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Attempt 1

[All Questions ▾](#)Question 1: Skipped

An application consists of the following architecture.a. EC2 Instances in multiple AZ's behind an ELB.b. The EC2 Instances are launched via an Autoscaling Group.c. There is a NAT instance which is used to ensure that instances can download updates from the internet.Which of the following is the bottleneck in the architecture

 A. The EC2 Instances B. The ELB C. The NAT Instance (Correct) D. The Autoscaling Group**Explanation**

Since there is only one NAT instance, this is a bottleneck for the architecture. For high availability, launch NAT instances in multiple available zones and make it as part of an Autoscaling Group. For more information on NAT Instances, please visit the following URL: https://docs.aws.amazon.com/AmazonVPC/latest/UserGuide/VPC_NAT_Instance.html

Question 2: Skipped

A company owns an API which currently gets 1000 requests per sec. They want to host this using AWS. Which of the following is the best cost effective solution for this. The API is currently hosted on a t2.xlarge instance

 A. Use API gateway with the backend services as it is. B. Use the API gateway along with AWS Lambda (Correct) C. Use Cloudfront along with the API backend service as it is. D. Use Elastic Cache along with the API backend service as it is.**Explanation**

Since the company has full ownership of the API, the best solution would be to convert the code for the API and use it in a Lambda function. You can save on cost, since in Lambda you don't pay for any infrastructure and only pay for how much time the Lambda function runs. And then you can use the API gateway along with the AWS Lambda function which can scale accordingly. For more information on using API gateway with AWS Lambda, please visit the following URL:
<https://docs.aws.amazon.com/apigateway/latest/developerguide/getting-started-with-lambda-integration.html>

Question 3: Skipped

There is a requirement to host a database application which will have a lot of resource intensive reads and writes. Which of the following is the best storage option to ensure that the data is persistent.

A. EBS IOPS

(Correct)

B. EBS SSD

C. EBS Throughput Optimized

D. EBS Cold Storage

Explanation

Since there is a high performance requirement with high IOPS needed, one needs to opt for EBS Provisioned IOPS SSD. The below snapshot from the AWS Documentation mentions the need of using Provisioned IOPS for better IOPS performance for database based applications. For more information on AWS EBS Volume types, please visit the following URL:
<https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/EBSVolumeTypes.html>

Question 4: Skipped

An application sends images to S3. The metadata for these images needs to be saved in persistent storage. The metadata needs to be indexed. Which of the following can be used for the underlying storage.

A. AWS Aurora

B. AWS S3

C. AWS DynamoDB

(Correct)

D. AWS RDS

Explanation

The most efficient storage mechanism for just storing metadata is DynamoDB. DynamoDB is normally used in conjunction with the Simple Storage service. So after storing the images in S3, you can store the metadata in DynamoDB. You can also create secondary indexes for DynamoDB Tables. For more information on managing indexes in DynamoDB, please visit the following

Question 5: Skipped

An application is hosted on EC2 Instances for an application. There is a promotion campaign due to start in 2 weeks for the application. There is a mandate from management to ensure that no performance problems are encountered due to traffic growth during this time. Which of the following must be done to the Autoscaling Group to ensure this requirement can be fulfilled.

- A. Configure step scaling for the Autoscaling Group
- B. Configure Dynamic scaling for the Autoscaling Group
- C. Configure Scheduled scaling for the Autoscaling Group
- D. Configure static scaling for the Autoscaling Group

(Correct)

Explanation

The AWS Documentation mentions the following Scaling based on a schedule allows you to scale your application in response to predictable load changes. For example, every week the traffic to your web application starts to increase on Wednesday, remains high on Thursday, and starts to decrease on Friday. You can plan your scaling activities based on the predictable traffic patterns of your web application. To configure your Auto Scaling group to scale based on a schedule, you create a scheduled action, which tells Amazon EC2 Auto Scaling to perform a scaling action at specified times. For more information on Autoscaling scheduled scaling, please visit the following URL: https://docs.aws.amazon.com/autoscaling/ec2/userguide/schedule_time.html

Question 6: Skipped

Currently a company makes user of EBS snapshots to back up their EBS Volumes. As part of the business continuity requirement, these snapshots need to be made available in another region. How can this be achieved?

- A. Directly create the snapshot in the other region
- B. Create a snapshot and then create it in the new region
- C. Copy the snapshot to an S3 bucket and then enable cross region replication for the bucket.
- D. Copy the EBS Snapshot to an EC2 instance in another region

(Correct)

Explanation

The AWS Documentation mentions the following A snapshot is constrained to the region where it was created. After you create a snapshot of an EBS volume, you can use it to create new volumes in the same region. For more information, see Restoring an Amazon EBS Volume from a Snapshot. You can also copy snapshots across regions, making it possible to use multiple regions for geographical expansion, data center migration, and disaster recovery. For more information on EBS Snapshots, please visit the

Question 7: Skipped

A company has an application hosted in AWS. This application consists of EC2 Instances which sits behind an ELB with EC2 Instances. The following are requirements from an administrative perspective
a) Ensure notifications are sent when the read requests goes beyond 1000 requests per minute
b) Ensure notifications are sent when the latency goes beyond 10 seconds
c) Also any API activity which calls for sensitive data should monitored
Which of the following can be used to achieve this requirement. Choose 2 answers from the options given below

- A. Use Cloudtrail to monitor the API Activity (Correct)
- B. Use Cloudwatch logs to monitor the API Activity
- C. Use Cloudwatch metrics for whatever metrics need to be monitored. (Correct)
- D. Use a custom log software to monitor the latency and read requests to the ELB

Explanation

AWS Cloudtrail can be used to monitor the API calls. For more information on Cloudtrail, please visit the following URL: <https://aws.amazon.com/cloudtrail/> When you use Cloudwatch metrics for an ELB, you can get the amount of read requests and latency out of the box. For more information on using Cloudwatch with the ELB, please visit the following URL: <https://docs.aws.amazon.com/elasticloadbalancing/latest/classic/elb-cloudwatch-metrics.html>

Question 8: Skipped

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

- A. Ensure Cloudtrail for each region. Then enable for each future region. (Correct)
- B. Ensure one Cloudtrail trail is enabled for all regions.
- C. Create a Cloudtrail for each region. Use Cloudformation to enable the trail for all future regions.
- D. Create a Cloudtrail for each region. Use AWS Config to enable the trail for all future regions.

Explanation

The 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-](https://aws.amazon.com/about-aws/whats-new/2015/12/turn-on-cloudtrail-across-all-regions-and-support/)

Question 9: Skipped

There is a requirement for an iSCSI device and the legacy application needs local storage. Which of the following can be used to meet the demands of the application.

A. Configure the Simple storage service

B. Configure Storage gateway cached volume

C. Configure Storage gateway stored volume

(Correct)

D. Configure Amazon Glacier

Explanation

The AWS Documentation mentions the following If you need low-latency access to your entire dataset, first configure your on-premises gateway to store all your data locally. Then asynchronously back up point-in-time snapshots of this data to Amazon S3. This configuration provides durable and inexpensive offsite backups that you can recover to your local data center or Amazon EC2. For example, if you need replacement capacity for disaster recovery, you can recover the backups to Amazon EC2. For more information on the Storage gateway, please visit the following URL:

<https://docs.aws.amazon.com/storagegateway/latest/userguide/WhatIsStorageGateway.html>

Question 10: Skipped

There is a requirement for EC2 Instances in a private subnet to access an S3 bucket. The traffic should not traverse to the internet. Which of the following can be used to fulfil this requirement

A. VPC endpoint

(Correct)

B. NAT Instance

C. NAT gateway

D. Internet gateway

Explanation

A VPC endpoint enables you to privately connect your VPC to supported AWS services and VPC endpoint services powered by PrivateLink without requiring an internet gateway, NAT device, VPN connection, or AWS Direct Connect connection. Instances in your VPC do not require public IP addresses to communicate with resources in the service. Traffic between your VPC and the other service does not leave the Amazon network. For more information on AWS VPC endpoints, please visit the following URL: <https://docs.aws.amazon.com/AmazonVPC/latest/UserGuide/vpc-endpoints.html>

Question 11: Skipped

There is an application which consists of EC2 Instances behind a classic ELB. An EC2 proxy is used for content management to backend instances. The application might not be able to scale properly. Which of the following can be used to scale the proxy and backend instances appropriately. Choose 2 answers from the options given below

- A. Use Autoscaling for the proxy servers (Correct)
- B. Use Autoscaling for the backend instances (Correct)
- C. Replace the Classic ELB with Application ELB
- D. Use Application ELB for both the front end and backend instances

Explanation

As soon as you see the requirement for scaling , automatically think of the Autoscaling service provided by AWS. This can be used to scale both the proxy servers and the backend instances. For more information on Autoscaling, please visit the following URL: <https://docs.aws.amazon.com/autoscaling/plans/userguide/what-is-aws-auto-scaling.html>

Question 12: Skipped

There is a marketing application hosted in AWS that might get a lot of traffic over the next couple of weeks. Which of the following can be used to reduce the potential disruption to users incase of any issues.

- A. Use an ELB to divert traffic to an Infrastructure hosted in another region
- B. Use an ELB to divert traffic to an Infrastructure hosted in another AZ
- C. Use Cloudformation to create backup resources in another AZ
- D. Use Route53 to route to static web site (Correct)

Explanation

In a disaster recovery scenario , the best from the above options is to divert the traffic to a static web site. Option A is wrong because ELB can only balance traffic in one region and not across regions. Option B and C are incorrect because using backups across AZ's is not enough for disaster recovery purposes. For more information on disaster recovery in AWS, please visit the following URL: <https://aws.amazon.com/disaster-recovery/>

Question 13: Skipped

QUESTION 15: Skipped

You have a requirement to host a static web site for a domain called mycompany.com in AWS. You need to ensure that the traffic is scaled properly. How can this be achieved. Choose 2 answers from the options given below

A. Host the static site on an EC2 Instance

B. Use Route53 with static web site in S3

(Correct)

C. Enter the NS records from Route53 in the domain registrar

(Correct)

D. Place the EC2 instance behind the ELB

Explanation

You can host a static web site in S3. You need to ensure that the nameserver records for the Route53 hosted zone are entered in your domain registrar. For more information on website hosting in S3, please visit the following URL:
<https://docs.aws.amazon.com/AmazonS3/latest/dev/WebsiteHosting.html>

Question 14: Skipped

A database is hosted using the AWS RDS service. The database is getting a lot of database queries and is now become a bottleneck for the associating application. Which can be used to ensure that the database is not a performance bottleneck?

A. Setup a Cloudfront distribution in front of the database

B. Setup an ELB in front of the database

C. Setup Elasticache in front of the database

(Correct)

D. Setup SNS in front of the database

Explanation

Elastic cache is an in-memory solution that can be used in front of a database to cache the common queries issued against the database. This can reduce the overall load on the database. Option A is incorrect because normally this is used for content distribution Option B is partially correct , but you need to have one more database as an internal load balancing solution. Option D is incorrect because SNS is a simple notification service. For more information on Elasticache, please visit the following URL:
<https://aws.amazon.com/elasticache/>

Question 15: Skipped

A database is being hosted using the AWS RDS service. The database is now going to be made into a production database. There is a requirement for the database to be made highly available. Which of the following can be used to achieve this requirement.

A. Use Multi-AZ for the RDS instance to ensure that a secondary database is created in another region

B. Use the Read Replica feature to create another instance of the DB in another region

C. Use Multi-AZ for the RDS instance to ensure that a secondary database is created in another Availability zone.

(Correct)

D. Use the Read Replica feature to create another instance of the DB in another Availability zone.

Explanation

Option A is incorrect because the Multi-AZ feature allows for high availability across availability zones and not regions. Option B and D are incorrect because Read Replica's can be used to offload database reads. But if you want high availability then opt for the Multi-AZ feature. The AWS Documentation mentions the following Amazon RDS Multi-AZ deployments provide enhanced availability and durability for Database (DB) Instances, making them a natural fit for production database workloads. When you provision a Multi-AZ DB Instance, Amazon RDS automatically creates a primary DB Instance and synchronously replicates the data to a standby instance in a different Availability Zone (AZ). For more information on AWS RDS Multi-AZ, please visit the following URL: <https://aws.amazon.com/rds/details/multi-az/>

Question 16: Skipped

A company wants to host a web application and a database layer in AWS. This will be done with the use of subnets in a VPC. Which of the following is the proper architecture design for supporting the required tiers of the application

A. Use a public subnet for the web tier and a public subnet for the database layer

B. Use a public subnet for the web tier and a private subnet for the database layer

(Correct)

C. Use a private subnet for the web tier and a private subnet for the database layer

D. Use a private subnet for the web tier and a public subnet for the database layer

Explanation

The ideal setup is to ensure that the web server is hosted in the public subnet so that it can be accessed by users on the internet. The database server can be hosted in the private subnet. The below diagram from the AWS Documentation shows how this can be setup For more information on public and private subnets in AWS, please visit the following URL: https://docs.aws.amazon.com/AmazonVPC/latest/UserGuide/VPC_Scenario2.html

Question 17: Skipped

You require the ability to analyze a customer's clickstream data on a website so they can do behavioral analysis. Your customer needs to know what sequence of pages and ads their customer clicked on. This data will be used in real time to modify the page layouts as customers click through the site to increase stickiness and advertising click-through. Which option meets the requirements for capturing and analyzing this data?

- A. Log clicks in weblogs by URL store to Amazon S3, and then analyze with Elastic MapReduce
- B. Push web clicks by session to Amazon Kinesis and analyze behavior using Kinesis workers (Correct)
- C. Write click events directly to Amazon Redshift and then analyze with SQL
- D. Publish web clicks by session to an Amazon SQS queue. Then send the events to AWS RDs for further processing

Explanation

The AWS Documentation mentions the following Amazon Kinesis Data Streams enables you to build custom applications that process or analyze streaming data for specialized needs. Kinesis Data Streams can continuously capture and store terabytes of data per hour from hundreds of thousands of sources such as website clickstreams, financial transactions, social media feeds, IT logs, and location-tracking events. For more information on Amazon Kinesis, please visit the following URL:
<https://aws.amazon.com/kinesis/data-streams/>

Question 18: Skipped

A company has an infrastructure that consist of machines that keep on sending log information every 5 minutes. The number of machines can run into thousands. There should be a requirement to ensure that the data can be analyzed at a later stage. Which of the following would help in fulfilling this requirement.

- A. Use Kinesis Firehose with S3 to take the logs and store them in S3 for further processing (Correct)
- B. Launch an Elastic beanstalk application to take the processing job of the logs
- C. Launch an EC2 instance with enough EBS volumes to consume the logs which can be used for further processing
- D. Use Cloudtrail to store all the logs which can be analyzed at a later stage

Explanation

The AWS Documentation mentions the following which perfectly matches this requirement Amazon Kinesis Data Firehose is the easiest way to load streaming data into data stores and analytics tools. It can capture, transform, and load streaming data into Amazon S3, Amazon Redshift, Amazon Elasticsearch Service, and Splunk, enabling near real-time analytics with existing business intelligence tools and dashboards you're already using today. For more information on Amazon Kinesis firehose, please visit the following URL: <https://aws.amazon.com/kinesis/data-firehose/>

Question 19: Skipped

An application hosted in AWS allows for users to upload videos in an S3 bucket. There is a requirement for a user to upload some videos during one week based on the profile. How can this be accomplished in the best way possible

A. Create an IAM bucket policy to provide access for a week's duration

B. Create a pre-signed URL for each profile which will last for a week's duration

(Correct)

C. Create an S3 bucket policy to provide access for a week's duration

D. Create an IAM role to provide access for a week's duration

Explanation

Pre-signed URL's are the perfect solution when you want to give temporary access to users for S3 buckets. So whenever a new profile is created, you can create a pre-signed URL to ensure that the URL lasts for a week to allow for users to upload the required objects. For more information on pre-signed URL's, please visit the following URL:
<https://docs.aws.amazon.com/AmazonS3/latest/dev/PresignedUrlUploadObject.html>

Question 20: Skipped

A company is planning to use Docker containers and the necessary container orchestration tools for their batch processing requirements. There is a requirement for batch processing for both critical and non-critical data. Which of the following is the best implementation steps for this requirement, to ensure that cost is effectively managed.

A. Use Kubernetes for container orchestration and Reserved instances for all underlying instances

B. Use ECS orchestration and use Reserved instances for all underlying instances

C. Use Docker for container orchestration and a combination of Spot and Reserved instances for the underlying instances

D. Use ECS for container orchestration and a combination of Spot and Reserved instances for the underlying instances

(Correct)

Explanation

The Elastic Container service from AWS can be used for container orchestration. Since there are both critical and non-critical loads, one can use Spot instances for the non-critical workloads for ensuring cost is kept at a minimal. For more information on AWS ECS, please visit the following URL: <https://docs.aws.amazon.com/AmazonECS/latest/developerguide>Welcome.html>

Question 21: Skipped

A company has a requirement for archival of 6 TB of data. There is an agreement with the stakeholders for an 8hr agreed retrieval time. Which of the following can be used as the MOST cost effective storage option.

A. AWS S3 Standard

B. AWS S3 Infrequent Access

C. AWS Glacier

(Correct)

D. AWS EBS Volumes

Explanation

Amazon Glacier is the perfect solution for this. Since the agreed timeframe for retrieval is met at 8h, this will be the most cost effective option. For more information on AWS Glacier, please visit the following URL:
<https://aws.amazon.com/documentation/glacier/>

Question 22: Skipped

A company hosts 5 web servers in AWS. They want to ensure that Route53 can be used to randomly provide users with the web server when they request for the underlying web application. Which routing policy should be used to fulfil this requirement

A. Simple

B. Weighted

C. Multi-Answer

(Correct)

D. Latency

Explanation

The AWS Documentation mentions the following to support this If you want to route traffic approximately randomly to multiple resources, such as web servers, you can create one multivalue answer record for each resource and, optionally, associate an Amazon Route 53 health check with each record. For example, suppose you manage an HTTP web service with a dozen web servers that each have their own IP address. No one web server could handle all of the traffic, but if you create a dozen multivalue answer records, Amazon Route 53 responds to DNS queries with up to eight healthy records in response to each DNS query. Amazon Route 53 gives different answers to different DNS resolvers. If a web server becomes unavailable after a resolver caches a response, client software can try another IP address in the response. For more information on this option, please visit the following URL: <https://aws.amazon.com/about-aws/whats-new/2017/06/amazon-route-53-announces-support-for-multivalue-answers-in-response-to-dns-queries/>

Question 23: Skipped

A company has a requirement for a managed database in AWS. There is a requirement that joins need to be performed on the underlying queries. Which of the following can be used as the underlying database

A. AWS Aurora

(Correct)

B. AWS DynamoDB

C. AWS S3

D. AWS Redshift

Explanation

In this case AWS Aurora would be the perfect choice Option B is incorrect because joins is not supported in DynamoDB Option C is incorrect because this is more an option for object storage Option D is incorrect because this option is better for data warehousing solutions For more information on AWS Aurora please visit the following URL:
<https://docs.aws.amazon.com/AmazonRDS/latest/UserGuide/Aurora.Overview.html>

Question 24: Skipped

A customer wants to create a stream of EBS Volumes in AWS. The customer has a requirement to ensure that data on the volume is encrypted at rest. How can this be achieved?

A. Create an SSL certificate and attach it to the EBS Volume

B. Use KMS to generate encryption keys which can be used to encrypt the volume

(Correct)

C. Use Cloudfront in front of the EBS volume to encrypt all requests.

D. Use EBS snapshots to encrypt the requests.

Explanation

When you create a volume, you have the option to encrypt the volume using keys generated by the Key Management service. For more information on using KMS, please refer to the below URL:
<https://docs.aws.amazon.com/kms/latest/developerguide/services-ebs.html>

Question 25: Skipped

A company has a requirement to store 100 TB of data to AWS. The data will be exported using AWS Snowball. The data needs to then reside in a database layer. The database should have the facility to be queried from a business intelligence application. Each item is roughly 500KB in size. Which of the following is the ideal storage mechanism for the underlying data layer

A. AWS DynamoDB

B. AWS Aurora

C. AWS RDS

D. AWS Redshift

(Correct)

Explanation

For the sheer data size, the ideal storage unit would be to use AWS Redshift. The AWS Documentation mentions the following on AWS 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. The first step to create a data warehouse is to launch a set of nodes, called an Amazon Redshift cluster. After you provision your cluster, you can upload your data set and then perform data analysis queries. Regardless of the size of the data set, Amazon Redshift offers fast query performance using the same SQL-based tools and business intelligence applications that you use today. For more information on AWS Redshift, please refer to the below URL:
<https://docs.aws.amazon.com/redshift/latest/mgmt/welcome.html>

Question 26: Skipped

A company is planning on testing a large set of IoT enabled devices. These devices will be streaming data every second. A proper service needs to be chosen in AWS which could be used to collect and analyze these streams in real time. Which of the following could be used for this purpose.

A. Use AWS EMR to store and process the streams

B. Use AWS Kinesis streams to process and analyze the data

(Correct)

C. Use AWS SQS to store the data

D. Use SNS to store the data

Explanation

The AWS Documentation mentions the following on Amazon Kinesis Amazon Kinesis makes it easy to collect, process, and analyze real-time, streaming data so you can get timely insights and react quickly to new information. Amazon Kinesis offers key capabilities to cost-effectively process streaming data at any scale, along with the flexibility to choose the tools that best suit the requirements of your application. With Amazon Kinesis, you can ingest real-time data such as video, audio, application logs, website clickstreams, and IoT telemetry data for machine learning, analytics, and other applications. For more information on Amazon Kinesis, please refer to the below URL: <https://aws.amazon.com/kinesis/>

Question 27: Skipped

Your company currently has a set of EC2 Instances hosted in AWS. The state of the instances needs to be monitored and each state change needs to be recorded. Which of the following can help fulfil this requirement. Choose 2 answers from the options given below

A. Use Cloudwatch logs to store the state change of the instances

B. Use Cloudwatch Events to monitor the state change of the events

(Correct)

C. Use SQS to trigger a record to be added to a DynamoDB table.

D. Use AWS Lambda to store a change record in a DynamoDB table.

(Correct)

Explanation

Cloudwatch Events can be used to monitor the state change of EC2 Instances. You can choose the Event Source and the Event type as shown below. You can then have a AWS Lambda function as a target which can then be used to store the record in a DynamoDB table. For more information on Cloudwatch events, please refer to the below URL:
<https://docs.aws.amazon.com/AmazonCloudWatch/latest/events/WhatIsCloudWatchEvents.html>

Question 28: Skipped

You have instances hosted in a private subnet in a VPC. There is a need for the instance to download updates from the internet. As an architect what change can you suggest to the IT operations team which would be MOST efficient and secure.

A. Create a new public subnet and move the instance to that subnet

B. Create a new EC2 Instance to download the updates separately and then push them to the required instance.

C. Use a NAT gateway to allow the instances in the private subnet to download the updates

(Correct)

D. Create a VPC link to the internet to allow the instances in the private subnet to download the updates

Explanation

The NAT gateway is the ideal option to ensure that instances in the private subnet have the ability to download updates from the internet. For more information on the NAT gateway, please refer to the below URL:
<https://docs.aws.amazon.com/AmazonVPC/latest/UserGuide/vpc-nat-gateway.html>

Question 29: Skipped

A company has opted to store their cold data on EBS volumes. To ensure optimal cost which of the following would be the ideal EBS volume type to host this type of data.

A. General Purpose SSD

B. Provisioned IOPS SSD

C. Throughput Optimized HDD

D. Cold HDD

(Correct)

Explanation

AWS Documentation also shows that the ideal and cost efficient storage type would be Cold HDD For more information on EBS volume types, please refer to the below URL: <https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/EBSVolumeTypes.html>

Question 30: Skipped

A company is planning to have their application hosted in AWS. The application consists of users uploading files and then having a public URL for downloading them at a later stage. Which of the following designs would help fulfil this requirement

A. Have EBS volumes hosted on EC2 Instances to store the files

B. Use Amazon S3 to host the files

(Correct)

C. Use Amazon Glacier to host the files since this would be the cheapest storage option

D. Use EBS snapshots attached to EC2 Instances to store the files

Explanation

If you need storage for the Internet, then AWS Simple Storage service is the best option. Each file uploaded would automatically get a public URL which could be used to download the file at a later point in time. For more information on Amazon S3, please refer to the below URL: <https://aws.amazon.com/s3/>

Question 31: Skipped

You are planning on hosting a web application on AWS. You create an EC2 Instance in a public subnet. This instance needs to connect to an EC2 Instance that will host an Oracle database. Which of the following steps should be followed to ensure a secure setup is in place

A. Place the EC2 Instance with the Oracle database in the same public subnet as the Web server for faster communication.

B. Place the EC2 Instance with the Oracle database in a separate private subnet

(Correct)

C. Create a database security group and ensure the web security group to allowed incoming access

(Correct)

D. Ensure the database security group allows incoming traffic from 0.0.0.0/0

Explanation

The best secure option is to place the database in a private subnet. The below diagram from the AWS Documentation shows this setup. Also ensure that access is not allowed from all sources but just from the web servers. For more information on this type of setup, please refer to the below URL: https://docs.aws.amazon.com/AmazonVPC/latest/UserGuide/VPC_Scenario2.html

Question 32: Skipped

An EC2 Instance hosts a Java based application that access a DynamoDB table. This EC2 Instance is currently serving production based users. Which of the following is a secure way of ensuring that the EC2 Instance access the DynamoDB table

- A. Use IAM Roles with permissions to interact with DynamoDB and assign it to the EC2 Instance (Correct)
- B. Use KMS keys with the right permissions to interact with DynamoDB and assign it to the EC2 Instance
- C. Use IAM Access Keys with the right permissions to interact with DynamoDB and assign it to the EC2 Instance
- D. Use IAM Access Groups with the right permissions to interact with DynamoDB and assign it to the EC2 Instance

Explanation

To always ensure secure access to AWS resources from EC2 Instances, always ensure to assign a Role to the EC2 Instance. For more information on IAM Roles, please refer to the below URL:
https://docs.aws.amazon.com/IAM/latest/UserGuide/id_roles.html

Question 33: Skipped

A company is planning on building and deploying a web application on AWS. They need to have a data store to store session data. Which of the below services can be used to meet this requirement.

- A. AWS RDS
- B. AWS SQS
- C. AWS ELB
- D. AWS ElastiCache (Correct)

Explanation

The AWS Documentation mentions the following: Amazon ElastiCache offers fully managed Redis and Memcached. Seamlessly deploy, operate, and scale popular open source compatible in-memory data stores. Build data-intensive apps or improve the performance of your existing apps by retrieving data from high throughput and low latency in-memory data stores. Amazon

ElastiCache is a popular choice for Gaming, Ad-Tech, Financial Services, Healthcare, and IoT apps. For more information on ElastiCache, please refer to the below URL: <https://aws.amazon.com/elasticsearch/>

Question 34: Skipped

A company has setup an application in AWS that interacts with DynamoDB. There is a requirement that when an item is modified in a DynamoDB table, an immediate entry is made to an associating application. How can this be accomplished? Choose 2 correct answers.

- A. Setup Cloudwatch to monitor the DynamoDB table for any changes. Then trigger a Lambda function to send the changes to the application.
- B. Setup Cloudwatch logs to monitor the DynamoDB table for any changes. Then trigger AWS SQS to send the changes to the application.
- C. Use DynamoDB streams to monitor the changes to the DynamoDB table
- D. Use an AWS Lambda function on a scheduled basis to monitor the changes to the DynamoDB table (Correct)

Explanation

One can use DynamoDB streams to monitor the changes to a DynamoDB table. The AWS Documentation mentions the following: A DynamoDB stream is an ordered flow of information about changes to items in an Amazon DynamoDB table. When you enable a stream on a table, DynamoDB captures information about every modification to data items in the table. For more information on DynamoDB streams, please refer to the below URL:

<https://docs.aws.amazon.com/amazondynamodb/latest/developerguide/Streams.html> If you enable DynamoDB Streams on a table, you can associate the stream ARN with a Lambda function that you write. Immediately after an item in the table is modified, a new record appears in the table's stream. AWS Lambda polls the stream and invokes your Lambda function synchronously when it detects new stream records. Since we have a requirement that when an item is modified in a DynamoDB table, an immediate entry needs to be made to an associating application, a Lambda function is also required. For more information on DynamoDB streams Lambda, please refer to the below URL:

<https://docs.aws.amazon.com/amazondynamodb/latest/developerguide/Streams.Lambda.html>

Question 35: Skipped

A company currently has an application hosted on their On-premise environment. The application has a combination of web instances with worker instances and Rabbit-MQ for messaging purposes. They now want to move this infrastructure to the AWS Cloud. How could they easily start using messaging on the AWS Cloud?

- A. Continue using Rabbit-MQ. Host is on a separate EC2 Instance.
- B. Make use of AWS SQS to manage the messages (Correct)
- C. Make use of DynamoDB to store the messages
- D. Make use of AWS RDS to store the messages

Explanation

The ideal option would be to make use of AWS Simple Queue Service to manage the messages between the application components. The AWS SQS service is a highly scalable and durable service. For more information on Amazon SQS, please refer to the below URL: <https://aws.amazon.com/sqs/>

Question 36: Skipped

An application currently uses AWS RDS MySQL as their data layer. Recently they have been getting a lot of performance issues on the database. They are planning to separate the querying part of the application by setting up a separate reporting layer. Which of the following additional steps could also potential assist in improving the performance of the underlying database.

A. Make use of Multi-AZ to setup a secondary database in another Availability Zone

B. Make use of Multi-AZ to setup a secondary database in another Region

C. Make use of Read Replica's to setup a secondary read-only database

(Correct)

D. Make use of Read Replica's to setup a secondary read and write database

Explanation

The AWS Documentation mentions the following Amazon RDS Read Replicas provide enhanced performance and durability for database (DB) instances. This feature makes it easy to elastically scale out beyond the capacity constraints of a single DB instance for read-heavy database workloads. You can create one or more replicas of a given source DB Instance and serve high-volume application read traffic from multiple copies of your data, thereby increasing aggregate read throughput. For more information on Amazon Read Replica's, please refer to the below URL: <https://aws.amazon.com/rds/details/read-replicas/>

Question 37: Skipped

A company is asking their developers to store the application logs in an S3 bucket. These logs are only required for a temporary period of time. After this, the logs can be deleted. Which of the following steps can be used to effectively manage this.

A. Create a cron job to detect the stale logs and delete them accordingly.

B. Use a bucket policy to manage the deletion

C. Use an IAM policy to manage the deletion

D. Use S3 lifecycle policies to manage the deletion

(Correct)

Explanation

The AWS Documentation mentions the following which can be used to support the requirement Lifecycle configuration enables you to specify the lifecycle management of objects in a bucket. The configuration is a set of one or more rules, where each rule defines an action for Amazon S3 to apply to a group of objects. These actions can be classified as follows:

- Transition actions - In which you define when objects transition to another storage class. For example, you may choose to transition objects to the STANDARD_IA (IA, for infrequent access) storage class 30 days after creation, or archive objects to the GLACIER storage class one year after creation.
- Expiration actions - In which you specify when the objects expire. Then Amazon S3 deletes the expired objects on your behalf. For more information on S3 lifecycle policies, please refer to the below URL:
<https://docs.aws.amazon.com/AmazonS3/latest/dev/object-lifecycle-mgmt.html>

Question 38: Skipped

A Solutions Architect is developing a document sharing application and needs a storage layer. The storage should provide automatic support for versioning so that users can easily roll back to a previous version or recover a deleted account. Which AWS service will meet the requirements?

A. Amazon S3

(Correct)

B. Amazon EBS

C. Amazon EFS

D. Amazon Storage Gateway VTL

Explanation

Amazon S3 is a perfect storage layer for storing documents and other types of objects. Amazon S3 also has the option for versioning as shown below. The versioning is on the bucket level and can be used to recover prior versions of an object. For more information on Amazon S3, please visit the following URL: <https://aws.amazon.com/s3/>

Question 39: Skipped

You have an application running in us-west-2 that requires 6 EC2 Instances running at all times. With 3 availability zones in that region us-west-2a,us-west-2b,us-west-2c) which of the following deployments provides fault tolerance if any Availability zone in us-west-2 becomes unavailable. Choose 2 answers from the options given below

A. 2 EC2 Instances in us-west-2a, 2 EC2 Instances in us-west-2b, 2 EC2 Instances in us-west-2c

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

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

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

(Correct)

Explanation

Option A is incorrect because if one AZ becomes unavailable, then you would only have 4 instances available which does not meet the requirement. Option B is incorrect because if either us-west-2a or us-west-2b becomes unavailable, then you would only have 3 instances available which does not meet the requirement. Option C is incorrect because if us-west-2a becomes unavailable, then you would only have 4 instances available which does not meet the requirement. For more information on AWS Regions and Availability Zones, please visit the following URL:

<https://docs.aws.amazon.com/AmazonRDS/latest/UserGuide/Concepts.RegionsAndAvailabilityZones.html>

Question 40: Skipped

An application allows manufacturing site to upload files. Each 3 GB file is then processed to extract metadata with the processing taking a few seconds for each file. The frequency updates is unpredictable. There may be no updates for hours then several files uploaded concurrently. What architecture will address this workload the most cost efficiently

- A. Use a Kinesis data delivery stream to store the file and use Lambda for processing
- B. Use an SQS queue to store the file, which is then accessed by a fleet of EC2 Instances.
- C. Store the file in an EBS volume which can then be accessed by another EC2 Instance for processing.
- D. Store the file in an S3 bucket and use Amazon S3 event notification to invoke a Lambda function to process the file

(Correct)

Explanation

One can create a Lambda function which can contain the code to process the file. You can then use the Event notification from the S3 bucket to invoke the Lambda function whenever the file is uploaded. For more information on Amazon S3 event notification, please visit the following URL: <https://docs.aws.amazon.com/AmazonS3/latest/dev/NotificationHowTo.html>

Question 41: Skipped

A company is migrating an on-premise 10TB MySQL database to AWS. The company expects the database to quadruple in size and the business requirement is that replica lag must be kept under 100 milliseconds. Which Amazon RDS engine meets these requirements?

- A. MySQL
- B. Microsoft SQL Server
- C. Oracle

Explanation

The AWS Documentation supports the mentioned requirements which is supported by AWS Aurora Amazon Aurora (Aurora) is a fully managed, MySQL- and PostgreSQL-compatible, relational database engine. It combines the speed and reliability of high-end commercial databases with the simplicity and cost-effectiveness of open-source databases. It delivers up to five times the throughput of MySQL and up to three times the throughput of PostgreSQL without requiring changes to most of your existing applications. All Aurora Replicas return the same data for query results with minimal replica lag—usually much less than 100 milliseconds after the primary instance has written an update For more information on AWS Aurora, please visit the following URL: <http://docs.aws.amazon.com/AmazonRDS/latest/UserGuide/Aurora.Overview.html>

Question 42: Skipped

For which of the following workloads should a Solutions Architect consider using Elastic Beanstalk. Choose 2 answers from the options given below

A. A Web application using Amazon RDS

(Correct)

B. An Enterprise data warehouse

C. A long running worker process

(Correct)

D. A static Website

E. A management task run once nightly

Explanation

The AWS Documentation clearly mentions that the Elastic Beanstalk component can be used to create Web Server environments and Worker environments For more information on AWS Elastic beanstalk Web server environments, please visit the following URL: <https://docs.aws.amazon.com/elasticbeanstalk/latest/dg/concepts-webserver.html>

Question 43: Skipped

An application with a 150 GB relational database runs on an EC2 Instance. The application is used infrequently with small peaks in the morning and evening. What is the MOST cost effective storage type? Choose 2 correct answers.

A. Amazon EBS provisioned IOPS SSD

(Correct)

B. Amazon EBS Throughput Optimized HDD

C. Amazon EBS General Purpose SSD

(Correct)

Explanation

Since the database is used infrequently and really is not used throughout the day and the question mentions the MOST cost effective storage type, you need to choose EBS General Purpose SSD over EBS provisioned IOPS SSD For more information on AWS EBS Volumes, please visit the following URL: <https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/EBSVolumes.html>

Question 44: Skipped

An administrator runs a highly available application in AWS. The Administrator needs a file storage layer that can share between instances and scale the platform more easily. Which AWS service can perform this action?

A. Amazon EBS

B. Amazon EFS

(Correct)

C. Amazon S3

D. Amazon EC2 Instance store

Explanation

The AWS Documentation mentions the following Amazon EFS provides scalable file storage for use with Amazon EC2. You can create an EFS file system and configure your instances to mount the file system. You can use an EFS file system as a common data source for workloads and applications running on multiple instances For more information on AWS EFS, please visit the following URL: <https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/AmazonEFS.html>

Question 45: Skipped

A company runs a service on AWS to provide offsite backups for images on laptops and phones. The solution must support millions of customers with thousands of images per customer. Images will be retrieved infrequently but must be available for retrieval immediately. Which is the MOST cost efficient storage option that meets these requirements?

A. Amazon Glacier with expedited retrievals

B. Amazon S3 Standard Infrequent Access

(Correct)

C. Amazon EFS

D. Amazon S3 Standard

Explanation

Amazon S3 Infrequent access is perfect if you want to store data that is not frequently accessed. It is more cost effective than Option D of Amazon S3 Standard. And if you choose Amazon Glacier with expedited retrievals, then you defeat the whole purpose of the requirement, because you would have an increased cost with this option. For more information on AWS Storage classes, please visit the following URL: <https://aws.amazon.com/s3/storage-classes/>

Question 46: Skipped

A Solutions Architect is designing a solution to store and archive corporate documents and has determined that Amazon Glacier is the right solution. Data must be delivered within 10 minutes of a retrieval request. Which feature in Amazon Glacier can help meet this requirement?

A. Vault Lock

B. Expedited retrieval

(Correct)

C. Bulk retrieval

D. Standard retrieval

Explanation

The AWS Documentation mentions the following: Expedited retrievals allow you to quickly access your data when occasional urgent requests for a subset of archives are required. For more information on AWS Glacier Retrieval, please visit the following URL: <https://docs.aws.amazon.com/amazon-glacier/latest/dev/downloading-an-archive-two-steps.html>

Question 47: Skipped

A data processing application in AWS must pull data from an Internet service. A Solutions Architect must design a highly available solution to access data without placing bandwidth constraints on the application traffic. Which solution meets these requirements?

A. Launch a NAT gateway and add routes for 0.0.0.0/0

B. Attach a VPC endpoint and add routes for 0.0.0.0/0

C. Attach an Internet gateway and add routes for 0.0.0.0/0

(Correct)

D. Deploy NAT instances in a public subnet and add routes for 0.0.0.0/0

Explanation

The AWS Documentation mentions the following: An Internet gateway is a horizontally scaled, redundant, and highly available VPC component that allows communication between instances in your VPC and the Internet. It therefore imposes no availability or performance constraints on traffic to the Internet. For more information on the Internet gateway, please see the following URL: <https://docs.aws.amazon.com/vpc/latest/userguide/internet-gateway.html>

Question 48: Skipped

In reviewing the Auto Scaling events for your application you notice that your application is scaling up and down multiple times in the same hour. What design choice could you make to optimize for cost while preserving elasticity. Choose 2 answers from the options given below

A. Modify the Autoscaling group termination policy to terminate the older instance first

B. Modify the Autoscaling group termination policy to terminate the newest instance first

C. Modify the Autoscaling group cool down timers

(Correct)

D. Modify the Autoscaling group to use scheduled scaling actions

E. Modify the Cloudwatch alarm period that triggers your AutoScaling scale down policy

(Correct)

Explanation

One of the main reasons for this is that not enough time is being given for the scaling activity to take effect and for the entire infrastructure to stabilize after the scaling activity. This can be defined by increasing the Autoscaling group cool down timers. For more information on Autoscaling cooldown, please visit the following URL:

<https://docs.aws.amazon.com/autoscaling/ec2/userguide/Cooldown.html> Another reason is that you have defined the right threshold for the Cloudwatch alarm for the scale down policy. For more information on Autoscaling dynamic scaling, please visit the following URL: <https://docs.aws.amazon.com/autoscaling/ec2/userguide/as-scale-based-on-demand.html>

Question 49: Skipped

A company hosts a popular web application that connects to an Amazon RDS MySQL DB instance running in a private VPC subnet that was created with default ACL settings. The web servers must be accessible only to customers on an SSL connection. The database should only accessible to web servers in a public subnet. Which solution meets these requirements without impacting other running applications? Select 2 answers from the options given below

A. Create a network ACL on the web server's subnets, allow HTTPS port 443 inbound and specify the source as 0.0.0.0/0

B. Create a web server security group that allows HTTPS port 443 inbound traffic from anywhere (0.0.0.0/0) and apply it to the web servers.

(Correct)

C. Create a DB server security group that allows MySQL port 3306 inbound and specify the source as the web server security group

(Correct)

D. Create a network ACL on the DB subnet, allow MySQL port 3306 inbound for web servers and deny all outbound traffic.

- E. Create a DB Server security groups that allows the HTTPS port 443 inbound and specify the source as a web server security group

Explanation

This sort of setup is given in the AWS documentation. 1) To ensure that traffic can flow into your web server from anywhere on secure traffic, you need to allow inbound security at 443 2) And then ensure that traffic can flow from the database server to the web server via the database security group The below snapshot from the AWS Documentation shows the rules tables for the security groups which relate to the same requirements as the question For more information on this use case scenario, please visit the following URL: https://docs.aws.amazon.com/AmazonVPC/latest/UserGuide/VPC_Scenario2.html

Question 50: Skipped

An application will read and write objects to an S3 bucket. When the application is fully deployed, the read/write traffic will be very high. How should the architect maximize Amazon S3 performance?

- A. Prefix each object name with a random string (Correct)
- B. Use the STANDARD_IA storage class
- C. Prefix each object name with the current date
- D. Enable versioning on the S3 bucket

Explanation

If the request rate is high, then you can use hash keys or random strings to prefix the object name. In such a case, the partitions used to store the objects will be better distributed and hence allow for better read/write performance for your objects. For more information on how to ensure performance in S3, please visit the following URL:
<https://docs.aws.amazon.com/AmazonS3/latest/dev/request-rate-perf-considerations.html>

Question 51: Skipped

You are deploying an application on Amazon EC2 that must call AWS API's. What method of securely passing credentials to the application should you use

- A. Pass API credentials to the instance using instance userdata
- B. Store API credentials as an object in Amazon S3
- C. Embed the API credentials into your application
- D. Assign IAM roles to the EC2 Instances (Correct)

Explanation

The AWS Documentation mentions the following You can use roles to delegate access to users, applications, or services that don't normally have access to your AWS resources Its not a best practice to use IAM credentials for any production based application. It's always a good practice to use IAM Roles. For more information on IAM Roles, please visit the following URL: https://docs.aws.amazon.com/IAM/latest/UserGuide/id_roles.html

Question 52: Skipped

A website runs on EC2 Instances behind an ELB Application Load Balancer. The instances run in an AutoScaling Group across multiple Availability Zones. The instances deliver several large files that are stored on a shared Amazon EFS file system. The company needs to avoid serving the files from EC2 Instances every time a user requests these digital assets. What should the company do to improve the user experience of the web site?

A. Move the digital assets to Amazon Glacier

B. Cache static content using Cloudfront (Correct)

C. Resize the images so that they are smaller

D. Use reserved EC2 Instances

Explanation

The AWS Documentation mentions the following on the benefits of using Cloudfront Amazon CloudFront is a web service that speeds up distribution of your static and dynamic web content, such as .html, .css, .js, and image files, to your users. CloudFront delivers your content through a worldwide network of data centers called edge locations. When a user requests content that you're serving with CloudFront, the user is routed to the edge location that provides the lowest latency (time delay), so that content is delivered with the best possible performance. If the content is already in the edge location with the lowest latency For more information on AWS Cloudfront, please visit the following URL:

<https://docs.aws.amazon.com/AmazonCloudFront/latest/DeveloperGuide/Introduction.html>

Question 53: Skipped

A Solutions Architect is designing a highly scalable system to track records. Records must remain available for immediate download for three months and then the records must be deleted. What is the most appropriate decision for this use case?

A. Store the files in Amazon EBS and create a lifecycle policy to remove the files after 3 months.

B. Store the files in Amazon S3 and create a lifecycle policy to remove the files after 3 months. (Correct)

C. Store the files in Amazon Glacier and create a lifecycle policy to remove the files after 3 months.

Explanation

Option A is invalid since the records need to be stored in a highly scalable system Option C is invalid since the records must be available for immediate download Option D is invalid because it does not have the concept of the lifecycle policy The AWS Documentation mentions the following on lifecycle policies Lifecycle configuration enables you to specify the lifecycle management of objects in a bucket. The configuration is a set of one or more rules, where each rule defines an action for Amazon S3 to apply to a group of objects. These actions can be classified as follows:

- Transition actions – In which you define when objects transition to another storage class. For example, you may choose to transition objects to the STANDARD_IA (IA, for infrequent access) storage class 30 days after creation, or archive objects to the GLACIER storage class one year after creation.
- Expiration actions – In which you specify when the objects expire. Then Amazon S3 deletes the expired objects on your behalf. For more information on AWS S3 Lifecycle policies, please visit the following URL:
<https://docs.aws.amazon.com/AmazonS3/latest/dev/object-lifecycle-mgmt.html>

Question 54: Skipped

A consulting firm repeatedly build large architectures for their customers using AWS resources from many AWS services including IAM, Amazon EC2, Amazon RDS, DynamoDB and Amazon VPC. The consultants have architecture diagrams for each of their architectures and they are frustrated that they cannot use them to automatically create their resources. Which service should provide immediate benefits to the organization?

A. AWS Beanstalk

B. AWS Cloudformation

(Correct)

C. AWS CodeBuild

D. AWS CodeDeploy

Explanation

The AWS Documentation mentions the below on AWS Cloudformation. This supplements the requirement in the question for the consultants to use their architecture diagrams to construct cloudformation templates. AWS CloudFormation is a service that helps you model and set up your Amazon Web Services resources so that you can spend less time managing those resources and more time focusing on your applications that run in AWS. You create a template that describes all the AWS resources that you want (like Amazon EC2 instances or Amazon RDS DB instances), and AWS CloudFormation takes care of provisioning and configuring those resources for you. For more information on AWS Cloudformation, please visit the following URL:
<https://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide>Welcome.html>

Question 55: Skipped

The security policy of an organization requires an application to encrypt data before writing to the disk. Which solution should the organization use to meet this requirement?

A. AWS KMS API

(Correct)

B. AWS Certificate Manager

C. API Gateway with STS

D. IAM Access Key

Explanation

Option B is incorrect - The AWS Certificate manager can be used to generate SSL certificates that can be used to encrypt traffic in transit, but not at rest. Option C is incorrect as it is again used for issuing tokens when using API gateway for traffic in transit. Option D is used for secure access to EC2 Instances. The AWS Documentation mentions the following on AWS KMS: AWS Key Management Service (AWS KMS) is a managed service that makes it easy for you to create and control the encryption keys used to encrypt your data. AWS KMS is integrated with other AWS services including Amazon Elastic Block Store (Amazon EBS), Amazon Simple Storage Service (Amazon S3), Amazon Redshift, Amazon Elastic Transcoder, Amazon WorkMail, Amazon Relational Database Service (Amazon RDS), and others to make it simple to encrypt your data with encryption keys that you manage. For more information on AWS KMS, please visit the following URL: <https://docs.aws.amazon.com/kms/latest/developerguide/overview.html>

Question 56: Skipped

An application currently stores all data on Amazon EBS Volumes. All EBS volumes must be backed up durably across multiple Availability Zones. What is the MOST resilient way to backup the volumes?

A. Take regular EBS snapshots

(Correct)

B. Enable EBS volume encryption

C. Create a script to copy data to an EC2 Instance store

D. Mirror data across 2 EBS volumes

Explanation

Option B is incorrect because it does not help in durability of EBS Volumes. Option C is incorrect since EC2 Instance stores are not durable. Option D is incorrect since mirroring data across EBS volumes is inefficient, when you already have the option for EBS snapshots. The AWS Documentation mentions the following on AWS EBS Snapshots: You can back up the data on your Amazon EBS volumes to Amazon S3 by taking point-in-time snapshots. Snapshots are incremental backups, which means that only the blocks on the device that have changed after your most recent snapshot are saved. This minimizes the time required to create the snapshot and saves on storage costs by not duplicating data. When you delete a snapshot, only the data unique to that snapshot is removed. Each snapshot contains all of the information needed to restore your data (from the moment when the snapshot was taken) to a new EBS volume. For more information on AWS EBS Snapshots, please visit the following URL: <https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/EBSSnapshots.html>

Question 57: Skipped

A retailer exports data from its transactional databases daily into an S3 bucket. The retailer's data warehousing team wants to import that data into an existing Amazon Redshift cluster in their VPC. Corporate security policy mandates that the 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

A. Enable Amazon Redshift Enhanced VPC routing

B. Create a cluster security group to allow the Amazon Redshift cluster to access Amazon S3

C. Create a NAT gateway in a public subnet to allow the Amazon Redshift cluster to access Amazon S3.

(Correct)

D. Create and configure an Amazon S3 VPC endpoint.

(Correct)

E. Setup a NAT gateway in a private subnet to allow the Amazon Redshift cluster to Access Amazon S3

Explanation

The AWS Documentation mentions the following on the benefits for using NAT gateways and VPC endpoints for better and secure communication of private resources to public endpoints like S3. You can use a network address translation (NAT) gateway to enable instances in a private subnet to connect to the internet or other AWS services, but prevent the internet from initiating a connection with those instances. For more information on AWS NAT Gateway, please visit the following URL:
<https://docs.aws.amazon.com/AmazonVPC/latest/UserGuide/vpc-nat-gateway.html> A VPC endpoint enables you to privately connect your VPC to supported AWS services and VPC endpoint services powered by PrivateLink without requiring an internet gateway, NAT device, VPN connection, or AWS Direct Connect connection. Instances in your VPC do not require public IP addresses to communicate with resources in the service. Traffic between your VPC and the other service does not leave the Amazon network. For more information on AWS VPC endpoints, please visit the following URL:
<https://docs.aws.amazon.com/AmazonVPC/latest/UserGuide/vpc-endpoints.html>

Question 58: Skipped

A team is building an application that must persist and index JSON files in a highly available data store. Latency of data access must remain consistent despite very high application traffic. Which services should the team choose?

A. Amazon EFS

B. Amazon Redshift

C. DynamoDB

(Correct)

D. AWS Cloudformation

Explanation

The AWS Documentation mentions the following on DynamoDB. Amazon DynamoDB is a fully managed NoSQL database service that provides fast and predictable performance with seamless scalability. The data in DynamoDB is stored in JSON format and hence is the perfect data store for the requirement in the question. For more information on AWS DynamoDB, please visit the following URL: <https://docs.aws.amazon.com/amazondynamodb/latest/developerguide/Introduction.html>

Question 59: Skipped

An organization hosts a multi-language website on AWS. The website is served using Cloudfront. The language is specified in the HTTP request `http://d11111f8.cloudfront.net/main.html?language=de` `http://d11111f8.cloudfront.net/main.html?language=en`. How should AWS Cloudfront be configured to deliver cache data in the correct language?

- A. Forward cookies to the origin
- B. Based on query string parameters
- C. Cache objects at the origin
- D. Serve dynamic content

(Correct)

Explanation

Since the language is specified in the query string parameters, hence the Cloudfront should be configured for query string parameters. For more information on configuring Cloudfront via Query string parameters, please visit the following URL:
<https://docs.aws.amazon.com/AmazonCloudFront/latest/DeveloperGuide/QueryStringParameters.html>

Question 60: Skipped

A Solutions Architect is designing a web page for event registrations and needs a managed service to send a text message to users every time users sign up for an event. Which AWS Service should the Architect use to achieve this?

- A. Amazon STS
- B. Amazon SQS
- C. AWS Lambda
- D. Amazon SNS

(Correct)

Explanation

The AWS Documentation mentions the following: You can use Amazon SNS to send text messages, or SMS messages, to SMS-enabled devices. You can send a message directly to a phone number, or you can send a message to multiple phone numbers at once by subscribing those phone numbers to a topic and sending your message to the topic. For more information on configuring SNS and SMS messages, please visit the following URL:
<https://docs.aws.amazon.com/sns/latest/dg/SMSMessages.html>

Question 61: Skipped

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 must not be able access data from another customer. Which solution should the architect use to meet the requirements?

A. IAM roles for tasks

(Correct)

B. IAM roles for EC2 Instances

C. IAM Instance profile for EC2 Instances

D. Security Group rules

Explanation

The AWS Documentation mentions the following With IAM roles for Amazon ECS tasks, you can specify an IAM role that can be used by the containers in a task. Applications must sign their AWS API requests with AWS credentials, and this feature provides a strategy for managing credentials for your applications to use, similar to the way that Amazon EC2 instance profiles provide credentials to EC2 instances. For more information on configuring IAM Roles for tasks in ECS, please visit the following URL: <https://docs.aws.amazon.com/AmazonECS/latest/developerguide/task-iam-roles.html>

Question 62: Skipped

A company is generating large datasets with millions of rows that must be summarized by column. Existing business intelligence tools will be used to build daily reports. Which storage service meets the requirements?

A. Amazon Redshift

(Correct)

B. Amazon RDS

C. ElastiCache

D. DynamoDB

Explanation

The AWS Documentation mentions the following 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>

Question 63: Skipped

A company is developing a web application that will be hosted in AWS. The application needs to have a data store for session data. As an AWS Solution Architect, which of the following would you recommend for this requirement. Choose 2 answer from the options given below

A. CloudWatch

B. DynamoDB

(Correct)

C. Elastic Load Balancing

D. ElastiCache

(Correct)

E. Storage Gateway

Explanation

DynamoDB and ElastiCache are the perfect options for storing session data. The AWS Documentation mentions the following on these services Amazon DynamoDB is a fast and flexible NoSQL database service for all applications that need consistent, single-digit millisecond latency at any scale. It is a fully managed cloud database and supports both document and key-value store models. Its flexible data model, reliable performance, and automatic scaling of throughput capacity, makes it a great fit for mobile, web, gaming, ad tech, IoT, and many other applications For more information on AWS DynamoDB, please visit the following URL: <https://aws.amazon.com/dynamodb/> ElastiCache is a web service that makes it easy to set up, manage, and scale a distributed in-memory data store or cache environment in the cloud. It provides a high-performance, scalable, and cost-effective caching solution, while removing the complexity associated with deploying and managing a distributed cache environment. For more information on AWS ElastiCache, please visit the following URL: <https://docs.aws.amazon.com/AmazonElastiCache/latest/UserGuide/Whats.html>

Question 64: Skipped

A company needs to store images that are uploaded by users via a mobile application. There is also a need to ensure that there is a security measure in place to protect against users accidentally deleting images. Which action will protect against unintended user actions?

A. Store data in an EBS volume and create snapshots once a week.

B. Store data in an S3 bucket and enable versioning.

(Correct)

C. Store data in two S3 buckets in different AWS regions.

D. Store data on EC2 instance storage

Explanation

Amazon S3 also has the option for versioning as shown below. The versioning is on the bucket level and can be used to recover prior versions of an object. For more information on AWS S3 versioning, please visit the following URL: <https://docs.aws.amazon.com/AmazonS3/latest/dev/Versioning.html>

Question 65: Skipped

An application needs to have a data store hosted in AWS. The following requirements are in place for the data store:
a) Ability to have an initial storage of 8 TB
b) The database will grow by 8 GB every day.
c) The ability to have 4 read replicas
Which of the following data store would you choose for this requirement?

A. DynamoDB

B. Amazon S3

C. Amazon Aurora

D. Amazon Redshift

(Correct)

Explanation

Amazon Redshift has all the features which meet the requirements. The AWS Documentation mentions the following:
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. Amazon Redshift replicates all your data within your data warehouse cluster when it is loaded and also continuously backs up your data to S3. Amazon Redshift always attempts to maintain at least three copies of your data (the original and replica on the compute nodes and a backup in Amazon S3). Redshift can also asynchronously replicate your snapshots to S3 in another region for disaster recovery. For more information on AWS Redshift, please visit the following URL: <https://docs.aws.amazon.com/redshift/latest/mgmt/welcome.html>

Question 66: Skipped

There is a requirement to host a database on an EC2 Instance. There is a requirement for the EBS volume to support 12,000 IOPS. Which Amazon EBS volume type can meet the performance requirements of this database?

A. EBS Provisioned IOPS SSD

(Correct)

B. EBS Throughput Optimized HDD

C. EBS General Purpose SSD

D. EBS Cold HDD

Explanation

Since there is a high performance requirement with high IOPS needed, one needs to opt for EBS Provisioned IOPS SSD. The below snapshot from the AWS Documentation mentions the need of using Provisioned IOPS for better IOPS performance for database based applications. For more information on AWS EBS Volume types, please visit the following URL:
<https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/EBSVolumeTypes.html>

Question 67: Skipped

Question 67: Skipped

Development teams in your organization use S3 buckets to store the log files for various application hosted in development environments in AWS. The developers want to keep the logs for one month for troubleshooting purposes, and then purge the logs. What feature will enable this requirement?

- A. Adding a bucket policy on the S3 bucket.
- B. Configuring lifecycle configuration rules on the S3 bucket. (Correct)
- C. Creating an IAM policy for the S3 bucket.
- D. Enabling CORS on the S3 bucket.

Explanation

The AWS Documentation mentions the following on lifecycle policies. Lifecycle configuration enables you to specify the lifecycle management of objects in a bucket. The configuration is a set of one or more rules, where each rule defines an action for Amazon S3 to apply to a group of objects. These actions can be classified as follows:

- Transition actions – In which you define when objects transition to another storage class. For example, you may choose to transition objects to the STANDARD_IA (IA, for infrequent access) storage class 30 days after creation, or archive objects to the GLACIER storage class one year after creation.
- Expiration actions – In which you specify when the objects expire. Then Amazon S3 deletes the expired objects on your behalf.

For more information on AWS S3 Lifecycle policies, please visit the following URL:
<https://docs.aws.amazon.com/AmazonS3/latest/dev/object-lifecycle-mgmt.html>

Question 68: Skipped

A legacy application needs a proprietary file system. Which of the following can be used to store the data which can be used by an EC2 Instance

- A. AWS EBS Volumes
- B. AWS S3
- C. AWS Glacier
- D. AWS EFS (Correct)

Explanation

The AWS Documentation mentions the following. Amazon Elastic File System (Amazon EFS) provides simple, scalable file storage for use with Amazon EC2 instances in the AWS Cloud. Amazon EFS is easy to use and offers a simple interface that allows you to create and configure file systems quickly and easily. With Amazon EFS, storage capacity is elastic, growing and shrinking automatically as you add and remove files, so your applications have the storage they need, when they need it. When mounted on Amazon EC2 instances, an Amazon EFS file system provides a standard file system interface and file system access semantics, allowing you to seamlessly integrate Amazon EFS with your existing applications and tools. Multiple Amazon EC2 instances can access an Amazon EFS file system at the same time, allowing Amazon EFS to provide a common data source for workloads and applications running on more than one Amazon EC2 instance. For more information on AWS EFS, please visit the following URL:
<https://aws.amazon.com/efs/>

Question 69: Skipped

Which of the following can be used to host an application which uses NGINX and can be scaled at any point in time

A. AWS EC2

B. AWS Elastic Beanstalk

(Correct)

C. AWS SQS

D. AWS ELB

Explanation

The below snippet from the AWS Documentation shows the server available for Web server environments that can be created via Elastic Beanstalk. The server shows that nginx servers can be provisioned via the Elastic Beanstalk service. For more information on the supported platforms for AWS Elastic beanstalk, please visit the following URL:
<https://docs.aws.amazon.com/elasticbeanstalk/latest/dg/concepts.platforms.html>

Question 70: Skipped

There is a requirement to upload a million images to S3. Which of the following can be used to ensure optimal performance

A. Use a sequential ID for the prefix

B. Use a hexadecimal hash for the prefix

(Correct)

C. Use a hexadecimal hash for the suffix

D. Use a sequential ID for the suffix

Explanation

This recommendation for increasing performance if you have a high request rate in S3 is given in the AWS documentation. For more information on S3 performance considerations, please visit the following URL:
<https://docs.aws.amazon.com/AmazonS3/latest/dev/request-rate-perf-considerations.html>

Question 71: Skipped

There is a requirement to get the IP address for resources accessed in a private subnet. Which of the following can be used

A. Trusted Advisor

B. VPC Flow Logs

(Correct)

C. Use Cloudwatch metrics

D. Use Cloudtrail

Explanation

The AWS Documentation mentions the following VPC Flow Logs is a feature that enables you to capture information about the IP traffic going to and from network interfaces in your VPC. Flow log data is stored using Amazon CloudWatch Logs. After you've created a flow log, you can view and retrieve its data in Amazon CloudWatch Logs. For more information on VPC Flow Logs, please visit the following URL: <https://docs.aws.amazon.com/AmazonVPC/latest/UserGuide/flow-logs.html>

Question 72: Skipped

There is a requirement for 500 message to be sent and processed in order. Which service can be used in this regard?

A. AWS SQS

(Correct)

B. AWS SNS

C. AWS Config

D. AWS ELB

Explanation

One can use SQS FIFO queues for this purpose. The AWS Documentation mentions the following on SQS FIFO Queues. Amazon SQS is a reliable and highly-scalable managed message queue service for storing messages in transit between application components. FIFO queues complement the existing Amazon SQS standard queues, which offer high throughput, best-effort ordering, and at-least-once delivery. FIFO queues have essentially the same features as standard queues, but provide the added benefits of supporting ordering and exactly-once processing. FIFO queues provide additional features that help prevent unintentional duplicates from being sent by message producers or from being received by message consumers. Additionally, message groups allow multiple separate ordered message streams within the same queue. For more information on SQS FIFO Queues, please visit the following URL: <https://aws.amazon.com/about-aws/whats-new/2016/11/amazon-sqs-introduces-fifo-queues-with-exactly-once-processing-and-lower-prices-for-standard-queues/>

Question 73: Skipped

There is a requirement for a database for a two tier application. The data would go through multiple schema changes. The database needs to be durable and also changes to the database should not result in downtime for the database. Which of the following is the best option for data storage

A. AWS S3

B. AWS Redshift

C. AWS DynamoDB

(Correct)

D. AWS Aurora

Explanation

AWS DynamoDB is a database that is schema-less and hence is ideal if you have multiple schema changes. It is also durable. Option A is incorrect because S3 is an object storage device and not a database. Option B is more of a data warehousing solution. Option D needs support for a constant schema and hence is not an ideal solution. For more information on AWS Aurora, please visit the following URL: <http://docs.aws.amazon.com/AmazonRDS/latest/UserGuide/Aurora.Overview.html>

Question 74: Skipped

A redshift cluster currently contains 60TB of data. There is a requirement to ensure a disaster recovery site in a region located 600 KM away is put in place. Which of the following solutions would help ensure that this requirement is fulfilled.

A. Take a copy of the underlying EBS volumes to S3 and then do cross region replication

B. Enable cross region snapshots for the Redshift Cluster

(Correct)

C. Create a Cloudformation template to restore the Cluster in another region

D. Enable cross availability zone snapshots for the Redshift Cluster

Explanation

The diagram in the article shows that snapshots are available for Redshift clusters which enables clusters to be available in different regions. For more information on managing Redshift snapshots, please visit the following URL: <https://docs.aws.amazon.com/redshift/latest/mgmt/managing-snapshots-console.html>

Question 75: Skipped

A company is using a Redshift cluster to store their data warehouse. There is a requirement from the Internal IT Security team to ensure that data gets encrypted for the Redshift database. How can this be achieved?

A. Encrypt the EBS volumes of the underlying EC2 Instances

B. Use AWS KMS Customer Default master key

(Correct)

C. Use SSL/TLS for encrypting the data

D. Use S3 Encryption

Explanation

The AWS Documentation mentions the following Amazon Redshift uses a hierarchy of encryption keys to encrypt the database. You can use either AWS Key Management Service (AWS KMS) or a hardware security module (HSM) to manage the top-level encryption keys in this hierarchy. The process that Amazon Redshift uses for encryption differs depending on how you manage keys. For more information on Redshift encryption, please visit the following URL:
<https://docs.aws.amazon.com/redshift/latest/mgmt/working-with-db-encryption.html>

Question 76: Skipped

There is a requirement for block level storage which would be able to store 500GB of data. Also encryption of the data is required. Which of the following can be used in such a case

A. AWS EBS Volumes

(Correct)

B. AWS S3

C. AWS Glacier

D. AWS EFS

Explanation

When you consider block level storage , then you need to consider EBS Volumes. Option B and C is incorrect since they are object level storage. Option D is incorrect since this is file level storage For more information on EBS volumes, please visit the following URL: <https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/EBSVolumes.html>

Question 77: Skipped

An application requires an EC2 Instance to do continuously batch processing activities which requires at least 500MiB/s throughput of data. Which of the following is the best storage option for this.

A. EBS IOPS

B. EBS SSD

C. EBS Throughput Optimized

(Correct)

- D. EBS Cold Storage

Explanation

When you are considering storage volume types for batch processing activities with large throughput , then consider using EBS Throughput Optimized volume type. This is also mentioned in the AWS Documentation For more information on EBS volume types, please visit the following URL: <https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/EBSVolumeTypes.html>

Question 78: Skipped

An application needs to access data in another AWS account in the same region. Which of the following can be used to ensure data can be accessed as required

- A. Establish a NAT instance between both accounts

- B. Use a VPN between both accounts

- C. Use a NAT gateway between both accounts

- D. Use VPC Peering between both accounts

(Correct)

Explanation

Option A and C are incorrect because you normally use these options when you want private resources to access the Internet. Option B is incorrect since the resources are in the same region, so you don't need a VPN connection. The AWS Documentation mentions the following about VPC Peering A VPC peering connection is a networking connection between two VPCs that enables you to route traffic between them privately. Instances in either VPC can communicate with each other as if they are within the same network. You can create a VPC peering connection between your own VPCs, with a VPC in another AWS account, or with a VPC in a different AWS Region. For more information on VPC Peering, please visit the following URL: <https://docs.aws.amazon.com/AmazonVPC/latest/UserGuide/vpc-peering.html>

Question 79: Skipped

An application currently uses a NAT instance and now wants to use a NAT gateway. Which of the following can be used to accomplish this

- A. Use NAT Instances along with the NAT Gateway

- B. Host the NAT Instance in the private subnet

- C. Migrate NAT Instance to NAT Gateway and host the NAT Gateway in the public subnet

(Correct)

Explanation

Once can simple start using the NAT gateway service and stop using the deployed NAT instances. But you need to ensure that the NAT gateway is deployed in the public subnet For more information on migrating to a NAT gateway, please visit the following URL: <https://aws.amazon.com/premiumsupport/knowledge-center/migrate-nat-instance-gateway/>

Question 80: Skipped

An application running on EC2 instances processes sensitive information stored on Amazon S3. The information is accessed over the Internet. The security team is concerned that the Internet connectivity to Amazon S3 is a security risk. Which solution will resolve the security concern?

- A. Access the data through an Internet Gateway.
- B. Access the data through a VPN connection.
- C. Access the data through a NAT Gateway.
- D. Access the data through a VPC endpoint for Amazon S3

(Correct)

Explanation

The AWS Documentation mentions the following A VPC endpoint enables you to privately connect your VPC to supported AWS services and VPC endpoint services powered by PrivateLink without requiring an internet gateway, NAT device, VPN connection, or AWS Direct Connect connection. Instances in your VPC do not require public IP addresses to communicate with resources in the service. Traffic between your VPC and the other service does not leave the Amazon network. For more information on VPC endpoints, please refer to the below URL: <https://docs.aws.amazon.com/AmazonVPC/latest/UserGuide/vpc-endpoints.html>

Question 81: Skipped

You have setup a Redshift cluster in AWS. You are trying to access the Redshift Cluster, but are not able to do so. What can be done to ensure you can access the Redshift Cluster?

- A. Ensure the Cluster is created in the right Availability Zone
- B. Ensure the Cluster is created in the right Region
- C. Change the security groups for the cluster
- D. Change the encryption key associated with the cluster

(Correct)

Explanation

The AWS Documentation mentions the following When you provision an Amazon Redshift cluster, it is locked down by default so nobody has access to it. To grant other users inbound access to an Amazon Redshift cluster, you associate the cluster with a security group. For more information on Redshift Security Groups, please refer to the below URL:
<https://docs.aws.amazon.com/redshift/latest/mgmt/working-with-security-groups.html>

Question 82: Skipped

You have a web application hosted on an EC2 Instance in AWS. The application is now being accessed by users across the globe. The Operations team is getting support requests from users in some parts that is experiencing extreme slowness. What can be done to the architecture to improve the response time for users?

- A. Add more EC2 Instances to support the load
- B. Change the Instance type to a higher instance type
- C. Add Route53 health checks to improve the performance
- D. Place the EC2 Instance behind Cloudfront

(Correct)

Explanation

The AWS Documentation mentions the following Amazon CloudFront is a web service that speeds up distribution of your static and dynamic web content, such as .html, .css, .js, and image files, to your users. CloudFront delivers your content through a worldwide network of data centers called edge locations. When a user requests content that you're serving with CloudFront, the user is routed to the edge location that provides the lowest latency (time delay), so that content is delivered with the best possible performance. For more information on Amazon Cloudfront, please refer to the below URL:
<https://docs.aws.amazon.com/AmazonCloudFront/latest/DeveloperGuide/Introduction.html>

Question 83: Skipped

You currently have a NAT gateway defined for your private instances. You need to make the NAT gateway highly available. How can this be accomplished?

- A. Create another NAT gateway and place is behind an ELB
- B. Create a NAT gateway in another Availability Zone
- C. Create a NAT gateway in another Region
- D. Use Autoscaling groups to scale the NAT gateway

(Correct)

Explanation

The AWS Documentation mentions the following If you have resources in multiple Availability Zones and they share one NAT gateway, in the event that the NAT gateway's Availability Zone is down, resources in the other Availability Zones lose internet access. To create an Availability Zone-independent architecture, create a NAT gateway in each Availability Zone and configure your routing to ensure that resources use the NAT gateway in the same Availability Zone. For more information on the NAT gateway, please refer to the below URL: <https://docs.aws.amazon.com/AmazonVPC/latest/UserGuide/vpc-nat-gateway.html>

Question 84: Skipped

A company wants to have a fully managed data store in AWS. It should be a compatible MySQL database , since it is an application requirement. Which of the following database can be used for this purpose.

A. AWS RDS

B. AWS Aurora

(Correct)

C. AWS DynamoDB

D. AWS Redshift

Explanation

The AWS Documentation mentions the following Amazon Aurora (Aurora) is a fully managed, MySQL- and PostgreSQL-compatible, relational database engine. It combines the speed and reliability of high-end commercial databases with the simplicity and cost-effectiveness of open-source databases. It delivers up to five times the throughput of MySQL and up to three times the throughput of PostgreSQL without requiring changes to most of your existing applications. For more information on AWS Aurora, please refer to the below URL: <https://docs.aws.amazon.com/AmazonRDS/latest/UserGuide/Aurora.Overview.html>

Question 85: Skipped

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. Which VPC design meets these requirements?

A. Public subnets for both the application tier and the database cluster

B. Public subnets for the application tier, and private subnets for the database cluster

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

(Correct)

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

Explanation

The diagram from the AWS Documentation shows the right setup for this. For more information on this setup, please refer to the below URL: <https://docs.aws.amazon.com/AmazonVPC/latest/UserGuide/vpc-nat-gateway.html>

Question 86: Skipped

A mobile based application has the need to upload images to S3. But as an architect you don't want to make use of the existing web server to upload the images due to the load it would incur. How could this be handled?

A. Create a secondary S3 bucket. Then use an AWS Lambda to sync the contents to the primary bucket

B. Use pre-signed URL's instead to upload the images

(Correct)

C. Use ECS containers to upload the images

D. Upload the images to SQS and then push them to the S3 bucket

Explanation

One can directly create a pre-signed URL for the images to be uploaded. So the S3 bucket owner can create the pre-signed URL's to upload the images to S3. For more information on pre-signed URL's, please refer to the below URL:
<https://docs.aws.amazon.com/AmazonS3/latest/dev/PresignedUrlUploadObject.html>

Question 87: Skipped

A company has a requirement to use the AWS RDS service to host a MySQL database. The database is going to be used for production purposes. It is expected that the database will experience a higher number of read/write activities. Which of the below underlying EBS volume type would be ideal for the database

A. General Purpose SSD

B. Provisioned IOPS SSD

(Correct)

C. Throughput Optimized HDD

D. Cold HDD

Explanation

The snapshot from the AWS Documentation also shows that the ideal storage option is Provisioned IOPS SSD because this will provide a high number of IOPS for the underlying database. For more information on EBS volume types, please refer to the below URL: <https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/EBSVolumeTypes.html>

Question 88: Skipped

You have a set of On-premise virtual machines which are used to serve a web based application. This is placed behind an On-premise load balanced solution. You need to ensure that if a virtual machine is unhealthy, then it should be taken out of rotation. Which of the following would quickly help fulfil this requirement.

A. Use Route53 health checks to monitor the endpoints

(Correct)

B. Move the solution to AWS and use a Classic load balancer

C. Move the solution to AWS and use an Application load balancer

D. Move the solution to AWS and use a Network load balancer

Explanation

Route53 health checks can be used for any endpoint which can be accessed via the Internet. Hence this would be an ideal option for monitoring the endpoints. The AWS Documentation mentions the following: You can configure a health check that monitors an endpoint that you specify either by IP address or by domain name. At regular intervals that you specify, Route 53 submits automated requests over the internet to your application, server, or other resource to verify that it's reachable, available and functional. For more information on Route53 Health checks, please refer to the below URL:
<https://docs.aws.amazon.com/Route53/latest/DeveloperGuide/dns-failover-simple-configs.html>

Question 89: Skipped

A company has a set of web servers. They want to ensure that all the logs from these web servers can be analyzed in real time for any sort of threat detection. Which of the following would assist in this regard

A. Upload all the logs to the SQS service and then use EC2 Instances to scan the logs

B. Upload the logs to Amazon Kinesis and then analyze the logs accordingly.

(Correct)

C. Upload the logs to Cloudtrail and then analyze the logs accordingly.

D. Upload the logs to Glacier and then analyze the logs accordingly.

Explanation

The AWS Documentation provides the following information that can be used to support this requirement: Amazon Kinesis makes it easy to collect, process, and analyze real-time, streaming data so you can get timely insights and react quickly to new information. Amazon Kinesis offers key capabilities to cost-effectively process streaming data at any scale, along with the flexibility to choose the tools that best suit the requirements of your application. With Amazon Kinesis, you can ingest real-time data such as video, audio, application logs, website clickstreams, and IoT telemetry data for machine learning, analytics, and other applications. For more information on Amazon Kinesis, please refer to the below URL: <https://aws.amazon.com/kinesis/>

Question 90: Skipped

You currently have the following architecture in AWS.a. A couple of EC2 Instances located in us-west-2ab. The EC2 Instances are launched via an Autoscaling groupc. The EC2 Instances sit behind a Classic ELBWhich of the following additional steps should be taken to ensure the above architecture conforms to a well architected framework

- A. Convert the classic ELB to an Application ELB
- B. Add an additional Autoscaling Group
- C. Add additional EC2 Instances to us-west-2a
- D. Add or spread existing instances across multiple Availability Zones

(Correct)

Explanation

The AWS Documentation provides the following information to support this concept Balancing resources across Availability Zones is a best practice for well-architected applications, as this greatly increases aggregate system availability. Auto Scaling automatically balances EC2 instances across zones when you configure multiple zones in your Auto Scaling group settings. Auto Scaling always launches new instances such that they are balanced between zones as evenly as possible across the entire fleet. For more information on Managing resources with Autoscaling, please refer to the below URL:
<https://aws.amazon.com/blogs/compute/fleet-management-made-easy-with-auto-scaling/>

Question 91: Skipped

Your company manages an application that currently allows users to upload images to an S3 bucket. These images are then picked up by EC2 Instances for processing and then placed in another S3 bucket. You need an area where the metadata for these images can be stored. Which of the following would be the ideal data store for this.

- A. AWS Redshift
- B. AWS Glacier
- C. AWS DynamoDB
- D. AWS SQS

(Correct)

Explanation

Option A is incorrect because this is normally used for petabyte based storage Option B is incorrect because this is used for archive storage Option D is incorrect because this used for messaging purposes. AWS DynamoDB is the best light weight and durable storage option for the metadata. For more information on DynamoDB, please refer to the below URL:
<https://aws.amazon.com/dynamodb/>

Question 92: Skipped

An application team needs to quickly provision a development environment which consists of a web and database layer. Which of the following would be quickest and ideal to get this setup in place

- A. Create Spot instances and install the Web and database components.
- B. Create reserved instances and install the Web and database components.
- C. Use AWS Lambda to create the web components and AWS RDS for the database layer.
- D. Use Elastic Beanstalk to quickly provision the environment

(Correct)

Explanation

The AWS Documentation mentions the following With Elastic Beanstalk, you can quickly deploy and manage applications in the AWS Cloud without worrying about the infrastructure that runs those applications. AWS Elastic Beanstalk reduces management complexity without restricting choice or control. You simply upload your application, and Elastic Beanstalk automatically handles the details of capacity provisioning, load balancing, scaling, and application health monitoring For more information on AWS Elastic beanstalk, please refer to the below URL: <https://docs.aws.amazon.com/elasticbeanstalk/latest/dg/Welcome.html>

Question 93: Skipped

A company has a requirement for having a file system which can be used across a set of instances. Which of the following storage options would be ideal for this requirement

- A. AWS S3
- B. AWS EBS Volumes
- C. AWS EFS
- D. AWS EBS snapshots

(Correct)

Explanation

Amazon EFS provides scalable file storage for use with Amazon EC2. You can create an EFS file system and configure your instances to mount the file system. You can use an EFS file system as a common data source for workloads and applications running on multiple instances For more information on AWS EFS, please visit the following URL: <https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/AmazonEFS.html>

Question 94: Skipped

A company has an application that stores images and thumbnails for those images on S3. The thumbnail images itself need

to be available for download immediately, while the images themselves are not accessed that frequently. Which is the MOST cost efficient storage option that meets these requirements?

A. Amazon Glacier with expedited retrievals

B. Amazon S3 Standard Infrequent Access

(Correct)

C. Amazon EFS

D. Amazon S3 Standard

Explanation

Amazon S3 Infrequent access is perfect if you want to store data that is not frequently accessed. It is more cost effective than Option D of Amazon S3 Standard. And if you choose Amazon Glacier with expedited retrievals, then you defeat the whole purpose of the requirement, because you would have an increased cost with this option. For more information on AWS Storage classes, please visit the following URL: <https://aws.amazon.com/s3/storage-classes/>

Question 95: Skipped

You have an EC2 Instance placed inside a subnet. You have created the VPC from scratch and the subnet and then added the EC2 Instance to the subnet. You need to ensure that the EC2 instance has complete access to the Internet, since it is going to be used by users on the Internet. Which of the following would help ensure this can be accomplished.

A. Launch a NAT gateway and add routes for 0.0.0.0/0

B. Attach a VPC endpoint and add routes for 0.0.0.0/0

C. Attach an Internet gateway and add routes for 0.0.0.0/0

(Correct)

D. Deploy NAT instances in a public subnet and add routes for 0.0.0.0/0

Explanation

The AWS Documentation mentions the following: An Internet gateway is a horizontally scaled, redundant, and highly available VPC component that allows communication between instances in your VPC and the Internet. It therefore imposes no availability risks or bandwidth constraints on your network traffic. For more information on the Internet gateway, please visit the following URL: https://docs.aws.amazon.com/AmazonVPC/latest/UserGuide/VPC_Internet_Gateway.html

Question 96: Skipped

You have an application hosted on AWS. It consists of EC2 instances launched via an Autoscaling Group. You are noticing that the EC2 instances are not scaling up on demand. What checks can be done to ensure that the scaling can occur as expected.

A. Ensure that the right metrics are being used to trigger the scale out.

(Correct)

B. Ensure that ELB health checks are being used

C. Ensure that the instances are placed across multiple Availability Zones

D. Ensure that the instances are placed across multiple Regions

Explanation

If scaling events are not based on the right metrics and have the right threshold defined, then the scaling will not occur as you want it to happen. For more information on Autoscaling Dynamic Scaling, please visit the following URL:
<https://docs.aws.amazon.com/autoscaling/ec2/userguide/as-scale-based-on-demand.html>

Question 97: Skipped

A company hosts a popular web application that connects to an Amazon RDS MySQL DB instance running in a private VPC subnet that was created with default ACL settings. The web servers must be accessible only to customers on an SSL connection. The database should only be accessible to web servers in a public subnet. As an architect which of the following would you not recommend for such an architecture?

A. Ensure to create a separate web server and database server security group

B. Ensure the web server security group allows HTTPS port 443 inbound traffic from anywhere (0.0.0.0/0) and apply it to the web servers.

C. Ensure the web server security group allows MySQL port 3306 inbound traffic from anywhere (0.0.0.0/0) and apply it to the web servers.

(Correct)

D. Ensure the DB server security group allows MySQL port 3306 inbound and specify the source as the web server security group

Explanation

This sort of setup is given in the AWS documentation. 1) To ensure that traffic can flow into your web server from anywhere on secure traffic, you need to allow inbound security at 443 2) And then ensure that traffic can flow from the database server to the web server via the database security group. The snapshot from the AWS Documentation shows the rules tables for the security groups which relate to the same requirements as the question. For more information on this use case scenario, please visit the following URL: https://docs.aws.amazon.com/AmazonVPC/latest/UserGuide/VPC_Scenario2.html

Question 98: Skipped

You have an application hosted on AWS that writes images to an S3 bucket. The concurrent number of users on the application is expected to reach around 10,000 with around 500 reads and write expected per second. How should the architect maximize Amazon S3 performance?

A. Prefix each object name with a random string

(Correct)

B. Use the STANDARD_IA storage class

C. Prefix each object name with the current date

D. Enable versioning on the S3 bucket

Explanation

If the request rate is high, then you can use hash keys or random strings to prefix the object name. In such a case, the partitions used to store the objects will be better distributed and hence allow for better read/write performance for your objects. For more information on how to ensure performance in S3, please visit the following URL:

<https://docs.aws.amazon.com/AmazonS3/latest/dev/request-rate-perf-considerations.html>

Question 99: Skipped

A company has an entire infrastructure hosted on AWS. They want to create code templates which can be used to provision the same set of resources in another region in case of a disaster in the primary region. Which of the following services can help in this regard

A. AWS Beanstalk

B. AWS Cloudformation

(Correct)

C. AWS CodeBuild

D. AWS CodeDeploy

Explanation

The AWS Documentation provides the following information to support this requirement AWS CloudFormation provisions your resources in a safe, repeatable manner, allowing you to build and rebuild your infrastructure and applications, without having to perform manual actions or write custom scripts. CloudFormation takes care of determining the right operations to perform when managing your stack, and rolls back changes automatically if errors are detected. For more information on AWS Cloudformation, please visit the following URL:

[Question 100: Skipped](https://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide>Welcome.html</p></div><div data-bbox=)

A company has a set of EBS volumes that need to be catered to in case of a disaster. How could one achieve this in an efficient manner using the existing AWS services?

A. Create a script to copy the EBS volume to another availability zone

B. Create a script to copy the EBS volume to another region

C. Use EBS Snapshots to create the volumes in another region

(Correct)

D. Use EBS Snapshots to create the volumes in another Availability Zone

Explanation

Option A and B are incorrect, because you can't directly copy EBS volumes. Option D is incorrect, because disaster recovery always looks at ensuring resources are created in another region. The AWS Documentation provides the following information to support this requirement: A snapshot is constrained to the region where it was created. After you create a snapshot of an EBS volume, you can use it to create new volumes in the same region. For more information, see Restoring an Amazon EBS Volume from a Snapshot. You can also copy snapshots across regions, making it possible to use multiple regions for geographical expansion, data center migration, and disaster recovery. For more information on EBS Snapshots, please visit the following URL: <https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/EBSSnapshots.html>

Question 101: Skipped

Your company currently has a web distribution hosted using the AWS Cloudfront service. The IT Security department has now confirmed that the application using this web distribution now falls under the scope of PCI compliance. Which of the following steps need to be carried out to ensure that the compliance objectives can be met.

A. Enable CloudFront access logs.

(Correct)

B. Enable Cache in Cloudfront

C. Capture requests that are sent to the CloudFront API.

(Correct)

D. Enable VPC Flow Logs

Explanation

The AWS Documentation mentions the following: If you run PCI or HIPAA-compliant workloads, based on the AWS Shared Responsibility Model, we recommend that you log your CloudFront usage data for the last 365 days for future auditing purposes. To log usage data, you can do the following: · Enable CloudFront access logs. · Capture requests that are sent to the CloudFront API. For more information on compliance with Cloudfront, please visit the following URL: <https://docs.aws.amazon.com/AmazonCloudFront/latest/DeveloperGuide/compliance.html>

Question 102: Skipped

You need to host a subscription service in AWS. Users can subscribe to this service and then get notifications on new updates to the service. Which of the following service can be used to fulfil this requirement

A. Use the SQS service to send the notification

B. Host an EC2 Instance and use the Rabbit-MQ service to send the notification

C. Use the SNS service to send the notification

(Correct)

D. Use the AWS DynamoDB streams to send the notification

Explanation

Use the SNS service to send the notification. The AWS Documentation mentions the following: Amazon Simple Notification Service (Amazon SNS) is a web service that coordinates and manages the delivery or sending of messages to subscribing endpoints or clients. For more information on AWS SNS, please visit the following URL:

<https://docs.aws.amazon.com/sns/latest/dg/welcome.html>

Question 103: Skipped

Your company has a set of EC2 Instances hosted in AWS. They now have a mandate to prepare for a disaster and come up with the necessary disaster recovery procedures. Which of the following would help in the mitigating the effects of a disaster for the EC2 instances

A. Place an ELB in front of the EC2 Instances

B. Use Autoscaling to ensure the minimum number of instances are always running

C. Use Cloudfront in front of the EC2 Instances

D. Use AMI's to recreate the EC2 Instances in another region

(Correct)

Explanation

One can create an AMI from the EC2 instances and then copy them to another region. In case of a disaster, you can create an EC2 Instance from the AMI. Option A and B are good options for fault tolerance, but cannot help completely in a disaster recovery for the EC2 Instances. Option C is incorrect because we don't know what is hosted on the EC2 instance to make any sort of judgement as to whether CloudFront can be helpful in this scenario. For more information on AWS AMI's, please visit the following URL: <https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/AMIs.html>

Question 104: Skipped

A company currently hosts a Redshift cluster in AWS. Due to security reasons it needs to be ensured that all traffic from and to the Redshift cluster does not go through the Internet. Which of the following features can be used to fulfil this requirement in an efficient manner

A. Enable Amazon Redshift Enhanced VPC routing

(Correct)

B. Create a NAT gateway to route the traffic

C. Create a NAT instance to route the traffic

D. Create a VPN connection to ensure traffic does not flow through the internet

Explanation

The AWS Documentation mentions the following When you use Amazon Redshift Enhanced VPC Routing, Amazon Redshift forces all COPY and UNLOAD traffic between your cluster and your data repositories through your Amazon VPC. If Enhanced VPC Routing is not enabled, Amazon Redshift routes traffic through the Internet, including traffic to other services within the AWS network. For more information on redshift Enhanced routing, please visit the following URL:
<https://docs.aws.amazon.com/redshift/latest/mgmt/enhanced-vpc-routing.html>

Question 105: Skipped

A company has a set of Hyper-V machines and VM ware virtual machines. They are now planning on migrating these instances to the AWS Cloud. Which of the following can be used to move these resources to the AWS Cloud.

A. DB Migration utility

B. Use the VM import tools

(Correct)

C. Use AWS Migration tools

D. Use AWS Config tools

Explanation

The AWS Documentation mentions the following You can import Windows and Linux VMs that use VMware ESX or Workstation, Microsoft Hyper-V, and Citrix Xen virtualization formats. For more information on VM Import, please visit the following URL:
<https://aws.amazon.com/ec2/vm-import/>

Question 106: Skipped

A company has a set of Linux based instances on their On-premise infrastructure. They want to have an equivalent block storage device on AWS which can be used to store the same datasets as on the Linux based instances. As an architect which of the following storage device would you recommend

A. AWS EBS

(Correct)

B. AWS S3

C. AWS EFS

D. AWS DynamoDB

Explanation

The AWS Documentation mentions the following on EBS Volumes Amazon Elastic Block Store (Amazon EBS) provides block level storage volumes for use with EC2 instances. EBS volumes are highly available and reliable storage volumes that can be attached to any running instance that is in the same Availability Zone. EBS volumes that are attached to an EC2 instance are exposed as storage volumes that persist independently from the life of the instance For more information on Amazon EBS, please visit the following URL: <https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/AmazonEBS.html>

Question 107: Skipped

A company has a set of Admin jobs which are currently setup in the C# programming language. They are moving their infrastructure to AWS. Which of the following would be an efficient means of hosting the admin related jobs in AWS

A. Use AWS DynamoDB to store the jobs and then run them on demand

B. Use AWS Lambda functions with C# for the Admin jobs

(Correct)

C. Use AWS S3 to store the jobs and then run them on demand

D. Use AWS Config functions with C# for the Admin jobs

Explanation

The best and most efficient option is to host the jobs using AWS Lambda. This service has the facility to have code run in the C# programming language. The AWS Documentation mentions the following on AWS Lambda AWS Lambda is a compute service that lets you run code without provisioning or managing servers. AWS Lambda executes your code only when needed and scales automatically, from a few requests per day to thousands per second. You pay only for the compute time you consume - there is no charge when your code is not running. With AWS Lambda, you can run code for virtually any type of application or backend service - all with zero administration For more information on AWS Lambda, please visit the following URL: <https://docs.aws.amazon.com/lambda/latest/dg/welcome.html>

Question 108: Skipped

Your company has a set of resources hosted on the AWS Cloud. As part of the new governing model, there is a requirement that all activity on AWS resources be monitored. What is the most efficient way to have this implemented?

A. Use VPC flow logs to monitor all activity in your VPC

B. Use AWS Trusted Advisor to monitor all of your AWS resources

C. Use AWS Inspector to inspect all of the resources in your account

D. Use AWS Cloudtrail to monitor all API activity

(Correct)

Explanation

The AWS Documentation mentions the following on AWS Cloudtrail: AWS CloudTrail is a service that enables governance, compliance, operational auditing, and risk auditing of your AWS account. With CloudTrail, you can log, continuously monitor, and retain account activity related to actions across your AWS infrastructure. CloudTrail provides event history of your AWS account activity, including actions taken through the AWS Management Console, AWS SDKs, command line tools, and other AWS services. This event history simplifies security analysis, resource change tracking, and troubleshooting. For more information on AWS Cloudtrail, please visit the following URL: <https://aws.amazon.com/cloudtrail/>

Question 109: Skipped

Your application has to retrieve data from your user's mobile every 5 minutes and the data is stored in DynamoDB, later every day at a particular time the data is extracted into S3 on a per user basis and then your application is later used to visualize the data to the user. You are asked to optimize the architecture of the backend system to lower cost, what would you recommend?

Create a new Amazon DynamoDB (able each day and drop the one for the previous day after its data is on Amazon S3).

Introduce an Amazon SQS queue to buffer writes to the Amazon DynamoDB table and reduce provisioned write throughput.

Introduce Amazon ElastiCache to cache reads from the Amazon DynamoDB table and reduce provisioned read throughput.

(Correct)

Write data directly into an Amazon Redshift cluster replacing both Amazon DynamoDB and Amazon S3.

Explanation

Since our work requires the data to be extracted and analyzed, to optimize this process a person would use provisioned IO, but since it is expensive, using a ElastiCache memory instead to cache the results in the memory can reduce the provisioned read throughput and hence reduce cost without affecting the performance.

Question 110: Skipped

How does Elastic Beanstalk apply updates?

By having a duplicate ready with updates before swapping.

(Correct)

By updating on the instance while it is running

By taking the instance down in the maintenance window

Updates should be installed manually

Explanation

Elastic Beanstalk prepares a duplicate copy of the instance, before updating the original instance, and routes your traffic to the duplicate instance, so that, incase your updated application fails, it will switch back to the original instance, and there will be no downtime experienced by the users who are using your application.

Question 111: Skipped

Why do you make subnets?

Because there is a shortage of networks

To efficiently utilize networks that have a large no. of hosts.

(Correct)

Because there is a shortage of hosts.

To efficiently utilize networks that have a small no. of hosts.

Explanation

If there is a network which has a large no. of hosts, managing all these hosts can be a tedious job. Therefore we divide this network into subnets (sub-networks) so that managing these hosts becomes simpler.