Question 1

Your manager has approached you about storing some old media files in AWS. These files need to be stored at the lowest cost possible. It is acceptable to wait for files to become available. Which of the following S3 Storage Tiers is best suited for this request?

* S3 Standard
* S3 One Zone - Standard-Infrequent AccessSelected
* ✓S3 Glacier
* S3 Infrequently Accessed

Explanation:  
S3 Glacier is a secure, durable, and low-cost storage class for data archiving. You can reliably store any amount of data at costs that are competitive with or cheaper than on-premises solutions. To keep costs low yet suitable for varying needs, S3 Glacier provides three retrieval options that range from a few minutes to hours.

Resources

* [Amazon S3 Storage Classes - Glacier](https://aws.amazon.com/s3/storage-classes/#Archive)

Stats

* You spent **00:12** on this question

Question 6

Which AWS Load Balancer types uses a Round-Robin load distribution strategy?

* The NLB uses a Round-Robin strategy for all protocols.
* ✓The NLB does not uses a Round-Robin strategy.
* ✓The ALB 1st selects a target based on the routing rule, then uses a Round-Robin strategy to select a node.Selected
* The Classic uses a Round-Robin strategy for all protocols.Selected
* The Classic uses a Round-Robin strategy for HTTP / HTTPS only.Selected
* The ALB uses a Round-Robin strategy 1st to select an ELB node, then selects a target based on the routing rules.
* ✓The Classic uses a Round-Robin strategy for TCP listeners only.

Explanation:  
The Classic will use Round-Robin only for TCP. The ALB will use it for final node selection after parsing the routing rules.

Resources

* [Load Balancers](https://docs.aws.amazon.com/elasticloadbalancing/latest/userguide/how-elastic-load-balancing-works.html)

Stats

* You spent **00:08** on this question

Question 11

Your company hosts 10 web servers all serving the same content in AWS. They want Route 53 to serve traffic to random web servers. Which routing policy should be used to meet this requirement?

* Weighted Routing
* Latency Routing
* Simple RoutingSelected
* ✓Multivalue Routing

Explanation:  
Multivalue answer routing lets you configure Amazon Route 53 to return multiple values, such as IP addresses for your web servers, in response to DNS queries. Route 53 responds to DNS queries with up to eight healthy records and gives different answers to different DNS resolvers. The choice of which to use is left to the requesting service effectively creating a form or randomisation.

Resources

* [Multivalue Answer Routing](https://docs.aws.amazon.com/Route53/latest/DeveloperGuide/routing-policy.html#routing-policy-multivalue)

Stats

* You spent **00:01** on this question

Question 16

You're running an application that needs to be highly available in eu-west-1. In order for this application to function correctly, 10 related EC2 instances must running at all times. Which of the following deployments provides the ability to meet the requirements should an AZ go down?

* ✓5 EC2 instances in eu-west-1a, 5 EC2 instances in eu-west-1b, and 5 EC2 instances in eu-west-1c.
* 4 EC2 instances in eu-west-1a, 4 EC2 instances in eu-west-1b, and 2 EC2 instances in eu-west-1c.Selected
* 3 EC2 instances in eu-west-1a, 3 EC2 instances in eu-west-1b, and 3 EC2 instances in eu-west-1c.Selected
* ✓10 EC2 instances in eu-west-1a, 0 EC2 instances in eu-west-1b, and 10 EC2 instances in eu-west-1c.

Explanation:  
Should an AZ go down, only the answers of 5,5,5 or 10,0,10 EC2 instances are correct because if you take out one of those AZs, you would still have 10 EC2 instances running. Of course 10,10,10 will be more expensive, butit is still a valid answer.

Resources

* [Reliability Pillar - AWS Well-Architected Framework](https://d1.awsstatic.com/whitepapers/architecture/AWS-Reliability-Pillar.pdf)

Stats

* You spent **00:03** on this question

Question 17

Which of the following are the application integration services enable communication between decoupled components in order to build a scalable and more resilient solution?

* ✓Amazon MQ
* AWS Simple Email Service (SES)Selected
* Amazon Data SyncSelected
* ✓Amazon SQSSelected
* ✓Amazon App Sync

Explanation:  
Amazon SQS, Amazon MQ and Amazon App Sync are AWS application integration services. Application integration services enable communication between decoupled components within micro-services, distributed systems, and serverless applications so you can easily build scalable and more resilient solutions. Amazon DataSync is AWS Migration and Transfer service and is not an integration service. AWS SES is a cloud-based email sending service designed for customer engagement.

Resources

* [AWS Application Integration Services](https://aws.amazon.com/products/application-integration/?nc2=h_m1)

Stats

* You spent **00:05** on this question

Question 19

As a Cloud Solutions Architect, you have been tasked to set up an enterprise-class database with six-way replication across three Availability Zones. This measure is proposed to strengthen the database’s fault tolerance to disk failures. Which of the following engines will enable you to do that?

* MariaDB
* MySQLSelected
* ✓Amazon Aurora
* Oracle

Explanation:  
Aurora is the database engine that provides six-way replication of each database volume across three Availability Zones. The other responses are just like Aurora in that they are relational database engines that offer Multi-AZ deployments. However, Oracle, MariaDB, and MySQL do not have this specific ability.

Resources

* [Amazon Aurora FAQs](https://aws.amazon.com/rds/aurora/faqs/)

Stats

* You spent **00:05** on this question

Question 20

The company you work for has been acquired and you have been tasked with the redirection of all its website traffic to the new company's website. The old one is hosted on S3 as a static website while the target is a self-hosted website. Which of the following options describes the best approach to achieve that as quickly as possible?

* ✓In the Amazon S3 console, configure a redirect to the new domain in the 'Redirect requests: Target bucket or domain' box within the 'Static website hosting' section under the Properties tab of the relevant bucket.
* In the Amazon S3 console, set the website redirect location in the metadata of each object in the relevant public bucket. You can do so by specifying the new domain as the value of the 'Website-Redirect-Location' key within the 'Metadata' section under the Properties tab.Selected
* Amazon S3 static website hosting supports only redirects to other AWS S3 buckets but not to external URLs. Therefore, you should set up a redirect to a new bucket with a single HTML file in it that uses client-side scripting (window.location.ref and a 'refresh' http-equiv meta tag) for the redirect to the new domain.
* Amazon S3 does not support website redirects. You will need to contact your domain registrar and ask them to update the target URL to point to the self-hosted website.

Explanation:  
Although other listed options are feasible, the quickest way to achieve the desired outcome is to set up a redirect at the S3 bucket level.

Resources

* [(Optional) Configuring a Webpage Redirect](https://docs.aws.amazon.com/AmazonS3/latest/dev/how-to-page-redirect.html)
* [Hosting a Static Website on Amazon S3](https://docs.aws.amazon.com/AmazonS3/latest/dev/WebsiteHosting.html)

Stats

* You spent **00:02** on this question

Question 33

You want a storage solution to store all e-commerce sales numbers processed on a daily basis. Notably, this solution must be designed in a way that protects against accidental deletion of data. Which of the following actions will satisfy your requirements?

* Store the sales numbers in a Redshift cluster.
* Store the sales numbers in three S3 buckets and in different AWS Regions.
* Store the sales numbers in an EBS volume and create snapshots at the end of each day.Selected
* ✓Store the sales numbers in an S3 bucket and enable versioning.

Explanation:  
Enabling versioning will mean that if someone accidentally deletes an object, S3 would insert a delete marker to make that the current object version. In addition, you can always restore the previous object version if needed. Although storing data in three S3 buckets gives you an extra layer of protection, users can still delete the objects in both buckets. With a new EBS snapshot, the changes made since the last one are lost. And Redshift is the least likely response, since it is used for data warehousing rather than simple straightforward storage.

Resources

* [Using Versioning](https://docs.aws.amazon.com/AmazonS3/latest/dev/Versioning.html)

Stats

* You spent **00:01** on this question

Question 43

You work for a games development company who are re-architecting their production environment. They have decided to make all web servers stateless. Which of the following the AWS services will help your company achieve this goal?

* ✓RDS
* ✓DynamoDBSelected
* ✓ElastiCacheSelected
* ELBSelected
* EMR

Explanation:  
An Elastic Load Balancer can help you deliver stateful services, but not stateless. Elastic Map Reduce is a data-analysis service and is not related to servicing web traffic.

Resources

* [Managing your Infrastructure at Scale](https://d0.awsstatic.com/whitepapers/managing-your-aws-infrastructure-at-scale.pdf)

Stats

Question 50

You have been asked to set up an EFS storage solution for a project team. Which of the following tasks do you need to complete ?

* Configure a Security Group to allow admin traffic on port 22 to connect to the EFS system.
* ✓mount EFS vol to your EC2 instance using 'mount -t nfs -o xxxx '.Selected
* ✓Set Linux file system permissions on the presented EFS volume using 'chmod' and 'chown'.Selected
* specify and provision disk capacity on the EFS system using 'fdisk' and 'mkfs -t xfs'.Selected
* ✓Configure a Security Group to allow data traffic on port 2049 to connect to the EFS targetSelected
* ✓Configure a Security Group to allow data traffic on port 2049 to connect to the EC2 server.

Explanation:  
It is necessary to set up the bi-directional network permissions, normally with Security Groups. You will connect the EFS Target to your EC2 instance with a 'mount' statement. You do not need to stipulate the size or format the volume. AWS provide a nominally unlimited file system ready for you to use. As normal under the shared security model AWS will ensure that the EFS system is secure, but you are responsible for the access control security inside the EFS file space provided to you.

Resources

* [EFS - How It Works](https://docs.aws.amazon.com/efs/latest/ug/how-it-works.html)
* [EFS limits](https://docs.aws.amazon.com/efs/latest/ug/limits.html)
* [EFS Security](https://docs.aws.amazon.com/efs/latest/ug/security-considerations.html)
* [EFS Security Groups](https://docs.aws.amazon.com/efs/latest/ug/accessing-fs-create-security-groups.html)
* [Mounting and EFS target](https://docs.aws.amazon.com/efs/latest/ug/wt1-getting-started.html)

Stats

* You spent **00:04** on this question

Question 55

You are a solutions architect working for a company that conducts surveys on specific industries. Each industry that you survey has its own EC2 fleet, separate from those of other industries. Company policy dictates that you should keep costs to a minimum, using only 1 load balancer, if possible. What type of load balancer should you use to suit this requirement?

* Elastic Load Balancer with IDS
* Classic Load Balancer
* Elastic Load Balancer with IPSSelected
* ✓Application Load Balancer

Explanation:  
You need an application-aware load balancer, so your best option would be to use an Application Load Balancer.

Resources

* [Application Load Balancer - Overview](https://docs.aws.amazon.com/elasticloadbalancing/latest/application/introduction.html)

Stats

* You spent **00:01** on this question

Question 58

Which of the following database engines support read replicas?

* ✓OracleSelected
* ✓PostgreSQLSelected
* SQL ServerSelected
* ✓MySQL

Explanation:  
Read Replicas are supported by Amazon Aurora, Amazon RDS for MySQL, MariaDB, PostgreSQL, and most recently Oracle.

Resources

* [Multi-AZ Deployments and Read Replicas](https://aws.amazon.com/rds/faqs/#replication)
* [RDS Oracle now Supports In-region Read Replicas](https://aws.amazon.com/about-aws/whats-new/2019/03/Amazon-RDS-for-Oracle-Now-Supports-In-region-Read-Replicas-with-Active-Data-Guard-for-Read-Scalability-and-Availability/)

Stats

* You spent **00:02** on this question

Question 63

You are configuring your application load balancer to enable users to access your application, which is in a staging environment and only has a private IP address. Which of the following schemes will enable this type of access?

* External
* Internet-facing
* User-facingSelected
* ✓Internal

Explanation:  
When configuring load balancers, you get two scheme choices, which are internet-facing and internal. If the users were to access the application through the Internet, then internet-facing would be the correct answer. Internal load balancing is right in this instance because the internal scheme choice will create an internal load balancer for routing requests from the users to the application with the private IP address.

Resources

* [Internal Classic Load Balancers](https://docs.aws.amazon.com/elasticloadbalancing/latest/classic/elb-internal-load-balancers.html)

Stats

* You spent **00:01** on this question

Question 3

Elasticity is a fundamental property of the cloud. Which of the following best describes elasticity?

* The power to increase the number of resources at your hands at the click of a mouse.
* ✓The power to scale resources both up and down with changes in demand.Selected
* The ability to manually deploy instances quickly in response to events.
* The ability to deploy managed services into your environment.

Explanation:  
In cloud computing, elasticity is defined as 'the degree to which a system is able to adapt to workload changes by provisioning and de-provisioning resources in an autonomic manner, such that at each point in time the available resources match the current demand as closely as possible'.

Resources

* [Scalable Computing Capacity](https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/concepts.html)

Stats

* You spent **00:01** on this question

Question 4

You are creating an RDS database for your production environment and it needs to be highly available and continue to function in the event of an outage to the Primary database. Which of the following options will best meet this requirement?

* Read replicas
* ✓Multi-AZ deploymentSelected
* Multi-region deployment
* Cross-region deployment

Explanation:  
Multi-AZ deployment involves the creation of a standby replica in a different Availability Zone (AZ) from the primary database. A standby replica cannot serve read traffic, it is used to synchronously replicate data from the primary database. AZs are isolated from one another to prevent failure from spreading to them all. So, if the location of the primary database has issues, Amazon RDS automatically fails over to the standby replica. Read replicas are used to scale out to cater for high volumes of read requests - not automated failover. Multi-region deployment is not a valid RDS option and Cross-region deployments enable support for scaling of Read replicas and can be used for cross-region DR, but don't support the automatic failover due to a Primary DB outage.

Resources

* [Choosing the Regions and Availability Zones](https://docs.aws.amazon.com/AmazonRDS/latest/AuroraUserGuide/Concepts.RegionsAndAvailabilityZones.html)

Stats

* You spent **00:01** on this question

Question 31

Your company is planning on moving to AWS. One of your applications will be launched on a set of EC2 instances. You will need to ensure that the architecture is fault tolerant and highly available. Which of the following would be considered during the design process?

* Ensure that the EC2 instances are spread across a single Availability Zone for better maintenance.
* ✓Use a load balancer in front of the EC2 instances.Selected
* ✓Ensure that the EC2 instances are spread across multiple Availability Zones.Selected
* Enable Multi-AZ for the databases.

Explanation:  
Most of the higher-level services, such as Amazon Simple Storage Service (S3), Amazon SimpleDB, Amazon Simple Queue Service (SQS), and Amazon Elastic Load Balancing (ELB), have been built with fault tolerance and high availability in mind. Services that provide basic infrastructure, such as Amazon Elastic Compute Cloud (EC2) and Amazon Elastic Block Store (EBS), provide specific features, such as availability zones, elastic IP addresses, and snapshots, that a fault-tolerant and highly available system must take advantage of and use correctly. Just moving a system into the cloud doesn’t make it fault-tolerant or highly available.

Resources

* [Fault Tolerance and High Availability](https://media.amazonwebservices.com/architecturecenter/AWS_ac_ra_ftha_04.pdf)

Stats

* You spent **00:03** on this question

Question 44

What type of replication is supported by Multi-AZ RDS instances?

* Continuous replication
* Asynchronous replication
* ✓Synchronous replicationSelected
* Sequential replication

Explanation:  
Multi-AZ deployments utilize synchronous replication, making database writes concurrently on both the primary and standby so that the standby will be up-to-date in the event a failover occurs.

Resources

* [RDS Multi-AZ Synchronous Replication](https://aws.amazon.com/rds/details/multi-az/)

Stats

* You spent **00:01** on this question

Question 47

The media company Starbright Entertainment owns the domain name starbright.net. They want to provide an online customer portal which will be addressed via the starbright.net domain. They create an ELB Classic Load Balancer in front of the portal’s web servers which gets assigned the host name clb1-1234.us-west-2.elb.amazonaws.com. Which type of Route 53 hosted zone record will they use to point to the load balancer?

* Pointer Record (PTR)
* Canonical Name Record (CNAME)
* ✓Alias Record (Alias)Selected
* Service Locator (SRV)

Explanation:  
An Amazon Route 53 Alias Record is an extension to DNS functionality. It provides the ability to map a domain name to select AWS services, including ELB load balancers. DNS PTR records are used for reverse DNS lookups. CNAME records map aliases to true or other canonical names, but a Route 53 Alias record is better for this use case because it will point to the load balancer even if its IP address changes. An SRV record is used for specifying data in a DNS system.

Resources

* [Choosing Between Alias and Non-Alias Records](https://docs.aws.amazon.com/Route53/latest/DeveloperGuide/resource-record-sets-choosing-alias-non-alias.html)

Stats

* You spent **00:02** on this question

Question 60

You need to find both the Public and Private IP addresses of an instance. Which of the following URLs should you query?

* http://169.254.169.524/latest/user-data/
* http://169.254.169.524/latest/meta-data/
* ✓http://169.254.169.254/latest/meta-data/Selected
* http://169.254.169.254/latest/user-data/

Explanation:  
Be careful on the exam to read the numbers and not assume what they are. The octet 254 is transposed into 524 in two of the answers, and two are user-data and two are meta-data.

Resources

* [Retrieving Instance Meta-Data](https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/ec2-instance-metadata.html#instancedata-data-retrieval)

Stats

* You spent **00:02** on this question

Question 2

You create a standard SQS queue and test it by creating a simple application that polls the queue for messages. After a message is retrieved, the application should delete it. You create three test messages in your SQS queue and discover that messages 1 and 3 are quickly deleted, but message 2 has remained in the queue. Which of the following could account for your findings?

* ✓Your application uses short-polling.
* ✓Message 2 is invalid.Selected
* The permissions on message 2 were incorrectly written.Selected
* Standard SQS queues cannot guarantee that messages are retrieved in first-in, first-out (FIFO) order.

Explanation:  
With short-polling, multiple polls of the queue may be necessary to find all messages on the various nodes in the queue. The queue not being FIFO may impact the order, but not the eventual successful processing. SQS has options to control access to create messages and retrieve them. However these are not per-message controls. That just leaves the possibility that it is a malformed message

Resources

* [SQS Long Polling](https://docs.aws.amazon.com/AWSSimpleQueueService/latest/SQSDeveloperGuide/sqs-long-polling.html)
* [SQS permissions](https://docs.aws.amazon.com/AWSSimpleQueueService/latest/SQSDeveloperGuide/sqs-authentication-and-access-control.html)

Stats

* You spent **00:02** on this question

Question 8

Your organisation is running a business critical application with a backend MySQL DB that has been experiencing performance issues due to an increase in customers hitting the website. Management are concerned that the existing solution will not handle the anticipated customer growth over the next 12 months and any outages could lead to a loss in potential revenue.\n You’ve been asked to develop a suitable AWS cloud based solution that will best meet the requirements of the organisation and require minimal operational overhead. Which AWS DB service will be most suitable for your organisation?

* Redshift
* MySQL
* PostgreSQLSelected
* ✓Aurora

Explanation:  
Aurora natively maintains 2 copies of your data in each availability zone (3 AZs x 2 = 6 copies) within a region providing the highly available solution needed for this scenario. It also supports storage autoscaling and CPU and Memory scaling. Aurora also provides up to 5 times improved performance over a traditional DB installation. MySQL and PostgreSQL support multi-AZ deployments and read replicas, but this requires additional configuration. CPU, memory and storage scaling is not automated and requires additional configuration and design consideration. Redshift does not support Multi-AZ deployments.

Resources

* [Amazon Aurora](https://docs.aws.amazon.com/AmazonRDS/latest/AuroraUserGuide/CHAP_AuroraOverview.html)
* [Amazon Aurora FAQs](https://aws.amazon.com/rds/aurora/faqs/)

Stats

* You spent **00:02** on this question

Question 10

You have suggested moving your company's web servers to AWS, but your supervisor is concerned about cost. Which of the following deployments will give you the most scalable and cost-effective solution?

* A hybrid solution that leverages on-premise resources
* ✓An EC2 auto-scaling group that will expand and contract with demand
* A solution that's built to run 24/7 at 100% capacity, using a fixed number of T2 Micro instancesSelected
* None of these options

Explanation:  
An Auto-Scaling group of EC2 instances will exactly match the demand placed on your servers, allowing you to pay only for the compute capacity you actually need.

Resources

* [About Auto-Scaling](https://docs.aws.amazon.com/autoscaling/latest/userguide/WhatIsAutoScaling.html)

Stats

* You spent **00:01** on this question

Question 14

You are running a Cassandra database that requires access to tens of thousands of low-latency IOPS. Which of the following EC2 instance families would best suit your needs?

* ✓High I/O instances
* Memory Optimized InstancesSelected
* Cluster GPU Instances
* Dense Storage Instances

Explanation:  
High I/O instances use SSD-based local instance storage to deliver very high, low latency, I/O capacity to applications, and are optimized for applications that require tens of thousands of IOPS.

Resources

* [High I/O Instances](https://aws.amazon.com/ec2/instance-types/#highio-instances)

Stats

* You spent **00:01** on this question

Question 15

Which of the following operating systems is NOT supported by EC2?

* Amazon Linux
* ✓OSX
* Windows ServerSelected
* Ubuntu

Explanation:  
OSX is not supported on EC2

Resources

* [EC2 FAQs](https://aws.amazon.com/ec2/faqs/#general)

Stats

* You spent **00:01** on this question

Question 21

You have an application that allows people in very remote locations to store their files safely and securely. You need to leverage CloudFront's globally distributed Edge Locations, so that as data arrives at an Edge Location the data is routed to your Amazon S3 bucket over an optimized network path. Which of the following services should you use?

* CloudFront Transfer Acceleration
* S3 Multipart UploadSelected
* CloudFront Multipart Upload
* ✓S3 Transfer Acceleration

Explanation:  
Amazon S3 Transfer Acceleration enables fast, easy, and secure transfers of files over long distances between your client and your Amazon S3 bucket. Transfer Acceleration leverages Amazon CloudFront's globally distributed AWS Edge Locations.

Resources

* [S3 Transfer Acceleration](https://docs.aws.amazon.com/AmazonS3/latest/dev/transfer-acceleration.html)

Stats

* You spent **00:02** on this question

Question 22

You terminated two EC2 instances that you launched with an auto scaling group. However, you realize that you keep getting emails showing that AWS is trying to launch the instances, but without any success. What do you do to halt the launching attempts?

* ✓Go to Auto Scaling Groups and delete the auto scaling group you find there.
* Delete the Simple Notification Service (SNS) topic that sends the notifications.
* ✓Double-check your instances to ensure that the desired ones are indeed terminated.Selected
* Delete the Simple Queue Service (SQS) that contains the notification.

Explanation:  
There’s a reason why there’s the word 'auto' in 'auto scaling'; with this feature, you can automatically scale your instances up and down to maintain your application availability. So, it’s not enough to delete the instances or double-check to make sure they are gone. You will need to delete the auto scaling group that comprises the instances you just terminated; Auto Scaling Groups will otherwise keep trying to relaunch the instances. Deleting the SNS topic is simply stopping the notification, not preventing the automatic relaunch attempts. Deleting the SQS queue is not a valid answer, since SQS does not send the notifications.

Resources

* [Deleting Your Auto Scaling Infrastructure](https://docs.aws.amazon.com/autoscaling/ec2/userguide/as-process-shutdown.html)

Stats

* You spent **00:02** on this question

Question 23

A company is designing a log event processing application that must process 1000 events per second. Maintaining event ordering is also a requirement. Which service should they use for this messaging platform?

* SQS FIFO Queues
* Amazon MQSelected
* ✓Kinesis Data Streams
* SNS

Explanation:  
Amazon SQS FIFO queues support processing of messages in first-in-first-out order. However, the service has a limit of 300 messages per second. Therefore, it does not meet the 1000 events per second requirement. Kinesis Data Streams support in-order event processing per shard. Each shard supports up to 1000 events per second. Hence, this is the correct option. Amazon MQ is a managed message broker service meant as a migration replacement for Apache ActiveMQ. Therefore, it is not an optimal solution when designing a new AWS cloud native application. SNS is a service for sending notifications and is not a suitable option in this scenario.

Resources

* [Kinesis Data Streams Limits](https://docs.aws.amazon.com/streams/latest/dev/service-sizes-and-limits.html)
* [Amazon SQS FIFO (First-In-First-Out) Queues](https://docs.aws.amazon.com/AWSSimpleQueueService/latest/SQSDeveloperGuide/FIFO-queues.html)

Stats

* You spent **00:02** on this question

Question 29

As a Cloud Engineer, you have been tasked to create many EC2 instances in three availability zones to deploy software that indexes web content. This software program does so with integrated crawlers to significantly improve search performance. Your Team Lead has strongly recommended choosing an EC2 instance type that provides low latency, incredibly high random I/O performance, and high sequential read throughput. Which of the following instance types is best suited for this application?

* t3.medium
* c5.largeSelected
* t2.micro
* ✓i3.2xlarge
* p3.2xlarge

Explanation:  
IOPS, latency, and throughput are essential metrics for measuring storage performance. Therefore a storage-optimized EC2 instance is what you would need. The i3.2xlarge type is storage-optimized, with the root volume configured to 1 TB.

Resources

* [EC2 Instance Types](https://aws.amazon.com/ec2/instance-types/)

Stats

* You spent **00:02** on this question

Question 35

Which of the following AWS services enables on-premises applications to use AWS Cloud storage?

* Amazon Elastic File System (EFS)
* Amazon Simple Storage Service (S3)
* Amazon Elastic Block Storage (EBS)Selected
* ✓AWS Storage Gateway

Explanation:  
Although all four responses are similar in that they are AWS storage services, it is Storage Gateway that enables on-premises applications to use cloud-based storage. EFS is for simple, scalable file storage, EBS serves as a virtual disk for virtual servers launched with EC2, and S3 is for object-based storage.

Resources

* [What Is AWS Storage Gateway?](https://docs.aws.amazon.com/storagegateway/latest/userguide/WhatIsStorageGateway.html)

Stats

* You spent **00:02** on this question

Question 37

John from the marketing department enquires about the unusually high bounce rate for his latest email campaign for which you've used Amazon SES for the first time. What are NOT possible reasons for this?

* ✓There was a temporary problem at one of the large ISPs and SES had to retry for an extended period of time before the ISP was eventually able to deliver the emails to the recipients.Selected
* ✓The message contained a virus.Selected
* You've sent emails to quite a few new addresses that were only recently added. Amazon SES rejected some of these because they were on the SES suppression list. This list is managed by Amazon and contains email addresses that recently caused a hard bounce for any Amazon SES customer.Selected
* ✓Your email-sending request to Amazon SES was not formatted properly.

Explanation:  
If Amazon SES accepts the sender's request and then determines that the message contains a virus, Amazon SES stops processing the message and doesn't attempt to deliver it to the recipient's mail server. If the sender's email-sending request to Amazon SES fails because the request is not formatted properly, Amazon SES responds to the sender with an error and drops the email. A soft bounce is a situation where the ISP cannot deliver the email to the recipient because of a temporary condition, such as the ISP is too busy to handle the request. Amazon SES retries the email for an extended period of time. Soft bounces are only included in the (hard) bounces email sending event when Amazon SES fails to deliver the email after retrying for a period of time.

Resources

* [Monitoring Your Amazon SES Sending Activity](https://docs.aws.amazon.com/ses/latest/DeveloperGuide/monitor-sending-activity.html)
* [Amazon SES Email-Sending Process](https://docs.aws.amazon.com/ses/latest/DeveloperGuide/sending-email-with-ses.html)

Stats

* You spent **00:03** on this question

Question 38

You wish to exclusively use AWS services to buy a domain name and create a static website. Which of the following combinations will enable you to do so?

* Amazon API Gateway and Elastic Compute Cloud (EC2)
* Amazon Virtual Private Cloud (VPC) and Relational Database Service (RDS)Selected
* Amazon Lambda and Elastic File Service (EFS)
* ✓Amazon Route 53 and Simple Storage Service (S3)

Explanation:  
You use Route 53 to register your domain and configure it so that Internet traffic is routed to your designated target. The target can be Amazon S3, where you can create a bucket, upload the HTML file that will function as the static website, configure the permissions for everyone to see the content, and configure the bucket for website hosting. Route 53 is missing from the other three choices; this omission makes these responses wrong.

Resources

* [Setting Up a Static Website Using a Custom Domain](https://docs.aws.amazon.com/AmazonS3/latest/dev/website-hosting-custom-domain-walkthrough.html#root-domain-walkthrough-update-ns-record)

Stats

* You spent **00:03** on this question

Question 46

Power plant technicians at an electrical utility need to monitor equipment heat readings in real-time on their mobile devices. They would like to be able to see changing temperature values without refreshing the device's screen. Temperature sensors have already been installed on the equipment, and they've connected the sensors to AWS IoT Core. A mobile app has been developed in React Native to receive the temperature updates. An additional twenty percent more equipment will be installed at the plant over the next year. Which architecture will provide the most scalable solution for the utility?

* Have an AWS IoT rule forward messages to an Amazon Kinesis Data Streams stream. Create one consumer of the stream to be Amazon DynamoDB. Create a second consumer of the stream to be AWS Mobile Hub, which broadcasts the changed data to mobile device users.
* Create an AWS IoT rule to forward messages to an Amazon Simple Queue Service queue. Have an EC2 instance read the queue and write the messages to DynamoDB, and forward the data to Amazon Pinpoint to broadcast the changed data to mobile device users.Selected
* Configure an AWS IoT rule to forward messages to a Lambda function. Have the Lambda function write the messages to DynamoDB, and to AWS Mobile Hub, which broadcasts the changed data to mobile device users.
* ✓Implement an AWS IoT rule to forward messages to a Lambda function. Have the Lambda function execute an AWS AppSync GraphQL mutation to write updates to Amazon DynamoDB and broadcast changed data to mobile device users.

Explanation:  
An AWS AppSync GraphQL update mutation will update a sensor's record in DynamoDB and broadcast updated data to mobile device clients. A Lambda function can initiate a connection to an AppSync GraphQL API endpoint. Each component of this architecture is a managed service that will scale with the power plant's growth plans. AWS Mobile Hub is used for building mobile applications, not for broadcasting messages to mobile devices. DynamoDB and Mobile Hub are not valid consumers of a Kinesis Data Streams stream. Amazon Pinpoint is used to send personalized communications, not forward data updates to mobile devices.

Resources

* [AWS AppSync](https://aws.amazon.com/appsync/)
* [Monitoring IoT devices in real time with AWS AppSync](https://aws.amazon.com/blogs/mobile/iot-with-aws-appsync/)

Stats

* You spent **00:01** on this question

Question 5

Which of the following are AWS compute services?

* EFS
* ✓ECSSelected
* ✓LambdaSelected
* ✓EC2Selected

Explanation:  
EC2, ECS, and Lambda are AWS compute services.

Resources

* [AWS Compute Services](https://aws.amazon.com/products/compute/#Cloud_Compute_Details)

Stats

* You spent **00:02** on this question

Question 7

You have been asked to advise on a scaling concern. The client has an elegant solution that works well. As the information base grows they use CloudFormation to spin up another stack made up of an S3 bucket and supporting compute instances. The trigger for creating a new stack is when the PUT rate approaches 100 PUTs per second. the problem is that as the business grows that number of buckets is growing into the hundreds and will soon be in the thousands. You have been asked what can be done to reduce the number of buckets without changing the basic architecture.

* Set up multiple accounts so that the per account hard limit on S3 buckets is avoided.
* ✓Change the trigger level to around 3000 as S3 can now accommodate much higher PUT and GET levels.Selected
* Refine the key hashing to randomise the name Key to achieve the potential of 300 PUTs per second.
* Upgrade all buckets to S3 provisioned IOPS to achieve better performance.

Explanation:  
Until 2018 there was a hard limit on S3 puts of 100 PUTs per second. To achieve this care needed to be taken with the structure of the name Key to ensure parallel processing. As of July 2018 the limit was raised to 3500 and the need for the Key design was basically eliminated. Disk IOPS is not the issue with the problem. The account limit is not the issue with the problem.

Resources

* [S3 Request rates - Whats new](https://aws.amazon.com/about-aws/whats-new/2018/07/amazon-s3-announces-increased-request-rate-performance/)
* [S3 Request rates documentation](https://docs.aws.amazon.com/AmazonS3/latest/dev/request-rate-perf-considerations.html)
* [S3 Storage classes](https://aws.amazon.com/s3/storage-classes/)

Stats

* You spent **00:01** on this question

Question 24

Which of the following RDS database types support RDS Read Replicas?

* ✓PostgreSQLSelected
* ✓AuroraSelected
* ✓MariaDBSelected
* ✓OracleSelected
* ✓MySQLSelected
* Microsoft SQL

Explanation:  
Aurora, MySQL, MariaDB, Oracle and PostgreSQL all natively support read replicas in RDS. Although read replicas are available in MS SQL Server, these are not natively available in RDS and must be deployed into EC2 instances to work.

Resources

* [Amazon RDS Read Replicas](https://aws.amazon.com/rds/details/read-replicas/)

Stats

* You spent **00:05** on this question

Question 42

As CloudWatch monitors RDS, it provides which of the following metrics by default?

* The number of transaction requests
* ✓Memory available for useSelected
* ✓The number of current connections to the databaseSelected
* The number of users

Explanation:  
Memory & CPU utilization are identified as metrics that should be monitored. CloudWatch does not monitor Memory usage only Freeable memory. Memory is used for a number of functions and the amount of memory used is less important than what subsystems are using it, and what is still available. Users are not generally measure, but DB connections are.

Resources

* [RDS Metrics](https://docs.aws.amazon.com/AmazonCloudWatch/latest/monitoring/rds-metricscollected.html)
* [Overview of Monitoring Amazon RDS](https://docs.aws.amazon.com/AmazonRDS/latest/UserGuide/MonitoringOverview.html#monitoring-cloudwatch)
* [What is Freeable memory](https://forums.aws.amazon.com/thread.jspa?threadID=209720)

Stats

* You spent **00:02** on this question

Question 52

You have a production application that is on the largest RDS instance possible, and you are still approaching CPU utilization bottlenecks. You have implemented read replicas, ElastiCache, and even CloudFront and S3 to cache static assets, but you are still bottle-necking. What should your next troubleshooting step be?

* You have reached the limits of public cloud. You should get a dedicated database server and host this locally within your own data center.
* You should consider using RDS Multi-AZ and using the secondary AZ nodes as read only nodes to further offset load.
* ✓You should implement database partitioning and spread your data across multiple DB Instances.Selected
* You should provision a secondary RDS instance and then implement and ELB to spread the load between the two RDS instances.

Explanation:  
If your application requires more compute resources than the largest DB instance class or more storage than the maximum allocation, you can implement partitioning, thereby spreading your data across multiple DB instances.

Resources

* [See 'Q: How can I scale my DB instance beyond the largest DB instance class and maximum storage capacity?'](https://aws.amazon.com/rds/faqs/)

Stats

* You spent **00:01** on this question

Question 9

Your company is moving their entire 20 TB data warehouse to the cloud. With your current bandwidth, it would take 2 months to transfer the data. Which service would you use to quickly get your data into AWS?

* Multipart Upload
* ✓Snowball
* DirectConnectSelected
* S3 with Transfer Acceleration

Explanation:  
At that amount of data and those bandwidth restrictions, Snowball would be the most expedient choice.

Resources

* [When to Use Snowball](https://aws.amazon.com/snowball/faqs/#when-to-use)

Stats

* You spent **00:01** on this question

Question 13

An application that performs statistical analysis on weather data receives files once a week. It assimilates the data in these files with previously collected data via its algorithms, and publishes a report at the end of each month. At unspecified times during the week, interim results need to be made available to meteorologists within minutes. Which architecture will meet the data availability requirements for the solution at the least cost, and with the simplest application code?

* Process the data on EC2 and store temporary results in Amazon DynamoDB
* Process the data on a transient EMR cluster and store temporary results in S3Selected
* ✓Process the data on EC2 and hibernate the instance until new data files arrive or an interim results request is made
* Process the data on EC2 and stop the instance until new data files arrive or an interim results request is made

Explanation:  
Hibernating an EC2 instance provides a warm-start capability. When an EC2 instance is hibernated, RAM contents are saved to the EBS root volume. RAM contents are reloaded when the instance is restarted. AWS doesn't charge for the time that an instance is in the hibernated state. Storing data in Amazon DynamoDB costs more than EBS. EMR clusters cost more than EC2 instances. Stopping an EC2 instance clears RAM and requires the application to reload the data from a storage source when the instance is restarted.

Resources

* [Hibernate Your Instance](https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/Hibernate.html)

Stats

* You spent **00:01** on this question

Question 25

Your fleet of EC2 instances is running 100% of the time, and there is no reason to believe that the demand will decrease. What pricing model might you use to reduce costs?

* ✓Reserved Instances
* Spot InstancesSelected
* Special Instances
* On-Demand Instances

Explanation:  
Reserved Instances provide you with a significant discount (up to 75%) compared to On-Demand instance pricing. You have the flexibility to change families, OS types, and tenancies while benefiting from Reserved Instance pricing when you use Convertible Reserved Instances. To maintain a fleet of Spot instances you would need to be bidding fairly high, so it is likely the RIs will give you a better price point. But you would need to check.

Resources

* [About Reserved Instances](https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/ec2-reserved-instances.html)

Stats

* You spent **00:01** on this question

Question 34

You have three AWS payer accounts consolidated under an AWS Organization . Which of the below statements is TRUE for purposes of volume discounts?

* Usage in each account will be evaluated individually to determine the volume discount it is individually entitled to
* Usage across the three accounts will be aggregated in determining the volume discount your Organization is entitled to only if Consolidated Billing is enabled in each account
* Usage across the three accounts will be aggregated in determining the volume discount your Organization is entitled to only if Consolidated Billing is enabled at the Organisation levelSelected
* ✓Usage across the three accounts will be aggregated in determining the volume discount your Organization is entitled to

Explanation:  
If you have multiple accounts, your charges will decrease because AWS combines usage from all accounts in the organization to qualify you for volume pricing discounts.

Resources

* [Consolidated Billing for Organizations](https://docs.aws.amazon.com/awsaccountbilling/latest/aboutv2/consolidated-billing.html)

Stats

* You spent **00:01** on this question

Question 36

You are speaking with a former colleague who asks you about cloud migrations. The place she is working for runs a large fleet of on-premise Microsoft servers and they are concerned about licensing costs. Which of the following statements is invalid?

* License Mobility allows customers to move eligible Microsoft software to third-party cloud providers such as AWS for use on EC2 instances with default tenancy.
* ✓If I bring my own licenses into EC2 Dedicated Hosts or EC2 Dedicated Instances, then - subject to Microsoft’s terms - Software Assurance is required.
* EC2 Bare Metal instances give the customer full control of the configuration of instances just as they have on-premise: The customer has the ability to install a hypervisor directly on the hardware and therefore define and configure their own instance configurations of RAM, disk and vCPU which can minimize additional licensing costs.Selected
* AWS License Manager includes features to help your organization manage licenses across AWS and on-premises. With AWS License Manager, you can define licensing rules, track license usage, and enforce controls on license use to reduce the risk of license overages. You can also set usage limits to control licensing costs. There is no additional charge for AWS License Manager.

Explanation:  
If you are bringing your own licenses into EC2 Dedicated Hosts or EC2 Dedicated Instances then Software Assurance is not required subject to Microsoft’s terms.

Resources

* [BYOL and Oversubscription](https://aws.amazon.com/blogs/compute/byol-and-oversubscription/)
* [Amazon Web Services and Microsoft FAQ](https://aws.amazon.com/windows/faq/)
* [Microsoft Licensing on AWS](https://aws.amazon.com/windows/resources/licensing/)
* [Introducing Five New Amazon EC2 Bare Metal Instances](https://aws.amazon.com/about-aws/whats-new/2019/02/introducing-five-new-amazon-ec2-bare-metal-instances/)

Stats

* You spent **00:02** on this question

Question 40

Your company recently expressed interest in upgrading to an AWS Support plan that provides infrastructure event management and incident response for the launch of a business-critical application. Which of the following support plans will satisfy your company's requirements?

* Business
* BasicSelected
* ✓Enterprise
* Developer

Explanation:  
Each AWS account comes with Basic Support, so Basic is not the answer. Either the Business or the Enterprise plan grants access to AWS Infrastructure Event Management, the program your company needs for assistance with launching the application. The Enterprise plan, however, provides up to a 15-minute response time if the business-critical application goes down; the Business plan does not offer this option. In addition, the Busines Plan does not include Infrastructure Event Management - you need to pay an additional fee for this. Therefore the Enterprise plan is the only option that provides the appropriate level of incident response and infrastructure event management required.

Resources

* [AWS Support Plans](https://console.aws.amazon.com/support/plans/home?#/)
* [AWS Infrastructure Event Management](https://aws.amazon.com/premiumsupport/programs/iem/)

Stats

* You spent **00:01** on this question

Question 64

You want to track the amount of money you ideally want your company to spend for EC2 data transfers every month. Which of the following actions will accomplish that?

* ✓Create a Usage budget with AWS Budgets.
* Create a Cost budget with AWS Budgets.
* Create a Reservation budget with AWS Budgets.Selected
* Enable AWS Cost Explorer

Explanation:  
AWS Cost Explorer is for providing information that you can use to track and manage costs, but it doesn’t enable the creation of budgets; that’s what AWS Budgets is for. If the question was strictly addressing cost, then creating a Cost budget with AWS Budgets would have been the correct answer. However, your concern is specifically with a usage type, which is EC2 data transfers. In this case, you would need to create a Usage budget with AWS Budgets and receive alerts when your defined threshold is met.

Resources

* [Managing Your Costs with Budgets](https://docs.aws.amazon.com/awsaccountbilling/latest/aboutv2/budgets-managing-costs.html)

Stats

* You spent **00:01** on this question

Question 65

Your company is running an older version of Windows on employees' desktops/laptops which will be going off of mainstream support in the near future. The most current version of Windows will require a large capital investment to purchase more powerful hardware to run it. All desktops/laptops require access to the Internet as well as access to multiple business applications running on Amazon EC2 web servers in the AWS cloud. Your manager has tasked you with determining how to move the company's desktops/laptops to the most current version of Windows. Which architecture will provide the most cost effective solution?

* ✓Deploy Amazon WorkSpaces with the most current version of Windows to provide Desktop-as-a-Service capability. Use a NAT Gateway in the same VPC to provide access to the Internet.
* Implement Amazon WorkSpaces with the most current version of Windows to provide Desktop-as-a-Service capability. Use Amazon AppStream to provide access to the Internet and to serve the EC2 applications to the desktops/laptops.
* Implement Amazon WorkSpaces with the most current version of Windows to provide Desktop-as-a-Service capability. Use an Internet Gateway in the same VPC to provide access to the Internet. Provision Elastic Network Interfaces in the same VPC to connect the desktops/laptops to the EC2 applications.Selected
* Use Amazon WorkSpaces with the most current version of Windows to provide Desktop-as-a-Service capability. Use an Internet Gateway in the same VPC to provide access to the Internet. Provision an AWS Managed Microsoft AD instance and link it to your on-premises Active Directory for user authentication.

Explanation:  
Amazon Workspaces provides the capability to serve virtual cloud-based desktop sessions to your desktop/laptop users (either Windows or Linux). It eliminates the need for powerful hardware, and it removes the burden of individual desktop/laptop software maintenance. AppStream is not needed to access the Internet, nor is it needed to serve the EC2 applications in this use case since a browser can be used from WorkSpaces to access the web servers. A NAT Gateway is preferred to an Internet Gateway since all traffic is initiated from the desktop/laptop, instead of from out on the Internet. WorkSpaces provides for creating an authentication directory, so creating one separately is not needed. WorkSpaces also creates an ENI for each session inherently.

Resources

* [What is Amazon WorkSpaces?](https://docs.aws.amazon.com/workspaces/latest/adminguide/amazon-workspaces.html)
* [Why Customers Are Moving Their Windows Desktops to the Cloud with Amazon WorkSpaces](https://aws.amazon.com/blogs/desktop-and-application-streaming/why-customers-are-moving-their-windows-desktops-to-the-cloud-with-aws/)

Stats

* You spent **00:01** on this question

Question 26

A large company is running multiple Amazon EC2 and Amazon RDS services across several AWS Regions. You are an AWS consultant and the company approaches you to provide recommendations on how to reduce operational cost without any major changes. The company confirms that certain instances are required to be run only during business hours from 8AM to 6PM on weekdays and can be shutdown on weekends and non-business hours. Which of the following automated solutions best matches the requirements?

* AWS Auto Scaling
* ✓AWS Instance SchedulerSelected
* Move AWS instances to lesser configuration Instance Type
* Move Instances to Spot Instances

Explanation:  
AWS offers infrastructure on demand so that customers can control their resource capacity and pay only for what they consume. One simple method to reduce costs is to stop resources that are not in use, and then start those resources again when their capacity is needed. The AWS Instance Scheduler is a simple AWS-provided solution that enables customers to easily configure custom start and stop schedules for their Amazon EC2 and Amazon RDS instances. The solution is easy to deploy and can help reduce operational costs for both development and production environments. Customers who use this solution to run instances during regular business hours can save up to 70% compared to running those instances 24 hours a day. AWS Auto Scaling is not a correct solution as auto-scaling groups can contain Amazon EC2 instances from multiple Availability Zones within the same Region and cannot contain instances from multiple regions. As the company confirms that the instances are required to be run during Business hours, Spot Instance is not a good choice as spot instances may be terminated if the spot price is higher than the bid price. Also, moving AWS Instances to lesser configurations is neither an automated solution nor guarantees saving operational cost if run 24 hours.

Resources

* [AWS Instance Scheduler](https://docs.aws.amazon.com/solutions/latest/instance-scheduler/overview.html)

Stats

* You spent **00:01** on this question

Question 41

You have been asked to design a scalable solution for a simple customer service survey that is shown online after each of the ~10 million chat bot interactions per month: Emoticons for 3 rating options ('positive', 'neutral' and 'negative') are to be presented with the expectation that about 10% of users submit their feedback. The bot is public facing and operates 24x7. Select a feasible and most cost effective solution.

* You front your Lambda that writes the ratings to a DynamoDB table with an ALB.
* Given the expected load, you are better off with an Elastic Beanstalk app and RDS such as PostgreSQL or MySQL
* ✓You invoke a Lambda function on demand in a browser script using the AWS SDK for JavaScript. For that to work you will need to create an Amazon Cognito identity pool with access enabled for unauthenticated identities and include the identity pool ID in your code to obtain credentials for the browser script. The function writes the submitted rating value to a DynamoDB table.Selected
* You develop a proper API and use an API Gateway, Lambda and DynamoDB solution

Explanation:  
RDS alone is more expensive than any of the serverless solutions and therefore not an option here. Because of this use case's simplicity (i.e. no request validation, rate limiting, authentication/authorization, etc. required), there is essentially no need for a Lambda fronting API Gateway. Given the described requirements (load and availability), an ALB is more expensive as it's billed hourly.

Resources

* [Saving Money By Replacing API Gateway With Application Load Balancers Lambda Integration](https://serverless-training.com/articles/save-money-by-replacing-api-gateway-with-application-load-balancer/)
* [Lambda functions as targets for Application Load Balancers](https://aws.amazon.com/blogs/networking-and-content-delivery/lambda-functions-as-targets-for-application-load-balancers)
* [Invoking a Lambda Function in a Browser Script](https://docs.aws.amazon.com/sdk-for-javascript/v2/developer-guide/browser-invoke-lambda-function-example.html)

Stats

* You spent **00:01** on this question

Question 56

Your AWS environment in us-east-1 contains several EC2 instances with associated RIs dedicated to a project that has just been canceled. You need to recoup the cost of these reserved instances, and you need to preserve the data for future use. What can you do to minimize charges for these instances?

* Contact AWS and ask them to release you from your Reserved Instance purchase.
* ✓Sell the unused reservations on the AWS Reserved Instance Marketplace.Selected
* ✓Take snapshots of the EBS volumes and terminate the instances.Selected
* Stop the instances and retain them for future use.

Explanation:  
You should preserve the data by taking snapshots of the EBS volumes backing your instances and sell the RIs on the Reserved Instance Marketplace. Remember the Reserved Instances is both a Capacity reserve, and a Billing discount.

Resources

* [About EBS Snapshots](https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/EBSSnapshots.html)
* [Selling on the Reserved Instance Marketplace](https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/ri-market-general.html)

Stats

* You spent **00:01** on this question

Question 59

The volume of transactions coming into your online trading application fluctuates each day depending on market events. Log analyses indicate that on the heaviest volume days, compute demand comes in triple that of the average volume days. These heavy volume days occur about 15 days per year. You also have some workloads that need to process before close of business to provide input to daily reporting functions. How would you structure your mix of EC2 General Purpose Linux instances to obtain the highest cost efficiency?

* 1-Year Term Standard Reserved Instances for 100% of the average and heavy volume days, and Spot Instances to handle the reporting workloads
* ✓3-Year Term Standard Reserved Instances for 100% of the average volume days, On-Demand instances to handle the spikes from the heavy volume days, and Spot Instances to handle the reporting workloadsSelected
* 3-Year Term Standard Reserved Instances for 100% of the average volume days and the reporting workloads, On-Demand instances to handle the spikes from the heavy volume days
* 3-Year Term Standard Reserved Instances for 100% of the average and heavy volume days, and the reporting workloads

Explanation:  
The most cost effective pricing for EC2 General Purpose Linux instances will usually involve a mix of pricing models. In this scenario, since the number of heavy volume days is limited, using a combination of reserved instances sized for the average volume days, on-demand instances to handle transaction volume increases on the heavy volume days, and spot instances to handle workloads that just need to complete by a certain time is the best option. Spot instances for reporting workloads will cost less than using reserved instances and capacity doesn't need to be guaranteed. 3-year reserved instances are more cost-effective than one-year-term reserved instances. Over-provisioning for all but the 15 heavy volume days each year by using RI to cover heaviest load leaves a lot of underutilised capacity.

Resources

* [Amazon EC2 Pricing](https://aws.amazon.com/ec2/pricing/)

Stats

* You spent **00:02** on this question

Question 62

What is the 'first-byte' latency when retrieving data from Glacier?

* ✓3-5 hoursSelected
* > 5 hours
* 2 hours
* 1 hour

Explanation:  
You should expect data retrieval latency of 3-5 hours when retrieving data from Glacier.

Resources

* [Glacier Data Retrieval Policies](https://aws.amazon.com/glacier/faqs/#dataretrievalpolicies)

Stats

* You spent **00:02** on this question

Question 12

A junior team member asks you about IAM best practices. Which of the following statements are valid recommendations?

* ✓A user in an IAM group inherits the permissions assigned to the group. Although you can define additional permissions for an individual IAM user, it can be less obvious what set of permissions is applicable to an individual user when you mix these two approaches.
* ✓Use IAM roles instead of sharing security credentials between accounts to allow users from another AWS account to access resources in your AWS account.Selected
* Applications that run on an Amazon EC2 instance need credentials in order to access other AWS services. To provide credentials to the application in a secure way, use IAM roles. Roles have their own permanent set of credentials the way IAM users do.Selected
* It is best practice to use access keys whenever possible. If you don't already have an access key for your AWS account root user, you should create one and use it instead of your account email address and password to sign in to the AWS Management Console. Rotate the access key regularly.

Explanation:  
If you don't already have an access key for your AWS account root user, don't create one unless you absolutely need to. If you do have an access key for your AWS account root user, delete it. If you must keep it, rotate (change) the access key regularly. Roles don't have their own permanent set of credentials the way IAM users do. In the case of Amazon EC2, IAM dynamically provides temporary credentials to the EC2 instance, and these credentials are automatically rotated for you

Resources

* [IAM Best Practices](https://docs.aws.amazon.com/IAM/latest/UserGuide/best-practices.html)

Stats

* You spent **00:02** on this question

Question 18

You have an EC2 Instance with an EIP allocated sitting in a Public subnet in your VPC. This instance is serving web content, and you want to make sure that users on the Internet can only access it via ports 80 and 443. Which of the below options lets you achieve this?

* Create a security group with an ALLOW rule for ports 80 & 443, and a DENY Rule for all other ports. Attach it to the instance
* Create an NACL with a default allow rule on incoming traffic. Create a security group with a DENY rule for all ports except 80 & 443 and attach it to the instance.Selected
* Create and NACL with a default deny rule on incoming traffic. Create a security group with an ALLOW rule for ports 80 & 443 and attach it to the instance.
* ✓Create a security group with an ALLOW rule for ports 80 & 443 and attach it to the instance

Explanation:  
DENY Rules cannot be created for security groups - so all options where this is mentioned can be ignored. With inbound traffic, NACLs are evaluated first - so an NACL with a default deny rule will block all incoming traffic before it reaches the instance - so this is not the correct option. This leaves creating an allow rule for the instance's security group as the correct answer.

Resources

* [VPC Security](https://docs.aws.amazon.com/vpc/latest/userguide/VPC_Security.html)

Stats

* You spent **00:03** on this question

Question 28

You have an S3 bucket which contains sensitive data and as part of an internal audit a recommendation has been made to restrict access to the bucket so that it is only accessible from a specific list of IP addresses. How would you implement this?

* ✓Apply a Bucket Policy to the bucket
* Apply a NACL to the bucketSelected
* Apply a Firewall Policy to the bucket
* Use a Security Group on the bucket

Explanation:  
Bucket policies allow you to control access to your bucket in a number of different ways - including specifying the IP addresses which can access the bucket. NACLS, Security Groups and Firewall Policies do not apply to buckets themselves.

Resources

* [How can I specify which VPCs or IP addresses can access my Amazon S3 bucket?](https://aws.amazon.com/premiumsupport/knowledge-center/block-s3-traffic-vpc-ip/)

Stats

* You spent **00:01** on this question

Question 32

Which of the following is an invalid VPC peering configuration?

* VPC A has peering connections to VPCs B and C. All three VPCs are in the same AWS account, and there are no overlapping CIDR blocks.
* ✓You have a VPC peering connection between VPC A and VPC B. VPC A also has a VPN connection to a corporate network. You use VPC A to extend the peering relationship to exist between VPC B and the corporate network so that traffic from the corporate network can directly access VPC B by using the VPN connection to VPC A.
* You have peered three VPCs in a full-mesh configuration. The VPCs are in the same AWS account and do not overlapping CIDR blocks.Selected
* You have a VPC peering connection between VPCs A and B. They are in the same AWS account, and they do not have overlapping CIDR blocks.

Explanation:  
Edge-to-edge routing is not allowed through a VPN connection.

Resources

* [Invalid VPC Peering Connection Configurations](https://docs.aws.amazon.com/AmazonVPC/latest/PeeringGuide/invalid-peering-configurations.html)

Stats

* You spent **00:01** on this question

Question 39

A shipping company brokers transportation arrangements for a large freight carrier. The shipping company currently uses an online form to make reservations with the freight carrier, but they'd like to automate the ordering process. The freight carrier runs its logistics system on AWS. The shipping company also runs its IT infrastructure on AWS. Which architecture should the shipping company put in place to provide the best security and operational efficiency for their transactions with the freight carrier?

* ✓Have the freight carrier create an Endpoint Service and use an Interface VPC Endpoint to connect
* Create an IPSec VPN tunnel to the freight carrier's network thorough a Virtual Private GatewaySelected
* Implement VPC Peering to the freight carrier's VPC
* Establish a Direct Connect circuit to the freight company

Explanation:  
AWS PrivateLink provides private connectivity between VPCs and AWS services securely on the AWS network without exposure to the public Internet. AWS PrivateLink is implemented by a service provider creating an Endpoint Service and a service consumer connecting via an Interface VPC Endpoint. Direct Connect is established between a customer and AWS, not between two AWS customers. VPC Peering and VPN connections will work, but will require more operational overhead than PrivateLink.

Resources

* [AWS PrivateLink](https://aws.amazon.com/privatelink/)
* [VPC Endpoint Services](https://docs.aws.amazon.com/vpc/latest/userguide/endpoint-service.html)

Stats

* You spent **00:01** on this question

Question 45

You must encrypt all incoming and outgoing traffic between your AWS environment and your customers. Your fleet of EC2 instances lives inside a public subnet and behind an elastic load balancer. Your application is very CPU intensive, and you want to minimize the processing load these EC2 instances must bear. What should you do?

* Use API Gateway to offload the SSL certificate, reducing the amount of load on both your ELB and EC2 instances.
* Install the SSL certificates on each EC2 instance and allow them to do the encryption/decryption with your customers.Selected
* ✓Install the SSL certificates on your ELBs so that there is less load on the EC2 instances.
* Configure a NAT and install the EC2 instance on that NAT so that you offload SSL termination to a third party EC2 instance and not your production environment.

Explanation:  
The best answer would be to offload your SSL decryption to an Elastic Load Balancer.

Resources

* [SSL on Classic Load Balancers](https://docs.aws.amazon.com/elasticloadbalancing/latest/classic/introduction.html#classic-load-balancer-overview)
* [SSL on Application Load Balancers](https://aws.amazon.com/blogs/aws/new-application-load-balancer-sni/)

Stats

* You spent **00:02** on this question

Question 48

You work for a construction company that has their production environment in AWS. The production environment consists of 3 identical web servers that are launched from a standard Amazon Linux AMI using Auto Scaling. The web servers are launched in to the same public subnet and belong to the same security group. They also sit behind the same ELB. You decide to do some testing: you launch a 4th EC2 instance into the same subnet and same security group. Annoyingly, your 4th instance does not appear to have internet connectivity. What could be the cause of this?

* ✓You have not assigned an elastic IP address to this instance.
* You need to update your route table so as to provide a route out for this instance.Selected
* You have not configured a routable IP address in the host OS of the fourth instance.
* You have not configured a NAT in the public subnet.

Explanation:  
Of these choices, the absence of the Elastic IP is the only one that could prevent internet access.

Resources

* [Enabling Internet Access](https://docs.aws.amazon.com/AmazonVPC/latest/UserGuide/VPC_Internet_Gateway.html)

Stats

* You spent **00:02** on this question

Question 49

Which of the following DNS record types does Route 53 not support?

* SPF
* ✓DNSKEY
* CNAMESelected
* AAAA

Explanation:  
Route 53 is a scalable and highly available DNS service and it currently supports 13 different DNS record types including; AAAA, CNAME and SPF. However, Route 53 does not support DNSSEC (other than during domain registration) and therefore any DNSSEC related records, such as DNSKEY, are also not supported.

Resources

* [Amazon Route 53 FAQs](https://aws.amazon.com/route53/faqs/)

Stats

* You spent **00:01** on this question

Question 51

Which of the below a valid sources or destinations for a VPC Security Group?

* An EC2 Instance
* ✓The prefix list ID for an AWS serviceSelected
* An IAM RoleSelected
* ✓A different security groupSelected
* An S3 Bucket
* ✓A range of IPv4 Addresses

Explanation:  
A different security group can act as the source or destination of any security group. Similarly, and IPv4 or IPv6 address or range of addresses can be used. Prefix list IDs can also be named as sources or destinations when using gateway endpoints in your VPC. Individual buckets a IAM roles cannot be named in a security group as sources or destinations. When it comes to Ec2 instances - their IP address or a Security Group to which the instance belongs can be used, but the actual instance itself cannot be specified.

Resources

* [Using Network Security](https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/using-network-security.html)

Stats

* You spent **00:02** on this question

Question 53

An enterprise is considering implementing Firewall Manager to manage the security policies across AWS resources centrally. What are the prerequisites to be considered in setting up AWS Firewall Manager?

* ✓Account must be part of AWS Organization with all features sets enabled
* ✓Firewall Manager should have an administrator account and it must be associated with the master account of AWS Organization, or it must be associated with a member account that has appropriate permissionsSelected
* Enable AWS System Manager resource groupsSelected
* ✓Enable AWS Config for each of the AWS Organization member accountsSelected
* Disable AWS Config for each of the AWS Organization member accounts

Explanation:  
AWS Firewall Manager is a security management service which allows you to centrally configure and manage firewall rules across your accounts and applications in AWS Organization. As new applications are created, Firewall Manager makes it easy to bring new applications and resources into compliance by enforcing a common set of security rules. Before using Firewall Manager for the first time, three steps need to be completed in sequence: 1. Join AWS Organizations; 2. Set the AWS Firewall Manager Administrator account with appropriate permissions; 3. Enable AWS Config.

Resources

* [AWS Security, Identity and Compliance](https://docs.aws.amazon.com/waf/latest/developerguide/fms-prereq.html)

Stats

* You spent **00:02** on this question

Question 54

A human resources consulting company has recently implemented Amazon Redshift to perform analytics on customer engagements. A number of departments have been given the ability to query the data. The operations team needs to be able to monitor and terminate queries as needed, but they should not have the ability to modify or delete any other Redshift resources. Which approach will provide the operations team with the access they require?

* Assign the AmazonRedshiftOperations managed policy to the users on the operations team.
* Create a custom IAM policy that includes the redshift:Describe\*, redshift:View\* and redshift:DeleteQueries actions. Assign the policy to the users on the operations team.
* Assign the AmazonRedshiftReadOnlyAccess and AmazonRedshiftQueryAdministrator managed policies to the users on the operations team.Selected
* ✓Create a custom IAM policy that includes the redshift:Describe\*, redshift:CancelQuerySession, and redshift:ViewQueriesInConsole actions. Assign the policy to the users on the operations team.

Explanation:  
A policy with the redshift:Describe\*, redshift:CancelQuerySession, and redshift:ViewQueriesInConsole actions will provide an IAM user with the ability to select a Redshift cluster, list all running queries, and terminate a query if needed. The redshift:DeleteQueries action does not exist. The AmazonRedshiftOperations and AmazonRedshiftQueryAdministrator managed policies do not exist.

Resources

* [Using Identity-Based Policies (IAM Policies) for Amazon Redshift](https://docs.aws.amazon.com/redshift/latest/mgmt/redshift-iam-access-control-identity-based.html)
* [Grant fine-grained access to the Amazon Redshift Management Console](https://aws.amazon.com/blogs/big-data/granting-fine-grained-access-to-the-amazon-redshift-management-console/)

Stats

* You spent **00:02** on this question

Question 57

You want to encrypt the data in your S3 buckets. You intend on managing the encryption keys and using Amazon S3 to manage the encryption itself. Which of the following S3 encryption types support your requirements?

* ✓Server-Side Encryption with Customer-Provided Keys (SSE-C)
* Server-Side Encryption with Amazon S3-Managed Keys (SSE-S3)
* Server-Side EncryptionSelected
* Server-Side Encryption with AWS Key Management Service (SSE-KMS)

Explanation:  
Although Response A is correct in a general sense, the question is asking for a specific type of server-side encryption. SSE-C is what you need if you want to manage the encryption keys and have Amazon manage the encryption. Both SSE-S3 and SSE-KMS support the management of keys, which does not match the requirements of this application.

Resources

* [Protecting Data Using Server-Side Encryption](https://docs.aws.amazon.com/AmazonS3/latest/dev/serv-side-encryption.html)

Stats

* You spent **00:01** on this question

Question 61

Your organisation is about to deploy a new website into their AWS environment that will publish news articles created by your content team, which will reside on the URL “www.cloud-news.com”. This website makes use of two EC2 austoscaling groups to serve content - one is for publicly accessible content and one for members-only content. An in-house developed authentication mechanism redirects users to “members.cloud-news.com” to access the members-only content. Which load balancer configuration is most appropriate for this architecture?

* Use a Network Load Balancer in a public subnet, with a target group for each Autoscaling group. Configure 2 listeners - one for each content type. Use the "host-header" condition on each listener rule to redirect users to the appropriate target group.
* Use a Network Load Balancer in a public subnet, with a target group for each Autoscaling group. Configure 2 listeners - one for each content type. Use the "path-pattern" condition on each listener rule to redirect users to the appropriate target group.
* Use an Application Load Balancer, with a target group for each Autoscaling group. Configure 2 listeners - one for each content type. Use the “path-pattern” condition on each listener rule to redirect users to the appropriate target group.Selected
* ✓Use an Application Load Balancer, with a target group for each Autoscaling group. Configure 2 listeners - one for each content type. Use the "host-header" condition on each listener rule to redirect users to the appropriate target group.

Explanation:  
The load balancer needs to be able to look at the hostname of the request and redirect it to the appropriate EC2 Autoscaling group - this requires the ability to do host-based routing, which is a feature of ALBs and is not available in NLBs. As we are routing to a different hostname, the path is irrelevant - only host-based will work, and the condition for this on an ALB is "host-header"

Resources

* [Load Balancing Features](https://aws.amazon.com/elasticloadbalancing/features/)

Stats

* You spent **00:02** on this question

Question 27

You need to restore an object from S3-Glacier. Which of the following will help you do that?

* Using the AWS s3-Glacier Console
* Using the S3 REST API
* ✓Using the Glacier APISelected
* Using the S3 sub-command from the AWS CLI

Explanation:  
When discussing GLACIER it is important to distinguish between the storage-class 'Glacier' use by S3, and the 'S3-Glacier' service. The 1st is managed via the 'S3' console & API, and the 2nd the 'S3-Glacier' console & API. The Amazon 'S3' service maintains the mapping between your user-defined object name and Amazon Glacier system-defined identifier. These objects are not accessible via the 'S3-Glacier' service. Objects that are stored using the 'S3-Glacier' service are only accessible through the Amazon 'S3' CLI or APIs.

Resources

* [What Is Amazon S3 Glacier?](https://docs.aws.amazon.com/amazonglacier/latest/dev/introduction.html)
* [Restoring S3-Glacier objects with CLI (glacier)](https://docs.aws.amazon.com/cli/latest/reference/glacier/initiate-job.html)
* [Restoring S3-Glacier objects with API (POST)](https://docs.aws.amazon.com/amazonglacier/latest/dev/api-initiate-job-post.html)

Stats

* You spent **00:01** on this question

Question 30

You are currently running an application in a production environment and you want to ensure that it is free of vulnerabilities. Which of the following AWS services would you use to accomplish this?

* AWS Web Application Firewall (WAF)
* AWS Shield
* ✓Amazon InspectorSelected
* AWS Trusted Inspector

Explanation:  
You will need Amazon Inspector to perform a security assessment. Not only does it identify vulnerabilities in your application, it will also spot deviations from security best practices. AWS Shield and WAF protect the application from attacks that exploit vulnerabilities, rather than identify them. And Trusted Advisor only provides recommendations on how to improve security.

Resources

* [What is Amazon Inspector?](https://docs.aws.amazon.com/inspector/latest/userguide/inspector_introduction.html)

Stats

* You spent **00:02** on this question