Amazon Alexa and digital forensics

Research motivation

In the IoT world, the 1) do-it-yourself culture is encouraged, meaning users themselves can develop customized devices and applications for their IoT 2) environments with tiny sensors and programmable brokers (Roeck et al., 2012). However, it is not easy for people who are unfamiliar with 3) a variety of technologies to build customized IoT environments. Thus, most people 4) …tend… to purchase IoT consumer products, including but not 5) limited to smart assistants, lights, sensors, switches, hubs, thermostats, and fitness devices.

Although 6) intelligent products are available on the market, we focused on one of the most famous products, Amazon Echo. The Amazon Echo family of smart devices, which also includes Dot and Tap, connect to the 7) state-of-the-art cloud-based voice service, Alexa Voice Service (AVS). With Alexa as a voice-activated personal assistant, the Echo is 8) …capable… of doing various things, such as 9) managing to-do lists, playing music, setting alarms, placing orders, searching information, and controlling other smart devices (Amazon). According to an industry report, the Echo family 10) …sold… more than 11 million units between the middle of 2015 and 2016 (1redDrop). Additionally, as 11) announced at CES 2017, there is an interesting 12) convergence of the Alexa with various devices, such as connected cars, smart fridges, and robots, which 13) …indicated… that the Amazon Alexa-related environment will become an important source of potential digital evidence. For these reasons, the Echo and Alexa were 14) selected… as the first targets for studying digital forensic approaches 15) …inside… the IoT world.