DOCKER

1. What is virtualization?
2. What are the limitations of virtualization?
3. What is containerization?
4. What is docker?
5. What are the underlying technologies of docker?
6. Difference between docker engine and docker desktop.
7. What are the components of docker engine?
8. ---
9. Explain in detail the docker container creation workflow.
10. How to access docker application from outside docker host machine?
    1. port forwarding (docker\_host\_machine\_ip:port\_no -> docker\_container\_ip:application\_port\_no)
11. What are different container restart policies?
    1. https://stackoverflow.com/questions/61725195/difference-in-docker-restart-policy-between-on-failure-and-unless-stopped
12. What are some important docker container commands?
    1. docker container run / create / start / stop / rm / exec / inspect
13. ---
14. What is a registry? What is docker hub?
15. What is a docker image?
16. Explain the architecture of docker image and container.
17. What are the different types of docker images?
    1. based on privacy - private, public
    2. based on trust - docker official, verified publisher, sponsored oss
18. Explain how docker pull works in detail.
19. Explain how docker push works in detail.
    1. docker login / logout
20. How will you share images in docker hub?
    1. https://stackoverflow.com/questions/49976188/copy-docker-image-between-repositories
21. What are some important docker image commands?
    1. docker image pull / push / ls / history / build / inspect
22. Why we need to build custom images?
    1. custom requirements
23. What is the process of building a custom image?
    1. using dockerfile
24. What are the different dockerfile parameters? Explain the functionality of each one of them.
    1. FROM, ENV …
25. Which parameters can be present in the first line of dockerfile?
    1. FROM, ARG
26. What is the difference between ENV and ARG?
27. How to choose right base image for custom image?
    1. size
    2. requirements
28. ---
29. What are the different storage types in docker engine? Explain the properties and uses of each one of them.
    1. volume mount
    2. bind mount
    3. tmpfs
    4. external storage linked to volume mount
30. What are some important docker volume commands?
    1. docker volume ls / inspect
31. ---
32. What are different supported network types in docker engine?
33. Explain the architecture of default bridge + user defined bridge network.
34. Can a default bridge network talk to a different user defined bridge network?
    1. by default, no
    2. to enable communication, use either docker connect command or modify iptables
35. Explain the architecture of host network.
36. Explain the architecture of none network.
37. Explain the architecture of overlay network and how two docker containers present in two different docker host machines can talk to each other?
38. What are some important docker network commands?
39. ---
40. How will you change the default docker root directory?
    1. first create a new folder to which you want to change. copy existing root directory contents to this new folder created. give this new folder path in /etc/docker/daemon.json with key as ‘data-root’. do all this after stopping docker service.
41. How to change default bridge network cidr?
    1. need to insert the new cidr range in /etc/docker/daemon.json file with key as ‘bip’. docker service needs to be stopped and then started after doing this change. all containers need to be deleted and created again, so backup of all containers need to be taken.
42. How to make custom network as default bridge network?
    1. first create a custom network using ip commands (and not using docker network create). once new custom network is created, add that network info in /etc/docker/daemon.json file with ‘bridge’ as key.
43. What are links and why we use them?
    1. used for container to container communication using names (which is still available in default bridge network).
    2. while creating a container, use --link container\_name:alias
44. How will you limit resources to your docker container?
    1. by default, a docker container can use full cpu, memory available in the host machine. to share resources among multiple containers, we need to limit resources that a particular container can use. we can use docker container update command with proper options to set the limits.
45. ---
46. What are the advantages of having an UI to handle docker environments?
47. ---
48. What are the challenges in using plain docker engine?
49. What is docker compose? Why we use it?
50. What are docker compose file parameters?
51. ---

KUBERNETES

1. Explain kubernetes architecture in detail. Explain what are the components and what each of them does.
2. Explain the flow of instructions using above k8s architecture.