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POD

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POD is a smallest building block in the k8s cluster.

Application will be deployed as a pod in k8s.

We can create multiple pods for one application.

To create a POD we will use YML file (Manifest YML).

In POD manifest YML we will configure our Docker image.

If POD is damaged/crashed/deleted then k8s will create new pod

(self-healing)

If application running in multiple pods, then k8s will distribute the load to all running pods (Load Balancer).

PODS can be increased or decreased automatically based on the load (Scalability).

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K8S Services

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Service is used to expose PODS.

We have 3 types of services in k8s

1) Cluster IP

2) Node Port

3) Load Balancer

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What is Cluster IP ?

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POD is a short lived object.

When pod is crashed/damaged k8s will replace that with new pod

Whenever you crate a pod, one ip will be created automatically

But when POD is re-created IP will be changed.

Note: It is not recommended to access pods using POD IP.

Cluster IP service is used to link all PODS to single ip.

Cluster IP is a static ip to access pods

Using Cluster IP we can access pods only with in the cluster

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What is NodePort service?

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NodePort service is used to expose our pods outside the cluster.

Using NodePort we can access our application with Worker Node Public IP address.

When we use Node Public IP to access our pod then all requests will go same worker node

(burden will be increased on the node).

Note: To distribute load to multiple worker nodes we will use LBR service.

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What is Load Balancer Service?

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It is used to expose our pods outside cluster using AWS Load Balancer

When we access aws load balancer url, requests will be distributed to all pods running in all worker nodes.

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Namespaces

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Namespaces are used to group our resources

frontend-app-pods ===> frontend-app-ns

backend-app-pods ===> backend-app-ns

database-pods ===> database-ns