What is docker?

docker is a platform for building ,running and shipping applications in a consistent manner, so if your application works on your developer machine, it can run or function on other machines.

If you have been developing software for a while, you probably come across a problem that your application works on your developer machine but doesn’t somewhere else.

It happens because of three reasons:

1.] If one or more files missing.-it happens if one or more files are not included us part of deployment so your application not completely deployed.it missing something.

2.] Software version mismatch. : - it also happen if the target machines running a different version of some software that your application needs. Let’s say your application needs node 14 but the target machine running on node 9.

3.] Different configuration settings. :- it can also happens if the configuration settings like environment variables are different across this machine.

And that’s why Docker come to rescue. With docker we can easily Package our application with everything it needs and running anywhere on any machine with docker.

Container: - is an isolated environment for running an application.

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| Container | Virtual machine |
| Container is an isolated environment for running an application. | Virtual machine is an abstraction of a machine(physical hardware) |
| Allow multiple applications in isolation | Each VM needs a full copy of an OS that needs to be licensed ,patched and monitored |
| They are more lightweight.they don’t neeed a full OS. In fact all containers on a single machine share the OS of the host .so that means we need to be licensed ,patched and monitored single OS | And that’s why these VM are slow to start because the entire OS is to be loaded just likes starting your computer |
| Containers are star quickly usually in seconds sometimes less | Another problem is that each VM is resource intensive. |
| These containers don’t need a slice of the hardware resources on the host so we don’t need to give them a specific number of CPU cores or a slice of memory or a disk space |  |
| So on a single host we can run10 or even 100s of containers side by side |  |
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Docker Architecture

REST API

Docker architecture