ROCHESTON® CERTIFIED CYBERSECURITY ENGINEER

RCCE

Cybersecurity Engineer

Level 2

RCCE® Certification Program Guide

TEM HACKED

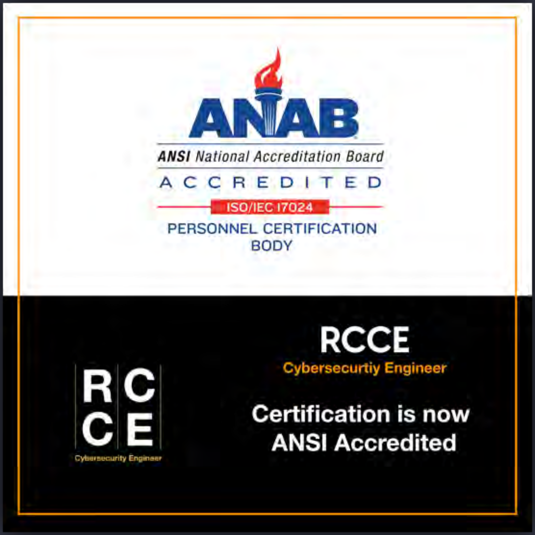
Why You Need to Attend RCCE Training?

The **Rocheston Certified Cybersecurity Engineer (RCCE)** training is a prestigious and advanced certification program designed for professionals seeking to excel in the cybersecurity industry.

This comprehensive training program equips participants with the necessary skills, knowledge, and hands-on experience to tackle complex cybersecurity challenges and vulnerabilities.

As an **RCCE, individuals set themselves apart from their peers within the cybersecurity community due to the highly respected nature of the certification.**

The ANSI accredited **RCCE certification is globally recognized, opening up career opportunities across the world and within multinational organizations.**



ANAB

ANSI National Accreditation Board

ACCREDITED

ISO/IEC 17024

PERSONNEL CERTIFICATION BODY

RC
CE
Cybersecurity Engineer

RCCE

Cybersecurtiy Engineer

Certification is now ANSI Accredited

Not only does the **RCCE training program enhance career prospects, but it also leads to high earning potential, with cybersecurity engineers being among the highest-paid professionals in the sector.**

By becoming an RCCE, individuals invest in their future career success and long-term growth within the cybersecurity field.

CRITICAL ERROR
ALL PROCESS TERMINATED

DoD 8140 **Approved**

The **U.S. Government officially recognizes and approves Rocheston Certified Cybersecurity Engineer (RCCE)** certification under Department of Defense DoD 8140 directive.

RCCE is approved under the Job roles:

- All-Source Analyst
- Warning Analyst
- Forensics Analyst
- Cyber Defense Forensics Analyst
- Cyber Operations Planner
- Systems Security Analyst,
- Cyber Defense Analyst
- Cyber Defense Incident Responder
- Vulnerability Assessment Analyst
- Secure Software Assessor
- Research & Development Specialist
- Program Manager
- IT Project Manager
- Product Support Manager
- IT Program Auditor

RCCE Level 2 Penetration Testing

The **RCCE Level 2 Rocheston Certified Cybersecurity Engineer (Penetration Testing) course** is an advanced, comprehensive, and highly specialized program that equips cybersecurity professionals with the knowledge and skills required to excel in penetration testing.

This course stands out for its extensive coverage of advanced penetrating testing techniques.

The Course is Divided into 4 Parts

The course is meticulously designed and divided into 4 parts to ensure maximum learning and practical exposure:

1. Cyber Range Sphere
2. ZombieCop.Run
3. Vulnerability Vines
4. JuggyBank Project

CRITICAL ERROR
ALL PROCESS TERMINATED
CRITICAL ERROR

Part 1: Cyber Range Exercises

In this part, students engage in capture-the-flag-style exercises where they attack machines with varying vulnerabilities. **The cyber range comprises more than 100 machines with diverse vulnerability configurations.** This hands-on approach enables students to:

- Gain real-world experience in identifying and exploiting vulnerabilities
- Understand how attackers think and strategize
- Develop the ability to prioritize and remediate vulnerabilities effectively
- Enhance their problem-solving and critical thinking skills

Rocheston Sphere Platform

Sphere Playbooks

The Rocheston Cyber Range Sphere is a next-level cybersecurity training tool specially developed to arm organizations with powerful strategies to combat the ever-growing cyber threats in today's connected world.

Employing advanced technology and providing immersive user experiences, Sphere stands as a benchmark by offering real-life scale cyber attack simulations, unmatched in its industry segment.

Visit Cyber Range Sphere

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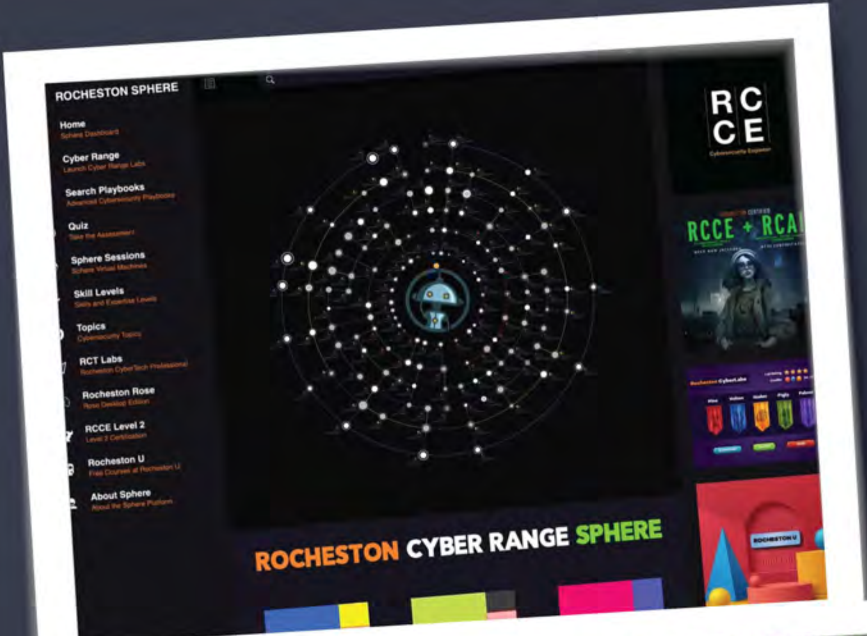
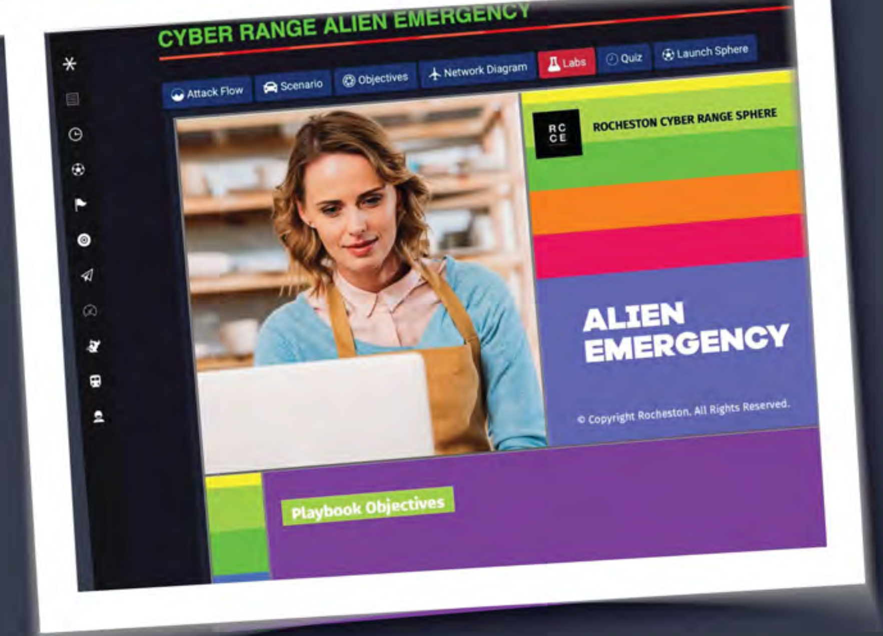

ROCHESTON SPHERE
Home
Sphere Dashboard
Cyber Range
Launch Cyber Range Labs
Search Playbooks
Advanced Cybersecurity Playbooks
Quiz
Take the Assessment
Sphere Sessions
Sphere Virtual Machines
Skill Levels
Skills and Expertise Levels
Topics
Cybersecurity Topics
RCT Labs
Rocheston CyberTech Professional
Rocheston Rose
Rose Desktop Edition
RCCE Level 2
Level 2 Certification
Rocheston U
Free Courses at Rocheston U
About Sphere
About the Sphere Platform
RC
CE
RCCE + RCA
ROCHESTON U
ROCHESTON CYBER RANGE SPHERE


CYBER RANGE ALIEN EMERGENCY
Attack Flow
Scenario
Objectives
Network Diagram
Labs
Quiz
Launch Sphere
RC
CE
ROCHESTON CYBER RANGE SPHERE
ALIEN EMERGENCY
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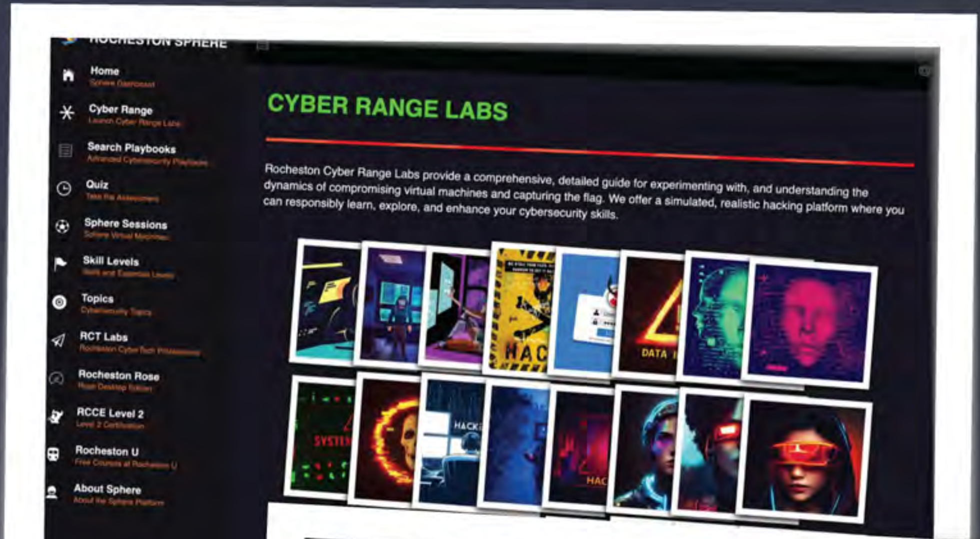
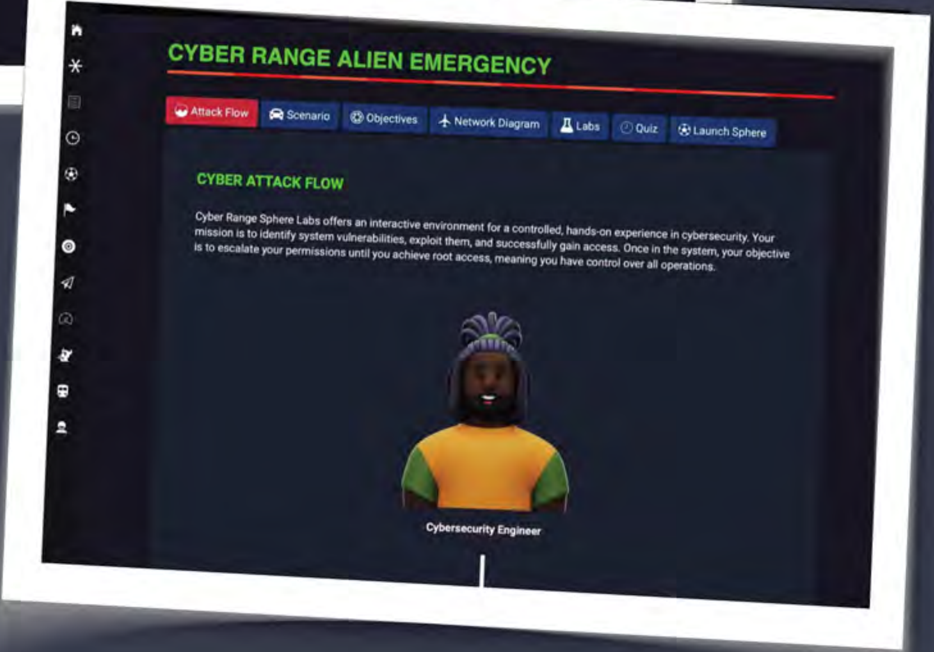
Playbook Objectives



CYBER RANGE LABS

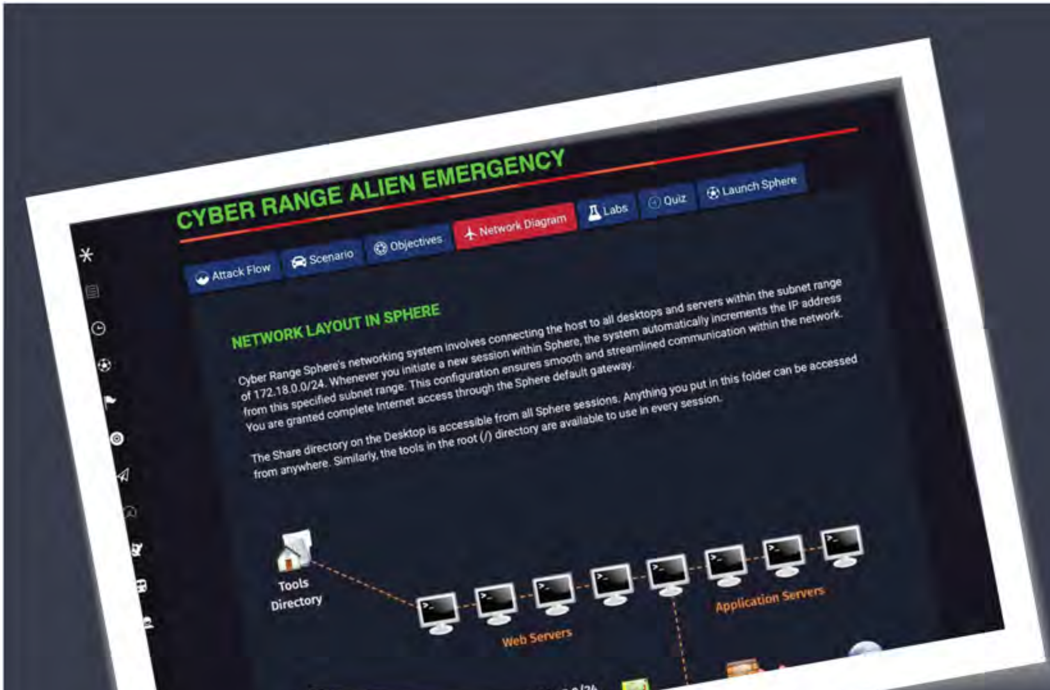
Rocheston Cyber Range Labs provide a comprehensive, detailed guide for experimenting with, and understanding the dynamics of compromising virtual machines and capturing the flag. We offer a simulated, realistic hacking platform where you can responsibly learn, explore, and enhance your cybersecurity skills.



CYBER RANGE ALIEN EMERGENCY

CYBER ATTACK FLOW

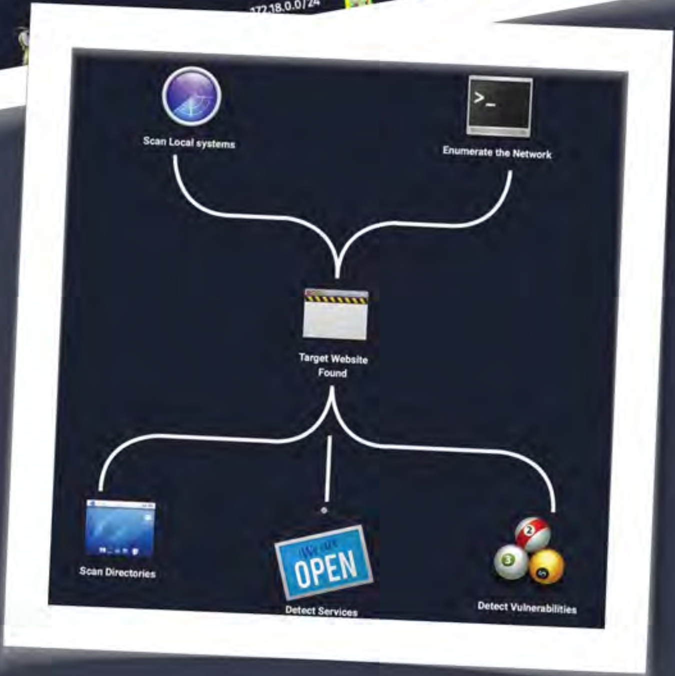
Cyber Range Sphere Labs offers an interactive environment for a controlled, hands-on experience in cybersecurity. Your mission is to identify system vulnerabilities, exploit them, and successfully gain access. Once in the system, your objective is to escalate your permissions until you achieve root access, meaning you have control over all operations.



NETWORK LAYOUT IN SPHERE

Cyber Range Sphere's networking system involves connecting the host to all desktops and servers within the subnet range of 172.18.0.0/24. Whenever you initiate a new session within Sphere, the system automatically increments the IP address from this specified subnet range. This configuration ensures smooth and streamlined communication within the network. You are granted complete Internet access through the Sphere default gateway.

The Share directory on the Desktop is accessible from all Sphere sessions. Anything you put in this folder can be accessed from anywhere. Similarly, the tools in the root (/) directory are available to use in every session.



Part 2: ZombieCop.Run

ZombieCop.Run Red Team / Blue Team Exercises

This part involves students dividing into **red and blue teams and attacking more than 100 targets.** The benefits of conducting these exercises include:

Learning to collaborate and communicate effectively within a team. Understanding the defense strategies employed by the blue team. Gaining insights into the offensive tactics used by the red team. Developing a well-rounded understanding of both attack and defense methodologies.

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ZombieCop Red Team / Blue Team Hacking Workshop

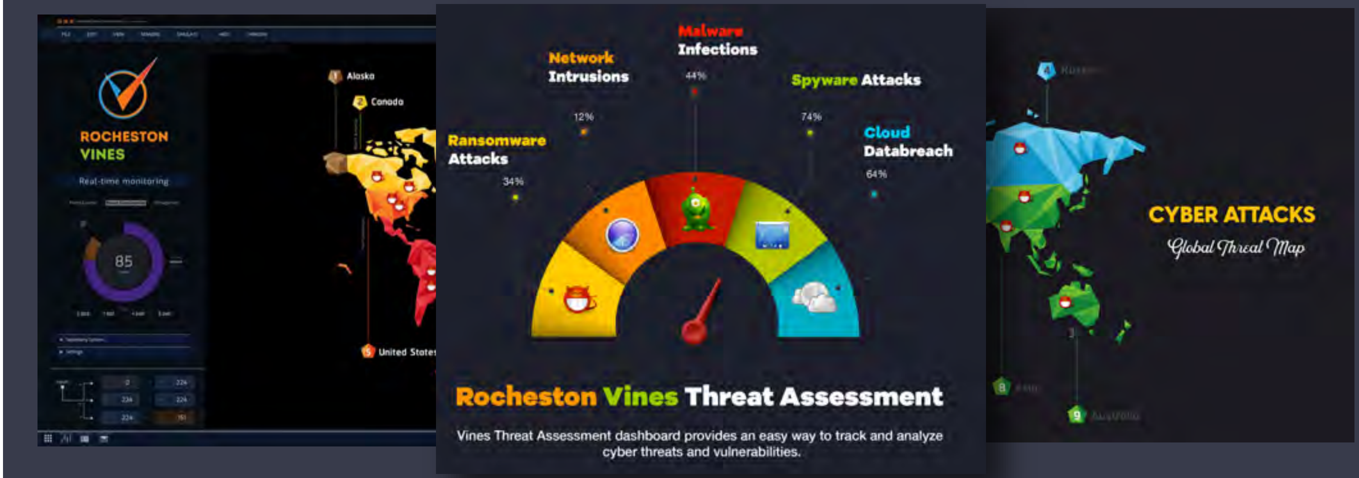
Join the Rocheston Red Team / Blue Team Hacking and EDR Engagements Workshop for an immersive and practical experience in enterprise network attack simulation.

This comprehensive **cybersecurity workshop features highly technical exercises and labs that will significantly enhance your knowledge and skills.** Guided by the experts at Rocheston CyberLabs, participants will gain valuable insights from the industry's leading cybersecurity hacking platform.

This intensive workshop requires the expertise of an **RCCE Cybersecurity Engineer to comprehend the concepts and execute the hands-on labs effectively.**

ZombieCop.Run
Red Team / Blue Team
Hacking Workshop
Presented by Rocheston
ZOMBIECOP
RUN
DELL
HACKING
Propagate the Attacks To Other S
Around the World At ZombieC

Part 3: Vulnerability Vines



Rocheston Vines Threat Assessment

Vines Threat Assessment dashboard provides an easy way to track and analyze cyber threats and vulnerabilities.

Rocheston's Vines is a full-scale vulnerability assessment and penetration testing tool that students will learn to implement within their organizations to secure their networks.

Vines covers a wide range of security aspects, such as DevSecOps, IAM, vulnerability scanning, cloud firewall, zero-trust, VPN, and more.

Students will receive in-depth training on how to use Vines effectively.

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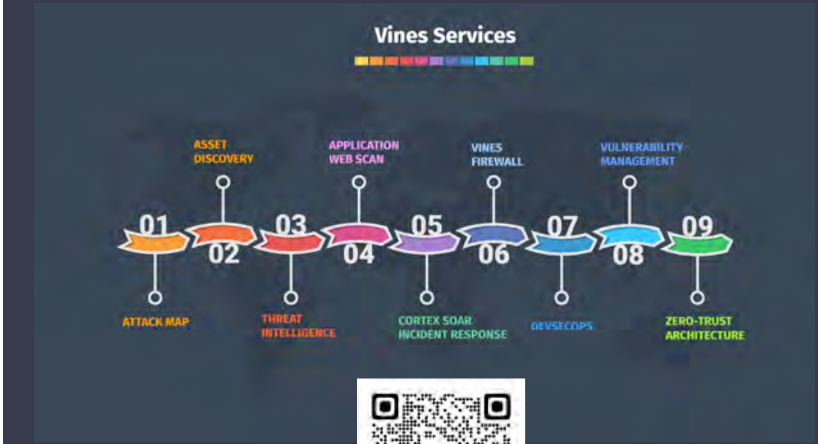
Vulnerability Vines

Rocheston's Vulnerability Vines is an advanced network scanning platform built from the ground up using open-source components.

The software is seamlessly **integrated into the Rocheston Certified Cybersecurity Engineer (RCCE) training program**, allowing students to deploy and manage their servers using Vines without any additional costs.

Vulnerability Vines serves as an indispensable resource for organizations aiming to strengthen their cybersecurity measures and safeguard their networks and systems against potential threats.


Vines Services

Visit Vulnerability Vines

LAUNCH
GMT: 10/115/45
GMT: 10/115/45
MONITORING
Cameras
Cam 01 - Ground
Connecting..
Engine
Pressure
Temperature
Oil Temp
Target
Cabin
Gravity
Online
Cam 03 - Capsule Cabin
Connecting..
FILE
EDIT
VIEW
SENSORS
SIMULATE
HELP
WINDOW
ROCHESTON
VINES
Real-time monitoring
85
THREATS
ATTACKS
DDOS
ASSETS
BLOCKED
Volume
Settings
Power management over time
Throughput
Sequential Gb/s
519 Gb
Date: 14.05.2020
Time 21:30:41
Location: Tallinn
Uploading
90%
Uploading Vines Cyber Range Simulation
Results
300k
200k
100k
0
AVZ
AVZ 2
WRZ
WRS
XRS 3
Secondary Options
Settings
Monitoring
Data
Connections:
Cabin data
Oxygen Level
Temperature
Out Temp
Pressure
Log
Data Encryption
Connection statistics

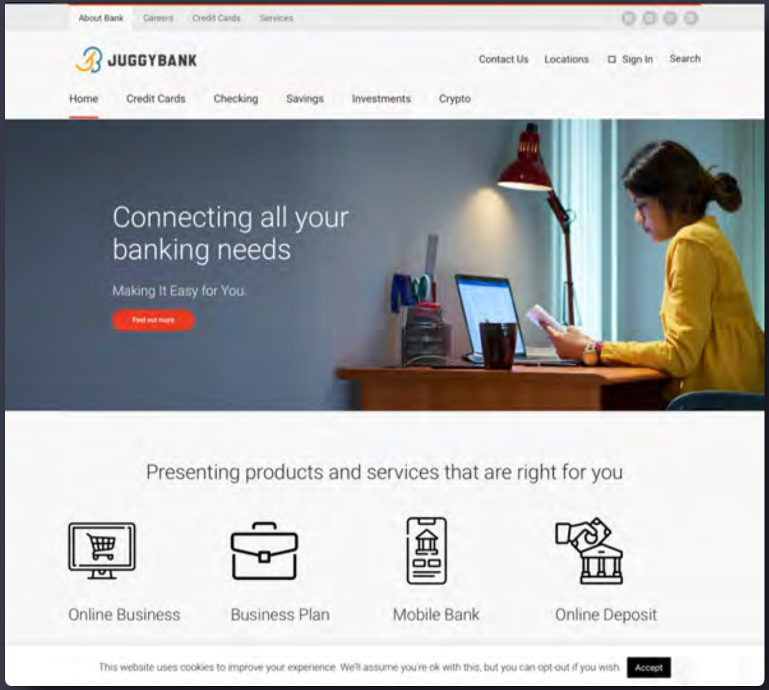
Part 4: JuggyBank Project

You will be intimately involved in a thorough penetration testing process for JuggyBank.

This real-world project is designed to deliver holistic understanding of **testing procedures, implementation of security measures, and subsequent defensive actions needed to secure JuggyBank.**

Each phase of this project, from execution to analysis, will enlighten you about the practical aspects of penetration testing in detail.

You will gain a realistic perspective of potential cybersecurity threats faced by banking institutions like JuggyBank.



Connecting all your banking needs

Making It Easy for You

Presenting products and services that are right for you

This website uses cookies to improve your experience. We'll assume you're ok with this, but you can opt-out if you wish.

Visit JuggyBank Website

What is RCPT?

RC
CE
Cybersecurity Engineer
Level 2 RCPT
Advanced Penetration Testing Red Team / Blue Team Engagements

The Rocheston Certified Red/Blue Pentester (RCPT) certification **is a significant part of the Rocheston Certified Cybersecurity Engineer** (RCCE) Level 2 program.

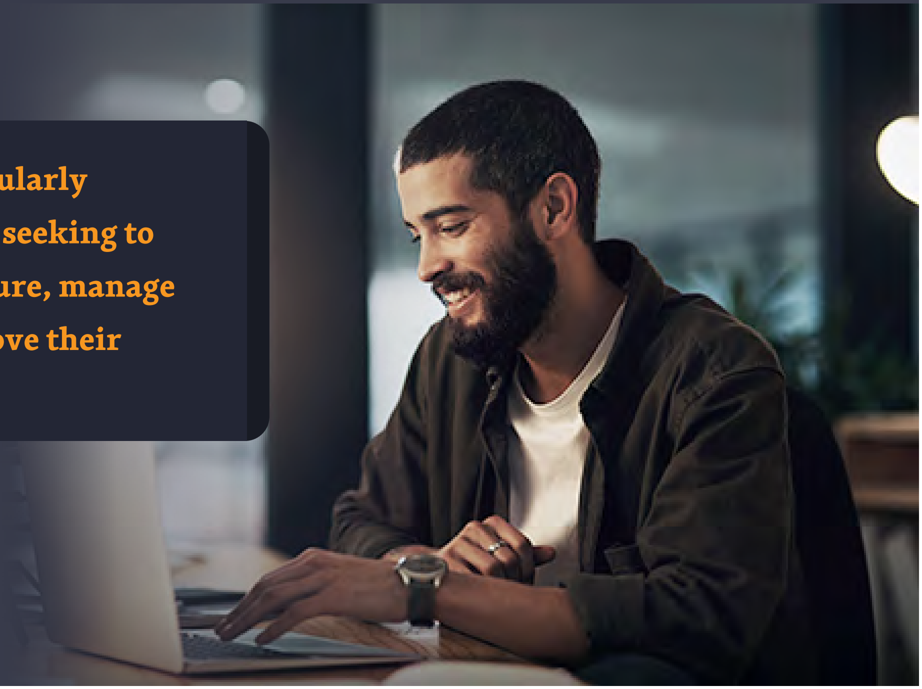
The **RCCE Level 2 program, incorporating RCPT**, aims to equip participants with an in-depth understanding of offensive and defensive cybersecurity strategies. The RCPT certification, in particular, has a strong emphasis on practical penetration testing techniques and methodologies.

RCPT Penetration Testing Framework

The **RCPT Framework touch on areas such as reconnaissance, scanning, gaining access, maintaining access, and covering tracks.** It also emphasizes on studying various penetration strategies, master hacking techniques, and become familiar with attack countermeasures in order to protect an organization's critical infrastructure.

Overall, the RCPT Framework strike a balance between aggressive red teaming and defensive blue teaming, making it an effective approach for comprehensive and robust penetration testing.

RCPT Framework are particularly beneficial for organizations seeking to evaluate their security posture, manage potential threats, and improve their overall defense strategies.



Critical files have been compromised. Begin data backup immediately.

15%

Accessing secure files...

82%

sender = "johndoe@company.co
subject = "Urgent: Security brea
body = "Hello,\n\nWe have dete
Please review the attached repo
immediately.\n\nBest regards,\n

sender = "janedoe@company.co
subject = "Reminder: Cybersecu
body = "Dear all,\n\nThis is a re
training is scheduled for next we
time. Your cooperation is greatly
Doe"

sender = "hacker1@anonymous
subject = "Breaking in"
body = "Hello,\n\nI have succes
You can call me a hacker, a cybe
you cannot stop me.\n\nSee yo

sender = "admin@company.com
subject = "System maintenance

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Rocheston Certified Red/Blue Pentester (RCPT) Framework

Module 1

Introduction to Penetration Testing

Module 2

Penetration Testing Methodologies

Module 3

Legal and Ethical Issues in Penetration Testing

Module 4

Rules of Engagement

Module 5

Network Penetration Testing

Module 6

Vulnerability Assessment and Exploitation

Module 7

Web Application Penetration Testing

Module 8

Wireless Network Penetration Testing

Module 9

Physical Penetration Testing

Module 10

Database Penetration Testing

Module 11

Source Code Penetration Testing

Module 12

Social Engineering in Penetration Testing

Module 13

Cyber Threat Intelligence in Penetration Testing

Module 14

Mobile and IoT Penetration Testing

Module 15

Cloud Penetration Testing

Module 16

Firewalls & IDS in Penetration Testing

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Module 17

Report Writing in Penetration Testing

Module 18

Active Directory (AD) Penetration Testing

Module 19

Administrative Interface Penetration Testing

Module 20

Anti-Malware Efficacy Penetration Testing

Module 21

Apache2 and nginx Penetration Testing

Module 22

Multi-factor authentication (MFA) Penetration Testing

Module 23

Network Mapping Penetration Testing

Module 24

Ongoing Tests Penetration Testing

Module 25

OWASP Top 10 Penetration Testing

Module 26

Best Practices Penetration Testing

Module 27

Password Strength Penetration Testing

Module 28

Patch Management Penetration Testing

Module 29

Penetration Testing from Various Locations

Module 30

Phishing Attack Simulation Penetration Testing

Module 31

Post-Exploitation Techniques

Module 32

Privilege Escalation Penetration Testing

Module 33

Race Condition Bugs Penetration Testing

Module 34

Ransomware Attacks Penetration Testing

Module 35

Real-time Alerting Penetration Testing

Module 36

Reconnaissance Penetration Testing

Module 37

Red Teaming Penetration Testing

Module 38

Regulatory Compliance Penetration Testing

Module 39

Remote Access Penetration Testing

Module 40

Rogue Device Detection Penetration Testing

Module 41

Scan Open Ports Penetration Testing

Module 42

Secure Token Penetration Testing

Module 43

Security Policy Compliance Penetration Testing

Module 44

Security Tool Efficacy Penetration Testing

Module 45

Security Training Efficacy Penetration Testing

Module 46

Server Misconfigurations Penetration Testing

Module 47

Server Security Headers Penetration Testing

Module 48

Server-side Request Forgery Penetration Testing

Module 49

Session Hijacking Penetration Testing

Module 50

Session Management Penetration Testing

Module 51

Shadow IT Detection Penetration Testing

Module 52

Social Media Footprinting Penetration Testing

Module 53

Spear Phishing Penetration Testing

Module 54

SSL-TLS Penetration Testing

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Module 55

Wordpress Penetration Testing

Module 56

Third Party and Supplier Penetration Testing

Module 57

Third-party Software Penetration Testing

Module 58

Threat Hunting Penetration Testing

Module 59

Token Permissions Penetration Testing

Module 60

Unauthorized Data Access Penetration Testing

Module 61

URL Manipulation Penetration Testing

Module 62

Use of Known Vulnerabilities Penetration Testing

Module 63

Version Detection Penetration Testing

Module 64

Virtual Machine Security Penetration Testing

Module 65

VoIP Penetration Testing

Module 66

VPN Security Penetration Testing

Module 67

Vulnerabilities and Exposures (CVE) database Penetration Testing

Module 68

Vulnerability Analysis Penetration Testing

Module 69

Web Services-API Penetration Testing

Module 70

Work from home Penetration Testing

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Module 71

Zero Trust Architecture Penetration Testing

Module 72

Zero-day Exploit Penetration Testing

Module 73

Mobile Application Penetration Testing

Module 74

Man-in-the-Middle (MITM) Attacks Penetration Testing

Module 75

Malware Analysis and Reverse Engineering

Module 76

Logs Auditing Penetration Testing

Module 77

Logic Penetration Testing

Module 78

Local Network Access Control Penetration Testing

Module 79

Load balancer Penetration Testing

Module 80

Linux Servers Penetration Testing

Module 81

IoT Device Penetration Testing

Module 82

Intrusion Prevention System (IPS) Penetration Testing

Module 83

Insider Threat Simulation Penetration Testing

Module 84

Input Validation Penetration Testing

Module 85

Infrastructure Configuration Review Penetration Testing

Module 86

Information Disclosure Penetration Testing

Module 87

Incident Response Capability Penetration Testing

Module 88

Human Interface Device (HID) Attacks Penetration Testing

Module 89

HTTP protocol verbs Penetration Testing

Module 90

Firewall Configuration Penetration Testing

Module 91

File Upload Penetration Testing

Module 92

File system permissions Penetration Testing

Module 93

Encryption At Rest & In Transit Penetration Testing

Module 94

Embedded Device Penetration Testing

Module 95

Email Phishing Campaigns Penetration Testing

Module 96

Email Configuration Penetration Testing

Module 97

DNS Security Penetration Testing

Module 98

DDoS Mitigation Capability Penetration Testing

Module 99

Database Security Penetration Testing

Module 100

Cyberthreat Intelligence Penetration Testing

Module 101

Cryptography for Penetration Testers

Module 102

Cross-Site Request Forgery (CSRF) Attacks Penetration Testing

Module 103

Cookie Security
Penetration Testing

Module 104

Content Management
System (CMS)
Penetration Testing

Module 105

Codebase Review
Penetration Testing

Module 106

Code Injection
Penetration Testing

Module 107

Cloud Storage
Penetration Testing

Module 108

Cloud Container
Penetration Testing

Module 109

Client-side Security
Controls
Penetration Testing

Module 110

Clickjacking
Penetration Testing

Module 111

Business Logic
Penetration Testing

Module 112

Brute Force Attacks
Penetration Testing

Module 113

Breach Readiness
Assessment
Penetration Testing

Module 114

Bot Detection
Penetration Testing

Module 115

Backup and Recovery
Penetration Testing

Module 116

Azure, AWS,
GC Penetration Testing

Module 117

Asset Discovery
Penetration Testing

Module 118

ARP Spoofing
Penetration Testing

Module 119

Application
Container
Penetration Testing

Module 120

Application
Behavior
Penetration Testing

Module 121

SSH
Penetration Testing

Module 122

WAF
Penetration Testing

Module 123

Blockchain
Penetration Testing

Module 124

DevSecOps in
Penetration Testing

Module 125

Identity and access management (IAM)
Penetration Testing

Module 126

Ethics in
Penetration Testing

Module 127

Tools in
Penetration Testing

Module 128

POS Systems
Penetration Testing

Module 129

Advanced Persistent Threat (APT)
Penetration Testing

Module 130

ATM
Penetration Testing

Module 131

RFID and Access Control
Penetration Testing

Module 132

Endpoint
Penetration Testing

Module 133

Industrial Control Systems (ICS) & SCADA
Penetration Testing

Module 134

Dark Web
Penetration Testing

Module 135

Quantum Computing
Penetration Testing

Module 136

AI and Machine Learning Systems
Penetration Testing

Module 137

Big Data
Penetration Testing

Module 138

Biometric Systems
Penetration Testing

Module 139

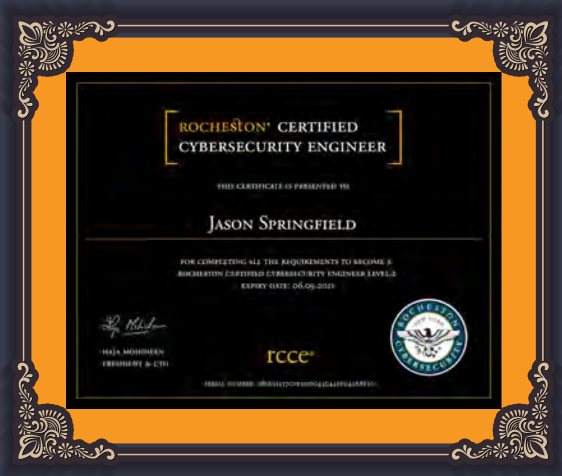
Drone & Robotics
Penetration Testing

Module 140

Password Cracking
Penetration Testing

DOWNLOADING DATA
Password Cracker
Program Console

RCCE Level 2 Exam



ROCHESTON® CERTIFIED CYBERSECURITY ENGINEER

THIS CERTIFICATE IS PRESENTED TO

JASON SPRINGFIELD

FOR COMPLETING ALL THE REQUIREMENTS TO BECOME A ROCHESTON CERTIFIED CYBERSECURITY ENGINEER LEVEL 2
EXPIRY DATE: 06.09.2021

HAJA MOHIDEEN
PRESIDENT & CTO

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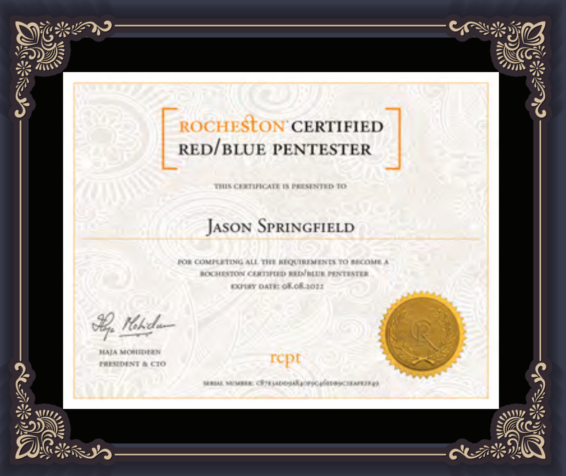
SERIAL NUMBER: [illegible]



ROCHESTON® CERTIFIED RED/BLUE PENTESTER

THIS CERTIFICATE IS PRESENTED TO

JASON SPRINGFIELD

FOR COMPLETING ALL THE REQUIREMENTS TO BECOME A ROCHESTON CERTIFIED RED/BLUE PENTESTER
EXPIRY DATE: 08.08.2022

HAJA MOHIDEEN
PRESIDENT & CTO

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SERIAL NUMBER: C87E3ADD9A840F9C46ED89C2EAFE2F49

The examination for the **RCCE Level 2 will be administered on the last day of the course.**

Upon successful completion of this exam, participants will earn the highly regarded **RCCE and RCPT certifications**, distinguishing them from their colleagues.

You will walk away

with RCCE and RCPT certifications.

ROCHESTON®
Signed by Haja
RCCE HACKER
I'am a stealth Lady Hacker
I'am badass. seriously
I'm an RCCE® Cybersecurity Engineer

RCPT Course Outline

- **Reconnaissance:** Includes collecting initial information about the target, typically via search engines, WHOIS, and DNS records.
- **Scan Open Ports:** Analyze open ports on the network.
- **Version Detection:** Understand the versions of web servers, operating systems any outward-facing software by network footprinting.
- **Network Mapping:** Use tools like Nmap to create a map of the network.
- **Vulnerability Analysis:** Perform a vulnerability analysis to identify potential points of exploitation.
- **Firewall Configuration Testing:** Checking the robustness of firewall rules and identifying misconfigurations.
- **Intrusion Detection/Prevention System Testing:** Evaluate the effectiveness of IDS/IPS.
- **Password Strength Testing:** Test the complexity and strength of passwords.
- **Password Cracking:** Use password cracking tools to identify weak and easily crack-able passwords.

- **Brute Force Attacks:** Try brute force attacks on login fields and other entry points.
- **Application Behavior:** Understand the behavior of applications under varied user inputs.
- **Input Validation:** Testing for weaknesses in input validation, such as cross-site scripting (XSS) or SQL injection vulnerabilities.
- **HTTP protocol verbs Testing:** Test to see if unsupported or potentially risky HTTP protocol verbs are in use.
- **URL Manipulation:** Manipulate URLs to bypass access controls or gain unauthorized access.
- **Cookie Security:** Evaluate the security measures in place for cookies.
- **Session Management:** Examine whether sessions are managed securely, including session timeouts and handling of concurrent logins.
- **Secure Token Testing:** Confirm that secure tokens are used and are handled correctly.
- **Phishing Attack Simulation:** Simulate phishing attacks to test response mechanisms and educate users.
- **Social Engineering:** Use social engineering techniques to identify vulnerabilities in human factors.
- **Malware Testing:** Test the protections against malicious software like viruses, worms, and Trojans.

- **Active Directory (AD) Testing:** Evaluate the security of AD configurations.
- **Wi-fi Network Security:** Assess the security of wireless networks and their configurations.
- **DDoS Mitigation Capability:** Test the system's ability to sustain a Distributed Denial of Service (DDoS) attack.
- **DNS Security:** Test the Domain Name System for cache poisoning or spoofing vulnerabilities.
- **Email Configuration:** Check the email configurations to ensure security settings like SPF, DKIM, and DMARC are in place.
- **VoIP Testing:** Voice over IP also needs to be tested for potential vulnerabilities.
- **SSL/TLS Testing:** Check the implementation of cryptography, deprecated protocols, weak ciphers, and certificate validity.
- **Third-party Software:** Any software from third parties or open-source libraries should be tested.
- **Intrusion Detection System (IDS):** Test and evaluate its capacity to detect malicious traffic.
- **Intrusion Prevention System (IPS):** Test and evaluate its capacity to prevent malicious traffic.

- **Patch Management Process:** Evaluate how patches are managed and how quickly they're implemented.
- **Backup and Recovery Test:** Validate the backup and recovery process of a company's data.
- **Physical Security Testing:** Evaluate the effectiveness of physical security controls if relevant to the pen test.
- **Cloud Environment:** Test security in cloud environments like AWS, Azure, or Google Cloud.
- **Database Security:** Check for SQL injection, misconfigurations, and exposure of sensitive data in any database used.
- **Remote Access Testing:** Assess the security of the Remote Desktop Protocol (RDP) or other remote access used.
- **Multi-factor authentication (MFA) Testing:** Understand how MFA is implemented and identify any weaknesses.
- **File system permissions:** Review file and directory permissions for any insecure settings.
- **Token Permissions:** Review user and application tokens for unnecessary permissions.
- **Logs Auditing:** Audit system, security and application logs to check for security incidents and anomalies.
- **Virtual Machine Security:** Test the security of virtual machines if utilized.

- **Web Services/API Testing:** Evaluate the security of any APIs or web services in use.
- **Mobile Application Testing:** Testing mobile apps, if relevant, for any inherent vulnerabilities.
- **Unauthorized Data Access:** Attempt to access sensitive or confidential data without appropriate permissions.
- **Administrative Interface Testing:** Check for vulnerabilities in admin interfaces.
- **IoT Device Testing:** Internet of Things devices, often overlooked, need proper pen testing too.
- **ARP Spoofing:** Test for man-in-the-middle attack vulnerabilities.
- **VPN Security:** Evaluate the security of Virtual Private Networks deployed in the organization.
- **Load balancer testing:** Test to confirm it correctly handles network traffic and ensures data availability and redundancy.
- **Content Management System (CMS) Testing:** Test the security of the CMS, a common target for attackers.
- **File Upload Testing:** Check that file upload features sanitize input and reject potential malicious files.

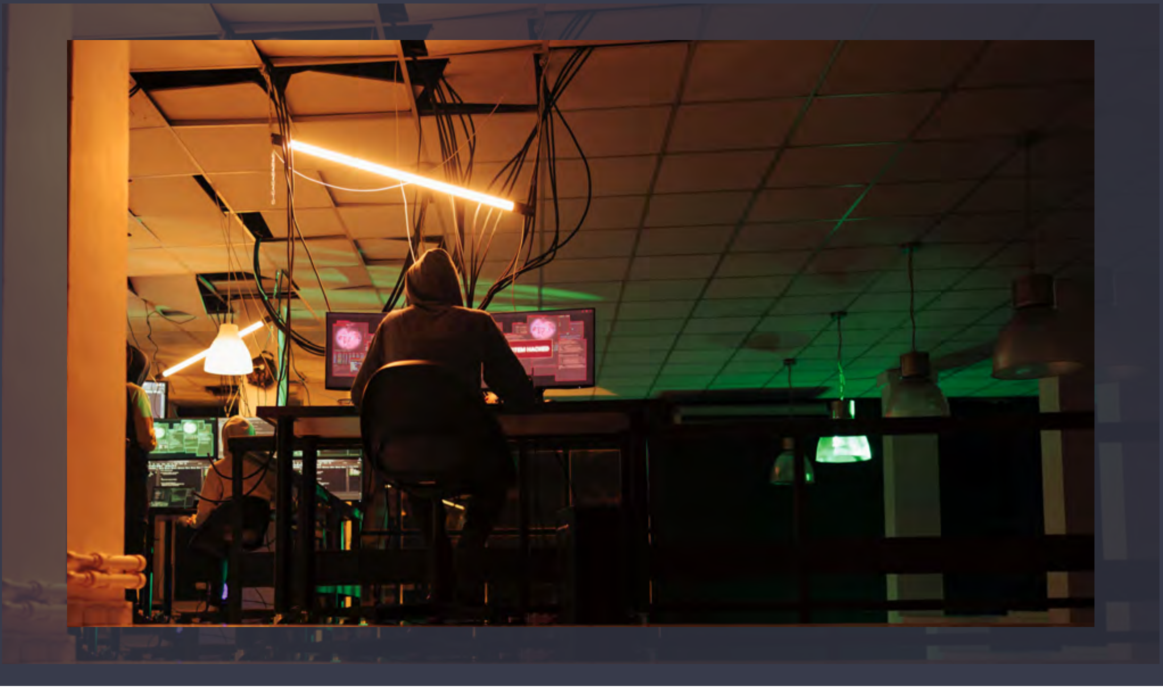
- **Logic Testing:** Make sure the application logic cannot be manipulated to achieve unauthorized access.
- **Session Hijacking:** MethodInvocation and testing of session management to identify weaknesses.
- **DOS and DDOS:** Test resilience against Denial of Service (DoS) or Distributed DoS attacks.
- **Business Logic Testing:** Examine business processes to detect any logical or technical frailties.
- **Privilege Escalation:** Try to gain higher permissions to access more resources.
- **Man-in-the-Middle (MITM) Attacks:** Test vulnerabilities to MITM attacks.
- **Code Injection:** Try injecting malicious code to exploit system or create unfavorable outcomes.
- **Information Disclosure:** Test if internal system information disclosure happens through error messages.
- **Embedded Device Testing:** If embedded or IoT devices are deployed, these need to also be pen tested.
- **Application Container Testing:** Check the security of application container environments like Docker.
- **Infrastructure Configuration Review:** Review security configurations of routers, switches, firewalls, etc.

- **Server Misconfigurations:** Identify any server misconfigurations that could potentially expose the network.
- **Clickjacking:** Test for vulnerabilities to clickjacking attacks.
- **Server Security Headers:** Check for appropriate implementation of HTTP security headers.
- **Server-side Request Forgery (SSRF) Attacks:** Test for vulnerabilities to SSRF attacks.
- **Race Condition Bugs:** Test to detect potential race condition bugs in code execution.
- **Client-side Security Controls:** Test all client-side security measures.
- **Cross-Site Request Forgery (CSRF) Attacks:** Test for vulnerabilities to CSRF attacks.
- **OWASP Top 10 & other Standard Framework Testing:** Test for vulnerabilities listed in the OWASP . Top 10 and other recognized security frameworks.
- **Insider Threat Simulation:** Simulate actions of malicious insiders to identify vulnerabilities.
- **Human Interface Device (HID) Attacks:** Test for potential HID attacks, such as BadUSB.
- **Regulatory Compliance Pen Testing:** Specialized tests to ensure compliance with regulations such as PCI DSS, HIPAA, GDPR.
- **Spear Phishing:** Test employee susceptibility to targeted spear phishing attacks.

- **Third Party and Supplier Security:** Test security preparedness of third parties and supply chain elements.
- **Cloud Storage Security:** Test the security of storage buckets like Amazon S3 or Azure Blob Storage.
- **Red Teaming:** Conduct complete cyber-attack simulations to evaluate organization's defense capability.
- **Zero-day Exploit Testing:** If zero-day exploits are discovered, understand their impact and mitigation.
- **Cloud Container Testing:** Test the security of containers in cloud services.
- **Shadow IT Detection:** Detect unmanaged systems or services within the network.
- **Breach Readiness Assessment:** Understand the readiness of the organization to handle a breach.
- **Social Media Footprinting:** Check for unintentionally revealed information on social media that could help attackers.
- **Security Policy Compliance:** Test to ensure adherence to organization’s security policy.
- **Incident Response Capability:** Test the organization's readiness to respond to security incidents.

- **Security Training Efficacy:** Evaluate how effective the security awareness and training programs are within the organization.
- **Codebase Review:** Manually review the codebase for any bugs or oversights that automated tools missed.
- **Security Tool Efficacy:** Assess whether the security tools deployed by the organization are performing as expected.
- **Zero Trust Architecture Testing:** Evaluate the effectiveness of zero trust models if implemented.
- **Local Network Access Control:** Evaluate the controls in place for local network access.
- **Encryption At Rest & In Transit:** Test for proper implementation of encryption both for data at rest and in transit.
- **Cyber Threat Intelligence Integration:** Utilize cyber threat intelligence to add context and better identify potential threats.
- **Bot Detection:** Test if the system has adequate protection against bots.
- **Email Phishing Campaigns:** Test employees ability to recognize and avoid phishing scams.
- **Anti-Malware Efficacy:** Test if the deployed antivirus or antimalware solution is effective.
- **Real-time Alerting:** Test the incident alert mechanisms to ensure they are working properly.

- **Use of Known Vulnerabilities:** Utilize known vulnerabilities from repositories like the CommonVulnerabilities and Exposures (CVE) database.
- **Rogue Device Detection:** Test the organization's ability to detect unauthorized devices on the network.
- **Pen Testing from Various Locations:** Test the security measures from diverse geographical locations and IP addresses.
- **Threat Hunting:** Proactively identify whether there are any unknown threats lurking in the infrastructure.
- **Ongoing Tests:** Regular and scheduled penetration tests to account for new vulnerabilities and system changes.



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