

SEC542: Web App Penetration Testing and Ethical Hacking

Assess Your Web Apps in Depth

Web applications are a major point of vulnerability in organizations today. Web app holes have resulted in the theft of millions of credit cards, major financial and reputational damage for hundreds of enterprises, and even the compromise of thousands of browsing machines that visited websites altered by attackers. In this intermediate to advanced level class, you'll learn the art of exploiting web applications so you can find flaws in your enterprise's web apps before the bad guys do. Through detailed, hands-on exercises and training from a seasoned professional, you will be taught the four-step process for Web application penetration testing. You will inject SQL into back-end databases, learning how attackers exfiltrate sensitive data. You will utilize cross-site scripting attacks to dominate a target infrastructure in our unique hands-on laboratory environment. And you will explore various other web app vulnerabilities in depth with tried-and-true techniques for finding them using a structured testing regimen. You will learn the tools and methods of the attacker, so that you can be a powerful defender.

Throughout the class, you will learn the context behind the attacks so that you intuitively understand the real-life applications of our exploitation. In the end, you will be able to assess your own organization's web applications to find some of the most common and damaging Web application vulnerabilities today.

By knowing your enemy, you can defeat your enemy. General security practitioners, as well as website designers, architects, and developers, will benefit from learning the practical art of web application penetration testing in this class.



giac.org



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sans.edu

"SEC542 is a step-by-step introduction to testing and penetrating web applications, a must for anyone who builds, maintains, or audits web systems."

-BRAD MILHORN, i2P LLC

"Without a doubt, this was the best class for my career."

-DON BROWN, LOCKHEED MARTIN

Who Should Attend

- General security practitioners
- Penetration testers
- Ethical hackers
- Web application developers
- Website designers and architects

You Will Be Able To

- Apply a detailed, four-step methodology to your web application penetration tests, including Recon, Mapping, Discovery, and Exploitation
- Analyze the results from automated web testing tools to remove false positives and validate findings
- Use python to create testing and exploitation scripts during a penetration test
- Create configurations and test payloads within Burp Intruder to perform SQL injection, XSS, and other web attacks
- Use FuzzDB to generate attack traffic to find flaws such as Command Injection and File Include issues
- Assess the logic and transaction flow within a target application to find logic flaws and business vulnerabilities
- Use Durzosploit to obfuscate XSS payloads to bypass WAFs and application filtering
- Analyze traffic between the client and the server application using tools such as Ratproxy and Zed Attack Proxy to find security issues within the client-side application code
- Use BeEF to hook victim browsers, attack the client software and network, and evaluate the potential impact XSS flaws have within an application
- Perform a complete web penetration test during the Capture the Flag exercise to pull all of the techniques and tools together into a comprehensive test

"Fun while you learn!"

Just don't tell your manager. Every class gives you invaluable information from real-world testing you cannot find in a book."

-DAVID FAVA, THE BOEING COMPANY

542.1 HANDS ON: The Attacker's View of the Web

We begin by examining web technology – protocols, languages, clients, and server architectures – from the attacker's perspective. Then we cover the four steps of web application pen tests: reconnaissance, mapping, discovery, and exploitation.

Topics: Overview of the Web from a Penetration Tester's Perspective; Exploring the Various Servers and Clients; Discussion of the Various Web Architectures; Discover How Session State Works; Discussion of the Different Types of Vulnerabilities; Define a Web Application Test Scope and Process; Define Types of Penetration Testing

542.2 HANDS ON: Reconnaissance and Mapping

Reconnaissance includes gathering publicly-available information regarding the target application and organization, identifying machines that support our target application, and building a profile of each server. Then we will build a map of the application by identifying the components, analyzing the relationship between them, and determining how they work together.

Topics: Discover the Infrastructure Within the Application; Identify the Machines and Operating Systems; SSL Configurations and Weaknesses; Explore Virtual Hosting and Its Impact on Testing; Learn Methods to Identify Load Balancers; Software Configuration Discovery; Explore External Information Sources; Google Hacking; Learn Tools to Spider a Website; Scripting to Automate Web Requests and Spidering; Application Flow Charting; Relationship Analysis Within an Application; JavaScript for the Attacker

542.3 HANDS ON: Server-Side Discovery

We will continue with the discovery phase, exploring both manual and automated methods of discovering vulnerabilities within the applications as well as exploring the interactions between the various vulnerabilities and the different user interfaces that web apps expose to clients.

Topics: Learn Methods to Discover Various Vulnerabilities; Explore Differences Between Different Data Back-ends; Explore Fuzzing and Various Fuzzing Tools; Discuss the Different Interfaces Websites Contain; Understand Methods for Attacking Web Services

542.4 HANDS ON: Client-Side Discovery

Learning how to discover vulnerabilities within client-side code, such as Java applets and Flash objects, includes using tools to decompile the objects and applets. We will have a detailed discussion of how AJAX and web service technology enlarges the attack surface that pen testers leverage.

Topics: Learn Methods to Discover Various Vulnerabilities; Learn Methods to Decompile Client-side Code; Explore Malicious Applets and Objects; Discover Vulnerabilities in Web Application Through Their Client Components; Understand Methods for Attacking Web Services; Understand Methods for Testing Web 2.0 and AJAX-based Sites; Learn How AJAX and Web Services Change Penetration Tests; Learn the Attacker's Perspective on Python and PHP

542.5 HANDS ON: Exploitation

Launching exploits against real-world applications includes exploring how they can help in the testing process, gaining access to browser history, port scanning internal networks, and searching for other vulnerable web applications through zombie browsers.

Topics: Explore Methods to Zombify Browsers; Discuss Using Zombies to Port Scan or Attack Internal Networks; Explore Attack Frameworks; Walk Through an Entire Attack Scenario; Exploit the Various Vulnerabilities Discovered; Leverage the Attacks to Gain Access to the System; Learn How to Pivot our Attacks Through a Web Application; Understand Methods of Interacting with a Server Through SQL Injection; Exploit Applications to Steal Cookies; Execute Commands Through Web Application Vulnerabilities

542.6 HANDS ON: Capture the Flag

The goal of this event is for students to use the techniques, tools, and methodology learned in class against a realistic intranet application. Students will be able to use a virtual machine with the SamuraiWTF web pen testing environment in class and can apply that experience in their workplace.



SEC542 COIN

SEC542 Training Formats

(subject to change)



Live Training

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Summit

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Mentor Program

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OnSite

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SelfStudy

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