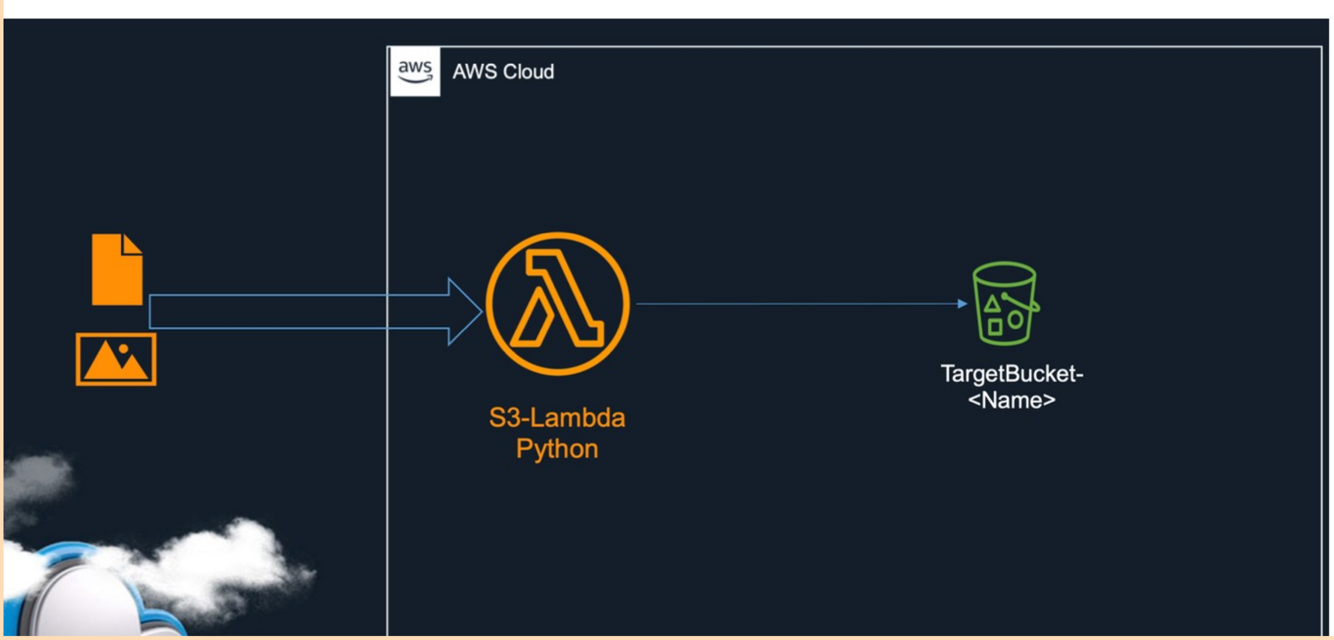
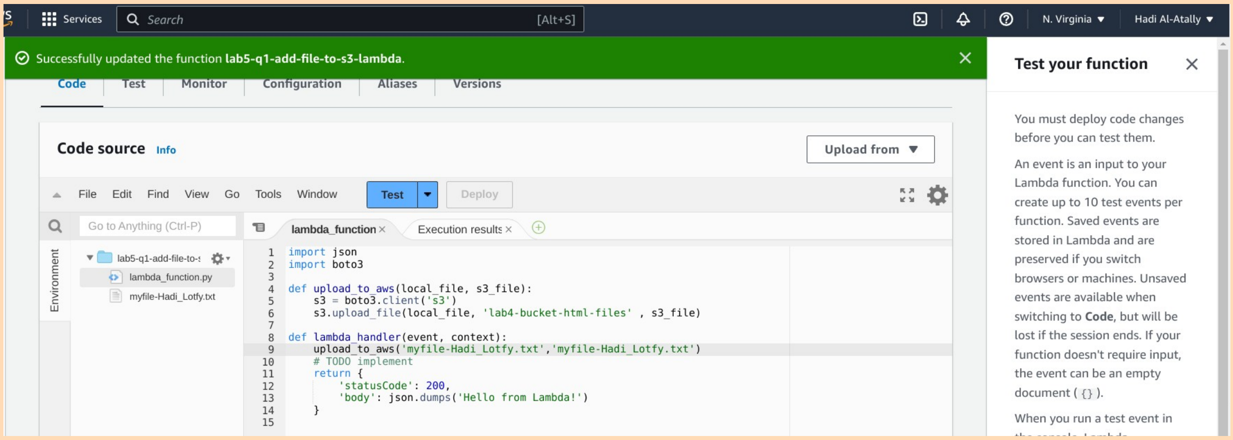
Question1:



Create a lambda function to copy a text file to an s3 called targetBucket yourname (search for the code)

- **screenshot From the lambda**



Successfully updated the function **lab5-q1-add-file-to-s3-lambda**.

```
import json
import boto3

def upload_to_aws(local_file, s3_file):
    s3 = boto3.client('s3')
    s3.upload_file(local_file, 'lab4-bucket-html-files' , s3_file)

def lambda_handler(event, context):
    upload_to_aws('myfile-Hadi_Lotfy.txt','myfile-Hadi_Lotfy.txt')
    # TODO implement
    return {
        'statusCode': 200,
        'body': json.dumps('Hello from Lambda!')
    }

```

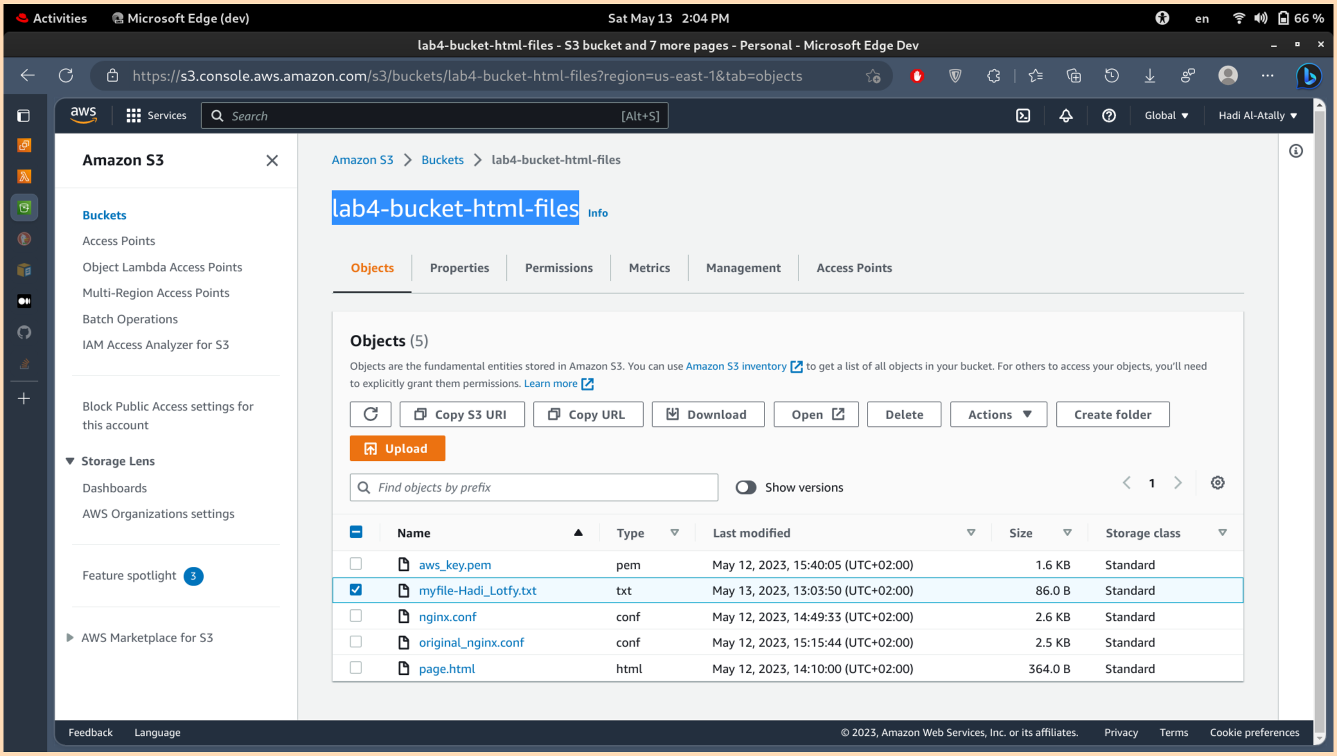
Test your function

You must deploy code changes before you can test them.

An event is an input to your Lambda function. You can create up to 10 test events per function. Saved events are stored in Lambda and are preserved if you switch browsers or machines. Unsaved events are available when switching to **Code**, but will be lost if the session ends. If your function doesn't require input, the event can be an empty document ({}).

When you run a test event in

- **Screenshot from the s3 with the file uploaded from lamba**

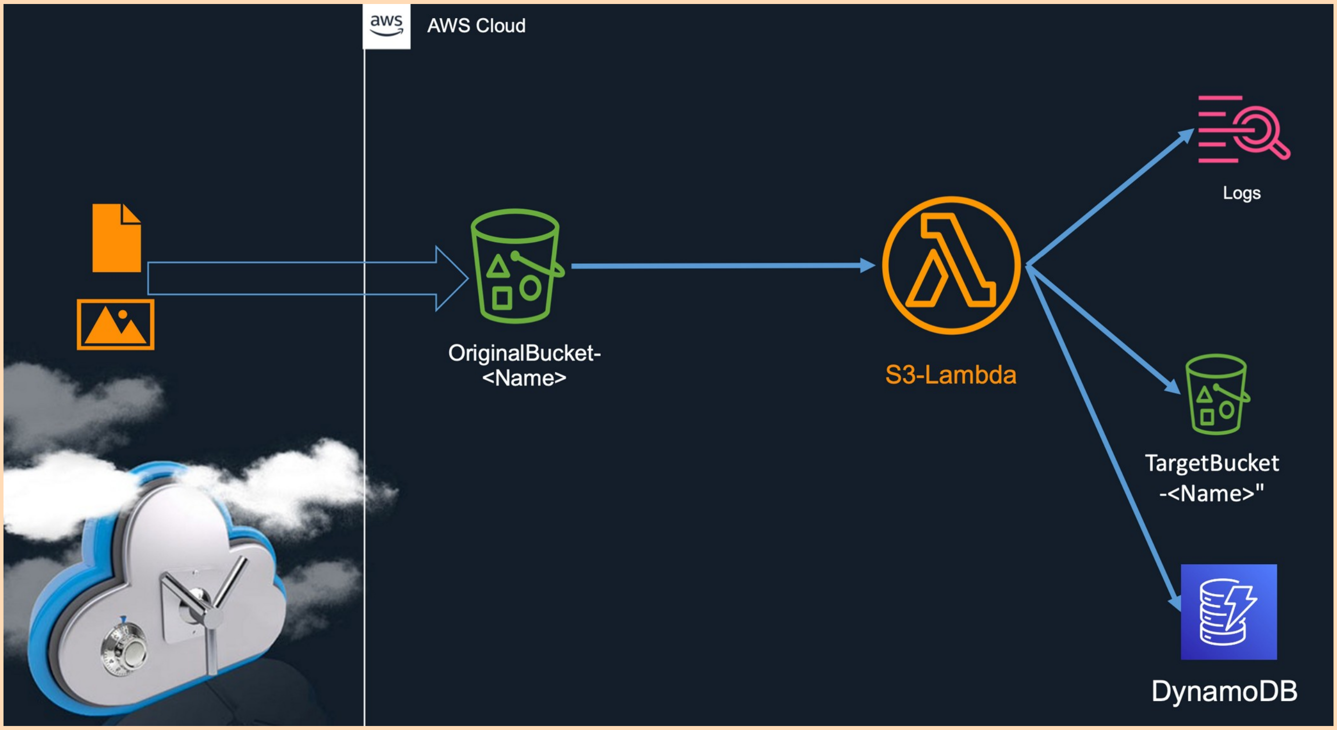

Activities
Microsoft Edge (dev)
Sat May 13 2:04 PM
en
66 %
lab4-bucket-html-files - S3 bucket and 7 more pages - Personal - Microsoft Edge Dev
https://s3.console.aws.amazon.com/s3/buckets/lab4-bucket-html-files?region=us-east-1&tab=objects
aws
Services
Search
[Alt+S]
Global
Hadi Al-Atally
Amazon S3
Buckets
Access Points
Object Lambda Access Points
Multi-Region Access Points
Batch Operations
IAM Access Analyzer for S3
Block Public Access settings for this account
Storage Lens
Dashboards
AWS Organizations settings
Feature spotlight 3
AWS Marketplace for S3
Amazon S3 > Buckets > lab4-bucket-html-files
lab4-bucket-html-files Info
Objects
Properties
Permissions
Metrics
Management
Access Points
Copy S3 URI
Copy URL
Download
Open
Delete
Actions
Create folder
Upload
Find objects by prefix
Show versions
1
Feedback
Language
© 2023, Amazon Web Services, Inc. or its affiliates.
Privacy
Terms
Cookie preferences

Objects (5)

Objects are the fundamental entities stored in Amazon S3. You can use Amazon S3 inventory to get a list of all objects in your bucket. For others to access your objects, you'll need to explicitly grant them permissions. Learn more

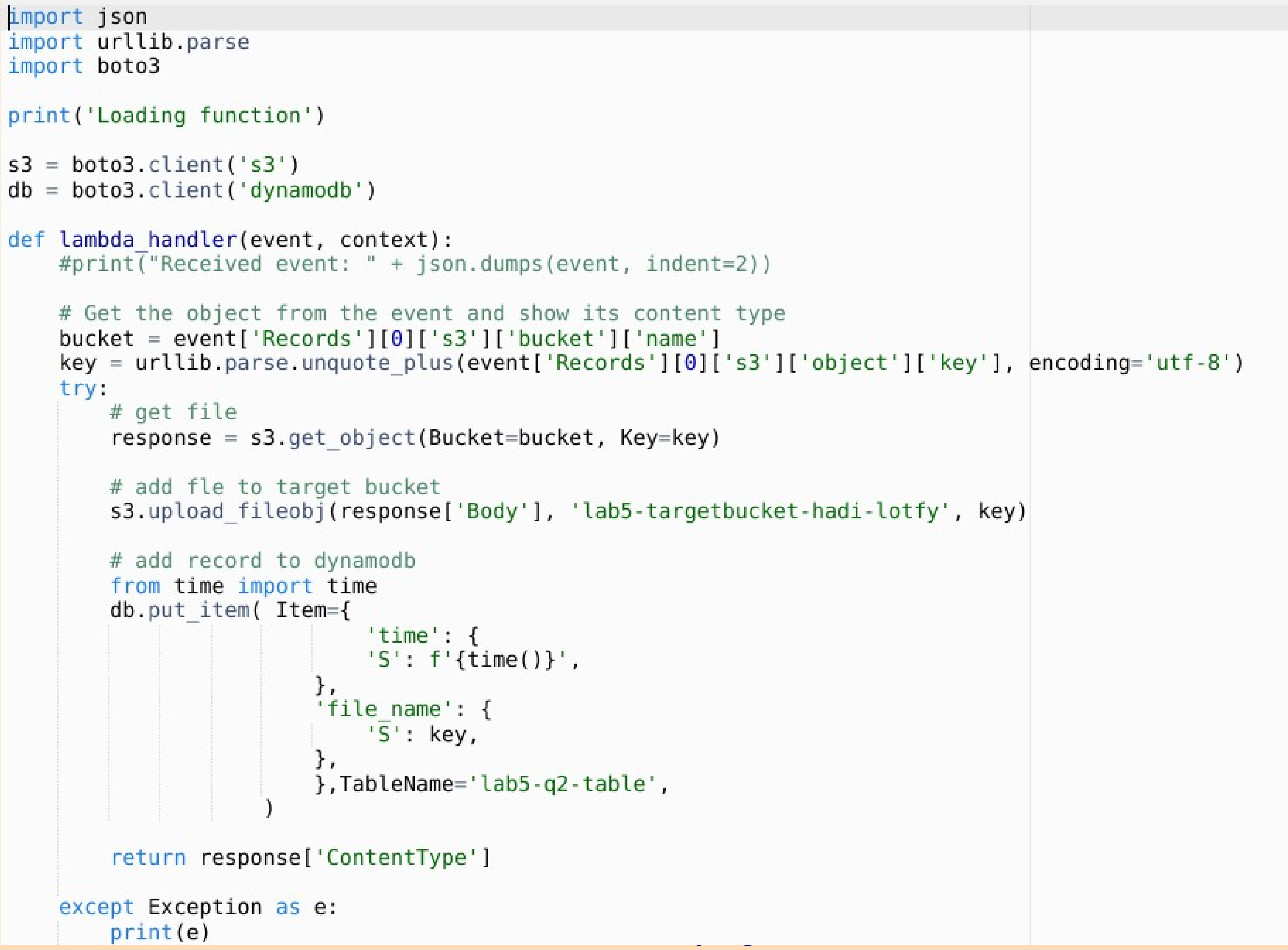
	Name	Type	Last modified	Size	Storage class
□	aws_key.pem	pem	May 12, 2023, 15:40:05 (UTC+02:00)	1.6 KB	Standard
☑	myfile-Hadi_Lotfy.txt	txt	May 13, 2023, 13:03:50 (UTC+02:00)	86.0 B	Standard
□	nginx.conf	conf	May 12, 2023, 14:49:33 (UTC+02:00)	2.6 KB	Standard
□	original_nginx.conf	conf	May 12, 2023, 15:15:44 (UTC+02:00)	2.5 KB	Standard
□	page.html	html	May 12, 2023, 14:10:00 (UTC+02:00)	364.0 B	Standard

Question2:



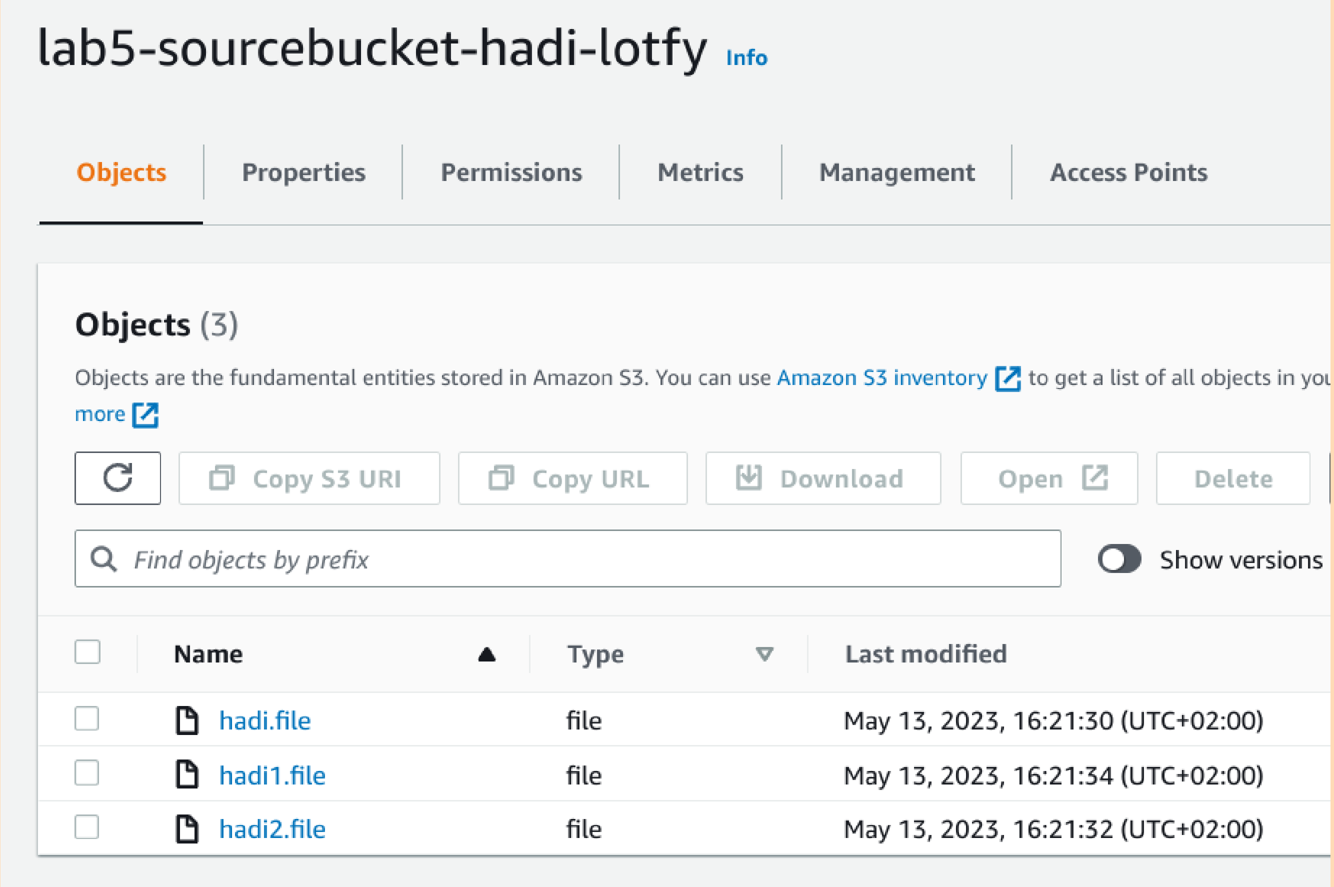
Create a lambda function to be triggered when you upload a file to s3 called sourcebucket-yourname , the lambda will copy the uploaded file to an s3 with name target-bucket-yourname And save the name of the file to dynamodb

- **screenshot From the lambda**



```
import json
import urllib.parse
import boto3

print('Loading function')

s3 = boto3.client('s3')
db = boto3.client('dynamodb')

def lambda_handler(event, context):
    #print("Received event: " + json.dumps(event, indent=2))

    # Get the object from the event and show its content type
    bucket = event['Records'][0]['s3']['bucket']['name']
    key = urllib.parse.unquote_plus(event['Records'][0]['s3']['object']['key'], encoding='utf-8')
    try:
        # get file
        response = s3.get_object(Bucket=bucket, Key=key)

        # add fle to target bucket
        s3.upload_fileobj(response['Body'], 'lab5-targetbucket-hadi-lotfy', key)

        # add record to dynamodb
        from time import time
        db.put_item( Item={
                            'time': {
                            'S': f'{time()}',
                        },
                        'file_name': {
                            'S': key,
                        },
                        },TableName='lab5-q2-table',
                    )

        return response['ContentType']

    except Exception as e:
        print(e)
```

- **Screenshot from the target-s3 with the file uploaded from lambda. (Here are the source and the destination!)**

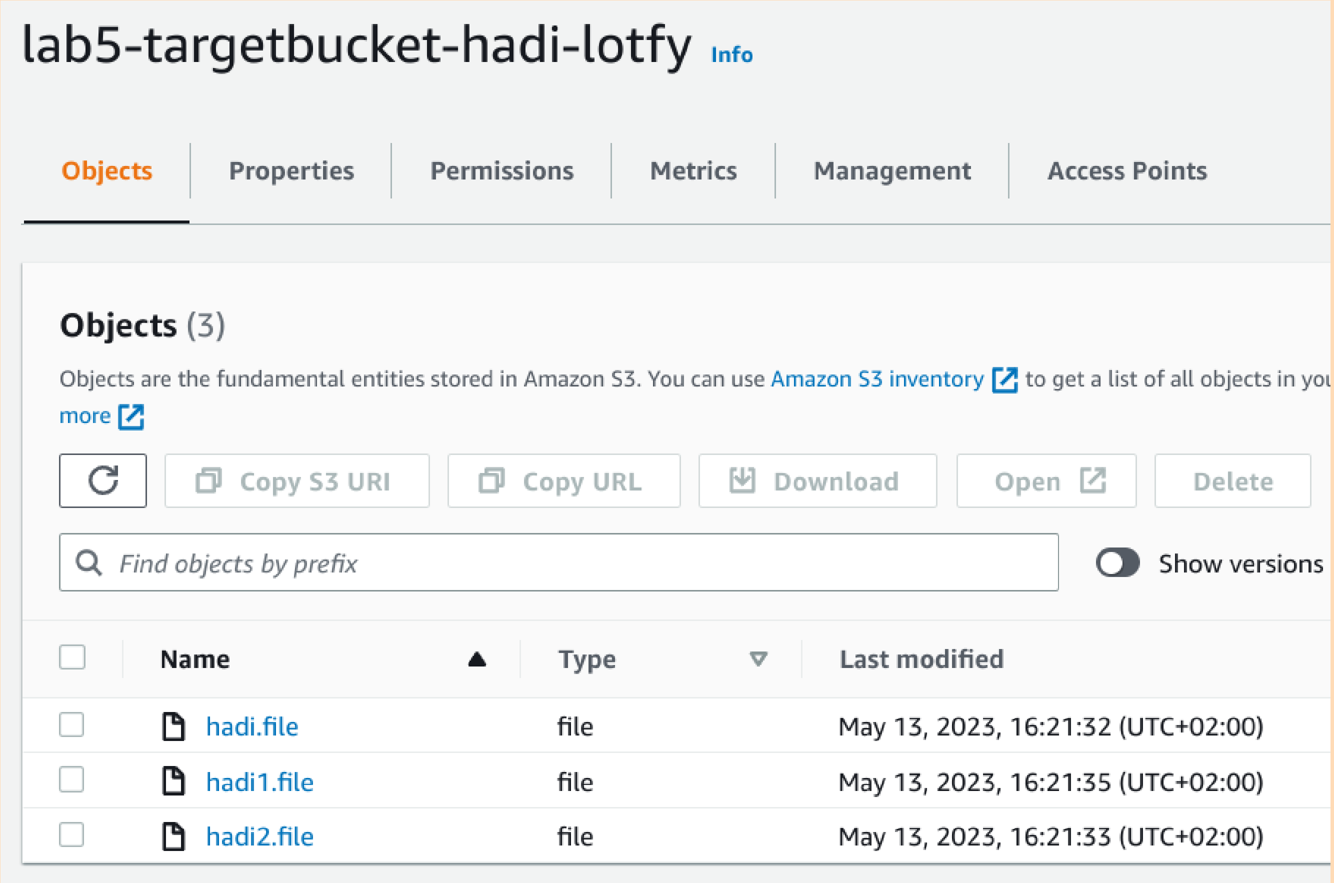


lab5-sourcebucket-hadi-lotfy

Objects (3)

Objects are the fundamental entities stored in Amazon S3. You can use Amazon S3 inventory to get a list of all objects in you more

□	Name ▲	Type ▽	Last modified
□	hadi.file	file	May 13, 2023, 16:21:30 (UTC+02:00)
□	hadi1.file	file	May 13, 2023, 16:21:34 (UTC+02:00)
□	hadi2.file	file	May 13, 2023, 16:21:32 (UTC+02:00)



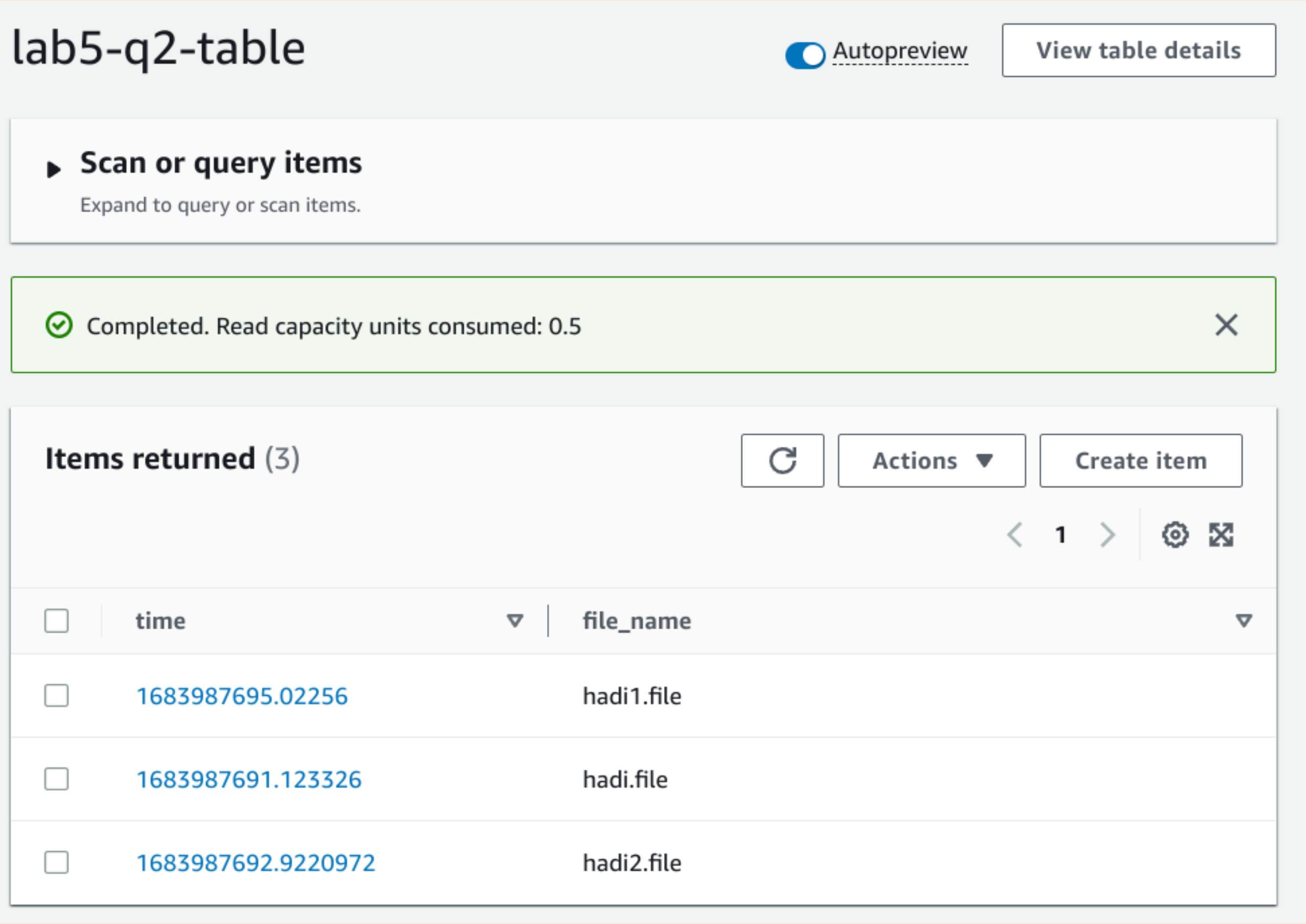
lab5-targetbucket-hadi-lotfy

Objects (3)

Objects are the fundamental entities stored in Amazon S3. You can use Amazon S3 inventory to get a list of all objects in you more

□	Name ▲	Type ▽	Last modified
□	hadi.file	file	May 13, 2023, 16:21:32 (UTC+02:00)
□	hadi1.file	file	May 13, 2023, 16:21:35 (UTC+02:00)
□	hadi2.file	file	May 13, 2023, 16:21:33 (UTC+02:00)

- **Screenshot from dynamomdb with the file name saved into it**

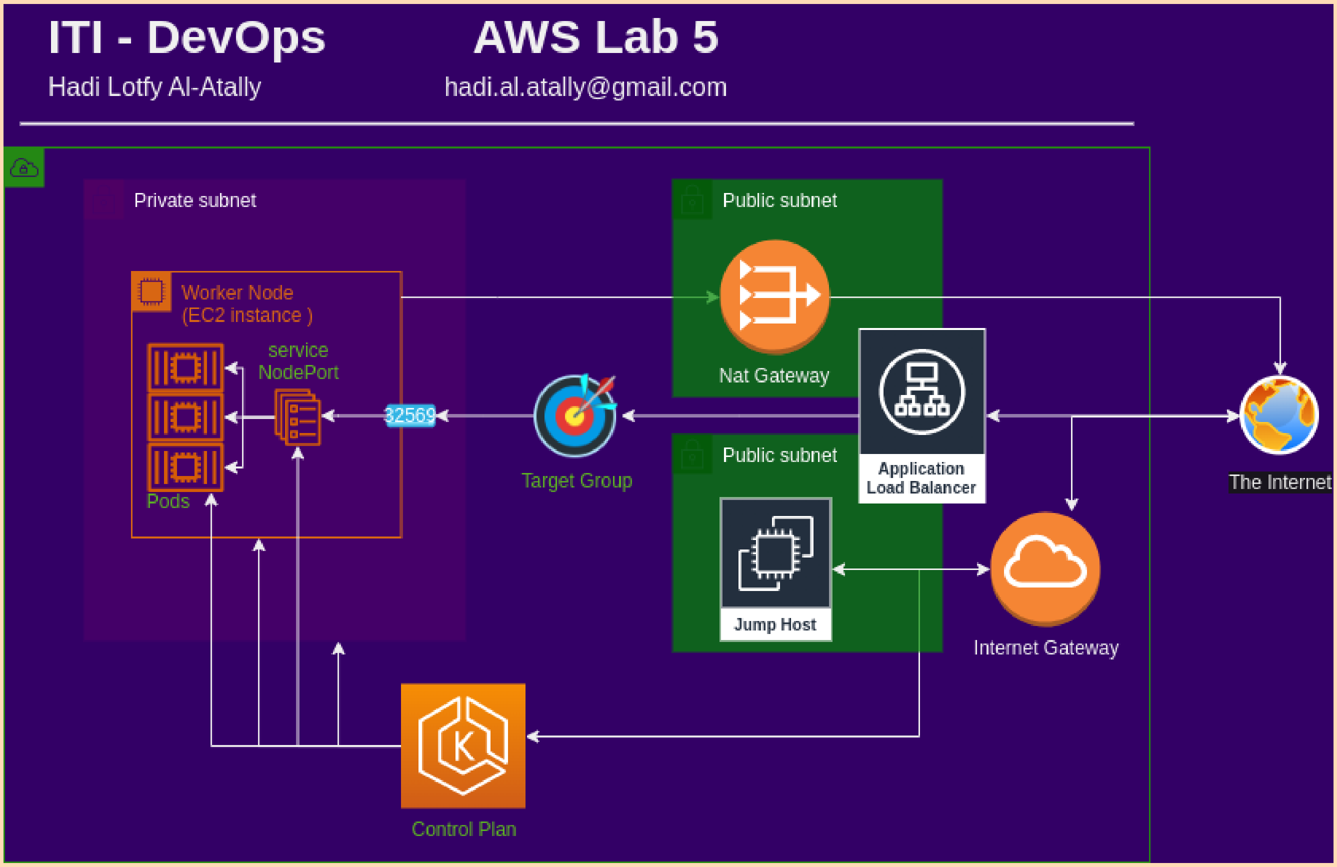


Completed. Read capacity units consumed: 0.5

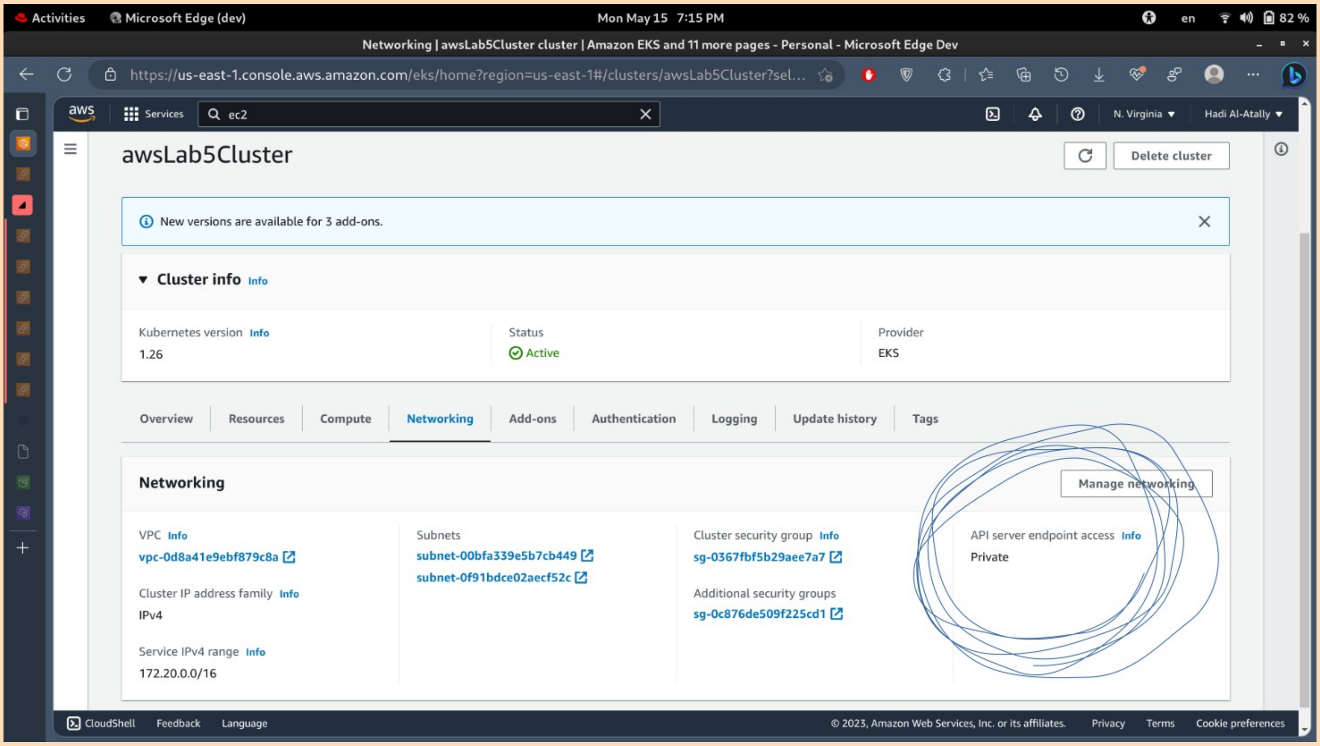
□	time	file_name
□	1683987695.02256	hadi1.file
□	1683987691.123326	hadi.file
□	1683987692.9220972	hadi2.file

Question3:
Create an EKS On aws to be a private one with any application deployed into it and access this app from the browser.

Firstly : my architecture



- **Screenshot fom eks settings**



awsLab5Cluster

New versions are available for 3 add-ons.

Cluster info Info

Kubernetes version Info: 1.26

Status: Active

Provider: EKS

Networking

VPC Info: vpc-0d8a41e9ebf879c8a

Cluster IP address family Info: IPv4

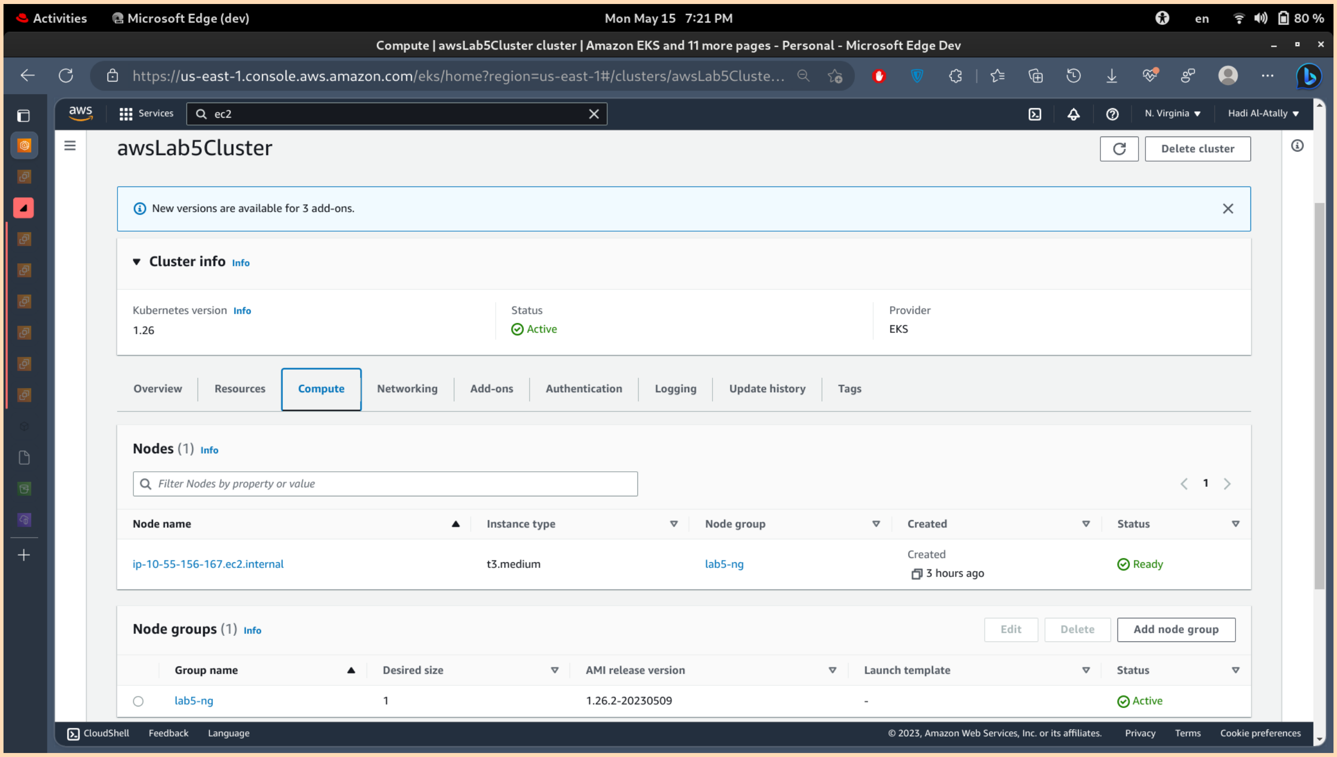
Service IPv4 range Info: 172.20.0.0/16

Subnets: subnet-00bfa339e5b7cb449, subnet-0f91bdce02aecf52c

Cluster security group Info: sg-0367fbf5b29aee7a7

Additional security groups: sg-0c876de509f225cd1

API server endpoint access Info: Private


Activities
Microsoft Edge (dev)
Mon May 15 7:21 PM
en
80 %
Compute | awsLab5Cluster cluster | Amazon EKS and 11 more pages - Personal - Microsoft Edge Dev
https://us-east-1.console.aws.amazon.com/eks/home?region=us-east-1#/clusters/awsLab5Cluste…
Services
ec2
N. Virginia
Hadi Al-Ataly
Delete cluster
CloudShell
Feedback
Language
© 2023, Amazon Web Services, Inc. or its affiliates.
Privacy
Terms
Cookie preferences

awsLab5Cluster

New versions are available for 3 add-ons.

Cluster info Info

Kubernetes version	Status	Provider
1.26	Active	EKS

Overview | Resources | Compute | Networking | Add-ons | Authentication | Logging | Update history | Tags

Nodes (1) Info

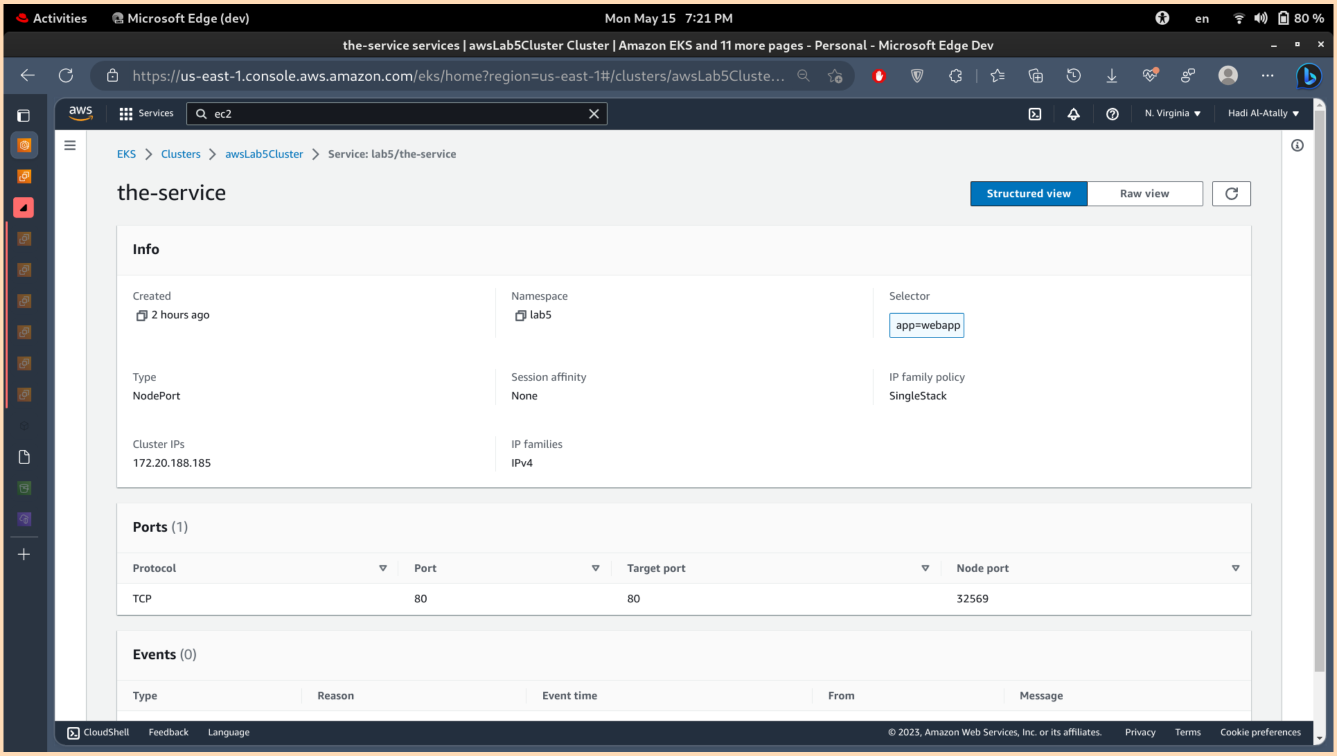
Filter Nodes by property or value

Node name	Instance type	Node group	Created	Status
ip-10-55-156-167.ec2.internal	t3.medium	lab5-ng	Created 3 hours ago	Ready

Node groups (1) Info

Edit | Delete | Add node group

	Group name	Desired size	AMI release version	Launch template	Status
○	lab5-ng	1	1.26.2-20230509	-	Active


Activities
Microsoft Edge (dev)
Mon May 15 7:21 PM
en
80 %
the-service services | awsLab5Cluster Cluster | Amazon EKS and 11 more pages - Personal - Microsoft Edge Dev
https://us-east-1.console.aws.amazon.com/eks/home?region=us-east-1#/clusters/awsLab5Cluste…
Services
ec2
N. Virginia
Hadi Al-Ataly
Structured view
Raw view
CloudShell
Feedback
Language
© 2023, Amazon Web Services, Inc. or its affiliates.
Privacy
Terms
Cookie preferences

EKS > Clusters > awsLab5Cluster > Service: lab5/the-service

the-service

Info

Created	Namespace	Selector
2 hours ago	lab5	app=webapp

Type	Session affinity	IP family policy
NodePort	None	SingleStack

Cluster IPs	IP families
172.20.188.185	IPv4

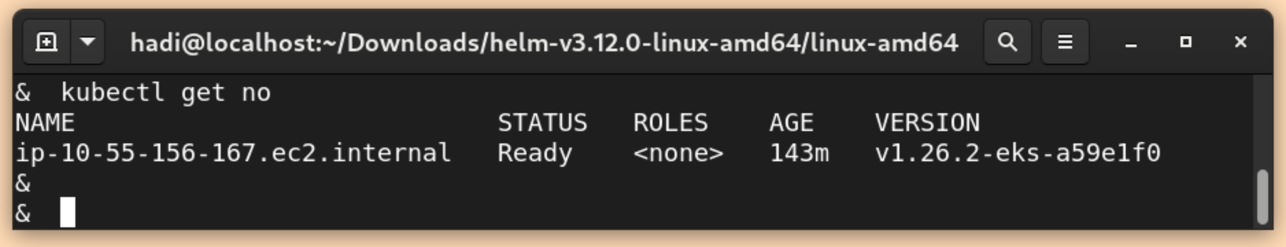
Ports (1)

Protocol	Port	Target port	Node port
TCP	80	80	32569

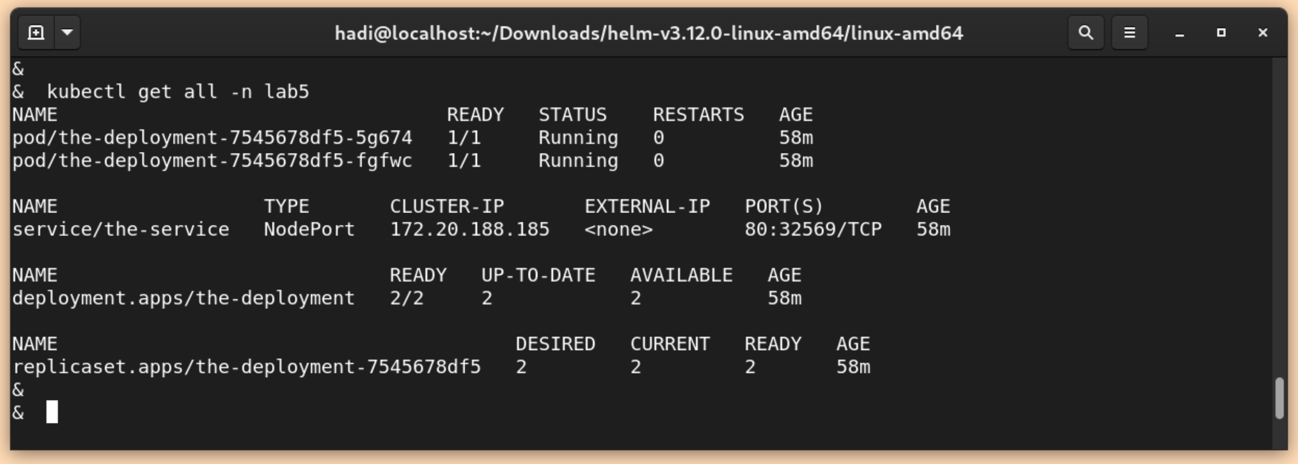
Events (0)

Type	Reason	Event time	From	Message

Screenshot from the app using kubctl get

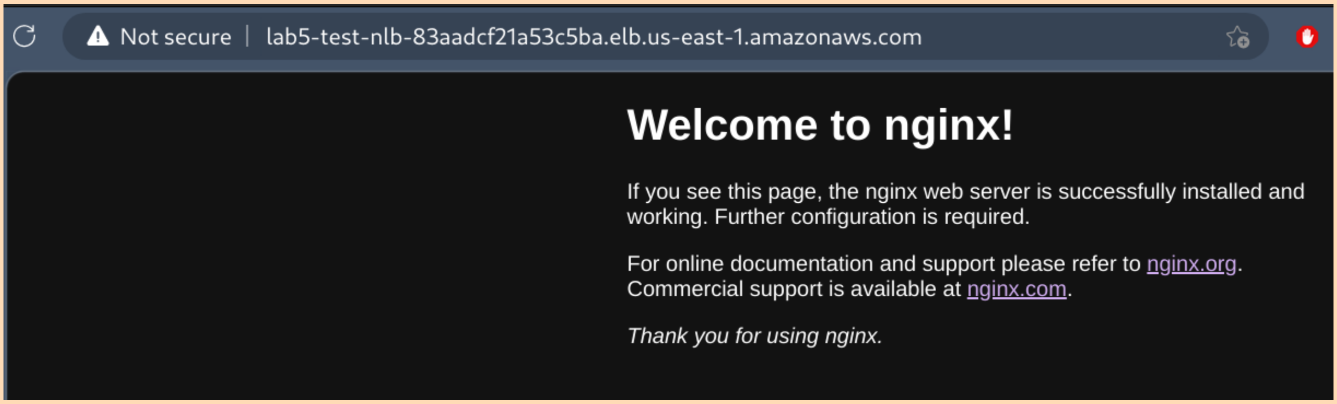

hadi@localhost:~/Downloads/helm-v3.12.0-linux-amd64/linux-amd64

```
&  kubectl get no
NAME                           STATUS   ROLES    AGE    VERSION
ip-10-55-156-167.ec2.internal  Ready    <none>   143m   v1.26.2-eks-a59e1f0
&
& 
```


hadi@localhost:~/Downloads/helm-v3.12.0-linux-amd64/linux-amd64

```
&
&  kubectl get all -n lab5
NAME                                 READY   STATUS    RESTARTS   AGE
pod/the-deployment-7545678df5-5g674  1/1     Running   0          58m
pod/the-deployment-7545678df5-fgfwc  1/1     Running   0          58m

NAME                  TYPE       CLUSTER-IP       EXTERNAL-IP   PORT(S)        AGE
service/the-service   NodePort   172.20.188.185   <none>        80:32569/TCP   58m

NAME                            READY   UP-TO-DATE   AVAILABLE   AGE
deployment.apps/the-deployment  2/2     2            2           58m

NAME                                       DESIRED   CURRENT   READY   AGE
replicaset.apps/the-deployment-7545678df5  2         2         2       58m
&
& 
```

Screenahot from accessing the app


Not secure | lab5-test-nlb-83aadcf21a53c5ba.elb.us-east-1.amazonaws.com

Welcome to nginx!

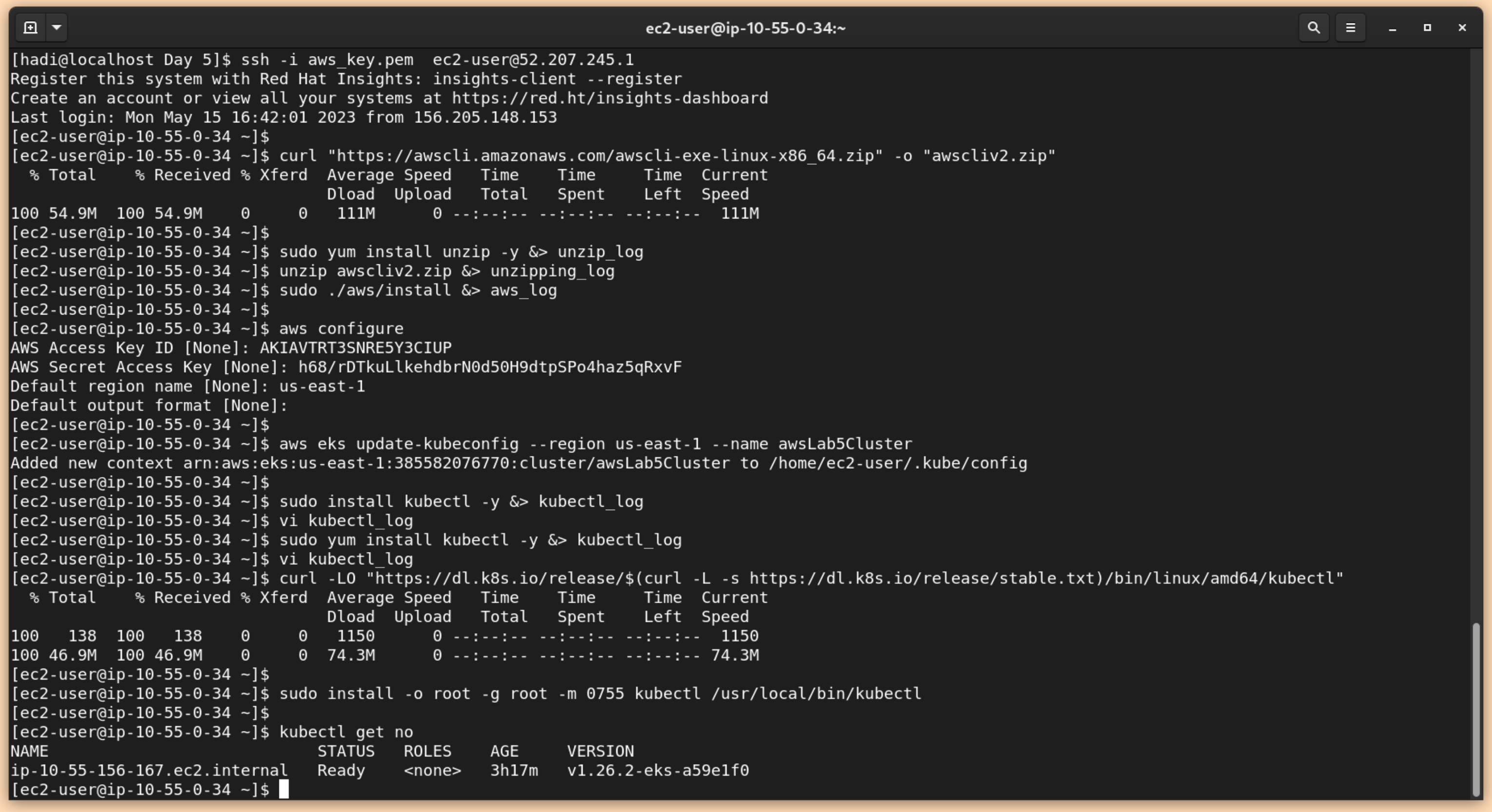
If you see this page, the nginx web server is successfully installed and working. Further configuration is required.

For online documentation and support please refer to nginx.org.
Commercial support is available at nginx.com.

Thank you for using nginx.

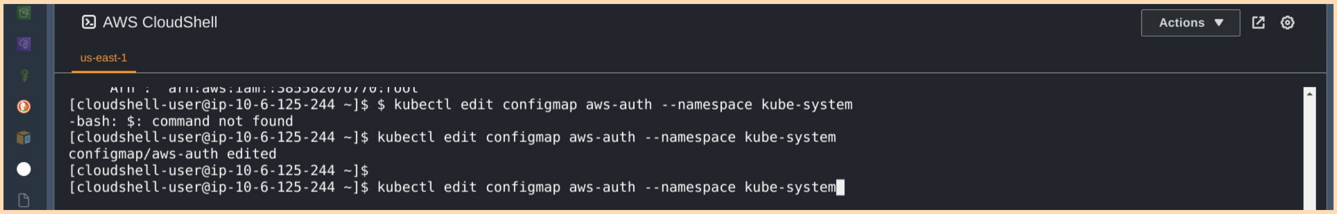
Additional screenshots:

- **how to access cluster control plan: use jumb host in the same vpc as the cluster, install aws and kubectl on it and configure aws credentials and kubectl .**

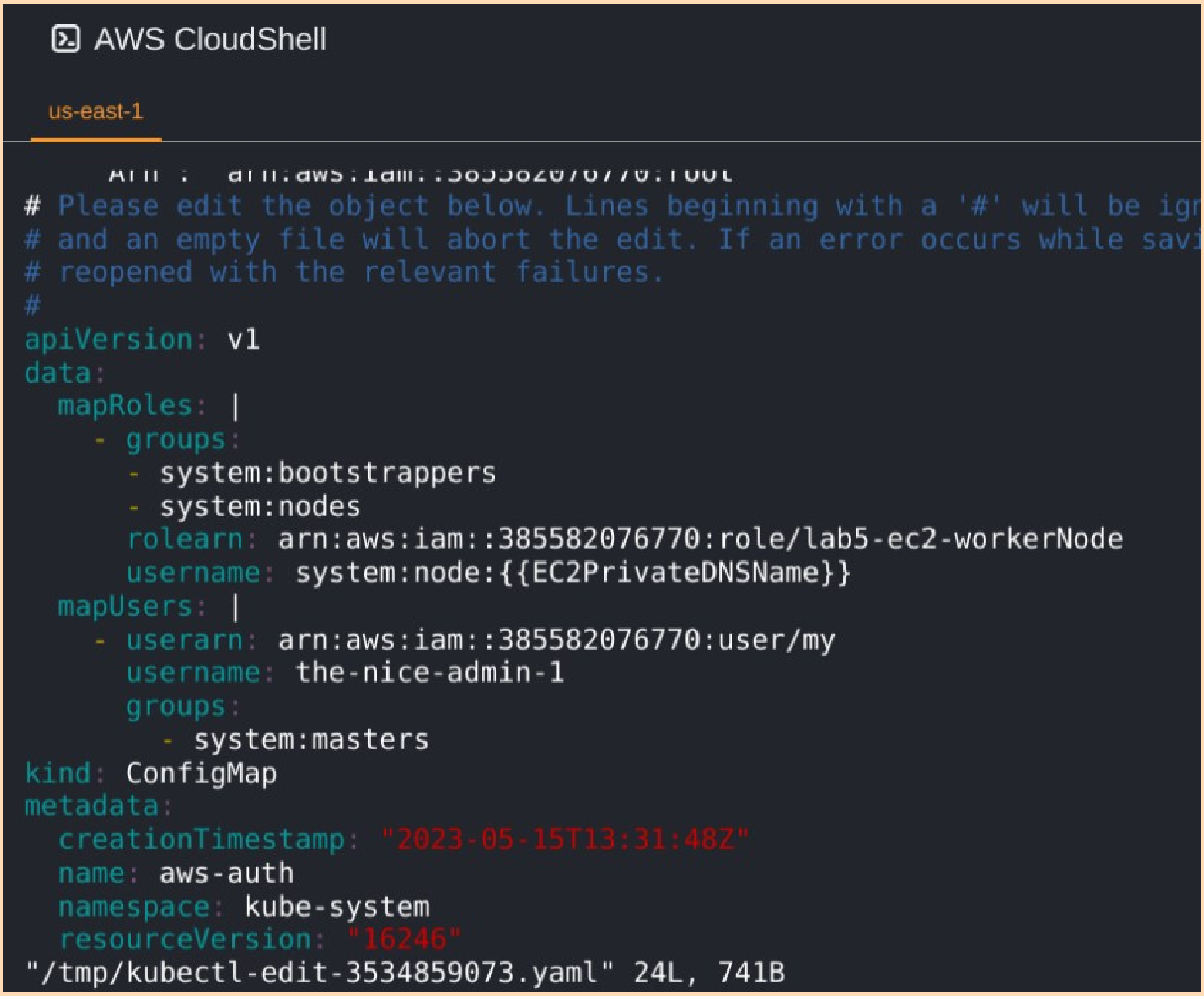


```
[hadi@localhost Day 5]$ ssh -i aws_key.pem  ec2-user@52.207.245.1
Register this system with Red Hat Insights: insights-client --register
Create an account or view all your systems at https://red.ht/insights-dashboard
Last login: Mon May 15 16:42:01 2023 from 156.205.148.153
[ec2-user@ip-10-55-0-34 ~]$
[ec2-user@ip-10-55-0-34 ~]$ curl "https://awscli.amazonaws.com/awscli-exe-linux-x86_64.zip" -o "awscliv2.zip"
  % Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
                                 Dload  Upload   Total   Spent    Left  Speed
100 54.9M  100 54.9M    0     0   111M      0 --:--:-- --:--:-- --:--:--  111M
[ec2-user@ip-10-55-0-34 ~]$
[ec2-user@ip-10-55-0-34 ~]$ sudo yum install unzip -y &> unzip_log
[ec2-user@ip-10-55-0-34 ~]$ unzip awscliv2.zip &> unzipping_log
[ec2-user@ip-10-55-0-34 ~]$ sudo ./aws/install &> aws_log
[ec2-user@ip-10-55-0-34 ~]$
[ec2-user@ip-10-55-0-34 ~]$ aws configure
AWS Access Key ID [None]: AKIAVTRT3SNRE5Y3CIUP
AWS Secret Access Key [None]: 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
Default region name [None]: us-east-1
Default output format [None]:
[ec2-user@ip-10-55-0-34 ~]$
[ec2-user@ip-10-55-0-34 ~]$ aws eks update-kubeconfig --region us-east-1 --name awsLab5Cluster
Added new context arn:aws:eks:us-east-1:385582076770:cluster/awsLab5Cluster to /home/ec2-user/.kube/config
[ec2-user@ip-10-55-0-34 ~]$
[ec2-user@ip-10-55-0-34 ~]$ sudo install kubectl -y &> kubectl_log
[ec2-user@ip-10-55-0-34 ~]$ vi kubectl_log
[ec2-user@ip-10-55-0-34 ~]$ sudo yum install kubectl -y &> kubectl_log
[ec2-user@ip-10-55-0-34 ~]$ vi kubectl_log
[ec2-user@ip-10-55-0-34 ~]$ curl -LO "https://dl.k8s.io/release/$(curl -L -s https://dl.k8s.io/release/stable.txt)/bin/linux/amd64/kubectl"
  % Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
                                 Dload  Upload   Total   Spent    Left  Speed
100   138  100   138    0     0   1150      0 --:--:-- --:--:-- --:--:--  1150
100 46.9M  100 46.9M    0     0  74.3M      0 --:--:-- --:--:-- --:--:-- 74.3M
[ec2-user@ip-10-55-0-34 ~]$
[ec2-user@ip-10-55-0-34 ~]$ sudo install -o root -g root -m 0755 kubectl /usr/local/bin/kubectl
[ec2-user@ip-10-55-0-34 ~]$
[ec2-user@ip-10-55-0-34 ~]$ kubectl get no
NAME                           STATUS   ROLES    AGE     VERSION
ip-10-55-156-167.ec2.internal   Ready    <none>   3h17m   v1.26.2-eks-a59e1f0
[ec2-user@ip-10-55-0-34 ~]$
```

- **Cluster is managed by its creator, so if root created it, we cannot directly go use it with an admin account from the cli, to add the admin account (my)**



```
     Arn :  arn:aws:iam::385582076770:root
[cloudshell-user@ip-10-6-125-244 ~]$ $ kubectl edit configmap aws-auth --namespace kube-system
-bash: $: command not found
[cloudshell-user@ip-10-6-125-244 ~]$ kubectl edit configmap aws-auth --namespace kube-system
configmap/aws-auth edited
[cloudshell-user@ip-10-6-125-244 ~]$
[cloudshell-user@ip-10-6-125-244 ~]$ kubectl edit configmap aws-auth --namespace kube-system
```



```
     Arn :  arn:aws:iam::385582076770:root
# Please edit the object below. Lines beginning with a '#' will be ign
# and an empty file will abort the edit. If an error occurs while savi
# reopened with the relevant failures.
#
apiVersion: v1
data:
  mapRoles: |
    - groups:
      - system:bootstrappers
      - system:nodes
      rolearn: arn:aws:iam::385582076770:role/lab5-ec2-workerNode
      username: system:node:{{EC2PrivateDNSName}}
  mapUsers: |
    - userarn: arn:aws:iam::385582076770:user/my
      username: the-nice-admin-1
      groups:
        - system:masters
kind: ConfigMap
metadata:
  creationTimestamp: "2023-05-15T13:31:48Z"
  name: aws-auth
  namespace: kube-system
  resourceVersion: "16246"
"/tmp/kubectl-edit-3534859073.yaml" 24L, 741B
```

Add the mapUsers section and save the file. Userarn is the arn of the user you need to add as an admin to this cluster.