Kubernetes Updating Cluster

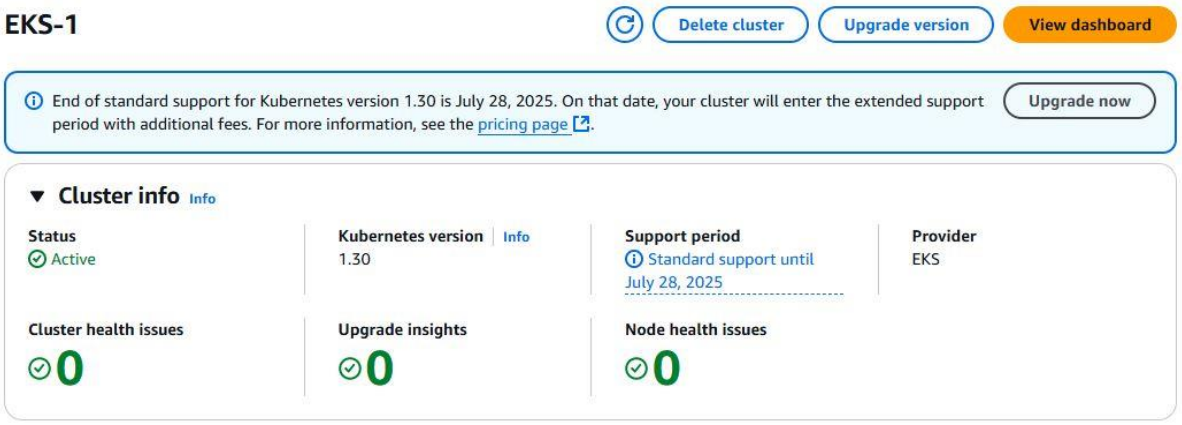
Scenario:

Updating the kubernetes cluster of the EKS v1.30 to v1.31 through the awscli without zero downtime.

Steps:

Step-1: Launched a ec2 instance at first and then with awscli completely setup the EKS cluster in the region eu-west-1 without node group.

```
eksctl create cluster --name=EKS-1 \
                      --region=eu-west-1 \
                      --zones=eu-west-1a,eu-west-1b \
                      --version=1.30 \
                      --without-nodegroup
```

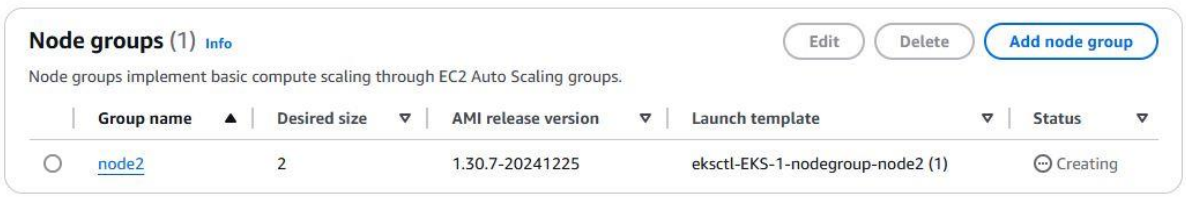


Step-2: Then by using iam-oidc provider to communicate cluster nodes, pods to remaining aws services.

```
eksctl utils associate-iam-oidc-provider \
    --region eu-west-1 \
    --cluster EKS-1 \
    --approve
```

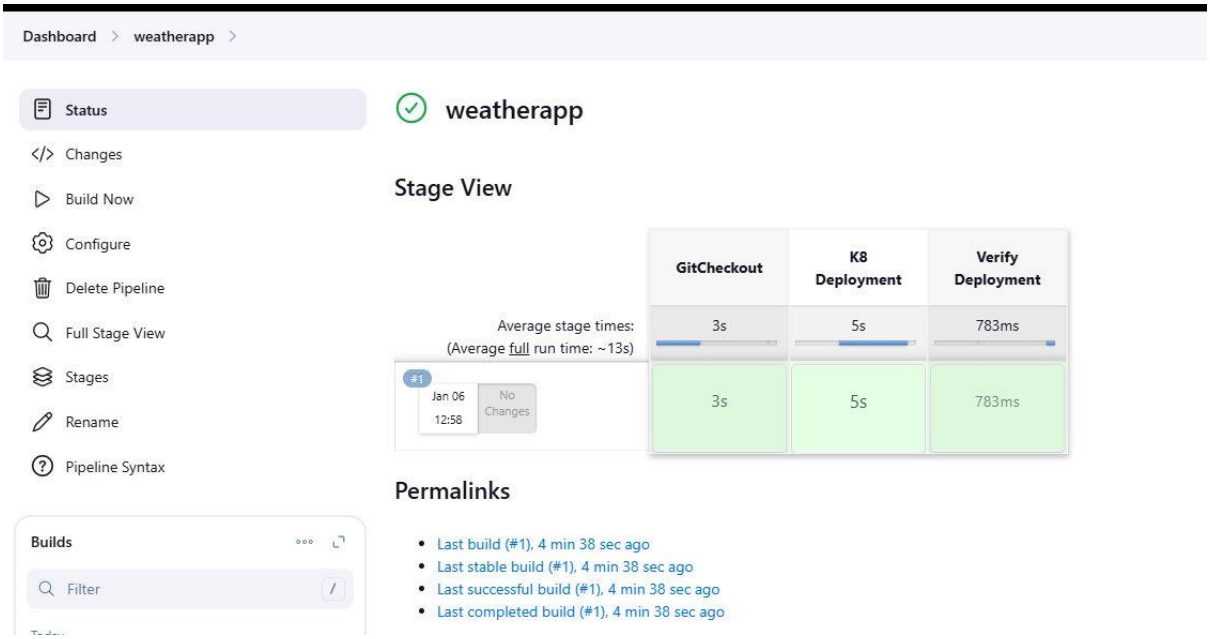
Step-3: Created a node group with t2.medium and remain requriments as below.

```
eksctl create nodegroup --cluster=EKS-1 \
                        --region=eu-west-1 \
                        --name=node2 \
                        --node-type=t2.medium \
                        --nodes=2 \
                        --nodes-min=1 \
                        --nodes-max=2 \
                        --node-volume-size=20 \
                        --ssh-access \
                        --ssh-public-key=ireland \
                        --managed \
                        --asg-access \
                        --external-dns-access \
                        --full-ecr-access \
                        --appmesh-access \
                        --alb-ingress-access
```

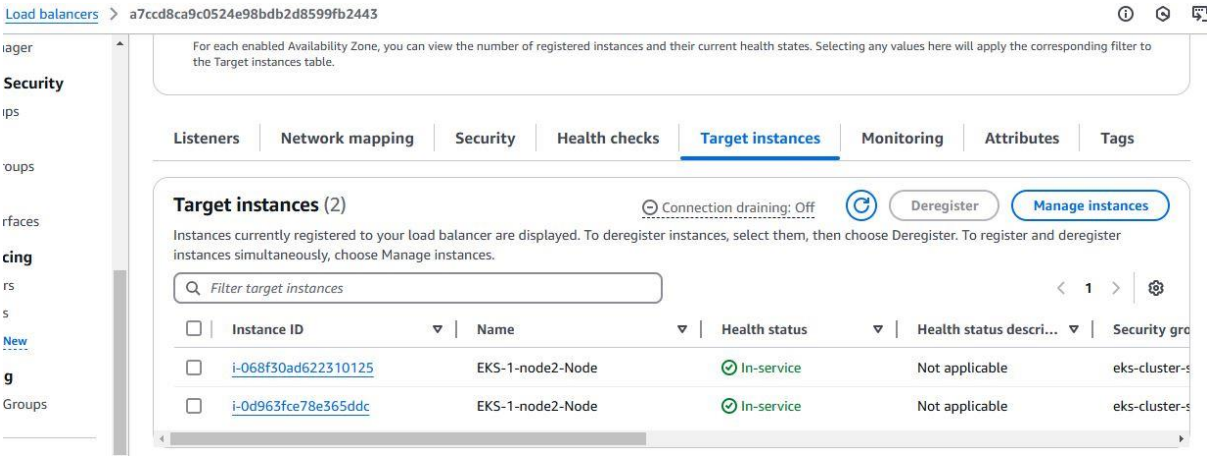


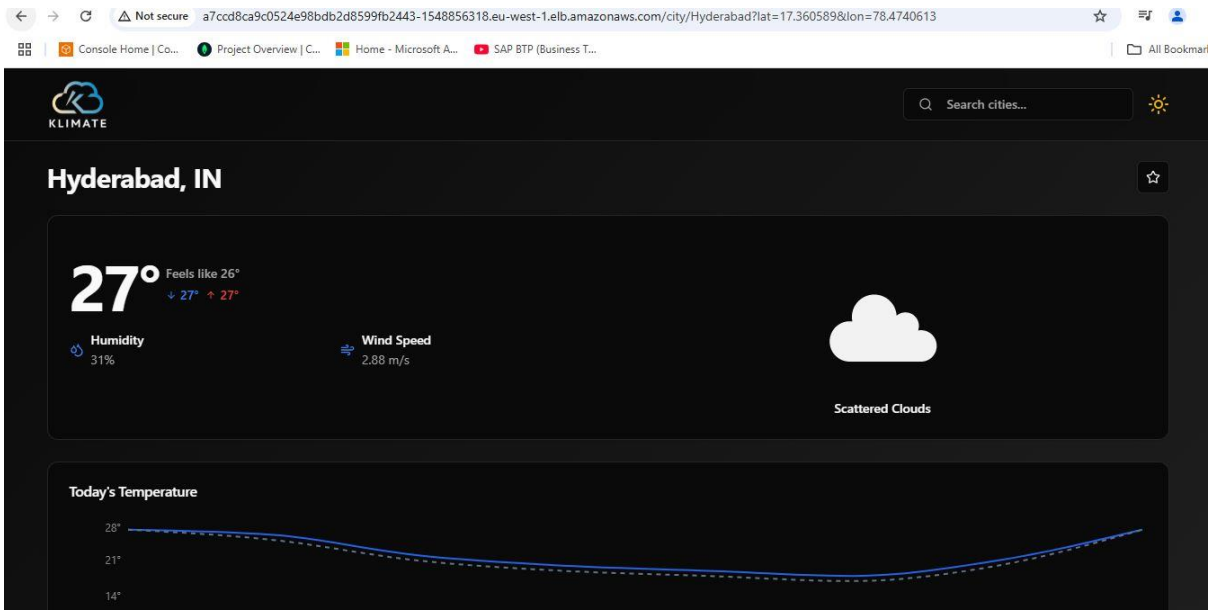

```
ubuntu@ip-172-31-33-119:~$ kubectl get nodes
NAME                                            STATUS   ROLES    AGE   VERSION
ip-192-168-23-105.eu-west-1.compute.internal    Ready    <none>   17m   v1.30.7-eks-59bf375
ip-192-168-53-213.eu-west-1.compute.internal    Ready    <none>   17m   v1.30.7-eks-59bf375
ubuntu@ip-172-31-33-119:~$
```

Step-4: After successful setup of the EKS cluster then, I deployed an application using Jenkins CICD pipeline in the ec2 instance.



Step-5: Load Balancer has been created and assigned with target instances and output

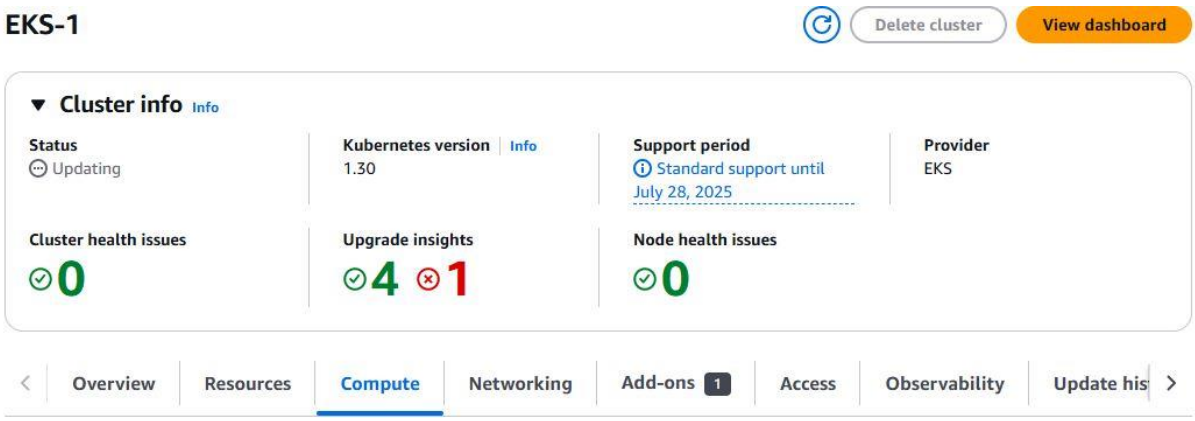




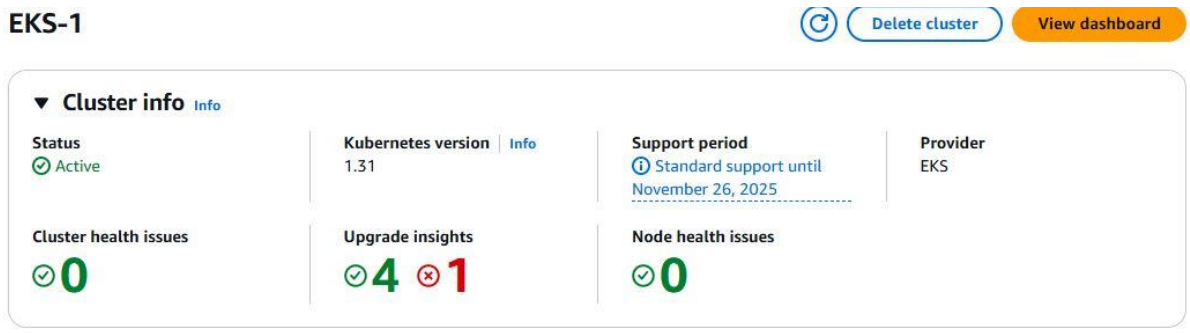
Step-6: Now updating the kubernetes cluster from v1.30 to v1.31 by awscli.

Syntax: eks upgrade cluster --name <cluster-name> --region <region> --version 1.31 –approve

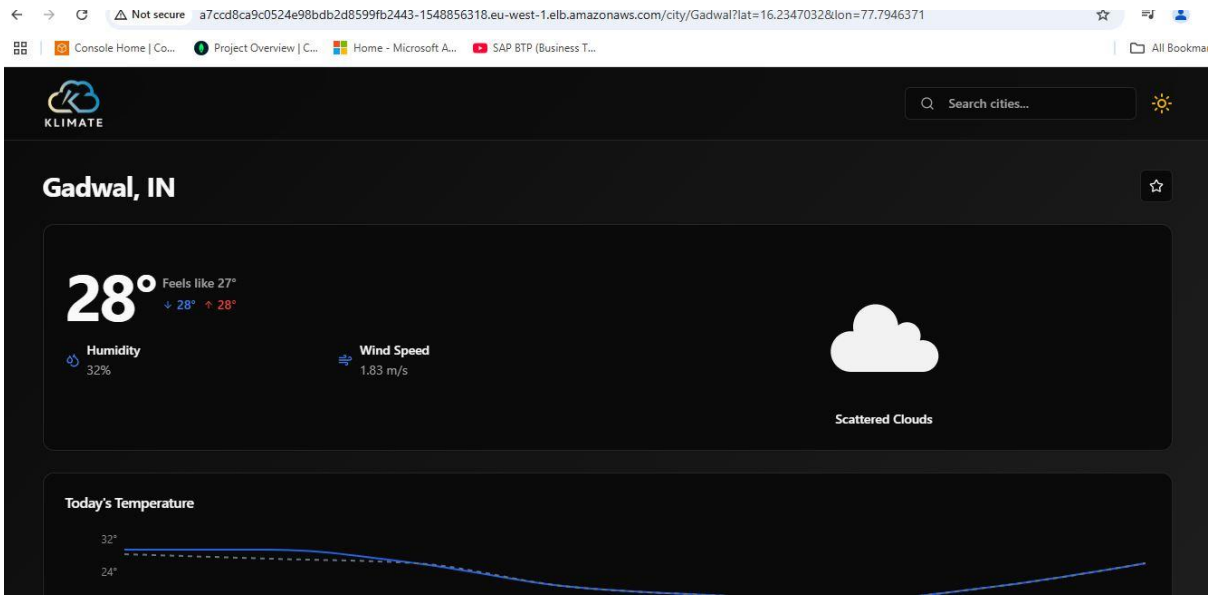
Step-7: The cluster updating in process and it will take some mean time to update it.



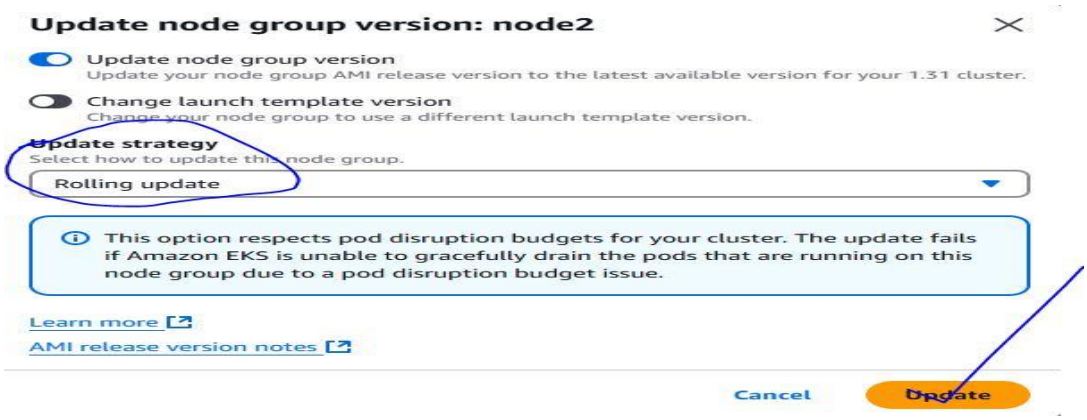
Updated to 1.31



Step-8: While updating the cluster there will be **zero Downtime** for the application, so here is the output



Step-9: After successful update of the cluster, then trying to update the node group by following the strategy Rollout strategy.



Node name	Instance type	Compute	Managed by	Created	Status
ip-192-168-23-105.eu-west-1.compute.internal	t2.medium	Node group	node2	Created 36 minutes ago	Ready
ip-192-168-28-113.eu-west-1.compute.internal	t2.medium	Node group	node2	Created 5 minutes ago	Ready
ip-192-168-34-48.eu-west-1.compute.internal	t2.medium	Node group	node2	Created 5 minutes ago	Ready

Step-10: After update the cluster works fine