TASK:

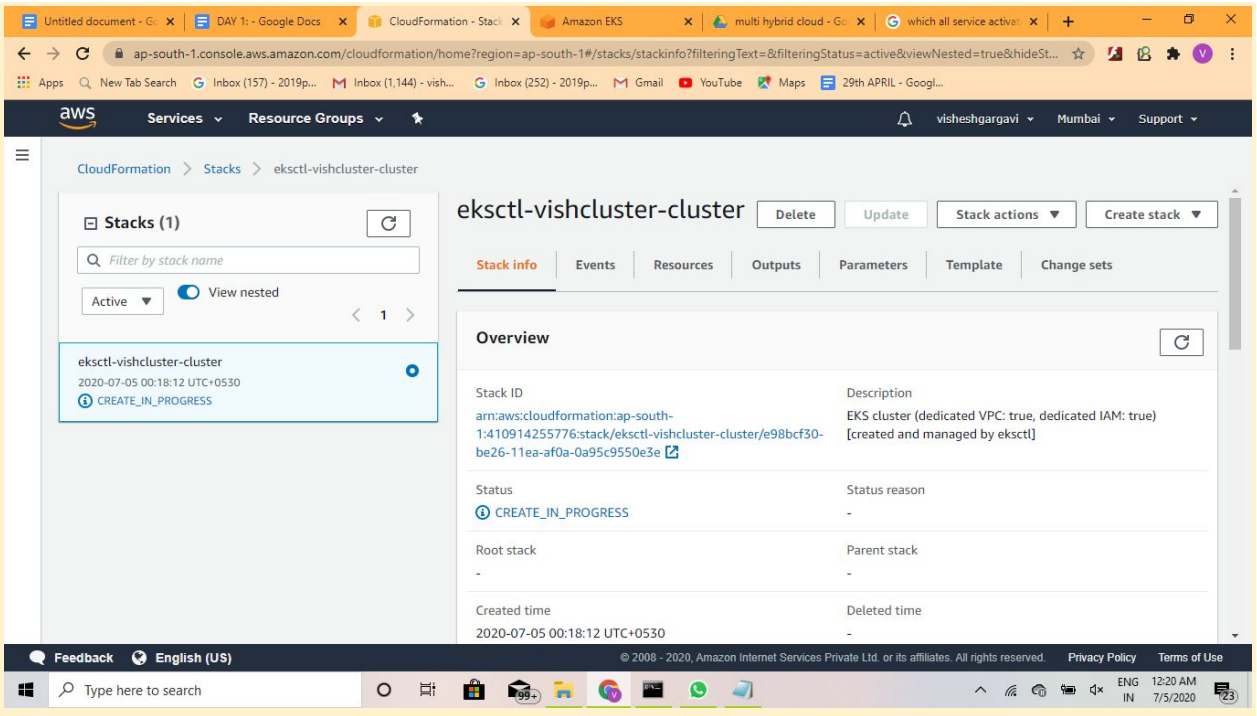
Launching a cluster on eks using cluster file:
eksctl create cluster -f cluster1.yml

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

metadata:
  name:  vishcluster
```

```
  region:  ap-south-1

nodeGroups:
  -  name:  ng1
     desiredCapacity:  2
     instanceType:  t2.micro
     ssh:
        publicKeyName:  mykey1111.pem
  -  name:  ng2
     desiredCapacity:  1
     instanceType:  t2.small
     ssh:
        publicKeyName:  mykey1111.pem
--cluster=vishcluster'
```


Untitled document - G
DAY 1: - Google Docs
CloudFormation - Stack
Amazon EKS
multi hybrid cloud - Go
which all service activat
ap-south-1.console.aws.amazon.com/cloudformation/home?region=ap-south-1#/stacks/stackinfo?filteringText=&filteringStatus=active&viewNested=true&hideSt...
Apps
New Tab Search
Inbox (157) - 2019p...
Inbox (1,144) - vish...
Inbox (252) - 2019p...
Gmail
YouTube
Maps
29th APRIL - Googl...
aws
Services
Resource Groups
visheshgargavi
Mumbai
Support
CloudFormation
Stacks
eksctl-vishcluster-cluster
Stacks (1)
Filter by stack name
Active
View nested
1
eksctl-vishcluster-cluster
2020-07-05 00:18:12 UTC+0530
CREATE_IN_PROGRESS
eksctl-vishcluster-cluster
Delete
Update
Stack actions
Create stack
Stack info
Events
Resources
Outputs
Parameters
Template
Change sets
Overview
Stack ID
arn:aws:cloudformation:ap-south-1:410914255776:stack/eksctl-vishcluster-cluster/e98bcf30-be26-11ea-af0a-0a95c9550e3e
Description
EKS cluster (dedicated VPC: true, dedicated IAM: true) [created and managed by eksctl]
Status
CREATE_IN_PROGRESS
Status reason
-
Root stack
-
Parent stack
-
Created time
2020-07-05 00:18:12 UTC+0530
Deleted time
-
Feedback
English (US)
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ENG
IN
12:20 AM
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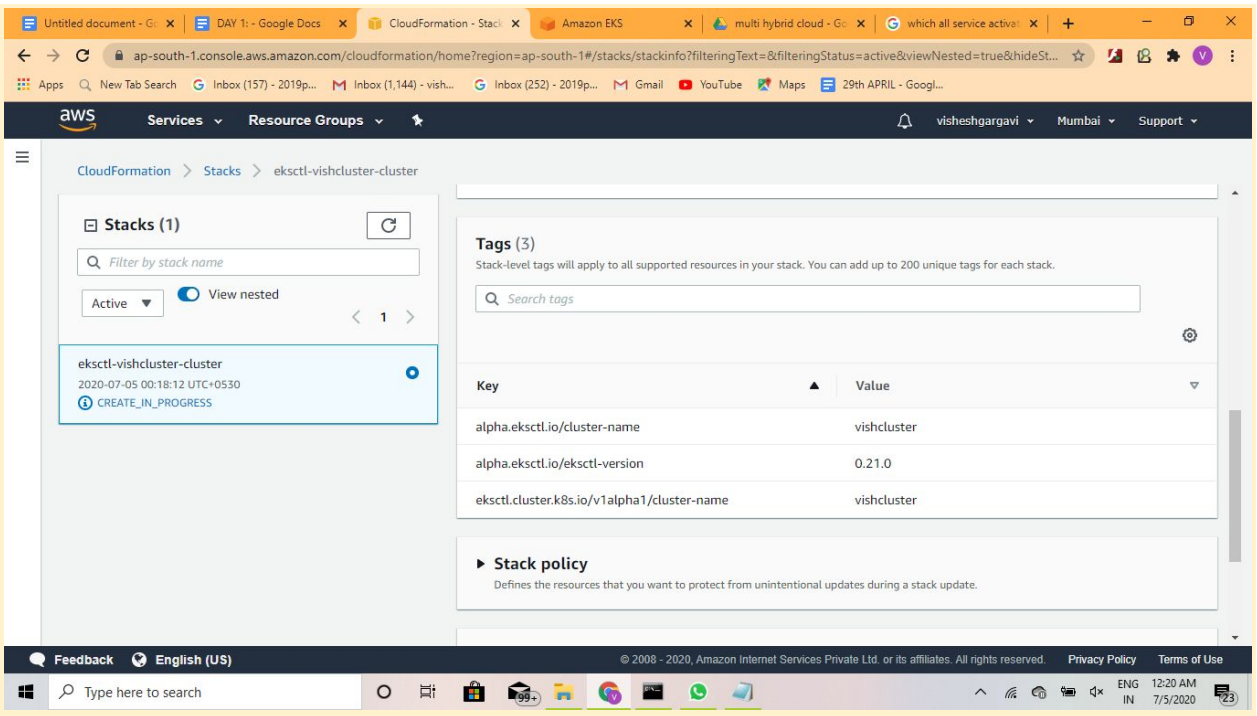
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ap-south-1.console.aws.amazon.com/cloudformation/home?region=ap-south-1#/stacks/stackinfo?filteringText=&filteringStatus=active&viewNested=true&hideSt...
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Stacks
eksctl-vishcluster-cluster
Stacks (1)
Filter by stack name
Active
View nested
1
eksctl-vishcluster-cluster
2020-07-05 00:18:12 UTC+0530
CREATE_IN_PROGRESS
Tags (3)
Stack-level tags will apply to all supported resources in your stack. You can add up to 200 unique tags for each stack.
Search tags
Key
Value
alpha.eksctl.io/cluster-name
vishcluster
alpha.eksctl.io/eksctl-version
0.21.0
eksctl.cluster.k8s.io/v1alpha1/cluster-name
vishcluster
Stack policy
Defines the resources that you want to protect from unintentional updates during a stack update.
Feedback
English (US)
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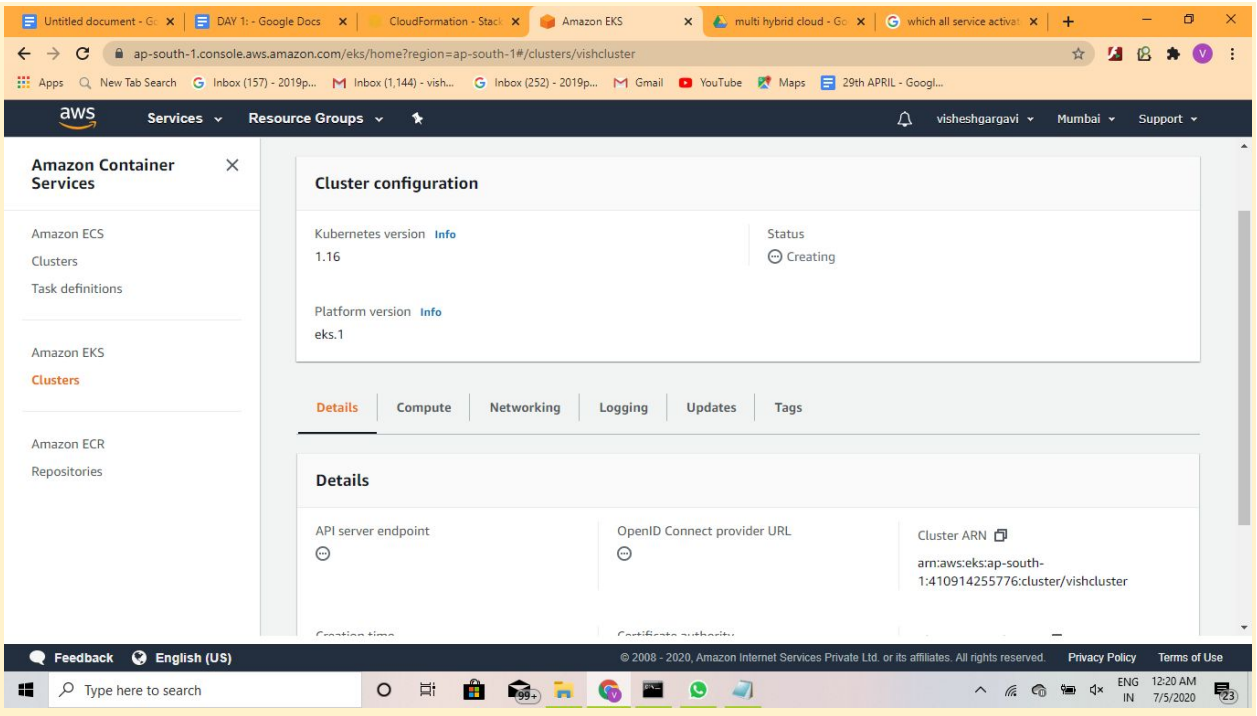
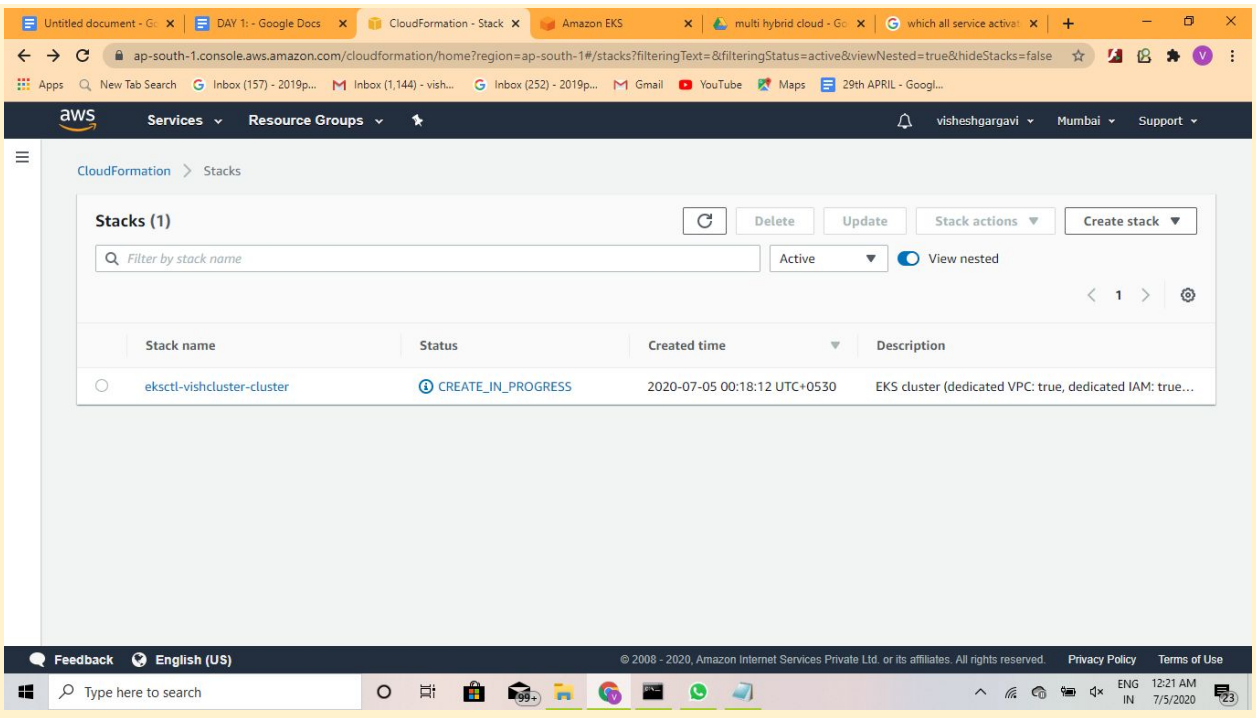
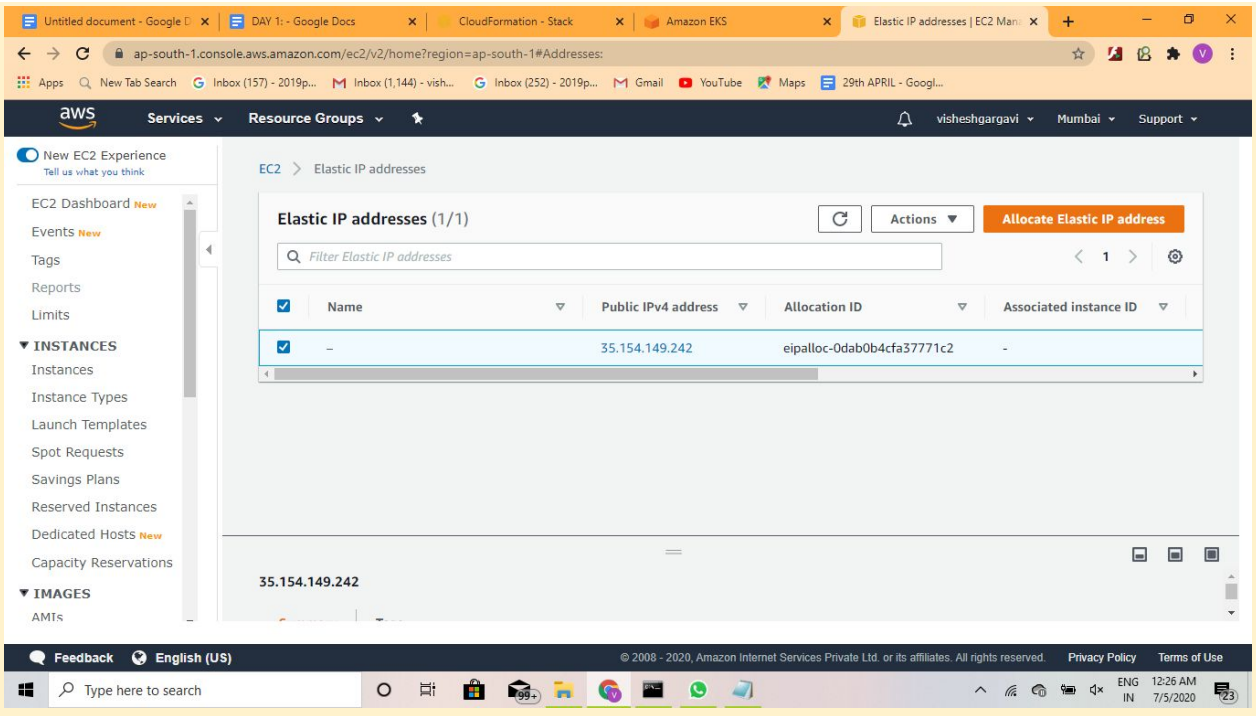
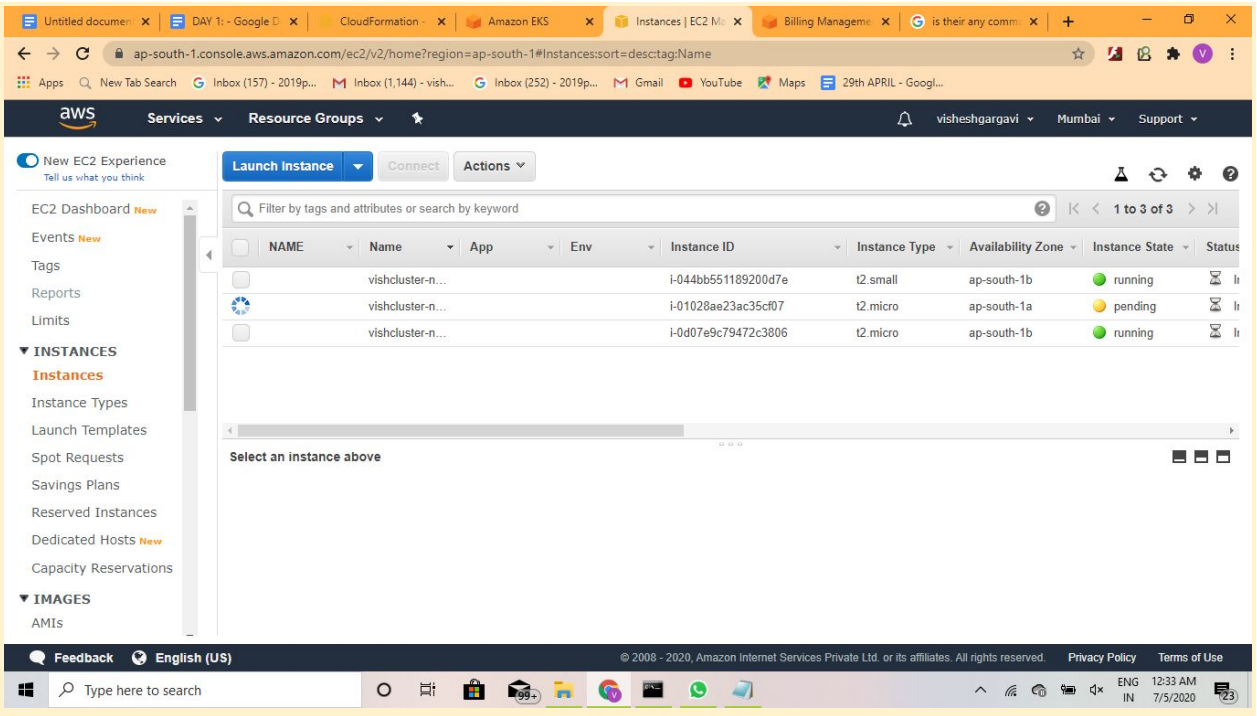
ENG
IN
12:20 AM
7/5/2020


Amazon Container Services
Amazon ECS
Clusters
Task definitions
Amazon EKS
Clusters
Amazon ECR
Repositories
Cluster configuration
Kubernetes version Info
1.16
Status
Creating
Platform version Info
eks.1
Details
Compute
Networking
Logging
Updates
Tags
Details
API server endpoint
OpenID Connect provider URL
Cluster ARN
arn:aws:eks:ap-south-1:410914255776:cluster/vishcluster


CloudFormation
Stacks
Stacks (1)
Delete
Update
Stack actions
Create stack
Filter by stack name
Active
View nested
Stack name
Status
Created time
Description
eksctl-vishcluster-cluster
CREATE_IN_PROGRESS
2020-07-05 00:18:12 UTC+0530
EKS cluster (dedicated VPC: true, dedicated IAM: true...



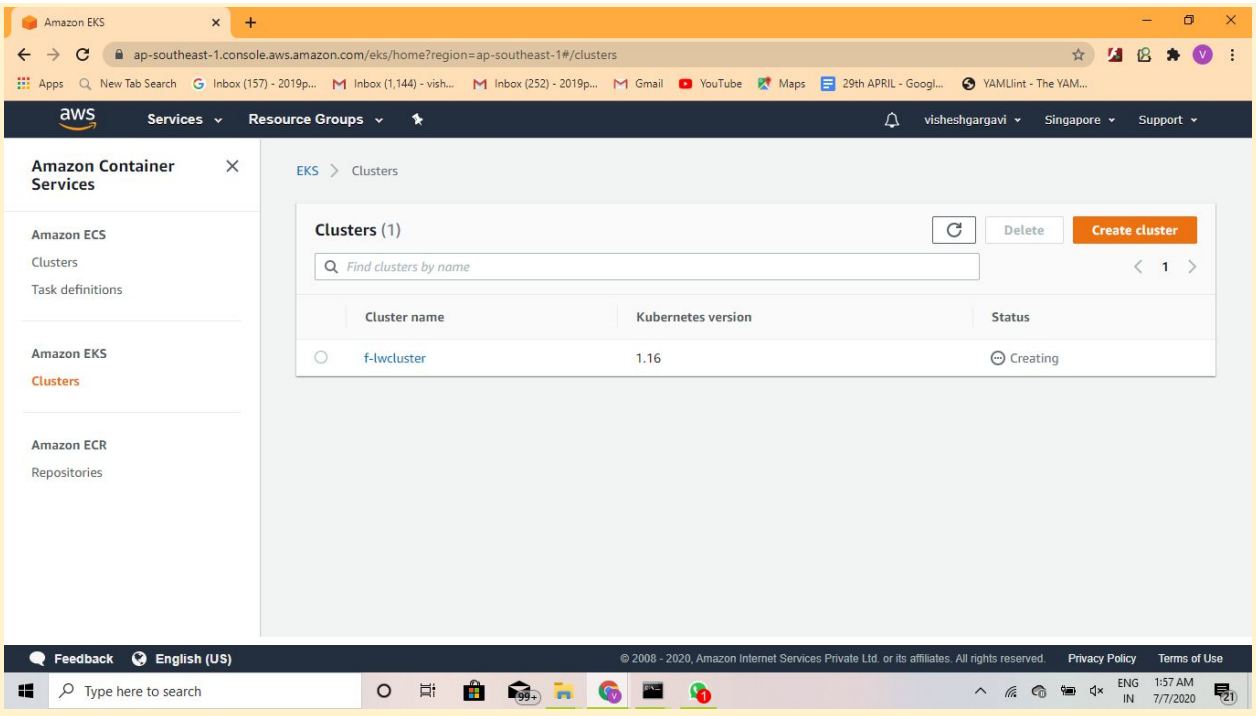


>> launching a fargate using fargate.yml

```
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
```

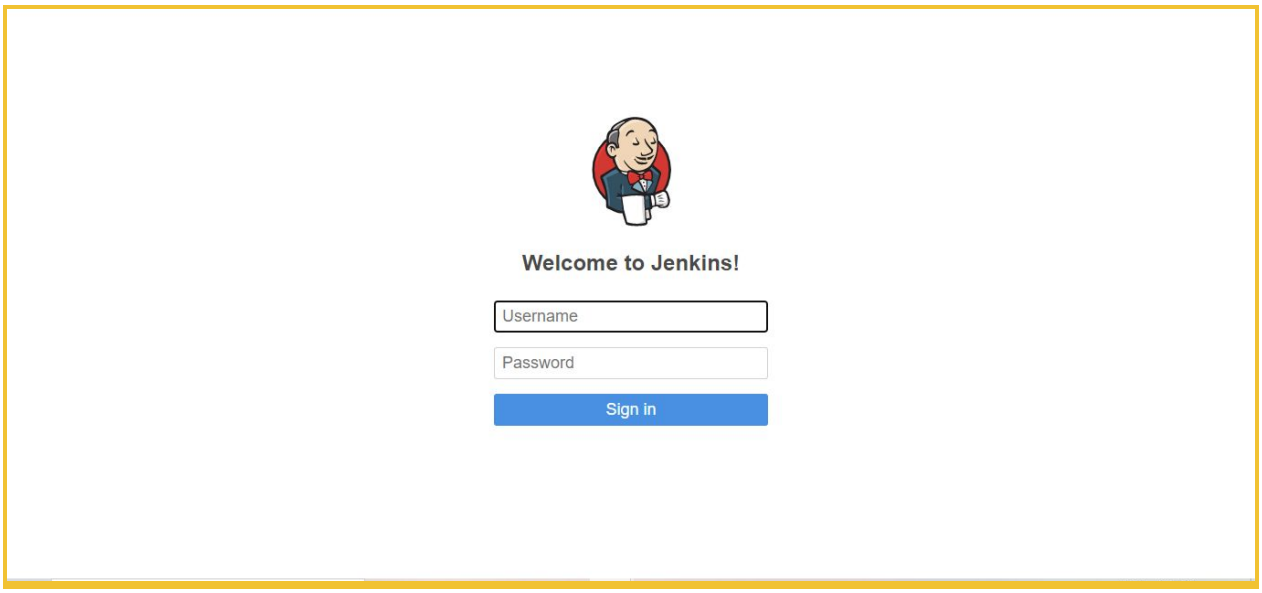
```
  selector:
    app:  jenkinsapp
  type:  NodePort
---
apiVersion: apps/v1 # for versions before 1.9.0 use apps/v1beta2
kind: Deployment
metadata:
  name: my-jenkins
  labels:
    app: jenkinsapp
spec:
  selector:
    matchLabels:
      app: jenkinsapp
      tier: frontend
  strategy:
    type: Recreate
  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
```

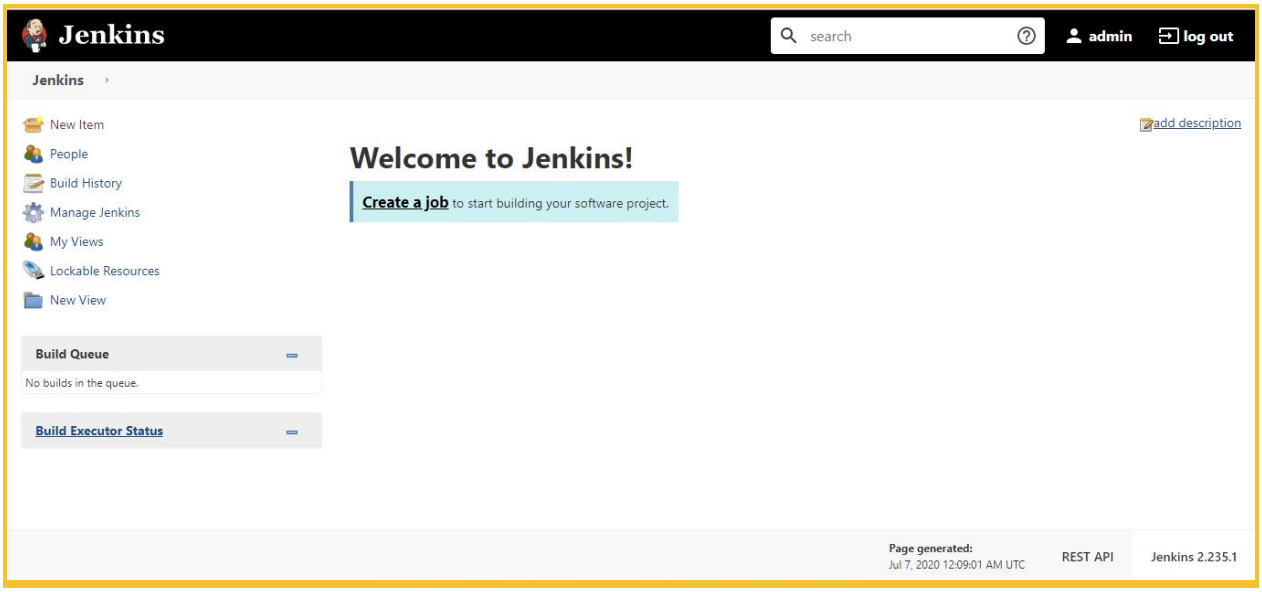
```
          name: jenkins-cont
        volumeMounts:
        - name: myjenkins-persistent-storage
          mountPath: /var/jenkins_home
      volumes:
      - name: myjenkins-persistent-storage
        persistentVolumeClaim:
          claimName: efs-myjenkins
---
kind:  StorageClass
apiVersion:  storage.k8s.io/v1
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: YWRtaW4K
   vpass: cmVkaGF0
```

kustomisation file:

```
apiVersion: kustomize.config.k8s.io/v1beta1
```

kind: Kustomization
resources:
 - my-jenkins.yml
 - secret.yml





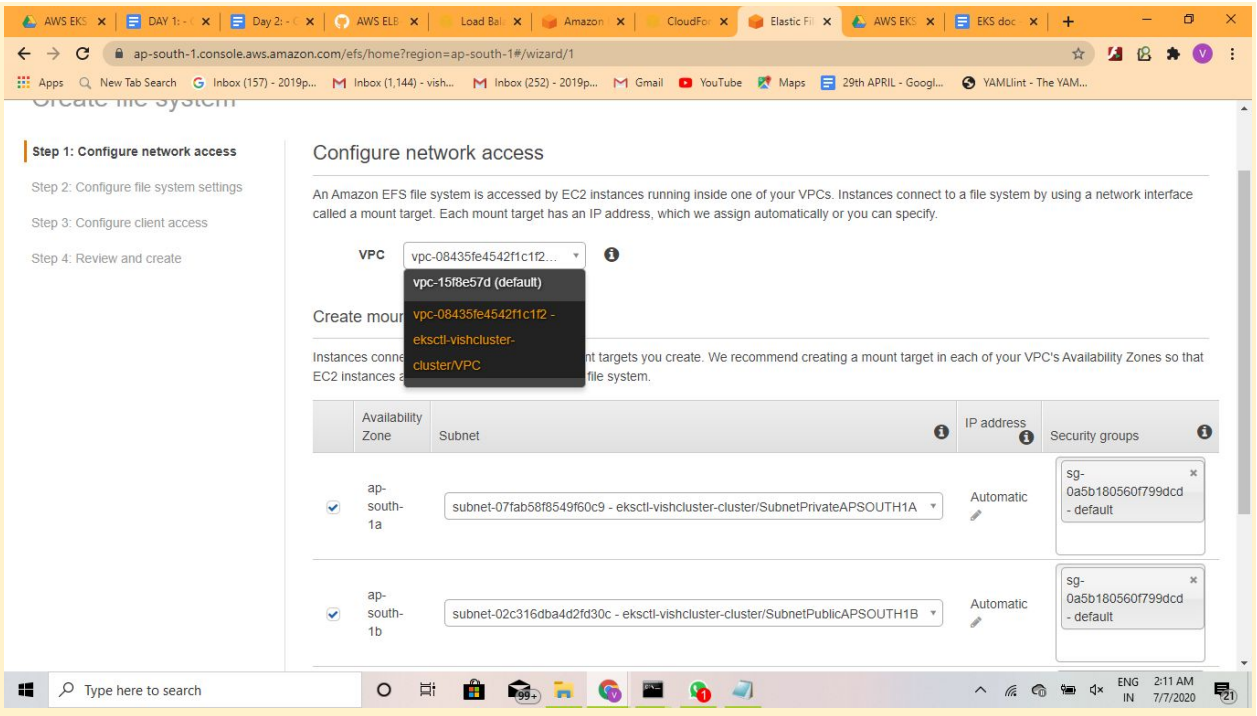
>> creating a efs setup and mounting the volume using yml file

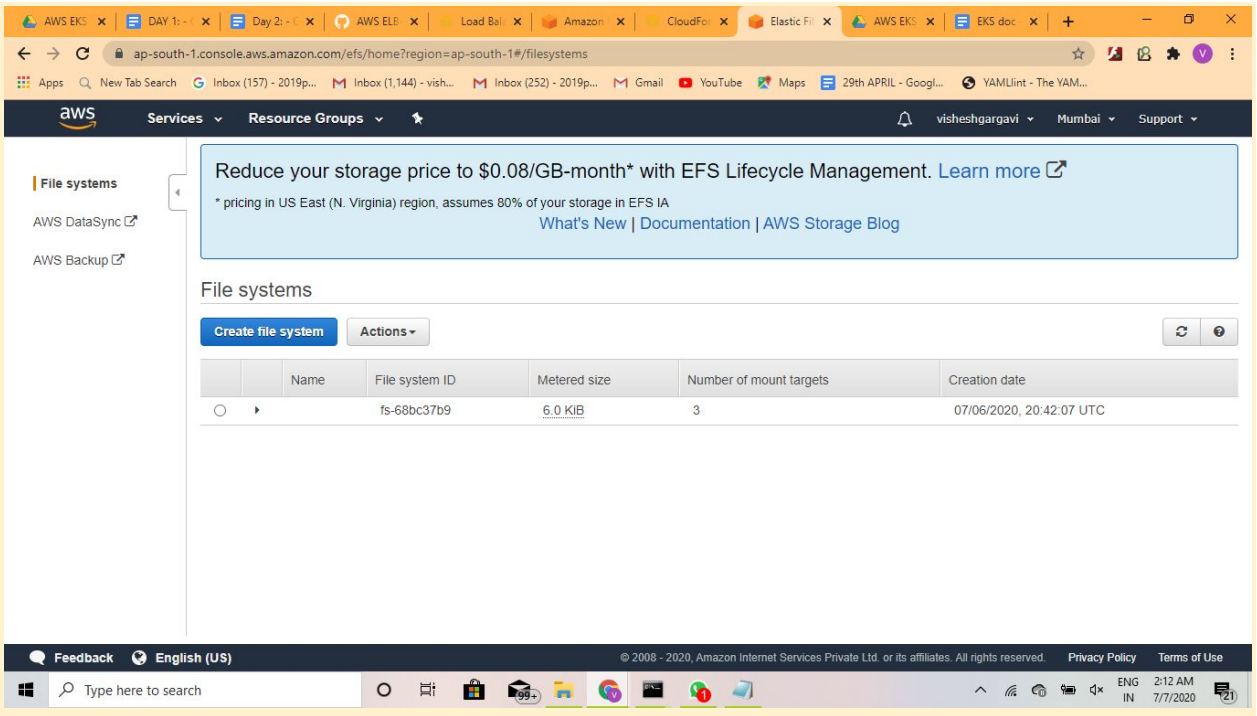
- Configuring the security
- Creating a storage class

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-68bc37b9.efs.ap-south-1.amazonaws.com
            path: /
```





2. 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
```

3. Creating storage-class and mouting 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
```

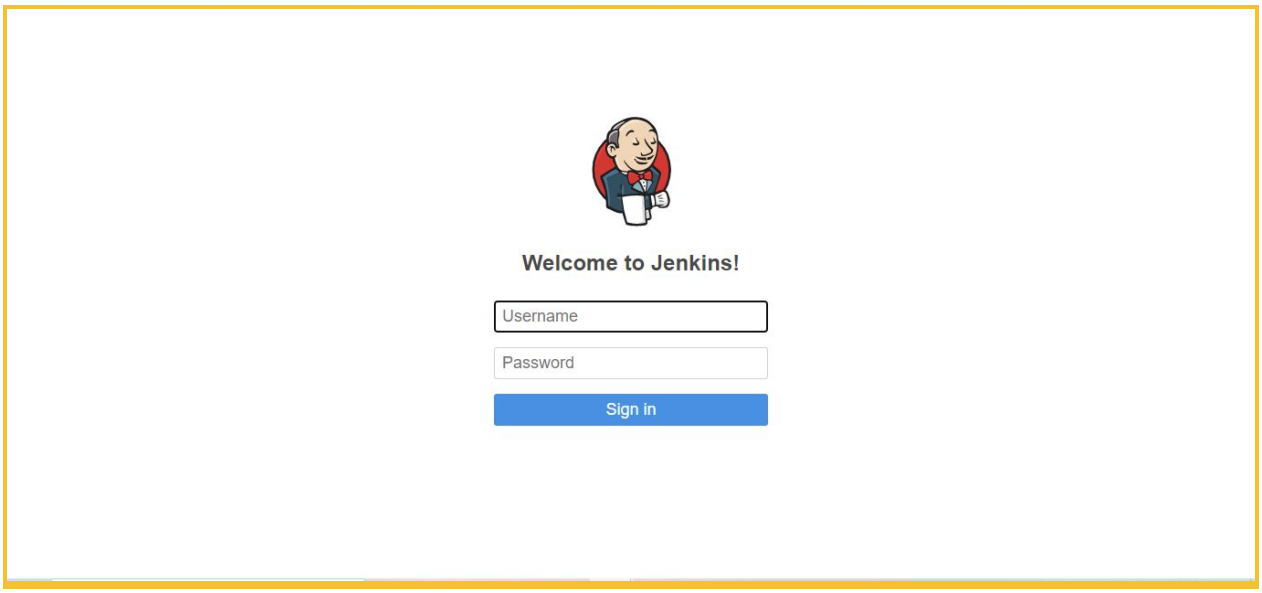
```
spec:
  ports:
    - port: 8080
  selector:
    app: jenkinsapp
    tier: frontened
  type: LoadBalancer
---
apiVersion: apps/v1 # for versions before 1.9.0 use apps/v1beta2
kind: Deployment
metadata:
  name: my-jenkins
  labels:
    app: jenkinsapp
spec:
  selector:
    matchLabels:
      app: jenkinsapp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

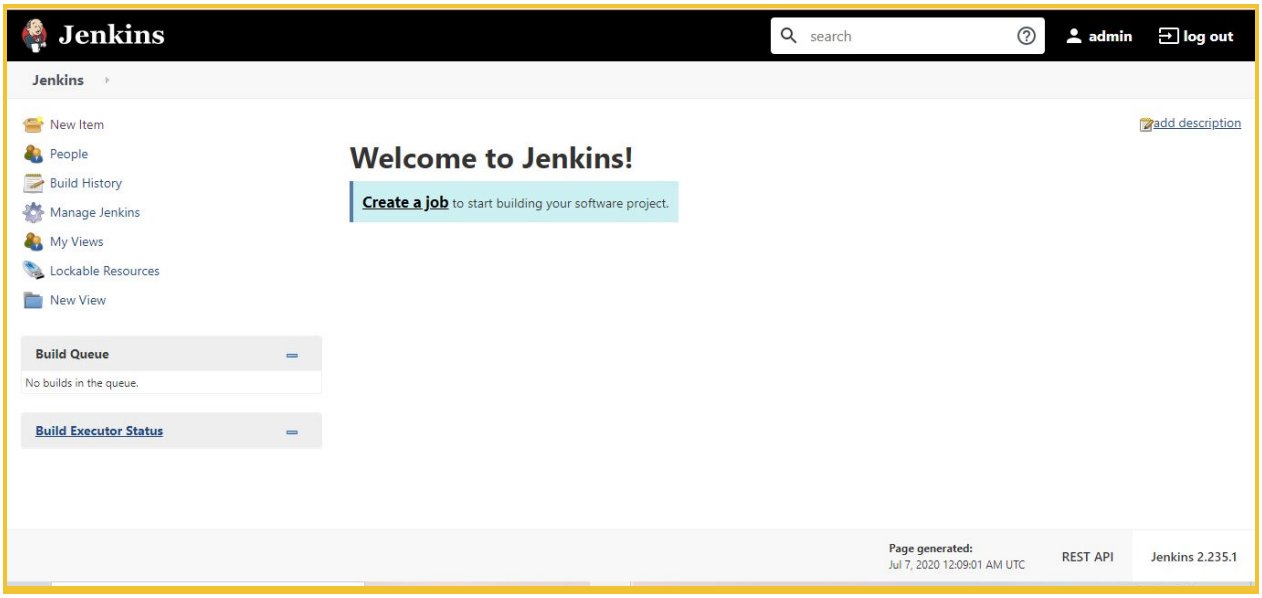
```
        volumeMounts:
        - name: myjenkins-persistent-storage
          mountPath: /var/jenkins_home
      volumes:
      - name: myjenkins-persistent-storage
        persistentVolumeClaim:
          claimName: efs-myjenkins
```

USING HELM AND TILLER:

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
```



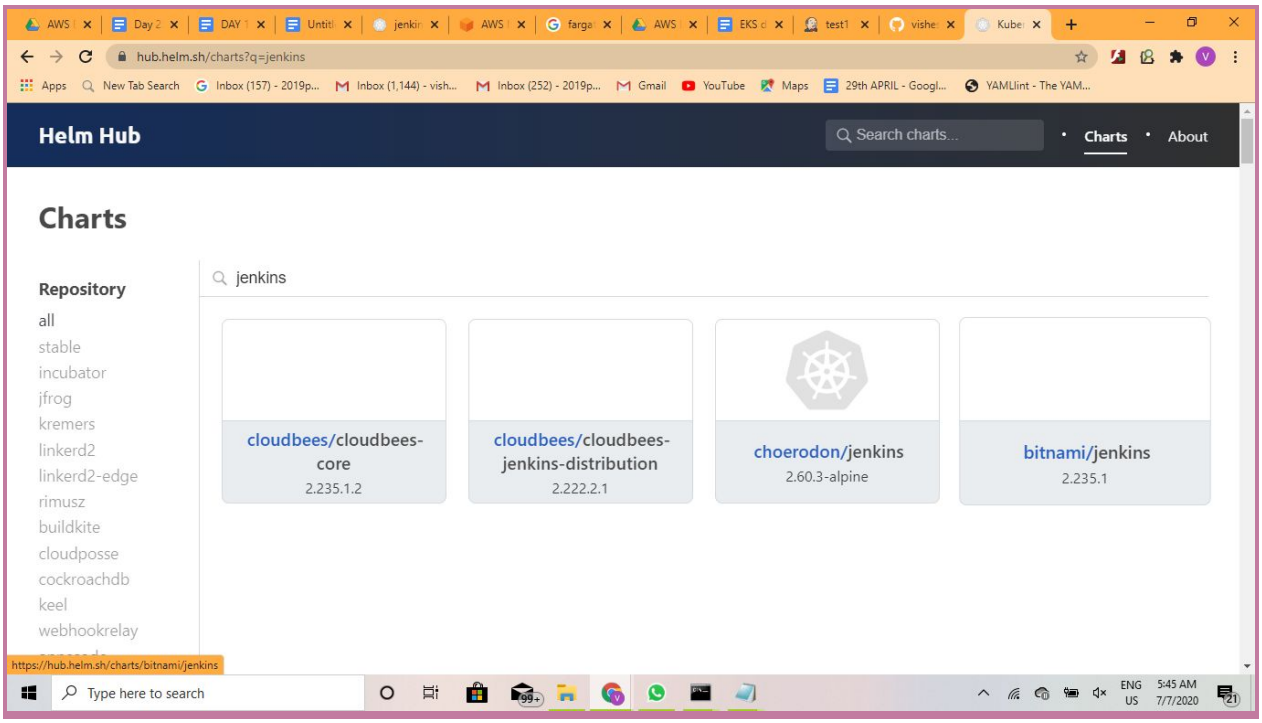


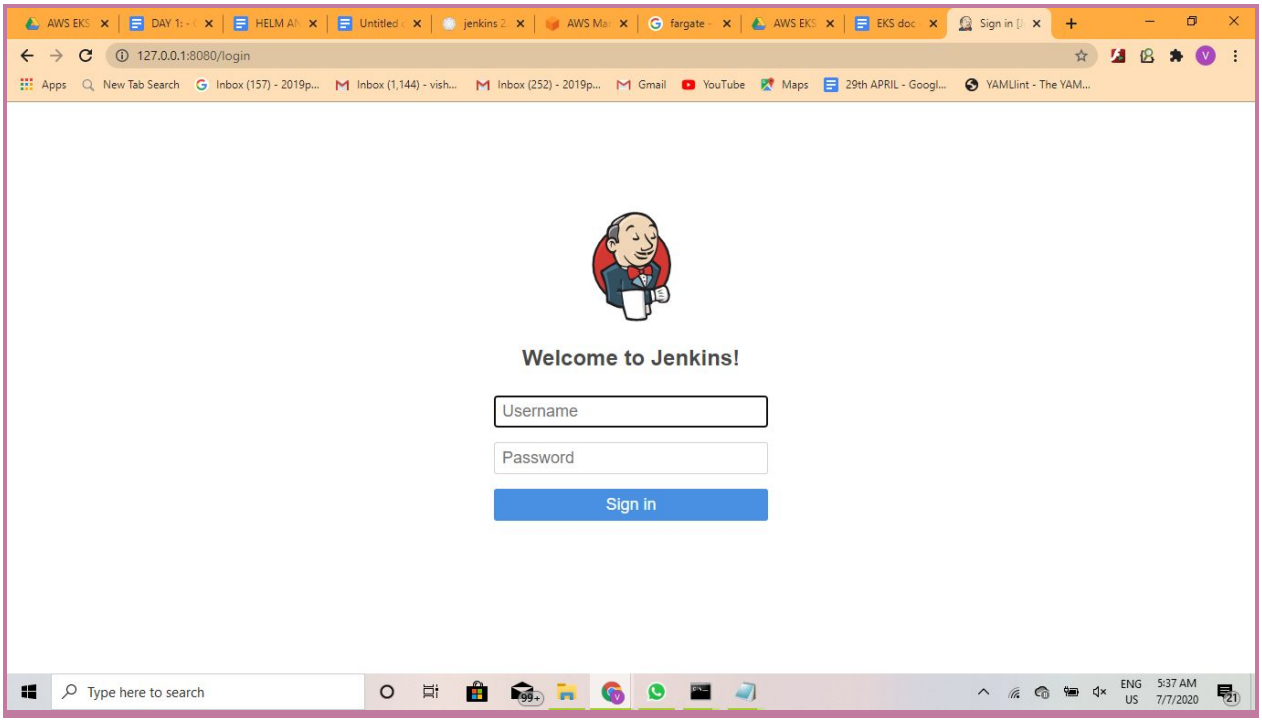
C:\Windows\system32>helm install stable/jenkins --version 2.1.2 --namespace jenkins --set master.usePodSecurityContext=True --set master.adminPassword="redhat" --set persistence.enabled=true --set persistence.storageClass=default --set persistence.accessMode=ReadWriteOnce --set persistence.size=5Gi
NAME: cautious-giraffe
LAST DEPLOYED: Tue Jul 7 05:10:41 2020
NAMESPACE: jenkins
STATUS: DEPLOYED

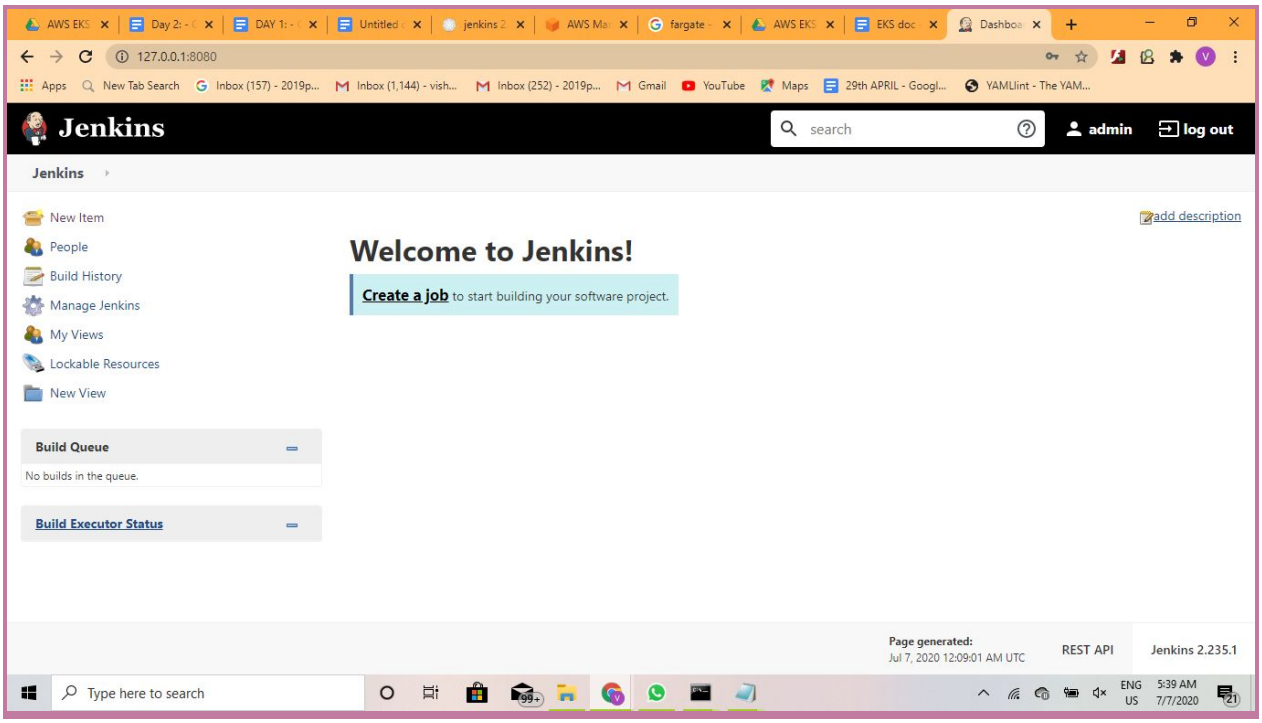
RESOURCES:

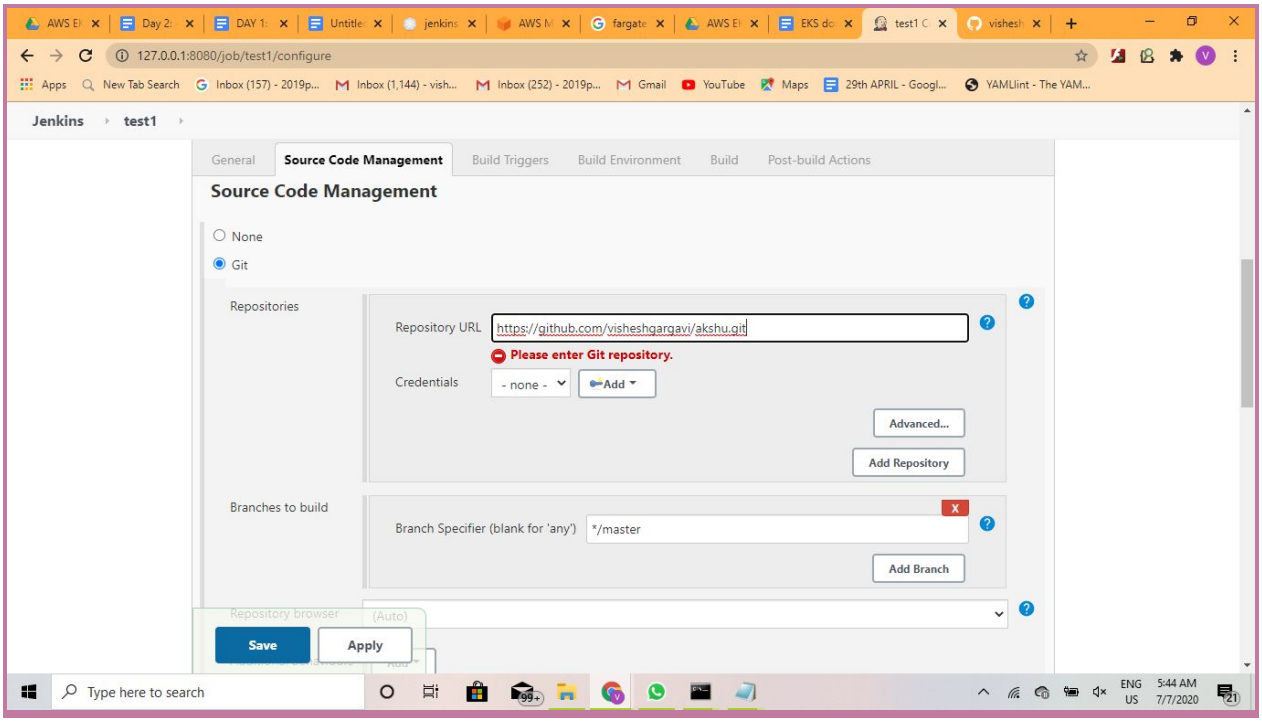
```
==> v1/ConfigMap
NAME                                        DATA  AGE
cautious-giraffe-jenkins                    2     1s
cautious-giraffe-jenkins-jenkins-jcasc-config  1     1s
cautious-giraffe-jenkins-tests              1     1s

==> v1/Deployment
NAME                    READY  UP-TO-DATE  AVAILABLE  AGE
cautious-giraffe-jenkins  0/1    1           0          1s

==> v1/PersistentVolumeClaim
NAME                    STATUS   VOLUME   CAPACITY  ACCESS MODES
STORAGECLASS  AGE
cautious-giraffe-jenkins  Pending  default  1s

==> v1/Pod(related)
NAME                                    READY  STATUS   RESTARTS  AGE
cautious-giraffe-jenkins-856749646-97qdf  0/2    Pending  0         1s

==> v1/Role
NAME                                    CREATED AT
cautious-giraffe-jenkins-casc-reload      2020-07-06T23:40:41Z
cautious-giraffe-jenkins-schedule-agents  2020-07-06T23:40:41Z

==> v1/RoleBinding
NAME                                    ROLE                                    AGE
cautious-giraffe-jenkins-schedule-agents
Role/cautious-giraffe-jenkins-schedule-agents  1s
cautious-giraffe-jenkins-watch-configmaps  Role/cautious-giraffe-jenkins-casc-reload
1s

==> v1/Secret
NAME                    TYPE    DATA  AGE
cautious-giraffe-jenkins  Opaque  2     1s

==> v1/Service
NAME                          TYPE       CLUSTER-IP      EXTERNAL-IP  PORT(S)    AGE
cautious-giraffe-jenkins        ClusterIP  10.109.108.189  <none>       8080/TCP   1s
cautious-giraffe-jenkins-agent  ClusterIP  10.110.253.149  <none>       50000/TCP  1s
```

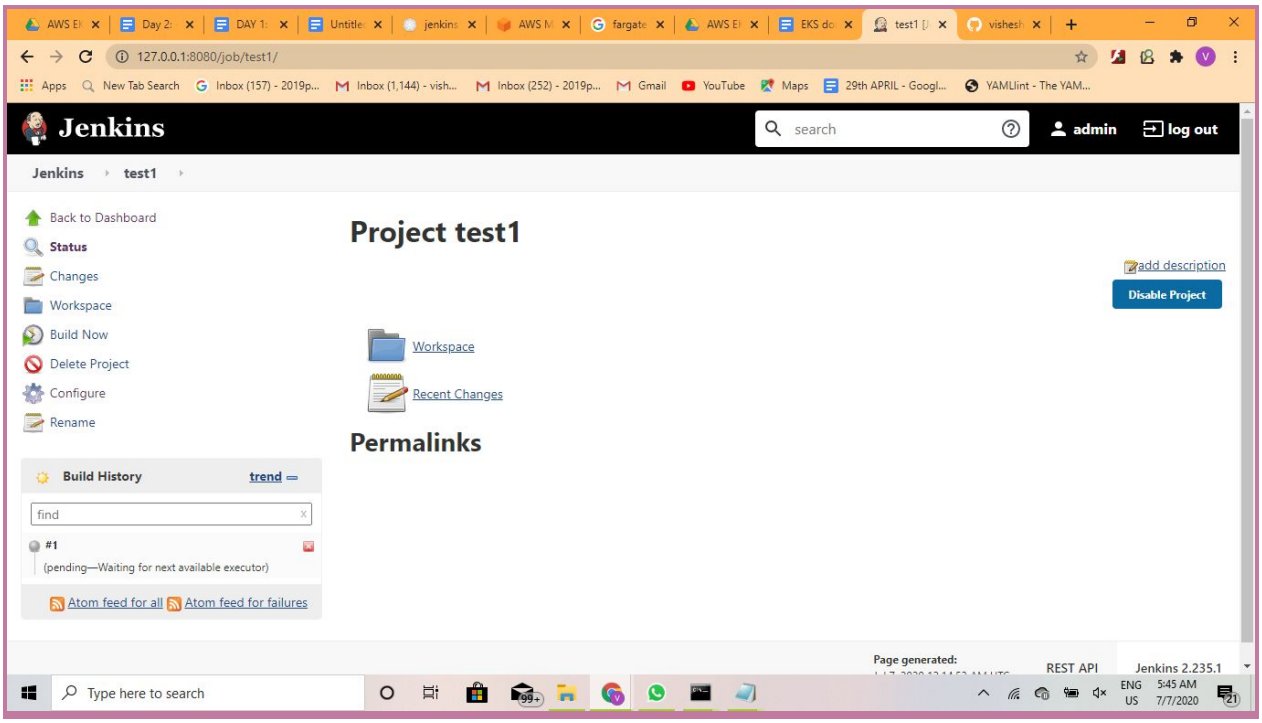
```
==> v1/ServiceAccount
NAME                       SECRETS  AGE
cautious-giraffe-jenkins  1        1s


NOTES:
1. Get your 'admin' user password by running:
  printf $(kubectl get secret --namespace jenkins cautious-giraffe-jenkins -o
jsonpath="{.data.jenkins-admin-password}" | base64 --decode);echo
2. Get the Jenkins URL to visit by running these commands in the same shell:
  export POD_NAME=$(kubectl get pods --namespace jenkins -l
"app.kubernetes.io/component=jenkins-master" -l
"app.kubernetes.io/instance=cautious-giraffe" -o jsonpath="{.items[0].metadata.name}")
  echo http://127.0.0.1:8080
  kubectl --namespace jenkins port-forward $POD_NAME 8080:8080

3. Login with the password from step 1 and the username: admin

4. Use Jenkins Configuration as Code by specifying configScripts in your values.yaml
file, see documentation: http:///configuration-as-code and examples:
https://github.com/jenkinsci/configuration-as-code-plugin/tree/master/demos

For more information on running Jenkins on Kubernetes, visit:
https://cloud.google.com/solutions/jenkins-on-container-engine
For more information about Jenkins Configuration as Code, visit:
https://jenkins.io/projects/jcasc/


C:\Windows\system32>kubectl get pods -n jenkins
NAME                                    READY   STATUS    RESTARTS   AGE
cautious-giraffe-jenkins-856749646-97qdf   0/2     Pending   0          19m

C:\Windows\system32>kubectl --namespace jenkins port-forward
cautious-giraffe-jenkins-856749646-97qdf 8080:8080
```

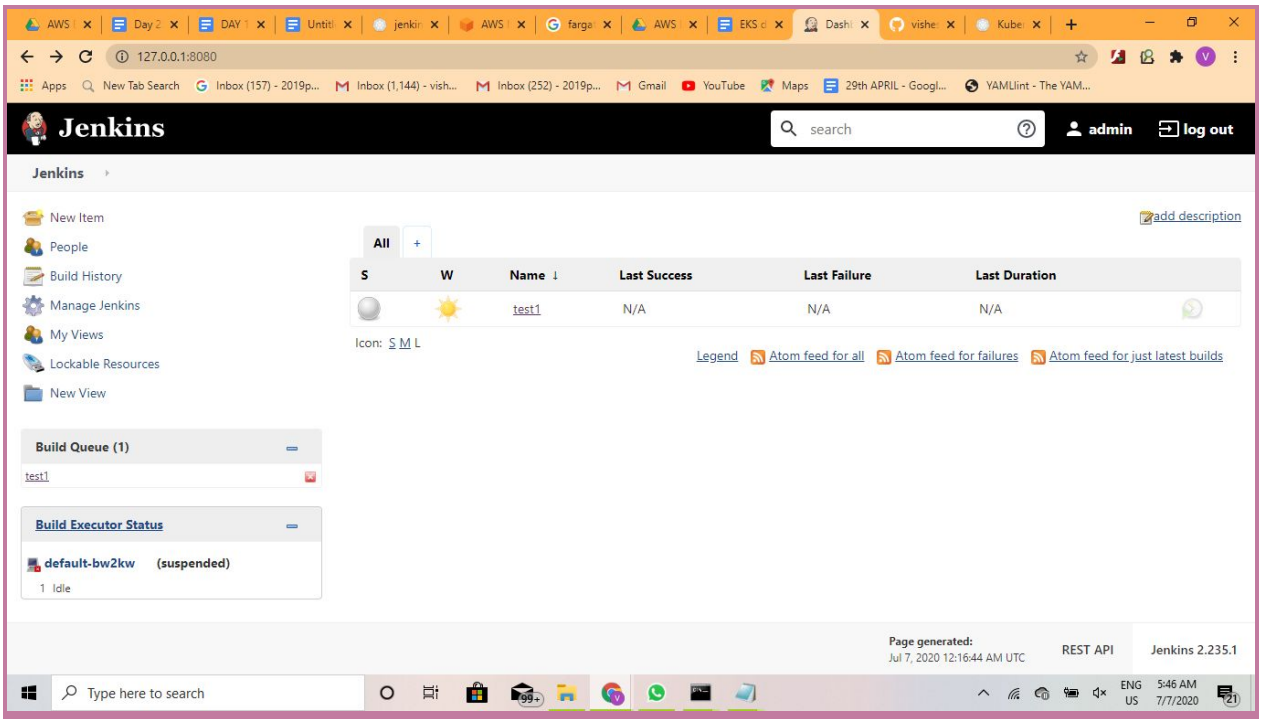

hub.helm.sh/charts?q=jenkins
Helm Hub
Search charts...
Charts
About
Charts
Repository
all
stable
incubator
jfrog
kremers
linkerd2
linkerd2-edge
rimusz
buildkite
cloudposse
cockroachdb
keel
webhookrelay
jenkins
cloudbees/cloudbees-core
2.235.1.2
cloudbees/cloudbees-jenkins-distribution
2.222.2.1
choerodon/jenkins
2.60.3-alpine
bitnami/jenkins
2.235.1
https://hub.helm.sh/charts/bitnami/jenkins
Type here to search
ENG
US
5:45 AM
7/7/2020


127.0.0.1:8080/login
Welcome to Jenkins!
Username
Password
Sign in
Type here to search
ENG
US
5:37 AM
7/7/2020


Jenkins
search
admin
log out
Jenkins
New Item
People
Build History
Manage Jenkins
My Views
Lockable Resources
New View
Build Queue
No builds in the queue.
Build Executor Status
add description
Welcome to Jenkins!
Create a job to start building your software project.
Page generated:
Jul 7, 2020 12:09:01 AM UTC
REST API
Jenkins 2.235.1
Type here to search


127.0.0.1:8080/job/test1/configure
Jenkins
test1
General
Source Code Management
Build Triggers
Build Environment
Build
Post-build Actions
Source Code Management
None
Git
Repositories
Repository URL
https://github.com/visheshgargavi/akshu.git
Please enter Git repository.
Credentials
- none -
Add
Advanced...
Add Repository
Branches to build
Branch Specifier (blank for 'any')
*/master
Add Branch
Repository browser
(Auto)
Save
Apply
Type here to search




```
C:\Windows\system32>kubectl get pods -n jenkins
NAME                                  READY   STATUS    RESTARTS   AGE
default-bw2kw                         1/1     Running   0          65s
yucky-panther-jenkins-66bc66cc45-7t2pk   2/2     Running   0          11m
```