

Wifi Beacons

Beacons are essential for all wireless networks to operate. In this lab, we'll go on some adventures and research, looking at Beacon frames that have already been captured using the capture file uploaded to D2L.

Capture File

Using the capture file, answer the following questions:

- Find the beacon frame for the wireless network. What's the SSID? Include a screenshot showing you found the SSID
- What is a Beacon interval? With wifi, what is the absolute minimum and maximum value for the beacon interval?
- What type of wireless network is broadcasting (802.11 a,b,g,n,ac,ad,etc)? Show a screenshot that shows how you found out.
- What encryption, if any, is the network using?
- With the beacon frame, the device is manufactured by Cisco (Linksys), but Cisco did not actually make the radio in the base station. Who did?
- Of the many values in this beacon frame, one of them isn't actually required by the access point. It could be blank/empty. Which one is it?
- The BTS in this beacon supports "short time slots". This setting is enabled. Find the setting (byte) in the beacon frame that indicates this and include a screenshot. What does this value indicate? What impact does it have on a network?
- Submit everything in a single PDF file. Do not copy/paste any text from the internet.

Detecting Networks

On-Campus students:

Using an Alfa USB adapter and a Kali virtual machine scan for networks in your area.

Online students:

Connect to the Kali virtual machine in the PCL Wireless environment (visit <https://pcl.dsu.edu> and select Wireless from the Select Environment button in the upper right.

Everyone:

- Take a screenshot showing that you have airodump running and displaying the networks in your area.
- Make a list of all BSSID's you were able to detect.

Hints:

Online Students: if your VM is missing an adapter (lsusb doesn't show an adapter), first run: "sudo usbreset <ID>" and swap the <ID> with the device ID you can view by just running 'sudo usbreset'. If your adapter fails after running that, we need to open a ticket with the helpdesk (<https://support.dsu.edu>) and report an issue.

Make sure to submit your results as a single PDF file!