**IAM**

**User->Roles-> Policy**

* Programmatic access -
* AWS Management access.

Access Key ,Secret Access Key used for command line access.

IAM Policy simulator tool -used to verify the created users.

**EC2 – Elastic cloud computing**

**Ec2 Pricing models**

* **On Demand** - Pay on usage
* **Reserved Instance** – 72% discount
* **Onspot instance --** Unused capacity ,90% discount
* **Dedicated -** physical server.

**EC2 Instance Type**

Console ->EC2->Launch Instance ->Amazon Linux2 AMI

* VPC,Subnet ,Cloud watch – Monitoring.
* Storage – EBS volume.
* Add Tag
* Security Group -Virutal firewall (SSH 22) ,Http -(hosting webserver)
* Key pair

Putty:

.pem – PPK (Putty don’t support .pem)

Putty -Key Gen – Load ->.pem -Ok -Save Private Key ->.ppk file

Putty -- >public ip Ec2 information. ->ec2user@publicIP ->

SSH-Auth- Private key location.

>Sudo su

>yum update -y

**EBS Volume - Elastic block storage**

* General purpose ssd (Gp2) -boot disk (16 K)
* Provisioned IOPS(io1) (high performance ) (online transaction operation )
* Throughput optimised HDD (st1) (Frequently access ,big Data, log processing ETL)
* Cold HDD (Sc1) Low cost

Snapshot (encrypted volume will get encrypted volume)

Volume dashboard—select- Action-attach

**Elastic Load Balancer**

* **Application Load Balancer –** http,https (layer 7 OSI model )
* **Network Load Balancer –** Tcp and high performance (layer4 Tcp layer)
* **Classic Load Balancer** – Legacy load balancer (x-forward address of user in http header, Sticky Session)

**Route 53 :** DNS service

Route 53- >Register domain

**Creating EC2 instnace:**

Ec2->start up script:

*Yum update -y*

*Echo “<htm>hai welcome my side</html>”*

*Systemctl start httpd*

*Systemctl enable httpd*

->Configure security group ->new http

>load balancer ->application load balancer ->new targer group-> (instance ID ,lambda etc)

>load balancer->load targets > security group > our security group

Attaching domain to load balancer :

Route 53>hosted zones>select the hosted zone >create record>alias(on)

>record type>route traffic to >alias to application AWS resource>regisn>choose instance

**AWS CLI :**

1. Launch an EC2 instance
2. Create an IAM User - S3 bucket to upload a file
3. Configure the AWS CLI

1) Ec2 – putty:

>aws s3 ls - Error message

Configuring s3

>aws configure

Aws access Key Id[none]:\_

AWS Secret access Key Id:

Defaulat Regions: us -east-1

Default out put format:json

2) IAM- >User ->Programating user –> Access ->amazon s3 full access

>aws configure list

>aws s3 ls (aws s3 bucket listing )

Creating s3 bucket

>aws s3 mb s3://mybucketname-23232 (mb- my bucket name )

>aws s3 ls

Uploading a txt file to S3

>echo “this is sample test message” test.txt

>aws s3 cp text.txt s3://mybucketname-23232

>aws s3 ls s3://mybucketname-23232

AWS Pagination of command (similar to tail command )

>aws s3api list-objects –bucket mybucket - - page-size 100

>aws s3api list-objects –bucket mybucket - - max-items 100

1. Create IAM role S3 bucket to upload a file
2. Ec2 -
3. Access from Ecw

IAM- >Role ->Aws Service ->Ec2->s3 full access

Ec2->Configure Instance details -> select s3 role

>aws s3 ls

>aws s3 mb s3://bucket

>aws s3 ls

>echo “testfile” text.txt

>aws s3 cp text.txt s3://bucket

**RDS :**

Used for Online Transaction Processing - OLTP

Online Analytical Processing – OLAP Red Shift

MS-mysql, Mysql ,Oracle, postgre Sql,maria DB ,Aurora DB .

Automated Back up -- 35 days retention, Transaction log to append the missing transaction.

Snaphshot backup - Manual.

Unencrypted back up will give unencrypted Backup .

Encryption AMS -Amazon Key management system(KMS) -AES(256 bit encryption)

Multi A-Z - Disaster recover backup in different zone

Replica set – Frequently used Read data in different or same region.

1. Launc RDS Instance
2. Ec2 - Mysql
3. Connect to RDS

RDS->Create Database->Standard->mysql->free tier

Settings – > Data base identifier ,Master user group ,password.instancet type-t2 micro,Storage ,VPC,Public access (no),new security group -vpc,

Datatbase option –> DB name, Parameter Group

Ec2-> start up script

*#!/bin/bash*

*yum update -y*

*yum install mysql -y*

*>mysql –version*

*mysql --version*

*Connect to your database using your endpoint (specify your own endpoint):*

*mysql -u acloudguru -p -h <YOUR\_RDS\_ENDPOINT> acloudguru*

*Check the status of your database:*

*status*

*show databases;*

*Quit the database connection:*

*exit*

**System -Manger -Parameter Store:** secretes and configuration data ,password, licence code

**Elastic Cache 101**

Memory cache – Object storage in

Reddsh:failover,sorting ,complex data base.

**S3:**

Universal namespace.

http 200 successful upload

Stored Key value pairs ,version, metadata (5 TB data)

S3 Standard: Website, mobile ,big data, frequesnt accessed

S3 Standard In-frequent access: DR sites,

S3 one zone in-frequent access: Non critical data

Glacier: cheaper ,2 to 3 time in a year access .each access cost.

Glacier Deep Archive: Retrieval 12 hours

S3 -Intelliget Tier