**Interview Question: Containers**

*When is it appropriate to use containers in cloud deployments, and what are the security benefits of doing so?*

Certainly there are scenarios which warrant the use of containers in cloud computing, and if I am understanding correctly, we are also looking for security benefits of doing so.

One of my cybersecurity projects was to generate a live ELK deployment on azure. In this project, I used an Ansible container to build docker images and orchestrate containers using Ansible playbooks. The Ansible container was an incredibly simple IT automation system. In this particular project, I used Ansible for purposes of configuration management, task execution, and automation.

We have to recognize that containers are very useful when we need them to virtualize a single application. As such, it also provides an isolation level where any process run inside the container will only affect that container and not the entire VM. In a sense, a container can be interpreted as a bare-bones “lite” version of a virtual machine. For my purposes, a container provided a faster and less-resource intensive alternative. I was using a personal laptop for this project. I had to allocate my computing power efficiently.

Due to the nature of containers, some security benefits include transparency and smaller attack surfaces. In terms of transparency, virtual machines are simple in relative terms. It is easy to inspect a container image. Inspecting virtual machines would be more challenging. Containers present smaller attack surfaces because we only need to secure the host and the application running inside the container.

We talked about the advantages of using containers earlier. Certainly there are some disadvantages we have to mention. Firstly, not all applications benefit from containers. Those that are designed to run as a set of discreet microservers have the most to gain. Additionally, containers may not always run at optimal speeds. They are subject to performance overhead from interfacing between containers and host.