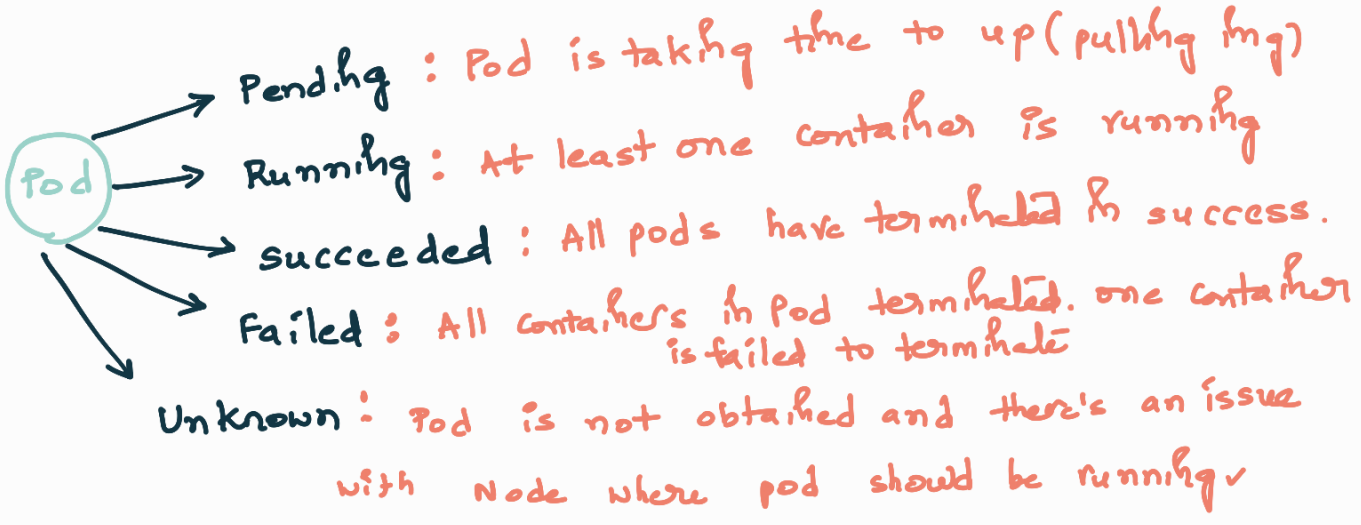
#KubernetesIn30Days challenge:-

#Day15:-

Pod Lifecycle

Pod phases:-



container states:-

After scheduler assigns a pod to a Node and kubelet starts creating container for that pod using container runtime. There three possible states of container. :

Waiting: The container neither started nor terminated. There is a process running that needs to be complete to bring container running state

Running: The Running status indicates that container running without any issues.

Terminated: The container in the terminated state begins execution and then either ran into completion

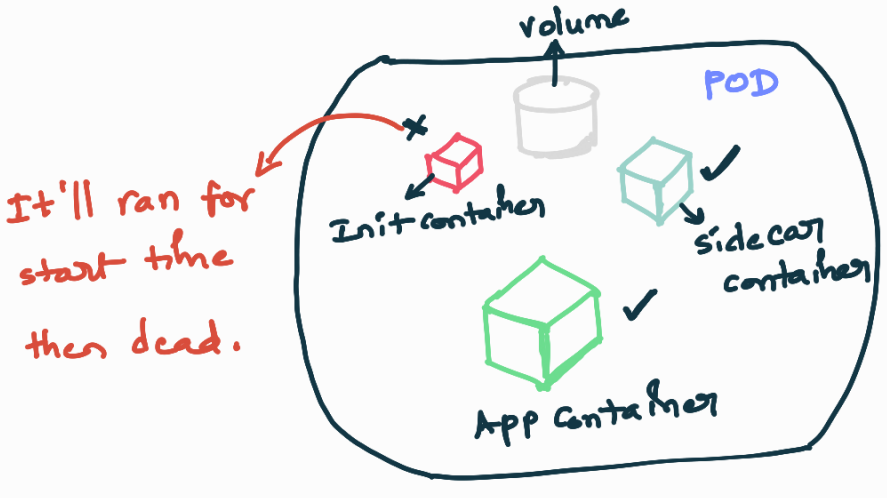
or failed for some reason.

Types of containers in a Pod :-

Init containers :- specialized containers that runs before app containers in a Pod. These containers can contain utilities/setup scripts not present on App container.

sidecar containers :- These are secondary containers that run along with the main application container within the same pod. These are used to enhance/extend the main functionality of App containers by providing additional services.

App containers :- The containers where actual Application image is running is the App container.



→ The Ideal use case would be one pod - one container but as mentioned we might have init/side car containers as and when required.

Pod conditions :-

PodScheduled : The Pod has been scheduled to a Node

PodReadyToStartContainers : The Pod sandbox has been successfully created and n/w configured. (beta feature)

ContainersReady : All containers in the Pod are ready.

Intialised : All init containers are completed successfully.

Ready : Pod is healthy to serve the request and should be added to LB pools of matching services.

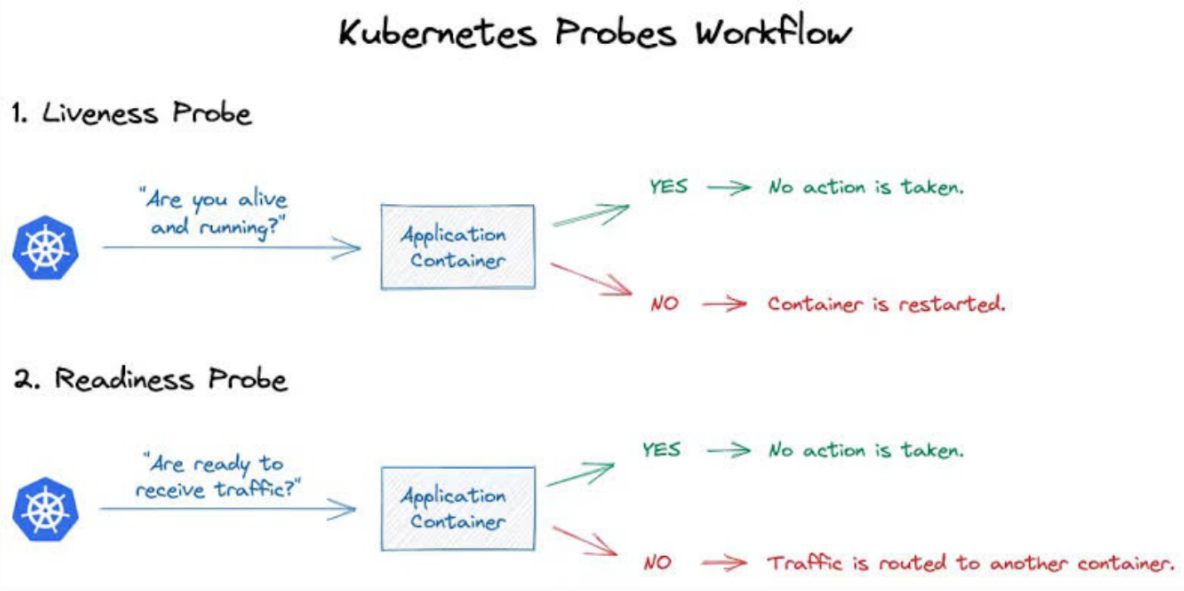
Types of Probes :-

liveness Probe :- Indicates whether Pod is running. if it fails, Kubelet kills the container and it is subjected to its restart policy. If container doesn't provide a liveness probe, the default state is success.

readiness Probe :- Indicates whether the pod is ready to respond to requests. If the readiness probe fails, the Endpoint controller removes the Pod's IP address from the end point of all services that matches the pod.

- Default state before intial delay is Failure.
- Default state if container doesn't provide a readiness probe is success.

startupProbe: Indicates whether the application within container is started. All other probes are disabled if a startup probe is provided, until it succeeds. If the startup probe is failed, Kubelet kills the container and container is subjected to restart policy. The default state is success.



3. Startup Probe :-

This is all about Pod's Lifecycle and different types of probes. For more details please visit Kubernetes official documentation.

Thanks for Reading

- Rajasekhar.