

# 04 Kubernetes Namespaces

## What are namespaces?

We use namespace to organize resources in namespaces. It is a virtual cluster inside a cluster.

4 Namespaces by default:

1. kube-system → contains system processes form master processes, kubectl processes, etc. Do not create or modify in kube-system
2. kube-public → publicly accessible data. A configmap, which contains cluster information.
3. kube-node-lease → It holds information about the heartbeats of nodes. Each node has associated lease object in namespace. It determines the availability of a node.
4. default → Resources you create are located here.

## What is the use of namespaces?

1. Just for managing all the resources. Eg: a namespace for databases, monitoring, logging, elastic stack, nginx ingress, etc.
2. Many teams, same application. So that teams don't overwrite each others deployments.
3. Resource Sharing: Staging and Development
4. Blue/Green Deployment: Versions of application differ, but use the same resources.
5. Access and Resource Limits on Namespaces

## Characteristic of Namespaces

1. Each NS must define own ConfigMap.
2. Components which can't be created within a NS: volume, node, etc. (as they live globally in a cluster, we can't isolate them)  
(use `kubectl api-resources --namespaces=false` to see all the non-namespaceable resources)