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<b>Exam</b>	<b>AWS-SOLUTION-ARCHITECT-ASSOCIATE</b>
<b>Title</b>	<b>Amazon AWS Certified Solutions Architect - Associate</b>
<b>Code</b>	<b>SAA-C02</b>
<b>Product Type</b>	<b>425 Q&amp;A</b>

**QUESTION: 1**

A solution architect is designing an application that will encrypt all data in an Amazon Redshift cluster. Which action will encrypt the data at rest?

- A. Place the Redshift KMS Default Cluster in a private subnet
- B. Use the AWS KMS Default Customer master key
- C. Encrypt the Amazon EBS volumes
- D. Encrypt the data using SSL/TLS

Answer: B

Explanation:

Reference: <https://docs.aws.amazon.com/redshift/latest/mgmt/working-with-db-encryption.html>

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**QUESTION: 2**

A Solution Architect is designing a solution with AWS Lambda where different environments require different database passwords. What should the Architect do to accomplish this in a secure and scalable way?

- A. Create a Lambda function for each individual environment
- B. Use Amazon DynamoDB to store environment variables
- C. Use encrypted AWS Lambda environment variables
- D. Implement a dedicated Lambda function for distributing environment variables

Answer: C

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**QUESTION: 3**

A company hosts a two-tier application that consists of a publicly accessible web server that communicates with a private database. Only HTTPS port 443 traffic to the web server must be allowed from the internet.

Which of the following options will achieve these requirements? (Select Two.)

- A. Security group rule that allows inbound internet traffic for port 443
- B. Security group rule that drives all inbound internet traffic expect port 443
- C. Network ACL rule that allows port 443 inbound and all ports outbound for internet traffic
- D. Security group rule that allows internet traffic for port 443 in both inbound and outbound
- E. Network ACL rule that allows port 443 for both inbound and outbound for all Internet traffic

Answer: A, E

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**QUESTION: 4**

A company's website receives 50,000 requests each second, and the company wants to use multiple applications to analyze the navigation patterns of the users on their website so that the experience can be personalized.

What can a Solutions Architect use to collect page clicks for the website and process them sequentially for each user?

- A. Amazon Kinesis Stream
- B. Amazon SQS standard queue
- C. Amazon SQS FIFO queue
- D. AWS CloudTrail trail

Answer: A

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**QUESTION: 5**

A Solutions Architect is designing a solution that can monitor memory and disk space utilization of all Amazon EC2 instances running Amazon Linux and Windows. Which solution meets this requirement?

- A. Default Amazon CloudWatch metrics
- B. Custom Amazon CloudWatch metrics
- C. Amazon inspector resource monitoring
- D. Detailed monitoring of Amazon EC2 instances

Answer: A

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**QUESTION: 6**

A news organization plans to migrate their 20 TB video archive to AWS. The files are rarely accessed, but when they are a request is made in advance and a 3- to 5-hour retrieval time frame is acceptable. However, when there is a breaking news story, the editors require access to archived footage within minutes.

Which storage solution meets the needs of this organization while providing the LOWEST cost of storage?

- A. Store the archive in Amazon S3 Reduced Redundancy Storage.
- B. Store the archive in Amazon Glacier and use standard retrieval for all content
- C. Store the archive in Amazon Glacier and pay the additional charge for expedited retrieval when needed
- D. Store the archive in Amazon S3 with a lifecycle policy to move this to S3 Infrequent Access after 30 days.

Answer: A

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**QUESTION: 7**

A Solutions Architect is designing a solution that includes a managed VPN connection. To monitor whether the VPN connection is up or down, the Architect should use:

- A. an external service to ping the VPN endpoint from outside the VPC
- B. AWS CloudTrail to monitor the endpoint
- C. the CloudWatch TunnelState Metric
- D. an AWS Lambda function that parses the VPN connection logs.

Answer: C

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**QUESTION: 8**

A Solutions Architect has a multi-layer application running in Amazon VPC. The application has an

ELB Classic Load Balancer as the front end in a public subnet, and an Amazon EC2-based reverse proxy that performs content-based routing to two backend Amazon EC2 instances hosted in a private subnet. The Architect sees tremendous traffic growth and is concerned that the reverse proxy and current backend setup will be insufficient.

Which actions should the Architect take to achieve a cost-effective solution that ensures the application automatically scales to meet traffic demand? (Select TWO)

- A. Replace the Amazon EC2 reverse proxy with an ELB internal Classic Load Balancer
- B. Add Auto Scaling to the Amazon EC2 backend fleet
- C. Add Auto Scaling to the Amazon EC2 reverse proxy layer
- D. Use t2 burstable instance types for the backend fleet
- E. Replace both the frontend and reverse proxy layers with an ELB Application Load Balancer

Answer: B, C

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**QUESTION: 9**

A Solution Architect is designing a new social media application. The application must provide a secure method for uploading profile photos. Each user should be able to upload a profile photo into a shared storage location for one week after their profile is created.

Which approach will meet all of these requirements?

- A. Use Amazon Kinesis with AWS CloudTrail for auditing the specific times when profile photos are uploaded.
- B. Use Amazon EBS volumes with IAM policies restricting user access to specific time periods
- C. Use Amazon S3 with the default private access policy and generate pre-signed URLs each time a new site profile is created
- D. Use Amazon CloudFront with AWS CloudTrail for auditing the specific times when profile photos are uploaded.

Answer: C

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**QUESTION: 10**

A Solutions Architect is designing an application that requires having six Amazon EC2 instances running at all times. The application will be deployed in the sa-east-1 region, which has three Availability Zones: sa-east-1a, sa-east-1b, and sa-east-1c.

Which action will provide 100 percent fault tolerance and the LOWEST cost in the event that one Availability Zone in the region becomes unavailable?

- A. Deploy six Amazon EC2 instances in sa-east-1a, six Amazon EC2 instances in sa-east-1b, and six Amazon EC2 instances in sa-east-1c.
- B. Deploy six Amazon EC2 instances in sa-east-1a, four Amazon EC2 instances in sa-east-1b, and two Amazon EC2 instances in sa-east-1c.
- C. Deploy three Amazon EC2 instances in sa-east-1a, three Amazon EC2 instances in sa-east-1b, and three Amazon EC2 instances in sa-east-1c.
- D. Deploy two Amazon EC2 instances in sa-east-1a, two Amazon EC2 instances in sa-east-1b, and two Amazon EC2 instances in sa-east-1c.

Answer: C

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**QUESTION: 11**

A company has a popular multi-player mobile game hosted in its on-premises datacenter. The current infrastructure can no longer keep up with demand and the company is considering a move to the cloud.

Which solution should a Solutions Architect recommend as the MOST scalable and cost-effective solution to meet these needs?

- A. Amazon EC2 and an Application Load Balancer
- B. Amazon S3 and Amazon CloudFront
- C. Amazon EC2 and Amazon Elastic Transcoder
- D. AWS Lambda and Amazon API Gateway

Answer: A

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**QUESTION: 12**

To meet compliance standards, a company must have encrypted archival data storage. Data will be accessed infrequently, with lead times when in advance of when archived data must be recovered. The company requires that the storage be secure, durable and provided at the lowest price per 1TB of data stored.

What type of storage should be used?

- A. Amazon S3
- B. Amazon EBS
- C. Amazon Glacier
- D. Amazon EFS

Answer: C

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**QUESTION: 13**

A Solutions Architect notices slower response times from an application. The CloudWatch metrics on the MySQL RDS instance indicate Read IOPS are high and fluctuate significantly when the database is under load.

How should the database environment be re-designed to resolve the IOPS fluctuation?

- A. Change the RDS instance type to get more RAM.
- B. Change the storage type to Provisioned IOPS.
- C. Scale the web server tier horizontally.
- D. Split the DB layer into separate RDS instances.

Answer: B

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**QUESTION: 14**

A Solutions Architect is designing an architecture for a mobile gaming application. The application is expected to be very popular. The Architect needs to prevent the Amazon RDS MySQL database from becoming a bottleneck due to frequently accessed queries.

Which service or feature should the Architect add to prevent a bottleneck?

- A. Multi-AZ feature on the RDS MySQL Database
- B. ELB Classic Load Balancer in front of the web application tier.
- C. Amazon SQS in front of RDS MySQL Database
- D. Amazon ElastiCache in front of the RDS MySQL Database.

Answer: D

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**QUESTION: 15**

A company runs a legacy application with a single-tier architecture on an Amazon EC2 Instance. Disk I/O is low, with occasional small spikes during business hours. The company requires the instance to be stopped from 8 PM to 8 AM daily.

Which storage option is MOST appropriate for this workload?

- A. Amazon EC2 instance storage
- B. Amazon EBS General Purpose SSD (gp2) storage
- C. Amazon S3
- D. Amazon EBS Provision IOPS SSD (io1) storage

Answer: C

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**QUESTION: 16**

A Solutions Architect is designing the storage layer for a production relational database. The database will run on Amazon EC2. The database is accessed by an application that performs intensive reads and writes, so the database requires the LOWEST random I/O latency.

Which data storage method fulfills the above requirements?

- A. Store data in a filesystem backed by Amazon Elastic File System (EFS)
- B. Store data in Amazon S3 and use a third-party solution to expose Amazon S3 as a filesystem to the database server
- C. Store data in Amazon DynamoDB and emulate relational database semantics
- D. Stripe data across multiple Amazon EBS volumes using RAID 0

Answer: D

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**QUESTION: 17**

A Solutions Architect is designing a stateful web application that will run for one year (24/7) and then be decommissioned. Load on this platform will be constant, using a number of r4.xlarge instances.

Key drivers for this system include high availability is not required.

What is the MOST cost-effective way to purchase compute for this platform?

- A. Scheduled Reserved instances
- B. Convertible Reserved Instances
- C. Standard Reserved instances
- D. Spot Instances

Answer: C

**QUESTION: 18**

A workload consists of downloading an image from an Amazon S3 bucket, processing the image, and moving it to another Amazon S3 bucket. An Amazon EC2 instance runs a scheduled task every hour to perform the operation.

How should a Solutions Architect redesign the process so that it is highly available?

- A. Charge the Amazon EC2 instance to compute optimized
- B. Launch a second Amazon EC2 instance to monitor the health of the first
- C. Trigger a Lambda function when a new object is uploaded
- D. Initially copy the images to an attached Amazon EBS volume.

Answer: A

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**QUESTION: 19**

A Solutions Architect must select the storage type for a big data application that requires very high sequential I/O. The data must persist if the instance is stopped. Which of the following storage types will provide the best fit at the LOWEST cost for the application?

- A. An Amazon EC2 instance store local SSD volume
- B. An Amazon EBS provisioned IOPS SSD volume
- C. An Amazon EBS throughput optimized HDD volume
- D. An Amazon EBS general purpose SSD volume

Answer: D

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**QUESTION: 20**

A company needs to quickly ensure that all files created in an Amazon S3 bucket in us-east-1 are also available in another bucket in ap-southeast-2. Which option represents the SIMPLEST way to implement this design?

- A. Add an S3 lifecycle rule to move any new files from the bucket in us-east-1 to the bucket in ap-southeast-2.
- B. Create a Lambda function to be triggered for every new file in us-east-1 that copies the file to the bucket in ap-southeast-2
- C. Use SNS to notify the bucket in ap-southeast-2 to create a file whenever a file is created in the bucket in us-east-1.
- D. Enable versioning and configure cross-region replication from the bucket in us-east-1 to the bucket in ap-southeast-2.

Answer: A

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**QUESTION: 21**

An internet-facing multi-tier web application must be highly available. An ELB Classic Load Balancer is deployed in front of the web tier. Amazon EC2 instances at the web application tier are deployed evenly across two Availability Zones. The database is deployed using RDS Multi-AZ. A NAT instance is launched for Amazon EC2 instances and database resources to access the Internet. These instances are not assigned with public IP addresses.

Which component poses a potential single point of failure in this architecture?

- A. Amazon EC2
- B. NAT instance
- C. ELB Classic Load Balancer
- D. Amazon RDS

Answer: C

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**QUESTION: 22**

A Solutions Architect is designing a microservice to process records from Amazon Kinesis Streams. The metadata must be stored « Amazon DynamoDB. The microservice must be capable of concurrently processing 10.000 records daily as they arrive in the Kinesis stream. The MOST scalable way to design the microservice is:

- A. As an AWS Lambda function
- B. As a process on an Amazon EC2 instance.
- C. As a Docker container running on Amazon ECS
- D. As a Docker container on an EC2 instance

Answer: A

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**QUESTION: 23**

An online company wants to conduct real-time sentiment analysis about its products from its social media channels using SQL. Which of the following solutions has the LOWEST cost and operational burden?

- A. Set up a streaming data ingestion application on Amazon EC2 and connect it to a Hadoop cluster for data processing. Send the output to Amazon S3 and use Amazon Athena to analyze the data.
- B. Configure the input stream using Amazon Kinesis Data Streams Use Amazon Kinesis Data Analytics to write SQL queries against the stream.
- C. Configure the input stream using Amazon Kinesis Data Streams. Use Amazon Kinesis Data Firehose to send data to an Amazon Redshift cluster, and then query directly against Amazon Redshift.
- D. Set up a streaming data ingestion application on Amazon EC2 and send the output to Amazon S3 using Kinesis Data Firehose. Use Athena to analyze the data

Answer: B

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**QUESTION: 24**

An on-premises workload consists of a single server with an Apache instance and a MySQL database. The Solutions Architect plans to migrate on-premises database to MySQL on Amazon RDS using multiple Availability Zones. What solution ensures that the remaining workload will be highly available?

- A. Provision the workload in an Auto Scaling group, with a minimum of two servers Use an Amazon Route 53 DNS-weighted routing policy to direct traffic to healthy servers.
- B. Provision the workload in an Auto Scaling group across Availability Zones, with a minimum of two Amazon EC2 instances Use an Application Load Balancer in front of an Auto Scaling group
- C. Provision at least two EC2 instances across two separate regions Use an Application Load Balancer



to direct traffic between the instances

D. Provision the workload in an Auto Scaling group across Availability Zones, with a minimum of two servers Use a Route 53 DNS simple routing policy to direct traffic to healthy servers

Answer: B

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**QUESTION: 25**

A company is evaluating Amazon S3 as a data storage solution for their daily analyst reports. The company has implemented stringent requirements concerning the security of the data at test. Specifically, the CISO asked for the use of envelope encryption with separate permissions for the use of an envelope key, automated rotation of the encryption keys, and visibility into when an encryption key was used and by whom.

Which steps should a Solutions Architect take to satisfy the security requirements requested by the CISO?

- A. Create an Amazon S3 bucket to store the reports and use Server-Side Encryption with Customer-Provided Keys (SSE-C)
- B. Create an Amazon S3 bucket to store the reports and use Server-Side Encryption with Amazon S3Managed Keys (SSE-S3)
- C. Create an Amazon S3 bucket to store the reports and use Server-Side Encryption with AWS KMSManaged Keys (SSE-KMS)
- D. Create an Amazon S3 bucket to store the reports and use Amazon S3 versioning with Server- Side Encryption with Amazon S3-Managed Keys (SSE-S3)

Answer: C

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**QUESTION: 26**

A bank is writing new software that is heavily dependent upon database transactions for write consistency. The application will also occasionally generate reports on data in the database, and will do joins across multiple tables. The database must automatically scale as the amount of data grows. Which AWS service should be used to run the database?

- A. Amazon S3
- B. Amazon Aurora
- C. Amazon DynamoDB
- D. Amazon Redshift

Answer: C

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**QUESTION: 27**

A company is launching a static website using the zone apex (mycompany.com). The company wants to use Amazon Route 53 for DNS. Which steps should the company perform to implement a scalable and cost-effective solution? (Select TWO)

- A. Host the website on an Amazon EC2 instance with ELB and Auto Scaling, and map a Route 53 alias record to the ELB endpoint
- B. Host the website using AWS Elastic Beanstalk, and map a Route 53 alias record to the Beanstalk stack.

- C. Host the website on an Amazon EC2 instance, and map a Route 53 alias record to the public IP address of the Amazon EC2 instance.
- D. Serve the website from an Amazon S3 bucket and map a Route 53 alias record to the website endpoint
- E. Create a Route 53 hosted zone, and set the NS records of the domain to use Route 53 name servers.

Answer: A, D

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**QUESTION: 28**

A company is developing several critical long-running applications hosted on Docker. How should a Solutions Architect design a solution to meet the scalability and orchestration requirements on AWS?

- A. Use Amazon ECS and Service Auto Scaling.
- B. Use Spot Instances for orchestration and for scaling containers on existing Amazon EC2 Instances.
- C. Use AWS OpsWorks to launch containers in new Amazon EC2 instances.
- D. Use Auto scaling groups to launch containers on existing Amazon EC2 instances.

Answer: A

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**QUESTION: 29**

A media company asked a Solutions Architect to design a nightly available storage solution to serve as a centralized document store for their Amazon EC2 instances. The storage solution needs to be POSIX-compliant scale dynamically and be able to serve up to 100 concurrent EC2 instances. Which solution meets these requirements?

- A. Create an Amazon S3 bucket and store all of the documents in this bucket.
- B. Create an Amazon EBS volume and allow multiple users to mount that volume to their EC2 instance(s)
- C. Use Amazon Glacier to store all of the documents
- D. Create an Amazon Elastic File System (Amazon EFS) to store and share the documents.

Answer: D

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**QUESTION: 30**

A Solutions Architect is designing a microservices-based application using Amazon ECS. The application includes a WebSocket component, and the traffic needs to be distributed between microservices based on the URL. Which service should the Architect choose to distribute the workload?

- A. ELB Classic Load Balancer
- B. Amazon Route 53 DNS
- C. ELB Application Load Balancer
- D. Amazon CloudFront

Answer: C

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**QUESTION: 31**

A Solutions Architect needs to design an architecture for a new, mission-critical batch processing billing application. The application is required to run Monday, Wednesday, and Friday from 5 AM to 11 AM. Which is the MOST cost-effective Amazon EC2 pricing model?

- A. Amazon EC2 Spot Instances
- B. On-Demand Amazon EC2 Instances
- C. Scheduled Reserved instances
- D. Dedicated Amazon EC2 Instances

Answer: A

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**QUESTION: 32**

A development team is building an application with front-end and backend application tiers. Each tier consists of Amazon EC2 instances behind an ELB Classic Load Balancer. The instances run in Auto Scaling groups across multiple Availability Zones. The network team has allocated the 10.0.0.0/24 address space for this application. Only the front-end load balancer should be exposed to the Internet. There are concerns about the limited size of the address space and the ability of each tier to scale.

What should the VPC subnet design be in each Availability Zone?

- A. One public subnet for the load balancer tier, one public subnet for the front-end tier, and one private subnet for the backend tier
- B. One shared public subnet for all tiers of the application
- C. One public subnet for the load balancer tier and one shared private subnet for the application tiers
- D. One shared private subnet for all tiers of the application

Answer: A

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**QUESTION: 33**

An organization must process a stream of large-volume hashtag data in real time and needs to run custom SQL queries on the data to get insights on certain tags. The organization needs this solution to be elastic and does not want to manage clusters.

Which of the following AWS services meets these requirements?

- A. Amazon Elasticsearch Service
- B. Amazon Athena
- C. Amazon Redshift
- D. Amazon Kinesis Data Analytics

Answer: B

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**QUESTION: 34**

A Solutions Architect was tasked with reviewing several templates that build VPCs and ensuring that they meet specific security requirements. After reviewing the templates, the Architect realizes that all of the templates are missing important security best practices.

What should the Architect do to implement security best practices in an efficient manner?

- A. Use VPC peering to enforce network consistency
- B. Restrict users from deploying an AWS CloudFormation template.
- C. Provide the teams a nested AWS CloudFormation template that builds the VPC correctly.
- D. Create AWS identity and Access Management (IAM) policies that enforce the corporate VPC architecture standards

Answer: D

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**QUESTION: 35**

A company has an application that uses Amazon CloudFront for content that is hosted on an Amazon S3 bucket. After an unexpected refresh, the users are still seeing old content. Which step should the Solutions Architect take to ensure that new content is displayed?

- A. Perform a cache refresh on the CloudFront distribution that is serving the content
- B. Perform an invalidation on the CloudFront distribution that is serving the content
- C. Create a new cache behavior path with the updated content
- D. Change the TTL value for removing the old objects.

Answer: D

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**QUESTION: 36**

A company hosts a website on premises. The website has a mix of static and dynamic content, but users experience latency when loading static files. Which AWS service can help reduce latency?

- A. Amazon CloudFront with on-premises servers as the origin
- B. ELB Application Load Balancer
- C. Amazon Route 53 latency-based routing
- D. Amazon EFS to store and serve static files

Answer: A

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**QUESTION: 37**

A Solutions Architect is creating a new relational database. The Compliance team will use the database and mandates that data content must be stored across three different Availability Zones. Which of the following options should the Architect use?

- A. Amazon Aurora
- B. Amazon RDS MySQL with Multi-AZ enabled
- C. Amazon DynamoDB
- D. Amazon ElastiCache

Answer: B

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**QUESTION: 38**

A Solutions Architect is designing a solution to monitor weather changes by the minute. The frontend application is hosted on Amazon EC2 instances. The backend must be scalable to a virtually unlimited size, and data retrieval must occur with minimal latency. Which AWS service should the Architect use to store the data and achieve these requirements?

- A. Amazon S3
- B. Amazon DynamoDB
- C. Amazon RDS
- D. Amazon EBS

Answer: A

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**QUESTION: 39**

Developers are creating a new online transaction processing (OLTP) application for a small database that is very read-write intensive. A single table in the database is updated continuously throughout the day, and the developers want to ensure that the database performance is consistent. Which Amazon EBS storage option will achieve the MOST consistent performance to help maintain application performance?

- A. Provisioned IOPS SSD
- B. General Purpose SSD
- C. Cold HDD
- D. Throughput Optimized HDD

Answer: A

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**QUESTION: 40**

A Solutions Architect has a two-tier blog application with a single Amazon EC2 instance web server and Amazon RDS MySQL Multi-AZ DB instances. The Architect is re-architecting the application for high availability by adding instances in a second Availability Zone. Which additional services will improve the availability of the application? (Select TWO)

- A. Auto Scaling group
- B. AWS CloudTrail
- C. ELB Classic Load Balancer
- D. Amazon DynamoDB
- E. Amazon ElastiCache

Answer: D, E

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**QUESTION: 41**

An organization designs a mobile application for their customers to upload photos to a site. The application needs a secure login with MFA.

- A. The organization wants to limit the initial onboarding time and maintenance of the solution. Which solution should a Solutions Architect recommend to meet the requirements?
- A. Use Amazon Cognito Identity with SMS-based MFA
- B. Edit AWS IAM policies to require MFA for all users.
- C. Federate IAM against corporate AD that requires MFA.
- D. Use Amazon API Gateway and require SSE for photos.

Answer: A

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**QUESTION: 42**

A Solutions Architect is developing a new web application on AWS. The Architect expects the application to become very popular, so the application must scale to support the load. The Architect wants to focus on software development and deploying new features without provisioning or managing instances. Which solution is appropriate?

- A. Amazon API Gateway and AWS Lambda
- B. Elastic Load Balancing with Auto Scaling groups and Amazon EC2
- C. Amazon API Gateway and Amazon EC2
- D. Amazon CloudFront and AWS Lambda

Answer: B

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**QUESTION: 43**

A Solutions Architect needs to use AWS to implement pilot light disaster recovery for a three-tier web application hosted in an on-premises datacenter. Which solution allows rapid provision of a working, fully-scaled production environment?

- A. Continuously replicate the production database server to Amazon RDS. Use AWS CloudFormation to deploy the application and any additional servers if necessary.
- B. Continuously replicate the production database server to Amazon RDS. Create one application load balancer and register on-premises servers. Configure ELB Application Load Balancer to automatically deploy Amazon EC2 instances for application and additional servers if the on-premises application is down.
- C. Use a scheduled Lambda function to replicate the production database to AWS. Use Amazon Route 53 health checks to deploy the application automatically to Amazon S3 if production is unhealthy.
- D. Use a scheduled Lambda function to replicate the production database to AWS. Register on-premises servers to an Auto Scaling group and deploy the application and additional servers if production is unavailable.

Answer: B

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**QUESTION: 44**

A Solutions Architect needs to design an Amazon EC2 cluster to analyze data that is currently stored in Amazon S3. A key requirement is to utilize the fastest storage service available when analyzing the data locally on the Amazon EC2 instance. Which of the following storage types should the Architect choose to meet the requirement?

- A. AWS Storage Gateway
- B. Amazon EBS using Provisioned IOPS (PIOPS)
- C. Amazon EC2 instance (ephemeral) Store
- D. Amazon Glacier

Answer: B

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**QUESTION: 45**

A company has asked a Solutions Architect to ensure that data is protected during data transfer to and from Amazon S3. Use of which service will protect the data in transit?

- A. AWS KMS
- B. HTTPS
- C. SFTP
- D. FTPS

Answer: B

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**QUESTION: 46**

A media company has more than 100TB of data to be stored and retrieved infrequently. However the company occasionally receives requests for data within an hour. The company needs a low-cost retrieval method to handle the requests. Which service meets this requirement?

- A. Amazon S3 Standard
- B. Amazon Glacier standard retrievals
- C. Amazon Glacier bulk retrievals
- D. Amazon S3 Standard Infrequent Access

Answer: D

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**QUESTION: 47**

A data analytics startup company asks a Solutions Architect to recommend an AWS data store option for indexed data.

The data processing engine will generate and input more than 64 TB of processed data every day, with item sizes reaching up to 300 KB. The startup is flexible with data storage models and is more interested in a database that requires minimal effort to scale with a growing dataset size. Which AWS data store service should the Architect recommend?

- A. Amazon RDS
- B. Amazon Redshift
- C. Amazon DynamoDB
- D. Amazon S3

Answer: C

Explanation:

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**QUESTION: 48**

A Solutions Architect is architecting a workload that requires a performant object-based storage system that must be shared with multiple Amazon EC2 instances. Which AWS service meets this requirement?

- A. Amazon EFS
- B. Amazon S3

- C. Amazon EBS
- D. Amazon ElastiCache

Answer: A

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**QUESTION: 49**

A company wants to migrate a highly transactional database to AWS. Requirements state that the database has more than 6 TB of data and will grow exponentially. Which solution should a Solutions Architect recommend?

- A. Amazon Aurora
- B. Amazon Redshift
- C. Amazon DynamoDB
- D. Amazon RDS MySQL

Answer: A

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**QUESTION: 50**

A Solutions Architect needs to allow developers to have SSH connectivity to web servers. The requirements are as follows:

- Limit access to users originating from the corporate network
- Web servers cannot have SSH access directly from the Internet
- Web servers reside in a private subnet

Which combination of steps must the Architect complete to meet these requirements? (Select TWO)

- A. Create a bastion host that authenticates users against the corporate directory
- B. Create a bastion host with security group rules that only allow traffic from the corporate network
- C. Attach an IAM role to the bastion host with relevant permissions
- D. Configure the web servers' security group to allow SSH traffic from a bastion host
- E. Deny all SSH traffic from the corporate network in the inbound network ACL.

Answer: A, C

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**QUESTION: 51**

Two Auto Scaling applications, Application A and Application B, currently run within a shared set of subnets. A Solutions Architect wants to make sure that Application A can make requests to Application B, but Application B should be denied from making requests to Application A. Which is the SIMPLEST solution to achieve this policy?

- A. Using security groups that reference the security groups of the other application
- B. Using security groups that reference the application server's IP addresses
- C. Using Network Access Control Lists to allow/deny traffic based on application IP addresses
- D. Migrating the applications to separate subnets from each other

Answer: C

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**QUESTION: 52**

A Solutions Architect is designing an Amazon VPC. Applications in the VPC must have private



connectivity to Amazon DynamoDB in the same AWS Region. The design should route DynamoDB traffic through:

- A. VPC peering connection
- B. NAT gateway
- C. VPC endpoint
- D. AWS Direct Connect

Answer: C

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**QUESTION: 53**

A company is using AWS Key Management Service (AWS KMS) to secure their Amazon RDS databases. An auditor has recommended that the company log all use of their AWS KMS keys. What is the SIMPLEST solution?

- A. Associate AWS KMS metrics with Amazon CloudWatch
- B. Use AWS CloudTrail to log AWS KMS key usage.
- C. Deploy a monitoring agent on the RDS instances
- D. Poll AWS KMS periodically with a scheduled job

Answer: B

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**QUESTION: 54**

Legacy applications currently send messages through a single Amazon EC2 instance, which then routes the messages to the appropriate destinations. The Amazon EC2 instance is a bottleneck and single point of failure, so the company would like to address these issues. Which services could address this architecture use case? (Select TWO)

- A. Amazon SNS B. AWS STS
- C. Amazon SQS
- D. Amazon Route 53
- E. AWS Glue

Answer: A,C

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**QUESTION: 55**

A company is migrating its data center to AWS. As part of this migration, there is a three-tier web application that has strict data-at-rest encryption requirements. The customer deploys this application on Amazon EC2 using Amazon EBS, and now must provide encryption at-rest. How can this requirement be met without changing the application?

- A. Use AWS Key Management Service and move the encrypted data to Amazon S3.
- B. Use an application-specific encryption API with AWS server-side encryption
- C. Use encrypted EBS storage volumes with AWS-managed keys
- D. Use third-party tools to encrypt the EBS data volumes with Key Management Service Bring Your Own Keys.

Answer: A

---

**QUESTION: 56**

A Solutions Architect must design an Amazon DynamoDB table to store data about customer activities. The data is used to analyze recent customer behavior, so data that is less than a week old is heavily accessed and older data is accessed infrequently. Data that is more than one month old never needs to be referenced by the application but needs to be archived for year-end analytics.

- A. Use DynamoDB time-to-live settings to expire items after a certain time period
- B. Provision a higher write capacity unit to minimize the number of partitions
- C. Create separate tables for each week's data with higher throughput for the current week
- D. Pre-process data to consolidate multiple records to minimize write operations
- E. Export the old table data from DynamoDB to Amazon S3 using AWS Data Pipeline and delete the old table

Answer: C,E

---

**QUESTION: 57**

An organization regularly backs up their application data

A. The application backups are required to be stored on Amazon S3 for a certain amount of time, and need to be accessed instantly in the event of a disaster recovery.  
Which of the following Amazon S3 storage classes would be the MOST cost-effective option to meet the needs of this scenario?

- A. Glacier Storage Class
- B. Standard Storage Class
- C. Standard - Infrequent Access (IA)
- D. Reduced Redundancy Class (RRS)

Answer: C

---

**QUESTION: 58**

A Solutions Architect is designing a highly-available website that is served by multiple web servers hosted outside of AWS. If an instance becomes unresponsive, the Architect needs to remove it from the rotation.

What is the MOST efficient way to fulfill this requirement?

- A. Use Amazon CloudWatch to monitor utilization.
- B. Use Amazon API Gateway to monitor availability
- C. Use an Amazon Elastic Load Balancer
- D. Use Amazon Route 53 health checks

Answer: A

---

**QUESTION: 59**

A Solutions Architect is building a multi-tier website. The web servers will be in a public subnet, and the database servers will be in a private subnet. Only the web servers can be accessed from the internet. The database servers must have Internet access for software updates. Which solution

meets these requirements?

- A. Assign Elastic IP addresses to the database instances
- B. Allow Internet traffic on the private subnet through the network ACL
- C. Use a NAT Gateway.
- D. Use an egress-only internet Gateway

Answer: C

---

**QUESTION: 60**

An application tier currently hosts two web services on the same set of instances, listening on different ports.

Which AWS service should a Solutions Architect use to route traffic to the service based on the incoming request path?

- A. AWS Application Load Balancer
- B. Amazon CloudFront
- C. Amazon Route 53
- D. AWS Classic Load Balancer

Answer: A

---

**QUESTION: 61**

A Solutions Architect is deploying a new production MySQL database on AWS. It is critical that the database is highly available. What should the Architect do to achieve this goal with Amazon RDS?

- A. Create a read replica of the primary database and deploy it in a different AWS Region
- B. Enable multi-AZ to create a standby database in a different Availability Zone
- C. Enable multi-AZ to create a standby database in a different AWS Region
- D. Create a read replica of the primary database and deploy it in a different Availability Zone

Answer: A

---

**QUESTION: 62**

An Administrator is hosting an application on a single Amazon EC2 instance, which users can access by the public hostname. The administrator is adding a second instance, but does not want users to have to decide between many public hostnames.

Which AWS service will decouple the users from specific Amazon EC2 instances?

- A. Amazon SQS
- B. Auto Scaling group
- C. Amazon EC2 security group
- D. Amazon ELB

Answer: B

---

**QUESTION: 63**

A customer owns a simple API for their website that receives about 1,000 requests each day and has

an average response time of 50 ms. It is currently hosted on one c4.large instance. Which changes to the architecture will provide high availability at the LOWEST cost?

- A. Create an Auto Scaling group with a minimum of one instance and a maximum of two instances then use an Application Load Balancer to balance the traffic
- B. Recreate the API using Amazon API Gateway and use AWS Lambda as the service backend
- C. Create an Auto Scaling group with a minimum and a maximum of two instances, then use an Application Load Balancer to balance the traffic.
- D. Recreate the API using Amazon API Gateway and integrate the new API with the existing backend service

Answer: B

---

**QUESTION: 64**

A Solutions Architect is developing a solution for sharing files in an organization. The solution must allow multiple users to access the storage service at once from different virtual machines and scale automatically. It must also support file-level locking.

Which storage service meets the requirements of this use case?

- A. Amazon S3
- B. Amazon EFS
- C. Amazon EBS
- D. Cached Volumes

Answer: B

---

**QUESTION: 65**

A Solutions Architect is designing a mobile application that will capture receipt images to track expenses. The Architect wants to store the images on Amazon S3. However, uploading images through the web server will create too much traffic. What is the MOST efficient method to store images from a mobile application on Amazon S3?

- A. Upload directly to S3 using a pre-signed URL
- B. Upload to a second bucket, and have a Lambda event copy the image to the primary bucket
- C. Upload to a separate Auto Scaling group of servers behind an ELB Classic Load Balancer, and have them write to the Amazon S3 bucket
- D. Expand the web server fleet with Spot Instances to provide the resources to handle the images

Answer: A

---

**QUESTION: 66**

A workload in an Amazon VPC consist of an Elastic Load Balancer that distributes incoming requests across a fleet of six Amazon EC2 instances. Each EC2 instance stores and retrieves data from an Amazon DynamoDB table.

Which of the following provisions will ensure that this workload a highly available?

- A. Provision DynamoDB tables across a minimum of two Availability Zones
- B. Provision the EC2 instances evenly across a minimum of two Availability Zones in two regions

- C. Provision the EC2 instances evenly across a minimum of two Availability Zones in a single region
- D. Provision the Elastic Load Balancer to distribute connections across multiple Availability Zones

Answer: D

---

**QUESTION: 67**

A customer is deploying a production portal application on AWS. The database tier has structured data

A. The company requires a solution that is easily manageable and highly availability.  
How can these requirements be met?

- A. Deploy the database on multiple Amazon EC2 instances backed by Amazon EBS across multiple Availability Zones
- B. Use Amazon RDS with a multiple Availability Zone option
- C. Use RDS with a single Availability Zone option and schedule periodic database snapshots
- D. Use Amazon DynamoDB

Answer: D

---

**QUESTION: 68**

As part of securing an API layer but on Amazon API Gateway, a Solutions Architect has to authorize users who are currently authenticated by an existing identity provider. The users must be denied access for a period of one hour after three unsuccessful attempts.

How can be Solutions Architect meet these requirements?

- A. Use AWS IAM authorization and add least-privileged permissions to each respective IAM role
- B. Use an API Gateway custom authorizer to invoke an AWS Lambda function to validate each user's identity
- C. Use Amazon Cognito user pools to provide built-in user management
- D. Use Amazon Cognito user pools to integrate with external identity providers

Answer: B

---

**QUESTION: 69**

A Solutions Architect a VPC. Instances in a private subnet must to be able to establish IPv6 traffic to the Internet. The design must scale automatically and not incur any additional cost.

This can be accomplished with:

- A. An egress-only internet gateway
- B. A NAT Gateway
- C. A custom NAT Instance
- D. A VPC endpoint

Answer: D

---

**QUESTION: 70**

An organization runs an online voting system for a television program. During broadcasts, hundreds of thousands of votes are submitted within minutes and sent to a front-end fleet of auto- scaled

Amazon EC2 instances. The EC2 instances push the votes to a RDBMS database. The database is unable to keep up with the front-end connection requests.

What is the MOST efficient and cost-effective way of ensuring that votes are processed in a timely manner?

- A. Each front-end node should send votes to an Amazon SQS queue. Provision worker instances to read the SQS queues and process the message information into the RDBMS database
- B. As the load on the database increases, horizontally-scale the RDBMS database with additional memory-optimized instances. When voting has ended, scale down the additional instances
- C. Re-provision the RDBMS database with larger, memory-optimized instances. When voting ends, re-provision the back-end database with similar instances
- D. Send votes from each front-end node to Amazon DynamoDB. Provision worker instances to process the votes in DynamoDB into the RDBMS database

Answer: A

---

**QUESTION: 71**

A mobile client requires data from several application-layer services to populate its user interface. What can the application team use to decouple the client interface from the underlying services behind them?

- A. Application Load Balancer
- B. Amazon API Gateway
- C. Amazon Cognito
- D. AWS Device Farm

Answer: C

---

**QUESTION: 72**

A Solutions Architect is designing a solution that retains traffic information between network interfaces. The traffic information will then be monitored for anomalies by an InfoSec team using Amazon CloudWatch.

What approach should the Architect take?

- A. Save all inbound requests to Amazon DynamoDB
- B. Maintain traffic history on each Amazon EC2 instance
- C. Enable Amazon VPC Flow Logs
- D. Save all inbound requests to Amazon S3

Answer: C

---

**QUESTION: 73**

An Organization has a long-running image processing application that runs on Spot Instances that will be terminated when interrupted. A highly available workload must be designed to respond to Spot Instance interruption notices. The solution must include a two-minute warning when there is not enough capacity.

How can these requirements be met?

- A. Use Amazon CloudWatch Events to invoke an AWS Lambda function that can launch On-Demand Instances
- B. Regularly store data from the application on Amazon DynamoDB. Increase the maximum number of instances in the AWS Auto Scaling group.
- C. Manually place a bid for additional Spot Instances at a higher price in the same AWS Region and Availability Zone
- D. Ensure that the Amazon Machine Image associated with the application has the latest configurations for the launch configuration

Answer: B

---

**QUESTION: 74**

A workload in an Amazon VPC consist of a single web-server launched from a custom AMI. Session state is stored in database. How should the Solutions Architect modify this workload to be both highly available and scalable?

- A. Create a launch configuration with a desired capacity of two web servers across multiple Availability Zones. Create an Auto Scaling group with the AMI ID of the web server image. Use Amazon Route S3 latency-based routing to balance traffic across the Auto Scaling group.
- B. Create a launch configuration with the AMI ID of the web server image. Create an Auto Scaling group using the newly-created launch configuration, and a desired capacity of two web servers across multiple regions. Use an Application Load Balancer (ALB) to balance traffic across the Auto Scaling group
- C. Create a launch configuration with the AMI ID of the web server image. Create an Auto Scaling group using the newly-created launch configuration, and a desired capacity of two web servers across multiple Availability Zones. Use an ALB to balance traffic across the Auto Scaling group
- D. Create a launch configuration with the AMI ID of the web server image. Create an Auto Scaling group using the newly-created launch configuration, and a desired capacity of two web servers across multiple Availability Zones. Use Route 53 weighted routing to balance traffic across the Auto Scaling group

Answer: A

---

**QUESTION: 75**

A company's policy requires that all data stored in Amazon S3 is encrypted. The company wants to use the option with the least overhead and does not manage any encryption keys. Which of the following options will meet the company's requirements?

- A. AWS CloudHSM
- B. AWS Trusted Advisor
- C. Server Side Encryption (SSE-S3)
- D. Server Side Encryption (SSE-KMS)

Answer: D

---

**QUESTION: 76**

After reviewing their logs, a startup company noticed larger, random spikes in traffic to their web application. The company wants to configure a cost-efficient Auto Scaling solution to support high

availability of the web application. Which scaling plan should a Solution Architect recommend to meet the company's needs?

- A. Dynamic
- B. Scheduled
- C. Manual
- D. Lifecycle

Answer: A

---

**QUESTION: 77**

A Solution Architect is trying to bring a data warehouse workload to an Amazon EC2 instance. The data will reside in Amazon EBS volumes and full table scans will be executed frequently. What type of Amazon AWS EBS volume would be most suitable in this scenario?

- A. Throughput Optimized HDD (st1)
- B. Provisioned IOPS SSD (io1)
- C. General Purpose SSD (gp2)
- D. Cold HDD (sc1)

Answer: C

---

**QUESTION: 78**

A company uses Amazon S3 for storing a variety of files. A Solutions Architect needs to design a feature that will allow users to instantly restore any deleted files within 30 days of deletion. Which is the Most cost-efficient solution?

- A. Create lifecycle policies that move the objects to Amazon Glacier and delete them after 30 days
- B. Enable cross-region replication. Empty the replica bucket every 30 days using an AWS Lambda function
- C. Enable versioning and create a lifecycle policy to remove expired versions after 30 days
- D. Enable versioning and MFA Delete. Using a Lambda function, remove MFA delete from objects more than 30 days old

Answer: C

---

**QUESTION: 79**

A workload consists of downloading an image from an Amazon S3 bucket, processing the image, and moving to another Amazon S3 bucket. An Amazon EC2 instance runs a scheduled task every hour to perform the operation.

How should a Solutions Architect redesign the process so that it is highly available?

- A. Change the Amazon EC2 instance to compute optimized
- B. Launch a second Amazon EC2 instance to monitor the health of the first
- C. Trigger a Lambda function when a new object is uploaded
- D. Install copy the images to an attached Amazon EBS volume

Answer: C

---



**QUESTION: 80**

A Solutions Architect is designing the storage layer for a production relation database. The database will run on Amazon EC2. The database is accessed by an application that performs intensive reads and writes, so the database requires the LOWEST random I/O latency.

Which data storage method fulfils the above requirements?

- A. Store data in a filesystem backed by Amazon Elastic File System (EFS)
- B. Store data Amazon S3 and use a third-party solution to expose Amazon S3 as a filesystem to the database server
- C. Store data in Amazon DynamoDB and emulate relational database semantics
- D. Stripe data across multiple Amazon EBS volume using RAID 0

Answer: D

---

**QUESTION: 81**

You are working with customer who has 10 TB of archival data that they want to migrate to Amazon Glacier. The customer has a 1Mbps connection to the Internet. Which service or feature provide the fastest method of getting the data into Amazon Glacier?

- A. Amazon Glacier multipart upload
- B. AWS Storage Gateway
- C. VM Import/Export
- D. AWS Import/Export

Answer: D

---

**QUESTION: 82**

You have been asked to design a NAT solution for your company's VPC-based web application. Traffic from the privatesubnets varies throughout the day from 500 Mbps to spikes of 7 Gbps.

What is the most cost-effective and scalable solution?

- A. Create an Amazon EC2 NAT instance with a second elastic network (ENI) in a public subnet; route all private subnet Internet traffic through the NAT gateway.
- B. Create an Auto Scaling group of Amazon EC2 NAT instances in a public subnet; route all private subnet Internet traffic through the NAT gateway
- C. Move the Internet gateway for the VPC to a public subnet; route all Internet traffic through the Internet gateway
- D. Create a NAT gateway in a public subnet; route all private subnet Internet Traffic through the NAT gateway

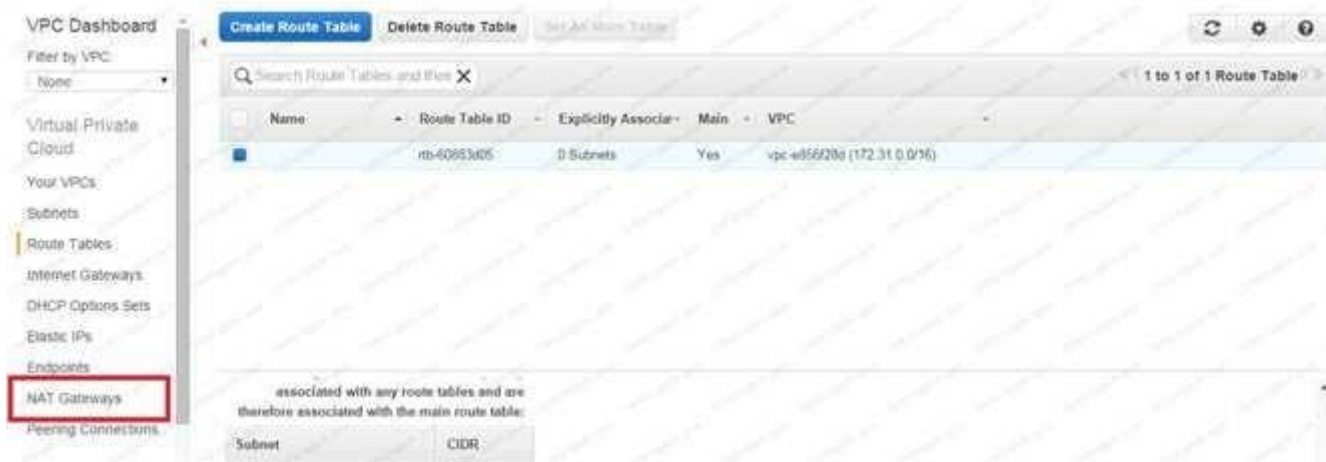
Answer: D

Explanation:

Getting Started

Let's try to see how we can create and configure an AWS NAT Gateway:

Login to the AWS console, select VPC service and click on NAT Gateways as shown below:



Provide the necessary details, like subnet and Elastic IP, and create the NAT Gateway. You need to select the subnet which you want to be private subnet and your Elastic IP so that it can communicate to Internet.

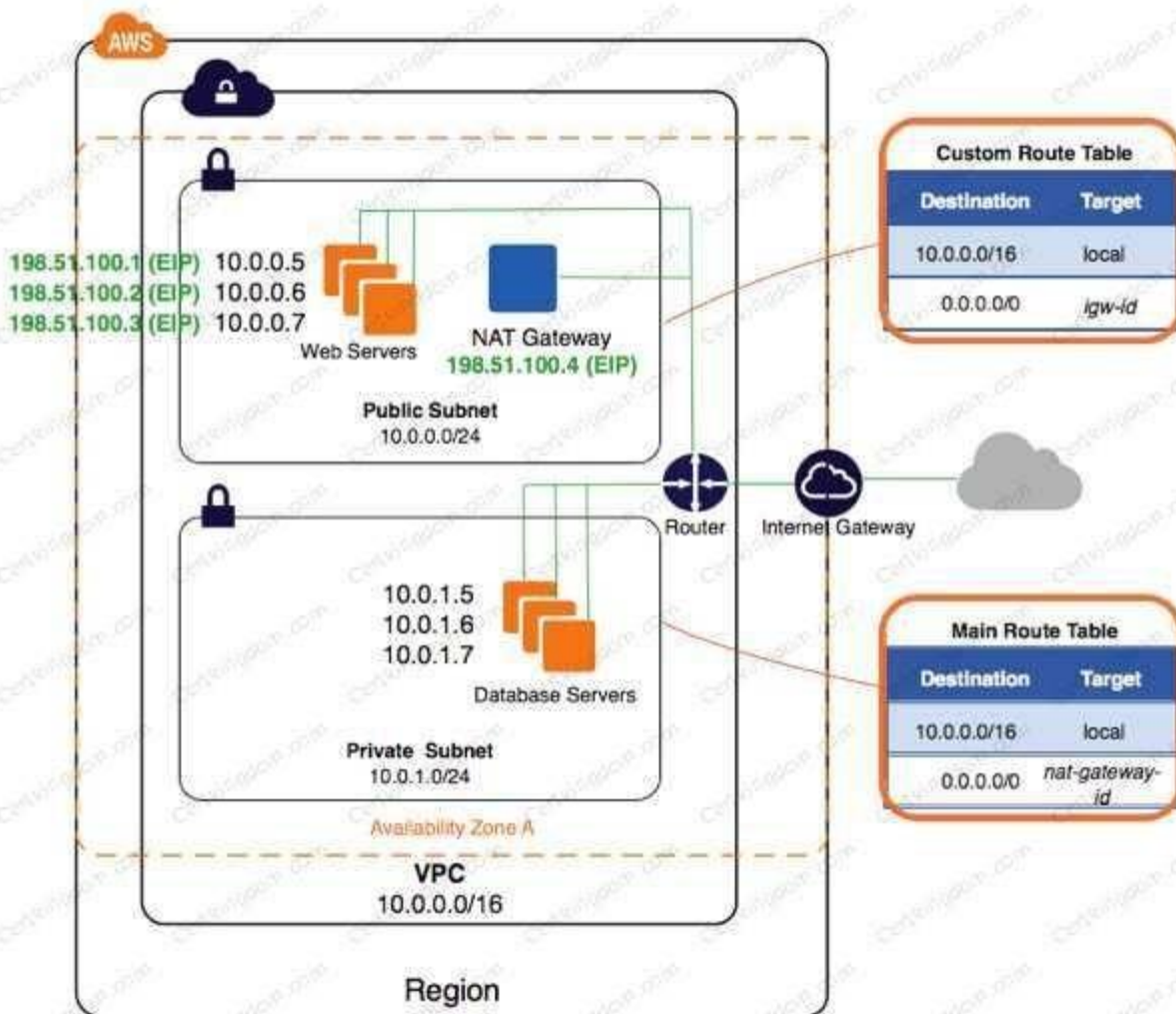
Once created you will see this:



Once the NAT Gateway is created you can edit your routing table to send traffic destined for the Internet toward the gateway. The gateway's internal address will be chosen automatically, and will be in the same subnet as the gateway.

Once the NAT Gateway is configured, you are all set. Your private subnet instances should now be able to communicate with the Internet without much management, monitoring, and configuration overhead.

Sample NAT Gateway architecture:



### Migrating from an existing NAT instance

If you are already using a NAT instance in your VPC setup, it's time to migrate now, and I can tell you that it's not tough. You only need to make sure that you create the NAT Gateway in the same subnet as your existing NAT instance. Then you need to edit the route table by replacing the existing NAT reference with the internal address of the new gateway. I told you this was very straightforward. You will need to ensure that you don't have any critical tasks running at the time of migration, because changing a route from a NAT instance to the gateway can result in a dropped connection.

This feature was only very recently introduced by AWS, so it's definitely worth sharing. It can resolve

lots of existing concerns. Do you have your own experience with this new feature? Why not share it with others.

---

**QUESTION: 83**

Which services can invoke AWS lambda functions? Choose 2 answers

- A. Amazon SNS
- B. Amazon Route53
- C. Amazon Redshift
- D. Amazon DynamoDB
- E. Elastic Load Balancing

Answer: A, D

---

**QUESTION: 84**

A company is building a two-tier web application to serve dynamic transaction-based content. The data tier is leveraging an Online Transactional Processing (OLTP) database. What services should you leverage to enable an elastic and scalable web tier?

- A. Elastic Load Balancing, Amazon EC2, and Auto Scaling
- B. Elastic Load Balancing, Amazon RDS with Multi-AZ, and Amazon S3
- C. Amazon RDS with Multi-AZ and Auto Scaling
- D. Amazon EC2, Amazon DynamoDB, and Amazon S3

Answer: A

---

**QUESTION: 85**

A company is deploying a new two-tier web application in AWS. The company has limited staff and requires high availability, and the application requires complex queries and table joins. Which configuration provides the solution for the company's requirements?

- A. MySQL Installed on two Amazon EC2 Instances in a single Availability Zone
- B. Amazon RDS for MySQL with Multi-AZ
- C. Amazon ElastiCache
- D. Amazon DynamoDB

Answer: B

---

**QUESTION: 86**

You are tasked with setting up a Linux bastion host for access to Amazon EC2 instances running in your VPC. Only clients connecting from the corporate external public IP address 72.34.51.100 should have SSH access to the host. Which option will meet the customer requirement?

- A. Security Group Inbound Rule: Protocol - TCP, Port Range - 22, Source 72.34.51.100/32
- B. Security Group Inbound Rule: Protocol - UDP, Port Range - 22, Source 72.34.51.100/32
- C. Network ACL Inbound Rule: Protocol - UDP, Port Range - 22, Source 72.34.51.100/32
- D. Network ACL Inbound Rule: Protocol - TCP, Port Range-22, Source 72.34.51.100/0

Answer: A

---

**QUESTION: 87**

Your company has separate AWS accounts for development and production. Each developer is assigned an IAM user in the development account. Developers occasionally need to access the production account to roll out changes to that environment. Your company does not allow the creation of IAM users in the production account.

What strategy will allow the development team to access the production account?

- A. Create an IAM role in the production account. Allow IAM users in the development account to assume the role.
- B. Create an IAM group in the development account. Grant IAM users in the development account membership in the group.
- C. Create an IAM group in the production account. Grant IAM users in the development account membership in the group.
- D. Create an IAM role in the development account. Allow IAM users in the development account to assume the role.

Answer: A

---

**QUESTION: 88**

You have a Cassandra cluster running in private subnets in an Amazon VPC. A new application in a different Amazon VPC needs access to the database.

How can the new application access the database?

- A. Set up a VPC peering connection between the two Amazon VPCs.
- B. Set up a dual-homed instance with ENIs in both Amazon VPCs.
- C. Set up a NAT Gateway in the application's Amazon VPC.
- D. Set up a NAT Gateway in the database's Amazon VPC.

Answer: A

---

**QUESTION: 89**

A colleague asked for your advice about how to easily deploy, monitor, and scale a three-tier LAMP (Linux, Apache, MySQL, PHP) application on AWS. Your colleague has time and staffing constraints and wants to deploy and manage the application with minimal effort.

What AWS service would you suggest?

- A. Data Pipeline
- B. Elastic Beanstalk
- C. CloudFormation
- D. CodeDeploy

Answer: D

Explanation:

AWS CodeDeploy automates code deployments to any instance, including Amazon EC2 instances and

on-premises servers. AWS CodeDeploy makes it easier for you to rapidly release new features, helps you avoid downtime during application deployment, and handles the complexity of updating your applications.

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**QUESTION: 90**

Which security functions are based on AWS STS? Choose 2 answers

- A. Adding conditions to managed policies
- B. Using Web federated identity to authenticate users
- C. Using IAM roles with Amazon EC2 instances
- D. Assigning managed policies to IAM groups
- E. Using access keys to authenticate IAM users

Answer: B, E

---

**QUESTION: 91**

Your Amazon EC2 instances must access the AWS API, so you created a NAT gateway in an existing subnet. When you try to access the AWS API, you are unsuccessful.

What could be preventing access?

- A. The instances need an IAM role granting access to the NAT gateway
- B. The NAT gateway subnet does not have a route to an Internet gateway
- C. The NAT gateway does not have a route to the virtual private gateway
- D. The instances are not in the same subnet as the NAT gateway

Answer: B

---

**QUESTION: 92**

Your company's IT policies mandate that all critical data must be duplicated in two physical locations at least 100 miles apart.

What storage option meets this requirement?

- A. One Amazon S3 bucket
- B. Two Amazon S3 buckets in the same region
- C. One Amazon Glacier archive
- D. Two Amazon S3 buckets in different regions

Answer: A

---

**QUESTION: 93**

You're building an API backend available at `services.yourcompany.com`. The API is implemented with API Gateway and Lambda

A. You successfully tested the API using curl. You implemented JavaScript to call the API from a webpage on your corporate website, `www.yourcompany.com`. When you access that page in your browser, you get the following error:

"The same origin policy disallows reading the remote resource"

How can you allow your corporate webpages to invoke the API?



- A. Enable CORS in the API Gateway
- B. Enable CORS in the JavaScript frontend
- C. Disable CORS in the JavaScript frontend
- D. Disable CORS in the API Gateway

Answer: A

---

**QUESTION: 94**

A stray Amazon EC2 r3.8xlarge instance is running in your AWS account. Before terminating it, you want to find the owner to confirm that it is not needed.

Where can you find the identity that launched this instance?

- A. CloudTrail logs
- B. VPC flow logs
- C. ELB access logs
- D. Operating system logs

Answer: A

---

**QUESTION: 95**

Which of the following are characteristics of Amazon VPC subnets? Choose 2 answers

- A. Each subnet spans at least 2 Availability Zones to provide a high-availability environment.
- B. Each subnet maps to a single Availability Zone.
- C. CIDR block mask of /25 is the smallest range supported.
- D. By default, all subnets can route between each other, whether they are private or public.
- E. Instances in a private subnet can communicate with the Internet only if they have an Elastic IP.

Answer: B, D

---

**QUESTION: 96**

You have been asked to design a fault-tolerant and scalable web application across three Availability Zones. The presentation logic will reside on web server's behind an ELB Classic Load Balance, and the application logic will reside on a set of app servers behind a second load balancer.

How should you use Auto Scaling groups?

- A. Deploy two Auto Scaling groups: one for the web servers in all Availability Zones and one for the app servers in all Availability Zones
- B. Deploy six Auto Scaling groups: a web server group in each Availability Zone and an app server group in each Availability Zone
- C. Deploy one Auto Scaling group that includes all the web and app servers across all Availability Zones
- D. Deploy three Auto Scaling groups: one for each Availability Zone that includes both web and app servers

Answer: A

**QUESTION: 97**

A company needs to deploy services to an AWS region which they have not previously used. The company currently has an AWS identity and Access Management (IAM) role for the Amazon EC2 instances, which permits the instance to have access to Amazon DynamoDB. The company wants their EC2 instances in the new region to have the same privileges. How should the company achieve this?

- A. Create a new IAM role and associated policies within the new region
- B. Assign the existing IAM role to the Amazon EC2 instances in the new region
- C. Copy the IAM role and associated policies to the new region and attach it to the instances
- D. Create an Amazon Machine Image (AMI) of the instance and copy it to the desired region using the AMI Copy feature

Answer: B

---

**QUESTION: 98**

You need a solution to distribute traffic across all the containers for a task running on Amazon ECS. Your task definitions define dynamic host port mapping for your containers. What AWS feature provides this functionality?

- A. CloudFront custom origins support dynamic host port mapping
- B. All Elastic Load Balancing instances support dynamic host port mapping
- C. Classic Load Balancers support dynamic host port mapping
- D. Application Load Balancers support dynamic host port mapping

Answer: D

---

**QUESTION: 99**

Which aspects of Amazon EC2 security are the responsibility of AWS? Choose 2 answers

- A. Virtualization Infrastructure
- B. Physical security of hardware
- C. Guest operating systems
- D. Application authentication
- E. VPC and security group configuration

Answer: B, C

Explanation:

AWS Security Responsibilities

AWS is responsible for protecting the global infrastructure that runs all of the services offered in the AWS cloud. This infrastructure is comprised of the hardware, software, networking, and facilities that run AWS services.

AWS provide several reports from third-party auditors who have verified their compliance with a variety of computer security standards and regulations

AWS is responsible for the security configuration of its products that are considered managed services for e.g. RDS, DynamoDB



For Managed Services, AWS will handle basic security tasks like guest operating system (OS) and database patching, firewall configuration, and disaster recovery.

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**QUESTION: 100**

An Auto-Scaling group spans 3 AZs and currently has 4 running EC2 instances. When Auto Scaling needs to terminate an EC2 instance by default, AutoScaling will:

Choose 2 answers

- A. Allow at least five minutes for Windows/Linux shutdown scripts to complete, before terminating the instance.
- B. Terminate the instance with the least active network connections. If multiple instances meet this criterion, one will be randomly selected.
- C. Send an SNS notification, if configured to do so.
- D. Terminate an instance in the AZ which currently has 2 running EC2 instances.
- E. Randomly select one of the 3 AZs, and then terminate an instance in that AZ.

Answer: B, D

---

**QUESTION: 101**

Your company runs an application that generates several thousand 1-GB reports a month. Approximately 10% of these reports will be accessed once during the first 3 days and must be available on demand. After 30 days, reports are no longer accessed as a part of normal business processes but must be retained for compliance reasons.

Which architecture would meet these requirements with the lowest cost?

- A. Upload the reports to Amazon S3 Standard – Infrequent Access storage class. Set a lifecycle configuration on the bucket to transition the reports to Amazon Glacier after 30 days.
- B. Upload the reports to Amazon Glacier. When reports are requested, copy them to Amazon S3 Standard storage class for access. Delete the copied reports after they have been viewed.
- C. Upload the reports to Amazon S3 Standard storage class. Set a lifecycle configuration on the bucket to transition the reports to Amazon Glacier after 30 days.
- D. Upload the reports to Amazon S3 Standard – Infrequent Access storage class. When reports are requested, copy them to Amazon S3 Standard storage class for access. Delete the copied reports after they have been viewed.

Answer: C

---

**QUESTION: 102**

Your organization is looking for a solution that can help the business with streaming data

A. Several services will require access to read and process the same stream concurrently. What AWS service meets the business requirements?

- A. Amazon Kinesis Streams
- B. Amazon SQS
- C. Amazon Kinesis Firehose
- D. Amazon CloudFront

Answer: C

---

**QUESTION:** 103

A company has a workflow that uploads video files from their data center to AWS for transcoding. They use Amazon EC2 worker instances that pull transcoding jobs from SQS.

Why is SQS an appropriate service for this scenario?

- A. SQS decouples the transcoding task from the upload.
- B. SQS can accommodate message payloads of any size.
- C. SQS checks the health of the worker instances.
- D. SQS synchronously provides transcoding output.

Answer: C

---

**QUESTION:** 104

A customer's security team requires the logging of all network access attempts to Amazon EC2 instances in their production VPC on AWS. Which configuration will meet the security team's requirement?

- A. Enable CloudTrail for the production VPC.
- B. Enable both CloudTrail and VPC Flow Logs for the AWS account.
- C. Enable both CloudTrail and VPC Flow Logs for the production VPC.
- D. Enable VPC Flow Logs for the production VPC.

Answer: D

**Explanation:**

Amazon VPC provides features that you can use to increase and monitor the security for your VPC:

- Security groups — Act as a firewall for associated Amazon EC2 instances, controlling both inbound and outbound traffic at the instance level

- Network access control lists (ACLs) — Act as a firewall for associated subnets, controlling both inbound and outbound traffic at the subnet level

- Flow logs — Capture information about the IP traffic going to and from network interfaces in your VPC

When you launch an instance in a VPC, you can associate one or more security groups that you've created. Each instance in your VPC could belong to a different set of security groups. If you don't specify a security group when you launch an instance, the instance automatically belongs to the default security group for the VPC. For more information about security groups, see *Security Groups for Your VPC*

You can secure your VPC instances using only security groups; however, you can add network ACLs as a second layer of defense. For more information about network ACLs, see *Network ACLs*.

You can monitor the accepted and rejected IP traffic going to and from your instances by creating a flow log for a VPC, subnet, or individual network interface. Flow log data is published to CloudWatch Logs, and can help you diagnose overly restrictive or overly permissive security group and network ACL rules. For more information, see *VPC Flow Logs*.

You can use AWS Identity and Access Management to control who in your organization has permission to create and manage security groups, network ACLs and flow logs. For example, you can

give only your network administrators that permission, but not personnel who only need to launch instances. For more information, see [Controlling Access to Amazon VPC Resources](#). Amazon security groups and network ACLs don't filter traffic to or from link-local addresses (169.254.0.0/16) or AWS-reserved IPv4 addresses—these are the first four IPv4 addresses of the subnet (including the Amazon DNS server address for the VPC). Similarly, flow logs do not capture IP traffic to or from these addresses. These addresses support the services: Domain Name Services (DNS), Dynamic Host Configuration Protocol (DHCP), Amazon EC2 instance metadata, Key Management Server (KMS—license management for Windows instances), and routing in the subnet. You can implement additional firewall solutions in your instances to block network communication with link-local addresses.

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**QUESTION: 105**

A customer is running two Amazon EC2 instances, Server1 and Server2, in different subnets of the same VPC. Server1 can ping Server2, but Server2 cannot ping Server1. What could explain this behavior? Choose 2 answers

- A. The ingress rules for Server1's security group do not allow ICMP traffic
- B. The ingress rules for Server2's security group do not allow ICMP traffic
- C. The two servers are not located in the same Availability Zone
- D. There is no route from Server2 to Server1 defined in the route table
- E. The operating system firewall on Server1 is blocking traffic from Server2

Answer: A, E

---

**QUESTION: 106**

Which of the following statements are true about Amazon Route 53 resource records? Choose 2 answers

- A. An Alias record can map one DNS name to another Amazon Route 53 DNS name.
- B. A CNAME record can be created for your zone apex.
- C. An Amazon Route 53 CNAME record can point to any DNS record hosted anywhere.
- D. TTL can be set for an Alias record in Amazon Route 53.
- E. An Amazon Route 53 Alias record can point to any DNS record hosted anywhere.

Answer: A, C

Explanation:

<https://aws.amazon.com/route53/faqs/>

Amazon Route 53 offers 'Alias' records (an Amazon Route 53-specific virtual record). Alias records are used to map resource record sets in your hosted zone to Amazon Elastic Load Balancing load balancers, Amazon CloudFront distributions, AWS Elastic Beanstalk environments, or Amazon S3 buckets that are configured as websites.

Alias records work like a CNAME record in that you can map one DNS name (example.com) to another 'target' DNS name (elb1234.elb.amazonaws.com).

[https://docs.aws.amazon.com/Route53/latest/DeveloperGuide/resource-record-sets-choosing-alias-non-](https://docs.aws.amazon.com/Route53/latest/DeveloperGuide/resource-record-sets-choosing-alias-nonalias.html)

[html](https://docs.aws.amazon.com/Route53/latest/DeveloperGuide/resource-record-sets-choosing-alias-non-alias.html)

A CNAME record can point to any DNS record hosted anywhere, including to the resource record set that Amazon Route 53 automatically creates when you create a policy record.

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**QUESTION: 107**

A photo-sharing service stores pictures in Amazon Simple Storage Service (S3) and allows application sign-in using an OpenID Connect-compatible identity provider. Which AWS Security Token Service approach to temporary access should you use for the Amazon S3 operations?

- A. SAML-based Identity Federation
- B. Cross-Account Access
- C. AWS Identity and Access Management roles
- D. Web Identity Federation

Answer: D

Explanation:

Explanation:

Web identity federation – You can let users sign in using a well-known third-party identity provider such as Login with Amazon, Facebook, Google, or any OpenID Connect (OIDC) 2.0 compatible provider. AWS STS web identity federation supports Login with Amazon, Facebook, Google, and any OpenID Connect (OIDC)-compatible identity provider.

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**QUESTION: 108**

You have a web portal composed of two services. Each service must scale independently. Both services should be served under the same domain. Which configuration allows this?

- A. Use one AWS Classic Load Balancer. Create a redirect in the web server based on users' source IPs.
- B. Use two AWS Application Load Balancer; one for each service. Assign the same CNAME to both.
- C. Use one AWS Application Load Balancer. Specify listener rules to route requests to each service.
- D. Use two AWS Classic Load Balancers; one for each service. Assign the same CNAME to both.

Answer: B

---

**QUESTION: 109**

Which features can be used to restrict access to data in S3? Choose 2 answers

- A. Set an S3 ACL on the bucket or the object.
- B. Create a CloudFront distribution for the bucket.
- C. Set an S3 bucket policy.
- D. Enable IAM Identity Federation
- E. Use S3 Virtual Hosting

Answer: C, D

Explanation:

Reference: <http://docs.aws.amazon.com/AmazonCloudHYPERLINK>

"[http://docs.aws.amazon.com/AmazonCloudFront/latest/DeveloperGuide/private-contentrestricting-access-to-s3.html#\\_blank](http://docs.aws.amazon.com/AmazonCloudFront/latest/DeveloperGuide/private-contentrestricting-access-to-s3.html#_blank)"Front/latest/DeveloperGuide/private-content-restrictingaccess-to-s3.html

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**QUESTION: 110**

What are characteristics of Amazon S3? Choose 2 answers

- A. S3 allows you to store objects of virtually unlimited size.
- B. S3 offers Provisioned IOPS.
- C. S3 allows you to store unlimited amounts of data.
- D. S3 should be used to host a relational database.
- E. Objects are directly accessible via a URL.

Answer: C, E

Explanation:

Reference: <http://docs.aws.amazon.com/AmazonCloudFront/latest/DeveloperGuide/privatecontent-restricting-access-to-s3.html>

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**QUESTION: 111**

You bid \$0.22 for an Amazon EC2 Spot Instance when the market price was \$0.20. For 90 minutes, the market price remained at \$0.20. Then the market price changed to \$0.25, and your instance was terminated by AWS.

What was your cost of running the instance for the entire duration?

- A. \$0.47
- B. \$0.20
- C. \$0.22
- D. \$0.40

Answer: C

---

**QUESTION: 112**

An application on an Amazon EC2 instance routinely stops responding to requests and requires a reboot to recover. The application logs are already exported into Amazon CloudWatch, and you notice that the problem consistently follows the appearance of a specific message in the log. The application team is working to address the bug, but has not provided a date for the fix.

What workaround can you implement to automate recovery of the instance until the fix is deployed?

- A. Create an Amazon CloudWatch alarm on instance memory usage; based on that alarm, trigger an Amazon CloudWatch action to reboot the instance
- B. Create a AWS CloudTrail alarm on low CPU; based on that alarm, trigger an Amazon SNS message to the Operations team
- C. Create an Amazon CloudWatch alarm on an Amazon CloudWatch Logs for that message; based on that alarm, trigger an Amazon CloudWatch action to reboot the instance
- D. Create an AWS CloudTrail alarm to detect the deadlock; based on that alarm, trigger an Amazon

SNS message to the Operations team

Answer: C

---

**QUESTION: 113**

A customer is running a multi-tier web application farm in a virtual private cloud (VPC) that is not connected to their corporate network. They are connecting to the VPC over the Internet to manage all of their Amazon EC2 instances running in both the public and private subnets. They have only authorized the bastion-security-group with Microsoft Remote Desktop Protocol (RDP) access to the application instance security groups, but the company wants to further limit administrative access to all of the instances in the VPC. Which of the following Bastion deployment scenarios will meet this requirement?

- A. Deploy a Windows Bastion host on the corporate network that has RDP access to all instances in the VPC.
- B. Deploy a Windows Bastion host with an Elastic IP address in the public subnet and allow SSH access to the bastion from anywhere.
- C. Deploy a Windows Bastion host with an Elastic IP address in the private subnet, and restrict RDP access to the bastion from only the corporate public IP addresses.
- D. Deploy a Windows Bastion host with an auto-assigned Public IP address in the public subnet, and allow RDP access to the bastion from only the corporate public IP addresses.

Answer: D

---

**QUESTION: 114**

You are launching an application in an Auto Scaling group. To store the user session state, you need a structured storage service with durability and low latency. Which service meets your needs?

- A. Amazon DynamoDB
- B. Amazon EC2 instance storage
- C. Amazon S3
- D. Amazon ElastiCache

Answer: A

---

**QUESTION: 115**

A customer wants to leverage Amazon Simple Storage Service (S3) and Amazon Glacier as part of their backup and archive infrastructure. The customer plans to use third-party software to support this integration. Which approach will limit the access of the third party software to only the Amazon S3 bucket named “company-backup”?

- A. A custom bucket policy limited to the Amazon S3 API in the Amazon Glacier archive “companybackup”
- B. A custom bucket policy limited to the Amazon S3 API in “company-backup”
- C. A custom IAM user policy limited to the Amazon S3 API for the Amazon Glacier archive “companybackup”
- D. A custom IAM user policy limited to the Amazon S3 API in “company-backup”

Answer: B

---

**QUESTION: 116**

Your Amazon VPC has a public subnet with a route that sends all Internet traffic to the Internet gateway. An Amazon EC2 instance in the public subnet has an assigned private IP address. The instance belongs to a security group set to allow all outbound traffic. The instance cannot access the Internet.

Why could the Internet be unreachable from the instance?

- A. The instance does not have a public IP address.
- B. The internet gateway security group must allow all outbound traffic.
- C. The instance security group must allow all inbound traffic.
- D. The instance "Source/Destination check" property must be enabled.

Answer: A

---

**QUESTION: 117**

Which Auto Scaling features allow you to scale ahead of expected increases in load?

Choose 2 answers

- A. Cooldown period
- B. Lifecycle hooks
- C. Desired capacity
- D. Metric-based scaling
- E. Health check grace period
- F. Scheduled scaling

Answer: C, F

---

**QUESTION: 118**

You are designing a scalable web application with stateless web servers. Which service or feature is well suited to store user session information?

- A. Amazon SQS
- B. Amazon EC2 instance store
- C. Amazon DynamoDB
- D. Amazon EBS

Answer: B

---

**QUESTION: 119**

You are architecting a web application that will be backed by a relational database. The application will be read-heavy, and database queries will be computationally intensive.

How can you improve overall application response for users?

- A. Use data Pipeline to replicate your relational data across all of your web tier nodes
- B. Use Amazon SQS to distribute messages among workers that are less busy
- C. Use ElastiCache to store critical pieces of data in memory for low-latency access
- D. Use an Auto Scaling group and ELB Classic Load Balancer for the application tier



Answer: A

---

**QUESTION:** 120

You are running a web application with four Amazon EC2 instances across two Availability Zones. The instances are in an Auto Scaling group behind an ELB Classic Load Balancer. A scaling event adds one instance to the group. After the event, you notice that, although all instances are serving traffic, some instances are serving more traffic than others.

Which of the following could be the problem?

- A. sticky bits is not enables on the ELB Classic Load Balancer
- B. A SSL/TLS certificate has not been deployed on the ELB Classic Load Balancer
- C. Cross-zone load balancing is not configuring on the ELB Classic Load Balancer
- D. Access logs are not enabled on the ELB Classic Load Balancer

Answer: C

---

**QUESTION:** 121

A client application requires operating system privileges on a relational database server. What is an appropriate configuration for a highly available database architecture?

- A. A standalone Amazon EC2 instance
- B. Amazon RDS in a Multi-AZ configuration
- C. Amazon EC2 instances in a replication configuration utilizing a single Availability Zone
- D. Amazon EC2 instances in a replication configuration utilizing two different Availability Zones

Answer: D

Explanation:

<http://docs.aws.amazon.com/AWSEC2/latest/UserGuide/using-regions-availability-zones.html>

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**QUESTION:** 122

You are migrating an existing enterprise application to AWS. It requires standard file system access from multiple instances. It also requires high storage throughput with consistently low latencies. You are looking for a storage solution that will grow and shrink capacity automatically.

How can you accomplish this in AWS?

- A. Create an Amazon S3 bucket that the application can for its storage requirements
- B. Launch an Amazon Redshift cluster with dense storage nodes to use with the application
- C. Create an Amazon EFS file system and mount it on all of the application instances
- D. Launch an EBS-backed EC2 instance. Create and share an NFS amount with application

Answer: C

---

**QUESTION:** 123

You are running a mobile media application and are considering API Gateway for the client entry point. What benefits would this provide? Choose 2 answers



- A. Caching API responses
- B. Intrusion prevention
- C. IP blacklisting
- D. Load balancing
- E. Throttling traffic

Answer: A, E

Explanation:

API Logging, Caching, Throttling, Bursting and Monitoring

Instead of invoking the backend API for every client call, developers can configure caching which will improve performance. Cache settings allow developers to control the way the cache key is built and the time-to-live (TTL) of the data stored for each method. The management API can be invoked to invalidate the cache. The pricing for this feature is based on the size of the cache.

Developers need to protect their backend APIs from deliberate misuse. They may also want to restrict the rate at which the API is invoked. Through throttling, it is possible to set a rate limit of API requests to avoid sudden spikes. API Gateway can also be configured to handle bursts of API calls for specific scenarios. Clients can include automatic retry logic when they receive a 429 HTTP response as a result of throttling. With the right configuration of cache and throttling, developers can increase the performance while securing the backend API.

Since API Gateway is a crucial element of an application, it needs to be monitored for uptime. For custom gateways, administrators need to configure native monitoring combined with agents.

Amazon API Gateway integrates with CloudWatch, the one-stop monitoring service for all AWS services. By configuring an IAM role that has write access to CloudWatch logs, API Gateway can be monitored for a variety of metrics.

Settings SDK Generation Deployment History

Configure the metering and caching settings for the Prod stage.

Cache Settings

Enable API cache ☐

CloudWatch Settings

Enable CloudWatch Logs ☒

Enable CloudWatch Metrics ☒

Throttling Settings

Burst Limit

Rate

Save Changes

Configuring Caching, Logging, Monitoring and Throttling

**QUESTION: 124**

Your application currently stores data on an unencrypted EBS volume. A new security policy mandates that all data must be encrypted at rest. How can you encrypt the data?

- A. Create a snapshot of the volume. Create a new, encrypted volume from the snapshot. Replace the volume.
- B. Create a snapshot of the volume. Make an encrypted copy of the snapshot. Create a new volume from the new snapshot. Replace the volume.
- C. Modify the EBS settings to encrypt the volume. You do need to detach the volume or stop the instance.
- D. Stop the instance. Detach the volume. Modify the EBS settings to encrypt the volume. Reattach the volume. Start the instance.

Answer: C

---

**QUESTION: 125**

Your existing web application requires a persistent key-value store database that must service 50,000 reads/second. Your company is looking at 10% growth in traffic and data volume month over month for the next several years. Which service meets these requirements?

- A. Amazon RDS
- B. Amazon SQS
- C. Amazon Redshift
- D. Amazon DynamoDB

Answer: D

---

**QUESTION: 126**

You are designing a web application that stores static assets in an Amazon Simple Storage Service (S3) bucket. You expect this bucket to immediately receive over 150 PUT requests per second. What should you do to ensure optimal performance?

- A. Use multi-part upload.
- B. Add a random prefix to the key names.
- C. Amazon S3 will automatically manage performance at this scale.
- D. Use a predictable naming scheme, such as sequential numbers or date time sequences, in the key names

Answer: C

---

**QUESTION: 127**

You originally built a VPC for a two-tier application. The subnets for the web and data tiers use all the IP address space in the VPC. Now you want to add subnets for an application tier. How can you accommodate the new subnets in your VPC?

- A. Change the CIDR block for the VPC to create enough free address space for the new subnets
- B. Create the new subnets in the VPC; the VPC will automatically scale to accommodate the new subnets

- C. Build a new VPC that can accommodate all the subnets, and migrate the application to the new VPC
- D. Reduce the CIDR block ranges of the existing subnets to make room for the new subnets

Answer: A

---

**QUESTION:** 128

You are working with a customer who is using Chef configuration management in their data center. Which service is designed to let the customer leverage existing Chef recipes in AWS?

- A. Amazon Simple Workflow Service
- B. AWS Elastic Beanstalk
- C. AWS CloudFormation
- D. AWS OpsWorks

Answer: D

Explanation:

Reference:

: <http://aws.amazon.com/opsworks/>

---

**QUESTION:** 129

What services will help identify Amazon EC2 instances with underutilized CPU capacity? Choose 2 answers

- A. Cost Explorer
- B. Amazon EC2 usage reports
- C. AWS CloudTrail
- D. Amazon CloudWatch
- E. AWS Trusted Advisor

Answer: B, D

---

**QUESTION:** 130

An instance is launched into a VPC subnet with the network ACL configured to allow all inbound traffic and deny all outbound traffic. The instance's security group is configured to allow SSH from any IP address and deny all outbound traffic. What changes need to be made to allow SSH access to the instance?

- A. The outbound security group needs to be modified to allow outbound traffic.
- B. The outbound network ACL needs to be modified to allow outbound traffic.
- C. Nothing, it can be accessed from any IP address using SSH.
- D. Both the outbound security group and outbound network ACL need to be modified to allow outbound traffic.

Answer: B

Explanation:

[http://docs.aws.amazon.com/AmazonVPC/latest/UserGuide/VPC\\_ACLS.html](http://docs.aws.amazon.com/AmazonVPC/latest/UserGuide/VPC_ACLS.html)

---

**QUESTION:** 131

You've been tasked with choosing a datastore to persist GPS coordinates for a new app. The service needs consistent, single-digit-millisecond latency at any scale. Which AWS service meets your requirements?

- A. Amazon S3
- B. Amazon Redshift
- C. Amazon RDS
- D. Amazon DynamoDB

Answer: D

Explanation:

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. Start today by downloading the [loHYPERLINK](http://docs.aws.amazon.com/amazondynamodb/latest/developerguide/Tools.DynamoDBLocal.html)

"[http://docs.aws.amazon.com/amazondynamodb/latest/developerguide/Tools.DynamoDBLocal.htm](http://docs.aws.amazon.com/amazondynamodb/latest/developerguide/Tools.DynamoDBLocal.html)l"cal version of DynamoDB, then read our Getting Started Guide.

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**QUESTION:** 132

You have a distributed application that periodically processes large volumes of data across multiple Amazon EC2 Instances. The application is designed to recover gracefully from Amazon EC2 instance failures. You are required to accomplish this task in the most cost-effective way. Which of the following will meet your requirements?

- A. Spot Instances
- B. Reserved instances
- C. Dedicated instances
- D. On-Demand instances

Answer: A

**QUESTION:** 133

Which AWS services are valid origins for an Amazon CloudFront distribution? Choose 2 answers

- A. Amazon DynamoDB
- B. Amazon S3
- C. Amazon Glacier
- D. ELB Classic Load Balancer
- E. Amazon RDS

Answer: B, D

**QUESTION: 134**

You have decided to change the instance type for instances running in your application tier that is using Auto Scaling. In which area below would you change the instance type definition?

- A. Auto Scaling policy
- B. Auto Scaling group
- C. Auto Scaling tags
- D. Auto Scaling launch configuration

Answer: D

---

**QUESTION: 135**

Your company has set up an application in eu-west1 with a disaster recovery site in eu-central-1. You want to be notified of any AWS API activity in regions other than these two. How can you monitor AWS API activity in other regions?

- A. Create a CloudWatch alarm for CloudTrail events
- B. Create a CloudWatch alarm for SSH key usage
- C. Create a CloudWatch alarm for Trusted Advisor
- D. Create a CloudWatch alarm for VPC flow logs

Answer: A

---

**QUESTION: 136**

You have a web application running on six Amazon EC2 instances, consuming about 45% of resources on each instance. You are using auto-scaling to make sure that six instances are running at all times. The number of requests this. Which of the following architectural choices should you make?

- A. Deploy 3 EC2 instances in one availability zone and 3 in another availability zone and use Amazon Elastic Load Balancer
- B. Deploy 3 EC2 instances In one region and 3 other region and use Amazon Elastic Load Balancer
- C. Deploy 2 EC2 instances in three regions and use Amazon Elastic Load Balancer
- D. Deploy 6 EC2 instances in one availability zone and use Amazon Elastic Load Balancer

Answer: A

---

**QUESTION: 137**

You are building a solution for a customer to extend their on-premises data centre to AWS. The customer requires a 50-Mbps dedicated and private connection to their VPC. Which AWS product or feature satisfies this requirement?

- A. Amazon VPC peering
- B. Elastic IP Addresses
- C. Amazon VPC virtual private gateway
- D. AWS Direct Connect

Answer: D

---

**QUESTION: 138**

How can an EBS volume that is currently attached to an EC2 instance be migrated from one Availability Zone to another?

- A. Detach the volume and attach it to another EC2 instance in the other AZ
- B. Create a snapshot of the volume, and create a new volume from the snapshot in the other AZ
- C. Detach the volume, then use the `ec2-migrate-volume` command to move it to another AZ
- D. Simply create a new volume in the other AZ and specify the original volume as the source

Answer: B

---

**QUESTION: 139**

How can you secure data at rest on an EBS volume?

- A. Create an IAM policy that restricts read and write access to the volume
- B. Use an encrypted file system on top of the EBS volume
- C. Write the data randomly instead of sequentially
- D. Encrypt the volume using the S3 server-side encryption service
- E. Attach the volume to an instance using EC2 SSL interface

Answer: B

---

**QUESTION: 140**

A customer is running a multi-tier web application farm in a virtual private cloud (VPC) that is not connected to their corporate network. They are connecting to the VPC.

Which of the following bastion deployment scenarios will meet this requirement?

- A. Deploy a Windows Bastion host on the corporate network that has RDP access to all instances in the VPC
- B. Deploy a Windows Bastion host with an Elastic IP address in the public subnet, and allow SSH access to the bastion from anywhere
- C. Deploy a Windows Bastion host with an Elastic IP address in the private subnet, and restrict RDP access to the bastion from only the corporate public IP addresses
- D. Deploy a Windows Bastion host with an auto-assigned Public subnet, and allow RDP access to the bastion from only the corporate public IP addresses

Answer: D

---

**QUESTION: 141**

You have a content management system running on an Amazon EC2 instance that is approaching 100% CPU utilization. Which option will reduce load on the Amazon EC2 instance?

- A. Create a new load balancer, and register the Amazon EC2 instance with it
- B. Create a CloudFront distribution, and configure the Amazon EC2 instance as the origin
- C. Create an Auto Scaling group from the instance using the `CreateAutoScalingGroup` action
- D. Create a launch configuration from the instance using the `CreateLaunchConfiguration` action

Answer: C

---

**QUESTION: 142**

You have a content management system running on an Amazon EC2 instance that is approaching 100% CPU utilization. Which option will reduce load on the Amazon EC2 instance?

- A. EC2Config service
- B. IAM roles
- C. User Data
- D. AWS Config

Answer: C

**QUESTION: 143**

A client application requires operating system privileges on a relational database server. What is an appropriate configuration for highly available database architecture?

- A. A standalone Amazon EC2 instance
- B. Amazon RDS in a multi-AZ configuration
- C. Amazon EC2 instances in a replication configuration utilizing a single Availability Zone
- D. Amazon EC2 instances in a replication configuration utilizing two different Availability Zones

Answer: D

**QUESTION: 144**

When an EC2 EBS-backed (EBS root) instance is stopped, what happens to the data on any ephemeral store volumes?

- A. Data is unavailable until the instance is restarted
- B. Data will be deleted and will no longer be accessible
- C. Data is automatically saved in an EBS snapshot
- D. Data is automatically saved in an EBS volume

Answer: B

**QUESTION: 145**

You are deploying an application to track GPS coordinates of delivery trucks in the United States. Coordinates are transmitted from each delivery truck once every three seconds. You need to design an architecture that will enable real-time processing of these coordinates from multiple consumers. Which service should you use to implement data ingestion?

- A. Amazon Kinesis
- B. Amazon Simple Queue Service
- C. Amazon AppStream
- D. AWS Data Pipeline

Answer: A



**QUESTION:** 146

A company has an AWS account that contains three VPCs (Dev, Test, and Prod) in the same region. Test is peered to both prod and Dev. All VPCs have non-overlapping CIDR blocks. The company wants to push minor code releases from Dev to Prod to speed up time to market. Which of the following options helps the company accomplish this?

- A. Create a new peering connection between Prod and Dev along with appropriate routes
- B. Create a new entry to Prod in the Dev route table using the peering connection as the target
- C. Attach a security gateway to Dev. Add a new entry in the Prod route table identifying the gateway as the target
- D. The VPCs have non-overlapping CIDR blocks in the same account. The route tables contain local routes for all VPCs

Answer: A

---

**QUESTION:** 147

Per the AWS Acceptable Use Policy, Penetration testing of EC2 instances:  
Are expressly prohibited under all circumstances

- A. May be performed by AWS, and is periodically performed by AWS
- B. May be performed by the customer on their own instances, only if performed from EC2 instances
- C. May be performed by the customer on their own instances with prior authorization from AWS
- D. May be performed by AWS, and will be performed by AWS upon customer request

Answer: D

---

**QUESTION:** 148

A company is storing data on Amazon Simple Storage Service (S3). The company's security policy mandates that data is encrypted at rest. Which of the following methods can achieve this?  
Choose 3 answers

- A. Use Amazon S3 server-side encryption with AWS key management Service managed keys
- B. Use Amazon S3 server-side encryption with customer-provided keys
- C. Use Amazon S3 server-side encryption with EC2 key pair
- D. Use Amazon S3 bucket policies to restrict access to the data at rest
- E. Encrypt the data on the client-side before ingesting to Amazon S3 using their own master key
- F. Use SSL to encrypt the data while in transit to Amazon S3

Answer: A, B, E

---

**QUESTION:** 149

In order to optimize performance for a compute cluster that requires low inter-node latency, which of the following feature should you use?

- A. EC2 Dedicated Instances
- B. AWS Direct Connect
- C. VPC private
- D. Multiple Availability Zones

E. Placement Groups

Answer: E

---

**QUESTION:** 150

Which of the following are true regarding encrypted Amazon Elastic Block Store (EBS) volumes?  
Choose 2 answers

- A. Snapshots are automatically encrypted
- B. Existing volumes can be encrypted
- C. Supported on all Amazon EBS volume types
- D. Available to all instances types
- E. Shared volumes can be encrypted

Answer: A, C

---

**QUESTION:** 151

You have a load balancer configured for VPC, and all back-end Amazon EC2 instances are in service. However, your web browser times out when connecting to the load balancer's DNS name. Which options are probable causes of this behavior? Choose 2 answers

- A. The load balancer was not configured to use a public subnet with an Internet gateway configured
- B. The security groups or network ACLs are not properly configured for web traffic
- C. The VPC does not have a VGW configured
- D. The Amazon EC2 instances do not have a dynamically allocated private IP address
- E. The load balancer is not configured in a private subnet with a NAT instance

Answer: A, B

---

**QUESTION:** 152

Which of the following are characteristics of a reserved instance?

- A. It is specific to an Amazon Machine Image(AMI)
- B. It can be applied to instances launched by Auto Scaling
- C. It can be migrated across Availability Zones
- D. It can be used to lower Total Cost of Ownership (TCO) of a system
- E. It is specific to an insurance Type

Answer: C, D, E

---

**QUESTION:** 153

You are working with a customers who is using chef configuration management in their data center. Which service is designed to let the customer leverage existing chef recipes in AWS?

- A. AWS CloudFormation
- B. AWS OpsWorks
- C. AWS Elastic Beanstalk
- D. Amazon Simple Workflow Service

Answer: B

---

**QUESTION:** 154

After creating a new IAM user which of the following must be done before they can successfully make API calls?

- A. Create a set of Access Keys for the user
- B. Enable Multi-Factor Authentication for the user
- C. Add a password to the user
- D. Assign a Password Policy to the user

Answer: A

---

**QUESTION:** 155

If you want to launch Amazon Elastic Compute Cloud (EC2) instances and assign each instance a predetermined private IP address, you should:

Assign a group of sequential Elastic IP address to the instances

- A. Use standard EC2 instances since each instance gets a private Domain Name Service already
- B. Launch the instances in the Amazon Virtual Cloud (VPC)
- C. Launch the instances in a placement Group
- D. Launch the instances from a private Amazon Machine Image (AMI)

Answer: C

---

**QUESTION:** 156

What is one key difference between an Amazon EBS-backed and an instance-store backed instance?

- A. Instance-store backed instances can be stopped and restarted
- B. Amazon EBS-backed instances can be stopped and restarted
- C. Virtual Private Cloud requires EBS backed instances
- D. Auto Scaling requires using Amazon EBS- backed instances

Answer: B

---

**QUESTION:** 157

A company is building software on AWS that requires access to various AWS services. Which configuration should be used to ensure that AWS credentials (i.e., Access Key ID/secret access key combination) are not compromised?

- A. Enable Multi-factor Authentication for your AWS root account
- B. Assign an IAM role to the Amazon EC2 instance
- C. Store the AWS Access key ID/secret Access Key combination in software comments
- D. Assign an IAM user to the Amazon EC2 instance

Answer: B

---

**QUESTION: 158**

An instance is launched into a VPC subnet with the network ACL configured to allow all inbound traffic and deny all outbound traffic. The instance's security group is configured to allow SSH from any IP address and deny all outbound traffic. What changes need to be made to allow SSH access to the instance?

- A. The outbound security group needs to be modified to allow outbound traffic
- B. The outbound network ACL needs to be modified to allow outbound traffic
- C. Both the outbound security group and outbound network ACL need to be modified to allow outbound traffic
- D. Nothing, it can be accessed from any IP using SSH

Answer: C

---

**QUESTION: 159**

Which of the following are valid statements about Amazon S3? Choose 2 answers

- A. S3 provides read-after-write consistency for any type of PUT or DELETE
- B. Partially saved objects are immediately readable with a GET after an overwrite Put
- C. Consistency is not guaranteed for any type of PUT and DELETE
- D. A successful response to a PUT request only occurs when a complete object is saved
- E. S3 provides eventual consistency for overwrite PUTS and DELETES

Answer: A, E

---

**QUESTION: 160**

You have decided to change the instance type for instances running in your application tier that is using Auto Scaling. In which area below would you change the instance type definition?

- A. Auto Scaling tags
- B. Auto Scaling policy
- C. Auto Scaling group
- D. Auto Scaling launch configuration

Answer: D

---

**QUESTION: 161**

A company is deploying a two-tier, highly available web application to AWS. Which service provides durable storage for static content while utilizing lower overall CPU resources for web tier?

- A. Amazon S3
- B. Amazon EBS volume
- C. Amazon RDS instance
- D. Amazon EC2 instance store

Answer: A

---

**QUESTION: 162**

Which of the following features ensures even distribution of traffic to Amazon EC2 instances in multiples Availability Zones registered with a load balancer?

- A. An Amazon Route 53 latency routing policy
- B. Elastic Load Balancing request routing
- C. An Amazon Route 53 weighted routing policy
- D. Elastic Load Balancing cross-zone load balancing

Answer: D

---

**QUESTION: 163**

You manually launch a NAT AMI in a public subnet. The network is properly configured. Security groups and network access control lists are properly configured. Instances in a private subnet can access the NAT. The NAT can access the internet. However, private instances cannot access the internet. What additional step is required to allow access from the private instances?

- A. Enable Source/Destination check on the private instances
- B. Enable Source/Destination check on the NAT instance
- C. Disable Source/Destination check on the private instance
- D. Disable Source/Destination check on the NAT instance

Answer: D

---

**QUESTION: 164**

You have just created an Amazon Relational Database Service (RDS) PostgreSQL instances in Amazon VPC and are unable to connect. Which of the following may be causing connection issues to your Amazon RDS endpoint? Choose 3 answers

- A. Incorrect rules in VPC security groups
- B. Incorrect rules in DB security groups
- C. Amazon RDS endpoint port restrictions on the local firewall
- D. An incorrect configuration in the Options Group
- E. An incorrect Amazon RDS DB instance type
- F. The Amazon RDS instance is not yet in a running state

Answer: B, C, F

---

**QUESTION: 165**

Which of the following items are required to allow an application deployed on an EC2 instance to write data to a DynamoDB table? Assume that to security keys are allowed to be stored on the EC2 instance.

- A. Launch an EC2 instance with the IAM user included in the launch configuration
- B. Create an IAM user that allows write access to the DynamoDB table
- C. Add an IAM user to a running EC2 instance
- D. Create an IAM role that allows write access to the dynamoDB table
- E. Add an IAM role to a running EC2 instance

F. Launch an EC2 instance with the IAM role included in the launch configuration

Answer: D, F

---

**QUESTION:** 166

A customer needs to deploy a NoSQL-based datastore to Amazon EC2 instances. The NoSQL software has native replication for durability of the data store. Which of the following storage options is the most cost-effective and performs best for the data store?

- A. Amazon EBS Magnetic volumes
- B. Amazon EBS provisioned IOPS volumes
- C. Amazon EBS general purpose SSD volumes
- D. SSD-based Amazon EC2 instance store volumes

Answer: B

---

**QUESTION:** 167

A customer has a single 3-TB volume on-premises that is used to hold a large repository of images and print layout files. This repository is growing at 500 GB a year and must be presented as a single logical volume. The customer is becoming. Which AWS Storage Gateway configuration meets the customer requirements?

- A. Gateway-Cached volumes with snapshots scheduled to Amazon S3
- B. Gateway-stored volumes with snapshots scheduled to Amazon S3
- C. Gateway-Virtual Tape library with snapshots to Amazon S3
- D. Gateway-Virtual tape library with snapshots to Amazon Glacier

Answer: C

---

**QUESTION:** 168

Which of the following approaches provides the lowest cost for Amazon Elastic Block Store snapshots while giving you the ability to fully restore data?

- A. Maintain a single snapshots: the latest snapshot is both incremental and complete
- B. Maintain the most current snapshots, archive the original and incremental to Amazon Glacier
- C. Maintain a volume snapshot: subsequent snapshots will overwrite one another
- D. Maintain two snapshots: the original snapshot and the latest incremental snapshot

Answer: A

---

**QUESTION:** 169

After launching an instance that you intend to serve as NAT (Network Address Translation) device in a public subnet you modify your route tables to have the NAT device be the target of internet bound traffic of your private subnet. When you try and make an outbound connection to the internet from an instance in the private subnet, you are not successful. Which of the following steps could resolve the issue?

- A. Disabling the Source/Destination check attribute on the NAT instance

- B. Attaching an Elastic IP address to the instance in the private subnet
- C. Attaching a second Elastic Network Interface(ENI) to the instance in the private subnet, and placing it in the public subnet
- D. Attaching a second Elastic Network Interface to the NAT instance, and placing it in the private subnet

Answer: A

---

**QUESTION:** 170

When creation of an EBS snapshot is initiated, but not completed, the EBS volume:

- A. Cannot be detached or attached to an EC2 instance until the snapshot completes
- B. Can be used while the snapshots is in progress
- C. Cannot be used until the snapshot completes
- D. Can be used in read-only mode while the snapshot is in progress

Answer: B

---

**QUESTION:** 171

A us-based company is expanding their web presence into Europe. The company wants to extend their AWS infrastructure from Northern Virginia (us-east-1) into the Dublin (eu-west-1) region. Which of the following options would enable an equivalent experience for users on both continents?

- A. Use a public-facing load balancer per region to load-balancer web traffic, and enable HTTP health checks
- B. Use a public-facing load balancer per region to load balancer web traffic, and enable sticky sessions
- C. Use Amazon Route S3, and apply a geolocation routing policy to distribution traffic across both regions
- D. Use Amazon Route S3, and apply a weighted routing policy to distribute traffic across both regions

Answer: C

---

**QUESTION:** 172

You need to configure an Amazon S3 bucket to serve static assets for your public-facing web application. Which methods ensure that all objects uploaded to the bucket are set to public read? Choose 2 answers

- A. Set permissions on the object to public read during upload
- B. Configure the bucket ACL to sell all objects to public read
- C. Configure the bucket policy to set all objects to public read
- D. Use AWS identity and access Management roles to set the bucket to public read
- E. Amazon S3 objects default to public read, so no action is needed

Answer: B, C

---

**QUESTION:** 173

Which set of Amazon S3 features helps to prevent and recover from accidental data loss?



- A. Object lifecycle and service access logging
- B. Object versioning and Multi-factor authentication
- C. Access controls and server-side encryption
- D. Website hosting and Amazon S3 policies

Answer: B

---

**QUESTION:** 174

In AWS, which security aspects are the customer's responsibility? Choose 4 answers

- A. Life-Cycle management of IAM credentials
- B. Security Group and ACL settings
- C. Controlling physical access to compute resources
- D. Path management on the EC2 instance's operating system
- E. Encryption of EBS volumes
- F. Decommissioning storage devices

Answer: A, B, D, E

---

**QUESTION:** 175

A photo-sharing service stores pictures in Amazon Simple Storage Service (S3) and allows application sign-in using an opened connect-compatible identity provider. Which AWS Security Token Service approach to temporary access should you use for the Amazon S3 operations?

- A. Cross-Account Access
- B. AWS identity and Access Management roles
- C. SAML-based Identity Federation
- D. Web identity Federation

Answer: C

---

**QUESTION:** 176

You have launched an Amazon Elastic Compute Cloud (EC2) instance into a public subnet with a primary private IP address assigned, an internet gateway is attached to the VPC, and the public route table is configured to send all internet-based internet. Why is the internet unreachable from this instance?

- A. The Internet gateway security group must allow all outbound traffic
- B. The instance does not have a public IP address
- C. The instance "Source/Destination check" property must be enabled
- D. The instance security group must allow all inbound traffic

Answer: B

---

**QUESTION:** 177

A company needs to deploy virtual desktops to its customers in a virtual private cloud, leveraging existing security controls. Which set of AWS services and features will meet the company's

requirements?

- A. Virtual private network connection, AWS Directory services, and ClassicLink
- B. Virtual private network connection, AWS Directory services, and Amazon WorkSpaces
- C. AWS Directory service, Amazon WorkSpaces, and AWS Identity and Access Management
- D. Amazon Elastic Compute Cloud, and AWS identity and access management

Answer: B

---

**QUESTION:** 178

A customer needs to capture all client connection information from their load balancer every five minutes. The company wants to use data for analyzing traffic patterns and troubleshooting their applications. Which of the following options meets the customer requirements?

- A. Enable access logs on the load balancer
- B. Enable AWS CloudTrail for the load balancer
- C. Enable Amazon CloudWatch metrics on the load balancer
- D. Install the Amazon CloudWatch Logs agent on the load balancer

Answer: B

---

**QUESTION:** 179

Your customers located around the globe require low-latency access to private video files. Which configuration meets these requirements?

- A. Use Amazon CloudFront with signed URLs
- B. Use Amazon EC2 with provisioned IOPS Amazon EBS volumes
- C. Use Amazon S3 with signed URLs
- D. Use Amazon S3 with access control lists

Answer: A

---

**QUESTION:** 180

An existing application stores sensitive information on a non-boot Amazon EBS data volume attached to an Amazon Elastic Compute Cloud instance. Which of the following approaches would protect the sensitive data on an Amazon EBS volume?

- A. Snapshot the current Amazon EBS volume. Restore the snapshot to a new, encrypted Amazon EBS volume. Mount the Amazon EBS volume.
- B. Create and mount a new, encrypted Amazon EBS volume. Move the data to the new volume. Delete the old Amazon EBS volume.
- C. Unmount the EBS volume. Toggle the encryption attribute to True. Re-mount the Amazon EBS volume.
- D. Upload your customer keys to AWS CloudHSM. Associate the Amazon EBS volume with AWS CloudHSM. Re-mount the Amazon EBS volume.

Answer: A

---

**QUESTION:** 181

When using the following AWS services, which should be implemented in multiple Availability Zones for high availability solutions? Choose 2 answers

- A. Amazon Simple Storage Service
- B. Amazon Elastic Load Balancing
- C. Amazon Elastic Compute Cloud
- D. Amazon Simple Notification Service
- E. Amazon DynamoDB

Answer: B, C

---

**QUESTION:** 182

A company needs to monitor the read and write IOPs metrics for their AWS MySQL RDS instances and send real-time alerts to their operations team. Which AWS services can accomplish this? Choose 2 answers

- A. Amazon Simple Email Service
- B. Amazon CloudWatch
- C. Amazon Simple Queue Service
- D. Amazon Route 53
- E. Amazon Simple Notification Service

Answer: B, E

---

**QUESTION:** 183

You are configuring your company's application to use Auto Scaling and need to move user state information. Which of the following AWS services provides a shared data store with durability and low latency?

- A. Amazon Simple Storage Service
- B. Amazon DynamoDB
- C. Amazon EC2 instance storage
- D. AWS ElasticCache Memcached

Answer: A

---

**QUESTION:** 184

How can the domain's zone apex, for example, "myzoneapexdomain.com", be pointed towards an Elastic Load Balancer?

- A. By using an Amazon Route 53 Alias record
- B. By using an A record
- C. By using an AAAA record
- D. By using an Amazon Route 53 CNAME record

Answer: A

---

**QUESTION: 185**

A company has reproducible data that they want to store on Amazon Web Services. The company may want to retrieve the data on a frequent basis. Which Amazon web services storage option allows the customer to optimize storage costs and still achieve high availability for their data?

- A. Amazon S3 Reduced Redundancy Storage
- B. Amazon EBS Magnetic Volume
- C. Amazon Glacier
- D. Amazon S3 Standard Storage

Answer: A

---

**QUESTION: 186**

When will you incur costs with an Elastic IP address (EIP)?

- A. When an EIP is allocated
- B. When it is allocated and associated with a running instance
- C. When it is allocated and associated with a stopped instance
- D. Costs are incurred regardless of whether the EIP associated with a running instance

Answer: C

---

**QUESTION: 187**

Your company wants to start working with AWS, but has not yet opened an account. With which of the following services should you begin local development?

- A. Amazon DynamoDB
- B. Amazon Simple Queue Service
- C. Amazon Simple Email Service
- D. Amazon CloudSearch

Answer: A

---

**QUESTION: 188**

Which of the following requires a custom cloudwatch metric to monitor?

- A. Memory utilization of an EC2 instance
- B. CPU utilization of an EC2 instance
- C. Disk usage activity of an EC2 instance
- D. Data transfer of an EC2 instance

Answer: A

---

**QUESTION: 189**

A company is preparing to give AWS Management Console access to developers. Company policy mandates identity federation and role based access control. Roles are currently assigned using groups in the corporate Active Directory. What combination of the following will give developers access to the AWS console? Choose 2 answers

- A. AWS Directory Service AD connector
- B. AWS Directory Service Simple AD
- C. AWS identity and Access Management groups
- D. AWS identity and Access Management roles
- E. AWS identity and Access Management users

Answer: A, D

---

**QUESTION:** 190

When you put objects in Amazon S3, what is the indication that an object was successfully stored?

- A. A HTTP 200 result code and MD5 checksum, taken together, indicate that the operation was successful
- B. A success code is inserted into the S3 object metadata
- C. Amazon S3 is engineered for 99.999999999% durability. Therefore there is no need to confirm that data was inserted.
- D. Each S3 account has a special bucket named \_s3\_logs. Success codes are written to this bucket with a timestamp and checksum

Answer: A

---

**QUESTION:** 191

Which set of Amazon S3 features helps to prevent and recover from accidental data loss?

- A. Object lifecycle and service access logging
- B. Object versioning and Multi-factor authentication
- C. Access controls and server-side encryption
- D. Website hosting and Amazon S3 policies

Answer: B

---

**QUESTION:** 192

A customer wants to track access to their Amazon Simple Storage Service (S3) buckets and also use this information for their internal security and access audits. Which of the following will meet the Customer requirement?

- A. Enable AWS CloudTrail to audit all Amazon S3 bucket access.
- B. Enable server access logging for all required Amazon S3 buckets.
- C. Enable the Requester Pays option to track access via AWS Billing
- D. Enable Amazon S3 event notifications for Put and Post.

Answer: B

---

**QUESTION:** 193

A photo sharing service stores pictures in Amazon Simple Storage Service (S3) and allows application sign-in using an Open ID Connect compatible identity provider. Which AWS Security Token approach to temporary access should you use for the Amazon S3 operations?

- A. SAML-based identity Federation
- B. Cross-Account Access
- C. AWS identity and Access Management roles
- D. Web identity Federation

Answer: A

---

**QUESTION:** 194

You are deploying an application to collect votes for a very popular television show. Millions of users will submit votes using mobile devices. The votes must be collected into a durable, scalable, and highly available data store for real-time public tabulation. Which service should you use?

- A. Amazon DynamoDB
- B. Amazon Redshift
- C. Amazon Kinesis
- D. Amazon Simple Queue Service

Answer: C

---

**QUESTION:** 195

Which of the following instance types are available as Amazon EBS backend only?

- A. General purpose T2
- B. General purpose M3
- C. Compute-optimized C4
- D. Compute-optimized C3
- E. Storage-optimized I2

Answer: A, C

---

**QUESTION:** 196

You have a content management system running on an Amazon EC2 instance that is approaching 100% CPU utilization. Which option will reduce load on the Amazon EC2 instance?

- A. Create a load balancer, and register the Amazon EC2 instance with it
- B. Create a CloudFront distribution, and configure the Amazon EC2 instance as the origin
- C. Create an Auto Scaling group from the instance using the CreateAutoScalingGroup action
- D. Create a launch configuration from the instance using the CreateLaunchConfiguration action

Answer: C

---

**QUESTION:** 197

Which of the following notification endpoints or clients are supported by Amazon Simple Notification Service? Choose 2 answers

- A. Email
- B. CloudFront distribution

- C. File Transfer Protocol
- D. Short Message Service
- E. Simple Network Management Protocol

Answer: B, C

---

**QUESTION:** 198

You have an application running on an Amazon Elastic Compute Cloud instance, that uploads 5 GB video objects to Amazon Simple Storage Service (S3). Video uploads are taking longer than expected, resulting in poor application performance. Which method will help improve performance of your application?

- A. Enable enhanced networking
- B. Use Amazon S3 multipart upload
- C. Leveraging Amazon CloudFront, use the HTTP POST method to reduce latency.
- D. Use Amazon Elastic Block Store Provisioned IOPs and use an Amazon EBS-optimized instance

Answer: B

---

**QUESTION:** 199

You are designing a web application that stores static assets in an Amazon Simple Storage Service (S3) bucket. You expect this bucket to immediately receive over 150 PUT requests per second. What should you do to ensure optimal performance?

- A. Use multi-part upload.
- B. Add a random prefix to the key names.
- C. Amazon S3 will automatically manage performance at this scale.
- D. Use a predictable naming scheme, such as sequential numbers or date time sequences, in the key names

Answer: B

---

**QUESTION:** 200

You are deploying an application to track GPS coordinates of delivery in the United States. Coordinates are transmitted from each delivery truck once every three seconds. You need to design an architecture that will enable realtime processing of these coordinates from multiple consumers. Which service should you use to implement data ingestion?

- A. Amazon Kinesis
- B. AWS Data Pipeline
- C. Amazon AppStream
- D. Amazon Simple Queue Service

Answer: A

---

**QUESTION:** 201

Which of the following are true regarding AWS Cloud Trail?



Choose 3 answers

- A. Cloudtrail is enabled globally
- B. Cloudtrail is enabled by default
- C. Cloudtrail is enabled on a per-region basis
- D. Cloudtrail is enabled on a per-service basis
- E. Logs can be delivered to a single Amazon S3 bucket for aggregation
- F. Logs can only be processes and delivered to the region in which they are generated

Answer: A, C, E

---

**QUESTION: 202**

When will you incur costs with an Elastic IP address (EIP)?

- A. When an EIP is allocated.
- B. When it is allocated and associated with a running instance.
- C. When it is allocated and associated with a stopped instance.
- D. Costs are incurred regardless of whether the EIP is associated with a running instance.

Answer: C

---

**QUESTION: 203**

You have a load balancer configured for VPC, and all backend Amazon EC2 instances are in service. However, your web browser times out when connecting to the load balancer's DNS name. Which options are probable causes of this behaviour?

- A. The load balancer was not configured to use a public subnet with an Internet gateway configured
- B. The Amazon EC2 instances do not have a dynamically allocated private IP address
- C. The security groups or network ACLs are not properly configured for web traffic
- D. The load balancer is not configured in a private subnet with a NAT instance
- E. The VPC does not have a VGW configured

Answer: A, C

---

**QUESTION: 204**

A company needs to deploy services to an AWS region which they not previously used. The company currently has an AWS identity and Access Management (IAM) role for their Amazon EC2 instances, which permits the instance to have access to Amazon DynamoDB. The company wants their EC2 instances in the new region to have the same privileges. How should the company achieve this?

- A. Create a new IAM role and associated policies within the new region
- B. Assign the existing IAM role to the Amazon EC2 instances in the new region
- C. Copy the IAM role and associated policies to the new region and attach it to the instances
- D. Create the Amazon Machine Image of the instance and copy it to the desired region using the AMI Copy feature

Answer: B

---

**QUESTION: 205**

A company needs to monitor the read and write IOPs metrics for their AWS MySQL RDS instance and send real-time alerts to their operations team. Which AWS services can accomplish this? Choose 2 answers

- A. Amazon Simple Email Service
- B. Amazon CloudWatch
- C. Amazon Simple Queue Service
- D. Amazon Route 53
- E. Amazon Simple Notification Service

Answer: B, E

---

**QUESTION: 206**

The Trusted Advisor service provides insight regarding which four categories of an AWS account?

- A. Security, fault tolerance, high availability, and connectivity
- B. Security, access control, high availability, and performance
- C. Performance, cost optimization, security, and fault tolerance
- D. Performance, cost optimization, access control, and connectivity

Answer: C

---

**QUESTION: 207**

A company has an AWS account that contains three VPCs (Dev, Test, and Prod) in the same region. Test is peered to both Prod and Dev. All VPCs have non-overlapping CIDR blocks. The company wants to push minor code releases from Dev to Prod to speed up time to market. Which of the following options helps the company accomplish this?

- A. Create a new peering connection Between Prod and Dev along with appropriate routes.
- B. Create a new entry to Prod in the Dev route table using the peering connection as the target.
- C. Attach a second gateway to Dev. Add a new entry in the Prod route table identifying the gateway as the target.
- D. The VPCs have non-overlapping CIDR blocks in the same account. The route tables contain local routes for all VPCs.

Answer: A

---

**QUESTION: 208**

A company is deploying a two tier, highly available web application to AWS. Which Service provides durable storage for static content while utilizing lower overall CPU resources for the web tier?

- A. Amazon EBS volume
- B. Amazon S3
- C. Amazon EC2 instance store
- D. Amazon RDS instance

Answer: B

---

**QUESTION: 209**

Using only AWS services, you intend to automatically scale a fleet of stateless web servers based on CPU and network utilization metrics. Which of the following services are needed? Choose 2 answers

- A. Auto Scaling
- B. Amazon Simple Notification Service
- C. AWS Cloud Formation
- D. CloudWatch
- E. Amazon Simple Workflow Service

Answer: A, D

---

**QUESTION: 210**

You run an ad-supported photo sharing website using S3 to serve photos to visitors of your site. At some point you find out that other sites have been linking to the photos on your site, causing loss to your business. What is an effective method to mitigate this?

- A. Use CloudFront distributions for static content
- B. Store photos on an EBS volume of the web server
- C. Block the IPs of the offering websites in Security Groups
- D. Remove public read access and use signed URLs with expiry dates

Answer: D

---

**QUESTION: 211**

When an EC2 instance that is backed by an s3-based AMI is terminated, what happens to the data on the root volume?

- A. Data is unavailable until the instance is restarted
- B. Data is automatically deleted
- C. Data is automatically saved as an EBS snapshot
- D. Data is automatically saved as an EBS volume

Answer: B

---

**QUESTION: 212**

You have a video Transcoding application running on Amazon EC2. Each instance pools a queue to find out which video should be Transcoded, and then runs a Transcoding process.

If this process is interrupted, the video will be Transcoded by another instance based on the queuing system. You have a large backlog of videos which need to be Transcoded and would like to reduce this backlog by adding more instances. You will need these instances only until the backlog is reduced. Which type of Amazon EC2 instance should you use to reduce the backlog in the most cost effective way?

- A. Dedicated instances
- B. Spot instances

- C. On-demand instances
- D. Reserved instances

Answer: B

---

**QUESTION:** 213

Which route needs to be added to your routing table in order to allow connections to the internet from your subnet?

- A. Destination: 0.0.0.0/0 target: 0.0.0.0/24
- B. Destination: 0.0.0.0/0 target: your internet Gateway
- C. Destination: 10.0.0.0/32 target: your Virtual Gateway
- D. Destination: 0.0.0.0/33 target: your internet gateway

Answer: B

---

**QUESTION:** 214

You have a web application running on Elastic Beanstalk using a RDS database instance. Using Amazon ElastiCache to store your web session data instead of storing it in the relational database will: Choose 2 answers

- A. Improve read/write performances of your session data
- B. Improve write performance by using ElastiCache to write to your database
- C. Reduce the load on your database instance
- D. Improve availability of your session data in an AZ failover scenario

Answer: A, C

---

**QUESTION:** 215

Which of the following are characteristics of Amazon VPC subnets? Choose 2 answers

- A. Each subnet spans at least 2 Availability Zones to provide a high-availability environment.
- B. Each subnet maps to a single Availability Zone.
- C. CIDR block mask of /25 is the smallest range supported.
- D. By default, all subnets can route between each other, whether they are private or public.
- E. Instances in a private subnet can communicate with the Internet only if they have an Elastic IP.

Answer: B, D

---

**QUESTION:** 216

What is one key difference between an Amazon EBS-backed and an instance-store backed instance?

- A. Amazon EBS-backed instances can be stopped and restarted
- B. Instance-store backed instances can be stopped and restarted
- C. Auto scaling requires using Amazon EBS-backed instances
- D. Virtual Private Cloud requires EBS backed instances

Answer: A

---

**QUESTION: 217**

Which services allow the customer to retain full administrative privileges of the underlying EC2 instances? Choose 2 answers

- A. Amazon Relational Database Service
- B. Amazon Elastic Map Reduce
- C. Amazon ElastiCache
- D. Amazon DynamoDB
- E. AWS Elastic Beanstalk

Answer: C, E

**QUESTION: 218**

How can software determine the public and private IP addresses of the Amazon EC2 instance that it is running on?

- A. Use ipconfig or ifconfig command
- B. Query the local instance metadata
- C. Query the appropriate Amazon CloudWatch metric
- D. Query the local instance userdata

Answer: B

**QUESTION: 219**

A company has a workflow that sends video files from their on-premise system to AWS for Transcoding. They use EC2 worker instances that pull Transcoding jobs from SQS an appropriate service for this scenario?

- A. SQS synchronously provides transcoding output
- B. SQS guarantees the order of the messages
- C. SQS checks the health of the worker instances
- D. SQS helps to facilitate horizontal scaling of encoding tasks

Answer: D

**QUESTION: 220**

What would happen to an RDS (Relational Database Service) multi-Availability Zone deployment if the primary DB instance fails?

- A. The IP of the primary DB instance is switched to the standby DB instance
- B. A new DB instance is created in the standby availability zone
- C. The canonical name record (CNAME) is changed from primary to standby
- D. The RDS DB instance reboots

Answer: C

Explanation:

**QUESTION: 221**

You have a database application running on two instances in Amazon EC2. This application runs 24x7x365 and has a consistent and predictable workload. You want to choose the most cost-effective pricing model. What kind of Amazon EC2 instances should you use?

- A. Dedicated instances
- B. On-demand instances
- C. Reserved instances
- D. Spot instances

Answer: C

---

**QUESTION: 222**

For which of the following use cases are Simple Queue Service (SQS) and Amazon EC2 an appropriate solution? Choose 2 answers

- A. Using as a distributed session store for your web application
- B. Managing a multi-step and multi-decision checkout process of an e-commerce website
- C. Using as an SNS endpoint to trigger execution of video transcoding jobs
- D. Orchestrating the execution of distributed and auditable business processes
- E. Using as an encrypted to collect thousands of data points per hour from a distributed fleet of sensors

Answer: D, E

---

**QUESTION: 223**

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

- A. Add the CloudFront account security group “amazon-ct/amazon-cf-sg” to the appropriate S3 bucket policy
- B. Create an Origin Access identity for CloudFront and grant access to the objects in your S3 bucket to that OAI
- C. Create an identity and Access Amangement User for CloudFornt and grant Access to the objects in your S3 bucket to that IAM user
- D. Create a S3 bucket policy that lists the Cloudfront distribution ID as the Principle and the target as the Amazon Resource Name

Answer: B

---

**QUESTION: 224**

If you're unable to connect via SSH to your EC2 instance. Which of the following should you check and possibly correct to restore connectivity?

- A. Adjust security group to permit egress traffic over TCP port 443 from your IP
- B. Modify the instance security group to allow ingress of ICMP packets from your IP

- C. Apply the most recently released Operating System security patches
- D. Configure the IAM role to permit changes to security group settings
- E. Adjust the instance's Security Group to permit ingress traffic over port 22 from your IP

Answer: C

---

**QUESTION:** 225

For which of the following use cases are Simple Workflow Service (SWF) and Amazon EC2 an appropriate solution? Choose 2 answers

- A. Using as an endpoint to collect thousands of data points per hour from a distributed fleet of sensors
- B. Managing a multi-step and multi-decision checkout process of an e-commerce website
- C. Orchestrating the execution of distributed and auditable business processes
- D. Using as an SNS (Simple Notification Service) endpoint to trigger execution of video transcoding jobs
- E. Using as a distributed session store for your web application

Answer: C, B

---

**QUESTION:** 226

If you want to launch Amazon Elastic Compute Cloud (EC2) instances and assign each instance a predetermined private IP address you should:

- A. Launch the instance from a private Amazon Machine Image (AMI).
- B. Assign a group of sequential Elastic IP address to the instances.
- C. Launch the instances in the Amazon Virtual Private Cloud (VPC).
- D. Launch the instances in a Placement Group.
- E. Use standard EC2 instances since each instance gets a private Domain Name Service (DNS) already.

Answer: C

---

**QUESTION:** 227

Which of the following actions can Cloud Formation trigger when launching Amazon Linux EC2 instance?

- A. Download and install software
- B. Attach the instance to an Elastic Map Reduce job flow
- C. Change the password for the root user
- D. Create custom files on the file system
- E. Change the EC2 instance metadata

Answer: A, D

---

**QUESTION:** 228

When an EC2 EBS-backend (EBS root) instance is stopped. What happens to the data on any Ephemeral store volumes?



- A. Data is automatically saved in an EBS volume
- B. Data will be deleted and will no longer be accessible
- C. Data is unavailable until the instance is restarted
- D. Data is automatically saved as an EBS snapshot

Answer: B

---

**QUESTION:** 229

What are characteristics of Amazon S3?

Choose 2 answers

- A. S3 allows you to store unlimited amounts of data
- B. S3 offers Provisioned IOPS
- C. S3 allows you to store objects of virtually unlimited size
- D. S3 should be used to host a relational database
- E. Objects are directly accessible via a URL

Answer: A, E

---

**QUESTION:** 230

An instance is launched into a VPC subnet with the network ACL configured to allow all inbound traffic and deny all outbound traffic. The instance's security group is configured to allow SSH from any IP address and deny all outbound traffic. What changes need to be made to allow SSH access to the instance?

- A. The outbound security group needs to be modified to allow outbound traffic
- B. Both the outbound security group and outbound network ACL need to be modified to allow outbound traffic
- C. The outbound network ACL needs to be modified to allow outbound traffic
- D. Nothing, it can be accessed from any IP address using SSH

Answer: B

---

**QUESTION:** 231

Which of the following items are required to allow an application deployed on an EC2 instance to write data to a DynamoDB table? Assume that no security keys are allowed to be stored on the EC2 instance? Choose 2 answers

- A. Add an IAM Role to a running EC2 instance
- B. Launch an EC2 instance with the IAM Role included in the launch configuration
- C. Create an IAM User that allows write access to the DynamoDB table
- D. Create an IAM role that allows write access to the DynamoDB table
- E. Launch an EC2 instance with the IAM user included in the launch configuration
- F. Add an IAM user to a running EC2 instance

Answer: B, D

**QUESTION: 232**

What is required in order to make a single web server in VPC (Virtual Private Cloud) publicly accessible? Choose 4 answers

- A. Configure an internet gateway
- B. Associate an Elastic IP to the web server
- C. Set up a NAT instance
- D. Alter the web server's security group to allow inbound web traffic on ports being used to serve web traffic
- E. Configure the routing table of the subnet
- F. Add a CNAME record to your Route 53 hosted zone

Answer: A, B, D, E

---

**QUESTION: 233**

You have an EC2 Security Group with several running EC2 instances. You change the Security Group rules to allow inbound traffic on a new port and protocol, and launch several new instances in the same Security Group. The new rules apply:

- A. Immediately to all instances in the security group.
- B. Immediately to the new instances only.
- C. Immediately to the new instances, but old instances must be stopped and restarted before the new rules apply.
- D. To all instances, but it may take several minutes for old instances to see the changes.

Answer: A

---

**QUESTION: 234**

On a single EC2 instance, which configuration provides the highest IOPS performance?

- A. Using an EBS-optimized instance using provisioned IOPS volumes
- B. Striping across several EBS volumes using standard EBS volumes
- C. Using a High I/O instance using local instance storage volumes
- D. Striping across several EBS volumes using provisioned IOPS volumes

Answer: A

---

**QUESTION: 235**

How can you secure data at rest on an EBS volume?

- A. Attach the volume to an instance using EC2's SSL interface.
- B. Write the data randomly instead of sequentially.
- C. Encrypt the volume using the S3 server-side encryption service.
- D. Create an IAM policy that restricts read and write access to the volume.
- E. Use an encrypted file system on top of the EBS volume.

Answer: E

---

**QUESTION: 236**

You have an environment that consists of a public subnet using Amazon VPC and 3 instances that are running in this subnet. These three instances can successfully communicate with other hosts on the internet. you launch a fourth instance in the same subnet, using the same AMI and security group configuration you used for the others, but find that this instance cannot be accessed from the internet. What should you do to enable internet access?

- A. Configure a publically routable IP Address in the host OS of the fourth instance
- B. Deploy a NAT instance into the public subnet
- C. Modify the routing table for the public subnet
- D. Assign an elastic IP address to the fourth instance

Answer: D

---

**QUESTION: 237**

You have a web application running on six Amazon EC2 instances, consuming about 45% of resources on each instance. You are using auto-scaling to make sure that six instances are running at all times. The number of requests this application processes is consistent and does not experience spikes. The application is critical to your business and you want high availability at all times. you want the load to be distributed evenly between all instances. you also want to use the same Amazon Machine image(AMI) for all instances .which of the following architectural choices should you make?

- A. Deploy 2 EC2 instances in three regions and use Amazon Elastic Load Balancer
- B. Deploy 6 EC2 instances in one availability zone and use Amazon Elastic Load Balancer
- C. Deploy 3 EC2 instances in one availability zone and 3 in another availability zone and use Amazon Elastic Load Balancer
- D. Deploy 3 EC2 instances in one region and 3 in another region and use Amazon Elastic Load Balancer

Answer: C

---

**QUESTION: 238**

What is a placement group?

- A. A collection of Auto Scaling groups in the same region
- B. A feature that enables EC2 instances to interact with each other via high bandwidth, low latency connections
- C. A collection of authorized CloudFront edge locations for a distribution
- D. A collection of Elastic Load Balancers in the same Region or Availability Zone

Answer: B

---

**QUESTION: 239**

Which technique can be used to integrate AWS IAM (Identity and Access Management) with an onpremise LDAP (Lightweight Directory Access Protocol) directory service?

- A. Use an IAM policy that references the LDAP account identifiers and the AWS credentials.
- B. Use SAML (Security Assertion Markup Language) to enable single sign-on between AWS and LDAP.

- C. Use AWS Security Token Service from an identity broker to issue short-lived AWS credentials.
- D. Use IAM roles to automatically rotate the IAM credentials when LDAP credentials are updated.
- E. Use the LDAP credentials to restrict a group of users from launching specific EC2 instance types.

Answer: B

---

**QUESTION:** 240

Which of the following are valid statements about Amazon S3? Choose 2 answers

- A. S3 provides read-after-write consistency for any type of PUT or DELETE.
- B. Consistency is not guaranteed for any type of PUT or DELETE.
- C. A successful response to a PUT request only occurs when a complete object is saved.
- D. Partially saved objects are immediately readable with a GET after an overwrite PUT.
- E. S3 provides eventual consistency for overwrite PUTS and DELETES.

Answer: C, E

---

**QUESTION:** 241

An Auto-scaling group spans 3 AZs and currently has 4 running EC2 instances. When Auto scaling needs to terminate an EC2 instance, by default, Auto scaling will:

Send an SNS notification, if configured to do so

- A. Allow at least five minutes for Windows/Linux shutdown scripts to complete, before terminating the instance
- B. Randomly select one of the 3 AZs, and then terminate an instance in that AZ
- C. Terminate an instance in the AZ which currently has 2 running EC2 instances
- D. Terminate the instance with the least active network connections if multiple instances meet this criterion, one will be randomly selected

Answer: A, D

---

**QUESTION:** 242

You have an application running in multiple Availability Zones, to confirm this application can continue to operate at full capacity without performance degradation or downtime. In the event of an Availability Zone failure. You must:

- A. Use Spot instances to guarantee supplemental capacity
- B. Use Auto Scaling to launch instances in other Availability Zones to replace lost capacity
- C. Use dedicated instances in all Availability Zones
- D. Have enough running EC2 instances in other Availability Zones

Answer: B

---

**QUESTION:** 243

Your web application front end consists of multiple EC2 instances behind an Elastic Load Balancer. You configured ELB to perform health checks on these EC2 instances, if an instance fails to pass health checks, which statement will be true?

- A. The instance gets terminated automatically by the ELB.
- B. The instance gets quarantined by the ELB for root cause analysis.
- C. The instance is replaced automatically by the ELB.
- D. The ELB stops sending traffic to the instance that failed its health check.

Answer: D

---

**QUESTION: 244**

In order to optimize performance for a compute cluster that requires low inter-node latency. Which of the following feature should you use?

- A. EC2 dedicated instances
- B. Placement Groups
- C. Multiple Availability Zones
- D. VPC private subnets
- E. AWS Direct Connect

Answer: B

---

**QUESTION: 245**

Which of the following requires a custom Cloud Watch metric to monitor?

- A. CPU utilization of an EC2 instance
- B. Memory utilization of an EC2 instance
- C. Disk usage activity of an EC2 instance
- D. Data transfer of an EC2 instance

Answer: B

---

**QUESTION: 246**

After launching an instance that you intend to serve as a NAT (Network Address Translation) device in a public subnet you modify your route tables to have the NAT device be the target of internet bound traffic of your private subnet. When you try and make an outbound connection to the internet from an instance in the private subnet, you are not successful. Which of the following steps could resolve the issue?

- A. Attaching a second Elastic network interface to the instance in the private subnet, and placing it in the public subnet
- B. Attaching an Elastic IP address to the instance in the private subnet
- C. Disabling the Source/Destination check attribute on the NAT instance
- D. Attaching a second Elastic Network interface to the NAT instance, and placing it in the private subnet

Answer: C

---

**QUESTION: 247**

If you want to setup a web server on EC2 with multiple Virtual Hosts Using distinct SSL certificates you need to:

- A. Use an S3 bucket with server side encryption
- B. Run your Apache EC2 instance in VPC
- C. Create one Amazon Elastic Load Balancer with SSL termination
- D. Upload your SSL server certification to Amazon identity and Access Management

Answer: C

---

**QUESTION:** 248

Your application provides data transmission services. Files containing data to be transformed are first uploaded to Amazon S3 and then transformed by a fleet of spot EC2 instances. Files submitted by your premium customers must be transformed with the highest Priority. How should you implement such a system?

- A. Use two SQS queues. One for high priority messages, the other for default priority. Transformation instances first poll the high priority queue, if there is no message; they poll the default priority queue.
  - B. Use Route latency based-routing to send high priority tasks to the closest transformation instances.
  - C. Use a DynamoDB table with an attribute defining the priority level. Transformation instances will scan the table for tasks, sorting results by priority level
  - D. Use a single SQS queue. Each message contains the priority level.
- Transformation instances poll high=priority messages first

Answer: A

---

**QUESTION:** 249

Which of the following approaches help improve the availability of an application on AWS?.  
Choose 2 answer

- A. Using multiple Availability zones
- B. Using placement groups
- C. Using Amazon virtual private cloud
- D. Using AutoScaling to replace lost capacity
- E. Using the largest available instance type

Answer: A, D

---

**QUESTION:** 250

You are using an m1.small EC2 instance with one 300GB EBS volume to host a relational database. You determined that write throughput to the database needs to be increased. Which of the following approaches can help achieve this? Choose 2 answers

- A. Add an EBS volume and place into RAID 5
- B. Use an array of EBS volumes
- C. Place the instance in an Auto Scaling Group
- D. Increase the size of the EC2 instance
- E. Enable multi-AZ mode
- F. Put the database behind an Elastic Load Balancer

Answer: B, D

---

**QUESTION:** 251

How can an EBS volume that is currently attached to an EC2 instance be migrated from one Availability Zone to another?

- A. Simply create a new volume in the other AZ and specify the original volume as the source
- B. Detach the volume and attach it to another EC2 instance in the other AZ
- C. Create a snapshot of the volume, and create a new volume from the snapshot in the other AZ
- D. Detach the volume, then use the `ec2-migrate-volume` command to move it to another AZ

Answer: C

---

**QUESTION:** 252

Which procedure for backing up a relational database on EC2 that is using a set of RAIDed EBS volumes for storage minimizes the time during which the database cannot be written to and results in a consistent backup?

- A. 1 stop the EC2 instance, 2 snapshot the EBS volume
- B. 1 suspend disk I/O, 2 create an image of the EC2 instance, 3 resume disk I/O
- C. 1 detach EBS volumes, 2 start EBS snapshot of volumes, 3 re-attach EBS volumes
- D. 1 suspend disk I/O, 2 start EBS snapshot of volumes, 3 wait for snapshots to complete, 4 resume disk I/O
- E. 1 suspend disk I/O, 2 start EBS snapshot of volumes, 3 resume disk I/O

Answer: C

---

**QUESTION:** 253

When creation of an EBS snapshot is initiated, but not completed, the EBS volume:

- A. Can be used while the snapshot is in progress
- B. Cannot be used until the snapshot completes
- C. Can be used in read-only mode while the snapshot is in progress
- D. Cannot be detached or attached to an EC2 instance until the snapshot completes

Answer: A

---

**QUESTION:** 254

How can the domain's zone apex, for example, "myzoneapexdomain.com", be pointed towards an Elastic Load Balancer?

- A. By using an AAAA record
- B. By using an Amazon Route 53 CNAME record
- C. By using an Amazon Route 53 Alias record
- D. By using an A record

Answer: C

---

**QUESTION: 255**

Which Amazon elastic compute cloud feature can you query from within the instance to access instance properties?

- A. Instance user data
- B. Amazon Machine Image
- C. Resource tags
- D. Instance metadata

Answer: D

---

**QUESTION: 256**

What is the minimum interval for the data that Amazon CloudWatch receives and aggregates?

- A. One second
- B. Five seconds
- C. One minutes
- D. Three minute
- E. Five minutes

Answer: C

---

**QUESTION: 257**

Which of the following are use cases for Amazon DynamoDB? Choose 3 answers

- A. Storing BLOB data
- B. Managing web sessions
- C. Storing JSON documents
- D. Storing metadata for Amazon S3 objects
- E. Running relational joins and complex updates
- F. Storing large amounts of infrequently accessed data
- G.

Answer: B, C, D

---

**QUESTION: 258**

The AWS CloudHSM service is integrated with which of the following service? Choose 2 answers

- A. Amazon Elastic Block Store
- B. Amazon Simple Storage Service
- C. Amazon redshift
- D. Amazon DynamoDB
- E. Amazon RDS (Oracle)

Answer: C, E

---



**QUESTION:** 259

Which of the following are true regarding encrypted amazon elastic block store (EBS) volumes?  
Choose 2 answers

- A. Available to all instance types
- B. Existing volumes can be encrypted
- C. Supported on all Amazon EBS volume types
- D. Snapshots are automatically encrypted
- E. Shared volumes can be encrypted

Answer: D, C

---

**QUESTION:** 260

Which of the following services natively encrypts data at rest within an AWS region? Choose 2 answers

- A. Amazon DynamoDB
- B. Amazon CloudFront
- C. Amazon Simple Queue Service
- D. Amazon Glacier
- E. AWS storage Gateway

Answer: E, D

---

**QUESTION:** 261

At t2.medium EC2 instance type must be launched with what type of amazon machine image (AMI)?

- A. An instance store Hardware Virtual Machine AMI
- B. An instance store Paravirtual AMI
- C. An Amazon EBS-backed Hardware Virtual Machine AMI
- D. An Amazon EBS-backed paravirtual AMI

Answer: C

Explanation:

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**QUESTION:** 262

You are tasked with migrating a high throughput, distributed, fault-tolerant NoSQL data store to AWS. The system is extremely disk-IO intensive. Which instance family is best suited for this workload?

- A. I2
- B. T2
- C. HS!
- D. R3

Answer: A

---

**QUESTION: 263**

You are working with a customer who has 10 TB of archival data that they want to migrate to Amazon glacier. The customer has a 1-Mbps connection to the internet. Which service or feature provides the fastest method of getting the data into Amazon glacier?

- A. Amazon Glacier multipart upload
- B. AWS storage Gateway
- C. VM Import/Export
- D. AWS Import/Export

Answer: A

---

**QUESTION: 264**

A customer is leveraging Amazon simple storage service in eu-west-1 to store static content for a web-based property. The customer is storing objects using the standard storage class. Where are the customer's objects replicated ?

- A. A single facility in eu-west-1 and a single facility in eu-central-1
- B. A single facility in ru-west-1 and a single facility in us-east-1
- C. Multiple facilities in eu-west-1
- D. A single facility in eu-west-1

Answer: C

Explanation:

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**QUESTION: 265**

You are building an automated transcription service in which Amazon EC2 worker instances process an uploaded audio file and generate a text file. You must store both of these files in the same durable storage until the text file is retrieved. You do not know what the storage capacity requirements are. Which storage option is both cost-efficient and scalable?

- A. Multiple instances stores
- B. A single Amazon S3 bucket
- C. Multiple Amazon EBS volume with snapshots
- D. A single Amazon Glacier vault

Answer: C

---

**QUESTION: 266**

A company is deploying a new two-tier web application in AWS. The company has limited staff and requires high availability, and the application requires complex queries and table joins. Which configuration provides the solution for the company's requirements?

- A. mySQL installed on two Amazon EC2 instances in a single Availability Zone
- B. Amazon RDS for MySQL with Multi-AZ
- C. Amazon ElastiCache
- D. Amazon DynamoDB

Answer: B

---

**QUESTION:** 267

A company has configured and peered two VPCs : VPC-1 and VPC-2. VPC-1 contains only private subnets, and VPC-2 contains only public subnets. The company uses a single AWS Direct Connect connection and private virtual interface to connect their on-premises network with VPC-1. Which two methods increase the fault tolerance of the connection to VPC-1? Choose 2 answers

- A. Establish a hardware VPN over the internet between VPC-2 and then the on-premises network
- B. Establish a hardware VPN over the internet between VPC-1 and then the on-premises network
- C. Establish a new AWS direct connect connection and private virtual interface in the same region as VPC-2
- D. Establish a new AWS direct connect connection and private virtual interface in a different AWS region than VPC-1
- E. Establish a new AWS direct connect connection and private virtual interface in the same AWS region as VPC-1

Answer: A, D

---

**QUESTION:** 268

A user in account A has created a bucket and added a bucket policy allowing all actions for a user in account B. the user in account B has uploaded a file to the bucket, specifying Amazon S3 server-side encryption (SSE) and Amazon S3 reduced redundancy storage (RRS). Using the AWS management console, the user in account A attempts to download the file from the bucket but gets an “Access Denied” error. What is causing the error?

- A. Account A user has not granted READ permission to itself
- B. Account B user has not granted READ permission to account A user
- C. SSE and RRS cannot be used on an object at the same time
- D. An SSE object cannot be copied between two different accounts

Answer: B

---

**QUESTION:** 269

A customer is hosting their company website on a cluster of web servers that are behind a publicfacing load balancer. The customer also uses Amazon Route S3 to manage their public DNS. How should the customer configure the DNS zone apex record to point to the load balancer?

- A. Create a CNAME record pointing to the load balancer DNS name
- B. Create a CNAME record aliased to the load balancer DNS name
- C. Create an A record pointing to the IP address of the load balancer
- D. Create an A record aliased to the load balancer DNS name

Answer: B

---

**QUESTION:** 270

A company is building a two-tier web application to serve dynamic transaction-based content. The

data tier is leveraging an online transactional processing (OLTP) database. What services should you leverage to enable an elastic and scalable web tier?

- A. Elastic Load Balancing, Amazon EC2, and Auto Scaling
- B. Elastic Load Balancing, Amazon RDS with Multi-AZ, and Amazon S3
- C. Amazon RDS with Multi-AZ and Auto Scaling
- D. Amazon EC2, Amazon DynamoDB, and Amazon S3

Answer: C

---

**QUESTION:** 271

You have an application running on a single Amazon EC2 instance with a 1 TB Amazon EBS magnetic volume. Using CloudWatch, you have found that Amazon EBS throughput is poor when the Amazon EC2 instance is under high network load. Which of the following may help improve performance?

- A. Relaunch the instance as Amazon EBS-optimized
- B. Modify the instance to enable enhanced networking
- C. Migrate the Amazon EBS volume to a General Purpose volume
- D. Migrate the Amazon EBS volume to a provisioned IOPs volume

Answer: D

---

**QUESTION:** 272

A company is storing a data on Amazon Simple Storage Service (S3). The company's security policy mandates that data is encrypted at rest. Which of the following methods can achieve this? Choose 3 answers

- A. Use Amazon S3 server-side encryption with AWS key management service managed keys
- B. Use Amazon S3 server-side encryption with customer-provided keys
- C. Use Amazon S3 server-side encryption with EC2 key pair
- D. Use Amazon S3 bucket policies to restrict access to the data at rest
- E. Encrypt the data on the client-side before ingesting to Amazon S3 using their own master key
- F. Use SSL to encrypt the data while in transit to Amazon S3

Answer: A, B, C

---

**QUESTION:** 273

Your company moved into AWS and created separate AWS accounts per department. To address latency and bandwidth challenges, the company ordered a single AWS Direct Connect circuit. How should you allocate the cost of the data transfer over AWS Direct Connect back to each department ?

- A. Configure a connection per department and tag each with the department account number. Use details usage reports
- B. Configure a connection per department and set the Connection Owner to the department's AWS account number
- C. Configure virtual interfaces and tag each with the department account number. Use detail usage reports
- D. Configure virtual interfaces and set the virtual interface owner to the department's AWS account

number

Answer: C

---

**QUESTION:** 274

A customer needs corporate IT governance and cost oversight of all AWS resources consumed by its divisions. The divisions wants to maintain administrative control of the discrete AWS resources they consume and keep those resources separate from the resources of other divisions. Which of the following options, when used together, will support the autonomy/control of divisions while enabling corporate IT to maintain governance and oversight? Choose 2 answers

- A. Enable IAM cross-account access for all corporate IT administrators in each child account.
- B. Create separate VPCs for each division within the corporate IT AWS account
- C. Use AWS Consolidated Billing and disable AWS root account access for the child accounts
- D. Use AWS Consolidated billing to link the divisions accounts to a parent corporate account
- E. Write all child AWS CloudTrail and Amazon CloudWatch logs to each child account's Amazon S3 log bucket

Answer: C, E

---

**QUESTION:** 275

A customer wants to leverage Amazon Simple Storage Service (S3) and Amazon Glacier as part of their backup and archive infrastructure. The customer plans to use third-party software to support this integration. Which approach will limit the access of the third party software to only the Amazon S3bucket named "company-backup"?

- A. A custom bucket policy limited to the Amazon S3 API in the Amazon Glacier archive companybackup
- B. A custom bucket policy limited to the Amazon S3 API in company-backup
- C. A custom IAM user policy limited to the Amazon S3 API for the Amazon Glacier archive companybackup
- D. A custom IAM user policy limited to the Amazon S3 API in company-backup

Answer: A

---

**QUESTION:** 276

You try to connect via SSH to a newly created Amazon EC2 instance and get one of the error messages: "Network error: Connection timed out" or "Error connecting to [instance], reason: -> Connection timed out connect," You have confirmed that the network and security group rules are configured correctly and the instance is passing status checks. What steps should you take to identify the source of the behavior? Choose 2 answers

- A. Verify that your IAM user policy has permission to launch Amazon EC2 instances
- B. Verify that you are connecting with the appropriate user name for your AMI
- C. Verify that the Amazon EC2 instance was launched with the proper IAM role
- D. Verify that your federation trust to AWS has been established
- E. Verify that the private key file corresponds to the Amazon EC2 key pair assigned at launch

Answer: E, C

---

**QUESTION:** 277

Your application contains thousands of Images in an Amazon RDS MySQL instance. These images are frequently accessed and the number of images is growing rapidly. Which should you implement to reduce cost and improve application performance?

- A. Create two Amazon RDS MySQL read replicas in different regions, and migrate the images to the cross-region read replicas
- B. Migrate the images to Amazon Glacier, and allow the end users to access the images through Amazon CloudFront
- C. Migrate the images to Amazon Elastic Block Store volumes, and allow the end users to access the images through Amazon CloudFront
- D. Migrate the images to Amazon Simple Storage Service, and allow the end users to access the images through Amazon CloudFront

Answer: D

---

**QUESTION:** 278

You have configured mycorp.com as an Amazon route 53 private hosted zone for Amazon virtual private cloud. Amazon elastic compute cloud (EC2) instances in your eu-east-1 virtual private cloud successfully resolve to internal.mycorp.com. You are extending your infrastructure to a VPC in euwest-1. Why are Amazon EC2 instance in eu-west-1 unable to resolve to internal.mycorp.com?

- A. The VPC in eu-west 1 is not associated to the private hosted zone
- B. The DHCP options set in eu-west-1 requires the private hosted zone name server IP addresses
- C. The enableDnsHostnames attribute of the VPC in eu-west-1 should be set to false
- D. A second private hosted zone for Amazon VPC is required for eu-west-1

Answer: B

---

**QUESTION:** 279

Which of the following categories are available from Amazon elastic compute cloud instance metadata ? Choose two answers

- A. Instance ID
- B. Elastic Load Balancing health status
- C. Auto Scaling launch configuration
- D. Bucket device mapping
- E. Bucket ID

Answer: A, C

---

**QUESTION:** 280

Within a VPC, you need to allow a wide range of ports, and block several non-contiguous ports within the range. Which option will allow you to do this ?

- A. Using a network ACL, place a DENY rule for ports to be blocked ahead of the ALLOW rule for the wide range of ports
- B. Using a network ACL, place a DENY rule for ports to be blocked after the ALLOW rule for the wide

range of ports

- C. Using a security group, place a DENY rule for ports to be blocked ahead of the ALLOW rule for the wide range of ports
- D. Using a security group, place a DENY rule for ports to be blocked after the ALLOW rule for the wide range of ports

Answer: B

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**QUESTION: 281**

A customer needs to capture all client connection information from their load balancer every five minutes. The company wants to use this data for analyzing traffic patterns and troubleshooting their applications. Which of the following options meets the customer requirements?

- A. Enable access logs on the load balancer
- B. Enable Amazon CloudWatch metrics on the load balancer
- C. Enable AWS CloudTrail for the load balancer
- D. Install the Amazon CloudWatch logs agent on the load balancer

Answer: A

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**QUESTION: 282**

Your company stores financial documents in Amazon S3. According to company policy, all financial documents must be retained for a period of seven years. However, documents older than one year are rarely accessed. How can you optimize cost?

- A. Create an Amazon S3 lifecycle rule to move objects older than one year to Storage Gateway
- B. Create an Amazon S3 lifecycle rule to move objects older than one year to Amazon Glacier
- C. Create an Amazon S3 event to move objects older than one year to Amazon Glacier
- D. Create an Amazon S3 event to move objects older than one year to Storage Gateway

Answer: C

---

**QUESTION: 283**

How frequently does the Amazon CloudWatch Logs agent send data by default?

- A. Every five seconds
- B. Every minute
- C. Every five seconds and is configurable by the user
- D. Every minute and is configurable by the user

Answer: B

---

**QUESTION: 284**

A customer has a public-facing web application hosted on a single Amazon Elastic Compute Cloud (EC2) instance and serving videos directly from an Amazon Simple Storage Service bucket. Which of the following will restrict third parties from directly accessing the video assets in the bucket?

- A. Use a bucket policy to only allow the public IP address of the Amazon EC2 instance hosting the

customer website

- B. Use a bucket policy to only allow referrals from the main website URL
- C. Launch the website Amazon EC2 instance using an IAM role that is authorized to access the videos
- D. restrict access to the bucket to the public CIDR range of the company locations

Answer: A

---

**QUESTION:** 285

A customer is complaining that requests made to their load balancer are closing prematurely. The customer also mentions that the issue only happens when waiting for the multi-week report to be generated. Which option will resolve the customer's issue?

- A. Adjust the timeout on health check settings
- B. Increase the idle timeout on registered instances
- C. Disable connection draining on the load balancer
- D. Enable stickiness on the load balancer

Answer: C

---

**QUESTION:** 286

A company collects click-stream data from Amazon EC2 instances that are in an auto scaling group. The age data feeds a centralized dashboard and is critical to the company's business. Which method will help ensure data is collected before an auto scaling policy terminates an instance from the auto scaling group?

- A. Use Auto Scaling lifecycle hooks
- B. Trigger Amazon S3 event notifications
- C. Implement Amazon Kinesis as a log collector
- D. Snapshot the Amazon EC2 instance Elastic Block Store volumes

Answer: A

---

**QUESTION:** 287

A company is running both their website and human resources (HR) application within the same virtual private cloud (VPC). For company compliance and security reasons, the instances running their HR application stack must not share hardware with other AWS customers. The website owner wants to keep their infrastructure costs as low as possible. How can the company ensure that all of the requirements are met within a single VPC?

- A. Create the VPC with Dedicated tenancy, launch the HR instances in placement groups, and launch the website instances in Shared tenancy
- B. Create the VPC with dedicated tenancy, launch the HR instances in Default tenancy, and launch the website instances in Shared tenancy
- C. Create the VPC with Default tenancy, launch the HR instances in placement groups, and launch the website instances in Shared tenancy
- D. Create the VPC with default tenancy, launch the HR instances in Dedicated tenancy, and launch the website instances in Shared tenancy



Answer: D

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**QUESTION:** 288

Which combination of two policies enables AWS identity and access management cross-account access? Choose 2 answers

- A. Permission policy
- B. Bucket policy
- C. Key policy
- D. Trust policy
- E. Access policy

Answer: A, B

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**QUESTION:** 289

A company is designing a hybrid IT architecture and requires a private connection between an onpremises data center and their virtual private cloud (VPC). Which of the following would enable the company to achieve this? Choose 2 answers

- A. VPN connection
- B. AWS Direct connect
- C. AWS DataPipeline
- D. Amazon Route53
- E. ClassicLink

Answer: A, B

---

**QUESTION:** 290

Which of the following does AWS own under the shared security responsibility model? Choose 3 answers

- A. Patching of Amazon Elastic Compute Cloud hypervisors
- B. Decommissioning storage devices at end of life
- C. Encryption of traffic within a virtual private cloud
- D. Physical security of AWS data centers and facilities
- E. Logical security of customer SSH private key material
- F. Access control within a virtual private cloud

Answer: A, B, D

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**QUESTION:** 291

Which auto scaling features allow you to scale ahead of expected increases in load? Choose 2 answers

- A. Cooldown period
- B. Metric-based scaling
- C. Health check grace period

- D. Scheduled scaling
- E. Lifecycle hooks
- F. Desired capacity

Answer: C, D

---

**QUESTION: 292**

You have launched an Amazon elastic compute cloud (EC2) instance in a VPC with an attached internet gateway. You assigned a public IP address to the Amazon EC2 instance but cannot connect from your on-premises client via SSH. Which of the following may be the cause of the behavior experienced? Choose 2 answers

- A. An incorrect security group rule for inbound SSH traffic
- B. An incorrect policy in the AWS IAM service
- C. An incorrect AWS IAM role used in the Amazon EC2 instances
- D. An incorrect routes in the subnet's route table
- E. An incorrect security group rule for outbound SSH traffic

Answer: A, B

---

**QUESTION: 293**

You have established a virtual private cloud (VPC) peering relationship between VPC 1 and VPC 2. VPC 1 has routes to VPC 2, yet hosts in VPC 1 cannot connect to hosts in VPC 2. Which of the following is a possible cause?

- A. Security groups applied to VPC 2 are blocking the traffic
- B. The network access control list applied to VPC 2 denies by default
- C. The subnet route table in VPC 2 does not have routes to VPC 1
- D. The VPCs have not been attached to a virtual private gateway

Answer: B

---

**QUESTION: 294**

You have an Amazon EC2 instance that belongs to two security groups. The first security group has a rule that allows ingress traffic to TCP port 80 from IP address 206.251.8.21 and the second security group has a rule that allows ingress traffic to TCP ports 80 and 443 from everywhere. Which traffic is allowed to the Amazon EC2 instance?

- A. Only ingress traffic to TCP port 80 from everywhere
- B. Only ingress traffic to TCP port 80 from 206.251.8.21
- C. Only ingress traffic to TCP ports 80 and 443 from everywhere
- D. Only ingress traffic to TCP ports 80 and 443 from 206.251.8.21

Answer: D

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**QUESTION: 295**

You have an Amazon EC2 instance with data stored in an Amazon elastic block store (EBS) volume. You want to make the data available in another region. Which of the following methods should be

used for making the data in the Amazon EBS volume available to the newly launched Amazon EC2 instance?

- A. Detach the Amazon EBS volume and attach it to the newly launched Amazon EC2 instance
- B. Snapshot the Amazon EBS volume and copy it to the other region. Create a new Amazon EBS volume from the snapshot, and attach it to the newly launched Amazon EC2 instance
- C. Copy the Amazon EBS volume to the other region, create a new Amazon EBS volume from that, and then attach it to newly launched Amazon EC2 instance
- D. Use AWS Import/Export to copy the Amazon EBS volume to the other region and attach it to newly launched instance

Answer: B

---

**QUESTION:** 296

Which AWS service allows you to collect and process e-commerce data for near real-time analysis?

- A. Amazon Redshift
- B. Amazon DynamoDB
- C. Amazon Elastic Map reduce
- D. Amazon ElasticCache

Answer: C

---

**QUESTION:** 297

You have an Amazon EC2 instance in a VPC that is in a stopped state. Which of the following actions can you perform on this instance?

- A. Change security groups
- B. Disable detailed monitoring
- C. Attach to an Auto Scaling group
- D. Detach the network interface

Answer: C

---

**QUESTION:** 298

A business-critical MySQL database is running on an Amazon EC2 instance. Storage Performance and durability are important to the application.

Which volume type provides a persistent volume with single-digit millisecond latencies and sustained IOPS performance?

- A. Amazon EC2 instance store
- B. Amazon EBS Cold HDD
- C. Amazon EBS provisioned IOPS SSD
- D. Amazon EBS General purpose SSD

Answer: A

**QUESTION: 299**

What services will help identify Amazon EC2 instances with underutilized CPU Capacity? Choose 2 answers

- A. AWS trusted advisor
- B. Amazon EC2 usage reports
- C. AWS CloudTrail
- D. Amazon CloudWatch
- E. Cost Explorer

Answer: C, D

---

**QUESTION: 300**

A customer is running two Amazon EC2 instances, Server1 and server2, in different subnets of the same VPC. Server1 can ping Server2, but server2 cannot ping Server1. What could explain this behavior? Choose 2 answers

- A. There is no route from server2 to server 1 defined in the route table
- B. The ingress rules for Server1's security group do not allow ICMP traffic
- C. The two servers are not located in the same Availability Zone
- D. The operating system firewall on server1 is blocking traffic from server 2
- E. The ingress rules for server2 security group do not allow ICMP traffic

Answer: A, D

---

**QUESTION: 301**

Your existing web application requires a persistent key-value store database that must service 50,000 reads/second. Your company is looking at 10% growth in traffic and data volume month over month for the next several years. Which service meets these requirements?

- A. Amazon RDS
- B. Amazon DynamoDB
- C. Amazon SQS
- D. Amazon RedShift

Answer: A

---

**QUESTION: 302**

Which AWS Services are valid origins for an Amazon CloudFront distribution? Choose 2 answers

- A. Amazon RDS
- B. Amazon Glacier
- C. ELB Classic Load Balancer
- D. Amazon DynamoDB
- E. Amazon S3

Answer: B, E

---

**QUESTION: 303**

You have been asked to design a NAT solution for your company's VPC-based web application. Traffic from the private subnets varies throughout the day from 500 Mbps to spikes of 7 Gbps. What is the most cost-effective and scalable solution?

- A. Move the internet gateway for the VPC to a public subnet; route all internet traffic through the internet gateway
- B. Create an Amazon EC2 NAT instance with a second elastic network interface in a public subnet; route all private subnet internet traffic through the NAT gateway
- C. Create an Auto Scaling group of Amazon EC2 NAT instances in a public subnet; route all private subnet internet traffic through the NAT gateway
- D. Create a NAT gateway in a public subnet; route all private subnet internet traffic through the NAT gateway

Answer: D

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**QUESTION: 304**

You are designing a scalable web application with stateless web servers. Which service or feature is well suited to store user session information?

- A. Amazon SQS
- B. Amazon EBS
- C. Amazon DynamoDB
- D. Amazon EC2 instance store

Answer: C

---

**QUESTION: 305**

An application on an Amazon EC2 instance routinely stops responding to requests and requires a reboot to recover. The application logs are already exported into Amazon CloudWatch, and you notice that the problem consistently follows the appearance of a specific message in the log. The application team is working to address the bug, but has not provided a date for the fix. What workaround can you implement to automate recovery of the instance until the fix is deployed?

- A. Create an Amazon CloudWatch alarm on instance memory usage; based on that alarm, trigger an Amazon CloudWatch action to reboot the instance
- B. Create an Amazon CloudWatch alarm on an Amazon CloudWatch Logs filter for that message; based on that alarm trigger an Amazon CloudWatch action to reboot the instance
- C. Create an AWS CloudTrail alarm to detect the deadlock; based on that alarm, trigger an Amazon SNS message to the Operations team
- D. Create an AWS CloudTrail alarm on low CPU; based on that alarm, trigger an Amazon SNS message to the Operations team

Answer: B

---

**QUESTION: 306**

Which aspects of Amazon EC2 security are the responsibility of AWS? Choose 2 answers

- A. Application authentication
- B. Virtualization infrastructure
- C. Guest operating systems
- D. VPC and security group configuration
- E. physical security of hardware

Answer: B, E

---

**QUESTION:** 307

You have been asked to design a fault-tolerant and scalable web application across three availability zones. The presentation logic will reside on web servers behind an ELB classic load balancer, and the application logic will reside on a set of app servers behind a second load balancer. How should you use auto scaling groups?

- A. Deploy two Auto Scaling groups: one for the web servers in all Availability zones and one for the app servers in all Availability zones
- B. Deploy three auto scaling groups: one for each Availability zone that includes both web and app servers
- C. Deploy six auto scaling groups: a web server group in each Availability zone and an app server group in each availability zone
- D. Deploy one auto scaling group that includes all the web and app servers across all availability zones

Answer: B

---

**QUESTION:** 308

Your Amazon RDS MySQL DB instance runs on the largest available instance type. The DB instance runs at near capacity for CPU and network bandwidth. You expect traffic to increase and are looking for ways you can continue to scale your database. Which strategies allow you to continue to scale and take on more traffic?

- A. Create a cross-region read replica of the master database; configure the app to send read-only calls to the replica
- B. Convert the DB instance to a Multi-AZ deployment; configure the app to send read-only calls to the standby
- C. Create additional database accounts in the DB instance; configure the app servers to make calls using different account credentials
- D. Create a read replica of the master database in another Availability Zone; configure the app to send read-only calls to the replica.
- E. Create an Amazon ElastiCache cluster; configure the app to retrieve frequently accessed data and queries from the cache.

Answer: D, E

Explanation:

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**QUESTION:** 309

You need a solution to distribute traffic evenly across all of the containers for a task running on

Amazon ECS. Your task definitions define dynamic host port mapping for your containers. What AWS feature provides this functionality?

- A. All elastic Load balancing instances support dynamic host port mapping
- B. Application load balancers support dynamic host port mapping
- C. CloudFront custom origins support dynamic host port mapping
- D. Classic load balancers support dynamic host port mapping

Answer: B

---

**QUESTION:** 310

You are migrating a MySQL database to Amazon RDS. You have allocated enough block storage for the initial migration. You expect data storage requirements to grow slowly over time: How can you expand the storage capacity of your Amazon RDS database instance in the future?

- A. Allocate additional storage as needed. Plan for a brief database outage during the allocation.
- B. Migrate the data base to a larger instance type as needed. Plan for a period of reduced performance during the migration
- C. Migrate the database to a larger instance type as needed. Plan for a brief database outage during the migration
- D. Allocate additional storage as needed. Plan for a period of reduced performance during the allocation

Answer: C

---

**QUESTION:** 311

Your organization is looking for a solution that can help the business with streaming dat

- A. Several services will require access to read and process the same stream concurrently. What AWS service meets the business requirements?
- A. Amazon Kinesis Firehose
- B. Amazon CloudFront
- C. Amazon SQS
- D. Amazon Kinesis Streams

Answer: D

---

**QUESTION:** 312

Your Amazon VPC has a public subnet with a route that sends all internet traffic to the internet gateway. An Amazon EC2 instance in the Public subnet has an assigned private IP address. The instance belongs to a security group set to allow all outbound traffic. The instance cannot access the internet. Why could the internet be unreachable from this instance?

- A. The instance “source/destination check” property must be enabled
- B. The instance security group must allow all inbound traffic
- C. The instance does not have a public IP address
- D. The internet gateway security group must allow all outbound traffic

Answer: C

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**QUESTION:** 313

You're building an API backend available at `services.yourcompany.com`. The API is implemented with API Gateway and Lambda

A. You successfully tested the API using curl. You implemented Javascript to call the API from a webpage on your corporate website, `www.yourcompany.com`. When you access that page in your browser, you get the following error: "The same origin policy disallows reading the remote resource" How can you allow your corporate webpages to invoke the API?

- A. Disable CORS in the API gateway
- B. Enable CORS in the Javascript frontend
- C. Disable CORS in the Javascript frontend
- D. Enable CORS in the API gateway

Answer: D

---

**QUESTION:** 314

Your company runs an application that generates several thousand 1-GB reports a month. Approximately 10% of these reports will be accessed once during the first 30 days and must be Available on demand. After 30 days, reports are no longer accessed as a part of normal business processes but must be retained for compliance reasons. Which architecture would meet these requirements with the lowest cost?

- A. Upload the reports to Amazon S3 Standard storage class. Set a lifecycle configuration on the bucket to transition the reports to Amazon Glacier after 30 days
- B. Upload the reports to Amazon S3 standard- infrequent Access storage class. Set a lifecycle configuration on the bucket to transition the reports to Amazon Glacier after 30 days
- C. Upload the reports to Amazon Glacier. When reports are requested, copy them to Amazon S3 standard storage class for access. Delete the copied reports after they have been viewed
- D. Upload the reports to Amazon S3 standard- infrequent access storage class. When reports are requested, copy them to Amazon S3 standard storage class for access. Delete the copied reports after they have been viewed.

Answer: A

---

**QUESTION:** 315

Your Auto Scaling group is configured to launch one new Amazon EC2 instance if the overall CPU load exceeds 65% over a five-minute interval. Occasionally, the Auto Scaling group launches a second Amazon EC2 instance before the first is operational. The second instance is not required and introduces needless compute costs. How can you prevent the Auto Scaling group from launching the second instance?

- A. Add a scaling-specific cooldown period to the scaling policy
- B. Configure a lifecycle hook for your Auto Scaling group
- C. Adjust the CPU threshold that triggers a scaling action



D. Attach a new launch configuration to the Auto Scaling group

Answer: A

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**QUESTION:** 316

You are trying to use SSH to connect from your laptop to an Amazon EC2 instance over the internet. You cannot establish a connection. What could be the problem?

- A. The network ACL is set to deny all outbound TCP traffic to your laptop IP address
- B. The IAM access key on your laptop does not have console access to the Amazon EC2 instance
- C. There is no security group and no network ACL associated with the Amazon EC2 instance
- D. The security group does not allow any outbound TCP traffic to your laptop IP address

Answer: D

---

**QUESTION:** 317

You have a CloudFront distribution configured with the following path patterns:  
When users request objects that start with 'static2/', they are receiving 404 response codes. What might be the problem?

- A. The "\*" path pattern must appear before 'static1/\*' path
- B. CloudFront distributions cannot have origins in different AWS regions
- C. CloudFront distributions cannot have multiple different origin types
- D. The "\*" path pattern must appear after the 'static2/\*' path

Answer: B

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**QUESTION:** 318

Your security team requires each Amazon ECS task to have an IAM policy that limits the task's privileges to only those required for its use of AWS services. How can you achieve this?

- A. Reboot each Amazon ECS task programmatically to generate new instance metadata for each task
- B. Connect to each running Amazon ECS container instance and add discrete credentials
- C. Use IAM roles on the Amazon ECS container instances to associate IAM roles with each ECS task on that instance
- D. Use IAM roles for Amazon ECS tasks to associate a specific IAM role with each ECS task definition

Answer: D

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**QUESTION:** 319

Which services can invoke AWS lambda functions?

- A. Amazon Route53
- B. Amazon Redshift
- C. Elastic Load Balancing
- D. Amazon DynamoDB
- E. Amazon SNS

Answer: D, E

---

**QUESTION:** 320

You have created an API powered by API Gateway and AWS Lambda

A. Because of a new feature release, you expect traffic volume on your API to increase 10-fold. Which configuration should you use?

- A. Use one Lambda function with API gateway as the trigger. Increase the amount of memory configured for the lambda function
- B. Use one Lambda function with API gateway as the trigger. AWS Lambda will allocate capacity to match the rate of incoming events
- C. Use multiple API Gateway endpoints, each triggering a Lambda function. You are charged per call, not per endpoint
- D. Use multiple copies of the Lambda function, each with API gateway as the trigger. You are charged per request, not per function

Answer: A

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**QUESTION:** 321

A Solutions Architect is designing an application in AWS. The Architect must not expose the application or database tier over the Internet for security reasons. The application must be low-cost and have a scalable front end. The databases and application tier must have only one-way Internet access to download software and patch updates. Which solution helps to meet these requirements?

- A. Use a NAT Gateway as the front end for the application tier and to enable the private resources to have Internet access
- B. Use an Amazon EC2-based proxy server as the front end for the application tier, and a NAT Gateway to allow Internet access for private resources
- C. Use an ELB Classic Load Balancer as the front end for the application tier, and an Amazon EC2 proxy server to allow Internet access for private resources
- D. Use an ELB Classic Load Balancer as the front end for the application tier, and a NAT Gateway to allow Internet access for private resources

Answer: D

Explanation:

You configure your load balancer to accept incoming traffic by specifying one or more listeners. A listener is a process that checks for connection requests. It is configured with a protocol and port number for connections from clients to the load balancer and a protocol and port number for connections from the load balancer to the targets.

Elastic Load Balancing supports three types of load balancers: Application Load Balancers, Network Load Balancers, and Classic Load Balancers. There is a key difference between the way you configure these load balancers. With Application Load Balancers and Network Load Balancers, you register targets in target groups, and route traffic to the target groups. With Classic Load Balancers, you register instances with the load balancer.

**QUESTION: 322**

A company has a legacy application using a proprietary file system and plans to migrate the application to AWS.

Which storage service should the company use?

- A. Amazon DynamoDB
- B. Amazon S3
- C. Amazon EBS
- D. Amazon EFS

Answer: B

Explanation:

Friendly interfaces to S3. These methods make it simple to use S3 with your existing native applications. Rather than lifting and shifting large datasets at once, these help you integrate existing process flows like backup and recovery or continuous Internet of Things streams directly with cloud storage.

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**QUESTION: 323**

A Solutions Architect is designing a workload that requires capacity reservation all times using many r4.xlarge instances. The workload will run 24/7 for the next two years and uses Amazon Linux. What is the MOST cost-effective way to obtain this required compute capacity?

- A. Regional Standard Reserved instances
- B. Spot Fleet
- C. Regional Convertible Reserved Instances
- D. Standard Reserved Instances

Answer: D

**QUESTION: 324**

A Solutions Architect plans to migrate NAT instances to NAT gateway. The Architect has NAT instances with scripts to manage high availability. What is the MOST efficient method to achieve similar high availability with NAT gateway?

- A. Remove source/destination check on NAT instances
- B. Launch a NAT gateway in each Availability Zone
- C. Use a mix of NAT instances and NAT gateway
- D. Add an ELB Application Load Balancer in front of NAT gateway

Answer: B

**QUESTION: 325**

A Lambda function must execute a query against an Amazon RDS database in a private subnet. Which steps are required to allow the Lambda function to access the Amazon RDS database (Select TWO.)

- A. Create a VPC Endpoint for Amazon RDS

- B. Create the Lambda function within the Amazon RDS VPC.
- C. Change the ingress rules of Lambda security group, allowing the Amazon RDS security group
- D. Change the ingress rules of the Amazon RDS security group, allowing the Lambda security group
- E. Add an Internet Gateway (IGW) to the VPC route the private subnet to the IGW

Answer: A, D

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**QUESTION:** 326

A Solutions Architect is designing an application on AWS that will connect to the on-premise data center through a VPN connection. The solution must be able to log network traffic over the VPN. Which service logs this network traffic?

- A. AWS CloudTrail
- B. logs Amazon VPC flow logs
- C. Amazon S3 bucket logs
- D. Amazon CloudWatch Logs

Answer: B

Explanation:

VPC Flow Logs

In order to provide better support for this important aspect of network monitoring, we are introducing Flow Logs for the Amazon Virtual Private Cloud. Once enabled for a particular VPC, VPC subnet, or Elastic Network Interface (ENI), relevant network traffic will be logged to CloudWatch Logs for storage and analysis by your own applications or third-party tools.

You can create alarms that will fire if certain types of traffic are detected; you can also create metrics to help you to identify trends and patterns.

The information captured includes information about allowed and denied traffic (based on security group and network ACL rules). It also includes source and destination IP addresses, ports, the IANA protocol number, packet and byte counts, a time interval during which the flow was observed, and an action (ACCEPT or REJECT).

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**QUESTION:** 327

An application uses a single-Instance deployment of Amazon RDS MySQL database. The database has intensive read operations, and the heavy load is causing performance issues. How can a user improve performance?

- A. Create read replicas
- B. Stripe the data across multiple Amazon EBS volumes
- C. Switch to a Multi-AZ RDS database
- D. Take hourly database snapshots

Answer: B

Explanation:

Benefits of Using EBS Volumes

EBS volumes provide several benefits that are not supported by instance store volumes.

Data availability

When you create an EBS volume in an Availability Zone, it is automatically replicated within that zone to prevent data loss due to failure of any single hardware component. After you create a volume, you can attach it to any EC2 instance in the same Availability Zone. After you attach a volume, it appears as a native block device similar to a hard drive or other physical device. At that point, the instance can interact with the volume just as it would with a local drive. The instance can format the EBS volume with a file system, such as ext3, and then install applications.

An EBS volume can be attached to only one instance at a time, but multiple volumes can be attached to a single instance. If you attach multiple volumes to a device that you have named, you can stripe data across the volumes for increased I/O and throughput performance.

An EBS volume and the instance to which it attaches must be in the same Availability Zone.

You can get monitoring data for your EBS volumes, including root device volumes for EBS-backed instances, at no additional charge. For more information about monitoring metrics, see *Monitoring Volumes with CloudWatch*. For information about tracking the status of your volumes, see *Amazon CloudWatch Events for Amazon EBS*.

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**QUESTION: 328**

A Solutions Architect is designing an application that stores objects encrypted in an Amazon S3 bucket. The company's security requirements state that the encryption key is stored by the organization. Which methods meet this requirement? (Select TWO.)

- A. Use S3 server-side encryption with customer-provided keys.
- B. Use S3 client-side encryption.
- C. Use S3 server-side encryption with Amazon S3 managed keys
- D. Use S3 server-side encryption with AWS KMS managed keys.
- E. Use S3 server-side encryption with the company's own keys imported into AWS KMS

Answer: A, D

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**QUESTION: 329**

A three-tier application is being created to host small news articles. The application is expected to serve millions of users. When breaking news. Which design meets these requirements while minimizing costs?

- A. Use Auto Scaling groups to increase the number of Amazon EC2 instances delivering the web application.
- B. Use Auto Scaling groups to increase the size of the Amazon RDS instances delivering the database
- C. Use Amazon DynamoDB strongly consistent reads to adjust for the increase in traffic.
- D. Use Amazon DynamoDB Accelerator (DAX) (IO cache read operations to the database
- E. the site must handle very large spikes in traffic without significantly impacting database.

Answer: B

Explanation:

Amazon RDS is a managed relational database service that provides you six familiar database engines to choose from, including Amazon Aurora, MySQL, MariaDB, Oracle, Microsoft SQL Server, and PostgreSQL. This means that the code, applications, and tools you already use today with your existing databases can be used with Amazon RDS. Amazon RDS handles routine database tasks such as provisioning, patching, backup, recovery, failure detection, and repair.

Amazon RDS makes it easy to use replication to enhance availability and reliability for production workloads. Using the Multi-AZ deployment option, you can run mission-critical workloads with high availability and built-in automated fail-over from your primary database to a synchronously replicated secondary database. Using Read Replicas, you can scale out beyond the capacity of a single database deployment for read-heavy database workloads.

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**QUESTION: 330**

A legacy application running on premises requires a Solutions Architect to be able to open a firewall to allow access to several Amazon S3 buckets. The Architect has a VPN connection to AWS in place. How should the Architect meet this requirement?

- A. Create an IAM role that allows access from the corporate network to Amazon S3
- B. Configure a proxy on Amazon EC2 and use an Amazon S3 VPC endpoint.
- C. Use Amazon API Gateway to do IP whitelisting.
- D. Configure IP whitelisting on the customer's gateway

Answer: A

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**QUESTION: 331**

A Solutions Architect needs to convert potential single points of failure to a highly-available configuration. The current architecture contains Amazon EC2 instances with databases running in one Availability Zone. Web-tier resources have not been given public addresses, but still require Internet access.

Which solution should the Architect use to maintain high availability?

- A. Use ELB Classic Load Balancer with the web user. Deploy EC2 instances in two Availability Zones and enable Multi-AZ RDS Deploy a NAT gateway in one Availability Zone.
- B. Use ELB Classic Load Balancer with the web tier. Deploy EC2 instances in two Availability Zones and enable Multi-AZ RDS Deploy NAT gateways in both Availability Zones
- C. Use ELB Classic Load Balancer with the database tier. Deploy Amazon EC2 instances in two Availability Zones and enable Multi-AZ RDS. Deploy NAT gateways in both Availability Zones
- D. Use ELB Classic Load Balancer with the database tier. Deploy Amazon EC2 instances in two Availability Zones and enable Multi-AZ RDS. Deploy a NAT gateway in one Availability Zone

Answer: B

Explanation:

Classic Load Balancer provides basic load balancing across multiple Amazon EC2 instances and operates at both the request level and connection level. Classic Load Balancer is intended for applications that were built within the EC2-Classic network. We recommend Application Load Balancer for Layer 7 and Network Load Balancer for Layer 4 when using Virtual Private Cloud (VPC).

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**QUESTION: 332**

An organization hosts 10 microservices, each in an Auto Scaling group behind individual Classic Load Balancers Each EC2 instance is running at optimal load.

Which of the following actions would allow the organization to reduce costs without impacting performance?

- A. Reduce the number of EC2 instances behind each Classic Load Balancer
- B. Change instance types in the Auto Scaling group launch configuration.
- C. Change the maximum size but leave the desired capacity of the Auto Scaling groups
- D. Replace the Classic Load Balancers with a single Application Load Balancer

Answer: B

---

**QUESTION:** 333

What Is the MOST cost-efficient way to host a scalable website with only static content?

- A. An Auto Scaling group
- B. An Amazon EC2 instance
- C. An Amazon S3 bucket
- D. An Elastic Beanstalk stack

Answer: C

---

**QUESTION:** 334

A new application is being deployed on Amazon EC2. The application needs to read/write up to 3 TB of data to an external data store and requires read-after-write consistency across all AWS regions for writing new objects into this data store. Which is the MOST cost-effective data storage service that meets these requirements?

- A. Amazon EBS
- B. Amazon Glacier
- C. Amazon EFS
- D. Amazon S3

Answer: B

Explanation:

Amazon S3 Glacier is an extremely low-cost storage service that provides secure, durable, and flexible storage for data backup and archival. With Amazon S3 Glacier, customers can reliably store their data for as little as \$0.004 per gigabyte per month. Amazon S3 Glacier enables customers to offload the administrative burdens of operating and scaling storage to AWS, so that they don't have to worry about capacity planning, hardware provisioning, data replication, hardware failure detection and repair, or time-consuming hardware migrations.

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**QUESTION:** 335

A Solutions Architect is designing a web application that will be hosted on Amazon EC2 instances in a public subnet. The web application uses a MySQL database in a private subnet. The database should be accessible to database administrators. Which of the following options should the Architect recommend? (Select TWO.)

- A. Create a bastion host in a public subnet, and use the bastion host to connect to the database.
- B. Log in to the web servers in the public subnet to connect to the database.
- C. Perform DB maintenance after using SSH to connect to the NAT Gateway in a public subnet.
- D. Create an IPsec VPN tunnel between the customer site and the VPC, and use the VPN tunnel to



connect to the database.

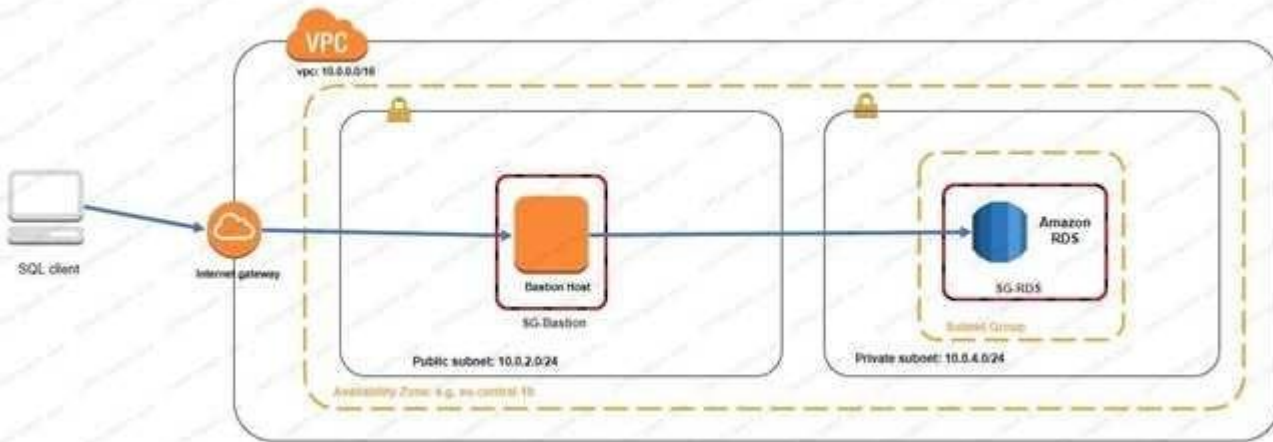
E. Attach an Elastic IP address to the database.

Answer: A

Explanation:

It is best practise to place your database servers into a private subnet. By definition a private subnet in Amazon Web Service (AWS) is not reachable from the internet. So there is no internet gateway assigned to it. With proper security groups configured you restrict the database access to that (web) servers which need access only.

But that configuration makes it more complicated for managing the database servers, e.g. connecting with SQL clients. Instead of putting your database instance into a public subnet you can configure a bastion host (aka jump box) for acting as an intermediate server. The following picture gives you a quick overview:



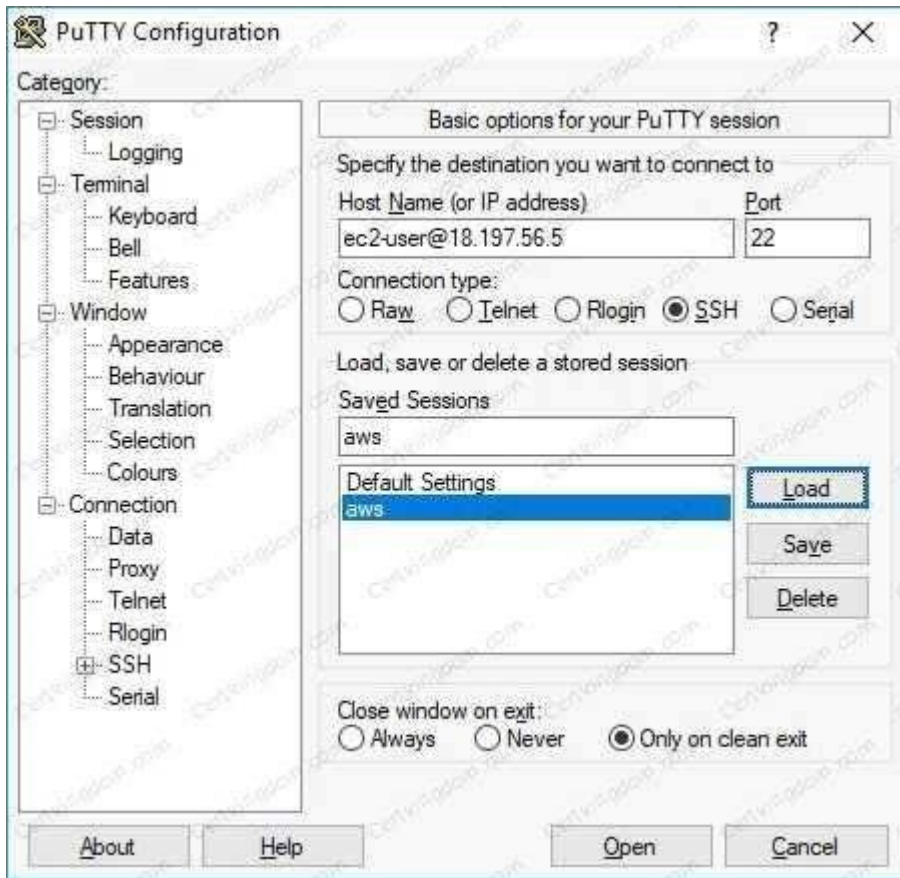
You place a small EC2 instance (e.g. t2.nano) into a public subnet within your VPC. After that you can connect with e.g. Putty (for Windows) to establish a SSH connection and configure it to create an SSH tunnel for the database port.

Please note your security group settings. The bastion host has inbound access for port 22 and your source IP address only (or more which is not recommended). The security group for the RDS instance will allow inbound access for port 3306 (for MySQL) with restriction to the security groups which needs access to the database server (in our case the bastion host). With that configuration you limit the database access to the minimum needed.

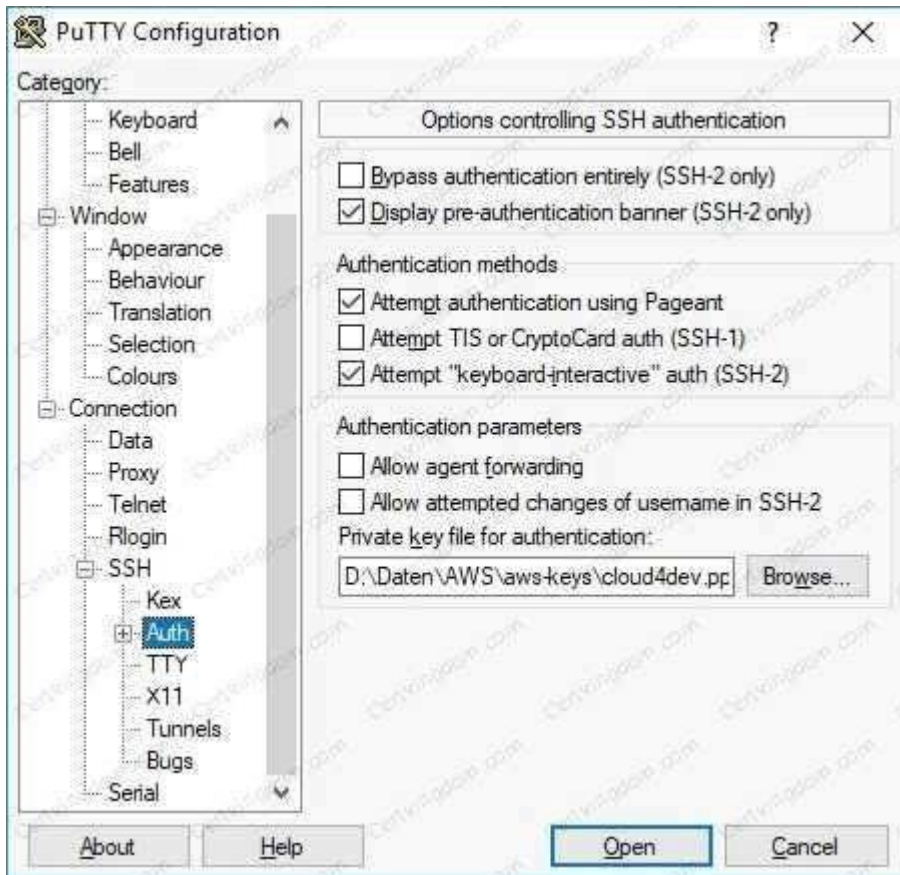
Configuring Putty

At first enter the hostname with ec2-user. This is the public IP address of your bastion host:

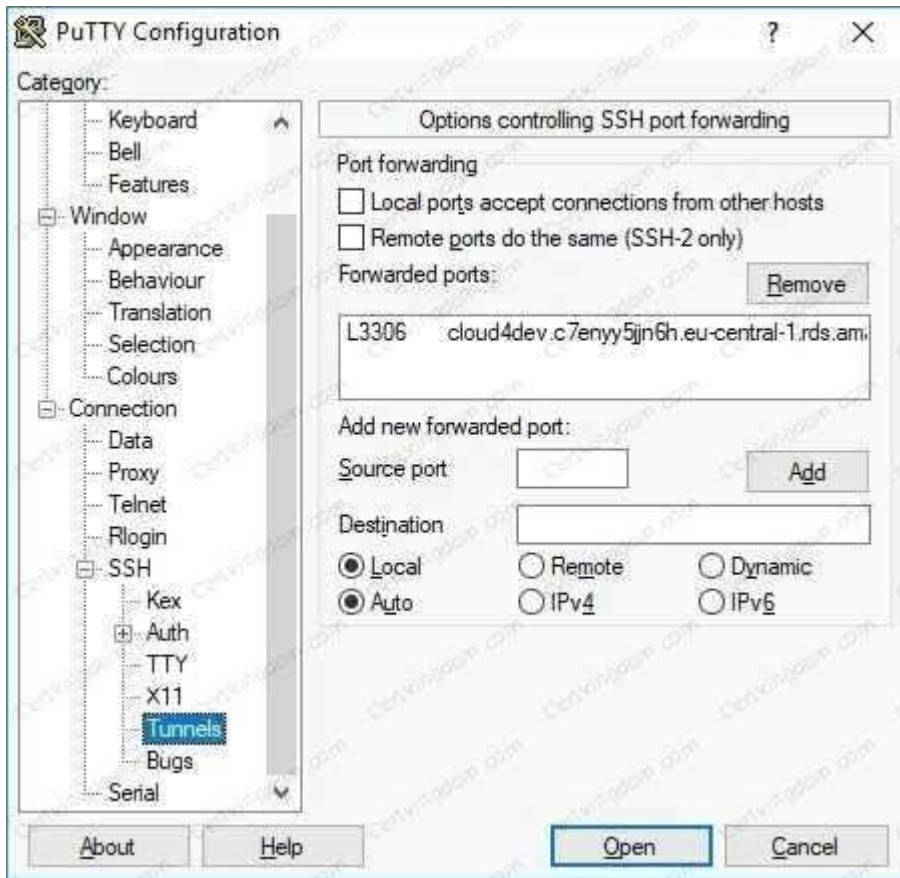




After that you define your private key for authentication:



In the last step you enter the SSH tunnel settings for your database instance. In this example we create a tunnel for port 3306 on your local computer to port 3306 on the RDS instance host (DNS name). This is possible, because the bastion host and the database instance are placed within the same VPC and the routing table allows the communication between both subnets.



After establishing the putty connection we can connect to our database on localhost, port 3306:



Making it more convenient ...

This is all fine but we can do it even more convenient. One solution is to place all Putty settings into a batch file:

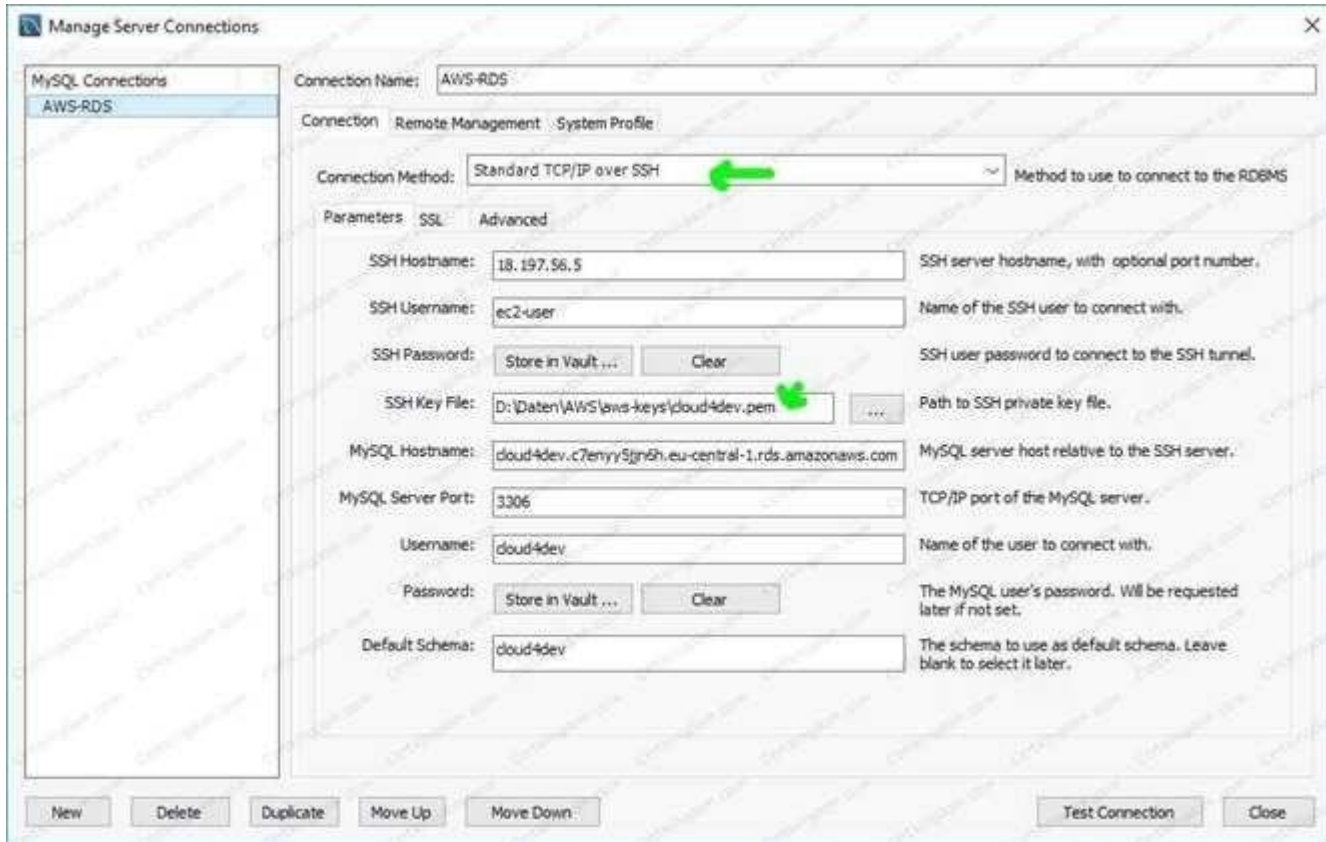
```
@ECHO OFF
```

```
SET PUTTY_EXE=C:\Putty\putty.exe
```

```
start %PUTTY_EXE% ec2-user@18.197.56.5 -i d:\my_private_key.ppk -L 3306:demo.abc.eu-central-1.rds.amazonaws.com:3306
```

After saving it to a batch file we can start the SSH tunnel by a double-click.

Another solution depends on your SQL Client. In some clients like e.g. DBWeaver or the MySQL Workbench you can configure a TCP connection over SSH directly. With that option you can configure it all in that client. No Putty configuration or batch file to be started.



Be sure to select „Standard TCP/IP over SSH“ and the correct private key format.

### QUESTION: 336

Application servers currently deployed in a private subnet require the ability to integrate with a third-party service accessible through the Internet.

Which changes are required to provide outbound Internet connectivity in the VPC without providing inbound Internet connectivity to the application servers?

- A. Create a NAT Gateway without attaching an Internet Gateway to the VPC
- B. Create a NAT Gateway and attach an Internet Gateway to the VPC.
- C. Attach an Internet Gateway to the VPC without creating a NAT Gateway.
- D. Attach a Virtual Private Gateway to the VPC and create a NAT Gateway.

Answer: B

Explanation:

NAT Gateway Basics

To create a NAT gateway, you must specify the public subnet in which the NAT gateway should reside. For more information about public and private subnets, see Subnet Routing. You must also specify an Elastic IP address to associate with the NAT gateway when you create it. After you've created a NAT gateway, you must update the route table associated with one or more of your private subnets to point Internet-bound traffic to the NAT gateway. This enables instances in your private subnets to



communicate with the internet.

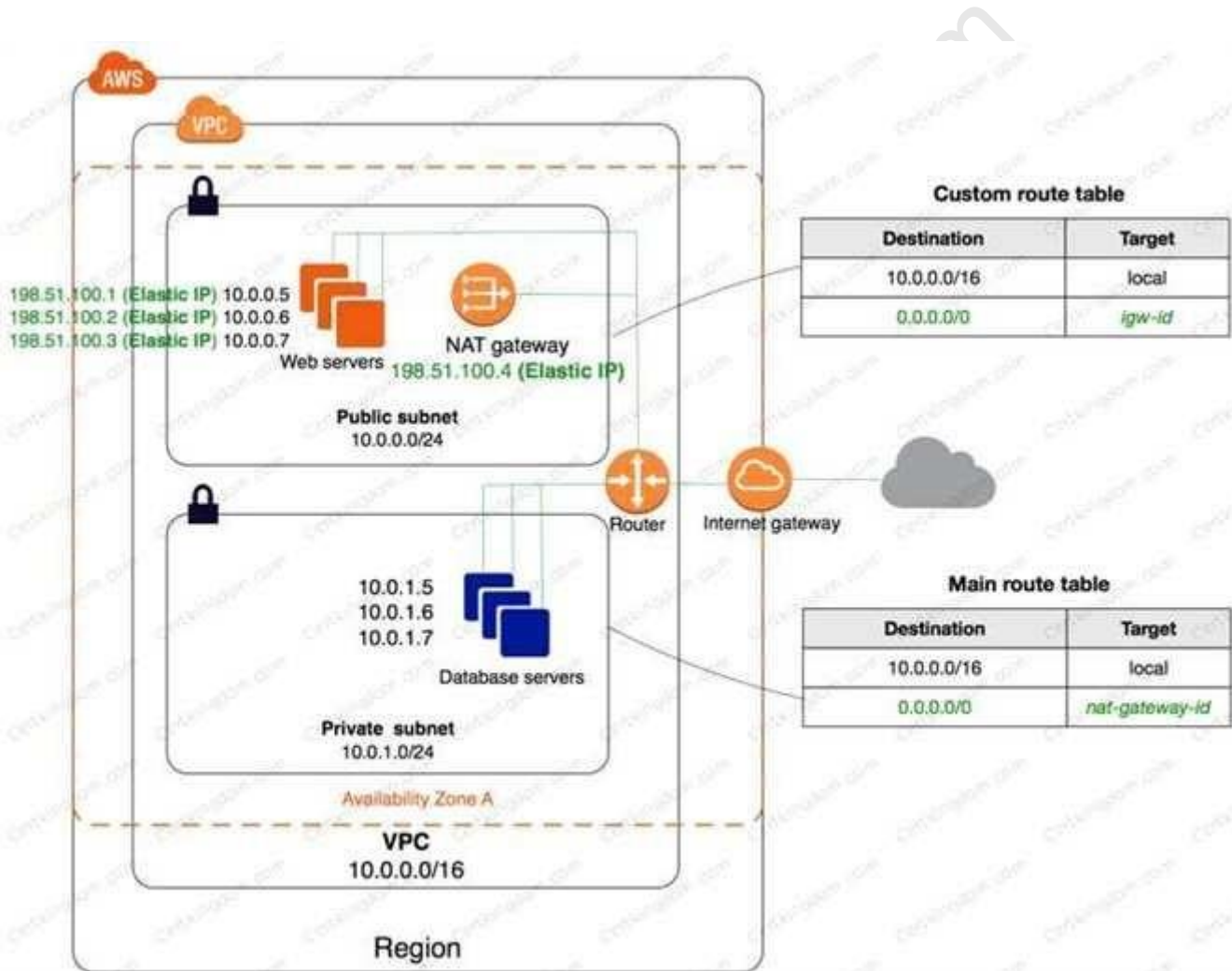
Each NAT gateway is created in a specific Availability Zone and implemented with redundancy in that zone. You have a limit on the number of NAT gateways you can create in an Availability Zone. For more information, see Amazon VPC Limits.

Note

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.

If you no longer need a NAT gateway, you can delete it. Deleting a NAT gateway disassociates its Elastic IP address, but does not release the address from your account.

The following diagram illustrates the architecture of a VPC with a NAT gateway. The main route table sends internet traffic from the instances in the private subnet to the NAT gateway. The NAT gateway sends the traffic to the internet gateway using the NAT gateway's Elastic IP address as the source IP address.



#### QUESTION: 337

A Solutions Architect needs to design a solution that will enable a security learn to detect, review

and perform root cause analysis of security incidents that occur in a cloud environment. The Architect must provide a centralized view of all API for current and future AWS regions. How should the Architect accomplish this task?

- A. Enable AWS CloudTrail logging in each individual region Repeat this for all tutu CK regions.
- B. Enable Amazon CloudWatch logs for all AWS services across all regions and aggregate them in a single Amazon S3 bucket
- C. Enable AWS Trusted Advisor security checks and report all security incidents tor all regions.
- D. Enable AWS CloudTrail by creating a new trail and apply the trail to all regions

Answer: D

Explanation:

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**QUESTION: 338**

A legacy application needs to interact with local storage using iSCSI. A team needs to design a reliable storage solution to provision all new storage on AWS.

Which storage solution meets the legacy application requirements?

- A. AWS Snowball storage for the legacy application until the application can be re-architected
- B. AWS Storage Gateway in cached mode for the legacy application storage to write data to Amazon S3
- C. AWS Storage Gateway in stored mode for the legacy application storage to write data to Amazon S3
- D. An Amazon S3 volume mounted on the legacy application server locally using the File Gateway service

Answer: D

---

**QUESTION: 339**

A Solutions Architect is designing the architecture for a web application that will be hosted on AWS Internet users will access the application using HTTP and HTTPS How should the Architect design the traffic control requirements?

- A. Use a network ACL to allow outbound ports for HTTP and HTTPS Deny other traffic for inbound and outbound.
- B. Use a network ACL to allow inbound ports for HTTP and HTTPS Deny other traffic for inbound and outbound
- C. Allow inbound ports for HTTP and HTTPS In the security group used by the web servers.
- D. Allow outbound ports for HTTP and HTTPS in the security group used by the web servers

Answer: C

---

**QUESTION: 340**

A Solutions Architect is designing a public-facing web application for employees to upload images to their social media account. The application consists of multiple Amazon EC2 instances behind an elastic load balancer, an Amazon S3 bucket where uploaded images are stored and an Amazon DynamoDB table for storing image metadata.

Which AWS service can the Architect use to automate the process of updating metadata in the DynamoDB table upon image upload?

- A. Amazon CloudWatch
- B. AWS Cloud Formation
- C. AWS Lambda
- D. Amazon SQS

Answer: B

---

**QUESTION:** 341

An application hosted on AWS uses object storage for storing internal reports that are accessed daily by the CFO. Currently, these reports are publicly available. How should a Solutions Architect re-design this architecture to prevent unauthorized access to these reports?

- A. Encrypt the files on the client side and store the files on Amazon Glacier, then decrypt the reports on the client side.
- B. Move the files to Amazon ElastiCache and provide a username and password for downloading the reports.
- C. Specify the use of AWS KMS server-side encryption at the time of an object creation on Amazon S3.
- D. Store the files on Amazon S3 and use the application to generate S3 pre-signed URLs to users.

Answer: D

---

**QUESTION:** 342

A Solutions Architect must design a solution that encrypts data in Amazon S3. Corporate policy mandates encryption keys be generated and managed on premises. Which solution should the Architect use to meet the security requirements?

- A. AWS CloudHSM
- B. SSE-KMS. Server-side encryption with AWS KMS managed keys
- C. SSE-S3. Server-side encryption with Amazon-managed master key
- D. SSE-C. Server-side encryption with customer-provided encryption keys

Answer: B

**Explanation:**

Protecting Data Using Server-Side Encryption with AWS KMS–Managed Keys (SSE-KMS)  
Server-side encryption is about protecting data at rest. AWS Key Management Service (AWS KMS) is a service that combines secure, highly available hardware and software to provide a key management system scaled for the cloud. AWS KMS uses customer master keys (CMKs) to encrypt your Amazon S3 objects. You use AWS KMS via the Encryption Keys section in the IAM console or via AWS KMS APIs to centrally create encryption keys, define the policies that control how keys can be used, and audit key usage to prove they are being used correctly. You can use these keys to protect your data in Amazon S3 buckets.

The first time you add an SSE-KMS–encrypted object to a bucket in a region, a default CMK is created for you automatically. This key is used for SSE-KMS encryption unless you select a CMK that you



created separately using AWS Key Management Service. Creating your own CMK gives you more flexibility, including the ability to create, rotate, disable, and define access controls, and to audit the encryption keys used to protect your data.

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**QUESTION:** 343

A Solutions Architect is building a new feature using Lambda to create metadata when a user uploads a picture to Amazon S3. All metadata must be indexed.

Which AWS service should the Architect use to store this metadata?

- A. Amazon S3
- B. Amazon DynamoDB
- C. Amazon Kinesis
- D. Amazon EFS

Answer: A

---

**QUESTION:** 344

A Solutions Architect is about to deploy an API on multiple EC2 instances in an Auto Scaling group behind an ELB. The support team has the following operational requirements:

1. They get an alert when the requests per second go over 50,000
  2. They get an alert when latency goes over 5 seconds
  3. They can validate how many times a day users call the API requesting highly-sensitive data
- Which combination of steps does the Architect need to take to satisfy these operational requirements? (Select TWO.)

- A. Ensure that CloudTrail is enabled
- B. Create a custom CloudWatch metric to monitor the API for data access
- C. Configure CloudWatch alarms for any metrics the support team requires
- D. Ensure that detailed monitoring for the EC2 instances is enabled
- E. Create an application to export and save CloudWatch metrics for longer term trending analysis

Answer: B, D

---

**QUESTION:** 345

A Solutions Architect is architecting a workload that requires a highly available shared block file storage system that must be consumed by multiple Linux applications. Which service meets this requirement?

- A. Amazon EFS
- B. Amazon S3
- C. AWS Storage Gateway
- D. Amazon EBS

Answer: D

---

**QUESTION:** 346

A Solutions Architect is designing a solution that must store and retrieve session data and JSON documents. The solution must provide high availability, strong consistency, and data durability. Which

solution meets these requirements?

- A. Amazon EBS volume with Provisioned IOPS
- B. Amazon EC2 instance store
- C. Amazon SQS
- D. Amazon DynamoDB table

Answer: C

---

**QUESTION:** 347

A customer has a production application that frequently overwrites and deletes data, the application requires the most up-to-date version of the data every time it is requested. Which storage service should a Solutions Architect recommend to best accommodate this use case?

- A. Amazon S3
- B. Amazon RDS
- C. Amazon Red Shift
- D. AWS Storage Gateway

Answer: A

---

**QUESTION:** 348

A Solutions Architect is designing a solution that will include a database in Amazon RDS. Corporate security policy mandates that the database, its logs, and its backups are all encrypted. Which is the MOST efficient option to fulfill the security policy using Amazon RDS?

- A. Launch an Amazon RDS instance with encryption enabled Enable encryption for logs and backups
- B. Launch an Amazon RDS instance Enable encryption for the database, logs, and backups
- C. Launch an Amazon RDS instance with encryption enabled Logs and backups are automatically encrypted
- D. Launch an Amazon RDS instance. Enable encryption for backups Encrypt logs with a databaseengine feature

Answer: B

---

**QUESTION:** 349

An application consists of microservices. The microservices need to communicate asynchronously and the solution must ensure that each message is consumed only once. Which service should be used?

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

Answer: C

---

**QUESTION: 350**

A Solutions Architect is designing a three-tier web application that includes an Auto Scaling group of Amazon EC2 Instances running behind an ELB Classic Load Balancer. The security team requires that all web servers must be accessible only through the Load Balancer and that none of the web servers are directly accessible from the Internet.

How should the Architect meet these requirements?

- A. Use a Load Balancer installed on an Amazon EC2 instance
- B. Configure the web servers' security group to deny traffic from the public Internet
- C. Create an Amazon CloudFront distribution in front of the ELB Classic Load Balancer
- D. Configure the web tier security group to allow only traffic from the ELB Classic Load Balancer

Answer: C

**Explanation:****Routing Traffic to an ELB Load Balancer**

If you host a website on multiple Amazon EC2 instances, you can distribute traffic to your website across the instances by using an Elastic Load Balancing (ELB) load balancer. The ELB service automatically scales the load balancer as traffic to your website changes over time. The load balancer also can monitor the health of its registered instances and route domain traffic only to healthy instances.

To route domain traffic to an ELB load balancer, use Amazon Route 53 to create an alias record. [HYPERLINK "https://docs.aws.amazon.com/Route53/latest/DeveloperGuide/resource-records-choosing-alias-non-alias.html"](https://docs.aws.amazon.com/Route53/latest/DeveloperGuide/resource-records-choosing-alias-non-alias.html) that points to your load balancer. An alias record is a Route 53 extension to DNS. It's similar to a CNAME record, but you can create an alias record both for the root domain, such as example.com, and for subdomains, such as www.example.com. (You can create CNAME records only for subdomains.)

**Note**

Route 53 doesn't charge for alias queries to ELB load balancers or other AWS resources.

**Prerequisites**

Before you get started, you need the following:

An ELB load balancer. You can use an ELB Classic, Application, or Network Load Balancer. For information about creating a load balancer, see *Getting Started with Elastic Load Balancing* in the *Elastic Load Balancing User Guide*.

Give the load balancer a name that will help you remember what it's for later. The name that you specify when you create a load balancer is the name that you'll choose when you create an alias record in the Route 53 console.

A registered domain name. You can use Route 53 as your domain registrar, or you can use a different registrar.

Route 53 as the DNS service for the domain. If you register your domain name by using Route 53, we automatically configure Route 53 as the DNS service for the domain.

For information about using Route 53 as the DNS service provider for your domain, see *Making Amazon Route 53 the DNS Service for an Existing Domain*.

**QUESTION: 351**

How can a user track memory usage in an EC2 instance?

- A. Call Amazon CloudWatch to retrieve the memory usage metric data that exists for the EC2

Instance

- B. Assign an IAM role to the EC2 instance with an IAM policy granting access to the desired metric.
- C. Use an instance type that supports memory usage reporting to a metric by default
- D. Place an agent on the EC2 instance to push memory usage to an Amazon CloudWatch custom metric.

Answer: D

---

**QUESTION:** 352

One company wants to share the contents of their Amazon S3 bucket with another company. Security requirements mandate that only the other company's AWS accounts have access to the contents of the Amazon S3 bucket.

Which Amazon S3 feature will allow secure access to the Amazon S3 bucket?

- A. Bucket policy
- B. Object lagging
- C. CORS configuration
- D. Lifecycle policy

Answer: C

Explanation:

Cross-origin resource sharing (CORS) defines a way for client web applications that are loaded in one domain to interact with resources in a different domain. With CORS support, you can build rich client-side web applications with Amazon S3 and selectively allow cross-origin access to your Amazon S3 resources.

This section provides an overview of CORS. The subtopics describe how you can enable CORS using the Amazon S3 console, or programmatically by using the Amazon S3 REST API and the AWS SDKs.

---

**QUESTION:** 353

A Solutions Architect is designing an elastic application that will have between 10 and 50 Amazon EC2 concurrent instances running, dependent on load. Each instance must mount storage that will read and write to the same 50 GB folder. Which storage type meets the requirements?

- A. Amazon S3
- B. Amazon EFS
- C. Amazon EBS volumes
- D. Amazon EC2 instance store

Answer: A

---

**QUESTION:** 354

An application is running in a single AWS region. The business team adds a requirement to run the application in a second region for multi-region high availability. A Solutions Architect needs to enable traffic to be distributed to multiple regions for high availability.

Which AWS service meets the requirements?

- A. Amazon Route 53
-

- B. Elastic Load Balancing
- C. Amazon CloudFront
- D. Amazon S3 Website Hosting

Answer: A

---

**QUESTION:** 355

A user is designing a new service that receives location updates from 3,600 rental cars every hour. The cars upload their location to an Amazon S3 bucket. Each location must be checked for distance from the original rental location. Which services will process the updates and automatically scale?

- A. Amazon EC2 and Amazon EBS
- B. Amazon Kinesis Firehouse and Amazon S3
- C. Amazon ECS and Amazon RDS
- D. Amazon S3 events and AWS Lambda

Answer: A

---

**QUESTION:** 356

An application stack includes an Elastic Load Balancer in a public subnet, a fleet of Amazon EC2 instances in an Auto Scaling group, and an Amazon RDS MySQL cluster. Users connect to the application from the Internet. The application servers and database must be secure. How should a Solutions Architect perform this task?

- A. Create a private subnet for the Amazon EC2 instances and a public subnet for the Amazon RDS cluster.
- B. Create a private subnet for the Amazon EC2 instances and a private subnet for the Amazon RDS cluster.
- C. Create a public subnet for the Amazon EC2 instances and a private subnet for the Amazon RDS cluster.
- D. Create a public subnet for the Amazon EC2 instances and a public subnet for the Amazon RDS cluster.

Answer: C

---

**QUESTION:** 357

A prediction process requires access to a trained model that is stored in an Amazon S3 bucket. The process takes a few seconds to process an image and make a prediction. The process is not overly resource-intensive, does not require any specialized hardware and takes less than 512 MB of memory to run.

What would be the MOST effective compute solution for this use case?

- A. Amazon ECS
- B. Amazon EC2 Spot instances
- C. AWS Lambda functions
- D. AWS Elastic Beanstalk

Answer: C

**QUESTION: 358**

A customer owns a MySQL database that is accessed by various clients who expect, at most 100 ms latency on requests. Once a record is stored in the database, it is rarely changed. Clients only access one record at a time.

Database access has been increasing exponentially due to increased client demand. The resultant load will soon exceed the capacity of the most expensive hardware available for purchase. The customer wants to migrate to AWS, and is willing to change database systems.

Which service would alleviate the database load issue and offer virtually unlimited scalability for the future?

- A. Amazon RDS
- B. Amazon DynamoDB
- C. Amazon Redshift
- D. AWS Data Pipeline

Answer: C

---

**QUESTION: 359**

A business team requires a structured storage solution to store all of a company's historical sales data.

A. Currently there are 4 TB of data, which will grow to hundreds of terabytes within a few years. The team must be able to regularly run queries against the data using current business intelligence tools. Fast performance is required despite the dataset growth.

Which solution should the company use?

- A. Amazon Redshift
- B. Amazon Aurora
- C. Amazon DynamoDB
- D. Amazon S3

Answer: B

---

**QUESTION: 360**

A Solutions Architect needs a storage solution for a fleet of Linux web application servers. The solution should provide file system interface and be able to support millions of files. Which AWS service should the Architect choose?

- A. Amazon S3
- B. Amazon EFS
- C. Amazon EBS
- D. Amazon ElastiCache

Answer: D

---

**QUESTION: 361**

An application provides a feature that allows users to securely download private and personal files. The web server is currently overwhelmed with serving files for download. A Solutions Architect must

find a more effective solution to reduce web server load and costs, and must allow users to download only their own files

Which solution meets all requirements?

- A. Store the files securely on Amazon S3 and have the application generate an Amazon S3 pre-signed URL for the user to download.
- B. Store the files in an encrypted Amazon EBS volume, and use a separate set of servers to serve the downloads.
- C. Have the application encrypts the files and stores them in the local Amazon EC2 InstanceStore prior to serving them up for download.
- D. Create an Amazon CloudFront distribution to distribute and cache the files.

Answer: D

---

**QUESTION:** 362

A website experiences unpredictable traffic. During peak traffic times, the database is unable to keep up with the write request.

Which AWS service will help decouple the web application from the database?

- A. Amazon SQS
- B. Amazon EFS
- C. Amazon S3
- D. AWS Lambda

Answer: A

---

**QUESTION:** 363

A company is launching an application that it expects to be very popular. The company needs a database that

can scale with the rest of the application. The schema will change frequently. The application cannot afford any downtime for database changes.

Which AWS service allows the company to achieve these objectives?

- A. Amazon Redshift
- B. Amazon DynamoDB
- C. Amazon RDS MySQL
- D. Amazon Aurora

Answer: A

---

**QUESTION:** 364

A Solution Architect is designing a disaster recovery solution for a 5 TB Amazon Redshift cluster. The recovery

site must be at least 500 miles (805 kilometers) from the live site.

How should the Architect meet these requirements?

- A. Use AWS CloudFormation to deploy the cluster in a second region.

- B. Take a snapshot of the cluster and copy it to another Availability Zone.
- C. Modify the Redshift cluster to span two regions.
- D. Enable cross-region snapshots to a different region.

Answer: C

---

**QUESTION:** 365

A customer has written an application that uses Amazon S3 exclusively as a data store. The application workswell until the customer increases the rate at which the application is updating information. The customer now reports that outdated data occasionally appears when the application accesses objects in Amazon S3. What could be the problem, given that the application logic is otherwise correct?

- A. The application is reading parts of objects from Amazon S3 using a range header.
- B. The application is reading objects from Amazon S3 using parallel object requests.
- C. The application is updating records by writing new objects with unique keys.
- D. The application is updating records by overwriting existing objects with the same keys.

Answer: A

---

**QUESTION:** 366

An application requires block storage for file updates. The data is 500 GB and must continuously sustain 100 MiB/s of aggregate read/write operations. Which storage option is appropriate for this application?

- A. Amazon S3
- B. Amazon EFS
- C. Amazon EBS
- D. Amazon Glacier

Answer: B

---

**QUESTION:** 367

A mobile application serves scientific articles from individual files in an Amazon S3 bucket. Articles older than 30 days are rarely read. Articles older than 60 days no longer need to be available through the application, but the application owner would like to keep them for historical purposes. Which cost-effective solution BEST meets these requirements?

- A. Create a Lambda function to move files older than 30 days to Amazon EBS and move files older than 60 days to Amazon Glacier.
- B. Create a Lambda function to move files older than 30 days to Amazon Glacier and move files older than 60 days to Amazon EBS.
- C. Create lifecycle rules to move files older than 30 days to Amazon S3 Standard Infrequent Access and move files older than 60 days to Amazon Glacier.
- D. Create lifecycle rules to move files older than 30 days to Amazon Glacier and move files older than 60 days to Amazon S3 Standard Infrequent Access.



Answer: C

---

**QUESTION:** 368

An organization is currently hosting a large amount of frequently accessed data consisting of keyvalue pairs and semi-structured documents in their data center. They are planning to move this data to AWS.

Which of one of the following services MOST effectively meets their needs?

- A. Amazon Redshift
- B. Amazon RDS
- C. Amazon DynamoDB
- D. Amazon Aurora

Answer: C

---

**QUESTION:** 369

A Solutions Architect needs to build a resilient data warehouse using Amazon Redshift. The Architect needs to rebuild the Redshift cluster in another region.

Which approach can the Architect take to address this requirement?

- A. Modify the Redshift cluster and configure cross-region snapshots to the other region.
- B. Modify the Redshift cluster to take snapshots of the Amazon EBS volumes each day, sharing those snapshots with the other region.
- C. Modify the Redshift cluster and configure the backup and specify the Amazon S3 bucket in the other region.
- D. Modify the Redshift cluster to use AWS Snowball in export mode with data delivered to the other region.

Answer: B

---

**QUESTION:** 370

A popular e-commerce application runs on AWS. The application encounters performance issues. The database is unable to handle the amount of queries and load during peak times. The database is running on the RDS Aurora engine on the largest instance size available.

What should an administrator do to improve performance?

- A. Convert the database to Amazon Redshift.
- B. Create a CloudFront distribution.
- C. Convert the database to use EBS Provisioned IOPS.
- D. Create one or more read replicas.

Answer: C

---

**QUESTION:** 371

A Solutions Architect is designing the architecture for a new three-tier web-based e-commerce site that must be available 24/7. Requests are expected to range from 100 to 10,000 each minute. Usage can vary depending on time of day, holidays, and promotions. The design should be able to handle

these volumes, with the ability to handle higher volumes if necessary.

How should the Architect design the architecture to ensure the web tier is cost-optimized and can handle the expected traffic? (Select two.)

- A. Launch Amazon EC2 instances in an Auto Scaling group behind an ELB.
- B. Store all static files in a multi-AZ Amazon Aurora database.
- C. Create an CloudFront distribution pointing to static content in Amazon S3.
- D. Use Amazon Route 53 to route traffic to the correct region.
- E. Use Amazon S3 multi-part uploads to improve upload times.

Answer: A, C

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**QUESTION:** 372

A Solution Architect is designing a three-tier web application. The Architect wants to restrict access to the database tier to accept traffic from the application servers only. However, these application servers are in an

Auto Scaling group and may vary in quantity.

How should the Architect configure the database servers to meet the requirements?

- A. Configure the database security group to allow database traffic from the application server IP addresses.
- B. Configure the database security group to allow database traffic from the application server security group.
- C. Configure the database subnet network ACL to deny all inbound non-database traffic from the application tier subnet.
- D. Configure the database subnet network ACL to allow inbound database traffic from the application-tier subnet.

Answer: C

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**QUESTION:** 373

A call center application consists of a three-tier application using Auto Scaling groups to automatically scale resources as needed. Users report that every morning at 9:00 AM the system becomes very slow for about 15 minutes. A Solution Architect determines that a large percentage of the call center staff starts work at 9:00 AM, so Auto Scaling does not have enough time to scale out to meet demand.

How can the Architect fix the problem?

- A. Change the Auto Scaling group's scale out event to scale based on network utilization.
- B. Create an Auto Scaling scheduled action to scale out the necessary resources at 8:30 AM every morning.
- C. Use Reserved Instances to ensure the system has reserved the right amount of capacity for the scale-up events.
- D. Permanently keep a steady state of instances that is needed at 9:00 AM to guarantee available resources, but leverage Spot Instances.

Answer: A

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**QUESTION: 374**

An e-commerce application is hosted in AWS. The last time a new product was launched, the application experienced a performance issue due to an enormous spike in traffic. Management decided that capacity must be doubled the week after the product is launched. Which is the MOST efficient way for management to ensure that capacity requirements are met?

- A. Add a Step Scaling policy.
- B. Add a Dynamic Scaling policy.
- C. Add a Scheduled Scaling action.
- D. Add Amazon EC2 Spot Instances.

Answer: A

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**QUESTION: 375**

A Solution Architect is designing an application that uses Amazon EBS volumes. The volumes must be backed up to a different region. How should the Architect meet this requirement?

- A. Create EBS snapshots directly from one region to another.
- B. Move the data to an Amazon S3 bucket and enable cross-region replication.
- C. Create EBS snapshots and then copy them to the desired region.
- D. Use a script to copy data from the current Amazon EBS volume to the destination Amazon EBS volume.

Answer: C

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**QUESTION: 376**

A company is using an Amazon S3 bucket located in us-west-2 to serve videos to their customers. Their customers are located all around the world and the videos are requested a lot during peak hours. Customers in Europe complain about experiencing slow downloaded speeds, and during peak hours, customers in all locations report experiencing HTTP 500 errors. What can a Solutions Architect do to address these issues?

- A. Place an elastic load balancer in front of the Amazon S3 bucket to distribute the load during peak hours.
- B. Cache the web content with Amazon CloudFront and use all Edge locations for content delivery.
- C. Replicate the bucket in eu-west-1 and use an Amazon Route 53 failover routing policy to determine which bucket it should serve the request to.
- D. Use an Amazon Route 53 weighted routing policy for the CloudFront domain name to distribute the GET request between CloudFront and the Amazon S3 bucket directly.

Answer: D

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**QUESTION: 377**

A social networking portal experiences latency and throughput issues due to an increased number of users. Application servers use very large datasets from an Amazon RDS database, which creates a performance bottleneck on the database.

Which AWS service should be used to improve performance?

- A. Auto Scaling
- B. Amazon SQS
- C. Amazon ElastiCache
- D. ELB Application Load Balancer

Answer: C

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**QUESTION:** 378

A Solutions Architect is designing network architecture for an application that has compliance requirements.

The application will be hosted on Amazon EC2 instances in a private subnet and will be using Amazon S3 for storing data

A. The compliance requirements mandate that the data cannot traverse the public Internet. What is the MOST secure way to satisfy this requirement?

- A. Use a NAT Instance.
- B. Use a NAT Gateway.
- C. Use a VPC endpoint.
- D. Use a Virtual Private Gateway.

Answer: C

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**QUESTION:** 379

A Solutions Architect is designing a log-processing solution that requires storage that supports up to 500 MB/s throughput. The data is sequentially accessed by an Amazon EC2 instance.

Which Amazon storage type satisfies these requirements?

- A. EBS Provisioned IOPS SSD (io1)
- B. EBS General Purpose SSD (gp2)
- C. EBS Throughput Optimized HDD (st1)
- D. EBS Cold HDD (sc1)

Answer: C

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**QUESTION:** 380

A company's development team plans to create an Amazon S3 bucket that contains millions of images. The team wants to maximize the read performance of Amazon S3.

Which naming scheme should the company use?

- A. Add a date as the prefix.
- B. Add a sequential id as the suffix.
- C. Add a hexadecimal hash as the suffix.
- D. Add a hexadecimal hash as the prefix.

Answer: D

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**QUESTION:** 381

A company plans to use AWS for all new batch processing workloads. The company's developers use Docker containers for the new batch processing. The system design must accommodate critical and non-critical batch processing workloads 24/7.

How should a Solutions Architect design this architecture in a cost-efficient manner?

- A. Purchase Reserved Instances to run all containers. Use Auto Scaling groups to schedule jobs.
- B. Host a container management service on Spot Instances. Use Reserved Instances to run Docker containers.
- C. Use Amazon ECS orchestration and Auto Scaling groups: one with Reserve Instances, one with Spot Instances.
- D. Use Amazon ECS to manage container orchestration. Purchase Reserved Instances to run all batch workloads at the same time.

Answer: C

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**QUESTION:** 382

A Solutions Architect is designing a photo application on AWS. Every time a user uploads a photo to Amazon

S3, the Architect must insert a new item to a DynamoDB table.

Which AWS-managed service is the BEST fit to insert the item?

- A. Lambda@Edge
- B. AWS Lambda
- C. Amazon API Gateway
- D. Amazon EC2 instances

Answer: B

---

**QUESTION:** 383

An application relies on messages being sent and received in order. The volume will never exceed more than 300 transactions each second.

Which service should be used?

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

Answer: A

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**QUESTION:** 384

A Solutions Architect is designing an application on AWS that uses persistent block storage. Data must be encrypted at rest.

Which solution meets the requirement?

- A. Enable SSL on Amazon EC2 instances.
- B. Encrypt Amazon EBS volumes on Amazon EC2 instances.
- C. Enable server-side encryption on Amazon S3.
- D. Encrypt Amazon EC2 Instance Storage.

Answer: B

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**QUESTION:** 385

A manufacturing company captures data from machines running at customer sites. Currently, thousands of machines send data every 5 minutes, and this is expected to grow to hundreds of thousands of machines in the near future. The data is logged with the intent to be analyzed in the future as needed.

What is the SIMPLEST method to store this streaming data at scale?

- A. Create an Amazon Kinesis Firehose delivery stream to store the data in Amazon S3.
- B. Create an Auto Scaling group of Amazon EC2 servers behind ELBs to write the data into Amazon RDS.
- C. Create an Amazon SQS queue, and have the machines write to the queue.
- D. Create an Amazon EC2 server farm behind an ELB to store the data in Amazon EBS Cold HDD volumes.

Answer: B

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**QUESTION:** 386

A Solutions Architect is designing a new application that needs to access data in a different AWS account located within the same region. The data must not be accessed over the Internet.

Which solution will meet these requirements with the LOWEST cost?

- A. Add rules to the security groups in each account.
- B. Establish a VPC Peering connection between accounts.
- C. Configure Direct Connect in each account.
- D. Add a NAT Gateway to the data account.

Answer: B

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**QUESTION:** 387

A company requires that the source, destination, and protocol of all IP packets be recorded when traversing a private subnet. What is the MOST secure and reliable method of accomplishing this goal.

- A. Create VPC flow logs on the subnet.
- B. Enable source destination check on private Amazon EC2 instances.
- C. Enable AWS CloudTrail logging and specify an Amazon S3 bucket for storing log files.
- D. Create an Amazon CloudWatch log to capture packet information.

Answer: A

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**QUESTION:** 388

A company is launching a marketing campaign on their website tomorrow and expects a significant increase in traffic. The website is designed as a multi-tiered web architecture, and the increase in traffic could potentially overwhelm the current design.

What should a Solutions Architect do to minimize the effects from a potential failure in one or more of the tiers?

- A. Migrate the database to Amazon RDS.
- B. Set up DNS failover to a statistic website.
- C. Use Auto Scaling to keep up with the demand.
- D. Use both a SQL and a NoSQL database in the design.

Answer: C

---

**QUESTION:** 389

A web application experiences high compute costs due to serving a high amount of static web content.

How should the web server architecture be designed to be the MOST cost-efficient?

- A. Create an Auto Scaling group to scale out based on average CPU usage.
- B. Create an Amazon CloudFront distribution to pull static content from an Amazon S3 bucket.
- C. Leverage Reserved Instances to add additional capacity at a significantly lower price.
- D. Create a multi-region deployment using an Amazon Route 53 geolocation routing policy.

Answer: B

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**QUESTION:** 390

A Solutions Architect plans to migrate NAT instances to NAT gateway. The Architect has NAT instances with scripts to manage high availability.

What is the MOST efficient method to achieve similar high availability with NAT gateway?

- A. Remove source/destination check on NAT instances.
- B. Launch a NAT gateway in each Availability Zone.
- C. Use a mix of NAT instances and NAT gateway.
- D. Add an ELB Application Load Balancer in front of NAT gateway.

Answer: B

---

**QUESTION:** 391

A Solutions Architect is designing a solution to store a large quantity of event data in Amazon S3. The Architect anticipates that the workload will consistently exceed 100 requests each second.

What should the Architect do in Amazon S3 to optimize performance?

- A. Randomize a key name prefix.
- B. Store the event data in separate buckets.
- C. Randomize the key name suffix.
- D. Use Amazon S3 Transfer Acceleration.

Answer: A

Explanation:

Reference:

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

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**QUESTION:** 392

A user is testing a new service that receives location updates from 3,600 rental cars every hour. Which service will collect data and automatically scale to accommodate production workload?

- A. Amazon EC2
- B. Amazon Kinesis Firehose
- C. Amazon EBS
- D. Amazon API Gateway

Answer: D

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**QUESTION:** 393

A Solutions Architect is designing a web application. The web and application tiers need to access the Internet, but they cannot be accessed from the Internet. Which of the following steps is required?

- A. Attach an Elastic IP address to each Amazon EC2 instance and add a route from the private subnet to the public subnet.
- B. Launch a NAT gateway in the public subnet and add a route to it from the private subnet.
- C. Launch Amazon EC2 instances in the public subnet and change the security group to allow outbound traffic on port 80.
- D. Launch a NAT gateway in the private subnet and deploy a NAT instance in the private subnet.

Answer: B

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**QUESTION:** 394

A Solutions Architect is designing a solution for a media company that will stream large amounts of data from an Amazon EC2 instance. The data streams are typically large and sequential, and must be able to support up to 500 MB/s.

Which storage type will meet the performance requirements of this application?

- A. EBS Provisioned IOPS SSD
- B. EBS General Purpose SSD
- C. EBS Cold HDD
- D. EBS Throughput Optimized HDD

Answer: D

---

**QUESTION:** 395

A Solutions Architect is designing a database solution that must support a high rate of random disk reads and writes. It must provide consistent performance, and requires long-term persistence.

Which storage solution BEST meets these requirements?



- A. An Amazon EBS Provisioned IOPS volume
- B. An Amazon EBS General Purpose volume
- C. An Amazon EBS Magnetic volume
- D. An Amazon EC2 Instance Store

Answer: A

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**QUESTION:** 396

A Solutions Architect is designing solution with AWS Lambda where different environments require different database passwords.

What should the Architect do to accomplish this in a secure and scalable way?

- A. Create a Lambda function for each individual environment.
- B. Use Amazon DynamoDB to store environmental variables.
- C. Use encrypted AWS Lambda environmental variables.
- D. Implement a dedicated Lambda function for distributing variables.

Answer: C

---

**QUESTION:** 397

A Solutions Architect is building a multi-tier website. The web servers will be in a public subnet, and the database servers will be in a private subnet. Only the web servers can be accessed from the Internet. The database servers must have Internet access for software updates.

Which solution meets the requirements?

- A. Assign Elastic IP addresses to the database instances.
- B. Allow Internet traffic on the private subnet through the network ACL.
- C. Use a NAT Gateway.
- D. Use an egress-only Internet Gateway.

Answer: C

---

**QUESTION:** 398

A Solutions Architect is designing a Lambda function that calls an API to list all running Amazon RDS instances.

How should the request be authorized?

- A. Create an IAM access and secret key, and store it in the Lambda function.
- B. Create an IAM role to the Lambda function with permissions to list all Amazon RDS instances.
- C. Create an IAM role to Amazon RDS with permissions to list all Amazon RDS instances.
- D. Create an IAM access and secret key, and store it in an encrypted RDS database.

Answer: C

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**QUESTION:** 399

A Solutions Architect is building an application on AWS that will require 20,000 IOPS on a particular volume to support a media event. Once the event ends, the IOPS need is no longer required. The

marketing team asks the Architect to build the platform to optimize storage without incurring downtime.

How should the Architect design the platform to meet these requirements?

- A. Change the Amazon EC2 instance types.
- B. Change the EBS volume type to Provisioned IOPS.
- C. Stop the Amazon EC2 instance and provision IOPS for the EBS volume.
- D. Enable an API Gateway to change the endpoints for the Amazon EC2 instances.

Answer: B

---

**QUESTION:** 400

An interactive, dynamic website runs on Amazon EC2 instances in a single subnet behind an ELB Classic Load Balancer.

Which design changes will make the site more highly available?

- A. Move some Amazon EC2 instances to a subnet in a different way.
- B. Move the website to Amazon S3.
- C. Change the ELB to an Application Load Balancer.
- D. Move some Amazon EC2 instances to a subnet in the same Availability Zone.

Answer: C

---

**QUESTION:** 401

A Solutions Architect is designing a web application that is running on an Amazon EC2 instance. The application stores data in DynamoDB. The Architect needs to secure access to the DynamoDB table. What combination of steps does AWS recommend to achieve secure authorization? (Select two.)

- A. Store an access key on the Amazon EC2 instance with rights to the Dynamo DB table.
- B. Attach an IAM user to the Amazon EC2 instance.
- C. Create an IAM role with permissions to write to the DynamoDB table.
- D. Attach an IAM role to the Amazon EC2 instance.
- E. Attach an IAM policy to the Amazon EC2 instance.

Answer: A, C

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**QUESTION:** 402

A company hosts a popular web application. The web application connects to a database running in a private

VPC subnet. The web servers must be accessible only to customers on an SSL connection. The RDS MySQL

database server must be accessible only from the web servers.

How should the Architect design a solution to meet the requirements without impacting running applications?

- A. Create a network ACL on the web server's subnet, and allow HTTPS inbound and MySQL outbound. Place both database and web servers on the same subnet.

- B. Open an HTTPS port on the security group for web servers and set the source to 0.0.0.0/0. Open the MySQL port on the database security group and attach it to the MySQL instance. Set the source to Web Server Security Group.
- C. Create a network ACL on the web server's subnet, and allow HTTPS inbound, and specify the source as 0.0.0.0/0. Create a network ACL on a database subnet, allow MySQL port inbound for web servers, and deny all outbound traffic.
- D. Open the MySQL port on the security group for web servers and set the source to 0.0.0.0/0. Open the HTTPS port on the database security group and attach it to the MySQL instance. Set the source to Web Server Security Group.

Answer: D

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**QUESTION:** 403

Which service should an organization use if it requires an easily managed and scalable platform to host its web application running on Nginx?

- A. AWS Lambda
- B. Auto Scaling
- C. AWS Elastic Beanstalk
- D. Elastic Load Balancing

Answer: C

---

**QUESTION:** 404

A Solutions Architect is designing a VPC. Instances in a private subnet must be able to establish IPv6 traffic to the Internet. The design must scale automatically and not incur any additional cost. This can be accomplished with:

- A. an egress-only internet gateway
- B. a NAT gateway
- C. a custom NAT instance
- D. a VPC endpoint

Answer: A

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**QUESTION:** 405

A web application stores all data in an Amazon RDS Aurora database instance. A Solutions Architect wants to provide access to the data for a detailed report for the Marketing team, but is concerned that the additional load on the database will affect the performance of the web application. How can the report be created without affecting the performance of the application?

- A. Create a read replica of the database.
- B. Provision a new RDS instance as a secondary master.
- C. Configure the database to be in multiple regions.

D. Increase the number of provisioned storage IOPS.

Answer: B

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**QUESTION:** 406

A company has an application that stores sensitive data.

A. The company is required by government regulations to store multiple copies of its data. What would be the MOST resilient and cost-effective option to meet this requirement?

- A. Amazon EFS
- B. Amazon RDS
- C. AWS Storage Gateway
- D. Amazon S3

Answer: D

---

**QUESTION:** 407

A Solutions Architect is developing software on AWS that requires access to multiple AWS services, including an Amazon EC2 instance. This is a security sensitive application, and AWS credentials such as Access Key ID and Secret Access Key need to be protected and cannot be exposed anywhere in the system.

What security measure would satisfy these requirements?

- A. Store the AWS Access Key ID/Secret Access Key combination in software comments.
- B. Assign an IAM user to the Amazon EC2 instance.
- C. Assign an IAM role to the Amazon EC2 instance.
- D. Enable multi-factor authentication for the AWS root account.

Answer: B

---

**QUESTION:** 408

An AWS workload in a VPC is running a legacy database on an Amazon EC2 instance. Data is stored on a 200GB Amazon EBS (gp2) volume. At peak load times, logs show excessive wait time.

What solution should be implemented to improve database performance using persistent storage?

- A. Migrate the data on the Amazon EBS volume to an SSD-backed volume.
- B. Change the EC2 instance type to one with EC2 instance store volumes.
- C. Migrate the data on the EBS volume to provisioned IOPS SSD (io1).
- D. Change the EC2 instance type to one with burstable performance.

Answer: D

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**QUESTION:** 409

As part of securing an API layer built on Amazon API gateway, a Solutions Architect has to authorize users who are currently authenticated by an existing identity provider. The users must be denied access for a period of one hour after three unsuccessful attempts.

How can the Solutions Architect meet these requirements?

- A. Use AWS IAM authorization and add least-privileged permissions to each respective IAM role.
- B. Use an API Gateway custom authorizer to invoke an AWS Lambda function to validate each user's identity.
- C. Use Amazon Cognito user pools to provide built-in user management.
- D. Use Amazon Cognito user pools to integrate with external identity providers.

Answer: B

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**QUESTION:** 410

An organization runs an online media site, hosted on-premises. An employee posted a product review that contained videos and pictures. The review went viral and the organization needs to handle the resulting spike in website traffic.

What action would provide an immediate solution?

- A. Redesign the website to use Amazon API Gateway, and use AWS Lambda to deliver content.
- B. Add server instances using Amazon EC2 and use Amazon Route 53 with a failover routing policy.
- C. Serve the images and videos via an Amazon CloudFront distribution created using the news site as the origin.
- D. Use Amazon ElasticCache for Redis for caching and reducing the load requests from the origin.

Answer: C

---

**QUESTION:** 411

A client notices that their engineers often make mistakes when creating Amazon SQS queues for their backend system.

Which action should a Solutions Architect recommend to improve this process?

- A. Use the AWS CLI to create queues using AWS IAM Access Keys.
- B. Write a script to create the Amazon SQS queue using AWS Lambda.
- C. Use AWS Elastic Beanstalk to automatically create the Amazon SQS queues.
- D. Use AWS CloudFormation Templates to manage the Amazon SQS queue creation

Answer: D

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**QUESTION:** 412

An application is running on an Amazon EC2 instance in a private subnet. The application needs to read and write data onto Amazon Kinesis Data Streams, and corporate policy requires that this traffic should not go to the internet.

How can these requirements be met?

- A. Configure a NAT gateway in a public subnet and route all traffic to Amazon Kinesis through the NAT gateway.
- B. Configure a gateway VPC endpoint for Kinesis and route all traffic to Kinesis through the gateway VPC endpoint.
- C. Configure an interface VPC endpoint for Kinesis and route all traffic to Kinesis through the gateway VPC endpoint.
- D. Configure an AWS Direct Connect private virtual interface for Kinesis and route all traffic to Kinesis

through the virtual interface.

Answer: C

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**QUESTION:** 413

A Solutions Architect is building an application that stores object data

A. Compliance requirements state that the data stored is immutable.  
Which service meets these requirements?

- A. Amazon S3
- B. Amazon Glacier
- C. Amazon EFS
- D. AWS Storage Gateway

Answer: B

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**QUESTION:** 414

A Solutions Architect is defining a shared Amazon S3 bucket where corporate applications will save objects.

How can the Architect ensure that when an application uploads an object to the Amazon S3 bucket, the object is encrypted?

- A. Set a CORS configuration.
- B. Set a bucket policy to encrypt all Amazon S3 objects.
- C. Enable default encryption on the bucket.
- D. Set permission for users.

Answer: B

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**QUESTION:** 415

A company has an Amazon RDS-managed online transaction processing system that has very heavy read and write. The Solutions Architect notices throughput issues with the system.

How can the responsiveness of the primary database be improved?

- A. Use asynchronous replication for standby to maximize throughput during peak demand.
- B. Offload SELECT queries that can tolerate stale data to READ replica.
- C. Offload SELECT and UPDATE queries to READ replica.
- D. Offload SELECT query that needs the most current data to READ replica.

Answer: A

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**QUESTION:** 416

A company is designing a failover strategy in Amazon Route 53 for its resources between two AWS Regions.

The company must have the ability to route a user's traffic to the region with least latency, and if both regions

are healthy, Route 53 should route traffic to resources in both regions.

Which strategy should the Solutions Architect recommend?

- A. Configure active-active failover using Route 53 latency DNS records.
- B. Configure active-passive failover using Route 53 latency DNS records.
- C. Configure active-active failover using Route 53 failover DNS records.
- D. Configure active-passive failover using Route 53 failover DNS records.

Answer: A

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**QUESTION:** 417

A company wants to analyze all of its sales information aggregated over the last 12 months. The company expects there to be over 10TB of data from multiple sources. What service should be used?

- A. Amazon DynamoDB
- B. Amazon Aurora MySQL
- C. Amazon RDS MySQL
- D. Amazon Redshift

Answer: D

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**QUESTION:** 418

A media company has deployed a multi-tier architecture on AWS. Web servers are deployed in two Availability Zones using an Auto Scaling group with a default Auto Scaling termination policy. The web servers' Auto Scaling group currently has 15 instances running. Which instance will be terminated first during a scale-in operation?

- A. The instance with the oldest launch configuration.
- B. The instance in the Availability Zone that has most instances.
- C. The instance closest to the next billing hour.
- D. The oldest instance in the group.

Answer: D

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**QUESTION:** 419

A retail company has sensors placed in its physical retail stores. The sensors send messages over HTTP when customers interact with in-store product displays. A Solutions Architect needs to implement a system for processing those sensor messages; the results must be available for the Data Analysis team.

Which architecture should be used to meet these requirements?

- A. Implement an Amazon API Gateway to server as the HTTP endpoint. Have the API Gateway trigger an AWS Lambda function to process the messages, and save the results to an Amazon DynamoDB table.
- B. Create an Amazon EC2 instance to server as the HTTP endpoint and to process the messages. Save the results to Amazon S3 for the Data Analysis team to download.
- C. Use Amazon Route 53 to direct incoming sensor messages to a Lambda function to process the

message and save the results to a Amazon DynamoDB table.

D. Use AWS Direct Connect to connect sensors to DynamoDB so that data can be written directly to a DynamoDB table where it can be accessed by the Data Analysis team.

Answer: A

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**QUESTION:** 420

A client is migrating a legacy web application to the AWS Cloud. The current system uses an Oracle database as a relational database management system solution. Backups occur every night, and the data is stored onpremises. The Solutions Architect must automate the backups and identify a storage solution while keeping costs low.

Which AWS service will meet these requirements?

- A. Amazon RDS
- B. Amazon RedShift
- C. Amazon DynamoDB Accelerator
- D. Amazon ElastiCache

Answer: A

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**QUESTION:** 421

A company has an Amazon RDS database backing its production website. The Sales team needs to run queries against the database to track training program effectiveness. Queries against the production database cannot impact performance, and the solution must be easy to maintain.

How can these requirements be met?

- A. Use an Amazon Redshift database. Copy the product database into Redshift and allow the team to query it.
- B. Use an Amazon RDS read replica of the production database and allow the team to query against it.
- C. Use multiple Amazon EC2 instances running replicas of the production database, placed behind a load balancer.
- D. Use an Amazon DynamoDB table to store a copy of the data.

Answer: A

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**QUESTION:** 422

A company must collect temperature data from thousands of remote weather devices. The company must also store this data in a data warehouse to run aggregations and visualizations.

Which services will meet these requirements? (Choose two.)

- A. Amazon Kinesis Data Firehouse
- B. Amazon SQS
- C. Amazon Redshift
- D. Amazon SNS
- E. Amazon DynamoDB

Answer: A, B

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**QUESTION: 423**

A company has a legal requirement to store point-in-time copies of its Amazon RDS PostgreSQL database instance in facilities that are at least 200 miles apart.

Use of which of the following provides the easiest way to comply with this requirement?

- A. Cross-region read replica
- B. Multiple Availability Zone snapshot copy
- C. Multiple Availability Zone read replica
- D. Cross-region snapshot copy

Answer: B

---

**QUESTION: 424**

Which requirements must be met in order for a Solutions Architect to specify that an Amazon EC2 instance should stop rather than terminate when its Spot Instance is interrupted? (Choose two.)

- A. The Spot Instance request type must be one-time.
- B. The Spot Instance request type must be persistent.
- C. The root volume must be an Amazon EBS volume.
- D. The root volume must be an instance store volume.
- E. The launch configuration is changed.

Answer: B, C

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**QUESTION: 425**

A team has an application that detects new objects being uploaded into an Amazon S3 bucket. The uploads trigger a Lambda function to write object metadata into an Amazon DynamoDB table and RDS PostgreSQL database. Which action should the team take to ensure high availability?

- A. Enable cross-region replication in the Amazon S3 bucket
- B. Create a Lambda function for each Availability Zone the application is deployed in.
- C. Enable multi-AZ on the RDS PostgreSQL database
- D. Create a DynamoDB stream for the DynamoDB table

Answer: D

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