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Exam : **SAA-C01**

Title : AWS Certified Solutions Architect - Associate

Vendor : Amazon

Version : DEMO

NO.1 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 r4.8xlarge instances. Key drivers for this system include high availability, but elasticity is not required.
What is the MOST cost-effective way to purchase compute for this platform?
A. Spot Instances
B. Convertible Reserved Instances
C. Scheduled Reserved Instances
D. Standard Reserved Instances
Answer: D

NO.2 A bank is writing new software that is heavily dependent upon the 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 DynamoDB
B. Amazon S3
C. Amazon Redshift
D. Amazon Aurora
Answer: D

NO.3 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 SQS
B. Amazon DynamoDB
C. Amazon Kinesis Data Firehouse
D. Amazon SNS
E. Amazon Redshift
Answer: C,E

NO.4 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 EBS
B. Amazon EC2
C. Amazon API Gateway
D. Amazon Kinesis Firehose
Answer: D

NO.5 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 an RDBMS database. The database is unable to keep up with the front-end connection requests.

A. Re-provision the RDBMS database with larger, memory-optimized instances. When voting ends, re-provision the back-end database with smaller instances.
B. Send votes from each front-end node to Amazon DynamoDB. Provision worker instances to process the votes in DynamoDB into the RDBMS database.
C. Each front-end node should send votes to an Amazon SQS queue. Provision worker instances to read the SQS queue and process the message information into RDBMS database.
D. What is the MOST efficient and cost-effective way of ensuring that votes are processed in a timely manner?
E. 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.
Answer: D

NO.6 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

NO.7 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 1AM 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

NO.8 An organization is deploying Amazon ElastiCache for Redis and requires password protection to improve their data security posture.
Which solution should a Solutions Architect recommend?
A. VPC security group for Redis
B. 1AM database authentication
C. Redis Auth
D. AWS Single Sign-On
Answer: D

NO.9 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. Enable multi-factor authentication for the AWS root account
C. Assign an 1AM role to the Amazon EC2 instance.
D. Assign an 1AM user to the Amazon EC2 instance.
Answer: A

NO.10 A Solutions Architect is developing a new web application on AWS. The services must scale to support an increasing load. The Architect wants to focus on software development and deploying new features rather than provisioning or managing servers.
Which AWS service is appropriate?
A. Elastic Beanstalk
B. Auto Scaling
C. CloudFormation
D. EC2 Container Service
Answer: A

NO.11 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. AWS Elastic Beanstalk
B. AWS Lambda functions
C. Amazon EC2 Spot instances
D. Amazon ECS
Answer: B

NO.12 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. Cross-region snapshot copy
C. Multiple Availability Zone snapshot copy
D. Multiple Availability Zone read replica
Answer: B

NO.13 Employees from several companies use an application once a year during a specific 30-day period. The periods are different for each company. Traffic to the application spikes during these 30-day periods.
How can the application be designed to handle these traffic spikes?
A. Use Amazon S3 to cache static elements of the website requests.
B. Use an Auto Scaling group to scale the number of EC2 instances to match the site traffic.
C. Use Amazon Cloud Front to serve static assets to decrease the load on the EC2 instances

D. Use an Amazon Route 53 latency routing policy to route traffic to an Amazon EC2 instance with the least lag time.
Answer: B

NO.14 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 S3
B. AWS Lambda
C. Amazon EFS
D. Amazon SQS
Answer: D

NO.15 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 EBS volume type to Provisioned IOPS.
B. Enable an API Gateway to change the endpoints for the Amazon EC2 instances.
C. Stop the Amazon EC2 instance and provision IOPS for the EBS volume.
D. Change the Amazon EC2 instant types.
Answer: A

NO.16 A Solutions Architect is designing a shared file system for a company. Multiple users will be accessing it at any given time. Different teams will have their own directories, and the company wants to secure files so that users can access only files owned by their team.
How should the Solutions Architect design this?
A. Use Amazon EFS and control permissions by using security groups.
B. Use AWS Storage Gateway and control permissions by using AWS Identity and Access Management (1AM)
C. Use Amazon EFS and control permissions by using file-level permissions.
D. Use Amazon S3 and control permissions by using ACLs.
Answer: C

NO.17 During a review of business applications, a Solutions Architect identifies a critical application with a relational database that was built by a business user and is running on the user's desktop. To reduce the risk of a business interruption, the Solutions Architect wants to migrate the application to a highly available, multi-tiered solution in AWS.
What should the Solutions Architect do to accomplish this with the LEAST amount of disruption to the business?
A. Create an image of the user's desktop, migrate it to Amazon EC2 using VM Import, and place the EC2 instance in an Auto Scaling group
B. Pre-stage new Amazon EC2 instances running the application code on AWS behind an Application

Load Balancer and an Amazon RDS Multi-AZ DB instance

C. Use AWS DMS to migrate the backend database to an Amazon RDS Multi-AZ DB instance. Migrate the application code to AWS Elastic Beanstalk

D. Create an import package of the application code for upload to AWS Lambda, and include a function to create another Lambda function to migrate data into an Amazon RDS database

Answer: C

NO.18 An application has a web tier that runs on EC2 instances in a public subnet. The application tier instances run in private subnets across two Availability Zones. All traffic is IPv4 only, and each subnet has its own custom route table.

A new feature requires that application tier instances can call an external service over the Internet; however, they must still not be accessible to Internet traffic.

What should be done to allow the application servers to connect to the Internet, maintain high availability, and minimize administrative overhead?

A. Add an Amazon NAT Gateway to each private subnet. Alter each private subnet's route table to include a route from 0.0.0.0/0 to the NAT Gateway in the other Availability Zone.

B. Add an Amazon NAT Gateway to each public subnet. Alter each private subnet's route table to include a route from 0.0.0.0/0 to the NAT Gateway in the same Availability Zone.

C. Add an Amazon NAT instance to one of the public subnets Alter each private subnet's route table to include a route from 0.0.0.0/0 to the Internet gateway in the VP

D. Add an Amazon egress-only internet gateway to each private subnet. Alter each private subnet's route table to include a route from 0.0.0.0/0 to the egress-only internal gateway in the same Availability Zone.

Answer: B

NO.19 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 a NAT Gateway to the data account.

B. Configure Direct Connect in each account.

C. Establish a VPC Peering connection between accounts.

D. Add rules to the security groups in each account.

Answer: C

NO.20 An e-commerce application places orders in an Amazon SQS queue. When a message is received, Amazon EC2 worker instances process the request. The EC2 instances are in an Auto Scaling group.

How should the architecture be designed to scale up and down with the LEAST amount of operational overhead?

A. Use an Amazon CloudWatch alarm based on the number of visible messages to scale the Auto Scaling group up or down.

B. Use an Amazon CloudWatch alarm based on the CPU to scale the Auto Scaling group up or down.

C. Use an EC2 Auto Scaling health check for messages processed on the EC2 instances to scale up and down.

D. Use an Amazon CloudWatch alarm on the EC2 CPU to scale the Auto Scaling group up and down.
Answer: A

NO.21 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. Use Amazon ECS to manage container orchestration. Purchase Reserved Instances to run all batch workloads at the same time.
C. Host a container management service on Spot Instances. Use Reserved Instances to run Docker containers.
D. Use Amazon ECS orchestration and Auto Scaling groups: one with Reserve Instances, one with Spot Instances.
Answer: D

NO.22 A company is setting up a new website for online sales. The company will have a web tier and a database tier. The web tier consists of load-balanced, auto-scaled Amazon EC2 instances in multiple Availability Zones (AZs). The database tier is an Amazon RDS Multi-AZ deployment. The EC2 instances must connect securely to the database.
How should the resources be launched?
A. EC2 instances: private subnet
RDS database instances: public subnet
Load balancer: public subnet
B. EC2 instances: public subnet
RDS database instances: public subnet
Load balancer: public subnet
C. EC2 instances: private subnet
RDS database instances: private subnet
Load balancer: public subnet
D. EC2 instances: public subnet
RDS database instances: private subnet
Load balancer: private subnet
Answer: C

NO.23 A customer has an application that is used by enterprise customers outside of AWS.
Some of these customers use legacy firewalls that cannot whitelist by DNS name, but whitelist based only on IP address. The application is currently deployed in two Availability Zones, with one EC2 instance in each that has Elastic IP addresses. The customer wants to whitelist only two IP addresses, but the two existing EC2 instances cannot sustain the amount of traffic.
What can a Solutions Architect do to support the customer and allow for more capacity?
(Choose two.)
A. Add additional EC2 instances with Elastic IP addresses, and register them with Amazon Route 53
B. Create a Network Load Balancer with an interface in each subnet, and assign a static IP address to each subnet.

C. Use Amazon Route 53 with a weighted, round-robin routing policy across the Elastic IP addresses to resolve one at a time.
D. Create additional EC2 instances and put them on standby. Remap an Elastic IP address to a standby instance in the event of a failure.
E. Switch the two existing EC2 instances for an Auto Scaling group, and register them with the Network Load Balancer.
Answer: B,E

NO.24 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 multiple Amazon EC2 instances running replicas of the production database, placed behind a load balancer.
B. Use an Amazon DynamoDB table to store a copy of the data.
C. Use an Amazon RDS read replica of the production database and allow the team to query against it.
D. Use an Amazon Redshift database. Copy the product database into Redshift and allow the team to query it.
Answer: C

NO.25 a company is storing application data in Amazon S3 buckets across multiple AWS regions. Company policy requires that encryption keys be generated at the company headquarters, but the encryption keys may be stored in AWS after generation. The solutions architect plans to configure cross-region replication.
Which solution will encrypt the data while requiring the LEAST amount of operational overhead?
A. Configure S3 object encryption using AWS CI I with Server Side Enciyption with AWS KMS Managed Keys (SSL KMS)
B. Configure the applications to write to an S3 bucket using client-side encryption.
C. Configure S3 buckets to encrypt using At-S-256
D. Configure S3 buckets to use Server Side Encryptjon with AWS KMS-Managed Keys (SSF-KMS) with imported key material in both regions
Answer: B

NO.26 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. Provision a new RDS instance as a secondary master.
B. Increase the number of provisioned storage IOPS.
C. Configure the database to be in multiple regions.
D. Create a read replica of the database.

Answer: D

NO.27 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 oneway 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

NO.28 A workload in an Amazon VPC consists of a single web server launched from a custom AMI. Session state is stored in a database.
How should the Solutions Architect modify this workload to be both highly available and scalable?
A. 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.
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 Availability Zones. Use an 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 Amazon Route 53 weighted routing to balance traffic across the Auto Scaling group.
D. 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 53 latency-based routing to balance traffic across the Auto Scaling group.
Answer: B

NO.29 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 1AM access and secret key, and store it in the Lambda function.
B. Create an 1AM access and secret key, and store it in an encrypted RDS database.
C. Create an 1AM role to the Lambda function with permissions to list all Amazon RDS instances.
D. Create an 1AM role to Amazon RDS with permissions to list all Amazon RDS instances.
Answer: C

NO.30 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 use AWS Snowball in export mode with data delivered to the other region.

C. Modify the Redshift cluster to take snapshots of the Amazon EBS volumes each day, sharing those snapshots with the other region.

D. Modify the Redshift cluster and configure the backup and specify the Amazon S3 bucket in the other region.

Answer: A