# Assignment 6 NCL Wireless Access Exploitation

- This is an individual assignment, and is worth 20 points.
- The due date and time is Tuesday, 1:00 pm (sec01) / 5:30 pm (sec76), October 22.
- Apply the usual naming convention.

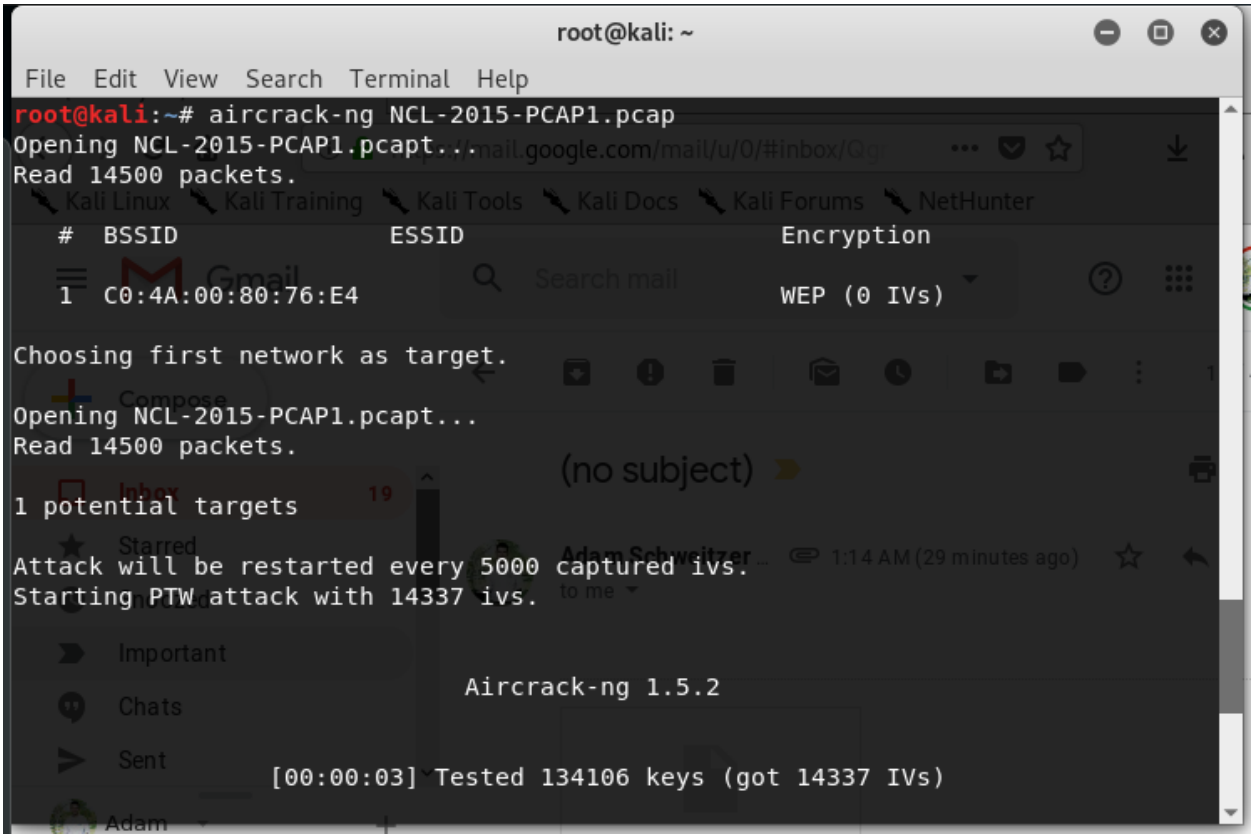
## Background

- This assignment is from National Cyber League (NCL) exercise.
- Use the attached "NCL-2015-PCAP1.pcap".
- You need to use Kali to answer the questions below. Send the attached pcap file to your email and download from Kali using Firefox. Move the capture file to **Desktop** on Kali.
- Use **aircrack-ng** on Kali. Refer to the "CIS 480 Aircrack-ng.pptx" for hints.

## Tasks

1. How many IVs are in the packet capture? Provide a screenshot that supports your answer. Run the following command: **aircrack-ng NCL-2015-PCAP1.pcap**.

There are 14337 IV's



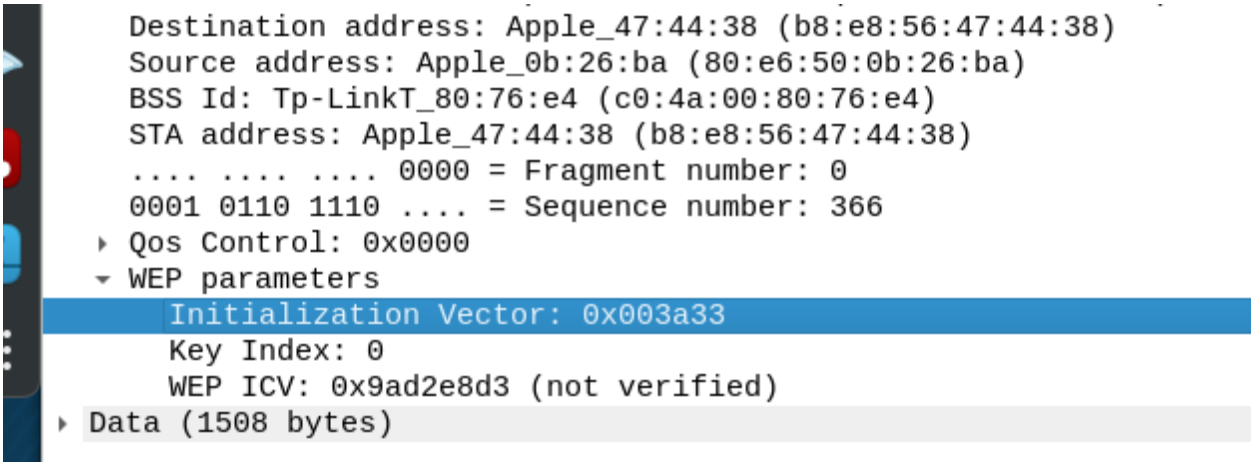
2. What is the WEP key size of the wireless network in bits? WEP keys are larger than the size of your password input (the key obtained via aircrack-ng). Explain how you arrived at your answer.

For this, we need to count the number of bits in the input password text (x bytes * 8 bits per byte = x bits). Then, we compare that to the possible WEP key sizes and configurations. Refer to the attached file: WEP Shared Key Authentication.pdf.

5 bytes * 8 (bits/byte) = 40 bits + 24 factory set bits = 64 bit WEP

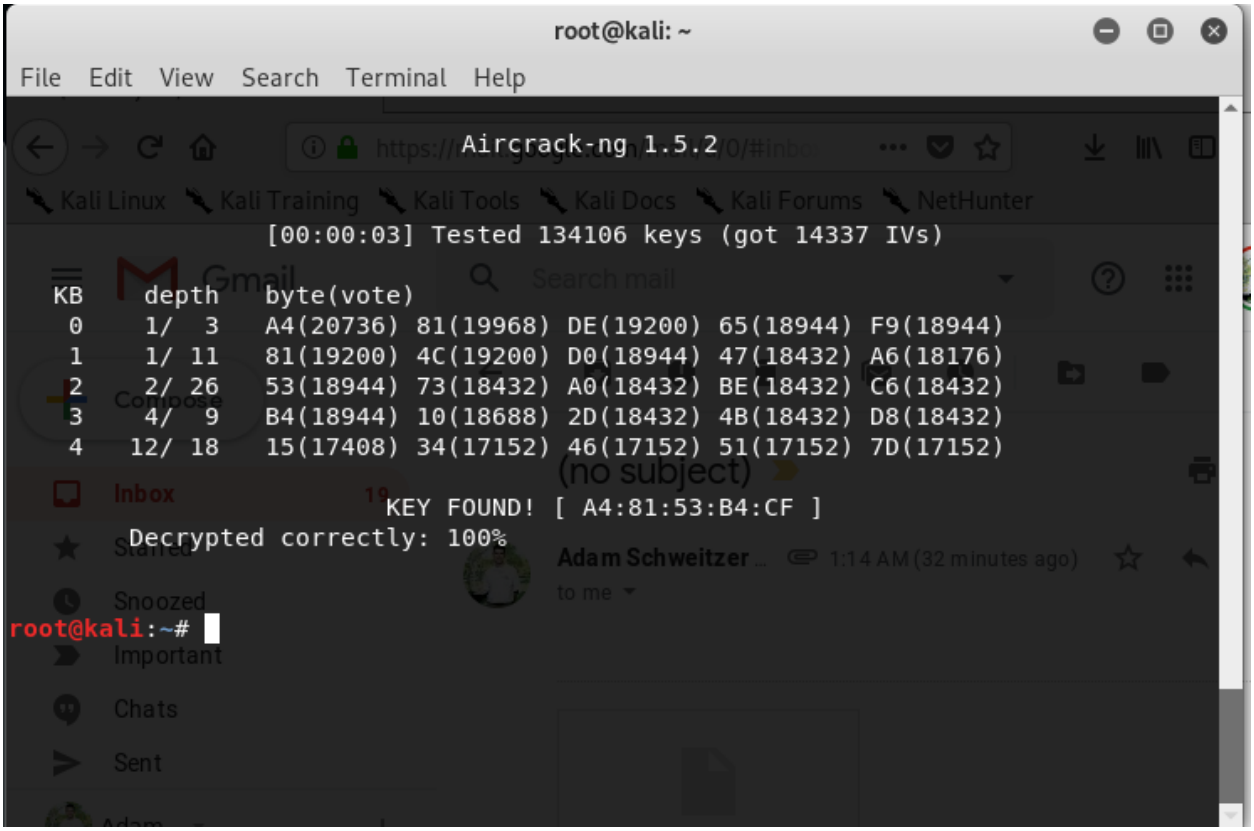
3. What is the IV for the first packet in the capture (in hex)? Provide a screenshot that supports your answer.

0c003a33



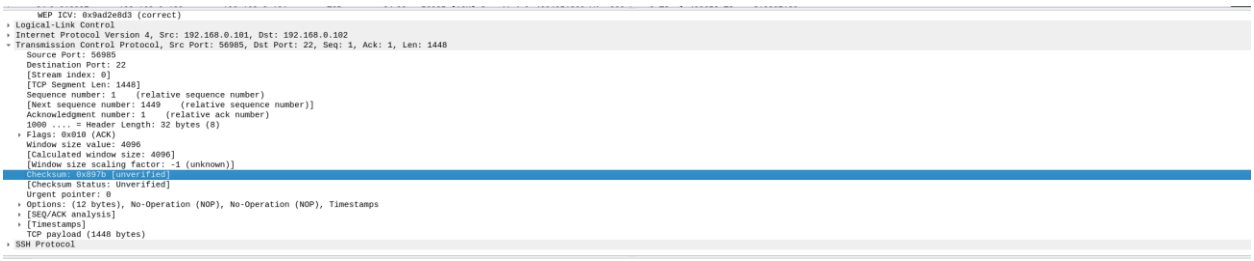

4. What is the key (i.e., password input) you obtained after running aircrack-ng? Provide a screenshot that supports your answer.

A4:81:53:B4:CF

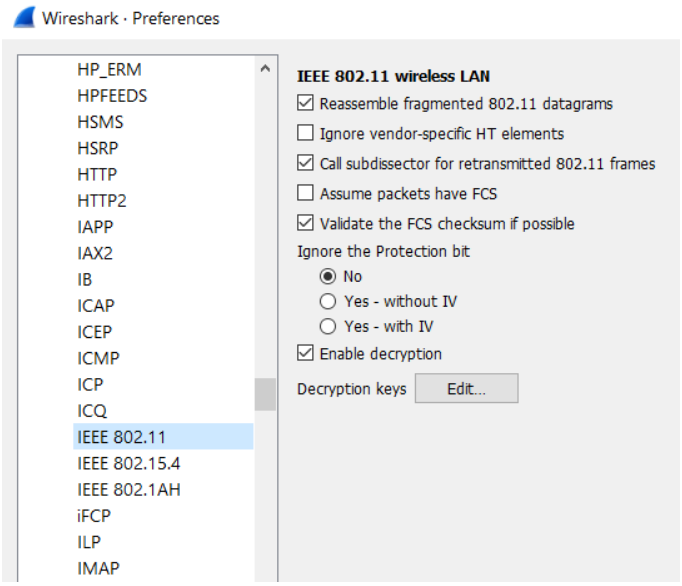



5. What is the TCP checksum of the first packet in the capture (in hex)? Provide a screenshot that supports your answer. You should decrypt the capture with the key you obtained.

0x897b




- Hints: Go to Wireshark > Edit > Preferences > IEEE 802.11


Wireshark · Preferences
HP_ERM
HPFEEDS
HSMS
HSRP
HTTP
HTTP2
IAPP
IAX2
IB
ICAP
ICEP
ICMP
ICP
ICQ
IEEE 802.11
IEEE 802.15.4
IEEE 802.1AH
iFCP
ILP
IMAP
IEEE 802.11 wireless LAN
Reassemble fragmented 802.11 datagrams
Ignore vendor-specific HT elements
Call subdissector for retransmitted 802.11 frames
Assume packets have FCS
Validate the FCS checksum if possible
Ignore the Protection bit
No
Yes - without IV
Yes - with IV
Enable decryption
Decryption keys
Edit...