Sustainability Project / Team Three / Safe-House

**Narrative**

One of the principles of sustainability is gender equality.

And in a gender-equal world, women would be able to live alone if they want. They would be able to sleep at night.

But according to the CDC, “Homicide is one of the leading causes of death for women … Nearly half of female victims are killed by a current or former male intimate partner.”

So, what if there were some way to know if a **former male intimate partner** were standing outside my window at 3 o’clock in the morning about a week after a nasty breakup?

**Well, my creepy ex always has his phone in his pocket. And if he’s close enough to bother me, then he’s close enough to automatically connect to my wi-fi.**

**And now, my wi-fi network can tell me when that happens.**

Let’s watch that, shall we?

The Safe Home device can be stored inside something unobtrusive that sits by the bed.

(Show sculpture and bear)

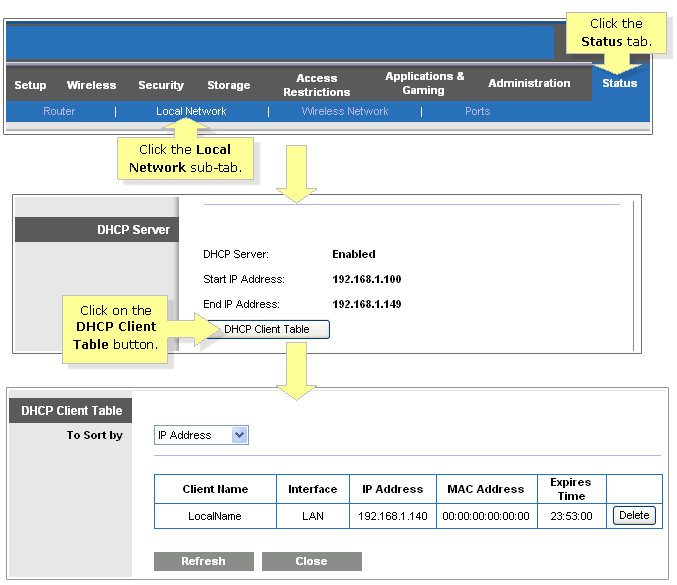
Here is a simulation of what happens if I’m asleep and my ex gets close enough for his phone to connect to my wi-fi.

**[SAFE HOME DEMO]**

If that happened at 3am, that would wake me up.

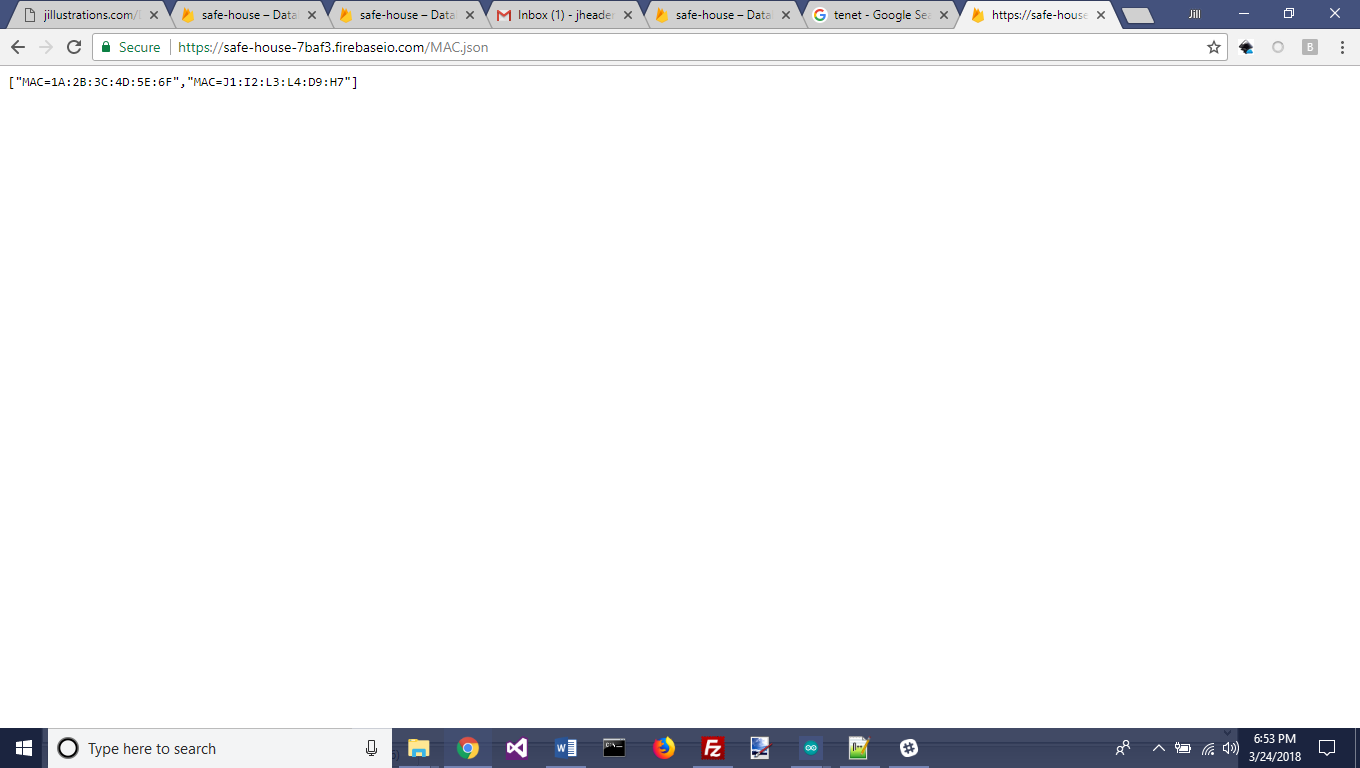
Here’s how it works:

A script[[1]](#footnote-1) goes out and scrapes the MAC[[2]](#footnote-2) addresses from the router’s DHCP[[3]](#footnote-3) client list and then that information is put as a payload where the feather HUZZAH can grab it and compare it to a list of **all** of my ex boyfriends’ MAC addresses.

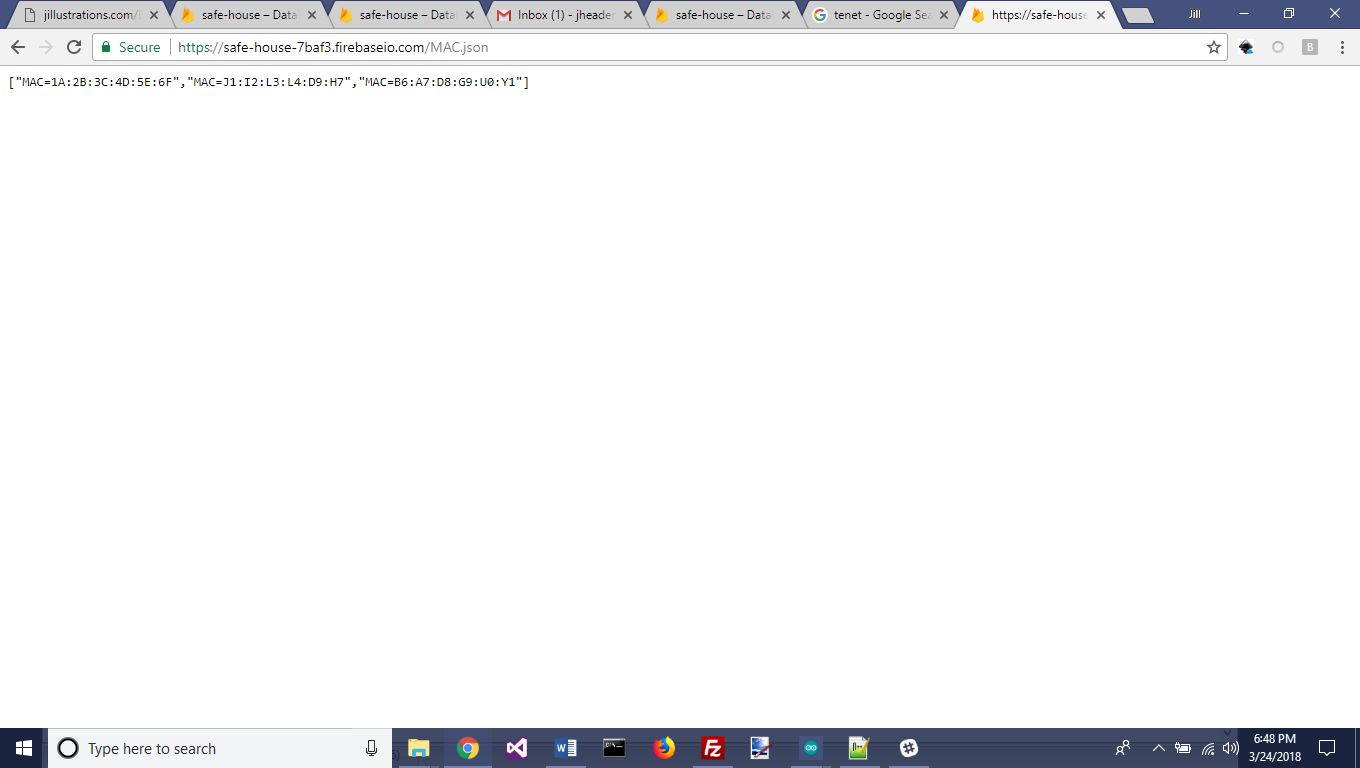


**Taken from: http://cache-www.linksys.com/support/images/KB17346-003\_EN\_v6.PNG**

Here is how the client list looks when only my own devices are in the list…



And here is a list with an undesirable added on there…



The feather HUZZAH pings the DHCP list, grabs the MAC addresses for every device connected, and if there’s a match between the list of who all is connected and who is listed on the Bad Guy list, Safe-Home lets me know.

**The App**

We have an app to make maintaining your list of bad guys easy.

When a script recognizes that you granted someone permission to connect to your wifi, the app asks you if you want to associate their MAC address with their contact. You know. Just in case things go wrong later.

And if you’re in another room when the device goes off, Safe House sends notification to your phone to let you know someone connected.

Oh, and the app is designed with your privacy in mind, in case your future ex looks through your phone **before** you’ve had the “It’s not me, it’s you” talk.

**Sustainable Future**

In the future, Safe-Home could connect with other security devices.

**Known Limitations:**

* Potential victim doesn’t have a wi-fi router
* Assailant loses/replaces phone, new MAC address is not on the Bad Guy list.
* Assailant knows to turn off the phone’s wi-fi - mitigation: this fact could be captured and submitted later as evidence whatever he did was premeditated.
* Bad Guy’s MAC address is not in “Bad Guy” list because I didn’t capture it when I had the chance – mitigation: write a script to send me a message whenever I give someone access to my wi-fi. MAC address can be associated with contact in my phone.

**Potential Improvements:**

1. Such as Import.io [↑](#footnote-ref-1)
2. Why MAC addresses instead of IP addresses? Because IP addresses can change. [↑](#footnote-ref-2)
3. DHCP (Dynamic Host Configuration Protocol) is a network management protocol used to dynamically assign an Internet Protocol (IP) address to any device, or node, on a network so they can communicate using IP. Source: http://searchnetworking.techtarget.com/definition/DHCP [↑](#footnote-ref-3)