

EXPERIMENT NO. 1

NAME : PRANAV POL

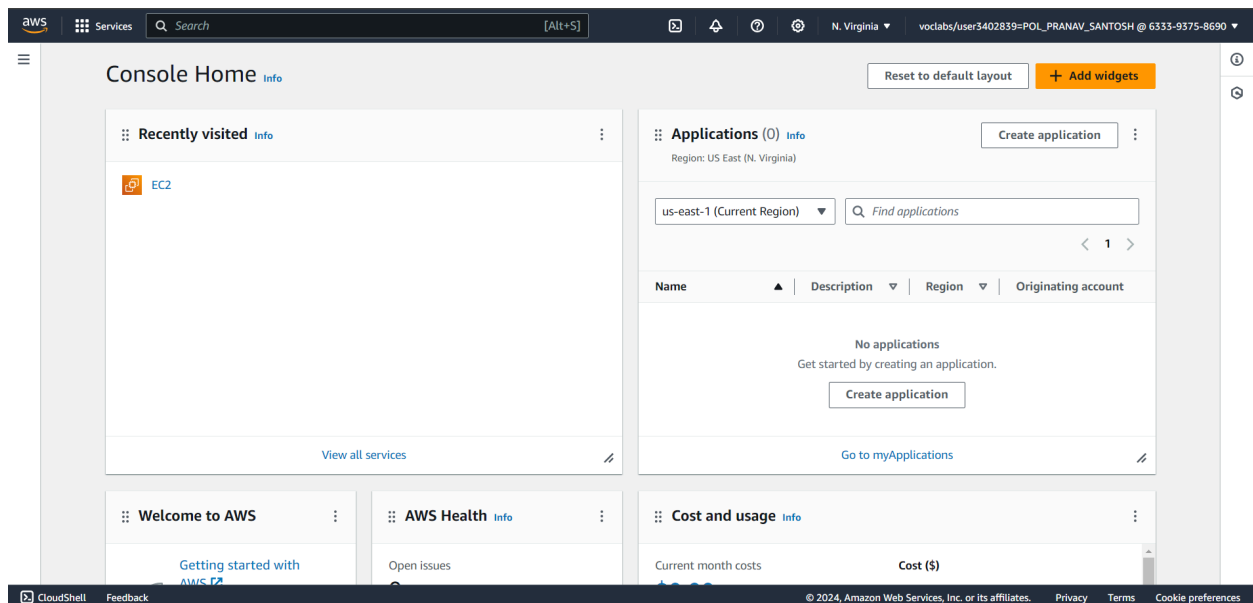
CLASS : D15A

ROLL NO. : 42

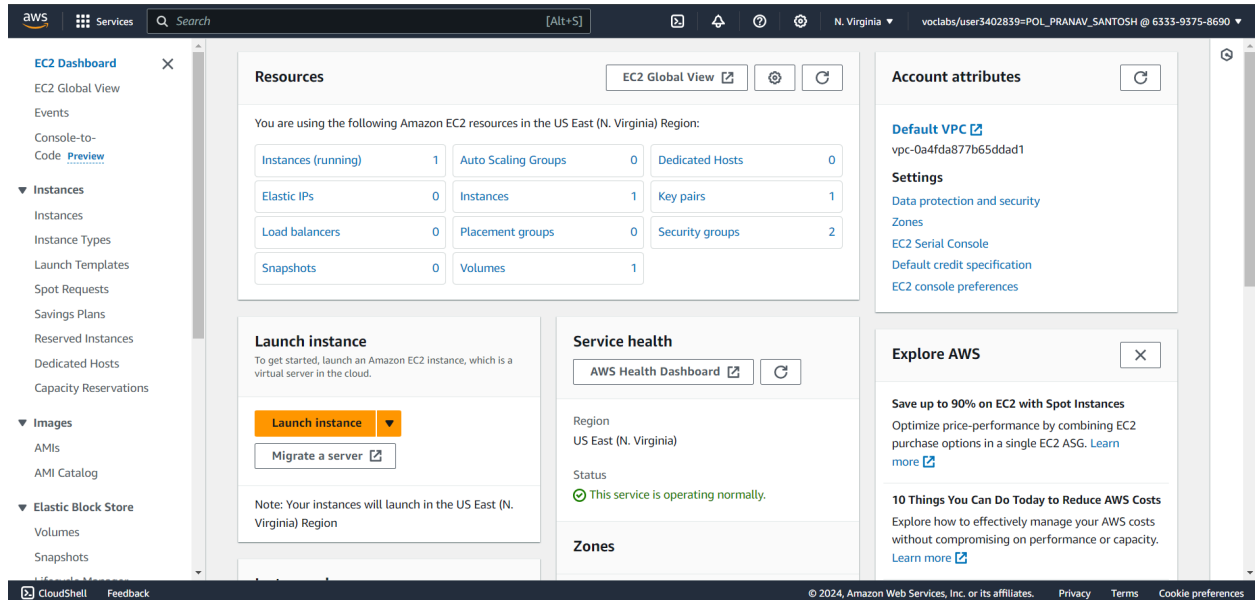
Aim : To understand the benefits of Cloud Infrastructure and Setup AWS Cloud9 IDE, Launch AWS Cloud9 IDE and Perform Collaboration Demonstration.

EC2 Instance Creation and static site hosting

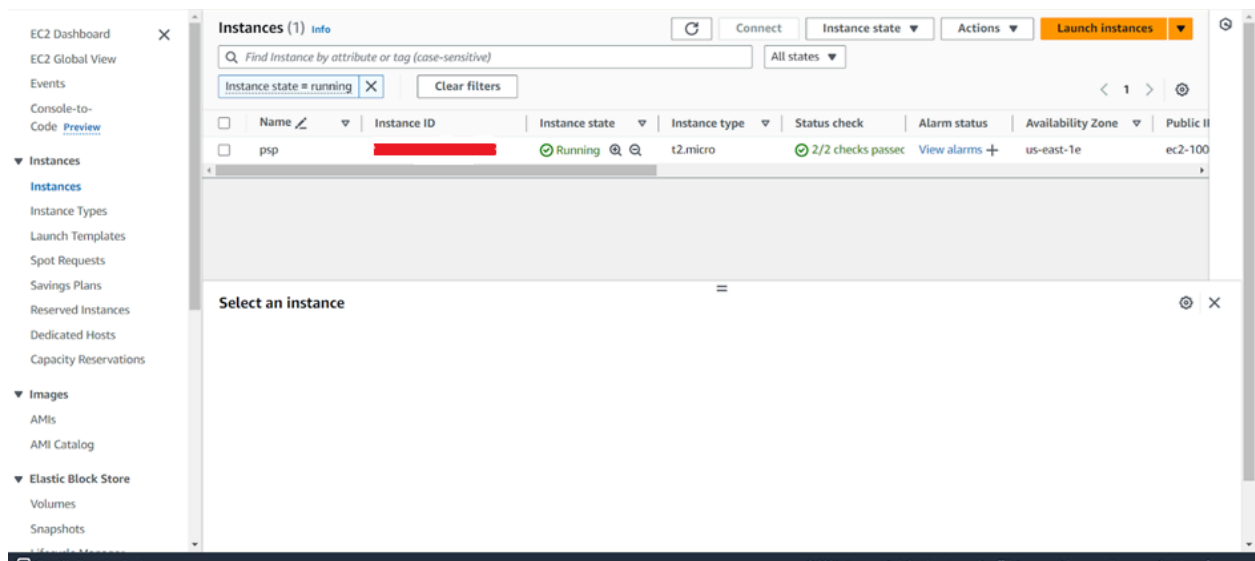
1) Login to your AWS account



2) Click on EC2 and then create an instance by clicking on instances



3) After an instance is created wait for it to come to Running state



4) After doing that you will see this UI

```
aws Services Search [Alt+S] N. Virginia voclabs/user340283
To check for new updates run: sudo apt update

The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

ubuntu@ip-172-31-55-145:~$ sudo su
root@ip-172-31-55-145:/home/ubuntu# apt-get update
Hit:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble InRelease
Get:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates InRelease [126 kB]
Get:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-backports InRelease [126 kB]
Get:4 http://security.ubuntu.com/ubuntu noble-security InRelease [126 kB]
Get:5 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/universe amd64 Packages [15.0 MB]
Get:6 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/universe Translation-en [5982 kB]
Get:7 http://security.ubuntu.com/ubuntu noble-security/main amd64 Packages [265 kB]
Get:8 http://security.ubuntu.com/ubuntu noble-security/main Translation-en [63.3 kB]
Get:9 http://security.ubuntu.com/ubuntu noble-security/main amd64 c-n-f Metadata [3668 B]
Get:10 http://security.ubuntu.com/ubuntu noble-security/universe amd64 Packages [247 kB]
Get:11 http://security.ubuntu.com/ubuntu noble-security/universe Translation-en [107 kB]
Get:12 http://security.ubuntu.com/ubuntu noble-security/universe amd64 Components [8632 B]
Get:13 http://security.ubuntu.com/ubuntu noble-security/universe amd64 c-n-f Metadata [9220 B]
```

5) Follow these steps and then run these commands

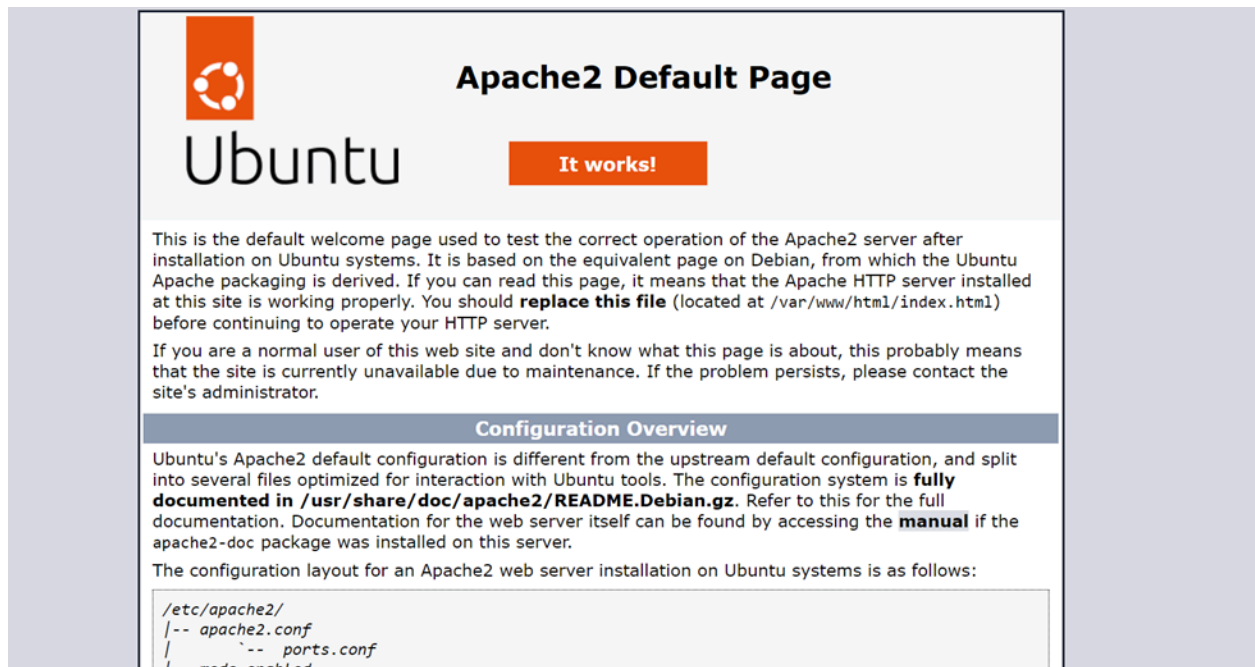
```
Launch AWS Academy x Instances | EC2 | us- x Launch an instance x Instances | EC2 | us- x Apache2 Ubuntu De x EC2 Instance Connec x Why unable to conn x +
us-east-1.console.aws.amazon.com/ec2-instance-connect/ssh?region=us-east-1&connType=standard&instanceId=i-0b32bf59846059397&osUser=ubuntu&sshPort=22#/
aws Services Search [Alt+S] N. Virginia voclabs/user3402839=POL_PRANAV_SANTOSH @ 6333-9375-8
Get:45 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-backports/universe amd64 Components [17.6 kB]
Get:46 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-backports/universe amd64 c-n-f Metadata [1016 B]
Get:47 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-backports/restricted amd64 Components [216 B]
Get:48 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-backports/restricted amd64 c-n-f Metadata [116 B]
Get:49 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-backports/multiverse amd64 Components [212 B]
Get:50 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-backports/multiverse amd64 c-n-f Metadata [116 B]
Fetched 28.2 MB in 6s (5102 kB/s)
Reading package lists... Done
root@ip-172-31-55-145:/home/ubuntu# apt update
Hit:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble InRelease
Hit:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates InRelease
Hit:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-backports InRelease
Hit:4 http://security.ubuntu.com/ubuntu noble-security InRelease
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
42 packages can be upgraded. Run 'apt list --upgradable' to see them.
root@ip-172-31-55-145:/home/ubuntu# apt install apache2
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  apache2-bin apache2-data apache2-utils libapr1t64 libaprutil1-dbd-sqlite3 libaprutil1-ldap libaprutil1t64 liblua5.4-0 ssl-cert
Suggested packages:
  apache2-doc apache2-suexec-pristine | apache2-suexec-custom www-browser
The following NEW packages will be installed:
  apache2 apache2-bin apache2-data apache2-utils libapr1t64 libaprutil1-dbd-sqlite3 libaprutil1-ldap libaprutil1t64 liblua5.4-0 ssl-cert
0 upgraded, 10 newly installed, 0 to remove and 42 not upgraded.
```

i-0b32bf59846059397 (psp)

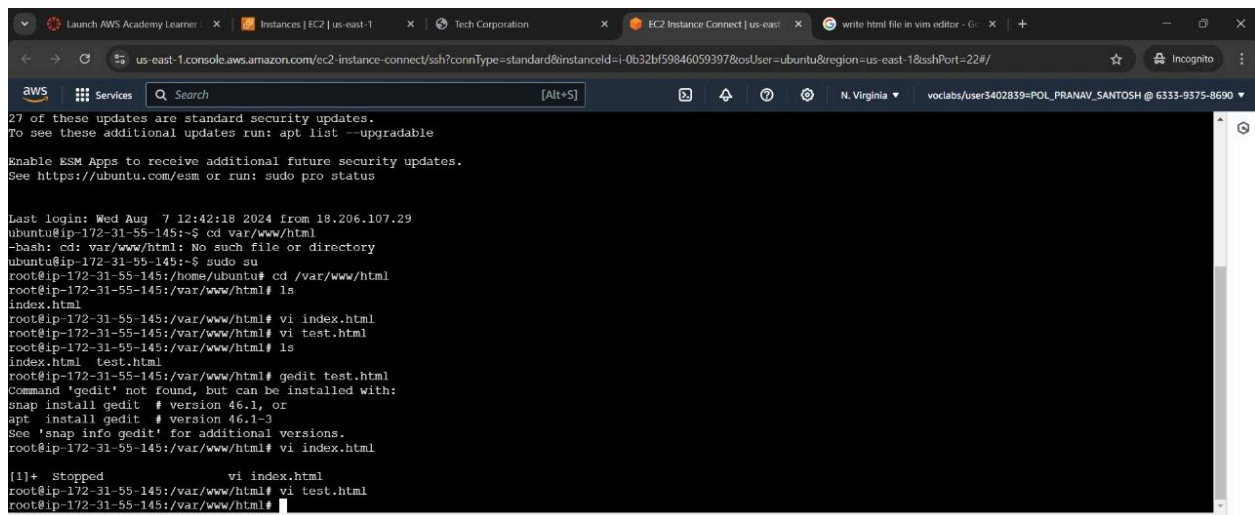
PublicIPs: 100.25.190.129 PrivateIPs: 172.31.55.145

```
Launch AWS Acaden x Instances | EC2 | us- x Launch an instance x Instances | EC2 | us- x Apache2 Ubuntu D x EC2 Instance Conne x Why unable to con x +
us-east-1.console.aws.amazon.com/ec2-instance-connect/ssh?region=us-east-1&connType=standard&instanceId=i-0b32bf59846059397&osUser=ubuntu&sshPort=22/
aws Services Search [Alt+S] N. Virginia voclabs/user3402839=POL_PRANAV_SANTOSH @ 6333-9
Get:49 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-backports/multiverse amd64 Components [212 B]
Get:50 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-backports/multiverse amd64 c-n-f Metadata [116 B]
Fetched 28.2 MB in 6s (5102 kB/s)
Reading package lists... Done
root@ip-172-31-55-145:/home/ubuntu# apt update
Hit:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble InRelease
Hit:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates InRelease
Hit:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-backports InRelease
Hit:4 http://security.ubuntu.com/ubuntu noble-security InRelease
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
42 packages can be upgraded. Run 'apt list --upgradable' to see them.
root@ip-172-31-55-145:/home/ubuntu# apt install apache2
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  apache2-bin apache2-data apache2-utils libapr1t64 libaprutil1-dbd-sqlite3 libaprutil1-ldap libaprutil1t64 liblua5.4-0 ssl-cert
Suggested packages:
  apache2-doc apache2-suexec-pristine | apache2-suexec-custom www-browser
The following NEW packages will be installed:
  apache2 apache2-bin apache2-data apache2-utils libapr1t64 libaprutil1-dbd-sqlite3 libaprutil1-ldap libaprutil1t64 liblua5.4-0 ssl-cert
0 upgraded, 10 newly installed, 0 to remove and 42 not upgraded.
Need to get 2083 kB of archives.
After this operation, 8094 kB of additional disk space will be used.
```

- 6) After that the ip-address which was given while running the instance, copy that and paste that on chrome, make sure that it is http and not https



- 7) Create a file using vi command and save it using :wq

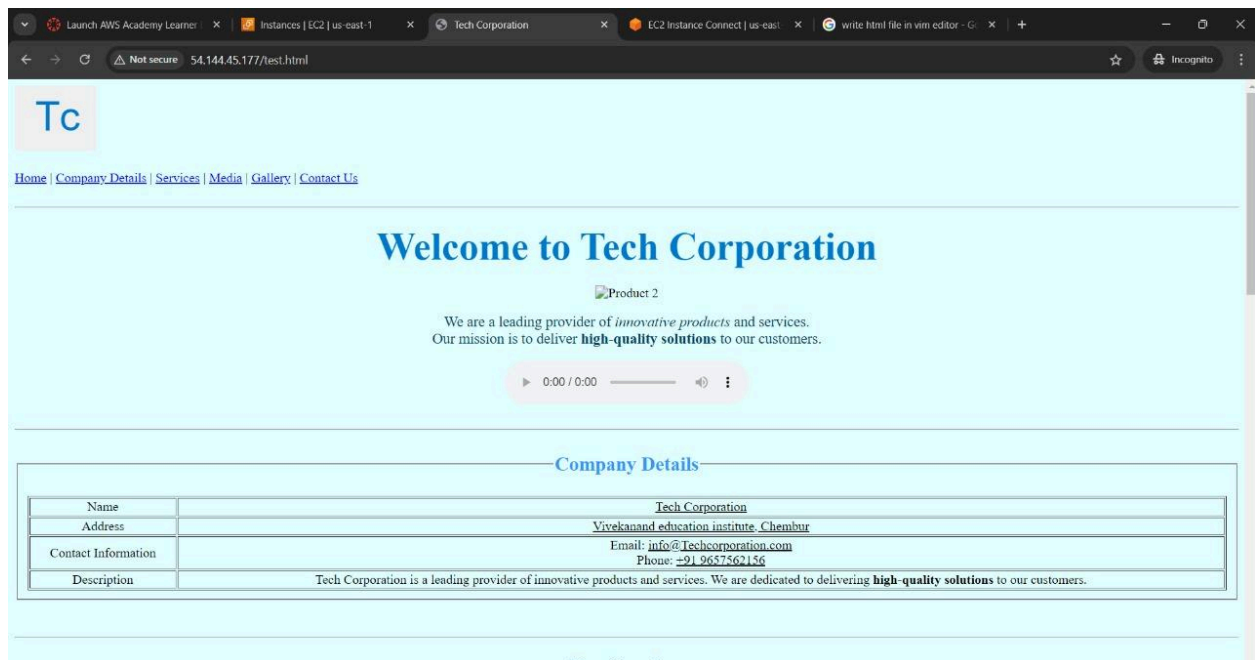


```
27 of these updates are standard security updates.
To see these additional updates run: apt list --upgradable

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status

Last login: Wed Aug 7 12:42:18 2024 from 18.206.107.29
ubuntu@ip-172-31-55-145:~$ cd /var/www/html
-bash: cd: /var/www/html: No such file or directory
ubuntu@ip-172-31-55-145:~$ sudo su
root@ip-172-31-55-145:/home/ubuntu# cd /var/www/html
root@ip-172-31-55-145:/var/www/html# ls
index.html
root@ip-172-31-55-145:/var/www/html# vi index.html
root@ip-172-31-55-145:/var/www/html# vi test.html
root@ip-172-31-55-145:/var/www/html# ls
index.html  test.html
root@ip-172-31-55-145:/var/www/html# gedit test.html
Command 'gedit' not found, but can be installed with:
snap install gedit # version 46.1, or
apt install gedit # version 46.1-3
See 'snap info gedit' for additional versions.
root@ip-172-31-55-145:/var/www/html# vi index.html
[!]+ Stopped vi index.html
root@ip-172-31-55-145:/var/www/html# vi test.html
root@ip-172-31-55-145:/var/www/html#
```

- 8) After saving that file go that page where ubuntu is listed and then on the link add “/your_file_name.html” and then whatever you saved on that file will be displayed



Static Site Hosting using S3 bucket

Step1: Create bucket

aws Services Search [Alt+S] N. Virginia voclabs/user3402839=POL_PRANAV_SANTOSH @ 6333-9

Amazon S3 > Buckets > Create bucket

Create bucket [Info](#)

Buckets are containers for data stored in S3.

General configuration

AWS Region
US East (N. Virginia) us-east-1

Bucket type [Info](#)

☒ **General purpose**
Recommended for most use cases and access patterns. General purpose buckets are the original S3 bucket type. They allow a mix of storage classes that redundantly store objects across multiple Availability Zones.

☐ **Directory - New**
Recommended for low-latency use cases. These buckets use only the S3 Express One Zone storage class, which provides faster processing of data within a single Availability Zone.

Bucket name [Info](#)

Bucket name must be unique within the global namespace and follow the bucket naming rules. [See rules for bucket naming](#)

Copy settings from existing bucket - *optional*
Only the bucket settings in the following configuration are copied.
Choose bucket

Format: s3://bucket/prefix

Step 2: Add resources

← → ↺ us-east-1.console.aws.amazon.com/s3/upload/pranavpolbucket?region=us-east-1&bucketType=general ☆ Incognito

aws Services Search [Alt+S] N. Virginia voclabs/user3402839=POL_PRANAV_SANTOSH @ 6333-9375-8690

Upload succeeded
View details below.

Files and folders Configuration

Files and folders (16 Total, 6.6 MB)


Find by name

Name	Folder	Type	Size	Status	Error
index.html	-	text/html	6.5 KB	✓ Succeeded	-
README.md	-	-	11.0 B	✓ Succeeded	-
style.css	-	text/css	7.0 KB	✓ Succeeded	-
appservice.p...	public/	image/png	346.9 KB	✓ Succeeded	-
award.jpeg	public/	image/jpeg	198.2 KB	✓ Succeeded	-
banner.jpeg	public/	image/jpeg	21.2 KB	✓ Succeeded	-
banner1.jpg	public/	image/jpeg	17.5 KB	✓ Succeeded	-
cloud.png	public/	image/png	347.0 KB	✓ Succeeded	-
conference.j...	public/	image/jpeg	174.4 KB	✓ Succeeded	-
office.png	public/	image/png	324.3 KB	✓ Succeeded	-

Step 3 : Provide public access

Edit Block public access (bucket settings) [Info](#)

Block public access (bucket settings)

Public access is granted to buckets and objects through access control lists (ACLs), bucket policies, access point policies, or all. In order to ensure that public access to all your S3 buckets and objects is blocked, turn on Block all public access. These settings apply only to this bucket and its access points. AWS recommends that you turn on Block all public access, but before applying any of these settings, ensure that your applications will work correctly without public access. If you require some level of public access to your buckets or objects within, you can customize the individual settings below to suit your specific storage use cases. [Learn more](#) 

☐ **Block *all* public access**

Turning this setting on is the same as turning on all four settings below. Each of the following settings are independent of one another.

☐ **Block public access to buckets and objects granted through *new* access control lists (ACLs)**

S3 will block public access permissions applied to newly added buckets or objects, and prevent the creation of new public access ACLs for existing buckets and objects. This setting doesn't change any existing permissions that allow public access to S3 resources using ACLs.

☐ **Block public access to buckets and objects granted through *any* access control lists (ACLs)**

S3 will ignore all ACLs that grant public access to buckets and objects.

☐ **Block public access to buckets and objects granted through *new* public bucket or access point policies**

S3 will block new bucket and access point policies that grant public access to buckets and objects. This setting doesn't change any existing policies that allow public access to S3 resources.

☐ **Block public and cross-account access to buckets and objects through *any* public bucket or access point policies**

S3 will ignore public and cross-account access for buckets or access points with policies that grant public access to buckets and objects.

Static website hosting

Use this bucket to host a website or redirect requests. [Learn more](#)

Static website hosting

- ☐ Disable
- ☒ Enable

Hosting type

- ☒ Host a static website

Use the bucket endpoint as the web address. [Learn more](#)

- ☐ Redirect requests for an object

Redirect requests to another bucket or domain. [Learn more](#)

i For your customers to access content at the website endpoint, you must make all your content publicly readable. To do so, you can edit the S3 Block Public Access settings for the bucket. For more information, see [Using Amazon S3 Block Public Access](#)

Index document

Specify the home or default page of the website.

index.html

Error document - optional

This is returned when an error occurs.

error.html



[Amazon S3](#) > [Buckets](#) > [pranavpolbucket](#) > Edit Object Ownership

Edit Object Ownership Info

Object Ownership

Control ownership of objects written to this bucket from other AWS accounts and the use of access control lists (ACLs). Object ownership determines who can specify access to objects.

- ☐ ACLs disabled (recommended)

All objects in this bucket are owned by this account. Access to this bucket and its objects is specified using only policies.

- ☒ ACLs enabled

Objects in this bucket can be owned by other AWS accounts. Access to this bucket and its objects can be specified using ACLs.

⚠ We recommend disabling ACLs, unless you need to control access for each object individually or to have the object writer own the data they upload. Using a bucket policy instead of ACLs to share data with users outside of your account simplifies permissions management and auditing.

⚠ Enabling ACLs turns off the bucket owner enforced setting for Object Ownership

Once the bucket owner enforced setting is turned off, access control lists (ACLs) and their associated permissions are restored. Access to objects that you do not own will be based on ACLs and not the bucket policy.

☐ I acknowledge that ACLs will be restored.

Object Ownership

Successfully edited public access
View details below.

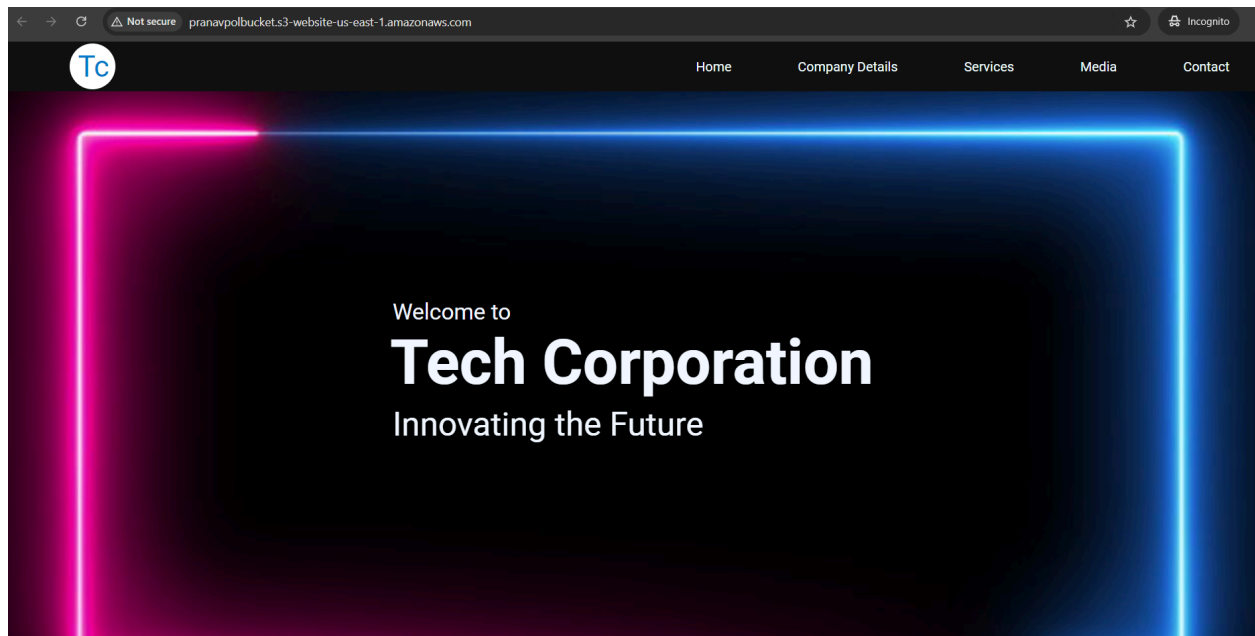
The information below will no longer be available after you navigate away from this page.

Summary

Source s3://pranavpolbucket	Successfully edited public access 13 objects, 3.5 MB	Failed to edit public access 0 objects
--------------------------------	---	---

[Failed to edit public access](#) | [Configuration](#)

Step 4 : visit hosted website



EC2 Dynamic Site Hosting

Step 1 : Open Console and clone the github repository

```
root@ip-172-31-55-145:/home/ubuntu/dynamic/dyanamic_site# npm i
( [REDACTED] ) : reify:define-data-property: http fetch GET 200 https://registry.npmjs.org/define-data-property
added 93 packages, and audited 94 packages in 3s

16 packages are looking for funding
  run `npm fund` for details

found 0 vulnerabilities
root@ip-172-31-55-145:/home/ubuntu/dynamic/dyanamic_site# npm start

> hosting-dynamic-website@1.0.0 start
> nodemon index.js

[nodemon] 3.1.4
[nodemon] to restart at any time, enter `rs`
[nodemon] watching path(s): *.*
[nodemon] watching extensions: js,mjs,cjs,json
[nodemon] starting `node index.js`
Server is running on port 3000
```

Step 2 : Install necessary Packages and run website on port 3000



Cloud 9 IDE Site Hosting

Step 1: Create Environment

[AWS Cloud9](#) > [Environments](#) > Create environment

Create environment [Info](#)

Details

Name

Limit of 60 characters, alphanumeric, and unique per user.

Description - *optional*

Limit 200 characters.

Environment type [Info](#)
Determines what the Cloud9 IDE will run on.

☒ **New EC2 instance**
Cloud9 creates an EC2 instance in your account. The configuration of your EC2 instance cannot be changed by Cloud9 after creation.

☐ **Existing compute**
You have an existing instance or server that you'd like to use.

New EC2 instance

Step 2 :Open the Environment IDE

AWS Cloud9 | Services | Search | [Alt+S] | N. Virginia | voclabs/user3402839=POL_PRANAV_SANTOSH @ 6333-9375-8690

My environments

Shared with me

All account environments

Documentation

Environments (1)

My environments

	Name	Cloud9 IDE	Environment type	Connection	Permission	Owner ARN
<input type="radio"/>	pranavenv	Open	EC2 instance	Secure Shell (SSH)	Owner	arn:aws:sts:633393758690:assumed-role/voclabs/user3402839=POL_PRANAV_SANTOSH

Delete

View details

Open in Cloud9

Create environment

Step 3: Add the code and preview the website

