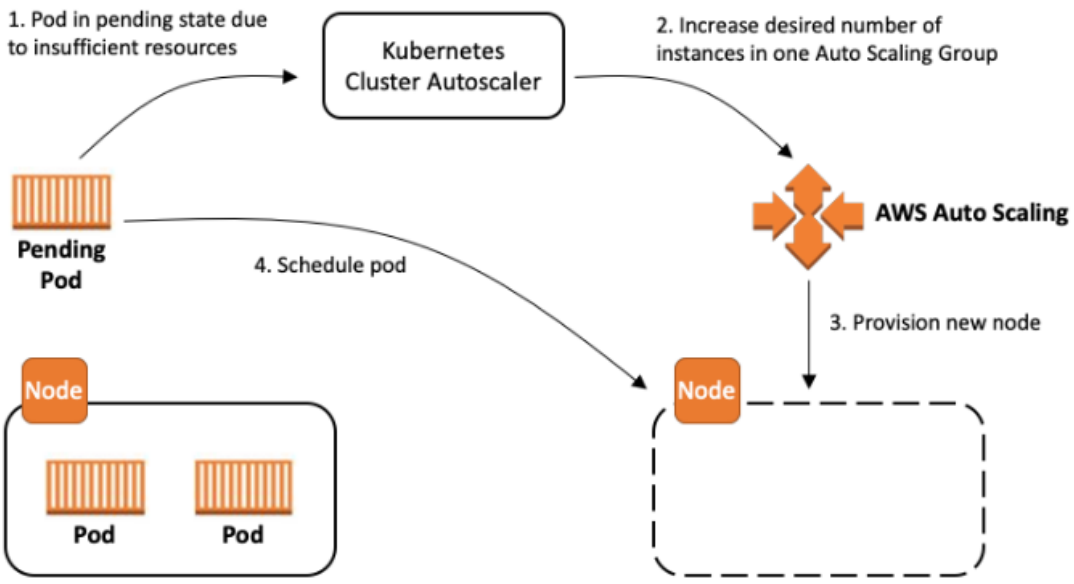
Cluster Autoscaler On EKS

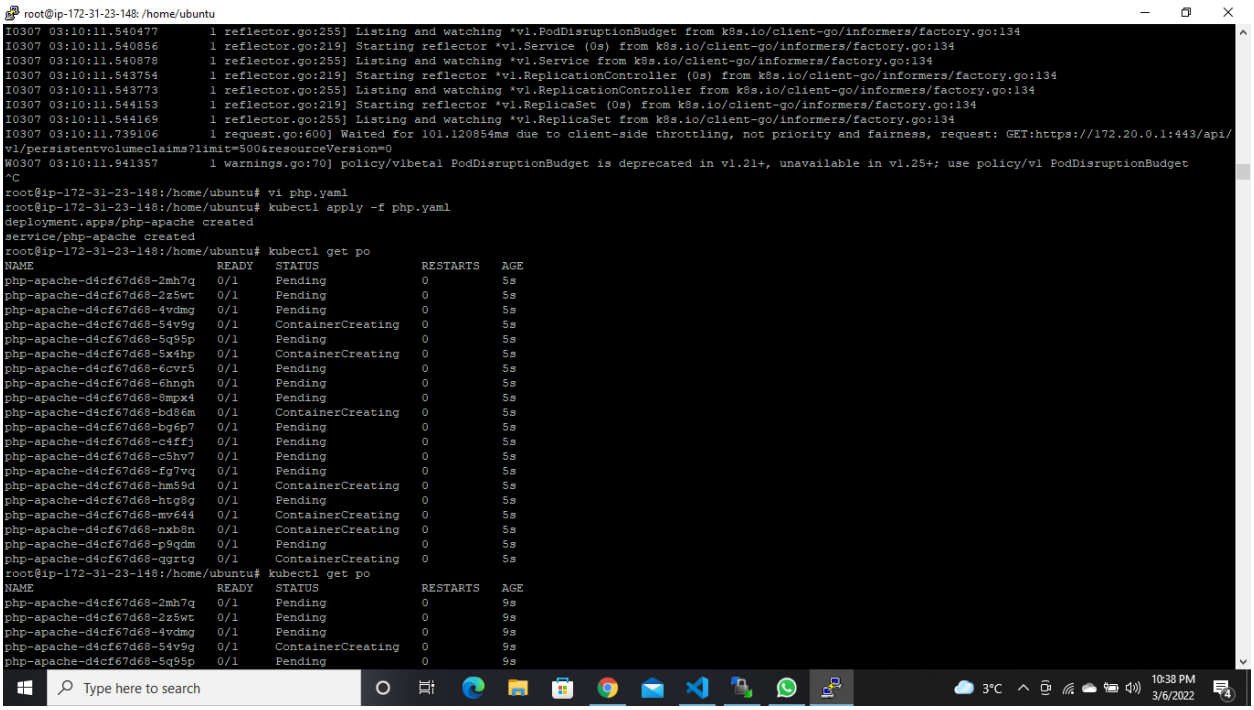
What is Cluster AutoScaler ?

The Kubernetes Cluster Autoscaler automatically adjusts the number of nodes in your cluster when pods fail or are rescheduled onto other nodes. The Cluster Autoscaler is typically installed as a Deployment in your cluster.

Architectural Diagram:



As shown in image below, I deployed a simple PHP application with replicas set as 20 which cannot be handled by a single node cluster. And for the same reason, pods are in pending state.

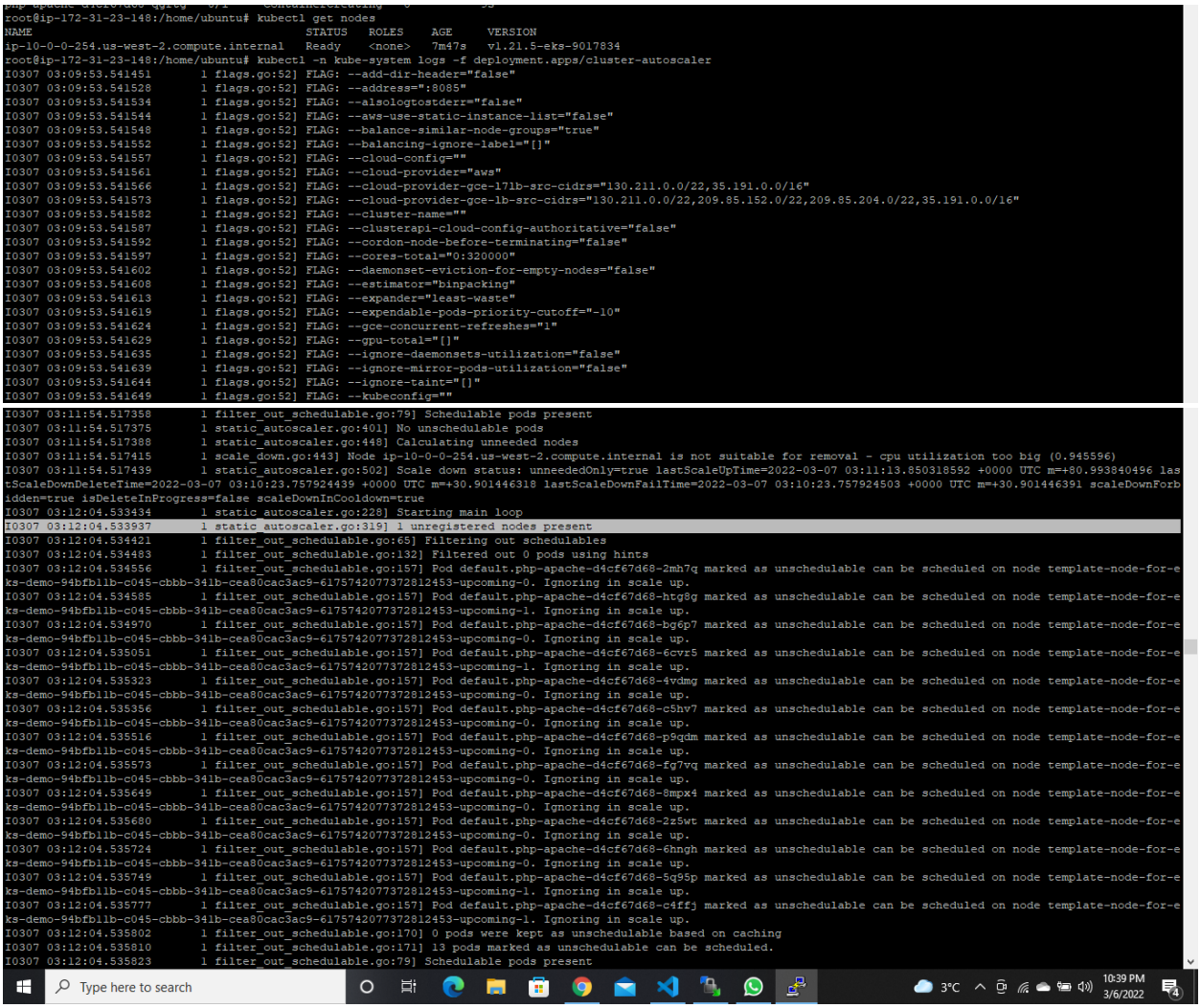


To deal with this, I have configured Cluster Autoscaler on AWS-EKS. So, when resources are not available to host the application, a new node will come up as per the requirements and configured in the Autoscaling group.
I have used the official AWS-EKS Cluster Autoscaler documentation to configure it in my environment.

Address: https://docs.aws.amazon.com/eks/latest/userguide/autoscaling.html

After the successful configuration of Cluster Autoscaler as per the official documentation. We can see that nodes are coming up automatically in the environment to handle the extra pods.

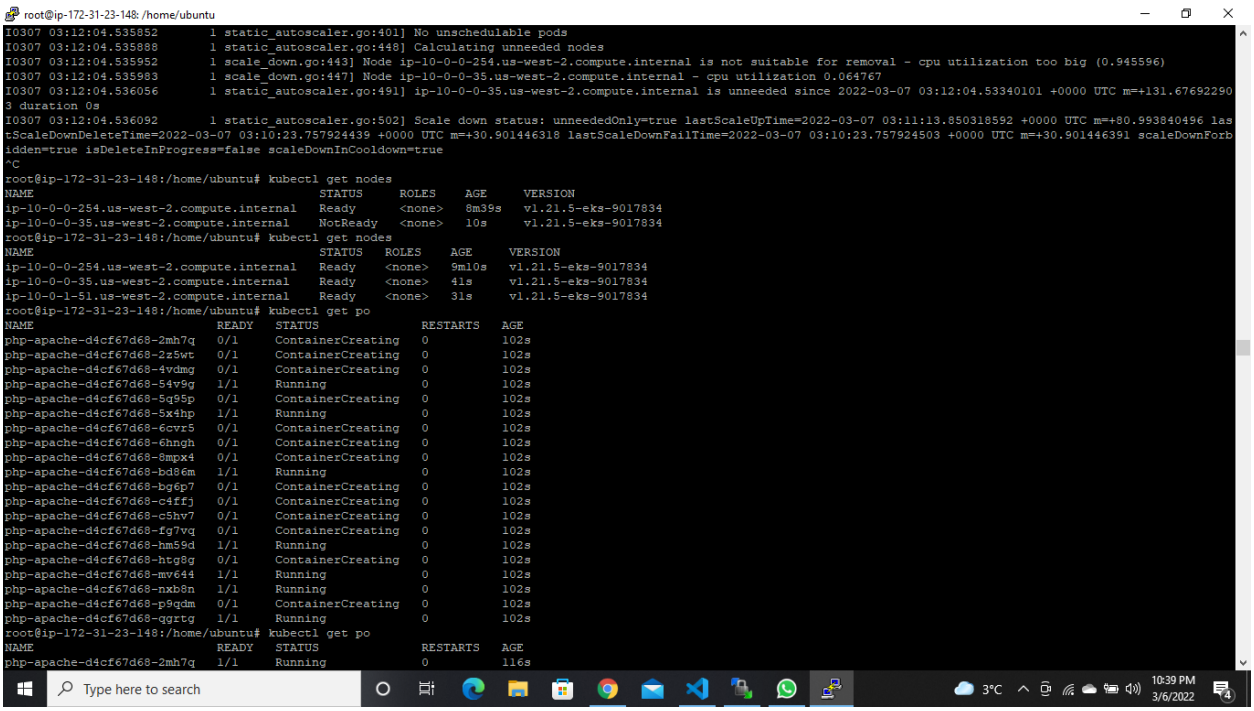
As shown in the images below, by keeping watch on the logs of Cluster Autoscaler deployment, we can see that new unregistered nodes are coming in.



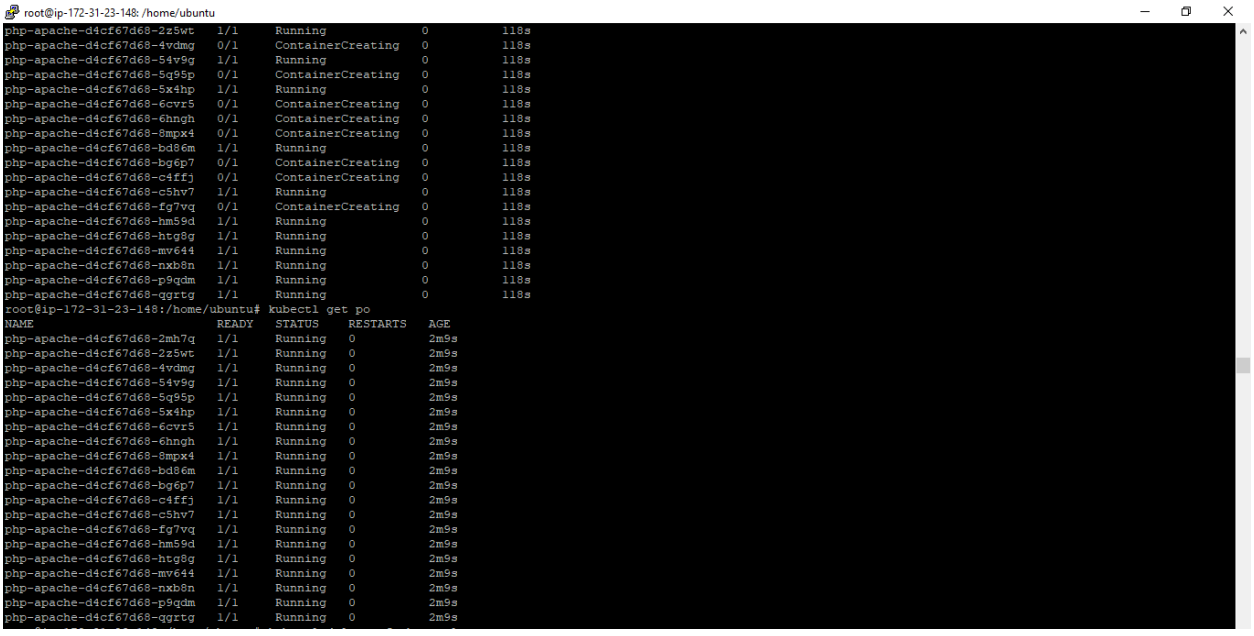
It can be clearly seen in the image below that 2 new nodes came up to host the pods in the cluster. Depicting our Cluster Autoscaler works fine.

These command will help us to keep watch on the nodes that are coming.

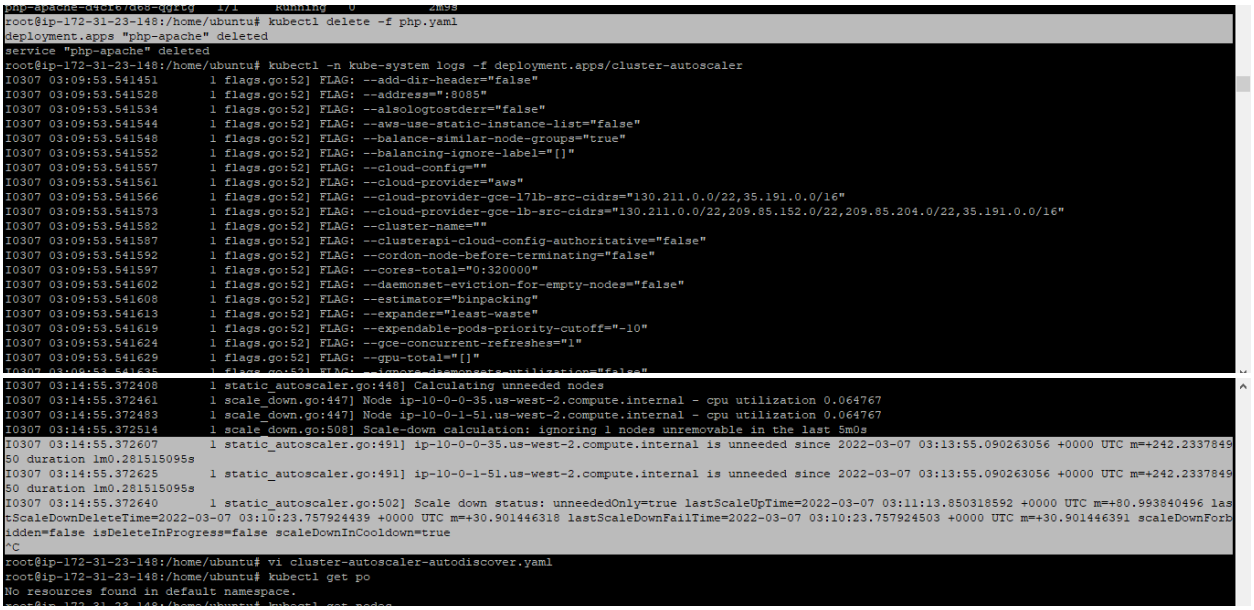
Command:
Kubectl logs -f deployment clusterautoscaler
Kubectl get nodes -w



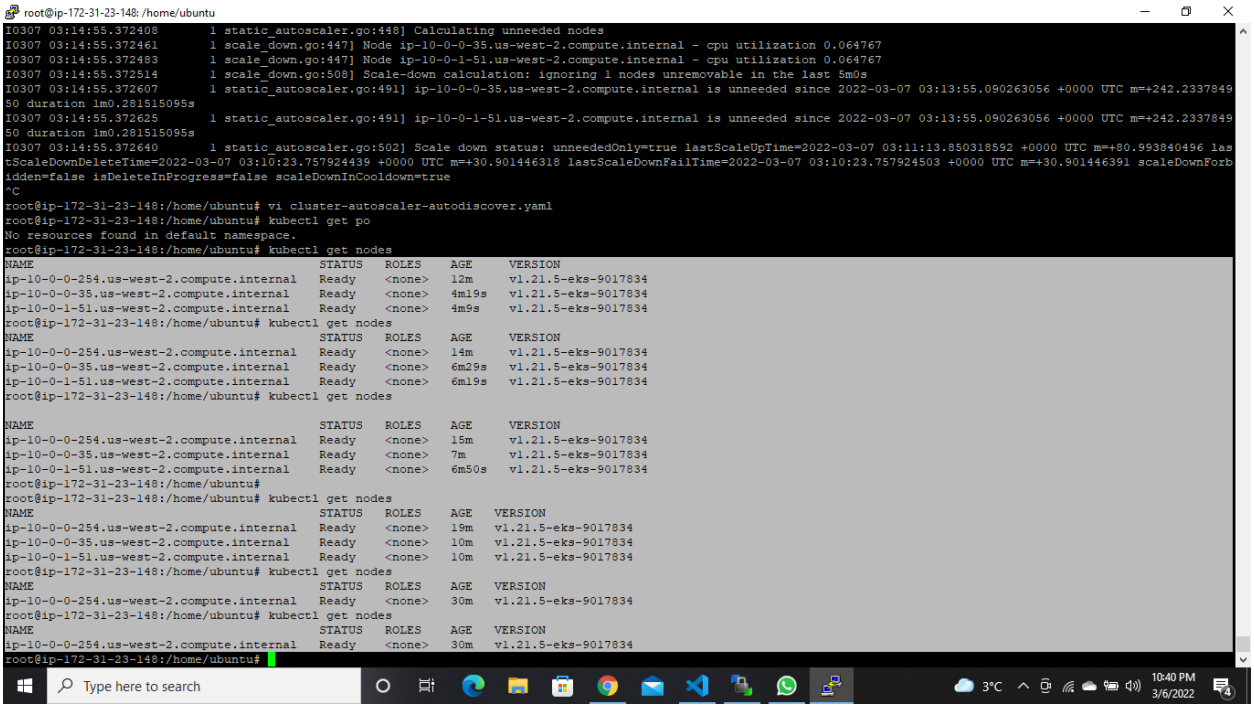
As the new nodes came in, pods which were in the pending state and didn't find enough resource are now scheduled on the new nodes and in running state.



As shown in the image below, what if we delete the deployment? Additional Nodes went down immediately or not? Answer to this is, yes, but by default additional nodes will wait for 20 minutes before shutting down their operation.



After some time, Nodes starts evicting as there is no requirement of additional nodes in the environment now.



As shown in the image, additional nodes are gone, and the node counts come to 1 from 3. Two additional nodes which were added by Cluster Autoscaler and adjusted back.

Thank you,
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