DEVOPS EASY LEARNING

S5GROUP5
BrainsCells
k8s object

scenario

1. **Scenario:** You want to grant a user the ability to manage resources across all namespaces. However, you want another user to have similar permissions but only within a specific namespace. Which Kubernetes object would you use in each case, and what is the main difference between them?
2. **Scenario:** You have a team of developers who need read and write access to a specific namespace. However, you also have an administrator who needs full control over the entire cluster. Which Kubernetes object would you use to grant the necessary permissions, and what is the difference between them?
3. **Scenario:** You have a Pod with two containers, one for your application and another for initialization tasks. Explain the purpose of the init container and how it differs from the main application container.
4. **Scenario:** You have a Kubernetes cluster with multiple applications running. You want to ensure fair allocation of resources among the applications. What Kubernetes object allows you to define resource requirements and limits for individual containers, and what is the significance of these specifications?
5. **Scenario:** You are deploying a database application in Kubernetes. You need to ensure that the data persists even if the Pod is restarted or rescheduled. Which Kubernetes object allows you to provide durable storage for your database, and how does it differ from ephemeral storage?
6. **Scenario:** You have container images stored in a private registry, and you want to ensure that Kubernetes can authenticate and pull these images when deploying your application. What Kubernetes object or mechanism is used to manage image pulling, and how does it handle authentication with private registries?

Hand-ons

During the meeting with the developer and manager at Ek-Software Solution, the requirements for the application were discussed as follows:

AFRICAS is an application that has been developed with by EK TECH to with main role to manage medical prescription of pharmacies in Africa. the application is made of a frontend (stateful service but no volume persistence or retention required) an api (stateless service) service then a backend service made of three databases the frontend service ia written in java that required to run a swagger file to make sure it is running correctly, the api service is written in go that required an npm health check command to make sure it is running correctly, the database are manage by third party and require sensitive and non-service data as information for authentication the minimum database storage required should be 2gi at least. applicate storage should be segregated from main volume. to guaranty high availability a minimum of three service for api and frontend is required. under no circumstance due to disruption should AFRICAS go down, also since pharmacies operate less at night in africa an automated. scaling technologies to reduce cost should be placed under the application. there is a special script that should run at a specific time daily to copy available prescription to a datacenter located in Bonaberie. Africas is an app also capable of collecting information from the cluster and should be capable to talk to the environment it has been deployed. limit AFRICAS permission only to its dedicated name space of the same name. Also the only people allow to perform any action on that app should be member of group devops. for security reason Africas should be exposed only to the browser via a dedicated proxy and service accessibility should only be restrain to the cluster.

What are the all the required object for this application to work.

GOOD JOB!!!

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