SEPIO

BadUSB - HOSPITALITY INCIDENT

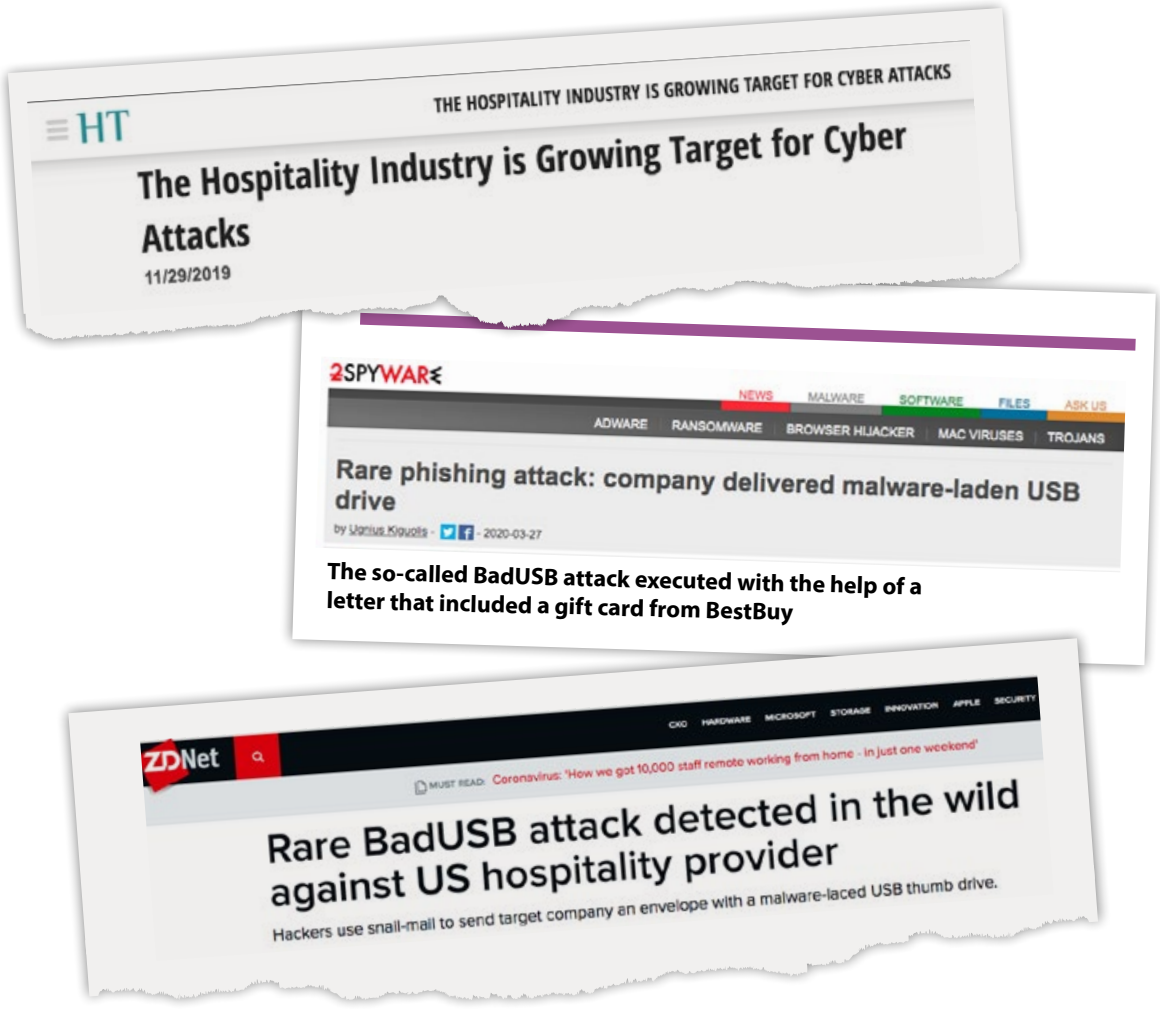
CASE STUDY

BACKGROUND

A hospitality company was awarded with a $50 Best-Buy gift card in a letter which also included a USB thumb drive. Once plugged in, the USB would present a list of items which could be bought with the gift card.

The company did not give in to the phishing attempt and contacted security experts from a cybersecurity firm instead, who revealed that the company encountered a so-called BadUSB attack. This was not the first targeted attack on the hospitality industry, as previous threat actors such as DarkHotel and RevengeHotels are known to be active in this industry.

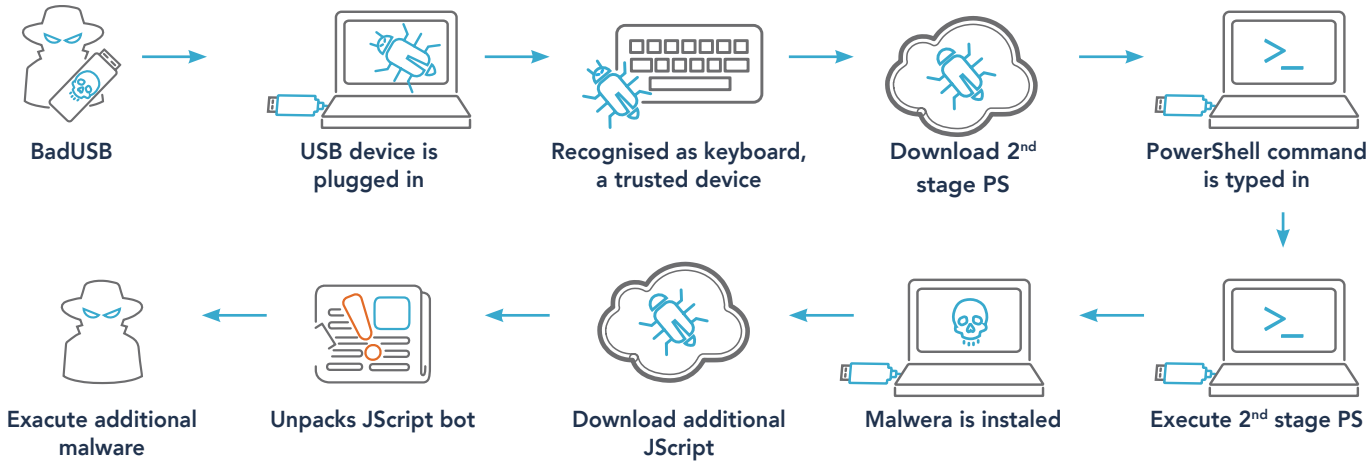
What stands out in this attack is the fact that a physical rogue device was used, capable of impersonating as a legitimate keyboard, which goes "below Radar" of existing EPS/EDR solutions – Only diving "deeper" into the physical layer can provide the adequate protection.



The so-called BadUSB attack executed with the help of a letter that included a gift card from BestBuy

ATTACK STUDY

Following an investigation by a cybersecurity firm, it was found that the USB device was the source of the attack. The device – known as "BadUSB" – functions as a keyboard to perform keystrokes that launch commands to download and install malware onto the computer. To install the malware, the device triggered a number of keystrokes that launched a PowerShell command which then downloaded a more cumbersome PowerShell script, ultimately leading to the malware being installed. The USB device looked, to the human eye, like all other USB thumb drives, thus causing no suspicion by the recipient.



TOOLS USED

The BadUSB device used an Arduino microcontroller ATMEGA32U4 and had been programmed to act as a USB keyboard, thereby allowing it to be trusted. However, the purpose of this device is to surreptitiously type malicious commands into the attached computer, in this case causing the installation of malware.

It is almost impossible to detect this type of attack as these devices are recognised as genuine HIDs by existing security software solutions. Hence, antivirus scans will not present any indication that a malicious attack is underway. The alternative is to employ advanced forensic methods such as physically taking apart and reverse engineering the device, yet this is impractical as there are thousands of devices being used by organisations.

Ideally, an organisation will want to employ a security software solution that detects these hardware attacks; something which Sepio has developed successfully.

HAC-1 SOLUTION

Many times, enterprises' IT and security teams struggle in providing complete and accurate visibility into their hardware assets, especially in today's extremely challenging IT/OT/IoT environment.

This is due to the fact that often, there is a lack of visibility, which leads to a weakened policy enforcement of hardware access. This may result in security accidents, such as ransomware attacks, data leakage, etc.

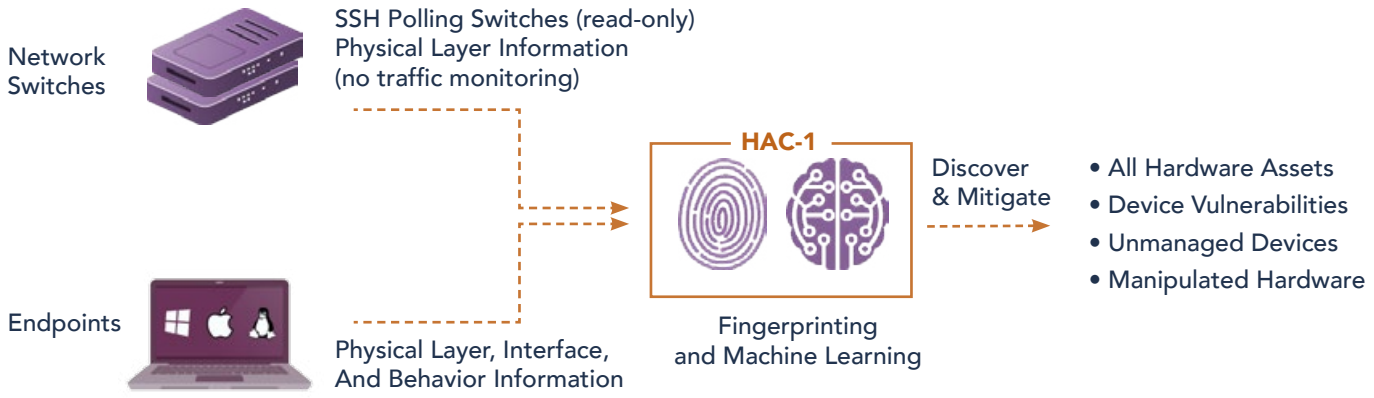
In order to address this challenge, ultimate visibility into your Hardware assets is required, regardless of their characteristics and the interface used for connection as attackers. Moreover, it is important to be practical and adjust to the dynamic Cyber security defenses put in place to block them, as well as take advantage of the "blind" spots – mainly through USB Human Interface Device (HID) emulating devices or Physical layer network implants.

In addition to the deep visibility layer, a comprehensive policy enforcement mechanism recommends on best practice policy and allows the administrator to define a strict, or more granular, set of rules for the system to enforce.

Sepio is the leader in the Rogue Device Mitigation (RDM) market and is disrupting the cybersecurity industry by uncovering hidden hardware attacks operating over network and USB interfaces. SepioPrime, which orchestrates Sepio's solution, identifies, detects and handles all peripherals; no device goes unmanaged.

The only company in the world to undertake Physical Layer fingerprinting, Sepio calculates a digital fingerprint using the device descriptors of all connected peripherals and compares them against a known set of malicious devices, automatically blocking any attacks. With Machine Learning, the software analyses device behavior to identify abnormalities, such as a mouse acting as a keyboard.

How It Works



HAC-1 - Visibility & Security of Hardware Assets

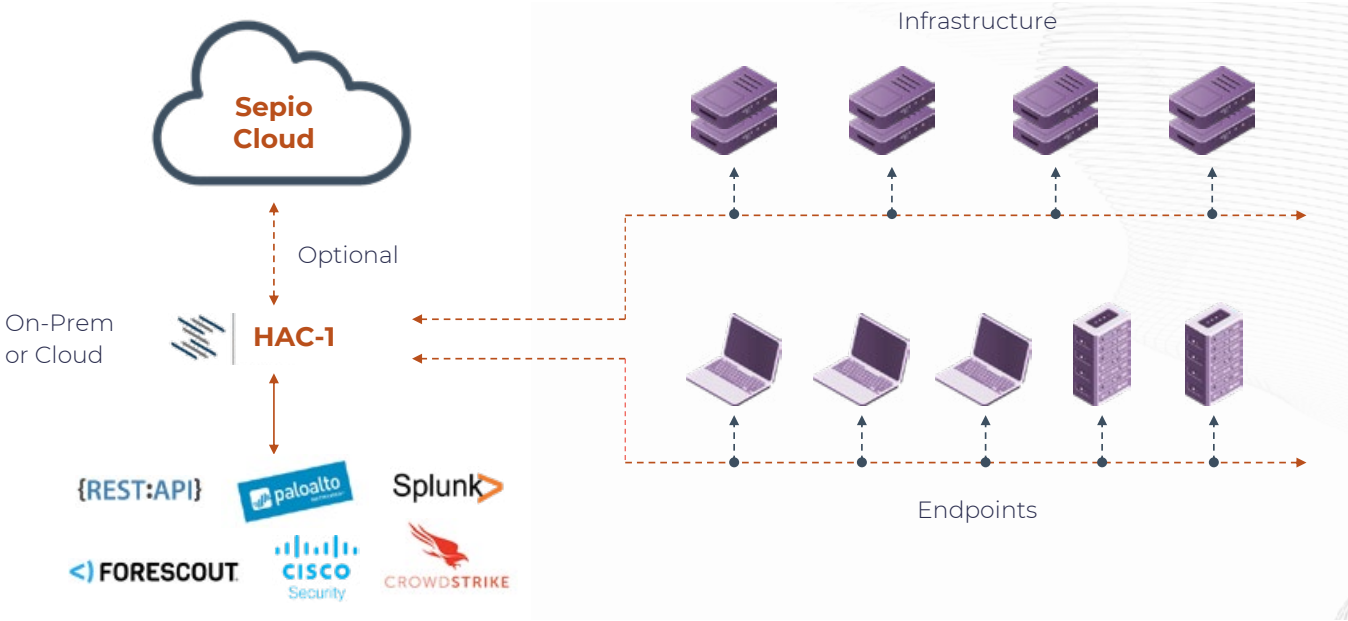
Main Benefits

Complete Visibility of all Hardware Assets: With all devices and anomalies detected, enterprises benefit from a greater overall cybersecurity posture. Gaining full visibility of all hardware devices from endpoint peripherals to connected devices (IT/OT/IoT), Sepio uses unique physical layer hardware fingerprinting technology and data augmentation from endpoints and networks.

Full Control through Predefined Policies: Enterprise-wide policies enable compliance, regulation and best practices. With predefined templates and no baselining or whitelisting, and no requirement for a clean environment start, Sepio provides a fast and easy setup.

Rogue Device Mitigation (RDM): Threat mitigation upon discovery of rogue or threatening devices. Integrations with existing security platforms such as NACs and SOARs for mitigation and remediation enhancements.

System Architecture



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