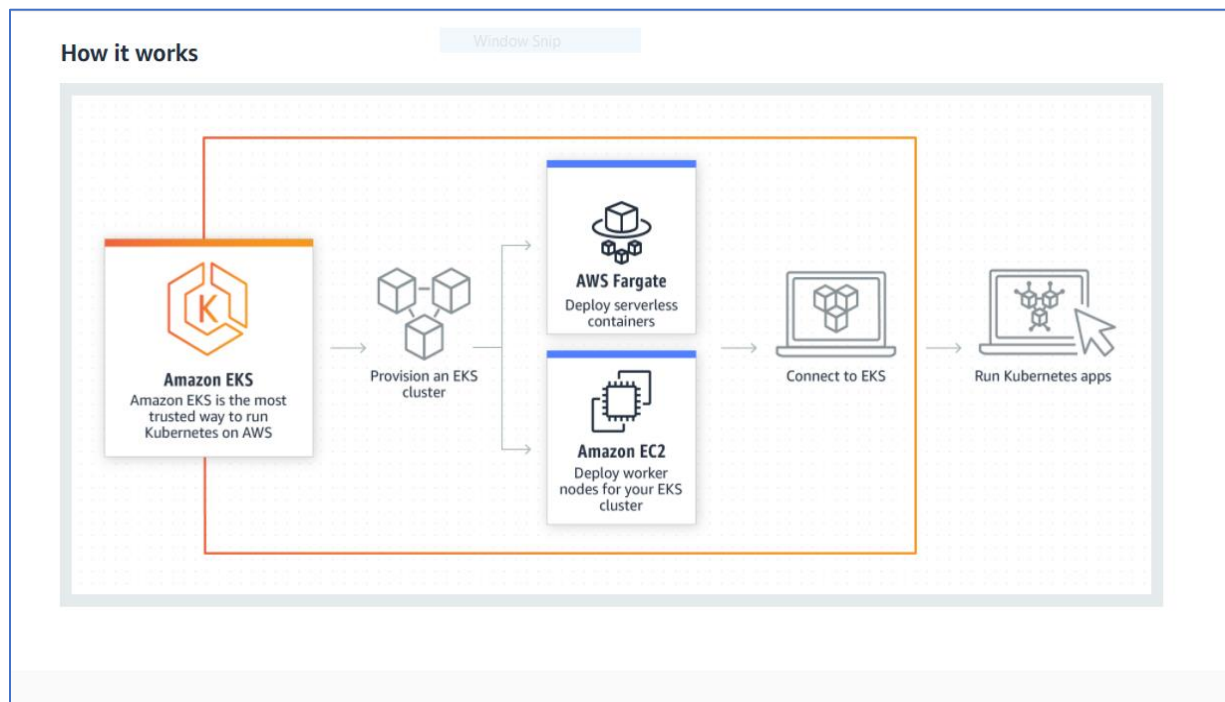
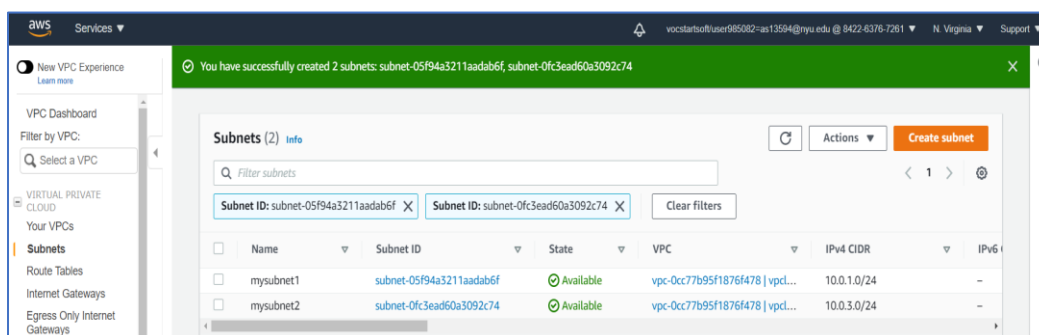
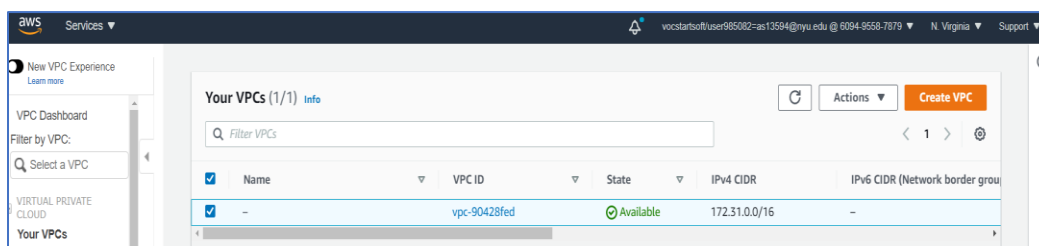


Extra Credit Assignment: Create a Kubernetes cluster in AWS or Google and compare your experience.

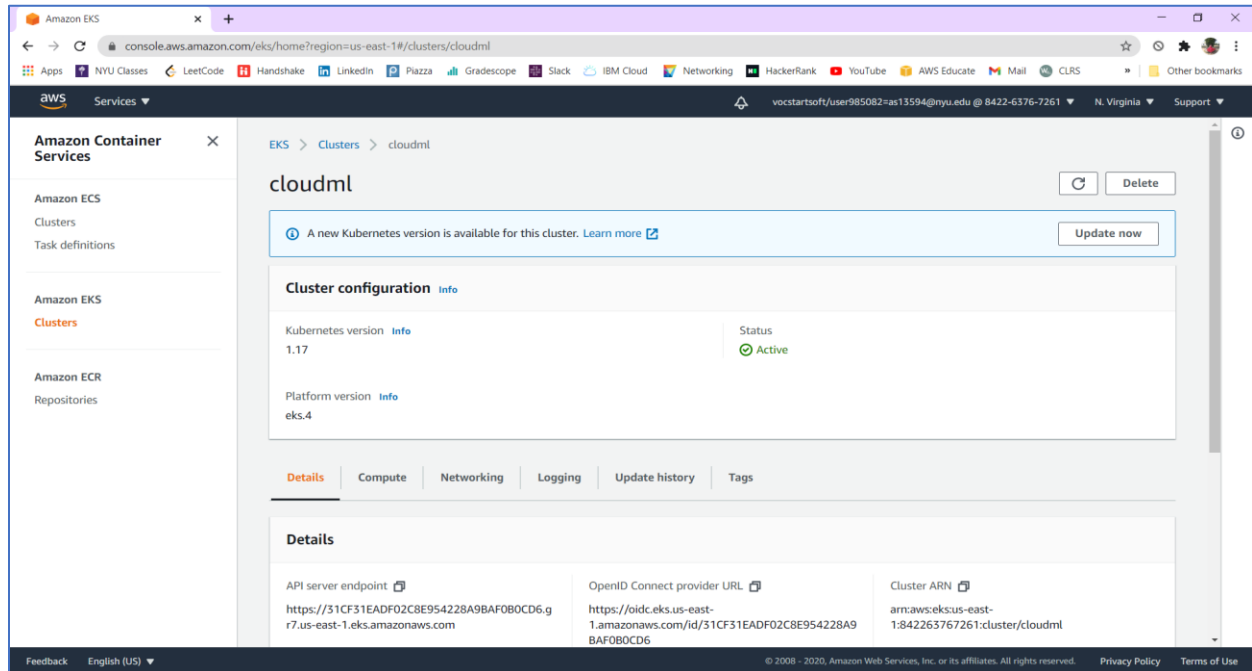


1. Amazon Elastic Kubernetes Service (Amazon EKS) is a fully managed Kubernetes service that makes it easy for you to run Kubernetes on AWS without needing to install, operate, and maintain your own Kubernetes control plane or nodes. We use the AWS EKS management console to create a cluster on AWS.



Amazon EKS is integrated with many AWS services to provide scalability and security for your applications, including the following:

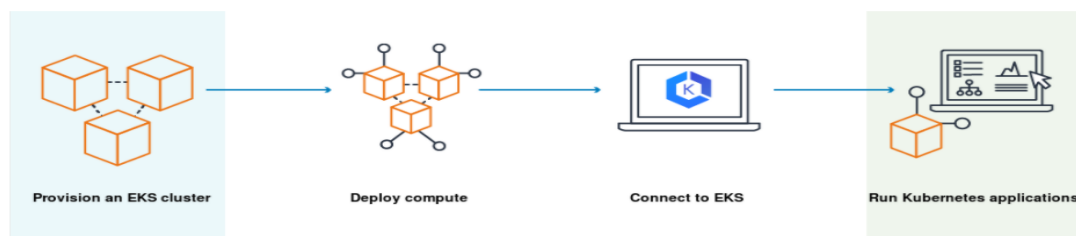
- Amazon ECR for container images
- Elastic Load Balancing for load distribution
- IAM for authentication
- Amazon VPC for isolation



2. How it works ?

- a) Create an Amazon EKS cluster in the AWS Management Console or with the AWS CLI or one of the AWS SDKs.
- b) Launch managed or self-managed nodes that register with the Amazon EKS cluster. They provide us with an AWS CloudFormation template that automatically configures our nodes. We can also deploy applications to AWS Fargate if we don't need to manage nodes.
- c) When our cluster is ready, we can configure Kubernetes tools (such as kubectl) to communicate with our cluster.
- d) Deploy and manage applications on your Amazon EKS cluster the same way that you would with any other Kubernetes environment.

How does Amazon EKS work?



3. Comparing the Cluster Experience:

Comparison Metrics	IBM	Amazon : EKS
Usability	It was comparatively easier to create and access the cluster. Deploying a Kubernetes cluster through the GUI is very easy and quick.	Creating the cluster was a more cumbersome process. We needed to explore the documentation to understand how to provision the cluster accurately. We needed to create Amazon EKS service roles, VPC's and their subnets to create a cluster. Therefore, it is difficult to use for new developers unfamiliar with container services and Kubernetes.
Pricing	It was cheaper. We were given the option to create one free single node Kubernetes cluster that we used for the assignment.	Although, given that I used a student account, I couldn't perform an exact pricing analysis but exploring EKS indicated that it is potentially more expensive than other options
Security	Choose between a public IP address, an IBM provided route, or your own custom domain to access services in your cluster from the internet	<ul style="list-style-type: none">• Public by default• Private-only address optional
Image Repository Service	ECR (Elastic Container Registry)	Enables us to pull images from docker hub.
Continuous monitoring of the cluster health	<ul style="list-style-type: none">• Use the cluster dashboard to quickly see and manage the health of your cluster, worker nodes, and container deployments.• Find detailed consumption metrics by using IBM Cloud™ Monitoring with Sysdig and quickly expand your cluster to meet work loads.• Review logging information by using IBM® Log Analysis with LogDNA to see detailed cluster activities.	EKS does not offer any specialized node health monitoring or repair. EKS customers can create custom health checks to do some degree of node health monitoring and customer-automated replacement for EKS clusters.