

Enhancing Digital Government and Economy

Batch: JUR2B11

Mid Term Exam

Date: 05-10-2024

Time: 03 hours

Case-01

In the heart of Dhaka, a city teeming with life and intrigue, a silent specter lurked. He was a man of Shadows, a ghost in the digital realm. An American spy, his identity hidden behind layers of encryption and anonymity. He moved through the city, observing, collecting data, his presence undetectable even to the watchful eyes of his own government. But nothing lasts forever. A breach occurred. A cache of images, seemingly innocuous snapshots of everyday life, was leaked. Yet, within these digital fragments, a hidden clue lay waiting. It was a base64-encoded string, a cryptic message that hinted at a deeper secret.

The encoded link is:

aHR0cHM6Ly9kcml2ZS5nb29nbGUuY29tL2RyaXZIL2ZvbGRlenMvMUJfODJraGkwckhJa2Nla0V4ZkZraWE5aDVPclBFTFIWP3VzcDIzaGFyaW5n

The Bangladesh government, alerted to the leak, mobilized their cyber experts. They knew that these images were more than just pictures. They were pieces of a puzzle, a trail that could lead them to the elusive American spy. Your mission, as a skilled ethical hacker and analyst, is to unravel the mystery. Decipher the base64-encoded string to reveal a hidden link. Download the two files associated with this link. Then, analyze the images (Both of the images found on the link) to answer the following questions:

1. When was this photo taken? (Date Only) 2024:09:25 21:16:00
2. Who is the device manufacturer? Unknown (OPPO)
3. What encoding process is maintained? Base64, DET, Huffman coding
4. What is the image height of this sample? 4000
5. What time was the photo originally taken? 2024:09:25 21:16:00. 871+06:00

The fate of the American spy, and perhaps the balance of power between two nations, hangs in the balance. Can you crack the code and expose the ghost in the machine?

Case-2

In the bustling digital metropolis of Dhaka, a sinister threat lurked. A malicious program, a digital rat, had infiltrated countless machines, gnawing away at their resources and leaving a trail of vulnerabilities in its wake. Your task, as a skilled network security analyst, is to root out this insidious creature and safeguard the city's digital infrastructure. To begin your investigation, you'll need a powerful tool capable of revealing the hidden secrets of the network. The target IP will be shared during exam time.

1. What is Nmap?
2. What command will you use to find out your own machine's own IP addresses?
3. Write a command to find open ports on a target IP.
4. What is the service version on 80 Port?
5. Which operating system is running on target system?