

Kubernetes Deployment and Service Setup

Creating Resources

1. Create the Deployment and Service

To create the Deployment and Service, you would use the `kubectl apply` command with the respective YAML files.

`kubectl apply -f deployment.yaml`

`kubectl apply -f service.yaml`

- `kubectl apply -f deployment.yaml` : This command creates or updates the Deployment defined in `deployment.yaml`.

- `kubectl apply -f service.yaml` : This command creates or updates the Service defined in `service.yaml`.

Updating Resources

2. Update the Deployment or Service

If you need to make changes to the Deployment or Service, you can edit the YAML files and then apply the changes using the same `kubectl apply` command.

`kubectl apply -f deployment.yaml`

`kubectl apply -f service.yaml`

- After editing the YAML files, re-run these commands to apply the updates.

3. Rolling Update for Deployment

If you update the Docker image or other configurations in the Deployment, Kubernetes will automatically perform a rolling update to ensure zero downtime.

`kubectl set image deployment/my-tools-deployment my-tools-container=my-tools:new-version`

- ``kubectl set image deployment/my-tools-deployment my-tools-container=my-tools:new-version`` : This command updates the image of the container in the Deployment to ``my-tools:new-version``.

Stopping Resources

4. Scale Down the Deployment

To stop the pods without deleting the Deployment, you can scale down the number of replicas to 0.

`kubectl scale deployment my-tools-deployment --replicas=0`

- ``kubectl scale deployment my-tools-deployment --replicas=0`` : This command scales down the Deployment to 0 replicas, effectively stopping all pods.

5. Delete the Deployment and Service

If you want to completely remove the Deployment and Service, you can use the ``kubectl delete`` command.

`kubectl delete -f deployment.yaml`

`kubectl delete -f service.yaml`

- ``kubectl delete -f deployment.yaml`` : This command deletes the Deployment defined in ``deployment.yaml``.

- ``kubectl delete -f service.yaml`` : This command deletes the Service defined in ``service.yaml``.

Checking the Status

6. Check the Status of the Deployment and Service

To check the status of your Deployment and Service, you can use the ``kubectl get`` command.

`kubectl get deployments`

`kubectl get services`

- ``kubectl get deployments`` : This command lists all Deployments in the current namespace.
- ``kubectl get services`` : This command lists all Services in the current namespace.

7. Describe the Deployment and Service

For detailed information about the Deployment and Service, you can use the ``kubectl describe`` command.

kubectl describe deployment my-tools-deployment

kubectl describe service my-tools-service

- ``kubectl describe deployment my-tools-deployment`` : This command provides detailed information about the specified Deployment.
- ``kubectl describe service my-tools-service`` : This command provides detailed information about the specified Service.

Summary

- **Create Resources:** ``kubectl apply -f <file>``
- **Update Resources:** Edit YAML and ``kubectl apply -f <file>``
- **Rolling Update:** ``kubectl set image deployment/<deployment-name> <container-name>=<new-image>``
- **Scale Down:** ``kubectl scale deployment <deployment-name> --replicas=0``
- **Delete Resources:** ``kubectl delete -f <file>``
- **Check Status:** ``kubectl get deployments`` and ``kubectl get services``
- **Describe Resources:** ``kubectl describe deployment <deployment-name>`` and ``kubectl describe service <service-name>``