HEXAWARE

Introduction to Amazon Web Service

Session Objective

- AWS – Account Creation
- AWS – EC2
- AWS – RDS
- AWS – S3

AWS – Account Creation

Amazon Web Services – Account -contd

- Following are the steps to access AWS services
  - ❖ Create an AWS account.
  - ❖ Sign-up for AWS services.
  - ❖ Create your password and access your account credentials.
  - ❖ Activate your services in credits section.

AWS - IAM

Amazon Web Services – Account -contd

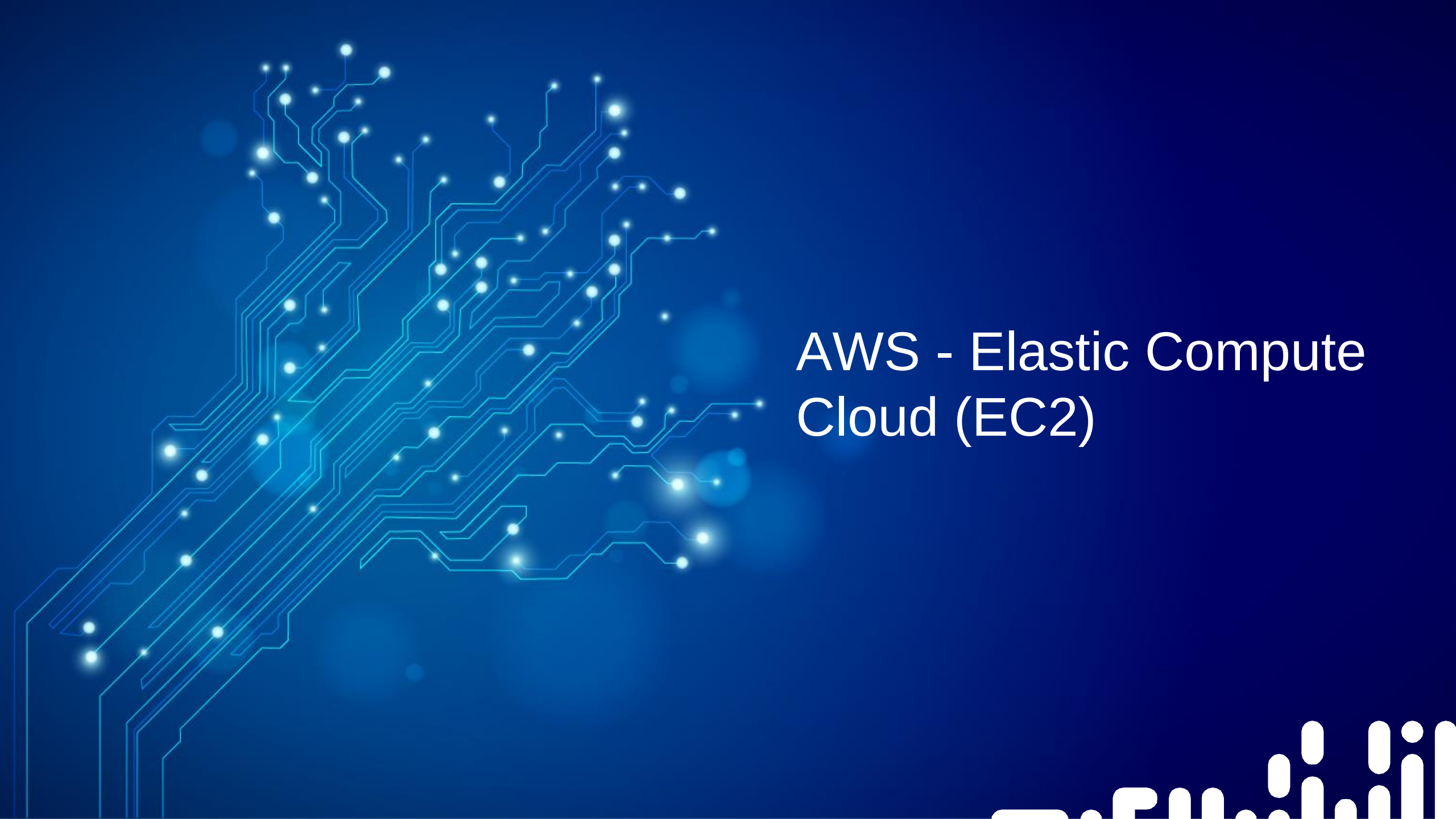
- Amazon provides a fully functional free account for one year for users to use and learn the different components of AWS. Get access to AWS services like EC2, S3, DynamoDB, etc. for free. However, there are certain limitations based on the resources consumed.

Amazon Web Services – Account -contd

- **Step 1** − To create an AWS account, open this link https://aws.amazon.com and sign-up for new account and enter the required details.
- **Step 2** − After providing an email-address, complete this form. Amazon uses this information for billing, invoicing and identifying the account. After creating the account, sign-up for the services needed.
- **Step 3** − To sign-up for the services, enter the payment information. Amazon executes a minimal amount transaction against the card on the file to check that it is valid. This charge varies with the region.

Amazon Web Services – Account

- **Step 4** − Next, is the identity verification. Amazon does a call back to verify the provided contact number.
- **Step 5** − Choose a support plan. Subscribe to one of the plans like Basic, Developer, Business, or Enterprise. The basic plan costs nothing and has limited resources, which is good to get familiar with AWS.
- **Step 6** − The final step is confirmation. Click the link to login again and it redirects to AWS management console.



AWS - Elastic Compute Cloud (EC2)

AWS - Elastic Compute Cloud

- **Amazon EC2 (Elastic Compute Cloud)** is a web service interface that provides resizable compute capacity in the AWS cloud.
- It is designed for developers to have complete control over web-scaling and computing resources.
- EC2 instances can be resized and the number of instances scaled up or down as per our requirement.
- These instances can be launched in one or more geographical locations or regions, and **Availability Zones (AZs)**.
- Each region comprises of several AZs at distinct locations, connected by low latency networks in the same region.

Features of EC2 -contd

- **Reliable** − Amazon EC2 offers a highly reliable environment where replacement of instances is rapidly possible. Service Level Agreement commitment is 99.9% availability for each Amazon EC2 region.
- **Designed for Amazon Web Services** − Amazon EC2 works fine with Amazon services like Amazon S3, Amazon RDS, Amazon DynamoDB, and Amazon SQS.
- It provides a complete solution for computing, query processing, and storage across a wide range of applications.

AWS EC2

Features of EC2

- **Secure** − Amazon EC2 works in Amazon Virtual Private Cloud to provide a secure and robust network to resources.
- **Flexible Tools** − Amazon EC2 provides the tools for developers and system administrators to build failure applications and isolate themselves from common failure situations.
- **Inexpensive** − Amazon EC2 wants us to pay only for the resources that we use. It includes multiple purchase plans such as On-Demand Instances, Reserved Instances, Spot Instances, etc. which we can choose as per our requirement.

Steps to use EC2 -contd

- **Step 1** − Sign-in to AWS account and open IAM console by using the following link https://console.aws.amazon.com/iam/.
- **Step 2** − In the navigation Panel, create/view groups and follow the instructions.
- **Step 3** − Create IAM user. Choose users in the navigation pane. Then create new users and add users to the groups.

Steps to use EC2 -contd

- **Step 4** − Create a Virtual Private Cloud using the following instructions.
  - Open the Amazon VPC console by using the following link − https://console.aws.amazon.com/vpc/
  - Select VPC from the navigation panel. Then select the same region in which we have created key-pair.
  - Select start VPC wizard on VPC dashboard.
  - Select VPC configuration page and make sure that VPC with single subnet is selected. The choose Select.
  - VPC with a single public subnet page will open. Enter the VPC name in the name field and leave other configurations as default.
  - Select create VPC, then select Ok.

Steps to use EC2 -contd

- **Step 5 −** Create WebServerSG security groups and add rules using the following instructions.
  - On the VPC console, select Security groups in the navigation panel.
  - Select create security group and fill the required details like group name, name tag, etc.
  - Select your VPC ID from the menu. Then select yes, create button.
  - Now a group is created. Select the edit option in the inbound rules tab to create rules.

Steps to use EC2 -contd

- **Step 6** − Launch EC2 instance into VPC using the following instructions.
  - Open EC2 console by using the following link − https://console.aws.amazon.com/ec2/
  - Select launch instance option in the dashboard.
  - A new page will open. Choose Instance Type and provide the configuration. Then select Next: Configure Instance Details.
  - A new page will open. Select VPC from the network list. Select subnet from the subnet list and leave the other settings as default.
  - Click Next until the Tag Instances page appears.

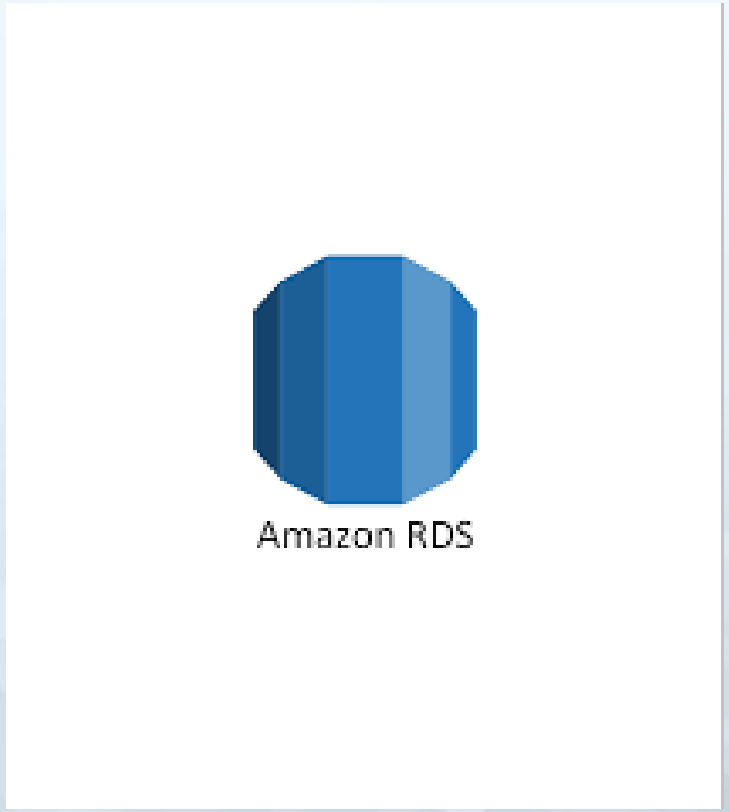
Steps to use EC2

- **Step 7** − On the Tag Instances page, provide a tag with a name to the instances. Select Next: Configure Security Group.
- **Step 8** − On the Configure Security Group page, choose the Select an existing security group option. Select the WebServerSG group that we created previously, and then choose Review and Launch.
- **Step 9** − Check Instance details on Review Instance Launch page then click the Launch button.
- **Step 10** − A pop up dialog box will open. Select an existing key pair or create a new key pair. Then select the acknowledgement check box and click the Launch Instances button.

AWS - Relational Database Service (RDS)

AWS - Relational Database Service

- **Amazon RDS (Relational Database Service)** is a fully-managed SQL database cloud service that allows to create and operate relational databases. Using RDS you can access your files and database anywhere in a cost-effective and highly scalable way.



Features of Amazon RDS -contd

- **Scalable** − Amazon RDS allows to scale the relational database by using AWS Management Console or RDS-specific API. We can increase or decrease your RDS requirements within minutes.
- **Host replacement** − Sometimes these situations occur when the hardware of Amazon RDS fails. There is no need to worry, it will be automatically replaced by Amazon.
- **Inexpensive** − Using Amazon RDS, we pay only for the resources we consume. There is no up-front and long-term commitment.

Features of Amazon RDS

- **Secure** − Amazon RDS provides complete control over the network to access their database and their associated services.
- **Automatic backups** − Amazon RDS backs up everything in the database including transaction logs up to last five minutes and also manages automatic backup timings.
- **Software patching** − Automatically gets all the latest patches for the database software. We can also specify when the software should be patched using DB Engine Version Management.

Set Up Amazon RDS -contd

- **Step 1** − Login to AWS management console. Use the following link to open Amazon RDS console
  - https://console.aws.amazon.com/rds/
- **Step 2** − Select the region where the DB instance is to be created, at the top right corner of the Amazon RDS console.
- **Step 3** − Select Instances in the navigation pane, then click Launch DB Instance button.
- **Step 4** − The Launch DB Instance Wizard opens. Select the type of instance as required to launch and click the Select button.

Amazon RDS

- **Step 5** − On the Specify DB Details page, provide the required details and click the Continue button.
- **Step 6** − On the Additional configuration page, provide the additional information required to launch the MySQL DB instance and click the Continue button.
- **Step 7** − On Management options page, make the choices and click the Continue button.
- **Step 8** − On the Review page, verify the details and click the Launch DB Instance button.

Delete a DB Instance -contd

- After completing the task, we should delete the DB instance so will not be charged for it. Follow these steps to delete a DB instance −
- **Step 1** − Sign in to the AWS Management Console and use the following link to open the Amazon RDS console.
  - https://console.aws.amazon.com/rds/
- **Step 2** − In the DB Instances list, select the DB instances to be deleted.

Delete a DB Instance

- **Step 3** − Click the Instance Actions button and then select the Delete option from the dropdown menu.
- **Step 4** − Select No in the Create Final Snapshot.
- **Step 5** − Click the Yes, Delete to delete the DB instance.

Cost of Amazon RDS -contd

- When using Amazon RDS, pay only for only the usage without any minimum and setup charges.
- Billing is based on the following criteria −
  - ✓ **Instance class** − Pricing is based on the class of the DB instance consumed.
  - ✓ **Running time** − Price is calculated by the instance-hour, which is equivalent to a single instance running per hour.

Cost of Amazon RDS

- **Storage** − Bill is calculated as per the storage capacity plan chosen in terms of per GB.
- **I/O requests per month** − Billing structure also includes total number of storage I/O requests made in a billing cycle.
- **Backup storage** − There is no additional charges for backup storage up to 100% of database. This service is free only for active DB instances.

AWS - Simple Storage Service (S3)

Amazon S3

- **Amazon S3** (Simple Storage Service) is a scalable, high-speed, low-cost web-based service designed for online backup and archiving of data and application programs.
- It allows to upload, store, and download any type of files up to 5 GB in size.
- This service allows the subscribers to access the same systems that Amazon uses to run its own web sites.
- The subscriber has control over the accessibility of data, i.e. privately/publicly accessible.

Configure S3 -contd

- **Step 1** − Open the Amazon S3 console using this link – https://console.aws.amazon.com/s3/home
- **Step 2** − Create a Bucket using the following steps.
  - A prompt window will open. Click the Create Bucket button at the bottom of the page.
  - Create a Bucket dialog box will open. Fill the required details and click the Create button.
  - The bucket is created successfully in Amazon S3. The console displays the list of buckets and its properties.
  - Select the Static Website Hosting option. Click the radio button Enable website hosting and fill the required details.

Configure S3

- **Step 3** − Add an Object to a bucket using the following steps.
  - Open the Amazon S3 console using the following link − https://console.aws.amazon.com/s3/home
  - Click the Upload button.
  - Click the Add files option. Select those files which are to be uploaded from the system and then click the Open button.
  - Click the start upload button. The files will get uploaded into the bucket.

S3 Bucket

Delete an Object

- **Step 1** − Open Amazon S3.
- **Step 2** − Select the files & folders option in the panel. Right-click on the object that is to be deleted. Select the delete option.
- **Step 3** − A pop-up window will open for confirmation. Click Ok.

Empty a Bucket

- **Step 1** − Open Amazon S3 console.
- **Step 2** − Right-click on the bucket that is to be emptied and click the empty bucket option. **Step 3** − A confirmation message will appear on the pop-up window. Read it carefully and click the **Empty bucket** button to confirm.

Amazon S3 Features -contd

- **Low cost and Easy to Use** − Using Amazon S3, the user can store a large amount of data at very low charges.
- **Secure** − Amazon S3 supports data transfer over SSL and the data gets encrypted automatically once it is uploaded. The user has complete control over their data by configuring bucket policies using AWS IAM.
- **Scalable** − Using Amazon S3, there need not be any worry about storage concerns. We can store as much data as we have and access it anytime.

Amazon S3 Features

- **Higher performance** − Amazon S3 is integrated with Amazon CloudFront, that distributes content to the end users with low latency and provides high data transfer speeds without any minimum usage commitments.
- **Integrated with AWS services** − Amazon S3 integrated with AWS services include Amazon CloudFront, Amazon CLoudWatch, Amazon Kinesis, Amazon RDS, Amazon Route 53, Amazon VPC, AWS Lambda, Amazon EBS, Amazon Dynamo DB, etc.

QUIZ

QUIZ

1. Amazon Web Services falls into which cloud-computing category?
    1. Software as a Service (SaaS)
    2. Platform as a Service (PaaS)
    3. Infrastructure as a Service (IaaS)
    4. Back-end as a Service (BaaS)
2. Which of the following service does automatic backup of data?
    1. EC2
    2. RDS
    3. S3
    4. All the above

QUIZ

3. What is the maximum size of single S3 object?
    1. 5GB
    2. 5TB
    3. 100GB
    4. No limit
4. Which of the following is a web service interface that provides resizable compute capacity in the AWS cloud
    1. AWS – EC2
    2. AWS – Lambda
    3. AWS – VPC
    4. AWS – S3

QUIZ

5. AWS reaches customers in how many countries?
    1. 86
    2. 137
    3. 182
    4. 190

QUIZ

Answers:

1. Infrastructure as a Service (IaaS)
2. RDS
3. 5 TB
4. AWS – EC2
5. 190

QUIZ

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