
  - Credential Dumping
  - Circumventing Security Tools
  - Clear Audit Policies
  - Misconfigured Endpoints

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- Payload Obfuscation
- User-Controlled Access Bypass
- Shell Escape
- Kiosk Escape
- Library Injection
- Process Hollowing and Injection
- Log Tampering
- Unquoted Service Path Injection
- Documenting Enterprise Attacks
- Applied Live Lab: Performing an On-Path (AiTM) Attack
- Live Lab: Performing Privilege Escalation
- Live Lab: Implementing Payload Obfuscation
- Live Lab: Performing SQL Injection
- Live Lab: Investigating with Evil-WinRM
- Live Lab: Exploiting LOLBins
- Live Lab: Implementing Credential Dumping

- Specialized Attacks
  - Wireless Attacks
    - Types of Wireless Attacks
    - Tools for Performing Wireless Attacks
    - Activity: Explore Wireless Tools
    - Wardriving
    - Bluetooth
    - Evil Twin Attack
    - Signal Jamming
    - Protocol Fuzzing
    - Packet Crafting
    - Deauthentication
    - Captive Portal
    - Wi-Fi Protected Setup (WPS) and Personal Identification (PIN) Attack
  - Social Engineering Attacks
    - Types of Social Engineering Attacks
    - Tools for Performing Social Engineering Attacks
    - Phishing, Whaling, Spear phishing, and Smishing
    - Social Engineering Techniques for Gathering Information
    - Watering Hole

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- Credential Harvesting
- Live Lab: Performing Social Engineering using SET

- Specialized System Attacks
  - Types of Specialized System Attacks
  - Tools for Performing Specialized System Attacks
  - Mobile Attacks
  - AI Attacks
  - Operational Technology (OT)
  - Radio-Frequency Identification (RFID) and Near-Field Communication (NFC)
  - Bluejacking
  - Conducting Specialized Penetration Testing Attacks

- Performing Penetration Testing Tasks
  - Establish and Maintain Persistence
    - Principles of Establishing and Maintaining Persistence
    - Scheduled Tasks/cron Jobs
    - Service Creation
    - Reverse and Bind Shells
    - Add New Accounts
    - Obtain Valid Account Credentials
    - Registry Keys
    - Command and Control (C2) Frameworks
    - Backdoor
    - Activity: Maintain Persistence
    - Create a Backdoor with Metasploit
    - Rootkit
    - Browser Extensions
    - Tampering Security Controls
    - Live Lab: Configuring Reverse and Bind Shells
    - Live Lab: Establishing Persistence and Other Post-Exploitation Activities
  - Move Laterally through Environments
    - Lateral and Horizontal Movement
    - Scan for Open Ports from a Remote Computer
    - Techniques for Moving Laterally through Environments
    - Tools for Moving Laterally through Environments
    - Pivoting
    - Relay Creation

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- Enumeration
- Perform Enumeration of MSSQL with Metasploit
- Service Discovery
- Perform a Scan Using Zenmap
- Bypass Windows Firewall
- Windows Management Instrumentation (WMI)
- Window Remote Management (WinRM)

- Staging and Exfiltration
  - Fundamentals of Staging and Exfiltration
  - Getting Data from a Target
  - Hide Files with OpenStego
  - Alternate Data Streams
  - Applied Live Lab: Staging and Exfiltration Using ADS
- Cleanup and Restoration
  - Cleanup and Restoration Procedures
  - Activity: Implement Cleanup and Restoration Activities
  - Documenting Penetration Testing Tasks

- Reporting and Recommendations
  - Penetration Test Report Components
    - Creating the Penetration Test Report
    - Reporting Considerations
    - Report Components and Definitions
    - Documentation Specifications and Format Alignment
    - Risk Scoring
    - Test Limitations and Assumptions
  - Analyze Findings and Remediation Recommendations
    - Analyzing Findings and Developing Recommendations Overview
    - Technical Controls
    - Administrative Controls
    - Operational Controls
    - Physical Controls
    - Activity: Administrative and Operational Controls

REQUIREMENTS:

Recommended experience: 3-4 years in a penetration tester job role, with Network+ and Security+ or

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equivalent knowledge

Difficulty level



CERTIFICATE:

The participants will obtain certificates signed by CompTIA (course completion). This course will help prepare you for the CompTIA PenTest+ certification exam, which is available through the Pearson VUE test centers.

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TRAINER:

Authorized CompTIA Trainer.

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