**QUESTION 10**

A company is running a business-critical web application on Amazon EC2 instances behind an Application Load Balancer.

The EC2 instances are in an Auto Scaling group.

The application uses an Amazon Aurora PostgreSQL database that is deployed in a single Availability Zone.

The company wants the application to be highly available with minimum downtime and minimum loss of data.

Which solution will meet these requirements with the LEAST operational effort?

1. Place the EC2 instances in different AWS Regions.

Use Amazon Route 53 health checks to redirect traffic.

Use Aurora PostgreSQL Cross-Region Replication.

1. Configure the Auto Scaling group to use multiple Availability Zones.

Configure the database as Multi-AZ.

Configure an Amazon RDS Proxy instance for the database.

1. Configure the Auto Scaling group to use one Availability Zone.

Generate hourly snapshots of the database.

Recover the database from the snapshots in the event of a failure.

1. Configure the Auto Scaling group to use multiple AWS Regions.

Write the data from the application to Amazon S3.

Use S3 Event Notifications to launch an AWS Lambda function to write the data to the database.

**Answer:** B

**QUESTION 14**

A company recently launched Linux-based application instances on Amazon EC2 in a private subnet and launched a Linux-based bastion host on an Amazon EC2 instance in a public subnet of a VPC.

A solutions architect needs to connect from the on-premises network, through the company's internet connection to the bastion host and to the application servers.

The solutions architect must make sure that the security groups of all the EC2 instances will allow that access.

Which combination of steps should the solutions architect take to meet these requirements? (Select TWO)

1. Replace the current security group of the bastion host with one that only allows inbound access from the application instances.
2. Replace the current security group of the bastion host with one that only allows inbound access from the internal IP range for the company.
3. Replace the current security group of the bastion host with one that only allows inbound access from the external IP range for the company.
4. Replace the current security group of the application instances with one that allows inbound SSH access from only the private IP address of the bastion host.
5. Replace the current security group of the application instances with one that allows inbound SSH access from only the public IP address of the bastion host

**Answer:** CD

**Explanation:**

<https://digitalcloud.training/ssh-into-ec2-in-private-subnet/>

**QUESTION 15**

A solutions architect is designing a two-tier web application.

The application consists of a publicfacing web tier hosted on Amazon EC2 in public subnets.

The database tier consists of Microsoft SQL Server running on Amazon EC2 in a private subnet. Security is a high priority for the company.

How should security groups be configured in this situation? (Select TWO)

1. Configure the security group for the web tier to allow inbound traffic on port 443 from 0.0.0.0/0.

1. Configure the security group for the web tier to allow outbound traffic on port 443 from 0.0.0.0/0.
2. Configure the security group for the database tier to allow inbound traffic on port 1433 from the security group for the web tier.
3. Configure the security group for the database tier to allow outbound traffic on ports 443 and 1433 to the security group for the web tier.
4. Configure the security group for the database tier to allow inbound traffic on ports 443 and 1433 from the security group for the web tier.

**Answer:** AC

**Explanation:**

"Security groups create an outbound rule for every inbound rule." Not completely right. Statefull does NOT mean that if you create an inbound (or outbound) rule, it will create an outbound (or inbound) rule. What it does mean is: suppose you create an inbound rule on port 443 for the X ip. When a request enters on port 443 from X ip, it will allow traffic out for that request in the port 443. However, if you look at the outbound rules, there will not be any outbound rule on port 443 unless explicitly create it. In ACLs, which are stateless, you would have to create an inbound rule to allow incoming requests and an outbound rule to allow your application responds to those incoming requests. <https://docs.aws.amazon.com/vpc/latest/userguide/VPC_SecurityGroups.html#SecurityGroupRules>

**QUESTION 25**

A company wants to reduce the cost of its existing three-tier web architecture.

The web, application, and database servers are running on Amazon EC2 instances for the development, test, and production environments.

The EC2 instances average 30% CPU utilization during peak hours and 10% CPU utilization during non-peak hours.

The production EC2 instances run 24 hours a day.

The development and test EC2 instances run for at least 8 hours each day.

The company plans to implement automation to stop the development and test EC2 instances when they are not in use.

Which EC2 instance purchasing solution will meet the company's requirements MOST costeffectively?

1. Use Spot Instances for the production EC2 instances.

Use Reserved Instances for the development and test EC2 instances.

1. Use Reserved Instances for the production EC2 instances.

Use On-Demand Instances for the development and test EC2 instances.

1. Use Spot blocks for the production EC2 instances.

Use Reserved Instances for the development and test EC2 instances.

1. Use On-Demand Instances for the production EC2 instances. Use Spot blocks for the development and test EC2 instances.

**Answer:** B

**QUESTION 53**

A company has a highly dynamic batch processing job that uses many Amazon EC2 instances to complete it.

The job is stateless in nature, can be started and stopped at any given time with no negative impact, and typically takes upwards of 60 minutes total to complete.

The company has asked a solutions architect to design a scalable and cost-effective solution that meets the requirements of the job.

What should the solutions architect recommend?

1. Implement EC2 Spot Instances.
2. Purchase EC2 Reserved Instances.
3. Implement EC2 On-Demand Instances.
4. Implement the processing on AWS Lambda.

**Answer:** A

**QUESTION 58**

A solutions architect needs to help a company optimize the cost of running an application on AWS. The application will use Amazon EC2 instances, AWS Fargate, and AWS Lambda for compute within the architecture.

The EC2 instances will run the data ingestion layer of the application.

EC2 usage will be sporadic and unpredictable.

Workloads that run on EC2 instances can be interrupted at any time.

The application front end will run on Fargate, and Lambda will serve the API layer.

The front-end utilization and API layer utilization will be predictable over the course of the next year.

Which combination of purchasing options will provide the MOST cost-effective solution for hosting this application? (Choose TWO)

1. Use Spot Instances for the data ingestion layer.
2. Use On-Demand Instances for the data ingestion layer.
3. Purchase a 1-year Compute Savings Plan for the front end and API layer.
4. Purchase 1-year All Upfront Reserved instances for the data ingestion layer.
5. Purchase a 1-year EC2 instance Savings Plan for the front end and API layer.

**Answer:** AC

**QUESTION 64**

A company runs a stateless web application in production on a group of Amazon EC2 On-Demand Instances behind an Application Load Balancer.

The application experiences heavy usage during an 8-hour period each business day.

Application usage is moderate and steady overnight Application usage is low during weekends.

The company wants to minimize its EC2 costs without affecting the availability of the application.

Which solution will meet these requirements?

1. Use Spot Instances for the entire workload.

1. Use Reserved instances for the baseline level of usage.

Use Spot Instances for any additional capacity that the application needs.

1. Use On-Demand Instances for the baseline level of usage.

Use Spot Instances for any additional capacity that the application needs.

1. Use Dedicated Instances for the baseline level of usage.

Use On-Demand Instances for any additional capacity that the application needs.

**Answer:** B

**QUESTION 80**

A company runs a high performance computing (HPC) workload on AWS.

The workload required low-latency network performance and high network throughput with tightly coupled node-to-node communication.

The Amazon EC2 instances are properly sized for compute and storage capacity, and are launched using default options.

What should a solutions architect propose to improve the performance of the workload?

1. Choose a cluster placement group while launching Amazon EC2 instances.

1. Choose dedicated instance tenancy while launching Amazon EC2 instances.
2. Choose an Elastic Inference accelerator while launching Amazon EC2 instances.
3. Choose the required capacity reservation while launching Amazon EC2 instances.

**Answer:** A

**Explanation:**

<https://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide/aws-resource-ec2placementgroup.html>

A cluster placement group is a logical grouping of instances within a single Availability Zone that benefit from low network latency, high network throughput.

**QUESTION 84**

A company hosts a two-tier application on Amazon EC2 instances and Amazon RDS.

The application's demand varies based on the time of day.

The load is minimal after work hours and on weekends.

The EC2 instances run in an EC2 Auto Scaling group that is configured with a minimum of two instances and a maximum of five instances.

The application must be available at all times, but the company is concerned about overall cost.

Which solution meets the availability requirement MOST cost-effectively?

1. Use all EC2 Spot Instances.

Stop the RDS database when it is not in use.

1. Purchase EC2 Instance Savings Plans to cover five EC2 instances.

Purchase an RDS Reserved DB Instance.

1. Purchase two EC2 Reserved Instances.

Use up to three additional EC2 Spot Instances as needed. Stop the RDS database when it is not in use.

1. Purchase EC2 Instance Savings Plans to cover two EC2 instances.

Use up to three additional EC2 On-Demand Instances as needed.

Purchase an RDS Reserved DB Instance.

**Answer:** D

**QUESTION 86**

A company is planning to build a high performance computing (HPC) workload as a service solution that Is hosted on AWS.

A group of 16 AmazonEC2Linux Instances requires the lowest possible latency for node-to-node communication.

The instances also need a shared block device volume for high-performing storage.

Which solution will meet these requirements?

1. Use a duster placement group.

Attach a single Provisioned IOPS SSD Amazon Elastic Block Store (Amazon EBS) volume to all the instances by using Amazon EBS Multi-Attach.

1. Use a cluster placement group.

Create shared 'lie systems across the instances by using Amazon Elastic File System (Amazon EFS).

1. Use a partition placement group.

Create shared tile systems across the instances by using Amazon Elastic File System (Amazon EFS).

1. Use a spread placement group.

Attach a single Provisioned IOPS SSD Amazon Elastic Block Store (Amazon EBS) volume to all the instances by using Amazon EBS Multi-Attach.

**Answer:** A

**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 120**

A company needs guaranteed Amazon EC2 capacity in three specific Availability Zones in a specific AWS Region for an upcoming event that will last 1 week.

What should the company do to guarantee the EC2 capacity?

1. Purchase Reserved instances that specify the Region needed.

1. Create an On Demand Capacity Reservation that specifies the Region needed.
2. Purchase Reserved instances that specify the Region and three Availability Zones needed.
3. Create an On-Demand Capacity Reservation that specifies the Region and three Availability Zones needed.

**Answer:** D

**Explanation:** <https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/ec2-capacity-reservations.htm>

l "When you create a Capacity Reservation, you specify:

The Availability Zone in which to reserve the capacity"

**QUESTION 149**

A company is building an application on Amazon EC2 instances that generates temporary transactional data.

The application requires access to data storage that can provide configurable and consistent IOPS.

What should a solutions architect recommend?

1. Provision an EC2 instance with a Throughput Optimized HDD (st1) root volume and a Cold HDD (sc1) data volume.

1. Provision an EC2 instance with a Throughput Optimized HDD (st1) volume that will serve as the root and data volume.
2. Provision an EC2 instance with a General Purpose SSD (gp2) root volume and Provisioned IOPS SSD (io1) data volume.
3. Provision an EC2 instance with a General Purpose SSD (gp2) root volume.

Configure the application to store its data in an Amazon S3 bucket.

**Answer:** C

**Explanation:**

Only gp3, io1, or io2 Volumes have configurable IOPS.

You cannot add HDD in root volume. SSD needs to be selected as root volume and HDD as Data Volume.

<https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/ebs-volumes.html>

**QUESTION 192**

A company wants to run applications in containers in the AWS Cloud. These applications are stateless and can tolerate disruptions within the underlying infrastructure. The company needs a solution that minimizes cost and operational overhead.

What should a solutions architect do to meet these requirements?

1. Use Spot Instances in an Amazon EC2 Auto Scaling group to run the application containers.

1. Use Spot Instances in an Amazon Elastic Kubernetes Service (Amazon EKS) managed node group.
2. Use On-Demand Instances in an Amazon EC2 Auto Scaling group to run the application containers.
3. Use On-Demand Instances in an Amazon Elastic Kubernetes Service (Amazon EKS) managed node group.

**Answer:** B

**QUESTION 25**

A company wants to reduce the cost of its existing three-tier web architecture.

The web, application, and database servers are running on Amazon EC2 instances for the development, test, and production environments.

The EC2 instances average 30% CPU utilization during peak hours and 10% CPU utilization during non-peak hours.

The production EC2 instances run 24 hours a day.

The development and test EC2 instances run for at least 8 hours each day.

The company plans to implement automation to stop the development and test EC2 instances when they are not in use.

Which EC2 instance purchasing solution will meet the company's requirements MOST costeffectively?

1. Use Spot Instances for the production EC2 instances.

Use Reserved Instances for the development and test EC2 instances.

1. Use Reserved Instances for the production EC2 instances.

Use On-Demand Instances for the development and test EC2 instances.

1. Use Spot blocks for the production EC2 instances.

Use Reserved Instances for the development and test EC2 instances.

1. Use On-Demand Instances for the production EC2 instances. Use Spot blocks for the development and test EC2 instances.

**Answer:** B

**QUESTION 202**

A company recently launched a variety of new workloads on Amazon EC2 instances in its AWS account.

The company needs to create a strategy to access and administer the instances remotely and securely.

The company needs to implement a repeatable process that works with native AWS services and follows the AWS Well-Architected Framework.

Which solution will meet these requirements with the LEAST operational overhead?

1. Use the EC2 serial console to directly access the terminal interface of each instance for administration.

1. Attach the appropriate IAM role to each existing instance and new instance.

Use AWS Systems Manager Session Manager to establish a remote SSH session.

1. Create an administrative SSH key pair.

Load the public key into each EC2 instance.

Deploy a bastion host in a public subnet to provide a tunnel for administration of each instance.

1. Establish an AWS Site-to-Site VPN connection.

Instruct administrators to use their local on-premises machines to connect directly to the instances by using SSH keys across the VPN tunnel.

**Answer:** B

**Explanation:** <https://docs.aws.amazon.com/systems-manager/latest/userguide/setup-launch-managedinstance.html>

**QUESTION 219**

A company runs a production application on a fleet of Amazon EC2 instances.

The application reads the data from an Amazon SQS queue and processes the messages in parallel.

The message volume is unpredictable and often has intermittent traffic.

This application should continually process messages without any downtime.

Which solution meets these requirements MOST cost-effectively?

1. Use Spot Instances exclusively to handle the maximum capacity required.

1. Use Reserved Instances exclusively to handle the maximum capacity required.
2. Use Reserved Instances for the baseline capacity and use Spot Instances to handle additional capacity.
3. Use Reserved Instances for the baseline capacity and use On-Demand Instances to handle additional capacity.

**Answer:** D

**Explanation:**

We recommend that you use On-Demand Instances for applications with short-term, irregular workloads that cannot be interrupted.

<https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/ec2-on-demand-instances.html>