

Digital Scavenger Hunt

Challenge Description

Category: Forensics

1. Discovery

The provided file is artifact.bin. Initial inspection with the file command shows that the system cannot identify the file type:

```
└─$ file artifact.bin  
artifact.bin: data
```

This indicates the Magic Bytes (file signature) have been altered.

2. Hex Analysis

Opening the file in a Hex Editor reveals the following "kill switch" modifications:

The Header:

The first 8 bytes contain the string CORRUPT! (Hex: 43 4F 52 52 55 50 54 21).

File: artifact.bin	ASCII	Offset: 0x00000000 / 0x00000021E (%00)
00000000 43 4F 52 52 55 50 54 21	00 00 00 0D 49 48 44 52	CORRUPT!....IHDR
00000010 00 00 01 5E 00 00 01 5E	01 00 00 00 00 E5 50 4A	...^...^.....PJ
00000020 B7 00 00 01 E6 49 44 41	54 78 9C ED 9B 4D 8A DDIDATX ...M..
00000030 30 10 84 AB 23 43 96 1A	C8 01 72 14 F9 66 B9 9A	0...#C...r..f..
00000040 DF 51 E6 00 01 79 39 60	51 59 48 F2 CF 7B 2F 64	.Q...y9`QYH..{/d
00000050 3C 30 9E OE 94 16 C2 96	BF 45 43 D3 D5 2E C9 36	<0.....EC....6
00000060		

The Footer:

The final 4 bytes of the file contain the string DEAD (Hex: 44 45 41 44).

000001D0 C1 D5 1E A6 C3 A4 0C 7A	87 D7 33 7A 94 FA C9 E1z..3z....
000001E0 6E BA 30 0C C1 67 E1 9D	1F AC B7 13 02 EB CB 67	n.0...g.....g
000001F0 CA A1 D5 A0 54 D4 31 FC	EC 93 B4 BF 0D FD BB 24T.1.....\$
00000200 58 B0 60 C1 82 05 0B F6	05 FF 01 07 BF DE B3 9C	X.`.....
00000210 47 F5 31 00 00 00 00 44	45 41 44 AE 42 60 82	G.1...DEAD.B..

3. The Repair

To restore the file, replace the sabotaged bytes with standard PNG signatures:

Header: Replace CORRUPT! with 89 50 4E 47 0D 0A 1A 0A.

Footer: Replace DEAD with 49 45 4E 44 (the hex for IEND).

4. Solving

Once the bytes are repaired, the file can be renamed to restored.png. Opening the image reveals a QR Code.



Scanning the QR code yields the final flag: LNMHACKS{1M_H3R3}