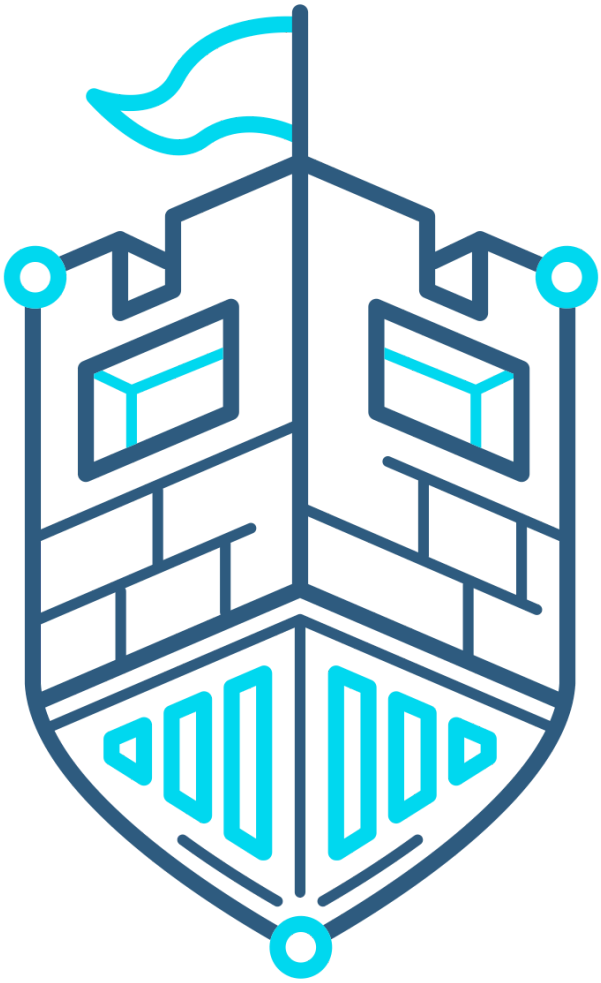
Security Operations and Defensive Analysis

Syllabus



PowerShell

d. Programming on Windows
   - Component Object Model
   - .NET and .NET Core
e. Windows Event Log
   - Introduction to Windows Events
   - PowerShell and Event Logs
f. Empowering the Logs
   - System Monitor (Sysmon)
   - Sysmon and Event Viewer
   - Sysmon and PowerShell
   - Remote Access with PowerShell Core
g. Wrapping Up

5. Windows Server Side Attacks
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      - Suspicious Logins
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   b. Web Application Attacks
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      - Local File Inclusion
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   c. Binary Exploitation
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      - Windows Defender Exploit Guard (WDEG)
   d. Wrapping Up
6. Windows Client-Side Attacks
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      - Social Engineering and Spearphishing
      - Installing Microsoft Office
      - Using Macros
   b. Monitoring Windows PowerShell
      - Introduction to PowerShell Logging

- PowerShell Module Logging
- PowerShell Script Block Logging
- PowerShell Transcription
- Case Study: PowerShell Logging for Phishing Attacks
- Obfuscating/Deobfuscating Commands

c. Wrapping Up

7. Windows Privilege Escalation
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      - Privilege Escalation Enumeration
      - User Account Control
      - Bypassing UAC
   b. Escalating to SYSTEM
      - Service Creation
      - Attacking Service Permissions
      - Leveraging Unquoted Service Paths
   c. Wrapping Up
8. Windows Persistence
   a. Persistence on Disk
      - Persisting via Windows Service
      - Persisting via Scheduled Tasks
      - Persisting by DLL-Sideloading/ Hijacking
   b. Persistence in Registry
      - Using Run Keys
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9. Linux Endpoint Introduction
   a. Linux Applications and Daemons
      - Daemons
      - Logging on Linux and the Syslog Framework
      - Rsyslog Meets Journal
      - Web Daemon Logging
   b. Automating the Defensive Analysis
      - Python for Log Analysis
      - DevOps Tools

- Hunting for Login Attempts
- c. Wrapping Up

10. Linux Server Side Attacks
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        - Password Brute Forcing
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    - a. Attacking the Users
        - Becoming a User
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    - b. Attacking the System
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12. Network Detections
    - a. Intrusion Detection Systems
        - Theory and Methodology
        - Foundations of IDS and Rule Crafting
    - b. Detecting Attacks
        - Known Vulnerabilities
        - Extra Mile I
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    - c. Detecting C2 Infrastructure
        - C2 Infrastructure
        - Extra Mile II
        - Network Communications
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13. Antivirus Alerts and Evasion
    - a. Antivirus Basics
        - Antivirus Overview

- Signature-Based Detection
- Real-time Heuristic and Behavioral-Based Detection

b. Antimalware Scan Interface (AMSI)
- Understanding AMSI
- Bypassing AMSI

c. Wrapping Up

14. Network Evasion and Tunneling

a. Network Segmentation
- Network Segmentation Concepts and Benefits
- Segmentation Theory

b. Egress Busting
- Detecting Egress Busting

c. Port Forwarding and Tunneling
- Port Forwarding and Tunneling Theory
- Port Forwarding and Tunneling in Practice

d. Wrapping Up

15. Active Directory Enumeration

a. Abusing Lightweight Directory Access Protocol
- Understanding LDAP
- Interacting with LDAP
- Enumerating Active Directory with PowerView

b. Detecting Active Directory
- Auditing Object Access
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- Using Honey Tokens

c. Wrapping Up

16. Windows Lateral Movement

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- Brute Force Domain Credentials
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b. Abuse the Kerberos Ticket
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c. Wrapping Up

17. Active Directory Persistence
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18. SIEM Part One: Intro to ELK
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        SIEM Concepts
        Elastic Stack (ELK)
        ELK Integrations with OSQuery
    b. ELK Security
        Rules and Alerts
        Timelines and Cases
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19. SIEM Part Two: Combining the Logs
    a. Phase One: Web Server Initial Access
        Enumeration and Command Injection of web01
        Phase One Detection Rules
    b. Phase Two: Lateral Movement to Application Server
        Brute Force and Authentication to appsrv01
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    c. Phase Three: Persistence and Privilege Escalation on Application Server
        Persistence and Privilege Escalation on appsrv01
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20. Trying Harder: The Labs
    a. Challenges
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