Group B Assignment No. 12

Title : Executing storage commands on cloud

Aim : To execute at least three command related to the Storage organization of the cloud and create necessary GUIusing Python.

Objective : To understand the services provided by AWS and to use GUI and CLI to execute commands

Theory :

Amazon S3

Amazon S3(Simple Storage Service) is cloud storage for the Internet. It is designed to make web-scale computing easier for developers. Amazon S3 provides a simple web-services interface that can be used to store and retrieve any amount of data, at any time, from anywhere on the web.Amazon S3 provides storage through web services interfaces (REST, SOAP, and BitTorrent).Amazon S3 has a simple web services interface that you can use to store and retrieve any amount of data, at any time, from anywhere on the web. It gives any developer access to the same highly scalable, reliable, fast, inexpensive data storage infrastructure that Amazon uses to run its own global network of web sites. The service aims to maximize benefits of scale and to pass those benefits on to developers.

To upload your data (photos, videos, documents etc.), you first create a bucket in one of the AWS regions. You can then upload any number of objects to the bucket. In terms of implementation, buckets and objects are resources, and Amazon S3 provides APIs for you to manage   them.
Amazon S3 bucket names are globally unique, regardless of the AWS region in which you create the bucket. You specify the name at the time you create the bucket.

Amazon IAM

AWS Identity and Access Management (IAM) is a web service that helps you securely control access to AWS resources for your users. You use IAM to control who can use your AWS resources (authentication) and what resources they can use and in what ways (authorization). IAM provides shared access to an AWS account which means you can grant other people permission to administer and use resources in your AWS account without having to share your password or access key.

Instead of sharing your root account credentials with others, you can create individual IAM users within your account that correspond to users in your organization. IAM users are not separate accounts; they are users within your account. Each user can have its own password for access to

the AWS Management Console. You can also create an individual access key for each user so that the user can make programmatic requests to work with resources in your account.

AWS CLI

The AWS Command Line Interface (CLI) is a unified tool to manage your AWS services. With just one tool to download and configure, you can control multiple AWS services from the command line and automate them through scripts.

Commands for various operations on S3 using AWS CLI:

1. To create a bucket in Amazon S3:
   aws s3api create-bucket --bucket bucket_name --region region_name
   aws s3 mb s3://bucketname

2. To delete a bucket in Amazon S3:
   aws s3api delete-bucket --bucket bucket_name --region region_name
   aws s3 rb s3://bucketname

3. To download an object:
   aws s3 cp s3://source_bucket_name/filename destination

4. To upload an object:
   aws s3 cp source_folder/filename s3://destination_bucket_name

5. To delete an object:
   aws s3 rm s3://bucket_name/filename

6. To view the buckets:
   aws s3 ls

AWS S3 configuration steps:

Open the terminal and run the following commands:

1. sudo apt-get install python-pip

2. sudo pip install awscli

3. sudo pip install --upgrade awscli

4. aws configure
   AWS Access Key ID [None]: <your_key>

AWS Secret Access Key [None]: <your-key>
Default region name [None]: <region-name>
Default output format [None]: json

Once the environment is set, execute the python program and run operations on Amazon S3.

Input :
Storage commands using python program

Output : Resultant changes in Amazon S3

Platform : Ubuntu 12.04

FAQ's

1. Enlist storage commands used on s3.
2. List at least five other cloud service providers for storage.
3. How security is provided to data on s3?