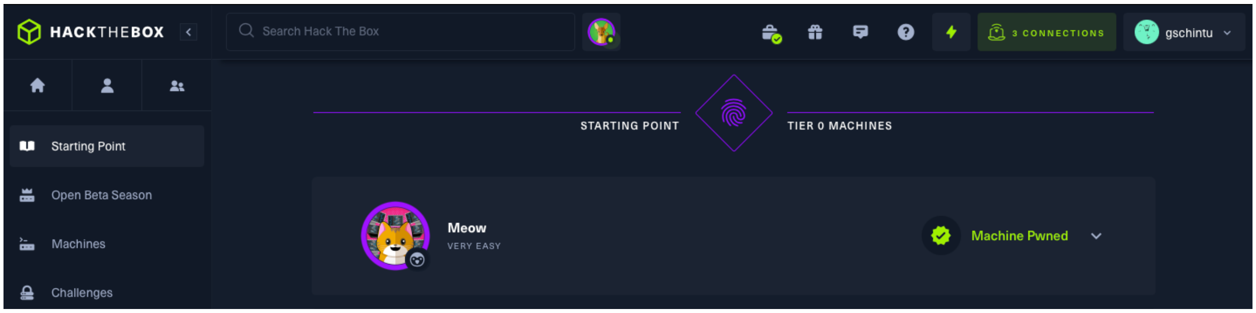
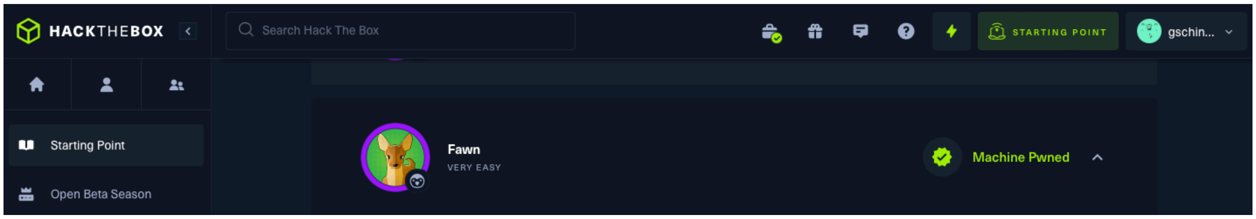
COSC 566 – Hack The Box Challenge
Giuseppe Schintu

--- TIER 0 ---



Connect to target machine using telnet, then use ls and cat commands to see what text file has the root flag.

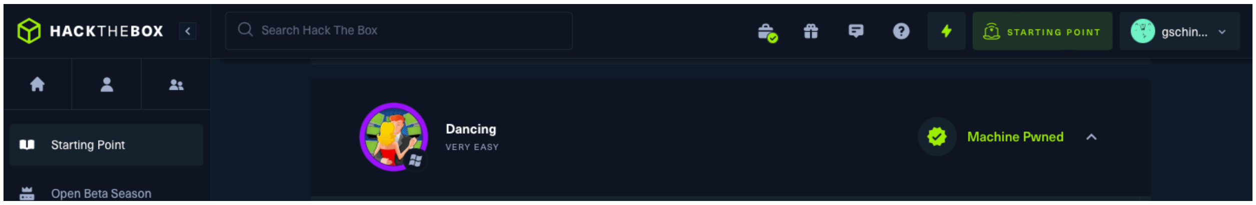
Question	Answer
What does the acronym VM stand for?	Virtual Machine
What tool do we use to interact with the operating system in order to issue commands via the command line, such as the one to start our VPN connection? It's also known as a console or shell.	Terminal
What service do we use to form our VPN connection into HTB labs?	Openvpn
What is the abbreviated name for a 'tunnel interface' in the output of your VPN boot-up sequence output?	Tun
What tool do we use to test our connection to the target with an ICMP echo request?	Ping
What is the name of the most common tool for finding open ports on a target?	Nmap
What service do we identify on port 23/tcp during our scans?	telnet
What username is able to log into the target over telnet with a blank password?	Root
Submit root flag	b40abdfe23665f766f9c61ecba8a4c19



This challenge is about FTP and basic commands to ultimately CTF to complete the level

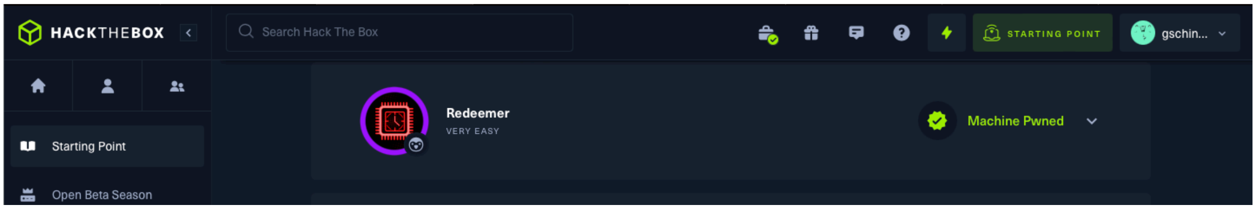
Question	Answer

What does the 3-letter acronym FTP stand for?	File Transfer Protocol
Which port does the FTP service listen on usually?	21
What acronym is used for the secure version of FTP? What is the command we can use to send an ICMP echo request to test our connection to the target?	sftp
From your scans, what version is FTP running on the target?	vsftpd 3.0.3
What is the command we need to run in order to display the 'ftp' client help menu?	ftp -h
What is username that is used over FTP when you want to log in without having an account?	anonymous
What is the response code we get for the FTP message 'Login successful'?	230
There are a couple of commands we can use to list the files and directories available on the FTP server. One is dir. What is the other that is a common way to list files on a Linux system.	ls
What is the command used to download the file we found on the FTP server?	get
Submit root flag	035db21c881520061c53e0536e44f815



This challenge is about SMB(Server Message Block). With smbclient we can see private and public share, and ultimately list access with ls/get the flag.txt file.

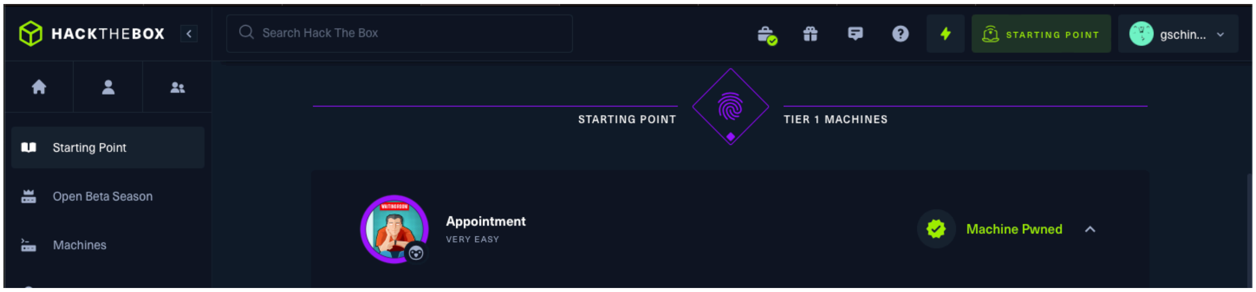
Question	Answer
What does the 3-letter acronym SMB stand for?	Server Message Block
What port does SMB use to operate at?	445
What is the service name for port 445 that came up in our Nmap scan?	Microsoft-ds
What is the 'flag' or 'switch' we can use with the SMB tool to 'list' the contents of the share?	-L
How many shares are there on Dancing?	4
What is the name of the share we are able to access in the end with a blank password?	Workshares
What is the command we can use within the SMB shell to download the files we find?	get
Submit root flag	5f61c10dffbc77a704d76016a22f1664



This challenge is about redis (a cache data server). With some basic commands using the redis-cli (select, list, keys, and get) we can inspect data and ultimately CTF.

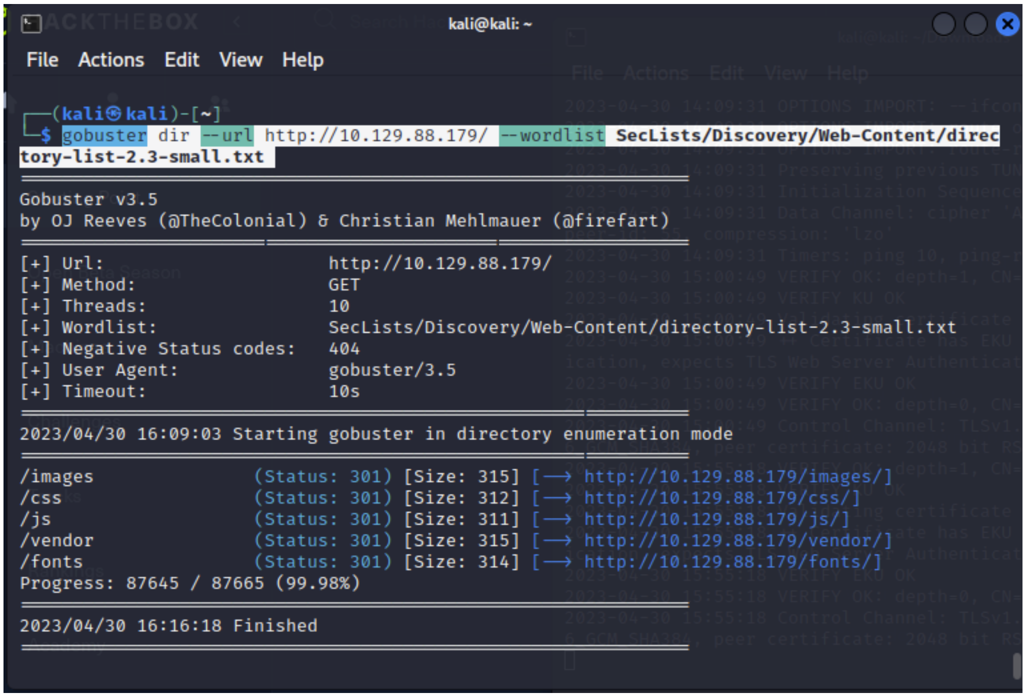
Question	Answer
Which TCP port is open on the machine?	6379
Which service is running on the port that is open on the machine?	Redis
What type of database is Redis? Choose from the following options: (i) In-memory Database, (ii) Traditional Database	In-memory database
Which command-line utility is used to interact with the Redis server? Enter the program name you would enter into the terminal without any arguments.	Redis-cli
Which flag is used with the Redis command-line utility to specify the hostname?	-h
Once connected to a Redis server, which command is used to obtain the information and statistics about the Redis server?	info
What is the version of the Redis server being used on the target machine?	5.0.7
Which command is used to select the desired database in Redis?	select
How many keys are present inside the database with index 0?	4
Which command is used to obtain all the keys in a database?	Keys *
Submit root flag	03e1d2b376c37ab3f5319922053953eb

--- TIER 1 ---



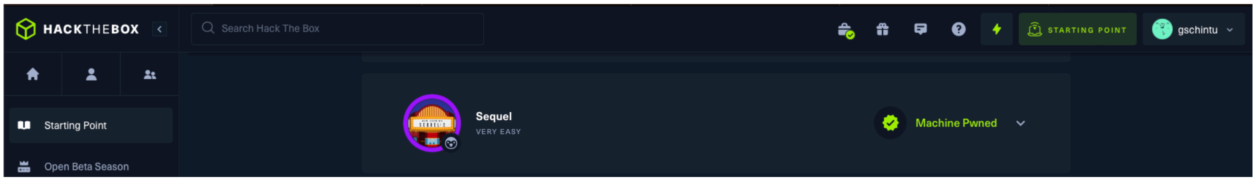
This Challenge is about Web and SQL Injection. There are scanning tools like gobuster that can identify exploitable files. The current instructions do not mention that git clone will use the current folder when cloning any project.

gobuster dir --url http://{Target IP}/ --wordlist SecLists/Discovery/Web-Content/directory-list-2.3-small.txt



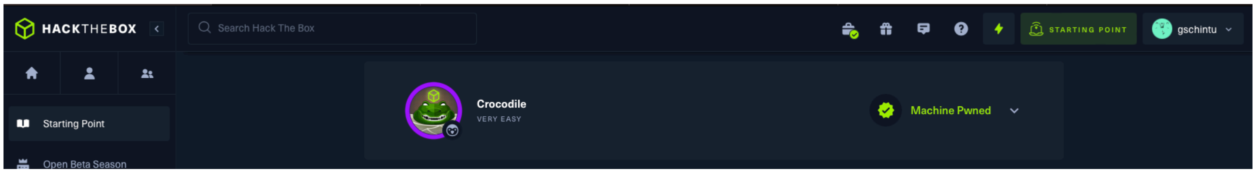
```
┌──(kali㉿kali)-[~]
└─$ gobuster dir --url http://10.129.88.179/ --wordlist SecLists/Discovery/Web-Content/directory-list-2.3-small.txt
===============================================================
Gobuster v3.5
by OJ Reeves (@TheColonial) & Christian Mehlmauer (@firefart)
===============================================================
[+] Url:                     http://10.129.88.179/
[+] Method:                  GET
[+] Threads:                 10
[+] Wordlist:                SecLists/Discovery/Web-Content/directory-list-2.3-small.txt
[+] Negative Status codes:   404
[+] User Agent:              gobuster/3.5
[+] Timeout:                 10s
===============================================================
2023/04/30 16:09:03 Starting gobuster in directory enumeration mode
===============================================================
/images               (Status: 301) [Size: 315] [--> http://10.129.88.179/images/]
/css                  (Status: 301) [Size: 312] [--> http://10.129.88.179/css/]
/js                   (Status: 301) [Size: 311] [--> http://10.129.88.179/js/]
/vendor               (Status: 301) [Size: 315] [--> http://10.129.88.179/vendor/]
/fonts                (Status: 301) [Size: 314] [--> http://10.129.88.179/fonts/]
Progress: 87645 / 87665 (99.98%)
===============================================================
2023/04/30 16:16:18 Finished
===============================================================
```

Question	Answer
What does the acronym SQL stand for?	Structured Query Language
What is one of the most common type of SQL vulnerabilities?	Sql Injection
What does PII stand for?	Personally Identifiable Information
What is the 2021 OWASP Top 10 classification for this vulnerability?	A03:2021-Injection
What does Nmap report as the service and version that are running on port 80 of the target?	Apache httpd 2.4.38 ((Debian))
What is the standard port used for the HTTPS protocol?	443
What is a folder called in web-application terminology?	directory
What is the HTTP response code is given for 'Not Found' errors?	404
Gobuster is one tool used to brute force directories on a webserver. What switch do we use with Gobuster to specify we're looking to discover directories, and not subdomains?	dir
What single character can be used to comment out the rest of a line in MySQL?	#
If user input is not handled carefully, it could be interpreted as a comment. Use a comment to login as admin without knowing the password. What is the first word on the webpage returned?	Congratulations
Submit root flag	e3d0796d002a446c0e622226f42e9672



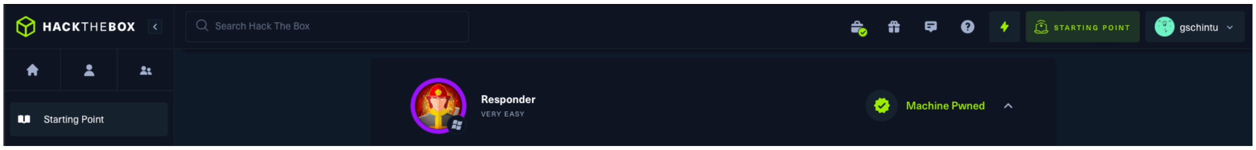
This challenge is about understanding the basics of MySQL (MariaDB) commands and structure. Ultimately, we will use simple commands (SHOW, SELECT) to capture the flag; which is in the htb table.

Question	Answer
During our scan, which port do we find serving MySQL?	3306
What community-developed MySQL version is the target running?	MariaDB
When using the MySQL command line client, what switch do we need to use in order to specify a login username?	-u
Which username allows us to log into this MariaDB instance without providing a password?	root
In SQL, what symbol can we use to specify within the query that we want to display everything inside a table?	*
In SQL, what symbol do we need to end each query with?	;
There are three databases in this MySQL instance that are common across all MySQL instances. What is the name of the fourth that's unique to this host?	htb
Submit root flag	7b4bec00d1a39e3dd4e021ec3d915da8



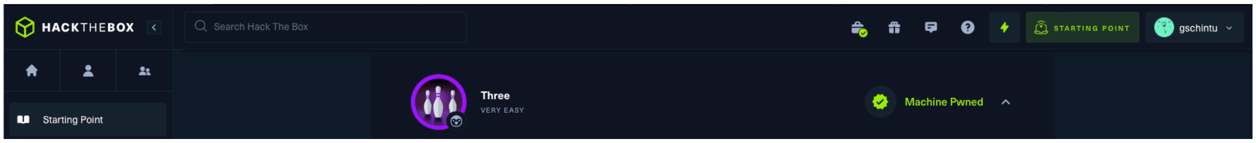
This challenge is about using basic ftp through vsftpd (secure ftp module). The additional caveat is to use gobuster to inspect and look for scripts like php and use the information from ftp files to gain access to password protected sites. Ultimately, we need to use the ls and get commands to search folders and download the file that has the flag.

Question	Answer
What Nmap scanning switch employs the use of default scripts during a scan?	-sC
What service version is found to be running on port 21?	vsftpd 3.0.3
What FTP code is returned to us for the "Anonymous FTP login allowed" message?	230
After connecting to the FTP server using the ftp client, what username do we provide when prompted to log in anonymously?	anonymous
After connecting to the FTP server anonymously, what command can we use to download the files we find on the FTP server?	get
What is one of the higher-privilege sounding usernames in 'allowed.userlist' that we download from the FTP server?	admin
What version of Apache HTTP Server is running on the target host?	apache httpd 2.4.41
What switch can we use with Gobuster to specify we are looking for specific filetypes?	-x
Which PHP file can we identify with directory brute force that will provide the opportunity to authenticate to the web service?	Login.php
Submit root flag	c7110277ac44d78b6a9fff2232434d16



This challenge focuses on file inclusion vulnerability on a webpage being served on a windows machine that can be exploited to collect the NetNTLMv2 challenge of the user that is running the web server. Additionally, it uses a utility called Responder to capture a NetNTLMv2 hash and later use a utility known as john the ripper to test millions of potential passwords to see if they match the one used to create the hash. With the password at hand we can finally use a tool called Evil-WinRM to remote into the target machine and look into folders and find suspicious files that may contain the root flag for this challenge.

Question	Answer
When visiting the web service using the IP address, what is the domain that we are being redirected to?	Unika.htb
Which scripting language is being used on the server to generate webpages?	php
What is the name of the URL parameter which is used to load different language versions of the webpage?	page
Which of the following values for the `page` parameter would be an example of exploiting a Local File Include (LFI) vulnerability	../../../../../../../../windows/system32/drivers/etc/hosts
Which of the following values for the `page` parameter would be an example of exploiting a Remote File Include (RFI) vulnerability	//10.10.14.6/somefile
What does NTLM stand for?	New Technology Lan Manager
Which flag do we use in the Responder utility to specify the network interface?	-I
There are several tools that take a NetNTLMv2 challenge/response and try millions of passwords to see if any of them generate the same response. One such tool is often referred to as `john`, but the full name is what?.	John The Ripper
What is the password for the administrator user?	badminton
We'll use a Windows service (i.e. running on the box) to remotely access the Responder machine using the password we recovered. What port TCP does it listen on?	5985
Submit root flag	ea81b7afddd03efaa0945333ed147fac

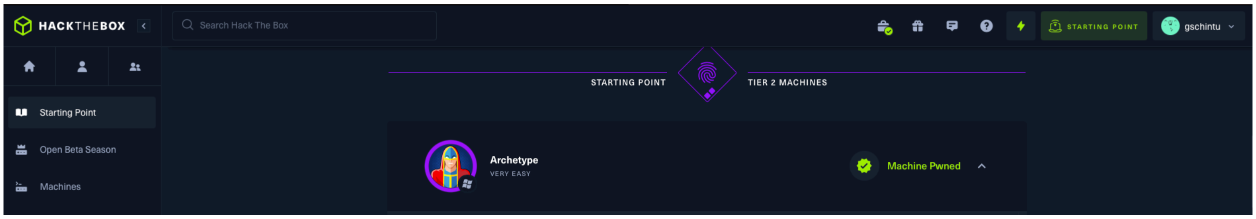


This challenge is about a brief introduction to the AWS CLI that will be used for attempt to exploit poor configuration in the Amazon AWS environment, specifically the AWS file hosting features S3. The final phase of this challenge will implement a reverse shell to navigate contents in the s3 target endpoint.

Question	Answer

How many TCP ports are open?	2
What is the domain of the email address provided in the "Contact" section of the website?	Thetoppers.htb
In the absence of a DNS server, which Linux file can we use to resolve hostnames to IP addresses in order to be able to access the websites that point to those hostnames?	/etc/hosts
Which sub-domain is discovered during further enumeration?	s3.thetoppers.htb
Which service is running on the discovered sub-domain?	Amazon s3
Which command line utility can be used to interact with the service running on the discovered sub-domain?	awscli
Which command is used to set up the AWS CLI installation?	Aws configure
What is the command used by the above utility to list all of the S3 buckets?	Aws s3 ls
This server is configured to run files written in what web scripting language?	php
Submit root flag	a980d99281a28d638ac68b9bf9453c2b

--- TIER 2 ---



In this challenge we can exploit a misconfiguration in Microsoft SQL Server with a reverse shell. For this, we will get familiarized with the use of basic use of Impacket and winPEAS tools in order to further attack some services. We will use the reverse shell to transfer and execute a couple of .exe that will enable us to read the windows configuration and identify exploitable files with potential credentials.

Question	Answer
Which TCP port is hosting a database server?	1433
What is the name of the non-Administrative share available over SMB?	backups
What is the password identified in the file on the SMB share?	M3g4c0rp123
What script from Impacket collection can be used in order to establish an authenticated connection to a Microsoft SQL Server?	mssqlclient.py
What extended stored procedure of Microsoft SQL Server can be used in order to spawn a Windows command shell?	Xp_cmdshell
What script can be used in order to search possible paths to escalate privileges on Windows hosts?	winPEAS
What file contains the administrator's password?	ConsoleHost_history.txt
Submit user flag	3e7b102e78218e935bf3f4951fec21a3
Submit root flag	b91ccec3305e98240082d44474b848528