AWS Free Practice Test

Free exam simulator

AWS solution architect associate certification exam sample quiz set 1

Hi, There you have completed AWS Solution Architect Set1.

- you have scored 39 correct out of 65 questions.
- you given 39 correct answers
- you given 26 incorrect answers
- you did not answer 0 question
- You have collected 37 points.

> *Before you look into the detailed explanations please try to find the out the right answers explanation by ourselves this will help you to ace the exam.*
>
> *Retake the exam again after getting the explanations , as the questions and answers will come in random manner , you need to rethink about the explanations to get the right answers again. Reverse engineer you weaker areas and look into the sectional test and then come back to retake the exam again.*

Your answers are shown below:

1. You have got one new DevOps engineer in your team and accidentally he just rebooted an EC2 instance which was having an instance store volume and a public IP address associated with it. What will happen with the application which was running in this particular ec2 instance?

- The public IP will change
- **The entire data in the instance store volume will be wiped**
- The public IP will be changed and instance store volume will be wiped off
- Nothing major will happen the instance will remain in the running state, IP also will remain the same

Detailed Explanation

The entire data in the instance store volume will be wiped

https://alestic.com/2011/09/ec2-reboot-stop-start/

Make sure you follow eric Hammond in twitter

When you reboot a physical computer at your desk it is very similar to shutting down the system and booting it back up. With Amazon EC2, rebooting an instance is much the same as with a local physical computer, but a stop/start differs in a few keys ways that may cause some problems and definitely have some benefits.

When you stop an EBS boot instance you are giving up the physical hardware that the server was running on and EC2 is free to start somebody else's instance there.

Your EBS boot volume (and other attached EBS volumes) are still preserved, though they aren't really tied to a physical or virtual server. They are just associated with an instance id that isn't running anywhere.

When you start the instance again, EC2 picks some hardware to run it on, ties in the EBS volume(s) and boots it up again.

Things that change when you stop/start include:

A new internal IP address though could randomly be the same. [VPC instances keep the same internal IP addresses through stop/start.]

A new external IP address (though could randomly be the same).

If an Elastic IP address was associated with the instance before it was stopped, then you'll need to re-associate it after the start. [VPC instances keep Elastic IP addresses associated through stop/start.]

Any contents on the instance's former ephemeral storage were wiped and you are given fresh ephemeral storage (often mounted as /mnt).

You can leave an instance stopped for as long as you like and not get charged for run time (though you do get charged at a much lower rate for the EBS volume storage). See the next point.

A fresh billing hour is started for the instance when you start it again. E.g., if you start a new instance and then stop/start it 3 times within the first 60 minutes, you'll get charged for 4 hours instead of 1.

There is a small chance that EC2 will not have available slots of the correct instance type to run your instance when you want to start it again. I've had this happen and temporarily switched to a different, available instance type to get it running again.

When you reboot, it's a simple reboot at the OS level and the instance stays running on the same hardware, with the same private and public IP addresses, keeps the same Elastic IP address (if associated), and keeps the same ephemeral storage without getting wiped. No new billing hour is started on a reboot and you do not give up the instance hardware.

While an instance is stopped, you can do some cool things before starting it again. Here's an article I wrote on changing the instance type of an instance while it's stopped:

Moving an EC2 Instance to a Larger Size

Here's an article I wrote on how to change the size of an EBS boot disk of an instance while it's stopped:

Resizing the Root Disk on a Running EBS Boot EC2 Instance

Here's an article I wrote on how to examine the root disk of an instance (while it's stopped) when you can't connect to it while it's running:

Fixing Files on the Root EBS Volume of an EC2 Instance

Since the stop/start cycle has a good chance of moving your instance to new hardware, it's an easy way to replace your instance hardware if you suspect that the current platform might be going bad and causing problems. Here's an article I wrote about that:

A Simpler Way To Replace Instance Hardware on EC2

Warning: "Stopping" an instance is completely different from "terminating" an instance! When you terminate an EC2 instance, by default it deletes the EBS boot volume and other volumes that were created at run time. Make sure you understand the difference before you start doing one or the other.

2. What is the best way to encrypt the redshift data warehousing cluster

- Encrypt the underneath EBS volume
- Use SSL/TLS certificate
- **Use KMS**
- Use any third party volume encryption tool for this purpose

Detailed Explanation

3. You are planning to build a single page application, for this you need to manage the session state, which served in aws is going to helpful for this activity.

- RDS
- **Elastic Cache**
- Kenenis
- Load balancer

Detailed Explanation

4. An application saves the logs to an S3 bucket. A user wants to keep the logs for one month for troubleshooting purposes, and then purge the logs.
What feature will enable this?

- Adding a bucket policy on the S3 bucket.
- Enabling CORS on the S3 bucket.
- **Configuring lifecycle configuration rules on the S3 bucket.**
- Creating an IAM policy for the S3 bucket.

Detailed Explanation

5. As part of the new image filter you have created an application, where the users upload the image and those are kept in a Que in AWS and there are multiple EC2 instances which work as worker nodes which polls the queue and then puts a filter on the image and one the image is processed an email is sent to the user stating that the filtering is done. Off let you have been reported that users are getting duplicate emails about the same image been processed more than once. What configuration you must change in this scenario.

- Create a delay queue for 60 seconds
- Create a delay queue to greater than 60 seconds
- Increase the visibility timeout to 60 seconds
- **Decrease the visibility time out to less than 60 seconds**

Detailed Explanation

Decrease the visibility time out to less than 60 seconds

Visibility time out is the time till when a message is not visible to the other queue will one worker node in processing it,as the users are getting duplicate emails because the worker node is possibly not able to process all the messages within 30 seconds, and it is getting visible to the other user and the users are getting duplicate emails, so increasing the visibility time out is the best approach in this regard,
Delay ques only delay the message delivery to another queue and is not the right answer in this scenario
We need to increase the visibility time out not decrease it.

6. As part of the audit criteria, you need to make sure you capture all the ip address that accesses any of the resources in private subnet, What will you use in this scenario.

- **Enable cloud watch matrix**
- Use cloud trail
- WAF (web application firewall)
- VPC flow log

Detailed Explanation

Enable cloud watch matrix

Web application firewalls are used to implement firewalls for web server.
Enabling VPC flow logs will give you the capability to capture all the incoming and out going traffic within a VPC.

Cloud trails are used to to monitor the account activity in your aws account , this is mainly used to monitor all the account related activity, cloud watch matrixs are used to see the performance and used for raising alarms in the system.
For more information please read the
https://docs.aws.amazon.com/AmazonVPC/latest/UserGuide/flow-logs.html

7. You have an application running in us-west-2 requiring 6 EC2 Instances running at all times. With 3 Availability Zones in the region viz. us-west-2a, us-west-2b, and us-west-2c, which of the following deployments provides fault tolerance if an Availability Zone in us-west-2 becomes unavailable? [Choose two]

- 2 EC2 Instances in us-west-2a, 2 EC2 Instances in us-west-2b, and 2 EC2 Instances in us-west-2c

- 3 EC2 Instances in us-west-2a, 3 EC2 Instances in us-west-2b, and no EC2 Instances in us-west-2c

- 4 EC2 Instances in us-west-2a, 2 EC2 Instances in us-west-2b, and 2 EC2 Instances in us-west-2c

- 6 EC2 Instances in us-west-2a, 6 EC2 Instances in us-west-2b, and no EC2 Instances in us-west-2c

- **3 EC2 Instances in us-west-2a, 3 EC2 Instances in us-west-2b, and 3 EC2 Instances in us-west-2c**

Detailed Explanation

8. A Solutions Architect is designing a shared service for hosting containers from several customers on Amazon ECS. These containers will use several AWS services. A container from one customer should not be able to access data from another customer.

Which of the below solutions should the architect use to meet these requirements?

- IAM roles for EC2 Instances
- IAM Instance Profile for EC2 Instances
- **IAM roles for tasks**
- Security Group rules

Detailed Explanation

9. You are storing the application data in the ebs volumes and as part of the application requirements these ebs volumes need to be stored durably for future audit. Choose the best possible way to store the volumes.

- **Create an automated script to take a snapshot**
- Create a script to copy the data in the instance store of the EC2 instances
- Use kms api to encrypt the data in the EBS volumes
- Use mirroring to store the data to a different EBS instance

Detailed Explanation

Name *

10. Your manager has just given you access to multiple VPN connections that someone else has recently set up between all your company's offices. She needs you to make sure that the communication between the VPNs is secure. Which of the following services would be best for providing a low-cost hub-and-spoke model for primary or backup connectivity between these remote offices?

- Amazon CloudFront
- AWS Direct Connect
- AWS VPN CIoudHub
- **AWS CloudHSM**

Detailed Explanation

AWS CloudHSM

If you have multiple VPN connections, you can provide secure communication between sites using the AWS VPN CIoudHub. The VPN CIoudHub operates on a simple hub-and-spoke model that you can use
with or without a VPC. This design is suitable for customers with multiple branch offices and existing
Internet connections who would like to implement a convenient, potentially low-cost hub-and-spoke model
for primary or backup connectivity between these remote offices.
Reference: clink

11. Your BI team is having a redshift cluster that has 100 tb of data as part of the resilience you have to make sure the data is backed up in a different region. what should be your strategy for this kind of situation?

- Make an automated script to take the data from underneath EBS volume to s3 and then make a cross-region replication
- **Enable cross-region snapshot for the redshift cluster**
- Create another job which copies data from your present redshift cluster to a different cluster in another region
- Make a cloud formation script to create a redshift cluster in the different region

Detailed Explanation

12. You are deploying an application which is running in EC2 and this application is required to call and AWS API which. How you are going to configure the application so that the security credentials are passed correctly to the application?

- Add the security key and access key to the configuration file and deploy the application in EC2 instance

- **Assign an IAM role to the EC2 instance**

- Pass the credentials as the user data in the ec2 instance

- Store the API credentials in S3 and use a custom program to access the application

Detailed Explanation

13. Which among the below service is independent of region and work in global scope of AWS and will work irrespective of a failure of a region in aws

- S3
- Route 53
- VPC
- WAF

Detailed Explanation

Route53 is a global service and will continue to work irrespective of a region failure. All other services mentioned above is region specific.

14. You are looking at ways to improve some existing infrastructure as it seems a lot of engineering resources are being taken up with basic management and monitoring tasks and the costs seem to be excessive.You are thinking of deploying Amazon E|asticCache to help. Which of the following statements is true in

regards to ElasticCache?

- You can't improve load and response times to user actions and queries but you can reduce the cost

  associated with scaling web applications.

- You can improve load and response times to user actions and queries and also reduce the cost

  associated with scaling web applications.

- **You can improve load and response times to user actions and queries however the cost associated**

  with scaling web applications will be more

- You can improve load and response times to user actions and queries however the cost associated

  with scaling web applications will remain the same.

Detailed Explanation

You can improve load and response times to user actions and queries however the cost associated with scaling web applications will be more

Amazon EIastiCache is a web service that makes it easy to deploy and run Memcached or Redis

protocol-compliant server nodes in the cloud. Amazon EIastiCache improves the performance of web

applications by allowing you to retrieve information from a fast, managed, in-memory caching system,

instead of relying entirely on slower disk-based databases. The service simplifies and offloads the

management, monitoring, and operation of in-memory cache environments, enabling your engineering

resources to focus on developing applications.

Using Amazon EIastiCache, you can not only improve load and response times to user actions and

queries, but also reduce the cost associated with scaling web applications.

Reference: https://aws.amazon.com/eIasticache/faqs/

15. As you are the DevOps lead for a company and as part of the new requirement you need to make sure that some EC2 instances are able to access few different

resources of AWS account how best you can achieve this.

- **Use an IAM role to manage temporary credentials for applications that run on an EC2 instance. The role will supply temporary permissions that applications can use when they make calls to other AWS resources.**

- Use an IAM user to manage temporary credentials for applications that run on an EC2 instance. The user will supply temporary permissions that applications can use when they make calls to other AWS resources.

- Use an IAM PassRole to restrict which role a user can pass to an EC2 instance when the user launches the instance. This way you can eliminate the need for credentials.

- Have your developers store AWS credentials directly within the EC2 instance and allow applications in that instance to use those credentials. Developers can manage the credentials and ensure that they securely pass the credentials to each instance and update each EC2 instance when it's time to rotate the credentials.

Detailed Explanation

16. As part of the new information security guidelines, you need to make sure you back up your EBS volumes in a durable place. [Choose two]

- **Use a lifecycle policy for EBS Snapshot**

- **Using CloudWatch Events, schedule a rule that calls the EC2 CreateSnapshot API.**

- Write a cronjob on the server that compresses any data that needs to be backed up using gzip compression. Then use AWS CLI to copy the data into an S3 bucket for durability.

- Configure Amazon Storage Gateway with EBS volumes as the data source, and store the backups on premise through the storage gateway.

Detailed Explanation

17. A company is storing an access key (access key ID and secret access key) in a text file on a custom AMI. The company uses the access key to access DynamoDB tables from instances created from the AMI. The security team has mandated a more secure solution. Which solution will meet the security team's mandate?

- Pass the access key to the instances through instance user data
- Obtain the access key from a key server launched in a private subnet.
- **Put the access key in an S3 bucket, and retrieve the access key on boot from the instance**
- Create an IAM role with permissions to access the table, and launch all instances with the new role

Detailed Explanation

Put the access key in an S3 bucket, and retrieve the access key on boot from the instance

Getting the access key from user data or storing them in some bucket is not recommended by aws, always think of delegating the role. User data is used to perform some action when the ec2 instance is getting launched passing the password to access any other service is not recommended.

18. You are in the process of creating a Route 53 DNS failover to direct traffic to two EC2 zones. Obviously, if
one fails, you would like Route 53 to direct traffic to the other region. Each region has an ELB with some
instances being distributed. What is the best way for you to configure the Route 53 health check?

- Route 53 natively supports ELB with an internal health check. Turn "Eva|uate target health" off and
  "Associate with Health Check" on and R53 will use the ELB's internal health check.
- **Route 53 doesn't support ELB with an internal health check. You need to associate your resource**
  record set for the ELB with your own health check
- Route 53 natively supports ELB with an internal health check. Turn "Eva|uate target health" on and "Associate with Health Check" off and R53 will use the ELB's internal health check.
- Route 53 doesn't support ELB with an internal health check.You need to create your own Route 53 health check of the ELB

Detailed Explanation

With DNS Failover, Amazon Route 53 can help detect an outage of your website and redirect your end

users to alternate locations where your application is operating properly. When you enable this feature,

Route 53 uses health checks-regularly making Internet requests to your appIication's endpoints from

multiple locations around the world-to determine whether each endpoint of your application is up or down.

To enable DNS Failover for an ELB endpoint, create an Alias record pointing to the ELB and set the

"EvaIuate Target HeaIth" parameter to true. Route 53 creates and manages the health checks for your

ELB automatically. You do not need to create your own Route 53 health check of the ELB. You also do

not need to associate your resource record set for the ELB with your own health check, because Route 53

automatically associates it with the health checks that Route 53 manages on your behalf. The ELB health

check will also inherit the health of your backend instances behind that ELB.

19. Your big data architect is using the Hadoop cluster for some BI analysis, they want to use AWS for this purpose what is the service that will help in this regard?

- EMR
- kinesis
- **Redshift**
- KMS

20. Your company has decided to build a business intelligence system, for this, it needs to process large data sets which have got millions of rows. Which storage is best suited for this activity.

- **Redshift**
- RDS
- Aurora
- Dynamo Db

Detailed Explanation

Redshift

Amazon Redshift is a fully managed, petabyte-scale data warehouse service in the cloud. You can start with just a few hundred gigabytes of data and scale to a petabyte or more. This enables you to use your data to acquire new insights for your business and customers.

For more information on AWS Redshift, please visit the following URL:

https://docs.aws.amazon.com/redshift/latest/mgmt/welcome.html
Columnar storage for database tables is an important factor in optimizing analytic query performance because it drastically reduces the overall disk I/O requirements and reduces the amount of data you need to load from disk.

Amazon Redshift uses a block size of 1 MB, which is more efficient and further reduces the number of I/O requests needed to perform any database loading or other operations that are part of query execution.

More information on how redshift manages the columnar storage is available here:

https://docs.aws.amazon.com/redshift/latest/dg/c_columnar_storage_disk_mem_mgmnt.html

21. A company is migrating (lift and shift) its database MySQL (8 TB) to AWS. They are for seeing rapid growth in their business application and estimate is that once they migrate in a few months the size of the database is going to be around 40 TB.
Which RDS you will suggest as the expert for this business activity.

- **Amazon Aurora**
- Oracle
- MySQL
- Microsoft SQL server

Detailed Explanation

22. As a full-stack architect you are architecting an application which is two tires and as part of the development life cycle you know there can be several changes in the business requirements and as a result, there will be schema change which you cannot avoid. You need to make sure your database is durable and ACID-compliant and there cannot be downtime, what kind of database you will choose in this scenario?

- Use a combination of S3 and queue
- Use any third party no sql database
- AWS Aurora
- **Dynamo Db**

Detailed Explanation

Dynamo Db

Amazon aurora is MYSQL comparable database and has all the requirements covered. S3 cannot be used as a database this is generally used for file and blob storage, never select any service which is not part of the aws offerings.

DynamoDB is not ACID compliant. The global secondary indexes in DynamoDB are eventually consistent and are not guaranteed to return correct results.
For more information about Aurora please go through
https://aws.amazon.com/blogs/database/amazon-aurora-under-the-hood-fast-ddl/

23. In which scenario you need to have an access key and secret key? [Choose two]

- **You need to configure aws CLI**
- You need to upload data using S3 CLI
- **Need to change the group association of an IAM user form console**
- You need to create a cross-account role for a user

Detailed Explanation

You need to configure aws CLI, Need to change the group association of an IAM user form console

You cannot create a cross-account role from CLI and for console access, you don't need a secret key and access key, you need a console user id and password for this

24. You are building a system to distribute confidential training videos to employees. Using CloudFront, what the method could be used to serve content that is stored in S3, but not publicly accessible from S3 directly?

- Create an S3 bucket policy that lists the CloudFront distribution ID as the Principal and the target
  bucket as the Amazon Resource Name (ARN).
- Add the CloudFront account security group "amazon-cf/amazon-cf-sg" to the appropriate S3 bucket
  policy.
- Create an Identity and Access Management (IAM) User for CloudFront and grant access to the
  objects in your S3 bucket to that IAM User.
- **Create an Origin Access Identity (OAI) for CloudFront and grant access to the objects in your S3 bucket to that OAI.**

Detailed Explanation

25. You have architected one of the applications which read and writes in S3 recently the application is getting a lot of popularity and you can see a lag in the performance of the application, what should you do to make sure the S3 read and write performance is improved to keep up with the request.

- Use s3 standard storage
- Prefix each object name with a hash key and time stamp
- Implement many prefix to maximize parallelizaition
- **Introduce versioning in the s3 bucket**

Detailed Explanation

Introduce versioning in the s3 bucket

To maximize the performance of S3 we should try to introduce randomness in the S3 objects one way is to add timestamp and hash string as the prefix of the object

26. As part of the mobile team you are working in an application in which you need to make sure users can upload photos , and as an architect you also have to make sure the data is not lost .What is the aws service that you will be using for this activity.

- Store the data in EBS instance storage
- **Keep the data in S3 and enable versioning**
- Store the data in RDS
- Keep the data in EBS volumes and write an automated script to take the backup of the volumes in weekly basis

Detailed Explanation

27. An organization has three separate AWS accounts, one each for development, testing, and production.
The organization wants the testing team to have access to certain AWS resources in the production
account. How can the organization achieve this?

- **Create the IAM users with cross account access.**
- Create the IAM user in a test account, and allow it access to the production environment with the IAM
  policy.
- Create the IAM roles with cross account access.
- It is not possible to access resources of one account with another account.

Detailed Explanation

An organization has multiple AWS accounts to isolate a development environment from a testing or

production environment. At times the users from one account need to access resources in the other

account, such as promoting an update from the development environment to the

production environment.

In this case the IAM role with cross account access will provide a solution. Cross account access lets one

account share access to their resources with users in the other AWS accounts.
Reference:

28. As part of the latest security requirement you need to secure the data stored in S3 at rest what will be the possible solution [Choose 2]

- By default all data in S3 are encrypted
- You can securely upload/download your data to Amazon S3 via SSL endpoints using the HTTPS protocol
- Use a third-party encryption library
- **Use SSE-S3**

Detailed Explanation

29. You are working as a consultant for a start-up firm. They have developed a web application for an employee to enable them to file sharing with external vendors securely. They created an Auto Scaling group for Web servers which require two m4. large EC2 instances running at all time & scaling up to a maximum of twelve instances. Post deploying this application, a huge rise in billing is observed. Due to a limited budget, CTO has requested your advice to optimize usage of instance in Auto Scaling groups. What will be the best solution to reduce cost without any performance impact?

- Create an Auto Scaling group with all Spot Instances.
- **Create an Auto Scaling group with a mix of On-Demand & Spot Instance. Select the On-Demand base as 2. Above On-Demand base, select 20% of On-Demand instance & 80% of Spot Instance.**

- Create an Auto Scaling group with a mix of On-Demand & Spot Instance. Select the On-Demand base as 0. Above On-Demand base, select 100% of On-Demand instance & 0% of Spot Instance.
- Create an Auto Scaling group with t2. micro On-Demand instances.

Detailed Explanation

30. Your audit team is uploading millions of pdf files in s3 what strategy you should take to make sure you get the maximum performance.

- Use hexadecimal hash as part if the suffix
- Make suffix of sequential ids
- **Use sequential id as part of the object prefix**
- Use hexadecimal hash as part of the prefix

Detailed Explanation

Use sequential id as part of the object prefix

Bringing in more randomization brings the performance optimization in S3

31. A custom CloudWatch metric has determined that your web application is returning a high number of 404 errors. How could you automatically create a message in your online Help Desk system for your webmaster? (Choose all that apply)

- Use the Zen Desk plugin for CloudWatch
- **Set an alarm for the metric that sends a notification to an SNS topic.**
- Run a report in AWS Config to find the source of the error, and send a message to an SNS topic.
- Run a scan with Amazon Inspector to locate the source of the error, and send a message to an SNS topic.
- **Create an SNS topic and subscribe the Create Ticket url for your Help Desk to the topic.**

Detailed Explanation

32. As part of your latest RFP response client has a requirement to upload image files(More than 1 gig) and the image processing algorithm runs to process the files and it takes anywhere between 3 to 10 minutes. The files are uploaded in a totally random manner by different shift users, as well as few downstream systems. What will you suggest as part of the solution for this business case to win it for your company?

- store the files in RDS and then fetch one by one to process
- propose kinesis to ingest the files and then have lambda workers to process the files
- Store the files in EBS and configure the different EC2 instances to access the shared filed system and process the files as per the need.
- **Keep the files in S3 and configure lambda event on each file drop in S3 and process the files in lambda through some python image recognition algorithm**
- configure SQS to hold the messaged and have multiple EC2 instances as part of the worker node. Use load balancer and auto-scaling groups to scale in and out as per the messages stored in the que

Detailed Explanation

33. A company is developing a highly available web application using stateless web servers. Which services are suitable for storing session state data? (Select TWO.)

- Cloudwatch
- **DynamoDb**
- **Elastic Cache**
- Load Balancer
- Storage Gateway

Detailed Explanation

DynamoDb, Elastic Cache

For the stateless application, we don't store the session data in the database, Cloudwatch is for monitoring it does not have any capability to store any session data. A storage gateway is not used to store the session data

34. A company has resources hosted in their AWS Account. There is a requirement to monitor API activity for all regions and the audit needs to be applied for future regions as well. Which of the following can be used to fulfill this requirement?

- Ensure one CloudTrail trail is enabled for all regions
- Create a CloudTrail for each region. Use CloudFormation to enable the trail for all future regions
- Create a CloudTrail for each region. Use AWS Config to enable the trail for all future regions
- **Ensure CloudTrail for each region, then enable for each future region.**

Detailed Explanation

Ensure CloudTrail for each region, then enable for each future region.

AWS Documentation mentions the following:

You can now turn on a trail across all regions for your AWS account. CloudTrail will deliver log files from all regions to the Amazon S3 bucket and an optional CloudWatch Logs log group you specified. Additionally, when AWS launches a new region, CloudTrail will create the same trail in the new region. As a result, you will receive log files containing API activity for the new region without taking any action.

For more information on this feature, please visit the following URL:
https://aws.amazon.com/about-aws/whats-new/2015/12/turn-on-cloudtrail-across-all-regions-and-support-for-multiple-trails/

35. A Solutions Architect is designing an online shopping application running in a VPC on EC2 instances behind an ELB Application Load Balancer. The instances run

in an Auto Scaling group across multiple Availability Zones. The application tier must read and write data to a customer-managed database cluster. There should be no access to the database from the Internet, but the cluster must be able to obtain software patches from the Internet.

- Public subnets for the application tier and NAT Gateway, and private subnets for the database cluster
- Public subnets for both the application tier and the database cluster
- **Public subnets for the application tier, and private subnets for the database cluster and NAT Gateway**
- Public subnets for the application tier, and private subnets for the database cluster

Detailed Explanation

36. As part of the requirement, there is a situation where you need to make sure the data (which is coming in JSON format) should be indexed and it should be persistent and also the response should remain stable in spite of the traffic increase. Which service of aws should be chosen for this requirement.

- **DynamoDb**
- EBS
- RDS
- EFS

Detailed Explanation

37. Which among the below is not a default cloud watch generated metrics

- The number of running processes on the instance
- **T2 Credit Balance**
- Disk Space Utilization
- CPU Utilisation of an Amazon EC2 instance

Detailed Explanation

T2 Credit Balance

https://aws.amazon.com/blogs/aws/new-amazon-cloudwatch-monitoring-scripts/

Number of the running process is an OS-level call which customers need to figure out as per AWS shared responsibility model, Other matrices are available in loudWatch default metrics

38. An organization is serving different content to the different user depending on the location present, The website is serving traffic through CloudFront. the URL of the website is given below,

http://d11111f8.cloudfront.net/main.html?region=US
http://d11111f8.cloudfront.net/main.html?region=EU
http://d11111f8.cloudfront.net/main.html?region=CA

What will be the configuration of the CloudFront to deliver the cache data to the correct region?

- Serve dynamic content
- Cache object in the origin
- **Based on the query string parameter**
- Use cookie forwarding to the origin

Detailed Explanation

39. You need to import several hundred megabytes of data from a local Oracle database to an Amazon RDS DB instance. What does AWS recommend you use to accomplish this?

- Oracle Data Pump
- Oracle export/import utilities
- **DBMS_FILE_TRANSFER**
- Oracle SQL Developer

Detailed Explanation

DBMS_FILE_TRANSFER

How you import data into an Amazon RDS DB instance depends on the amount of data you have and the
number and variety of database objects in your database.
For example, you can use Oracle SQL Developer to import a simple, 20 MB database; you want to use
Oracle Data Pump to import complex databases or databases that are several hundred megabytes or
several terabytes in size.
Reference:

http://docs.aws.amazon.com/AmazonRDS/latest/UserGuide/Oracle.Procedural.Importing.html

40. One of your juniors has identified AWS glacier as the choice of document archival. What should be used if the requirement is to retrieve the document within 10 minutes?

- **Expedited retrieval**
- Standard retrieval
- Bulk retrieval
- Vault Lock

Detailed Explanation

41. As part of the application restructuring program, there is a requirement that an application that was running on a single Linux instance and access the data stored as part of the EBS volume need to be refactored to 5 different servers and all should be able to access the data in parallel. What are the services that you will choose in this instance

- **EFS**
- ECS

- S3
- Use the existing EBS volume to mount in different servers

Detailed Explanation

42. As per information security you have to keep the log files for a month and then you can delete it .What is the best way to achieve this.

- Use ELK stack to keep the logs
- Keep the log files in EBS volume and then take a snap shot of that
- The logs can remain in application server for a month then delete the logs from the application server
- **Keep the log files in S3 and then create a life cycle policy to delete the files after required time**

Detailed Explanation

43. Company salespeople upload their sales figures daily. A Solutions Architect needs a durable storage solution for these documents that also protects against users accidentally deleting important documents.

- Store data in two S3 buckets in different AWS regions.
- **Store data in an S3 bucket and enable versioning**
- Store data on EC2 instance storage.
- Store data in an EBS volume and create snapshots once a week

Detailed Explanation

44. A Solutions Architect is designing an online shopping application running in a VPC on EC2 instances behind an ELB Application Load Balancer. The instances run in an Auto Scaling group across multiple Availability Zones. The application tier must read and write data to a customer-managed database cluster. There should

be no access to the database from the Internet, but the cluster must be able to obtain software patches from the Internet.

- Public subnets for the application tier, and private subnets for the database cluster
- Public subnets for both the application tier and the database cluster
- **Public subnets for the application tier, and private subnets for the database cluster and NAT Gateway**
- Public subnets for the application tier and NAT Gateway, and private subnets for the database cluster

Detailed Explanation

Public subnets for the application tier, and private subnets for the database cluster and NAT Gateway

Always keep the database cluster in the private subnet unless anything specifically mentioned NAT gateway is used by the database mainly for downloading the database updates. NAT gateways are present in public subnet

45. As you have joined in a new startup that is having a web server, DB server and an RDS instance(Postgres).The application users' sessions are managed as part of the stateful design. To achieve failover DB servers are spread over multiple availability zones. From your manager's instruction, you have configured load balancer along with an auto-scaling group. with max and min limit as 9 and 3.Your testing team is complaining they are seeing some data loss in off-peak hours. What should you change so that data can be copied before the instances are terminated?

- customize the termination policy such a way that it copies the data
- Configure life cycling hook
- disable the termination policy
- **ask your developers to manage the states in Redis**

Detailed Explanation

Using the lifecycle hook we can make the termination wait for a certain amount of time, during this time we can perform the action of copying the data.

Managing cache is not helpful to restore the lost data

disabling the termination policy is going to disturb the other instances

we cannot customize the termination policy to copy the data

For more information on lifecycle-hooks, refer to the following URLs,

https://docs.aws.amazon.com/autoscaling/ec2/userguide/lifecycle-hooks.htmlhttps://aws.amazon.com/ec2/autoscaling/faqs/

46. Company salespeople upload their sales figures daily. A Solutions Architect needs a durable storage solution for these documents that also protects against users accidentally deleting important documents.

- Store data on EC2 instance storage.
- Store data in two S3 buckets in different AWS regions.
- Store data in an EBS volume and create snapshots once a week
- **Store data in an S3 bucket and enable versioning**

Detailed Explanation

47. As per the migration from the data center to AWS you need to host a database in an Ec2 instance, the instance should have an EBS volume and as the application is quite read and write-intensive it is required that there should be an IOPS of 20000 for the EBS instance. Which volume type you should choose for this case.

- **EBS Provisioned IOPS SSD**
- EBS Cold HDD
- EBS Throughput Optimized HDD
- EBS General Purpose SSD

Detailed Explanation

48. As part of the latest compliance guide lines there is requirement that data should be encrypted before writing to the discs.Which service is going to help you achieve this.

- Iam access keys
- API gateway with STS
- AWS certificate manager
- **KMS api**

Detailed Explanation

49. A user wants to use an EBS-backed Amazon EC2 instance for a temporary job. Based on the input data,the job is most likely to finish within a week. Which of the following steps should be followed to terminate the instance automatically once the job is finished?

- Configure the CIoudWatch alarm on the instance that should perform the termination action once the instance is idle
- **Configure the Auto Scaling schedule actMty that terminates the instance after 7 days.**
- Configure the EC2 instance with a stop instance to terminate it.
- Configure the EC2 instance with ELB to terminate the instance when it remains idle

Detailed Explanation

Auto Scaling can start and stop the instance at a pre-defined time. Here, the total running time is unknown.Thus, the user has to use the CIoudWatch alarm, which monitors the CPU utilization. The user can create an alarm that is triggered when the average CPU utilization percentage has been lower than 10 percent for 24 hours, signaling that it is idle and no longer in use. When the utilization is below the threshold limit,it will terminate the instance as a part of the instance action.

For more information

50. There is a new junior who has joined into your team and he just got rights to create new EC2 Instance from DevOps team , but when he is trying to launch an instance its going into terminated state what can NOT be a possible cause for this situation?

- He missed the first step of creating EBS volume which he was supposed to attach to the instance
- Your junior is trying to create the instance from a corrupted snapshot
- The AMI is not bundled properly
- **He does not have access to create EC2 instance**

Detailed Explanation

Your answer He does not have access to create EC2 instance

Explanation:

After you launch an instance, AWS recommends that you check its status to confirm that it goes from the

pending status to the running status, the not terminated status.

The following are a few reasons why an Amazon EBS-backed instance might immediately terminate:

You've reached your volume limit.

The AM is missing a required part.

The snapshot is corrupt.

As DevOps team gave access there should not be an issue with (In exam don't assume any team has done something wrong, unless otherwise something exclusively mentioned)

Adding volume does not have anything to do with the instance termination status [Correct answer]

51. A retailer exports data daily from its transactional databases into an S3 bucket in the Sydney region. The retailer's Data Warehousing team wants to import this data into an existing Amazon Redshift cluster in their VPC at Sydney. Corporate security policy mandates that data can only be transported within a VPC.
What combination of the following steps will satisfy the security policy?
Choose 2 answers from the options given below.

- Enable Amazon Redshift Enhanced VPC Routing.

- **Create a Cluster Security Group to allow the Amazon Redshift cluster to access Amazon S3.**
- Create a NAT gateway in a public subnet to allow the Amazon Redshift cluster to access Amazon S3.
- **Create and configure an Amazon S3 VPC endpoint.**

Detailed Explanation

Create a Cluster Security Group to allow the Amazon Redshift cluster to access Amazon S3. , Create and configure an Amazon S3 VPC endpoint.

Amazon Redshift Enhanced VPC Routing provides VPC resources, access to Redshift.

Redshift will not be able to access the S3 VPC endpoints without enabling Enhanced VPC routing, so one option is not going to support the scenario if another is not selected.

NAT instance (the proposed answer) cannot be reached by Redshift without enabling Enhanced VPC Routing.

https://aws.amazon.com/about-aws/whats-new/2016/09/amazon-redshift-now-supports-enhanced-vpc-routing/

52. Your supervisor has asked you to build a simple file synchronization service for your department. He doesn't want to spend too much money and he wants to be notified of any changes to files by email. What do you think would be the best Amazon service to use for the email solution?

- **Amazon SES**
- Amazon CIoudSearch
- Amazon AppStream
- Amazon SWF

Detailed Explanation

First

53. You have set up an Auto Scaling group. The cool-down period for the Auto Scaling group is 7 minutes. The first instance is launched after 3 minutes, while the second instance is launched after 4 minutes. How many minutes after the first instance is launched will Auto Scaling accept another scaling request?

- **10 Minutes**
- 14 Minutes
- 11 minutes
- 7 minutes

54. Your Database admin had an "AmazonDynamoDBFullAccess" policy attached to his IAM user, but after few weeks he got into Development and you added him to the "Developer" IAM group which does not have "AmazonDynamoDBFullAccess" policy. What will happen to the Dynamo access to the engineer?

- It is not possible for an IAM group to have IAM permission policies, they need to be placed at the user level
- You would need to remove the DynamoDB policy from her IAM user and add it to the developer's group policy
- Only one IAM policy can be attached to a user at a time. You need to create another IAM user for his to use for his to perform her DynamoDB activities
- **Nothing, as an IAM user can have multiple IAM permission policies attached to them at the same time, either directly to the user or through an associated IAM group. The multiple policies are combined and evaluated together.**

Detailed Explanation

Nothing, as an IAM user can have multiple IAM permission policies attached to them at the same time, either directly to the user or through an associated IAM group. The multiple policies are combined and evaluated together.

IAM policies can be attached at the group level and user level, and it is perfectly ok to have multiple groups added to a particular IAM user the rules are deduced by taking all the

attached groups into account (Remember explicit deny wins always but in this scenario there were no explicit deny)

55. As a DevOps architect, you have got an application to manage which is having a production system running as a two-tire system. The app server and database server are both hosted in multiple availability zones. The database server is managed by a third party vendor and you need to make sure they are given access as per the standard and all their actions are logged properly.
What will be the best-suited option for this scenario?

- Deploy a Nat instance in the private subnet
- use Nat gateway
- Implementing a bastion host in the private subnet
- **Deploy Bastion hosts in Public Subnet**

Detailed Explanation

56. You need to migrate a large amount of data into the cloud that you have stored on a hard disk and you decide that the best way to accomplish this is with AWS Import/Export and you mail the hard disk to AWS. Which of the following statements is incorrect in regards to AWS Import/Export?

- It can export from Amazon S3
- **It can Import to Amazon EBS**
- It can Import to Amazon Glacier
- It can export from Amazon Glacier

Detailed Explanation

It can Import to Amazon EBS

AWS Import/Export supports:
Import to Amazon S3
Export from Amazon S3
Import to Amazon EBS

Import to Amazon Glacier

AWS Import/Export does not currently support export from Amazon EBS or Amazon Glacier.

Reference: https://docs.aws.amazon.com/AWSImportExport/Iatest/DG/whatisdisk.html

57. You have developed a new web application on AWS for a real estate firm. It has a web interface where real estate employees upload photos of new construction houses in S3 buckets. Prospective buyer's login to these web site & access photos. Marketing Team has initiated an intensive marketing event to promote new housing schemes which we will lead to buyer's frequently accessing these images. As this is a new application you have no projection of traffic. You have created Auto Scaling across multiple instance types for these web servers, but you also need to optimized cost for storage. You don't want to compromise on latency & all images should be downloaded instantaneously without any outage. Which of the following is a recommended storage solution to meet this requirement?

- **Use Standard-IA to store all images.**
- Use Standard storage class, use Storage class analytics to identify & move objects using lifecycle policies.
- Use S3 Intelligent-Tiering storage class
- Use One Zone-IA storage class to store all images.

Detailed Explanation

Use Standard-IA to store all images.

When access pattern to web application using S3 storage buckets is unpredictable, you can use S3 intelligent-Tiering storage class.S3 Intelligent-Tiering storage class includes two access tiers: frequent access and infrequent access. Based upon access patterns it moves data between these tiers which helps in cost saving. S3 Intelligent-Tiering storage class has the same performance as that of Standard storage class.

Option A is incorrect as all though it will save cost, it will not provide any protection in case of AZ failure. Also, this class is suitable for infrequently accessed data & not for frequently access data.

Option B is incorrect as Standard-IA storage class is for infrequently accessed data & there

are retrieval charges associated. In the above requirement, you do not have any projections of data being access which may result in a higher cost.

Option D is incorrect it has operational overhead to setup Storage class analytics & move objects between various classes. Also, since the access pattern is undetermined, this will run into the costlier option.

For more information on S3 Intelligent-Tiering, refer to following URLs,

https://aws.amazon.com/blogs/aws/new-automatic-cost-optimization-for-amazon-s3-via-intelligent-tiering/

58. Your DevOps team member is telling your fleet of EC2 instances as part of the auto-scaling group and it is scaling up and down multiple times in a short span of time. What should you do to stop this but still holding the design principles?

- Change the cool down time
- Modify the auto scaling group to make sure the newest instance is shutdown first
- Implement schedules scaling actions
- **Change the termination policy to terminate the oldest instance first and then followed by the next old instance so on and so forth**

Detailed Explanation

The root cause of the problem is that not enough time is given to the auto-scaling group to stabilize after scaling activity, this can be taken into consideration by increasing the cooldown period of the auto-scaling group
for more info please visit

59. You have got an application that runs on a 100GB database within an EC2 instance. The application is used randomly and infrequently, which will be the most cost-effective option suited data store for this kind of database.

- EBS with general-purpose SSD
- **EFS**
- Throughout optimized EBS
- EBS with provisioned IOPS

Detailed Explanation

Provision IOPS is not required as the application is not used frequently, although it will get the job done this will entail extra cost

The minimum volume for a throughput optimized instance in 500 Gig, so we will be overprovisioning and this will not be the most cost-effective for the scenario

We are not using any shared files storage across the EC2 we will be using it for the database so this is not the correct choice

NOTE: Please go through the link for more details

60. Application architecture is using a three tire approach with an LB and auto-scaling group in front of EC2 instances. The business application serves static files to the users. which are stored in EFS as part of the price optimization and improved performance what should be done?

- Use a custom zip program to zip the files before saving it to the efs

- Use spot instance instead of on-demand instances

- **Use cloud front**

- Keep the files in S3 glacier

Detailed Explanation

61. As DevOps lead, you need to create multiple environments where you are using VPC, DynamoDB, Load balancer, different subnets, API gateways to create the infrastructure. Every month there is a different environment requirement. you need to find some way to automate the process. What is the service that can help you to achieve this?

- Code build

- **Cloudformation**

- Code deploy

- Elastic Beanstalk

Detailed Explanation

62. You have created an application that runs behind a load balancer that serves traffic to 4 ec2 instances, the ec2 instances are configured for DR scenarios across multiple availability zones. In the situation of an ec2 instance going down, the customer who was logged into that machine had to re-login to the application .what should be your strategy to avoid this situation.

- Use Duration-Based Session Stickiness
- Use the application-generated cookie to maintain the session
- **Use dynamo DB to manage the individual session of the ec2 instances**
- Use sticky session of load balancers

Detailed Explanation

63. A business application is having a required where the user is uploading a file and it should be ready to get served to the user when he requests till another 2 months and then it should be archived. What will be the best way to achieve this

- **Keep the files in S3 and then create a life cycle policy to delete the files after 2 months**
- Keep the files in EBS and then delete files after 2 months
- Keep the files in EFS and then create a life cycle policy to delete the files after 2 months
- Keep the files in amazon glacier and the use the life cycle policy to delete the files after 2 months time
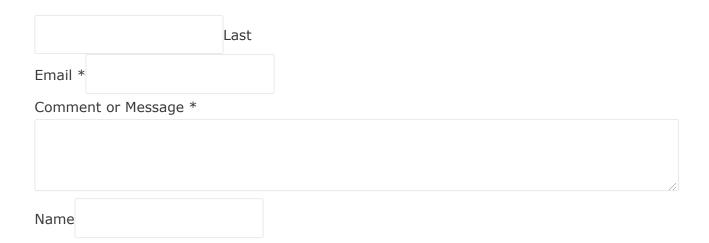
Detailed Explanation

64. You are in the process of creating a Route 53 DNS failover to direct traffic to two EC2 zones. Obviously, if one fails, you would like Route 53 to direct traffic to the other region. Each region has an ELB with some instances being distributed. What is the best way for you to configure the Route 53 health check?

- **Route 53 doesn't support ELB with an internal health check. You need to associate your resource**
  record set for the ELB with your own health check

- Route 53 natively supports ELB with an internal health check. Turn "Eva|uate target health" on and "Associate with Health Check" off and R53 will use the ELB's internal health check.

- Route 53 natively supports ELB with an internal health check. Turn "Eva|uate target health" off and
  "Associate with Health Check" on and R53 will use the ELB's internal health check.

- Route 53 doesn't support ELB with an internal health check.You need to create your own Route 53 health check of the ELB

65. A web application allows customers to upload orders to an S3 bucket. The resulting Amazon S3 events trigger a Lambda function that inserts a message to an SQS queue. A single EC2 instance reads messages from the queue, processes them, and stores them in a DynamoDB table partitioned
by a unique order ID. Next month traffic is expected to increase by a factor of 10 and a Solutions Architect is reviewing the architecture for possible scaling problems.

Which component is MOST likely to need re-architecting to be able to scale to accommodate the new traffic?

- Lambda function
- SQS queue
- DynamoDB table
- **EC2 instance**

Detailed Explanation

Last

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