**QUESTION 56**

A company runs its ecommerce application on AWS.

Every new order is published as a message in a RabbitMQ queue that runs on an Amazon EC2 instance in a single Availability Zone.

These messages are processed by a different application that runs on a separate EC2 instance.

This application stores the details in a PostgreSQL database on another EC2 instance.

All the EC2 instances are in the same Availability Zone.

The company needs to redesign its architecture to provide the highest availability with the least operational overhead.

What should a solutions architect do to meet these requirements?

1. Migrate the queue to a redundant pair (active/standby) of RabbitMQ instances on Amazon MQ.

Create a Multi-AZ Auto Scaling group (or EC2 instances that host the application.

Create another Multi-AZ Auto Scaling group for EC2 instances that host the PostgreSQL database.

1. Migrate the queue to a redundant pair (active/standby) of RabbitMQ instances on Amazon MQ.

Create a Multi-AZ Auto Scaling group for EC2 instances that host the application.

Migrate the database to run on a Multi-AZ deployment of Amazon RDS for PostgreSQL.

1. Create a Multi-AZ Auto Scaling group for EC2 instances that host the RabbitMQ queue.

Create another Multi-AZ Auto Scaling group for EC2 instances that host the application. Migrate the database to run on a Multi-AZ deployment of Amazon RDS fqjPostgreSQL.

1. Create a Multi-AZ Auto Scaling group for EC2 instances that host the RabbitMQ queue.

Create another Multi-AZ Auto Scaling group for EC2 instances that host the application. Create a third Multi-AZ Auto Scaling group for EC2 instances that host the PostgreSQL database.

**Answer:** B

**QUESTION 81**

A company wants to use the AWS Cloud to make an existing application highly available and resilient.

The current version of the application resides in the company's data center.

The application recently experienced data loss after a database server crashed because of an unexpected power outage.

The company needs a solution that avoids any single points of failure.

The solution must give the application the ability to scale to meet user demand.

Which solution will meet these requirements?

1. Deploy the application servers by using Amazon EC2 instances in an Auto Scaling group across multiple Availability Zones.

Use an Amazon RDS DB instance in a Multi-AZ configuration.

1. Deploy the application servers by using Amazon EC2 instances in an Auto Scaling group in a single Availability Zone.

Deploy the database on an EC2 instance.

Enable EC2 Auto Recovery.

1. Deploy the application servers by using Amazon EC2 instances in an Auto Scaling group across multiple Availability Zones.

Use an Amazon RDS DB instance with a read replica in a single Availability Zone.

Promote the read replica to replace the primary DB instance if the primary DB instance fails.

1. Deploy the application servers by using Amazon EC2 instances in an Auto Scaling group across multiple Availability Zones.

Deploy the primary and secondary database servers on EC2 instances across multiple Availability Zones.

Use Amazon Elastic Block Store (Amazon EBS) Multi-Attach to create shared storage between the instances.

**Answer:** A

**QUESTION 82**

A company wants to run a gaming application on Amazon EC2 instances that are part of an Auto Scaling group in the AWS Cloud. The application will transmit data by using UDP packets.

The company wants to ensure that the application can scale out and in as traffic increases and decreases.

What should a solutions architect do to meet these requirements?

1. Attach a Network Load Balancer to the Auto Scaling group.

B. Attach an Application Load Balancer to the Auto Scaling group.

1. Deploy an Amazon Route 53 record set with a weighted policy to route traffic appropriately.

1. Deploy a NAT instance that is configured with port forwarding to the EC2 instances in the Auto Scaling group.

**Answer:** B

**QUESTION 91**

A company runs a global web application on Amazon EC2 instances behind an Application Load Balancer.

The application stores data in Amazon Aurora.

The company needs to create a disaster recovery solution and can tolerate up to 30 minutes of downtime and potential data loss.

The solution does not need to handle the load when the primary infrastructure is healthy.

What should a solutions architect do to meet these requirements?

1. Deploy the application with the required infrastructure elements in place.

Use Amazon Route 53 to configure active-passive failover.

Create an Aurora Replica in a second AWS Region.

1. Host a scaled-down deployment of the application in a second AWS Region.

Use Amazon Route 53 to configure active-active failover.

Create an Aurora Replica in the second Region.

1. Replicate the primary infrastructure in a second AWS Region.

Use Amazon Route 53 to configure active-active failover.

Create an Aurora database that is restored from the latest snapshot.

1. Back up data with AWS Backup.

Use the backup to create the required infrastructure in a second AWS Region.

Use Amazon Route 53 to configure active-passive failover.

Create an Aurora second primary instance in the second Region.

**Answer:** C

**QUESTION 105**

A company is hosting a web application on AWS using a single Amazon EC2 instance that stores user-uploaded documents in an Amazon EBS volume.

For better scalability and availability, the company duplicated the architecture and created a second EC2 instance and EBS volume in another Availability Zone placing both behind an Application Load Balancer.

After completing this change, users reported that, each time they refreshed the website, they could see one subset of their documents or the other, but never all of the documents at the same time.

What should a solutions architect propose to ensure users see all of their documents at once?

1. Copy the data so both EBS volumes contain all the documents.

1. Configure the Application Load Balancer to direct a user to the server with the documents.
2. Copy the data from both EBS volumes to Amazon EFS.

Modify the application to save new documents to Amazon EFS.

1. Configure the Application Load Balancer to send the request to both servers.

Return each document from the correct server.

**Answer:** C

**Explanation:**

Amazon EFS provides file storage in the AWS Cloud. With Amazon EFS, you can create a file system, mount the file system on an Amazon EC2 instance, and then read and write data to and from your file system. You can mount an Amazon EFS file system in your VPC, through the Network File System versions 4.0 and 4.1 (NFSv4) protocol. We recommend using a current generation Linux NFSv4.1 client, such as those found in the latest Amazon Linux, Redhat, and Ubuntu AMIs, in conjunction with the Amazon EFS Mount Helper. For instructions, see Using the amazon-efs-utils Tools.

For a list of Amazon EC2 Linux Amazon Machine Images (AMIs) that support this protocol, see NFS Support. For some AMIs, you'll need to install an NFS client to mount your file system on your Amazon EC2 instance. For instructions, see Installing the NFS Client. You can access your Amazon EFS file system concurrently from multiple NFS clients, so applications that scale beyond a single connection can access a file system. Amazon EC2 instances running in multiple Availability Zones within the same AWS Region can access the file system, so that many users can access and share a common data source.

**QUESTION 108**

A company is migrating a distributed application to AWS.

The application serves variable workloads.

The legacy platform consists of a primary server trial coordinates jobs across multiple compute nodes.

The company wants to modernize the application with a solution that maximizes resiliency and scalability.

How should a solutions architect design the architecture to meet these requirements?

1. Configure an Amazon Simple Queue Service (Amazon SQS) queue as a destination for the jobs.

Implement the compute nodes with Amazon EC2 instances that are managed in an Auto Scaling group.

Configure EC2 Auto Scaling to use scheduled scaling.

1. Configure an Amazon Simple Queue Service (Amazon SQS) queue as a destination for the jobs.

Implement the compute nodes with Amazon EC2 Instances that are managed in an Auto Scaling group.

Configure EC2 Auto Scaling based on the size of the queue.

1. Implement the primary server and the compute nodes with Amazon EC2 instances that are managed in an Auto Scaling group.

Configure AWS CloudTrail as a destination for the fobs .

Configure EC2 Auto Scaling based on the load on the primary server.

1. implement the primary server and the compute nodes with Amazon EC2 instances that are managed in an Auto Scaling group.

Configure Amazon EventBridge (Amazon CloudWatch Events) as a destination for the jobs. Configure EC2 Auto Scaling based on the load on the compute nodes.

**Answer:** B

**QUESTION 133**

A company is running a multi-tier ecommerce web application in the AWS Cloud.

The web application is running on Amazon EC2 instances.

The database tier Is on a provisioned Amazon Aurora MySQL DB cluster with a writer and a reader in a Multi-AZ environment.

The new requirement for the database tier is to serve the application to achieve continuous write availability through an Instance failover.

What should a solutions architect do to meet this new requirement?

1. Add a new AWS Region to the DB cluster for multiple writes.
2. Add a new reader In the same Availability Zone as the writer.
3. Migrate the database tier to an Aurora multi-master cluster.
4. Migrate the database tier to an Aurora DB cluster with parallel query enabled.

**Answer:** C

**Explanation:**

Bring-your-own-shard (BYOS)

A situation where you already have a database schema and associated applications that use sharding. You can transfer such deployments relatively easily to Aurora multi-master clusters.

In this case, you can devote your effort to investigating the Aurora benefits such as server consolidation and high availability. You don't need to create new application logic to handle multiple connections for write requests.

Global read-after-write (GRAW)

A setting that introduces synchronization so that any read operations always see the most current state of the data. By default, the data seen by a read operation in a multi-master cluster is subject to replication lag, typically a few milliseconds. During this brief interval, a query on one DB instance might retrieve stale data if the same data is modified at the same time by a different DB instance. To enable this setting, change aurora\_mm\_session\_consistency\_level from its default setting of INSTANCE\_RAW to REGIONAL\_RAW. Doing so ensures cluster-wide consistency for read operations regardless of the DB instances that perform the reads and writes. Reference: <https://docs.aws.amazon.com/AmazonRDS/latest/AuroraUserGuide/aurora-multimaster.html>

**QUESTION 152**

A company is developing an ecommerce application that will consist of a load-balanced front end, a container-based application, and a relational database.

A solutions architect needs to create a highly available solution that operates with as little manual intervention as possible.

Which solutions meet these requirements? (Choose TWO)

1. Create an Amazon RDS DB instance in Multi-AZ mode.

1. Create an Amazon RDS DB instance and one or more replicas in another Availability Zone.
2. Create an Amazon EC2 instance-based Docker cluster to handle the dynamic application load.
3. Create an Amazon Elastic Container Service (Amazon ECS) cluster with a Fargate launch type to handle the dynamic application load.
4. Create an Amazon Elastic Container Service (Amazon ECS) cluster with an Amazon EC2 launch type to handle the dynamic application load.

**Answer:** AD

**Explanation:**

<https://docs.aws.amazon.com/AmazonECS/latest/developerguide/Welcome.html>

1. Relational database: RDS
2. Container-based applications: ECS

"Amazon ECS enables you to launch and stop your container-based applications by using simple API calls.

You can also retrieve the state of your cluster from a centralized service and have access to many familiar Amazon EC2 features."

1. Little manual intervention: Fargate

You can run your tasks and services on a serverless infrastructure that is managed by AWS Fargate. Alternatively, for more control over your infrastructure, you can run your tasks and services on a cluster of Amazon EC2 instances that you manage.

**QUESTION 194**

An application runs on Amazon EC2 instances across multiple Availability Zones.

The instances run in an Amazon EC2 Auto Scaling group behind an Application Load Balancer.

The application performs best when the CPU utilization of the EC2 instances is at or near 40%.

What should a solutions architect do to maintain the desired performance across all instances in the group?

1. Use a simple scaling policy to dynamically scale the Auto Scaling group.

1. Use a target tracking policy to dynamically scale the Auto Scaling group.
2. Use an AWS Lambda function to update the desired Auto Scaling group capacity.
3. Use scheduled scaling actions to scale up and scale down the Auto Scaling group.

**Answer:** B

**Explanation:** <https://docs.aws.amazon.com/autoscaling/application/userguide/application-auto-scaling-targettracking.html>

**QUESTION 212**

A company has a mulli-tier application that runs six front-end web servers in an Amazon EC2 Auto Scaling group in a single Availability Zone behind an Application Load Balancer (ALB).

A solutions architect needs lo modify the infrastructure to be highly available without modifying the application.

Which architecture should the solutions architect choose that provides high availability?

1. Create an Auto Scaling group that uses three Instances across each of tv/o Regions.

1. Modify the Auto Scaling group to use three instances across each of two Availability Zones.
2. Create an Auto Scaling template that can be used to quickly create more instances in another Region.
3. Change the ALB in front of the Amazon EC2 instances in a round-robin configuration to balance traffic to the web tier.

**Answer:** B

**Explanation:**

High availability can be enabled for this architecture quite simply by modifying the existing Auto Scaling group to use multiple availability zones. The ASG will automatically balance the load so you don't actually need to specify the instances per AZ.

**QUESTION 237**

A company provides an API to its users that automates inquiries for tax computations based on item prices.

The company experiences a larger number of inquiries during the holiday season only that cause slower response times.

A solutions architect needs to design a solution that is scalable and elastic.

What should the solutions architect do to accomplish this?

1. Provide an API hosted on an Amazon EC2 instance.

The EC2 instance performs the required computations when the API request is made.

1. Design a REST API using Amazon API Gateway that accepts the item names.

API Gateway passes item names to AWS Lambda for tax computations.

1. Create an Application Load Balancer that has two Amazon EC2 instances behind it.

The EC2 instances will compute the tax on the received item names.

1. Design a REST API using Amazon API Gateway that connects with an API hosted on an Amazon EC2 instance.

API Gateway accepts and passes the item names to the EC2 instance for tax computations.

**Answer:** B

**Explanation:**

Lambda server-less is scalable and elastic than EC2 api gateway solution.