
Amazon
EKS


AWS ECS


AWS Fargate


EC2

Launching a cluster on eks using cluster file:
eksctl create cluster -f cluster1.yml

apiVersion: eksctl.io/v1alpha5 kind: ClusterConfig

metadata:

  name: mycluster

  region: ap-south-1

nodeGroups:

  - name: ng1

        desiredCapacity: 2

        instanceType: t2.micro

        ssh:

        publicKeyName: mykey11.pem

  - name: ng2

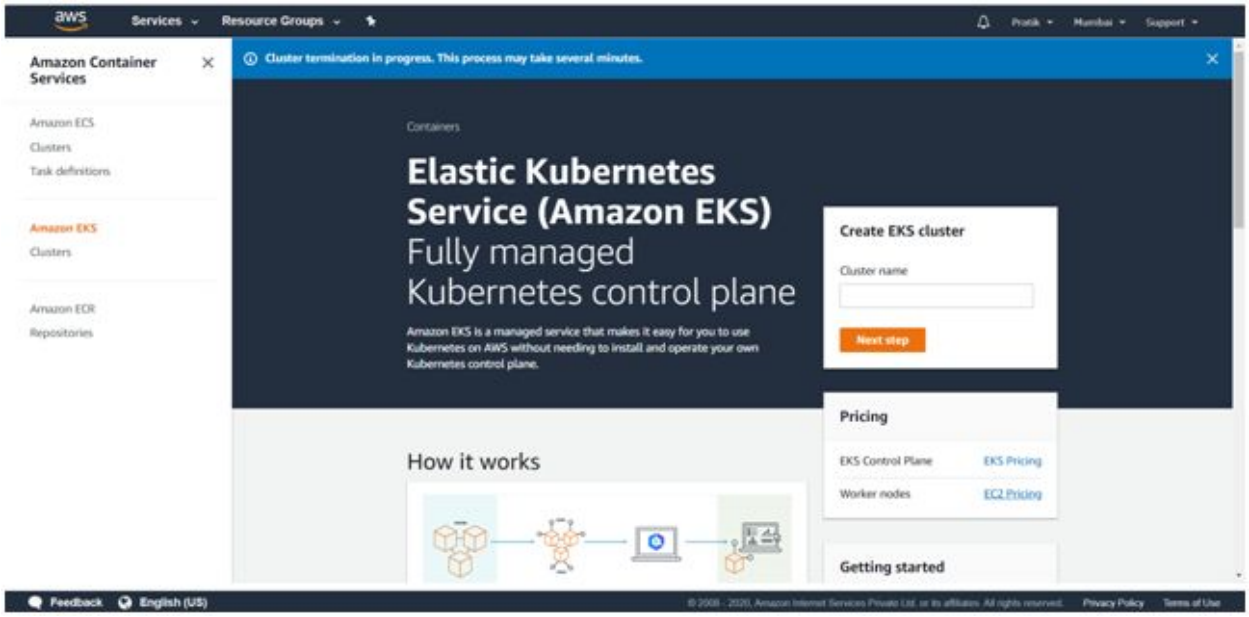
        desiredCapacity: 1

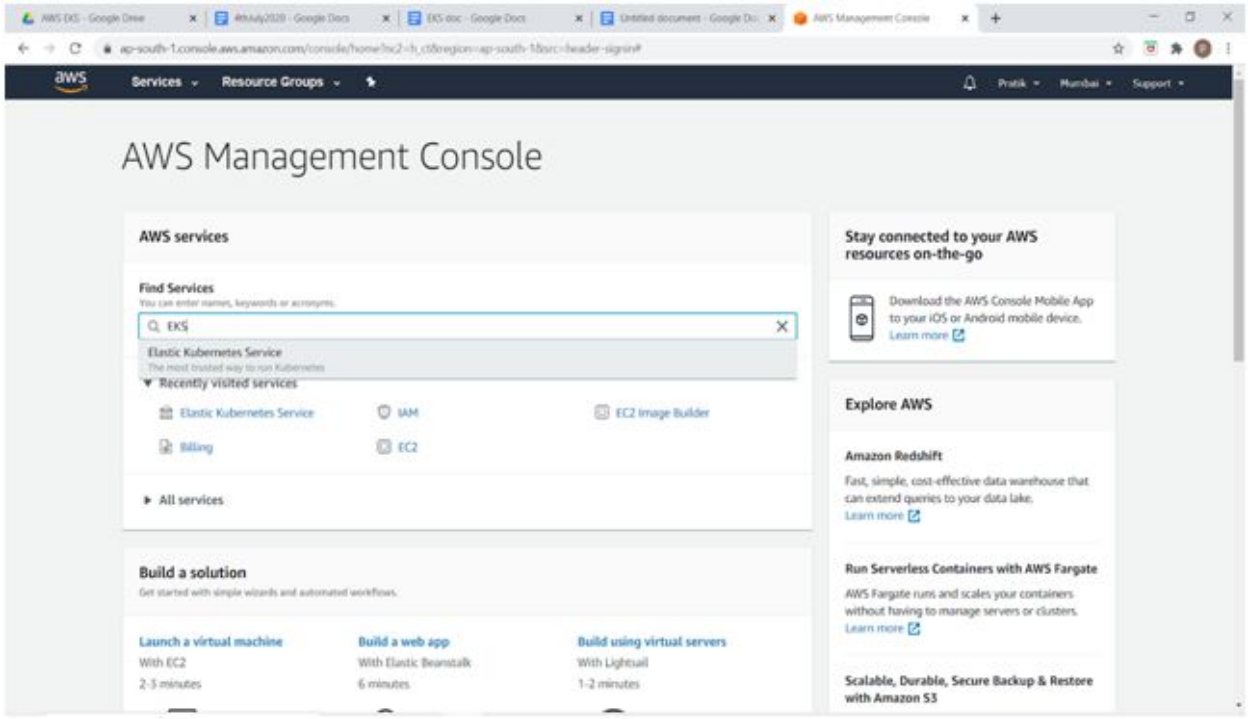
        instanceType: t2.small

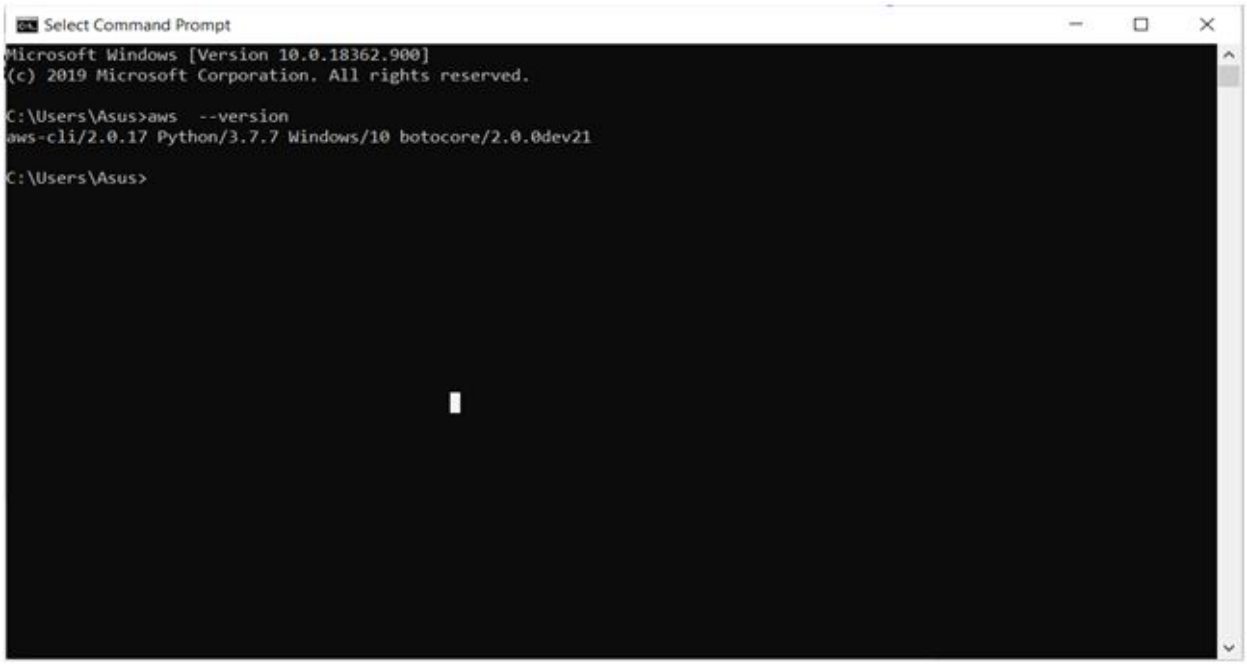
        ssh:

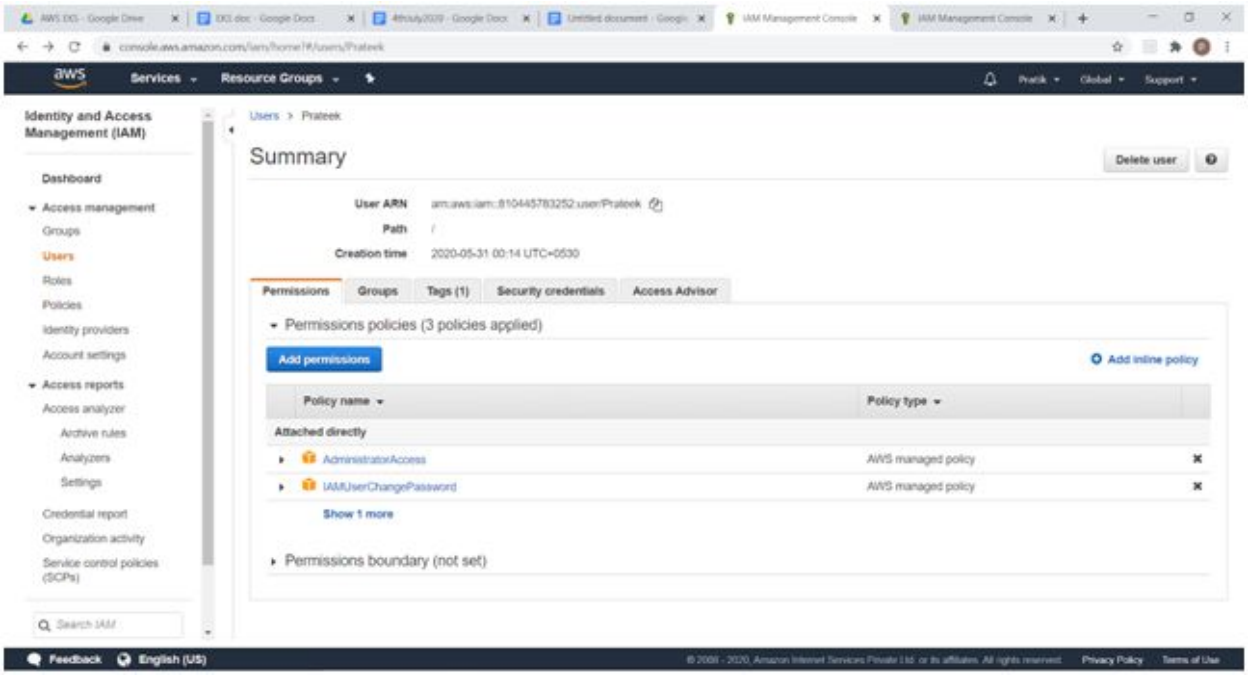
        publicKeyName: mykey11.pem

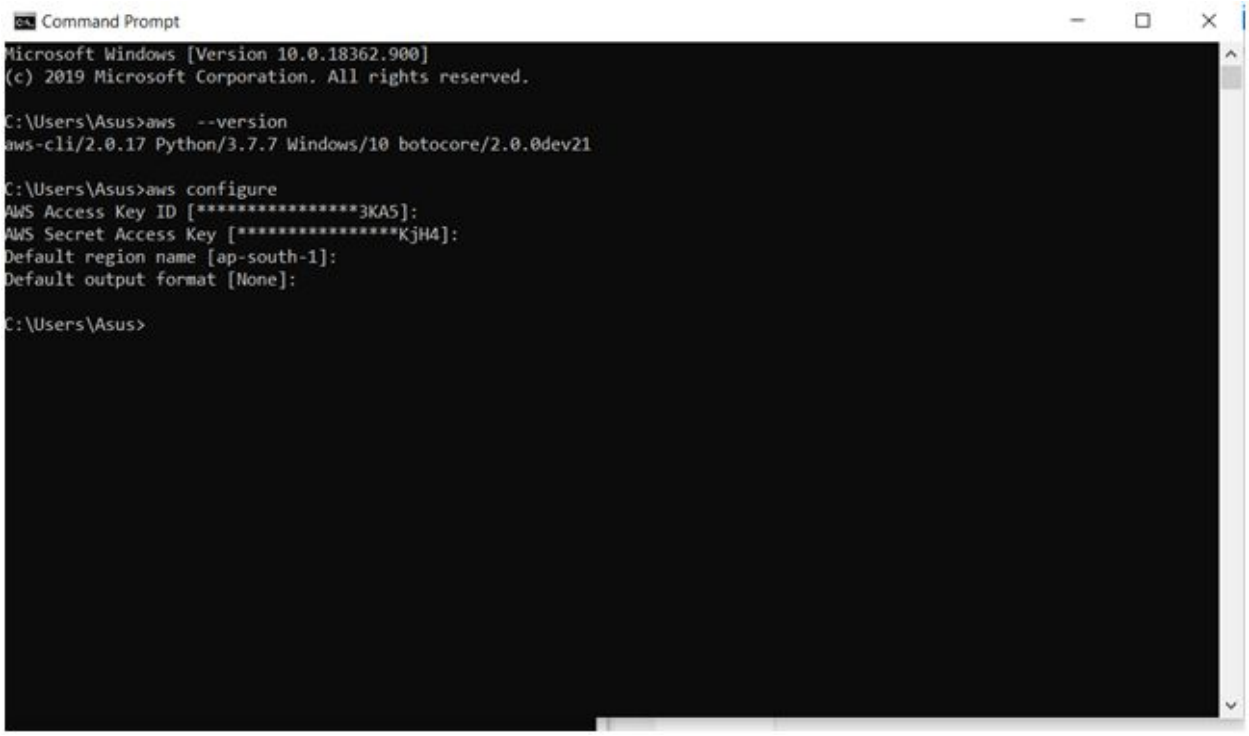
  --cluster=mycluster'

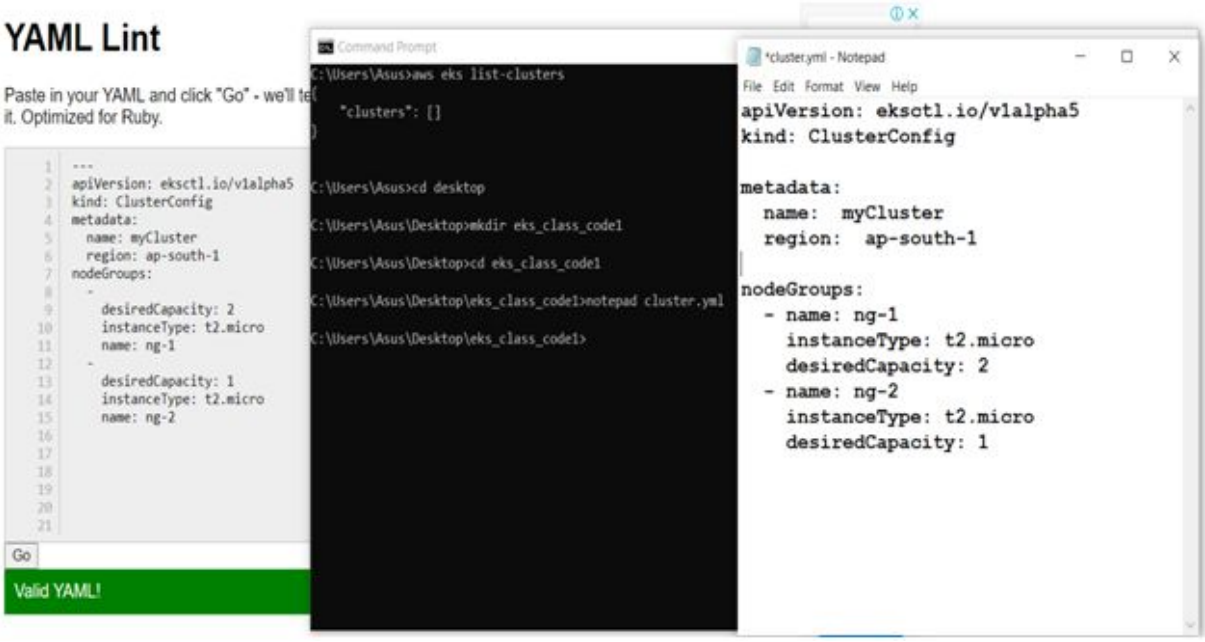

Services
Resource Groups
Pratik
Mumbai
Support
Amazon Container Services
Amazon ECS
Clusters
Task definitions
Amazon EKS
Clusters
Amazon ECR
Repositories
Cluster termination in progress. This process may take several minutes.
Containers
Elastic Kubernetes Service (Amazon EKS)
Fully managed Kubernetes control plane
Amazon EKS is a managed service that makes it easy for you to use Kubernetes on AWS without needing to install and operate your own Kubernetes control plane.
Create EKS cluster
Cluster name
Next step
Pricing
EKS Control Plane
EKS Pricing
Worker nodes
EC2 Pricing
How it works
Getting started
Feedback
English (US)
Privacy Policy
Terms of Use

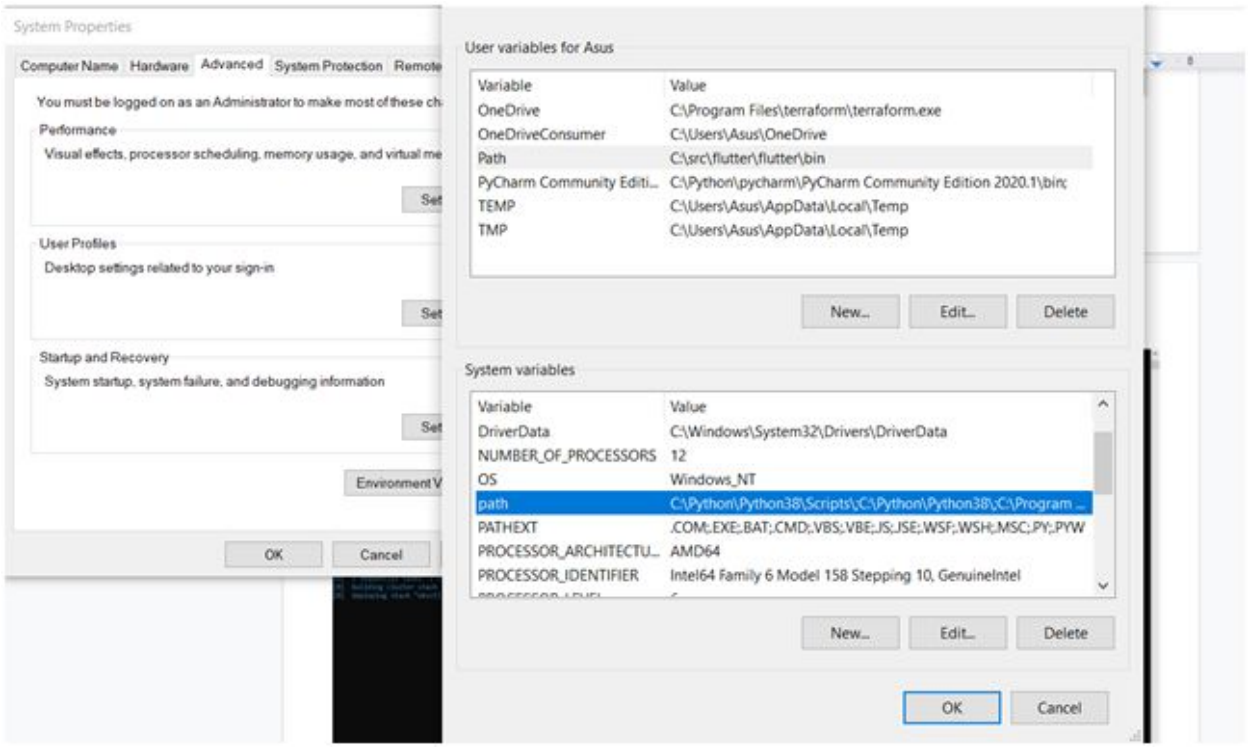

Services
Resource Groups
Pratik
Mumbai
Support
AWS Management Console
AWS services
Find Services
EKS
Elastic Kubernetes Service
Recently visited services
Elastic Kubernetes Service
IAM
EC2 Image Builder
Billing
EC2
All services
Build a solution
Launch a virtual machine
With EC2
2-3 minutes
Build a web app
With Elastic Beanstalk
6 minutes
Build using virtual servers
With Lightsail
1-2 minutes
Stay connected to your AWS resources on-the-go
Download the AWS Console Mobile App to your iOS or Android mobile device.
Learn more
Explore AWS
Amazon Redshift
Fast, simple, cost-effective data warehouse that can extend queries to your data lake.
Learn more
Run Serverless Containers with AWS Fargate
AWS Fargate runs and scales your containers without having to manage servers or clusters.
Learn more
Scalable, Durable, Secure Backup & Restore with Amazon S3

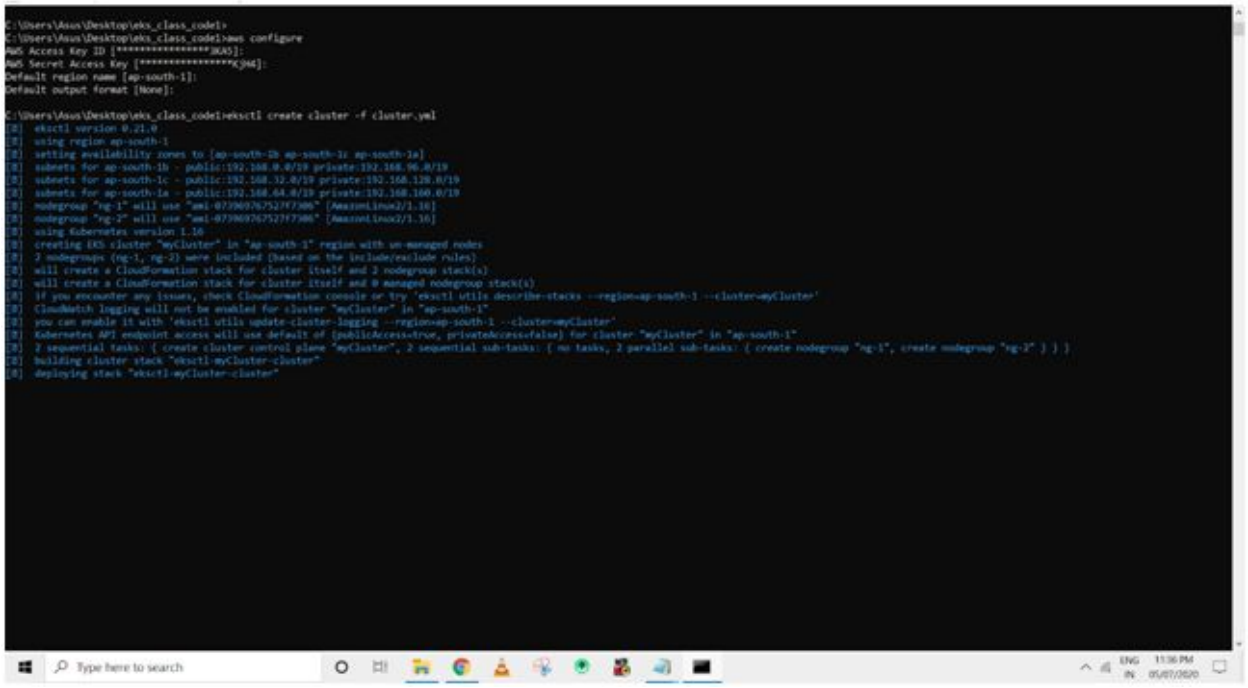

Select Command Prompt
Microsoft Windows [Version 10.0.18362.900]
(c) 2019 Microsoft Corporation. All rights reserved.
C:\Users\Asus>aws --version
aws-cli/2.0.17 Python/3.7.7 Windows/10 botocore/2.0.0dev21
C:\Users\Asus>

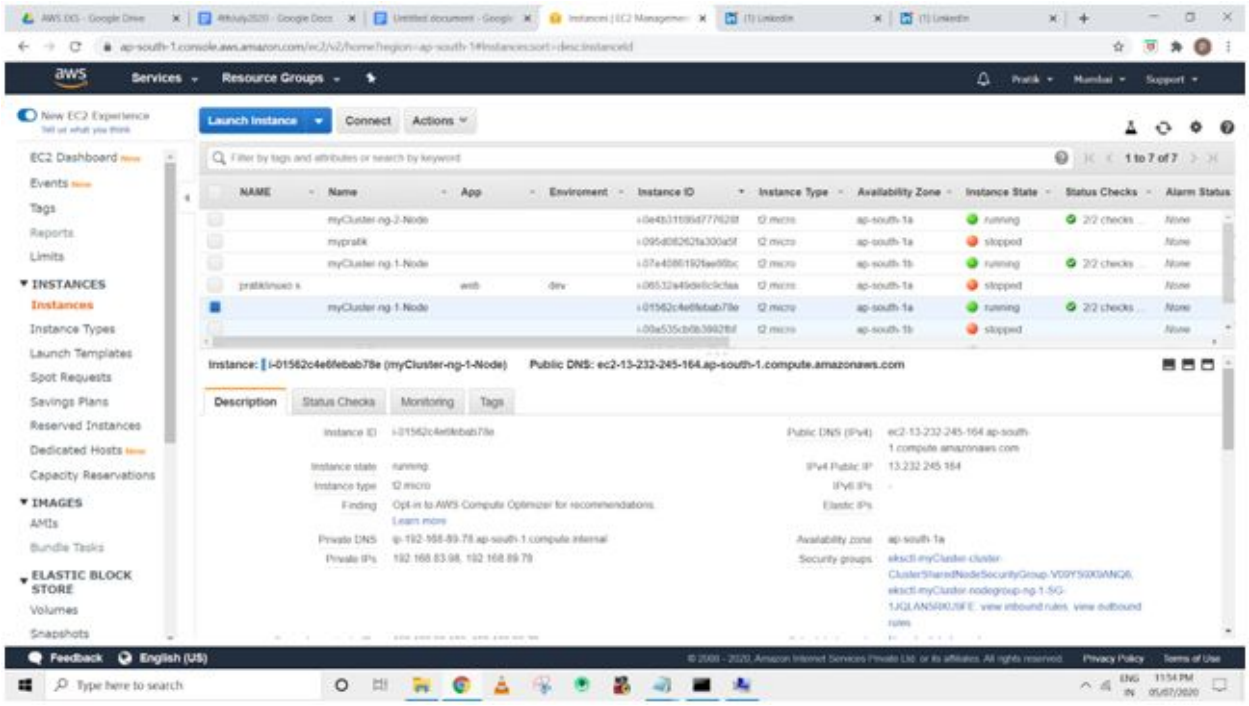

Identity and Access Management (IAM)
Dashboard
Access management
Groups
Users
Roles
Policies
Identity providers
Account settings
Access reports
Access analyzer
Archive rules
Analyzers
Settings
Credential report
Organization activity
Service control policies (SCPs)
Users > Prateek
Summary
Delete user
User ARN
Path
Creation time
2020-05-31 00:14 UTC+0530
Permissions
Groups
Tags (1)
Security credentials
Access Advisor
Permissions policies (3 policies applied)
Add permissions
Add inline policy
Policy name
Policy type
Attached directly
AdministratorAccess
AWS managed policy
IAMUserChangePassword
AWS managed policy
Show 1 more
Permissions boundary (not set)
Feedback
English (US)
Privacy Policy
Terms of Use

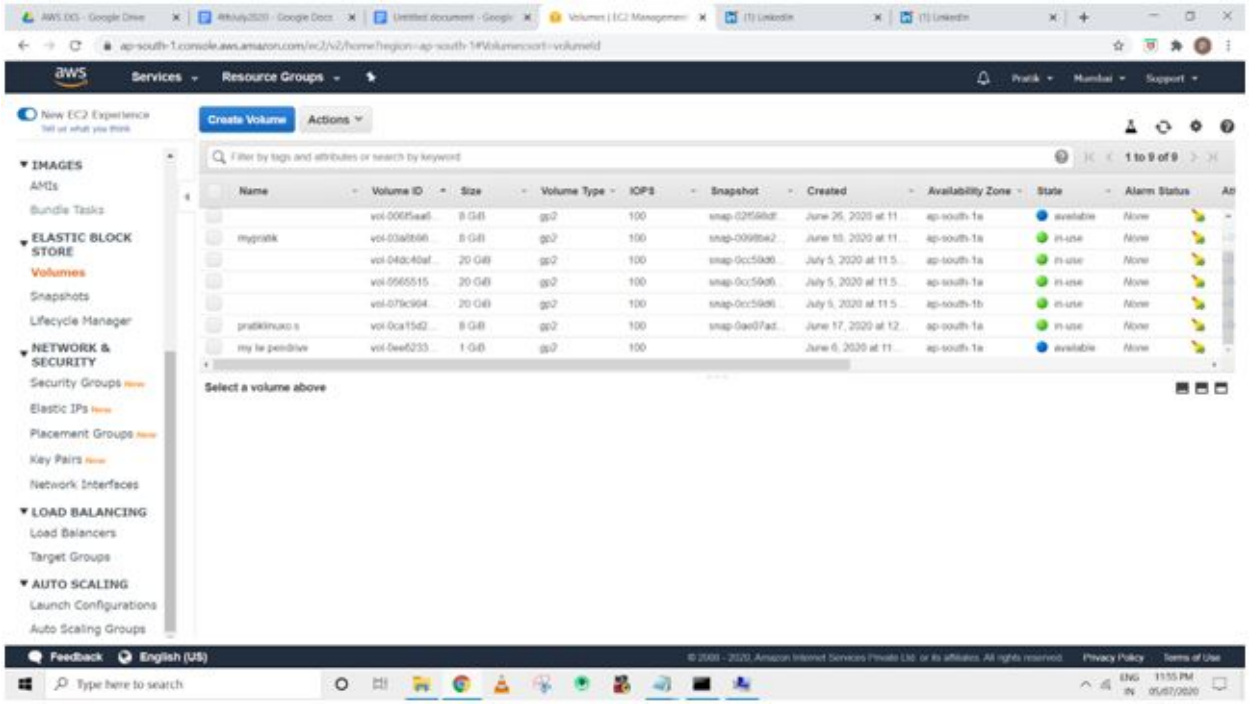

Command Prompt
Microsoft Windows [Version 10.0.18362.900]
(c) 2019 Microsoft Corporation. All rights reserved.
C:\Users\Asus>aws --version
aws-cli/2.0.17 Python/3.7.7 Windows/10 botocore/2.0.0dev21
C:\Users\Asus>aws configure
AWS Access Key ID [**********3KA5]:
AWS Secret Access Key [**********KjH4]:
Default region name [ap-south-1]:
Default output format [None]:
C:\Users\Asus>

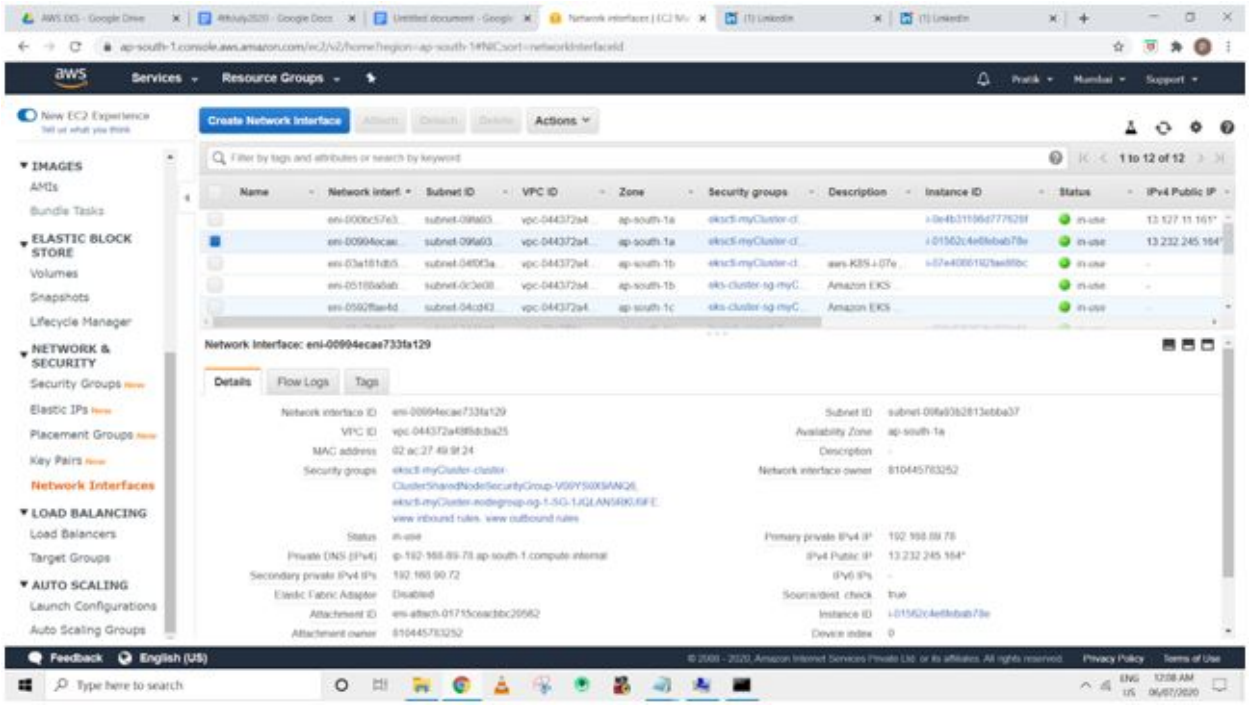

YAML Lint
Paste in your YAML and click "Go" - we'll te
it. Optimized for Ruby.
---
apiVersion: eksctl.io/v1alpha5
kind: ClusterConfig
metadata:
name: myCluster
region: ap-south-1
nodeGroups:
- desiredCapacity: 2
instanceType: t2.micro
name: ng-1
- desiredCapacity: 1
instanceType: t2.micro
name: ng-2
Go
Valid YAML!
Command Prompt
C:\Users\Asus>aws eks list-clusters
"clusters": []
C:\Users\Asus>cd desktop
C:\Users\Asus\Desktop>mkdir eks_class_code1
C:\Users\Asus\Desktop>cd eks_class_code1
C:\Users\Asus\Desktop\eks_class_code1>notepad cluster.yml
C:\Users\Asus\Desktop\eks_class_code1>
*cluster.yml - Notepad
File Edit Format View Help
apiVersion: eksctl.io/v1alpha5
kind: ClusterConfig
metadata:
name: myCluster
region: ap-south-1
nodeGroups:
- name: ng-1
instanceType: t2.micro
desiredCapacity: 2
- name: ng-2
instanceType: t2.micro
desiredCapacity: 1

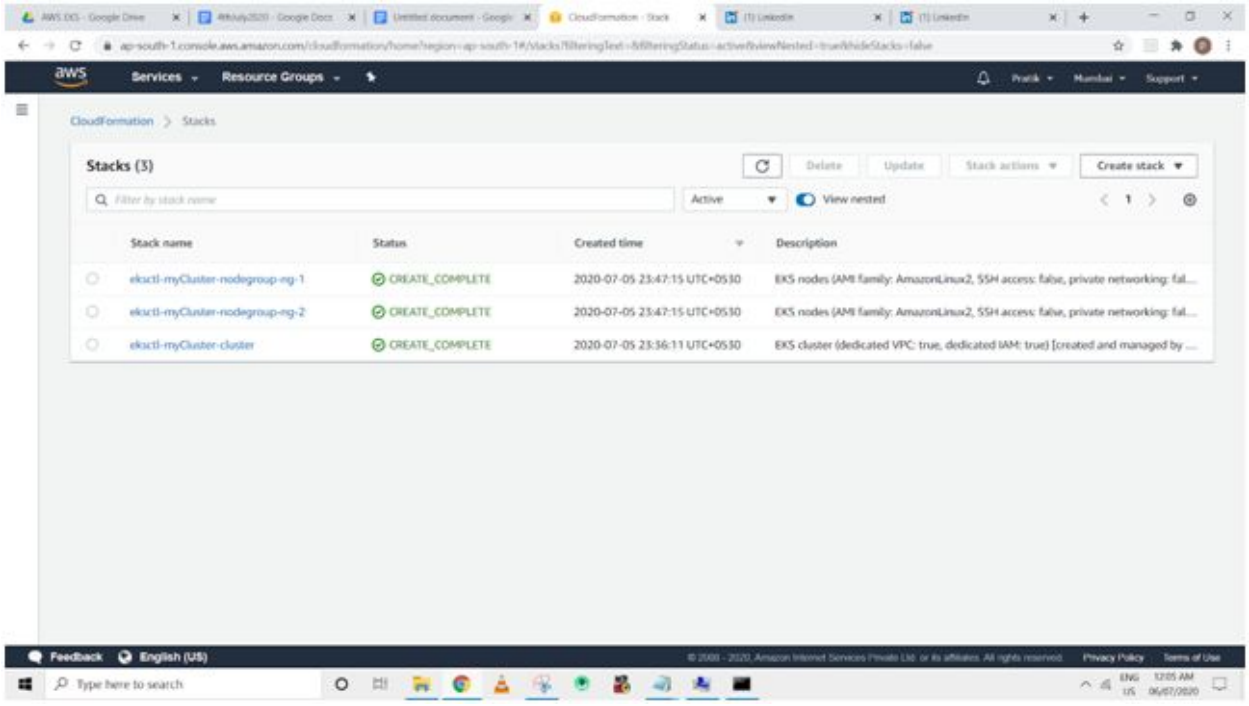

System Properties
Computer Name
Hardware
Advanced
System Protection
Remote
You must be logged on as an Administrator to make most of these ch
Performance
Visual effects, processor scheduling, memory usage, and virtual me
Set
User Profiles
Desktop settings related to your sign-in
Set
Startup and Recovery
System startup, system failure, and debugging information
Set
Environment V
OK
Cancel
User variables for Asus
Variable
Value
OneDrive
C:\Program Files\terraform\terraform.exe
OneDriveConsumer
C:\Users\Asus\OneDrive
Path
C:\src\flutter\flutter\bin
PyCharm Community Editi...
C:\Python\pycharm\PyCharm Community Edition 2020.1\bin;
TEMP
C:\Users\Asus\AppData\Local\Temp
TMP
C:\Users\Asus\AppData\Local\Temp
New...
Edit...
Delete
System variables
Variable
Value
DriverData
C:\Windows\System32\Drivers\DriverData
NUMBER_OF_PROCESSORS
12
OS
Windows_NT
path
C:\Python\Python38\Scripts\;C:\Python\Python38\;C:\Program ...
PATHEXT
.COM;.EXE;.BAT;.CMD;.VBS;.VBE;.JS;.JSE;.WSF;.WSH;.MSC;.PY;.PYW
PROCESSOR_ARCHITECTU...
AMD64
PROCESSOR_IDENTIFIER
Intel64 Family 6 Model 158 Stepping 10, GenuineIntel
New...
Edit...
Delete
OK
Cancel

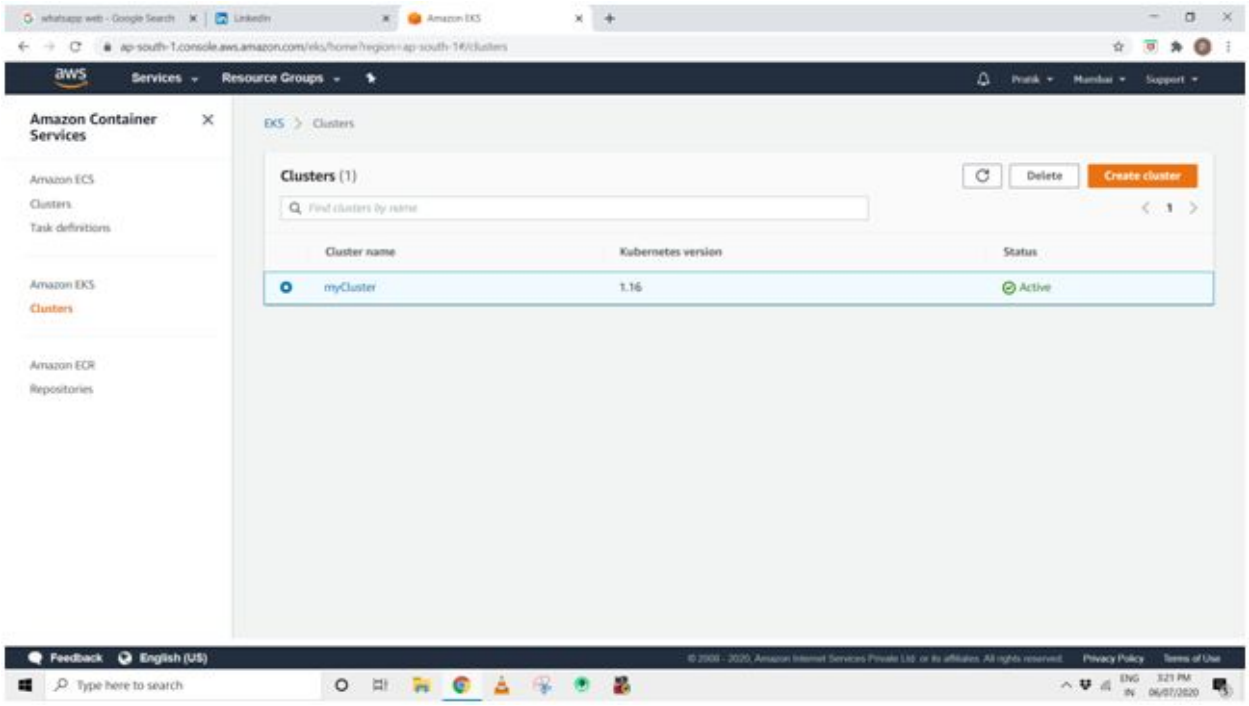

C:\Users\Asus\Desktop\eks_class_code1>
C:\Users\Asus\Desktop\eks_class_code1>aws configure
AWS Access Key ID [**********IKA5]:
AWS Secret Access Key [**********rCJH4]:
Default region name [ap-south-1]:
Default output format [None]:
C:\Users\Asus\Desktop\eks_class_code1>eksctl create cluster -f cluster.yml
[ℹ] eksctl version 0.21.0
[ℹ] using region ap-south-1
[ℹ] setting availability zones to [ap-south-1b ap-south-1c ap-south-1a]
[ℹ] subnets for ap-south-1b - public:192.168.0.0/19 private:192.168.96.0/19
[ℹ] subnets for ap-south-1c - public:192.168.32.0/19 private:192.168.128.0/19
[ℹ] subnets for ap-south-1a - public:192.168.64.0/19 private:192.168.160.0/19
[ℹ] nodegroup "ng-1" will use "ami-0739869767527f7306" [AmazonLinux2/1.16]
[ℹ] nodegroup "ng-2" will use "ami-0739869767527f7306" [AmazonLinux2/1.16]
[ℹ] using Kubernetes version 1.16
[ℹ] creating EKS cluster "myCluster" in "ap-south-1" region with un-managed nodes
[ℹ] 2 nodegroups (ng-1, ng-2) were included (based on the include/exclude rules)
[ℹ] will create a CloudFormation stack for cluster itself and 2 nodegroup stack(s)
[ℹ] will create a CloudFormation stack for cluster itself and 0 managed nodegroup stack(s)
[ℹ] if you encounter any issues, check CloudFormation console or try 'eksctl utils describe-stacks --region=ap-south-1 --cluster=myCluster'
[ℹ] CloudWatch logging will not be enabled for cluster "myCluster" in "ap-south-1"
[ℹ] you can enable it with 'eksctl utils update-cluster-logging --region=ap-south-1 --cluster=myCluster'
[ℹ] Kubernetes API endpoint access will use default of {publicAccess=true, privateAccess=false} for cluster "myCluster" in "ap-south-1"
[ℹ] 2 sequential tasks: { create cluster control plane "myCluster", 2 sequential sub-tasks: { no tasks, 2 parallel sub-tasks: { create nodegroup "ng-1", create nodegroup "ng-2" } } }
[ℹ] building cluster stack "eksctl-myCluster-cluster"
[ℹ] deploying stack "eksctl-myCluster-cluster"
Type here to search

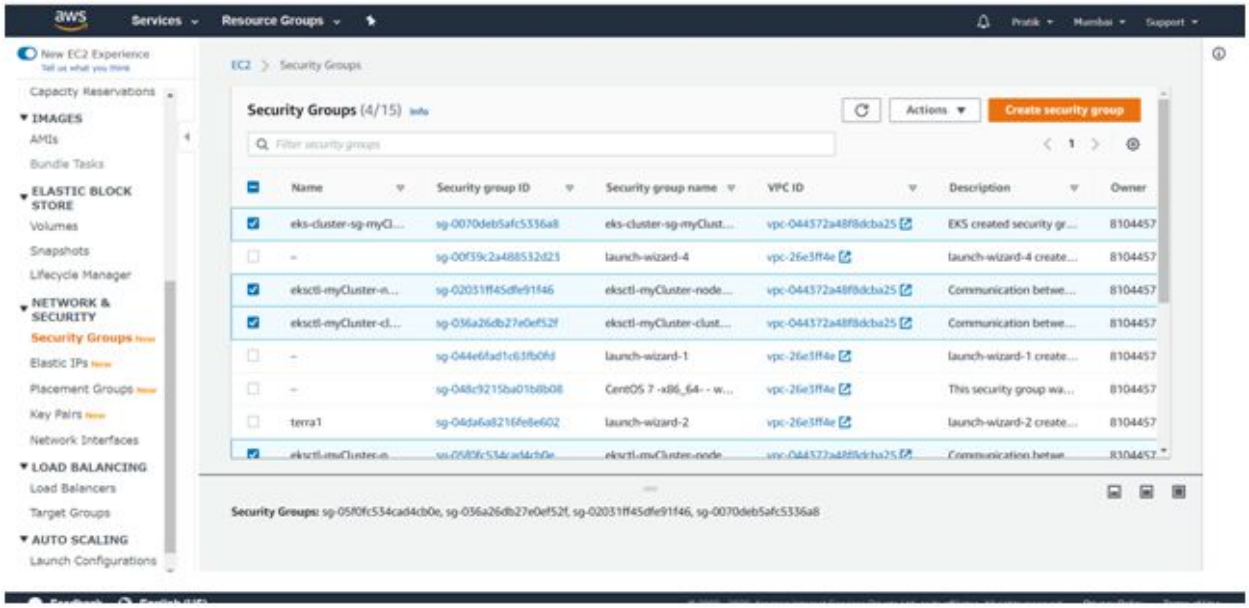

Services
Resource Groups
Launch Instance
Connect
Actions
EC2 Dashboard
Events
Tags
Reports
Limits
INSTANCES
Instances
Instance Types
Launch Templates
Spot Requests
Savings Plans
Reserved Instances
Dedicated Hosts
Capacity Reservations
IMAGES
AMIs
Bundle Tasks
ELASTIC BLOCK STORE
Volumes
Snapshots
NAME
Name
App
Environment
Instance ID
Instance Type
Availability Zone
Instance State
Status Checks
Alarm Status
myCluster-ng-2-Node
mypratik
myCluster-ng-1-Node
myCluster-ng-1-Node
Instance: i-01562c4e6febab78e (myCluster-ng-1-Node)
Public DNS: ec2-13-232-245-164.ap-south-1.compute.amazonaws.com
Description
Status Checks
Monitoring
Tags
Feedback
English (US)


Services
Resource Groups
Create Volume
Actions
IMAGES
AMIs
Bundle Tasks
ELASTIC BLOCK STORE
Volumes
Snapshots
Lifecycle Manager
NETWORK & SECURITY
Security Groups
Elastic IPs
Placement Groups
Key Pairs
Network Interfaces
LOAD BALANCING
Load Balancers
Target Groups
AUTO SCALING
Launch Configurations
Auto Scaling Groups
Name
Volume ID
Size
Volume Type
IOPS
Snapshot
Created
Availability Zone
State
Alarm Status
mypratik
Select a volume above
Feedback
English (US)


Services
Resource Groups
Create Network Interface
Actions
IMAGES
AMIs
Bundle Tasks
ELASTIC BLOCK STORE
Volumes
Snapshots
Lifecycle Manager
NETWORK & SECURITY
Security Groups
Elastic IPs
Placement Groups
Key Pairs
Network Interfaces
LOAD BALANCING
Load Balancers
Target Groups
AUTO SCALING
Launch Configurations
Auto Scaling Groups
Network Interface: eni-00994ecae733fa129
Details
Flow Logs
Tags
Feedback
English (US)


Services
Resource Groups
CloudFormation > Stacks
Stacks (3)
Delete
Update
Stack actions
Create stack
Active
View nested
Stack name
Status
Created time
Description
eksctl-myCluster-nodegroup-ng-1
CREATE_COMPLETE
2020-07-05 23:47:15 UTC+0530
eksctl-myCluster-nodegroup-ng-2
CREATE_COMPLETE
2020-07-05 23:47:15 UTC+0530
eksctl-myCluster-cluster
CREATE_COMPLETE
2020-07-05 23:36:11 UTC+0530
Feedback
English (US)


Amazon Container Services
Amazon ECS
Clusters
Task definitions
Amazon EKS
Clusters
Amazon ECR
Repositories
EKS > Clusters
Clusters (1)
Delete
Create cluster
Cluster name
Kubernetes version
Status
myCluster
1.16
Active


Security Groups
Actions
Create security group
Name
Security group ID
Security group name
VPC ID
Description
Owner
Security Groups: sg-05f0fc534cad4cb0e, sg-036a26db27e0ef52f, sg-02031ff45dfe91f46, sg-0070deb5afc5336a8

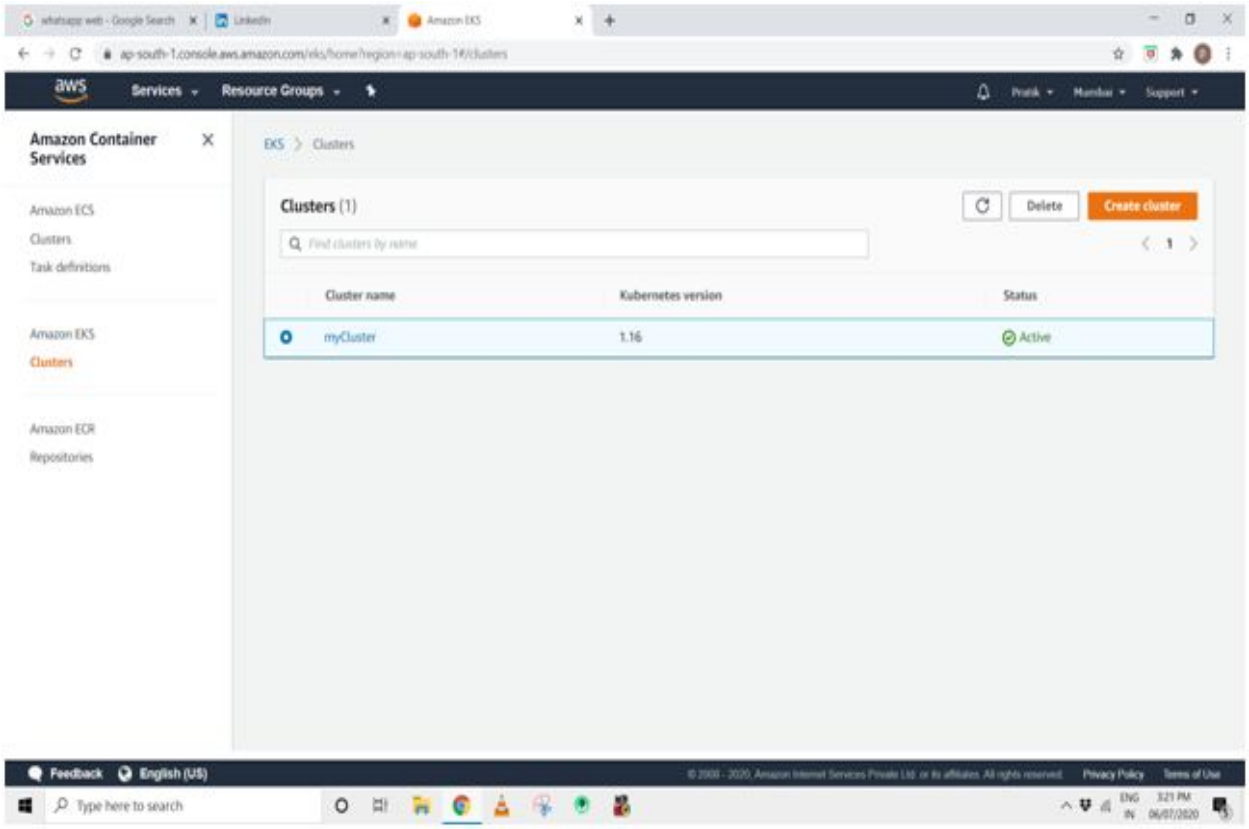
launching a fargate using fargate.yml

eksctl create cluster -f fargate.yml

```
apiVersion: eksctl.io/v1alpha5
kind: ClusterConfig

metadata:
  name: f-lwcluster
  region: ap-southeast-1

fargateProfiles:
  - name: fargate-default
        selectors:
        - namespace: kube-system
        - namespace: default
```



Creating the jenkins deployment , a secret and pvc using customisation file

kubectl create -k

```
apiVersion: v1
kind: Service
metadata:
  name: my-jenkins
  labels:
        app: jenkinsapp
spec:
 ports:
```

```
  - port: 80
```

Creating the jenkins deployment , a secret and pvc using customisation file kubectl create -k .

```
apiVersion: v1

kind: Service

metadata:

  name: my-jenkins

  labels:

        app: jenkinsapp

spec:

 ports:

  - port: 80




selector:

        app: jenkinsapp

  type: NodePort

---

apiVersion: apps/v1 # for versions before 1.9.0 use apps/v1beta2

kind: Deployment

metadata:

  name: my-jenkins

  labels:

        app: jenkinsapp spec:

  selector:

        matchLabels:
```

```
        app: jenkinsapp
  tier:frontend
  strategy:
        type: Recreate
  template:
        metadata:
    labels:
        app: jenkinsapp
    tier:frontend
      spec:
    containers:
        - image: jenkins/jenkins
    name:myjenkins


    env:
     - name: MYJENKINS_USER
valueFrom:
secretKeyRef:
        name: myjenkinssecret
       key: username
    - name: MYJENKINS_PASSWORD
valueFrom:
secretKeyRef:
        name: myjenkinssecret
       key:vpass
   ports:
    - containerPort: 80
```

```
name: jenkins-cont
volumeMounts:
    - name: myjenkins-persistent-storage
mountPath:/var/jenkins_home
volumes:
    - name: myjenkins-persistent-storage
persistentVolumeClaim
    -  claimName: efs-myjenkins
---
kind: StorageClass apiVersion: storage.k8s.io/v1
metadata:
  name:  aws-efs
  provisioner: jenkins/aws-efs
---
kind: PersistentVolumeClaim apiVersion: v1
metadata:
  name: efs-myjenkins
  annotations:
        volume.beta.kubernetes.io/storage-class: "aws-efs" spec:
  accessModes:
        - ReadWriteMany
  resources:
        requests:
        storage: 10Gi
---
apiVersion: v1 kind: Secret metadata:
  name: myjenkinssecret
```

data:

username: WYRat4KK

vpass: gmKkaG0F

kustomisation file:

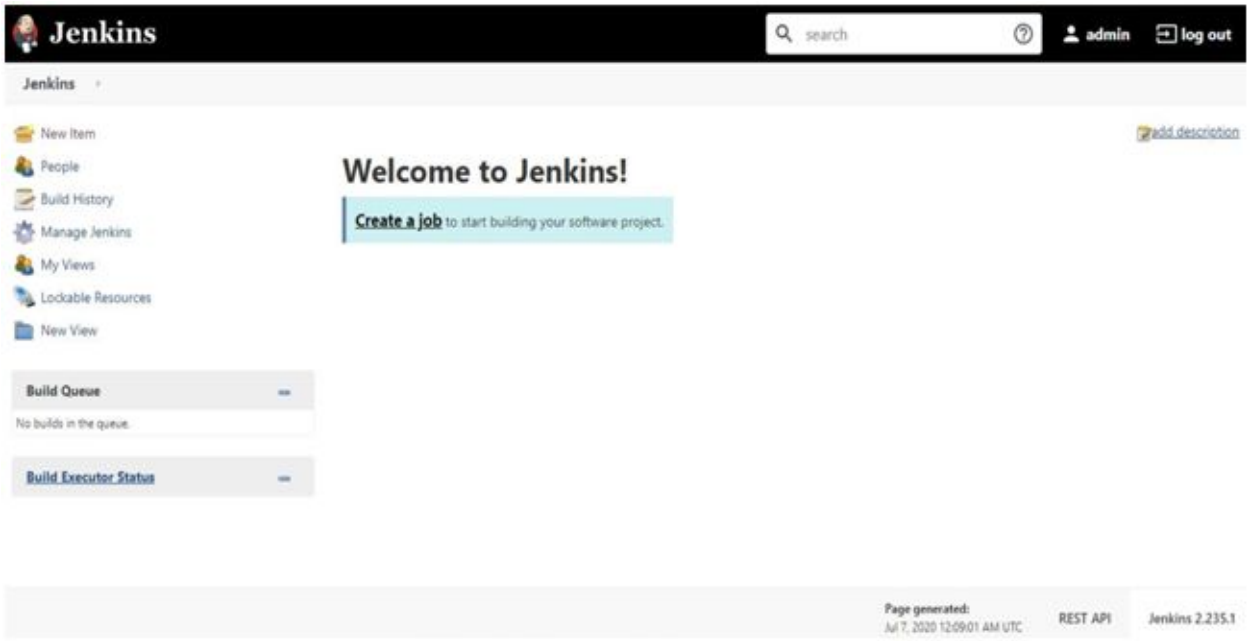
apiVersion: kustomize.config.k8s.io/v1beta1

kind: Kustomization

resources:

- my-jenkins.yml

- secret.yml



- Creating a efs setup and mounting the volume using yml file
    - security Configuration
    - Creation of storage class

1. Create provisioner

```
kind: Deployment

apiVersion: apps/v1

metadata:

  name: efs-provisioner

spec:

 selector:
```

```
 matchLabels:
  app: efs-provisioner
replicas: 1
strategy:
 type: Recreate
template:
 metadata:
  labels:
        app: efs-provisioner
 spec:
  containers:
        - name: efs-provisioner
        image: quay.io/external_storage/efs-provisioner:v0.1.0
env:
        - name: FILE_SYSTEM_ID
        value: fs-68bc37b9
        - name: AWS_REGION
        value: ap-southeast-1
        - name: PROVISIONER_NAME
        value: jenkins/aws-efs
        volumeMounts:
        - name: pv-volume
        mountPath: /persistentvolumes
  volumes:
        - name: pv-volume
        nfs:
        server: fs-87cb37c9.efs.ap-south-1.amazonaws.com
```

path: /

create-rbac(security)

```
apiVersion: rbac.authorization.k8s.io/v1beta1
kind: ClusterRoleBinding
metadata:
  name: nfs-provisioner-role-binding
subjects:
  - kind: ServiceAccount
        name: default
        namespace: jenkins
roleRef:
  kind: ClusterRole
  name: cluster-admin
  apiGroup: rbac.authorization.k8s.io
```

Creating storage-class and mounting volume

```
kind: StorageClass

apiVersion: storage.k8s.io/v1

metadata:

 name: aws-efs

provisioner: jenkins/aws-efs

---

kind: PersistentVolumeClaim

apiVersion: v1

metadata:

 name: jenkins-efs

 annotations:

  volume.beta.kubernetes.io/storage-class: "aws-efs"

spec:

 accessModes:

  - ReadWriteMany

 resources:

  requests:

   storage: 1Gi
```

Deploying jenkins

```
apiVersion: v1
kind: Service
metadata:
 name: myjenkinsvcv
 labels:
  app: jenkinsapp
spec:
 ports:
  - port: 8080
selector:
 app: jenkinsapp
 tier: frontened
type: LoadBalancer
---
apiVersion: apps/v1 # for versions before 1.9.0 use apps/v1beta2
kind: Deployment
metadata:
 name: my-jenkins
 labels:
  app: jenkinsapp
spec:
 selector:
  matchLabels:
   app: jenkinsapp
   tier: frontened
```

```
 strategy:
  type: Recreate
 template:
  metadata:
   labels:
            app: jenkinsapp
            tier: frontened
spec:
 containers:
 - image: jenkins/jenkins
   name: myjenkins
env:
  - name: MYJENKINS_PASSWORD
            valueFrom:
            secretKeyRef:
            name: myjenkins-pass
            key: password
  ports:
  - containerPort: 8080
            name: mysql
            volumeMounts:
            - name: myjenkins-persistent-storage
            mountPath: /var/jenkins_home
   volumes:
   - name: myjenkins-persistent-storage
            persistentVolumeClaim:
             claimName: efs-myjenkins
```

USING HELM(client) AND TILLER(server):

https://github.com/helm/helm/releases

helm init

helm repo add stable https://kubernetes-charts.storage.googleapis.com/

helm repo list

helm repo update

kubectl -n kube-system create serviceaccount tiller

kubectl create clusterrolebinding tiller --clusterrole cluster-admin

--serviceaccount=kube-system:tiller

helm init --service-account tiller

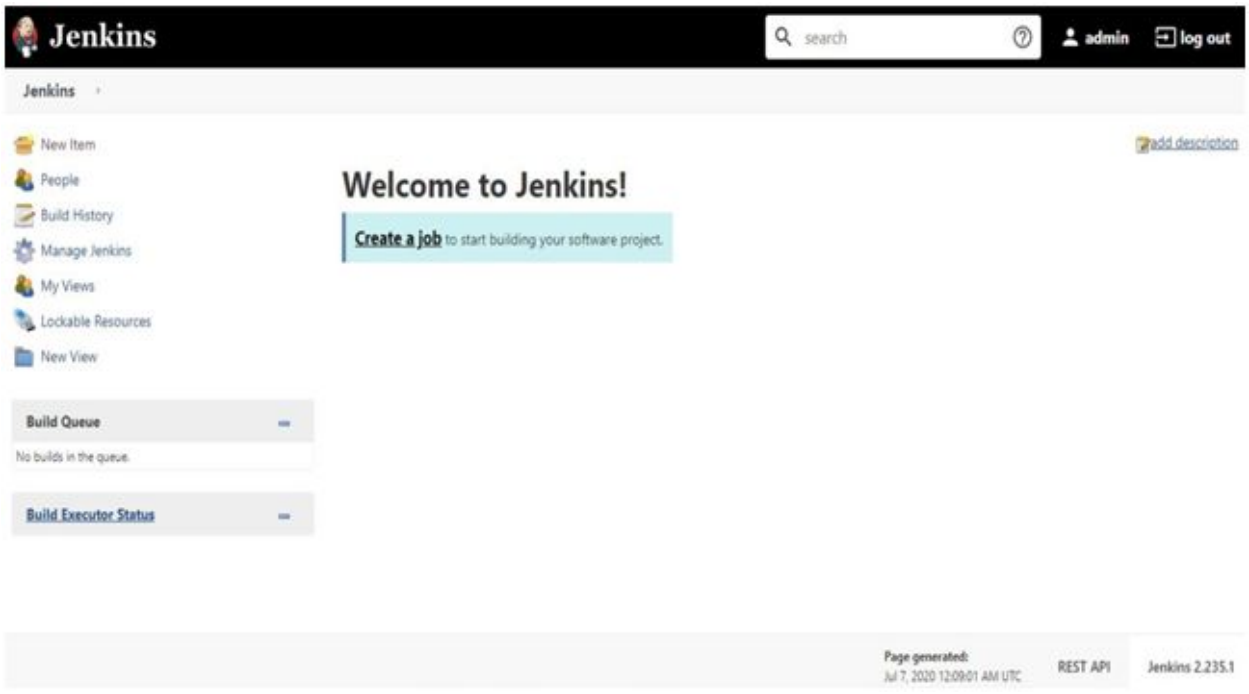
kubectl get pods --namespace kube-system

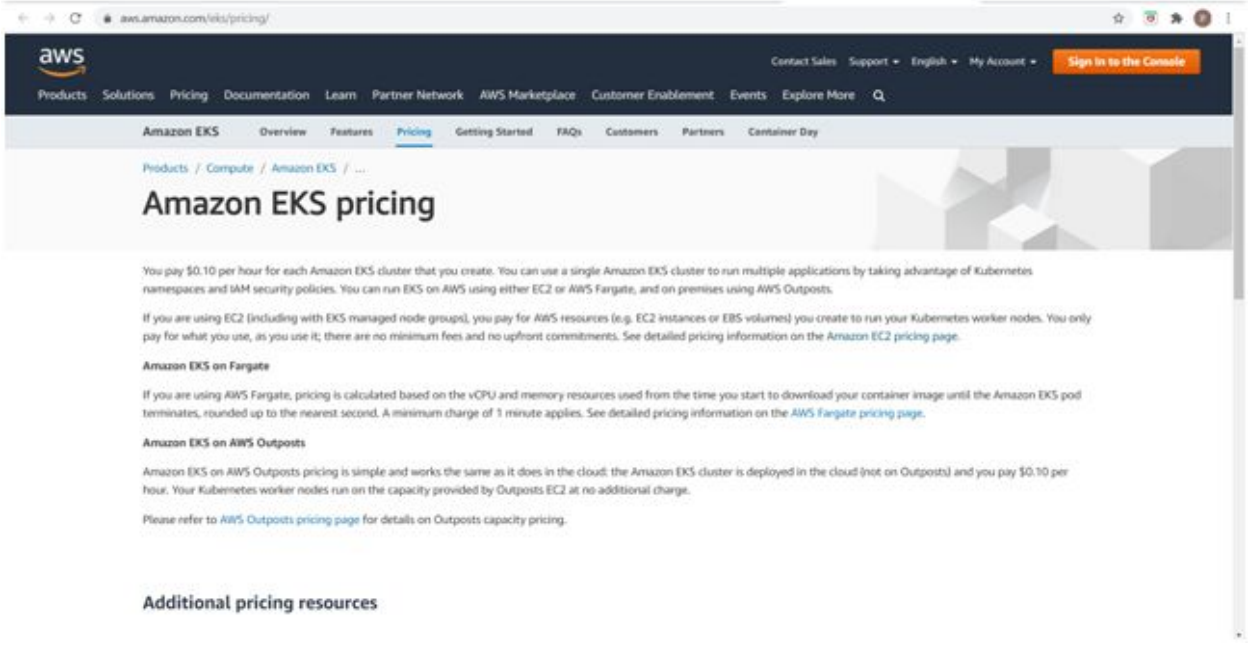
helm install stable/jenkins --version 2.1.2 --namespace jenkins --set

master.usePodSecurityContext=True --set master.adminPassword="redhat" --set

persistence.enabled=true --set persistence.storageClass=default --set
persistence.accessMode=ReadWriteOnce --set persistence.size=5Gi


Welcome to Jenkins!
Username
Password
Sign in


Jenkins
search
admin
log out
Jenkins
New Item
People
Build History
Manage Jenkins
My Views
Lockable Resources
New View
add description
Welcome to Jenkins!
Create a job to start building your software project.
Build Queue
No builds in the queue.
Build Executor Status
Page generated:
Jul 7, 2020 12:09:01 AM UTC
REST API
Jenkins 2.235.1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Overview
Features
Pricing
Getting Started
FAQs
Customers
Partners
Container Day
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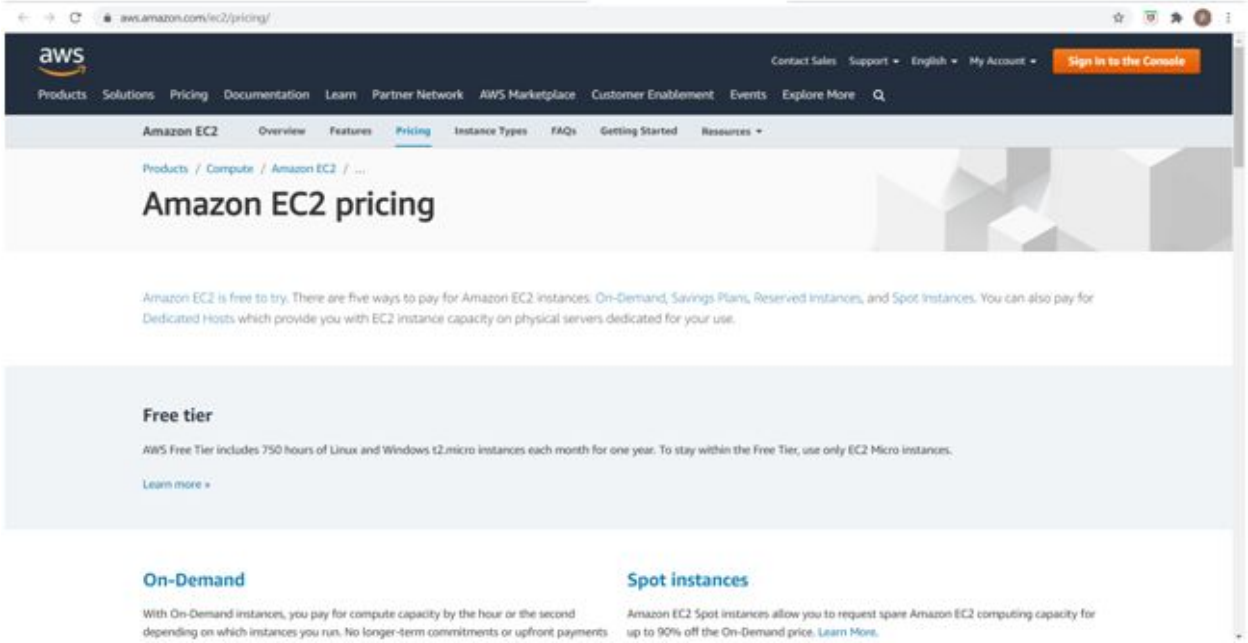
Amazon EKS pricing
You pay $0.10 per hour for each Amazon EKS cluster that you create. You can use a single Amazon EKS cluster to run multiple applications by taking advantage of Kubernetes namespaces and IAM security policies. You can run EKS on AWS using either EC2 or AWS Fargate, and on premises using AWS Outposts.
If you are using EC2 (including with EKS managed node groups), you pay for AWS resources (e.g. EC2 instances or EBS volumes) you create to run your Kubernetes worker nodes. You only pay for what you use, as you use it; there are no minimum fees and no upfront commitments. See detailed pricing information on the Amazon EC2 pricing page.
Amazon EKS on Fargate
If you are using AWS Fargate, pricing is calculated based on the vCPU and memory resources used from the time you start to download your container image until the Amazon EKS pod terminates, rounded up to the nearest second. A minimum charge of 1 minute applies. See detailed pricing information on the AWS Fargate pricing page.
Amazon EKS on AWS Outposts
Amazon EKS on AWS Outposts pricing is simple and works the same as it does in the cloud: the Amazon EKS cluster is deployed in the cloud (not on Outposts) and you pay $0.10 per hour. Your Kubernetes worker nodes run on the capacity provided by Outposts EC2 at no additional charge.
Please refer to AWS Outposts pricing page for details on Outposts capacity pricing.
Additional pricing resources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Customer Enablement
Events
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Overview
Features
Pricing
Instance Types
FAQs
Getting Started
Resources
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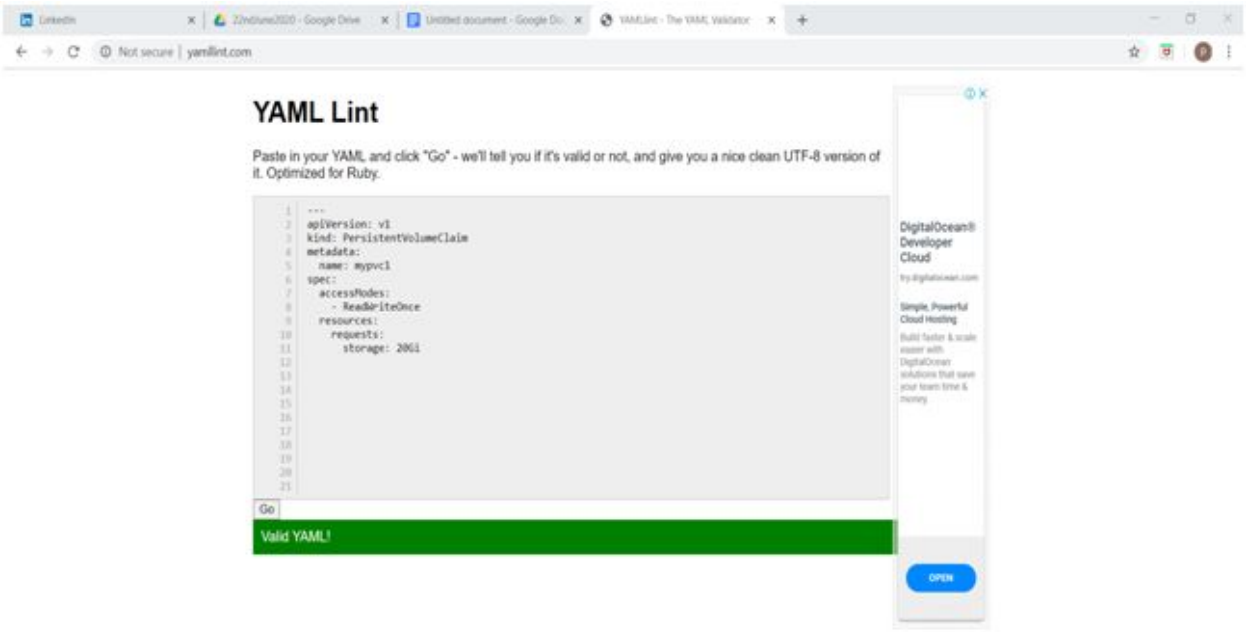
Amazon EC2 pricing
Amazon EC2 is free to try. There are five ways to pay for Amazon EC2 instances: On-Demand, Savings Plans, Reserved Instances, and Spot Instances. You can also pay for Dedicated Hosts which provide you with EC2 instance capacity on physical servers dedicated for your use.
Free tier
AWS Free Tier includes 750 hours of Linux and Windows t2.micro instances each month for one year. To stay within the Free Tier, use only EC2 Micro instances.
Learn more »
On-Demand
With On-Demand instances, you pay for compute capacity by the hour or the second depending on which instances you run. No longer-term commitments or upfront payments
Spot instances
Amazon EC2 Spot instances allow you to request spare Amazon EC2 computing capacity for up to 90% off the On-Demand price. Learn More.


YAMLint - The YAML Validator
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YAML Lint
Paste in your YAML and click "Go" - we'll tell you if it's valid or not, and give you a nice clean UTF-8 version of it. Optimized for Ruby.
---
apiVersion: v1
kind: PersistentVolumeClaim
metadata:
name: mypvc1
spec:
accessModes:
- ReadWriteOnce
resources:
requests:
storage: 20Gi
Go
Valid YAML!
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