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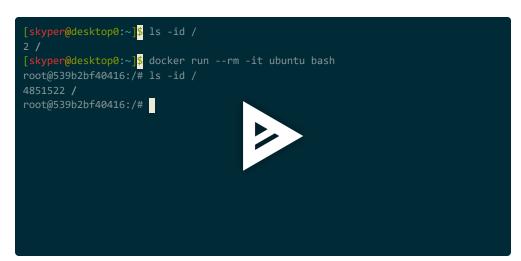
Detect whether you are inside a container or not

27 Jul 2023

Container technologies (chroot, LXC, ...) are very common these days, especially since the massive adoption of Docker.

One of the use cases of container technologies is to isolate services from each others and from the host system. As a result, in case of an intrusion, the attacker would be in theory trapped inside a container. From the attacker's perspective, it is important to be able to detect if a compromised service lives in a restricted environment such as a Docker container or if it runs directly on the host operating system.

One way to do so is to have a look at the inode of the mount point (ls -id). On the host system it will be very low (generally 1 or 2) whereas in a container it will generally be quite high (4851522 in the asciicast):



Recorded with asciinema

On Linux, one of the underlying mechanisms commonly used to create a container is cgroups. The /proc/1/cgroup virtual file will give you the control groups of the init process which are generally / for the majority of the controllers by default. However, if you have a look at /proc/1/cgroup from the inside of a container, the result is likely to be different as you can see:

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```
[skyper@desktop0:~]$ cat /proc/1/cgroup
11:rdma:/
10:cpu,cpuacct:/
9:pids:/
8:freezer:/
7:memory:/
6:net_cls,net_prio:/
5:devices:/
4:perf_event:/
3:cpuset:/
```

When containers are created by a Docker Engine, this last one adds a /.dockerenv file into them. The presence of this file is even used to this date by some underlying components of the Moby project for the exact same purpose, knowing if they run inside a container:

Security SysAdmin

Container Docker