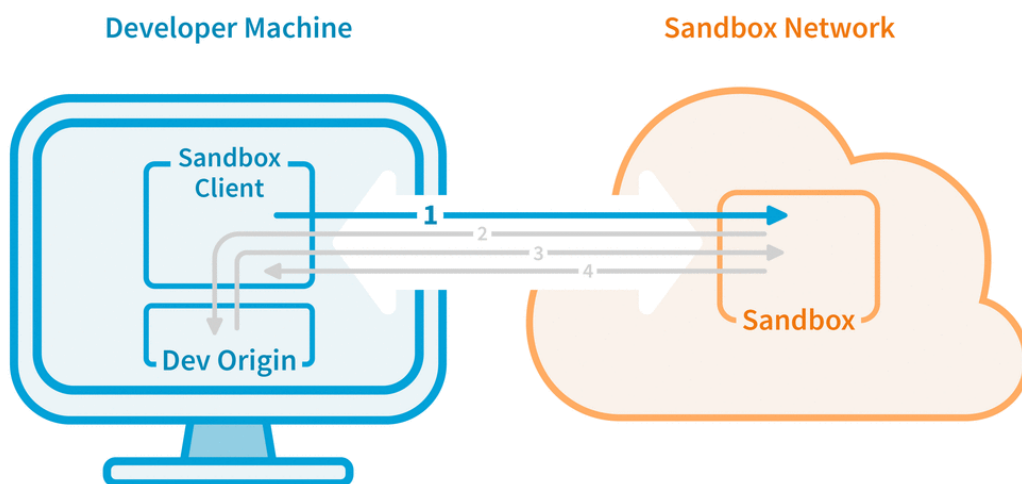# Sandboxing

I. What is sandbox ?

Sandbox is a security mechanism for separating running programs in a isolated enviroment, usually in an effort to mitigate system failures or software vulnerabilities from spreading. It is often used to execute untested or untrusted programs or code, possibly from unverified or untrusted third parties, suppliers, users or websites, witgout risking harm to the host machine or computer OS.

A sandbox typically provides a tightly controlled set of resources for guest programs to run in. Network access, the ability to inspect the host system or read from input devices are usually disallowed or heavily restricted.

II. How does a sandbox work ?

Regardless of how a sandbox is be used, every environment has a few basic features:

- Emulation of an actual device. This could be emulation of a desktop or mobile device. In either case, the application being tested must have access to the same resources as the code being analyzed, including CPU, memory and storage.
- Emulation of the target operating system. Using a virtual machine, the application must have access to the operating system. With a virtual machine, the sandbox is isolated from the underlying physical hardware but has access to the installed operating system.
- Virtualized environment. Usually, a sandbox is on a virtual machine so that it has no access to physical resources but can access virtualized hardware.
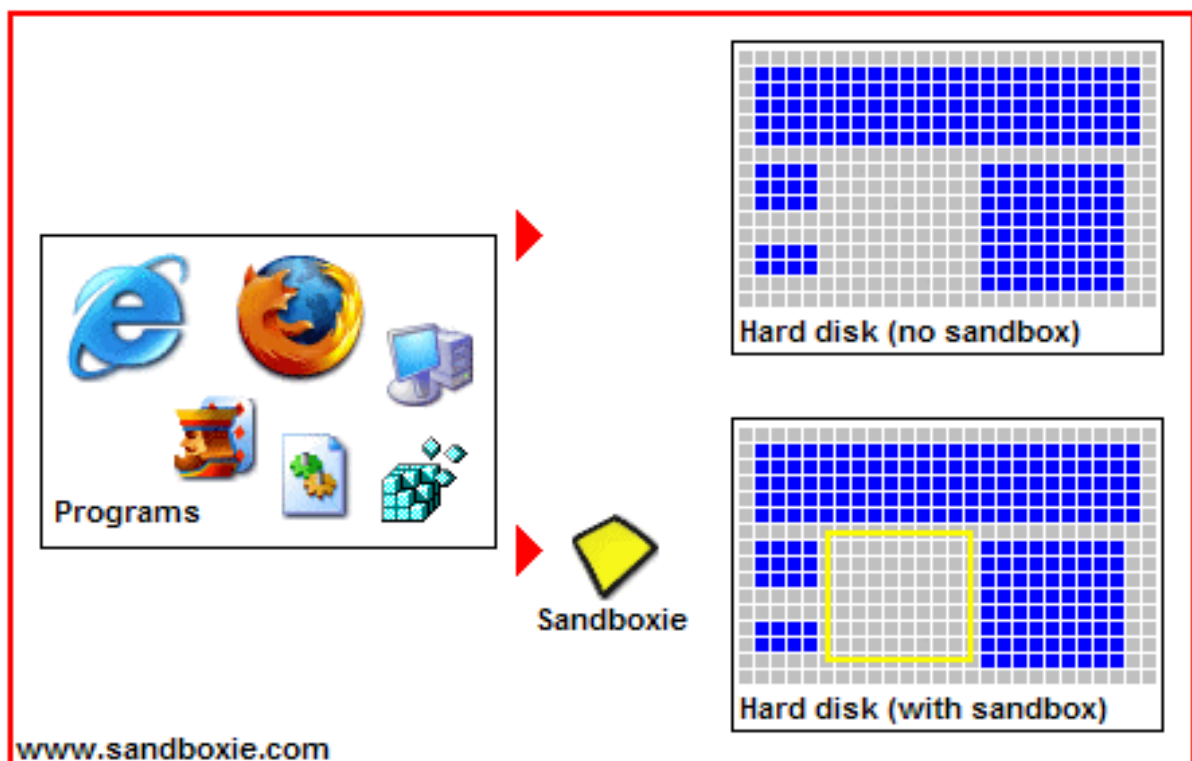
II. Types of Sandbox

Normally , there are four types of sandbox:

- **Developer Sandbox**

Developer sandboxes are special configuration sandboxes intended for coding and testing by a single developer. Multiple users can log into a single Developer sandbox, but their primary purpose is to provide an environment in which changes under active development can be isolated until they're ready to be shared.

- **Developer Pro sandbox**

  The main difference between this and Developer is the amount of data that can be stored.

- **Partical Copy Sandbox**

  Partial Data sandboxes include all of your organization's metadata and add a selected amount of your production organization's data that you define using a sandbox template. A Partial Data sandbox is a Developer sandbox plus the data you define in a sandbox template. It includes the reports, dashboards, price books, products, apps, and customizations under Setup (including all of your metadata).

- **Full Sandbox**

  Full sandboxes copy your entire production organization and all its data, including standard and custom object records, documents, and attachments. You can refresh a Full sandbox every 29 days.

IV. Reference

https://stackoverflow.com/questions/2126174/what-is-sandboxing

https://www.proofpoint.com/us/threat-reference/sandbox

https://learn.akamai.com/en-us/webhelp/sandbox/sandbox-user-guide/GUID-1660CF17-73A4-4F3C-8808-FBA49393ED49.html