

# AWS INTERN

## TASK 2

### TEAM

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# **Pinterest Clone Hosting On AWS**

## **Description:**

In this report, we created and deployed website using AWS. As we go forward, there will be screenshots of configuration of web server as well as AWS Services. We've made and deployed Pinterest Website Clone.

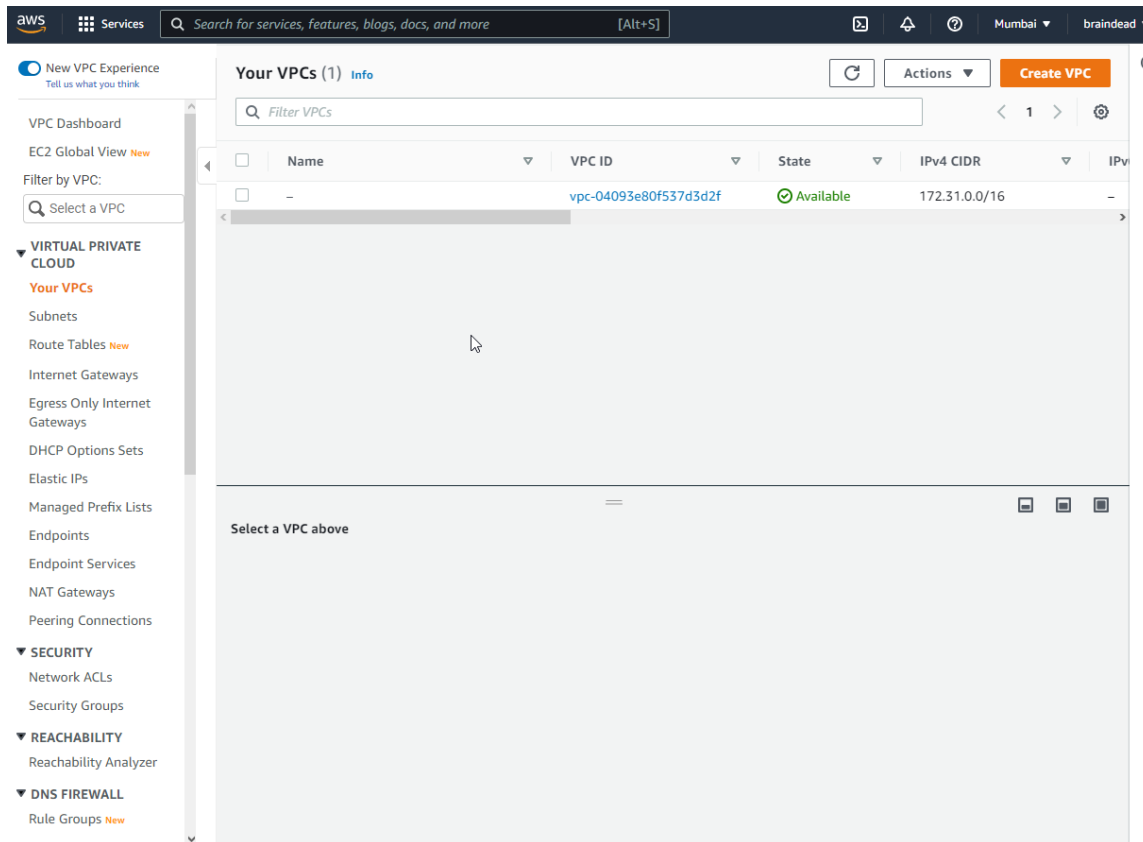
**Pinterest is an image sharing and social media service designed to enable saving and discovery of information on the internet using images**

## **Services Used:**

- VPC (Virtual Private Cloud)
- AWS EC2 Virtual Server
- Route Tables
- Internet Gateway
- CloudWatch
- Data Lifecycle Policy

## Solution:

1. Code is ready to deploy and to host on server.
2. Go to [aws.amazon.com](https://aws.amazon.com)



## 4.VPC Configuration :

aws

Services

Search for services, features, blogs, docs, and more

[Alt+S]

Mumbai

braindead

VPC > Your VPCs > Create VPC

Create VPC [Info](#)

A VPC is an isolated portion of the AWS cloud populated by AWS objects, such as Amazon EC2 instances.

VPC settings

Name tag - optional

Creates a tag with a key of 'Name' and a value that you specify.

vpc-webhost

IPv4 CIDR block [Info](#)

10.0.0/16

IPv6 CIDR block [Info](#)

☒ No IPv6 CIDR block

☐ Amazon-provided IPv6 CIDR block

☐ IPv6 CIDR owned by me

Tenancy [Info](#)

Default

Tags

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.

Key

Value - optional

Q Name X

Q vpc-webhost X

Remove

Add new tag

You can add 49 more tags.

## 5. Create Subnet For VPC And Configure it.

### Subnet settings

Specify the CIDR blocks and Availability Zone for the subnet.

**Subnet 1 of 1**

**Subnet name**  
Create a tag with a key of 'Name' and a value that you specify.

webhost\_vpc\_subnet

The name can be up to 256 characters long.

**Availability Zone** [Info](#)  
Choose the zone in which your subnet will reside, or let Amazon choose one for you.

Asia Pacific (Mumbai) / ap-south-1a

**IPv4 CIDR block** [Info](#)

10.0.0.0/16

▼ **Tags - optional**

Key	Value - optional	
Name	webhost_vpc_subnet	Remove

[Add new tag](#)

You can add 49 more tags.

[Remove](#)

[Add new subnet](#)

[Cancel](#) [Create subnet](#)

## 6. Create Internet Gateway.

The screenshot displays the AWS Management Console interface for an Internet Gateway. At the top, a green notification bar states: "The following internet gateway was created: igw-07fd528c6b1a1d8ba - gw\_webhost\_vpc. You can now attach to a VPC to enable the VPC to communicate with the internet." with an "Attach to a VPC" button.

The breadcrumb navigation shows: [VPC](#) > [Internet gateways](#) > [igw-07fd528c6b1a1d8ba](#).

The main heading is **igw-07fd528c6b1a1d8ba / gw\_webhost\_vpc**, with an "Actions" dropdown menu.

**Details** [Info](#)

Internet gateway ID igw-07fd528c6b1a1d8ba	State Detached	VPC ID -	Owner 393767145308
--	-------------------	-------------	-----------------------

**Tags** [Manage tags](#)

Search tags

Key	Value
Name	gw_webhost_vpc

**Left Sidebar:**

- New VPC Experience
- VPC Dashboard
- EC2 Global View
- Filter by VPC: Select a VPC
- VIRTUAL PRIVATE CLOUD**
- Your VPCs
- Subnets
- Route Tables
- Internet Gateways**
- Egress Only Internet Gateways
- DHCP Options Sets
- Elastic IPs
- Managed Prefix Lists
- Endpoints
- Endpoint Services
- NAT Gateways
- Peering Connections
- SECURITY**
- Network ACLs
- Security Groups

Step 3: Configure Instance Details

Configure the instance to suit your requirements. You can launch multiple instances from the same AMI, request Spot instances to take advantage of the lower pricing, assign an access management role to the instance, and more.

Number of instances
1
Launch into Auto Scaling Group

Purchasing option
☐ Request Spot instances

Network
vpc-03382e4342b979950 | vpc-webhost
Create new VPC

Subnet
subnet-0602f13c3f8dc74d7 | webhost\_vpc\_subnet | 65531 IP Addresses available
Create new subnet

Auto-assign Public IP
Enable

Hostname type
Use subnet setting (IP name)

DNS Hostname
☒ Enable IP name IPv4 (A record) DNS requests  
☒ Enable resource-based IPv4 (A record) DNS requests  
☐ Enable resource-based IPv6 (AAAA record) DNS requests

Placement group
☐ Add instance to placement group

Capacity Reservation
Open

Domain join directory
No directory
Create new directory

IAM role
None
Create new IAM role

Shutdown behavior
Stop

Stop - Hibernate behavior
☐ Enable hibernation as an additional stop behavior

Enable termination protection
☐ Protect against accidental termination

Cancel
Previous
Review and Launch
Next: Add Storage

Step 4: Add Storage

Your instance will be launched with the following storage device settings. You can attach additional EBS volumes and instance store volumes to your instance, or edit the settings of the root volume. You can also attach additional EBS volumes after launching an instance, but not instance store volumes. [Learn more](#) about storage options in Amazon EC2.

Volume Type	Device	Snapshot	Size (GiB)	Volume Type	IOPS	Throughput (MB/s)	Delete on Termination	Encryption
Root	/dev/xvda	snap-03a294f50612b550e	8	General Purpose SSD (gp2)	100 / 3000	N/A	<input checked="" type="checkbox"/>	Not Encrypt

Add New Volume

Free tier eligible customers can get up to 30 GB of EBS General Purpose (SSD) or Magnetic storage. [Learn more](#) about free usage tier eligibility and usage restrictions.

Shared file systems

You currently don't have any file systems on this instance. Select "Add file system" button below to add a file system.

Add file system



## Step 6: Configure Security Group

A security group is a set of firewall rules that control the traffic for your instance. On this page, you can add rules to allow specific traffic to reach your instance. For example, if you want to set up a web server and allow Internet traffic to reach your instance, add rules that allow unrestricted access to the HTTP and HTTPS ports. You can create a new security group or select from an existing one below. [Learn more](#) about Amazon EC2 security groups.

Assign a security group: ☒ Create a new security group  
☐ Select an existing security group

Security group name:   
Description:

Type	Protocol	Port Range	Source	Description
SSH	TCP	22	My IP 223.235.164.98/32	ssh for admin
HTTP	TCP	80	Anywhere 0.0.0.0/0, ::/0	for web access

Add Rule

## Step 7: Review Instance Launch

Please review your instance launch details. You can go back to edit changes for each section. Click **Launch** to assign a key pair to your instance and complete the launch process.

AMI Details

Edit AMI

Free tier eligible

**Amazon Linux 2 AMI (HVM) - Kernel 5.10, SSD Volume Type - ami-0108d6a82a783b352**  
Amazon Linux 2 comes with five years support. It provides Linux kernel 5.10 tuned for optimal performance on Amazon EC2, systemd 219, GCC 7.3, Glibc 2.26, Binutils 2.29.1, and the latest software packages through extras. This AMI is the successor of the Amazon Linux AMI that is n  
Root Device Type: ebs    Virtualization type: hvm

Instance Type

Edit instance type

Instance Type	ECUs	vCPUs	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Performance
t2.micro	-	1	1	EBS only	-	Low to Moderate

Security Groups

Edit security groups

Security group name

webhost\_sg\_config

Description

launch-wizard-2 created 2021-11-24T22:04:06.744+05:30

Type	Protocol	Port Range	Source	Description
SSH	TCP	22	223.235.164.98/32	ssh for admin
HTTP	TCP	80	0.0.0.0/0	for web access
HTTP	TCP	80	::/0	for web access

Instance Details

Edit instance details

Storage

Edit storage

Tags

Edit tags

Cancel

Previous

Launch

# 8.Successfully Launched.

## Launch Status

✓

Your instances are now launching

The following instance launches have been initiated: i-0999bc67345a48eb2 [View launch log](#)

i

Get notified of estimated charges

Create [billing alerts](#) to get an email notification when estimated charges on your AWS bill exceed an amount you define (for example, if you exceed the free usage tier).

## How to connect to your instances

Your instances are launching, and it may take a few minutes until they are in the **running** state, when they will be ready for you to use. Usage hours on your new instances will start immediately and continue to accrue until you stop or terminate your instances.

Click **View Instances** to monitor your instances' status. Once your instances are in the **running** state, you can **connect** to them from the Instances screen. [Find out](#) how to connect to your instances.

### Here are some helpful resources to get you started

- [How to connect to your Linux instance](#)
  - [Learn about AWS Free Usage Tier](#)
- [Amazon EC2: User Guide](#)
  - [Amazon EC2: Discussion Forum](#)

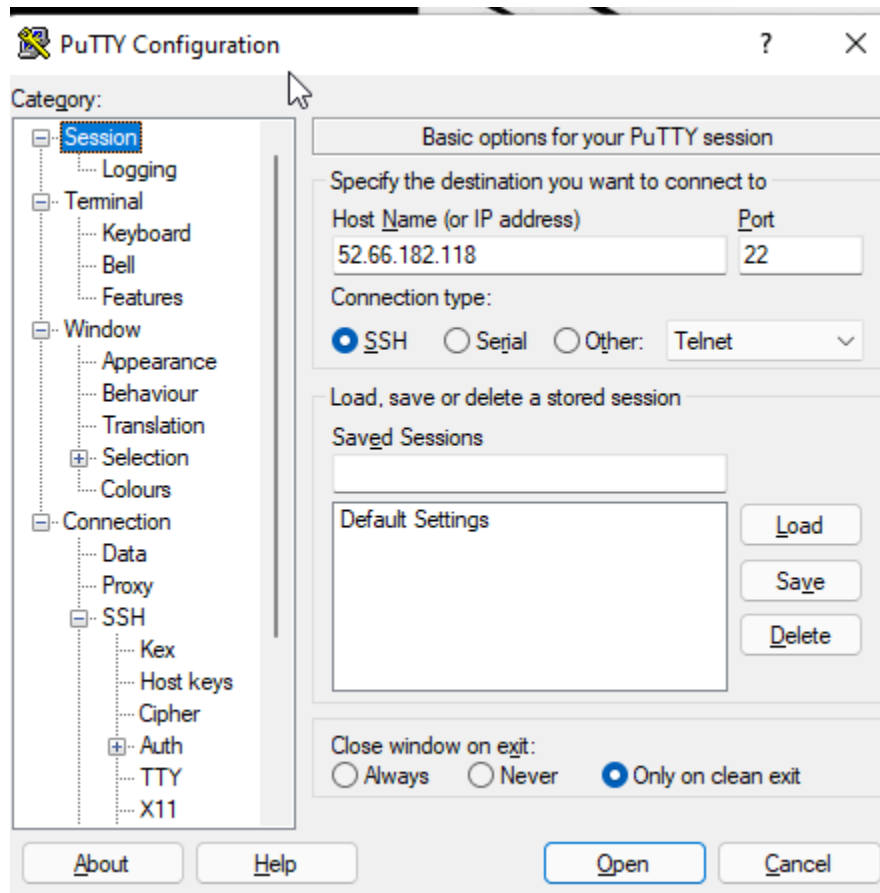
While your instances are launching you can also

- [Create status check alarms](#) to be notified when these instances fail status checks. (Additional charges may apply)
- [Create and attach additional EBS volumes](#) (Additional charges may apply)
- [Manage security groups](#)

View Instances

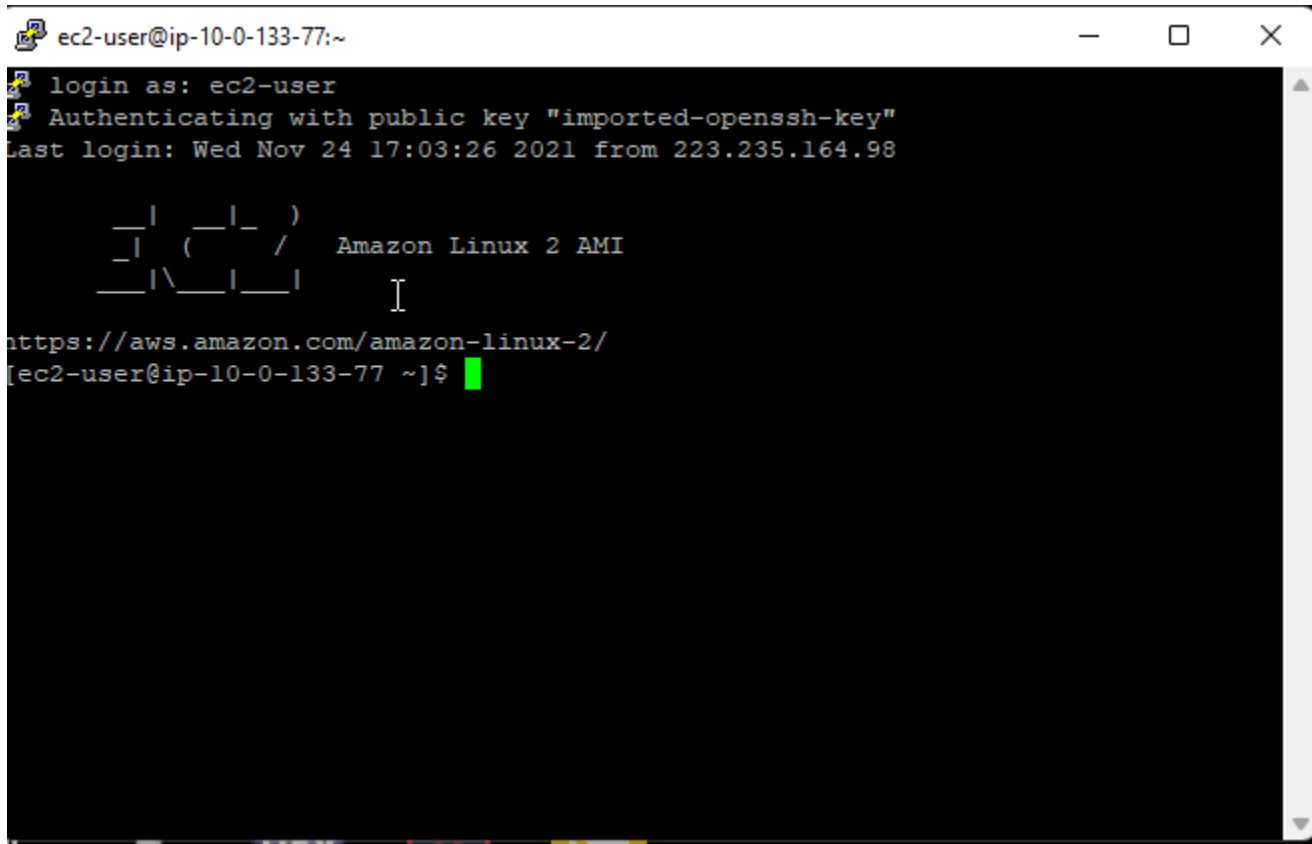
## 9. Accessing the Web-Server By Putty.

By providing IP Address & Key provided by AWS.



# Logged into the EC2 Instance By Putty

User: ec2-user



```
ec2-user@ip-10-0-133-77:~  
login as: ec2-user  
Authenticating with public key "imported-openssh-key"  
Last login: Wed Nov 24 17:03:26 2021 from 223.235.164.98  
  
  _ | _ | _ )  
  _ | ( _ /   Amazon Linux 2 AMI  
  _ | \ _ | _ |  
                                     I  
  
https://aws.amazon.com/amazon-linux-2/  
[ec2-user@ip-10-0-133-77 ~]$
```

# Installing Web-Server(HTTPD) on EC2 Instance By YUM Module. Start HTTPD Server

```
root@ip-10-0-133-77:/home/ec2-user

Verifying : httpd-2.4.51-1.amzn2.x86_64 2/9
Verifying : apr-util-bdb-1.6.1-5.amzn2.0.2.x86_64 3/9
Verifying : httpd-filesystem-2.4.51-1.amzn2.noarch 4/9
Verifying : apr-1.7.0-9.amzn2.x86_64 5/9
Verifying : mailcap-2.1.41-2.amzn2.noarch 6/9
Verifying : generic-logos-httpd-18.0.0-4.amzn2.noarch 7/9
Verifying : mod_http2-1.15.19-1.amzn2.0.1.x86_64 8/9
Verifying : httpd-tools-2.4.51-1.amzn2.x86_64 9/9

Installed:
  httpd.x86_64 0:2.4.51-1.amzn2

Dependency Installed:
  apr.x86_64 0:1.7.0-9.amzn2
  apr-util.x86_64 0:1.6.1-5.amzn2.0.2
  apr-util-bdb.x86_64 0:1.6.1-5.amzn2.0.2
  generic-logos-httpd.noarch 0:18.0.0-4.amzn2
  httpd-filesystem.noarch 0:2.4.51-1.amzn2
  httpd-tools.x86_64 0:2.4.51-1.amzn2
  mailcap.noarch 0:2.1.41-2.amzn2
  mod_http2.x86_64 0:1.15.19-1.amzn2.0.1

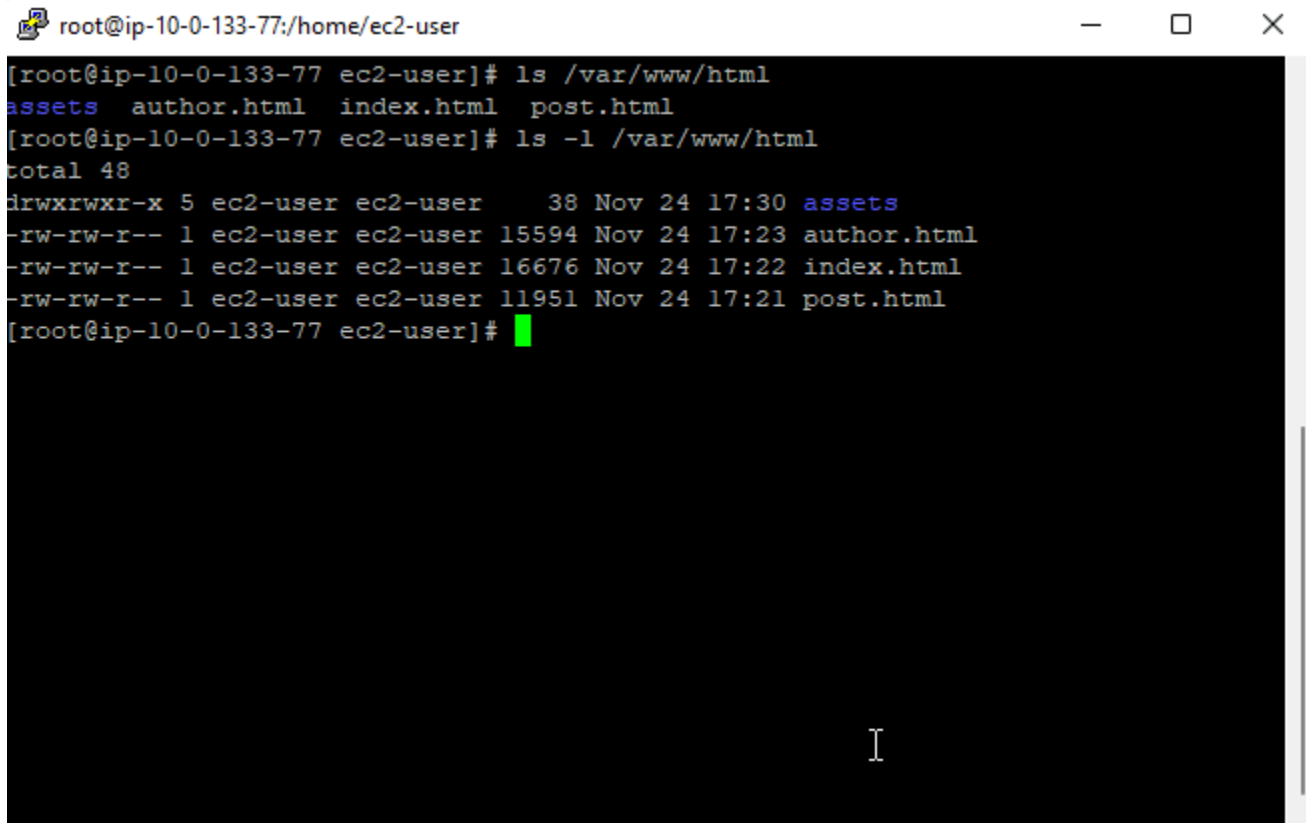
Complete!
[root@ip-10-0-133-77 ec2-user]#
```

```
root@ip-10-0-133-77:/home/ec2-user

Complete!
[root@ip-10-0-133-77 ec2-user]# service httpd start
Redirecting to /bin/systemctl start httpd.service
[root@ip-10-0-133-77 ec2-user]# service httpd status
Redirecting to /bin/systemctl status httpd.service
• httpd.service - The Apache HTTP Server
   Loaded: loaded (/usr/lib/systemd/system/httpd.service; disabled; vendor prese
t: disabled)
   Active: active (running) since Wed 2021-11-24 17:05:32 UTC; 6s ago
     Docs: man:httpd.service(8)
  Main PID: 3579 (httpd)
    Status: "Processing requests..."
   CGroup: /system.slice/httpd.service
           └─3579 /usr/sbin/httpd -DFOREGROUND
             └─3580 /usr/sbin/httpd -DFOREGROUND
               └─3581 /usr/sbin/httpd -DFOREGROUND
                 └─3582 /usr/sbin/httpd -DFOREGROUND
                   └─3583 /usr/sbin/httpd -DFOREGROUND
                     └─3584 /usr/sbin/httpd -DFOREGROUND

Nov 24 17:05:32 ip-10-0-133-77.ap-south-1.compute.internal systemd[1]: Starti...
Nov 24 17:05:32 ip-10-0-133-77.ap-south-1.compute.internal systemd[1]: Starte...
Hint: Some lines were ellipsized, use -l to show in full.
[root@ip-10-0-133-77 ec2-user]#
```

Copy Source Code To /var/www/html for code deployment on web-server.

A terminal window with a title bar showing 'root@ip-10-0-133-77:/home/ec2-user'. The terminal output shows two 'ls' commands. The first command 'ls /var/www/html' lists 'assets', 'author.html', 'index.html', and 'post.html'. The second command 'ls -l /var/www/html' provides detailed file information including permissions, user, group, size, date, and filename. A cursor is visible on the line following the second command.

```
root@ip-10-0-133-77:/home/ec2-user

[root@ip-10-0-133-77 ec2-user]# ls /var/www/html
assets  author.html  index.html  post.html
[root@ip-10-0-133-77 ec2-user]# ls -l /var/www/html
total 48
drwxrwxr-x 5 ec2-user ec2-user   38 Nov 24 17:30 assets
-rw-rw-r-- 1 ec2-user ec2-user 15594 Nov 24 17:23 author.html
-rw-rw-r-- 1 ec2-user ec2-user 16676 Nov 24 17:22 index.html
-rw-rw-r-- 1 ec2-user ec2-user 11951 Nov 24 17:21 post.html
[root@ip-10-0-133-77 ec2-user]#
```



# Data Lifecycle Policy Homepage.

aws

Services

Search for services, features, blogs, docs, and more [Alt+S]

Mumbai

braindead

New EC2 Experience

EC2 Dashboard

EC2 Global View

Events

Tags

Limits

Instances

Instances New

Instance Types

Launch Templates

Spot Requests

Savings Plans

Reserved Instances New

Dedicated Hosts

Capacity Reservations

Images

AMIs

AMI Catalog

Elastic Block Store

Volumes New

Snapshots New

Lifecycle Manager New

Network & Security

Security Groups

To learn more about managing your Amazon Data Lifecycle Manager policies using the new EC2 Experience, see the [Automating snapshot and AMI management using Amazon Data Lifecycle Manager](#) blogpost.

Data Lifecycle Manager (1)

Filter policies

< 1 >

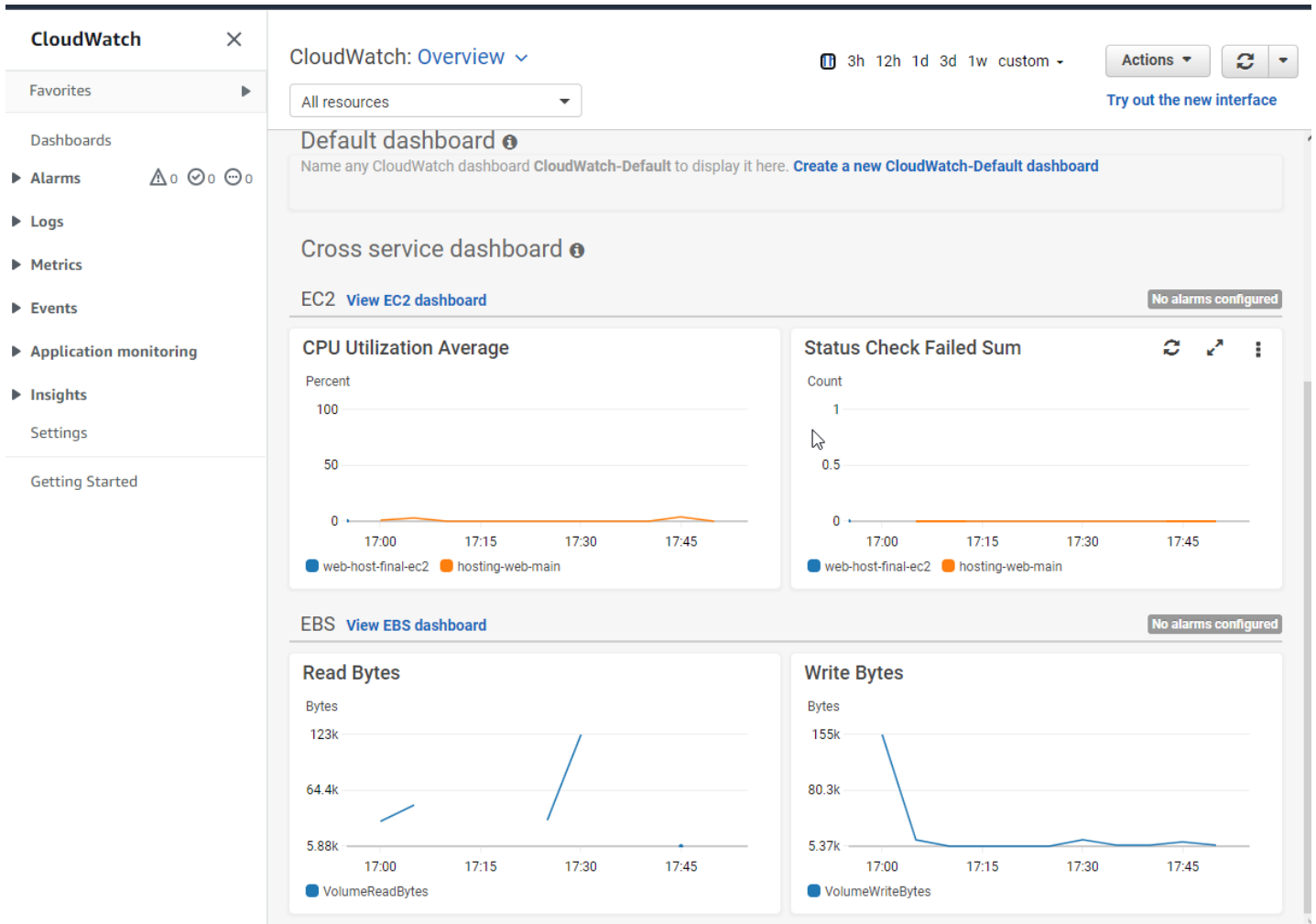
	Name	Policy ID	Description	Policy type	State
<input type="checkbox"/>	-	policy-0a80704c87fce744f	data lifecycle policy	EBS snapshot policy	Enabled

Select a lifecycle policy above

Create lifecycle policy



# 11. CloudWatch Stats

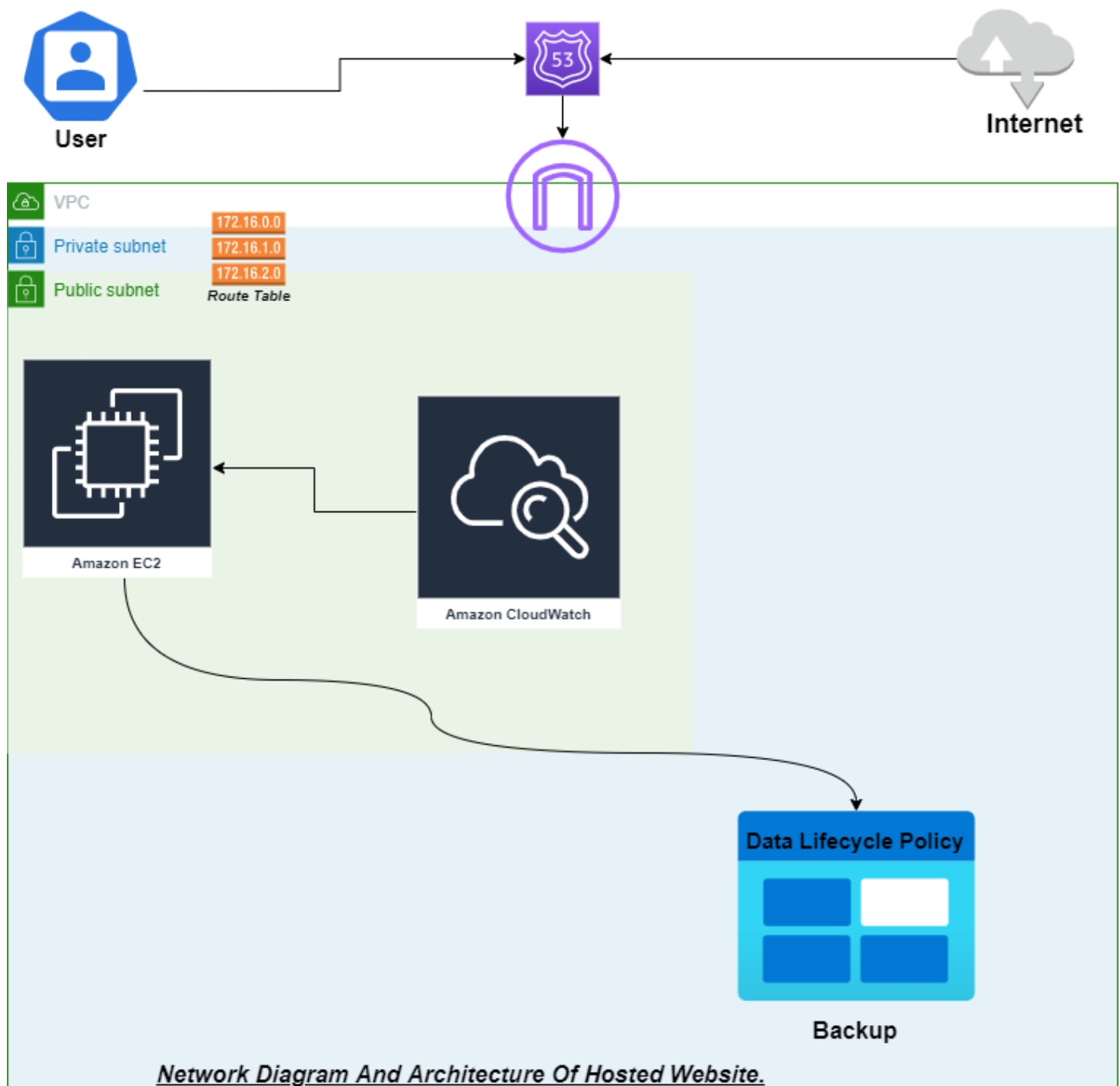


## ***Server Configuration***

### AWS EC2:

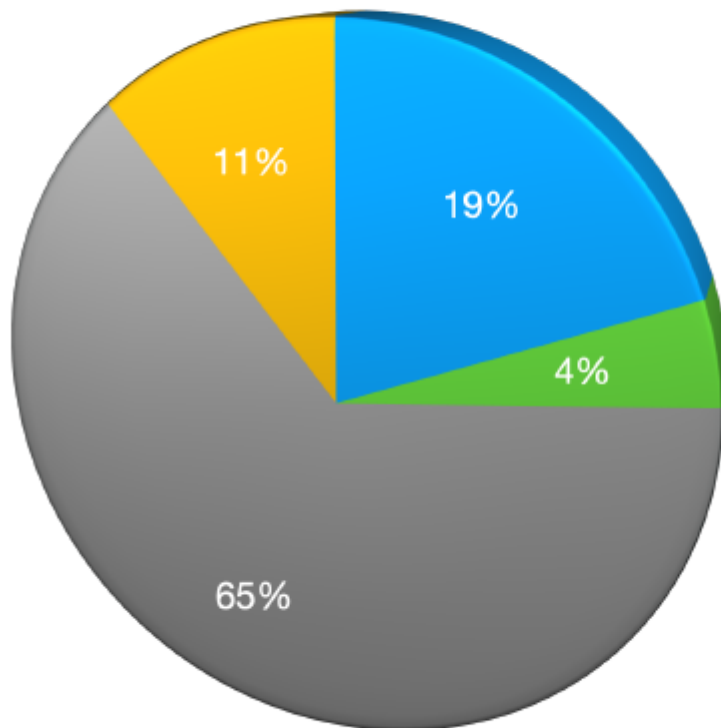
- Type: t2 micro(free tier)
- Region: Asia Pacific(Mumbai)
- AMI Image: Amazon Linux 2 Kernel 5.10
- Security Group Config:
  - SSH port 22 TCP – for admin access limited to admin ip
  - HTTP port 80 TCP – for web access accessible to all
- Network: Private VPC (vpc-webhost)
- Subnet: webhost\_vpc\_subnet
- Auto-assign Public IP: Enable

## Network Diagram And Architecture :-

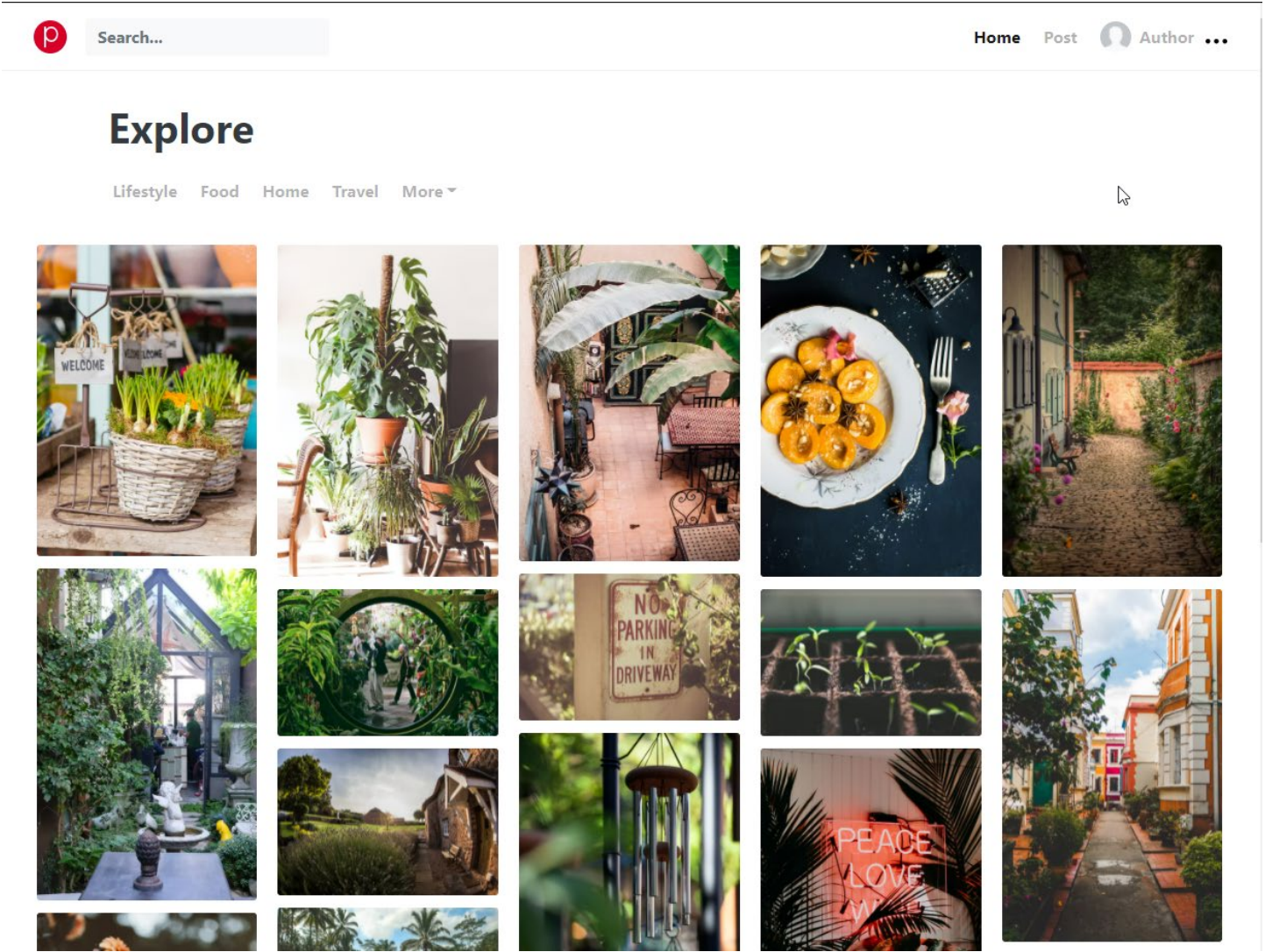


## **Efficiency Report Diagram:-**

- Amazon Virtual Private Cloud (VPC)
- Amazon EC2
- Amazon CloudWatch
- Amazon Route 53



# Screenshots Of Website :





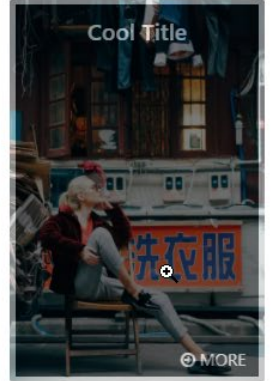
Search...

Home

Post



Author



[f](#) [t](#) [@](#) [G+](#) [Be](#) [✎](#)

© [Pinterest Clone Modified By Tanmay](#)





Search...

Home

Post



Author ...



## Sushi Rolls

- 5 cups short-grain sushi rice
- 6 cups water
- 1/2 cup rice vinegar
- 2 tablespoons sugar
- A teaspoon of salt

[Visit Website](#)





Search...

Home

Post



Sample Creator User ...



## Sample User

I love Art, Web Design, Photography, Design, Illustration





## **Details of the services used :**

### **1 :-VPC (Virtual Private Cloud):**

**A VPC is a public cloud that establishes its own private cloud-like computing environment on shared public cloud infrastructure. A VPC gives the ability to define and control a virtual network that is logically isolated from all other public cloud tenants, creating a private, secure place on the public cloud.**

**A VPC's logical isolation is implemented using virtual network functions and security features that gives granular control over which IP addresses or applications can access particular resources**

#### **Benefits:**

- Flexible business growth: Because cloud infrastructure resources—including virtual servers, storage, and networking—can be deployed dynamically, VPC customers can easily adapt to changes in business needs.**
- Satisfied customers: In today's "always-on" digital business environments, customers expect uptime ratios of nearly 100%. The high availability of VPC environments enables reliable online experiences that build customer loyalty and increase trust in your brand.**
- Reduced risk across the entire data lifecycle: VPCs enjoy high levels of security at the instance or subnet level, or both. This gives you peace of mind and further increases the trust of your customers.**
- More resources to channel toward business innovation: With reduced costs and fewer demands on your internal IT team, you can focus your efforts on achieving key business goals and exercising core competencies.**

## **Configuration :**

**1-we Created VPC for our virtual server environment**

**2-created name tag as : vpc\_webhost**

**3- IP4 block : 10.0.0.0/16**

**4- creating subnet for VPC:**

**Subnetname: webhost\_vpc\_subnet**

**Availability zone: Asia pacific (mumbai) / ap-south-a1**

## **2 :-Internet Gateway**

**An internet gateway is a horizontally scaled, redundant, and highly available VPC component that allows communication between your VPC and the internet.**

**we used internet gateway for two purposes: to provide a target in our VPC route tables for internet-routable traffic, and to perform network address translation (NAT) for instances that have been assigned public IPv4 addresses.**

**An internet gateway supports IPv4 and IPv6 traffic. It does not cause availability risks or bandwidth constraints on your network traffic. There's no additional charge for having an internet gateway in your account.**

### 3 :-AWS EC2 Virtual Server:

Amazon EC2 instance is a virtual server in Amazon's Elastic Compute Cloud (EC2) for running applications on the Amazon Web Services (AWS) infrastructure .

we used Amazon Elastic Compute Cloud (Amazon EC2) because it provides scalable computing capacity in the Amazon Web Services (AWS) Cloud.

we used Amazon EC2 to launch as many or as few virtual servers as we need, configure security and networking, and manage storage.

#### Amazon EC2 pricing options

\$	<b>Spot Instances</b>	<ul style="list-style-type: none"><li>• Temporary, spare EC2 capacity available at a deep discount.</li><li>• Workloads that need a short-term compute boost.</li></ul>
\$\$	<b>Savings Plans</b>	<ul style="list-style-type: none"><li>• Discount with commitment to certain usage (\$/hour) over a one- or three-year term.</li><li>• AWS Cost Explorer can recommend a plan for usage.</li></ul>
\$\$	<b>Reserved Instances</b>	<ul style="list-style-type: none"><li>• Capacity reservation purchased on a one- or three-year term at a discount.</li><li>• Applications with steady state usage.</li></ul>
\$\$\$\$	<b>On-Demand</b>	<ul style="list-style-type: none"><li>• Pay-as-you-go, scalable.</li><li>• Short-term, variable workloads that cannot be interrupted.</li></ul>
\$\$\$\$\$	<b>Dedicated Host</b>	<ul style="list-style-type: none"><li>• Fully dedicated physical server.</li><li>• Projects that must meet corporate compliance requirements.</li></ul>



Amazon EC2 provides the following features:

- Virtual computing environments, known as *instances*
- Preconfigured templates for your instances, known as *Amazon Machine Images (AMIs)*, that package the bits you need for your server (including the operating system and additional software)
- Various configurations of CPU, memory, storage, and networking capacity for your instances, known as *instance types*
- Secure login information for your instances using *key pairs* (AWS stores the public key, and you store the private key in a secure place)
- Storage volumes for temporary data that's deleted when you stop, hibernate, or terminate your instance, known as *instance store volumes*
- Persistent storage volumes for your data using Amazon Elastic Block Store (Amazon EBS), known as *Amazon EBS volumes*
- Multiple physical locations for your resources, such as instances and Amazon EBS volumes, known as *Regions* and *Availability Zones*
- A firewall that enables you to specify the protocols, ports, and source IP ranges that can reach your instances using *security groups*
- Static IPv4 addresses for dynamic cloud computing, known as *Elastic IP addresses*
- Metadata, known as *tags*, that you can create and assign to your Amazon EC2 resources
- Virtual networks you can create that are logically isolated from the rest of the AWS Cloud, and that you can optionally connect to your own network, known as *virtual private clouds (VPCs)*

## **4 :-Route Tables**

**An AWS route table contains a set of rules or routes, which is used to determine where the network traffic is directed to. All subnets in your VPC have to be attached to an AWS route table, and the table will take control of routing for those particular subnets.**

### **How it Works:**

**Our VPC has an implicit router, and we use route tables to control where network traffic is directed. Each subnet in Our VPC must be associated with a route table, which controls the routing for the subnet (subnet route table).**

**We can explicitly associate a subnet with a particular route table. Otherwise, the subnet is implicitly associated with the main route table. A subnet can only be associated with one route table at a time, but We can associate multiple subnets with the same subnet route table.**

**Thus, We can optionally associate a route table with an internet gateway or a virtual private gateway (gateway route table). This enables us to specify routing rules for inbound traffic that enters Our VPC through the gateway.**

## **5 :-CloudWatch**

**We use Amazon CloudWatch to monitor our Amazon Web Services (AWS) resources and the applications we run on AWS in real time. we can use CloudWatch to collect and track metrics, which are variables we can measure for our resources and applications.**

**The CloudWatch home page automatically displays metrics about every AWS service we use. We can additionally create custom dashboards to display metrics about your custom applications, and display custom collections of metrics that we choose.**

**we can create alarms that watch metrics and send notifications or automatically make changes to the resources we are monitoring when a threshold is breached. For example, we can monitor the CPU usage and disk reads and writes of your Amazon EC2 instances and then use this data to determine whether we should launch additional instances to handle increased load. We can also use this data to stop under-used instances to save money.**

**With CloudWatch, We gain system-wide visibility into resource utilization, application performance, and operational health.**

## **6 :-Data Lifecycle Policy**

**Data Lifecycle Manager (DLM) is a service offered by AWS that you can use to automate the creation and management of snapshots. It works according to lifecycle policies that you define and attaches to specific volumes according to metadata tags. In these policies, you can define how frequently backups are created and when, how many backups are retained, and how long backups are kept for.**

**The AWS Lifecycle Policy is a native AWS tool. That means it is a feature that integrates seamlessly with your EBS account. The process is fairly simple. we create a policy and then let the Data Lifecycle Manager create snapshots for us. We can then easily monitor the process through Amazon CloudWatch.**

# **Pinterest Clone Hosting On AWS**

## **Why Pinterest use AWS?**

Users can browse billions of images on Pinterest and save them as "Pins" to their own digital inspiration boards. Pinterest uses Amazon Web Services (AWS) storage and compute solutions to provide the scale, speed, and security its platform requires, while keeping costs low and freeing engineers to focus on innovation. With over 450 million monthly users and 300 billion Pins—and counting—Pinterest uses Amazon Web Services (AWS) storage and compute solutions to provide the scale, speed, and security its platform requires, while keeping costs low and freeing engineers to focus on innovation. Pinterest has tripled its storage and compute usage on AWS in only two years, without having to worry about reliability or scalability. With over 200 million users and 2 billion boards, Pinterest is one of the world's largest visual bookmarking platforms. To help engineers focus on delighting consumers, the company has employed a number of AWS services to extend its processing, storage, and data-analysis workloads.

## **To Manage An AWS Cloud-Based High-Performance Social Application With More Than 8 Billion Objects And 400 Terabytes Of Data**

In just nine months, the company grew from 50,000 to 17 million users. Pinterest, which now has 48 million users, has been able to scale its company thanks to Amazon Web Services (AWS). Pinterest didn't want to devote staff time to manage a data centre because it had less than 12 employees. Instead, Pinterest uses AWS to run a high-performance social application that leverages Amazon Simple Storage Service (Amazon S3) to store over 8 billion objects and 400 terabytes of data, as well as Amazon Elastic Compute Cloud to provide 225,000 instance hours per month (Amazon EC2).

Pinterest has built a feature-rich platform on the AWS Cloud that allows the company to run a web-scale consumer internet service at high speeds.



# Popular Websites that use AWS

## Netflix:

Netflix is the world's leading internet television network, with over 100 million members around the world watching 125 million hours of TV shows and movies each day, including original series, documentaries, and feature films. Members can watch as much as they want, whenever and wherever they want, on almost any Internet-connected screen.



Amazon Kinesis Data Streams processes multiple terabytes of log data each day, yet events show up in our analytics in seconds. We can discover and respond to issues in real time, ensuring high availability and a great customer experience."

**John Bennett**  
*Senior Software Engineer,  
Netflix*

Netflix relies on Amazon Web Services (AWS) for nearly all of its computing and storage requirements, including databases, analytics, recommendation engines, video transcoding, and more—hundreds of functions that require more than 100,000 server instances on AWS.

Netflix must monitor and optimize its network in order to continue improving customer experience, increasing efficiency, and lowering costs. Netflix, in particular, required a solution for ingesting, augmenting, and analysing the multiple terabytes of data generated daily by its network in the form of virtual private cloud (VPC) flow logs. This necessitates the use of **Amazon VPC** to isolate your entire

IT infrastructure. This would allow Netflix to identify performance-improvement opportunities, such as identifying and collocating apps that communicate across regions. In addition, by quickly detecting and mitigating application downtime, the company would be able to increase uptime.

Netflix's final solution, known internally as Dredge, uses **Amazon Kinesis Data Streams** to centralize flow logs. To provide a complete picture of the networking environment, the application reads data **from Amazon Kinesis Data Streams** in real time and enriches IP addresses with application metadata. "Normally, we would put the data into a database, which would create an index to allow for faster querying," Bennett explains. "Dredge joins the flow logs with application metadata as it streams and indexes it without using a database, removing much of the complexity." Based on the requirements listed above, they require **Amazon EC2**, **Amazon Simple Storage Service (S3)** for big data storage because it provides a highly secure and redundant file storage service.

## Coursera:



Coursera is a prevalent international digital educational course provider founded in 2012 by Stanford University computer science professors Andrew Ng and Daphne Koller. Coursera works with other top universities to make a variety of high-quality courses available to users all over the world.

Since 2017, Coursera has collaborated with AWS to host their website on the AWS cloud, which uses the latest Intel Xeon processors to deliver educational content all over the world. Coursera was able to take advantage of AWS cloud network's global footprint to deliver the content that is required.

Coursera manages their workload using a variety of Amazon web services. **Amazon Simple Storage Service or Amazon S3** is used to store all of the assets. Amazon S3's incredible elasticity and scalability allow it to access the assets and deliver the content in the blink of an eye. **Amazon EC2 Auto Scaling** is used to

maintain application availability by automatically adding or removing EC2 instances based on incoming traffic. Coursera can deliver more than half a petabyte per year and seamlessly connect with users all over the world thanks to AWS' global footprint. They were able to reduce the load time for static assets to 15 milliseconds by using **AWS CloudFront**, and they were able to host more than 2.5 million educational documents globally with the help of CloudFront.

**Amazon Relational Database** answers more than 10 billion SQL queries per month on average, and the scalability of Amazon RDS instances has been critical as it allows them to scale up as Coursera's growth has been rapid. **Amazon Redshift** enables them to load data and cluster it in minutes, as well as perform test queries quickly; it provides deeper insights into student experiences at a high speed and at a low cost.

# **Dribbble Case Study**

## **1. Understand Dribbble :-**

- Dribbble is on a mission to build the world's best platform for designers and creative professionals to gain inspiration, feedback, education, community, and job opportunities.
- Focused around “What are you working on?”
- A community of [creatives] sharing ‘shots’ of their work, process, and current projects.

## **2. Features :-**

- **Shots** – The core function of posting screenshots of a user's own creative work (images)
- **Designers** - A user who can post shots, join teams, get hired
- **Teams** – A Profile for a group of users and their shots for that team, usually used by companies and agencies.
- **Community Features** – Mainly consists of a blog, podcast and regional meetups, dribbble offers the ability to share knowledge both

digitally and in-person.

- **Advertise on Dribbble** – Allow businesses to promote their message to the community in various ways; including in the dribbble newsletter, podcast, and contests (which is based off the Playoffs feature)
- **Hiring on Dribbble** – A paid feature that, depending on your plan, allows someone to search for designers and/or post a job listing
- **Dribbble API** – a way of viewing and posting different data types, such as shots and jobs, to dribbble from a 3rd party application.
- **Integrations** – A small handful of add-ons that leverage the API to do various things on common platforms like Slack, Invision, Framer, and Flinto.
- **Dribbble for iOS** – a mobile app only for Apple products (iPhone & iPad) to browse Dribbble with a native platform experience [Release Mid 2017].

### **3. Opportunity Focus :-**

- The Dribbble mission highlights education, but outside of commenting on shots, there's no meaningful online interactions that encourage the community to help itself.
- It's worth noting that Dribbble has an annual conference, allows anyone to host a local meetup, and the blog does designer interviews, which all aid in the educational and community goals of the platform.