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SaaS-Based Applications:
What You Need to Know

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Many software providers offer their users access to applications online via a subscription. This offering, known as Software as a Service (SaaS), allows software providers to manage all the physical resources needed to run the application, and to push out feature and maintenance updates, with no action required by users. The applications are typically hosted in the cloud, and users access them through a web browser or mobile device app. Examples of popular SaaS companies include Adobe, Microsoft, Netflix, Slack, Spotify, and Zoom.

Several digital forensics tools are now available as SaaS based applications. While these applications offer many benefits, there are several factors to consider, from a digital forensics practitioner's perspective.

WHO'S IN CONTROL?!

SaaS based applications take away the burden from users, of having to perform product updates. With non-SaaS-based applications, users can choose whether to perform an update. Regarding updates – some may be critical and may affect the features or functionality of an application. While updates are beneficial, they may also be detrimental; for example, an update may cause an unexpected issue, requiring the software provider to apply a patch.

It is also important to know when the software providers will perform updates or scheduled maintenance; during this time, the SaaS application may be unavailable to users. While notifications about these activities may be sent to users, it may pose a challenge if an urgent data collection request is received during this time. In such a scenario, the digital forensics practitioner should have an alternative data collection tool available.

SaaS-based applications must be accessed via the Internet. The digital forensics practitioner must take into consideration the amount of time that data collection may take to complete. The amount of time is dependent on several factors, including the hardware/software running on the device accessing the application, the hardware/software running on the source device, the storage location for the collected data (whether it is local or in the cloud), and the speed of the internet connection.

WHERE'S MY DATA?!

When you think of traditional forensic data collections, forensic hardware devices, such as physical write-blockers and Faraday bags, may come to mind. These products prevent any writes to the source device, preserving the integrity of data stored on the device. SaaS-based digital forensic tools require the digital forensics practitioner to interact with the source device, while it is connected to the Internet. Depending on the tool, this interaction may impact the integrity of the data on the source device; an important factor that the digital forensics practitioner must consider when deciding whether to use a SaaS-based application.

Data security is a major concern today, with people being more aware and sensitive to it. When a digital forensics practitioner decides whether to use a SaaS-based digital forensics tool, they must consider where the collected data will be stored, especially if it will be in the cloud. The parties involved may not feel comfortable with their data being stored in the cloud. If local storage of collected data is not an option using the SaaS-based application, the digital forensics practitioner may need to leverage an alternative data collection method, where local target media can be leveraged.

EMBRACE INNOVATION?

We live in a technological age, and we must all decide what innovations to embrace. As software providers have shifted from offering on-premises solutions to those hosted in the cloud, the digital forensics practitioner must weigh the various pros and cons of using SaaS-based applications, especially for performing investigations.

It is important to remember the following:

- SaaS applications are accessed via the Internet;

- They interact with the source device, which may impact the integrity of the data on the device;

- Users do not have control of updates or maintenance schedules;

- Data may be stored in the cloud. **PI**

Robert B. Fried has over 22 years of experience collecting data and investigating electronic evidence. Robert's background includes senior leadership positions in the digital forensics practices of global professional services firms. Robert was a Computer Crime Specialist at the National White Collar Crime Center (NW3C), where he developed and instructed computer forensic and investigative training courses for federal, state, and local law enforcement agencies. Robert attained a BS and MS in Forensic Science, and certificates in Law Enforcement Science, Computer Forensic Investigation, and Information Protection and Security from the University of New Haven. He holds and actively maintains the following industry certifications: ACE, CFCE, EnCE, GCFA, and C4 CBP. Robert is a licensed PI in Michigan, New York, and South Carolina. Robert serves on the Board of Advisors for the Masters in Investigations program at the University of New Haven, and the Global Advisory Board for EC-Council's CHFI certification. Robert is a frequent speaker at industry events, a featured guest on industry podcasts and has been published in several professional publications. He is an author of PI Magazine's *Cybersleuthing Department, where he shares insightful content on topics relating to digital forensics, eDiscovery, data privacy, and cybersecurity. Robert is also the author of the books,* Forensic Data Collections 2.0: The Guide for Defensible & Efficient Processes *(2022),* Forensic Data Collections 2.0: A Selection of Trusted Digital Forensics Content *(2023) and* Forensic Data Collections 2.0: A Selection of Trusted Digital Forensics Content: Second Edition *(2024).*