

# EXPERIMENT 1

## 1) To Develop A Website And Host it on a VM.

Steps:

Create An Instance:

The screenshot shows the AWS EC2 Dashboard. On the left, a sidebar lists various EC2 services like Instances, Images, and Elastic Block Store. The main area displays 'Resources' with counts for Instances (running: 2), Auto Scaling Groups (0), Capacity Reservations (0), Dedicated Hosts (0), Elastic IPs (0), Instances (2), Key pairs (1), Load balancers (0), Placement groups (0), Security groups (1), Snapshots (0), and Volumes (2). Below this is the 'Launch instance' section, which includes a 'Launch instance' button and a note that instances will launch in the US East (N. Virginia) Region. To the right is the 'Service health' section, which shows the AWS Health Dashboard, the Region (US East (N. Virginia)), and a status message indicating the service is operating normally. Further right is the 'Explore AWS' section, which promotes better price performance and spot instances. At the bottom, there's a navigation bar with CloudShell, Feedback, and other AWS services.

The screenshot shows the 'Launch an instance' wizard. Step 1: Set instance details. It asks for the number of instances (1) and specifies the software image (Amazon Linux 2023 AMI 2023.5.2...). It also sets the virtual server type to t2.micro and creates a new security group. A tooltip for the free tier is shown, stating: 'Free tier: In your first year includes 750 hours of t2.micro (or t3.micro in the Regions in which t2.micro is unavailable) instance'. At the bottom are 'Cancel', 'Launch instance', and 'Review commands' buttons.

**Application and OS Images (Amazon Machine Image)**

An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. Search or Browse for AMIs if you don't see what you are looking for below.

Search our full catalog including 1000s of application and OS images

Recents Quick Start

Amazon Linux macOS Ubuntu Windows Red Hat SUSE Linux

Browse more AMIs Including AMIs from AWS, Marketplace and the Community

**Amazon Machine Image (AMI)**

Amazon Linux 2023 AMI  
ami-066784287e358dad1 (64-bit (x86), uefi-preferred) / ami-023508951a94f0c71 (64-bit (Arm), uefi)  
Virtualization: hvm ENA enabled: true Root device type: ebs

Free tier eligible

Description

Amazon Linux 2023 is a modern, general purpose Linux-based OS that comes with 5 years of long term support. It is optimized for AWS and designed to provide a secure, stable and high-performance execution environment to

**Summary**

Number of instances: 1

Software Image (AMI): Amazon Linux 2023 AMI 2023.5.2...  
Virtual server type (instance type): t2.micro  
Firewall (security group): New security group  
Storage (volumes): 1 volume(s) - 8 GiB

Free tier: In your first year includes 750 hours of t2.micro (or t3.micro in the Regions in which t2.micro is unavailable) instance

Cancel Launch instance Review commands

**Instance type**

t2.micro

Family: t2 1 vCPU 1 GiB Memory Current generation: true

On-Demand Windows base pricing: 0.0162 USD per Hour

On-Demand SUSE base pricing: 0.0116 USD per Hour

On-Demand RHEL base pricing: 0.026 USD per Hour

On-Demand Linux base pricing: 0.0116 USD per Hour

All generations

Compare instance types

Additional costs apply for AMIs with pre-installed software

**Key pair (login)**

You can use a key pair to securely connect to your instance. Ensure that you have access to the selected key pair before you launch the instance.

Key pair name - required

vokey

Create new key pair

**Network settings**

Network

**Summary**

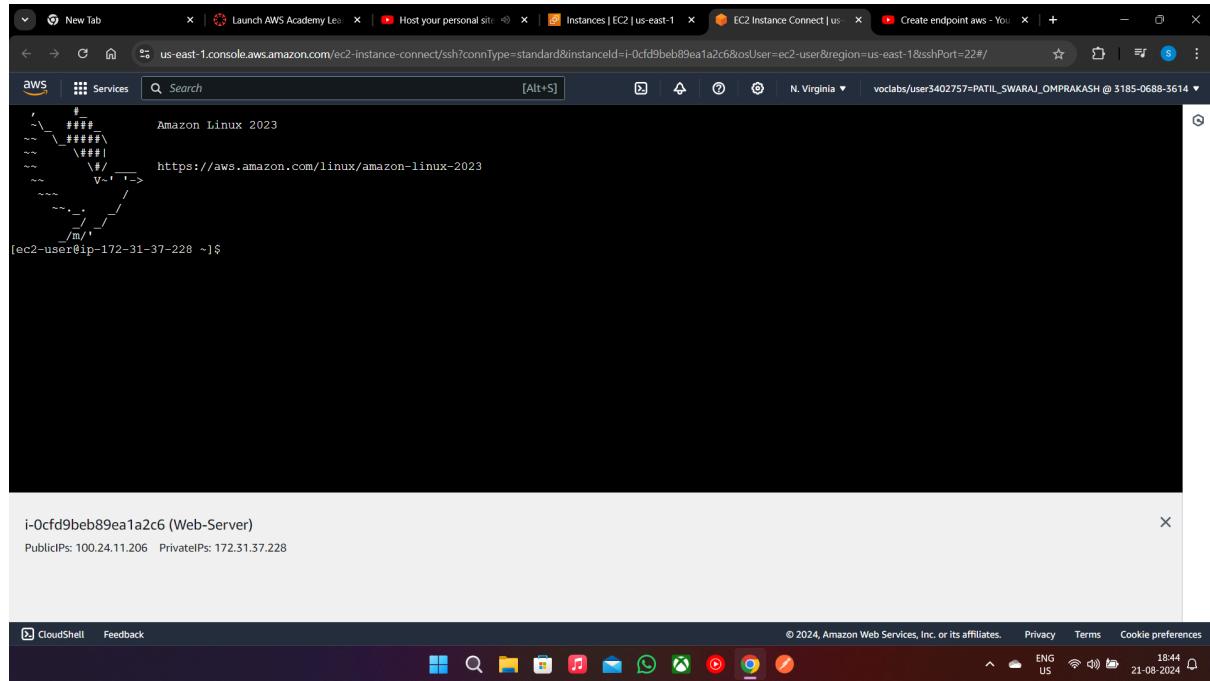
Number of instances: 1

Software Image (AMI): Amazon Linux 2023 AMI 2023.5.2...  
Virtual server type (instance type): t2.micro  
Firewall (security group): New security group  
Storage (volumes): 1 volume(s) - 8 GiB

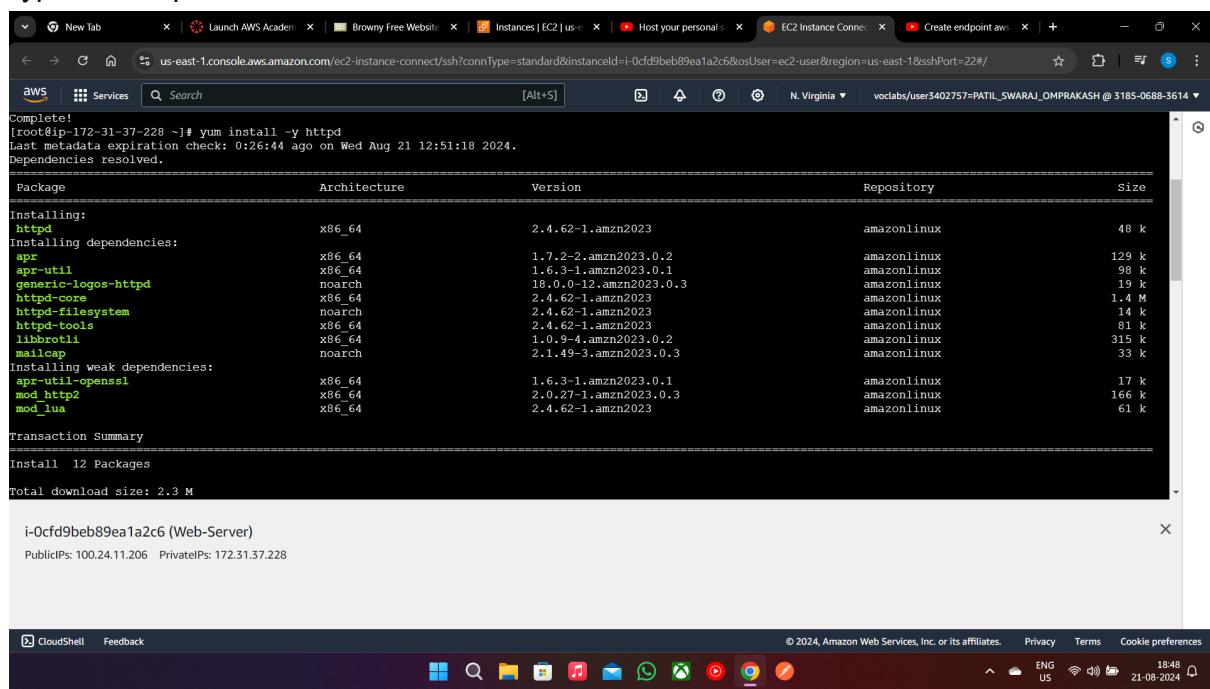
Free tier: In your first year includes 750 hours of t2.micro (or t3.micro in the Regions in which t2.micro is unavailable) instance

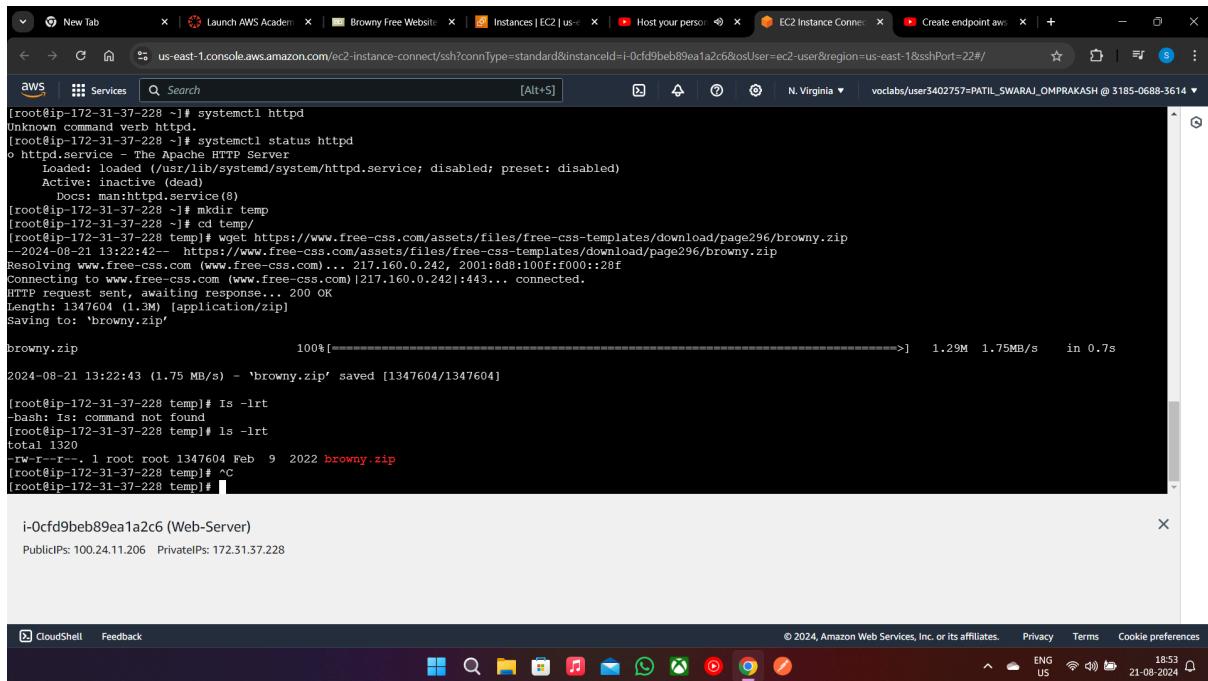
Cancel Launch instance Review commands

## Step 2: Connect To the Instance:



## Type the Required Commands:





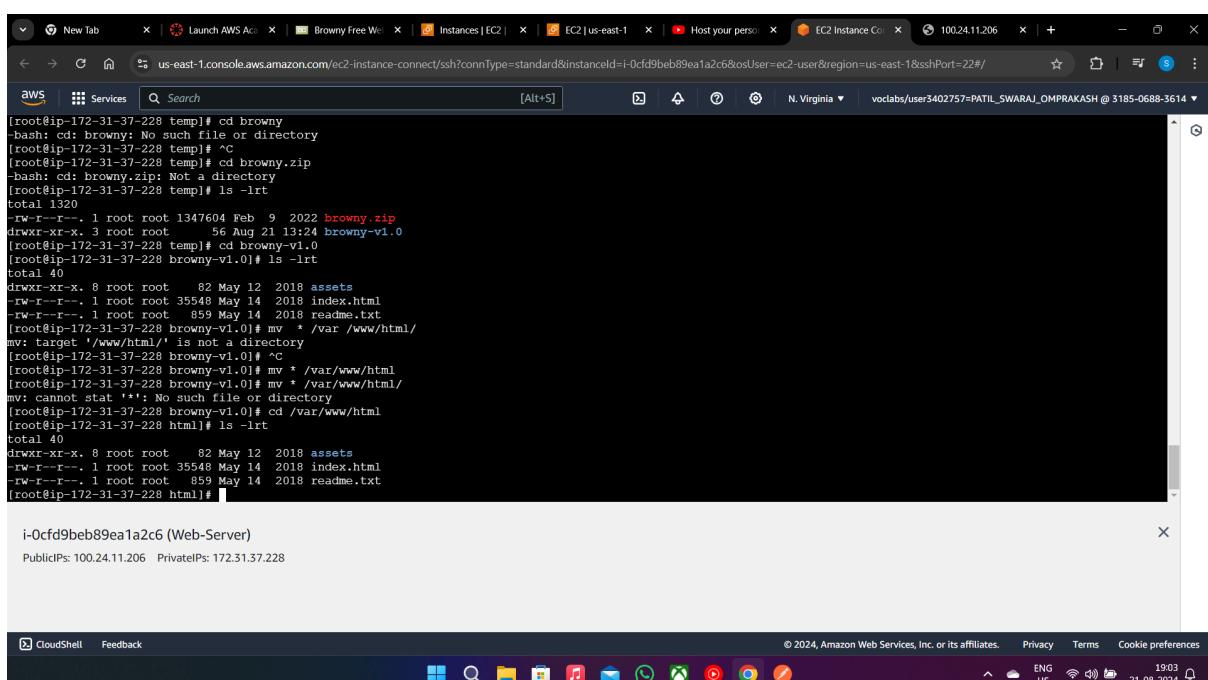
```
[root@ip-172-31-37-228 ~]# systemctl httpd
Unknown command verb httpd.
[root@ip-172-31-37-228 ~]# systemctl status httpd
● httpd.service - The Apache HTTP Server
   Loaded: loaded (/usr/lib/systemd/system/httpd.service; disabled; preset: disabled)
     Active: inactive (dead)
       Docs: man:httpd.service(8)
[root@ip-172-31-37-228 ~]# mkdir temp
[root@ip-172-31-37-228 temp]# wget https://www.free-css.com/assets/files/free-css-templates/download/page296/browny.zip
--2024-08-21 13:22:42-- https://www.free-css.com/assets/files/free-css-templates/download/page296/browny.zip
Resolving www.free-css.com (www.free-css.com)... 217.160.0.242, 2001:8d8:100f:f000::28E
Connecting to www.free-css.com (www.free-css.com)|217.160.0.242|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 1347604 (1.3M) [application/zip]
Saving to: 'browny.zip'

browny.zip                                         100%[=====]  1.29M  1.75MB/s    in 0.7s

2024-08-21 13:22:43 (1.75 MB/s) - 'browny.zip' saved [1347604/1347604]

[root@ip-172-31-37-228 temp]# ls -lrt
-bash: ls: command not found
[root@ip-172-31-37-228 temp]# ls -lrt
total 1320
-rw-r--r--. 1 root root 1347604 Feb  9  2022 browny.zip
[root@ip-172-31-37-228 temp]# ^C
[root@ip-172-31-37-228 temp]# 
```

i-0cf9beb89ea1a2c6 (Web-Server)  
PublicIPs: 100.24.11.206 PrivateIPs: 172.31.37.228



```
[root@ip-172-31-37-228 temp]# cd browny
-bash: cd: browny: No such file or directory
[root@ip-172-31-37-228 temp]# ^C
[root@ip-172-31-37-228 temp]# cd browny.zip
-bash: cd: browny.zip: Not a directory
[root@ip-172-31-37-228 temp]# ls -lrt
total 1320
-rw-r--r--. 1 root root 1347604 Feb  9  2022 browny.zip
drwxr-xr-x. 3 root root      56 Aug 21 13:24 browny-v1.0
[root@ip-172-31-37-228 temp]# cd browny-v1.0
[root@ip-172-31-37-228 browny-v1.0]# ls -lrt
total 40
drwxr-xr-x. 8 root root     82 May 12  2018 assets
-rw-r--r--. 1 root root 35548 May 14  2018 index.html
-rw-r--r--. 1 root root    859 May 14  2018 readme.txt
[root@ip-172-31-37-228 browny-v1.0]# mv * /var/www/html/
mv: target '/var/www/html/' is not a directory
[root@ip-172-31-37-228 browny-v1.0]# ^C
[root@ip-172-31-37-228 browny-v1.0]# mv * /var/www/html/
[root@ip-172-31-37-228 browny-v1.0]# mv * /var/www/html/
mv: cannot stat '*': No such file or directory
[root@ip-172-31-37-228 browny-v1.0]# cd /var/www/html
[root@ip-172-31-37-228 html]# ls -lrt
total 40
drwxr-xr-x. 8 root root     82 May 12  2018 assets
-rw-r--r--. 1 root root 35548 May 14  2018 index.html
-rw-r--r--. 1 root root    859 May 14  2018 readme.txt
[root@ip-172-31-37-228 html]# 
```

i-0cf9beb89ea1a2c6 (Web-Server)  
PublicIPs: 100.24.11.206 PrivateIPs: 172.31.37.228

## Give it Permission For HTTP And Https:

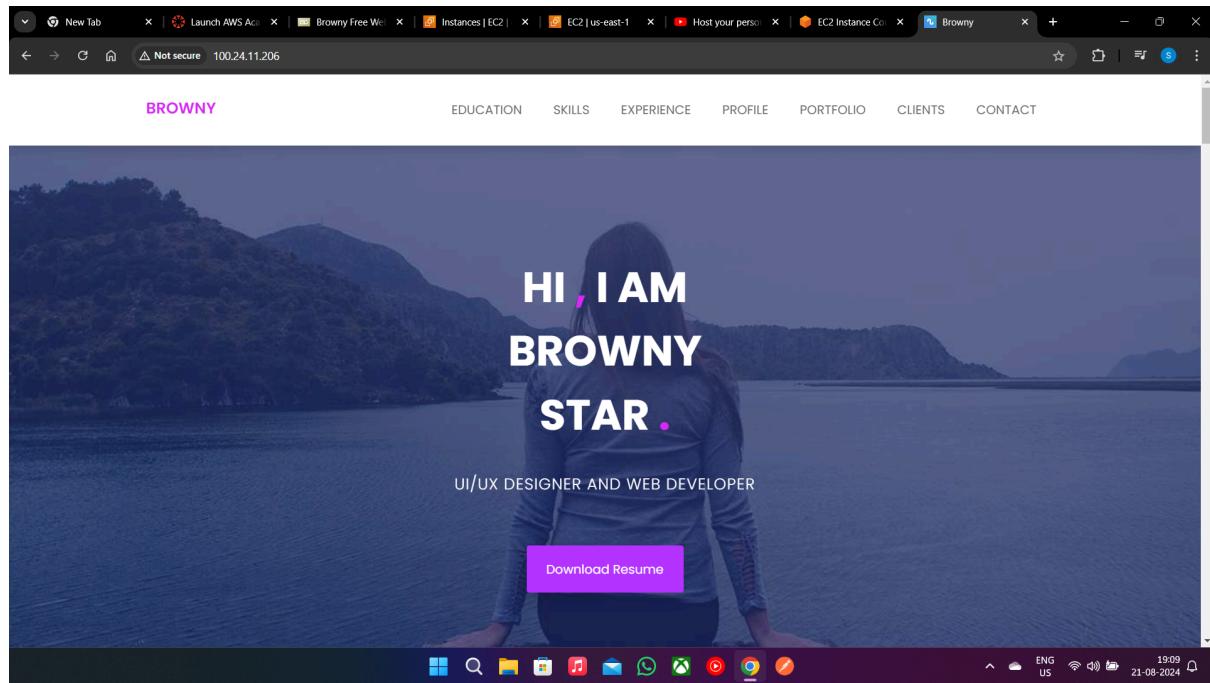
The screenshot shows the AWS CloudShell interface. The user is navigating to the AWS Management Console and selecting the EC2 service. They are viewing the details of a security group named "sg-0f1d7bd3441ae56c8". In the "Inbound rules" tab, they have added a rule allowing SSH traffic (Protocol TCP, Port 22) from their local IP address (IPv4). The "Outbound rules" tab shows one permission entry. The bottom of the screen displays the Windows taskbar with various pinned icons.

The screenshot shows the AWS CloudShell interface. The user has run the command `systemctl status httpd` to check the status of the Apache HTTP Server. The output indicates that the service is inactive (dead). The bottom of the screen displays the Windows taskbar with various pinned icons.

```
--image=PATH      Edit/enable/disable/mask unit files in the specified image
--n --lines=INTEGER Number of journal entries to show
--o --output=STRING Change journal output mode (short, short-precise,
                     short-iso, short-iso-precise, short-full,
                     short-monotonic, short-unix, short-delta,
                     verbose, export, json, json-pretty, json-sse, cat)
--firmware-setup   Tell the firmware to show the setup menu on next boot
--boot-loader-menu=TIME Boot into boot loader menu on next boot
--boot-loader-entry=NAME Boot into a specific boot loader entry on next boot
--plain           Print unit dependencies as a list instead of a tree
--timestamp=FORMAT Change format of printed timestamps (pretty, unix,
                     us, utc, us+utc)
--read-only        Create read-only bind mount
--mkdir           Create directory before mounting, if missing
--marked          Restart/reload previously marked units

See the systemctl(1) man page for details.
log file: /var/log/httpd/error_log
[root@ip-172-31-37-228 ~]# systemctl status httpd
● httpd.service - The Apache HTTP Server
   Loaded: loaded (/usr/lib/systemd/system/httpd.service; disabled; preset: disabled)
     Active: inactive (dead)
       Docs: man:httpd.service(8)
[root@ip-172-31-37-228 ~]# 
```

## THE HOSTED WEBSITE:



## 2) HOSTING THROUGH CLOUD9:

### Step 1: CREATE A CLOUD9 ENVIRONMENT:

A screenshot of a web browser showing the AWS Cloud9 'Create environment' interface. The URL is 'us-east-1.console.aws.amazon.com/cloud9control/home?region=us-east-1#/create/'. The page shows a success message: 'Successfully created AWS Cloud9. To get the most out of your environment, see Best practices for using AWS Cloud9'. It also provides information about AWS Toolkits and CloudShell. Below this, there's a 'Create environment' form with a 'Details' section. It asks for a 'Name' (input field), a 'Description - optional' (input field), and an 'Environment type' section. The 'New EC2 instance' option is selected, with a note that Cloud9 creates an EC2 instance in your account. The bottom of the screen shows the AWS navigation bar and system status icons.

## STEP 2:

The screenshot shows the 'Network settings' step of the AWS Cloud9 environment creation wizard. It includes options for 'AWS Systems Manager (SSM)' (selected) and 'Secure Shell (SSH)'. A note states that SSM allows access via SSM without opening inbound ports. A 'Tags - optional' section is also present. A callout box highlights the creation of IAM resources: 'AWSServiceRoleForAWSCloud9' (service-linked role for Cloud9 to call other AWS services), 'AWSCloud9SSMAccessRole' (service role for Cloud9 to access SSM), and 'AWSCloud9SSMInstanceProfile' (instance profile for Cloud9 instances). The 'Create' button is at the bottom right.

**Connection**  
How your environment is accessed.

AWS Systems Manager (SSM)  
Accesses environment via SSM without opening inbound ports (no ingress).

Secure Shell (SSH)  
Accesses environment directly via SSH, opens inbound ports.

▶ VPC settings [Info](#)

▶ Tags - optional [Info](#)  
A tag is a label that you assign to an AWS resource. Each tag consists of a key and an optional value. You can use tags to search and filter your resources or track your AWS costs.

**The following IAM resources will be created in your account**

- AWSServiceRoleForAWSCloud9 - AWS Cloud9 creates a service-linked role for you. This allows AWS Cloud9 to call other AWS services on your behalf. You can delete the role from the AWS IAM console once you no longer have any AWS Cloud9 environments. [Learn more](#)
- AWSCloud9SSMAccessRole and AWSCloud9SSMInstanceProfile - A service role and an instance profile are automatically created if Cloud9 accesses its EC2 instance through AWS Systems Manager. If your environments no longer require EC2 instances that block incoming traffic, you can delete these roles using the AWS IAM console. [Learn more](#)

Cancel [Create](#)

The screenshot shows the 'Environments' list in the AWS Cloud9 console. A success message indicates the environment was created. The environment table lists one entry: 'AWS Cloud9' (Name), 'Open' (Cloud9 IDE), 'EC2 instance' (Environment type), 'Secure Shell (SSH)' (Connection), 'Owner' (Permissions), and the ARN 'arn:aws:sts::318506883614:assumed-role/voclabs/user3402757=PATIL\_SWARAJ\_OMPRAKASH' (Owner ARN). The 'Create environment' button is visible at the top right of the table.

**AWS Cloud9**

Successfully created AWS Cloud9. To get the most out of your environment, see [Best practices for using AWS Cloud9](#).

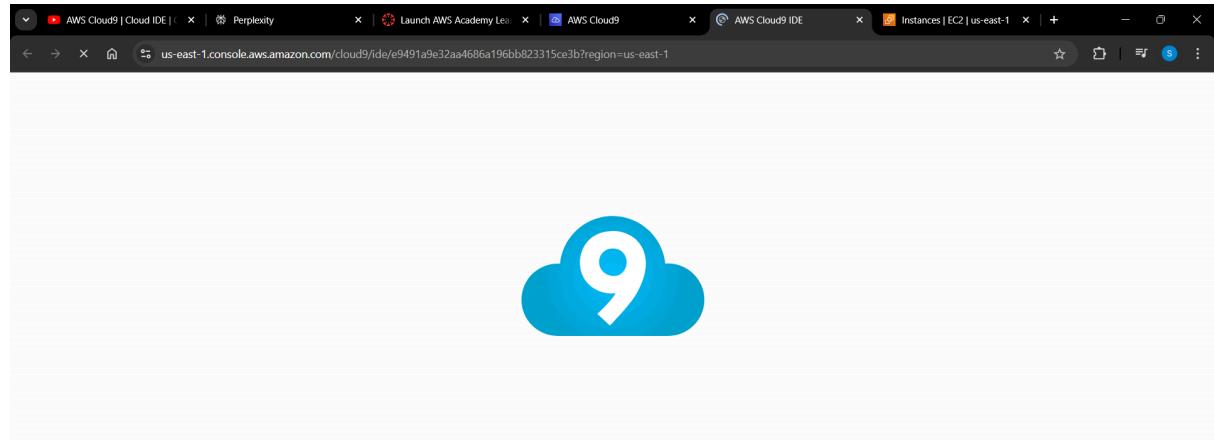
For capabilities similar to AWS Cloud9, explore AWS Toolkits in your own IDE and AWS CloudShell in the AWS Management Console. [Learn more](#)

[AWS Cloud9](#) > Environments

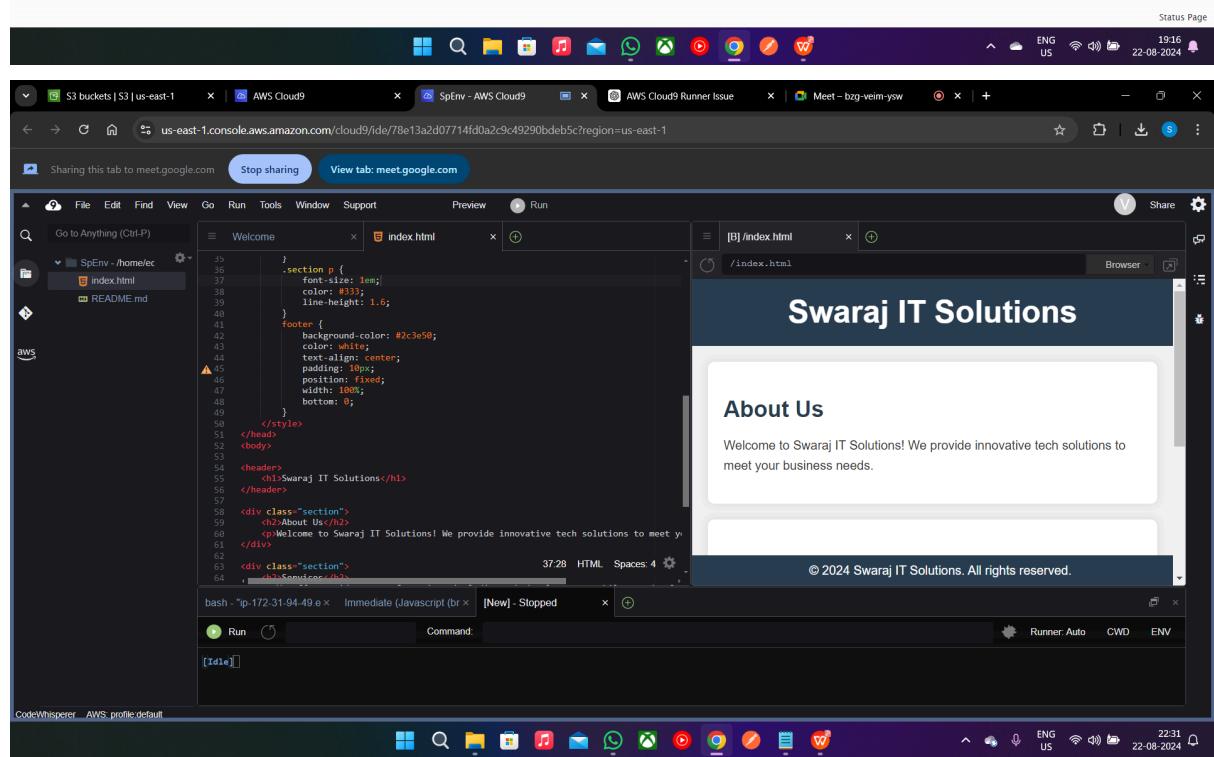
Environments (1)						
Delete View details Open in Cloud9 <a href="#">Create environment</a>						
My environments						
Name	Cloud9 IDE	Environment type	Connection	Permissions	Owner ARN	
<a href="#">AWS Cloud9</a>	<a href="#">Open</a>	EC2 instance	Secure Shell (SSH)	Owner	arn:aws:sts::318506883614:assumed-role/voclabs/user3402757=PATIL_SWARAJ_OMPRAKASH	

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### STEP 3: OPEN IN THE CLOUD9 IDE:



To rename a variable, highlight it then press Ctrl-Alt-R.



## HOSTING USING S3 BUCKET:

### CREATE A BUCKET:

The screenshot shows the 'Create bucket' configuration page in the AWS S3 console. The 'General configuration' section is selected. Under 'AWS Region', 'US East (N. Virginia) us-east-1' is chosen. Under 'Bucket type', 'General purpose' is selected, which is described as recommended for most use cases and access patterns. A second option, 'Directory - New', is also listed. The 'Bucket name' field contains 'MyBucket'. Below it, a note states that the name must be unique within the global namespace and follow bucket naming rules. There is a 'Copy settings from existing bucket - optional' section with a 'Choose bucket' button and a dropdown for 'Format: s3://bucket/prefix'. The bottom of the page includes standard AWS navigation links like CloudShell and Feedback, along with a dark-themed system tray.

### SELECT THE BUCKET:

The screenshot shows the 'Buckets' list page in the AWS S3 console. A green banner at the top indicates that a bucket named 'bucky11' has been successfully created. Below the banner, there is an 'Account snapshot' section with a 'Storage lens' link. The main table lists three buckets under the 'General purpose buckets' tab. The columns include Name, AWS Region, IAM Access Analyzer, and Creation date. The buckets listed are 'bucky11' (Region: US East (N. Virginia) us-east-1, Creation date: August 22, 2024), 'elasticbeanstalk-us-east-1-318506883614' (Region: US East (N. Virginia) us-east-1, Creation date: August 8, 2024), and 'hutyapa' (Region: US East (N. Virginia) us-east-1, Creation date: August 8, 2024). The bottom of the page includes standard AWS navigation links like CloudShell and Feedback, along with a dark-themed system tray.

## UPLOAD THE HTML FILE:

The screenshot shows two screenshots of the AWS S3 console. The top screenshot shows the 'Objects' page for the 'bucky11' bucket, which is currently empty. The bottom screenshot shows the details for the uploaded 'index.html' file.

**Top Screenshot (Objects Page):**

- Bucket: bucky11
- Region: N. Virginia
- Actions: Copy S3 URI, Copy URL, Download, Open, Delete, Actions, Create folder, Upload
- Search bar: Find objects by prefix
- Table Headers: Name, Type, Last modified, Size, Storage class
- Message: No objects. You don't have any objects in this bucket.
- Upload button

**Bottom Screenshot (Object Details):**

- Bucket: bucky11
- Object: index.html
- Properties tab selected
- Object overview table:

Owner	s3://bucky11/index.html
AWS Region	Amazon Resource Name (ARN)
Last modified	Entity tag (Etag)
Size	arn:aws:s3:::bucky11/index.html
Type	d2789291e219bc55a8cdf3c2c088d2b1
Key	Object URL
	<a href="https://bucky11.s3.amazonaws.com/index.html">https://bucky11.s3.amazonaws.com/index.html</a>
- CloudShell and Feedback buttons at the bottom

## **OUTPUT PAGE:**

The screenshot shows a web browser window with multiple tabs open. The active tab displays the homepage of "Swaraj IT Solutions". The page has a dark header with the company name. Below the header is a light gray content area containing three sections: "About Us", "Services", and "Contact Us". Each section has a heading and a brief description. At the bottom of the page is a dark footer bar with the copyright notice "© 2024 Swaraj IT Solutions. All rights reserved." and various system icons.

**Swaraj IT Solutions**

**About Us**  
Welcome to Swaraj IT Solutions! We provide innovative tech solutions to meet your business needs.

**Services**  
We offer a wide range of services including web development, mobile app development, and IT consulting.

**Contact Us**  
Reach out to us via email at [contact@swrajitsolutions.com](mailto:contact@swrajitsolutions.com) or call us at +123-456-7890.

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