

Paths completed: 2

Targets compromised: 405

Ranking: Top 1%

PATHS COMPLETED

PROGRESS

Basic Toolset



Basic Toolset

100% Completed

7 Modules **Medium**

In this path, modules cover the basic tools needed to be successful in network and web application penetration testing. This is not an exhaustive listing of all tools (both open source and commercial) available to us as security practitioners but covers tried and true tools that we find ourselves using on every technical assessment that we perform. Learning how to use the basic toolset is essential, as many different tools are used in penetration testing. We need to understand which of them to use for the various situations we will come across.

Local Privilege Escalation



Local Privilege Escalation

Local Privilege Escalation is a vital phase of the penetration testing process, one we may revisit multiple times during an engagement. During our assessments, we will encounter a large variety of operating systems and applications. Most often, if we can exploit a vulnerability and gain a foothold on a host, it will be running some version of Windows or Linux. Both present a large attack surface with many tactics and techniques available to us for escalating privileges. This path teaches the core concepts of local privilege escalation necessary for being successful against Windows and Linux systems. The path covers manual enumeration and exploitation and the use of tools to aid in the process.

2 Modules Medium

Privilege escalation is a vital phase of the penetration testing process, one we may revisit multiple times during an engagement. During our assessments, we will encounter a large variety of operating systems and applications. Most often, if we can exploit a vulnerability and gain a foothold on a host, it will be running some version of Windows or Linux. Both present a large attack surface with many tactics and techniques available to us for escalating privileges. This path teaches the core concepts of local privilege escalation necessary for being successful against Windows and Linux systems. The path covers manual enumeration and exploitation and the use of tools to aid in the process.

100% Completed

MODULE E

PROGRESS

A screenshot of the Academy interface. On the left, there's a sidebar with the title "Intro to Academy" in large white font, with three green 3D cubes floating above it. The main content area has a dark blue header with the title "Introduction to Academy" in white. Below the title are three buttons: "8 Sections", "Fundamental" (which is highlighted in yellow), and "General". To the right of the title is a progress bar consisting of a yellow bar and the text "100% Completed". Below the title, there's a descriptive text: "This module is recommended for new users. It allows users to become acquainted with the platform and the learning process.".

Network Enumeration with Nmap

12 Sections | Easy | Offensive

Nmap is one of the most used networking mapping and discovery tools because of its accurate results and efficiency. The tool is widely used by both offensive and defensive security practitioners. This module covers fundamentals that will be needed to use the Nmap tool for performing effective network enumeration.

100% Completed

Cracking Passwords with Hashcat



Cracking Passwords with Hashcat

14 Sections Medium Offensive

100% Completed

This module covers the fundamentals of password cracking using the Hashcat tool.

Kerberos Attacks



Kerberos Attacks

23 Sections Hard Offensive

Kerberos is an authentication protocol that allows users to authenticate and access services on a potentially insecure network. Due to its prevalence throughout an Active Directory environment, it presents us with a significant attack surface when assessing internal networks. This module will explain how Kerberos works thoroughly and examines several scenarios to practice the most common attacks against it from multiple perspectives.

100% Completed



Active Directory PowerView



Active Directory PowerView

9 Sections Medium Offensive

This module covers AD enumeration focusing on the PowerView and SharpView tools. We will cover various techniques for enumerating key AD objects that will inform our attacks in later modules.

100% Completed



File Transfers



File Transfers

10 Sections Medium Offensive

During an assessment, it is very common for us to transfer files to and from a target system. This module covers file transfer techniques leveraging tools commonly available across all versions of Windows and Linux systems.

100% Completed



SQL Injection Fundamentals



SQL Injection Fundamentals

17 Sections Medium Offensive

Databases are an important part of web application infrastructure and SQL (Structured Query Language) to store, retrieve, and manipulate information stored in them. SQL injection is a code injection technique used to take advantage of coding vulnerabilities and inject SQL queries via an application to bypass authentication, retrieve data from the backend database, or achieve code execution on the underlying server.

100% Completed



OSINT: Corporate Recon



OSINT: Corporate Recon

23 Sections Hard Offensive

OSINT (Open-source Intelligence) is a crucial stage of the penetration testing process. A thorough examination of publicly available information can increase the chances of finding a vulnerable system, gaining valid credentials through password spraying, or gaining a foothold via social engineering. There is a vast amount of publicly available information from which relevant information needs to be selected.

100% Completed



Web Requests



Web Requests

8 Sections Fundamental General

This module introduces the topic of HTTP web requests and how different web applications utilize them to communicate with their backends.

100% Completed



File Inclusion



File Inclusion

11 Sections Medium Offensive

File Inclusion is a common web application vulnerability, which can be easily overlooked as part of a web application's functionality.

100% Completed



Stack-Based Buffer Overflows on Linux x86



Stack-Based Buffer Overflows on Linux x86

13 Sections Medium Offensive

Buffer overflows are common vulnerabilities in software applications that can be exploited to achieve remote code execution (RCE) or perform a Denial-of-Service (DoS) attack. These vulnerabilities are caused by insecure coding, resulting in an attacker being able to overrun a program's buffer and overwrite adjacent memory locations, changing the program's execution path and resulting in unintended actions.

100% Completed



JavaScript Deobfuscation

JavaScript Deobfuscation

11 Sections Easy Defensive

This module will take you step-by-step through the fundamentals of JavaScript Deobfuscation until you can deobfuscate basic JavaScript code and understand its purpose.

54.55% Completed



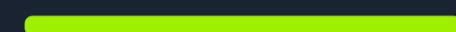
Linux Privilege Escalation

Linux Privilege Escalation

28 Sections Easy Offensive

Privilege escalation is a crucial phase during any security assessment. During this phase, we attempt to gain access to additional users, hosts, and resources to move closer to the assessment's overall goal. There are many ways to escalate privileges. This module aims to cover the most common methods emphasizing real-world misconfigurations and flaws that we may encounter in a client environment. The techniques covered in this module are not an exhaustive list of all possibilities and aim to avoid extreme "edge-case" tactics that may be seen in a Capture the Flag (CTF) exercise.

100% Completed



Attacking Web Applications with Ffuf

Attacking Web Applications with Ffuf

13 Sections Easy Offensive

This module covers the fundamental enumeration skills of web fuzzing and directory brute forcing using the Ffuf tool. The techniques learned in this module will help us in locating hidden pages, directories, and parameters when targeting web applications.

100% Completed



Login Brute Forcing

Login Brute Forcing

11 Sections Easy Offensive

Learn how to brute force logins for various types of services and create custom wordlists based on your target.

100% Completed



SQLMap Essentials

SQLMap Essentials

11 Sections Easy Offensive

The SQLMap Essentials module will teach you the basics of using SQLMap to discover various types of SQL Injection vulnerabilities, all the way to the advanced enumeration of databases to retrieve all data of interest.

100% Completed



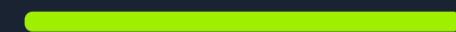
Windows Privilege Escalation

Windows Privilege Escalation

33 Sections Medium Offensive

After gaining a foothold, elevating our privileges will provide more options for persistence and may reveal information stored locally that can further our access in the environment. Enumeration is the key to privilege escalation. When you gain initial shell access to the host, it is important to gain situational awareness and uncover details relating to the OS version, patch level, any installed software, our current privileges, group memberships, and more. Windows presents an enormous attack surface and, being that most companies run Windows hosts in some way, we will more often than not find ourselves gaining access to Windows machines during our assessments. This covers common methods while emphasizing real-world misconfigurations and flaws that we may encounter during an assessment. There are many additional "edge-case" possibilities not covered in this module. We will cover both modern and legacy Windows Server and Desktop versions that may be present in a client environment.

100% Completed



Introduction to Active Directory

Introduction to Active Directory

16 Sections Fundamental General

Active Directory (AD) is present in the majority of corporate environments. Due to its many features and complexity, it presents a vast attack surface. To be successful as penetration testers and information security professionals, we must have a firm understanding of Active Directory fundamentals, AD structures, functionality, common AD flaws, misconfigurations, and defensive measures.

100% Completed





Introduction to Web Applications

Introduction to Web Applications

17 Sections Fundamental General

In the Introduction to Web Applications module, you will learn all of the basics of how web applications work and begin to look at them from an information security perspective.

100% Completed



Getting Started

Getting Started

23 Sections Fundamental Offensive

This module covers the fundamentals of penetration testing and an introduction to Hack The Box.

100% Completed



Broken Authentication

Broken Authentication

14 Sections Medium Offensive

Authentication is probably the most straightforward and prevalent measure used to secure access to resources, and it's the first line of defense against unauthorized access. Broken authentication is currently listed as #7 on the 2021 OWASP Top 10 Web Application Security Risks, falling under the broader category of Identification and Authentication failures. A vulnerability or misconfiguration at the authentication stage can devastatingly impact an application's overall security.

100% Completed



Intro to Network Traffic Analysis

Intro to Network Traffic Analysis

15 Sections Medium General

Network traffic analysis is used by security teams to monitor network activity and look for anomalies that could indicate security and operational issues. Offensive security practitioners can use network traffic analysis to search for sensitive data such as credentials, hidden applications, reachable network segments, or other potentially sensitive information "on the wire." Network traffic analysis has many uses for attackers and defenders alike.

100% Completed



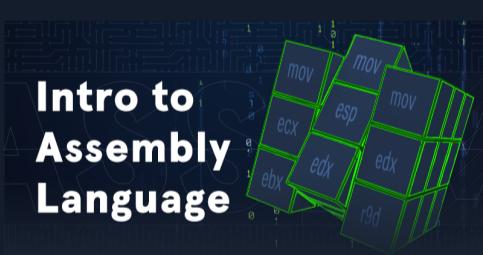
Using CrackMapExec

Using CrackMapExec

27 Sections Medium Offensive

Active Directory presents a vast attack surface and often requires us to use many different tools during an assessment. The CrackMapExec tool, known as a "Swiss Army Knife" for testing networks, facilitates enumeration, attacks, and post-exploitation that can be leveraged against most any domain using multiple network protocols. It is a versatile and highly customizable tool that should be in any penetration tester's toolbox.

100% Completed



Intro to Assembly Language

Intro to Assembly Language

24 Sections Medium General

This module builds the core foundation for Binary Exploitation by teaching Computer Architecture and Assembly language basics.

91.67% Completed



Setting Up

Setting Up

9 Sections Fundamental General

This module covers topics that will help us be better prepared before conducting penetration tests. Preparations before a penetration test can often take a lot of time and effort, and this module shows how to prepare efficiently.

100% Completed



Stack-Based Buffer Overflows on Windows x86

Stack-Based Buffer Overflows on Windows x86

11 Sections Medium Offensive

This module is your first step into Windows Binary Exploitation, and it will teach you how to exploit local and remote buffer overflow vulnerabilities on Windows machines.

100% Completed



Penetration Testing Process



Penetration Testing Process

15 Sections Fundamental General

This module teaches the penetration testing process broken down into each stage and discussed in detail. We will cover many aspects of the role of a penetration tester during a penetration test, explained and illustrated with detailed examples. The module also covers pre-engagement steps like the criteria for establishing a contract with a client for a penetration testing engagement.

100% Completed



Cross-Site Scripting (XSS)



Cross-Site Scripting (XSS)

10 Sections Easy Offensive

Cross-Site Scripting (XSS) vulnerabilities are among the most common web application vulnerabilities. An XSS vulnerability may allow an attacker to execute arbitrary JavaScript code within the target's browser and result in complete web application compromise if chained together with other vulnerabilities. This module will teach you how to identify XSS vulnerabilities and exploit them.

100% Completed



Vulnerability Assessment



Vulnerability Assessment

17 Sections Easy Offensive

This module introduces the concept of Vulnerability Assessments. We will review the differences between vulnerability assessments and penetration tests, how to carry out a vulnerability assessment, how to interpret the assessment results, and how to deliver an effective vulnerability assessment report.

100% Completed



Command Injections



Command Injections

12 Sections Medium Offensive

Command injection vulnerabilities can be leveraged to compromise a hosting server and its entire network. This module will teach you how to identify and exploit command injection vulnerabilities and how to use various filter bypassing techniques to avoid security mitigations.

100% Completed



Using Web Proxies



Using Web Proxies

15 Sections Easy Offensive

Web application penetration testing frameworks are an essential part of any web penetration test. This module will teach you two of the best frameworks: Burp Suite and OWASP ZAP.

100% Completed



Footprinting



Footprinting

21 Sections Medium Offensive

This module covers techniques for footprinting the most commonly used services in almost all enterprise and business IT infrastructures. Footprinting is an essential phase of any penetration test or security audit to identify and prevent information disclosure. Using this process, we examine the individual services and attempt to obtain as much information from them as possible.

100% Completed



Attacking Common Applications



Attacking Common Applications

33 Sections Medium Offensive

Penetration Testers can come across various applications, such as Content Management Systems, custom web applications, internal portals used by developers and sysadmins, and more. It's common to find the same applications across many different environments. While an application may not be vulnerable in one environment, it may be misconfigured or unpatched in the next. It is important as an assessor to have a firm grasp of enumerating and attacking the common applications discussed in this module. This knowledge will help when encountering other types of applications during assessments.

60.61% Completed





Shells & Payloads

Shells & Payloads

17 Sections | Medium | Offensive

Gain the knowledge and skills to identify and use shells & payloads to establish a foothold on vulnerable Windows & Linux systems. This module utilizes a fictitious scenario where the learner will place themselves in the perspective of a sysadmin trying out for a position on CAT5 Security's network penetration testing team.

100% Completed



Attacking Common Services

Attacking Common Services

19 Sections | Medium | Offensive

Organizations regularly use a standard set of services for different purposes. It is vital to conduct penetration testing activities on each service internally and externally to ensure that they are not introducing security threats. This module will cover how to enumerate each service and test it against known vulnerabilities and exploits with a standard set of tools.

100% Completed



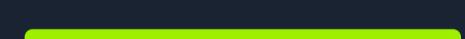
Web Attacks

Web Attacks

18 Sections | Medium | Offensive

This module covers three common web vulnerabilities, HTTP Verb Tampering, IDOR, and XXE, each of which can have a significant impact on a company's systems. We will cover how to identify, exploit, and prevent each of them through various methods.

100% Completed



Information Gathering - Web Edition

Information Gathering - Web Edition

10 Sections | Easy | Offensive

This module covers techniques for identifying and analyzing an organization's web application-based attack surface and tech stack. Information gathering is an essential part of any web application penetration test, and it can be performed either passively or actively.

100% Completed



File Upload Attacks

File Upload Attacks

11 Sections | Medium | Offensive

Arbitrary file uploads are among the most critical web vulnerabilities. These flaws enable attackers to upload malicious files, execute arbitrary commands on the back-end server, and even take control over the entire server and all web applications hosted on it and potentially gain access to sensitive data or cause a service disruption.

100% Completed



Active Directory Enumeration & Attacks

Active Directory Enumeration & Attacks

36 Sections | Medium | Offensive

Active Directory (AD) is the leading enterprise domain management suite, providing identity and access management, centralized domain administration, authentication, and much more. Due to the many features and complexity of AD, it presents a large attack surface that is difficult to secure properly. To be successful as infosec professionals, we must understand AD architectures and how to secure our enterprise environments. As Penetration testers, having a firm grasp of what tools, techniques, and procedures are available to us for enumerating and attacking AD environments and commonly seen AD misconfigurations is a must.

100% Completed



Server-side Attacks

Server-side Attacks

19 Sections | Medium | Offensive

A backend that handles user-supplied input insecurely can lead to sensitive information disclosure and remote code execution. This module covers how to identify and exploit server-side bugs. This module introduces Server-Side Request Forgery (SSRF), Server-Side Template Injection (SSTI), and Server-Side Includes (SSI) injection attacks, alongside other server-side vulnerabilities.

63.16% Completed



Password Attacks



Password Attacks

22 Sections Medium Offensive

Passwords are still the primary method of authentication in corporate networks. If strong password policies are not in place, users will often opt for weak, easy-to-remember passwords that can often be cracked offline and used to further our access. We will encounter passwords in many forms during our assessments. We must understand the various ways they are stored, how they can be retrieved, methods to crack weak passwords, ways to use hashes that cannot be cracked, and hunting for weak/default password usage.

100% Completed



Session Security



Session Security

14 Sections Medium Offensive

Maintaining and keeping track of a user's session is an integral part of web applications. It is an area that requires extensive testing to ensure it is set up robustly and securely. This module covers the most common attacks and vulnerabilities that can affect web application sessions, such as Session Hijacking, Session Fixation, Cross-Site Request Forgery, Cross-Site Scripting, and Open Redirects.

100% Completed



Pivoting, Tunneling, and Port Forwarding



Pivoting, Tunneling, and Port Forwarding

18 Sections Medium Offensive

Once a foothold is gained during an assessment, it may be in scope to move laterally and vertically within a target network. Using one compromised machine to access another is called pivoting and allows us to access networks and resources that are not directly accessible to us through the compromised host. Port forwarding accepts the traffic on a given IP address and port and redirects it to a different IP address and port combination. Tunneling is a technique that allows us to encapsulate traffic within another protocol so that it looks like a benign traffic stream.

100% Completed



Web Service & API Attacks



Web Service & API Attacks

13 Sections Medium Offensive

Web services and APIs are frequently exposed to provide certain functionalities in a programmatic way between heterogeneous devices and software components. Both web services and APIs can assist in integrating different applications or facilitate separation within a given application. This module covers how to identify the functionality a web service or API offers and exploit any security-related inefficiencies.

100% Completed



Bug Bounty Hunting Process

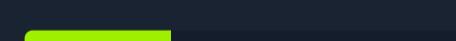


Bug Bounty Hunting Process

6 Sections Easy General

Bug bounty programs encourage security researchers to identify bugs and submit vulnerability reports. Getting into the world of bug bounty hunting without any prior experience can be a daunting task, though. This module covers the bug bounty hunting process to help you start bug bounty hunting in an organized and well-structured way. It's all about effectiveness and professionally communicating your findings.

33.33% Completed



Documentation and Reporting



Documentation & Reporting

8 Sections Easy General

Proper documentation is paramount during any engagement. The end goal of a technical assessment is the report deliverable which will often be presented to a broad audience within the target organization. We must take detailed notes and be very organized in our documentation, which will help us in the event of an incident during the assessment. This will also help ensure that our reports contain enough detail to illustrate the impact of our findings properly.

87.5% Completed



Active Directory BloodHound



Active Directory BloodHound

14 Sections Medium Offensive

This module covers AD enumeration focusing on the BloodHound tool. We will cover various techniques for enumerating key AD objects that will inform our attacks in later modules.

100% Completed





NTLM Relay Attacks

10 Sections | Hard | Offensive

The NTLM authentication protocol is commonly used within Windows-based networks to facilitate authentication between clients and servers. However, NTLM's inherent weaknesses make it susceptible to Adversary-in-the-Middle attacks, providing a significant attack vector. This module focuses on the various NTLM relay attacks that attackers use to compromise Active Directory networks.

100% Completed

