

Basics of A.W.S. / G.C.P. Services

1435 - Jainil Sanghavi

1) What are cloud services & why to use them?

- The term “Cloud Services” refers to a wide range of services delivered on demand to companies and customers over the Internet. These services are designed to provide easy, affordable access to applications and resources, without the need for internal infrastructure or hardware.

There are 3 types of services:

- a) **Infrastructure as a Service (IaaS):** IaaS is also known as **Hardware as a Service (HaaS)**. It is a computing infrastructure managed over the internet. The main advantage of using IaaS is that it helps users to avoid the cost and complexity of purchasing and managing the physical servers.
Example: DigitalOcean, Linode, Amazon Web Services (AWS), Microsoft Azure, Google Compute Engine (GCE), Rackspace, and Cisco Metacloud.
- b) **Platform as a Service (PaaS):** PaaS cloud computing platform is created for the programmer to develop, test, run, and manage the applications.
Example: AWS Elastic Beanstalk, Windows Azure, Heroku, Force.com, Google App Engine, Apache Stratos, Magento Commerce Cloud, and OpenShift.
- c) **Software as a Service (SaaS):** SaaS is also known as "**On-Demand Software**". It is a software in which the applications are hosted by a cloud service provider. Users can access these applications with the help of internet connection and web browser.
Example: BigCommerce, Google Apps, Salesforce, Dropbox, ZenDesk, Cisco WebEx, ZenDesk, Slack, and GoToMeeting.

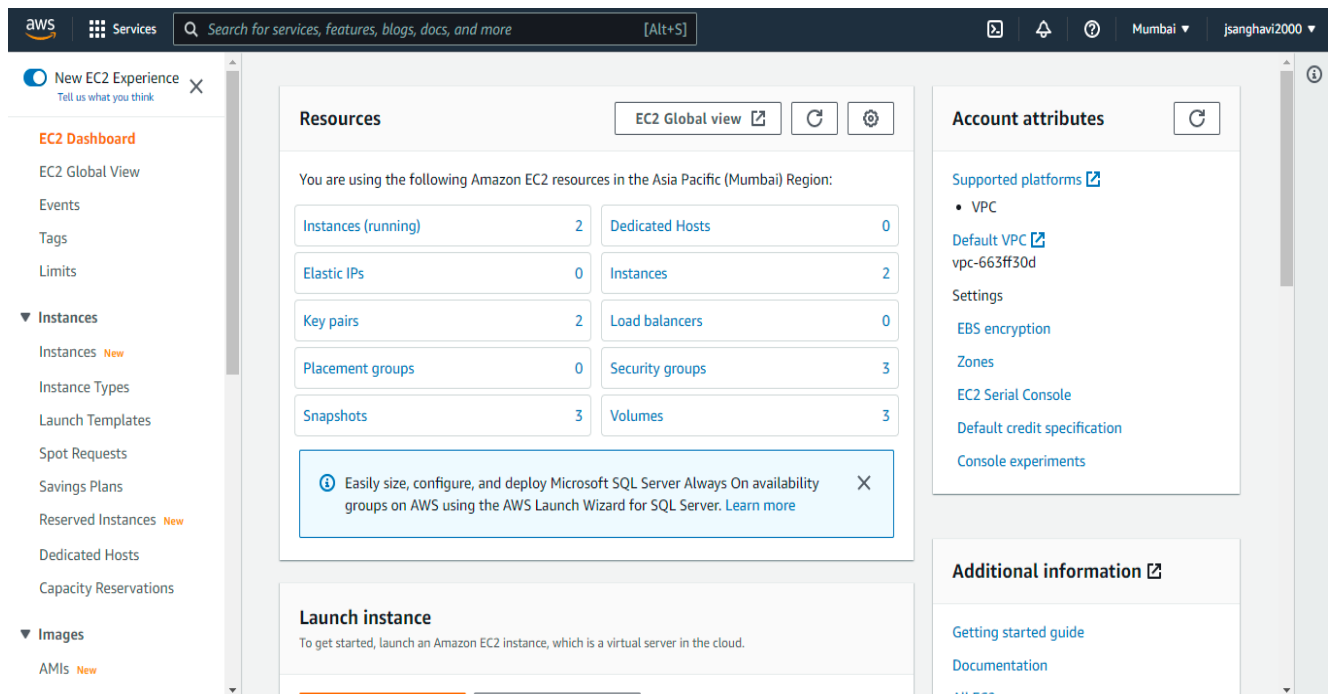
Advantages of using Cloud Services:

- Back-up and Restore Data
- Improved Collaboration
- Excellent Accessibility
- Low Maintenance Cost
- Mobility
- Unlimited Storage Capacity
- Data Security

2) Create an account on AWS and GCP. Get familiar with UI.

3) Learn below AWS Services.

a) **EC2:** Amazon EC2 stands for Amazon **Elastic Compute Cloud**. Amazon EC2 is a web service that provides resizable compute capacity in the cloud.



Creating an EC2 Instance:

- 1) Choose AMI
- 2) Choose Instance Type
- 3) Configure Instance
- 4) Add Storage
- 5) Add Tags
- 6) Configure Security Groups
- 7) Review

Instances (1/3) Info

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone
Linux Comma...	i-04ba8bec6ad90916e	Running	t2.micro	2/2 checks passed	No alarms	ap-south-1b
Linux Comma...	i-03e90f36082a5a16c	Running	t2.micro	2/2 checks passed	No alarms	ap-south-1b
AWS Demo	i-032124f5808b5fac8	Running	t2.micro	-	No alarms	ap-south-1a

Instance: i-032124f5808b5fac8

Details | Security | Networking | Storage | Status checks | Monitoring | Tags

Instance summary Info

Instance ID i-032124f5808b5fac8	Public IPv4 address 65.0.17.77 open address	Private IPv4 addresses 172.31.35.208
IPv6 address -	Instance state Running	Public IPv4 DNS ec2-65-0-17-77.ap-south-

Connecting my ec2 instance to PuTTY.

```
ec2-user@ip-172-31-35-208:~
Using username "ec2-user".
Authenticating with public key "imported-openssh-key"

  _ | _ | _ )
  _ | ( _ | /   Amazon Linux 2 AMI
  __| \__|__|

https://aws.amazon.com/amazon-linux-2/
11 package(s) needed for security, out of 15 available
Run "sudo yum update" to apply all updates.
[ec2-user@ip-172-31-35-208 ~]$
```

b) **EIP: Elastic IP address** is a service provided by an EC2 instance. It is basically a static IP address attached to an EC2 instance. This address is associated with your AWS account not with an EC2 instance. You can also disassociate your EIP address from your EC2 instance and map it to another EC2 instance in your AWS account.

The screenshot displays the AWS Management Console interface. On the left, the navigation menu includes 'New EC2 Experience', 'EC2 Dashboard', 'EC2 Global View', 'Events', 'Tags', 'Limits', 'Instances', 'Instance Types', 'Launch Templates', 'Spot Requests', 'Savings Plans', 'Reserved Instances', 'Dedicated Hosts', 'Capacity Reservations', and 'Images'. The main content area shows the 'Instance summary for i-032124f5808b5fac8'. The instance is in a 'Pending' state. Key details include: Instance ID (i-032124f5808b5fac8), Public IPv4 address (65.0.17.77), Private IPv4 address (172.31.35.208), Public IPv4 DNS (ec2-65-0-17-77.ap-south-1.compute.amazonaws.com), Private IP DNS name (ip-172-31-35-208.ap-south-1.compute.internal), Instance type (t2.micro), and VPC ID (vpc-663ff30d).

Instance summary for i-032124f5808b5fac8		
Instance ID i-032124f5808b5fac8	Public IPv4 address 65.0.17.77 open address	Private IPv4 addresses 172.31.35.208
IPv6 address -	Instance state Pending	Public IPv4 DNS ec2-65-0-17-77.ap-south-1.compute.amazonaws.com open address
Hostname type IP name: ip-172-31-35-208.ap-south-1.compute.internal	Private IP DNS name (IPv4 only) ip-172-31-35-208.ap-south-1.compute.internal	Answer private resource DNS name IPv4 (A)
Instance type t2.micro	Elastic IP addresses -	VPC ID vpc-663ff30d
AWS Compute Optimizer finding Opt-in to AWS Compute Optimizer for recommendations. Learn more	IAM Role -	Subnet ID subnet-57da2f3c

- c) **SG: A Security Group** is a virtual firewall which is controlling the traffic to your EC2 instances. When you first launch an EC2 instance, you can associate it with one or more security groups. A Security group is the first defence against hackers.

The screenshot displays the AWS Management Console interface for 'Security Groups (1/4)'. The left navigation menu includes 'AMI Catalog', 'Elastic Block Store', 'Network & Security', 'Load Balancing', and 'Auto Scaling'. The main content area shows a table of security groups. One security group is listed: 'launch-wizard-1' with ID 'sg-0389171629b853f0f' and VPC ID 'vpc-663ff30d'. Below the table, there is a 'Details' section for the selected security group, showing its name, ID, description, VPC ID, owner, and rule counts.

Name	Security group ID	Security group name	VPC ID	Description
launch-wizard-1	sg-0389171629b853f0f	launch-wizard-1	vpc-663ff30d	launch-wizard-1 create...

Details			
Security group name launch-wizard-1	Security group ID sg-0389171629b853f0f	Description launch-wizard-1 created 2022-01-12T08:38:03.409+05:30	VPC ID vpc-663ff30d
Owner 214041766426	Inbound rules count 1 Permission entry	Outbound rules count 1 Permission entry	

Inbound Rules for Security Groups:

The screenshot shows the AWS Management Console interface for a Security Group. The left sidebar lists various AWS services, including Elastic Block Store, Network & Security, Load Balancing, and Auto Scaling. The main content area displays the 'Security Groups (1/4)' page, specifically the 'Inbound rules' tab. A table lists the inbound rules for the selected security group.

Name	Security group rule...	IP version	Type	Protocol
-	sg-0389171629b853f0f	IPv4	SSH	TCP

Outbound Rules for Security Groups:

The screenshot shows the AWS Management Console interface for a Security Group, specifically the 'Outbound rules' tab. A table lists the outbound rules for the selected security group.

Name	Security group rule...	IP version	Type	Protocol
-	sgr-070403cb12f0cb11f	IPv4	All traffic	All

- d) **Ephemeral Volume:** Instance store volumes also known as virtual devices have underlying hardware physically attached to the host computer for the instance. Instance store volumes support ephemeral [0-23]. Whenever you launch an EC2 instance, the instance store volume type is ephemeral by default.

The screenshot shows the AWS Management Console interface for the 'Volumes (4)' page. A table lists the details of four EBS volumes.

Name	Volume ID	Type	Size	IOPS	Throughput	Snapshot	Created
Linux Comma...	vol-0eb29fc5145a68a34	gp2	10 GiB	100	-	snap-0822a58...	2022/01/12 08
Linux Comma...	vol-0805c69499c8afe87	gp2	10 GiB	100	-	snap-0822a58...	2022/01/12 17
-	vol-0be70a25c064dbe8d	gp2	11 GiB	100	-	snap-037741c...	2022/01/17 12
-	vol-034efefa9837b4311	gp2	8 GiB	100	-	snap-0822a58...	2022/01/24 11

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[Alt+S]

Create an Amazon EBS volume to attach to any EC2 instance in the same Availability Zone.

Volume settings

Volume type [Info](#)

General Purpose SSD (gp2)

Size (GiB) [Info](#)

15

Min: 1 GiB, Max: 16384 GiB. The value must be an integer.

IOPS [Info](#)

100 / 3000

Baseline of 3 IOPS per GiB with a minimum of 100 IOPS, burstable to 3000 IOPS.

Throughput (MiB/s) [Info](#)

Not applicable

Availability Zone [Info](#)

ap-south-1a

Availability Zone [Info](#)

ap-south-1a

Snapshot ID - optional [Info](#)

Don't create volume from a snapshot

Encryption [Info](#)

Use Amazon EBS encryption as an encryption solution for your EBS resources associated with your EC2 instances.

☐ Encrypt this volume

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.

No tags associated with the resource.

Add tag

You can add 50 more tags.

Cancel

Create volume

Successfully created volume vol-0cbdb43f93b619700.

Volumes (1/5)

Filter volumes

	Name	Volume ID	Type	Size	IOPS	Throughput	Snapshot	Created
<input checked="" type="checkbox"/>	-	vol-0cbdb43f93b619700	gp2	15 GiB	100	-	-	2022/01/24

Details

Volume ID	Size	Type	Volume status
vol-0cbdb43f93b619700	15 GiB	gp2	✓ Okay
Volume state	IOPS	Throughput	Encryption
Creating	100	-	Not encrypted
KMS key ID	KMS key alias	KMS key ARN	Snapshot
-	-	-	-
Availability Zone	Created	Multi-Attach enabled	Attached Instances
ap-south-1a	Mon Jan 24 2022 12:47:23 GMT+0530 (India Standard Time)	No	-

- e) **EBS and Snapshot:** EBS stands for **Elastic Block Store**. EC2 is a virtual server in a cloud while EBS is a virtual disk in a cloud. Amazon EBS allows you to create storage volumes and attach them to the EC2 instances.

Snapshots (3)

Owned by me Filter snapshots by attributes and tags

	Name	Snapshot ID	Size	Description	Storage...	Snapshot status	Starte
<input type="checkbox"/>	-	snap-037741cad013d4e8a	10 GiB	Snapshot2	Standard	✓ Completed	2022/
<input type="checkbox"/>	-	snap-0c49a50efa2dc9bc9	10 GiB	[Copied snap-0de1f0d873...	Standard	✓ Completed	2022/
<input type="checkbox"/>	-	snap-0de1f0d873225e9cd	10 GiB	Snapshot1	Standard	✓ Completed	2022/

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Snapshot settings

Resource type [Info](#)

☒ Volume
Create a snapshot from a specific volume.

☐ Instance
Create multi-volume snapshots from an instance.

Volume ID

The volume from which to create the snapshot.

vol-0cddb43f93b619700

Description

Add a description for your snapshot.

AWS Demo Snapshot

255 characters maximum

Encryption [Info](#)

Not encrypted

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Volume ID

The volume from which to create the snapshot.

vol-0cddb43f93b619700

Description

Add a description for your snapshot.

AWS Demo Snapshot

255 characters maximum

Encryption [Info](#)

Not encrypted

Tags [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.

No tags associated with the resource.

Add tag

You can add 50 more tags.

Cancel

Create snapshot

AWS Snapshots (1/4)

Owned by me | Filter snapshots by attributes and tags

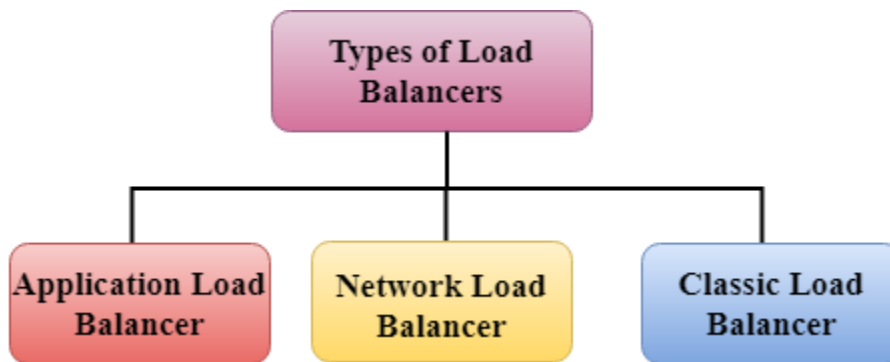
Name	Snapshot ID	Size	Description	Storage...	Snapshot status	Starte
✓	–	15 GiB	AWS Demo Snapshot	Standard	✓ Completed	2022/
☐	–	10 GiB	Snapshot2	Standard	✓ Completed	2022/

Snapshot ID: snap-0644475e90ef8c84e

Details | Permissions | Storage tier | Tags

Snapshot ID snap-0644475e90ef8c84e	Size 15 GiB	Progress ✓ Available (100%)	Snapshot status ✓ Completed
Owner 214041766426	Volume ID vol-0cddb43f93b619700	Started Mon Jan 24 2022 13:24:19 GMT+0530 (India Standard Time)	Product codes –
Encryption Not encrypted	KMS key ID –	KMS key alias –	KMS key ARN –
Fast snapshot restore –	Description AWS Demo Snapshot		

f) **ELB: Elastic Load Balancer** is a virtual machine or appliance that balances your web application load that could be Http or Https traffic that you are getting in. It balances a load of multiple web servers so that no web server gets overwhelmed.



Create Load Balancer | Actions ▾

search : Loadbalancer1 | Add filter

Name	DNS name	State	VPC ID	Availability Zones	Type
Loadbalancer1	Loadbalancer1-34340319.ap...	Active	vpc-663ff30d	ap-south-1a, ap-south-1b	application

Basic configuration

Load balancer name

Name must be unique within your AWS account and cannot be changed after the load balancer is created.

AWSDemoLoadBalancer

A maximum of 32 alphanumeric characters including hyphens are allowed, but the name must not begin or end with a hyphen.

Scheme [Info](#)

Scheme cannot be changed after the load balancer is created.

☒ Internet-facing

An internet-facing load balancer routes requests from clients over the internet to targets. Requires a public subnet. [Learn more](#)

☐ Internal

An internal load balancer routes requests from clients to targets using private IP addresses.

IP address type [Info](#)

Select the type of IP addresses that your subnets use.

☒ IPv4

Recommended for internal load balancers.

☐ Dualstack

Includes IPv4 and IPv6 addresses.

Network mapping [Info](#)

The load balancer routes traffic to targets in the selected subnets, and in accordance with your IP address settings.

VPC [Info](#)

Select the virtual private cloud (VPC) for your targets. Only VPCs with an internet gateway are enabled for selection. The selected VPC cannot be changed after the load balancer is created. To confirm the VPC for your targets, view your [target groups](#).

-
vpc-663ff30d
IPv4: 172.31.0.0/16

Mappings [Info](#)

Select at least two Availability Zones and one subnet per zone. The load balancer routes traffic to targets in these Availability Zones only. Availability Zones that are not supported by the load balancer or the VPC are not available for selection. Subnets cannot be removed after the load balancer is created, but additional subnets can be added.

☐ ap-south-1a

☐ ap-south-1b

☐ ap-south-1c

 At least two subnets must be specified.

Security groups [Info](#)

A security group is a set of firewall rules that control the traffic to your load balancer.

Security groups

Select security groups

[Create new security group](#)

default sg-4c809331
VPC: vpc-663ff30d

Successfully created target group: **AWSDemoTargetGroup**

EC2 > Target groups

Target groups (1/2) Info

Search or filter target groups

Name	ARN	Port	Protocol	Target type
<input checked="" type="checkbox"/> AWSDemoTargetGroup	arn:aws:elasticloadbalancing...	80	HTTP	Instance

Target type Instance	Protocol : Port HTTP: 80	Protocol version HTTP1	VPC vpc-663ff30d
IP address type IPv4	Load balancer None associated		
Total targets 0	Healthy 0	Unhealthy 0	Unused 0
	Initial 0	Draining 0	

Listener HTTP:80

Protocol: HTTP, Port: 80, Default action: Forward to AWSDemoTargetGroup (Target type: Instance, IPv4)

Add Listener

Create Load Balancer

search : AWSDemoLoadBalancer

Name	DNS name	State	VPC ID	Availability Zones	Type
<input checked="" type="checkbox"/> AWSDemoLoadBalancer	AWSDemoLoadBalancer-19...	Provisioning	vpc-663ff30d	ap-south-1a, ap-south...	application

Load balancer: AWSDemoLoadBalancer

Description | Listeners | Monitoring | Integrated services | Tags

Basic Configuration

Name	AWSDemoLoadBalancer
ARN	arn:aws:elasticloadbalancing:ap-south-1:214041766426:loadbalancer/app/AWSDemoLoadBalancer/7dad3dfa521c5973
DNS name	AWSDemoLoadBalancer-1943027156.ap-south-1.elb.amazonaws.com (A Record)
State	Provisioning
Type	application
Scheme	internet-facing
IP address type	ipv4

g) ASG: Auto Scaling is a feature in aws that automatically scales the capacity to maintain steady and predictable performance. While using auto scaling, you can scale multiple resources across multiple services in minutes.

Services

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EC2 > Auto Scaling groups > Create Auto Scaling group

Step 1

Choose launch template or configuration

Step 2

Choose instance launch options

Step 3 (optional)

Configure advanced options

Step 4 (optional)

Configure group size and

Choose launch template or configuration Info

Specify a launch template that contains settings common to all EC2 instances that are launched by this Auto Scaling group. If you currently use launch configurations, you might consider migrating to launch templates.

Name

Auto Scaling group name

Enter a name to identify the group.

Must be unique to this account in the current Region and no more than 255 characters.

Step 5 (optional)

Add notifications

Step 6 (optional)

Add tags

Step 7

Review

Launch template Info

[Switch to launch configuration](#)

Launch template

Choose a launch template that contains the instance-level settings, such as the Amazon Machine Image (AMI), instance type, key pair, and security groups.

[Create a launch template](#)

Version

[Create a launch template version](#)

Description	Launch template	Instance type
-	MyTemplate lt-0820f01381e35faeb	-
AMI ID	Security groups	Request Spot Instances
ami-08181691f669ef7d2	-	No
Key pair name	Security group IDs	
-	-	

Additional details

Storage (volumes)	Date created
-	Mon Jan 24 2022 13:57:54 GMT+0530 (India Standard Time)

Cancel

Next

h) AMI: An AMI stands for **Amazon Machine Images**. An AMI is a virtual image used to create a virtual machine within an EC2 instance.

You've been invited to try an early, beta iteration of the new launch instance wizard. We will continue to improve the experience over the next few months. We're asking customers for their feedback on this early release. To exit the new launch instance wizard at any time, choose the **Cancel** button.

Try it now!

1. Choose AMI
2. Choose Instance Type
3. Configure Instance
4. Add Storage
5. Add Tags
6. Configure Security Group
7. Review

Step 1: Choose an Amazon Machine Image (AMI)

Quick Start

My AMIs

AWS Marketplace

Community AMIs

☐ Free tier only ⓘ

Amazon Linux 2 AMI (HVM) - Kernel 5.10, SSD Volume Type - ami-0af25d0df86db00c1 (64-bit x86) / ami-0a0e2241200ee6c49 (64-bit Arm)

Free tier eligible

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 now under maintenance only mode and has been removed from this wizard.

Root device type: ebs Virtualization type: hvm ENA Enabled: Yes

Select

☒ 64-bit (x86)

☐ 64-bit (Arm)

Amazon Linux 2 AMI (HVM) - Kernel 4.14, SSD Volume Type - ami-08181691f669ef7d2 (64-bit x86) / ami-02085663f89f6faa5 (64-bit Arm)

Free tier eligible

Amazon Linux 2 comes with five years support. It provides Linux kernel 4.14 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 now under maintenance only mode and has been removed from this wizard.

Select

☒ 64-bit (x86)

☐ 64-bit (Arm)

- i) **VPC:** VPC stands for **Virtual Private Cloud**. Amazon Virtual Private Cloud (Amazon VPC) provides a logically isolated area of the AWS cloud where you can launch AWS resources in a virtual network that you define.

Services

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New VPC Experience

Tell us what you think

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

Use Amazon VPC IP Address Manager to automatically allocate, manage, and monitor VPC CIDRs.

Learn more

Launch VPC Wizard

Launch EC2 Instances

Note: Your Instances will launch in the Asia Pacific region.

Resources by Region Refresh Resources

You are using the following Amazon VPC resources

VPCs See all regions	Asia Pacific 1	NAT Gateways See all regions	Asia Pacific 0
Subnets See all regions	Asia Pacific 3	VPC Peering Connections See all regions	Asia Pacific 0
Route Tables See all regions	Asia Pacific 1	Network ACLs See all regions	Asia Pacific 1
Internet Gateways See all regions	Asia Pacific 1	Security Groups See all regions	Asia Pacific 4

Service Health

Current Status	Details
Amazon EC2 - Asia Pacific	Service is operating normally

View complete service health details

Settings

Zones

Console Experiments

Additional Information

VPC Documentation

All VPC Resources

Forums

Report an Issue

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New VPC Experience
Tell us what you think

VPC Dashboard

EC2 Global View **New**

Filter by 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

Your VPCs (1/1) Info

<input checked="" type="checkbox"/>	Name	VPC ID	State	IPv4 CIDR	IPv6 CIDR
<input checked="" type="checkbox"/>	AWS Demo VPC	vpc-663ff30d	Available	172.31.0.0/16	-

Details

VPC ID vpc-663ff30d	State Available	DNS hostnames Enabled	DNS resolution Enabled
Tenancy Default	DHCP options set dopt-a655fedc	Main route table rtb-1e3fbd75	Main network ACL acl-da41f6b1
Default VPC Yes	IPv4 CIDR 172.31.0.0/16	IPv6 pool -	IPv6 CIDR -
Route 53 Resolver DNS Firewall rule groups -	Owner ID 214041766426		

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IPv6 CIDR block

Info

☒ No IPv6 CIDR block

☐ IPAM-allocated IPv6 CIDR block - new

☐ Amazon-provided IPv6 CIDR block

☐ IPv6 CIDR owned by me

Tenancy

Info

Dedicated

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 AWS Demo VPC

X

Remove

Add new tag

You can add 49 more tags.

Cancel

Create VPC

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New VPC Experience

Tell us what you think

VPC Dashboard

EC2 Global View New

Filter by VPC:

Q 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

You successfully created vpc-0afa602a7fe7c9e16 / AWS Demo VPC

X

?

VPC > Your VPCs > vpc-0afa602a7fe7c9e16

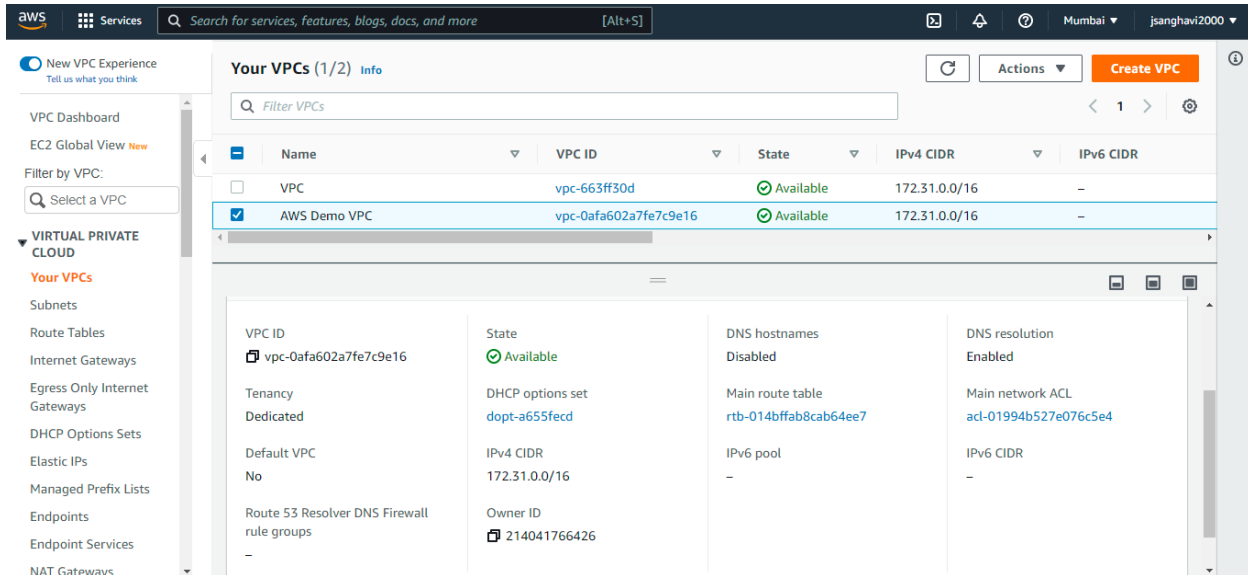
vpc-0afa602a7fe7c9e16 / AWS Demo VPC

Actions

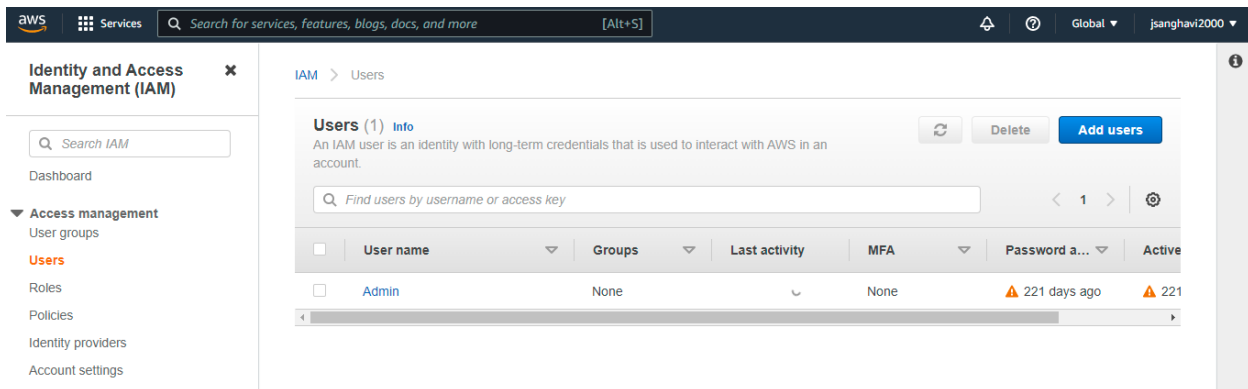
Details

Info

VPC ID	State	DNS hostnames	DNS resolution
vpc-0afa602a7fe7c9e16	Available	Disabled	Enabled
Tenancy	DHCP options set	Main route table	Main network ACL
Dedicated	dopt-a655fecd	rtb-014bffb8cab64ee7	acl-01994b527e076c5e4
Default VPC	IPv4 CIDR	IPv6 pool	IPv6 CIDR
No	172.31.0.0/16	-	-
Route 53 Resolver DNS Firewall rule groups	Owner ID		
-	214041766426		



j) **IAM:** IAM stands for **Identity Access Management**. IAM allows you to manage users and their level of access to the aws console. It is used to set users, permissions and roles. It allows you to grant access to the different parts of the aws platform. AWS Identity and Access Management is a web service that enables Amazon Web Services (AWS) customers to manage users and user permissions in AWS.



k) **S3:** S3 stands for **Simple Storage Service**. S3 provides developers and IT teams with secure, durable, highly scalable object storage. It is easy to use with a simple web services interface to store and retrieve any amount of data from anywhere on the web. S3 is a safe place to store the files. It is Object-based storage, i.e., you can store the images, word files, pdf files, etc. The files which are stored in S3 can be from 0 Bytes to 5 TB. It has unlimited storage which means that you can store the data as much as you want. Files are stored in Bucket. A bucket is like a folder available in S3 that stores the files.

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Services

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We're continuing to improve the S3 console to make it faster and easier to use. If you have feedback on the updated experience

Amazon S3

Create bucket

Create bucket

Info

Buckets are containers for data stored in S3. [Learn more](#)

General configuration

Bucket name

awsdemobuckets3

Bucket name must be unique and must not contain spaces or uppercase letters. [See rules for bucket naming](#)

AWS Region

Asia Pacific (Mumbai) ap-south-1

Copy settings from existing bucket - optional

Only the bucket settings in the following configuration are copied.

Choose bucket

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Global

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Amazon S3

Buckets

Access Points

Object Lambda Access Points

Multi-Region Access Points

Batch Operations

Access analyzer for S3

Block Public Access settings for this account

Storage Lens

Dashboards

AWS Organizations settings

Amazon S3

Account snapshot

Storage lens provides visibility into storage usage and activity trends. [Learn more](#)

View Storage Lens dashboard

Buckets (2)

Info

Refresh

Copy ARN

Empty

Delete

Create bucket

Buckets are containers for data stored in S3. [Learn more](#)

Find buckets by name

Name	AWS Region	Access	Creation date
awsdemobuckets3	Asia Pacific (Mumbai) ap-south-1	Bucket and objects not public	January 24, 2022, 14:59:11 (UTC+05:30)
bucket4593	Asia Pacific (Mumbai) ap-south-1	Bucket and objects not public	January 18, 2022, 09:24:23 (UTC+05:30)

aws

Services

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[Alt+S]

Files and folders (1 Total, 5.4 KB)

Remove

Add files

Add folder

All files and folders in this table will be uploaded.

Find by name

< 1 >

<input type="checkbox"/>	Name	Folder	Type	Size
<input type="checkbox"/>	AWS Demo Image.png	-	image/png	5.4 KB

Destination

Destination

s3://awsdemobuckets3

Destination details

Bucket settings that impact new objects stored in the specified destination.

Permissions

Grant public access and access to other AWS accounts.

Properties

Specify storage class, encryption settings, tags, and more.

Cancel

Upload

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Global

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Upload succeeded

View details below.

Upload: status

Close

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

Summary

Destination	Succeeded	Failed
s3://awsdemobuckets3	✔ 1 file, 5.4 KB (100.00%)	☹ 0 files, 0 B (0%)

Files and folders

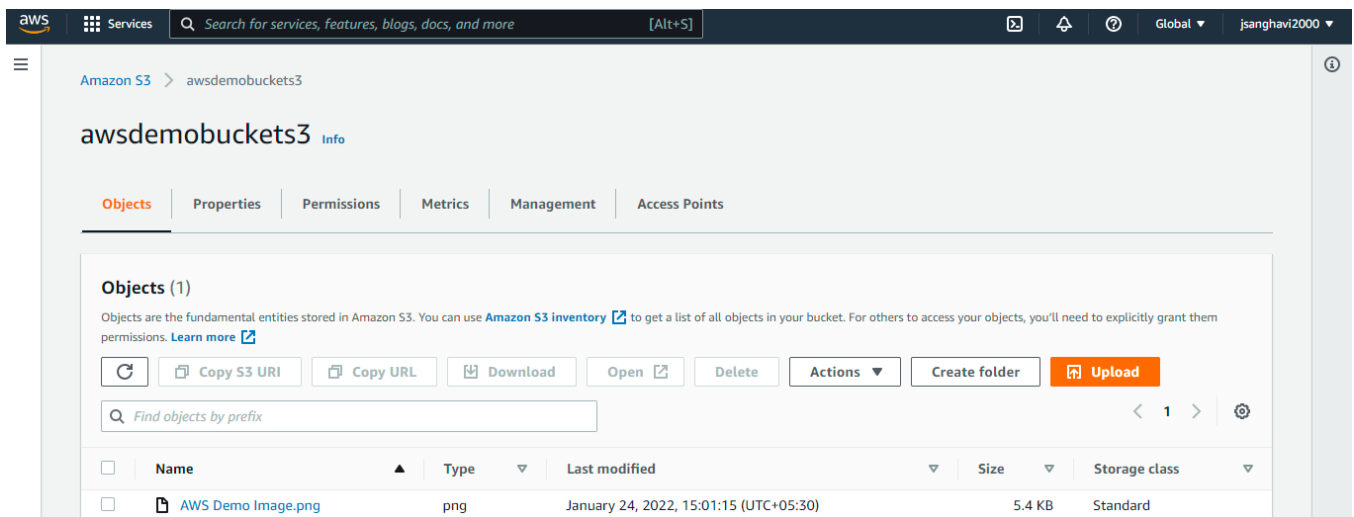
Configuration

Files and folders (1 Total, 5.4 KB)

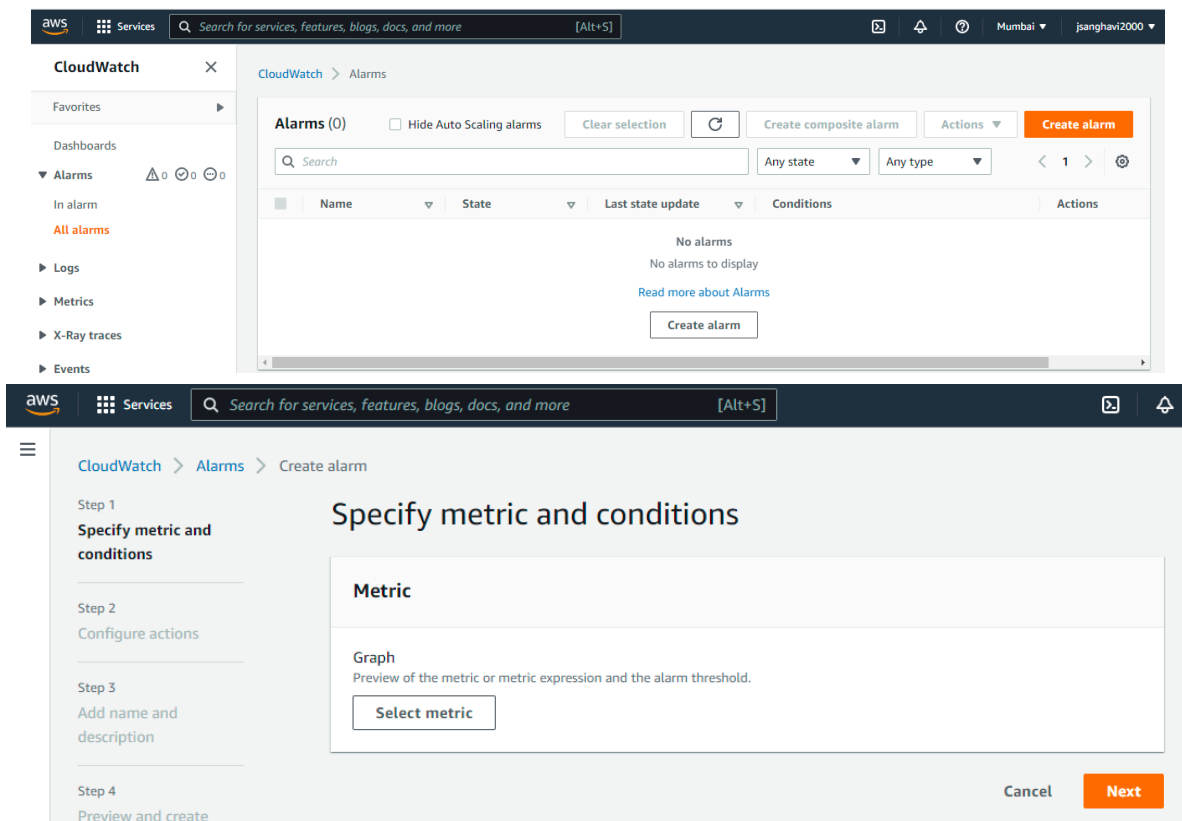
Find by name

< 1 >

Name	Folder	Type	Size	Status	Error
AWS Demo Image.png	-	image/png	5.4 KB	✔ Succeeded	-



- 1) **Cloudwatch: CloudWatch** is a service used to monitor your AWS resources and applications that you run on AWS in real time. CloudWatch is used to collect and track metrics that measure your resources and applications. It displays the metrics automatically about every AWS service that you choose.



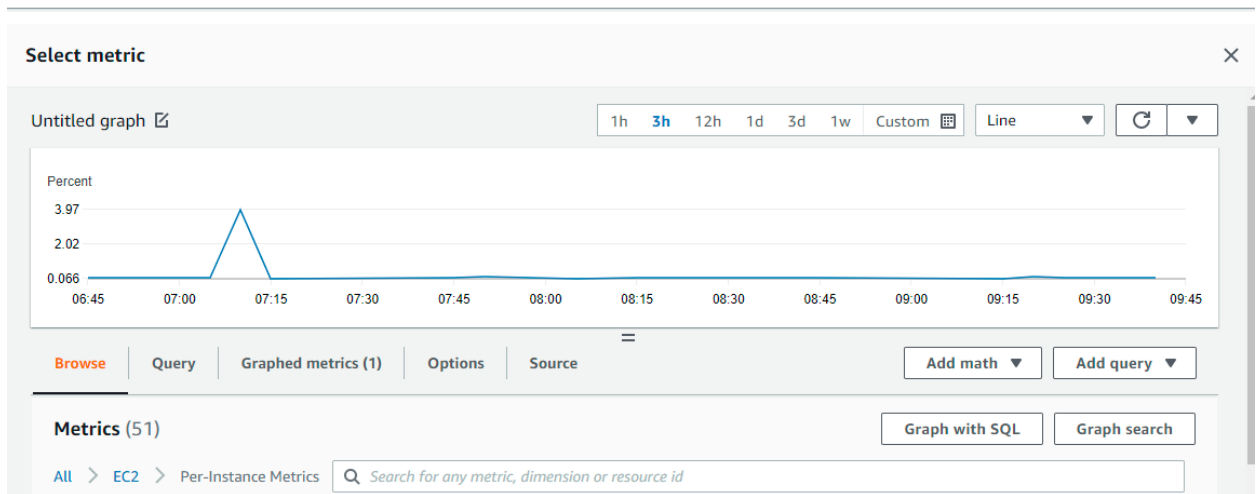
Browse | Query | Graphed metrics (1) | Options | Source

Metrics (51) Graph with SQL Graph search

All > EC2 > Per-Instance Metrics

<input type="checkbox"/>	Instance name (51)	Instanceld	Metric name
<input checked="" type="checkbox"/>	AWS Demo	i-032124f5808b5fac8	CPUUtilization
<input type="checkbox"/>	AWS Demo	i-032124f5808b5fac8	NetworkIn

Cancel Select metric



CloudWatch ×

Services [Alt+S] Mumbai jsanghavi2000

CloudWatch × Successfully created alarm AWS Demo CloudWatch. View alarm ×

Some subscriptions are pending confirmation ×
Amazon SNS doesn't send messages to an endpoint until the subscription is confirmed View SNS Subscriptions

CloudWatch > Alarms

Alarms (1/1) ☐ Hide Auto Scaling alarms Clear selection ↺ Create composite alarm Actions Create alarm

Any state Any type < 1 > ⚙

<input checked="" type="checkbox"/>	Name	State	Last state update	Conditions	Actions
<input checked="" type="checkbox"/>	AWS Demo CloudWatch	Insufficient data	2022-01-24 15:19:06	CPUUtilization > 10000 for 1 datapoints within 5 minutes	Actions enabled

m) Cloudtrail: AWS **CloudTrail** is an AWS service that helps you enable governance, compliance, and operational and risk auditing of your AWS account. Actions taken by a user, role, or an AWS service are recorded as events in CloudTrail. Events include actions taken in the AWS Management Console, AWS Command Line Interface, and AWS SDKs and APIs.

Services
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Quick trail create

Trail details

Start logging management events by creating a trail with simplified settings. Logs are sent to an S3 bucket we create on your behalf. To choose a different bucket or additional events, go to the full [Create trail](#) workflow.

A trail created in the console is a multi-region trail. [Learn more](#)

Trail name

Enter a display name for your trail.

3-128 characters. Only letters, numbers, periods, underscores, and dashes are allowed.

Trail log bucket and folder

Logs will be stored in aws-cloudtrail-logs-214041766426-e5c35da1/AWSLogs/214041766426

ⓘ Though there is no cost to log these events, you incur charges for the S3 bucket that we create to store your logs.

Cancel
Create trail

Services
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Mumbai
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Now use IAM Access Analyzer on a CloudTrail trail

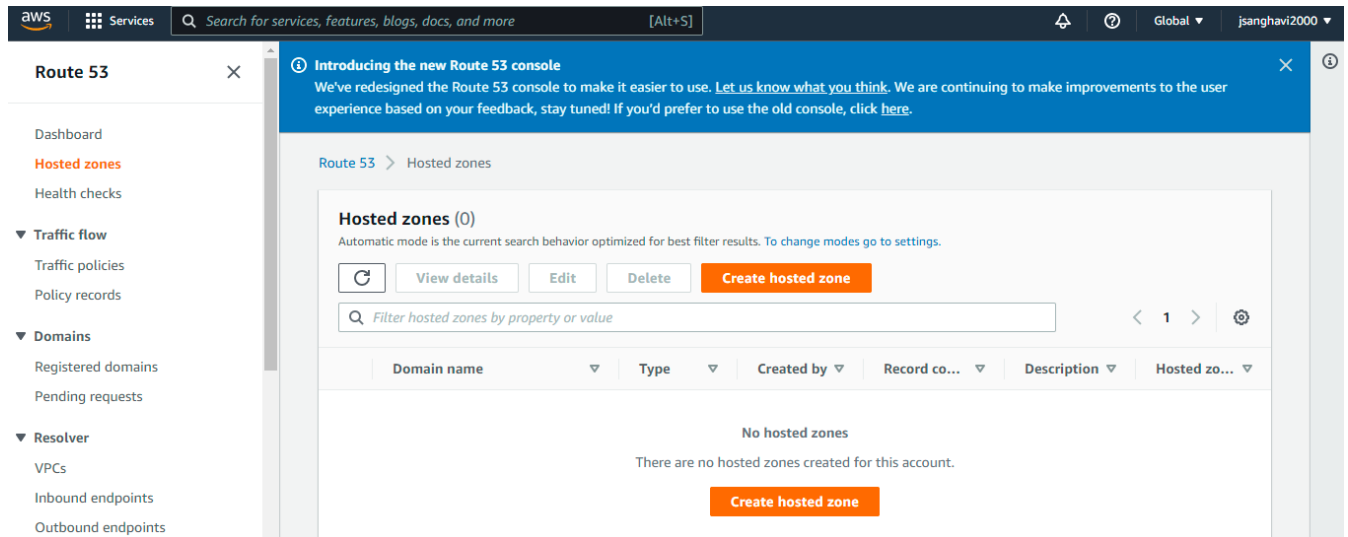
IAM Access Analyzer lets you implement least privilege permissions by generating IAM policies based on CloudTrail logs. [Learn more](#)

CloudTrail > Trails

Trails
Refresh
Delete
Create trail

Name	Home region	Multi-region trail	Insights	Organization trail	S3 bucket	Log file prefix	CloudWatch Logs log group	Status
AWS-Demo-Cloudtrail	Asia Pacific (Mumbai)	Yes	Disabled	No	aws-cloudtrail-logs-214041766426-e5c35da1			Logging

n) Route53: It is a highly available and scalable DNS (Domain Name Service) service. It provides a reliable and cost-effective way for the developers and businesses to route end users to internet applications by translating domain names into numeric IP addresses.



4) Learn below GCP Services.

a) Compute Engine:

- Google Compute Engine (GCE) is an Infrastructure as a Service (IaaS) offering that allows clients to run workloads on Google's physical hardware.
- Google Compute Engine provides a scalable number of virtual machines (VMs) to serve as large compute clusters for that purpose. GCE can be managed through a RESTful API, command line interface (CLI) or Web console. GCE competes with Amazon's Elastic Compute Cloud (EC2) and Microsoft Azure.
- GCE's application program interface (API) provides administrators with virtual machine, DNS server and load balancing capabilities. VMs are available in a number of CPU and RAM configurations and Linux distributions, including Debian and CentOS. Customers may use their own system images for custom virtual machines. Data at rest is encrypted using the AEC-128-CBC algorithm.
- GCE allows administrators to select the region and zone where certain data resources will be stored and used. Currently, GCE has three regions: the United States, Europe and Asia. Each region has two availability zones and each zone supports either Ivy Bridge or Sandy Bridge processors. GCE also offers a suite of tools for administrators to create advanced networks on the regional level.

b) Cloud Storage:

GCP has following Storage Services:

1. **Google Cloud Storage:** It is an online data storage web service that Google provides to its users to store and access data from anywhere. The service also includes a wide range of features like maximum performance, scalability, security and sharing.
2. **Cloud SQL:** It is a web-service that enables users to create, manage, and use relational databases stored on Google Cloud servers. The service itself maintains and protects the databases, which helps users focus on their applications and other operations.
3. **Cloud Bigtable:** It is known for its fast performance and highly manageable feature. It is a highly scalable NoSQL database service that allows collecting and retaining data from as low as 1 TB to hundreds of PB.

c) Local SSD:

- **Local SSDs** are physically attached to the server that hosts the VM instance.
- Local SSDs have higher throughput and lower latency than standard persistent disks or SSD persistent disks.
- The data that you store on a local SSD persists only until the instance is stopped or deleted.
- Local SSDs are designed to offer very high IOPS and low latency.
- Compute Engine automatically encrypts your data when it is written to local SSD storage space. You can't use customer-supplied encryption keys with local SSDs.
- Each local SSD is 375 GB in size, but a maximum of 24 local SSD partitions can be attached for a total of 9 TB per instance.

d) VPC:

- A **Google Virtual Private Cloud network** is very similar to a physical network, except that it is virtualized within the Google Cloud Platform (GCP).
- A VPC network is a global resource which consists of a list of regional virtual subnetworks (subnets) in data centers, all connected by a global wide area network. VPC networks are logically isolated from each other in the Google Cloud Platform.