**DevOps Assignment** 

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**Section:** B

1) Comparison between hypervisor and docker

An open platform for creating, distributing, and running programs is Docker. You may divide your apps from your infrastructure with the help of Docker, allowing for rapid software delivery. You can manage your infrastructure using Docker in the same

manner that you manage your applications.

Software that builds and manages virtual machines is called a hypervisor, also referred to as a virtual machine monitor or VMM. By essentially sharing its resources, such as memory and computation, a hypervisor enables a single host computer to

handle numerous guest virtual machines.

Functioning Mechanism

There are two sorts of hypervisors:

type one works on the hardware itself, while typetwo runs on top of the operating

system.

Conversely, Docker operates directly on the host kernel. As a result, the user cannot

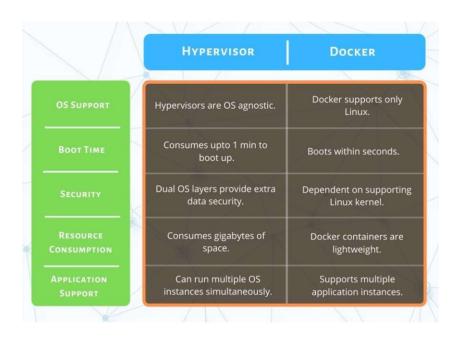
build several instances of the same operating system. Instead, they build containers

that serve as user-interactive virtual application environments.

## **Number of Application Instances Supported**

A hypervisor allows the users to generate multiple instances of complete operating systems. Dockers can run multiple applications or multiple instances of a single application. It does this with containers. Users can run several instances of whole operating systems thanks to hypervisors. They become resource poor as a result. On the shared hardware that the hypervisor allots at boot, they require specific resources for each instance.

However, there are no similar requirements for Dockers. As many containers as are required can be made. The amount of processing power made available to the containers by Docker depends on the requirements of the application and its availability.



#### **Boot time**

Containers can be created rapidly to get started thanks to Dockers' lack of need for such resource allocations.

The fact that Dockers and containers may be set up in a matter of seconds is one of the main factors contributing to their growing popularity.

It could take a hypervisor up to a minute to start the OS and function.

Users can start using Docker right away and containers can be created in just a few seconds.

# 2) Comparison between Containers and Virtual machines

### **Container:**

It is supported by its host operating system and a physical server. They share an operating system that needs maintenance and upkeep in order to receive bug updates and patches. When compared to virtual machines, they are more agile and very portable.

### **Virtual Machine:**

It functions on top of the hypervisor, a piece of software that serves as an intermediary between the hardware and the virtual computer. The hypervisor is essential for making virtualization possible. It controls how physical resources are distributed among virtual computers. Each virtual machine has a unique guest operating system running on it. They are less mobile than containers and less agile.

Containers	Virtual Machines (VM)
A container is a software that allows	VM is piece of software that allows you
different functionalities of an	to install other software inside of it so
application independently.	you basically control it virtually as
	opposed to installing the software
	directly on the computer.
Applications running in a container	Applications running on VM system
environment share a single OS.	can run different OS.
Containers virtualize the operating	VM virtualizes the computer system.
system only.	
Containers take a few seconds to run.	VM takes minutes to run, due to large
	size.
Containers are useful when we are	VM's are useful when we require all of
required to maximise the running	OS resources to run various
applications using minimal servers.	applications.
Size of container is very light, i.e. a few	VM size is very large.
megabytes.	
Examples of containers are: Rancher	Examples of VM are: KVM, Xen,
OS, Photon OS, Containers by Docker.	VMware.