**PREREQUISITES:**

AWS, AWS CLI, KUBECTL, Backup for the cluster(EC2), Existing cluster

STEPS:

IAM ROLES

* Search for IAM roles create a role for EKS cluster. Choose Roles, then Create role.
* Under Trusted entity type, select AWS service.
* From the Use cases for other AWS services dropdown list, choose EKS.
* Choose EKS - Cluster for your use case, and then choose Next.
* On the Add permissions tab, choose Next.
* For Role name, enter a unique name for your role, such as eksClusterRole.
* Choose create role.

VPC:

* Create a VPC network for the cluster and add subnets following ci/cr configuration.
* We can also use default options to create subnets for the creating vpc

CREATING CLUSTER:

* For creating the cluster we should add both vpc and configuring cluster with IAM role
* Next in networking add created subnet or default subnet.
* If any monitoring needed we should enable apiserver, controlmanger, scheduler etc.
* For addons we should add vpc CNI, Core DNS, kube proxy for managing cluster.
* Configure these addons and Create the Cluster.

Updating cluster:

* Now, check for the version and plan the upgrade as the kubernetes wil provide default cluster or stable cluster during creation or created long back ago.
* Now, we should update the version we can manually update the cluster in EKS cluster management where we created it or using kubectl.
* We should also update Nodes present In Compute Properties.
* Update Kubectl and AWS CLI
* Update control nodes and worker nodes in a controlled manner to reduce downtime
* Update node internal components kubelet and kubeproxy.
* Then go to add on and update the Kubeproxy and VPC-CNI.
* To update the kube proxy add on we use cmd

aws eks describe-addon --cluster-name my-cluster --addon-name kube-proxy --query addon.addonVersion --output text

* To update the cluster we use cmd
* aws eks update-cluster-version --region region-code --name my-cluster --kubernetes-version 1.28.
* If there are any applications present test your applications and workloads to ensure they're functioning correctly on the new cluster version.



