**Welcome to the GCU CTF Event 2019!  
Answer all of the questions and complete all of the challenges you can!  
Some are rather easy with some web searching, others are quite difficult. Teamwork!**

**\*\*\***

**Cyber Dan is trying to return to the GCU Cyber Range to visit his coworkers. He has had quite a technology enriched global trek. He is almost ready to share what cyber obstacles he has had to face while so far. Cyber Dan encountered challenges including Networking, Cybersecurity, Cryptology, Steganography, Forensics, Programming, and other ethical hacking tasks. It is your team’s goal to answer as many of the challenges as possible to assist Cyber Dan in securely getting home.**

*Cyber Dan explains that while he was preparing to have a great time in the continent of Europe, he had nothing else on his mind but “work”. This was unfortunate, because he goes on to describe how he boarded the plane without noticing that he was leaving his briefcase which included his mobile phone. His phone was his life line to everyone he knew. What was he to do? He only noticed his tragedy when he reached in his pocket to call his parents and tell them that he had made it safely to Russia. Fortunately, for Cyber Dan, he had a work phone and immediately called his team members, his coworkers. You were able to retrieve his briefcase from the lost and found department at the airport, but Cyber Dan needs some very important papers for work. Since you and Cyber Dan also work in the same department, you know how to help him retrieve his papers.*

**2.1.** As stated previously Cyber Dan first traveled to Europe. To access the contents of the brief case you will have to decipher his Caesar’s Cipher, which can be found in the Alps of Austria. He does not remember how he created his top secret code. You will look online for ways to decode his cipher. Please use your browser to search for Caesar Ciphers to see what he wrote down as his password.

**2.2.** Great job! Now that you have gained access to the contents of the briefcase you see that there is a mini laptop, and cell phone. The laptop has cleverly been named Norway. It also uses the same password as the briefcase. Cyber Dan then instructs you open his laptop and access a file that contains encoded emails. You will have to search online to find out the encoding that was used and then break the code to decode the message.

**2.3.** You are moving along and making great progress. Cyber Dan has a file that he needs to verify the type of hash to validate its authenticity and give to the companies’ president in Finland. He does not remember what type of hash his boss used on the message. You task now is to find out what type of hash was used. Please use your web browser to aide you in correctly identifying the hash that was used. Cyber Dan has asked that you not ask the boss due to his unique position.

**2.4.** Now that you have identified the type of hash Cyber Dan asks for one last favor. He requests that you crack the hash because your boss is working with the Sweden division to upgrade their network security and you will save the day by giving him the temporary password that your boss will change once she starts the upgrade.

**Programming Challenges (5)**

Cyber Dan’s team has been involved in some great adventures so far. As the next letter is opened, it states that the team is needed in South America. The letter also states that the team needs to understand 5 different coding languages to help get Cyber Dan out of the country.

**Hack the Box**

Cyber Dan has made it back to the Cyber Range safely in one piece. He then thanks everyone for their help in getting him back. He states that he has one last challenge that he has to face. He informs the team about a box that he found in Russia. He further explains that this box was hidden between the walls of a house. He heard that the box contains a key that potentially opens a bank account containing 10,000 bitcoin. Are you up for the challenge? *[When you reach this challenge after completing the rest, reach out to a GCU CTF Volunteer for the secret IP address to access this Box.]*

*Some guiding questions....*

What tool(s) would you use to identify vulnerable or open services?

What would your first primary objective be? (identify a vulnerable service or app that can be attacked)

*How to gain access…*

What steps would you take to gain elevated or privileged access?

How would you obfuscate or hide your tracks?

**For your personal wireless device for connecting to the Internet via the Cyber Range:**

SSID is **CTF Internet Access**

Password is: **L0pesUp**

*Please do not use the open network LOPES; this network is being observed by IT Security. Since we are technically hacking, we are to be off the main network and use the Cyber Range wireless as given.*

**Tools & Commands you can start with.**

|  |  |
| --- | --- |
| **Tools available:** | **Other Resources:** |
| Kali Linux & XAMPP/LAMPP | Google / Bing / DuckDuckGo |
| stegosuite | passwordrecovery.io |
| bless & hexedit | Caesar cipher |
| dirbuster | inventwithpython.com/cipherwheel/ |
| hash-identifier | php, JAVA, Javascript, SQL, Python |
| base64 | Hashes & hashing |
| wireshark | Firefox: Toggle Tools |
| python & python3 |  |
| msfconsole (Metasploit) | **Commands:** |
| nmap / zenmap | ls, cd, man, dig, cat, cd .. |
| MySQL Workbench | grep or xgrep |
| Sublime | unzip filename.zip |
| Leafpad | (Or right-click and extract) |
| vim | iwconfig |
| hashcat | nslookup |
| John the Ripper (john) | history |
| owasp | Use the up/down arrow keys |
| exif | Use the TAB key to help type |