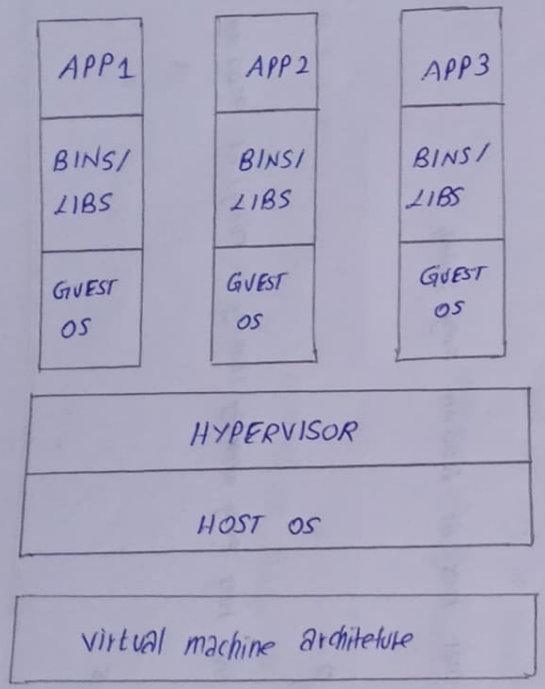
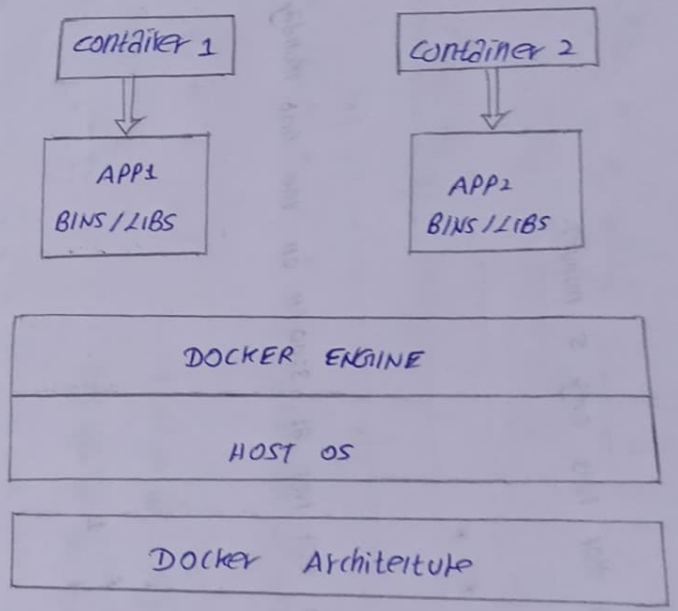
23.01.2025

VMware VS Docker



VMware



Docker

VMware vs Docker:

Hypervisor (VMware):

Resource Allocation: Hosting multiple features of an application on seperate instances (microservices) requires a high-capacity system.

Example: on a local machine (laptop), installing three os's like Linux, windows and ubuntu would each consume around 2GB RAM, making it heavy weight.

Isolation: Provides strong isolation by running each os in a seperate VM, but it's resource-intensive since each VM includes a full os instance.

Advantage: Run any os within a vmware virtual machine, regardless of the host.

Docker:

Lightweight: In contrast, Docker containers are lightweight and boot quickly, consuming far fewer resources.

Even a full os in a Docker container might only take about 150 MB.

Dependency management: Docker is ideal for microservices. For instance, a bank application with features like savings, loans and fixed deposits can run each feature in seperate containers, each with different dependencies (Java17, Java20 and Java19 respectively)

Efficiency: containers share the host os kernel, avoiding the need to install seperate os instances.

This reduces resource consumption.

Isolation & security: containers won't conflit with each other and maintain security without direct contact with the host server, taking up no extra storage space or RAM on the host.

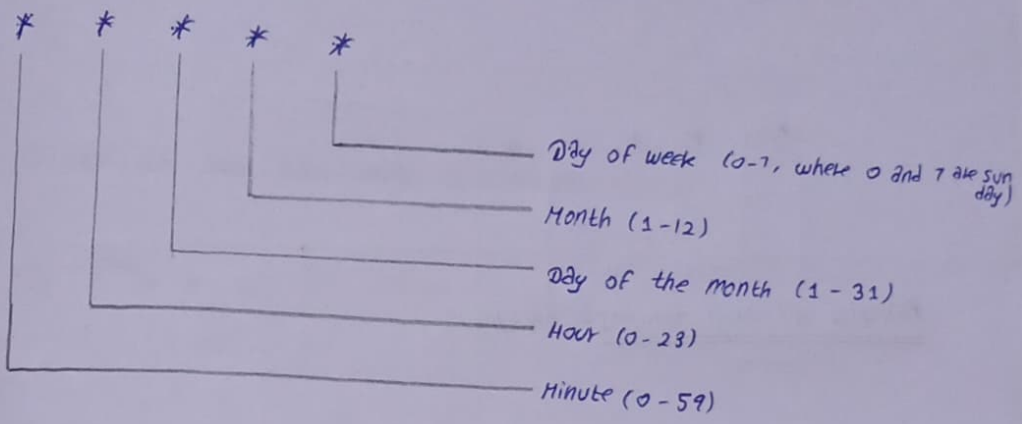
Disadvantage: Docker containers are usually restricted to the same operating system family as the host.

For example: If our host is Linux, we generally can't run windows containers directly.

21.01.2025

Crontab

Structure of cron job:



* * * * *

→ This means every minute, every hour, every day of the month, Every month, Every day of the week.

Example of cron timings:

1. Run at 5 minutes past every hour:

5 * * * *

2. Run every day at 2:30 AM:

30 2 * * *

3. Run every sunday at midnight:

0 0 * * 0

4. Run every 10 minutes:

*/10 * * * *

Examples of cron timings: (Practice)

1. 30 14 * * * = 2:30 PM of every day.

2. 0 9 * * 1-5 = 9:00 AM of, Monday to Friday (weekdays), every day of the month, and every month.

3. 15 18 1 * * = 6:15 AM on 1st day of every month, regardless of day of the week

4. */10 * * * * = will run every 10 minute of every hour, regardless of day, month or date

5. 0 0 1 1 * = 12:00 AM on January 1st every year.

6. write the cron job that runs at 8:00 AM on the 15th of every month.

Ans: 0 8 15 * *

7. write a cron job that runs every 5 minutes.

Ans: */5 * * * *

8. write the cron job that runs at 3:00 PM on the first monday of every month.

Ans: 0 15 * * 1

9. write the cron job that runs at midnight on the last day of every month.

Ans: 0 0 28-31 * * ["$(date +\%d -d tomorrow)" == "01"] && comand

10. write a cron job that runs at 6:00 AM every sunday.

Ans: 0 6 * * 0

11. write a cron job that runs every weekday (Monday to Friday) at 9:00 AM.

Ans: 0 9 * * 1-5