TROUBLESHOOTING TECHNIQUES IN K8S

CRASHLOOPBACKOFF: it error indicates that will automatically starting, crash and then restart the pod again repeatedly.

1. check the logs of the pods : kubectl logs pod-name
2. describe the pod : kubectl describe pod pod-name
3. ENSURE THAT THE POD CONFIGURATIONS AND ENVIRONMENT VARIABLES ARE CORRECTLY SET.
4. Verify the entrypoint of a container
5. Ensure that there are no resource limitations preventing the pod from running.

IMAGEPULLBACKOFF: this error occurs when k8s cant able to pull image from registry (Dockerhub, ECR)

1. describe the pod : kubectl describe pod pod-name
2. Check The imagename of pod config file (YAML)
3. Check the secrets : kubectl get secret

PENDINGPODS: This error will occurs when a pod is in pending state when it is unable to schedule on to a node

10 pods (worker : t2.micro)

11th pod pending

if any pod was deleted from that 10 pods, then 11th pod will be created

1. describe the pod : kubectl describe pod pod-name
2. check the nodes : kubectl get no

NODENOTREADY: A node is in a NoTReady State when its unable to participate in the cluster

1. describe the node : kubectl describe node node-name
2. Review the node logs : kubectl logs node node-id

UNAUTHORIZED ERROR: This error indicates a failure in API Authentication

1. Check your credentials
2. describe the resource : kubectl describe resource resource-name
3. Check the RBAC policies
4. Check the service account tokens are valid or not
5. check the kubeconfig file configured correctly or not

FailedScheduling: This error occurs when the scheduler cant find any suitable node for a pod.

1. describe the pod : kubectl describe pod pod-name
2. check the resources of a pod (CPU, Memory)

OOMKILLED : This error will occur when a pod was killed itself because it exceeds the memory limits.

1. check the resources of pods
2. describe the pod
3. increase the pod memory limit
4. optimising the app to use less memory

ERROR CREATING LOADBALANCER: it error will occurs when k8s cant communicate with cloud provider.

1. describe the service : kubectl describe service service-name
2. check the IAM permissions on AWS account
3. Check the cloud provider integration configuration is successfully configured or not
4. Verify the service file annotations (YAML)

ContainerCreatingerror: this error will occurs when we didnt pass correct container configurations on yaml file

1. describe the pod : kubectl describe pod pod-name
2. check the container configurations on YAML file
3. Imagepull Issue check
4. Verify the node has sufficient resources or not
5. Ensure that there are no networking issues.